

FILE Q:\Jnu\68129\Plans\Guardrail\New\Plans\68129_A1_TITLE.dwg
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STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES

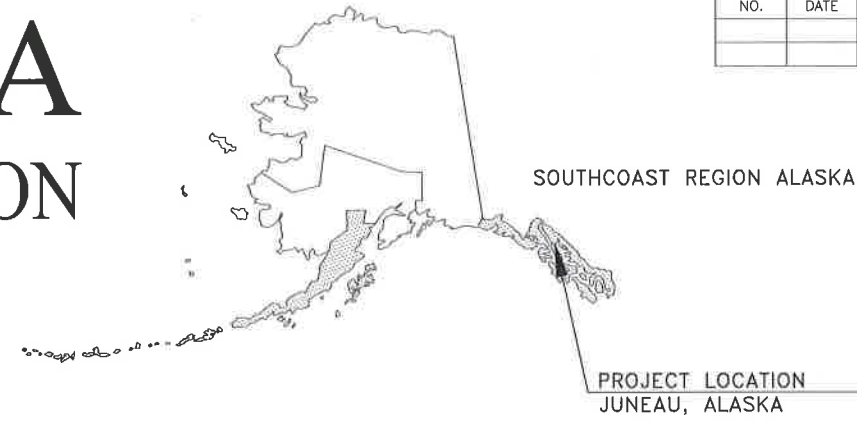
PROPOSED HIGHWAY PROJECT

JNU EGAN DRIVE GUARDRAIL REPLACEMENT

JUNEAU, ALASKA

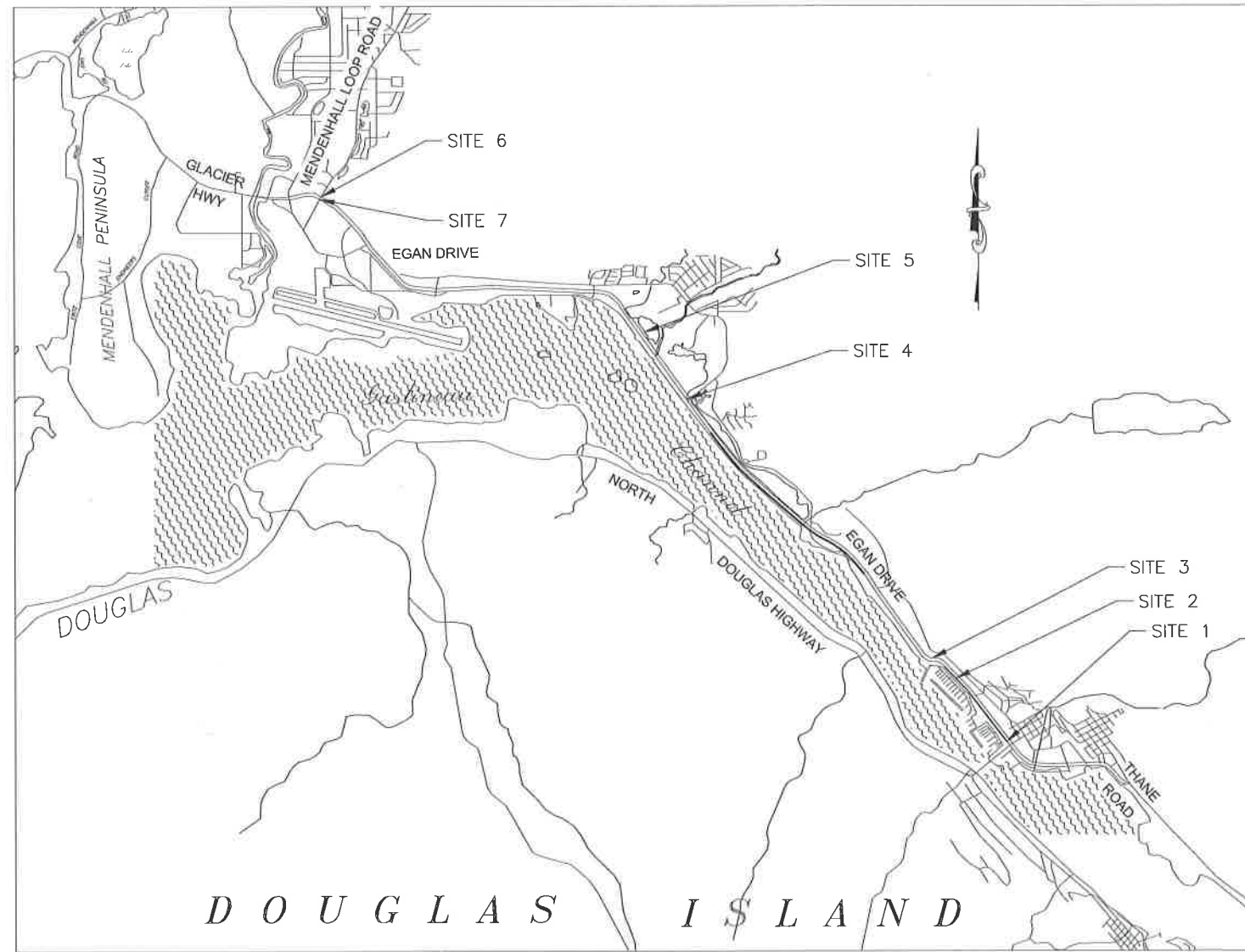
PROJECT NO. NH-0932(049)/Z681290000

NO.	DATE	REVISIONS	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	Z681290000	2018	A1	12



Project As-Built Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge the project as constructed.
 PE: *Randall E. Johnston* Date 07.05.2019

Start Date: April 04, 2019
 End Date: May 24th, 2019
 Contractor: Glacier State Contractors



The undersigned hereby certifies that this duplicated document is an exact and true copy of the original.

Jessica Puskala

November 21, 2018

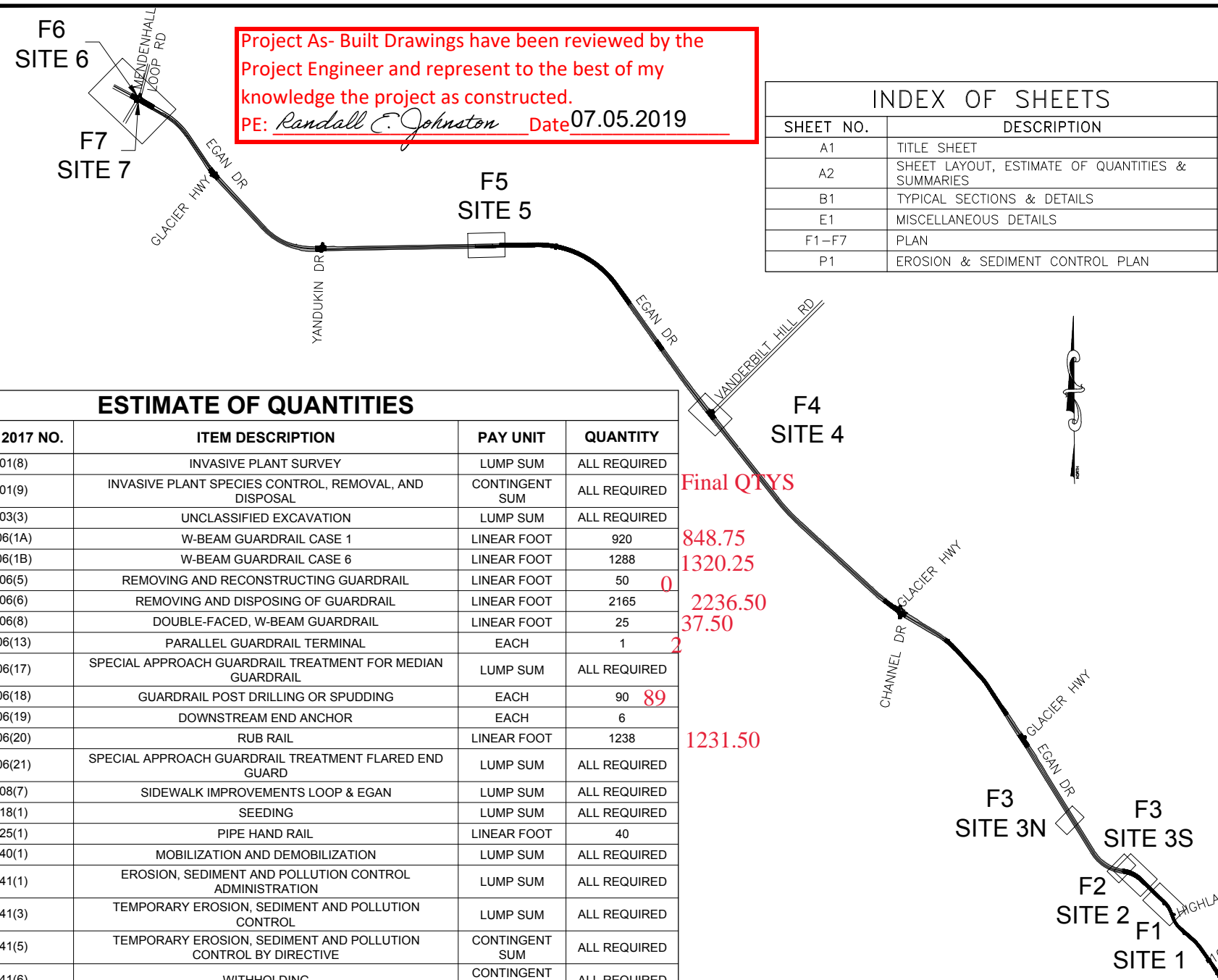
USE THESE PLANS IN CONJUNCTION WITH THE STATE OF ALASKA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2017 EDITION AND THE PROJECT SPECIAL PROVISIONS.

STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
 6860 GLACIER HIGHWAY, JUNEAU, AK 99801
 (907) 465-1763

APPROVED: *[Signature]* a/g/d/r
 REGIONAL PRECONSTRUCTION ENGINEER DATE
 L. PAT CARROLL, P.E.

CONCUR: *[Signature]* For 9/6/18
 REGIONAL DIRECTOR DATE
 D. LANCE MEARIG, P.E.

FILE G:\ju\68129\PlanSet\Guardrail\68129_A2_LAYOUT_UPDATED ITEM NC.dwg DATE 9/6/2018 11:42 LAYOUT A2 DESIGNED T.F. CHECKED K.M.C.T.,J.W. DRAFTED T.F., J.T.



Project As- Built Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge the project as constructed.
 PE: *Randall E. Johnston* Date 07.05.2019

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
A1	TITLE SHEET
A2	SHEET LAYOUT, ESTIMATE OF QUANTITIES & SUMMARIES
B1	TYPICAL SECTIONS & DETAILS
E1	MISCELLANEOUS DETAILS
F1-F7	PLAN
P1	EROSION & SEDIMENT CONTROL PLAN

ESTIMATE OF QUANTITIES				
ITEM NO.	SSHC 2017 NO.	ITEM DESCRIPTION	PAY UNIT	QUANTITY
201.2002.0000	201(8)	INVASIVE PLANT SURVEY	LUMP SUM	ALL REQUIRED
201.2003.0000	201(9)	INVASIVE PLANT SPECIES CONTROL, REMOVAL, AND DISPOSAL	CONTINGENT SUM	ALL REQUIRED
203.0019.0000	203(3)	UNCLASSIFIED EXCAVATION	LUMP SUM	ALL REQUIRED
606.0001.0000	606(1A)	W-BEAM GUARDRAIL CASE 1	LINEAR FOOT	920
606.0001.0000	606(1B)	W-BEAM GUARDRAIL CASE 6	LINEAR FOOT	1288
606.0005.0000	606(5)	REMOVING AND RECONSTRUCTING GUARDRAIL	LINEAR FOOT	50
606.0006.0000	606(6)	REMOVING AND DISPOSING OF GUARDRAIL	LINEAR FOOT	2165
606.0008.0000	606(8)	DOUBLE-FACED, W-BEAM GUARDRAIL	LINEAR FOOT	25
606.0013.0000	606(13)	PARALLEL GUARDRAIL TERMINAL	EACH	1
606.2009.0000	606(17)	SPECIAL APPROACH GUARDRAIL TREATMENT FOR MEDIAN GUARDRAIL	LUMP SUM	ALL REQUIRED
606.2015.0000	606(18)	GUARDRAIL POST DRILLING OR SPUDDING	EACH	90
606.2011.0000	606(19)	DOWNSTREAM END ANCHOR	EACH	6
606.2016.0000	606(20)	RUB RAIL	LINEAR FOOT	1238
606.2009.0000	606(21)	SPECIAL APPROACH GUARDRAIL TREATMENT FLARED END GUARD	LUMP SUM	ALL REQUIRED
608.2024.0000	608(7)	SIDEWALK IMPROVEMENTS LOOP & EGAN	LUMP SUM	ALL REQUIRED
618.0005.0000	618(1)	SEEDING	LUMP SUM	ALL REQUIRED
625.0001.0000	625(1)	PIPE HAND RAIL	LINEAR FOOT	40
640.0001.0000	640(1)	MOBILIZATION AND DEMOBILIZATION	LUMP SUM	ALL REQUIRED
641.0001.0000	641(1)	EROSION, SEDIMENT AND POLLUTION CONTROL ADMINISTRATION	LUMP SUM	ALL REQUIRED
641.0003.0000	641(3)	TEMPORARY EROSION, SEDIMENT AND POLLUTION CONTROL	LUMP SUM	ALL REQUIRED
641.0005.0000	641(5)	TEMPORARY EROSION, SEDIMENT AND POLLUTION CONTROL BY DIRECTIVE	CONTINGENT SUM	ALL REQUIRED
641.0006.0000	641(6)	WITHHOLDING	CONTINGENT SUM	ALL REQUIRED
643.0002.0000	643(2)	TRAFFIC MAINTENANCE	LUMP SUM	ALL REQUIRED

Final QTYS
 848.75
 1320.25
 2236.50
 37.50
 1231.50

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	Z681290000	2018	A2	12

606(1) W-BEAM GUARDRAIL					
BEGIN		END		LENGTH (FT)	REMARKS
STATION	OFFSET	STATION	OFFSET		
60+31	LT	66+32	LT	612.5	SITE 1
71+86	LT	84+47	LT	1,237.5	SITE 2
264+44	RT	264+82	RT	114	SITE 4
298+82	LT	300+07	LT	125	SITE 5
469+44	RT	469+47	RT	56	SITE 6
N/A	LT	N/A	LT	63	SITE 7

606(5) REMOVING AND RECONSTRUCTING GUARDRAIL		
STATION	OFFSET	REMARKS
300+07	55' LT	SITE 5. RELOCATE PARALLEL GUARDRAIL TERMINAL

606(8) DOUBLE-FACED, W-BEAM GUARDRAIL					
BEGIN		END		LENGTH (FT)	REMARKS
STATION	OFFSET	STATION	OFFSET		
83+75	LT	84+00	LT	25	MEDIAN GUARDRAIL EXTENSION

606(6) REMOVING AND DISPOSING OF GUARDRAIL					
BEGIN		END		LENGTH (FT)	REMARKS
STATION	OFFSET	STATION	OFFSET		
60+31	LT	66+82	LT	662.5	SITE 1
71+86	LT	84+47	LT	1,237.5	SITE 2
84+18	CENTER	84+30	CENTER	12.5	SITE 3
96+30	CENTER	96+43	CENTER	12.5	SITE 3
264+44	RT	265+00	RT	114	SITE 4
N/A	RT	N/A	RT	63	SITE 6
N/A	LT	N/A	LT	63	SITE 7

606(13) PARALLEL GUARDRAIL TERMINAL		
STATION	OFFSET	REMARKS
66+32	41' LT	SITE 1

606(17) MEDIAN GUARDRAIL TERMINAL		
STATION	OFFSET	REMARKS
84+30	5' LT	SITE 3
96+30	5' LT	SITE 3

606(19) DOWNSTREAM END ANCHOR		
STATION	OFFSET	REMARKS
60+31	39' LT	SITE 1, W31, G-14.00
71+86	36' LT	SITE 2, W31, G-14.00
N/A	RT	SITE 6, W31 (SHORT RADIUS TYPE) G-26.00
N/A	RT	SITE 6, W31 (SHORT RADIUS TYPE) G-26.00
N/A	LT	SITE 7, W31 (SHORT RADIUS TYPE) G-26.00
N/A	LT	SITE 7, W31 (SHORT RADIUS TYPE) G-26.00

606(21) FLARED END GUARD		
STATION	OFFSET	REMARKS
N/A	RT	SITE 6

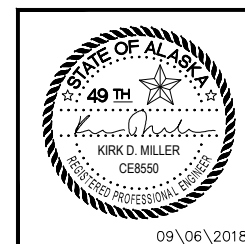
GENERAL NOTES:

- ALL EXISTING FEATURES ARE NOT NECESSARILY SHOWN ON THIS PLAN SET, INCLUDING BURIED AND OVERHEAD ELECTRICAL POWER AND ROADWAY LIGHTING UTILITIES. INSPECT ALL WORK LOCATIONS AND VERIFY EXISTING CONDITIONS WITH THE RESPECTIVE UTILITY OWNERS AND REPRESENTATIVES PRIOR TO START OF WORK. REFERENCE ADDITIONAL PLAN NOTES ON OTHER SHEETS IN THIS PLAN SET. ALSO REFERENCE AS-BUILT PLANS INCLUDED AS SUPPLEMENTAL INFORMATION TO BIDDERS ON THE DEPARTMENT'S BID ADVERTISE WEBSITE FOR EXISTING FEATURES NOT SHOWN. REFERENCE FOLLOWING CONTACT INFORMATION FOR EXISTING UTILITIES:

 ALASKA ELECTRIC LIGHT AND POWER (AELP), DARRELL WETHERALL, TEL. (907) 780-2222
 ALASKA COMMUNICATIONS (ACS), DAN STARBUCK, TEL. (907) 714-8738
 GCI COMMUNICATION CORPORATION (GCI), REBECCA COLTON, TEL. (907) 868-8784
 DOT&PF (FOR ROADWAY ILLUMINATION UTILITIES), MARCUS ZIMMERMAN, TEL. (907) 465-4655
- STATIONING AND OFFSETS ARE INDICATED ON THE PLANS FOR GENERAL REFERENCE AND WORK LIMITS IDENTIFICATION. HOWEVER, SURVEY CONTROL INFORMATION IS NOT PROVIDED NOR NEEDED FOR THIS PROJECT. THE ENGINEER AND THE CONTRACTOR WILL JOINTLY LOCATE THE BEGINNING AND/OR ENDS OF THE REQUIRED WORK LIMITS AND FIELD LOCATE ALL WORK PRIOR TO START OF PROJECT.
- ALL GUARDRAIL REPLACEMENT SECTIONS WILL FOLLOW THE SAME ALIGNMENT AND LOCATION OF THE EXISTING GUARDRAIL POSTS. DEVIATIONS FROM EXISTING HORIZONTAL ALIGNMENT WILL NOT BE PERMITTED UNLESS OTHERWISE APPROVED BY THE ENGINEER. THE CONTRACTOR WILL FIELD REFERENCE THE HORIZONTAL LOCATION OF EXISTING FEATURES PRIOR TO REMOVAL AND ESTABLISH NEW ALIGNMENT CONTROL AS REQUIRED TO MATCH EXISTING ALIGNMENT AND GRADES.
- CONTAIN ALL CONSTRUCTION WITHIN THE RIGHT-OF-WAY. DO NOT DISPOSE OF EXCESS MATERIAL WITHIN THE RIGHT-OF-WAY, UNLESS SPECIFICALLY CALLED FOR IN THE PLANS.
- DO NOT COVER SIGNAL POLE FOUNDATION BOLTS AND BASE PLATES.
- ON STANDARD DRAWING C-03.10, REPLACE THE SAFETY FENCE AND TYPE II BARRICADE OR TUBULAR MARKINGS SHOWN IN THE TYPICAL SECTION WITH ADA COMPLIANT BARRICADES.

THE FOLLOWING STANDARD DRAWINGS APPLY TO THESE PROJECT:

- C-03.10
- G-00.04
- G-05.00S
- G-10.10
- G-11.00
- G-14.00
- G-26.00



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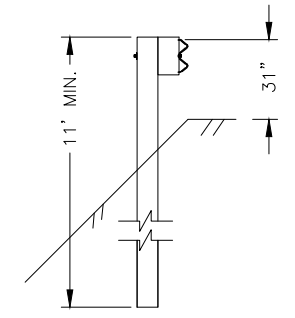
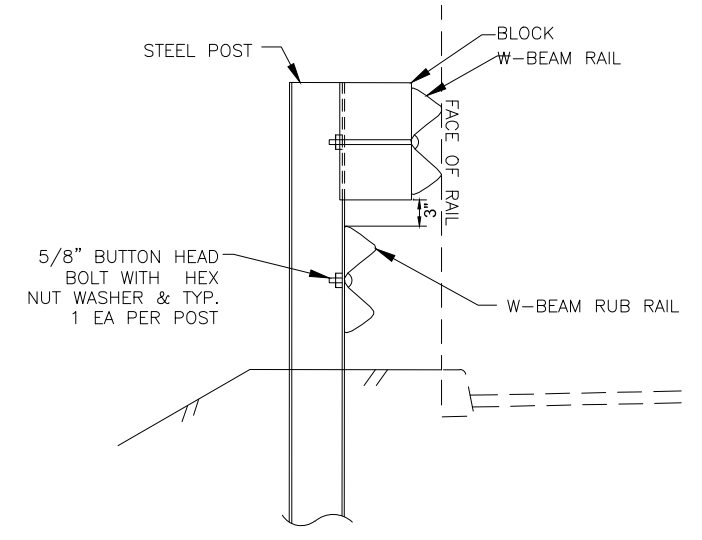
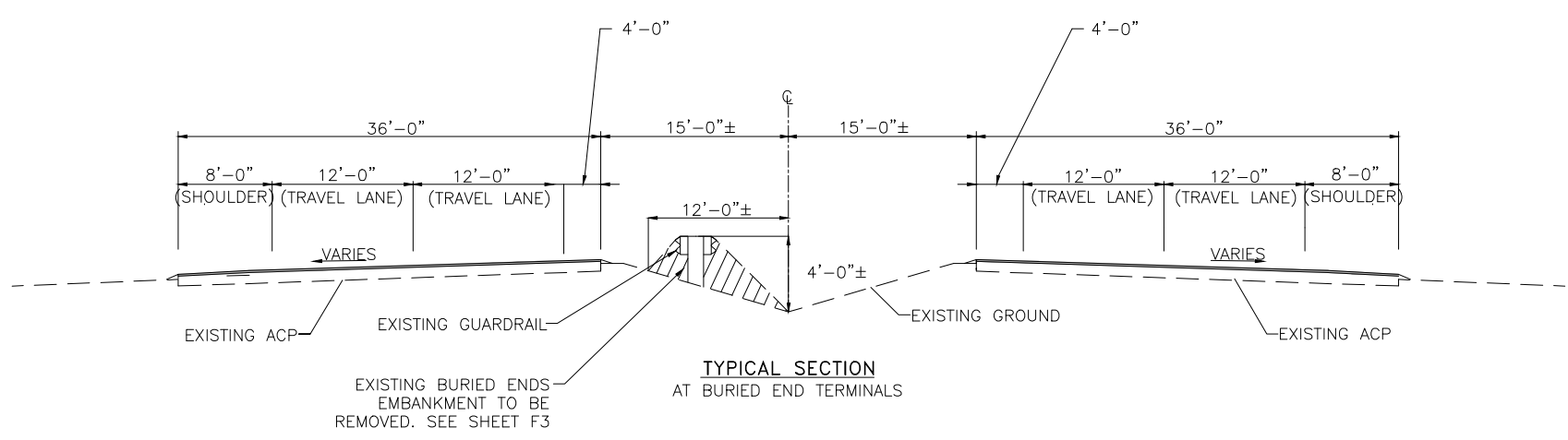
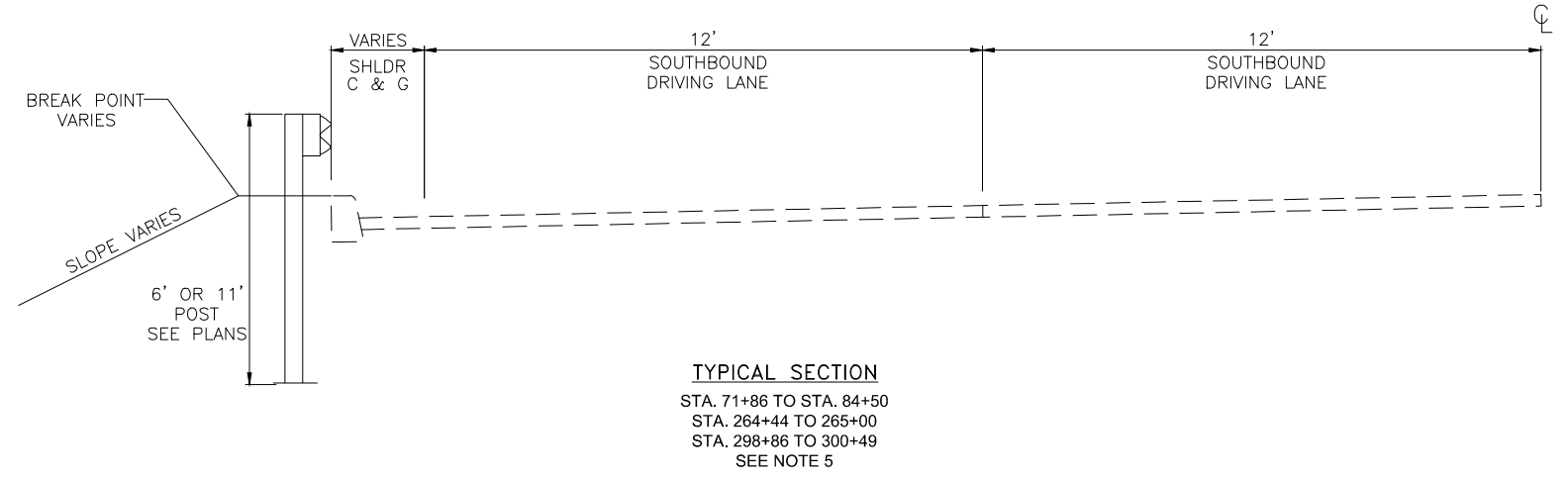
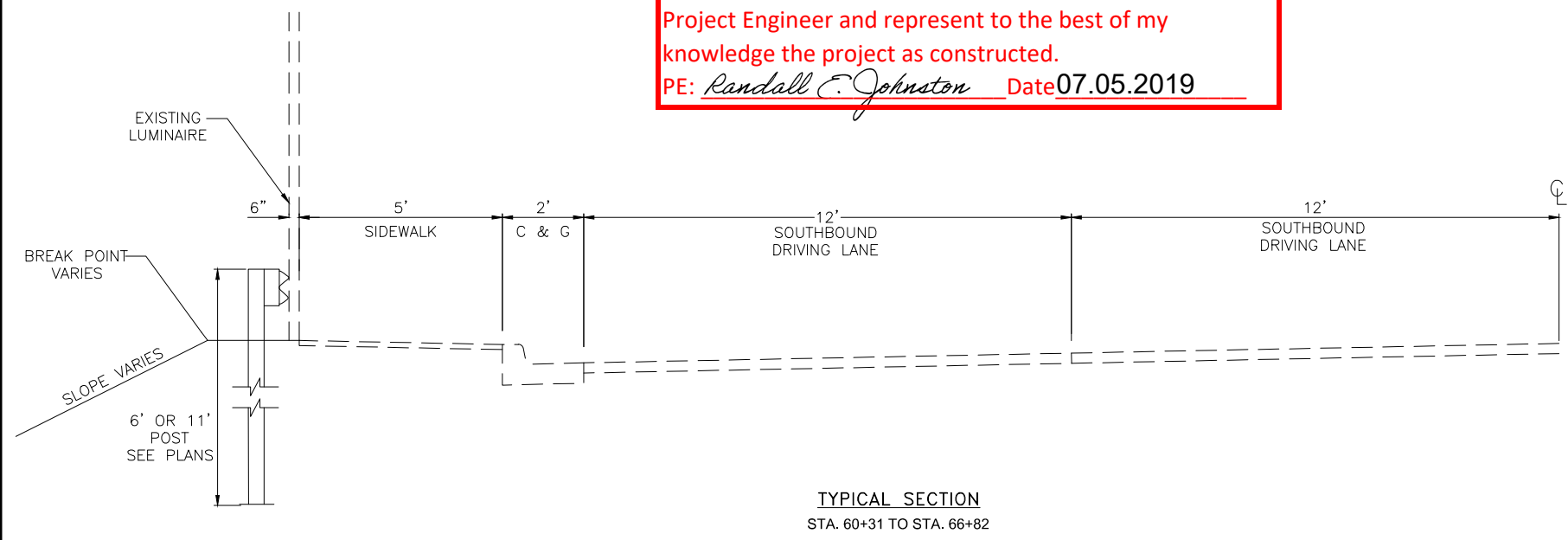
JNU EGAN DRIVE GUARDRAIL REPLACEMENT

