MATERIAL FINISHES	
SEAT PLANK	ANODIZED
RISER PLANK	MILL FINISH
FOOT PLANK	MILL FINISH
CHAIN LINK	GALVANIZED

BRB-0821AS

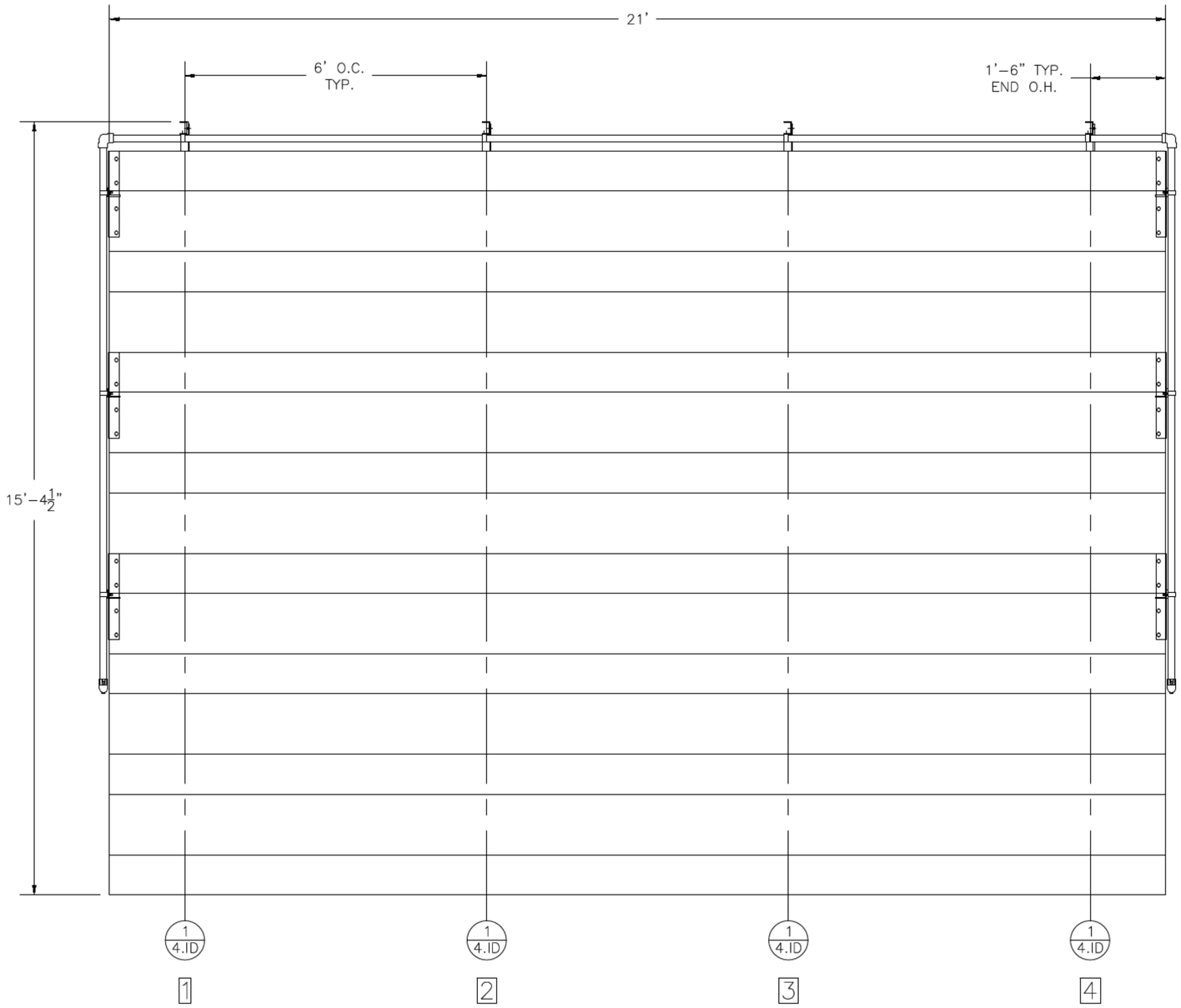
NON-ELEV. ALUM. 8 ROW x 21'-0" BLEACHER

DRAWING REFERENCE NUMBER: NA-0821STD_CL	
DRAWING SHEET INDEX	
1.CS	COVER SHEET
2.TD	SEATING PLAN
3.FP	FOUNDATION PLAN
4.ID	FRAME IDENTIFICATION
5.BA	BLEACHER ASSEMBLY PREP
6.BA	BLEACHER ASSEMBLY – BRACING
7.BA	BLEACHER ASSEMBLY SECTION VIEW
8.AP	ANCHORING PLAN
9.PF	PLANK & FRAMING PLAN
10.GR	GUARDRAIL ASSEMBLY
11.DS	TYPICAL BLEACHER ASSEMBLY DETAILS

RECOMMENDED TOOLS		
SOCKET WRENCH	POP RIVET GUN	CORDLESS DRILL
½" DEEP WELL SOCKET	LEVEL	3/16" DRILL BIT
9/16" DEEP WELL SOCKET	RUBBER MALLET	7/16" DRILL BIT
TAPE MEASURE	GLOVES	SAFETY GLASSES

BUILTRITE BLEACHERS .com
T/F: 866-281-5337 - WWW.ALUMINUM-BLEACHERS.COM

MODEL: BRB-0821AS				
DESCRIPTION: NON-ELEV. 8 ROW x 21'-0" ASSEMBLY COVER SHEET				
DRAWN BY: HIT	DATE: 9/5/23	REVISION: 0	SCALE: N.T.S.	SHEET NUMBER: 1.CS

