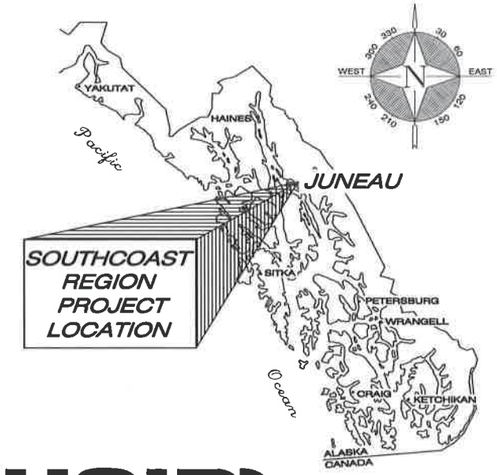
State of Alaska
Department of Transportation and Public Facilities
Southcoast Region

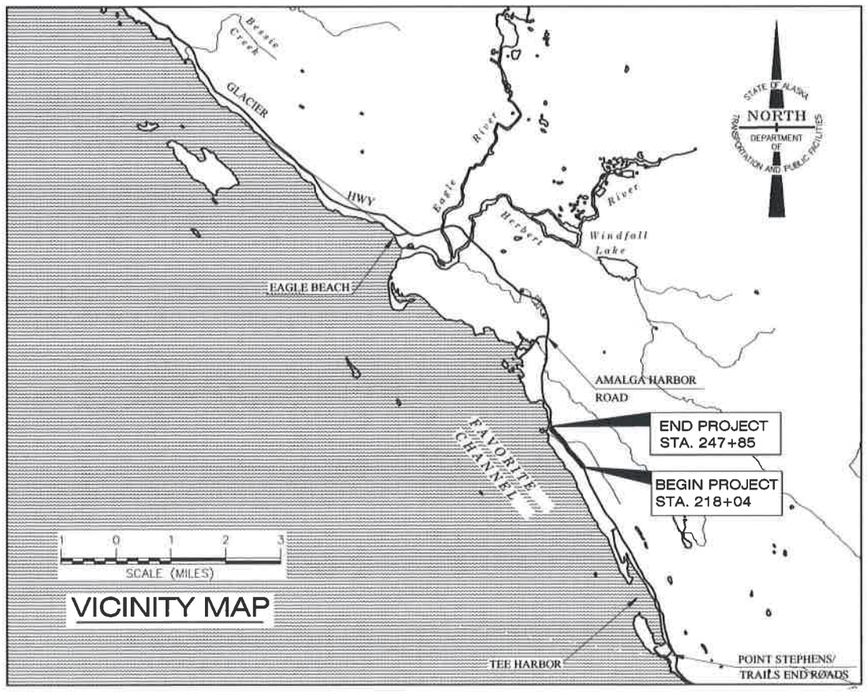
The undersigned hereby certifies that this duplicated document is an exact and true copy of the original.
Cody Sutton



August 26, 2016

JNU GLACIER HWY SAFETY IMPROVEMENTS (HSIP) SFHWY00041 ~ 0933(045)

PROJECT AS-BUILT DRAWINGS HAVE BEEN REVIED BY THE PROJECT ENGINEER AND REPRESENT TO THE BEST OF MY KNOWLEDGE THE PROJECT AS CONSTRUCTED.
PE: Emily Delaney
DATE: 12/5/2016



STATE OF ALASKA,
DOT & PF,
SOUTHCOAST REGION

DAVID EPSTEIN, P. E.
PROJECT MANAGER

6860 GLACIER HIGHWAY
JUNEAU, AK 99811
(907) 465-1763

PROJECT SUMMARY

LENGTH OF PROJECT	=	2,981 FT
ADT	=	1,120
DHV	=	160

THE FOLLOWING STANDARD DRAWINGS APPLY TO THIS PROJECT:

G-00.02
G-04.10S
G-10.01
G-13.00
G-20.11
G-28.00

INDEX

As-BuiltS
Contractor: Glacier State Contractors, Inc.
Project Engineer: Emily Delaney
Start Date: September 22, 2016
End Date: November 16, 2016

ROUTE: – MILEPOINT: –

PATH: Q:\Jnu\00041\TR\0933045 Glacier Hwy Safety Improvements
Fri, 15/Jul/16 10:18AM dastevens
PLOT: PSPACE OR MSPACE: TAB: TSHT

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

APPROVED: Pat Carroll 7-19-16
PRECONSTRUCTION ENGINEER, SOUTHCOAST REGION — DATE
L. PAT CARROLL, P.E.

APPROVED: Pat Carroll FOR 7-19-16
DIRECTOR, SOUTHCOAST REGION — DATE
MICHAEL J. COFFEY

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	SFHWY00041~0933(045)	2016	A1	9

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	SFHWY00041	2016	A2	9

DESIGNED: S. POWERS
DRAWN: S. POWERS
CHECKED: STATE-WIDE COORDINATION TEAM
SCALE:
LAYOUT: HWYS LEGEND
REVISED: 6/24/2016 8:41
FILE: Q:\Jnu\00041\TR\0933045 Glacier Hwy Safety Improvements\0933045_A2 Legend.dwg

	RECOVERED	SET
BLM MONUMENT	✠	
GLO MONUMENT	✠	
USC&GS MONUMENT	▲	
PRIMARY MONUMENT	✠	✠
CENTERLINE MONUMENT IN CASING	⊕	◕
PRIMARY R.O.W. MONUMENT	⊕	◕
BEARING OBJECT	✳	
MISCELLANEOUS MONUMENT	⊗	
LINE OF SIGHT MONUMENT		⊕
CONCRETE R.O.W. MONUMENT	■	
BENCHMARK		BM
REBAR AND CAP	⊙	◎
REBAR	⊙	●
IRON PIPE	●	
PK NAIL		▽
SPIKE		×
HUB AND TACK		⊡
CONSTRUCTION CENTERLINE	5+00	
MICELLANEOUS CENTERLINE	10+00	
STATION EQUATION	"L"48+97.23 POT BK= "O"48+97.23 PC AHD	
PROJECT RIGHT-OF-WAY LINE	R/W	
EXISTING RIGHT-OF-WAY LINE		
EXISTING PROPERTY LINE		
CONTROLLED ACCESS LINE	C/A	
EXISTING EASEMENT LINE		
PROPOSED EASEMENT LINE		
PROPOSED CUT SLOPE LIMIT		
PROPOSED FILL SLOPE LIMIT		
SECTION LINE		
1/4 SECTION LINE		
1/16 SECTION LINE		
TOWNSHIP & RANGE LINE	T. 2 N. / T. 1 N. — T. 1 E. / T. 2 E.	
MEANDER LINE	M1 M2 M3	

	EXISTING	PROPOSED
SANITARY SEWER (FLOW DIRECTION →)		
FUEL LINE		
GAS LINE		
WATER LINE		
METER, VALVE, FIRE HYDRANT		
EXISTING STORM DRAIN (FLOW DIRECTION →)		
PROPOSED STORM DRAIN		S-10, SD, S-11, P-11, P-10, MH
FIBER OPTIC LINE		
DIRECT BURIAL TELEPHONE CABLE		
DIRECT BURIAL ELECTRIC CABLE		
ELECTRIC LINE (OVERHEAD)		
POWER POLE LINE		
JOINT USE POWER & TELEPHONE		
TELEPHONE POLE LINE		
POLE ANCHOR		
STUB POLE (POWER OR TELEPHONE)		
TELEPHONE DUCT		
TELEPHONE PEDESTAL		
BURIED CABLE MARKER		
PIPELINE MARKER OR VALVE		
CATCH BASIN OR DROP INLET		
MANHOLE	MH	MH
SANITARY SEWER CLEAN OUT		

	EXISTING	PROPOSED
ROADWAY/PAVEMENT EDGE		
FENCE		
CURB AND GUTTER		
DETECTABLE WARNINGS		
GUARDRAIL		
CULVERT PIPE		
SIGN		
MAILBOX	MB	MB
RAILROAD TRACKS		
RAILROAD DEVICES	CROSS-BUCK, FLASHING LIGHT	CANTILEVER, SWITCH
TREE LINE		
WATER BOUNDARY		
ORDINARY HIGH WATER LINE		
FLOW CENTERLINE		
FLOW DIRECTION		
WETLANDS		
EXISTING BUILDINGS	H = HOUSE, G = GARAGE, M = MERCHANT/STORE, B = BARN, S = SHED, P = PRIVY, SS = SERVICE STATION, W = WAREHOUSE	
POST OR BOLLARD		
WELL OR MONITORING WELL	W, MW	
SEPTIC PIPE	S	
FUEL TANK FILL PIPE/VENT	F	
SATELLITE DISH	SAT. DISH	
TEST HOLE	TH	
CONIFER TREE		
DECIDUOUS TREE		
GRAVE		
THERMOSIPHON		
PARKING METER		
VEHICLE PLUG-IN		
DELINEATOR/GUIDE MARKER		

	EXISTING	PROPOSED
JUNCTION BOX, TYPE IA		5
JUNCTION BOX, TYPE II		6
JUNCTION BOX, TYPE III		3
SIGNAL FACE, VEHICULAR	42	42
SIGNAL FACE, BACKPLATE	42	42
SIGNAL FACE, LEFT TURN, BACKPLATE	43	43
SIGNAL FACE, PEDESTRIAN		
LOOP DETECTOR	33	73
VIDEO DETECTOR	2	2
RADAR DETECTOR	4	4A
OPTICOM DETECTOR	1	1
PEDESTRIAN PUSH BUTTON	1	1
SIGNAL POST W/O MAST ARM		1
SIGNAL POLE W/MAST ARM		4
SIGNAL CONTROLLER		
LOAD CENTER		
LUMINAIRE		22
RIGID METAL CONDUIT		

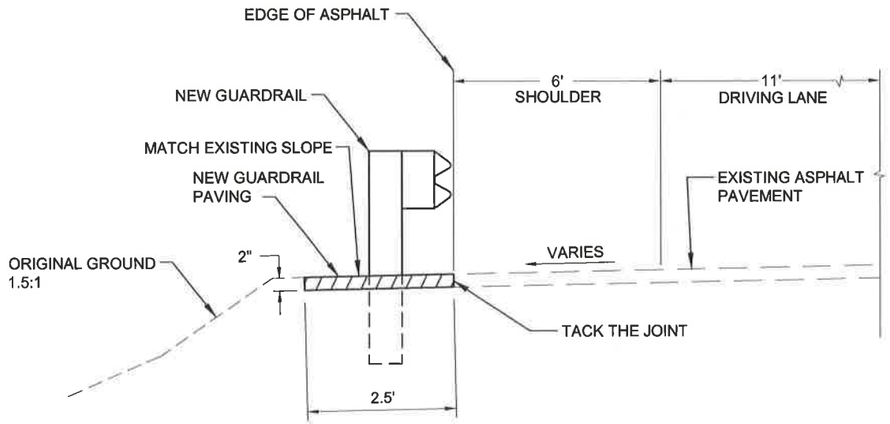
6860 GLACIER HIGHWAY
JUNEAU, AK 99811
(907) 465-1763

STATE OF ALASKA, DEPT. OF TRANSPORTATION, 49TH, David Brose-Epstein, CE-6866, REGISTERED PROFESSIONAL ENGINEER, 6.27.16

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

JNU GLACIER HWY SAFETY IMPROVEMENTS (HSIP)

LEGEND



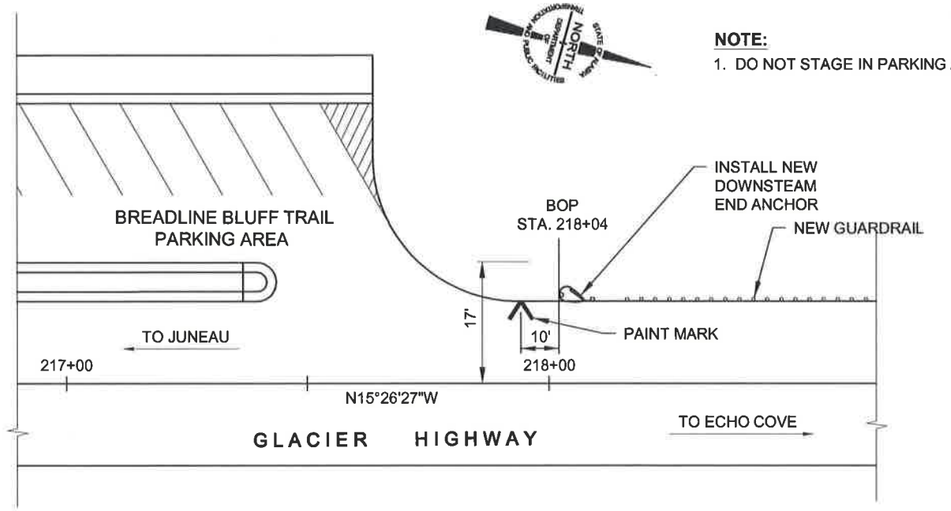
TYPICAL SECTION

STA. 218+04 LT TO STA. 247+85 LT

NOTES:

1. INSTALL PER STANDARD DRAWINGS.
2. FACE OF GUARDRAIL SHALL BE 2' MIN. FROM TOP OF SLOPE.
3. EXCAVATE TOP 2" OF SHOULDER AS SHOWN ABOVE. REPLACE WITH 2" OF GUARDRAIL PAVING.
4. CONTACT SOUTHCOAST REGION M&O AT 465-1787 ONE WEEK PRIOR TO CONSTRUCTION FOR REMOVAL OF FLEXIBLE DELINEATORS.

