

BRIDGE PROJECT NOTES

DESIGN OF PREFABRICATED STEEL BRIDGE

THE DESIGN OF THE PREFABRICATED STEEL BRIDGE SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS". WHEN USING THE "SHOULD" LRFD BRIDGE DESIGN SPECIFICATIONS, ALL OCCURRENCES OF THE WORD "SHOULD" SHALL BE REPLACED WITH THE WORD "SHALL". ALL DRAWINGS, SPECIFICATIONS, AND PROJECT SPECIFIC CALCULATIONS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF ALASKA.

DO NOT PROVIDE A FACILITY CRITICAL OR NON-REDUNDANT BRIDGE SUCH AS A TRUSS OR TWO-GIRDER BRIDGE SYSTEM.

THE BRIDGE SHALL BE CONFIGURED TO BE TRANSPORTED TO A SITE BY STANDARD HIGHWAY LOG TRUCK OR "LOW BOY" IN MULTIPLE SECTIONS. APPROPRIATE LIFTING POINTS SHALL BE INTEGRATED INTO THE DESIGN TO ALLOW TYPICAL SLIDING AND HANDLING METHODS FOR INSTALLATION AND TRANSPORTATION TO THE SITE.

BRIDGE RAILING POSTS SHALL TIE TO THE DECK STRUCTURE (DECK OR DECK BEAMS) OF THE BRIDGE, NOT THE BRIDGE GIRDERS. CRASH WORTHY RAIL SYSTEMS DESIGNED TO THE LRFD TEST LEVEL 2 STANDARD IS ACCEPTABLE FOR THIS SUBMITTAL. BRIDGE RAILING SHALL BE HOT DIPPED GALVANIZED THREE BEAM GUARDRAIL MEETING AASHTO HIGHWAY AND BRIDGE SPECIFICATIONS. GUARDRAIL SHALL BE COMPATIBLE WITH DOT & PF STANDARD THREE BEAM CONFIGURATIONS.

CLEARLY SPECIFY RELEVANT INFORMATION SUCH AS MEMBER SIZES, GEOMETRY, BEARING REACTIONS, DESIGN LOADS, MATERIAL PROPERTIES AND OTHER DESIGN INFORMATION ON THE DRAWINGS.

DESIGN LOADINGS FOR THE BRIDGE WILL CONFORM TO THE FOLLOWING.

- A. DEAD LOAD- USE UNIT WEIGHTS AS DEFINED IN THE "AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS" MOST RECENT EDITION WITH INTERIM REVISIONS.
- B. VEHICULAR LIVE LOAD - USE THE OPERATING STRESS LEVEL OF THE AASHTO BRIDGE MAINTENANCE MANUAL FOR HL-93, AND UPSL LOADS FOR UBO, UO2 AND L90 LOADING.
- C. WIND LOAD - 100 MPH PER AASHTO REQUIREMENTS.
- D. FATIGUE - USE A SINGLE LANE AVERAGE DAILY TRUCK TRAFFIC (ADTT) OF 20 FOR DESIGN.
- E. SEISMIC - AS DEFINED IN THE "AASHTO GUIDE SPECIFICATIONS FOR LRFD SEISMIC BRIDGE DESIGN".
- F. ERECTION - USE A CONSTRUCTION LOAD FACTOR OF NOT LESS THAN 1.25 FOR ALL LOADS THAT ARE ESSENTIALLY STATIC AND NOT LESS THAN 1.50 FOR ALL OTHER LOADS.
- G. THERE IS NO DEFLECTION CRITERIA.

MATERIALS

STEEL

CONSTRUCT PREFABRICATED STEEL BRIDGE FROM ASTM A109 GRADE 5013 OR ASTM A109 GRADE 5613 PLATE AND STRUCTURAL SHAPES. ASTM A572 STEEL MAY BE SUBSTITUTED FOR A109 IF:

IT MEETS THE CHARPY V-NOTCH, ZONE 3 TEST REQUIREMENTS AS SPECIFIED IN ASTM A109.

FABRICATION CONFORMS TO THE MOST RECENT EDITION OF THE ANSI/AASHTO/AWS BRIDGE WELDING CODE D15 WHEN WELDING NEW STEEL BRIDGE GIRDERS, BEAMS AND STRINGERS.

HOT DIP GALVANIZE ALL STRUCTURAL STEEL SHAPES, PLATES, AND BARS IN ACCORDANCE WITH AASHTO M 111, REPAIR DAMAGE TO GALVANIZED COATINGS ACCORDING TO ASTM A180 OR AASHTO M 36.

EASTERNERS, ASTM A325, GALVANIZED PER AASHTO M 232.

DECKING

IF TIMBER DECKING IS USED, BRIDGE SHALL HAVE A PRESSURE TREATED DECK OF AT LEAST 4X12 TIMBERS WITH AN ADDITIONAL UNTREATED RUNNING/WEAR SURFACE OF 3X12 UNTREATED DOUG-FIR. USE GRADE 1 OR BETTER FOR DECKING AND GRADE #2 FOR RUNNING PLANKS.

UNLESS OTHERWISE APPROVED BY THE STATE, ALL TREATED WOOD SHALL BE NEW PRESSURE TREATED PACIFIC DOUG-FIR TIMBERS OR EQUIVALENT MEETING THE DOT & PF STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (SHC) AND THE AMERICAN WOOD PRESERVERS ASSOCIATION (AWPA) USE CATEGORY OF UC4B. PENNY BASED PRODUCTS WILL NOT BE ACCEPTED. FABRICATE TIMBER (INCLUDING ALL CUTTING, SHAPING, AND BORING) BEFORE TREATMENT. CAREFULLY TRIM ALL ABRASIONS AND TREAT ALL CUTS IN TREATED MEMBERS ACCORDING TO AWPA STANDARD M 4, BEFORE DRIVING BOLTS. TREAT ALL HOLES BORED AFTER TREATMENT ACCORDING TO THE APPLICABLE AWPA STANDARDS. FILL REMAINING HOLES WITH TREATED PLUGS.

MATERIALS (CONT)

CONCRETE

USE NON-SHRINK, NON-CORROSIVE, NON-METALLIC, CEMENT BASED GROUT MEETING ASTM C-1107, GRADE C. MEET THE REQUIREMENTS OF ASTM 520. DEVELOP A COMPRESSIVE STRENGTH OF 4000 PSI.

ALL CONCRETE SHALL CONFORM TO DOT & PF CLASS A CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS.

ALL REINFORCING SHALL BE ASTM A 616, GRADE 60.

STRUCTURAL TIMBERS

APPLY PRESERVATIVE TO ALL STRUCTURAL TIMBER THAT IS EXPOSED TO WEATHER, WATER OR SOIL. USE THE PRESERVATIVE AND TREATMENT PROCESS OF AASHTO M193 AND "BEST MANAGEMENT PRACTICES FOR THE USE OF TREATED WOOD IN AQUATIC ENVIRONMENTS (BMP)", PUBLISHED BY THE WESTERN WOOD PRESERVERS INSTITUTE. USE COPPER NAPHTHENATE WITH A RETENTION OF PRESERVATION CONFORMING TO AWPA USE CATEGORY 4B FOR HIGHWAYS AND BRIDGES.

WELDING

PERFORM ALL WELDING AND NONDESTRUCTIVE EXAMINATION (NDE) AS SPECIFIED OR SHOWN ON THE PLANS. CONFORM TO THE MOST RECENT EDITION OF THE ANSI/AASHTO/AWS BRIDGE WELDING CODE D15 WHEN WELDING NEW STEEL BRIDGE GIRDERS, BEAM AND STRINGERS. CONFORM TO THE MOST RECENT EDITION OF THE STRUCTURAL WELDING CODE AWS D11 WHEN WELDING ALL OTHER STEEL STRUCTURES.