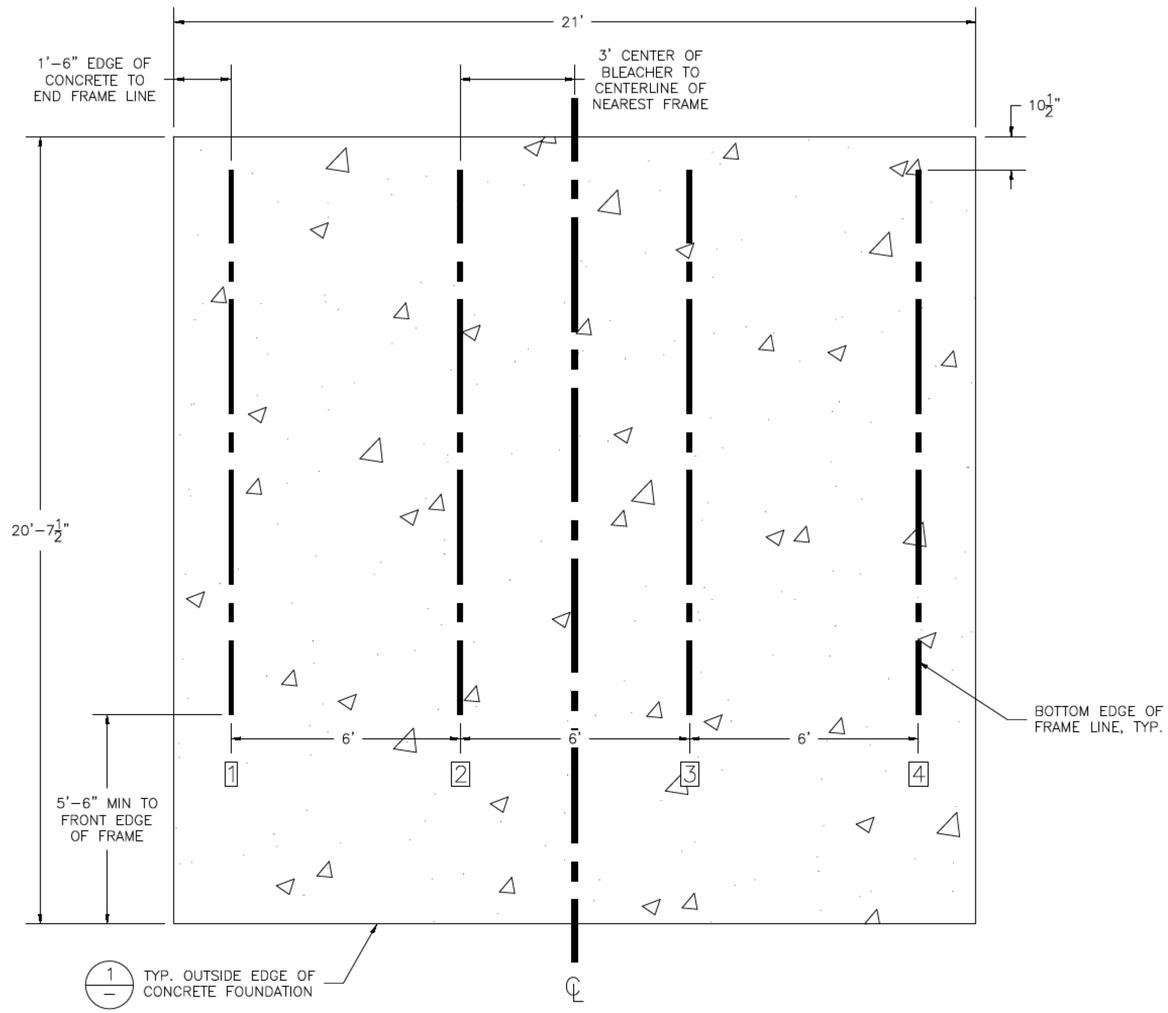


SECTION LENGTH	GROSS SEATS	ACTUAL SEATS	NO. OF ROWS	NET SEATS
21	14.00	14.00	8	112
		NET SEATS		112
		WHEELCHAIR SPACES		0
		TOTAL NET SEATING CAPACITY (BASED ON 18" PER SEAT)		112

**ECONOMICAL MILL FINISH FOOT PLANK AND RISERS HAVE BEEN SPECIFIED ON THIS BLEACHER DESIGN. NRS WILL NOT BE RESPONSIBLE FOR DISCOLORATION OR STAINING (DARK BLACK, BROWN, OR WHITE RESIDUE) RESULTING FROM UNAVOIDABLE CONDENSATION THAT OCCURS DURING PACKING, TRANSPORTING AND STORAGE, PRECEDING AND/OR DURING INSTALLATION. REMOVAL OF THESE STAINS OR REPLACEMENT OF BOARDS UPON COMPLETION OF INSTALLATION IS NOT PART OF THIS CONTRACT BECAUSE STAINED MILL FINISH BOARDS MEET ALL SPECIFIED REQUIREMENTS. A CLEAR ANODIZED FINISH MAY BE QUOTED AT AN ADDITIONAL COST TO AVOID POTENTIAL DISCOLORATION OR STAINING.

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MODEL: BRB-0821AS					
DESCRIPTION: NON–ELEV. 8 ROW x 21'–0" SEATING PLAN					
DRAWN BY: HIT	DATE: 9/5/23	REVISION: 0	SCALE: N.T.S.	SHEET NUMBER: 2.TD	



CONCRETE FOUNDATION SPECIFICATIONS

SCOPE:

Foundation construction is not part of NATIONAL RECREATION SYSTEMS, INC's., scope of work unless noted otherwise in the contract documents. The OWNER shall review the foundation design with local code authorities and coordinate with NRS, Inc.

FOUNDATION DESIGN & ANCHORS:

1) The foundation designs are based on the following:
   a) Minimum presumed soil bearing of 2000 psf.
   b) Bleacher frame dead and live load of 700 lbs./ft.
   c) Bleacher frame wind uplift of 250 lbs./ft.

2) Unless otherwise specified on the drawings the bleacher frames shall be attached to concrete with a ^{12}" dia. x 3$^{3}_{4}$" wedge type expansion anchor. The anchors shall be embedded a minimum of 2^{12}" into the concrete.

CONCRETE SPECIFICATIONS:

1) All concrete construction shall be in accordance with ***ACI 318.08.***

2) All concrete shall be air-entrained using an air entraining admixtruing meeting ***ASTM C620***. Total air content: 5%-7% per ***ASTM C173***.

3) All concrete shall have a minimum 28-day strength of Fc=3000psi. Concrete shall have air-entrainment

4) A ^{14}" bituminous expansion joint material shall be placed between strip and slab foundations when adjacent to each other.

5) The depressions in the top of the foundations between high spots shall not exceed ^{516}" below 10-foot long straightedge. The 10-foot straightedge method used to measure foundation flatness shall be in accordance with ***ACI 302.1R-04*** *"Guide for Concrete Floor and Slab Construction".*

CONCRETE SLAB RECOMMENDED SPECIFICATIONS:

1) Concrete slab shall have a minimum thickness of 5" (some areas may require 6") and placed on 4" of compacted gravel or compacted sub base.

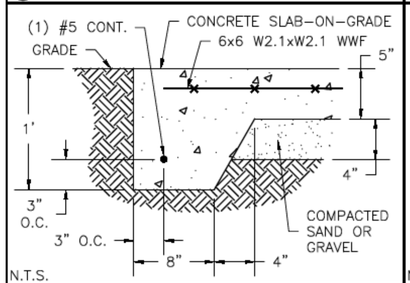
2) NRS. INC., recommends that the concrete slab be reinforced with 6x6-W2.1xW2.1 welded wire fabric at 1^{12}" concrete cover from the top. In lieu of welded wire fabric, steel fiber substitution requires OWNER approval and his understanding of potential maintenance issues.

3) Contractor may substitute blended fiber reinforcing, provided the blend consists of multifilament polypropylene fibers and cold drawn steel wire fibers. Novamesh 950 or approved equivalent, applied at a dosage rate of 5lb/CY unless specified otherwise or a different recommendation is made by the manufacturer.

4) Crack control joints shall be sawed into slab to form approximate square patterns. The maximum spacing for control joints shall not exceed 13'-6", UNLESS INDICATED OTHERWISE. The bleacher frames shall not be set on control joints. The designer shall contact NRS to coordinate joint spacing requirements with the specific bleacher design.

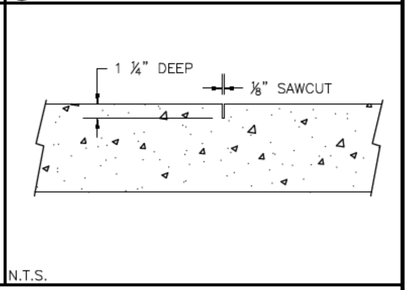
5) The slab may be sloped a maximum of 1/8 inch per foot for drainage. The maximum overall out of level slope for the slab perpendicular to the seats (front to rear) shall not exceed 2" and parallel to the seats (end to end) shall not exceed 4".

① CONCRETE SLAB SECTION



N.T.S.

