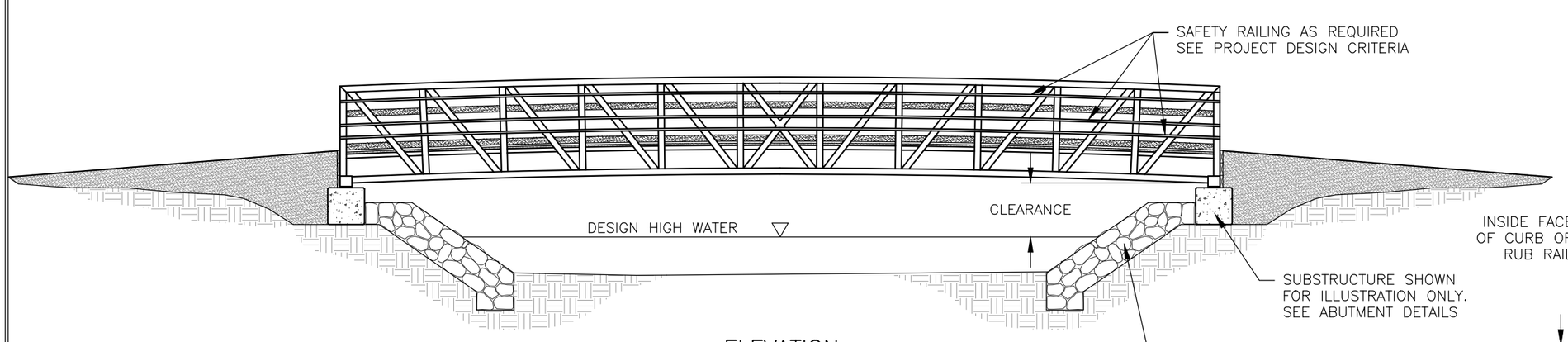
								HANDRAIL					END POST		DECK		
STRUCTURE NUMBER	TRAIL NO.	BRIDGE LOCATION	BRIDGE LENGTH ℄–℄ BRNG	BRIDGE SPAN OUT–TO–OUT	BRIDGE CLEAR WIDTH	PEDESTRIAN LOAD	GROUND SNOW LOAD	ADA REQUIRED	HEIGHT	RUB RAIL SPECIES	RUB RAIL SIZE	TREATMENT	VERTICAL	DIAGONAL	SPECIES	SIZE	TREATMENT TYPE

DECK TYPE: ST = STEEL THROUGH TRUSS, FRP = FIBER REINFORCED POLYMER THROUGH TRUSS, CONC = CONCRETE VOIDED SLAB

	RUNNING PLANK				ABUTMENT				BACKWALL						APPROACHES						
STRUCTURE NUMBER	SPECIES	SIZE	WIDTH	TREATMENT TYPE	TYPE	SIZE	TREATMENT YES	TREATMENT NO	TYPE	SPECIES	SIZE	WIDTH	HEIGHT	TREATMENT	LENGTH NEAR	LENGTH FAR	WIDTH	MATERIAL TYPE	MATERIAL DEPTH	GEO–SYNTHETIC TYPE	COMMENTS
X																					
X																					
X																					
X																					
X																					
X																					