AT LEAST 30 DAYS PRIOR TO WELDING, SUBMIT FOR APPROVAL A WELDING PLAN STAMPED AND SIGNED BY THE CERTIFIED WELDING INSPECTOR (CWI) RESPONSIBLE FOR THE QUALITY CONTROL (QC) AND CONSISTING OF THE FOLLOWING DOCUMENTS:

- A. QUALITY CONTROL PERSONNEL QUALIFICATIONS INCLUDING CWI NUMBER.
- B. WELDING PROCEDURE SPECIFICATIONS (WPS) USING FORMS IN AWS D11, SAMPLE WELDING FORMS.
- C. PROCEDURE QUALIFICATION RECORDS (PQR), WHEN APPLICABLE, USING FORMS IN AWS D11, SAMPLE WELDING FORMS.
- D. WELDER PERFORMANCE QUALIFICATION RECORDS (WPQR) USING FORMS IN AWS D11, SAMPLE WELDING FORMS WITH DOCUMENTATION OF CURRENT WELDER CERTIFICATION.
- E. SAMPLE DAILY INSPECTION SHEET, AND
- F. TYPE AND EXTENT OF NDE TO BE CONDUCTED, AS REQUIRED IN THE SHC SECTION 504. USING A CWI, PERFORM ALL QUALITY CONTROL, INSPECTION NECESSARY TO ENSURE THAT THE MATERIALS AND WORKMANSHIP MEET THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. CORRECT ALL DEFICIENCIES IN MATERIALS AND WORKMANSHIP REVEALED BY QUALITY CONTROL AND QUALITY ASSURANCE REPRESENTATIVES DESIGNATED BY THE STATE. WHEN SPECIFIED, THE QUALITY ASSURANCE REPRESENTATIVE DESIGNATED BY THE STATE. DO NOT WELD OR TACK BRACKETS, CLIPS, SHIPPING DEVICES OR OTHER MATERIAL NOT REQUIRED BY THE CONTRACT DOCUMENTS TO THE PERMANENT STRUCTURE UNLESS SHOWN ON THE WORKING DRAWINGS AND APPROVED BY THE ENGINEER.

SITE SPECIFIC NOTES

EACH END OF THE BRIDGE MUST BE SECURED TO THE ABUTMENT STRUCTURE.

AN EARTH EMBANKMENT CONSTRUCTED FOR USE AS A BRIDGE APPROACH MUST BE PROTECTED FROM EROSION BY USING PLANTED OR SEEDED GROUND COVER, BULKHEADS, ROCK RIPRAP, RETAINING WALLS, OR OTHER EQUALLY EFFECTIVE MEANS.

A BRIDGE MUST BE INSTALLED IN SUCH A MANNER AS TO MINIMIZE DISTURBANCE TO THE BED AND BANKS OF A STREAM. NO PART OF THE SUPERSTRUCTURE MAY BE BELOW THE HIGH WATER MARK OF THE STREAM OR OBSTRUCTING THE STREAM'S FLOW BETWEEN ORDINARY HIGH WATER.

EQUIPMENT STREAM CROSSINGS ARE NOT AUTHORIZED WITHOUT PRIOR SPECIFIC STATE APPROVAL. THE PURCHASER/CONTRACTOR MUST SUBMIT WRITTEN PLANS IF CROSSING OF OPEN (UNFROZEN WATER) IS REQUIRED FOR ROAD CONSTRUCTION.

GENERAL NOTES:

THE BIDDER WILL HAVE THE STRUCTURE DESIGNED BY A PROFESSIONAL ENGINEER, REGISTERED IN THE STATE OF ALASKA. PLANS OF THE PROPOSED STRUCTURE WILL BE SUBMITTED AND BE SUBJECT TO APPROVAL OF THE DOT CONTRACTING OFFICER OR HIS DESIGNEE BEFORE FINAL ACCEPTANCE.

PROVIDE AND SECURE A NAMEPLATE TO THE STRUCTURE INDICATING THE BRIDGE MANUFACTURER'S NAME, MAXIMUM LOAD LIMITS, AND YEAR OF FABRICATION. PROVIDE AN INVENTORY AND OPERATING LOAD RATINGS OF THE BRIDGE IN THE PLAN SUBMITTALS ACCORDING TO THE MOST RECENT VERSION, INCLUDING INTERIM VERSION, OF THE AASHTO MANUAL FOR BRIDGE EVALUATION (MBE). LOAD RATE STEEL AND CONCRETE ELEMENTS USING THE LOAD AND RESISTANCE FACTOR RATING (LRFR) METHOD. LOAD RATE TIMBER ELEMENTS USING THE ALLOWABLE STRESS RATING (ASR) METHOD AND LOAD AND RESISTANCE FACTOR RATING (LRFR) METHODS.

THE BRIDGE SHALL BE DELIVERED WITH ADEQUATE BLOCKING TO KEEP THE STRUCTURE 6 INCHES OFF THE GROUND, LEVEL AND WELL SUPPORTED UNTIL IT IS INSTALLED.

FOUNDATION NOTES

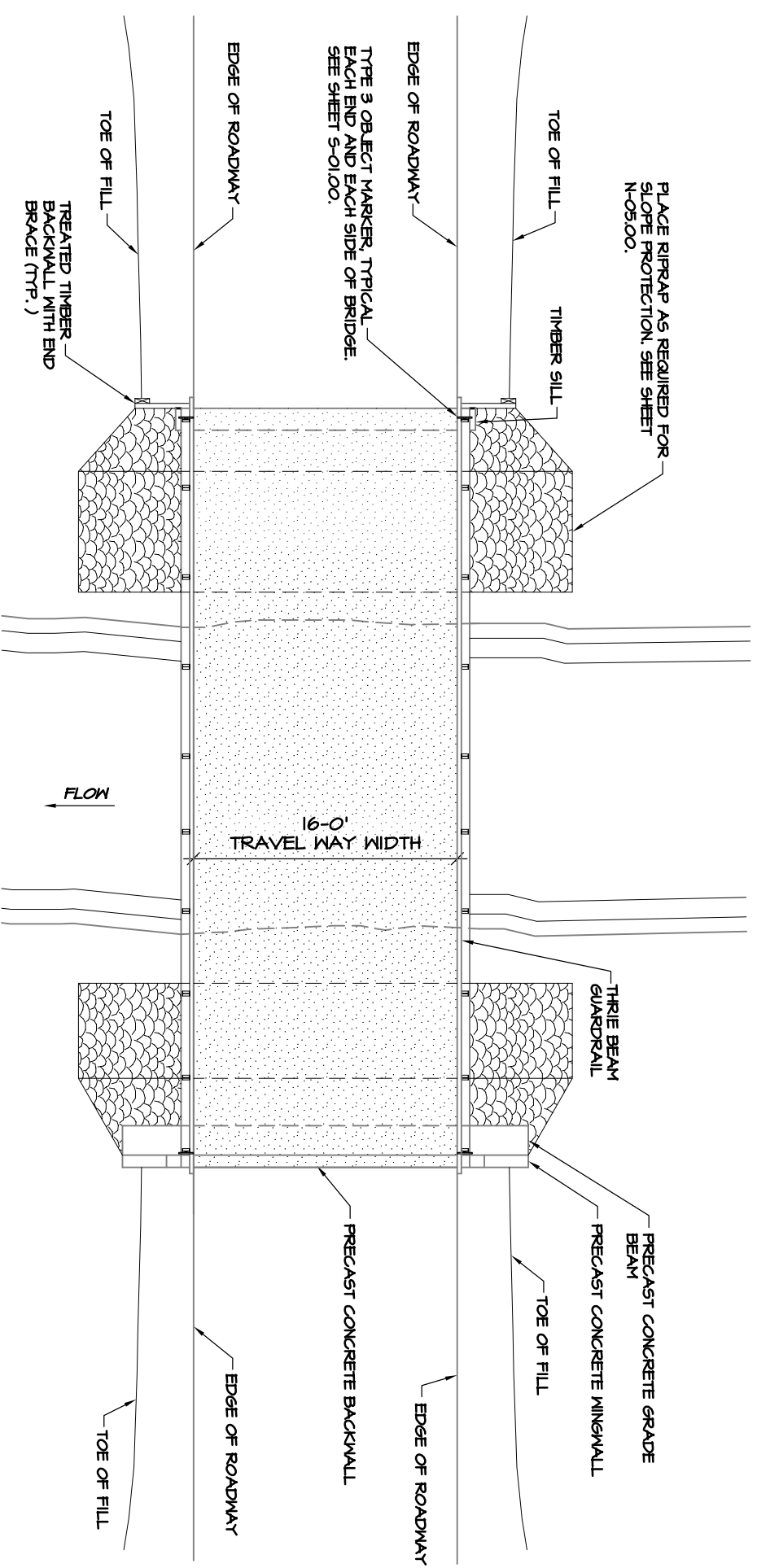
FOUNDATION DESIGN AND DETAILS ASSUME SUBSTRUCTURE UNITS WILL BE PLACED ON COMPETENT SOIL OR BEDROCK CAPABLE OF ACHIEVING A MINIMUM BEARING PRESSURE OF 1500 PSF. IF THIS CRITERIA CANNOT BE MET, CONSULT WITH A LICENSED PROFESSIONAL ENGINEER FOR FURTHER GUIDANCE.

