125' STANDARD TPG BRIDGE REPLACEMENT

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LEGEND
END = BEARING
S = COVERING
SA = COVERING
CA = COVERING
EP = EXPANDED BEARING
FCE = FRAC TURE CRITICAL
FIX = Fixed Bearing
GAL = GALVANIZED
HAS = HIDDEN ANCHOR STUD
H.E = HIGH STRENGTH
LB = POUNDS
LFT = LEFT
O.D = OUTER DIAMETER
OP = OPPOSITE
P = PLATE
RAD = RADIUS
REH = REINFORCED
RFH = REINFORCED
SYM = Symmetric
TYP = THRU PLATE ORDER
TYP = TYPICAL
U.N.O = UNLESS NOTED OTHERWISE

ISSUED FOR CONSTRUCTION

COVER SHEET
GENERAL REQUIREMENTS

1. All material, fabrication, and erection shall be in accordance with Chapter II of the American Welding Society Structural Welding Code. All structural steel shall be in accordance with the requirements of ASTM A500. All fabrication and erection procedures, equipment, materials, qualification of welders, and inspection shall be in accordance with the American Welding Society Bridge Welding Code ANSI/AWS D1.5-2010. The above codes shall be strictly enforced.

2. The fabricator shall furnish all equipment, tools, labor, and materials in connection with the fabrication and shipping of all bridge structural steel. All welding procedures, equipment, materials, and inspection shall be in accordance with the requirements of the American Welding Society Bridge Welding Code ANSI/AWS D1.5-2010. The above codes shall be strictly enforced.

3. Except as otherwise noted, the furnishing and fabrication of structural steel shall conform to the requirements of Chapter II of the American Standards for Bridge Construction for Fabrication of Structural Steel for Bridges. These requirements shall be in accordance with the latest edition of the American Welding Society Structural Welding Code ANSI/AWS D1.5-2010.

4. Fabrication of structural steel shall be performed in accordance with the American Welding Society Bridge Welding Code ANSI/AWS D1.5-2010 and the AISC Steel Construction Manual. All fabrication and erection procedures, equipment, materials, and inspection shall be in accordance with the requirements of the American Welding Society Bridge Welding Code ANSI/AWS D1.5-2010. The above codes shall be strictly enforced.

5. All welding and cutting shall be in accordance with requirements set forth in the American Welding Society Structural Welding Code ANSI/AWS D1.5-2010, except as may be amended by this specification.

6. The American Welding Society Bridge Welding Code ANSI/AWS D1.5-2010 shall be utilized for all welding and cutting. All welding and cutting shall be in accordance with the requirements of the American Welding Society Bridge Welding Code ANSI/AWS D1.5-2010.

7. The fabricator shall furnish to the Alaska Railroad Corporation all prints or drawings as may be necessary to carry out the work. The fabricator shall be responsible for the correctness and completeness of the drawings, regardless of any errors by the engineer. Any work performed or material ordered prior to approval by the engineer shall be at the sole risk of the fabricator.

MATERIALS

1. All structural steel shall conform to ASTM A572. Structural steel shall be in accordance with ASTM A36, Grade 50. Structural steel shall be in accordance with the requirements of ASTM A36, Grade 50. Structural steel shall be in accordance with the requirements of ASTM A36, Grade 50.

2. Non-fracture critical members shall be marked with a non-fracture critical identification number. Non-fracture critical members shall be marked with a non-fracture critical identification number. Non-fracture critical members shall be marked with a non-fracture critical identification number.

3. Fracture critical members shall be marked with a fracture critical identification number. Fracture critical members shall be marked with a fracture critical identification number. Fracture critical members shall be marked with a fracture critical identification number.

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TESTS AND INSPECTION

1. As promptly as practicable after rolling of metal and before shipping, holes shall be made in the chemical analysis and physical tests required and such samples cut and tests of the tests to be made in the number requested. Certified copies must be furnished to the engineer prior to use in the work.

