

Illinois Tollway Standard Drawing Revisions

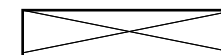
| Section F | | Sign Structure | |
|---------------|--|-----------------------|--|
| Standard | Modification Summary | Effective: 03-01-2026 | |
| F1-16 | OVERHEAD SIGN STRUCTURE SPAN TYPE STRUCTURE DETAILS | Sheet 1 | Deleted Note 3 and Renumbered. |
| F4-16 | OVERHEAD SIGN STRUCTURE CANTILEVER TYPE STRUCTURE DETAILS | Sheet 1 | Deleted Note 3 and Renumbered. |
| F9-08 | BREAKAWAY SIGN SUPPORT DETAILS | Sheet 3 | Revised edge of traveled lane to edge of pavement in Note 5 and in Unshielded Slope elevations. Added clear height dimension callouts for Unshielded Slope. |
| Sheet 4 | Revised edge of traveled lane to edge of pavement in Note 5 and in Shielded Slope elevations. Added clear height dimension callouts for Shielded Slope. | Sheet 5 | Revised Note 1 to include Longest Post. |
| F13-11 | OVERHEAD SIGN STRUCTURE MONOTUBE TYPE (STEEL) MAINLINE STRUCTURE DETAILS | Sheet 1 | Added junction box in Toll Plaza Plan. |
| Sheet 2 | Added junction box in Entrance Monotube Plan and Elevation. | Sheet 3 | Added junction box in Exit Monotube Plan and Elevation. |
| F14-09 | OVERHEAD SIGN STRUCTURE BUTTERFLY TYPE STRUCTURE DETAILS | Sheet 1 | Deleted Note 4 and Renumbered. |
| F15-10 | OVERHEAD SIGN STRUCTURE MONOTUBE TYPE (STEEL) STRUCTURE DETAILS FOR AET RAMP | Sheet 1 | Added Wrong Way Sign in Section A-A and Sign Table. Revised Plaza ID Sign maximum area in Sign Table. Added junction box in AET Ramp Toll Plaza Plan. |
| Sheet 2 | Added junction box in Entrance Monotube Plan and Elevation. | Sheet 3 | Added junction box in Exit Monotube Plan and Elevation. Added Section S-S Monotube Elevation. |
| Sheet 4 | Added Section S-S (Sign Hanger). Added Note 3 in General Notes. | | |
| F17-11 | OVERHEAD SIGN STRUCTURE SPAN TYPE (STEEL) STRUCTURE DETAILS | Sheet 1 | Deleted Note 3 and Renumbered. |

Illinois Tollway Standard Drawing Revisions

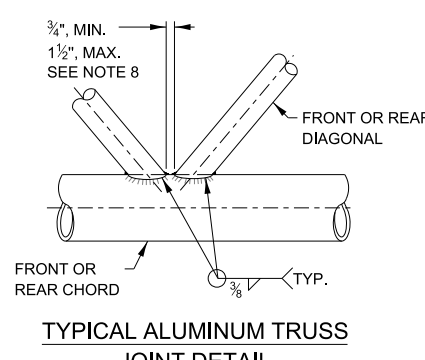
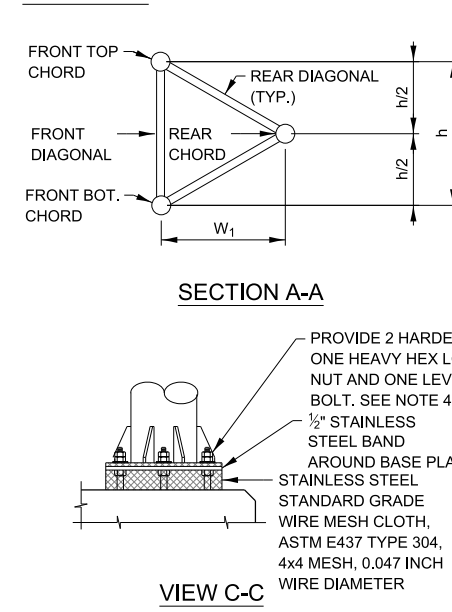
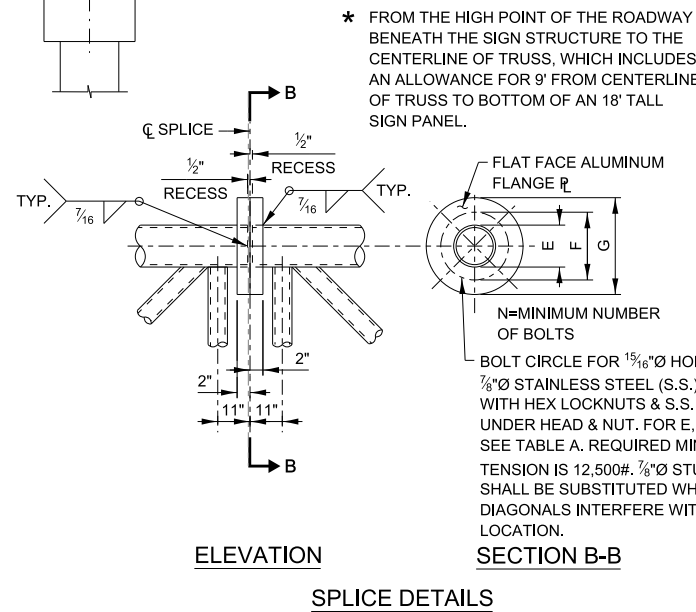
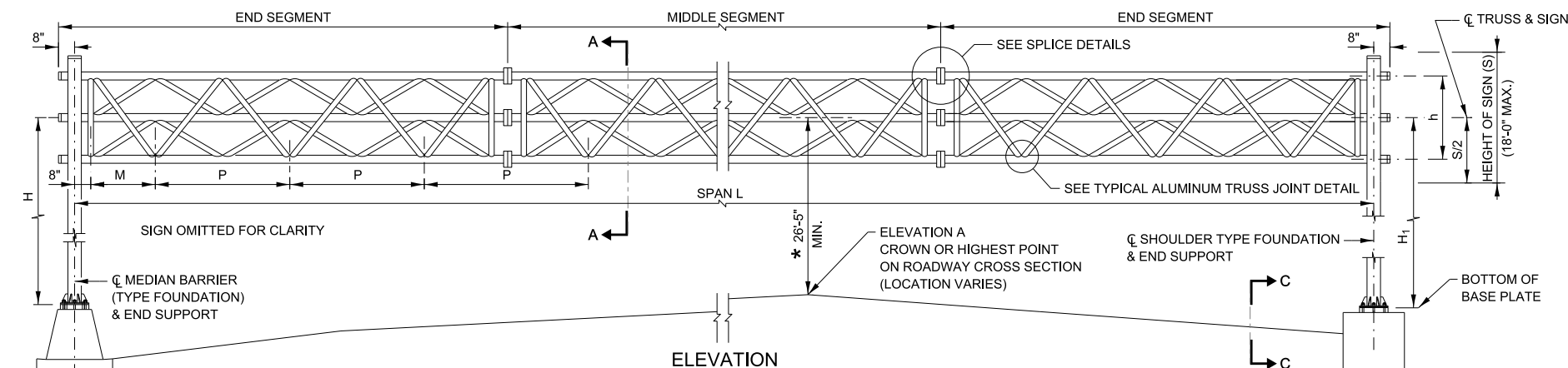
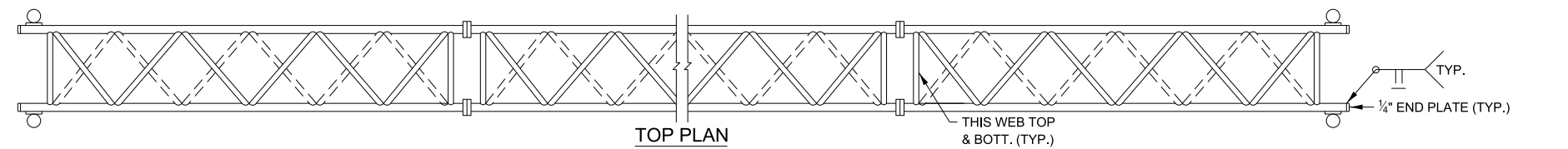
| Section F | | Sign Structure | |
|---------------|---|-----------------------|---|
| Standard | Modification Summary | Effective: 03-01-2026 | |
| F17-11 | OVERHEAD SIGN STRUCTURE SPAN TYPE (STEEL) STRUCTURE DETAILS | | |
| F21-01 | OVERHEAD SIGN STRUCTURE AET RAMP MONOTUBE TYPE (STEEL) GROUND MOUNTED | Sheet 1 | Added Wrong Way Sign in Toll Plaza Elevation and Sign Table. Added junction box on both sides of Monotube. |
| Sheet 2 | Added junction box on both sides of Monotube. | Sheet 4 | Revised Section H-H (Sign Hanger). Added note under Detail M. |
| F22-01 | OVERHEAD SIGN STRUCTURE AET RAMP MONOTUBE TYPE (STEEL) BARRIER MOUNTED | Sheet 1 | Added Wrong Way Sign in Toll Plaza Elevation and Sign Table. Added junction box in Toll Plaza Plan. |
| Sheet 2 | Added junction box in Monotube Plan and Elevation. | Sheet 4 | Revised Section H-H (Sign Hanger). Added note under Detail M. |



New Sheet



Retired Standard



GENERAL NOTES:

1. WORK THIS SHEET WITH OVERHEAD SIGN STRUCTURES SPAN TYPE SUMMARY AND TOTAL BILL OF MATERIAL.
2. AFTER ADJUSTMENTS TO LEVEL TRUSS AND ENSURE ADEQUATE VERTICAL CLEARANCE, ALL TOP AND LEVELING NUTS SHALL BE TIGHTENED AGAINST THE BASE PLATE WITH A MINIMUM TORQUE OF 200 LB.-FT. STAINLESS STEEL MESH SHALL THEN BE PLACED AROUND THE PERIMETER OF THE BASE PLATE. SECURE TO BASE PLATE WITH STAINLESS STEEL BANDING.
3. TRUSS SEGMENTS SHALL BE SHIPPED INDIVIDUALLY WITH ADEQUATE PROVISION TO PREVENT DETRIMENTAL MOTION DURING TRANSPORT. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE CONFIGURATION AND PROTECTION OF THE TRUSSES.
4. ONLY SIGN PANELS ARE PERMITTED TO BE MOUNTED ON THIS TRUSS.

DESIGN SPECIFICATIONS:

1. 2015 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, 1ST EDITION WITH 2020 INTERIM REVISIONS, INSTRUCTIONS AND INFORMATION.
2. FOUNDATION DESIGN IS IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION, 2020

CONSTRUCTION SPECIFICATIONS:

1. ALL MATERIALS, EXCEPT AS SHOWN, FABRICATION, ERECTION AND CONSTRUCTION REQUIREMENTS SHALL BE IN ACCORDANCE WITH SECTION 733 OF THE LATEST ILLINOIS TOLLWAY SUPPLEMENTAL SPECIFICATIONS.

LOADING:

1. BOTH END SUPPORTS ARE DESIGNED FOR 60% OF THE TOTAL LOAD.
2. WIND LOADING SHALL BE A MINIMUM OF 50 PSF ON SIGN PANELS AND 35 PSF NORMAL TO TRUSS ELEMENTS NOT BEHIND SIGN PANELS.
3. ICE LOAD, OSHA, WALKWAY = 3 P.S.F. APPLIED WITH A FACTOR OF 1.0 FOR STRENGTH I ONLY.

FABRICATION NOTES:

1. NO SPLICES SHALL BE LOCATED WITHIN 0.1xL OF THE CENTERLINE OF THE SPAN.
2. MATERIALS: ALUMINUM SHALL CONFORM TO ASTM B221, ALLOY 6061 TEMPER T6. ALL STRUCTURAL STEEL PIPE SHALL BE ASTM A53 GRADE B OR A106 GRADE B OR API 5L GRADE B OR X42 OR X52. ALL STRUCTURAL STEEL HSS SHALL BE ASTM A500 GRADE B OR C. ALL STRUCTURAL STEEL PLATES AND SHAPES SHALL CONFORM TO ASTM A36 (AASHTO M183) OR ASTM A572 GRADE 50. 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 HSS 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.
3. 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 IDOT STANDARD SPECIFICATIONS. ALUMINUM WELD FILLER SHALL BE ALLOY 5556.
4. FASTENERS FOR ALUMINUM TRUSSES: HIGH STRENGTH BOLTS SHALL SATISFY THE REQUIREMENTS OF AASHTO M164 (ASTM A325), OR APPROVED ALTERNATE, AND SHALL HAVE MATCHING LOCK NUTS. THREADED STUDS FOR SPLICES (IF MEMBERS INTERFERE) SHALL SATISFY THE REQUIREMENTS OF ASTM A449, ASTM A193, GRADE B7, OR APPROVED ALTERNATE, AND SHALL HAVE MATCHING LOCK NUTS. BOLTS AND LOCK NUTS NOT REQUIRED TO BE HIGH STRENGTH SHALL SATISFY THE REQUIREMENTS OF ASTM A307. ALL BOLTS AND LOCK NUTS SHALL BE HOT DIP GALVANIZED PER AASHTO M232, EXCEPT STAINLESS STEEL FASTENERS, NUTS AND WASHERS. THE LOCK NUTS SHALL HAVE NYLON OR STEEL INSERTS. A STAINLESS STEEL FLAT WASHER CONFORMING TO ASTM A240 TYPE 302 OR 304, IS REQUIRED UNDER BOTH HEAD AND NUT OR UNDER BOTH NUTS WHERE THREADED STUDS ARE USED. HIGH STRENGTH BOLT INSTALLATION SHALL CONFORM TO ARTICLE 505.04 (f)(2)d OF THE IDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. ROTATIONAL CAPACITY ("ROCAP") TESTING OF BOLTS WILL NOT BE REQUIRED.

5. U-BOLTS: U-BOLTS SHALL BE STAINLESS STEEL AND SHALL CONFORM TO ASTM 193, CLASS I, GRADE B8 (AISI TYPE 304). WASHERS FOR U-BOLTS SHALL CONFORM TO ASTM A240, TYPE 302. NUTS FOR U-BOLTS SHALL CONFORM TO ASTM A194 (AASHTO M292), GRADE 8F (AISI TYPE 303).

6. GALVANIZING: ALL STEEL GRATING, PLATES, SHAPES, HSS AND PIPE SHALL BE HOT DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AASHTO M111. PAINTING IS NOT PERMITTED.

7. SEE TABLE "SIGN STRUCTURE MEMBER SCHEDULE" FOR "W" AND "W1".

8. DIAGONALS SHALL BE DETAILED TO MINIMIZE OFFSET FOR THEORETICAL PANEL POINT AND PROVIDE 3/4" TO 1 1/2" INCH CLEARANCE BETWEEN DIAGONALS AND PROVIDE CLEARANCE FOR U-BOLT CONNECTIONS OF SIGNS OR WALKWAY BRACKETS.

9. FOR ANY DESIGN SPAN LENGTH THAT FALLS BETWEEN TWO CONSECUTIVE SPANS PROVIDED IN COLUMN 2 OF TABLE "SIGN STRUCTURE MEMBER SCHEDULE", THE LARGER DESIGN SPAN LENGTH SHALL BE USED (I.E. FOR A 92' SPAN LENGTH FALLING BETWEEN 90' AND 95' DESIGN SPAN LENGTHS IN TABLE, THE 95' DESIGN SPAN LENGTH TRUSS AND POST DETAILS SHALL BE USED).

SIGN STRUCTURE MEMBER SCHEDULE

| TRUSS NO. | DIMENSIONS | | | | | | ALUMINUM TRUSS * | | | | STEEL END SUPPORT | | | | |
|-----------|---------------------|----------|--------|--------|----------------|-----------------------------------|-----------------------|-------------------------------|---------------|-----------------|-------------------|-------------------------------|---------------------|---------------------|---------------------|
| | TRUSS SPAN L (MAX.) | P (MAX.) | M | h | W ₁ | MAXIMUM ALLOWABLE SIGN PANEL AREA | DL (TRUSS) DEFLECTION | MIDDLE SEGMENT OR END SEGMENT | | | | HSS COLUMN (NOMINAL DIAMETER) | | | |
| | | | | | | | | CHORD (O.D.) | | DIAGONAL (O.D.) | | HSS 12.75x0.500 | | HSS 14x0.625 | |
| | | | | | | | | FRONT | REAR | FRONT | REAR | H OR H ₁ | H OR H ₁ | H OR H ₁ | H OR H ₁ |
| T-80 | 80'-0" | 9'-0" | 3'-4" | 4'-6" | 3'-10 3/4" | 900 S.F. | 1" | 5 1/2" x 1/2" | 5 1/2" x 1/2" | 2 1/2" x 1/4" | 2 1/2" x 1/4" | 5'-9" | 32'-0" (MAX) | 38'-0" (MAX) | |
| T-85 | 85'-0" | 9'-6" | 3'-10" | 4'-9" | 4'-1 3/8" | 955 S.F. | 1 1/8" | 6 7/8" x 1/2" | 6 7/8" x 1/2" | 3" x 1/4" | 3" x 1/4" | 6'-7" | 31'-0" (MAX) | 38'-0" (MAX) | |
| T-90 | 90'-0" | 10'-0" | 4'-4" | 5'-0" | 4'-4" | 1010 S.F. | 1 1/8" | 6 7/8" x 1/2" | 6 7/8" x 1/2" | 3" x 1/4" | 3" x 1/4" | 6'-7" | 31'-0" (MAX) | 38'-0" (MAX) | |
| T-95 | 95'-0" | 10'-6" | 4'-10" | 5'-3" | 4'-6 5/8" | 1065 S.F. | 1 3/8" | 6 7/8" x 1/2" | 6 7/8" x 1/2" | 3" x 1/4" | 3" x 1/4" | 6'-7" | 31'-0" (MAX) | 38'-0" (MAX) | |
| T-100 | 100'-0" | 11'-4" | 4'-0" | 5'-8" | 4'-10 7/8" | 1125 S.F. | 1 1/4" | 7" x 1/2" | 7" x 1/2" | 3 1/2" x 1/4" | 3 1/2" x 1/4" | 7'-5" | 31'-0" (MAX) | 38'-0" (MAX) | |
| T-105 | 105'-0" | 12'-0" | 3'-10" | 6'-0" | 5'-2 3/8" | 1180 S.F. | 1 5/8" | 7" x 1/2" | 7" x 1/2" | 3 1/2" x 1/4" | 3 1/2" x 1/4" | 7'-5" | 31'-0" (MAX) | 38'-0" (MAX) | |
| T-110 | 110'-0" | 12'-6" | 4'-4" | 6'-3" | 5'-5" | 1200 S.F. | 1 3/8" | 7" x 1/2" | 7" x 1/2" | 3 1/2" x 1/4" | 3 1/2" x 1/4" | 7'-5" | 31'-0" (MAX) | 38'-0" (MAX) | |
| T-115 | 115'-0" | 13'-0" | 4'-10" | 6'-6" | 5'-7 7/8" | 1200 S.F. | 1 1/2" | 7 1/2" x 1/2" | 7 1/2" x 1/2" | 3 1/2" x 1/4" | 3 1/2" x 1/4" | 10'-2" | 34'-0" (MAX) | 40'-0" (MAX) | |
| T-120 | 120'-0" | 13'-8" | 4'-8" | 6'-10" | 5'-11" | 1200 S.F. | 1 5/8" | 7 1/2" x 1/2" | 7 1/2" x 1/2" | 3 1/2" x 1/4" | 3 1/2" x 1/4" | 10'-2" | 34'-0" (MAX) | 40'-0" (MAX) | |
| T-130 | 130'-0" | 15'-0" | 4'-4" | 7'-6" | 6'-5 7/8" | 1200 S.F. | 1 5/8" | 9" x 1/2" | 9" x 1/2" | 4" x 1/4" | 4" x 1/4" | 10'-2" | NOT APPLICABLE | 40'-0" (MAX) | |
| T-140 | 140'-0" | 16'-3" | 4'-4" | 8'-2" | 7'-0 7/8" | 1200 S.F. | 1 11/16" | 10" x 1/2" | 10" x 1/2" | 4" x 1/4" | 4" x 1/4" | 10'-2" | NOT APPLICABLE | 40'-0" (MAX) | |
| T-150 | 150'-0" | 17'-6" | 4'-4" | 8'-10" | 7'-7 3/4" | 1200 S.F. | 1 13/16" | 11" x 1/2" | 11" x 1/2" | 4 1/2" x 1/4" | 4 1/2" x 1/4" | 10'-2" | NOT APPLICABLE | 40'-0" (MAX) | |

* SUBSTITUTION OF LARGER TRUSS SIZE IS ACCEPTABLE.

NOTE:
A PAIR OF MAIN HSS COLUMN SIZES FOR EACH SUPPORT SHALL BE SELECTED INDEPENDENTLY BASED ON SPECIFIC NEEDS.

CAMBER

| SPAN IN FEET | CAMBER IN INCHES |
|--------------|------------------|
| 80 THRU 95 | 1 1/2" |
| 96 THRU 110 | 1 5/8" |
| 111 THRU 120 | 1 7/8" |
| 121 THRU 130 | 1 7/8" |
| 131 THRU 140 | 2" |
| 141 THRU 150 | 2 1/8" |

PROVIDE THE ABOVE CAMBER AT MIDDLE OF SPAN OF STRUCTURES

TABLE A

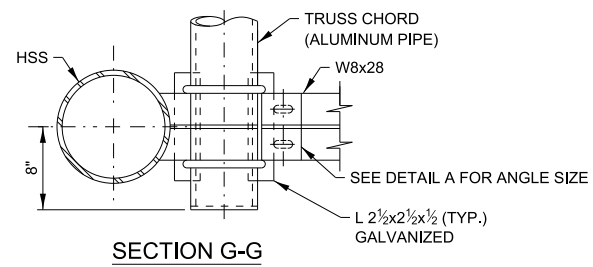
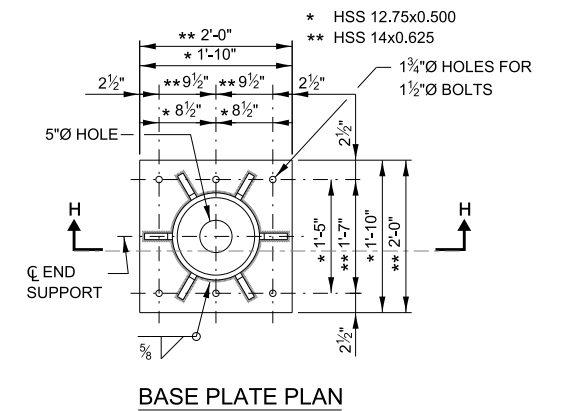
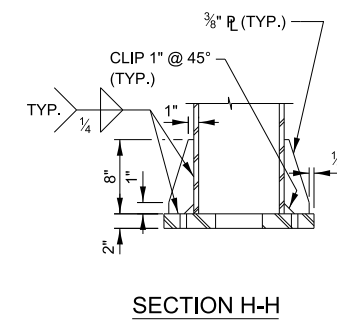
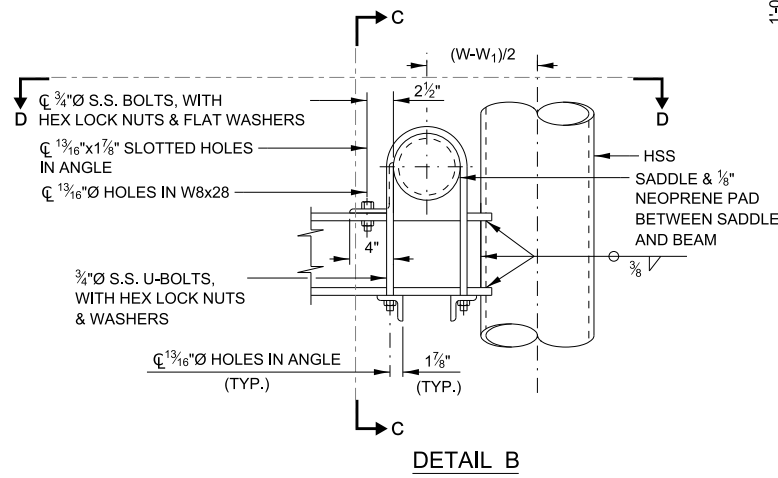
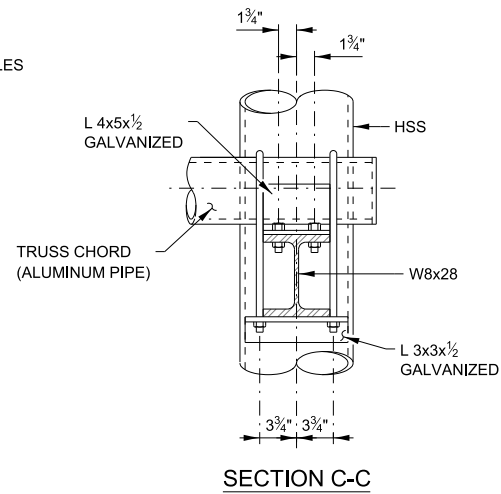
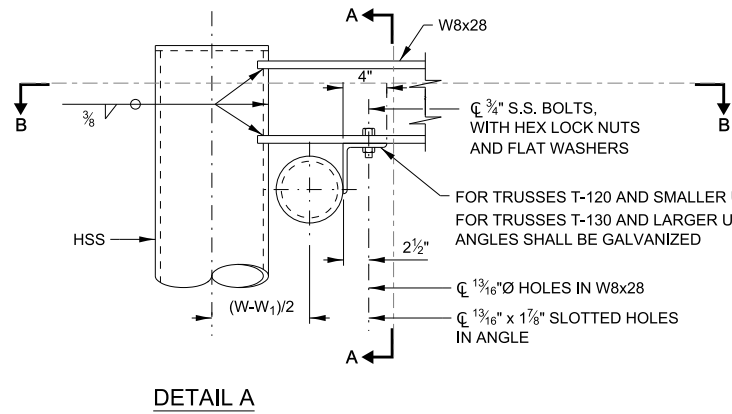
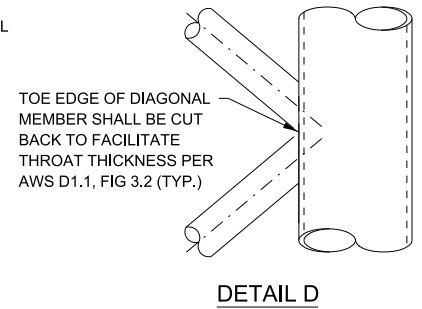
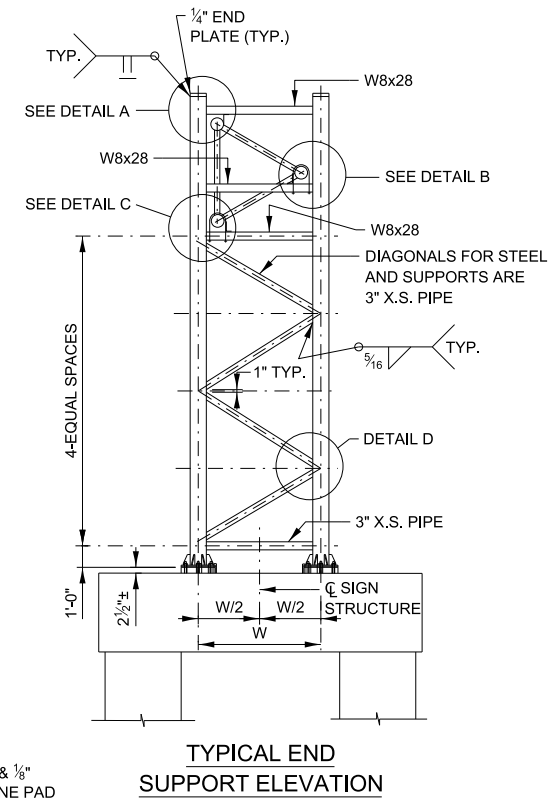
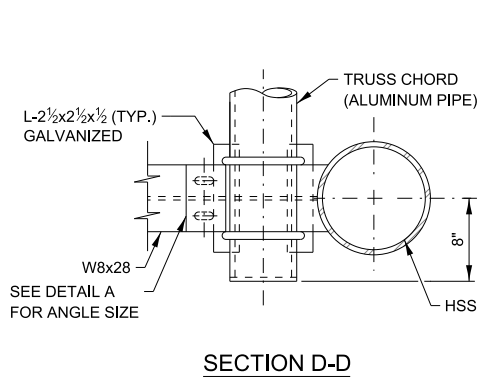
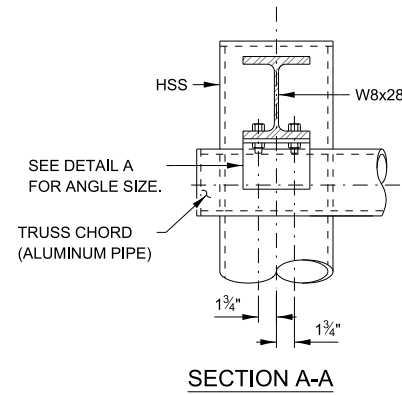
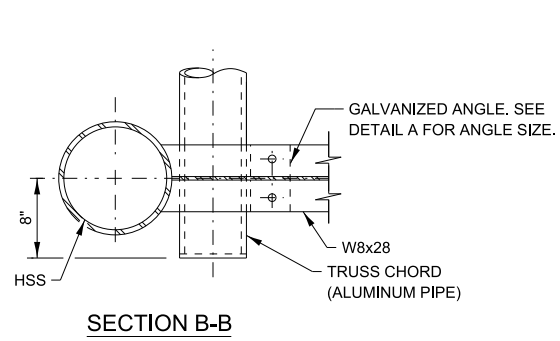
| CHORD O.D. E | F | G | N |
|-----------------|---------|---------|----|
| 5 1/2" Ø | 10" | 13" | 8 |
| 6 7/8" Ø & 7" Ø | 11 1/2" | 14 1/2" | 10 |
| 7 1/2" Ø | 12 1/2" | 15 1/2" | 12 |
| 9" Ø | 13 1/2" | 16 1/2" | 14 |
| 10" Ø | 15 1/2" | 18 1/2" | 16 |
| 11" Ø | 17 1/2" | 20 1/2" | 18 |

| REVISIONS | |
|------------|--------------------------------|
| DATE | DESCRIPTION |
| 03-01-2026 | DELETED NOTE 3 AND RE-NUMBERED |
| 03-01-2025 | ADDED UTILITY CLEARANCE REQ. |
| 03-01-2024 | ADDED UTILITY CLEARANCE REQ. |

OVERHEAD SIGN STRUCTURE SPAN TYPE STRUCTURE DETAILS



APPROVED BY: *Manar Nashif*
CHIEF ENGINEERING OFFICER
DATE: 03/01/2026

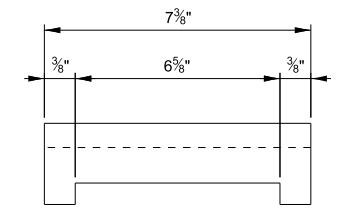
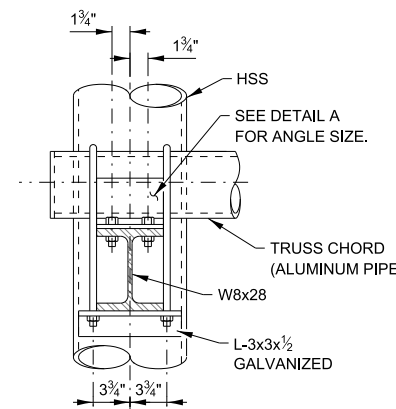
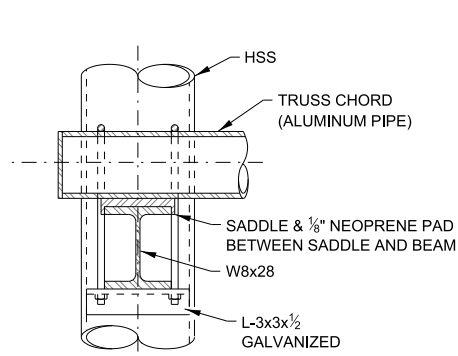
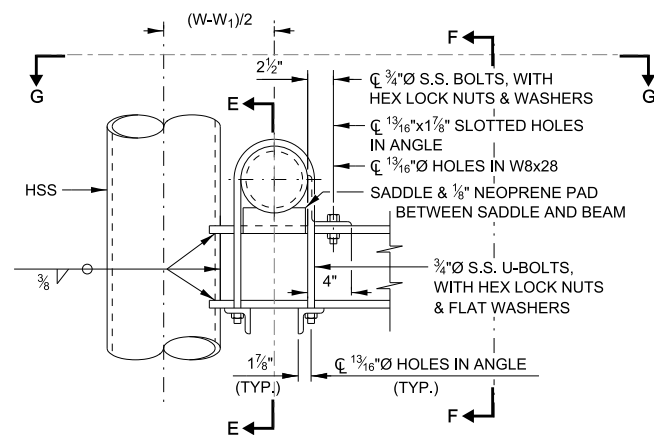


SECTION C-C

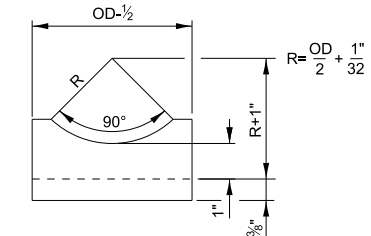
DETAIL B

SECTION H-H

BASE PLATE PLAN



SADDLE (SHIM) DETAIL (ALUMINUM)

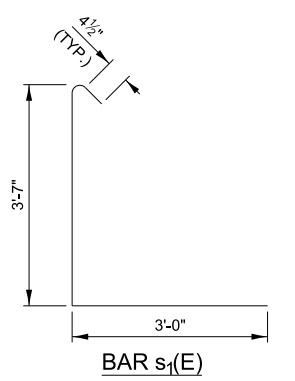
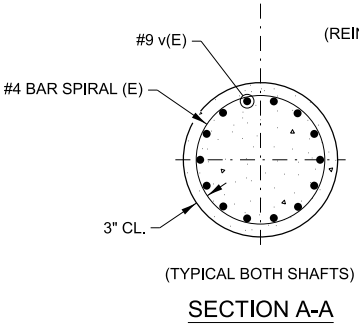
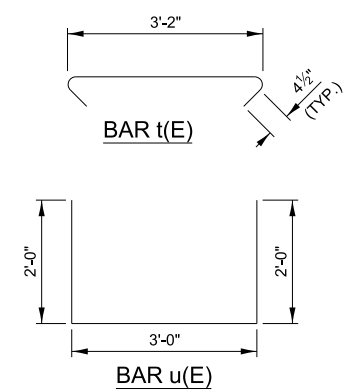
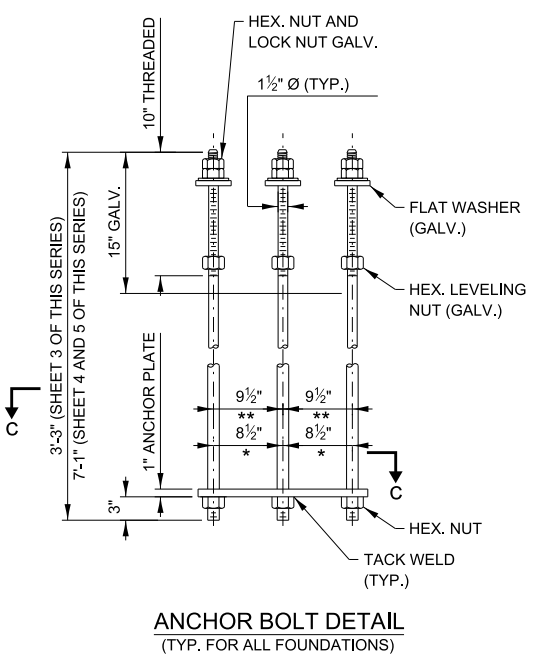
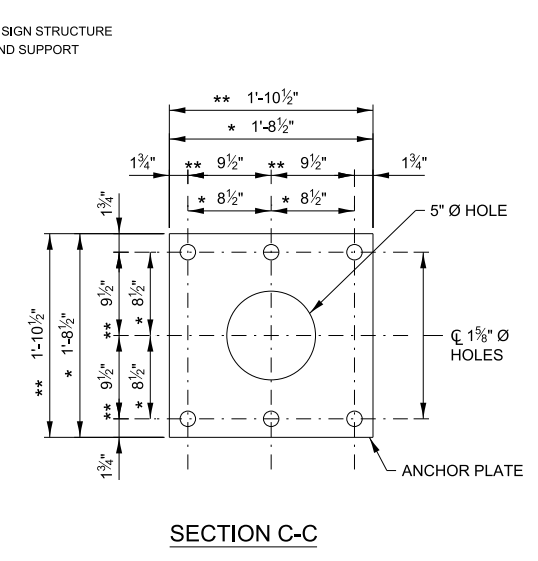
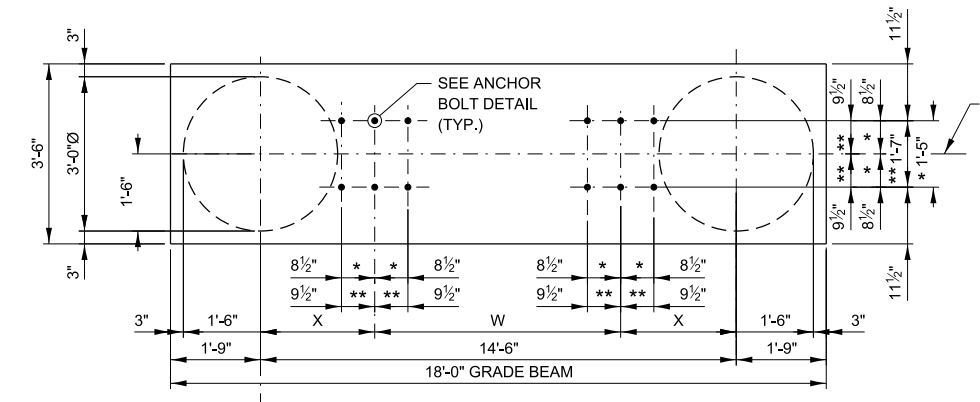
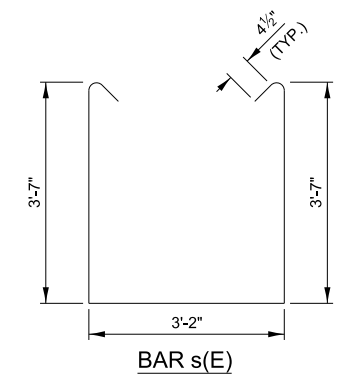
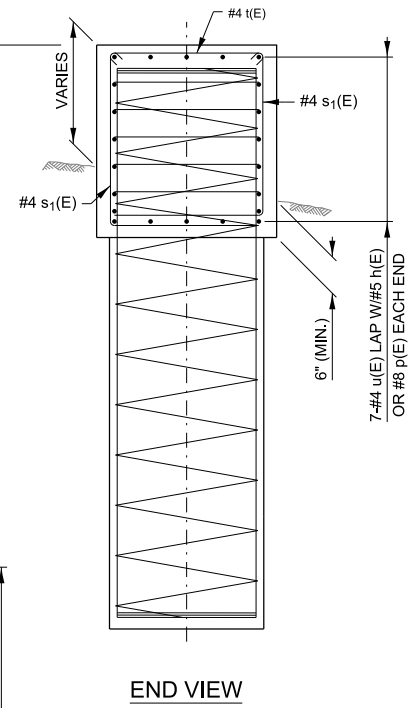
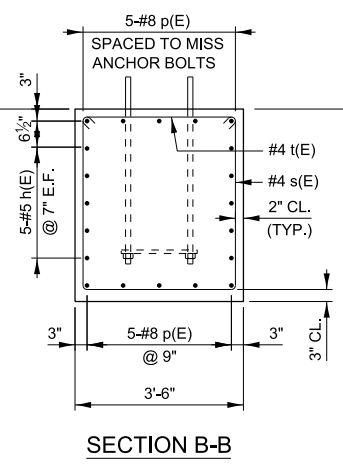
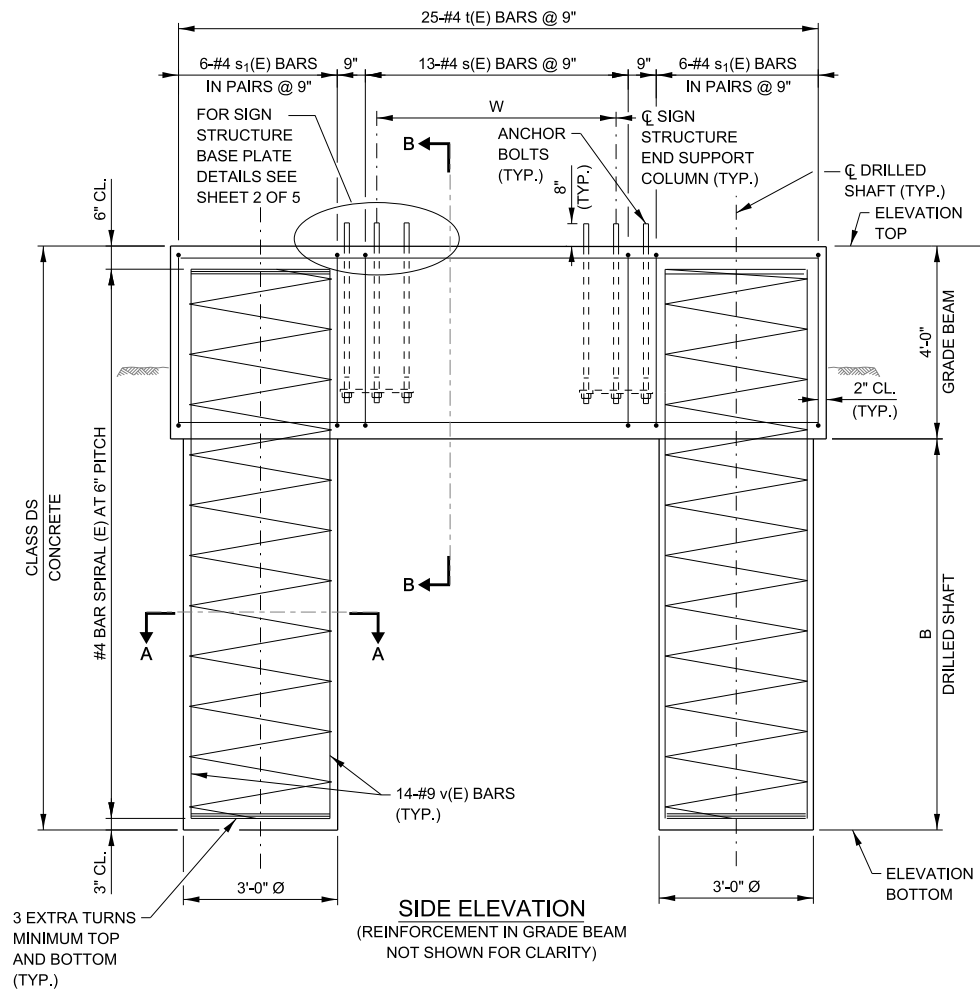


DETAIL C

SECTION E-E

SECTION F-F

APPROVED BY: *Manar Nashif* DATE: 03/01/2026
 CHIEF ENGINEERING OFFICER



- NOTES:**
1. THE FOUNDATION DETAILS SHOWN ARE BASED ON THE PRESENCE OF MOSTLY COMMON COHESIVE SOIL CONDITIONS (SILTY OR SANDY CLAY), WITH AN AVERAGE UNCONFINED COMPRESSIVE STRENGTH (QU) > 1.25 TON/SQ. FT. WHICH SHALL BE DETERMINED BY PREVIOUS SOIL INVESTIGATIONS AT THE JOBSITE. WHEN OTHER CONDITIONS ARE INDICATED, THE FOUNDATION DIMENSIONS SHOWN 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. ANCHOR BOLTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M314 OR ASTM F1554 GRADE 55. ALL OTHER MATERIAL, FABRICATION, AND CONSTRUCTION REQUIREMENTS 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 IDOT STANDARD SPECIFICATION AND PRIOR TO ERECTION OF SUPPORT COLUMN.
 5. 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.
 6. ALL REBAR DESIGNATED (E) SHALL BE EPOXY COATED. REBAR SHALL BE POSITIONED SO THAT THERE WILL BE NO INTERFERENCE BETWEEN VERTICAL REINFORCEMENT AND ANCHOR BOLTS.
 7. SITE GROUNDING ELECTRODE SYSTEM TO BE PROVIDED AS INDICATED ON THE PLANS.
 8. NO SONOTUBES OR DECOMPOSABLE FORMS SHALL BE USED 6" BELOW THE FINISHED GROUND LINE. PERMANENT METAL FORMS OR OTHER SHIELDING SHALL NOT BE LEFT IN PLACE BELOW THE ELEVATION WITHOUT THE ENGINEER'S WRITTEN PERMISSION. EXCAVATIONS SHALL BE DEWATERED BEFORE CONCRETE PLACEMENT IF DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST.
 9. IF NECESSARY TO INCREASE STEEL END SUPPORT HEIGHT ABOVE THE LIMITATIONS SHOWN IN SIGN STRUCTURE MEMBER SCHEDULE ON SHEET 1 OF THIS SERIES, GRADE BEAM DEPTH SHALL BE INCREASED UP TO 6'-0" WITHOUT CHANGES TO THE DRILLED SHAFT DESIGN, GRADE BEAM REINFORCEMENT, CONCRETE VOLUME AND LENGTH OF ANCHOR BOLTS SHALL BE REVISED ACCORDINGLY.

CLASS DS CONC. AND REINF. BARS QUANTITIES SHOWN IN THE TABLE ARE FOR 2 DRILLED SHAFTS AND 1 GRADE BEAM

| DESIGN TABLE FOR DRILLED SHAFTS IN COHESIVE SOILS (QU > 1.25 TON/SQ. FT.) | | | | | |
|---|--------|------------|--------|-------------------|-------------------|
| TRUSS No. | W | X | B | CLASS DS CONC. CY | REINF. BARS POUND |
| T-80 | 5'-9" | 4'-4 1/2" | 40'-0" | 30.3 | 6090 |
| T-85 | 6'-7" | 3'-11 1/2" | 50'-0" | 35.5 | 7250 |
| T-90 | 6'-7" | 3'-11 1/2" | 50'-0" | 35.5 | 7250 |
| T-95 | 6'-7" | 3'-11 1/2" | 50'-0" | 35.5 | 7250 |
| T-100 | 7'-5" | 3'-6 1/2" | 50'-0" | 35.5 | 7250 |
| T-105 | 7'-5" | 3'-6 1/2" | 50'-0" | 35.5 | 7250 |
| T-110 | 7'-5" | 3'-6 1/2" | 50'-0" | 35.5 | 7250 |
| T-115 | 10'-2" | 2'-2" | 50'-0" | 35.5 | 7250 |
| T-120 | 10'-2" | 2'-2" | 50'-0" | 35.5 | 7250 |
| T-130 | 10'-2" | 2'-2" | 55'-0" | 38.1 | 7830 |
| T-140 | 10'-2" | 2'-2" | 55'-0" | 38.1 | 7830 |
| T-150 | 10'-2" | 2'-2" | 55'-0" | 38.1 | 7830 |

BAR LIST - EACH FOUNDATION
(2 SHAFT AND 1 GRADE BEAM)

| BAR | NUMBER | SIZE | LENGTH | SHAPE |
|-------|--------|------|-------------|-------|
| h(E) | 10 | #5 | 17'-8" | — |
| p(E) | 10 | #8 | 17'-8" | — |
| s(E) | 13 | #4 | 11'-1" | — |
| s1(E) | 24 | #4 | 6'-11 1/2" | — |
| t(E) | 25 | #4 | 3'-11" | — |
| u(E) | 14 | #4 | 7'-0" | — |
| v(E) | 28 | #9 | B ADD 3'-3" | — |

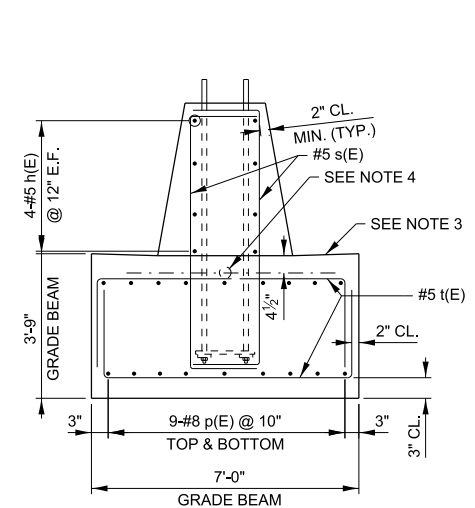
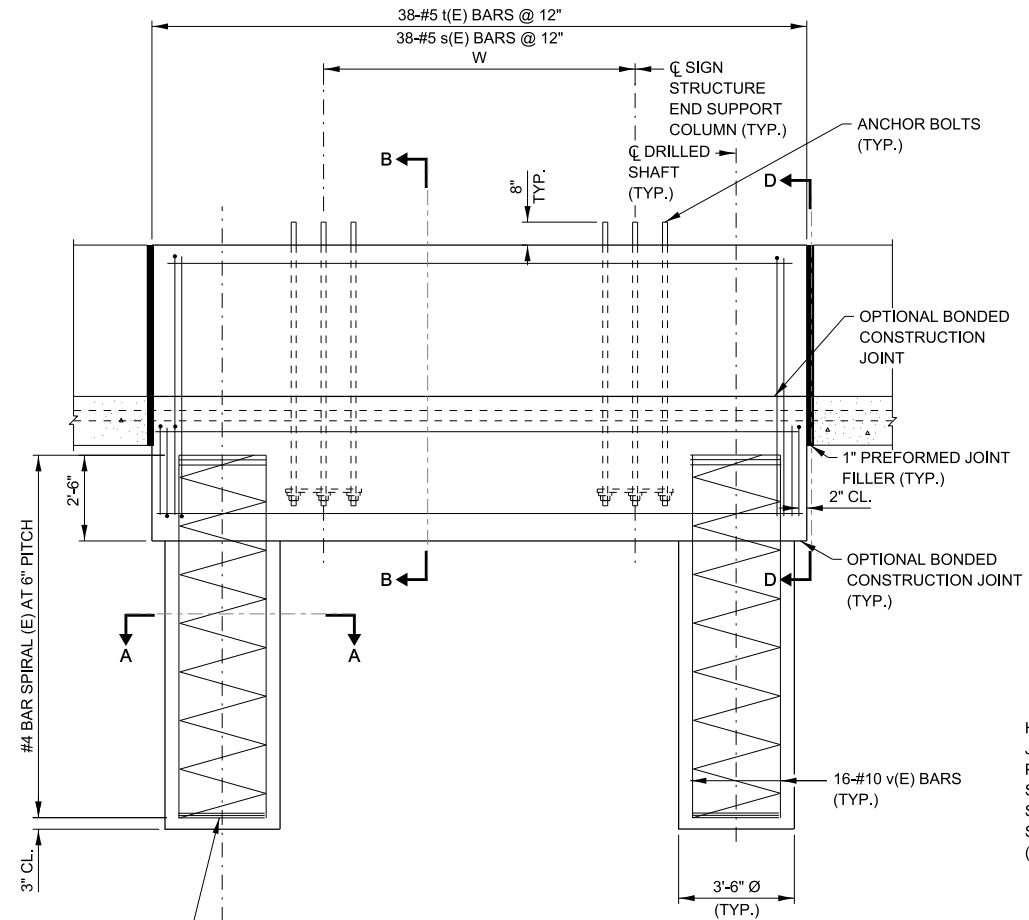
#4 BAR SPIRAL (E) - SEE SIDE ELEVATION

* HSS 12.75x0.500
** HSS 14x0.625

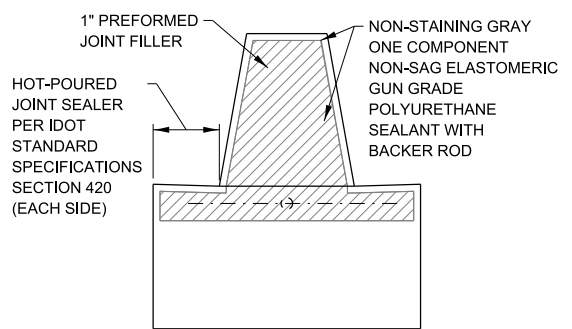
APPROVED BY: *Manar Nashif*
CHIEF ENGINEERING OFFICER
DATE: 03/01/2026

**OVERHEAD SIGN STRUCTURE
SPAN TYPE STRUCTURE
DETAILS**

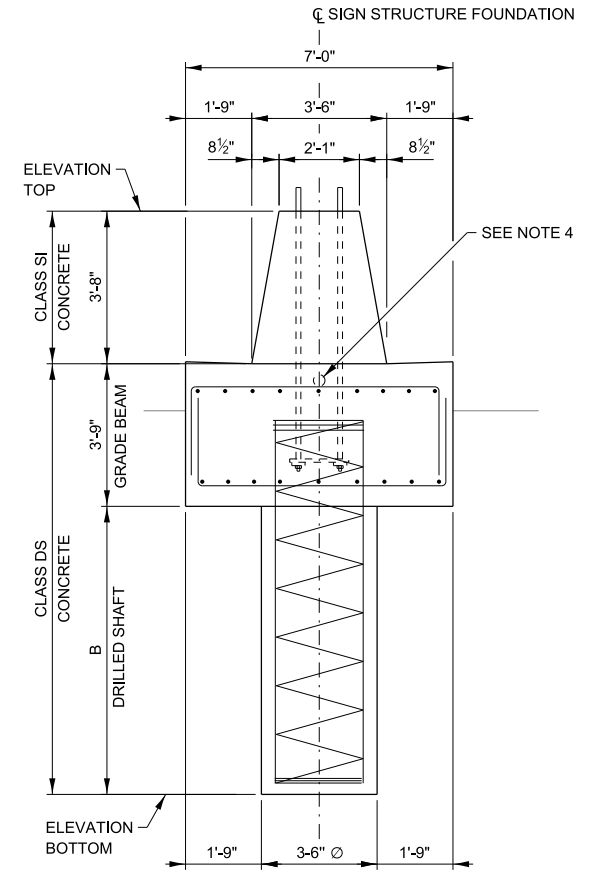
VERSION: 2026-03 STANDARD: F1-16 SHEET: 3 OF 5



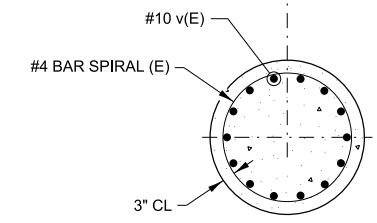
SECTION B-B



SECTION D-D



END VIEW

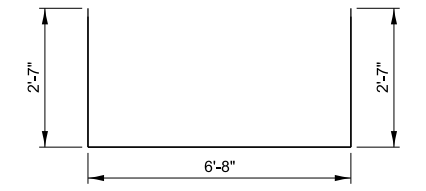


SECTION A-A
(TYPICAL BOTH SHAFTS)

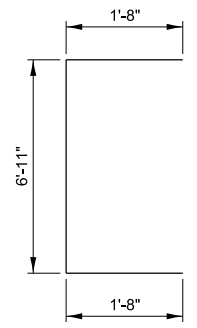
BAR LIST - EACH FOUNDATION

| BAR | NUMBER | SIZE | LENGTH | SHAPE |
|------|--------|------|-------------|-------|
| h(E) | 8 | #5 | 17'-8" | — |
| p(E) | 18 | #8 | 17'-8" | — |
| s(E) | 38 | #5 | 10'-3" | □ |
| t(E) | 38 | #5 | 11'-10" | □ |
| v(E) | 32 | #10 | B ADD 2'-3" | — |

#4 BAR SPIRAL (E) - SEE SIDE ELEVATION



BAR t(E)



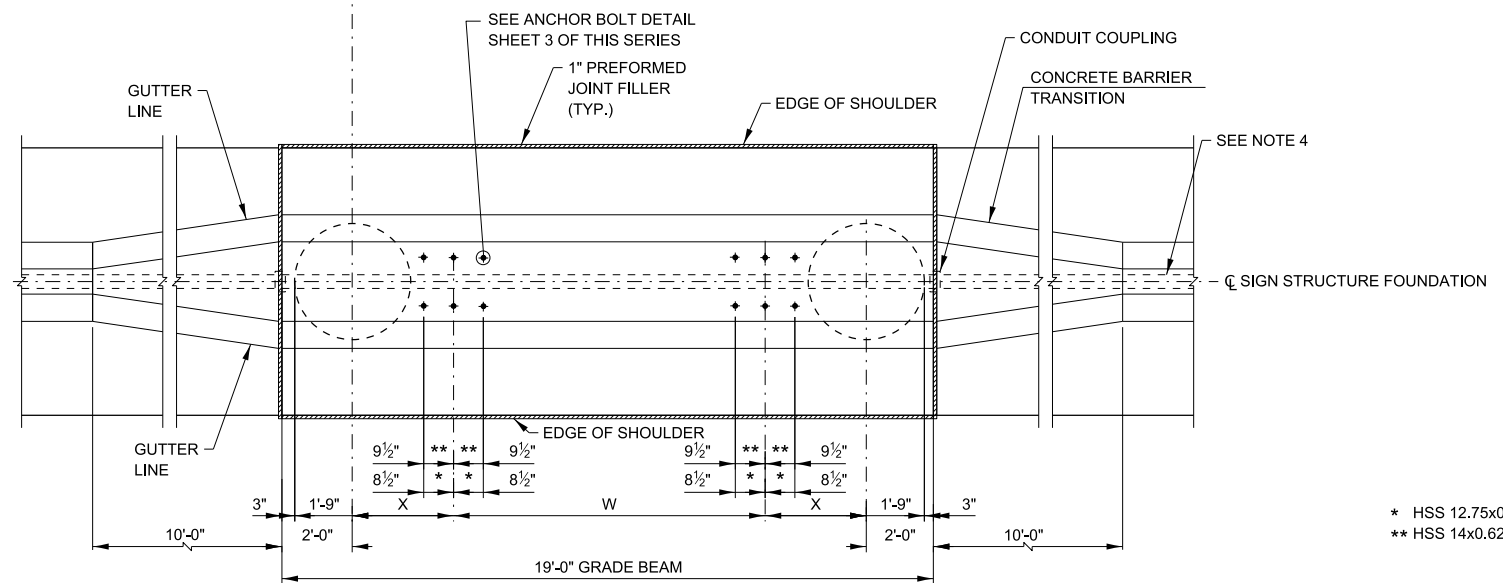
BAR s(E)

| TRUSS No. | W | X | B | CLASS DS CONC. CU. YD. | CLASS SI CONC. CU. YD. | REINF. BARS POUND | PROTECTIVE COAT SQ. YD. |
|-----------|--------|-----------|--------|------------------------|------------------------|-------------------|-------------------------|
| T-80 | 5'-9" | 4'-7 1/2" | 50'-0" | 54.1 | 7.2 | 10460 | 27.5 |
| T-85 | 6'-7" | 4'-2 1/2" | 55'-0" | 57.7 | 7.2 | 11280 | 27.5 |
| T-90 | 6'-7" | 4'-2 1/2" | 55'-0" | 57.7 | 7.2 | 11280 | 27.5 |
| T-95 | 6'-7" | 4'-2 1/2" | 55'-0" | 57.7 | 7.2 | 11280 | 27.5 |
| T-100 | 7'-5" | 3'-9 1/2" | 55'-0" | 57.7 | 7.2 | 11280 | 27.5 |
| T-105 | 7'-5" | 3'-9 1/2" | 55'-0" | 57.7 | 7.2 | 11280 | 27.5 |
| T-110 | 7'-5" | 3'-9 1/2" | 55'-0" | 57.7 | 7.2 | 11280 | 27.5 |
| T-115 | 10'-2" | 2'-5" | 55'-0" | 57.7 | 7.2 | 11280 | 27.5 |
| T-120 | 10'-2" | 2'-5" | 55'-0" | 57.7 | 7.2 | 11280 | 27.5 |
| T-130 | 10'-2" | 2'-5" | 60'-0" | 61.2 | 7.2 | 12090 | 27.5 |
| T-140 | 10'-2" | 2'-5" | 60'-0" | 61.2 | 7.2 | 12090 | 27.5 |
| T-150 | 10'-2" | 2'-5" | 60'-0" | 61.2 | 7.2 | 12090 | 27.5 |

CLASS DS CONC. QUANTITIES SHOWN IN THE TABLE ARE FOR 2 DRILLED SHAFTS AND 1 GRADE BEAM.
 CLASS SI CONC. QUANTITIES SHOWN IN THE TABLE ARE FOR 1 TWO-FACE BARRIER OVER GRADE BEAM.
 REINF. BAR AND PROTECTIVE COAT QUANTITIES SHOWN IN THE TABLE ARE FOR 2 DRILLED SHAFTS,
 1 GRADE BEAM, AND 1 TWO-FACE BARRIER OVER GRADE BEAM.

NOTES:

- SEE SHEET 3 OF THIS SERIES FOR GENERAL NOTES AND DESIGN CRITERIA.
- FOR SIGN STRUCTURE BASE PLATE DETAIL, SEE SHEET 2 OF THIS SERIES.
- REFERENCE ILLINOIS TOLLWAY STANDARD DRAWING C5 FOR GUTTER SLOPE.
- COORDINATE CONDUIT SIZE, LOCATION AND QUANTITY WITH ELECTRICAL PLANS, CONDUITS SHALL BE PLACED TO MISS REINFORCEMENT BARS, DO NOT CUT REINFORCEMENT BARS.
- PROTECTIVE COAT SHALL BE APPLIED TO THE TRAFFIC AND TOP FACES OF THE BARRIER AND TOP FACE OF GUTTER.



PLAN

(REINFORCEMENT NOT SHOWN FOR CLARITY)

* HSS 12.75x0.500
 ** HSS 14x0.625

APPROVED BY: *Manar Nashif*
 CHIEF ENGINEERING OFFICER
 DATE: 03/01/2026

**OVERHEAD SIGN STRUCTURE
 SPAN TYPE STRUCTURE
 DETAILS**

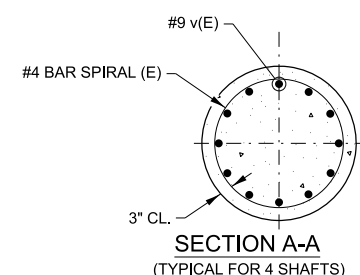
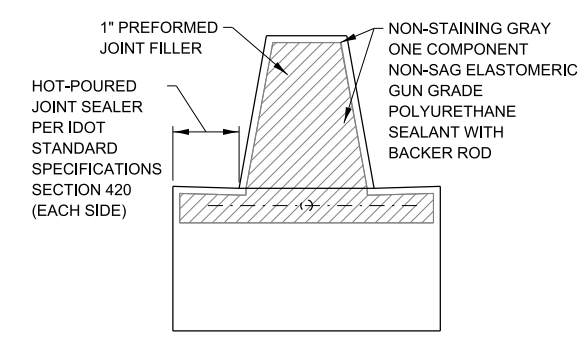
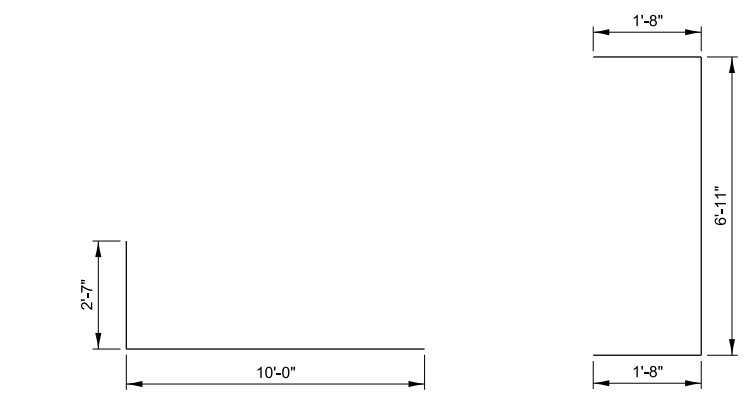
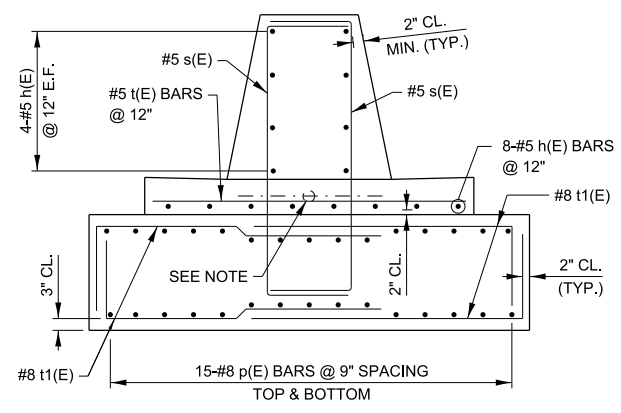
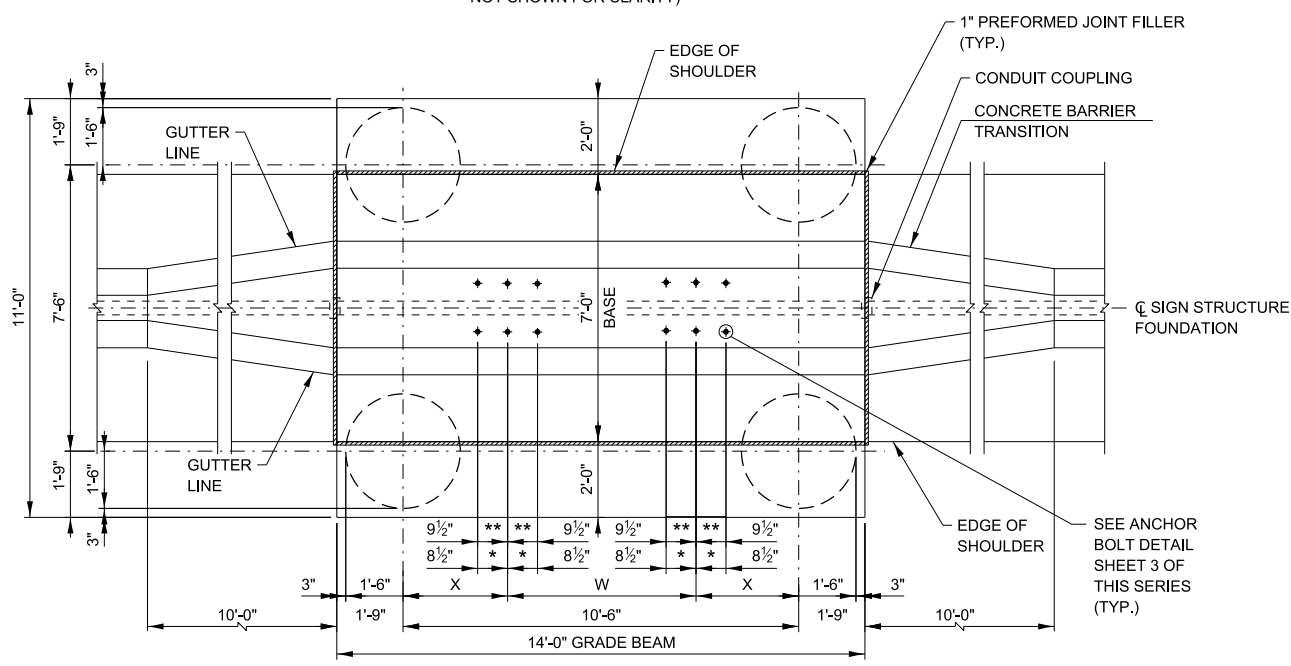
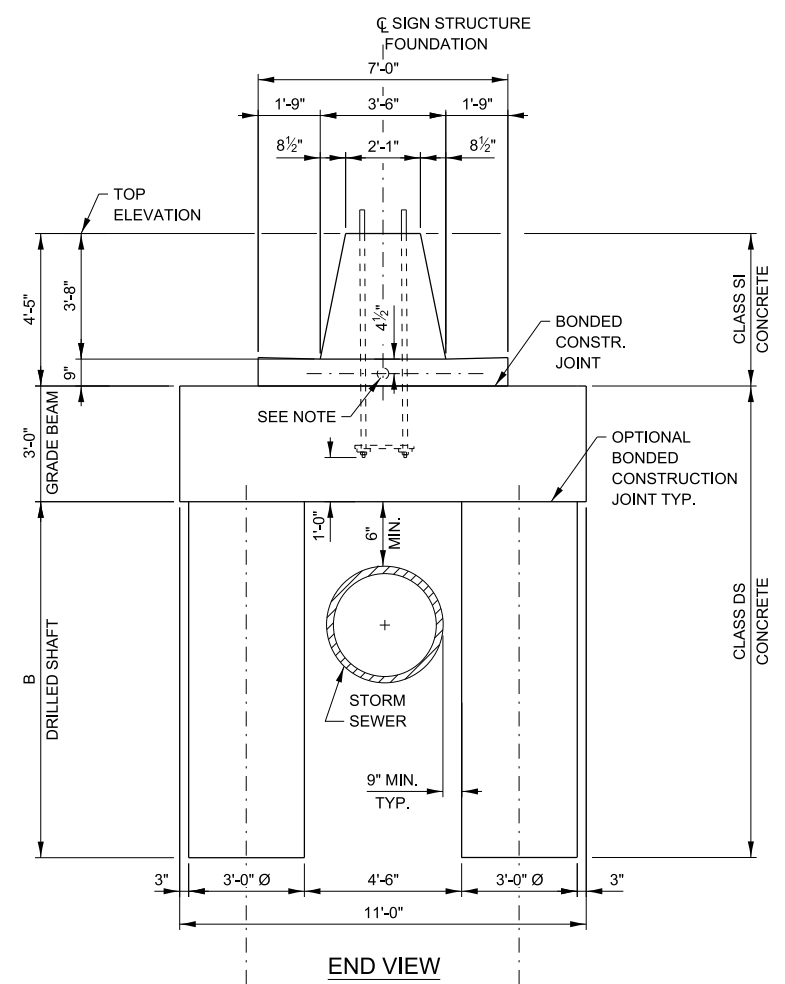
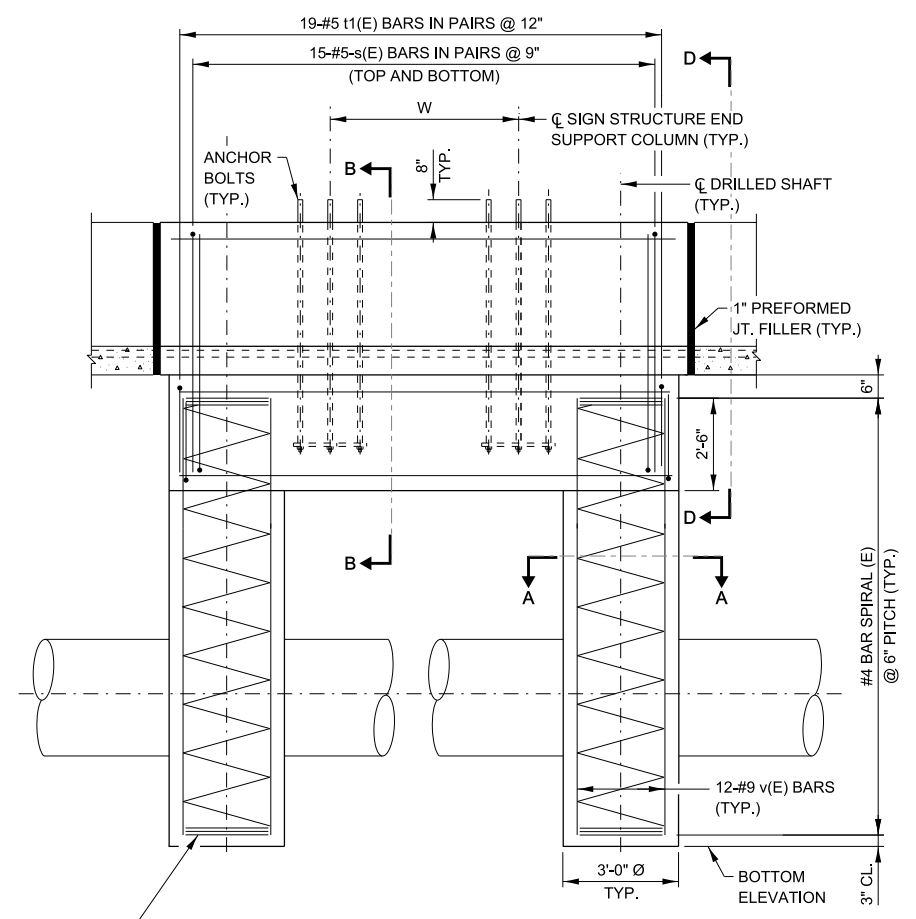
VERSION: 2026-03 STANDARD: F1-16 SHEET: 4 OF 5

BAR LIST - EACH FOUNDATION

| BAR | NUMBER | SIZE | LENGTH | SHAPE |
|--|--------|------|-------------|-------|
| h(E) | 16 | #5 | 13'-8" | — |
| p(E) | 30 | #8 | 13'-8" | — |
| s(E) | 38 | #5 | 10'-3" | ⊔ |
| t(E) | 15 | #5 | 6'-8" | — |
| t1(E) | 60 | #8 | 12'-7" | — |
| v(E) | 48 | #9 | B ADD 2'-3" | — |
| #4 BAR SPIRAL (E) - SEE SIDE ELEVATION | | | | |

DESIGN TABLE FOR DRILLED SHAFTS IN COHESIVE SOILS (QU > 1.25 TON/SQ. FT.)

| TRUSS No. | W | X | B | CLASS DS CONC. CU. YD. | CLASS SI CONC. CU. YD. | REINF. BARS POUND | PROTECTIVE COAT SQ. YD. |
|-----------|--------|------------|--------|------------------------|------------------------|-------------------|-------------------------|
| T-80 | 5'-9" | 2'-4 1/2" | 25'-0" | 43.3 | 8.0 | 9570 | 20.3 |
| T-85 | 6'-7" | 1'-11 1/2" | 25'-0" | 43.3 | 8.0 | 9570 | 20.3 |
| T-90 | 6'-7" | 1'-11 1/2" | 25'-0" | 43.3 | 8.0 | 9570 | 20.3 |
| T-95 | 6'-7" | 1'-11 1/2" | 25'-0" | 43.3 | 8.0 | 9570 | 20.3 |
| T-100 | 7'-5" | 1'-6 1/2" | 25'-0" | 43.3 | 8.0 | 9570 | 20.3 |
| T-105 | 7'-5" | 1'-6 1/2" | 30'-0" | 48.5 | 8.0 | 10600 | 20.3 |
| T-110 | 7'-5" | 1'-6 1/2" | 30'-0" | 48.5 | 8.0 | 10600 | 20.3 |
| T-115 | 10'-2" | 0'-2" | 30'-0" | 48.5 | 8.0 | 10600 | 20.3 |
| T-120 | 10'-2" | 0'-2" | 30'-0" | 48.5 | 8.0 | 10600 | 20.3 |
| T-130 | 10'-2" | 0'-2" | 35'-0" | 53.7 | 8.0 | 11630 | 20.3 |
| T-140 | 10'-2" | 0'-2" | 35'-0" | 53.7 | 8.0 | 11630 | 20.3 |
| T-150 | 10'-2" | 0'-2" | 35'-0" | 53.7 | 8.0 | 11630 | 20.3 |



* HSS 12.75x0.500
** HSS 14x0.625

APPROVED BY: *Manar Nashif*
CHIEF ENGINEERING OFFICER
DATE: 03/01/2026

NOTE:
1. SEE NOTES ON SHEET 4 OF THIS SERIES.

Illinois Tollway

OVERHEAD SIGN STRUCTURE SPAN TYPE STRUCTURE DETAILS

VERSION: 2026-03 STANDARD: F1-16 SHEET: 5 OF 5

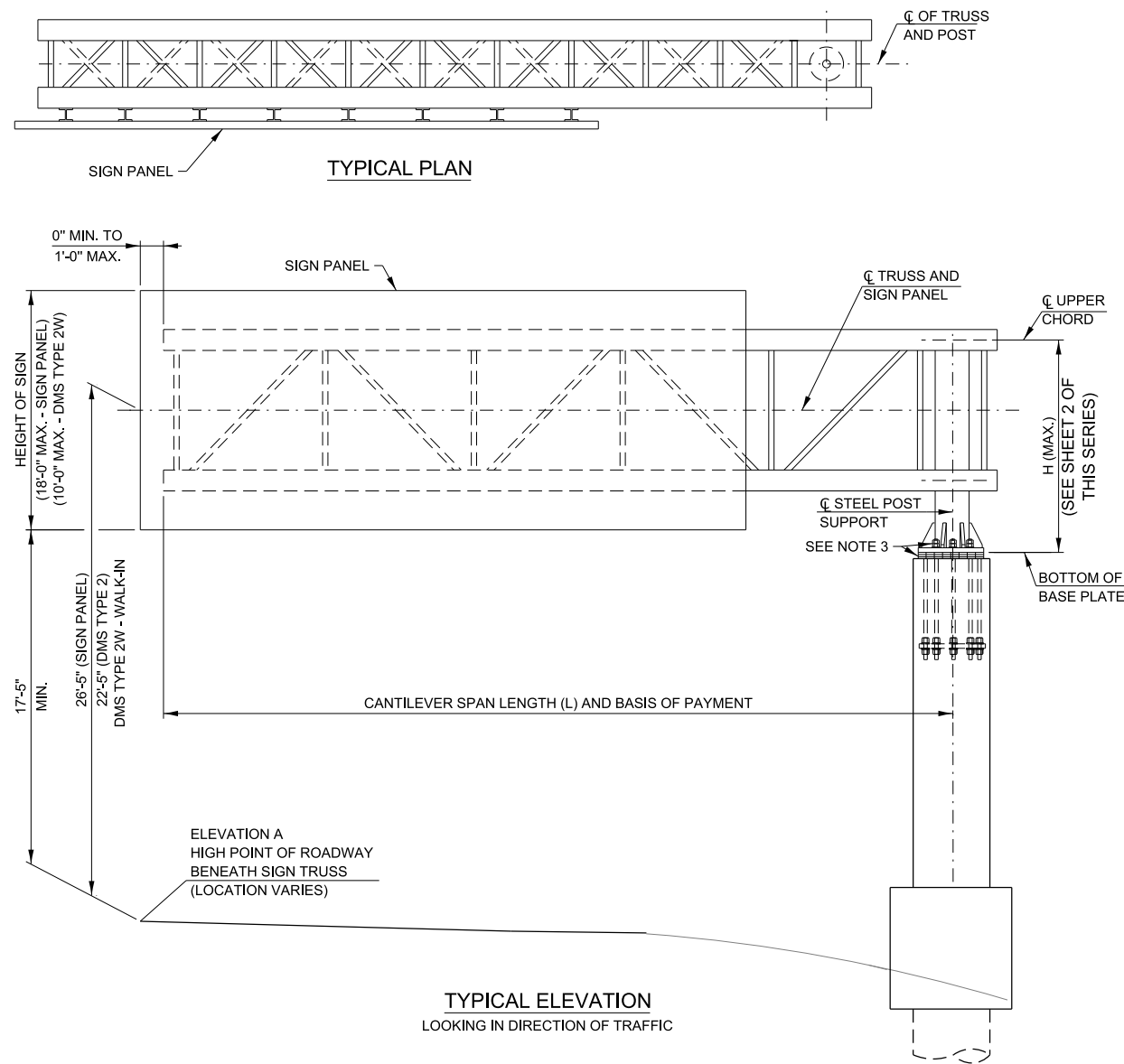
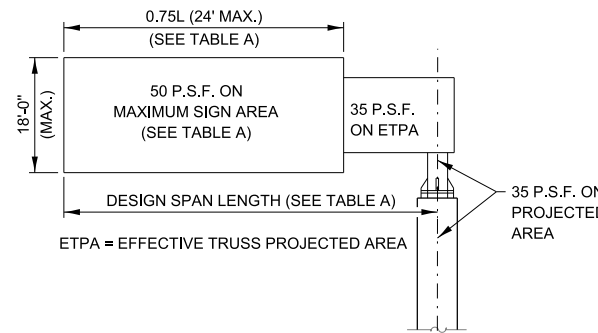


TABLE A: MAXIMUM LIMITS FOR SIGNS

| TRUSS TYPE | DESIGN SPAN LENGTH (FT.) | MAXIMUM SIGN AREA (SQ. FT.) | MAXIMUM SIGN LENGTH (FT.) |
|------------|--------------------------|-----------------------------|---------------------------|
| 20-D | 20 | 270 | 15 |
| 25-D | 25 | 338 | 18.75 |
| 30-D | 30 | 405 | 22.5 |
| 35-D | 35 | 432 | 24 |
| 40-D | 40 | 432 | 24 |
| 45-D | 45 | 432 | 24 |
| 50-D | 50 | 432 | 24 |



GENERAL NOTES:

- WORK THIS SHEET WITH OVERHEAD SIGN STRUCTURE CANTILEVER TYPE SUMMARY AND TOTAL BILL OF MATERIAL SHEET.
- AFTER ADJUSTMENTS TO LEVEL TRUSS AND ENSURE ADEQUATE VERTICAL CLEARANCE, ALL TOP AND LEVELING NUTS SHALL BE TIGHTENED AGAINST THE BASE PLATE WITH A MINIMUM TORQUE OF 200 LB.-FT. STAINLESS STEEL MESH SHALL THEN BE PLACED AROUND THE PERIMETER OF THE BASE PLATE. SECURE TO BASE PLATE WITH STAINLESS STEEL BANDING.
- TRUSSES SHALL BE SHIPPED INDIVIDUALLY WITH ADEQUATE PROVISION TO PREVENT DETRIMENTAL MOTION DURING TRANSPORT. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE CONFIGURATION AND PROTECTION OF THE TRUSSES.
- ALL WELDS SHALL BE CONTINUOUS UNLESS OTHERWISE SHOWN. ALL WELDING SHALL BE DONE IN ACCORDANCE WITH CURRENT AWS D1.1 STRUCTURE WELDING CODE AND THE STANDARD SPECIFICATIONS.
- ALL STEEL PLATES, SHAPES AND PIPE SHALL BE HOT DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AASHTO M111.
- PROVIDE RUBBED SURFACE FINISH FOLLOWED BY CONCRETE SEALER APPLICATION ON ENTIRE SURFACE OF CONCRETE COLUMN AND NORMAL SURFACE FINISH ON GRADE BEAM, EXCEPT BOTTOM SURFACE.
- REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
- DMS TYPE 2W - WALK-IN IS PERMITTED TO BE INSTALLED ON CANTILEVER TRUSS. DO NOT INSTALL SIGN PANEL IN CONJUNCTION WITH DMS TYPE 2W - WALK-IN. SEE SHEET 9 OF THIS SERIES FOR PERMISSIBLE SIGN SIZE AND WEIGHT.

CONSTRUCTION SPECIFICATIONS:

- ALL MATERIALS, EXCEPT AS SHOWN, FABRICATION, ERECTION AND CONSTRUCTION REQUIREMENTS SHALL BE IN ACCORDANCE WITH SECTION 733 OF THE LATEST ILLINOIS TOLLWAY SUPPLEMENTAL SPECIFICATIONS.

LOADING:

- ALL CANTILEVER TRUSSES ARE DESIGNED FOR AN 18'-0" DEEP SIGN PANEL OVER 75% OF THE ARM LENGTH, WITH A MAXIMUM PANEL WIDTH OF 24'-0".
- ALL CANTILEVER TRUSSES ARE DESIGNED FOR 35 PSF WIND PRESSURE ON TRUSS MEMBERS AND 50 PSF WIND PRESSURE ON SIGN PANEL.
- WALKWAY SHALL INCLUDE DEAD LOAD PLUS 500 LB CONCENTRATED LIVE LOAD.
- WALKWAY HANDRAILS ARE DESIGNED FOR A 200-LB LOAD ON TOP RAIL AND A 150-LB LOAD ON MID RAIL, APPLIED IN ANY DIRECTION.
- PROVIDE ANCHORAGE FOR ATTACHMENT OF PERSONAL FALL ARREST SYSTEMS PER OSHA SECTION 1926.502(D). ANCHORAGE SHALL BE INSTALLED AS CLOSE TO PANEL POINTS AS POSSIBLE AND SHALL BE CAPABLE OF SUPPORTING AT LEAST 5000 LBS.
- ICE LOAD OF 3 PSF APPLIED WITH A FACTOR OF 1.0 FOR STRENGTH I ONLY.

DESIGN SPECIFICATIONS:

2015 AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, 1ST EDITION, WITH 2020 INTERIM REVISIONS, INSTRUCTIONS AND INFORMATION

CONCRETE COLUMN, GRADE BEAM AND DRILLED SHAFT ARE DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION, 2020

DESIGN UNIT STRESSES FOR REINFORCED CONCRETE:

CLASS SI CONCRETE $f_c = 3,500$ P.S.I.
 CLASS DS CONCRETE $f_c = 4,000$ P.S.I.
 REINFORCING STEEL $f_y = 60,000$ P.S.I.

SHOP CAMBER TABLE

| CANTILEVER LENGTH (L) | SHOP CAMBER AT END |
|-----------------------|--------------------|
| 20' | 1 1/2" |
| 25' | 1 1/2" |
| 30' | 2" |
| 35' | 2 1/2" |
| 40' | 2 1/2" |
| 45' | 3" |
| 50' | 3 1/2" |

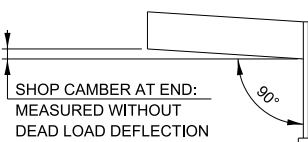


TABLE B: MATERIAL SPECIFICATIONS FOR STRUCTURAL STEEL AND FASTENERS

| ELEMENT OF STRUCTURE | SPECIFICATION | MINIMUM YIELD STRENGTH (K.S.I.) | MINIMUM ULTIMATE STRENGTH (K.S.I.) |
|--------------------------------------|--------------------------------|---------------------------------|------------------------------------|
| STRUCTURAL STEEL TUBE, PIPE AND POST | ASTM A500 GRADE B OR GRADE C | 42, 46 | 58, 62 |
| | API 5L GRADE B OR X42 OR X52 | 35 | 52 |
| | ASTM A106 GRADE B | 35 | 60 |
| | ASTM A53, TYPE E OR S, GRADE B | 35 | 60 |
| STEEL BAR AND STEEL PLATES | ASTM A572 GRADE 50 | 50 | 65 |
| STAINLESS STEEL BOLTS | ASTM A193, CLASS 1, GRADE B8 | 30 | 75 |
| STRUCTURAL STEEL BOLTS | ASTM 325 TYPE 1 | -- | 105 |
| STAINLESS STEEL LOCKNUTS | ASTM A194 GRADE 8F | -- | -- |
| NUTS | ASTM A194 GRADE 2H | -- | -- |
| STEEL WASHERS | ASTM A563 GRADE DH | -- | -- |
| STAINLESS STEEL WASHERS | ASTM F436 | -- | -- |
| STEEL WASHERS | ASTM A240, TYPE 302 | -- | -- |
| STEEL ANCHOR BOLTS | AASHTO M314 OR ASTM F1554 | 55 | 75 |

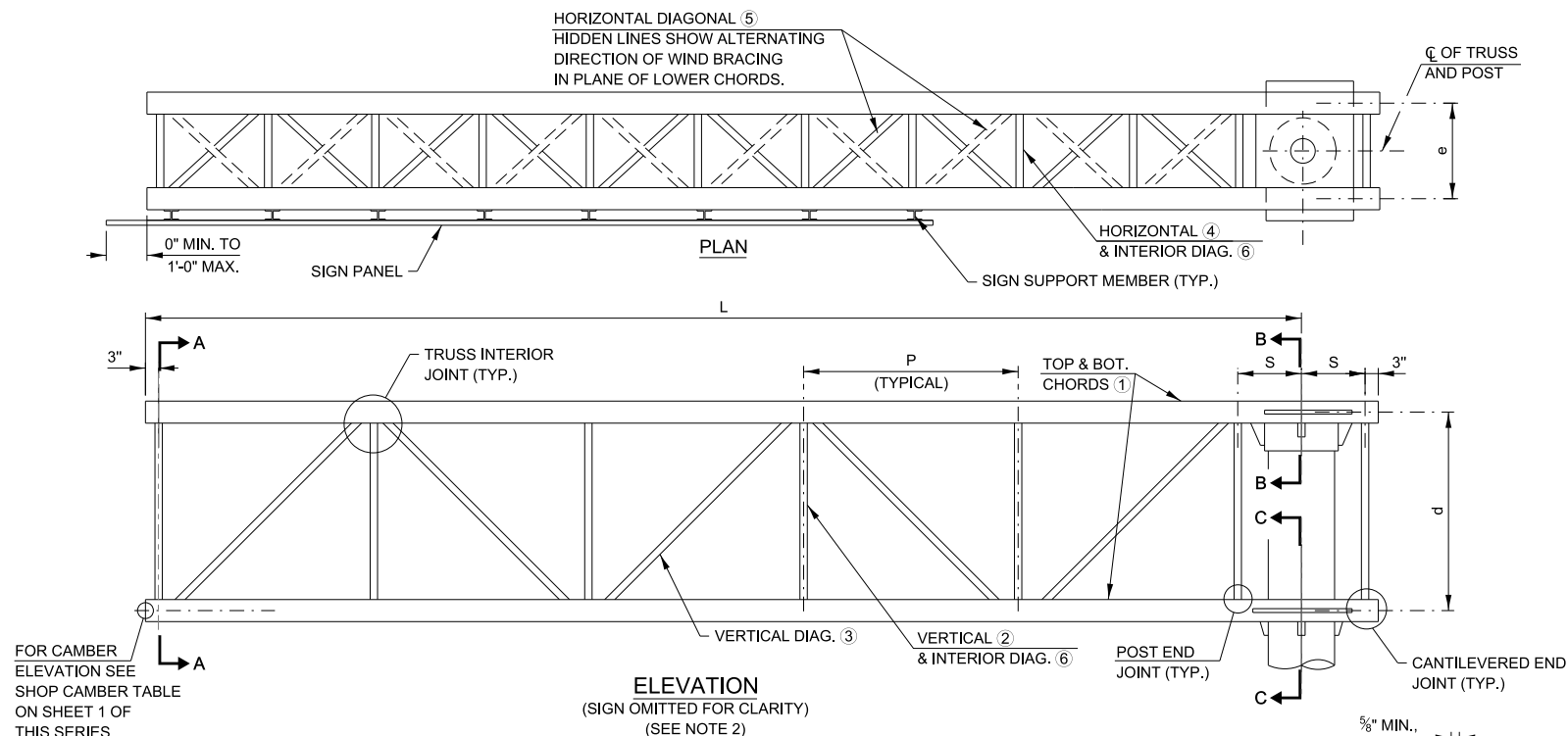
FABRICATION NOTES:

- MATERIALS: FOR MATERIAL SPECIFICATIONS FOR CANTILEVER SIGN STRUCTURES, SEE TABLE B. ALL STRUCTURAL STEEL PLATES AND SHAPES SHALL CONFORM TO ASTM A572 GR. 50. 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 STEEL POST SHALL HAVE A MINIMUM LONGITUDINAL CHARPY V-NOTCH (CVN) ENERGY OF 15 LB.-FT. AT 40° F (ZONE 2) BEFORE GALVANIZING.
- WELDING: ALL MATERIALS, WELDING PROCEDURES AND INSPECTION USED FOR THE CANTILEVER OVERHEAD SIGN STRUCTURE SHALL CONFORM TO AWS D1.1-10 FOR TUBULAR, CYCLICALLY LOADED STRUCTURES. ADDITIONALLY, ALL WELDED MATERIALS USED SHALL BE PREQUALIFIED FOR USE WITH WPS AS PER AWS D1.1-10, TABLE 3.1.
- FASTENERS FOR STEEL TRUSSES: HIGH STRENGTH BOLTS SHALL SATISFY THE REQUIREMENTS OF AASHTO M164 (ASTM A325), OR APPROVED ALTERNATE, AND SHALL HAVE MATCHING LOCKNUTS. THREADED STUDS FOR SPLICES (IF MEMBERS INTERFERE) SHALL SATISFY THE REQUIREMENTS OF ASTM A449, ASTM A193 GRADE B7, OR APPROVED ALTERNATE, AND SHALL HAVE MATCHING LOCKNUTS. BOLTS AND LOCKNUTS NOT REQUIRED TO BE HIGH STRENGTH SHALL SATISFY THE REQUIREMENTS OF ASTM A307. ALL BOLTS AND LOCKNUTS SHALL BE HOT DIP GALVANIZED PER AASHTO M232, EXCEPT STAINLESS STEEL FASTENERS, NUTS AND WASHERS. THE LOCKNUTS SHALL 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)j OF THE IDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. ROTATIONAL CAPACITY ("ROCAP") TESTING OF BOLTS WILL NOT BE REQUIRED.
- U-BOLTS: U-BOLTS SHALL BE STAINLESS STEEL AND SHALL CONFORM TO ASTM 193, CLASS I, GRADE B8 (AISI TYPE 304), WASHERS FOR U-BOLTS SHALL CONFORM TO ASTM A240, TYPE 302. NUTS FOR U-BOLTS SHALL CONFORM TO ASTM A194 (AASHTO M292), GRADE 8F (AISI TYPE 303).
- GALVANIZING: ALL PLATES, SHAPES AND PIPE SHALL BE HOT DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AASHTO M111. PAINTING IS NOT PERMITTED. ALL FASTENERS SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH AASHTO M111 OR M232 AS APPROPRIATE FOR THE PRODUCT (EXCEPT STAINLESS STEEL FASTENERS).

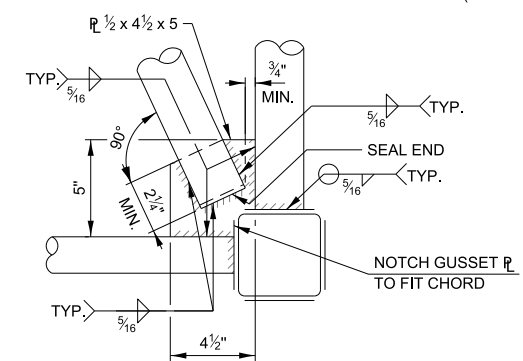
APPROVED BY: *Manar Nashif* CHIEF ENGINEERING OFFICER
 DATE: 03/01/2026

| REVISIONS | | VERSION: | STANDARD: | SHEET: |
|------------|---|----------|-----------|---------|
| DATE | DESCRIPTION | | | |
| 03-01-2026 | DELETED NOTE 3 AND RE-NUMBERED. | 2026-03 | F4-16 | 1 OF 12 |
| 03-01-2025 | CHANGED LOCKNUT MATERIAL. | | | |
| 03-01-2024 | REVISED ANCHOR BOLT DETAILS. | | | |
| 03-01-2023 | CHANGE COL. SIZES AND 50' TOP. | | | |
| | BOTT. & VERT. DIAG. MEMBER SIZES, REMOVE TACK WELD. | | | |

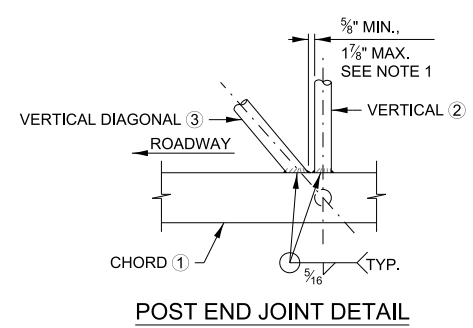
OVERHEAD SIGN STRUCTURE CANTILEVER TYPE STRUCTURE DETAILS



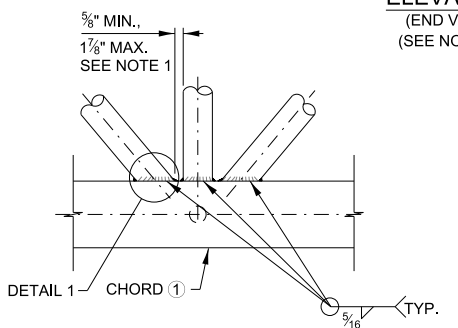
FOR CAMBER ELEVATION SEE SHOP CAMBER TABLE ON SHEET 1 OF THIS SERIES



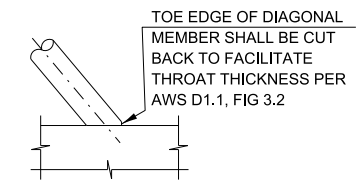
GUSSET P FOR INTERIOR DIAG. DETAIL



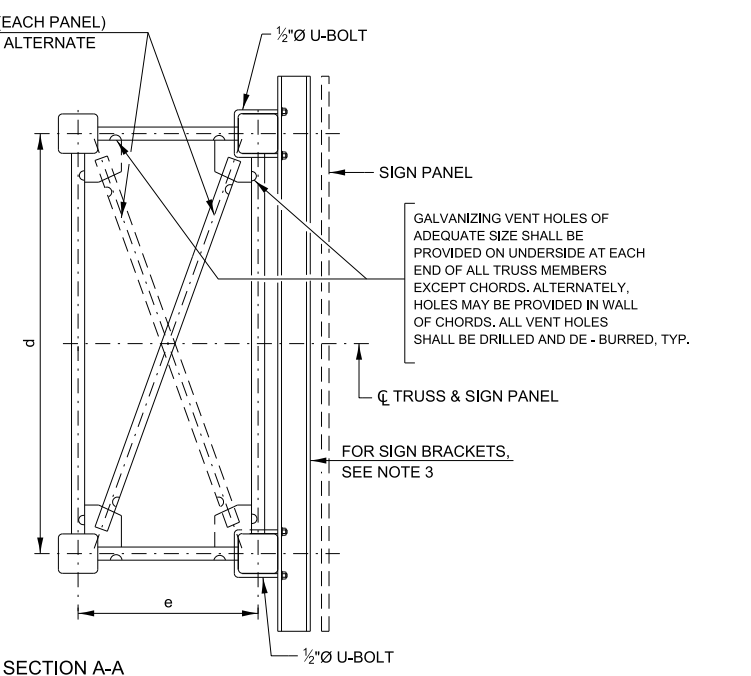
POST END JOINT DETAIL



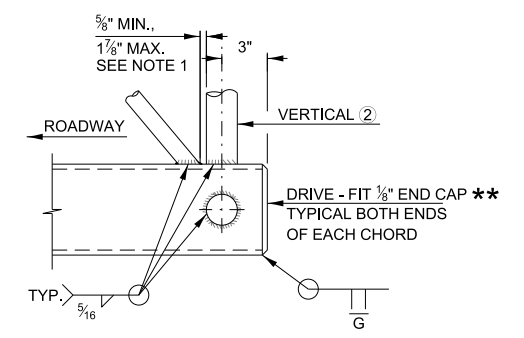
TRUSS INTERIOR JOINT DETAIL



DETAIL 1



SECTION A-A
 ** CONTRACTOR SHALL USE STANDARD DRIVE - FIT CAP TO CLOSE ENDS. AFTER GALVANIZING, DRIVE - FIT CAP SHALL HAVE 1/2" Ø DRAIN HOLES AT LOW EDGE.



CANTILEVER END JOINT DETAIL

TABLE C: TRUSS AND POST DETAILS FOR 18'-0" (MAX.) SIGN HEIGHT

| DESIGN SPAN LENGTH (L) | TRUSS TYPE | TRUSS SIZE | | ACTUAL SPAN LENGTH | MAXIMUM SIGN LENGTH | STEEL SUPPORT POST (COLUMN) | | | | TRUSS MEMBERS AND DETAILS | | | | | | | | | | | | | |
|------------------------|------------|------------|-------|--------------------|---------------------|-----------------------------|---------------|----------------|----------|---------------------------|--------------|--------------|---------------|--------------------|--------------|----------------|--------------|----------------------|--------------|--------------------|---|-----------|-------|
| | | e | d | | | DIAMETER | WEIGHT | WALL THICKNESS | H (MAX.) | TOP & BOTTOM CHORD (1) | | VERTICAL (2) | | VERTICAL DIAG. (3) | | HORIZONTAL (4) | | HORIZONTAL DIAG. (5) | | INTERIOR DIAG. (6) | | PANELS | |
| | | | | | | | | | | PIPE | WALL | PIPE | WALL | PIPE | WALL | PIPE | WALL | PIPE | WALL | NO. | P | S | |
| 20' | 20-D | 2'-6" | 5'-6" | 20'-1" | 15'-0" | 18" | 104.67 (#/FT) | 0.562" | 12'-0" | HSS 5x5x1/4 | 2 1/2" Ø X.S | 0.276" | 3" Ø X.S | 0.600" | 1 1/2" Ø X.S | 0.200" | 2 1/2" Ø X.S | 0.276" | 1 1/2" Ø X.S | 0.200" | 4 | 4'-7" | 1'-6" |
| 25' | 25-D | 3'-6" | 5'-6" | 24'-11" | 18'-9" | 18" | 104.67 (#/FT) | 0.562" | 12'-0" | HSS 5x5x1/4 | 2 1/2" Ø X.S | 0.276" | 4" Ø X.S | 0.600" | 2" Ø X.S | 0.218" | 2 1/2" Ø X.S | 0.276" | 2" Ø X.S | 0.218" | 5 | 4'-7" | 1'-9" |
| 30' | 30-D | 3'-6" | 7'-0" | 30'-2" | 22'-6" | 18" | 104.67 (#/FT) | 0.562" | 12'-0" | HSS 6x6x1/4 | 3" Ø X.S | 0.300" | 4" Ø X.S | 0.674" | 2" Ø X.S | 0.218" | 2 1/2" Ø X.S | 0.276" | 2" Ø X.S | 0.218" | 5 | 5'-7" | 2'-0" |
| 35' | 35-D | 4'-0" | 7'-0" | 35'-0" | 24'-0" | 24" | 171.29 (#/FT) | 0.687" | 12'-0" | HSS 6x6x1/4 | 3" Ø X.S | 0.300" | 4" Ø X.S | 0.674" | 2" Ø X.S | 0.218" | 2 1/2" Ø X.S | 0.276" | 2" Ø X.S | 0.218" | 5 | 6'-6" | 2'-3" |
| 40' | 40-D | 4'-0" | 7'-0" | 40'-0" | 24'-0" | 24" | 171.29 (#/FT) | 0.687" | 12'-0" | HSS 6x6x1/4 | 3" Ø X.S | 0.300" | 4" Ø X.S | 0.674" | 2" Ø X.S | 0.218" | 2 1/2" Ø X.S | 0.276" | 2" Ø X.S | 0.218" | 6 | 6'-3" | 2'-3" |
| 45' | 45-D | 4'-6" | 7'-0" | 45'-0 1/2" | 24'-0" | 24" | 171.29 (#/FT) | 0.687" | 12'-0" | HSS 6x6x1/4 | 3" Ø X.S | 0.300" | 4" Ø X.S | 0.674" | 2" Ø X.S | 0.218" | 2 1/2" Ø X.S | 0.276" | 2" Ø X.S | 0.218" | 7 | 6'-0 1/2" | 2'-6" |
| 50' | 50-D | 4'-6" | 7'-0" | 50'-1" | 24'-0" | 24" | 171.29 (#/FT) | 0.687" | 12'-0" | HSS 10x10x1/4 | 3" Ø X.S | 0.300" | HSS 8.625x0.5 | 0.465" | 2" Ø X.S | 0.218" | 3" Ø X.S | 0.276" | 2" Ø X.S | 0.218" | 8 | 5'-11" | 2'-6" |

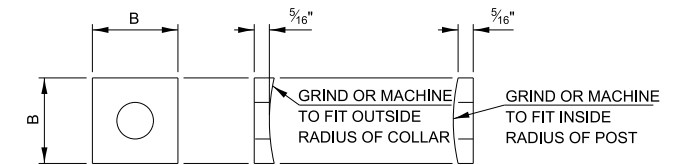
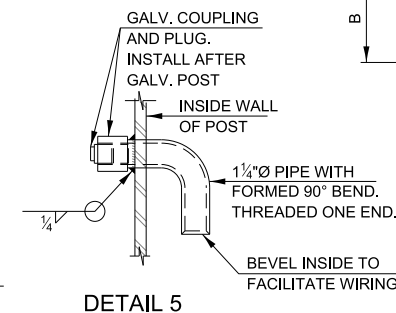
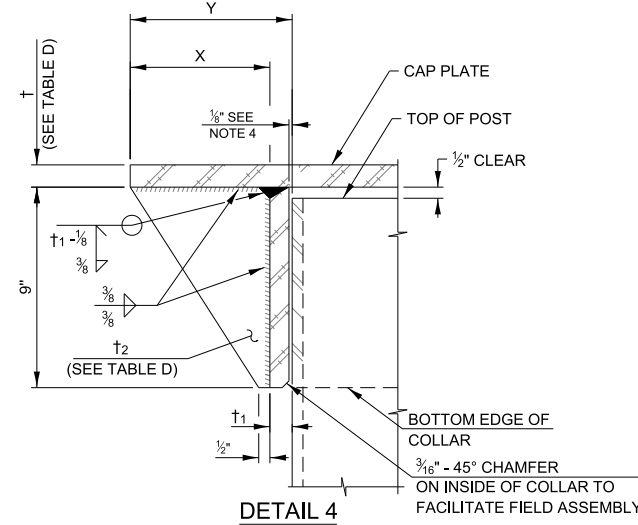
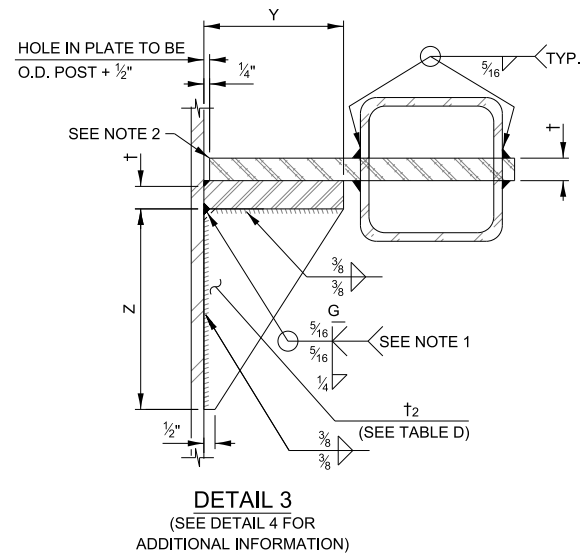
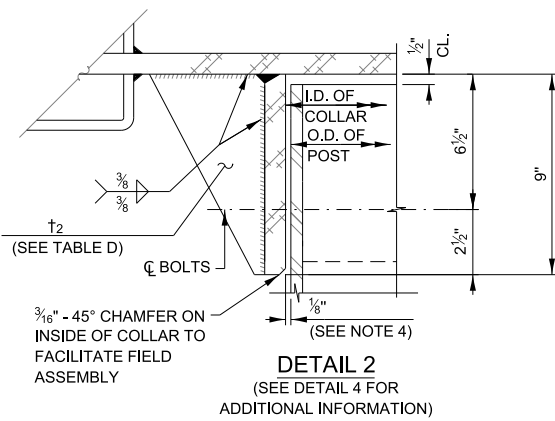
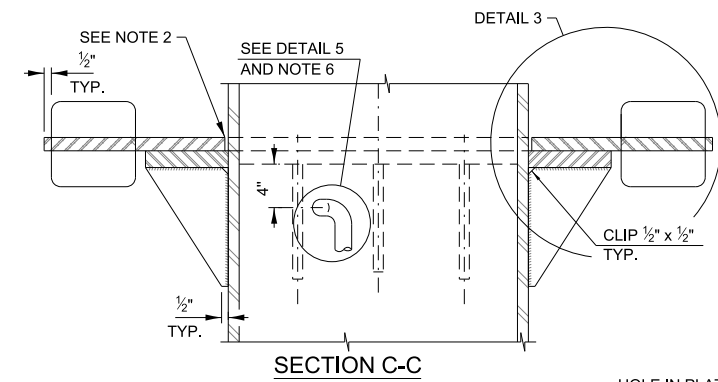
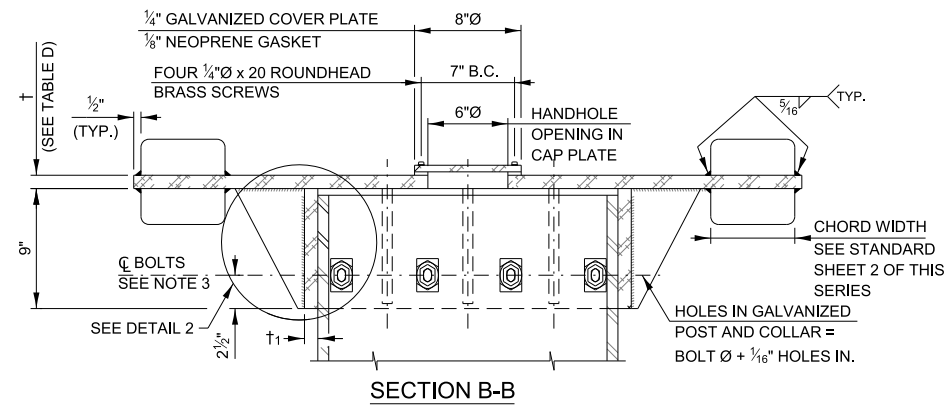
NOTES:

- TRUSS MEMBERS SHALL BE SPACED A MINIMUM OF 3 TIMES THE WALL THICKNESS OF THE LARGEST CONNECTING MEMBERS TO ENSURE PROPER WELD SPACING.
- FOR SECTIONS B-B, C-C, D-D, E-E AND F-F SEE SHEET 3 OF THIS SERIES.
- FOR SIGN SUPPORT DETAILS, SEE ILLINOIS TOLLWAY STANDARD DRAWING F8, FOR DMS TYPE 2W - WALK-IN SIGN SUPPORT DETAILS, SEE SHEET 9 OF THIS SERIES.
- DIRECTION OF INTERIOR DIAGONALS SHOWN IN SECTION A-A CORRECTLY DEPICTS TRUSSES HAVING AN ODD NUMBER OF PANELS. TRUSSES WITH AN EVEN NUMBER OF PANELS WILL HAVE DIAGONALS IN A REVERSED DIRECTION THAN AS SHOWN.
- FOR ANY DESIGN SPAN LENGTH THAT FALLS BETWEEN TWO CONSECUTIVE SPANS, PROVIDED IN COLUMN 1 OF TABLE C, THE LARGER DESIGN SPAN LENGTH SHALL BE USED (I.E. FOR A 32' SPAN LENGTH FALLING BETWEEN 30' AND 35' DESIGN SPAN LENGTHS IN TABLE C, THE 35' DESIGN SPAN LENGTH TRUSS AND POST DETAILS SHALL BE USED).