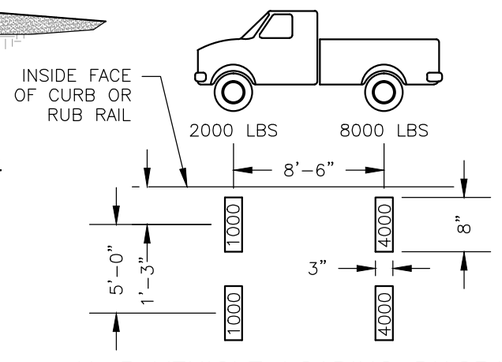
ABUTMENT MATERIAL TYPE: SS = SOLID SAWN, GLU = GLULAM, CONC = CONCRETE



ELEVATION

– MAXIMUM GRADE ℄ BEARING TO ℄ BEARING = 5%

– RUNNING PLANKS AND DECK PLANKS NOT SHOWN FOR CLARITY



H–5 VEHICLE LOADING DIAGRAM

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE

STANDARD TRAIL PLAN

PROJECT NAME & LOCATION

DRAWING NAME
PREFABRICATED STEEL TRAIL BRIDGE

SECTION
964 - PREFABRICATED TRAIL BRIDGE

TYPICAL ID
PRE

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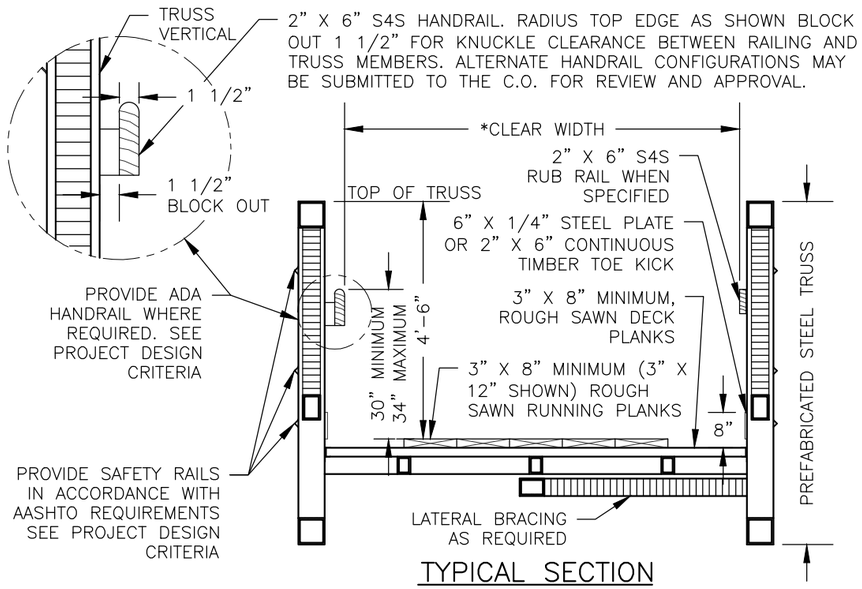
NOT TO SCALE

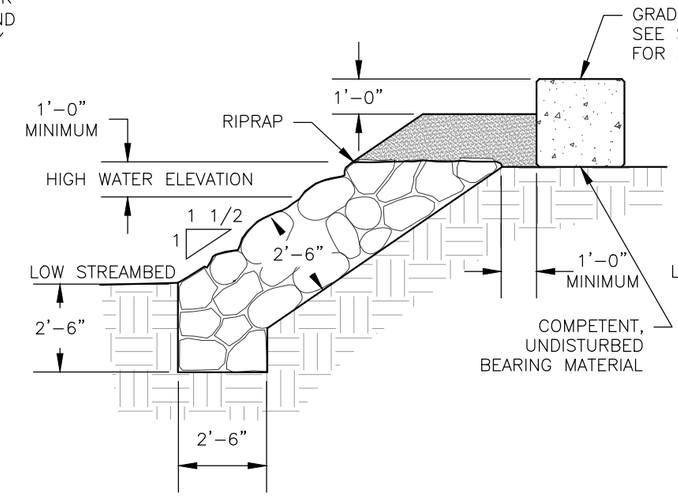
DRAWING NO.
STD_964-10-01

SHEET
OF

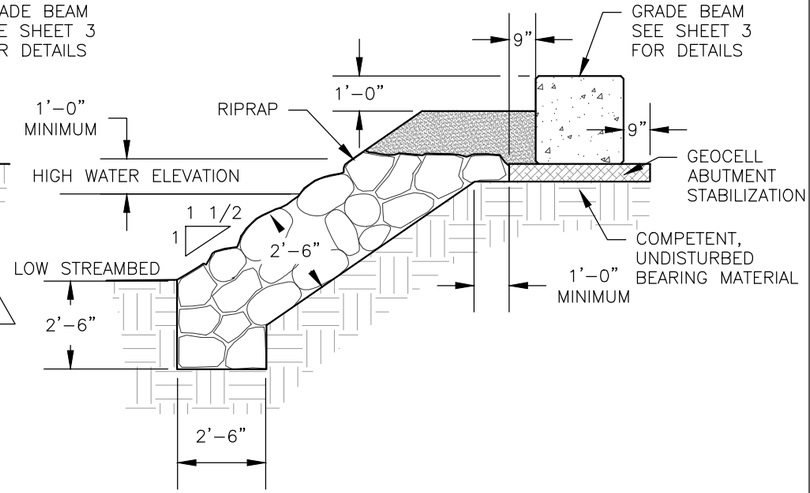


TYPICAL SECTION

*INSIDE FACE TO INSIDE FACE(RUB RAILS AND RAIL)