2. Shop inspection of metal fabrication shall be performed by the Alaska Railroad Corporation at the work processes without delay to the fabricator. The fabricator shall give two weeks written notice to the engineer of the beginning of work in the shops so inspection may be arranged. No work in the shop shall be done until the engineer has been notified.

3. The engineer and inspector shall have full access to all parts of the shop where work is being fabricated for the contract and shall be permitted reasonable facility for determining the character of the material and workmanship.

4. The fabricator shall lay out and arrange the individual members or units to be inspected so that no section marks on each may be readily distinguished and so that each member or unit is accessible for such measurements as the inspector may deem necessary. If the material has not been inspected as the will become visible during the fabrication, the fabricator shall assist the inspector by turning the steel to permit examination on both sides.

5. Final inspection shall take place after the fabrication is complete, before shipping.

6. Whether or not shop inspection is made, workmanship and materials which do not conform to the specifications or to recommended good practice may be rejected at any time prior to final acceptance of the work.

7. Non-destructive testing of steel is considered a part of quality control and shall be at the fabricator's expense (see need inspection of material specifications).

8. Non-destructive testing of the fabricated structural members shall be performed by an independent testing company approved by the engineer and contracted for by the fabricator. Personnel, qualification and certification is to be in accordance with the latest AREMA specifications, Chapter 15, Steel Structures, Part 3, "Fabrication" except as otherwise indicated on the plans.

GENERAL FABRICATION

1. The shop fabrication shall be governed by the applicable provisions of the latest AREMA specifications, Chapter 15, "Steel Structures", Part 3, "Fabrication" except as herein specified. Those members designated as fracture control shall conform to the requirements of the fracture control plan set forth in the applicable parts of the AREMA manual in addition to the requirements of the project specifications.

2. A prefabrication meeting shall be held to establish shop fabrication schedules, material supplies, inspection procedures, slope procedures, record keeping procedures, and all other related subjects. All interested parties shall be invited to attend.

3. The bottom flanges of the beams must be square with the vertical and 5 feet from both ends of the beams.

4. The top surface of the beams shall be adjusted to form a straight line at any transverse section throughout the span. Tolerance is plus or minus 1/8 inch.

HANDLING STRUCTURAL STEEL

1. Extraordinary care shall be taken in the handling of fabricated structural members, lifting devices, wood, gridding, backing bars or other lifting devices placed in direct contact with the member when they contact, chock, scope, spade, or otherwise damage the surface. Edges or corners shall not be used. Procedures for handling structural members using lifting straps, timber cushions, or other lifting devices shall be inspected in advance and approved by the engineer before handling any material for movement, designated as fracture critical.

CUTTING STRUCTURAL STEEL

1. Plate making up structural members shall be cut so that the direction of rolling is parallel to the longitudinal axis of the member. Edges shall be ground to remove minor waves.

2. All work in the cutting shop shall be performed by a machinist or other qualified workmen and shall be made in accordance with shop normal welding code, Article 7.2 requirements, except as otherwise indicated on the plans.

3. The cutting procedures described in Table 3.1 of News of 2010 shall not apply to structural steel fabrication. Structural steel shall be fabricated in accordance with the specifications in these specifications.

SHIPPING

1. Shipping edges, where permitted, shall be left to a neat and finished condition. A shipping edge is defined as the termination of any cut by shearing, whether on steel ends or otherwise.

2. Edges of all main material, if sheared, shall be finished to a depth of 1/2 inch high material. All components, guides and lateral plates, bearing stiffeners and floorbeam end connectors.

3. Shipping may be cut at the sheared edges of plates and shapes which become ends of other steel. No edge treatment shall be necessary.

4. Other methods of shearing sheared edges by chipping or chipping which are considered equivalent to the specified method. Care shall be taken to prevent edge damage when sheared edges are exposed.

MECHANICAL CONNECTION

1. Bolts shall be used in the connection of structural steel. The proper bolt tension shall be in accordance with AREMA Chapter 15.5.3.3.2.4.5.