SHEET LAYOUT, ESTIMATE OF QUANTITIES & SUMMARIES

FILE Q:\Inu\68129\Plans\Guardrail\New\Plans\68129_B1_TYPICAL_SECTION.dwg DATE 9/6/2018 11:44 LAYOUT B1 DESIGNED T.F. CHECKED K.M.C.T.,J.W. DRAFTED T.F., J.T.

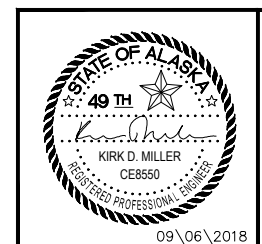
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
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PE: *Randall E. Johnston* Date 07.05.2019



NOTES:

- STANDARD POST INSTALLATION IS CASE 1 PER STANDARD DRAWING G-10.10 UNLESS OTHERWISE NOTED. USE CASE 6 POST INSTALLATION SHOWN ON THIS SHEET WHERE SHOWN ON PLANS.
- PROVIDE TYPE IV, DOUBLE-SIDED TYPE GUARDRAIL PER STANDARD DRAWING G-05.00S WHERE NOTED FOR NEW MEDIAN GUARDRAIL EXTENSION AT SITE 3S.
- DEPENDING ON EXISTING CONDITIONS OF UNDERLYING MATERIAL, POST INSTALLATION MAY REQUIRE ROCK DRILLING OR SPUDDING. REF PLANS FOR LOCATIONS.
- THE SOUTHBOUND SIDE THAT IS SHOWN IS MIRRORED ABOUT THE CENTERLINE FOR EGAN DRIVE, FOR NORTHBOUND DIMENSIONS.



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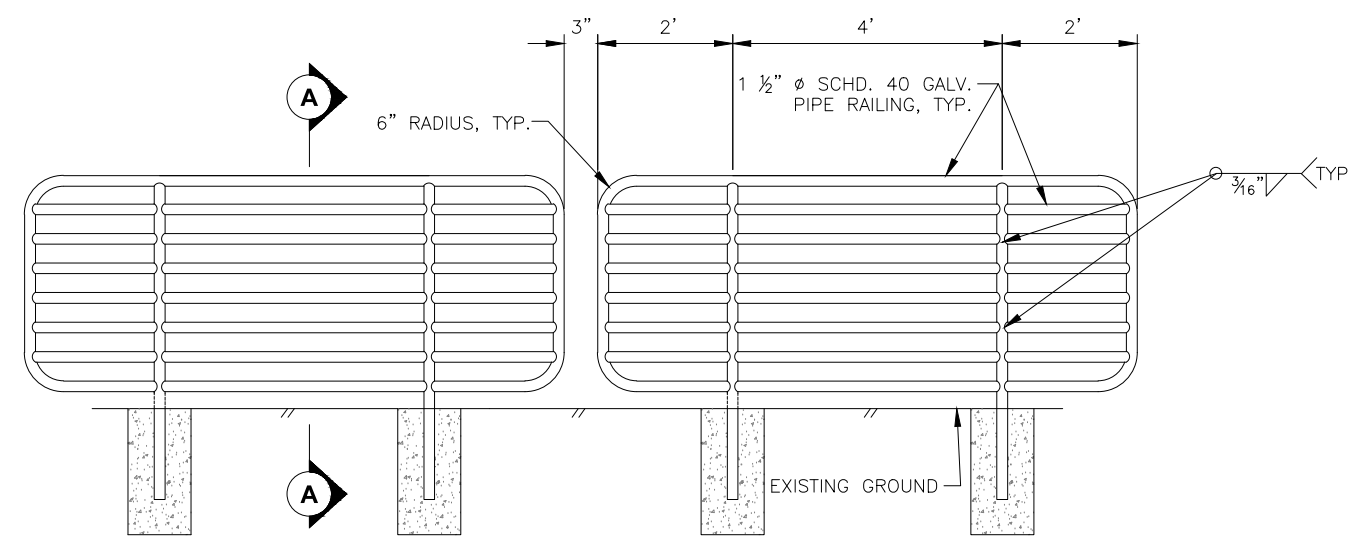
JNU EGAN DRIVE GUARDRAIL REPLACEMENT

TYPICAL SECTION & DETAILS

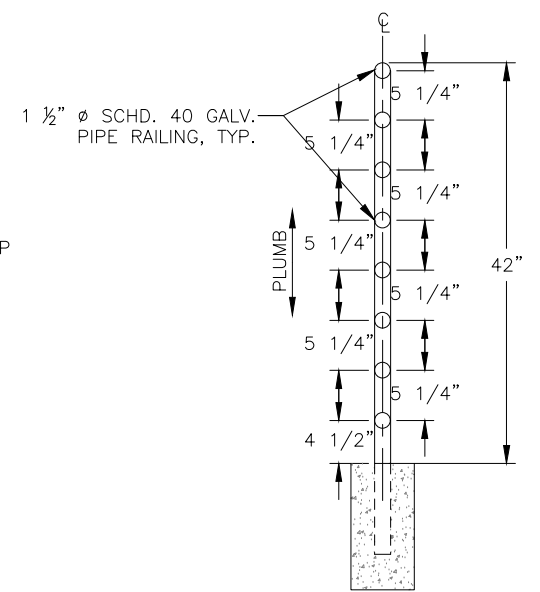
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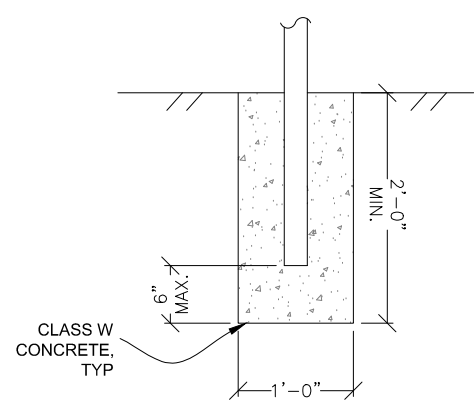
PIPE PEDESTRIAN RAIL - PROFILE VIEW
 (5 SECTIONS REQUIRED, SEE SHEET F6)
 N.T.S.



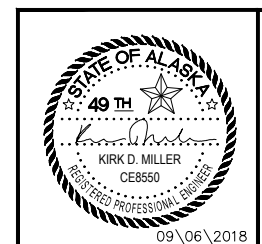
SECTION A-A
 N.T.S.

NOTES:

1. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF ALL PEDESTRIAN RAILING, PRIOR TO FABRICATION, FOR THE ENGINEER'S REVIEW AND APPROVAL.
2. THE 3" DIMENSION BETWEEN PIPE RAIL SECTIONS IS TYPICAL. THE CONTRACTOR MAY ADJUST THE SPACING BETWEEN RAIL SECTIONS +/- 3" AS REQUIRED TO AVOID CONFLICTS.
3. ALL METAL RAILING SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.



CONCRETE FOOTING DETAIL
 N.T.S.

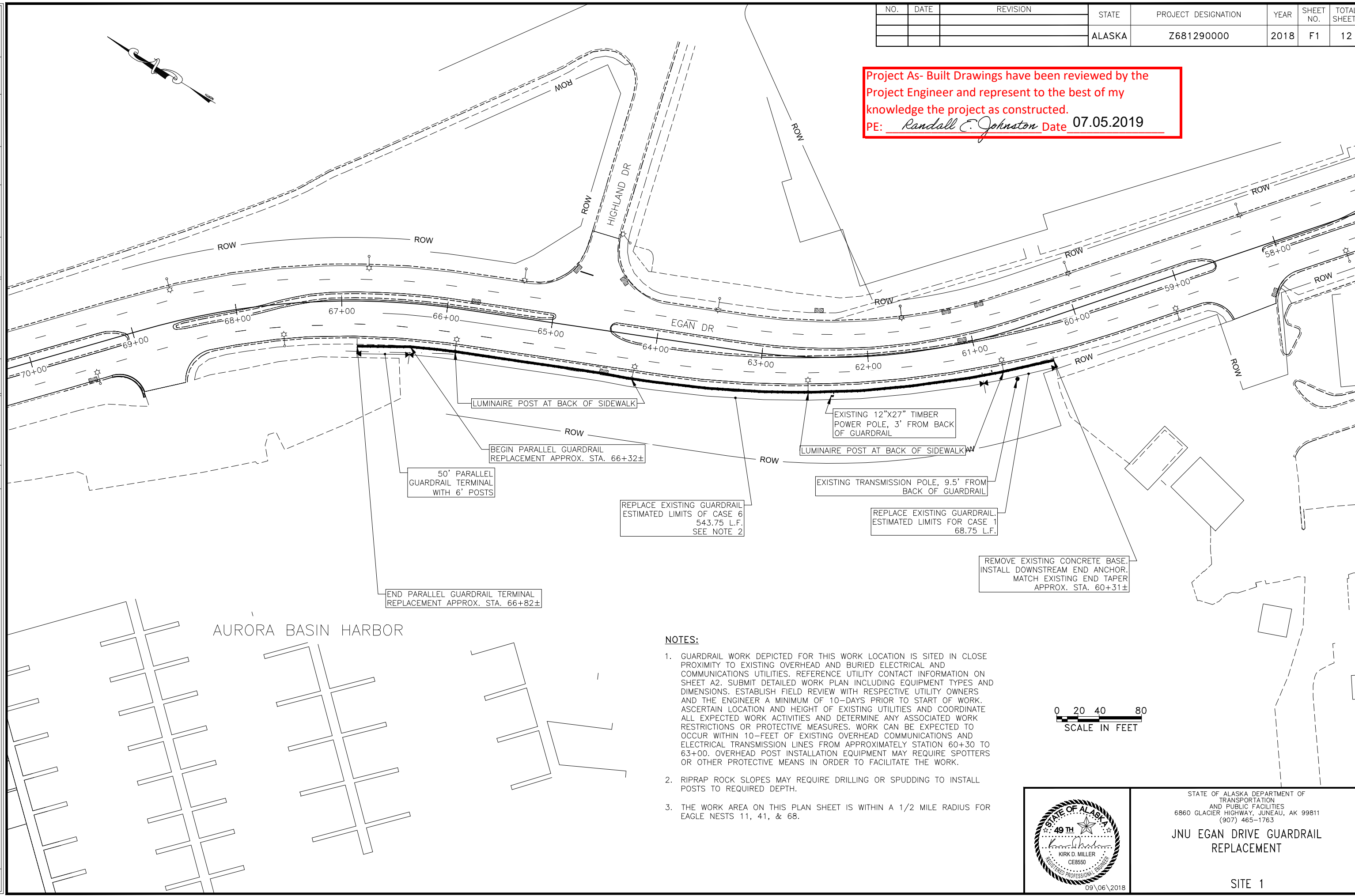


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**JNU EGAN DRIVE GUARDRAIL
 REPLACEMENT**
 PEDESTRIAN RAIL
 MISCELLANEOUS DETAILS

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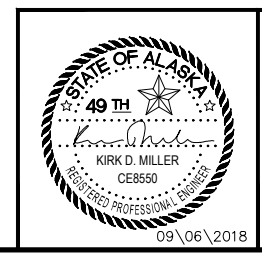
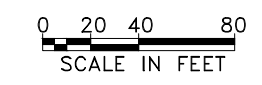
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 DATE 9/6/2018 11:54 LAYOUT F1 DESIGNED T.F. CHECKED K.M.C.T.,J.W. DRAFTED T.F., J.T.



AURORA BASIN HARBOR

NOTES:

- GUARDRAIL WORK DEPICTED FOR THIS WORK LOCATION IS SITED IN CLOSE PROXIMITY TO EXISTING OVERHEAD AND BURIED ELECTRICAL AND COMMUNICATIONS UTILITIES. REFERENCE UTILITY CONTACT INFORMATION ON SHEET A2. SUBMIT DETAILED WORK PLAN INCLUDING EQUIPMENT TYPES AND DIMENSIONS. ESTABLISH FIELD REVIEW WITH RESPECTIVE UTILITY OWNERS AND THE ENGINEER A MINIMUM OF 10-DAYS PRIOR TO START OF WORK. ASCERTAIN LOCATION AND HEIGHT OF EXISTING UTILITIES AND COORDINATE ALL EXPECTED WORK ACTIVITIES AND DETERMINE ANY ASSOCIATED WORK RESTRICTIONS OR PROTECTIVE MEASURES. WORK CAN BE EXPECTED TO OCCUR WITHIN 10- FEET OF EXISTING OVERHEAD COMMUNICATIONS AND ELECTRICAL TRANSMISSION LINES FROM APPROXIMATELY STATION 60+30 TO 63+00. OVERHEAD POST INSTALLATION EQUIPMENT MAY REQUIRE SPOTTERS OR OTHER PROTECTIVE MEANS IN ORDER TO FACILITATE THE WORK.
- RIPRAP ROCK SLOPES MAY REQUIRE DRILLING OR SPUDDING TO INSTALL POSTS TO REQUIRED DEPTH.
- THE WORK AREA ON THIS PLAN SHEET IS WITHIN A 1/2 MILE RADIUS FOR EAGLE NESTS 11, 41, & 68.



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**JNU EGAN DRIVE GUARDRAIL
 REPLACEMENT**

SITE 1

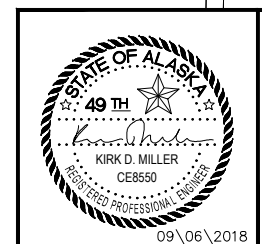
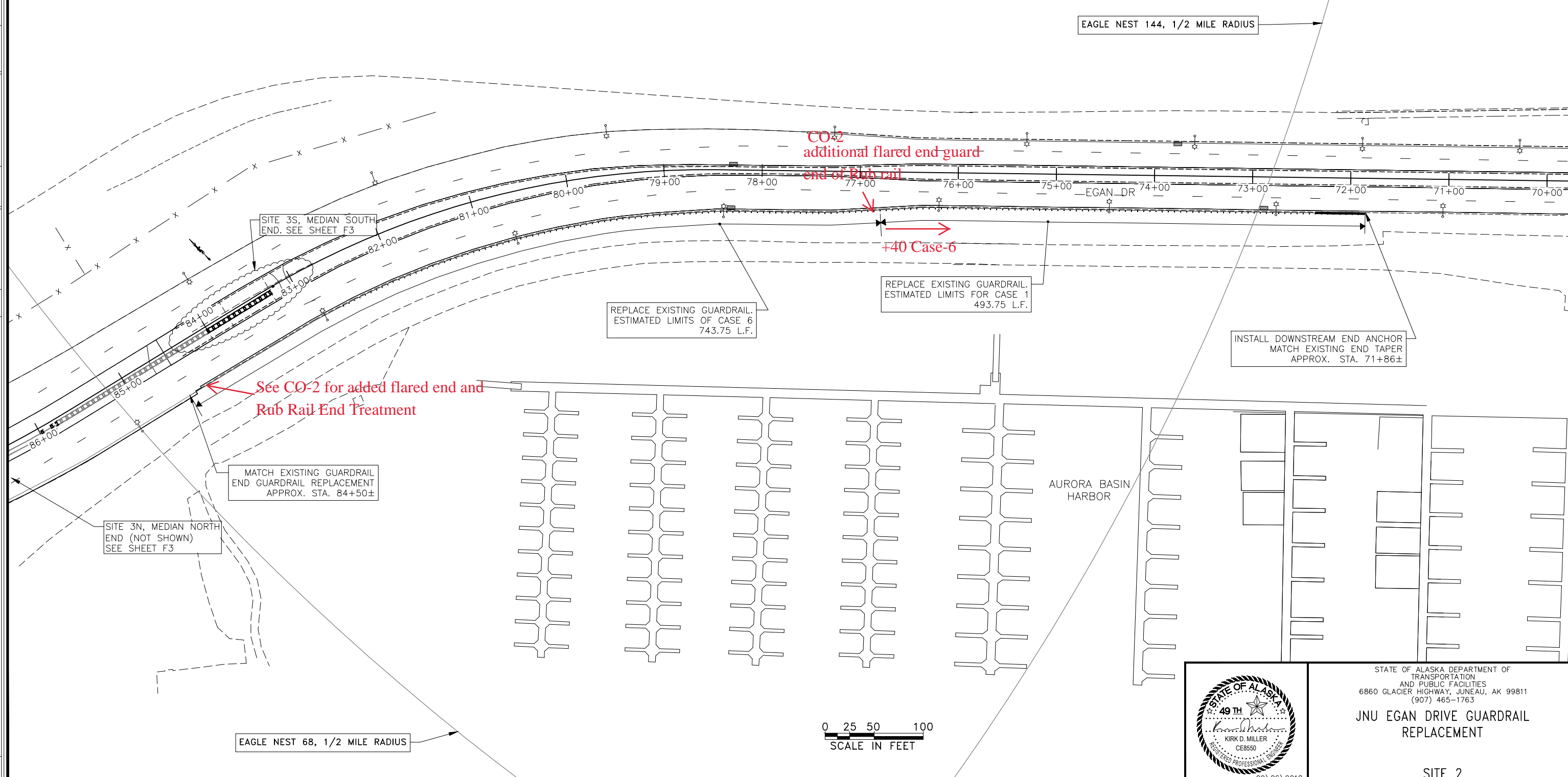
FILE Q:\Inu\68129\Plans\Guardrail\New\Plans\68129_F1_PLAN.dwg DATE 9/6/2018 11:54 LAYOUT F2 DESIGNED T.F. CHECKED K.M.C.T.J.W. DRAFTED T.F., J.T.

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	Z681290000	2018	F2	12

NOTES:

1. GUARDRAIL WORK DEPICTED FOR THIS WORK LOCATION ARE SITED IN CLOSE PROXIMITY TO EXISTING OVERHEAD ELECTRIC AND BURIED ELECTRICAL LIGHTING UTILITIES. REFERENCE UTILITY CONTACT INFORMATION ON SHEET A2. SUBMIT DETAILED WORK PLAN INCLUDING EQUIPMENT TYPES AND DIMENSIONS. ESTABLISH FIELD REVIEW WITH RESPECTIVE UTILITY OWNERS AND THE ENGINEER A MINIMUM OF 10-DAYS PRIOR TO START OF WORK. ASCERTAIN LOCATION AND HEIGHT OF EXISTING UTILITIES AND COORDINATE ALL EXPECTED WORK ACTIVITIES AND DETERMINE ANY ASSOCIATED WORK RESTRICTIONS OR PROTECTIVE MEASURES OVERHEAD POST INSTALLATION EQUIPMENT MAY REQUIRE SPOTTERS OR OTHER PROTECTIVE MEANS IN ORDER TO FACILITATE THE WORK.
2. INSTALL RUB RAIL ALONG WITH ALL GUARDRAIL REPLACED IN THIS SITE.
3. THE WORK AREA ON THIS PLAN SHEET IS WITHIN A 1/2 MILE RADIUS FOR EAGLE NESTS 11, 41, 68, & 144.

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 PE: *Randall E. Johnston* Date 07.05.2019

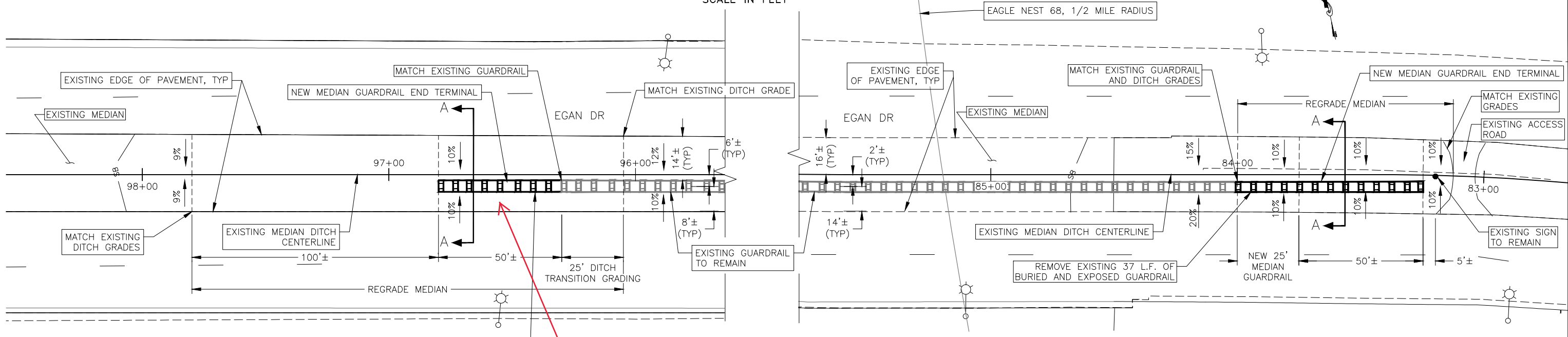


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JNU EGAN DRIVE GUARDRAIL REPLACEMENT
 SITE 2

FILE Q:\jnu\68129\Plans\Guardrail\New\Plans\68129_F1_PLAN.dwg DATE 9/6/2018 11:52 LAYOUT F3 DESIGNED T.F. CHECKED K.M.C.T.,J.W. DRAFTED T.F., J.T.