GRADE BEAM FOUNDATION
RIPRAP ARMORING



GRADE BEAM FOUNDATION
RIPRAP ARMORING W/GEOCELL

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,

PREFABRICATED STEEL BRIDGE SUPERSTRUCTURE: PREFABRICATED STEEL SUPERSTRUCTURE DESIGN MUST BE A TRUSS CONFIGURATION SIMILAR TO THAT SHOWN ON THE DRAWINGS. THE BRIDGE SHALL MAINTAIN THE CLEARANCES ABOVE HIGH WATER INDICATED ON THE BRIDGE ELEVATION. THE BRIDGE CROSS-SECTION SHALL BE DETERMINED BY THE CONTRACTOR BUT SHALL PROVIDE THE WIDTH AND RAILING DETAILS INDICATED ON THE BRIDGE TYPICAL SECTION. THE CONTRACTOR SHALL DETERMINE TRUSS HEIGHT AND THE LOCATION OF THE DECK WITH RESPECT TO THE TOP AND BOTTOM CHORDS (U FRAME VS. H FRAME). OVERHEAD LATERAL BRACING IS UNACCEPTABLE. ALL RELATED DETAILS SUCH AS PROFILE, ABUTMENT DETAILS, BEARINGS, AND TIMBER DECKING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO FINALIZE AND CONSTRUCT.

THE PREFABRICATED STEEL BRIDGE SUPERSTRUCTURE, ABUTMENT FOUNDATIONS, AND ASSOCIATED DETAILS INCLUDING TIMBER COMPONENTS SHALL BE DESIGNED UNDER THE DIRECTION OF A REGISTERED PROFESSIONAL ENGINEER. THE COMPLETED DESIGN, DRAWINGS, AND SPECIFICATION PACKAGE SHALL BE SUBMITTED TO THE CONTRACTING OFFICER FOR REVIEW AND APPROVAL.

DESIGN: THE DESIGN OF ALL PREFABRICATED STEEL BRIDGE SUPERSTRUCTURE ELEMENTS SHALL COMPLY WITH THE AASHTO LRFD GUIDE SPECIFICATION FOR DESIGN OF PEDESTRIAN BRIDGES, CURRENT EDITION AND AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, CURRENT EDITION. PROVIDE CAMBER FOR 100% OF THE FULL DEAD LOAD DEFLECTION PLUS 1% OF BRIDGE SPAN. SUBMIT SHOP DRAWINGS AND CALCULATIONS FOR APPROVAL AND MUST BE APPROVED BEFORE FABRICATION.

MATERIALS: USE STEEL SHAPES, PLATES AND BARS OF WEATHERING STEEL CONFORMING TO AASHTO M270, GRADE 50W (ASTM A588 OR ASTM A242) OR ASTM A847 FOR SQUARE AND RECTANGULAR TUBING. MINIMUM STEEL THICKNESS SHALL BE AS SPECIFIED IN THE GUIDE SPECIFICATIONS FOR DESIGN OF PEDESTRIAN BRIDGES. USE HIGH STRENGTH BOLTS CONFORMING TO AASHTO M164, (ASTM A325), TYP 3, UNLESS NOTED OTHERWISE. USE MALLEABLE IRON WASHERS AGAINST WOOD.

STEEL FABRICATION: THE PREFABRICATED STEEL BRIDGE SUPERSTRUCTURE SHALL BE FABRICATED BY AN AISC CERTIFIED PLANT – SIMPLE STEEL BRIDGES OR COMPLEX STEEL STRUCTURES. WHEN STRUCTURAL STEEL IS TO BE WELDED, THE WELDING PROCEDURE SHALL BE IN ACCORDANCE WITH AWS D1.5 AND SHALL BE SUITABLE FOR THE GRADE OF STEEL AND INTENDED USE OR SERVICE.