APPROVED BY: *Manar Nashif* DATE: 03/01/2026
 CHIEF ENGINEERING OFFICER

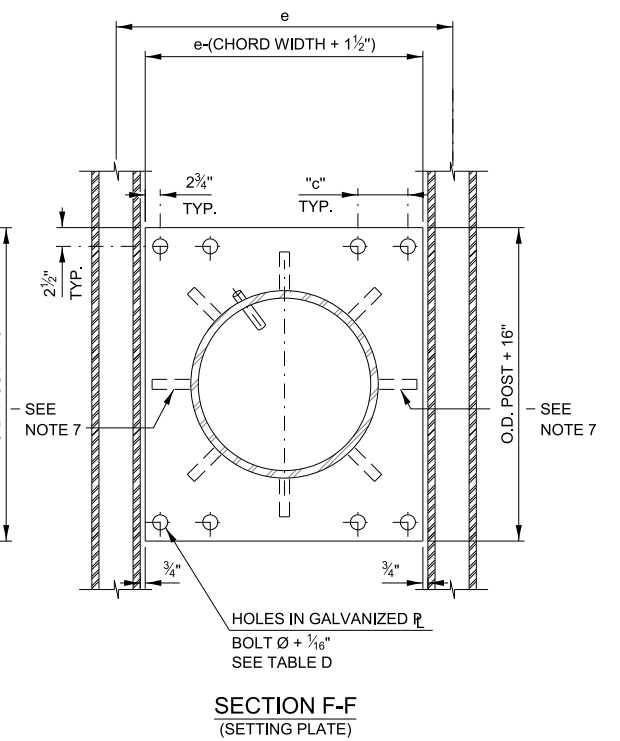
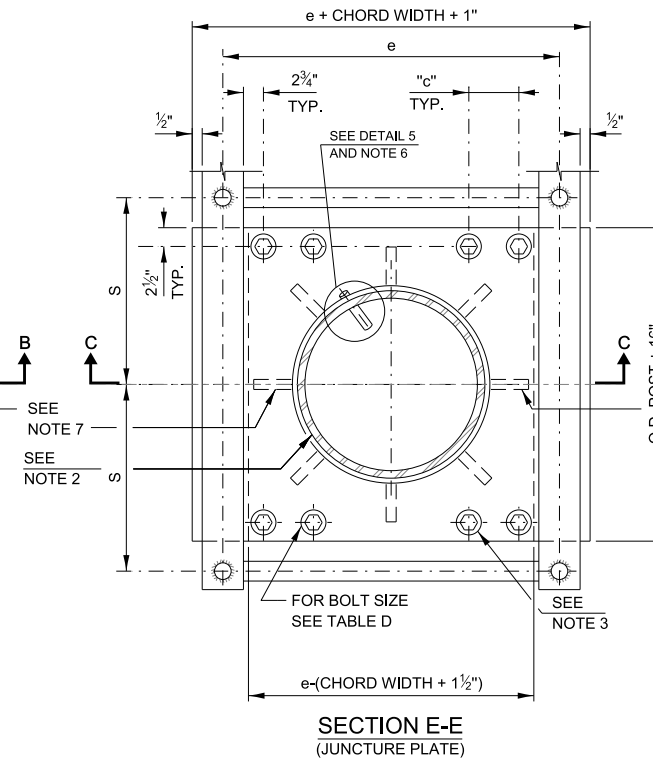
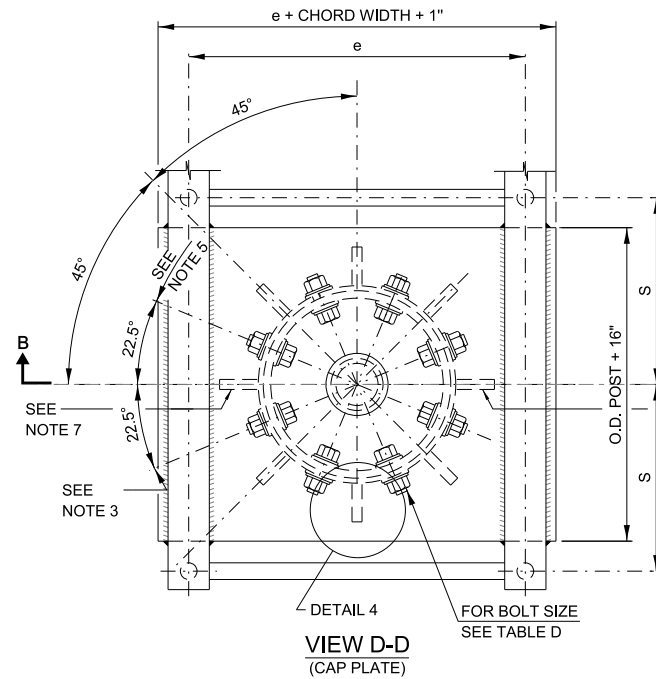
OVERHEAD SIGN STRUCTURE CANTILEVER TYPE STRUCTURE DETAILS

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| BOLT SIZE | CONTOURED WASHERS | |
|-----------|-------------------|--------|
| | HOLE DIA. | B |
| 1 1/8"Ø | 1 1/8"Ø | 2 1/4" |
| 1 1/4"Ø | 1 3/8"Ø | 2 1/4" |
| 1 1/2"Ø | 1 5/8"Ø | 2 1/4" |

CONTOURED WASHERS (ASTM A240, TYPE 304)



NOTES:

- GRIND TOP IF REQUIRED TO FULLY SEAT PLATE. REPAIR DAMAGED GALVANIZING BEFORE ASSEMBLY.
- AFTER TIGHTENING LOWER CONNECTION BOLTS, FILL GAP WITH NON - HARDENING SILICONE CAULK SUITABLE FOR EXTERIOR EXPOSURE AND ACCEPTABLE TO THE ENGINEER.
- CONNECTION BOLTS IN COLLAR AND BOLTS AT LOWER CHORD CONNECTION SHALL BE HIGH STRENGTH WITH MATCHING LOCKNUTS. LOWER CONNECTION BOLTS SHALL HAVE 2 FLAT WASHERS EACH.
- AFTER GALVANIZING, COLLAR I.D. SHALL EQUAL O.D. OF GALVANIZED POST PLUS 1/8" (± 1/16") MAXIMUM GAP BETWEEN POST AND COLLAR AT ANY LOCATION SHALL BE 1/8" BEFORE TIGHTENING BOLTS.
- OPTIONAL FULL PENETRATION WELD IN COLLAR. (TWO LOCATIONS MAXIMUM (180° APART) X-RAY OR UT 100%) ALL BOLTS SHOWN ARE HIGH STRENGTH.
- ORIENT PIPE TOWARD SIGN PANEL SIDE. HOLE IN POST = O.D. PIPE + 1/8".
- OMIT INDICATED STIFFENER IN TRUSS TYPE 20-D.

TABLE D: BOLT SCHEDULE

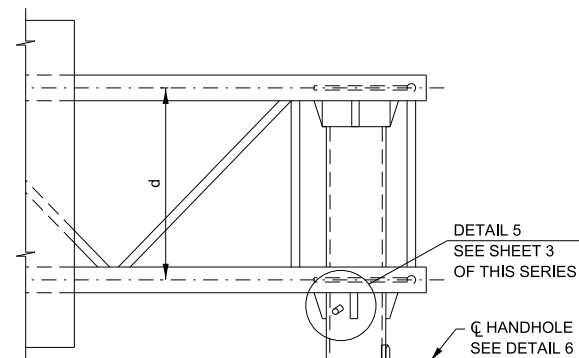
| SPAN LENGTH | POST OUTSIDE DIAMETER | JUNCTURE & COLLAR CONNECTION BOLT DIAMETER | LOWER JUNCTURE BOLT SPACING DIMENSION "c" | PLATE THICKNESS | | STIFFENER THICKNESS (t ₂) | NO. OF STIFFENERS | STIFFENERS | | |
|-------------|-----------------------|--|---|-----------------|-------------------|---------------------------------------|-------------------|------------|----|---------|
| | | | | (t) | (t ₁) | | | x | y | z |
| <= 20' | 18" | 1 1/8" | 3 1/8" | 1" | 3/4" | 1/2" | 6 | 5" | 6" | 8" |
| 21'-30' | 18" | 1 1/2" | 3 3/4" | 1 1/8" | 7/8" | 3/4" | 8 | 5" | 6" | 8" |
| 31'-40' | 24" | 1 1/2" | 4 1/2" | 1 1/4" | 1" | 3/4" | 8 | 7" | 8" | 10 1/2" |
| 41'-50' | 24" | 1 1/2" | 4 1/2" | 1 1/4" | 1" | 3/4" | 8 | 7" | 8" | 10 1/2" |

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 CHIEF ENGINEERING OFFICER
 DATE: 03/01/2026

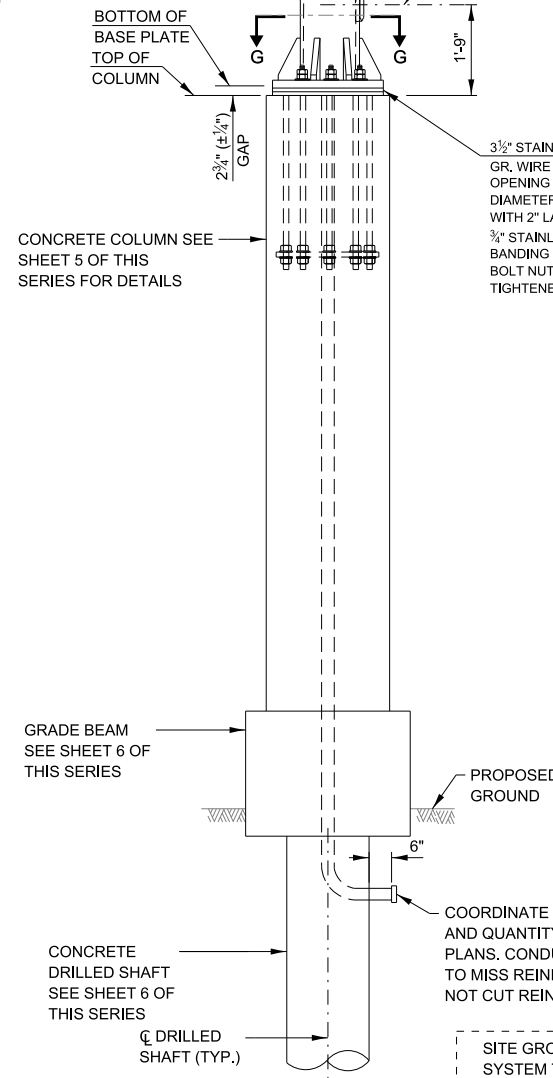
B.C. = BOLT CIRCLE



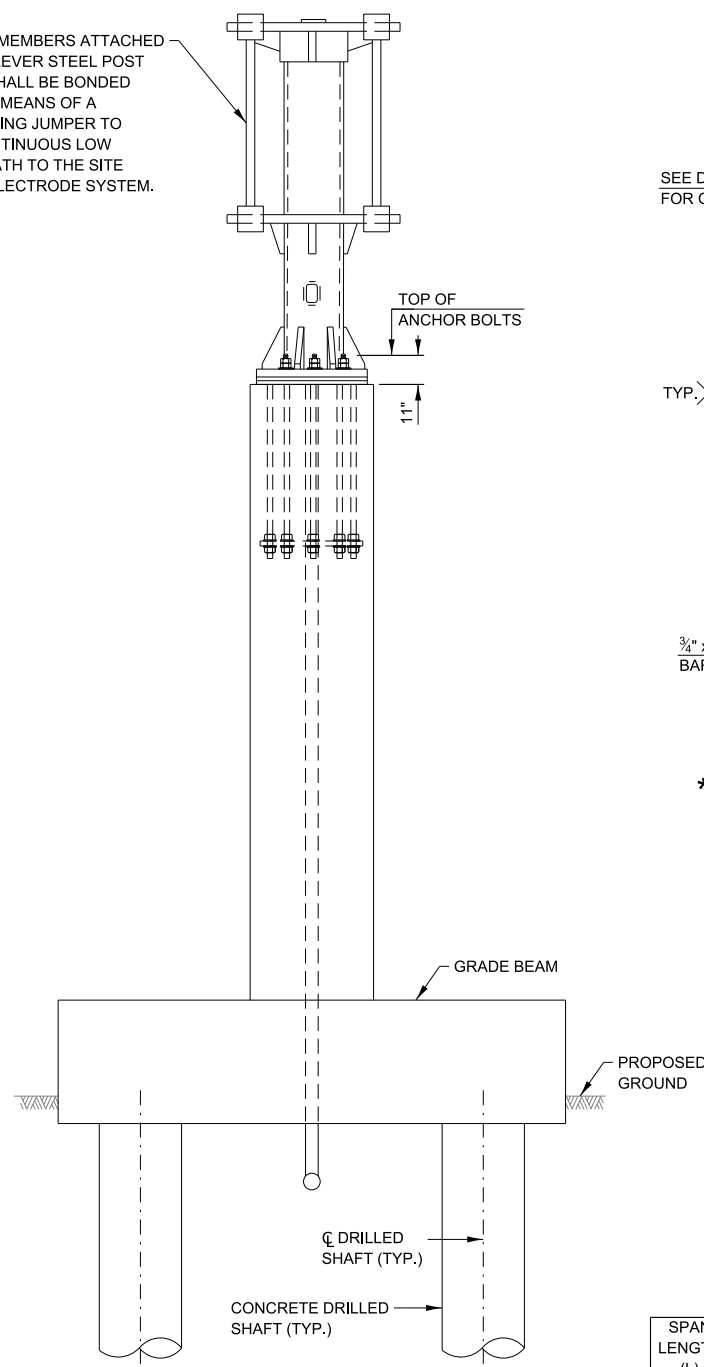
OVERHEAD SIGN STRUCTURE CANTILEVER TYPE STRUCTURE DETAILS



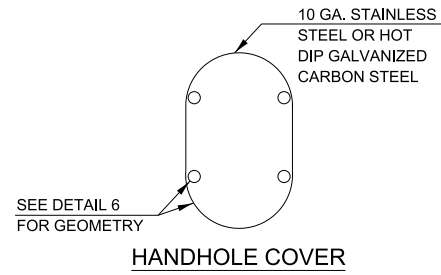
ALL METALLIC MEMBERS ATTACHED TO THE CANTILEVER STEEL POST STRUCTURE SHALL BE BONDED TOGETHER BY MEANS OF A COPPER BONDING JUMPER TO CREATE A CONTINUOUS LOW IMPEDANCE PATH TO THE SITE GROUNDING ELECTRODE SYSTEM.



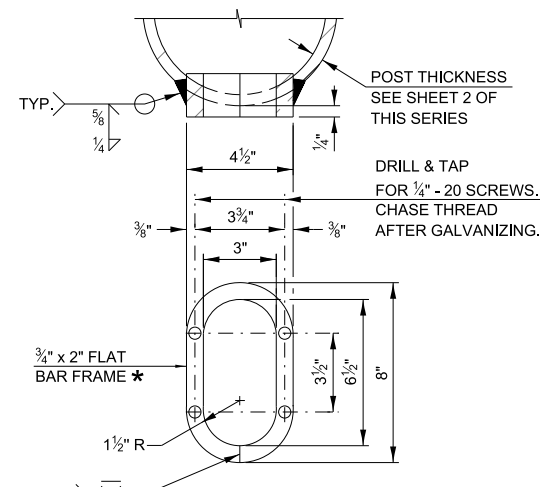
FRONT ELEVATION



SIDE ELEVATION



HANDHOLE COVER



PROVIDE 8" x 4 1/2" COVER. OUTSIDE CORNERS = 2 1/4" RADIUS. PROVIDE 4-3/16" Ø HOLES IN COVER FOR 1/4" - 20 ROUND HEAD HOT DIP GALVANIZED OR STAINLESS STEEL MACHINE SCREWS. (SEE COVER DETAILS.)

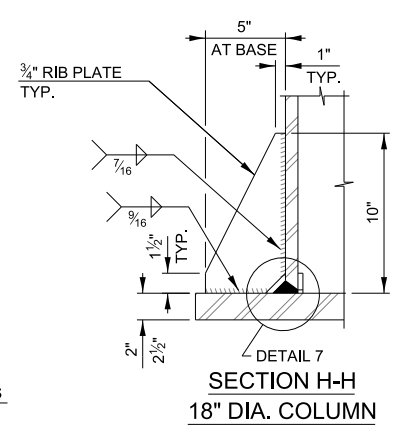
DETAIL 6

BENT BARS MAY BE BUTT WELDED TOP AND BOTTOM OR BOTTOM ONLY. IN LIEU OF FABRICATED HANDHOLE FRAME AS SHOWN, MAY CUT FROM 2" PLATE (ROLLING DIRECTION VERTICAL). ALL CUT FACES TO BE GROUND TO ANSI ROUGHNESS OF 500 µ IN OR LESS.

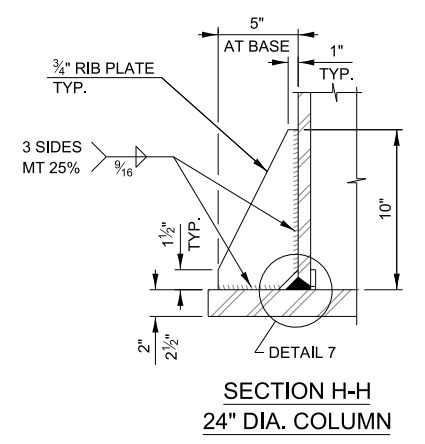
** 18" IS MINIMUM TO BE GALVANIZED. ENTIRE BOLT MAY BE GALVANIZED AT CONTRACTOR'S OPTION.

TABLE E: BASE PLATE DETAIL

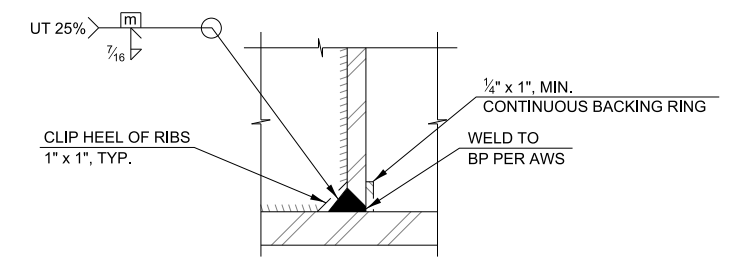
| SPAN LENGTH (L) | POST OUTSIDE DIAMETER | BASE PLATE DIAMETER | BASE PLATE THICKNESS | BOLT CIRCLE | BOLT DIA. |
|-----------------|-----------------------|---------------------|----------------------|-------------|-----------|
| <= 20' | 18" | 30" | 2" | 24" | 1 3/4" |
| 21'-30' | 18" | 30" | 2" | 24" | 1 3/4" |
| 31'-40' | 24" | 36" | 2 1/2" | 30" | 2" |
| 41'-50' | 24" | 36" | 2 1/2" | 30" | 2" |



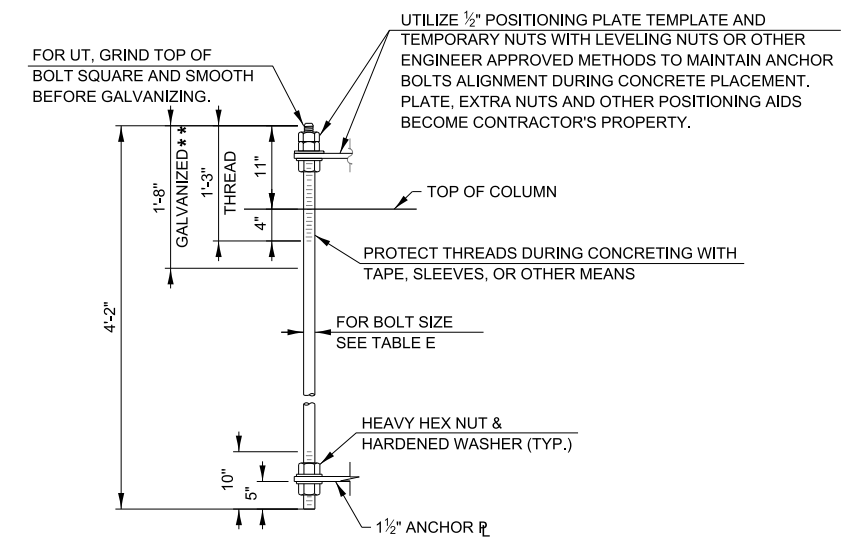
SECTION H-H 18" DIA. COLUMN



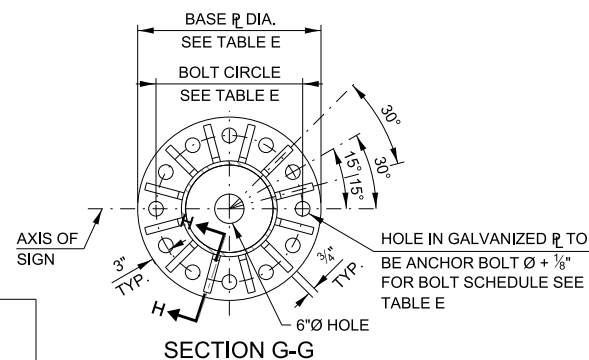
SECTION H-H 24" DIA. COLUMN



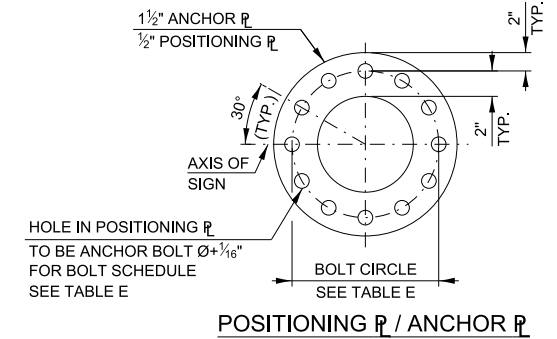
DETAIL 7 (TYPICAL RIB)



ANCHOR BOLT DETAIL



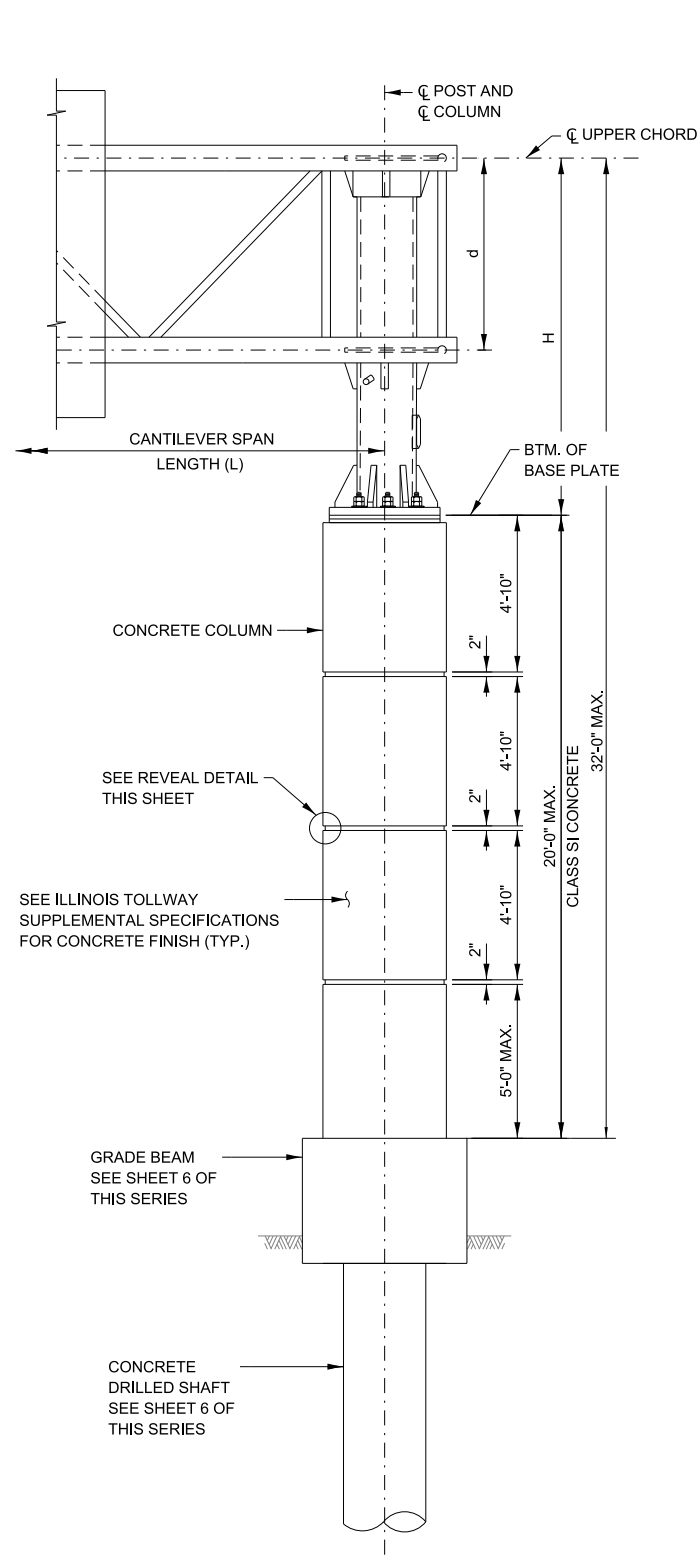
SECTION G-G



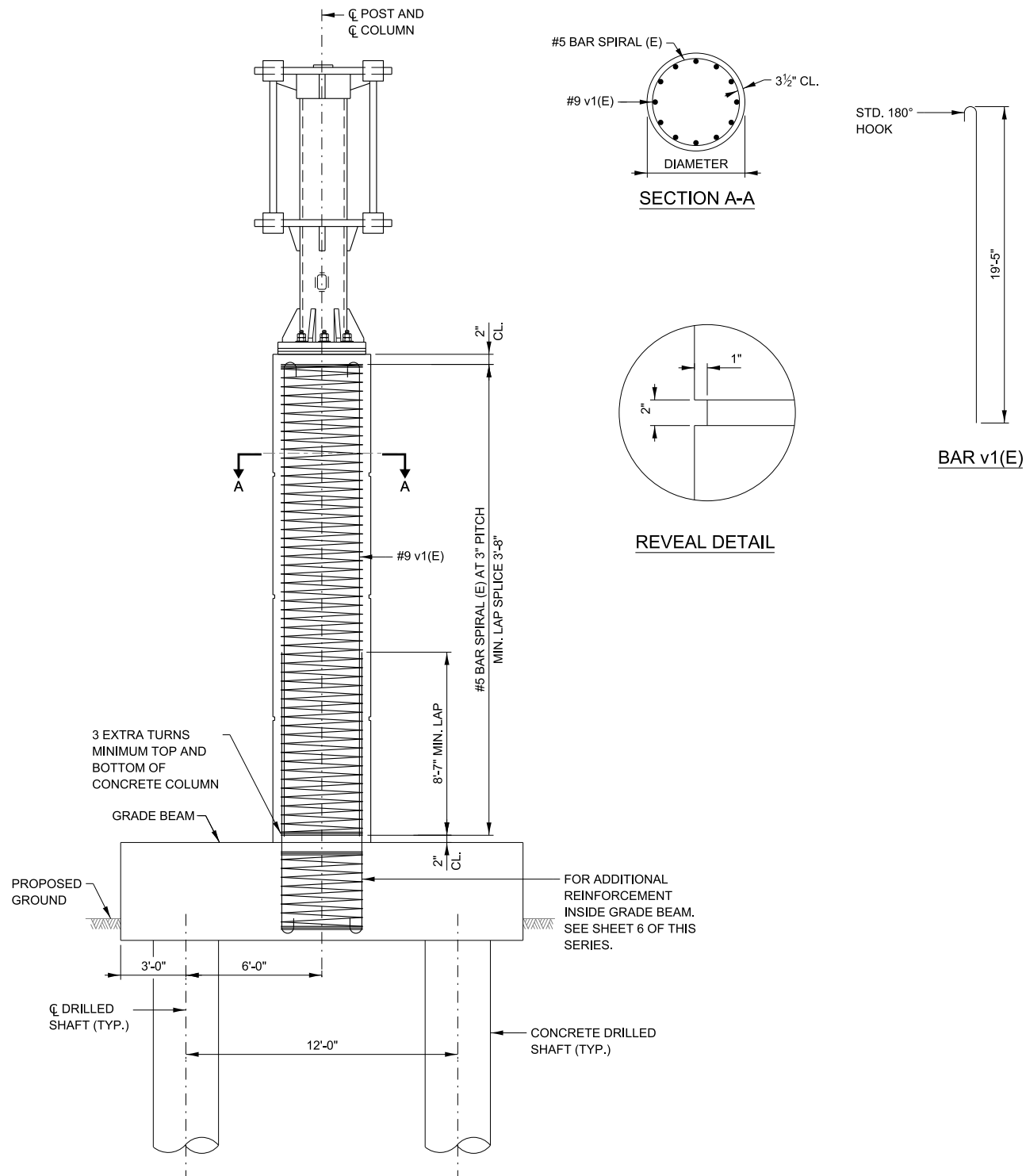
POSITIONING PLATE / ANCHOR PLATE

NOTE:
ANCHOR BOLTS SHALL CONFORM TO AASHTO M314 OR ASTM F1554 AND MEET CHARPY V-NOTCH (CVN) ENERGY OF 15 LB.-FT. AT 10° F. BEFORE GALVANIZING. GALVANIZE THE UPPER 18" (MINIMUM **) AND ASSOCIATED M291, GRADE A, C OR DH HEAVY HEX NUTS, HEAVY HEX LOCK NUTS AND HARDENED WASHERS PER AASHTO M293. NO WELDING SHALL BE PERMITTED ON BOLTS. PROVIDE AN UNFINISHED NUT AT BOTTOM, A HEXAGON LOCKNUT, HEXAGON NUT AND WASHER ABOVE BASE PLATE AND A LEVELING NUT AND WASHER BELOW BASE PLATE. NUTS SHALL EACH BE TIGHTENED WITH 200 LB.-FT. MINIMUM TORQUE AGAINST BASE PLATE. BEFORE OR AFTER THREADING, BUT BEFORE GALVANIZING, EACH ANCHOR BOLT SHALL BE ULTRASONICALLY TESTED (UT) BY A LEVEL II OR III INSPECTOR, QUALIFIED IN ACCORDANCE WITH ANSI GUIDELINES, USING A STRAIGHT BEAM, 1/2" Ø 3.5 MHZ. TRANSDUCER, TO ENSURE NO REJECTABLE FLAWS EXIST IN THE UPPER 18" (TENSION CRITERIA).

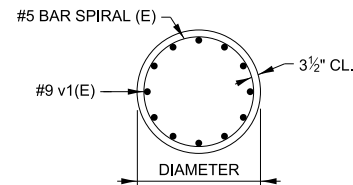
APPROVED BY: *Manar Nashif*
CHIEF ENGINEERING OFFICER
DATE: 03/01/2026



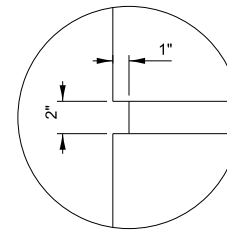
FRONT ELEVATION



SIDE ELEVATION



SECTION A-A



REVEAL DETAIL

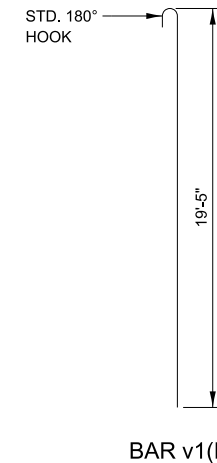


TABLE F: CONCRETE COLUMN DESIGN TABLE

| SPAN LENGTH (L) | STEEL POST DIAMETER | CONCRETE COLUMN | | | |
|-----------------|---------------------|-----------------|--------------------|-------------------------|---------------------|
| | | DIAMETER | VERTICAL BAR v1(E) | CLASS SI CONC. CU. YD.* | REINF. BARS POUND * |
| <= 20' | 18" | 3'-6" | 16-#9 | 7.1 | 1,910 |
| 21'-30' | 18" | 3'-6" | 16-#9 | 7.1 | 1,910 |
| 31'-40' | 24" | 4'-0" | 20-#9 | 9.2 | 2,330 |
| 41'-50' | 24" | 4'-0" | 20-#9 | 9.2 | 2,330 |

* CONCRETE VOLUME AND REBAR WEIGHT ARE DETERMINED FOR 20'-0" CONCRETE COLUMN HEIGHT. ADJUST CONCRETE VOLUME AND REBAR WEIGHT ACCORDINGLY IF CONCRETE COLUMN HEIGHT IS LESS THAN 20'-0".

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 CHIEF ENGINEERING OFFICER
 DATE: 03/01/2026



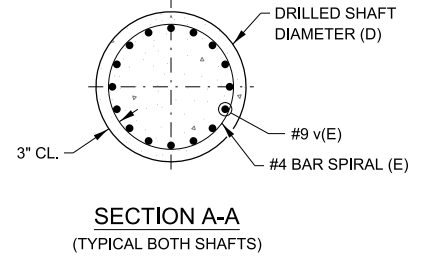
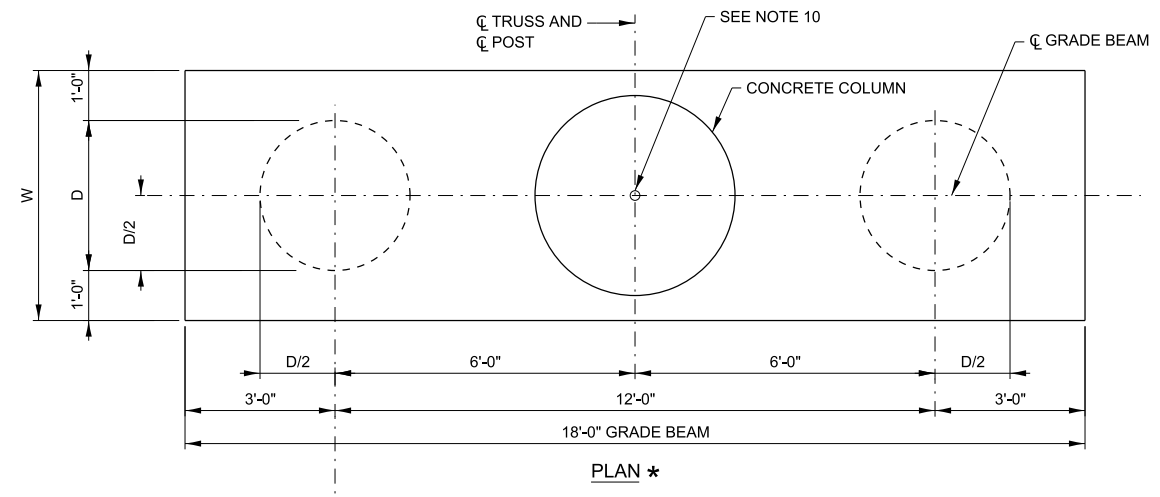
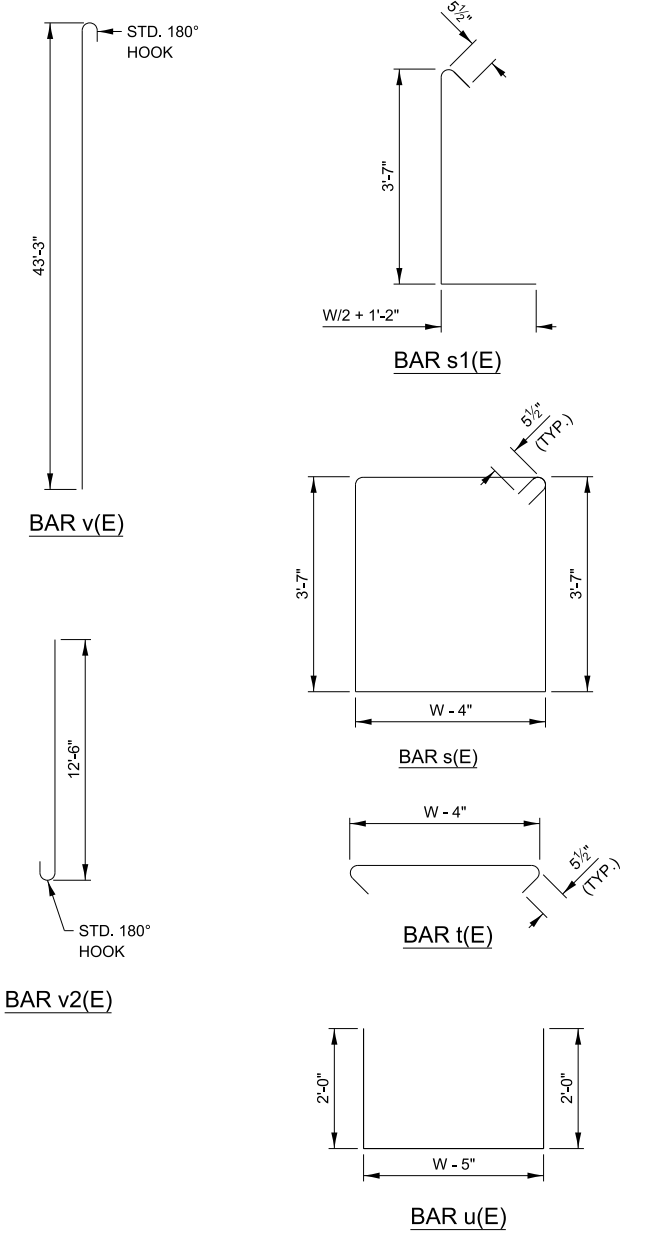
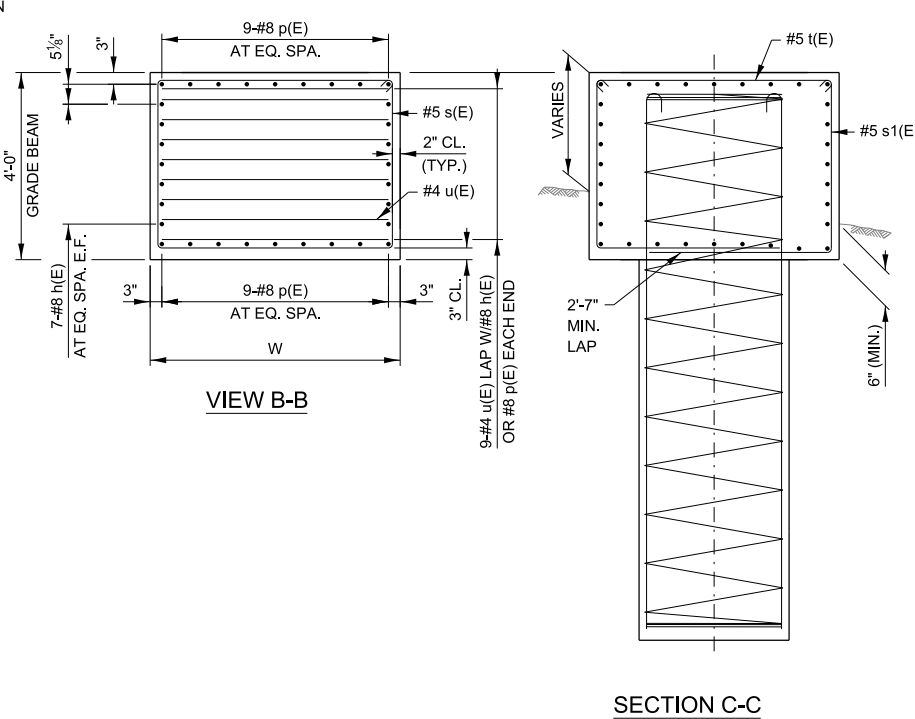
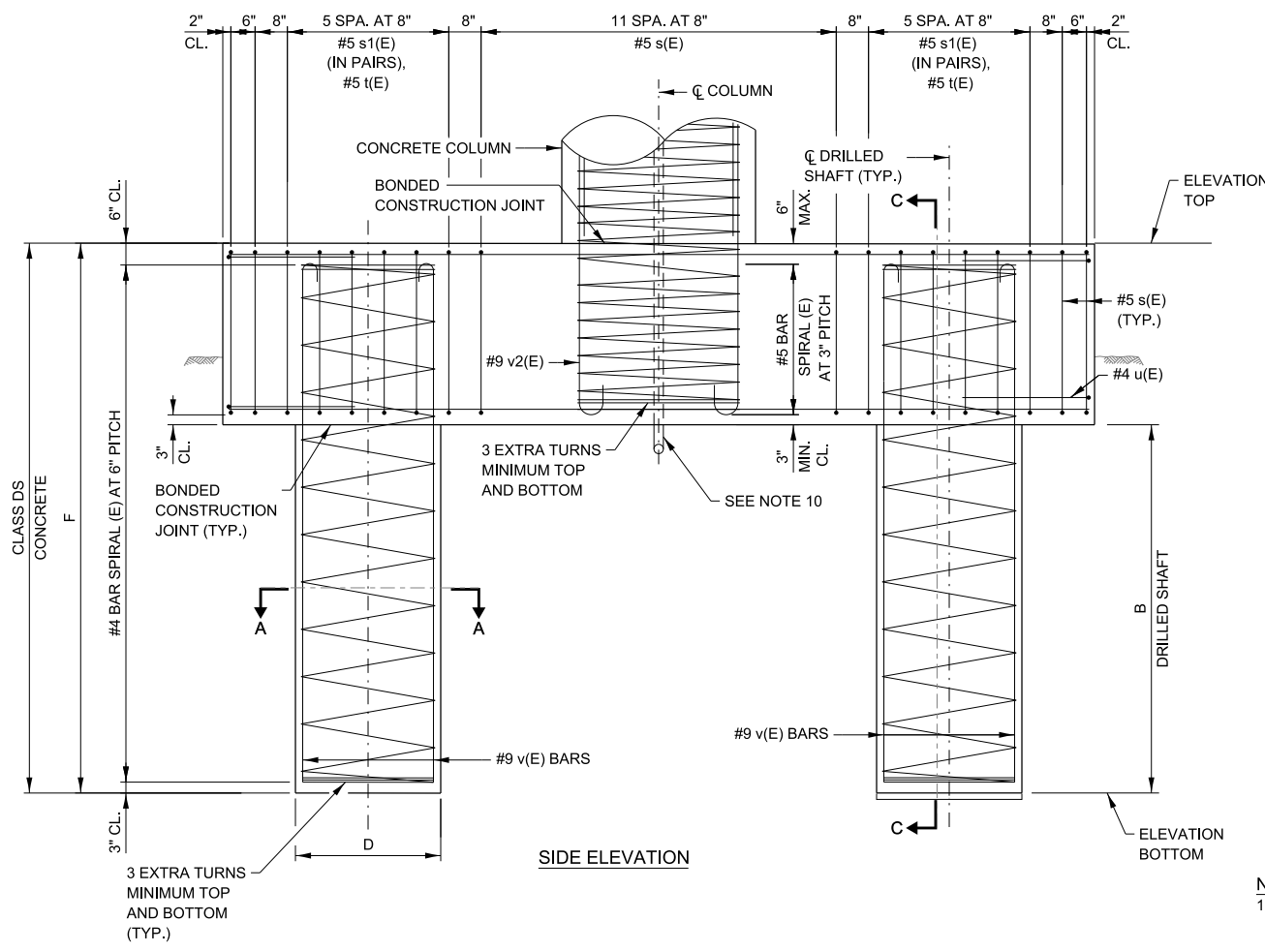
OVERHEAD SIGN STRUCTURE
 CANTILEVER TYPE
 STRUCTURE DETAILS

VERSION: 2026-03 STANDARD: F4-16 SHEET: 5 OF 12

BAR LIST - EACH FOUNDATION
(2 SHAFT AND 1 GRADE BEAM)

| BAR | NUMBER | SIZE | LENGTH | | SHAPE |
|-------|-------------|------|-----------|-----------|-------|
| | | | D = 3'-0" | D = 4'-0" | |
| h(E) | 14 | #8 | 17'-8" | 17'-8" | ┌───┐ |
| p(E) | 18 | #8 | 17'-8" | 17'-8" | ┌───┐ |
| s(E) | 16 | #5 | 17'-5" | 19'-5" | ┌───┐ |
| s1(E) | 24 | #5 | 7'-8 1/2" | 8'-2 1/2" | ┌───┐ |
| t(E) | 12 | #5 | 5'-7" | 6'-7" | ┌───┐ |
| u(E) | 18 | #4 | 8'-7" | 9'-7" | ┌───┐ |
| v(E) | SEE TABLE G | #9 | 44'-6" | 44'-6" | ┌───┐ |
| v2(E) | SEE TABLE G | #9 | 13'-9" | 13'-9" | ┌───┐ |

#4 BAR SPIRAL (E) - SEE SIDE ELEVATION
#5 BAR SPIRAL (E) - SEE SIDE ELEVATION



NOTE:
* REINFORCEMENT IN GRADE BEAM NOT SHOWN FOR CLARITY.
** FOR GRADE BEAM ONLY.

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 SHALL 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 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 CONCRETE COLUMN.
5. PROVIDE RUBBED SURFACE FINISH FOLLOWED BY CONCRETE SEALER APPLICATION ON ENTIRE SURFACE OF CONCRETE COLUMN AND NORMAL SURFACE FINISH ON GRADE BEAM, EXCEPT BOTTOM SURFACE. COST IS INCLUDED IN THE COST OF "FOUNDATION FOR OVERHEAD SIGN STRUCTURE, CANTILEVER TYPE".
6. ALL REBAR DESIGNATED (E) SHALL BE EPOXY COATED. REBAR SHALL BE POSITIONED SO THAT THERE WILL BE NO INTERFERENCE BETWEEN VERTICAL REINFORCEMENT AND STIRRUPS.
7. NO SONOTUBES OR DECOMPOSABLE FORMS SHALL BE USED 6" BELOW THE FINISHED GROUND LINE. PERMANENT METAL FORMS OR OTHER SHIELDING SHALL NOT BE LEFT IN PLACE BELOW THE ELEVATION WITHOUT THE ENGINEER'S WRITTEN PERMISSION. EXCAVATIONS SHALL BE DEWATERED BEFORE CONCRETE PLACEMENT IF DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST.
8. FOR SIZE AND NUMBER OF PVC COATED STEEL CONDUITS, SEE ELECTRICAL CONSTRUCTION DRAWINGS.
9. TYPICAL SIGN STRUCTURE FOUNDATION IS SHOWN ON THIS SHEET. SEE SHEET 7 OF THIS SERIES FOR FOUNDATION LOCATED IN ROADWAY MEDIAN.
10. COORDINATE CONDUIT SIZE, LOCATION AND QUANTITY WITH ELECTRICAL PLANS. CONDUITS SHALL BE PLACED TO MISS REINFORCEMENT BARS. DO NOT CUT REINFORCEMENT BARS.

TABLE G: DESIGN TABLE FOR DRILLED SHAFTS IN COHESIVE SOILS

| SPAN LENGTH (L) | W | D | B | F | VERTICAL BAR | | | CLASS DS ** CONC. CU. YD. | CLASS DS CONC. CU. YD. | REINF. BARS POUND |
|-----------------|-------|-------|-----|-----|--------------|--------------|-------|---------------------------|------------------------|-------------------|
| | | | | | v(E) SHAFT 1 | v(E) SHAFT 2 | v2(E) | | | |
| <= 20' | 5'-0" | 3'-0" | 40" | 44' | 12-#9 | 12-#9 | 16-#9 | 13.4 | 21 | 4,610 |
| 21'-30' | 5'-0" | 3'-0" | 40" | 44' | 12-#9 | 12-#9 | 16-#9 | 13.4 | 21 | 4,610 |
| 31'-40' | 6'-0" | 4'-0" | 40" | 44' | 20-#9 | 20-#9 | 20-#9 | 16 | 37.3 | 7,420 |
| 41'-50' | 6'-0" | 4'-0" | 40" | 44' | 20-#9 | 20-#9 | 20-#9 | 16 | 37.3 | 7,420 |

| BAR SPIRAL LAP SPLICE | |
|-----------------------|----------|
| BAR | MIN. LAP |
| #4 | 2'-11" |
| #5 | 3'-8" |

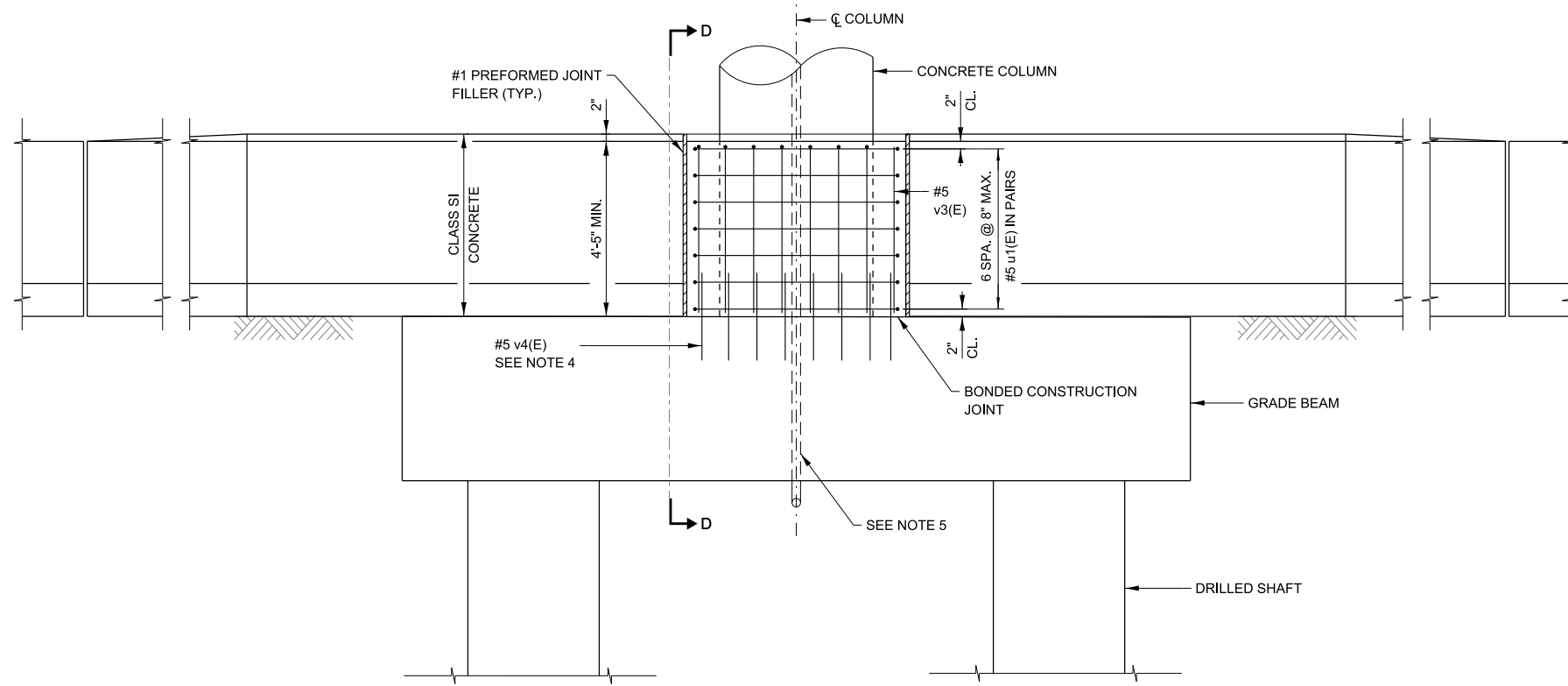
APPROVED BY: *Manar Nashif* CHIEF ENGINEERING OFFICER
DATE: 03/01/2026

OVERHEAD SIGN STRUCTURE CANTILEVER TYPE STRUCTURE DETAILS

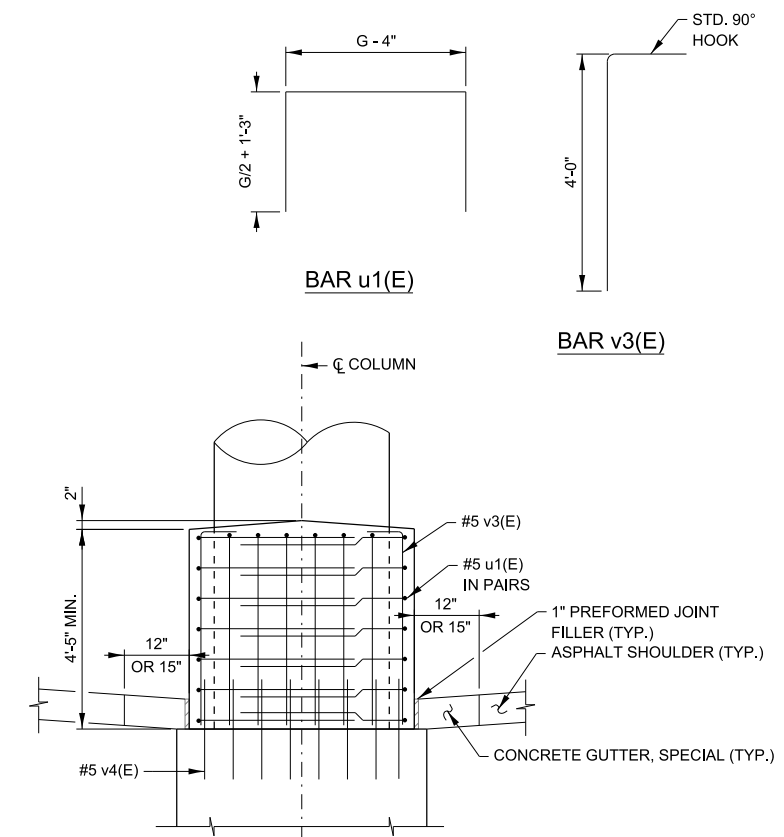
VERSION: 2026-03 STANDARD: F4-16 SHEET: 6 OF 12

BAR LIST - CRASHWALL

| BAR | SIZE | G = 4'-6" | | G = 5'-0" | | SHAPE |
|-------|------|-----------|--------|-----------|--------|-------|
| | | NUMBER | LENGTH | NUMBER | LENGTH | |
| u1(E) | #5 | 14 | 11'-2" | 14 | 12'-2" | |
| v3(E) | #5 | 24 | 4'-10" | 28 | 4'-10" | |
| v4(E) | #5 | 24 | 2'-0" | 28 | 2'-0" | |



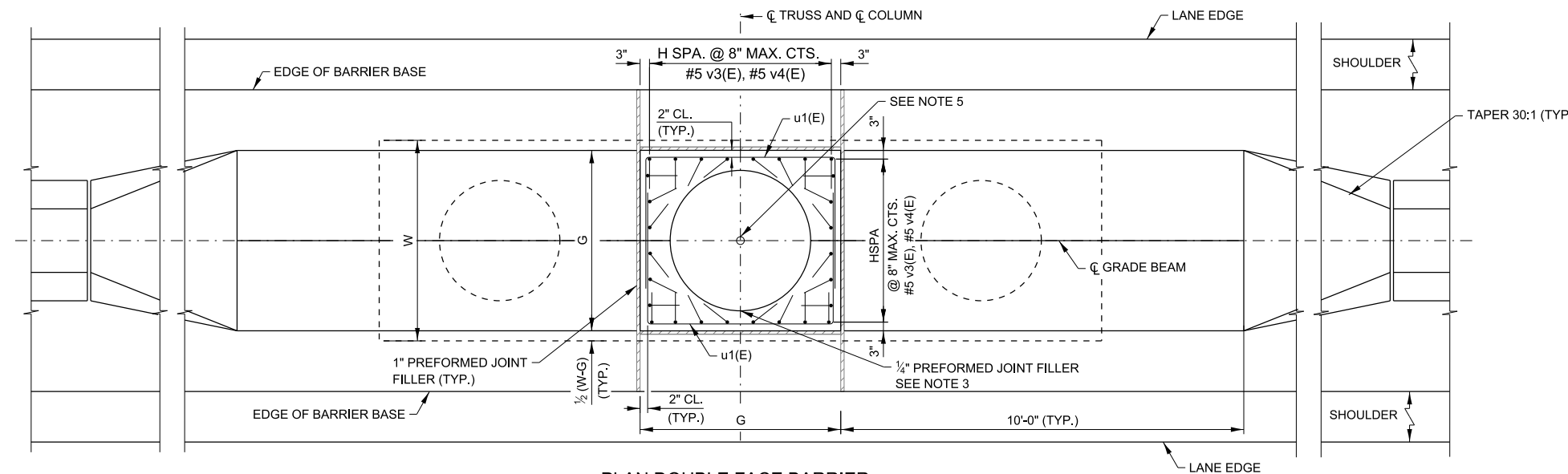
SIDE ELEVATION



SECTION D-D

NOTES:

- SEE SHEET 6 OF THIS SERIES FOR ADDITIONAL NOTES.
- GRADE BEAM AND DRILLED SHAFT DIMENSIONS, DETAILS, QUANTITIES AND BAR LIST ARE SHOWN ON SHEET 6 OF THIS SERIES.
- SEAL EXPOSED SURFACE OF 1/2" PREFORMED JOINT FILLER WITH BACKER ROD AND SILICONE SEALER (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE).
- #5 DRILLED ANCHOR BARS WILL BE EPOXY GROUTED AASHTO M31, GRADE 60 REBAR. PROVIDE 12" MINIMUM EMBEDMENT. INSTALL ANCHORS ACCORDING TO STANDARD SPECIFICATIONS SECTION 584. LOCATE GRADE BEAM REBAR PRIOR TO DRILLING. DO NOT DAMAGE GRADE BEAM REBAR DURING INSTALLATION.
- COORDINATE CONDUIT SIZE, LOCATION AND QUANTITY WITH ELECTRICAL 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 CRASHWALL.



PLAN DOUBLE FACE BARRIER

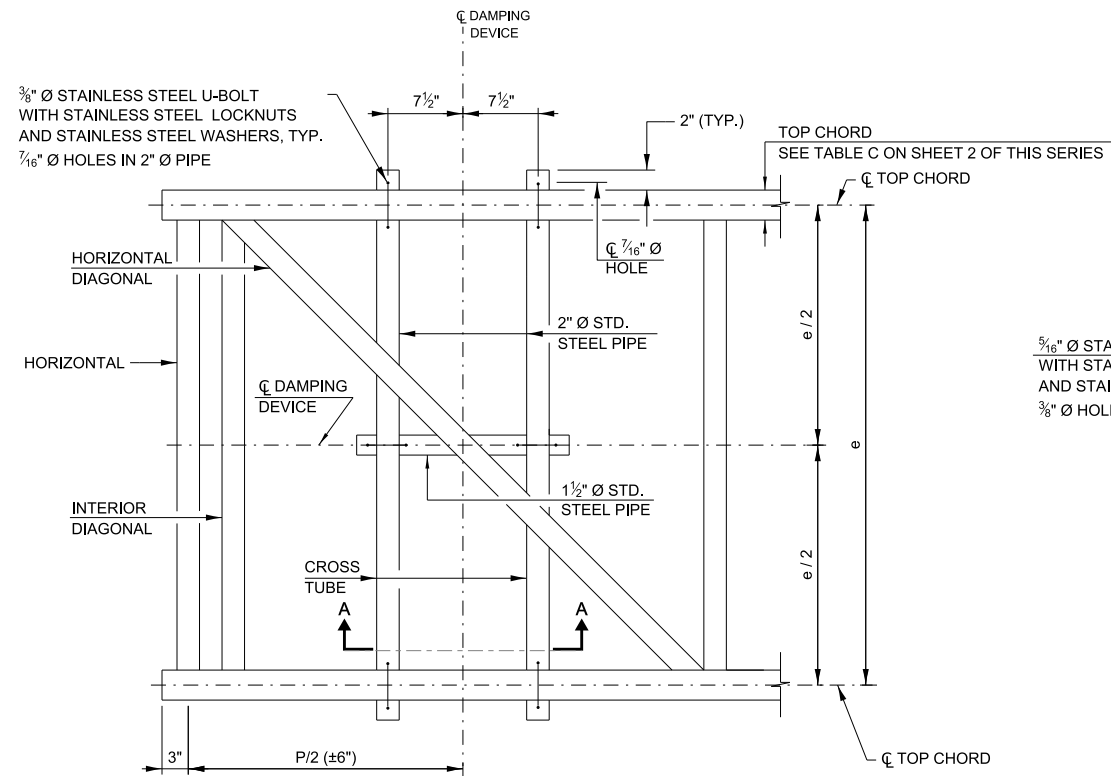
TABLE H: DESIGN TABLE FOR CRASHWALL

| SPAN LENGTH (L) | W | G | H | CLASS SI CONCRETE CU. YD. | REINF. BARS POUND | PROTECTIVE COAT SQ. YD. |
|-----------------|-------|-------|---|---------------------------|-------------------|-------------------------|
| <= 20' | 5'-0" | 4'-6" | 6 | 1.7 | 340 | 6.0 |
| 21'-30' | 5'-0" | 4'-6" | 6 | 1.7 | 340 | 6.0 |
| 31'-40' | 6'-0" | 5'-0" | 7 | 2.0 | 350 | 7.0 |
| 41'-50' | 6'-0" | 5'-0" | 7 | 2.0 | 350 | 7.0 |

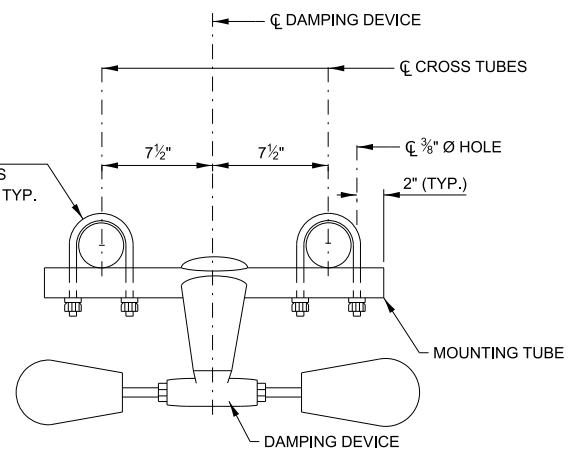


OVERHEAD SIGN STRUCTURE CANTILEVER TYPE STRUCTURE DETAILS

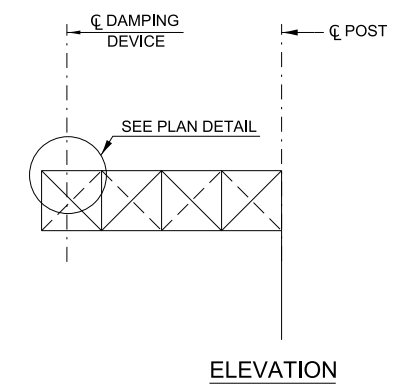
APPROVED BY: *Manar Nashif* DATE: 03/01/2026
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PLAN DETAIL

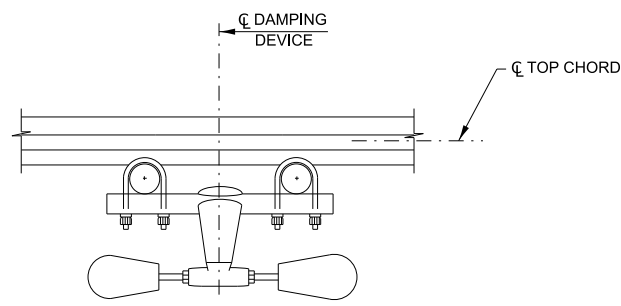


TRUSS DAMPING DEVICE CONNECTION DETAIL

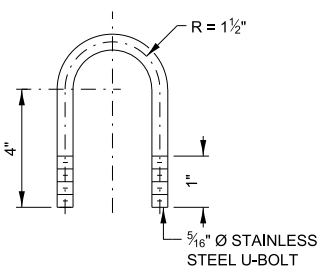


ELEVATION

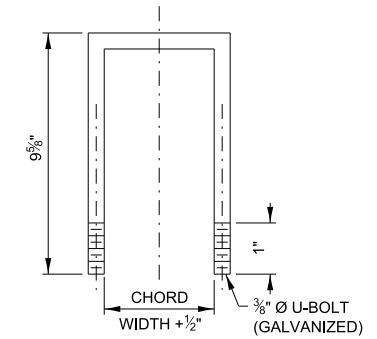
NOTE:
 DAMPER: ONE DAMPER PER TRUSS. (31 LBS. STOCKBRIDGE-TYPE)
 29" MINIMUM BETWEEN ENDS OF WEIGHTS.



SECTION A-A



DAMPING DEVICE MOUNTING TUBE U-BOLT DETAIL (TYPICAL)



TOP CHORD TO CROSS TUBE U-BOLT DETAIL (TYPICAL)

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 CHIEF ENGINEERING OFFICER
 DATE: 03/01/2026



OVERHEAD SIGN STRUCTURE
 CANTILEVER TYPE
 STRUCTURE DETAILS

VERSION: 2026-03 STANDARD: F4-16 SHEET: 8 OF 12

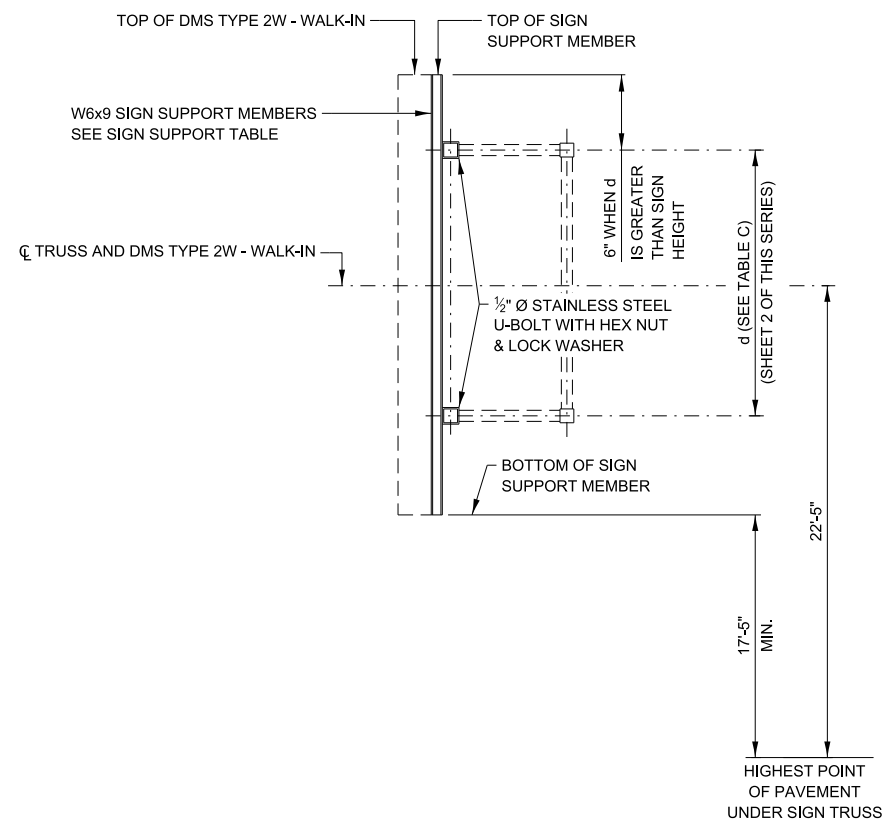
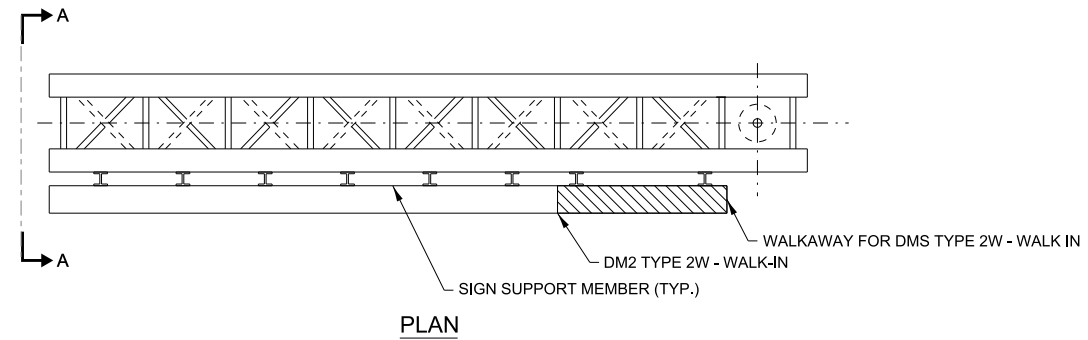
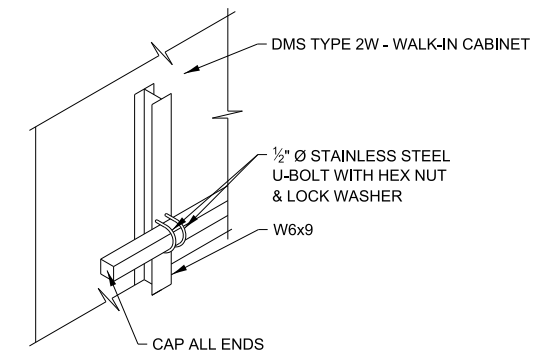


TABLE I: SIGN SUPPORT TABLE

| SIGN WIDTH | | NUMBER OF SIGN 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 |
| 26'-0" | 32'-0" | 6 |

TABLE J: DMS TYPE 2W - WALK-IN TABLE

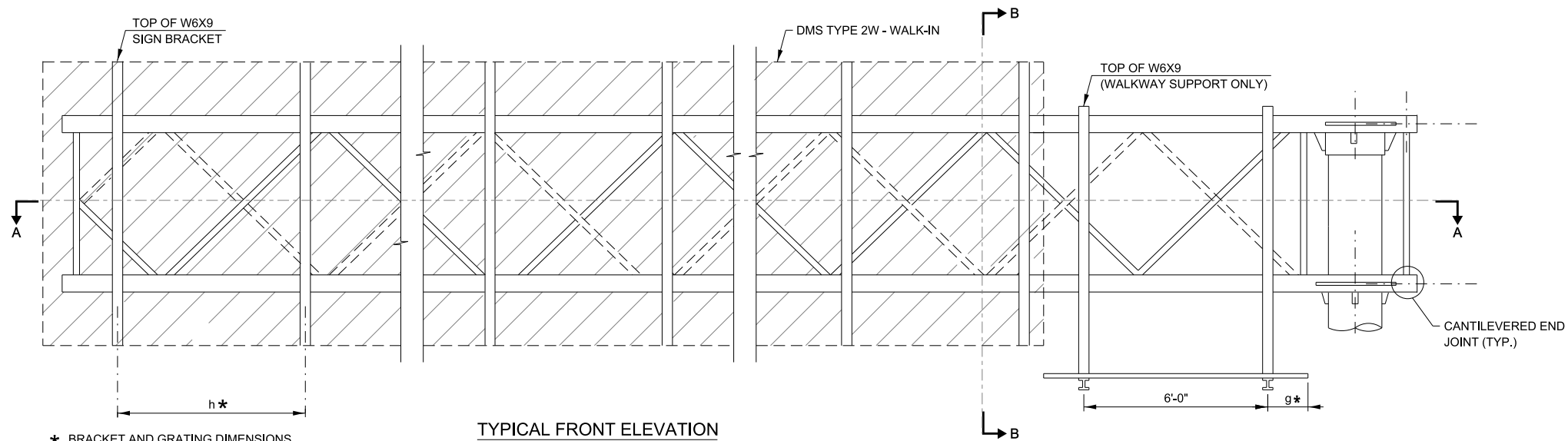
| MAXIMUM TRUSS LENGTH | W6x9 | | | MAXIMUM WEIGHT |
|----------------------|--------|--------|-----------|----------------|
| | HEIGHT | WIDTH | DEPTH | |
| 40 FEET | 8'-0" | 26'-6" | 3'-4 1/2" | 4200 LBS. |



NOTES:

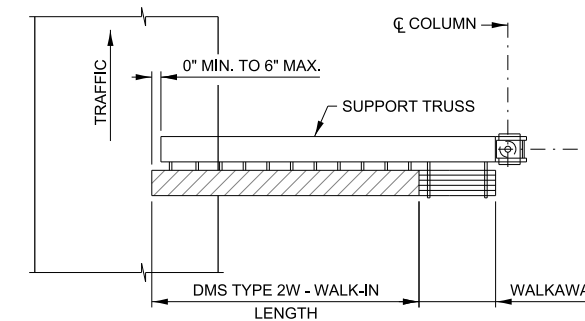
- DMS TYPE 2W - WALK-IN SHALL BE ATTACHED TO TRUSS AS CLOSE TO PANEL JOINTS AS POSSIBLE.
- VERIFY SIGN SUPPORT MEMBER LENGTH PRIOR TO FABRICATION.
- DMS TYPE 2W - WALK-IN MANUFACTURER SHALL DESIGN, PROVIDE AND INSTALL HORIZONTAL MOUNTING MEMBERS. VERTICAL SPACING OF HORIZONTAL MEMBERS SHALL BE DESIGNED BY DMS TYPE 2W - WALK-IN MANUFACTURER. VERIFY VERTICAL SPACING WITH HOLES FOR STAINLESS STEEL U-BOLT.

APPROVED BY: *Manar Nashif*
 CHIEF ENGINEERING OFFICER
 DATE: 03/01/2026



* BRACKET AND GRATING DIMENSIONS ARE NOMINAL AND WILL VARY BASED ON ACTUAL DMS TYPE 2W - WALK-IN DIMENSIONS PLUS MANUFACTURER'S MOUNTING DEVICES.

TYPICAL FRONT ELEVATION
WITH HANDRAIL OMITTED FOR CLARITY.
FOR SECTION B-B, SEE SHEET 11 OF THIS SERIES.



PLAN WALKWAY AND HANDRAIL SKETCH
(ROAD PLAN BENEATH TRUSS VARIES)
WALKWAY MAY BE LOCATED AT RIGHT OR LEFT END OF TRUSS.

NOTES:
SPACE WALKWAY BRACKETS AND SIGN BRACKETS W6X9 FOR EFFICIENCY AND WITHIN LIMITS SHOWN:

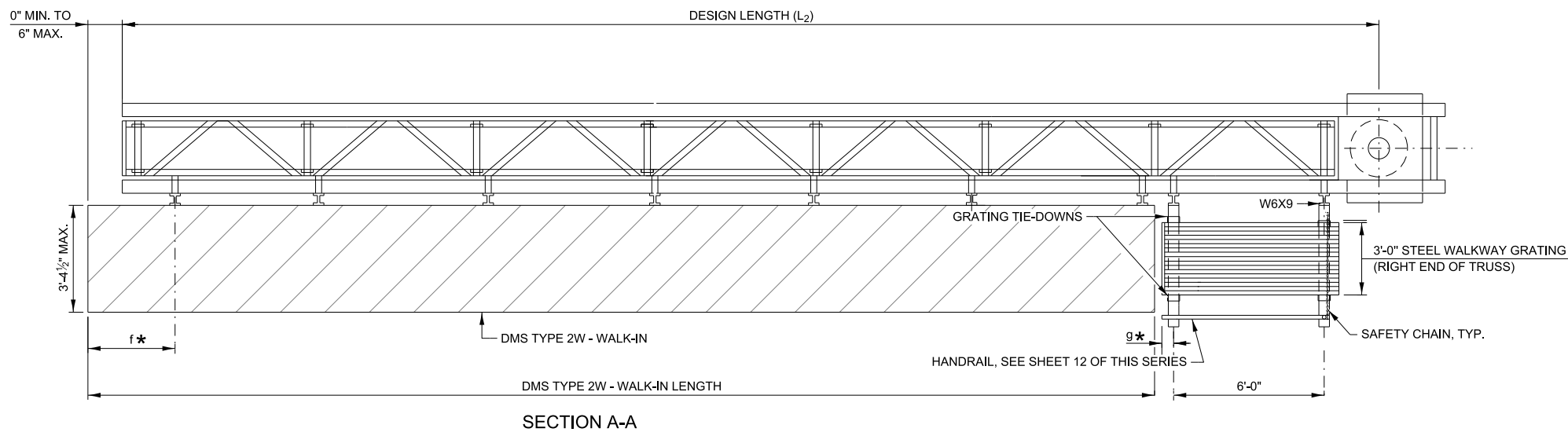
f = 12" MAXIMUM, 4" MINIMUM (END OF SIGN TO C OF NEAREST BRACKET)
g = 12" MAXIMUM, 4" MINIMUM (END OF WALKWAY GRATING TO C OF NEAREST SUPPORT BRACKET)
h = 6'-0" MAXIMUM (C TO C SIGN AND/OR WALKWAY SUPPORT BRACKETS, W6X9)

FOR SECTION B-B, SEE SHEET 11 OF THIS SERIES.

WALKWAY AND TRUSS GRATING WIDTH DIMENSIONS ARE NOMINAL AND MAY VARY ± 1/2" BASED ON AVAILABLE STANDARD WIDTH.

PLACE ALL SIGN AND WALKWAY BRACKETS AS CLOSE TO PANEL POINTS AS PRACTICAL.

DMS TYPE 2W - WALK-IN SHALL HAVE THE DOOR AT THE END, OPPOSITE THE WALKWAY SECURED IN A CLOSED POSITION.



PLACE ALL SIGN AND WALKWAY BRACKETS AS CLOSE TO PANEL POINTS AS PRACTICAL.

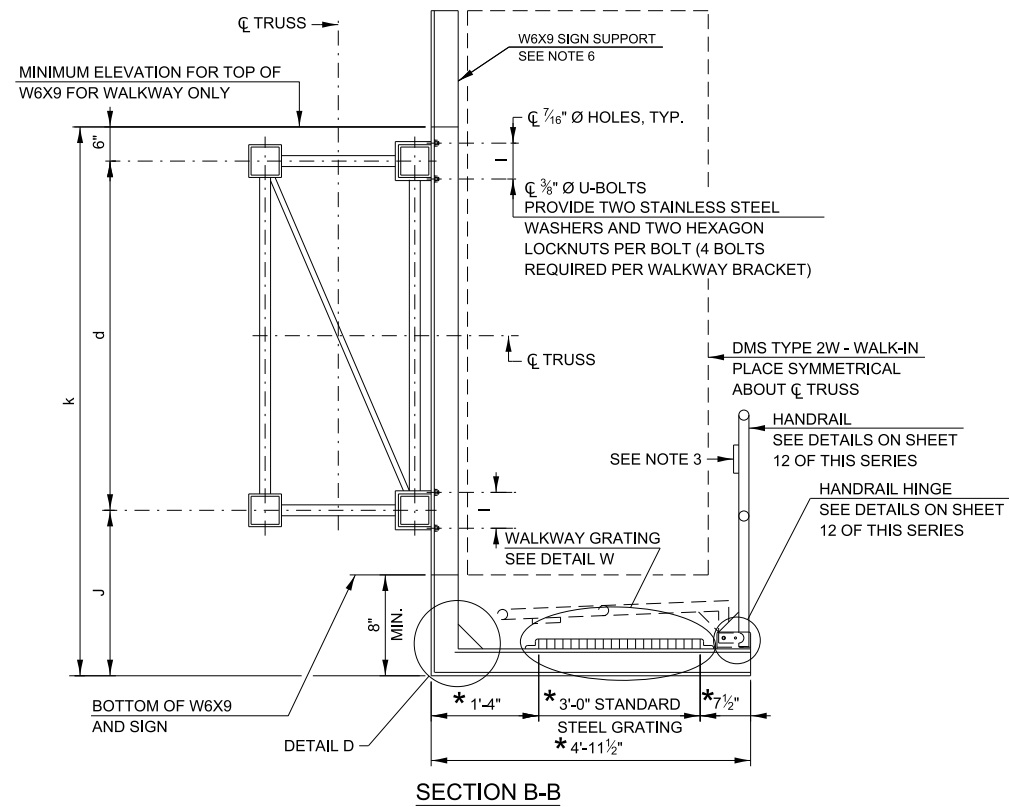
BRACKET TABLE

| SIGN WIDTH | | NUMBER OF 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 |

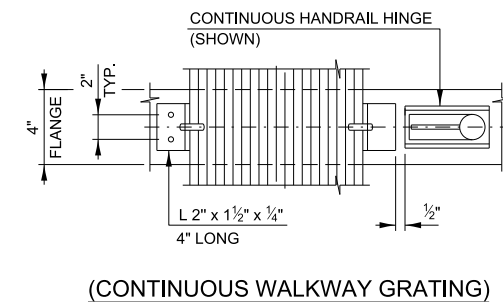
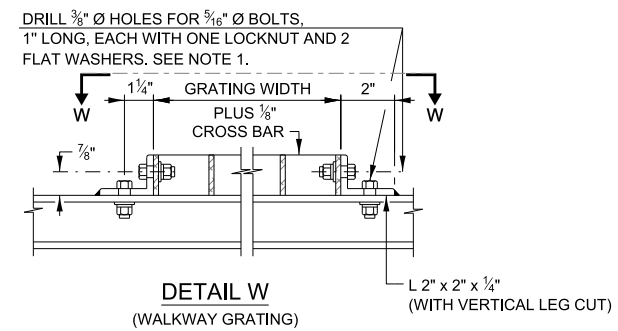
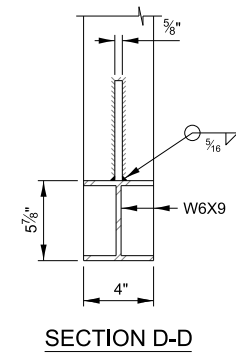
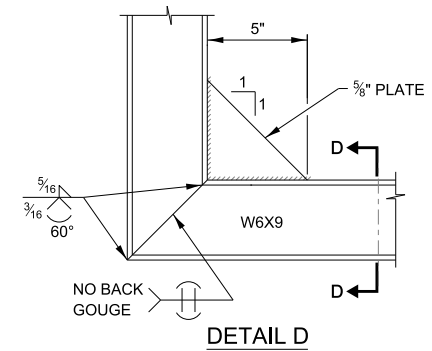
APPROVED BY: *Manan Nashif*
CHIEF ENGINEERING OFFICER
DATE: 03/01/2026

OVERHEAD SIGN STRUCTURE CANTILEVER TYPE STRUCTURE DETAILS

VERSION: 2026-03 STANDARD: F4-16 SHEET: 10 OF 12



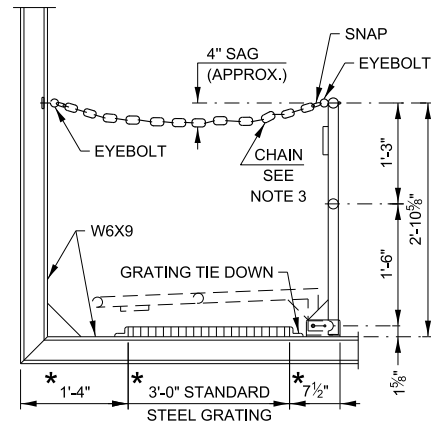
* BRACKET AND GRATING DIMENSIONS ARE NOMINAL AND WILL VARY BASED ON ACTUAL DMS TYPE 2W - WALK-IN DIMENSIONS PLUS MANUFACTURERS MOUNTING DEVICE



NOTES:

1. DRILLING HOLES IN GRATING MAY BE DONE IN SHOP OR FIELD, BASED ON CONTRACTOR'S PREFERENCE AND SUBJECT TO ACCURATE ALIGNMENT.
2. IF HANDRAIL JOINT PRESENT, WELD ANGLE TO W6X9 AND 1/4" EXTENSION BARS. SEE SHEET 12 OF THIS SERIES.
3. ϕ 1/8" x 1/2" X 2" WELDED TO HANDRAIL POSTS TO PROTECT LOCATIONS THAT CONTACT GRATING.
4. DMS TYPE 2W - WALK-IN MANUFACTURER SHALL DESIGN AND SUPPLY HARDWARE FOR CONNECTION TO W6X9. BOLTS SHALL BE STAINLESS STEEL OR HOT DIP GALVANIZED HIGH STRENGTH PER IDOT SPECIFICATIONS.

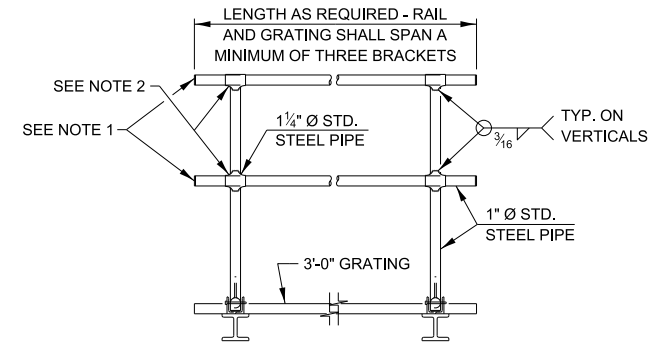
APPROVED BY: *Manar Nashif*
 CHIEF ENGINEERING OFFICER
 DATE: 03/01/2026



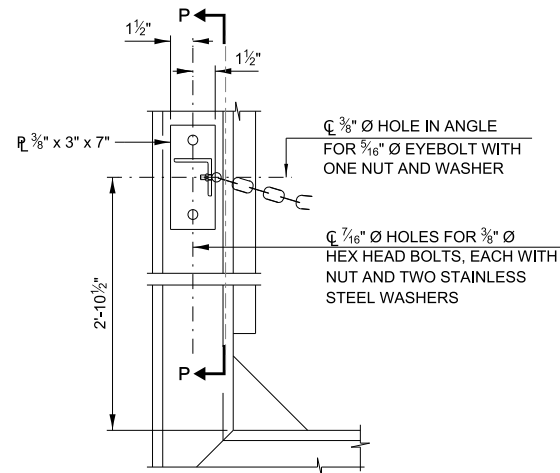
SIDE ELEVATION
(SHOWING SAFETY CHAIN W/O SIGN)

* BRACKET AND GRATING DIMENSIONS ARE NOMINAL AND WILL VARY BASED ON ACTUAL DMS TYPE 2W - WALK-IN DIMENSIONS PLUS MANUFACTURERS MOUNTING DEVICE.

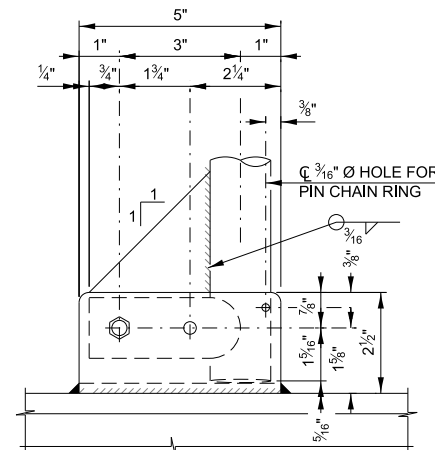
HANDRAIL DETAILS



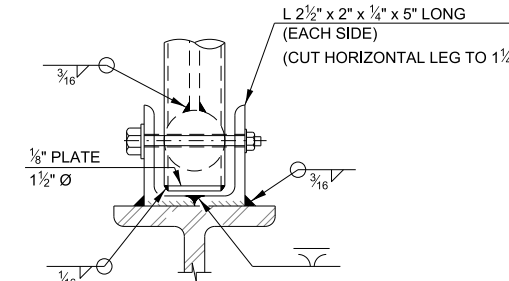
FRONT ELEVATION



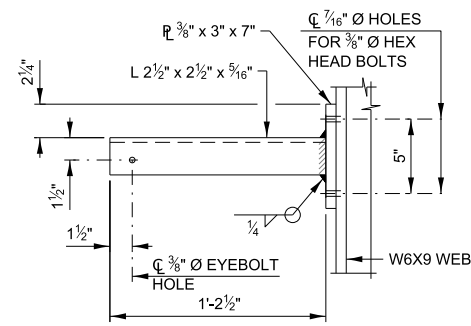
ALTERNATE SAFETY CHAIN ATTACHMENT
ITEMS NOT SHOWN SAME AS "SIDE ELEVATION" OF "HANDRAIL DETAILS"



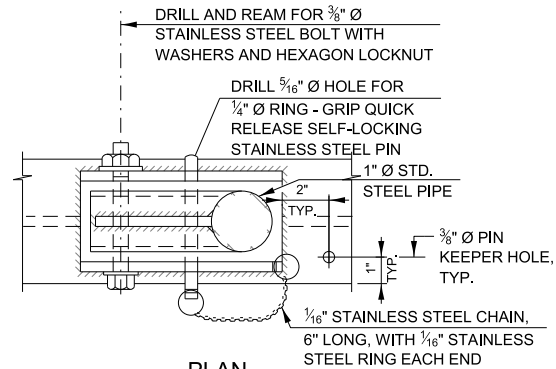
SIDE ELEVATION



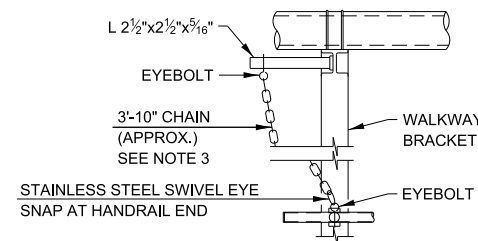
FRONT ELEVATION
DETAILS NOT SHOWN SAME AS "ELEVATION" AT RIGHT.



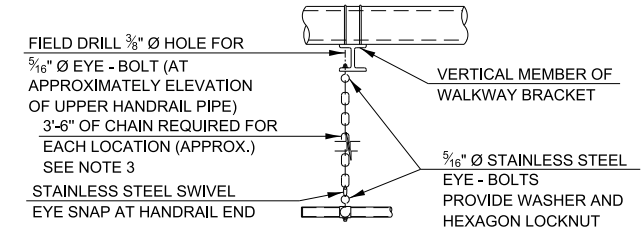
SECTION P-P



PLAN
DETAIL E HANDRAIL HINGE



ALTERNATE SAFETY CHAIN ATTACHMENT
DETAILS NOT SHOWN SIMILAR TO "SAFETY CHAIN" DETAILS (WALKWAY OMITTED FOR CLARITY)

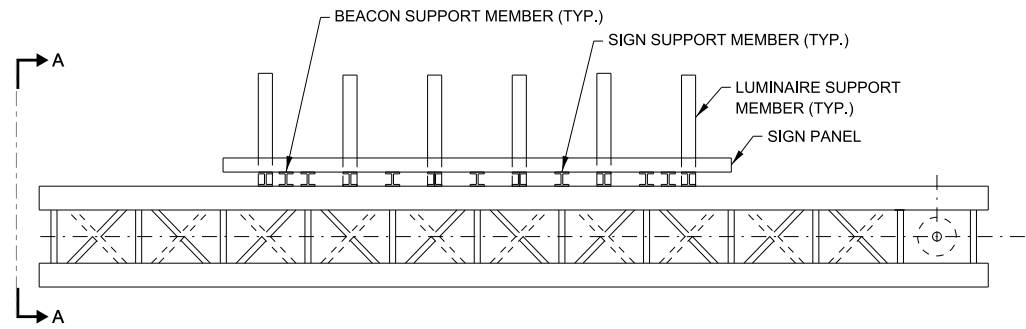


SAFETY CHAIN
ONE REQUIRED FOR EACH END OF WALKWAY.

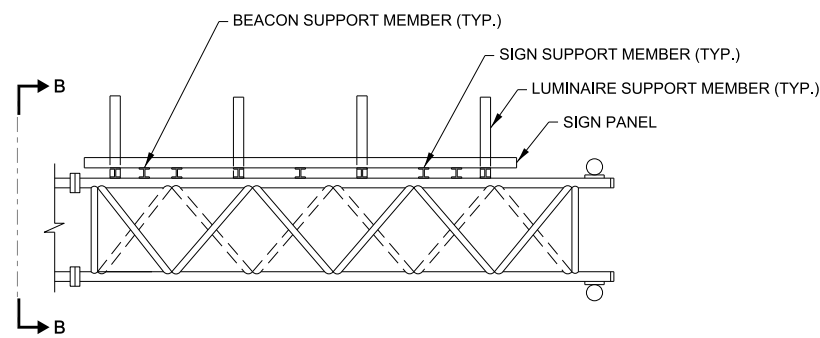
NOTES:

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)
2. HORIZONTAL HANDRAIL MEMBER SHALL BE CONTINUOUS THRU 1 1/4" Ø PIPE. PROVIDE 7/16" Ø HOLE IN 1 1/4" Ø PIPE FOR 3/8" Ø BOLT. FIELD DRILL 7/16" Ø HOLE IN HORIZONTAL RAIL MEMBER. PROVIDE LOCKNUT AND TWO STAINLESS STEEL WASHERS FOR BOLT. (USE 3/16" EYEBOLTS IN 7/16" Ø HOLES ON TOP RAIL AT ENDS ONLY.)
3. 3/16" TYPE 304L STAINLESS STEEL CHAIN, APPROXIMATELY 12 LINKS PER FOOT.

APPROVED BY: *Manar Nashif* DATE: 03/01/2026
CHIEF ENGINEERING OFFICER



PLAN

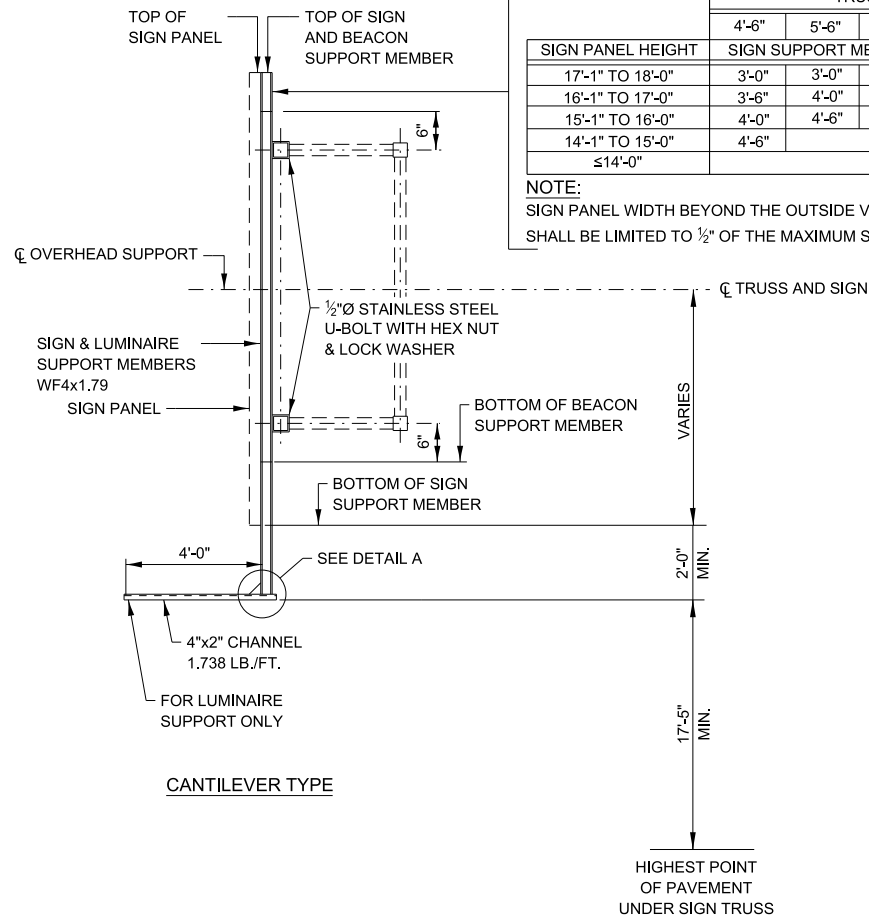


PLAN

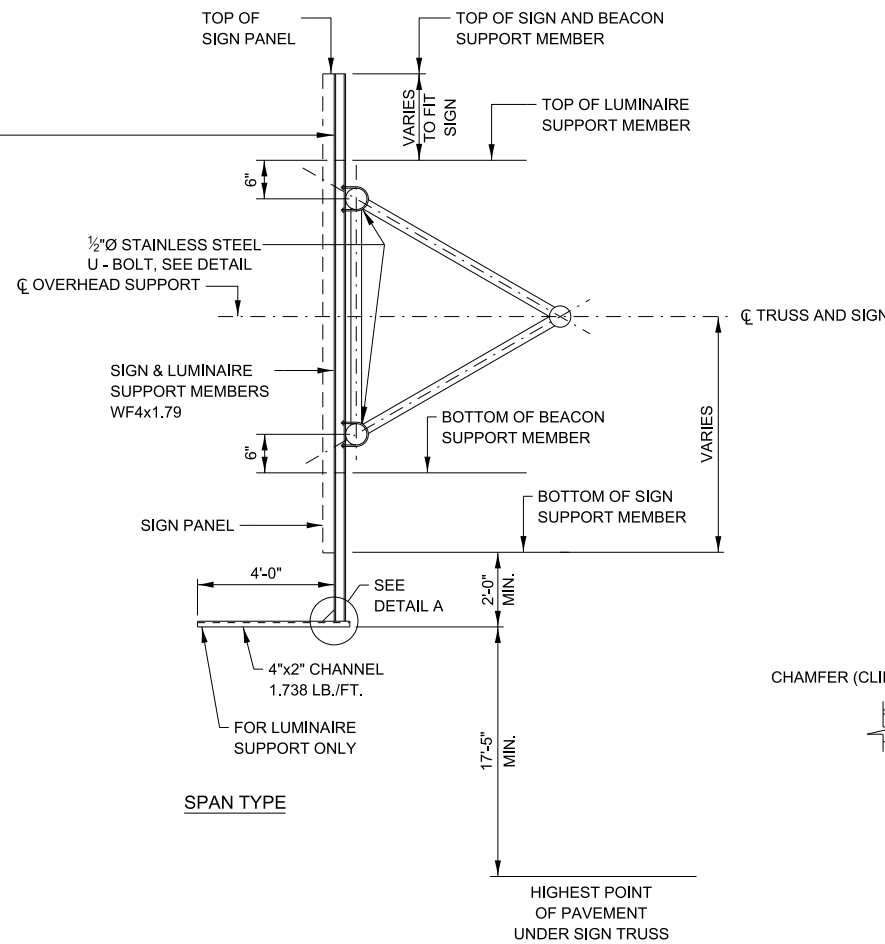
SIGN SUPPORT MEMBERS-WF4x1.79

| SIGN PANEL HEIGHT | TRUSS DEPTH | | | | |
|-------------------|-------------|-------|-------|-------|--------|
| | 4'-6" | 5'-6" | 7'-0" | 8'-2" | 8'-10" |
| 17'-1" TO 18'-0" | 3'-0" | 3'-0" | 4'-6" | 5'-6" | 6'-0" |
| 16'-1" TO 17'-0" | 3'-6" | 4'-0" | 5'-0" | 6'-0" | |
| 15'-1" TO 16'-0" | 4'-0" | 4'-6" | 6'-0" | | |
| 14'-1" TO 15'-0" | 4'-6" | 6'-0" | | | |
| ≤14'-0" | | 6'-0" | | | |

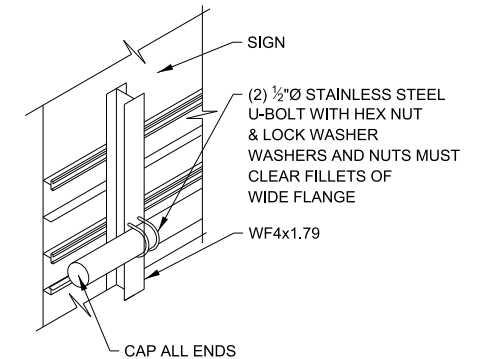
NOTE:
SIGN PANEL WIDTH BEYOND THE OUTSIDE VERTICAL MEMBER SHALL BE LIMITED TO 1/2" OF THE MAXIMUM SPACING



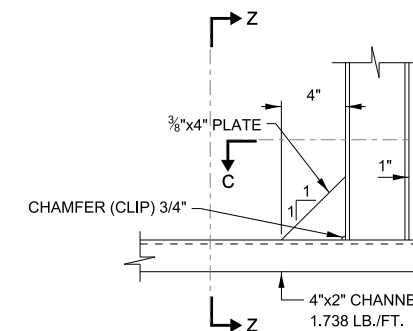
SECTION A-A



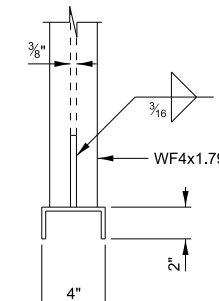
SECTION B-B



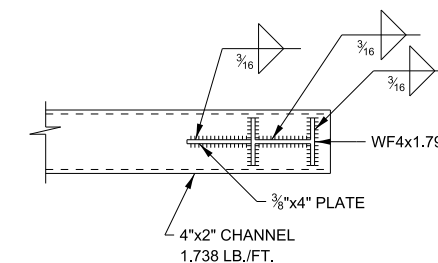
STAINLESS STEEL U-BOLT DETAIL



DETAIL A



SECTION Z-Z



SECTION C-C

SIGN AND LUMINAIRE SUPPORT DETAIL

NOTES:

- SIGN PANEL SHALL BE ATTACHED TO TRUSS AS CLOSE TO PANEL JOINTS AS POSSIBLE.
- LUMINAIRE SUPPORT MEMBERS TO BE INSTALLED ONLY WHEN SIGN STRUCTURE IS TO BE ILLUMINATED.
- BEACON SUPPORT MEMBERS TO BE INSTALLED ONLY WHEN FLASHING BEACON IS REQUIRED.
- WF4x1.79 AND 4"x2" CHANNEL SHALL BE 6061-T6 ALUMINUM.
- WELDS MUST BE IN ACCORDANCE WITH AWS D1.2.
- LUMINAIRE SHALL NOT HAVE A PROJECTED AREA FOR WIND LOADS LARGER THAN 144IN.
- THE C.G. OF THE LUMINAIRE SHALL NOT EXCEED 6" VERTICALLY OR HORIZONTALLY FROM WHERE IT ATTACHES ON THE 4"x2" CHANNEL.
- THE MAXIMUM WEIGHT FOR THE LUMINAIRE SHALL BE 15LBS.
- THE REQUIRED MOUNTING HARDWARE FOR SIGN PANELS SHALL BE FURNISHED BY THE CONTRACTOR.

NOTES:

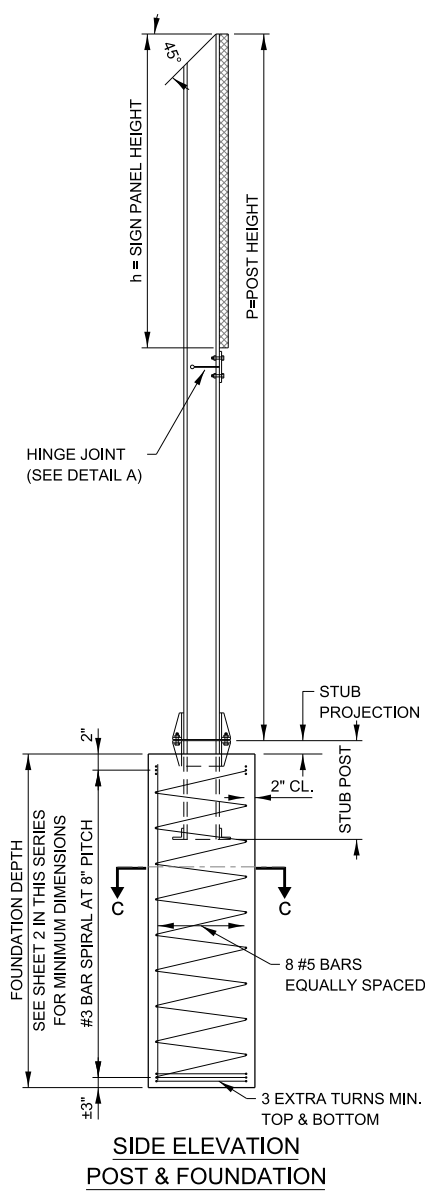
ALL MATERIAL IS ALUMINUM (UNLESS OTHERWISE NOTED).



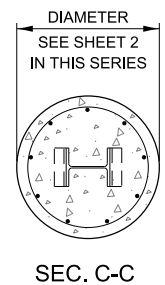
OVERHEAD SIGN STRUCTURE
SIGN, LUMINAIRE AND
BEACON SUPPORTS

| REVISIONS | |
|------------|---|
| DATE | DESCRIPTION |
| 03-01-2025 | ADDED NOTE 9. |
| 03-01-2021 | UPDATED DESIGN LOADING AND DESIGN CRITERIA. |
| 03-01-2020 | ADDED BEACON DETAILS. |
| 03-01-2019 | REVISED NOTE 2. |
| 03-01-2018 | ADDED VERTICAL CLEARANCE. |

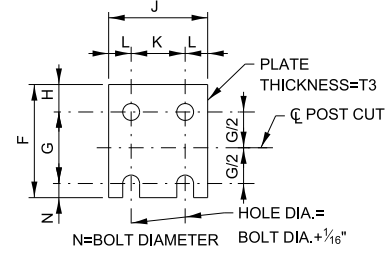
APPROVED BY: *Manar Nashif* DATE: 03/01/2025
CHIEF ENGINEERING OFFICER



**SIDE ELEVATION
POST & FOUNDATION**



SEC. C-C

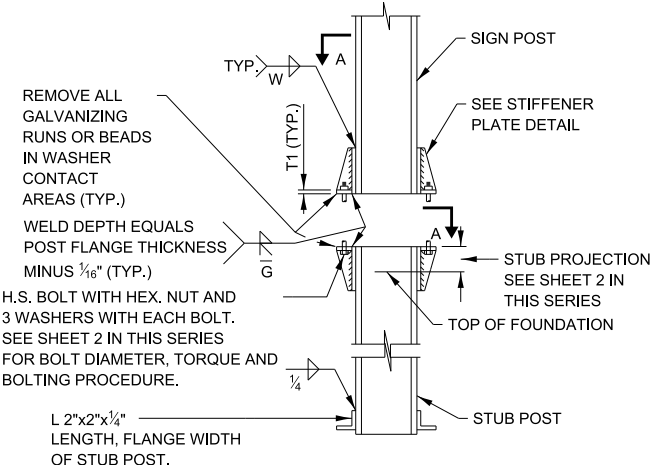


FUSE PLATE DETAIL
INSTALL WITH NOTCHES TOWARDS BASE

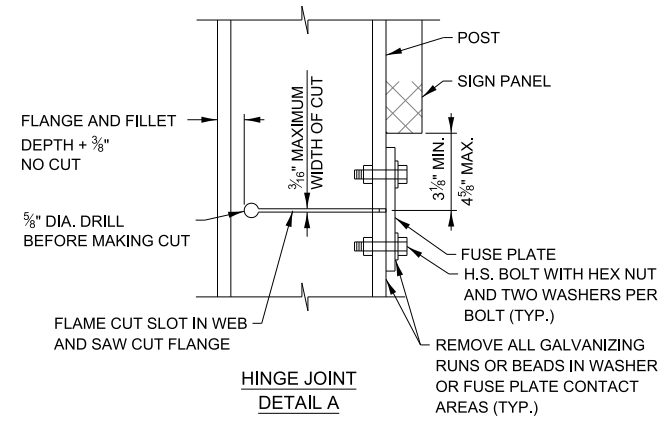
| G & H DIM. TABLE | | |
|------------------|--------|--------|
| BOLT DIA. | G | H |
| 1/2" | 2" | 1 1/8" |
| 5/8" | 2 1/4" | 1 1/4" |
| 3/4" | 2 1/2" | 1 3/8" |
| 7/8" | 2 3/4" | 1 1/2" |
| 1" | 3" | 1 5/8" |
| 1 1/8" | 3 1/4" | 1 3/4" |
| 1 1/4" | 3 1/2" | 1 7/8" |

FABRICATORS NOTES

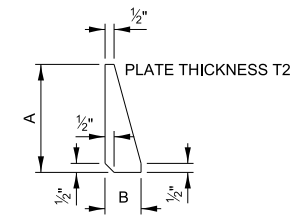
THE SLOT AND THE 5/8" DIA. HOLE IN THE WEB AND THE FUSE PLATE BOLT HOLES IN THE FLANGE SHALL BE MADE BEFORE GALVANIZING. POST FLANGE SHALL BE SAW CUT AFTER GALVANIZING AND BARE METAL SURFACES SHALL BE COATED WITH AN APPROVED ZINC SOLDER OR ZINC-RICH PAINT. THESE SURFACES SHALL NOT BE COATED UNTIL THE FUSE PLATE IS INSTALLED AND BOLTS FULLY TIGHTENED.