2. Bolts and nuts shall be furnished by the same supplier to ensure proper fit.

3. Bolts shall be of such length that they will extend entirely through their nuts and approximately 1/2 inch beyond them and the full threads shall extend no more than 1/8 inch into the shop.

4. Any open bolt hole shall be filled with high strength steel bolts if not used.

5. Bolts in the field shall be held together when assembled and shall be separated by gaskets or any other interposed compressible material.

6. When assembled, all joint surfaces, including those adjacent to the bolts holes, nuts or washers, shall be free of scale. Exposed bolt holes shall be filled with high strength screws, high density material, and other gaskets that will prevent scale or dirt of the parts.

7. Contact surfaces when the joint shall be free of oil, paints, lacquer or rust particles.

BOLT TENSION

1. Bolt tension shall be tested with the inspecting wrench. Each fastener shall be tested when all work is finished in the shop and at least the annual high tension shown in Table 2.1.5 of AREMA Chapter 16.1.5.2.3.1 for the grade of fasteners used.

2. Field bolts shall be tightened by the torque wrench to the proper tension. The proper tension shall be obtained at the proper tension. The proper tension shall be checked at the proper tension.

3. Tensioning shall be carried out at the proper tension.

4. Turn of the nut method to obtain the correct bolt tension. The turn of the nut method to obtain the correct bolt tension. The turn of the nut method to obtain the correct bolt tension.
WELDING

1. WELDING OF THE STEEL SHALL CONFORM TO THE INSTRUCTIONS ON THE DRAWING SYSTEM, SPECIFICATIONS AND ISSUANCE OF THE AMERICAN-haspopup(5,136)ALSOELDING SOCIETY, EXCEPT FOR THE FOLLOWING MODIFICATIONS AND ADJUSTMENTS.

2. THE WELDING OF MATERIAL DESIGNATED IN WELDING SPECIFICATIONS AS PLATE WELDS ON THE PROJECT SHALL COMPLY WITH THE REQUIREMENTS OF THE WELDING CONTROL PROGRAM SET FORTH IN THE APPENDIX OF THE PROJECT.

3. THE USE OF WELDING BARS OF NON-ARMS SPECIFIED WELDING PRACTICES AND PROCEDURES, SINGLE OR MULTIPLE STICKS, OR ANY RE-DEPOSIT OF WELDS THAT IS NOT SUBJECT TO THE REQUIREMENTS OF THE WELDING CONTROL PROGRAM, SHALL BE PERMITTED.

4. ALL PRIMARY SHOP WELDS SHALL BE MADE BY APPROVED AUTOMATIC FEED AND TRAVEL WELDING PROCESSES. NO other machine or mechanical welding shall be used. NO ELECTRIC OR ELECTRICAL WELDING SHALL BE USED.

5. THE USE OF ELECTRIC CURRENT OR OTHER WELDING PROCESSES SHALL NOT BE PERMITTED.

6. ALL WELDS SHALL BE INSPECTED BY THE FABRICATOR TO CHECK FOR CRACKS, UNDERCUTTING, EXCESS WELD METAL, IMPROPER WELD CONTOURS, ETC.

WELD INSPECTION

1. WELDING OF THE STEEL SHALL CONFORM TO THE INSTRUCTIONS ON THE DRAWING SYSTEM, SPECIFICATIONS AND ISSUANCE OF THE AMERICAN Welding Society, ExCEPT FOR THE FOLLOWING MODIFICATIONS AND ADJUSTMENTS.

2. ALL NON-DESTRUCTIVE TESTS, TOGETHER WITH DESCRIPTIONS OF ANY REPAIRS MADE AND ALL PLATES IN BEARING ASSEMBLIES SHALL BE FLAT AND LEVEL.