ERECTION PLAN: THE CONTRACTOR SHALL SUBMIT AN ERECTION PLAN FOR THE PREFABRICATED STEEL BRIDGE SUPERSTRUCTURE TO THE C.O. FOR APPROVAL 14 DAYS BEFORE ERECTION IS SCHEDULED. IF ALLOWED UNDER THE PROJECT DESIGN CRITERIA, TEMPORARY IN-STREAM SUPPORT BENTS MAY BE USED FOR THE ERECTION OF THE PREFABRICATED STEEL TRUSS BRIDGE. THE IN-STREAM BENTS SHALL BE CRIBBING, SILLS, CONCRETE BLOCKS OR OTHER SUPPORTS AND SHALL BE PLACED WITH MINIMAL DISTURBANCE WITHIN THE STREAM. ALL MATERIALS TO CONSTRUCT THE TEMPORARY IN-STREAM BENTS SHALL BE REMOVED. THE SUBMITTALS SHALL INCLUDE DRAWINGS INDICATING TEMPORARY BENT LOCATIONS AND DETAILS ALSO INCLUDED, THE CONTRACTOR SHALL INDICATE THE EQUIPMENT AND METHODS PROPOSED TO INSTALL AND REMOVE THE TEMPORARY BENTS AND ERECT THE NEW PREFABRICATED STEEL TRUSS SUPERSTRUCTURE.

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

RUNNING PLANKS AND RUB RAIL
- COASTAL REGION DOUGLAS FIR – LARCH ROUGH SAWN NO.2 GRADE, GRADING RULES AGENCY – WWPA, WCLIB

RAILS, HANDRAILS UNTREATED
- REDWOOD, S4S, NO.2 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".

DECKING, RUNNING PLANKS, 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 OF 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.

TIMBER FABRICATION: SUBMIT SHOP DRAWINGS FOR ALL TIMBER 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.

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE

STANDARD TRAIL PLAN

PROJECT NAME & LOCATION

DRAWING NAME
PREFABRICATED STEEL TRAIL BRIDGE

SECTION
964 - PREFABRICATED TRAIL BRIDGE

TYPICAL ID
PRE

REVISION DATE

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DRAWING NO.
STD_964-10-02a

SHEET
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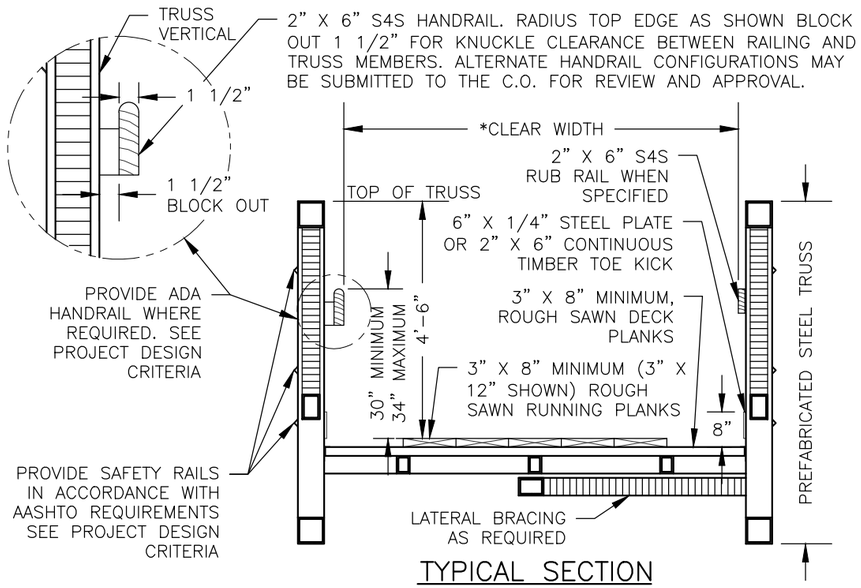
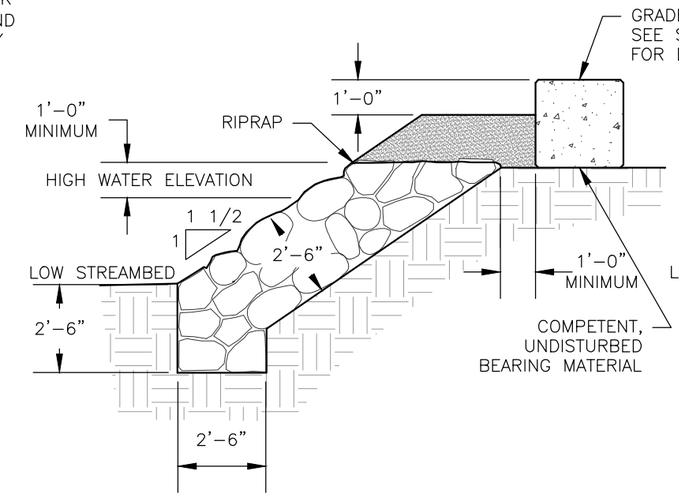
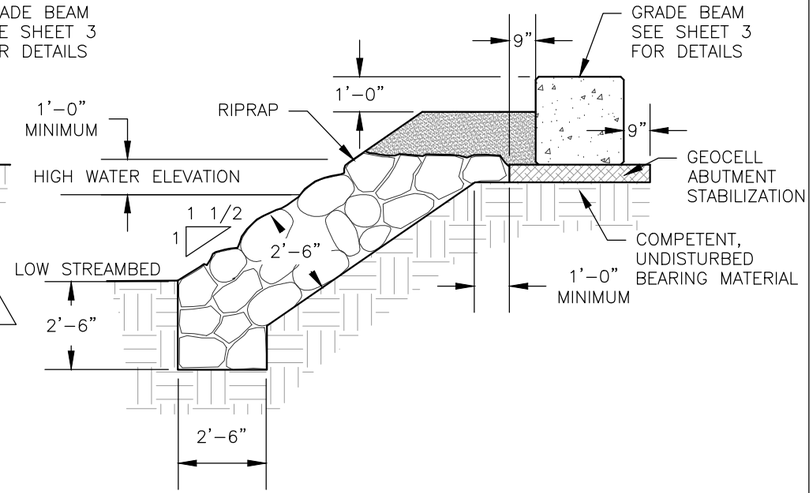