PROJECT AS-BUILT DRAWINGS HAVE BEEN REVIED BY THE PROJECT ENGINEER AND REPRESENT TO THE BEST OF MY KNOWLEDGE THE PROJECT AS CONSTRUCTED.
PE:
DATE: 12/5/2016



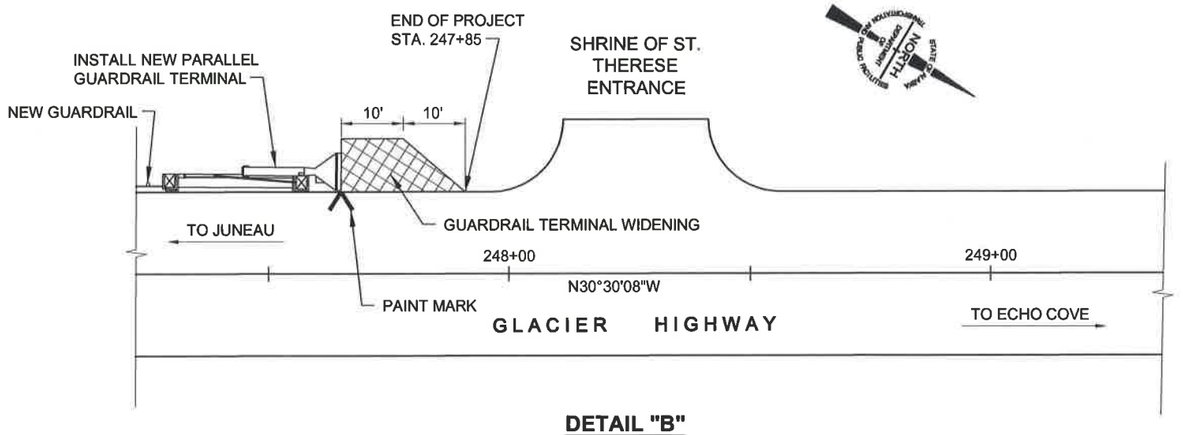
NOTE:

1. DO NOT STAGE IN PARKING AREA.

DETAIL "A"

NOTES:

1. BOP IS 10 FT. NORTH OF PAINT MARK ON SHOULDER.



DETAIL "B"

NOTES:

1. EOP IS DENOTED BY PAINT MARK ON SHOULDER.
2. FLARE GUARDRAIL TERMINAL PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
3. PARALLEL TERMINAL IS 50 FT. LONG.
4. PAVE HATCHED AREA PER STD. DWG. G-20.11 ALTERNATE GUARDRAIL TERMINAL WIDENING DETAIL.

DO NOT SCALE FROM THESE DRAWINGS USE DIMENSIONS

PATH:
Q:\Jnu\00041\TR\0933045 Glacier Hwy Safety Improvemen
Fri, 15/Jul/16 10:20AM dastevens
PLOT:
PSPACE 1=1(F) OR MSPACE 1=1(F)
TAB: SCHEDULE

ADDENDUM NUMBER

ATTACHMENT NUMBER

RECORD OF REVISIONS

No.	DATE	DESCRIPTION

JNU GLACIER HIGHWAY
SAFETY IMPROVEMENTS
(HSIP)

GUARDRAIL TYPICAL SECTION
AND DETAILS

6860 GLACIER HIGHWAY
JUNEAU, AK 99811
(907) 465-1763

DESIGNED BY: D. EPSTEIN

STATE OF ALASKA 49th David Bruce Epstein CE-6886 REGISTERED PROFESSIONAL ENGINEER 6.27.16

CHECKED BY: D. EPSTEIN
DRAWN BY: D. STEVENS

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

JNU GLACIER HIGHWAY
SAFETY IMPROVEMENTS
(HSIP)

GUARDRAIL
TYPICAL SECTION
AND DETAILS

PROJECT DESIGNATION NUMBER
SFHWY00041~0933(045)

STATE	YEAR
ALASKA	2016
SHEET NUMBER	TOTAL SHEETS
B1	9

BASIC BID - ESTIMATE OF QUANTITIES

ITEM NUMBER	ITEM DESCRIPTION	PAY UNIT	QUANTITY
201 (7)	INVASIVE PLANT SPECIES CONTROL, REMOVAL AND DISPOSAL	SQUARE YARD	~~1,200~~ 11
606 (1)	W-BEAM GUARDRAIL	LINEAR FOOT	~~2,911~~ 2937.5
606 (13)	PARALLEL GUARDRAIL TERMINAL	EACH	1
629 (1)	GUARDRAIL PAVING	LINEAR FOOT	2,981
633 (2)	SEDIMENT BARRIER	LINEAR FOOT	~~275~~ 225
640 (1)	MOBILIZATION AND DEMOBILIZATION	LUMP SUM	ALL REQUIRED
641 (1)	EROSION,SEDIMENT AND POLLUTION CONTROL ADMINISTRATION	LUMP SUM	ALL REQUIRED
641 (2)	TEMPORARY EROSION, SEDIMENT, AND POLLUTION CONTROL	CONTINGENT SUM	ALL REQUIRED
641 (6)	WITHOLDING	CONTINGENT SUM	ALL REQUIRED
642 (1)	CONSTRUCTION SURVEYING	LUMP SUM	ALL REQUIRED
643 (2)	TRAFFIC MAINTENANCE	LUMP SUM	ALL REQUIRED
643 (15)	FLAGGING	CONTINGENT SUM	ALL REQUIRED
643 (23)	TRAFFIC PRICE ADJUSTMENT	CONTINGENT SUM	ALL REQUIRED
643 (25)	TRAFFIC CONTROL	CONTINGENT SUM	ALL REQUIRED

SUMMARIES

606 (1) W-BEAM GUARDRAIL

FROM STATION	TO STATION	OFFSET	LENGTH
218+04	247+15	LT.	2911 FT.

606 (13) PARALLEL GUARDRAIL TERMINAL

FROM STATION	TO STATION	OFFSET	LENGTH
247+15	247+65	LT.	50 FT.

NOTES:

1. **TERMINAL WIDENING EXTENDS 20 FT. PAST END OF PARALLEL GUARDRAIL TERMINAL (STA. 247+65 TO STA. 247+85).**
2. **INVASIVE PLANT SPECIES CONTROL IS LIMITED TO THE AREA BEING DISTURBED (NEW GUARDRAIL PAVING, TYPICAL SECTION, SHEET B1).**

PROJECT AS-BUILT DRAWINGS HAVE BEEN REVIED BY THE PROJECT ENGINEER AND REPRESENT TO THE BEST OF MY KNOWLEDGE THE PROJECT AS CONSTRUCTED.
PE:
DATE: 12/5/2016 Emily Delaney

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Q:\Jnu\00041\TR\0933045 Glacier Hwy Safety
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ADDENDUM NUMBER

ATTACHMENT NUMBER

RECORD OF REVISIONS

No.	DATE	DESCRIPTION
1	8/2/16	ADDENDUM 2
2	8/8/16	ADDENDUM 3

JNU GLACIER HIGHWAY SAFETY IMPROVEMENTS (HSIP)

ESTIMATE OF QUANTITIES AND SUMMARIES

6860 GLACIER HIGHWAY
JUNEAU, AK 99811
(907) 465-1763

STATE OF ALASKA 49 TH
David Bruce Epstein
CE-6866
REGISTERED PROFESSIONAL ENGINEER
8.8.16

DESIGNED BY: D. EPSTEIN
DRAWN BY: D. STEVENS

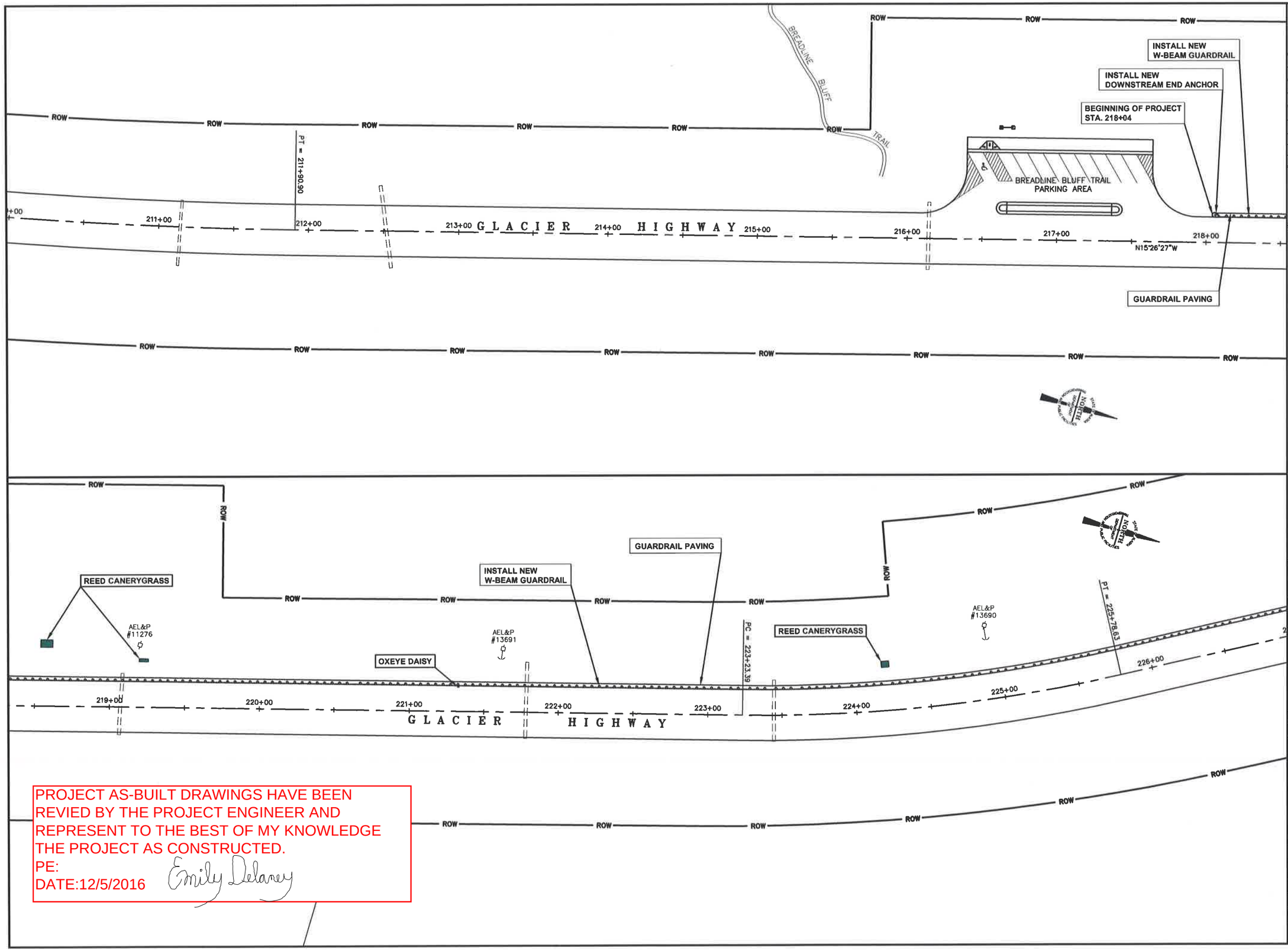
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
SOUTHCOAST REGION

JNU GLACIER HIGHWAY SAFETY IMPROVEMENTS (HSIP)

ESTIMATE OF QUANTITIES AND SUMMARIES

PROJECT DESIGNATION NUMBER
SFHWY00041~0933(045)

STATE	YEAR
ALASKA	2016
SHEET NUMBER	TOTAL SHEETS
C1	9



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PE:
DATE:12/5/2016 Emily Delaney

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Mon, 08/Aug/16 09:26AM
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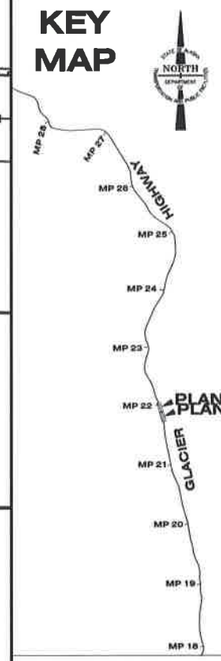
RECORD OF REVISIONS

No.	DATE	DESCRIPTION
1	8/8/16	ADDENDUM 3

KEY MAP



6860 GLACIER HIGHWAY
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(907) 465-1763

STATE OF ALASKA 49TH
David Brian Epstein
CE-6866
REGISTERED PROFESSIONAL ENGINEER
8.8.16

