



ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES
 P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

BR. 211.0 SPANS #1 AND #2 BEARING REPLACEMENT

LATITUDE: 62.1039°, LONGITUDE: -150.0680°

DRAWING INDEX

- | | |
|--|---|
| 1. COVER SHEET | 8. SPAN #2 FIXED BEARING SECTIONS |
| 2. GENERAL NOTES AND QUANTITIES | 9. ANCHOR BOLT INSTALLATION DETAILS |
| 3. BRIDGE PLAN AND ELEVATION | 10. SPAN #1 STRUCTURAL STEEL DETAILS |
| 4. PHASING DETAILS AND LATERAL BRACING BOLT LOCATION SCHEMATIC | 11. SPAN #2 STRUCTURAL STEEL DETAILS |
| 5. SPAN #1 EXPANSION BEARING SECTIONS | 12. BEARING ASSEMBLY DETAILS |
| 6. SPAN #1 FIXED BEARING SECTIONS | 13. MISCELLANEOUS DETAILS |
| 7. SPAN #2 EXPANSION BEARING SECTIONS | 14. PRECAST CONCRETE PEDESTAL PCP-1 AND PCP-2 DETAILS |



ISSUED FOR CONSTRUCTION

LETTER SERIES SHEET NO. CUT ON SHEET NO. SHOWN ON

SECTION DESIGNATION



REV.	DATE	BY	REVISION

ALASKA RAILROAD CORPORATION ENGINEERING SERVICES <small>P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500</small>	
PROJECT: BR. 211.0 SPANS #1 AND #2 BEARING REPLACEMENT	
TITLE: COVER SHEET	
DESIGNED BY: <u>BJB</u> DRAWN BY: <u>BJB</u> CHECKED BY: <u>BWB</u> APPROVED BY: <u>BWB</u>	SCALE: AS NOTED DATE: 11/19/20
1 OF 14	

GENERAL NOTES

- All work requirements on these drawings and not otherwise detailed shall be accomplished as specified in the current edition of the American Railway Engineering and Maintenance-of-Way Association (AREMA) Manual for Railway Engineering.
- Field verify all dimensions and elevations prior to start of construction.

DESIGN NOTES

- The proposed bearings have been designed in accordance with the AREMA Manual for Railway Engineering, Chapter 8: Concrete Structures and Foundations, Chapter 9: Seismic Design for Railway Structures and Chapter 15: Steel Structures.
- This structure was designed for Cooper E80 Live Load plus Impact.
- Existing concrete is assumed to be 3,000 psi.

STRUCTURAL STEEL NOTES

- Materials, fabrication and shop assembly shall be in accordance with Chapter 15: Steel Structures of the current AREMA Manual for Railway Engineering.
- Material shall conform to the following requirements:

Structural Steel	ASTM A709 Gr. 50W T3
Threaded Rods	ASTM F1554 Gr. 105 (GALVANIZED)
- All steel surfaces shall be cleaned to a minimum SSPC-SP6, commercial blast cleaning.
- Structural steel shall not be painted.
- Structural steel shall be of the type and quality as designated on the drawings. Material supplied shall meet the longitudinal Charpy V-notch requirements for Zone 3 as specified in the AREMA Manual for Railway Engineering.
- All shop and field bolted connections shall use high strength bolts (including nuts and washers) conforming to ASTM A325 Type 3, except as otherwise noted. Nuts shall conform to ASTM A563. All bolts shall be 1" diameter unless noted otherwise. Diameter of bolt holes shall be 1/16" larger than nominal bolt diameter, unless noted otherwise. All bolts shall have one hardened steel washer conforming to ASTM F436 per bolt under the element to be turned.
- High strength steel bolts shall be installed in accordance with the "Turn of the Nut Method". The procedure for installation is as specified by the Research Council on Riveted and Bolted Structural Joints of the Engineering Foundation. Alternative bolt installation methods are subject to approval by the Railroad.
- Bolts shall be of such length that they will extend entirely through their nuts and approximately 1/4" beyond them and the full threads shall extend no more than 3/8" into the grip.
- When assembled, all joint surfaces, including those adjacent to the bolt heads, nuts or washers, shall be free of scale, except tight mill scale; and shall also be free of dirt, loose scale, burrs, other foreign material and other defects that would prevent solid seating of the parts.
- All welding shall be in accordance with the Bridge Welding Code, AWS D1.5.
- Welded joints are to be AWS prequalified. Alternate joint details are subject to approval by the Railroad. All welding shall be done to minimize distortion. The welding sequence and procedures to be used shall be submitted for approval to the Railroad.
- Fully automatic submerged arc welding shall be required for this project. Manual shielded arc welding or semi-automatic submerged arc welding shall be allowed only if fully automatic submerged arc welding is not practical. Alternate welding methods are subject to approval by the Railroad.
- When welding A709 Grade 50W steel, weld metal shall be equivalent to A709, Grade 50W steel in strength, corrosion resistance and weathered appearance.
- The Fabricator shall submit copies of welders' certificates for all welding processes. Welders shall possess valid qualifications.
- The Fabricator shall submit detailed shop drawings prior to beginning fabrication. Fabrication shall not begin until shop drawings are approved.
- The fabricator is responsible for the design and detailing of lifting devices. Details for all lifting devices required for handling and shipping shall be submitted with the shop drawings.
- All steel components shall be inspected by the Fabricator before shipment.
- All material certifications and quality control test results shall be submitted to the Railroad at project completion.

BEARING NOTES

- Bearing fabrication, finishing, tolerances, testing requirements and installation requirements shall conform to AREMA Chapter 15, Part 5.
- Elastomeric bearings shall be previously unvulcanized 100 percent virgin polyisoprene (natural rubber), 60 durometer with low temperature properties equal to AASHTO Grade 5. Steel laminates shall be ASTM A1011, Grade 36.
- Sole plates shall be in full contact with elastomeric bearings.
- Methyl Ethyl Ketone for use in cleaning of elastomeric bearings shall conform to ASTM D740, Type 1 or Type 2.
- The surface finish of bearing and base plates and other bearing surfaces that are to come in contact with each other or with concrete shall meet the American National Standard Institute (ANSI) surface roughness requirements as defined in ANSI Standard B46.1, "Surface Roughness, Waviness, and Lay" and shown on the plans, or in the following listing:

Bearing plates (surfaces in contact with rubber)	500
Heavy plates in contact to be welded or bolted	250
- All plates in bearing assemblies shall be flat and level, unless beveled.

GROUT PAD NOTES

- GROUT PADS SHALL BE PROVIDED UNDER PROPOSED BEARINGS TO PROVIDE A SOUND LEVEL BEARING SURFACE. GROUT SHALL BE SIKAGROUT 428 FS OR APPROVED ALTERNATIVE.
- ALL LOOSE CONCRETE AND DEBRIS SHALL BE REMOVED FROM EXISTING PIER/ABUTMENT SEAT. CONCRETE WITHIN EXTENTS OF PROPOSED GROUT PAD MUST BE SOUND AND ROUGHENED TO PROMOTE MECHANICAL ADHESION. BASED ON FIELD OBSERVATION THE EXISTING CONCRETE SEATS HAVE SOUND CONCRETE WITHIN 2" +/- FROM THE EXISTING SEAT ELEVATION.
- PROPOSED GROUT PADS SHALL BE A MINIMUM OF 1/4" THICK, POURED TO THE ELEVATIONS PROVIDED. GROUT PADS EXCEEDING 2" IN THICKNESS SHALL BE EXTENDED WITH AGGREGATE PER MANUFACTURER'S INSTRUCTIONS. GROUT PADS SHALL NOT EXCEED 6" IN THICKNESS.
- THE GROUT PADS SHALL REACH A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI PRIOR TO SETTING THE BRIDGE DOWN.

PRECAST CONCRETE NOTES

CONCRETE

- All concrete materials, placement and workmanship shall be in accordance with Chapter 8: Concrete Structures and Foundations of the AREMA Manual for Railway Engineering.
- Minimum compressive strength at 28 days shall be 4000 psi.
- Exposed surfaces shall be formed in a manner which shall produce a smooth and uniform appearance without rubbing or plastering. Exposed edges of 90° or less are to be chamfered 3/4" x 3/4". Top surface to have a smooth finish, free of all float or trowel marks.
- Concrete shall be proportioned such that the water - cement ratio (by weight) does not exceed 0.45. Concrete shall contain a minimum of 6 1/2 sacks of cement per cubic yard of concrete.
- Cement shall be Type I or Type II Portland Cement in accordance with ASTM C150 specifications.
- Aggregates shall be graded in accordance with ASTM C33 specifications. Fine aggregate shall be natural sand.
- Air content shall be between 5% and 7% (by volume).
- Admixtures shall not be used without approval by the Railroad.
- Curing shall be accomplished by wet curing or application of a Type 2 membrane.
- The Fabricator shall stencil the Fabricator's name, date of fabrication, bridge number and piece mark at location shown on the drawings.
- Production procedures for the manufacture of precast members shall be in accordance with the AREMA Manual for Railway Engineering and the Prestressed Concrete Institute's Manual MNL 116 for Quality Control.
- Dimensional tolerances governing the manufacture of precast members shall conform to Division VI, Section 6.4 of the Precast Concrete Institute's Manual MNL 116 for Quality Control for the appropriate shape. Tolerance for location of lifting devices shall be +/- 1/2".
- The Fabricator shall be responsible for loading and properly securing all precast concrete members for shipment. All concrete components shall be made available for inspection by the Railroad at the Fabricator's plant prior to shipment, at the Railroad's discretion.

REINFORCING STEEL

- Reinforcing steel shall be deformed, new billet bars per ASTM A615 specifications and meet Grade 60 requirements.
- Fabrication of reinforcing steel shall be per Chapter 7 of the CRSI Manual of Standard Practice. Dimensions of bending details are out to out of bar.
- Reinforcing steel shall be blocked and tied to proper location and securely wired against displacement. Tie wires shall be installed at every other bar intersection so that at least 50% of the intersections are tied. Tack welding of reinforcing is prohibited. Minimum concrete cover on reinforcing not otherwise noted shall meet the AREMA Manual for Railway Engineering requirements.

STRUCTURAL STEEL

- Steel plates shall conform to ASTM A36 or A709-Grade 36 specifications.
- Studs shall be C1015, C1017 or C1020 cold drawn steel which conforms to ASTM A108 specifications.
- Deformed bar anchors shall conform to ASTM A706 specifications. Welding of deformed bar anchors shall conform to AWS D1.4. Welding shall be performed by certified welder.
- Where galvanizing is not indicated, material shall be plain.

LIFTING ANCHORS

- Swift lift anchors shall be Dayton Richmond P-52 anchors or approved alternate with a safe working load sufficient for the weight of the precast element including form removal. The safe working load shall provide a minimum safety factor of 4.

SUMMARY OF ESTIMATED QUANTITIES

DESCRIPTION	ESTIMATING UNIT	QUANTITY
EXPANSION BEARING EB-1 (PER NOTES, DWG. NO. 2 AND MATERIAL SCHEDULE/DETAILS, DWG. NO. 12)	EA.	2
FIXED BEARING FB-1 (PER NOTES, DWG. NO. 2 AND MATERIAL SCHEDULE/DETAILS, DWG. NO. 12)	EA.	2
EXPANSION BEARING EB-2 (PER NOTES, DWG. NO. 2 AND MATERIAL SCHEDULE/DETAILS, DWG. NO. 12)	EA.	2
FIXED BEARING FB-2 (PER NOTES, DWG. NO. 2 AND MATERIAL SCHEDULE/DETAILS, DWG. NO. 12)	EA.	2
BEARING PAD BP-1 (PER NOTES, DWG. NO. 2 AND DETAILS, DWG. NO. 13)	EA.	4
BEARING PAD BP-2 (PER NOTES, DWG. NO. 2 AND DETAILS, DWG. NO. 13)	EA.	4
SHIM PACK SP-1 (PER NOTES, DWG. NO. 2 AND SCHEDULE/DETAILS, DWG. NO. 13)	EA.	1
SHIM PACK SP-2 (PER NOTES, DWG. NO. 2 AND SCHEDULE/DETAILS, DWG. NO. 13)	EA.	1
BEVELED SHIM PACK BSP-2 (PER NOTES, DWG. NO. 2 AND SCHEDULE/DETAILS, DWG. NO. 13)	EA.	1
PRECAST CONCRETE PEDESTAL PCP-1 (PER NOTES, DWG. NO. 2 AND DETAILS, DWG. NO. 14)	EA.	2
PRECAST CONCRETE PEDESTAL PCP-2 (PER NOTES, DWG. NO. 2 AND DETAILS, DWG. NO. 14)	EA.	2
7/8" DIA. x 2" ASTM F3125 GR. A325 TYPE I BOLT w/ 1 HVY HEX NUT (A563, LUBRICATED) AND ASTM F436 FLAT CIRCULAR WASHER	EA.	96
7/8" DIA. x 2 1/4" ASTM F3125 GR. A325 TYPE I BOLT w/ 1 HVY HEX NUT (A563, LUBRICATED) AND ASTM F436 FLAT CIRCULAR WASHER	EA.	168
7/8" DIA. x 2 1/2" ASTM F3125 GR. A325 TYPE I BOLT w/ 1 HVY HEX NUT (A563, LUBRICATED) AND ASTM F436 FLAT CIRCULAR WASHER	EA.	204
7/8" DIA. x 3/4" ASTM F3125 GR. A325 TYPE I BOLT w/ 1 HVY HEX NUT (A563, LUBRICATED) AND ASTM F436 FLAT CIRCULAR WASHER	EA.	16
7/8" DIA. x 3/8" ASTM F3125 GR. A325 TYPE I BOLT w/ 1 HVY HEX NUT (A563, LUBRICATED) AND ASTM F436 FLAT CIRCULAR WASHER	EA.	16
1" DIA. x 2 7/8" ASTM F3125 GR. A325 TYPE 3 LONG HEX HEAD TAP BOLT	EA.	32
1 1/4" DIA. x 2'-3" LONG THREADED ROD (ASTM F1554 GR. 105) w/ 1 HVY. HEX ELASTIC LOCKNUT AND ASTM A436 FLAT CIRCULAR WASHER (GALVANIZED)	EA.	16
1 1/2" DIA. x 4'-4" LONG THREADED ROD (ASTM F1554 GR. 105) w/ 1 HVY. HEX ELASTIC LOCKNUT AND ASTM A436 FLAT CIRCULAR WASHER (GALVANIZED)	EA.	4
1 1/2" DIA. x 4'-6" LONG THREADED ROD (ASTM F1554 GR. 105) w/ 1 HVY. HEX ELASTIC LOCKNUT AND ASTM A436 FLAT CIRCULAR WASHER (GALVANIZED)	EA.	4
1 1/2" DIA. x 4'-10" LONG THREADED ROD (ASTM F1554 GR. 105) w/ 1 HVY. HEX ELASTIC LOCKNUT AND ASTM A436 FLAT CIRCULAR WASHER (GALVANIZED)	EA.	4
1 1/2" DIA. x 5'-0" LONG THREADED ROD (ASTM F1554 GR. 105) w/ 1 HVY. HEX ELASTIC LOCKNUT AND ASTM A436 FLAT CIRCULAR WASHER (GALVANIZED)	EA.	4
SIKAGROUT 428 FS OR APPROVED ALTERNATIVE	LOT	1
REDHEAD C6+ EPOXY ADHESIVE OR APPROVED ALTERNATE	LOT	1



ISSUED FOR CONSTRUCTION



ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

PROJECT: **BR. 211.0 SPANS #1 AND #2 BEARING REPLACEMENT**

TITLE: **GENERAL NOTES AND QUANTITIES**

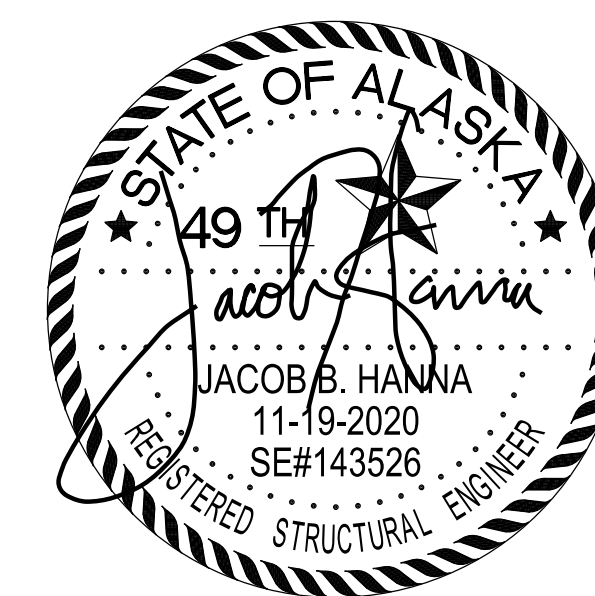
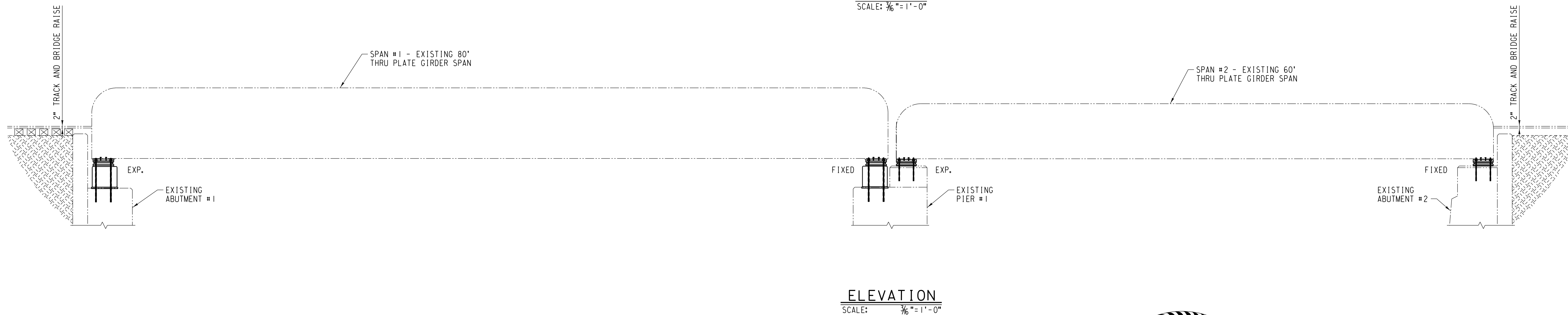
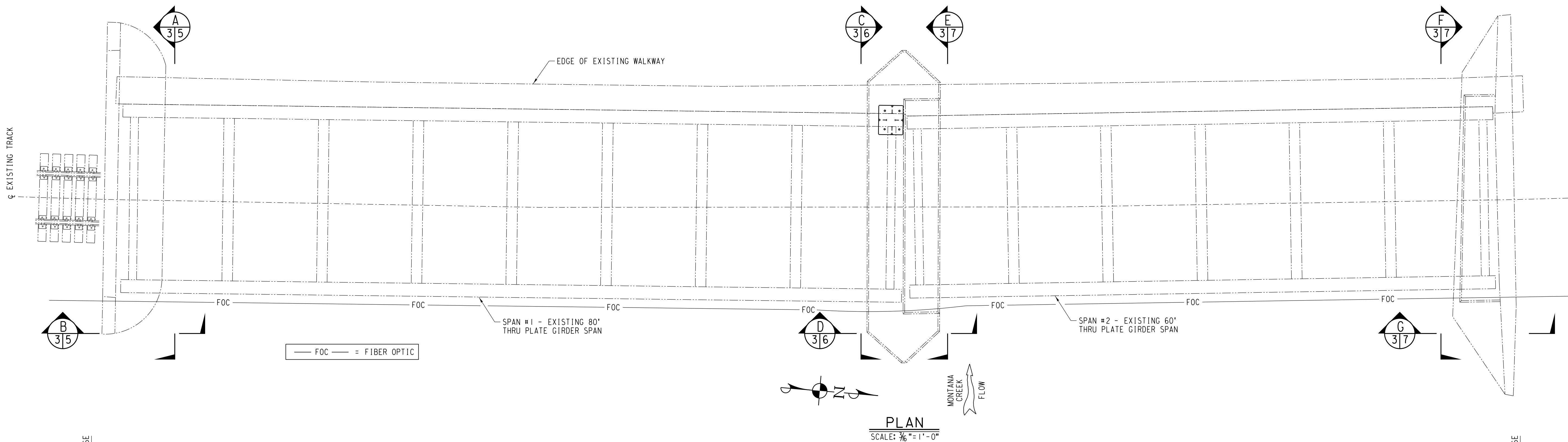
DESIGNED BY: <u>BJB</u>	SCALE: AS NOTED	2 OF 14
DRAWN BY: <u>BJB</u>	DATE: 11/19/20	
CHECKED BY: <u>BWB</u>		
APPROVED BY: <u>BWB</u>		

WILSON & COMPANY

REV.	DATE	BY	REVISION

TO SEWARD

TO FAIRBANKS



ISSUED FOR CONSTRUCTION

ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

PROJECT: BR. 211.0 SPANS #1 AND #2 BEARING REPLACEMENT

TITLE: BRIDGE PLAN AND ELEVATION

DESIGNED BY: BJB
DRAWN BY: BJB
CHECKED BY: BWB
APPROVED BY: BWB

SCALE: AS NOTED
DATE: 11/19/20

3 OF 14

WILSON & COMPANY

REV.	DATE	BY	REVISION

PROPOSED CONSTRUCTION SEQUENCE (SPAN #1 & #2)

PHASE 1:

1. REMOVE EXISTING GUSSET PLATES AND LATERAL BRACING RIVETS AT END BAY AND REPLACE WITH HIGH STRENGTH BOLTS. (RIVETS SHALL BE REPLACED ONE AT A TIME). CONSTRUCTOR TO DETERMINE WHICH RIVETS ARE REQUIRED TO REMOVE GUSSETS AND LATERAL BRACING IN ORDER TO PROVIDE CLEARANCE TO INSTALL PROPOSED ANCHOR RODS.