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LEGEND
 — SB — SEDIMENT BARRIER



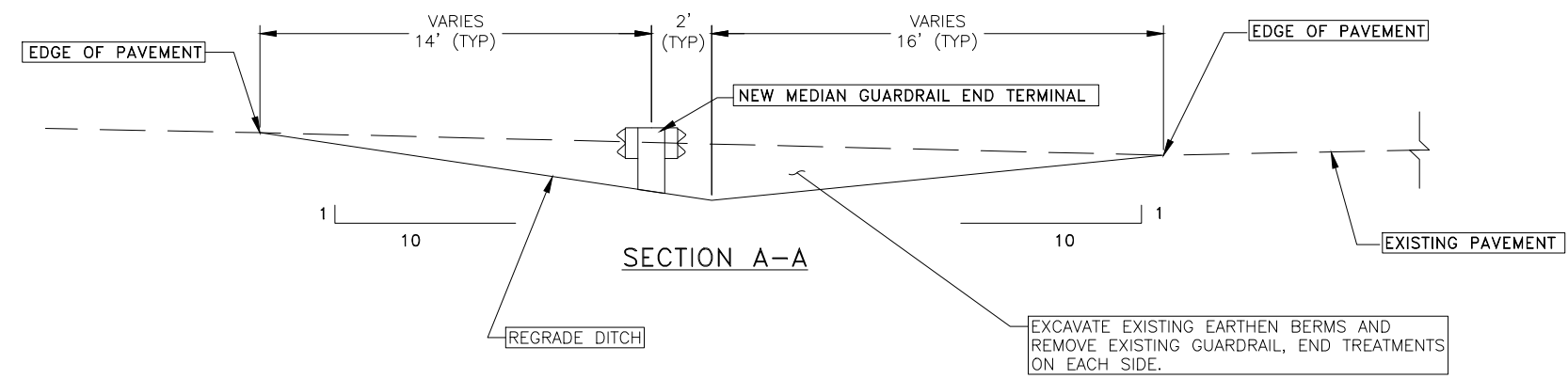
PLAN
NORTH END
(SITE 3N)

REMOVE EXISTING 30 L.F.
OF BURIED GUARDRAIL.
PLACE NEW END SECTION

+12.50' 606(8) Double faced

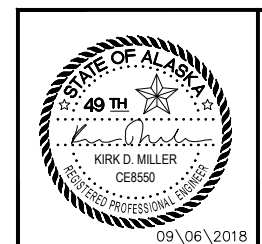
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 PE: *Randall E. Johnston* Date **07.05.2019**

PLAN
SOUTH END
(SITE 3S)



NOTES:

1. CONDUCT FIELD INSPECTION WITH THE ENGINEER PRIOR TO DEMOLITION AND ESTABLISH LIMITS OF NEW WORK BASED ON THE PROVIDED DIMENSIONS. STATIONING NOTED IS NOT INTENDED TO BE USED FOR SURVEY CONTROL. HORIZONTAL LOCATION FOR NEW GUARDRAIL SHALL MATCH EXISTING ALIGNMENT. EXACT DIMENSIONS FOR NEW WORK DEPENDS ON THE SELECTED PRODUCT FOR THE NEW END TERMINALS WHICH MAY VARY IN LENGTH AND THE LOCATION WHERE THE EXISTING MEDIAN GUARDRAIL IS SEVERED OR TO REMAIN.
2. EXISTING BURIED END TREATMENTS TO BE REMOVED MAY CONTAIN CONCRETE AND CABLE ANCHORS. COMPLETELY REMOVE AND DISPOSE IF ENCOUNTERED.
3. NEW END TREATMENTS REQUIRE 10% OR FLATTER SLOPES FOR INSTALLATION. EXCAVATE, REMOVE AND DISPOSE OF EXISTING EARTHEN MOUNDS AND GRADE NEW MEDIAN DITCH SLOPES AS INDICATED. TRANSITION NEW MEDIAN SLOPES TO EXISTING GRADES AS APPROXIMATELY NOTED. SEED ALL DISTURBED AND REGRADED MEDIAN AREAS.
4. WORK AREAS ARE WITHIN 1/2-MILE RADIUS FOR IDENTIFIED EAGLE NESTS 11, 41, 68, 141 AND 144.



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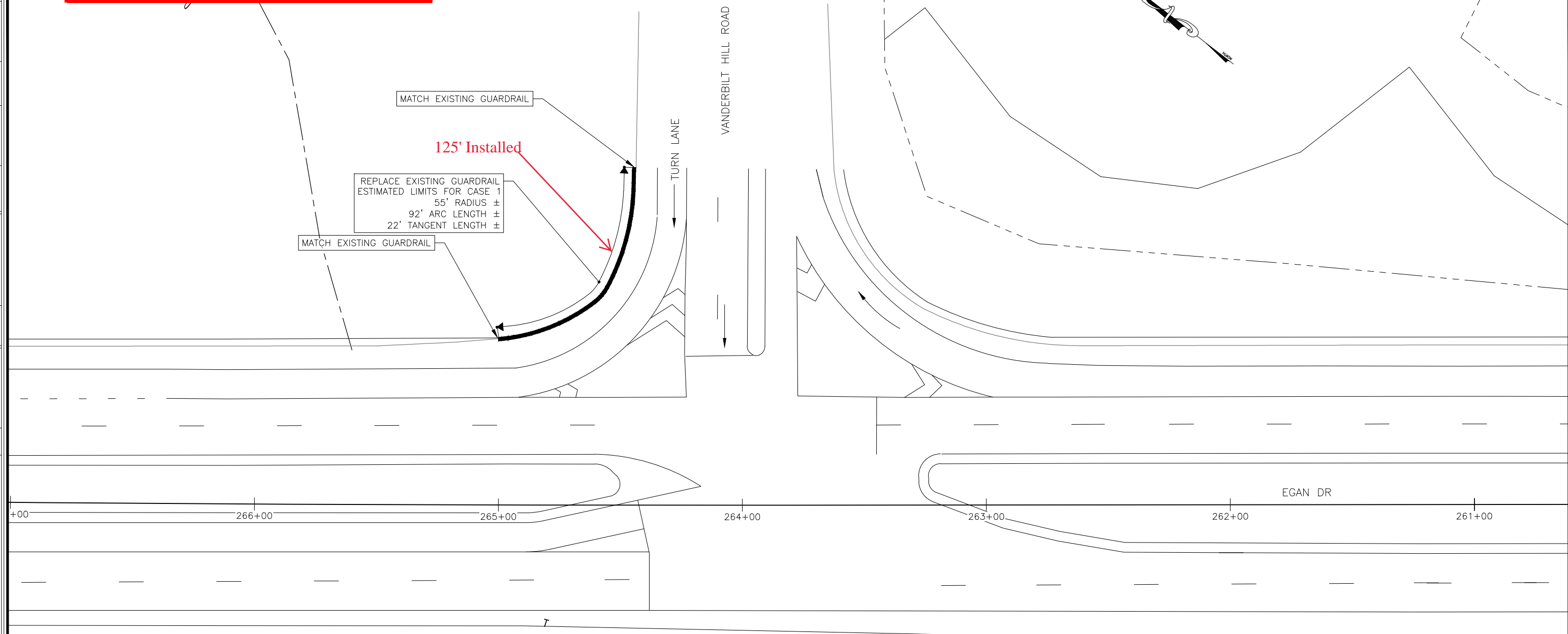
**JNU EGAN DRIVE GUARDRAIL
REPLACEMENT**

SITE 3

FILE Q:\jnu\68129\Planset\Guardrail New\Plans\68129_F1_PLAN.dwg DATE 9/6/2018 11:51 LAYOUT F4 DESIGNED T.F. CHECKED K.M.C.T.,J.W. DRAFTED T.F., J.T.

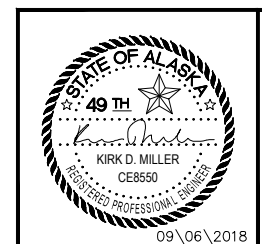
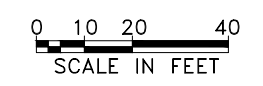
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	Z681290000	2018	F4	12

Project As- Built Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge the project as constructed.
 PE: Randall E. Johnston Date 07.05.2019



NOTES:

- GUARDRAIL WORK DEPICTED FOR THIS WORK LOCATION IS SITED IN CLOSE PROXIMITY TO EXISTING OVERHEAD TRAFFIC SIGNALS AND BURIED ELECTRICAL FOR ROADWAY LIGHTING (NOT SHOWN). REFERENCE DOT&PF UTILITY CONTACT INFORMATION ON SHEET A2. ASCERTAIN LOCATION AND HEIGHT OF EXISTING UTILITY CONFLICTS PRIOR TO START OF WORK.
- CONDUCT FIELD INSPECTION WITH THE ENGINEER PRIOR TO DEMOLITION OR REMOVAL AND ESTABLISH LIMITS OF NEW WORK BASED ON THE PROVIDED DIMENSIONS. ENGINEER AND CONTRACTOR WILL JOINTLY DETERMINE THE EXACT LIMITS OF WORK FOR GUARDRAIL REPLACEMENT. HORIZONTAL LOCATION FOR NEW GUARDRAIL SHALL MATCH EXISTING ALIGNMENT.
- CONDUCT FIELD INSPECTION WITH THE ENGINEER PRIOR TO DEMOLITION OR REMOVAL AND ESTABLISH LIMITS OF NEW WORK BASED ON THE PROVIDED DIMENSIONS. ENGINEER AND CONTRACTOR WILL JOINTLY DETERMINE THE EXACT LIMITS OF WORK FOR GUARDRAIL REPLACEMENT. HORIZONTAL LOCATION FOR NEW GUARDRAIL SHALL MATCH EXISTING ALIGNMENT.
- FIELD VERIFY NEW RAIL QUANTITIES, DIMENSIONS, AND RADIUS PRIOR TO MATERIAL FABRICATION.
- THE WORK AREA ON THIS PLAN SHEET IS WITHIN A 1/2 MILE RADIUS FOR EAGLE NESTS 3, 29, 85, & 133.



STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
 6860 GLACIER HIGHWAY, JUNEAU, AK 99811
 (907) 465-1763

JNU EGAN DRIVE GUARDRAIL REPLACEMENT

SITE 4

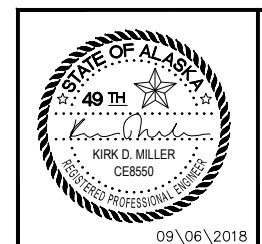
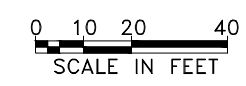
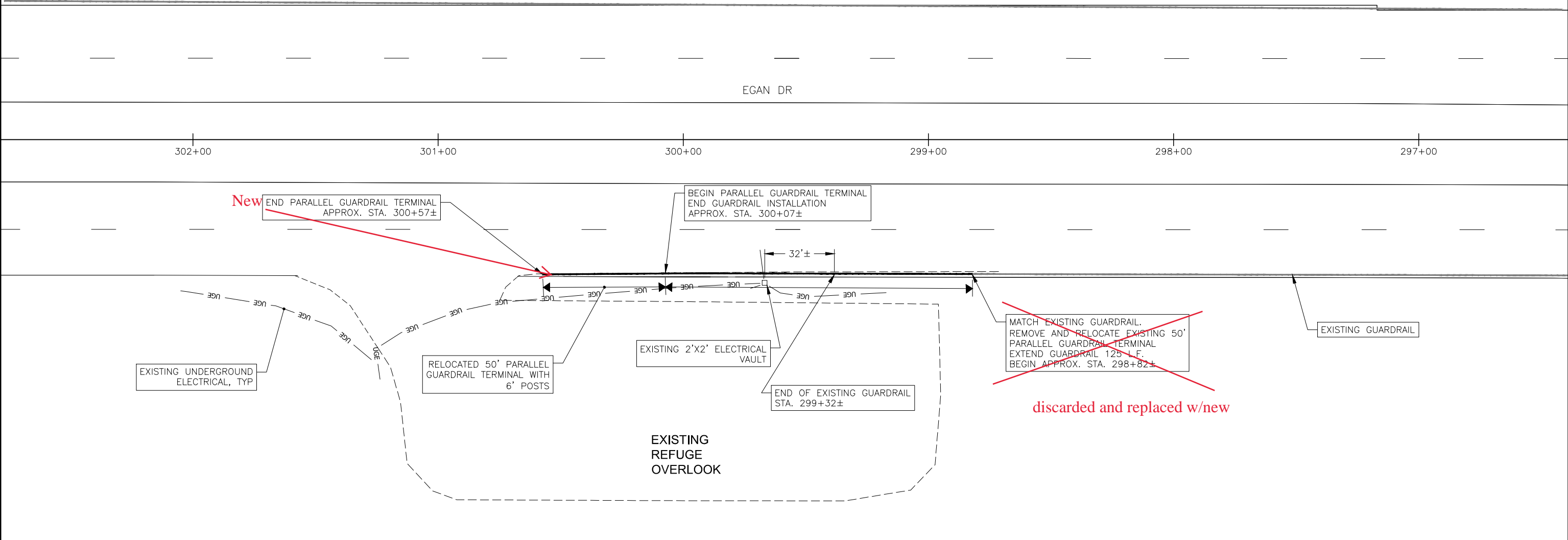
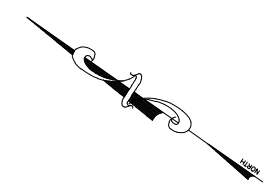
FILE G:\jnu\68129\Plans\Guardrail New\Plans\68129_F1_PLAN.dwg DATE 9/6/2018 11:51 LAYOUT F5 DESIGNED T.F. CHECKED K.M.C.T.,J.W. DRAFTED T.F., J.T.

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	Z681290000	2018	F5	12

NOTES:

1. GUARDRAIL WORK DEPICTED FOR THIS WORK LOCATION IS SITED IN CLOSE PROXIMITY TO EXISTING BURIED ELECTRICAL FOR ROADWAY LIGHTING (NOT SHOWN). REFERENCE DOT&PF UTILITY CONTACT INFORMATION ON SHEET A2. ASCERTAIN ALL EXISTING UTILITY CONFLICTS PRIOR TO START OF WORK.
2. STATIONING REFERENCE IS APPROXIMATE ONLY AND NOT INTENDED FOR SURVEY CONTROL PURPOSES. CONDUCT FIELD INSPECTION WITH THE ENGINEER PRIOR TO DEMOLITION OR REMOVAL AND ESTABLISH LIMITS OF NEW WORK BASED ON THE PROVIDED DIMENSIONS. ENGINEER AND CONTRACTOR WILL JOINTLY DETERMINE THE EXACT LIMITS OF WORK FOR GUARDRAIL REPLACEMENT. HORIZONTAL LOCATION FOR NEW GUARDRAIL SHALL MATCH EXISTING ALIGNMENT.
3. EIGHT (8) EXISTING GUARDRAIL POSTS LOCATED WITHIN THE EXISTING PARALLEL END TERMINAL TO BE REMOVED ARE INSTALLED INSIDE STEEL SLEEVES. SLEEVES MAY BE SALVAGED AND REUSED IN THE NEW END TERMINAL IF NOT DAMAGED OR MAY REMAIN. FILL HOLES WITH AGGREGATE BASE COURSE, SAND OR OTHER APPROVED MATERIALS PRIOR TO DRIVING NEW GUARDRAIL POSTS.
4. ROADWAY SHOULDER FROM APPROXIMATELY STA 298+82 TO 299+60 WHERE NEW GUARDRAIL IS TO BE INSTALLED IS SITED WITHIN EXISTING ASPHALT CONCRETE PAVEMENT. DRIVE NEW POSTS THROUGH PAVEMENT.
5. SEE STD DWG G-20.11 WIDENING FOR GUARDRAIL END TERMINAL.
6. THIS WORK AREA IS NOT WITHIN A 1/2 MILE RADIUS OF AN EAGLE TREE.

Project As- Built Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge the project as constructed.
 PE: *Randall E. Johnston* Date 07.05.2019



STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
 6860 GLACIER HIGHWAY, JUNEAU, AK 99811
 (907) 465-1763

JNU EGAN DRIVE GUARDRAIL REPLACEMENT

SITE 5

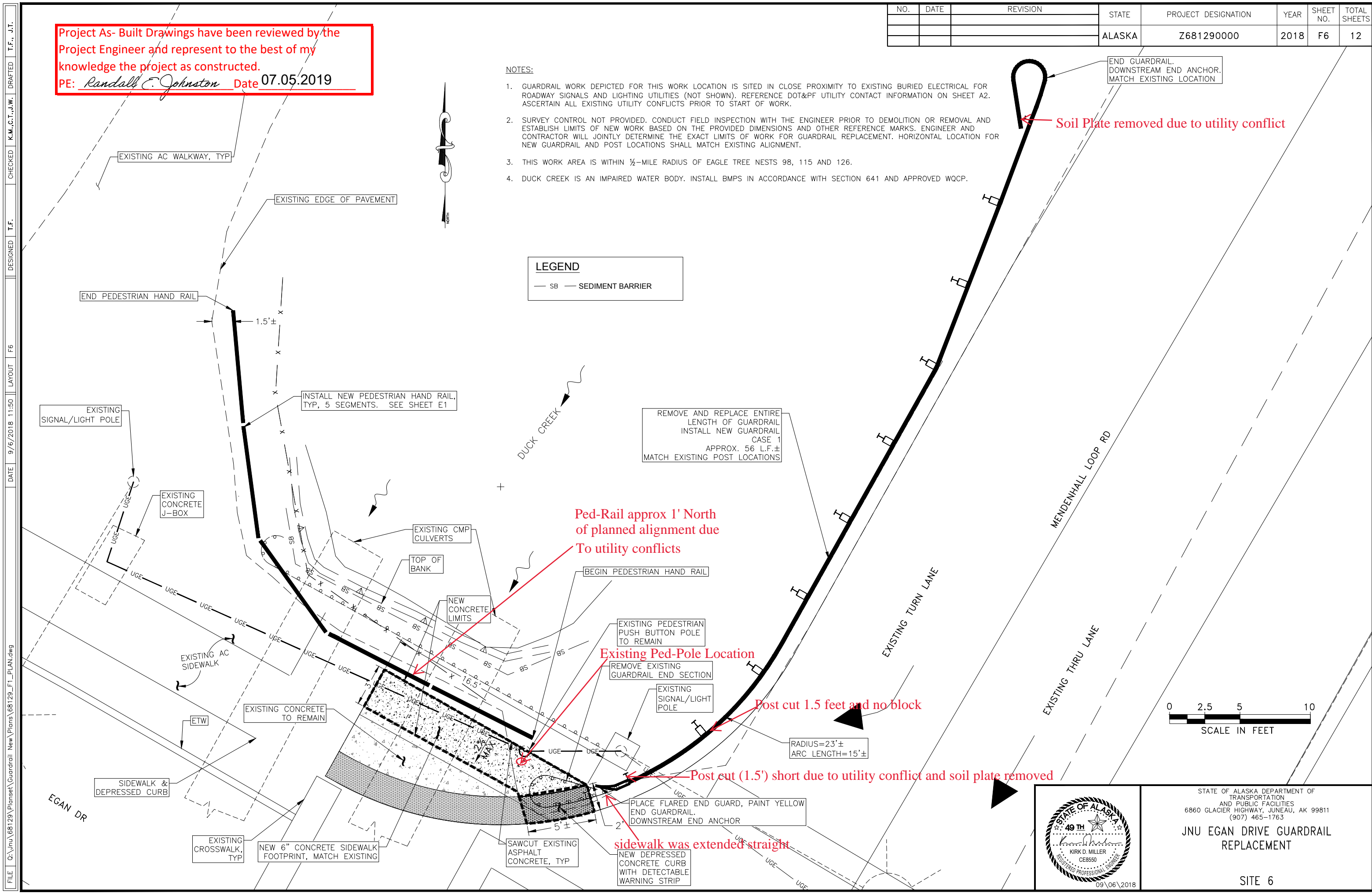
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	Z681290000	2018	F6	12

Project As-Built Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge the project as constructed.
 PE: *Randall E. Johnston* Date 07.05.2019

NOTES:

- GUARDRAIL WORK DEPICTED FOR THIS WORK LOCATION IS SITED IN CLOSE PROXIMITY TO EXISTING BURIED ELECTRICAL FOR ROADWAY SIGNALS AND LIGHTING UTILITIES (NOT SHOWN). REFERENCE DOT&PF UTILITY CONTACT INFORMATION ON SHEET A2. ASCERTAIN ALL EXISTING UTILITY CONFLICTS PRIOR TO START OF WORK.
- SURVEY CONTROL NOT PROVIDED. CONDUCT FIELD INSPECTION WITH THE ENGINEER PRIOR TO DEMOLITION OR REMOVAL AND ESTABLISH LIMITS OF NEW WORK BASED ON THE PROVIDED DIMENSIONS AND OTHER REFERENCE MARKS. ENGINEER AND CONTRACTOR WILL JOINTLY DETERMINE THE EXACT LIMITS OF WORK FOR GUARDRAIL REPLACEMENT. HORIZONTAL LOCATION FOR NEW GUARDRAIL AND POST LOCATIONS SHALL MATCH EXISTING ALIGNMENT.
- THIS WORK AREA IS WITHIN 1/2-MILE RADIUS OF EAGLE TREE NESTS 98, 115 AND 126.
- DUCK CREEK IS AN IMPAIRED WATER BODY. INSTALL BMPS IN ACCORDANCE WITH SECTION 641 AND APPROVED WQCP.

LEGEND
 — SB — SEDIMENT BARRIER



END GUARDRAIL. DOWNSTREAM END ANCHOR. MATCH EXISTING LOCATION

Soil Plate removed due to utility conflict

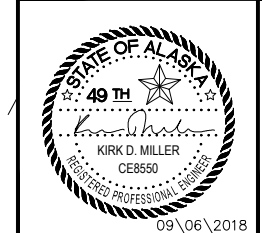
Ped-Rail approx 1' North of planned alignment due to utility conflicts

Existing Ped-Pole Location

Post cut 1.5 feet and no block

Post cut (1.5') short due to utility conflict and soil plate removed

sidewalk was extended straight



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 (907) 465-1763

JNU EGAN DRIVE GUARDRAIL REPLACEMENT

SITE 6

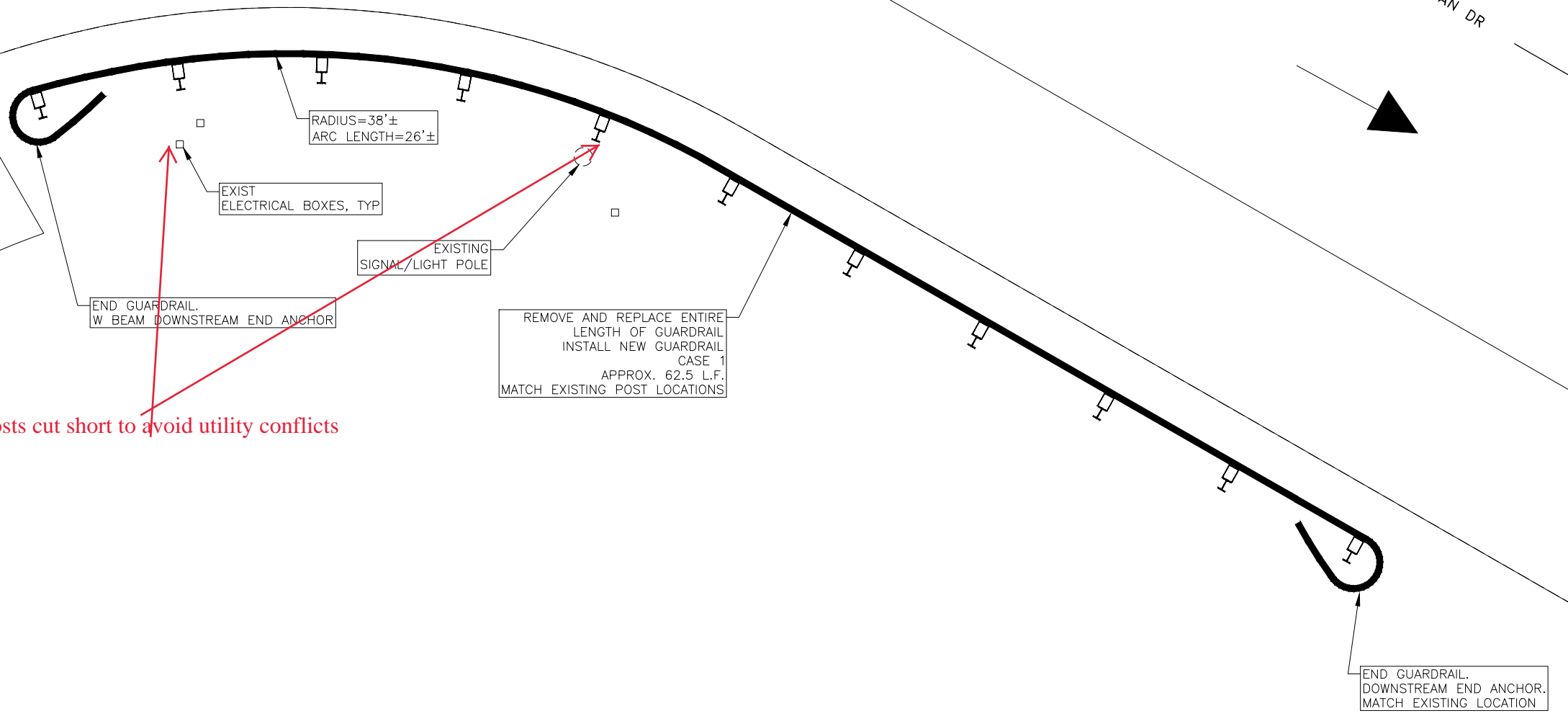
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 DESIGNED T.F.
 CHECKED K.M.C.T.J.W. DRAFTED T.F., J.T.