**ELEVATION
SIGN POST & STUB POST**

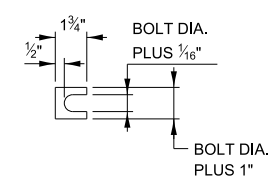


**HINGE JOINT
DETAIL A**



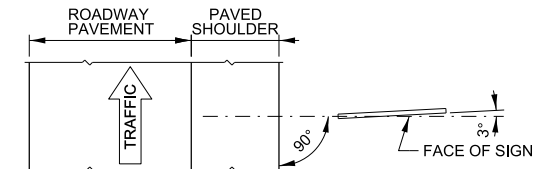
**STIFFENER PLATE
DETAIL**

SEE SHEET 2 IN THIS SERIES FOR DIMENSIONS

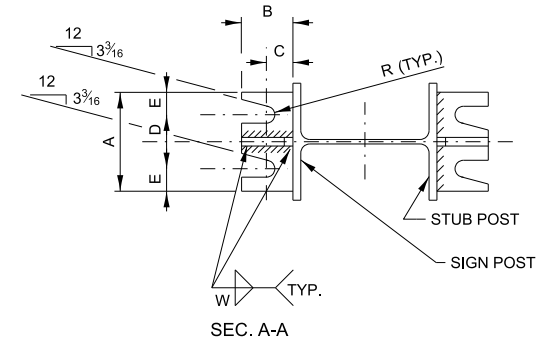


SHIM DETAIL

FURNISH 2-.012" THICK AND 2-.032" THICK SHIMS PER POST. SHIMS SHALL BE FABRICATED FROM BRASS SHIM STOCK CONFORMING TO ASTM B36.



LOCATION SKETCH



SEC. A-A

GENERAL NOTES

DESIGN: 2015 AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, 1ST EDITION, WITH 2020 INTERIM REVISIONS, INSTRUCTIONS AND INFORMATION

CONSTRUCTION: STANDARD SPECIFICATIONS AND THE SPECIAL PROVISIONS.

LOADING: FOR 120 MPH WIND VELOCITY PLUS 14% GUST FACTOR NORMAL TO SIGN.

CONTROLLING LOAD COMBINATION (EXTREME 1) PER AASHTO: 1.1DC + 1.0W

DESIGN STRESSES:
STRUCTURAL STEEL - PER AASHTO 36,000 P.S.I.
REINFORCING STEEL - 60,000 P.S.I.
CLASS SI CONCRETE - 3,500 P.S.I.

FOUNDATION:
MINIMUM UNCONFINED COMPRESSIVE STRENGTH, Qu FOR ALL LAYERS FOR COHESIVE SOILS (CLAYS) SHALL BE 1.25 TON/SQ.FT.

WELDING: ALL WELDING TO BE CONTINUOUS UNLESS OTHERWISE SHOWN. ALL WELDING TO BE DONE IN ACCORDANCE WITH CURRENT AWS SPECIFICATIONS, AND STANDARD SPECIFICATIONS.

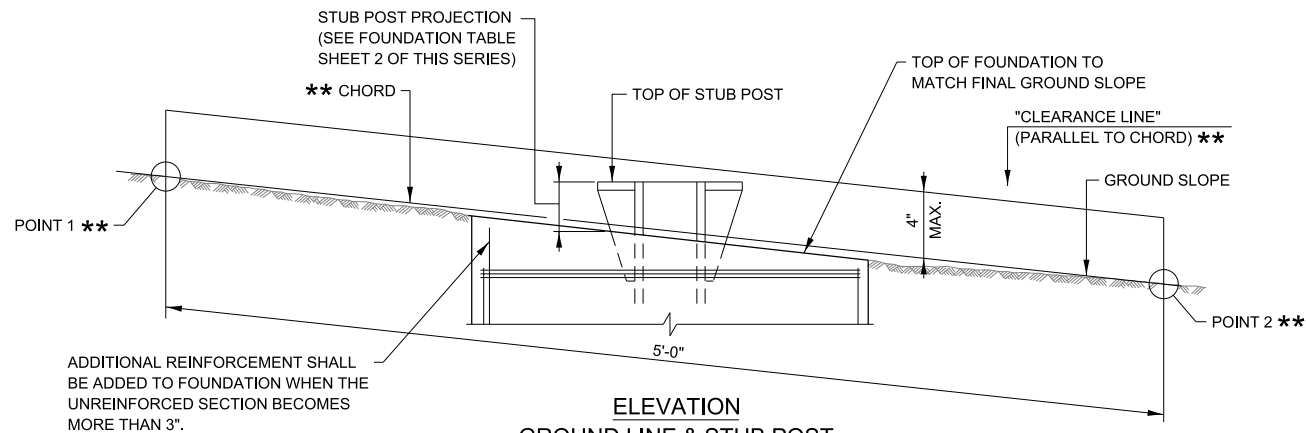
MATERIALS:
ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 AND LRFD SPECIFICATIONS. ALL PLATES SHALL CONFORM TO ASTM A572-GR50.

ALL HIGH STRENGTH STEEL BOLTS, NUTS AND WASHERS SHALL CONFORM TO STANDARD SPECIFICATIONS.

HIGH STRENGTH STEEL BOLTS, NUTS AND HARDENED WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M232.

HIGH STRENGTH BOLTS IN BASE PLATES SHALL BE TIGHTENED TO THE TORQUE SHOWN ON SHEET 2 IN THIS SERIES.

AFTER FABRICATION, THE POST, FUSE PLATE, BASE PLATE AND UPPER 6" OF STUB POST SHALL BE HOT - DIP GALVANIZED ACCORDING TO ASTM M111, EXCEPT AS NOTED UNDER FABRICATOR NOTES.



**ELEVATION
GROUND LINE & STUB POST**

** FOR ALL "POINT 1" AND "POINT 2" LOCATIONS, "CLEARANCE LINE" MUST BE AT OR ABOVE TOP OF STUB POST.

ADDITIONAL REINFORCEMENT SHALL BE ADDED TO FOUNDATION WHEN THE UNREINFORCED SECTION BECOMES MORE THAN 3".

APPROVED BY: *Manar Nashif*
CHIEF ENGINEERING OFFICER
DATE: 03/01/2026

| REVISIONS | |
|------------|--|
| DATE | DESCRIPTION |
| 03-01-2026 | CLEAR HEIGHT DIMENSION CALLOUTS ADDED. NOTE REV. TO INCLUDE LONGEST POST, REVISED EDGE OF TRAVELED LANE TO EDGE OF PAVEMENT IN NOTE 5 AND IN SHIELDED AND UNSHIELDED SLOPE ELEVATIONS. |

Illinois Tollway

BREAKAWAY SIGN SUPPORT DETAILS

VERSION: 2026-03 STANDARD: F9-08 SHEET: 1 OF 5

| POST | FOUNDATION TABLE | | | | | | | | | | | | BASE CONNECTION DATA TABLE | | | | | | | | | | |
|--------|------------------|------------|-------|---------------|----|-------------|----|--------|------------|-----------------|---------|------|----------------------------|------------------------------------|------------------------------------|-----|-----|-------------------------------------|-----|-----|-----|-----|-------|
| | FOUNDATION | | | REINFORCEMENT | | | | | | STUB POST | | | BOLT SIZE AND TORQUE | A | B | C | D | E | T1 | T2 | W | R | |
| | DIA. | MIN. DEPTH | CY. ★ | VERTICAL BARS | | BAR SPIRALS | | LBS.★★ | STUB LGTH. | STUB PROJECTION | LBS.★★★ | | | | | | | | | | | | |
| W6x9 | 2'-0" | 6'-0" | .70 | 8 | #5 | 5'-9" | #3 | | | | | 20½" | 79' | 78 | 2'-3" | 3" | 44 | 5/8" ★ x 3¼" LG. TORQUE = 450" # | 6" | 2¼" | 1¼" | 3½" | 1¼" |
| W6x15 | 2'-0" | 6'-0" | .70 | 8 | #5 | 5'-9" | #3 | 20½" | 79' | 78 | 2'-6" | 3" | 71 | ¾" ★ x 3¾" LG. TORQUE = 750" # | 6" | 2½" | 1¾" | | 3¼" | 1¾" | 1" | ½" | 5/16" |
| W8x18 | 2'-0" | 6'-0" | .70 | 8 | #5 | 5'-9" | #3 | 20½" | 79' | 78 | 2'-6" | 3" | 85 | | 7/8" ★ x 4" LG. TORQUE = 950" # | 7" | 2¾" | 1½" | 4" | 1½" | 1" | ¾" | 3/8" |
| W10x22 | 2'-6" | 7'-0" | 1.27 | 8 | #5 | 6'-3" | #3 | 26½" | 105' | 92 | 3'-0" | 2½" | 110 | 1" ★ x 4½" LG. TORQUE = 1100" # | | 7½" | 3" | 1¾" | 4" | 1¾" | 1¼" | ¾" | 3/8" |
| W10x26 | 2'-6" | 7'-6" | 1.39 | 8 | #5 | 6'-9" | #3 | 26½" | 112' | 98 | 3'-0" | 2½" | 137 | | 7/8" ★ x 4" LG. TORQUE = 950" # | 7" | 2¾" | 1½" | 4" | 1½" | 1" | ¾" | 3/8" |
| W12x26 | 2'-6" | 7'-9" | 1.41 | 8 | #5 | 7'-6" | #3 | 26½" | 119' | 107 | 3'-0" | 2½" | 140 | 1" ★ x 4½" LG. TORQUE = 1100" # | | 7½" | 3" | 1¾" | 4" | 1¾" | 1¼" | ¾" | 3/8" |
| W14x30 | 3'-0" | 8'-6" | 2.23 | 8 | #5 | 7'-0" | #3 | 32½" | 145' | 113 | 3'-0" | 2½" | 150 | | 1" ★ x 4½" LG. TORQUE = 1100" # | 7½" | 3" | 1¾" | 4" | 1¾" | 1¼" | ¾" | 3/8" |
| W14x38 | 3'-0" | 9'-0" | 2.36 | 8 | #5 | 7'-9" | #3 | 32½" | 153' | 122 | 3'-6" | 2½" | 208 | 1" ★ x 4½" LG. TORQUE = 1100" # | | 7½" | 3" | 1¾" | 4" | 1¾" | 1¼" | ¾" | 3/8" |
| W16x45 | 3'-0" | 9'-6" | 2.49 | 8 | #5 | 8'-3" | #3 | 32½" | 162' | 130 | 3'-6" | 2½" | 233 | | 1" ★ x 4½" LG. TORQUE = 1100" # | 7½" | 3" | 1¾" | 4" | 1¾" | 1¼" | ¾" | 3/8" |

PROCEDURE FOR ASSEMBLY OF BASE CONNECTION:

- ASSEMBLE POST TO STUB WITH H.S. BOLTS AND ONE OF THE THREE FLAT WASHERS ON EACH BOLT BETWEEN PLATES AS SHOWN.
- SHIMS MAY BE USED BETWEEN PLATES TO LEVEL POST.
- TIGHTEN BOLTS IN BASE PLATE IN A SYSTEMATIC ORDER TO THE REQUIRED TORQUE.
- LOOSEN EACH BOLT AND RETIGHTEN TO THE REQUIRED TORQUE IN SAME ORDER AS INITIAL TIGHTENING.
- BURR OR CENTER PUNCH THREADS AT JUNCTURE OF BOLT AND NUT TO PREVENT NUT FROM LOOSENING.

- ★ QUANTITY OF CLASS SI CONCRETE CONSISTS OF ALL CONCRETE NECESSARY FOR ONE FOUNDATION. (CUBIC YARDS)
- ★★ THIS INCLUDES REINFORCEMENT BARS AND SPIRAL HOOPING REQUIRED FOR ONE FOUNDATION.
- ★★★ INCLUDES WEIGHT OF STUB POST WITH ANGLES, GUSSETS, BASE PLATES, BOLTS, NUTS, WASHERS, PLUS BASE PLATES AND GUSSETS ON MAIN POST, PLUS FUSE PLATE (IF ANY) WITH BOLTS, NUTS AND WASHERS. (ONE POST)

EQUIVALENT TORQUE VALUES

- 450" # = 37.5' #
- 750" # = 62.5' #
- 950" # = 79.2' #
- 1100" # = 91.7' #

| POST | FUSE PLATE DATA TABLE | | | | FUSE PLATE BOLT SIZE TABLE | | | | | | | | | | | | |
|--------|-----------------------|-----|-----|----|----------------------------|-----------|-----------|-----------|---------|-----------|-----------|-----------|-----------|-----------|-----------|---------|---------|
| | J | K | L | T3 | SIGN PANEL HEIGHT (h) | | | | | | | | | | | | |
| | | | | | 4' | 5' | 6' | 7' | 8' | 9' | 10' | 11' | 12' | 13' | 14' | | |
| W6x9 | 4" | 2¼" | ¾" | ¼" | ½"Øx1½" | ½"Øx1½" | ½"Øx1½" | — | — | — | — | — | — | — | — | — | — |
| W6x15 | 6" | 3½" | 1¼" | ¾" | 5/8"Øx2" | 5/8"Øx2" | ¾"Øx2" | ¾"Øx2" | ¾"Øx2" | ¾"Øx2" | ¾"Øx2" | ¾"Øx2" | — | — | — | — | — |
| W8x18 | 5¼" | 2¾" | 1¼" | ¾" | ½"Øx1¾" | 5/8"Øx2" | ¾"Øx2" | ¾"Øx2" | ¾"Øx2" | ¾"Øx2" | ¾"Øx2" | ¾"Øx2" | 7/8"Øx2¼" | 7/8"Øx2¼" | — | — | — |
| W10x22 | 5¾" | 2¾" | 1½" | ¾" | ½"Øx1½" | 5/8"Øx2" | ¾"Øx2¼" | ¾"Øx2¼" | ¾"Øx2¼" | 7/8"Øx2¼" | 7/8"Øx2¼" | 7/8"Øx2¼" | 7/8"Øx2¼" | 7/8"Øx2¼" | 7/8"Øx2¼" | 1"Øx2½" | 1"Øx2½" |
| W10x26 | 5¾" | 2¾" | 1½" | ¾" | ½"Øx2" | 5/8"Øx2¼" | ¾"Øx2½" | ¾"Øx2½" | ¾"Øx2½" | 7/8"Øx2½" | 1"Øx2¾" | 1"Øx2¾" | 1"Øx2¾" | 1"Øx2¾" | 1"Øx2¾" | 1"Øx2¾" | 1"Øx2¾" |
| W12x26 | 6½" | 3½" | 1½" | ¾" | — | — | — | — | — | 7/8"Øx2½" | — | — | 1"Øx2½" | 1"Øx2½" | 1"Øx2½" | 1"Øx2½" | 1"Øx2½" |
| W14x30 | 6¾" | 3½" | 1¾" | ¾" | ½"Øx2" | ½"Øx2" | 5/8"Øx2" | ¾"Øx2¼" | ¾"Øx2¼" | 7/8"Øx2½" | ¾"Øx2½" | 1"Øx2½" | 1"Øx2½" | 1"Øx2½" | 1"Øx2½" | 1"Øx2½" | 1"Øx2½" |
| W14x38 | 6¾" | 3½" | 1¾" | ¾" | — | ½"Øx2" | 5/8"Øx2¼" | 5/8"Øx2¼" | ¾"Øx2½" | 7/8"Øx2½" | ¾"Øx2½" | 1"Øx2½" | 1¼"Øx3" | 1¼"Øx3" | 1¼"Øx3" | 1¼"Øx3" | 1¼"Øx3" |
| W16x45 | 7" | 3½" | 1¾" | ¾" | — | — | — | 5/8"Øx2¼" | ¾"Øx2½" | ¾"Øx2½" | ¾"Øx2½" | 1"Øx2¾" | 1"Øx2¾" | 1½"Øx3" | 1½"Øx3" | 1½"Øx3" | 1½"Øx3" |

| POST | FUSE PLATE DATA TABLE | | | | FUSE PLATE BOLT SIZE TABLE | | | | | | | | | | | | |
|--------|-----------------------|-----|-----|----|----------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---|---|
| | J | K | L | T3 | SIGN PANEL HEIGHT (h) | | | | | | | | | | | | |
| | | | | | 15' | 16' | 17' | 18' | 19' | 20' | 21' | 22' | 23' | 24' | — | | |
| W6x9 | 4" | 2¼" | ¾" | ¼" | — | — | — | — | — | — | — | — | — | — | — | — | — |
| W6x15 | 6" | 3½" | 1¼" | ¾" | — | — | — | — | — | — | — | — | — | — | — | — | — |
| W8x18 | 5¼" | 2¾" | 1¼" | ¾" | — | — | — | — | — | — | — | — | — | — | — | — | — |
| W10x22 | 5¾" | 2¾" | 1½" | ¾" | 1"Øx2½" | — | — | — | — | — | — | — | — | — | — | — | — |
| W10x26 | 5¾" | 2¾" | 1½" | ¾" | 1"Øx2¾" | 1"Øx2¾" | 1"Øx2¾" | — | — | — | — | — | — | — | — | — | — |
| W12x26 | 6½" | 3½" | 1½" | ¾" | 1"Øx2½" | 1"Øx2½" | 1½"Øx3" | 1¼"Øx3" | — | — | — | — | — | — | — | — | — |
| W14x30 | 6¾" | 3½" | 1¾" | ¾" | 1"Øx2½" | 1"Øx2½" | 1½"Øx3" | 1¼"Øx3" | 1¼"Øx3" | — | — | — | — | — | — | — | — |
| W14x38 | 6¾" | 3½" | 1¾" | ¾" | 1¼"Øx3" | 1¼"Øx3" | 1¼"Øx3" | 1¼"Øx3" | 1¼"Øx3" | 1¼"Øx3" | 1¼"Øx3" | 1¼"Øx3" | 1¼"Øx3" | 1¼"Øx3" | 1¼"Øx3" | — | — |
| W16x45 | 7" | 3½" | 1¾" | ¾" | 1¼"Øx3" | 1¼"Øx3" | 1¼"Øx3" | 1¼"Øx3" | 1¼"Øx3" | 1¼"Øx3" | 1¼"Øx3" | 1¼"Øx3" | 1¼"Øx3" | 1¼"Øx3" | 1¼"Øx3" | — | — |

PROCEDURE FOR FUSE PLATE BOLT TIGHTENING:

ALL FRICTION FUSE BOLTS SHALL BE TIGHTENED IN THE SHOP AS APPROVED BY THE ENGINEER ACCORDING TO ONE OF THE FOLLOWING METHODS:

- TURN-OF-NUT TIGHTENING.
- TIGHTENING BY USE OF A DIRECT TENSION INDICATOR.

THE ABOVE METHODS OF INSTALLATION AND TIGHTENING SHALL CONFORM TO THE LATEST ISSUE OF THE SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A-325 OR A-490 BOLTS, FOR SLIP - CRITICAL CONNECTIONS AS ISSUED BY THE RESEARCH COUNCIL ON RIVETED AND BOLTED STRUCTURAL JOINTS OF THE ENGINEERING FOUNDATION.

TIGHTENING SHALL BE TO SUCH A DEGREE AS TO OBTAIN THE FOLLOWING MINIMUM RESIDUAL TENSION IN EACH BOLT.

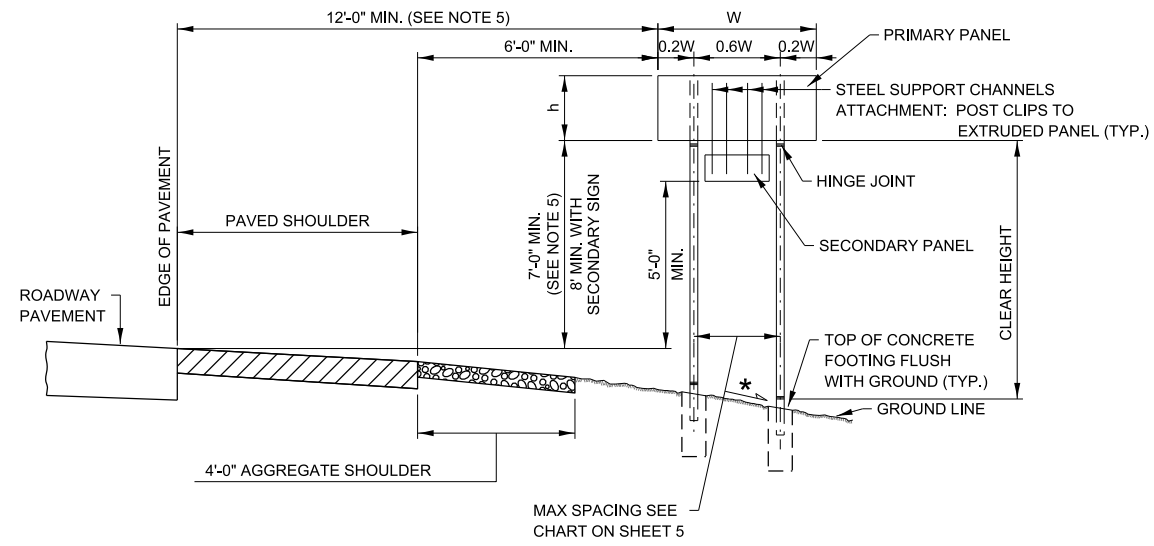
| BOLT DIA. | MIN. RESIDUAL BOLT TENSION | BOLT DIA. | MIN. RESIDUAL BOLT TENSION | BOLT DIA. | MIN. RESIDUAL BOLT TENSION |
|-----------|----------------------------|-----------|----------------------------|-----------|----------------------------|
| ½" | 12,050 | 7/8" | 39,250 | 1¼" | 71,700 |
| 5/8" | 19,200 | 1" | 51,500 | | |
| ¾" | 28,400 | 1½" | 56,450 | | |

APPROVED BY: *Manar Nashif*
 CHIEF ENGINEERING OFFICER
 DATE: 03/01/2026

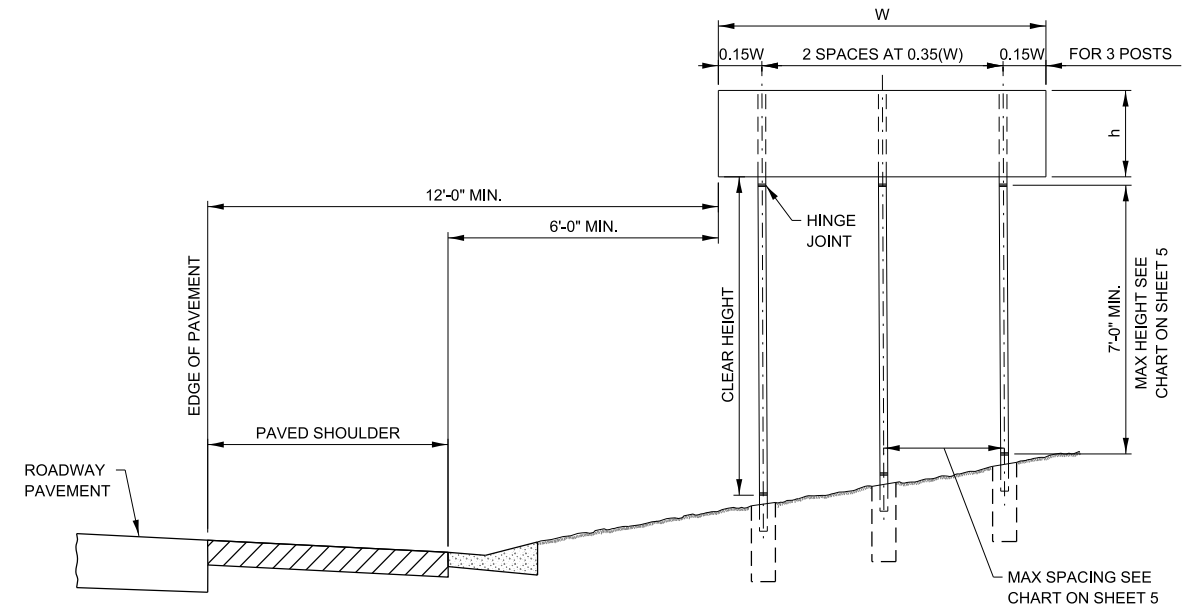


BREAKAWAY SIGN SUPPORT DETAILS

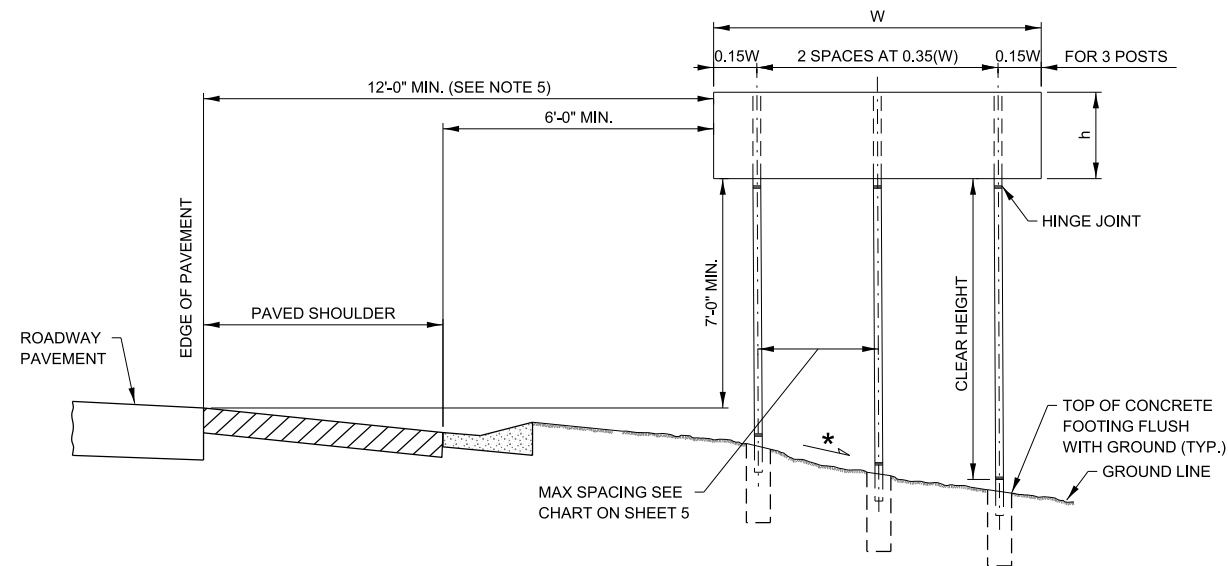
VERSION: 2026-03 STANDARD: F9-08 SHEET: 2 OF 5



CONDITION 1 - SIGN INSTALLATION
 (*) FORESLOPE 1:6 (V:H) OR FLATTER



CONDITION 3 - SIGN INSTALLATION



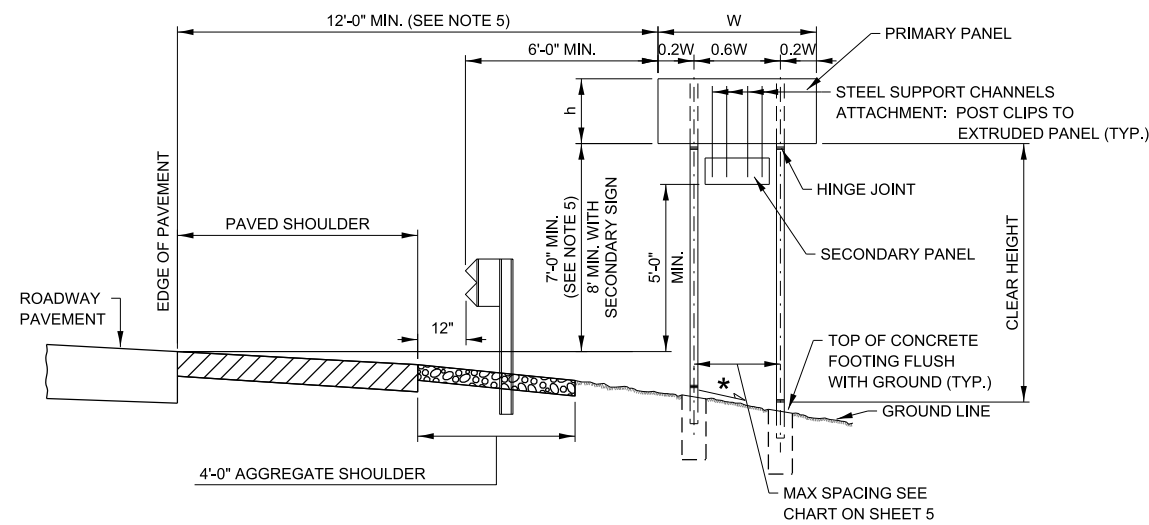
CONDITION 2 - SIGN INSTALLATION
 (*) FORESLOPE 1:6 (V:H) OR FLATTER

UNSHIELDED SLOPE

NOTES:

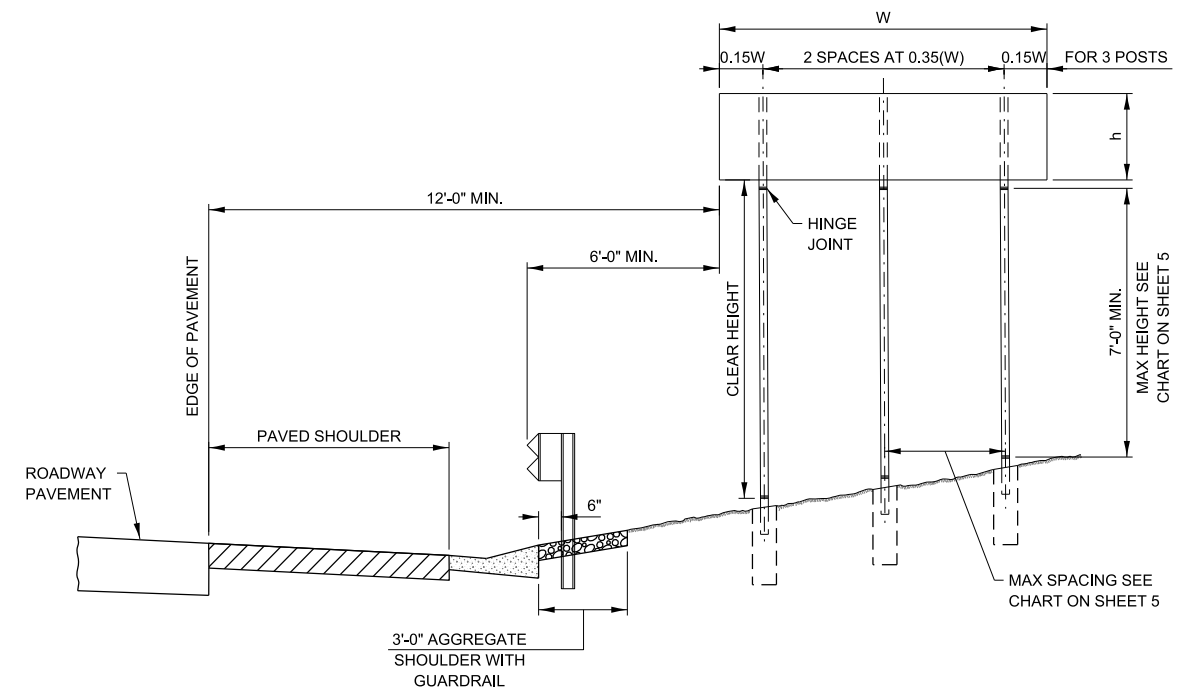
1. SEE SIGN INSTALLATION SCHEDULE IN CONTRACT PLANS FOR DIMENSIONS.
2. THE DIMENSIONS OF ALL POSTS FOR GROUND MOUNTED SIGNS ARE BASED ON DESIGN CROSS SECTIONS. THE CONTRACTOR SHALL VERIFY REQUIRED POST LENGTHS IN THE FIELD, PRIOR TO SUBMITTING SHOP DRAWINGS AND POST FABRICATION TO MAINTAIN THE CLEARANCES SHOWN.
3. SIGN FOUNDATION ELEVATIONS TO BE BASED ON FINISHED SLOPES.
4. ANY ADDITIONAL SIGN TO BE ADDED LATER MUST BE SUPPORTED BY THE EXISTING SIGN PANEL AND NOT THE SIGN POST. MINIMUM CLEARANCES SHALL BE MAINTAINED.
5. SIGNS THAT ARE PLACED WELL OUTSIDE THE CLEAR ZONE MAY BE INSTALLED WITH A MINIMUM HEIGHT OF 5 FEET, MEASURED VERTICALLY FROM THE BOTTOM OF THE SIGN TO THE HORIZONTAL ELEVATION OF THE EDGE OF PAVEMENT.
6. MINIMUM HEIGHT OF LOWEST POST SHALL BE 7'-0" MEASURED BETWEEN STUB PROJECTION AND HINGE JOINT.
7. FOR TWO POSTS SPACED LESS THAN 7 FEET APART, EACH POST SHALL HAVE A MASS LESS THAN 18 lb/ft.
8. WHEN THE TOTAL COMBINED WEIGHT OF THE TWO POSTS LOCATED WITHIN 7 FEET OF EACH OTHER EXCEEDS 600 lbs., THE SIGN SHALL BE PLACED WELL OUTSIDE THE CLEAR ZONE OR BE SHIELDED FROM VEHICULAR IMPACT.

APPROVED BY: *Manar Nashif*
 CHIEF ENGINEERING OFFICER
 DATE: 03/01/2026

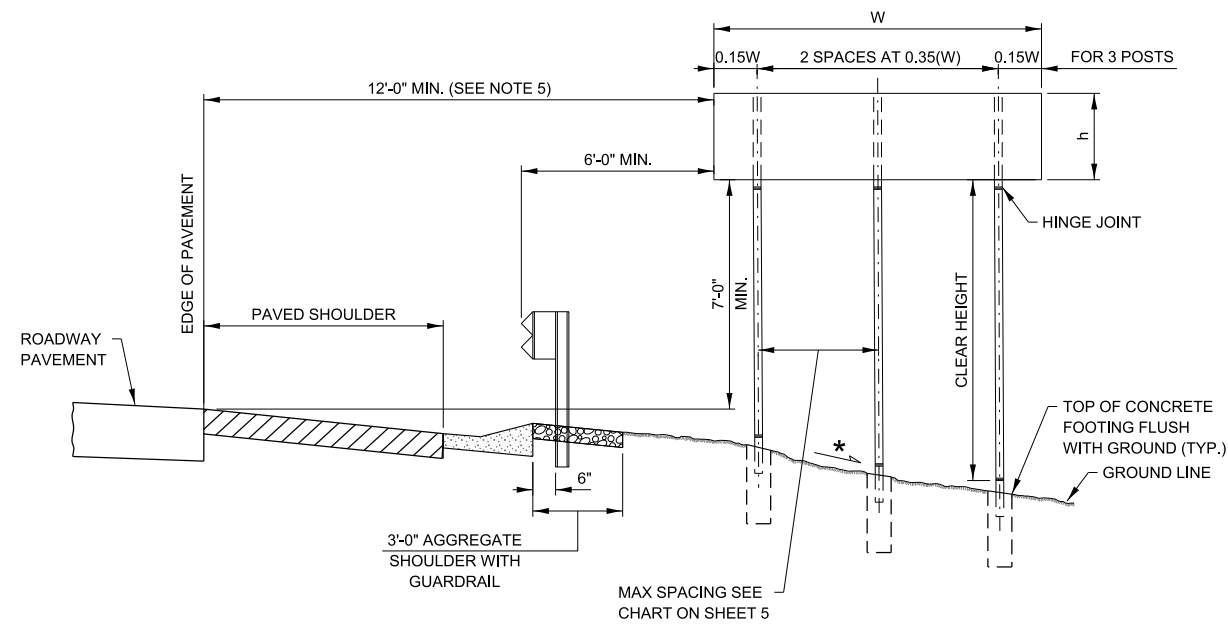


CONDITION 1 - SIGN INSTALLATION

(*) FORESLOPE STEEPER THAN 1:6 (V:H)



CONDITION 3 - SIGN INSTALLATION



CONDITION 2 - SIGN INSTALLATION

(*) FORESLOPE STEEPER THAN 1:6 (V:H)

SHIELDED SLOPE

NOTES:

1. SEE SIGN INSTALLATION SCHEDULE IN CONTRACT PLANS FOR DIMENSIONS.
2. THE DIMENSIONS OF ALL POSTS FOR GROUND MOUNTED SIGNS ARE BASED ON DESIGN CROSS SECTIONS. THE CONTRACTOR SHALL VERIFY REQUIRED POST LENGTHS IN THE FIELD, PRIOR TO SUBMITTING SHOP DRAWINGS AND POST FABRICATION TO MAINTAIN THE CLEARANCES SHOWN.
3. SIGN FOUNDATION ELEVATIONS TO BE BASED ON FINISHED SLOPES.
4. ANY ADDITIONAL SIGN TO BE ADDED LATER MUST BE SUPPORTED BY THE EXISTING SIGN PANEL AND NOT THE SIGN POST. MINIMUM CLEARANCES SHALL BE MAINTAINED.
5. SIGNS THAT ARE PLACED WELL OUTSIDE THE CLEAR ZONE MAY BE INSTALLED WITH A MINIMUM HEIGHT OF 5 FEET, MEASURED VERTICALLY FROM THE BOTTOM OF THE SIGN TO THE HORIZONTAL ELEVATION OF THE EDGE OF PAVEMENT.
6. MINIMUM HEIGHT OF LOWEST POST SHALL BE 7'-0" MEASURED BETWEEN STUB PROJECTION AND HINGE JOINT.
7. FOR TWO POSTS SPACED LESS THAN 7 FEET APART, EACH POST SHALL HAVE A MASS LESS THAN 18 lb/ft.
8. WHEN THE TOTAL COMBINED WEIGHT OF THE TWO POSTS LOCATED WITHIN 7 FEET OF EACH OTHER EXCEEDS 600 lbs., THE SIGN SHALL BE PLACED WELL OUTSIDE THE CLEAR ZONE OR BE SHIELDED FROM VEHICULAR IMPACT.

APPROVED BY: *Manar Nashif*
 CHIEF ENGINEERING OFFICER
 DATE: 03/01/2026

| POST SIZE W6x15 | SIGN DEPTH | | | | | | |
|-----------------|------------------|-------|-------|-------|-------|-------|--------|
| | 4'-0" | 5'-0" | 6'-0" | 7'-0" | 8'-0" | 9'-0" | 10'-0" |
| CLEAR HEIGHT | POST MAX SPACING | | | | | | |
| 6'-0" | 11'-6" | 9'-0" | 7'-0" | 6'-0" | 5'-0" | 4'-0" | 3'-6" |
| 8'-0" | 8'-0" | 6'-6" | 5'-6" | 4'-6" | 3'-6" | 3'-0" | - |
| 10'-0" | 6'-0" | 5'-0" | 4'-0" | 3'-6" | 3'-0" | - | - |
| 12'-0" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | - | - | - |
| 14'-0" | 3'-6" | 3'-0" | - | - | - | - | - |
| 16'-0" | 3'-0" | - | - | - | - | - | - |

| POST SIZE W6x9 | SIGN DEPTH | | |
|----------------|------------------|-------|-------|
| | 4'-0" | 5'-0" | 6'-0" |
| CLEAR HEIGHT | POST MAX SPACING | | |
| 6'-0" | 5'-6" | 4'-0" | 3'-0" |
| 8'-0" | 4'-0" | 3'-0" | - |
| 10'-0" | 3'-0" | - | - |
| 12'-0" | - | - | - |

| POST SIZE W12x26 | SIGN DEPTH | | | | | | | | | | | | | | | | | |
|------------------|------------------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---|---|--|
| | 4'-0" | 5'-0" | 6'-0" | 7'-0" | 8'-0" | 9'-0" | 10'-0" | 11'-0" | 12'-0" | 13'-0" | 14'-0" | 15'-0" | 16'-0" | 17'-0" | 18'-0" | | | |
| CLEAR HEIGHT | POST MAX SPACING | | | | | | | | | | | | | | | | | |
| 6'-0" | - | - | - | - | - | 12'-0" | - | - | 8'-0" | 6'-6" | 5'-6" | 4'-6" | 4'-0" | 3'-0" | 3'-0" | - | - | |
| 8'-0" | - | - | - | - | - | 10'-6" | - | - | 6'-6" | 5'-6" | 4'-6" | 4'-0" | 3'-0" | - | - | - | - | |
| 10'-0" | - | - | - | - | - | 8'-6" | - | - | 5'-6" | 4'-6" | 4'-0" | 3'-0" | - | - | - | - | - | |
| 12'-0" | - | - | - | - | - | 7'-0" | - | - | 4'-6" | 4'-0" | 3'-0" | - | - | - | - | - | - | |
| 14'-0" | - | - | - | - | - | 6'-0" | - | - | 4'-0" | 3'-0" | - | - | - | - | - | - | - | |
| 16'-0" | - | - | - | - | - | 5'-0" | - | - | 3'-6" | 3'-0" | - | - | - | - | - | - | - | |
| 18'-0" | - | - | - | - | - | 4'-0" | - | - | 3'-0" | - | - | - | - | - | - | - | - | |
| 20'-0" | - | - | - | - | - | 3'-6" | - | - | - | - | - | - | - | - | - | - | - | |
| 22'-0" | - | - | - | - | - | 3'-0" | - | - | - | - | - | - | - | - | - | - | - | |
| 24'-0" | - | - | - | - | - | 3'-0" | - | - | - | - | - | - | - | - | - | - | - | |

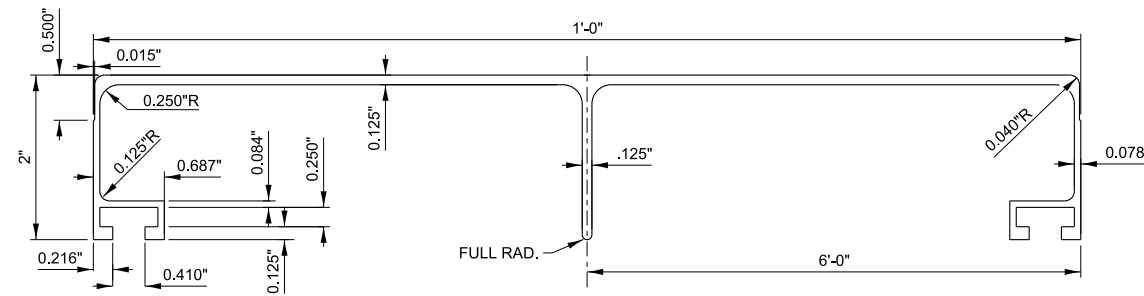
| POST SIZE W14x30 | SIGN DEPTH | | | | | | | | | | | | | | | | | |
|------------------|------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---|--|
| | 4'-0" | 5'-0" | 6'-0" | 7'-0" | 8'-0" | 9'-0" | 10'-0" | 11'-0" | 12'-0" | 13'-0" | 14'-0" | 15'-0" | 16'-0" | 17'-0" | 18'-0" | 19'-0" | | |
| CLEAR HEIGHT | POST MAX SPACING | | | | | | | | | | | | | | | | | |
| 6'-0" | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 11'-6" | 10'-0" | 8'-0" | 6'-6" | 5'-6" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | - | |
| 8'-0" | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 11'-0" | 9'-6" | 8'-0" | 6'-6" | 5'-6" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | - | - | |
| 10'-0" | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 10'-6" | 9'-0" | 7'-6" | 6'-6" | 5'-6" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | - | - | - | |
| 12'-0" | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 10'-0" | 8'-6" | 7'-6" | 6'-6" | 5'-6" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | - | - | - | - | |
| 14'-0" | 12'-0" | 12'-0" | 11'-0" | 9'-6" | 8'-6" | 7'-6" | 6'-6" | 5'-6" | 5'-0" | 4'-0" | 3'-6" | 3'-0" | - | - | - | - | - | |
| 16'-0" | 12'-0" | 11'-0" | 9'-6" | 8'-0" | 7'-0" | 6'-0" | 5'-6" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | - | - | - | - | - | - | |
| 18'-0" | 10'-6" | 9'-0" | 8'-0" | 7'-0" | 6'-0" | 5'-6" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | - | - | - | - | - | - | - | |
| 20'-0" | 8'-6" | 7'-6" | 6'-6" | 6'-0" | 5'-0" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | - | - | - | - | - | - | - | - | |
| 22'-0" | 7'-6" | 6'-6" | 6'-0" | 5'-0" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | 3'-0" | - | - | - | - | - | - | - | - | |
| 24'-0" | 6'-6" | 5'-6" | 5'-0" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | - | - | - | - | - | - | - | - | - | - | |
| 26'-0" | 5'-6" | 5'-0" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | - | - | - | - | - | - | - | - | - | - | - | |
| 28'-0" | 5'-0" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | - | - | - | - | - | - | - | - | - | - | - | - | |
| 30'-0" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | - | - | - | - | - | - | - | - | - | - | - | - | - | |

| POST SIZE W10x26 | SIGN DEPTH | | | | | | | | | | | | | | | | |
|------------------|------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---|---|--|
| | 4'-0" | 5'-0" | 6'-0" | 7'-0" | 8'-0" | 9'-0" | 10'-0" | 11'-0" | 12'-0" | 13'-0" | 14'-0" | 15'-0" | 16'-0" | 17'-0" | | | |
| CLEAR HEIGHT | POST MAX SPACING | | | | | | | | | | | | | | | | |
| 6'-0" | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 11'-6" | 9'-6" | 8'-0" | 7'-0" | 6'-0" | 5'-0" | 4'-0" | 3'-6" | 3'-0" | - | - | |
| 8'-0" | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 10'-6" | 9'-0" | 7'-6" | 6'-6" | 5'-6" | 5'-0" | 4'-0" | 3'-6" | 3'-0" | - | - | - | |
| 10'-0" | 12'-0" | 12'-0" | 12'-0" | 10'-0" | 8'-6" | 7'-6" | 6'-0" | 5'-6" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | - | - | - | - | |
| 12'-0" | 12'-0" | 11'-6" | 9'-6" | 8'-0" | 7'-0" | 6'-0" | 5'-0" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | - | - | - | - | - | |
| 14'-0" | 11'-0" | 9'-0" | 8'-0" | 7'-0" | 6'-0" | 5'-0" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | - | - | - | - | - | - | |
| 16'-0" | 9'-0" | 7'-6" | 6'-6" | 5'-6" | 5'-0" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | - | - | - | - | - | - | - | |
| 18'-0" | 7'-6" | 6'-6" | 5'-6" | 5'-0" | 4'-0" | 3'-6" | 3'-0" | 3'-0" | - | - | - | - | - | - | - | - | |
| 20'-0" | 6'-6" | 5'-6" | 5'-0" | 4'-0" | 3'-6" | 3'-0" | 3'-0" | - | - | - | - | - | - | - | - | - | |
| 22'-0" | 5'-6" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | 3'-0" | - | - | - | - | - | - | - | - | - | - | |
| 24'-0" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | 3'-0" | - | - | - | - | - | - | - | - | - | - | - | |
| 26'-0" | 4'-0" | 3'-6" | 3'-0" | 3'-0" | - | - | - | - | - | - | - | - | - | - | - | - | |
| 28'-0" | 3'-6" | 3'-0" | 3'-0" | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 30'-0" | 3'-0" | 3'-0" | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |

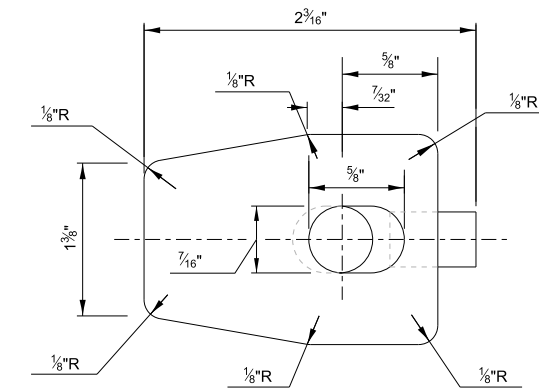
| POST SIZE W14x38 | SIGN DEPTH | | | | | | | | | | | | | | | | | | | | | | | |
|------------------|------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---|--|--|
| | 4'-0" | 5'-0" | 6'-0" | 7'-0" | 8'-0" | 9'-0" | 10'-0" | 11'-0" | 12'-0" | 13'-0" | 14'-0" | 15'-0" | 16'-0" | 17'-0" | 18'-0" | 19'-0" | 20'-0" | 21'-0" | 22'-0" | 23'-0" | 24'-0" | | | |
| CLEAR HEIGHT | POST MAX SPACING | | | | | | | | | | | | | | | | | | | | | | | |
| 6'-0" | - | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 10'-6" | 9'-0" | 7'-6" | 6'-6" | 5'-6" | 5'-0" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | - | - | | |
| 8'-0" | - | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 11'-6" | 10'-0" | 8'-6" | 7'-6" | 6'-6" | 5'-6" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | 3'-0" | - | - | | | |
| 10'-0" | - | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 11'-0" | 9'-6" | 8'-6" | 7'-6" | 6'-6" | 5'-6" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | 3'-0" | - | - | - | | | |
| 12'-0" | - | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 10'-6" | 9'-0" | 8'-0" | 7'-0" | 6'-0" | 5'-6" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | 3'-0" | - | - | - | - | | | |
| 14'-0" | - | 12'-0" | 12'-0" | 12'-0" | 11'-6" | 10'-0" | 9'-0" | 8'-0" | 7'-0" | 6'-0" | 5'-6" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | - | - | - | - | - | - | | | |
| 16'-0" | - | 12'-0" | 12'-0" | 11'-0" | 9'-6" | 8'-6" | 7'-6" | 6'-6" | 6'-0" | 5'-6" | 4'-6" | 4'-0" | 3'-6" | - | - | - | - | - | - | - | - | | | |
| 18'-0" | - | 12'-0" | 10'-6" | 9'-6" | 8'-6" | 7'-6" | 6'-6" | 6'-0" | 5'-0" | 4'-6" | 4'-0" | 3'-6" | - | - | - | - | - | - | - | - | - | | | |
| 20'-0" | - | 10'-6" | 9'-0" | 8'-0" | 7'-0" | 6'-6" | 5'-6" | 5'-0" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | - | - | - | - | - | - | - | - | - | | | |
| 22'-0" | - | 9'-0" | 8'-0" | 7'-0" | 6'-6" | 5'-6" | 5'-0" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | 3'-0" | - | - | - | - | - | - | - | - | - | | | |
| 24'-0" | - | 7'-6" | 7'-0" | 6'-0" | 5'-6" | 5'-0" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | 3'-0" | - | - | - | - | - | - | - | - | - | - | | | |
| 26'-0" | - | 6'-6" | 6'-0" | 5'-6" | 5'-0" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | 3'-0" | - | - | - | - | - | - | - | - | - | - | - | | | |
| 28'-0" | - | 6'-0" | 5'-6" | 5'-0" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | 3'-0" | - | - | - | - | - | - | - | - | - | - | - | - | | | |
| 30'-0" | - | 5'-6" | 5'-0" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | 3'-0" | - | - | - | - | - | - | - | - | - | - | - | - | - | | | |

| POST SIZE W10x22 | SIGN DEPTH | | | | | | | | | | | | | | |
|------------------|------------------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|---|---|--|
| | 4'-0" | 5'-0" | 6'-0" | 7'-0" | 8'-0" | 9'-0" | 10'-0" | 11'-0" | 12'-0" | 13'-0" | 14'-0" | 15'-0" | | | |
| CLEAR HEIGHT | POST MAX SPACING | | | | | | | | | | | | | | |
| 6'-0" | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 10'-6" | 9'-0" | 7'-6" | 6'-0" | 5'-0" | 4'-0" | 3'-6" | 3'-0" | - | - | |
| 8'-0" | 12'-0" | 12'-0" | 11'-0" | 10'-0" | 8'-6" | 7'-0" | 6'-0" | 5'-0" | 4'-0" | 3'-6" | 3'-0" | - | - | - | |
| 10'-0" | 12'-0" | 11'-6" | 9'-6" | 8'-0" | 6'-6" | 5'-6" | 5'-0" | 4'-0" | 3'-6" | 3'-0" | - | - | - | - | |
| 12'-0" | 11'-0" | 9'-0" | 7'-6" | 6'-6" | 5'-6" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | - | - | - | - | - | |
| 14'-0" | 9'-0" | 7'-6" | 6'-6" | 5'-6" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | - | - | - | - | - | - | |
| 16'-0" | 7'-0" | 6'-0" | 5'-0" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | - | - | - | - | - | - | - | |
| 18'-0" | 6'-0" | 5'-0" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | - | - | - | - | - | - | - | - | |
| 20'-0" | 5'-0" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | - | - | - | - | - | - | - | - | - | |
| 22'-0" | 4'-6" | 3'-6" | 3'-6" | 3'-0" | - | - | - | - | - | - | - | - | - | - | |
| 24'-0" | 3'-6" | 3'-0" | 3'-0" | - | - | - | - | - | - | - | - | - | - | - | |
| 26'-0" | 3'-0" | 3'-0" | - | - | - | - | - | - | - | - | - | - | - | - | |
| 28'-0" | 3'-0" | - | - | - | - | - | - | - | - | - | - | - | - | - | |

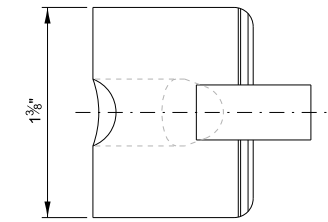
| POST SIZE W16x45 | SIGN DEPTH | | | | | | | | | | | | | | | | | | | | | | | |
|------------------|------------------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---|--|--|
| | 4'-0" | 5'-0" | 6'-0" | 7'-0" | 8'-0" | 9'-0" | 10'-0" | 11'-0" | 12'-0" | 13'-0" | 14'-0" | 15'-0" | 16'-0" | 17'-0" | 18'-0" | 19'-0" | 20'-0" | 21'-0" | 22'-0" | 23'-0" | 24'-0" | | | |
| CLEAR HEIGHT | POST MAX SPACING | | | | | | | | | | | | | | | | | | | | | | | |
| 6'-0" | - | - | - | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 11'-0" | 10'-0" | 9'-0" | 7'-6" | 6'-6" | 6'-0" | 5'-0" | 4'-6" | 4'-0" | 3'-6" | - | | |
| 8'-0" | - | - | - | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 11'-6" | 10'-0" | 8'-6" | 7'-6" | 6'-6" | 5'-6" | 5'-0" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | - | | |
| 10'-0" | - | - | - | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 11'-0" | 10'-0" | 8'-6" | 7'-6" | 6'-6" | 5'-6" | 5'-0" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | - | - | | |
| 12'-0" | - | - | - | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 12'-0" | 11'-0" | 9'-6" | 8'-6" | 7'-6" | 6'-6" | 5'-6" | 5'-0" | 4'-6" | 4'-0" | 3'-6" | 3'-0" | - | - | - | | |
| 14'- | | | | | | | | | | | | | | | | | | | | | | | | |



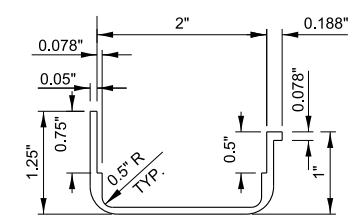
12" PANEL
TYPE B SIGN PANEL EXTRUSIONS



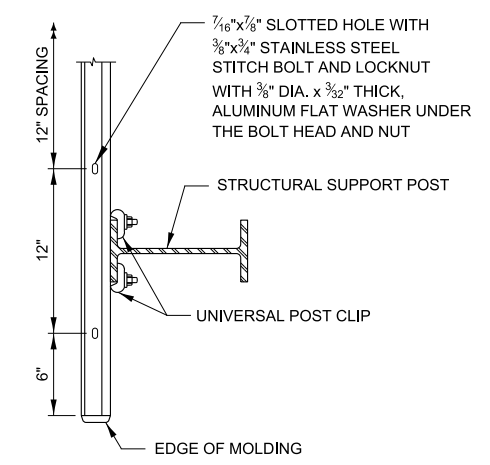
PLAN VIEW



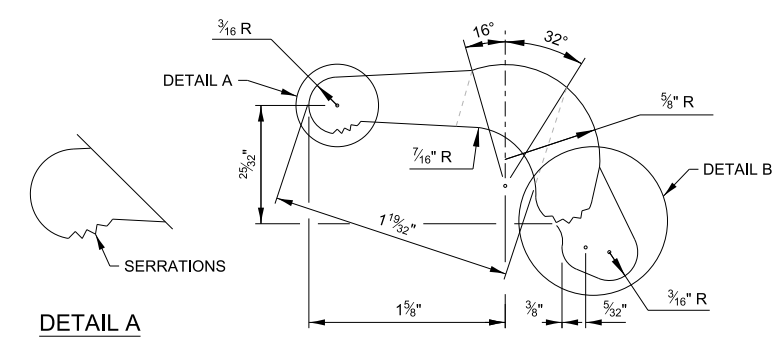
END VIEW



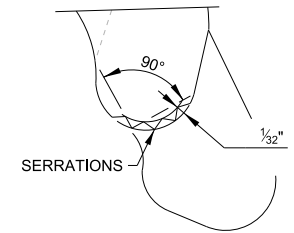
EDGE MOLDING SECTION
FOR SIGN PANEL



SECTION C-C



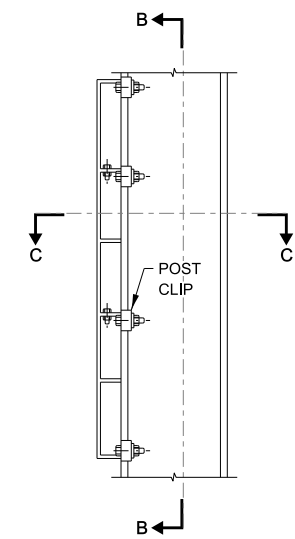
ELEVATION VIEW



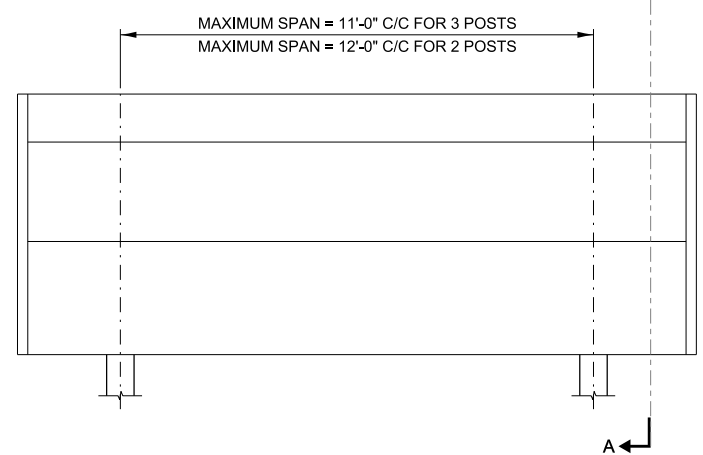
DETAIL B
(ENLARGED DETAIL
OF SERRATIONS)

DETAIL A
(ENLARGED VIEW
OF SERRATIONS)

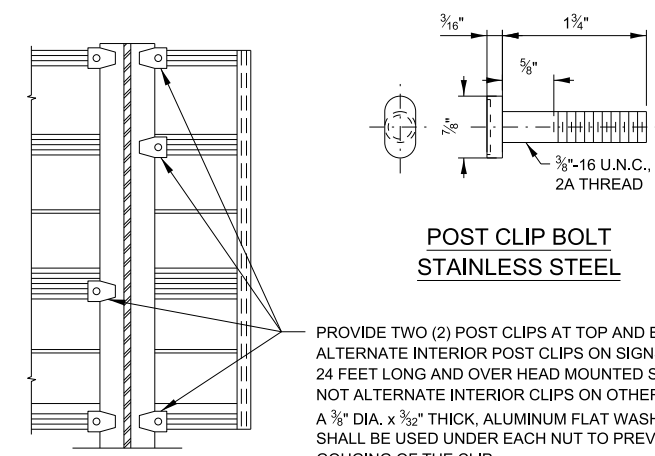
UNIVERSAL POST CLIP DETAIL



SECTION A-A



FACE OF SIGN PANEL



POST CLIP BOLT
STAINLESS STEEL

PROVIDE TWO (2) POST CLIPS AT TOP AND BOTTOM. ALTERNATE INTERIOR POST CLIPS ON SIGNS UNDER 24 FEET LONG AND OVER HEAD MOUNTED SIGNS. DO NOT ALTERNATE INTERIOR CLIPS ON OTHER SIGNS. A 3/8" DIA. x 3/32" THICK, ALUMINUM FLAT WASHER SHALL BE USED UNDER EACH NUT TO PREVENT GOUGING OF THE CLIP.

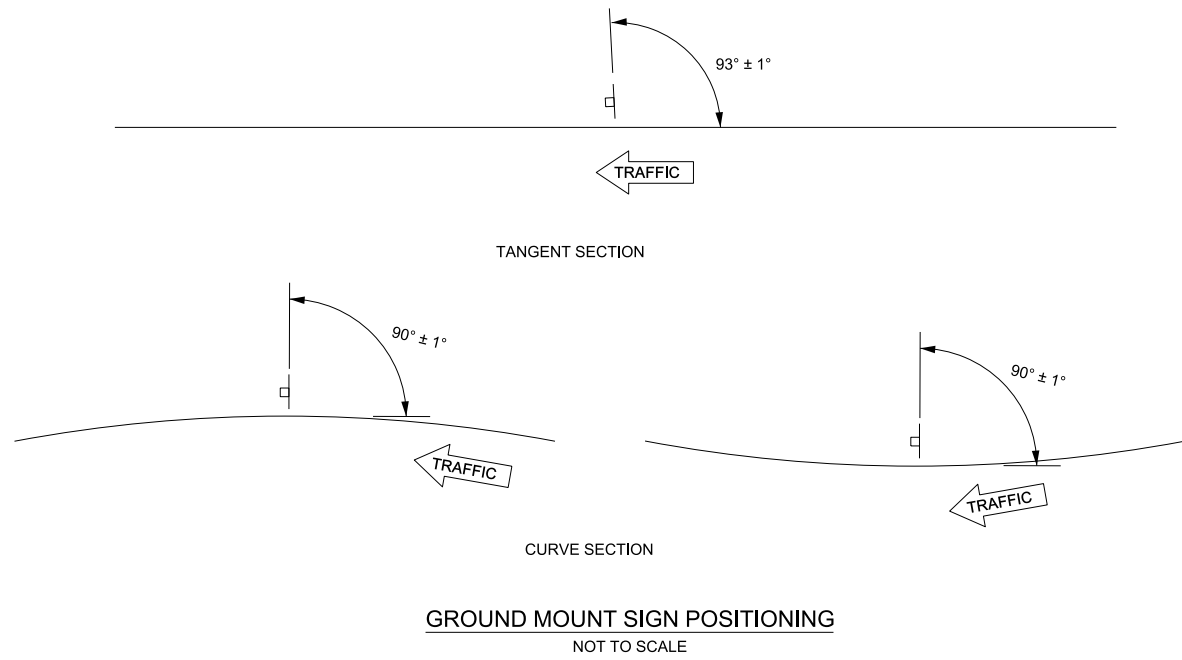
SECTION B-B



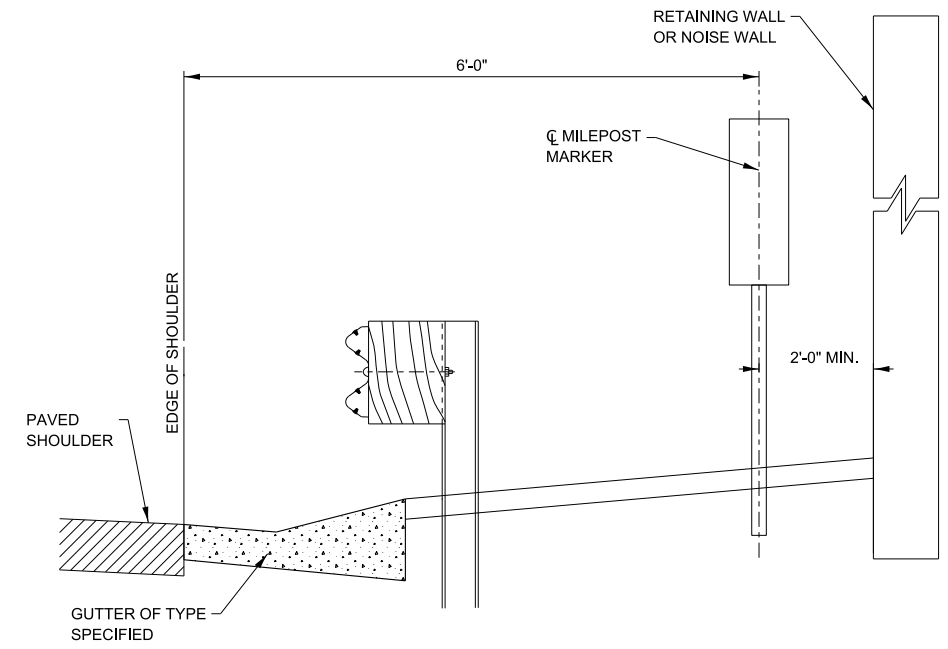
| REVISIONS | |
|------------|--|
| DATE | DESCRIPTION |
| 03-11-2015 | ADDED WASHERS TO CONNECTION DETAILS |
| 02-07-2012 | REMOVED DETAIL FOR MOUNTING 2 PANEL SIGN. |
| 01-01-2009 | MODIFIED TYPE B SIGN PANEL DIM. MODIFIED POST CLIP DETAIL. |

MISCELLANEOUS DETAILS
AND ALUMINUM SIGN PANELS

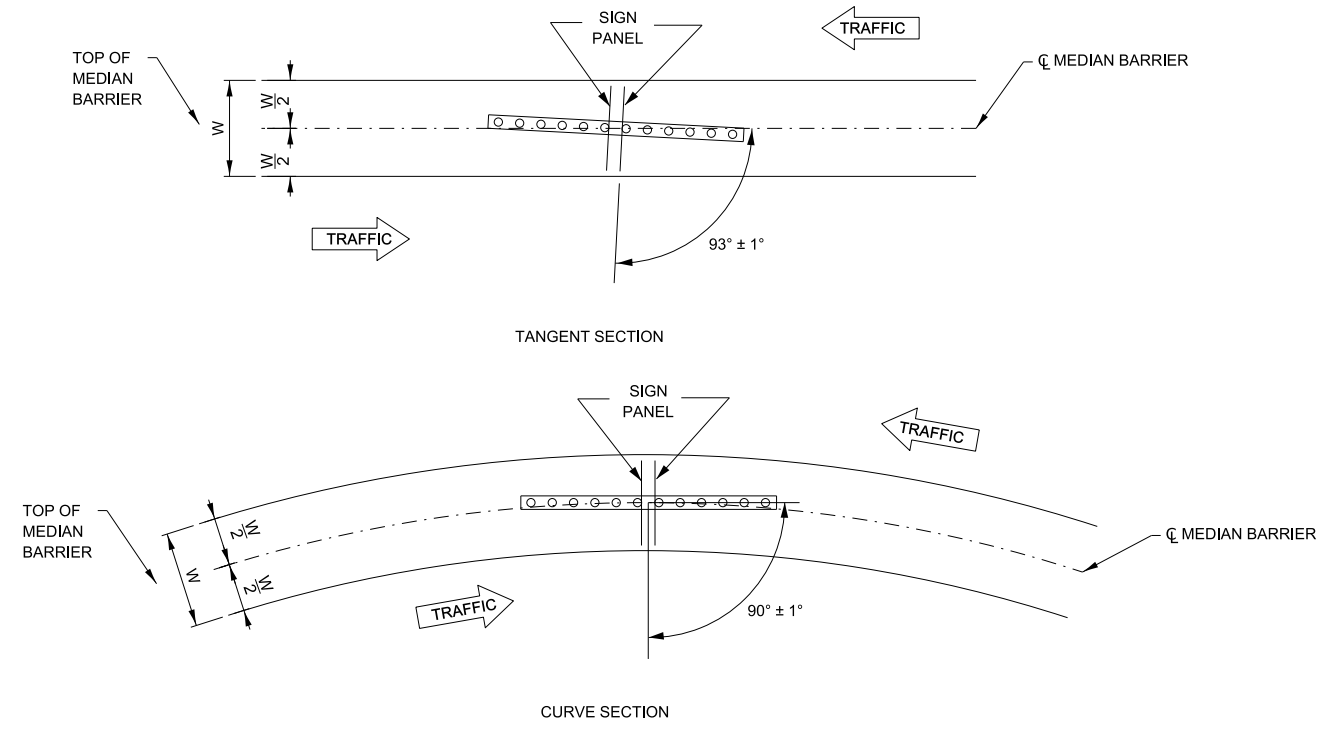
APPROVED BY: *Paul Kovacs* CHIEF ENGINEERING OFFICER DATE: 03/11/2015



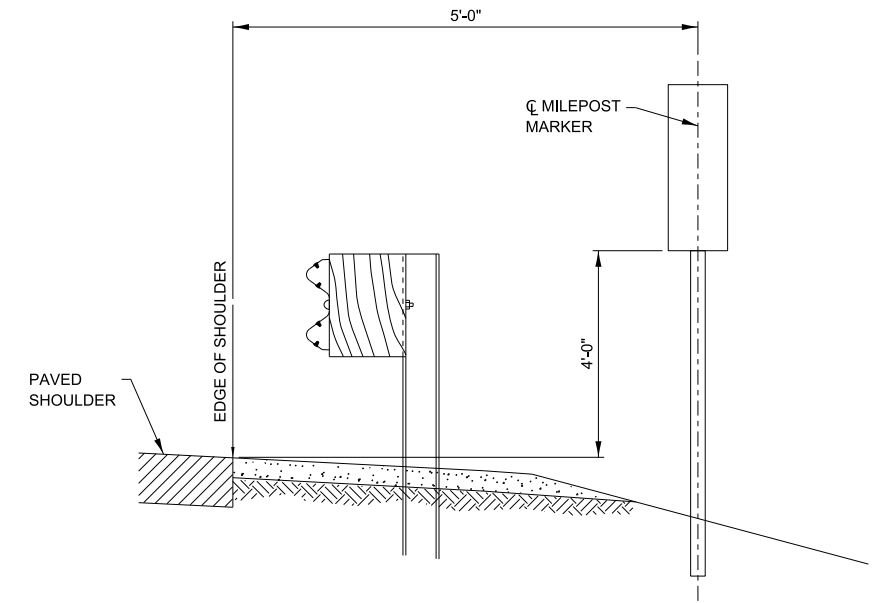
GROUND MOUNT SIGN POSITIONING
NOT TO SCALE



SECTION WITH GUTTER
NOT TO SCALE



MEDIAN BARRIER SIGN POSITIONING
NOT TO SCALE



SECTION WITHOUT GUTTER
NOT TO SCALE

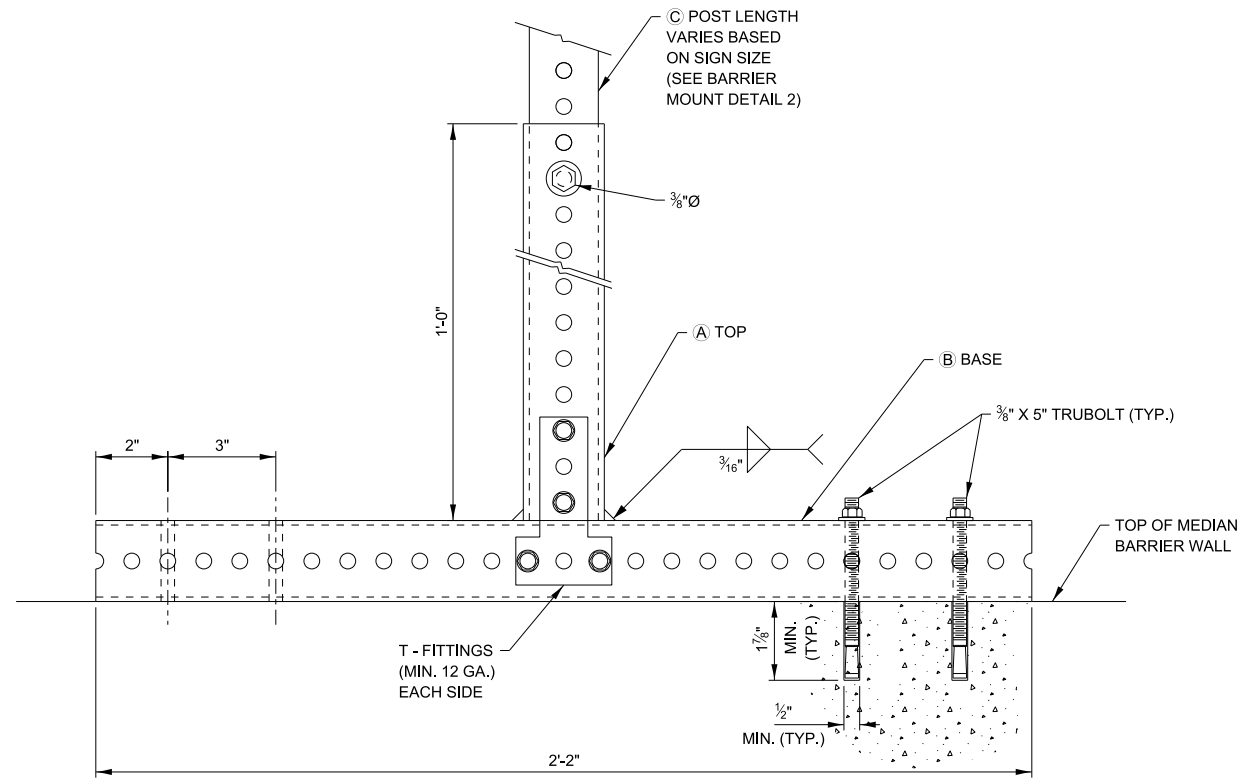
LEGEND:
 DIRECTION OF TRAFFIC



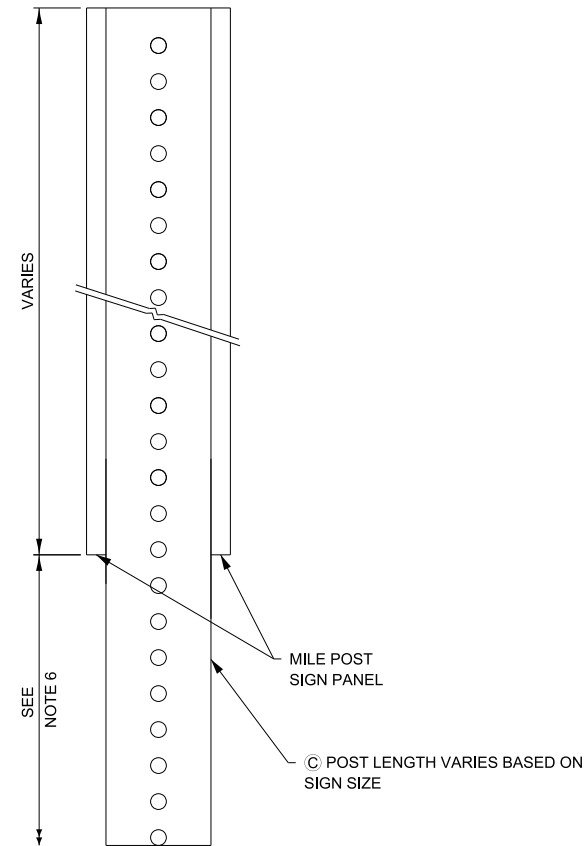
| REVISIONS | |
|------------|--|
| DATE | DESCRIPTION |
| 03-01-2025 | ADDED MILEPOST MARKER CALLOUTS |
| 03-01-2020 | REVISED BARRIER MOUNT DETAIL AND GENERAL NOTES, ADDED MILEPOST |
| 03-01-2019 | REMOVED "LIGHT POLE/SIGN" |
| | STRUCTURE MOUNTED DETAIL.* |
| 03-31-2016 | REVISED BOLT NOTE. |

MILEPOST MARKER

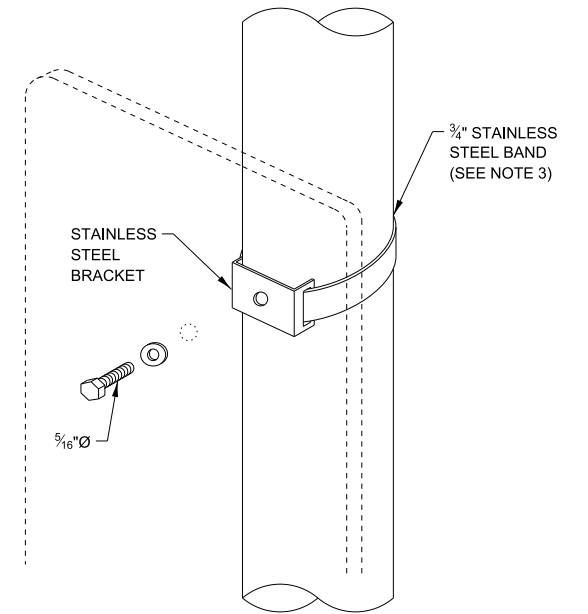
APPROVED BY: *Manar Nashif* DATE: 03/01/2025
 CHIEF ENGINEERING OFFICER



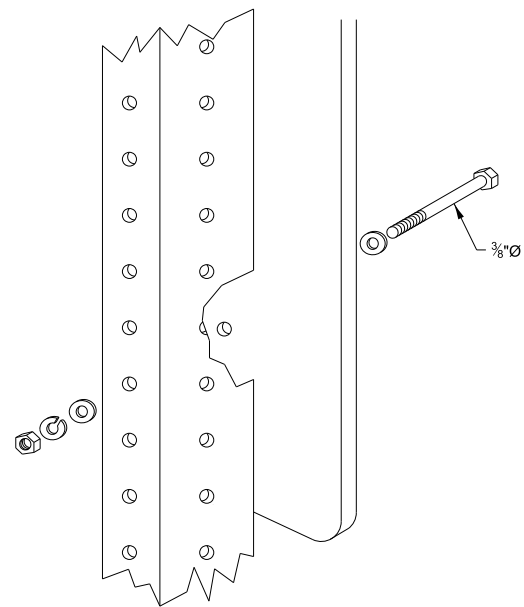
BARRIER MOUNT DETAIL
NOT TO SCALE



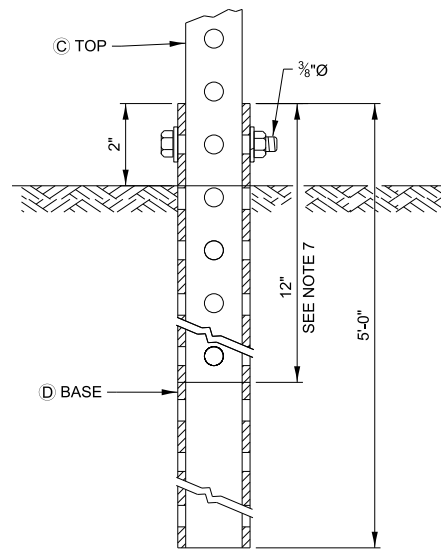
BARRIER MOUNT DETAIL 2
NOT TO SCALE



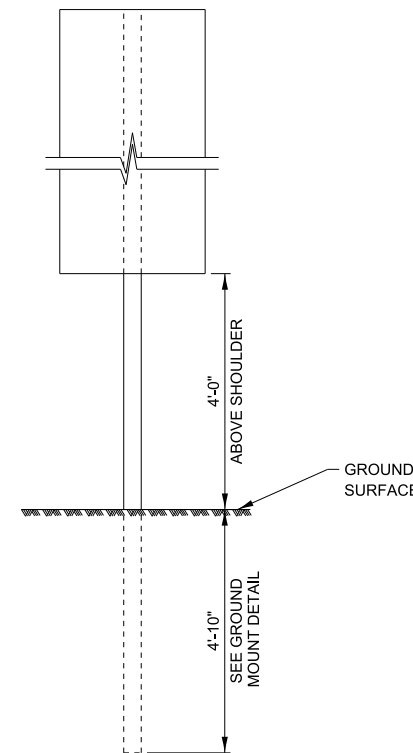
LIGHT POLE/SIGN STRUCTURE MOUNT DETAIL
NOT TO SCALE



TELESCOPING STEEL POSTS
NOT TO SCALE



GROUND MOUNT DETAIL
NOT TO SCALE



ONE POST INSTALLATION
NOT TO SCALE

GENERAL NOTES:

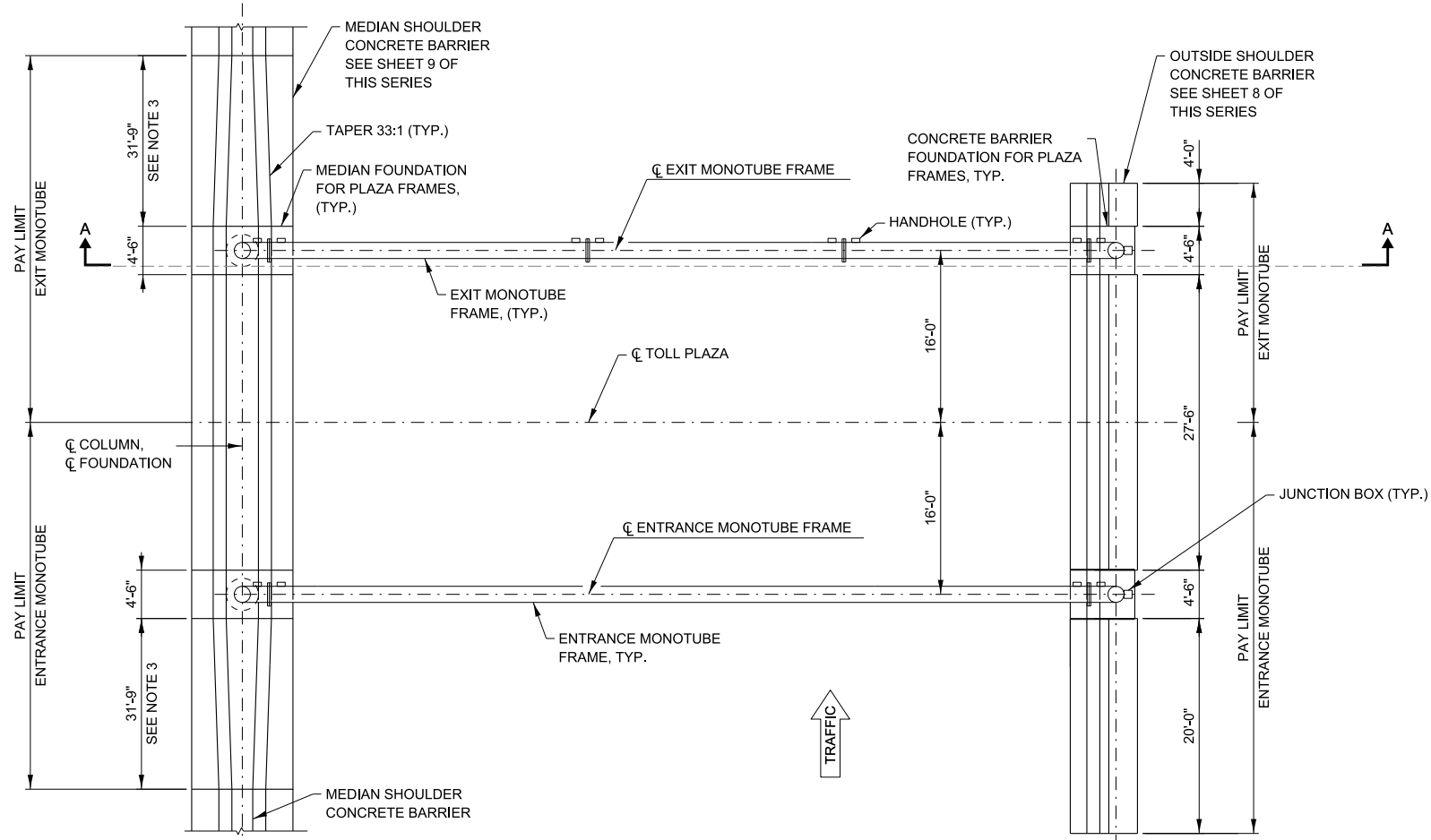
- ALL ANCHOR BOLTS FOR MEDIAN BARRIER MOUNT DETAIL SHALL BE 3/8" DIA. RED HEAD "TRUBOLT" OR APPROVED EQUAL.
- ALL DIMENSIONS ARE IN INCHES UNLESS SHOWN OTHERWISE.
- FOLLOWING ARE THE STEPS FOR FASTENING THE MILEPOST MARKER SIGN PANEL. ALL MOUNTING DETAILS SHOWN ON THIS SHEET APPLY:
 - CENTER ALL FASTENERS ON THE SIGN PANEL.
 - START AND FINISH THE FASTENER SPACING USING A MINIMUM OF 3" TO A MAXIMUM OF 6" FROM THE TOP AND BOTTOM EDGE OF THE SIGN PANEL.
 - THE DISTANCE BETWEEN SUCCESSIVE FASTENERS SHALL NOT EXCEED 2'-0".
- CENTER THE 5/16" DIA. BOLT IN THE MIDDLE OF THE SIGN.
- USE THE SAME ATTACHMENT FOR BACK TO BACK MILEPOST MARKER SIGN.
- DISTANCE FROM THE GROUND TO THE BOTTOM OF THE MILEPOST MARKER SIGN SHALL BE A MINIMUM OF 4'-0" REGARDLESS OF BARRIER TYPE.
- THE TOP SECTION SHALL BE TELESCOPED INTO THE BASE SECTION 12 INCHES AND FASTENED TOGETHER.
- FOR ATTACHMENT TO BRIDGE PARAPET USE BARRIER WALL MOUNT DETAIL. ONLY ONE PANEL REQUIRED WHEN ATTACHED TO PARAPET ALONG OUTSIDE SHOULDER.
- BASE AND POST ASSEMBLY SHALL BE HOT DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AASHTO M111 OR AS SPECIFIED IN THE SPECIAL PROVISION.

| | |
|---|----------------------------------|
| A | 2 1/4" x 2 1/4" x 1'-0" (12 GA.) |
| B | 2 1/4" x 2 1/4" x 2'-2" (12 GA.) |
| C | 2" x 2" x VARIES (12 GA.) |
| D | 2 1/4" x 2 1/4" x 5'-0" (12 GA.) |

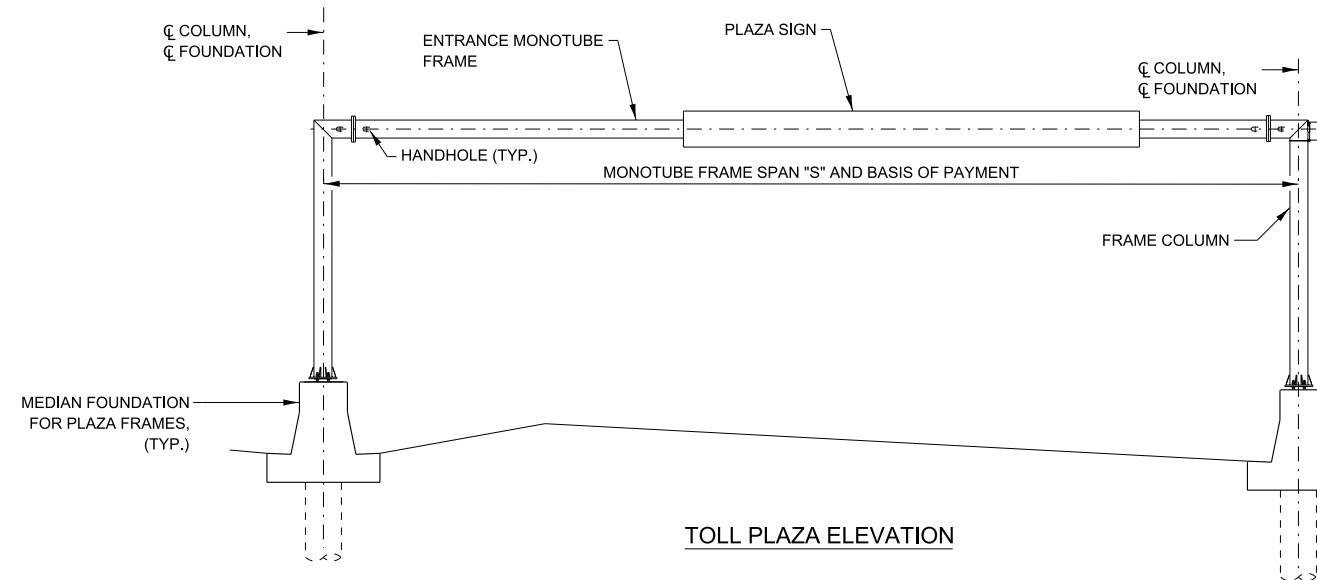
APPROVED BY: *Manar Nashif*
CHIEF ENGINEERING OFFICER
DATE: 03/01/2025



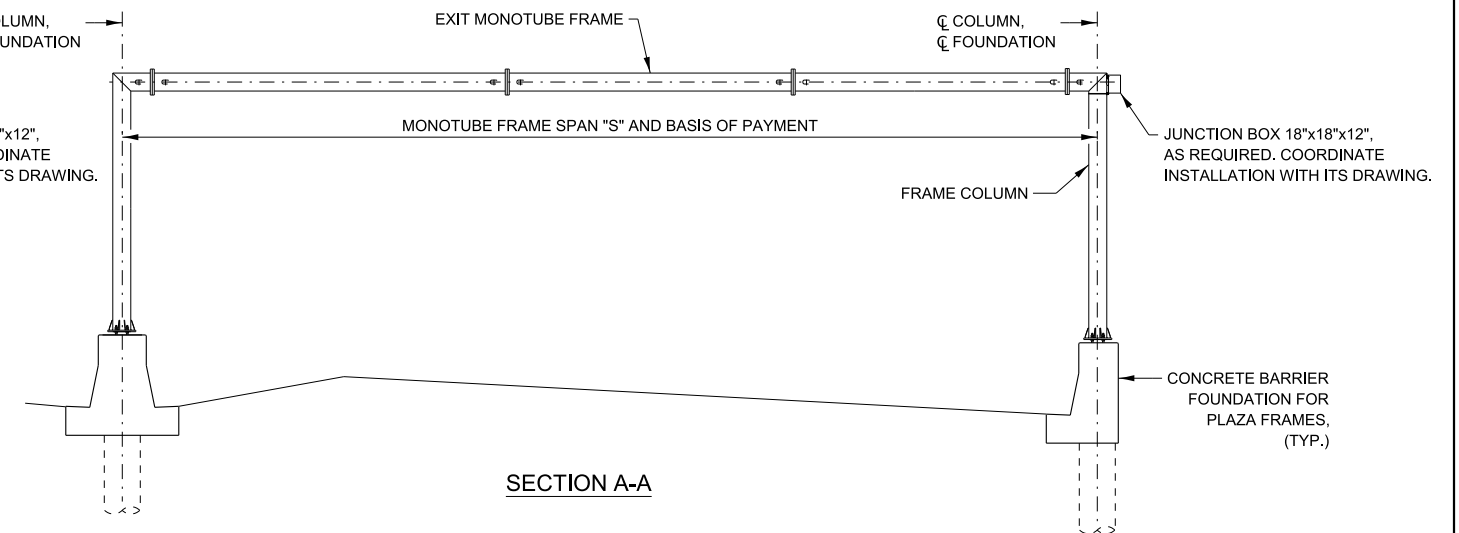
MILEPOST MARKER



TOLL PLAZA PLAN



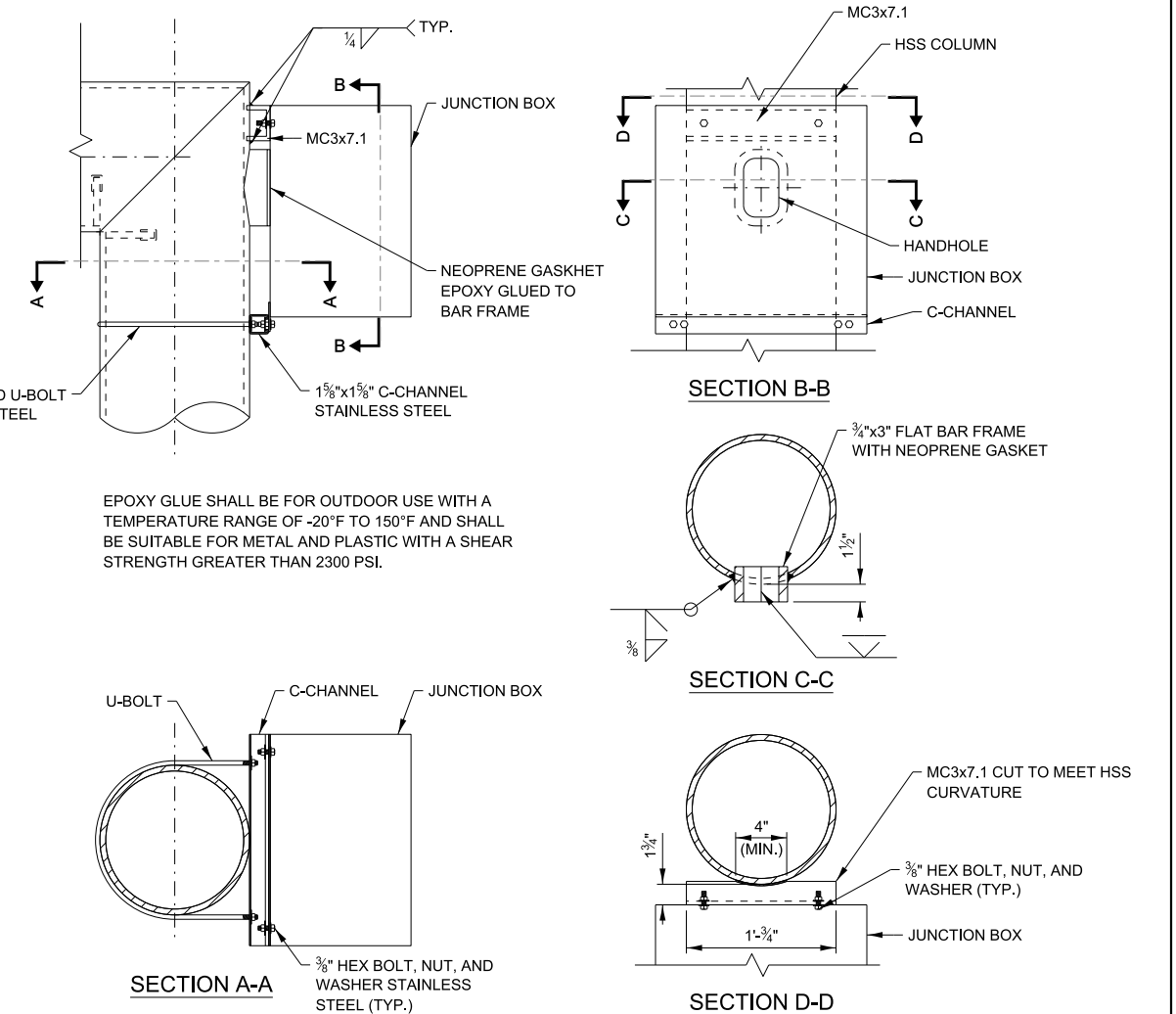
TOLL PLAZA ELEVATION



SECTION A-A

NOTES:

1. SEE PLANS FOR SIGN SIZE AND LOCATION.
2. MAXIMUM PLAZA SIGN AREA IS 108 SQ. FT. MAXIMUM PLAZA SIGN LENGTH IS 36 FT.
3. TAPER BARRIER WIDTH AND HEIGHT FULL LENGTH.



JUNCTION BOX CONNECTION DETAIL

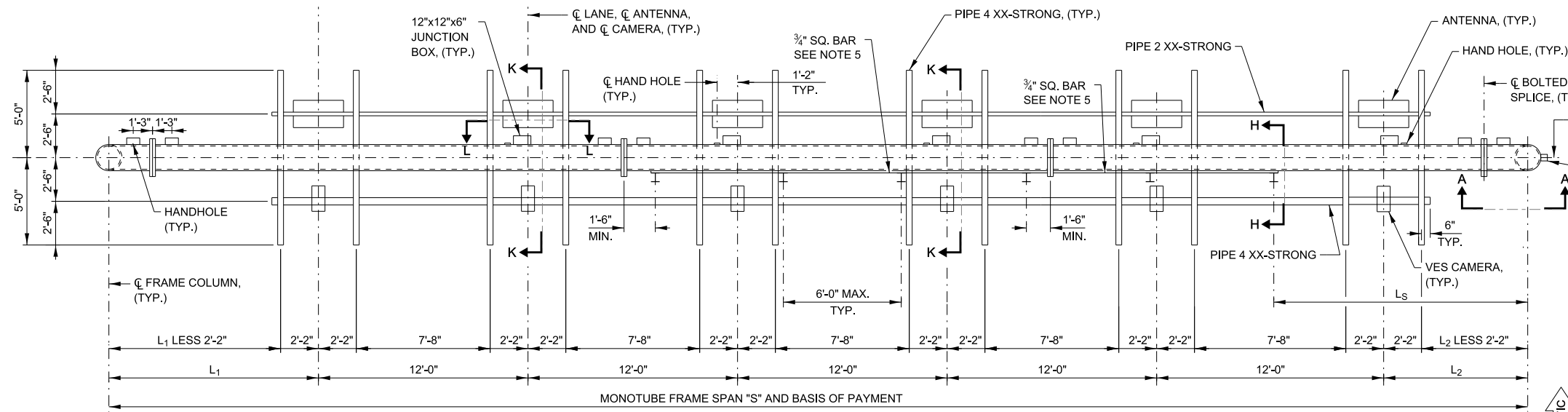
APPROVED BY: *Manar Nashif*
 CHIEF ENGINEERING OFFICER
 DATE: 03/01/2026

| REVISIONS | |
|------------|---|
| DATE | DESCRIPTION |
| 03-01-2026 | ADDED JUNCTION BOX IN TOLL PLAZA PLAN. |
| 03-01-2025 | ADDED MEDIAN BARRIER, JUNCTION BOX, AND PLASTIC TRIM DETAILS. |
| 03-01-2024 | ADDED NOTE FOR BARRIER PAYMENT CLARIFIED PAY ITEMS FOR MONOTUBES. |

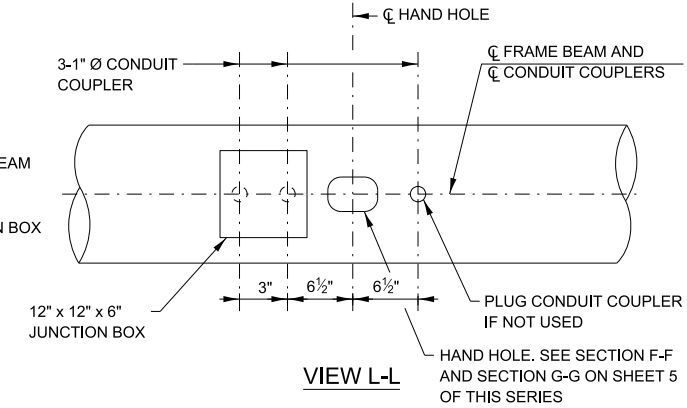
Illinois Tollway

OVERHEAD SIGN STRUCTURE MONOTUBE TYPE (STEEL) MAINLINE STRUCTURE DETAILS

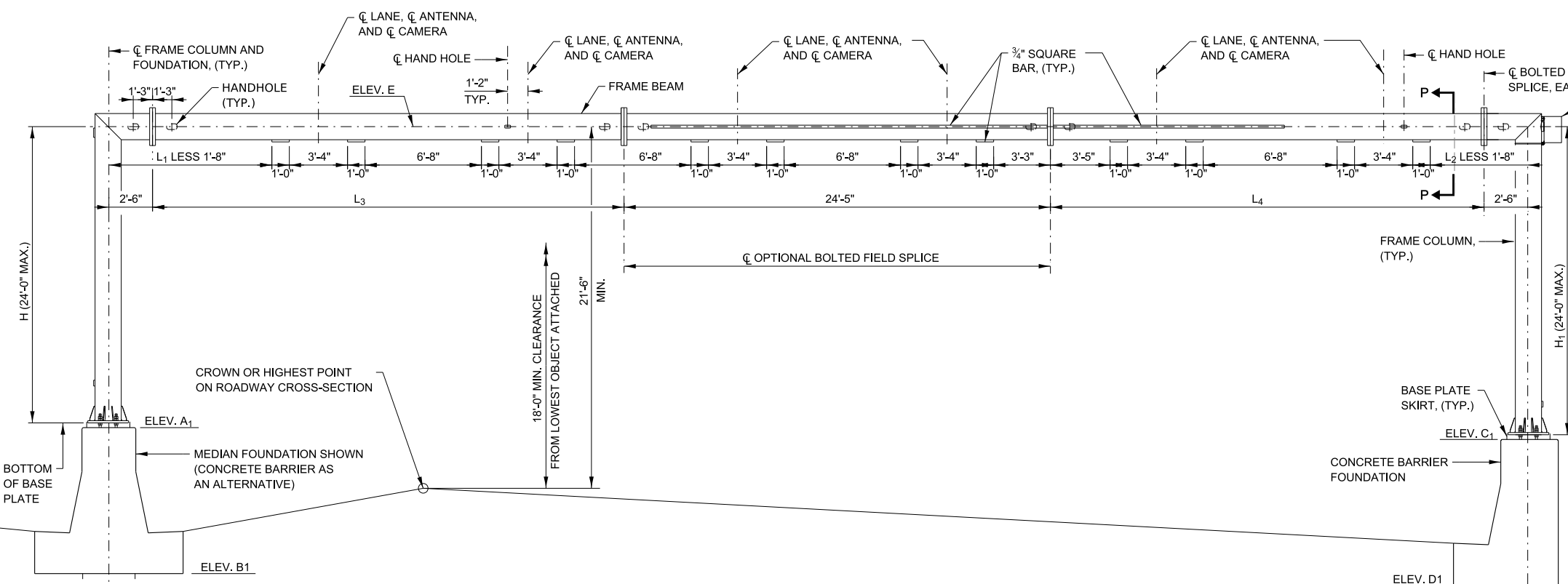
VERSION: 2026-03 STANDARD: F13-11 SHEET: 1 OF 9



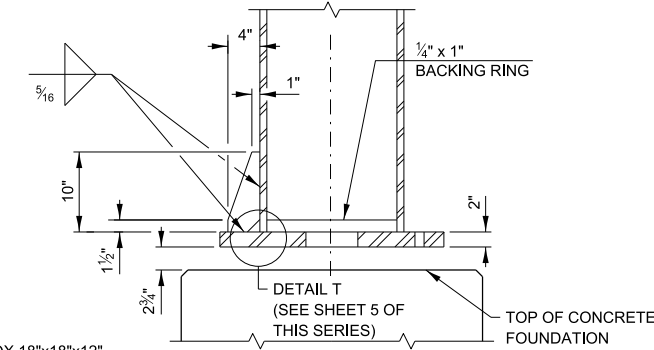
ENTRANCE MONOTUBE PLAN



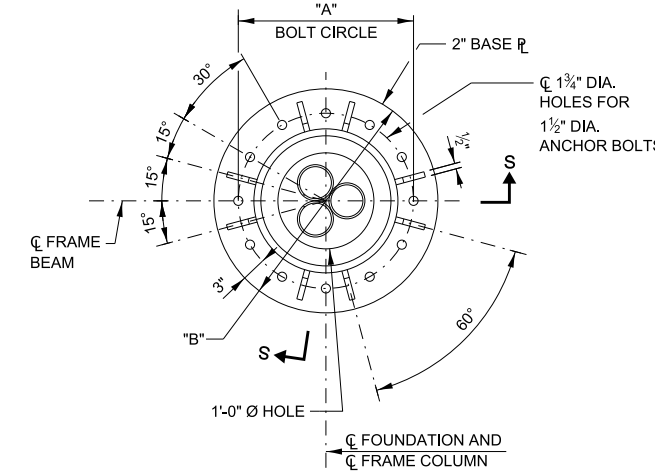
VIEW L-L



ENTRANCE MONOTUBE ELEVATION



SECTION S-S



BASE PLATE PLAN MONOTUBE FRAMES

- NOTES:**
- FOUNDATIONS FOR PLAZA FRAMES ARE SHOWN ON SHEETS 6 AND 7 OF THIS SERIES.
 - FOR SECTIONS A-A, H-H, K-K, BASE PLATE SKIRT AND HAND HOLE DETAILS, SEE SHEET 5 OF THIS SERIES.
 - FOR SECTION P-P SEE SHEET 4 OF THIS SERIES.
 - PROVIDE CAMBER AT MIDSPAN OF STRUCTURE.
 - DISCONTINUE 3/4" SQUARE BAR TO ALLOW 1/2" Ø U-BOLT INSTALLATION.
 - WORK THIS SHEET WITH, OVERHEAD SIGN STRUCTURES ENTRANCE/EXIT MONOTUBE TYPE (STEEL) MAINLINE SUMMARY AND TOTAL BILL OF MATERIAL SHEET.

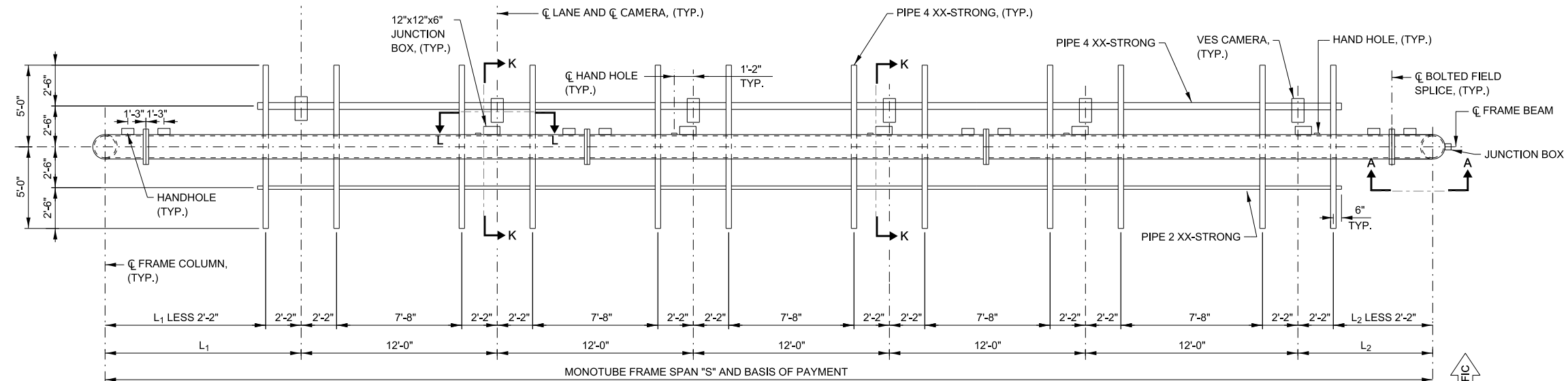
MONOTUBE FRAME TABLE

| TYPE | SPAN "S" | FRAME COLUMN | FRAME BEAM | CAMBER | "A" | "B" |
|------|----------|--------------|--------------|--------|--------|-------|
| I | ≤ 70' | HSS 16x0.500 | HSS 16x0.500 | 2 3/4" | 1'-8" | 2'-2" |
| II | 71'-80' | HSS 18x0.500 | HSS 18x0.500 | 4" | 1'-10" | 2'-4" |
| III | 81'-90' | HSS 18x0.500 | HSS 18x0.500 | 4 1/2" | 1'-10" | 2'-4" |

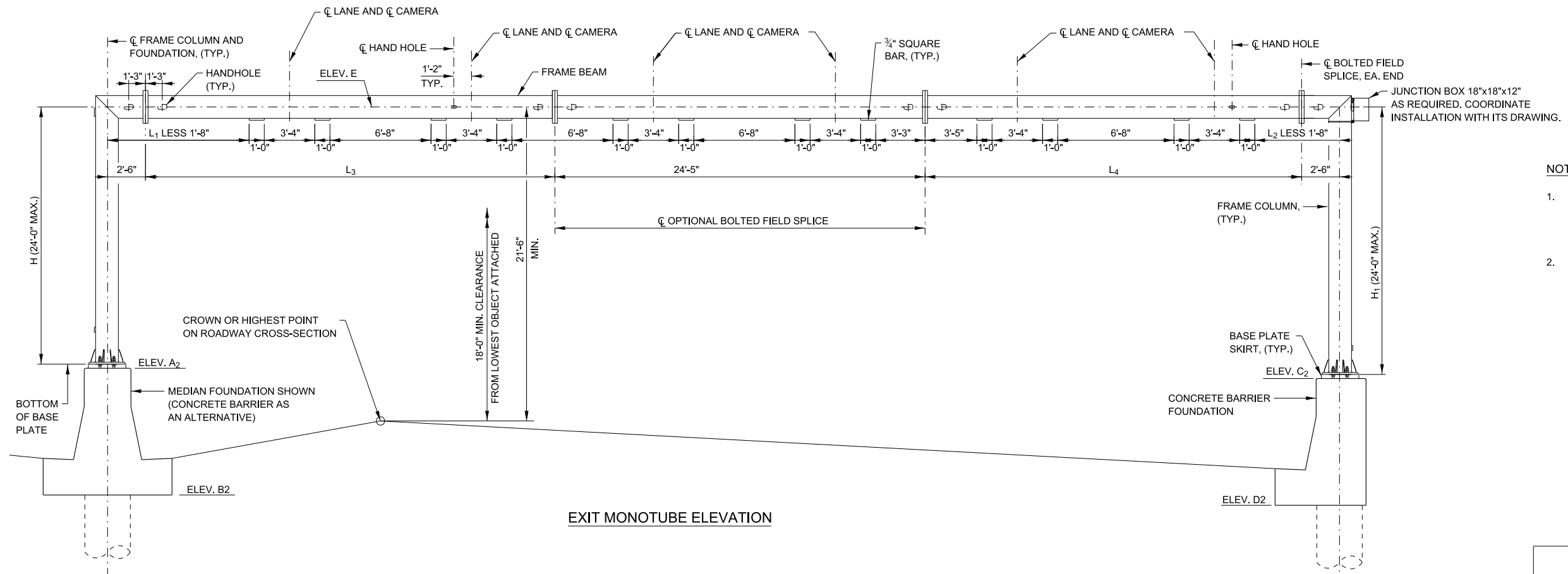
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 DATE: 03/01/2026

OVERHEAD SIGN STRUCTURE MONOTUBE TYPE (STEEL) MAINLINE STRUCTURE DETAILS

VERSION: 2026-03 STANDARD: F13-11 SHEET: 2 OF 9



EXIT MONOTUBE PLAN



EXIT MONOTUBE ELEVATION

NOTES:

1. SEE SHEET 2 OF THIS SERIES FOR MONOTUBE FRAME TABLE, VIEW L-L, BASE PLATE DETAIL, AND ADDITIONAL NOTES.
2. WORK THIS SHEET WITH, OVERHEAD SIGN STRUCTURES EXIT MONOTUBE TYPE (STEEL) SUMMARY AND TOTAL BILL OF MATERIAL SHEET.

