

DESIGNED BY: LG, IT, NG
CHECKED BY: LG, IT, NG
DATE: 6/30/2016 11:58
SCALE: A1
LAYOUT: A1
DRAWING LOCATION: G:\K\69420\Plans\69420_A1_Title.dwg

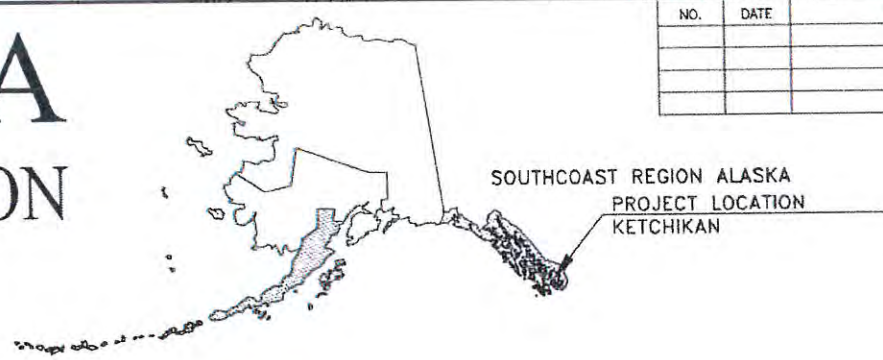
STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

PROPOSED HIGHWAY PROJECT KTN TROLLERS CREEK BRIDGE #0864 REPLACEMENT PROJECT No. Z694200000

BRIDGE CONSTRUCTION, GRADING, DRAINAGE, PAVING, GUARDRAIL, & SIGNING

August 17, 2016



NO.	DATE	REVISIONS	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL 'A' SHEETS
			ALASKA	Z694200000	2016	A1	3
						PLAN SET TOTAL	21
			CDS ROUTE: 291570		MILEPOINT: 0.08 TO 0.09		
			LATITUDE: N55.4684		LONGITUDE: W131.7985		

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
A1	TITLE SHEET
A2	LEGEND & SHEET LAYOUT INDEX
A3	SURVEY CONTROL PLAN
B1	TYPICAL SECTIONS <i>See Revision</i>
C1	ESTIMATE OF QUANTITIES
D1	MISCELLANEOUS SUMMARIES
E1	GRADING PLAN & ELEVATION
F1	PLAN & PROFILE <i>See Revision</i>
N1-N11	BRIDGE PLANS <i>See Revision</i>
P1	EROSION & SEDIMENT CONTROL PLAN
T1	TRAFFIC CONTROL PLAN

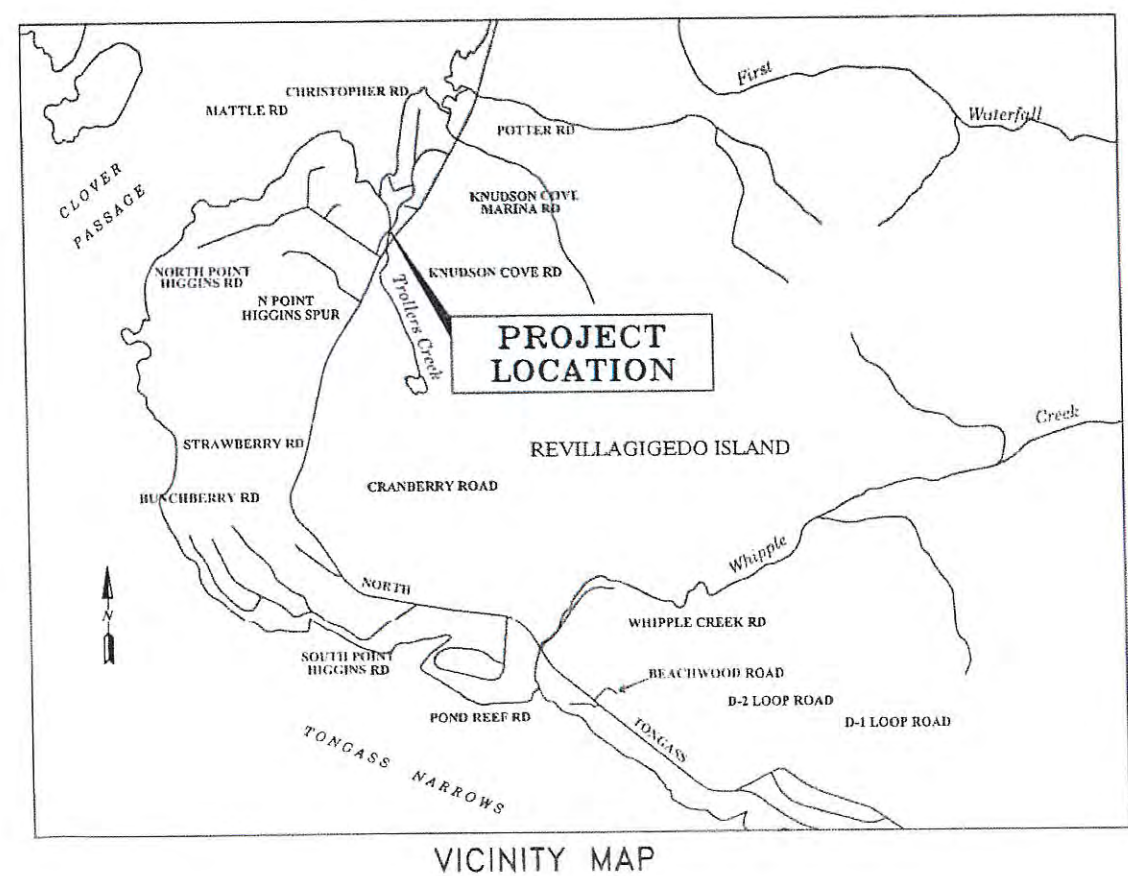
The undersigned hereby certifies that this duplicated document is an exact and true copy of the original.

Cody Butler

PROJECT SUMMARY	
	KNUDSON COVE ROAD
WIDTH OF CHIP SEAL	28 FT
LENGTH OF CHIP SEAL	141 FT
LENGTH OF PROJECT	305 FT
LENGTH OF BRIDGE	124 FT

DESIGN DESIGNATIONS	
FUNCTIONAL CLASS	URBAN COLLECTOR
ADT (2014)	460
ADT (2064)	590
DHV (10.7%) 2014	50
DHV (10.7%) 2064	60
PERCENT TRUCKS (T)	13.1%
DIRECTIONAL SPLIT (D)	55/45
DESIGN SPEED (V)	25 MPH
DESIGN EAL'S (5 YEARS/75 YEARS)	350,000

USE THESE PLANS IN CONJUNCTION WITH THE STATE OF ALASKA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2015 EDITION (OR CURRENT EDITION AS THE ELECTRONIC SPEC CHANGES) AND THE PROJECT SPECIAL PROVISIONS.



THE FOLLOWING STANDARD DRAWINGS APPLY TO THIS PROJECT:

- | | |
|----------|---------|
| G-00.02 | S-00.11 |
| G-04.10S | S-01.00 |
| G-10.01 | S-05.01 |
| G-13.00 | S-32.00 |
| G-20.11 | |
| G-46.11 | |

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. *MP* Date *11-13-17*

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
SOUTHCOST REGION
6860 GLACIER HIGHWAY
JUNEAU, AK 99811-2506
(907)465-1763



APPROVED: <i>Potter</i>	6-30-16
REGIONAL PRECONSTRUCTION ENGINEER	DATE
CONCUR: <i>Potter FOK</i>	6-30-16
SOUTHCOST REGIONAL DIRECTOR	DATE
CERTIFIED TRUE & CORRECT AS-BUILT OF ACTUAL FIELD CONDITION:	
CONSTRUCTION PROJECT MANAGER	DATE

NO.				DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
						ALASKA	Z694200000	2016	A2	3

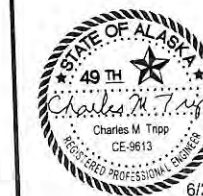
		EXISTING	PROPOSED
BLM MONUMENT			
GLO MONUMENT			
USC&GS MONUMENT			
PRIMARY MONUMENT			
CENTERLINE MONUMENT IN CASING			
PRIMARY R.O.W. MONUMENT			
BEARING OBJECT			
MISCELLANEOUS MONUMENT			
LINE OF SIGHT MONUMENT			
CONCRETE R.O.W. MONUMENT			
BENCHMARK			
REBAR AND CAP			
REBAR			
IRON PIPE			
PK NAIL			
SPIKE			
HUB AND TACK			
CONSTRUCTION CENTERLINE			
MICELLANEOUS CENTERLINE			
STATION EQUATION			
PROJECT RIGHT-OF-WAY LINE			
EXISTING RIGHT-OF-WAY LINE			
EXISTING PROPERTY LINE			
CONTROLLED ACCESS LINE			
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			
MEANDER LINE			

		EXISTING	PROPOSED
SANITARY SEWER (FLOW DIRECTION →)			
FUEL LINE			
GAS LINE			
WATER LINE			
METER, VALVE, FIRE HYDRANT			
EXISTING STORM DRAIN (FLOW DIRECTION →)			
PROPOSED STORM DRAIN			
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			
SANITARY SEWER CLEAN OUT			
PIPE CULVERT			

		EXISTING	PROPOSED
ROADWAY/PAVEMENT EDGE			
FENCE			
CURB AND GUTTER			
DETECTABLE WARNINGS			
GUARDRAIL			
CULVERT PIPE			
SIGN			
MAILBOX			
RAILROAD TRACKS			
RAILROAD DEVICES			
TREE LINE			
WATER BOUNDARY			
ORDINARY HIGH WATER LINE			
FLOW CENTERLINE			
FLOW DIRECTION			
WETLANDS			
EXISTING BUILDINGS			
POST OR BOLLARD			
WELL OR MONITORING WELL			
SEPTIC PIPE			
FUEL TANK FILL PIPE/VENT			
SATELLITE DISH			
TEST HOLE			
CONIFER TREE			
DECIDUOUS TREE			
GRAVE			
THERMOSIPHON			
PARKING METER			
VEHICLE PLUG-IN			
DELINEATOR/GUIDE MARKER			

		EXISTING	PROPOSED
JUNCTION BOX, TYPE IA			
JUNCTION BOX, TYPE II			
JUNCTION BOX, TYPE III			
SIGNAL FACE, VEHICULAR			
SIGNAL FACE, BACKPLATE			
SIGNAL FACE, LEFT TURN, BACKPLATE			
SIGNAL FACE, PEDESTRIAN			
LOOP DETECTOR			
VIDEO DETECTOR			
RADAR DETECTOR			
OPTICOM DETECTOR			
PEDESTRIAN PUSH BUTTON			
SIGNAL POST W/O MAST ARM			
SIGNAL POLE W/MAST ARM			
SIGNAL CONTROLLER			
LOAD CENTER			
LUMINAIRE			
RIGID METAL CONDUIT			

H	HOUSE
G	GARAGE
M	MERCHANT/STORE
B	BARN
S	SHED
P	PRIVY
SS	SERVICE STATION
W	WAREHOUSE



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KTN TROLLERS CREEK BRIDGE
PROJECT #Z694200000

LEGEND / SYMBOLS

6/23/16

DESIGNED BY: KNOXOV
CHECKED BY: KNOXOV
DRAFTED BY: KNOXOV

KRETS

SCALE

LAYOUT
A3

DATE TIME
6/24/2016 11:03

DRAWING LOCATION
Q:\K1\69420\SW\CD\SOURCE DWG\BASEMAP\69420_SCS_A3.dwg

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	Z694200000	2016	A3	3

HORIZONTAL CONTROL

SURVEY CONTROL IS A LOCAL GROUND BASED COORDINATE SYSTEM.

TRANSFORMATION PARAMETERS RELATING THE LOCAL GROUND BASED COORDINATE SYSTEM TO ALASKA STATE PLANE ZONE 1 US FEET ARE AS FOLLOWS:

GRID SCALE FACTOR : 0.99990085
ROTATION TO GRID NORTH : 1°35'14"

LOCAL NORTHING: 1,316,047.09'
LOCAL EASTING: 3,079,528.57'

AKSPC GRID NORTHING: 1,315,746.05'
AKSPC GRID EASTING: 3,079,408.28'

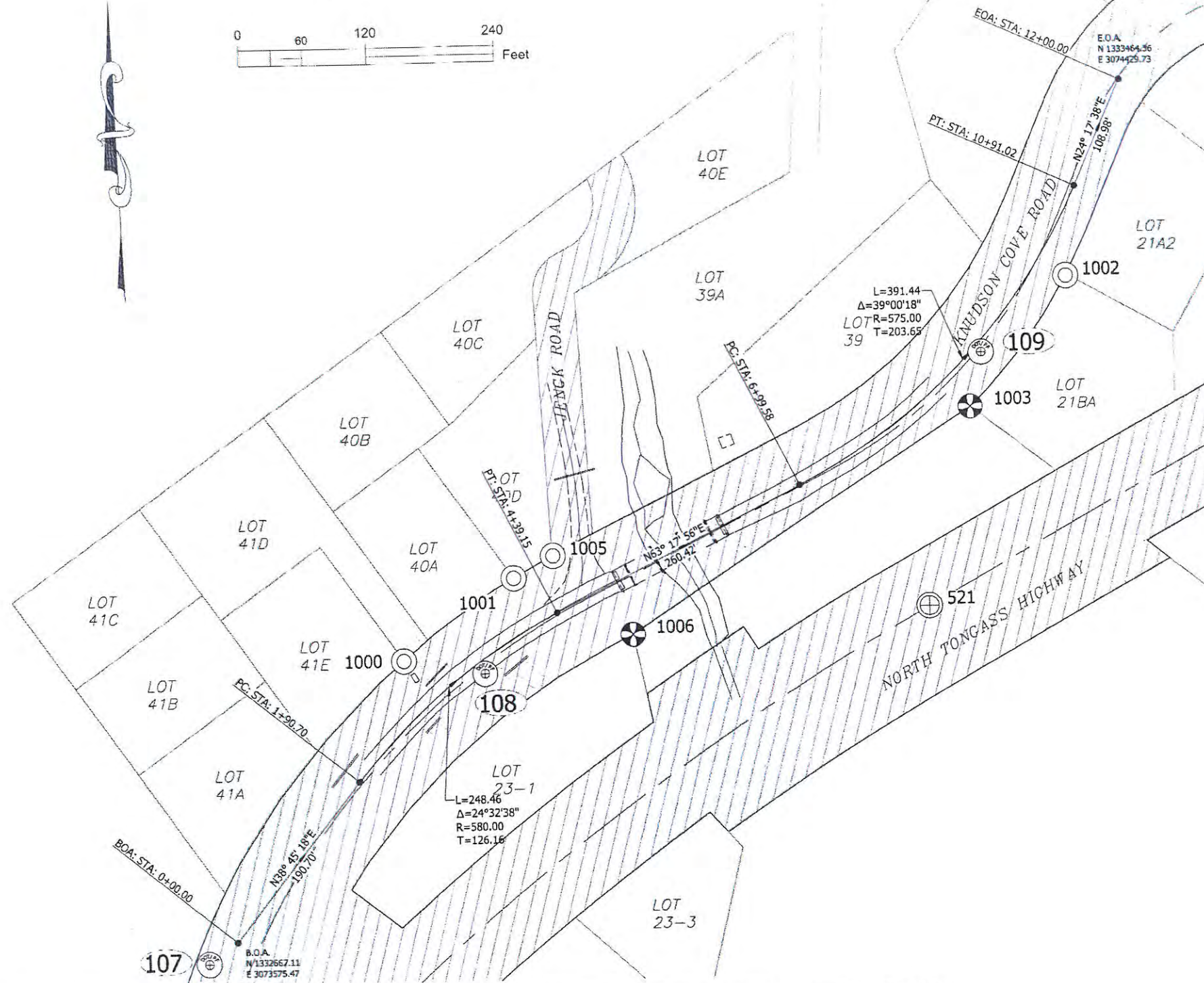
THESE COORDINATES ARE NOT TRUE STATE PLANE BUT RATHER A LOCAL SYSTEM NEAR STATE PLANE VALUES.

VERTICAL CONTROL

THE BASIS OF VERTICAL CONTROL IS A BRASS CAP MONUMENT FOUND IN THE NE BRIDGE ABUTMENT OF WHIPPLE CREEK BRIDGE. THE ACCEPTED ELEVATION OF THIS POINT IS 135.79' ABOVE MLLW.

MONUMENT NOTES:

- IF ANY PAIR OF CONTROL POINTS DISAGREES FROM PUBLISHED VALUE BY MORE THAN 1:10,000 HORIZONTALLY OR VERTICALLY THEN A THIRD NETWORK POINT MUST BE TIED TO ASCERTAIN WHICH POINT IS IN ERROR OR HAS BEEN DISTURBED.
- WHETHER LISTED OR NOT, ALL MONUMENTS, PROPERTY MARKERS, OR ACCESSORIES THAT WILL BE DISTURBED OR BURIED SHALL BE REFERENCED PRIOR TO BEING DISTURBED, AND RE-ESTABLISHED IN THEIR ORIGINAL POSITION AND A RECORD OF MONUMENT FORM IN ACCORDANCE WITH A.S.34.65.040 SHALL BE SUBMITTED TO THE CONSTRUCTION ENGINEER FOR REVIEW PRIOR TO RECORDING. COORDINATE VALUES LISTED ARE FOR INFORMATIONAL PURPOSES AND SHOULD BE USED TO RESET MONUMENTS ONLY AS A LAST RESORT.

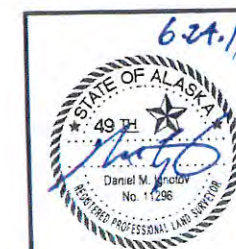


Existing Property					
Point #	Northing	Easting	Description	Station	Offset
521	1332973.00	3074238.69	CL_MCN_679+60.25BK/679+60.48AH	7+42.84	158.43R
1000	1332928.58	3073739.84	REBAR1/2"	2+98.83	46.36L
1001	1333004.22	3073846.05	PLASCAP1" _4742S	4+19.59	48.32L
1002	1333281.04	3074374.55	IP1.25"	10+14.05	30.54R
1003	1333159.95	3074281.51	BLM_BC3.25" _S2807-C1-L21/S3768-C1-2	8+69.25	34.94R
1005	1333024.68	3073883.83	PLASCAP1" _4742S	4+60.91	49.27L
1006	1332950.04	3073958.23	BLM_BC3.25" _ROW/S2808-C1-L23/S3768-C13	4+93.84	50.85R

All **PROPERTY MONUMENTS** in these **existing property** tables shall be **preserved** and **referenced** prior to disturbance and replaced at their original horizontal position.

Survey Control Table						
Point #	Northing	Easting	Elevation	Description	Station	Offset
107	1332647.18	3073547.78	159.23	ALCTRL2"	N/A	N/A
108	1332914.91	3073816.75	143.15	ALCTRL2"	3+49.47	11.88R
109	1333210.88	3074292.77	129.27	ALCTRL2"	9+12.02	7.45R

All **SURVEY CONTROL** monuments in this table are provided strictly for survey control. Should any of them be destroyed during construction they **shall NOT** be replaced.



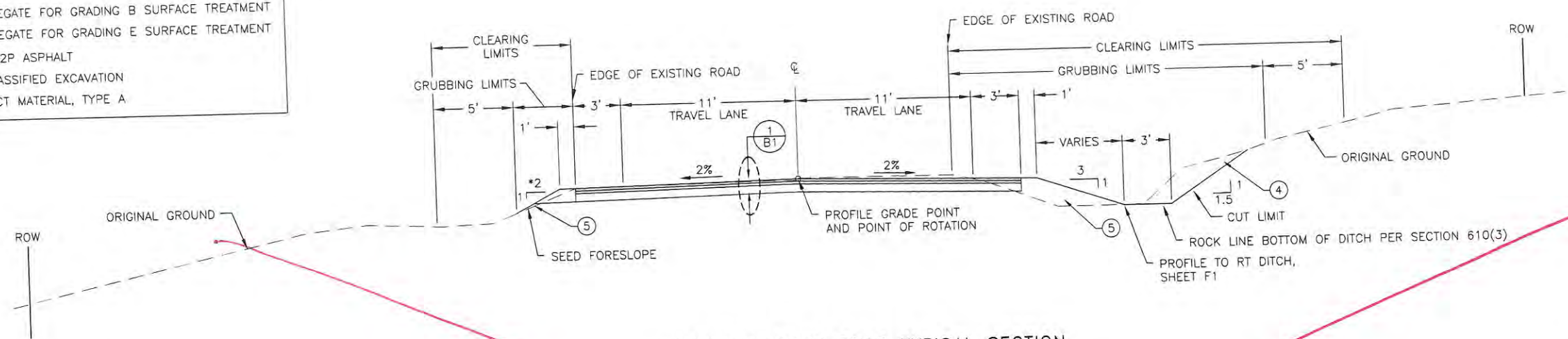
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOST REGION
6860 GLACIER HIGHWAY
JUNEAU, AK 99811-2506
(907)465-1763

KTN TROLLERS CREEK BRIDGE
PROJECT #Z694200000
SURVEY CONTROL SHEET

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	Z694200000	2016	B1	1

LEGEND

- ① AGGREGATE FOR GRADING B SURFACE TREATMENT
- ② AGGREGATE FOR GRADING E SURFACE TREATMENT
- ③ CRS-2P ASPHALT
- ④ UNCLASSIFIED EXCAVATION
- ⑤ SELECT MATERIAL, TYPE A



TYPICAL SECTION NOTES:

1. STABILIZE ALL NEW EMBANKMENT AND CUT SLOPES THAT ARE NOT ROCK LINED WITH SEEDING AND BONDED FIBER MATRIX PER SECTION 618 AND SECTION 619. APPLY 2" OF TOPSOIL TO DISTURBED SLOPES THAT ARE NOT ROCK LINED PRIOR TO SEEDING AND PLACING BONDED FIBER MATRIX.
2. LOCATE UTILITIES PRIOR TO EXCAVATION
3. STRUCTURAL FILL WITHIN THE ROAD PRISM, USEABLE EXCAVATION OUTSIDE THE ROAD PRISM
4. ALL UTILITY TRENCH EXCAVATION, BEDDING AND BACKFILL WORK SHALL BE PERFORMED BY THE CONTRACTOR. UTILITY COMPANIES WILL FURNISH AND INSTALL CONDUIT AND CONDUCTORS. COORDINATE ALL TRENCH WORK AND CONDUIT INSTALLATION ACTIVITIES WITH THE UTILITY COMPANIES. REFERENCE SPECIAL PROVISIONS, SECTION 662.

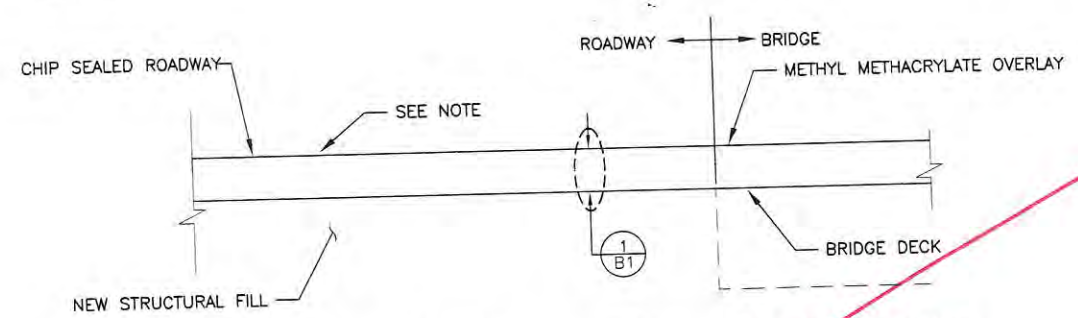
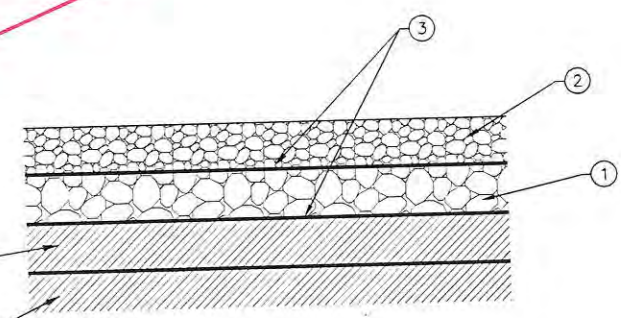
KNUDSON COVE ROAD TYPICAL SECTION

STA. 3+98 TO STA. 4+99
STA. 6+23 TO STA. 7+24

*GRADE TO EXISTING DITCH FROM STA. 6+88 TO STA. 7+04 LT.
**AGGREGATE BASE COURSE, GRADING D-1 AND NEW STRUCTURAL FILL SHALL ONLY BE PLACED UNDER THE NEW CHIP SEAL FROM .50' PRIOR TO THE BRIDGE AND .50' AFTER THE BRIDGE, AS SHOWN ON THE 'N' SHEETS.

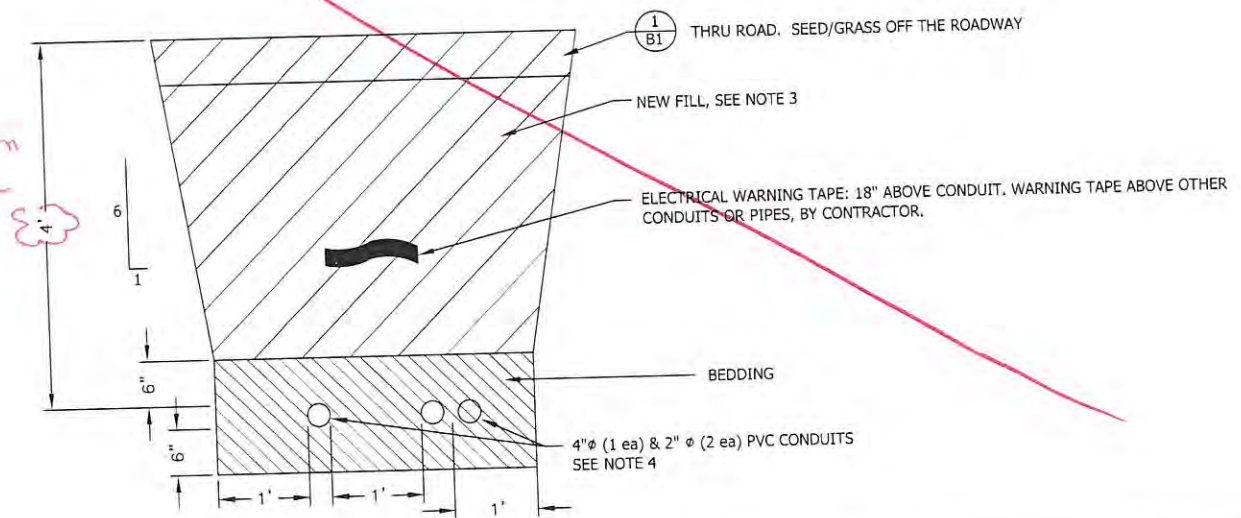
**NEW 4" AGGREGATE BASE COURSE, GRADING D-1
**NEW STRUCTURAL FILL

① ASPHALT SURFACE TREATMENT (CHIP SEALING) DETAIL N.T.S.

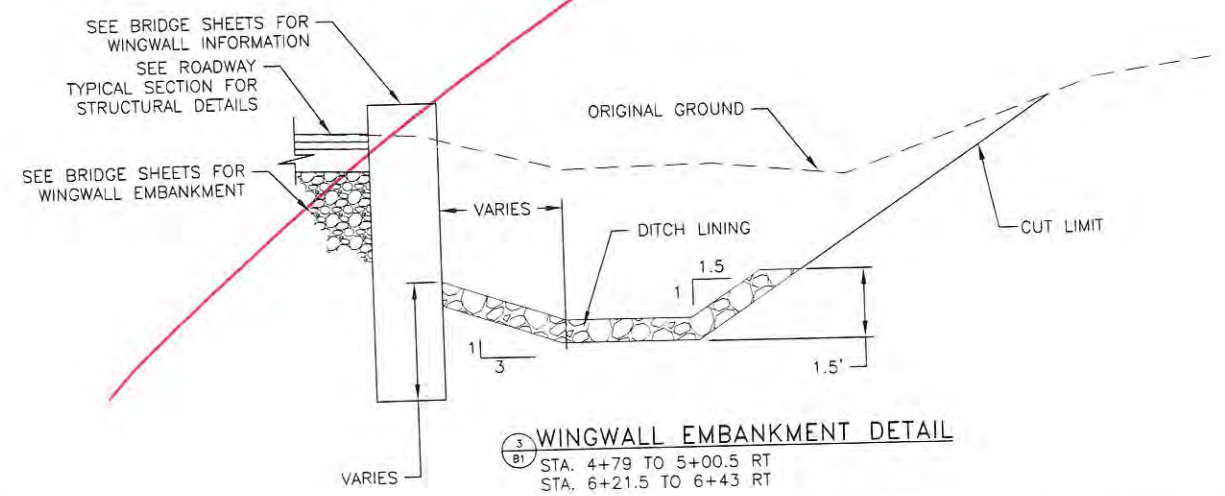


② CHIP SEAL TRANSITION DETAIL AT BRIDGE ENDS NTS

30' minimum
42" Average Depth
(Actual)



UTILITY TRENCH TYPICAL SECTION



③ WINGWALL EMBANKMENT DETAIL

STA. 4+79 TO 5+00.5 RT
STA. 6+21.5 TO 6+43 RT

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent. To the Best of My Knowledge, the Project as Constructed.

Project Eng. *MP*

Date 11-13-17



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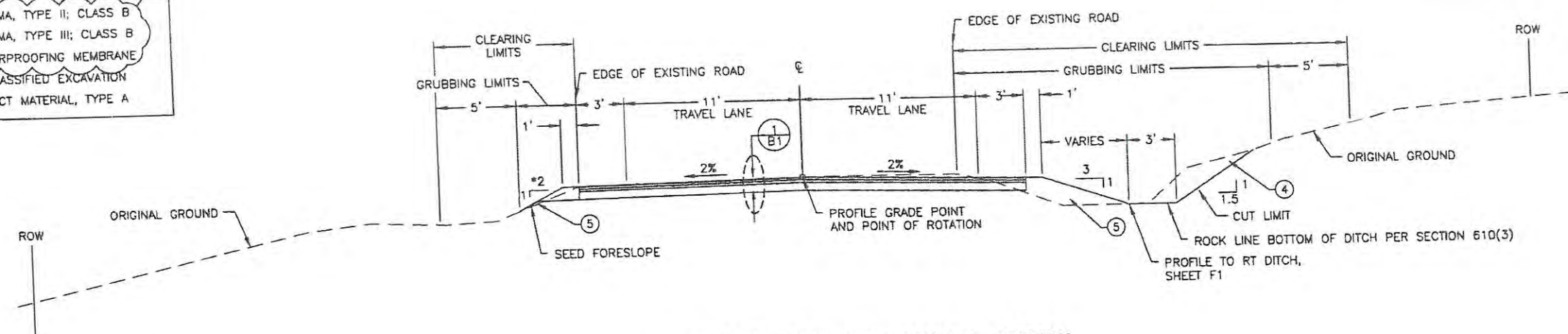
KTN TROLLERS CREEK BRIDGE
PROJECT #Z694200000
TYPICAL SECTION

DRAWING LOCATION
Q:\Ktn\69420\Plans\69420_B1_Type.dwg

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
1	1/31/17	MATERIAL SUBSTITUTIONS	ALASKA	Z694200000	2017	B1	1

REVISED
AFTER
BID DATE

- LEGEND**
- ① 2" HMA, TYPE II; CLASS B
 - ② 1" HMA, TYPE III; CLASS B
 - ③ WATERPROOFING MEMBRANE
 - ④ UNCLASSIFIED EXCAVATION
 - ⑤ SELECT MATERIAL, TYPE A



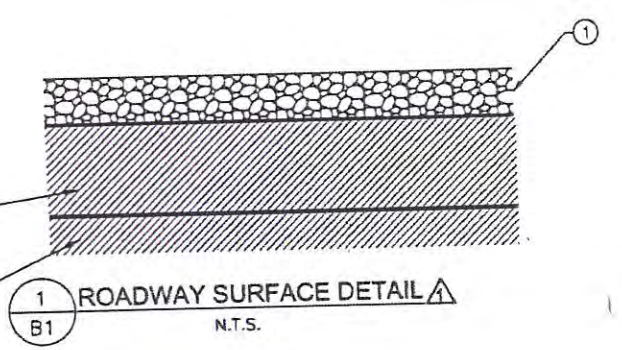
TYPICAL SECTION NOTES:

1. STABILIZE ALL NEW EMBANKMENT AND CUT SLOPES THAT ARE NOT ROCK LINED WITH SEEDING AND BONDED FIBER MATRIX PER SECTION 618 AND SECTION 619. APPLY 2" OF TOPSOIL TO DISTURBED SLOPES THAT ARE NOT ROCK LINED PRIOR TO SEEDING AND PLACING BONDED FIBER MATRIX.
2. LOCATE UTILITIES PRIOR TO EXCAVATION
3. STRUCTURAL FILL WITHIN THE ROAD PRISM, USEABLE EXCAVATION OUTSIDE THE ROAD PRISM
4. ALL UTILITY TRENCH EXCAVATION, BEDDING AND BACKFILL WORK SHALL BE PERFORMED BY THE CONTRACTOR. UTILITY COMPANIES WILL FURNISH AND INSTALL CONDUIT AND CONDUCTORS. COORDINATE ALL TRENCH WORK AND CONDUIT INSTALLATION ACTIVITIES WITH THE UTILITY COMPANIES. REFERENCE SPECIAL PROVISIONS, SECTION 662.