Project As- Built Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge the project as constructed.
 PE: *Randall E. Johnston* Date 07.05.2019

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	Z681290000	2018	F7	12

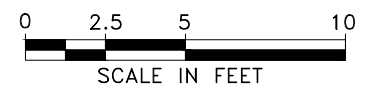
Radius realigned slightly to avoid utilities

Posts cut short to avoid utility conflicts



NOTES:

- GUARDRAIL WORK DEPICTED FOR THIS WORK LOCATION IS SITED IN CLOSE PROXIMITY TO EXISTING BURIED ELECTRICAL FOR ROADWAY SIGNALS AND LIGHTING UTILITIES (NOT SHOWN). REFERENCE DOT&PF UTILITY CONTACT INFORMATION ON SHEET A2. ASCERTAIN ALL EXISTING UTILITY CONFLICTS PRIOR TO START OF WORK.
- SURVEY CONTROL NOT PROVIDED. CONDUCT FIELD INSPECTION WITH THE ENGINEER PRIOR TO DEMOLITION OR REMOVAL AND ESTABLISH LIMITS OF NEW WORK BASED ON THE PROVIDED DIMENSIONS AND OTHER REFERENCE MARKS. ENGINEER AND CONTRACTOR WILL JOINTLY DETERMINE THE EXACT LIMITS OF WORK FOR GUARDRAIL REPLACEMENT. HORIZONTAL LOCATION FOR NEW GUARDRAIL AND POST LOCATIONS SHALL MATCH EXISTING ALIGNMENT.
- THIS WORK AREA IS WITHIN 1/2-MILE RADIUS OF EAGLE TREE NESTS 98, 115 AND 126.



STATE OF ALASKA DEPARTMENT OF
 TRANSPORTATION
 AND PUBLIC FACILITIES
 6860 GLACIER HIGHWAY, JUNEAU, AK 99811
 (907) 465-1763
**JNU EGAN DRIVE GUARDRAIL
 REPLACEMENT**

SITE 7

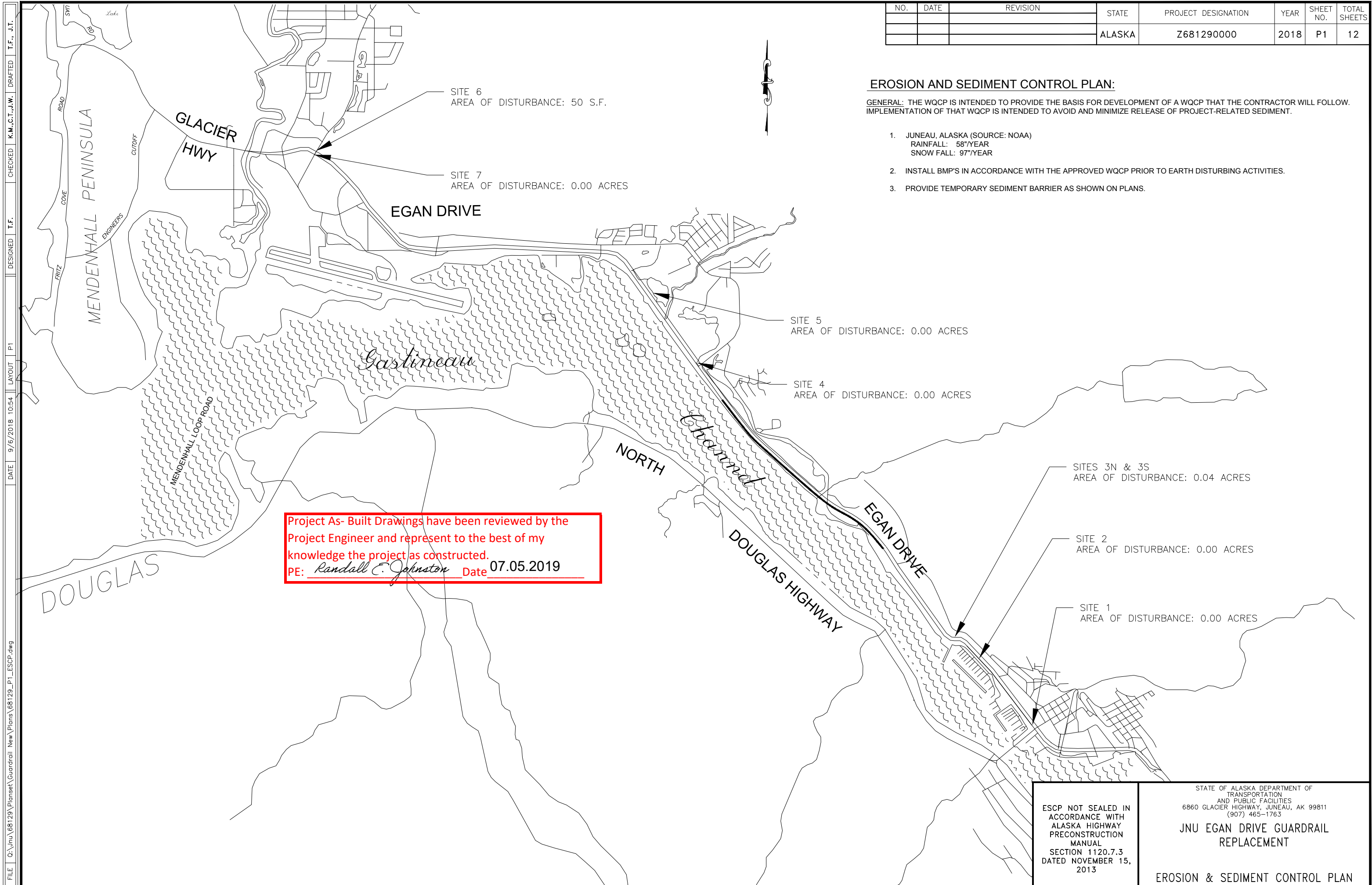
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	Z681290000	2018	P1	12

EROSION AND SEDIMENT CONTROL PLAN:

GENERAL: THE WQCP IS INTENDED TO PROVIDE THE BASIS FOR DEVELOPMENT OF A WQCP THAT THE CONTRACTOR WILL FOLLOW. IMPLEMENTATION OF THAT WQCP IS INTENDED TO AVOID AND MINIMIZE RELEASE OF PROJECT-RELATED SEDIMENT.

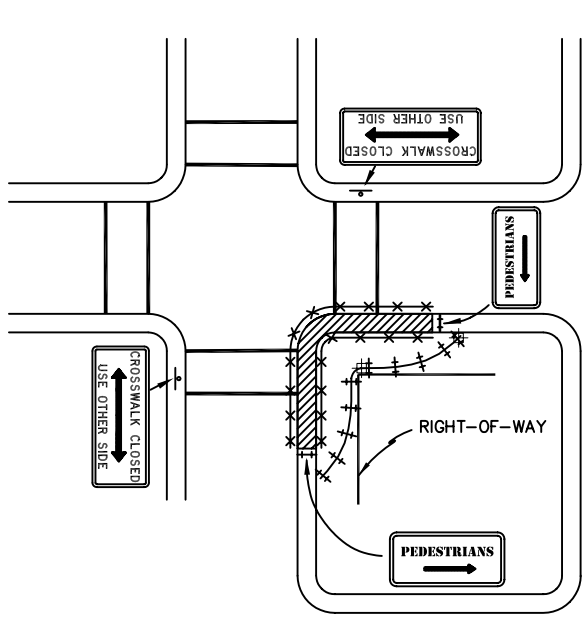
1. JUNEAU, ALASKA (SOURCE: NOAA)
RAINFALL: 58"/YEAR
SNOW FALL: 97"/YEAR
2. INSTALL BMP'S IN ACCORDANCE WITH THE APPROVED WQCP PRIOR TO EARTH DISTURBING ACTIVITIES.
3. PROVIDE TEMPORARY SEDIMENT BARRIER AS SHOWN ON PLANS.



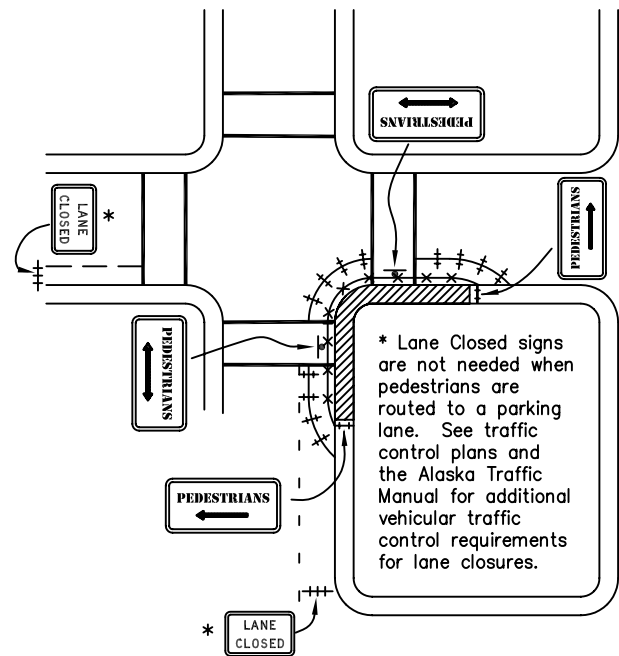
Project As-Built Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge the project as constructed.
PE: *Randall E. Johnston* Date 07.05.2019

ESCP NOT SEALED IN ACCORDANCE WITH ALASKA HIGHWAY PRECONSTRUCTION MANUAL SECTION 1120.7.3 DATED NOVEMBER 15, 2013	STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES 6860 GLACIER HIGHWAY, JUNEAU, AK 99811 (907) 465-1763
	JNU EGAN DRIVE GUARDRAIL REPLACEMENT EROSION & SEDIMENT CONTROL PLAN

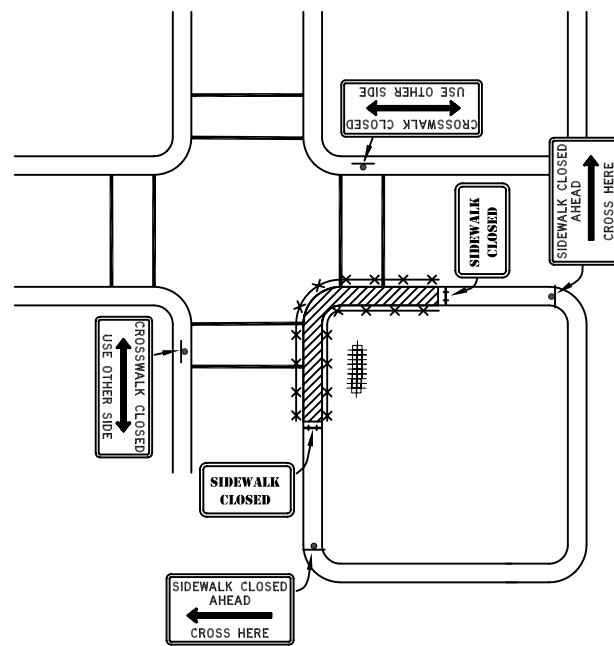
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 DATE 9/6/2018 10:54 LAYOUT P1 DESIGNED T.F. CHECKED K.M.C.T.J.W. DRAFTED T.F., J.T.



A. Detour Away From Road



B. Detour to Closed Parking or Travel Lane



C. Detour to Other Side

INTERSECTION SIDEWALK PATHWAY OR SHOULDER CLOSURE

A to C In Order of Preference

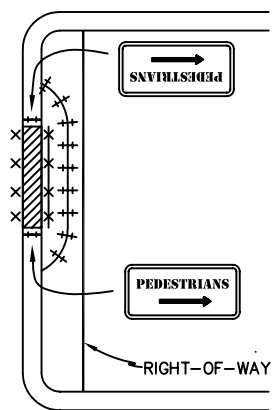
Project As-Built Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge the project as constructed.
 PE: *Randall E. Johnston* Date 07.05.2019

NOTES.

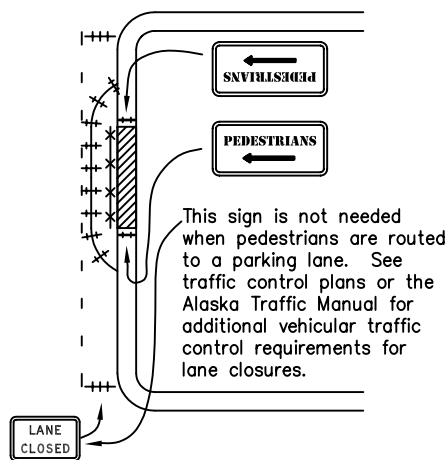
1. Provide pedestrian traffic control devices when sidewalks or pathways are closed to pedestrians and where required by the Plans or Specifications.
2. Avoid routing pedestrians across roads unnecessarily. Use detail C or F only when it is not practical to use detail A, B, D, or E.
3. Maintain a minimum pedestrian facility width of 5 feet or the width of the facility that existed before construction, whichever is less.
4. Where the posted speed limit exceeds 45 MPH, separate pedestrians from roadway edge of pavement or face of curb by at least 5'. Where that is not feasible, install portable concrete barrier between pedestrians and the road.
5. When pedestrian traffic control devices required by the current traffic control plan are not in place or are temporarily removed, provide a worker to direct pedestrians through the work area.
6. Cover pedestrian traffic signal displays controlling closed crosswalks.
7. This sheet focuses on traffic control devices for pedestrians. Look elsewhere for vehicular traffic control requirements.
8. When using details C and F, route pedestrians to the best crossing point near the work area.

LEGEND:

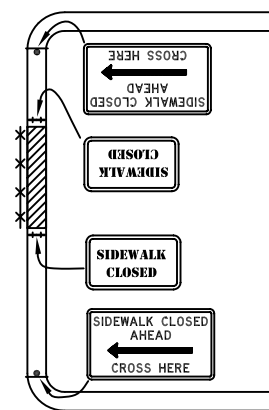
- ++ Type II Barricade or Tubular Marker
- +++ Type III Barricade
- x-x-x- Safety Fence
- Sign
- Work Area



D. Detour Away From Road



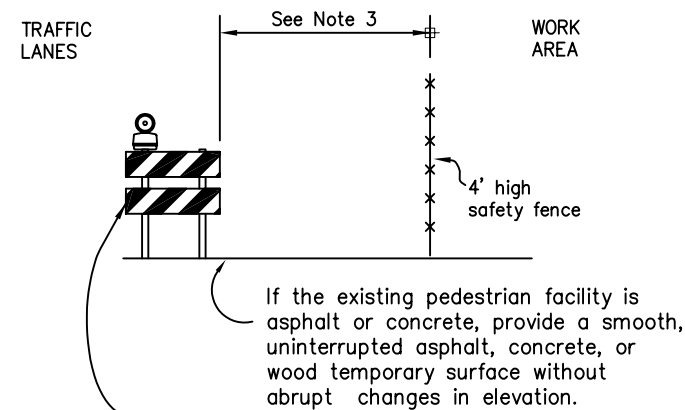
E. Detour to Closed Parking or Travel Lane



F. Detour to Other Side

MID-BLOCK SIDEWALK PATHWAY OR SHOULDER CLOSURE

D to F In Order of Preference



Type II barricades or tubular markers with flagger tape strung between them. A 4' high safety fence may be used instead of tape when greater control of pedestrian routing is desirable.

PEDESTRIAN DETOUR TYPICAL SECTION

REVISIONS		
Date	Description	By

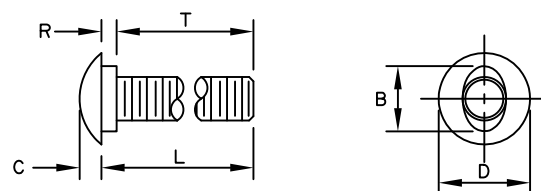
Sheet 1 of 1

State of Alaska
 Department of Transportation
 & Public Facilities

PEDESTRIAN TRAFFIC CONTROL

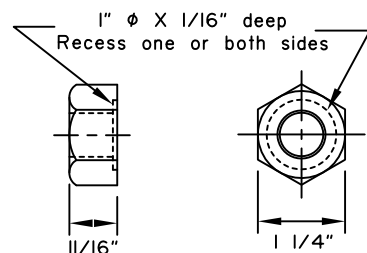
APPROVED

Date 5/15/01

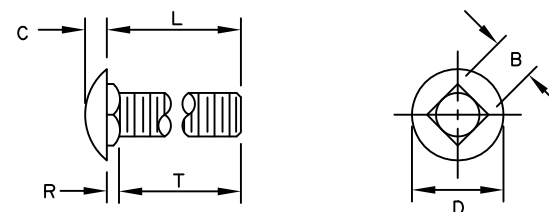


B	C	D	L (Length)	R	T (Thread Length)
15/16"	5/16"	1 5/16" or 1 7/16"	As Required	7/32"	As Required

5/8" BUTTONHEAD BOLT
(FBB01-05)

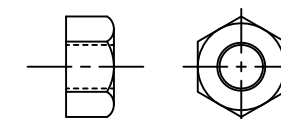


5/8" Dia. RECESSED HEX NUT
(FBB01-05)

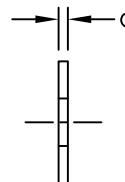
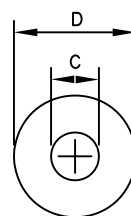
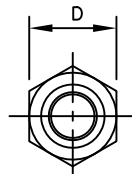
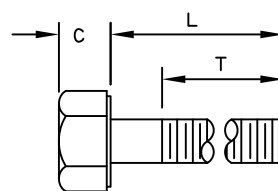


B	C	D	L (Length)	R	T (Thread Length)
5/8"	5/16"	1 5/16"	As Required	3/16"	As Required

5/8" Dia. CARRIAGE BOLT
(FBC10-20)



STANDARD HEX NUT



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"-II	—	—	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

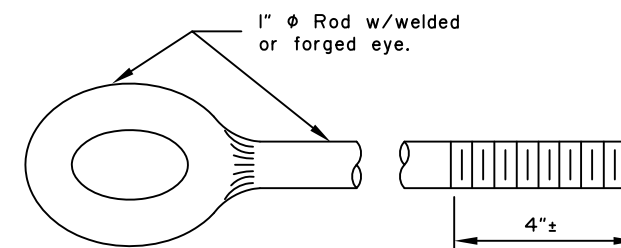
For Bolt ϕ	C	D	G
3/8"	7/16"	1"	5/64"
1/2"	17/32"	1 1/16"	3/32"
1/2" H.S.	17/32"	1 1/16"	3/32"
5/8"	11/16"	1 3/4"	9/64"
3/4"	13/16"	1 15/32"	9/64"
3/4" H.S.	13/16"	2"	5/32"
1"	1 1/16"	2"	9/64"

STANDARD STEEL WASHERS

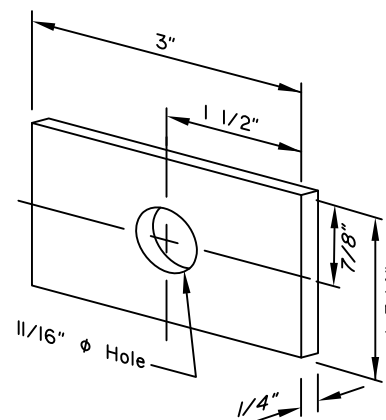
Project As-Built Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge the project as constructed.
PE: *Randall E. Johnston* Date 07.05.2019

GENERAL NOTES:

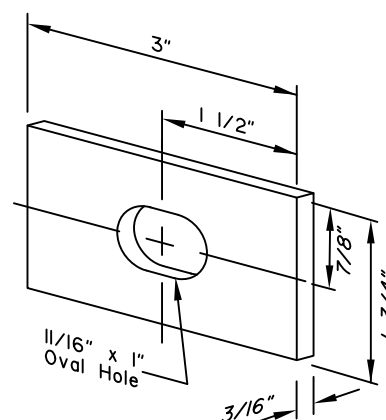
- All covered hardware shall comply with the AASHTO/AGC/ARTBA "A Guide to Standardized Highway Barrier Hardware", latest edition. Designators given when possible in parentheses.



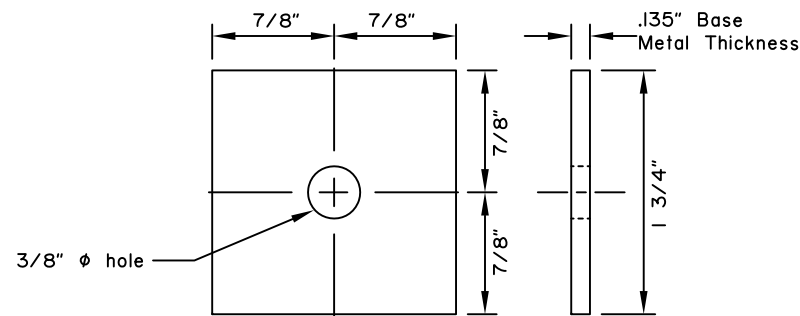
EYE BOLT



FLAT PLATE WASHER



RECTANGULAR POST BOLT WASHER
(FWR03)



SQUARE STEEL WASHER
(FWR01)

Note: drawing not to scale

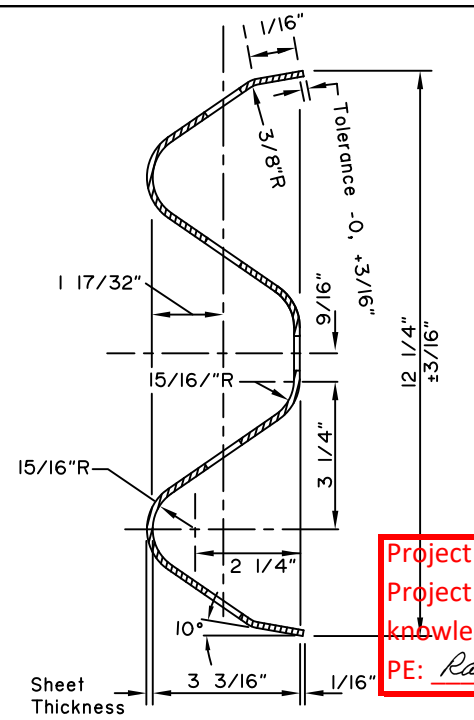
REVISIONS		
Date	Description	By
3/15/99	Delete BCT Hardware	KJS
1/16/17	Added Designators	LRG
12/22/17	No changes this sht.	LRG