DESIGNED BY: D. EPSTEIN
DRAWN BY: D. STEVENS

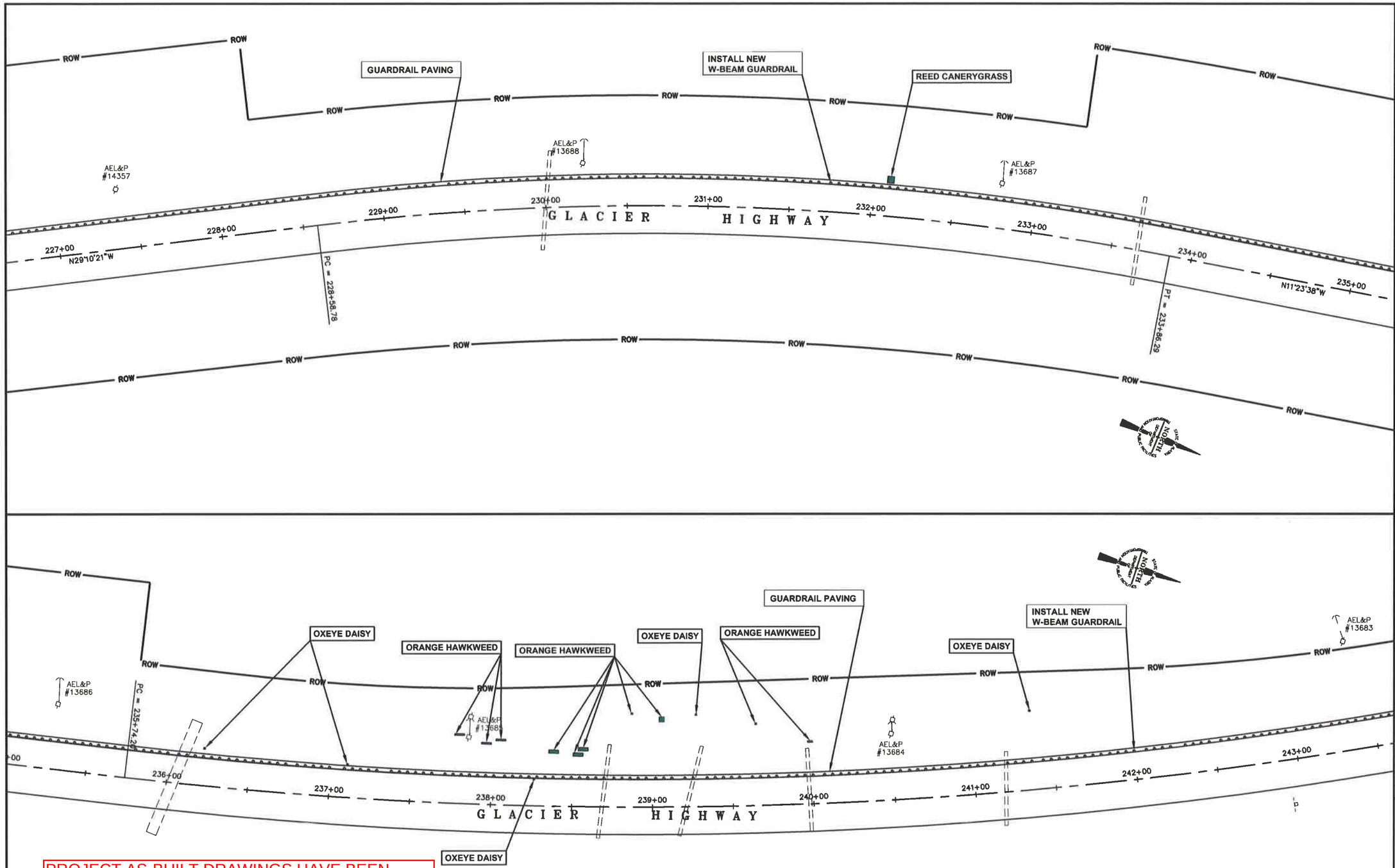
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
SOUTHCOAST REGION

JNU GLACIER HIGHWAY SAFETY IMPROVEMENTS (HSIP)

PLAN SHEET

PROJECT DESIGNATION NUMBER
SFHWY00041~0933(045)

STATE	YEAR
ALASKA	2016
SHEET NUMBER	TOTAL SHEETS
F1	9



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PE:
DATE:12/5/2016 Emily Delaney

PATH:
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Mon, 08/Aug/16 09:26AM
PLOT:
PSPACE 1=1(F) OR MSPACE 1=1(F)
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ATTACHMENT NUMBER

RECORD OF REVISIONS

No.	DATE	DESCRIPTION
1	8/8/16	ADDENDUM 3

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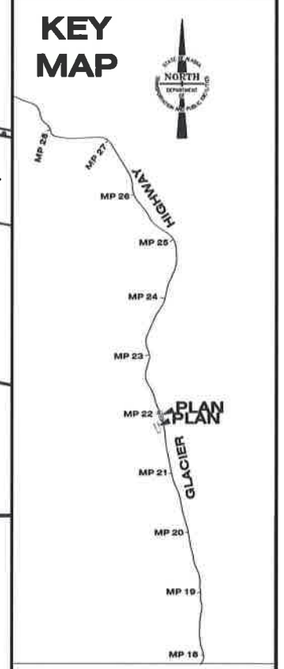

6860 GLACIER HIGHWAY
JUNEAU, AK 99811
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STATE OF ALASKA
49 TH
David Bruce Epstein
CE-6866
REGISTERED PROFESSIONAL ENGINEER
8.8.16

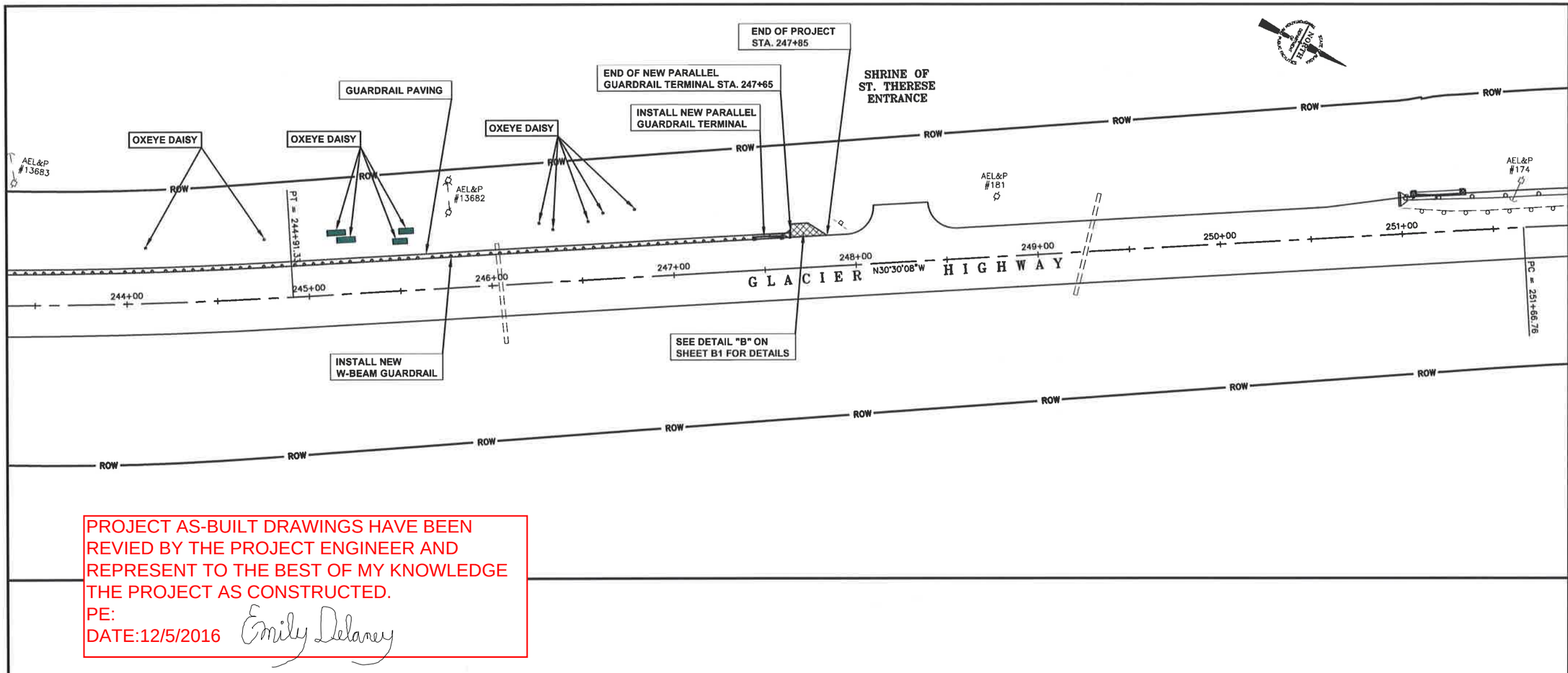
DESIGNED BY: D. EPSTEIN
DRAWN BY: D. STEVENS

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
SOUTHCOAST REGION

JNU GLACIER HIGHWAY SAFETY IMPROVEMENTS (HSIP)

PLAN SHEET

PROJECT DESIGNATION NUMBER	
SFHWY00041~0933(045)	
STATE	YEAR
ALASKA	2016
SHEET NUMBER	TOTAL SHEETS
F2	9



PROJECT AS-BUILT DRAWINGS HAVE BEEN REVIED BY THE PROJECT ENGINEER AND REPRESENT TO THE BEST OF MY KNOWLEDGE THE PROJECT AS CONSTRUCTED.
PE:
DATE:12/5/2016 Emily Delaney

PATH:
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Mon, 08/Aug/16 09:25AM
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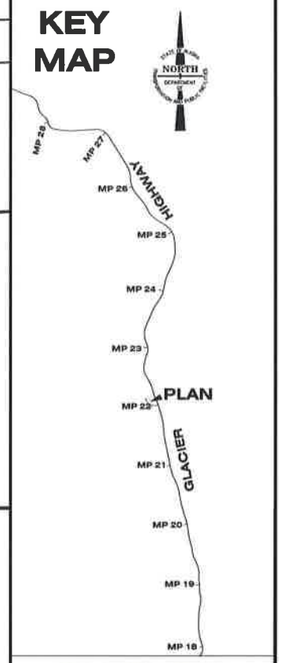
ATTACHMENT NUMBER

RECORD OF REVISIONS

No.	DATE	DESCRIPTION
1	8/8/16	ADDENDUM 3

KEY MAP



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STATE OF ALASKA 49TH
David Bruce Epstein
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STATE OF ALASKA
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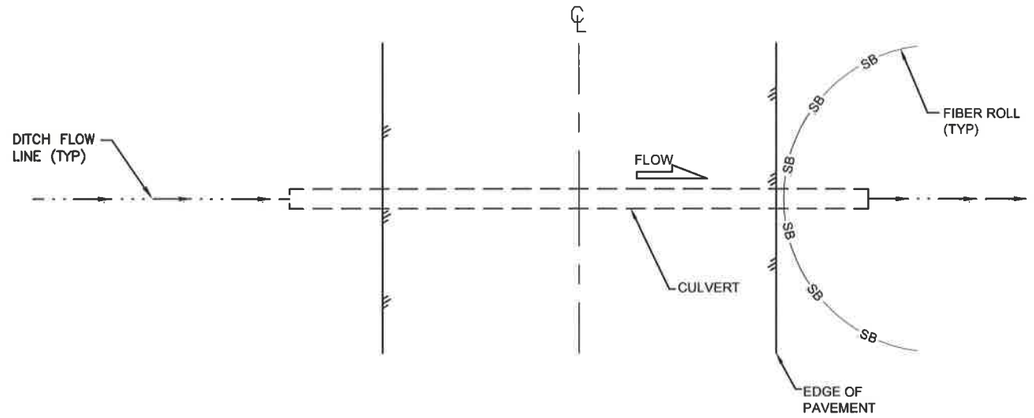
& PUBLIC FACILITIES
SOUTHCOAST REGION

JNU GLACIER HIGHWAY SAFETY IMPROVEMENTS (HSIP)

PLAN SHEET

PROJECT DESIGNATION NUMBER	
SFHWY00041~0933(045)	
STATE	YEAR
ALASKA	2016
SHEET NUMBER	TOTAL SHEETS
F3	9



CULVERT BMP INSTALLATION

SCALE: NOT TO SCALE

CULVERT BMP INSTALLATION NOTES:

1. INSTALL SEDIMENT CONTROL TO MINIMIZE SEDIMENT DISCHARGE. USE TYPE 1 OR TYPE 2 FIBER ROLL.

PROJECT AS-BUILT DRAWINGS HAVE BEEN REVIED BY THE PROJECT ENGINEER AND REPRESENT TO THE BEST OF MY KNOWLEDGE THE PROJECT AS CONSTRUCTED.
PE:
DATE:12/5/2016 Emily Delaney

PATH:
Q:\Jnu\00041\TR\0933045 Glacier Hwy Safety
Fri, 15/Jul/16 10:35AM
PLOT:
PSPACE 1=1(F) OR MSPACE 1=1(F)
TAB: TYPICALS

ADDENDUM NUMBER

ATTACHMENT NUMBER

RECORD OF REVISIONS

No.	DATE	DESCRIPTION

JNU GLACIER HIGHWAY
SAFETY IMPROVEMENTS
(HSIP)

EROSION SEDIMENT CONTROL PLAN

6860 GLACIER HIGHWAY
JUNEAU, AK 99811
(907) 465-1763

STATE OF ALASKA 49 TH
David Bruce Epstein
CE-6866
REGISTERED PROFESSIONAL ENGINEER
6.27.16

