CITY OF VALDEZ
MINERAL CREEK BRIDGE REPAIRS

VALDEZ, ALASKA
MARCH 2021

SUMMARY OF WORK:

1. REPLACEMENT OF SELECTED ELEMENTS OF THE BRIDGE RAIL
2. REPLACEMENT OF BRIDGE APPROACH RAILING (GUARDRAIL)
3. REMOVAL OF VEGETATION AT SELECTED AREAS ALONG THE BRIDGE
4. REMOVAL OF WOOD DEBRIS AT SELECTED AREAS BENEATH THE BRIDGE
5. REPLACEMENT OF EXPANSION JOINT ON THE BRIDGE DECK
6. REPAIR OF CRACKS, SPALLS, AND UNSOUND CONCRETE IN BRIDGE SUPERSTRUCTURE

DRAWING INDEX

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APPROACH RAIL REPLACEMENT	4
BRIDGE EXPANSION JOINT REPLACEMENT	5
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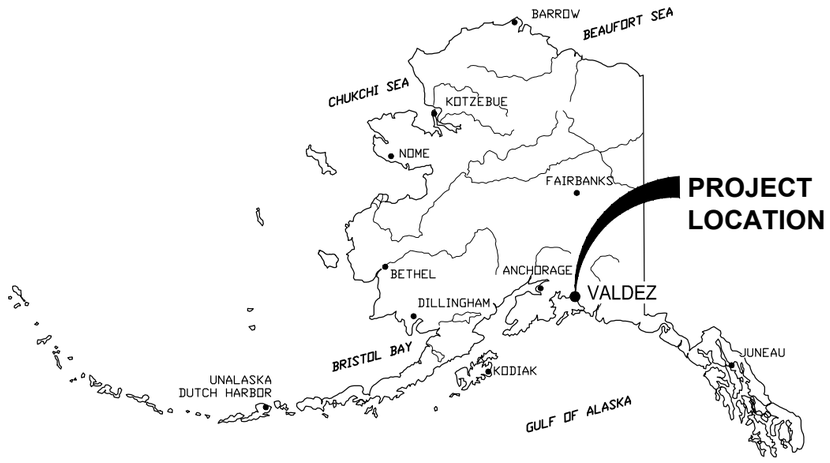
REFERENCE DRAWINGS

ALASKA DOT&PF STANDARD PLANS (2020):
G-00.05, G-05.11S, G-05.11W, G-10.20, G-14.01, G-29.00
S-00.12, S-01.02, S-05.02, S20.10, S-31.02
MINERAL CREEK BRIDGE AND WATER CONTROL WORKS (1982)

MINERAL CREEK BRIDGE
(FACING DOWNSTREAM)



STATE OF ALASKA

VICINITY MAP

CITY OF VALDEZ, ALASKA
OPPORTUNITIES IN EVERY SEASON

REV	DATE	DESCRIPTION

STATE OF ALASKA
49 TH
Douglas T. Kenley
CE-8176
4/9/21
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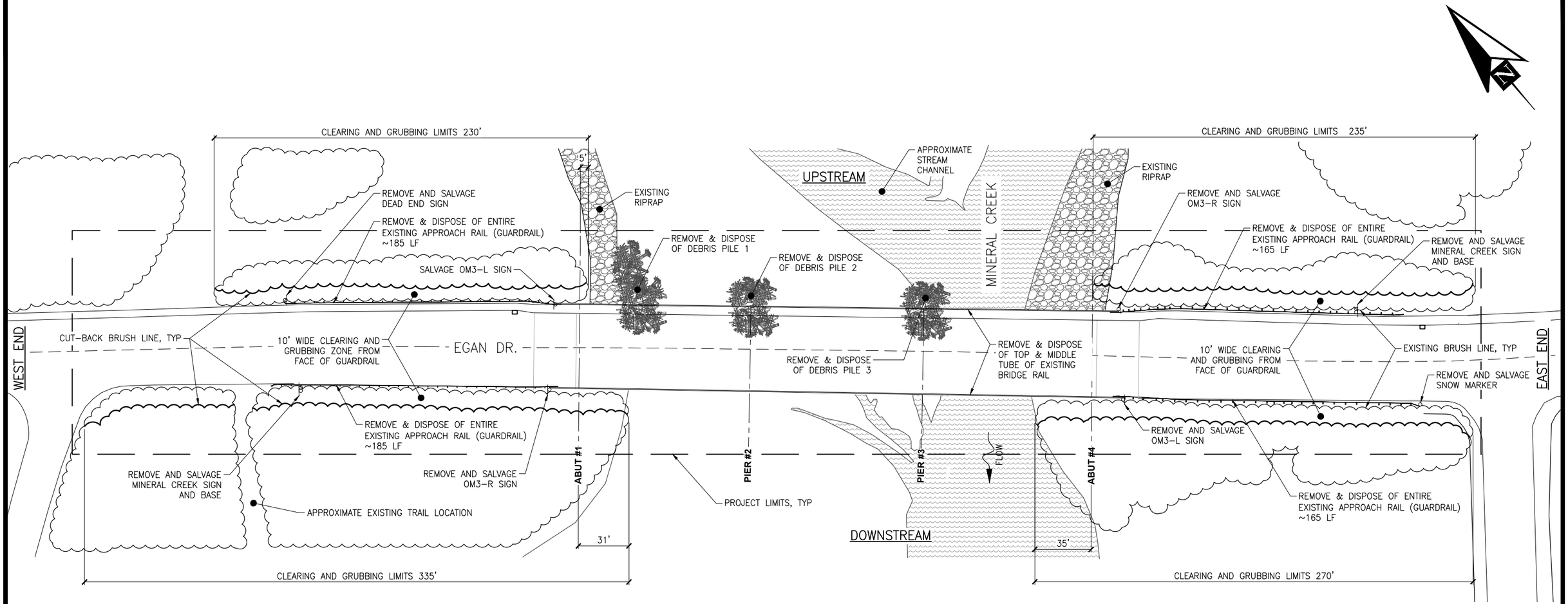
PND ENGINEERS, INC.

PROJECT:
CITY OF VALDEZ
MINERAL CREEK BRIDGE REPAIRS

TITLE:
COVER SHEET AND DRAWING INDEX

DESIGNED BY:	DTK	DATE:	04/08/2021
CHECKED BY:	CC	PROJECT NO:	201123

SHEET NO: 1 OF 11



A2 EXISTING CONDITIONS AND STRUCTURE & DEBRIS REMOVAL PLAN

SCALE: 1" = 30'

LEGEND

WOOD DEBRIS

TREES & BUSHES

NOTES:

1. DIMENSIONS AND LOCATIONS SHOWN ARE APPROXIMATE.
2. THE CONTRACTOR IS ADVISED THAT THE STREAM CHANNEL SHOWN IS ACCURATE ONLY FOR THE SURVEY CONDUCTED IN AUGUST 2017. DEPENDING ON THE SEASON AND YEAR THE ACTUAL CHANNEL FLOW COULD EXTEND BANK FULL WIDTH.
3. CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING ACCESS POINTS TO THE STREAM CHANNEL FOR STRUCTURE AND DEBRIS REMOVAL.
4. BACKFILL THE RESULTING TRENCHES, HOLES, AND PITS FROM REMOVAL OF STRUCTURES & DEBRIS.
5. DISPOSE OF ALL REMOVED ITEMS IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS.
6. SEE SHEETS 3 & 4 FOR ADDITIONAL RAIL REMOVAL AND REPLACEMENT NOTES.
7. CONTRACTOR SHALL COORDINATE STAGING AREAS WITH THE CITY OF VALDEZ.
8. PERFORM WORK IN ACCORDANCE WITH AKDOT&PF SPECIFICATIONS AND SPECIAL PROVISIONS.
9. ALL REMOVED AND SALVAGED SIGN MATERIALS SHALL BECOME THE PROPERTY OF THE CITY. CONTRACTOR SHALL COORDINATE WITH THE CITY TO STOCKPILE SIGN MATERIALS AT THE PUBLIC WORKS DEPARTMENT YARD.

CITY OF VALDEZ, ALASKA — OPPORTUNITIES IN EVERY SEASON

REV	DATE	DESCRIPTION

STATE OF ALASKA — 49 TH — Douglas T. Kenley — CE-8176 — 4/8/21 — REGISTERED PROFESSIONAL ENGINEER

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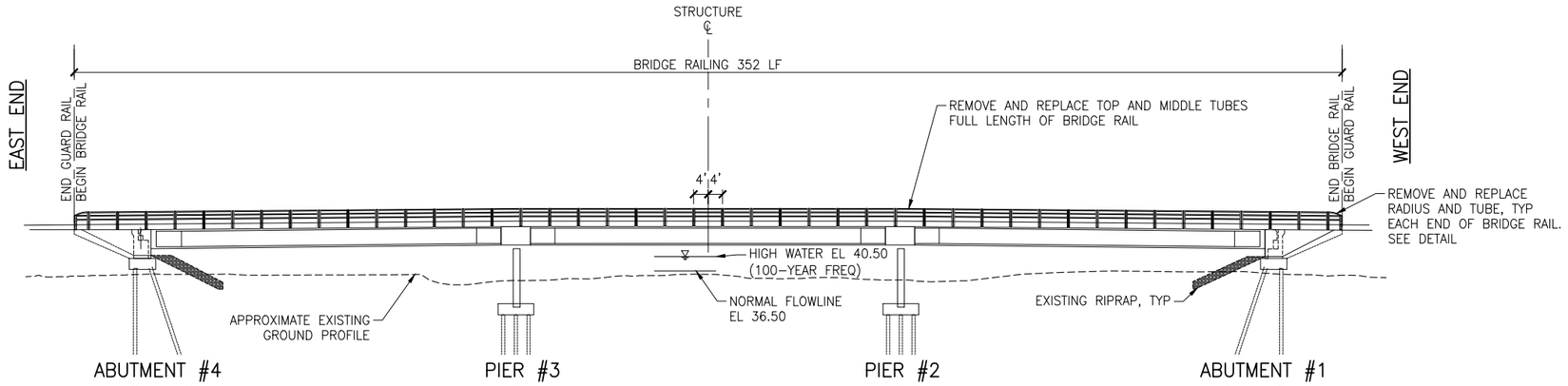
PND ENGINEERS, INC.

PROJECT: **CITY OF VALDEZ MINERAL CREEK BRIDGE REPAIRS**

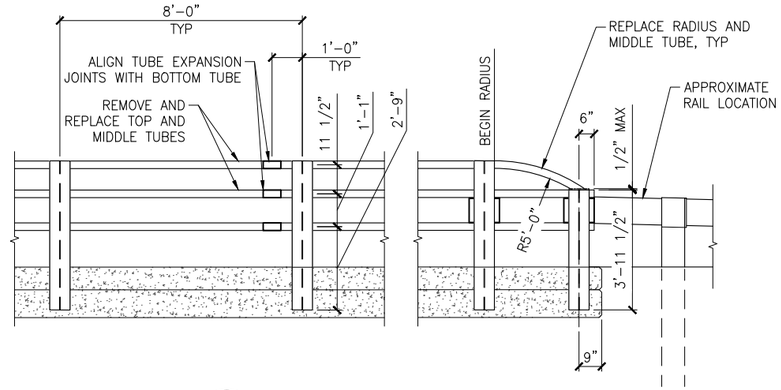
TITLE: EXISTING CONDITIONS AND STRUCTURE & DEBRIS REMOVAL

DESIGNED BY:	DTK	DATE:	04/08/2021
CHECKED BY:	CC	PROJECT NO:	201123

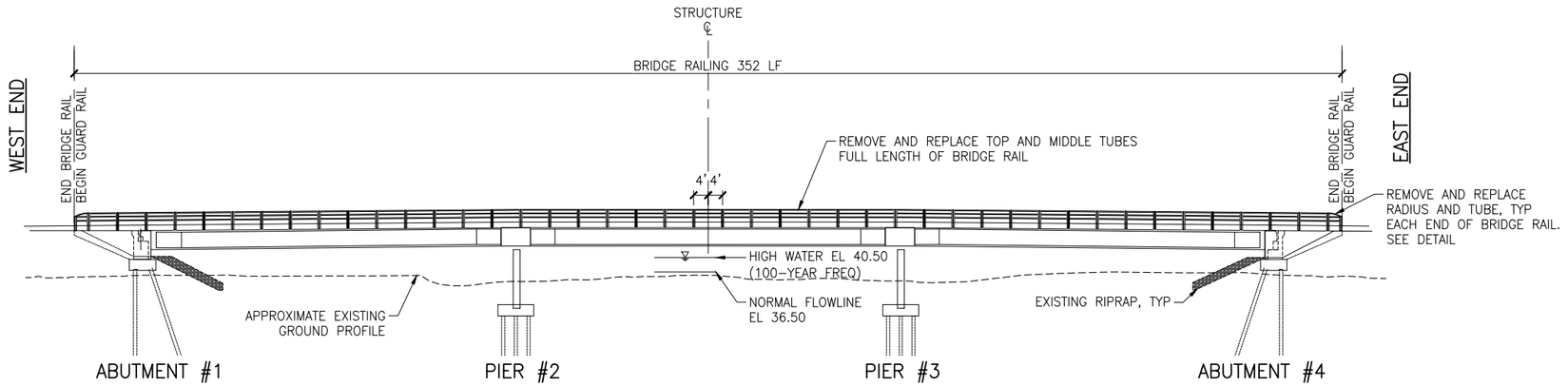
SHEET NO: 2 OF 11



A 3 BRIDGE RAIL - UPSTREAM ELEVATION
SCALE: NTS



C 3 BRIDGE RAIL DETAIL
SCALE: NTS



B 3 BRIDGE RAIL - DOWNSTREAM ELEVATION
SCALE: NTS

RAILING NOTES:

1. RAILS SHALL INSTALLED IN THE EXISTING ALIGNMENT.
2. RAILS SHALL BE CONTINUOUS OVER NOT LESS THAN 3 INTERMEDIATE POSTS, WITH A MINIMUM LENGTH OF 3 PANELS (24 FEET).
3. NO MORE THAN ONE RAIL SPLICE PER PANEL SHALL BE PERMITTED, EXCEPT AT DECK EXPANSION JOINTS.
4. MAXIMUM LENGTH OF RAIL BETWEEN TYPICAL SPLICES SHALL BE 48 FEET.
5. MAXIMUM OF ONE SHOP FABRICATED TUBE SPLICE PER SECTION OF RAIL SHALL BE PERMITTED.
6. 3/4-INCH STUD BOLT NUTS SHALL BE TORQUED TO 175 FT-LBS.
   3/8-INCH STUD BOLT NUTS SHALL BE WRENCH/SNUG TIGHT.
7. ANCHOR BOLT NUTS SHALL BE WRENCH/SNUG TIGHT.
8. GALVANIZE RAIL ASSEMBLY AFTER FABRICATION.

SHEET NOTES:

1. DIMENSIONS AND LOCATIONS SHOWN ARE APPROXIMATE. FIELD FIT TO MATCH EXISTING.
2. REMOVE AND REPLACE TOP AND MIDDLE TUBE INCLUDING RADIUS.
3. SEE DETAILS ON SHEET 7 FOR ADDITIONAL INFORMATION.
4. PERFORM WORK IN ACCORDANCE WITH AKDOT&PF SPECIFICATIONS AND SPECIAL PROVISIONS.

CITY OF VALDEZ, ALASKA
OPPORTUNITIES IN EVERY SEASON

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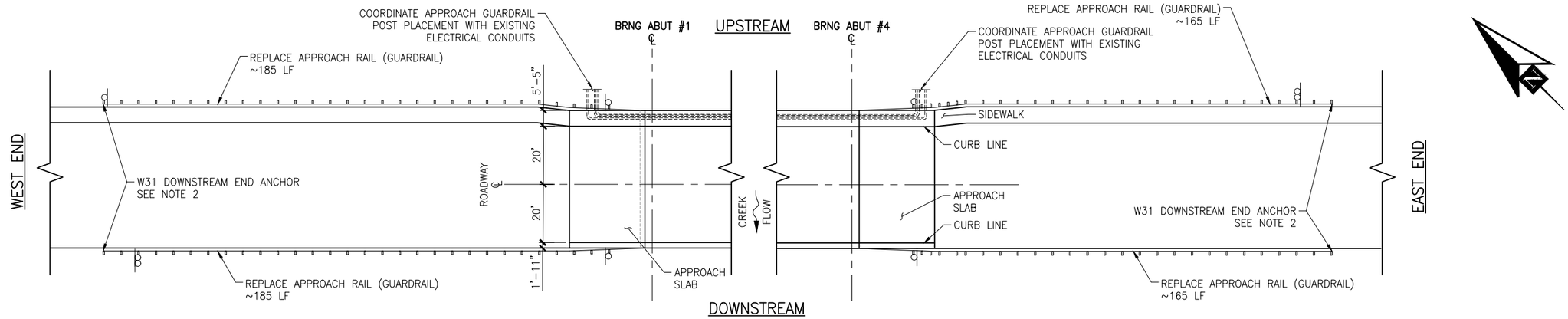
PND ENGINEERS, INC.

PROJECT:
CITY OF VALDEZ
MINERAL CREEK BRIDGE REPAIRS

TITLE:
BRIDGE RAIL REPLACEMENT

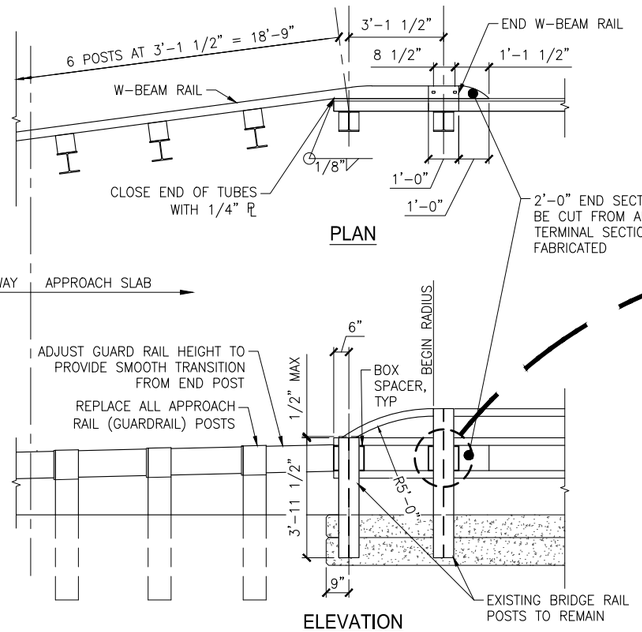
DESIGNED BY:	DTK	DATE:	04/08/2021
CHECKED BY:	CC	PROJECT NO:	201123

SHEET NO: 3 OF 11



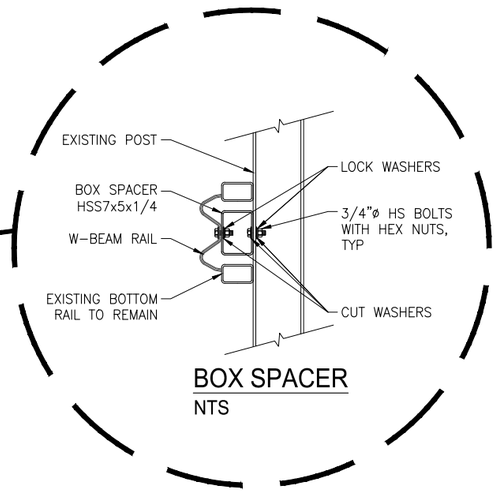
A/4 APPROACH RAIL PLAN

SCALE: 1" = 20'



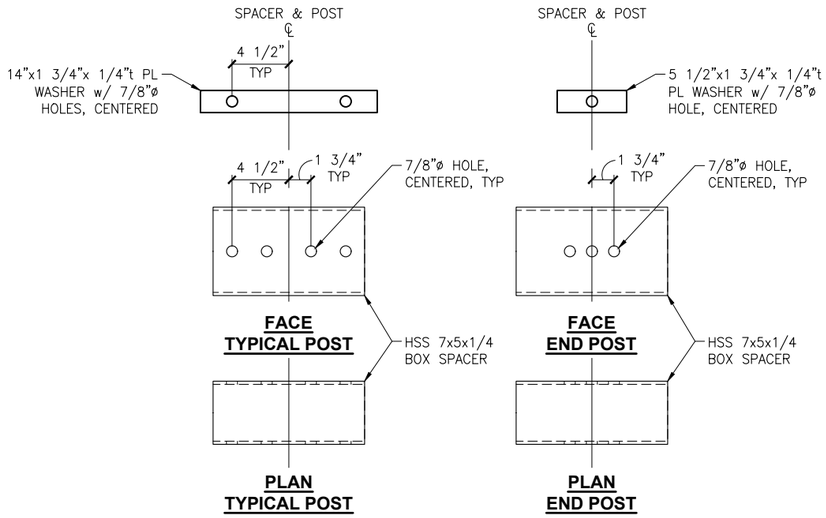
B/4 BRIDGE TO GUARD RAIL TRANSITION DETAIL

SCALE: NTS



BOX SPACER

NTS



C/4 BOX SPACER DETAILS

SCALE: NTS

NOTES:

1. DIMENSIONS AND LOCATIONS SHOWN ARE APPROXIMATE. FIELD FIT TO MATCH EXISTING.
2. SEE ALASKA DOT&PF STANDARD PLANS (G00.05, G5.11S, G10.20, G14.01) FOR APPROACH RAIL (GUARDRAIL) CONSTRUCTION REQUIREMENTS. INSTALL FLEXIBLE DELINEATORS AT GUARDRAIL ENDS.
3. REMOVE AND REPLACE APPROACH RAIL (GUARDRAIL). INSTALL STEEL POSTS EXCEPT WHERE WOOD POSTS ARE SPECIFIED ON THE PLANS, STANDARD PLANS, AND/OR DETAILS. REMOVAL AND REPLACEMENT OF GUARDRAIL/APPROACH RAIL INCLUDES ALL COMPONENTS INCLUDING POSTS, BOX SPACERS, MOUNTING HARDWARE, END ANCHORS, ETC.
4. CONTRACTOR SHALL FIELD LOCATE ALL UTILITIES WITHIN THE PROJECT LIMITS PRIOR TO BEGINNING WORK.
5. PERFORM WORK IN ACCORDANCE WITH AKDOT&PF SPECIFICATIONS AND SPECIAL PROVISIONS.

