

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY

July 17, 2020

DESIGN BULLETIN No. 20-03

SUBJECT: Noise Abatement Wall Updates

The following revisions and additions to the Illinois Tollway Standard Drawings Sections G and F19, Base Sheets M-BRG-529, M-BRG-531, M-BRG-532 and Structure Design Manual Figure 15.5.1.6 and Article 22.6.

All Standard Drawings in Section G have been updated to clarify no chamfer at the horizontal joint between panels. A tongue and groove detail has been added as an option in lieu of the caulk joint with shim as shown in the Horizontal Joint Detail. Notes have also been added which allow the Contractor to increase panel heights for certain panels, up to a maximum height. Minimum angle between panels and posts has been increased to 84 degrees for all Standard Drawings. Clarification has been added to Standard Drawing G12 clarifying the maximum limits of the bottom of panel above and below the barrier and Standard Drawings G12 and G13 have updated callouts for contraction joints to interior joints to be consistent with the Illinois Tollway Structure Design Manual and changed the 4'-10" spacing requirements of posts to full height joints to apply only to bridges and 1'-10" post to full height joints on approach slabs and moment slabs. Offsets between to back of the barrier and face of the noise abatement wall have been noted as minimum dimensions as well. Details for filter fabric at the unbalanced soil conditions, shims shown as 6" minimum, clarification to the bearing of angle shown in the 90 Degree Turn Detail and removing the redundant panel width shown in Section B-B have also been included in Standard Drawings G15 and G16. Standard Drawing G15 also shows the balanced soil condition can accommodate up to 9" of unbalanced soil load and additional updates have been made in G16 including the post callout as shown in the Sign Panel Mount Post Extension Detail and revising the spacing of end bars shown in Section A-A to 14".

Base Plate Details in F19 have been updated to include base plate detail to fit all standard NAW post flanges.

Minor updates have been made to Base Sheets M-BRG-529, M-BRG-531 and M-BRG-532. Revisions include removing the note for contraction joints and changing callouts to interior joint. Added note to designer to include the acoustical profile for information only. Updated Illinois Tollway references and Construction Specifications to 2020 and added notes clarifying systemwide structure mounted details may be used with CTS bump-out details and adding note allowing panel heights to increase for certain panels, up to a maximum height. Structure Mounted Base Sheets M-BRG-529 and M-BRG-530 have notes to designer requiring expansion panels, fixed and expansion post to be identified in the schedules and dimensions shown for the NAW post connection on M-BRG-531 have been updated as well. New base sheet M-BRG-532 Sheet 4 of 4 has been added for ground mounted Noise Abatement Walls with unbalanced soil loads to tabulate finished grade on each face and include any required drainage details.

Figure 15.5.1.6 has been revised to allow the noise abatement wall post to full height joint spacing to be reduced to 1'-10" on approach slabs and moments slabs but remain 4'-10" on bridges. Callout for Contract Joint has been revised to Interior Joint and note referring to contraction joints on moment slabs has been removed. Article 22.6 of the Illinois Tollway Structure Design Manual has been revised to indicate sawed controlled joints are only allowed on 44" parapets when slip-formed. Details for 72" barrier shall follow Figure 15.5.1.8 and Figure 15.5.1.4 for the 44" parapet.

The affected Standards and Base Sheets are per below:

Standard Drawings:

Revised Drawings: G12, G13, G14, G15, G16 and F19.

Base Sheets:

Revised Drawings: M-BRG-529, Sheets 1-3, M-BRG-531, Sheets 1-4 and M-BRG-532, Sheets 1-3.

New Drawing: M-BRG-532, Sheet 4 of 4.

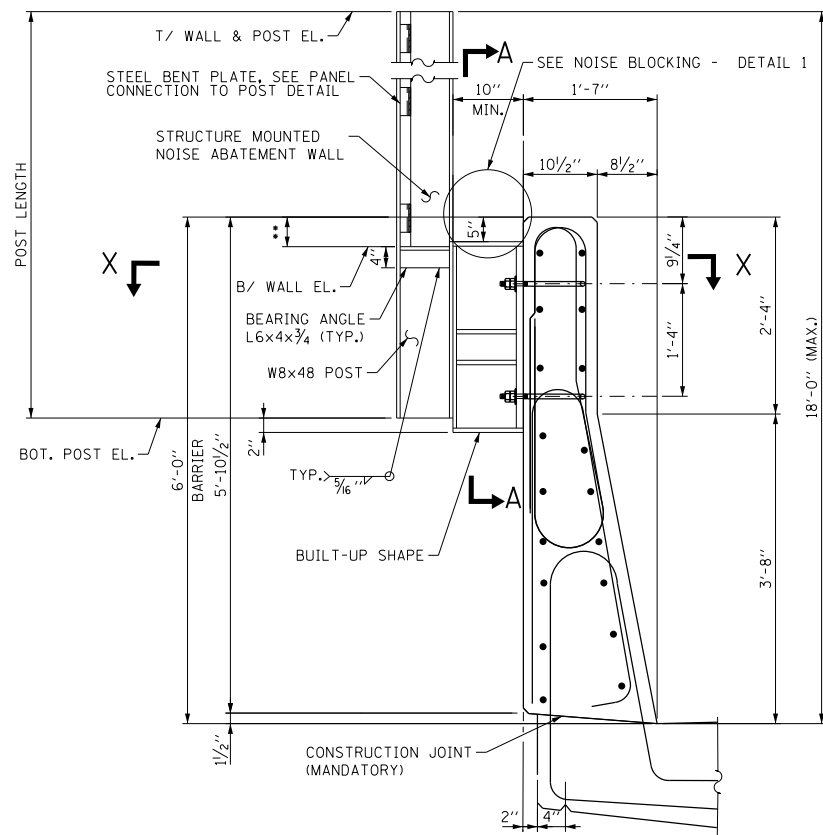
DSEs are hereby directed to incorporate this design bulletin into all contracts currently under design, currently being advertised and all future contracts.



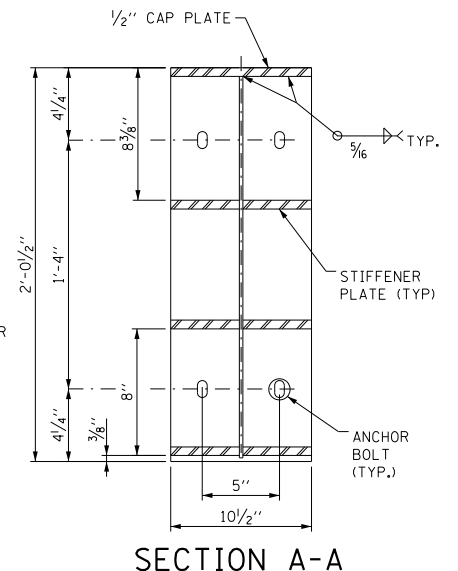
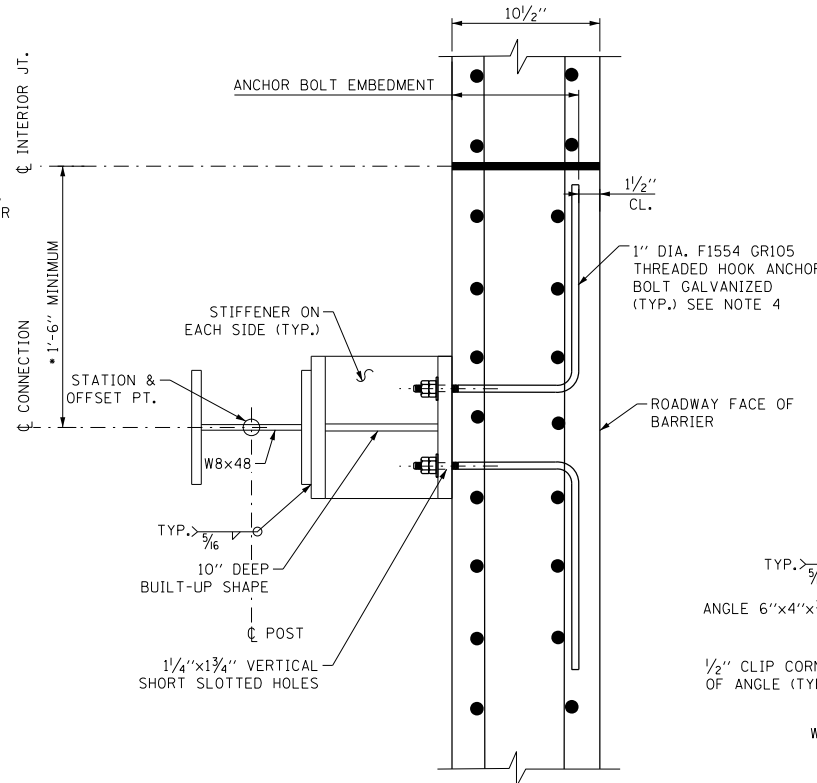
Paul Kovacs (Jul 17, 2020 11:22 CDT)

Paul D. Kovacs, P.E.
Chief Engineering Officer

Date

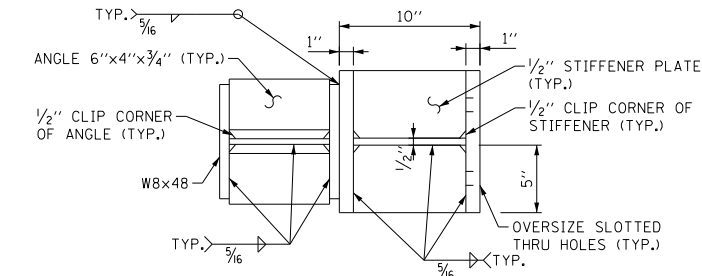


** BEARING SEAT IS 6" MAX. BELOW TOP OF BARRIER OR 3" MAX. ABOVE TOP OF BARRIER.



SECTION X-X

SECTION A-A

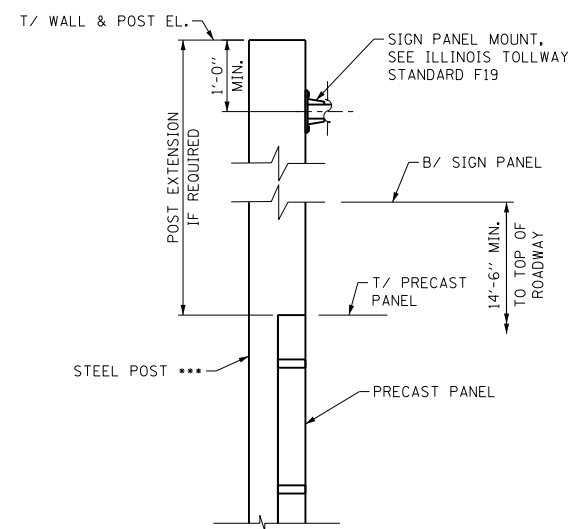


BUILT UP SHAPE

ILLINOIS TOLLWAY CONSTANT SLOPE BARRIER - DETAILS

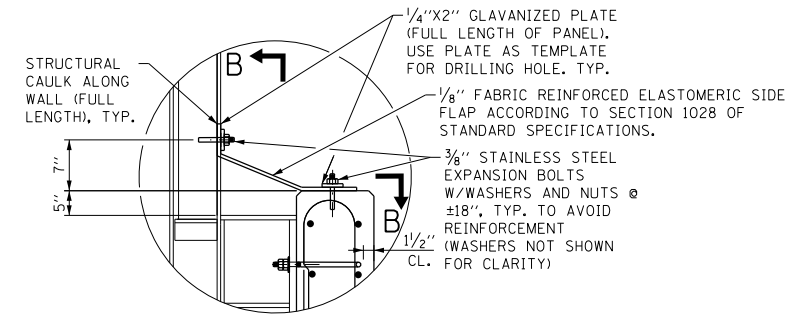
- NOTES:
1. STEEL POST MAXIMUM SPACING IS 11'-8".
 2. SLIPFORMING OF THE BARRIER IS NOT PERMITTED.
 3. REFER TO ILLINOIS TOLLWAY STRUCTURE DESIGN MANUAL FOR SHOWN DECK REINFORCEMENT, JOINT DETAILS AND OTHER MISCELLANEOUS DETAILS NOT DETAILED IN THIS STANDARD.
 4. ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE SUPPLIED BY THE FABRICATOR OF AN ADVANCE PROCUREMENT CONTRACT FOR THE STRUCTURAL STEEL POSTS. BENT ANCHOR BOLTS SHALL BE INSTALLED WITH ILLINOIS TOLLWAY CONSTANT SLOPE BARRIER. SEE SPECIAL PROVISION FOR FURNISHING NOISE ABATEMENT WALL STRUCTURAL STEEL.
 5. MINIMUM DISTANCE BETWEEN CENTERLINE OF POST TO CENTERLINE OF LIGHT POLE IS 4'-7" DESIRABLE AND 3'-7" MINIMUM.

• USE 4'-10" MINIMUM FROM FULL HEIGHT JOINTS ON BRIDGES, OTHERWISE USE 1'-10" MINIMUM FOR END POSTS AND POSTS LOCATED ON APPROACH SLABS OR MOMENT SLABS.

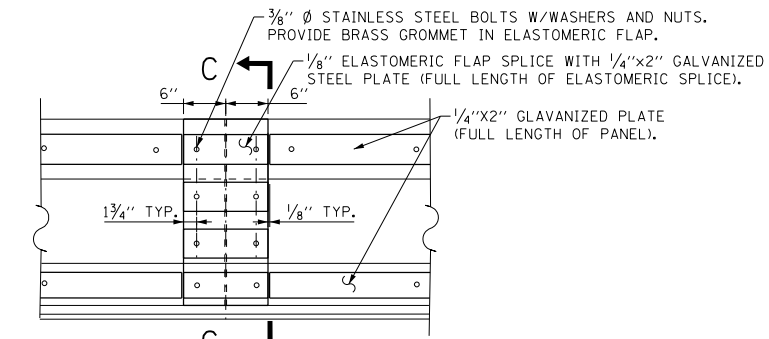


SIGN PANEL MOUNT POST EXTENSION DETAIL

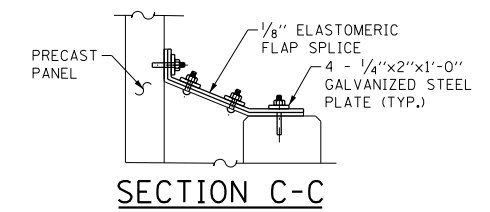
***STEEL POSTS HAVE BEEN DESIGNED TO ACCOMMODATE A 17'-3 1/2" POST WITH MAX 32 SF SIGN AREA IN ACCORDANCE WITH ILLINOIS TOLLWAY STANDARD F19



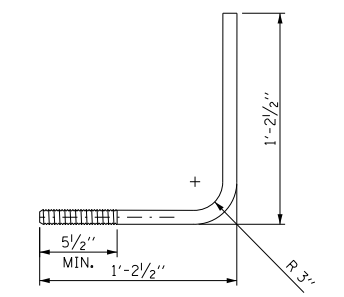
DETAIL 1 NOISE BLOCKING ASSEMBLY



VIEW B-B AT ASSEMBLY SPLICE



SECTION C-C



BENT ANCHOR BOLT

GENERAL NOTES

1. ALL EXPOSED CONCRETE EDGES SHALL HAVE A 3/4" X 45° CHAMFER, EXCEPT WHERE SHOWN OTHERWISE. NO CHAMFER WILL BE ALLOWED AT HORIZONTAL JOINTS BETWEEN PANELS.
2. REINFORCEMENT BARS, INCLUDING EPOXY-COATED REINFORCEMENT BARS, SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-31 (ASTM A706), GRADE 60, DEFORMED BARS.
3. REINFORCEMENT BARS DESIGNATED "E" SHALL BE EPOXY COATED.
4. REINFORCEMENT BAR BENDING DETAILS SHALL BE IN ACCORDANCE WITH THE LATEST "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", ACI 315.
5. REINFORCEMENT BAR BENDING DIMENSIONS ARE OUT TO OUT.
6. CONSTRUCTION CONTRACTOR SHALL NOT SCALE DIMENSIONS FROM THE CONTRACT PLANS FOR CONSTRUCTION PURPOSES. SCALES SHOWN ARE FOR INFORMATION ONLY.

DESIGN SPECIFICATIONS

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION DATED SEPTEMBER 2017.

DESIGN STRESSES

f'c = 4,000 PSI (CLASS BS), (BARRIERS)
 f'c = 5,000 PSI AT 28 DAYS (CLASS PC) (PRECAST CONCRETE NAW PANELS)
 fy = 60,000 PSI (REINFORCEMENT)

GRADE 50, Fy = 50,000 PSI, ASTM A709 (AASHTO M270) - STRUCTURAL STEEL POST
 GRADE 36, Fy = 36,000 PSI, ASTM A709 (AASHTO M270) ALL OTHER STEEL (UNLESS NOTED OTHERWISE)
 ALL STEEL SHALL BE HOT-DIP GALVANIZED

DESIGN LOADING

CONCRETE = 150 PCF
 STEEL = 490 PCF
 WIND LOADS = 50PSF (STR III)
 = 15PSF (SERV I)
 VEHICLE IMPACT - 4KIPS APPLIED AT THE HIGHEST POINT UP TO 14FT ABOVE SURFACE OF PAVEMENT IN FRONT OF BARRIER.

PRECAST PANEL MAX. ALLOWABLE DEFLECTION - L/180

STEEL POST MAX. ALLOWABLE DEFLECTION - H/360

MISCELLANEOUS STEEL CONNECTION QUANTITY

DESCRIPTION	WEIGHT
BUILT-UP SHAPE	219 LBS.
BEARING ANGLE (2 ANGLES)	32 LBS.
BENT PLATE ALLOWANCE (8 PLATES)	11 LBS.
ANCHOR BOLT ASSEMBLY (4 BOLTS)	26 LBS.
TOTAL	288 LBS.
NOISE BLOCKING ASSEMBLY BETWEEN POSTS (2 PLATES)	3.4 PLF
NOISE BLOCKING ASSEMBLY SPLICE (4 PLATES)	7 LBS.

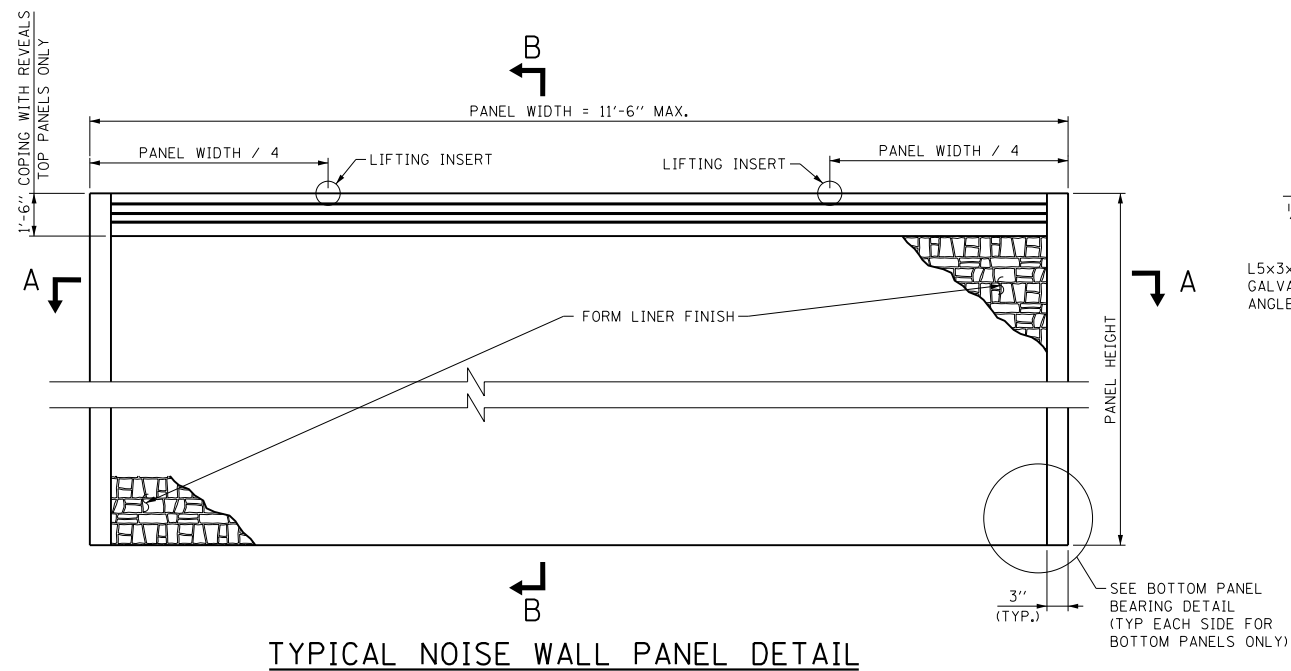
DATE	REVISIONS
7-17-2020	REVISE NOTE 1 AND CLARIFIED NO CHAMFER AT HORIZONTAL JOINTS, NOTE 10" NAW OFFSET AS MIN., ADD MAX. SEAT LIMITS ABOVE AND BELOW BARRIER IN TYP. SECTION, REV. CONTRACT. JT. TO INTERIOR JT., HOLE FOR BENT ANCHOR REV. TO 1 1/4" CHANGE 4'-10" SPA. REQUIRE FOR BRIDGES ONLY, DIM. FORM LINER ON PANEL TO POST DET., ADD DET. FOR TONGUE AND GROOVE, REMOVE REVEAL CALLOUT AND REVISE NOTE B, INC. MIN. ANGLE AT POST AND PANELS,



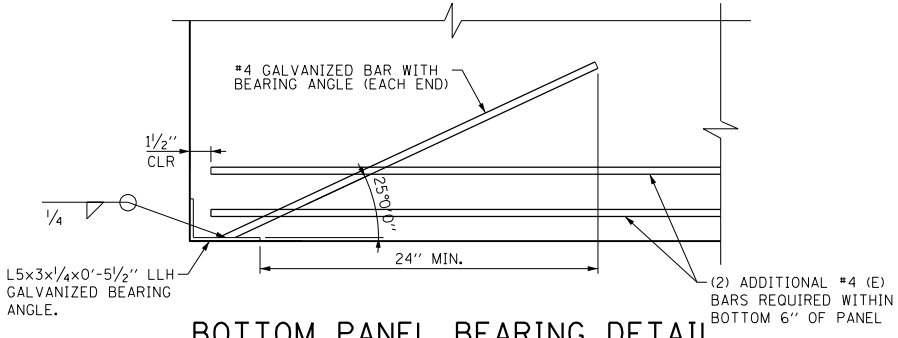
STRUCTURE MOUNTED NOISE ABATEMENT WALL DETAILS

STANDARD G12-01

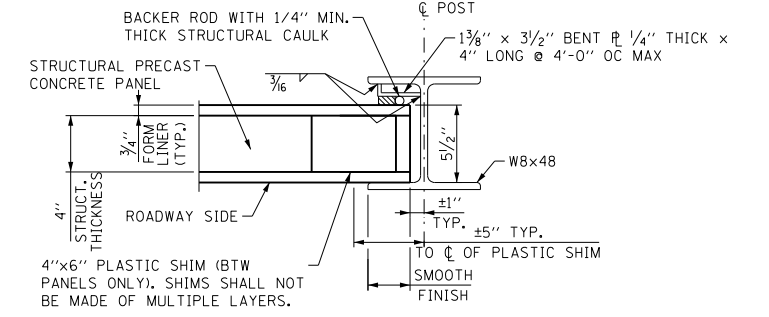
APPROVED: *Paul Kovacs* DATE 7-17-2020
 CHIEF ENGINEERING OFFICER



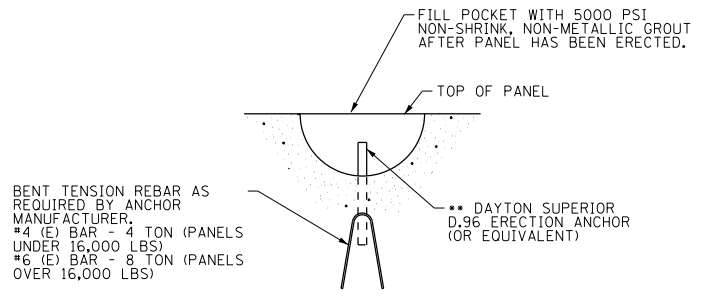
TYPICAL NOISE WALL PANEL DETAIL



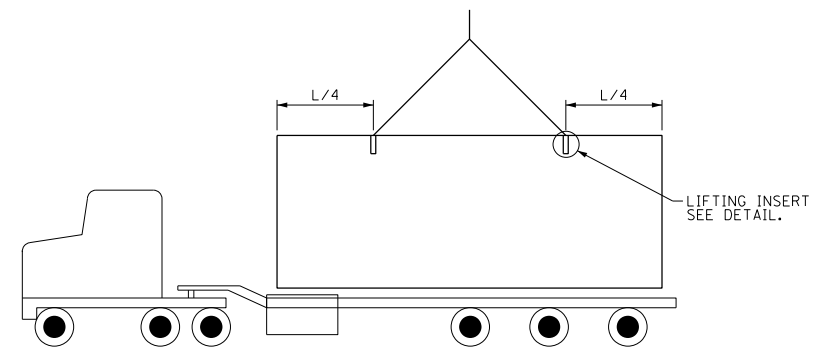
BOTTOM PANEL BEARING DETAIL



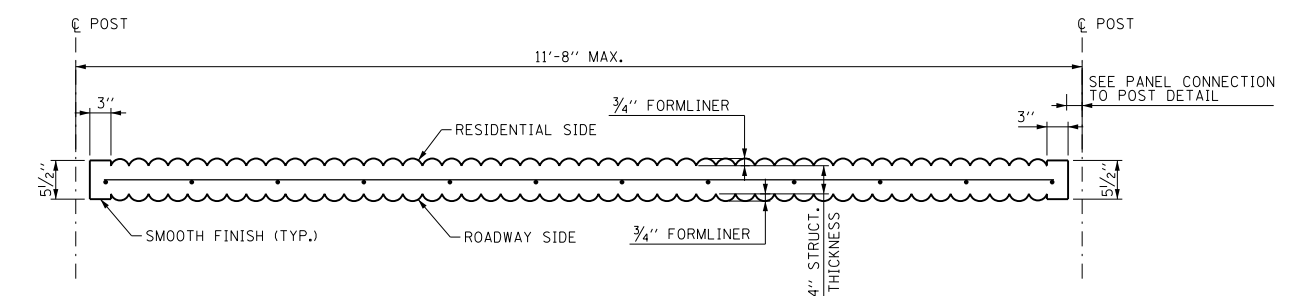
PANEL CONNECTION TO POST DETAIL



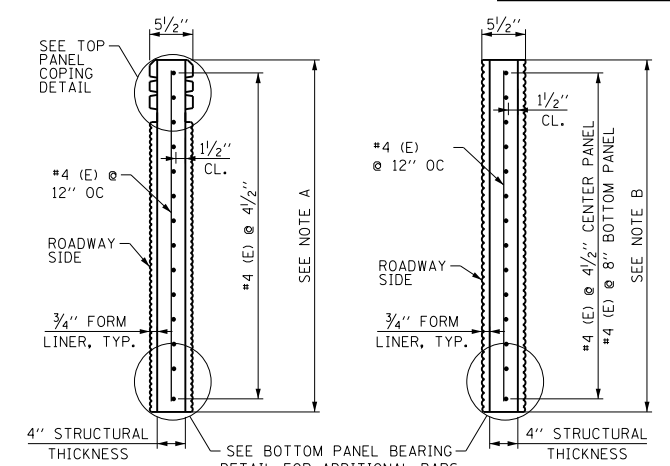
TYPICAL LIFTING INSERT DETAIL



SUGGESTED TYPICAL NOISE ABATEMENT WALL INSTALLATION SEQUENCE AND PROCEDURE



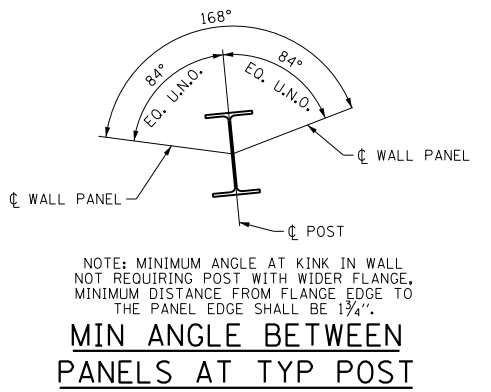
TYPICAL PLAN VIEW THRU NOISE ABATEMENT WALL SECTION A-A



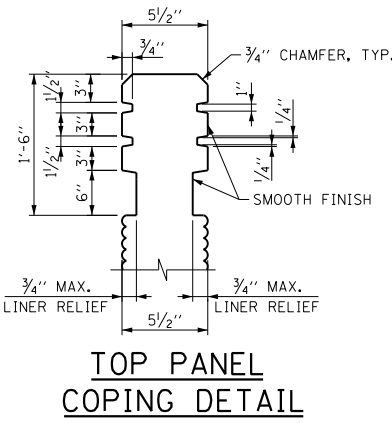
TOP PANEL OR FULL HEIGHT PANEL SECTION B-B
CENTER OR BOTTOM PANEL SECTION B-B

NOTE A
TO ACCOMMODATE VARYING HEIGHT NAW, TOP PANEL HEIGHTS ARE PERMITTED TO BE 4'-0", 5'-0", 6'-0", 7'-0", OR 8'-0". FULL HEIGHT PANELS ARE PERMITTED TO BE 4'-0", 4'-6", 5'-0", 5'-6", 6'-0", 6'-6", 7'-0", 7'-6" OR 8'-0".

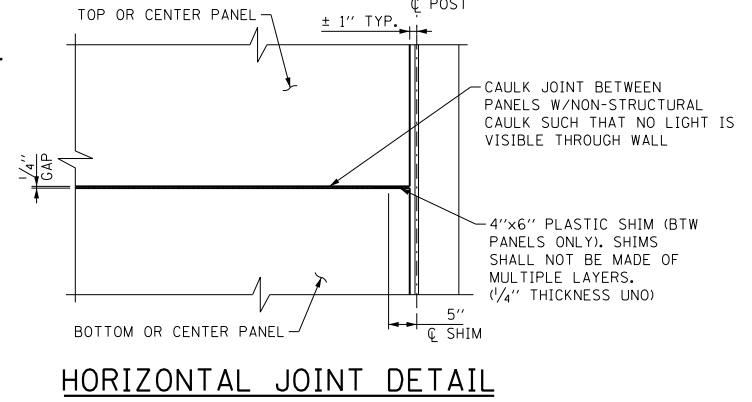
NOTE B
BOTTOM PANEL HEIGHTS ARE PERMITTED TO BE 4'-0" OR 4'-6". CONTRACTOR MAY INCREASE BOTTOM PANEL HEIGHTS AND USE UP TO AN 8FT (NON-STANDARD) MAXIMUM HEIGHT PANEL. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW PRIOR TO INSTALLATION. CENTER PANEL HEIGHT IS 4'-0".