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 CHIEF ENGINEERING OFFICER
 DATE: 03/01/2026

OVERHEAD SIGN STRUCTURE
 MONOTUBE TYPE (STEEL)
 MAINLINE STRUCTURE
 DETAILS

| | | |
|---------------------|---------------------|------------------|
| VERSION: 2026-03 | STANDARD: F13-11 | SHEET: 3 OF 9 |
|---------------------|---------------------|------------------|

GENERAL NOTES:

- SEE THE ILLINOIS TOLLWAY STRUCTURE DESIGN MANUAL FOR MINIMUM VERTICAL CLEARANCE.
- 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.
- REINFORCEMENT BARS DESIGNATED "(E)" SHALL BE EPOXY COATED.

STRUCTURAL STEEL:

- MATERIAL FOR THE HSS MONOTUBE FRAME SHALL CONFORM TO THE REQUIREMENT OF ASTM A500 GRADE B OR GRADE C. OTHER STRUCTURAL STEEL SHAPES AND PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36, UNLESS NOTED OTHERWISE.
- PIPES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A53 GRADE B.
- ANCHOR BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F1554 (AASHTO M314) GRADE 55, WITH A MINIMUM TENSILE STRENGTH OF 75,000 PSI. INSTALLATION AND INSPECTION OF ANCHOR BOLTS SHALL COMPLY WITH ILLINOIS TOLLWAY SPECIAL PROVISION "INTELLIGENT TRANSPORTATION SYSTEMS GANTRY FRAME "STEEL". ANCHORS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 (AASHTO M232). SEE SHEET 6 OF THIS SERIES FOR GALVANIZED LENGTH.
- U-BOLTS SHALL BE STAINLESS STEEL AND SHALL CONFORM TO ASTM 193, CLASS I, GRADE B8 (AISI TYPE 304). WASHERS FOR U-BOLTS SHALL CONFORM TO ASTM A240, TYPE 302. NUTS FOR U-BOLTS SHALL CONFORM TO ASTM A194 (AASHTO M292), GRADE 8F (AISI TYPE 303).
- BOLTS (EXCLUDING ANCHOR BOLTS AND U-BOLTS) SHALL BE HIGH STRENGTH AND SHALL CONFORM TO THE REQUIREMENTS OF ASTM A325 (AASHTO M164). THEY SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 (AASHTO M232).
- NUTS SHALL CONFORM TO ASTM A563 GRADE DH AND GALVANIZED ACCORDING TO ASTM A153 (AASHTO M232).
- HARDENED STEEL WASHERS SHALL CONFORM TO ASTM F436 AND GALVANIZED ACCORDING TO ASTM A153 (AASHTO M232).
- HSS FOR MONOTUBE FRAME, PIPES, STRUCTURAL STEEL SHAPES AND PLATES SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123 AFTER FABRICATION.
- THE MONOTUBE FRAME BEAM, COLUMNS, BASE PLATE MATERIAL, AND SPLICES ARE CONSIDERED TENSION MEMBERS AND SHALL CONFORM TO THE IMPACT TESTING REQUIREMENT, ZONE 2.
- WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS USING E70-XX ELECTRODES, AND SHALL CONFORM TO AWS D1.1-08 "STRUCTURAL WELDING CODE - STEEL". ALL WELDS ON ARCHITECTURAL EXPOSED STEEL (AES) MEMBERS ARE TO BE GROUND SMOOTH AND FILLED.

DESIGN LOADING:

WIND LOAD CRITERIA:
 BASIC WIND SPEED = 120 M.P.H.
 G = 1.14
 I_F = 1.00
 K_Z = 1.00
 SIGN PANEL = 50 P.S.F.
 COLUMN/BEAM = 35 P.S.F.
 SIGN DEAD LOAD = 3 P.S.F.
 ICE = 3 P.S.F. (APPLIED WITH A FACTOR OF 1.0 FOR STRENGTH I ONLY)

EQUIPMENT LOADS:

CAMERA ASSEMBLY W/MOUNTING HARDWARE 40 LB.
 ANTENNA W/MOUNTING HARDWARE 24 LB.

DESIGN STRESSES FOR REINFORCED CONCRETE:

f_c = COMPRESSIVE STRENGTH OF CONCRETE AT 14 DAYS (CLASS SI) = 3,500 P.S.I.
 f_c = COMPRESSIVE STRENGTH OF CONCRETE AT 14 DAYS (CLASS DS) = 4,000 P.S.I.
 f_y = YIELD STRENGTH OF REINFORCEMENT BARS (GRADE 60) = 60,000 P.S.I.

FOUNDATION:

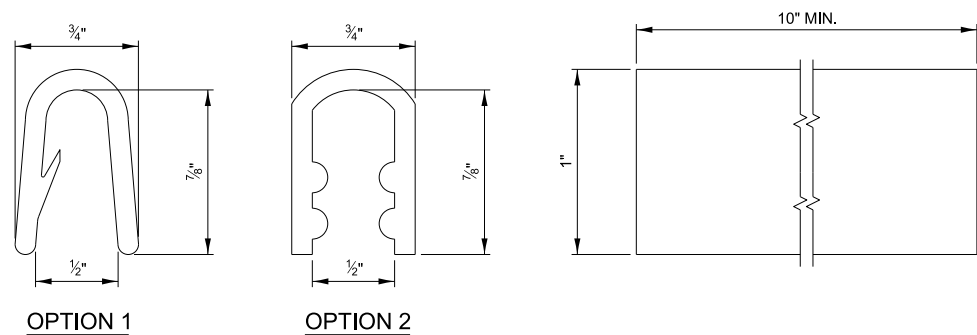
MINIMUM UNCONFINED COMPRESSIVE STRENGTH, Q_u FOR ALL LAYERS OF COHESIVE SOILS (CLAYS) SHALL BE 1.25 TON/SQ.FT. AT PLAZA FRAMES.

DESIGN SPECIFICATIONS:

- ILLINOIS TOLLWAY STRUCTURE DESIGN MANUAL, LATEST EDITION.
- AASHTO LRFD SPECIFICATION FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 1ST EDITION.
- AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION, 2020.
- ILLINOIS DEPARTMENT OF TRANSPORTATION BRIDGE MANUAL, JANUARY 2012

CONSTRUCTION SPECIFICATIONS:

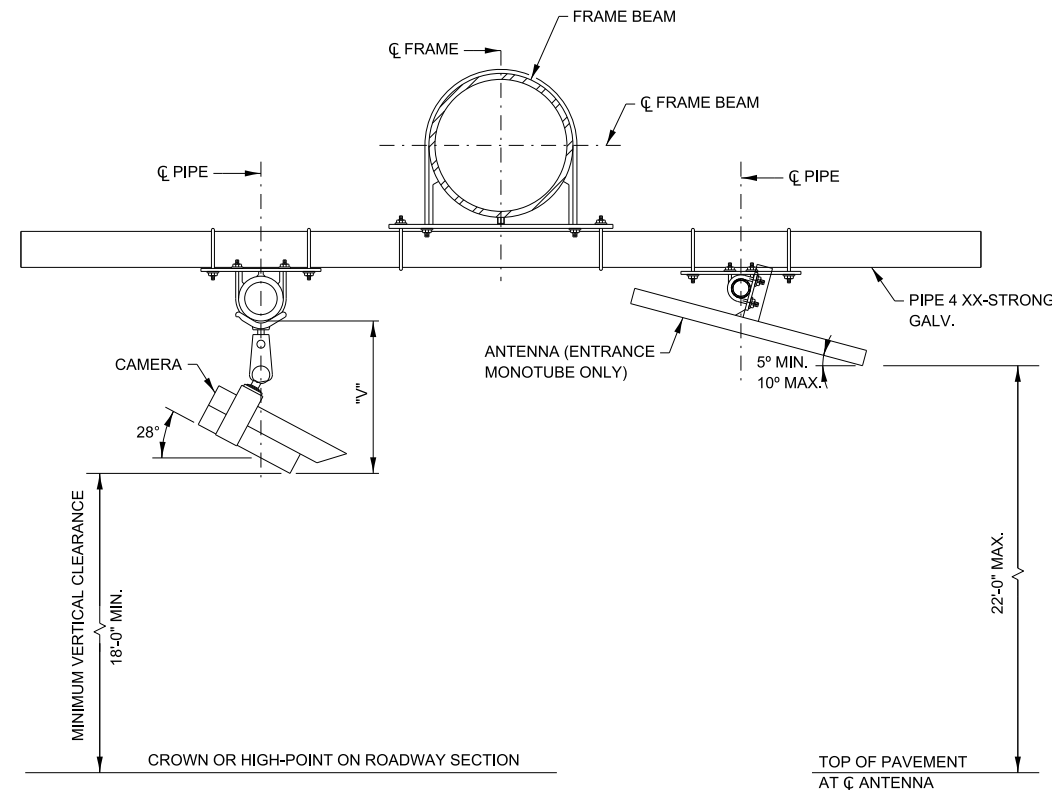
- ILLINOIS TOLLWAY SUPPLEMENTAL SPECIFICATIONS TO THE ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.
- ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.



PLASTIC TRIM DETAIL

NOTES:

- ALL SHARP EDGES OR DRIPS OF ZINC SHALL BE REMOVED FROM ALL STIFFENER PLATES PRIOR TO EPOXY GLUING THE TRIM. THE TRIM SHALL BE EPOXY GLUED TO BOTH SIDES OF THE PLATE. THE COST OF THE TRIM AND EPOXY GLUE SHALL BE INCLUDED IN THE COST OF "OVERHEAD SIGN STRUCTURE, AET RAMP ENTRANCE MONOTUBE TYPE (STEEL)"
- THE TRIM SHALL BE HEAVY DUTY PLASTIC TRIM (OPTION 1 OR OPTION 2 OR EQUIVALENT) FOR OUTDOOR USE FOR APPLICATION WITH A TEMPERATURE RANGE OF -20°F TO 150°F. THE TRIM SHALL BE CHEMICAL RESISTANT, A HARD RATING AND SHALL MEET FMVSS-302 FOR FEDERAL MOTOR VEHICLE SAFETY STANDARDS FOR FLAMMABILITY.
- EPOXY GLUE SHALL BE FOR OUTDOOR USE WITH A TEMPERATURE RANGE OF -20°F TO 150°F AND SHALL BE SUITABLE FOR METAL AND PLASTIC WITH A SHEAR STRENGTH GREATER THAN 2300 PSI.



SECTION P-P

NOTE:

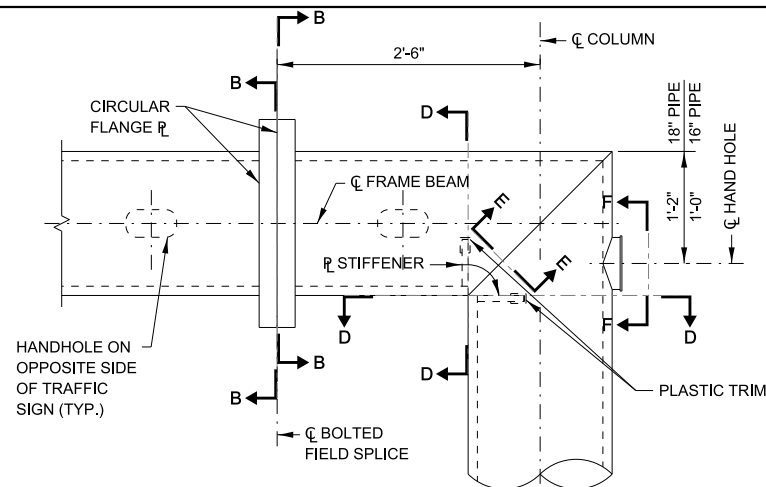
VERIFY DIMENSION "V" WITH CAMERA MANUFACTURER.

APPROVED BY: *Manar Nashif*
 CHIEF ENGINEERING OFFICER
 DATE: 03/01/2026

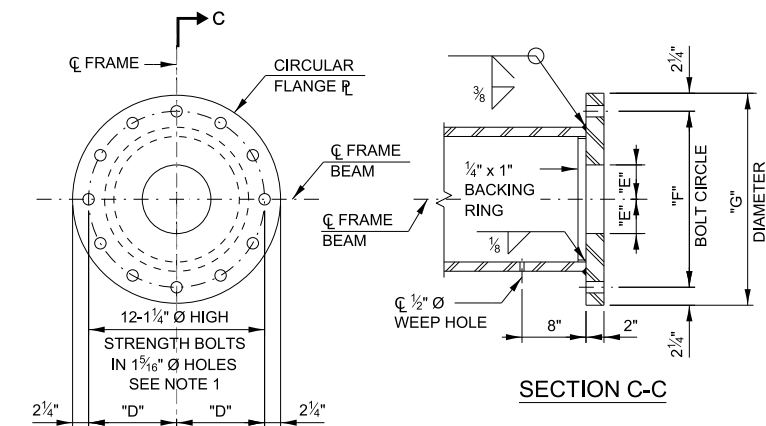
Illinois Tollway

OVERHEAD SIGN STRUCTURE MONOTUBE TYPE (STEEL) MAINLINE STRUCTURE DETAILS

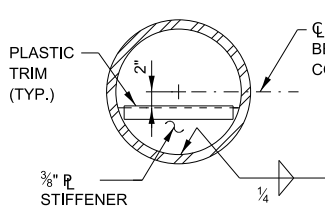
VERSION: 2026-03 STANDARD: F13-11 SHEET: 4 OF 9



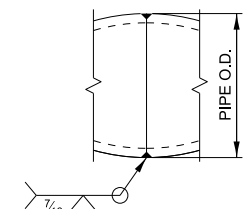
SECTION A-A
(SEE SHEET 1 OF THIS SERIES FOR LOCATION)



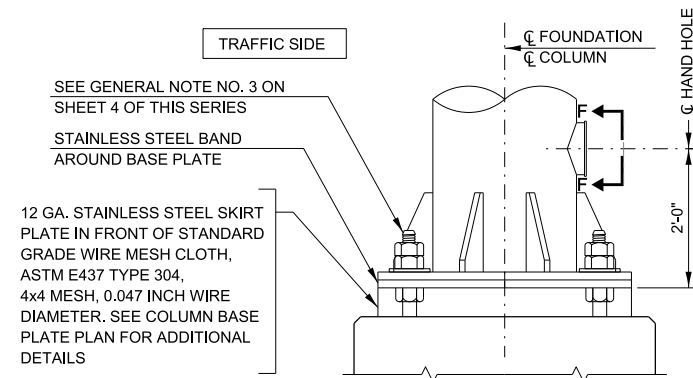
SECTION B-B



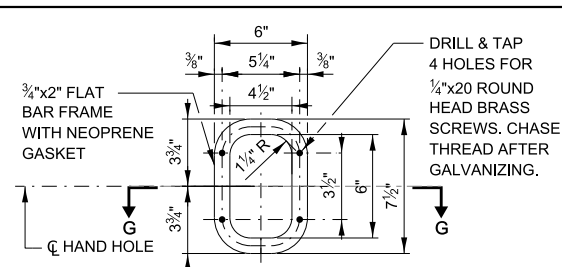
SECTION D-D



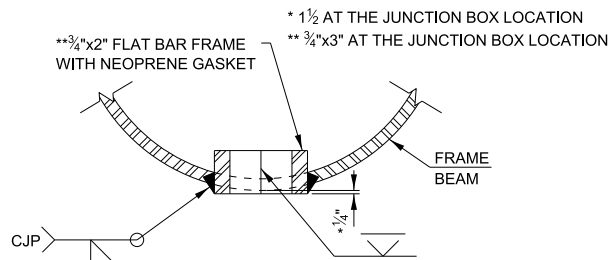
SECTION E-E



COLUMN BASE

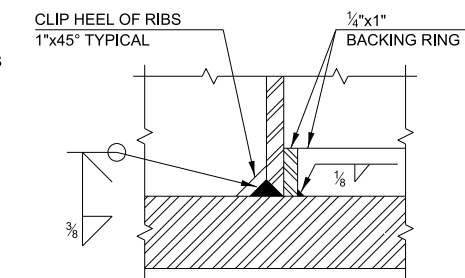


SECTION F-F

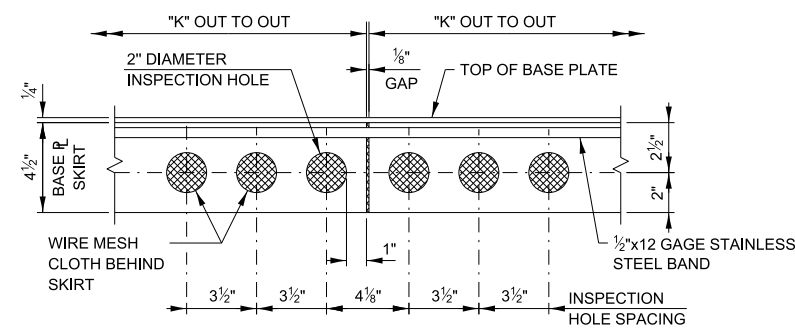


SECTION G-G

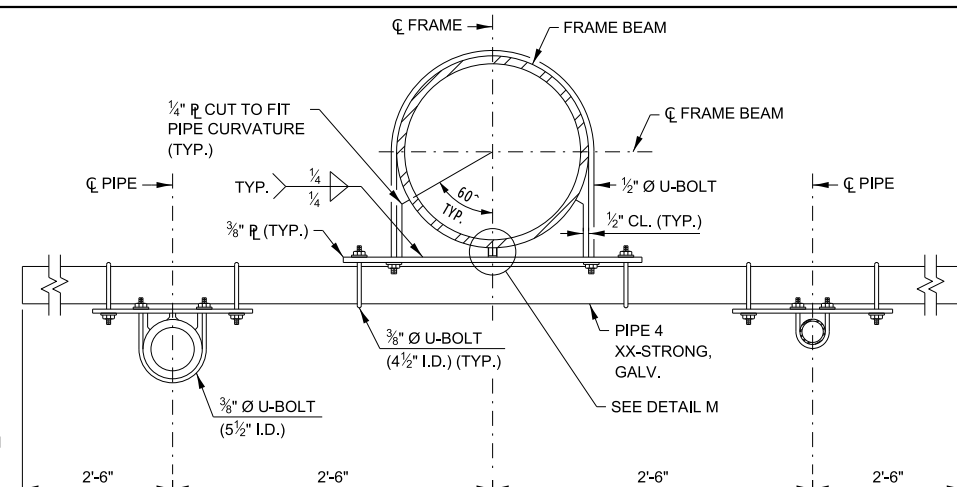
| FRAME BEAM | "D" | "E" | "F" | "G" |
|--------------|-----|-----|--------|-----------|
| HSS 16x0.500 | 10" | 6" | 1'-8" | 2'-0 1/2" |
| HSS 18x0.500 | 11" | 6" | 1'-10" | 2'-2 1/2" |



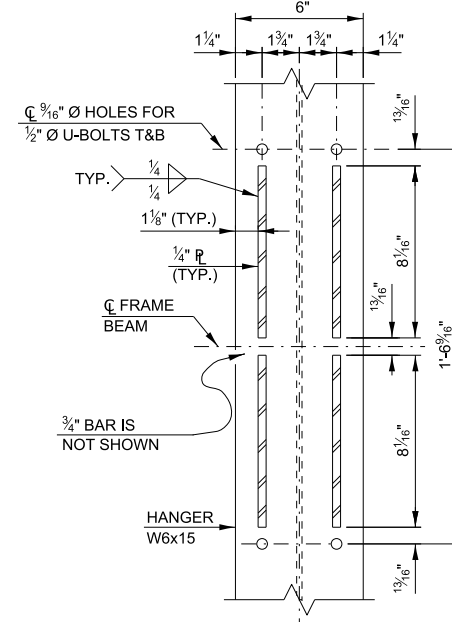
DETAIL T



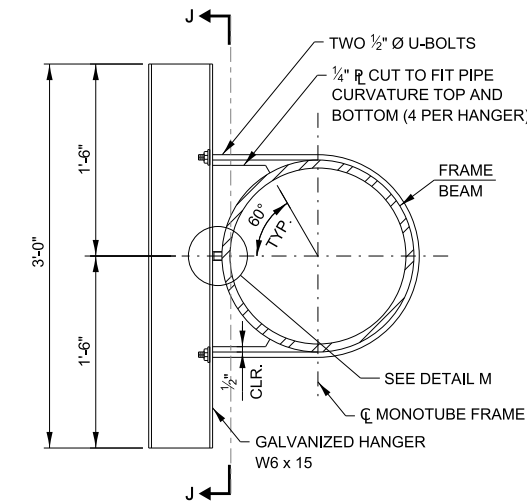
VIEW R-R (BASE PLATE SKIRT)



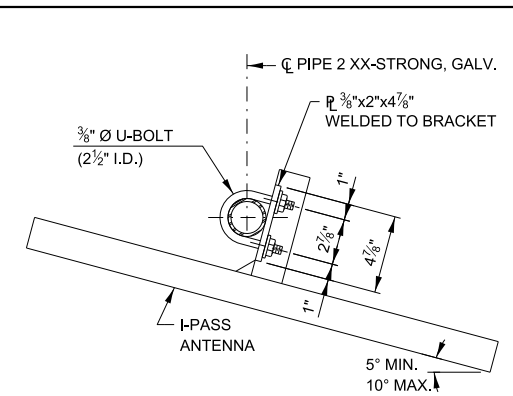
SECTION K-K



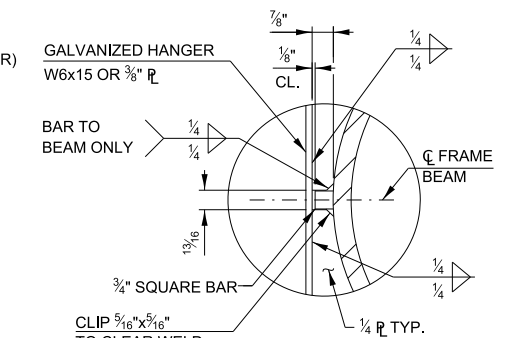
SECTION J-J



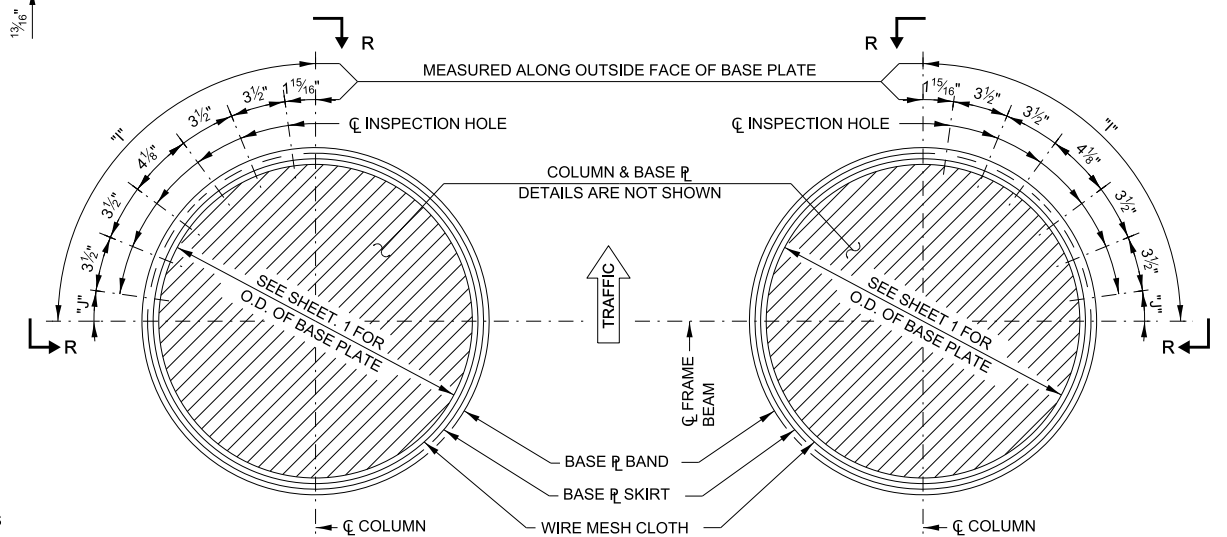
SECTION H-H (SIGN HANGER)



ANTENNA HANGER



DETAIL M



LEFT BASE PLATE

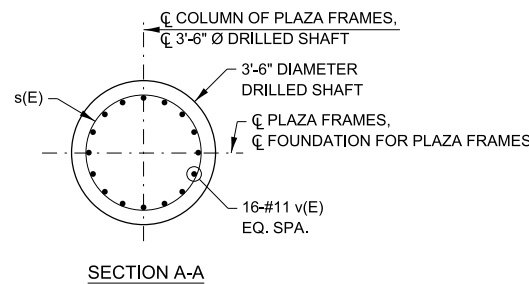
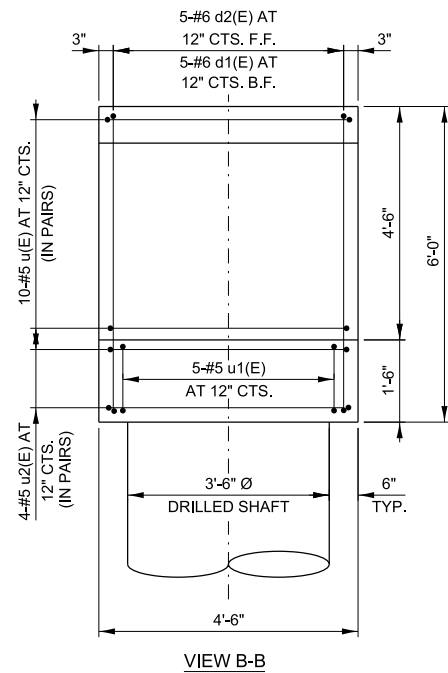
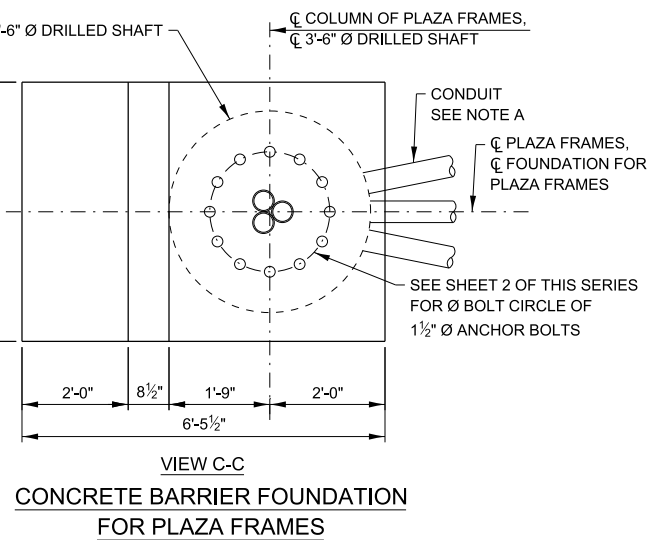
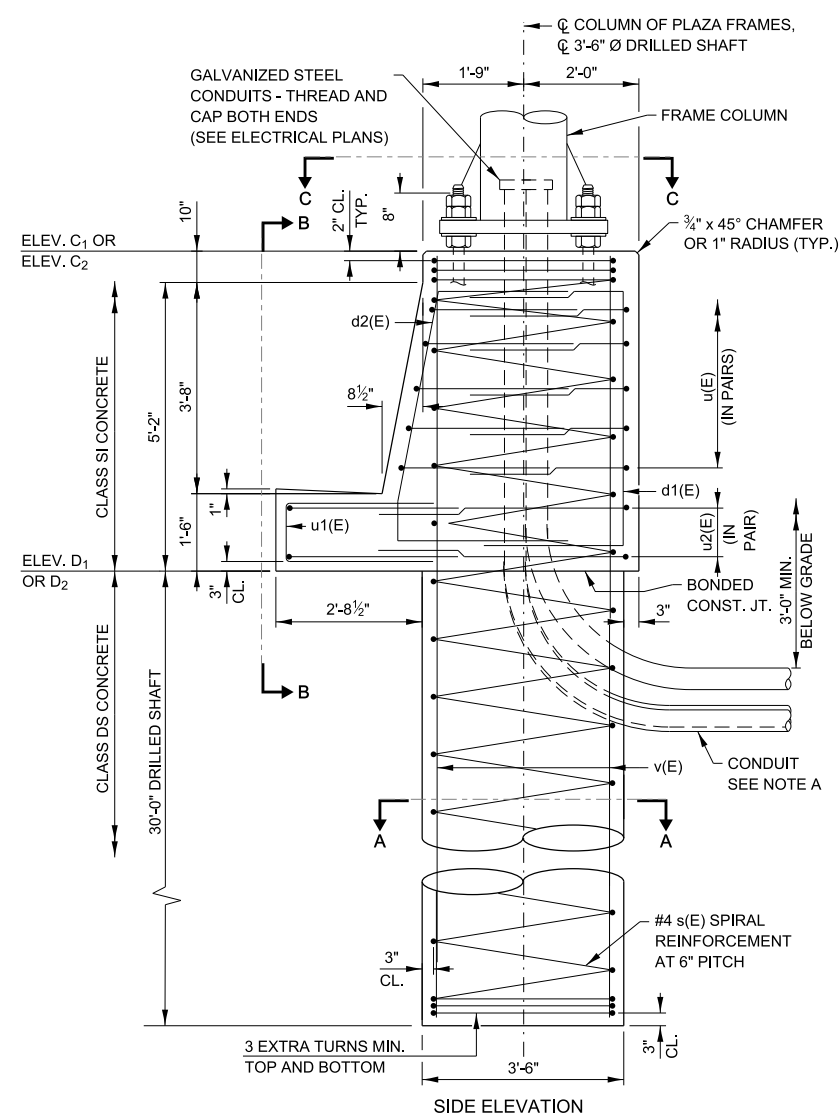
RIGHT BASE PLATE

COLUMN BASE PLATE PLAN

| FRAME COLUMN | "I" | "J" | "K" |
|--------------|------------|----------|------------|
| HSS 16x0.500 | 1'-8 7/16" | 3/8" | 6'-9 9/16" |
| HSS 18x0.500 | 1'-10" | 1 15/16" | 7'-3 7/8" |



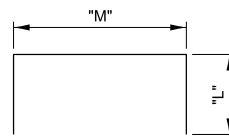
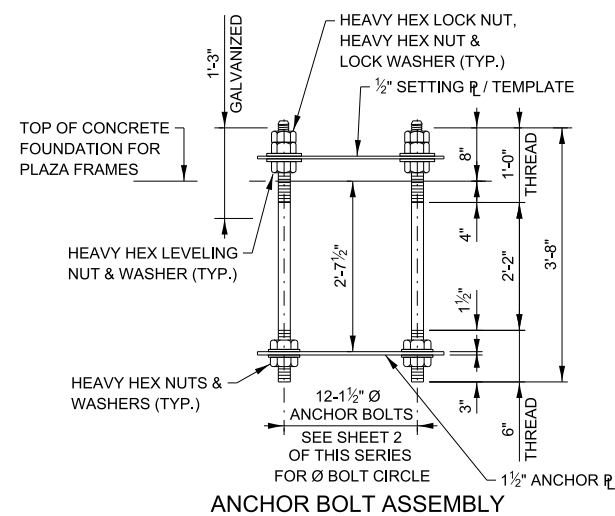
OVERHEAD SIGN STRUCTURE
MONOTUBE TYPE (STEEL)
MAINLINE STRUCTURE
DETAILS



NOTE A:
COORDINATE CONDUIT SIZE, LOCATION AND QUANTITY WITH ELECTRICAL PLANS. CONDUITS SHALL BE PLACED TO MISS REINFORCEMENT. CUTTING OF REINFORCEMENT SHALL NOT BE ALLOWED.

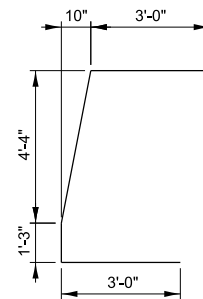
FOUNDATIONS:
THE FOUNDATION DETAILS SHOWN ARE BASED ON THE PRESENCE OF MOSTLY COMMON COHESIVE SOIL CONDITIONS (SILTY OR SANDY CLAY), WITH AN AVERAGE UNCONFINED COMPRESSIVE STRENGTH (QU) > 1.25 TON/SQ. FT. WHICH MUST BE DETERMINED BY PREVIOUS SOIL INVESTIGATIONS AT THE JOBSITE. WHEN OTHER CONDITIONS ARE 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.

LEGEND:
F.F. - FRONT FACE
B.F. - BACK FACE
CTS. - CENTERS



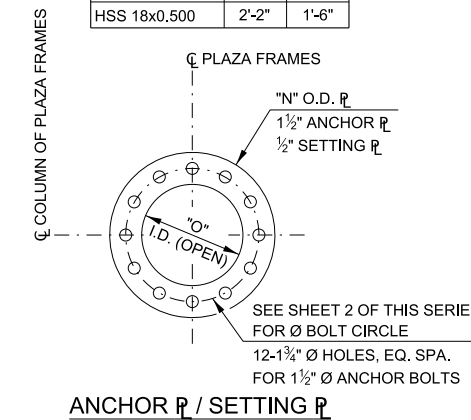
| BAR | "L" | "M" |
|-------|--------|-------|
| d1(E) | 3'-0" | 5'-7" |
| u(E) | 3'-0" | 4'-2" |
| u1(E) | 3'-6" | 1'-1" |
| u2(E) | 4'-1" | 4'-2" |
| u3(E) | 5'-10" | 4'-2" |

BARS d1(E), u(E), u1(E), u2(E) AND u3(E)



BAR d2(E)

| FRAME COLUMN | "N" | "O" |
|--------------|-------|-------|
| HSS 16x0.500 | 2'-0" | 1'-4" |
| HSS 18x0.500 | 2'-2" | 1'-6" |



BAR LIST-ONE FOUNDATION

| BAR | NO. | | SIZE | LENGTH | SHAPE |
|-------|-----------------------|---------------------|------|---------|-------|
| | CONCRETE BARRIER FDN. | MEDIAN BARRIER FDN. | | | |
| d1(E) | 5 | 10 | #6 | 11'-7" | □ |
| d2(E) | 5 | 10 | #6 | 11'-8" | □ |
| s(E) | 1 | | #4 | 35'-7" | MWW |
| s1(E) | | 1 | #4 | 35'-7" | MWW |
| v(E) | 16 | | #11 | 35'-7" | — |
| v1(E) | | 16 | #11 | 35'-7" | — |
| u(E) | 10 | 10 | #5 | 10'-2" | □ |
| u1(E) | 5 | 10 | #5 | 8'-1" | □ |
| u2(E) | 4 | | #5 | 12'-4" | □ |
| u3(E) | | 4 | #5 | 15'-10" | □ |

ESTIMATED QUANTITY

| ITEM | UNIT | CONCRETE BARRIER FDN. | MEDIAN BARRIER FDN. |
|---------------------------------|---------|-----------------------|---------------------|
| CLASS SI CONCRETE | CU. YD. | 4.7 | 4.9 |
| CLASS DS CONCRETE | CU. YD. | 10.7 | 10.7 |
| REINFORCEMENT BARS EPOXY COATED | POUND | 3,890 | 4,120 |
| PROTECTIVE COAT | SQ. YD. | 5.2 | 7.4 |

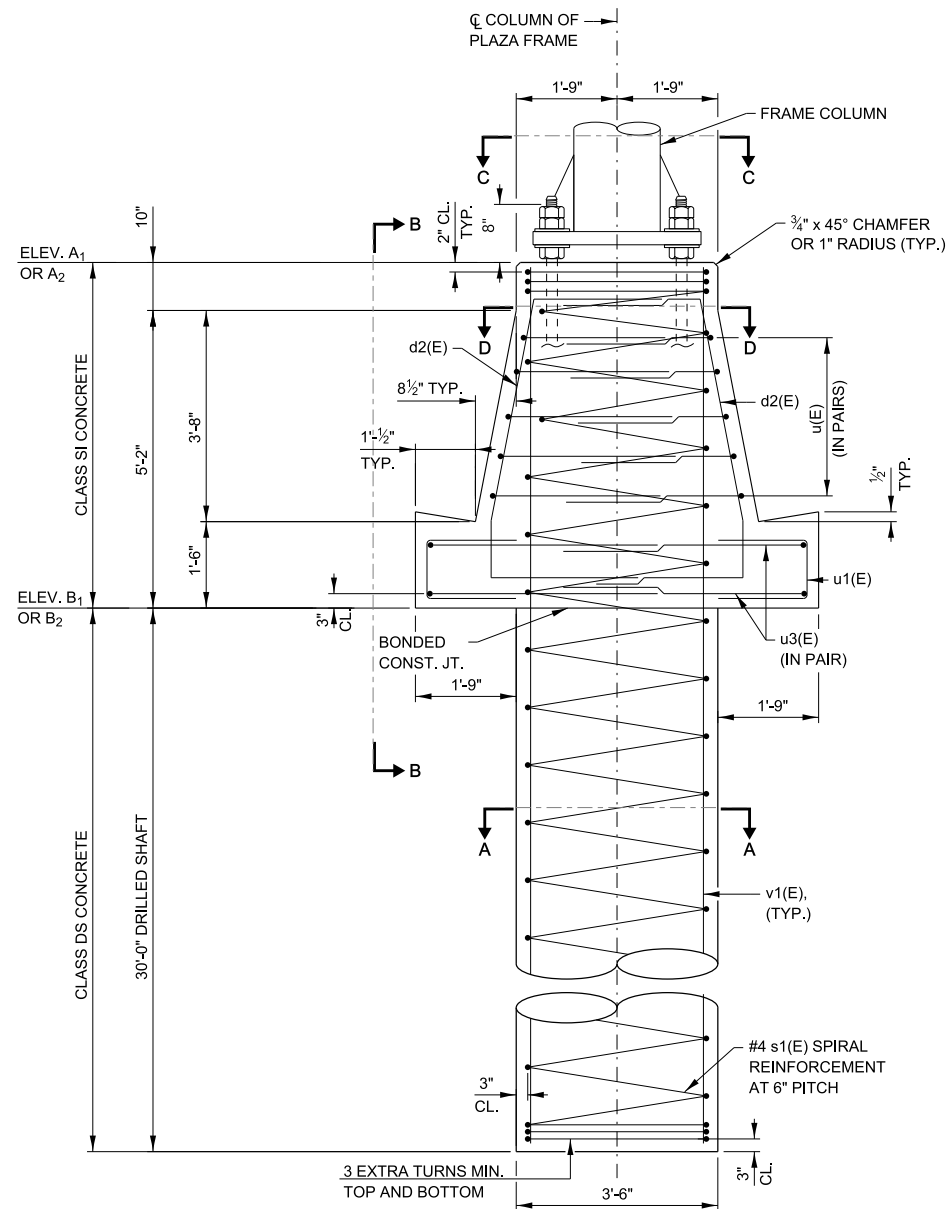
NOTES:

- SITE GROUNDING ELECTRODE SYSTEM TO BE PROVIDED AS INDICATED ON THE PLANS.
- PROTECTIVE COAT SHALL BE APPLIED TO THE TRAFFIC AND TOP FACES OF THE BARRIER AND TOP OF GUTTER.

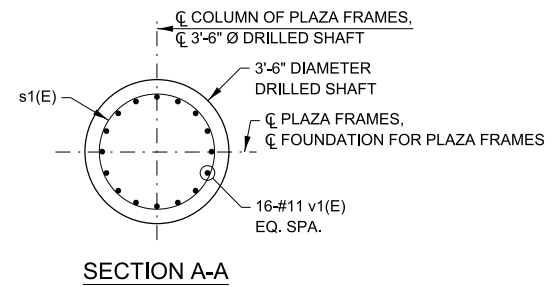
APPROVED BY: *Manar Nashif*
CHIEF ENGINEERING OFFICER
DATE: 03/01/2026

OVERHEAD SIGN STRUCTURE MONOTUBE TYPE (STEEL) MAINLINE STRUCTURE DETAILS

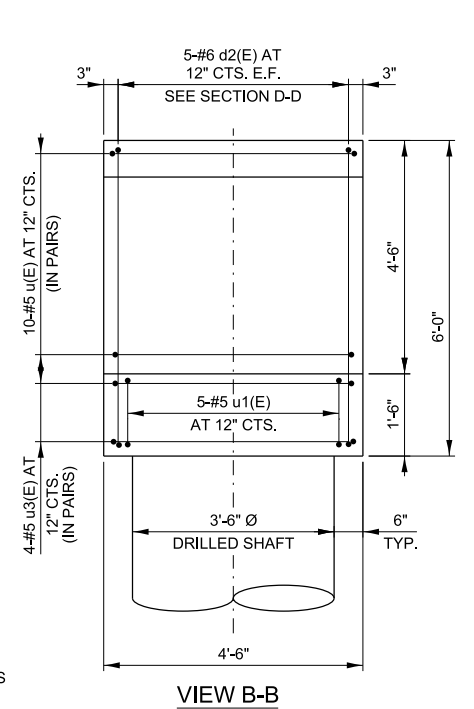
VERSION: 2026-03 STANDARD: F13-11 SHEET: 6 OF 9



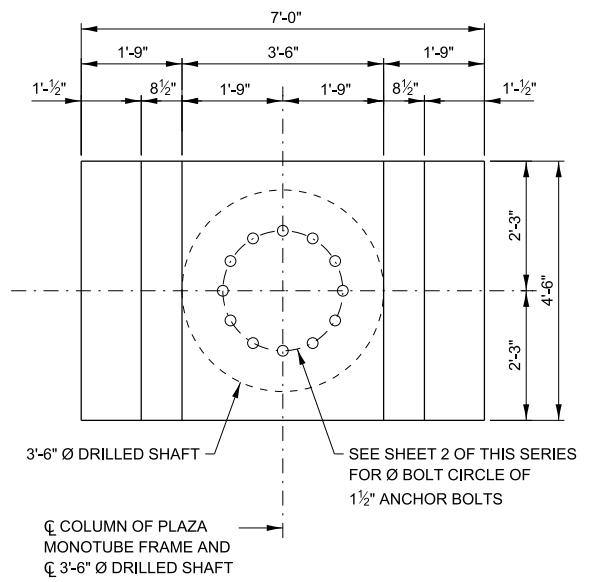
MEDIAN FOUNDATION FOR PLAZA FRAMES



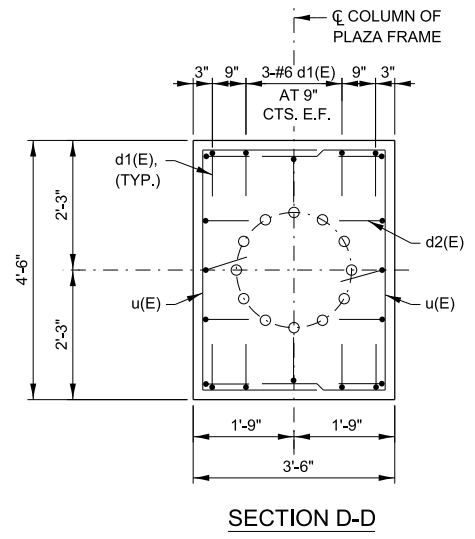
SECTION A-A



VIEW B-B



VIEW C-C



SECTION D-D

NOTES:

1. ANCHOR BOLT ASSEMBLY DETAIL, ANCHOR PLATE DETAIL AND BAR BENDING DIAGRAMS AND QUANTITIES ARE SHOWN ON SHEET 6 OF THIS SERIES.
2. SEE SHEET 6 OF THIS SERIES FOR ADDITIONAL NOTES.
3. SITE GROUNDING ELECTRODE SYSTEM TO BE PROVIDED AS INDICATED ON THE PLANS.
4. SEE SHEETS 1 AND 9 FOR BARRIER TAPER DETAILS.

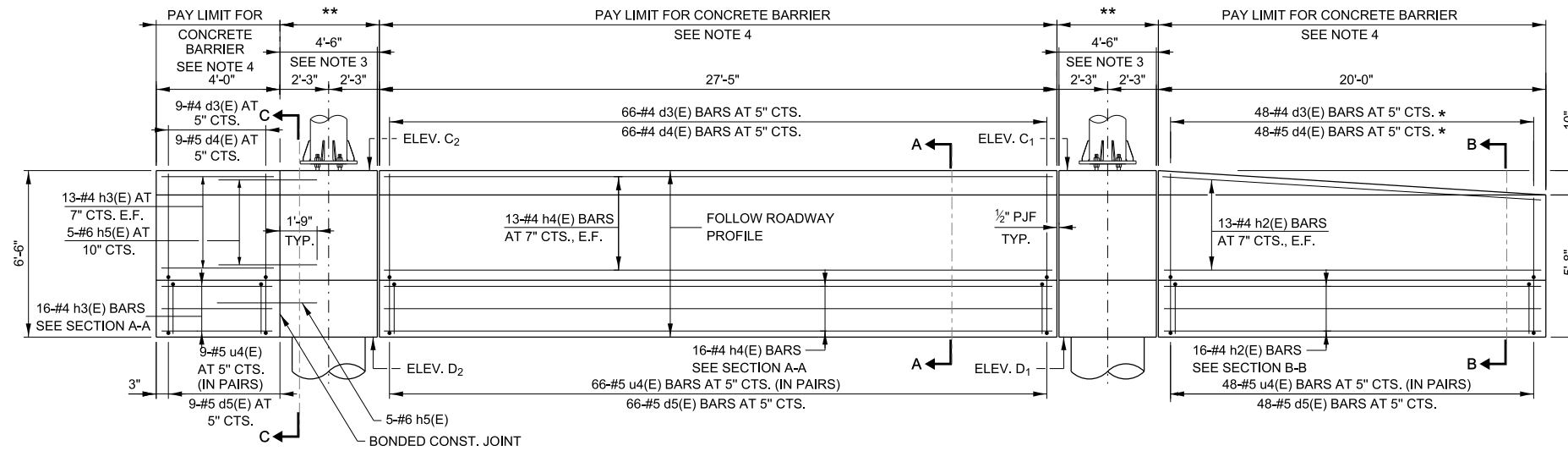
LEGEND:

E.F. - EACH FACE
CTS. - CENTERS

APPROVED BY: *Manar Nashif*
CHIEF ENGINEERING OFFICER
DATE: 03/01/2026

OVERHEAD SIGN STRUCTURE
MONOTUBE TYPE (STEEL)
MAINLINE STRUCTURE
DETAILS

| | | |
|---------------------|---------------------|------------------|
| VERSION: 2026-03 | STANDARD: F13-11 | SHEET: 7 OF 9 |
|---------------------|---------------------|------------------|

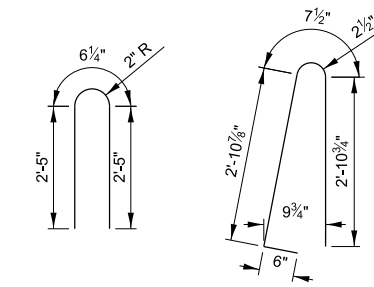


OUTSIDE SHOULDER CONCRETE BARRIER ELEVATION
INSIDE FACE BARRIER IS SHOWN

* CUT IN FIELD AS REQUIRED TO FIT TAPER
** PAY LIMIT FOR FOUNDATION FOR OVERHEAD SIGN STRUCTURE

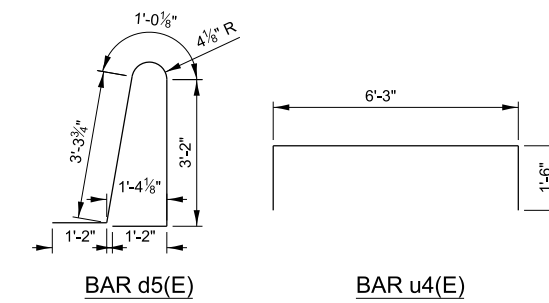
BAR LIST - ONE BARRIER

| BAR | NO. | SIZE | LENGTH | SHAPE |
|-------|-----|------|--------|-------|
| d3(E) | 123 | #4 | 5'-5" | |
| d4(E) | 123 | #5 | 7'-0" | |
| d5(E) | 123 | #5 | 9'-10" | |
| h2(E) | 29 | #4 | 19'-7" | |
| h3(E) | 29 | #4 | 3'-8" | |
| h4(E) | 29 | #4 | 27'-1" | |
| h5(E) | 10 | #6 | 3'-9" | |
| u4(E) | 246 | #5 | 9'-3" | |



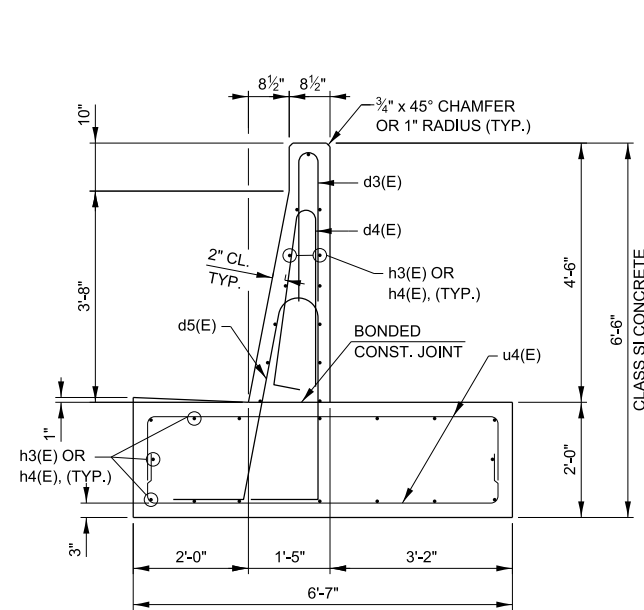
BAR d3(E)

BAR d4(E)

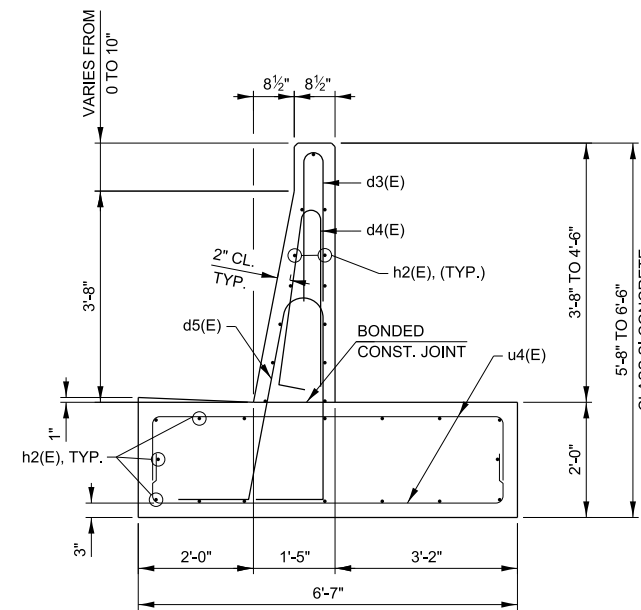


BAR d5(E)

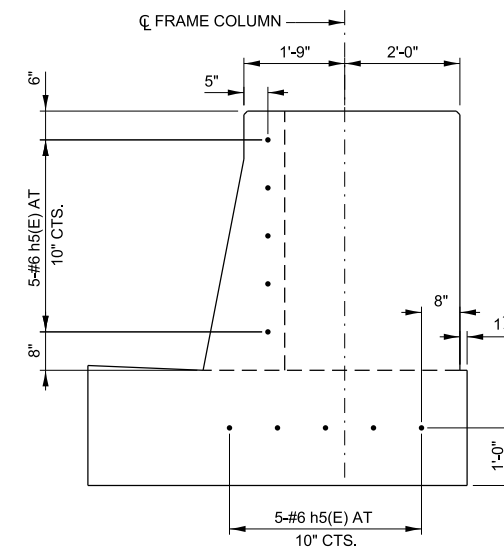
BAR u4(E)



SECTION A-A



SECTION B-B



SECTION C-C

ESTIMATED QUANTITY

| ITEM | UNIT | ESTIMATED QUANTITY | | | |
|---|--|--------------------|---------------|-------|-------|
| | | ENTRANCE MONOTUBE | EXIT MONOTUBE | TOTAL | |
| OUTSIDE SHOULDER CONCRETE BARRIER | CONCRETE STRUCTURES | CU. YD. | 21.8 | 11.6 | 33.4 |
| | REINFORCEMENT BARS, EPOXY COATED | POUND | 3,920 | 2,090 | 6,010 |
| | PROTECTIVE COAT | SQ. YD. | 26.8 | 14.3 | 41.1 |
| MEDIAN SHOULDER CONCRETE BARRIER (SEE SHEET 9 OF 9) | CONCRETE BARRIER MEDIAN TRANSITION, DOUBLE FACE, AT PLAZA MONOTUBE | FOOT | 31.8 | 31.8 | 63.5 |
| | CONCRETE BARRIER MEDIAN, DOUBLE FACE, AT PLAZA MONOTUBE | FOOT | 13.8 | 13.8 | 27.5 |
| | PROTECTIVE COAT | SQ. YD. | 60.2 | 60.2 | 120.5 |

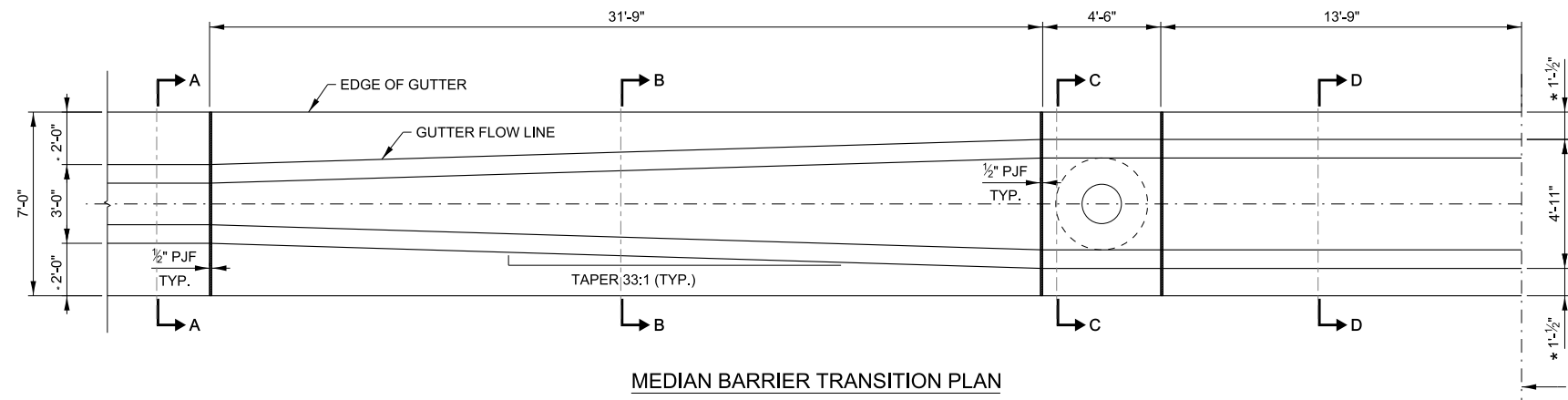
NOTES:

- PROTECTIVE COAT SHALL BE APPLIED TO THE TRAFFIC AND TOP FACES OF THE BARRIER, TOP FACE OF THE GUTTER AND TO THE ENTRANCE SIDE FACE (AT THE BEGINNING OF THE PLAZA PAVEMENT) FOR THE FULL HEIGHT OF THE BARRIER.
- FOR LOCATION OF ELECTRICAL JUNCTION BOXES ON THE WALL, SEE ELECTRICAL DETAIL SHEETS.
- FOR CONCRETE BARRIER FOUNDATION DETAILS FOR PLAZA FRAMES SEE SHEET 6 OF THIS SERIES.
- OUTSIDE SHOULDER CONCRETE BARRIER AND BASE DETAILED ON THIS SHEET WILL BE PAID FOR UNDER THE ITEMS: CONCRETE STRUCTURES, REINFORCEMENT BARS, EPOXY COATED AND PROTECTIVE COAT.
- ALL CONCRETE BARRIERS LOCATED OUTSIDE THE LIMITS SHOWN ON THESE SHEETS WILL BE PAID SEPARATELY.

APPROVED BY: *Manar Nashif*
CHIEF ENGINEERING OFFICER
DATE: 03/01/2026

OVERHEAD SIGN STRUCTURE MONOTUBE TYPE (STEEL) MAINLINE STRUCTURE DETAILS

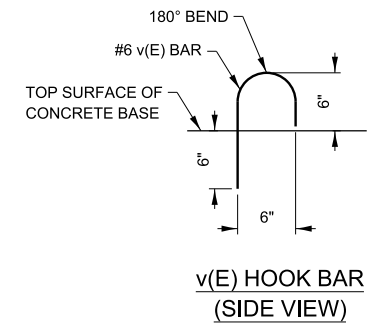
VERSION: 2026-03 STANDARD: F13-11 SHEET: 8 OF 9



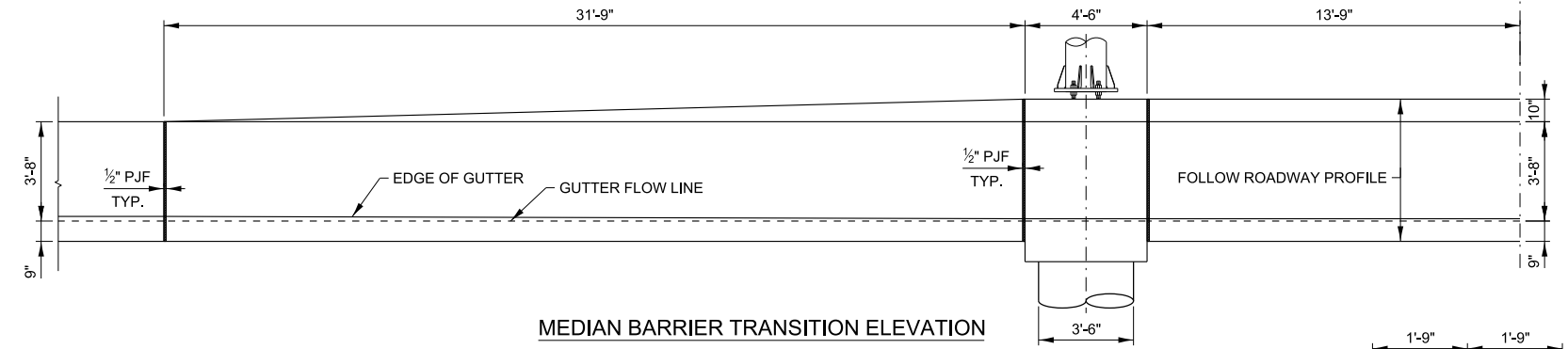
MEDIAN BARRIER TRANSITION PLAN

NOTES:

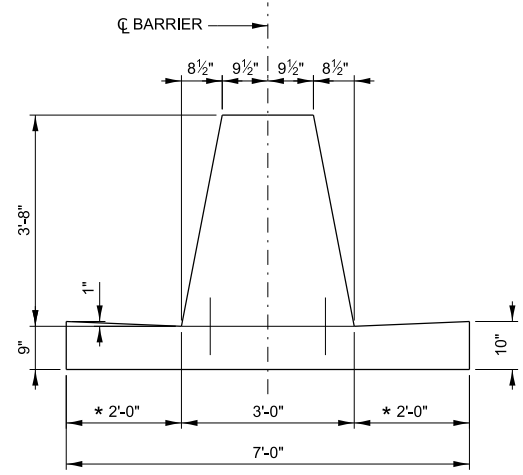
1. FOR LOCATION OF ELECTRICAL JUNCTION BOXES IN THE WALL, SEE ELECTRICAL DETAIL SHEETS.
2. FOR CONCRETE BARRIER FOUNDATION DETAILS FOR PLAZA FRAMES SEE SHEET 7 OF THIS SERIES.



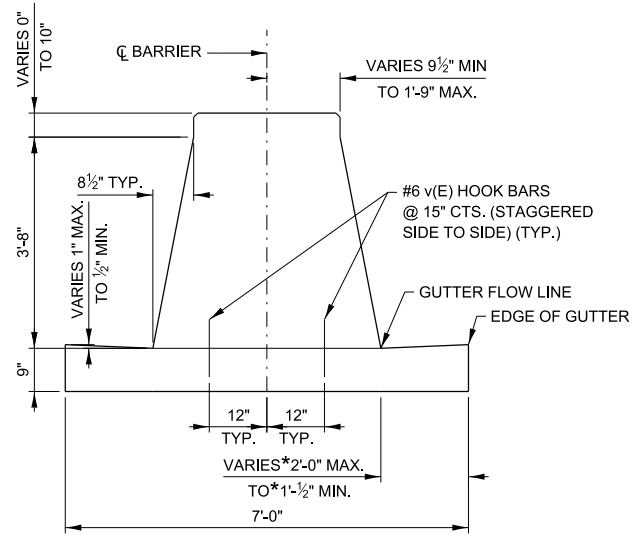
v(E) HOOK BAR (SIDE VIEW)



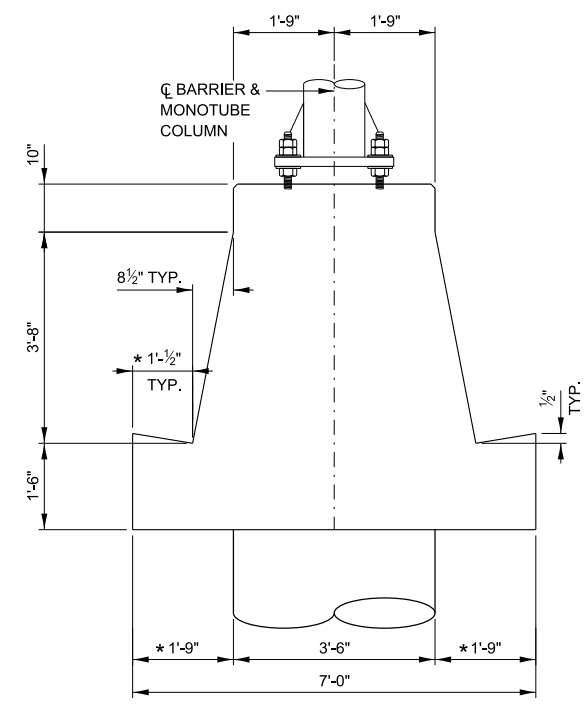
MEDIAN BARRIER TRANSITION ELEVATION



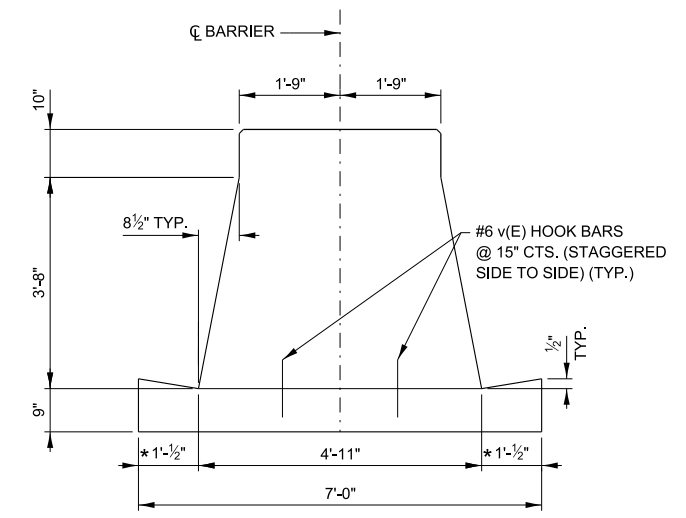
SECTION A-A



SECTION B-B



SECTION C-C (MONOTUBE FOUNDATION REINFORCEMENT NOT SHOWN FOR CLARITY)



SECTION D-D

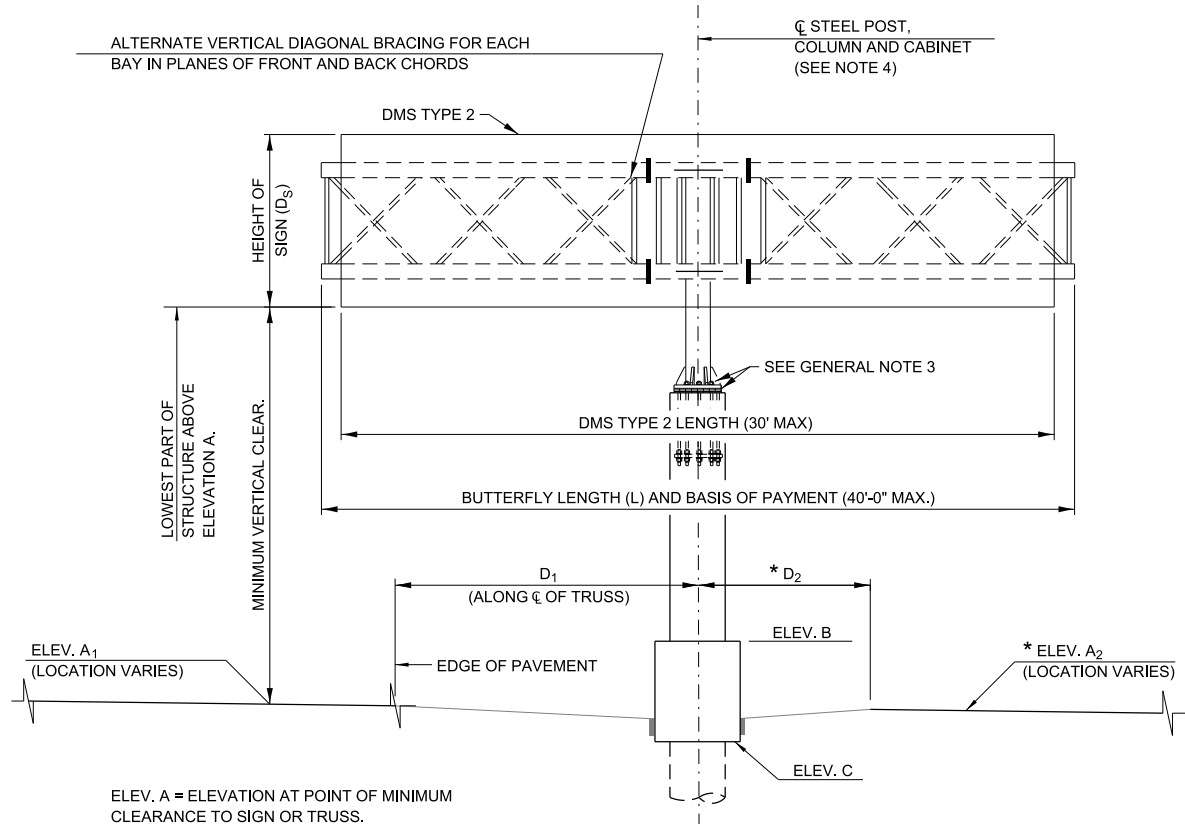
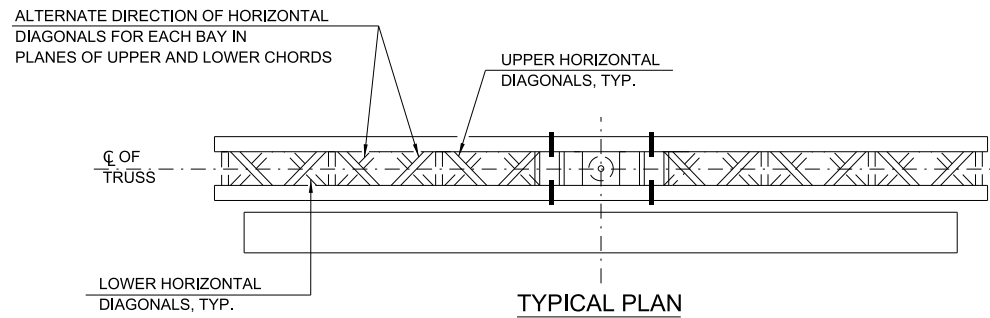
* WHEN THE ADJACENT ROADWAY SHOULDER IS WIDER THAN 14 FEET, THE GUTTER WIDTH SHALL BE WIDENED AS SHOWN ON THE CONTRACT PLANS.

APPROVED BY: *Manar Nashif*
 CHIEF ENGINEERING OFFICER
 DATE: 03/01/2026

Illinois Tollway

OVERHEAD SIGN STRUCTURE
 MONOTUBE TYPE (STEEL)
 MAINLINE STRUCTURE
 DETAILS

VERSION: 2026-03 STANDARD: F13-11 SHEET: 9 OF 9

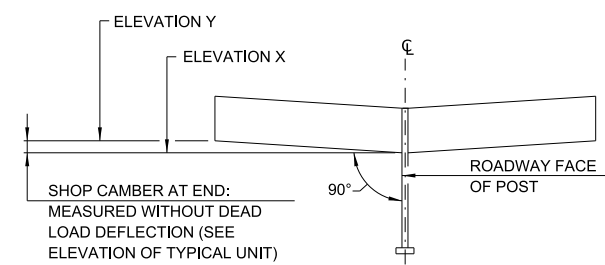


TYPICAL ELEVATION
LOOKING IN DIRECTION OF TRAFFIC

* ELEVATION A₂ AND DIMENSION D₂ NOT USED WHEN BUTTERFLY STRUCTURE IS MOUNTED ON RIGHT SIDE OF THE SHOULDER.

SHOP CAMBER TABLE

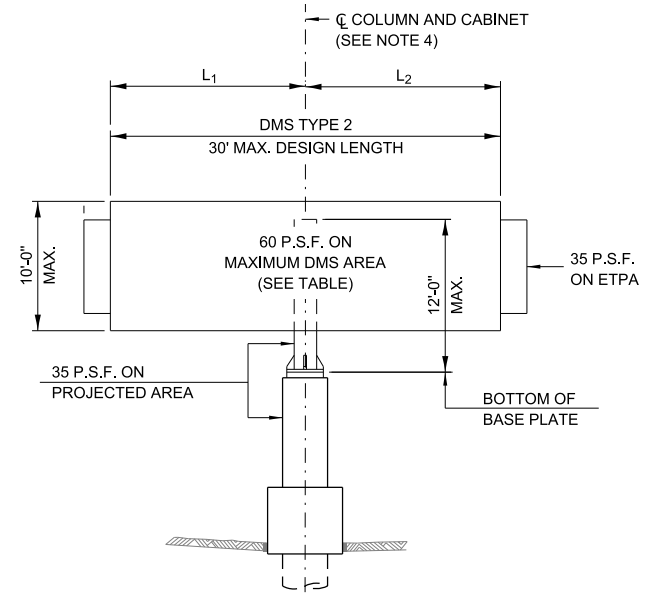
| UNIT LENGTH L ₁ OR L ₂ | SHOP CAMBER AT END |
|--|--------------------|
| 15' | 1/4" |
| 20' | 1/2" |
| 25' | 3/4" |



CAMBER DIAGRAM
(FOR FABRICATION ONLY)

DMS TYPE 2 TABLE

| TRUSS MOUNTING | MAXIMUM TOTAL AREA | MAXIMUM ALLOWABLE WEIGHT |
|----------------|--------------------|----------------------------------|
| ONE FACE | 300 SQ. FT. | 5000 LB. - CENTERED ON STRUCTURE |
| TWO FACE | 300 SQ. FT. | 6000 LB. - CENTERED ON STRUCTURE |



DESIGN WIND LOADING DIAGRAM
ETPA = EFFECTIVE TRUSS PROJECTED AREA

FABRICATION NOTES:

- MATERIALS: ALL STRUCTURAL STEEL PIPE SHALL BE ASTM A53 GRADE B OR ASTM A106 GRADE B OR API 5L GRADE X42 OR API 5L GRADE X52 OR ASTM A500 GRADE B OR C. ALL STRUCTURAL STEEL PLATES AND SHAPE SHALL CONFORM TO ASTM A36 (AASHTO M183) OR ASTM A572 GRADE 50. 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.
- WELDING: ALL WELDS TO BE CONTINUOUS UNLESS OTHERWISE SHOWN. ALL WELDING TO BE DONE IN ACCORDANCE WITH CURRENT AWS D1.1 STRUCTURAL WELDING CODE AND THE STANDARD SPECIFICATIONS.
- FASTENERS: HIGH STRENGTH BOLTS SHALL SATISFY THE REQUIREMENTS OF AASHTO M164 (ASTM A325), OR APPROVED ALTERNATE, AND SHALL HAVE MATCHING LOCKNUTS. THREADED STUDS FOR SPLICES (IF MEMBERS INTERFERE) SHALL SATISFY THE REQUIREMENTS OF ASTM A449, ASTM A193, GRADE B7, OR APPROVED ALTERNATE, AND SHALL HAVE MATCHING LOCKNUTS. BOLTS AND LOCKNUTS NOT REQUIRED TO BE HIGH STRENGTH SHALL SATISFY THE REQUIREMENTS OF ASTM A307. ALL BOLTS AND LOCKNUTS SHALL BE HOT DIP GALVANIZED PER AASHTO M232, EXCEPT STAINLESS STEEL FASTENERS, NUTS AND WASHERS. THE LOCKNUTS SHALL HAVE NYLON OR STEEL INSERTS. A STAINLESS STEEL FLAT WASHER CONFORMING TO ASTM A240 TYPE 302 OR 304, IS REQUIRED UNDER BOTH HEAD AND NUT OR UNDER BOTH NUTS WHERE THREADED STUDS ARE USED. HIGH STRENGTH BOLT INSTALLATION SHALL CONFORM TO ARTICLE 505.04(f)(2)d OF THE IDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. ROTATIONAL CAPACITY ("ROCAP") TESTING OF BOLTS WILL NOT BE REQUIRED.
- U-BOLTS SHALL BE STAINLESS STEEL AND SHALL CONFORM TO ASTM 193, CLASS I, GRADE B8 (AISI TYPE 304). WASHERS FOR U-BOLTS SHALL CONFORM TO ASTM A240, TYPE 302. NUTS FOR U-BOLTS SHALL CONFORM TO ASTM A194 (AASHTO M292), GRADE 8F (AISI TYPE 303).
- GALVANIZING: ALL STEEL PLATES, SHAPES AND PIPE SHALL BE HOT DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AASHTO M111. PAINTING IS NOT PERMITTED.
- ANCHOR BOLTS: SHALL CONFORM TO AASHTO M314 OR ASTM F1554 GRADE 55.

GENERAL NOTES:

- WORK THIS SHEET WITH OVERHEAD SIGN STRUCTURE BUTTERFLY TYPE (STEEL) SUMMARY AND TOTAL BILL OF MATERIAL SHEET.
- AFTER ADJUSTMENTS TO LEVEL TRUSS AND ENSURE ADEQUATE VERTICAL CLEARANCE, ALL TOP AND BOTTOM LEVELING NUTS SHALL BE TIGHTENED AGAINST THE BASE PLATE WITH A MINIMUM TORQUE OF 200 LB.-FT. STAINLESS STEEL MESH SHALL THEN BE PLACED AROUND THE PERIMETER OF THE BASE PLATE. SECURE TO BASE PLATE WITH STAINLESS STEEL BANDING.
- CENTERLINE DMS TYPE 2 SHALL BE LOCATED AT CENTERLINE OF COLUMN.
- TRUSSES SHALL BE SHIPPED INDIVIDUALLY WITH ADEQUATE PROVISION TO PREVENT DETRIMENTAL MOTION DURING TRANSPORT. THIS MAY REQUIRE ROPES BETWEEN HORIZONTALS AND DIAGONALS OR ENERGY DISSIPATING (ELASTIC) TIES TO THE VEHICLE. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE CONFIGURATION AND PROTECTION OF THE TRUSSES.
- PROVIDE RUBBED SURFACE FINISH FOLLOWED BY CONCRETE SEALER APPLICATION ON ENTIRE SURFACE OF CONCRETE COLUMN AND ALL SURFACES OF CRASHWALL, EXCEPT BOTTOM SURFACE.
- REINFORCEMENT BARS: REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
- PARAMETERS SHOWN ARE BASIS FOR THIS STANDARD. INSTALLATION NOT WITHIN DIMENSIONAL LIMITS SHOWN REQUIRE SPECIAL ANALYSIS FOR ALL COMPONENTS.
- IT IS PERMISSIBLE TO MOUNT TWO DMS TYPE 2 ON THE BUTTERFLY TRUSS, ONE ON EACH FACE OF THE TRUSS. THE TOTAL COMBINED DEPTH OF DMS TYPE 2 SHALL NOT EXCEED 4'-4" AND THE TOTAL COMBINED WEIGHT SHALL NOT EXCEED 6000 LB. CENTER THE DMS TYPE 2 ON ~ STEEL POST. DO NOT INSTALL SIGN PANEL IN CONJUNCTION WITH DMS TYPE 2 SIGN CABINETS ON ONE FACE OF THE TRUSS. A SIGN PANEL ON ONE FACE AND DMS TYPE 2 ON THE OTHER IS PERMITTED.
- SIGN PANEL DIMENSIONS MAY NOT EXTEND BEYOND DMS LIMITS.

CONSTRUCTION SPECIFICATIONS:

- ALL MATERIALS, EXCEPT AS SHOWN, FABRICATION, ERECTION AND CONSTRUCTION REQUIREMENTS SHALL BE IN ACCORDANCE WITH SECTION 733 AND 734 OF THE LATEST ILLINOIS TOLLWAY SUPPLEMENTAL SPECIFICATIONS.

LOADING:

- WIND LOADING SHALL BE A MINIMUM OF 60 PSF ON DMS TYPE 2 AND 35 PSF NORMAL TO TRUSS ELEMENTS NOT BEHIND DMS TYPE 2.
- PROVIDE ANCHORAGE FOR ATTACHMENT OF PERSONAL FALL ARREST SYSTEMS PER OSHA SECTION 1926.502(D). ANCHORAGE SHALL BE INSTALLED AS CLOSE TO PANEL POINTS AS POSSIBLE AND SHALL BE CAPABLE OF SUPPORTING AT LEAST 5000 LBS.
- ICE LOAD OF 3 PSF APPLIED WITH A FACTOR OF 1.0 FOR STRENGTH I ONLY.

DESIGN SPECIFICATIONS:

2015 AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, 1ST EDITION WITH 2020 INTERIM REVISIONS, INSTRUCTIONS AND INFORMATION.

CONCRETE COLUMN, CRASH WALL AND DRILLED SHAFT ARE DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION, 2020.

DESIGN UNIT STRESSES FOR REINFORCED CONCRETE:

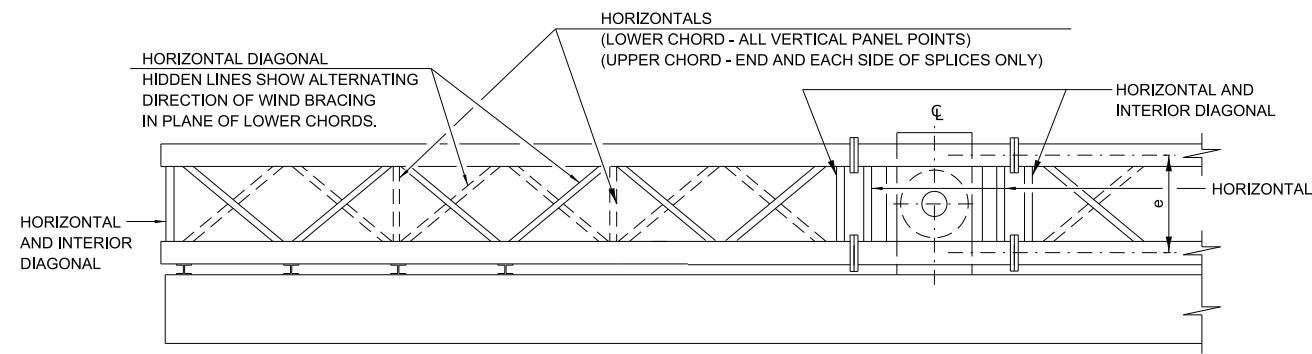
CLASS SI CONCRETE: $f_c = 3,500$ P.S.I.
CLASS DS CONCRETE: $f_c = 4,000$ P.S.I.
REINFORCING STEEL: $f_y = 60,000$ P.S.I.

| REVISIONS | |
|------------|--|
| DATE | DESCRIPTION |
| 03-01-2026 | DELETED NOTE 4 AND RE-NUMBERED. |
| 03-01-2025 | REVISED LOCKNUT MATERIAL. |
| 03-01-2022 | REVISE FABRICATION NOTES 1 & 4. |
| 03-01-2021 | UPDATE DESIGN LOADING AND DESIGN CRITERIA. |

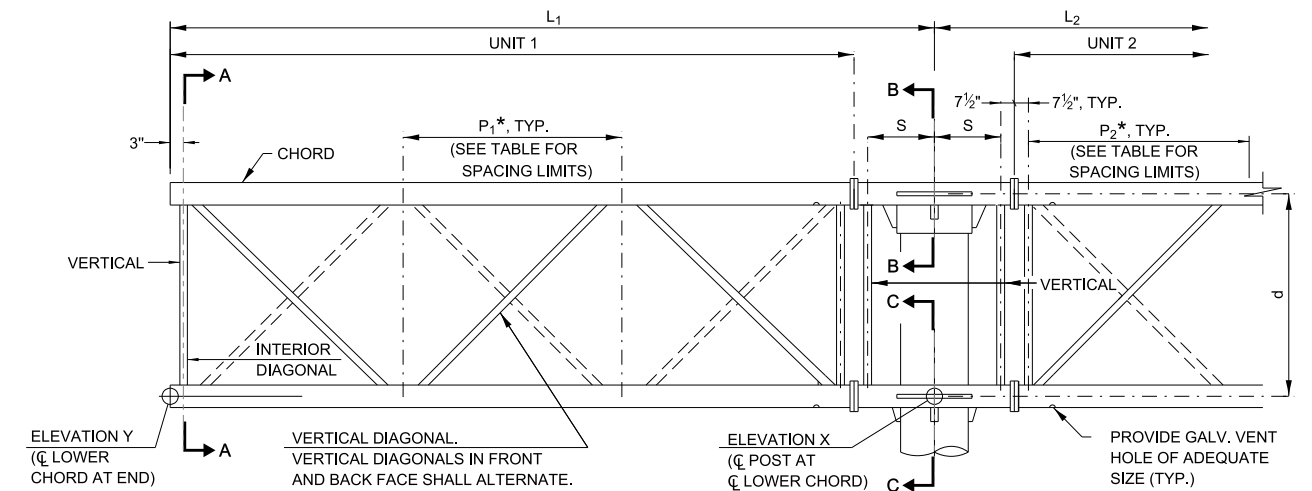


OVERHEAD SIGN STRUCTURE BUTTERFLY TYPE STRUCTURE DETAILS

APPROVED BY: *Manar Nashif* DATE: 03/01/2026
CHIEF ENGINEERING OFFICER



PLAN

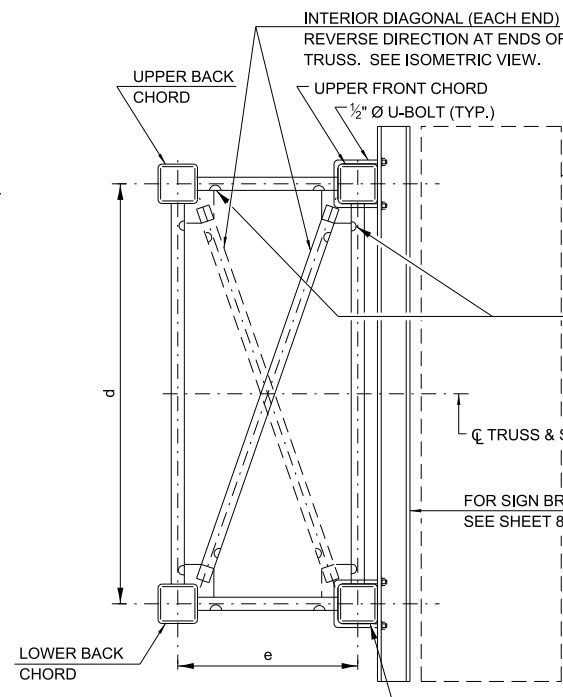


ELEVATION

(SIGN OMITTED FOR CLARITY)

TYPICAL TRUSS UNIT

FOR SECTION B-B AND SECTION C-C, SEE SHEET 3 OF THIS SERIES



SECTION A-A

DYNAMIC MESSAGE SIGN CABINET PLACE SYMMETRICAL ABOUT \bar{C} TRUSS.

GALVANIZING VENT HOLES OF ADEQUATE SIZE SHALL BE PROVIDED ON UNDERSIDE AT EACH END OF ALL TRUSS MEMBERS EXCEPT CHORDS. ALTERNATELY, HOLES MAY BE PROVIDED IN WALL OF CHORDS. ALL VENT HOLES SHALL BE DRILLED AND DE-BURRED, TYP.

FOR SIGN BRACKETS, SEE SHEET 8 OF THIS SERIES.

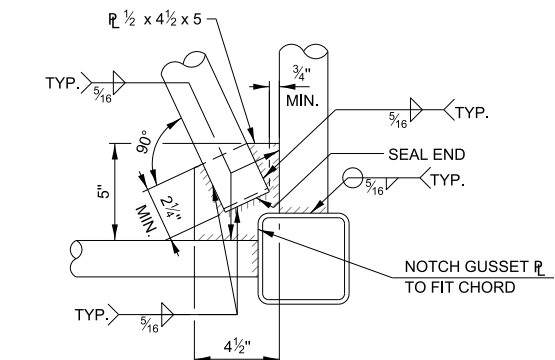
CJP AND SEE NOTE 2

BACKING BAR

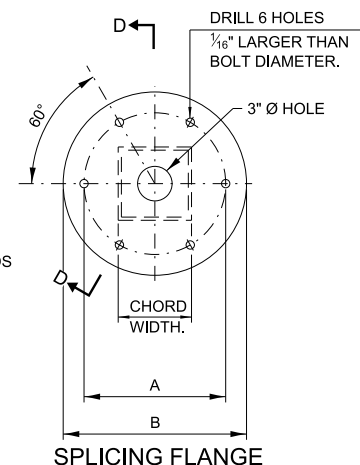
HIGH STRENGTH BOLTS WITH LOCKNUTS OR (IF MEMBERS INTERFERE) THREADED STUDS WITH TWO LOCKNUTS. USE STAINLESS STEEL WASHERS UNDER HEAD AND NUT. SEE TABLE.

| BOLT DIA. | A | B |
|-----------|---------|-----|
| 1/4" | 11 1/2" | 15" |

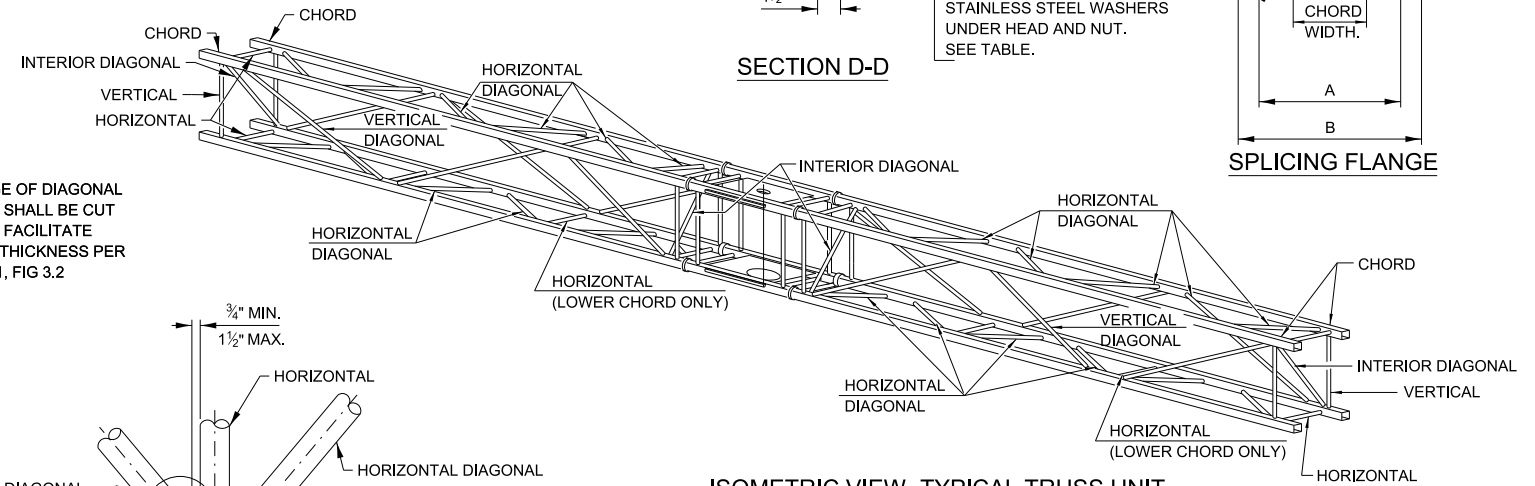
SECTION D-D



GUSSET P FOR INTERIOR DIAG. DETAIL



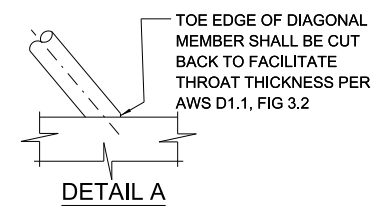
SPlicing FLANGE



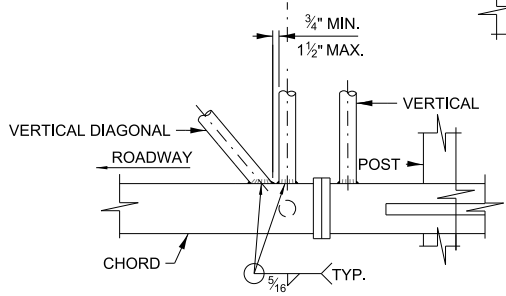
ISOMETRIC VIEW- TYPICAL TRUSS UNIT

NOTES:

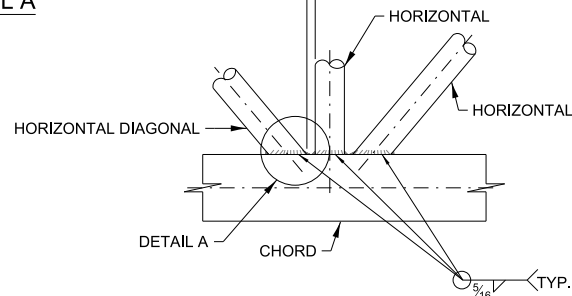
1. THERE ARE TWICE AS MANY HORIZONTAL DIAGONALS AS THERE ARE VERTICAL DIAGONALS.
2. SPlicing FLANGES SHALL BE ATTACHED TO EACH TRUSS UNIT WITH THE TRUSS SHOP ASSEMBLED TO CAMBER SHOWN ON SHEET 1 OF THIS SERIES. TRUSS UNITS SHALL BE IN PROPER ALIGNMENT AND FLANGE SURFACES SHALL BE SHOP BOLTED INTO FULL 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.
3. NOMINAL WALL THICKNESS SHOWN. THICKER WALL IS PERMITTED UPON ENGINEER'S APPROVAL.



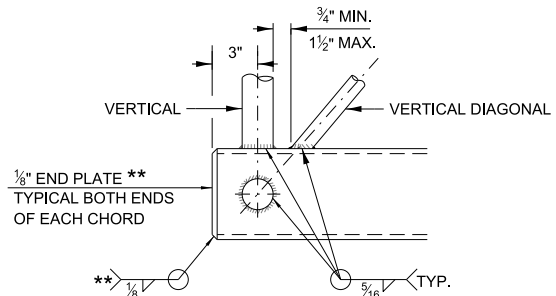
DETAIL A



POST END JOINT DETAIL



TRUSS INTERIOR JOINT DETAIL



BUTTERFLY END JOINT DETAIL

** CONTRACTOR MAY ALTERNATIVELY USE STANDARD STEEL DRIVE - FIT CAP TO CLOSE ENDS. 1/2" Ø DRAIN HOLE IN END PLATE / DRIVE - FIT CAP.

TRUSS UNIT TABLE

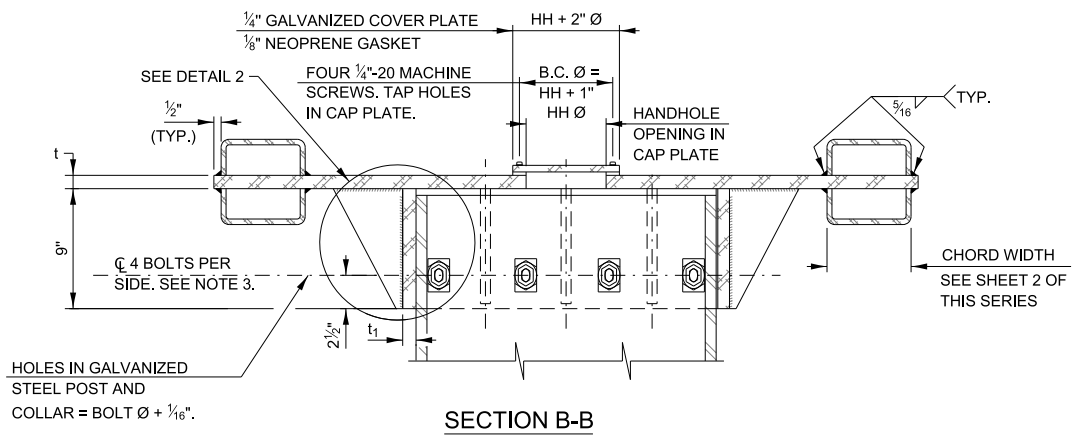
| TRUSS SIZE | MAXIMUM DMS TYPE 2 SIGN LENGTH | STEEL SUPPORT POST (COLUMN) | | | | TRUSS MEMBERS AND DETAILS | | | | | | | LIMITS FOR PANEL SPACING (P) * | DIMENSION S |
|---------------|--------------------------------|-----------------------------|---------------|-----------------------------|----------|---------------------------|---------------|---------------------|-----------------|-----------------------|---------------------|--|--------------------------------|-------------|
| | | DIAMETER | WEIGHT | WALL THICKNESS (SEE NOTE 3) | H (MAX.) | TOP & BOTTOM CHORD | VERTICAL PIPE | VERTICAL DIAG. PIPE | HORIZONTAL PIPE | HORIZONTAL DIAG. PIPE | INTERIOR DIAG. PIPE | | | |
| e d | | | | | | | | | | | | | | |
| 3'-9" 7'-0" | 30'-0" | 24" | 125.61 (#/FT) | 1/2" | 12'-0" | HSS 6x6x5/16 | 3"Ø X.S | 4"Ø X.X.S | 2"Ø X.S | 2 1/2"Ø X.S | 2"Ø X.S | | 48" MIN. TO 66" MAX. | 1'-9" |

*P = L-S-1'-6" / # PANELS

APPROVED BY: *Manar Nashif*
 CHIEF ENGINEERING OFFICER
 DATE: 03/01/2026

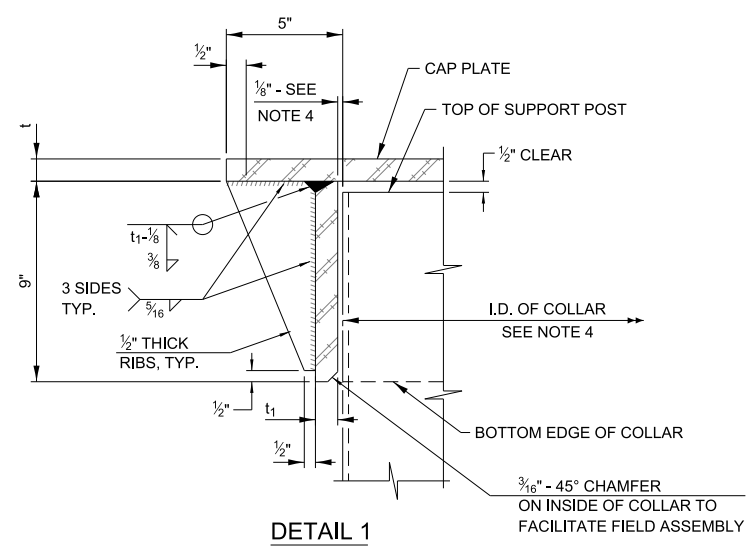
OVERHEAD SIGN STRUCTURE BUTTERFLY TYPE STRUCTURE DETAILS

VERSION: 2026-03 STANDARD: F14-09 SHEET: 2 OF 8



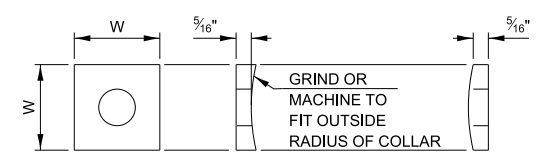
SECTION B-B

BOLTS SHALL BE HIGH STRENGTH WASHERS (INCLUDING CONTOURED WASHERS), AND LOCKNUTS SHALL BE STAINLESS STEEL.



DETAIL 1

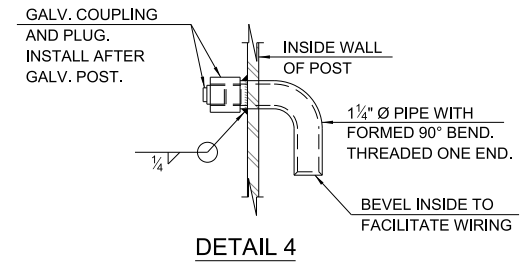
GRIND OR MACHINE TO FIT INSIDE RADIUS OF POST



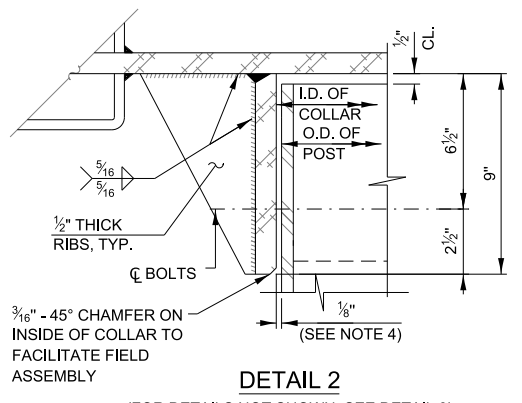
CONTOURED WASHERS

| BOLT SIZE | CONTOURED WASHERS HOLE DIA. | W |
|-----------|-----------------------------|--------|
| 7/8" | 1" | 2 1/2" |
| 1" | 1 1/8" | 3" |
| 1 1/4" | 1 3/8" | 3 1/4" |

(ASTM A240, TYPE 304)

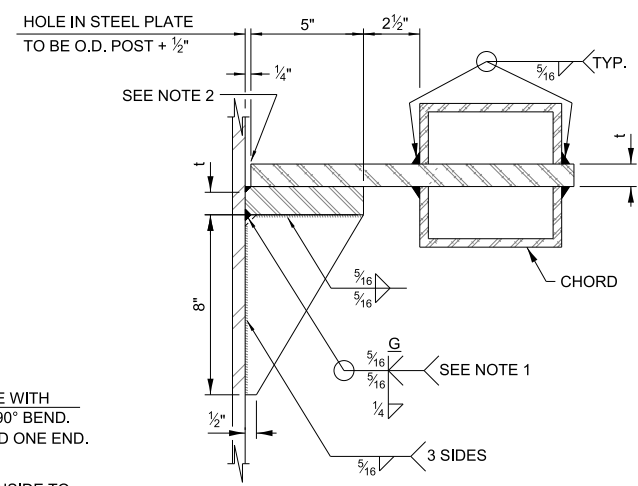


DETAIL 4

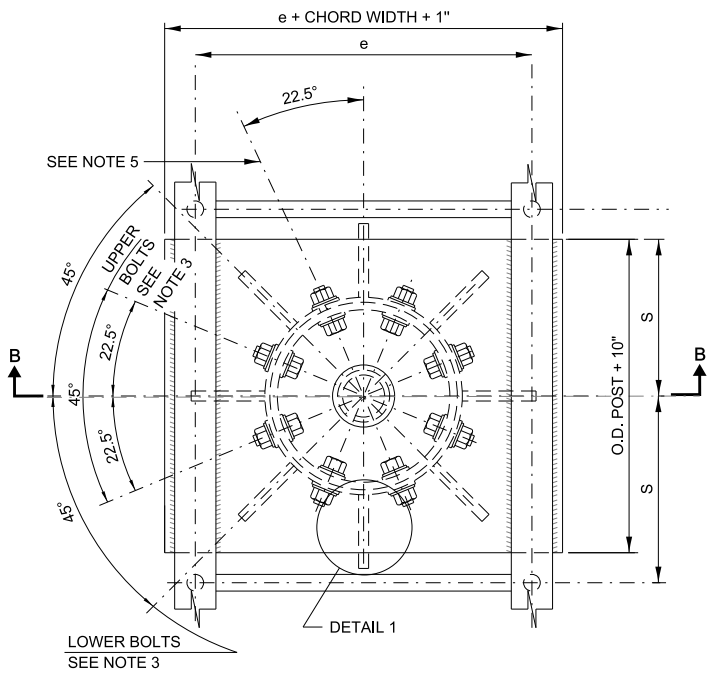


DETAIL 2

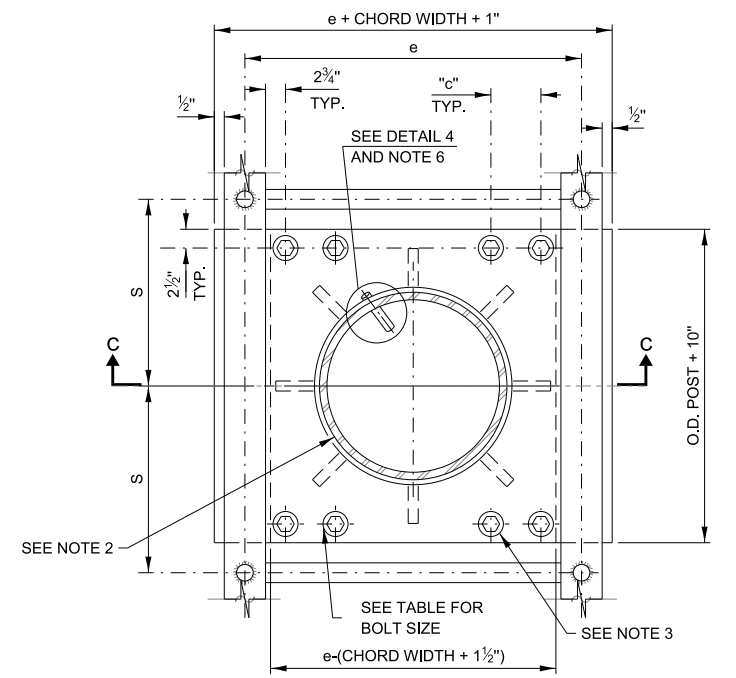
(FOR DETAILS NOT SHOWN, SEE DETAIL 3)



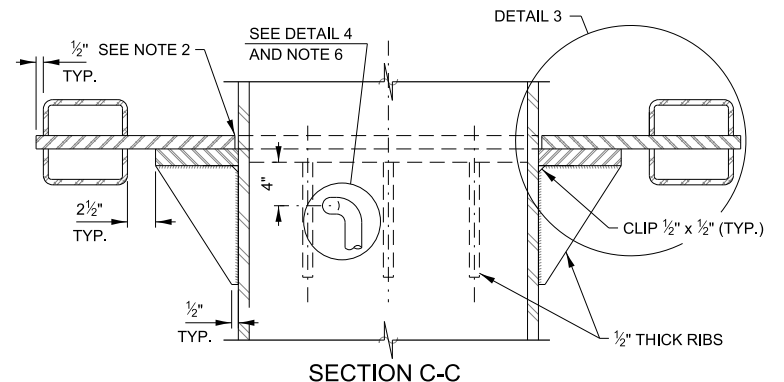
DETAIL 3



PLAN VIEW - TOP OF COLUMN



SECTION THRU POST ABOVE LOWER CHORDS



SECTION C-C

NOTES:

- GRIND TOP IF REQUIRED TO FULLY SEAT PLATE. REPAIR DAMAGED GALVANIZING BEFORE ASSEMBLY.
- AFTER TIGHTENING LOWER CONNECTION BOLTS, FILL GAP WITH NON-HARDENING, SILICONE CAULK SUITABLE FOR EXTERIOR EXPOSURE AND ACCEPTABLE TO THE ENGINEER.
- CONNECTION BOLTS IN COLLAR AND BOLTS AT LOWER CHORD CONNECTION SHALL BE HIGH STRENGTH WITH MATCHING LOCKNUTS. CONNECTION BOLTS SHALL HAVE TWO STAINLESS STEEL FLAT WASHERS EACH.
- COLLAR I.D. SHALL BE MANUFACTURED TO CORRESPOND TO O.D. OF ACTUAL GALVANIZED POST PLUS 1/8 inch (± 1/16 inch). MAXIMUM GAP BETWEEN POST AND COLLAR AT ANY LOCATION EQUALS 1/8 inch BEFORE TIGHTENING BOLTS.
- OPTIONAL FULL PENETRATION WELD IN COLLAR. (TWO LOCATIONS MAXIMUM (180° APART) X-RAY OR UT 100%)
- ORIENT PIPE TOWARD WALKWAY SIDE. HOLE IN POST = O.D. PIPE + 1/8 inch.