CITY OF VALDEZ, ALASKA
OPPORTUNITIES IN EVERY SEASON

REV	DATE	DESCRIPTION

STATE OF ALASKA
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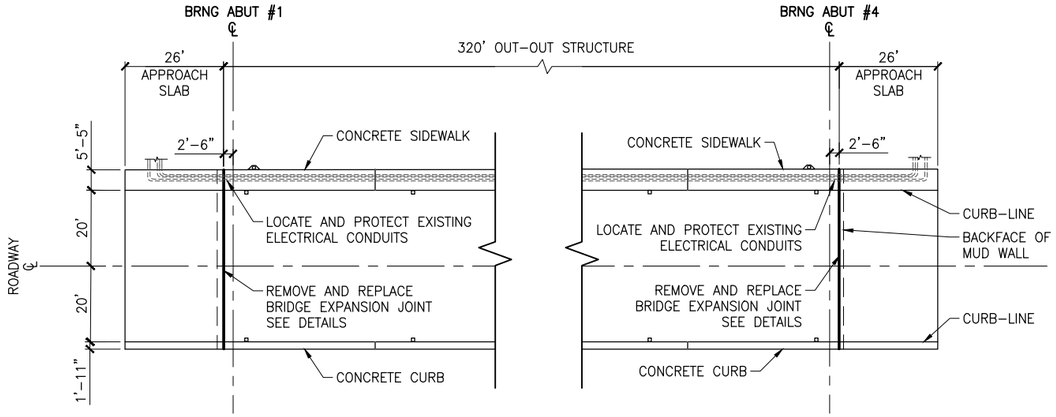
PND ENGINEERS, INC.

PROJECT:
CITY OF VALDEZ
MINERAL CREEK BRIDGE REPAIRS

TITLE:
APPROACH RAIL REPLACEMENT

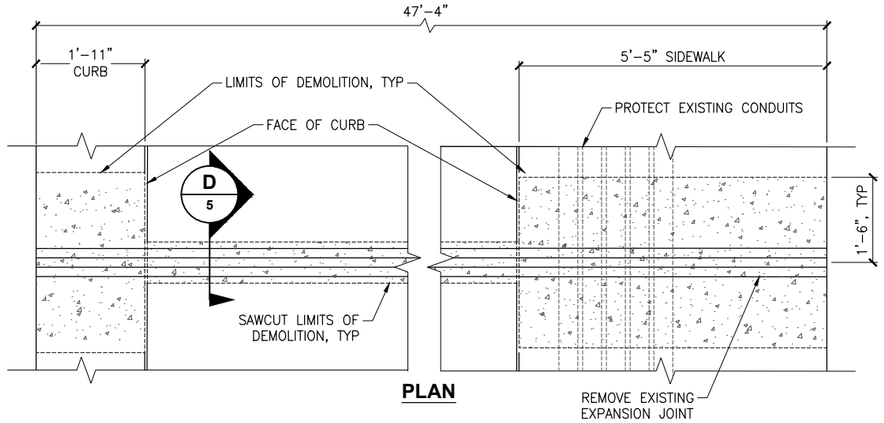
DESIGNED BY:	DTK	DATE:	04/08/2021
CHECKED BY:	CC	PROJECT NO:	201123

SHEET NO: 4 OF 11



A 5 BRIDGE EXPANSION JOINT REPAIR OVERVIEW PLAN

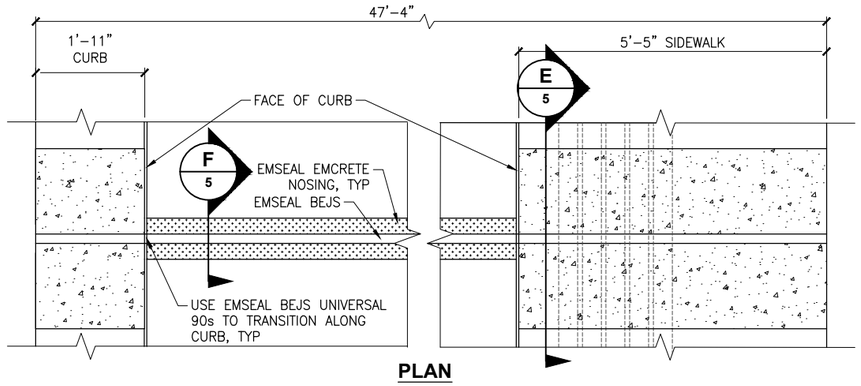
SCALE: NTS



PLAN

B 5 BRIDGE EXPANSION JOINT DEMOLITION PLAN

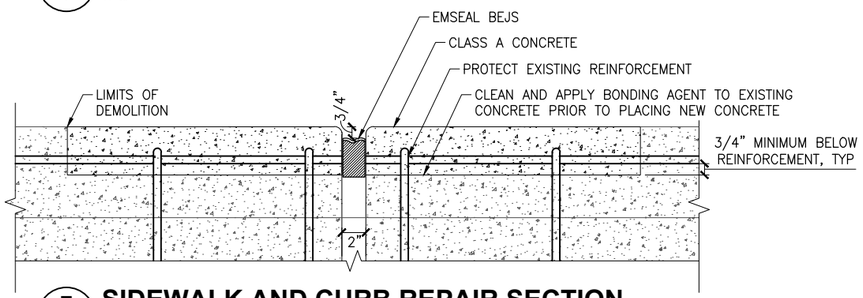
SCALE: NTS



PLAN

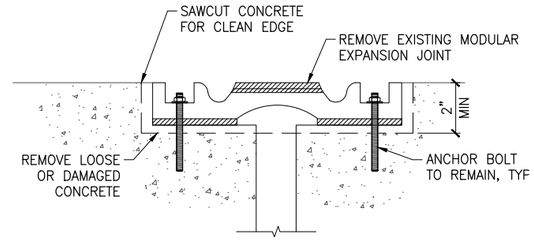
C 5 BRIDGE EXPANSION JOINT REPAIR PLAN (2 EA)

SCALE: NTS



E 5 SIDEWALK AND CURB REPAIR SECTION

SCALE: NTS



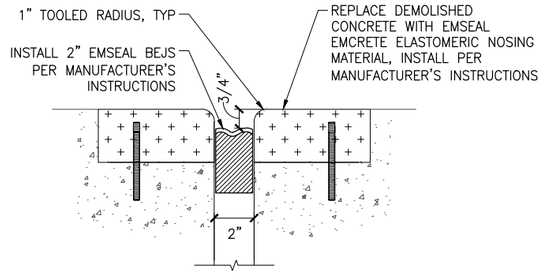
D 5 EXISTING EXPANSION JOINT REPLACEMENT SECTION

SCALE: NTS

(TO BE REMOVED)

NOTES:

1. DIMENSIONS AND LOCATIONS SHOWN ARE APPROXIMATE. FIELD FIT TO MATCH EXISTING.
2. DAMAGED AND DELAMINATED CONCRETE IN THE JOINT INTERFACE MUST BE REMOVED AND REPLACED PRIOR TO PLACEMENT OF EXPANSION JOINT.
3. REMOVE EXISTING EXPANSION JOINTS AND REPLACE WITH NEW EXPANSION JOINT.
4. REMOVE CONCRETE USING HYDRODEMOLITION OR OTHER APPROVED METHOD.
5. PERFORM WORK IN ACCORDANCE WITH AKDOT&PF SPECIFICATIONS AND SPECIAL PROVISIONS.



F 5 NEW EXPANSION JOINT REPLACEMENT SECTION

SCALE: NTS

CITY OF VALDEZ, ALASKA
OPPORTUNITIES IN EVERY SEASON

REV	DATE	DESCRIPTION

STATE OF ALASKA
49 TH
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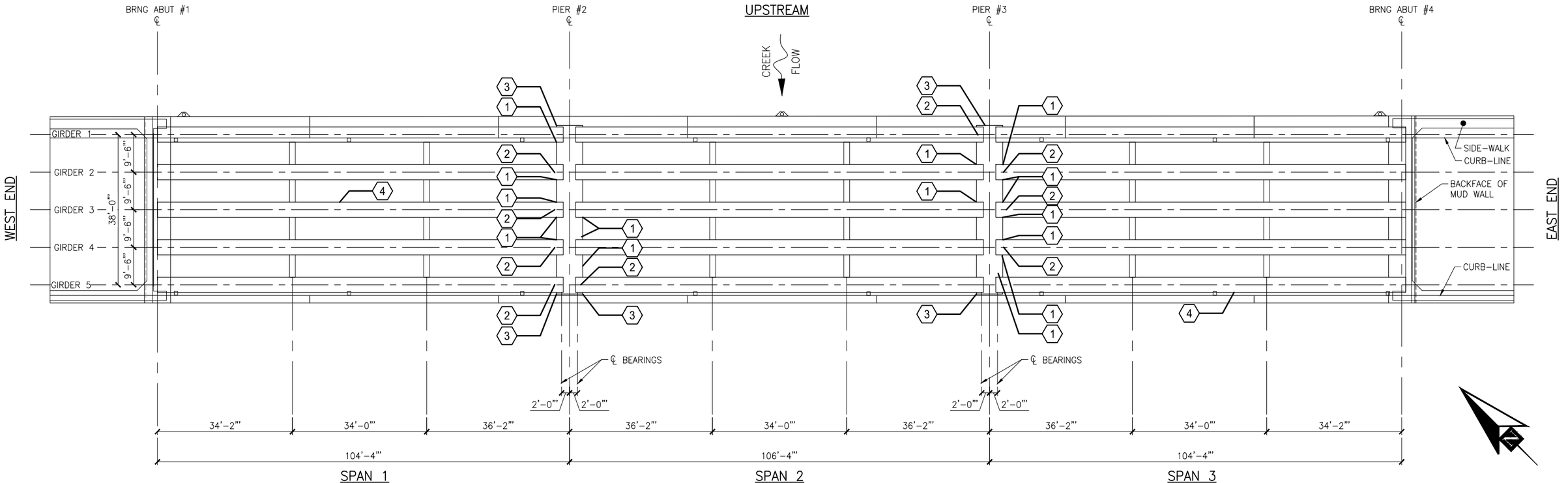
PND ENGINEERS, INC.

PROJECT:
CITY OF VALDEZ
MINERAL CREEK BRIDGE REPAIRS

TITLE:
BRIDGE EXPANSION JOINT REPLACEMENT

DESIGNED BY:	DTK	DATE:	04/08/2021
CHECKED BY:	CC	PROJECT NO:	201123

SHEET NO: 5 OF 11



A/6 **SUPERSTRUCTURE CONCRETE REPAIR PLAN**

SCALE: NTS

REPAIR TYPE

1. DIAPHRAGM CONCRETE SPALL REPAIR
2. GIRDER SPALL REPAIR AT JOINT WITH PIER CAP
   MAINTAIN EXISTING ½" POLYSTYRENE FOAM EXPANSION MATERIAL BETWEEN GIRDER END AND PIER CAP FACE.
3. PIER END SPALL REPAIR
4. GIRDER BOTTOM FLANGE CORNER SPALL REPAIR

NOTES:

1. DIMENSIONS AND LOCATIONS SHOWN ARE APPROXIMATE. FIELD FIT TO MATCH EXISTING.
2. PERFORM WORK IN ACCORDANCE WITH AKDOT&PF SPECIFICATIONS AND SPECIAL PROVISIONS.

CITY OF VALDEZ, ALASKA — OPPORTUNITIES IN EVERY SEASON

REV	DATE	DESCRIPTION

STATE OF ALASKA — 49 TH — Douglas T. Kenley — CE-8176 — 4/8/21 — REGISTERED PROFESSIONAL ENGINEER

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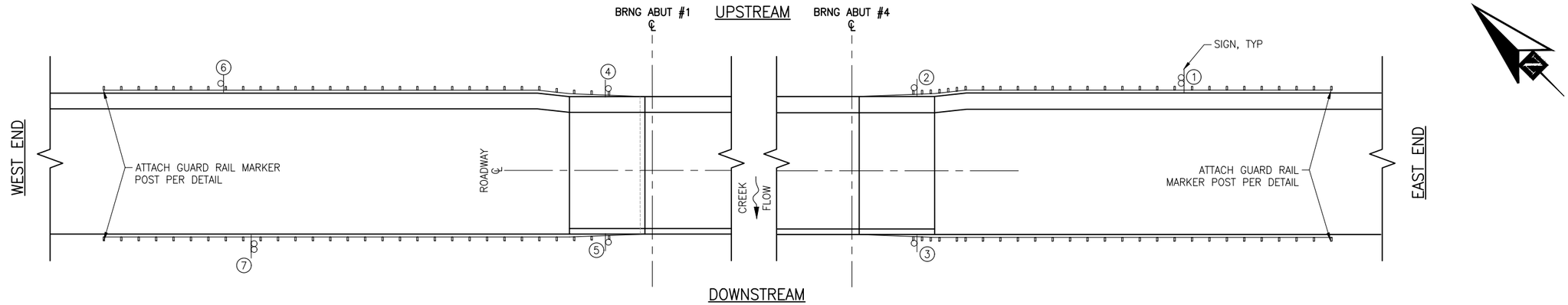
TITLE: SUPERSTRUCTURE CONCRETE REPAIR

DESIGNED BY:	DTK	DATE:	04/08/2021
CHECKED BY:	CC	PROJECT NO:	201123

SHEET NO: 6 OF 11



A/7 SIGNING PLAN

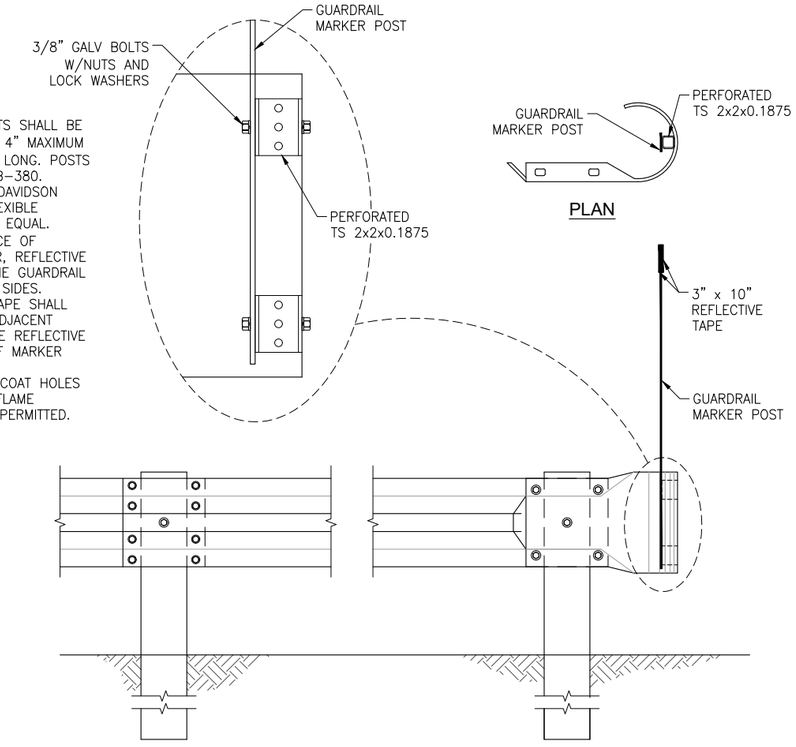
SCALE: 1" = 20'

FASTENER SPECIFICATION TABLE		
FASTENERS	STEEL	STAINLESS STEEL
BOLTS	ASTM A 307	ASTM F 593
NUTS	ASTM A 563	ASTM F 594
WASHERS	ASTM F 844	ASTM A 480

THESE SPECIFICATIONS APPLY TO ALL SIGN FASTENER HARDWARE ON THE PROJECT.

NOTES:
1. SIGN LOCATIONS ARE APPROXIMATE. VERIFY WITH THE ENGINEER PRIOR TO PLACEMENT.
2. USE THE FOLLOWING DEFINITIONS TO DECIPER THE ABBREVIATED SIGN POST TYPES.
   A. STEEL TUBE SQUARE (0.1875 IN. WALL)
   B. PERFORATED STEEL TUBING: PST
3. INSTALL NEW SIGNS PRIOR TO REMOVAL OF EXISTING SIGNS WITH SIMILAR MESSAGE.
4. DETERMINE POST LENGTHS IN THE FIELD. DO NOT EXTEND POSTS ABOVE TOP OF SIGN.
5. MOUNT SIGNS PER STANDARD PLANS S-05.02. SIGNS THAT PROJECT OVER OR WITHIN 2 FEET OF THE SIDEWALK AND PATHWAYS SHALL BE MOUNTED TO A HEIGHT OF 8 FEET.
6. ATTACH ALL SIGNS TO THEIR SUPPORTS WITH 3/8" DIAMETER BOLTS, EXCEPT ATTACH UNFRAMED SIGNS TO POSTS WITH ALUMINUM DRIVE RIVETS. WIND WASHERS ARE NOT REQUIRED WITH DRIVE RIVETS. INCLUDE SPLIT LOCK WASHERS WHEN BOLTS ARE USED.
7. ALL SIGNS, SIGN POSTS, AND ASSOCIATED HARDWARE SHALL BE IN ACCORDANCE WITH THE ALASKA SIGN DESIGN SPECIFICATION (ASDS), STATE OF ALASKA STANDARD PLANS, AND OTHER STATE OF ALASKA DOT&PF REQUIREMENTS.

GUARDRAIL MARKER NOTES:
1. GUARDRAIL MARKER POSTS SHALL BE YELLOW, 3" MINIMUM TO 4" MAXIMUM WITH AND AT LEAST 78" LONG. POSTS SHALL BE CARSONITE CIB-380. TRAFFICWORKS TW-.75, DAVIDSON FLEXI-GUIDE FG 500 FLEXIBLE MARKERS, OR APPROVED EQUAL.
2. INSTALL A 3" x 10" PIECE OF HI-INTENSITY, OR BETTER, REFLECTIVE TAPE AT THE TOP OF THE GUARDRAIL MARKER POST ON BOTH SIDES. COLOR OF REFLECTIVE TAPE SHALL MATCH THE COLOR OF ADJACENT EDGE LINE STRIPE. PLACE REFLECTIVE TAPE ON BOTH SIDES OF MARKER POST.
3. DRILL ALL BOLT HOLES. COAT HOLES WITH ZINC RICH PAINT. FLAME CUTTING SHALL NOT BE PERMITTED.