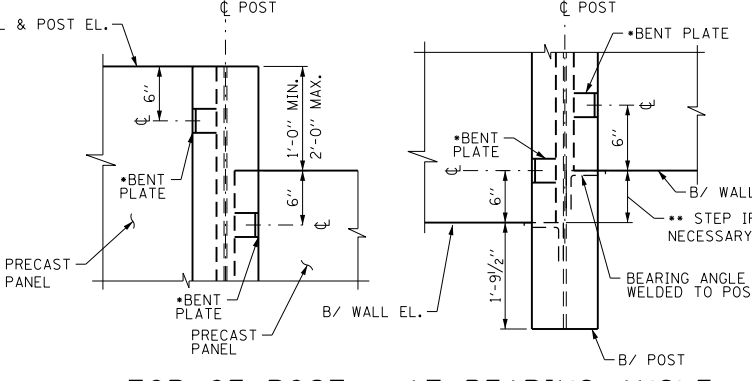
- NOTE: MINIMUM ANGLE AT KINK IN WALL NOT REQUIRING POST WITH WIDER FLANGE, MINIMUM DISTANCE FROM FLANGE EDGE TO THE PANEL EDGE SHALL BE 1 3/4".
- MIN ANGLE BETWEEN PANELS AT TYP POST**
- STRUCTURAL CAULK - SIKADUR 51 NS FLEXIBLE EPOXY CONTROL JOINT SEALER / ADHESIVE OR EQUIVALENT. CAULK SHALL BE APPLIED PER MANUFACTURER'S SPECIFICATION AND RECOMMENDATIONS.
 - BACKER ROD: MILE HIGH FOAM PRODUCT SIZED PER BACKER ROD MANUFACTURING, INC OR EQUIVALENT.
 - NON-STRUCTURAL CAULK SEALANT: SIKAFLEX 15 LM PER MANUFACTURERS STANDARD OR EQUIVALENT.
 - SHIMS: VERSA-A-SHIM HIGH IMPACT PLASTIC SHIMS ASTM D792 & ASTM D695
 - LIFTING INSERTS SHALL HAVE A FACTOR OF SAFETY OF 4:1
 - THE NAW INSTALLATION PROCEDURES SHOWN ON THIS SHEET PROVIDE GENERAL INSTALLATION SEQUENCE AND PROCEDURES FOR THE CONTRACTOR. THE CONTRACTOR SHALL RETAIN SOLE RESPONSIBILITY FOR THE MEANS, METHODS, AND TECHNIQUES OF CONSTRUCTION OF THE NAW FOR COMPLIANCE WITH LAWS, REGULATIONS, AND CODES, AND FOR THE SAFETY OF CONSTRUCTION APPLICABLE TO THIS WORK.
 - THE OPTIONAL TONGUE AND GROOVE DETAIL MAY BE USED IN LIEU OF THE CAULK SHOWN IN THE HORIZONTAL JOINT DETAIL.



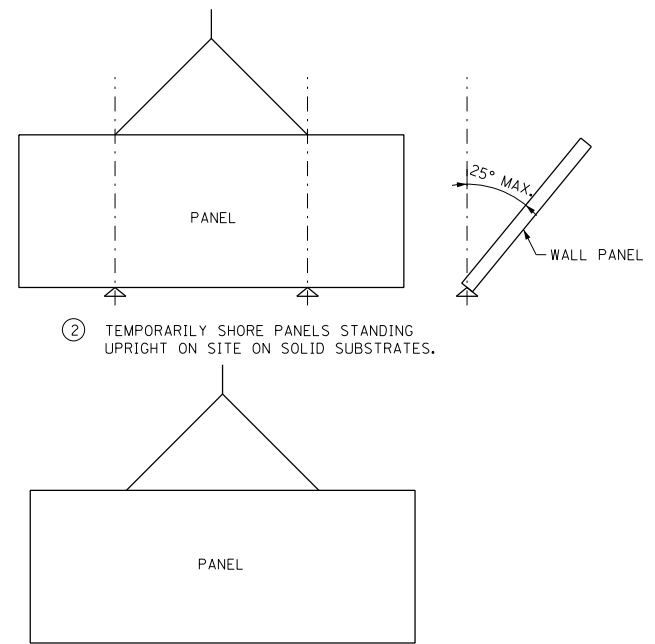
TOP PANEL COPING DETAIL



HORIZONTAL JOINT DETAIL



TOP OF POST AT BEARING ANGLE BENT PLATE DETAILS



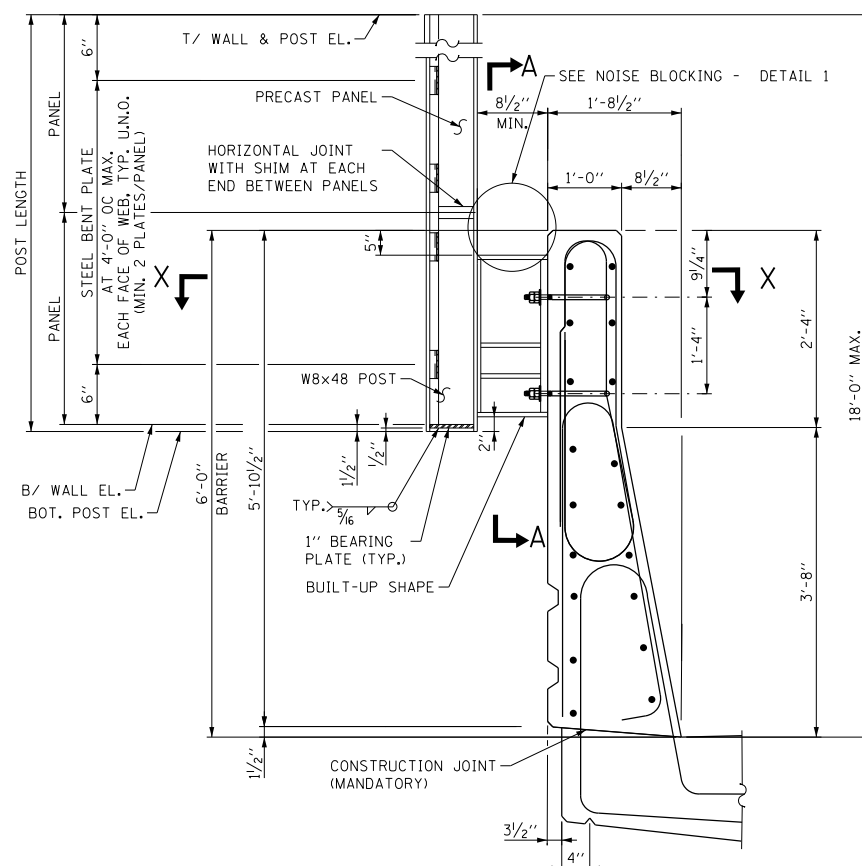
SUGGESTED TYPICAL NOISE ABATEMENT WALL INSTALLATION SEQUENCE AND PROCEDURE

- STEEL BENT PLATE AT 4'-0" OC MAX. EACH FACE OF WEB, TYP. U.N.O. (MIN. 2 PLATES/PANEL)
- MAXIMUM DIMENSION OF BEARING ANGLE BELOW BARRIER IS 6" AND 3" ABOVE THE TOP OF THE BARRIER.

APPROVED: *Paul Kovacs* DATE 7-17-2020
CHIEF ENGINEERING OFFICER

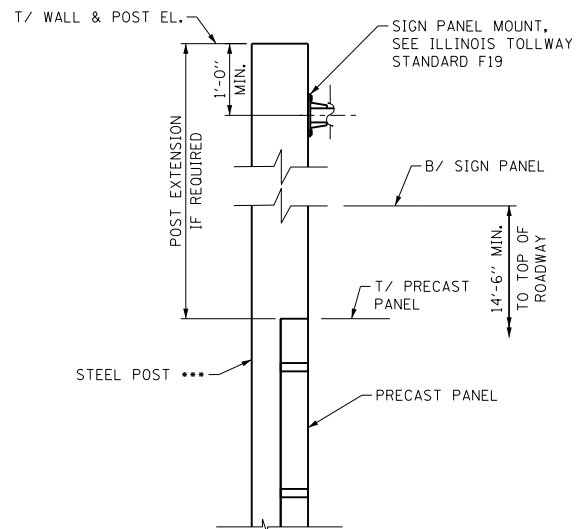
SHEET 2 OF 2

STRUCTURE MOUNTED NOISE ABATEMENT WALL DETAILS
STANDARD G12-01



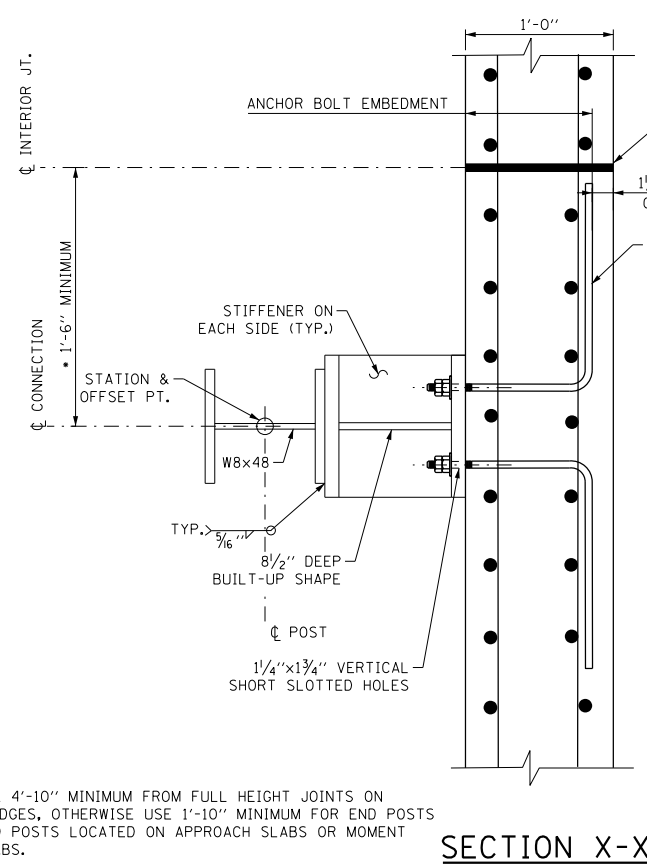
ILLINOIS TOLLWAY CONSTANT SLOPE BARRIER - DETAILS

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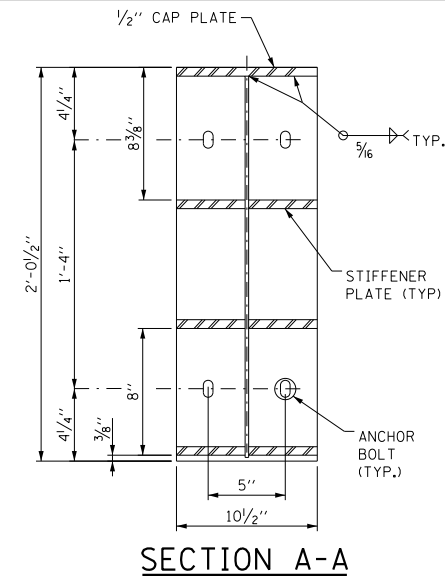
SIGN PANEL MOUNT POST EXTENSION DETAIL

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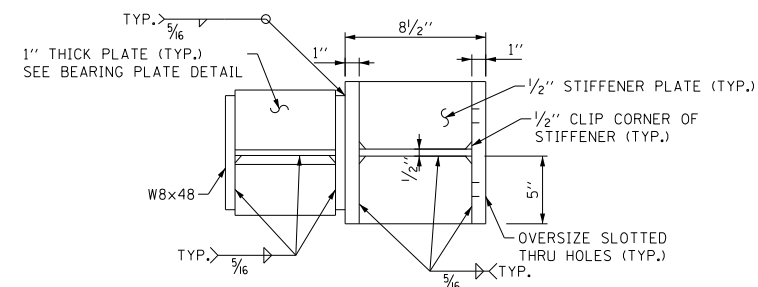


SECTION X-X

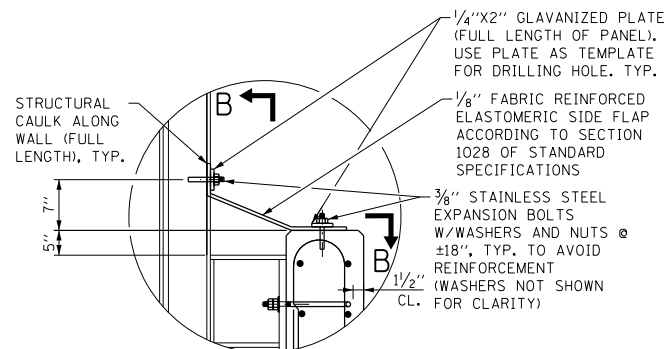
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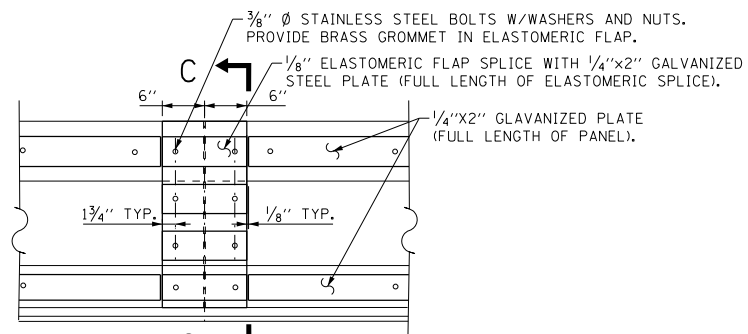
SECTION A-A



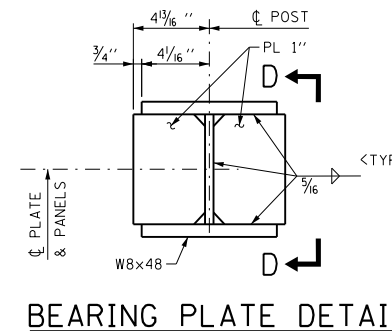
BUILT UP SHAPE



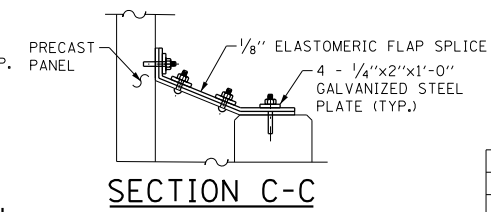
DETAIL 1 NOISE BLOCKING ASSEMBLY



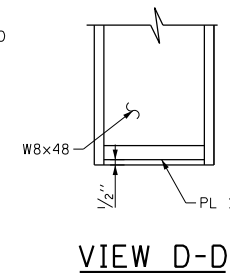
VIEW B-B AT ASSEMBLY SPLICE



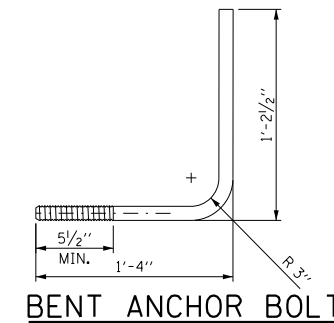
BEARING PLATE DETAIL



SECTION C-C



VIEW D-D



BENT ANCHOR BOLT

GENERAL NOTES

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DESIGN SPECIFICATIONS

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION DATED SEPTEMBER 2017.

DESIGN STRESSES

f'c = 4,000 PSI (CLASS BS), (BARRIERS)
 f'c = 5,000 PSI AT 28 DAYS (CLASS PC) (PRECAST CONCRETE NAW PANELS)
 fy = 60,000 PSI (REINFORCEMENT)

GRADE 50, Fy = 50,000 PSI, ASTM A709 (AASHTO M270) - STRUCTURAL STEEL POST
 GRADE 36, Fy = 36,000 PSI, ASTM A709 (AASHTO M270) ALL OTHER STEEL (UNLESS NOTED OTHERWISE)
 ALL STEEL SHALL BE HOT-DIP GALVANIZED

DESIGN LOADING

CONCRETE = 150 PCF
 STEEL = 490 PCF
 WIND LOADS = 50PSF (STR III) = 15PSF (SERV I)
 VEHICLE IMPACT - 4KIPS APPLIED AT THE HIGHEST POINT UP TO 14FT ABOVE SURFACE OF PAVEMENT IN FRONT OF BARRIER.

PRECAST PANEL MAX. ALLOWABLE DEFLECTION - L/180

STEEL POST MAX. ALLOWABLE DEFLECTION - H/360

MISCELLANEOUS STEEL CONNECTION QUANTITY

DESCRIPTION	WEIGHT
BUILT-UP SHAPE	205 LBS.
BEARING PLATE (2 PIECES)	40 LBS.
BENT PLATE ALLOWANCE (8 PIECES)	14 LBS.
ANCHOR BOLT ASSEMBLY (4 BOLTS)	29 LBS.
TOTAL	288 LBS.
NOISE BLOCKING ASSEMBLY BETWEEN POSTS (2 PLATES)	3.4 PLF
NOISE BLOCKING ASSEMBLY SPLICE (4 PLATES)	7 LBS.

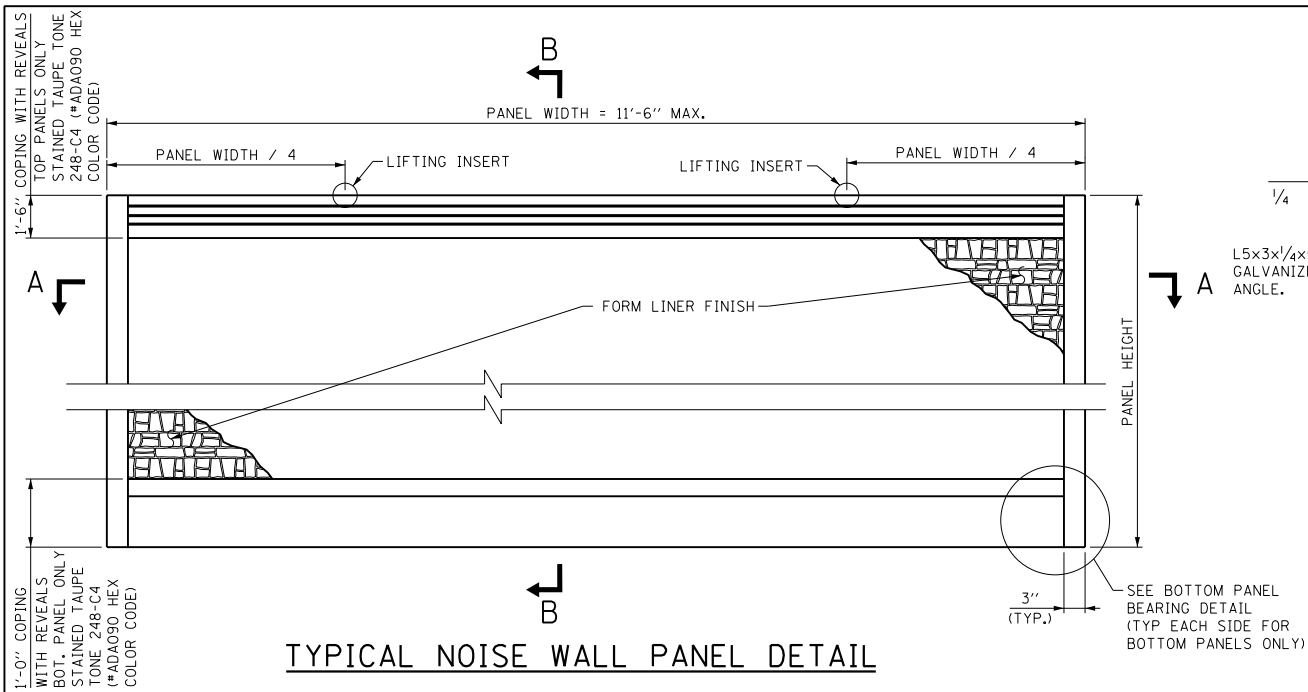
DATE	REVISIONS
7-17-2020	REVISE NOTE 1 AND CLARIFIED NO CHAMFER AT HORIZONTAL JOINTS, NOTED 8.5" NAW OFFSET AS MIN., REV. CONTRACT, JT. TO INTERIOR JT., HOLE FOR BENT ANCHOR REV. TO 1/4", CHANGE 4'-10" SPA, REQUIRE FOR BRIDGES ONLY, DIM. FORM LINE ON PANEL TO POST DET., ADD DET. FOR TONGUE AND GROOVE, REMOVE REVEAL CALLOUT, REVISE NOTE C, INC. MIN. ANGLE AT POST AND PANELS,



CENTRAL TRI-STATE STRUCTURE MOUNTED NOISE ABATEMENT WALL DETAILS

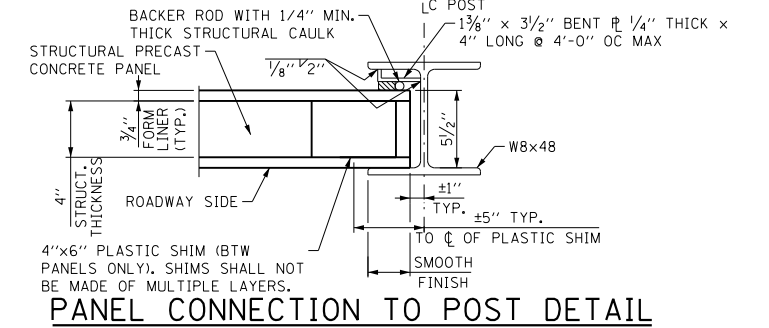
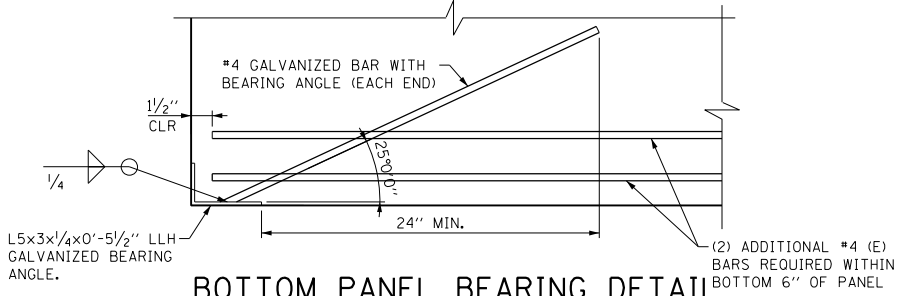
STANDARD G13-01

APPROVED: *Paul Kovacs* DATE 7-17-2020
 CHIEF ENGINEERING OFFICER

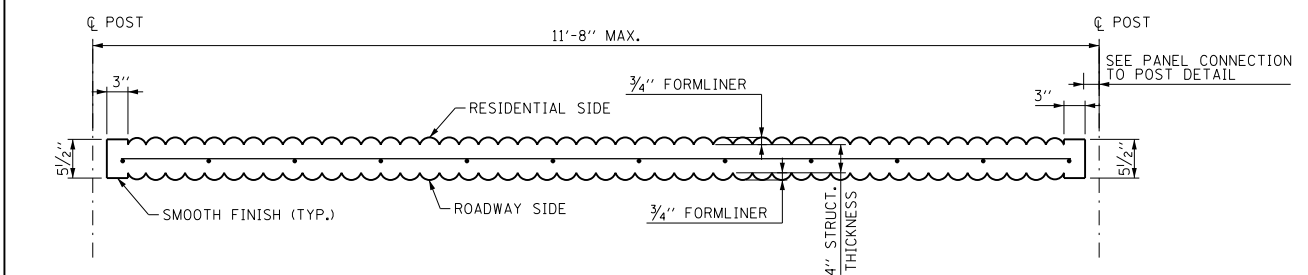


TYPICAL NOISE WALL PANEL DETAIL

BOTTOM PANEL BEARING DETAIL

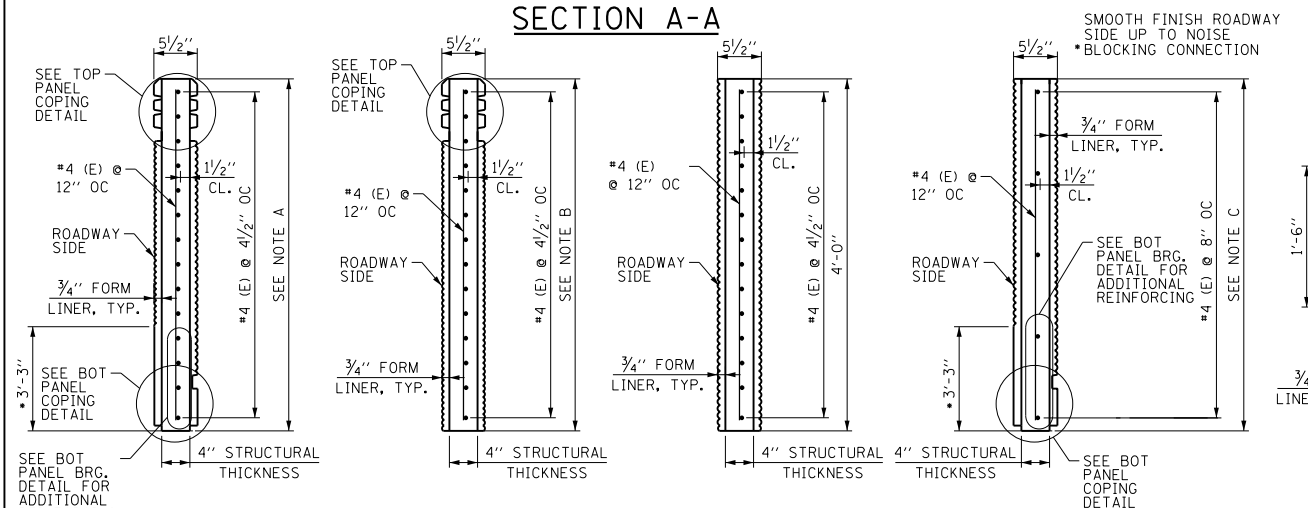
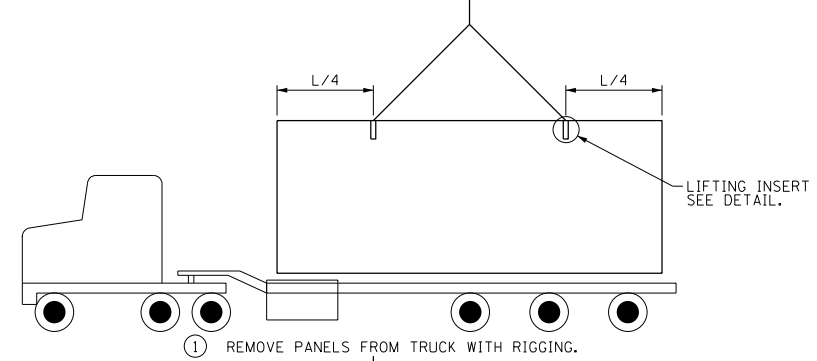
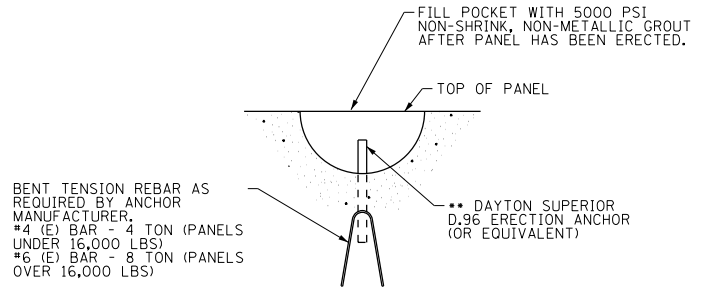


PANEL CONNECTION TO POST DETAIL



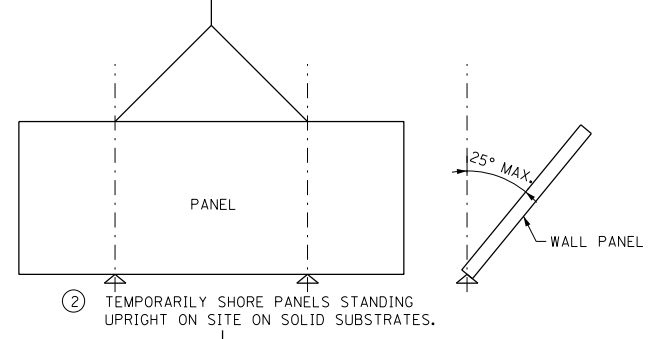
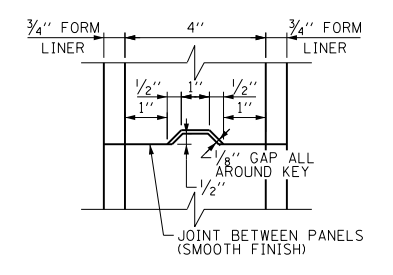
TYPICAL PLAN VIEW THRU NOISE ABATEMENT WALL SECTION A-A

TYPICAL LIFTING INSERT DETAIL



FULL HEIGHT PANEL SECTION B-B, TOP PANEL SECTION B-B, CENTER PANEL SECTION B-B, BOTTOM PANEL SECTION B-B

OPTIONAL TONGUE AND GROOVE DETAIL

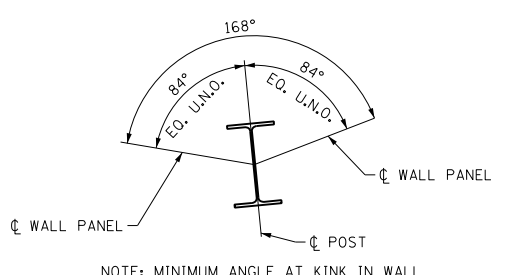


SUGGESTED TYPICAL NOISE ABATEMENT WALL INSTALLATION SEQUENCE AND PROCEDURE

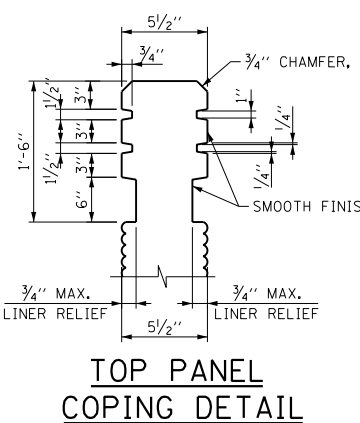
NOTE A
TO ACCOMMODATE VARYING HEIGHT NAW WITHIN ONE PANEL WITH TOP AND BOTTOM COPING, FULL HEIGHT PANEL IS PERMITTED TO BE 4'-0", 4'-6", 5'-0", 5'-6", 6'-0", 6'-6", 7'-0", 7'-6", OR 8'-0" TALL

NOTE B
TO ACCOMMODATE VARYING HEIGHT NAW, TOP PANEL WITH ONLY TOP COPING IS PERMITTED TO BE 4'-0", 5'-0", 6'-0", 7'-0" OR 8'-0" TALL

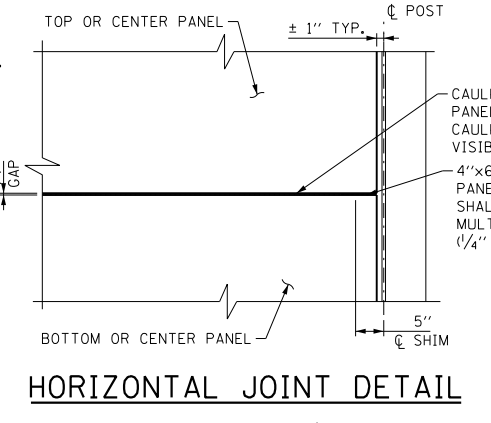
NOTE C
TO ACCOMMODATE BOTTOM STEPS IN PANEL, BOTTOM PANEL IS PERMITTED TO BE 4'-0" OR 4'-6" TALL. CONTRACTOR MAY INCREASE BOTTOM PANEL HEIGHTS AND USE UP TO AN 8FT (NON-STANDARD) MAXIMUM HEIGHT PANEL. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW PRIOR TO INSTALLATION.