KNUDSON COVE ROAD TYPICAL SECTION

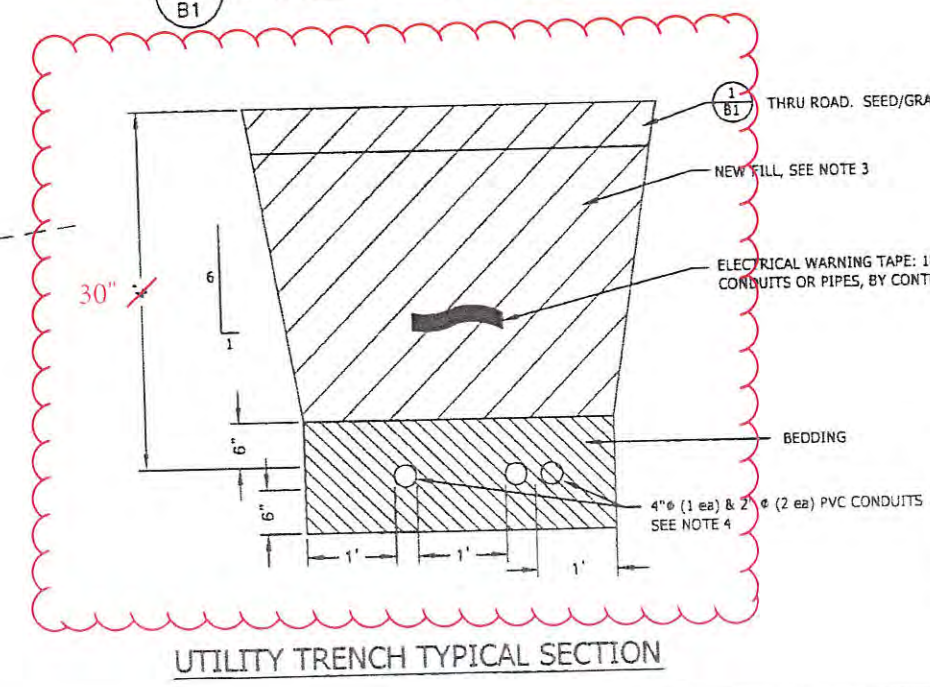
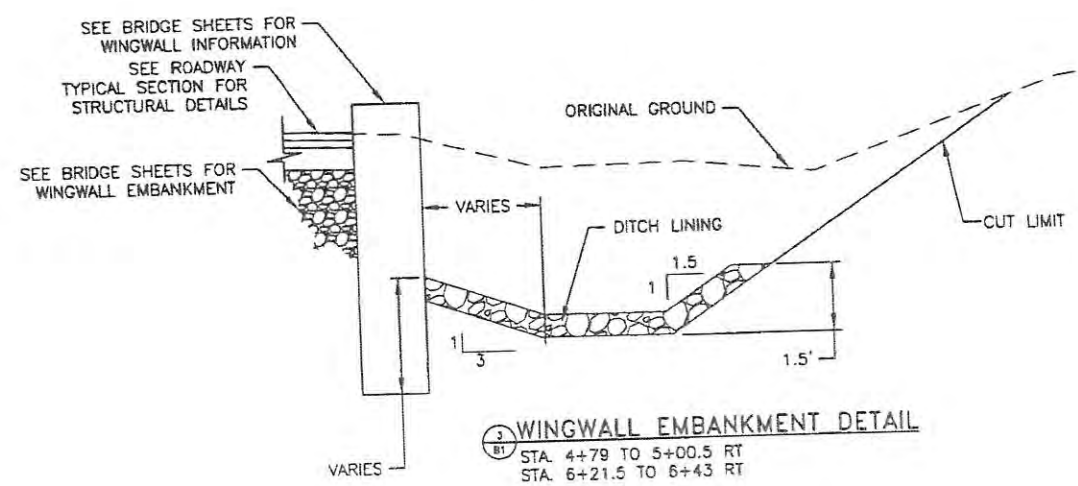
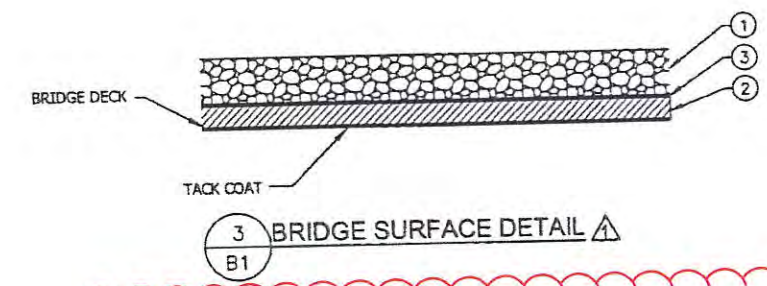
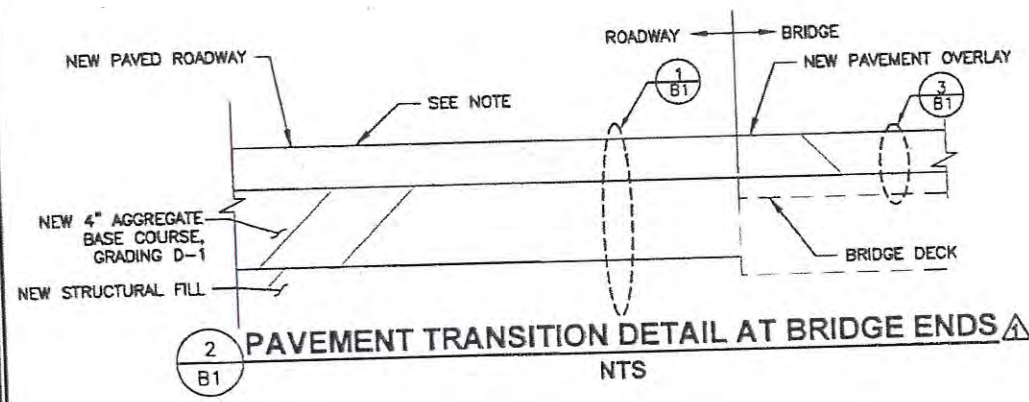
STA. 3+98 TO STA. 4+99
STA. 6+23 TO STA. 7+24

*GRADE TO EXISTING DITCH FROM STA. 6+88 TO STA. 7+04 LT.
**AGGREGATE BASE COURSE, GRADING D-1 AND NEW STRUCTURAL FILL SHALL ONLY BE PLACED UNDER THE NEW (ASPHALT) FROM 50' PRIOR TO THE BRIDGE AND 50' AFTER THE BRIDGE AS SHOWN ON THE 'N' SHEETS.



Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. **MP** Date **11-13-17**



KTN TROLLERS CREEK BRIDGE
PROJECT #Z694200000
TYPICAL SECTION

DESIGNED LC, IF, NG
CHECKED CT, IF, NG
DRAFTED LC, IF, NG
XREFS
SCALE
LAYOUT C1
DATE TIME 6/21/2016 13:21
DRAWING LOCATION Q:\KIn\69420\Plansect\69420_C1_Est_Qty.dwg

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	Z694200000	2016	C1	1

ESTIMATE OF QUANTITIES			
ITEM NO.	PAY ITEM	PAY UNIT	QUANTITY
201(3B)	CLEARING AND GRUBBING	LUMP SUM	ALL REQ'D
202(10)	SINGLE MAIL BOX INSTALLATION	EACH	1
202(11)	MULTIPLE MAIL BOX INSTALLATION	EACH	1
202(23)	REMOVAL OF EXISTING BRIDGE NO. 864	LUMP SUM	ALL REQ'D
203(3)	UNCLASSIFIED EXCAVATION	LUMP SUM	ALL REQ'D
205(6)	STRUCTURAL FILL	CUBIC YARD	~~1378~~ 957.97
301(1)	AGGREGATE BASE COURSE, GRADING D-1	TON	~~90~~ 241.90
405(2-B)	AGGREGATE SURFACE TREATMENT, GRADING B Deleted CO#1	SQUARE YARD	~~630~~
405(2-E)	AGGREGATE SURFACE TREATMENT, GRADING E	SQUARE YARD	~~600~~
501(1)	CLASS A CONCRETE	LUMP SUM	ALL REQ'D
501(7)	PRECAST CONCRETE MEMBER (122'-6"x4'-6")	EACH	5
503(1)	REINFORCING STEEL	LUMP SUM	ALL REQ'D
503(2)	EPOXY-COATED REINFORCING STEEL	LUMP SUM	ALL REQ'D
507(2)	PEDESTRIAN RAILING	LINEAR FOOT	288
518(2)	BRIDGE DECK OVERLAY	SQUARE FOOT	~~2472~~
606(1)	W-BEAM GUARDRAIL	LINEAR FOOT	~~48~~ 56.5
606(13)	PARALLEL GUARDRAIL TERMINAL	EACH	1
606(16)	TRANSITION RAIL	EACH	3
610(3)	DITCH LINING	STATION	~~2~~ 2.41
615(2)	REMOVE AND RELOCATE EXISTING SIGN	EACH	6
615(6)	SALVAGE SIGN	EACH	2
618(1)	SEEDING	ACRE	~~0.06~~ 0
619(3)	BONDED FIBER MATRIX (BFM) Deleted CO#3	POUND	~~180~~
620(1)	TOPSOIL	SQUARE YARD	~~390~~
640(1)	MOBILIZATION AND DEMOBILIZATION	LUMP SUM	ALL REQ'D
640(4)	WORKER MEALS AND LODGING, OR PER DIEM	LUMP SUM	ALL REQ'D
641(1)	EROSION, SEDIMENT AND POLLUTION CONTROL ADMINISTRATION	LUMP SUM	ALL REQ'D
641(3)	TEMPORARY EROSION, SEDIMENT AND POLLUTION CONTROL	LUMP SUM	ALL REQ'D
641(5)	TEMPORARY EROSION, SEDIMENT AND POLLUTION CONTROL BY DIRECTIVE	CONTINGENT SUM	ALL REQ'D
641(6)	WITHHOLDING	CONTINGENT SUM	ALL REQ'D
642(1)	CONSTRUCTION SURVEYING	LUMP SUM	ALL REQ'D
643(2)	TRAFFIC MAINTENANCE	LUMP SUM	ALL REQ'D
643(3)	PERMANENT CONSTRUCTION SIGNS	LUMP SUM	ALL REQ'D
643(25)	TRAFFIC CONTROL	CONTINGENT SUM	ALL REQ'D
662(1)	UTILITY RELOCATION	LUMP SUM	ALL REQ'D
672(1)	CONSTRUCTION MONITORING	EACH	1

BASIS OF ESTIMATE		
ITEM NO.	ITEM DESCRIPTION	ESTIMATING FACTOR
201(3B)	CLEARING AND GRUBBING	0.06 ACRES
203(3)	UNCLASSIFIED EXCAVATION	340 C.Y.
405(2-B)	AGGREGATE FOR SURFACE TREATMENT, GRADING B	50 LB/SY; 0.60 GAL/S.Y. CRSP-2P ASPHALT FOR SURFACE TREATMENT
405(2-E)	AGGREGATE FOR SURFACE TREATMENT, GRADING E	30 LB/SY; 0.55 GAL/S.Y. CRSP-2P ASPHALT FOR SURFACE TREATMENT
619(3)	BONDED FIBER MATRIX (BFM)	3,000 LBS/ACRE

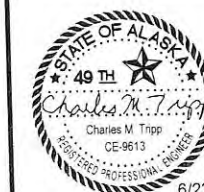
CHANGE ORDERS				
Co #	Item #	PAY ITEM	PAY UNIT	Quantity
1	401(1A)	HMA, Type II, Class B	Ton	123.98
	401(1B)	HMA, Type III, Class B	Ton	28.3
	510(10)	Misc. Bridge Structure Work	Lump Sump	All Req'd
2	642(3)	Three Person Survey Party	Hours	14.23
	643(15)	Flagging	C.S	All Req'd
3	610(4)	Rock Slope Armor	S.Y	364.5
5	501(1a)	Concrete Price Reduction	Lump Sum	All Req'd
6	205 (6a)	Structual Fill Price Reduction	Lump Sum	All Req'd
7	401(1B)	Additional Asphalt Inspection	Lump Sum	All Req'd

Project As Built Drawings Have Been Reviewed
By the Project Engineer & Represent. To the
Best of My Knowledge, the Project as
Constructed.

Project Eng. **MP**

Date

11-13-17



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JUNEAU, AK 99811-2506
(907) 465-1703

KTN TROLLERS CREEK BRIDGE
PROJECT #Z694200000
ESTIMATE OF QUANTITIES

DESIGNED C. T. NG
CHECKED C. T. NG
DRAFTED C. T. NG
XREFS
SCALE
LAYOUT D1
DATE TIME 6/23/2016 15:18
DRAWING LOCATION
C:\KIN\69420\PlanSet\69420_D1_Misc_Summ.dwg

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	Z694200000	2016	D1	1

202(10) SINGLE MAIL BOX INSTALLATION

STATION	OFFSET
6+61	LT

202(11) MULTIPLE MAIL BOX INSTALLATION

STATION	OFFSET
4+61	LT

606(1) W-BEAM GUARDRAIL

ITEM NO.	BEGIN		END		LENGTH (FT)	REMARKS
	STATION	OFFSET	STATION	OFFSET		
606(1)	6+43	*14' LT	6+54	18' LT	11' 19"	DOWNSTREAM END ANCHOR
606(1)	6+63	*14' RT	6+74	14' RT	10' 11"	DOWNSTREAM END ANCHOR
606(1)	4+97	15' LT	4+97	31' LT	16	DOWNSTREAM END ANCHOR TREATMENT AT BOTH ENDS
			TOTAL		46	

606(13) PARALLEL GUARDRAIL TERMINAL

STATION	OFFSET	LENGTH
4+21	16' RT - *14' RT	37.5

15.5 FROM FACE OF W-BEAM

606(16) TRANSITION RAIL

FROM STA.	TO STA.	OFFSET	LENGTH (FT)	REMARKS
4+59	4+79	RT	20	GUARDRAIL/BRIDGE RAIL CONNECTION
6+43	6+63	RT	20	GUARDRAIL/BRIDGE RAIL CONNECTION
6+23	6+43	LT	20	GUARDRAIL/BRIDGE RAIL CONNECTION
		TOTAL	60	

*MATCH TRANSITION RAIL OFFSET

615 (2) REMOVE AND RELOCATE SIGN SUMMARY

SIGN #	LEGEND	STATION	OFFSET	POST	SIGN FACING	NOTES
1	-	4+99	14' LT	-	E.B.	REMOVE FROM EXISTING BRIDGE AND RELOCATE TO NEW BRIDGE, E.B. LT
2	-	4+99	14' RT	-	E.B.	REMOVE FROM EXISTING BRIDGE AND RELOCATE TO END OF NEW GUARDRAIL, E.B. RT
3	-	6+23	14' LT	-	W.B.	REMOVE FROM EXISTING BRIDGE AND RELOCATE TO END OF NEW GUARDRAIL, W.B. LT
4	-	6+23	14' RT	-	W.B.	REMOVE FROM EXISTING BRIDGE AND RELOCATE TO END OF NEW GUARDRAIL, W.B. RT
5	TROLLERS CREEK	5+01	22' RT	YES	E.B.	REMOVE AND PLACE IN ORIGINAL LOCATION
6	TROLLERS CREEK	6+16	16' LT	YES	W.B.	REMOVE AND PLACE IN ORIGINAL LOCATION

615 (6) SALVAGE SIGN

SIGN #	LEGEND	STATION	OFFSET	POST	SIGN FACING	NOTES
1	WEIGHT LIMIT 8 TONS	5+81	17' RT	YES	E.B.	REMOVE SIGN & POST
2	WEIGHT LIMIT 8 TONS	6+20	12' LT	YES	W.B.	REMOVE SIGN & POST

APPROACH SUMMARY

STATION	OFFSET	WIDTH	RADIUS	REMARKS
4+90	LT	43'	20' & 8'	JENCK RD. CHIP SEALED
6+75	LT	21'	8'	GRAVEL DRIVEWAY

Project As Built Drawings Have Been Reviewed
By the Project Engineer & Represent, To the
Best of My Knowledge, the Project as
Constructed.

Project Eng.

11.13.17

Date



STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOST REGION
6860 GLACIER HIGHWAY
JUNEAU, AK 99811-2506
(907)465-1763

KTN TROLLERS CREEK BRIDGE
PROJECT #Z694200000
MISCELLANEOUS
SUMMARIES

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	Z694200000	2016	E1	1

DESIGNED BY: JF, NG
CHECKED BY: JF, NG
DRAFTED BY: JF, NG

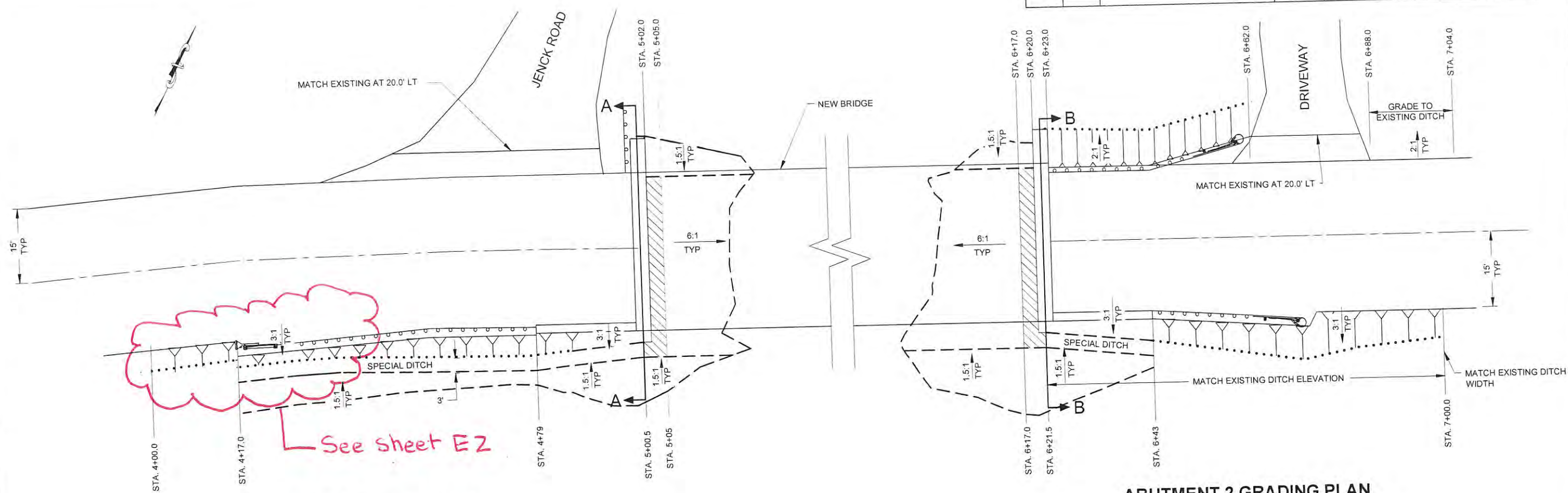
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SCALE

LAYOUT E1

DATE TIME 6/6/2016 10:19

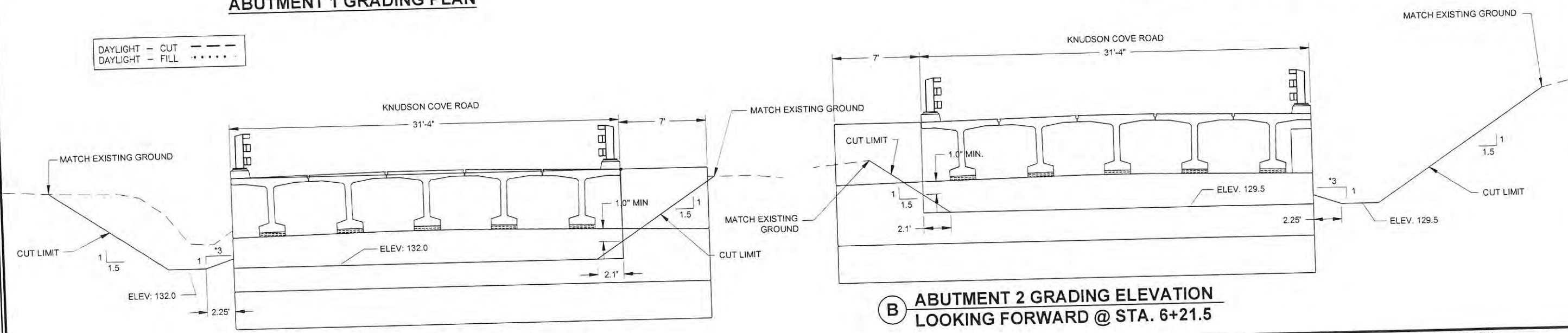
DRAWING LOCATION
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ABUTMENT 1 GRADING PLAN

ABUTMENT 2 GRADING PLAN

DAYLIGHT - CUT - - - - -
DAYLIGHT - FILL -



**A ABUTMENT 1 GRADING ELEVATION
LOOKING BACK @ STA. 5+00.5**

**B ABUTMENT 2 GRADING ELEVATION
LOOKING FORWARD @ STA. 6+21.5**

*TRANSITION FROM A 3:1 SLOPE TO A FLAT SLOPE FROM STA. 5+00.5 TO 5+05 AND FROM STA. 6+17 TO 6+21.5

LEVEL GROUND

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

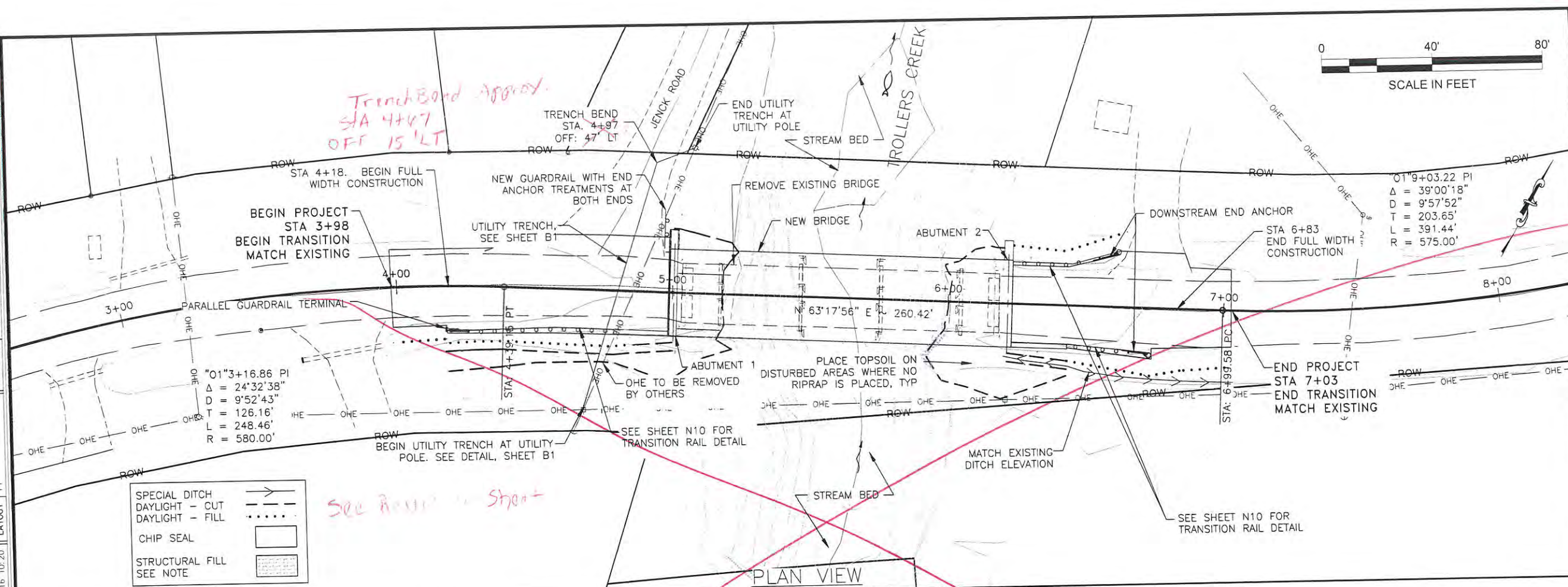
Project Eng. *MP* Date *11.13.17*



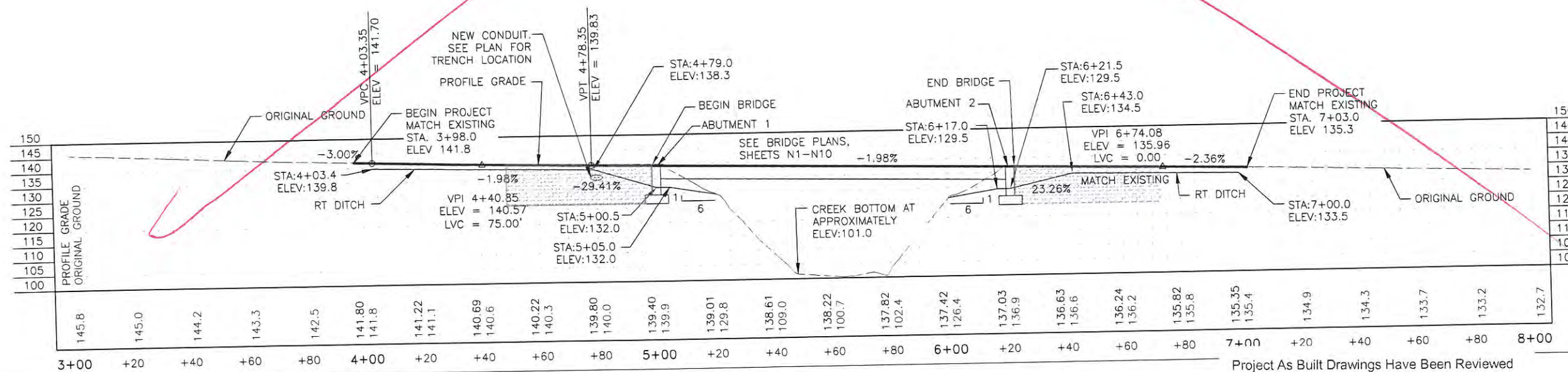
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOST REGION
6860 GLACIER HIGHWAY
JUNEAU, AK 99811-2506
(907)465-1763

**KTN TROLLERS CREEK BRIDGE
PROJECT #Z694200000**

GRADING PLAN & ELEVATION



NOTE:
STRUCTURAL FILL LIMITS ARE SHOWN
ON SHEET N6



PROFILE VIEW

Project As Built Drawings Have Been Reviewed
By the Project Engineer & Represent, To the
Best of My Knowledge, the Project as
Constructed.

Project Eng. Date

SHEET NO.	TOTAL SHEETS
F1	1
STATE	YEAR
ALASKA	2016

PROJECT DESIGNATION

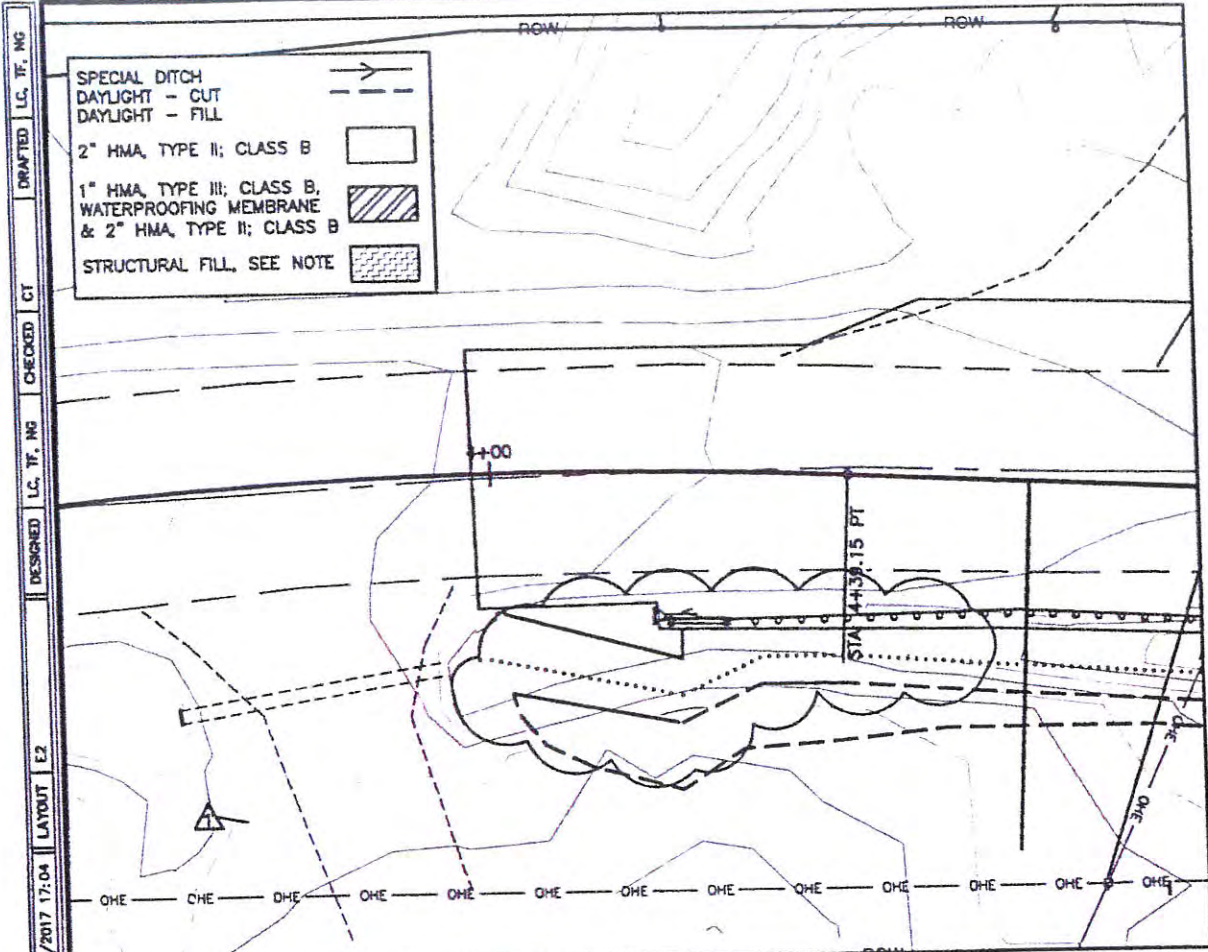
Z694200000

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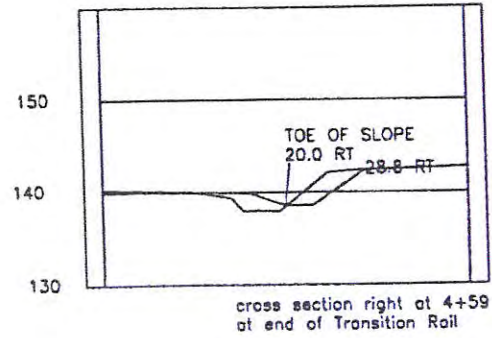
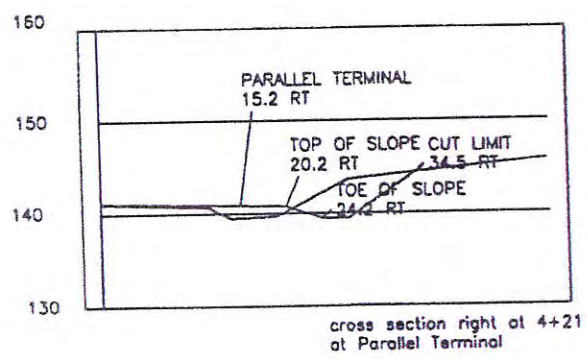
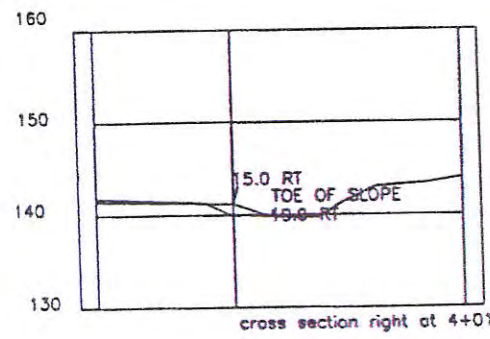
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOST REGION
6860 GLACIER HIGHWAY
JUNEAU, AK 99811-2506
(907)465-1763

KTN TROLLERS CREEK
BRIDGE
PROJECT #Z694200000

PLAN & PROFILE



NOTE:
STRUCTURAL FILL LIMITS ARE SHOWN
ON SHEET N6

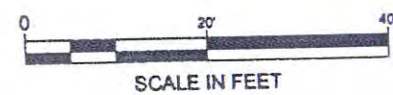


PLAN VIEW

Project As Built Drawings Have Been Reviewed
By the Project Engineer & Represent, To the
Best of My Knowledge, the Project as
Constructed.