C/7 GUARD RAIL MARKER POST & ATTACHMENT DETAIL

SCALE: NTS

SIGN SUMMARY												
LOC NO.	ASDS CODE	LEGEND	SIZE (in) W x H			FACE DIR.	BRACING/FRAMING BRACED	BRACING/FRAMING FRAMED	AREA (sf)	POSTS NO.	POSTS SIZE (in)	POSTS TYPE	REMARKS
1	I-3	MINERAL CREEK	48	x	24	FAR END		X	8	2	2.5 x 2.5	PST	SIGN SIZE TO MATCH EXISTING
2	OM3-R	OBJECT MARKER	12	x	36	FAR END			3	1	2.5 x 2.5	PST	
3	OM3-L	OBJECT MARKER	12	x	36	FAR END			3	1	2.5 x 2.5	PST	
4	OM3-L	OBJECT MARKER	12	x	36	NEAR END			3	1	2.5 x 2.5	PST	
5	OM3-R	OBJECT MARKER	12	x	36	NEAR END			3	1	2.5 x 2.5	PST	
6	W14-1	DEAD END	30	x	30	FAR END	X		6.250	1	3 x 3	TS	
7	I-3	MINERAL CREEK	48	x	24	NEAR END		X	8	2	2.5 x 2.5	PST	SIGN SIZE TO MATCH EXISTING

B/7 SIGN SCHEDULE

SCALE: NTS

CITY OF VALDEZ, ALASKA — OPPORTUNITIES IN EVERY SEASON

REV	DATE	DESCRIPTION

STATE OF ALASKA — 49 TH — Douglas T. Kenley — CE-8176 — 4/8/21 — REGISTERED PROFESSIONAL ENGINEER

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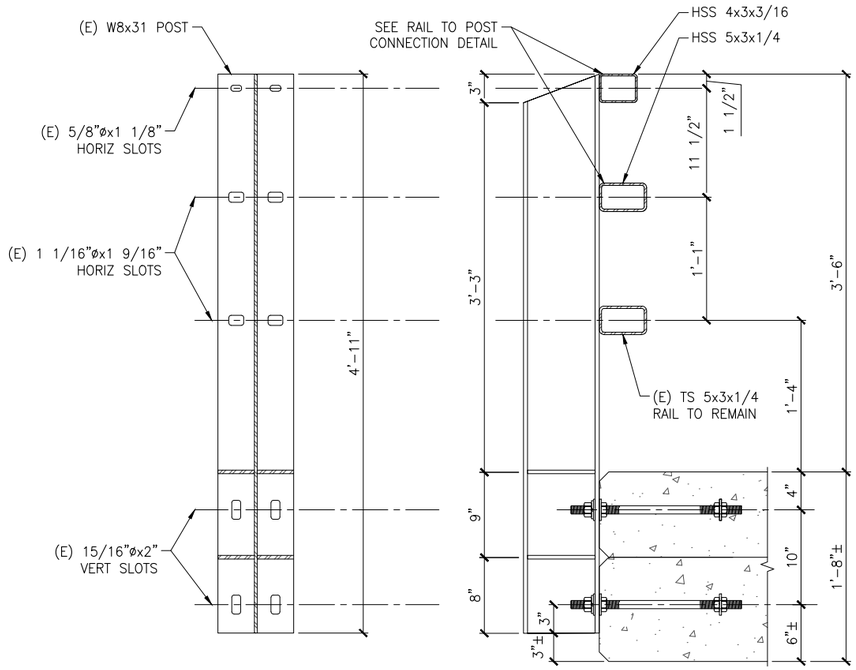
PND ENGINEERS, INC.

PROJECT: CITY OF VALDEZ
MINERAL CREEK BRIDGE REPAIRS

TITLE: SIGNING PLAN AND SUMMARY

DESIGNED BY:	DTK	DATE:	04/08/2021
CHECKED BY:	CC	PROJECT NO:	201123

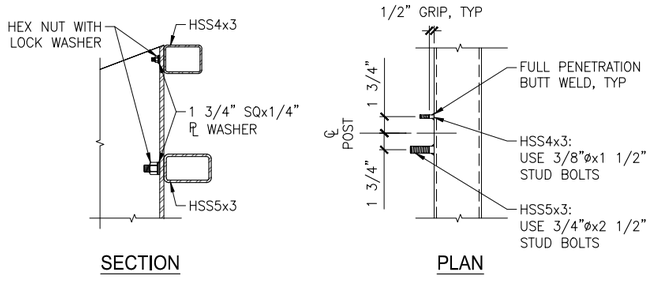
SHEET NO: 7 OF 11



SECTION SIDE VIEW

A 8 BRIDGE RAIL POST DETAILS

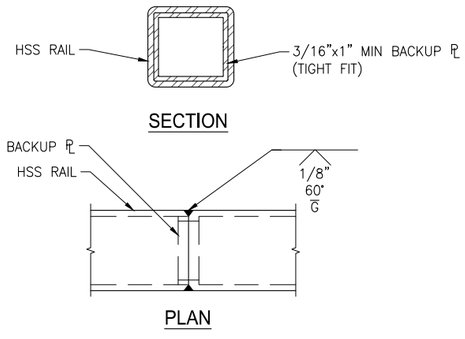
SCALE: NTS



SECTION PLAN

B 8 BRIDGE RAIL TO POST CONNECTION DETAIL

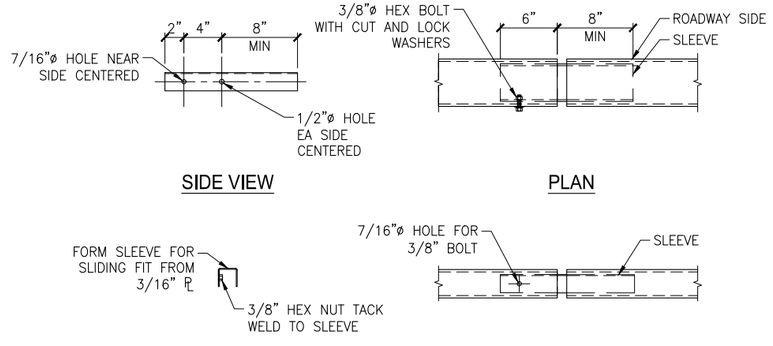
SCALE: NTS



SECTION PLAN

C 8 SHOP FABRACATED TUBE SPLICE

SCALE: NTS



SIDE VIEW PLAN

END VIEW ELEVATION

D 8 TYPICAL BRIDGE RAIL SPLICE DETAIL

SCALE: NTS

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PROJECT: CITY OF VALDEZ
MINERAL CREEK BRIDGE REPAIRS

TITLE: DETAILS

DESIGNED BY:	DTK	DATE:	04/08/2021
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SHEET NO: 8 OF 11

EXPANSION JOINT - WEST END

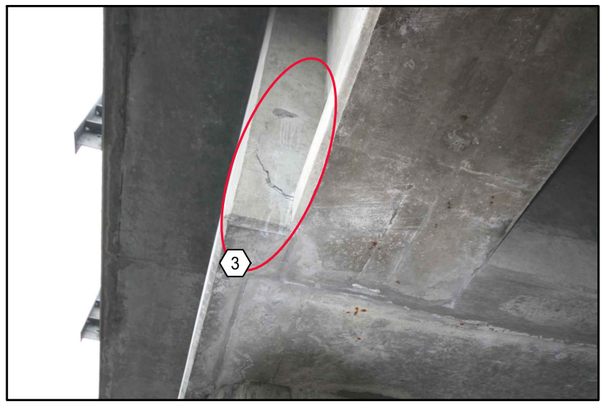
EXPANSION JOINT - EAST END, UPSTREAM (SIDEWALK)

EXPANSION JOINT - EAST END, DOWNSTREAM (CURB)

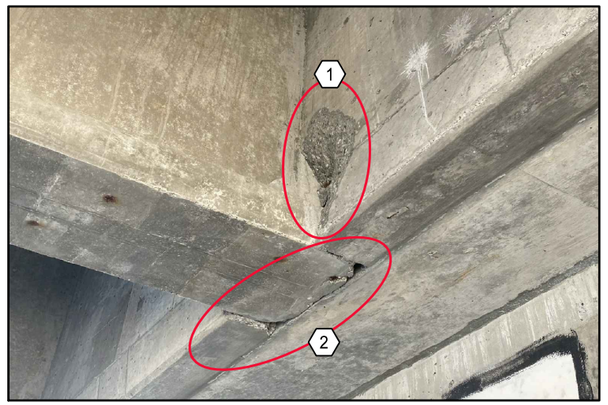
BRIDGE RAIL - WEST END, DOWNSTREAM

EXPANSION JOINT - WEST END, UPSTREAM (SIDEWALK)

EXPANSION JOINT - WEST END, DOWNSTREAM (CURB)



SPAN 1, GIRDER 1, EAST END



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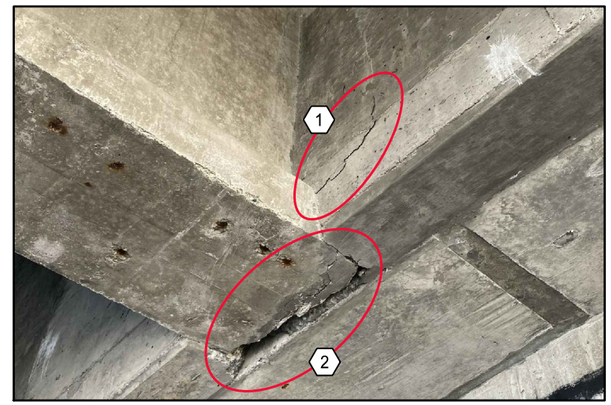

SPAN 1, GIRDER 3, EAST END

CITY OF VALDEZ, ALASKA
OPPORTUNITIES IN EVERY SEASON

PND Engineers, Inc. is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.

REV	DATE	DESCRIPTION

STATE OF ALASKA
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CE-8176
4/8/21
REGISTERED PROFESSIONAL ENGINEER

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Phone: 907.561.1011
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AK. LIC# AECC250

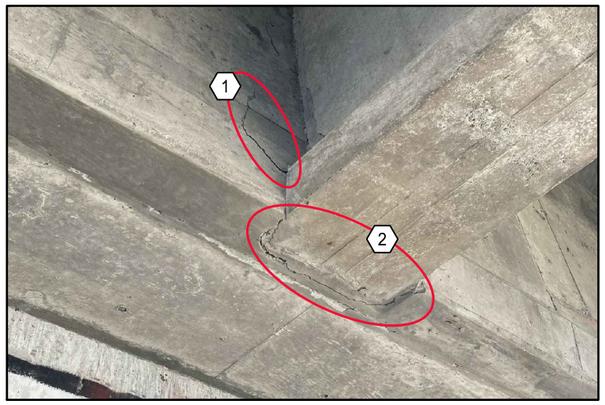
PND ENGINEERS, INC.

PROJECT:
CITY OF VALDEZ
MINERAL CREEK BRIDGE REPAIRS

TITLE:
PHOTO LOG (1 OF 3)

DESIGNED BY:	DTK	DATE:	04/08/2021
CHECKED BY:	CC	PROJECT NO:	201123

SHEET NO: 9 11



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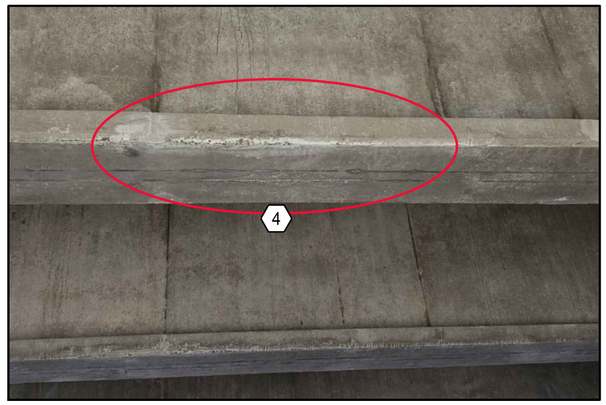
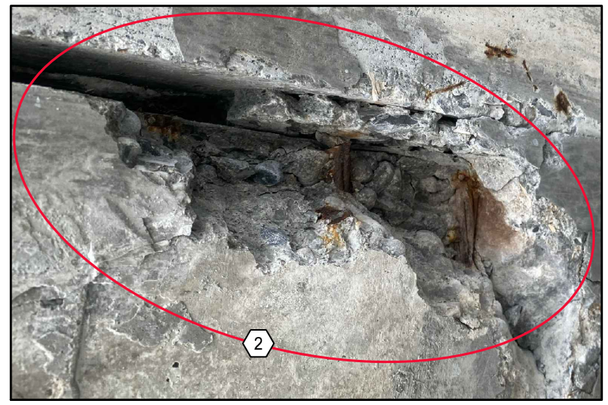


SPAN 1, GIRDER 3, MIDDLE



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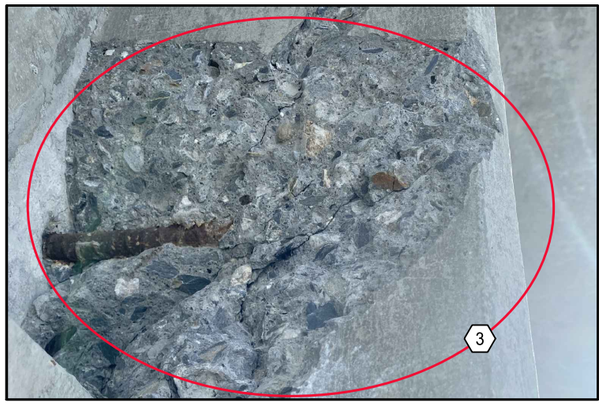
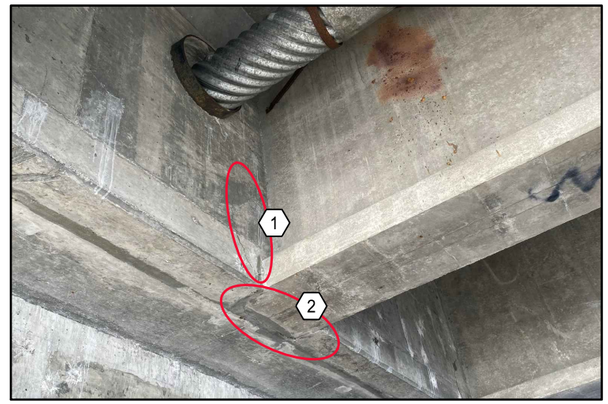


SPAN 1, GIRDER 5, EAST END

SPAN 2, GIRDER 2, WEST END



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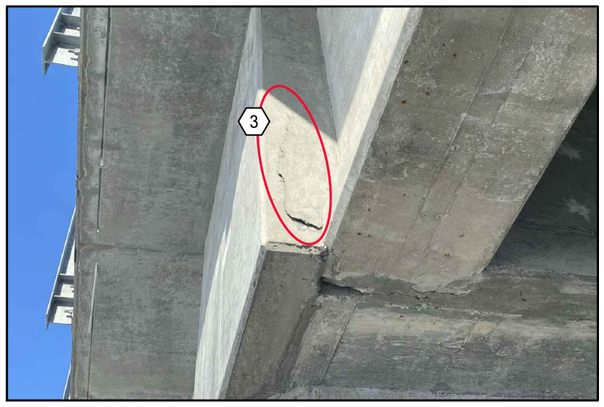

SPAN 2, GIRDER 5, WEST END

SPAN 2, GIRDER 5, WEST END

SPAN 2, GIRDER 1, EAST END

CITY OF VALDEZ, ALASKA
OPPORTUNITIES IN EVERY SEASON

REV	DATE	DESCRIPTION

STATE OF ALASKA
49 TH
Douglas T. Kenley
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4/9/21
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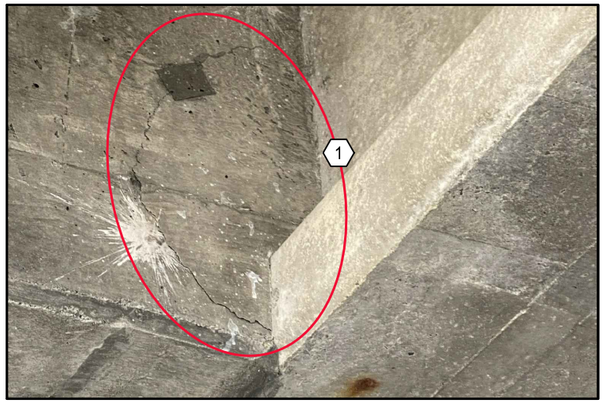
PND ENGINEERS, INC.

PROJECT:
CITY OF VALDEZ
MINERAL CREEK BRIDGE REPAIRS

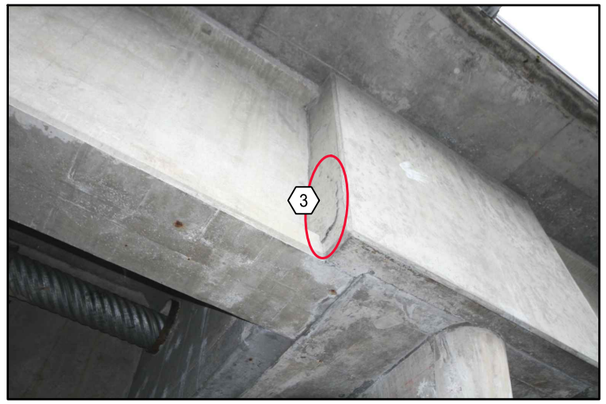
TITLE:
PHOTO LOG (2 OF 3)

DESIGNED BY:	DTK	DATE:	04/08/2021
CHECKED BY:	CC	PROJECT NO:	201123

SHEET NO: **10** 11



SPAN 2, GIRDER 3, EAST END



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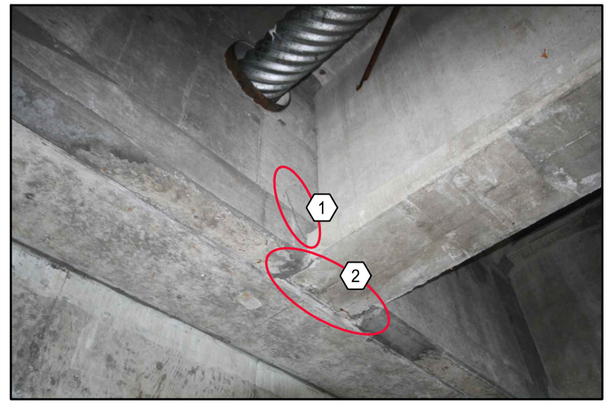

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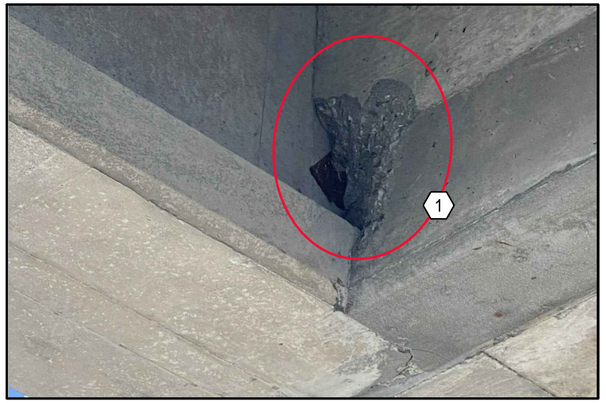

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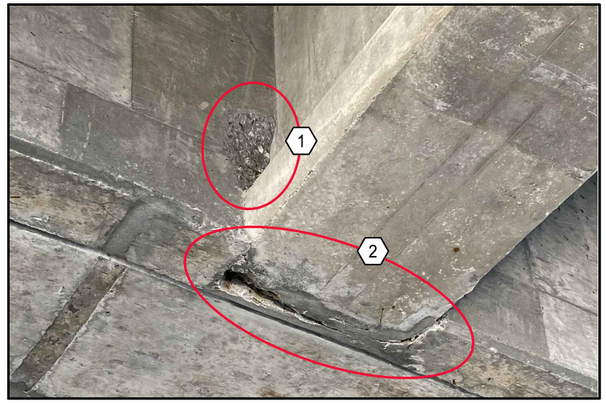

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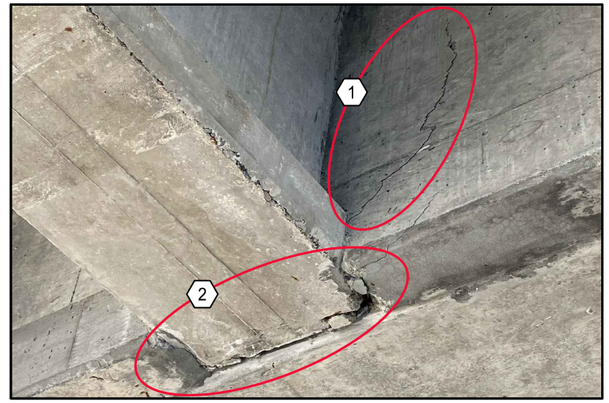

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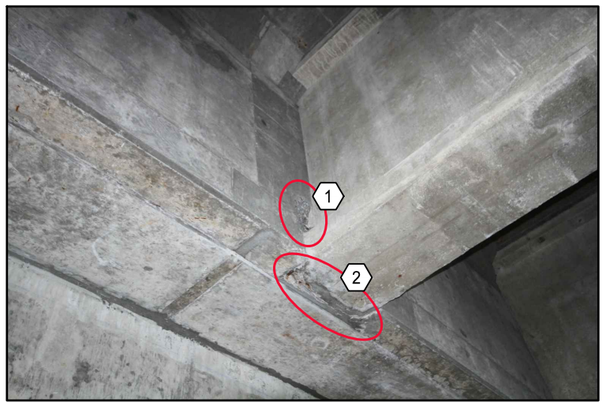

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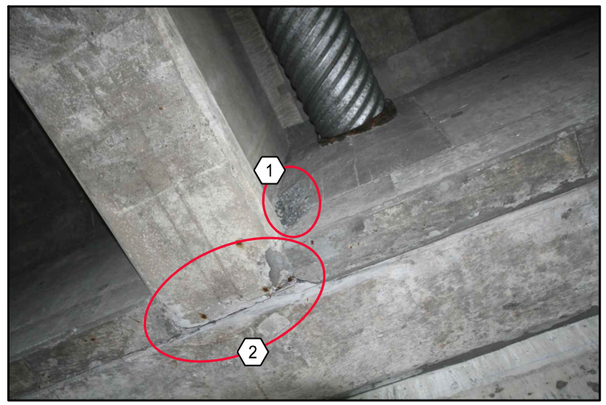
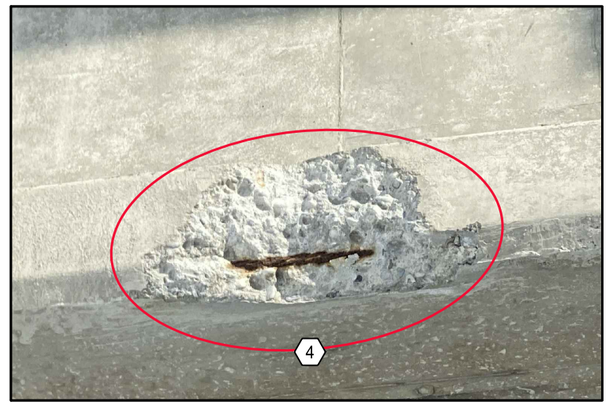


SPAN 3, GIRDER 2, WEST END



SPAN 3, GIRDER 5, MIDDLE

CITY OF VALDEZ, ALASKA
OPPORTUNITIES IN EVERY SEASON

REV	DATE	DESCRIPTION

STATE OF ALASKA
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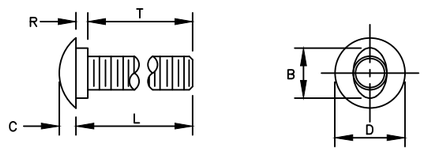
PND ENGINEERS, INC.