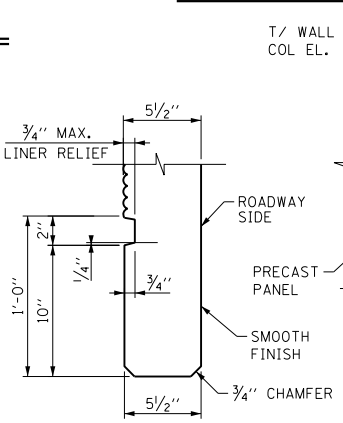
MIN ANGLE BETWEEN PANELS AT TYP POST



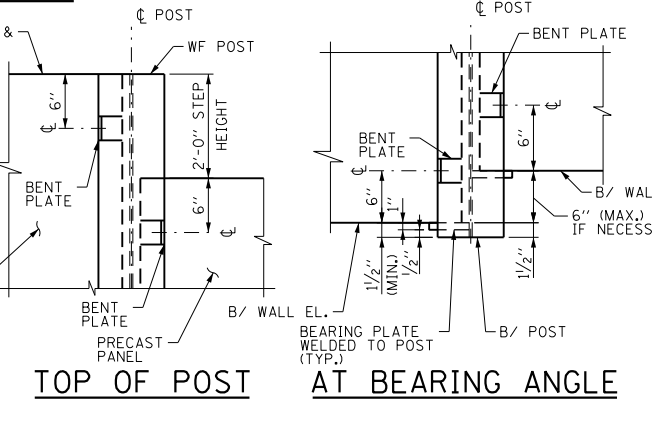
TOP PANEL COPING DETAIL



HORIZONTAL JOINT DETAIL



BOTTOM PANEL COPING DETAIL

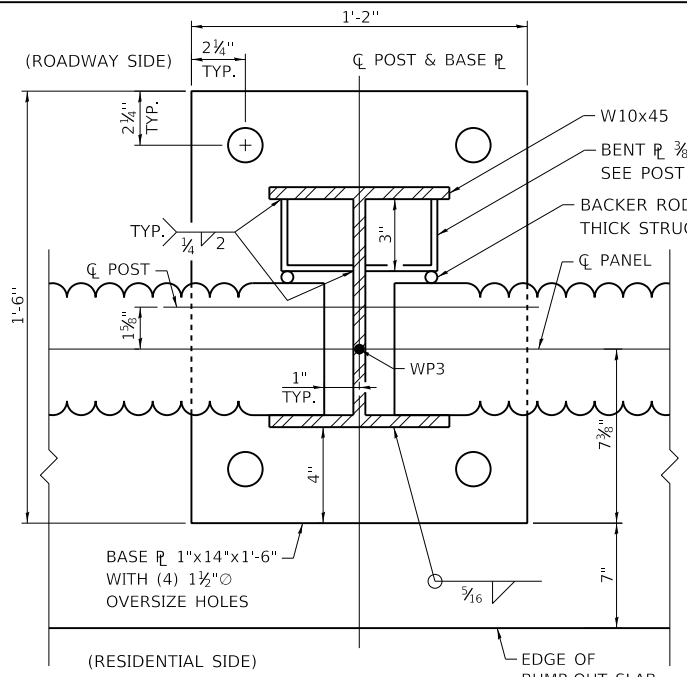
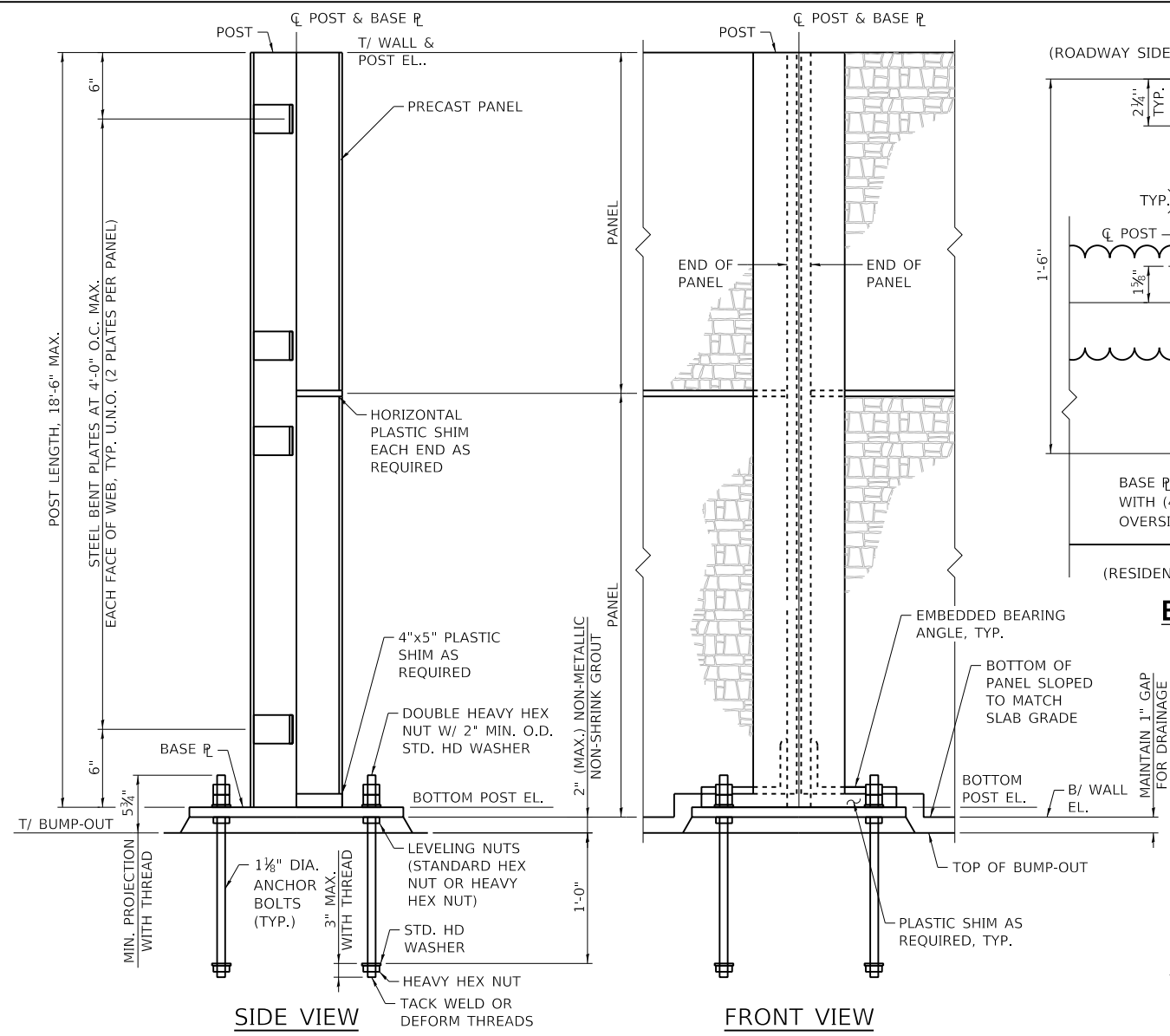


BENT PLATE DETAILS

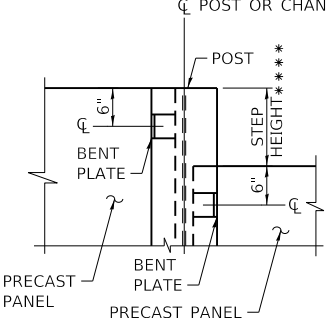
- NOTES:
- STRUCTURAL CAULK - SIKADUR 51 NS FLEXIBLE EPOXY CONTROL -JOINT SEALER / ADHESIVE OR EQUIVALENT. CAULK SHALL BE APPLIED PER MANUFACTURERS 532S SPECIFICATION AND RECOMMENDATIONS.
 - BACKER ROD: MILE HIGH FOAM PRODUCT SIZED PER BACKER ROD MANUFACTURING, INC OR EQUIVALENT.
 - NON-STRUCTURAL CAULK SEALANT: SIKAFLEX 15 LM PER MANUFACTURERS STANDARD OR EQUIVALENT.
 - SHIMS: VERSA-A-SHIM HIGH IMPACT PLASTIC SHIMS ASTM D792 & ASTM D695
 - LIFTING INSERTS SHALL HAVE A FACTOR OF SAFETY OF 4:1
 - THE NAW INSTALLATION PROCEDURES SHOWN ON THIS SHEET PROVIDE GENERAL INSTALLATION SEQUENCE AND PROCEDURES FOR THE CONTRACTOR. THE CONTRACTOR SHALL RETAIN SOLE RESPONSIBILITY FOR THE MEANS, METHODS, AND TECHNIQUES OF CONSTRUCTION OF THE NAW FOR COMPLIANCE WITH LAWS, REGULATIONS, AND CODES, AND FOR THE SAFETY OF CONSTRUCTION APPLICABLE TO THIS WORK.
 - THE OPTIONAL TONGUE AND GROOVE DETAIL MAY BE USED IN LIEU OF THE CAULK SHOWN IN THE HORIZONTAL JOINT DETAIL.

Paul Kovacs
APPROVED... CHIEF ENGINEERING OFFICER
DATE 7-17-2020

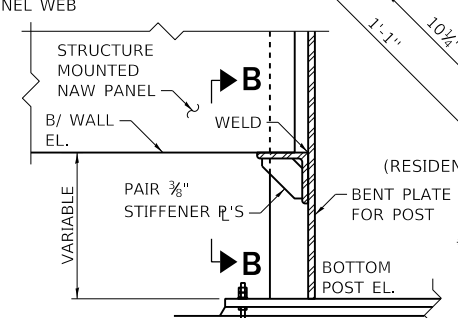
CENTRAL TRI-STATE
STRUCTURE MOUNTED
NOISE ABATEMENT WALL
DETAILS
STANDARD G13-01



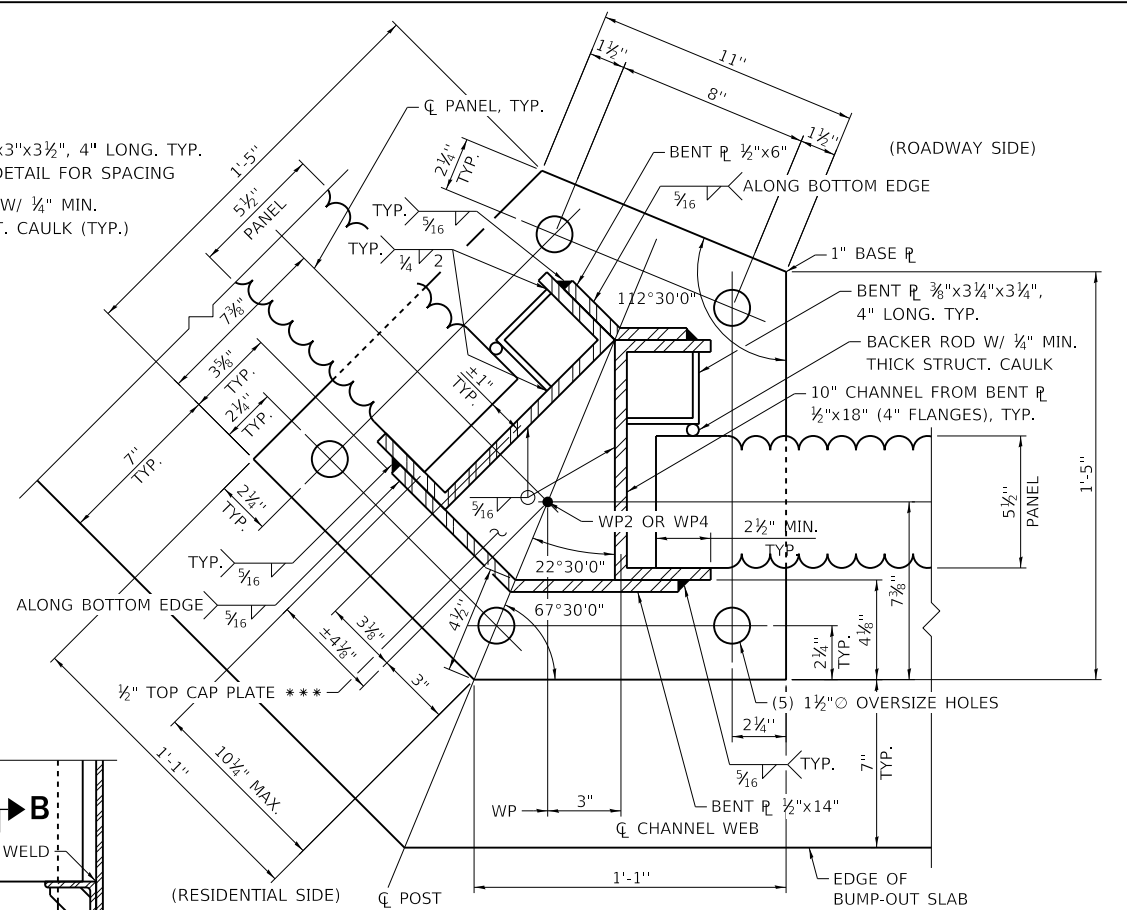
BASE PLATE AND POST DETAIL 1



STEP DETAIL

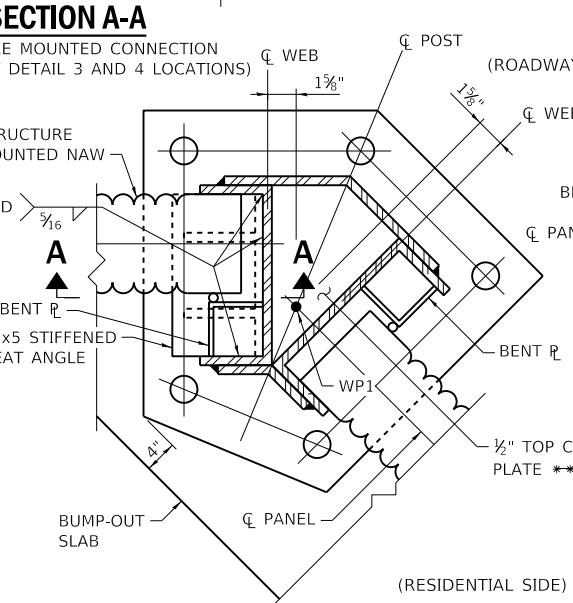


SECTION A-A

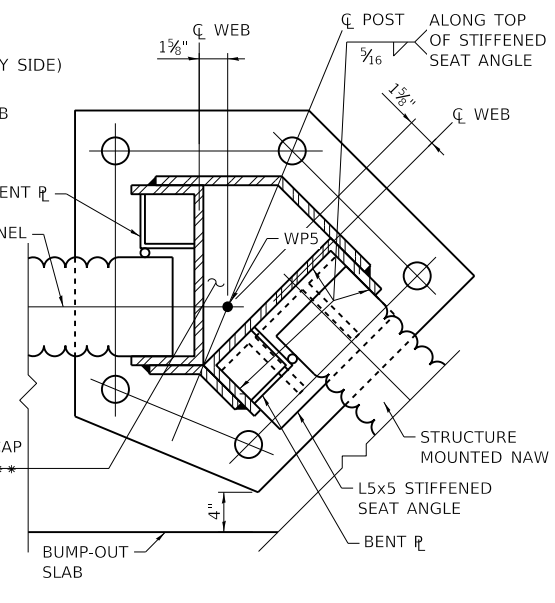


BASE PLATE AND POST DETAIL 2

*** TOP CAP PLATE (NOT SHOWN) WELDED ALL AROUND PERIMETER USING 1/4" FILLET WELD TO COMPLETELY SEAL POST INTERIOR. SEE DETAIL BELOW.



BASE PLATE AND POST DETAIL 3**



BASE PLATE AND POST DETAIL 4**

**BASE PLATE AND POST DETAILS 3 AND 4 ARE SIMILAR TO BASE PLATE AND POST DETAIL 2, EXCEPT AS NOTED.

GENERAL NOTES

- ALL EXPOSED CONCRETE EDGES SHALL HAVE A 3/4" X 45° CHAMFER, EXCEPT WHERE SHOWN OTHERWISE. NO CHAMFER WILL BE ALLOWED AT HORIZONTAL JOINTS BETWEEN PANELS.
- REINFORCEMENT BARS, INCLUDING EPOXY-COATED REINFORCEMENT BARS, SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-31 (ASTM A706), GRADE 60, DEFORMED BARS.
- REINFORCEMENT BARS DESIGNATED "(E)" SHALL BE EPOXY COATED.
- REINFORCEMENT BAR BENDING DETAILS SHALL BE IN ACCORDANCE WITH THE LATEST "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", ACI 315.
- REINFORCEMENT BAR BENDING DIMENSIONS ARE OUT TO OUT.
- CONSTRUCTION CONTRACTOR SHALL NOT SCALE DIMENSIONS FROM THE CONTRACT PLANS FOR CONSTRUCTION PURPOSES. SCALES SHOWN ARE FOR INFORMATION ONLY.
- STRUCTURAL STEEL SHALL BE PAINTED USING A TOLLWAY APPROVED TWO-COAT PAINT SYSTEM MANUFACTURED BY IDOT APPROVED PRODUCERS. THE FIRST COAT SHALL BE EPOXY POLYAMIDE MEETING THE REQUIREMENTS OF ARTICLE 1008.05 (d) OF THE STANDARD SPECIFICATIONS. THE SECOND COAT SHALL BE ALIPHATIC URETHANE MEETING THE REQUIREMENTS OF ARTICLE 1008.05 (e) OF THE STANDARD SPECIFICATIONS. THE PAINT SYSTEM SHALL BE APPLIED ACCORDING TO THE APPLICABLE PORTIONS OF SECTION 506 AND THE GALVANIZE AND PAINT MANUFACTURER'S RECOMMENDATIONS.

POST DETAIL*

*TYPICAL POST SHOWN, OTHERS SIMILAR

- THE COLOR OF THE STRUCTURAL STEEL FINAL COAT PAINT SHALL MATCH THE COLOR OF THE PRECAST CONCRETE PANEL STAIN OF SHERWIN-WILLIAMS 7633, TAUPE TONE 248-C4 (#ADA090 HEX COLOR CODE).
- STRUCTURAL CAULK - SIKADUR 51 NS FLEXIBLE EPOXY CONTROL -JOINT SEALER / ADHESIVE OR EQUIVALENT. CAULK SHALL BE APPLIED PER MANUFACTURER'S SPECIFICATION AND RECOMMENDATIONS.
- BACKER ROD: MILE HIGH FOAM PRODUCT SIZED PER BACKER ROD MANUFACTURING, INC OR EQUIVALENT.
- NON -STRUCTURAL CAULK SEALANT: SIKAFLEX 15 LM PER MANUFACTURER'S STANDARD OR EQUIVALENT.
- SHIMS: VERS-A-SHIM HIGH IMPACT PLASTIC SHIMS ASTM D792 & D695. SHIMS SHALL NOT BE MADE OF MULTIPLE LAYERS.
- GROUT SHALL CONFORM TO THE REQUIREMENTS OF SECTION 1024.02 OF THE STANDARD SPECIFICATIONS. GROUT UNDER POSTS PRIOR TO INSTALLATION OF THE PANELS.
- THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL ANY PROPOSED HOLES IN THE BUILT-UP POST FOR GALVANIZING AND/OR ERECTION.

DESIGN LOADS

WIND LOAD = 50 PSF (STR. III)
= 15 PSF (SERV I)
DEFLECTION:
PANEL = L/180
POST = H/360

DESIGN SPECIFICATIONS

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION DATED SEPTEMBER 2017.

DESIGN STRESSES

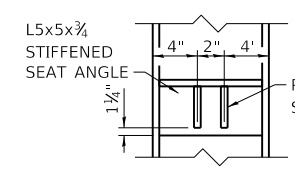
PRECAST CONCRETE:
f_c = 5,000 PSI AT 28 DAYS (CLASS PC) ALONG TOP
f_c = 3,500 PSI AT 5 DAYS (SHIPPING) OF STIFFENED SEAT ANGLE
DENSITY = 150 PCF

STEEL POST:
ASTM A709 (AASHTO M270)
GRADE 50, f_y = 50 KSI
ALL STEEL POSTS TO BE HOT DIPPED GALVANIZED

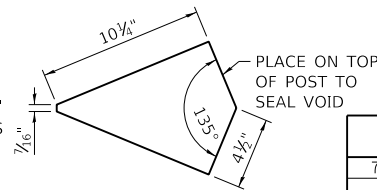
BENT PLATE AND BEARING ANGLES:
ASTM A709 (AASHTO M270)
GRADE 50, f_y = 50 KSI U.N.O.
ALL STEEL TO BE HOT DIPPED GALVANIZED

ANCHOR BOLT ASSEMBLY:
BOLT: ASTM F1554, GRADE 105
HEAVY HEX NUTS: ASTM A563, DH3
HARDENED WASHERS: ASTM F436
ASSEMBLY PIECES SHALL BE HOT-DIP GALVANIZED

REINFORCING STEEL:
ASTM A709 (AASHTO M270)
f_y = 60,000 PSI (EPOXY COATED)



SECTION B-B



TOP CAP PLATE

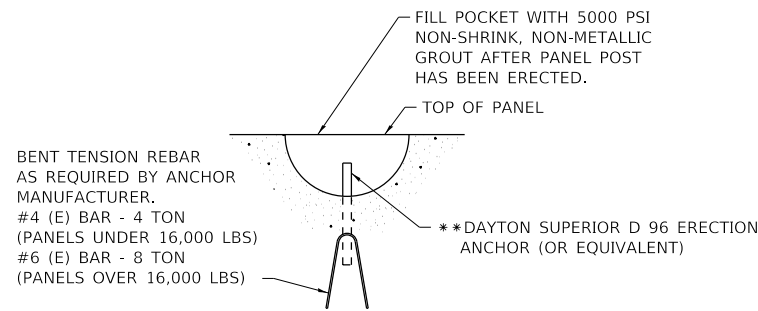
APPROVED: *Paul Kovacs* DATE 7-17-2020
CHIEF ENGINEERING OFFICER

DATE	REVISIONS
7-17-2020	REVISE NOTE 1, ADD TONGUE AND GROOVE DETAIL AND REVISE NOTE C

Illinois Tollway

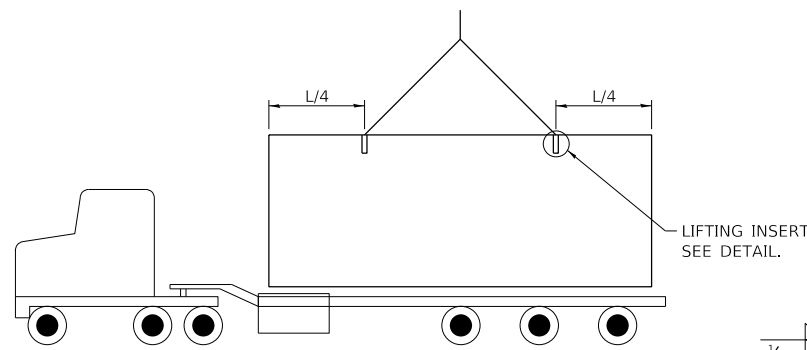
CENTRAL TRI-STATE BUMP-OUT MOUNTED NOISE ABATEMENT WALL DETAILS

STANDARD G14-01

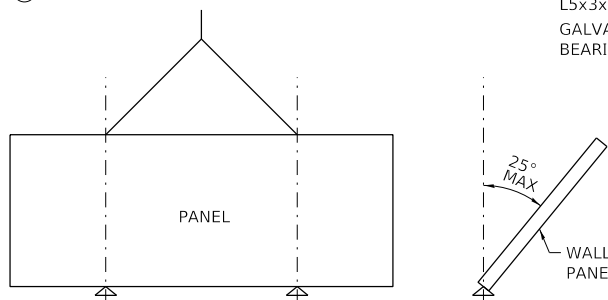


TYPICAL LIFTING INSERT DETAIL

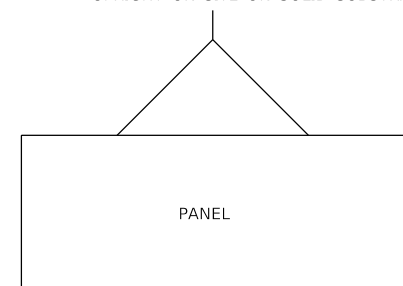
**ERECTION ANCHORS SHALL BE HOT-DIPPED GALVANIZED



① REMOVE PANELS FROM TRUCK WITH RIGGING.



② TEMPORARILY SHORE PANELS STANDING UPRIGHT ON SITE ON SOLID SUBSTRATES.



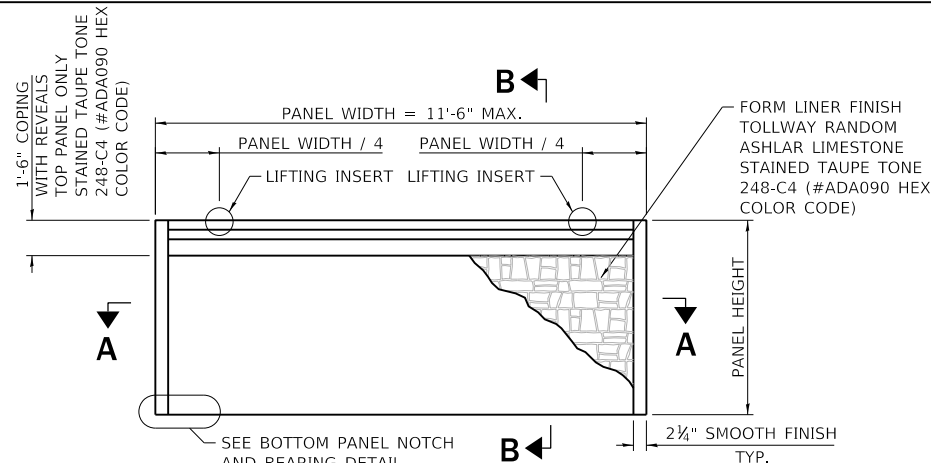
③ ERECT PANELS BETWEEN POSTS

SUGGESTED TYPICAL NOISE ABATEMENT WALL INSTALLATION SEQUENCE AND PROCEDURE

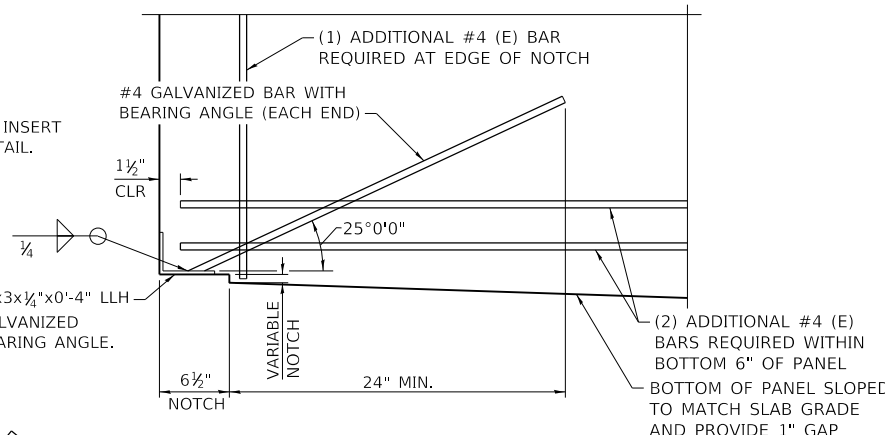
NOTES:

- LIFTING INSERTS SHALL HAVE A FACTOR OF SAFETY OF 4:1
- THE NAW INSTALLATION PROCEDURES SHOWN ON THIS SHEET PROVIDE GENERAL INSTALLATION SEQUENCE AND PROCEDURES FOR THE CONTRACTOR. THE CONTRACTOR SHALL RETAIN SOLE RESPONSIBILITY FOR THE MEANS, METHODS, AND TECHNIQUES OF CONSTRUCTION OF THE NAW FOR COMPLIANCE WITH LAWS, REGULATIONS, AND CODES, AND FOR THE SAFETY OF CONSTRUCTION APPLICABLE TO THIS WORK.

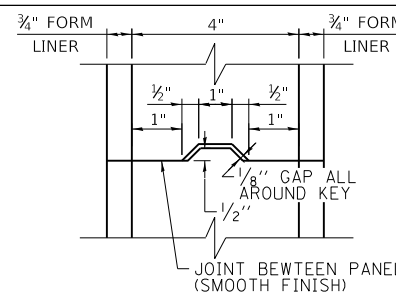
APPROVED: *Paul Kovacs* DATE 7-17-2020
CHIEF ENGINEERING OFFICER



TYPICAL NOISE WALL PANEL DETAIL

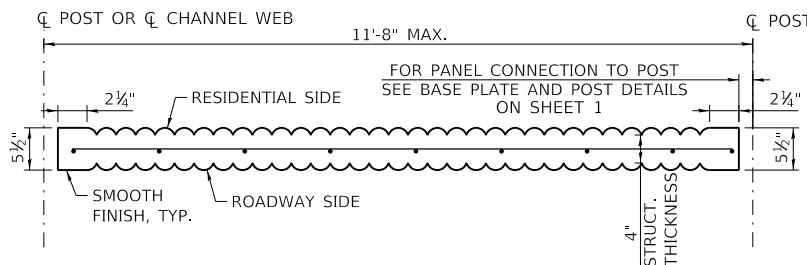


BOTTOM PANEL NOTCH AND BEARING DETAIL



OPTIONAL TONGUE AND GROOVE DETAIL

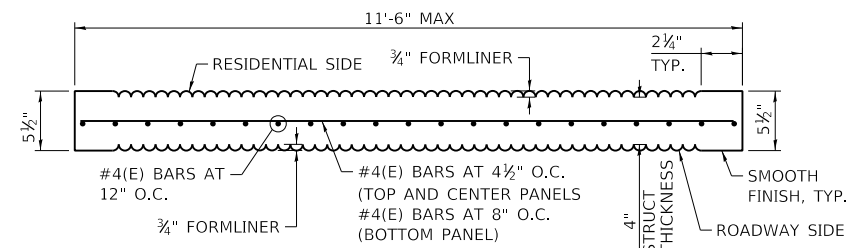
(IN LIEU OF SHIM AND CAULK)



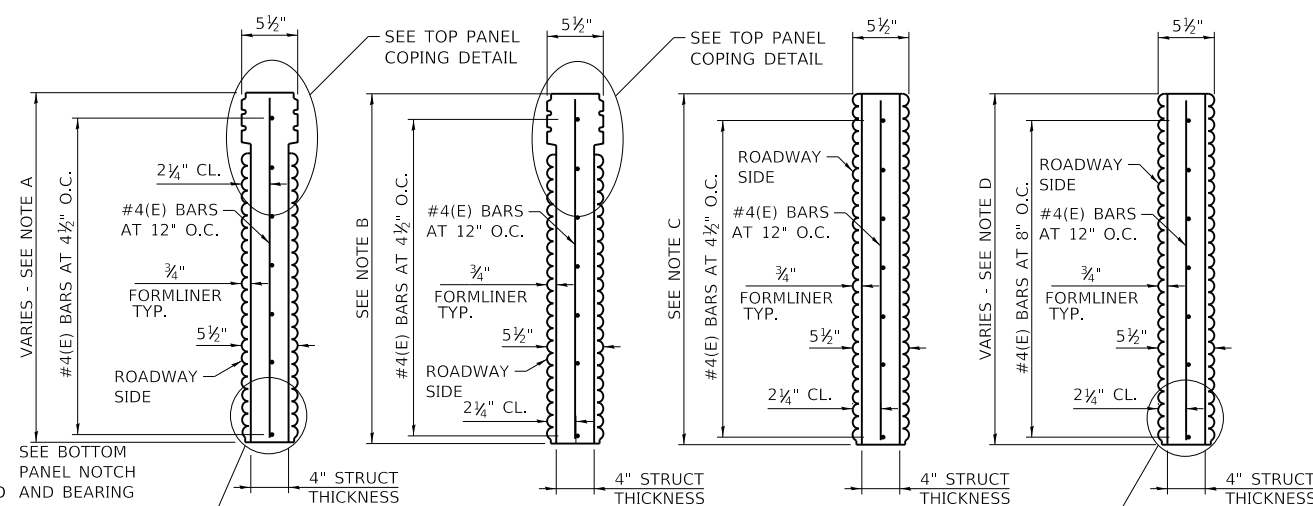
TYPICAL PLAN VIEW THRU NOISE ABATEMENT WALL

MISCELLANEOUS STEEL QUANTITY

W POST		BUILT-UP POST	
DESCRIPTION	WEIGHT	DESCRIPTION	WEIGHT
BASE PLATE	71 LBS.	BASE PLATE	95 LBS.
BENT PLATE ALLOWANCE (16 PIECES)	44 LBS.	TOP CAP PLATE	7 LBS.
ANCHOR BOLT ASSEMBLY (4 EACH)	32 LBS.	BENT PLATE ALLOWANCE (16 PIECES)	44 LBS.
		ANCHOR BOLT ASSEMBLY (5 EACH)	39 LBS.
		STRUCTURE MOUNTED CONNECTION	21 LBS.
TOTAL	147 LBS.	TOTAL	206 LBS.