PHASE 2:

1. PREPARE EXISTING BRIDGE SEAT UNDER FLOORBEAM FOR JACKING.
2. SHUT DOWN BRIDGE TO RAILROAD TRAFFIC.
3. REMOVE EXISTING GUSSETS AND LATERAL BRACING IN END BAY.
4. INSTALL BRIDGE JACKS AND JACK BOTH SIDES OF THRU PLATE GIRDER SPAN.
5. REMOVE EXISTING BEARINGS AND EXISTING CONCRETE PEDESTAL (PEDESTAL FOR SPAN #1 ONLY).
6. INSTALL GROUT PAD FOR SPAN #1, THIN LAYER FOR SPAN #2 IF REQUIRED.

PHASE 3:

1. INSTALL NEW BEARINGS AND PEDESTALS (PEDESTALS FOR SPAN #1 ONLY) FOR THRU PLATE GIRDER SPAN.
2. LOWER THRU PLATE GIRDER SPAN.
3. REMOVE BRIDGE JACKS.
4. INSTALL EXISTING GUSSET PLATES AND LATERAL BRACING WITH PERMANENT HIGH STRENGTH BOLTS IN END BAY.
5. ALLOW RAILROAD TRAFFIC BACK ON THE BRIDGE.

JACKING NOTES

1. THE CONTRACTOR SHALL SUBMIT DETAILED JACKING PLANS AND CALCULATIONS. THE JACKING PLAN SHALL TAKE INTO ACCOUNT THE SUPERELEVATION OF THE SPAN TO ENSURE ADEQUATE STABILITY. PLANS AND CALCULATIONS SHALL BE SEALED BY A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF ALASKA.
2. THE EXISTING STEEL THRU PLATE GIRDER SPANS SHALL BE JACKED AT THE CENTERLINE OF THE END FLOOR BEAM AND AT THE CENTERLINE OF THE OUTSIDE STRINGERS.
3. THE BRIDGE JACK SHALL HAVE A MINIMUM SAFE WORKING LOAD OF 75 KIPS. THE MINIMUM CAPACITY REQUIRED PROVIDES A SAFETY FACTOR OF 1.5.
4. THE MINIMUM JACKING AREA ON CONCRETE SURFACES SHALL BE 144 SQ IN. PLATE THICKNESS SHALL BE OF SUFFICIENT THICKNESS TO TRANSFER THE LOAD TO THE ENTIRE BEARING FOOTPRINT.
5. ALL BRIDGE JACKING COMPONENTS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE AMERICAN RAILWAY ENGINEERING AND MAINTENANCE-OF-WAY ASSOCIATION (AREMA) MANUAL FOR RAILWAY ENGINEERING. THE UNFACTORED DESIGN JACKING LOAD REACTIONS ARE AS FOLLOWS:

DEAD LOAD REACTION = 68 KIPS
WIND LOAD REACTION = 7 KIPS

6. EXISTING RAIL SHALL BE CUT OR UNCOUPLED AS REQUIRED TO FACILITATE JACKING.

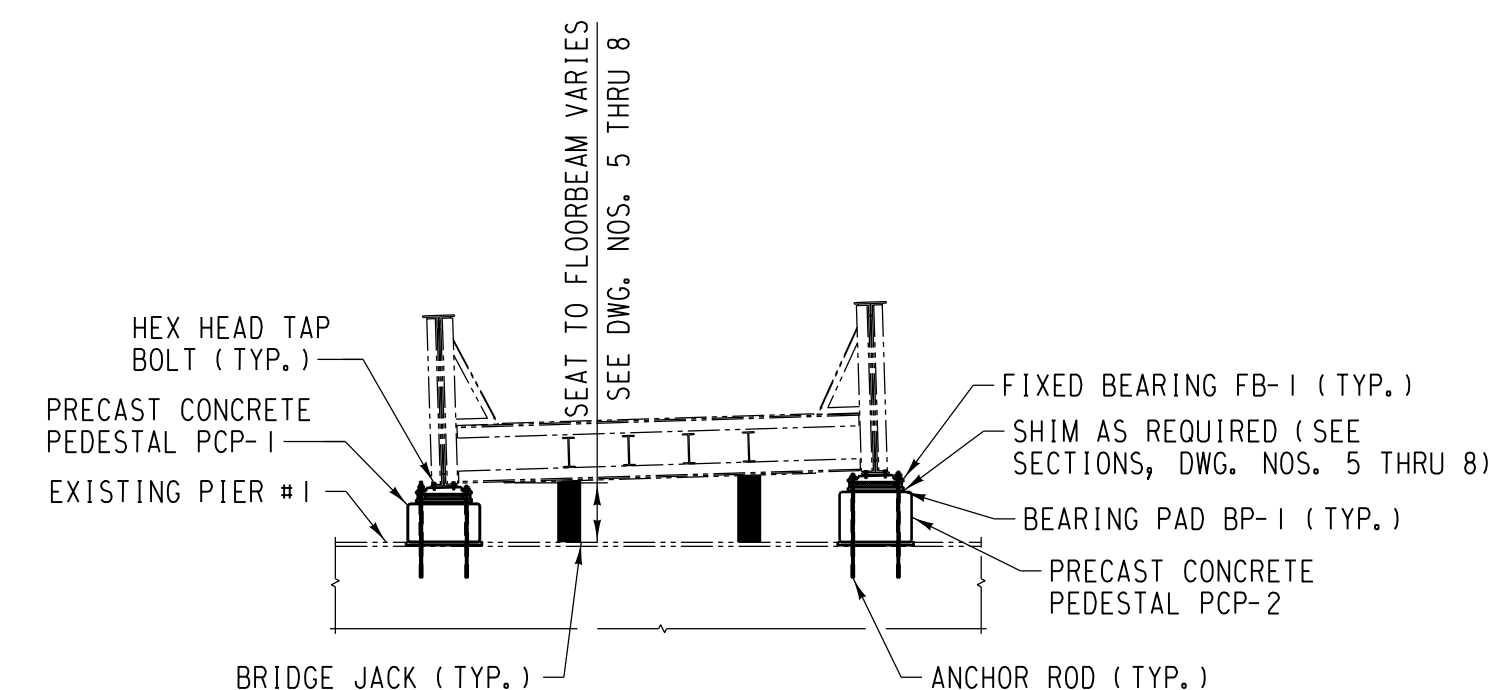
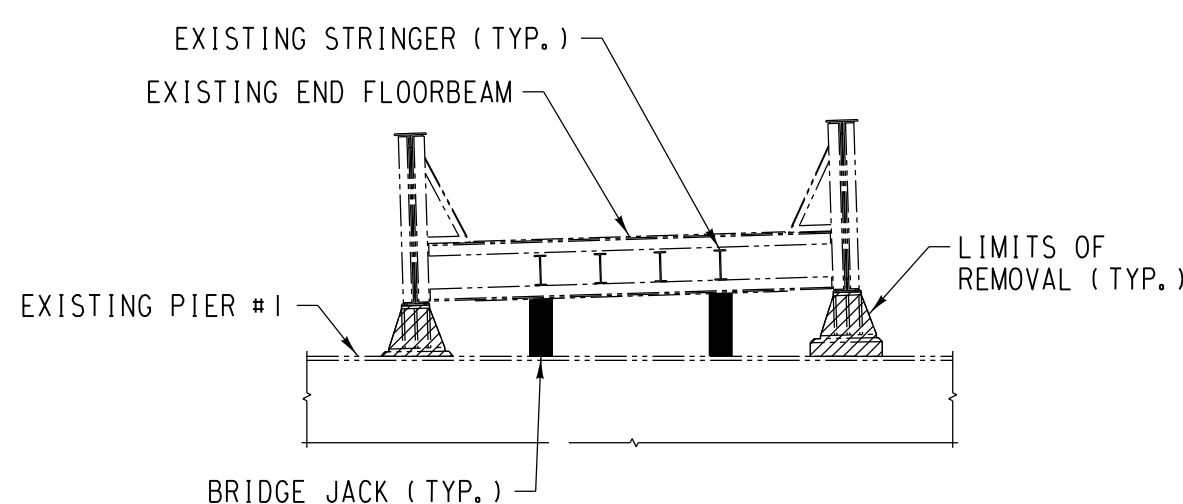
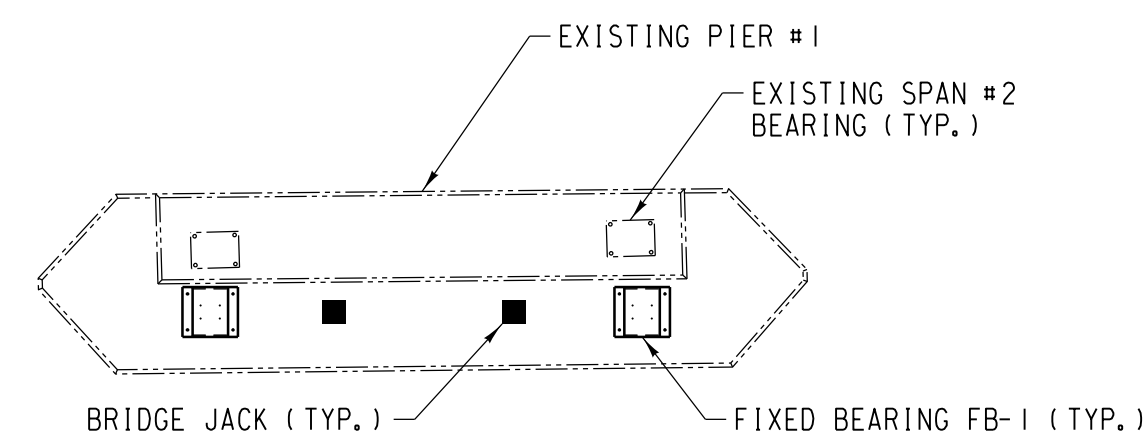
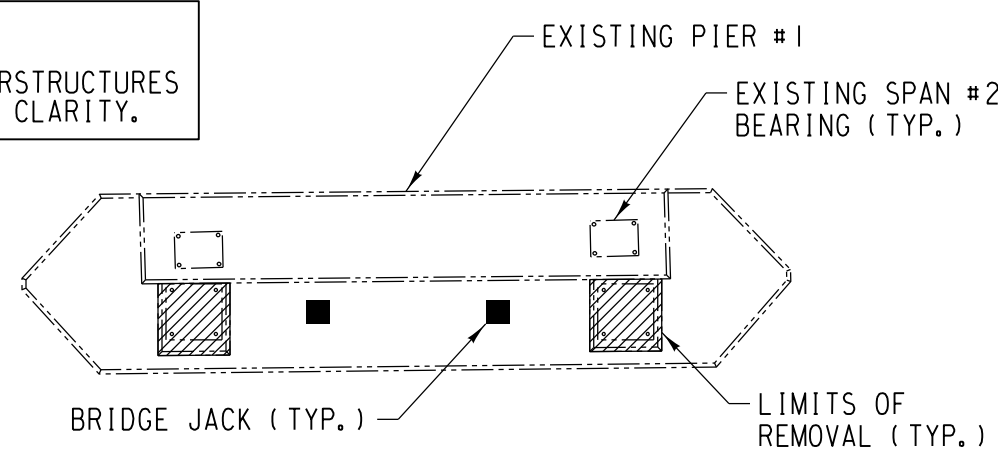
EST. WT. OF EXISTING SPAN

80' THRU PLATE = 192,000 LB. (96.0 TON)

60' THRU PLATE = 144,000 LB. (72.0 TON)

ESTIMATED WEIGHT INCLUDES TIES AND RAIL.

NOTE:
EXISTING SUPERSTRUCTURES NOT SHOWN FOR CLARITY.



CONSTRUCTION SEQUENCE - PHASE 2

SCALE: 1/8" = 1'-0"

(SPAN #1 AT PIER #1 SHOWN, OTHER LOCATIONS SIMILAR)

CONSTRUCTION SEQUENCE - PHASE 3

SCALE: 1/8" = 1'-0"

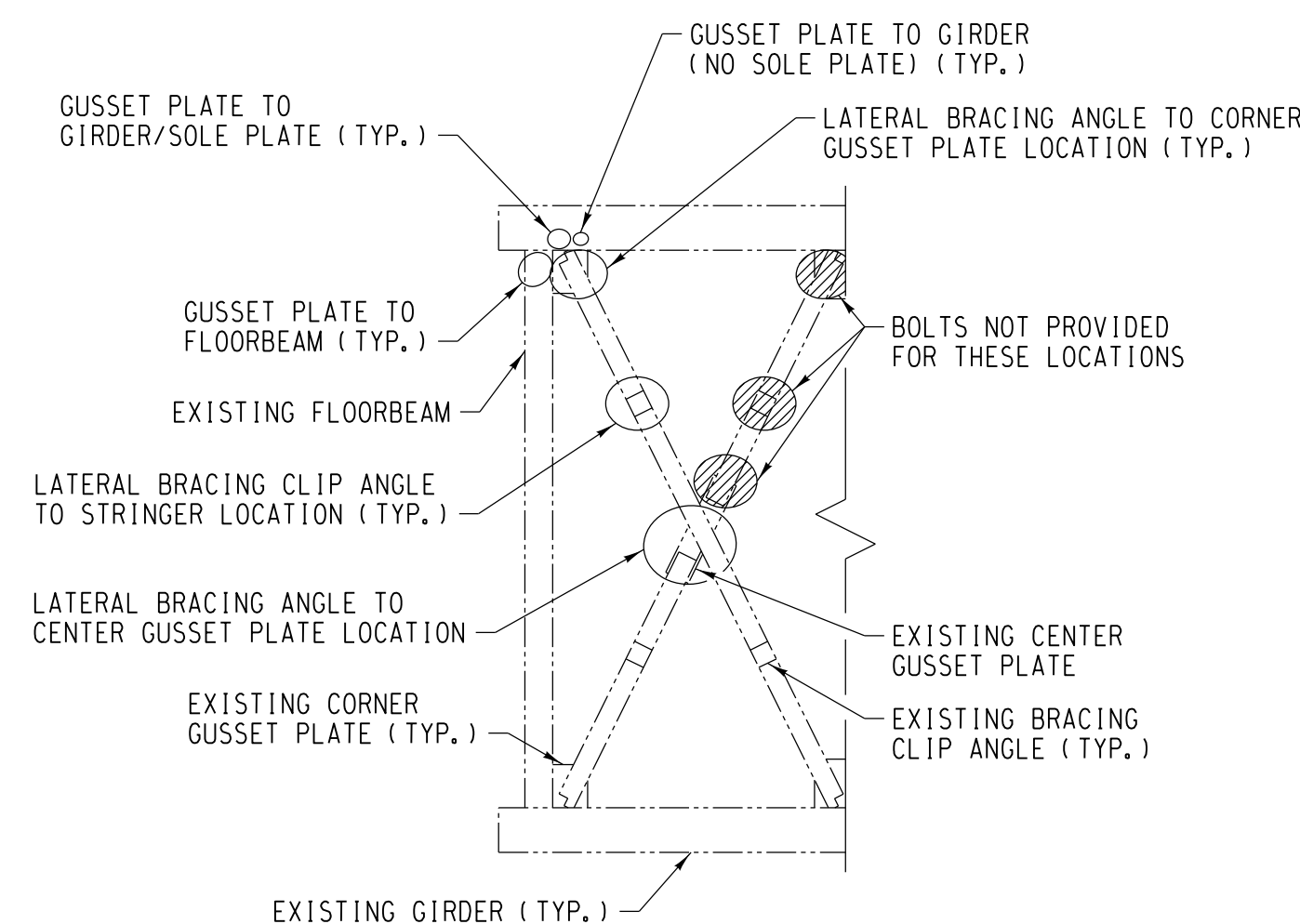
(SPAN #1 AT PIER #1 SHOWN, OTHER LOCATIONS SIMILAR)

SPAN #1 LATERAL BRACING BOLT LENGTHS		
BOLT LOCATION DESCRIPTION	# OF BOLT LOCATIONS	BOLT LENGTH
LATERAL BRACING ANGLE TO CORNER GUSSET PLATE	48	2"
LATERAL BRACING CLIP ANGLE TO STRINGER	12	2 1/4"
LATERAL BRACING ANGLE TO CENTER GUSSET PLATE	24	2 1/4"
GUSSET PLATE TO FLOORBEAM	40	2 1/2"
GUSSET PLATE TO GIRDER/SOLE PLATE	8	3 1/4"
GUSSET PLATE TO GIRDER (NO SOLE PLATE)	4	2 1/2"

OF BOLT LOCATIONS INCLUDES BOTH ENDS OF SPAN

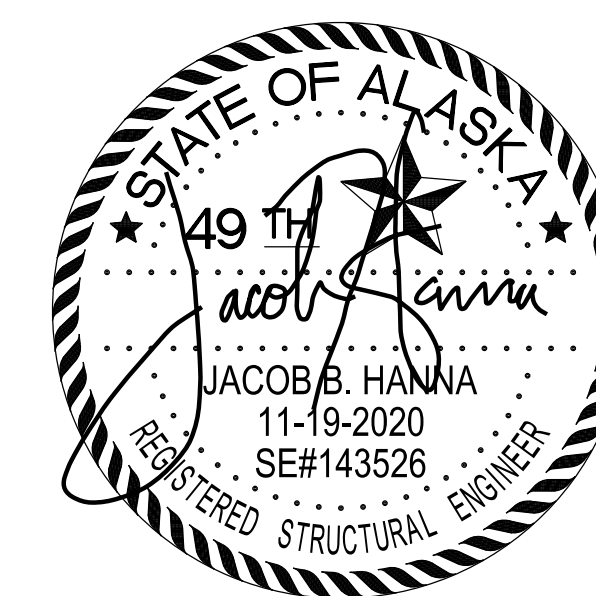
SPAN #2 LATERAL BRACING BOLT LENGTHS		
BOLT LOCATION DESCRIPTION	# OF BOLT LOCATIONS	BOLT LENGTH
LATERAL BRACING ANGLE TO CORNER GUSSET PLATE	36	2 1/4"
LATERAL BRACING CLIP ANGLE TO STRINGER	12	2 1/4"
LATERAL BRACING ANGLE TO CENTER GUSSET PLATE	18	2 1/2"
GUSSET PLATE TO FLOORBEAM	32	2 1/2"
GUSSET PLATE TO GIRDER/SOLE PLATE	8	3 1/2"
GUSSET PLATE TO GIRDER (NO SOLE PLATE)	8	2 1/2"