State of Alaska DOT&PF
3132 Channel Dr., Juneau, AK
Phone: (907) 465-2960

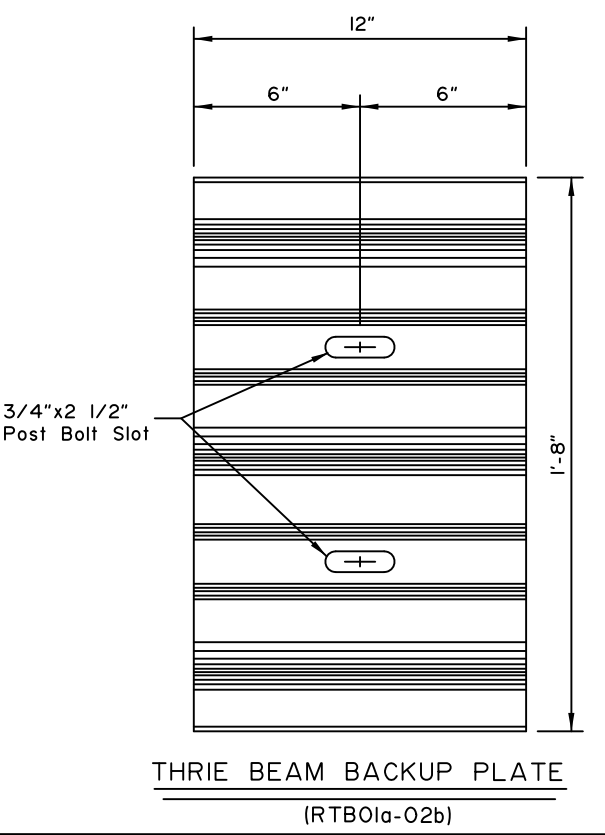
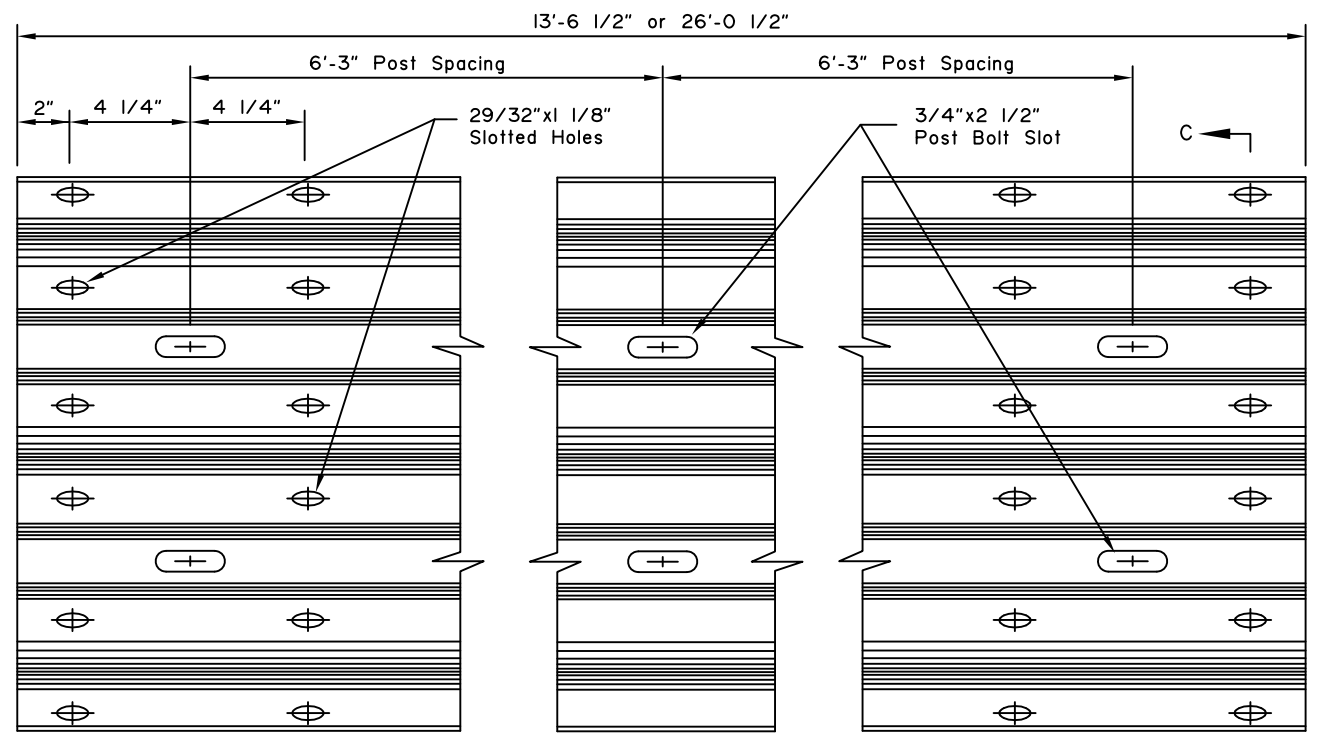
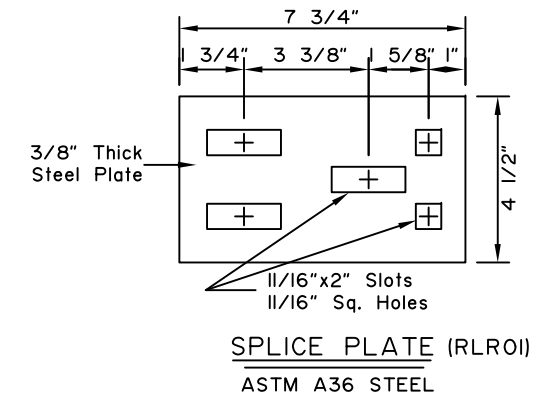
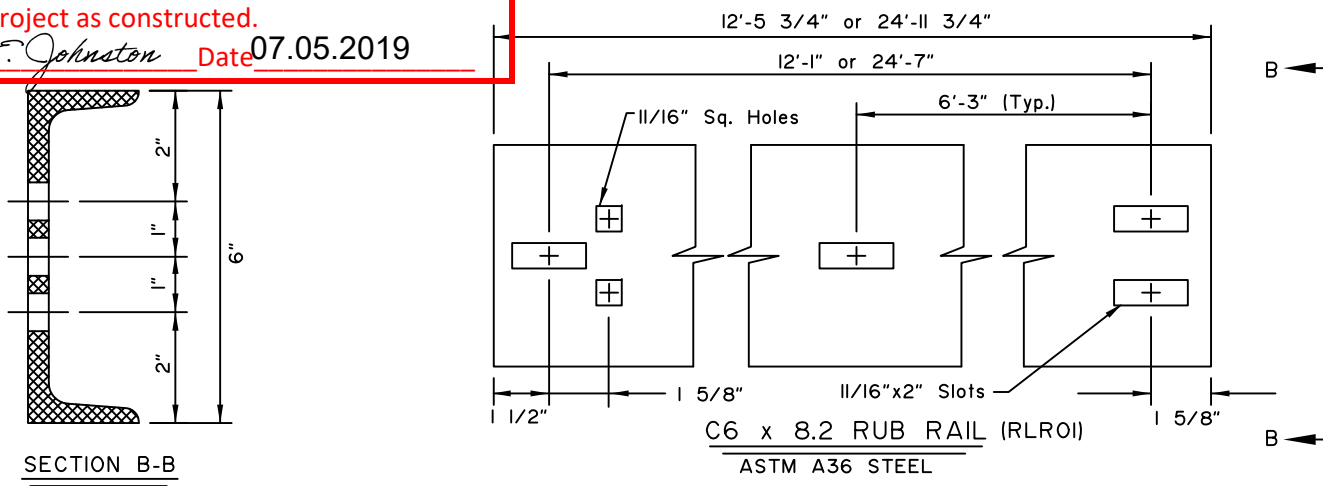
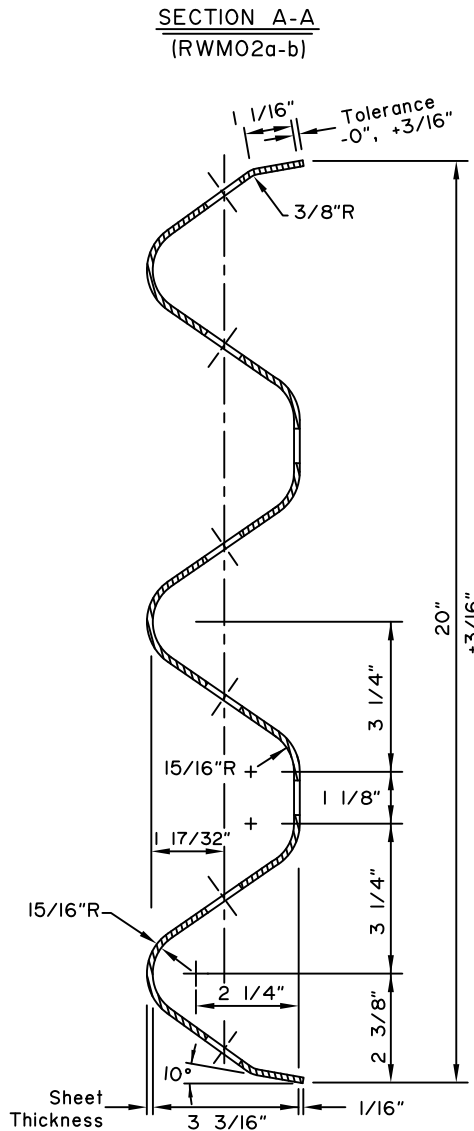
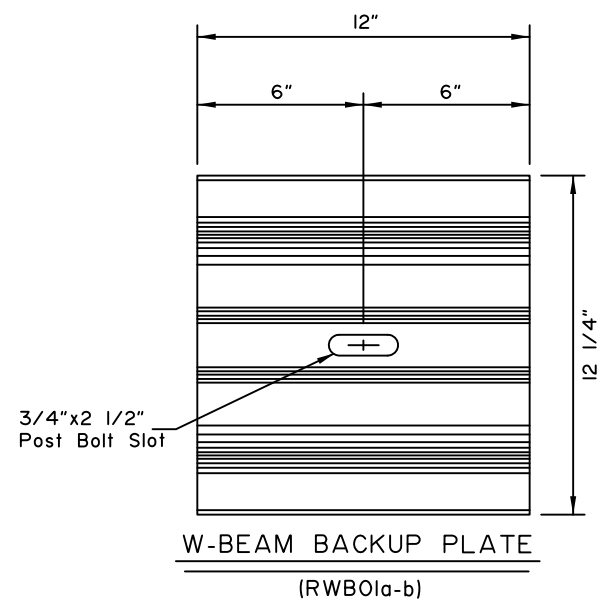
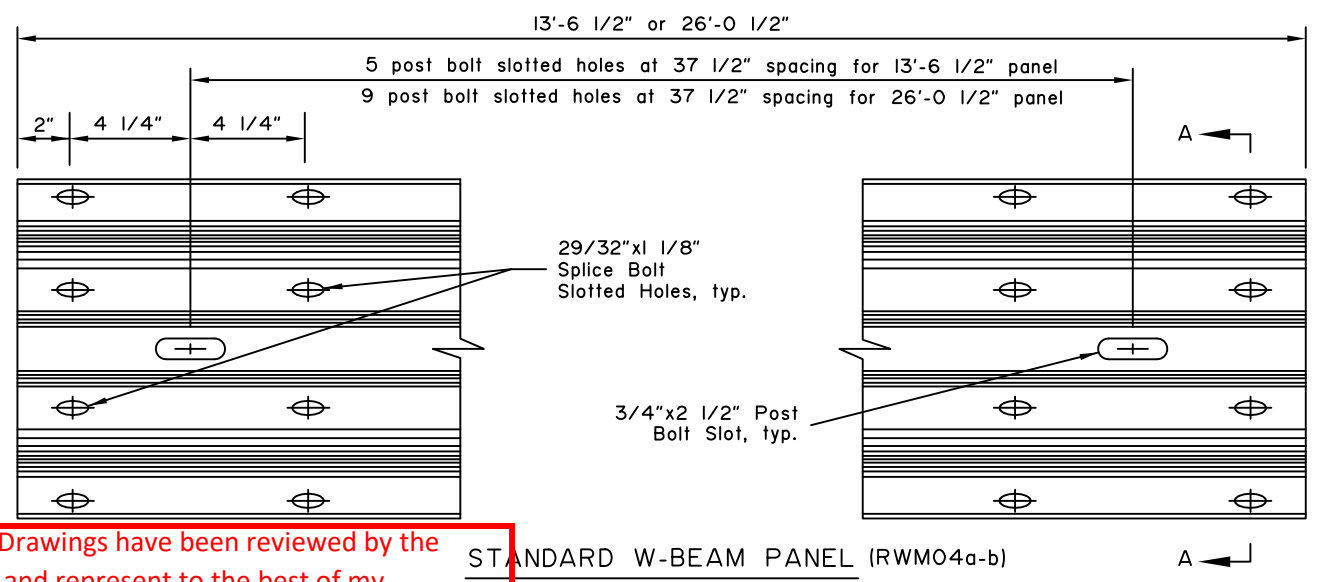
**STANDARD GUARDRAIL
HARDWARE
(NUTS, BOLTS & WASHERS)**



Eff. Date:
12/22/17



Project As-Built Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge the project as constructed.
 PE: *Randall E. Johnston* Date 07.05.2019

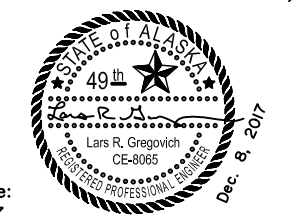


- GENERAL NOTES:**
- All covered hardware shall comply with the AASHTO/AGC/ARTBA "A Guide to Standardized Highway Barrier Hardware", latest edition. Designators given when possible in parentheses.
 - Install back-up plates between blockouts and w-beam or thrie-beam rail at intermediate (non-splice) posts when steel blockouts are used but not with wood, rubber, plastic, or other approved blockouts.

REVISIONS		
Date	Description	By
4/28/10	Revise general notes	KJS
1/16/17	Fix dimensions in Sections A-A and C-C	LRG
12/22/17	Std w-beam to RWM04	LRG

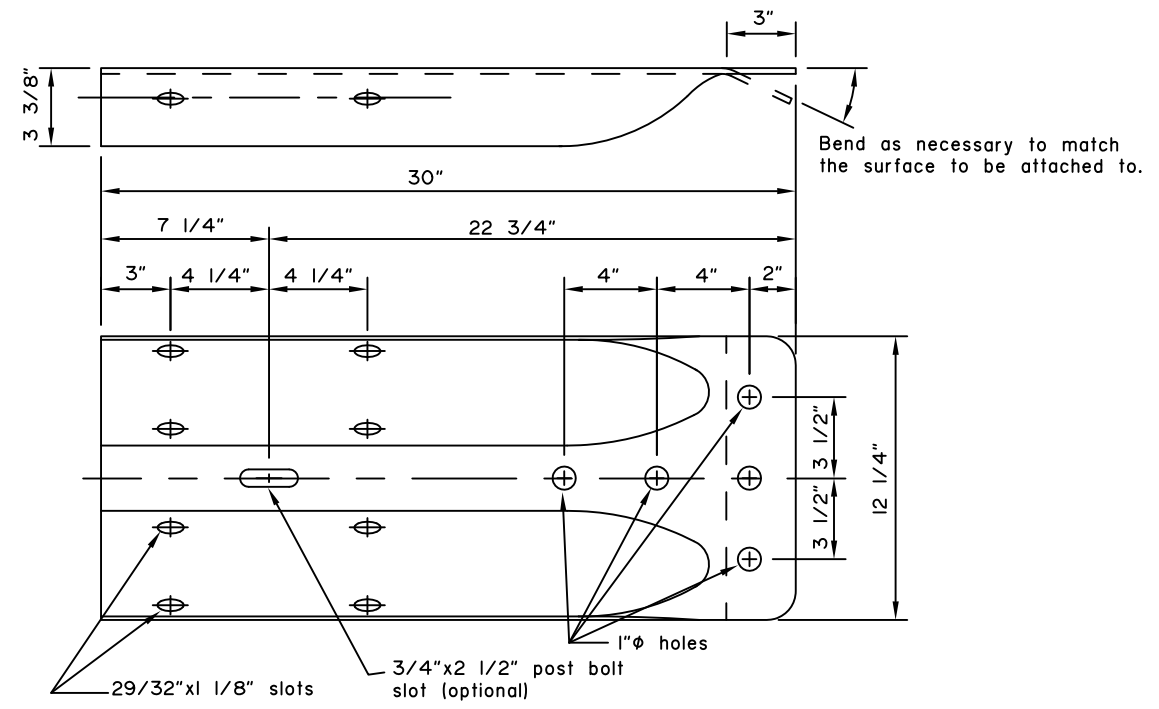
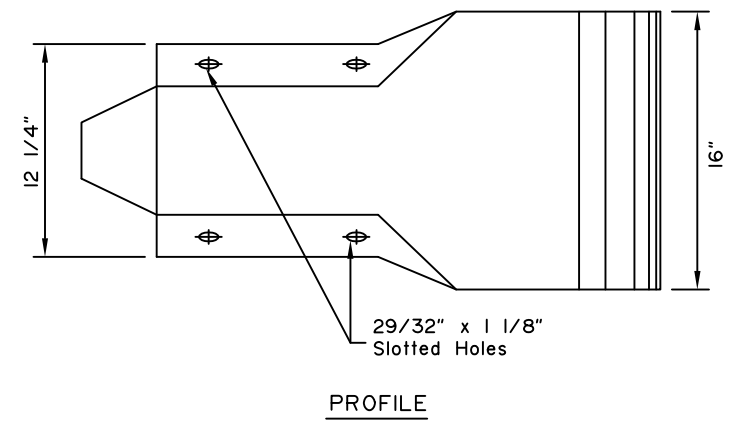
State of Alaska DOT&PF
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 Phone: (907) 465-2960

**STANDARD GUARDRAIL
 HARDWARE
 (RAILS AND SPLICES)**



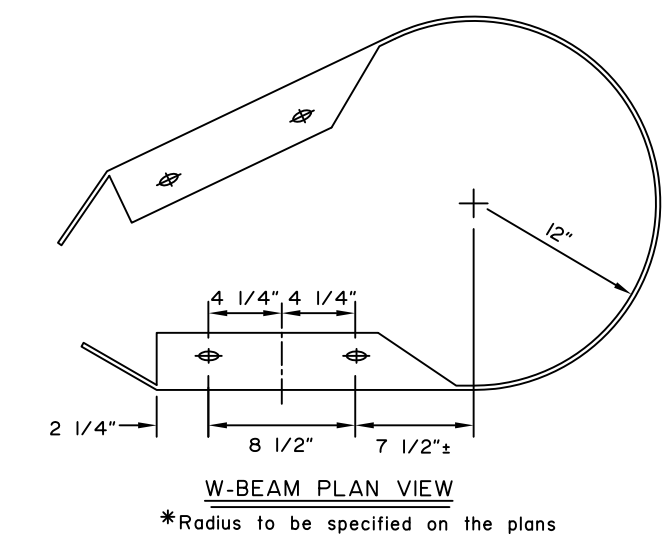
Eff. Date: 12/22/17

Project As- Built Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge the project as constructed.
PE: *Randall E. Johnston* Date **07.05.2019**

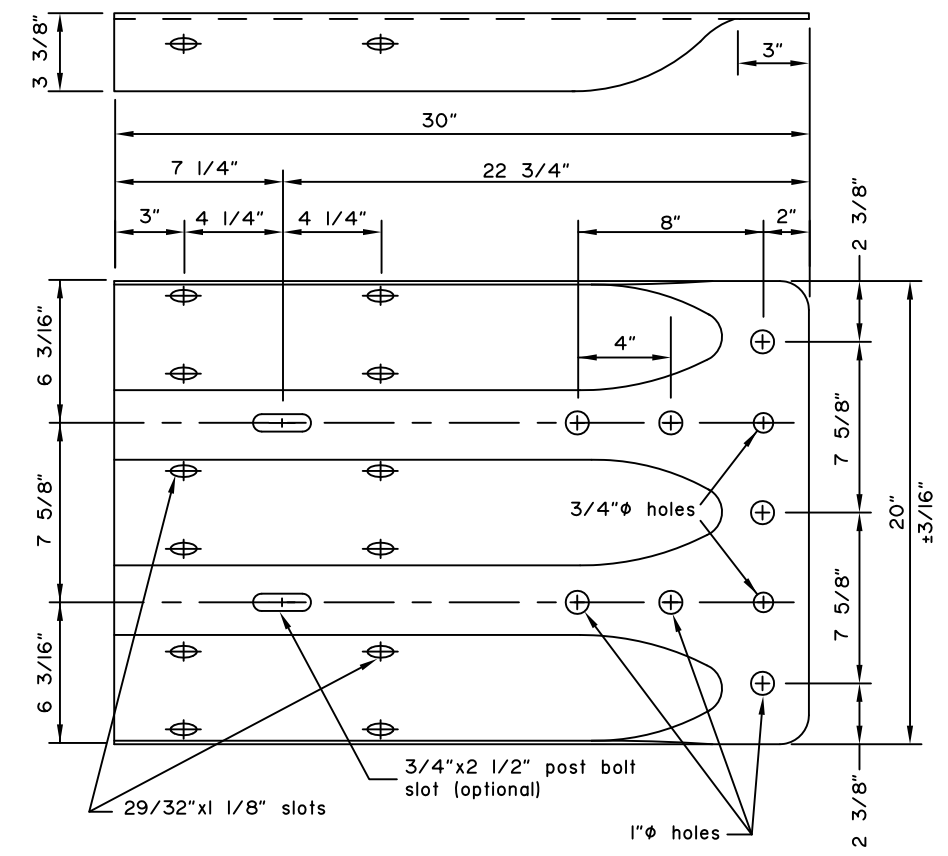


STANDARD W-BEAM TERMINAL CONNECTOR
(RWE02)

- 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 AASHTO/AGC/ARTBA "A Guide to Standardized Highway Barrier Hardware", latest edition. Designators given when possible in parentheses.



STANDARD W-BEAM END SECTION
(RWE06)



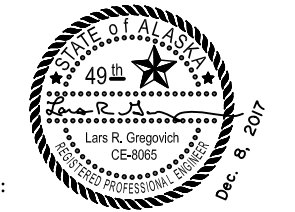
STANDARD THRIE BEAM TERMINAL CONNECTOR
(RTE01b)

Note: Drawing not to scale

REVISIONS		
Date	Description	By
3/15/99	Delete Thrie end sect.	KJS
1/16/17	Holes added to Thrie	LRG
12/22/17	No changes this shi.	LRG

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**STANDARD GUARDRAIL
HARDWARE
(TERMINAL CONNECTORS)**

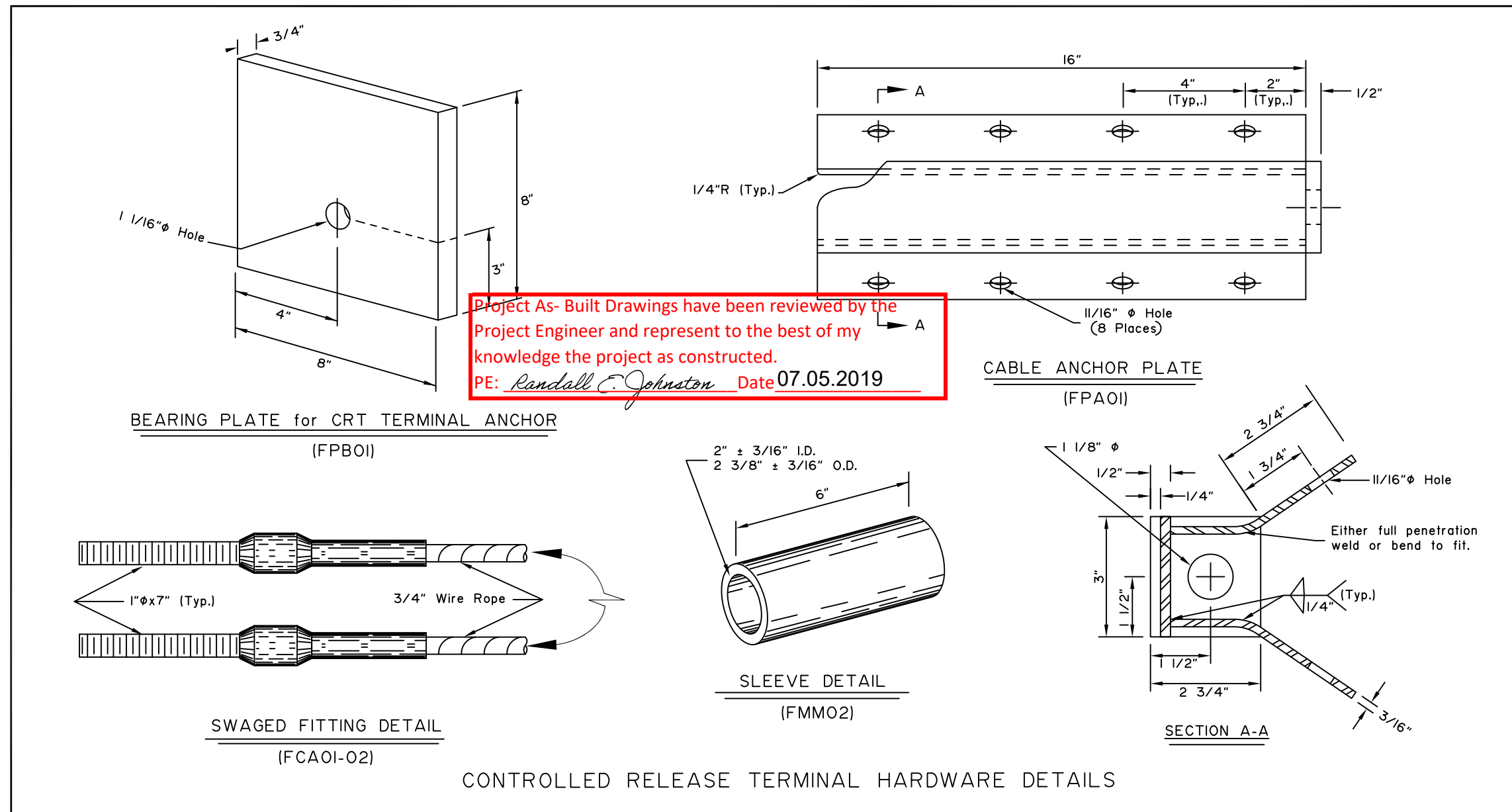


Eff. Date:
12/22/17

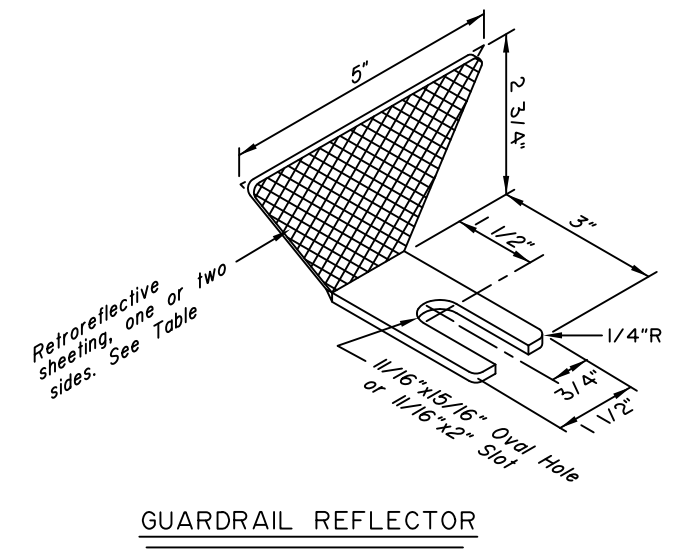
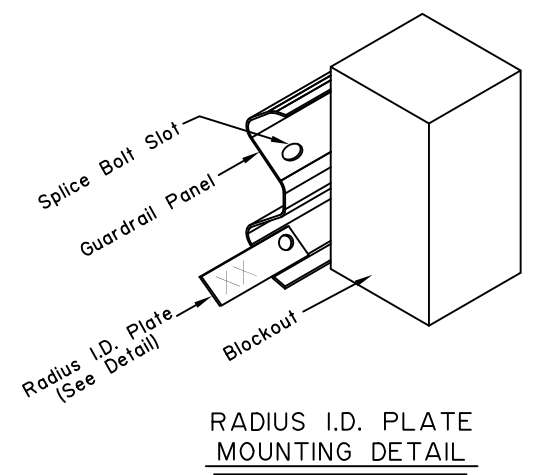
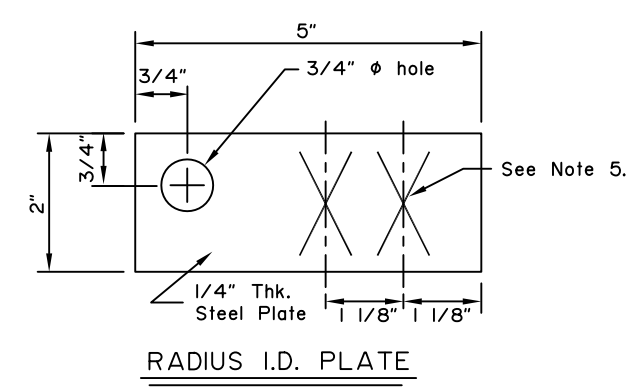
GENERAL NOTES:

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 1/2" and a max. width of 3/4". Galvanize the plate after the digits are marked.
6. All covered hardware shall comply with the AASHTO/AGC/ARTBA "A Guide to Standardized Highway Barrier Hardware", latest edition. Designators given when possible in parentheses.