SECTION A-A



SECTION B-B

SECTION B-B

SECTION B-B

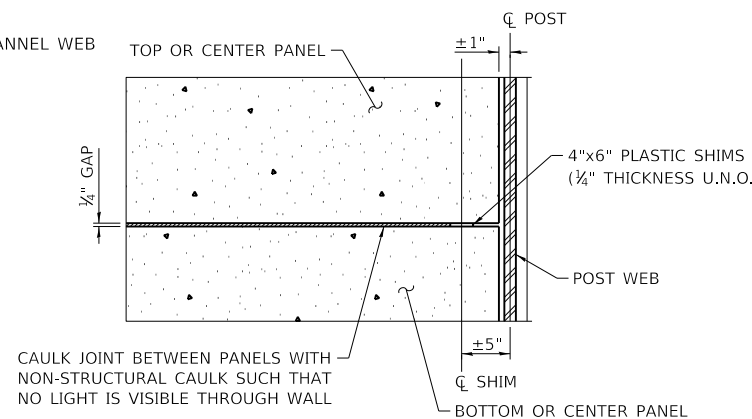
SECTION B-B

NOTE A
TO ACCOMMODATE VARYING SLAB GRADES, FULL HEIGHT PANEL WILL VARY TO FOLLOW SLOPE ON BUMP-OUT SLAB AND TO MAINTAIN A 1" GAP.

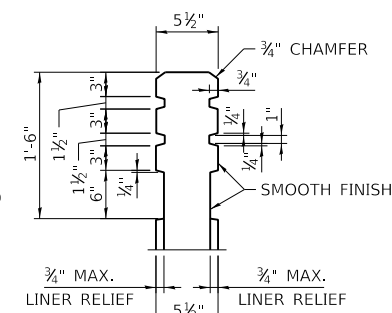
NOTE B
TO ACCOMMODATE VARYING HEIGHT NAW, TOP PANEL IS PERMITTED TO BE 4'-0", 5'-0", 6'-0", 7'-0" OR 8'-0" TALL.

NOTE C
TO ACCOMMODATE VARYING HEIGHT NAW, CENTER PANEL IS PERMITTED TO BE 4'-0" OR 4'-6" TALL. CONTRACTOR MAY INCREASE THE STANDARD CENTER PANEL HEIGHTS, MAXIMUM 8FT, TO MINIMIZE THE NUMBER OF JOINTS. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW PRIOR TO INSTALLATION.

NOTE D
TO ACCOMMODATE VARYING SLAB GRADES, BOTTOM PANEL HEIGHT WILL VARY TO FOLLOW SLOPE ON BUMP-OUT SLAB AND TO MAINTAIN A 1" GAP. PANEL HEIGHT SHOULD NOT EXTEND ABOVE BOTTOM OF STRUCTURE MOUNTED BOTTOM PANEL.



HORIZONTAL JOINT DETAIL

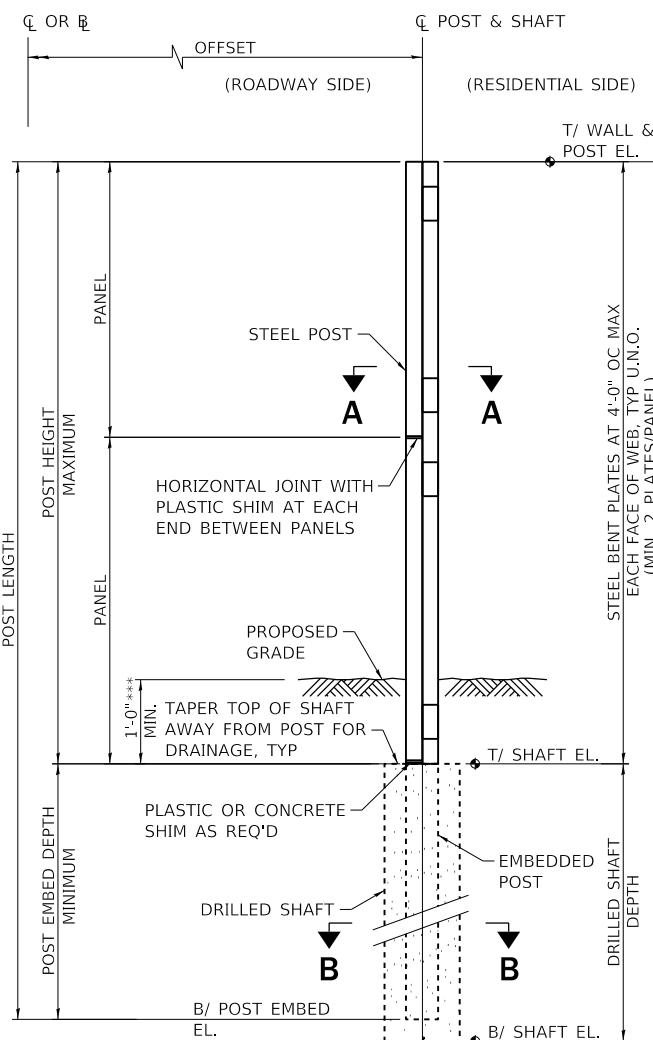


TOP PANEL COPING DETAIL



CENTRAL TRI-STATE
BUMP-OUT MOUNTED
NOISE ABATEMENT WALL
DETAILS

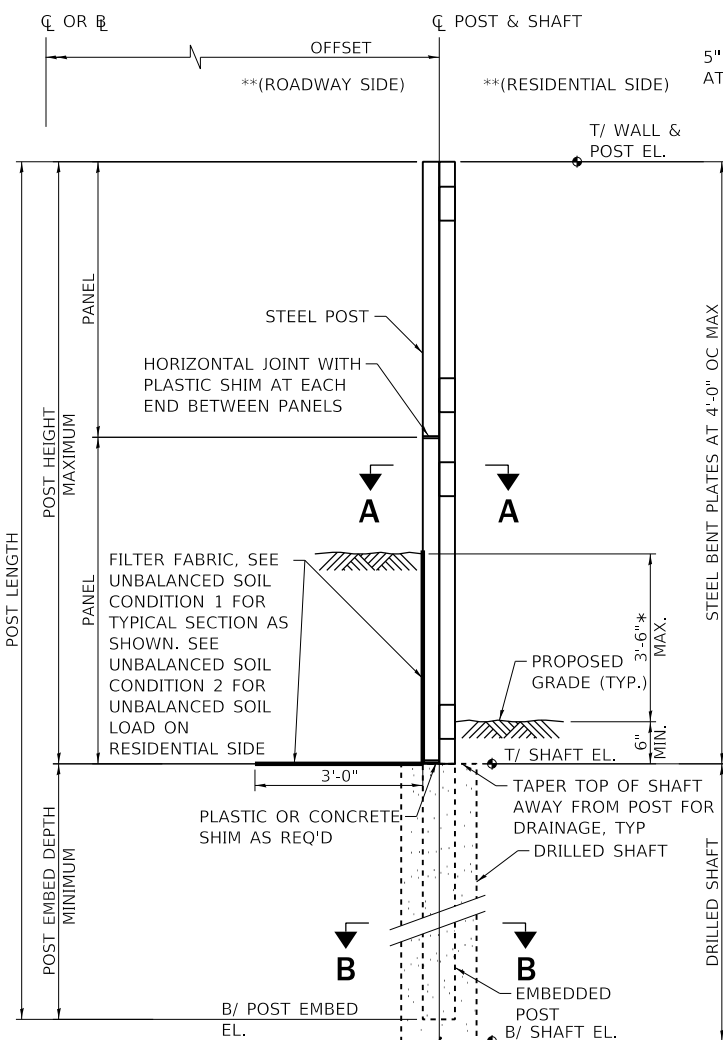
STANDARD G14-01



TYPICAL CROSS SECTION

(BALANCED SOIL LOAD)

*** BALANCED SOIL CONDITION CAN ACCOMMODATE UP TO A 9" UNBALANCED SOIL LOAD



TYPICAL CROSS SECTION

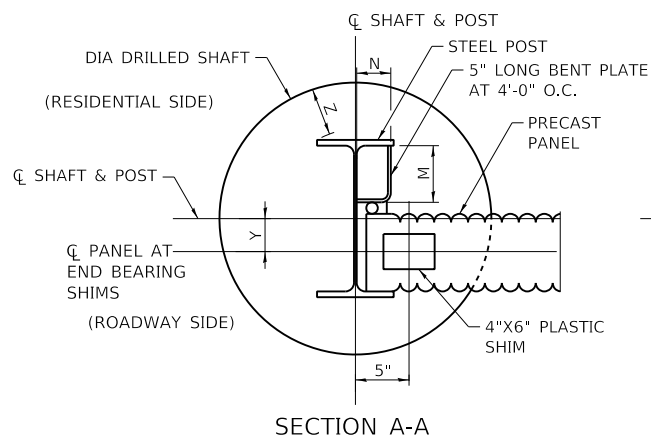
(UNBALANCED SOIL LOAD)

** TYPICAL SECTION SHOWS ROADWAY ON THE HIGH SIDE. DETAILS OF POST FOR ROADWAY ON THE LOW SIDE ARE MIRRORED.

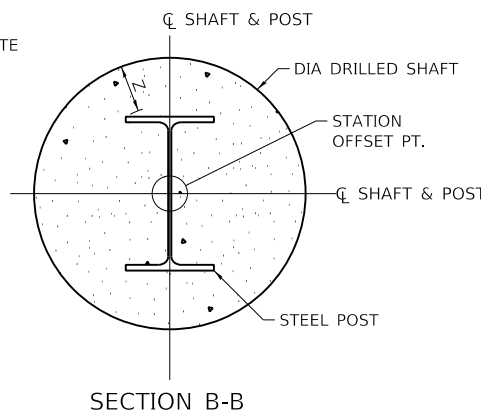
POST & DRILLED SHAFT DESIGN

NAW TYPE	MAX POST HEIGHT	MIN POST EMBED DEPTH	MAX DRILLED SHAFT SPACING	DRILLED SHAFT DEPTH	STEEL POST SIZE	Y	BENT PLATE M x N x THICK.	Z	DIA
NON-CRASHWORTHY GROUND MOUNTED I	15'-0"	10'-0"	20'-0"	12'-0"	W18X35**	3 1/16"	7"x2 3/8"x 3/8"	5 3/8"	2'-6"
NON-CRASHWORTHY GROUND MOUNTED II	20'-0"	12'-0"	20'-0"	16'-0"	W21X50**	5 3/8"	10"x2 3/4"x 3/8"	4 1/2"	2'-6"
NON-CRASHWORTHY GROUND MOUNTED III	25'-0"	12'-6"	20'-0"	15'-0"	W21X68	5 3/8"	10"x3 1/2"x 3/8"	6 3/8"	3'-0"
NON-CRASHWORTHY GROUND MOUNTED IV	28'-0"	13'-6"	20'-0"	15'-6"	W21X83	5 3/8"	10"x3 1/2"x 3/8"	9 1/2"	3'-6"

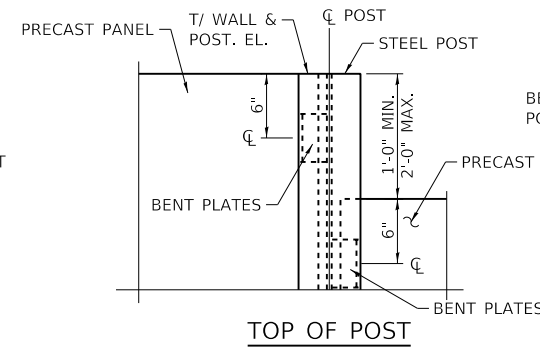
** USE W18x65 FOR NON-CRASHWORTHY GROUND MOUNTED I AND W21X68 FOR NON-CRASHWORTHY GROUND MOUNTED II WHEN SIGN PANEL MOUNT POST EXTENSION IS USED TO ACCOMMODATE A SIGN PANEL ATTACHED TO POST



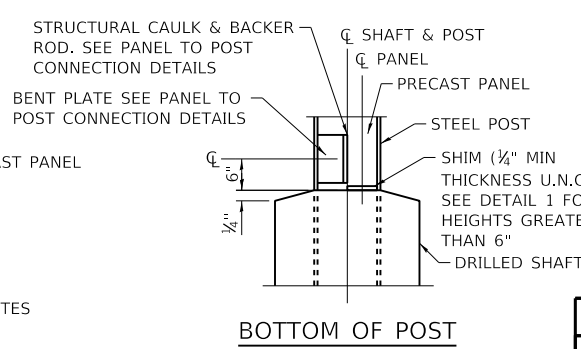
SECTION A-A



SECTION B-B

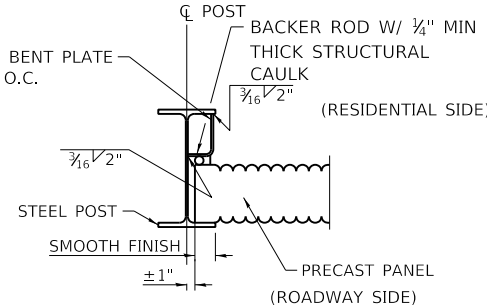


TOP OF POST

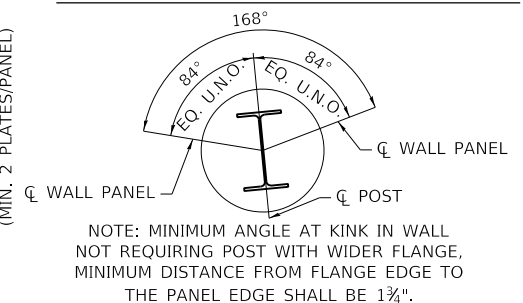


BOTTOM OF POST

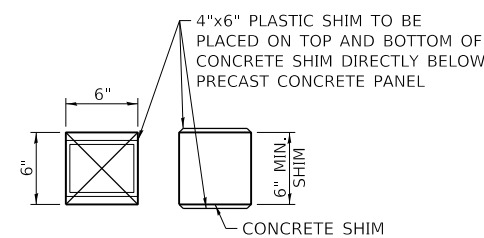
BENT PLATE DETAILS



PANEL TO POST CONNECTION DETAIL



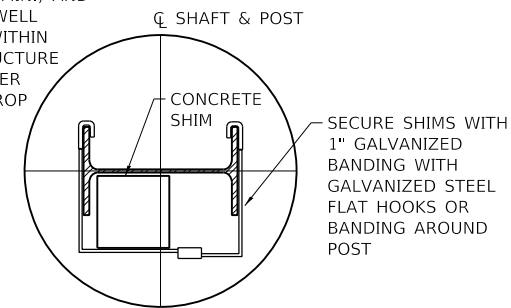
MIN ANGLE BETWEEN PANELS AT TYP POST



**CONCRETE SHIM DETAIL
DETAIL 1**

SHIMS TO BE SECURED TO THE POST, SEE DETAIL 2.

* UNBALANCED SOIL LOAD VARIES 9" (MIN.) AND 3'-6" (MAX.) WHEN NAW IS PLACED WELL OUTSIDE CLEAR ZONE. FOR NAW'S WITHIN CLEAR ZONE ILLINOIS TOLLWAY STRUCTURE DESIGN MANUAL AND TRAFFIC BARRIER GUIDELINES FOR TEST LEVEL AND DROP OFF REQUIREMENTS SHALL APPLY.



**SHIM TO POST
CONNECTION DETAIL 2**

GENERAL NOTES

- ALL EXPOSED CONCRETE EDGES SHALL HAVE A 3/4" X 45° CHAMFER, EXCEPT WHERE SHOWN OTHERWISE. CHAMFER ON VERTICAL EDGES SHALL BE CONTINUED A MINIMUM OF ONE FOOT BELOW FINISHED GROUND LEVEL. NO CHAMFER WILL BE ALLOWED AT HORIZONTAL JOINTS BETWEEN PANELS.
- REINFORCEMENT BARS, INCLUDING EPOXY-COATED REINFORCEMENT BARS, SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-31 (ASTM A706), GRADE 60, DEFORMED BARS.
- REINFORCEMENT BARS DESIGNATED "(E)" SHALL BE EPOXY COATED.
- REINFORCEMENT BAR BENDING DETAILS SHALL BE IN ACCORDANCE WITH THE LATEST "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", ACI 315.
- REINFORCEMENT BAR BENDING DIMENSIONS ARE OUT TO OUT.
- CONSTRUCTION CONTRACTOR SHALL NOT SCALE DIMENSIONS FROM THE CONTRACT PLANS FOR CONSTRUCTION PURPOSES. SCALES SHOWN ARE FOR INFORMATION ONLY.
- END POSTS SHALL HAVE NO BENT PLATES ON EXPOSE SIDE.
- 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 TONS/SQ. FT. WHICH SHALL BE DETERMINED BY PREVIOUS SOIL INVESTIGATIONS AT THE JOB SITE. 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 THE SITE SPECIFIC DESIGNS. IF CONDITIONS ENCOUNTERED IN THE FILED ARE DIFFERENT THAN THOSE INDICATED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO DETERMINE IF THE FOUNDATION DIMENSIONS NEED TO BE MODIFIED.

DESIGN SPECIFICATIONS

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION DATED SEPTEMBER 2017.

ILLINOIS TOLLWAY STRUCTURE DESIGN MANUAL, LATEST EDITION

ILLINOIS TOLLWAY GEOTECHNICAL MANUAL, LATEST EDITION

DESIGN LOADS

GROUND MOUNTED

WIND LOAD = 35 PSF (STR. III)
= 15 PSF (SERV I)

RETAINED EARTH:

SOIL HORIZONTAL LOAD = 120PCF
DEFLECTION:
PANEL = L/240
POST = H/360

DESIGN STRESSES

PRECAST CONCRETE (GROUND MOUNTED NAW):

f'c = 5,000 PSI AT 28 DAYS (CLASS PC)
f'c = 3,500 PSI AT 5 DAYS (SHIPPING)
DENSITY = 150 PCF

FOUNDATION CONCRETE CLASS SI:

f'c = 3,500 PSI AT 14 DAYS PER SECTION 1020 OF IDOT STANDARD SPECIFICATIONS.

STEEL POSTS:

ASTM A709 (AASHTO M270)

GRADE 50, fy = 50 KSI

ALL STEEL POSTS SHALL BE HOT-DIP GALVANIZED

BENT PLATE AND BEARING ANGLES:

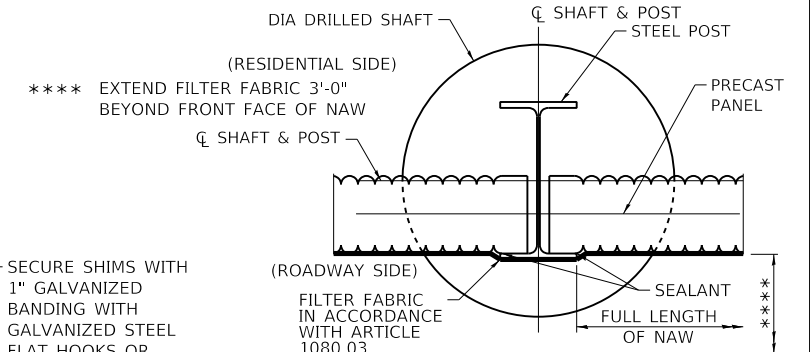
ASTM A709 (AASHTO M270)

GRADE 36, fy = 36 KSI U.N.O.

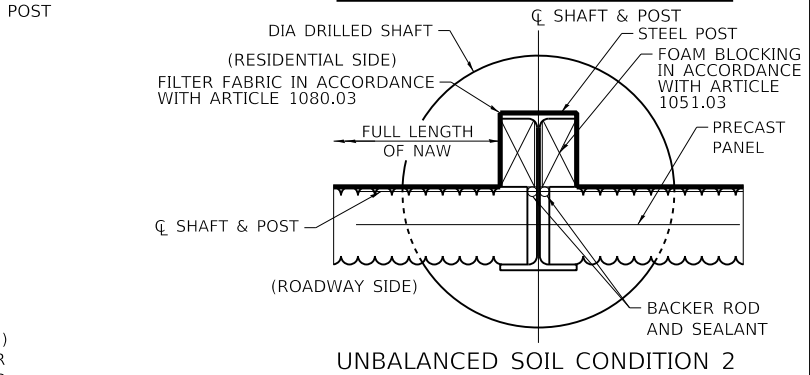
ALL STEEL SHALL BE HOT-DIP GALVANIZED

REINFORCING STEEL:

fy = 60,000 PSI (EPOXY COATED)



UNBALANCED SOIL CONDITION 1



UNBALANCED SOIL CONDITION 2

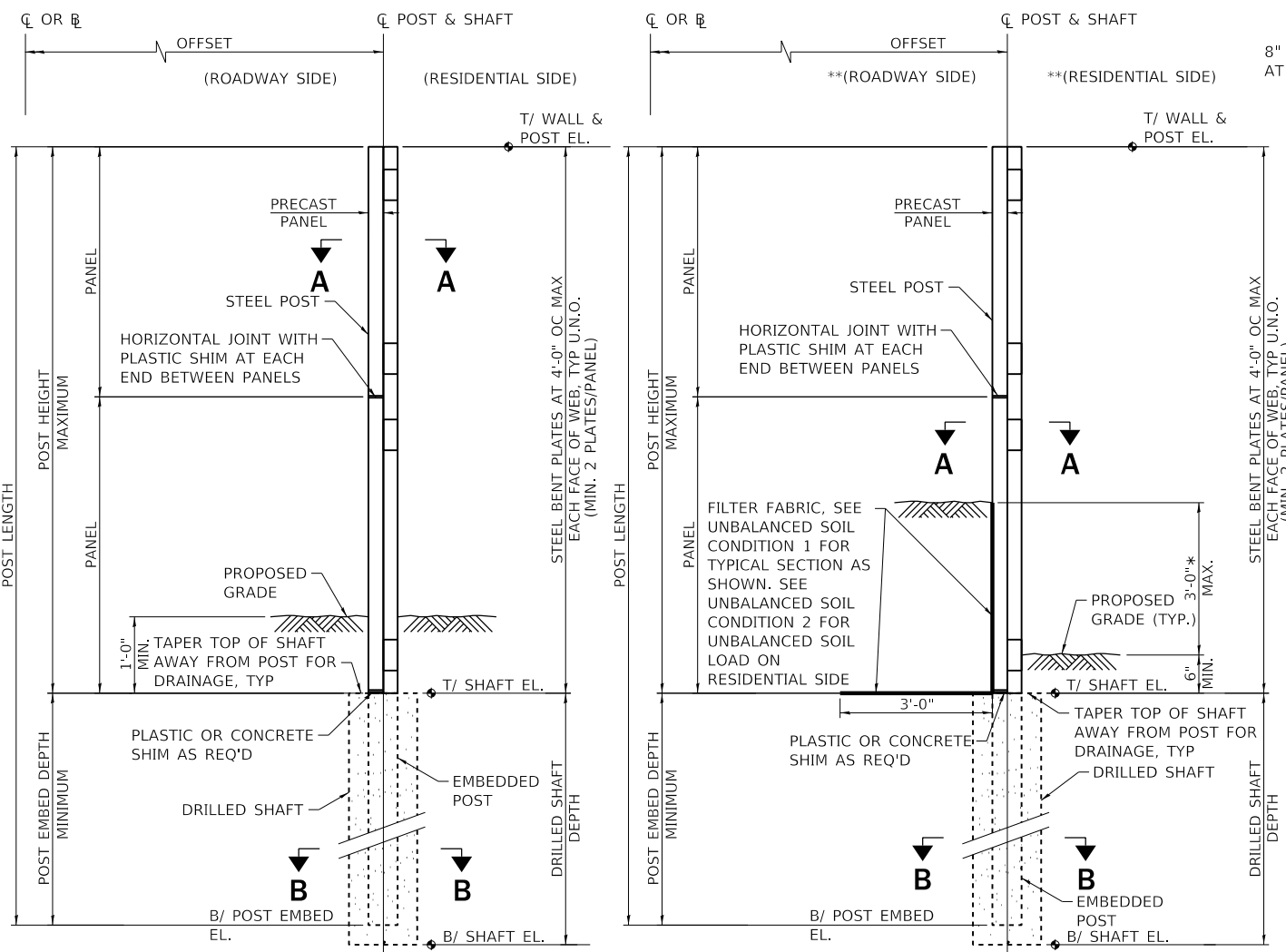
APPROVED: *Paul Kovacs* DATE 7-17-2020
CHIEF ENGINEERING OFFICER

DATE	REVISIONS
7-17-2020	REVISE NOTE 1, ADD FILTER FABRIC
	DET., ADD NOTE THAT TYP. SECT.
	ACCOMMODATES 9" UNBALANCED
	SOIL, REVISED CONC. SHIMS TO 6"
	MIN., INCREASE MIN. ANGLE BETW.
	POST AND PANEL, REMOVE
	REDUNDANT DIMS. IN SECT. B-B,
	CLARIFY 1.5" DIM. IN 90 DEG. DET.,
	ADD TONGUE AND GROOVE DET.,
	ADDED NOTE B

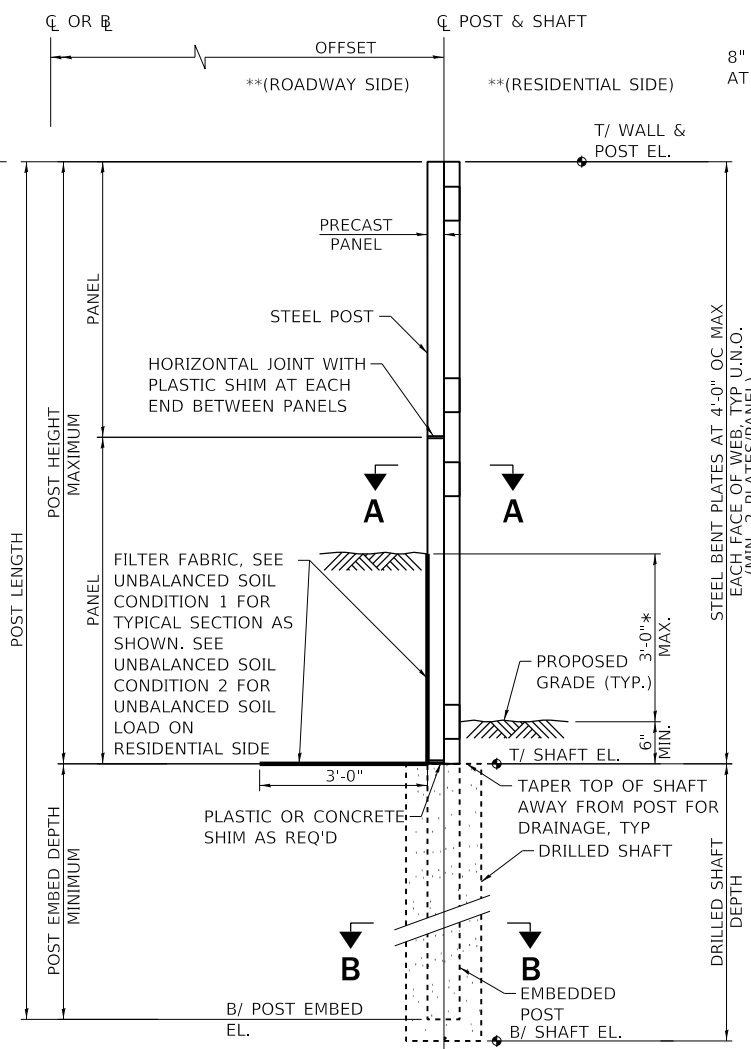


NON-CRASHWORTHY
GROUND MOUNTED
NOISE ABATEMENT WALL
DETAILS

STANDARD G15-01



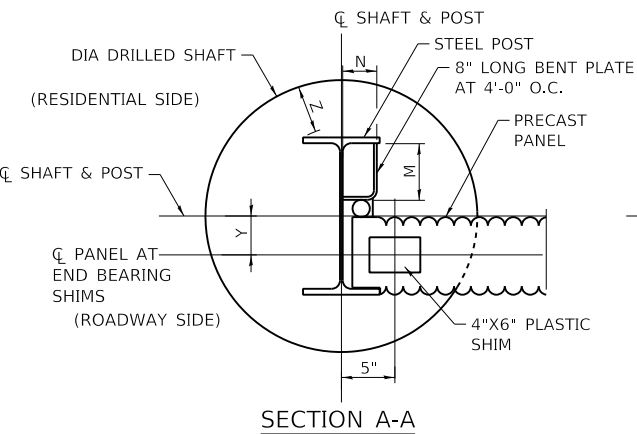
TYPICAL CROSS SECTION
(BALANCED SOIL LOAD)



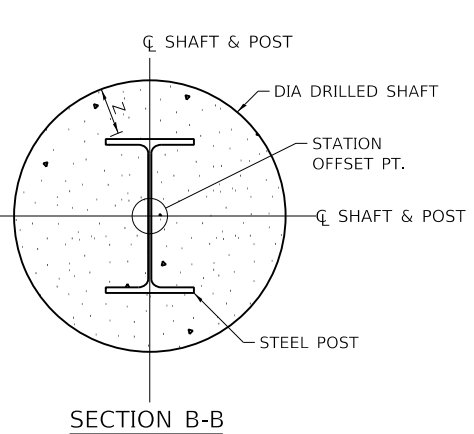
TYPICAL CROSS SECTION
(UNBALANCED SOIL LOAD)
** TYPICAL SECTION SHOWS ROADWAY ON THE HIGH SIDE. DETAILS OF POST FOR ROADWAY ON THE LOW SIDE ARE MIRRORED.