OF BOLT LOCATIONS INCLUDES BOTH ENDS OF SPAN



LATERAL BRACING BOLT LOCATION SCHEMATIC

SCALE: NONE



ISSUED FOR CONSTRUCTION

ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

PROJECT: **BR. 211.0 SPANS #1 AND #2 BEARING REPLACEMENT**

TITLE: **PHASING DETAILS AND LATERAL BRACING BOLT LOCATION SCHEMATIC**

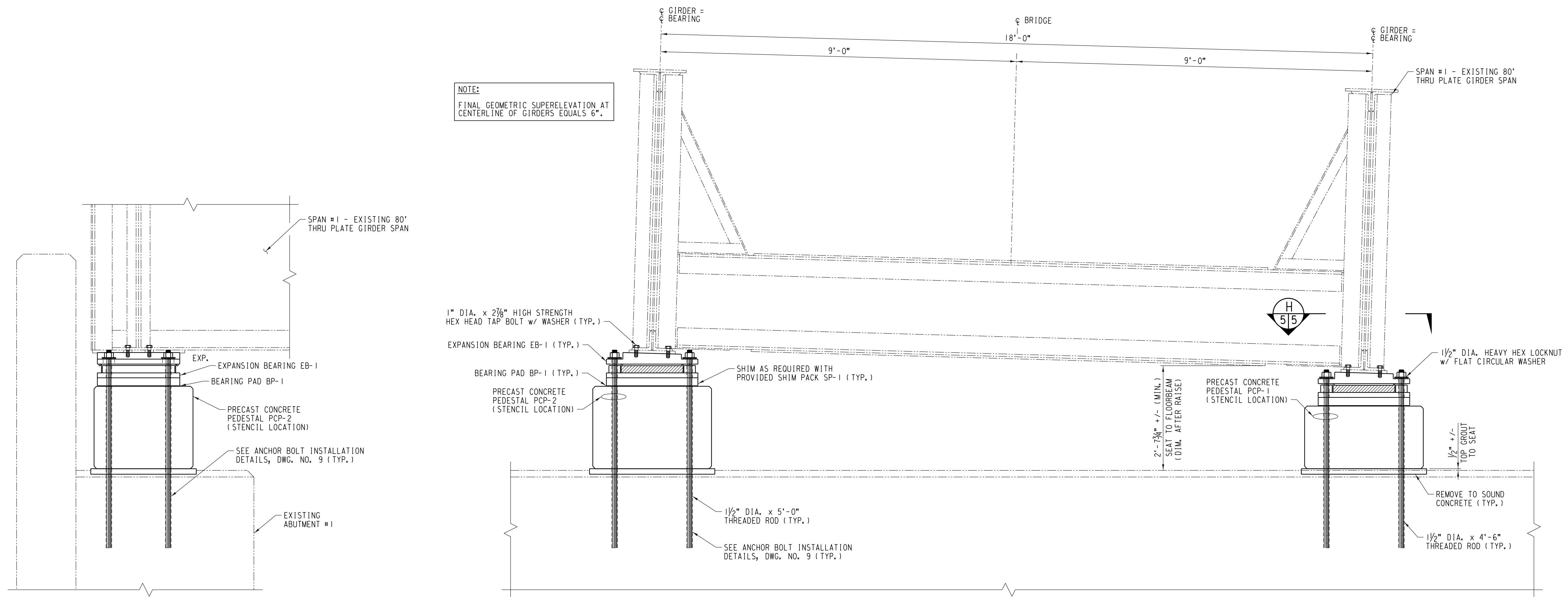
DESIGNED BY: BJB
DRAWN BY: BJB
CHECKED BY: BWB
APPROVED BY: BWB

SCALE: AS NOTED
DATE: 11/19/20

4 OF 14



REV.	DATE	BY	REVISION

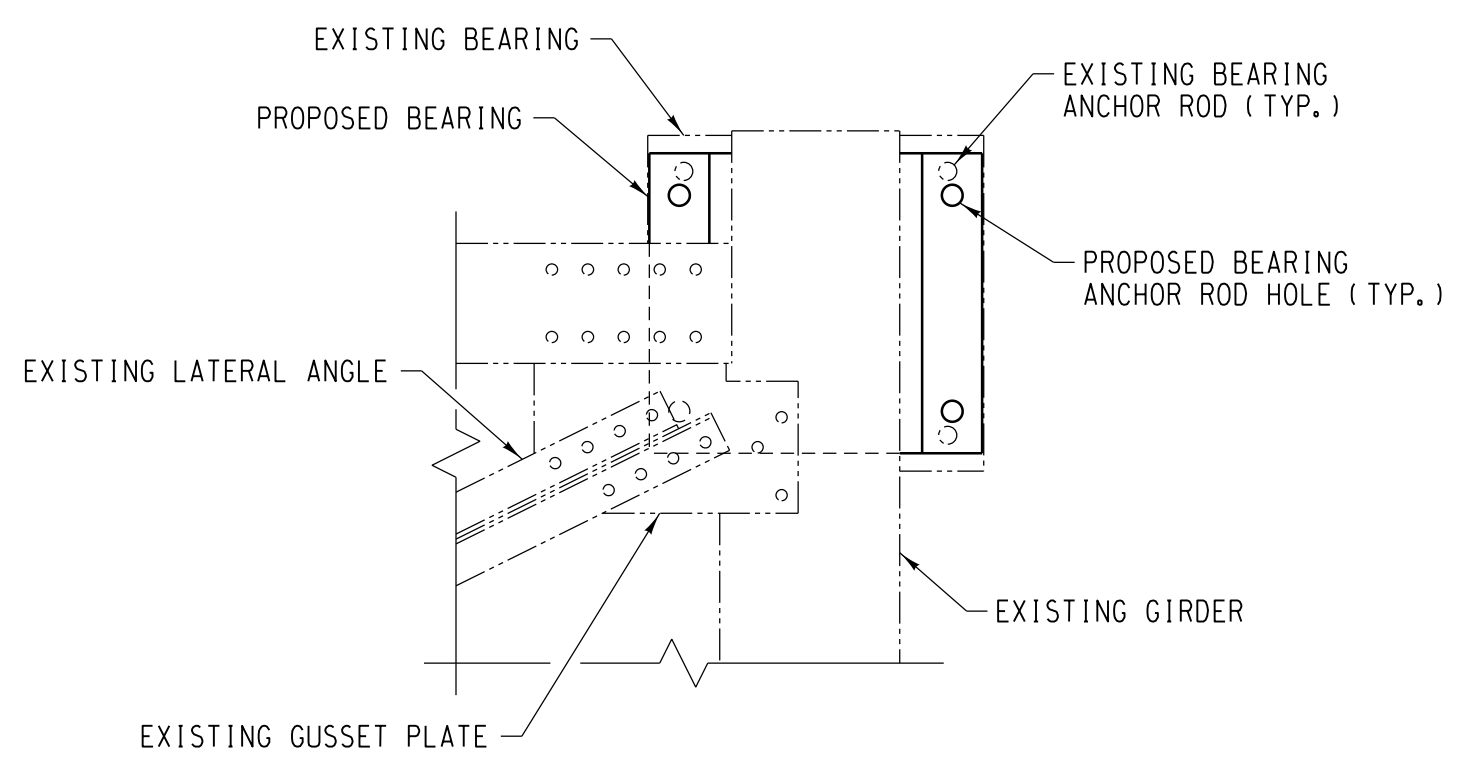


NOTE:
FINAL GEOMETRIC SUPERELEVATION AT CENTERLINE OF GIRDERS EQUALS 6%.

NOTE:
CLEAN BOTTOM OF EXISTING SOLE PLATES FREE OF DEBRIS, MOISTURE, AND DIRT PRIOR TO INSTALLING NEW BEARINGS.

SECTION B
SCALE: 3/4"=1'-0" 3/5

SECTION A
SCALE: 3/4"=1'-0" 3/5



SECTION H
SCALE: 3/4"=1'-0" 5/5
(TYPICAL FOR ALL SPAN #1 BEARINGS)



ISSUED FOR CONSTRUCTION

ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

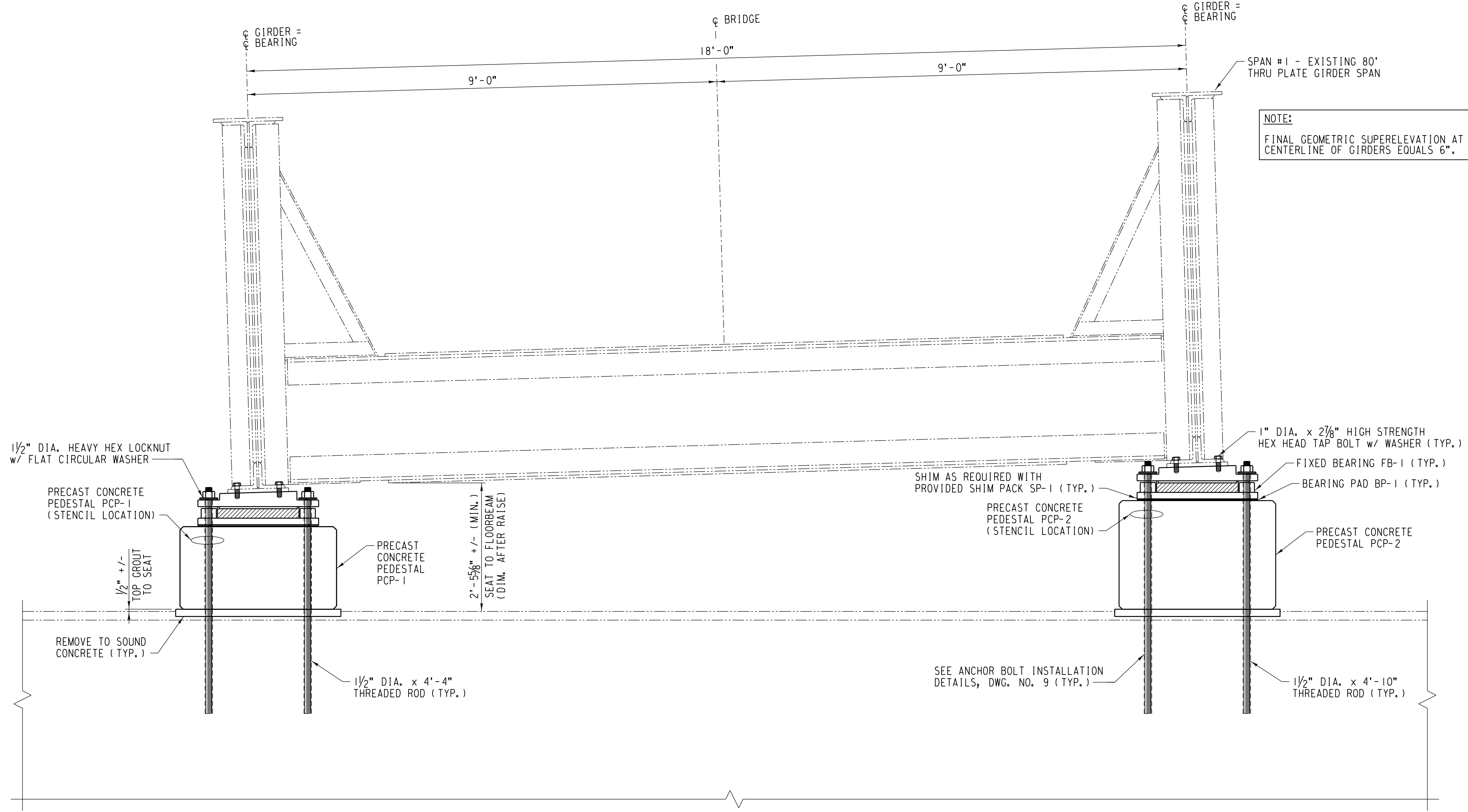
PROJECT: BR. 211.0 SPANS #1 AND #2 BEARING REPLACEMENT

TITLE: SPAN #1 EXPANSION BEARING SECTIONS

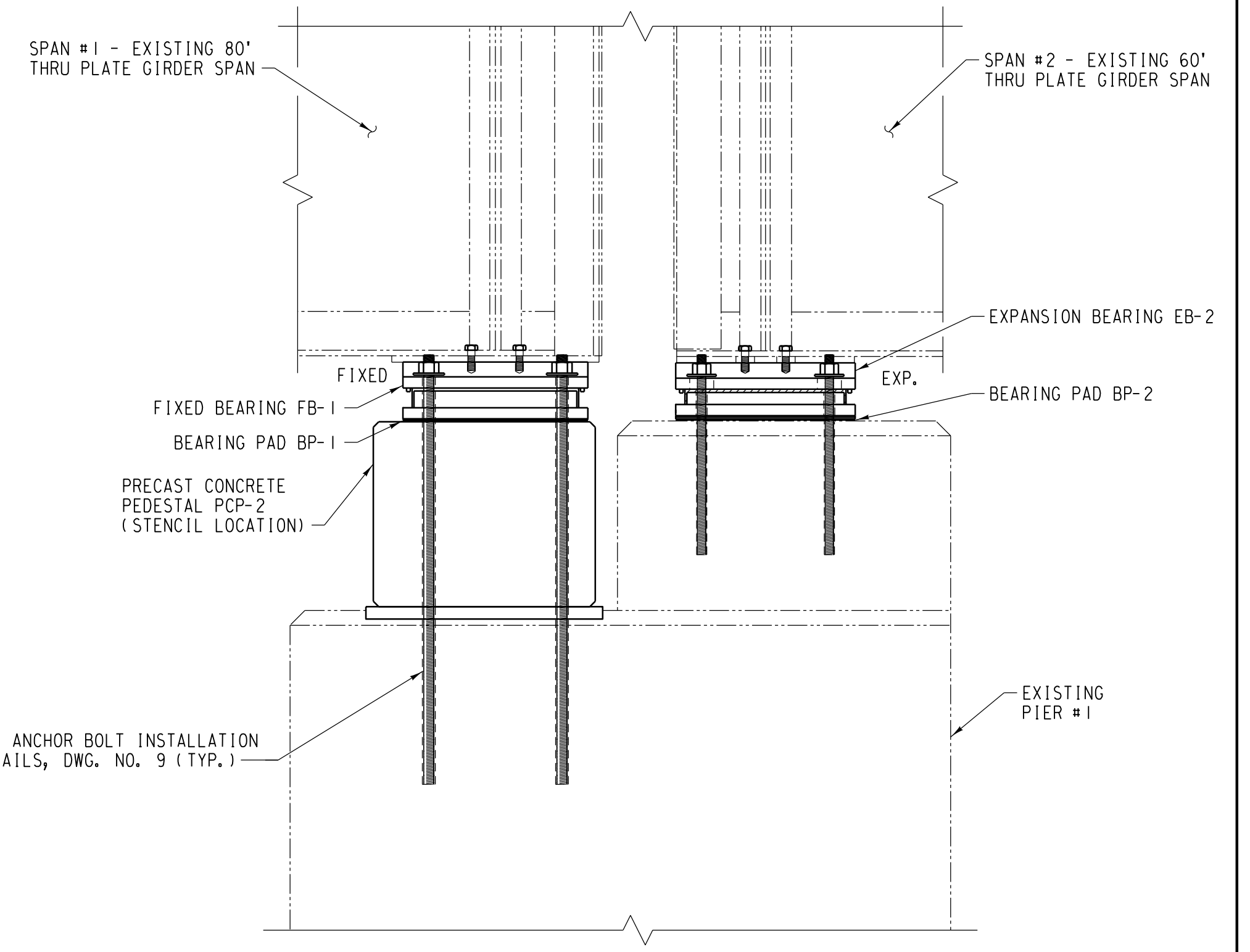
DESIGNED BY: BJB	SCALE: AS NOTED	5 OF 14
DRAWN BY: BJB	DATE: 11/19/20	
CHECKED BY: BWB		
APPROVED BY: BWB		



REV.	DATE	BY	REVISION



NOTE:
FINAL GEOMETRIC SUPERELEVATION AT CENTERLINE OF GIRDERS EQUALS 6".



NOTE:
CLEAN BOTTOM OF EXISTING SOLE PLATES FREE OF DEBRIS, MOISTURE, AND DIRT PRIOR TO INSTALLING NEW BEARINGS.

SECTION C
SCALE: 3/4"=1'-0" 3/6

SECTION D
SCALE: 3/4"=1'-0" 3/6



ISSUED FOR CONSTRUCTION

ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

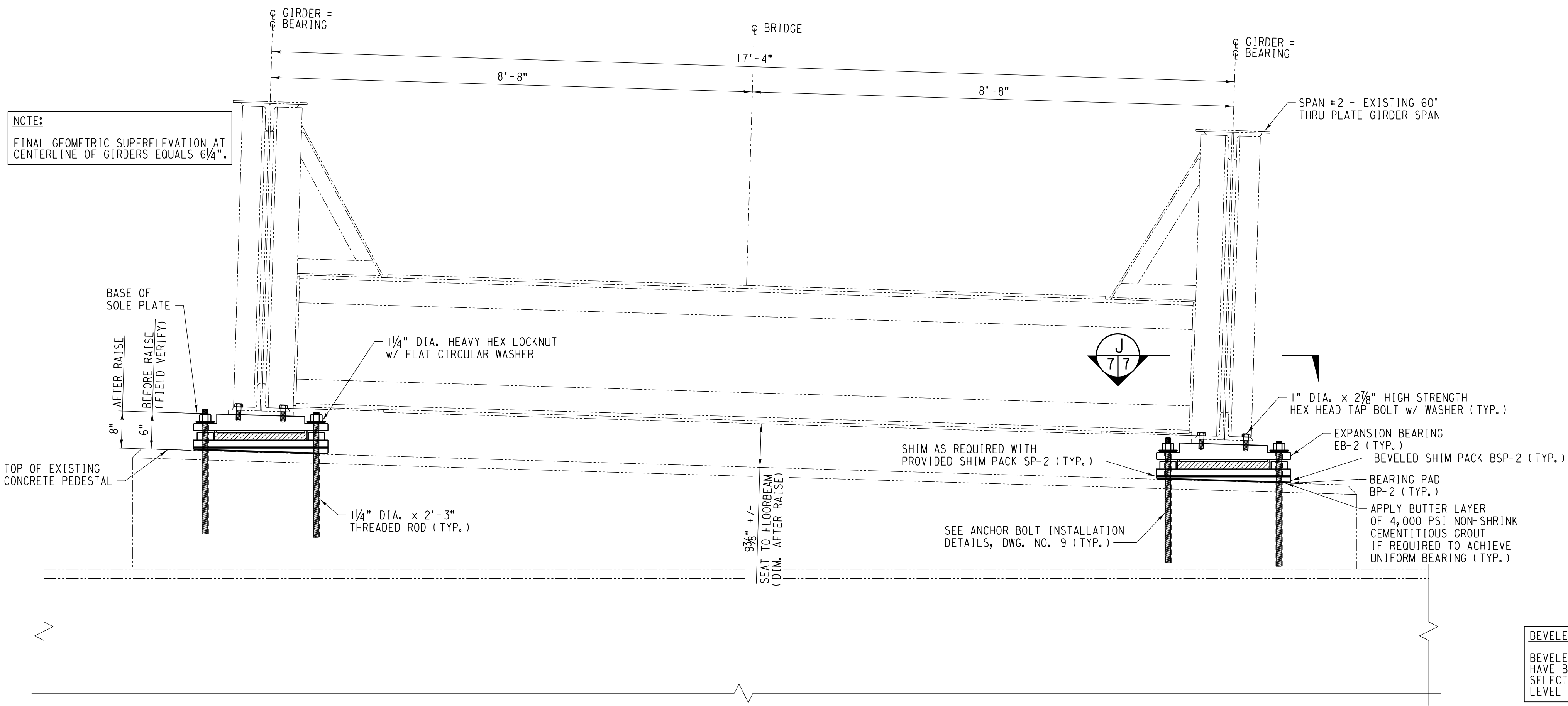
PROJECT: BR. 211.0 SPANS #1 AND #2 BEARING REPLACEMENT

TITLE: SPAN #1 FIXED BEARING SECTIONS

DESIGNED BY: BJB	SCALE: AS NOTED	6 OF 14
DRAWN BY: BJB	DATE: 11/19/20	
CHECKED BY: BWB		
APPROVED BY: BWB		



REV.	DATE	BY	REVISION



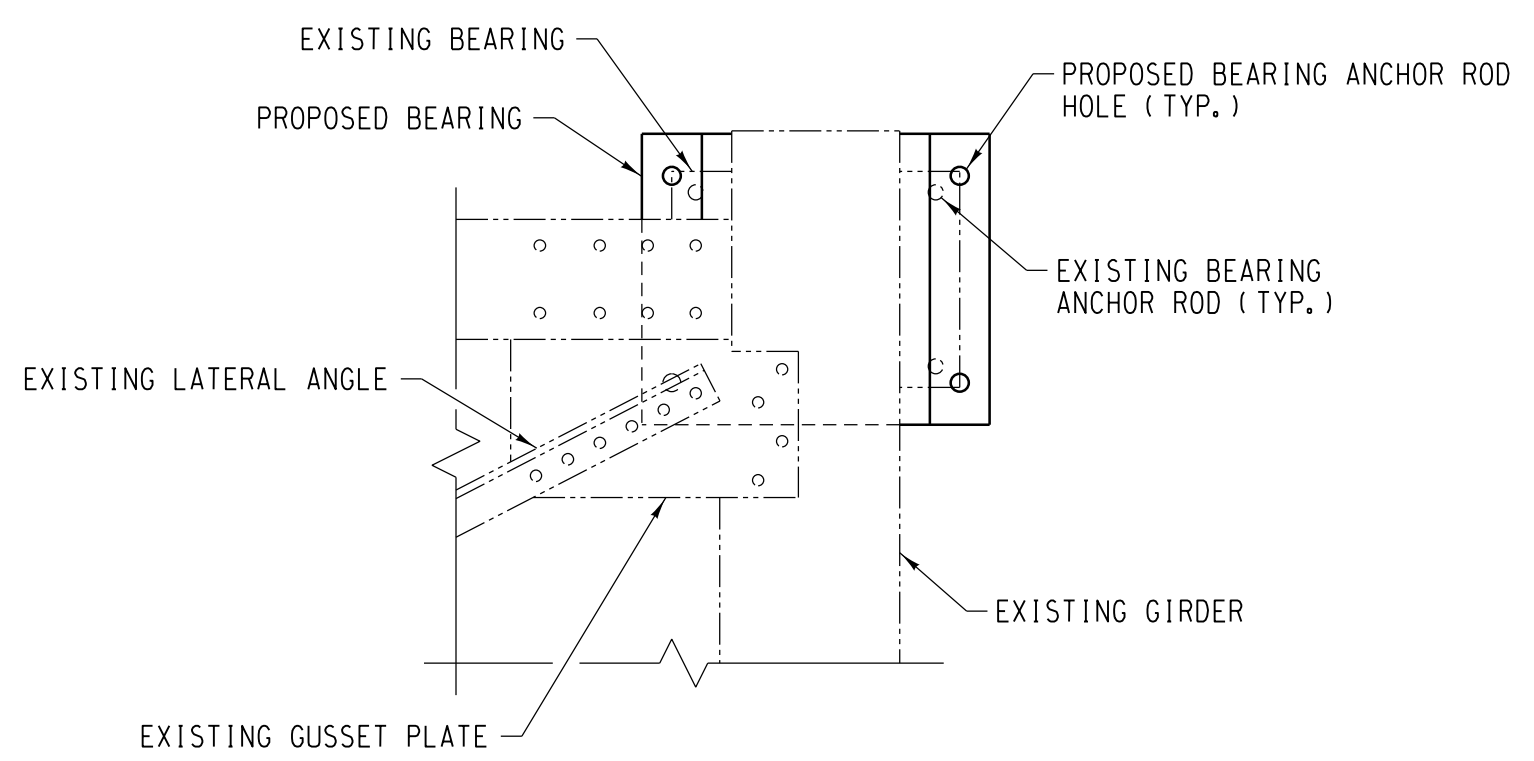
NOTE:
FINAL GEOMETRIC SUPERELEVATION AT CENTERLINE OF GIRDERS EQUALS 6 1/4".