3. ALL PLATES IN BEARING ASSEMBLIES SHALL BE FLAT AND LEVEL.

4. ALL PLATES IN BEARING ASSEMBLIES SHALL BE FLAT AND LEVEL.

5. ALL PLATES IN BEARING ASSEMBLIES SHALL BE FLAT AND LEVEL.
GALVANIZING

1. Hot-dip galvanizing shall be applied to all parts indicated on the plans or elsewhere specified in these specifications for galvanizing.

2. All rolled steel shapes, plates, and bars to be galvanized shall conform to ASTM A925. The weight of the zinc coating per square foot of actual surface area shall average 0.8 oz. and no individual specimen shall show less than 0.6 oz.

3. Damaged galvanized surfaces shall be thoroughly cleaned to remove all contaminants and shall then be repaired per AWS A5.5.

4. All steel hardware (bolts, nuts, washers, etc.) shall be galvanized per AWS A5.5.

LOADING AND SHIPPING

1. All materials shall be carefully loaded so as to avoid damage in transit. Members weighing more than three tons shall have the weight marked thereon. All small parts such as rivets, bolts, pins, washers, and small connection plates shall be packed in containers of adequate strength. The contents of each unit shall be plainly marked on the top of each container.

2. The welded girders and floorbeam panels shall be shipped in an upright position and be adequately blocked and braced to prevent damage during shipping. The fabrication shop shall submit order drawing drawings to the engineer for approval 1 week prior to the anticipated shipping date. These drawings shall include proposed blocking, bracing and tie-down details.

EPOXY GROUT

Epoxy grout shall be non-shrink and shall conform to ASTM C1107. The minimum 28-day compressive strength of the grout shall be 6,000 psi.

The following materials are approved for use:

CLASS A EPOXY
1. SPEC-BOND A&B LIQUID TYPE EPOXY
2. SPEC-BOND 100 EPOXY

CLASS B EPOXY
1. SPEC-BOND A&B GEL TYPE EPOXY
2. SPEC-BOND 200 EPOXY

SPEC-BOND 200 and SPEC-BOND 100 EPOXY ARE AVAILABLE FROM:

DELTA PLASTICS CO., INC. OR PERMACON
1201 ROSS 206 1217 MONTROSE AVE
NEWTON VILLAGE, CA 92270 NEWPORT BEACH, CA 92663
PHONE (213) 633-0132 PHONE (714) 548-1137
FAX (213) 633-2723 FAX (714) 548-1130

SPEC-BOND EPOXY ARE AVAILABLE FROM:

CONSPEC MARKETING & MANUFACTURING CO., INC.
6300 S.W. 66TH TERRACE
KANSAS CITY, KS 66111
PHONE (813) 287-1702
FAX (813) 287-2766

PAYMENT

Payment for structural steel will be made at the lump sum price quoted for "structural steel" which shall be full compensation for furnishing and installing the metalwork and shall be full compensation for furnishing all labor, materials, tools, supplies, equipment and accessories necessary to complete the work required in this plan set. This price paid shall include prepaid freight, insurance, bearing, park, erection, erection, inspection, test, inspection, services, surface preparation, cleaning, and galvanizing where required. No additional payment will be made for materials used in span assembly during fabrication or for any metal added for erection or other purposes unless approved by the engineer.

JOINT SEALANT

A PREMIUM POLYSULFIDE SEALANT SHALL BE USED TO FILL FLOORBEAM PANEL CLOSURE GAP AFTER FIELD WELDING.
125'-0" STANDARD TPG
BRIDGE REPLACEMENT
GENERAL PLAN AND ELEVATION

- PLAN
  - HP = HANDRAIL PANEL (SEE SHEETS S15 & S16)
  - BCP = BENT CURB PLATE (SEE SHEET S11)
  - FBP = FLOORBEAM PANEL (SEE SHEET S12)

- ELEVATION
  - HP = HANDRAIL PANEL (SEE SHEETS S15 & S16)