POST & DRILLED SHAFT DESIGN

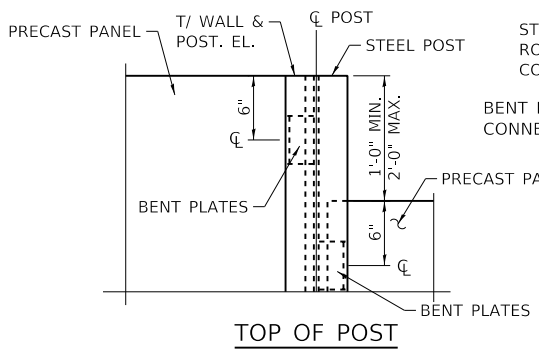
NAW TYPE	MAX POST HEIGHT	MIN POST EMBED DEPTH	MAX DRILLED SHAFT SPACING	DRILLED SHAFT DEPTH	STEEL POST SIZE	Y	BENT PLATE M x N x THICK.	Z	DIA
CRASHWORTHY GROUND MOUNTED I	15'-0"	16'-6"	15'-0"	18'-6"	W21x68	5 1/16"	6 1/2" x 3 1/2" x 1/2"	6 3/8"	3'-0"
CRASHWORTHY GROUND MOUNTED II	20'-0"	16'-6"	15'-0"	18'-6"	W21x68	5 1/16"	6 1/2" x 3 1/2" x 1/2"	6 3/8"	3'-0"
CRASHWORTHY GROUND MOUNTED III	25'-0"	16'-6"	15'-0"	18'-6"	W21x68	5 1/16"	6 1/2" x 3 1/2" x 1/2"	6 3/8"	3'-0"
CRASHWORTHY GROUND MOUNTED IV	28'-0"	16'-6"	15'-0"	19'-0"	W21x68	5 1/16"	6 1/2" x 3 1/2" x 1/2"	6 3/8"	3'-0"



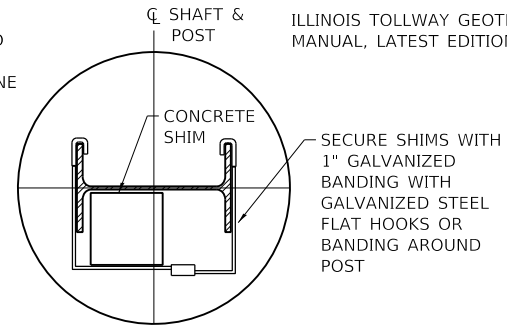
SECTION A-A



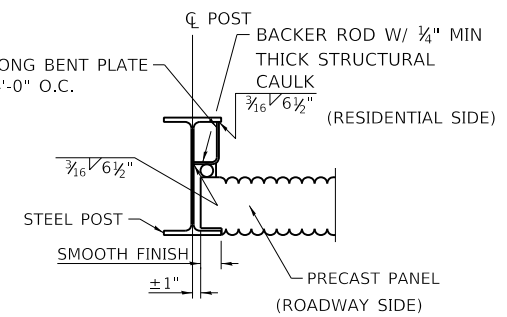
SECTION B-B



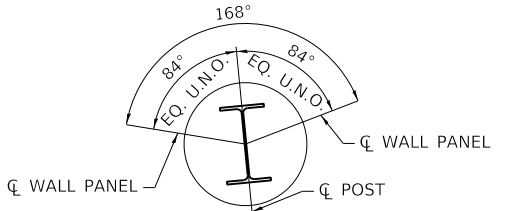
BENT PLATE DETAILS



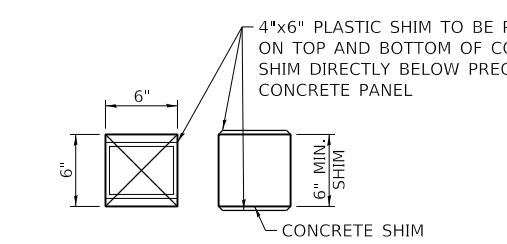
SHIM TO POST CONNECTION DETAIL 2



PANEL TO POST CONNECTION DETAIL



MIN ANGLE BETWEEN PANELS AT TYP POST
NOTE: MINIMUM ANGLE AT KINK IN WALL NOT REQUIRING POST WITH WIDER FLANGE, MINIMUM DISTANCE FROM FLANGE EDGE TO THE PANEL EDGE SHALL BE 1 3/4\"/>



CONCRETE SHIM DETAIL 1
SHIMS TO BE SECURED TO THE POST SEE DETAIL 2
* 3'-0" IS MAX. UNBALANCED SOIL LOAD WHEN NAW IS PLACED INSIDE CLEAR ZONE TO MAINTAIN TL-4 TEST LEVEL.

GENERAL NOTES

- ALL EXPOSED CONCRETE EDGES SHALL HAVE A 3/4" X 45° CHAMFER, EXCEPT WHERE SHOWN OTHERWISE. CHAMFER ON VERTICAL EDGES SHALL BE CONTINUED A MINIMUM OF ONE FOOT BELOW FINISHED GROUND LEVEL. NO CHAMFER WILL BE ALLOWED AT HORIZONTAL JOINTS BETWEEN PANELS.
- REINFORCEMENT BARS, INCLUDING EPOXY-COATED REINFORCEMENT BARS, SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-31 (ASTM A706), GRADE 60, DEFORMED BARS.
- REINFORCEMENT BARS DESIGNATED "(E)" SHALL BE EPOXY COATED.
- REINFORCEMENT BAR BENDING DETAILS SHALL BE IN ACCORDANCE WITH THE LATEST "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", ACI 315.
- REINFORCEMENT BAR BENDING DIMENSIONS ARE OUT TO OUT.
- CONSTRUCTION CONTRACTOR SHALL NOT SCALE DIMENSIONS FROM THE CONTRACT PLANS FOR CONSTRUCTION PURPOSES. SCALES SHOWN ARE FOR INFORMATION ONLY.
- END POSTS SHALL HAVE NO BENT PLATES ON EXPOSE SIDE.
- 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 TONS/SQ. FT. WHICH SHALL BE DETERMINED BY PREVIOUS SOIL INVESTIGATIONS AT THE JOB SITE. 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 THE SITE SPECIFIC DESIGNS. IF CONDITIONS ENCOUNTERED IN THE FILED ARE DIFFERENT THAN THOSE INDICATED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO DETERMINE IF THE FOUNDATION DIMENSIONS NEED TO BE MODIFIED.

DESIGN LOADS

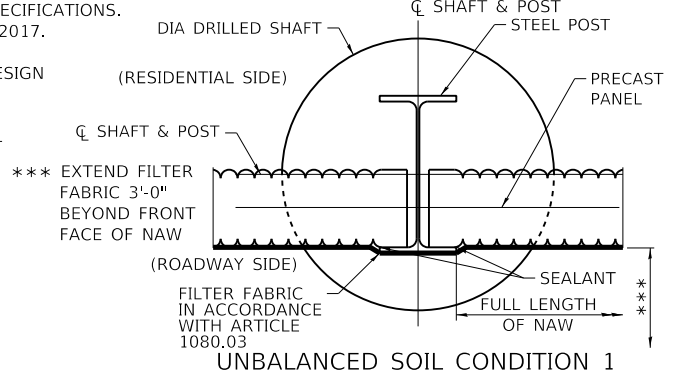
- CRASHWORTHY GROUND MOUNTED**
WIND LOAD = 35 PSF (STR. III)
= 15 PSF (SERV I)
- RETAINED EARTH:**
HORIZONTAL SOIL LOAD = 120 PCF
LIVE LOAD SURCHARGE = 2FT
TL-4 VEHICLE COLLISION LOADING:
54 KIP APPLIED AT 6'-0"
ABOVE ROADWAY PAVEMENT
SECONDARY IMPACT (NO TL-4 IMPACT):
4 KIP APPLIED AT THE HIGHEST POINT UP TO 14FT ABOVE SURFACE OF PAVEMENT IN FRONT OF NAW
- DEFLECTION:**
PANEL = L/240
POST = H/360

DESIGN SPECIFICATIONS

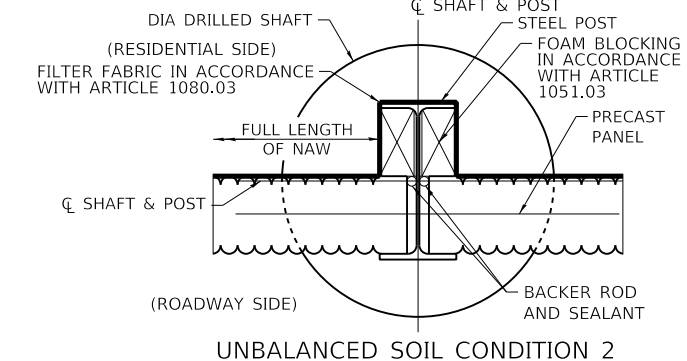
- AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION DATED SEPTEMBER 2017.
- ILLINOIS TOLLWAY STRUCTURE DESIGN MANUAL, LATEST EDITION
- ILLINOIS TOLLWAY GEOTECHNICAL MANUAL, LATEST EDITION

DESIGN STRESSES

- PRECAST CONCRETE (GROUND MOUNTED NAW):**
f'c = 5,000 PSI AT 28 DAYS (CLASS PC)
f'c = 3,500 PSI AT 5 DAYS (SHIPPING)
DENSITY = 150 PCF
- FOUNDATION CONCRETE CLASS S1:**
f'c = 3,500 PSI AT 14 DAYS PER SECTION 1020 OF IDOT STANDARD SPECIFICATIONS.
- STEEL POSTS:**
ASTM A709 (AASHTO M270)
GRADE 50, fy = 50 KSI
ALL STEEL POSTS SHALL BE HOT-DIP GALVANIZED
- BENT PLATE AND BEARING ANGLES:**
ASTM A709 (AASHTO M270)
GRADE 36, fy = 36 KSI U.N.O.
ALL STEEL SHALL BE HOT-DIP GALVANIZED
- REINFORCING STEEL:**
fy = 60,000 PSI (EPOXY COATED)



UNBALANCED SOIL CONDITION 1



UNBALANCED SOIL CONDITION 2

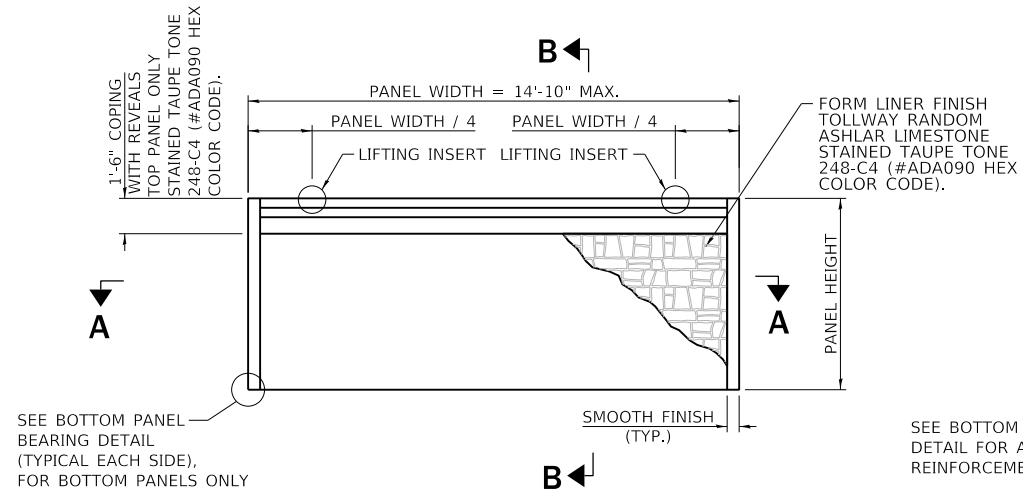
DATE	REVISIONS
7-17-2020	REVISE NOTE 1, ADD FILTER FABRIC
	DET., REVISE CONC. SHIMS TO 6"
	MIN., INCREASE MIN. ANGLE BETW. POST AND PANEL, REMOVE
	REDUNDANT DIMS. IN SECT. B-B,
	REVISE END BAR SPACING TO 14"
	IN SECT. A-A, CLARIFY 1" DIM. IN
	90 DEG. DET., REVISE POST SIZE
	POST EXTENSION DET. ADD
	TONGUE AND GROOVE DET. AND
	ADDED NOTE C



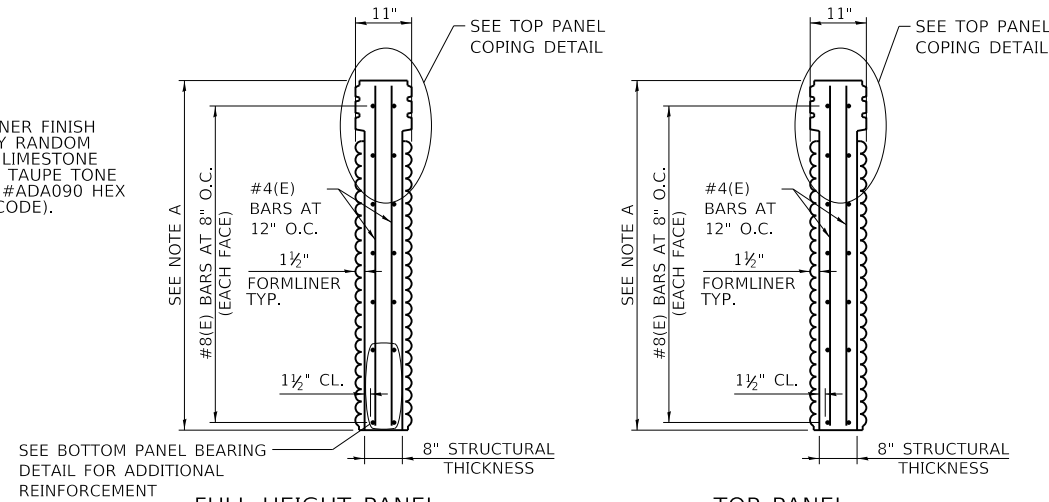
CRASHWORTHY GROUND MOUNTED NOISE ABATEMENT WALL DETAILS

STANDARD G16-01

APPROVED: *Paul Kovacs* DATE 7-17-2020
CHIEF ENGINEERING OFFICER



TYPICAL NOISE WALL PANEL DETAIL



FULL HEIGHT PANEL (TL-4 IMPACT LOAD)

TOP PANEL (TL-4 IMPACT LOAD)

CENTER PANEL (TL-4 IMPACT LOAD)

BOTTOM PANEL (TL-4 IMPACT LOAD)

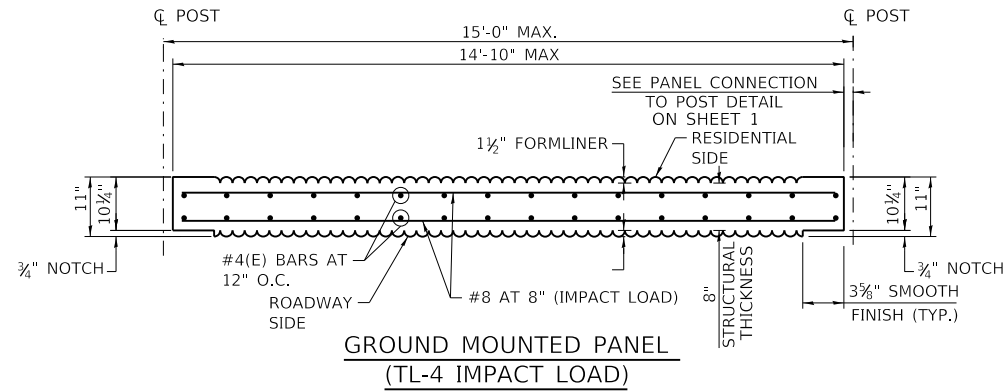
SECTION B-B

SECTION B-B

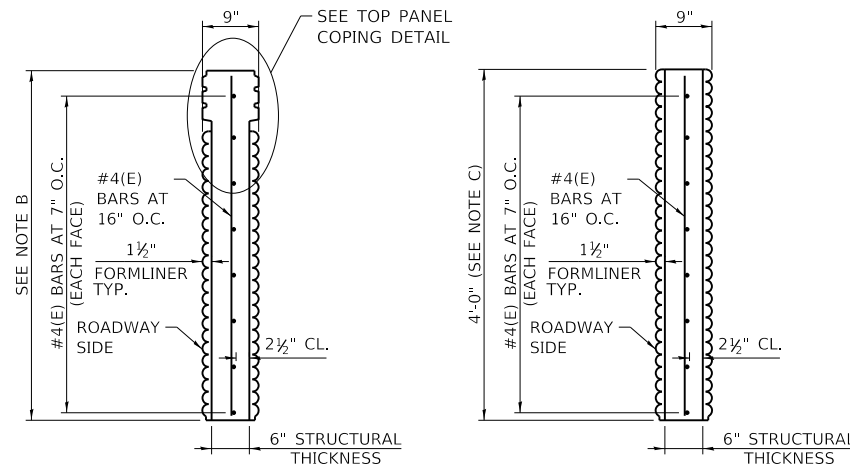
SECTION B-B

SECTION B-B

NOTE A:
TO ACCOMMODATE VARYING HEIGHT NAW PANELS ARE PERMITTED TO BE 6'-0", 7'-0", 8'-0" OR 9'-0" TALL



GROUND MOUNTED PANEL (TL-4 IMPACT LOAD)



TOP PANEL (NO TL-4 IMPACT LOAD)

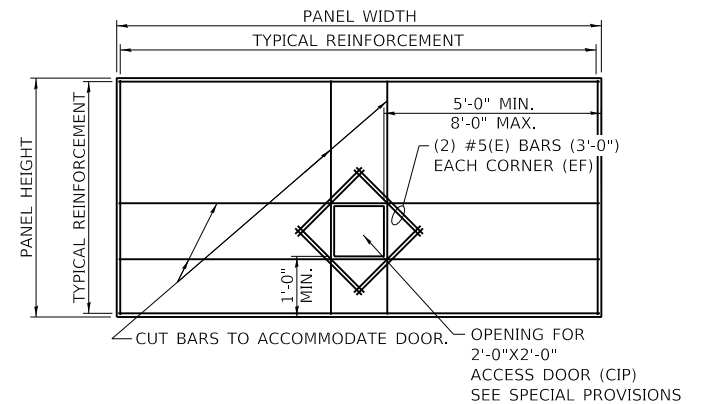
CENTER PANEL (NO TL-4 IMPACT LOAD)

SECTION B-B

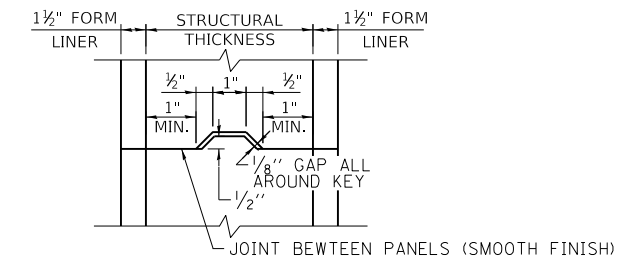
SECTION B-B

NOTE B:
TO ACCOMMODATE VARYING HEIGHT NAW, TOP PANEL (NO TL-4 IMPACT LOAD) IS PERMITTED TO BE 5'-0", 6'-0", 7'-0", 8'-0" OR 9'-0" TALL

NOTE C:
CONTRACTOR MAY INCREASE THE STANDARD PANEL HEIGHTS, MAXIMUM HEIGHT OF 9FT, TO MINIMIZE THE NUMBER OF HORIZONTAL JOINTS. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW PRIOR TO INSTALLATION.

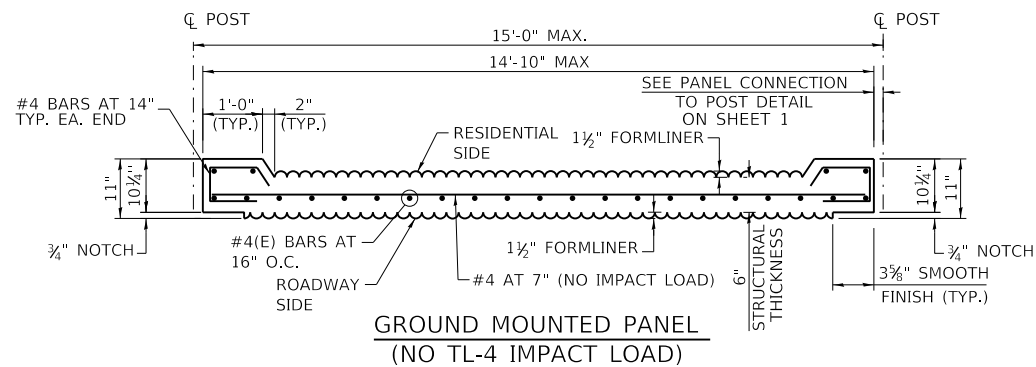


FIRE HYDRANT ACCESS OPENING DETAIL



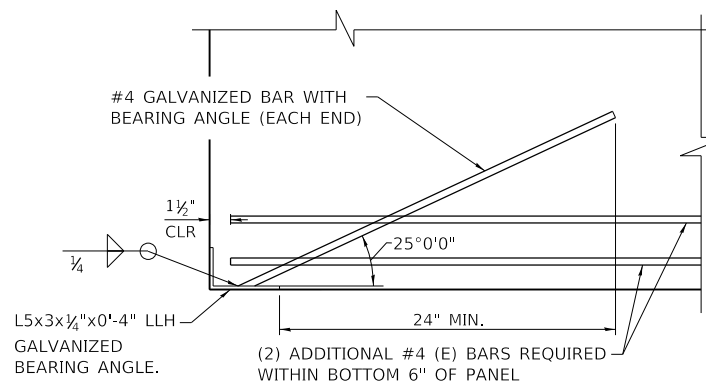
OPTIONAL TONGUE AND GROOVE DETAIL

(IN LIEU OF SHIM AND CAULK)

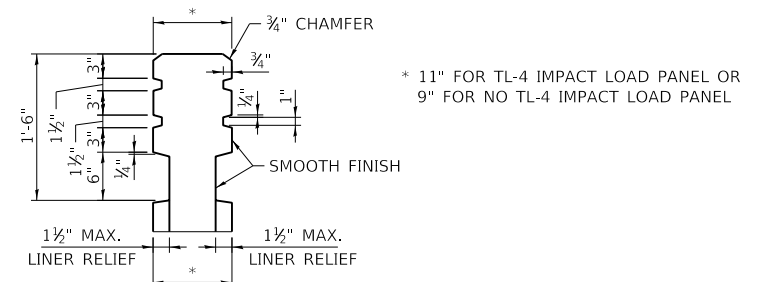


GROUND MOUNTED PANEL (NO TL-4 IMPACT LOAD)

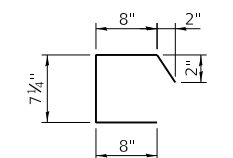
SECTION A-A



BOTTOM PANEL BEARING DETAIL

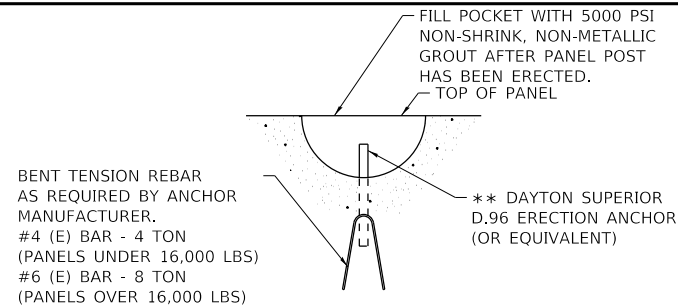


TOP PANEL COPING DETAIL



END BAR DETAIL



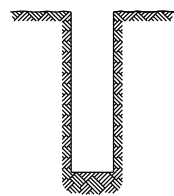


TYPICAL LIFTING INSERT DETAIL

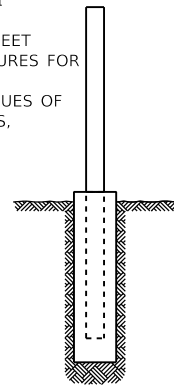
** ERECTION ANCHORS SHALL BE HOT-DIPPED GALVANIZED

NOTES:

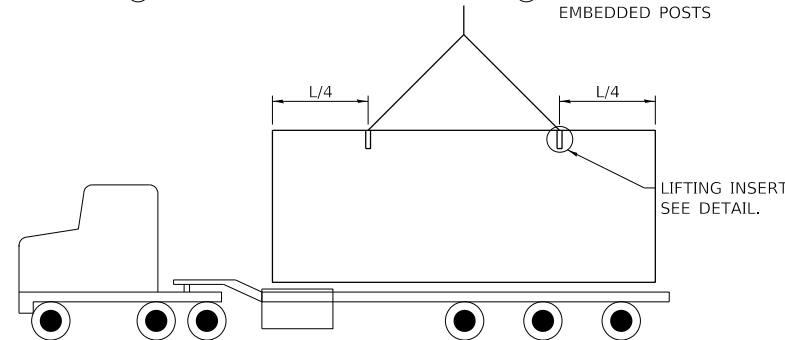
1. LIFTING INSERTS SHALL HAVE A FACTOR OF SAFETY OF 4:1
2. THE NAW INSTALLATION PROCEDURES SHOWN ON THIS SHEET PROVIDE GENERAL INSTALLATION SEQUENCE AND PROCEDURES FOR THE CONTRACTOR. THE CONTRACTOR SHALL RETAIN SOLE RESPONSIBILITY FOR THE MEANS, METHODS, AND TECHNIQUES OF CONSTRUCTION OF THE NAW FOR COMPLIANCE WITH LAWS, REGULATIONS, AND CODES, AND FOR THE SAFETY OF CONSTRUCTION APPLICABLE TO THIS WORK.



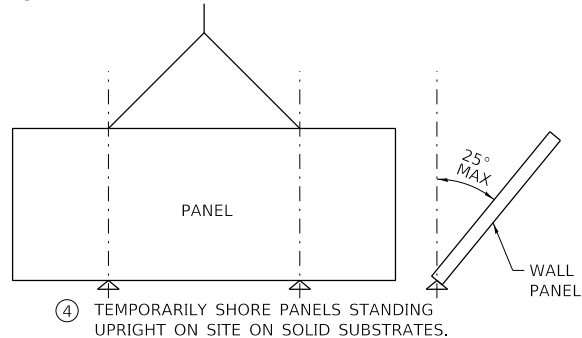
① DRILL SHAFTS



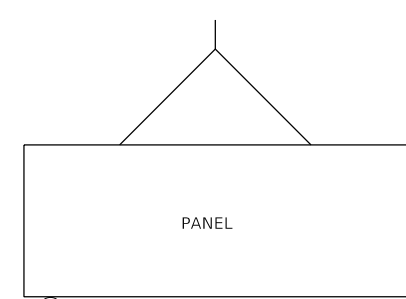
② POUR CONCRETE AND SET EMBEDDED POSTS



③ REMOVE PANELS FROM TRUCK WITH RIGGING.

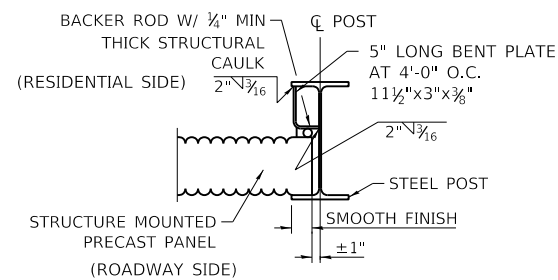


④ TEMPORARILY SHORE PANELS STANDING UPRIGHT ON SITE ON SOLID SUBSTRATES.



⑤ ERECT PANELS BETWEEN POSTS

SUGGESTED TYPICAL NOISE ABATEMENT WALL INSTALLATION SEQUENCE AND PROCEDURE

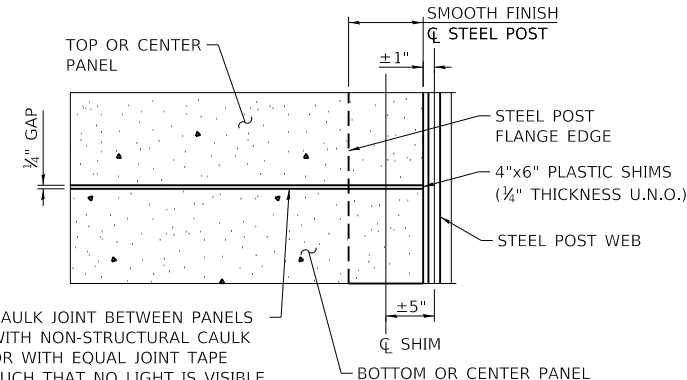


STRUCTURE MOUNTED PANEL TO POST CONNECTION DETAIL

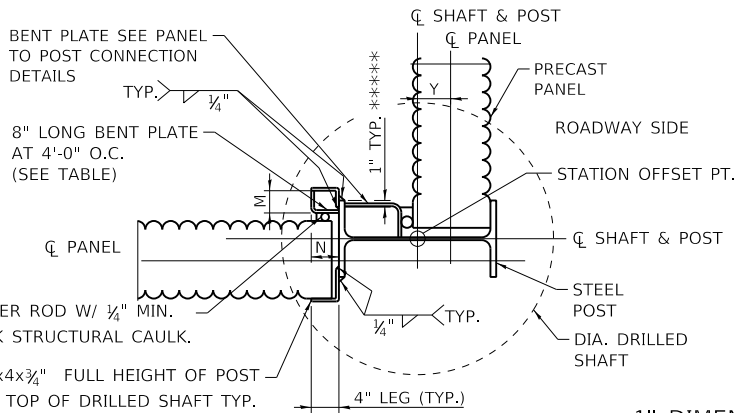


SIGN PANEL MOUNT TO PANEL DETAIL

*** PRECAST PANELS HAVE BEEN DESIGNED TO ACCOMMODATE SIGN PANEL MOUNT WITH MAX 32 SF SIGN AREA IN ACCORDANCE WITH ILLINOIS TOLLWAY STANDARD F19. MIN. PANEL HEIGHT SUPPORTING SIGN SHALL BE 5'-0".