DESIGNED BY:	D. EPSTEIN
DRAWN BY:	D. STEVENS

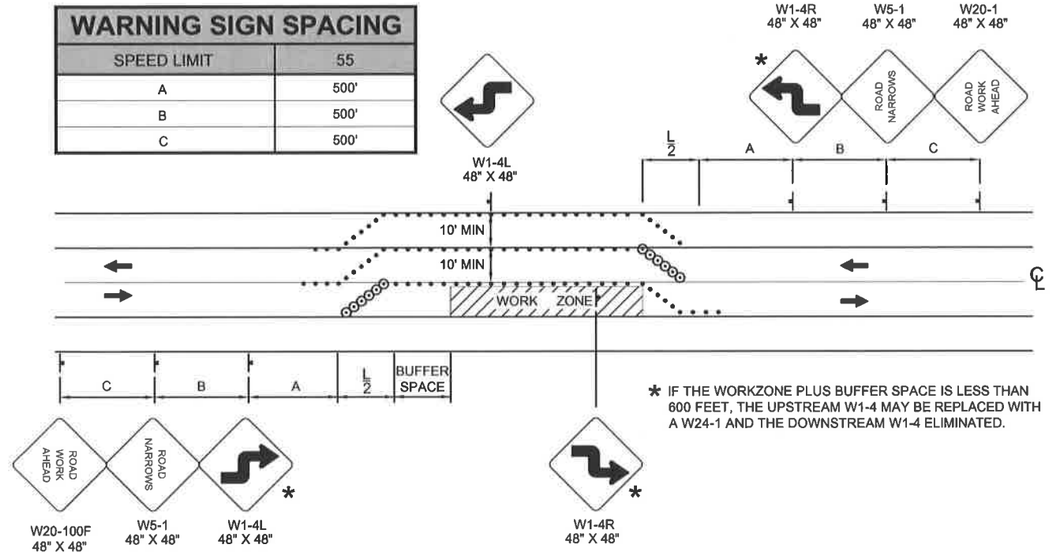
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
SOUTHCOAST REGION

JNU GLACIER HIGHWAY SAFETY IMPROVEMENTS (HSIP)

EROSION SEDIMENT CONTROL PLAN

PROJECT DESIGNATION NUMBER	
SFHWY00041~0933(045)	
STATE	YEAR
ALASKA	2016
SHEET NUMBER	TOTAL SHEETS
Q1	9

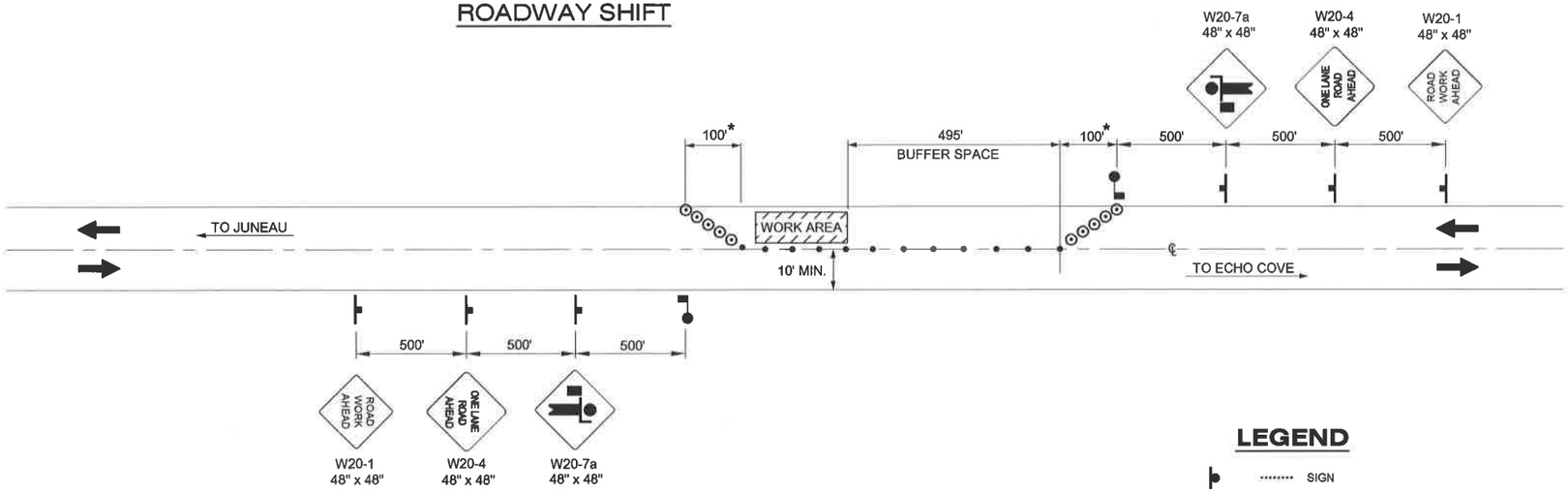
WARNING SIGN SPACING	
SPEED LIMIT	55
A	500'
B	500'
C	500'



* IF THE WORKZONE PLUS BUFFER SPACE IS LESS THAN 600 FEET, THE UPSTREAM W1-4 MAY BE REPLACED WITH A W24-1 AND THE DOWNSTREAM W1-4 ELIMINATED.

TCP SETUP TABLE									
	MIN MERGING TAPER LENGTH, (L) IN FEET			MIN NUMBER OF DEVICES WIDTH OF OFFSET (W) IN FEET			MAX DEVICE SPACING IN FEET		BUFFER SPACE
SPEED LIMIT (MPH)	10'	11'	12'	10'	11'	12'	ALONG TAPER	ALONG TANGENT	(FT)
55	550	605	660	11	12	13	55	110	495

ROADWAY SHIFT



GLACIER HIGHWAY
LEFT LANE CLOSURE

* TAPERS ARE 6 DEVICES EVENLY SPACED

LEGEND

- SIGN
- CONE
- DRUM
- FLAGGING STATION

TRAFFIC CONTROL NOTES:

1. A MINIMUM OF ONE 10 FOOT LANE SHALL BE MAINTAINED AT ALL TIMES, THROUGH ALL WORK AREAS.
2. TWO LANES SHALL BE MAINTAINED AT ALL TIMES IN NON-WORK AREAS AND DURING NON-WORK HOURS.
3. THE LENGTH OF WORK AREA SHALL BE MINIMIZED TO AVOID EXCESSIVE TRAFFIC DELAYS AS DIRECTED BY THE ENGINEER.
4. IT IS THE INTENT OF THIS TRAFFIC CONTROL PLAN (TCP) TO ILLUSTRATE SOME, NOT ALL, OF THE TRAFFIC CONTROL SETUPS WHICH WILL BE REQUIRED ON THIS PROJECT. ALL TCP'S SHALL BE CREATED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR APPROVAL. TRAFFIC CONTROL SHALL CONFORM TO THE ALASKA TRAFFIC MANUAL AND THE MUTCD.
5. AT THE END OF EACH WORK SHIFT, INSTALL DRUMS OR TYPE II BARRICADES WITH FLASHING YELLOW WARNING LIGHTS TO DELINEATE INCOMPLETE SECTIONS OF GUARDRAIL AND TERMINAL SECTIONS.

PATH:
Q:\Jnu\00041\TR\0933045 Glacier Hwy Safety
Fri, 15/Jul/16 10:37AM
PLOT:
PSPACE 1=1(F) OR MSPACE 1=1(F)
TAB: TYPICALS

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RECORD OF REVISIONS

No.	DATE	DESCRIPTION

JNU GLACIER HIGHWAY
SAFETY IMPROVEMENTS
(HSIP)

TRAFFIC CONTROL PLAN

TCP NOT SEALED IN ACCORDANCE WITH ALASKA HIGHWAY PRECONSTRUCTION MANUAL SECTION 1400.3.5 DATED JANUARY 30, 2012.

DESIGNED BY: D. EPSTEIN
DRAWN BY: D. STEVENS

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
SOUTHCOAST REGION

JNU GLACIER HIGHWAY SAFETY IMPROVEMENTS (HSIP)

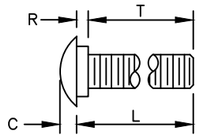
TRAFFIC CONTROL PLAN

PROJECT DESIGNATION NUMBER
SFHWY00041~0933(045)

STATE	YEAR
ALASKA	2016
SHEET NUMBER	TOTAL SHEETS
T1	9

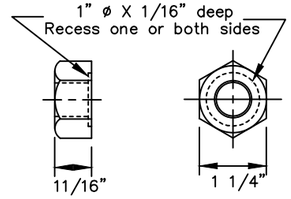
GENERAL NOTES:

1. All covered hardware shall comply with the AASHTO/AGC/ARTBA "A Guide to Standardized Highway Barrier Hardware", latest edition.

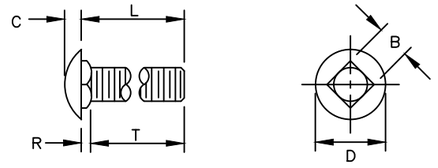


B	C	D	L (Length)	R	T (Thread Length)
15/16"	5/16"	1 5/16" or 1 7/16"	As Required	7/32"	As Required

5/8" BUTTONHEAD BOLT

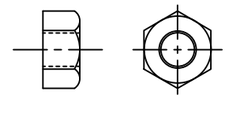


5/8" Dia. RECESSED HEX NUT

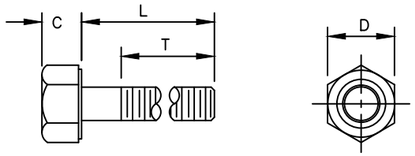


B	C	D	L (Length)	R	T (Thread Length)
5/8"	5/16"	1 5/16"	As Required	3/16"	As Required

5/8" Dia. CARRIAGE BOLT

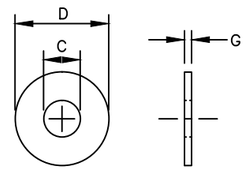


STANDARD HEX NUT



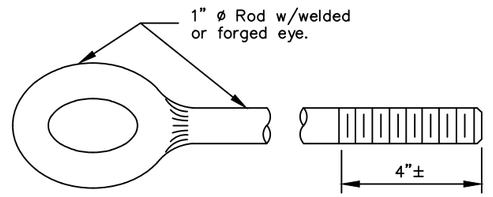
Bolt Size	C	D	L (Length)	T (Thread Length)
5/16"	——	——	1 1/2"	7/8"
5/16"	——	——	1"	1"
3/8"	——	——	7 1/2"	1 1/2"
1/2"	——	——	1 1/2"	1 1/2"
1/2"	——	——	1 1/4"	1 1/4"
5/8" H.S.	5/16"	7/8"	8"	1 1/2"
5/8"-11	——	——	1 1/2"	1 1/2"
3/4"	——	——	1 1/2"	1 1/2"
3/4"	——	——	As Required	2"
3/4" H.S.	15/32"	1 1/4"	2"	1 1/2"

STANDARD HEX BOLTS



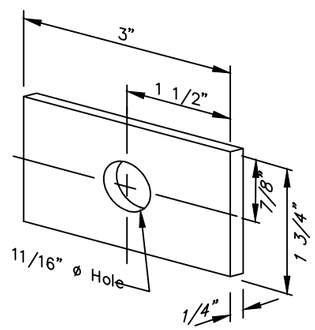
For Bolt ø	C	D	G
3/8"	7/16"	1"	5/64"
1/2"	17/32"	1 1/16"	3/32"
1/2" H.S.	17/32"	1 1/16"	3/32"
5/8"	11/16"	1 3/4"	9/64"
3/4"	13/16"	1 15/32"	9/64"
3/4" H.S.	13/16"	2"	5/32"
1"	1 1/16"	2"	9/64"

STANDARD STEEL WASHERS

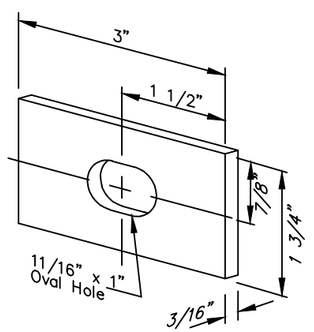


EYE BOLT

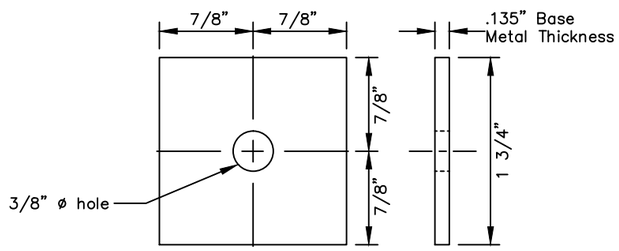
PROJECT AS-BUILT DRAWINGS HAVE BEEN REVIED BY THE PROJECT ENGINEER AND REPRESENT TO THE BEST OF MY KNOWLEDGE THE PROJECT AS CONSTRUCTED.
PE:
DATE:12/5/2016 Emily Delaney



FLAT PLATE WASHER



RECTANGULAR POST BOLT WASHER



SQUARE STEEL WASHER

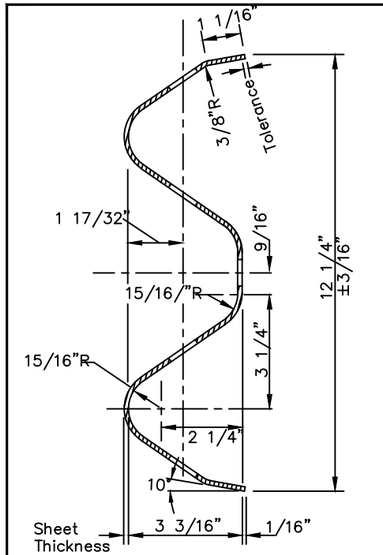
REVISIONS		
Date	Description	By
3/15/99	Delete BCT Hardware	KJS

