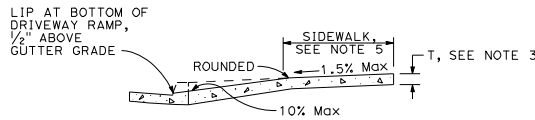
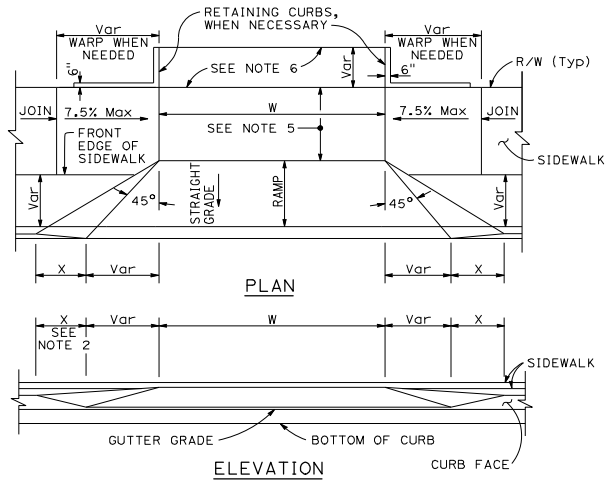


# **PART IX APPENDIX**

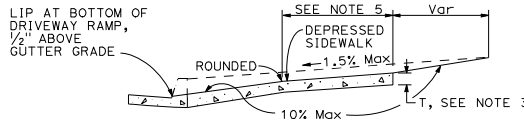
## **INDEX**

<b>Section</b>	<b>Title</b>
Appendix A	Caltrans Standard Drawings – Curbs and ADA Ramps
Appendix B	US Forest Service Standard Drawings – Pedestrian Boardwalks

**APPENDIX A**  
**Caltrans Standard Drawings –**  
**Curbs and ADA Ramps**



**CASE A**  
Typical driveway, sidewalk not depressed



**CASE B**  
Driveway with depressed sidewalk

**SECTIONS**

**TABLE A**

CURB TYPE	DIMENSIONS			
	"H1"	"H2"	"W1"	"W2"
A1-6	1'-2"	6"	7 1/2"	1 1/2"
A1-8	1'-4"	8"	8"	2"
A2-6	1'-0"	6"	2'-7 1/2"	1 1/2"
A2-8	1'-2"	8"	2'-8"	2"
A3-6	6"	5"	7 1/4"	1 1/4"
A3-8	8"	7"	7 3/4"	1 3/4"
B1-4	1'-0"	4"	7 1/2"	2 1/2"
B1-6	1'-2"	6"	9"	4"
B2-4	10"	4"	2'-7 1/2"	2 1/2"
B2-6	1'-0"	6"	2'-9"	4"
B3-4	4"	3"	7"	2"
B3-6	6"	5"	8 1/2"	3 1/2"
D-4	10"	4"	1'-6"	1'-1"
D-6	1'-0"	6"	2'-2"	1'-9"

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET TOTAL SHEETS

*Hector David Corbo*  
REGISTERED CIVIL ENGINEER

August 1, 2022  
PLANS APPROVAL DATE

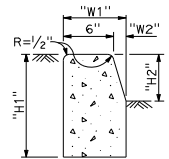
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER  
Hector David Corbo  
No. C41951  
Exp. 3-31-24  
CIVIL  
STATE OF CALIFORNIA

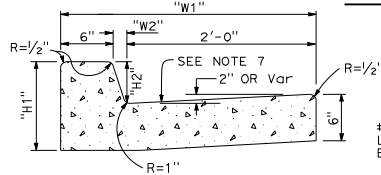
**CURB QUANTITIES**

TYPE	CUBIC YARDS PER LINEAR FOOT
A1-6	0.02585
A1-8	0.03084
A2-6	0.05903
A2-8	0.06379
A3-6	0.01036
A3-8	0.01435
B1-4	0.02185
B1-6	0.02930
B2-4	0.05515
B2-6	0.06171
B3-4	0.00641
B3-6	0.01074
B4	0.05709
D-4	0.04083
D-6	0.06804
E	0.06661

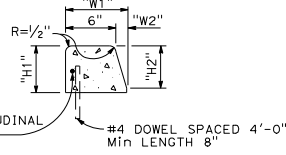
**DRIVEWAYS**



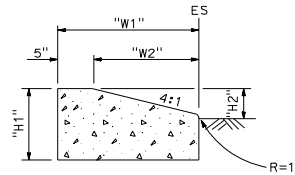
**TYPE A1 CURBS**  
See Table A



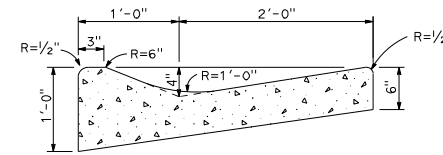
**TYPE A2 CURBS**  
See Table A



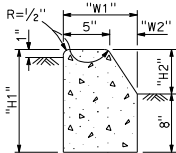
**TYPE A3 CURBS**  
Superimposed on existing pavement  
See Table A



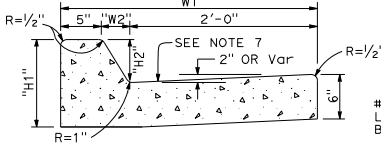
**TYPE D CURBS**  
See Table A



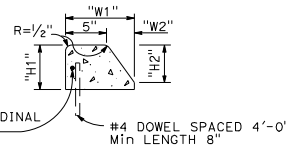
**TYPE E CURB**



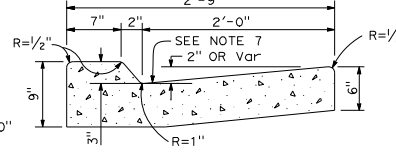
**TYPE B1 CURBS**  
See Table A



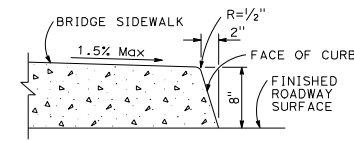
**TYPE B2 CURBS**  
See Table A



**TYPE B3 CURBS**  
Superimposed on existing pavement  
See Table A



**TYPE B4 CURBS**



**TYPE H CURB**  
On Bridges

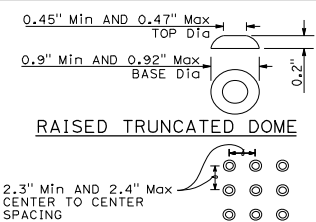
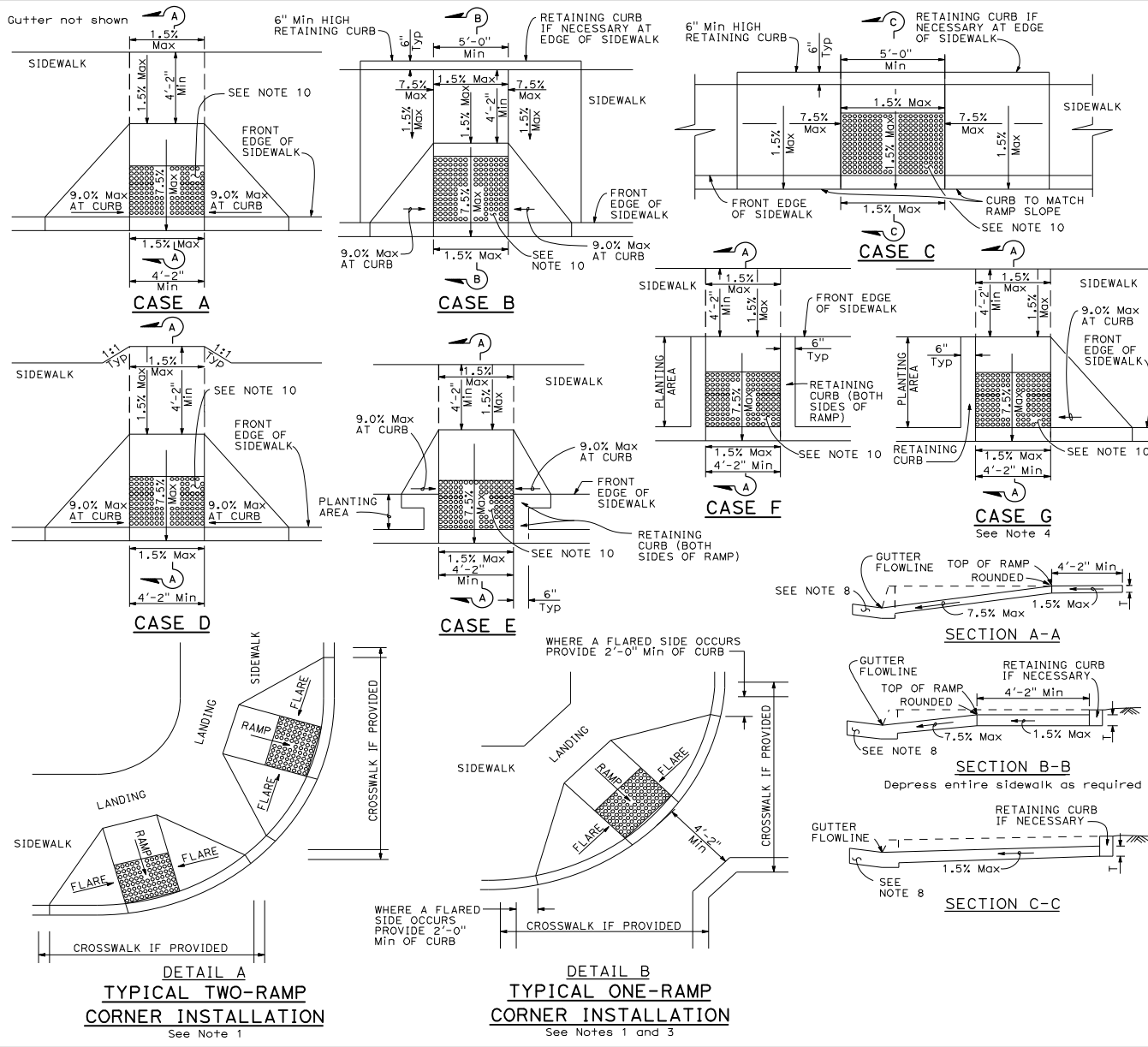
**NOTES:**