PROJECT:
CITY OF VALDEZ
MINERAL CREEK BRIDGE REPAIRS

TITLE:
PHOTO LOG (3 OF 3)

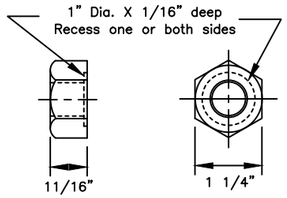
DESIGNED BY:	DTK	DATE:	04/08/2021
CHECKED BY:	CC	PROJECT NO:	201123

SHEET NO: **11** 11

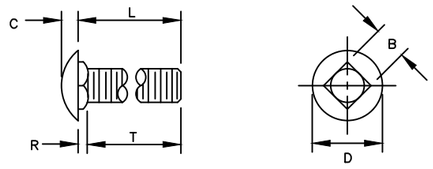


B	C	D	L (Length)	R	T (Thread Length)
15/16"	5/16"	1 5/16" or 1 7/16"	As Required	7/32"	As Required

5/8" BUTTONHEAD BOLT
(FBB01–05)

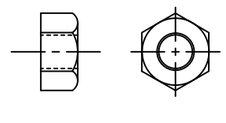


5/8" Dia. RECESSED HEX NUT
(FBB01–05)



B	C	D	L (Length)	R	T (Thread Length)
5/8"	5/16"	1 5/16"	As Required	3/16"	As Required

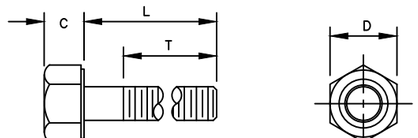
5/8" Dia. CARRIAGE BOLT
(FBC10–20)



STANDARD HEX NUT

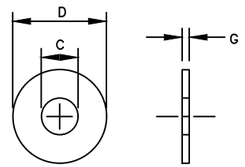
GENERAL NOTES:

1. All covered hardware shall comply with the Task Force 13 (TF13) Guide to Standardized Roadside Safety Hardware online publication. Designators given when possible in parentheses.



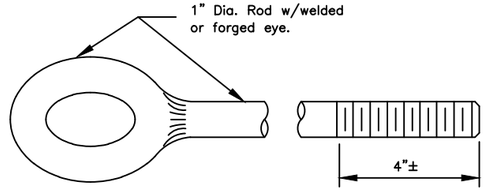
Bolt Size	C	D	L (Length)	T (Thread Length)
5/16"	——	——	1 1/2"	7/8"
5/16"	——	——	1"	1"
3/8"	——	——	7 1/2"	1 1/2"
1/2"	——	——	1 1/2"	1 1/2"
1/2"	——	——	1 1/4"	1 1/4"
5/8" H.S.	5/16"	7/8"	8"	1 1/2"
5/8"–11	——	——	1 1/2"	1 1/2"
3/4"	——	——	1 1/2"	1 1/2"
3/4"	——	——	As Required	2"
3/4" H.S.	15/32"	1 1/4"	2"	1 1/2"

STANDARD HEX BOLTS

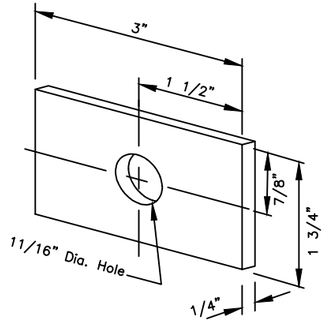


For Bolt ø	C	D	G
3/8"	7/16"	1"	5/64"
1/2"	17/32"	1 1/16"	3/32"
1/2" H.S.	17/32"	1 1/16"	3/32"
5/8"	11/16"	1 3/4"	9/64"
3/4"	13/16"	1 15/32"	9/64"
3/4" H.S.	13/16"	2"	5/32"
1"	1 1/16"	2"	9/64"

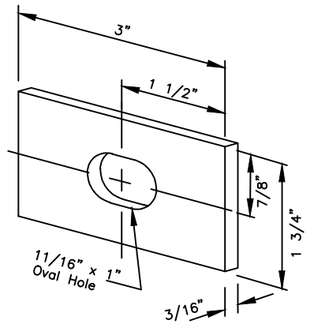
STANDARD STEEL WASHERS



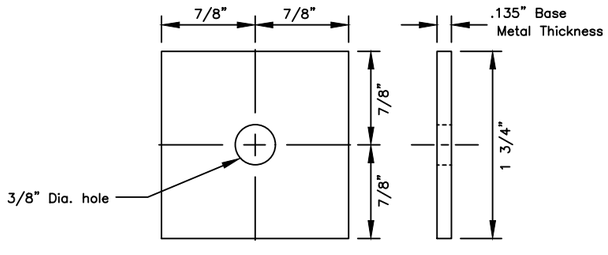
EYE BOLT



FLAT PLATE WASHER



RECTANGULAR POST BOLT WASHER
(FWR03)



SQUARE STEEL WASHER
(FWR01)

State of Alaska DOT&PF
ALASKA STANDARD PLAN

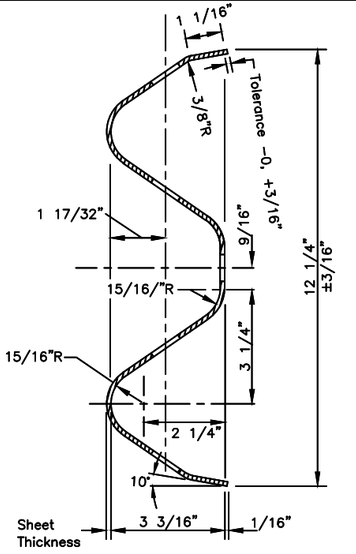
STANDARD GUARDRAIL HARDWARE
(NUTS, BOLTS & WASHERS)

Adopted as an Alaska Standard Plan by: Carolyn Morehouse
Carolyn Morehouse, P.E.
Chief Engineer

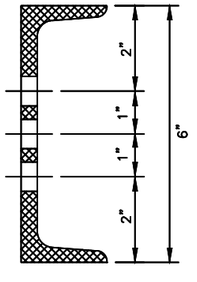
Adoption Date: 7/17/2020

Last Code and Stds. Review
By: KLK Date: 7/8/2020

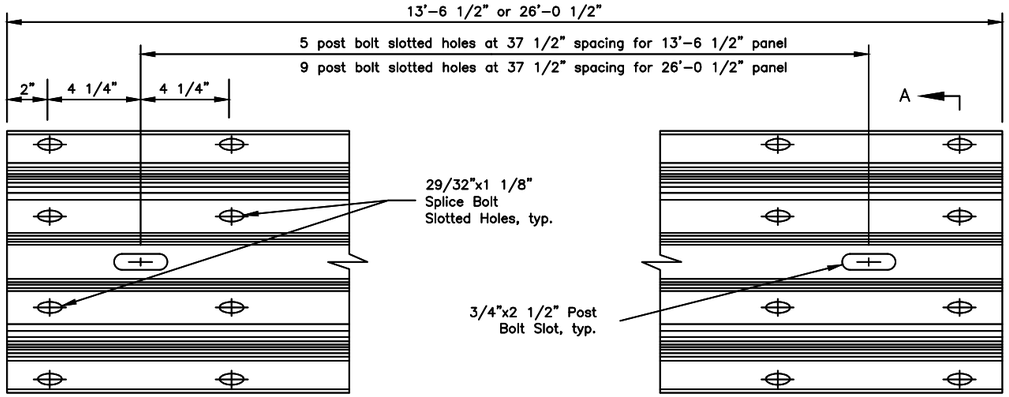
Next Code and Standards Review Date: 7/8/2030



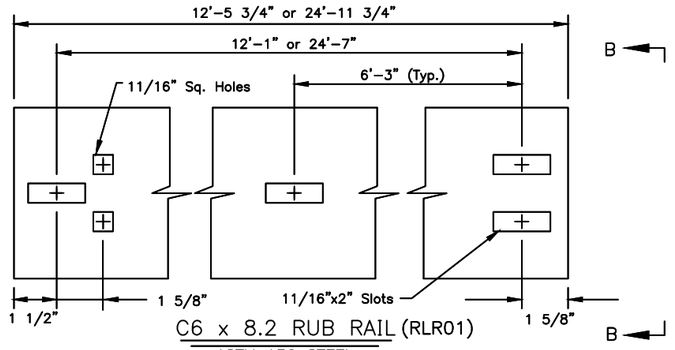
SECTION A–A
(cross section same as RWM02a–b)



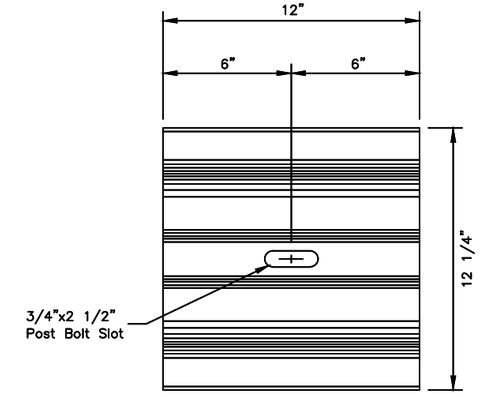
SECTION B–B



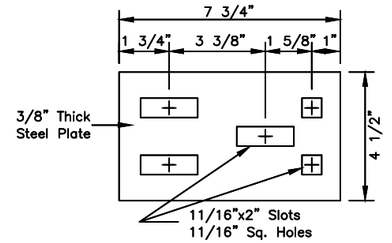
STANDARD W–BEAM PANEL (RWM04a–b)



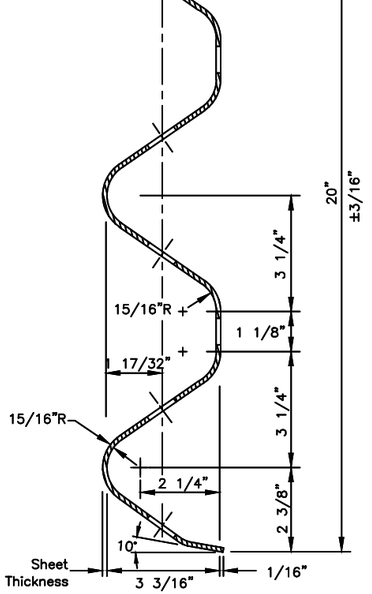
C6 x 8.2 RUB RAIL (RLR01)
ASTM A36 STEEL



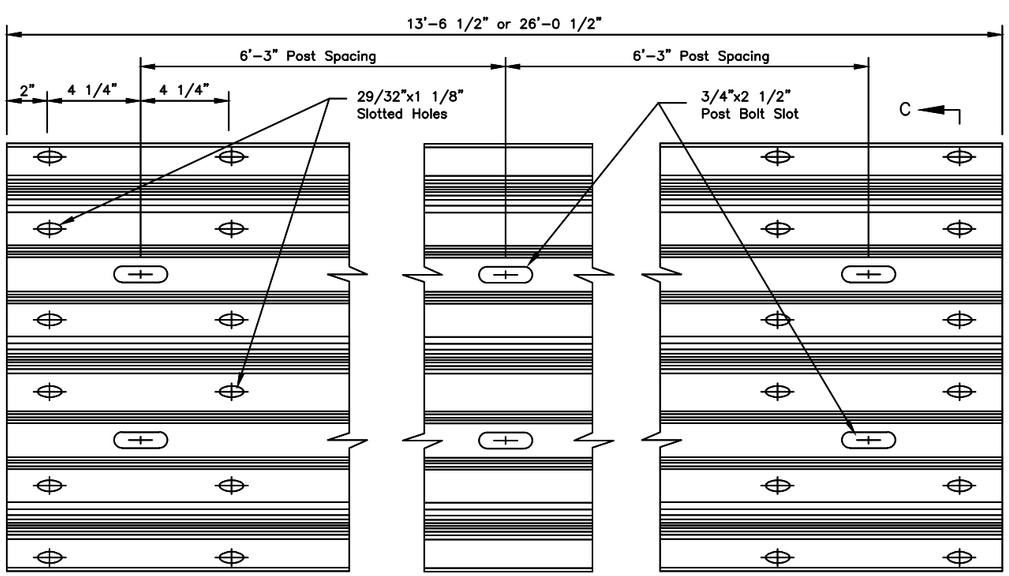
W–BEAM BACKUP PLATE
(RWB01a–b)



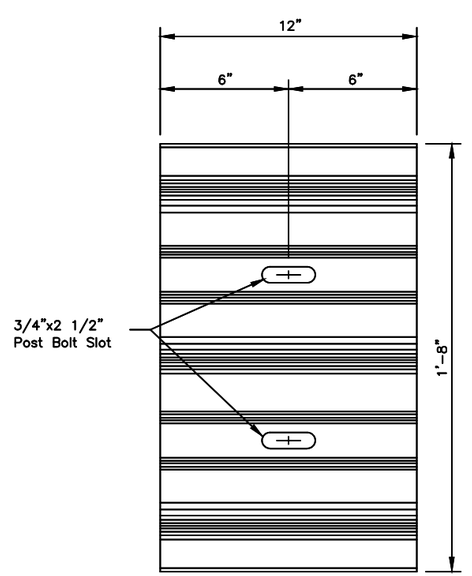
SPLICE PLATE (RLR01)
ASTM A36 STEEL



SECTION C–C
(RTM01a–02b)



STANDARD THRIE BEAM PANEL (RTM01a–02b)



THRIE BEAM BACKUP PLATE
(RTB01a–02b)

GENERAL NOTES:

1. All covered hardware shall comply with the Task Force 13 (TF13) Guide to Standardized Roadside Safety Hardware online publication. Designators given when possible in parentheses.
2. Install back–up plates between blockouts and w–beam or thrie–beam rail at intermediate (non–splice) posts when steel blockouts are used but not with wood, rubber, plastic, or other approved blockouts.

State of Alaska DOT&PF
ALASKA STANDARD PLAN

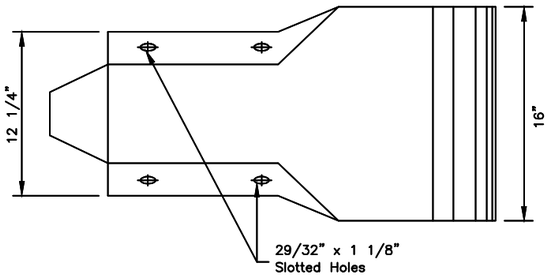
STANDARD GUARDRAIL HARDWARE (RAILS AND SPLICES)

Adopted as an Alaska Standard Plan by: Carolyn Morehouse
Carolyn Morehouse, P.E.
Chief Engineer

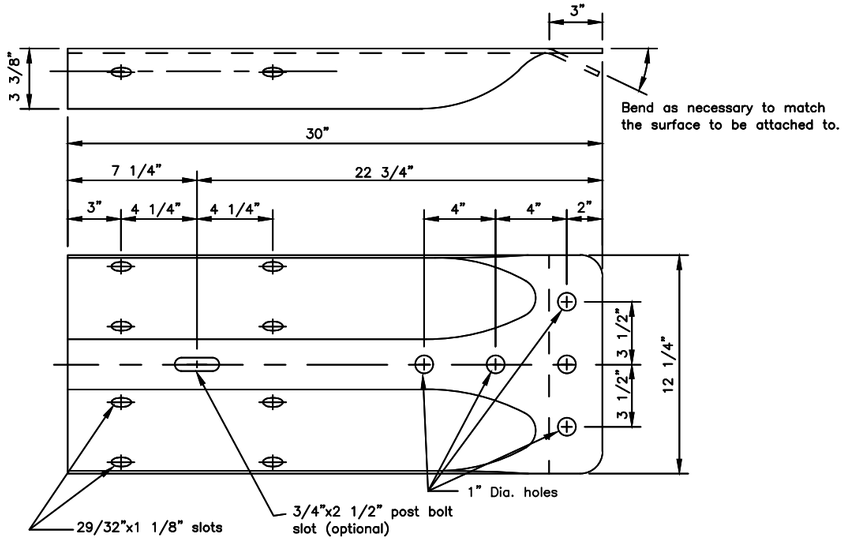
Adoption Date: 7/17/2020

Last Code and Stds. Review
By: KLK Date: 7/8/2020

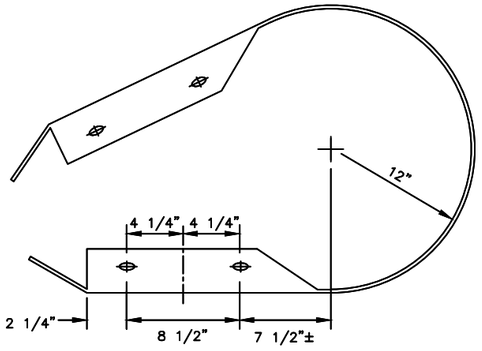
Next Code and Standards Review Date: 7/8/2030



PROFILE

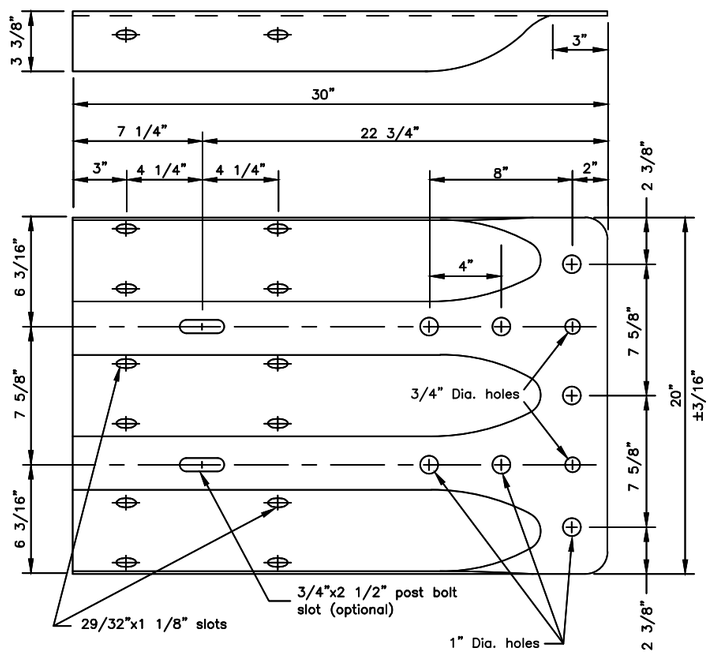


STANDARD W-BEAM TERMINAL CONNECTOR
(RWE02)



W-BEAM PLAN VIEW
*Radius to be specified on the plans

STANDARD W-BEAM END SECTION
(RWE06)



STANDARD THRIE BEAM TERMINAL CONNECTOR
(RTE01b)

GENERAL NOTES:

1. W-Beam and Thrie Beam Terminal Connectors shall conform to AASHTO M 180, Class B, Type II.
2. W-Beam end sections shall conform to AASHTO M 180, Class A, Type II.
3. All covered hardware shall comply with the Task Force 13 (TF13) Guide to Standardized Roadside Safety Hardware online publication. Designators given when possible in parentheses.