BEVELED SHIM NOTE:
BEVELED SHIMS OF VARYING THICKNESS HAVE BEEN PROVIDED. CONTRACTOR SHALL SELECT PLATE THAT PROVIDES BEST LEVEL UPPER BEARING SURFACE.

NOTE:
CLEAN BOTTOM OF EXISTING SOLE PLATES FREE OF DEBRIS, MOISTURE, AND DIRT PRIOR TO INSTALLING NEW BEARINGS.

SECTION E
SCALE: 3/4" = 1'-0" 3/7

NOTE:
SEE SHEET 6 SECTION D FOR ELEVATION VIEW



SECTION J
SCALE: 3/4" = 1'-0" 7/7
(TYPICAL FOR ALL SPAN #2 BEARINGS)



ISSUED FOR CONSTRUCTION

ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

PROJECT: BR. 211.0 SPANS #1 AND #2 BEARING REPLACEMENT

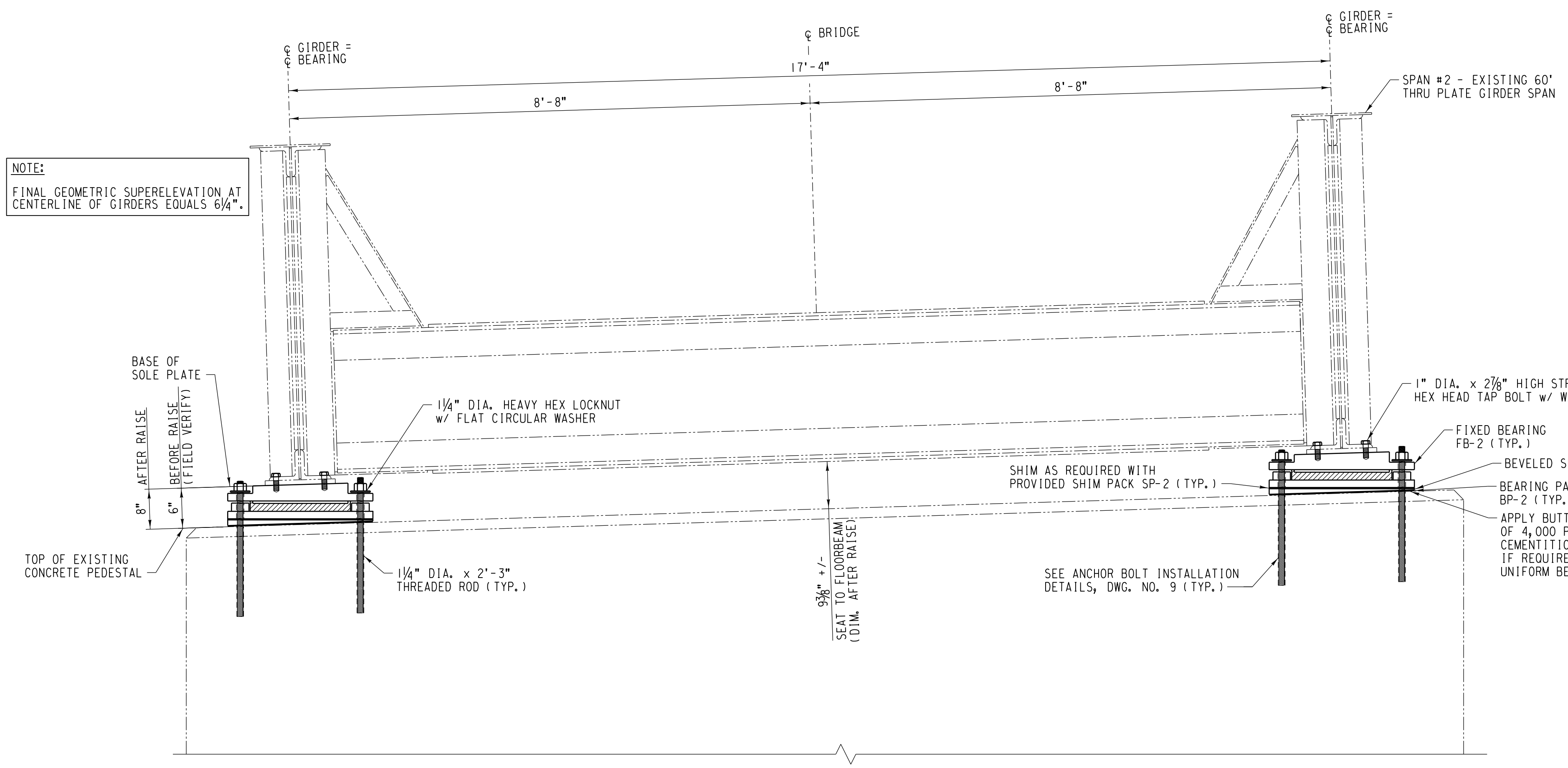
TITLE: SPAN #2 EXPANSION BEARING SECTIONS

DESIGNED BY: BJB	SCALE: AS NOTED	7 OF 14
DRAWN BY: BJB	DATE: 11/19/20	
CHECKED BY: BWB		
APPROVED BY: BWB		

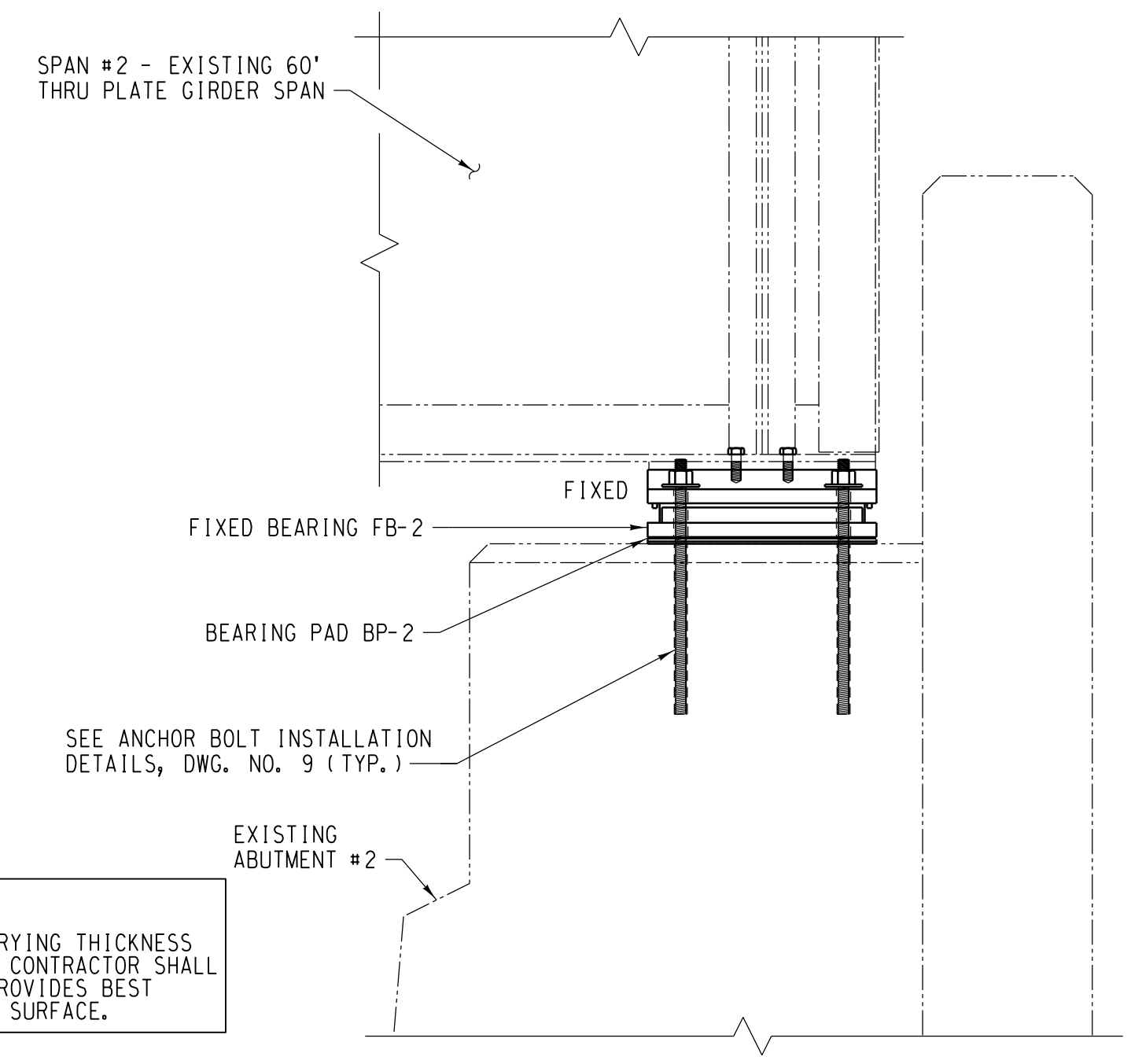


REV.	DATE	BY	REVISION

NOTE:
FINAL GEOMETRIC SUPERELEVATION AT CENTERLINE OF GIRDERS EQUALS 6 1/4".



SECTION F
SCALE: 3/4" = 1'-0" 3/8



SECTION G
SCALE: 3/4" = 1'-0" 3/8

BEVELED SHIM NOTE:
BEVELED SHIMS OF VARYING THICKNESS HAVE BEEN PROVIDED. CONTRACTOR SHALL SELECT PLATE THAT PROVIDES BEST LEVEL UPPER BEARING SURFACE.

NOTE:
CLEAN BOTTOM OF EXISTING SOLE PLATES FREE OF DEBRIS, MOISTURE, AND DIRT PRIOR TO INSTALLING NEW BEARINGS.



ISSUED FOR CONSTRUCTION

ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

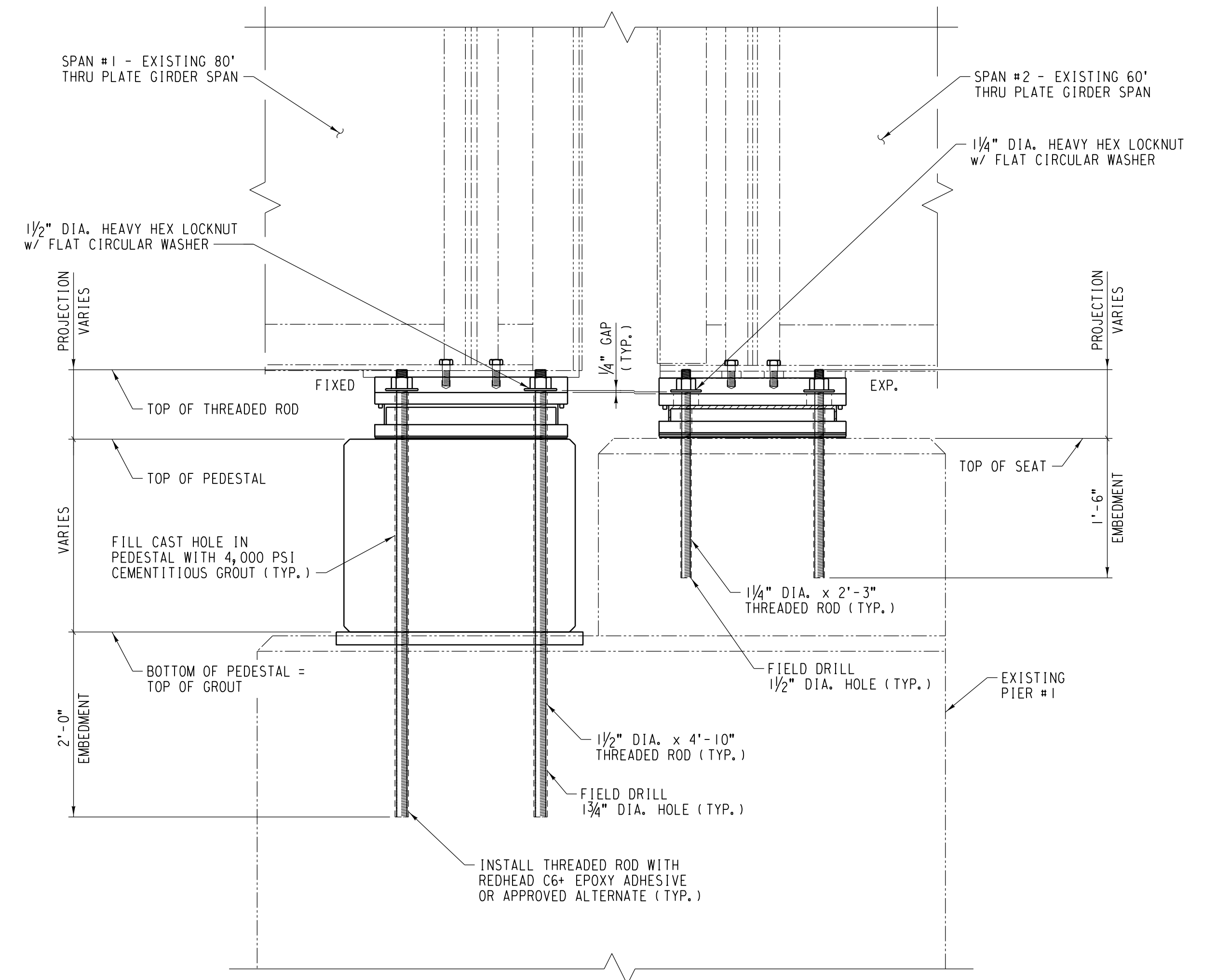
PROJECT: BR. 211.0 SPANS #1 AND #2 BEARING REPLACEMENT

TITLE: SPAN #2 FIXED BEARING SECTIONS

DESIGNED BY: BJB
DRAWN BY: BJB
CHECKED BY: BWB
APPROVED BY: BWB
SCALE: AS NOTED
DATE: 11/19/20
8 OF 14

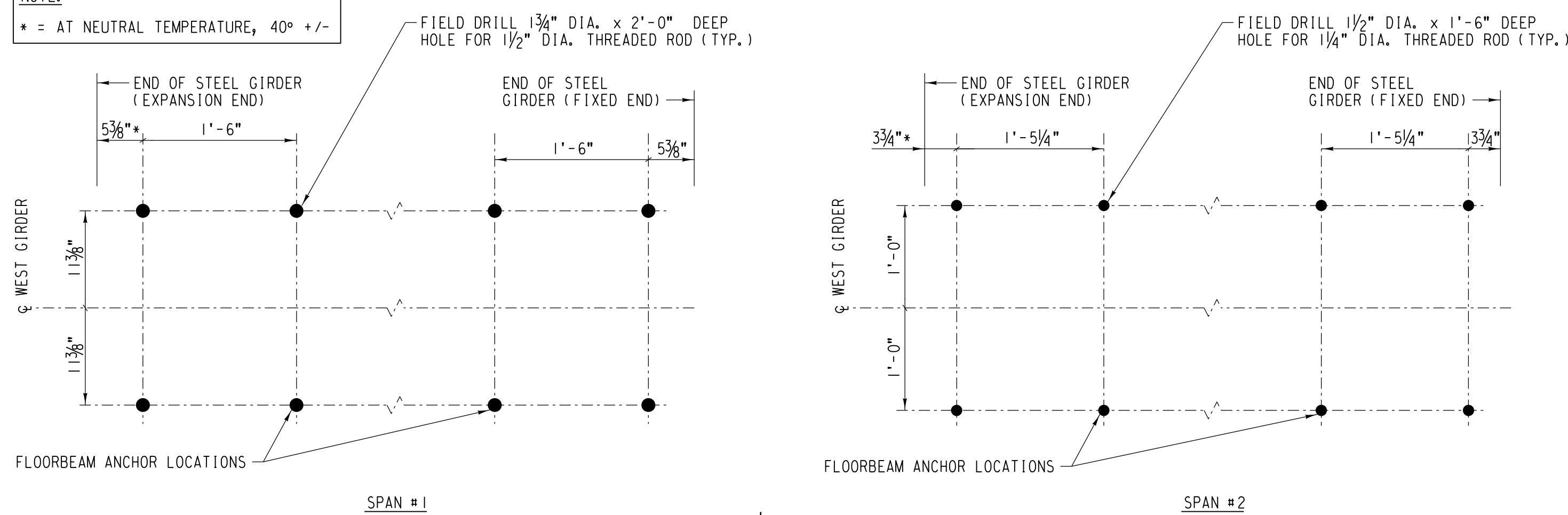


REV.	DATE	BY	REVISION

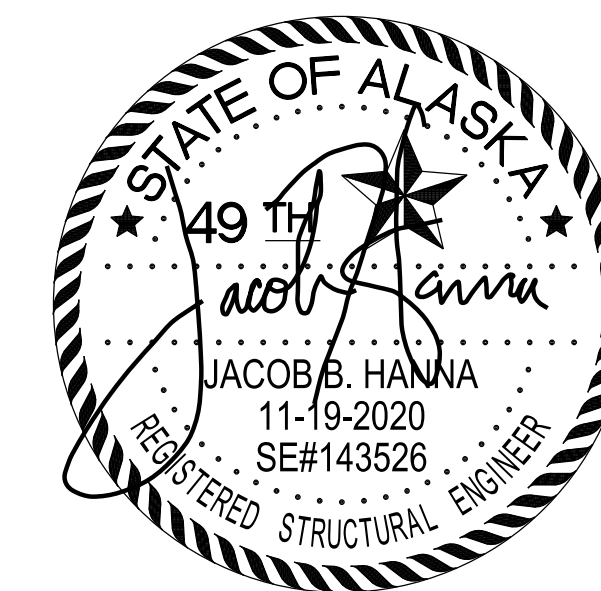


ANCHOR BOLT INSTALLATION DETAIL
 SCALE: 1"=1'-0"
 (EAST END OF EXISTING PIER #1 SHOWN, OTHER LOCATIONS SIMILAR)

NOTE:
 * = AT NEUTRAL TEMPERATURE, 40° +/-



ANCHOR ROD LOCATION PLAN
 SCALE: 1"=1'-0"
 (WEST GIRDER LINE SHOWN, EAST GIRDER LINE SIMILAR)