② CONTROL JOINT DETAIL



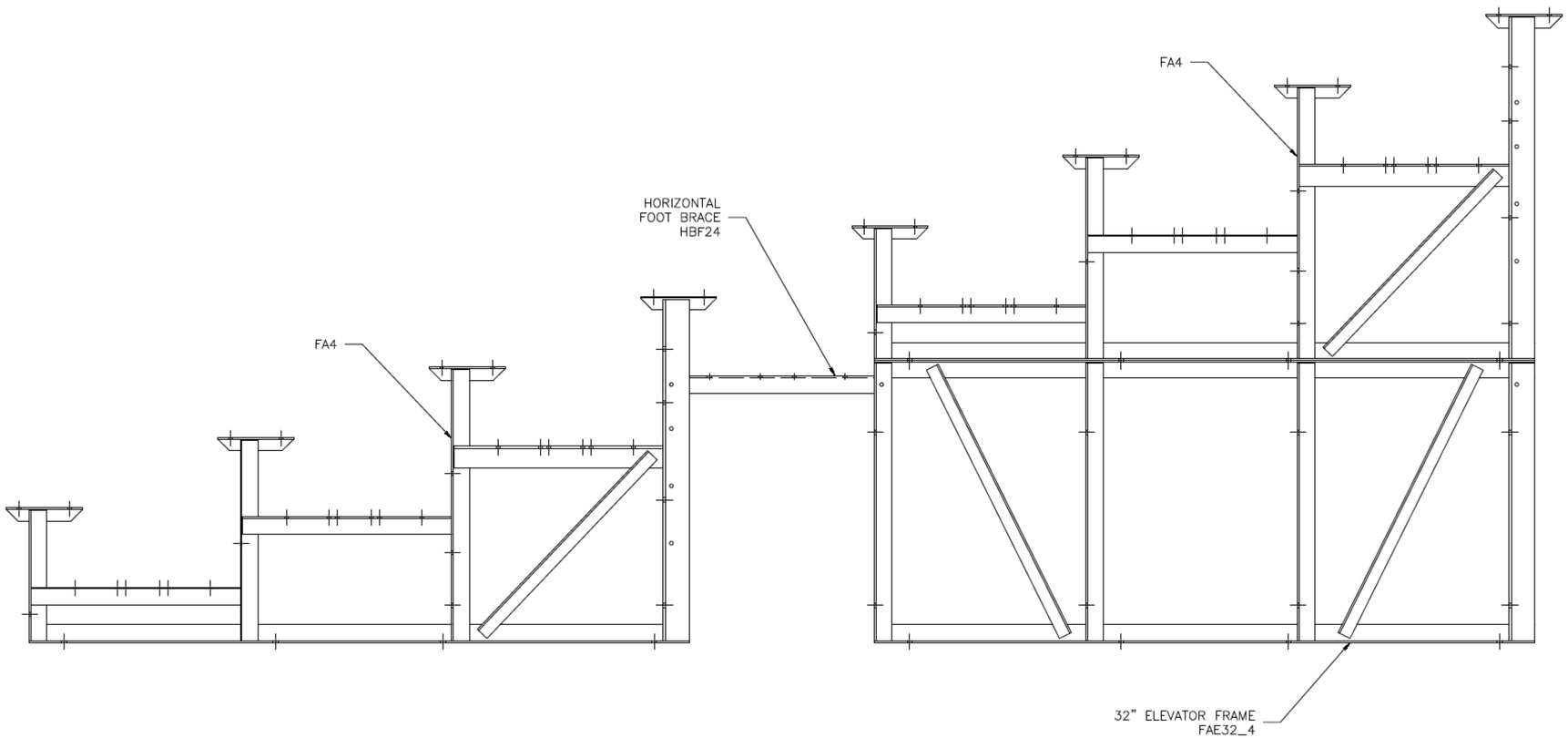
N.T.S.

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T/F: 866-281-5337 - WWW.ALUMINUM-BLEACHERS.COM

MODEL:	BRB-0821AS				
DESCRIPTION:	NON–ELEV. 8 ROW x 21'–0" FOUNDATION PLAN				
DRAWN BY: HIT	DATE: 9/5/23	REVISION: 0	SCALE: N.T.S.	SHEET NUMBER: 3.FP	

1
4.ID FRAME LINES 1, 2, 3, 4



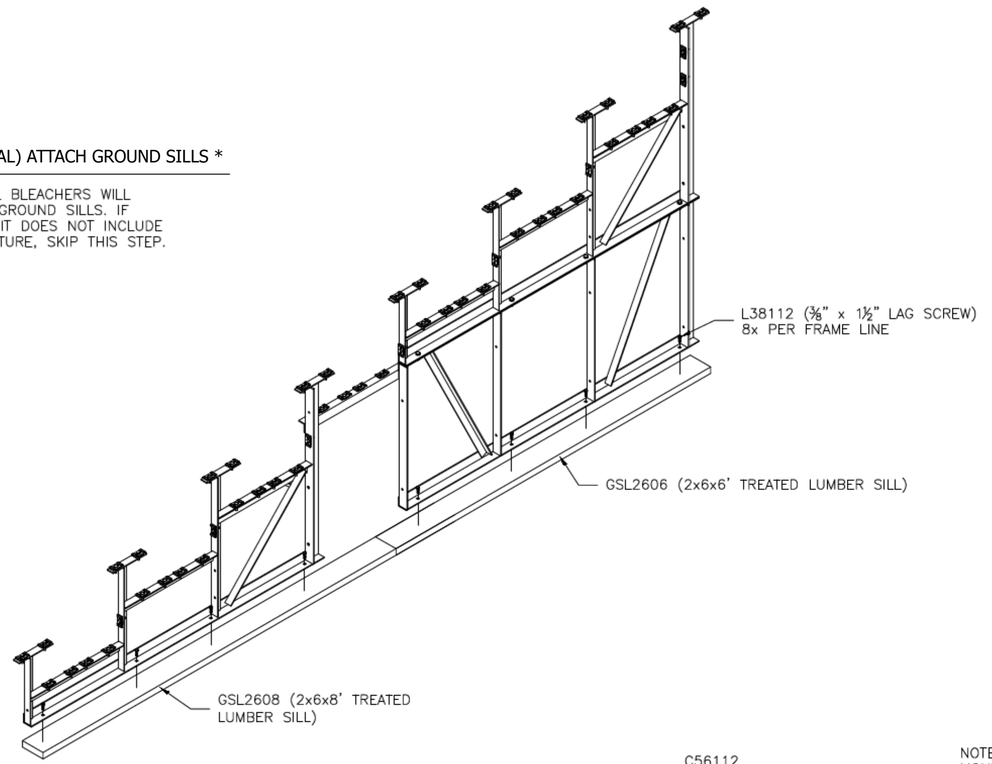
BUILTRITE BLEACHERS .com

T/F: 866-281-5337 - WWW.ALUMINUM-BLEACHERS.COM

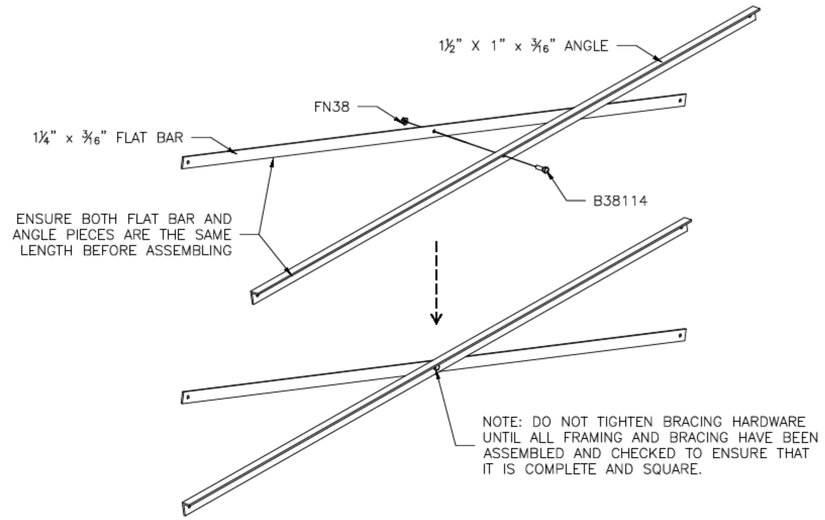
MODEL: BRB-0821AS				
DESCRIPTION: NON–ELEV. 8 ROW x 21'–0" FRAME IDENTIFICATION				
DRAWN BY: HIT	DATE: 9/5/23	REVISION: 0	SCALE: N.T.S.	SHEET NUMBER: 4.ID