State of Alaska DOT&PF
ALASKA STANDARD PLAN

STANDARD GUARDRAIL HARDWARE (TERMINAL CONNECTORS)

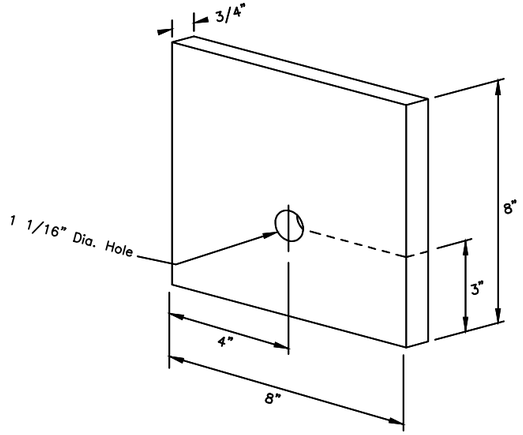
Adopted as an Alaska Standard Plan by: Carolyn Morehouse
Carolyn Morehouse, P.E.
Chief Engineer

Adoption Date: 7/17/2020

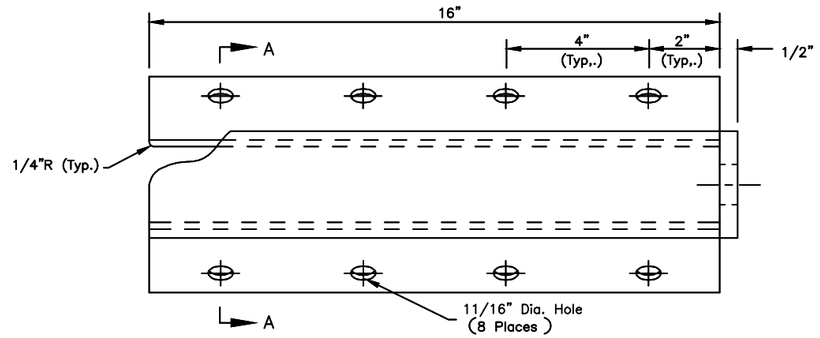
Last Code and Stds. Review
By: KLK Date: 7/8/2020

Next Code and Standards Review Date: 7/8/2030

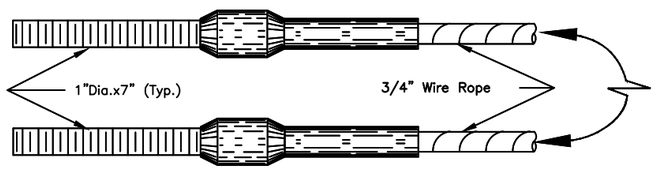
G-00.05



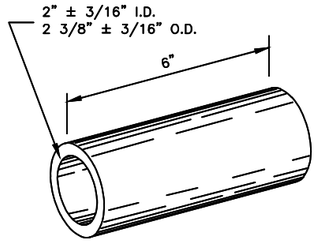
BEARING PLATE for CRT TERMINAL ANCHOR
(FPB01)



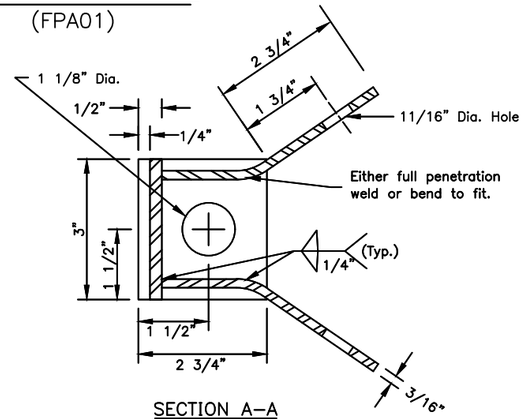
CABLE ANCHOR PLATE
(FPA01)



SWAGED FITTING DETAIL
(FCA01-02)

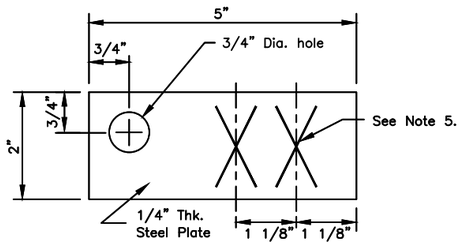


SLEEVE DETAIL
(FMM02)

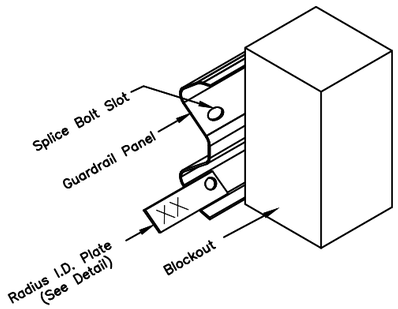


SECTION A-A

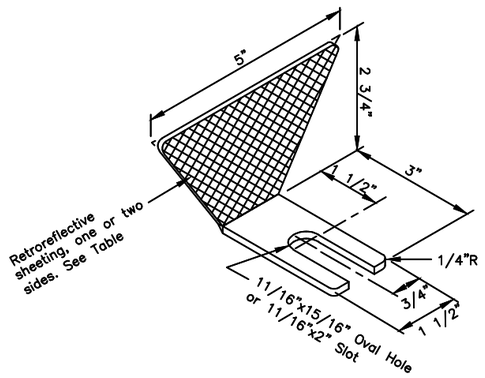
CONTROLLED RELEASE TERMINAL HARDWARE DETAILS



RADIUS I.D. PLATE



RADIUS I.D. PLATE MOUNTING DETAIL



GUARDRAIL REFLECTOR

Guardrail Reflector Table

Type	Color	Reflectorized
A	White	Front & Rear
B	White	Front
C	Yellow	Front
D	Yellow	Front & Rear

GENERAL NOTES:

1. Cable Anchor Plate may be formed in single unit or welded fabrication.
2. Anchor Cable Assembly must conform to AASHTO M 30 with Type II Wire Rope.
3. Provide Sleeve for Wood Posts meeting the requirements of ASTM A53 and made of 2-inch galvanized standard pipe. Sleeve shall be a tight, pressed fit in post.
4. Attach radius ID plates to all shop-bent guardrail sections. Bolt the ID plates to the back side of the guardrail panel with the lower splice bolt nearest the P.C. of the radius.
5. Show the Rail bend radius, in feet, as "XX" on the radius ID plate. Digits shall be etched or stamped and have a min. height of 1 1/2" and a max. width of 3/4". Galvanize the plate after the digits are marked.
6. All covered hardware shall comply with the Task Force 13 (TF13) Guide to Standardized Roadside Safety Hardware online publication. Designators given when possible in parentheses.

State of Alaska DOT&PF
ALASKA STANDARD PLAN

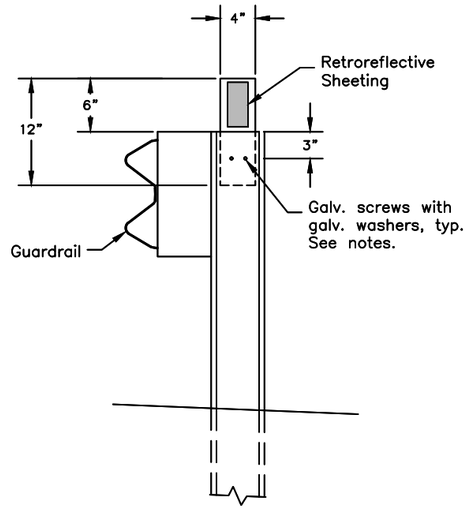
STANDARD GUARDRAIL HARDWARE (MISCELLANEOUS)

Adopted as an Alaska Standard Plan by: Carolyn Morehouse
Carolyn Morehouse, P.E.
Chief Engineer

Adoption Date: 7/17/2020

Last Code and Stds. Review
By: KLK Date: 7/8/2020

Next Code and Standards Review Date: 7/8/2030



GUARDRAIL FLEXIBLE DELINEATOR DETAIL

(Steel post shown – similar for wood post)

CONSTRUCTION NOTES

1. Install guardrail flexible delineators where shown on the plans.
2. Install guardrail flexible delineators at 50 foot spacing, unless otherwise noted on the plans. Install not less than 2 delineators per guardrail run.
3. Use 3" x 5" white/yellow/red retroreflective sheeting as required per Standard Plan T–05. Install retroreflective sheeting on both sides of delineator on two–way roads.
4. Attach 4" x 12" flexible delineators to the top of new guardrail posts, on the trailing side of the posts relative to the adjacent lane's direction of travel.
5. Use 2 each 1/4" dia. x 1–1/2" long galvanized lag screws for attaching to wood posts and 2 each 1/4" dia. x 3/4" long galvanized self–drilling fasteners for steel posts. Install a galvanized washer between the fastener head and the flexible delineator.

State of Alaska DOT&PF
ALASKA STANDARD PLAN

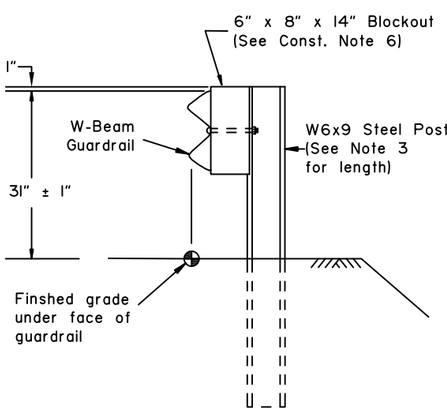
STANDARD GUARDRAIL HARDWARE (FLEXIBLE DELINEATORS)

Adopted as an Alaska Standard Plan by: Carolyn Morehouse
Carolyn Morehouse, P.E.
Chief Engineer

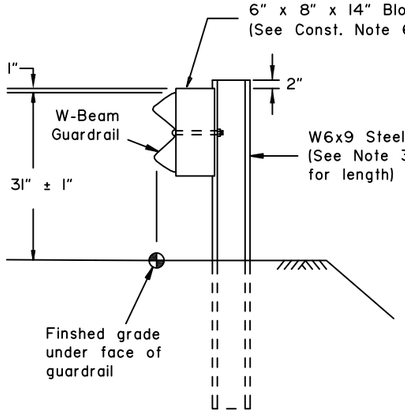
Adoption Date: 7/17/2020

Last Code and Stds. Review
By: KLK Date: 7/8/2020

Next Code and Standards Review Date: 7/8/2030

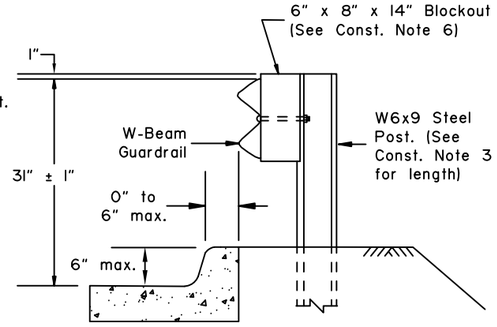


TYPE I POST INSTALLATION

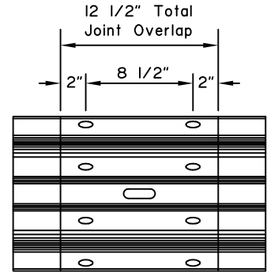


TYPE II POST INSTALLATION

(Facilitates raising rail for future overlays.)

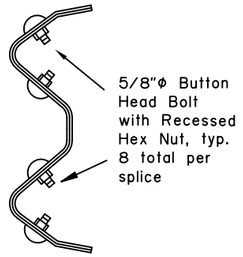


TYPE III POST INSTALLATION

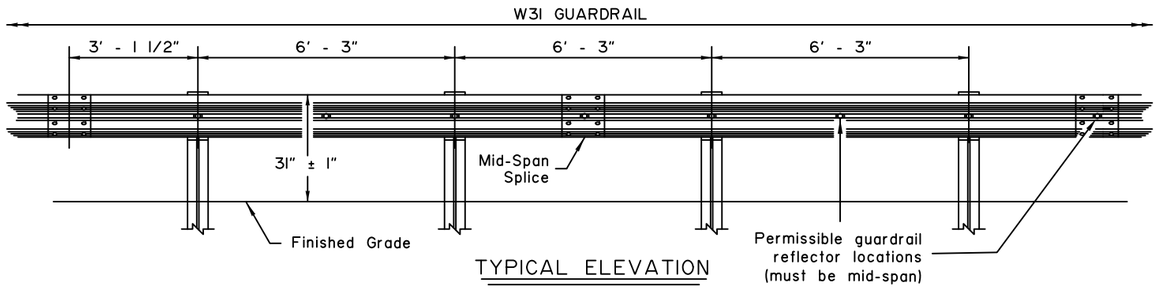


SPLICE DETAIL

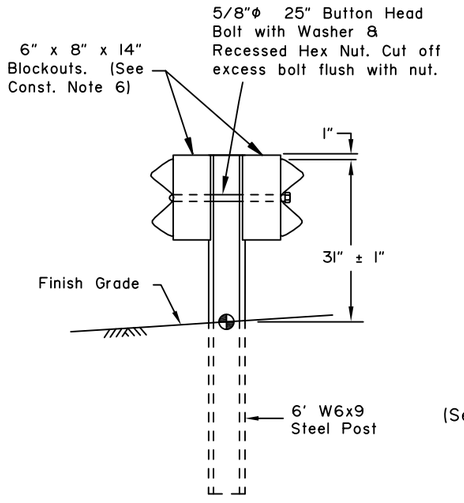
(At mid span between posts only. Bolts not shown for clarity)



SPLICE CROSS-SECTION



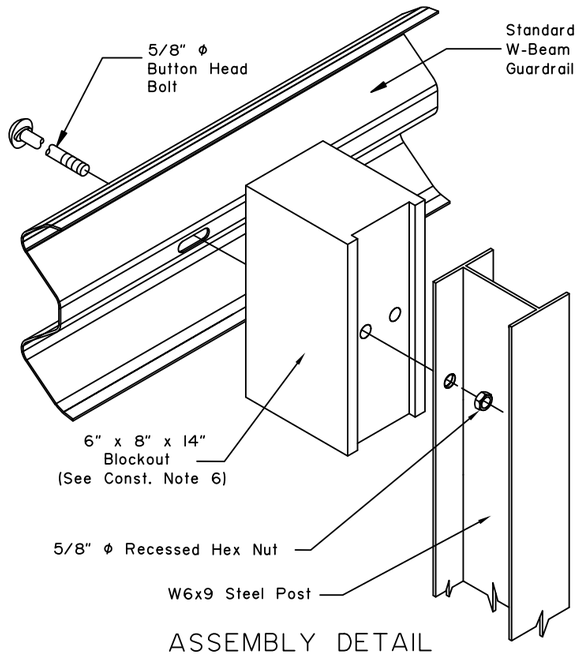
TYPICAL ELEVATION



TYPE IV DOUBLE SIDED INSTALLATION

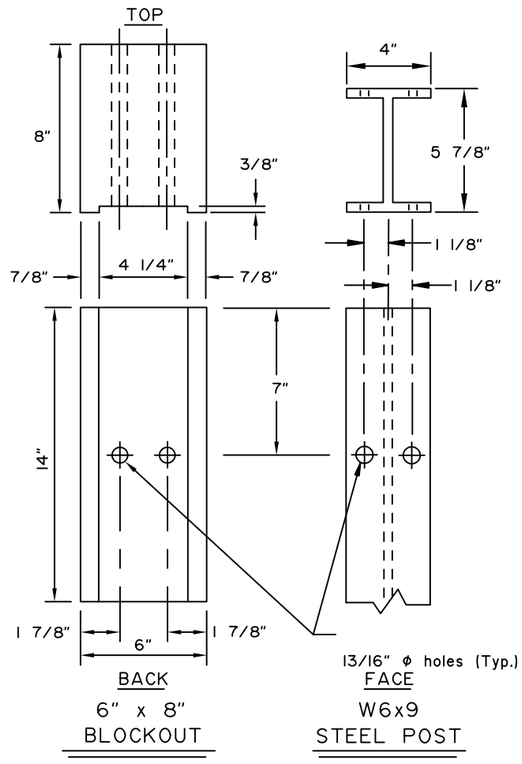
GUARDRAIL REFLECTOR

(See Const. Note 5)



ASSEMBLY DETAIL

(Type I post shown)



BACK

6" x 8" BLOCKOUT

FACE

W6x9 STEEL POST

CONSTRUCTION NOTES:

1. Provide hardware compliant with the Task Force 13 (TF13) Guide to Standardized Roadside Safety Hardware.
2. See Standard Plan G-00 for hardware details not shown on this drawing.
3. See Standard Plan G-10 for post lengths corresponding to different combinations of slope and behind-post embankment width.
4. Typical post spacing is 6'-3" center to center.
5. Attach guardrail reflector to guardrail using a 5/8" button head bolt with 5/8" recessed head hex nut and steel washer at location shown in the Typical Elevation. Install reflectors every 25' on tangents and every 12.5' on curves starting 100' before the P.C. and ending 100' after the P.T.
6. Use wood or synthetic blockouts designed, tested, and passed per MASH for use with steel posts. Either bolt hole on the blockout may be used for attachment.
7. Use a 25 linear foot transition to match differing height of existing or new rail elements and end treatments - see Standard Plan G-11.
8. W6x8.5 steel post may be substituted for W6x9 steel post.
9. Install flexible delineators on guardrail posts when called for in the contract. See Standard Plan G-00 for guardrail flexible delineator details.

DESIGN NOTES:

1. No fixed objects allowed within 36" of the back side of guardrail post.
2. This barrier is acceptable under MASH Tests 3-10 and 3-11.

State of Alaska DOT&PF
ALASKA STANDARD PLAN

STEEL POST W31 GUARDRAIL

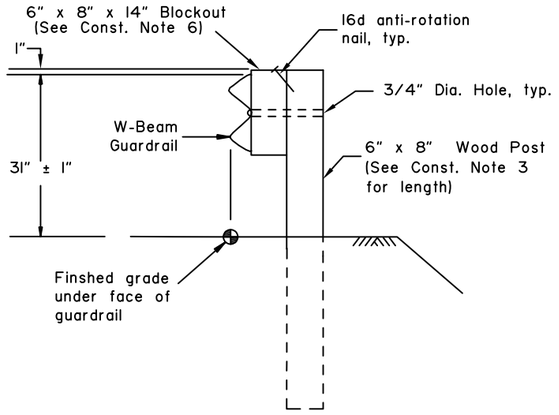
Adopted as an Alaska Standard Plan by: *Carolyn Morehouse*

Carolyn Morehouse, P.E.
Chief Engineer

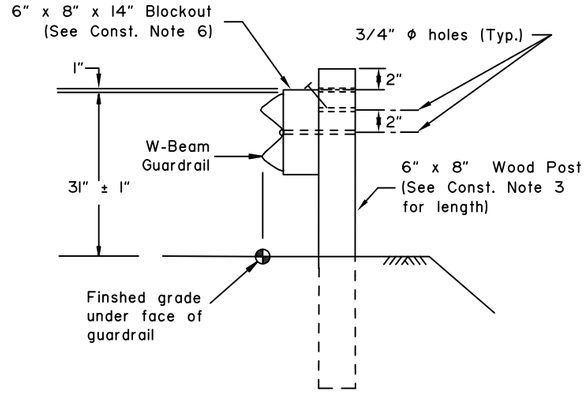
Adoption Date: 05/15/2019

Last Code and Stds. Review By: LRG Date: 5/15/2019

Next Code and Standards Review date: 5/15/2029

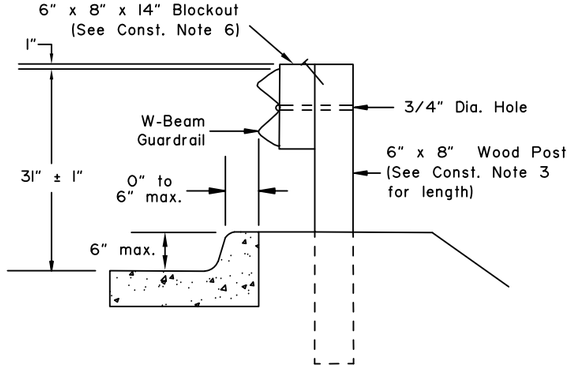


TYPE I POST INSTALLATION

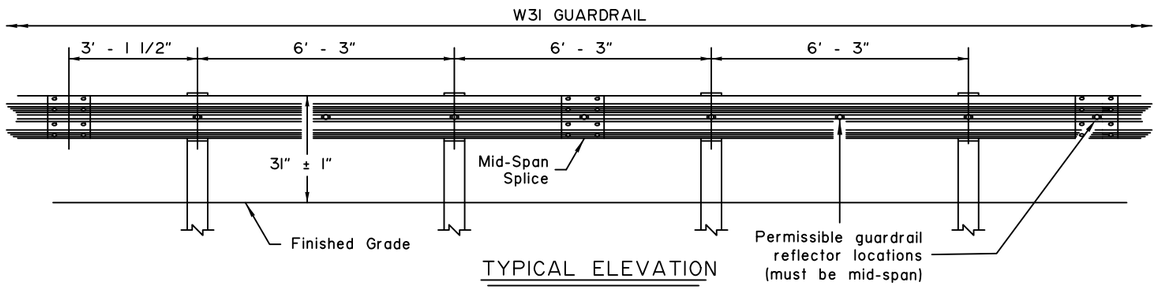


TYPE II POST INSTALLATION

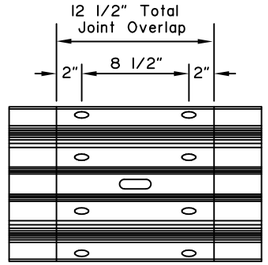
(Facilitates raising rail for future overlays.)