Project Eng. *MP* 11.13.17
Date

PROFILE VIEW



SHEET NO.	TOTAL SHEETS
E2	1
STATE	YEAR
ALASKA	2017

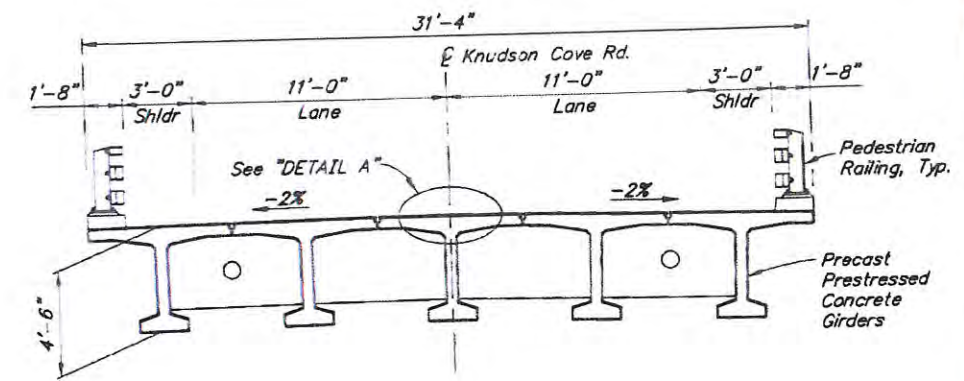
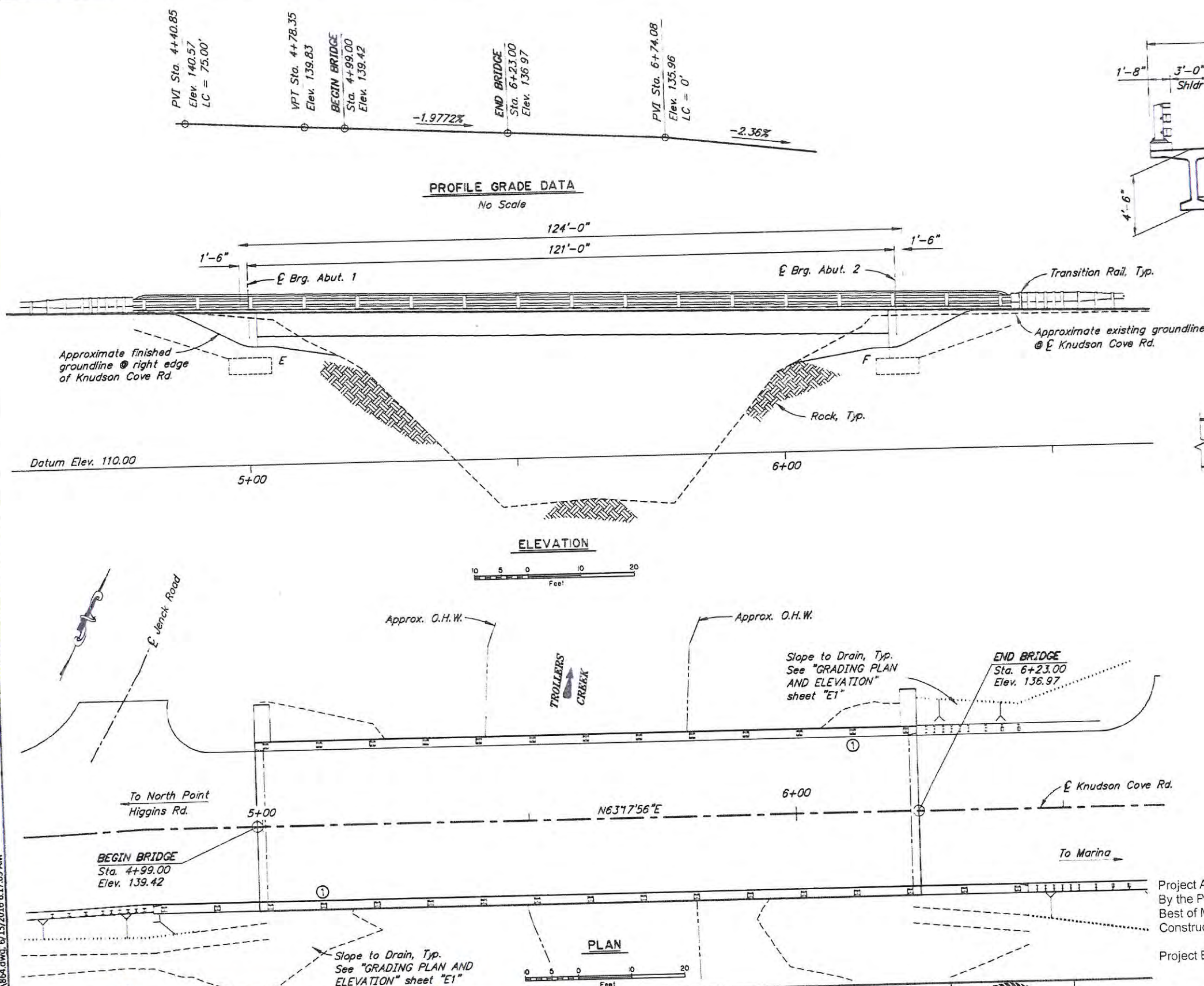
PROJECT DESIGNATION
Z694200000

REVISION	MATERIAL SUBSTITUTIONS
NO.	DATE
1	1/31/17

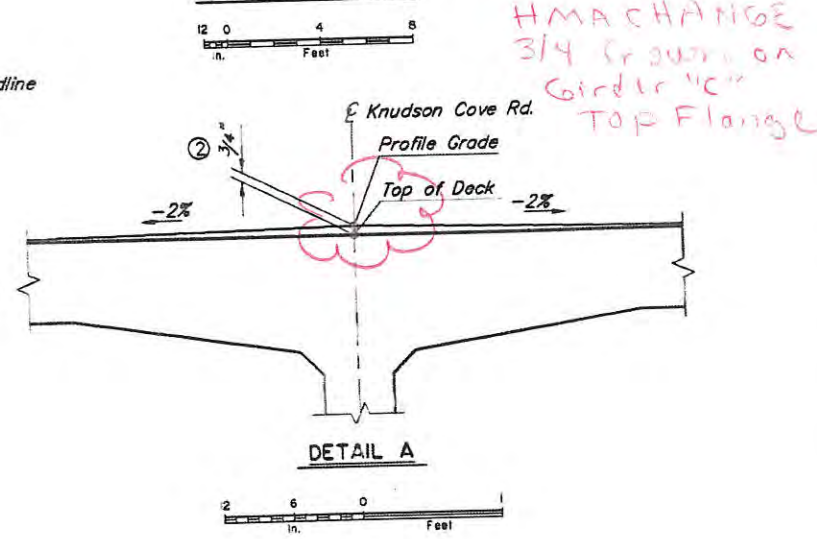
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOST REGION
6660 GLACIER HIGHWAY
JUNEAU, AK 99811-2506
(907)465-1763

**KTN TROLLERS CREEK
BRIDGE
PROJECT #Z694200000**

PLAN & PROFILE



TYPICAL SECTION



BRIDGE DRAWING INDEX	
TITLE	DWG. NO.
GENERAL LAYOUT	1
SITE PLAN	2
ABUTMENT 1	3
ABUTMENT 2	4
WINGWALLS ABUTMENT 1	5
WINGWALLS ABUTMENT 2	6
FRAMING PLAN AND TYPICAL SECTION	7
GIRDERS	8
PEDESTRIAN RAILING	9
TRANSITION RAIL	10
TRANSITION RAIL DETAILS	11
LOG OF TEST BORINGS	12-16

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. *MP*

11-13-17
Date

- NOTES:**
- ① Denotes location of Bridge No. Plate.
 - ② Thicken bridge deck overlay near E Knudson Cove Road such that bridge crown matches roadway crown.

DESIGNED BY: <i>Travis Arndt</i>	CHECKED: <i>Jared Levings</i>	LAYOUT BY: <i>Travis Arndt</i>	CHECKED BY: <i>Jared Levings</i>
DRAWN BY: <i>Sam Sallie</i>	CHECKED: <i>Travis Arndt</i>	SPECIFICATIONS BY: <i>Travis Arndt</i>	P S & E COMPARED: <i>Jared Levings</i>
QUANTITIES BY: <i>Travis Arndt</i>	CHECKED: <i>Jared Levings</i>	APPROVAL RECOMMENDED BY: <i>Rich Pratt</i>	

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
BRIDGE SECTION



TROLLERS CREEK BRIDGE
KNUDSON COVE ROAD
GENERAL LAYOUT

BRIDGE NO. 864
DWG. NO. 1

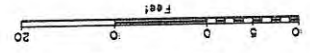
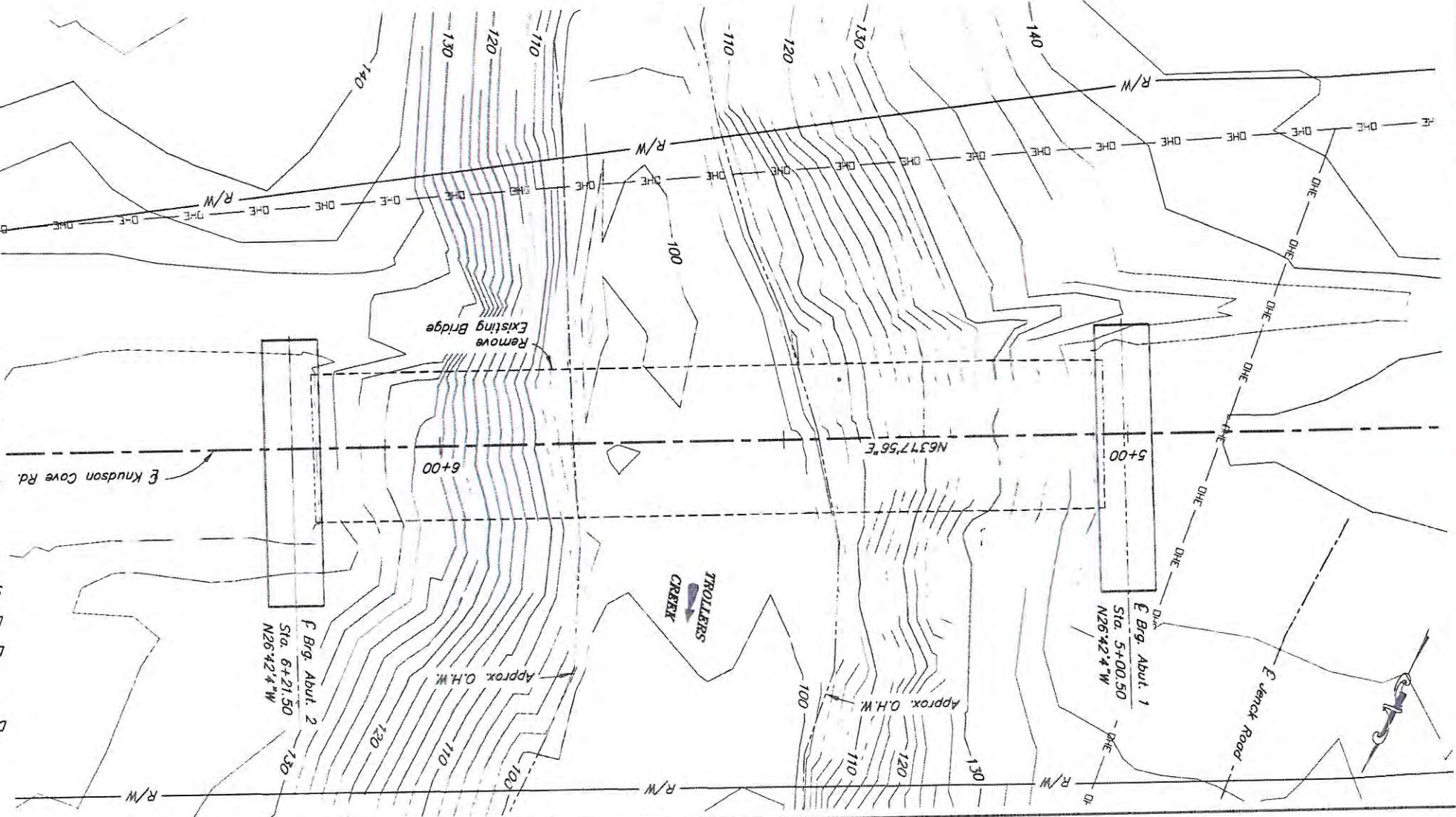
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STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	Z694200000	2016	N2	

GENERAL NOTES

DESIGN:.....
ASHTO LRFD Bridge Design Specifications, 2014 Edition, with latest interim specifications
Seismic design per ASHTO Guide Specifications for LRFD Seismic Bridge Design, 2011 with latest interim revisions.
LIVE LOAD:..... HL-93
Includes 50 psf for all wearing surfaces.
SEISMIC PARAMETERS:.....
PGA = 0.08
Ss = 0.18
S1 = 0.14
Site Class = B
Liquefaction Potential = Low
AASHTO 7% probability of exceedance in 75 years.
REINFORCEMENT:.....
ASTM A706, Grade 60, Fy = 60,000 psi
Use ASTM A970 Headed bars, Class HA.
Space reinforcement evenly unless otherwise noted.
PRESTRESSED CONCRETE:..... See "GIRDERS" Dwg.
CONCRETE:.....
Class A Concrete for all concrete unless otherwise noted, f'c = 4000 psi
STRUCTURAL STEEL:.....
ASTM A709, Grade 50T1, Fy = 50,000 psi
Galvanize all structural steel in accordance with AASHTO M111 unless shown otherwise.

FOOTING PRESSURE TABLE			
LOCATION	STRENGTH I FACTOR, ϕ	NOMINAL BEARING RESISTANCE (KSF)	Abutment 1
BEARING	0.45	210	0.45
RESISTANCE	0.45	210	0.45
FACTORED LOAD	2.7	210	0.45



BRIDGE BASIS OF ESTIMATE			
ITEM NO.	ITEM	ESTIMATING UNIT	PAY UNIT
202(23)	Removal of existing Bridge No. 864	LS	SF
205(6)	Structural Fill	CY	CY
501(1)	Class A Concrete	LS	CY
501(7)	Precast Concrete Member (12'-6"x4'-6" Decked Build-T)	EA	EA
503(1)	Reinforcing Steel	LS	LB
503(2)	Epoxy-Coated Reinforcing Steel	LS	LB
507(2)	Pedestrian Railing	LF	LF
518(2)	Bridge Deck Overlay	SF	SF
606(16)	Transition Pile	EA	EA
TOTAL		SUBST.	SUPERST.

Item numbers are for reference only. Quantities shown are not necessarily the pay quantities nor the total quantity of the particular item.

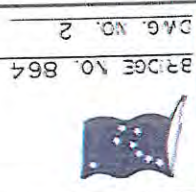
Project AS Built Drawings Have Been Reviewed
By the Project Engineer & Represent, To the
Best of My Knowledge, the Project as
Constructed.
Project Eng. *MP*
Date *11.13.17*

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
BRIDGE SECTION



TROLLERS CREEK BRIDGE
KNUDSON COVE ROAD
SITE PLAN

DESIGNED BY: <i>John Andri</i>	CHECKED: <i>John Andri</i>	HYDRAULICS BY:	CHECKED BY:
DRAWN BY: <i>Sam Solie</i>	CHECKED: <i>Sam Solie</i>	FOUNDATIONS REVIEWED BY: <i>Robert L. Scher</i>	CHECKED BY:
QUANTITIES BY: <i>John Andri</i>	CHECKED: <i>John Andri</i>		

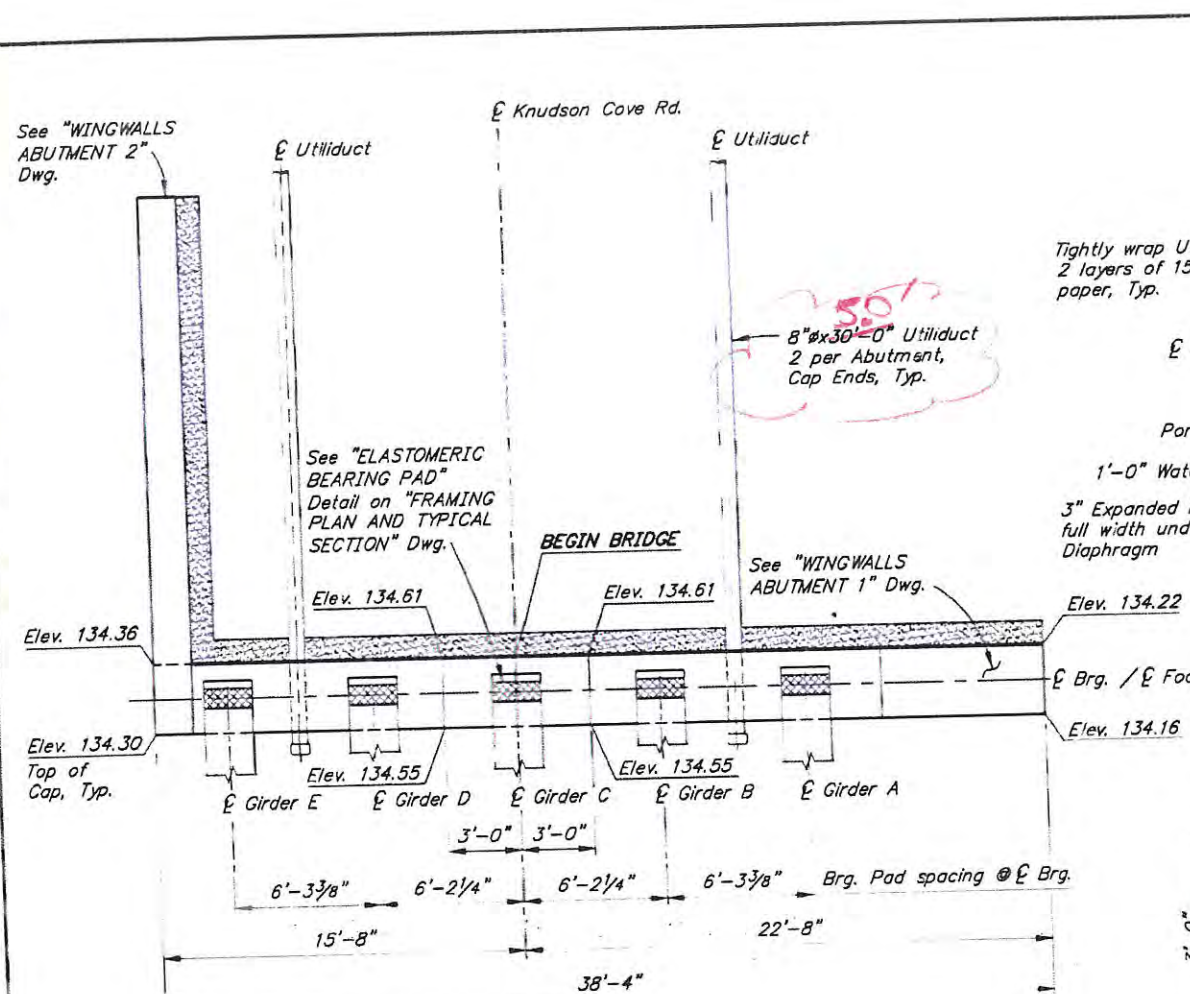


BRIDGE NO. 864
D.G. NO. 2

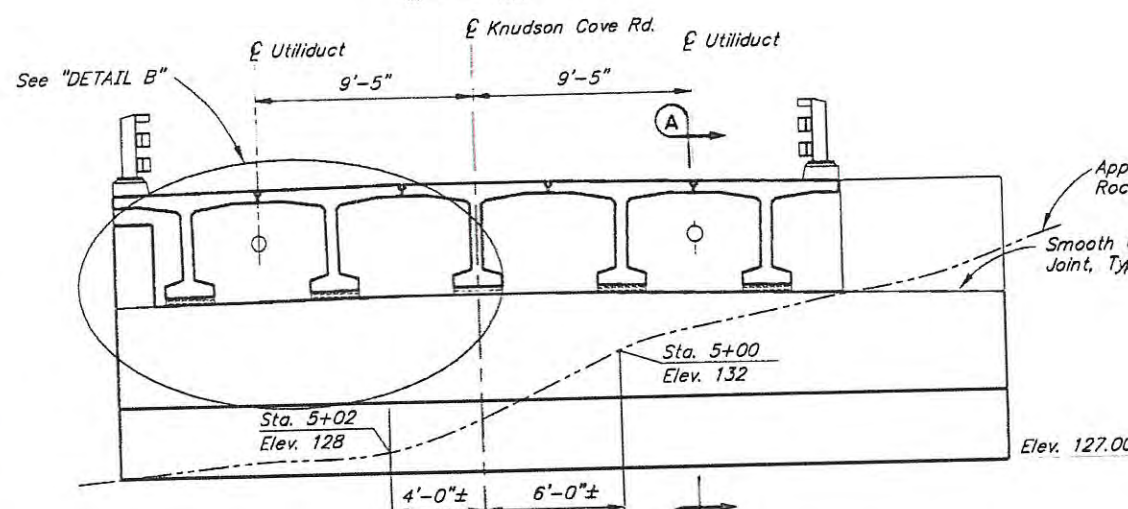
MARK	NOTE	SIZE	NO.	LENGTH	TYPE	BENDING DIAGRAM
A401		4	77	VARIES	STIRRUP	
A501	E	5	28	14'-3"	STIRRUP	
A502	E	5	28	38'-0"	---	
A503	H, M	5	4	38'-0"	HEADED	
A601	E	6	4	3'-9"	---	
A602	E	6	7	29'-3"	---	
A603	E	6	5	31'-0"	---	
A604	E	6	77	21'-10"	STIRRUP	
A701	E	7	8	3'-0"	BENT	

E - Epoxy-Coated reinforcing steel
H - Headed reinforcing steel
M - Match roadway crown

ASTM A970, CLASS H

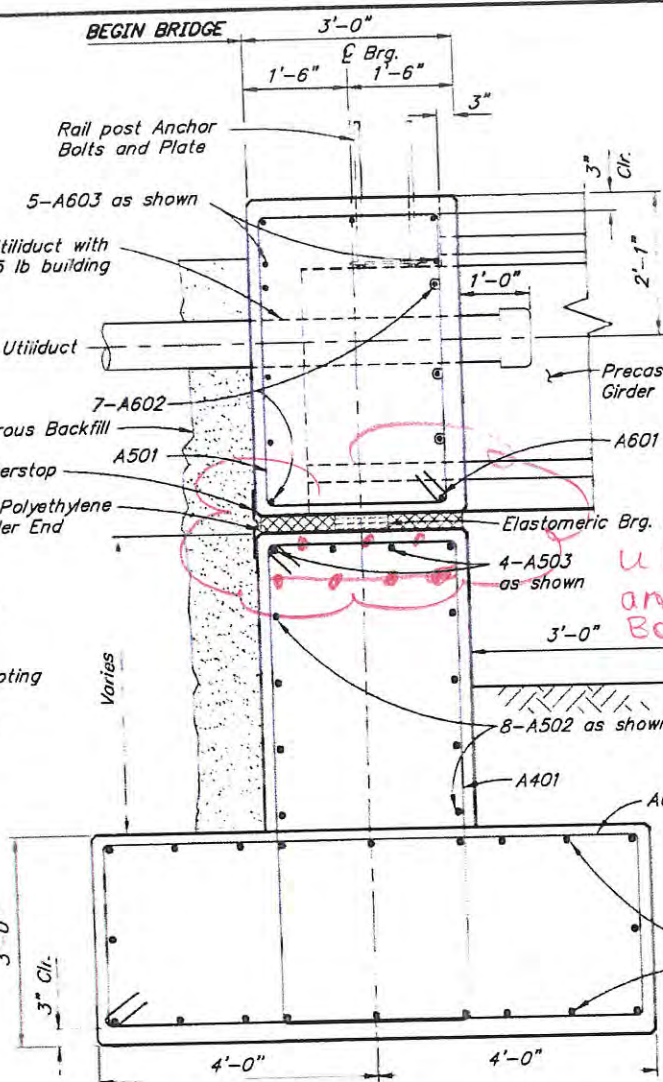


PLAN

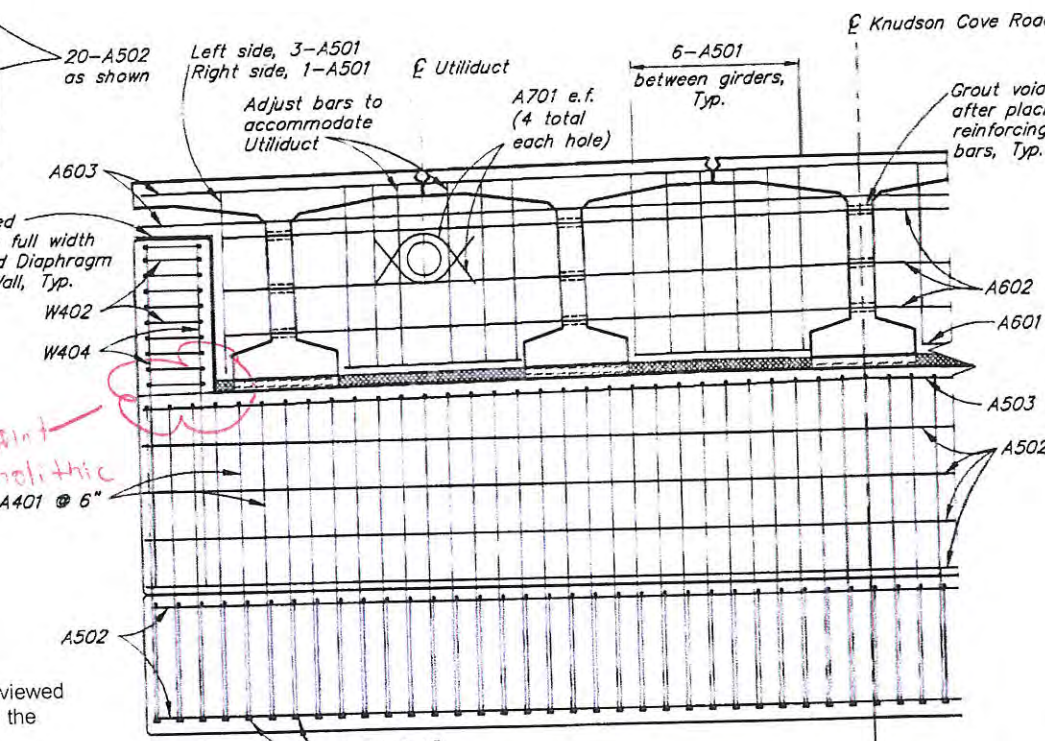
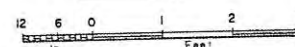


ELEVATION

(Looking Back on Station)



SECTION A-A



DETAIL B



Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

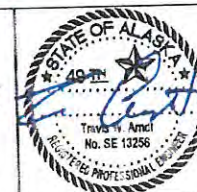
Project Eng. *MP*

11-13-17
Date

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DESIGNED BY:	Travis Arndt	CHECKED:	Jared Levens
DRAWN BY:	Sam Soile	CHECKED:	Travis Arndt
QUANTITIES BY:	Travis Arndt	CHECKED:	Jared Levens

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
BRIDGE SECTION



TROLLERS CREEK BRIDGE
KNUDSON COVE ROAD
ABUTMENT 1

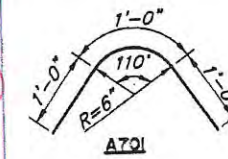


BRIDGE NO. 864
DWG. NO. 3

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	Z694200000	2016	N4	

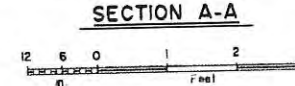
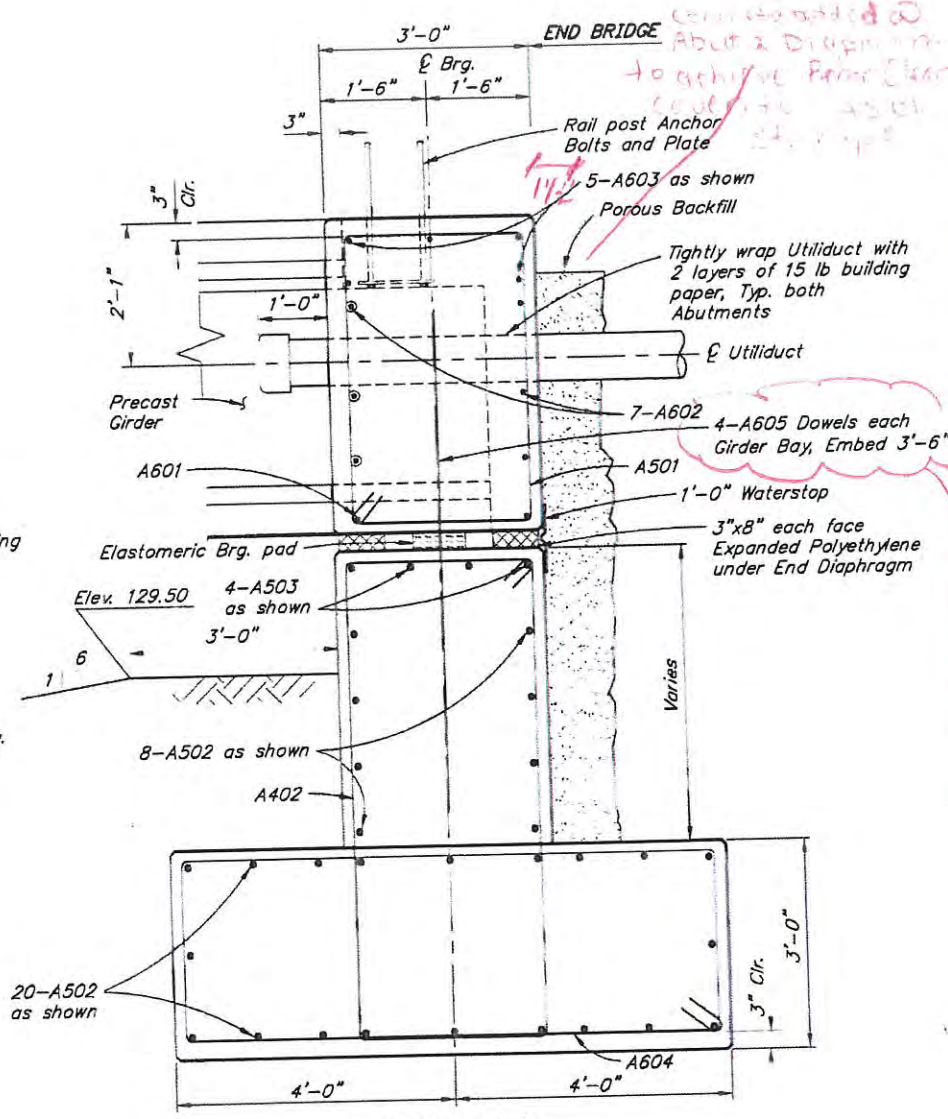
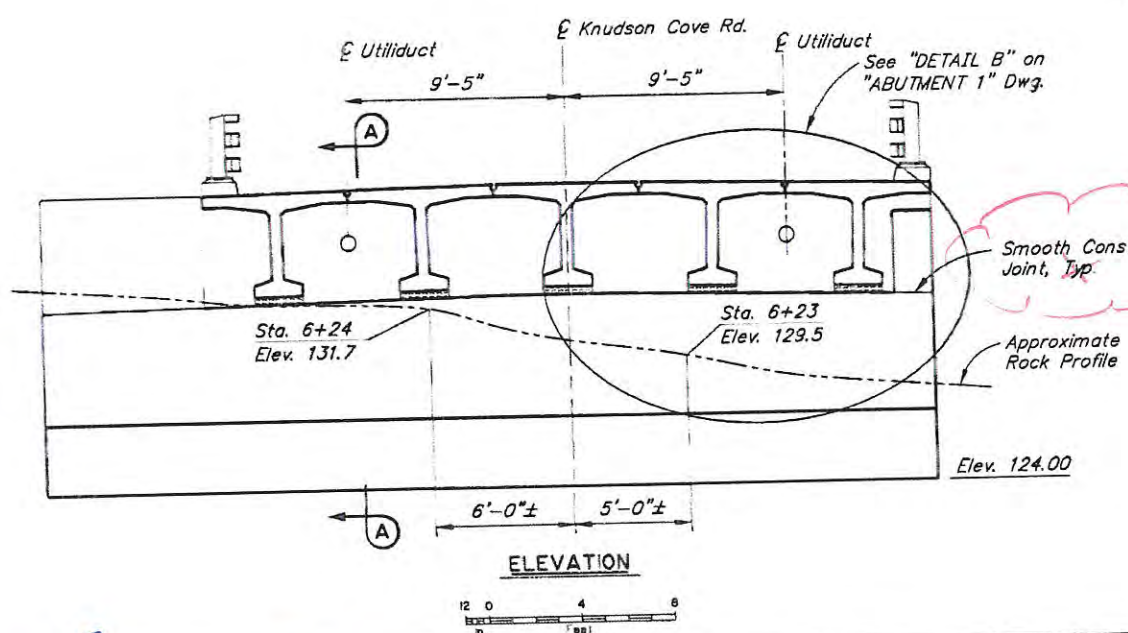
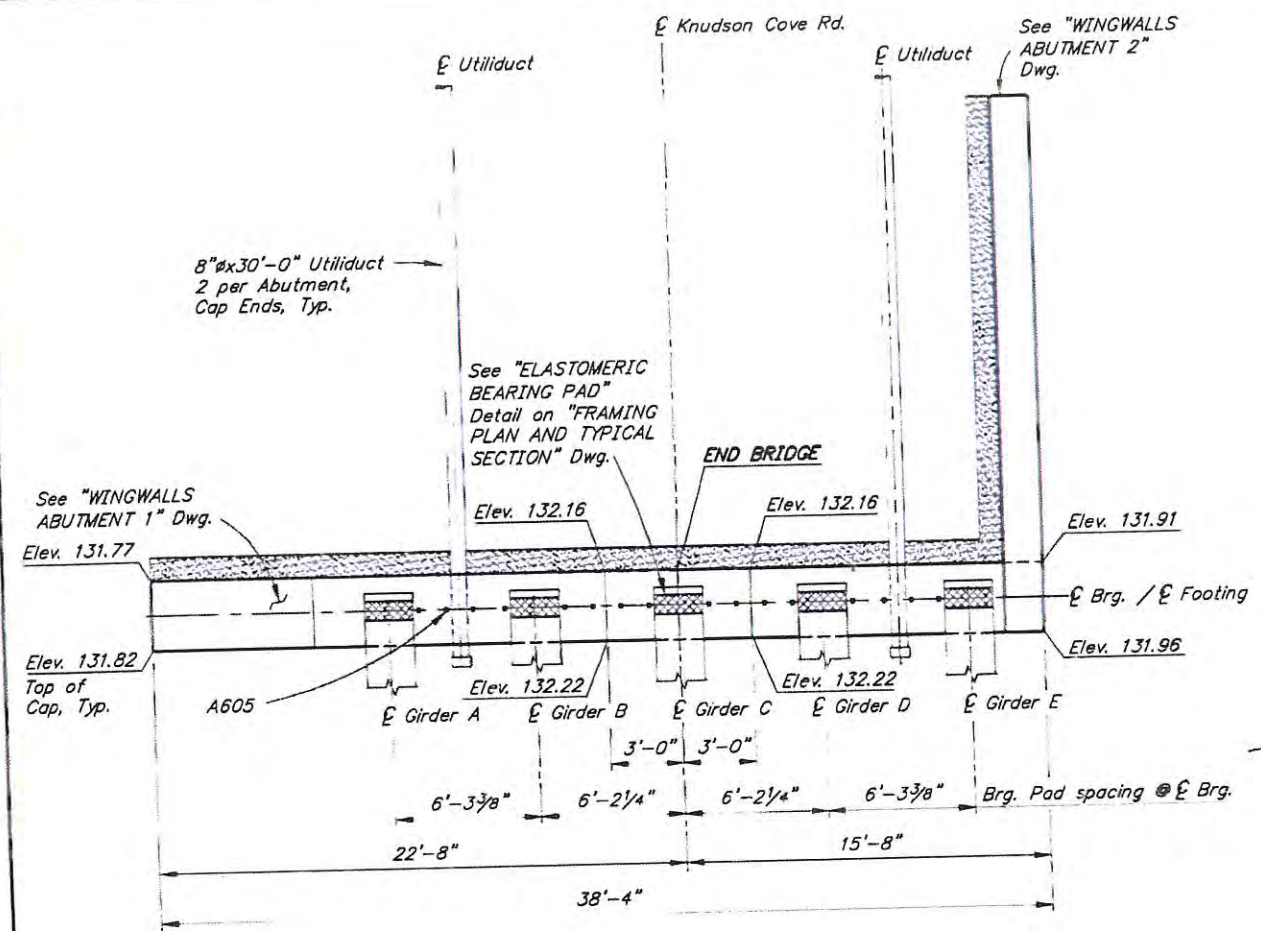
REINFORCING STEEL - ABUTMENT 2

MARK	NOTE	SIZE	NO.	LENGTH	TYPE	BENDING DIAGRAM
A402		4	77	VARIES	STIRRUP	
A501	E	5	28	14'-3"	STIRRUP	
A502		5	28	38'-0"	---	
A503	H,M	5	4	38'-0"	HEADED	
A601	E	6	4	3'-9"	---	
A602	E	6	7	29'-3"	---	
A603	E	6	5	31'-0"	---	
A604		6	77	21'-10"	STIRRUP	
A605	E	6	16	7'-0"	---	
A701	E	7	8	3'-0"	BENT	



E - Epoxy-Coated reinforcing steel
H - Headed reinforcing steel
M - Match roadway crown

4'-6" to 5'-0"
Embedded into the cap
4'-0" Extended Above Cap



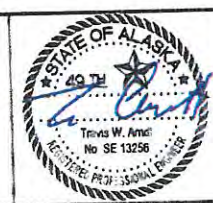
No Construction Joint
Hydro-thermally Bonded Monolithic
w/ 1/2" steel exp

Project As Built Drawings Have Been Reviewed
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Constructed.