State of Alaska
Department of Transportation
& Public Facilities

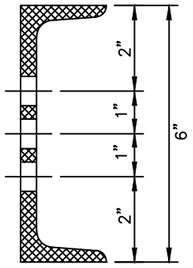
STANDARD GUARDRAIL HARDWARE
(NUTS, BOLTS, WASHERS)

APPROVED
Date 5/31/12

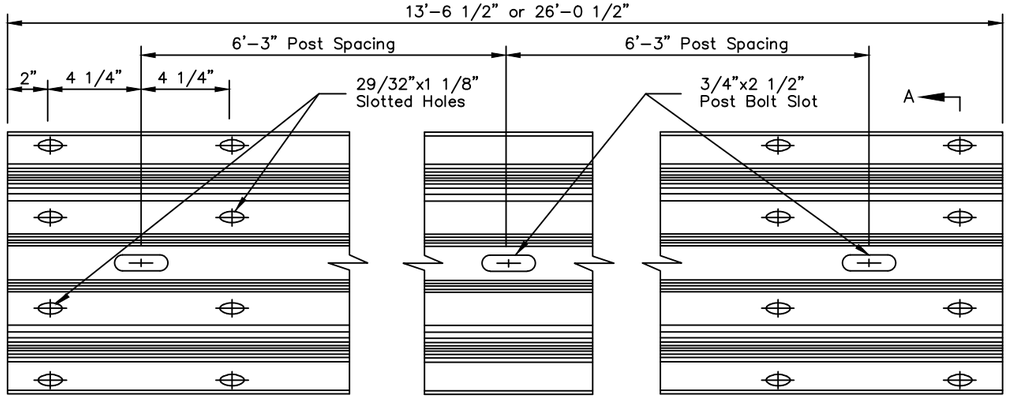
G-00.02



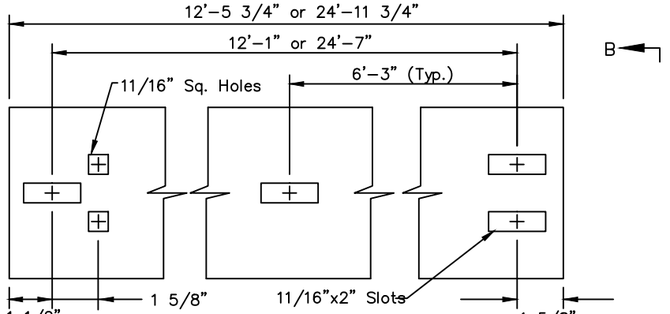
SECTION A–A



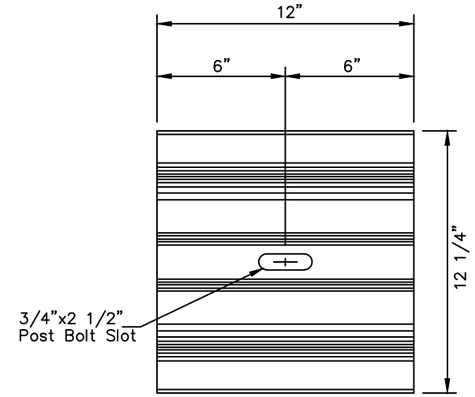
SECTION B–B



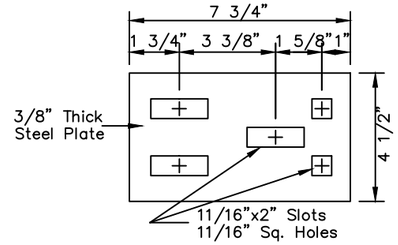
STANDARD W–BEAM PANEL



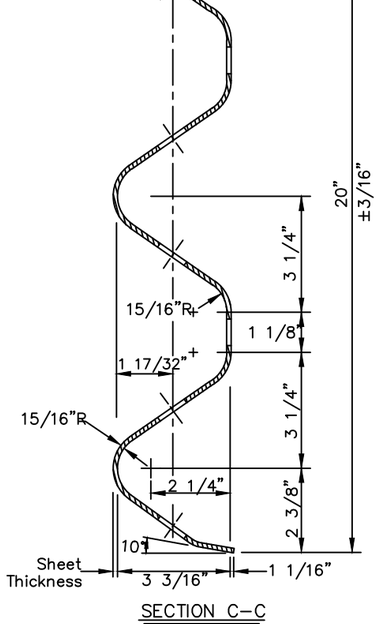
C6 x 8.2 RUB RAIL
ASTM A36 STEEL



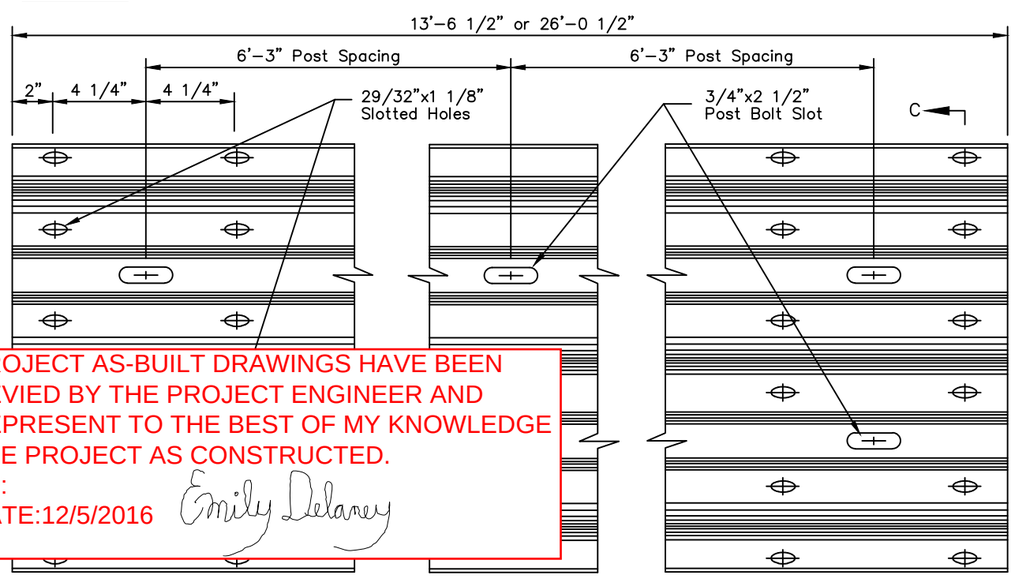
W–BEAM BACKUP PLATE



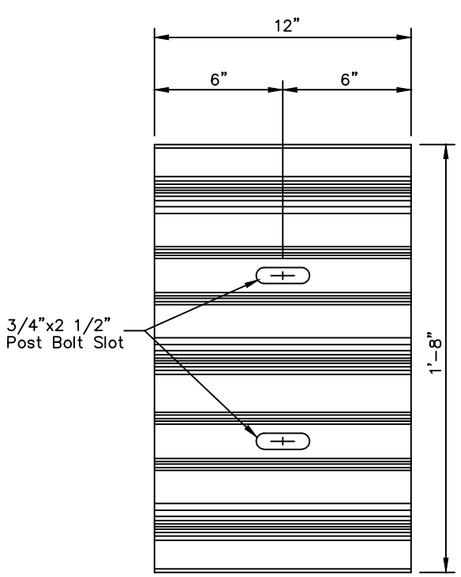
SPLICE PLATE
ASTM A36 STEEL



SECTION C–C



STANDARD THRIE BEAM PANEL



THRIE BEAM BACKUP PLATE

PROJECT AS-BUILT DRAWINGS HAVE BEEN REVIED BY THE PROJECT ENGINEER AND REPRESENT TO THE BEST OF MY KNOWLEDGE THE PROJECT AS CONSTRUCTED.
PE:
DATE:12/5/2016 Emily Delaney

GENERAL NOTES:

1. Provide hardware compliant with the AASHTO/AGC/ARTBA "A Guide to Standardized Highway Barrier Hardware, latest edition.
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.
3. Provide Thrie beam and W–beam compliant with AASHTO M180A. Use 12 gauge (0.105") thick steel for both.

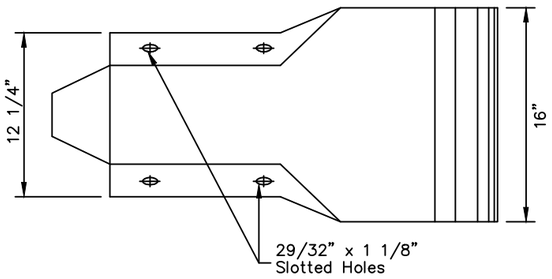
REVISIONS		
Date	Description	By
4/28/10	Revise General Notes	KJS

State of Alaska
Department of Transportation
& Public Facilities

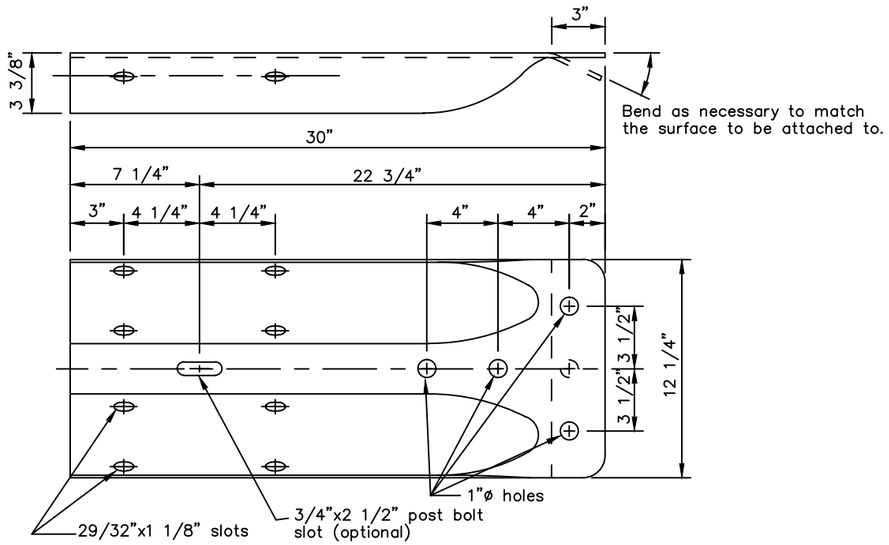
STANDARD GUARDRAIL HARDWARE (RAILS AND SPLICES)

APPROVED
Date 5/31/12

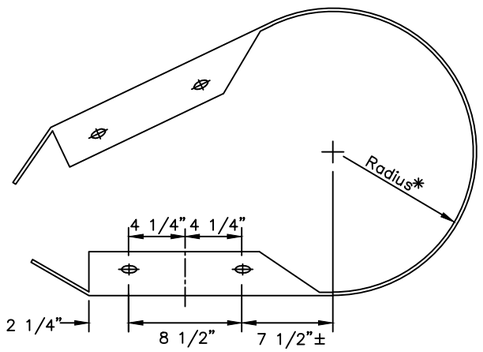
G-00.02



PROFILE



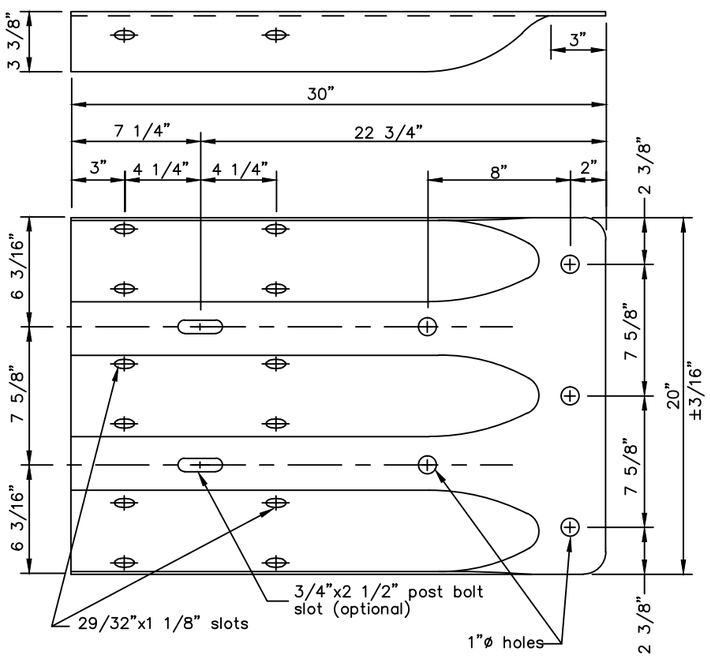
STANDARD W-BEAM TERMINAL CONNECTOR



W-BEAM PLAN VIEW

*Radius to be specified on the plans

STANDARD W-BEAM END SECTION



STANDARD THRIE BEAM TERMINAL CONNECTOR

GENERAL NOTES:

1. W-Beam and Thrie Beam Terminal Connectors shall conform to AASHTO M180, Class B, Type 2.
2. W-Beam end sections shall conform to AASHTO M180, Class A, Type 2.
3. All covered hardware shall comply with the AASHTO/AGC/ARTBA "A Guide to Standardized Highway Barrier Hardware", latest edition.