TYPE III POST INSTALLATION

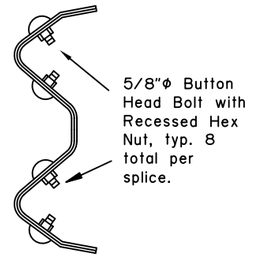


TYPICAL ELEVATION

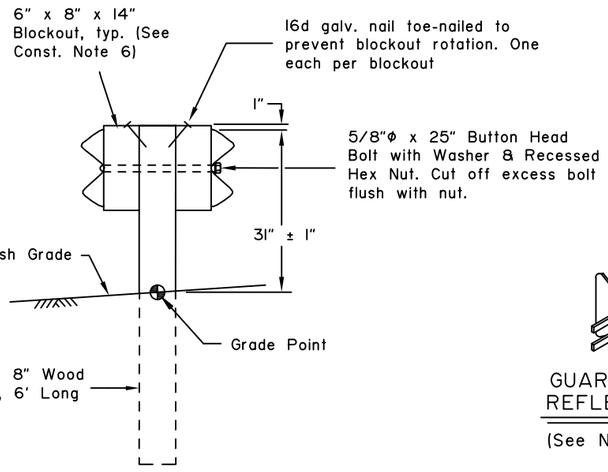


SPLICE DETAIL

(At mid-span between posts only. Bolts not shown for clarity.)



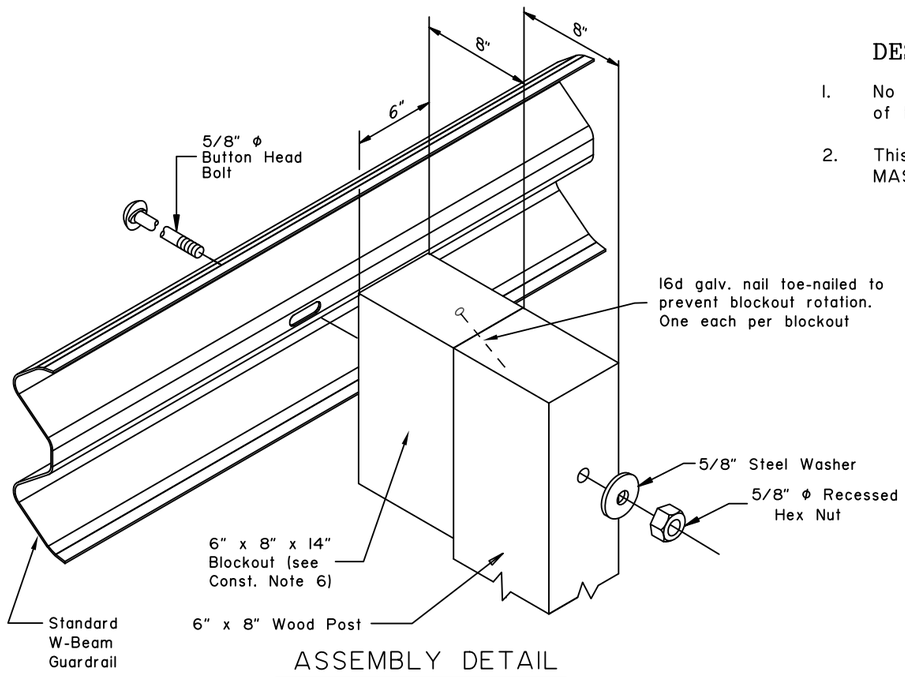
SPLICE CROSS-SECTION



TYPE IV DOUBLE SIDED INSTALLATION

GUARDRAIL REFLECTOR

(See Note 5)



ASSEMBLY DETAIL

(Type I post shown)

CONSTRUCTION NOTES:

1. Provide hardware compliant with the Task Force 13 (TF13) Guide to Standardized Roadside Safety Hardware.
2. See Standard Plan G-00 for hardware details.
3. See Standard Plan G-10 for post lengths corresponding to different combinations of slope and behind-post embankment width.
4. Typical post spacing is 6'-3" center to center.
5. Attach guardrail reflector using a 5/8" button head bolt with 5/8" recessed head hex nut and steel washer at the location shown on the Typical Elevation. Install reflectors every 25' on tangents and every 12.5' on curves starting 100' before the P.C. and ending 100' after the P.T.
6. Use wood blockouts designed, tested, and passed per MASH to be used with wood posts.
7. Use 25 linear foot transition panel to match differing height of existing or new rail elements and end treatments. See Standard Plan G-11.
8. Install flexible delineators on guardrail posts when called for in the contract. See Standard Plan G-00 for guardrail flexible delineator details.

DESIGN NOTES:

1. No fixed objects allowed within 36" of the back side of guardrail post.
2. This barrier is acceptable under MASH tests 3-10 and 3-11.

State of Alaska DOT&PF
ALASKA STANDARD PLAN

STEEL POST W3 GUARDRAIL

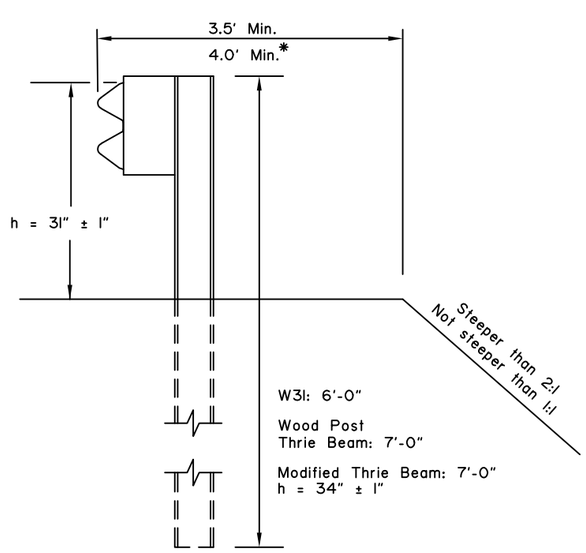
Adopted as an Alaska Standard Plan by: *Carolyn Morehouse*
Carolyn Morehouse, P.E.
Chief Engineer

Adoption Date: 5/15/2019

Last Code and Stds. Review By: LRG Date: 5/15/2019

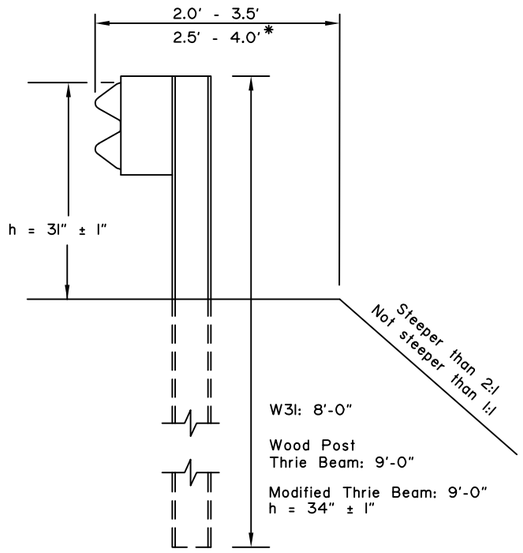
Next Code and Standards Review date: 5/15/2029

G-05.11W



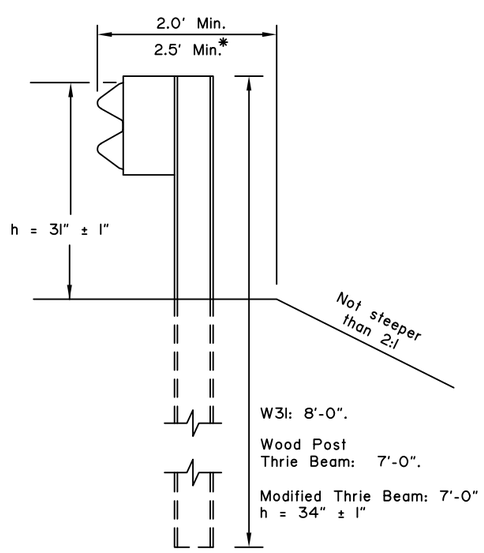
* with Modified Thrie Beam

CASE 1



* with Modified Thrie Beam

CASE 2



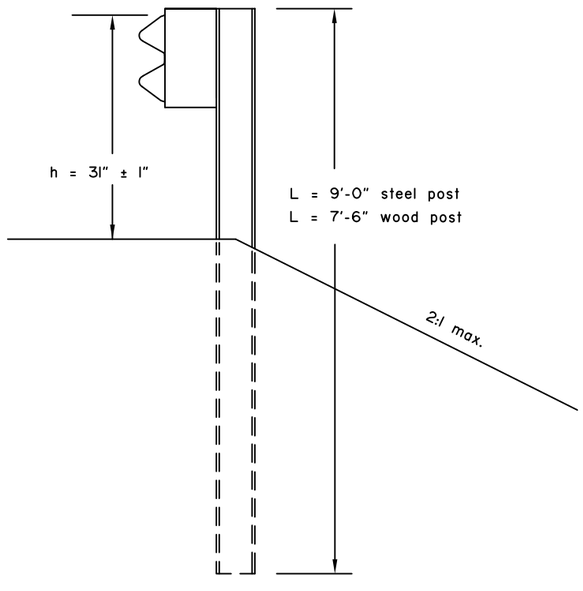
CASE 3

CONSTRUCTION NOTES:

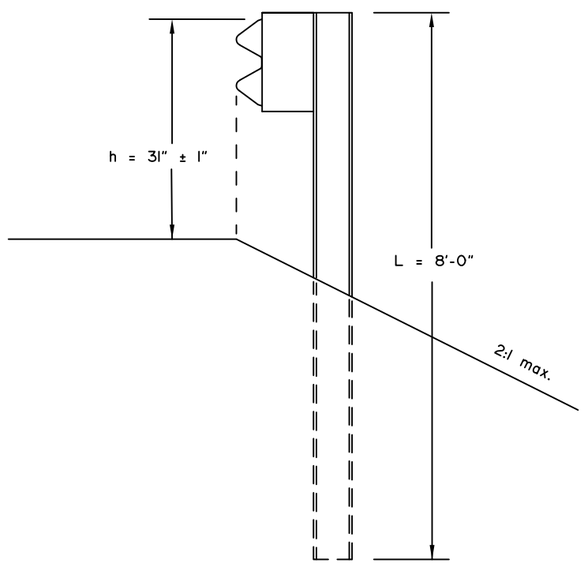
1. This drawings is to be used for post length determination only. See Plans for slopes and behind-post embankment widths.
2. To determine post length, identify the case that matches site conditions and read the length corresponding to the pertinent guardrail type.
3. These dimensions apply to both curbed and uncurbed section.
4. Case 1, 2 and 3 are shown with steel posts. Wood posts may be substituted when allowed by specifications. Wood Post Thrie Beam installations must use wood posts only.
5. Case 4 and 5 apply to W31 guardrail only.

DESIGN NOTES:

1. No fixed objects allowed within 36" of the back of post for Cases 1, 2 & 3.
2. No fixed objects allowed within 48" of the back of post for Cases 4 & 5.



CASE 4
(See Note 5)



CASE 5
(See Note 5)

State of Alaska DOT&PF
ALASKA STANDARD PLAN

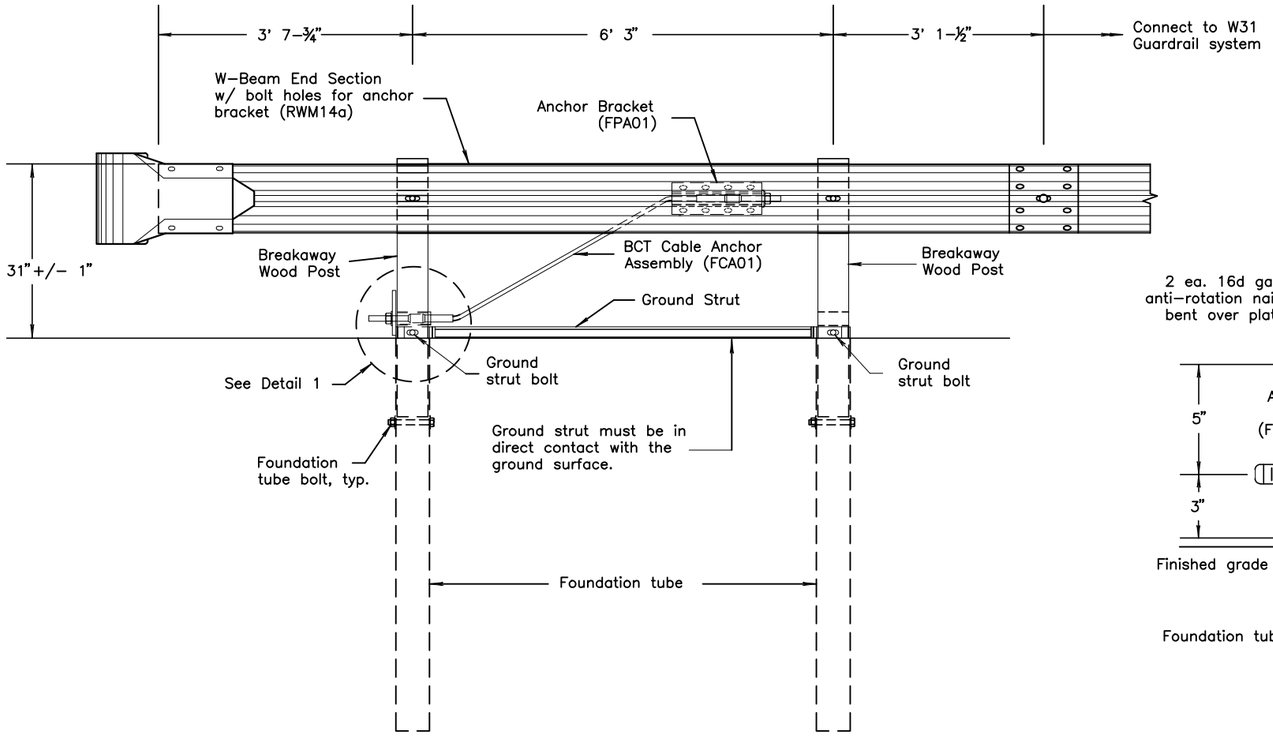
GUARDRAIL POST INSTALLATION

Adopted as an Alaska Standard Plan by: Kenneth J. Fisher
Kenneth J. Fisher, P.E.
Chief Engineer

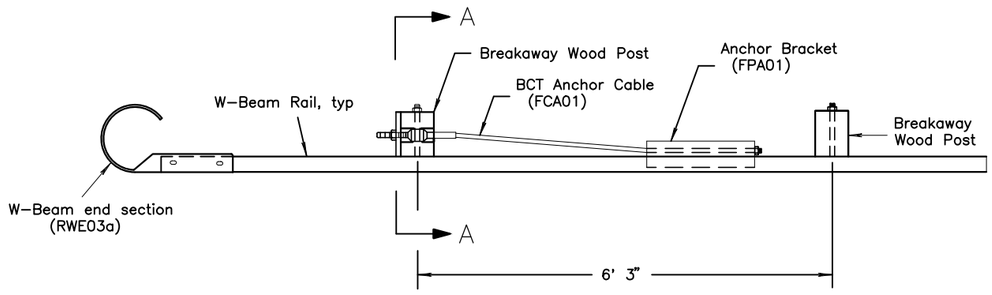
Adoption Date: 02/08/2019

Last Code and Stds. Review
By: Date:

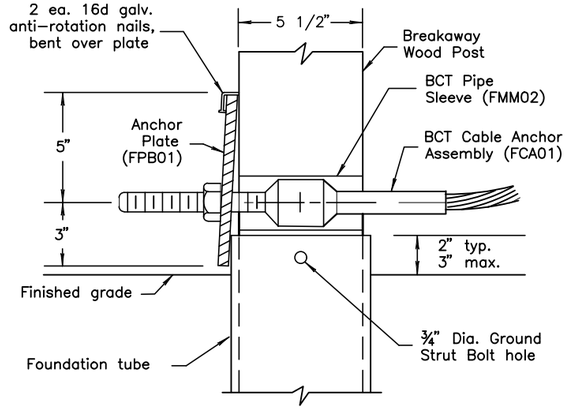
Next Code and Standards Review date: 02/08/2029



ELEVATION

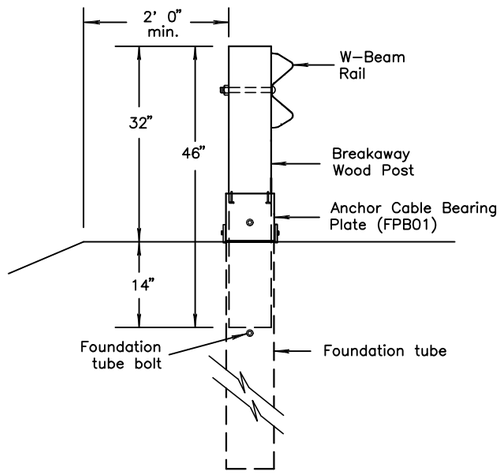


PLAN VIEW



DETAIL 1

(Ground strut not shown for clarity)



SECTION A–A

CONSTRUCTION NOTES

1. All covered hardware must comply with Task Force 13 (TF13) Guide to Standardized Roadside Safety Hardware online publication. Designators are given in parenthesis, when possible.
2. End section bolts and nuts have the same material requirements as splice bolts.
3. Foundation tube bolts are are 7/8" diameter ASTM A307 hex head. Foundation tube bolts require an ASTM A563 A nut and two ASTM F844 7/8" diameter flat washers. Install one washer under bolt head and one under nut.
4. Anchor bracket and strut bolts are are 5/8" diameter ASTM A307 hex head. Foundation tube bolts require ASTM A563 A nut and two ASTM F844 7/8" diameter flat washers. Install one washer under bolt head and one under nut.

State of Alaska DOT&PF
ALASKA STANDARD PLAN

W31 DOWNSTREAM END ANCHOR

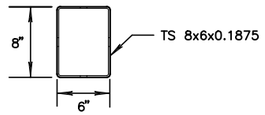
Adopted as an Alaska Standard Plan by: *Carolyn Morehouse*
Carolyn Morehouse, P.E.
Chief Engineer

Adoption Date: 7/17/2020

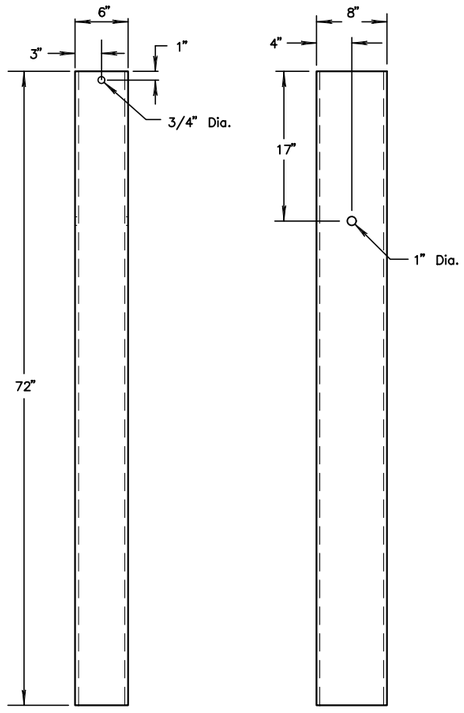
Last Code and Stds. Review
By: KLK Date: 7/8/2020

Next Code and Standards Review Date: 7/8/2030

G–14.01



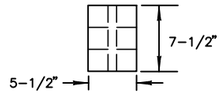
PLAN VIEW



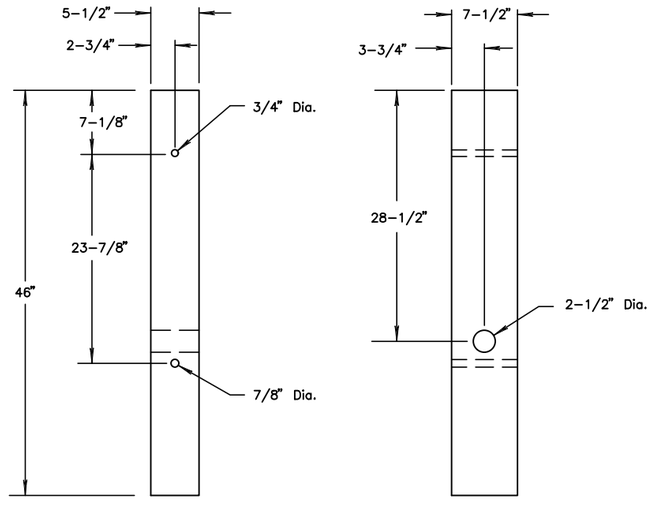
FRONT VIEW SIDE VIEW

FOUNDATION TUBE

GROUND STRUT SECTION

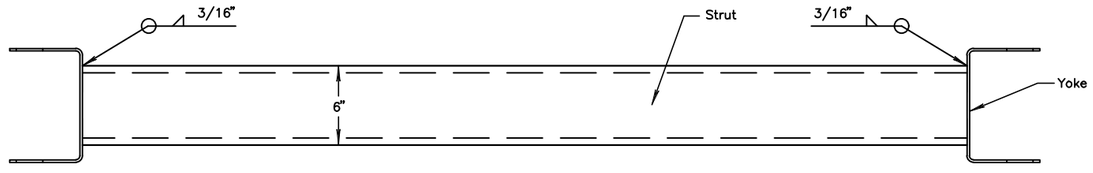


PLAN VIEW

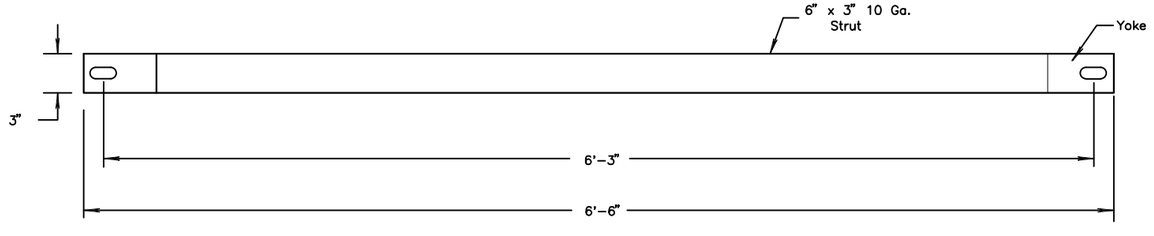


FRONT VIEW SIDE VIEW

BREAKAWAY WOOD POST

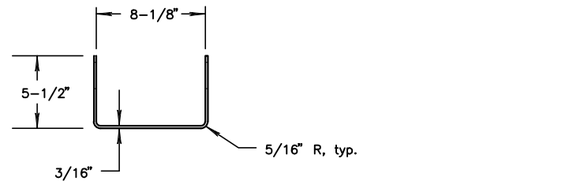


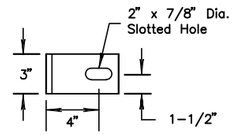
PLAN VIEW



FRONT VIEW

GROUND STRUT DETAIL





YOKE DETAIL

CONSTRUCTION NOTES

1. All covered hardware must comply with Task Force 13 (TF13) Guide to Standardized Roadside Safety Hardware online publication. Designators are given in parenthesis, when possible.