- Case A driveway section typically applies.
- X=3'-0" except for curb heights over 10" where 4:1 slopes shall be used on curb slope.
- Sidewalk and ramp thickness "T" at driveway shall be 4" for residential and 6" for commercial.
- Difference in slope of the driveway ramp and the slope of a line between the gutter and a point on the roadway 5'-0" from gutter line shall not exceed 15%. Reduce driveway ramp slope, not gutter slope, where required.
- Minimum width of clear passageway for sidewalk shall be 4'-2".
- Retaining curbs and acquisition of construction easement may be necessary for narrow sidewalks or curb heights in excess of 6".
- Across the pedestrian route at curb ramp locations, the gutter pan slope shall not exceed 1" of depth for each 2'-0" of width.

**CURBS**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**CURBS AND DRIVEWAYS**  
NO SCALE

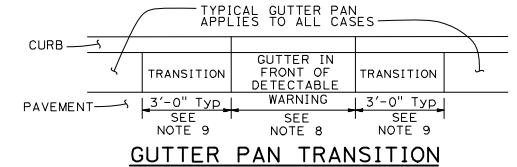
**A87A**



**RAISED TRUNCATED DOME PATTERN (IN-LINE) DETECTABLE WARNING SURFACE**

NOTES:  
See Note 10

- As site conditions dictate, Case A through Case G curb ramps may be used for corner installations similar to those shown in Detail A and Detail B. The case of curb ramps used in Detail A do not have to be the same. Case A through Case G curb ramps also may be used at mid-block locations, as site conditions dictate. For specific site condition configuration, including the conform to existing sidewalk, see Project Plans.
- If distance from curb to back of sidewalk is too short to accommodate ramp and 4'-2" platform (landing) as shown in Case A, the sidewalk may be depressed longitudinally as in Case B or C or may be widened as in Case D.
- When ramp is located in center of curb return, crosswalk configuration must be similar to that shown for Detail B.
- As site conditions dictate, the retaining curb side and the flared side of the Case G ramp shall be constructed in reversed position.
- The ramp portion of the curb ramp is a typical rectangle, unless modified in the Project Plans.
- Side slope of ramp flares vary uniformly from a maximum of 9.0% at curb to conform with longitudinal sidewalk slope adjacent to top of the ramp, except in Case C and Case F.
- The adjacent surfaces at transitions at curb ramps to walks, gutters, and streets shall be at the same level.
- Counter slopes of adjoining gutters and road surfaces immediately adjacent to and within 24 inches of the curb ramp shall not be steeper than 1v:20H (5.0%). Gutter pan slope shall not exceed 1" of depth for each 2'-0" of width.
- Transition gutter pan slope from 1" of depth for each 2'-0" of width to match typical gutter pan slope per Standard Plan A87A.
- The detectable warning surface will be a rectangle as shown at back of curb, unless modified in the Project Plans. Curb ramps shall have a detectable warning surface that extends the full width and 3'-0" depth of the ramp. Detectable warning surfaces shall extend the full width of the ramp except a maximum gap of 1 inch is allowed on each side of the ramp. Detectable warning surfaces shall conform to the requirements in the Standard Specifications.
- Sidewalk and ramp thickness "T", shall be 3/2" minimum.
- Utility pull boxes, manholes, vaults and all other utility facilities within the boundaries of the curb ramp will be relocated or adjusted to grade by the owner prior to, or in conjunction with, curb ramp construction.
- Detectable warning surface may have to be cut to allow removal of utility covers while maintaining detectable warning width and depth.



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**CURB RAMP DETAILS**  
NO SCALE

**A88A**

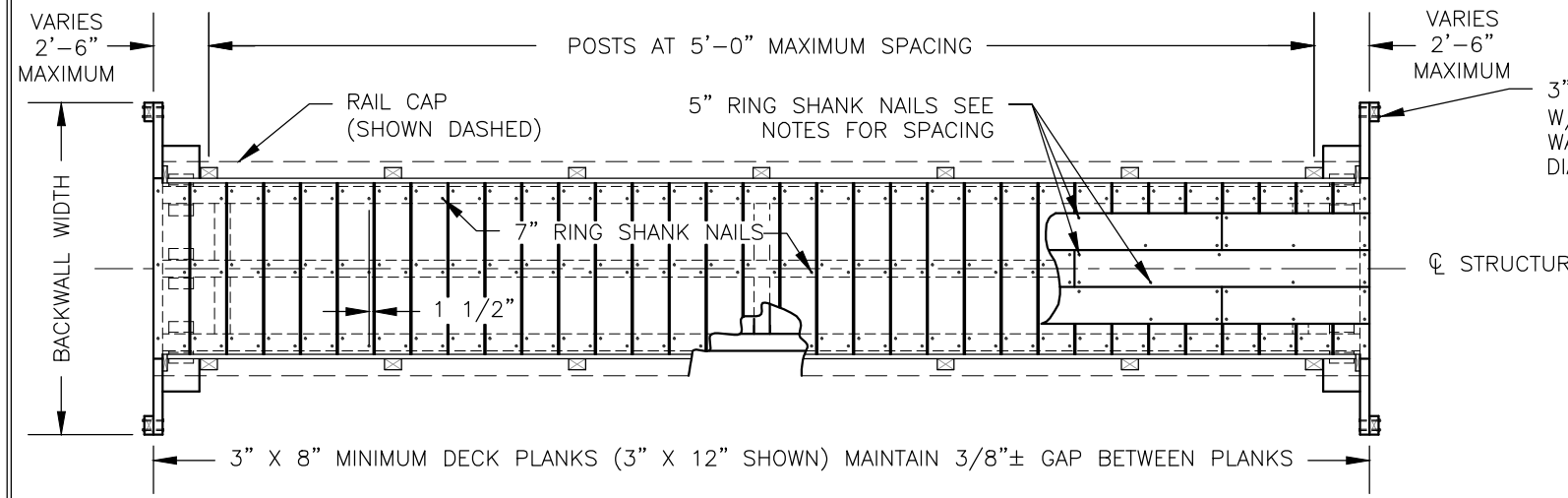
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REGISTERED CIVIL ENGINEER  
August 1, 2022  
PLANS APPROVAL DATE