- NOTE:
  1. FOR MULTIPLE SPAN CONDITION, SEE SHEET S13.
  2. PROJECT PLANS TO BE PROVIDED FOR SPECIFIC BRIDGE SITES.
**EXISTING TYPICAL SECTION @ C BEARING**

**NOTE:**
- 1. SEE SHEETS S14 THROUGH S16 FOR WALKWAY & UTILITY CHASE DETAILS.
- 2. OPTIONAL WALKWAY AND HOLES IN TPG SHALL ONLY BE PROVIDED AS THE DESIGN PLANS DICTATE.
- 3. OPTIONAL UTILITY CHASES SHALL ONLY BE PROVIDED AS THE DESIGN PLANS DICTATE.

**NOTES:**
1. PROVIDE PREMIUM POLYURETHANE SEALANT IN 2" GAP AMONG BALLAST DECK PLATES AT FLOORBEAM PANEL CLOSURE LOCATION.
2. NO ALLOWANCE FOR CORROSION OF BALLAST DECK PLATES, UNLESS INDICATED DIFFERENTLY IN DESIGN PLANS.
3. CONNECTION HOLES SHALL ALWAYS BE PROVIDED IN STIFFENER PLATES, UNLESS INDICATED OTHERWISE IN DESIGN PLANS.

**EXISTING SUBSTRUCTURE (SEE PROJECT PLANS)***

**WATERPROOFING REQUIREMENTS IF ANY:**
- SEE PROJECT PLANS FOR REQUIRED WATERPROOFING REQUIREMENTS.

**NOTE:**
- DIFFERENCE IN LOW CHORD FOR GIRDERS:
  - 8"x10"x10'-0" BRIDGE TIE

**PROPOSED TYPICAL SECTION AT C BEARING**

**FLOORBEAM PANEL CLOSURE DETAIL**

**BALLAST DEC (TYP.)**

**W36x135**

**1"=1'-0"**

**12" STANDARD TPG BRIDGE REPLACEMENT CLEARANCE ENVELOPE (SEE SHEET S2)**

**SCALE:**
- 1"=1'-0" THRU BRIDGE = â" THRU GIRDERS = â"* (LOOKING RR NORTH)

**NOTE:**
- *SEE PROJECT BILL OF MATERIALS FOR REQUIRED WALKWAY AND UTILITY CHASE.*
**NOTES:**
1. **FLOORBEAM CONNECTIONS AT INTERMEDIATE AND BEARING STIFFENER PLATES ARE TO BE MADE ON OPPOSITE SIDES OF STIFFENERS AT THE 2 GIRDERS.**
2. **SEE SHEET S17 FOR SOLE PLATE DETAILS.**
3. **SEE SHEET S12 FOR FLOORBEAM PANEL DETAILS.**
4. **ALTERNATE BRIDGE JACKING LOCATION UNDER INTERMEDIATE STIFFENER PLATES ON GIRDER LT AND GIRDER RT AT FB3 AND FB31.**

**TABLE OF MEMBERS AND LOADING**

<table>
<thead>
<tr>
<th>MEMBER</th>
<th>SECTION</th>
<th>WEIGHT (LBS)</th>
<th>SHEAR (KIP)</th>
<th>MOMENT (KIP-FT)</th>
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<tr>
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<td>W36x135</td>
<td>354.1</td>
<td>19.3</td>
<td>9700.5</td>
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<tr>
<td>INTERIOR FLOORBEAM</td>
<td>W36x135</td>
<td>46.0</td>
<td>25.0</td>
<td>1349.4</td>
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<td>SOLE</td>
<td>SEE NOTE 2</td>
<td>354.1</td>
<td>19.3</td>
<td>9700.5</td>
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**NOTES:**
5. **END FLOORBEAM FRAME JACK LOADS PROVIDED.**