Project Eng. *MP* Date 11-13-17

DESIGNED BY: <i>Travis Arndt</i>	CHECKED: <i>Jared Levings</i>
DRAWN BY: <i>Sam Salie Jr</i>	CHECKED: <i>Travis Arndt</i>
QUANTITIES BY: <i>Travis Arndt</i>	CHECKED: <i>Jared Levings</i>

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
BRIDGE SECTION



TROLLERS CREEK BRIDGE
KNUDSON COVE ROAD
ABUTMENT 2



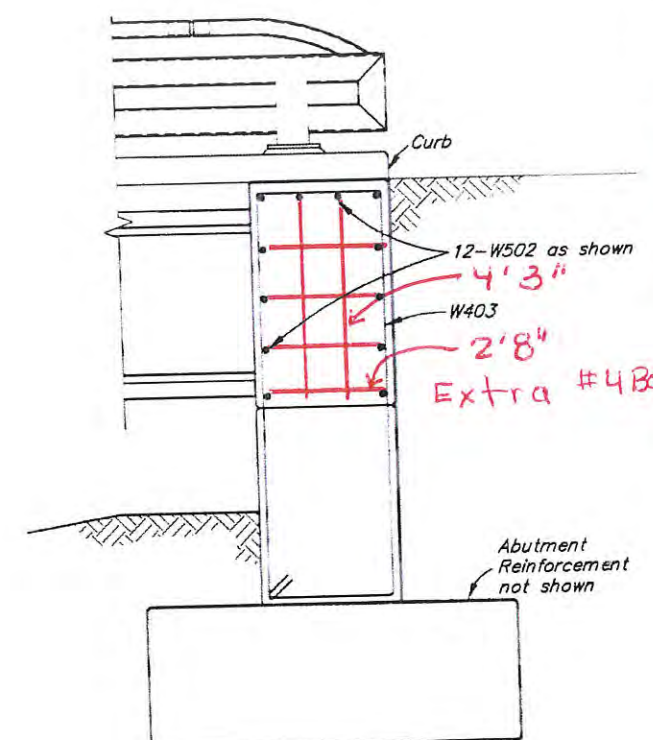
BRIDGE NO. 864
DWG. NO. 4

6/15/16

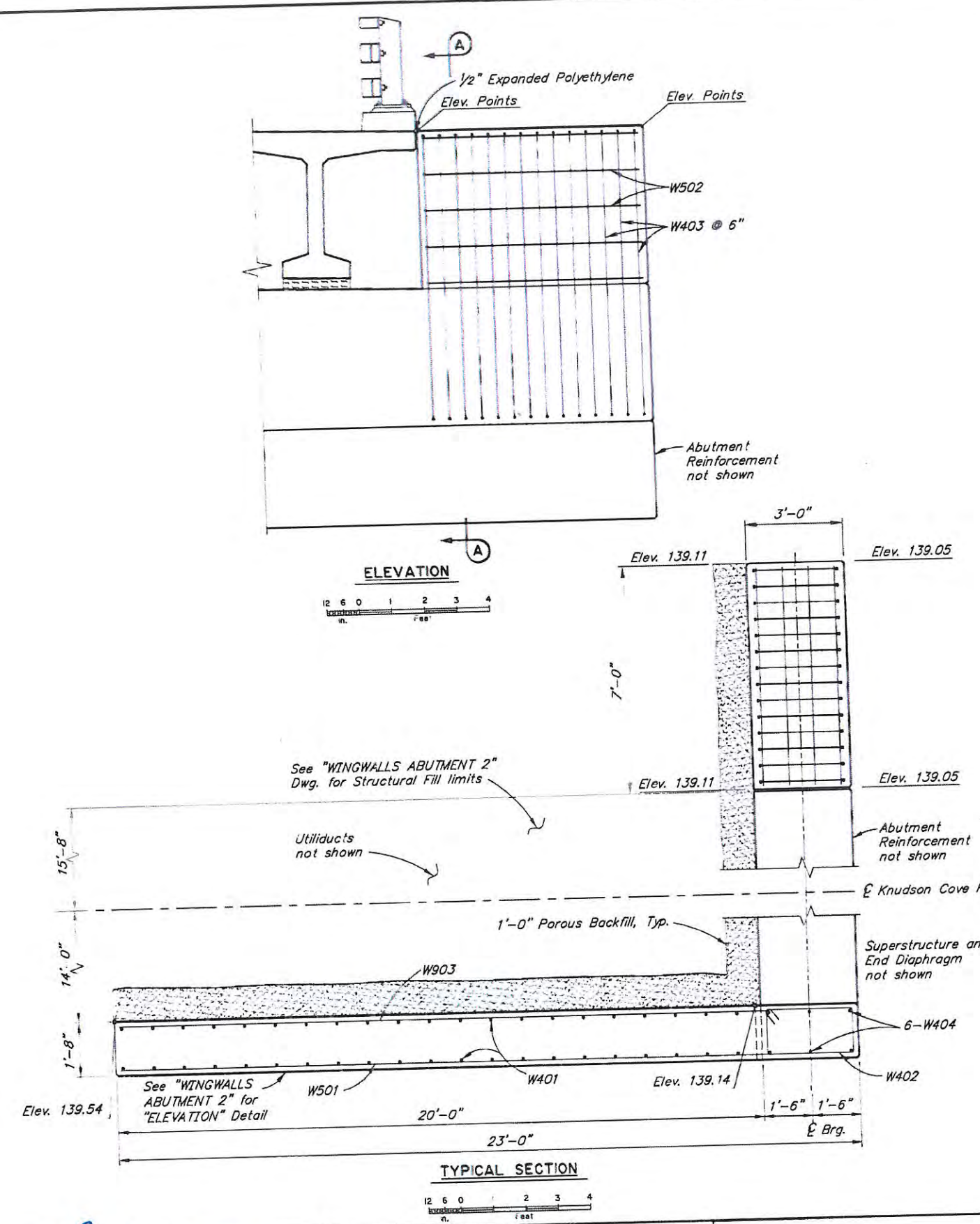
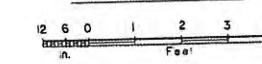
REINFORCING STEEL - ONE ABUTMENT

MARK	NOTE	SIZE	NO.	LENGTH	TYPE	BENDING DIAGRAM
W401		4	42	VARIES	---	
W402		4	10	8'-7"	STIRRUP	
W403		4	15	23'-5"	STIRRUP	
W404		4	6	7'-6"	---	
W501		5	11	VARIES	---	
W502		5	12	6'-8"	---	
W901		9	2	23'-9"	BENT	
W902		9	2	21'-0"	BENT	
W903		9	11	VARIES	---	
C402	E	4	15	7'-7"	STIRRUP	
C502	E	5	2	19'-6"	---	

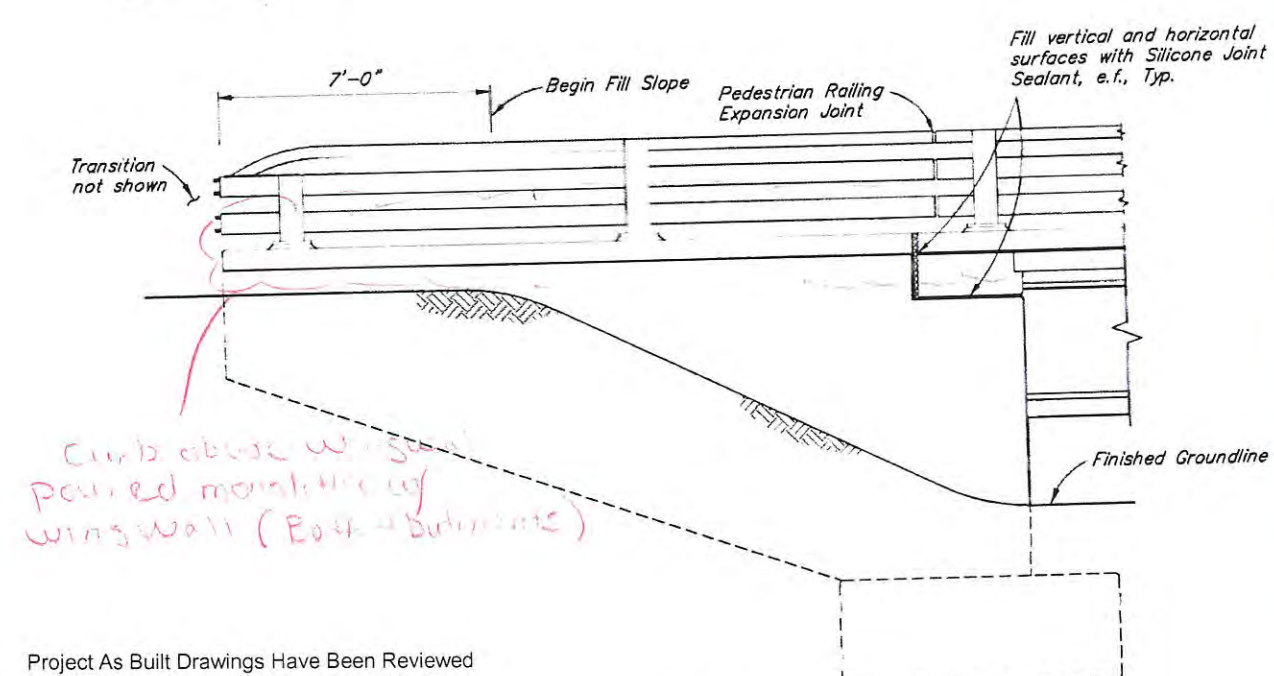
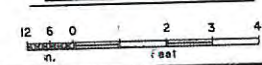
E - Epoxy-Coated reinforcing steel



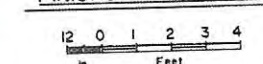
SECTION A-A



TYPICAL SECTION



FINISHED ELEVATION



Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

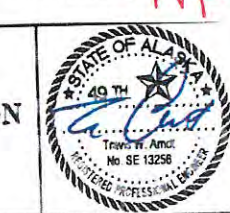
Project Eng. *MP*

11.13.17
Date

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DESIGNED BY: <i>Travis Amdt</i>	CHECKED: <i>Jared Levings</i>
DRAWN BY: <i>Sam Salie Jr</i>	CHECKED: <i>Travis Amdt</i>
QUANTITIES BY: <i>Travis Amdt</i>	CHECKED: <i>Jared Levings</i>

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
BRIDGE SECTION



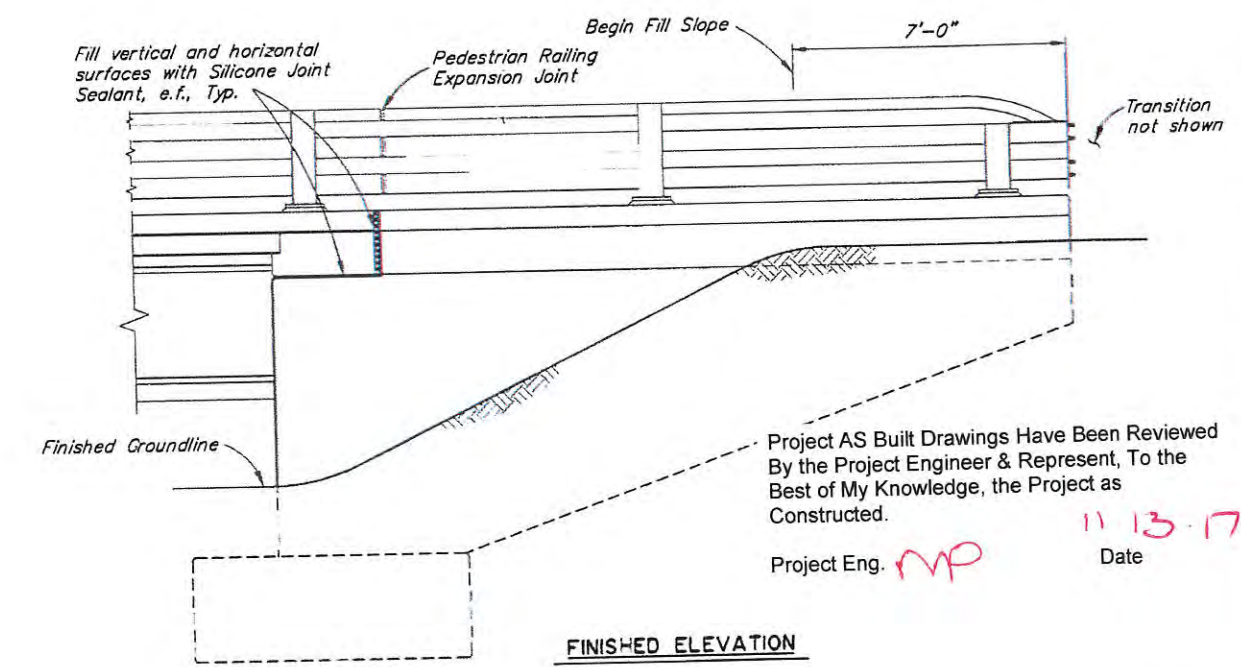
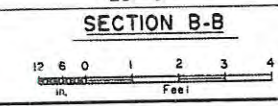
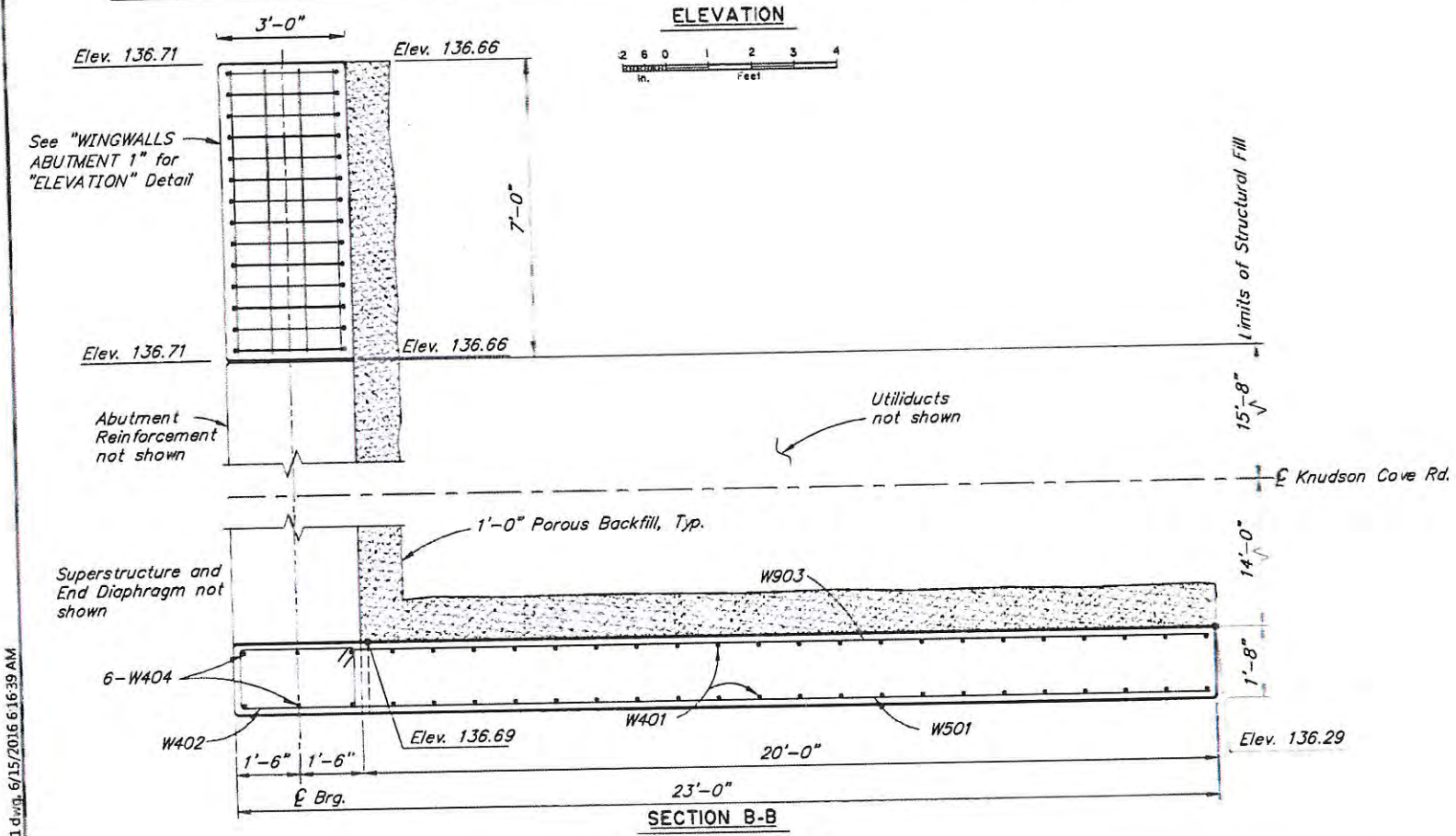
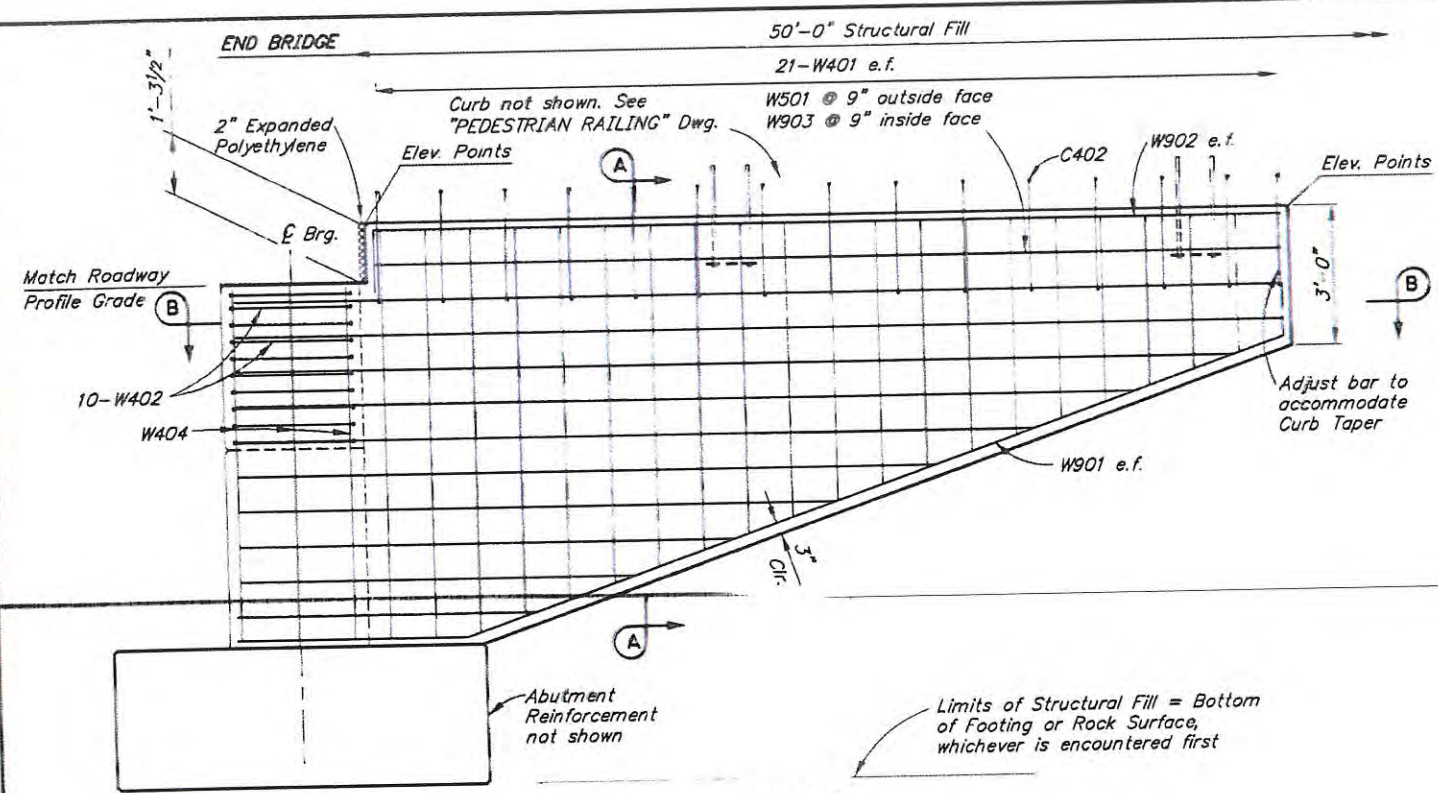
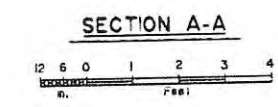
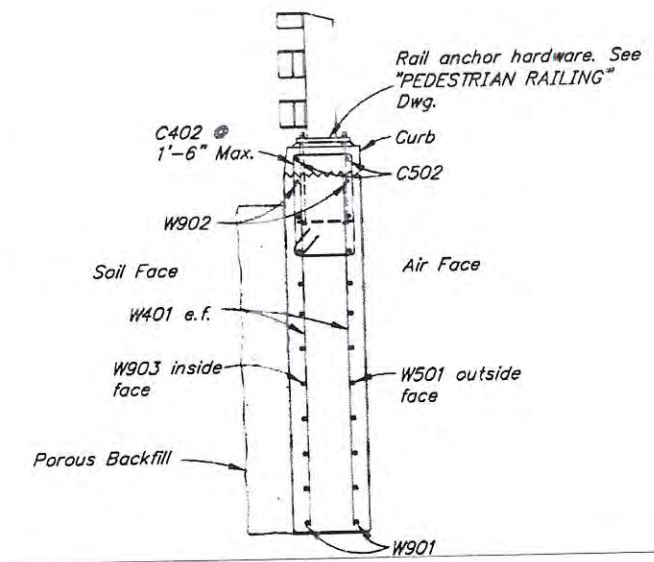
TROLLERS CREEK BRIDGE
KNUDSON COVE ROAD
WINGWALLS ABUTMENT 1

BRIDGE NO. 864
DWG. NO. 5

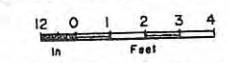
REINFORCING STEEL - ONE ABUTMENT

MARK	NOTE	SIZE	NO.	LENGTH	TYPE	BENDING DIAGRAM
W401		4	42	VARIES	---	
W402		4	10	8'-7"	STIRRUP	
W403		4	15	24'-9"	STIRRUP	
W404		4	6	8'-0"	---	
W501		5	12	VARIES	---	
W502		5	12	6'-8"	---	
W901		9	2	23'-8"	BENT	
W902		9	2	21'-0"	BENT	
W903		9	12	VARIES	---	
C402	E	4	15	7'-7"	STIRRUP	
C502	E	5	2	19'-6"	---	

E - Epoxy-Coated reinforcing steel



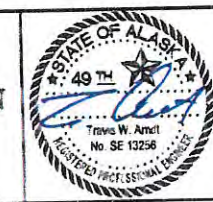
FINISHED ELEVATION



Project AS Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.
Project Eng. *MP* Date 11/13/17

DESIGNED BY: *Travis Arndt* CHECKED: *Jared Levings*
DRAWN BY: *Sam Salie* CHECKED: *Travis Arndt*
QUANTITIES BY: *Travis Arndt* CHECKED: *Jared Levings*

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
BRIDGE SECTION



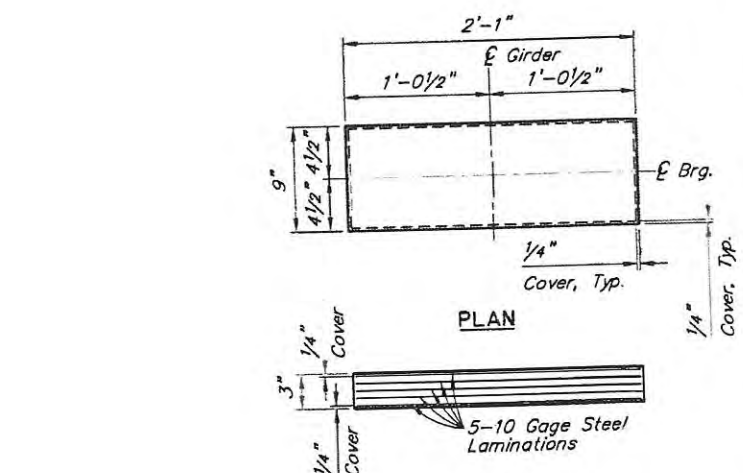
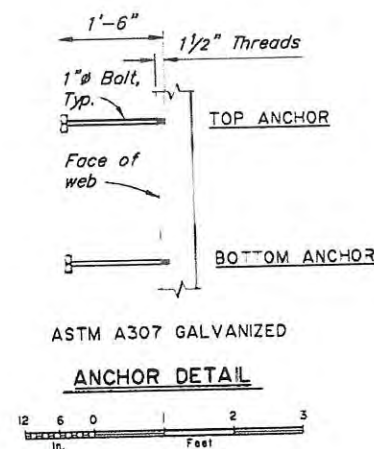
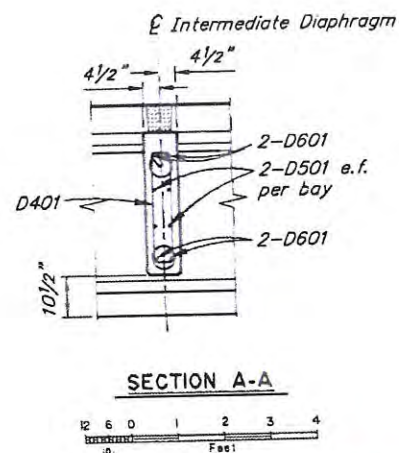
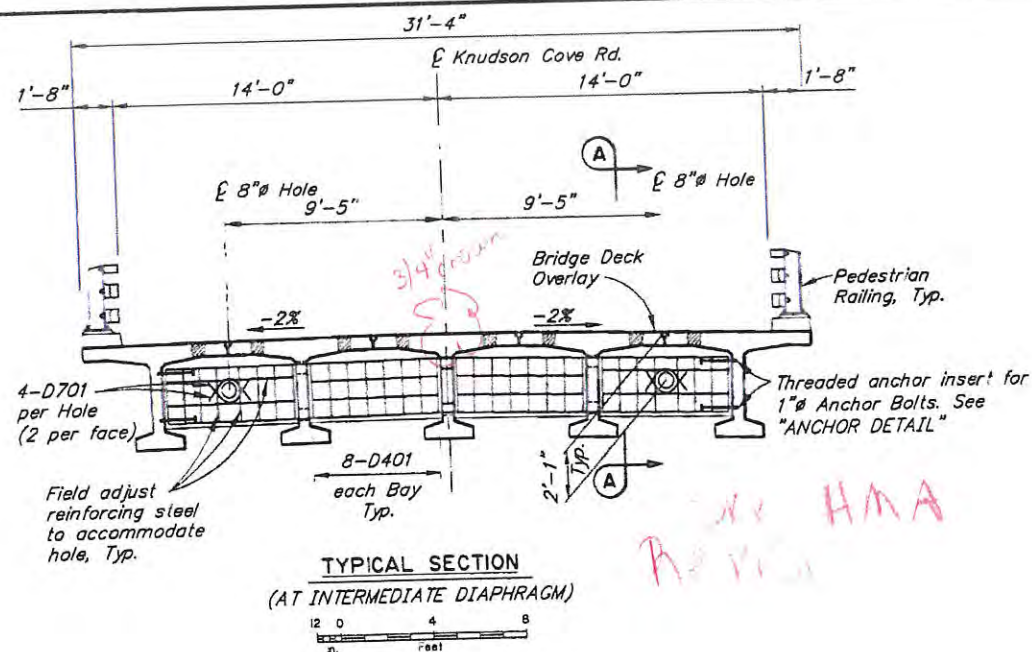
TROLLERS CREEK BRIDGE
KNUDSON COVE ROAD
WINGWALLS ABUTMENT 2

BRIDGE NO. 864
DWG. NO. 6

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	Z694200000	2016	N7	

REINFORCING STEEL						BENDING DIAGRAM
MARK	NOTE	SIZE	NO.	LENGTH	TYPE	
D401	E	4	32	6'-3"	STIRRUP	
D501	E	5	16	5'-5"	---	
D601	E	6	4	24'-3"	---	
D701	E	7	8	3'-0"	BENT	

E - Epoxy-Coated reinforcing steel



ELASTOMERIC BEARING PAD
 No Scale
 Grade 5
 Max. Dead Load = 105 k
 Max. Live Load = 75 k
 Shear Modulus = 115 psi

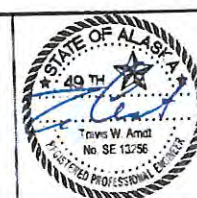
Bearing Pads
 ① M251 8.9.2
 Compression Stiffness Test
 ② Top & Bottom Cover
 Tolerance - 0" to 0.18"
 Side Edge Cover
 Modified to meet M251,
 - 0" to 0.18"

Project As Built Drawings Have Been Reviewed
 By the Project Engineer & Represent. To the
 Best of My Knowledge, the Project as
 Constructed.
 Project Eng. *MP* Date 11-13-17

6/15/2016 6:16:44 AM

DESIGNED BY: <i>Travis Arndt</i>	CHECKED: <i>Jared Levings</i>
DRAWN BY: <i>Sam Saline Jr</i>	CHECKED: <i>Travis Arndt</i>
QUANTITIES BY: <i>Travis Arndt</i>	CHECKED: <i>Jared Levings</i>

STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 AND PUBLIC FACILITIES
 BRIDGE SECTION

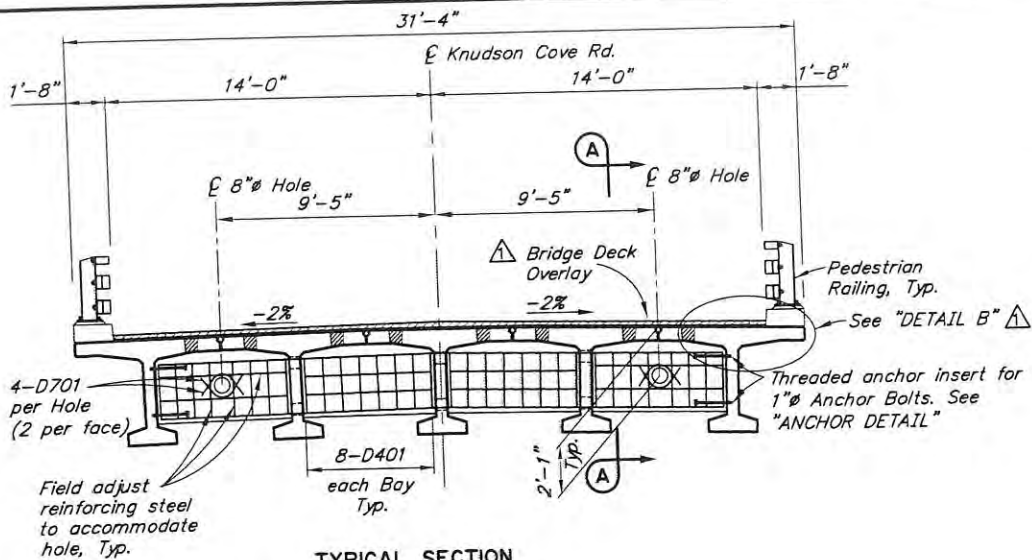


TROLLERS CREEK BRIDGE
 KNUDSON COVE ROAD

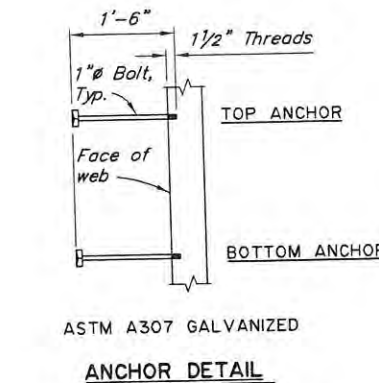
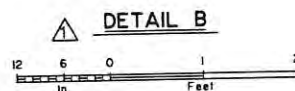
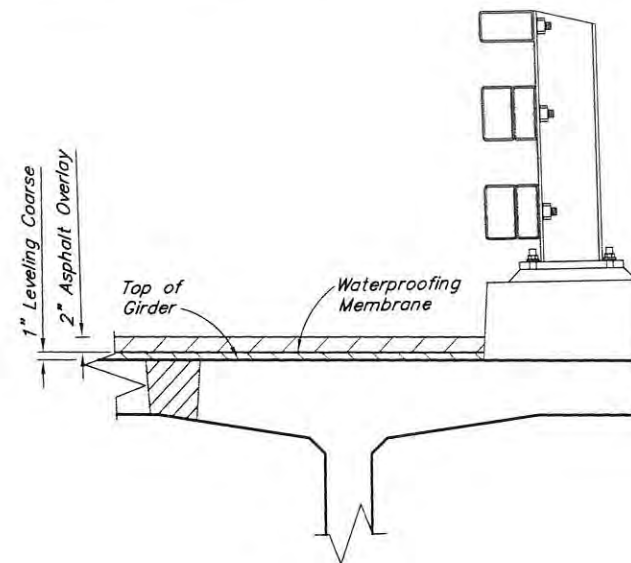
FRAMING PLAN AND TYPICAL SECTION



BRIDGE NO. 864
 DWG. NO. 7



TYPICAL SECTION
(AT INTERMEDIATE DIAPHRAGM)