FABRICATION AND INSTALLATION OF GEOCELL FOUNDATION STABILIZATION UNITS SHALL BE IN ACCORDANCE WITH SPECIAL PROVISION 611.

FABRICATION AND INSTALLATION OF WELDED WIRE RETAINING WALL SYSTEMS SHALL BE IN ACCORDANCE WITH SPECIAL PROVISION 516.

FABRICATION AND INSTALLATION OF BIN WALL ABUTMENT SYSTEMS SHALL BE IN ACCORDANCE WITH SPECIAL PROVISION 517.





PLACE RIPRAP AS REQUIRED FOR SLOPE PROTECTION, SEE SHEET N-05.00.

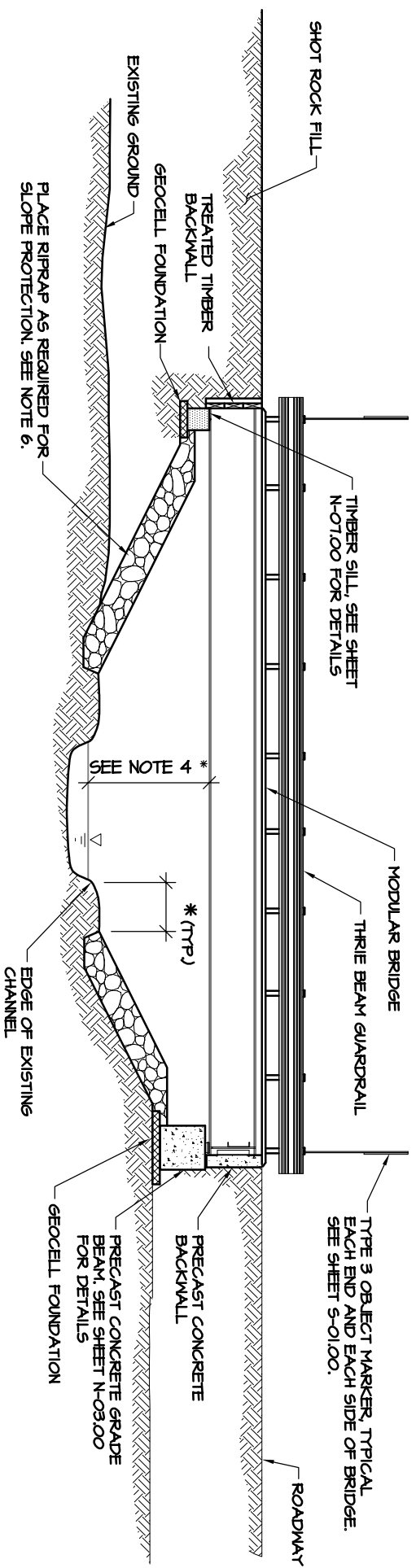
TYPE 3 OBJECT MARKER TYPICAL EACH END AND EACH SIDE OF BRIDGE. SEE SHEET S-01.00.

NOTE: THIS DRAWING SHOWS A TYPICAL INSTALLATION.

PLAN VIEW

GENERAL NOTES:

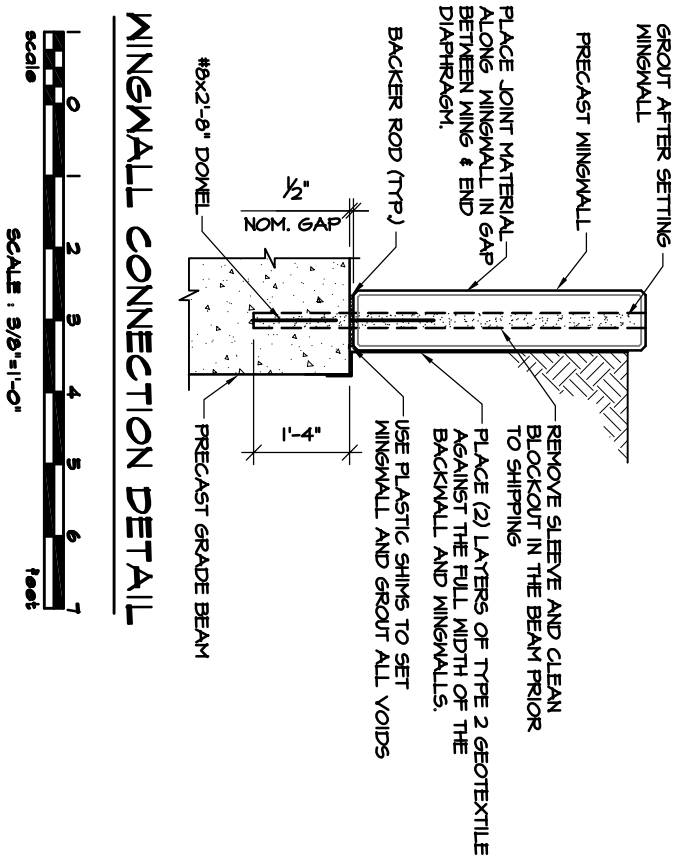
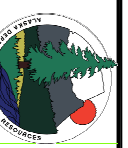
1. DRAWING IS APPLICABLE FOR SINGLE LANE BRIDGE ONLY, UNLESS OTHERWISE NOTED.
2. SEE SHEET N-01.00 FOR FOUNDATION PARAMETERS.
3. SEE SHEET N-06.00 FOR SILL MATERIAL NOTES.
4. PROVIDE 5 FT. MIN CLEARANCE FROM AVERAGE HIGH WATER MARK FOR ICE AND DEBRIS PASSAGE.
5. WHERE STRUCTURAL EXCAVATION IS REQUIRED, REFER TO DOT & PF SPECIFICATION 205.
6. SEE SHEET N-05.00 FOR RIPRAP DETAILS AND NOTES.



ELEVATION

* 3'-0" FEET MIN. (UNLESS OTHERWISE SPECIFIED BY ENGINEER)