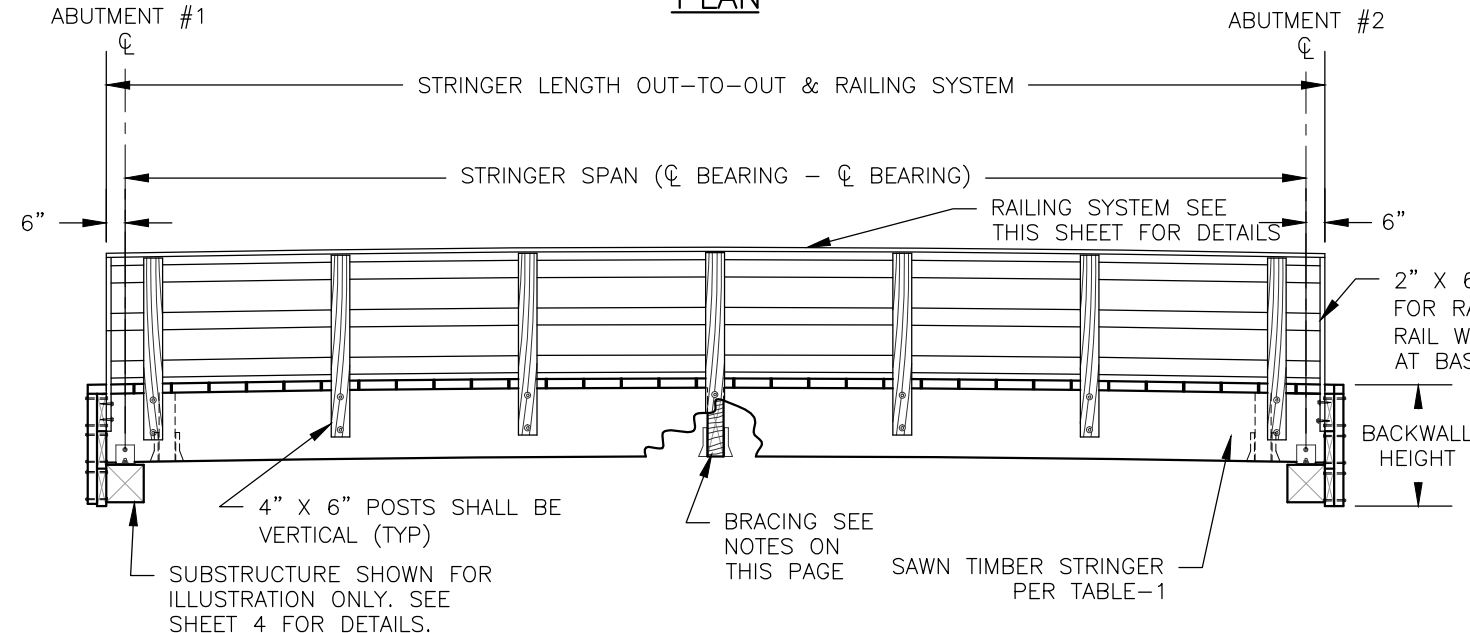
REBECCA LYNN MOWRY  
No. CS4415  
Exp. 12-31-23  
CIVIL  
STATE OF CALIFORNIA

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**APPENDIX B**  
**US Forest Service Standard Drawings –**  
**Pedestrian Boardwalks**



**PLAN**



**ELEVATION**

**NOTES:**

GRADE SHOWN = 0.0%, RUNNING PLANKS NOT SHOWN FOR CLARITY

- ALL DIMENSIONS IN TABLE-1 ARE NOMINAL (ROUGH SAWN). THE MINIMUM STRINGER DEPTH FOR BRIDGES WITH A PEDESTRIAN RAILING SYSTEM IS 15-INCHES. BRIDGES WITH STRINGER DEPTHS LESS THAN 15-INCHES SHALL HAVE CURBS ONLY. THE MINIMUM NUMBER OF STRINGERS IS THREE.
- FASTEN DECK PLANKS TO STRINGERS WITH TWO ROWS 5/16-INCH DIAMETER X 7-INCH RING SHANK NAILS PER PLANK AT EACH STRINGER. ALTERNATE SIDES.
- FASTEN RUNNING PLANKS TO DECK WITH 40d (5-INCH RING SHANK) NAILS AT 24-INCH SPACING. ALTERNATE SIDES WITH TWO AT EACH END.
- PROVIDE A MINIMUM 1/2-INCH SPACE BETWEEN BLOCKING AND BACKWALL FOR AIR CIRCULATION.
- SPLICE RAILS AT POSTS. RAILS SHALL BE CONTINUOUS FOR TWO POST SPACES. DO NOT LOCATE MORE THAN ONE RAIL SPLICE AT ANY ONE POST.
- BRACING REQUIRED AT THE ENDS OF EACH MEMBER. THE BRACING SHALL BE THREE-QUARTERS TO FULL DEPTH AND PLACED WITHIN A DISTANCE OF THE DEPTH OF THE BEAM FROM THE CENTERLINE OF BEARING. BRACING REQUIRED AT MID-SPAN FOR SPANS OVER 20 FEET LONG.
- WOOD BLOCKING SHALL BE BOLTED TO STRINGERS WITH STEEL ANGLES OR SUSPENDED IN STEEL HANGERS THAT ARE NAILED TO BLOCKS AND STRINGER SIDES

VARIES 2'-6" MAXIMUM  
 3" X 6" BACKING PLANK STIFFENER ATTACH W/(2)-1/2"Ø BOLTS W/(2)-MALLEABLE IRON WASHERS PER BACKING PLANK SPACED DIAGONALLY FROM EACH OTHER

2" X 8" S4S RAIL CAP FASTEN TO POST AND TO RAIL W/(2)-#10 X 4" WOOD SCREWS ON 2'-0" CENTERS

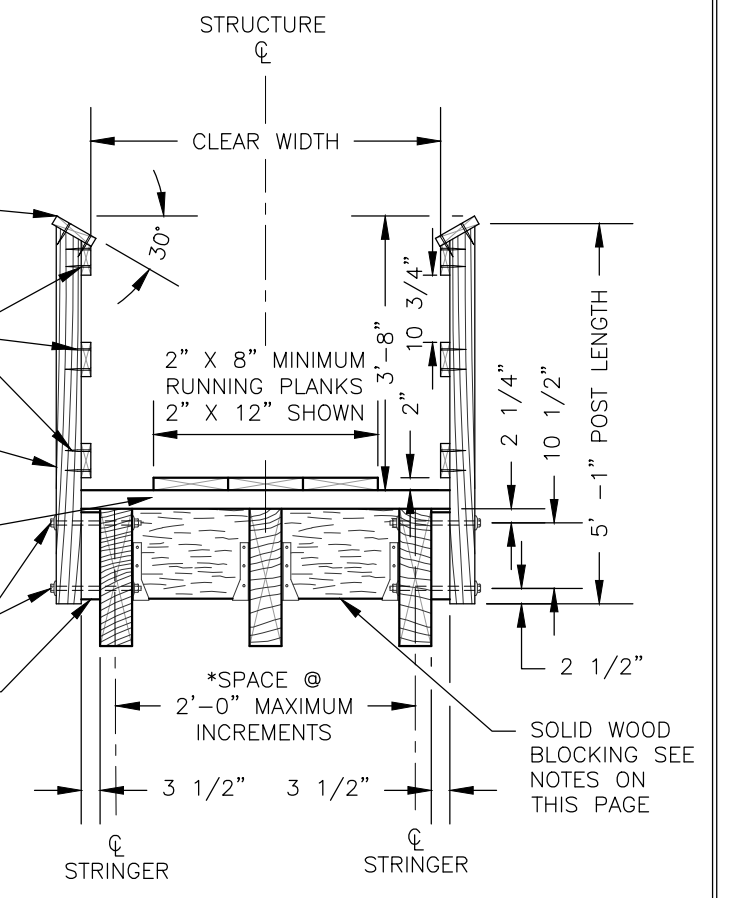
2" X 6" S4S RAIL, FASTEN RAILS TO POSTS W/(2)-#10 X 4" WOOD SCREWS AT EACH CONNECTION

4" X 6" POST. FABRICATE W/TAPERED END (TOP) AND W/(2)-13/16"Ø HOLES AT BOTTOM  
 3" X 8" MINIMUM DECK PLANKS 3" X 12" SHOWN

5/8"Ø BOLT X (VERIFY LENGTH) W/NUT AND (2)-OVERSIZED MALLEABLE IRON WASHERS  
 4" X 6" X 1'-2" S4S BLOCKING

2" X 6" X 4'-6" VERTICAL END SUPPORT FOR RAILS (TYP) (2)-16d NAILS INTO EACH RAIL W/(2)-3/8"Ø X 3 1/2" LAG BOLTS AT BASE

**TYPICAL DECK SECTION W/RAILING SYSTEM**



**\*TABLE-1: SOLID SAWN STRINGER SIZE REQUIREMENTS - LRFD**

**STRINGER SPAN (FEET)	TIMBER SPECIES - DOUGLAS FIR - LARCH GRADE - NO.1				
	DESIGN LOADING IN POUNDS PER SQUARE FOOT				
	PEDESTRIAN LIVE LOAD		GROUND SNOW LOAD		
	***65	90	120	150	200
● 10	3" X 8"	3" X 10"	3" X 12"	4" X 10"	4" X 12"
● 15	4" X 10"	4" X 12"	4" X 14"	4" X 16"	6" X 12"
● 20	4" X 14"	6" X 12"	6" X 12"	6" X 14"	6" X 16"
▲ 25	6" X 14"	6" X 14"	6" X 16"	6" X 18"	6" X 20"
▲ 30	6" X 16"	6" X 18"	6" X 20"	6" X 20"	8" X 20"