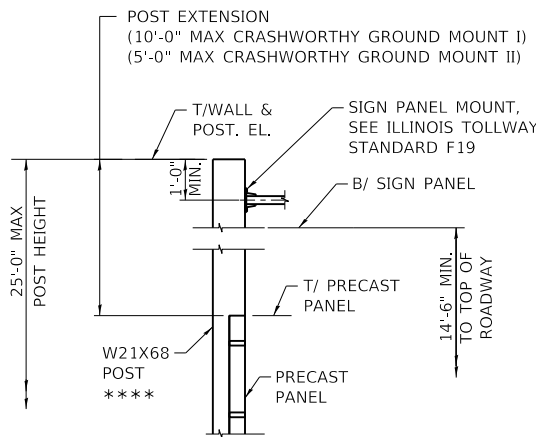
HORIZONTAL JOINT DETAIL



90° TURN DETAIL 90° TURN BENT PLATE TABLE

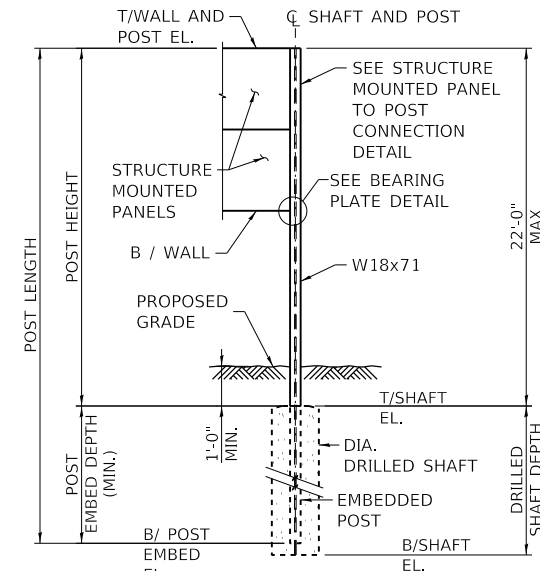
NAW TYPE	BENT PLATE N x M x THICK.
CRASHWORTHY GROUND MOUNTED I	3"x8"x3/8"
CRASHWORTHY GROUND MOUNTED II	3"x8"x3/8"
CRASHWORTHY GROUND MOUNTED III	3"x8"x3/8"
CRASHWORTHY GROUND MOUNTED IV	3"x8"x3/8"

***** 1" DIMENSION IS BEARING LENGTH OF BENT PLATE ON POST FLANGE

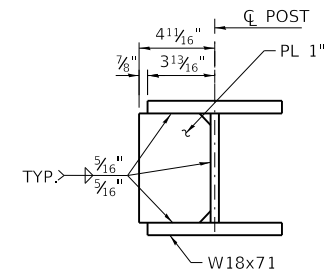


SIGN PANEL MOUNT POST EXTENSION DETAIL

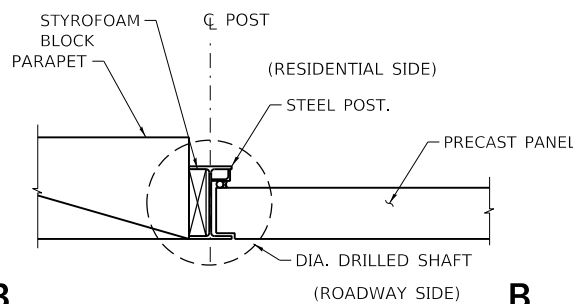
**** W18X71 POSTS HAVE BEEN DESIGNED TO ACCOMMODATE A POST EXTENSION WITH MAX 32 SF SIGN AREA IN ACCORDANCE WITH ILLINOIS TOLLWAY STANDARD F19 UP TO A MAXIMUM POST HEIGHT OF 25'-0"



DETAIL 1

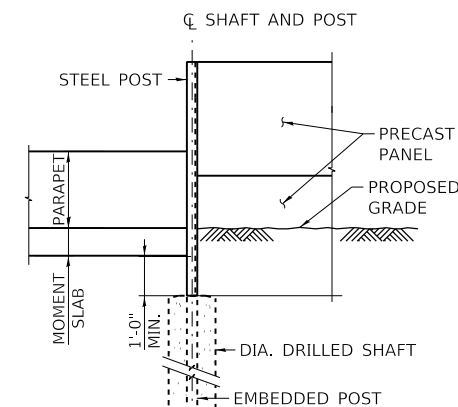


BEARING PLATE DETAIL



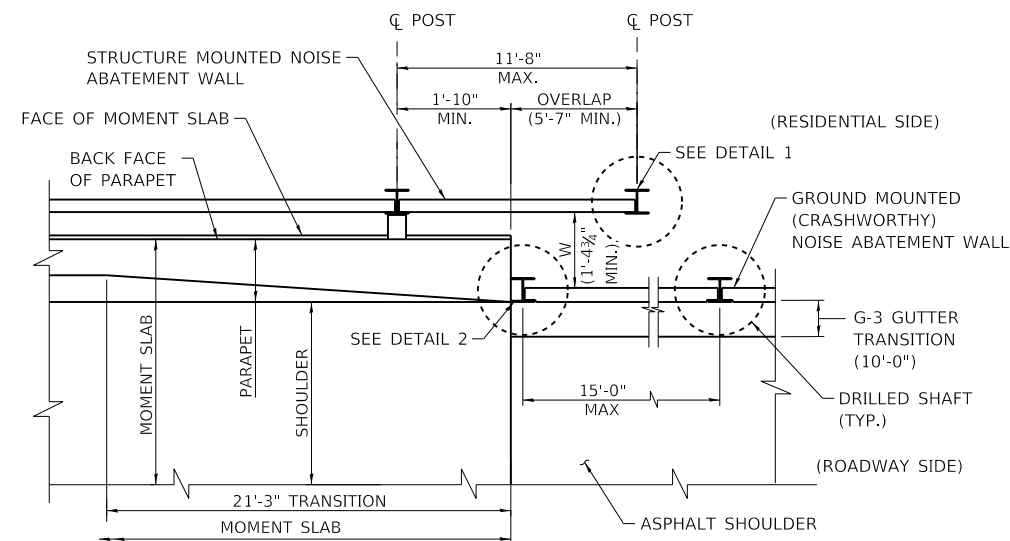
DETAIL 2

CRASHWORTHY GROUND MOUNTED NAW TRANSITION TO PARAPET



VIEW B-B

(STRUCTURE MOUNTED NAW) NOT SHOWN FOR CLARITY



NAW TRANSITION DETAIL PLAN

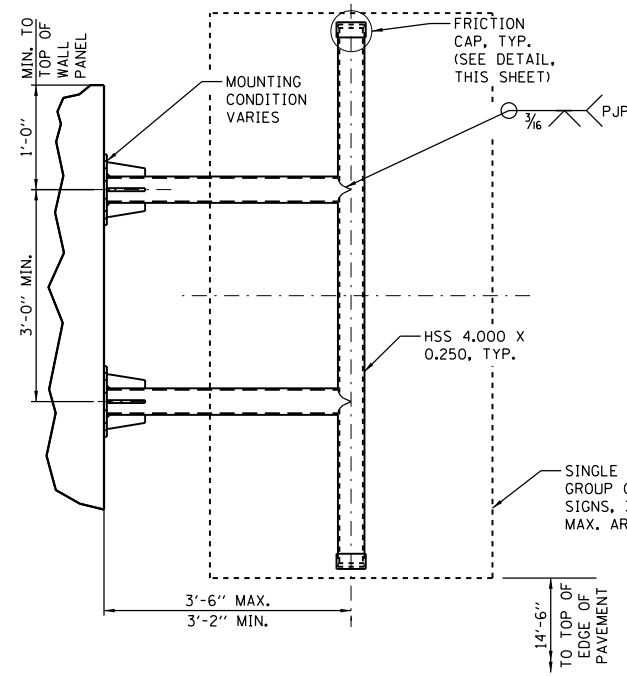


CRASHWORTHY GROUND MOUNTED NOISE ABATEMENT WALL DETAILS

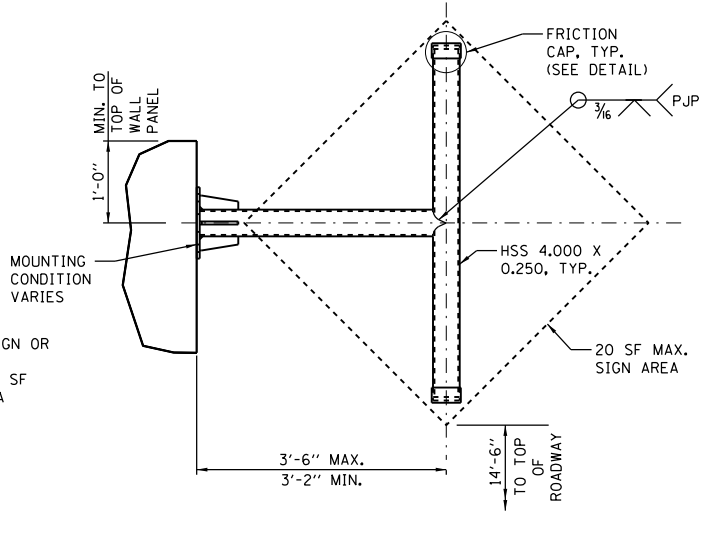
STANDARD G16-01

Paul Kovacs

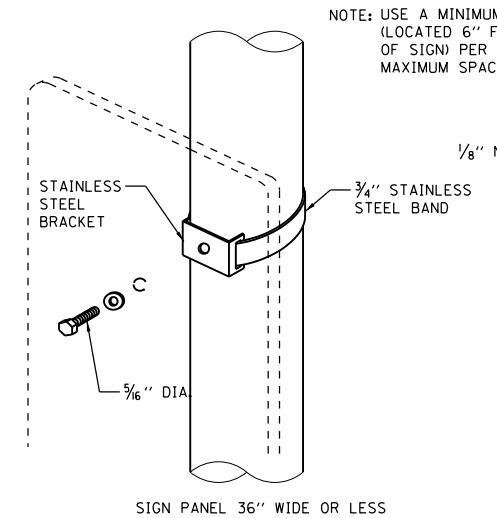
APPROVED... DATE 7-17-2020
CHIEF ENGINEERING OFFICER



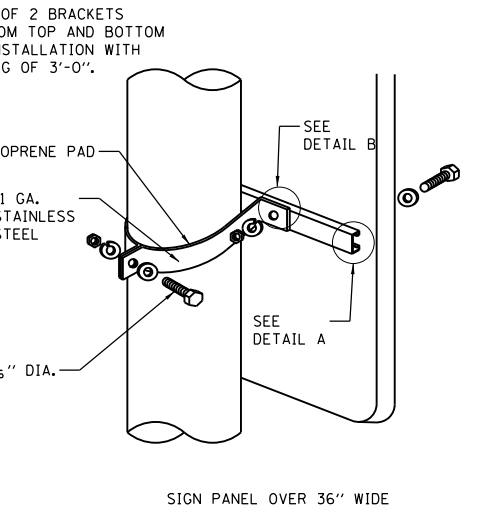
SIGN PANEL MOUNT
(MAXIMUM SIGN AREA 32 SF)



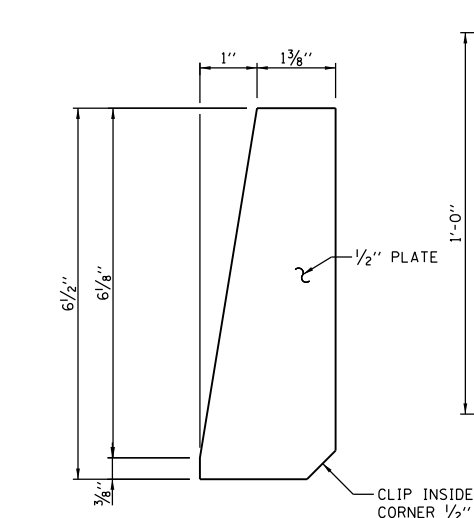
SIGN PANEL MOUNT
(MAXIMUM SIGN AREA 20 SF)



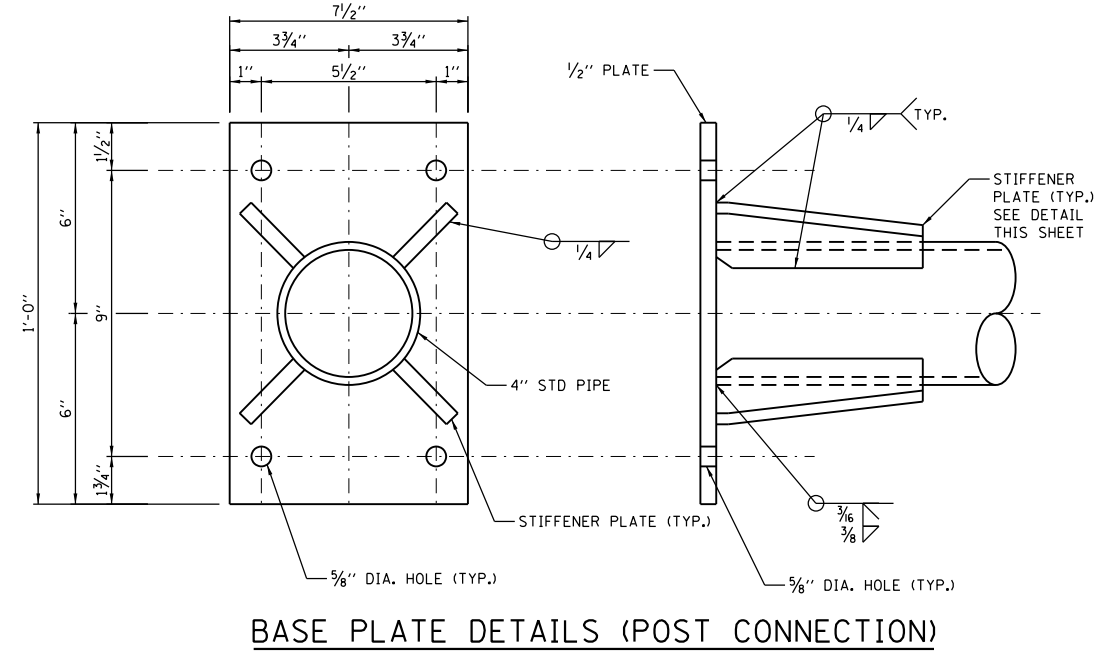
MOUNTING BRACKET DETAIL



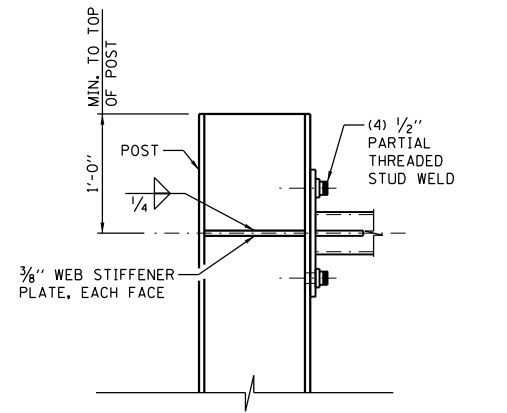
MOUNTING BRACKET DETAIL



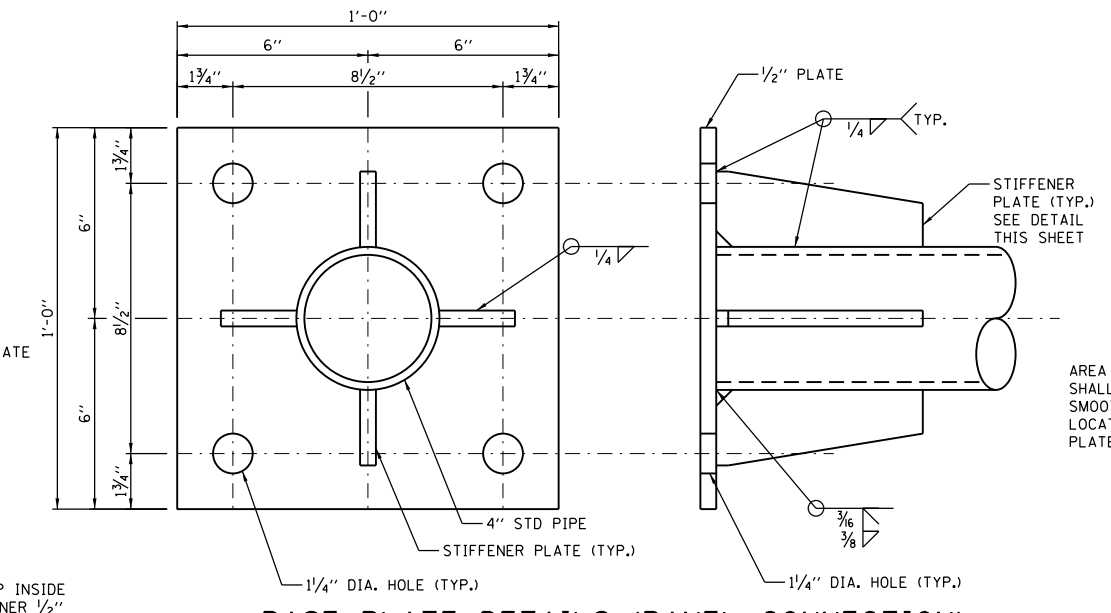
STIFFENER PLATE DETAIL



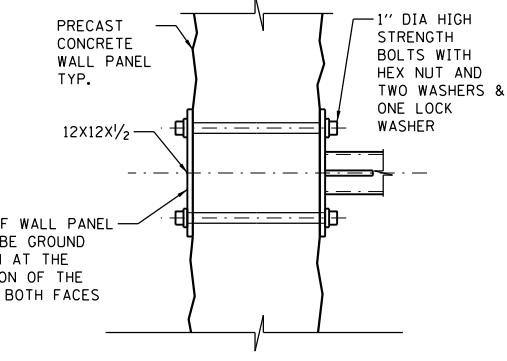
BASE PLATE DETAILS (POST CONNECTION)



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



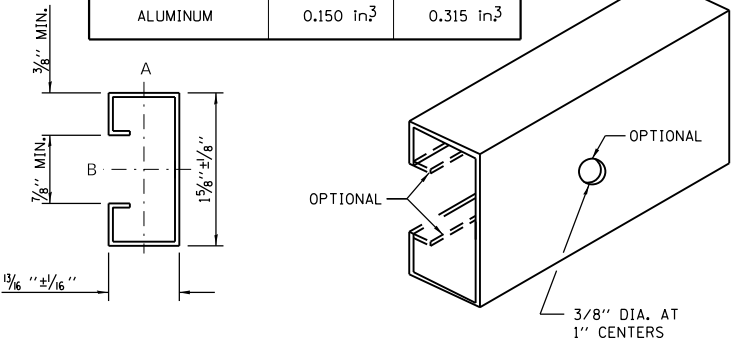
BASE PLATE DETAILS (PANEL CONNECTION)



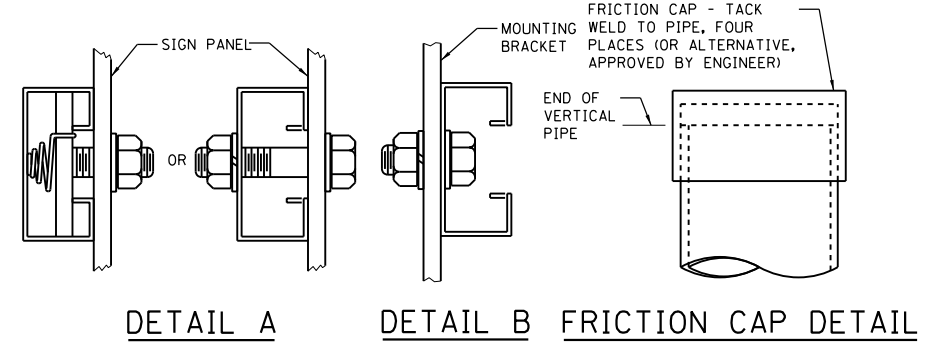
CONNECTION TO PANEL

- 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 3-5 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 HOLES(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.
 - 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



SUPPORTING CHANNEL DETAILS



DETAIL A DETAIL B FRICTION CAP DETAIL

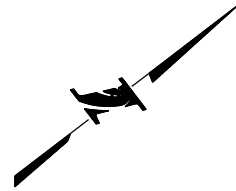
APPROVED *Paul Kovacs* CHIEF ENGINEERING OFFICER DATE 7-17-2020

DATE	REVISIONS
7-17-2020	REVISE BASE PLATE DETAILS FOR POST AND PANEL CONNECTIONS

SHEET 1 OF 1

NOISE ABATEMENT WALL MOUNTED SIGN SUPPORT

STANDARD F19-01



NOTE TO DESIGNER

THIS SHEET IS NOT TO SCALE. DESIGNER TO DETERMINE APPROPRIATE SCALE ON GP&E SHEET TO ACCURATELY REPRESENT REQUIRED INFORMATION.

NOTE TO DESIGNER

ALL SIGNS MOUNTED TO NAW SHALL BE SHOWN ON GP&E IN ACCORDANCE WITH LATEST ILLINOIS TOLLWAY DETAIL FOR NOISE ABATEMENT WALL MOUNTED SIGN SUPPORT.

NOTE TO DESIGNER

THE BASE SHEET SHOWS TYPICAL CONSTRUCTION BUT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DSE PRIOR TO INSERTION INTO A CONTRACT. THE DSE SHALL ACCEPT RESPONSIBILITY OF THE DESIGN UPON ITS COMPLETION AND INSERTION INTO A CONTRACT.

THIS BASE SHEET REPRESENTS THE TYPICAL DETAILS FOR STRUCTURE MOUNTED, NOISE ABATEMENT WALLS. THE DSE IS RESPONSIBLE FOR COMPLETING THE TABLES AND INCLUDE IN THEIR CONTRACT PLANS. IF ANY OF THE DESIGN PARAMETERS IN THE ILLINOIS TOLLWAY STANDARD ARE EXCEEDED, THE DSE WILL BE RESPONSIBLE FOR DESIGN CALCULATIONS AND DETAILS FOR THOSE COMPONENTS.

THE PLAN AND ELEVATION ON THIS COVER SHEET REPRESENTS ADDITIONAL INFORMATION TO SHOW ON THE GP&E SHEET. THE GP&E SHEET AND REMAINING NAW PLANS SHALL BE IN ACCORDANCE WITH ILLINOIS TOLLWAY STRUCTURE DESIGN MANUAL ARTICLES 6.2.5 AND 23.3.

NOTE TO DESIGNER

THE COVER SHEET IS FOR INFORMATION ONLY AND SHOULD NOT BE INCLUDED IN THE DSE'S SET OF PLANS.

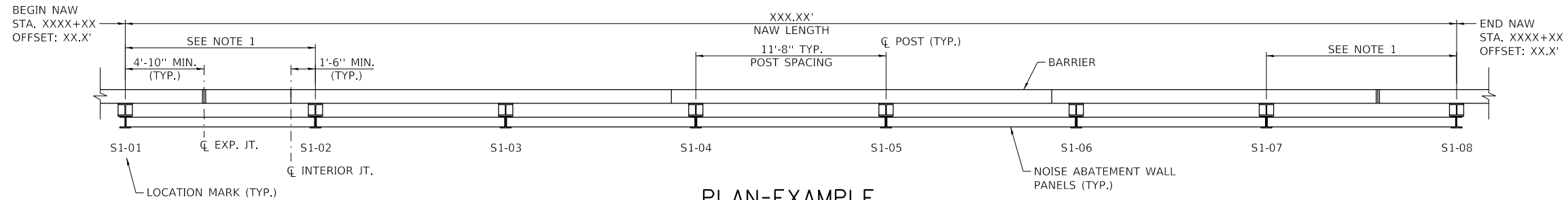
NOTE TO DESIGNER

INCLUDE ACOUSTICAL PROFILE FOR INFORMATION ONLY.

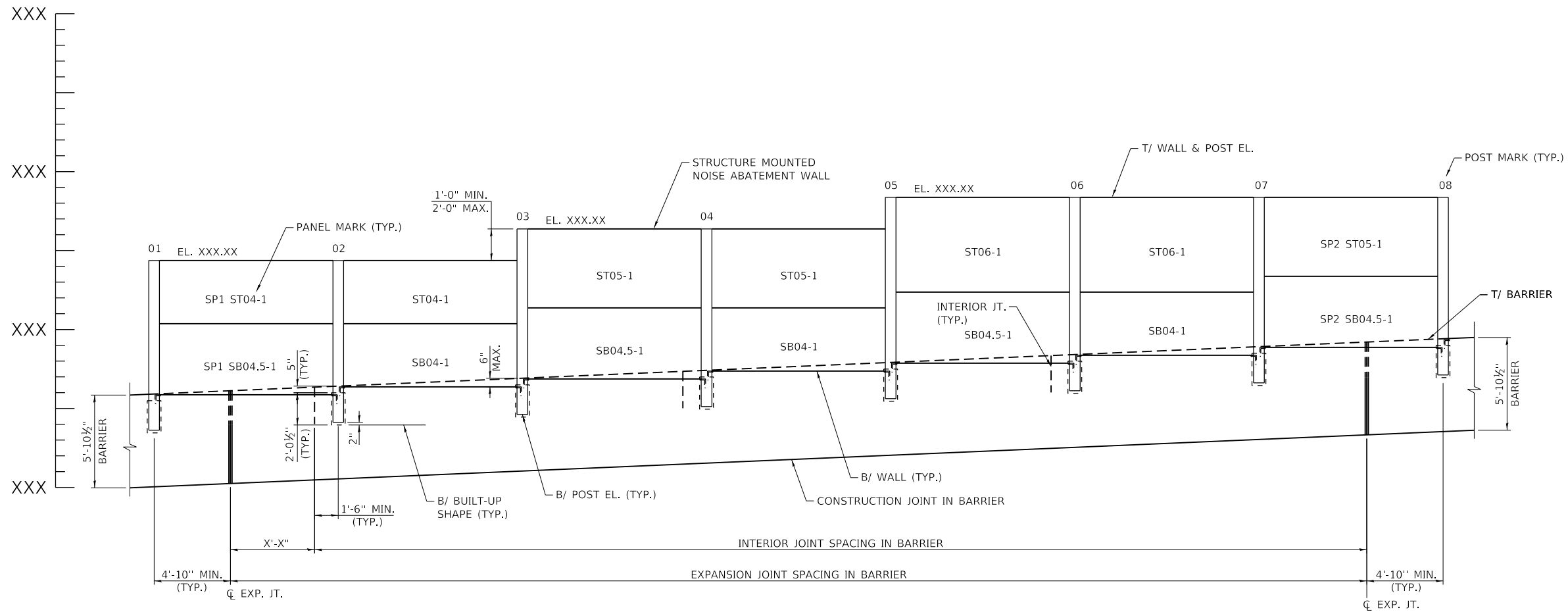
NOTE TO DESIGNER

NOTE:

1. USE SPECIALTY PANEL AND POST SPACING AT ENDS OF WALL OR UNIQUE LOCATIONS SUCH AS INTERIOR OR EXPANSION JOINT CONFLICTS TO ACCOMMODATE TYPICAL 11'-8" POST SPACING ALONG THE MAJORITY OF THE LENGTH OF WALL. POST SPACING SHOULD NOT EXCEED LIMITS WITHIN THE ILLINOIS TOLLWAY STANDARD. IF LIMITS ARE EXCEEDED, DSE TO DESIGN AND DETAIL ALL COMPONENTS.



PLAN-EXAMPLE



ELEVATION-EXAMPLE



STRUCTURE MOUNTED PANEL SCHEDULE

PANEL MARK	PANEL HEIGHT	PANEL WIDTH	TOTAL PANEL THICKNESS	NUMBER OF PANELS
* SB04-1	4'-0"	11'-6"	5½"	X
* SB04.5-1	4'-6"	11'-6"	5½"	X
SC04-1	4'-0"	11'-6"	5½"	X
ST04-1	4'-0"	11'-6"	5½"	X
ST05-1	5'-0"	11'-6"	5½"	X
ST06-1	6'-0"	11'-6"	5½"	X
ST07-1	7'-0"	11'-6"	5½"	X
ST08-1	8'-0"	11'-6"		X
STF04-1	4'-0"	11'-6"	5½"	X
STF04.5-1	4'-6"	11'-6"	5½"	X
STF05-1	5'-0"	11'-6"	5½"	X
STF05.5-1	5'-6"	11'-6"	5½"	X
STF06-1	6'-0"	11'-6"	5½"	X
STF06.5-1	6'-6"	11'-6"	5½"	X
STF07-1	7'-0"	11'-6"	5½"	X
STF07.5-1	7'-6"	11'-6"	5½"	X
STF08-1	8'-0"	11'-6"	5½"	X
* SPX SB04-1	4'-0"	X'-X"	5½"	X
* SPX SB04.5-1	4'-6"	X'-X"	5½"	X
SPX SC04-1	4'-0"	X'-X"	5½"	X
SPX ST04-1	4'-0"	X'-X"	5½"	X
SPX ST05-1	5'-0"	X'-X"	5½"	X
SPX ST06-1	6'-0"	X'-X"	5½"	X
SPX ST07-1	7'-0"	X'-X"	5½"	X
SPX ST08-1	8'-0"	X'-X"		X
SPX STF04-1	4'-0"	X'-X"	5½"	X
SPX STF04.5-1	4'-6"	X'-X"	5½"	X
SPX STF05-1	5'-0"	X'-X"	5½"	X
SPX STF05.5-1	5'-6"	X'-X"	5½"	X
SPX STF06-1	6'-0"	X'-X"	5½"	X
SPX STF06.5-1	6'-6"	X'-X"	5½"	X
SPX STF07-1	7'-0"	X'-X"	5½"	X
SPX STF07.5-1	7'-6"	X'-X"	5½"	X
SPX STF08-1	8'-0"	X'-X"	5½"	X

NOTE:

1. WORK THIS SHEET WITH ILLINOIS TOLLWAY STANDARD G12.

* CONTRACTOR MAY INCREASE BOTTOM PANEL HEIGHTS AND USE UP TO AN 8FT (NON-STANDARD) MAXIMUM HEIGHT PANEL. THE ADJACENT TOP PANEL MAY ALSO BE ADJUSTED, PROVIDED STANDARD PANEL HEIGHTS AS SHOWN IN STANDARD G12 ARE USED. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW PRIOR TO INSTALLATION.

DESIGN SPECIFICATIONS

ILLINOIS TOLLWAY STRUCTURE DESIGN MANUAL, MARCH 2020.

ILLINOIS TOLLWAY GEOTECHNICAL MANUAL, MARCH 2020.

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION DATED SEPTEMBER 2017.

CONSTRUCTION SPECIFICATIONS

ILLINOIS DEPARTMENT OF TRANSPORTATION GUIDE BRIDGE SPECIAL PROVISIONS (GBSPs)

ILLINOIS TOLLWAY SUPPLEMENTAL SPECIFICATIONS TO THE ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION ISSUED MARCH 30, 2020.

ILLINOIS DEPARTMENT OF TRANSPORTATION SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS ADOPTED JANUARY 1, 2020.

ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION ADOPTED APRIL 1, 2016.