CONNECTION TABLE

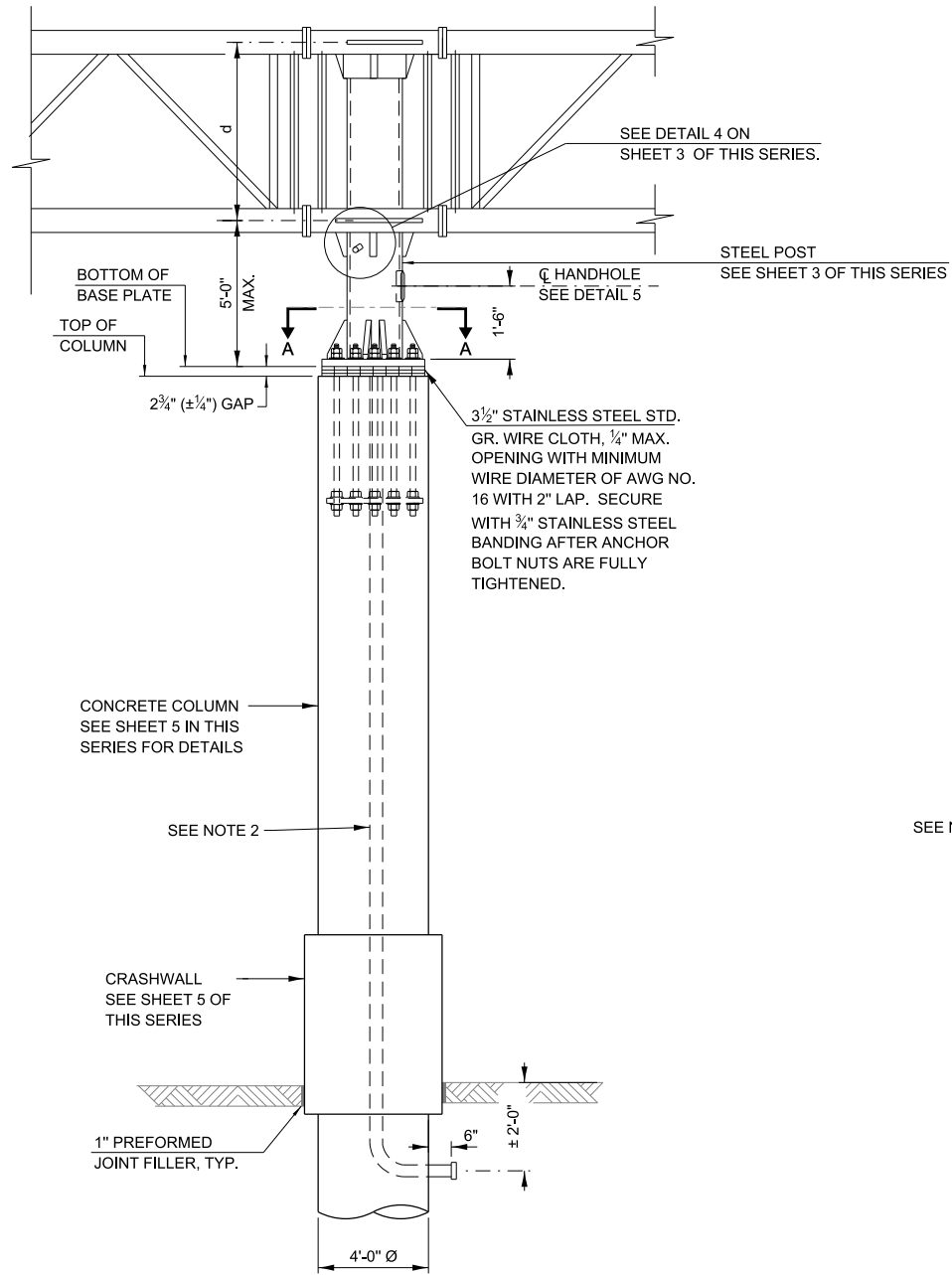
| POST OUTSIDE DIAMETER | UPPER & LOWER CONNECTION BOLT DIAMETER (SEE NOTE 3) | LOWER JUNCTURE BOLT SPACING DIMENSION "c" (SEE NOTE 3) | OPENING IN CAP PLATE "HH" | PLATE THICKNESS (t) | COLLAR THICKNESS (t ₁) |
|-----------------------|---|--|---------------------------|---------------------|------------------------------------|
| 24" | 1 1/4" | 3 1/2" | 6" | 1" | 7/8" |

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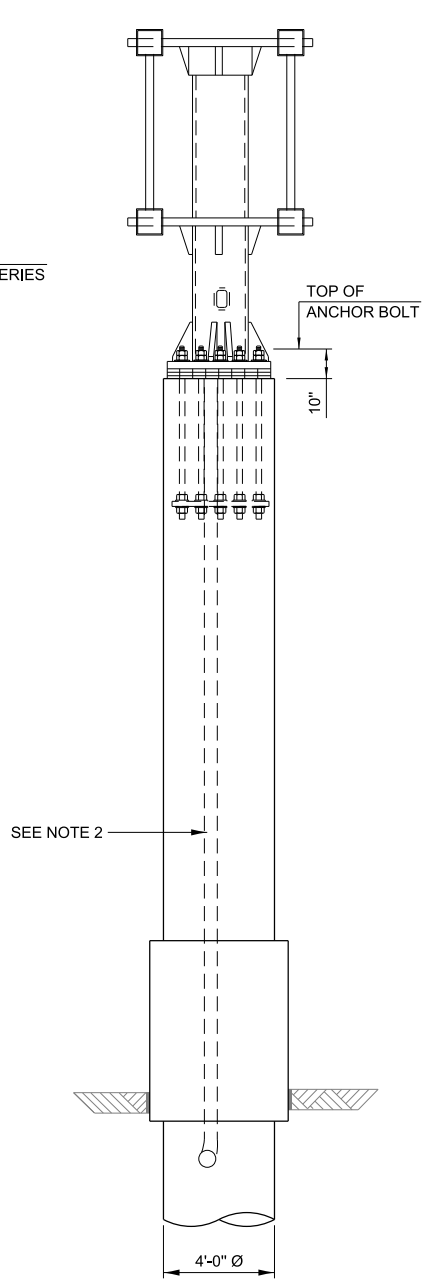
Illinois Tollway

OVERHEAD SIGN STRUCTURE BUTTERFLY TYPE STRUCTURE DETAILS

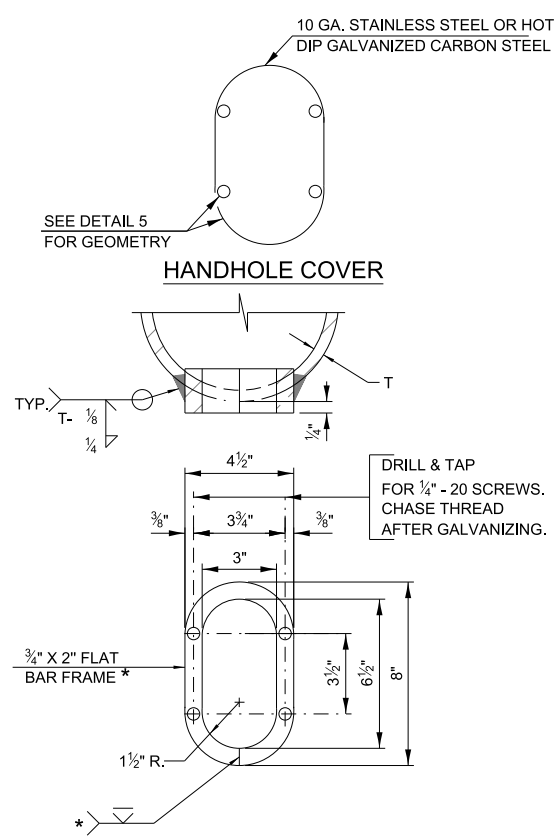
VERSION: 2026-03 STANDARD: F14-09 SHEET: 3 OF 8



FRONT ELEVATION
SEE SHEET 5 OF THIS SERIES FOR FOUNDATION DETAILS.
(DMS TYPE 2 SIGN CABINET NOT SHOWN FOR CLARITY)



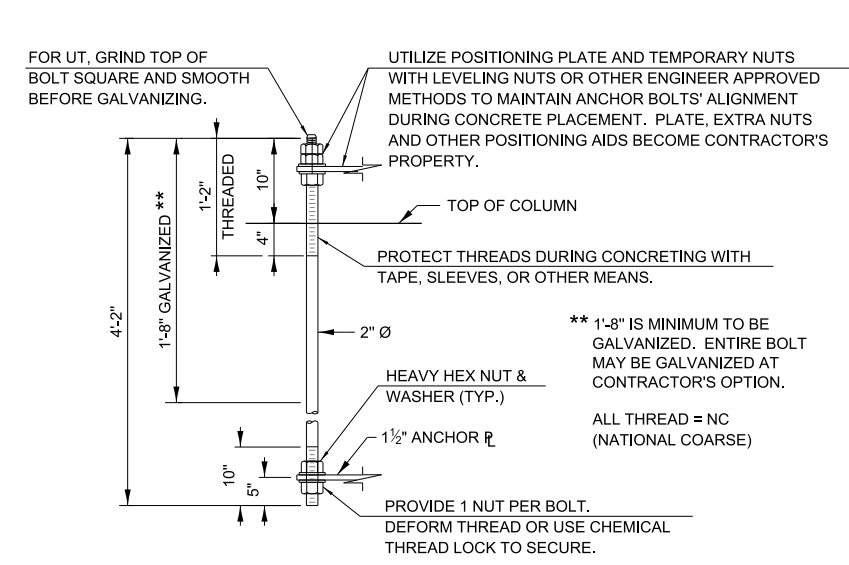
SIDE ELEVATION



PROVIDE 8" X 4" COVER. OUTSIDE CORNERS = 2 1/4" RADIUS. PROVIDE 4-5/16" Ø HOLES IN FOR 1/4" - 20 ROUND HEAD HOT DIP GALVANIZED OR STAINLESS STEEL MACHINE SCREWS. (SEE COVER DETAILS.)

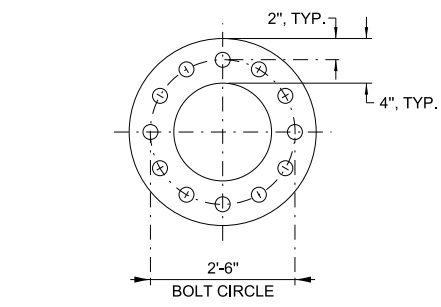
DETAIL 5

* BENT BARS MAY BE BUTT WELDED TOP AND BOTTOM OR BOTTOM ONLY. IN LIEU OF FABRICATED HANDHOLE FRAME AS SHOWN, MAY CUT FROM 2" PLATE (ROLLING DIRECTION VERTICAL). ALL CUT FACES TO BE GROUND TO ANSI ROUGHNESS OF 500µ IN OR LESS.

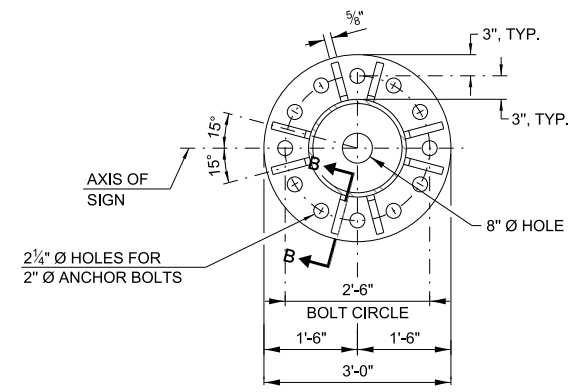


ANCHOR BOLT DETAIL

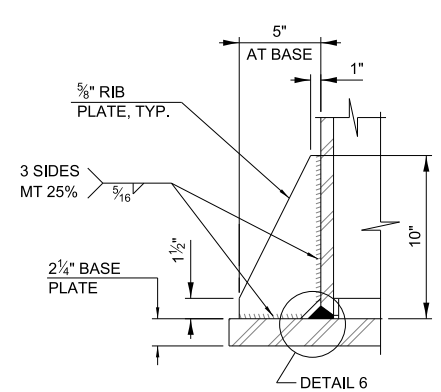
ANCHOR BOLTS SHALL CONFORM TO AASHTO M314 OR ASTM F1554 GRADE 55. GALVANIZE THE UPPER 1'-8" (MINIMUM (**)) AND ASSOCIATED AASHTO M291, GRADE A, C OR DH HEAVY HEX NUTS AND HARDENED WASHERS PER AASHTO M232. NO WELDING SHALL BE PERMITTED ON BOLTS. PROVIDE A NUT AT BOTTOM, A HEXAGON LOCKNUT AND WASHER ABOVE BASE PLATE AND A LEVELING NUT AND WASHER BELOW BASE PLATE. NUTS SHALL EACH BE TIGHTENED WITH 200 LB.-FT. MINIMUM TORQUE AGAINST BASE PLATE. BEFORE OR AFTER THREADING, BUT BEFORE GALVANIZING, EACH ANCHOR BOLT SHALL BE ULTRASONICALLY TESTED (UT) BY A LEVEL II OR III INSPECTOR, QUALIFIED IN ACCORD WITH ANSI GUIDELINES, TO ENSURE NO REJECTABLE FLAWS EXIST IN THE UPPER 18" (TENSION CRITERIA).



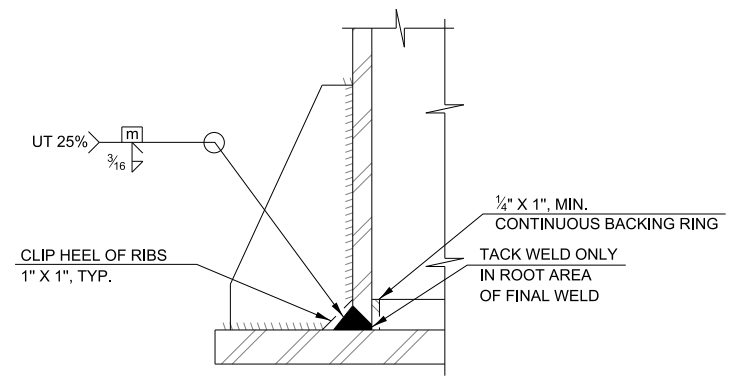
POSITIONING PLATE/ANCHOR BOLT



SECTION A-A




SECTION B-B



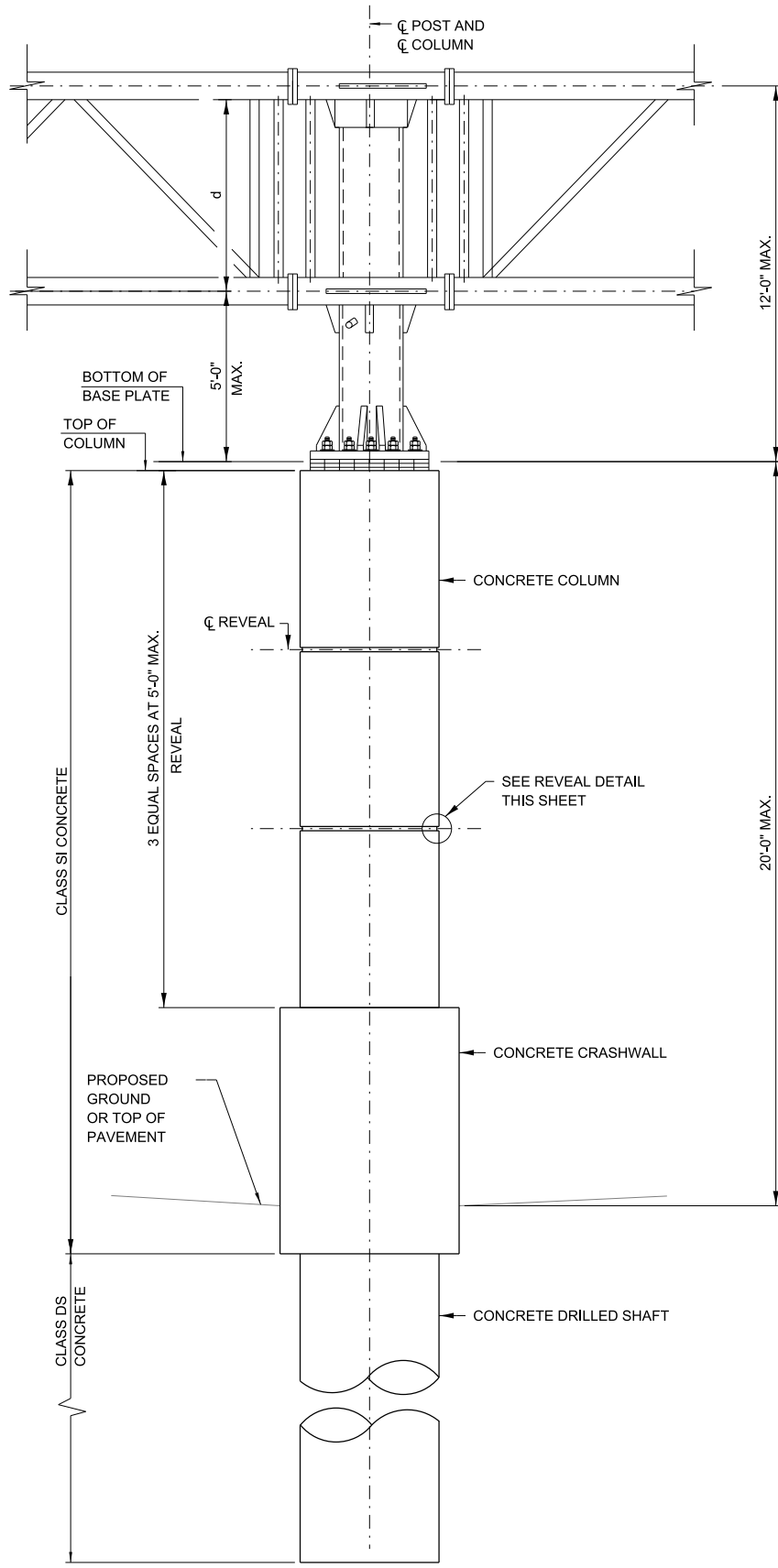
DETAIL 6 (TYPICAL RIB)

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DATE: 03/01/2026

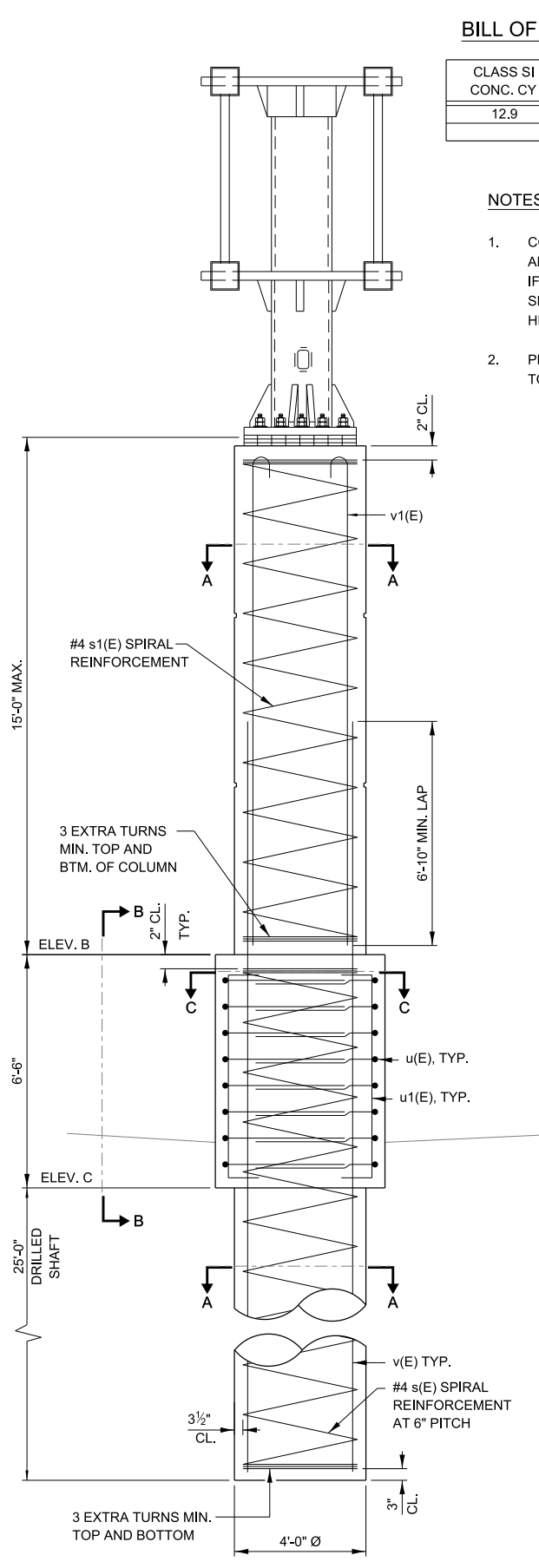


OVERHEAD SIGN STRUCTURE BUTTERFLY TYPE STRUCTURE DETAILS

| | | |
|------------------|------------------|---------------|
| VERSION: 2026-03 | STANDARD: F14-09 | SHEET: 4 OF 8 |
|------------------|------------------|---------------|



FRONT ELEVATION
DMS TYPE 2 NOT SHOWN
FOR CLARITY



SIDE ELEVATION

BILL OF MATERIAL - EACH FOUNDATION

| CLASS SI CONC. CY | CLASS DS CONC. CY | REBAR POUNDS | PROTECTIVE COAT SQ. YD. |
|-------------------|-------------------|--------------|-------------------------|
| 12.9 | 11.7 | 4,830 | 6.0 |

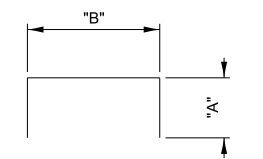
NOTES:

1. COLUMN CONCRETE VOLUME AND BAR s1(E) LENGTH ARE COMPUTED BASED ON 15'-0" COLUMN HEIGHT. IF COLUMN HEIGHT IS NOT EQUAL 15'-0", QUANTITIES SHALL BE CALCULATED BASED ON ACTUAL COLUMN HEIGHT.
2. PROTECTIVE COAT SHALL BE APPLIED TO TRAFFIC AND TOP FACES OF CRASHWALL AND PERIMETER OF THE COLUMN.

BAR LIST - EACH FOUNDATION
(COLUMN, CRASHWALL AND DRILLED SHAFT)

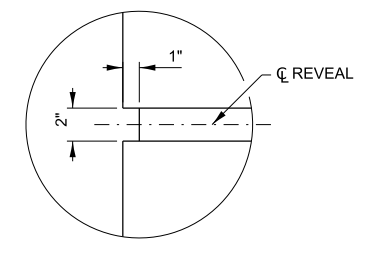
| BAR | NUMBER | SIZE | LENGTH | SHAPE |
|-------|--------|------|--------|-------|
| v(E) | 20 | #9 | 38'-3" | — |
| v1(E) | 20 | #9 | 15'-8" | — |
| s(E) | 1 | #4 | 31'-1" | |
| s1(E) | 1 | #4 | 14'-5" | |
| u(E) | 16 | #5 | 12'-2" | — |
| u1(E) | 24 | #5 | 8'-7" | — |

* THE LENGTH OF SPIRAL SHOWN IS THE HEIGHT OF SPIRAL



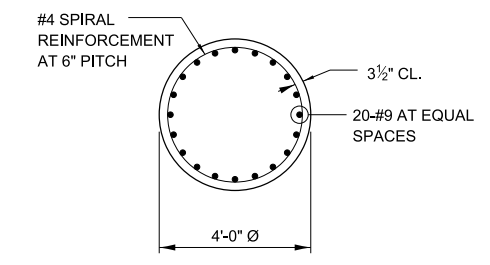
| BAR | "A" | "B" |
|-------|-------|-------|
| u(E) | 3'-9" | 4'-8" |
| u1(E) | 1'-3" | 6'-1" |

BAR u(E), u1(E)

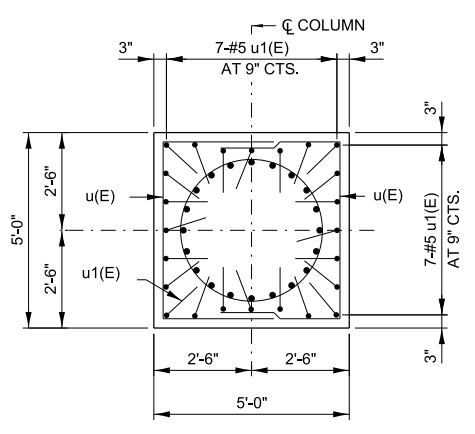


REVEAL DETAIL

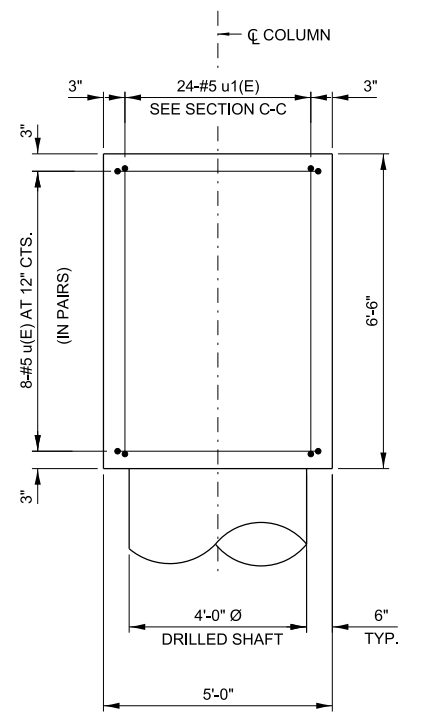
BAR v1(E)



SECTION A-A



SECTION C-C



SECTION B-B

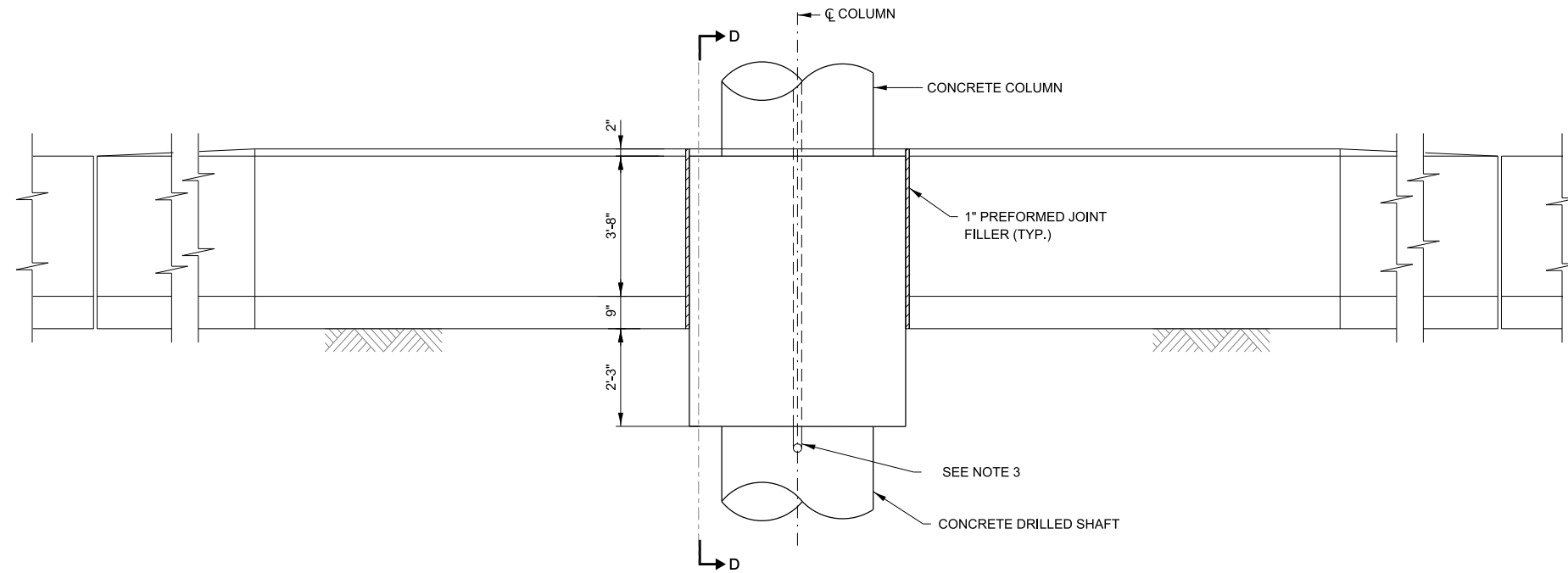
FOUNDATIONS:

THE FOUNDATION DETAILS SHOWN ARE BASED ON THE PRESENCE OF MOSTLY COMMON COHESIVE SOIL CONDITIONS (SILTY OR SANDY CLAY), WITH AN AVERAGE UNCONFINED COMPRESSIVE STRENGTH (QU) > 1.25 TON/SQ. FT. WHICH SHALL 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.

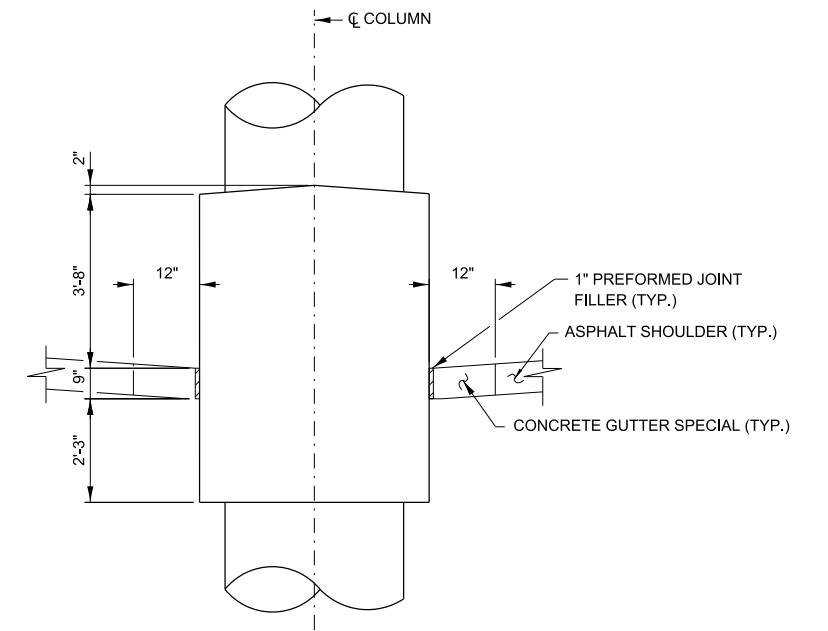
APPROVED BY: *Manar Nashif*
CHIEF ENGINEERING OFFICER
DATE: 03/01/2026

OVERHEAD SIGN STRUCTURE BUTTERFLY TYPE STRUCTURE DETAILS

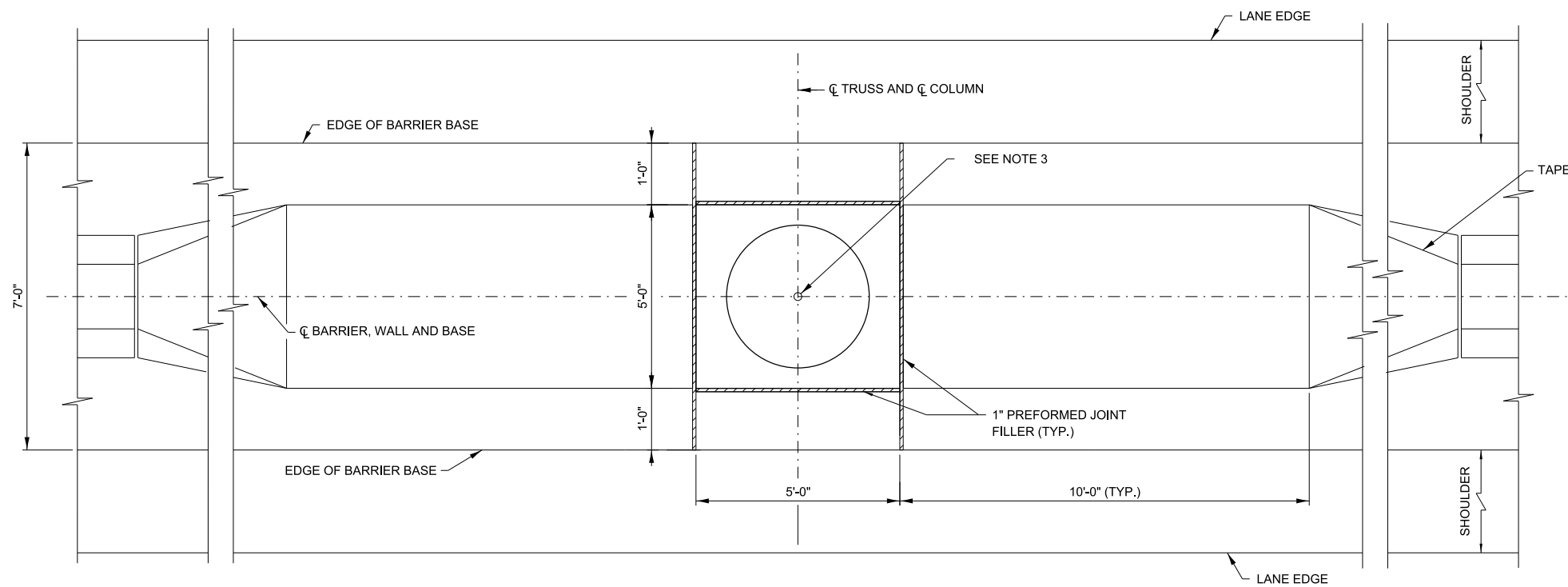
VERSION: 2026-03 STANDARD: F14-09 SHEET: 5 OF 8



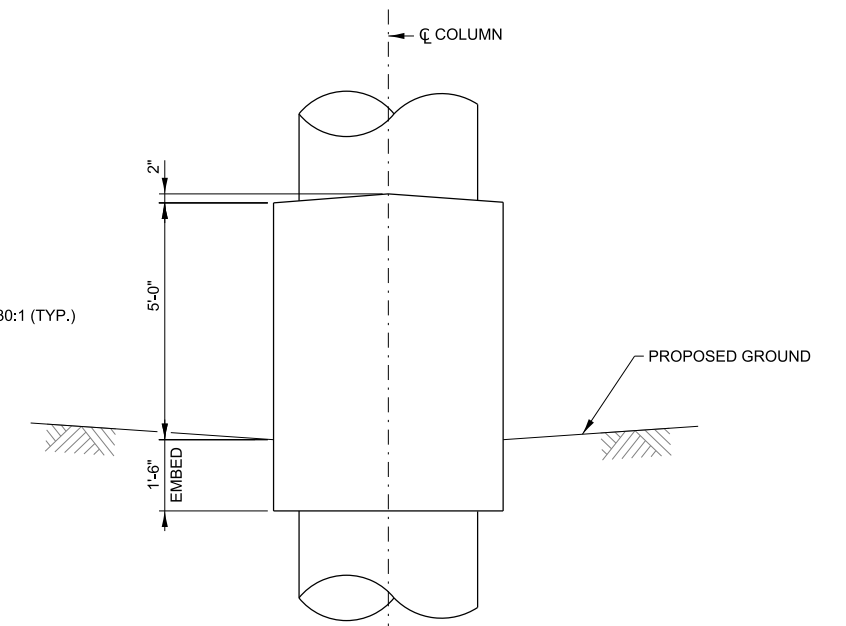
SIDE ELEVATION



SECTION D-D
FOUNDATION LOCATED IN PAVED ROADWAY MEDIAN



PLAN



SECTION D-D
FOUNDATION LOCATED IN UNPAVED ROADWAY MEDIAN

NOTES:

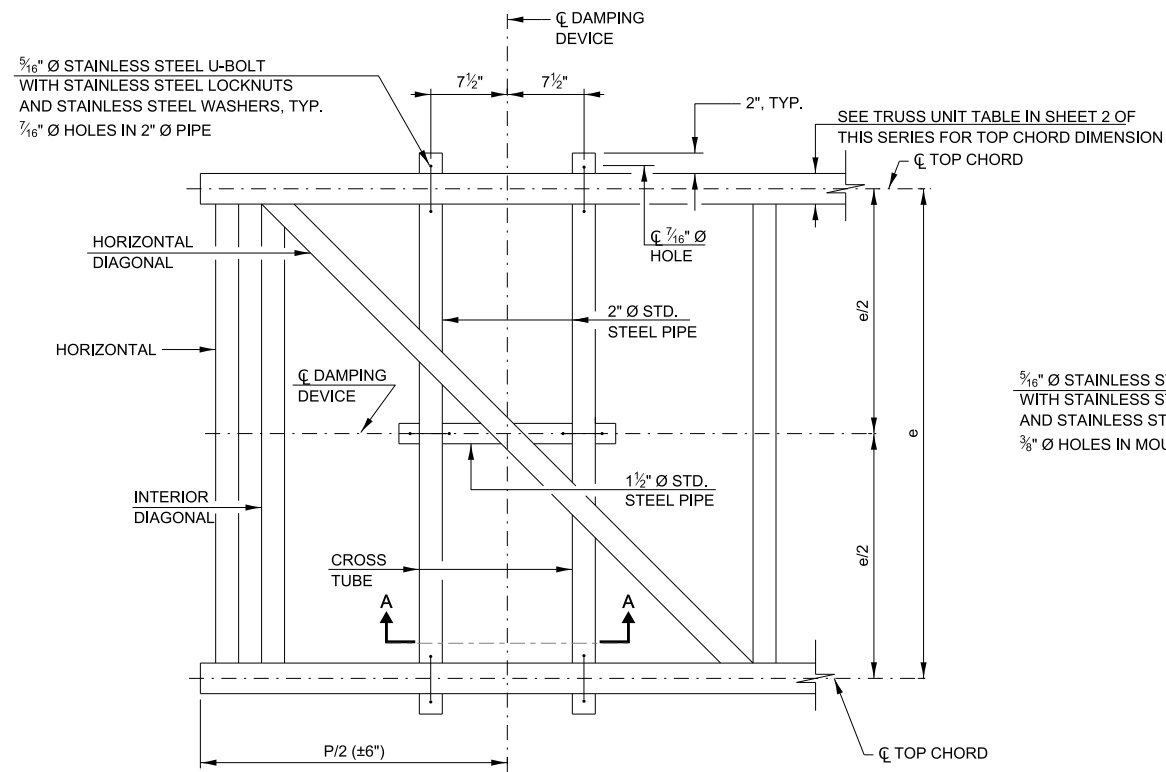
1. SIDE ELEVATION AND PLAN VIEW ARE SHOWN FOR FOUNDATION LOCATED IN PAVED MEDIAN.
2. SEE SHEET 5 OF THIS SERIES FOR REINFORCEMENT DETAILS.
3. COORDINATE CONDUIT SIZE, LOCATION AND QUANTITY WITH ELECTRICAL PLANS. CONDUITS SHALL BE PLACED TO MISS REINFORCEMENT BARS. DO NOT CUT REINFORCEMENT BARS.

APPROVED BY: *Manar Nashif*
 CHIEF ENGINEERING OFFICER
 DATE: 03/01/2026

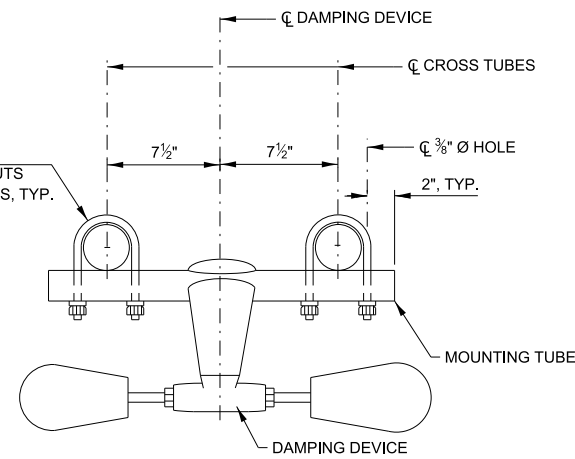
Illinois Tollway

**OVERHEAD SIGN STRUCTURE
 BUTTERFLY TYPE
 STRUCTURE DETAILS**

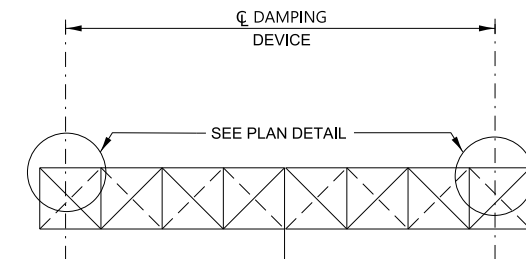
| | | |
|---------------------|---------------------|------------------|
| VERSION: 2026-03 | STANDARD: F14-09 | SHEET: 6 OF 8 |
|---------------------|---------------------|------------------|



PLAN DETAIL



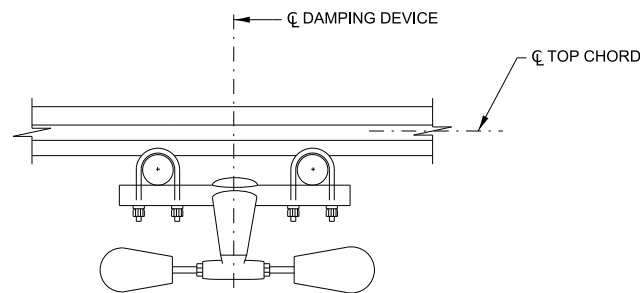
TRUSS DAMPING DEVICE CONNECTION DETAIL



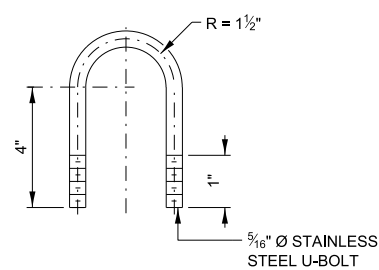
ELEVATION
STEEL BUTTERFLY SIGN STRUCTURE

NOTE:

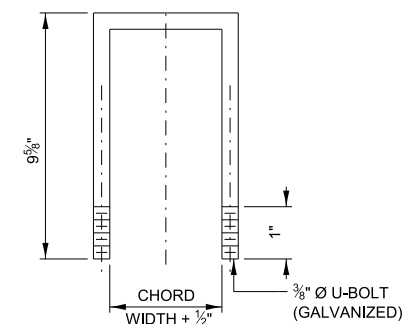
DAMPER: ONE DAMPER PER TRUSS. (31 LBS. STOCKBRIDGE-TYPE 29" MINIMUM BETWEEN ENDS OF WEIGHTS).



SECTION A-A



DAMPING DEVICE MOUNTING TUBE U-BOLT DETAIL (TYPICAL)

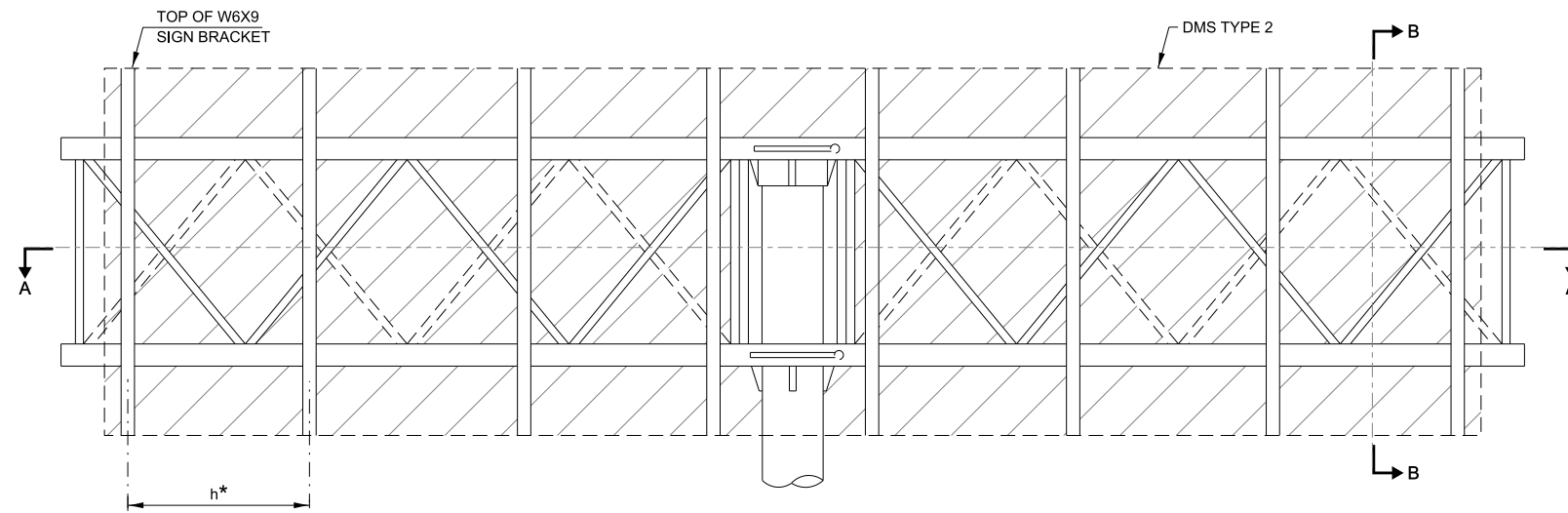


TOP CHORD TO CROSS TUBE U-BOLT DETAIL (TYPICAL)

APPROVED BY: *Manar Nashif* DATE: 03/01/2026
CHIEF ENGINEERING OFFICER

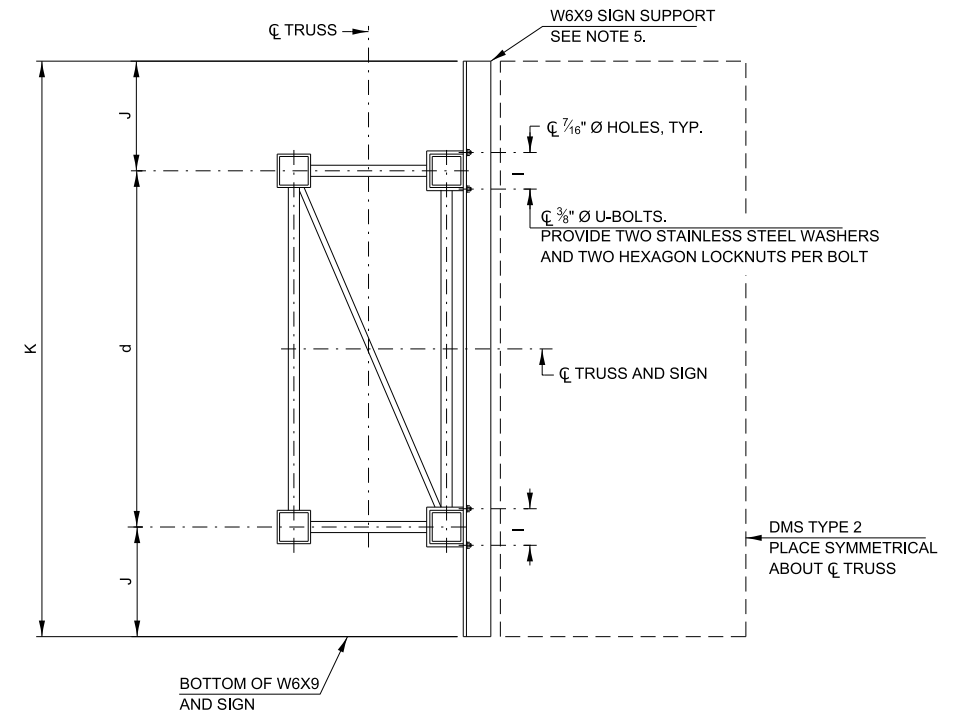
NOTES:

1. SPACE SIGN BRACKETS W6X9 FOR EFFICIENCY AND WITHIN LIMITS SHOWN:
2. $f = 12"$ MAXIMUM, $4"$ MINIMUM (END OF SIGN TO CL OF NEAREST BRACKET)
 $h = 6'-0"$ MAXIMUM (CL TO CL SIGN SUPPORT BRACKETS, W6X9)
3. MAXIMUM DMS TYPE 2 WEIGHT = 5000 LBS.
4. $4'-2"$ MAXIMUM DEPTH INCLUDES DEPTH OF DMS TYPE 2 PLUS CONNECTION TO W6X9.
5. DMS TYPE 2 MANUFACTURER SHALL DESIGN AND SUPPLY HARDWARE FOR CONNECTION TO W6X9. BOLTS SHALL BE STAINLESS STEEL OR HOT DIP GALVANIZED HIGH STRENGTH PER THE STANDARD SPECIFICATION.

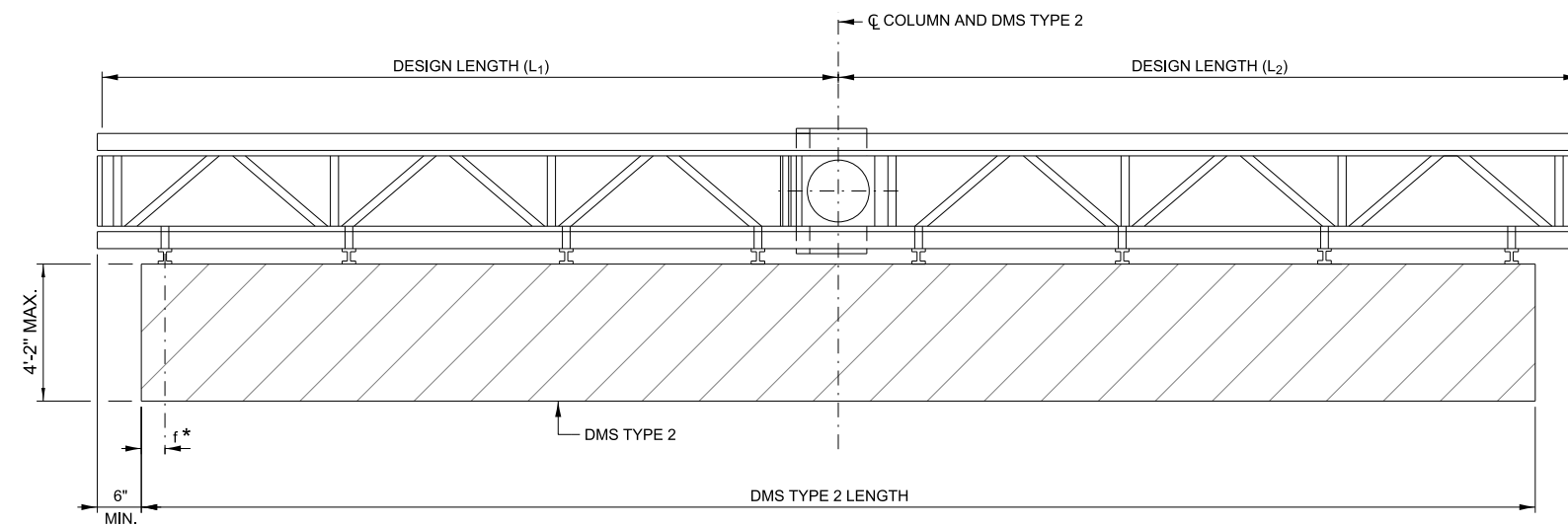


* BRACKET DIMENSIONS ARE NOMINAL AND WILL VARY BASED ON ACTUAL DMS TYPE 2 DIMENSIONS PLUS MANUFACTURER'S MOUNTING DEVICES.

TYPICAL FRONT ELEVATION



SECTION B-B



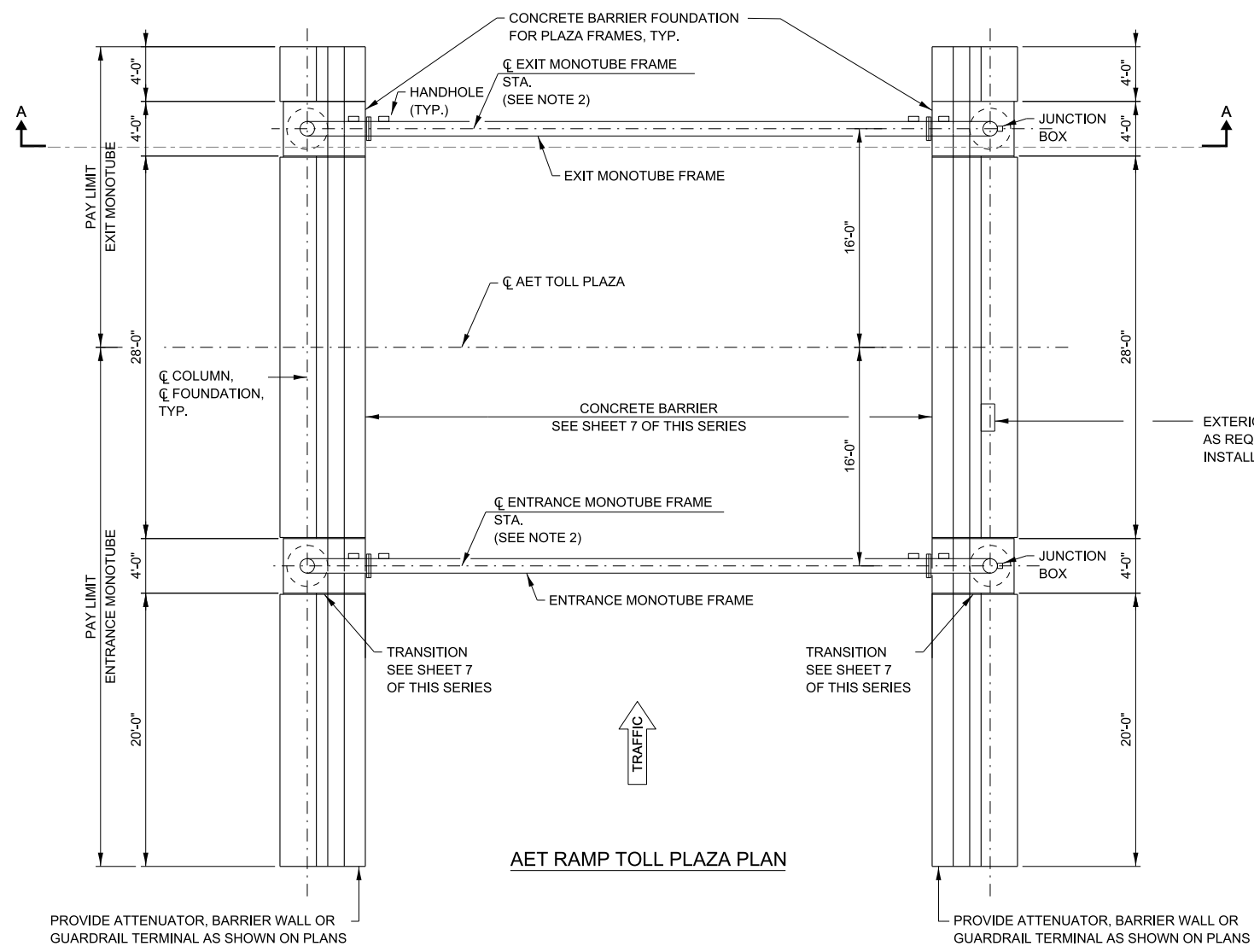
SECTION A-A

PLACE ALL SIGN BRACKETS AS CLOSE TO PANEL POINTS AS PRACTICAL.
(ROAD PLAN BENEATH TRUSS VARIES)
BUTTERFLY MAY BE LOCATED IN SHOULDER AREA.

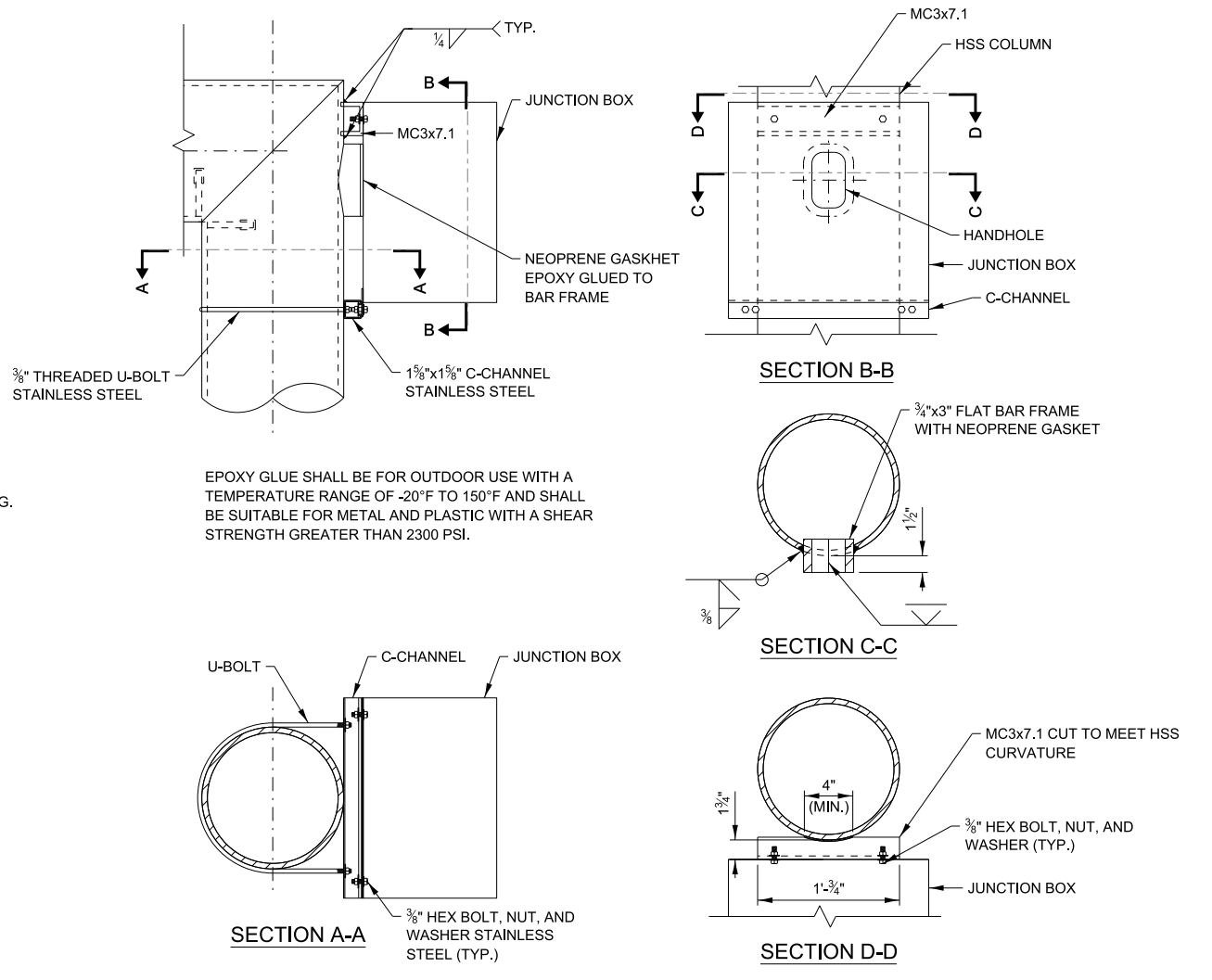
BRACKET TABLE

| SIGN WIDTH | | NUMBER OF 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 |

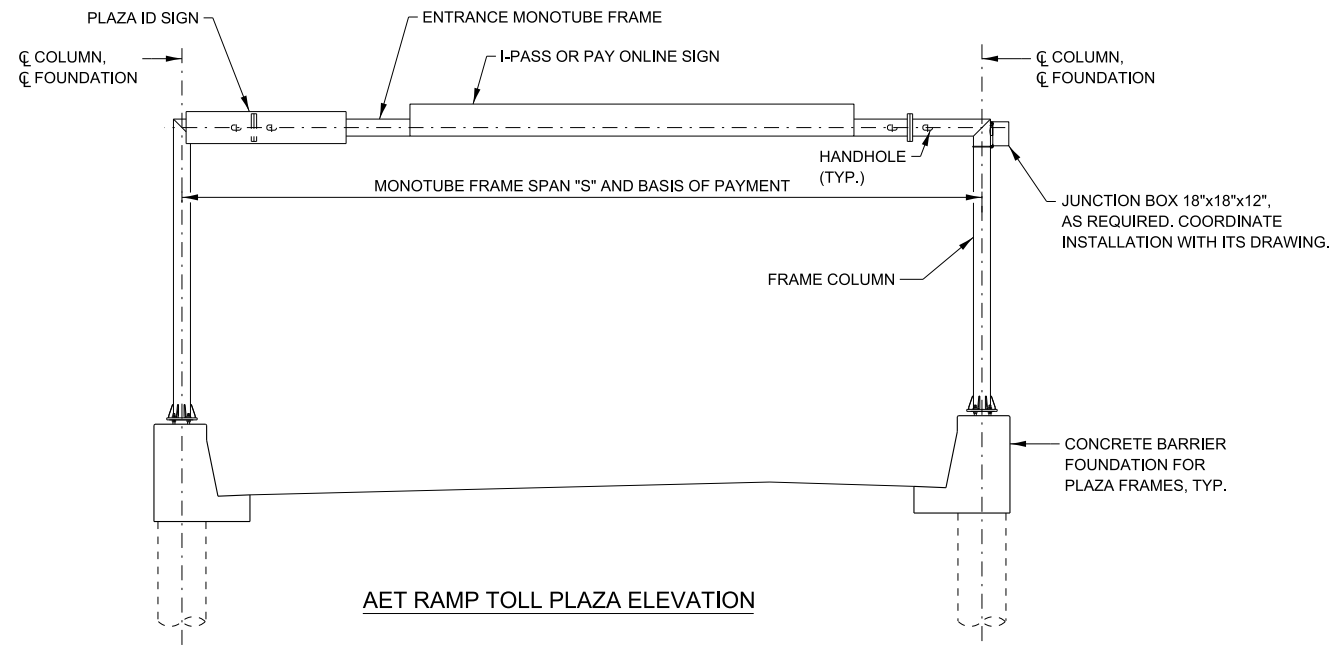
APPROVED BY: *Manar Nashif*
DATE: 03/01/2026
CHIEF ENGINEERING OFFICER



AET RAMP TOLL PLAZA PLAN



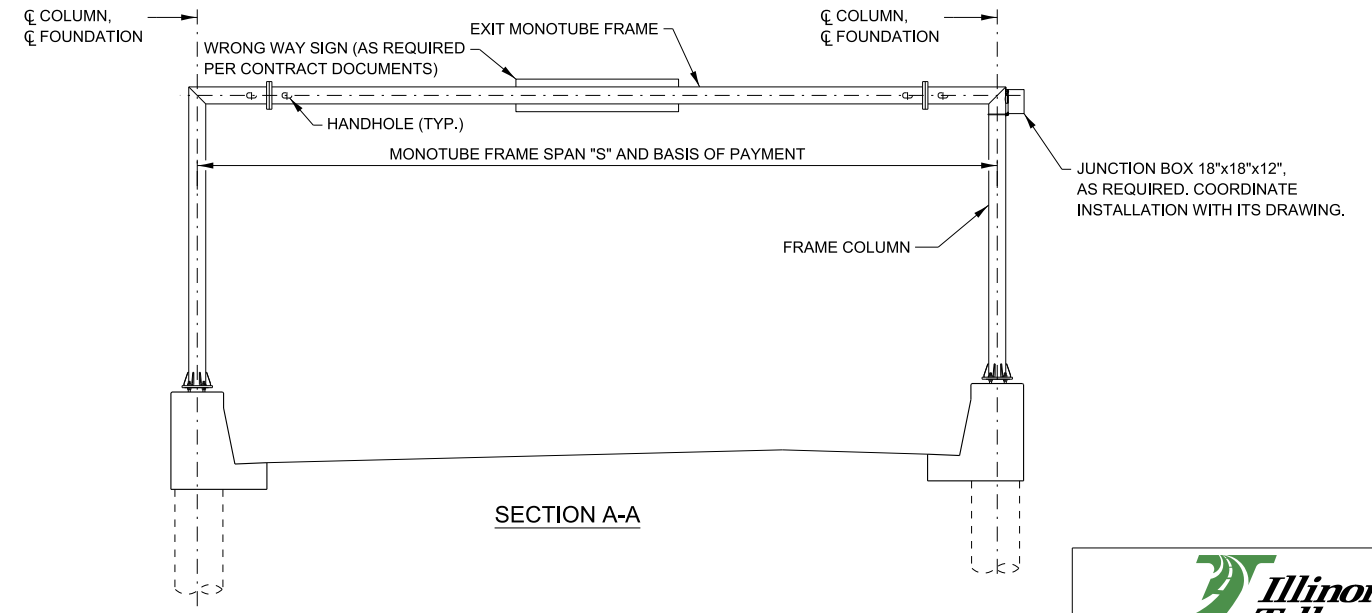
JUNCTION BOX CONNECTION DETAIL



AET RAMP TOLL PLAZA ELEVATION

SIGN TABLE

| SIGN | MAXIMUM AREA | MAXIMUM LENGTH |
|---------------------------|--------------|----------------|
| PLAZA ID SIGN | 20 S.F. | 8'-0" |
| I-PASS OR PAY ONLINE SIGN | 60 S.F. | 20'-0" |
| WRONG WAY SIGN | 16 S.F. | 8'-0" |



SECTION A-A

NOTES:

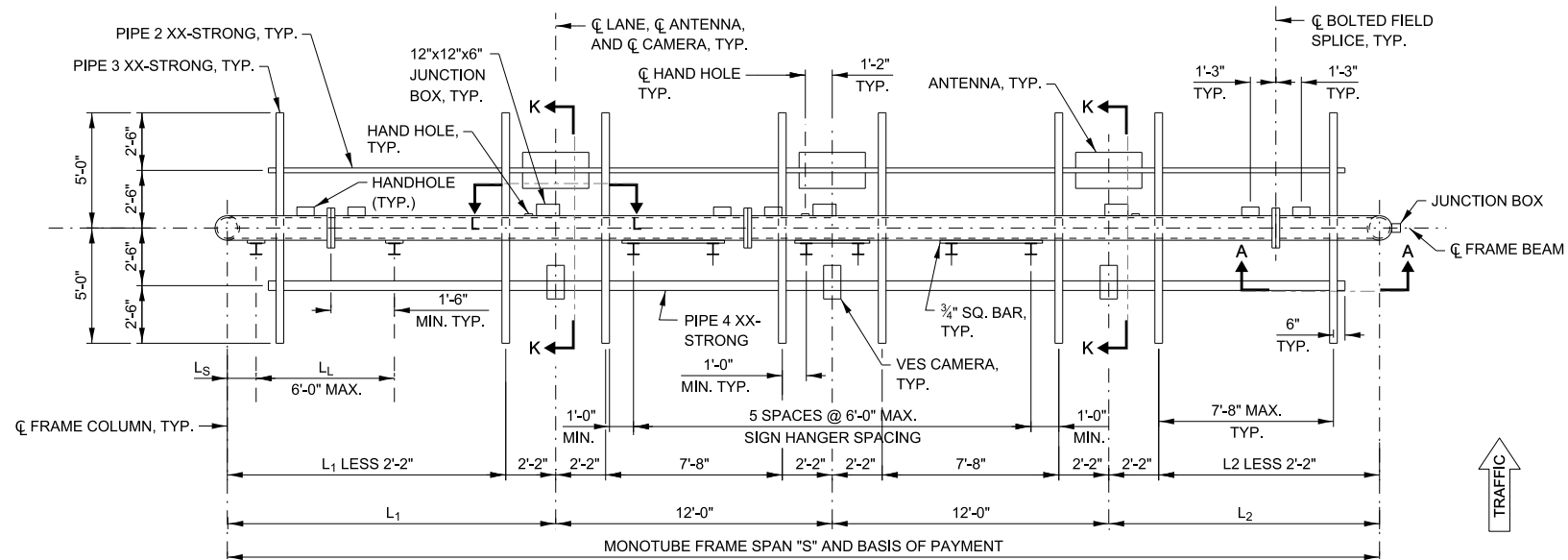
- SEE CONTRACT PLANS FOR SIGN SIZE AND LOCATION.
- PROVIDE ENTRANCE AND EXIT MONOTUBE FRAME STATIONS IN CONTRACT PLANS.

| REVISIONS | |
|------------|---|
| DATE | DESCRIPTION |
| 03-01-2026 | ADDED WRONG WAY SIGN IN SECTION A-A AND SIGN TABLE. ADDED GENERAL NOTE 3. ADDED JUNCTION BOX IN TOLL PLAZA PLAN. ADDED SECTION S-S. REV. PLAZA ID SIGN MAX. AREA IN SIGN TABLE. |
| 03-01-2025 | UPDATED JUNCT. BOX & CAM. ANGLES |

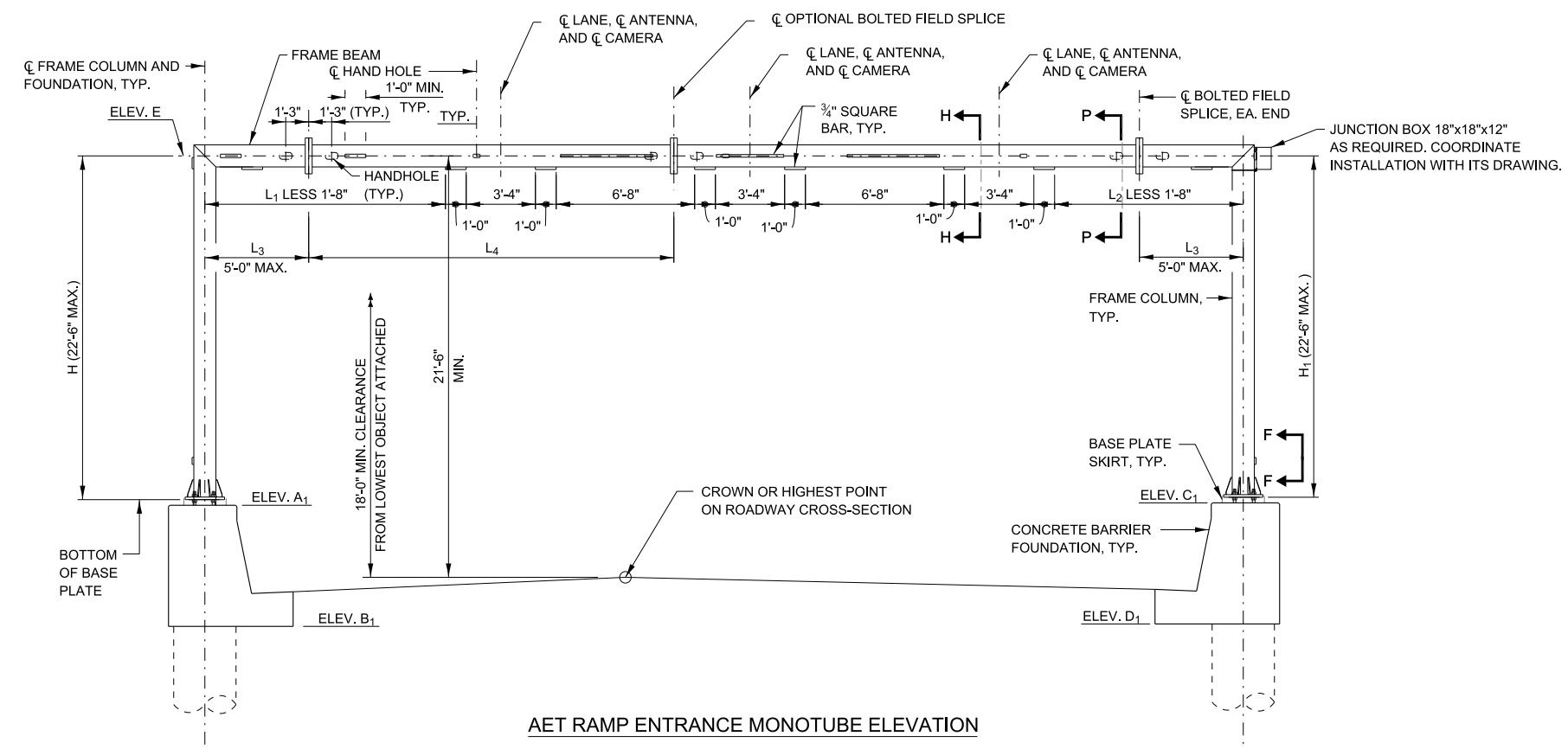
OVERHEAD SIGN STRUCTURE MONOTUBE TYPE (STEEL) STRUCTURE DETAILS FOR AET RAMP

VERSION: 2026-03 STANDARD: F15-10 SHEET: 1 OF 7

APPROVED BY: *Manar Nashif* DATE: 03/01/2026
 CHIEF ENGINEERING OFFICER



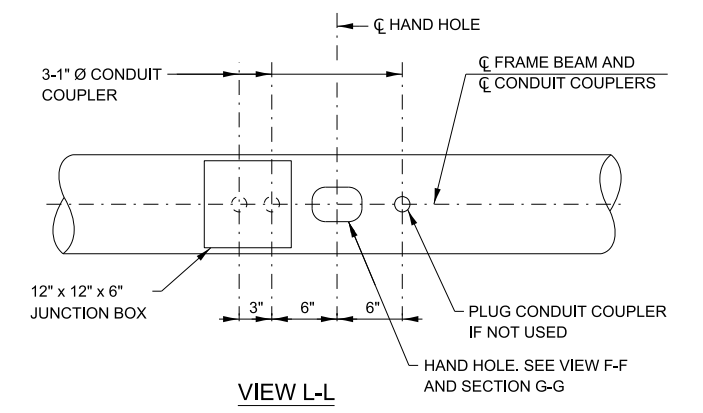
AET RAMP ENTRANCE MONOTUBE PLAN



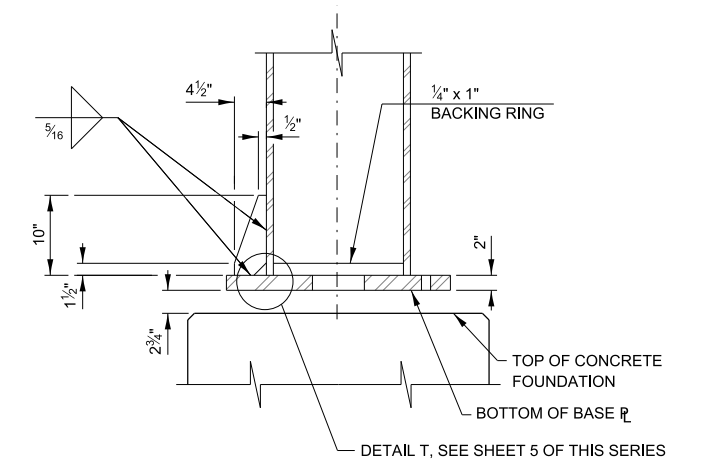
AET RAMP ENTRANCE MONOTUBE ELEVATION

NOTES:

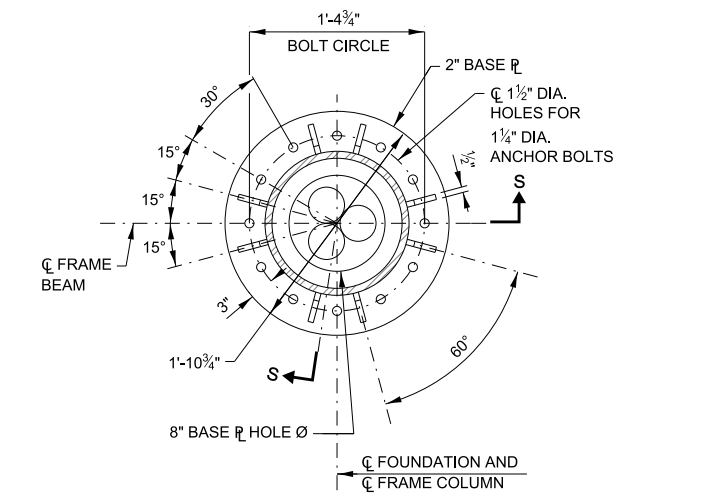
- FOUNDATIONS FOR MONOTUBE FRAMES ARE SHOWN ON SHEET 6 OF THIS SERIES.
- SEE SHEET 5 OF THIS SERIES FOR SECTIONS A-A, G-G, H-H, K-K, VIEW F-F AND BASE PLATE SKIRT.
- SEE SHEET 4 OF THIS SERIES FOR SECTION P-P.
- PROVIDE CAMBER AT MIDSPAN OF STRUCTURE.
- LOCATE OPTIONAL BOLTED FIELD SPLICE NEAR MIDSPAN.
- WORK THIS SHEET WITH, OVERHEAD SIGN STRUCTURE ENTRANCE MONOTUBE TYPE (STEEL) AET RAMP SUMMARY AND TOTAL BILL OF MATERIAL SHEET.



VIEW L-L



SECTION S-S



**BASE PLATE PLAN
ENTRANCE AND EXIT MONOTUBE**

ENTRANCE MONOTUBE FRAME TABLE

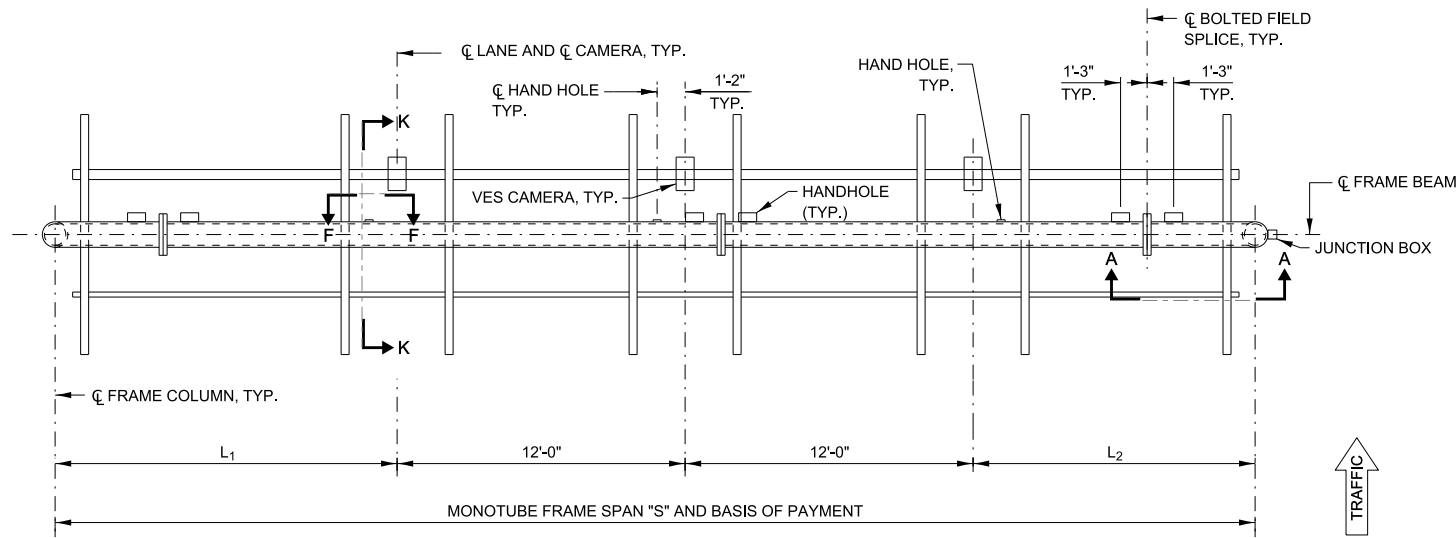
| SPAN "S" | FRAME COLUMN | FRAME BEAM | CAMBER |
|----------|-----------------|-----------------|--------|
| 60' MAX. | HSS 12.75x0.500 | HSS 12.75x0.500 | 2 1/4" |

SEE ILLINOIS TOLLWAY STANDARD DRAWING F13 FOR SPANS GREATER THAN 60'.

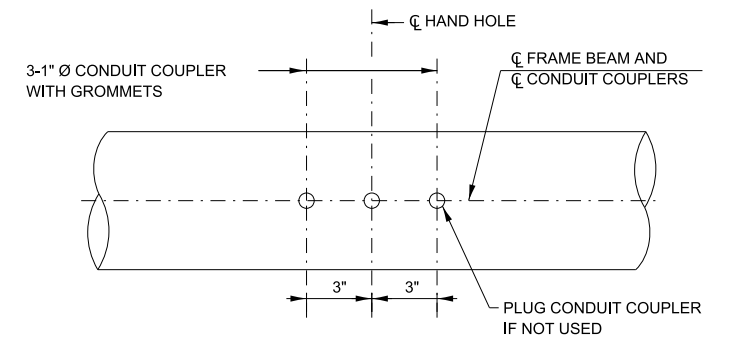
APPROVED BY: *Manar Nashif*
 CHIEF ENGINEERING OFFICER
 DATE: 03/01/2026

OVERHEAD SIGN STRUCTURE MONOTUBE TYPE (STEEL) STRUCTURE DETAILS FOR AET RAMP

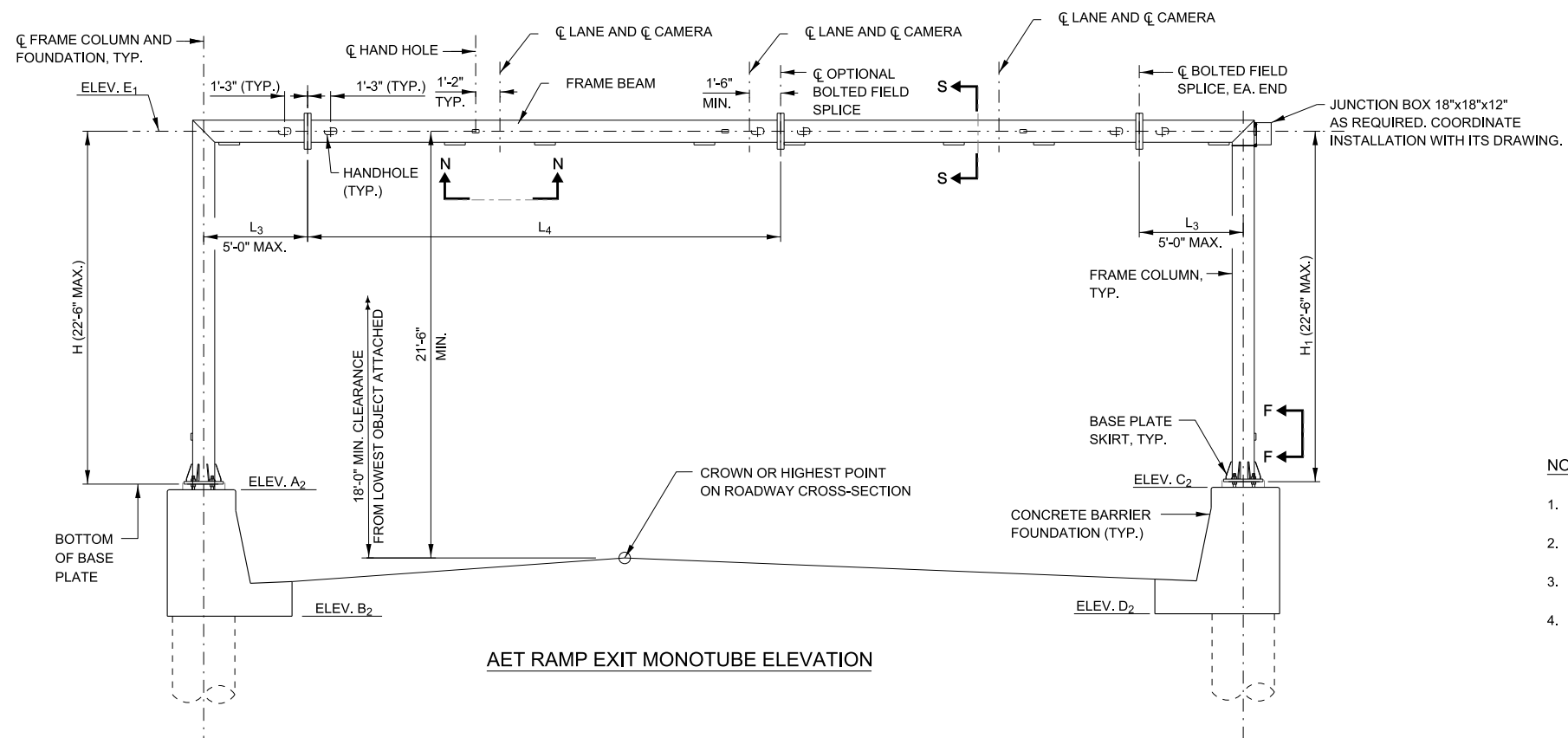
VERSION: 2026-03 STANDARD: F15-10 SHEET: 2 OF 7



AET RAMP EXIT MONOTUBE PLAN



VIEW N-N (CONDUIT COUPLER DETAIL)



AET RAMP EXIT MONOTUBE ELEVATION

EXIT MONOTUBE FRAME TABLE

| SPAN "S" | FRAME COLUMN | FRAME BEAM | CAMBER |
|----------|-----------------|-----------------|--------|
| 60' MAX. | HSS 12.75x0.500 | HSS 12.75x0.500 | 2 1/4" |

SEE STANDARD F13 FOR SPANS GREATER THAN 60'.

NOTES:

- SEE SHEET 2 OF THIS SERIES FOR SECTION S-S, BASE ' PLAN AND ADDITIONAL NOTES.
- SEE SHEET 4 OF THIS SERIES FOR SECTION O-O.
- SEE SHEET 5 OF THIS SERIES FOR SECTIONS A-A AND G-G, AND BASE PLATE SKIRT.
- WORK THIS SHEET WITH, OVERHEAD SIGN STRUCTURE EXIT MONOTUBE TYPE (STEEL) AET RAMP SUMMARY AND TOTAL BILL OF MATERIAL SHEET.

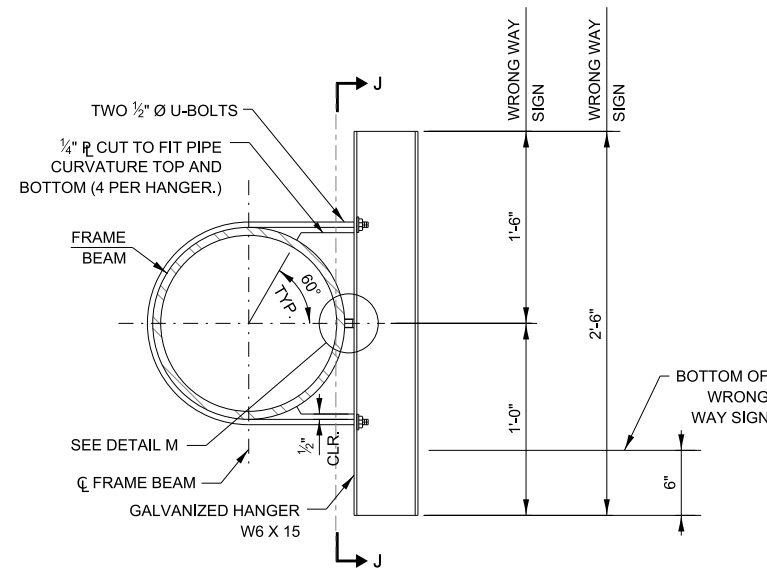
APPROVED BY: *Manar Nashif*
 CHIEF ENGINEERING OFFICER
 DATE: 03/01/2026

OVERHEAD SIGN STRUCTURE MONOTUBE TYPE (STEEL) STRUCTURE DETAILS FOR AET RAMP

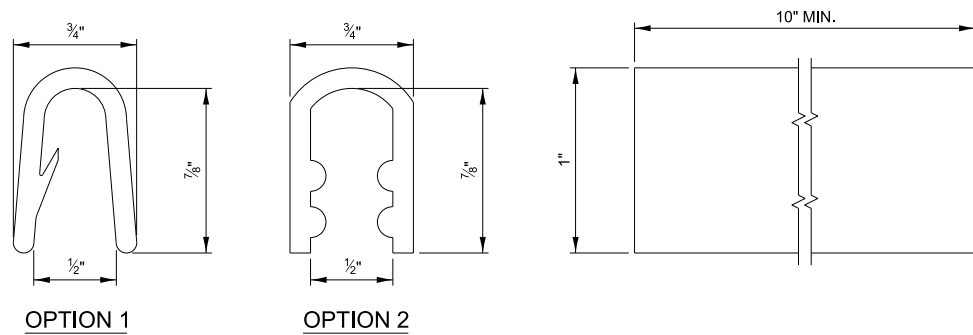
| | | |
|------------------|------------------|---------------|
| VERSION: 2026-03 | STANDARD: F15-10 | SHEET: 3 OF 7 |
|------------------|------------------|---------------|

GENERAL NOTES:

- 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.
- REINFORCEMENT BARS DESIGNATED "(E)" SHALL BE EPOXY COATED.
- CONTRACTOR SHALL COORDINATE WITH THE ILLINOIS TOLLWAY FOR INSTALLATION OF SIGNING BRACKETS TO PREVENT CONFLICTS WITH EXISTING TOLLING EQUIPMENT ON MONOTUBE STRUCTURES.



SECTION S-S (SIGN HANGER)



PLASTIC TRIM DETAIL

NOTES:

- ALL SHARP EDGES OR DRIPS OF ZINC SHALL BE REMOVED FROM ALL STIFFENER PLATES PRIOR TO EPOXY GLUING THE TRIM. THE TRIM SHALL BE EPOXY GLUED TO BOTH SIDES OF THE PLATE. THE COST OF THE TRIM AND EPOXY GLUE SHALL BE INCLUDED IN THE COST OF "OVERHEAD SIGN STRUCTURE, AET RAMP ENTRANCE MONOTUBE TYPE (STEEL)"
- THE TRIM SHALL BE HEAVY DUTY PLASTIC TRIM (OPTION 1 OR OPTION 2 OR EQUIVALENT) FOR OUTDOOR USE FOR APPLICATION WITH A TEMPERATURE RANGE OF -20°F TO 150°F. THE TRIM SHALL BE CHEMICAL RESISTANT, A HARD RATING AND SHALL MEET FMVSS-302 FOR FEDERAL MOTOR VEHICLE SAFETY STANDARDS FOR FLAMMABILITY.
- EPOXY GLUE SHALL BE FOR OUTDOOR USE WITH A TEMPERATURE RANGE OF -20°F TO 150°F AND SHALL BE SUITABLE FOR METAL AND PLASTIC WITH A SHEAR STRENGTH GREATER THAN 2300 PSI.

STRUCTURAL STEEL:

- MATERIAL FOR THE HSS MONOTUBE FRAME SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C. BASE PLATE AND STIFFENER PLATE SHALL CONFORM TO ASTM A709 GRADE 50. OTHER STRUCTURAL STEEL SHAPES AND PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36, UNLESS NOTED OTHERWISE.
- PIPES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A53 GRADE B.
- ANCHOR BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F1554 (AASHTO M314) GRADE 55, WITH A MINIMUM TENSILE STRENGTH OF 75,000 PSI. INSTALLATION AND INSPECTION OF ANCHOR BOLTS SHALL COMPLY WITH ILLINOIS TOLLWAY SPECIAL PROVISION "INTELLIGENT TRANSPORTATION SYSTEMS GANTRY FRAME "STEEL". ANCHORS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 (AASHTO M232). SEE SHEET 6 OF THIS SERIES FOR GALVANIZED LENGTH.
- U-BOLTS SHALL BE STAINLESS STEEL AND SHALL CONFORM TO ASTM 193, CLASS I, GRADE B8 (AISI TYPE 304). WASHERS FOR U-BOLTS SHALL CONFORM TO ASTM A240, TYPE 302. NUTS FOR U-BOLTS SHALL CONFORM TO ASTM A194 (AASHTO M292), GRADE 8F (AISI TYPE 303).
- BOLTS (EXCLUDING ANCHOR BOLTS AND U-BOLTS) SHALL BE HIGH STRENGTH STEEL BOLTS.
- HSS FOR MONOTUBE FRAME, PIPES, STRUCTURAL STEEL SHAPES AND PLATES SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123 AFTER FABRICATION.
- THE MONOTUBE FRAME BEAM, COLUMNS, BASE PLATE MATERIAL, AND SPLICES ARE CONSIDERED TENSION MEMBERS AND SHALL CONFORM TO THE IMPACT TESTING REQUIREMENT, ZONE 2.

DESIGN LOADING:

WIND LOAD CRITERIA

BASIC WIND SPEED = 120 M.P.H.

G = 1.14

I_f = 1.00

K_z = 1.00

| | |
|-------------|-----------|
| SIGN PANEL | 50 P.S.F. |
| COLUMN/BEAM | 35 P.S.F. |

SIGN DEAD LOAD = 3 P.S.F.

ICE = 3 P.S.F. (APPLIED WITH A FACTOR OF 1.0 FOR STRENGTH I ONLY)

EQUIPMENT LOADS:

| | |
|-------------------------------------|--------|
| CAMERA ASSEMBLY W/MOUNTING HARDWARE | 40 LB. |
| ANTENNA W/MOUNTING HARDWARE | 24 LB. |

DESIGN STRESSES FOR REINFORCED CONCRETE:

| | |
|--|-----------------|
| f _c = COMPRESSIVE STRENGTH OF CONCRETE (CLASS SI) | = 3,500 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. |

FOUNDATION:

MINIMUM UNCONFINED COMPRESSIVE STRENGTH, Q_u FOR ALL LAYERS OF COHESIVE SOILS (CLAYS) SHALL BE 1.25 TON/SQ.FT. AT MONOTUBE FRAMES.

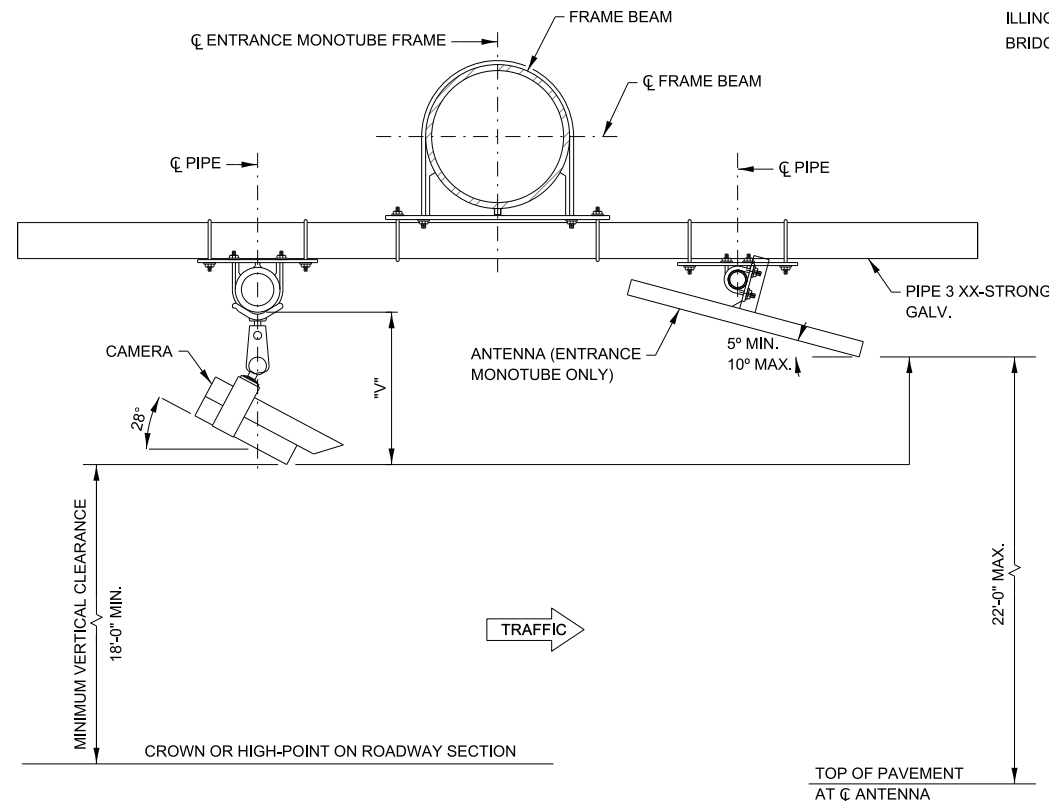
DESIGN SPECIFICATIONS:

- ILLINOIS TOLLWAY STRUCTURE DESIGN MANUAL, LATEST EDITION.
- AASHTO LRFD SPECIFICATION FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 1ST EDITION.
- AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION, 2020.
- ILLINOIS DEPARTMENT OF TRANSPORTATION BRIDGE MANUAL, JANUARY 2012.

CONSTRUCTION SPECIFICATIONS:

ILLINOIS TOLLWAY SUPPLEMENTAL SPECIFICATIONS TO THE ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.

ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.



SECTION P-P

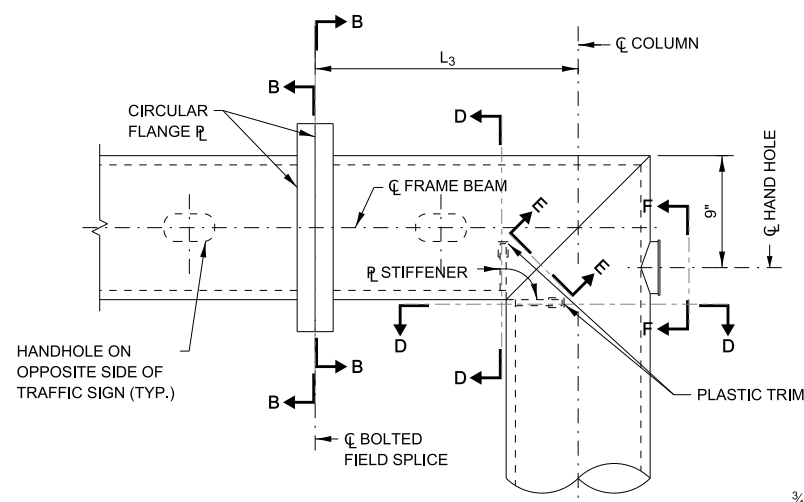
NOTE:
VERIFY DIMENSION "V" WITH CAMERA MANUFACTURER.

APPROVED BY: *Manar Nashif*
CHIEF ENGINEERING OFFICER
DATE: 03/01/2026

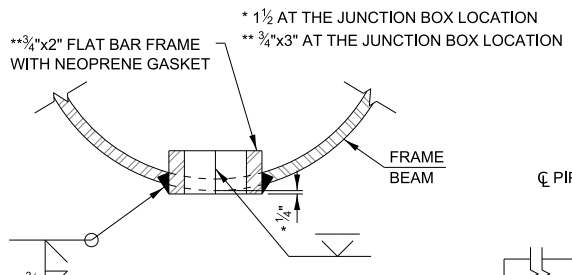
Illinois Tollway

OVERHEAD SIGN STRUCTURE MONOTUBE TYPE (STEEL) STRUCTURE DETAILS FOR AET RAMP

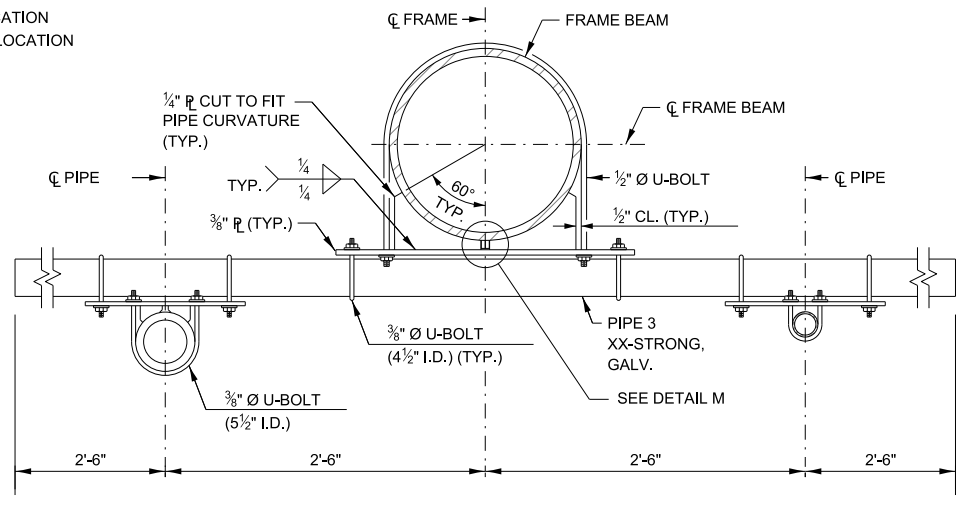
| | | |
|------------------|------------------|---------------|
| VERSION: 2026-03 | STANDARD: F15-10 | SHEET: 4 OF 7 |
|------------------|------------------|---------------|



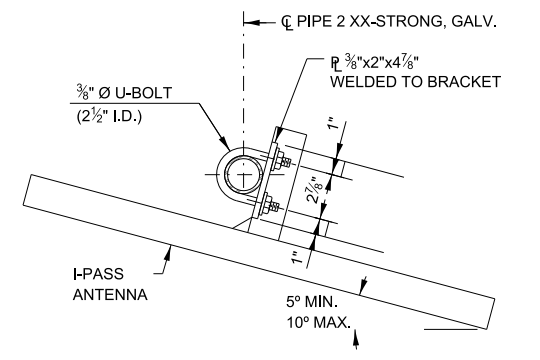
SECTION A-A
(SEE SHEETS 2 AND 3 OF THIS SERIES FOR LOCATION)



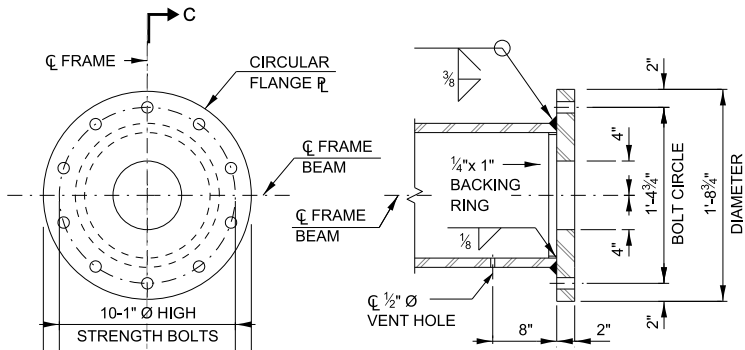
SECTION G-G



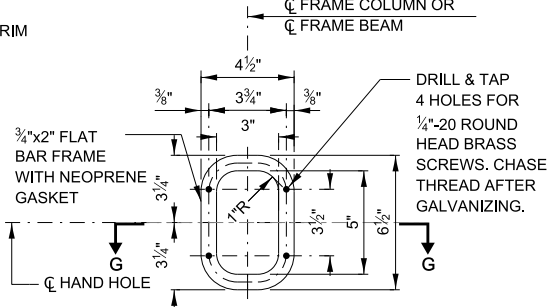
SECTION K-K



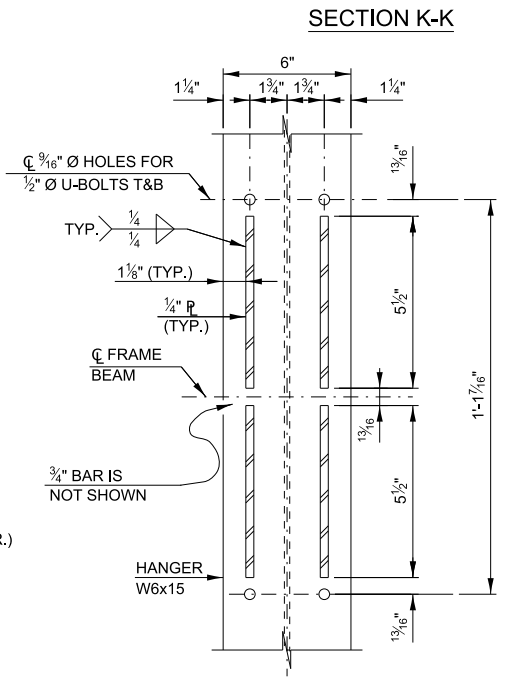
ANTENNA HANGER



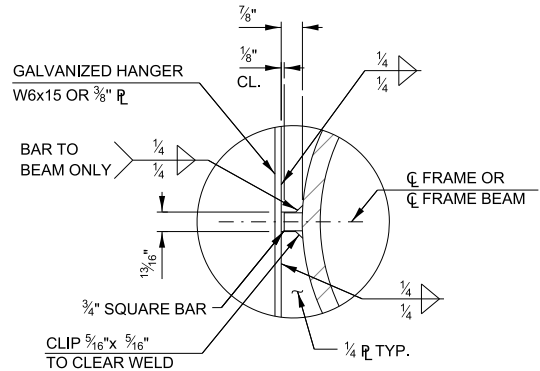
SECTION C-C



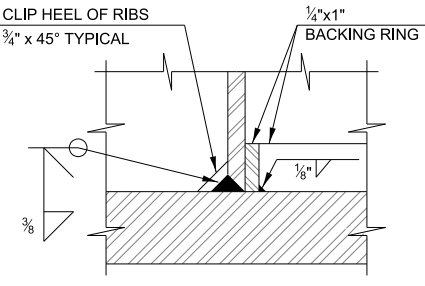
VIEW F-F



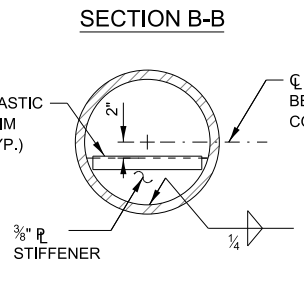
SECTION J-J



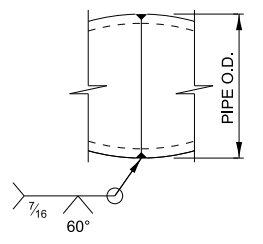
DETAIL M



DETAIL T

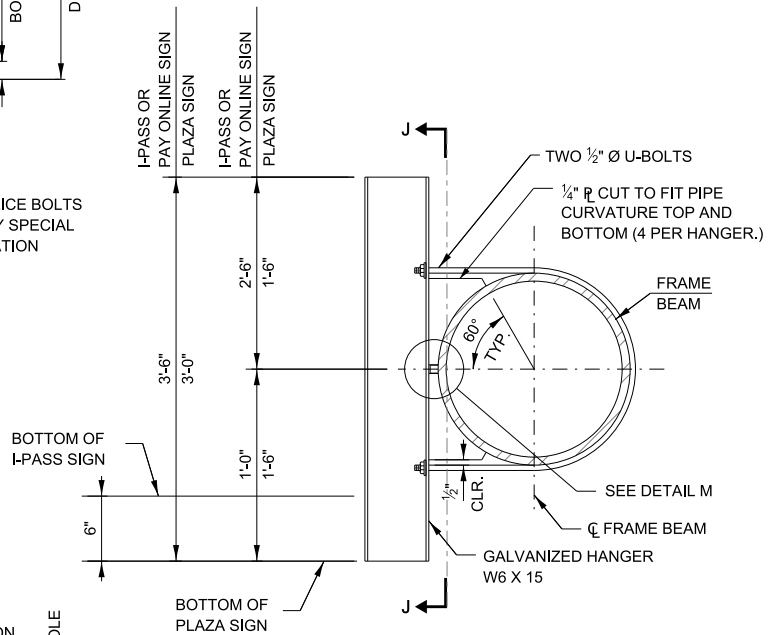


SECTION D-D

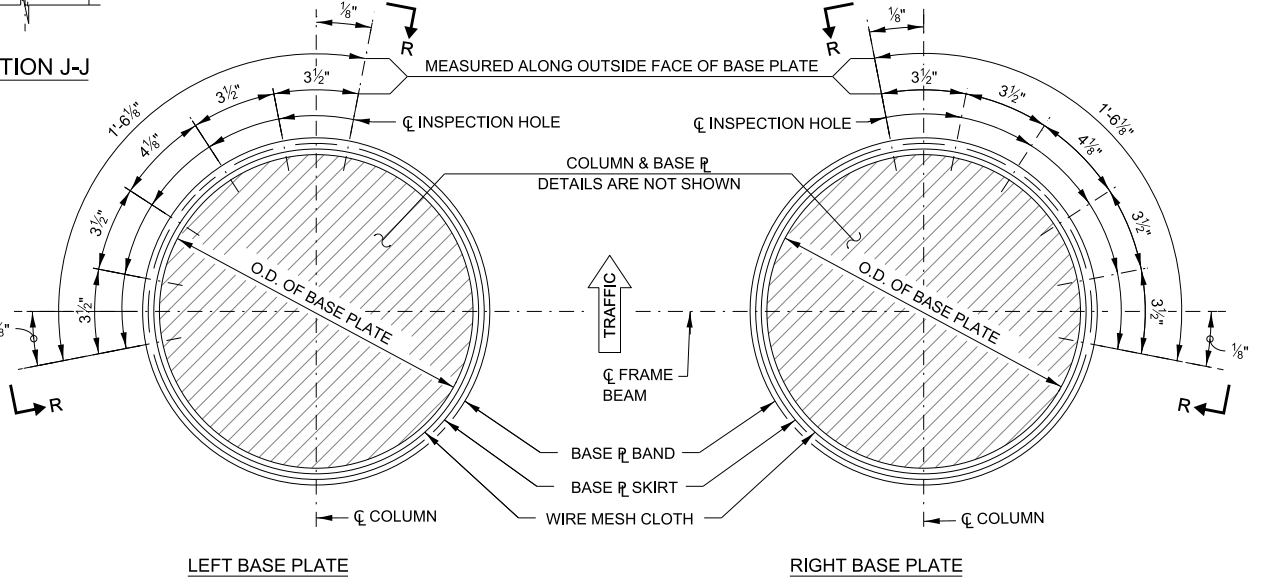


SECTION E-E

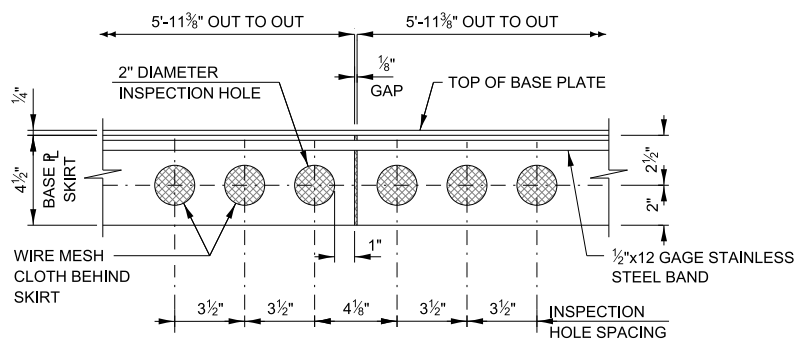
NOTE 1:
INSTALLATION AND INSPECTION OF SPLICE BOLTS SHALL COMPLY WITH ILLINOIS TOLLWAY SPECIAL PROVISION "INTELLIGENT TRANSPORTATION SYSTEMS GANTRY FRAME (STEEL)".