ASTM A307 GALVANIZED

ANCHOR DETAIL



Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

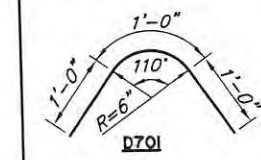
Project Eng. **MP**

Date

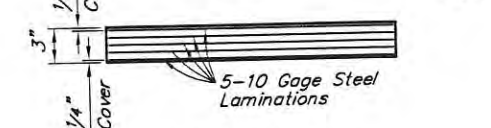
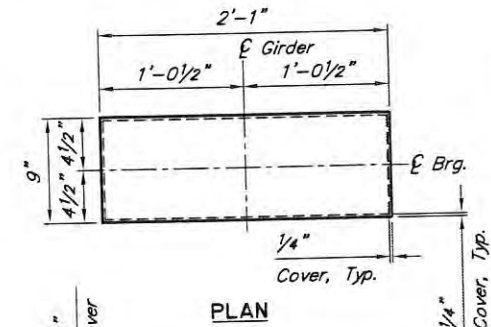
11-13-17

REINFORCING STEEL

MARK	NOTE	SIZE	NO.	LENGTH	TYPE	BENDING DIAGRAM
D401	E	4	32	6'-3"	STIRRUP	
D501	E	5	16	5'-5"	---	
D601	E	6	4	24'-3"	---	
D701	E	7	8	3'-0"	BENT	

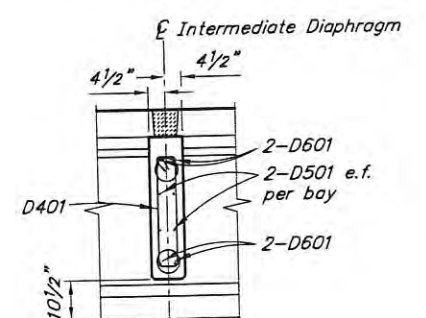


E - Epoxy-Coated reinforcing steel

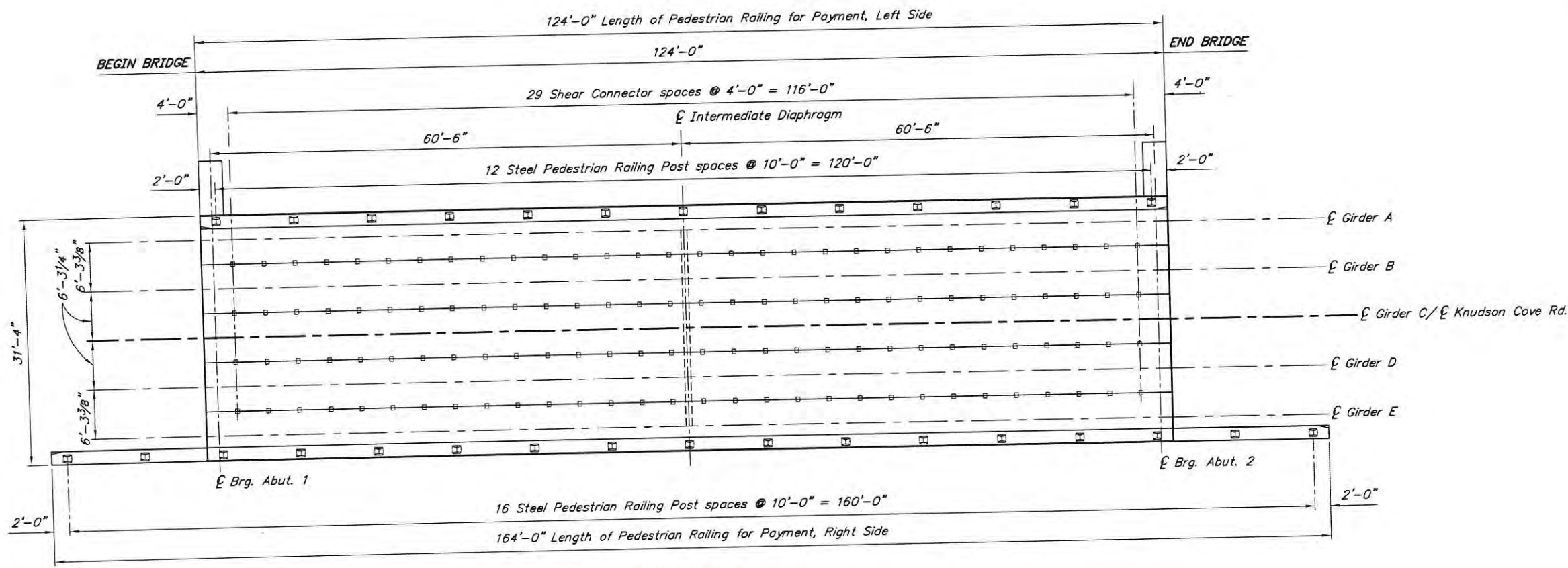
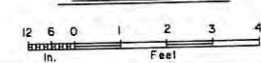


ELASTOMERIC BEARING PAD

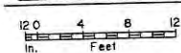
No Scale
Grade 5
Max. Dead Load = 105 k
Max. Live Load = 75 k
Shear Modulus = 115 psi



SECTION A-A



FRAMING PLAN



DESIGNED BY: Travis Arndt	CHECKED: Jared Levings	REVISIONS			
DRAWN BY: Sam Sallie Sam Sallie Jr	CHECKED: Travis Arndt	No.	Date	By	Description
QUANTITIES BY: Travis Arndt	CHECKED: Jared Levings	1	1/27/17	TWA	Overlay and Membrane

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
BRIDGE SECTION

TROLLERS CREEK BRIDGE
KNUDSON COVE ROAD
FRAMING PLAN AND TYPICAL SECTION

BRIDGE NO. 864
DWG. NO. 7

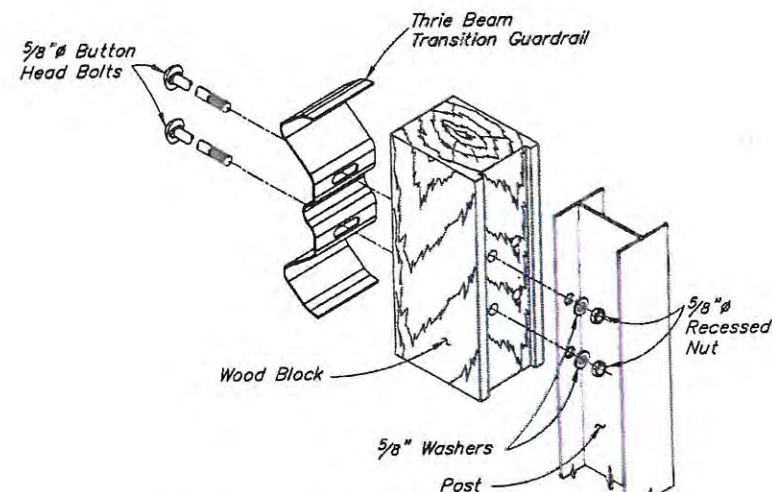
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	Z694200000	2016	N10	

Project As Built Drawings Have Been Reviewed
By the Project Engineer & Represent, To the
Best of My Knowledge, the Project as
Constructed.

Project Eng. **MP**

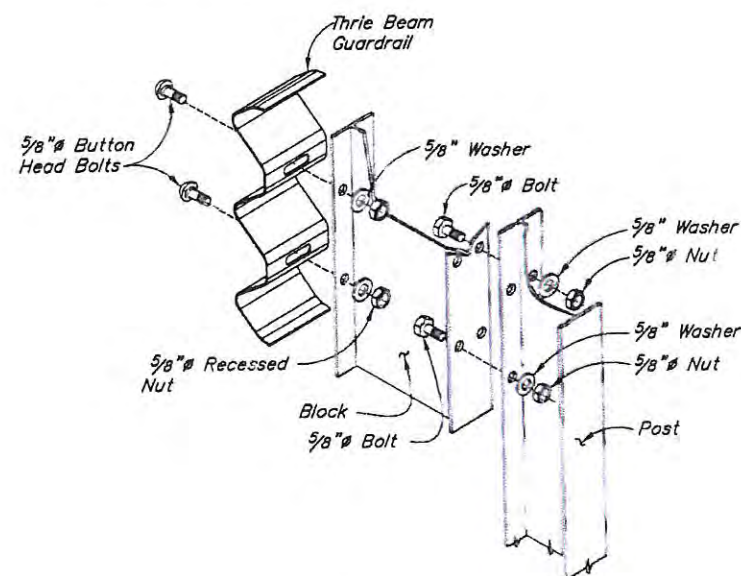
11.13.17

Date



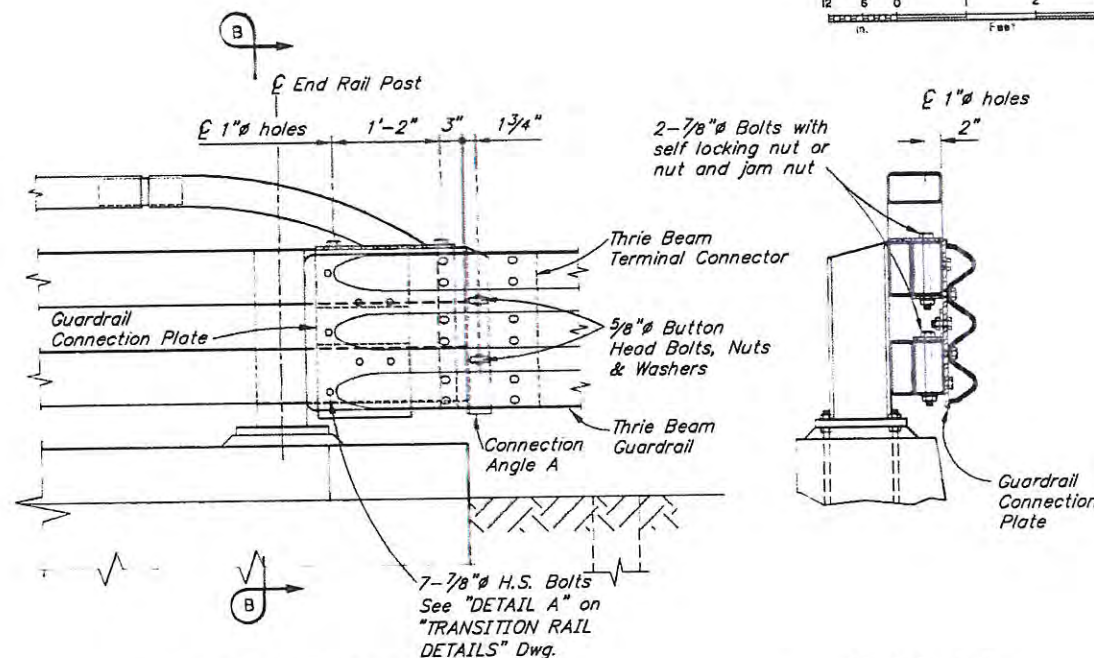
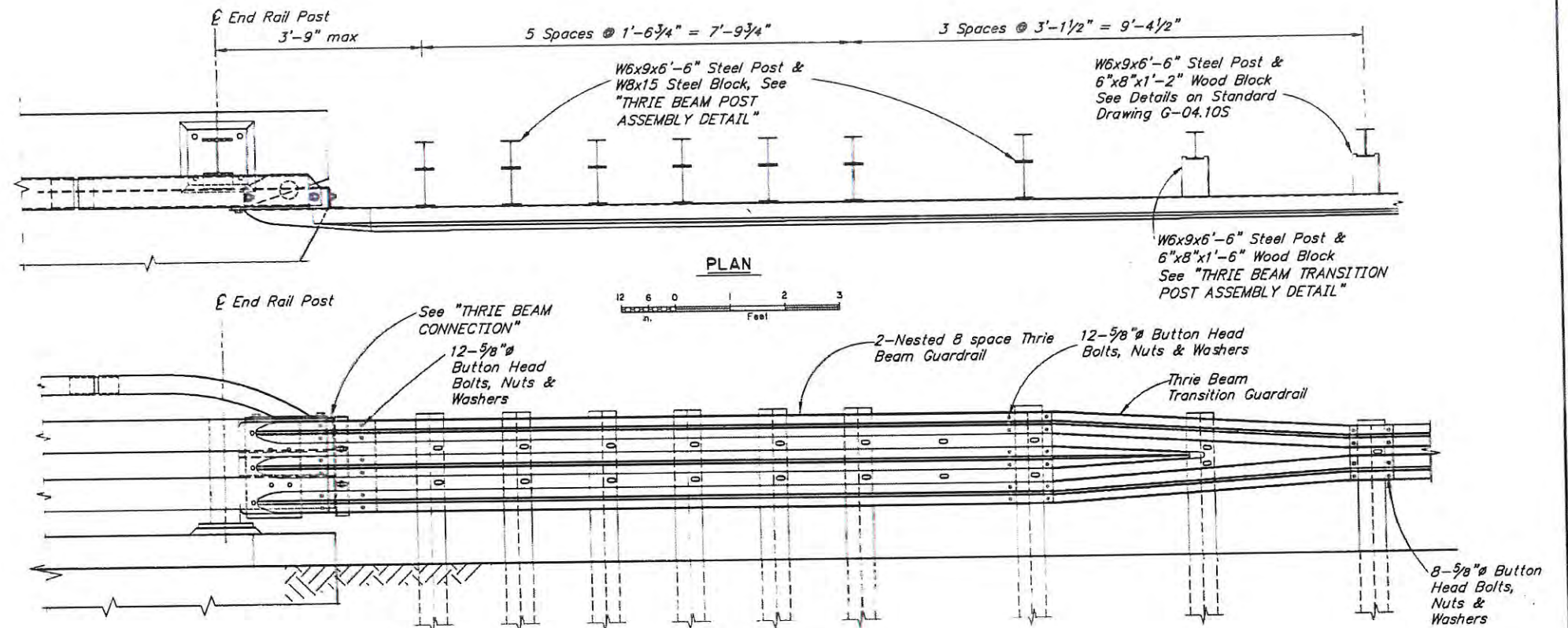
THRIE BEAM TRANSITION POST ASSEMBLY DETAIL

No Scale



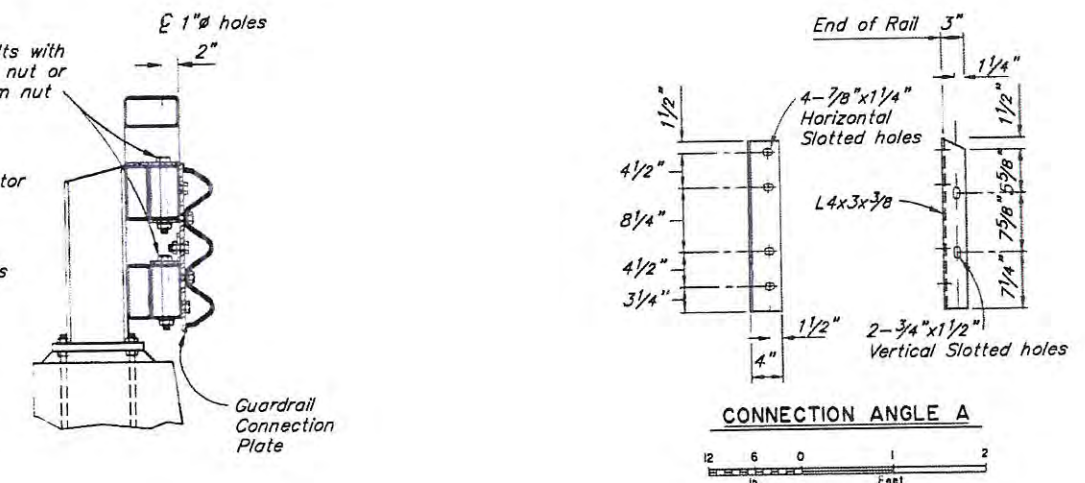
THRIE BEAM POST ASSEMBLY DETAIL

No Scale



THRIE BEAM CONNECTION

No Scale



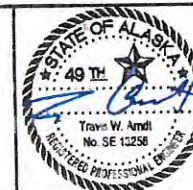
NOTES:

1. See Standard Drawing G-00.02 for details not shown.
2. Verify all bolt hole locations to match thrie beam terminal connector.

R:\pav\1864\1864.dwg, 6/15/2016 6:16:59 AM

DESIGNED BY: Travis Armit	CHECKED: Jared Levings
DRAWN BY: Sam Salter	CHECKED: Travis Armit
QUANTITIES BY: Travis Armit	CHECKED: Jared Levings

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
BRIDGE SECTION

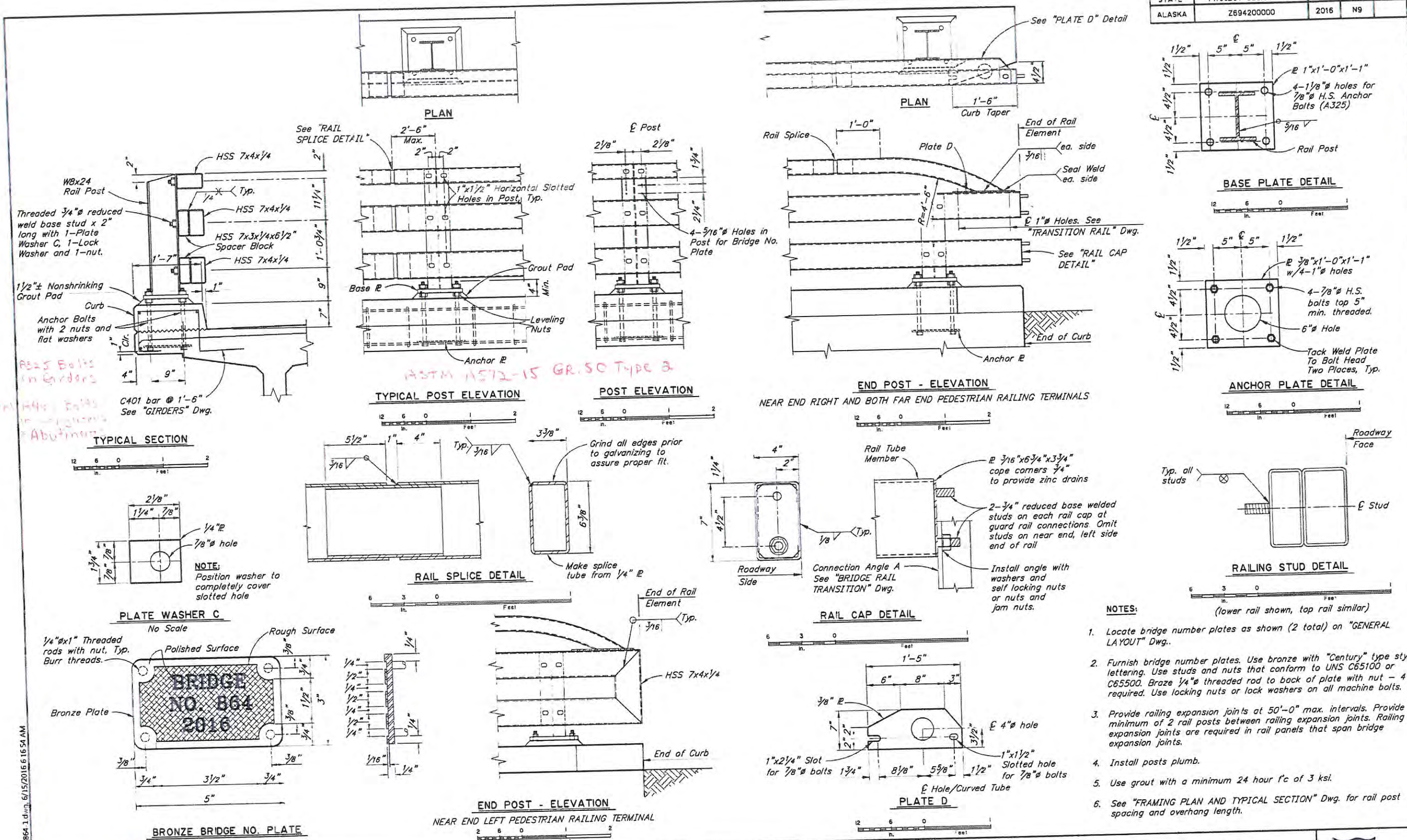


TROLLERS CREEK BRIDGE
KNUDSON COVE ROAD
TRANSITION RAIL



BRIDGE NO. 864
DWG. NO. 10

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	Z694200000	2016	N9	



DESIGNED BY:	Travis Arndt	CHECKED:	Jared Levens
DRAWN BY:	Sam Salie	CHECKED:	Travis Arndt
QUANTITIES BY:	Travis Arndt	CHECKED:	Jared Levens

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. **MP** Date **11/3/17**

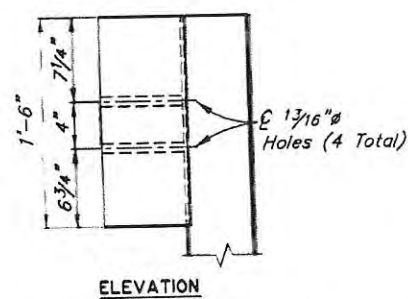
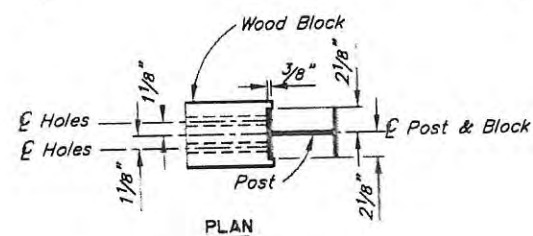
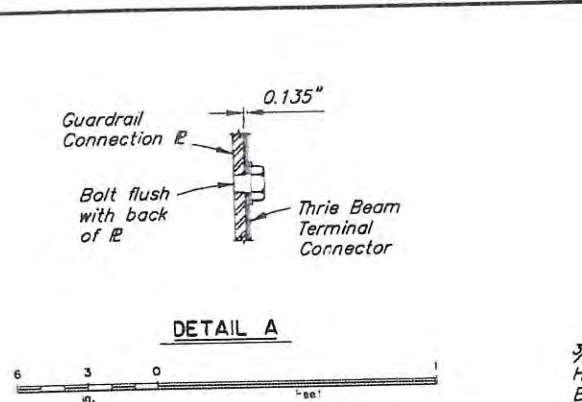
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
BRIDGE SECTION



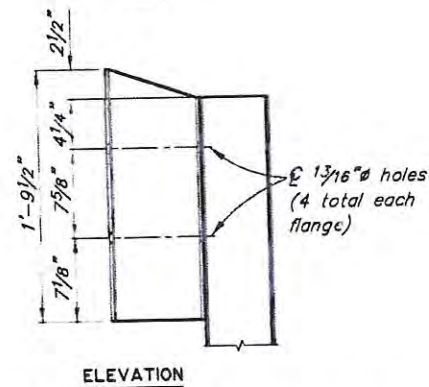
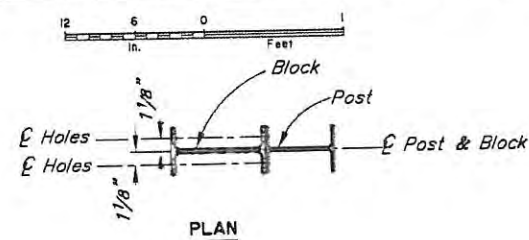
TROLLERS CREEK BRIDGE
KNUDSON COVE ROAD
PEDESTRIAN RAILING

BRIDGE NO. 864
DWG. NO. 9

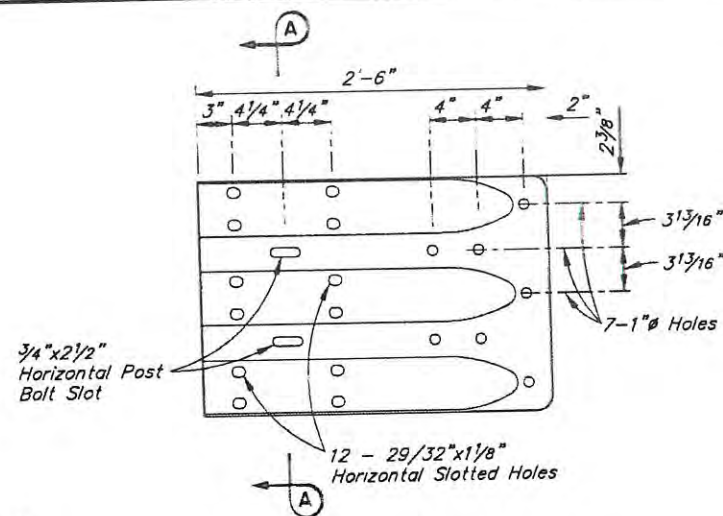
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	Z694200000	2016	N11	



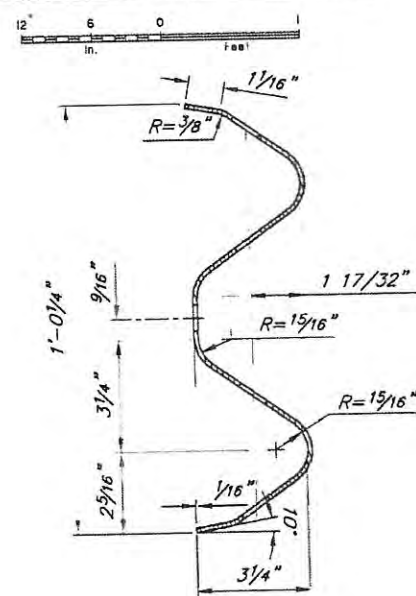
THRIE BEAM TRANSITION BLOCK AND POST DETAIL



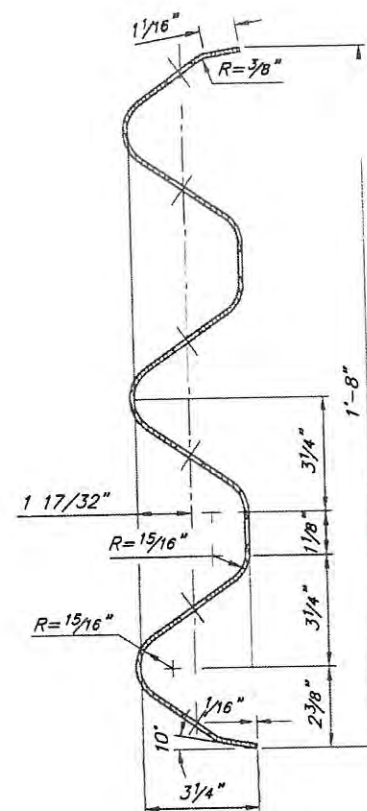
THRIE BEAM BLOCK AND POST DETAIL



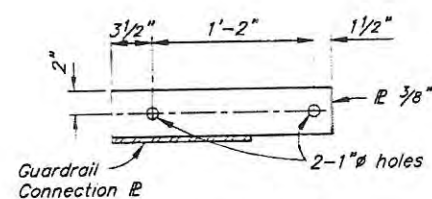
THRIE BEAM TERMINAL CONNECTOR



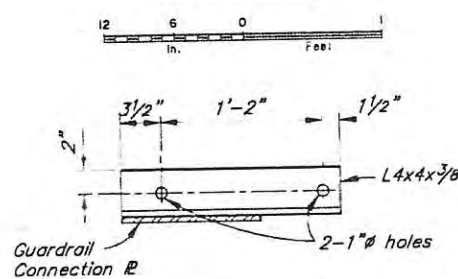
SECTION B-B
No Scale



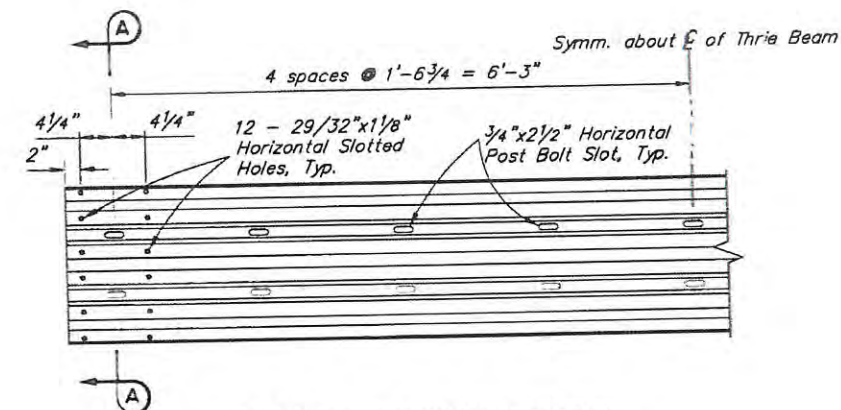
SECTION A-A
No Scale



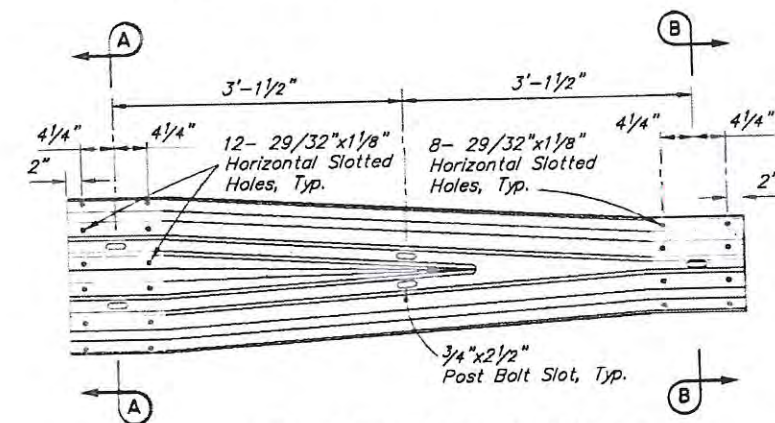
SECTION D-D



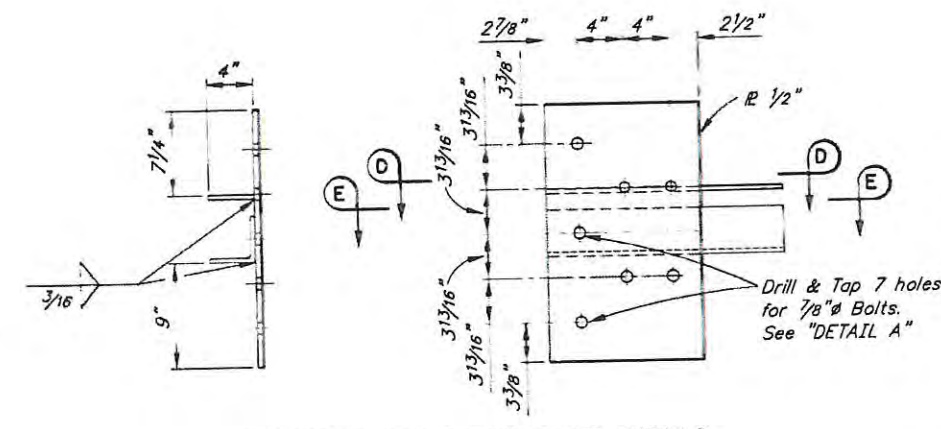
SECTION E-E



8 SPACE THRIE BEAM GUARDRAIL



THRIE BEAM TRANSITION GUARDRAIL



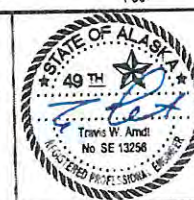
GUARDRAIL CONNECTION PLATE DETAILS

DESIGNED BY: <i>Travis Arndt</i>	CHECKED: <i>Jared Lewings</i>
DRAWN BY: <i>Sam Salter</i>	CHECKED: <i>Travis Arndt</i>
QUANTITIES BY: <i>Travis Arndt</i>	CHECKED: <i>Jared Lewings</i>

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. *MP* 11-13-17 Date

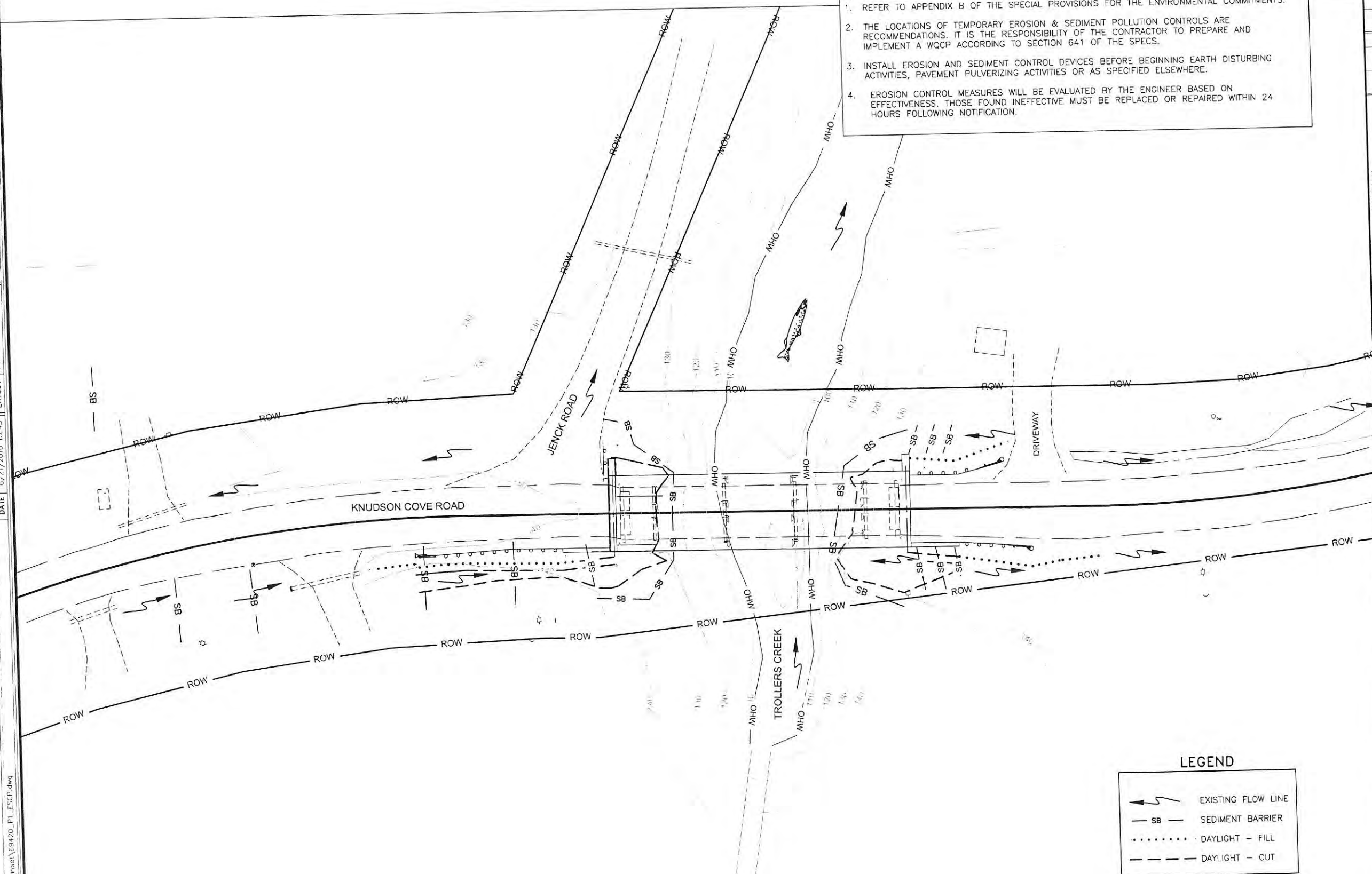
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
BRIDGE SECTION



TROLLERS CREEK BRIDGE
KNUDSON COVE ROAD
TRANSITION RAIL DETAILS



BRIDGE NO. 864
DWG. NO. 1



GENERAL NOTES:

- GENERAL NOTES:**
1. REFER TO APPENDIX B OF THE SPECIAL PROVISIONS FOR THE ENVIRONMENTAL COMMITMENTS.
 2. THE LOCATIONS OF TEMPORARY EROSION & SEDIMENT POLLUTION CONTROLS ARE RECOMMENDATIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PREPARE AND IMPLEMENT A WQCP ACCORDING TO SECTION 641 OF THE SPECS.
 3. INSTALL EROSION AND SEDIMENT CONTROL DEVICES BEFORE BEGINNING EARTH DISTURBING ACTIVITIES, PAVEMENT PULVERIZING ACTIVITIES OR AS SPECIFIED ELSEWHERE.
 4. EROSION CONTROL MEASURES WILL BE EVALUATED BY THE ENGINEER BASED ON EFFECTIVENESS. THOSE FOUND INEFFECTIVE MUST BE REPLACED OR REPAIRED WITHIN 24 HOURS FOLLOWING NOTIFICATION.