ISSUED FOR CONSTRUCTION

ALASKA RAILROAD CORPORATION
 ENGINEERING SERVICES
 P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

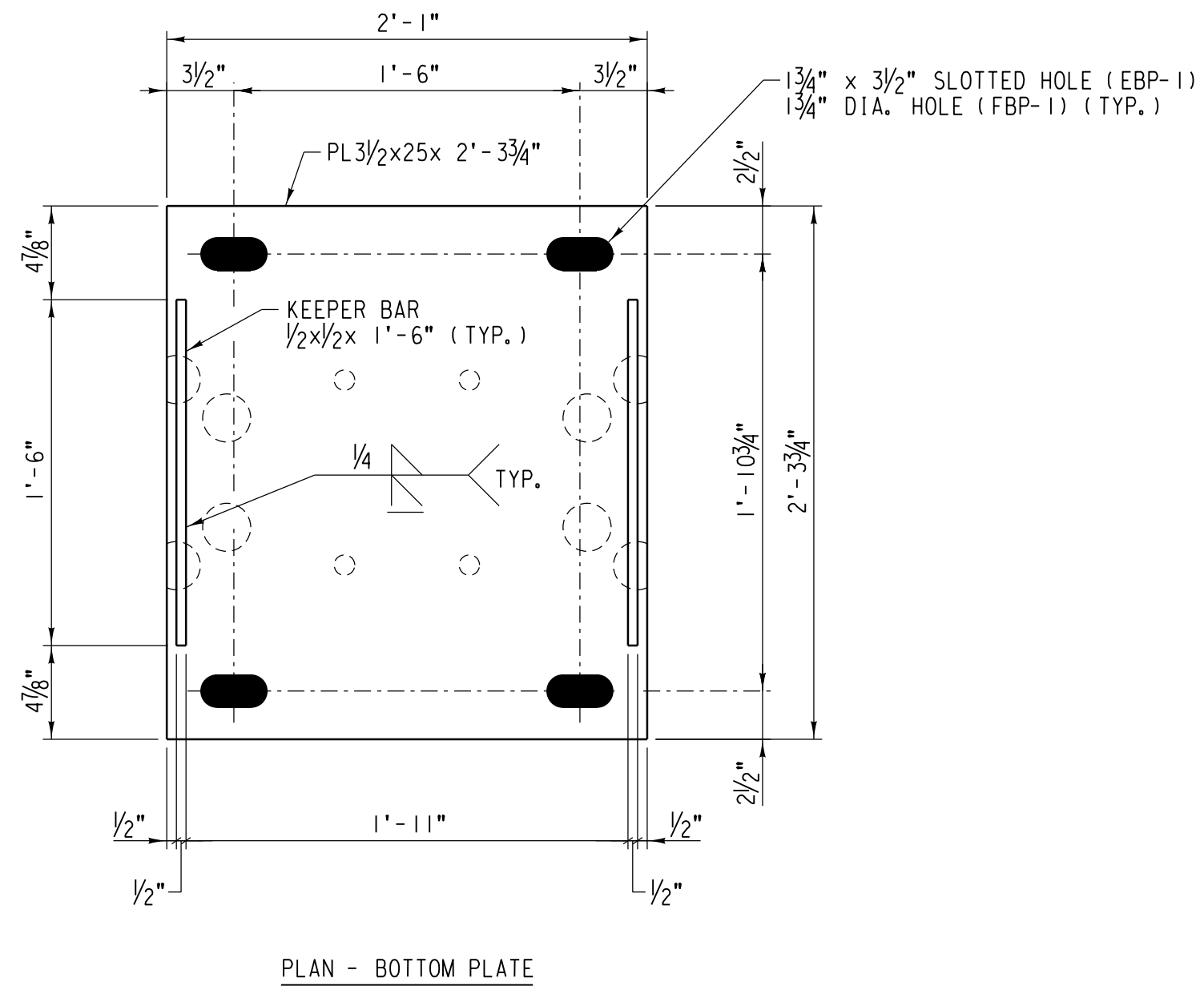
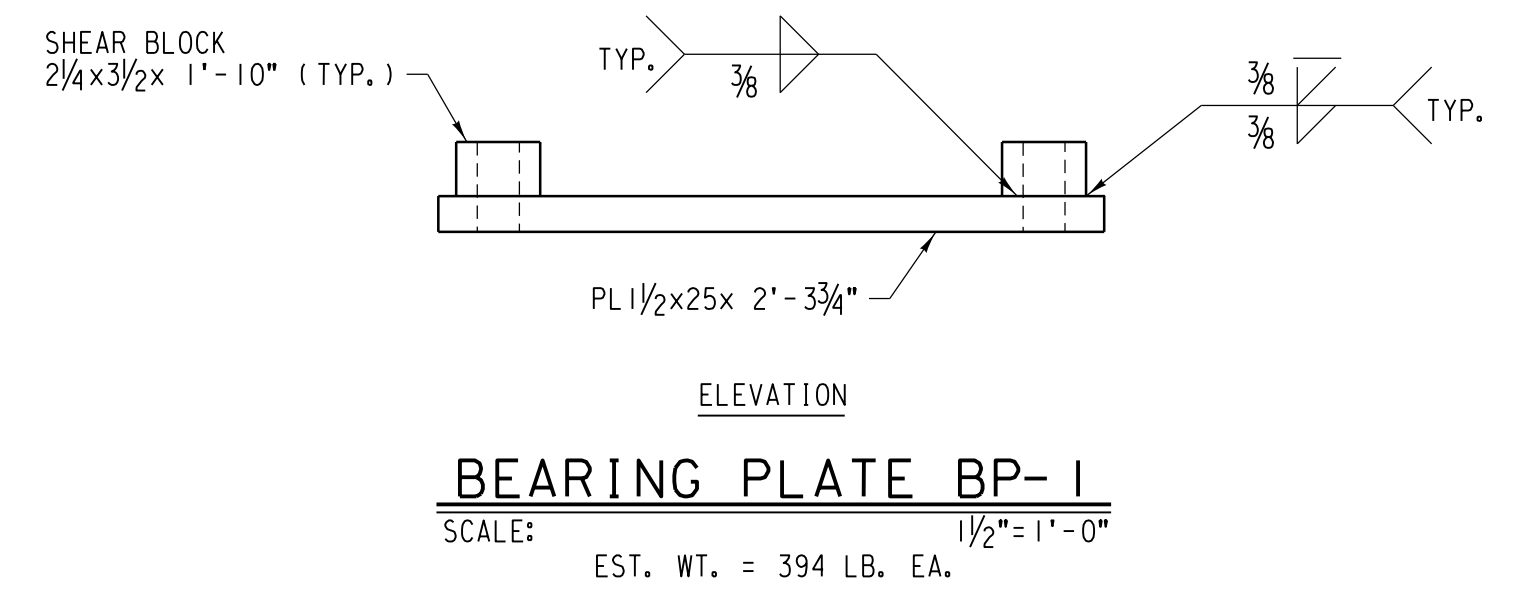
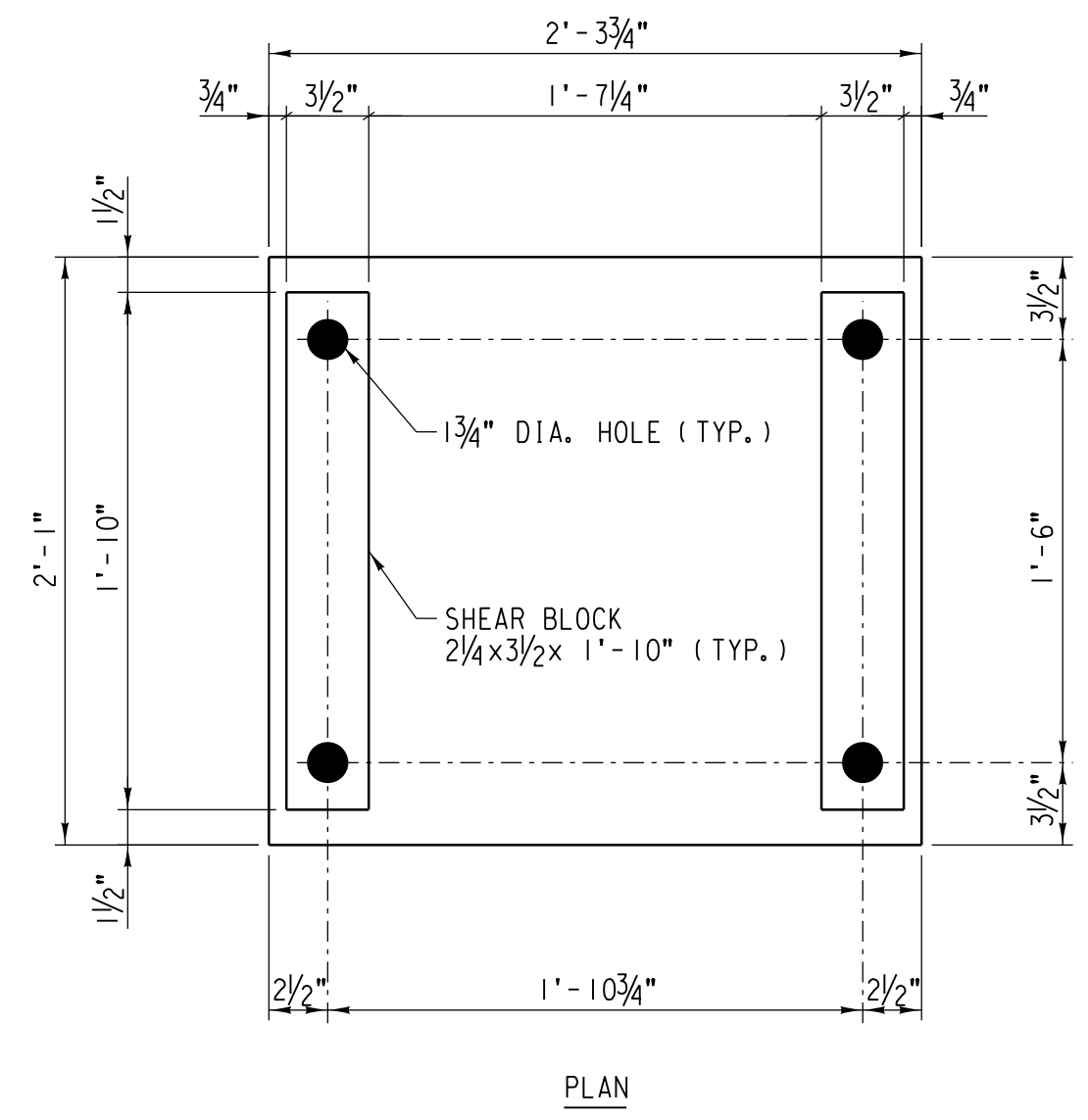
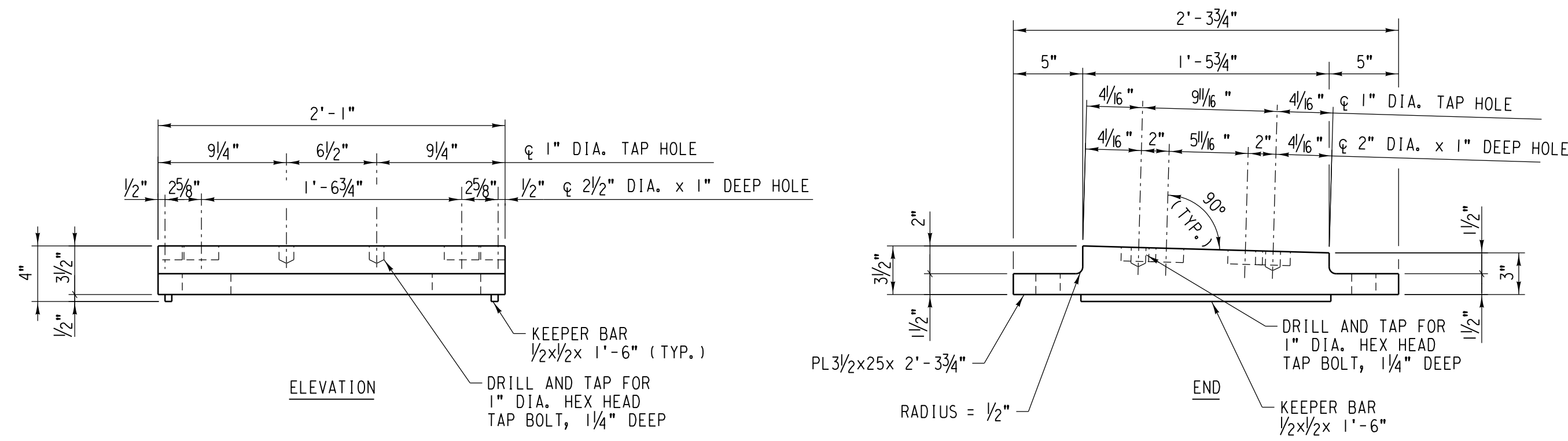
PROJECT: BR. 211.0 SPANS #1 AND #2 BEARING REPLACEMENT

TITLE: ANCHOR BOLT INSTALLATION DETAILS

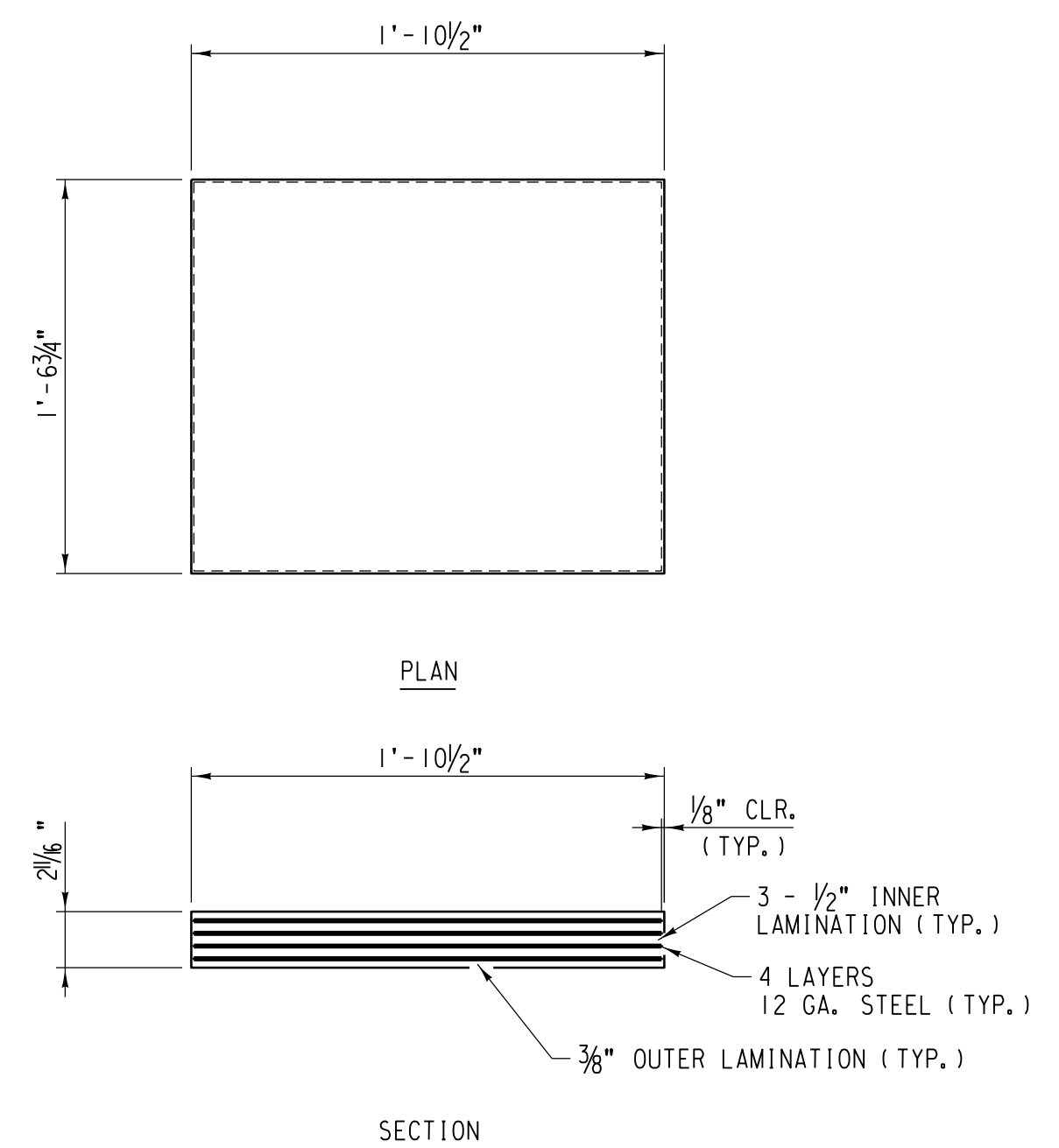
DESIGNED BY: BJB	SCALE: AS NOTED	9 OF 14
DRAWN BY: BJB	DATE: 11/19/20	
CHECKED BY: BWB		
APPROVED BY: BWB		



REV.	DATE	BY	REVISION



BEARING PLATE EBP-1 AND FBP-1
 SCALE: 1/2" = 1'-0"
 EST. WT. = 692 LB. EA.
 (EXPANSION BEARING EBP-1 SHOWN, FIXED BEARING FBP-1 SAME EXCEPT BOTTOM HOLES)



ELASTOMERIC REINFORCED BEARING PAD EP-1
 SCALE: 1/2" = 1'-0"
 (NATURAL RUBBER 60 DUROMETER)



ISSUED FOR CONSTRUCTION

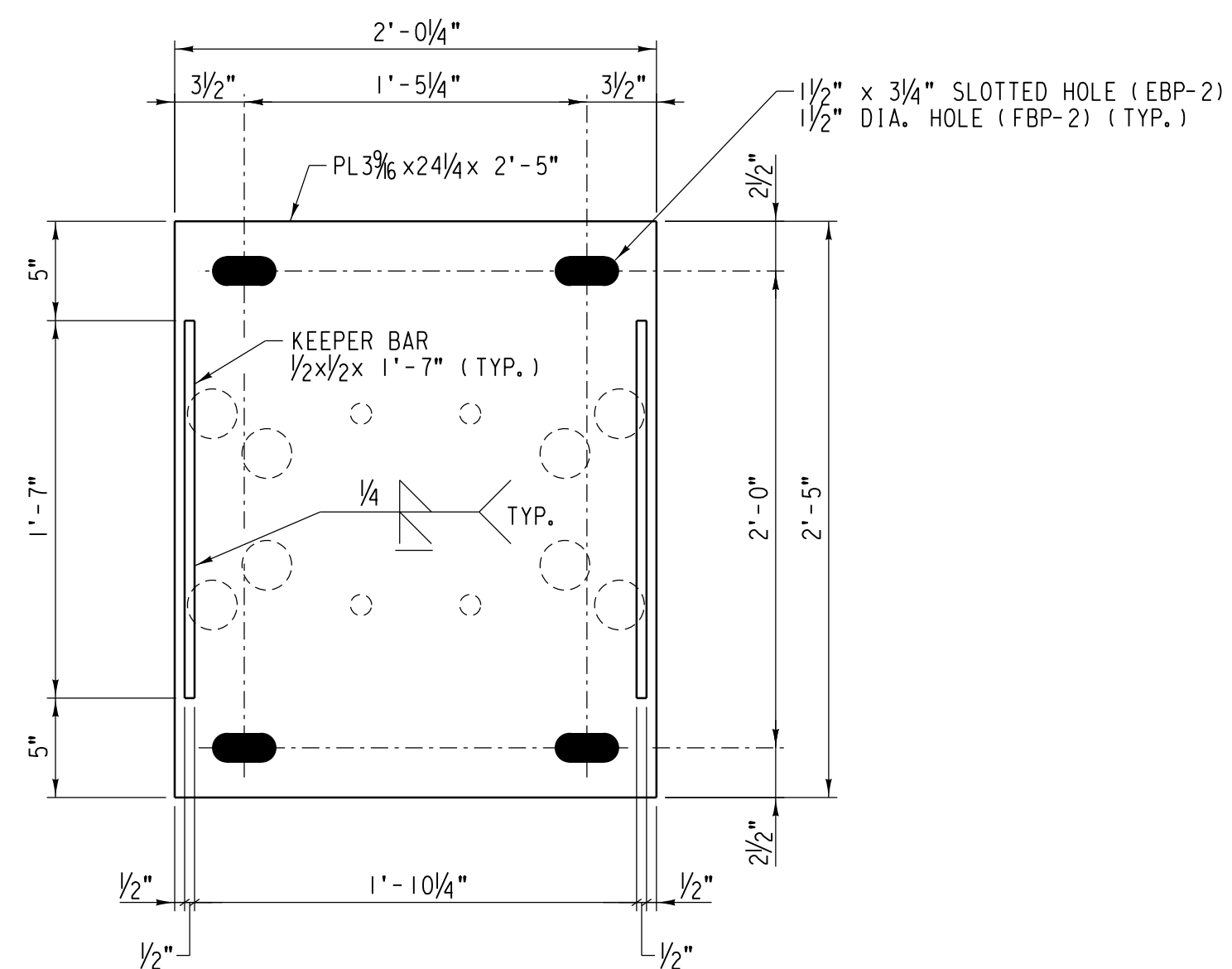
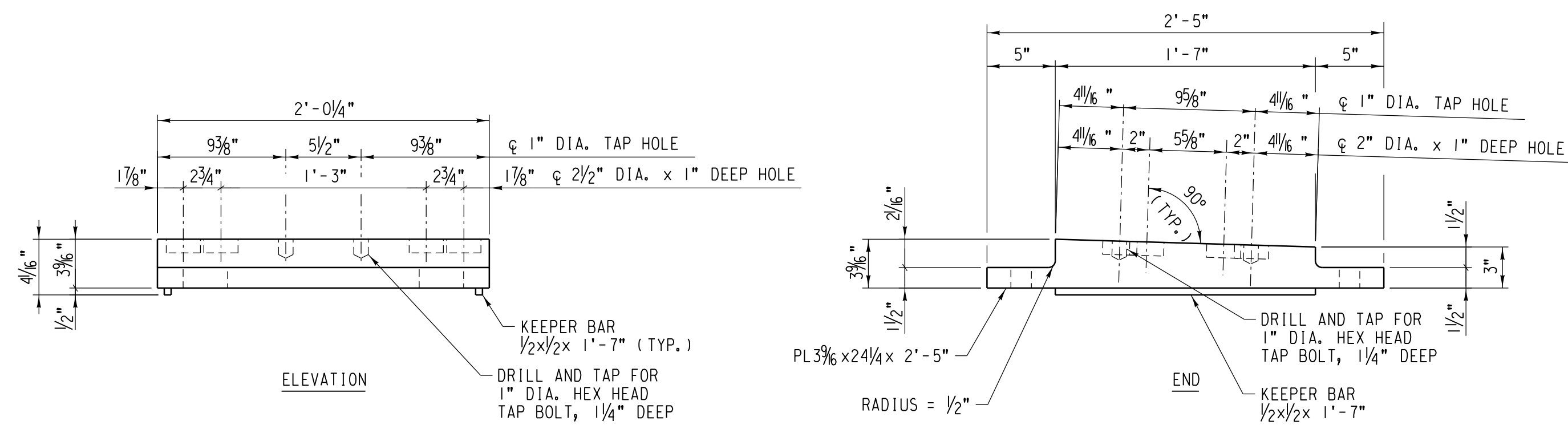
ALASKA RAILROAD CORPORATION
 ENGINEERING SERVICES
 P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