Note: Drawing not to scale



CONTROLLED RELEASE TERMINAL HARDWARE DETAILS



Guardrail Reflector Table

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

REVISIONS		
Date	Description	By
3/15/99	Delete BCT Hardware	KJS
1/16/17	Change ASTM in Note 3	LRG
12/22/17	No changes this sht.	LRG

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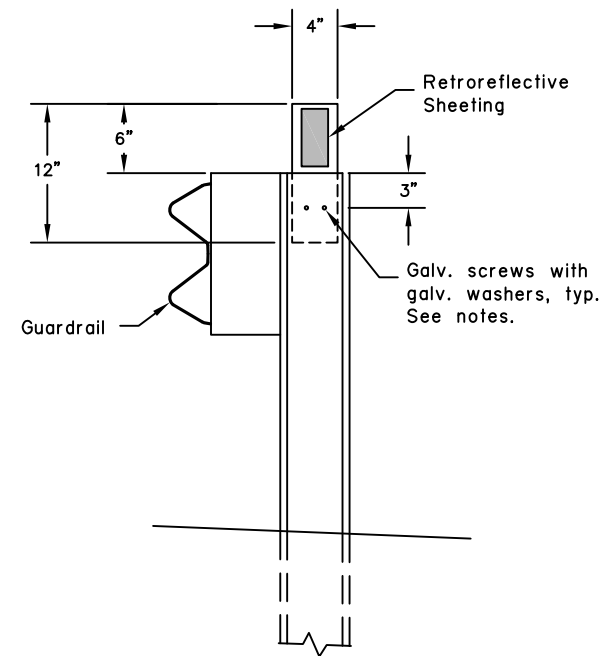
**STANDARD GUARDRAIL
HARDWARE
(MISCELLANEOUS)**



Eff. Date:
12/22/17

Project As- Built Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge the project as constructed.

PE: *Randall E. Johnston* Date 07.05.2019



GUARDRAIL FLEXIBLE DELINEATOR DETAIL

(Steel post shown - similar for wood post)

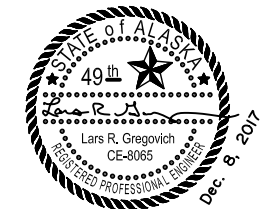
CONSTRUCTION NOTES

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 Drawing 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. Predrill or preform 5/16" diameter mounting holes in steel posts by the manufacturer prior to galvanizing. Predrilling or preforming holes not required for wood posts.
6. 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.

REVISIONS		
Date	Description	By
12/22/17	New Shf. 5 added	LRG

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STANDARD GUARDRAIL
HARDWARE
(FLEXIBLE DELINEATORS)



Eff. Date:
12/22/17

Note: Drawing not to scale

Project As-Built Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge the project as constructed.

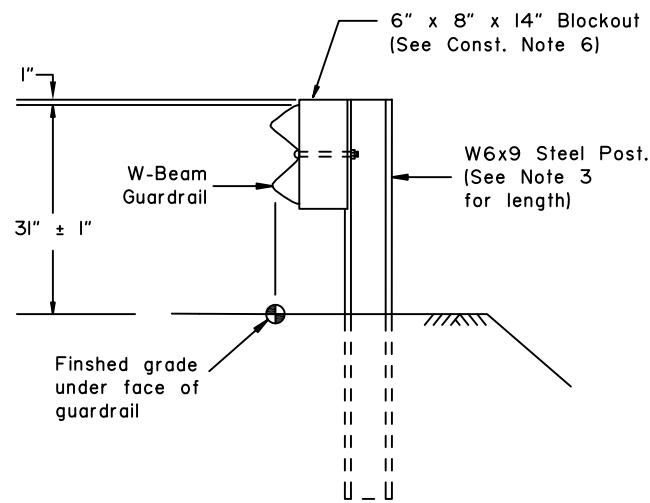
PE: *Randall E. Johnston* Date 07.05.2019

CONSTRUCTION NOTES:

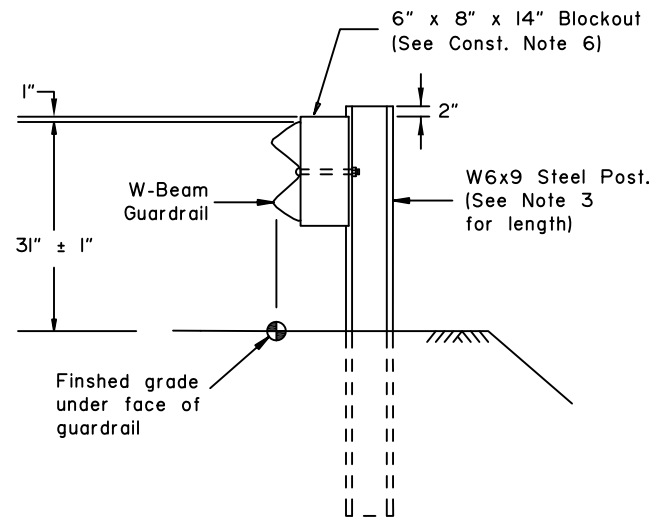
1. Provide hardware compliant with the AASHTO/AGC/ARTBA "A Guide to Standardized Highway Barrier Hardware," latest edition.
2. See Std. Dwg. G-00 for hardware details not shown on this drawing.
3. See Standard Drawing G-10 for post lengths corresponding to different combinations of slope and behind-post 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 Std. Dwg. G-II.
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 Std. Dwg. G-00 for guardrail flexible delineator details.

DESIGN NOTES:

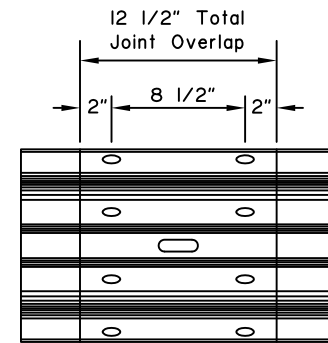
1. No fixed objects allowed within 36" of the back side of guardrail post.
2. This barrier is acceptable under MASH Tests 3-10 and 3-11.



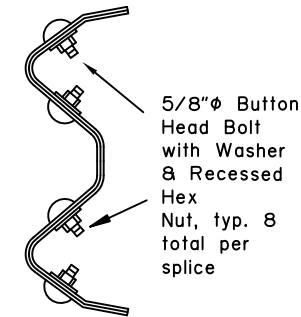
TYPE I POST INSTALLATION



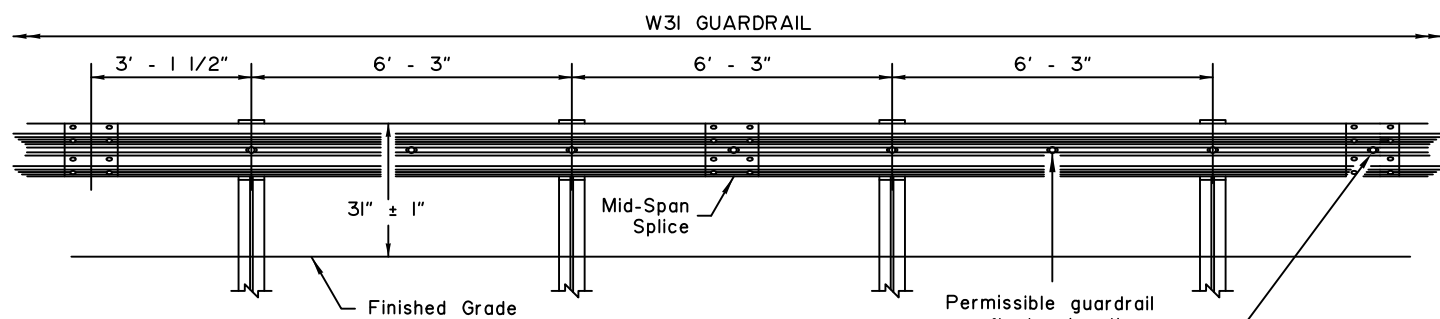
TYPE II POST INSTALLATION
(Facilitates raising rail for future overlays.)



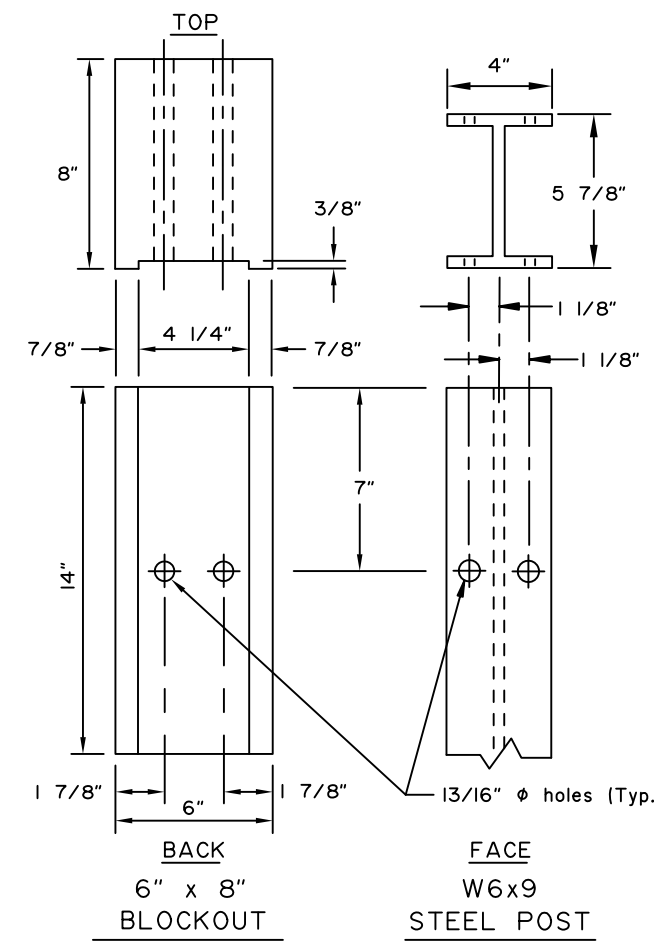
SPLICE DETAIL
(At mid span between posts only. Bolts not shown for clarity)



SPLICE CROSS-SECTION

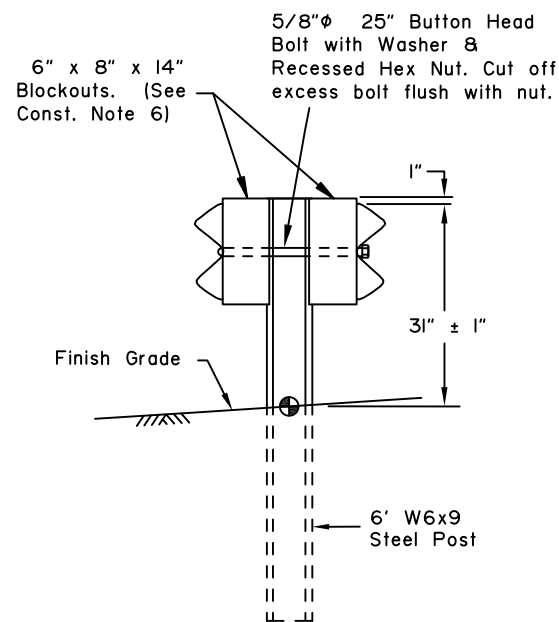


TYPICAL ELEVATION

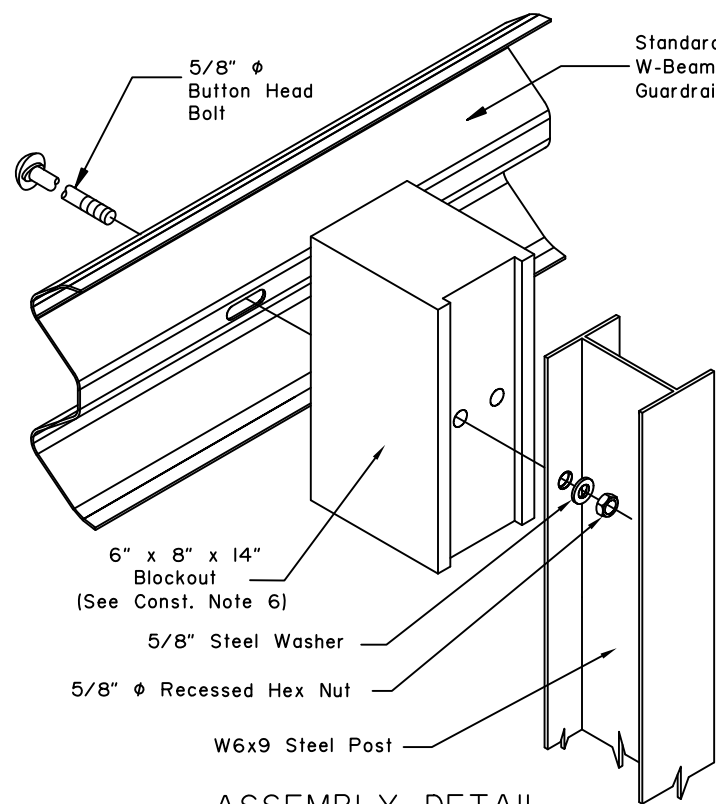


BACK
6" x 8"
BLOCKOUT

FACE
W6x9
STEEL POST



TYPE IV DOUBLE SIDED INSTALLATION



ASSEMBLY DETAIL

(Type I post shown)

GUARDRAIL REFLECTOR

(See Const. Note 5)

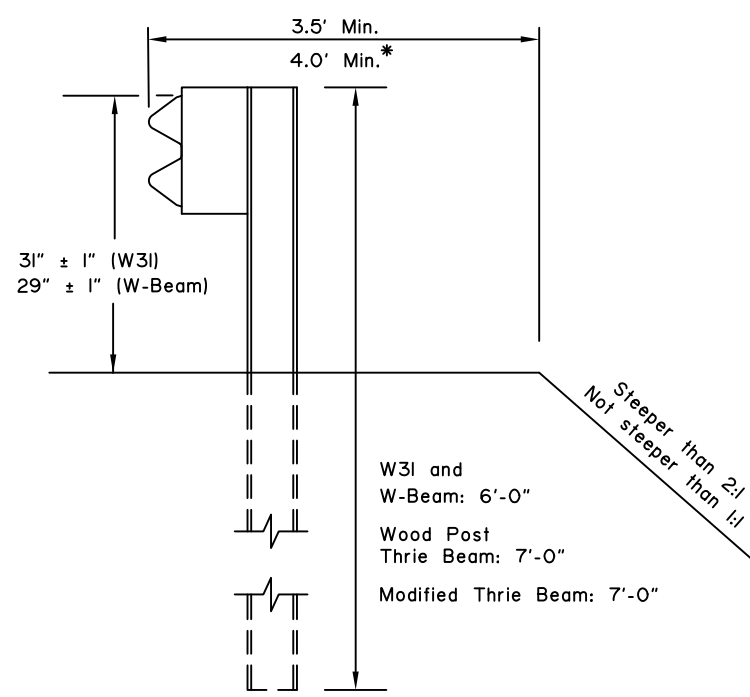
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STEEL POST
W31 GUARDRAIL

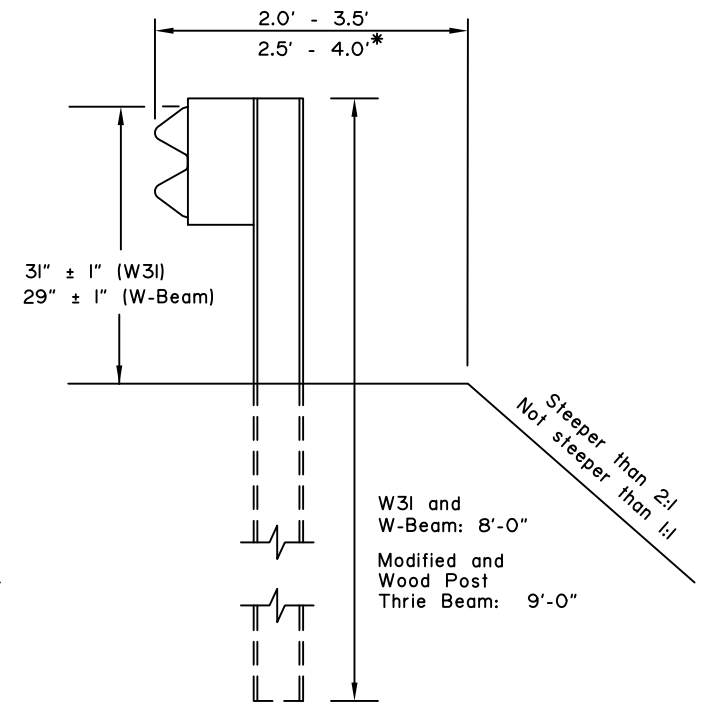


Eff. Date:
12/22/17

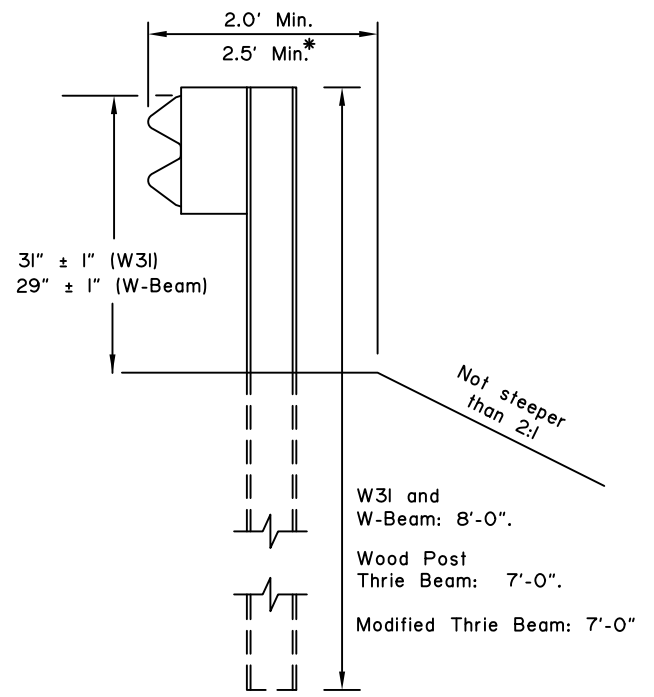


CASE 1

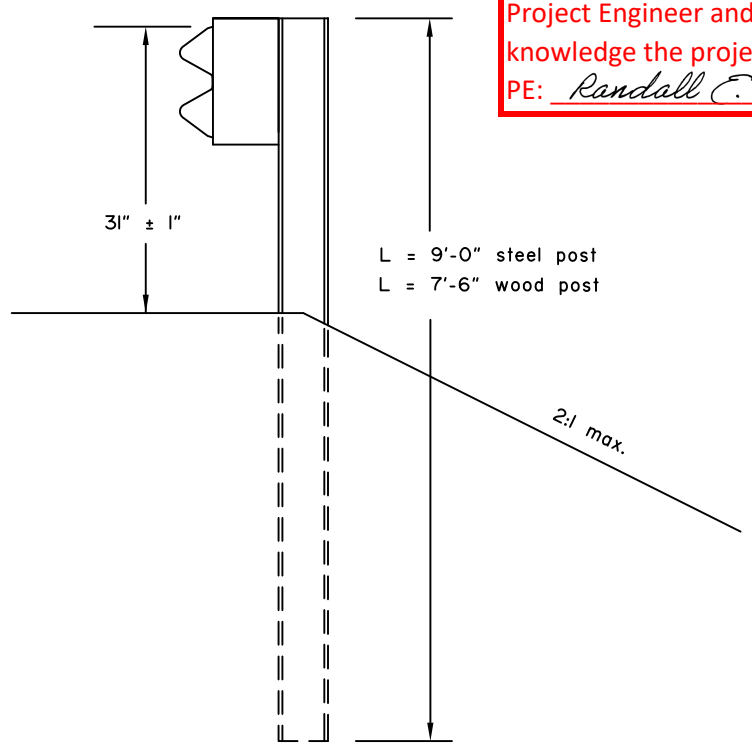
* with Modified Thrie Beam



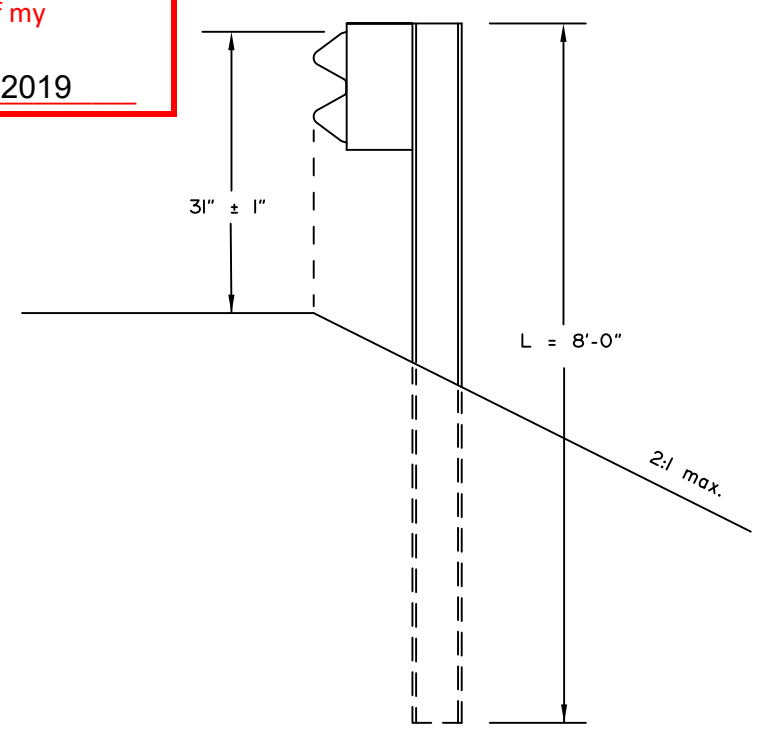
CASE 2



CASE 3



CASE 4
(See Note 5)



CASE 5
(See Note 5)

Project As-Built Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge the project as constructed.
PE: *Randall E. Johnston* Date 07.05.2019

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.

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**BEAM GUARDRAIL
POST INSTALLATION**



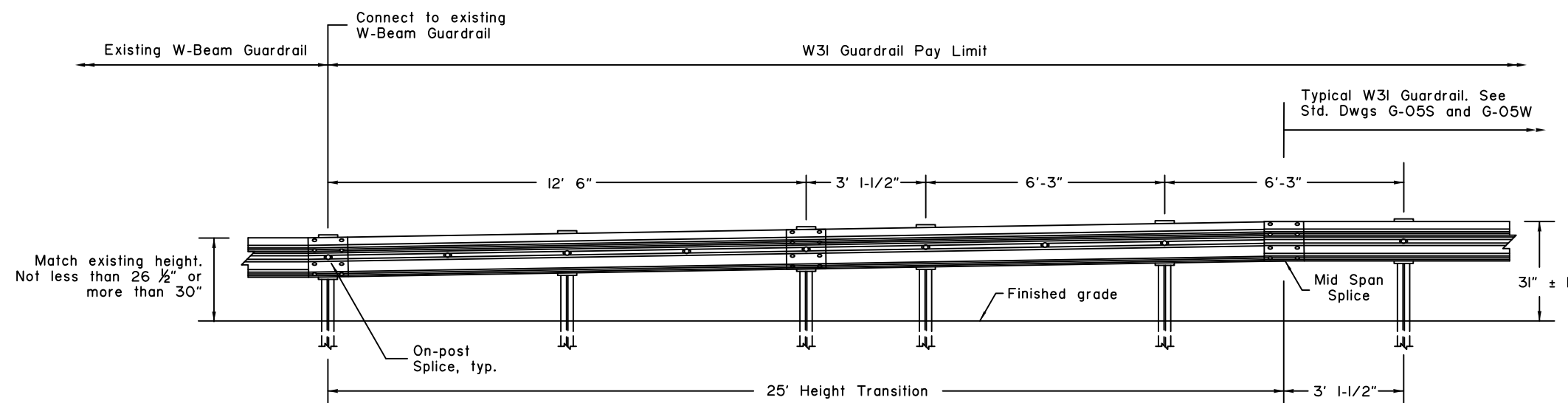
Eff. Date:
12/22/17

Project As-Built Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge the project as constructed.