LEGEND

-
- | | |
|-----------|--------------------|
| | EXISTING FLOW LINE |
| — SB — | SEDIMENT BARRIER |
| | DAYLIGHT - FILL |
| — — — — — | DAYLIGHT - CUT |

[illegible]

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOST REGION
6860 GLACIER HIGHWAY
JUNEAU, AK 99811-2506
(907)465-1763

KTN TROLLERS CREEK
BRIDGE
PROJECT #Z694200000

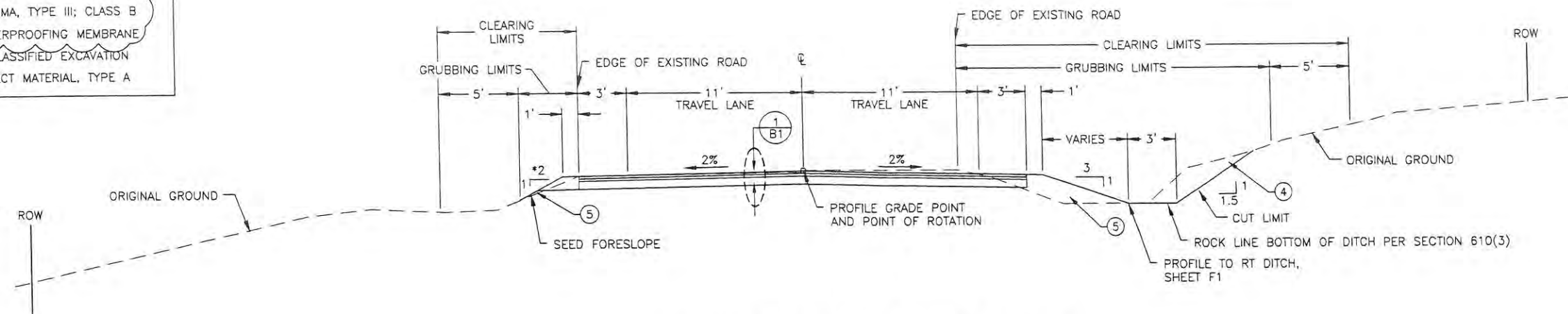
EROSION SEDIMENT
CONTROL PLAN

DESIGNED BY: J.C. IF, NG
CHECKED BY: J.C. IF, NG
DRAFTED BY: J.C. IF, NG
XREFS

LEGEND

- ① 2" HMA, TYPE II; CLASS B
- ② 1" HMA, TYPE III; CLASS B
- ③ WATERPROOFING MEMBRANE
- ④ UNCLASSIFIED EXCAVATION
- ⑤ SELECT MATERIAL, TYPE A

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
①	1/31/17	MATERIAL SUBSTITUTIONS	ALASKA	Z694200000	2017	B1	1



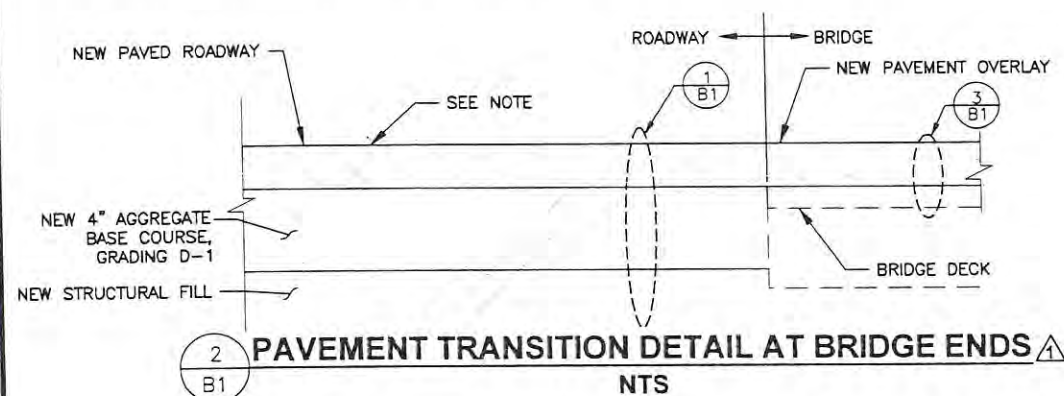
TYPICAL SECTION NOTES:

1. STABILIZE ALL NEW EMBANKMENT AND CUT SLOPES THAT ARE NOT ROCK LINED WITH SEEDING AND BONDED FIBER MATRIX PER SECTION 618 AND SECTION 619. APPLY 2" OF TOPSOIL TO DISTURBED SLOPES THAT ARE NOT ROCK LINED PRIOR TO SEEDING AND PLACING BONDED FIBER MATRIX.
2. LOCATE UTILITIES PRIOR TO EXCAVATION
3. STRUCTURAL FILL WITHIN THE ROAD PRISM, USEABLE EXCAVATION OUTSIDE THE ROAD PRISM
4. ALL UTILITY TRENCH EXCAVATION, BEDDING AND BACKFILL WORK SHALL BE PERFORMED BY THE CONTRACTOR. UTILITY COMPANIES WILL FURNISH AND INSTALL CONDUIT AND CONDUCTORS. COORDINATE ALL TRENCH WORK AND CONDUIT INSTALLATION ACTIVITIES WITH THE UTILITY COMPANIES. REFERENCE SPECIAL PROVISIONS, SECTION 662.

KNUDSON COVE ROAD TYPICAL SECTION

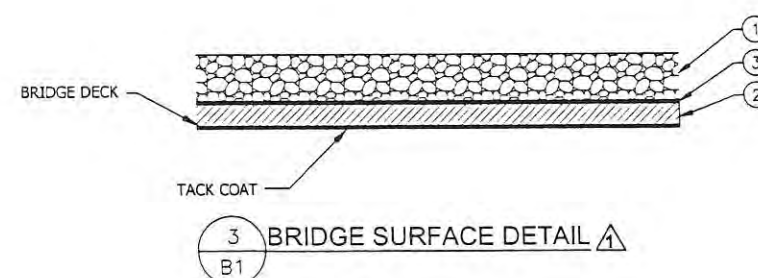
STA. 3+98 TO STA. 4+99
STA. 6+23 TO STA. 7+24

*GRADE TO EXISTING DITCH FROM STA. 6+88 TO STA. 7+04 LT.
**AGGREGATE BASE COURSE, GRADING D-1 AND NEW STRUCTURAL FILL SHALL ONLY BE PLACED UNDER THE NEW (ASPHALT) FROM 50' PRIOR TO THE BRIDGE AND 50' AFTER THE BRIDGE AS SHOWN ON THE 'N' SHEETS.

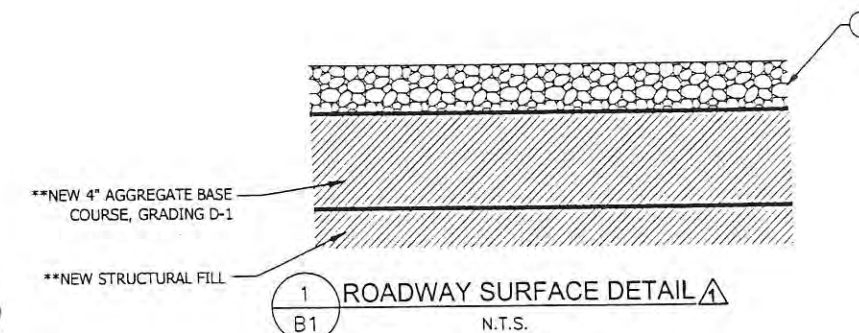


PAVEMENT TRANSITION DETAIL AT BRIDGE ENDS

NTS

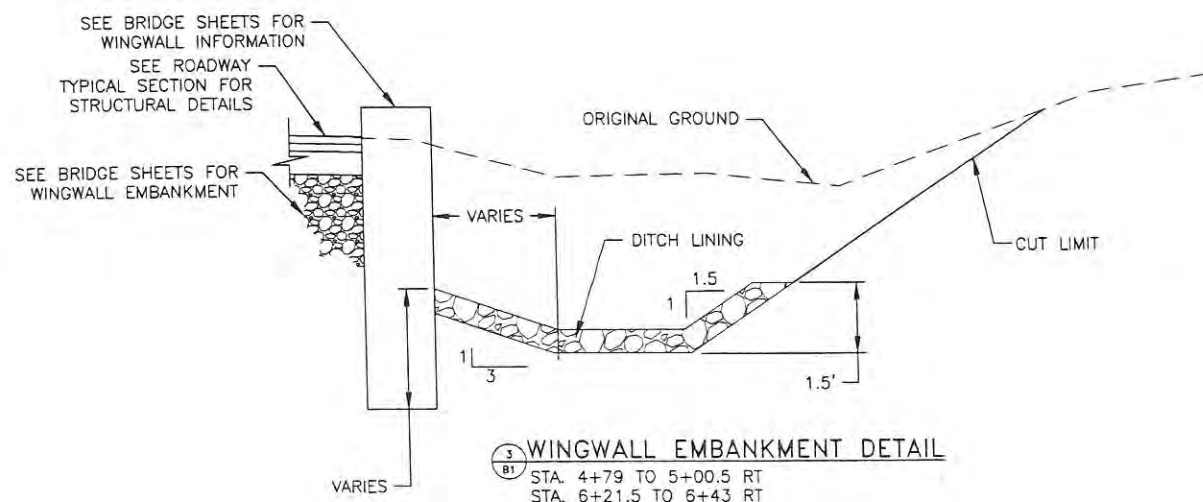


BRIDGE SURFACE DETAIL



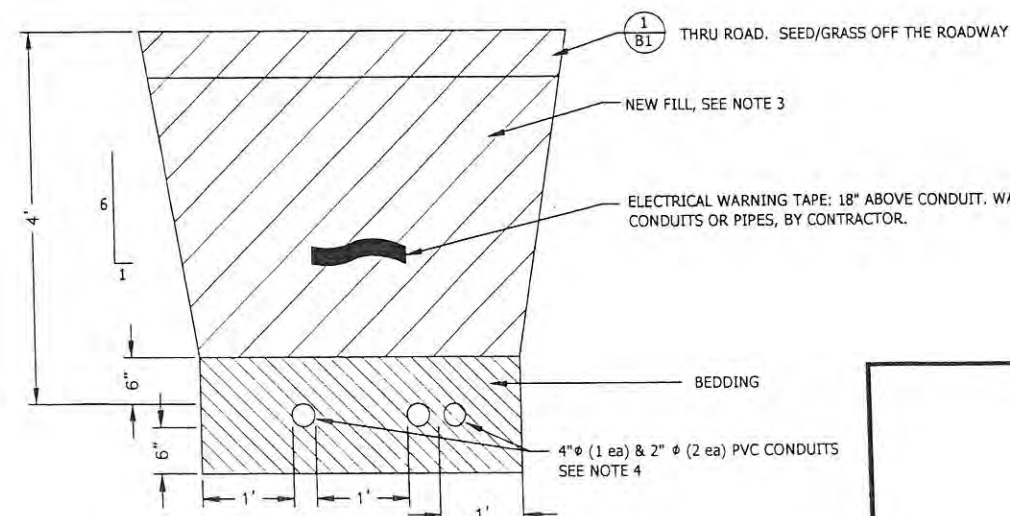
ROADWAY SURFACE DETAIL

N.T.S.



WINGWALL EMBANKMENT DETAIL

STA. 4+79 TO 5+00.5 RT
STA. 6+21.5 TO 6+43 RT



UTILITY TRENCH TYPICAL SECTION

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

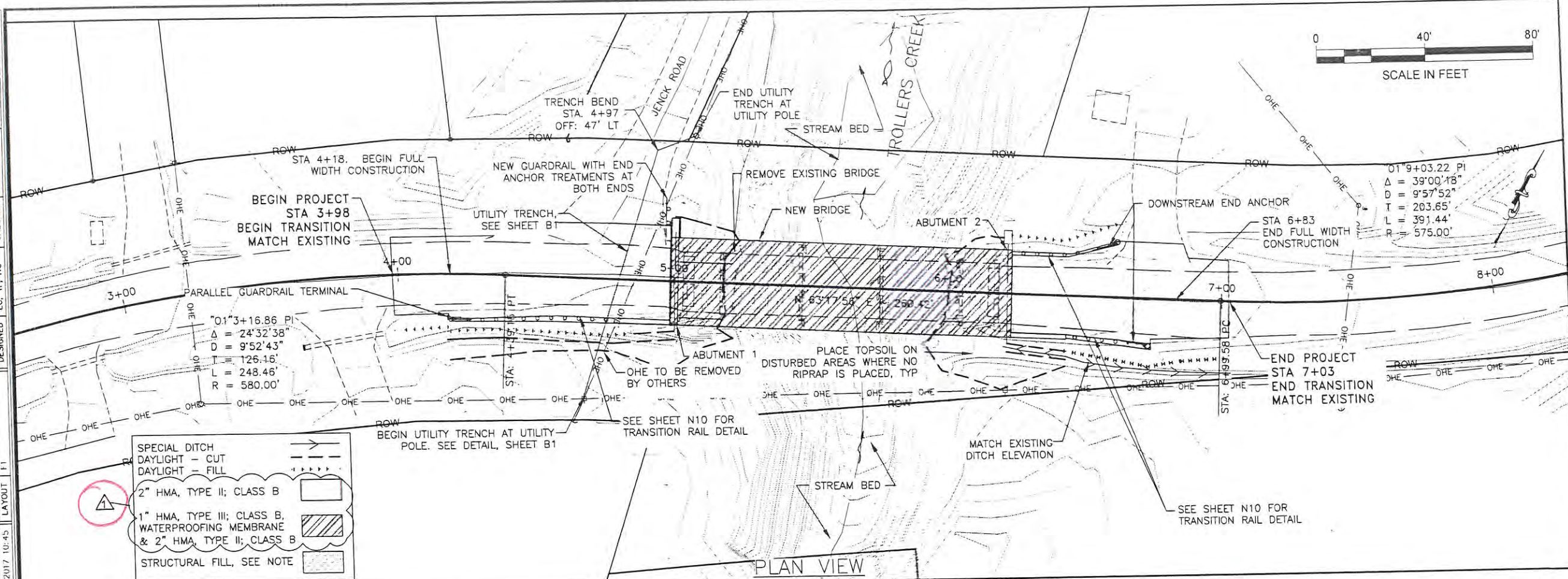
Project Eng.

Date

KTN TROLLERS CREEK BRIDGE
PROJECT #Z694200000
TYPICAL SECTION

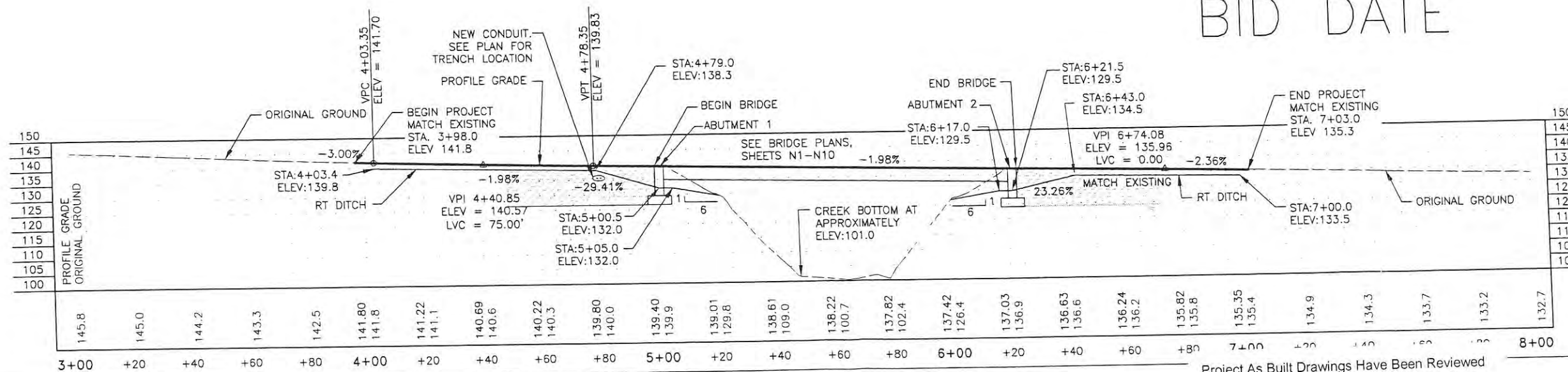
REVISED
AFTER
BID DATE

DATE 1/31/2017 10:45 LAYOUT F1 DESIGNED LC, TF, NG CHECKED CT DRAFTED LC, IF, NG



NOTE:
STRUCTURAL FILL LIMITS ARE SHOWN
ON SHEET N6

REVISED
AFTER
BID DATE



PROFILE VIEW

Project As Built Drawings Have Been Reviewed
By the Project Engineer & Represent, To the
Best of My Knowledge, the Project as
Constructed.

Project Eng.

Date

SHEET NO.	TOTAL SHEETS
F1	1
STATE	YEAR
ALASKA	2017

PROJECT DESIGNATION
Z694200000

REVISION	DATE	MATERIAL SUBSTITUTIONS
NO.	1/31/17	

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOST REGION
6860 GLACIER HIGHWAY
JUNEAU, AK 99811-2506
(907)465-1763

KTN TROLLERS CREEK
BRIDGE
PROJECT #Z694200000

PLAN & PROFILE

REINFORCING STEEL						
MARK	NOTE	SIZE	NO.	LENGTH	TYPE	BENDING DIAGRAM
D401	E	4	32	6'-3"	STIRRUP	5" 2'-4" <u>D401</u>
D501	E	5	16	5'-5"	---	
D601	E	6	4	24'-3"	---	
D701	E	7	8	3'-0"	BENT	

1'-0"

110°

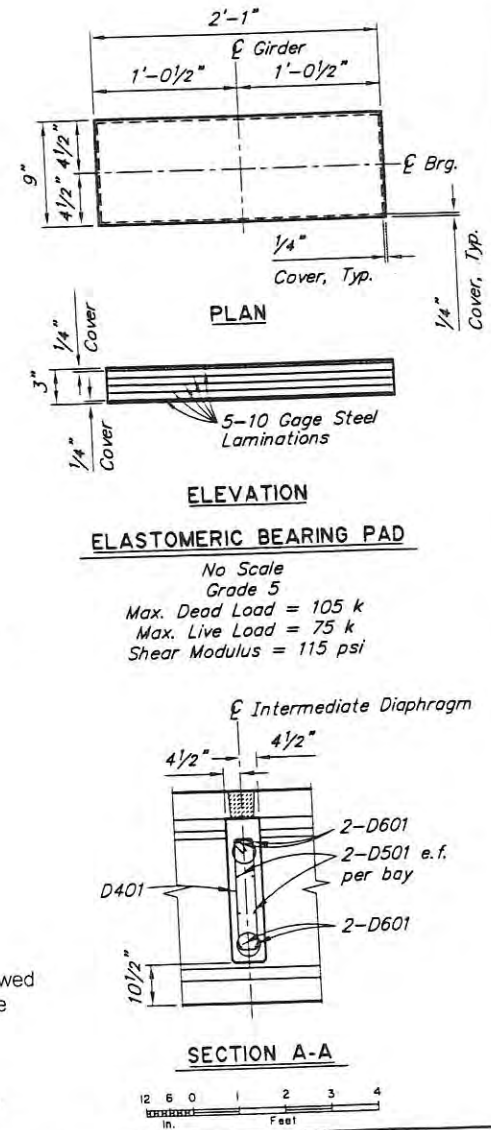
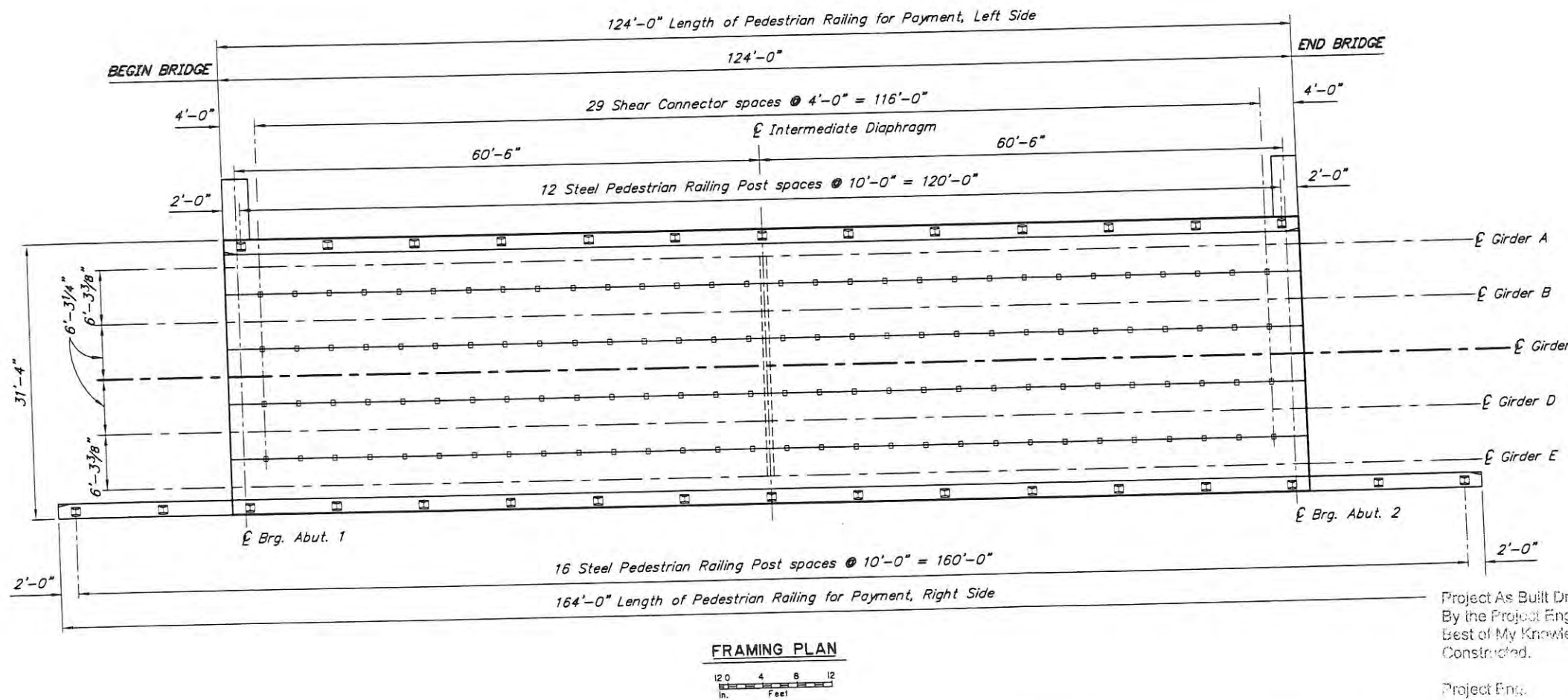
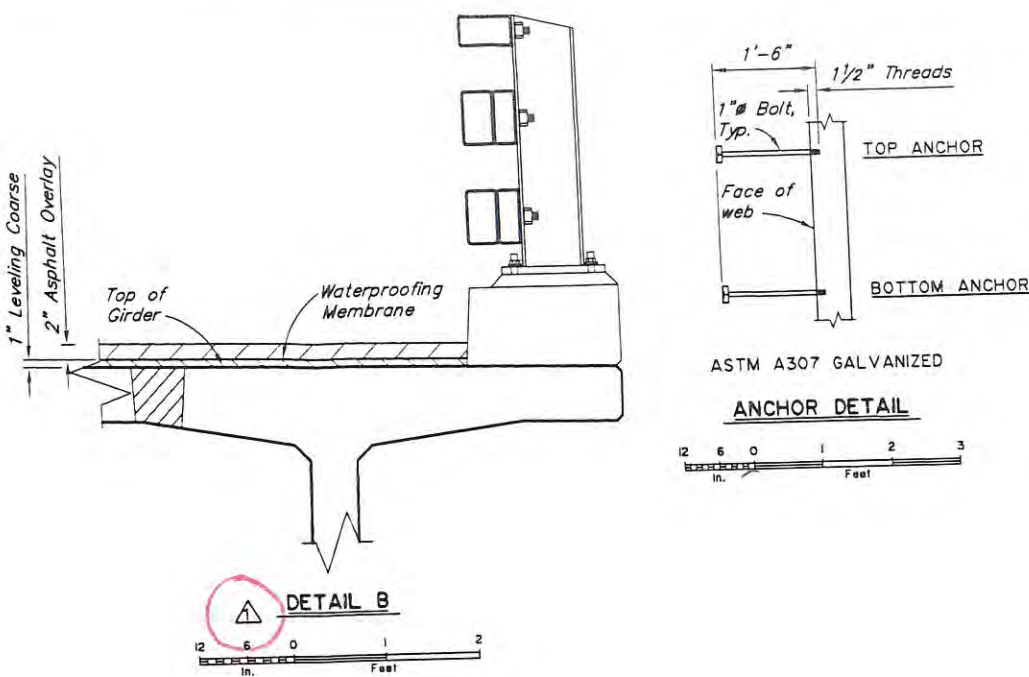
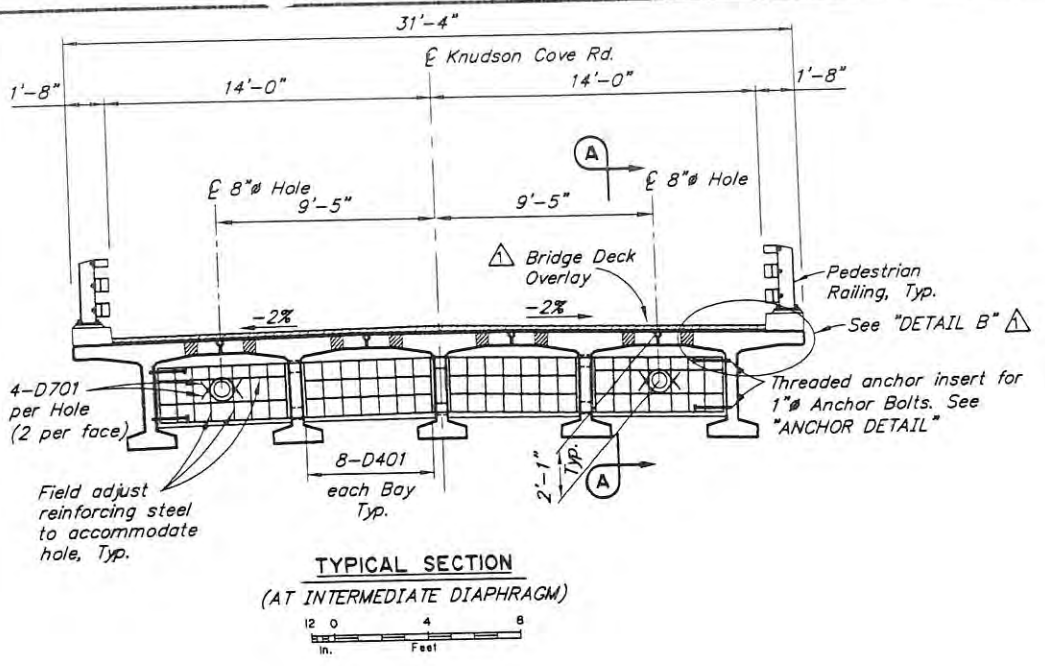
R=6"

1'-0"

1'-0"

D701

E - Epoxy-Coated reinforcing steel



Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

DESIGNED BY: <i>Travis Arndt</i>	CHECKED: <i>Jared Levings</i>	REVISIONS <table><tr><th>No.</th><th>Date</th><th>By</th><th colspan="2">Description</th></tr><tr><td>1</td><td>1/27/17</td><td>TWA</td><td colspan="2">Overlay and Membrane</td></tr><tr><td> </td><td> </td><td> </td><td colspan="2"> </td></tr><tr><td> </td><td> </td><td> </td><td colspan="2"> </td></tr></table>				No.	Date	By	Description		1	1/27/17	TWA	Overlay and Membrane											
No.	Date	By	Description																						
1	1/27/17	TWA	Overlay and Membrane																						
DRAWN BY: <i>Sam Sollie</i> <i>Sam Sollie Jr</i>	CHECKED: <i>Travis Arndt</i>																								
QUANTITIES BY: <i>Travis Arndt</i>	CHECKED: <i>Jared Levings</i>																								

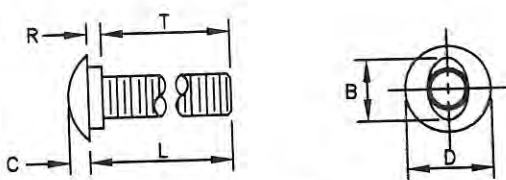
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
BRIDGE SECTION

TROLLERS CREEK BRIDGE
KNUDSON COVE ROAD
FRAMING PLAN AND TYPICAL SECTION

BRIDGE NO. 864
DWG. NO. 7

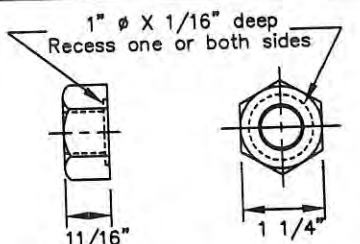
GENERAL NOTES:

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

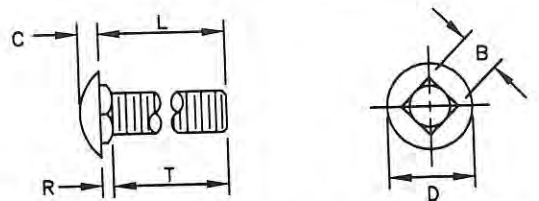


B	C	D	L (Length)	R	T (Thread Length)
15/16"	5/16"	1 5/16" or 1 7/16"	As Required	7/32"	As Required

5/8" BUTTONHEAD BOLT

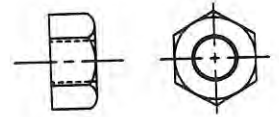


5/8" Dia. RECESSED HEX NUT

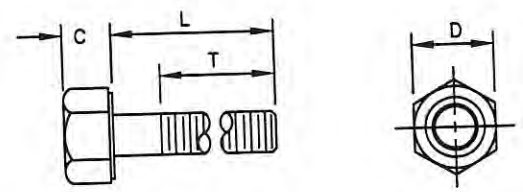


B	C	D	L (Length)	R	T (Thread Length)
5/8"	5/16"	1 5/16"	As Required	3/16"	As Required

5/8" Dia. CARRIAGE BOLT

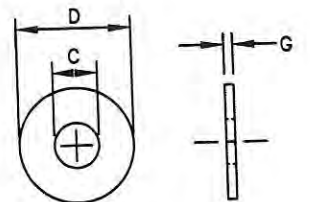


STANDARD HEX NUT



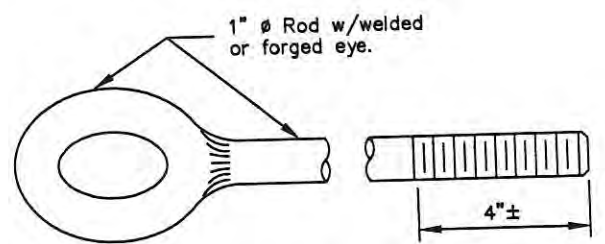
Bolt Size	C	D	L (Length)	T (Thread Length)
5/16"	—	—	1 1/2"	7/8"
5/16"	—	—	1"	1"
3/8"	—	—	7 1/2"	1 1/2"
1/2"	—	—	1 1/2"	1 1/2"
1/2"	—	—	1 1/4"	1 1/4"
5/8" H.S.	5/16"	7/8"	8"	1 1/2"
5/8"-11	—	—	1 1/2"	1 1/2"
3/4"	—	—	1 1/2"	1 1/2"
3/4"	—	—	As Required	2"
3/4" H.S.	15/32"	1 1/4"	2"	1 1/2"

STANDARD HEX BOLTS

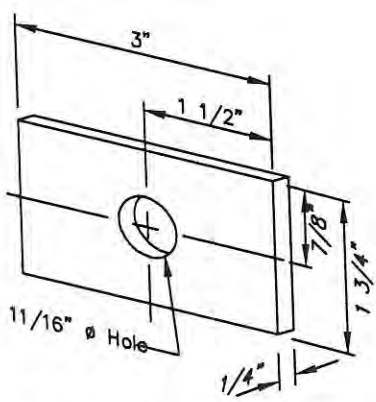


For Bolt ϕ	C	D	G
3/8"	7/16"	1"	5/64"
1/2"	17/32"	1 1/16"	3/32"
1/2" H.S.	17/32"	1 1/16"	3/32"
5/8"	11/16"	1 3/4"	9/64"
3/4"	13/16"	1 15/32"	9/64"
3/4" H.S.	13/16"	2"	5/32"
1"	1 1/16"	2"	9/64"