PROJECT: BR. 211.0 SPANS #1 AND #2 BEARING REPLACEMENT

TITLE: SPAN #1 STRUCTURAL STEEL DETAILS

DESIGNED BY: BJB	SCALE: AS NOTED	10 OF 14
DRAWN BY: BJB	DATE: 11/19/20	
CHECKED BY: BWB		
APPROVED BY: BWB		

WILSON & COMPANY			REV.	DATE	BY	REVISION

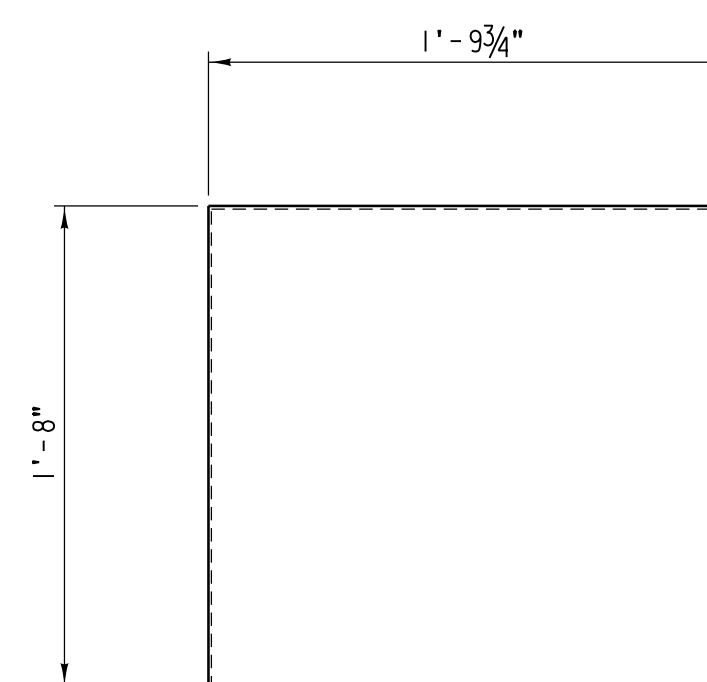


PLAN - BOTTOM PLATE

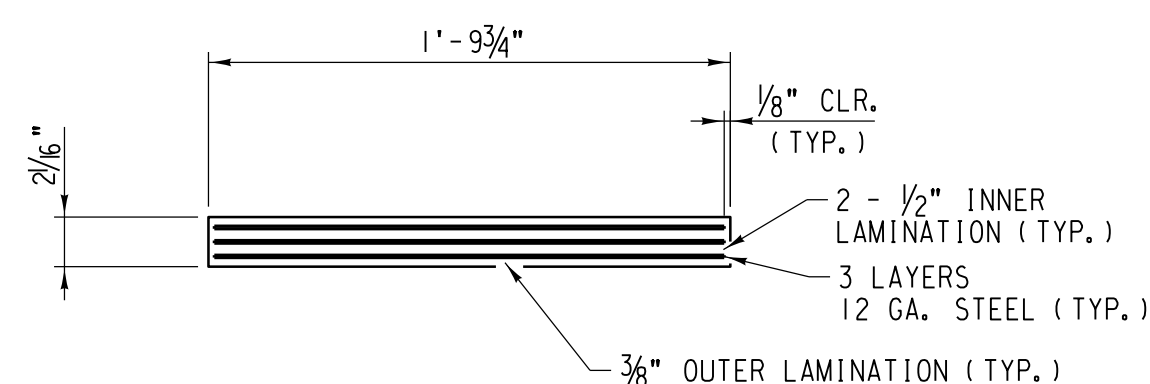
BEARING PLATE EBP-2 AND FBP-2

SCALE: 1/2" = 1'-0" EST. WT. = 714 LB. EA.

(EXPANSION BEARING EBP-2 SHOWN, FIXED BEARING FBP-2 SAME EXCEPT BOTTOM HOLES)



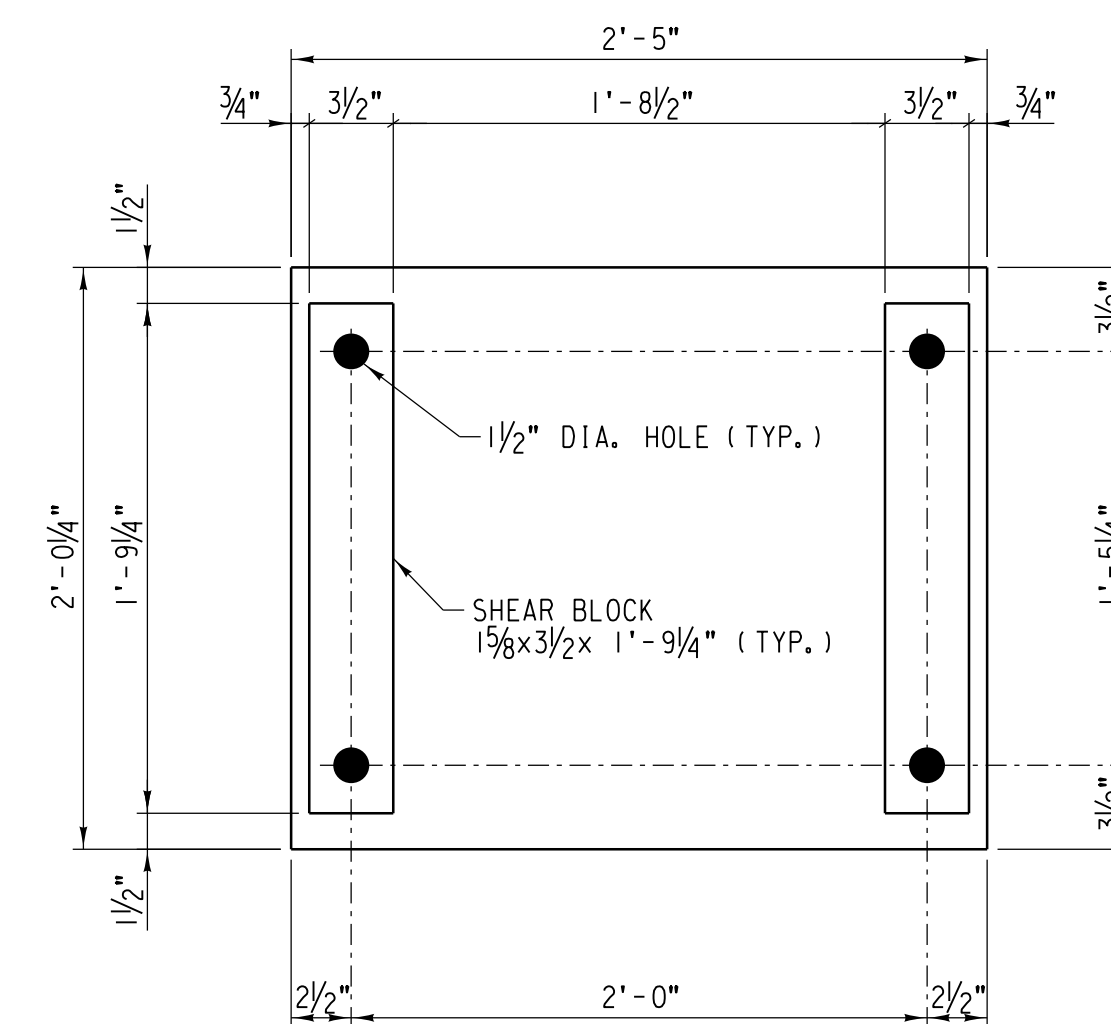
PLAN



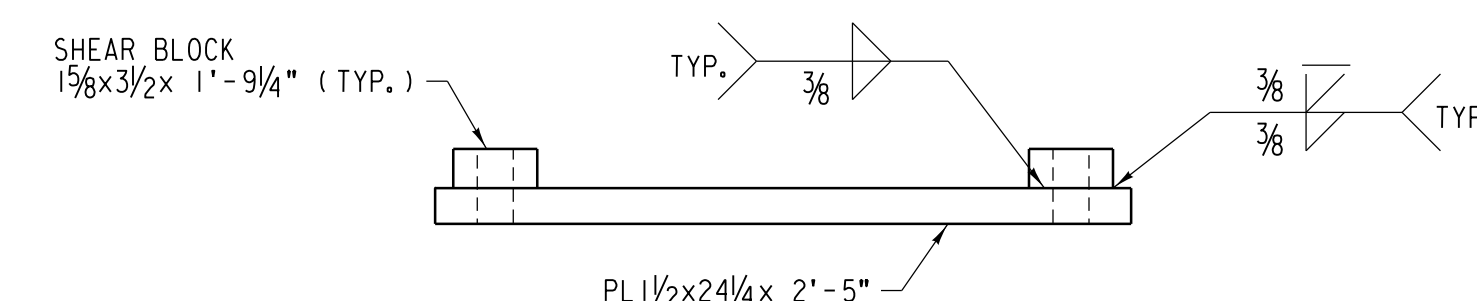
SECTION

ELASTOMERIC REINFORCED BEARING PAD EP-2

SCALE: 1/2" = 1'-0" (NATURAL RUBBER 60 DUROMETER)



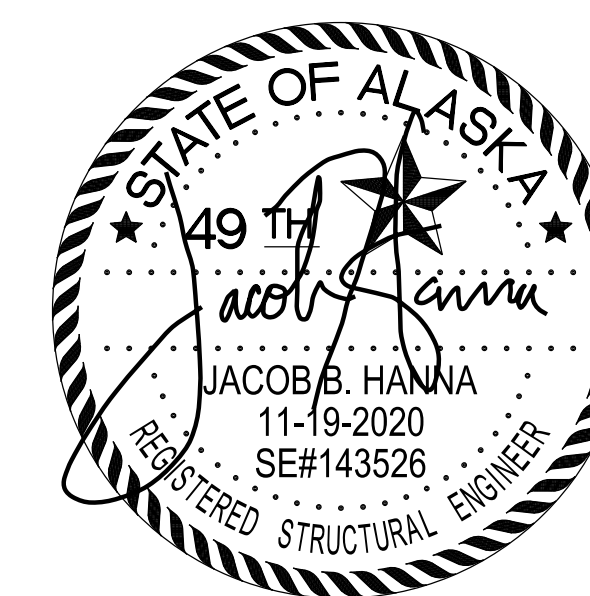
PLAN



ELEVATION

BEARING PLATE BP-2

SCALE: 1/2" = 1'-0" EST. WT. = 368 LB. EA.



ISSUED FOR CONSTRUCTION

ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

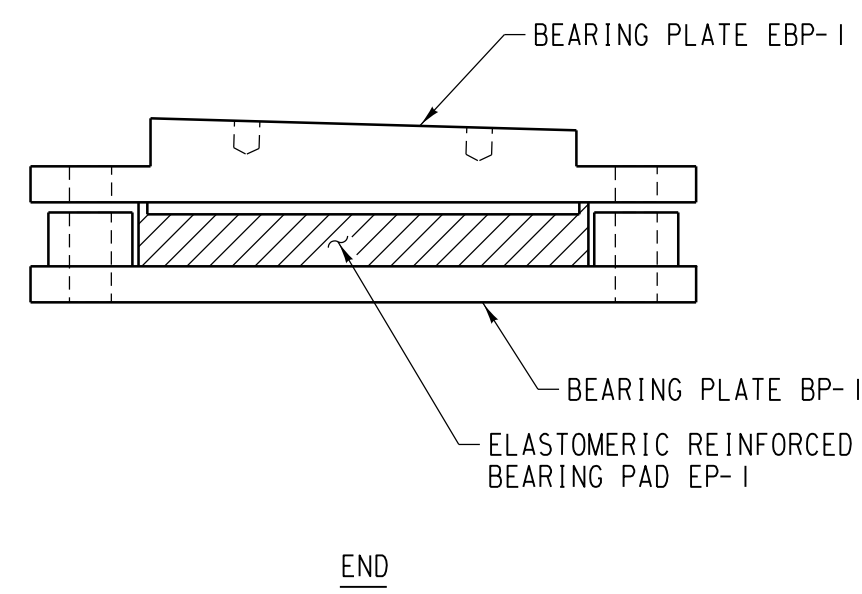
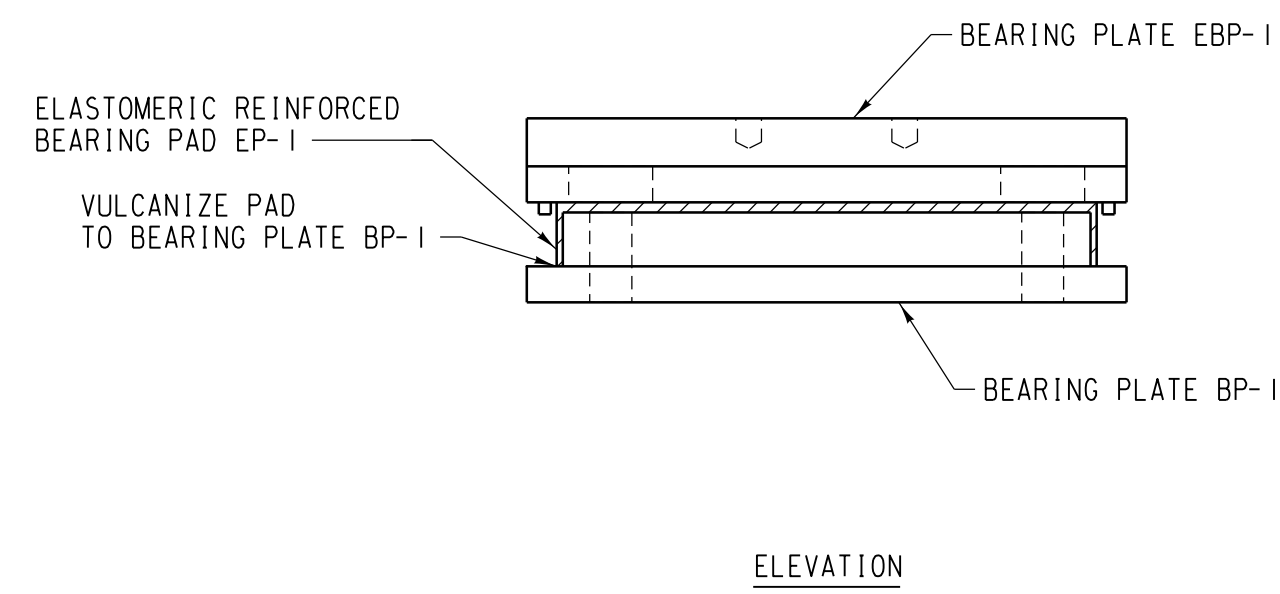
PROJECT: BR. 211.0 SPANS #1 AND #2 BEARING REPLACEMENT

TITLE: SPAN #2 STRUCTURAL STEEL DETAILS

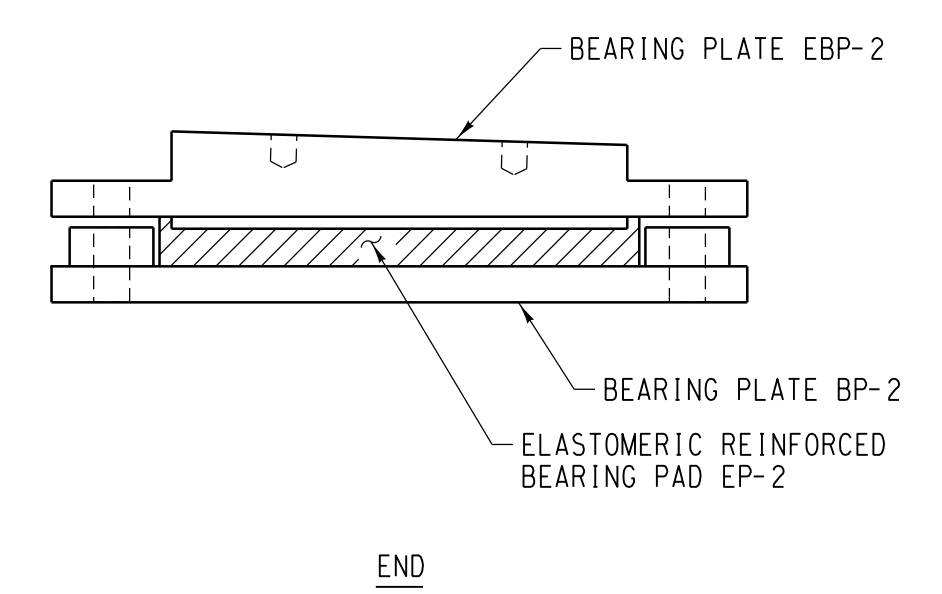
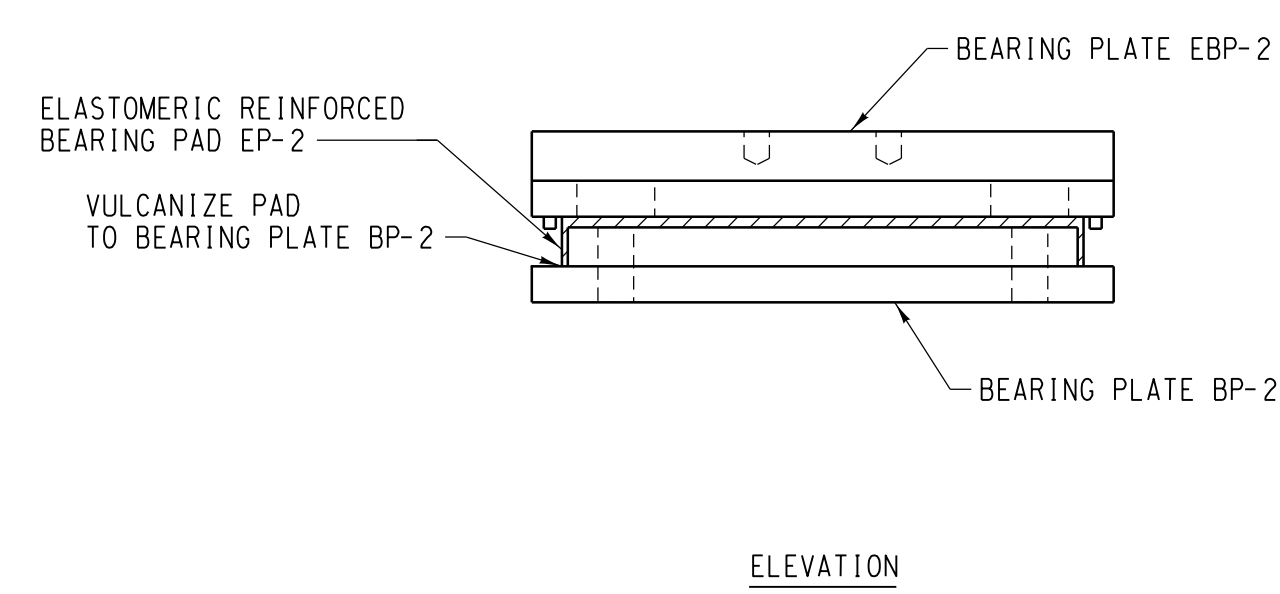
DESIGNED BY: BJB	SCALE: AS NOTED	11 OF 14
DRAWN BY: BJB	DATE: 11/19/20	
CHECKED BY: BWB		
APPROVED BY: BWB		