---

**FRAMING PLAN**

**SCALE:**

**DATE:**

**DESIGNED BY:**

**DRAWN BY:**

**APPROVED BY:**

**PROJECT:**

**TITLE:**

**DWG NO.:**

**AFE NO.:**

**OF CHECKED BY:**

**ACAD FILE:**

---

**ISSUED FOR CONSTRUCTION**

---

**ALASKA RAILROAD CORPORATION**

**ENGINEERING SERVICES**

**4300 B STREET, SUITE 505**

**ANCHORAGE, AK 99503**

**P.O. BOX 10750, ANCHORAGE, ALASKA 99510-7500**

**PHONE: 907-315-8306**

**FAX: 907-274-8644**

---

**125' STANDARD TPG BRIDGE REPLACEMENT FRAMING PLAN**

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**09-11-15  DF ISSUED FOR CONSTRUCTION**

---

**DAVID M. FITZWATER**

---

**03-05-21 JBH**

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**VARIOUS UPDATES**
**Bridge Steel Details (1 of 2)**

**Typical Section**

- **W36x135 Floorbeam**
- **W30x90 Diaphragm**

**Section A**

- **Optional Walkway Attachment**
- **Optional Utility Chase Attachment**

**Section B**

- **Face of Web B**
- **Face of Web G**
- **Face of Web G**

**Section C**

- **Face of Floorbeam**
- **Face of Floorbeam**

**Footnotes:**

1. See Sheet S11 for Knee Brace Details.
2. All dimensions and connections shall be detailed on the plans. See project plans for detailed construction requirements.

**Notes:**

- **Top of Floorbeam**
- **Top of Floorbeam**

**Diaphragm to Floorbeam Connection**

- **W36x135 Floorbeam**
- **W30x90 Diaphragm**

**Jackin G Detail**

- **5" = 1'-0"**

**Scale:**

- **1" = 1'-0"**

**Issued for Construction**

- **Alaska Railroad Corporation**
- **Wilson & Company**
- **P.O. Box 10750, Anchorage, AK 99510-7500**

**Engineering Services**

- **Phone:** 907-315-8306
- **Fax:** 907-274-8644

**Approved by:**

- **David M. Fitzwater**
  - **Project Engineer**
  - **No. CE12133**
  - **J BH**
  - **Various Updates**

**Date:** 09-11-2015
KNEE BRACE KB1
ATTACHED TO FB1 & FB3

KNEE BRACE KB2
ATTACHED TO FB1 & FB3

KNEE BRACE KB3
ATTACHED TO FB1 & FB3

KNEE BRACE KB4
ATTACHED TO FB1 & FB3

BCP2

BCP3

BCP4

BIT CURB ELEVATION

BENT CURB TYPICAL SECTION

OVERSIZE HOLE FOR 7/8" DIA. BOLT (TYP.)

DISTANCE MEASURED ALONG PLATE SLOPE TO CENTER OF OVERSIZED HOLE FOR 7/8" DIA. BOLT

3" = 1'-0"

2'-3 1/2"

5'-0 1/2"

10 1/2'

3'-7 1/4"

7'-11 1/4"

10"
GIRDER END @ ABUTMENT - LONGITUDINAL SECTION

GIRDER ENDS @ PIER - LONGITUDINAL SECTION

GIRDER END @ ABUTMENT - LONGITUDINAL SECTION

NOTES:
1. SEE SHEET S11 FOR BENT CURB DETAIL
2. HOLES IN KNEE BRACE FLANGE SHALL BE FILLED WITH COUNTERSUNK BOLT.

EXISTING SUBSTRUCTURE (TYP.) (SEE PROJECT PLANS)

PROPOSED

TOP OF TIE (TYP.)

H.D. H.S. BOLT (TYP.)