- INSTALL BRACING WITHIN A DISTANCE OF THE DEPTH OF THE BEAM FROM THE CENTERLINE OF BEARING
- ▲ INSTALL BRACING WITHIN A DISTANCE OF THE DEPTH OF THE BEAM FROM THE CENTERLINE OF BEARING & MID-SPAN
- \* STRINGER SIZE SHALL BE THE LARGER OF THE PEDESTRIAN OR GROUND SNOW LOAD SIZE REQUIRED FOR THE SITE CONDITIONS
- \*\* STRINGER LENGTH EQUAL TO STRINGER SPAN PLUS ONE FOOT
- \*\*\* REQUIRES REGIONAL BRIDGE ENGINEER APPROVAL



PROJECT NAME & LOCATION

DRAWING NAME  
**SAWN TIMBER STRINGER TRAIL BRIDGE**

SECTION  
**962 - SAWN TIMBER TRAIL BRIDGE**

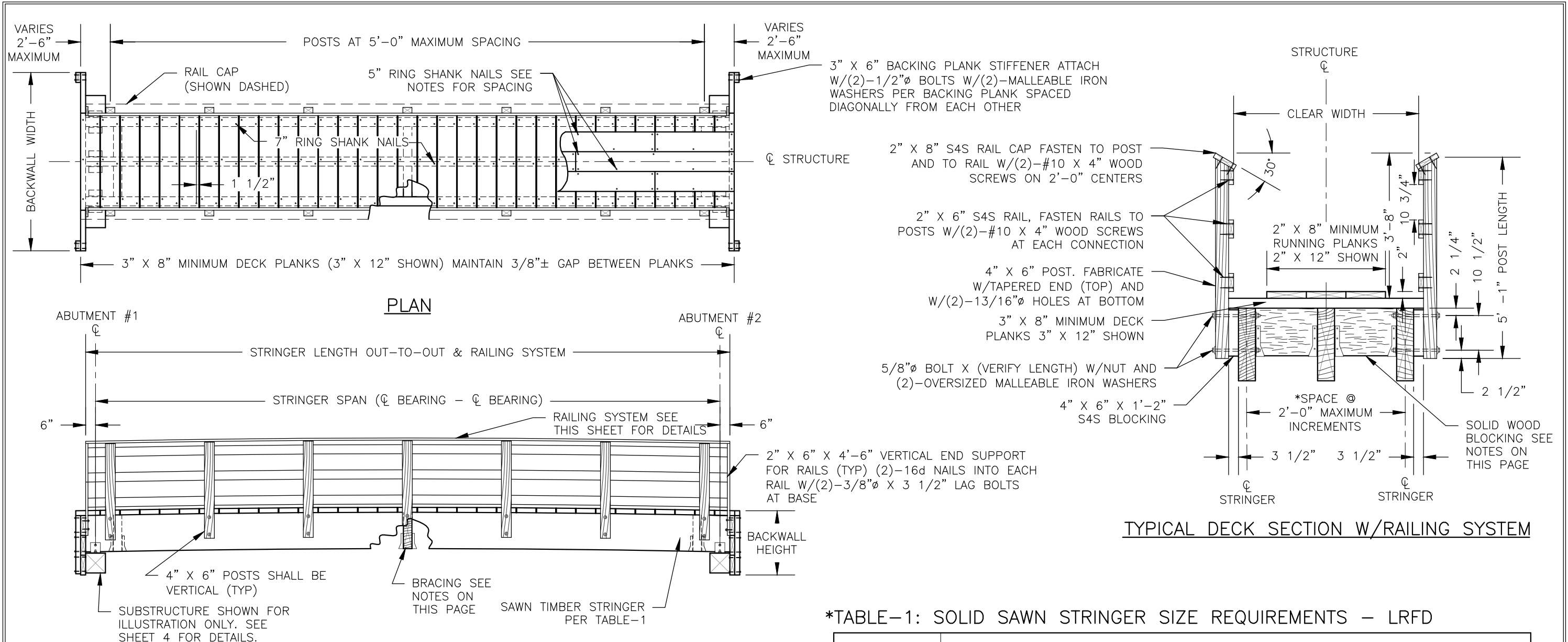
TYPICAL ID  
**STS**

REVISION DATE

**NOT TO SCALE**

DRAWING NO.  
**STD\_962-10-02a**

SHEET  
 OF



**NOTES:**

GRADE SHOWN = 0.0%, RUNNING PLANKS NOT SHOWN FOR CLARITY

- ALL DIMENSIONS IN TABLE-1 ARE NOMINAL (ROUGH SAWN). THE MINIMUM STRINGER DEPTH FOR BRIDGES WITH A PEDESTRIAN RAILING SYSTEM IS 15-INCHES. BRIDGES WITH STRINGER DEPTHS LESS THAN 15-INCHES SHALL HAVE CURBS ONLY. THE MINIMUM NUMBER OF STRINGERS IS THREE.
- FASTEN DECK PLANKS TO STRINGERS WITH TWO ROWS 5/16-INCH DIAMETER X 7-INCH RING SHANK NAILS PER PLANK AT EACH STRINGER. ALTERNATE SIDES.
- FASTEN RUNNING PLANKS TO DECK WITH 40d (5-INCH RING SHANK) NAILS AT 24-INCH SPACING. ALTERNATE SIDES WITH TWO AT EACH END.
- PROVIDE A MINIMUM 1/2-INCH SPACE BETWEEN BLOCKING AND BACKWALL FOR AIR CIRCULATION.
- SPLICE RAILS AT POSTS. RAILS SHALL BE CONTINUOUS FOR TWO POST SPACES. DO NOT LOCATE MORE THAN ONE RAIL SPLICE AT ANY ONE POST.
- BRACING REQUIRED AT THE ENDS OF EACH MEMBER. THE BRACING SHALL BE THREE-QUARTERS TO FULL DEPTH AND PLACED WITHIN A DISTANCE OF THE DEPTH OF THE BEAM FROM THE CENTERLINE OF BEARING. BRACING REQUIRED AT MID-SPAN FOR SPANS OVER 20 FEET LONG.
- WOOD BLOCKING SHALL BE BOLTED TO STRINGERS WITH STEEL ANGLES OR SUSPENDED IN STEEL HANGERS THAT ARE NAILED TO BLOCKS AND STRINGER SIDES

**\*TABLE-1: SOLID SAWN STRINGER SIZE REQUIREMENTS - LRFD**

**STRINGER SPAN (FEET)	TIMBER SPECIES - SOUTHERN PINE GRADE - NO.1				
	DESIGN LOADING IN POUNDS PER SQUARE FOOT				
	PEDESTRIAN LIVE LOAD		GROUND SNOW LOAD		
	**65	90	120	150	200
● 10	3" X 8"	3" X 10"	3" X 10"	3" X 12"	4" X 12"
● 15	4" X 10"	4" X 12"	4" X 14"	4" X 16"	6" X 12"
● 20	4" X 14"	4" X 16"	6" X 12"	6" X 14"	6" X 16"
▲ 25	6" X 14"	6" X 16"	6" X 16"	6" X 16"	6" X 20"
▲ 30	6" X 16"	6" X 18"	6" X 18"	6" X 20"	8" X 20"

● INSTALL BRACING WITHIN A DISTANCE OF THE DEPTH OF THE BEAM FROM THE CENTERLINE OF BEARING  
 ▲ INSTALL BRACING WITHIN A DISTANCE OF THE DEPTH OF THE BEAM FROM THE CENTERLINE OF BEARING & MID-SPAN  
 \* STRINGER SIZE SHALL BE THE LARGER OF THE PEDESTRIAN OR GROUND SHOW LOAD SIZE REQUIRED FOR THE SITE CONDITIONS  
 \*\* STRINGER LENGTH EQUAL TO STRINGER SPAN PLUS ONE FOOT  
 \*\*\* REQUIRES REGIONAL BRIDGE ENGINEER APPROVAL