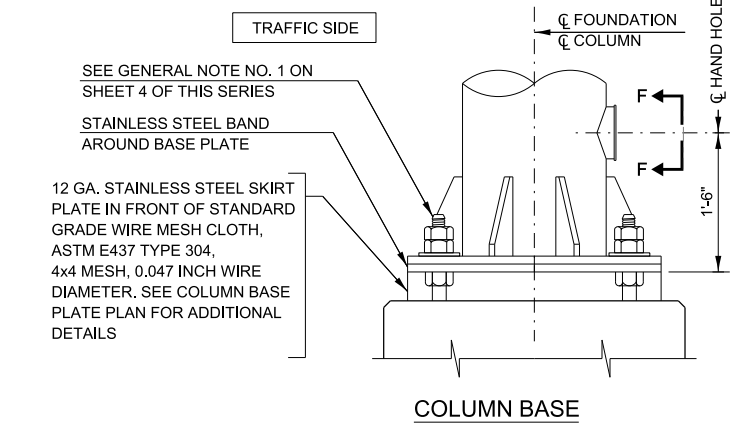
SECTION H-H (SIGN HANGER)



COLUMN BASE PLATE PLAN



VIEW R-R (BASE PLATE SKIRT)

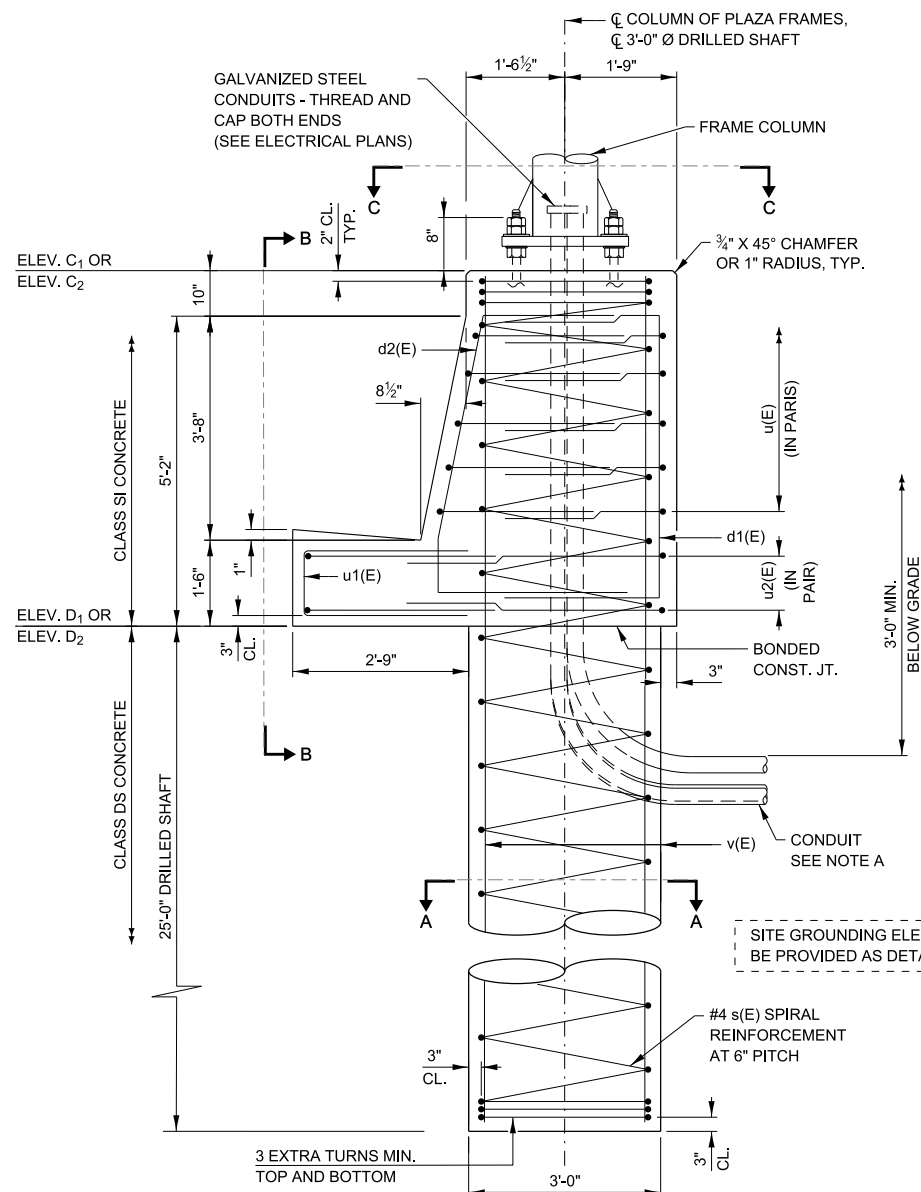


COLUMN BASE

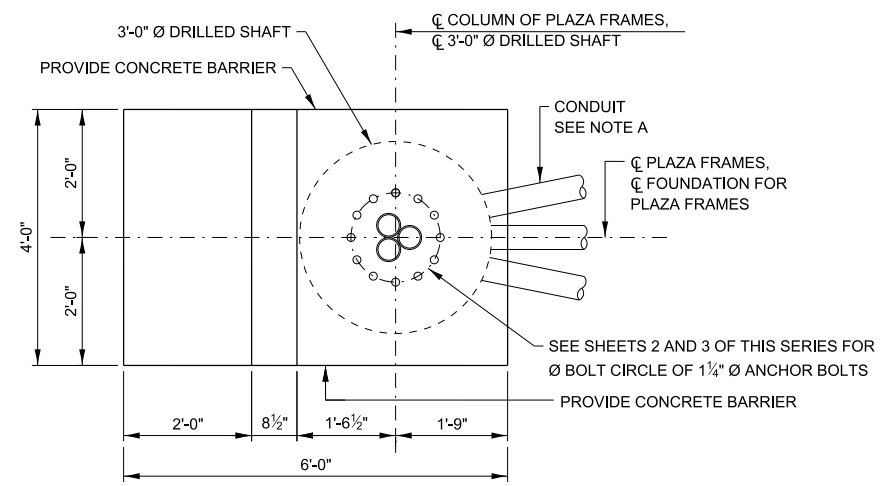
NOTE:
SEE SHEET 2 OF THIS SERIES FOR BASE PLATE OUTSIDE DIAMETER.

APPROVED BY:
Manar Nashif
CHIEF ENGINEERING OFFICER

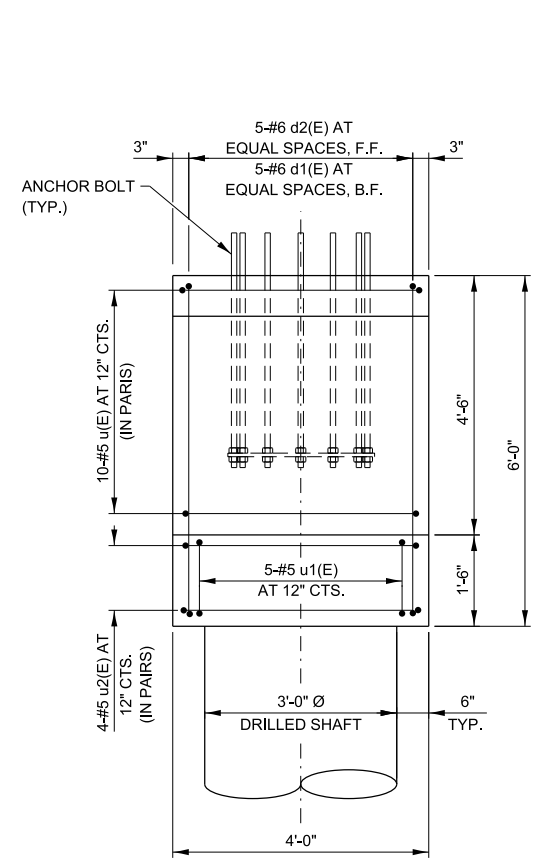
DATE:
03/01/2026



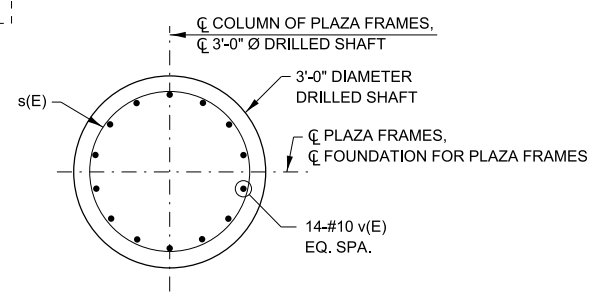
SIDE ELEVATION RIGHT SIDE
(MIRRORED ELEVATION LEFT SIDE)



VIEW C-C
CONCRETE BARRIER FOUNDATION FOR PLAZA FRAMES RIGHT SIDE
(MIRRORED ELEVATION LEFT SIDE)



VIEW B-B



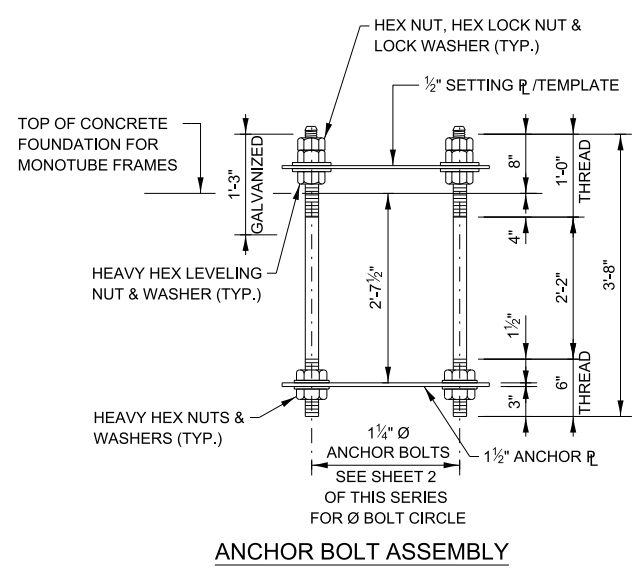
SECTION A-A

NOTE A:
1. COORDINATE CONDUIT SIZE, LOCATION AND QUANTITY WITH ELECTRICAL PLANS. PROVIDE CONDUIT COUPLERS AS REQUIRED.
2. CONDUITS SHALL BE PLACED TO MISS REINFORCEMENT. CUTTING OF REINFORCEMENT SHALL NOT BE ALLOWED.

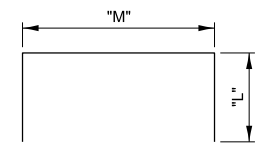
NOTE B:
PROTECTIVE COAT SHALL BE APPLIED TO THE TRAFFIC AND TOP FACES OF THE BARRIER AND TOP OF GUTTER

FOUNDATION NOTE:
THE FOUNDATION DETAILS SHOWN ARE BASED ON THE PRESENCE OF MOSTLY 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 JOB SITE. 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.

LEGEND:
F.F. - FRONT FACE
B.F. - BACK FACE
CTS. - CENTERS

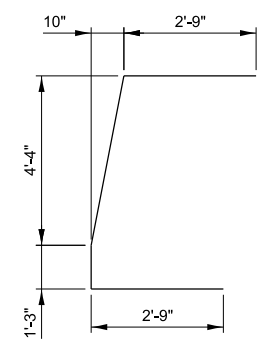


ANCHOR BOLT ASSEMBLY



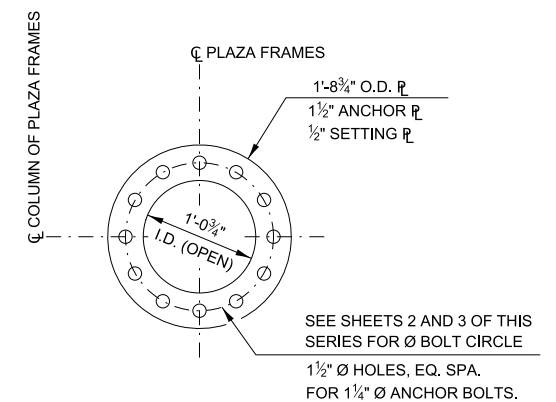
| BAR | "L" | "M" |
|-------|--------|-------|
| d1(E) | 2'-9" | 5'-7" |
| u(E) | 2'-9" | 3'-8" |
| u1(E) | 3'-3" | 1'-1" |
| u2(E) | 3'-10" | 3'-8" |

BARS d1(E), u(E), u1(E) AND u2(E)



BAR d2(E)

| FRAME COLUMN | ANCHOR BOLT |
|-----------------|-------------|
| HSS 12.75x0.500 | 12 |



ANCHOR R / SETTING R

BAR LIST-ONE FOUNDATION

| BAR | NO. | SIZE | LENGTH | SHAPE |
|-------|-----|------|--------|-------|
| d1(E) | 5 | #6 | 11'-1" | ┌ |
| d2(E) | 5 | #6 | 11'-2" | └ |
| s(E) | 1 | #4 | 30'-7" | |
| v(E) | 14 | #10 | 30'-7" | — |
| u(E) | 10 | #5 | 9'-2" | ┌ |
| u1(E) | 5 | #5 | 7'-7" | ┌ |
| u2(E) | 4 | #5 | 11'-4" | ┌ |

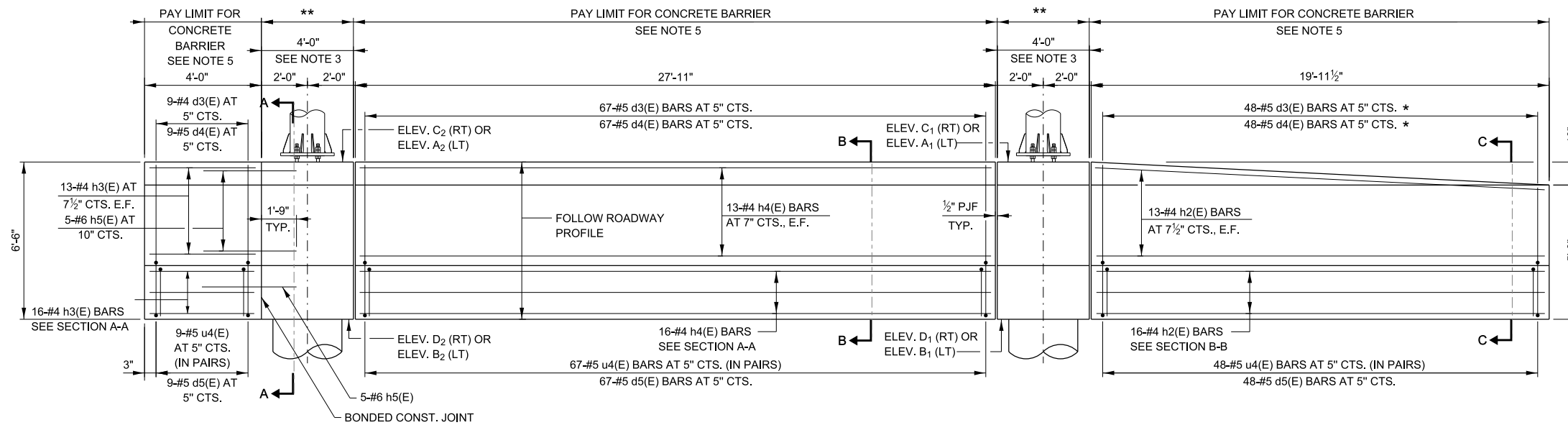
ESTIMATED QUANTITY

| ITEM | UNIT | CONCRETE BARRIER FDN. |
|--------------------------------|---------|-----------------------|
| CLASS SI CONCRETE | CU. YD. | 3.8 |
| CLASS DS CONCRETE | CU. YD. | 6.6 |
| REINFORCEMENT BARS, EPOXY COAT | POUND | 2,540 |
| PROTECTIVE COAT | SQ. YD. | 4.4 |

APPROVED BY: *Manar Nashif* DATE: 03/01/2026
CHIEF ENGINEERING OFFICER

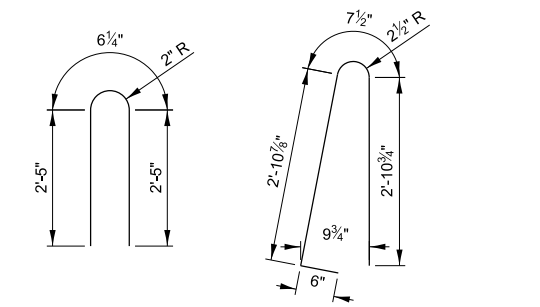
OVERHEAD SIGN STRUCTURE MONOTUBE TYPE (STEEL) STRUCTURE DETAILS FOR AET RAMP

VERSION: 2026-03 STANDARD: F15-10 SHEET: 6 OF 7



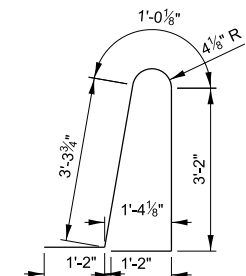
BAR LIST - FOR ONE BARRIER

| BAR | NO. | SIZE | LENGTH | SHAPE |
|-------|-----|------|--------|-------|
| d3(E) | 124 | #4 | 5'-5" | |
| d4(E) | 124 | #5 | 7'-0" | |
| d5(E) | 124 | #5 | 9'-10" | |
| h2(E) | 29 | #4 | 19'-7" | |
| h3(E) | 29 | #4 | 3'-8" | |
| h4(E) | 29 | #4 | 27'-7" | |
| h5(E) | 10 | #6 | 3'-9" | |
| u4(E) | 248 | #5 | 9'-3" | |

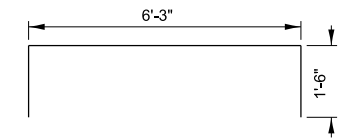


BAR d3(E)

BAR d4(E)



BAR d5(E)

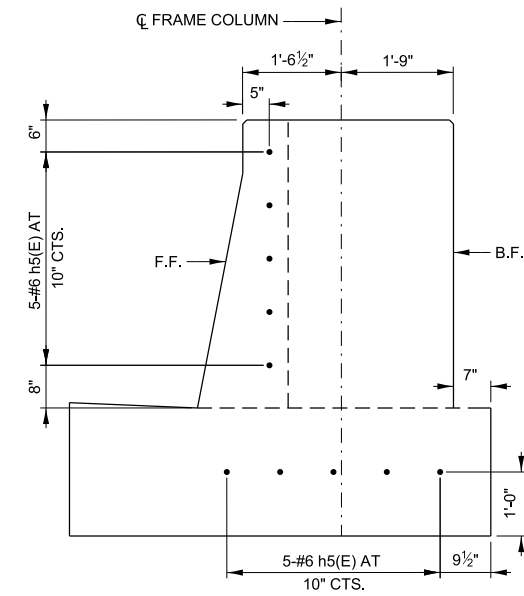


BAR u4(E)

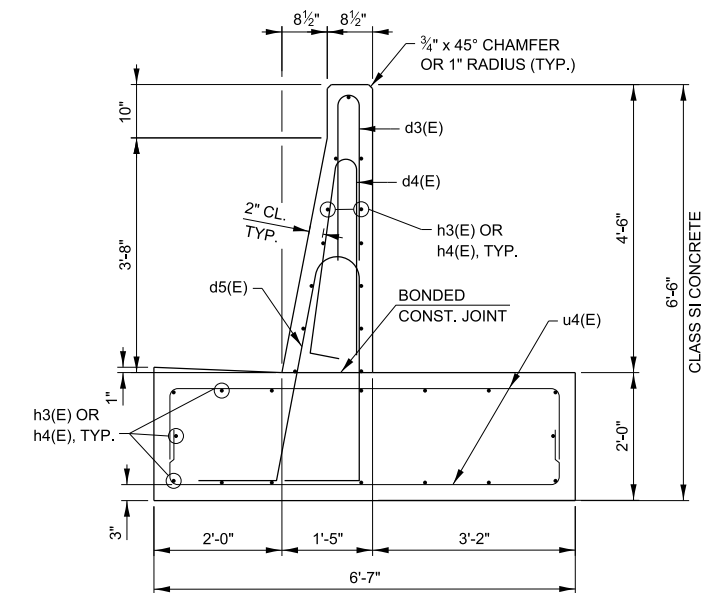
CONCRETE BARRIER AND BARRIER BASE ELEVATION

INSIDE FACE OF RIGHT BARRIER IS SHOWN
(MIRROR ELEVATION OF LEFT BARRIER)

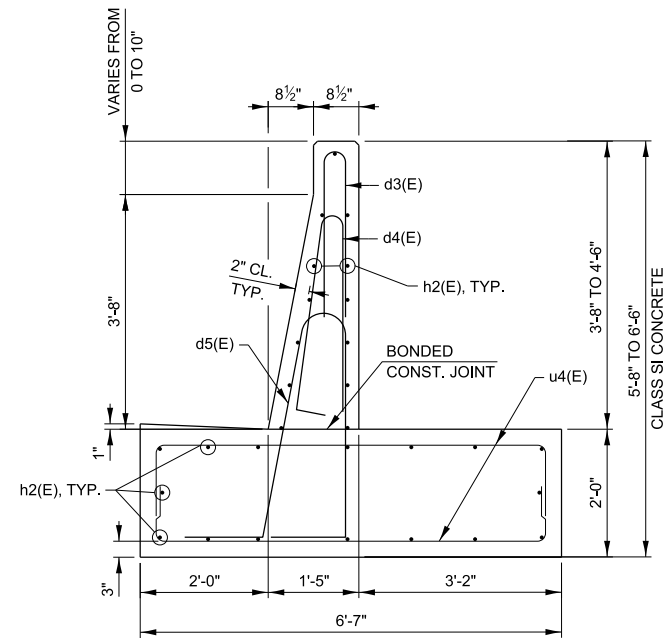
- * CUT IN FIELD AS REQUIRED TO FIT TAPER
- ** PAY LIMIT FOR FOUNDATION FOR OVERHEAD SIGN STRUCTURE



SECTION A-A



SECTION B-B



SECTION C-C

ESTIMATED QUANTITY
(FOR ONE CONCRETE BARRIER)

| ITEM | UNIT | ENETRANCE MONOTUBE | EXIT MONOTUBE | TOTAL |
|----------------------------------|---------|--------------------|---------------|-------|
| CONCRETE STRUCTURES | CU. YD. | 22.0 | 11.7 | 33.7 |
| REINFORCEMENT BARS, EPOXY COATED | POUND | 3,945 | 2,115 | 6,060 |
| PROTECTIVE COAT | SQ. YD. | 26.9 | 14.5 | 41.4 |

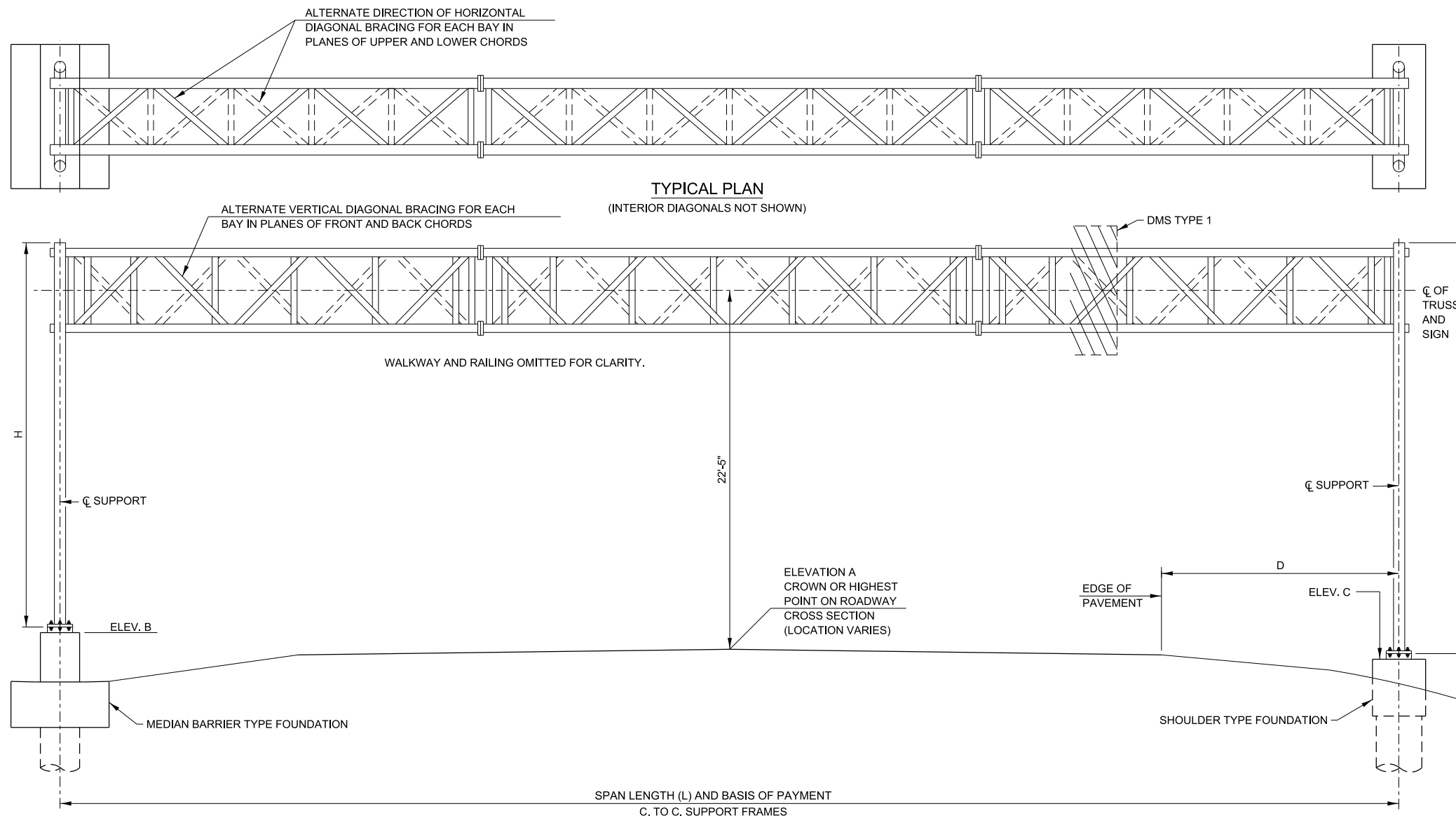
NOTES:

- PROTECTIVE COAT SHALL BE APPLIED TO THE TRAFFIC AND TOP FACES OF THE BARRIER, GUTTER AND TO THE ENTRANCE SIDE FACE (AT THE BEGINNING OF THE RAMP PLAZA PAVEMENT) FOR THE FULL HEIGHT OF THE BARRIER.
- ELECTRICAL JUNCTION BOXES SHALL BE EXTERIOR MOUNTED ON THE BACK FACE OF BARRIER.
- FOR CONCRETE BARRIER FOUNDATION DETAILS FOR MONOTUBE FRAMES, SEE SHEET 6 OF THIS SERIES.
- SEE OVERHEAD SIGN STRUCTURE ENTRANCE MONOTUBE TYPE (STEEL) AET RAMP SUMMARY AND TOTAL BILL OF MATERIAL IN CONTACT PLANS FOR COMPLETE BILL OF MATERIAL.
- CONCRETE BARRIER AND BASE DETAILED ON THIS SHEET WILL BE PAID FOR UNDER THE ITEMS: CONCRETE STRUCTURES, REINFORCEMENT BARS, EPOXY COATED AND PROTECTIVE COAT.
- CONCRETE BARRIER LOCATED OUTSIDE THE LIMITS SHOWN ON THESE SHEETS WILL BE PAID FOR SEPARATELY.

APPROVED BY: *Manar Nashif*
CHIEF ENGINEERING OFFICER
DATE: 03/01/2026

OVERHEAD SIGN STRUCTURE MONOTUBE TYPE (STEEL) STRUCTURE DETAILS FOR AET RAMP

VERSION: 2026-03 STANDARD: F15-10 SHEET: 7 OF 7



GENERAL NOTES:

1. WORK THIS SHEET WITH, OVERHEAD SIGN STRUCTURE SPAN TYPE (STEEL) SUMMARY AND BILL OF MATERIAL SHEET.
2. AFTER ADJUSTMENTS TO LEVEL TRUSS AND ENSURE ADEQUATE VERTICAL CLEARANCE, ALL TOP AND LEVELING NUTS SHALL BE TIGHTENED AGAINST THE BASE PLATE WITH A MINIMUM TORQUE OF 200 LB.-FT. STAINLESS STEEL MESH SHALL THEN BE PLACED AROUND THE PERIMETER OF THE BASE PLATE. SECURE TO BASE PLATE WITH STAINLESS STEEL BANDING.
3. TRUSS UNITS SHALL BE SHIPPED INDIVIDUALLY WITH ADEQUATE PROVISION TO PREVENT DETRIMENTAL MOTION DURING TRANSPORT. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE CONFIGURATION AND PROTECTION OF THE TRUSS UNITS.
4. ALL WELDS SHALL BE CONTINUOUS UNLESS OTHERWISE SHOWN. ALL WELDING SHALL BE DONE IN ACCORDANCE WITH CURRENT AWS D1.1 STRUCTURE WELDING CODE AND THE STANDARD SPECIFICATIONS.
5. INSTALLATIONS NOT WITHIN DIMENSIONAL LIMITS SHOWN REQUIRE SPECIAL ANALYSIS FOR ALL COMPONENTS.
6. ONE DMS TYPE 1 IS PERMITTED TO BE MOUNTED ON A SPAN TRUSS. DO NOT MOUNT SIGN PANELS ON THIS TRUSS.

FABRICATION NOTES:

1. MATERIALS: SEE MATERIAL SPECIFICATIONS TABLE FOR MATERIAL SPECIFICATIONS FOR OVERHEAD SIGN STRUCTURE SPAN TYPE (STEEL). 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 STEEL POST SHALL HAVE A MINIMUM LONGITUDINAL CHARPY V-NOTCH (CVN) ENERGY OF 15 LB.-FT. AT 40 F (ZONE 2) BEFORE GALVANIZING.
2. WELDING: ALL MATERIALS, WELDING PROCEDURES AND INSPECTION USED FOR THE SPAN TYPE OVERHEAD SIGN STRUCTURE SHALL CONFORM TO AWS D1.1-15 FOR TUBULAR, CYCLICALLY LOADED STRUCTURES. ADDITIONALLY, ALL WELDED MATERIALS USED SHALL BE PREQUALIFIED FOR USE WITH WPS PER AWS D1.1-15, TABLE 3.1.
3. FASTENERS FOR STEEL TRUSSES: HIGH STRENGTH BOLTS SHALL SATISFY THE REQUIREMENTS OF AASHTO M164 (ASTM A325), OR APPROVED ALTERNATE, AND SHALL HAVE MATCHING LOCKNUTS. THREADED STUDS FOR SPLICES (IF MEMBERS INTERFERE) SHALL SATISFY THE REQUIREMENTS OF ASTM A449, ASTM A193 GRADE B7, OR APPROVED ALTERNATE, AND SHALL HAVE MATCHING LOCKNUTS. BOLTS AND LOCKNUTS NOT REQUIRED TO BE HIGH STRENGTH SHALL SATISFY THE REQUIREMENTS OF ASTM A307. ALL BOLTS AND LOCKNUTS SHALL BE HOT DIP GALVANIZED PER AASHTO M232, EXCEPT STAINLESS STEEL FASTENERS, NUTS AND WASHERS. THE LOCKNUTS SHALL HAVE NYLON OR STEEL INSERTS. A STAINLESS STEEL FLAT WASHER CONFORMING TO ASTM A240 TYPE 302 OR 304, IS REQUIRED UNDER BOTH HEAD AND NUT OR UNDER BOTH NUTS WHERE THREADED STUDS ARE USED. HIGH STRENGTH BOLT INSTALLATION SHALL CONFORM TO ARTICLE 505.04(f)(2)d OF THE IDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. ROTATIONAL CAPACITY ("ROCAP") TESTING OF BOLTS WILL NOT BE REQUIRED.

4. U-BOLTS: U-BOLTS SHALL BE STAINLESS STEEL AND SHALL CONFORM TO ASTM 193, CLASS I, GRADE B8 (AISI TYPE 304). WASHERS FOR U-BOLTS SHALL CONFORM TO ASTM A240, TYPE 302. NUTS FOR U-BOLTS SHALL CONFORM TO ASTM A194 (AASHTO M292), GRADE 8F (AISI TYPE 303).
5. STEEL GRATING: STEEL BARS FOR GRATING ELEMENTS SHALL CONFORM TO ASTM A36 OR AN EQUIVALENT MATERIAL ACCEPTABLE TO THE ENGINEER.
6. GALVANIZING: ALL PLATES, SHAPES AND PIPE SHALL BE HOT DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AASHTO M111. PAINTING IS NOT PERMITTED. ALL FASTENERS SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH AASHTO M111 OR M232 AS APPROPRIATE FOR THE PRODUCT (EXCEPT STAINLESS STEEL FASTENERS).

CONSTRUCTION SPECIFICATIONS:

ALL MATERIALS, EXCEPT AS SHOWN, FABRICATION, ERECTION AND CONSTRUCTION REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE LATEST STANDARD SPECIFICATIONS.

LOADING:

1. SPAN TYPE (STEEL) TRUSS ARE DESIGNED FOR A 10'-0" DEEP DMS, WITH A MAXIMUM LENGTH OF 30'-0" AND A MAXIMUM THICKNESS OF 4'-2".
2. SPAN TYPE (STEEL) TRUSS ARE DESIGNED FOR 35 PSF WIND PRESSURE ON TRUSS MEMBERS AND 60 PSF ON DMS.
3. WALKWAY LOADING SHALL INCLUDE DEAD LOAD PLUS 500 LBS. CONCENTRATED LIVE LOAD.
4. WALKWAY HANDRAILS ARE DESIGNED FOR A 200-LB LOAD ON TOP RAIL AND A 150-LB LOAD ON MID RAIL, APPLIED IN ANY DIRECTION.
5. PROVIDE ANCHORAGE FOR ATTACHMENT OF PERSONAL FALL ARREST SYSTEMS PER OSHA SECTION 1926.502(D). ANCHORAGE SHALL BE INSTALLED AS CLOSE TO PANEL POINTS AS POSSIBLE AND SHALL BE CAPABLE OF SUPPORTING AT LEAST 5000 LBS.
6. ICE LOAD OF 3 PSF APPLIED WITH A FACTOR OF 1.0 FOR STRENGTH I ONLY.

DESIGN SPECIFICATIONS:

2015 AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS. 1ST EDITION WITH 2020 INTERIM REVISIONS, INSTRUCTIONS AND INFORMATION.

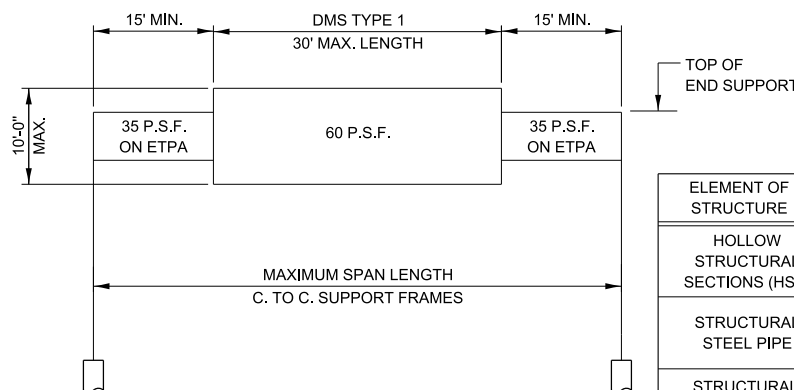
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION, 2020

TYPICAL ELEVATION
(LOOKING AT FACE OF SIGN)

ELEV. A = ELEVATION AT POINT OF MINIMUM CLEARANCE TO DMS, WALKWAY SUPPORT OR TRUSS.

MATERIAL SPECIFICATIONS TABLE FOR STRUCTURAL STEEL AND FASTENERS

| ELEMENT OF STRUCTURE | SPECIFICATION | MINIMUM YIELD STRENGTH (K.S.I.) | MINIMUM ULTIMATE STRENGTH (K.S.I.) |
|---|--|---------------------------------|------------------------------------|
| HOLLOW STRUCTURAL SECTIONS (HSS) | ASTM A500 GRADE B | 42 | 58 |
| STRUCTURAL STEEL PIPE | ASTM A53, TYPE E OR S, GRADE B | 35 | 60 |
| STRUCTURAL STEEL BAR, PLATES AND SHAPES | ASTM A572 GRADE 50 | 50 | 65 |
| STAINLESS STEEL BOLTS | ASTM A193 GRADE B8 OR B8M | 30 | 75 |
| STRUCTURAL STEEL BOLTS | ASTM 325, TYPE 1 | - | 105 |
| STAINLESS STEEL LOCKNUTS | ASTM A194 GRADE 8F ASTM A194 GRADE 2H | - | - |
| NUTS | ASTM A563 GRADE DH | - | - |
| STEEL WASHERS | ASTM F436 | - | - |
| STAINLESS STEEL WASHERS | ASTM A240, TYPE 302 | - | - |
| STEEL ANCHOR BOLTS | AASHTO M314 OR ASTM F1554 | 105 | 125 |



DESIGN WIND LOADING DIAGRAM

ETPA = EFFECTIVE TRUSS PROJECTED AREA.
MAXIMUM DMS WEIGHT = 5000 LBS.

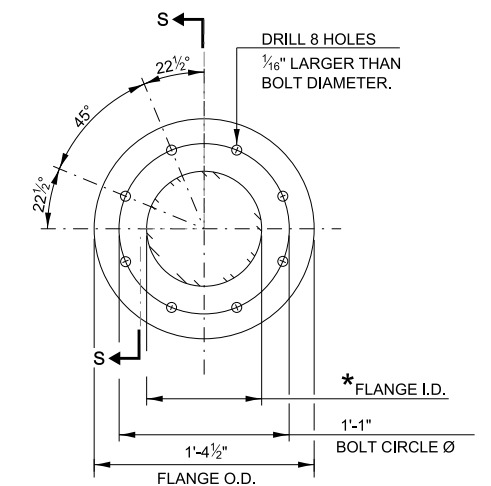
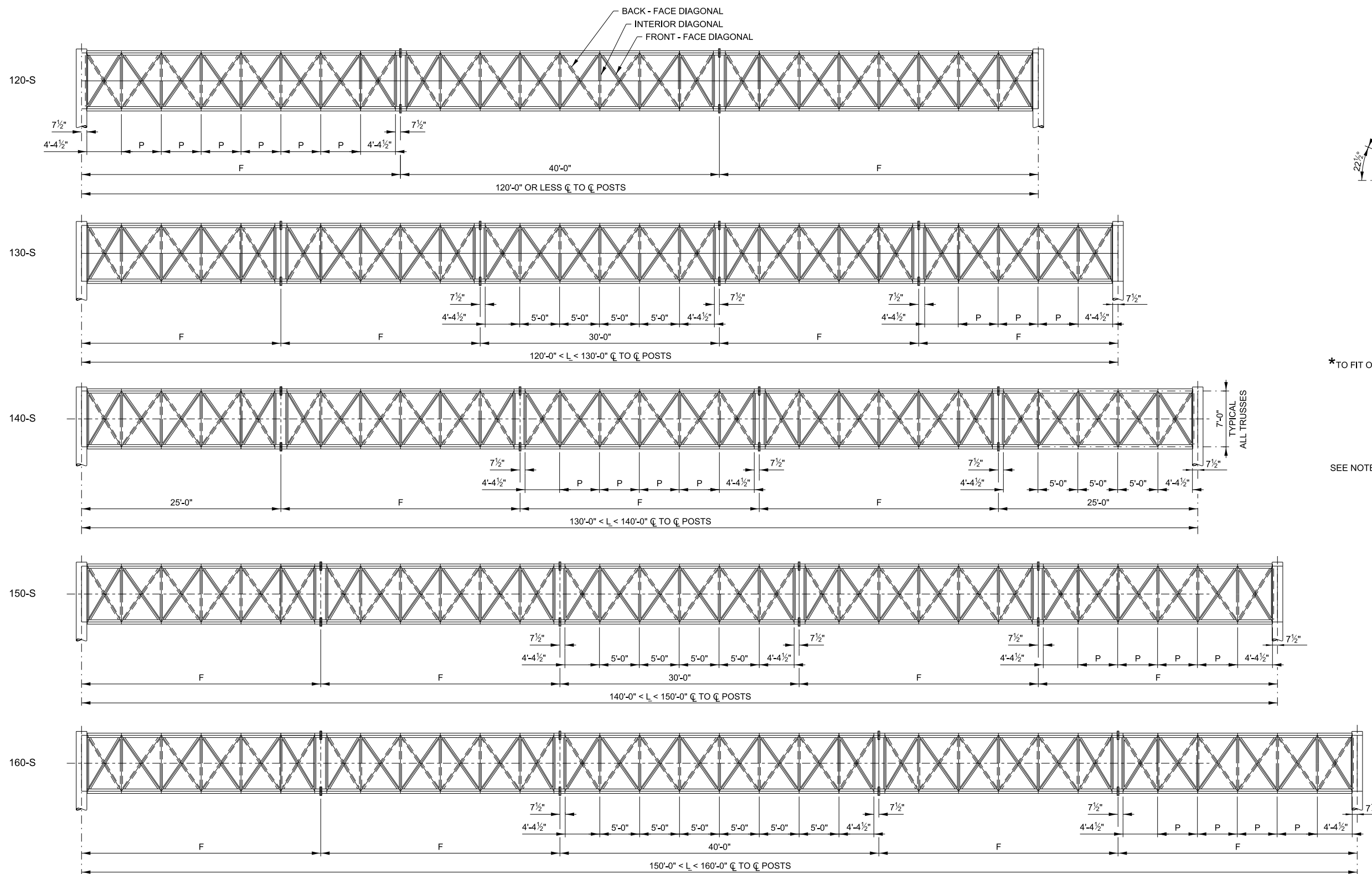
APPROVED BY: *Manar Nashif*
CHIEF ENGINEERING OFFICER
DATE: 03/01/2026

| REVISIONS | |
|------------|---------------------------------|
| DATE | DESCRIPTION |
| 03-01-2026 | DELETED NOTE 3 AND RE-NUMBERED. |
| 03-01-2025 | ADDED UTILITY CLEARANCE REQ. |
| 03-01-2024 | ADDED UTILITY CLEARANCE REQ. |

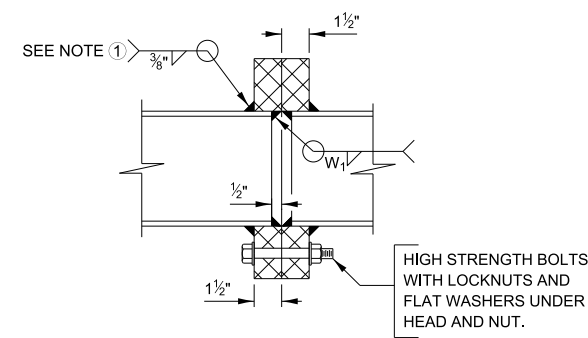
Illinois Tollway

OVERHEAD SIGN STRUCTURE SPAN TYPE (STEEL) STRUCTURE DETAILS

VERSION: 2026-03 STANDARD: F17-11 SHEET: 1 OF 13



SPLICING FLANGES
 * TO FIT O.D. OF CHORD WITH MAXIMUM GAP OF 1/16".

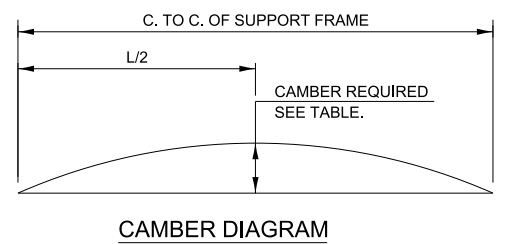


SECTION S-S
 HIGH STRENGTH BOLTS WITH LOCKNUTS AND FLAT WASHERS UNDER HEAD AND NUT.

NOTE:
 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.

PART ELEVATION VIEWS

| SPAN LENGTH (L) | CAMBER |
|-----------------|--------|
| 120' OR LESS | 2 3/4" |
| 120' < L ≤ 130' | 3 1/4" |
| 130' < L ≤ 140' | 4" |
| 140' < L ≤ 150' | 4 1/4" |
| 150' < L ≤ 160' | 5" |



NOTE:
 1. FABRICATE TRUSS WITH CHORDS CURVED SMOOTHLY TO PROVIDE CAMBER.
 2. DO NOT CAMBER BY SHIMMING AT TRUSS FIELD SPLICES OR CUTTING AND REWELDING CHORD.

TRUSS MEMBER SCHEDULE

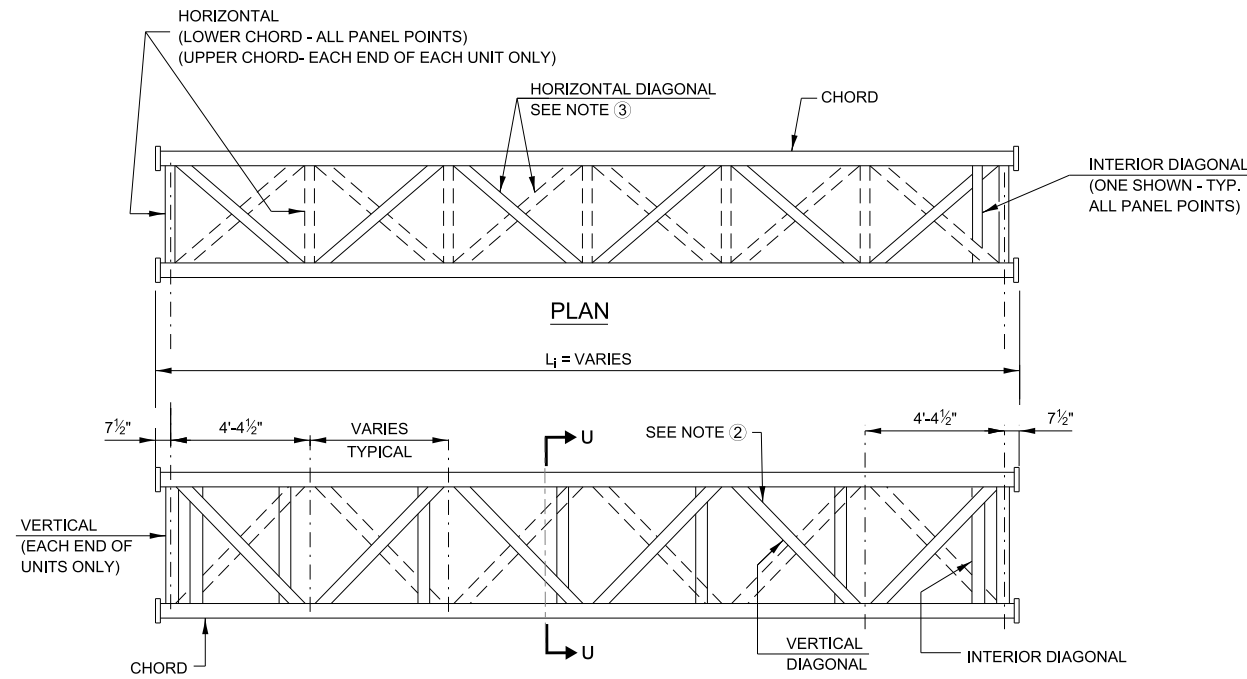
| DESIGN TRUSS TYPE | SPAN | CHORDS | VERTICAL DIAGONALS, VERTICALS AND INTERIOR DIAGONALS | HORIZONTAL DIAGONALS | HORIZONTALS | SPLICING FLANGE | | |
|-------------------|-----------------|-----------------|--|----------------------|-----------------|-----------------|--------|-----------|
| | | | | | | H.S. BOLTS | | WELD SIZE |
| | | | | | | NO./SPLICE | DIA. | |
| 120-S | 120' OR LESS | HSS 8.625x0.322 | PIPE 4 X-STRONG | PIPE 3 XX-STRONG | PIPE 3 X-STRONG | 8 | 1" | 1/4" |
| 130-S | 120' < L ≤ 130' | HSS 8.625x0.375 | PIPE 4 X-STRONG | PIPE 3 XX-STRONG | PIPE 3 X-STRONG | 8 | 1" | 5/16" |
| 140-S | 130' < L ≤ 140' | HSS 8.625x0.375 | PIPE 4 X-STRONG | PIPE 3 XX-STRONG | PIPE 3 X-STRONG | 8 | 1" | 5/16" |
| 150-S | 140' < L ≤ 150' | HSS 8.625x0.500 | PIPE 4 X-STRONG | PIPE 3 XX-STRONG | PIPE 3 X-STRONG | 8 | 1" | 7/16" |
| 160-S | 150' < L ≤ 160' | HSS 8.625x0.500 | PIPE 4 X-STRONG | PIPE 3 XX-STRONG | PIPE 3 X-STRONG | 8 | 1 1/4" | 7/16" |

APPROVED BY:

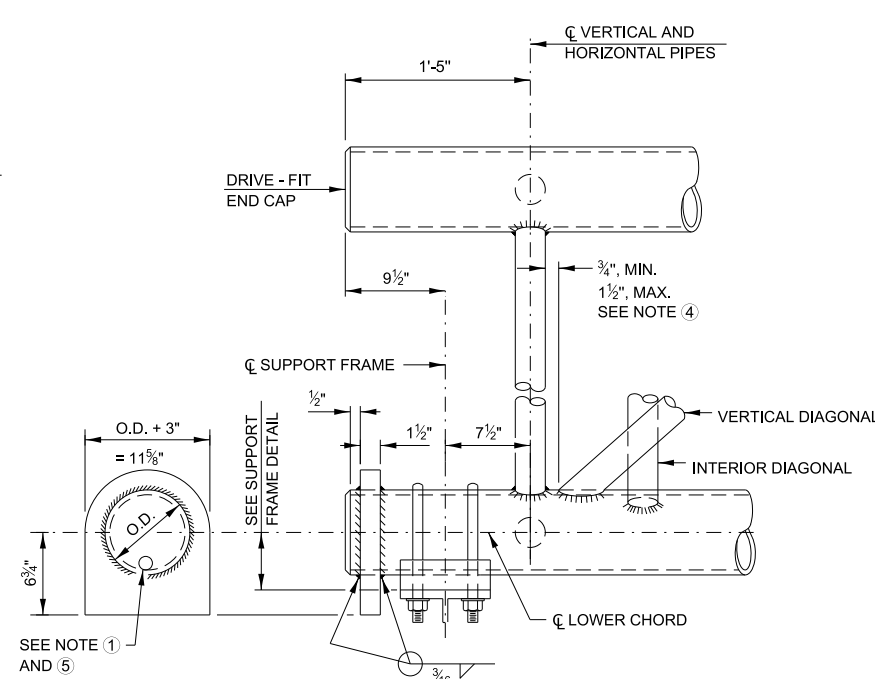
 CHIEF ENGINEERING OFFICER
 DATE: 03/01/2026

OVERHEAD SIGN STRUCTURE
SPAN TYPE (STEEL)
STRUCTURE DETAILS

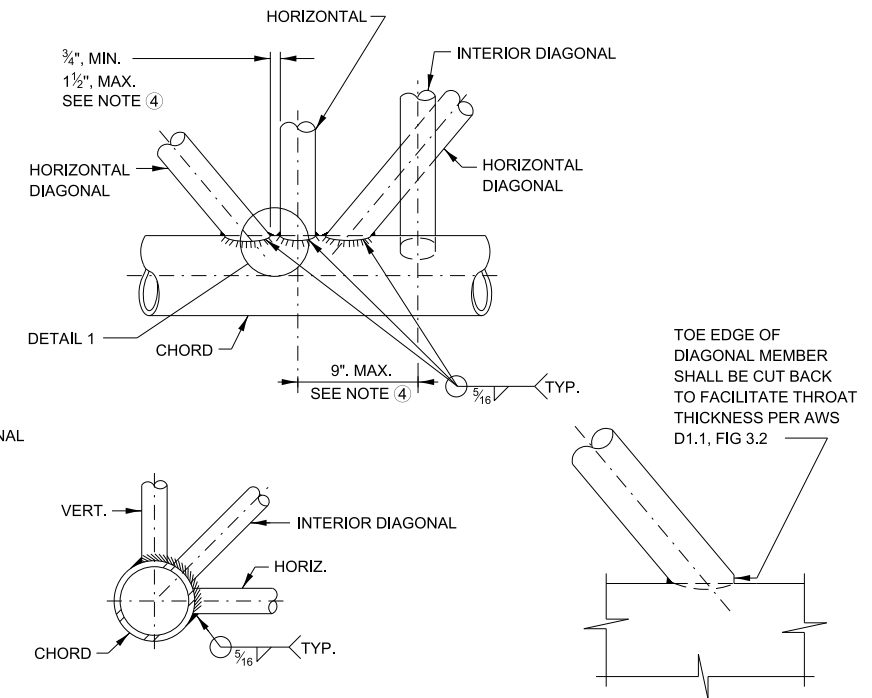
VERSION: 2026-03 STANDARD: F17-11 SHEET: 2 OF 13



**ELEVATION
TYPICAL INTERIOR UNIT**
EVEN OR ODD NUMBER OF PANELS/EXTERIOR UNITS ALLOWED.

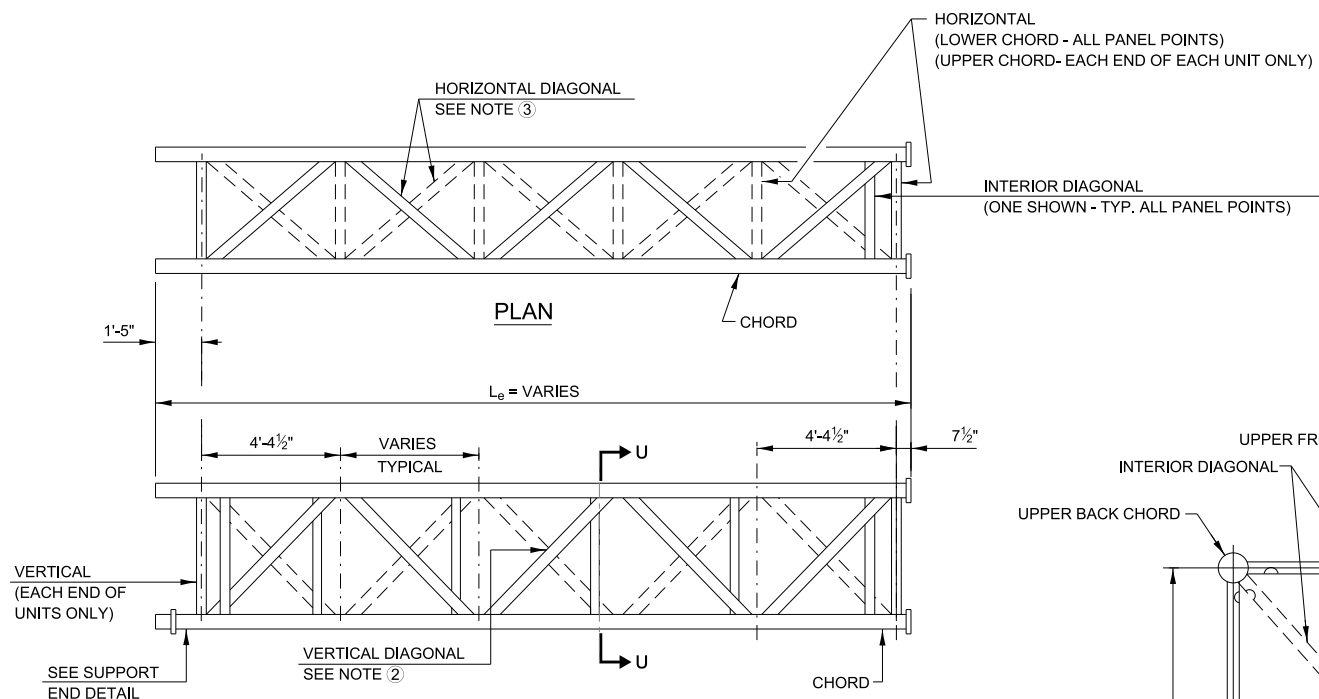


SUPPORT END DETAIL FOR EXTERIOR UNIT

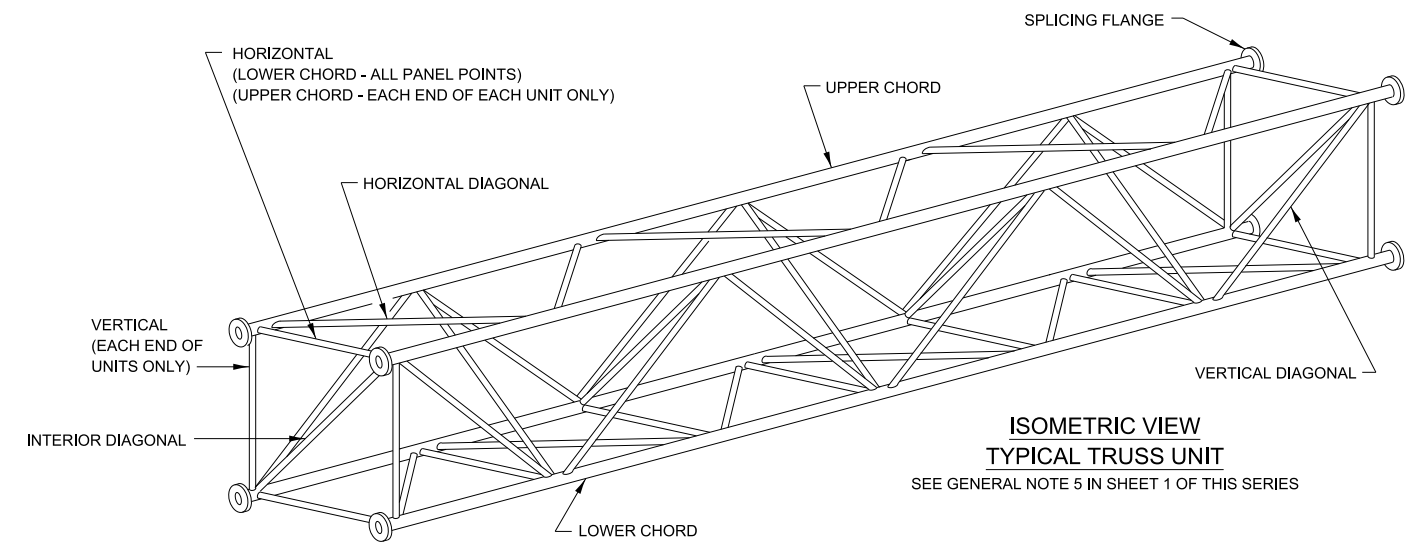


TYPICAL JOINT DETAILS

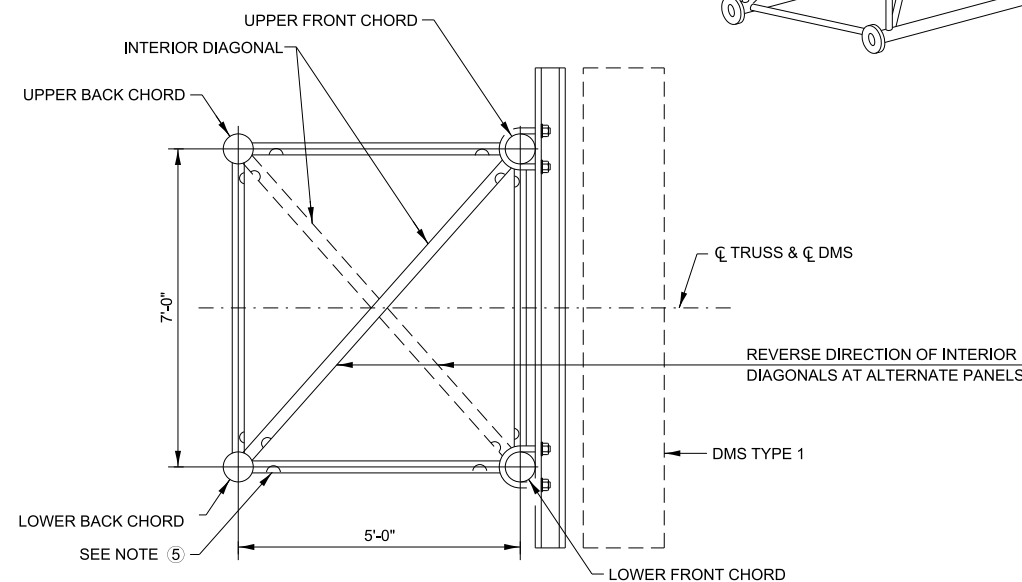
DETAIL 1



**ELEVATION
TYPICAL EXTERIOR UNIT**
EVEN OR ODD NUMBER OF PANELS/EXTERIOR UNITS ALLOWED.



**ISOMETRIC VIEW
TYPICAL TRUSS UNIT**
SEE GENERAL NOTE 5 IN SHEET 1 OF THIS SERIES



SECTION U-U
(VERTICAL AND HORIZONTAL DIAGONALS NOT SHOWN)

NOTES

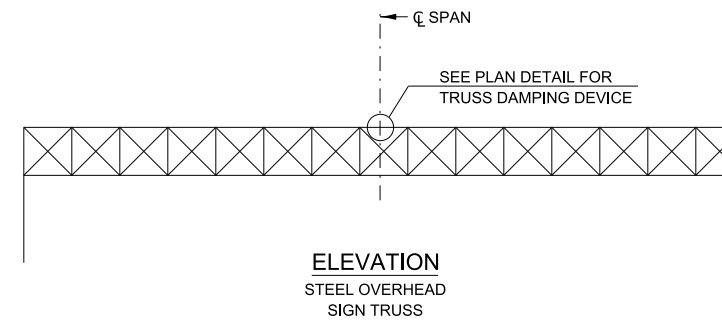
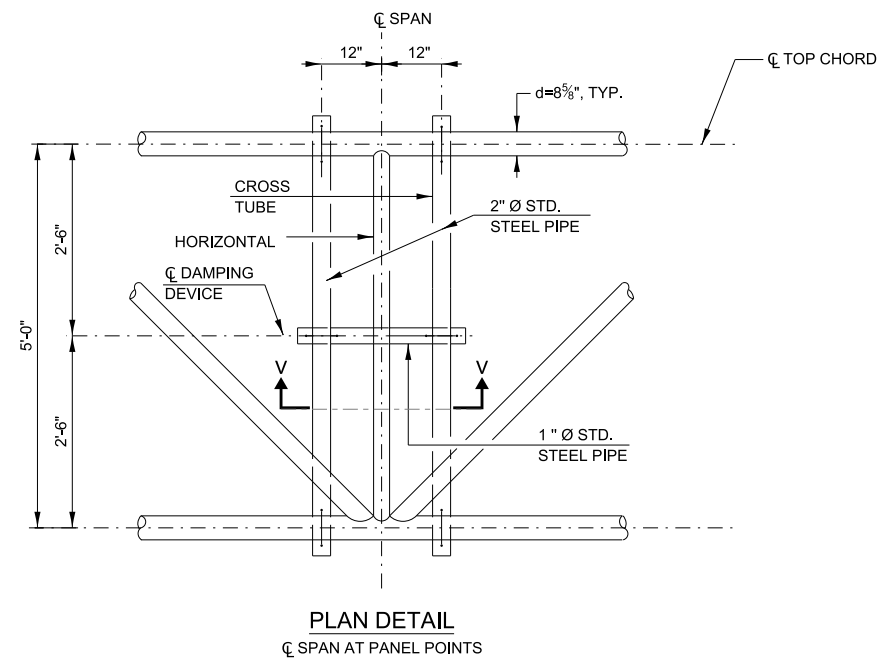
- ① CONTRACTOR SHALL USE STANDARD DRIVE - FIT CAP TO CLOSE END. 1/2" Ø DRAIN HOLE IN DRIVE - FIT CAP INSTALLED AFTER GALVANIZING. (TYP. AT NON - SPLICED ENDS OF CHORDS)
- ② VERTICAL DIAGONALS IN FRONT AND BACK FACE SHALL ALTERNATE INCLINATION.
- ③ HIDDEN LINES SHOW WIND BRACING ALTERNATES DIRECTION BETWEEN PLANES OF TOP AND BOTTOM CHORDS.
- ④ ALL DIAGONALS SHALL BE OFFSET FROM THE PANEL POINT BASED ON THE FOLLOWING: OFFSET SHALL PROVIDE A 3/4" MINIMUM TO 1 1/2" MAXIMUM CLEARANCE BETWEEN DIAGONAL AND ANY OTHER DIAGONAL, HORIZONTAL OR VERTICAL MEMBER, AND TO PROVIDE CLEARANCE FOR U-BOLT CONNECTIONS OF DMS TYPE 1 OR WALKWAY BRACKETS.
- ⑤ GALVANIZING VENT HOLES OF ADEQUATE SIZE SHALL BE PROVIDED ON UNDERSIDE AT EACH END OF TRUSS MEMBERS EXCEPT CHORDS. ALTERNATELY, HOLES MAY BE PROVIDED IN WALL OF CHORDS. ALL VENT HOLES SHALL BE DRILLED AND DE - BURRED, TYP.

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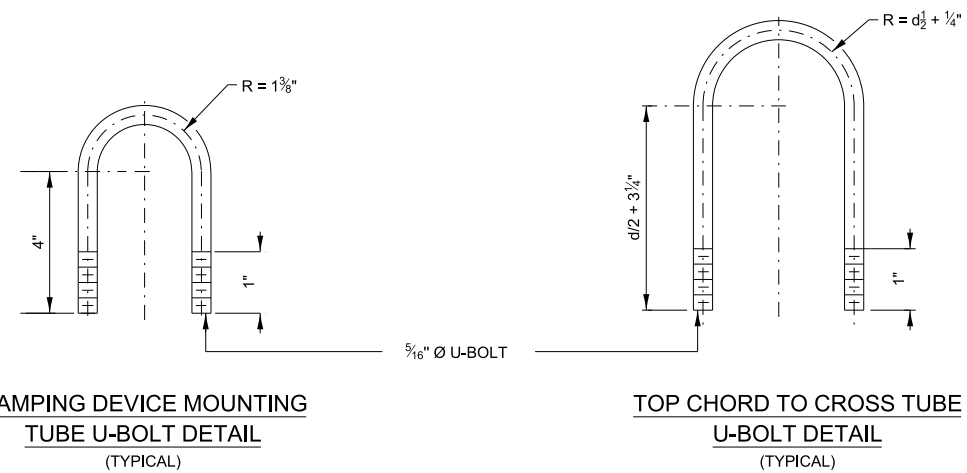
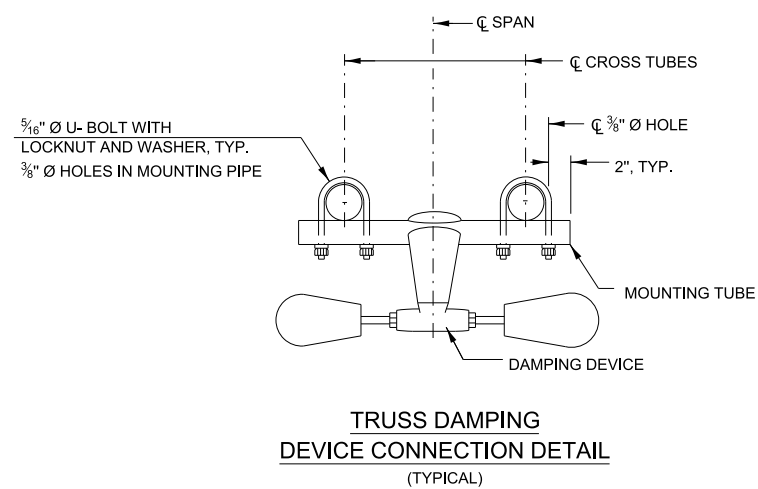
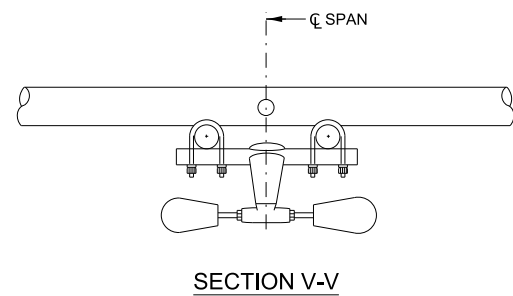
Illinois Tollway

**OVERHEAD SIGN STRUCTURE
SPAN TYPE (STEEL)
STRUCTURE DETAILS**

| | | |
|---------------------|---------------------|-------------------|
| VERSION: 2026-03 | STANDARD: F17-11 | SHEET: 3 OF 13 |
|---------------------|---------------------|-------------------|

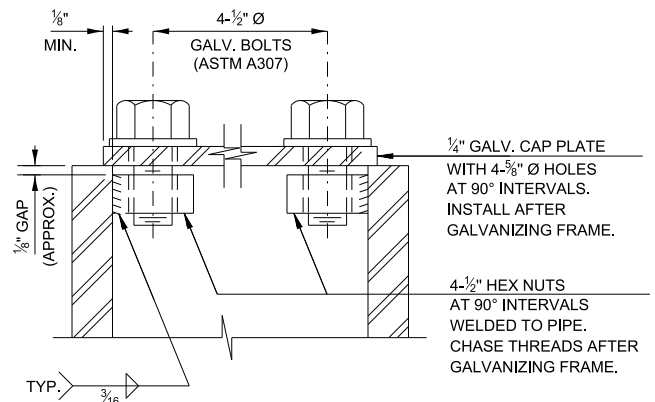
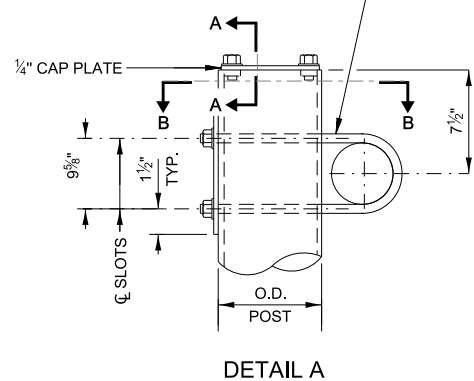


DAMPER NOTE:
ONE DAMPER PER TRUSS. (31 LBS. STOCKBRIDGE-TYPE - 29" MINIMUM BETWEEN ENDS OF WEIGHTS).

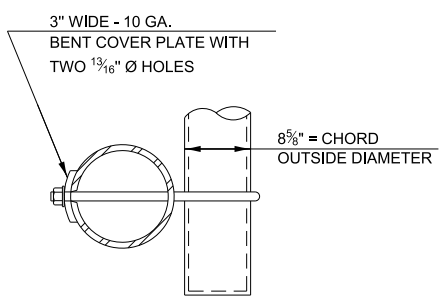


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3/4" Ø U-BOLT.
 PROVIDE TWO WASHERS AND TWO
 HEXAGON LOCKNUTS. (4)
 1 3/16" X 2" SLOTS ON C POST.
 (4 SLOTS REQUIRED PER PIPE)



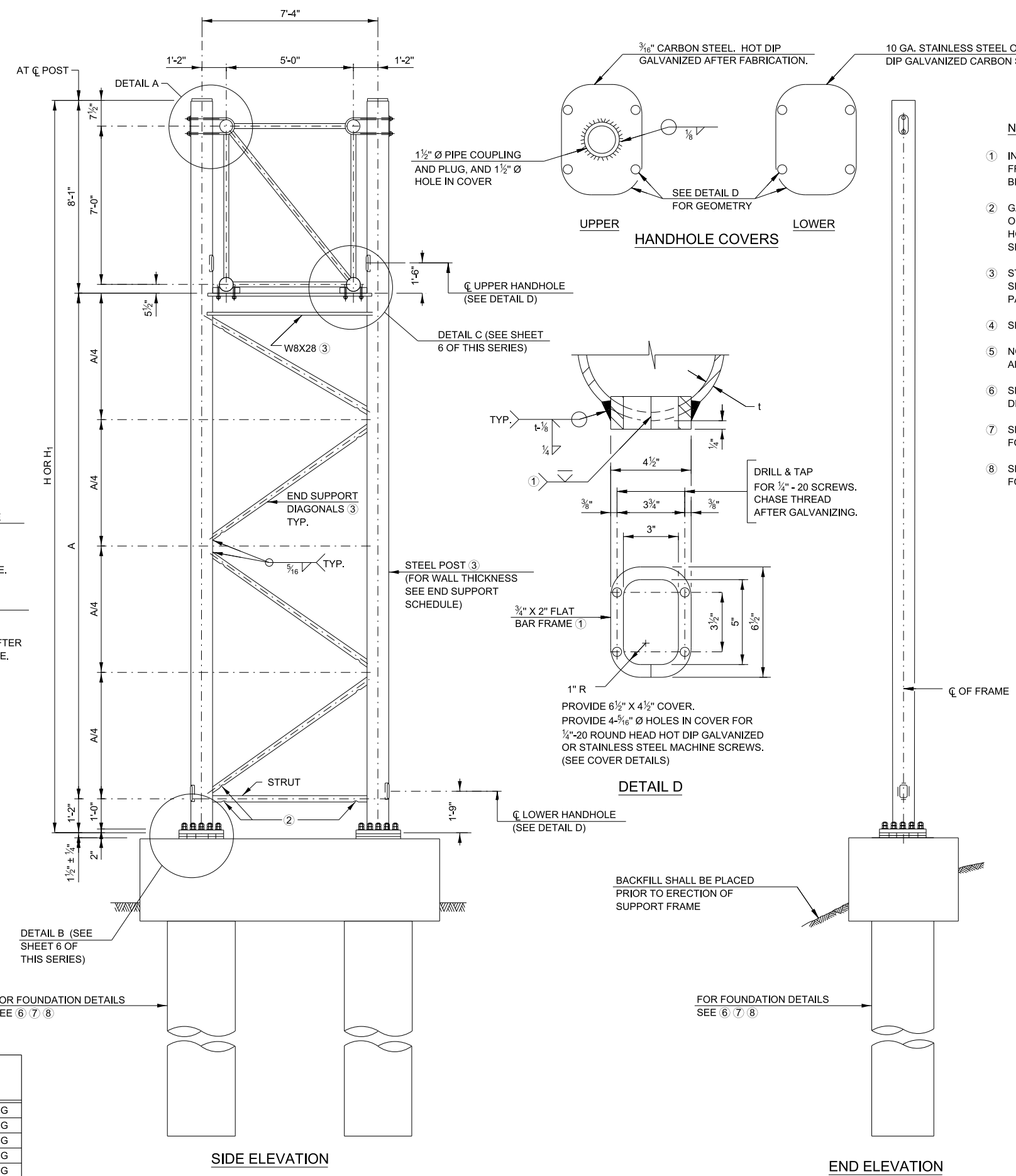
SECTION A-A
 AS AN ALTERNATE TO BOLTS, MAY USE GALVANIZED
 DRIVE - FIT CAPS INSTALLED AFTER GALVANIZING FRAME.



SECTION B-B

END SUPPORT SCHEDULE

| DESIGN TRUSS TYPE | H OR H ₁ | t | POSTS | DIAGONALS, STRUT |
|-------------------|---------------------|------|-----------------|------------------|
| 120-S | 34' MAX. | 1/2" | HSS 12.75x0.500 | PIPE 4 XX-STRONG |
| 130-S | 34' MAX. | 1/2" | HSS 14x0.500 | PIPE 4 XX-STRONG |
| 140-S | 34' MAX. | 1/2" | HSS 14x0.500 | PIPE 4 XX-STRONG |
| 150-S | 36' MAX. | 1/2" | HSS 16x0.500 | PIPE 4 XX-STRONG |
| 160-S | 36' MAX. | 1/2" | HSS 16x0.500 | PIPE 4 XX-STRONG |



SIDE ELEVATION

END SUPPORT DETAILS

END ELEVATION

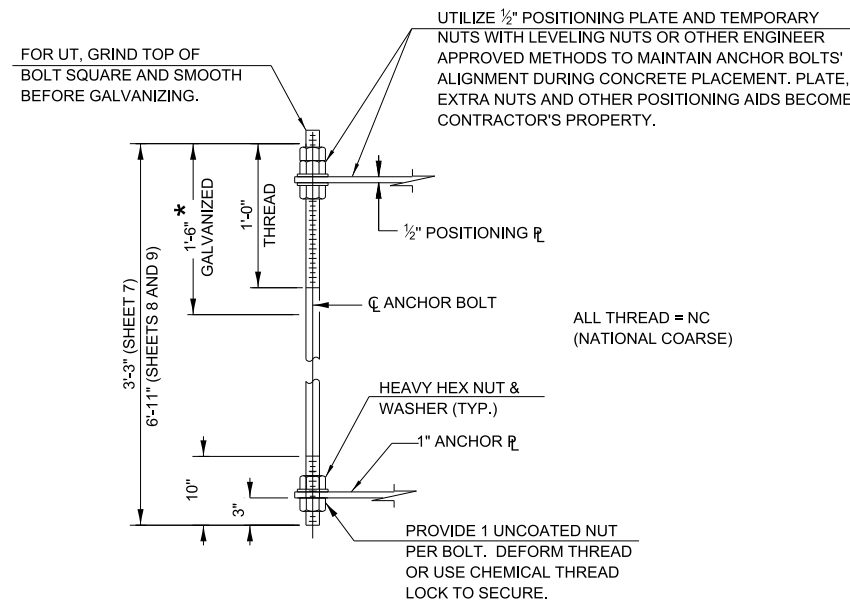
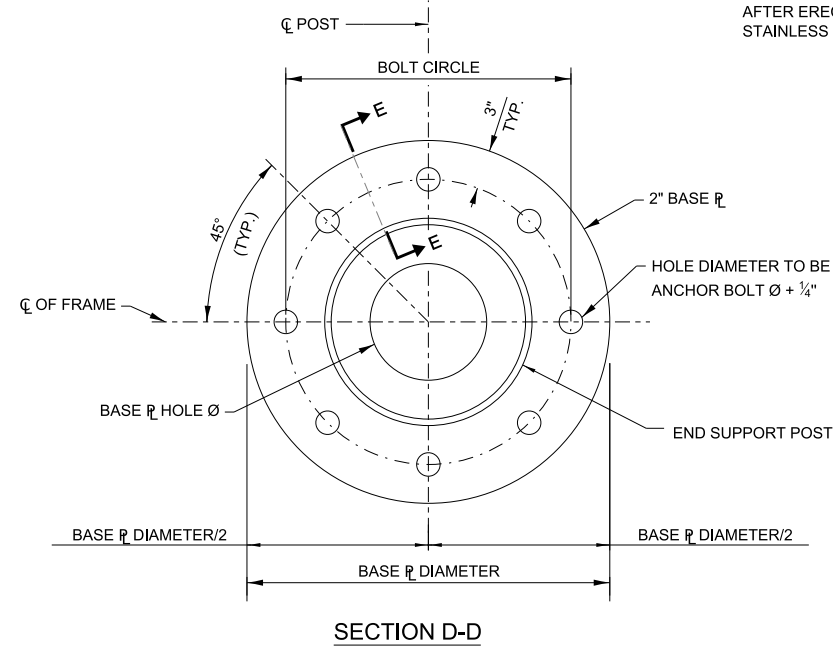
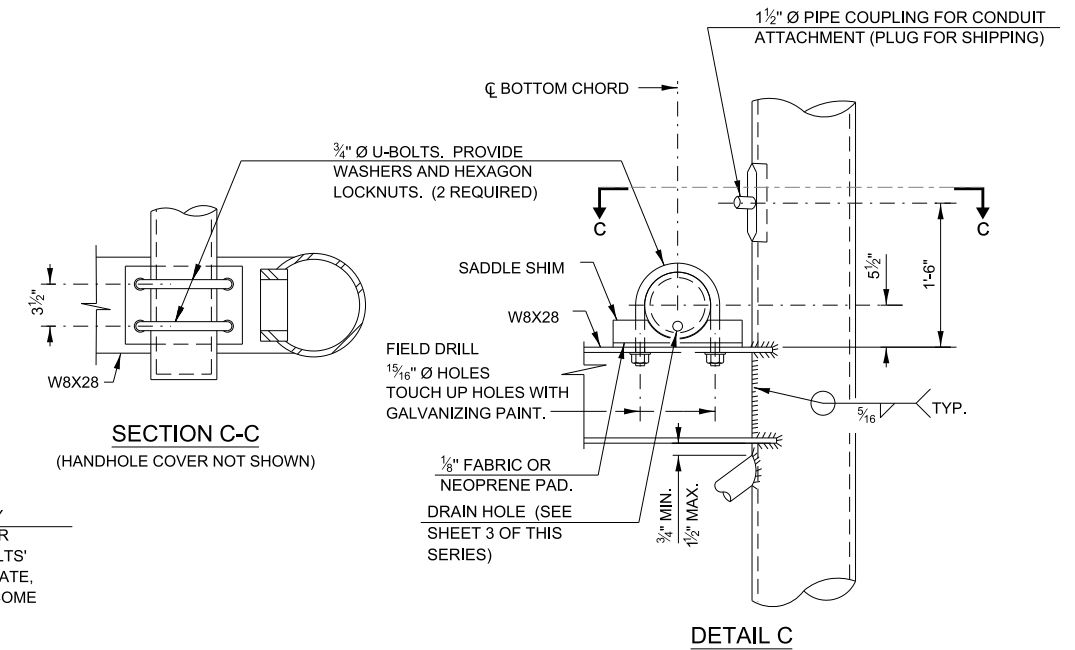
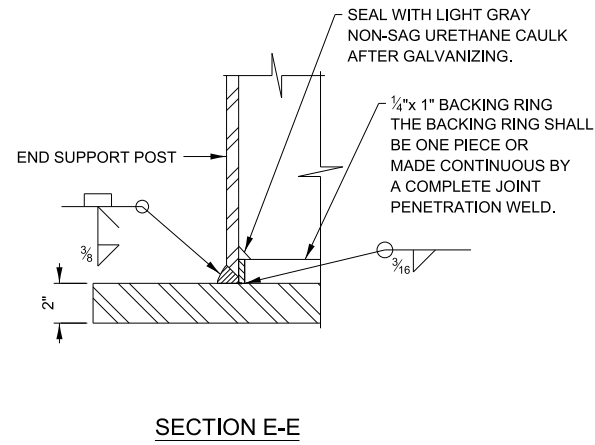
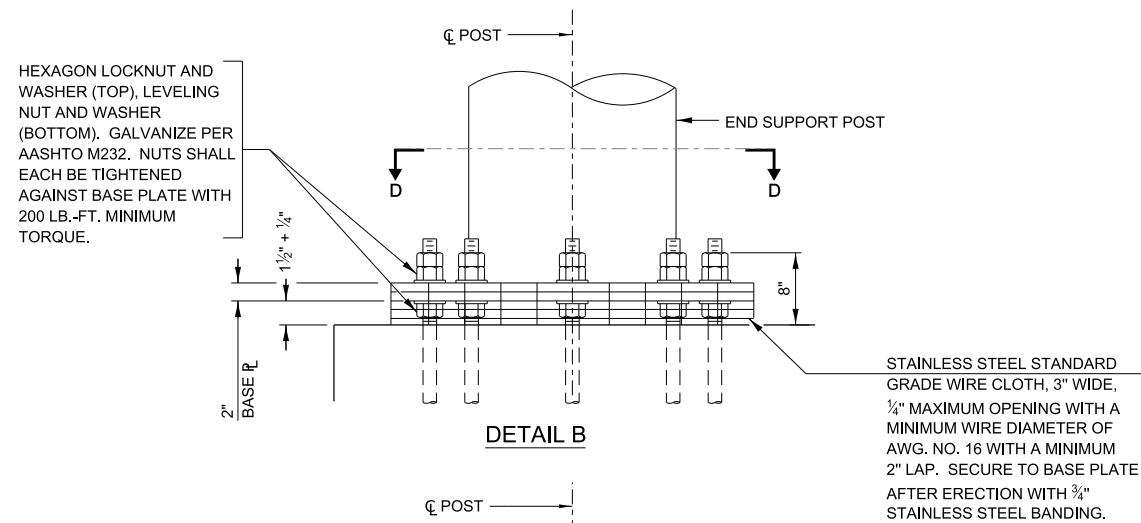
NOTES:

- 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.
- 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.
- STEEL PIPE, PLATE, CARBON STEEL HANDHOLE COVERS AND ROLLED SECTIONS SHALL BE HOT DIP GALVANIZED AFTER FABRICATION. PAINTING IS NOT PERMITTED. SEE SHEET 1 OF THIS SERIES.
- SEE GENERAL NOTES FOR FASTENERS.
- NONSTANDARD APPLICATIONS SHALL HAVE DIMENSIONS VERIFIED OR AMENDED AS APPROPRIATE.
- SEE SHEET 7 OF THIS SERIES FOR SHOULDER TYPE FOUNDATION DETAILS.
- SEE SHEET 8 OF THIS SERIES FOR MEDIAN BARRIER TYPE FOUNDATION DETAILS.
- SEE SHEET 9 OF THIS SERIES FOR MEDIAN BARRIER TYPE FOUNDATION DETAILS WHEN EXISTING UTILITY IS PRESENT.

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**OVERHEAD SIGN STRUCTURE
 SPAN TYPE (STEEL)
 STRUCTURE DETAILS**

VERSION: 2026-03 STANDARD: F17-11 SHEET: 5 OF 13

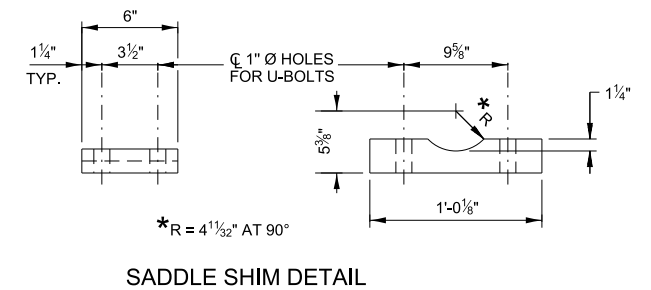
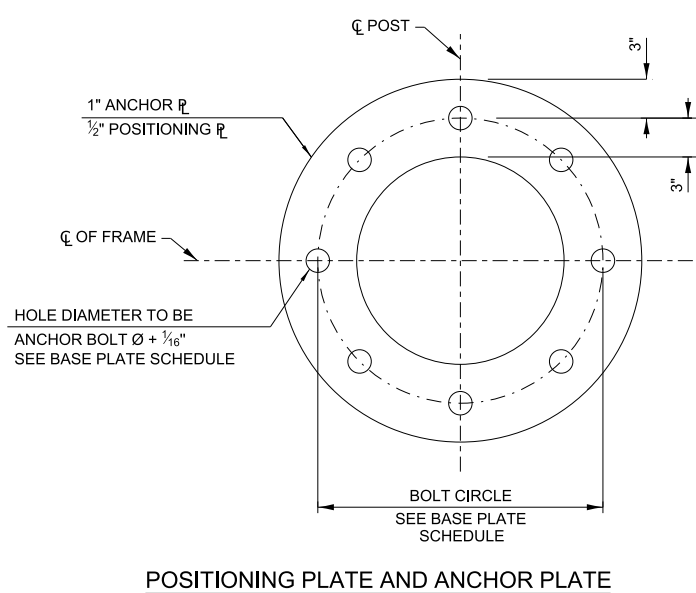


ANCHOR BOLTS SHALL CONFORM TO AASHTO M314 GRADE 105 AND MEET CHARPY V-NOTCH (CVN) ENERGY OF 15 LB.-FT. AT 40° F. GALVANIZE UPPER 18" PER AASHTO M232. NO WELDING SHALL BE PERMITTED ON BOLTS.

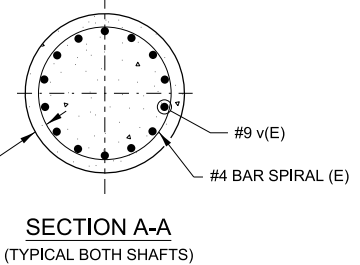
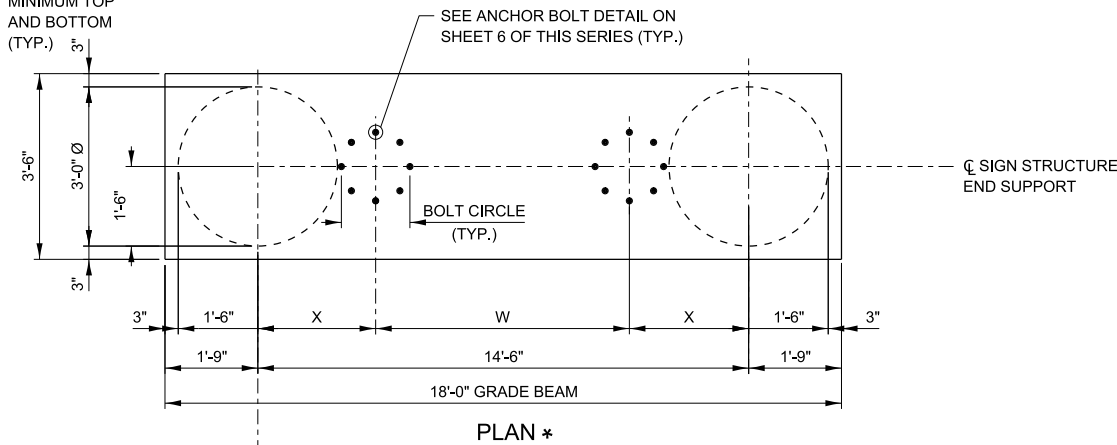
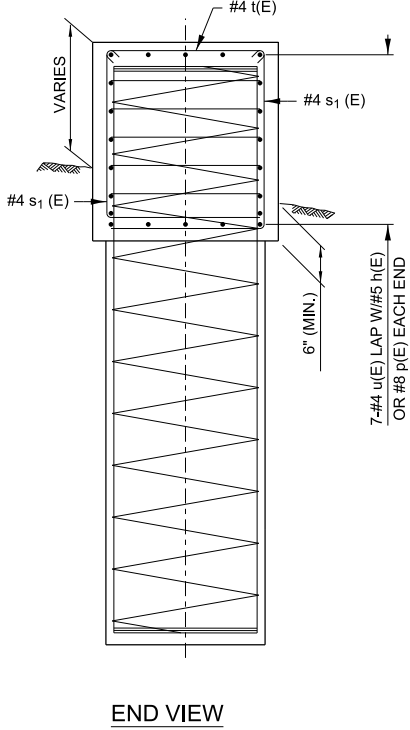
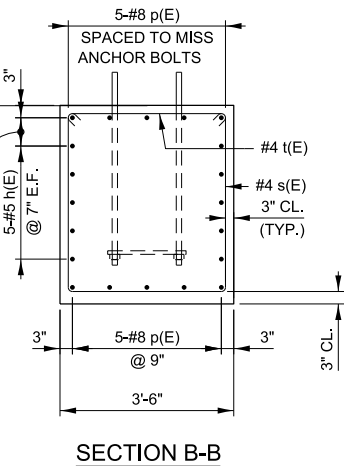
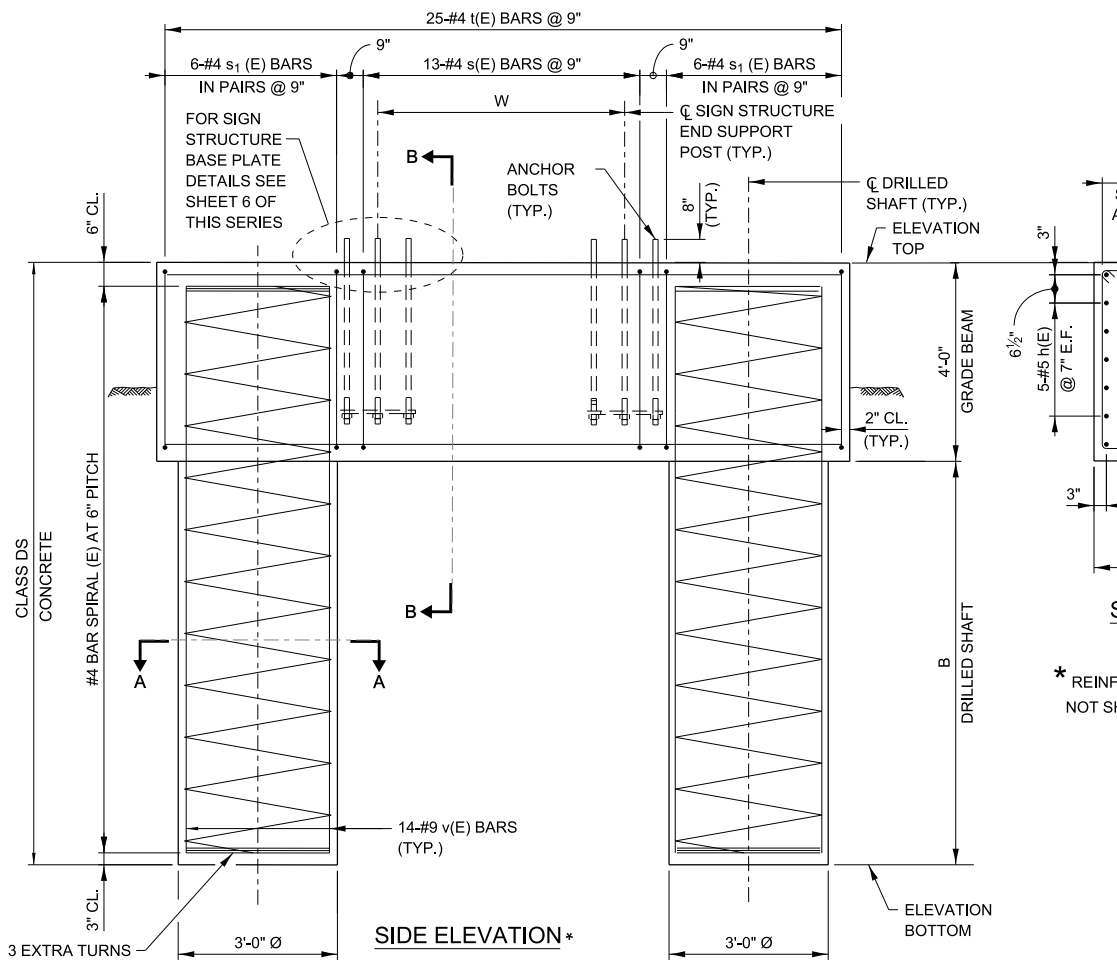
* 18" IS MINIMUM TO BE GALVANIZED. ENTIRE BOLT MAY BE GALVANIZED AT CONTRACTOR'S OPTION.

BASE PLATE SCHEDULE

| DESIGN TRUSS TYPE | END SUPPORT POST OUTSIDE DIAMETER | BASE PLATE | | BOLT CIRCLE | ANCHOR BOLT DIA. |
|-------------------|-----------------------------------|------------|--------|-------------|------------------|
| | | DIAMETER | HOLE } | | |
| 120-S | 1'-0 3/4" | 2'-0 3/4" | 6.75" | 1'-6 3/4" | 1 1/2" |
| 130-S | 14" | 2'-2" | 8" | 1'-8" | 1 1/2" |
| 140-S | 14" | 2'-2" | 8" | 1'-8" | 1 1/2" |
| 150-S | 16" | 2'-4" | 8" | 1'-10" | 1 1/2" |
| 160-S | 16" | 2'-4" | 8" | 1'-10" | 1 3/4" |



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SITE GROUNDING ELECTRODE SYSTEM TO BE PROVIDED AS DETAILED ON PLANS.

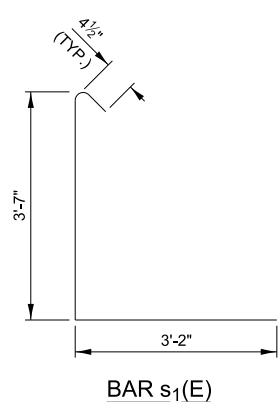
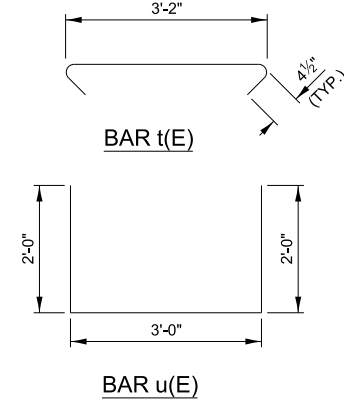
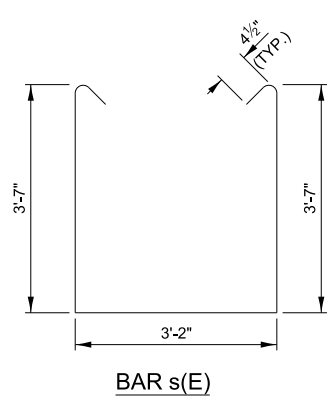
NOTES:

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 SHALL 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 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 IDOT STANDARD SPECIFICATION AND PRIOR TO ERECTION OF END SUPPORT POST.
5. PROVIDE NORMAL SURFACE FINISH, FOLLOWED BY CONCRETE SEALER APPLICATION ON ALL CONCRETE SURFACES EXCEPT BOTTOM OF GRADE BEAM AND DRILLED SHAFTS.
6. ALL REBAR DESIGNATED (E) SHALL BE EPOXY COATED. REBAR SHALL BE POSITIONED SO THAT THERE WILL BE NO INTERFERENCE BETWEEN VERTICAL REINFORCEMENT AND ANCHOR BOLTS.
7. NO SONOTUBES OR DECOMPOSABLE FORMS SHALL BE USED 6" BELOW THE FINISHED GROUND LINE. PERMANENT METAL FORMS OR OTHER SHIELDING SHALL NOT BE LEFT IN PLACE BELOW THE ELEVATION WITHOUT THE ENGINEER'S WRITTEN PERMISSION. EXCAVATIONS SHALL BE DEWATERED BEFORE CONCRETE PLACEMENT IF DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST.
8. IF NECESSARY TO INCREASE STEEL END SUPPORT HEIGHT ABOVE THE LIMITATIONS SHOWN IN SIGN STRUCTURE MEMBER SCHEDULE ON SHEET 5 OF THIS SERIES, GRADE BEAM DEPTH ON THIS SHEET SHALL BE INCREASED UP TO 6'-0" WITHOUT CHANGES TO THE DRILLED SHAFT DESIGN. GRADE BEAM REINFORCEMENT, CONCRETE VOLUME AND LENGTH OF ANCHOR BOLTS SHALL BE REVISED ACCORDINGLY.

BAR LIST - EACH FOUNDATION
(2 SHAFT AND 1 GRADE BEAM)

| BAR | NUMBER | SIZE | LENGTH | SHAPE |
|-------|--------|------|-------------|-------|
| h(E) | 10 | #5 | 17'-8" | — |
| p(E) | 10 | #8 | 17'-8" | — |
| s(E) | 13 | #4 | 11'-1" | ┌┐ |
| s1(E) | 24 | #4 | 6'-11 1/2" | └┘ |
| t(E) | 25 | #4 | 3'-11" | └┘ |
| u(E) | 14 | #4 | 7'-0" | ┌┐ |
| v(E) | 28 | #9 | B ADD 3'-3" | — |

#4 BAR SPIRAL (E) - SEE SIDE ELEVATION



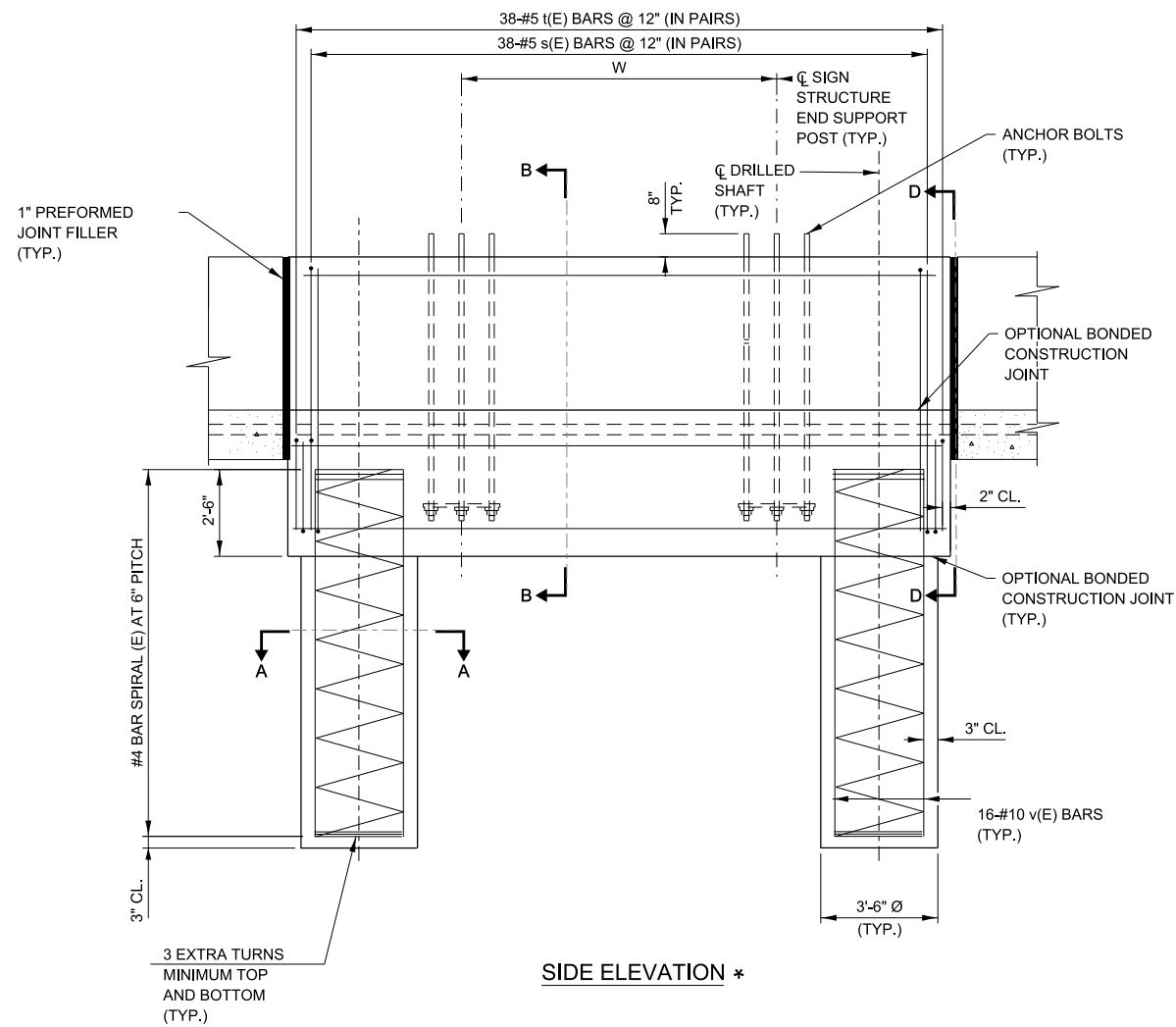
SHOULDER FOUNDATION SCHEDULE

| DESIGN TRUSS TYPE | W | X | B | CLASS DS CONCRETE (CU YD) | REINFORCEMENT BARS (POUNDS) |
|-------------------|-------|-------|--------|---------------------------|-----------------------------|
| 120-S | 7'-4" | 3'-7" | 50'-0" | 35.5 | 7,250 |
| 130-S | 7'-4" | 3'-7" | 55'-0" | 38.1 | 7,830 |
| 140-S | 7'-4" | 3'-7" | 55'-0" | 38.1 | 7,830 |
| 150-S | 7'-4" | 3'-7" | 55'-0" | 38.1 | 7,830 |
| 160-S | 7'-4" | 3'-7" | 55'-0" | 38.1 | 7,830 |

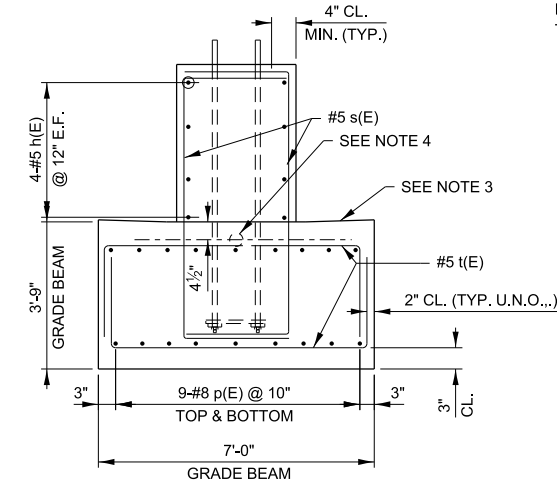
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CHIEF ENGINEERING OFFICER

OVERHEAD SIGN STRUCTURE
SPAN TYPE (STEEL)
STRUCTURE DETAILS

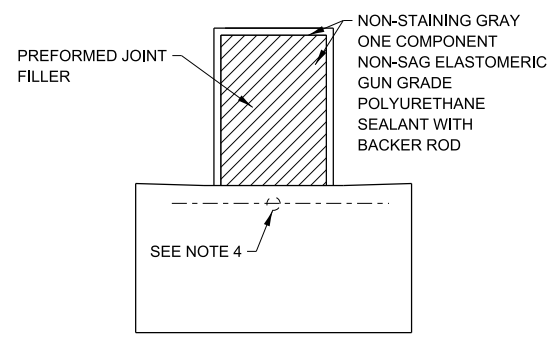
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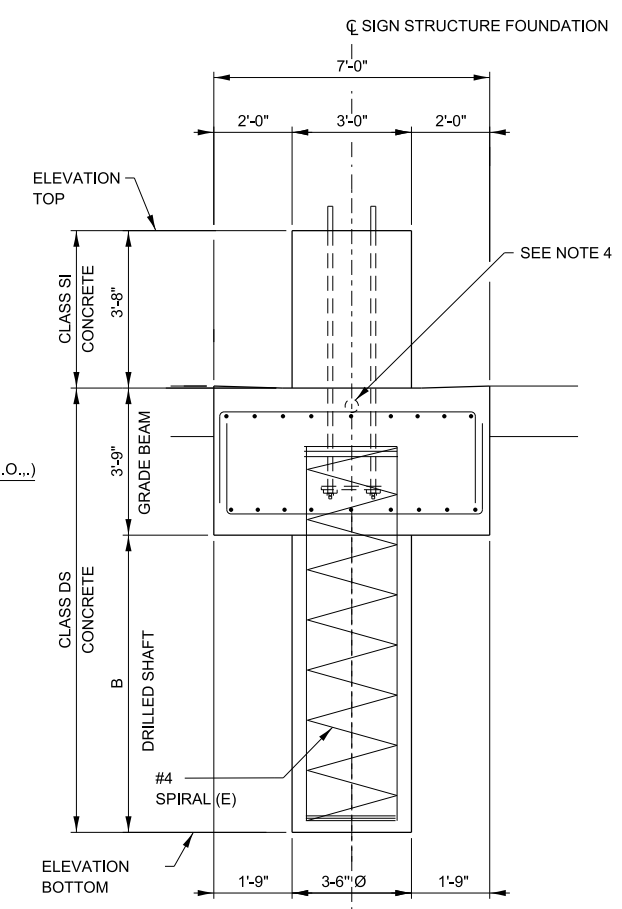
SIDE ELEVATION *



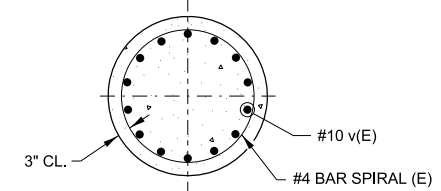
SECTION B-B



SECTION D-D



END VIEW

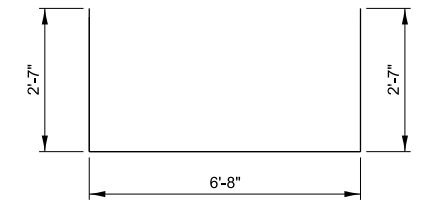


SECTION A-A
(TYPICAL BOTH SHAFTS)

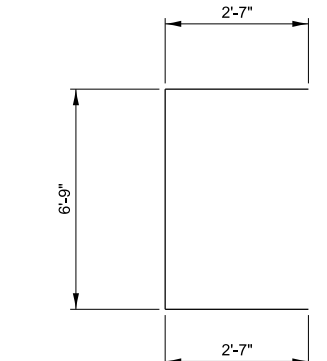
BAR LIST - EACH FOUNDATION

| BAR | NUMBER | SIZE | LENGTH | SHAPE |
|------|--------|------|-------------|-------|
| h(E) | 8 | #5 | 17'-8" | |
| p(E) | 18 | #8 | 17'-8" | |
| s(E) | 38 | #5 | 11'-3" | □ |
| t(E) | 38 | #5 | 11'-10" | □ |
| v(E) | 32 | #10 | B ADD 2'-3" | |

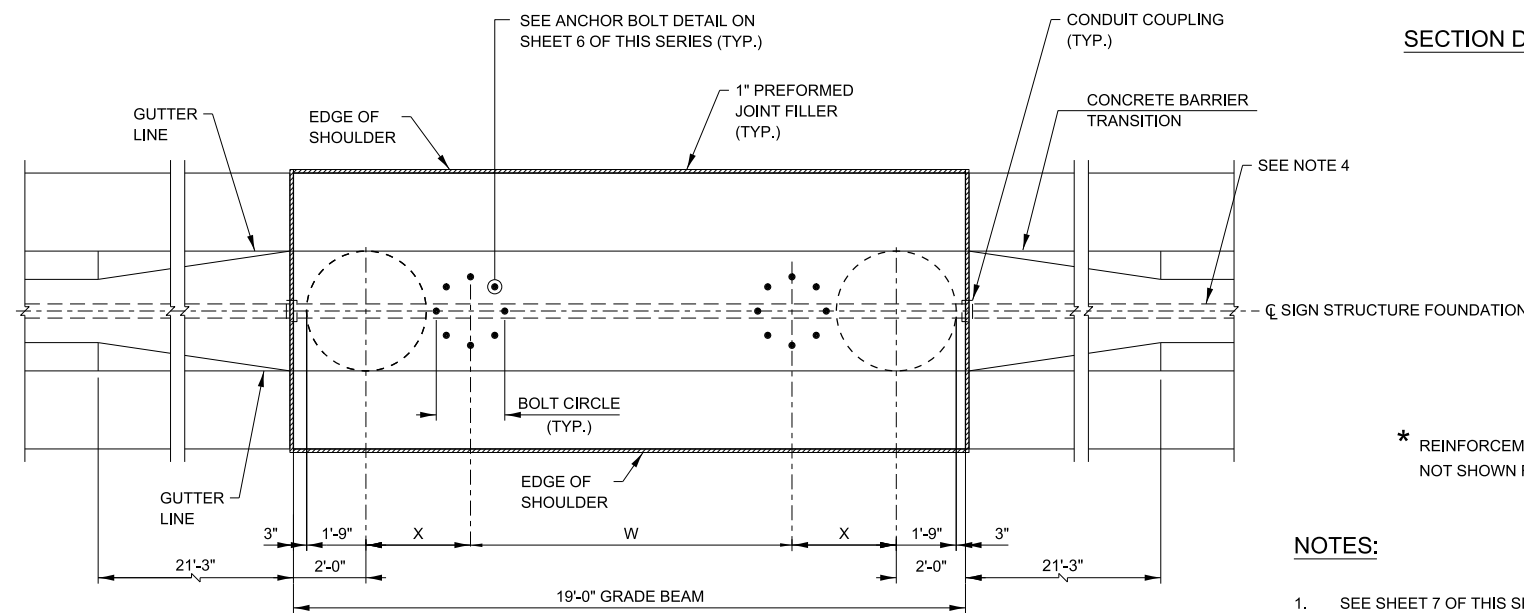
#4 BAR SPIRAL (E) - SEE SIDE ELEVATION



BAR t(E)



BAR s(E)



PLAN *

MEDIAN BARRIER FOUNDATION SCHEDULE

| DESIGN TRUSS TYPE | W | X | B | CLASS SI CONCRETE (CU YD) | CLASS DS CONCRETE (CU YD) | REINFORCEMENT BARS (POUNDS) | PROTECTIVE COAT (SQ YD) |
|-------------------|-------|--------|--------|---------------------------|---------------------------|-----------------------------|-------------------------|
| 120-S | 7'-4" | 3'-10" | 55'-0" | 7.7 | 57.7 | 11320 | 30.3 |
| 130-S | 7'-4" | 3'-10" | 55'-0" | 7.7 | 57.7 | 11320 | 30.3 |
| 140-S | 7'-4" | 3'-10" | 60'-0" | 7.7 | 61.2 | 12130 | 30.3 |
| 150-S | 7'-4" | 3'-10" | 65'-0" | 7.7 | 64.8 | 12950 | 30.3 |
| 160-S | 7'-4" | 3'-10" | 65'-0" | 7.7 | 64.8 | 12950 | 30.3 |

NOTES:

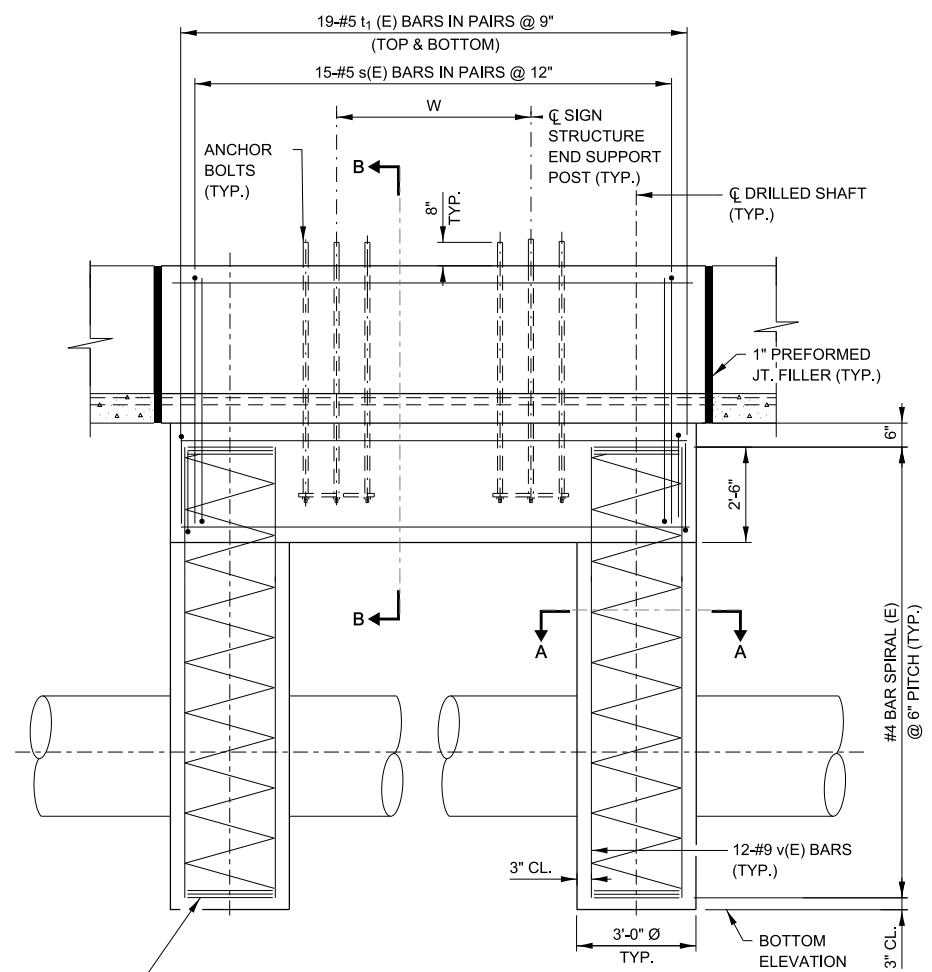
- SEE SHEET 7 OF THIS SERIES FOR FOUNDATION NOTES AND DESIGN CRITERIA.
- FOR SIGN STRUCTURE BASE PLATE DETAIL, SEE SHEET 6 OF THIS SERIES.
- REFERENCE ILLINOIS TOLLWAY STANDARD DRAWING C5 FOR GUTTER SLOPE.
- COORDINATE CONDUIT SIZE, LOCATION AND QUANTITY WITH ELECTRICAL PLANS. CONDUITS SHALL BE PLACED TO MISS REINFORCEMENT BARS. DO NOT CUT REINFORCEMENT BARS.
- PROTECTIVE COAT SHALL BE APPLIED TO THE TRAFFIC AND TOP FACES OF BARRIER AND TOP FACE OF GUTTER.