(OPTIONAL) ATTACH GROUND SILLS *

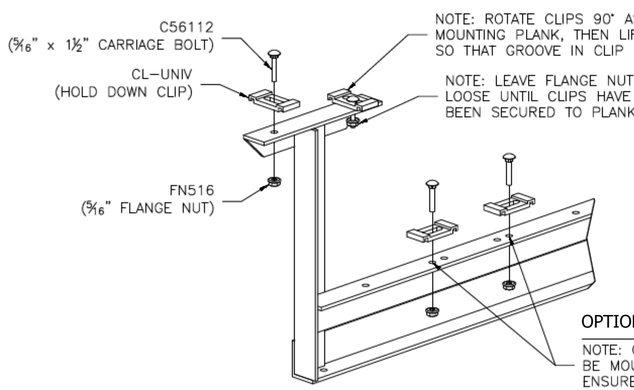
*NOT ALL BLEACHERS WILL RECEIVE GROUND SILLS. IF YOUR UNIT DOES NOT INCLUDE THIS FEATURE, SKIP THIS STEP.



PRE-ASSEMBLE X-BRACE PAIR(S)

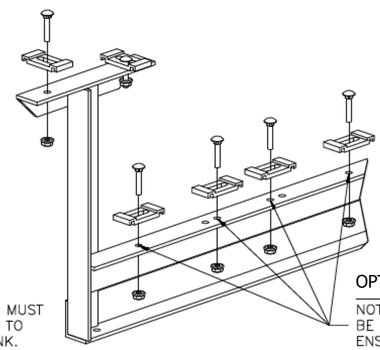


ONCE FRAMING IS COMPLETE, PRE-ASSEMBLE CLIP SETS ON BLEACHER FRAMES



OPTION A: SINGLE FOOT BOARDS

NOTE: CLIP SETS ON FOOT SUPPORTS MUST BE MOUNTED TO HOLES SHOWN HERE TO ENSURE CORRECT FIT WITH FOOT PLANK.

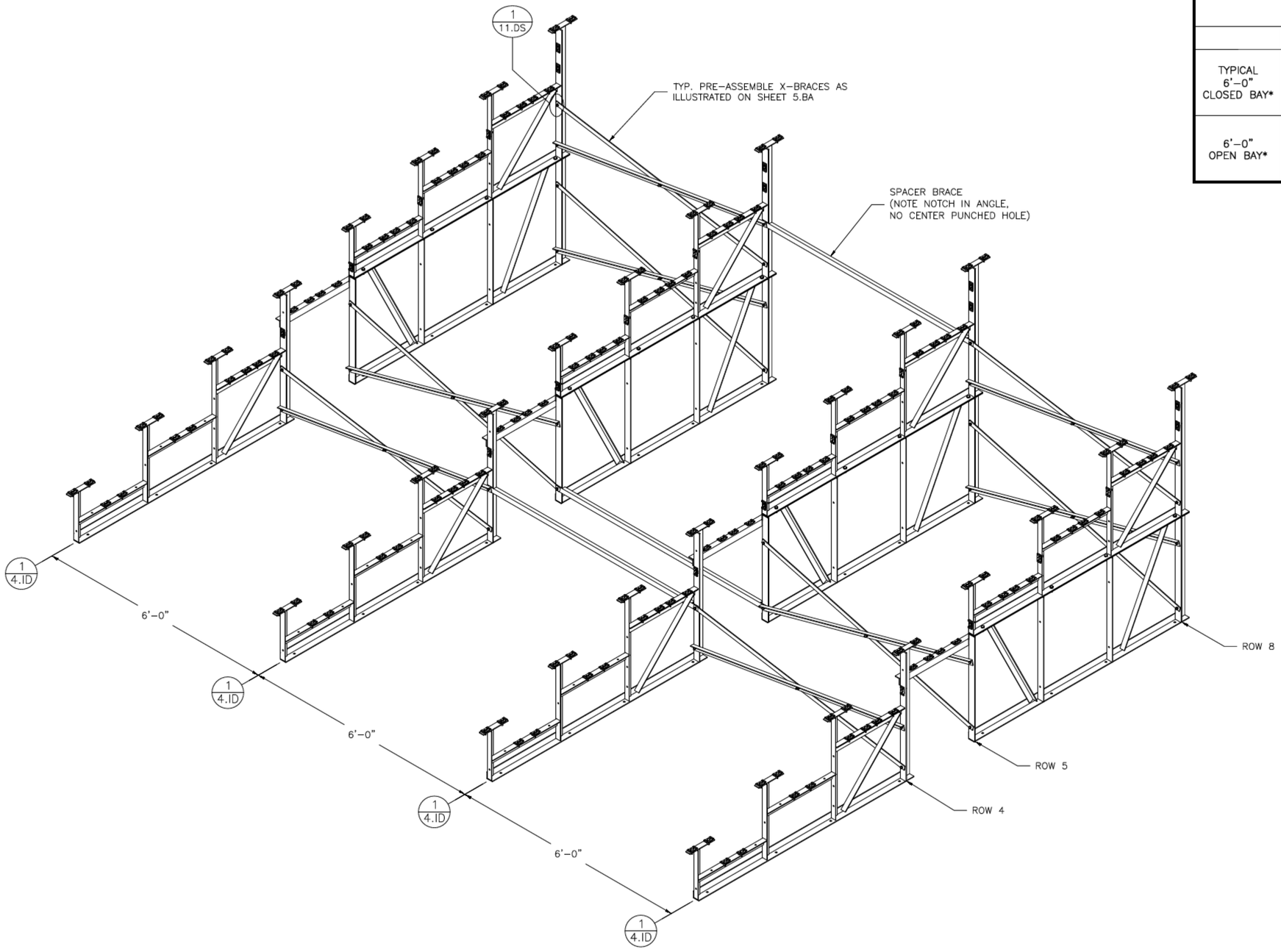


OPTION B: DOUBLE FOOT BOARDS

NOTE: CLIP SETS ON FOOT SUPPORTS MUST BE MOUNTED TO HOLES SHOWN HERE TO ENSURE CORRECT FIT WITH FOOT PLANK.