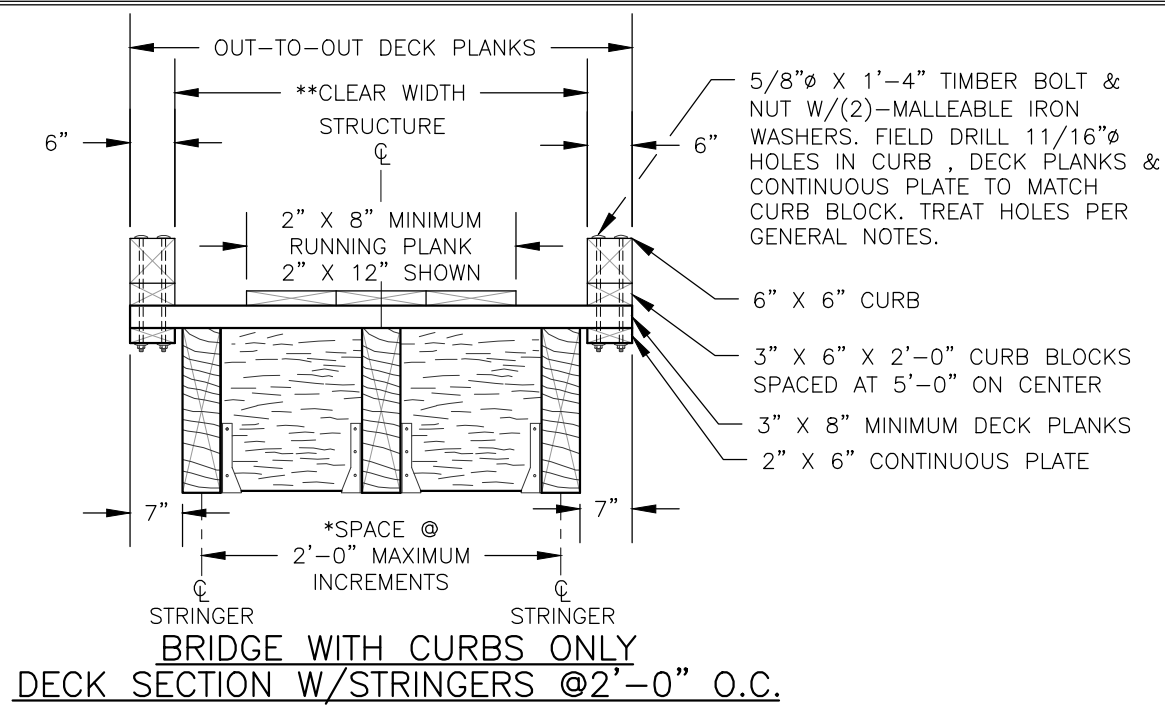


PROJECT NAME & LOCATION

DRAWING NAME  
**SAWN TIMBER STRINGER TRAIL BRIDGE**  
 SECTION 962 - SAWN TIMBER TRAIL BRIDGE TYPICAL ID STS

REVISION DATE  
 NOT TO SCALE

DRAWING NO.  
**STD\_962-10-02b**  
 SHEET OF



**BRIDGE WITH CURBS ONLY  
DECK SECTION W/STRINGERS @2'-0" O.C.**

\* MINIMUM NUMBER OF STRINGERS IS THREE  
\*\* INSIDE FACE TO INSIDE FACE OF RAILING SYSTEM

**GENERAL NOTES:**

**SPECIFICATIONS:** MATERIALS AND CONSTRUCTION OF THIS STRUCTURE SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATION FOR CONSTRUCTION OF ROADS AND BRIDGES ON FEDERAL HIGHWAY PROJECTS (FP-03) AND STANDARD SPECIFICATIONS FOR CONSTRUCTION OF TRAILS AND TRAIL BRIDGES ON FEDERAL PROJECTS,

**TIMBER & LUMBER:** SOLID SAWN TIMBER MEMBERS SHALL CONFORM TO THE REQUIREMENTS OF THE GRADING RULES AGENCY FOR THE SPECIES, TYPE, AND GRADE SPECIFIED BELOW.

**DECK PLANKS, CURBS, SILLS, & BACKING PLANKS**

- COASTAL REGION DOUGLAS FIR-LARCH ROUGH SAWN NO.1 GRADE, GRADING RULES AGENCY - WWPA, WCLIB

**RUNNING PLANKS**

- COASTAL REGION DOUGLAS FIR-LARCH ROUGH SAWN NO.2 GRADE, GRADING RULES AGENCY - WWPA, WCLIB

**RAILS & POSTS (SEE PROJECT CRITERIA)**

**UNTREATED**

- REDWOOD, S4S, NO.1 GRADE GRADING RULES AGENCY - RIS  
- WESTERN RED CEDAR, S4S, SELECT STRUCTURAL GRADE GRADING RULES AGENCY - WWPA, WCLIB

**TREATED**

- HEM-FIR/DOUGLAS FIR, S4S, NO.1 GRADE GRADING RULES AGENCY - WWPA, WCLIB

**TREATMENT:** SEE PROJECT CRITERIA FOR MEMBERS IDENTIFIED TO BE TREATED AND FOR TREATMENT TYPE. PRESERVATIVE TREATMENT SHALL BE IN ACCORDANCE WITH THE CURRENT AMERICAN WOOD PROTECTION ASSOCIATION (AWPA) SPECIFICATIONS USING THE TREATMENT MATERIALS LISTED BELOW. TREATMENT WILL COMPLY WITH THE REQUIREMENTS OF THE CURRENT EDITION OF WESTERN WOOD PRESERVERS INSTITUTE (WWPI) "BEST MANAGEMENT PRACTICES FOR THE USE OF TREATED WOOD IN AQUATIC ENVIRONMENTS".

**STRINGERS, DECKING, RUNNING PLANKS, & RAILING SYSTEM, IF TREATED**

- AWPA USE CATEGORY SYSTEM (U1) FOR USE CATEGORY 3B ABOVE GROUND-EXPOSED (UC3B)  
- PENTACHLOROPHENOL IN LIGHT OIL (TYPE C SOLVENT)  
- COPPER NAPHTHENATE (CuN) IN LIGHT OIL (TYPE C SOLVENT)

**SILLS, BACKING PLANKS, CRIBS, & TIMBER WALLS, IF TREATED**

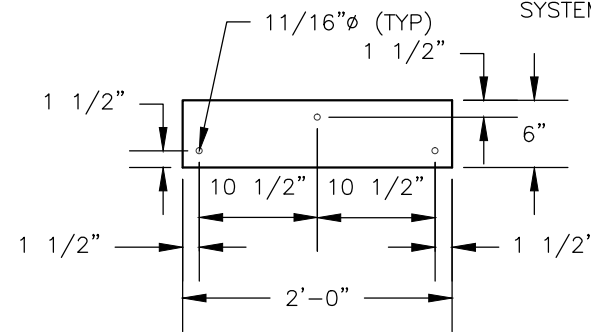
- AWPA USE CATEGORY SYSTEM (U1) FOR USE CATEGORY 4B GROUND CONTACT-HEAVY DUTY (UC4B)  
- PENTACHLOROPHENOL IN HEAVY OIL (TYPE A SOLVENT)  
- COPPER NAPHTHENATE (CuN) IN HEAVY OIL (TYPE A SOLVENT)

**FIELD TREATMENT:** COPPER NAPHTHENATE (2% SOLUTION) SHALL BE FURNISHED FOR FIELD TREATING OD WOOD. ALL ABRASIONS AND FIELD CUTS -APPROVED BY THE C.O.R.- SHALL BE CAREFULLY TRIMMED AND GIVEN THREE BRUSH COATS OF THE FIELD TREATMENT SOLUTION. WHERE APPROVED FIELD DRILLING OF BOLT OR NAIL HOLES IS REQUIRED, THE HOLES SHALL BE FILLED WITH PRESERVATIVE PRIOR TO INSERTING THE FASTENERS.

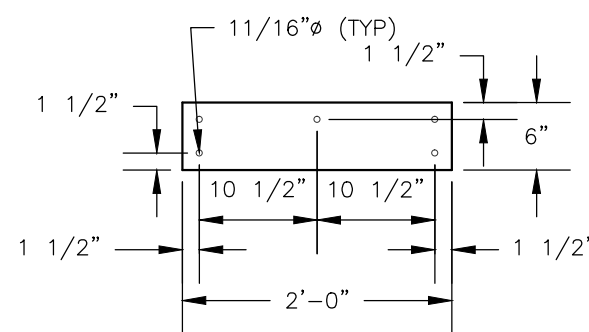
**HARDWARE AND STRUCTURAL STEEL:** SEE PROJECT DESIGN CRITERIA FOR STEEL HARDWARE FINISH. GALVANIZED OR UNFINISHED HARDWARE SHALL MEET THE REQUIREMENTS OF AASHTO M270, GRADE 36, WITH NUTS AND BOLTS CONFORMING TO ASTM A307, GRADE A. WEATHERING STEEL AND HARDWARE SHALL MEET THE REQUIREMENTS OF AASHTO M270, GRADE 50W, WITH BOLTS AND NUTS CONFORMING TO ASTM A325, TYPE 3. USE MALLEABLE IRON WASHERS AGAINST WOOD UNLESS OTHERWISE NOTED.