GENERAL NOTES

- CONTRACTOR SHALL NOT SCALE DIMENSIONS FROM THE CONTRACT PLANS FOR CONSTRUCTION PURPOSES. SCALES SHOWN ARE FOR INFORMATION ONLY.
- NO CONSTRUCTION JOINTS EXCEPT THOSE SHOWN ON THE PLANS SHALL BE ALLOWED UNLESS APPROVED BY THE ENGINEER.
- THE CONTRACTOR MAY REQUEST COPIES OF EXISTING CONSTRUCTION PLANS THAT ARE CURRENTLY ON FILE WITH THE ILLINOIS TOLLWAY. THE REQUEST SHALL BE IN WRITING WITH THE UNDERSTANDING THAT ANY REPRODUCTION COST WILL BE AT THE CONTRACTOR'S EXPENSE AT NO ADDITIONAL COST TO THE ILLINOIS TOLLWAY.
- NO CONCRETE CUTTING SHALL BE PERMITTED UNTIL THE CUTTING LIMITS HAVE BEEN OUTLINED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO STARTING CONSTRUCTION. CONTACT J.U.L.I.E., 800-892-0123.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION OF ALL FIBER OPTIC UTILITIES PRIOR TO STARTING CONSTRUCTION. THE CONTRACTOR SHALL INITIATE THE LOCATION PROCESS FOR THE FIBER OPTIC CABLE BY COMPLETING A "REQUEST ILLINOIS TOLLWAY UTILITIES LOCATE" FORM ONLINE AT THE ILLINOIS TOLLWAY WEBSITE UNDER "DOING BUSINESS" AT LEAST FOUR (4) BUSINESS DAYS PRIOR TO STARTING ANY UNDERGROUND OPERATIONS, EXCAVATIONS OR DIGGING OF ANY TYPE IN THE GENERAL AREA OF THE FIBER OPTIC CABLE."
- WHENEVER ANY MATERIAL IS DEPOSITED INTO A DRAINAGE SYSTEM OR DRAINAGE STRUCTURES, THE DEPOSITED MATERIAL SHALL BE REMOVED AT THE CLOSE OF EACH WORKING DAY. AT THE CONCLUSION OF CONSTRUCTION OPERATIONS, ALL DRAINAGE SYSTEMS AND STRUCTURES SHALL BE FREE FROM DIRT AND DEBRIS DEPOSITED DURING THE VARIOUS CONSTRUCTION OPERATIONS.

NOTE TO DESIGNER

THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THESE DETAILS UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES SHALL BE REMOVED PRIOR TO INSERTION OF THE DETAILS INTO THE PLAN SET.

NOTE TO DESIGNER

REMOVE BASE SHEET ID, "BASE SHEET" AND BASE SHEET INFORMATION FROM THE TITLE BLOCK.

NOTE TO DESIGNER

DESIGNER TO COMPLETE TABLES.

NOTE TO DESIGNER

FOR CTS PROJECTS UTILIZING BUMP-OUTS, SEE M-BRG-531 SHEET 3 OF 4.

NOTE TO DESIGNER

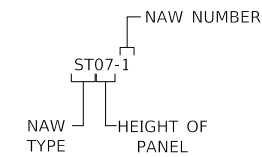
PANEL MARK SHOULD BE SHOWN ON THE ELEVATION VIEW ON THE GP&E

NOTE TO DESIGNER

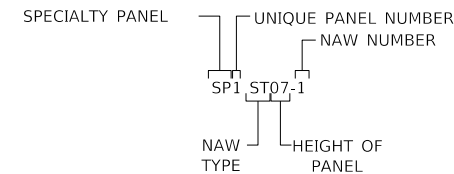
FOR PANELS SPANNING BRIDGE EXPANSION JOINTS, DETAILS FROM M-BRG-530 SHALL BE INCLUDED AND NOTE ADDED IDENTIFYING THE EXPANSION PANEL

NAW TYPE

STF = STRUCTURE MOUNTED FULL HEIGHT PANEL
ST = STRUCTURE MOUNTED TOP PANEL
SC = STRUCTURE MOUNTED CENTER PANEL
SB = STRUCTURE MOUNTED BOTTOM PANEL
SP = SPECIALTY PANEL



TYPICAL PANEL NAMING CONVENTION



SPECIALTY PANEL NAMING CONVENTION

LIST OF ABBREVIATIONS

AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
ABUT.	ABUTMENT
BK.	BACK
B.F.	BACK FACE
℄	BASELINE
BRG.	BEARING
BOTT.	BOTTOM
B/	BOTTOM OF
BM	BRIDGE MOUNTED
℄	CENTERLINE
CL.	CLEARANCE
COL.	COLUMN
CONC.	CONCRETE
CGM	CRASHWORTHY GROUND MOUNTED
E.E.	EACH END
E.	EAST
EB	EASTBOUND
ELEV.	ELEVATION
EQ.	EQUAL
EXIST.	EXISTING
EXP.	EXPANSION
F.F.	FRONT FACE
JT.	JOINT
LOC.	LOCATION
MAX.	MAXIMUM
MIN.	MINIMUM
NAW	NOISE ABATEMENT WALL
N.	NORTH
N.A.	NOT APPLICABLE
O.C.	ON CENTER
℄	PLATE
PVC	POINT OF VERTICAL CURVE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
PROP.	PROPOSED
SHLDR.	SHOULDER
S.	SOUTH
S.P.	SPECIAL PROVISION
SQ. FT.	SQUARE FOOT
SQ. YD.	SQUARE YARD
STA.	STATION
STRUCT	STRUCTURAL
S.M.	STRUCTURE MOUNTED
T/	TOP OF
TYP.	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
WB	WESTBOUND
WF	WIDE FLANGE

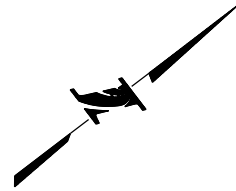
SHEET 2 OF 3
BASE SHEET M-BRG-529



STRUCTURE MOUNTED
NOISE ABATEMENT WALL
SCHEDULE

DATE

07-17-2020



NOTE TO DESIGNER

THIS SHEET IS NOT TO SCALE. DESIGNER TO DETERMINE APPROPRIATE SCALE ON GP&E SHEET TO ACCURATELY REPRESENT REQUIRED INFORMATION.

NOTE TO DESIGNER

ALL SIGNS MOUNTED TO NAW SHALL BE SHOWN ON GP&E IN ACCORDANCE WITH LATEST ILLINOIS TOLLWAY DETAIL FOR NOISE ABATEMENT WALL MOUNTED SIGN SUPPORT.

NOTE TO DESIGNER

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NOTE TO DESIGNER

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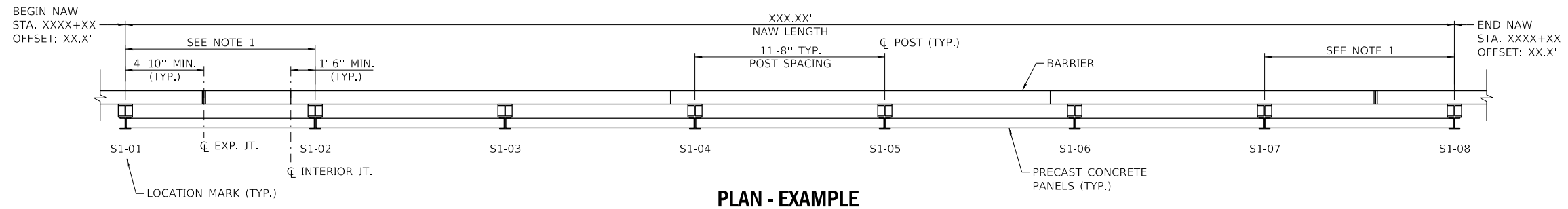
NOTE TO DESIGNER

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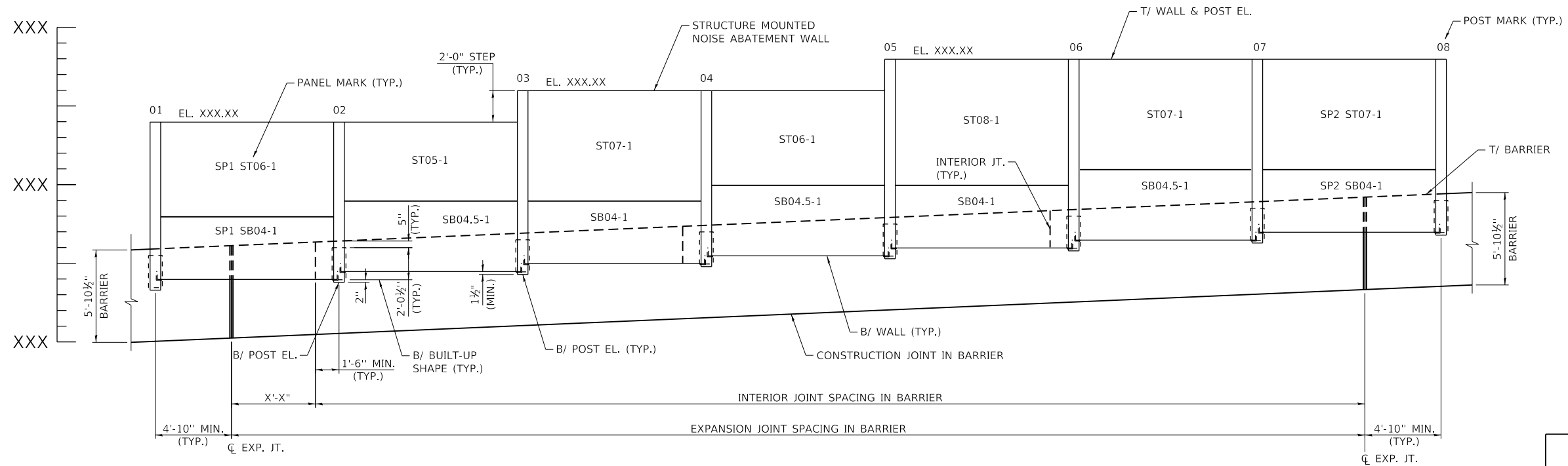
NOTE TO DESIGNER

NOTE:

1. USE SPECIALTY PANEL AND POST SPACING AT ENDS OF WALL OR UNIQUE LOCATIONS SUCH AS INTERIOR OR EXPANSION JOINT CONFLICTS TO ACCOMMODATE TYPICAL 11'-8" POST SPACING ALONG THE MAJORITY OF THE LENGTH OF WALL. POST SPACING SHOULD NOT EXCEED LIMITS WITHIN THE ILLINOIS TOLLWAY STANDARD. IF LIMITS ARE EXCEEDED, DSE TO DESIGN AND DETAIL ALL COMPONENTS. THE "SPX" DESIGNATION FOR SPECIALTY PANELS SHOULD BE USED FOR ALL PANELS WITHIN THAT BAY WITH THE SAME WIDTH.

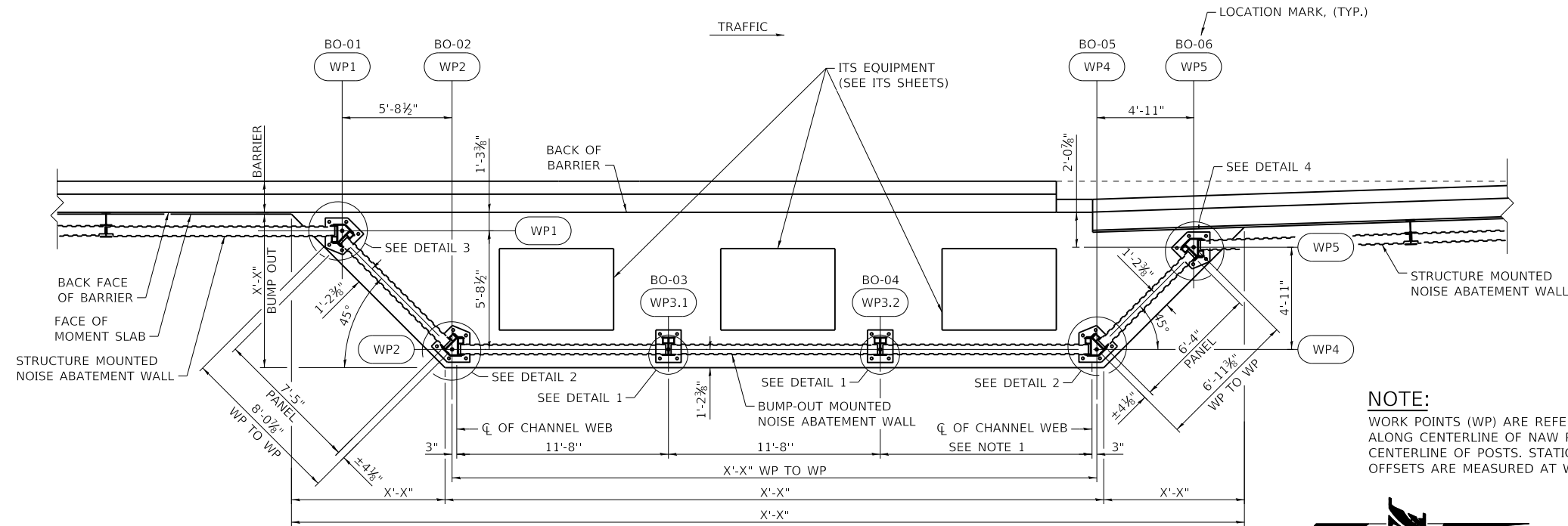


PLAN - EXAMPLE

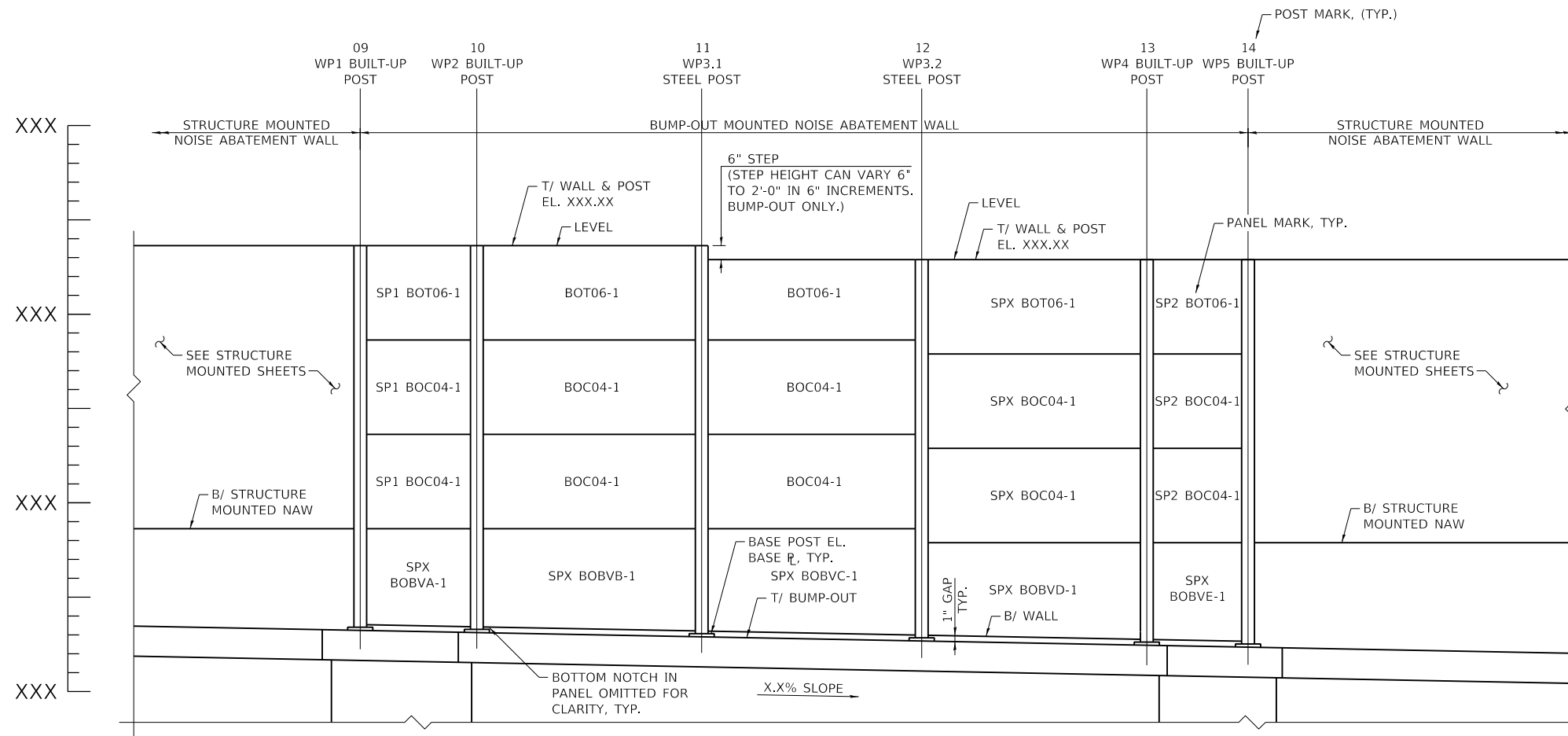


ELEVATION - EXAMPLE





PLAN - EXAMPLE



ELEVATION - EXAMPLE

NOTE TO DESIGNER

THE COVER SHEET IS FOR INFORMATION ONLY AND SHOULD NOT BE INCLUDED IN THE DSE'S SET OF PLANS.

NOTE TO DESIGNER

BUMP-OUT MOUNTED NAW DETAILS MAY BE USED WITH SYSTEMWIDE STRUCTURE MOUNTED NAW DETAILS SHOWN IN STANDARD G12 AND M-BRG-529. DSE TO UPDATE ACCORDINGLY FOR SYSTEMWIDE GEOMETRY.

NOTE TO DESIGNER

THIS SHEET IS NOT TO SCALE. DESIGNER TO DETERMINE APPROPRIATE SCALE ON GP&E SHEET TO ACCURATELY REPRESENT REQUIRED INFORMATION.

NOTE TO DESIGNER

NOTE:

1. USE SPECIALTY PANEL AND POST SPACING AT END OF WALL TO ACCOMMODATE TYPICAL 11'-8" POST SPACING ALONG THE STRAIGHT LENGTH OF WALL. POST SPACING SHOULD NOT EXCEED LIMITS WITHIN THE ILLINOIS TOLLWAY STANDARD. IF LIMITS ARE EXCEEDED, DSE TO DESIGN AND DETAIL ALL COMPONENTS. THE "SPX" DESIGNATION FOR SPECIALTY PANELS SHOULD BE USED FOR ALL PANELS WITHIN BAY WITH THE SAME WIDTH.

NOTE TO DESIGNER

THE BASE SHEET SHOWS TYPICAL CONSTRUCTION BUT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DSE PRIOR TO INSERTION INTO A CONTRACT. THE DSE SHALL ACCEPT RESPONSIBILITY OF THE DESIGN UPON ITS COMPLETION AND INSERTION INTO A CONTRACT.

THIS BASE SHEET REPRESENTS THE TYPICAL DETAILS FOR BUMP-OUT MOUNTED, NOISE ABATEMENT WALLS. THE DSE IS RESPONSIBLE FOR COMPLETING THE TABLES AND INCLUDING THEM IN THEIR CONTRACT PLANS. IF ANY OF THE DESIGN PARAMETERS IN THE ILLINOIS TOLLWAY STANDARD ARE EXCEEDED, THE DSE WILL BE RESPONSIBLE FOR DESIGN CALCULATIONS AND DETAILS FOR THOSE COMPONENTS.

THE PLAN AND ELEVATION ON THIS COVER SHEET REPRESENTS ADDITIONAL INFORMATION TO SHOW ON THE GP&E SHEET. THE GP&E SHEET AND REMAINING NAW PLANS SHALL BE IN ACCORDANCE WITH ILLINOIS TOLLWAY STRUCTURE DESIGN MANUAL ARTICLES 6.2.5 AND 23.3.



STRUCTURE MOUNTED PANEL SCHEDULE

PANEL MARK	PANEL HEIGHT	PANEL WIDTH	TOTAL PANEL THICKNESS	NUMBER OF PANELS
***SB04-1	4'-0"	11'-6"	5½"	X
***SB04.5-1	4'-6"	11'-6"	5½"	X
SC04-1	4'-0"	11'-6"	5½"	X
ST04-1	4'-0"	11'-6"	5½"	X
ST05-1	5'-0"	11'-6"	5½"	X
ST06-1	6'-0"	11'-6"	5½"	X
ST07-1	7'-0"	11'-6"	5½"	X
ST08-1	8'-0"	11'-6"	5½"	X
STF04-1	4'-0"	11'-6"	5½"	X
STF04.5-1	4'-6"	11'-6"	5½"	X
STF05-1	5'-0"	11'-6"	5½"	X
STF05.5-1	5'-6"	11'-6"	5½"	X
STF06-1	6'-0"	11'-6"	5½"	X
STF06.5-1	6'-6"	11'-6"	5½"	X
STF07-1	7'-0"	11'-6"	5½"	X
STF07.5-1	7'-6"	11'-6"	5½"	X
STF08-1	8'-0"	11'-6"	5½"	X
***SPX SB04-1	4'-0"	X'-X"	5½"	X
***SPX SB04.5-1	4'-6"	X'-X"	5½"	X
SPX SC04-1	4'-0"	X'-X"	5½"	X
SPX ST04-1	4'-0"	X'-X"	5½"	X
SPX ST05-1	5'-0"	X'-X"	5½"	X
SPX ST06-1	6'-0"	X'-X"	5½"	X
SPX ST07-1	7'-0"	X'-X"	5½"	X
SPX ST08-1	8'-0"	X'-X"	5½"	X
SPX STF04-1	4'-0"	X'-X"	5½"	X
SPX STF04.5-1	4'-6"	X'-X"	5½"	X
SPX STF05-1	5'-0"	X'-X"	5½"	X
SPX STF05.5-1	5'-6"	X'-X"	5½"	X
SPX STF06-1	6'-0"	X'-X"	5½"	X
SPX STF06.5-1	6'-6"	X'-X"	5½"	X
SPX STF07-1	7'-0"	X'-X"	5½"	X
SPX STF07.5-1	7'-6"	X'-X"	5½"	X
SPX STF08-1	8'-0"	X'-X"	5½"	X

NOTE:

1. WORK THIS SHEET WITH ILLINOIS TOLLWAY STANDARD G12, G13 OR G14.

*** CONTRACTOR MAY INCREASE BOTTOM PANEL HEIGHTS AND USE UP TO AN 8FT (NON-STANDARD) MAXIMUM HEIGHT PANEL. THE ADJACENT TOP PANEL MAY ALSO BE ADJUSTED, PROVIDED STANDARD PANEL HEIGHTS AS SHOWN IN STANDARD G13 ARE USED. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW PRIOR TO INSTALLATION.

DESIGN SPECIFICATIONS

ILLINOIS TOLLWAY STRUCTURE DESIGN MANUAL, MARCH 2020.

ILLINOIS TOLLWAY GEOTECHNICAL MANUAL, MARCH 2020.

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION DATED SEPTEMBER 2017.

CONSTRUCTION SPECIFICATIONS

ILLINOIS DEPARTMENT OF TRANSPORTATION GUIDE BRIDGE SPECIAL PROVISIONS (GBSPs)

ILLINOIS TOLLWAY SUPPLEMENTAL SPECIFICATIONS TO THE ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION ISSUED MARCH 30, 2020.

ILLINOIS DEPARTMENT OF TRANSPORTATION SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS ADOPTED JANUARY 1, 2020.

ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION ADOPTED APRIL 1, 2016.

BUMP-OUT STRUCTURE MOUNTED PANEL SCHEDULE

PANEL MARK	PANEL HEIGHT	PANEL WIDTH	TOTAL PANEL THICKNESS	NUMBER OF PANELS
**BOC04-1	4'-0"	11'-6"	5½"	X
**BOC04.5-1	4'-6"	11'-6"	5½"	X
BOT04-1	4'-0"	11'-6"	5½"	X
BOT05-1	5'-0"	11'-6"	5½"	X
BOT06-1	6'-0"	11'-6"	5½"	X
BOT07-1	7'-0"	11'-6"	5½"	X
BOT08-1	8'-0"	11'-6"	5½"	X
SP1 BOC04-1	4'-0"	7'-5"	5½"	X
SP1 BOC04.5-1	4'-6"	7'-5"	5½"	X
SP1 BOT04-1	4'-0"	7'-5"	5½"	X
SP1 BOT05-1	5'-0"	7'-5"	5½"	X
SP1 BOT06-1	6'-0"	7'-5"	5½"	X
SP1 BOT07-1	7'-0"	7'-5"	5½"	X
SP1 BOT08-1	8'-0"	7'-5"	5½"	X
SP2 BOC04-1	4'-0"	6'-4"	5½"	X
SP2 BOC04.5-1	4'-6"	6'-4"	5½"	X
SP2 BOT04-1	4'-0"	6'-4"	5½"	X
SP2 BOT05-1	5'-0"	6'-4"	5½"	X
SP2 BOT06-1	6'-0"	6'-4"	5½"	X
SP2 BOT07-1	7'-0"	6'-4"	5½"	X
SP2 BOT08-1	8'-0"	6'-4"	5½"	X
SPX BOC04-1	4'-0"	X'-X"	5½"	X
SPX BOC04.5-1	4'-6"	X'-X"	5½"	X
SPX BOT04-1	4'-0"	X'-X"	5½"	X
SPX BOT05-1	5'-0"	X'-X"	5½"	X
SPX BOT06-1	6'-0"	X'-X"	5½"	X
SPX BOT07-1	7'-0"	X'-X"	5½"	X
SPX BOT08-1	8'-0"	X'-X"	5½"	X

NOTE:

1. WORK THIS SHEET WITH ILLINOIS TOLLWAY STANDARD.

* TO ACCOMMODATE VARYING SLAB GRADES, PANEL HEIGHTS WILL VARY TO FOLLOW SLOPE ON BUMP-OUT SLAB AND MAINTAIN A 1" GAP BETWEEN BOTTOM OF PANEL AND TOP OF SLAB.

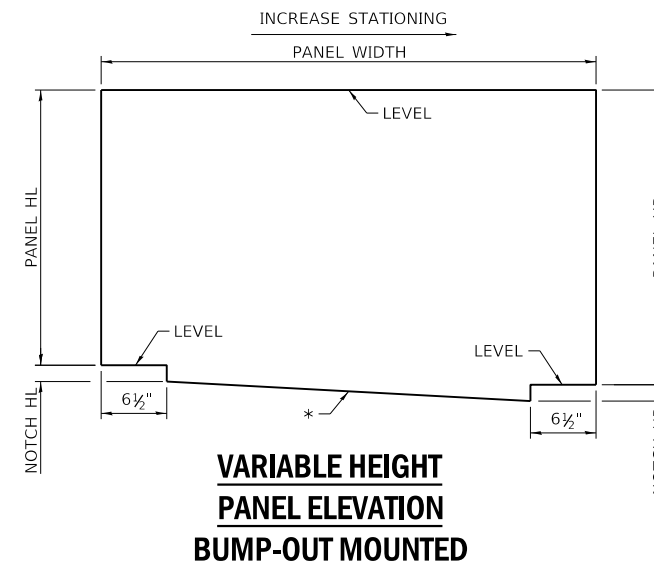
** CONTRACTOR MAY INCREASE THE STANDARD CENTER PANEL HEIGHTS, MAXIMUM 8FT, TO MINIMIZE THE NUMBER OF JOINTS. THE ADJACENT TOP PANEL MAY ALSO BE ADJUSTED, PROVIDED STANDARD PANEL HEIGHTS AS SHOWN IN STANDARD G14 ARE USED. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW PRIOR TO INSTALLATION.

GENERAL NOTES

- CONTRACTOR SHALL NOT SCALE DIMENSIONS FROM THE CONTRACT PLANS FOR CONSTRUCTION PURPOSES. SCALES SHOWN ARE FOR INFORMATION ONLY.
- NO CONSTRUCTION JOINTS EXCEPT THOSE SHOWN ON THE PLANS SHALL BE ALLOWED UNLESS APPROVED BY THE ENGINEER.
- THE CONTRACTOR MAY REQUEST COPIES OF EXISTING CONSTRUCTION PLANS THAT ARE CURRENTLY ON FILE WITH THE ILLINOIS TOLLWAY. THE REQUEST SHALL BE IN WRITING WITH THE UNDERSTANDING THAT ANY REPRODUCTION COST WILL BE AT THE CONTRACTOR'S EXPENSE AT NO ADDITIONAL COST TO THE ILLINOIS TOLLWAY.
- NO CONCRETE CUTTING SHALL BE PERMITTED UNTIL THE CUTTING LIMITS HAVE BEEN OUTLINED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO STARTING CONSTRUCTION. CONTACT J.U.L.I.E., 800-892-0123.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION OF ALL FIBER OPTIC UTILITIES PRIOR TO STARTING CONSTRUCTION. THE CONTRACTOR SHALL INITIATE THE LOCATION PROCESS FOR THE FIBER OPTIC CABLE BY COMPLETING A "REQUEST ILLINOIS TOLLWAY UTILITIES LOCATE" FORM ONLINE AT THE ILLINOIS TOLLWAY WEBSITE UNDER "DOING BUSINESS" AT LEAST FOUR (4) BUSINESS DAYS PRIOR TO STARTING ANY UNDERGROUND OPERATIONS, EXCAVATIONS OR DIGGING OF ANY TYPE IN THE GENERAL AREA OF THE FIBER OPTIC CABLE."
- WHenever any material is deposited into a drainage system or drainage structures, the deposited material shall be removed at the close of each working day. At the conclusion of construction operations, all drainage systems and structures shall be free from dirt and debris deposited during the various construction operations.

BUMP-OUT STRUCTURE MOUNTED VARIABLE HEIGHT PANEL SCHEDULE

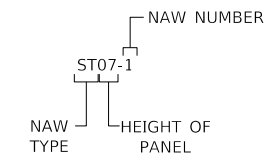
PANEL MARK	PANEL HL	NOTCH HL	PANEL HR	NOTCH HR	PANEL WIDTH	TOTAL PANEL THICKNESS	NUMBER OF PANELS
SPX BOBVA-1	X'-X"	X"	X'-X"	X"	X'-X"	5½"	X
SPX BOBVB-1	X'-X"	X"	X'-X"	X"	X'-X"	5½"	X
SPX BOBVC-1	X'-X"	X"	X'-X"	X"	X'-X"	5½"	X
SPX BOBVD-1	X'-X"	X"	X'-X"	X"	X'-X"	5½"	X
SPX BOBVE-1	X'-X"	X"	X'-X"	X"	X'-X"	5½"	X
SPX BOTFVA-1	X'-X"	X"	X'-X"	X"	X'-X"	5½"	X
SPX BOTFVB-1	X'-X"	X"	X'-X"	X"	X'-X"	5½"	X
SPX BOTFVC-1	X'-X"	X"	X'-X"	X"	X'-X"	5½"	X
SPX BOTFVD-1	X'-X"	X"	X'-X"	X"	X'-X"	5½"	X
SPX BOTFVE-1	X'-X"	X"	X'-X"	X"	X'-X"	5½"	X



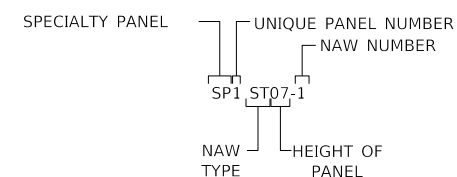
**VARIABLE HEIGHT
PANEL ELEVATION
BUMP-OUT MOUNTED**

NAW TYPE

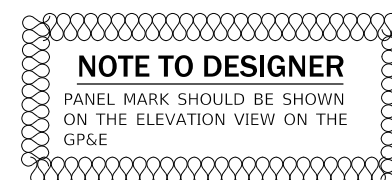
STF = STRUCTURE MOUNTED FULL HEIGHT PANEL
 ST = STRUCTURE MOUNTED TOP PANEL
 SC = STRUCTURE MOUNTED CENTER PANEL
 SB = STRUCTURE MOUNTED BOTTOM PANEL
 BOTFV = BUMP-OUT STRUCTURE MOUNTED FULL HEIGHT PANEL (VARIABLE HEIGHT)
 BOT = BUMP-OUT STRUCTURE MOUNTED TOP PANEL
 BOC = BUMP-OUT STRUCTURE MOUNTED CENTER PANEL
 BOBV = BUMP-OUT STRUCTURE MOUNTED BOTTOM PANEL (VARIABLE HEIGHT)
 SP = SPECIALTY PANEL



TYPICAL PANEL NAMING CONVENTION



SPECIALTY PANEL NAMING CONVENTION



NOTE TO DESIGNER

PANEL MARK SHOULD BE SHOWN ON THE ELEVATION VIEW ON THE GP&E

NOTE TO DESIGNER

THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THESE DETAILS UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES SHALL BE REMOVED PRIOR TO INSERTION OF THE DETAILS INTO THE PLAN SET.