State of Alaska DOT&PF
ALASKA STANDARD PLAN

W31 DOWNSTREAM
END ANCHOR

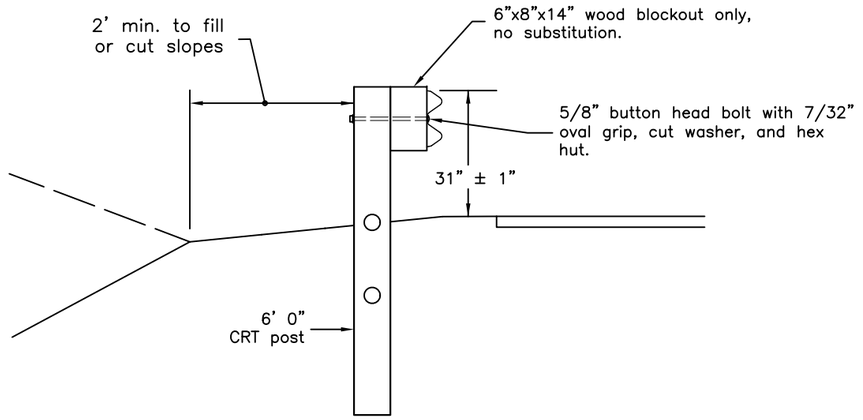
Adopted as an Alaska Standard Plan by: Carolyn Morehouse
Carolyn Morehouse, P.E.
Chief Engineer

Adoption Date: 7/17/2020

Last Code and Stds. Review
By: KLK Date: 7/8/2020

Next Code and Standards Review Date: 7/8/2030

G-14.01



SECTION A–A

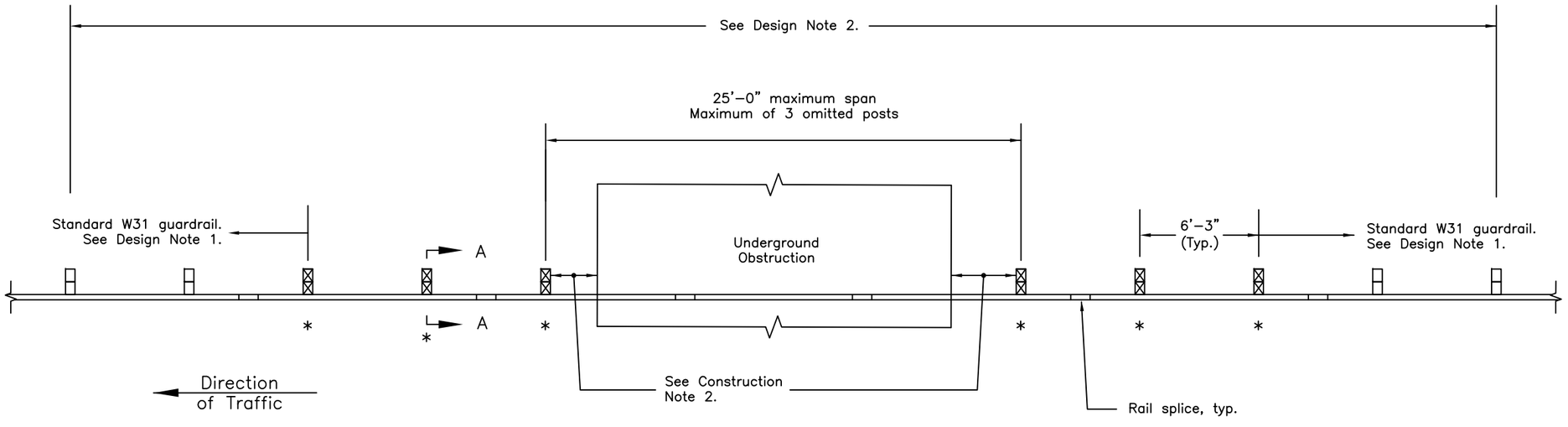
Typical for all CRT post locations shown in the plan view

CONSTRUCTION NOTES

1. See Standard Drawings G–00 and G–05 for additional guardrail and guardrail hardware details. See G–26 Sheet 1 of 3 for CRT post details.
2. Provide 1' minimum lateral clearance between posts and underground obstruction.
3. Nesting of rail elements in the long span area is not allowed.

DESIGN NOTES

1. Total installed length of guardrail and end anchorage (including end terminals, downstream anchors, etc.) shall not be less than 62.5' measured from the outermost CRT post on both the upstream and downstream ends.
2. No fixed objects allowed within 9'–0" from the back of posts where post are omitted. This is the crash–tested lateral deflection of the long span section.
3. Do no install curb in the long span area – this includes the area of CRT posts.



*–Designates CRT post location

LONG SPAN GUARDRAIL PLAN

State of Alaska DOT&PF
ALASKA STANDARD PLAN

LONG SPAN
W31 GUARDRAIL

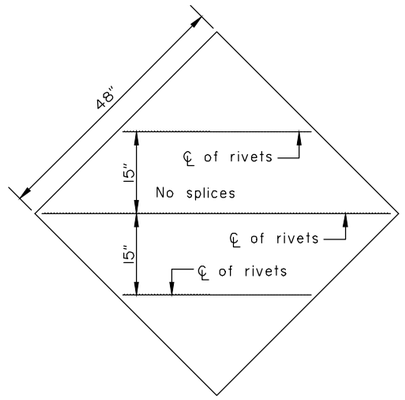
Adopted as an Alaska Standard Plan by:
Kenneth J. Fisher, P.E.
Chief Engineer

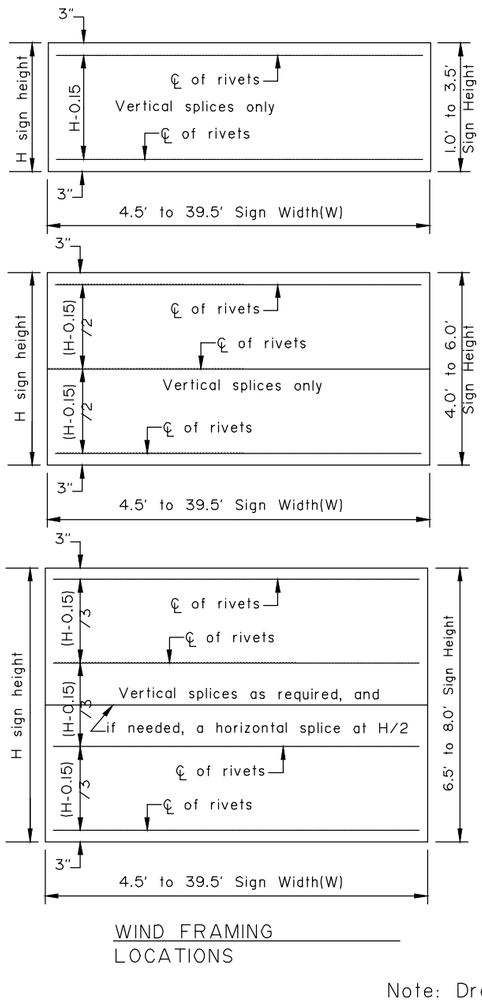
Adoption Date: 02/08/2019

Last Code and Stds. Review
By: Date:

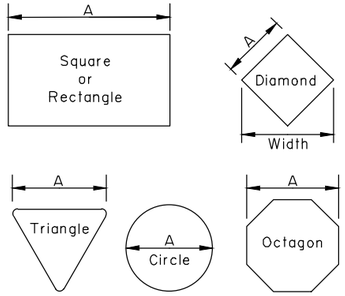
Next Code and Standards Review date:02/08/2029

G-29.00





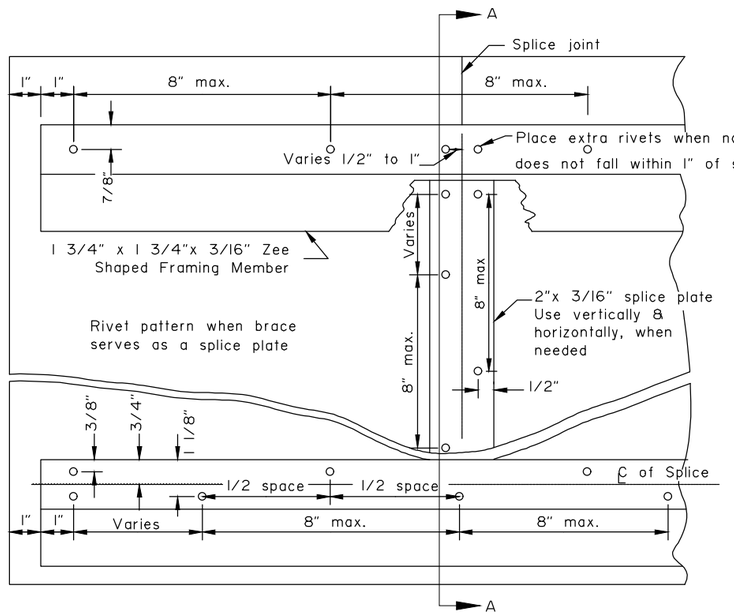
WIND FRAMING LOCATIONS



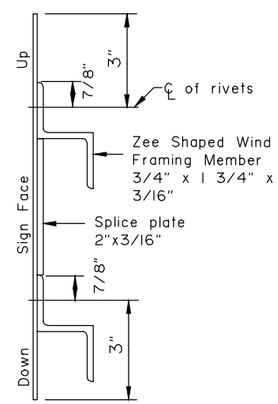
Maximum size unframed signs using 0.125" thick aluminum sheeting.	
Sign Shape	A
Squares, Shields, and Route Markers	48"
Rectangles	48"
Diamonds	48"
Triangles	48"
Rounds and Octagons	48"

Install wind framing on all signs that exceed the dimensions listed.

LIGHT SIGNS



RIVET DETAIL FOR ZEE SHAPED WIND FRAMING & SPLICE PLATE



SECTION A-A

Note: Drawing not to scale

GENERAL NOTES

1. See the standard specifications for the aluminum alloys that you may use for sign sheeting and wind framing members.
2. Fabricate all signs from 0.125" thick aluminum sheeting.
3. Sign fabricators may use alternates to the zee shaped framing member with approval of the engineer, if the frame manufacturer certifies their design equals or exceeds the strength of the zee shaped design.
4. Install one piece wind framing members on all signs up to 23.5' wide. Use one splice in each wind frame on all signs wider than 23.5'. Locate splices at least 18" from all posts and panel edges. Stagger splices in adjacent framing members at least 8.0' apart.
5. Attach wind framing members with rivets or with an engineer approved, double sided, high strength, adhesive tape. Clean and handle sheeting and framing members and apply tape in accordance with the tape manufacturer's written instructions. Install two rivets in both ends of each framing member.
6. Use 3/16" diameter rivets conforming to aluminum alloy 6061-T6 for cold driven rivets, or aluminum alloy 6061-T43 for hot driven rivets.
7. Sign fabricators may use sign panels extruded with integral framing with approval of the engineer, if the manufacturer certifies their design equals or exceeds the strength of the 0.125" thick panel with framing attached to it.
8. Frame all signs taller than 8.0' with five wind framing members located (H-0.15)/4 spaces. If needed, make a horizontal splice at the middle wind frame.
9. Do not use round pipes for sign supports.

State of Alaska DOT&PF
ALASKA STANDARD PLAN

SIGN FRAMING

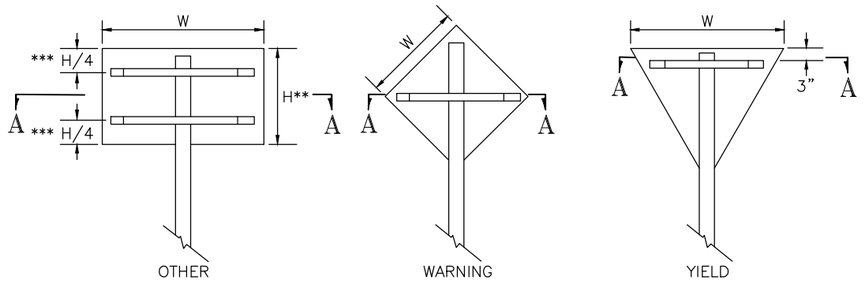
Adopted as an Alaska Standard Plan by: Carolyn Morehouse
Carolyn Morehouse, P.E.
Chief Engineer

Adoption Date: 7/17/2020

Last Code and Stds. Review
By: WTH Date: 7/8/2020

Next Code and Standards Review date: 7/8/2030

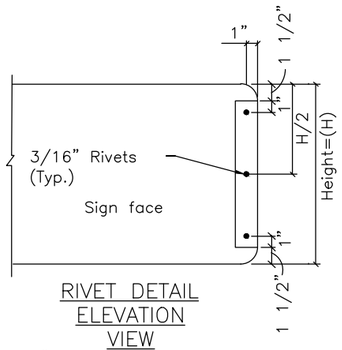
S-00.12



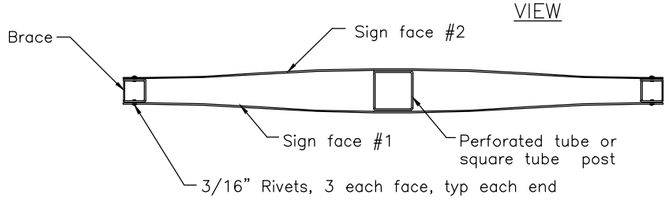
*** Use one brace when H ≤ 18"
Use two braces when 18"< H < 48"
Use three braces when H ≥ 48"

** Position of brace may be varied to match Predrilled mounting holes in panel

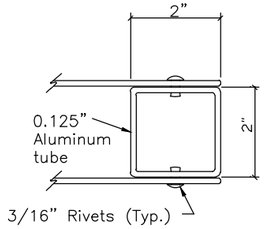
SIGN BRACING PLACEMENT



RIVET DETAIL
ELEVATION
VIEW

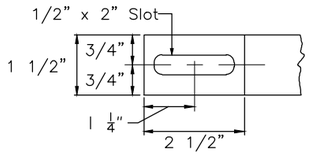


PLAN VIEW

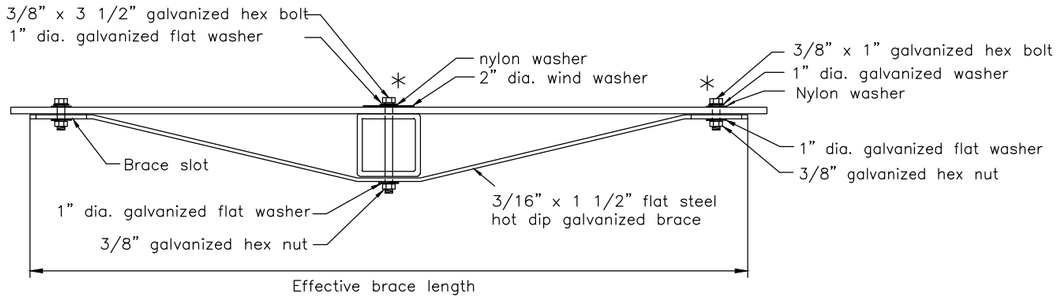


END BRACE DETAIL

SMALL STREET NAME SIGN (D3-1, D3-1A, D3-1D) BRACING DETAILS



DETAIL OF BRACE SLOT
Elevation view



TUBE POST SIGN BRACING SECTION A-A
Plan view

* Adjust location of bracing so that bolts and washers will miss the sign legend

Sign Width(W)	Effective Brace Length		
	Warning	Yield	Other
30"	36"	24"	24"
36"	42"	30"	30"
42"	48"	–	36"
48"	Two posts	36"	42"

< 30" No bracing required and use square tube

Note: Drawing not to scale

State of Alaska DOT&PF
ALASKA STANDARD PLAN

BRACING FOR SIGNS
MOUNTED ON SINGLE POST

Adopted as an Alaska Standard Plan by: Carolyn Morehouse
Carolyn Morehouse, P.E.
Chief Engineer

Adoption Date: 7/17/2020

Last Code and Stds. Review
By: WTH Date: 7/8/2020

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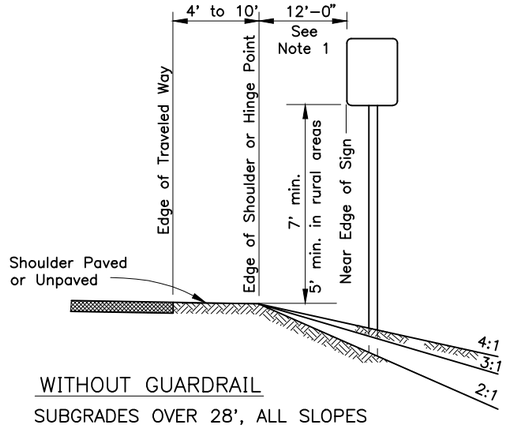
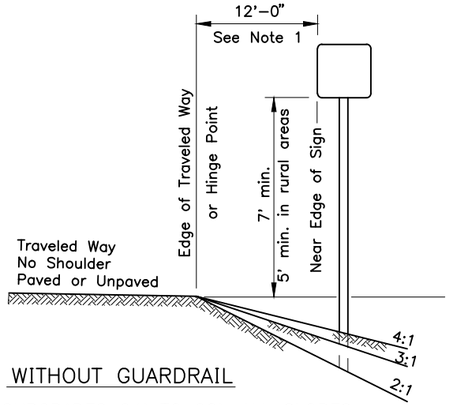
S-01.02



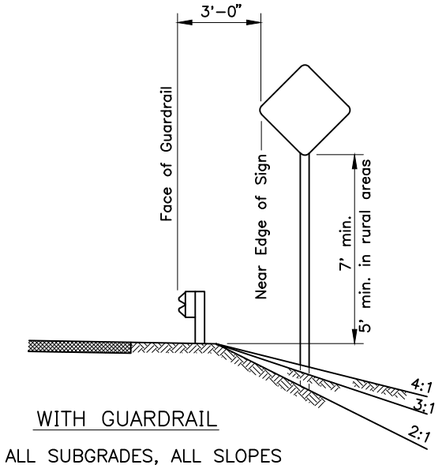
WITHOUT GUARDRAIL

SUBGRADES OVER 28', ALL SLOPES



WITHOUT GUARDRAIL

SUBGRADES 24' TO 28', ALL SLOPES

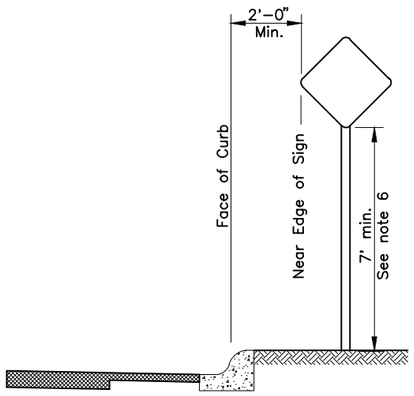


WITH GUARDRAIL

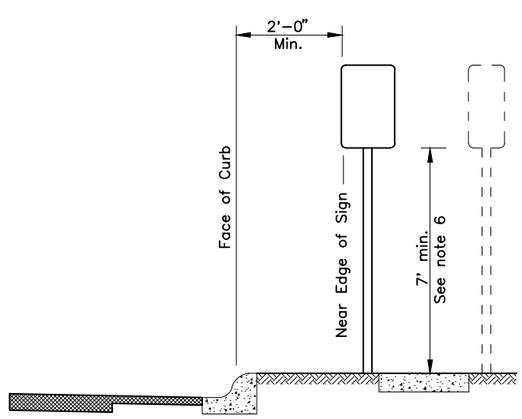
ALL SUBGRADES, ALL SLOPES

GENERAL NOTES

1. Unless shown otherwise on the plans, the standard sign offset is 12'. The minimum is 6' where shoulder width is 6' or greater.
2. Add 6" to mounting height on unpaved roads.
3. If signs extend over bike paths, the minimum vertical clearance is 8' 0".
4. When signs are placed 30' or more from the edge of traveled way, mount them with the bottom of the sign at least 5' above the road surface at the near edge of the road.
5. When multiple hinged sign supports are used, mount hinges at least 7' above the ground.
6. Minimum mounting height is 7'–0" where parking or pedestrian movements are likely to occur, or where sings extend over sidewalks.
7. For construction signs in rural areas, mounting height shall be 7' minimum.