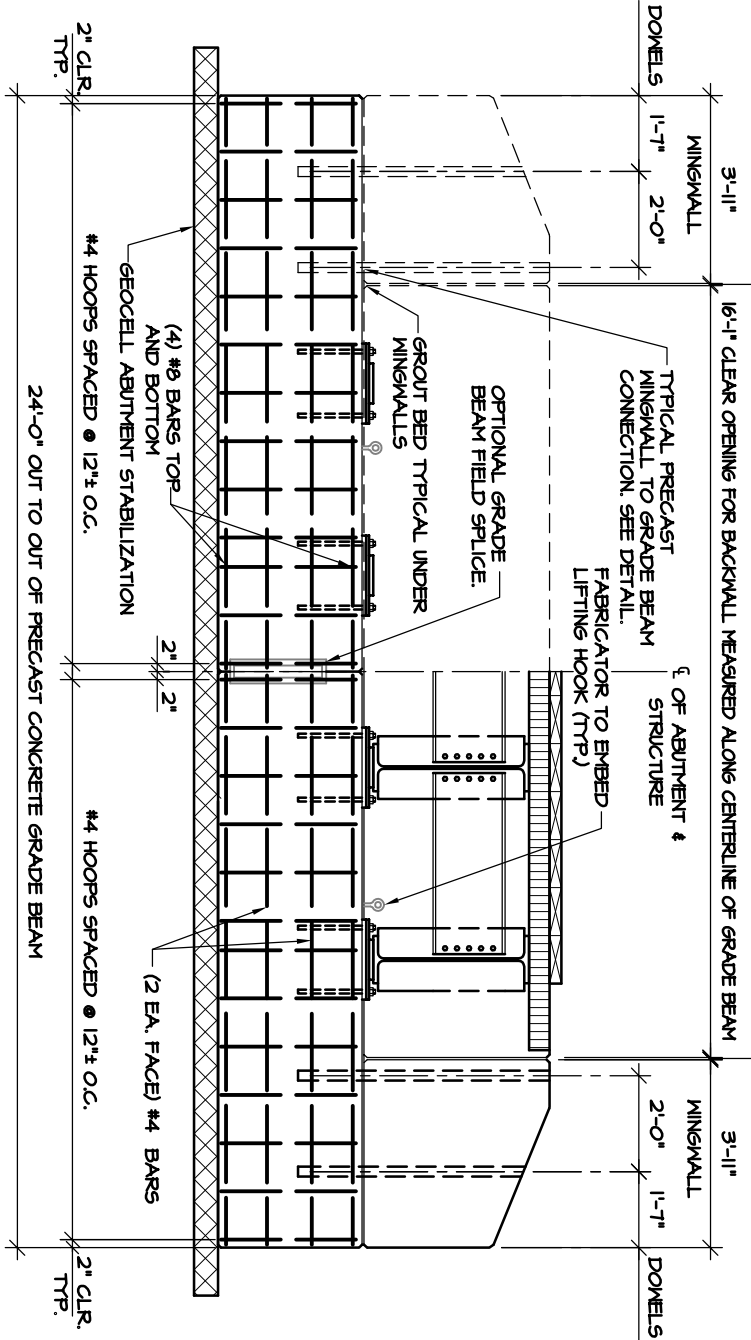




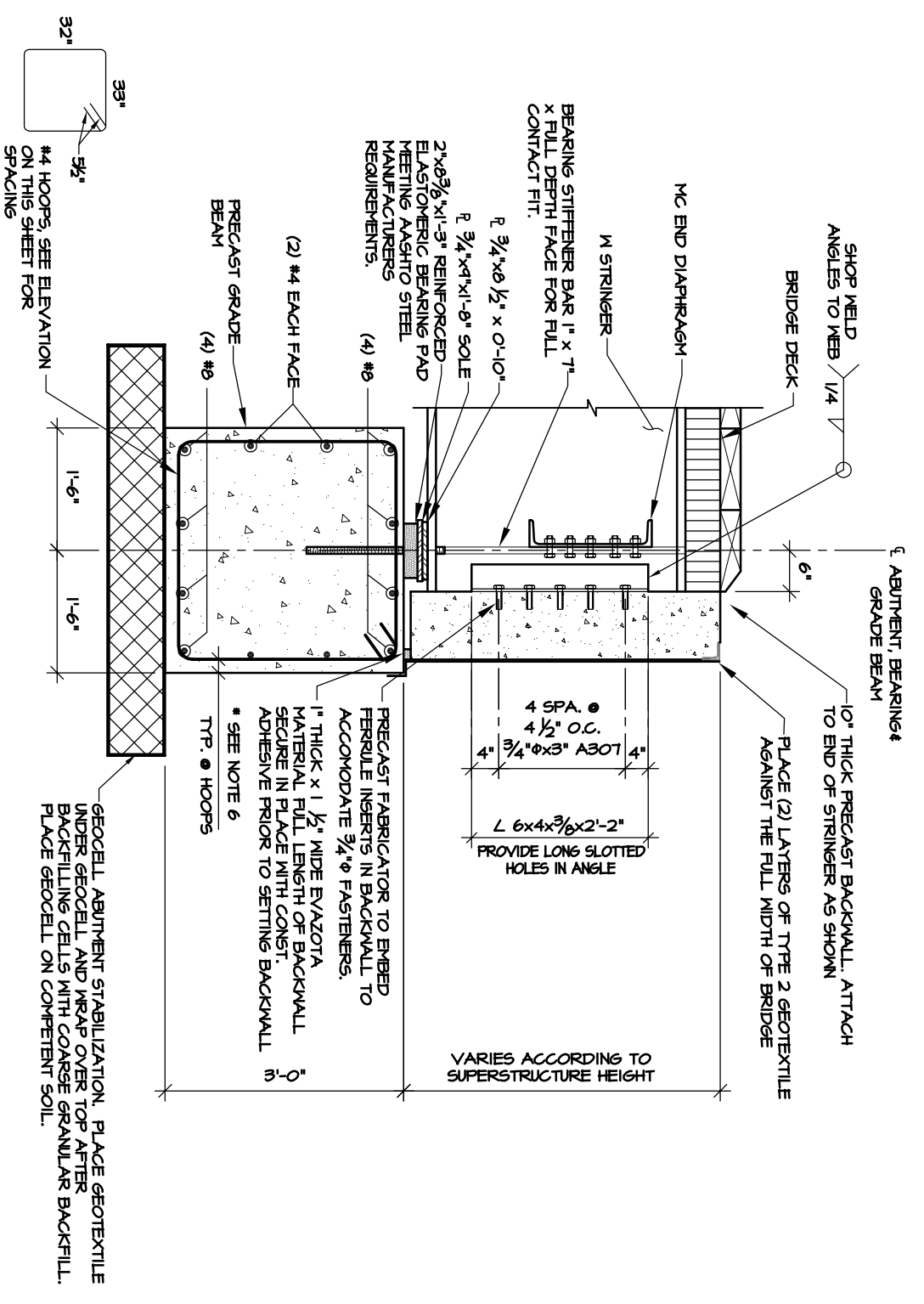
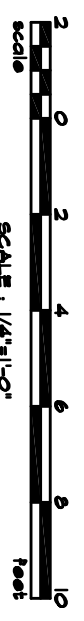
MINGEWALL CONNECTION DETAIL



NOTE:
BRIDGE SUPERSTRUCTURE NOT SHOWN THIS SIDE FOR CLARITY.