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

ISSUED FOR CONSTRUCTION 06-30-21

DAVID M. FITZWATER

ALLENI ENG 09-11-15  DF  ISSUED FOR CONSTRUCTION

ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES
P.O. BOX 10750, ANCHORAGE, ALASKA 99510-7500
PHONE: 907-274-8644
FAX: 907-315-8306

125' STANDARD TPO
BRIDGE REPLACEMENT

GIRDER END DETAILS
HANDRAIL PANEL HP1
3'-11" OUT-TO-OUT OF HANDRAIL

HANDRAIL PANEL HP2
5" OUT-TO-OUT OF HANDRAIL

HANDRAIL PANEL HP3
5' OUT-TO-OUT OF HANDRAIL

HANDRAIL PANEL HP4
5' OUT-TO-OUT OF HANDRAIL

NOTES:
1. STRUCTURAL STEEL BARS AND PLATES SHALL CONFORM TO ASTM A36. STANDARD BLACK PIPE SHALL CONFORM TO ASTM A53.
2. BOLTS USED ON HANDRAIL PLATES SHALL BE GALVANIZED.
3. HANDRAIL PANELS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123. BOLTS USED ON HANDRAIL PLATE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153.
4. HANDRAIL PANELS ON WALKWAY SHALL BE ERECTED PLUMB AND IN-LINE.
5. HANDRAIL PANELS ON WALKWAY SHALL BE FABRICATED USING 2" DIA. STANDARD BLACK PIPE.
6. HANDRAIL PANELS ON WALKWAY SHALL BE FREE OF FINS, ABRASIONS, ROUGH SURFACES, ROUGH EDGES AND OTHER SURFACE DEFECTS.
HANDRAIL PANEL HP4R
MINIMUM PANELS ARE TO BE FABRICATED USING 2" DIA. STANDARD BLACK PIPE GALVANIZE AFTER FABRICATION

HANDRAIL PANEL HP5
MINIMUM PANELS ARE TO BE FABRICATED USING 2" DIA. STANDARD BLACK PIPE GALVANIZE AFTER FABRICATION

HANDRAIL PANEL HP6
MINIMUM PANELS ARE TO BE FABRICATED USING 2" DIA. STANDARD BLACK PIPE GALVANIZE AFTER FABRICATION

NOTES:
1. HANDRAIL PANELS ON WALKWAY SHALL BE ERRECTED PLUMB AND IN-LINE.
2. AFTER GALVANIZING ALL ELEMENTS SHALL BE FREE OF FINS, ABRASIONS, ROUGH OR SHARP EDGES AND OTHER SURFACE DEFECTS.
3. HANDRAIL PANELS ON WALKWAY SHALL BE DRILLED PLUMB AND IN-LINE
NOTES:
1. BEARINGS SHALL BE FABRICATED IN ACCORDANCE WITH CHAPTER 15, PART 5 OF THE CURRENT AREMA MANUAL FOR RAILWAY ENGINEERING.
2. BEARING SURFACE SHALL BE COVERED WITH THE USE OF NON-SLIDING MATERIAL AS REQUIRED.
3. HOLE SHALL BE DRY AND FREE OF EXCESS PASTE BURNISHING.

ACADEMIC FILE:
REV. 0
ACAD FILE: DWG NO.
123° STANDARD TPQ
ALASKA RAILROAD CORPORATION
BRIDGE REPLACEMENT
ENGINEERING SERVICES
APPROVED BY:
08-11-2005
ISSUED FOR CONSTRUCTION
BEARING DETAILS
BEARING PAD DETAIL
SECTION
EXPANSION BEARING PAD
INSTALLATION DETAIL
8 SCALE
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<table>
<thead>
<tr>
<th>#</th>
<th>QUANTITY</th>
<th>UNIT</th>
<th>DESCRIPTION</th>
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<td>1</td>
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<td>GIRDER LT W/ STIFFENERS &amp; H.S. BOLTS FOR FIELD ERECTION</td>
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<td>9</td>
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**TPG BILL OF MATERIALS - PER SPAN**

- **SCALE:**
- **DATE:**
- **DESIGNED BY:**
- **DRAWN BY:**
- **APPROVED BY:**
- **CHECKED BY:**
- **ACAD FILE:**

**ISSUED FOR CONSTRUCTION**