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MODEL: BRB-0821AS					
DESCRIPTION: NON–ELEV. 8 ROW x 21'–0" ASSEMBLY PREP					
DRAWN BY: HIT	DATE: 9/5/23	REVISION: 0	SCALE: N.T.S.	SHEET NUMBER: 5.BA	



BRACING CHART

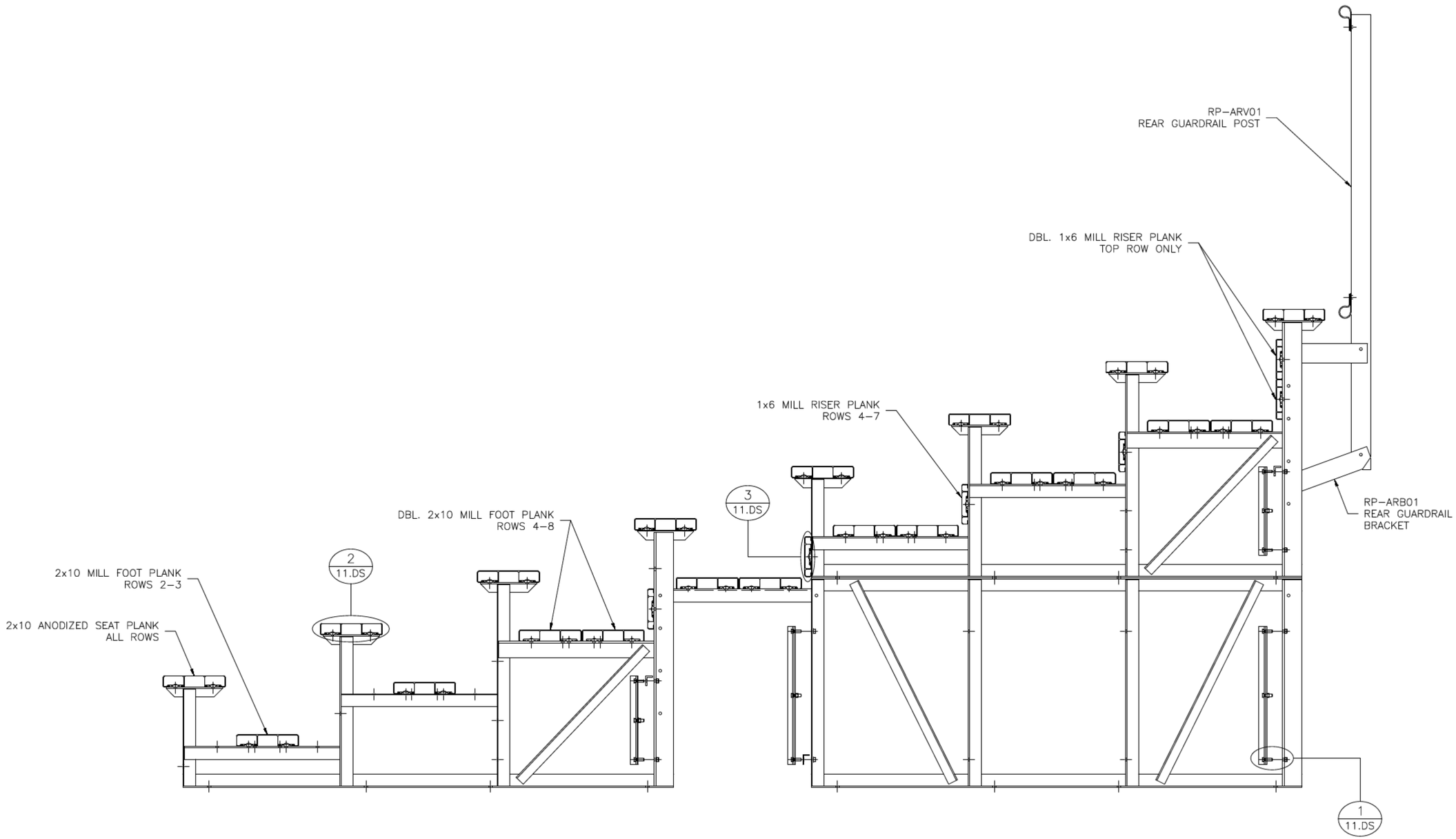
	ROW 4	ROW 5	ROW 8
TYPICAL 6'-0" CLOSED BAY*	6'-2½" X-BRACE	6'-4⅛" X-BRACE	6'-2½" X-BRACE
			6'-4⅛" X-BRACE
6'-0" OPEN BAY*	6'-1½" SPACER BRACE	6'-1½" SPACER BRACE	6'-1½" SPACER BRACE
			N/A

* NOTE:
"CLOSED BAY" RECEIVES ONLY X-BRACING.
"OPEN BAY" RECEIVES ONLY SPACER (STRAIGHT) BRACING.

BUILTRITE BLEACHERS .com

T/F: 866-281-5337 - WWW.ALUMINUM-BLEACHERS.COM

MODEL:	BRB-0821AS				
DESCRIPTION:	NON-ELEV. 8 ROW x 21'-0" ASSEMBLY - BRACING				
DRAWN BY: HIT	DATE: 9/5/23	REVISION: 0	SCALE: N.T.S.	SHEET NUMBER: 6.BA	

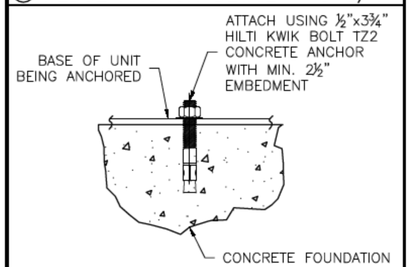


BUILTRITE BLEACHERS .com

T/F: 866-281-5337 - WWW.ALUMINUM-BLEACHERS.COM

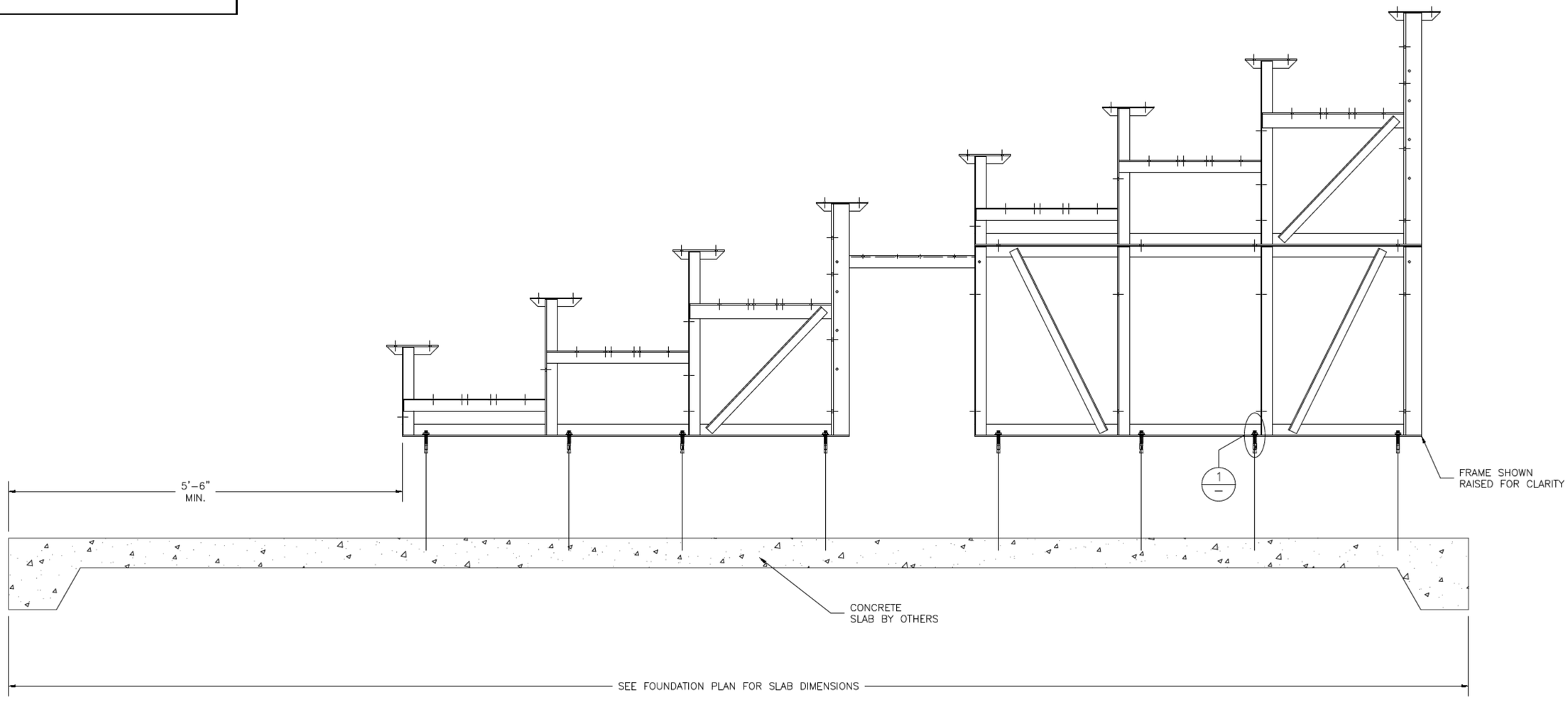
MODEL: BRB-0821AS					
DESCRIPTION: NON-ELEV. 8 ROW x 21'-0" ASSEMBLY SECTION VIEW					
DRAWN BY: HIT	DATE: 9/5/23	REVISION: 0	SCALE: N.T.S.	SHEET NUMBER: 7.BA	