ABUTMENT ELEVATION

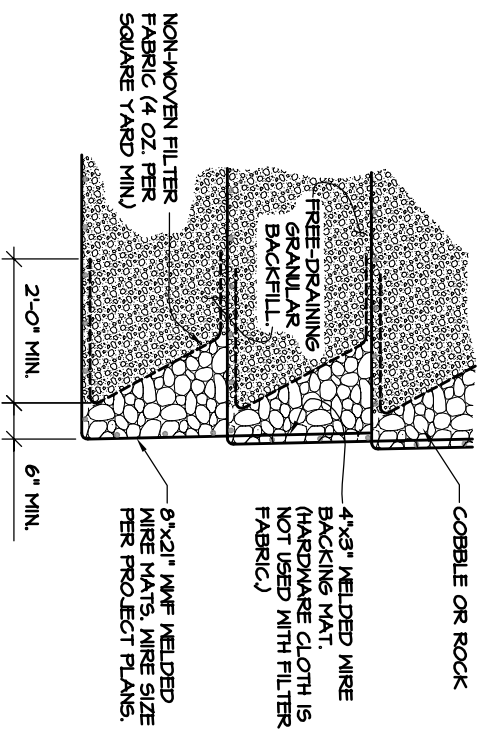


ABUTMENT SECTION



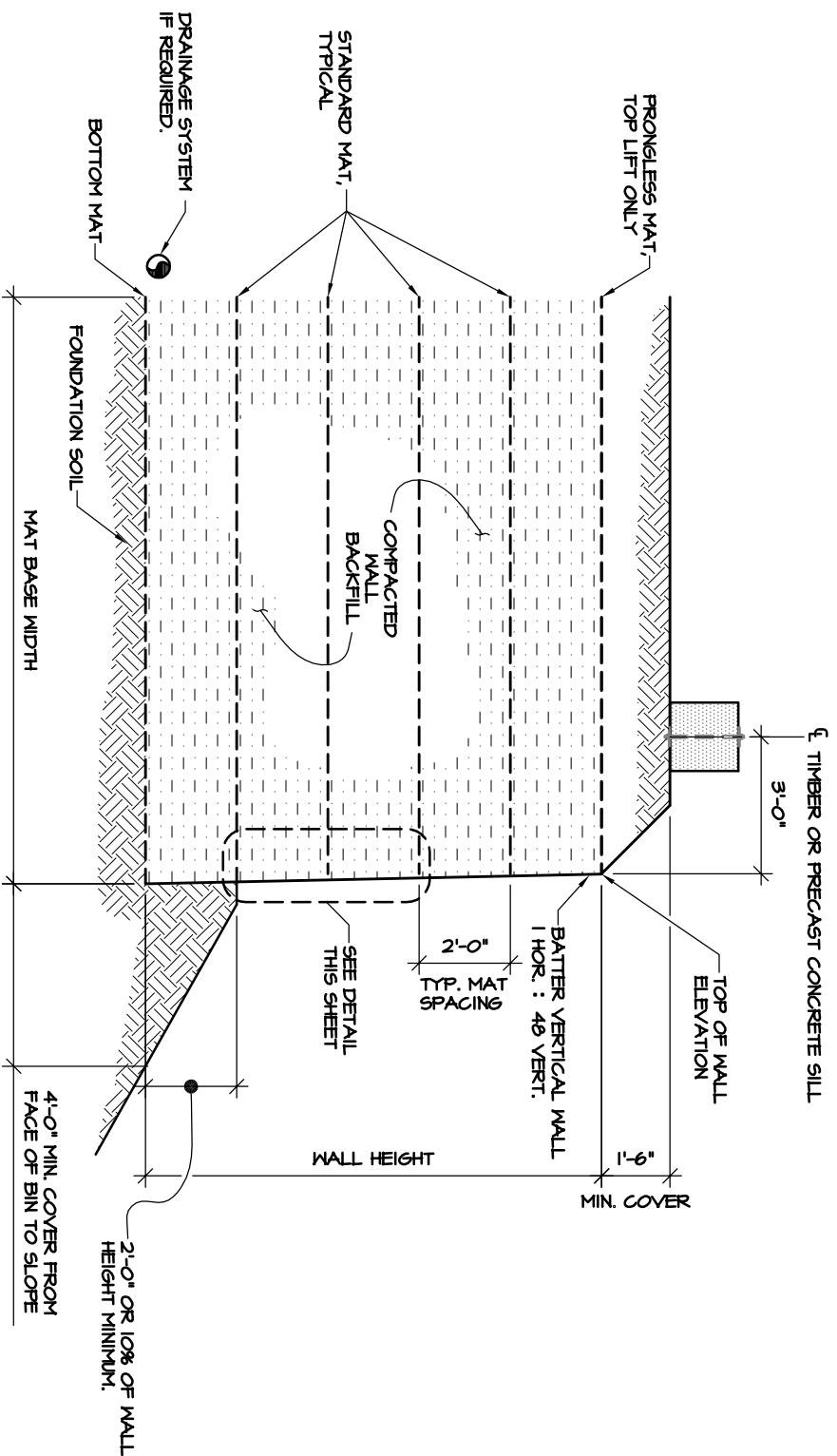
- GENERAL NOTES:**
1. ALL PRECAST CONCRETE SHALL BE CLASS A CONCRETE MEETING DOT & PF STANDARD SPECIFICATION SOI WITH A MINIMUM F'C = 4000 PSI AT 28 DAYS.
 2. ALL REINFORCING STEEL SHALL BE THE DEFORMED TYPE MEETING AASHTO M61 (ASTM A616), GRADE 60. BENDING AND SPLICING OF REINFORCEMENT SHALL BE IN ACCORDANCE WITH ACI 318.
 3. ALL BOLTS SHALL TO BE ASTM A325, GALVANIZED IN ACCORDANCE WITH AASHTO M232.
 4. ALL METAL COMPONENTS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111.
 5. GRADE BEAM AND MINGEWALL LENGTH SHALL BE EXTENDED TO MEET SITE CONDITIONS AND RETAIN ROADWAY APPROACH FILL.
 6. PROVIDE A MINIMUM OF 2" OF CONCRETE COVER OVER REINFORCING STEEL.

GEOTEXTILE ABUTMENT STABILIZATION. PLACE GEOTEXTILE UNDER GEOTEXTILE AND WRAP OVER TOP AFTER BACKFILLING CELLS WITH COARSE GRANULAR BACKFILL. PLACE GEOTEXTILE ON COMPETENT SOIL.

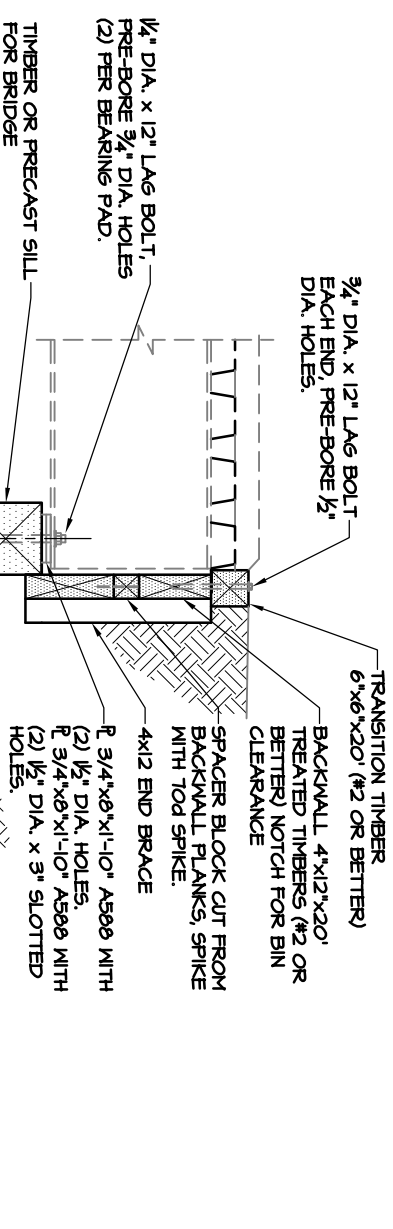
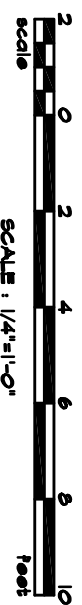


- GENERAL NOTES:**
1. WELDED WIRE RETAINING WALL SYSTEMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE MANUFACTURER'S GUIDELINES.
 2. WELDED WIRE RETAINING WALL DETAILS SHALL BE USED THAT MINIMIZE IMPACTS ON WATERWAYS BY UTILIZING FILTER FABRIC OR HARDWARE CLOTH TO PROTECT FROM INFILTRATION OF FINES AND BY PROVIDING ADEQUATE DRAINAGE BEHIND THE STRUCTURE.
 3. ALL METAL COMPONENTS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111.
 4. INSTALL BIN WALL RETAINING ABUTMENT SYSTEM PER MANUFACTURER'S TYPICAL INSTALLATION. FILL INTERIOR OF BIN WITH SELECT GRANULAR BACKFILL MATERIAL. TOS-2.22 COMPACTED TO 95% DENSITY OR ENGINEER'S APPROVAL. BACKFILL AND COMPACT ADJACENT TO BIN WITH BACKFILL MATERIAL TOS-2.15.
 5. EROSION CONTROL PLAN IS REQUIRED.

WELDED WIRE ROCK FACING DETAIL



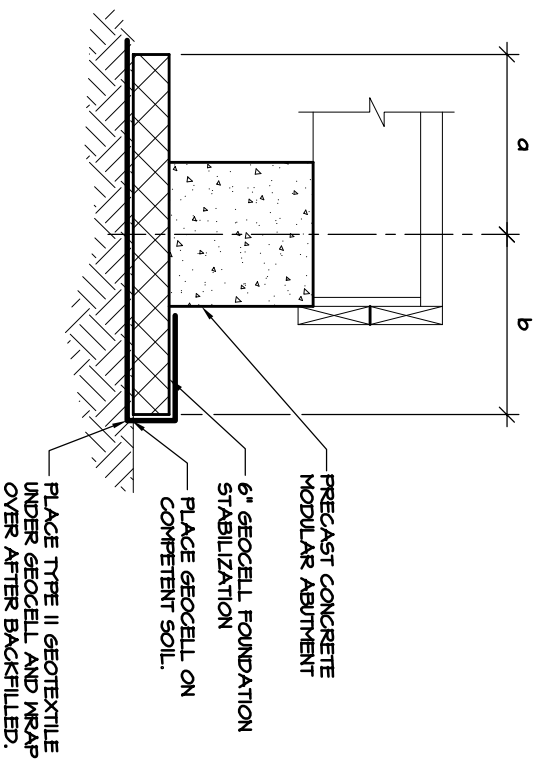
ELEVATION - WELDED WIRE RETAINING WALL FOUNDATION



INSTALL 6" DIA. CSP DRAIN FULL LENGTH OF ABUTMENT, TYP.