PROJECT AS-BUILT DRAWINGS HAVE BEEN REVIED BY THE PROJECT ENGINEER AND REPRESENT TO THE BEST OF MY KNOWLEDGE THE PROJECT AS CONSTRUCTED.
PE:
DATE:12/5/2016 Emily Delaney

REVISIONS		
Date	Description	By
3/15/99	Delete Thrie End Sect.	KJS

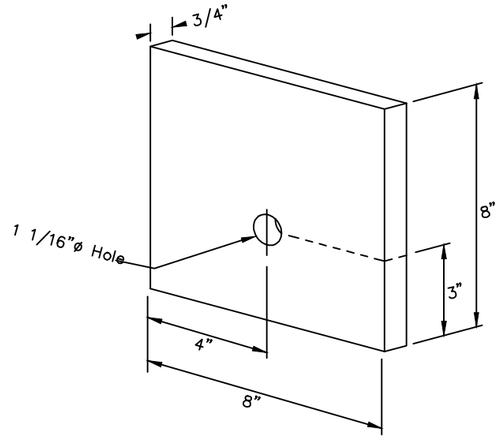
State of Alaska
Department of Transportation
& Public Facilities

STANDARD GUARDRAIL HARDWARE (TERMINAL CONNECTORS)

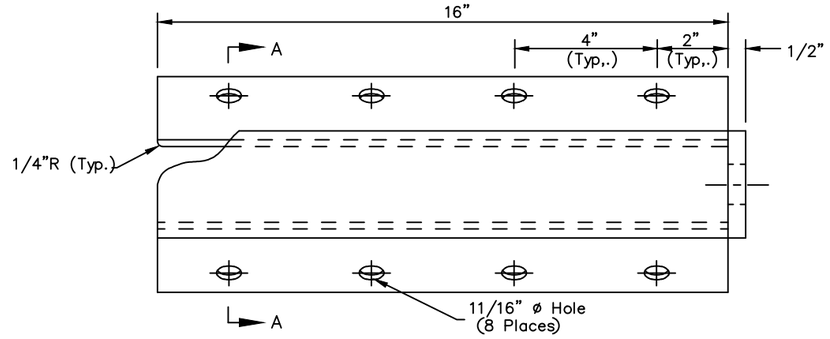
APPROVED
49TH STATE OF ALASKA
Kurtis A. Smith
SE-7347
4/28/10

Date 5/31/12

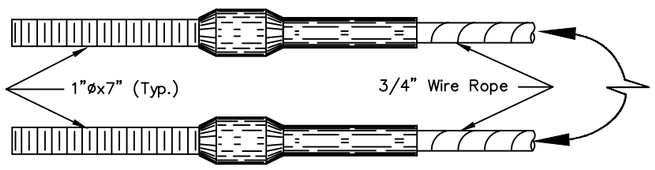
G-00.02



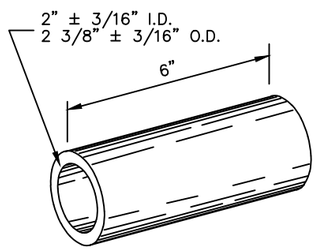
BEARING PLATE for CRT TERMINAL ANCHOR



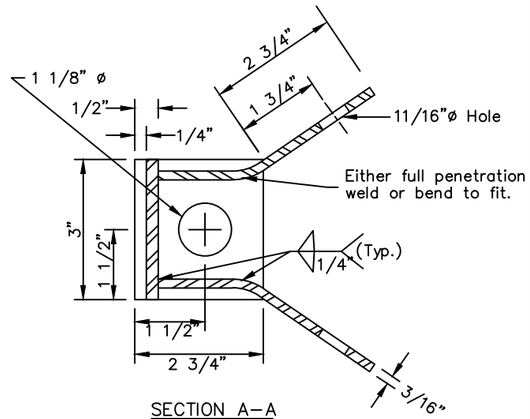
CABLE ANCHOR PLATE



SWAGED FITTING DETAIL



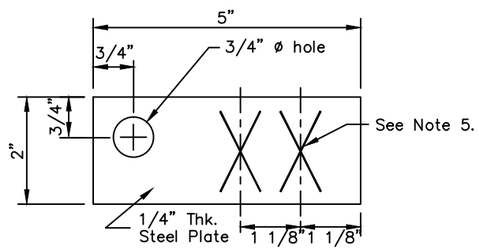
SLEEVE DETAIL



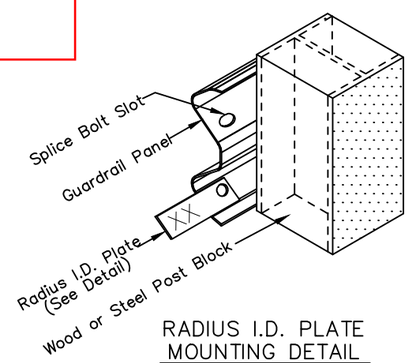
SECTION A–A

ED RELEASE TERMINAL HARDWARE DETAILS

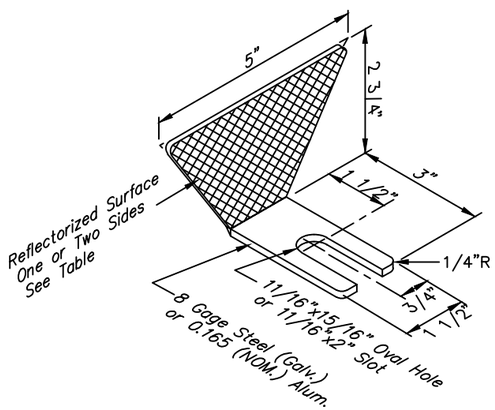
PROJECT AS-BUILT DRAWINGS HAVE BEEN REVIED BY THE PROJECT ENGINEER AND REPRESENT TO THE BEST OF MY KNOWLEDGE THE PROJECT AS CONSTRUCTED.
PE:
DATE:12/5/2016 Emily Delaney



RADIUS I.D. PLATE



RADIUS I.D. PLATE MOUNTING DETAIL



GUARDRAIL REFLECTOR

Type	Guardrail Reflectors 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 shall conform to AASHTO M–30 with Type II Wire Rope.
3. Sleeve for Wood Posts shall conform to the requirements of ASTM A120 and shall be of 2–inch galvanized standard pipe. Sleeve shall be a tight, pressed fit in post.
4. Bolts, nuts and washers shall conform to ASTM A–325 and galvanized in accordance with ASTM A–153.
5. Radius ID plates shall be attached to all shop–bent guardrail sections. They shall be bolted to the back side of the guardrail panel with the lower splice bolt nearest the P.C. of the radius.
6. Rail bend radius in feet shall be shown 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". The plate shall be galvanized after digits are marked.
7. All covered hardware shall comply with the AASHTO/AGC/ARTBA "A Guide to Standardized Highway Barrier Hardware", latest edition.

REVISIONS		
Date	Description	By
3/15/99	Delete BCT Hardware	KJS

State of Alaska
Department of Transportation & Public Facilities

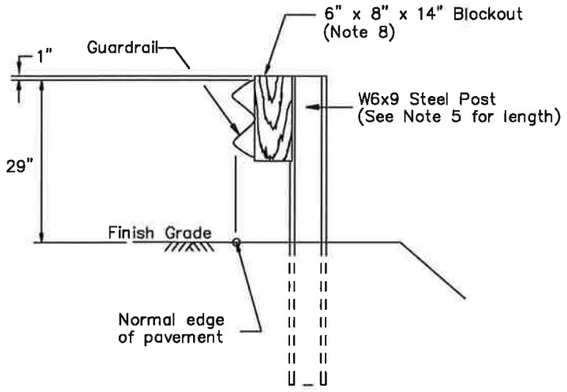
STANDARD GUARDRAIL HARDWARE (MISCELLANEOUS)

APPROVED
Date 5/31/12

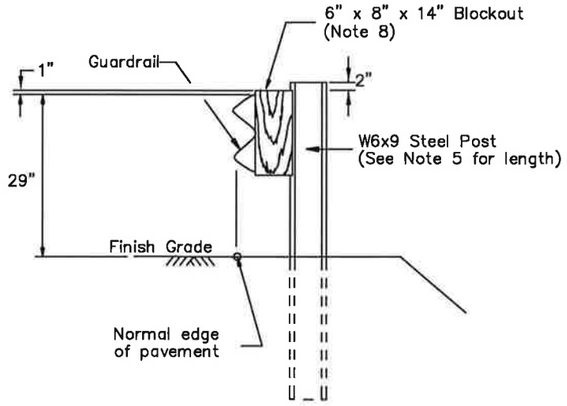
G–00.02

G-04.10S

SHEET 1 of 1

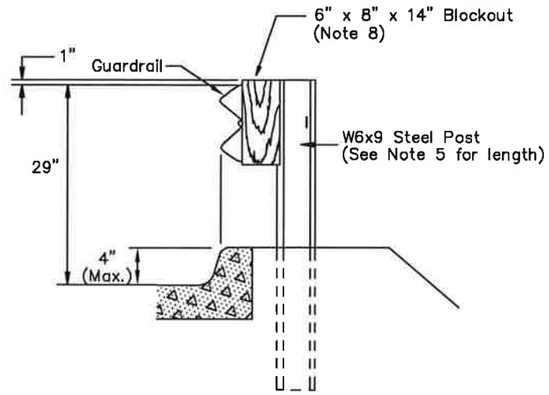


TYPE I POST INSTALLATION



TYPE II POST INSTALLATION

(Facilitates raising rail for future overlays.)



CURB DETAIL

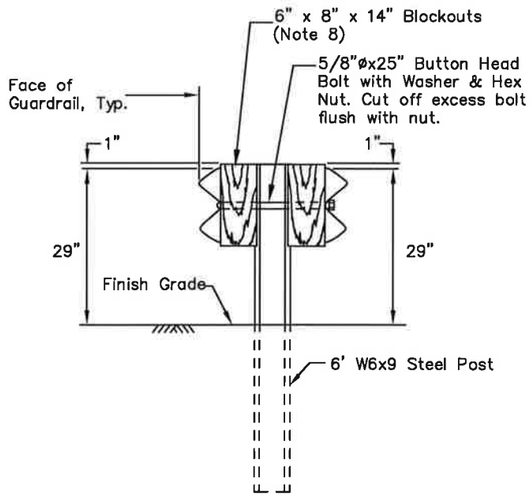
TYPE III POST INSTALLATION

NOTE: Curb should not be installed with guardrail when the speed limit exceeds 40 mph.

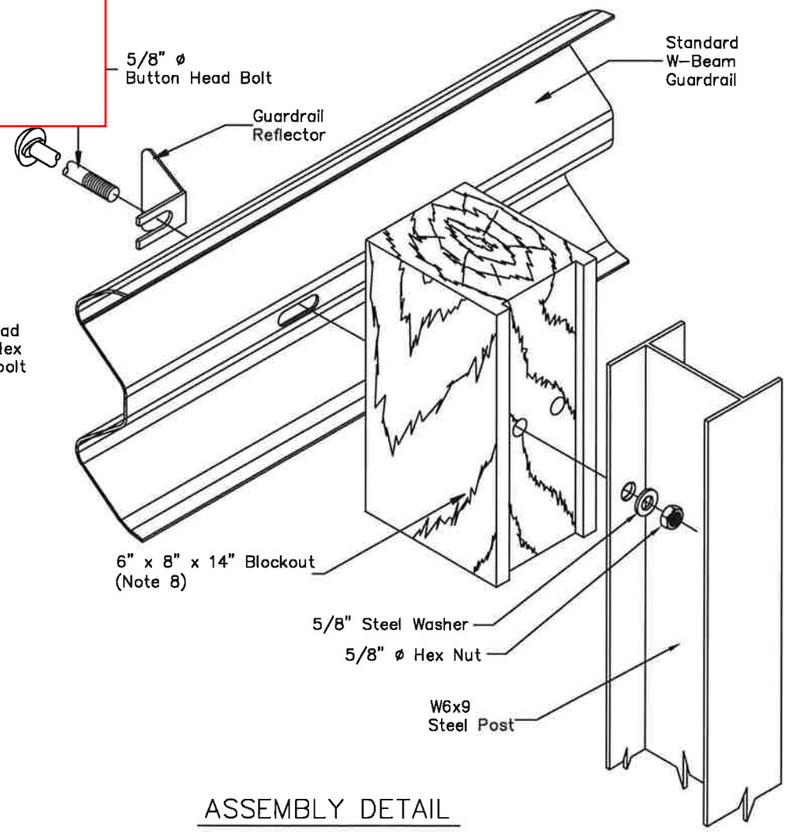
GENERAL NOTES:

1. Attach guardrail reflectors at 50' centers beginning with the first post. Use Type A reflectors unless specified otherwise.
2. Provide hardware compliant with the AASHTO/AGC/ARTBA "A Guide to Standardized Highway Barrier Hardware," latest edition.
3. See Standard Drawing G-00 for hardware details.
4. Mount rail to block with bolt on approaching traffic side of block web.
5. See Standard Drawing G-10 for post lengths corresponding to different combinations of slope and behind-post embankment width.
6. Typical post spacing is 6'-3" center to center.
7. This barrier is acceptable under NCHRP 350, TL-3.
8. Use wood, rubber, plastic, or other NCHRP 350 or MASH approved blockouts designed to be used with steel posts
9. Use 25 linear foot transition to match height of existing or new rail elements and end treatments.
10. W6x8.5 steel post may be substituted for W6x9 steel post.