① WEDGE ANCHOR DETAIL – 3 3/4



N.T.S.

(OPTIONAL) ANCHOR BLEACHER TO CONCRETE FOUNDATION *

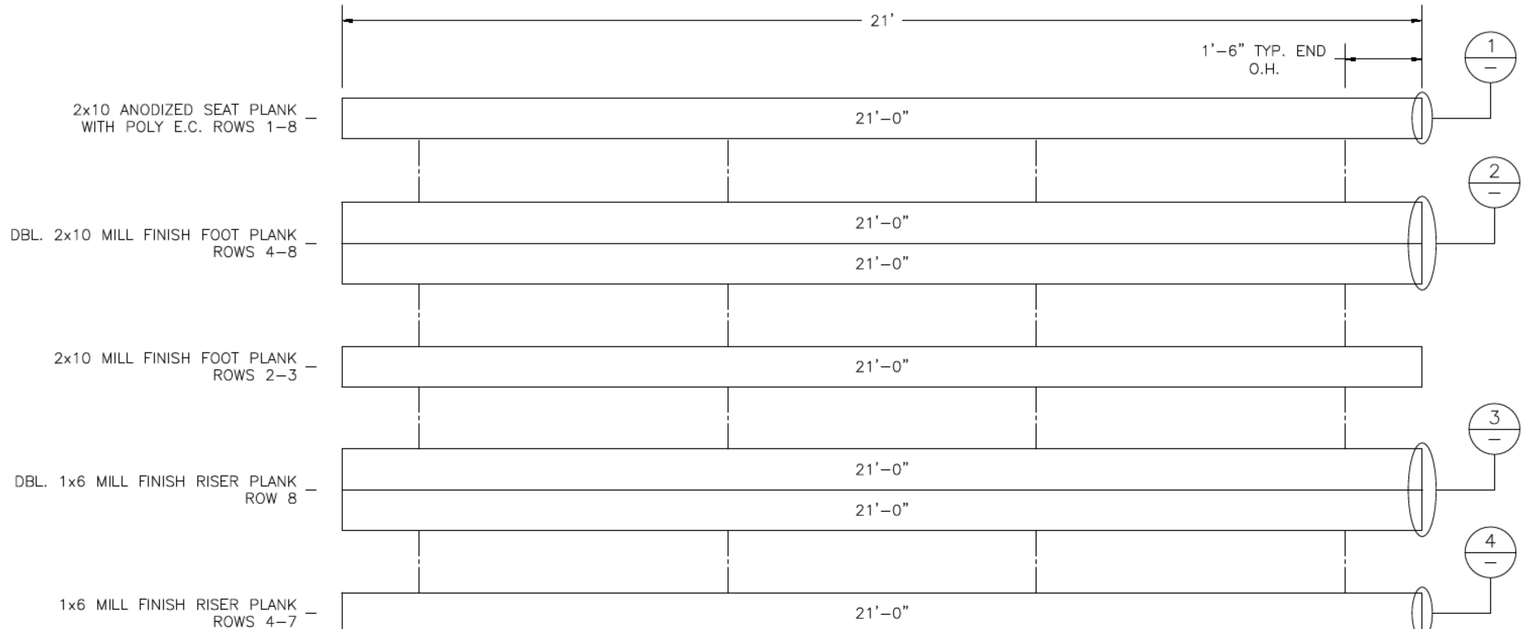


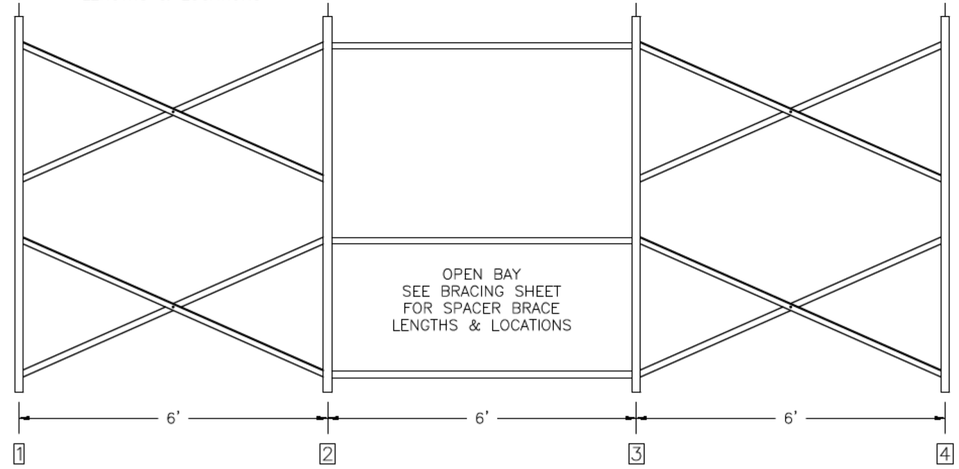
* CONCRETE WEDGE ANCHORS NOT INCLUDED WITH ALL UNITS. IF USING OTHER ANCHORING SYSTEM, SKIP THIS STEP AND REFER TO INSTRUCTIONS SPECIFIC TO THE ANCHORING SYSTEM PURCHASED FOR YOUR UNIT.

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T/F: 866-281-5337 - WWW.ALUMINUM-BLEACHERS.COM

MODEL: BRB-0821AS					
DESCRIPTION: NON–ELEV. 8 ROW BLEACHER ANCHORING PLAN					
DRAWN BY: HIT	DATE: 9/5/23	REVISION: 0	SCALE: N.T.S.	SHEET NUMBER: 8.AP	