TYPICAL SECTION

*INSIDE FACE TO INSIDE FACE(RUB RAILS AND RAIL)



GRADE BEAM FOUNDATION
RIPRAP ARMORING



GRADE BEAM FOUNDATION
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DESIGN: THE DESIGN OF ALL PREFABRICATED STEEL BRIDGE SUPERSTRUCTURE ELEMENTS SHALL COMPLY WITH THE AASHTO LRFD GUIDE SPECIFICATION FOR DESIGN OF PEDESTRIAN BRIDGES, CURRENT EDITION AND AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, CURRENT EDITION. PROVIDE CAMBER FOR 100% OF THE FULL DEAD LOAD DEFLECTION PLUS 1% OF BRIDGE SPAN. SUBMIT SHOP DRAWINGS AND CALCULATIONS FOR APPROVAL AND MUST BE APPROVED BEFORE FABRICATION.

MATERIALS: USE STEEL SHAPES, PLATES AND BARS OF WEATHERING STEEL CONFORMING TO AASHTO M270, GRADE 50W (ASTM A588 OR ASTM A242) OR ASTM A847 FOR SQUARE AND RECTANGULAR TUBING. MINIMUM STEEL THICKNESS SHALL BE AS SPECIFIED IN THE GUIDE SPECIFICATIONS FOR DESIGN OF PEDESTRIAN BRIDGES. USE HIGH STRENGTH BOLTS CONFORMING TO AASHTO M164, (ASTM A325), TYP 3, UNLESS NOTED OTHERWISE. USE MALLEABLE IRON WASHERS AGAINST WOOD.

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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 AND BACKING PLANKS
- SOUTHERN PINE ROUGH SAWN NO.2 GRADE, GRADING RULES AGENCY – SPIB

RUNNING PLANKS AND RUB RAIL
- SOUTHERN PINE ROUGH SAWN NO.2 GRADE, GRADING RULES AGENCY – SPIB

RAILS, HANDRAILS 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.2 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".

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- COPPER NAPHTHENATE (CuN) IN LIGHT OIL (TYPE C SOLVENT)