WHEN STRUCTURAL STEEL IS TO BE WELDED, THE WELDING PROCEDURE SHALL BE IN ACCORDANCE WITH AWS D1.1 AND SHALL BE SUITABLE FOR THE GRADE OF STEEL AND INTENDED USE OR SERVICE.

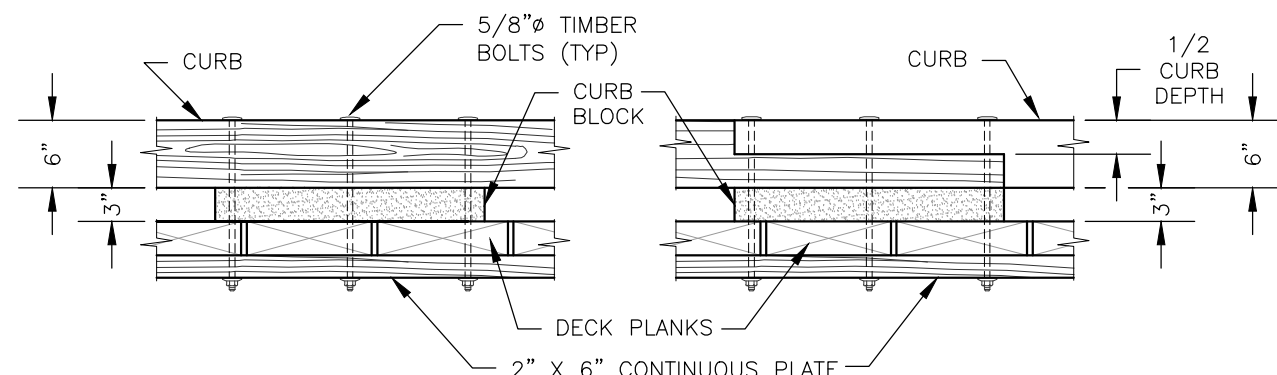
**FABRICATION:** SUBMIT SHOP DRAWINGS FOR ALL BRIDGE COMPONENTS (EXCEPT TIMBER RUNNING PLANKS). SHOW ALL DIMENSIONS AND FABRICATION DETAILS FOR ALL CUT OR BORED TIMBER. FIELD DRILLING OF HOLES SHALL NOT BE ALLOWED UNLESS OTHERWISE NOTED ON THE PLANS.



**PLAN-CURB BLOCK**



**PLAN-CURB BLOCK AT SPLICE**

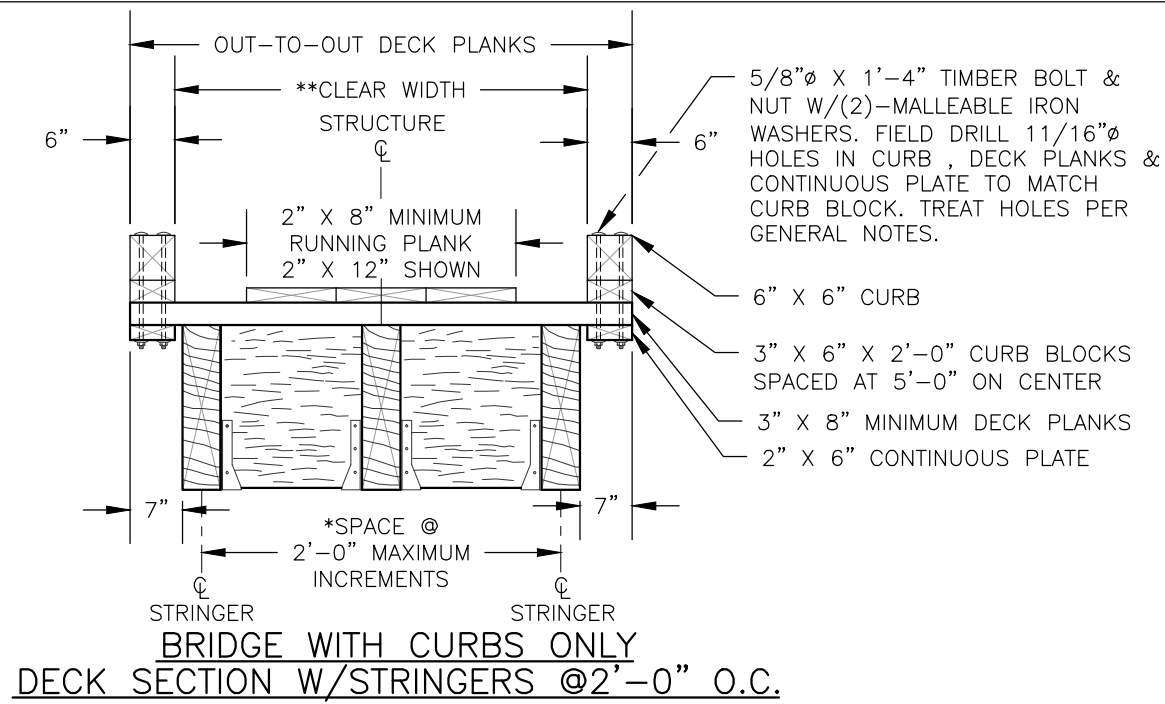


**ELEVATION-TYPICAL CONNECTION**

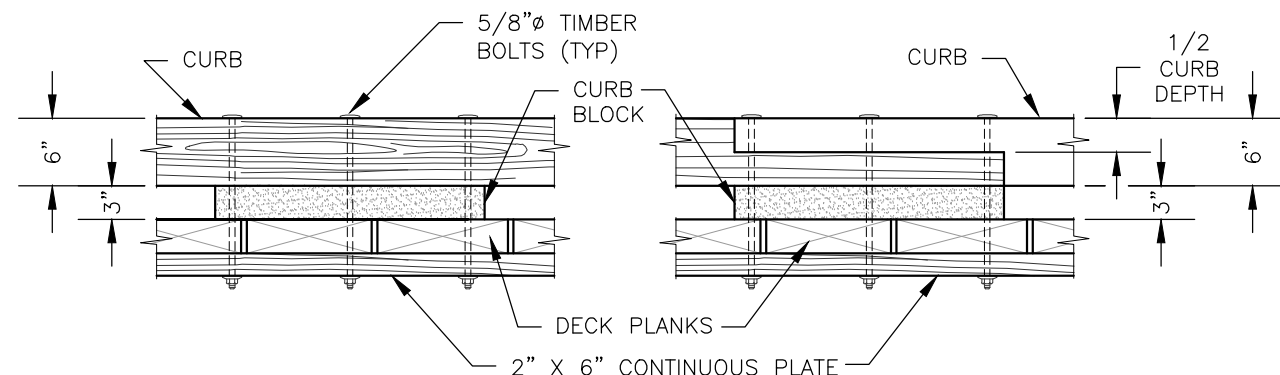
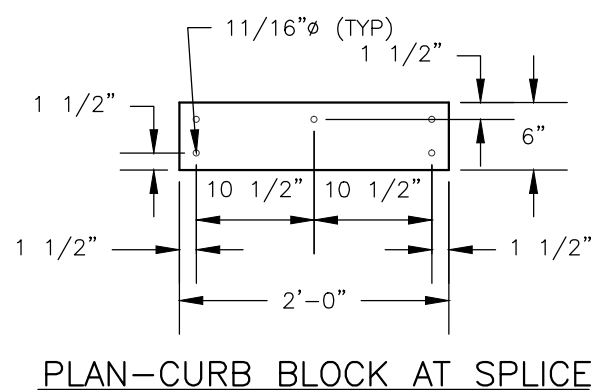
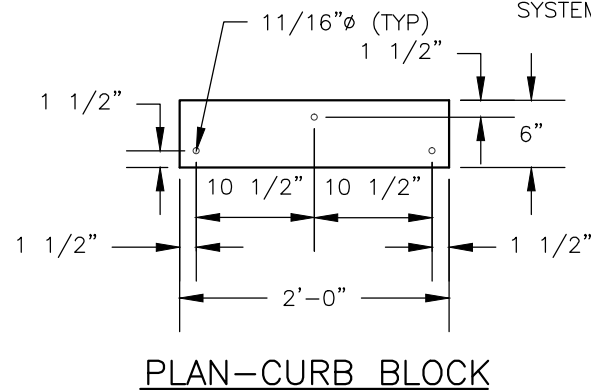
**ELEVATION-CONNECTION AT SPLICE**

**SOLID SAWN CURB CONNECTION DETAILS**





\* MINIMUM NUMBER OF STRINGERS IS THREE  
 \*\* INSIDE FACE TO INSIDE FACE OF RAILING SYSTEM



**SOLID SAWN CURB CONNECTION DETAILS**

**GENERAL NOTES:**

**SPECIFICATIONS:** MATERIALS AND CONSTRUCTION OF THIS STRUCTURE SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATION FOR CONSTRUCTION OF ROADS AND BRIDGES ON FEDERAL HIGHWAY PROJECTS (FP-03) AND STANDARD SPECIFICATIONS FOR CONSTRUCTION OF TRAILS AND TRAIL BRIDGES ON FEDERAL PROJECTS,

**TIMBER & LUMBER:** SOLID SAWN TIMBER MEMBERS SHALL CONFORM TO THE REQUIREMENTS OF THE GRADING RULES AGENCY FOR THE SPECIES, TYPE, AND GRADE SPECIFIED BELOW.