PROJECT AS-BUILT DRAWINGS HAVE BEEN REVIED BY THE PROJECT ENGINEER AND REPRESENT TO THE BEST OF MY KNOWLEDGE THE PROJECT AS CONSTRUCTED.
PE:
DATE:12/5/2016 Emily Delaney

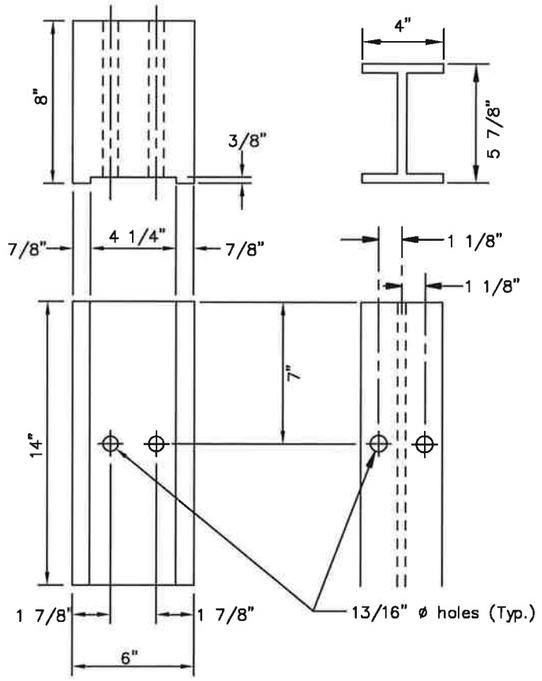


TYPE IV DOUBLE SIDED INSTALLATION



ASSEMBLY DETAIL

(Type I post shown)



BACK

6" x 8"
WOOD BLOCK

FACE

W6x9
STEEL POST

REVISIONS		
Date	Description	By
3/1/83	Revised gen. notes	Gdo
1/1/86	Revised hanger detail	Gdo
3/15/99	Block and post length	KJS
4/1/13	Add double-sided detail and increase g.r. height	JCJ

State of Alaska
Department of Transportation
& Public Facilities

STEEL POST
W-BEAM GUARDRAIL

APPROVED
Date 05/15/13

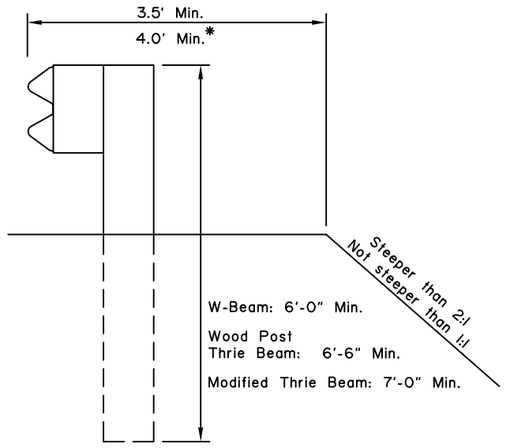
G-04.10S

G-10.01

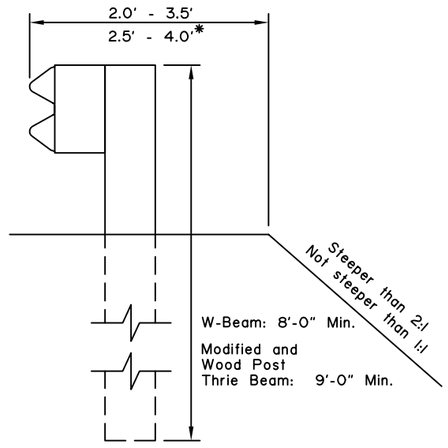
SHEET | of |

GENERAL NOTES:

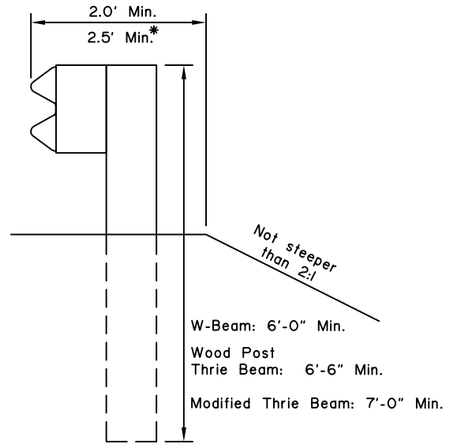
1. This drawing is to be used for post length determination only. See the plans for slopes and behind-post embankment widths.
2. To determine post length, identify the case that matches site conditions and read the length corresponding to the pertinent guardrail type.
3. These dimensions apply to both curbed and uncurbed sections.



CASE 1



CASE 2



CASE 3

* with Modified Thrie Beam'

PROJECT AS-BUILT DRAWINGS HAVE BEEN REVIED BY THE PROJECT ENGINEER AND REPRESENT TO THE BEST OF MY KNOWLEDGE THE PROJECT AS CONSTRUCTED.
PE:
DATE:12/5/2016
Emily Delaney

REVISIONS		
Date	Description	By
12/2/99	Delete Case 4,5, and 6	KJS

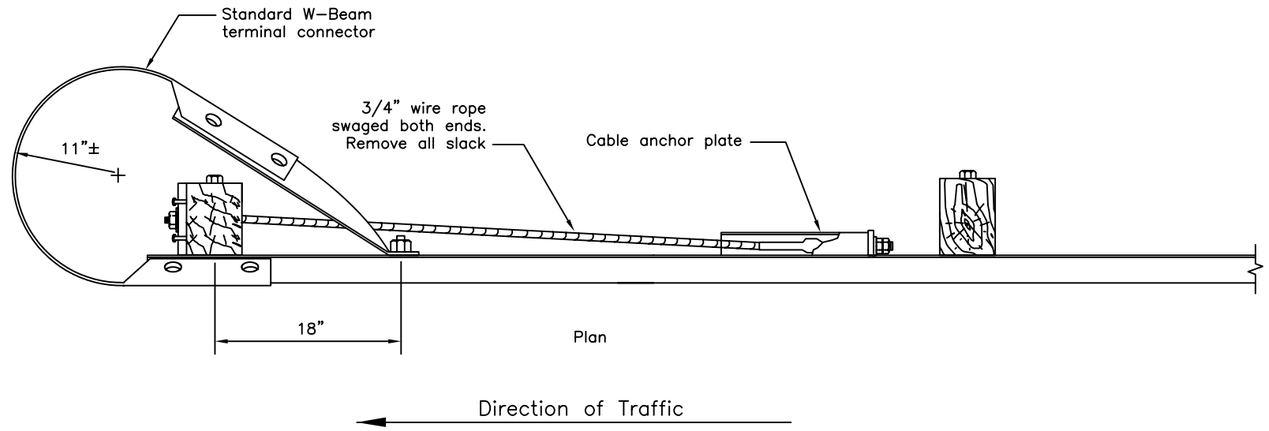
State of Alaska
Department of Transportation
& Public Facilities

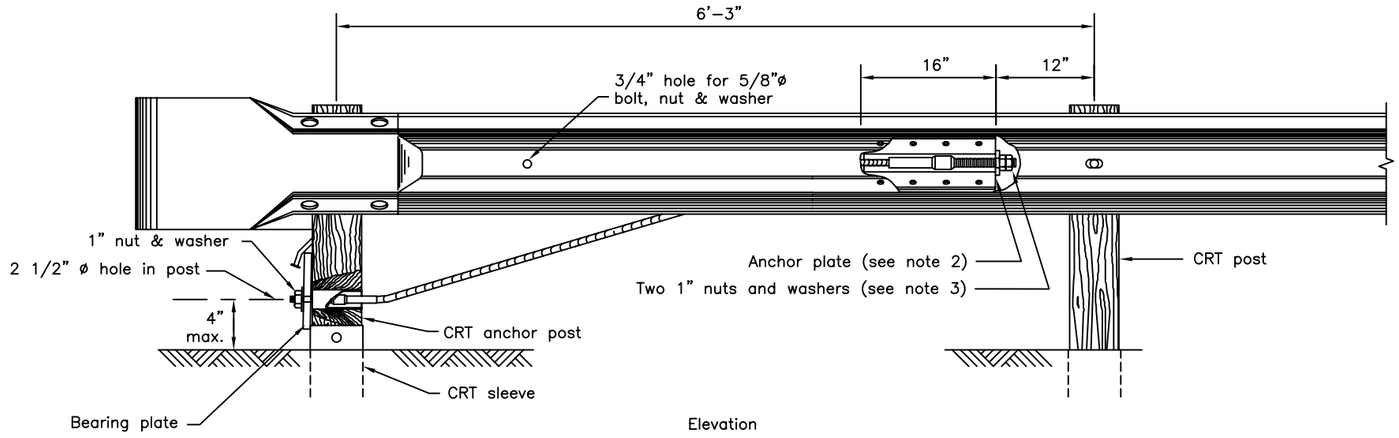
BEAM GUARDRAIL POST INSTALLATION

APPROVED
49TH STATE
Kurtis J. Smith
CE-7347
Date 3/15/99

G-10.01

G-13.00





TERMINAL ANCHOR

PROJECT AS-BUILT DRAWINGS HAVE BEEN REVIED BY THE PROJECT ENGINEER AND REPRESENT TO THE BEST OF MY KNOWLEDGE THE PROJECT AS CONSTRUCTED.
PE:
DATE:12/5/2016
Emily Delaney

GENERAL NOTES:

1. Hardware details not shown here shall conform to drawings G–00, G–04W, G–25W
2. Fasten anchor plate to rail with eight 5/8" x 1 1/2" machine bolts with hex nut and washer. Place washer on face side of rail.
3. Torque outside nut against inside nut a minimum of 100 ft–lbs.
4. Toenail bearing plate with two 10d galvanized nails at corners to prevent turning.
5. All covered hardware shall comply with the AASHTO/AGC/ARTBA "A Guide to Standardized Highway Barrier Hardware", latest edition.
6. This assembly will typically be used on the downstream ends of guardrail runs on one–way streets.
7. This assembly is generally not intended for divided highway applications due to possible 2–way construction detours. Designer should consider future detouring needs when deciding whether to use this terminal.
8. This design does not meet NCHRP 350 TL 3 standards. It is not intended as a crash worthy barrier end treatment for approach end impacts.

REVISIONS		
Date	Description	By

Sheet 1 of 1

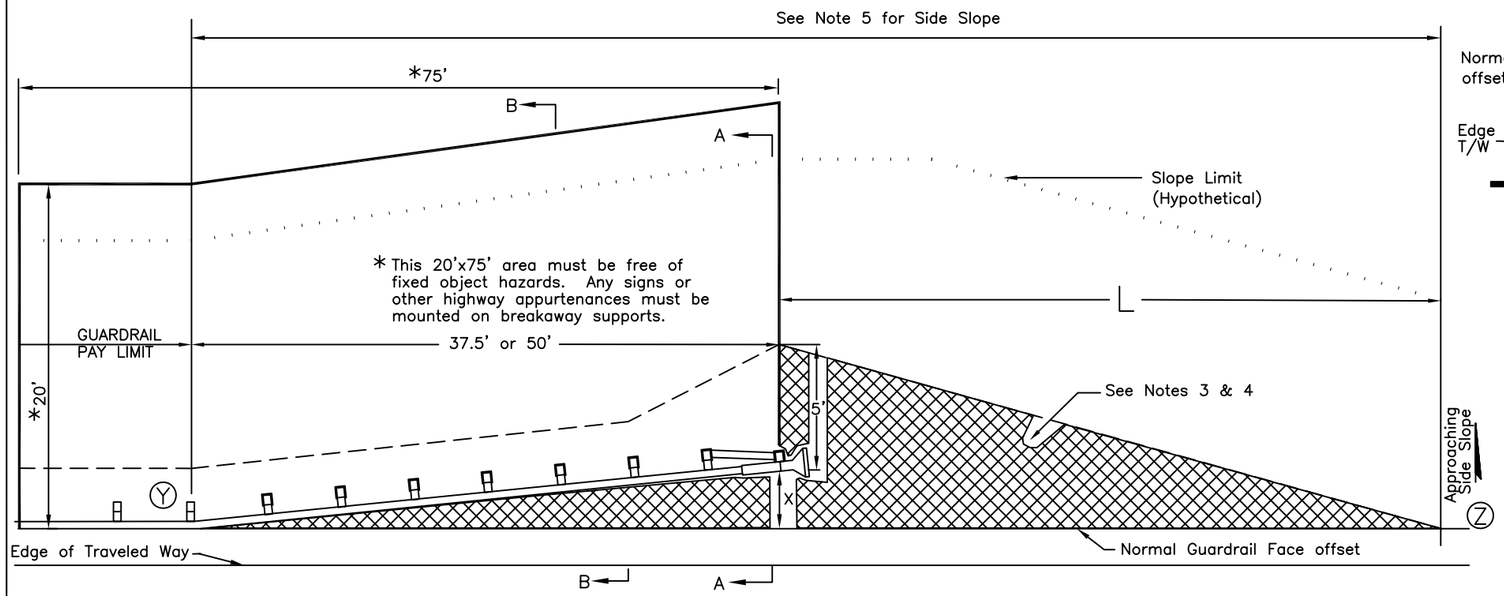
State of Alaska
Department of Transportation
& Public Facilities