NOTE TO DESIGNER

REMOVE BASE SHEET ID, "BASE SHEET" AND BASE SHEET INFORMATION FROM THE TITLE BLOCK.

LIST OF ABBREVIATIONS

AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
ABUT.	ABUTMENT
BK.	BACK
B.F.	BACK FACE
B.	BASELINE
BRG.	BEARING
BOTT.	BOTTOM
B/	BOTTOM OF
BM	BRIDGE MOUNTED
CL	CENTERLINE
CL.	CLEARANCE
COL.	COLUMN
CONC.	CONCRETE
CGM	CRASHWORTHY GROUND MOUNTED
E.E.	EACH END
E.	EAST
EB	EASTBOUND
ELEV.	ELEVATION
EQ.	EQUAL
EXIST.	EXISTING
EXP.	EXPANSION
F.F.	FRONT FACE
JT.	JOINT
LOC.	LOCATION
MAX.	MAXIMUM
MIN.	MINIMUM
NAW	NOISE ABATEMENT WALL
N.	NORTH
N.A.	NOT APPLICABLE
O.C.	ON CENTER
PLATE	PLATE
PVC	POINT OF VERTICAL CURVE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
PROP.	PROPOSED
SHLDR.	SHOULDER
S.	SOUTH
S.P.	SPECIAL PROVISION
SQ. FT.	SQUARE FOOT
SQ. YD.	SQUARE YARD
STA.	STATION
STRUCT	STRUCTURAL
S.M.	STRUCTURE MOUNTED
T/	TOP OF
TYP.	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
WB	WESTBOUND
WF	WIDE FLANGE

NOTE TO DESIGNER

DESIGNER TO COMPLETE TABLES.

NOTE TO DESIGNER

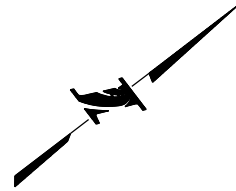
FOR PANELS SPANNING BRIDGE EXPANSION JOINTS, DETAILS FROM M-BRG-530 SHALL BE INCLUDED AND NOTE ADDED IDENTIFYING THE EXPANSION PANEL

SHEET 3 OF 4
BASE SHEET M-BRG-531



CENTRAL TRI-STATE
STRUCTURE MOUNTED
NOISE ABATEMENT WALL
SCHEDULE

DATE
07-17-2020

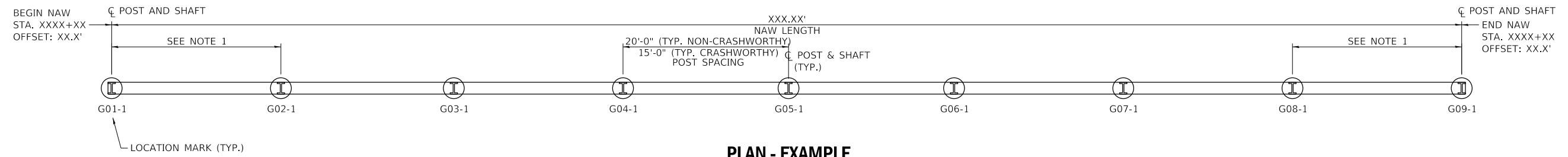


NOTE TO DESIGNER

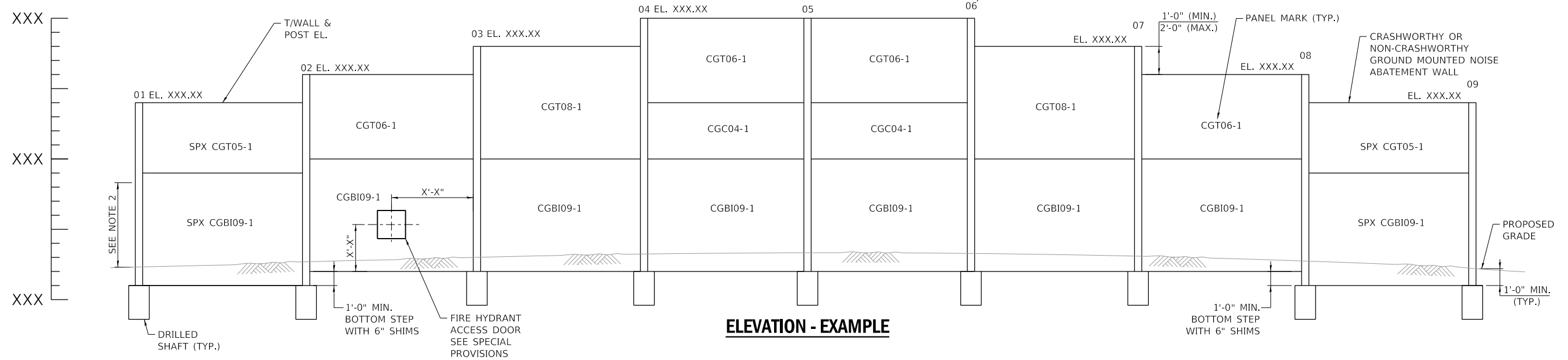
THE BASE SHEET SHOWS TYPICAL CONSTRUCTION BUT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DSE PRIOR TO INSERTION INTO A CONTRACT. THE DSE SHALL ACCEPT RESPONSIBILITY OF THE DESIGN UPON ITS COMPLETION AND INSERTION INTO A CONTRACT.

THIS BASE SHEET REPRESENTS THE TYPICAL DETAILS FOR GROUND MOUNTED, NOISE ABATEMENT WALLS. THE DSE IS RESPONSIBLE FOR COMPLETING THE TABLES AND INCLUDE IN THEIR CONTRACT PLANS. IF ANY OF THE DESIGN PARAMETERS IN THE ILLINOIS TOLLWAY STANDARD ARE EXCEEDED, THE DSE WILL BE RESPONSIBLE FOR DESIGN CALCULATIONS AND DETAILS FOR THOSE COMPONENTS.

THE PLAN AND ELEVATION ON THIS COVER SHEET REPRESENTS ADDITIONAL INFORMATION TO SHOW ON THE GP&E SHEET. THE GP&E SHEET AND REMAINING NAW PLANS SHALL BE IN ACCORDANCE WITH ILLINOIS TOLLWAY STRUCTURE DESIGN MANUAL ARTICLES 6.2.5 AND 23.3.



PLAN - EXAMPLE



ELEVATION - EXAMPLE

NOTE TO DESIGNER

NOTE:
 1. USE SPECIALTY PANEL AND POST SPACING AT ENDS OF WALL OR UNIQUE LOCATIONS SUCH AS UTILITY CROSSINGS TO ACCOMMODATE TYPICAL 20'-0" OR 15'-0" POST SPACING FOR NON-CRASHWORTHY OR CRASHWORTHY, RESPECTIVELY ALONG THE MAJORITY OF THE LENGTH OF WALL. POST SPACING SHOULD NOT EXCEED LIMITS WITHIN THE ILLINOIS TOLLWAY STANDARD. IF LIMITS ARE EXCEEDED, DSE TO DESIGN AND DETAIL ALL COMPONENTS. THE "SPX" DESIGNATION FOR SPECIALTY PANELS SHOULD BE USED FOR ALL PANELS WITHIN THAT BAY WITH THE SAME WIDTH.
 2. FOR CRASHWORTHY NAW, PANELS WITHIN 6FT ABOVE FACE OF ROADWAY PAVEMENT SHALL BE THE TL-4 IMPACT PANELS.

NOTE TO DESIGNER

THIS DRAWING IS NOT TO SCALE. DESIGNER TO DETERMINE APPROPRIATE SCALE ON GP&E SHEET TO ACCURATELY REPRESENT REQUIRED INFORMATION.

NOTE TO DESIGNER

ALL SIGNS MOUNTED TO NAW SHALL BE SHOWN ON GP&E IN ACCORDANCE WITH LATEST ILLINOIS TOLLWAY DETAIL FOR NOISE ABATEMENT WALL MOUNTED SIGN SUPPORT.

NOTE TO DESIGNER

SEE BASE SHEET M-BRG-532 SHEET 2 OF 3 FOR PANEL DESIGNATIONS AND M-BRG-532 SHEET 3 OF 3 FOR POST DESIGNATIONS TO BE SHOWN ON THIS SHEET

NOTE TO DESIGNER

INCLUDE ACOUSTICAL PROFILE FOR INFORMATION ONLY.



**NON-CRASHWORTHY NAW
GROUND MOUNTED PANEL SCHEDULE**

PANEL MARK	PANEL HEIGHT	PANEL WIDTH	TOTAL PANEL THICKNESS	NUMBER OF PANELS
GB04-1	4'-0"	19'-10"	7"	X
GBU04-1	4'-0"	19'-10"	9"	X
**GC04-1	4'-0"	19'-10"	7"	X
GT04-1	4'-0"	19'-10"	7"	X
GT05-1	5'-0"	19'-10"	7"	X
GT06-1	6'-0"	19'-10"	7"	X
GT07-1	7'-0"	19'-10"	7"	X
GT08-1	8'-0"	19'-10"	7"	X
GTF04-1	4'-0"	19'-10"	7"	X
GTF05-1	5'-0"	19'-10"	7"	X
GTF06-1	6'-0"	19'-10"	7"	X
GTF07-1	7'-0"	19'-10"	7"	X
GTF08-1	8'-0"	19'-10"	7"	X
GTFU04-1	4'-0"	19'-10"	9"	X
GTFU05-1	5'-0"	19'-10"	9"	X
GTFU06-1	6'-0"	19'-10"	9"	X
GTFU07-1	7'-0"	19'-10"	9"	X
GTFU08-1	8'-0"	19'-10"	9"	X
SPX GB04-1	4'-0"	19'-10"	7"	X
SPX GBU04-1	4'-0"	19'-10"	9"	X
**SPX GC04-1	4'-0"	19'-10"	7"	X
SPX GT04-1	4'-0"	19'-10"	7"	X
SPX GT05-1	5'-0"	19'-10"	7"	X
SPX GT06-1	6'-0"	19'-10"	7"	X
SPX GT07-1	7'-0"	19'-10"	7"	X
SPX GT08-1	8'-0"	19'-10"	7"	X
SPX GTF04-1	4'-0"	19'-10"	7"	X
SPX GTF05-1	5'-0"	19'-10"	7"	X
SPX GTF06-1	6'-0"	19'-10"	7"	X
SPX GTF07-1	7'-0"	19'-10"	7"	X
SPX GTF08-1	8'-0"	19'-10"	7"	X
SPX GTFU04-1	4'-0"	19'-10"	9"	X
SPX GTFU05-1	5'-0"	19'-10"	9"	X
SPX GTFU06-1	6'-0"	19'-10"	9"	X
SPX GTFU07-1	7'-0"	19'-10"	9"	X
SPX GTFU08-1	8'-0"	19'-10"	9"	X

NOTE:

1. WORK THIS SHEET WITH ILLINOIS TOLLWAY STANDARDS G14 AND G15.

GENERAL NOTES

1. CONTRACTOR SHALL NOT SCALE DIMENSIONS FROM THE CONTRACT PLANS FOR CONSTRUCTION PURPOSES. SCALES SHOWN ARE FOR INFORMATION ONLY.
2. NO CONSTRUCTION JOINTS EXCEPT THOSE SHOWN ON THE PLANS SHALL BE ALLOWED UNLESS APPROVED BY THE ENGINEER.
3. THE CONTRACTOR MAY REQUEST COPIES OF EXISTING CONSTRUCTION PLANS THAT ARE CURRENTLY ON FILE WITH THE ILLINOIS TOLLWAY. THE REQUEST SHALL BE IN WRITING WITH THE UNDERSTANDING THAT ANY REPRODUCTION COST WILL BE AT THE CONTRACTOR'S EXPENSE AT NO ADDITIONAL COST TO THE ILLINOIS TOLLWAY.
4. NO CONCRETE CUTTING SHALL BE PERMITTED UNTIL THE CUTTING LIMITS HAVE BEEN OUTLINED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.
5. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO STARTING CONSTRUCTION. CONTACT J.U.L.I.E., 800-892-0123.
6. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION OF ALL FIBER OPTIC UTILITIES PRIOR TO STARTING CONSTRUCTION. THE CONTRACTOR SHALL INITIATE THE LOCATION PROCESS FOR THE FIBER OPTIC CABLE BY COMPLETING A "REQUEST ILLINOIS TOLLWAY UTILITIES LOCATE" FORM ONLINE AT THE ILLINOIS TOLLWAY WEBSITE UNDER "DOING BUSINESS" AT LEAST FOUR (4) BUSINESS DAYS PRIOR TO STARTING ANY UNDERGROUND OPERATIONS, EXCAVATIONS OR DIGGING OF ANY TYPE IN THE GENERAL AREA OF THE FIBER OPTIC CABLE."
7. THE SOIL BORING LOGS REPRESENT POINT INFORMATION. PRESENTATION OF THIS INFORMATION IN NO WAY IMPLIES THAT SUBSURFACE CONDITIONS ARE THE SAME AT LOCATIONS OTHER THAN THE EXACT LOCATION OF THE BORING.
8. WHENEVER ANY MATERIAL IS DEPOSITED INTO A DRAINAGE SYSTEM OR DRAINAGE STRUCTURES, THE DEPOSITED MATERIAL SHALL BE REMOVED AT THE CLOSE OF EACH WORKING DAY. AT THE CONCLUSION OF CONSTRUCTION OPERATIONS, ALL DRAINAGE SYSTEMS AND STRUCTURES SHALL BE FREE FROM DIRT AND DEBRIS DEPOSITED DURING THE VARIOUS CONSTRUCTION OPERATIONS.

**CRASHWORTHY NAW
GROUND MOUNTED PANEL SCHEDULE
(NO TL-4 IMPACT)**

PANEL MARK	PANEL HEIGHT	PANEL WIDTH	TOTAL PANEL THICKNESS	NUMBER OF PANELS
* CGC04-1	4'-0"	14'-10"	9"	X
CGT05-1	5'-0"	14'-10"	9"	X
CGT06-1	6'-0"	14'-10"	9"	X
CGT07-1	7'-0"	14'-10"	9"	X
CGT08-1	8'-0"	14'-10"	9"	X
CGT09-1	9'-0"	14'-10"	9"	X
* SPX CGC04-1	4'-0"	X'-X"	9"	X
SPX CGT05-1	5'-0"	X'-X"	9"	X
SPX CGT06-1	6'-0"	X'-X"	9"	X
SPX CGT07-1	7'-0"	X'-X"	9"	X
SPX CGT08-1	8'-0"	X'-X"	9"	X
SPX CGT09-1	9'-0"	X'-X"	9"	X

* CONTRACTOR MAY INCREASE THE STANDARD CENTER PANEL HEIGHTS, MAXIMUM 9FT, TO MINIMIZE THE NUMBER OF JOINTS. THE ADJACENT TOP PANEL MAY ALSO BE ADJUSTED, PROVIDED STANDARD PANEL HEIGHTS AS SHOWN IN STANDARD G16 ARE USED. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW PRIOR TO INSTALLATION.

** CONTRACTOR MAY INCREASE THE STANDARD CENTER PANEL HEIGHTS, MAXIMUM 8FT, TO MINIMIZE THE NUMBER OF JOINTS. THE ADJACENT TOP PANEL MAY ALSO BE ADJUSTED, PROVIDED STANDARD PANEL HEIGHTS AS SHOWN IN STANDARD G15 ARE USED. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW PRIOR TO INSTALLATION.

LIST OF ABBREVIATIONS

AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
ABUT.	ABUTMENT
BK.	BACK
B.F.	BACK FACE
℄	BASELINE
BRG.	BEARING
BOTT.	BOTTOM
B/	BOTTOM OF
BM	BRIDGE MOUNTED
℄	CENTERLINE
CL.	CLEARANCE
COL.	COLUMN
CONC.	CONCRETE
CGM	CRASHWORTHY GROUND MOUNTED
E.E.	EACH END
E.	EAST
EB	EASTBOUND
ELEV.	ELEVATION
EQ.	EQUAL
EXIST.	EXISTING
EXP.	EXPANSION
F.F.	FRONT FACE
JT.	JOINT
LOC.	LOCATION
MAX.	MAXIMUM
MIN.	MINIMUM
NAW	NOISE ABATEMENT WALL
N.	NORTH
N.A.	NOT APPLICABLE
O.C.	ON CENTER
℄	PLATE
PVC	POINT OF VERTICAL CURVE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
PROP.	PROPOSED
SHLDR.	SHOULDER
S.	SOUTH
S.P.	SPECIAL PROVISION
SQ. FT.	SQUARE FOOT
SQ. YD.	SQUARE YARD
STA.	STATION
STRUCT	STRUCTURAL
S.M.	STRUCTURE MOUNTED
T/	TOP OF
TYP.	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
WB	WESTBOUND
WF	WIDE FLANGE

**CRASHWORTHY NAW
GROUND MOUNTED PANEL SCHEDULE
(TL-4 IMPACT)**

PANEL MARK	PANEL HEIGHT	PANEL WIDTH	TOTAL PANEL THICKNESS	NUMBER OF PANELS
CGBI06-1	6'-0"	14'-10"	11"	X
CGBI07-1	7'-0"	14'-10"	11"	X
CGBI08-1	8'-0"	14'-10"	11"	X
CGBI09-1	9'-0"	14'-10"	11"	X
CGCI06-1	6'-0"	14'-10"	11"	X
CGCI07-1	7'-0"	14'-10"	11"	X
CGCI08-1	8'-0"	14'-10"	11"	X
CGCI09-1	9'-0"	14'-10"	11"	X
CGTI06-1	6'-0"	14'-10"	11"	X
CGTI07-1	7'-0"	14'-10"	11"	X
CGTI08-1	8'-0"	14'-10"	11"	X
CGTI09-1	9'-0"	14'-10"	11"	X
CGTFI06-1	6'-0"	14'-10"	11"	X
CGTFI07-1	7'-0"	14'-10"	11"	X
CGTFI08-1	8'-0"	14'-10"	11"	X
CGTFI09-1	9'-0"	14'-10"	11"	X
SPX CGBI06-1	6'-0"	X'-X"	11"	X
SPX CGBI07-1	7'-0"	X'-X"	11"	X
SPX CGBI08-1	8'-0"	X'-X"	11"	X
SPX CGBI09-1	9'-0"	X'-X"	11"	X
SPX CGCI06-1	6'-0"	X'-X"	11"	X
SPX CGCI07-1	7'-0"	X'-X"	11"	X
SPX CGCI08-1	8'-0"	X'-X"	11"	X
SPX CGCI09-1	9'-0"	X'-X"	11"	X
SPX CGTI06-1	6'-0"	X'-X"	11"	X
SPX CGTI07-1	7'-0"	X'-X"	11"	X
SPX CGTI08-1	8'-0"	X'-X"	11"	X
SPX CGTI09-1	9'-0"	X'-X"	11"	X
SPX CGTFI06-1	6'-0"	X'-X"	11"	X
SPX CGTFI07-1	7'-0"	X'-X"	11"	X
SPX CGTFI08-1	8'-0"	X'-X"	11"	X
SPX CGTFI09-1	9'-0"	X'-X"	11"	X

NAW TYPE

- GTF= NON-CRASHWORTHY GROUND MOUNTED FULL HEIGHT PANEL
 * GTFU= NON-CRASHWORTHY GROUND MOUNTED FULL HEIGHT PANEL (UNBALANCED SOIL LOAD)
 GT = NON-CRASHWORTHY GROUND MOUNTED TOP PANEL
 GC = NON-CRASHWORTHY GROUND MOUNTED CENTER PANEL
 GB = NON-CRASHWORTHY GROUND MOUNTED BOTTOM PANEL
 * GBU = NON-CRASHWORTHY GROUND MOUNTED BOTTOM PANEL (UNBALANCED SOIL LOAD)
 ** CGT = CRASHWORTHY GROUND MOUNTED TOP PANEL (NO TL-4 IMPACT)
 *** CGC = CRASHWORTHY GROUND MOUNTED CENTER PANEL (NO TL-4 IMPACT)
 *** CGTFI = CRASHWORTHY GROUND MOUNTED FULL HEIGHT PANEL (TL-4 IMPACT)
 *** CGTI = CRASHWORTHY GROUND MOUNTED TOP PANEL (TL-4 IMPACT)
 *** CGCI = CRASHWORTHY GROUND MOUNTED CENTER PANEL (TL-4 IMPACT)
 *** CGBI = CRASHWORTHY GROUND MOUNTED BOTTOM PANEL (TL-4 IMPACT)
 SP = SPECIALTY PANEL

- * THESE PANELS HAVE BEEN DESIGNED FOR THE MAXIMUM UNBALANCED SOIL LOAD.
 ** THESE PANELS HAVE BEEN DESIGNED FOR THE 4KIP VEHICLE COLLISION LOADING.
 *** THESE PANELS HAVE BEEN DESIGNED FOR THE 54KIP TL-4 VEHICLE COLLISION LOADING.

DESIGN SPECIFICATIONS

ILLINOIS TOLLWAY STRUCTURE DESIGN MANUAL, MARCH 2020.

ILLINOIS TOLLWAY GEOTECHNICAL MANUAL, MARCH 2020.

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. 8TH EDITION DATED SEPTEMBER 2017.

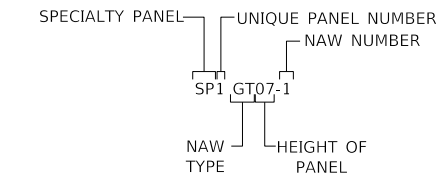
CONSTRUCTION SPECIFICATIONS

ILLINOIS DEPARTMENT OF TRANSPORTATION GUIDE BRIDGE SPECIAL PROVISIONS (GBSPs)

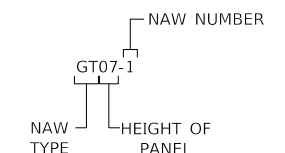
ILLINOIS TOLLWAY SUPPLEMENTAL SPECIFICATIONS TO THE ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION ISSUED MARCH 30, 2020.

ILLINOIS DEPARTMENT OF TRANSPORTATION SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS ADOPTED JANUARY 1, 2020.

ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION ADOPTED APRIL 1, 2016.



SPECIALTY PANEL NAMING CONVENTION



TYPICAL PANEL NAMING CONVENTION

NOTE TO DESIGNER
 PANEL MARK SHOULD BE SHOWN ON THE ELEVATION VIEW ON THE GP&E

NOTE TO DESIGNER
 THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THESE DETAILS UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES SHALL BE REMOVED PRIOR TO INSERTION OF THE DETAILS INTO THE PLAN SET.

NOTE TO DESIGNER
 DESIGNER TO COMPLETE TABLES.

NOTE TO DESIGNER
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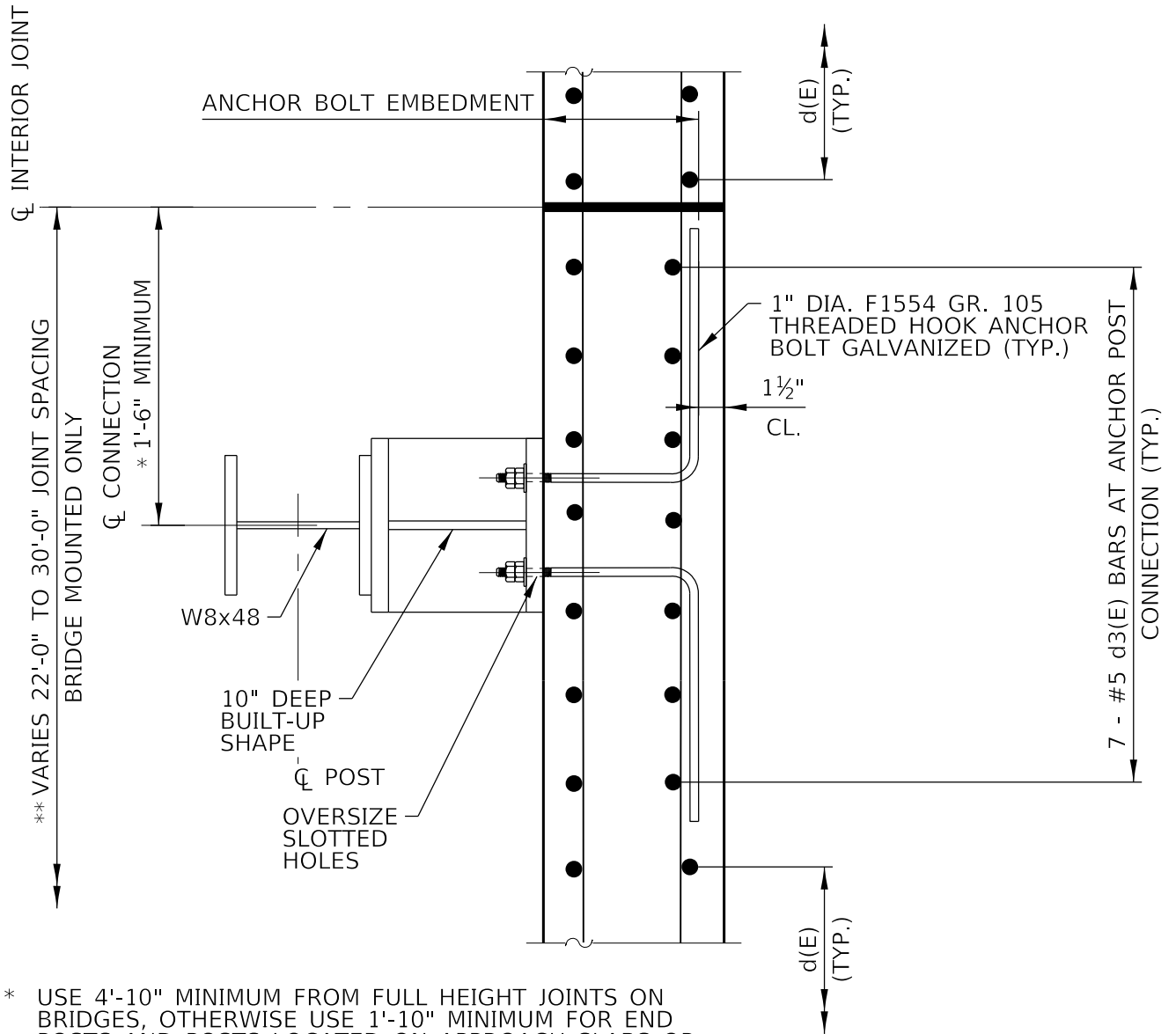


GROUND MOUNTED NOISE ABATEMENT WALL SCHEDULE

DATE
 07-17-2020

NOTE:

REFER TO ILLINOIS TOLLWAY STANDARD DRAWINGS G12 AND G13 FOR STRUCTURE MOUNTED NOISE ABATEMENT DETAILS.



* USE 4'-10" MINIMUM FROM FULL HEIGHT JOINTS ON BRIDGES, OTHERWISE USE 1'-10" MINIMUM FOR END POSTS AND POSTS LOCATED ON APPROACH SLABS OR MOMENT SLABS.

SECTION A-A

NOISE ABATEMENT WALL CONNECTION PLAN

FIGURE 15.5.1.6

The maximum slope to be used for determining the horizontal resistance of a battered pile shall be 3 inches horizontal per foot vertical.

The lateral resistance of battered or vertical piles, in addition to horizontal component of battered piles, shall be as specified in the Structure Geotechnical Report.

22.6 Flexible Retaining Walls

Flexible retaining walls include; Mechanically Stabilized Earth (MSE), Precast Modular, Soldier Pile, Sheet Pile, Soil Nail and Gabion.

Walls shall be located a minimum of 10'-0" inside of the Illinois Tollway's Right of Way.

The required design life for all elements of retaining wall structures is 75 years except for walls in front of bridge abutments which require a design life of 100 years.

Provide full height expansion joints in the gutter and parapet every 90 feet. The expansion joints shall be detailed as shown in Figure 22.14.1. Provide ½" interior joints at 22-foot minimum and 30-foot maximum spacing for the 72 inch barrier as shown in Figure 15.5.1.8 and cork joints at 14-foot minimum to 20-foot maximum for the 44 inch parapet as shown in Figure 15.5.1.4. Sawed controlled joints shall only be used for the 44" parapet when slipformed.

Design loads for retaining walls with moment slabs shall include the provisions of the AASHTO LRFD Bridge Design Specifications, Article 11.10.10.2 and Test Level 5 (TL-5). In order to achieve TL-5 crash force protection, all designers shall increase the specified horizontal load applied to the top of the soil mass from 0.5 kip per foot, developed for TL-4, to 1.15 kips per foot (for TL-5) and 2.4 kips per foot (for 72 inch TL-5). The magnitude of the force was determined by multiplying the ratio of the TL-5 or 72 inch TL-5 crash force (124 kips or 260 kips) over the TL-4 crash force (54 kips) by 0.5 kip per foot.

When structural steel is in contact with the ground, the effects of corrosion shall be included in the design. The specification and accommodation for the length of the corrosion are the responsibility of the Designer with approval of the Illinois Tollway. Paint used shall be specified by the Designer and shall be consistent with Section 506 of IDOT Standard Specifications. The IDOT Bridge Manual also references concrete encasement and use of additional sacrificial steel section. Paint or concrete in exposed conditions shall generally extend to 3 feet beyond expected exposure line including the fully exposed length. Section 506 of the Standard Specifications for paint shall be used in corrosive soils with or without exposure. If protection is not specified for exposed or corrosive conditions, additional steel section shall be supplied to compensate for losses due to corrosion.

22.6.1 Mechanically Stabilized Earth (MSE) Retaining Walls

Generally, MSE walls shall only be utilized for fill locations or where part of the existing side-slope or fore-slope can be removed without compromising the stability of the embankment. MSE walls shall not be utilized where a Temporary Earth Retention System