**DECK PLANKS, CURBS, SILLS, & BACKING PLANKS RUNNING PLANKS**

- SOUTHERN PINE NO.2 GRADE GRADING RULES AGENCY - SPIB
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**RAILS & POSTS (SEE PROJECT CRITERIA)**

**UNTREATED**

- BALDCYPRESS, S4S, NO.1 GRADE GRADING RULES AGENCY - SPIB
- WHITE OAK, S4S, SELECT STRUCTURAL GRADE GRADING RULES AGENCY - NELMA

**TREATED**

- SOUTHERN PINE, S4S, NO.1 GRADE GRADING RULES AGENCY - SPIB

**TREATMENT:** SEE PROJECT CRITERIA FOR MEMBERS IDENTIFIED TO BE TREATED AND FOR TREATMENT TYPE. PRESERVATIVE TREATMENT SHALL BE IN ACCORDANCE WITH THE CURRENT AMERICAN WOOD PROTECTION ASSOCIATION (AWPA) SPECIFICATIONS USING THE TREATMENT MATERIALS LISTED BELOW. TREATMENT WILL COMPLY WITH THE REQUIREMENTS OF THE CURRENT EDITION OF WESTERN WOOD PRESERVERS INSTITUTE (WWPI) "BEST MANAGEMENT PRACTICES FOR THE USE OF TREATED WOOD IN AQUATIC ENVIRONMENTS".

**STRINGERS, DECKING, RUNNING PLANKS, & RAILING SYSTEM, IF TREATED**

- AWPA USE CATEGORY SYSTEM (U1) FOR USE CATEGORY 3B ABOVE GROUND-EXPOSED (UC3B)
- PENTACHLOROPHENOL IN LIGHT OIL (TYPE C SOLVENT)
- COPPER NAPHTHENATE (CuN) IN LIGHT OIL (TYPE C SOLVENT)

**SILLS, BACKING PLANKS, CRIBS, & TIMBER WALLS, IF TREATED**

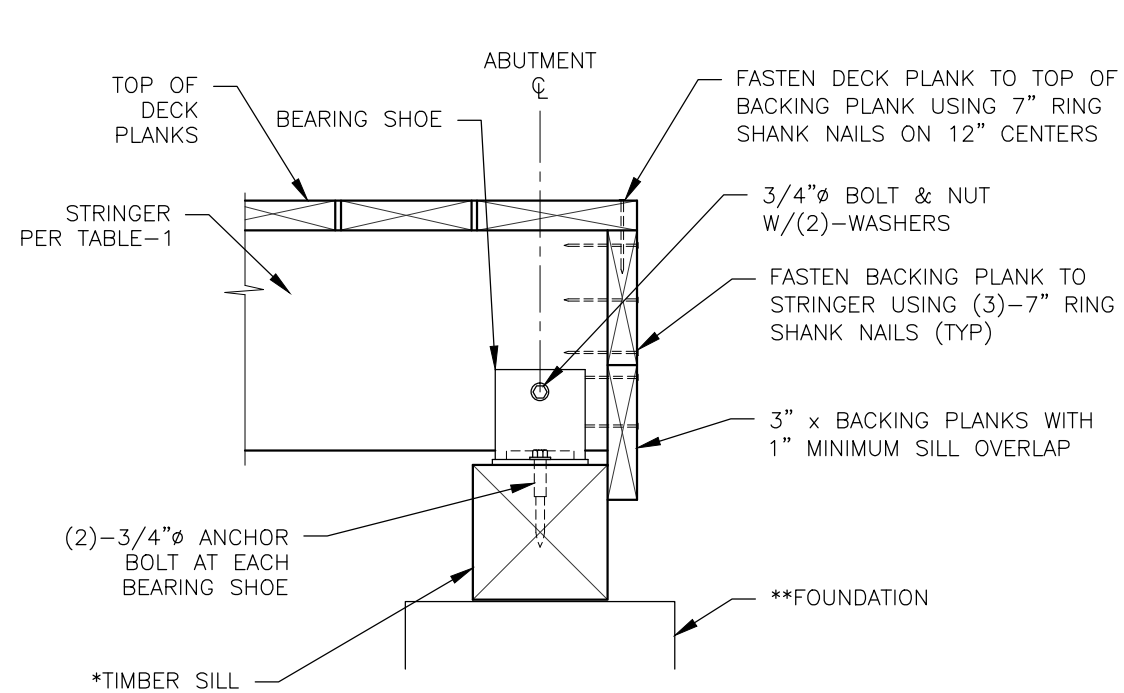
- AWPA USE CATEGORY SYSTEM (U1) FOR USE CATEGORY 4B GROUND CONTACT-HEAVY DUTY (UC4B)
- PENTACHLOROPHENOL IN HEAVY OIL (TYPE A SOLVENT)
- COPPER NAPHTHENATE (CuN) IN HEAVY OIL (TYPE A SOLVENT)

**FIELD TREATMENT:** COPPER NAPHTHENATE (2% SOLUTION) SHALL BE FURNISHED FOR FIELD TREATING OD WOOD. ALL ABRASIONS AND FIELD CUTS -APPROVED BY THE C.O.R.- SHALL BE CAREFULLY TRIMMED AND GIVEN THREE BRUSH COATS OF THE FIELD TREATMENT SOLUTION. WHERE APPROVED FIELD DRILLING OF BOLT OR NAIL HOLES IS REQUIRED, THE HOLES SHALL BE FILLED WITH PRESERVATIVE PRIOR TO INSERTING THE FASTENERS.

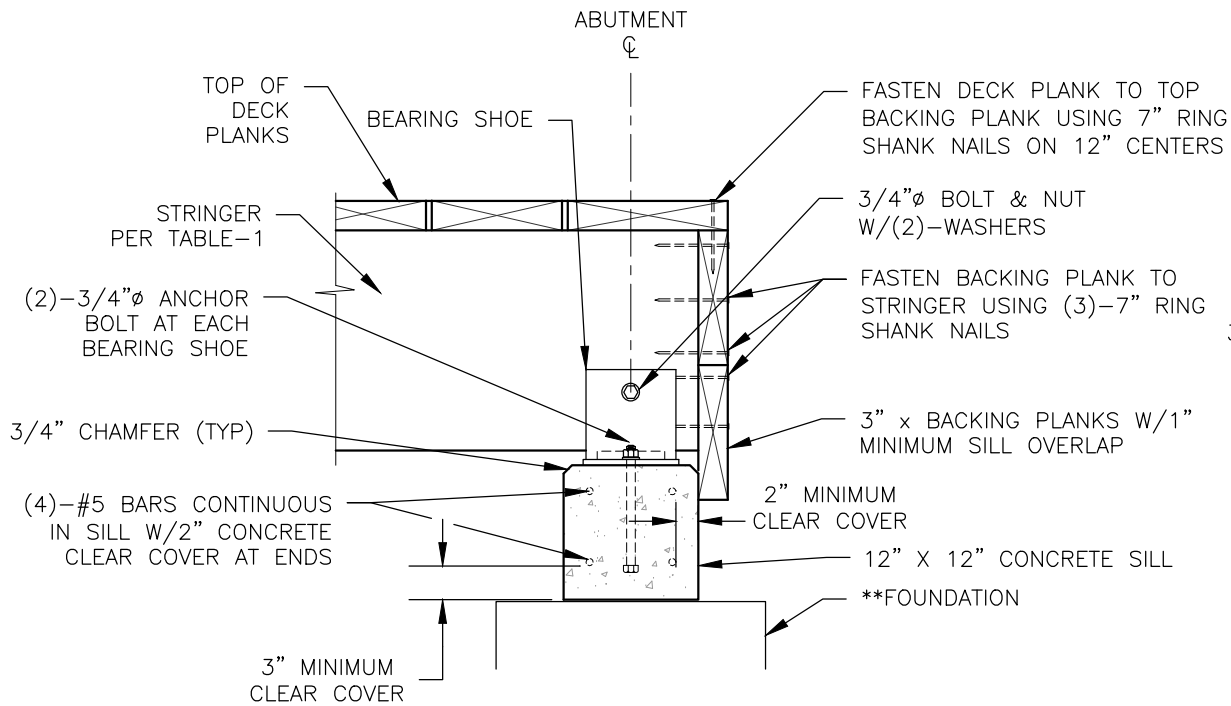
**HARDWARE AND STRUCTURAL STEEL:** SEE PROJECT DESIGN CRITERIA FOR STEEL HARDWARE FINISH. GALVANIZED OR UNFINISHED HARDWARE SHALL MEET THE REQUIREMENTS OF AASHTO M270, GRADE 36, WITH NUTS AND BOLTS CONFORMING TO ASTM A307, GRADE A. WEATHERING STEEL AND HARDWARE SHALL MEET THE REQUIREMENTS OF AASHTO M270, GRADE 50W, WITH BOLTS AND NUTS CONFORMING TO ASTM A325, TYPE 3. USE MALLEABLE IRON WASHERS AGAINST WOOD UNLESS OTHERWISE NOTED.