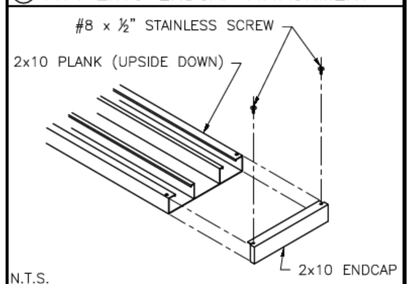
PLANK PLAN



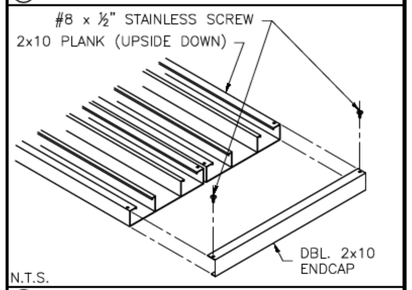


FRAMING PLAN

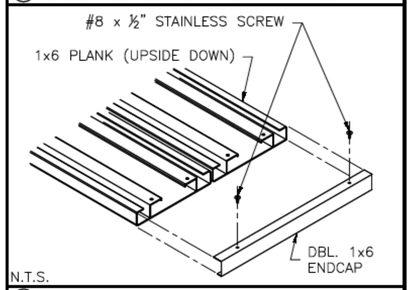
① TYP. 2x10 ENDCAP ATTACHMENT



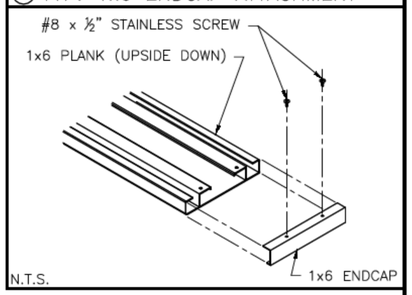
② DBL. 2x10 ENDCAP ATTACHMENT



③ DBL. 1x6 ENDCAP ATTACHMENT



④ TYP. 1x6 ENDCAP ATTACHMENT



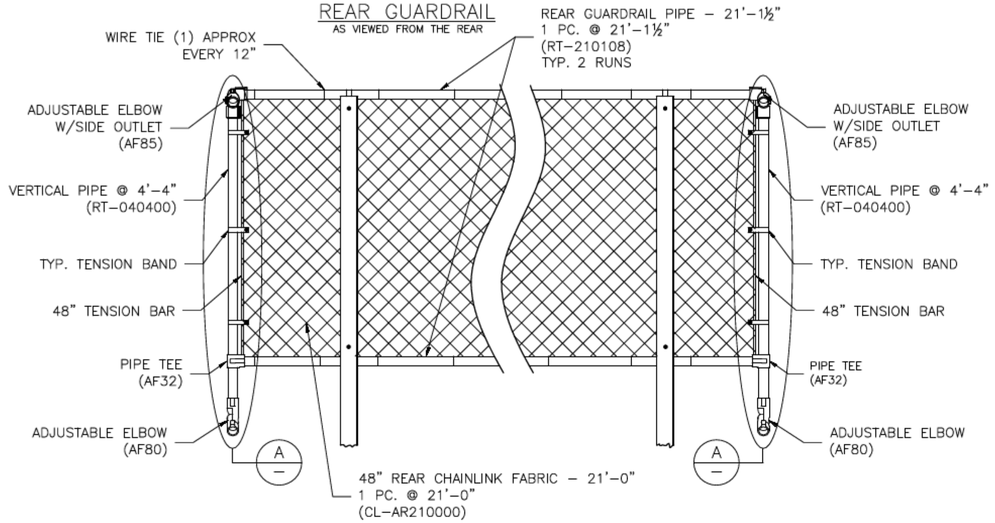
* NOTE:
"CLOSED BAY" RECEIVES ONLY X–BRACING.
"OPEN BAY" RECEIVES ONLY SPACER (STRAIGHT) BRACING.

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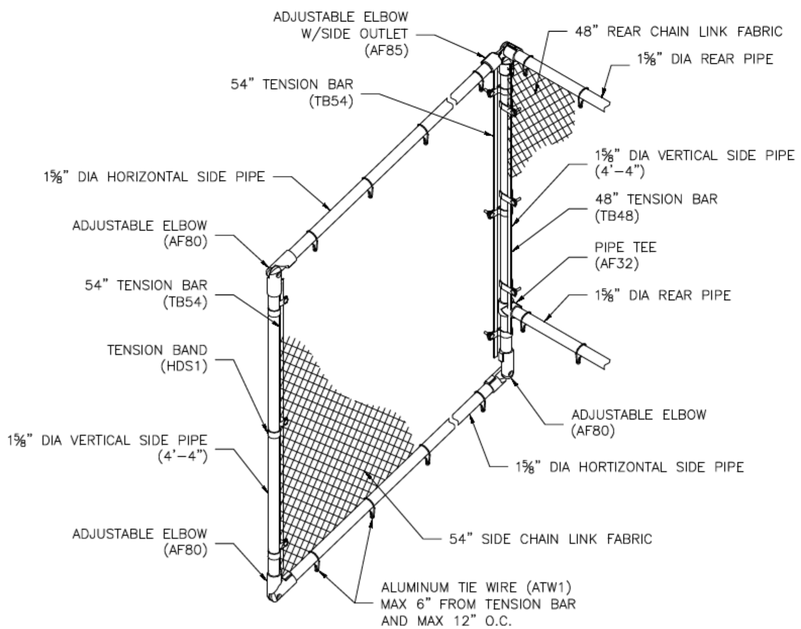
T/F: 866-281-5337 - WWW.ALUMINUM-BLEACHERS.COM

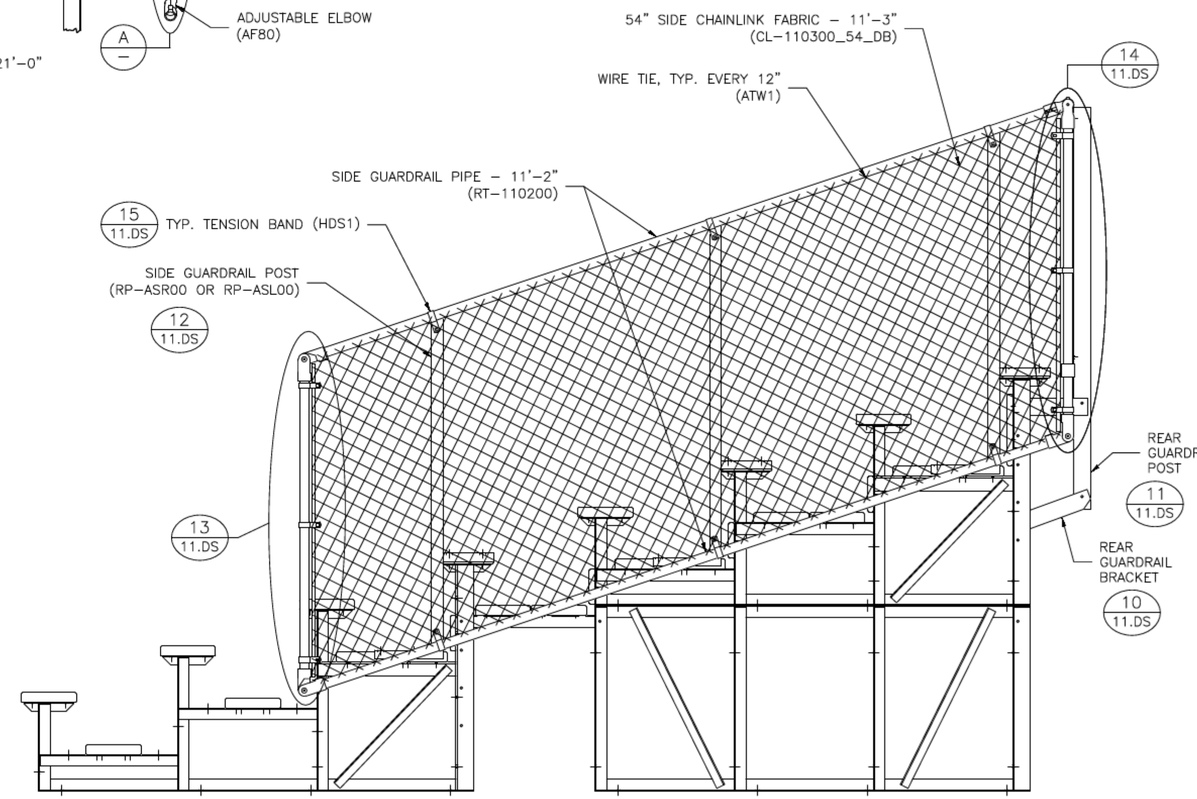
MODEL:	BRB-0821AS				
DESCRIPTION:	NON–ELEV. 8 ROW x 21'–0" PLANK & FRAMING PLAN				
DRAWN BY: HIT	DATE: 9/5/23	REVISION: 0	SCALE: N.T.S.	SHEET NUMBER: 9.PF	