**SECTION
MODULAR BIN WALL ABUTMENT**

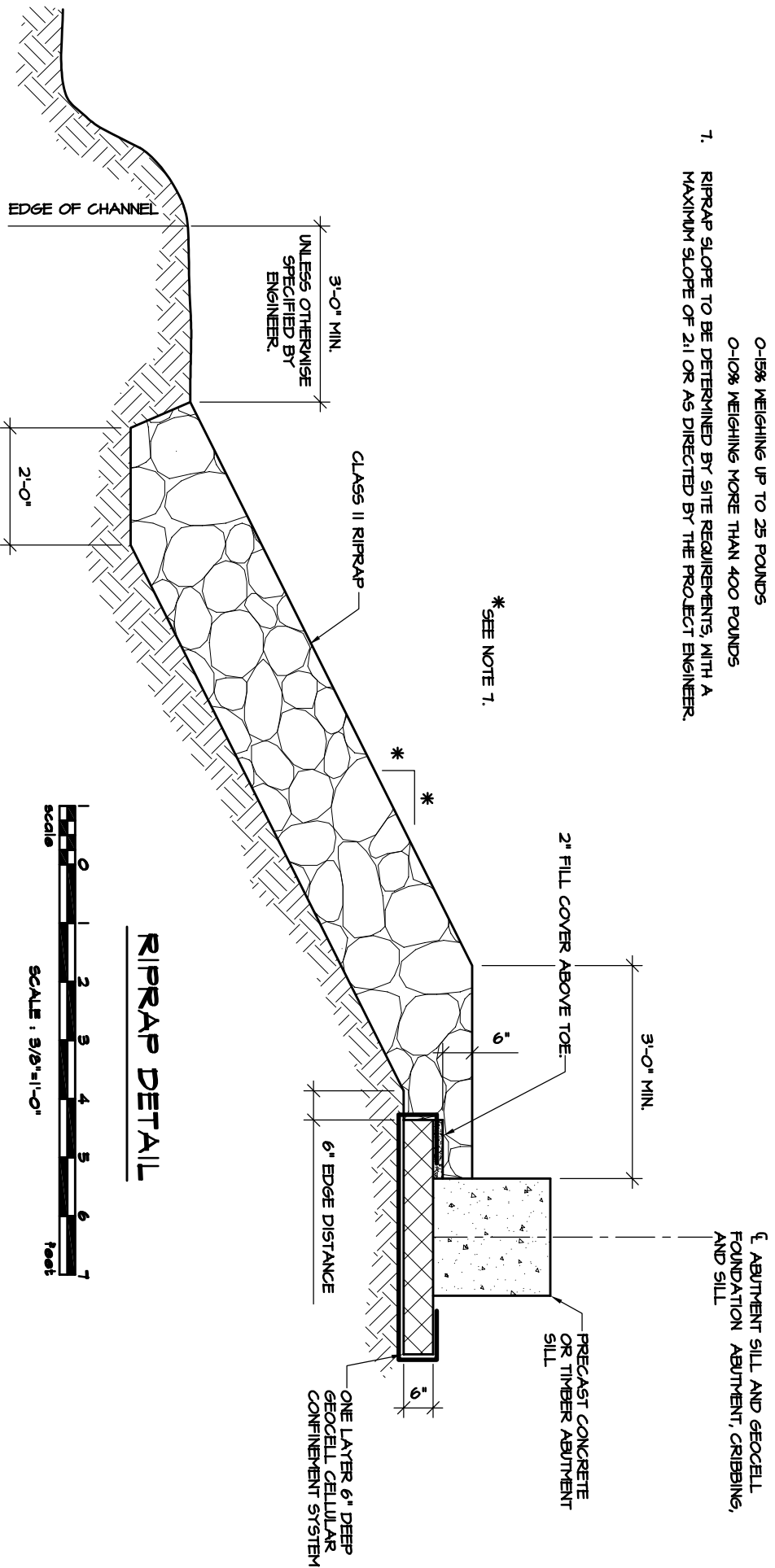




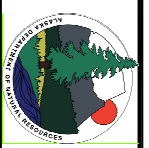
GEOCELL SCHEDULE			
STRUCTURE	SPAN	a	b
CONCRETE ABUTMENT	UP TO 50 FT.	4'-3"	2'-6"
	UP TO 90 FT.	5'-6"	4'-6"

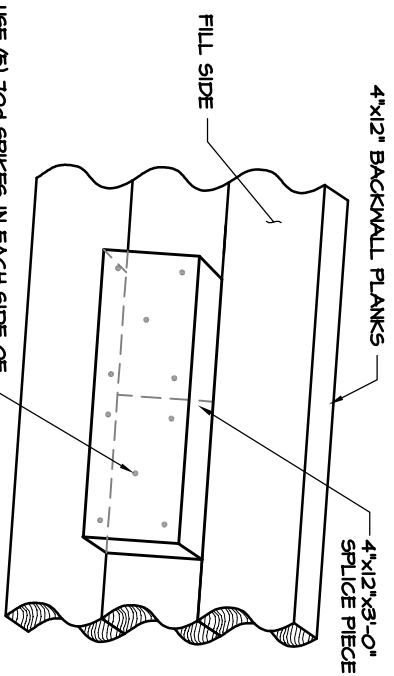
GEOCELL DETAIL

- GENERAL NOTES:**
- SEE SHEET N-01.00 FOR FOUNDATION PARAMETERS.
 - ALL GEOTEXTILE SHALL BE TYPE II UNLESS OTHERWISE SPECIFIED BY THE ENGINEER.
 - GEOTEXTILE SHALL BE JOINED BY OVERLAPPING A MINIMUM OF 18 INCHES (UNLESS OTHERWISE SPECIFIED) AND SECURED AGAINST UNDERLYING FOUNDATION MATERIAL USING PINS APPROVED AND PROVIDED BY THE GEOTEXTILE MANUFACTURER.
 - GEOTEXTILE BENEATH RIPRAP SHALL BE PLACED WITH A MINIMUM OVERLAP OF 24 INCHES.
 - SUBGRADE SURFACES ON WHICH FABRIC IS PLACED SHALL BE REASONABLY SMOOTH AND FREE OF ROCKS, CLODS, ROOTS OR OTHER OBJECTS WHICH COULD PUNCTURE THE FABRIC.
 - ALL RIPRAP SHALL BE CLASS II RIPRAP CONFORMING TO THE FOLLOWING CRITERIA, UNLESS OTHERWISE SPECIFIED BY THE ENGINEER.
 - CLASS II 50-100% WEIGHING 200 POUNDS OR MORE.
 - 0-15% WEIGHING UP TO 25 POUNDS
 - 0-10% WEIGHING MORE THAN 400 POUNDS



RIPRAP DETAIL

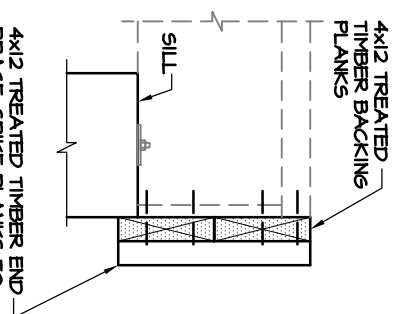




NOTE:
ALL TIMBER BACKWALL SPLICES SHALL OCCUR WITHIN THE LIMITS OF THE OUTER GIRDERS.