PE: *Randall E. Johnston* Date 07.05.2019

GENERAL NOTES:

- This drawing illustrates steel post W31 guardrail. Wood posts may be substituted when allowed by specification.



W31 TO W-BEAM TRANSITION

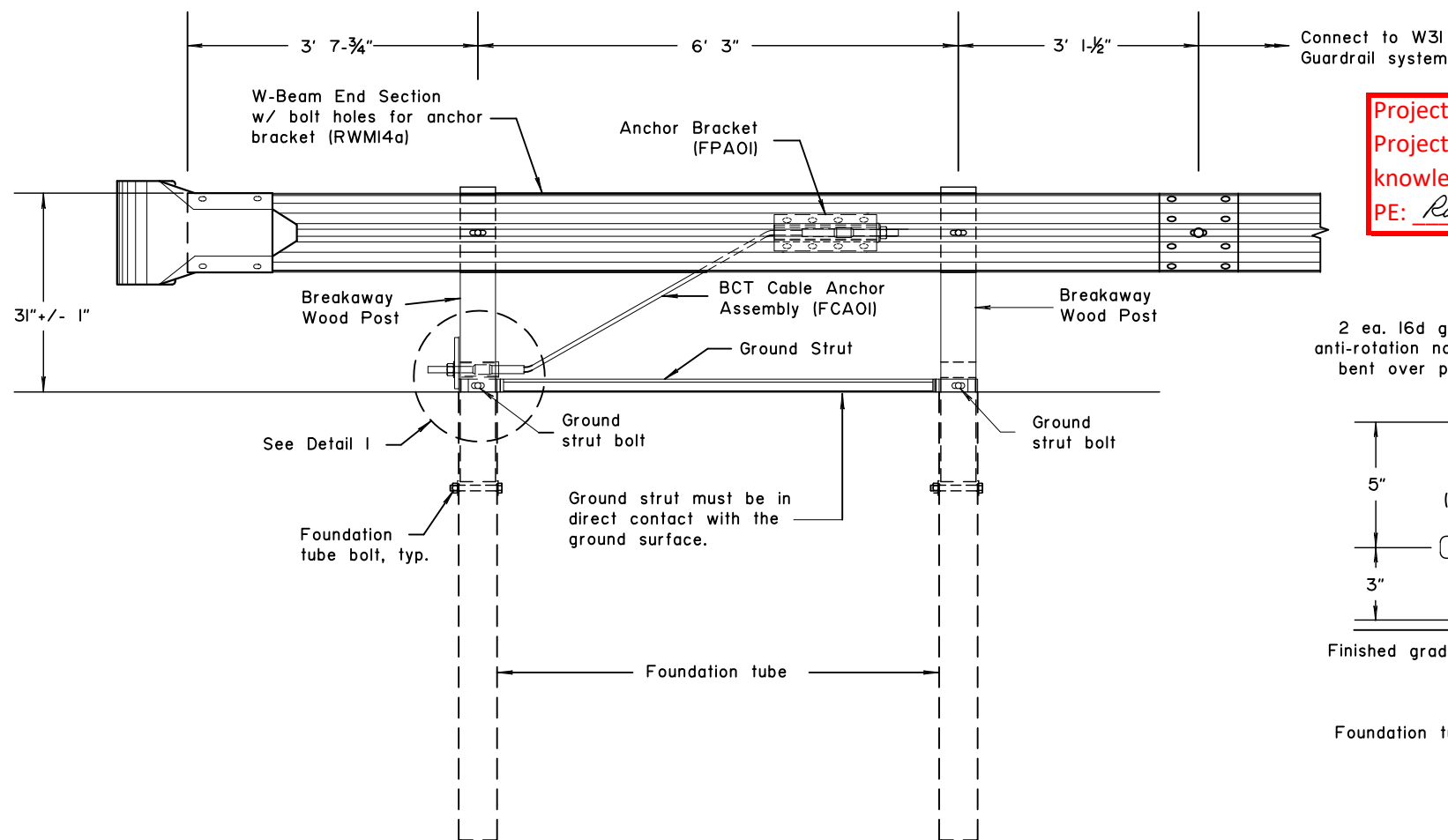
REVISIONS		
Date	Description	By

State of Alaska
Department of Transportation
& Public Facilities

W31 Guardrail
Transition Details

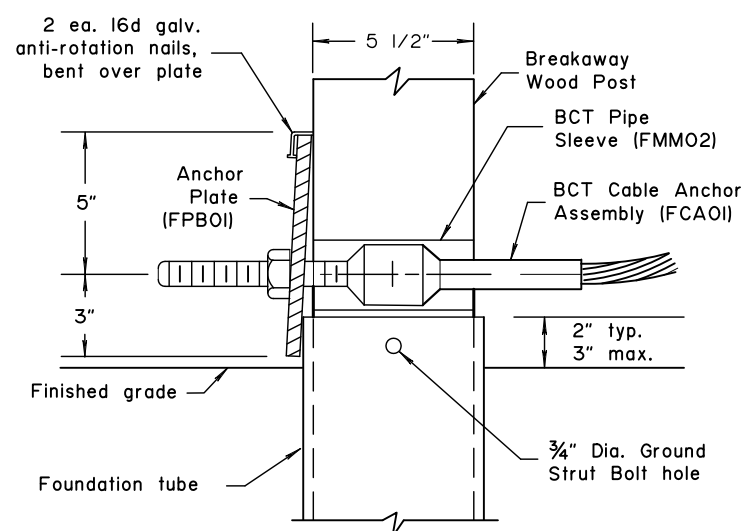


Eff. Date:
12/22/17

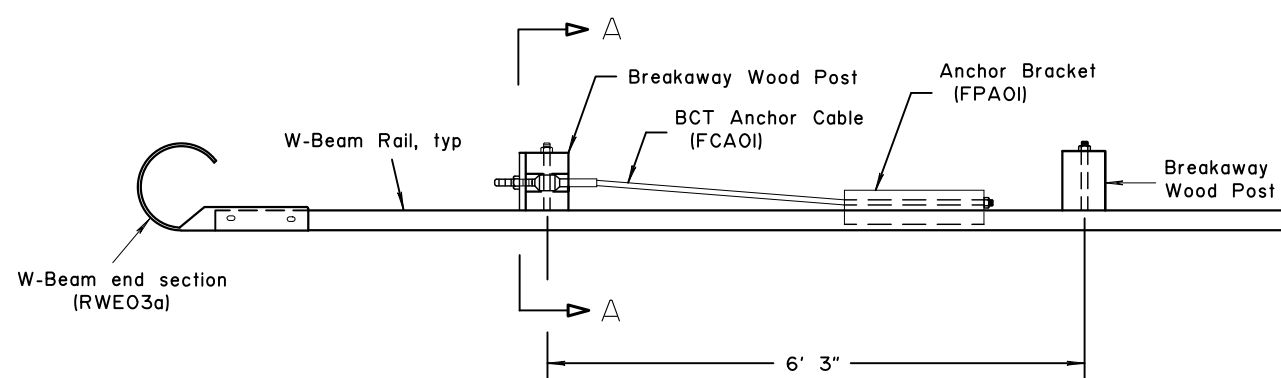


ELEVATION

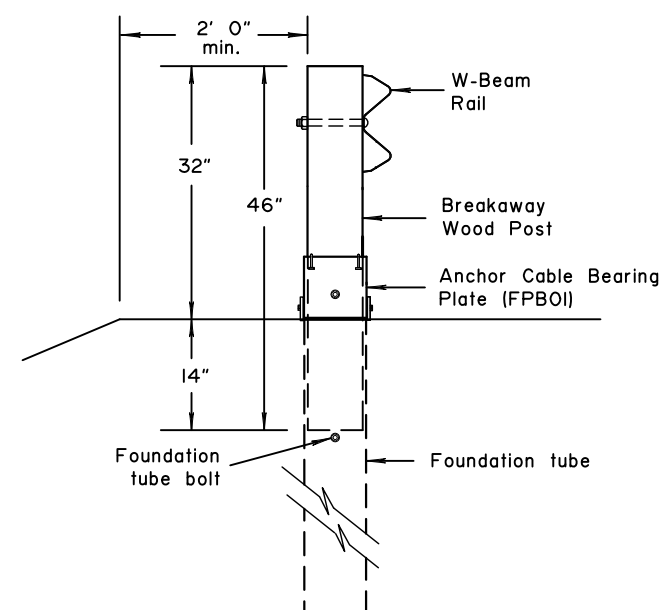
Project As- Built Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge the project as constructed.
PE: *Randall E. Johnston* Date 07.05.2019



DETAIL 1
(Ground strut not shown for clarity)



PLAN VIEW



SECTION A-A

CONSTRUCTION NOTES

- All covered hardware must comply with the AASHTO/AGC/ARTBA "A Guide to Standardized Highway Barrier Hardware", latest edition. Designators are given in parenthesis, when possible.
- End section bolts and nuts have the same material requirements as splice bolts.
- Foundation tube bolts 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.
- Anchor bracket and strut bolts 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.

DESIGN NOTES

- This design is not crashworthy under MASH and is not intended for locations within the clear zone or where it is likely to be struck head-on by an errant vehicle.
- This end anchorage is typically used on the downstream end of guardrail runs on one-way roads.

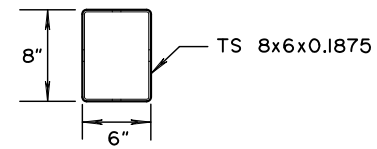
REVISIONS		
Date	Description	By

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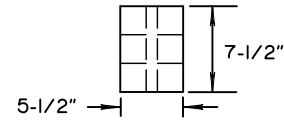
W31 DOWNSTREAM END ANCHOR



Eff. Date:
12/22/17



PLAN VIEW

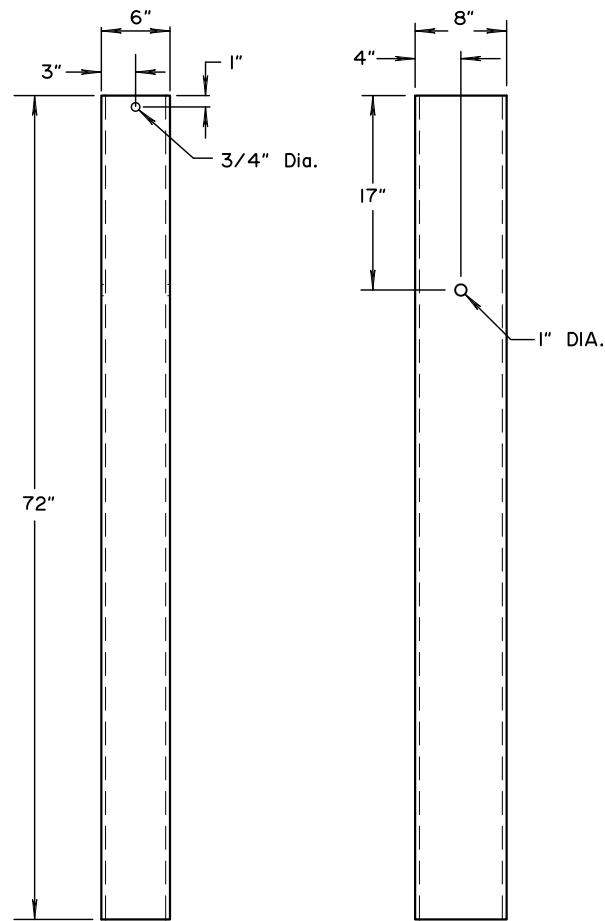


PLAN VIEW

Project As- Built Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge the project as constructed.
PE: *Randall E. Johnston* Date: 07.05.2019

CONSTRUCTION NOTES

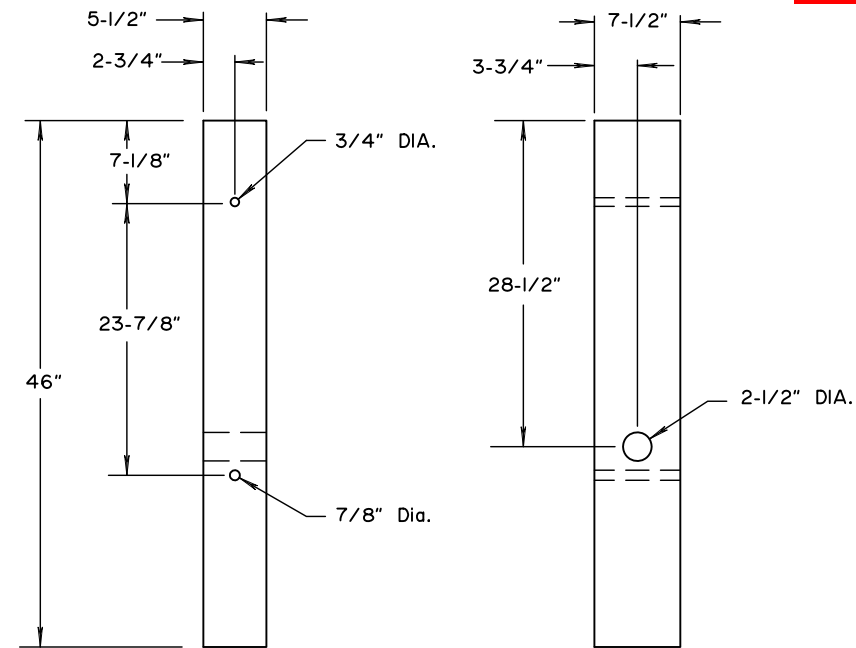
- All covered hardware must comply with the AASHTO/AGC/ARTBA "A Guide to Standardized Highway Barrier Hardware", latest edition. Designators are given in parenthesis, when possible.



FRONT VIEW

SIDE VIEW

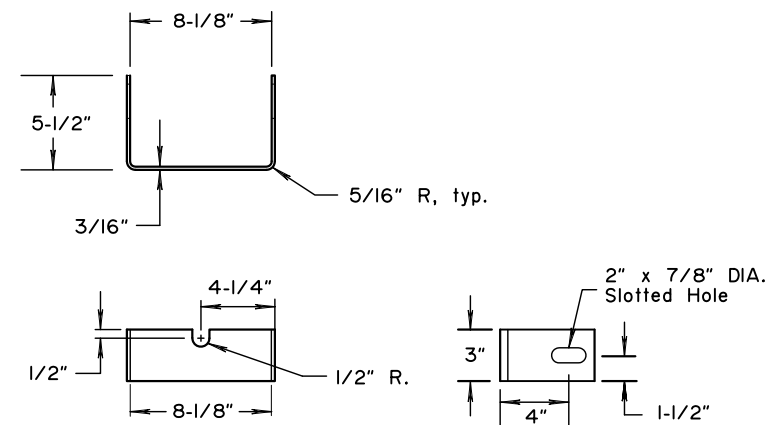
FOUNDATION TUBE



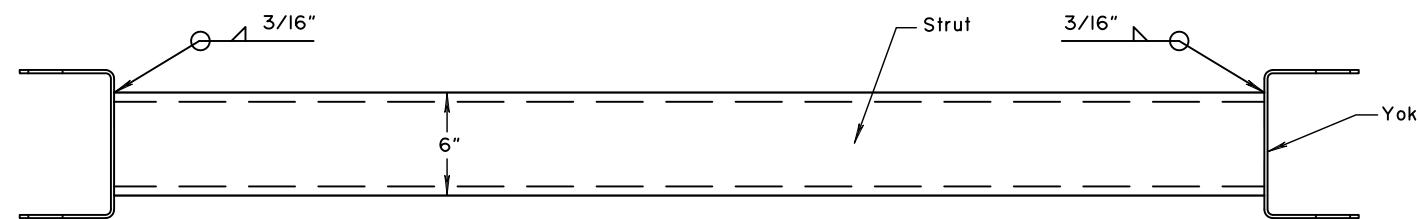
FRONT VIEW

SIDE VIEW

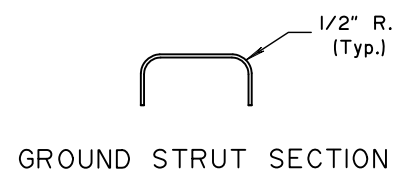
BREAKAWAY WOOD POST



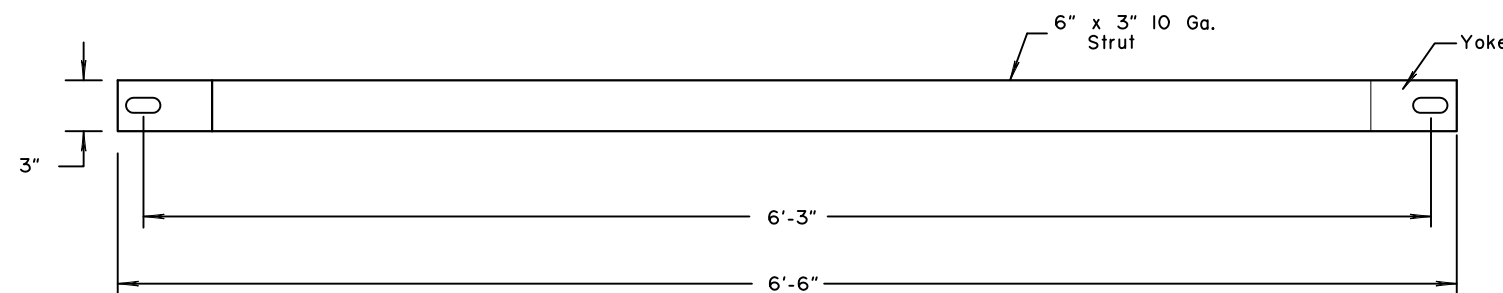
YOKE DETAIL



PLAN VIEW



GROUND STRUT SECTION



FRONT VIEW

GROUND STRUT DETAIL

REVISIONS		
Date	Description	By

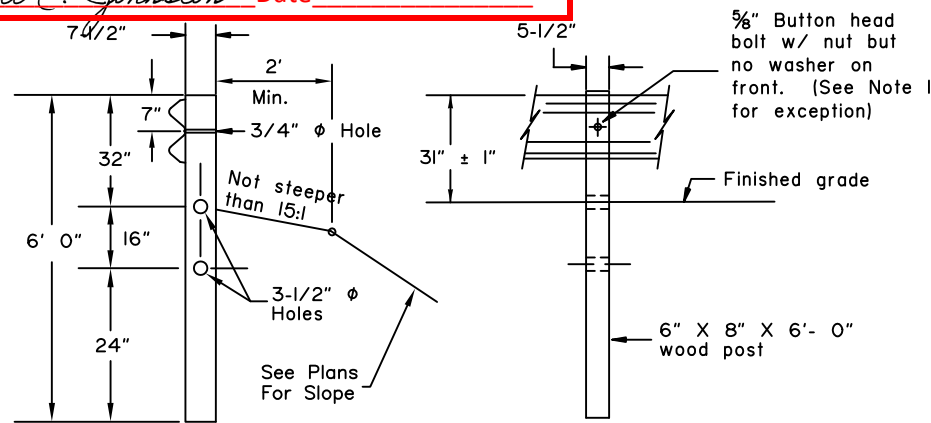
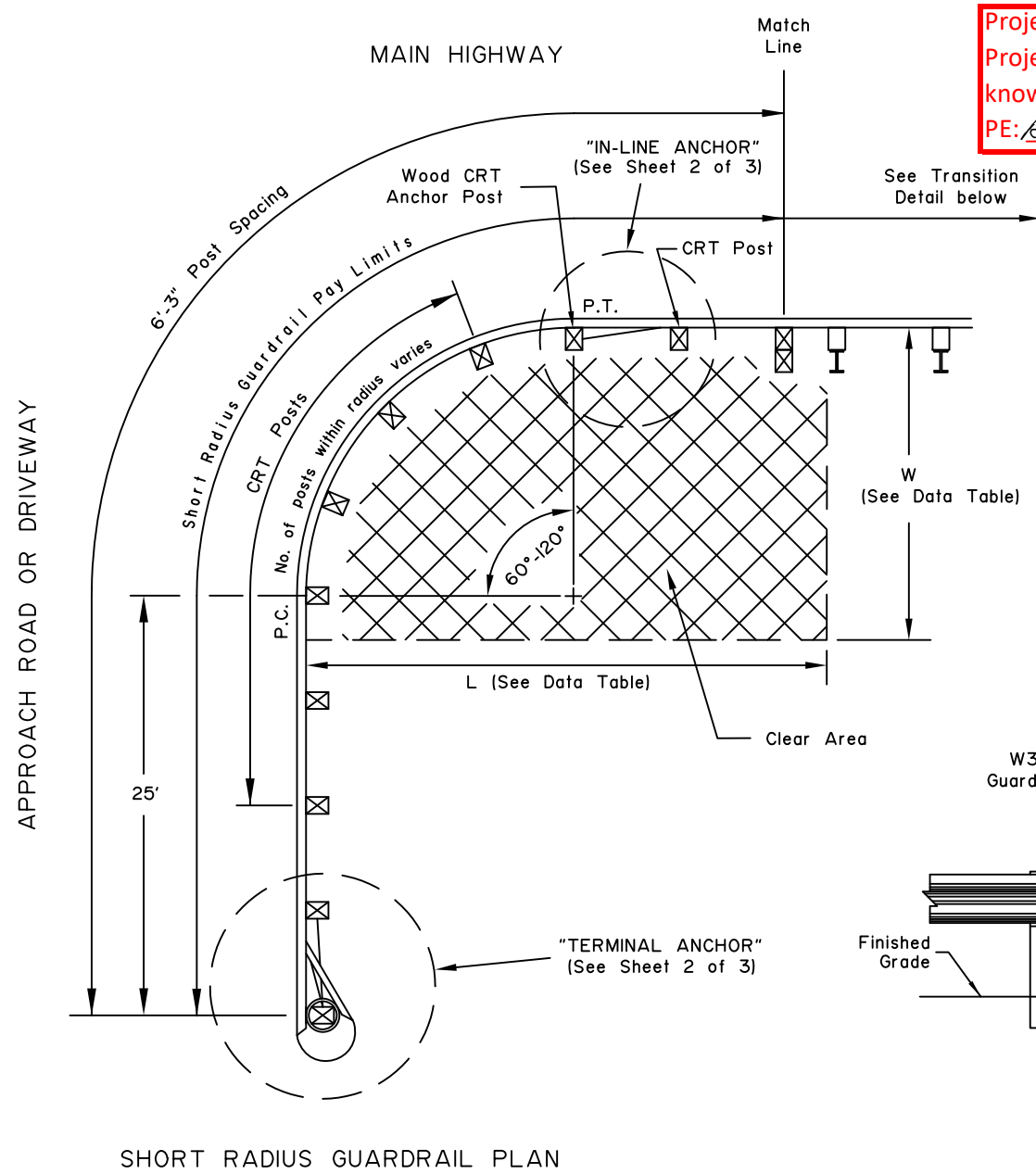
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Phone: (907) 465-2960

W31 DOWNSTREAM
END ANCHOR

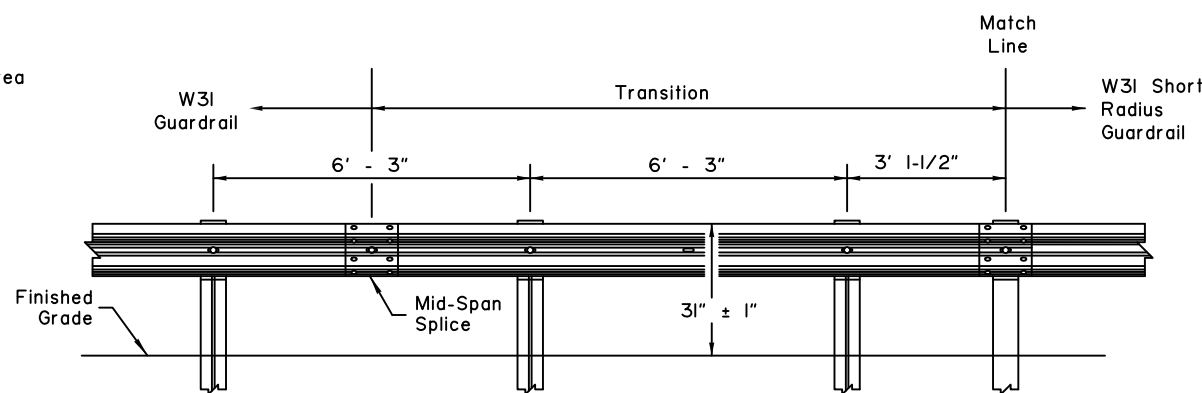


Eff. Date:
12/22/17

Project As-Built Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge the project as constructed.
PE: *Randall E. Johnston* Date 07.05.2019

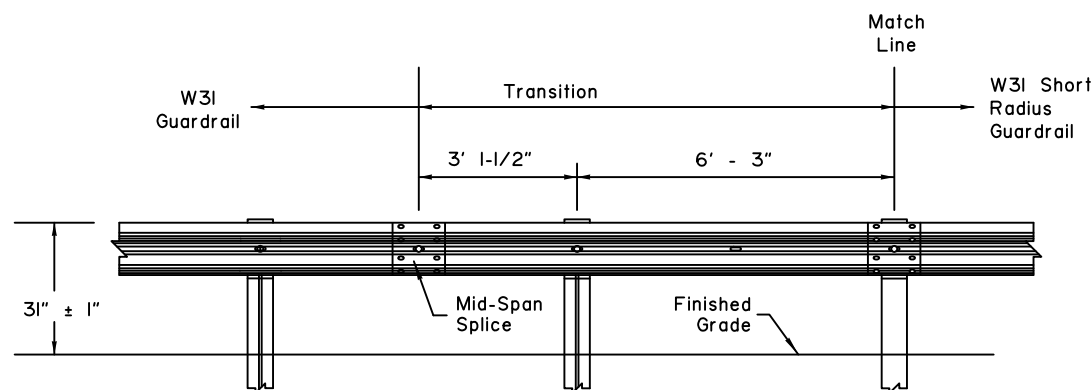


CONTROLLED RELEASE TERMINAL (CRT) POST



TRANSITION TO W3I GUARDRAIL - TYPE I

(As viewed from Main Highway)
(See Construction Note 2)



TRANSITION TO W3I GUARDRAIL TYPE II

(As viewed from Main Highway)
(See Construction Note 2)

CONSTRUCTION NOTES:

1. Do not bolt rail to central post on 8' radius CRT.
2. Steel posts are shown in the transition. Wood post may be substituted when allowed by the Specifications.