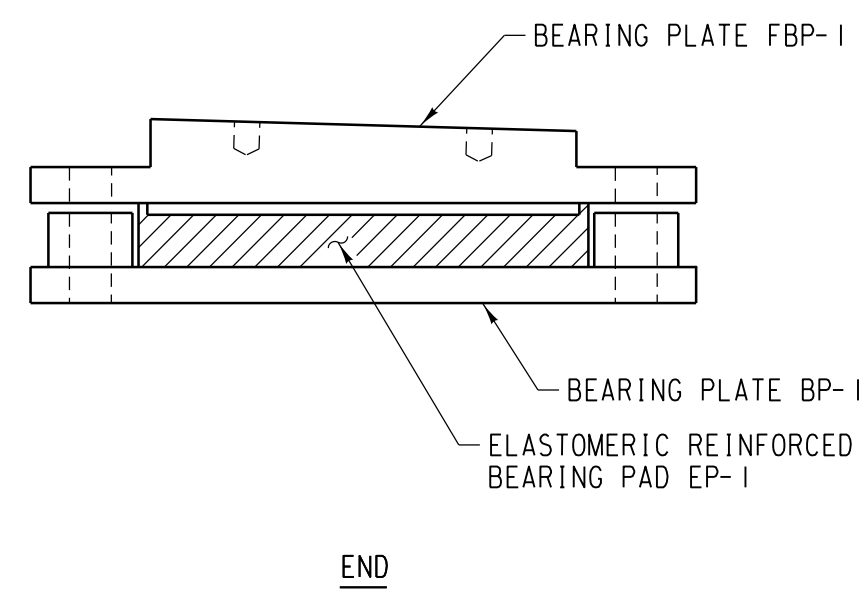
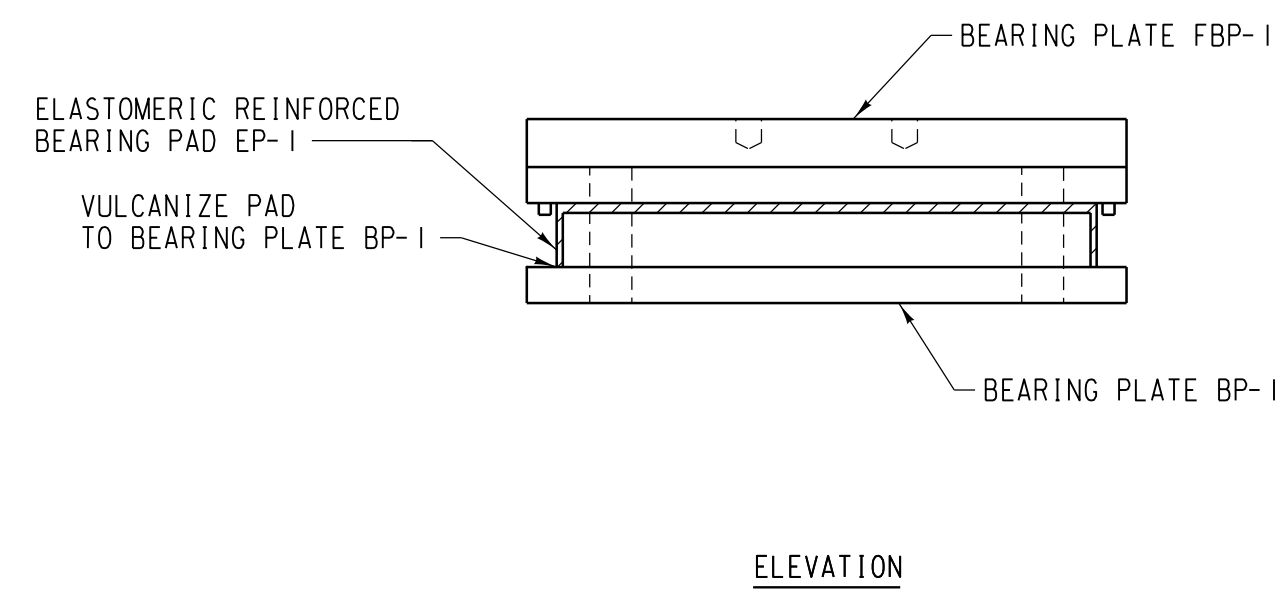
REV.	DATE	BY	REVISION



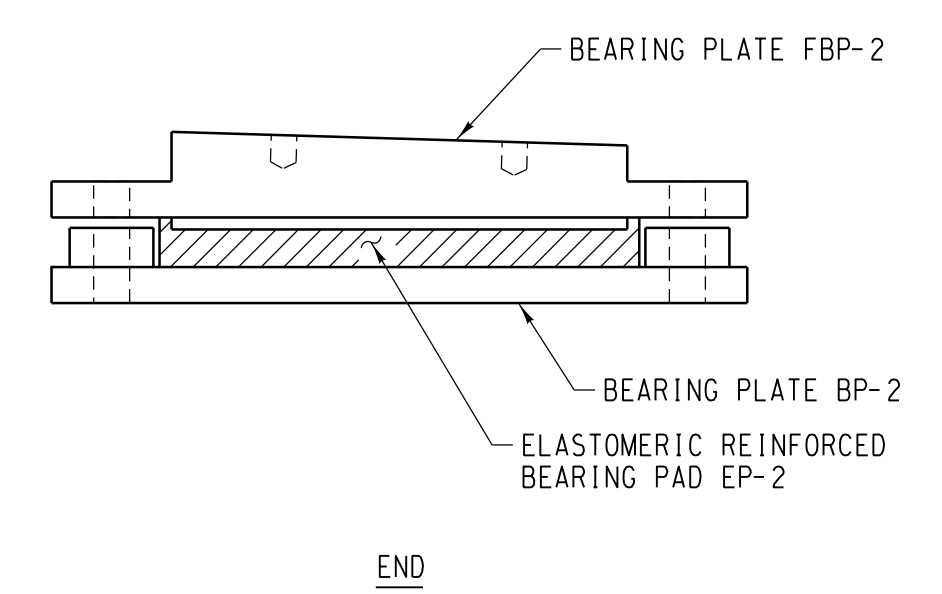
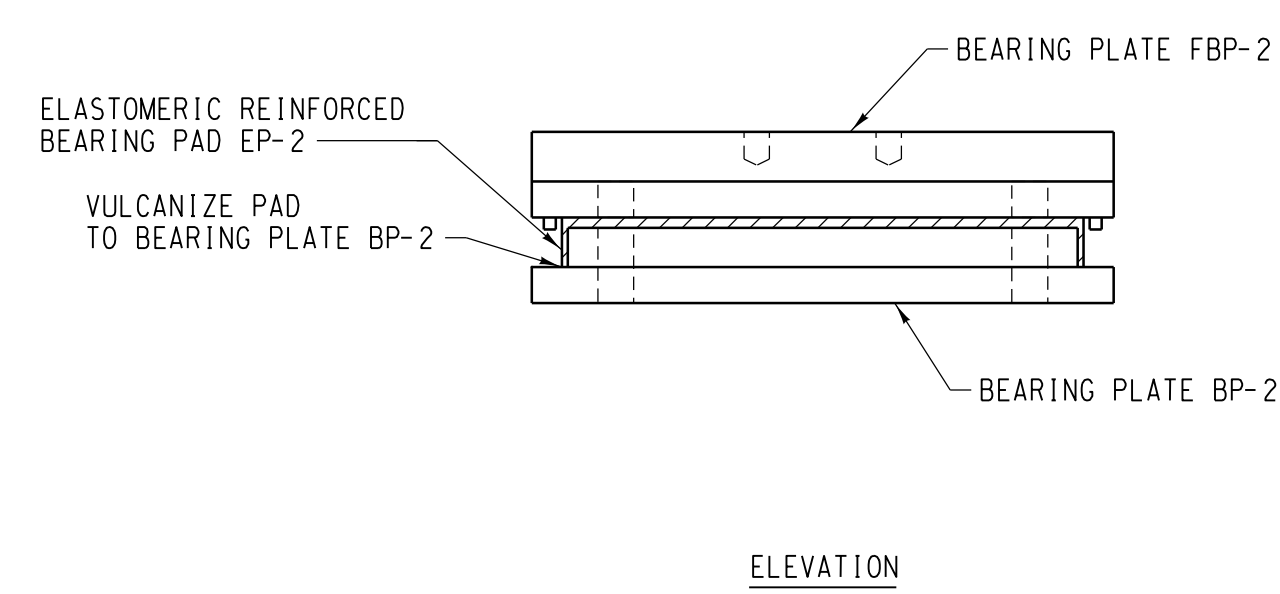
EXPANSION BEARING EB-1
SCALE: 1/2"=1'-0"



EXPANSION BEARING EB-2
SCALE: 1/2"=1'-0"



FIXED BEARING FB-1
SCALE: 1/2"=1'-0"



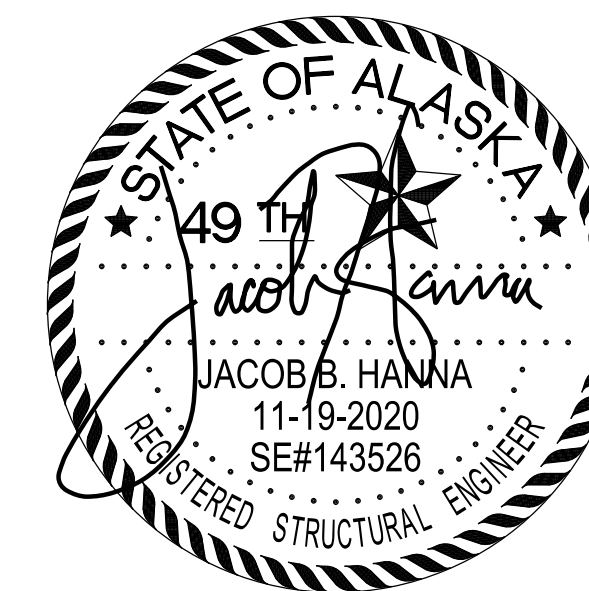
FIXED BEARING FB-2
SCALE: 1/2"=1'-0"

EXPANSION BEARING EB-1 MATERIAL SCHEDULE (PER BEARING)		
DESCRIPTION	UNIT	QUANTITY
BEARING PLATE EBP-1 (PER NOTES, DWG. NO. 2 AND DETAILS, DWG. NO. 10)	EA.	1
BEARING PLATE BP-1 (PER NOTES, DWG. NO. 2 AND DETAILS, DWG. NO. 10)	EA.	1
ELASTOMERIC REINFORCED BEARING PAD EP-1 (PER NOTES, DWG. NO. 2 AND DETAILS, DWG. NO. 10)	EA.	1

FIXED BEARING FB-1 MATERIAL SCHEDULE (PER BEARING)		
DESCRIPTION	UNIT	QUANTITY
BEARING PLATE FBP-1 (PER NOTES, DWG. NO. 2 AND DETAILS, DWG. NO. 10)	EA.	1
BEARING PLATE BP-1 (PER NOTES, DWG. NO. 2 AND DETAILS, DWG. NO. 10)	EA.	1
ELASTOMERIC REINFORCED BEARING PAD EP-1 (PER NOTES, DWG. NO. 2 AND DETAILS, DWG. NO. 10)	EA.	1

EXPANSION BEARING EB-2 MATERIAL SCHEDULE (PER BEARING)		
DESCRIPTION	UNIT	QUANTITY
BEARING PLATE EBP-2 (PER NOTES, DWG. NO. 2 AND DETAILS, DWG. NO. 11)	EA.	1
BEARING PLATE BP-2 (PER NOTES, DWG. NO. 2 AND DETAILS, DWG. NO. 11)	EA.	1
ELASTOMERIC REINFORCED BEARING PAD EP-2 (PER NOTES, DWG. NO. 2 AND DETAILS, DWG. NO. 11)	EA.	1

FIXED BEARING FB-2 MATERIAL SCHEDULE (PER BEARING)		
DESCRIPTION	UNIT	QUANTITY
BEARING PLATE FBP-2 (PER NOTES, DWG. NO. 2 AND DETAILS, DWG. NO. 11)	EA.	1
BEARING PLATE BP-2 (PER NOTES, DWG. NO. 2 AND DETAILS, DWG. NO. 11)	EA.	1
ELASTOMERIC REINFORCED BEARING PAD EP-2 (PER NOTES, DWG. NO. 2 AND DETAILS, DWG. NO. 11)	EA.	1



ISSUED FOR CONSTRUCTION

ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

PROJECT: BR. 211.0 SPANS #1 AND #2 BEARING REPLACEMENT

TITLE: BEARING ASSEMBLY DETAILS

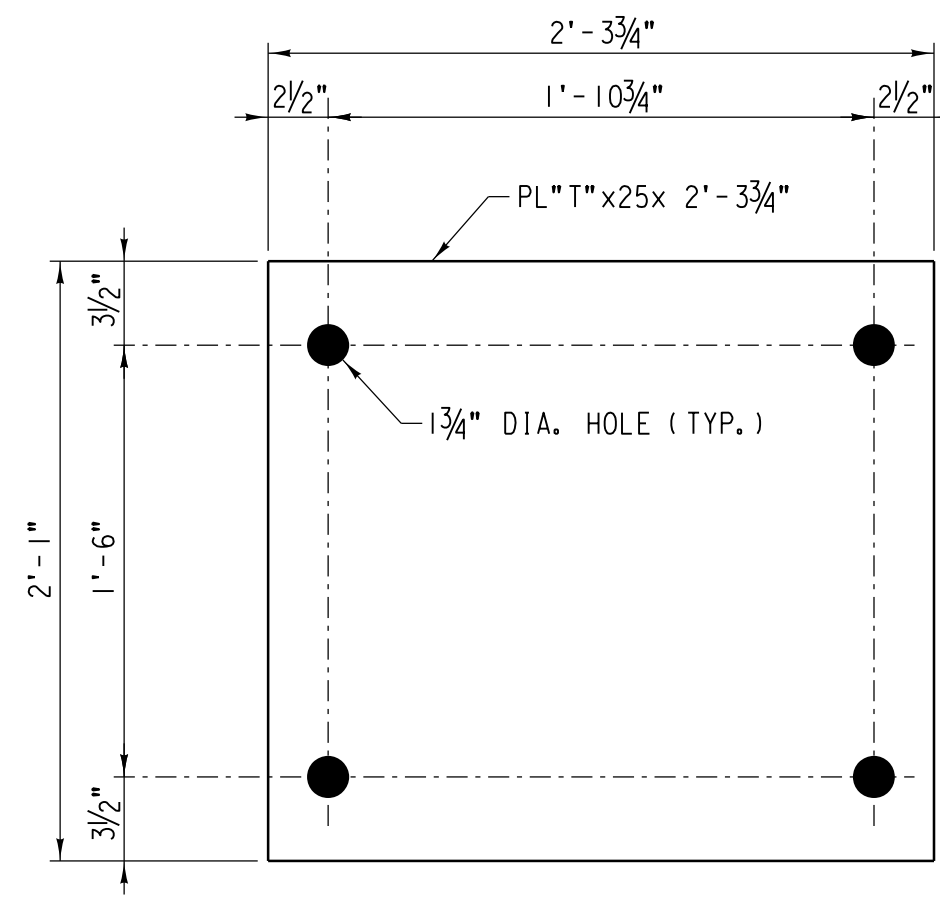
DESIGNED BY: BJB
DRAWN BY: BJB
CHECKED BY: BWB
APPROVED BY: BWB

SCALE: AS NOTED
DATE: 11/19/20

12 OF 14



REV.	DATE	BY	REVISION



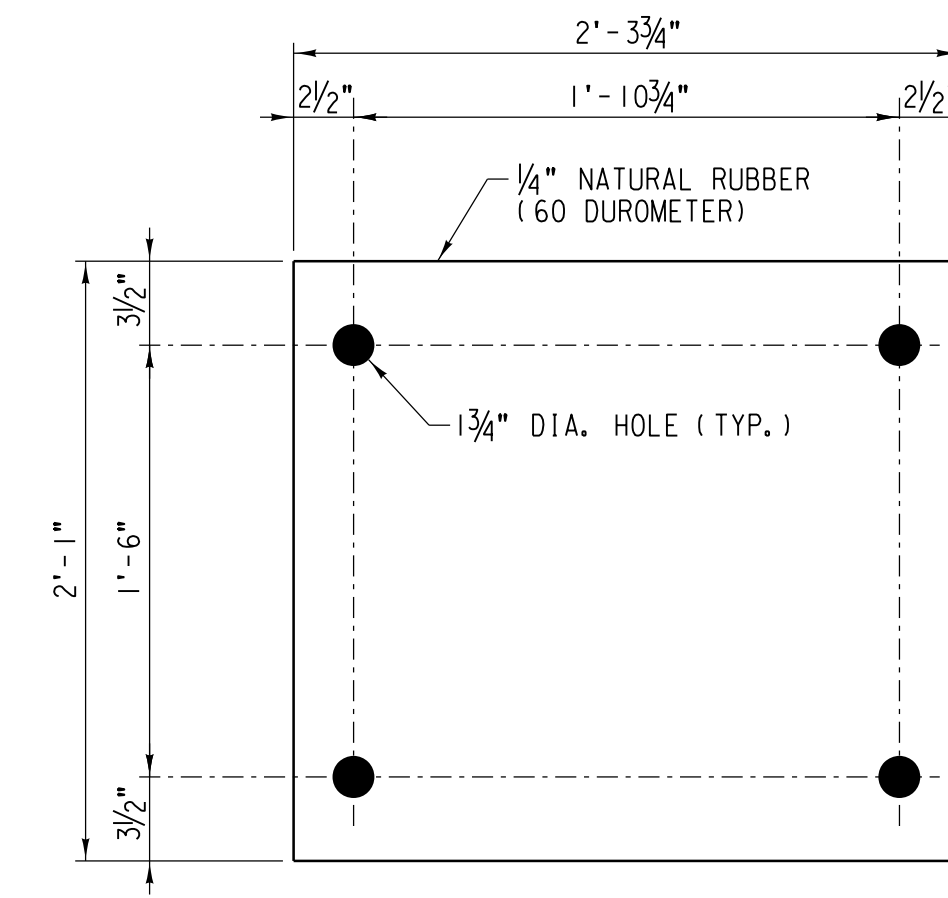
PLAN

SHIM PACK SP-1

SCALE: 1/2" = 1'-0"

SHIM PACK SP-1 SCHEDULE		
QUANTITY	THICKNESS "T"	WEIGHT PER (LB)
8	1/8"	24.6
8	1/4"	49.2
4	1/2"	98.4
4	1"	196.8

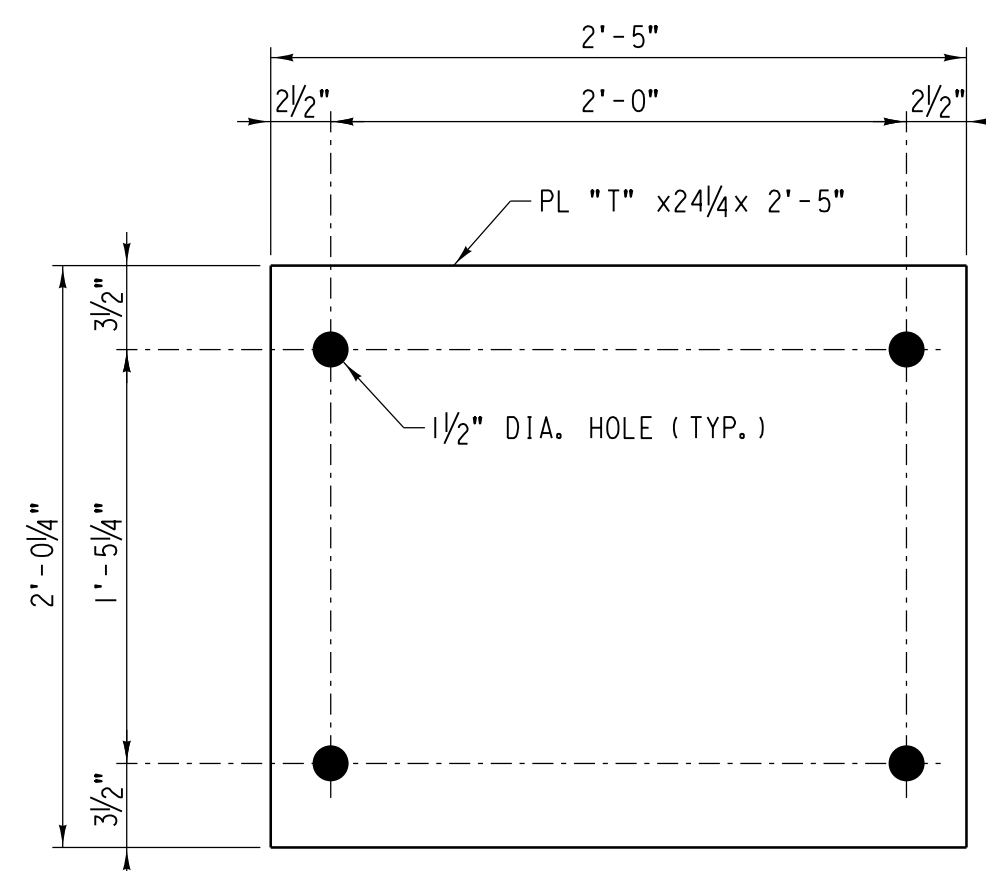
EST. WT. OF SHIMS = 1,775 LB.



PLAN

BEARING PAD BP-1

SCALE: 1/2" = 1'-0"



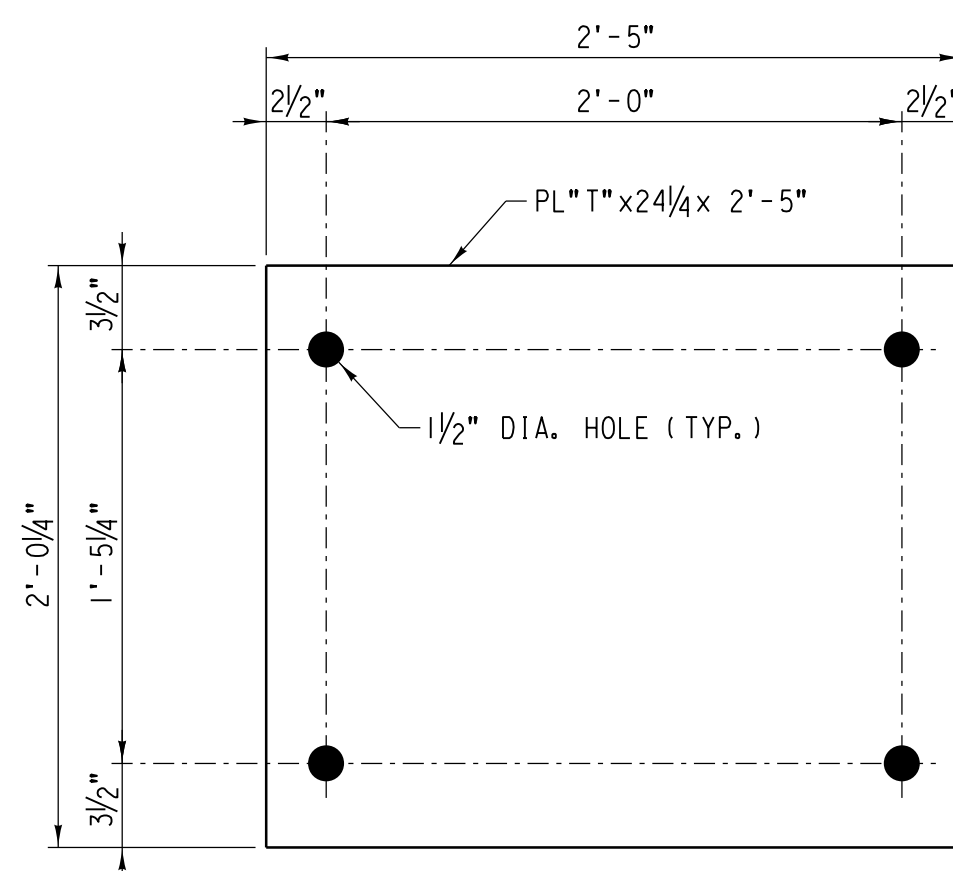
PLAN

BEVELED SHIM PACK BSP-2

SCALE: 1/2" = 1'-0"

BEVELED SHIM PACK BSP-2 SCHEDULE		
QUANTITY	THICKNESS "T"	WEIGHT PER (LB)
4	1"	199.5
4	1 1/8"	224.4
4	1 1/4"	249.3

EST. WT. OF SHIMS = 2,695 LB.