BACKWALL PLANK SPLICE DETAIL

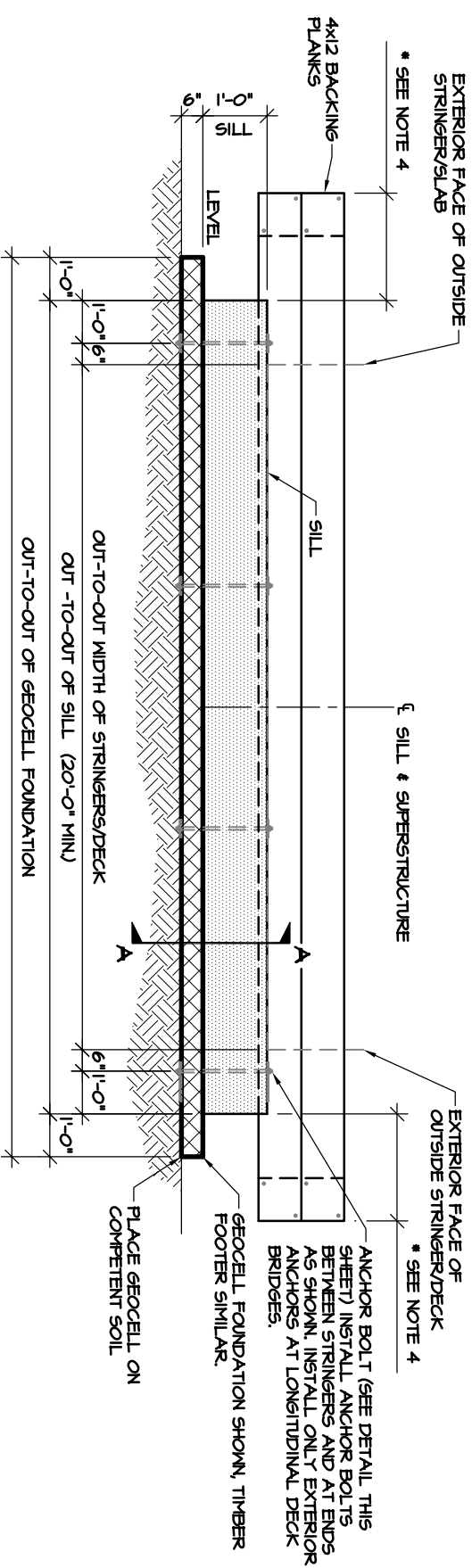
NOT TO SCALE



4x12 TREATED TIMBER END BRACE SPIKE PLANKS TO BRACE WITH (4) TOD SPIKES PER PLANK DRIVEN FROM ALTERNATE SIDES. PRE-BORE 1/4" DIA. LEAD HOLES.

TREATED TIMBER BACKWALL

NOT TO SCALE



ELEVATION - GEOCELL FOUNDATION

SCALE : 1/4"=1'-0"

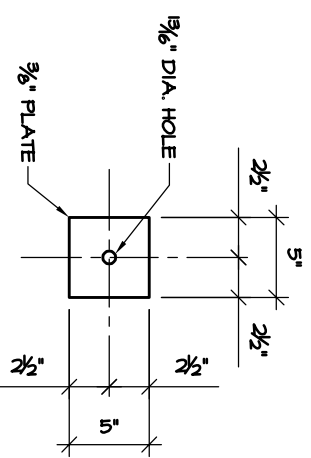
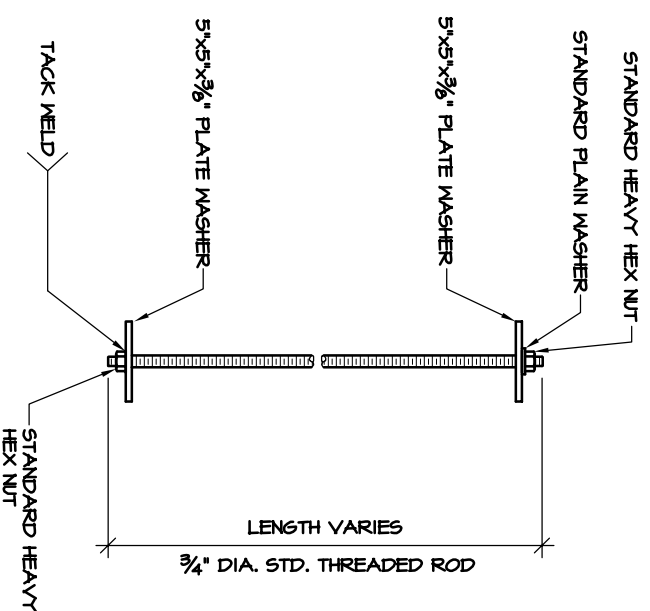


PLATE WASHER DETAIL

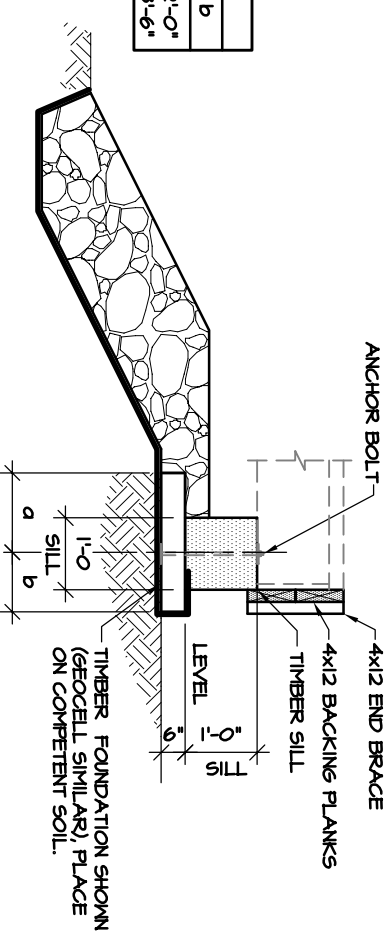


ELEVATION

ANCHOR BOLT DETAIL

SCALE : 1"=1'-0"

FOOTING SCHEDULE		
STRUCTURE	SPAN	
TIMBER SILL	UP TO 50 FT.	4'-0"
	UP TO 90 FT.	5'-0"
		2'-0"
		3'-6"



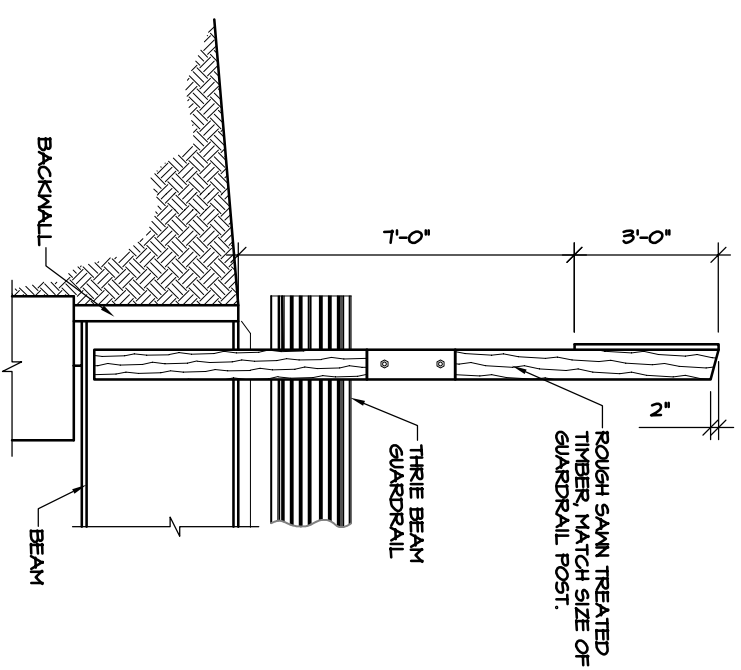
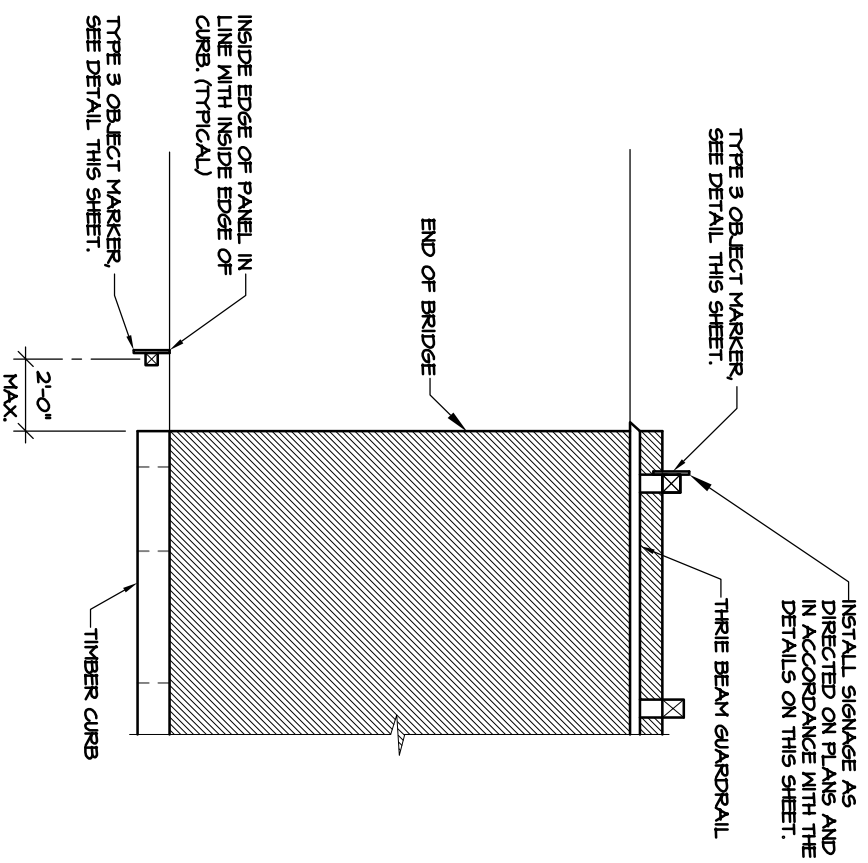
SECTION A-A (GEOCELL FOUNDATION)