SITE GROUNDING ELECTRODE SYSTEM TO BE PROVIDED AS DETAILED ON PLANS.

APPROVED BY: *Manar Nashif*
 CHIEF ENGINEERING OFFICER
 DATE: 03/01/2026

OVERHEAD SIGN STRUCTURE SPAN TYPE (STEEL) STRUCTURE DETAILS

VERSION: 2026-03 STANDARD: F17-11 SHEET: 8 OF 13

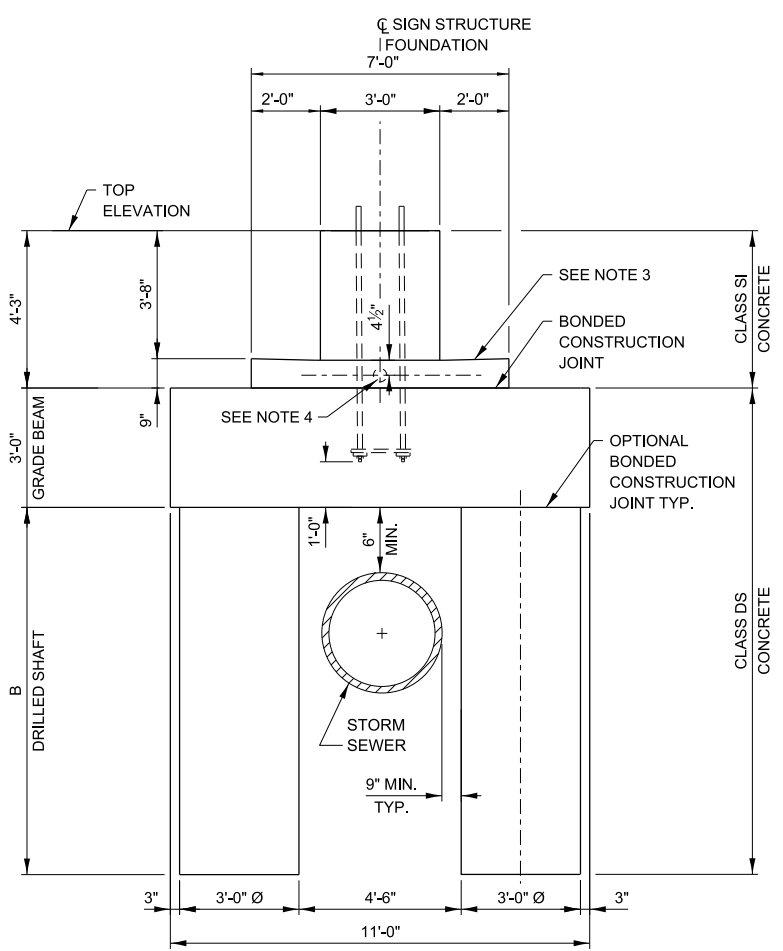


SIDE ELEVATION *

3 EXTRA TURNS MINIMUM TOP AND BOTTOM (TYP.)

SITE GROUNDING ELECTRODE SYSTEM TO BE PROVIDED AS DETAILED ON PLANS.

* REINFORCEMENT IN GRADE BEAM NOT SHOWN FOR CLARITY



END VIEW

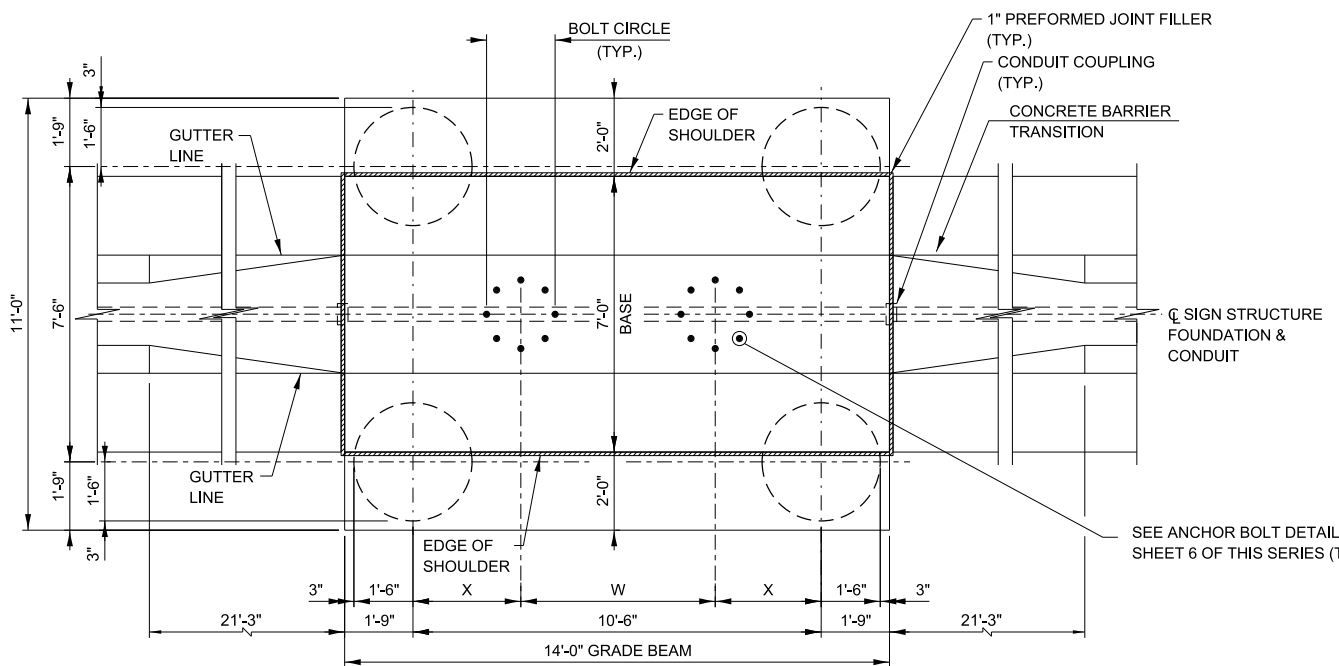
BAR LIST - EACH FOUNDATION

| BAR | NUMBER | SIZE | LENGTH | SHAPE |
|-------|--------|------|-------------|-------|
| h(E) | 16 | #5 | 13'-8" | — |
| p(E) | 30 | #8 | 13'-8" | — |
| s(E) | 30 | #5 | 11'-3" | ⊔ |
| t(E) | 15 | #5 | 6'-8" | — |
| t1(E) | 76 | #8 | 12'-7" | ⊔ |
| v(E) | 48 | #9 | B ADD 2'-3" | ⊔ |

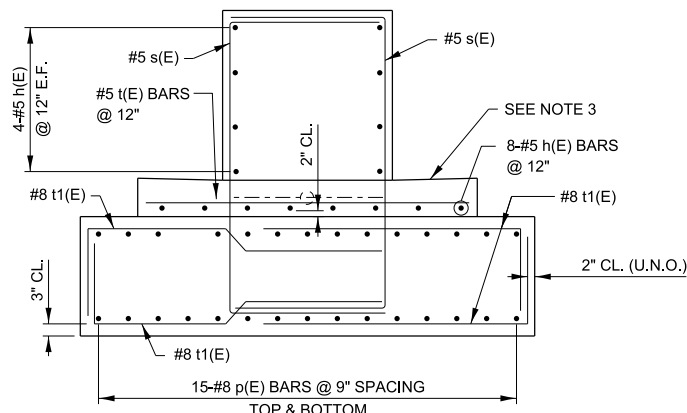
#4 BAR SPIRAL (E) - SEE SIDE ELEVATION

MEDIAN BARRIER FOUNDATION SCHEDULE

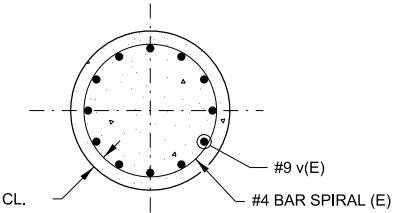
| DESIGN TRUSS TYPE | W | X | B | CLASS SI CONCRETE (CU YD) | CLASS DS CONCRETE (CU YD) | REINFORCEMENT BARS (POUNDS) | PROTECTIVE COAT (SQ YD) |
|-------------------|-------|-------|--------|---------------------------|---------------------------|-----------------------------|-------------------------|
| 120-S | 7'-4" | 1'-7" | 40'-0" | 8.5 | 59.0 | 13130 | 22.3 |
| 130-S | 7'-4" | 1'-7" | 40'-0" | 8.5 | 59.0 | 13130 | 22.3 |
| 140-S | 7'-4" | 1'-7" | 45'-0" | 8.5 | 64.2 | 14160 | 22.3 |
| 150-S | 7'-4" | 1'-7" | 50'-0" | 8.5 | 69.5 | 15190 | 22.3 |
| 160-S | 7'-4" | 1'-7" | 50'-0" | 8.5 | 69.5 | 15190 | 22.3 |



PLAN *



SECTION B-B



SECTION A-A (TYPICAL FOR 4 SHAFTS)

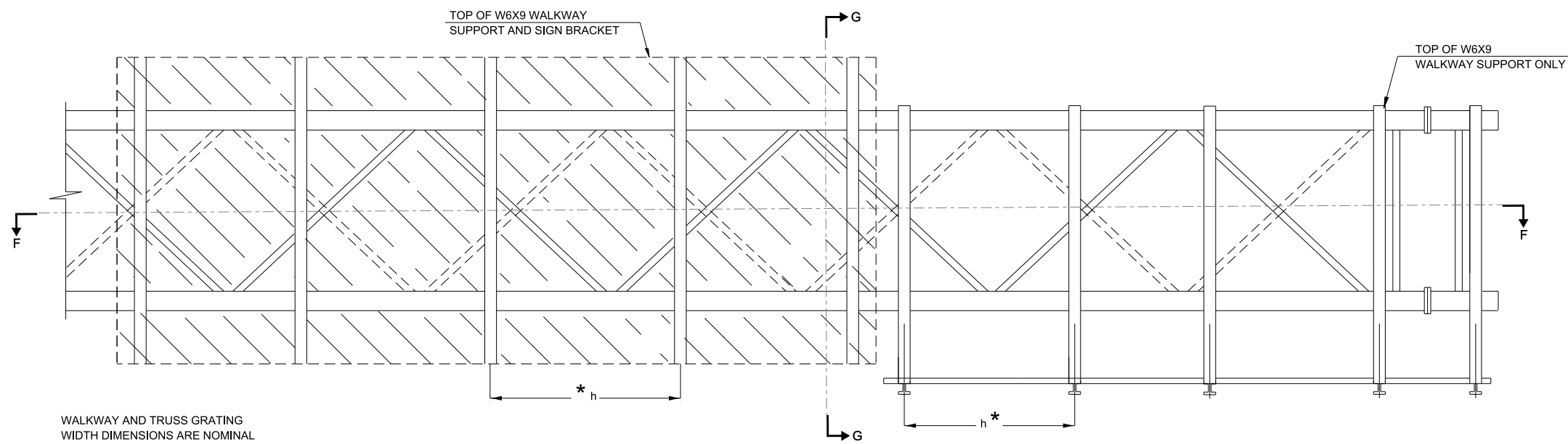
NOTES:

- SEE SHEET 7 FOR FOUNDATION NOTES AND DESIGN CRITERIA.
- FOR SIGN STRUCTURE BASE PLATE DETAIL, SEE SHEET 6 OF THIS SERIES.
- REFERENCE ILLINOIS TOLLWAY STANDARD DRAWING C5 FOR GUTTER SLOPE.
- COORDINATE CONDUIT SIZE, LOCATION AND QUANTITY WITH ELECTRICAL PLANS. CONDUITS SHALL BE PLACED TO MISS REINFORCEMENT BARS. DO NOT CUT REINFORCEMENT BARS.
- PROTECTIVE COAT SHALL BE APPLIED TO THE TRAFFIC AND TOP FACES OF BARRIER AND TOP FACE OF GUTTER.

APPROVED BY: *Manar Nashif*
 CHIEF ENGINEERING OFFICER
 DATE: 03/01/2026

OVERHEAD SIGN STRUCTURE SPAN TYPE (STEEL) STRUCTURE DETAILS

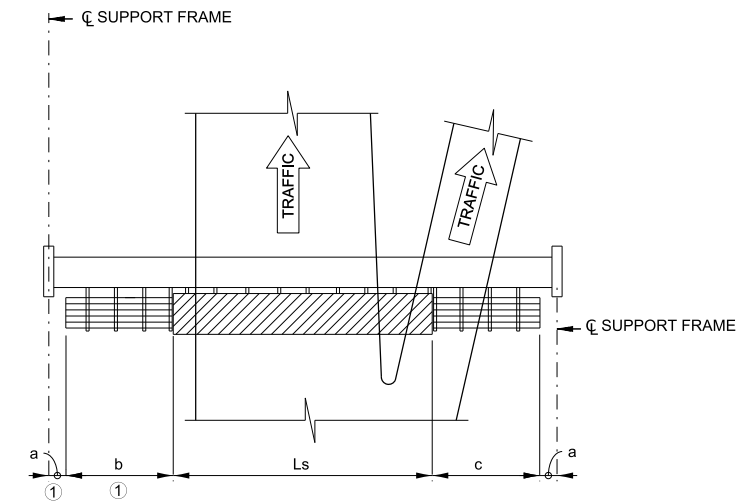
VERSION: 2026-03 STANDARD: F17-11 SHEET: 9 OF 13



WALKWAY AND TRUSS GRATING WIDTH DIMENSIONS ARE NOMINAL AND MAY VARY $\pm 1/2$ " BASED ON AVAILABLE STANDARD WIDTHS.

TYPICAL FRONT ELEVATION
WITH HANDRAIL OMITTED FOR CLARITY.

BRACKET AND GRATING DIMENSIONS ARE NOMINAL AND WILL VARY BASED ON ACTUAL DMS DIMENSIONS PLUS MANUFACTURER'S MOUNTING DEVICES.



PLAN
WALKWAY AND HANDRAIL SKETCH
(ROAD PLAN BENEATH TRUSS VARIES)

BRACKET TABLE

| W6X9 | | |
|--------------|-----------------------|--------------------------|
| 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 W6X9 WALKWAY BRACKETS AND SIGN BRACKETS FOR EFFICIENCY AND WITHIN LIMITS SHOWN:

f = 12" MAXIMUM, 4" MINIMUM (END OF SIGN TO CL OF NEAREST BRACKET)

g = 12" MAXIMUM, 4" MINIMUM (END OF WALKWAY GRATING TO CL OF NEAREST SUPPORT BRACKET)

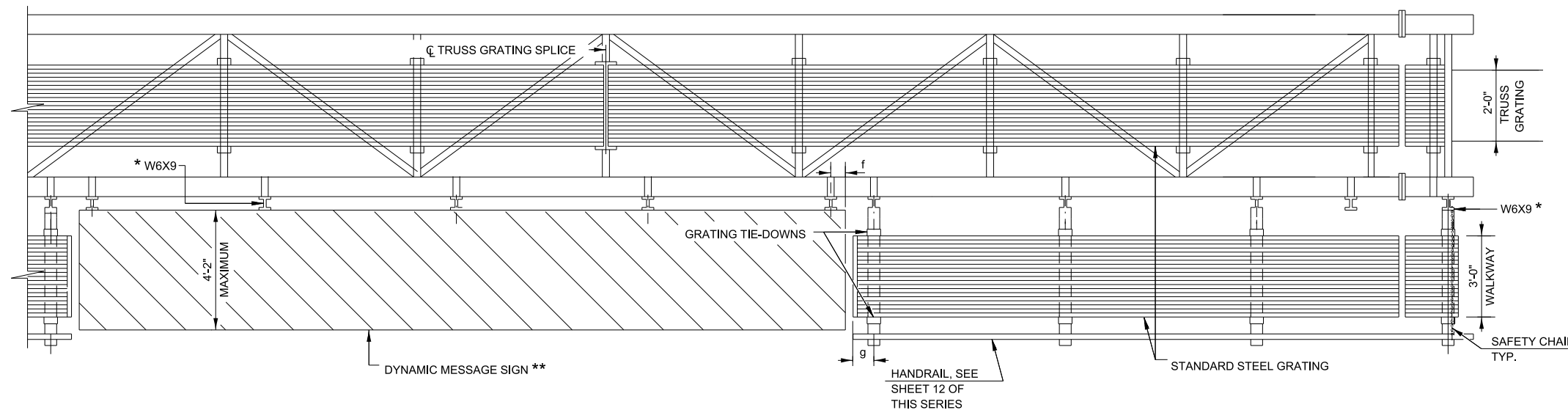
h = 6'-0" MAXIMUM (CL TO CL SIGN AND/OR WALKWAY SUPPORT BRACKETS, W6X9)

** MAXIMUM DMS WEIGHT = 5000 LBS. 4'-2" MAXIMUM THICKNESS INCLUDES THICKNESS OF DMS TYPE 1 PLUS CONNECTION TO W6X9.

FOR SECTION G-G AND GRATING SPLICE DETAILS, SEE SHEET 11 OF THIS SERIES. FOR HANDRAIL SPLICE DETAILS, SEE SHEET 12 OF THIS SERIES.

TRUSS GRATING TO FACILITATE INSPECTION SHALL RUN FULL LENGTH (CENTER TO CENTER OF SUPPORT FRAMES) [12" ON OVERHEAD TRUSSES.

① IF WALKWAY IS REQUIRED LEFT OF THE DMS, a = 1'-6" AND b = WALKWAY LENGTHS. IF WALKWAY IS NOT REQUIRED LEFT OF THE DMS, b = 0 AND "a" IS DIMENSION FROM LEFT SUPPORT FRAME TO LEFT END OF DMS.



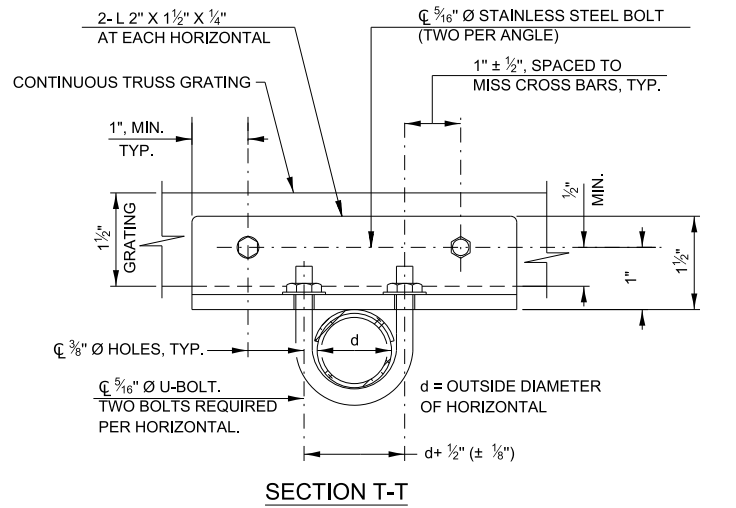
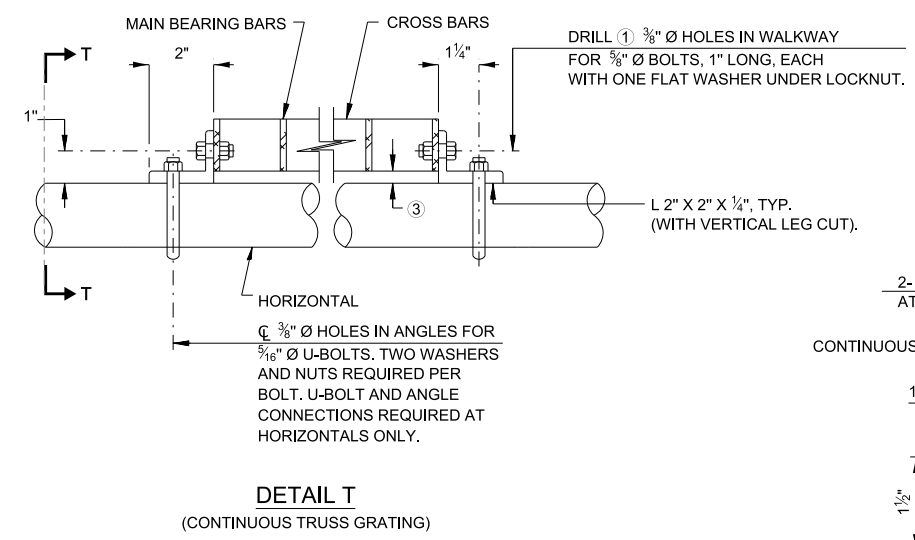
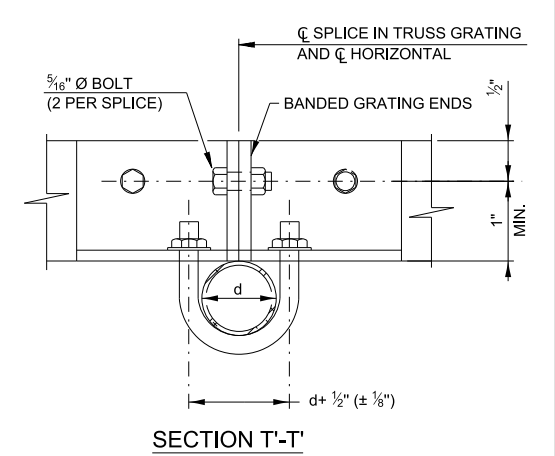
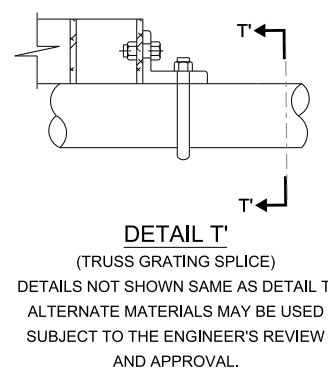
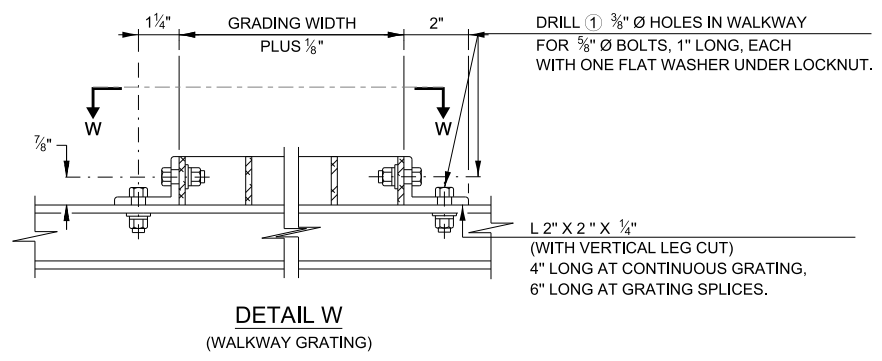
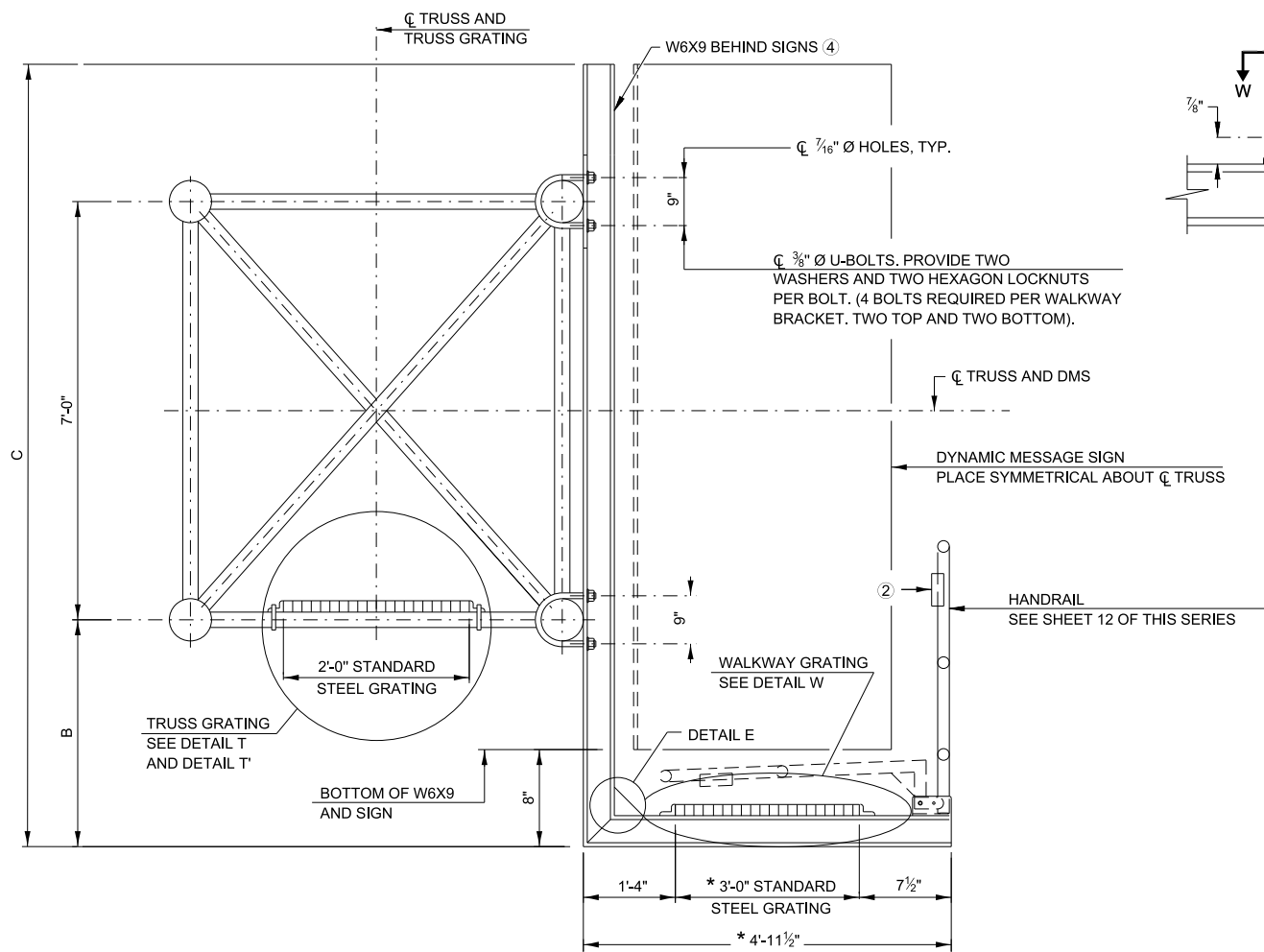
SECTION F-F

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.
GRATING AND HANDRAIL SPLICES PLACED AS NEEDED.

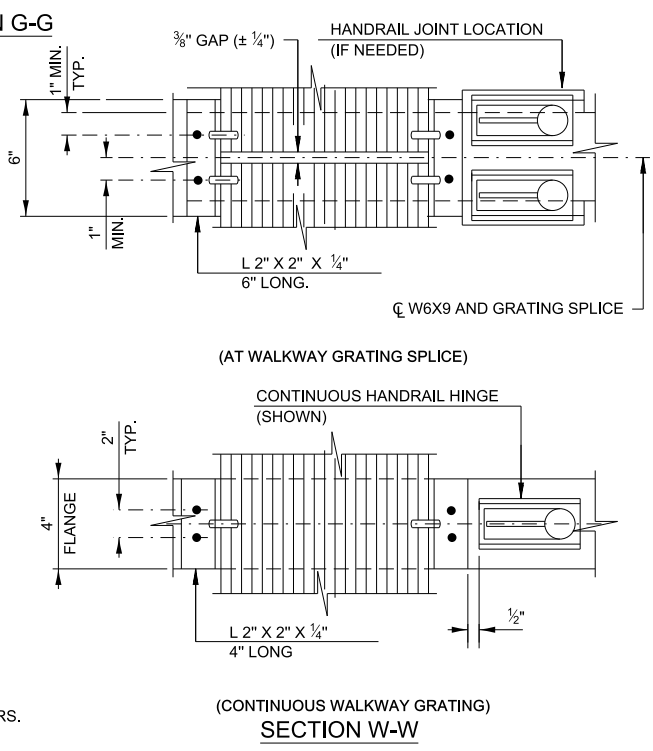
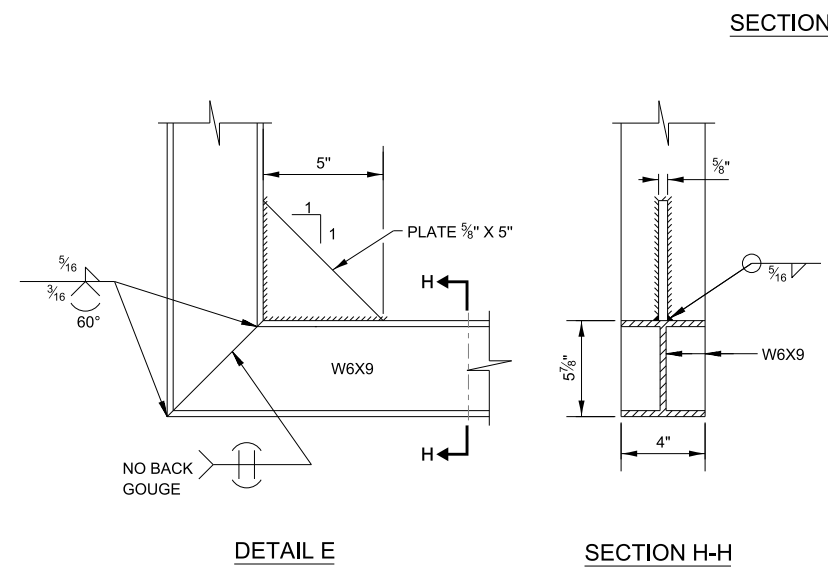
APPROVED BY: *Manar Nashif*
CHIEF ENGINEERING OFFICER
DATE: 03/01/2026

OVERHEAD SIGN STRUCTURE
SPAN TYPE (STEEL)
STRUCTURE DETAILS

VERSION: 2026-03 STANDARD: F17-11 SHEET: 10 OF 13



- NOTES:**
- DRILLING HOLES IN GRATING MAY BE DONE IN SHOP OR FIELD, BASED ON CONTRACTOR'S PREFERENCE AND SUBJECT TO ACCURATE ALIGNMENT.
 - R 1/8" X 1/2" X 2" WELDED TO HANDRAIL POSTS TO PROTECT LOCATIONS THAT CONTACT GRATING.
 - PIPE TO GRATING GAP MAY VARY FROM 0 TO 1/2", MAX. TO ALIGN WALKWAY, ALLOW FOR CAMBER, ETC.
 - DMS MANUFACTURER SHALL DESIGN AND SUPPLY HARDWARE FOR CONNECTION OF DMS TO W6X9. BOLTS SHALL BE STAINLESS STEEL OR HOT DIP GALVANIZED HIGH STRENGTH PER ILLINOIS TOLLWAY SPECIFICATIONS.
- * BRACKET AND GRATING DIMENSIONS ARE NOMINAL AND WILL VARY BASED ON ACTUAL DMS DIMENSIONS PLUS MANUFACTURER'S MOUNTING DEVICES.



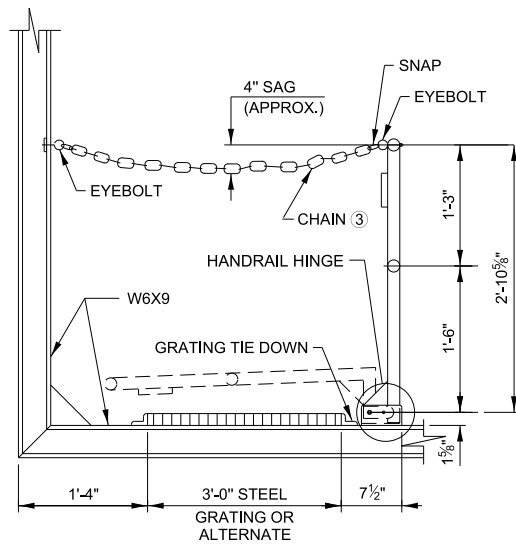
BARS SIZES FOR STANDARD STEEL GRATING

| | |
|------------------|--|
| TRUSS GRATING: | MAIN BEARING BARS 3/16" X 1 1/2" ON 1 3/16" CENTERS. |
| | CROSS BARS 3/16" X 1 1/2" ON 4" CENTERS. |
| WALKWAY GRATING: | MAIN BEARING BARS 3/16" X 1 1/2" ON 1 3/16" CENTERS. |
| | CROSS BARS 3/16" X 1 1/2" ON 4" CENTERS. |

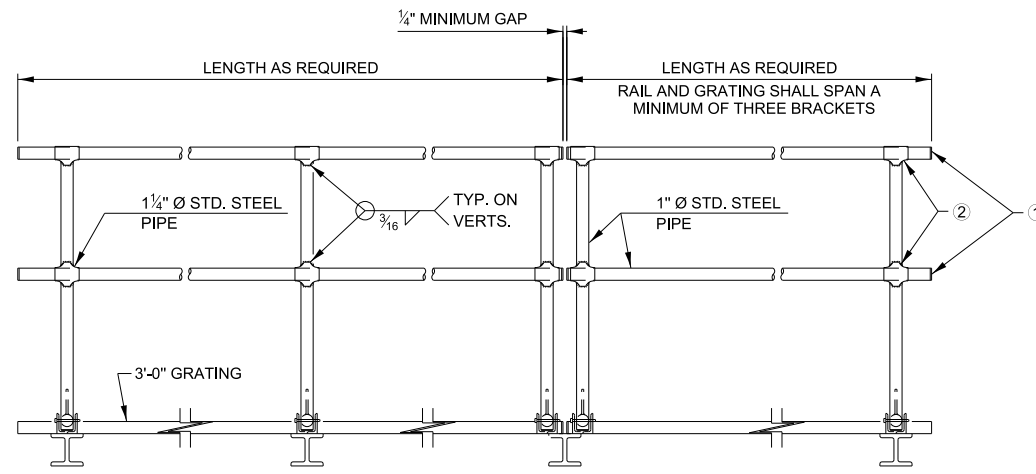
APPROVED BY: *Manar Nashif* DATE: 03/01/2026
CHIEF ENGINEERING OFFICER

**OVERHEAD SIGN STRUCTURE
SPAN TYPE (STEEL)
STRUCTURE DETAILS**

VERSION: 2026-03 STANDARD: F17-11 SHEET: 11 OF 13

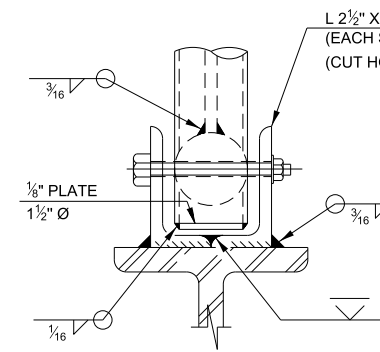


SIDE ELEVATION
(SHOWING SAFETY CHAIN W/O SIGN)

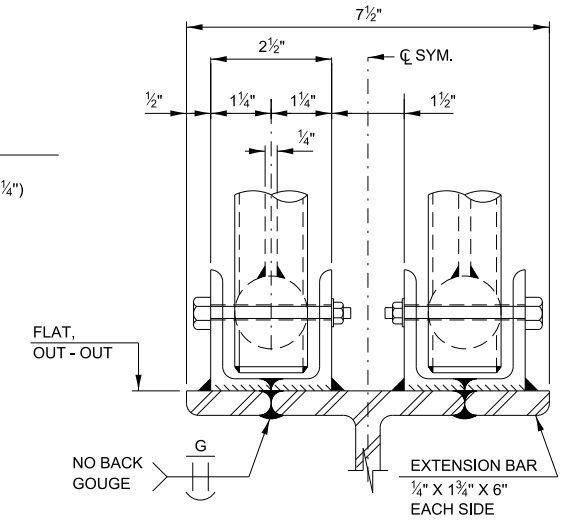


FRONT ELEVATION

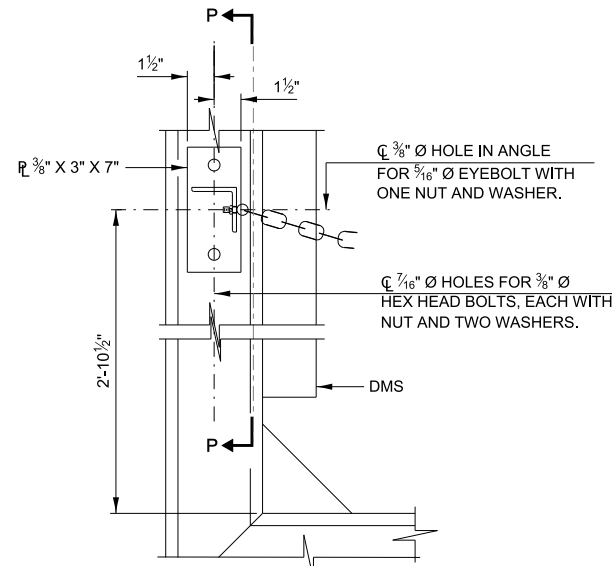
HANDRAIL DETAILS



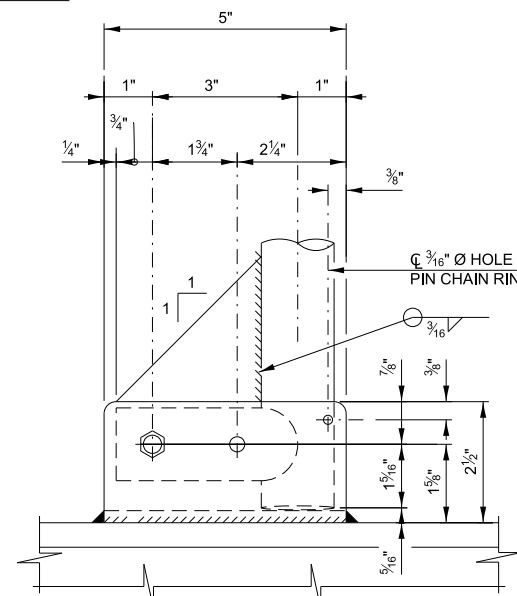
FRONT ELEVATION
SEE "ELEVATION" AT RIGHT FOR DIMENSIONS.



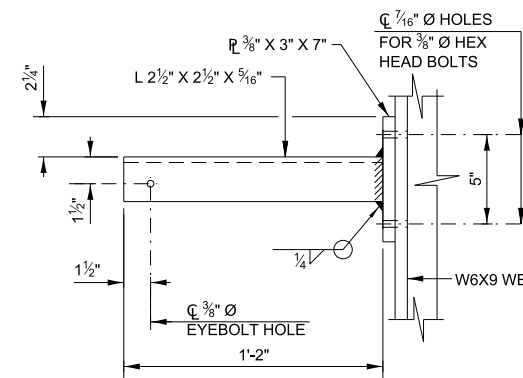
ELEVATION AT HANDRAIL JOINT



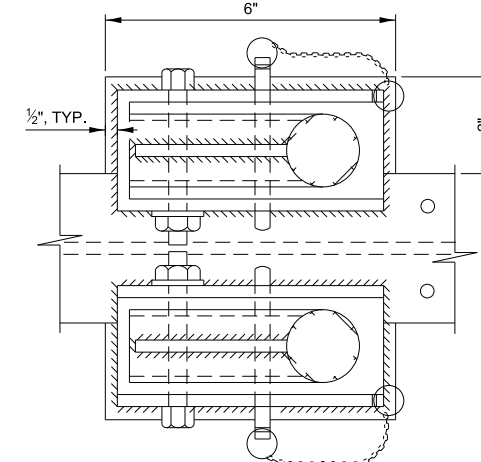
ALTERNATE SAFETY CHAIN ATTACHMENT
(WITH SIGN PRESENT)
ITEMS NOT SHOWN SAME AS "SIDE ELEVATION" OF "HANDRAIL DETAILS"



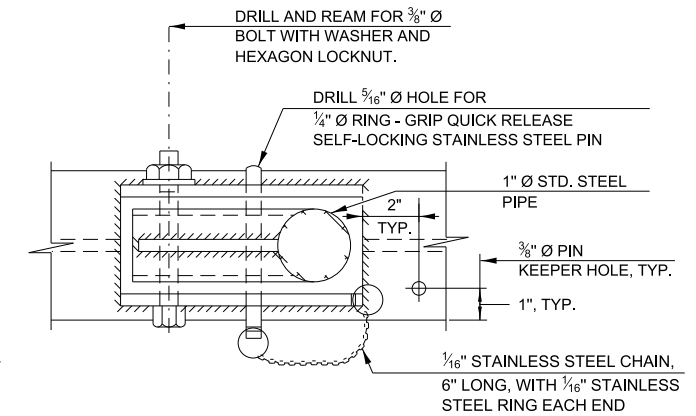
SIDE ELEVATION



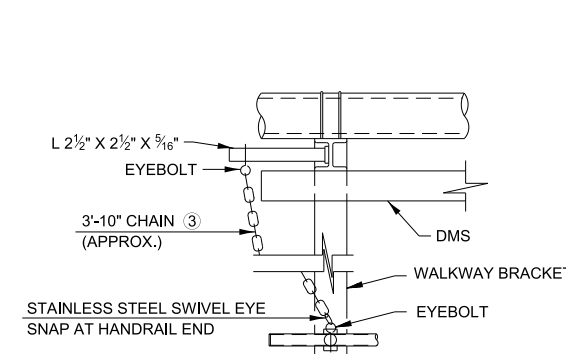
SECTION P-P



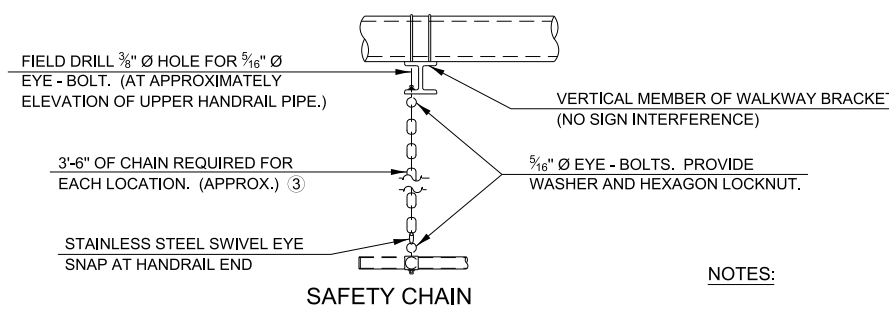
PLAN AT HANDRAIL JOINT
DETAILS NOT SHOWN SAME AS "PLAN"



PLAN AT HANDRAIL HINGE



ALTERNATE SAFETY CHAIN ATTACHMENT
DETAILS NOT SHOWN SIMILAR TO "SAFETY CHAIN" DETAILS
(WALKWAY OMITTED FOR CLARITY)

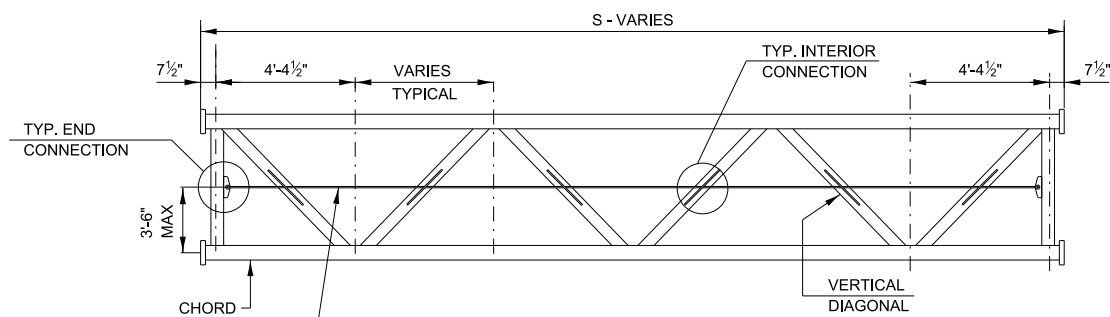


SAFETY CHAIN

NOTES:

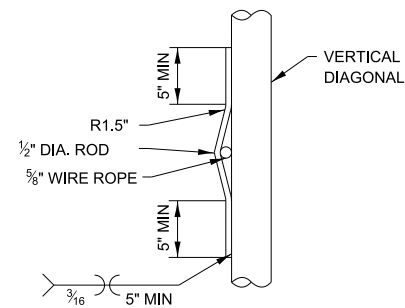
- INSTALL STANDARD FORCE - FIT END CAPS OR WELD 1/8" END PLATES WITH 1/8" C.F.W. AND GRIND SMOOTH. (ALL RAIL ENDS)
- HORIZONTAL HANDRAIL MEMBER SHALL BE CONTINUOUS THRU 1 1/4" Ø PIPE. PROVIDE 7/16" Ø HOLE IN 1 1/4" Ø PIPE FOR 3/8" Ø BOLT. FIELD DRILL 7/16" Ø HOLE IN HORIZONTAL RAIL MEMBER. PROVIDE WASHER AND LOCKNUT FOR BOLT. (USE 5/16" EYEBOLTS IN 7/16" Ø HOLES ON TOP RAIL AT ENDS ONLY.)
- 3/16" TYPE 304L STAINLESS STEEL CHAIN, APPROXIMATELY 12 LINKS PER FOOT.

APPROVED BY: *Manar Nashif* DATE: 03/01/2026
CHIEF ENGINEERING OFFICER

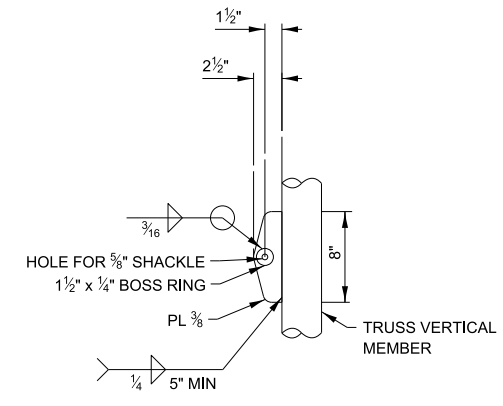


5/8" GALV. WIRE ROPE,
THIMBLE, TURN ROPE
BACK 12" AND SECURE
WITH MIN (3) WIRE ROPE
CLIPS. PROVIDE 1 BOLT TYPE
ANCHOR SHACKLE PER SIDE
WITH MIN 3-TON CAPACITY
FOR ATTACHMENT TO
BRACKET PLATE

**TRUSS TYPICAL
INTERIOR ELEVATION**
EVEN OR ODD NUMBER OF PANELS/EXTERIOR UNITS ALLOWED.

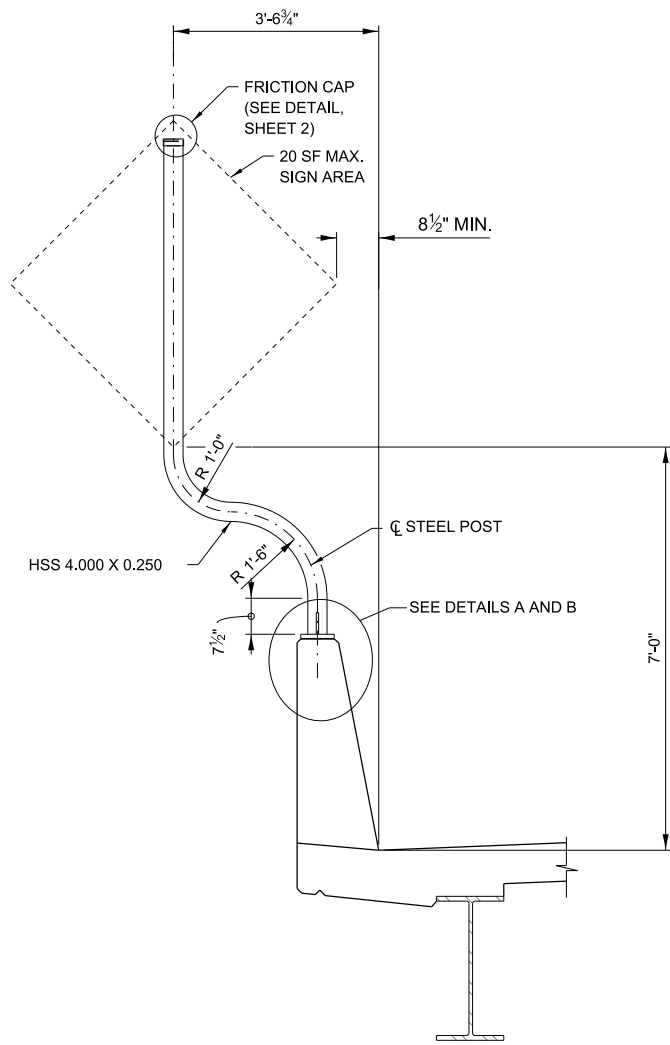


**TYP INTERIOR
CONNECTION**

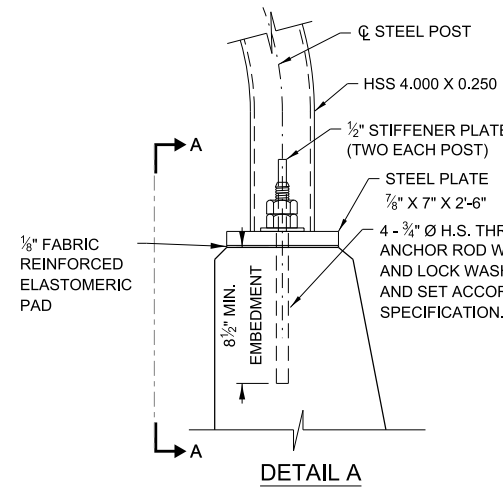


**TYP END
CONNECTION**

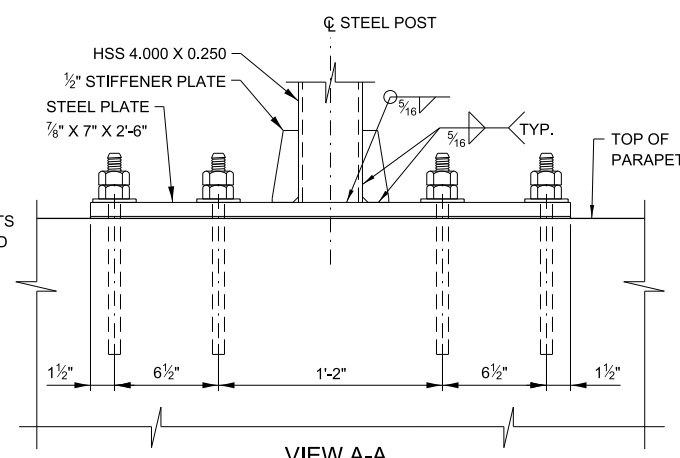
APPROVED BY: *Manar Nashif* DATE: 03/01/2026
CHIEF ENGINEERING OFFICER



PARAPET MOUNTED SIGN
(MAXIMUM SIGN AREA 20 SF)

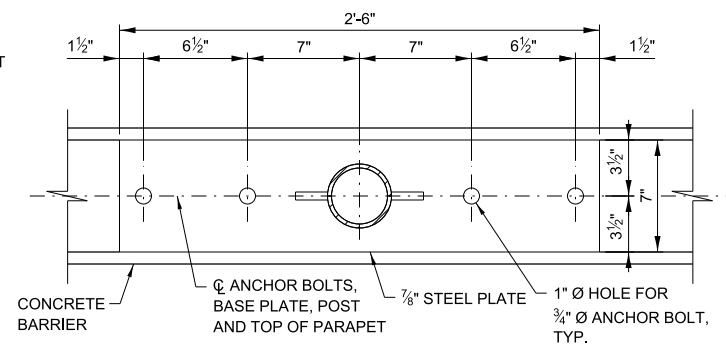


DETAIL A

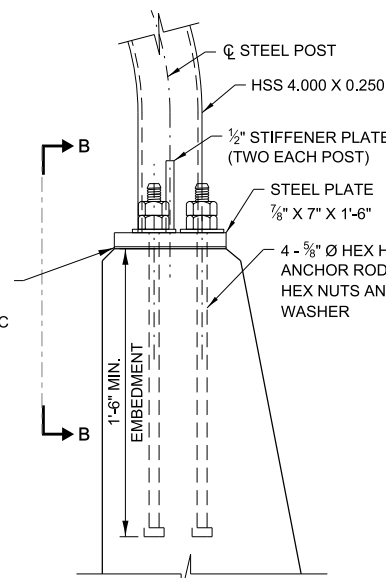


VIEW A-A

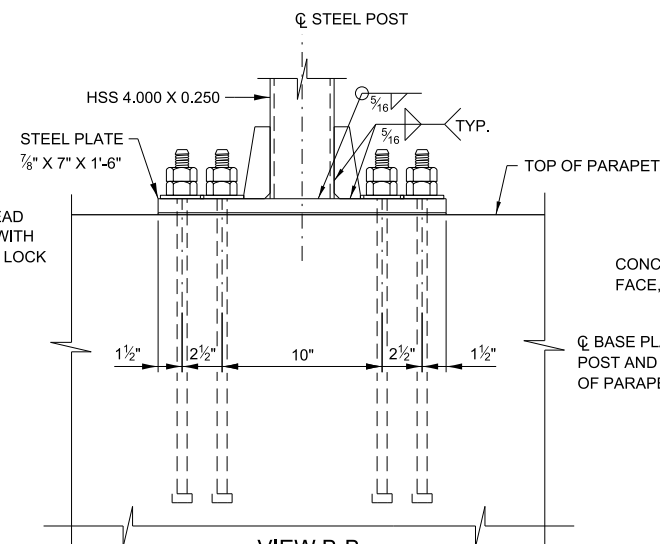
POST INSTALLED DETAIL
(MAXIMUM SIGN AREA 20 SF)



BASE PLATE DETAIL
(FOR POST INSTALLED CONDITION)

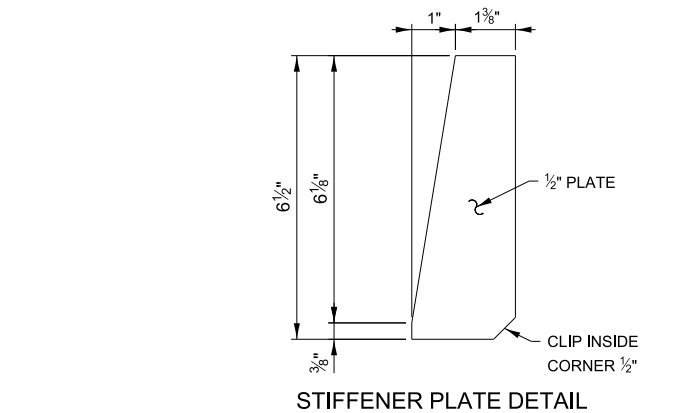


DETAIL B

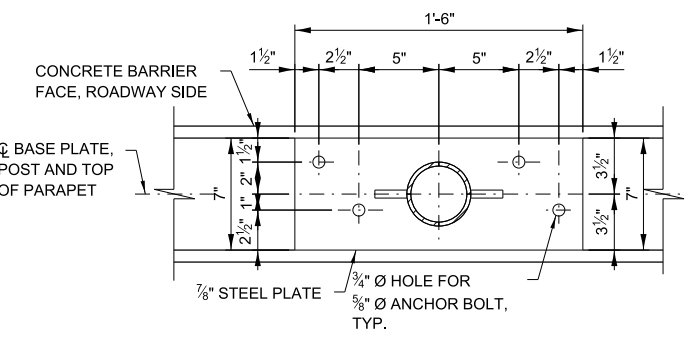


VIEW B-B

CAST-IN-PLACE DETAIL
(MAXIMUM SIGN AREA 20 SF)



STIFFENER PLATE DETAIL



BASE PLATE DETAIL
(CAST-IN-PLACE INSTALLATION)

NOTES:

- FOR MATERIAL, FABRICATION, ERECTION, AND OTHER REQUIREMENTS, REFER TO ILLINOIS TOLLWAY "STRUCTURAL SUPPORT FOR SIGN PANELS" SPECIAL PROVISION.
- THESE DETAILS ARE NOT INTENDED FOR PORTABLE AND/OR PRECAST BARRIER.
- DESIGN CONFORMS TO THE 2015 EDITION OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS WITH 2017 INTERIM SPECIFICATIONS THERETO. DESIGN WIND SPEEDS OF 3-S GUST WITH SPEED OF 120 MPH PLUS 14% GUST FACTOR, AND A WIND IMPORTANCE FACTOR OF 1.0 (50 YEAR MEAN RECURRENCE INTERVAL) FOR THE SUPPORTING STRUCTURES.
- THE PARAPET WALL SHALL BE DESIGNED TO SAFELY SUPPORT THE PROPOSED SIGN PANELS IN ACCORDANCE WITH NOTE 3.
- WELDED PLATES MAY BE USED IN LIEU OF THE BENT PLATE OF MOUNTING PLATE SHOWN. ALL STEEL ELEMENTS SHALL BE GALVANIZED AFTER FABRICATION.
- EXISTING REINFORCING BARS IN THE CONCRETE STRUCTURES MAY CONFLICT WITH SPECIFIC ANCHOR LOCATIONS. THE CONTRACTOR SHALL LOCATE THE POSITION OF THE REINFORCING BARS AT THE LOCATIONS OF THE CONCRETE ANCHORS. DRILLED HOLES FOR ANCHOR RODS SHALL BE CAREFULLY PLACED TO AVOID INTERFERENCE WITH EXISTING REINFORCEMENT.
- NO ANCHOR BOLT SHALL BE PLACED CLOSER THAN 12" FROM PARAPET WALL EXPANSION JOINT.
- TWO STIFFENER PLATES (ONE ON EACH SIDE OF POST) SHALL BE WELDED AS SHOWN ON PLANS IN DIRECTION PERPENDICULAR TO SIGN.
- INSTALLATION SHALL BE DONE IN ACCORDANCE WITH ILLINOIS TOLLWAY SPECIAL PROVISION "SIGN INSTALLATION".
- THIS STANDARD SHALL BE UTILIZED TO MOUNT SIGN SUPPORT ON SINGLE FACE PARAPETS CONSTRUCTED ON BRIDGES, WALLS AND MOMENT SLABS.

MATERIAL SPECIFICATIONS FOR STRUCTURAL STEEL AND FASTENERS

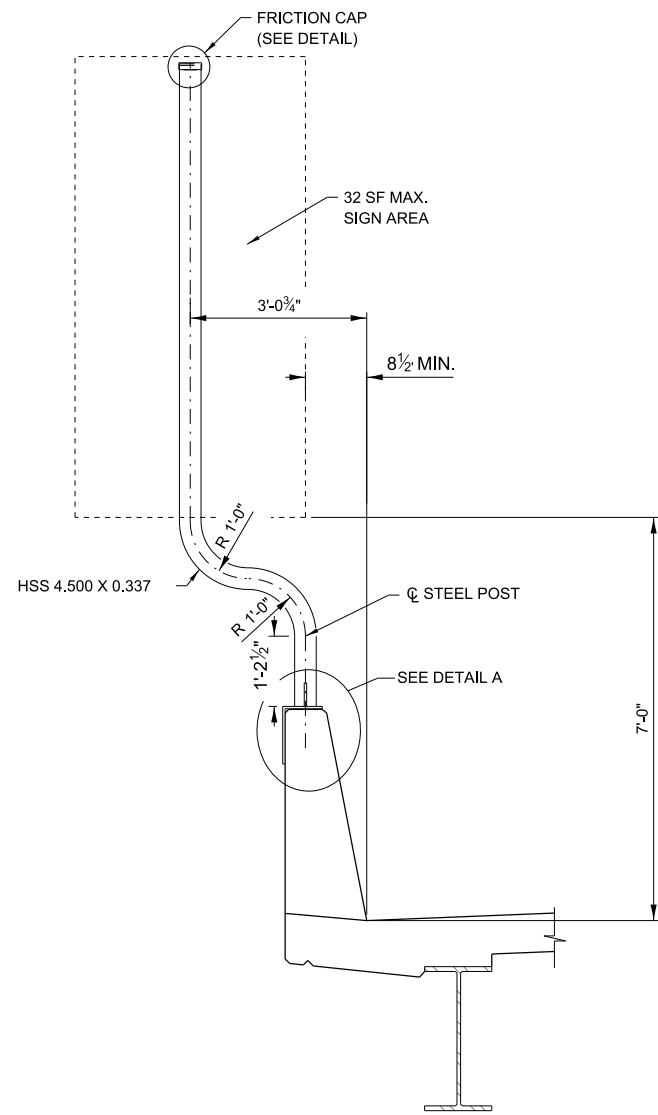
| ELEMENTS OF STRUCTURE | MINIMUM YIELD STRENGTH (K.S.I.) | MINIMUM ULTIMATE STRENGTH (K.S.I.) |
|-----------------------|---------------------------------|------------------------------------|
| STRUCTURAL STEEL HSS | 42 | 58 |
| STEEL ANCHOR BOLTS | 36 | 58 |

| REVISIONS | |
|------------|-------------------------|
| DATE | DESCRIPTION |
| 03-01-2022 | REVISED CALLOUTS TO HSS |
| | |
| | |
| | |

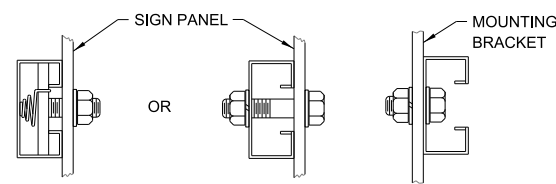


PARAPET MOUNTED SIGN SUPPORT

APPROVED BY: *Paul Kovacs* CHIEF ENGINEERING OFFICER DATE: 03/01/2022

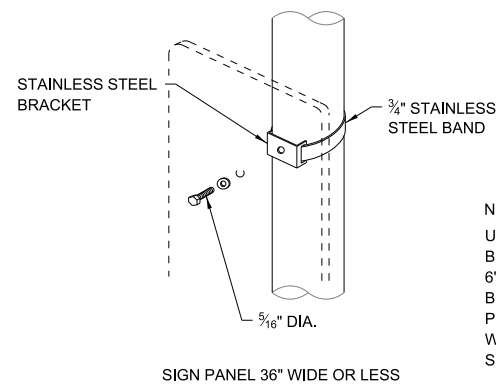


PARAPET MOUNTED SIGN
(MAXIMUM SIGN AREA 32 SF)



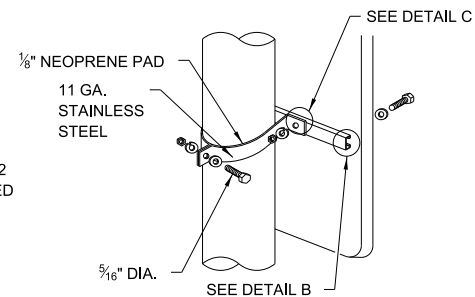
DETAIL B

DETAIL C

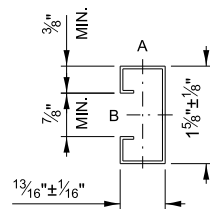


SIGN PANEL 36" WIDE OR LESS

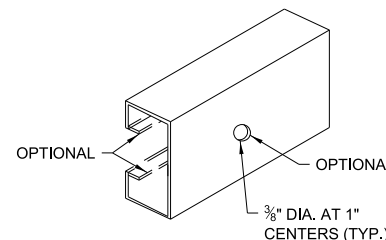
NOTE:
USE A MINIMUM OF 2 BRACKETS (LOCATED 6" FROM TOP AND BOTTOM OF SIGN) PER INSTALLATION WITH MAXIMUM SPACING OF 3'-0".



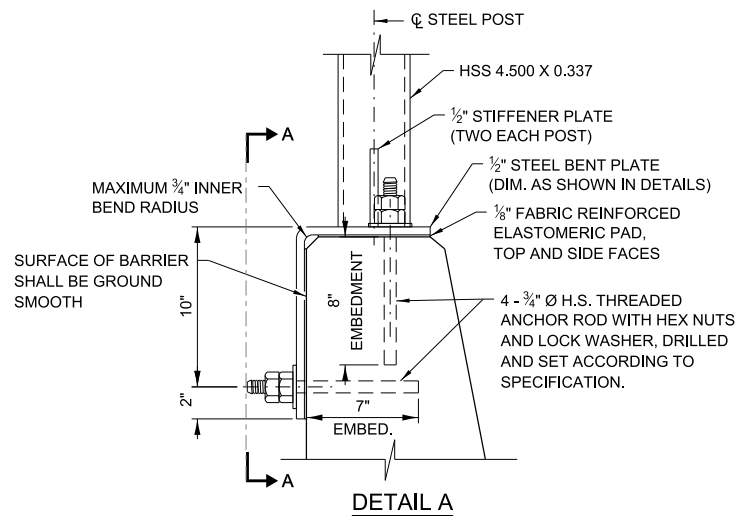
SIGN PANEL OVER 36" WIDE



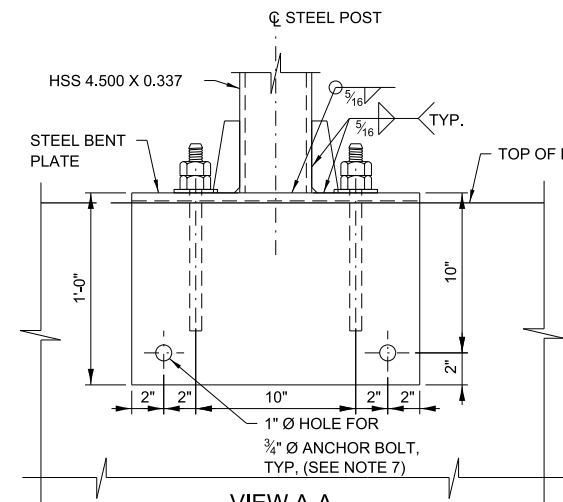
SUPPORTING CHANNEL DETAILS



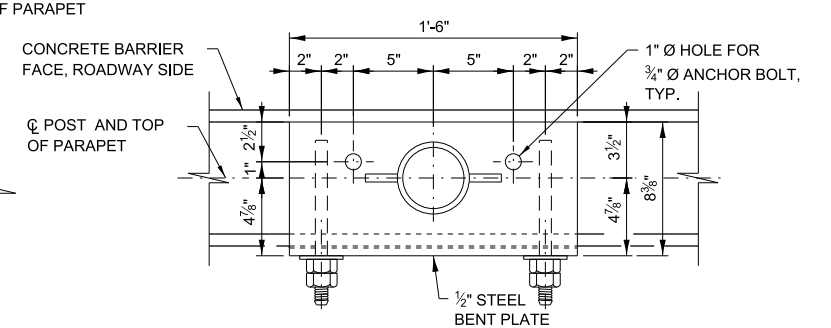
| SUPPORTING CHANNEL SECTION MODULUS (MINIMUM) | Axis A | Axis B |
|--|------------------------|------------------------|
| STEEL | 0.050 in. ³ | 0.105 in. ³ |
| ALUMINUM | 0.150 in. ³ | 0.315 in. ³ |



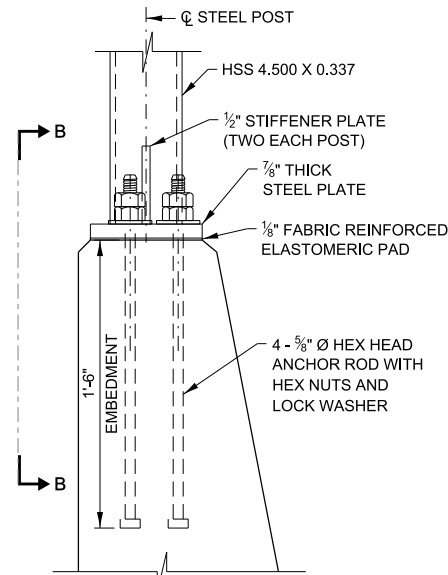
DETAIL A



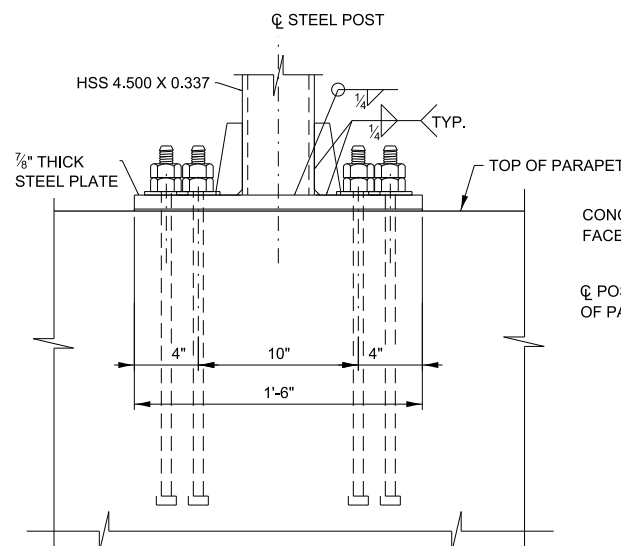
POST INSTALLED DETAIL
(MAXIMUM SIGN AREA 32 SF)



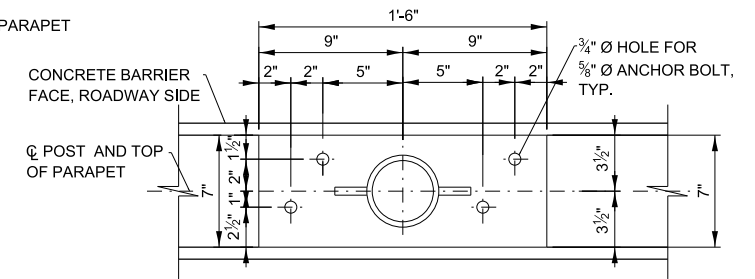
BASE PLATE DETAIL
(FOR POST INSTALLED CONDITION)



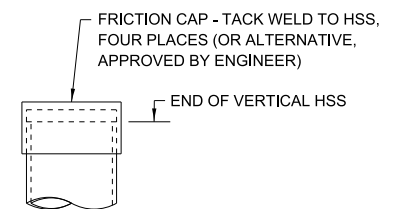
DETAIL A



CAST-IN-PLACE DETAIL
(MAXIMUM SIGN AREA 32 SF)



BASE PLATE DETAIL
(CAST-IN-PLACE INSTALLATION)



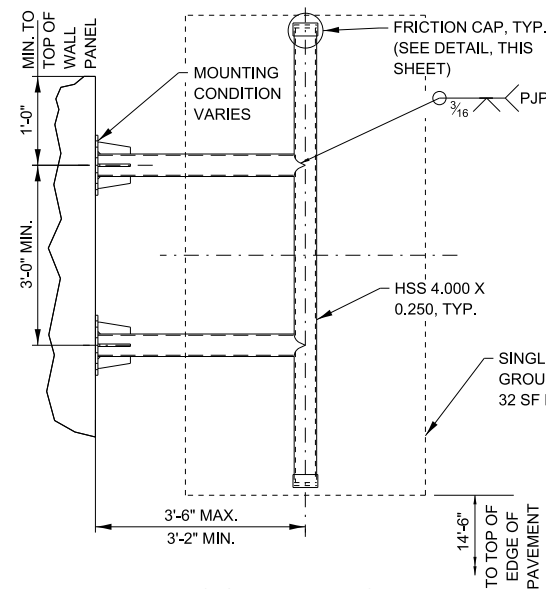
FRICTION CAP DETAIL

APPROVED BY: *Paul Kovacs*
CHIEF ENGINEERING OFFICER
DATE: 03/01/2022

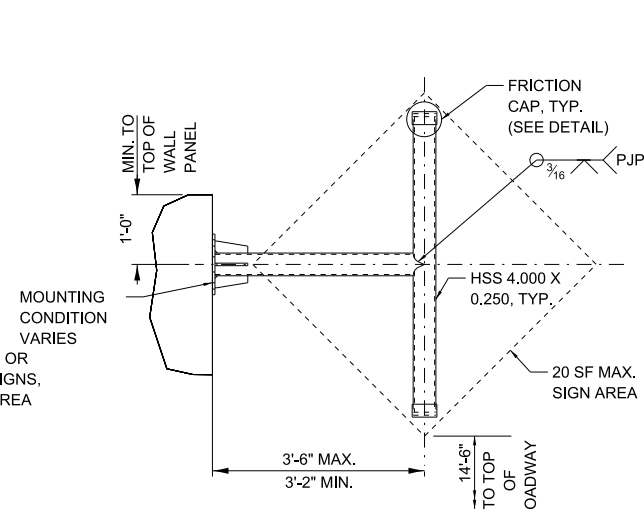
MOUNTING BRACKET DETAILS

PARAPET MOUNTED SIGN SUPPORT

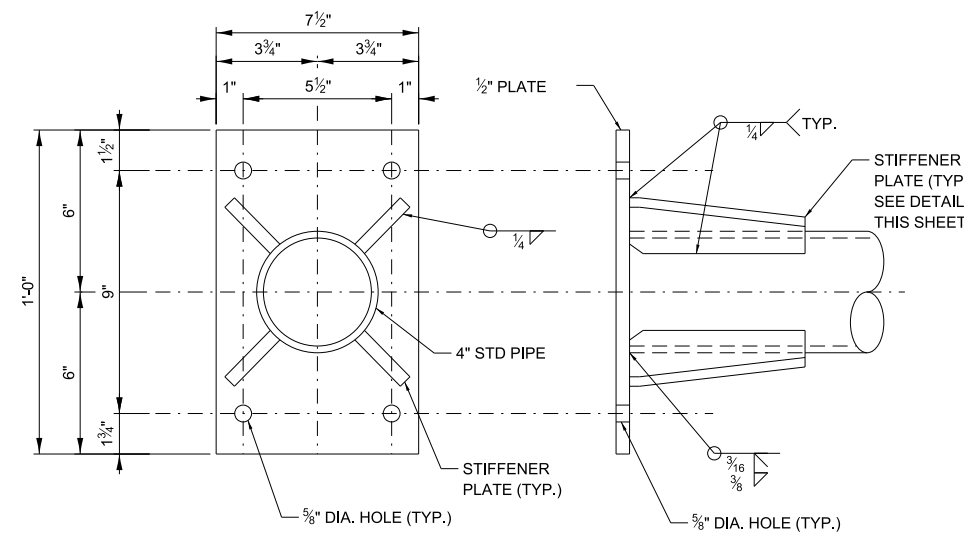
VERSION: 2022-03 STANDARD: F18-01 SHEET: 2 OF 2



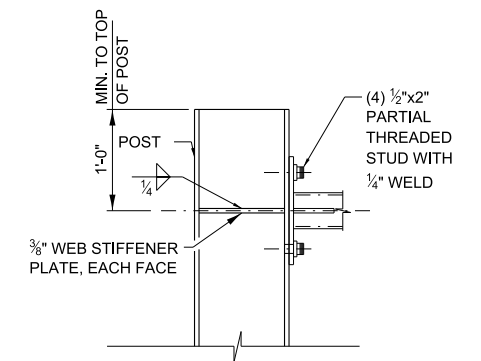
SIGN PANEL MOUNT
(MAXIMUM SIGN AREA 32 SF)



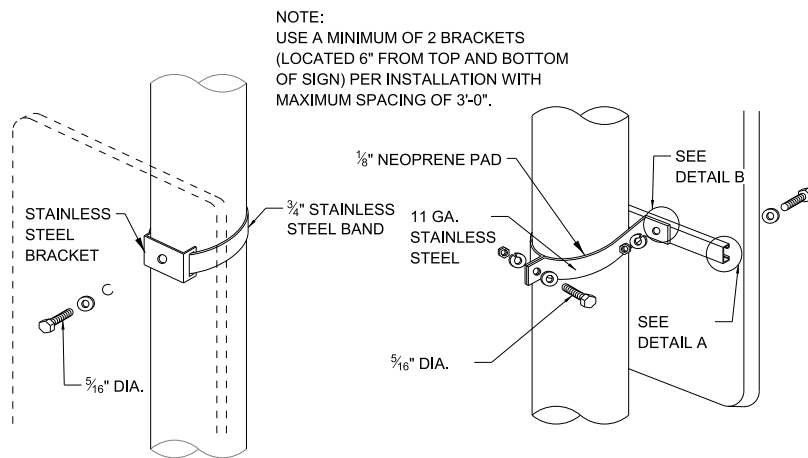
SIGN PANEL MOUNT
(MAXIMUM SIGN AREA 20 SF)



BASE PLATE DETAILS (POST CONNECTION)

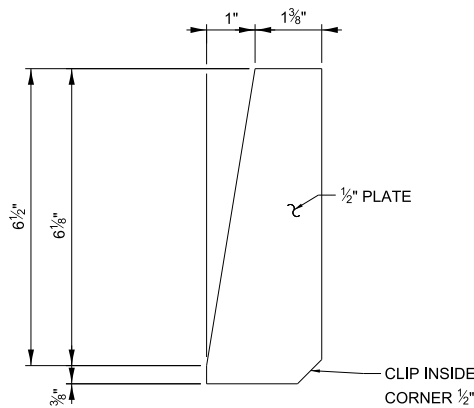


CONNECTION TO POST
(APPLIES WHERE CONNECTION TO WALL PANEL IS NOT FEASIBLE DUE TO 14'-6" CLEARANCE REQUIREMENT)

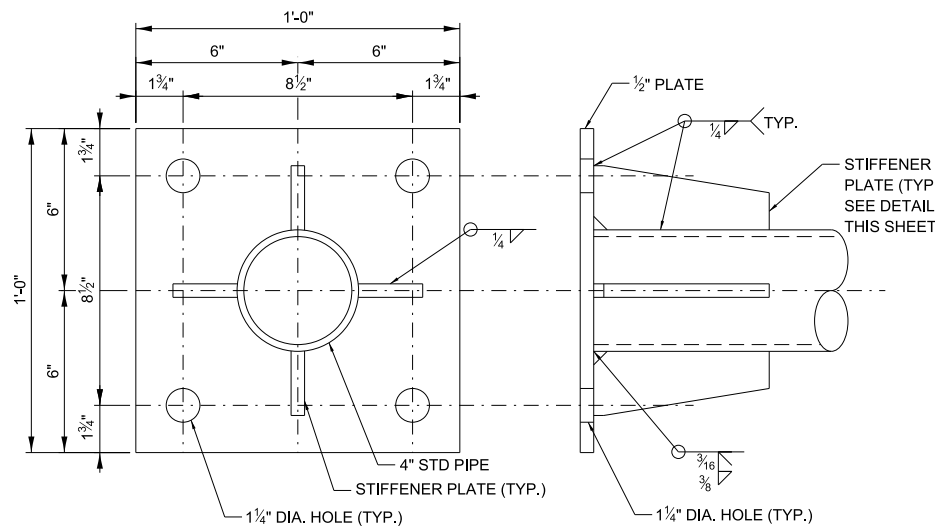


MOUNTING BRACKET DETAIL
SIGN PANEL 36" WIDE OR LESS

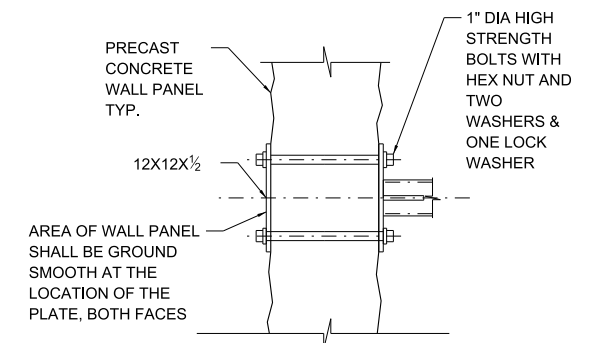
MOUNTING BRACKET DETAIL
SIGN PANEL OVER 36" WIDE



STIFFENER PLATE DETAIL



BASE PLATE DETAILS (PANEL CONNECTION)

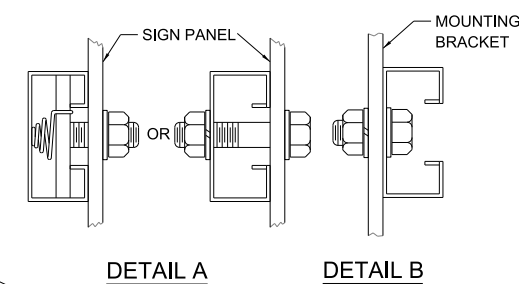


CONNECTION TO PANEL

NOTES:

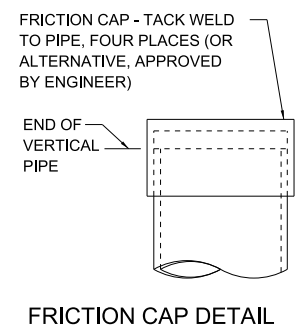
- FOR MATERIAL, FABRICATION, ERECTION, AND OTHER REQUIREMENTS, REFER TO ILLINOIS TOLLWAY "STRUCTURAL SUPPORT FOR SIGN PANELS" SPECIAL PROVISION.
- DESIGN CONFORMS TO THE 2015 EDITION OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS WITH 2017 INTERIM SPECIFICATIONS THERETO. DESIGN WIND SPEEDS OF 3-S GUST WITH SPEED OF 120 MPH PLUS 14% GUST FACTOR, AND A WIND IMPORTANCE FACTOR OF 1.0 (50 YEAR MEAN RECURRENCE INTERVAL) FOR THE SUPPORTING STRUCTURES.
- ALL FABRICATION SHALL BE COMPLETE AND READY FOR ASSEMBLY BEFORE GALVANIZING. NO PUNCHING, DRILLING, CUTTING, NOR WELDING SHALL BE PERMITTED AFTER GALVANIZING.
- THE WALL PANELS AND/OR POSTS SHALL BE DESIGNED TO SAFELY SUPPORT THE PROPOSED SIGN PANELS IN ACCORDANCE WITH NOTE 2.
- FOR SIGN CONNECTION TO MOUNTING BRACKET, SHOP DRILL HOLES ON SIGN IN ACCORDANCE WITH THE CURRENT STANDARD HIGHWAY SIGN DESIGNS FOR ILLINOIS. ADDITIONAL HOLE(S) NEEDED TO MEET A STIPULATED TYPE MOUNTING MAY BE FIELD DRILLED.
- ALL THREADED RODS SHALL CONFIRM TO ASTM F1554 GRADE 105, EACH WITH ONE PLATE WASHER AND LOCKNUT AND BE HOT DIP GALVANIZED PER ASTM A153 (AASHTO M232). THEY SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 1211 OF ILLINOIS TOLLWAY SUPPLEMENTAL SPECIFICATIONS TO THE IDOT STANDARD SPECIFICATIONS.
- PARTIAL THREADED STUDS SHALL BE TYPE A MILD STEEL, 61,000 PSI MINIMUM ULTIMATE AND 49,000 PSI MINIMUM YIELD STRENGTH.
- A NYLON WASHER SHALL BE PLACED BETWEEN THE SIGN FACE AND ANY OTHER WASHER REQUIRED ON SIGNS CONSTRUCTED OF ASTM TYPE III OR IV SHEETING.
- CONTRACTOR SHALL VERIFY APPLICABLE FIELD DIMENSIONS BEFORE FABRICATION. HOLES DRILLED THROUGH NOISE ABATEMENT WALL SHALL BE DRILLED WITH ROTARY (CORING OR MASONRY DRILL) TYPE EQUIPMENT. PERCUSSION (STAR) DRILLING SHALL NOT BE ALLOWED.
- CENTER LINE OF BOLTS INTO NOISE ABATEMENT WALL SHALL BE AT LEAST 12" TO CENTER LINE OF OPEN JOINT IN WALL.

| SUPPORTING CHANNEL SECTION MODULUS (MINIMUM) | Axis A | Axis B |
|--|------------------------|------------------------|
| STEEL | 0.050 in. ³ | 0.105 in. ³ |
| ALUMINUM | 0.150 in. ³ | 0.315 in. ³ |

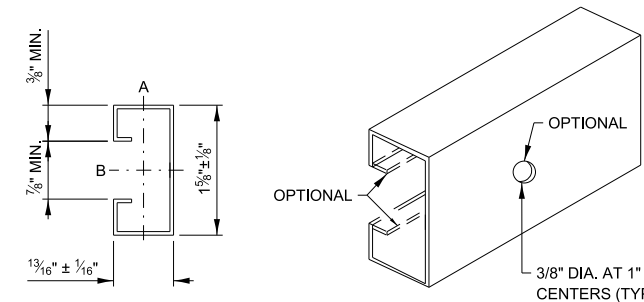


DETAIL A

DETAIL B



FRICTION CAP DETAIL

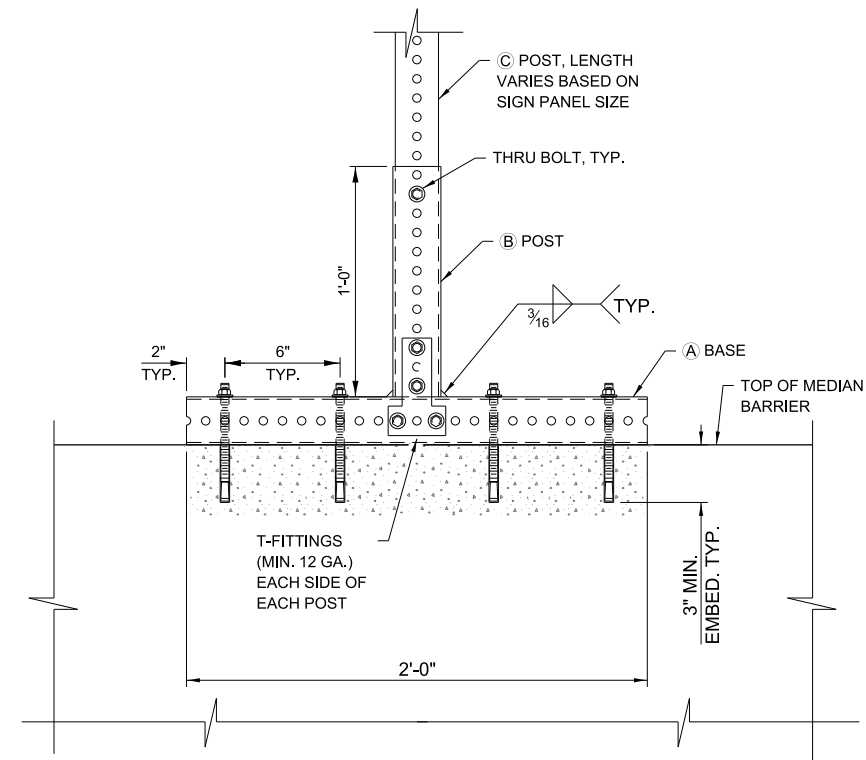
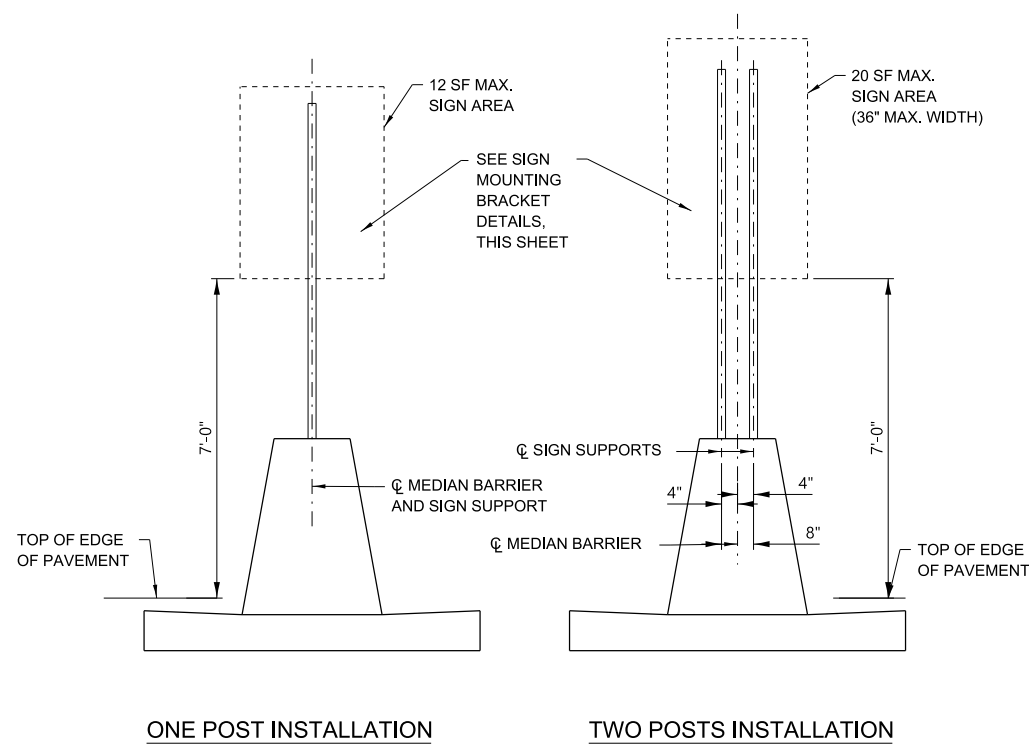


SUPPORTING CHANNEL DETAILS

| REVISIONS | |
|------------|---|
| DATE | DESCRIPTION |
| 03-01-2023 | SPECIFY LENGTH AND WELD SIZE FOR PARTIAL THREADED STUD |
| 03-01-2021 | ADD MATERIAL NOTE FOR PARTIAL THREADED STUDS. |
| 07-17-2020 | REVISE BASE PLATE DETAILS FOR POST AND PANEL CONNECTIONS. |



NOISE ABATEMENT WALL MOUNTED SIGN SUPPORT

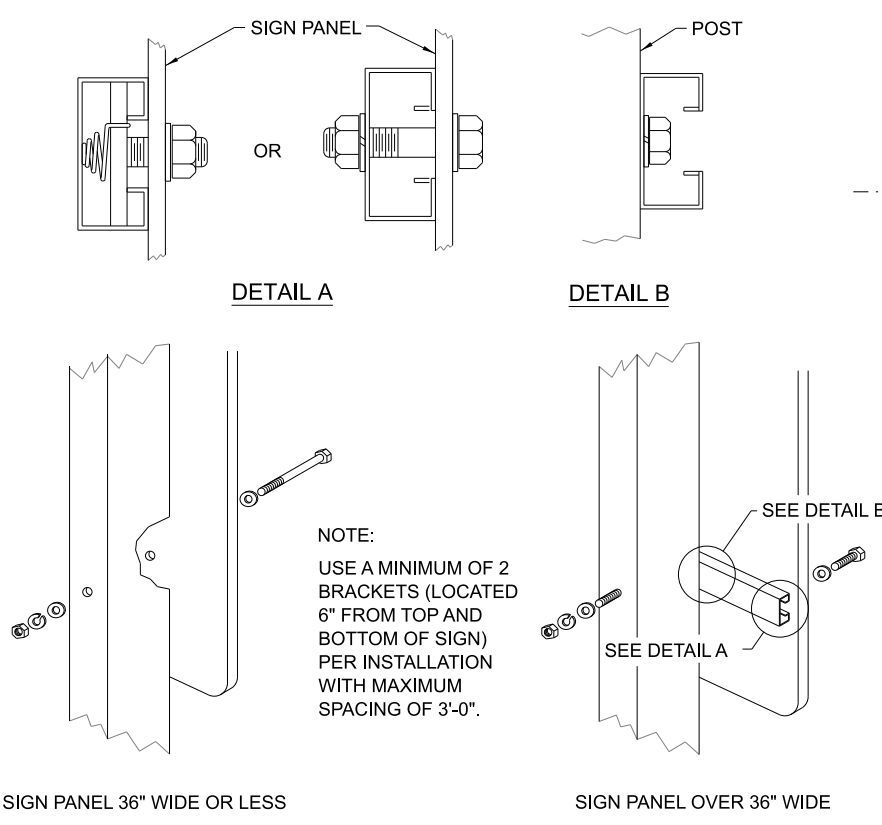


NOTES:

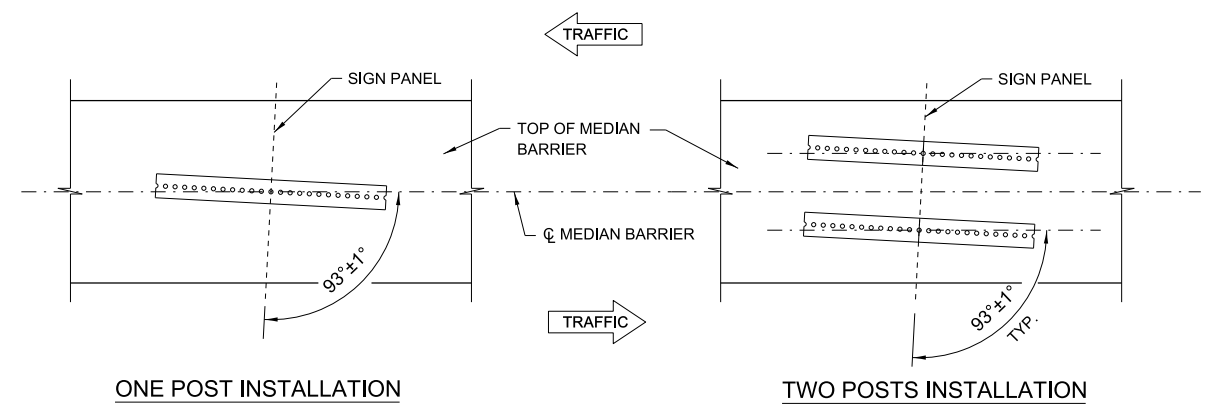
1. ALL ANCHOR BOLTS FOR MEDIAN BARRIER MOUNTED SIGN SUPPORT ASSEMBLY SHALL BE 3/8" DIA. EXPANSION ANCHORS.
2. THE TOP SECTION SHALL BE TELESCOPED INTO THE BASE SECTION 12 INCHES AND FASTENED TOGETHER.
3. DESIGN CONFORMS TO THE 2015 EDITION OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS WITH 2011 INTERIM SPECIFICATIONS THERETO. DESIGN WIND SPEEDS OF 3-s GUST WITH SPEED OF 120 MPH PLUS 14% GUST FACTOR, AND A WIND IMPORTANCE FACTOR OF 1.0 (50 YEAR MEAN RECURRENCE INTERVAL) FOR THE SUPPORTING STRUCTURES.
4. NO ANCHOR BOLT SHALL BE PLACED CLOSER THAN 12" FROM CENTER LINE OF MEDIAN BARRIER JOINT.
5. SIGN FABRICATION AND INSTALLATION SHALL BE DONE IN ACCORDANCE WITH ILLINOIS TOLLWAY SPECIAL PROVISION "SIGN INSTALLATION".
6. BASE AND POST ASSEMBLY SHALL BE HOT DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AASTHO M111 OR AS SPECIFIED IN THE SPECIAL PROVISION "TELESCOPING STEEL SIGN SUPPORT, BARRIER ASSEMBLY".
7. ALL MATERIALS FOR THE SIGN SUPPORT ASSEMBLY SHALL BE INCLUDED IN THE COST OF "TELESCOPING STEEL SIGN SUPPORT, BARRIER ASSEMBLY".

MEMBER DETAILS

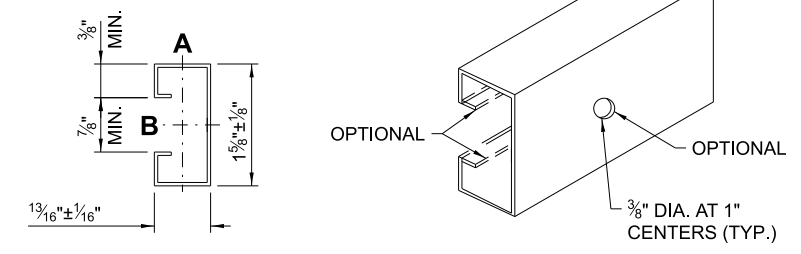
| | |
|-----|-----------------------------------|
| (A) | 2 1/2" x 2 1/2" x 2'-0" (12 GA.) |
| (B) | 2 1/2" x 2 1/2" x 1'-0" (12 GA.) |
| (C) | 2 1/4" x 2 1/4" x VARIES (12 GA.) |



MOUNTING BRACKET DETAILS



PLAN VIEW



SUPPORTING CHANNEL DETAILS

| SUPPORTING CHANNEL SECTION MODULUS (MINIMUM) | Axis A | Axis B |
|--|-----------|-----------|
| STEEL | 0.050 in. | 0.105 in. |
| ALUMINUM | 0.150 in. | 0.315 in. |

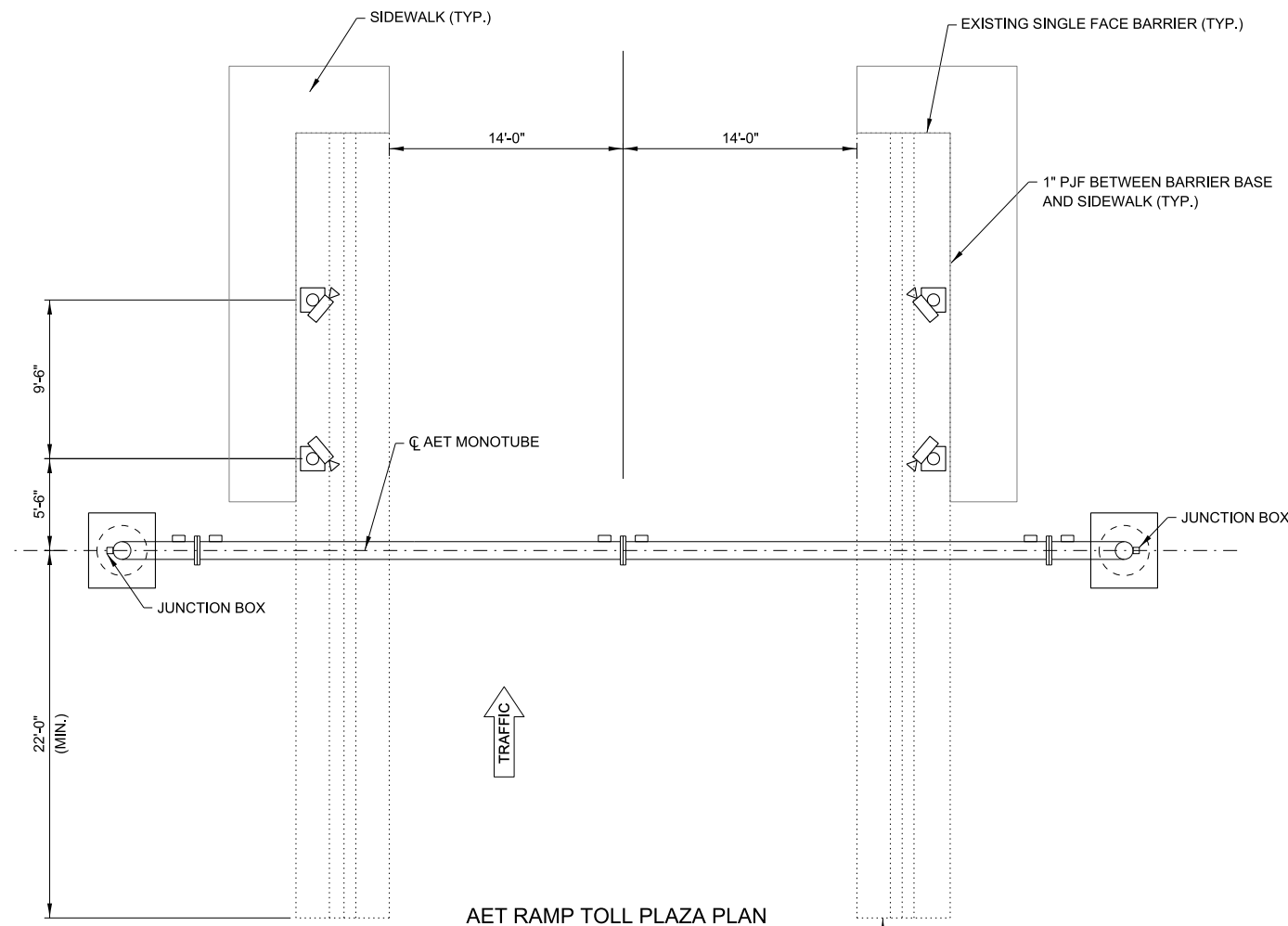
| REVISIONS | |
|-----------|-------------|
| DATE | DESCRIPTION |
| | |
| | |
| | |
| | |

Illinois Tollway

MEDIAN BARRIER MOUNTED SIGN SUPPORT

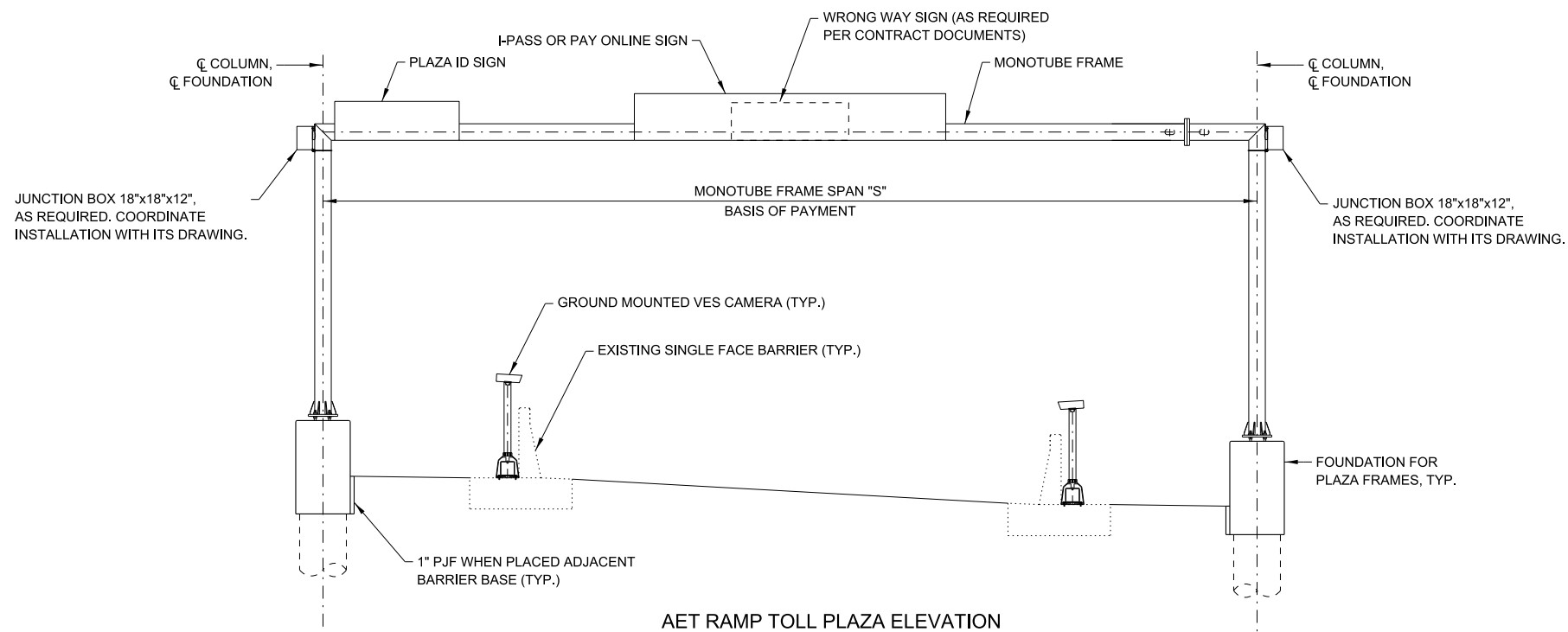
VERSION: 2020-03 STANDARD: F20-00 SHEET: 1 OF 1

APPROVED BY: *Paul Kovacs* DATE: 03/01/2020
CHIEF ENGINEERING OFFICER



AET RAMP TOLL PLAZA PLAN

PROVIDE ATTENUATOR, BARRIER WALL OR GUARDRAIL TERMINAL AS SHOWN ON PLANS (TYP.)