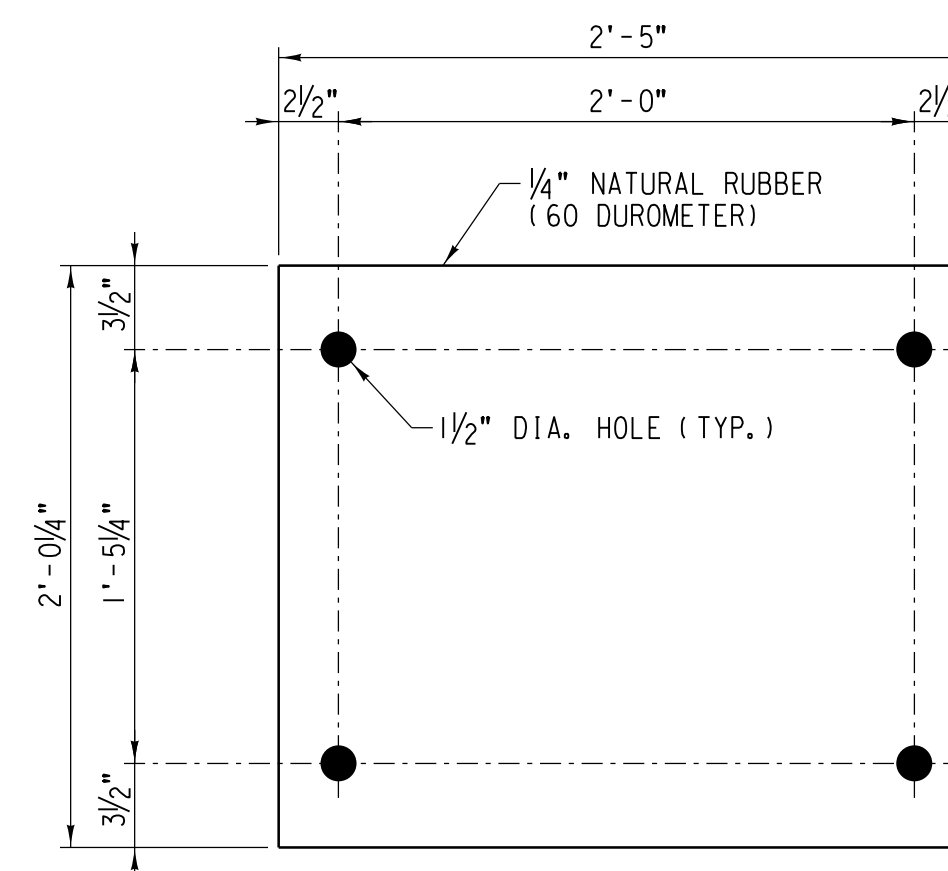
PLAN

SHIM PACK SP-2

SCALE: 1/2" = 1'-0"

SHIM PACK SP-2 SCHEDULE		
QUANTITY	THICKNESS "T"	WEIGHT PER (LB)
8	1/8"	25.0
8	1/4"	49.9

EST. WT. OF SHIMS = 600 LB.



PLAN

BEARING PAD BP-2

SCALE: 1/2" = 1'-0"



ISSUED FOR CONSTRUCTION

ALASKA RAILROAD CORPORATION ENGINEERING SERVICES P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500	
PROJECT: BR. 211.0 SPANS #1 AND #2 BEARING REPLACEMENT	
TITLE: MISCELLANEOUS DETAILS	
DESIGNED BY: BJB DRAWN BY: BJB CHECKED BY: BJB APPROVED BY: BJB	SCALE: AS NOTED DATE: 11/19/20
13 OF 14	

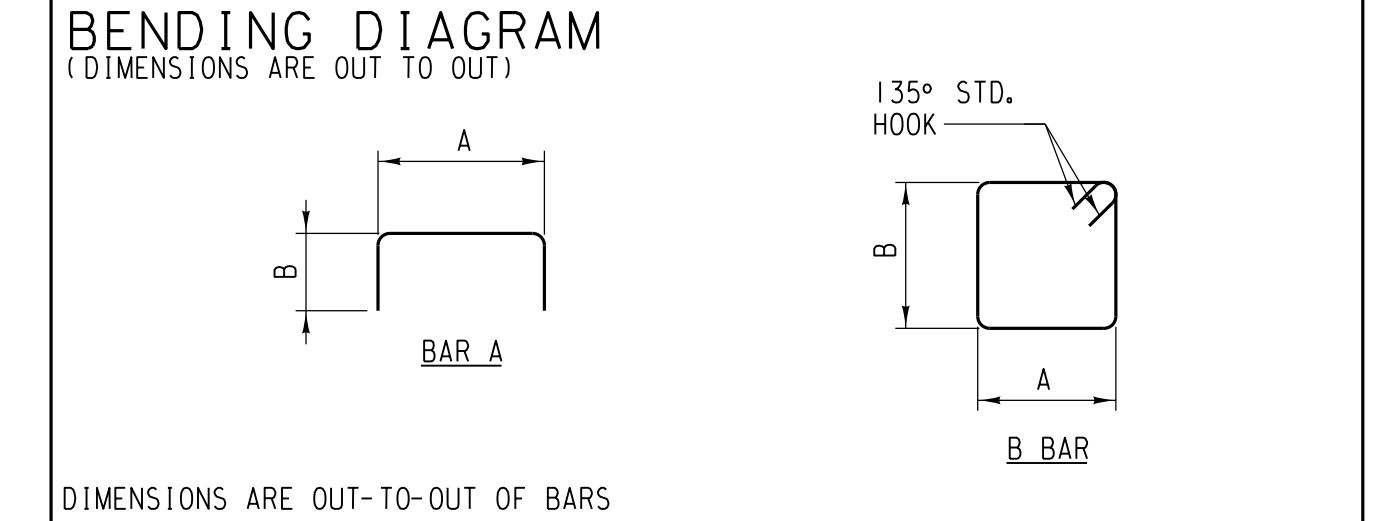


REV.	DATE	BY	REVISION

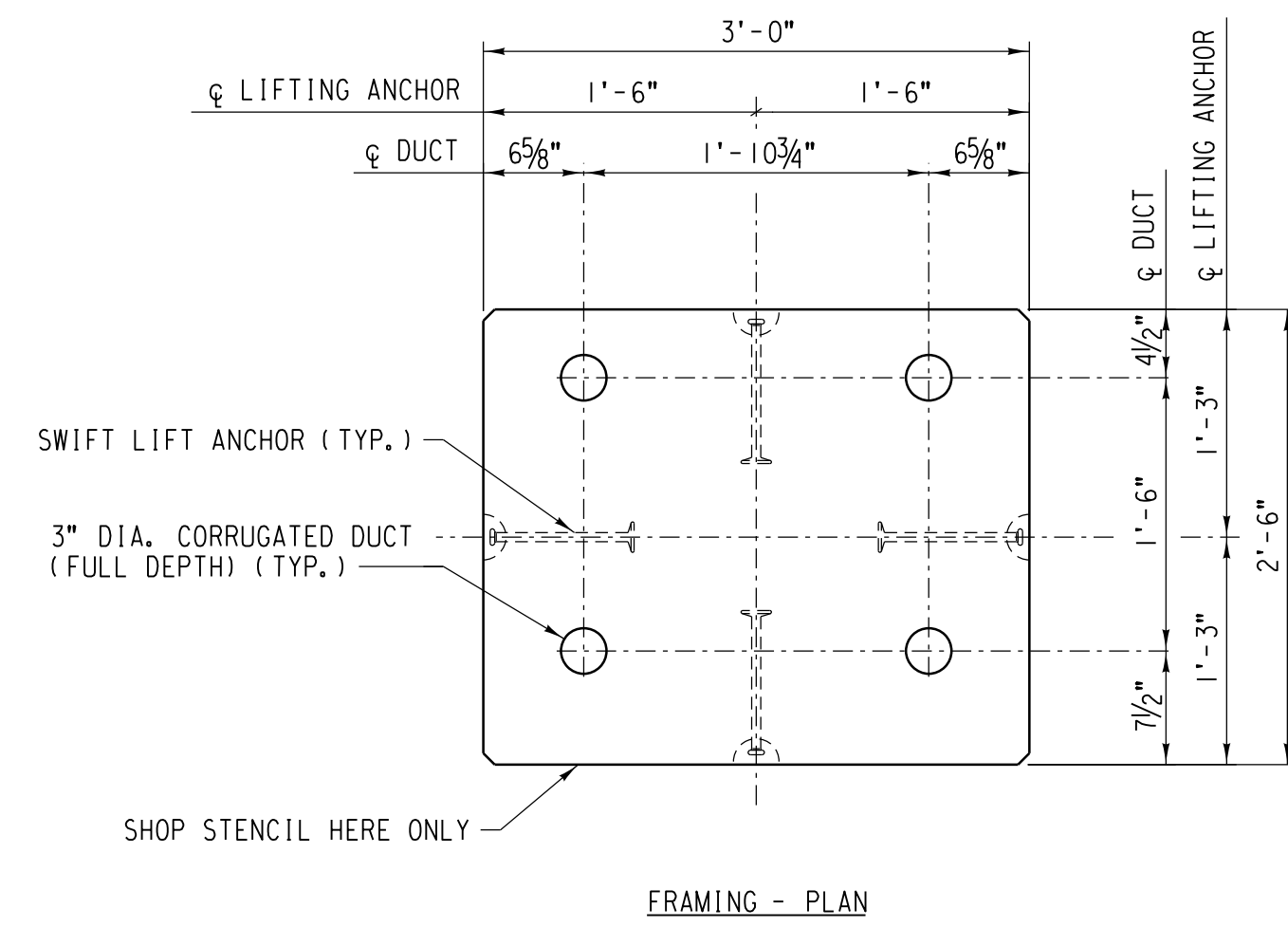
NOTE:
 4-TON SWIFT LIFT RECESS PLUGS, ANCHORS AND LIFTING EYES ARE AVAILABLE FROM DAYTON SUPERIOR CORP., 1125 BYERS ROAD, MIAMISBURG, OHIO 45342, TELEPHONE (937) 866-0711. THE MATERIALS FOR THIS LIFTING SYSTEM ARE NOT INCLUDED IN THE BILL OF MATERIAL BUT ARE TO BE ORDERED AS REQUIRED.

PRECAST CONCRETE PEDESTAL MATERIAL SCHEDULE			
PER PCP-1	PER PCP-2	UNIT	DESCRIPTION
0.5	0.6	CU. YD.	4,000 PSI CONCRETE (PER NOTES, DWG. NO. 2)
1	1	LOT	REINFORCING STEEL (PER NOTES, DWG. NO. 2 AND SCHEDULE DWG. NO. 14)
4	4	EA.	4-TON SWIFT LIFT ANCHOR, L=9/2" (PER NOTES, DWG. NO. 2)

PRECAST CONCRETE PEDESTAL REINFORCING SCHEDULE							
NAME	SIZE	TYPE	A	B	LENGTH	PER PCP-1	PER PCP-2
52-9	#5	STR.	-	-	2'-9"	10	10
5A1	#5	A	2'-1"	0'-10"	3'-9"	6	6
5B1	#5	A	2'-3"	1'-3"	7'-10"	6	-
5B2	#5	A	2'-3"	1'-9"	8'-10"	-	6



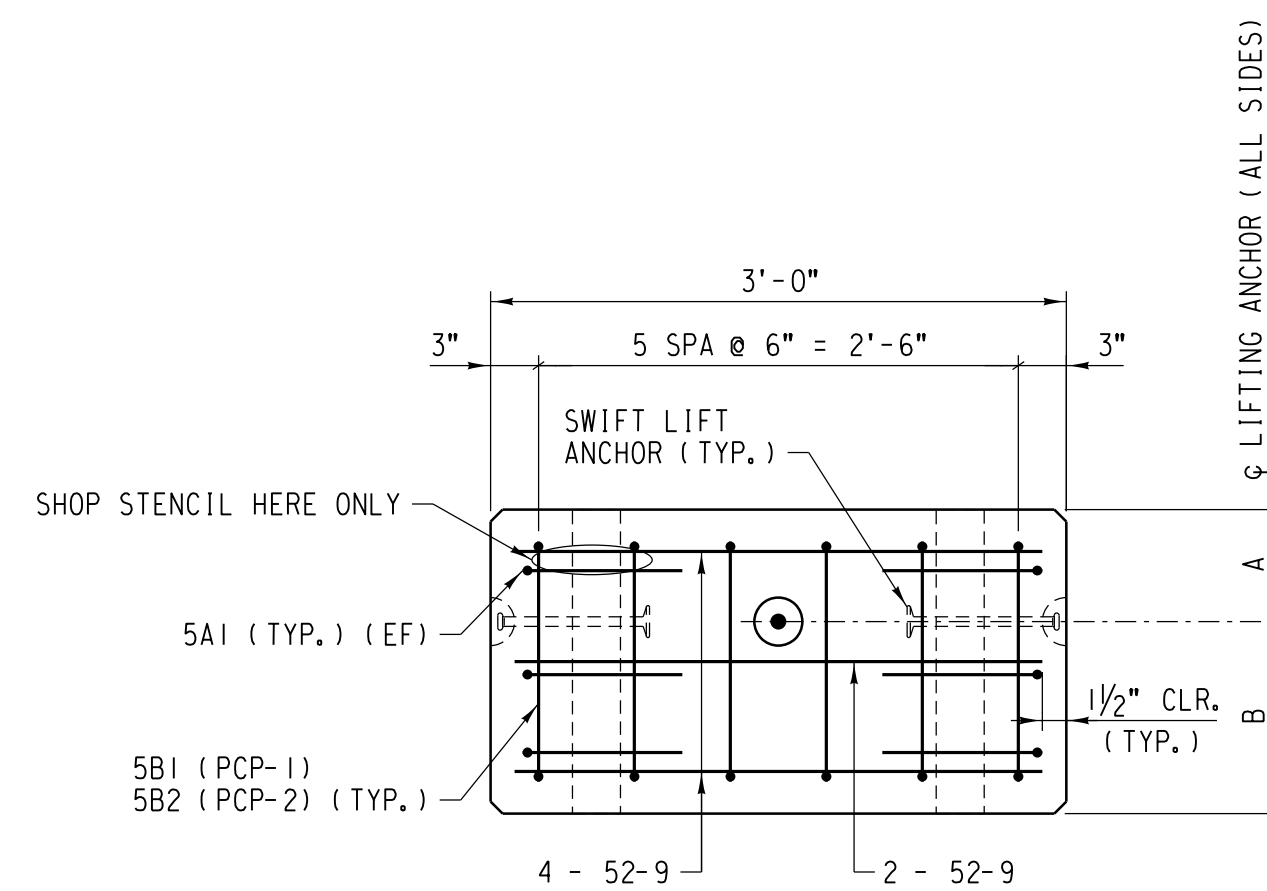
DIMENSIONS ARE OUT-TO-OUT OF BARS
 EST. WT. OF REINFORCING STEEL PER PCP-1 = 100 LB.
 EST. WT. OF REINFORCING STEEL PER PCP-2 = 110 LB.



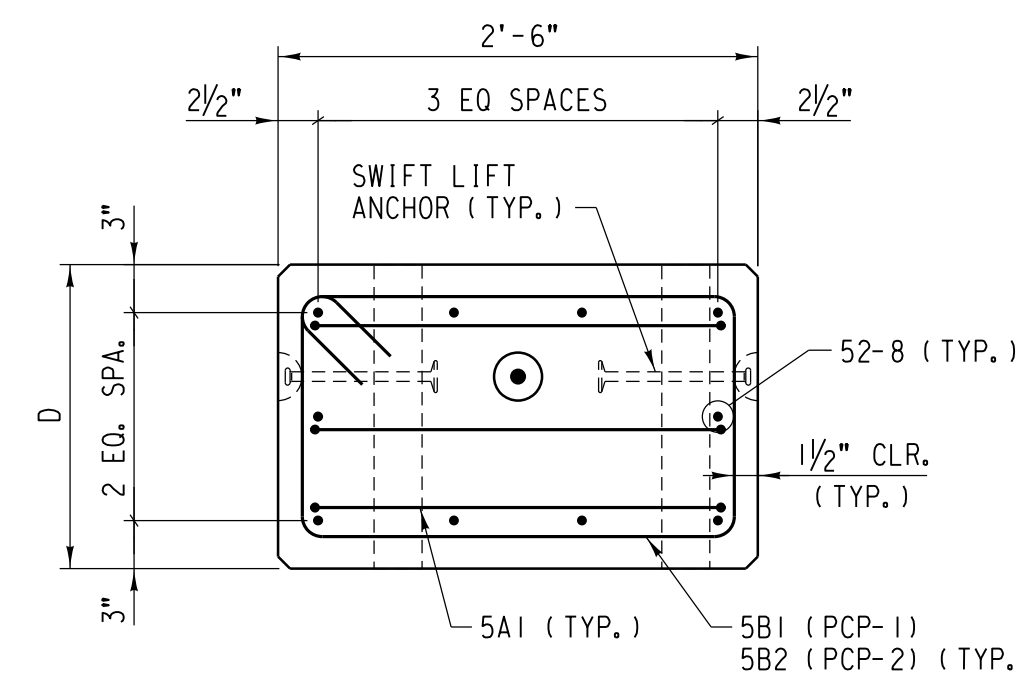
FRAMING - PLAN

PEDESTAL DIMENSIONS

PIECE	A	B	D
PCP-1	0'-7"	1'-0"	1'-7"
PCP-2	0'-10"	1'-3"	2'-1"



FRAMING - ELEVATION



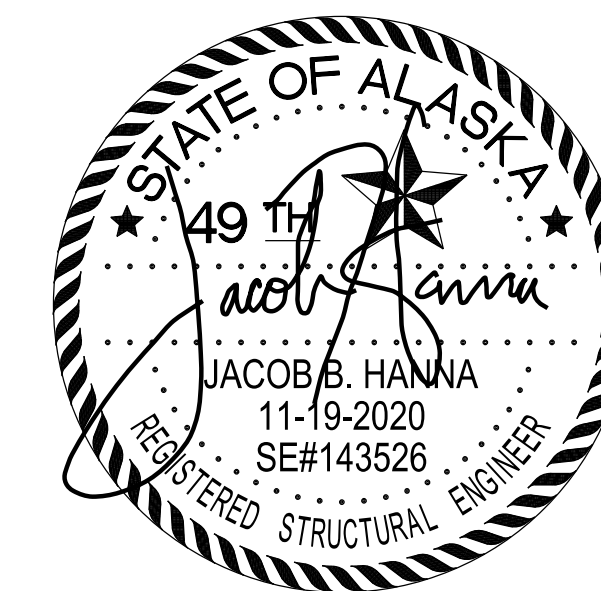
END SECTION

PRECAST CONCRETE PEDESTAL PCP-1 AND PCP-2

SCALE: 1"=1'-0"

EST. WT. = 1,800 LB. PER PCP-1
 EST. WT. = 2,400 LB. PER PCP-2

- NOTES:**
- MINIMALLY ADJUST REINFORCING AS REQUIRED TO CLEAR EMBEDDED ITEMS AND HOLES.
 - EF = EACH FACE



ISSUED FOR CONSTRUCTION

ALASKA RAILROAD CORPORATION
 ENGINEERING SERVICES
 P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

PROJECT: BR. 211.0 SPANS #1 AND #2 BEARING REPLACEMENT

TITLE: PRECAST CONCRETE PEDESTAL PCP-1 AND PCP-2 DETAILS

DESIGNED BY: BJB
 DRAWN BY: BJB
 CHECKED BY: BWB
 APPROVED BY: BWB

SCALE: AS NOTED
 DATE: 11/19/20

14 OF 14



REV.	DATE	BY	REVISION