GENERAL NOTES

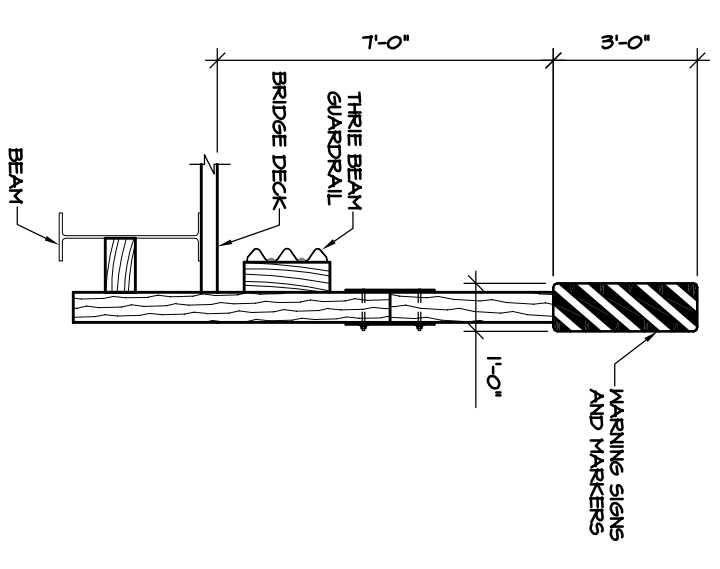
- SEE SHEET N-0100 FOR TIMBER MATERIAL NOTES.
- ALL TIMBER FOR BACKWALLS AND ASSOCIATED CONNECTIONS SHALL BE ROUGH CUT DOUGLAS FIR OR WESTERN LARCH, GRADED NO. 2 OR BETTER, AND TREATED IN ACCORDANCE WITH ANPFA STANDARDS C1 AND C2 FOR GROUND CONTACT WITH PENTACHLOROPHENOL IN PETROLEUM OIL (TYPE A) CONFORMING TO ANPFA STANDARD P8, OR CREOSOTE CONFORMING TO ANPFA STANDARD P9.
- FIELD CUTS, BORE HOLES, AND DAMAGE IN TREATED TIMBER SHALL BE TREATED IN ACCORDANCE WITH ANPFA STANDARDS M4 AND P1.
- MINGWALL LENGTH WILL BE DETERMINED BY AREA FORESTER ACCORDING TO SITE REQUIREMENTS.



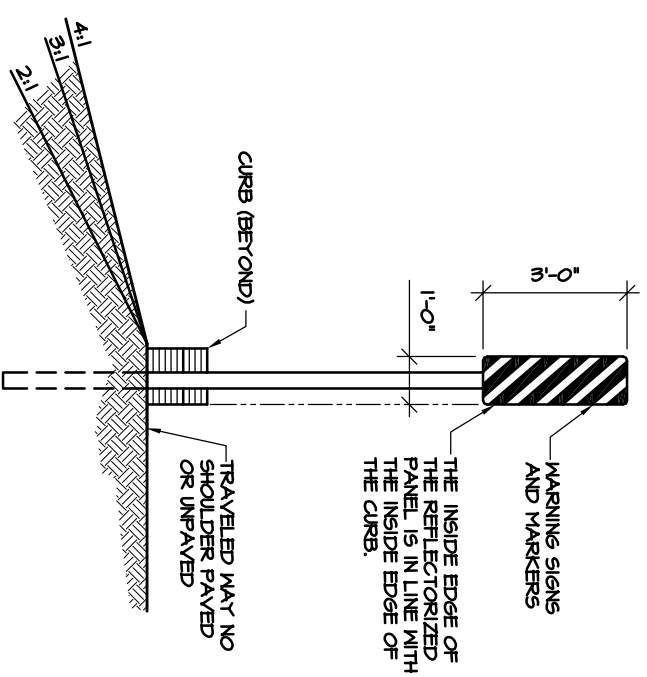
- GENERAL NOTES:**
1. PROVIDE TYPE 0M-3R OR 0M-3L OBJECT MARKERS AT EACH CORNER OF THE BRIDGE, EITHER AT EACH ABUTMENT OR AT THE END OF APPROACH RAIL, AS SHOWN ON THE CONTRACT PLANS.
 2. WHEN OBJECT MARKERS ARE TO BE PLACED ON TOP OF FINAL GUARDRAIL POST, USE SIMILAR MATERIAL TO SPLICE TO GUARDRAIL POST AS SHOWN ON DOT & PF STANDARD DRAWING S-2010. OTHERWISE WOOD OR STEEL PERFORATED POSTS MAY BE USED.
 3. PLYWOOD OR ALUMINUM AS SPECIFIED IN SECTION T30 OF THE DOT & PF STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION MAY BE USED FOR THE OBJECT MARKER SIGN BASE. IF ALUMINUM IS TO BE USED, PROVIDE A MINIMUM OF 0.080" THICK SHEET ALUMINUM.
 4. ALWAYS PLACE INSIDE EDGE OF OBJECT MARKER IN LINE WITH EDGE OF OBSTRUCTION CLOSEST TO ROADWAY.
 5. WHEN OBJECT MARKER IS AT THE EDGE OF FLARED APPROACH GUARDRAIL, ENSURE THAT BOTTOM OF OBJECT MARKER SIGN IS A MINIMUM OF 5 FOOT CLEAR ABOVE FINISHED ROADWAY EDGE.
 6. IF APPROACH GUARDRAIL IS WARRANTED CONSULT "BARRIER GUIDE FOR LOW VOLUME AND LOW SPEED ROADS" PUBLICATION NO. FHWA-FLTD-05-004, FOR DESIGN OF NECESSARY CLEAR ZONE.
 7. FOR EMBEDMENT LENGTH SEE DOT & PF STANDARD SHEET S-30.03.
 8. ATTACH ALL OBJECT MARKER POSTS IN ACCORDANCE WITH DOT & PF STANDARD SHEET S-30.03.



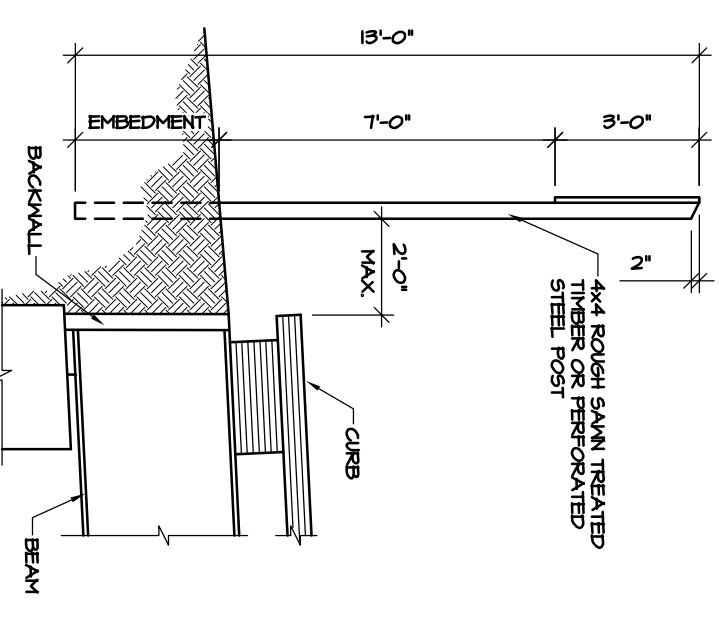
SIDE ELEVATION



FRONT ELEVATION



FRONT ELEVATION



SIDE ELEVATION

TYPICAL OBJECT MARKER INSTALLATION

NOT TO SCALE

OBJECT MARKER TYPE 3 INSTALLATION DETAIL

NOT TO SCALE