WHEN STRUCTURAL STEEL IS TO BE WELDED, THE WELDING PROCEDURE SHALL BE IN ACCORDANCE WITH AWS D1.1 AND SHALL BE SUITABLE FOR THE GRADE OF STEEL AND INTENDED USE OR SERVICE.

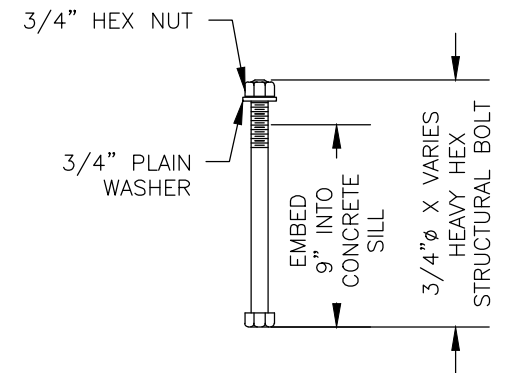
**FABRICATION:** SUBMIT SHOP DRAWINGS FOR ALL BRIDGE COMPONENTS (EXCEPT TIMBER RUNNING PLANKS). SHOW ALL DIMENSIONS AND FABRICATION DETAILS FOR ALL CUT OR BORED TIMBER. FIELD DRILLING OF HOLES SHALL NOT BE ALLOWED UNLESS OTHERWISE NOTED ON THE PLANS.



**GLU-LAM/SAWN TIMBER SILL CONNECTION DETAIL**



**CONCRETE SILL CONNECTION DETAIL**



**CONCRETE SILL ANCHOR BOLT DETAIL**

BACKING PLANK STIFFENER NOT SHOWN FOR CLARITY

\*\* TIMBER SILL CAN BE EITHER 12" X 12" SOLID SAWN 10 3/4" X 12" GLUE-LAMINATED, BUILT-UP 3" X 12", 4" X 12", & 6" X 12" TREATED MEMBERS.

\*\* SEE STANDARD DRAWINGS 965-10, 965-20, 965-30, & 965-40 FOR FOUNDATION ALTERNATIVES

**NOTES:**

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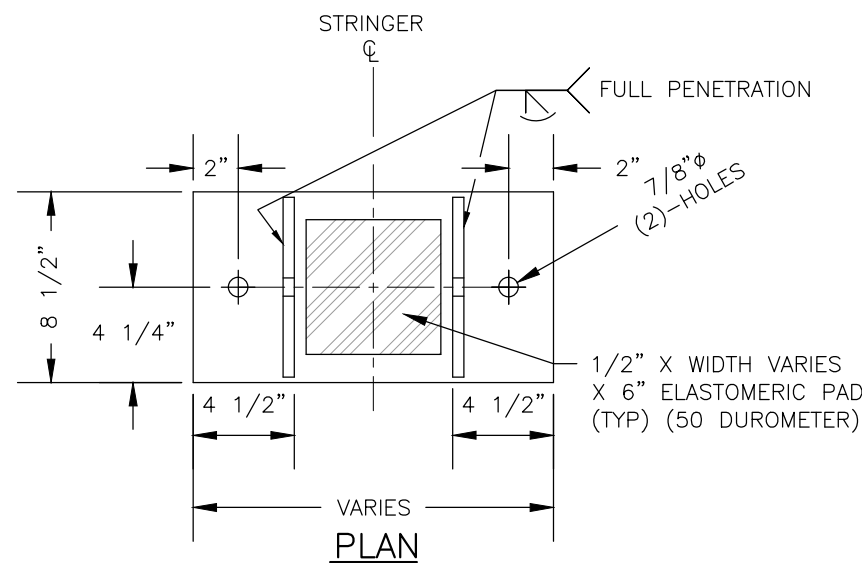
**CONCRETE:** USE STRUCTURAL CONCRETE WITH 7 SACK MINIMUM MIX APPROVED BY THE C.O., CONCRETE SHALL RECEIVE A TOWELED SURFACE FINISH. CONCRETE SHALL HAVE 4%-6% ENTRAINED AIR. MAXIMUM SIZE AGGREGATE SHALL BE 3/4-INCH AND CONCRETE SLUMP SHALL NOT EXCEED 4-INCHES.

**REINFORCING STEEL:** PROVIDE REINFORCING STEEL THAT CONFORMS TO ASTM A615 (AASHTO M31), GRADE 40 OR 60. PROVIDE 2-INCH CLEAR CONCRETE COVER FOR ALL REBAR, UNLESS NOTED OTHERWISE ON THE PLANS.

**HARDWARE AND STRUCTURAL STEEL:** SEE SHEET 3 FOR PROJECT DESIGN CRITERIA AND GENERAL NOTES.

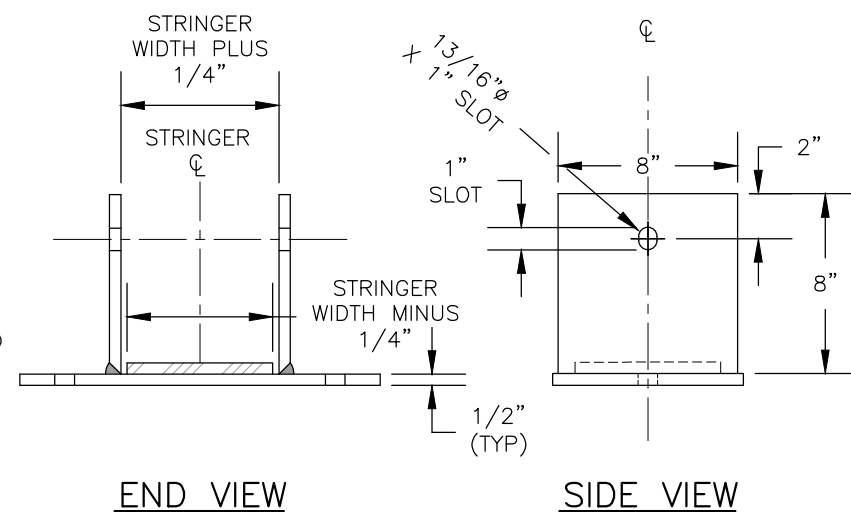
**TREATED TIMBER & LUMBER:** REFER TO THE GENERAL NOTES ON THE SUBSTRUCTURE DRAWINGS FOR TREATED TIMBER & LUMBER SPECIFICATIONS AND FIELD TREATING OF WOOD

**LAG SCREW INSTALLATION:** PRE-BORE LAG SCREW HOLES USING TWO DIAMETERS, ONE FOR THE SHANK AND ONE FOR THE THREADS. THE LEAD HOLE FOR THE SHANK IS TO BE 1/16-INCH LARGER THAN THE SHANK DIAMETER AND IS TO BE BORED TO THE DEPTH OF PENETRATION OF THE SHANK. THE LEAD HOLE FOR THE THREADED PORTION IS TO BE 70% OF THE BOLT DIAMETER AS SHOWN ON THE PLANS AND IS TO BE BORED AT LEAST TO THE LENGTH OF THE THREADS. **DO NOT DRIVE LAG SCREWS WITH A HAMMER.**



**BEARING SHOE DETAIL**

MATERIAL = 1/2" STEEL PLATE A36



**END VIEW**

**SIDE VIEW**