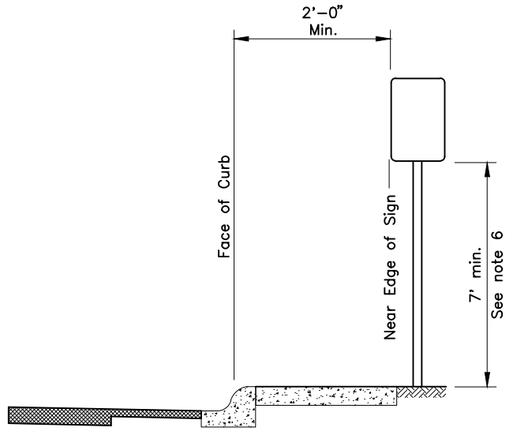


CURB WITHOUT SIDEWALK

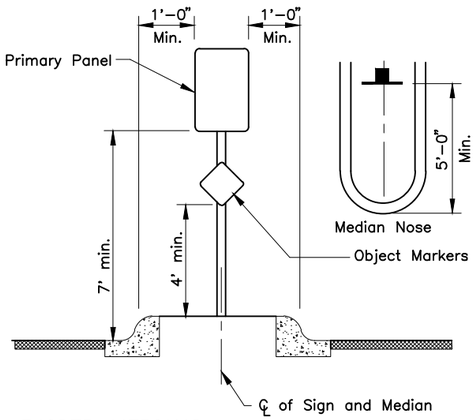


CURB WITH PARKWAY AND SIDEWALK

(If R/W width permits, signs should be placed behind sidewalk.)

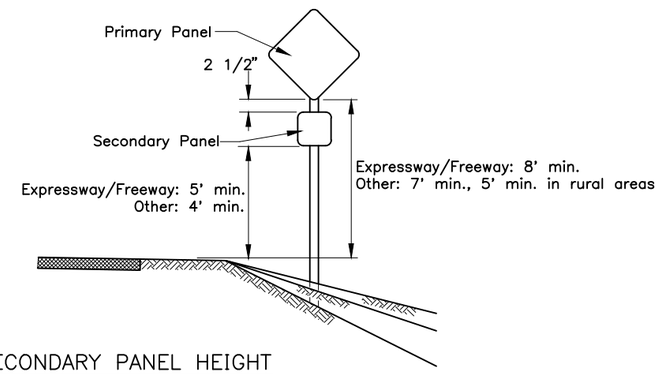


CURB WITH SIDEWALK WITHOUT PARKWAY



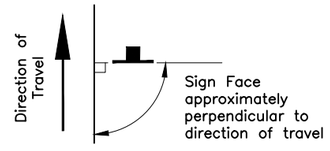
RAISED MEDIANS

Minimum 4' Width for Signing



SECONDARY PANEL HEIGHT

ALL TWO PANEL MOUNTING



SIGN POSITIONING

State of Alaska DOT&PF
ALASKA STANDARD PLAN

POST MOUNTED SIGN
OFFSET AND HEIGHT

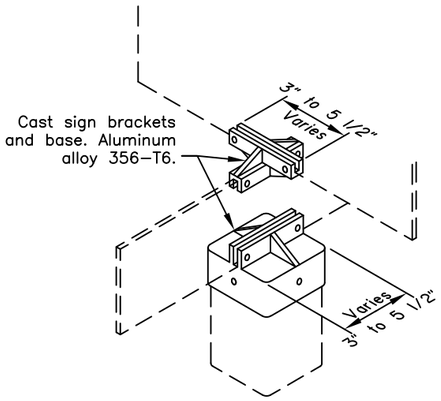
Adopted as an Alaska Standard Plan by: Carolyn Morehouse
Carolyn Morehouse, P.E.
Chief Engineer

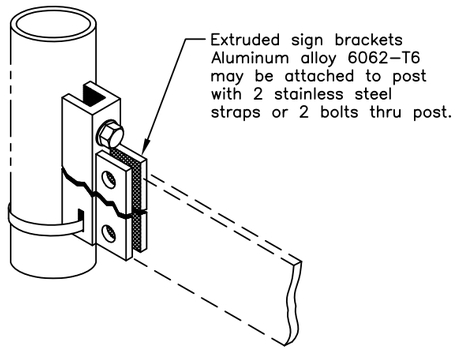
Adoption Date: 7/17/2020

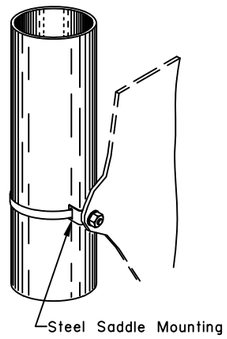
Last Code and Stds. Review
By: KLK Date: 7/8/2020

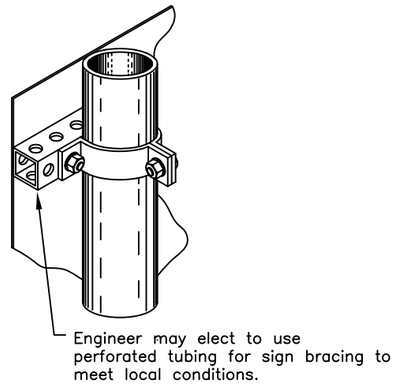
Next Code and Standards Review Date: 7/8/2030

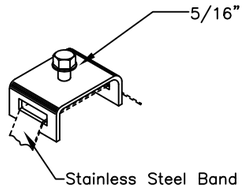
S-05.02

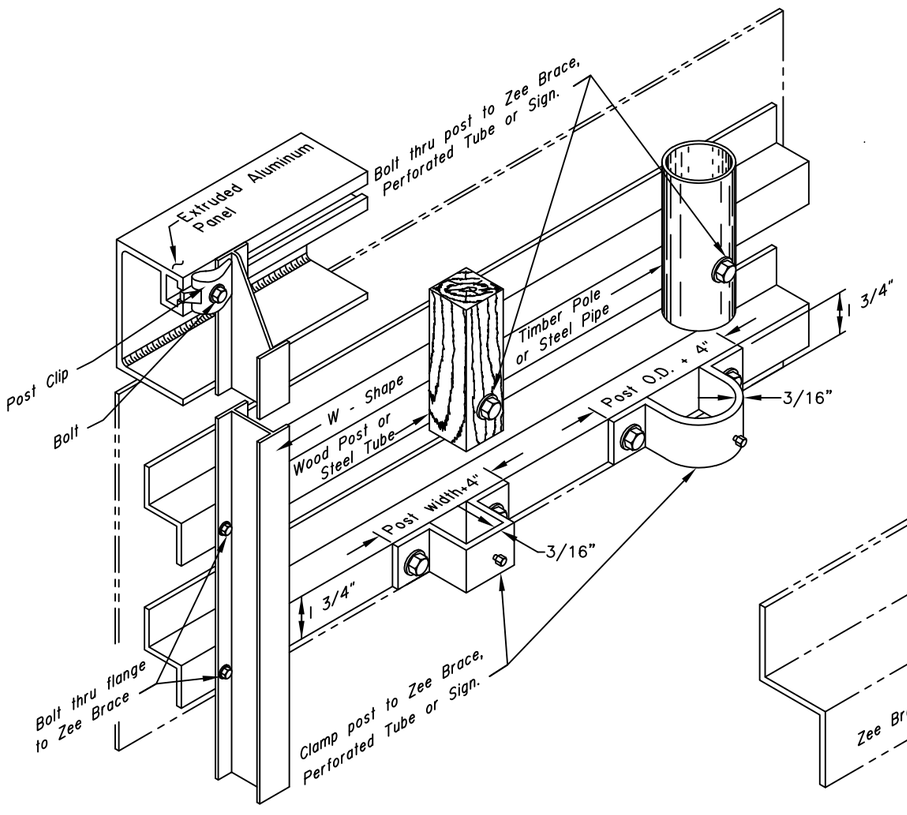


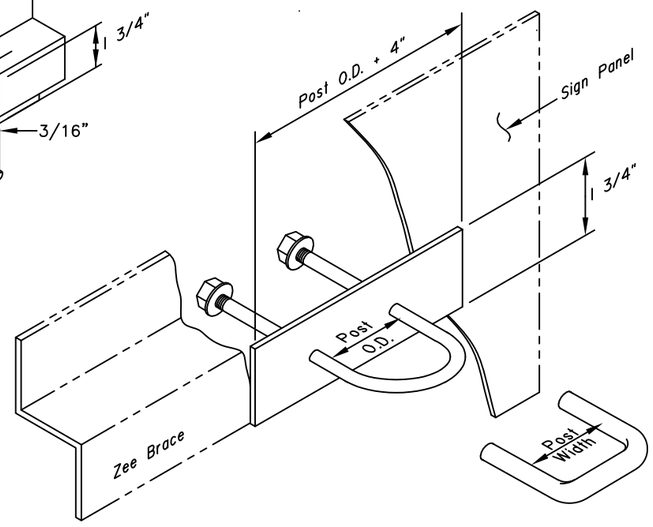


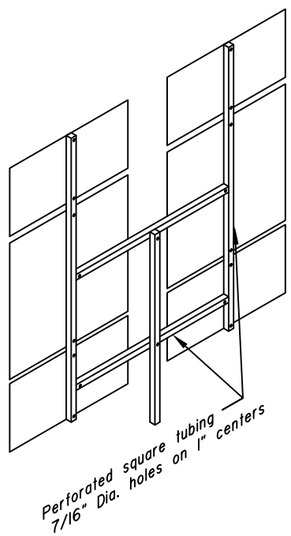












GENERAL NOTES

1. Details shown indicate general design only. Dimensions and design may vary among the manufacturers.
2. Install weather tight caps on all pipe and tube post (except perforated tubing).
3. Protect sign posts installed using driving methods with drive caps during installation.
4. Bolt braces to posts at each point where they cross posts.
5. Install signs with top of post, mounting brackets, etc. with a minimum of 3" below top of sign.
6. Paint all sign mounting fasteners on sign face a color closely matching the sign face.
7. Attach all signs, zees and braces mounted to the posts with 5/16" bolts.
8. Furnish all aluminum nuts, bolts and washers with anodized finish.

FASTENER SPECIFICATION TABLE				
FASTENERS		ALUMINUM	STEEL	STAINLESS STEEL
BOLTS	MACHINE CARRIAGE "U"	2024–T4	A–307	A–276
NUTS	REGULAR	6061–T6	A–307	A–276
	LOCK	2017–T4		
WASHERS		2024–T4	A–36	A–276
POST CLIP		356–T6		

State of Alaska DOT&PF
ALASKA STANDARD PLAN

SIGN TO SIGN POST CONNECTION

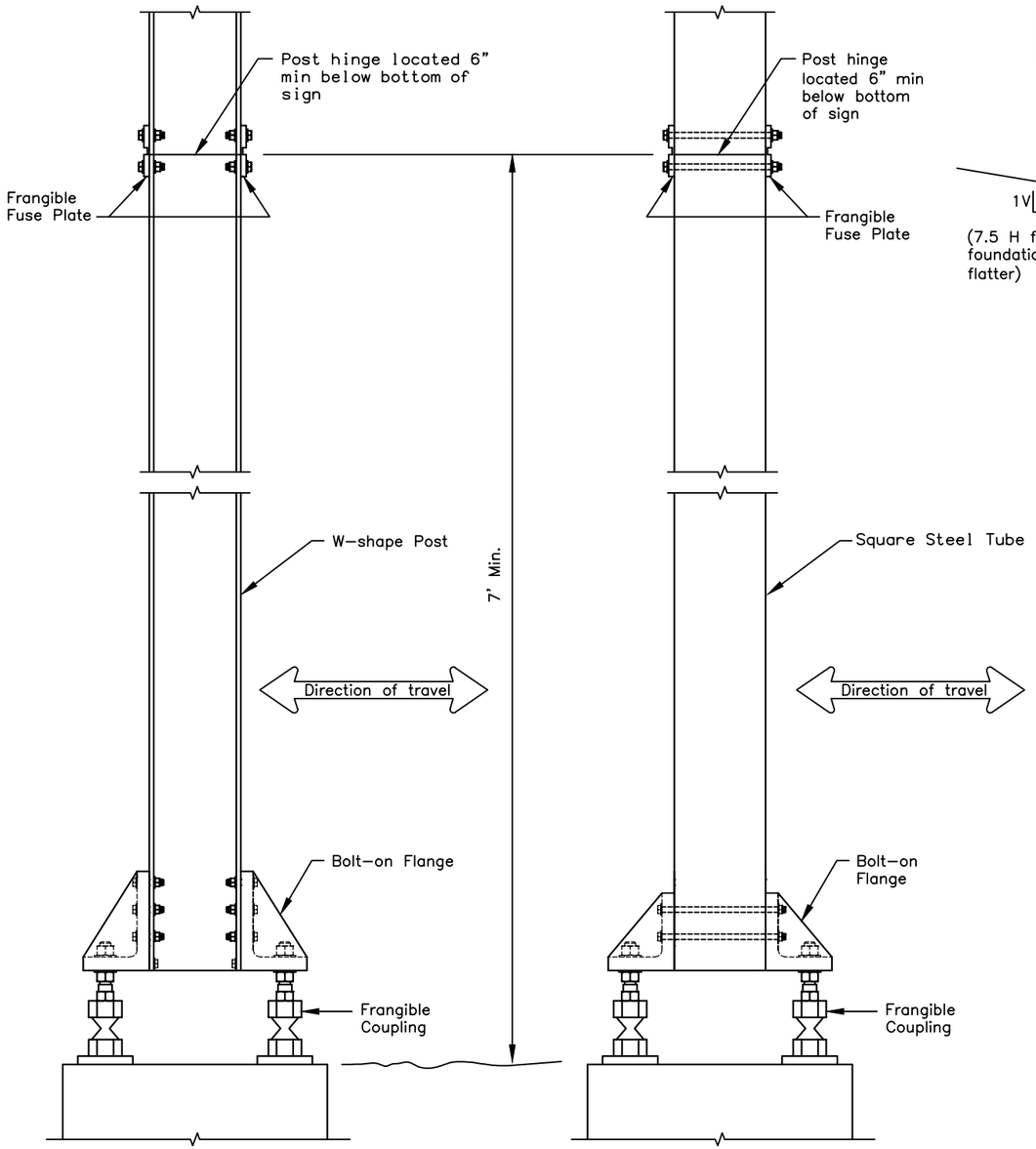
Adopted as an Alaska Standard Plan by: Kenneth J. Fisher, P.E.
Chief Engineer

Adoption Date: 02/08/2019

Last Code and Stds. Review
By: Date:

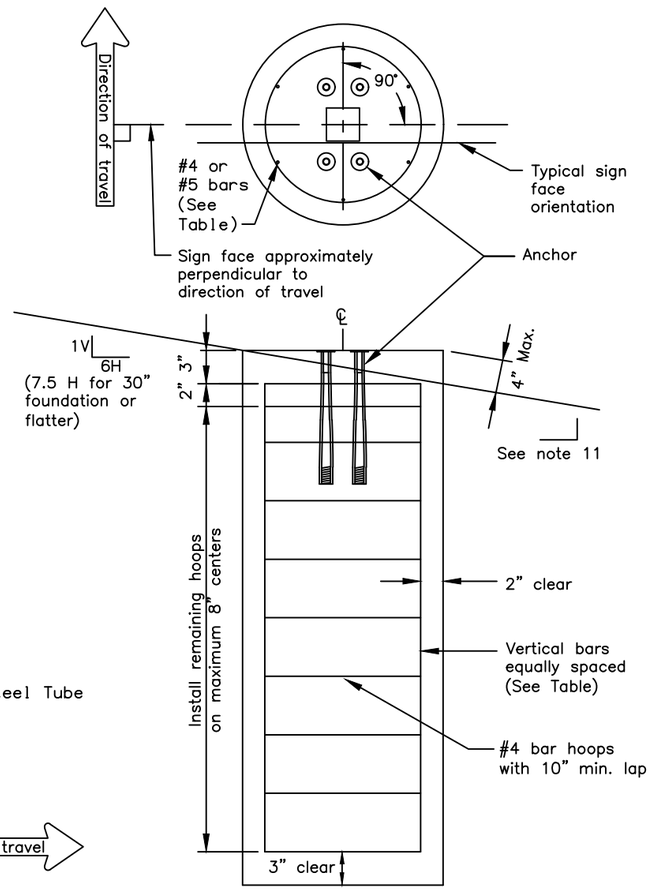
Next Code and Standards Review date: 02/08/2029

NOTE:
Install hinges when more than one post is used to support a sign. Do not install hinges on single post installations.



FRANGIBLE COUPLING SYSTEM FOR W–SHAPE POST

FRANGIBLE COUPLING SYSTEM FOR SQUARE STEEL TUBES



SIGN POST FOUNDATION
See Table for depth and diameter

POST SIZE & TYPE	FOUNDATION *			REINFORCEMENT					
	DIA.	MIN. DEPTH	CY^3 CONC.	VERTICAL BARS			HOOPS		
				QTY.	SIZE	LGTH.	QTY.	SIZE	DIA.
2 1/2" TUBE	1'–6"	6'–0"	0.39	7	#5	5'–6"	10	#4	1'–2"
3" TUBE	1'–6"	6'–0"	0.39	7	#5	5'–6"	10	#4	1'–2"
3 1/2" TUBE	1'–6"	6'–0"	0.39	7	#5	5'–6"	10	#4	1'–2"
4" TUBE	2'–6"	6'–0"	1.09	8	#8	5'–6"	10	#4	2'–2"
4 1/2" TUBE	2'–6"	6'–0"	1.09	8	#8	5'–6"	10	#4	2'–2"
5" TUBE	2'–6"	6'–0"	1.09	8	#8	5'–6"	10	#4	2'–2"
W6 x 9	2'–6"	6'–0"	1.09	8	#8	5'–6"	10	#4	2'–2"
W6 x 12	2'–6"	6'–0"	1.09	8	#8	5'–6"	10	#4	2'–2"
W6 x 15	3'–0"	6'–6"	1.70	8	#11	6'–0"	12	#4	2'–8"
W6 x 30	3'–0"	7'–6"	1.96	8	#11	7'–0"	13	#4	2'–8"

FOUNDATION TABLE

* Foundations sized for use where there are no loose, high moisture, or fine grained soils.

GENERAL NOTES

1. Furnish sign posts with NCHRP 350 compliant frangible couplings designed to break away safely when struck from any direction. There is no MASH compliant device at this time. See SPDR report for more info.
2. Furnish frangible coupling systems with bolt–on flanges.
3. Details on this sheet illustrate only the general components of a frangible coupling system, and are not intended to specify a particular product.
4. Install frangible fuse plates as specified by the manufacturer and hinged joints when multiple posts are used to support a sign. Do not use round pipes.
5. Install the components of the breakaway system, including hinges, in accordance with the written instructions of the system manufacturer.
6. Use Class A, B or W concrete conforming to Sections 501 or 550 of the Standard Specifications. Furnish ASTM A615 grade 60 steel bars for concrete reinforcement conforming to AASHTO M31.
7. Spiral reinforcing steel may be substituted for hoops in concrete foundation. Spiral option shall consist of #3 plain spiral with 6" pitch with three flat turns at the top and one flat turn at the bottom.
8. Install the concrete anchors using a rigid template. Locate the anchors on centers and within tolerances specified by the manufacturer.
9. Install the anchors in fresh concrete as recommended by the manufacturer. Adjust the template's final position until it is level. Remove and replace all foundations that need more than 2 shims under any 1 coupling or more than a total of 3 shims under any pair of couplings to plumb the post.
10. Drill the holes for attaching brackets before the sign posts are hot dip galvanized. Test fit templates in the holes to ensure the brackets can be installed square to the posts.
11. Special grading detail and/or shielding may be required to maintain 4" maximum clear distance.

State of Alaska DOT&PF
ALASKA STANDARD PLAN

SIGN POST BASE AND FOUNDATION

Adopted as an Alaska Standard Plan by: Carolyn Morehouse
Carolyn Morehouse, P.E.
Chief Engineer

Adoption Date: 7/17/2020

Last Code and Stds. Review
By: KLK, MJM Date: 7/8/2020

Next Code and Standards Review Date: 7/8/2030

S-31.02