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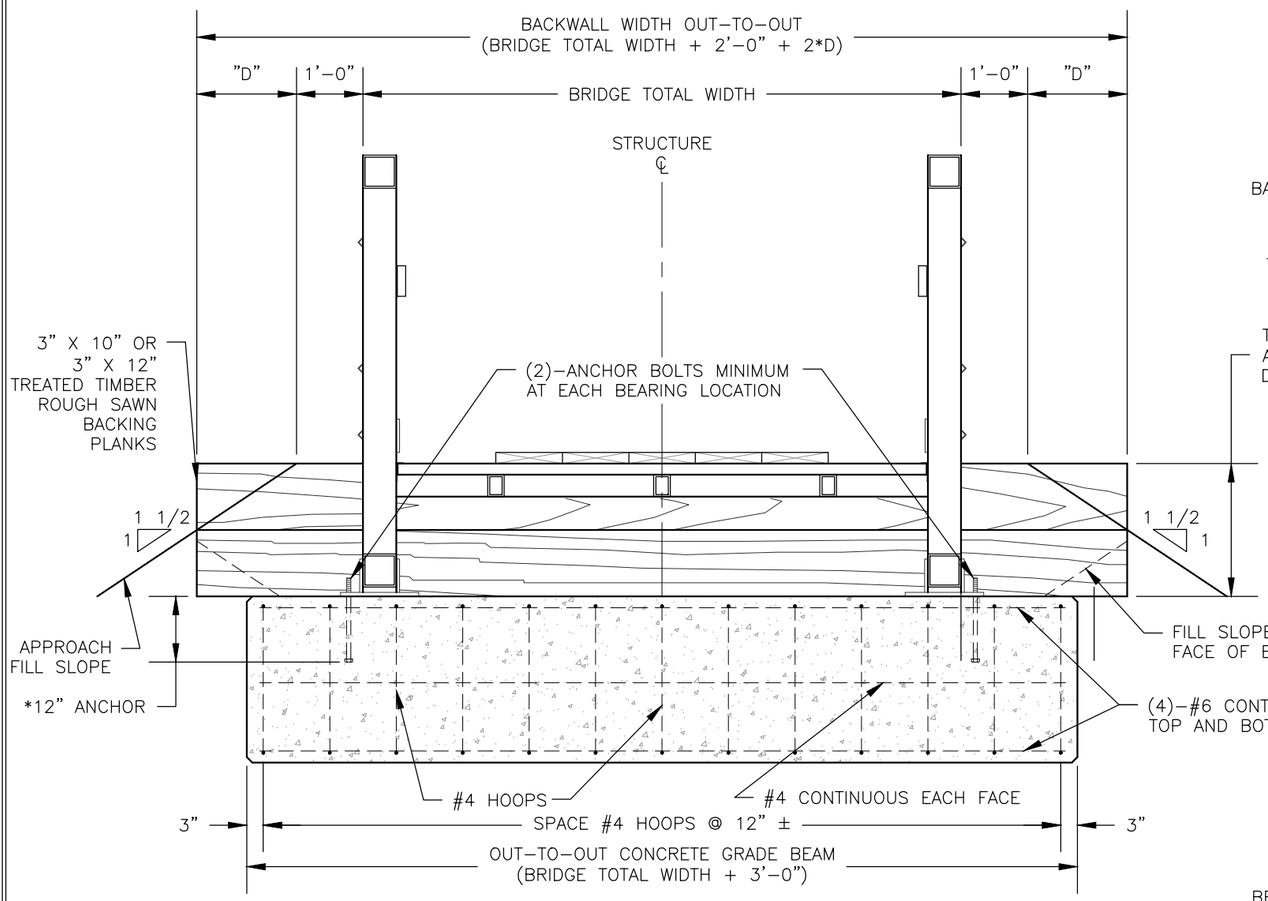
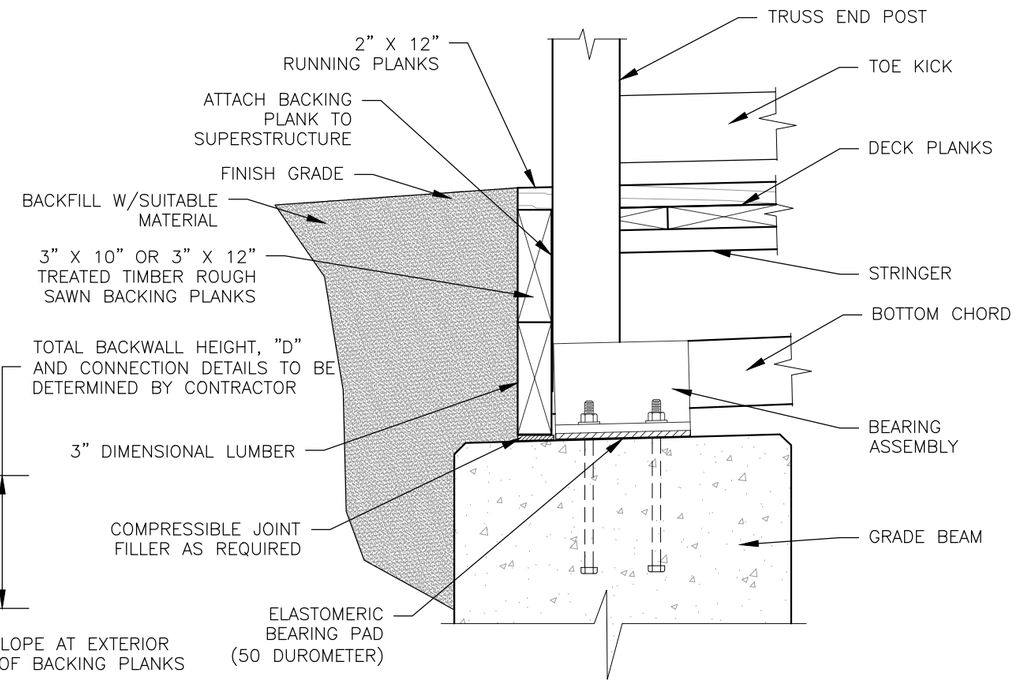
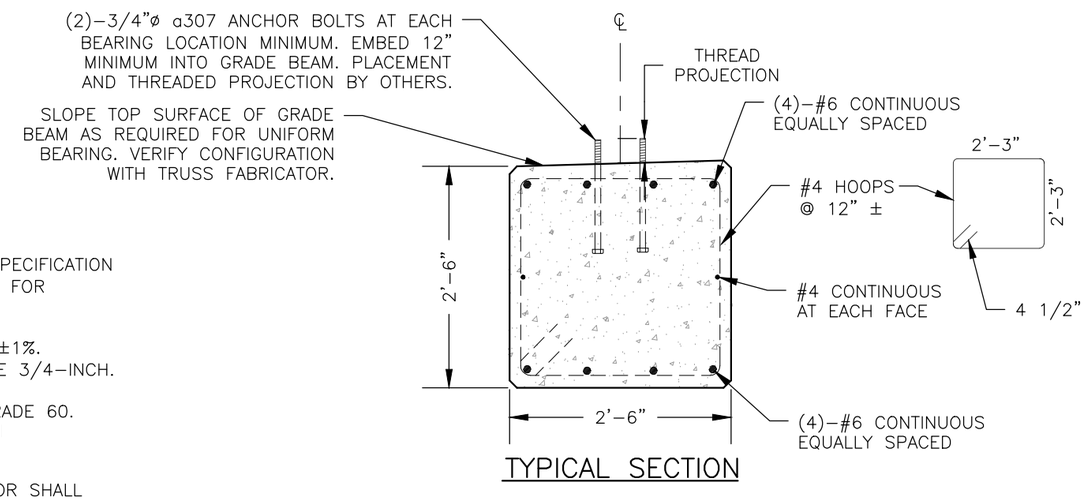