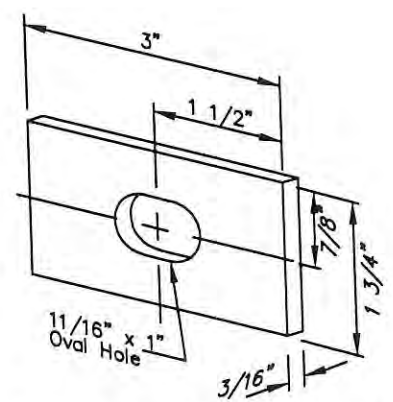
STANDARD STEEL WASHERS



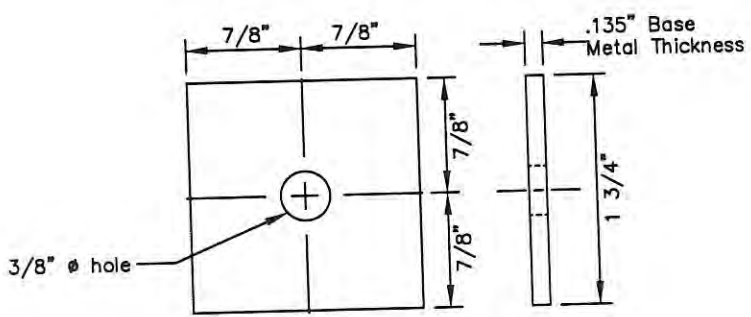
EYE BOLT



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)

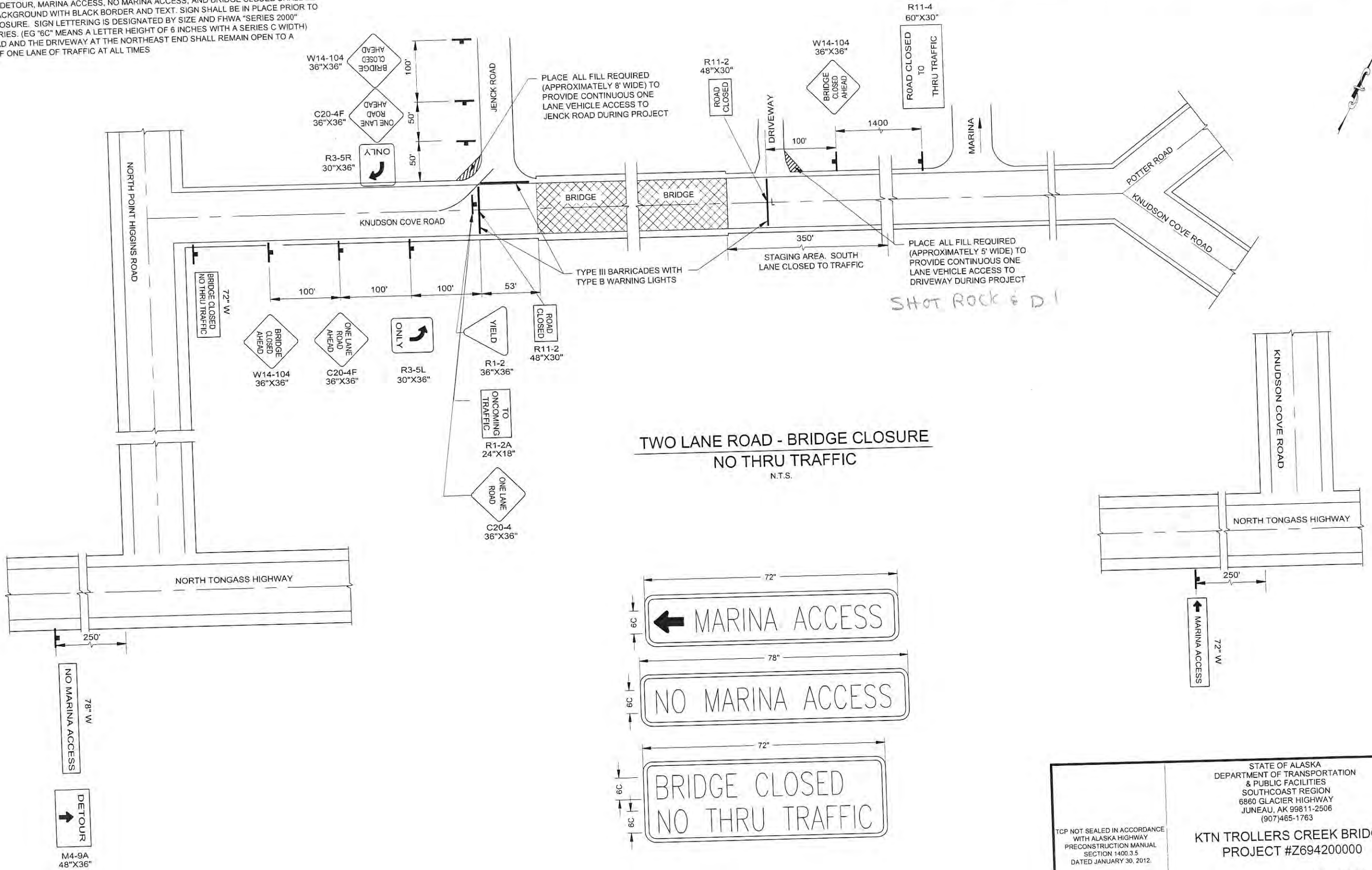
APPROVED
49th
4/28/10

Date5/31/12

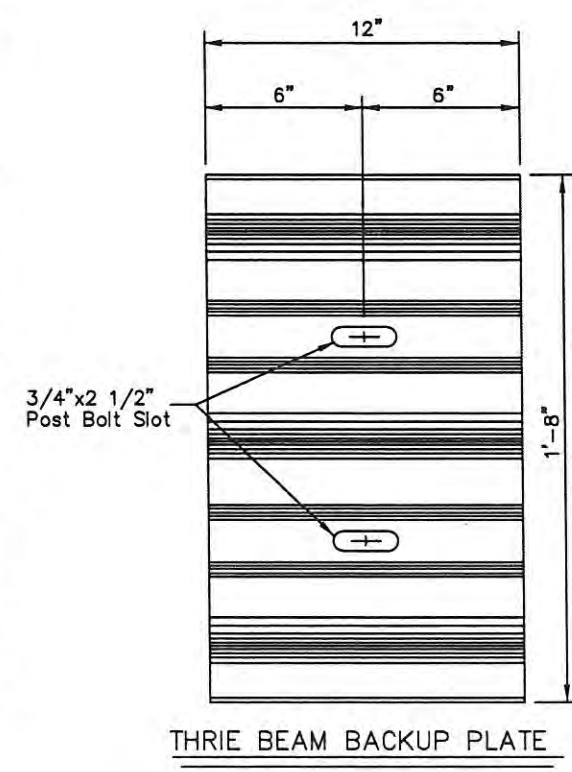
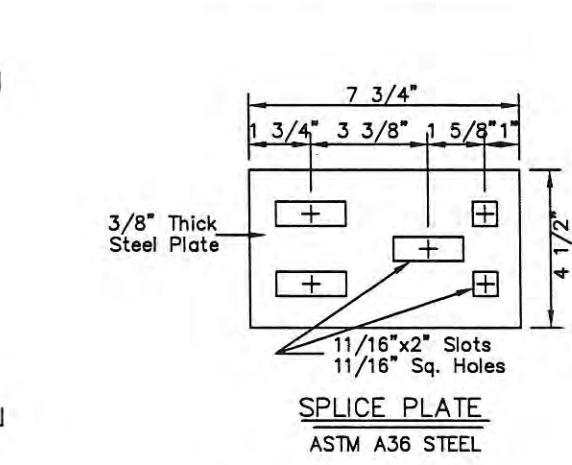
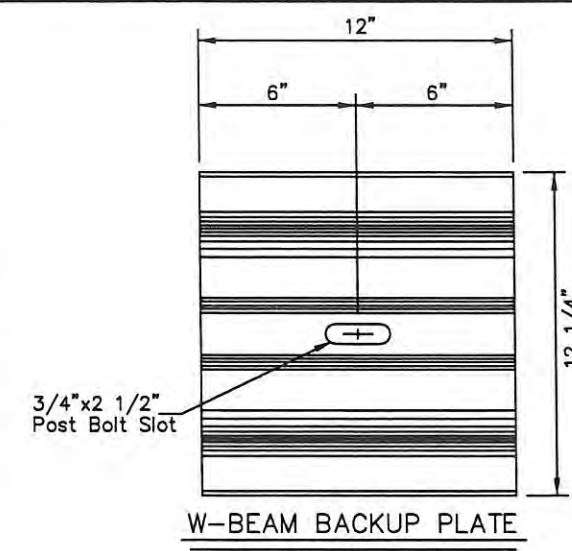
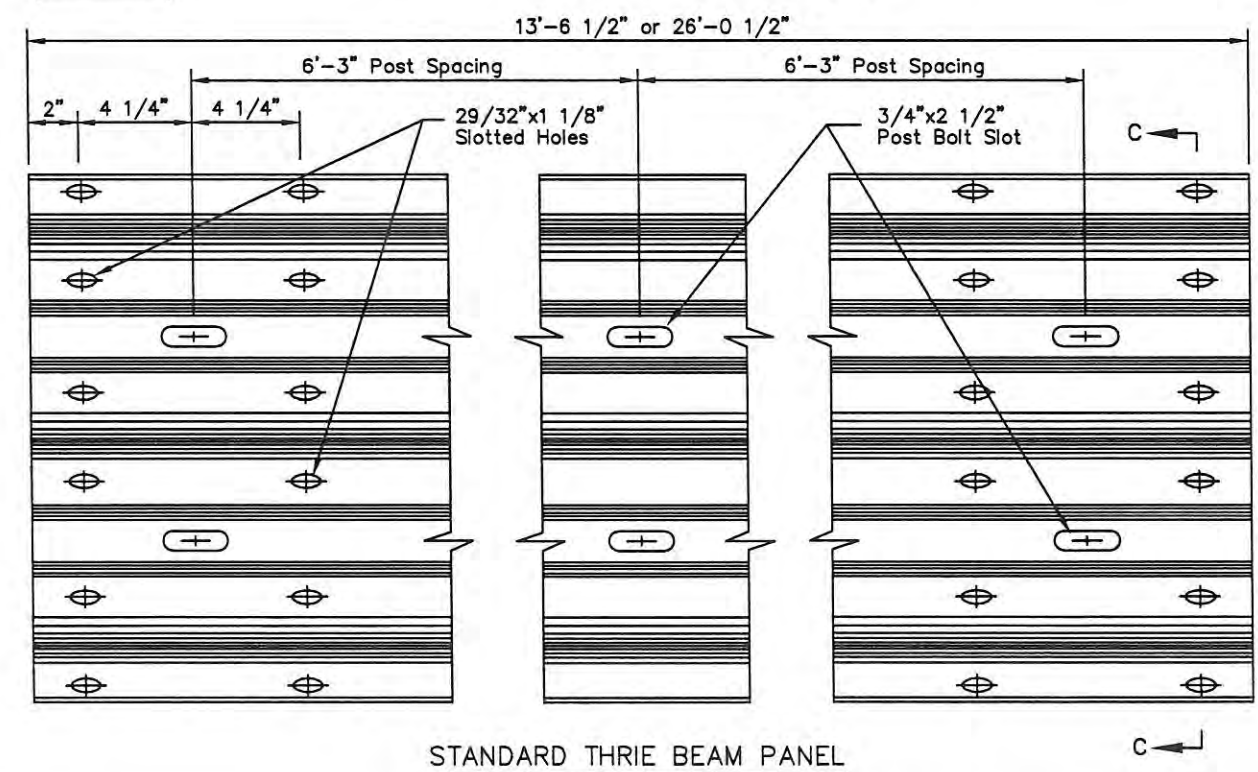
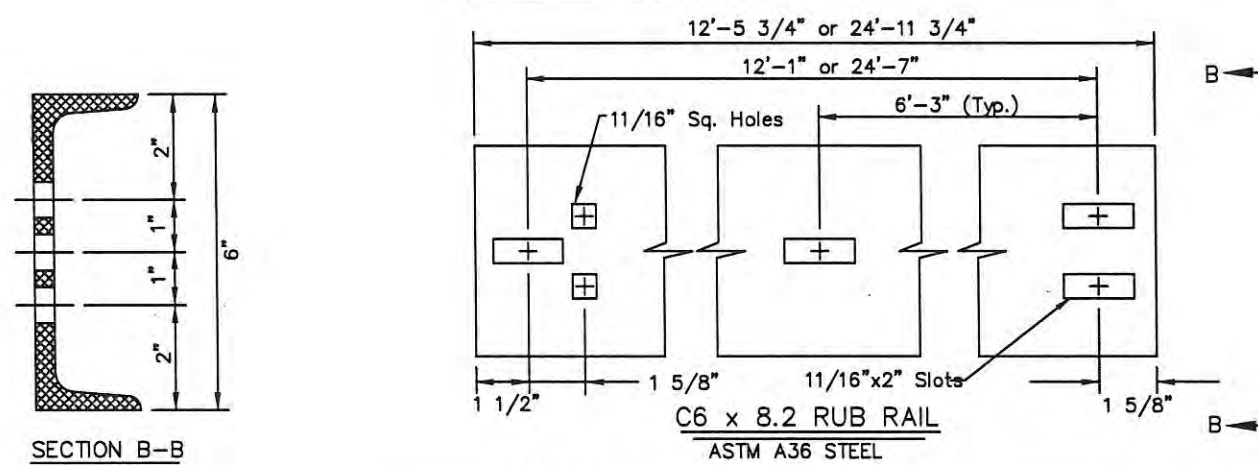
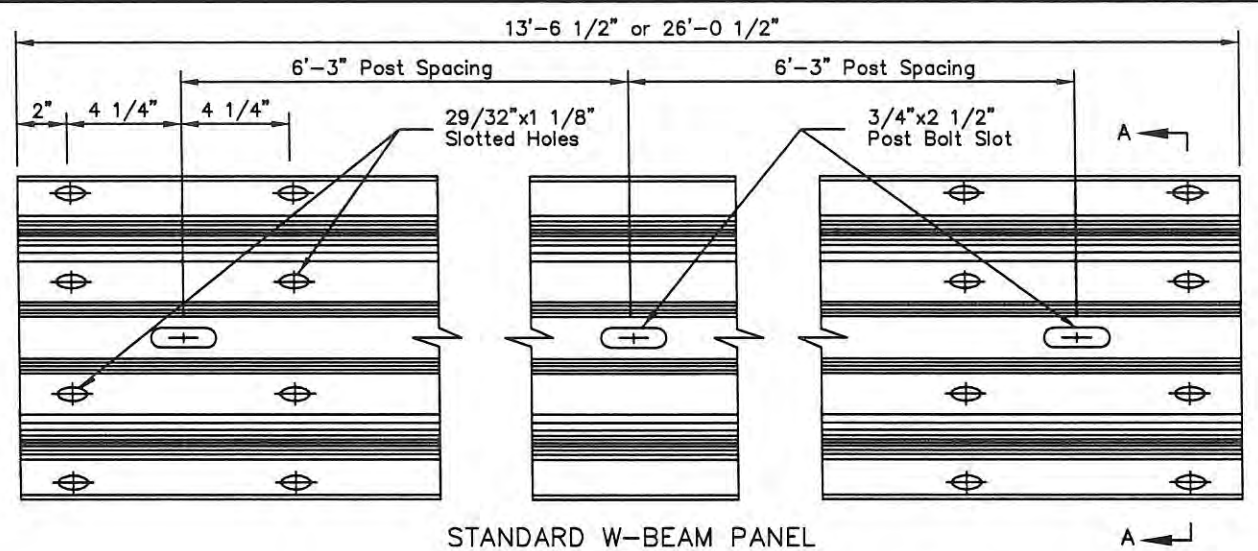
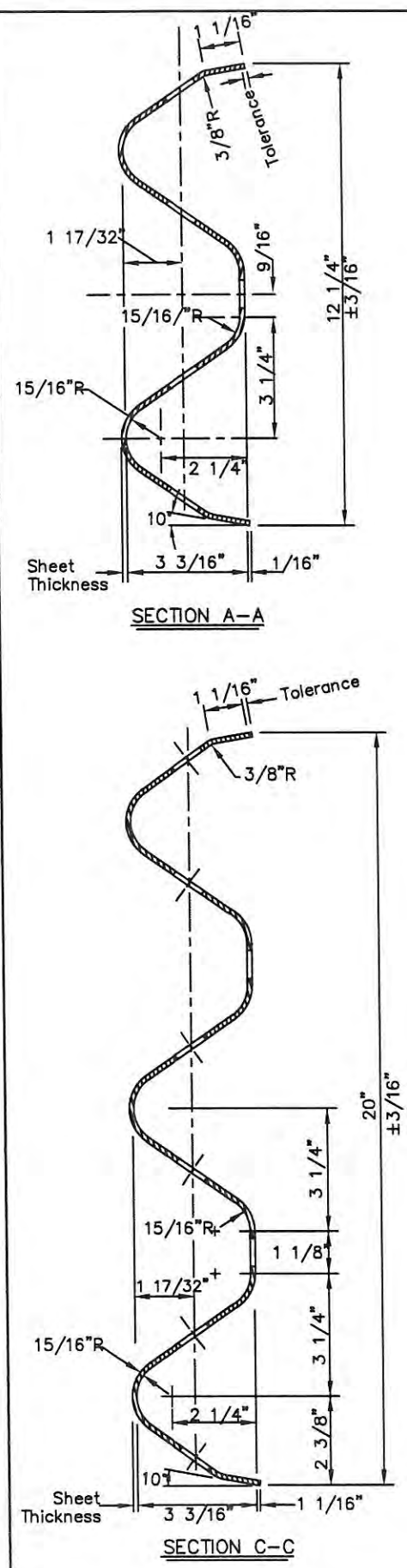
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	Z694200000	2016	T1	1

NOTE:

- SIGNS FOR DETOUR, MARINA ACCESS, NO MARINA ACCESS, AND BRIDGE CLOSED SHALL BE ORANGE BACKGROUND WITH BLACK BORDER AND TEXT. SIGN SHALL BE IN PLACE PRIOR TO BRIDGE CLOSURE. SIGN LETTERING IS DESIGNATED BY SIZE AND FHWA "SERIES 2000" LETTER SERIES. (EG "6C" MEANS A LETTER HEIGHT OF 6 INCHES WITH A SERIES C WIDTH)
- JENCK ROAD AND THE DRIVEWAY AT THE NORTHEAST END SHALL REMAIN OPEN TO A MINIMUM OF ONE LANE OF TRAFFIC AT ALL TIMES



- 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

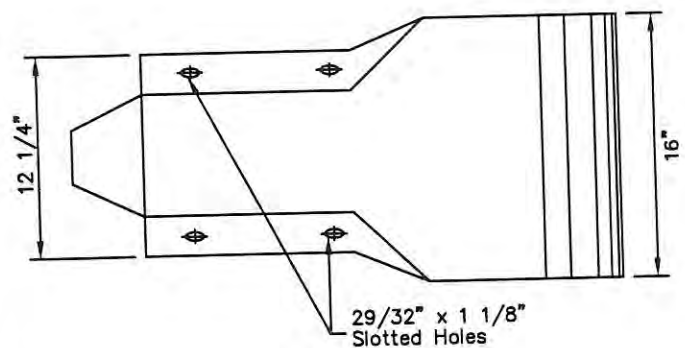
STANDARD GUARDRAIL
HARDWARE
(RAILS AND SPLICES)

APPROVED
49
4/28/10

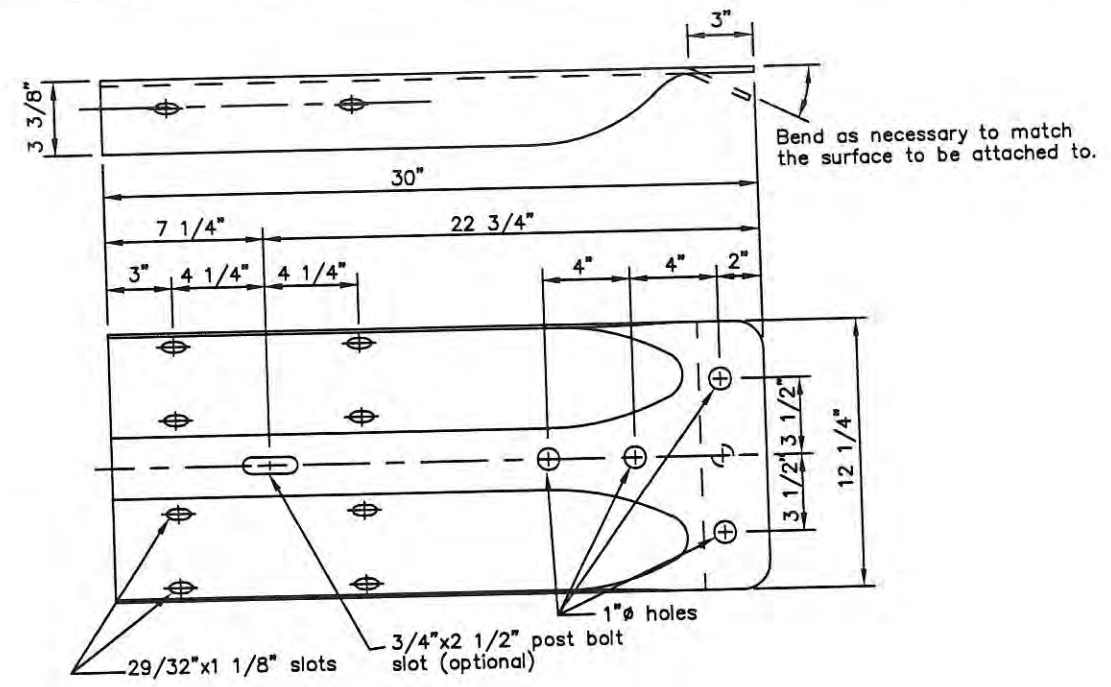
Date 5/31/12

GENERAL NOTES:

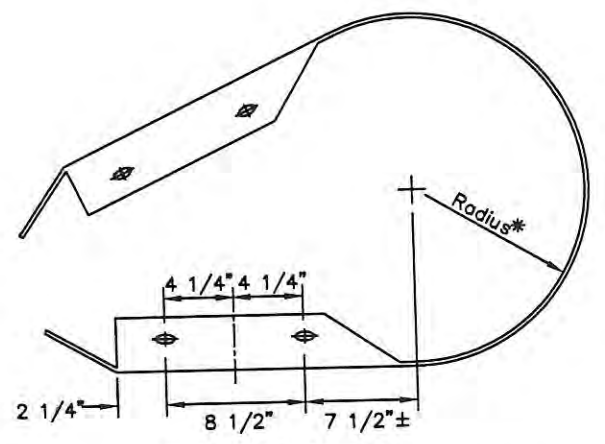
1. W-Beam and Thrie Beam Terminal Connectors shall conform to AASHTO M180, Class B, Type 2.
2. W-Beam end sections shall conform to AASHTO M180, Class A, Type 2.
3. All covered hardware shall comply with the AASHTO/AGC/ARTBA "A Guide to Standardized Highway Barrier Hardware", latest edition.



PROFILE

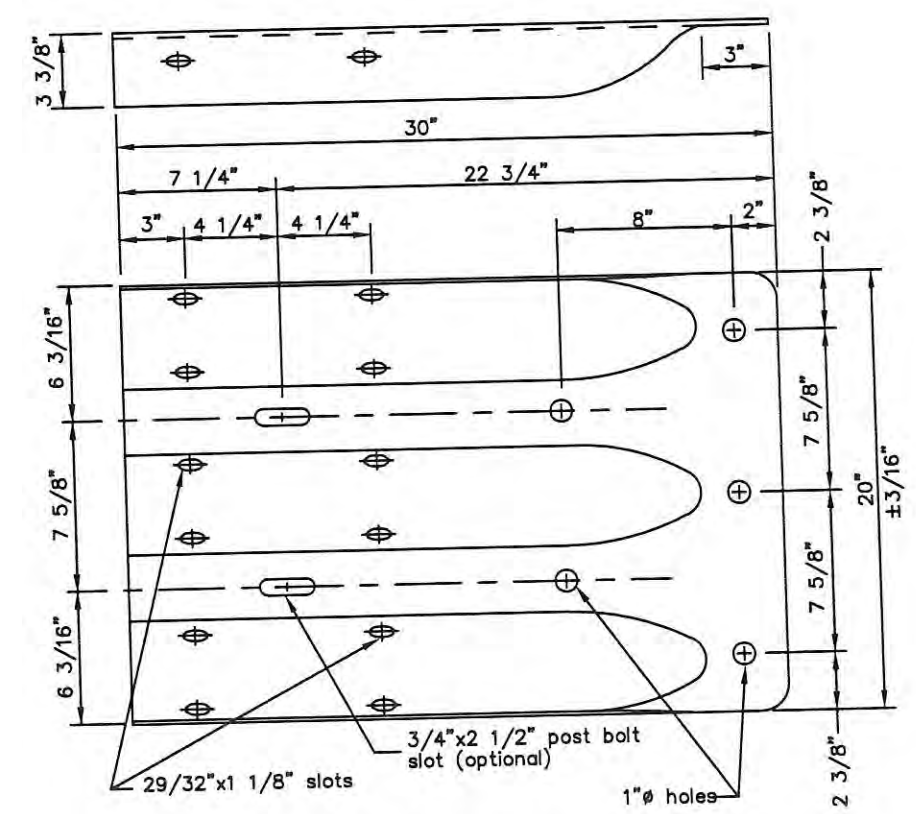


STANDARD W-BEAM TERMINAL CONNECTOR



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

STANDARD W-BEAM END SECTION



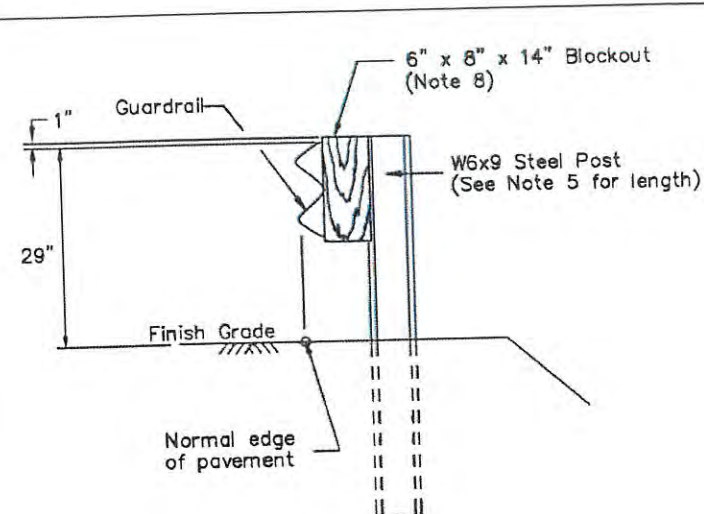
STANDARD THRIE BEAM TERMINAL CONNECTOR

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

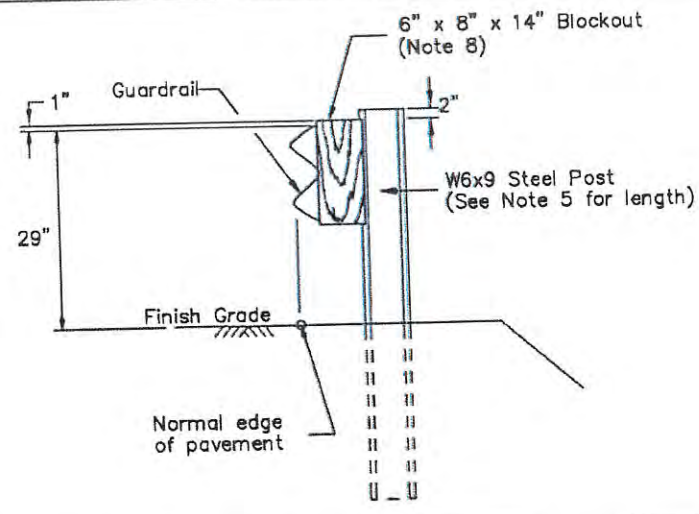
State of Alaska
Department of Transportation
& Public Facilities
**STANDARD GUARDRAIL
HARDWARE
(TERMINAL CONNECTORS)**



Date 5/31/12

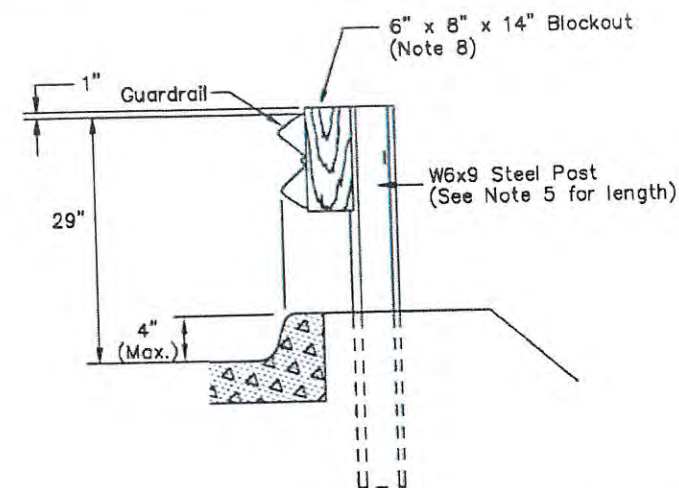


TYPE I POST INSTALLATION



TYPE II POST INSTALLATION

(Facilitates raising rail for future overlays.)



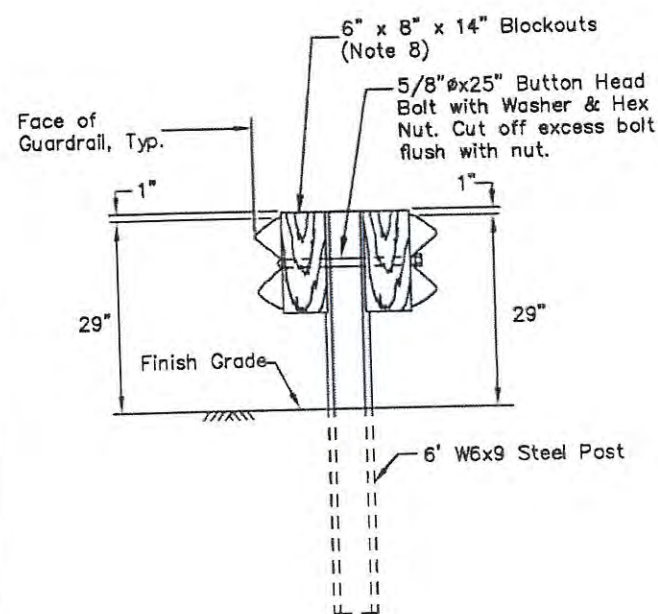
CURB DETAIL

TYPE III POST INSTALLATION

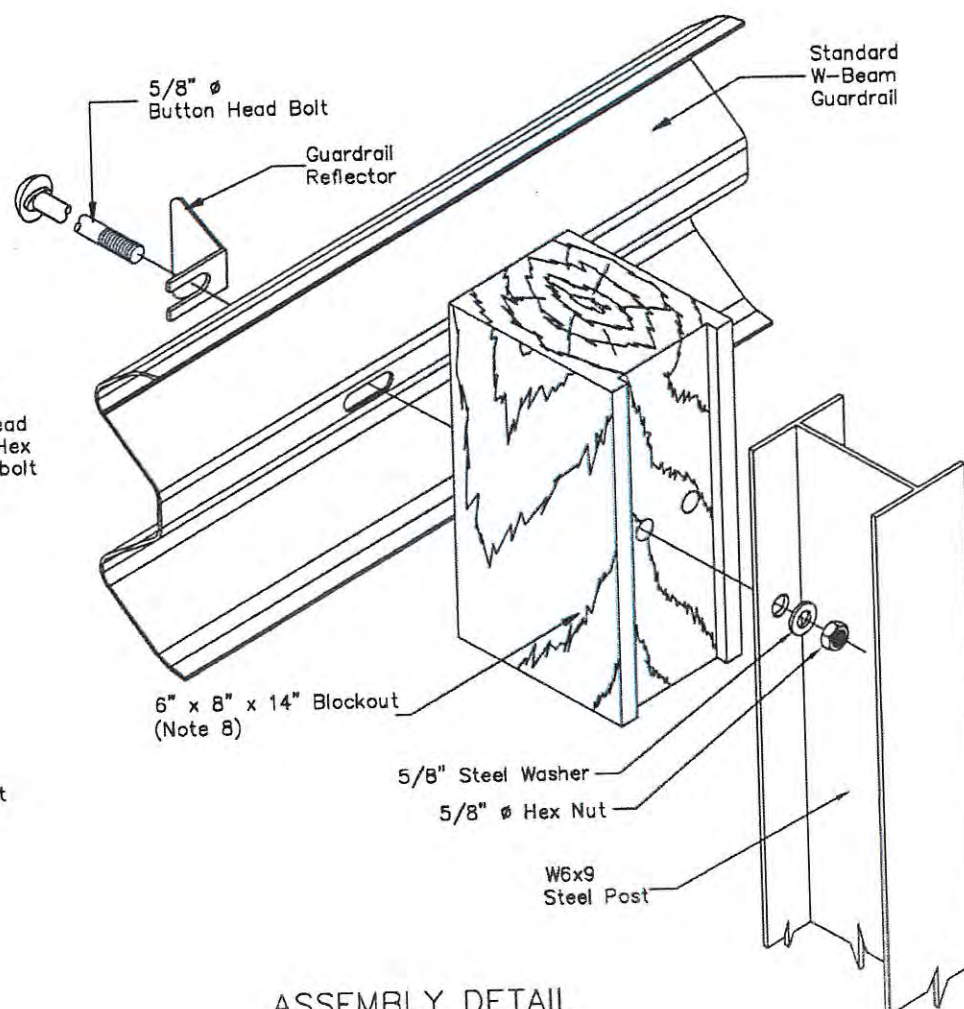
NOTE: Curb should not be installed with guardrail when the speed limit exceeds 40 mph.

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.