DESIGN NOTES:

1. Use the W3I short radius guardrail system to shield hazards at the intersection of a main highway with a minor road or driveway. Typical application include interruptions in guardrail runs caused by intersecting roadways
2. The short radius guardrail Terminal Anchor shown is for use on low speed (<45 mph) approach roads or driveways where motorists are required to stop or yield. Do not use this Terminal Anchor for high speed approach roads or driveways when a MASH approved end treatment is required.
3. The Clear Area shall be free of fixed object hazards. Any signs or other highway appurtenances in the clear area must be mounted on MASH compliant breakaway supports.
4. Connections to other guardrail systems (e.g. bridge rails and end treatments) and not provided on this drawing. Other details may be needed for this.
5. Short Radius Guardrail on 60 to 90 degree approaches are allowed provided they are constructed with posts at the P.C. and P.T. and the posts are placed on a uniform 6'-3" spacing.
6. When Short Radius Guardrail transitions to guardrail not at 31" ± 1" top-of-rail height, transition height over a 25 foot length.

DATA TABLE *					
Curve Radius, Ft. (Rounded)	Curve Length	Number of Rail Sections	Clear Area		** No. of Posts
			Length (L)	Width (W)	
8'	12.50'	1.0	25	15	5
12'	18.75'	1.5	25	15	6
16'	25.00'	2.0	30	15	7
20'	31.25'	2.5	33	15	8
24'	37.50'	3.0	37	20	9
28'	43.75'	3.5	40	20	10
32'	50.00'	4.0	45	20	11
36'	56.25'	4.5	50	20	12

* The table applies only to 90° approaches or driveways.
* 36 feet is the maximum allowable radius for this system.
** Number of CRT posts includes one for the In-Line Anchor.

REVISIONS		
Date	Description	By

State of Alaska
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& Public Facilities

W3I SHORT
RADIUS GUARDRAIL

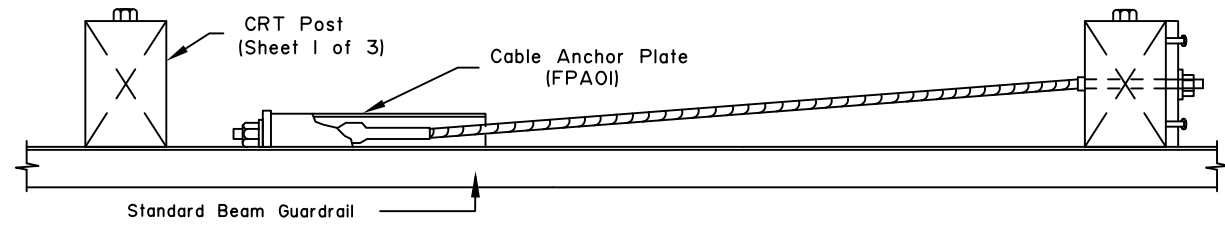


Eff. Date:
12/22/17

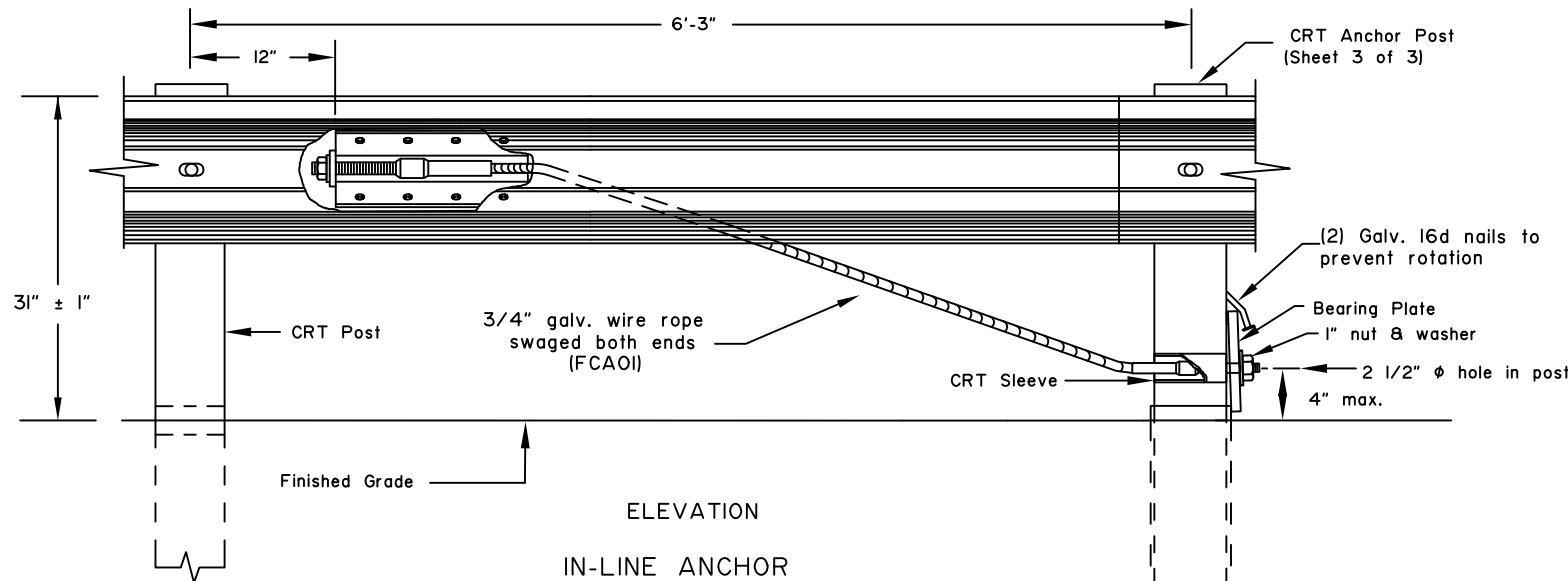
CONSTRUCTION NOTES

1. See Standard Drawings G-00 and G-05 for details not shown here.
2. All covered hardware must comply with the AASHTO/AGC/ARTBA "A Guide to Standardized Highway Barrier Hardware", latest edition. Designators are given in parenthesis, when possible.

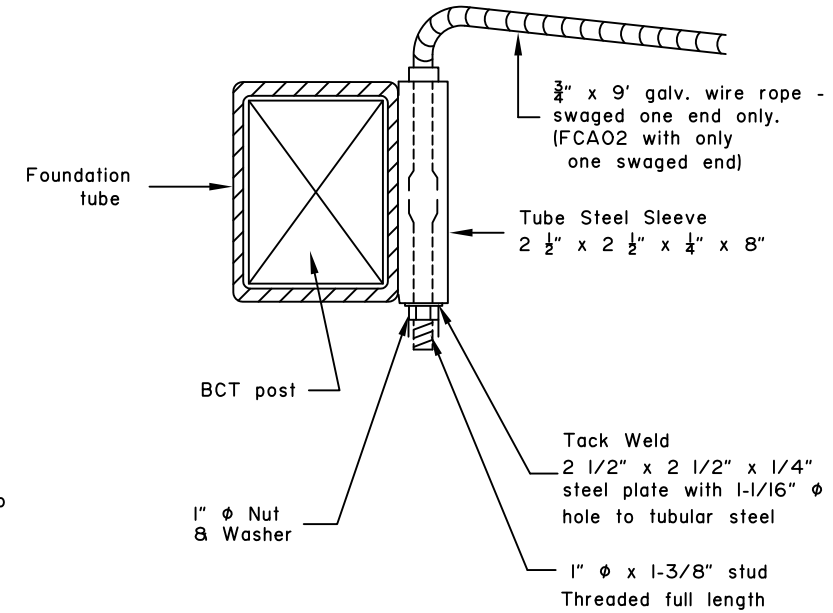
Project As-Built Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge the project as constructed.
PE: *Randall E. Johnston* Date 07.05.2019



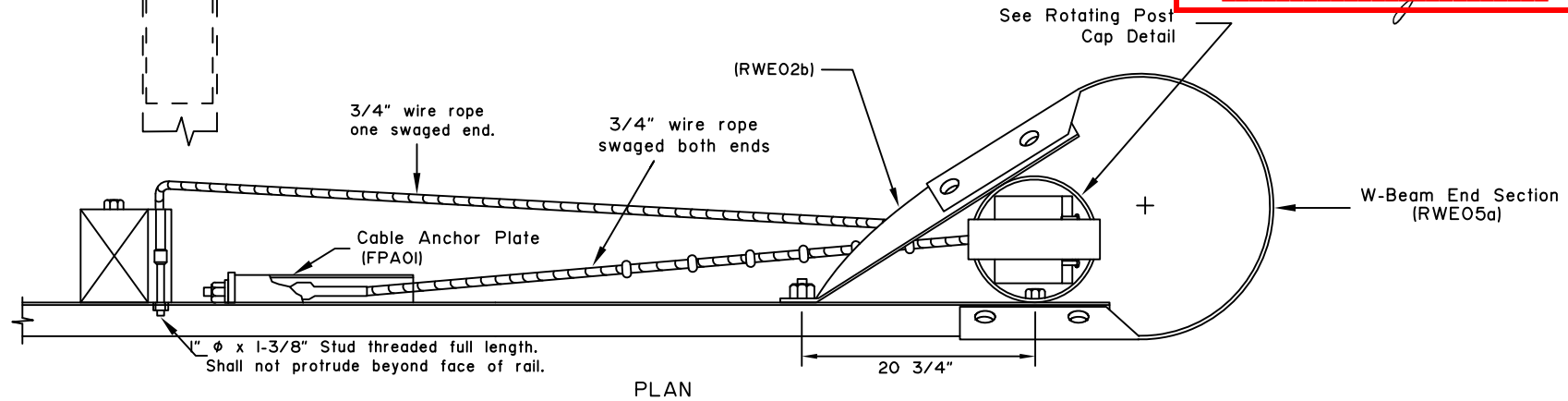
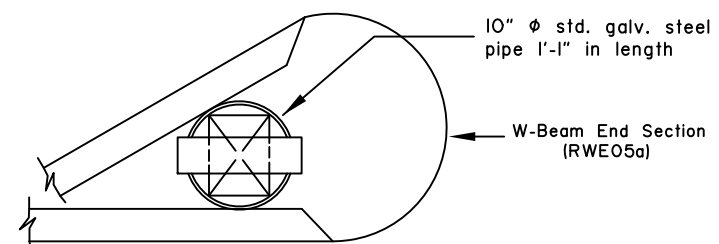
PLAN



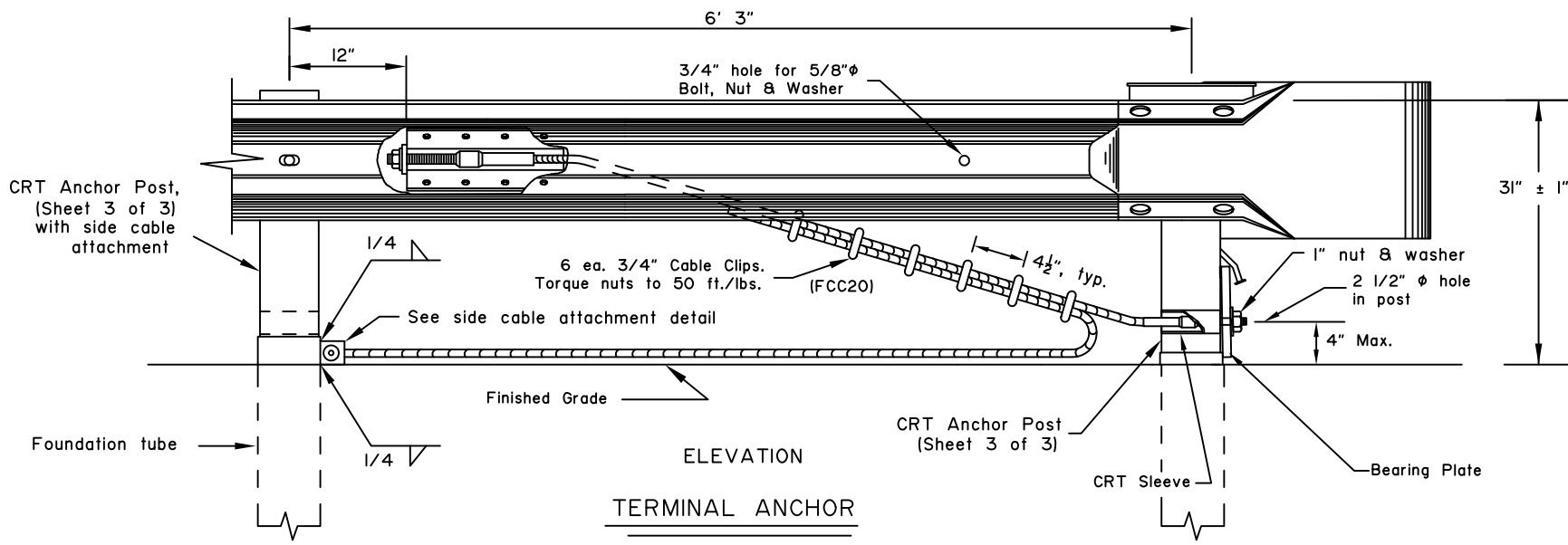
ELEVATION
IN-LINE ANCHOR



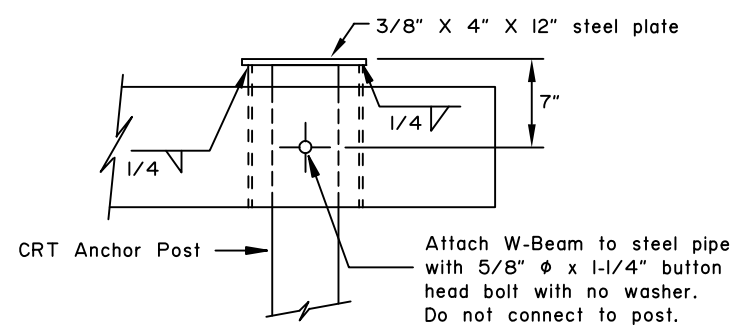
SIDE CABLE ATTACHMENT



PLAN



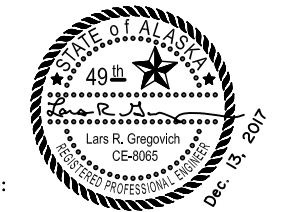
ELEVATION
TERMINAL ANCHOR



ROTATING POST CAP

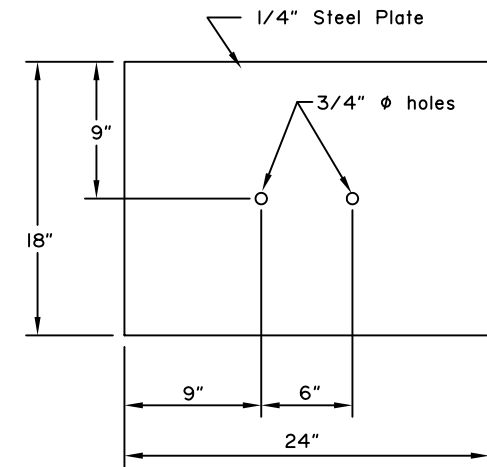
REVISIONS		
Date	Description	By

State of Alaska
Department of Transportation
& Public Facilities
**W31 SHORT
RADIUS GUARDRAIL**

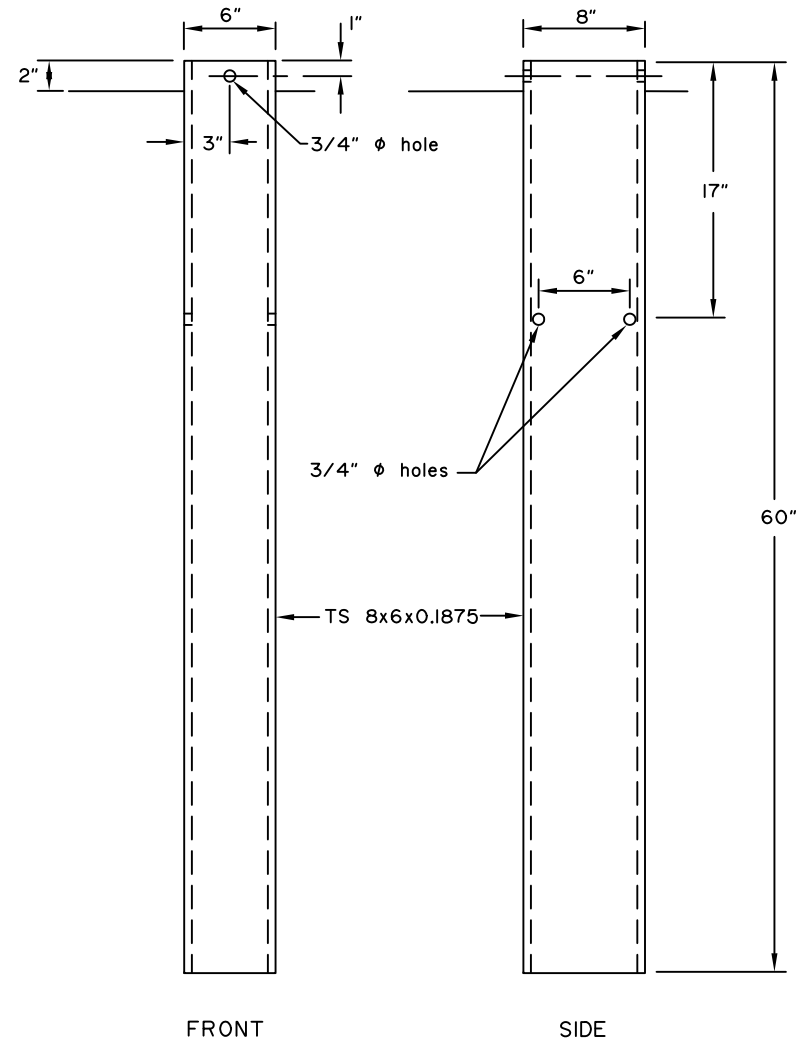


Eff. Date:
12/22/17

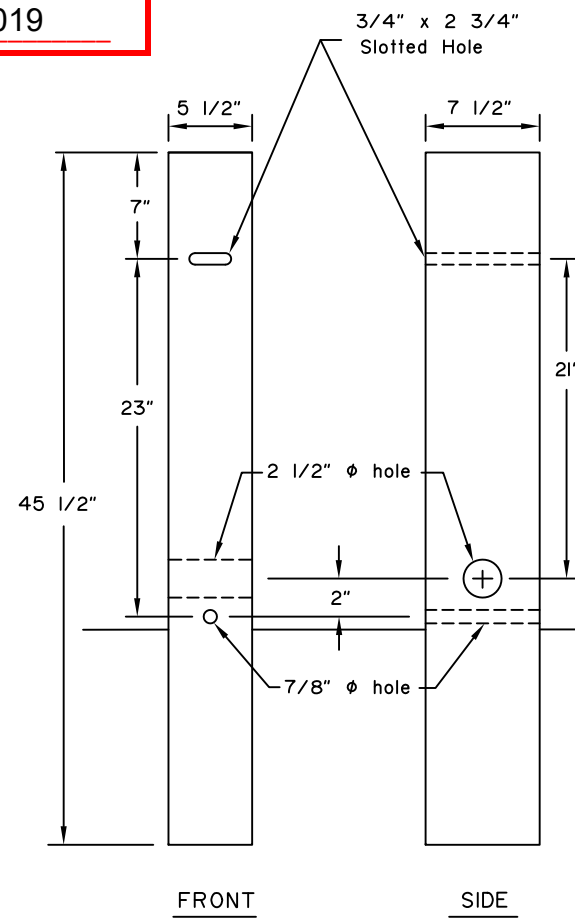
Project As-Built Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge the project as constructed.
PE: *Randall E. Johnston* Date 07.05.2019



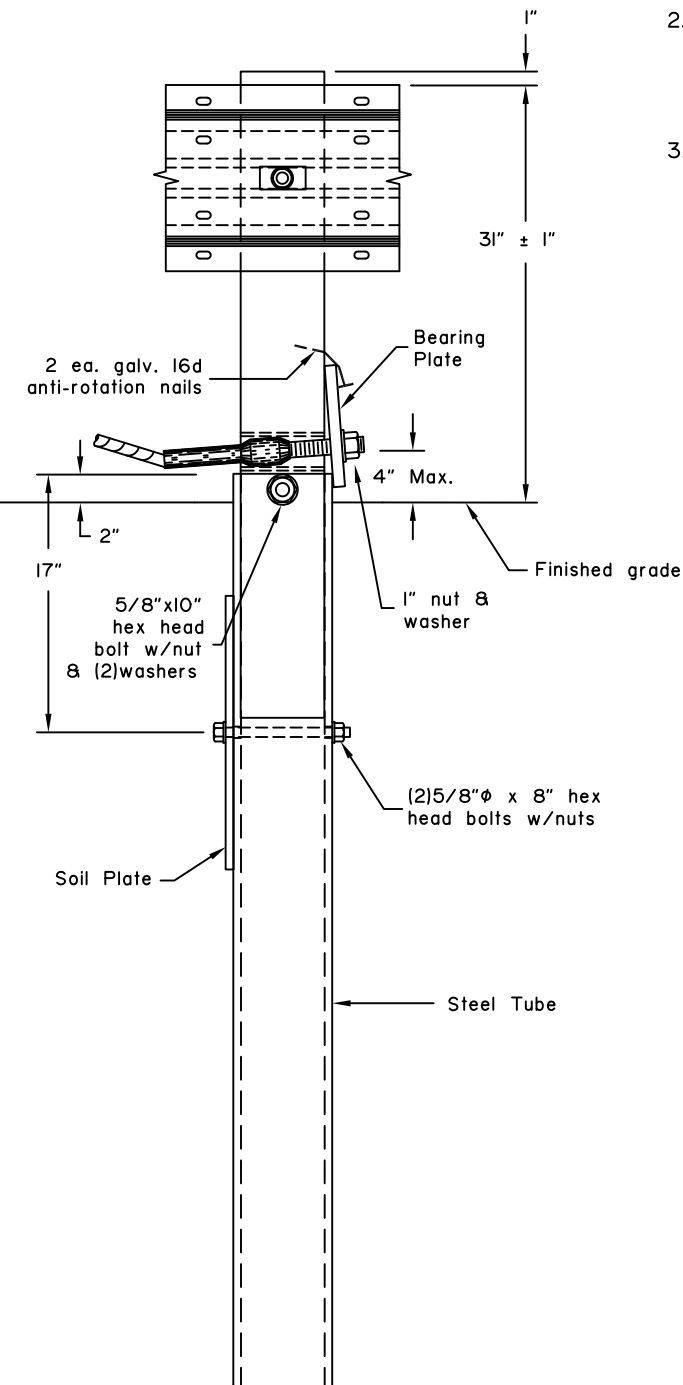
FOUNDATION TUBE SOIL PLATE
(PLS03)



FOUNDATION TUBE
(PTE05)



WOOD POST



ASSEMBLY

GENERAL NOTES:

1. Hardware details not shown here shall conform to drawings G-05W and G-00.
2. Comply with the AASHTO/AGC/ARTBA "A Guide to Standardized Highway Barrier Hardware", latest edition, for all covered guardrail hardware.
3. Not all bolt and nuts are shown for clarity purposes.

REVISIONS		
Date	Description	By

State of Alaska
Department of Transportation
& Public Facilities

W31 SHORT
RADIUS GUARDRAIL



Eff. Date:
12/22/17