W BEAM GUARDRAIL
DOWNSTREAM END
ANCHOR

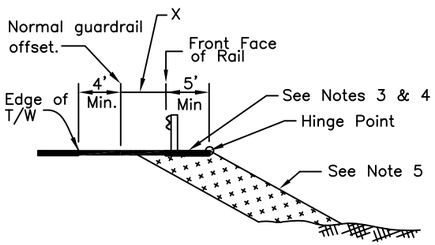
APPROVED
Date 2/28/03

G–13.00

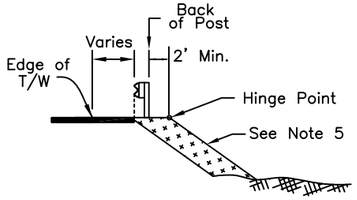
G-20.11



STANDARD GUARDRAIL TERMINAL WIDENING DETAIL



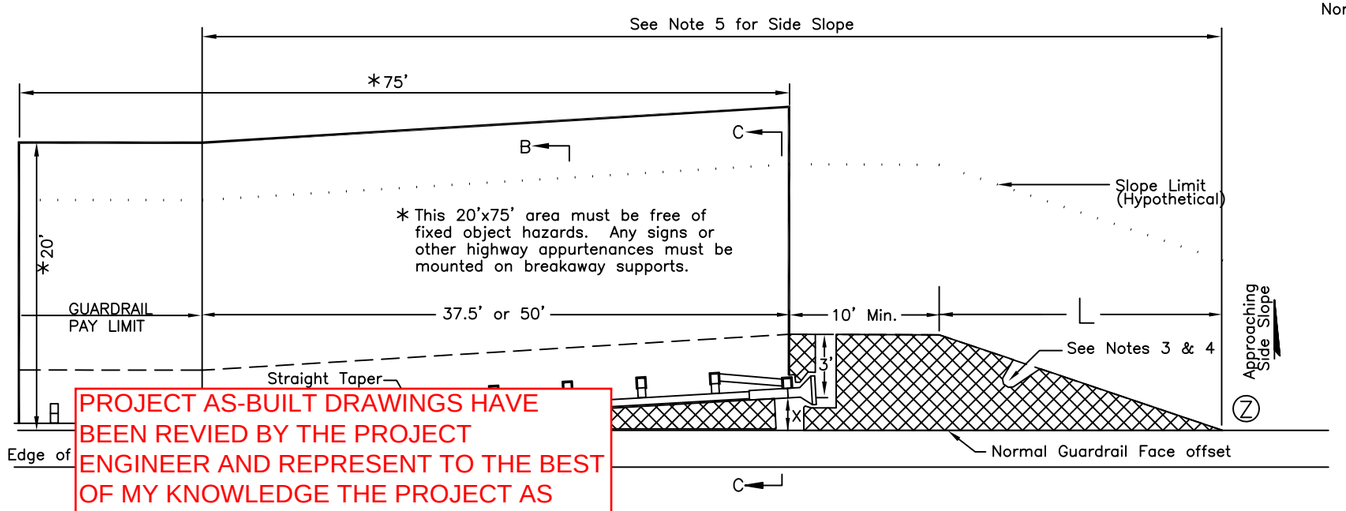
SECTION A–A



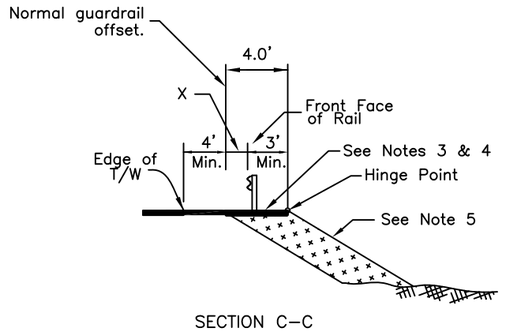
SECTION B–B
(Applies to both drawings)

GENERAL NOTES:

1. The standard detail applies to all approved guardrail terminals, including those with parabolic flares. The alternate detail may only be used with straight terminals. The terminal details shown are for illustration only – see manufacturer's drawings for actual post, rail, etc. drawings.
2. Use the standard detail for all terminals except when upgrading existing non–NCHRP 350 or MASH compliant terminals to NCHRP 350 or MASH compliant terminals where site conditions make the use of the standard detail infeasible. In that case, use the alternate detail.
3. Construct the hatched areas to match the slope of the adjacent shoulder to a maximum slope of 10:1. Maintain 10:1 for steeper shoulders. Match the slope when the shoulder slopes toward the road as well as away from the road.
4. On paved roads, the hatched areas shall be paved. On gravel roads, surface the hatched areas with the same materials used to surface the travel lanes.
5. From point Ⓨ to point Ⓩ make the side slope match the approaching side slope except where it is flatter than 4:1. In that case, the slope may be steepened to 4:1.
6. Attach a flexible marker to the first point (where the flare begins) and the end post of each terminal.
7. The maximum allowable height for foundation tubes or other steel components of terminal post breakaway systems is 4 inches above the surrounding grade.
8. The details on this sheet do not apply to Controlled Release Terminals (G–25) or Downstream End Anchors (G–13).
9. On two–way undivided roads, the details on this sheet do apply to NCHRP 350 or MASH compliant guardrail terminals on both the approach and downstream ends.



TERMINAL WIDENING DETAIL



SECTION C–C

X: End offset. See manufacturer's information for the range of acceptable (NCHRP 350 or MASH compliant) end offsets for each terminal.

Taper Lengths (L)
for Common End Offsets (X)

End Offset	Standard Detail	Alternate Detail
0'	15.0'	10.0'
1'	17.0'	10.0'
1.5'	20.0'	15.0'
2'	22.0'	15.0'
2.5'	25.0'	15.0'
4'	30.0'	20.0'

Interpolate if the end offset falls between table values

PROJECT AS-BUILT DRAWINGS HAVE BEEN REVIED BY THE PROJECT ENGINEER AND REPRESENT TO THE BEST OF MY KNOWLEDGE THE PROJECT AS CONSTRUCTED.
PE:
DATE:12/5/2016

REVISIONS		
Date	Description	By
3/6/02	Change ET Offset	KJS
2/28/03	Major Revisions	KJS
4/28/10	Revise General Notes	KJS

Sheet 1 of 1

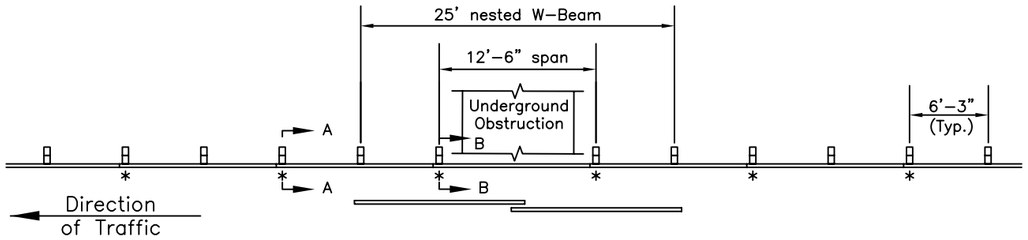
State of Alaska
Department of Transportation
& Public Facilities

WIDENING FOR GUARDRAIL END TERMINALS

APPROVED
Date 5/31/12

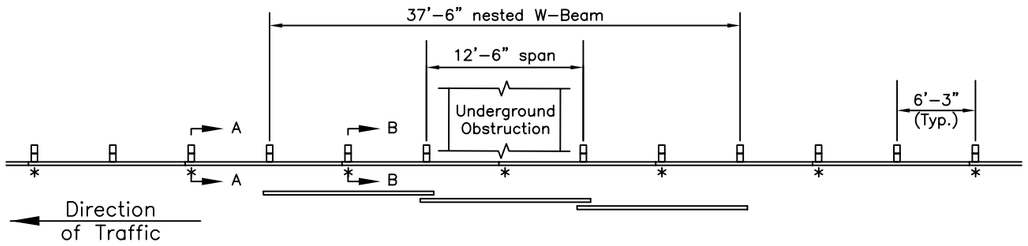
G–20.11

G-28.00



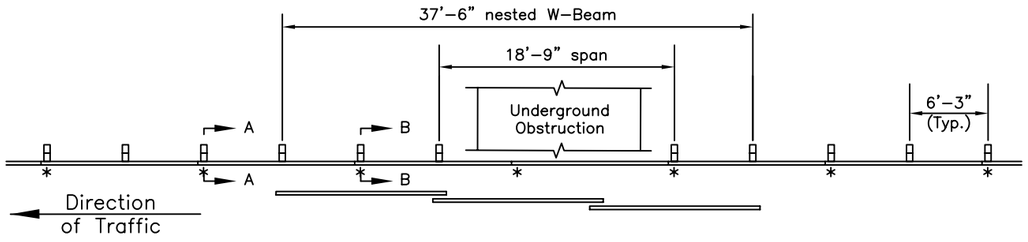
CASE A – ONE POST OMITTED (NESTED RAIL SPLICE AT OMITTED POST)

For obstruction widths up to 10'–6"



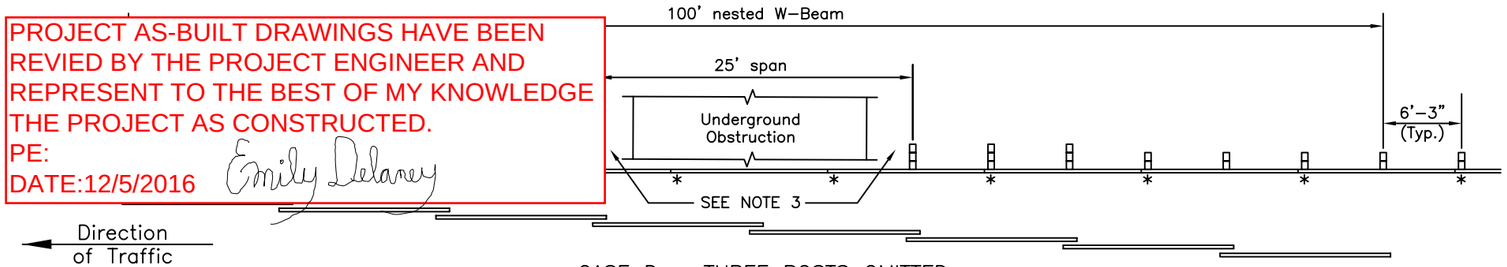
CASE B – ONE POST OMITTED (NESTED RAIL SPANS OMITTED POST)

For obstruction widths up to 10'–6"



CASE C – TWO POSTS OMITTED

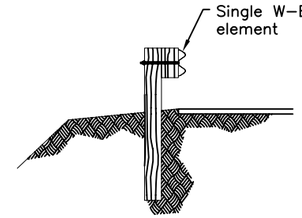
For obstruction widths from 10'–6" to 16'–9"



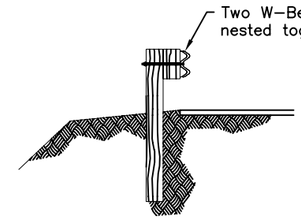
CASE D – THREE POSTS OMITTED

For obstruction widths from 16'–9" to 20'–6"

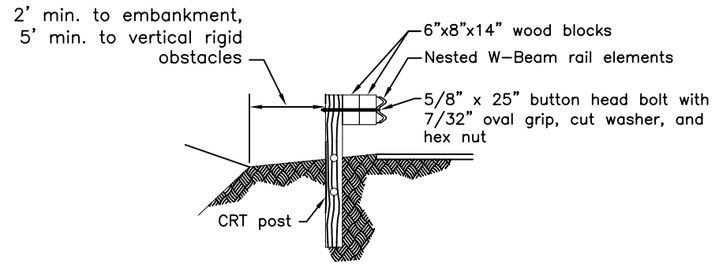
* Designates Splice Location



SECTION A–A



SECTION B–B



SECTION C–C

CROSS SECTIONS

GENERAL NOTES

1. See Standard Drawings G–00, G–04, G–10 for additional details, and G–25 Sheet 1 of 3 for CRT post details.
2. For one–way traffic locations Case D may be modified so that only the posts trailing the span are CRT posts with double blocks.
3. In Case D only, provide 2' minimum clearance between posts and underground obstruction.
4. Standard steel posts with standard wood blocks (or NCHRP 350 compliant synthetic blocks) may be used for all posts except those indicated to be CRT posts.
5. Install nested rail element with leading edge lapped behind primary rail element.
6. Cases A and B were tested under NCHRP 230 guidelines but the FHWA considers them equivalent to an NCHRP 350 Test Level 2 design. Case C has not been tested (as of March, 03) but the FHWA considers it equivalent to an NCHRP 350 Test Level 3 design. Case D is NCHRP 350 Test Level 3 tested and approved.

PROJECT AS-BUILT DRAWINGS HAVE BEEN REVIED BY THE PROJECT ENGINEER AND REPRESENT TO THE BEST OF MY KNOWLEDGE THE PROJECT AS CONSTRUCTED.
PE:
DATE:12/5/2016 Emily Delaney

REVISIONS		
Date	Description	By

Sheet 1 of 1

State of Alaska
Department of Transportation & Public Facilities

LONG SPAN
W BEAM GUARDRAIL

APPROVED
Date 2/28/03

G–28.00