ELEVATION – GRADE BEAM

* 12" CAST–IN–PLACE ANCHOR OR 7" EPOXY ANCHOR WHEN APPROVED BY CO.



BEARING DETAIL



TYPICAL SECTION

NOTES:

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CONCRETE: USE CLASS A(AE) FOR CONCRETE, f'c = 4000 PSI AT 28 DAYS WITH AN ENTRAINED AIR CONTENT OF 5% ±1%. PROVIDE ALL CONCRETE IN ACCORDANCE WITH AN APPROVED MIX DESIGN. CHAMFER ALL EXPOSED EDGES OF CONCRETE 3/4–INCH.

REINFORCING STEEL: USE REINFORCING STEEL OF THE DEFORMED TYPE CONFORMING TO AASHTO M31 (ASTM A615), GRADE 60. CONCRETE COVER SHALL BE AS SHOWN, WHERE NOT SHOWN IT SHALL CONFORM TO AASHTO. CUT AND BEND STEEL IN ACCORDANCE WITH ACI 315.

CONCRETE GRADE BEAM: DETAILS SHOWN ON THIS SHEET PROVIDE MINIMUM SIZES AND REQUIREMENTS. THE CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE GRADE BEAM DETAILS WITH THE PROPOSED SUPERSTRUCTURE DESIGN AND SHOP DRAWINGS.

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