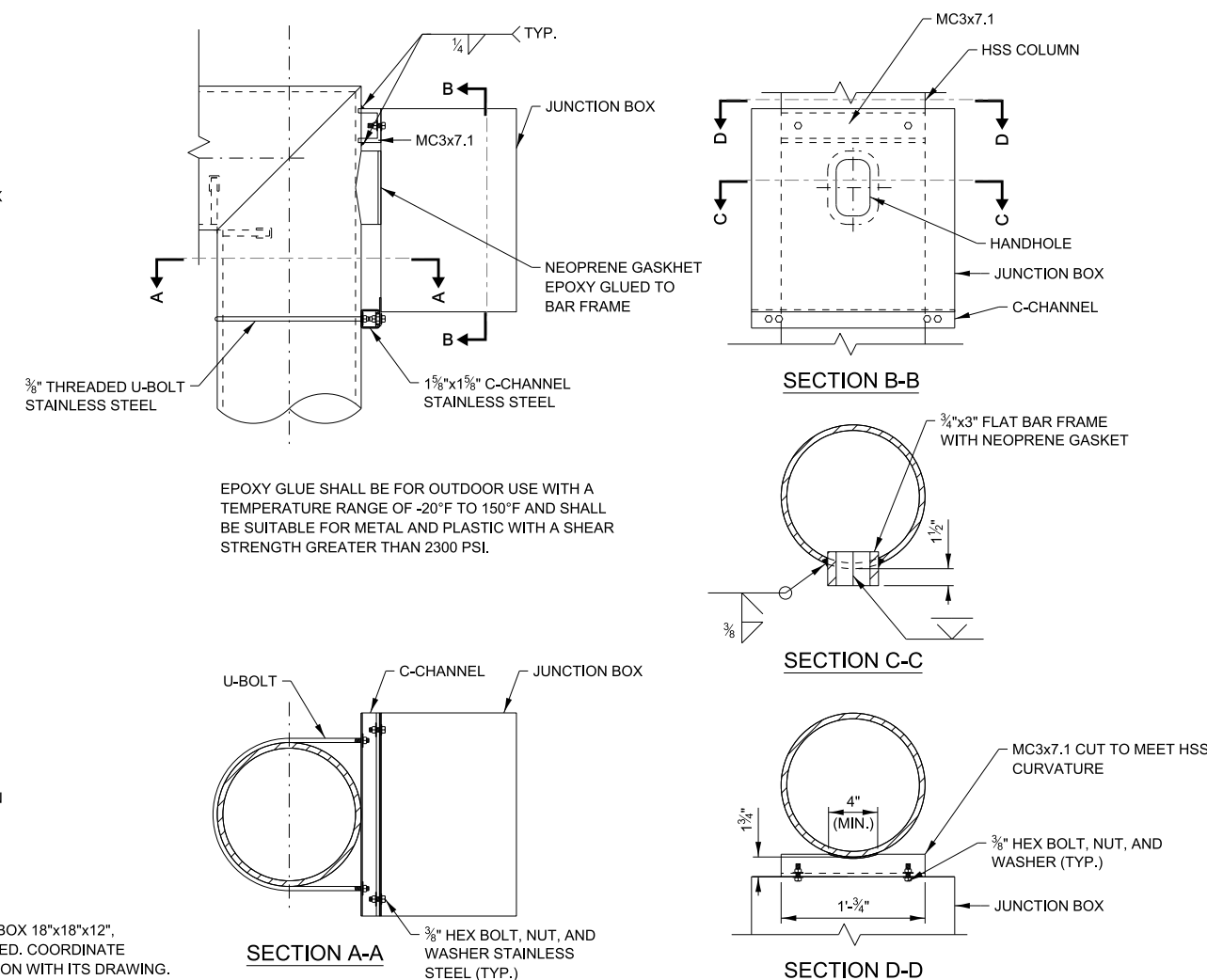
AET RAMP TOLL PLAZA ELEVATION

SIGN TABLE

| SIGN | MAXIMUM AREA | MAXIMUM LENGTH |
|---------------------------|--------------|----------------|
| PLAZA ID SIGN | 20 S.F. | 8'-0" |
| I-PASS OR PAY ONLINE SIGN | 60 S.F. | 20'-0" |
| WRONG WAY SIGN | 16 S.F. | 8'-0" |

NOTES:

- SEE CONTRACT PLANS FOR SIGN SIZE AND LOCATION.
- PROVIDE MONOTUBE FRAME STATIONS IN CONTRACT PLANS.



JUNCTION BOX CONNECTION DETAIL

EPOXY GLUE SHALL BE FOR OUTDOOR USE WITH A TEMPERATURE RANGE OF -20°F TO 150°F AND SHALL BE SUITABLE FOR METAL AND PLASTIC WITH A SHEAR STRENGTH GREATER THAN 2300 PSI.

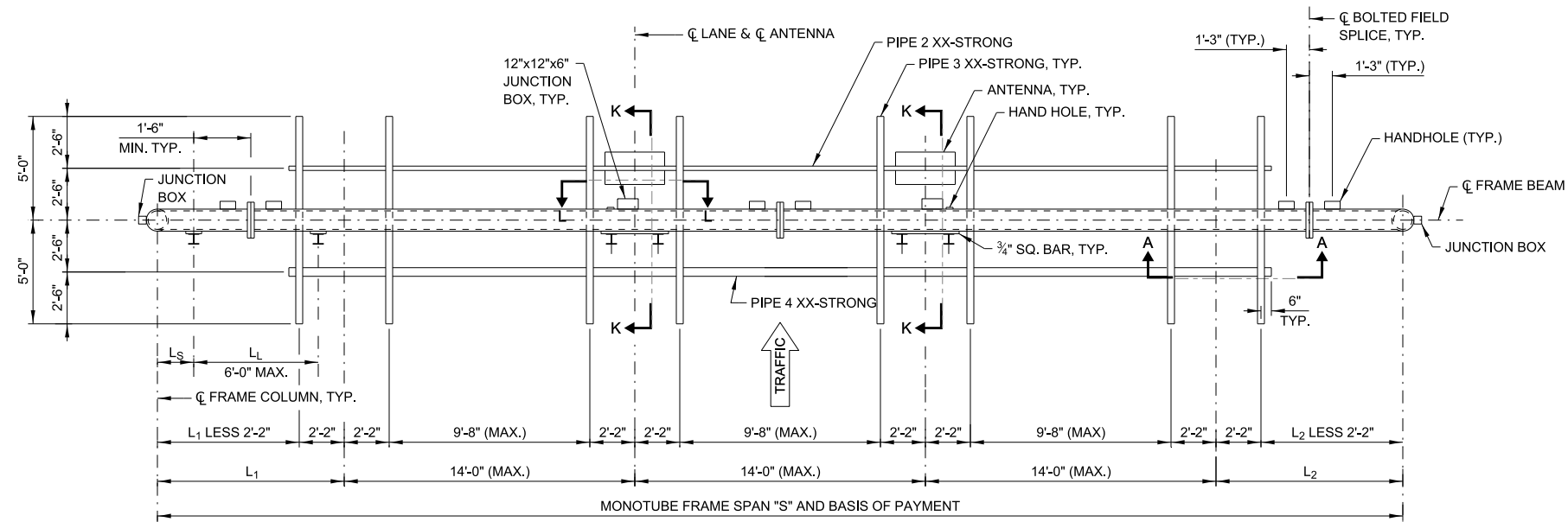


| REVISIONS | |
|------------|--|
| DATE | DESCRIPTION |
| 03-01-2026 | ADDED WRONG WAY SIGN IN TOLL PLAZA ELEVATION AND SIGN TABLE. ADDED JUNCTION BOX ON BOTH SIDES OF MONOTUBE. REVISED SECTION H-H. ADDED NOTE UNDER DETAIL M. |

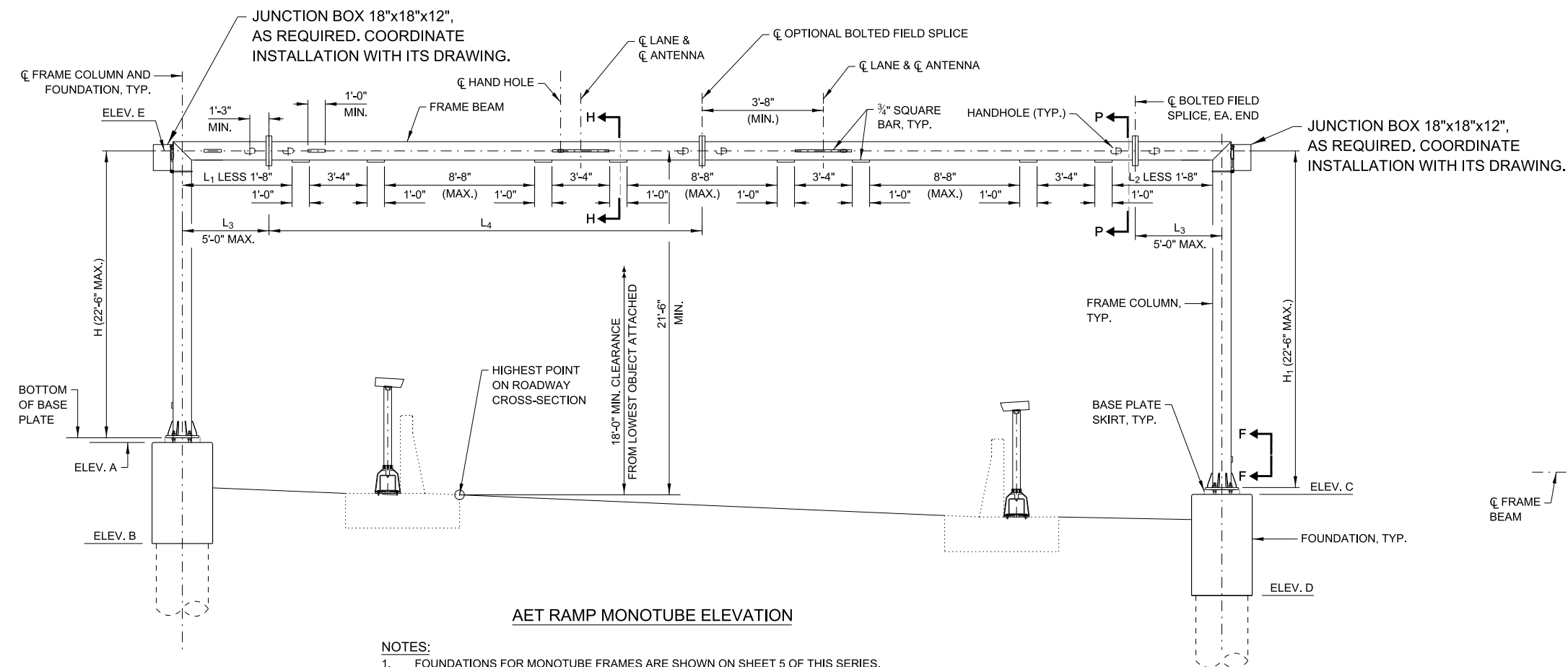
OVERHEAD SIGN STRUCTURE
AET RAMP MONOTUBE TYPE
(STEEL) GROUND MOUNTED

| | | |
|---------------------|---------------------|------------------|
| VERSION: 2026-03 | STANDARD: F21-01 | SHEET: 1 OF 5 |
|---------------------|---------------------|------------------|

APPROVED BY:
Manar Nashif
CHIEF ENGINEERING OFFICER
DATE:
03/01/2026



AET RAMP MONOTUBE PLAN



AET RAMP MONOTUBE ELEVATION

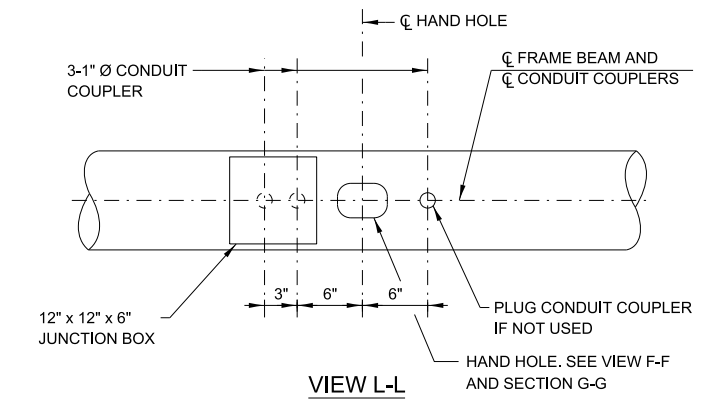
NOTES:

- FOUNDATIONS FOR MONOTUBE FRAMES ARE SHOWN ON SHEET 5 OF THIS SERIES.
- SEE SHEET 4 OF THIS SERIES FOR SECTIONS G-G, H-H, K-K, VIEW A-A AND F-F AND BASE PLATE SKIRT.
- SEE SHEET 3 OF THIS SERIES FOR SECTION P-P.
- PROVIDE CAMBER AT MIDSPAN OF STRUCTURE.
- LOCATE OPTIONAL BOLTED FIELD SPLICE NEAR MIDSPAN.
- WORK THIS SHEET WITH, OVERHEAD SIGN STRUCTURE AET RAMP MONOTUBE TYPE (STEEL) GROUND MOUNTED SUMMARY AND TOTAL BILL OF MATERIAL SHEET.

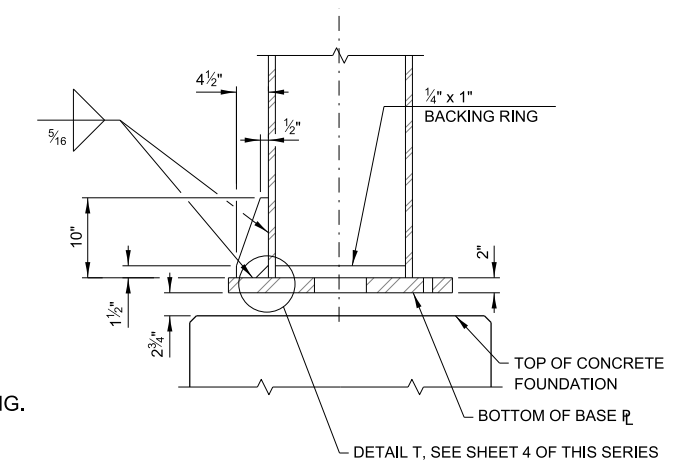
MONOTUBE FRAME TABLE

| SPAN "S" | FRAME COLUMN | FRAME BEAM | CAMBER |
|----------|-----------------|-----------------|--------|
| 60' MAX. | HSS 12.75x0.500 | HSS 12.75x0.500 | 2 1/4" |

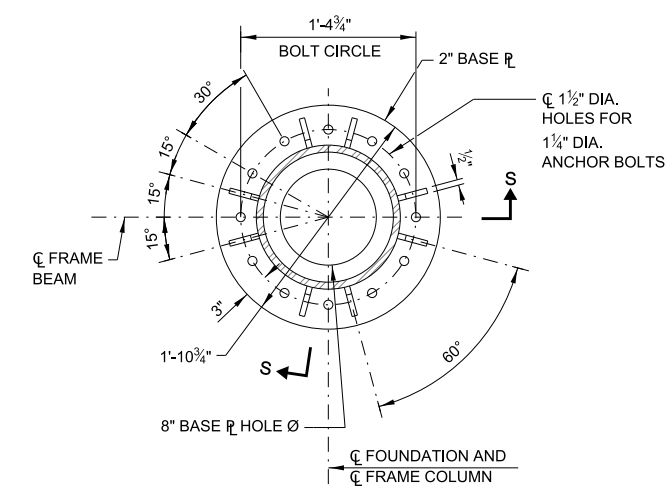
SEE ILLINOIS TOLLWAY STANDARD DRAWING F13 FOR SPANS GREATER THAN 60'.



VIEW L-L



SECTION S-S



BASE PLATE PLAN MONOTUBE



**OVERHEAD SIGN STRUCTURE
AET RAMP MONOTUBE TYPE
(STEEL) GROUND MOUNTED**

APPROVED BY: *Manar Nashif* DATE: 03/01/2026
CHIEF ENGINEERING OFFICER

GENERAL NOTES:

- 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.
- REINFORCEMENT BARS DESIGNATED "(E)" SHALL BE EPOXY COATED.

STRUCTURAL STEEL:

- MATERIAL FOR THE HSS MONOTUBE FRAME SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C. BASE PLATE AND STIFFENER PLATE SHALL CONFORM TO ASTM A709 GRADE 50. OTHER STRUCTURAL STEEL SHAPES AND PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36, UNLESS NOTED OTHERWISE.
- PIPES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A53 GRADE B.
- ANCHOR BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F1554 (AASHTO M314) GRADE 55, WITH A MINIMUM TENSILE STRENGTH OF 75,000 PSI. INSTALLATION AND INSPECTION OF ANCHOR BOLTS SHALL COMPLY WITH ILLINOIS TOLLWAY SPECIAL PROVISION "INTELLIGENT TRANSPORTATION SYSTEMS GANTRY FRAME "STEEL". ANCHORS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 (AASHTO M232). SEE SHEET 6 OF THIS SERIES FOR GALVANIZED LENGTH.
- U-BOLTS SHALL BE STAINLESS STEEL AND SHALL CONFORM TO ASTM 193, CLASS I, GRADE B8 (AISI TYPE 304), WASHERS FOR U-BOLTS SHALL CONFORM TO ASTM A240, TYPE 302. NUTS FOR U-BOLTS SHALL CONFORM TO ASTM A194 (AASHTO M292), GRADE 8F (AISI TYPE 303).
- BOLTS (EXCLUDING ANCHOR BOLTS AND U-BOLTS) SHALL BE HIGH STRENGTH STEEL BOLTS.
- HSS FOR MONOTUBE FRAME, PIPES, STRUCTURAL STEEL SHAPES AND PLATES SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123 AFTER FABRICATION.
- THE MONOTUBE FRAME BEAM, COLUMNS, BASE PLATE MATERIAL, AND SPLICES ARE CONSIDERED TENSION MEMBERS AND SHALL CONFORM TO THE IMPACT TESTING REQUIREMENT, ZONE 2.

DESIGN LOADING:

WIND LOAD CRITERIA
 BASIC WIND SPEED = 120 M.P.H.
 $G = 1.14$
 $I_F = 1.00$
 $K_Z = 1.00$
 SIGN PANEL 50 P.S.F.
 COLUMN/BEAM 35 P.S.F.

SIGN DEAD LOAD = 3 P.S.F.

ICE = 3 P.S.F. (APPLIED WITH A FACTOR OF 1.0 FOR STRENGTH I ONLY)

EQUIPMENT LOADS:

ANTENNA W/MOUNTING HARDWARE 24 LB.

DESIGN STRESSES FOR REINFORCED CONCRETE:

f'_c = COMPRESSIVE STRENGTH OF CONCRETE (CLASS SI) = 3,500 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.

FOUNDATION:

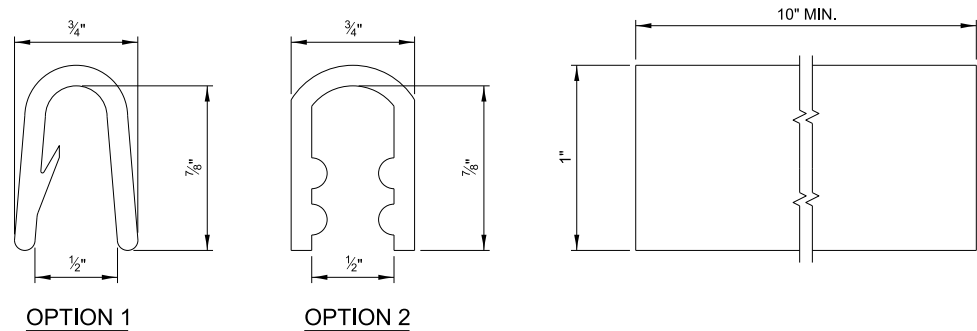
MINIMUM UNCONFINED COMPRESSIVE STRENGTH, Q_u FOR ALL LAYERS OF COHESIVE SOILS (CLAYS) SHALL BE 1.25 TON/SQ.FT. AT MONOTUBE FRAMES.

DESIGN SPECIFICATIONS:

- ILLINOIS TOLLWAY STRUCTURE DESIGN MANUAL, LATEST EDITION.
- AASHTO LRFD SPECIFICATION FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 1ST EDITION.
- AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION, 2020.
- ILLINOIS DEPARTMENT OF TRANSPORTATION BRIDGE MANUAL, LATEST EDITION.

CONSTRUCTION SPECIFICATIONS:

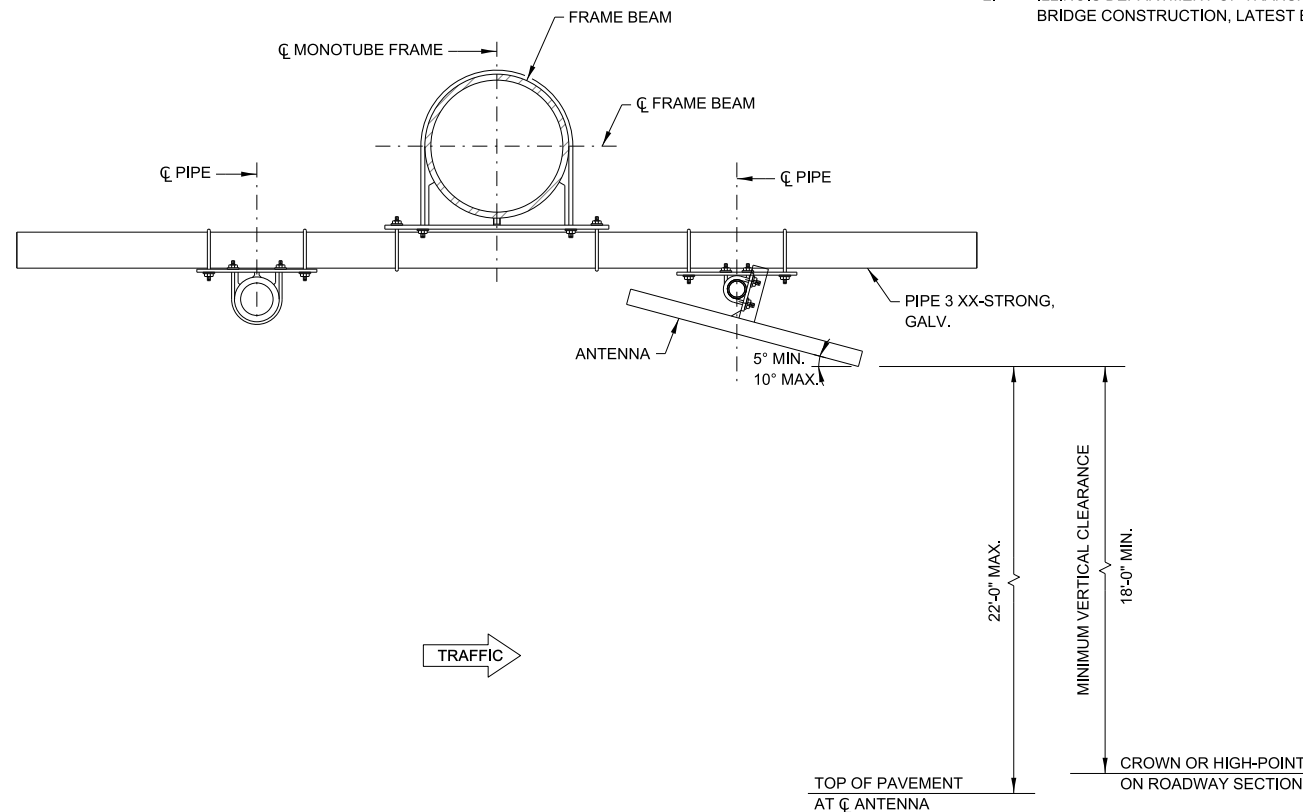
- ILLINOIS TOLLWAY SUPPLEMENTAL SPECIFICATIONS TO THE ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.
- ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.



PLASTIC TRIM DETAIL

NOTES:

- ALL SHARP EDGES OR DRIPS OF ZINC SHALL BE REMOVED FROM ALL STIFFENER PLATES PRIOR TO EPOXY GLUING THE TRIM. THE TRIM SHALL BE EPOXY GLUED TO BOTH SIDES OF THE PLATE. THE COST OF THE TRIM AND EPOXY GLUE SHALL BE INCLUDED IN THE COST OF "OVERHEAD SIGN STRUCTURE, AET RAMP ENTRANCE MONOTUBE TYPE (STEEL)"
- THE TRIM SHALL BE HEAVY DUTY PLASTIC TRIM (OPTION 1 OR OPTION 2 OR EQUIVALENT) FOR OUTDOOR USE FOR APPLICATION WITH A TEMPERATURE RANGE OF -20°F TO 150°F. THE TRIM SHALL BE CHEMICAL RESISTANT, A HARD RATING AND SHALL MEET FMVSS-302 FOR FEDERAL MOTOR VEHICLE SAFETY STANDARDS FOR FLAMMABILITY.
- EPOXY GLUE SHALL BE FOR OUTDOOR USE WITH A TEMPERATURE RANGE OF -20°F TO 150°F AND SHALL BE SUITABLE FOR METAL AND PLASTIC WITH A SHEAR STRENGTH GREATER THAN 2300 PSI.



SECTION P-P

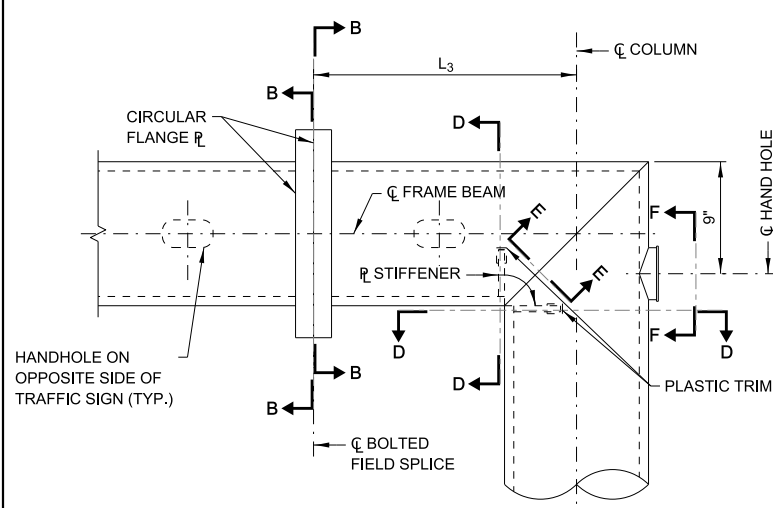
TOP OF PAVEMENT AT \bar{C} ANTENNA
 MINIMUM VERTICAL CLEARANCE
 22'-0" MAX.
 18'-0" MIN.
 CROWN OR HIGH-POINT ON ROADWAY SECTION

APPROVED BY: *Manan Nashif*
 CHIEF ENGINEERING OFFICER
 DATE: 03/01/2026

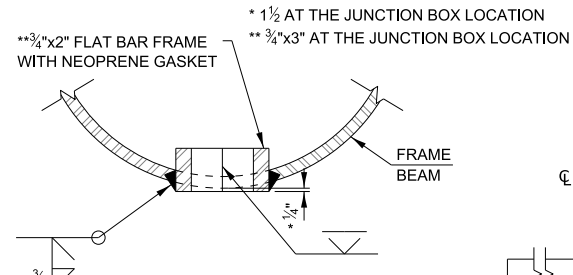
Illinois Tollway

**OVERHEAD SIGN STRUCTURE
 AET RAMP MONOTUBE TYPE
 (STEEL) GROUND MOUNTED**

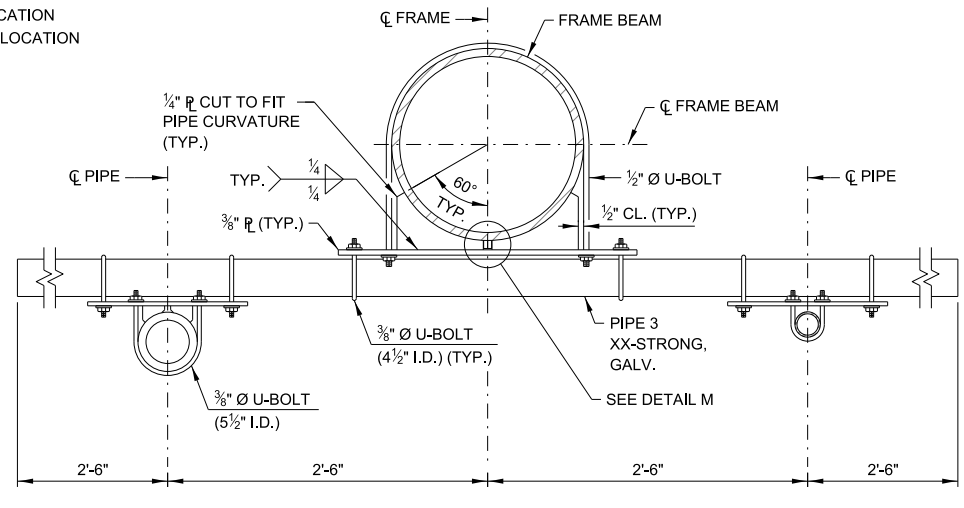
VERSION: 2026-03 STANDARD: F21-01 SHEET: 3 OF 5



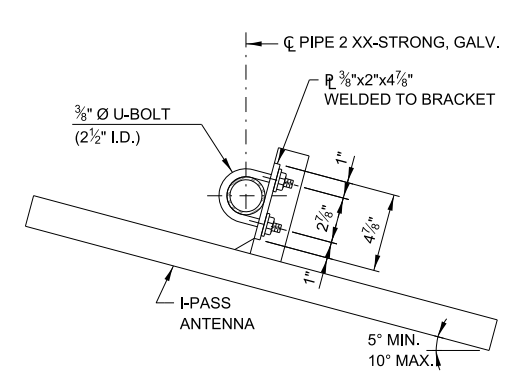
SECTION A-A
(SEE SHEETS 2 AND 3 OF THIS SERIES FOR LOCATION)
(PIPES NOT SHOWN FOR CLARITY)



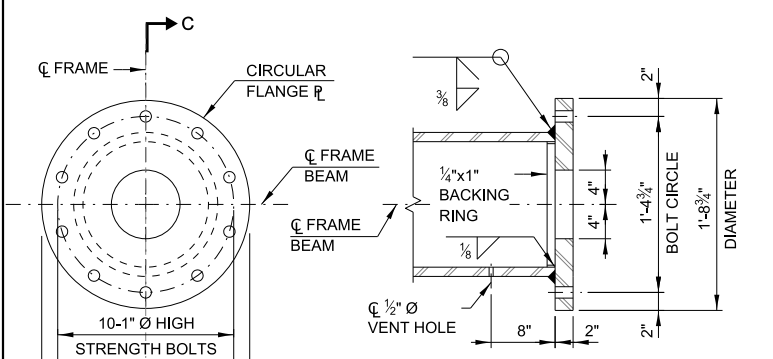
SECTION G-G



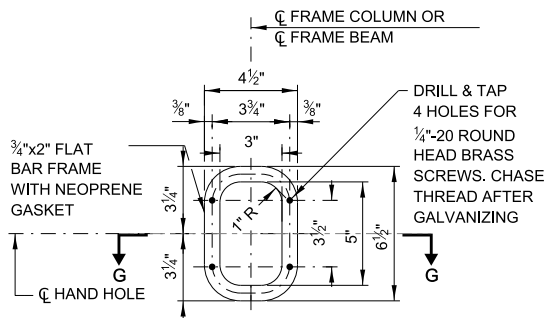
SECTION K-K



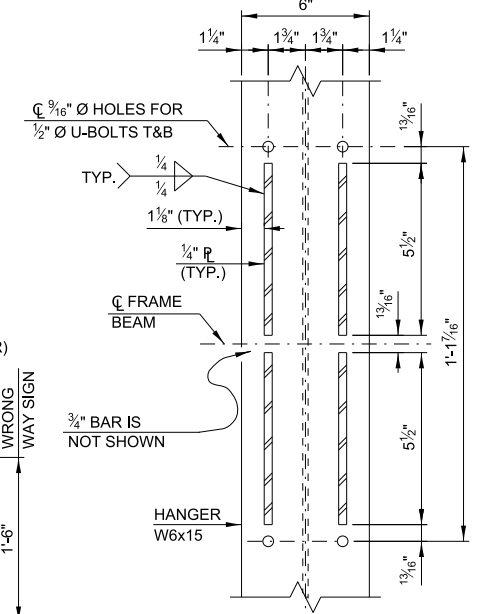
ANTENNA HANGER



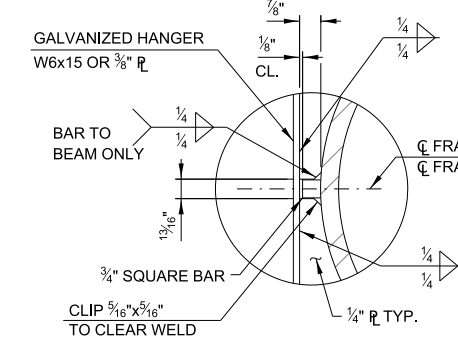
SECTION B-B



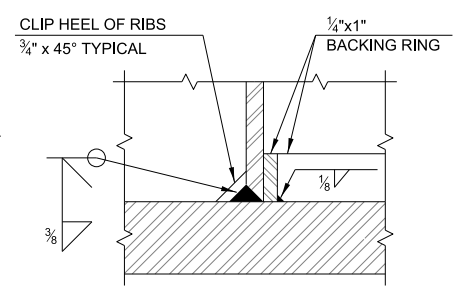
VIEW F-F



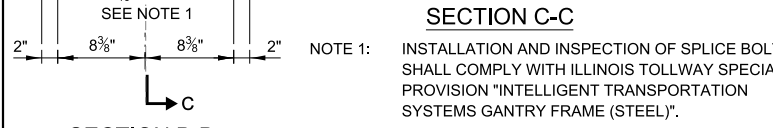
SECTION J-J



DETAIL M
(U-BOLT NOT SHOWN FOR CLARITY)

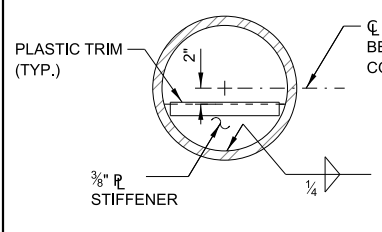


DETAIL T

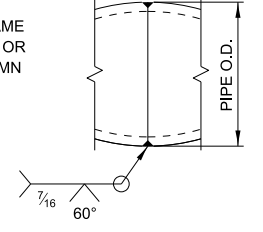


SECTION C-C

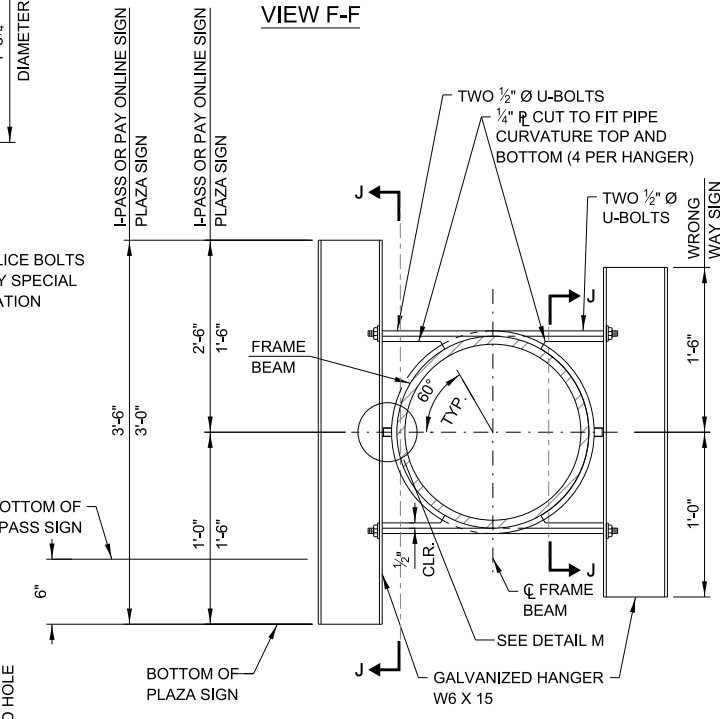
NOTE 1: INSTALLATION AND INSPECTION OF SPLICE BOLTS SHALL COMPLY WITH ILLINOIS TOLLWAY SPECIAL PROVISION "INTELLIGENT TRANSPORTATION SYSTEMS GANTRY FRAME (STEEL)".



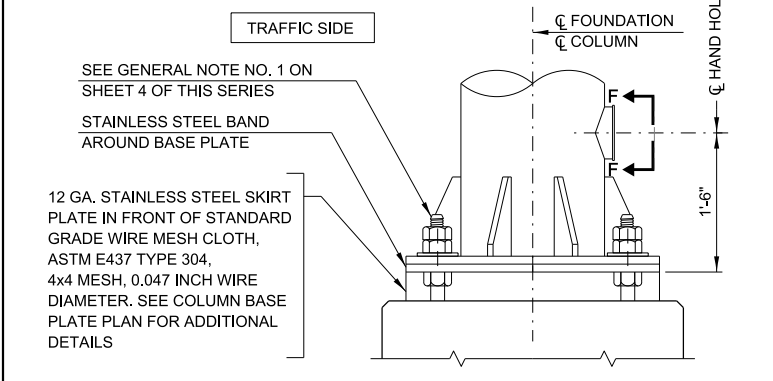
SECTION D-D



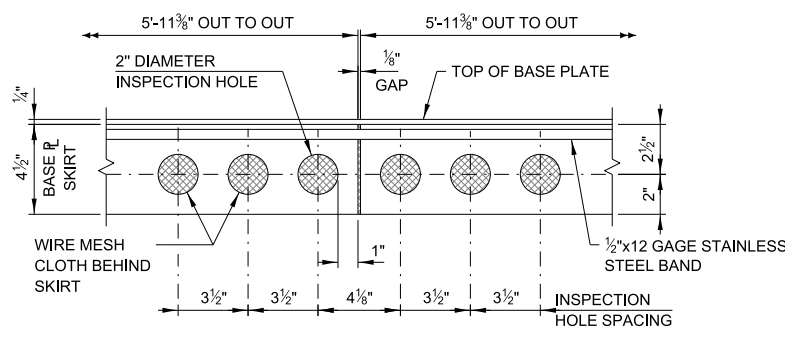
SECTION E-E



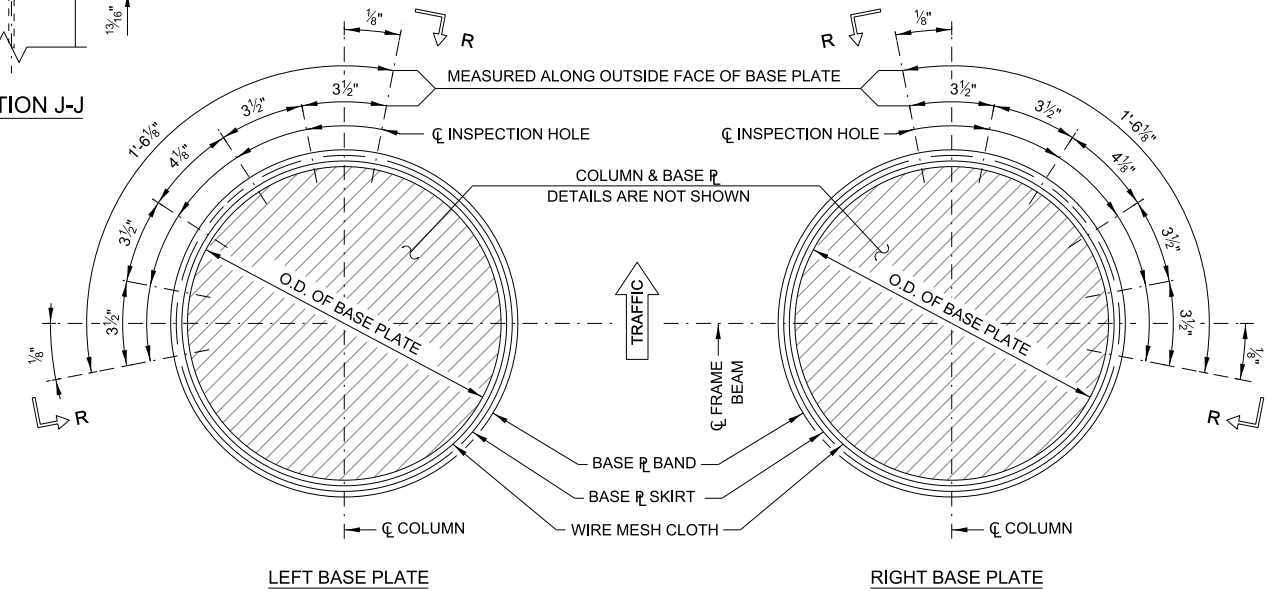
SECTION H-H (SIGN HANGER)



COLUMN BASE



VIEW R-R (BASE PLATE SKIRT)



COLUMN BASE PLATE PLAN

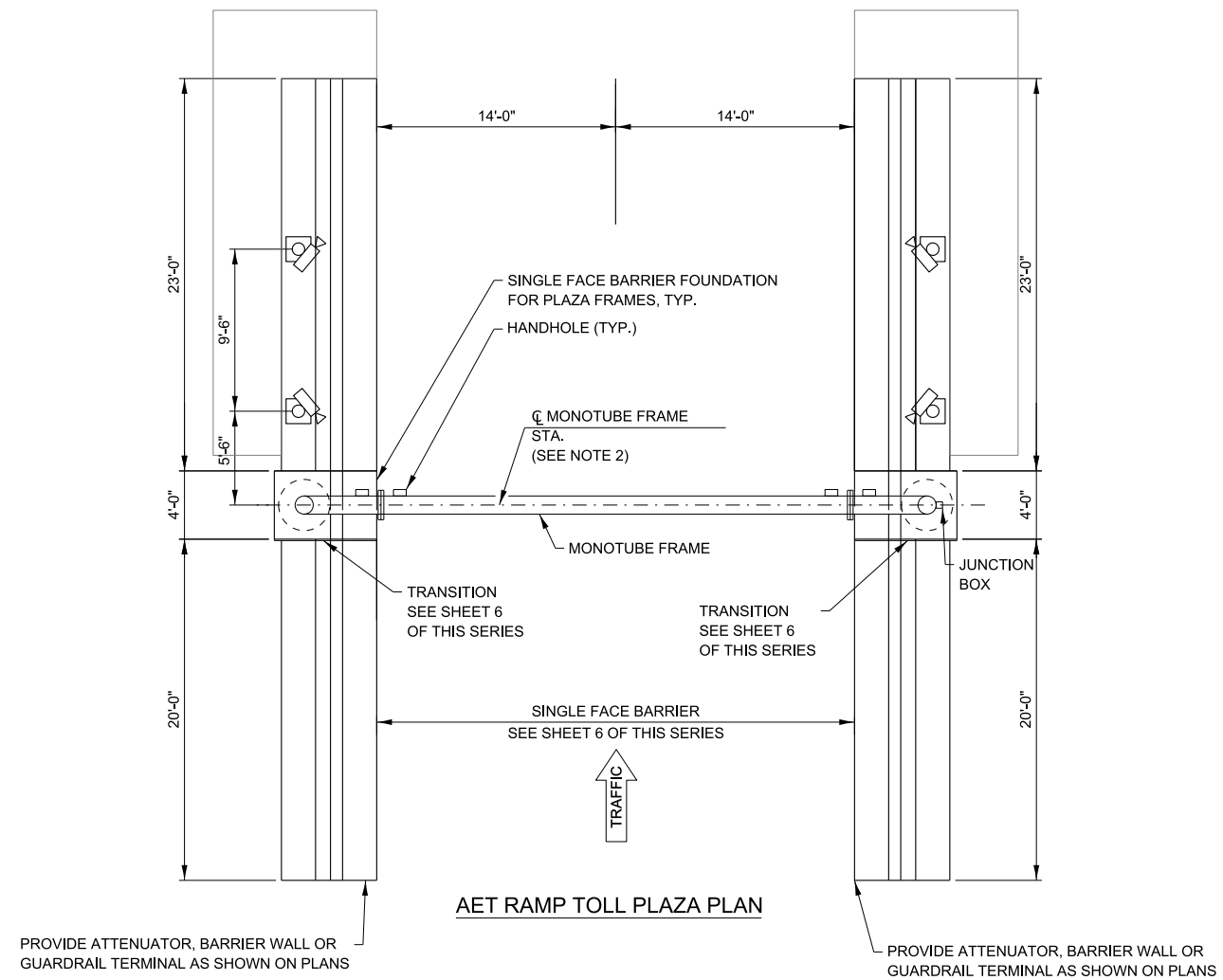
NOTE: SEE SHEET 2 OF THIS SERIES FOR BASE PLATE OUTSIDE DIAMETER.

APPROVED BY: *Manar Nashif*
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DATE: 03/01/2026

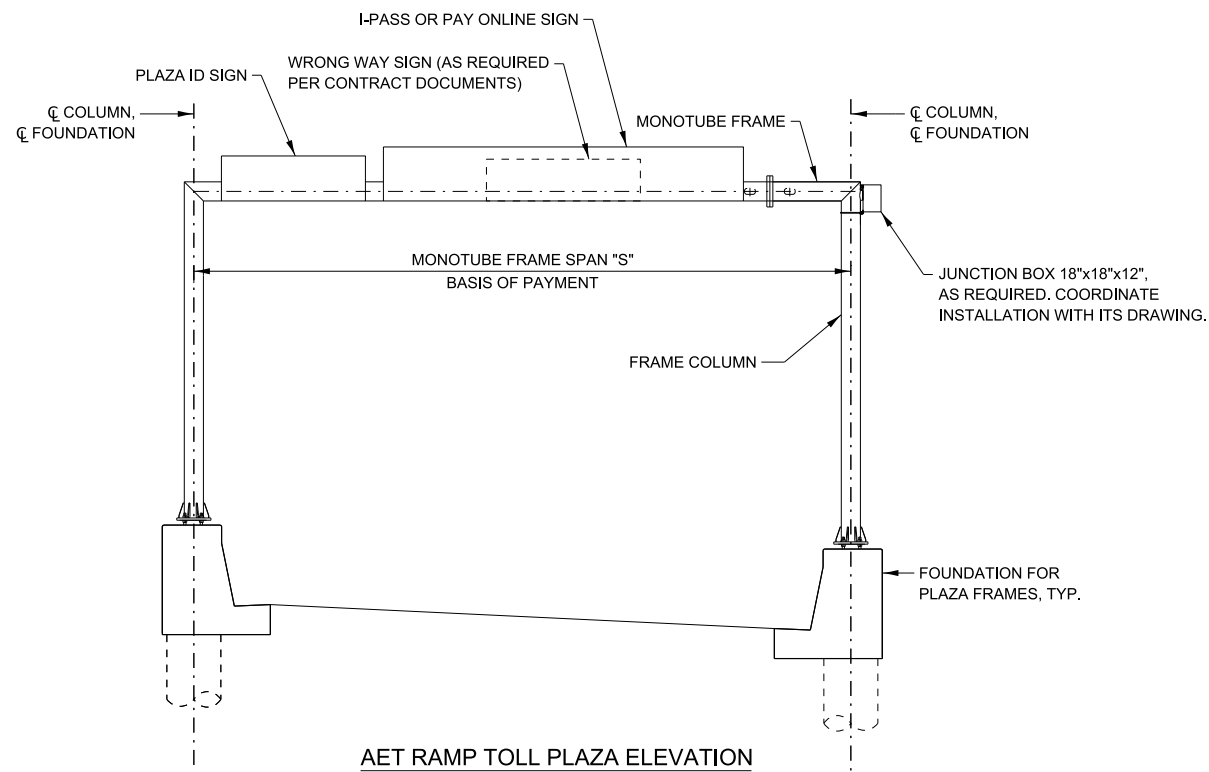
Illinois Tollway

**OVERHEAD SIGN STRUCTURE
AET RAMP MONOTUBE TYPE
(STEEL) GROUND MOUNTED**

VERSION: 2026-03 STANDARD: F21-01 SHEET: 4 OF 5



AET RAMP TOLL PLAZA PLAN



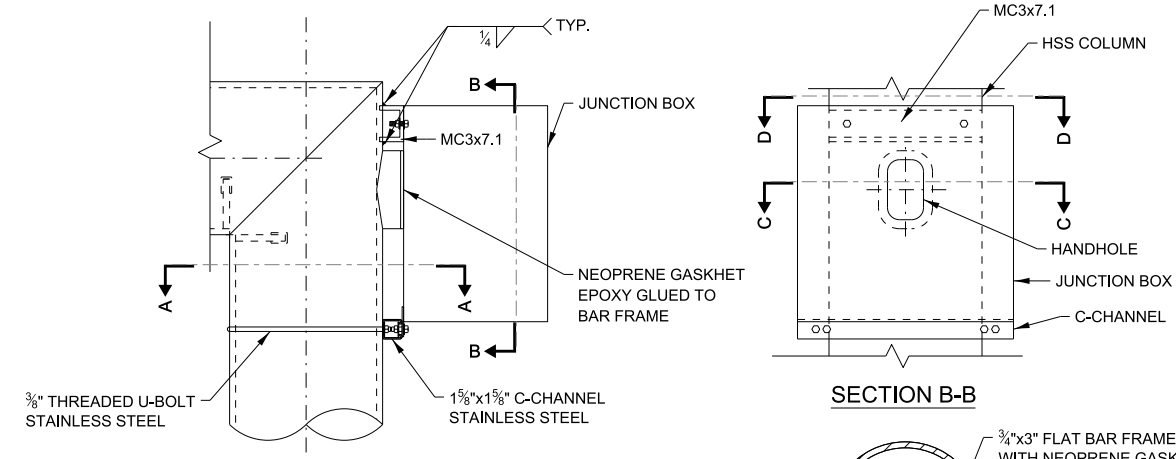
AET RAMP TOLL PLAZA ELEVATION

NOTE:

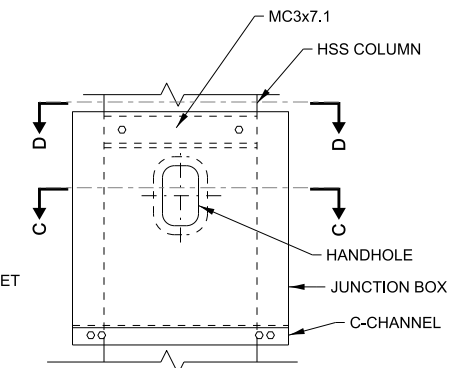
1. SEE CONTRACT PLANS FOR SIGN SIZE AND LOCATION.
2. PROVIDE MONOTUBE FRAME STATION IN CONTRACT PLANS.

SIGN TABLE

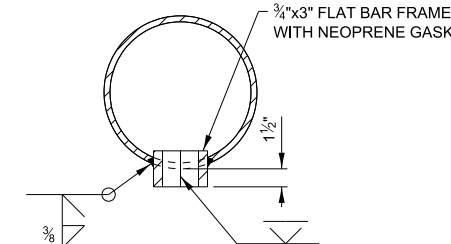
| SIGN | MAXIMUM AREA | MAXIMUM LENGTH |
|---------------------------|--------------|----------------|
| PLAZA ID SIGN | 20 S.F. | 8'-0" |
| I-PASS OR PAY ONLINE SIGN | 60 S.F. | 20'-0" |
| WRONG WAY SIGN | 16 S.F. | 8'-0" |



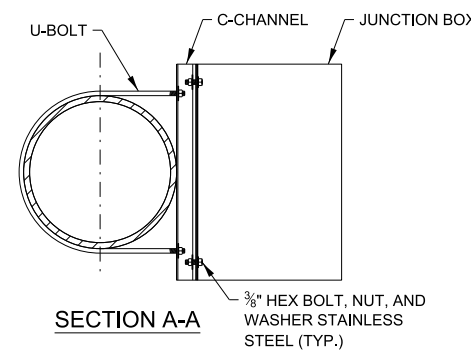
EPOXY GLUE SHALL BE FOR OUTDOOR USE WITH A TEMPERATURE RANGE OF -20°F TO 150°F AND SHALL BE SUITABLE FOR METAL AND PLASTIC WITH A SHEAR STRENGTH GREATER THAN 2300 PSI.



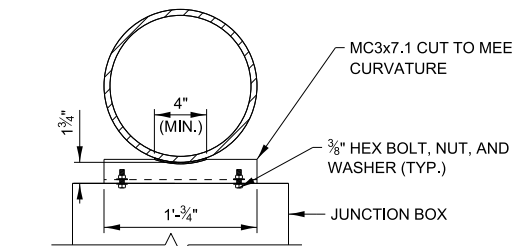
SECTION B-B



SECTION C-C



SECTION A-A



SECTION D-D

JUNCTION BOX CONNECTION DETAIL

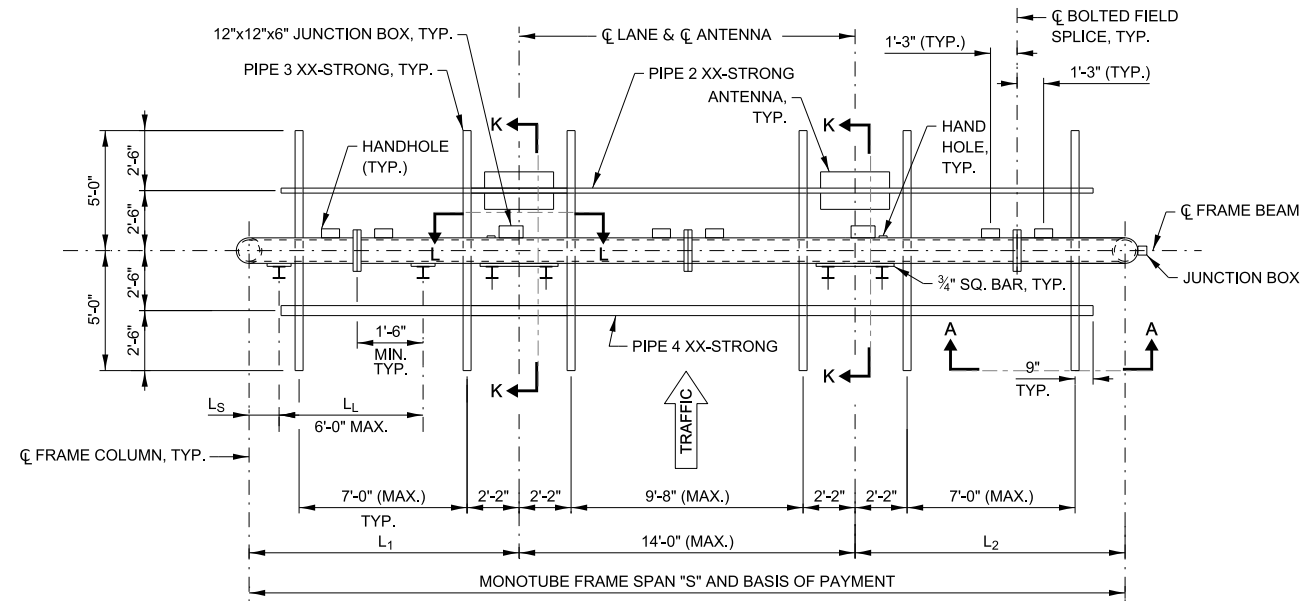


| REVISIONS | |
|------------|---|
| DATE | DESCRIPTION |
| 03-01-2026 | ADDED WRONG WAY SIGN IN TOLL PLAZA ELEVATION AND SIGN TABLE. ADDED JUNCTION BOX IN TOLL PLAZA PLAN. REVISED SECTION H-H. ADDED NOTE UNDER DETAIL M. |

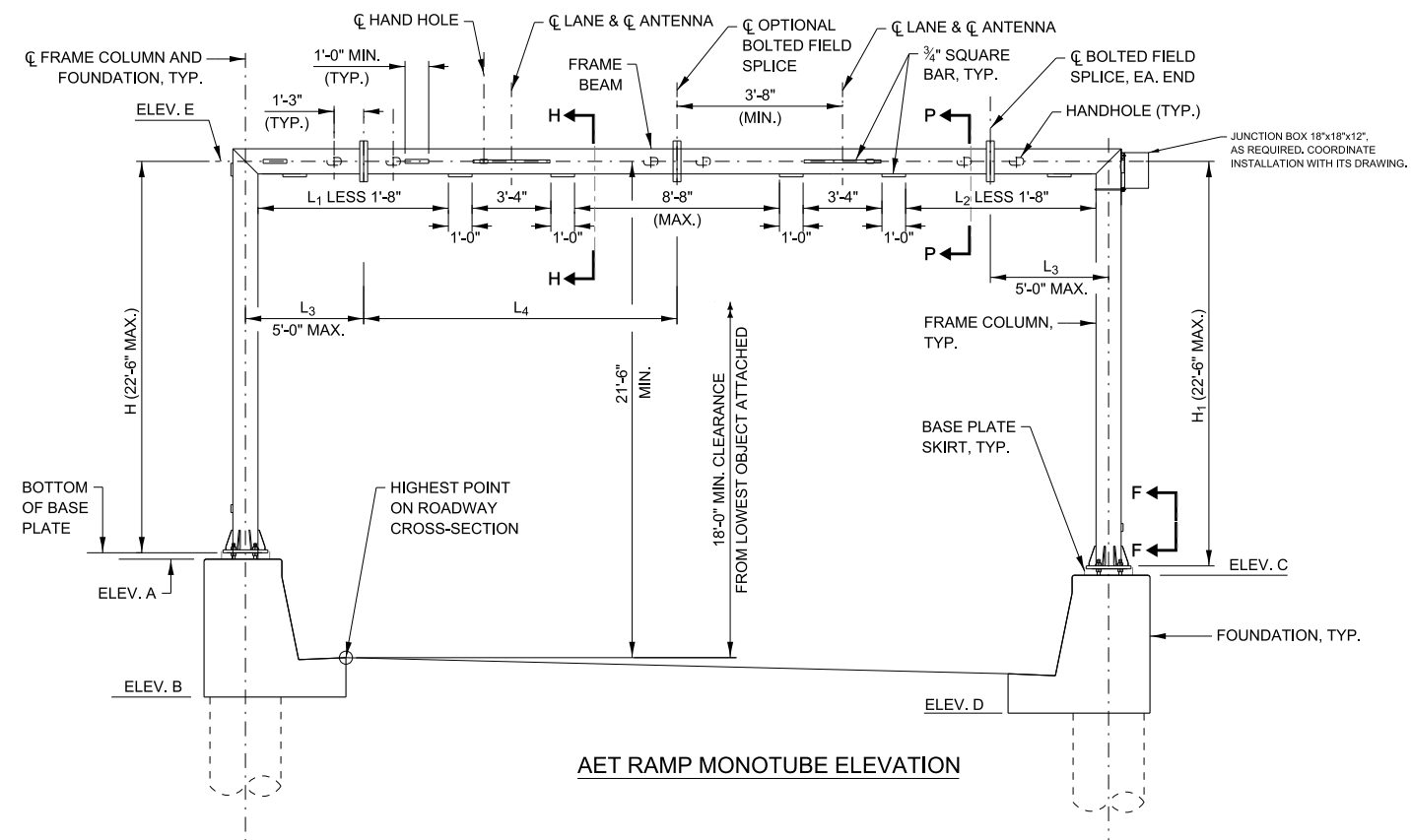
OVERHEAD SIGN STRUCTURE
AET RAMP MONOTUBE TYPE
(STEEL) BARRIER MOUNTED

| | | |
|---------------------|---------------------|------------------|
| VERSION: 2026-03 | STANDARD: F22-01 | SHEET: 1 OF 6 |
|---------------------|---------------------|------------------|

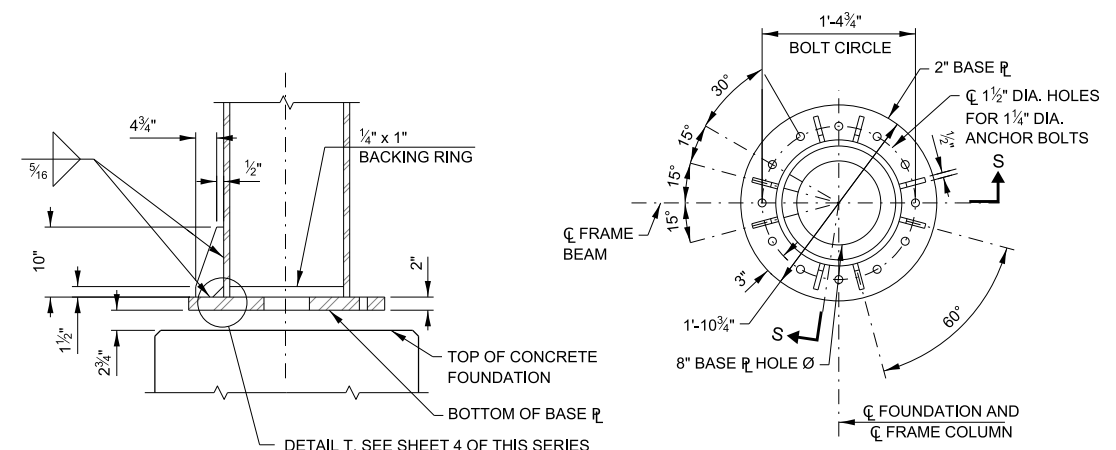
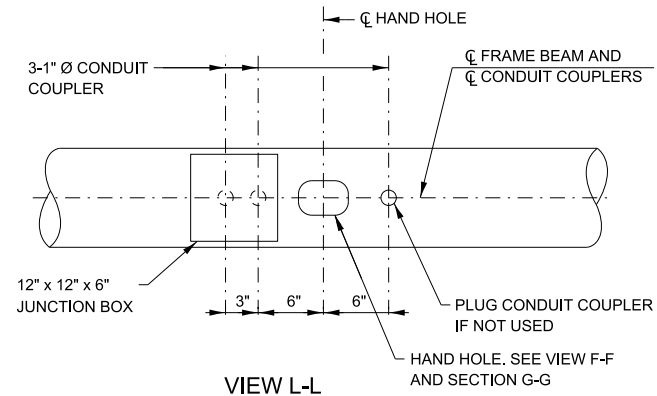
APPROVED BY: *Manar Nashif*
CHIEF ENGINEERING OFFICER
DATE: 03/01/2026



AET RAMP MONOTUBE PLAN



AET RAMP MONOTUBE ELEVATION



MONOTUBE FRAME TABLE

| SPAN "S" | FRAME COLUMN | FRAME BEAM | CAMBER |
|------------|-----------------|-----------------|--------|
| 36.5' MAX. | HSS 12.75x0.500 | HSS 12.75x0.500 | 0.75" |

NOTES:

1. WORK THIS SHEET WITH OVERHEAD SIGN STRUCTURE AET RAMP MONOTUBE TYPE (STEEL) BARRIER MOUNTED, SUMMARY AND TOTAL BILL OF MATERIAL SHEET.
2. FOUNDATION FOR MONOTUBE FRAME IS SHOWN ON SHEET 5 OF THIS SERIES.
3. SEE SHEET 4 OF THIS SERIES FOR SECTIONS G-G, H-H AND K-K, VIEWS A-A AND F-F, AND HAND HOLE DETAILS.
4. SEE SHEET 3 OF THIS SERIES FOR SECTION P-P.
5. PROVIDE CAMBER AT MIDSPAN OF STRUCTURE.
6. LOCATE OPTIONAL BOLTED FIELD SPLICE NEAR MIDSPAN.

APPROVED BY: *Manar Nashif*
 CHIEF ENGINEERING OFFICER
 DATE: 03/01/2026



OVERHEAD SIGN STRUCTURE
 AET RAMP MONOTUBE TYPE
 (STEEL) BARRIER MOUNTED

GENERAL NOTES:

1. 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.
2. REINFORCEMENT BARS DESIGNATED "(E)" SHALL BE EPOXY COATED.

STRUCTURAL STEEL:

1. MATERIAL FOR THE HSS MONOTUBE FRAME SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C. BASE PLATE AND STIFFENER PLATE SHALL CONFORM TO ASTM A709 GRADE 50. OTHER STRUCTURAL STEEL SHAPES AND PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36, UNLESS NOTED OTHERWISE.
2. PIPES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A53 GRADE B.
3. ANCHOR BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F1554 (AASHTO M314) GRADE 55, WITH A MINIMUM TENSILE STRENGTH OF 75,000 PSI. INSTALLATION AND INSPECTION OF ANCHOR BOLTS SHALL COMPLY WITH ILLINOIS TOLLWAY SPECIAL PROVISION "INTELLIGENT TRANSPORTATION SYSTEMS GANTRY FRAME "STEEL". ANCHORS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 (AASHTO M232). SEE SHEET 6 OF THIS SERIES FOR GALVANIZED LENGTH.
4. U-BOLTS SHALL BE STAINLESS STEEL AND SHALL CONFORM TO ASTM 193, CLASS I, GRADE B8 (AISI TYPE 304). WASHERS FOR U-BOLTS SHALL CONFORM TO ASTM A240, TYPE 302. NUTS FOR U-BOLTS SHALL CONFORM TO ASTM A194 (AASHTO M292), GRADE 8F (AISI TYPE 303).
5. BOLTS (EXCLUDING ANCHOR BOLTS AND U-BOLTS) SHALL BE HIGH STRENGTH STEEL BOLTS.
6. HSS FOR MONOTUBE FRAME, PIPES, STRUCTURAL STEEL SHAPES AND PLATES SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123 AFTER FABRICATION.
7. THE MONOTUBE FRAME BEAM, COLUMNS, BASE PLATE MATERIAL, AND SPLICES ARE CONSIDERED TENSION MEMBERS AND SHALL CONFORM TO THE IMPACT TESTING REQUIREMENT, ZONE 2.

DESIGN LOADING:

WIND LOAD CRITERIA
 BASIC WIND SPEED = 120 M.P.H.
 $G = 1.14$
 $I_F = 1.00$
 $K_z = 1.00$
 SIGN PANEL 50 P.S.F.
 COLUMN/BEAM 35 P.S.F.

SIGN DEAD LOAD = 3 P.S.F.

ICE = 3 P.S.F. (APPLIED WITH A FACTOR OF 1.0 FOR STRENGTH I ONLY)

EQUIPMENT LOADS:

ANTENNA W/MOUNTING HARDWARE 24 LB.

DESIGN STRESSES FOR REINFORCED CONCRETE:

f_c = COMPRESSIVE STRENGTH OF CONCRETE (CLASS SI) = 3,500 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.

FOUNDATION:

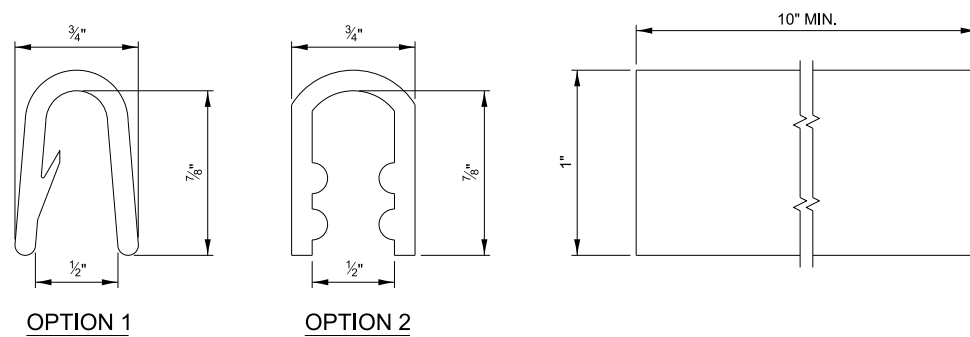
MINIMUM UNCONFINED COMPRESSIVE STRENGTH, Q_u FOR ALL LAYERS OF COHESIVE SOILS (CLAYS) SHALL BE 1.25 TON/SQ.FT. AT MONOTUBE FRAMES.

DESIGN SPECIFICATIONS:

1. ILLINOIS TOLLWAY STRUCTURE DESIGN MANUAL, LATEST EDITION.
2. AASHTO LRFD SPECIFICATION FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 1ST EDITION.
3. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION, 2020.
4. ILLINOIS DEPARTMENT OF TRANSPORTATION BRIDGE MANUAL, LATEST EDITION.

CONSTRUCTION SPECIFICATIONS:

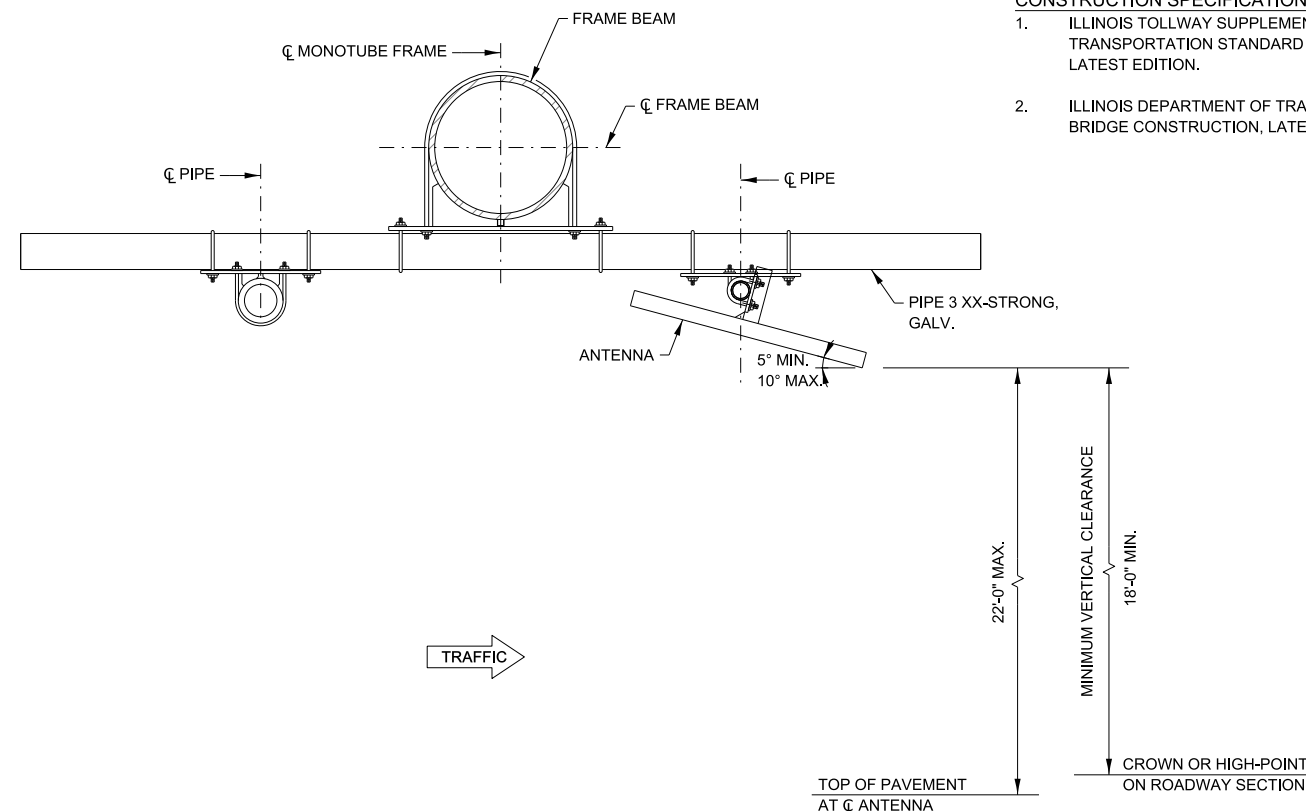
1. ILLINOIS TOLLWAY SUPPLEMENTAL SPECIFICATIONS TO THE ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.
2. ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.



PLASTIC TRIM DETAIL

NOTES:

1. ALL SHARP EDGES OR DRIPS OF ZINC SHALL BE REMOVED FROM ALL STIFFENER PLATES PRIOR TO EPOXY GLUING THE TRIM. THE TRIM SHALL BE EPOXY GLUED TO BOTH SIDES OF THE PLATE. THE COST OF THE TRIM AND EPOXY GLUE SHALL BE INCLUDED IN THE COST OF "OVERHEAD SIGN STRUCTURE, AET RAMP ENTRANCE MONOTUBE TYPE (STEEL)"
2. THE TRIM SHALL BE HEAVY DUTY PLASTIC TRIM (OPTION 1 OR OPTION 2 OR EQUIVALENT) FOR OUTDOOR USE FOR APPLICATION WITH A TEMPERATURE RANGE OF -20°F TO 150°F. THE TRIM SHALL BE CHEMICAL RESISTANT, A HARD RATING AND SHALL MEET FMVSS-302 FOR FEDERAL MOTOR VEHICLE SAFETY STANDARDS FOR FLAMMABILITY.
3. EPOXY GLUE SHALL BE FOR OUTDOOR USE WITH A TEMPERATURE RANGE OF -20°F TO 150°F AND SHALL BE SUITABLE FOR METAL AND PLASTIC WITH A SHEAR STRENGTH GREATER THAN 2300 PSI.



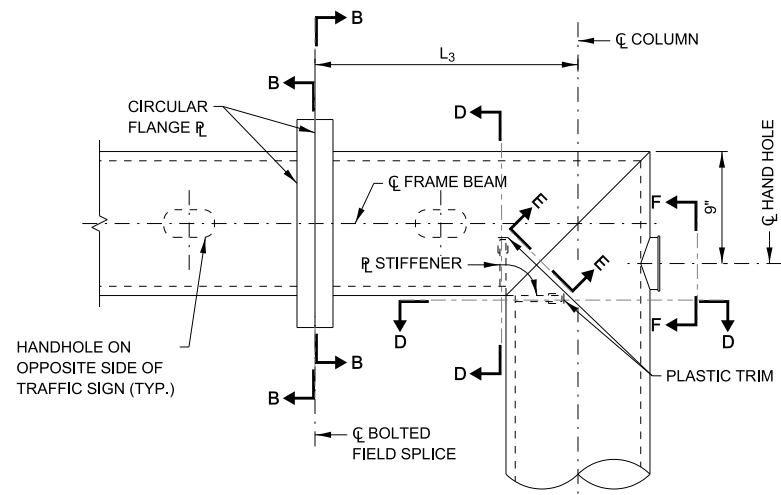
SECTION P-P

APPROVED BY: *Manan Nashif* DATE: 03/01/2026
 CHIEF ENGINEERING OFFICER

Illinois Tollway

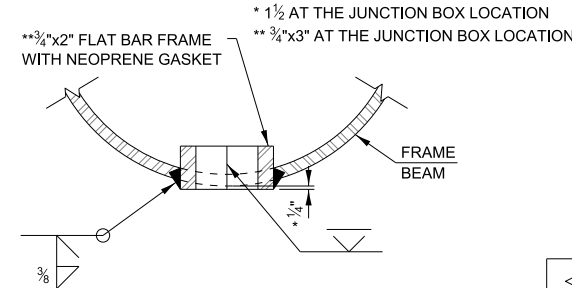
**OVERHEAD SIGN STRUCTURE
 AET RAMP MONOTUBE TYPE
 (STEEL) BARRIER MOUNTED**

VERSION: 2026-03 STANDARD: F22-01 SHEET: 3 OF 6

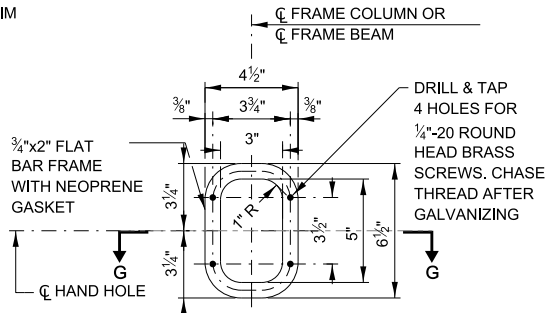


SECTION A-A

(SEE SHEETS 2 AND 3 OF THIS SERIES FOR LOCATION)
(PIPES NOT SHOWN FOR CLARITY)

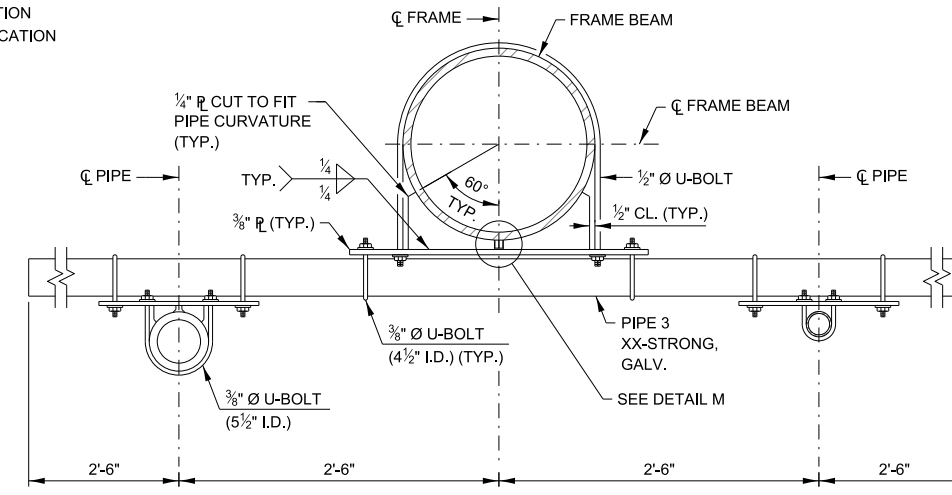


SECTION G-G

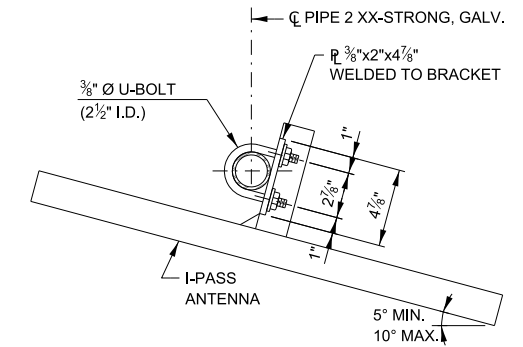


VIEW F-F

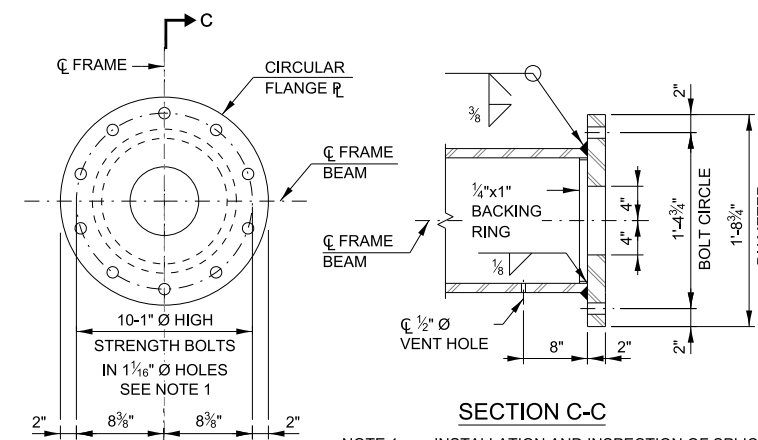
PROVIDE 4 1/2"x6 1/2" #10 GA. COVER. ROUND CORNERS TO 1 1/4" RADIUS. PROVIDE FOUR 3/16" Ø HOLES.



SECTION K-K



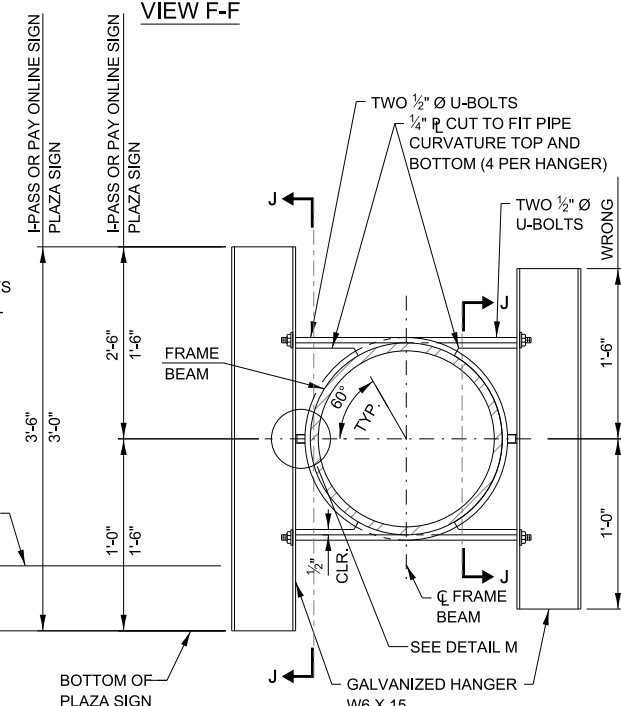
ANTENNA HANGER



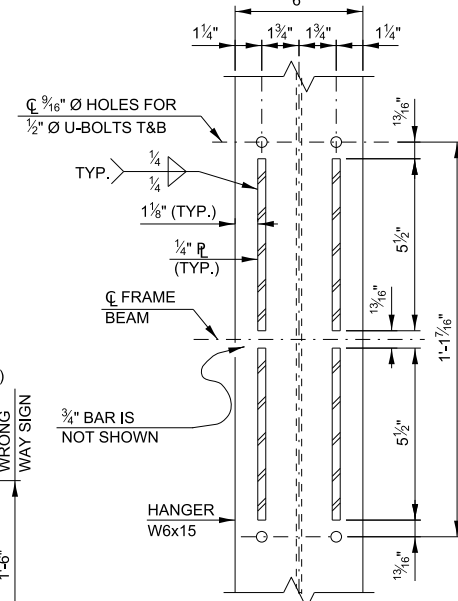
SECTION B-B

SECTION C-C

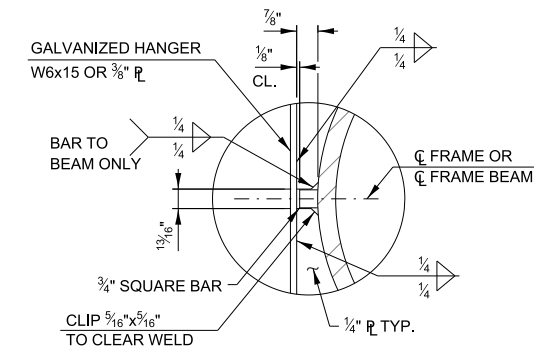
NOTE 1: INSTALLATION AND INSPECTION OF SPLICE BOLTS SHALL COMPLY WITH ILLINOIS TOLLWAY SPECIAL PROVISION "INTELLIGENT TRANSPORTATION SYSTEMS GANTRY FRAME (STEEL)".



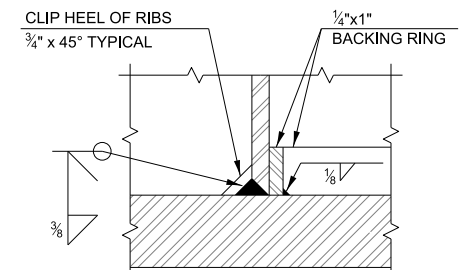
SECTION H-H (SIGN HANGER)



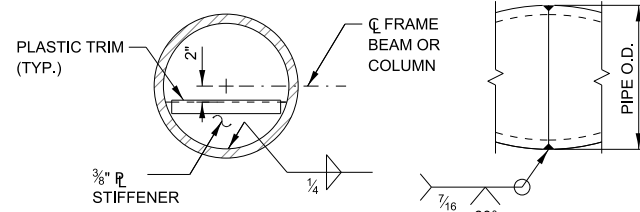
SECTION J-J



DETAIL M
(U-BOLT NOT SHOWN FOR CLARITY)



DETAIL T

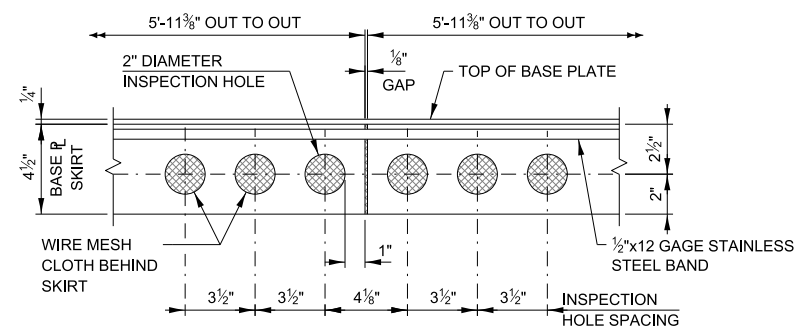


SECTION D-D

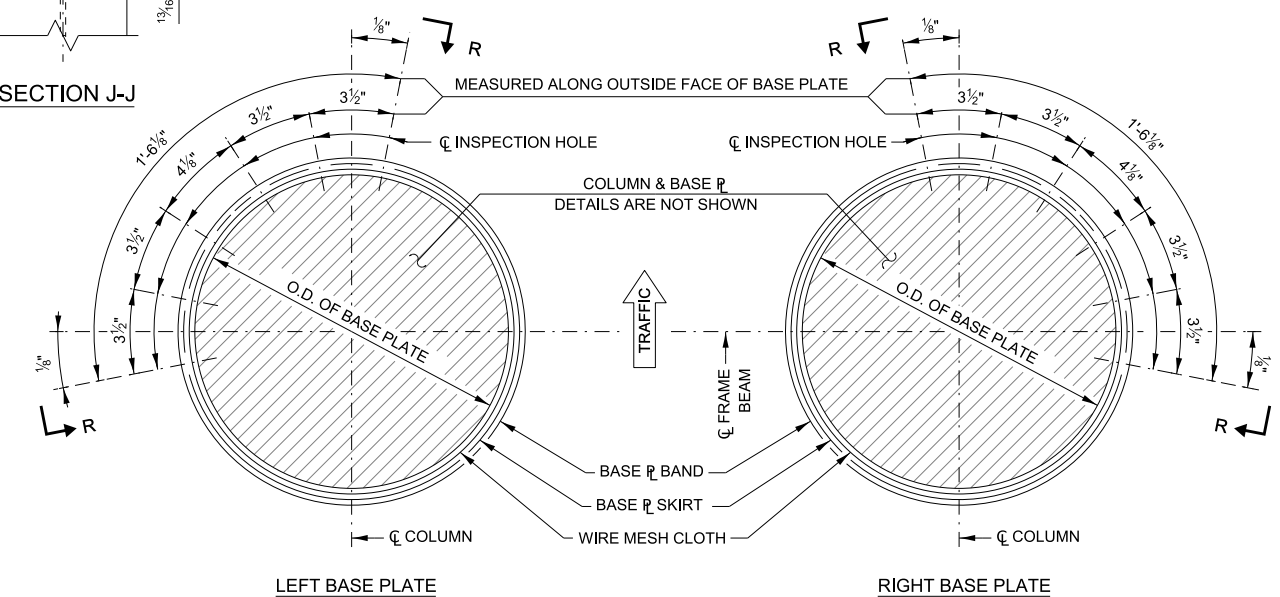
SECTION E-E

SEE GENERAL NOTE NO. 1 ON SHEET 4 OF THIS SERIES
STAINLESS STEEL BAND AROUND BASE PLATE
12 GA. STAINLESS STEEL SKIRT PLATE IN FRONT OF STANDARD GRADE WIRE MESH CLOTH, ASTM E437 TYPE 304, 4x4 MESH, 0.047 INCH WIRE DIAMETER. SEE COLUMN BASE PLATE PLAN FOR ADDITIONAL DETAILS

COLUMN BASE



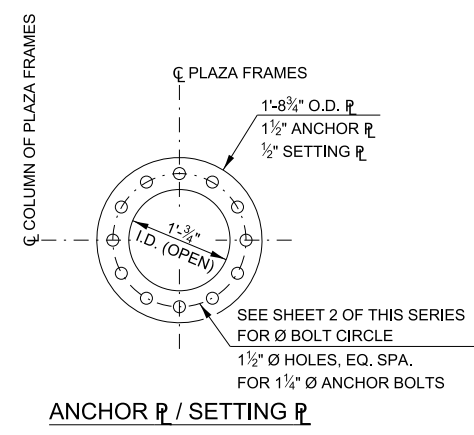
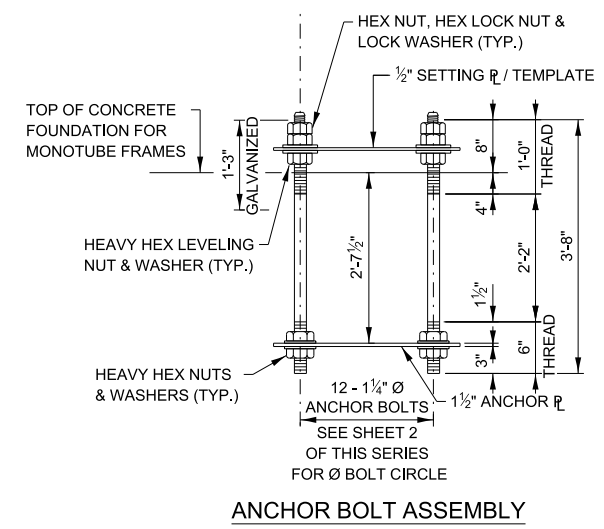
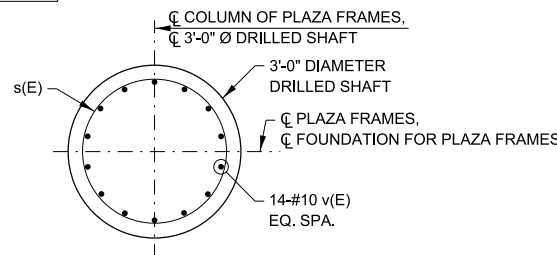
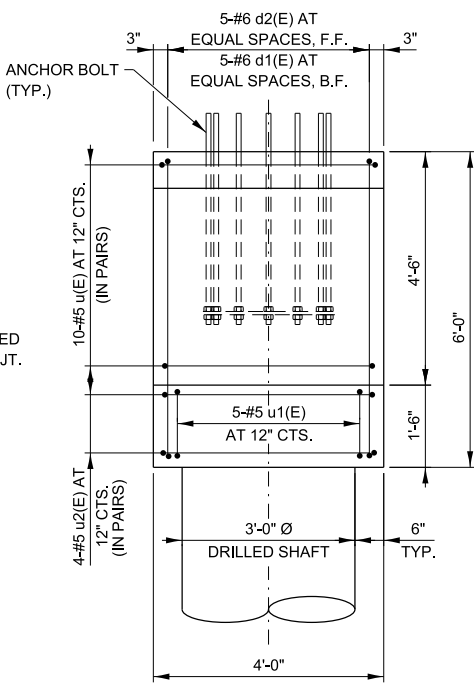
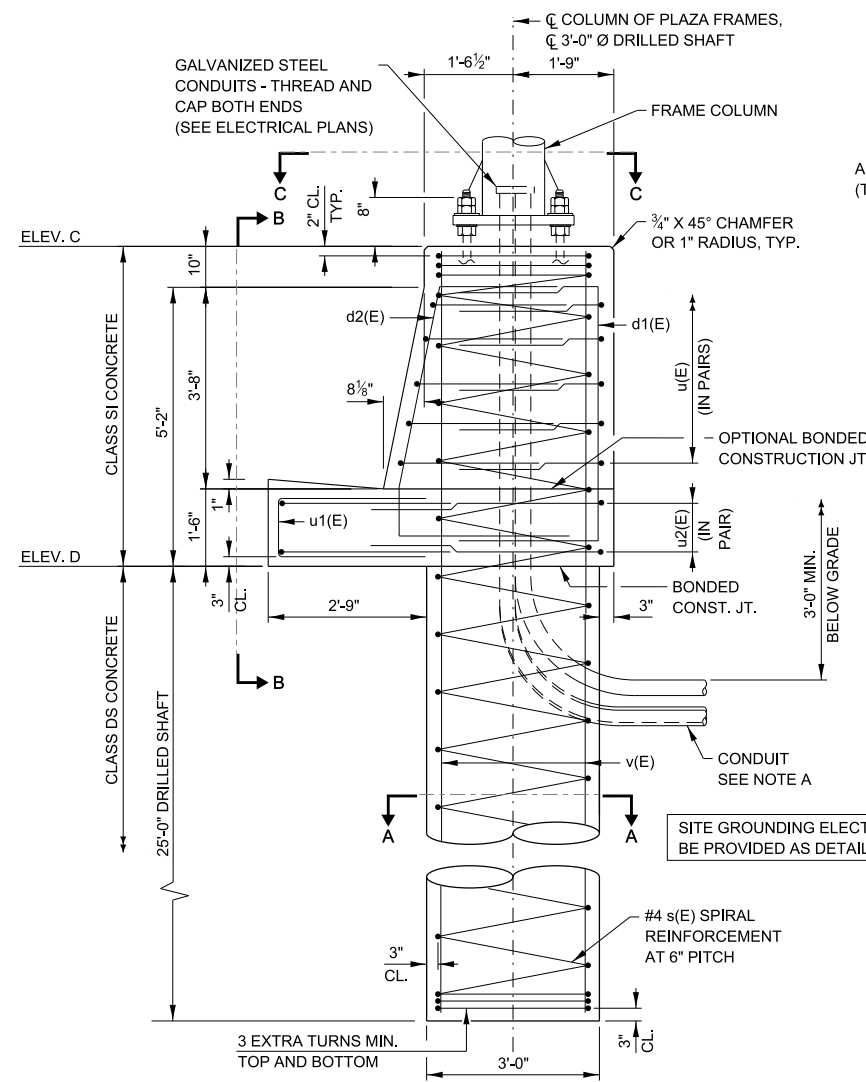
VIEW R-R (BASE PLATE SKIRT)



COLUMN BASE PLATE PLAN

NOTE: SEE SHEET 2 OF THIS SERIES FOR BASE PLATE OUTSIDE DIAMETER.

APPROVED BY: *Manar Nashif*
CHIEF ENGINEERING OFFICER
DATE: 03/01/2026



REINFORCEMENT BAR SCHEDULE
FOR ONE FOUNDATION

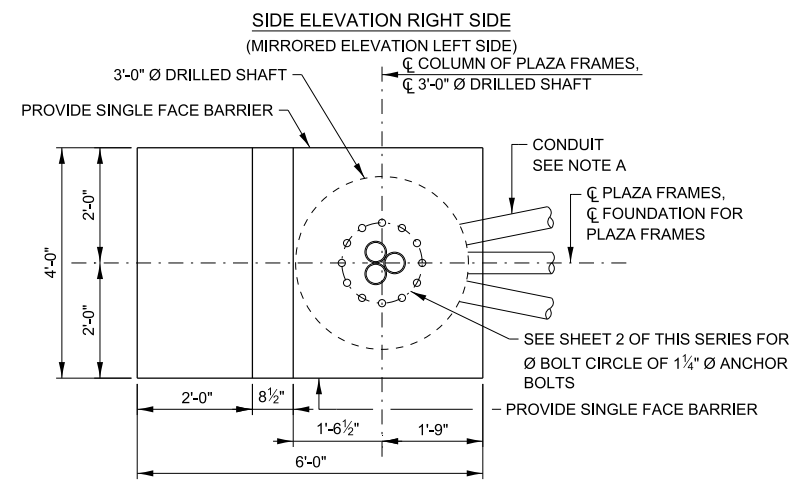
| BAR | NO. | SIZE | LENGTH | SHAPE |
|-------|-----|------|--------|-------|
| d1(E) | 5 | #6 | 11'-1" | □ |
| d2(E) | 5 | #6 | 11'-2" | □ |
| s(E) | 1 | #4 | 30'-7" | WWW |
| v(E) | 14 | #10 | 30'-7" | — |
| u(E) | 10 | #5 | 9'-2" | □ |
| u1(E) | 5 | #5 | 7'-7" | □ |
| u2(E) | 4 | #5 | 11'-4" | □ |

BARS d1(E), u(E), u1(E) AND u2(E)

| BAR | "L" | "M" |
|-------|--------|-------|
| d1(E) | 2'-9" | 5'-7" |
| u(E) | 2'-9" | 3'-8" |
| u1(E) | 3'-3" | 1'-1" |
| u2(E) | 3'-10" | 3'-8" |

ESTIMATED QUANTITY

| ITEM | UNIT | SINGLE FACE BARRIER FDN. |
|----------------------------------|---------|--------------------------|
| CLASS SI CONCRETE | CU. YD. | 3.8 |
| CLASS DS CONCRETE | CU. YD. | 6.6 |
| REINFORCEMENT BARS, EPOXY COATED | POUND | 2,540 |
| PROTECTIVE COAT | SQ. YD. | 4.4 |



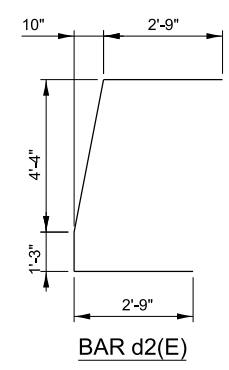
SINGLE FACE BARRIER FOUNDATION FOR PLAZA FRAMES

NOTE A:

- COORDINATE CONDUIT SIZE, LOCATION AND QUANTITY WITH ELECTRICAL PLANS. PROVIDE CONDUIT COUPLERS AS REQUIRED.
- CONDUITS SHALL BE PLACED TO MISS REINFORCEMENT. CUTTING OF REINFORCEMENT SHALL NOT BE ALLOWED.
- COST INCLUDED IN FOUNDATION FOR OVERHEAD SIGN STRUCTURE, RAMP MONOTUBE TYPE.
- PROTECTIVE COAT SHALL BE APPLIED TO THE TRAFFIC AND TOP FACES OF BARRIER AND TOP OF GUTTER.

FOUNDATIONS:
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 SHALL 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.

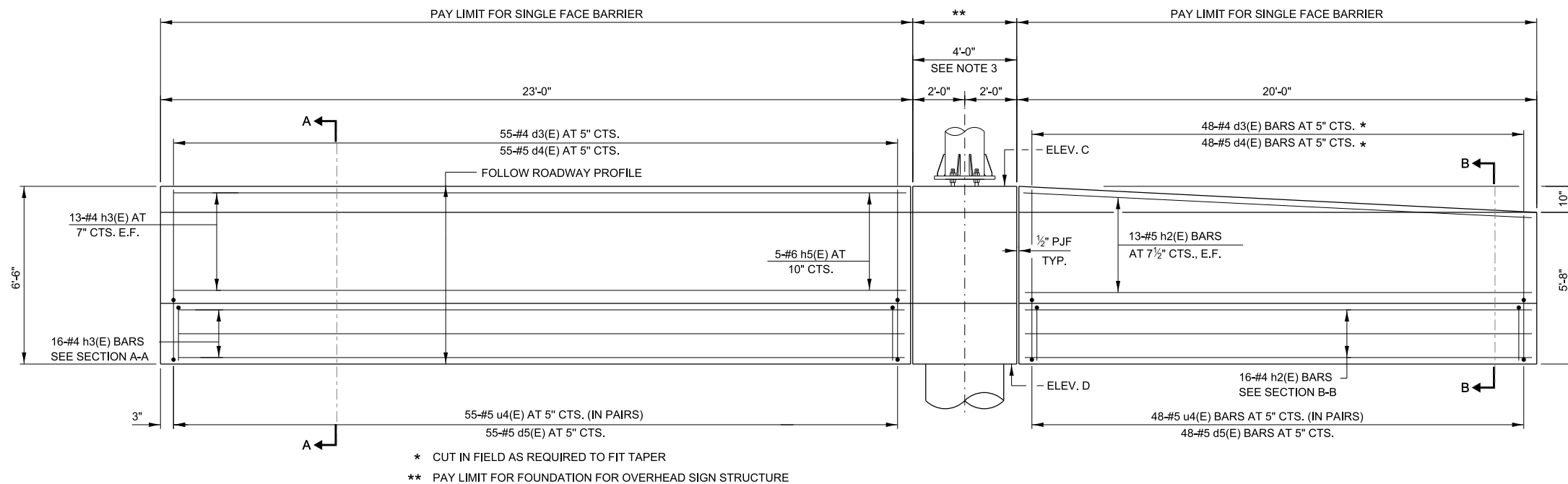
LEGEND:
F.F. - FRONT FACE
B.F. - BACK FACE
CTS. - CENTERS



APPROVED BY: *Manar Nashif*
CHIEF ENGINEERING OFFICER
DATE: 03/01/2026

**OVERHEAD SIGN STRUCTURE
AET RAMP MONOTUBE TYPE
(STEEL) BARRIER MOUNTED**

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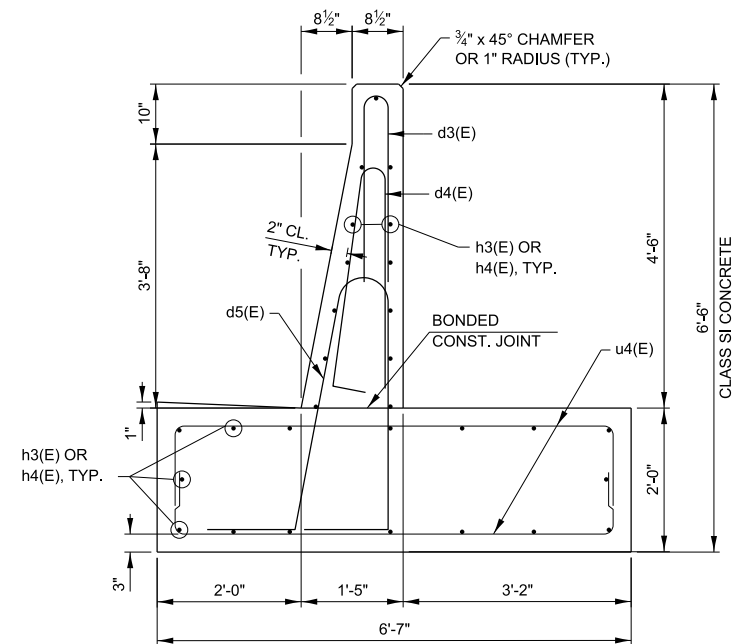


BAR LIST - ONE BARRIER

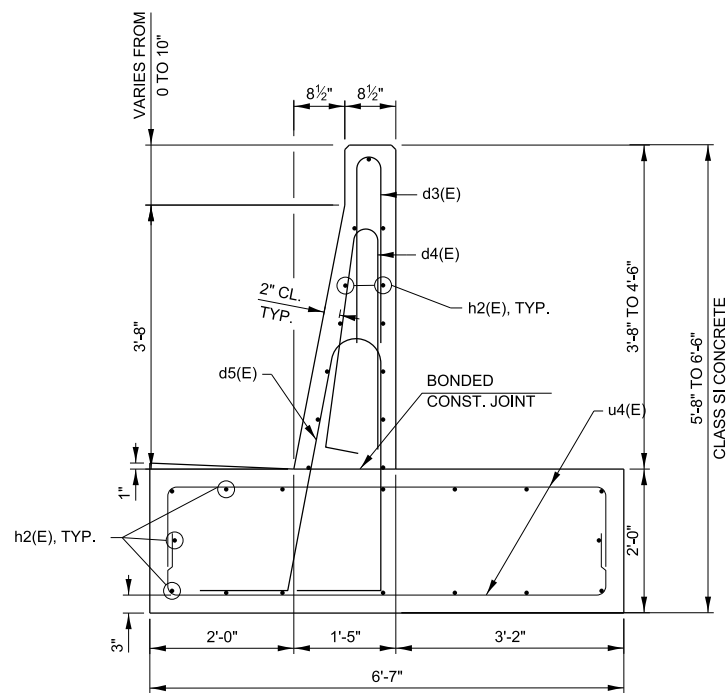
| BAR | NO. | SIZE | LENGTH | SHAPE |
|-------|-----|------|--------|-------|
| d3(E) | 103 | #4 | 5'-5" | |
| d4(E) | 103 | #5 | 7'-0" | |
| d5(E) | 103 | #5 | 9'-10" | |
| h2(E) | 29 | #4 | 19'-6" | |
| h3(E) | 29 | #4 | 22'-6" | |
| u4(E) | 206 | #5 | 9'-3" | |

* CUT IN FIELD AS REQUIRED TO FIT TAPER
 ** PAY LIMIT FOR FOUNDATION FOR OVERHEAD SIGN STRUCTURE

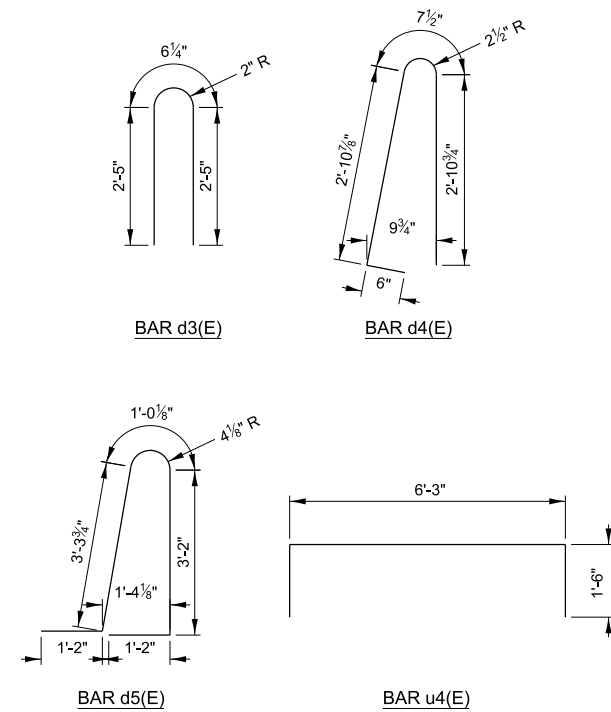
SINGLE FACE BARRIER ELEVATION
 INSIDE FACE OF RIGHT BARRIER IS SHOWN
 (MIRROR ELEVATION OF LEFT BARRIER)



SECTION A-A



SECTION B-B



ESTIMATED QUANTITY
 (FOR ONE SINGLE FACE BARRIER)

| ITEM | UNIT | TOTAL |
|----------------------------------|---------|-------|
| CONCRETE STRUCTURES | CU. YD. | 27.9 |
| REINFORCEMENT BARS, EPOXY COATED | POUND | 2,820 |
| PROTECTIVE COAT | SQ. YD. | 33.9 |

NOTES:

- PROTECTIVE COAT SHALL BE APPLIED TO THE TRAFFIC AND TOP FACES OF THE BARRIER, GUTTER AND TO THE ENTRANCE SIDE FACE (AT THE BEGINNING OF THE RAMP PLAZA PAVEMENT) FOR THE FULL HEIGHT OF THE BARRIER.
- ELECTRICAL JUNCTION BOXES SHALL BE EXTERIOR MOUNTED ON THE BACK FACE OF BARRIER.
- FOR SINGLE FACE BARRIER FOUNDATION DETAILS FOR MONOTUBE FRAMES, SEE SHEET 5 OF THIS SERIES.
- WORK THIS SHEET WITH, OVERHEAD SIGN STRUCTURE AET RAMP MONOTUBE TYPE (STEEL) BARRIER MOUNTED SUMMARY AND TOTAL BILL OF MATERIAL SHEET.

APPROVED BY: *Manar Nashif* DATE: 03/01/2026
 CHIEF ENGINEERING OFFICER

**OVERHEAD SIGN STRUCTURE
 AET RAMP MONOTUBE TYPE
 (STEEL) BARRIER MOUNTED**

VERSION: 2026-03 STANDARD: F22-01 SHEET: 6 OF 6