REAR GUARDRAIL
AS VIEWED FROM THE REAR



DETAIL A
SPECTATOR RIGHT SIDE GUARDRAIL CONNECTION



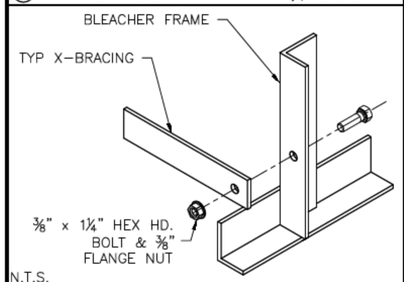


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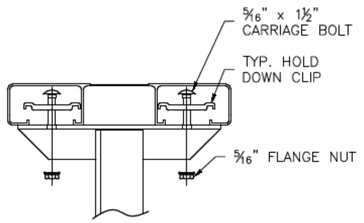
MODEL: BRB-0821AS				
DESCRIPTION: NON–ELEV. 8 ROW x 21'–0" GUARDRAIL ASSEMBLY				
DRAWN BY: HIT	DATE: 9/5/23	REVISION: 0	SCALE: N.T.S.	SHEET NUMBER: 10.GR

① TYP. BRACE CONN. – 1¼ BOLT



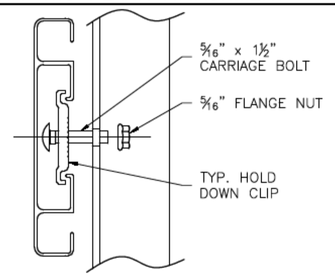
N.T.S.

② TYP. 2x10 PLANK ATTACHMENT



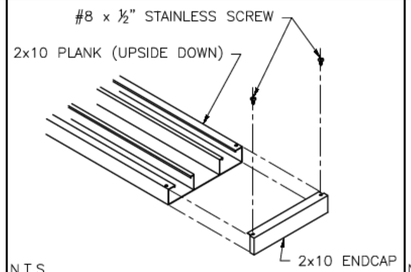
N.T.S.

③ TYP. 1x6 PLANK ATTACHMENT



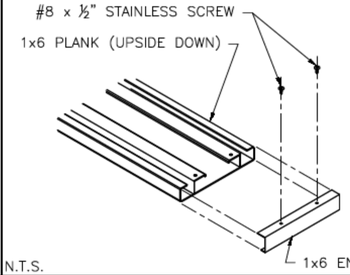
N.T.S.

④ TYP. 2x10 ENDCAP ATTACHMENT



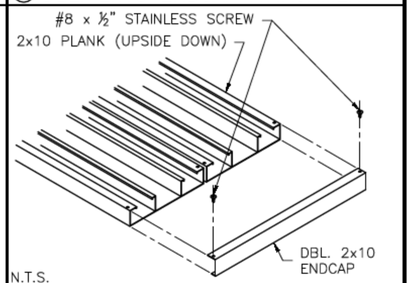
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⑤ TYP. 1x6 ENDCAP ATTACHMENT



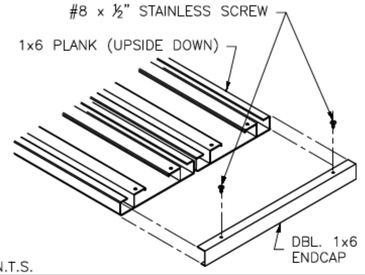
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⑥ DBL. 2x10 ENDCAP ATTACHMENT



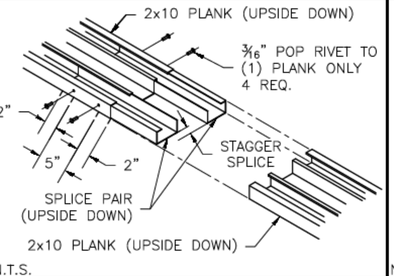
N.T.S.

⑦ DBL. 1x6 ENDCAP ATTACHMENT



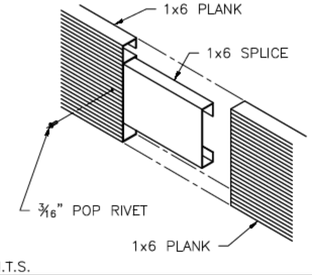
N.T.S.

⑧ TYP. 2x10 SPLICE CONN.



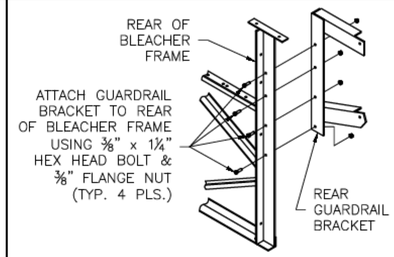
N.T.S.

⑨ TYP. 1x6 SPLICE CONN.



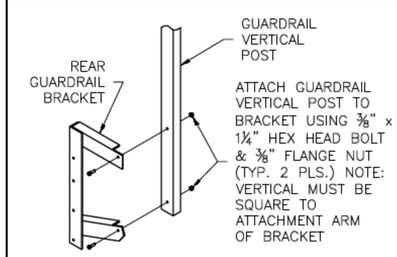
N.T.S.

⑩ REAR GUARDRAIL BRACKET ATTACH



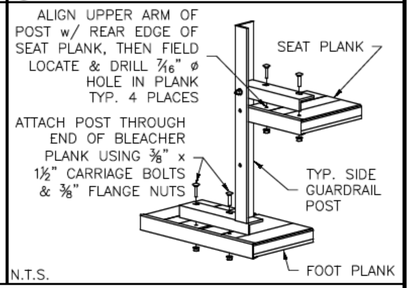
N.T.S.

⑪ REAR GUARDRAIL POST ATTACH



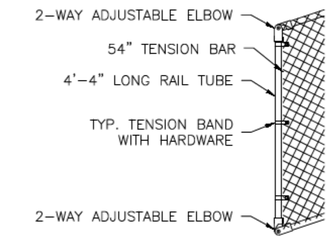
N.T.S.

⑫ SIDE GD. RAIL POST INSTALLATION



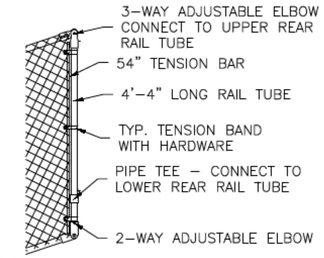
N.T.S.

⑬ VERT. PIPE DETAIL (SIDE, BOTTOM)



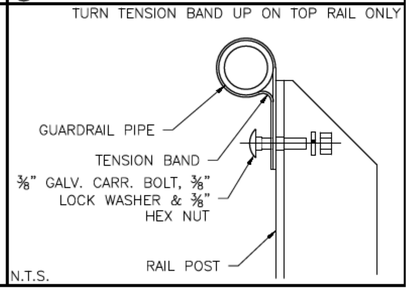
N.T.S.

⑭ VERT. PIPE DETAIL (SIDE, TOP)



N.T.S.

⑮ TENSION BAND ATTACHMENT



N.T.S.

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MODEL: BRB-0821AS				
DESCRIPTION: TYPICAL BLEACHER ASSEMBLY DETAILS				
DRAWN BY: HIT	DATE: 9/5/23	REVISION: 0	SCALE: N.T.S.	SHEET NUMBER: 11.DS