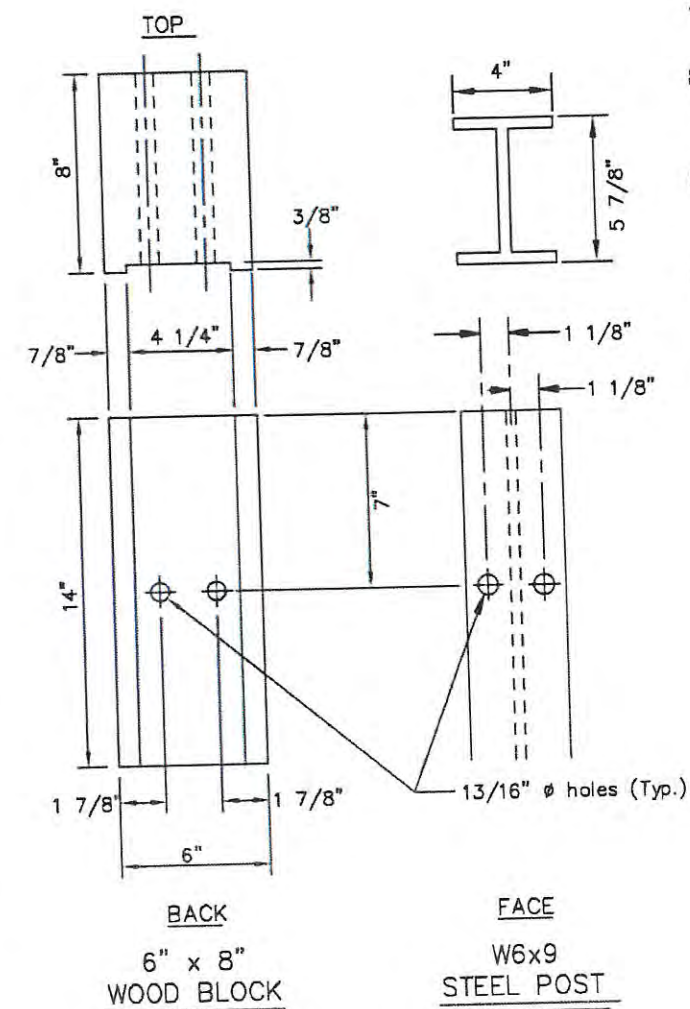


TYPE IV DOUBLE SIDED INSTALLATION



ASSEMBLY DETAIL

(Type I post shown)



6" x 8" WOOD BLOCK

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	JCU

State of Alaska
Department of Transportation
& Public Facilities

STEEL POST
W-BEAM GUARDRAIL

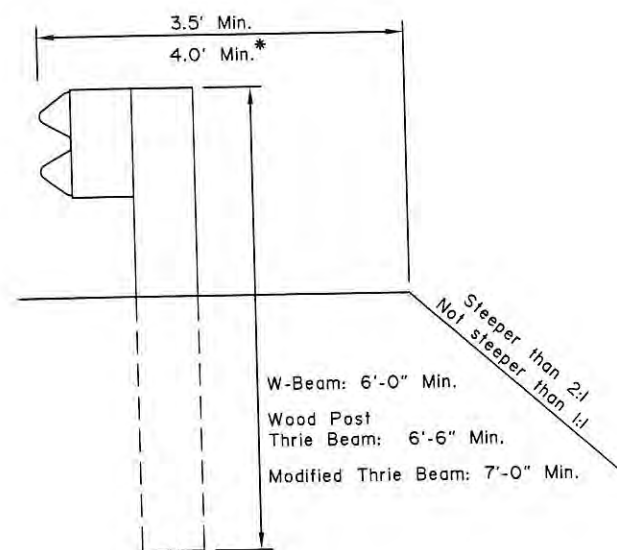
APPROVED



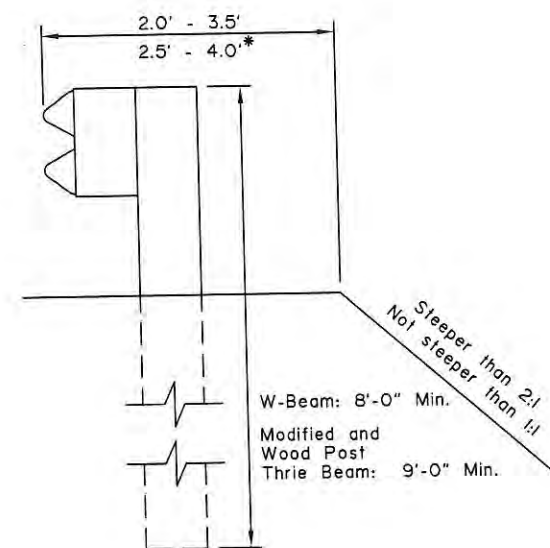
Date 05/15/13

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.

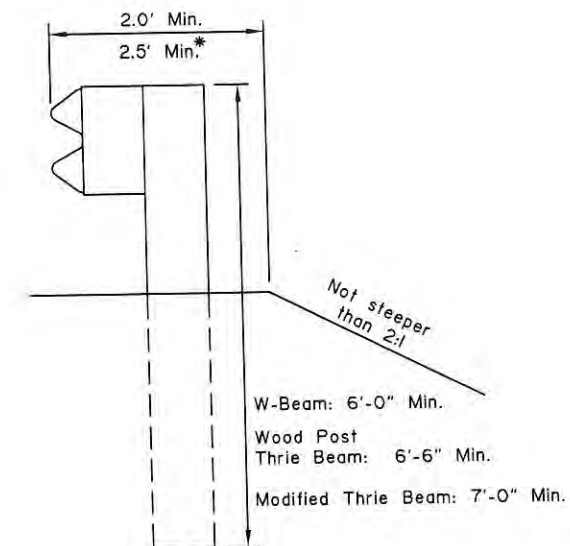


CASE 1



* with Modified Thrie Beam'

CASE 2



CASE 3

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

State of Alaska
Department of Transportation
& Public Facilities

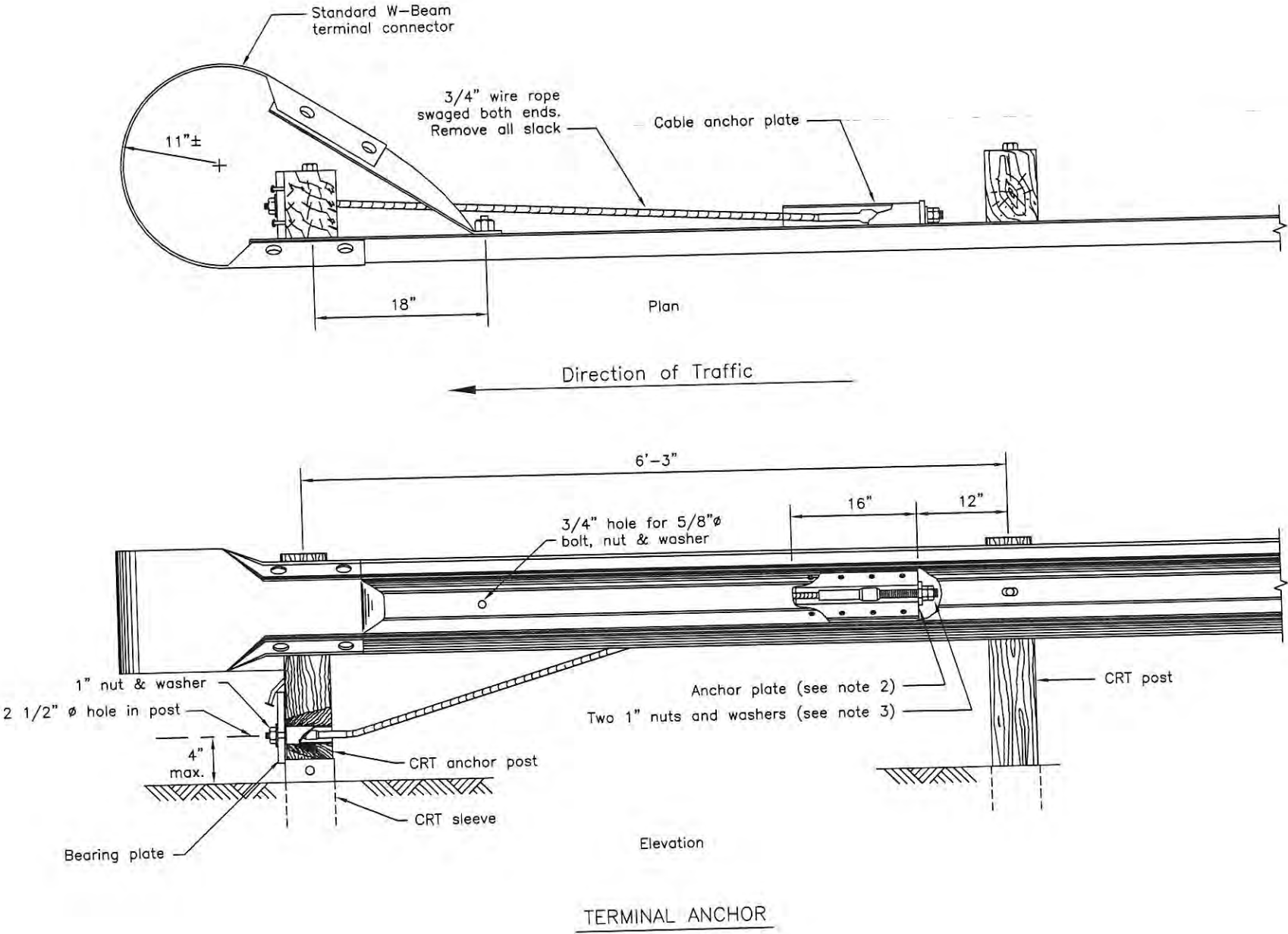
BEAM GUARDRAIL POST INSTALLATION



Date 3/15/99

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

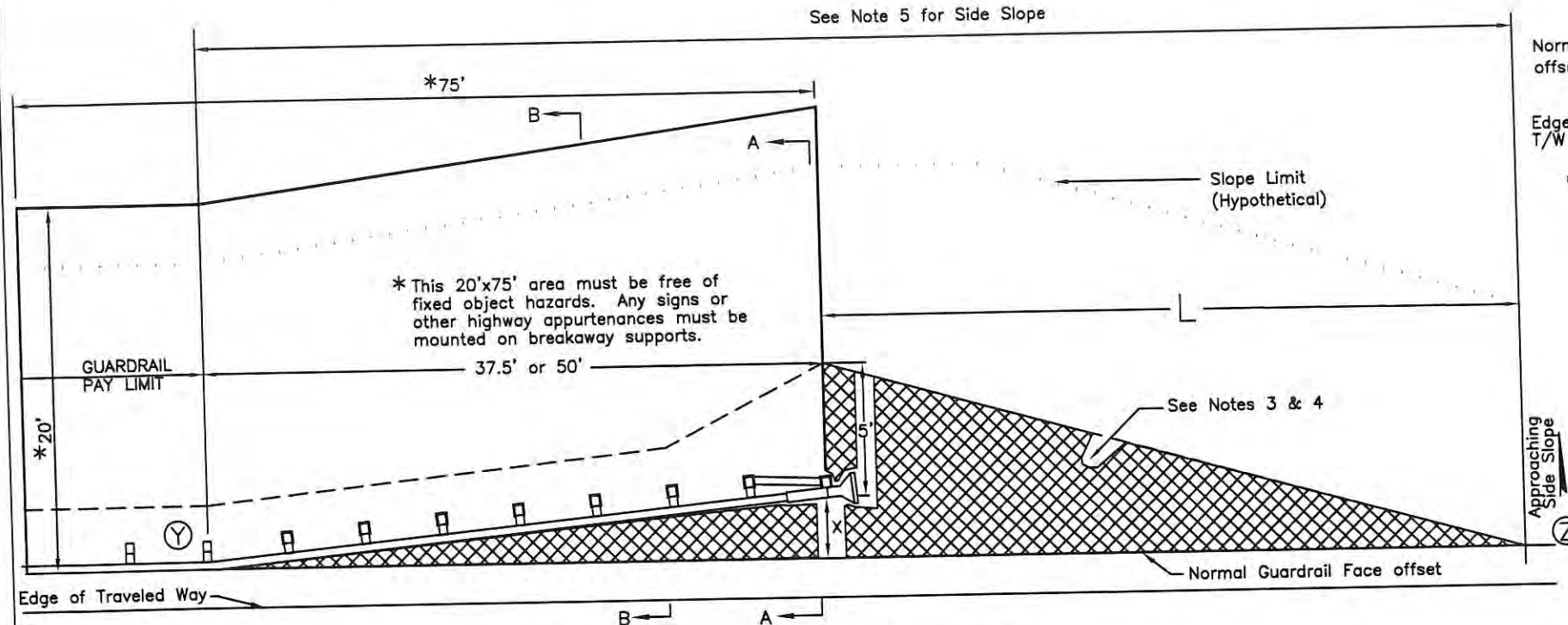
**W BEAM GUARDRAIL
DOWNSTREAM END
ANCHOR**

APPROVED

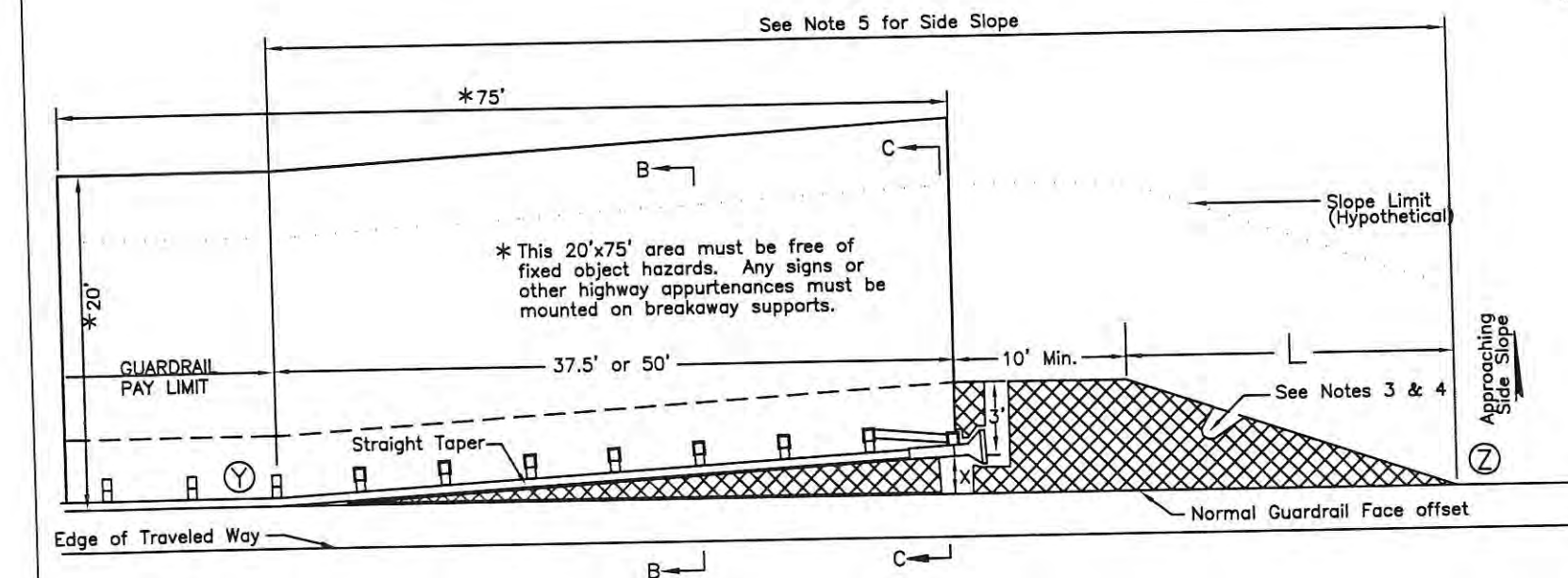
Date 2/28/03

49th
State of Alaska
Department of Transportation
& Public Facilities
Engineering Division
2/28/03
G. Miller

49th
State of Alaska
Department of Transportation
& Public Facilities
Engineering Division
2/28/03
G. Miller

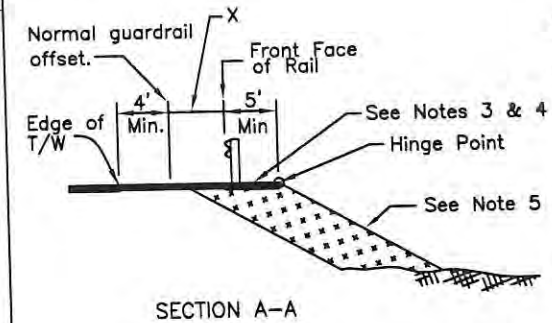


STANDARD GUARDRAIL TERMINAL WIDENING DETAIL

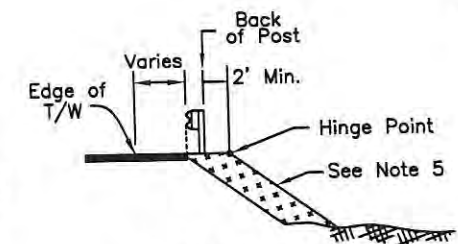


ALTERNATE GUARDRAIL TERMINAL WIDENING DETAIL

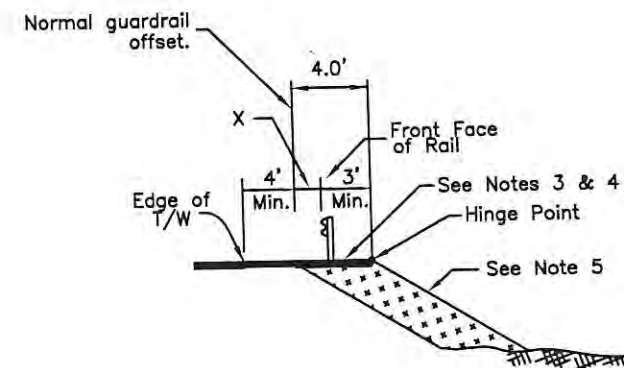
X: End offset. See manufacturer's information for the range of acceptable (NCHRP 350 or MASH compliant) end offsets for each terminal.



SECTION A-A



SECTION B-B
(Applies to both drawings)



SECTION C-C

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 Y to point Z 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.

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**



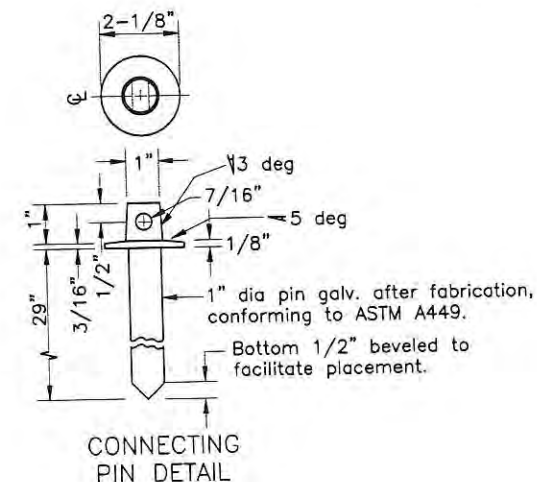
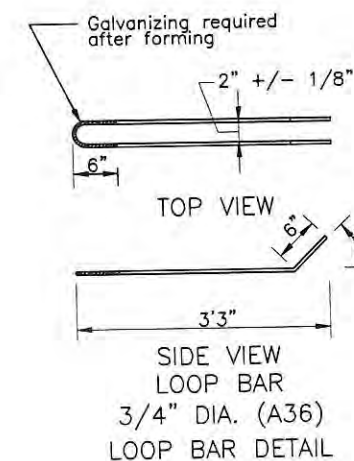
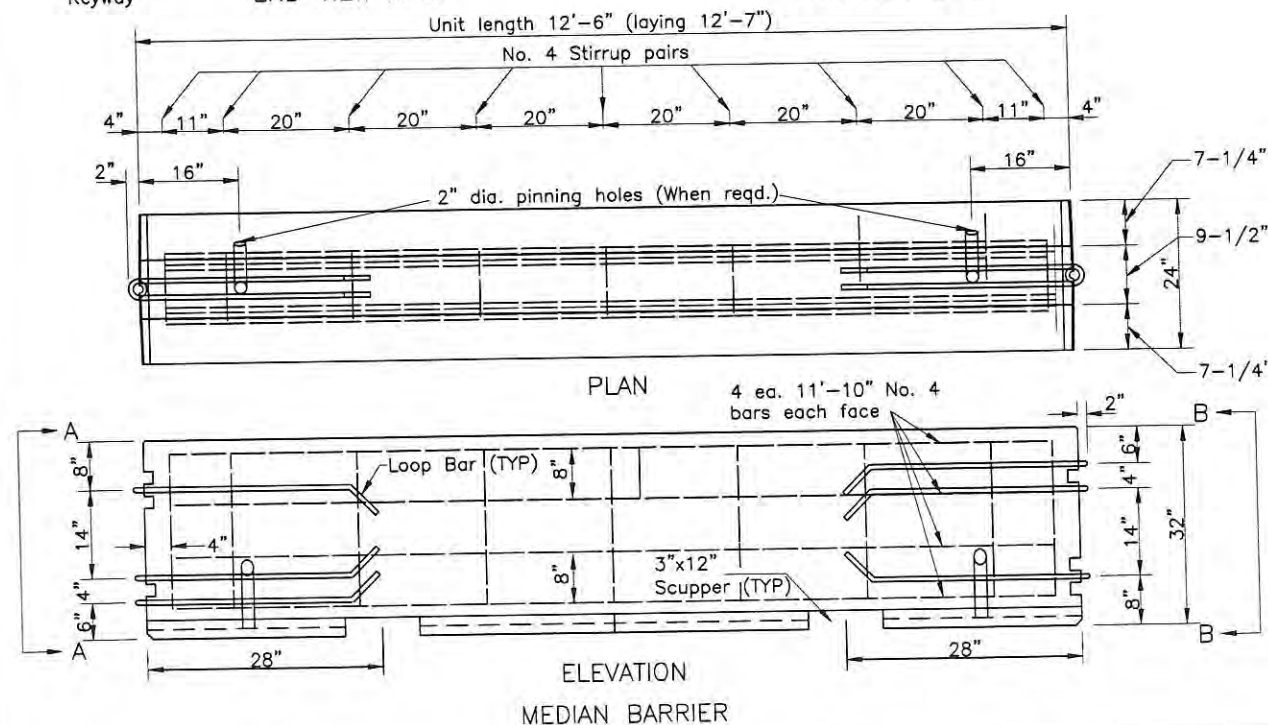
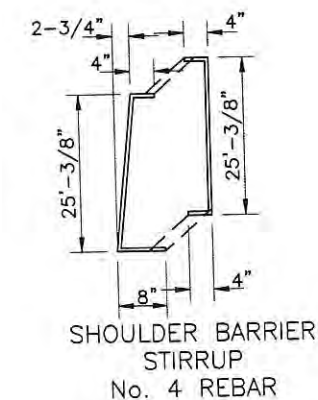
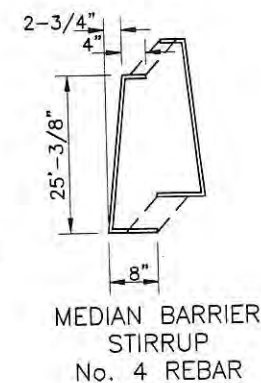
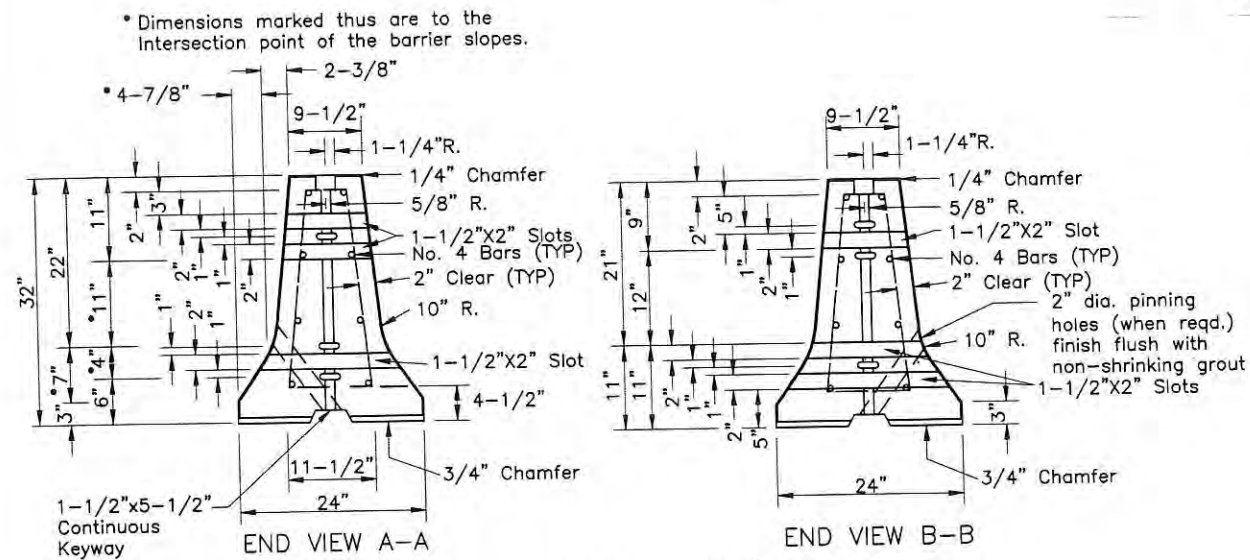
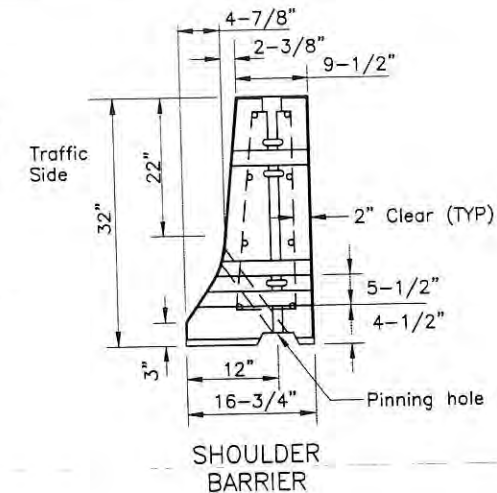
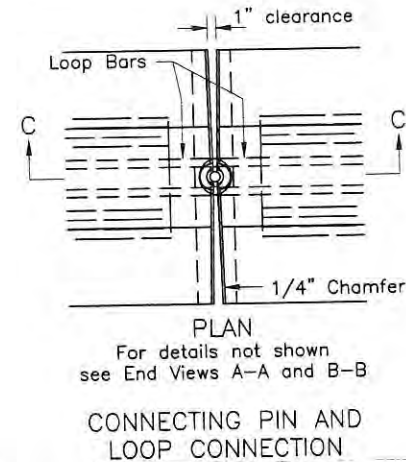
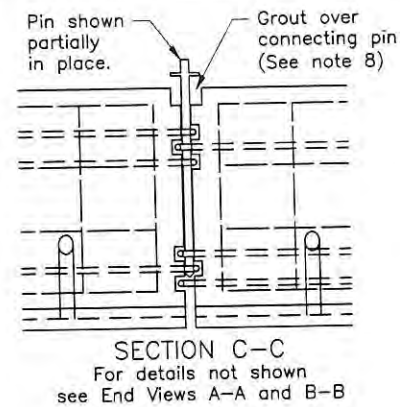
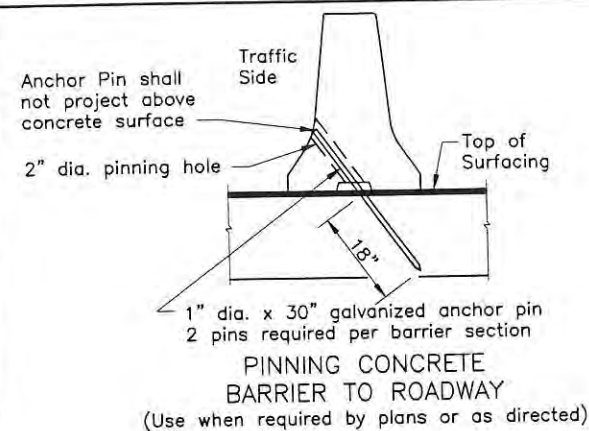
Date 5/31/12

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		

G-46.11

GENERAL NOTES

1. Barriers may be used for temporary and permanent applications.
2. Provide 36" unobstructed smooth deflection area behind barrier for unanchored applications. Provide 12" unobstructed smooth deflection area behind barrier for anchored applications.
3. When anchored, install anchor pins on the side facing traffic. Precast barrier used as permanent median barrier in medians less than 8' in width shall be anchored to the roadway. When anchored in medians, install anchor pins on both sides of the barrier.
4. Provide 2" clearance between all metal reinforcement and the nearest face of concrete unless otherwise shown.
5. Normal use of precast barrier units is restricted to curvatures with radii greater than 770'.
6. Use narrow base shoulder barrier only at locations with full height backfill or equivalent structural support placed behind barrier.
7. When scuppers are not required plug them with a minimum 2" of grout.
8. Concrete grout for grouting over pins, pinning holes or grouting of scuppers shall be a non-shrinking grout, weak in strength and of thick consistency.
9. This precast concrete barrier is NCHRP 350 TL-3 approved.



REVISONS		
Date	Description	By
4/28/10	Correct Dims, Note 1	KJS

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State of Alaska
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**PRECAST CONCRETE
"F" SHAPE BARRIER**

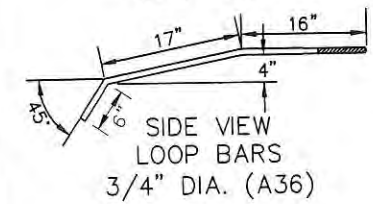
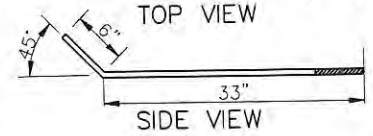
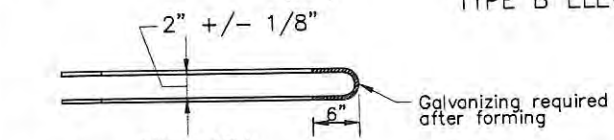
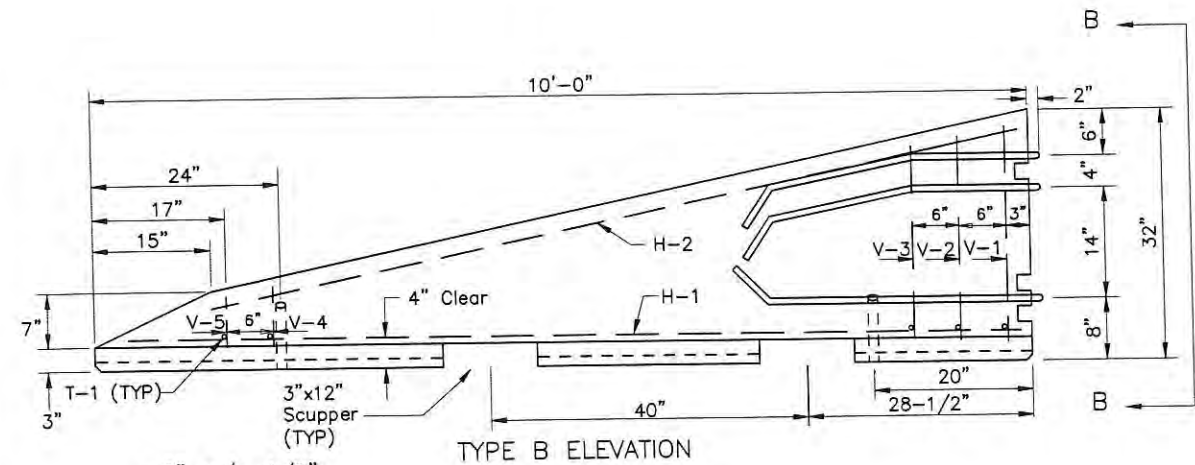
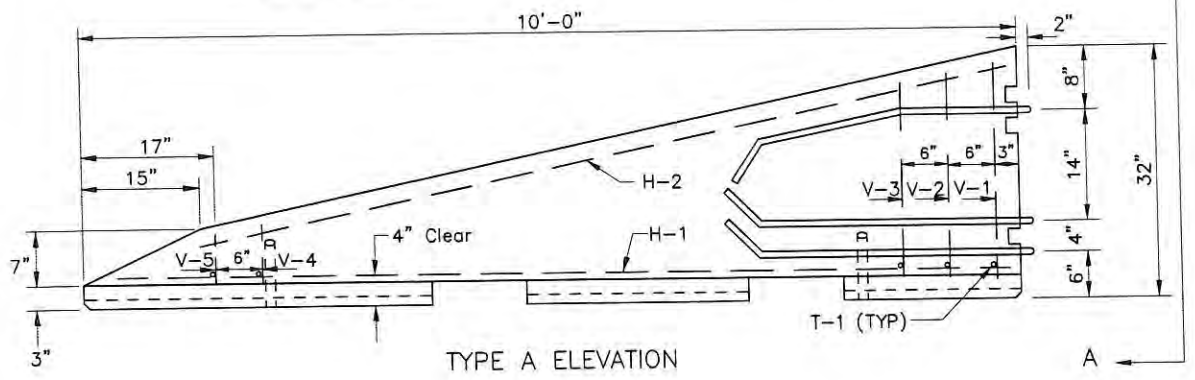
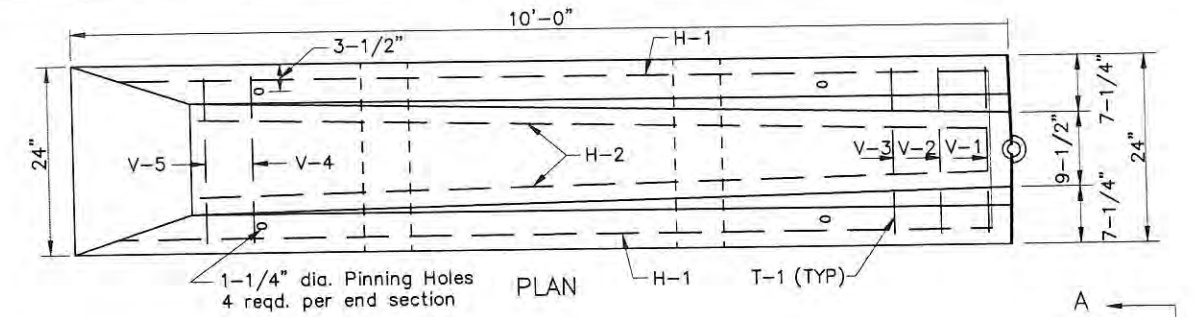
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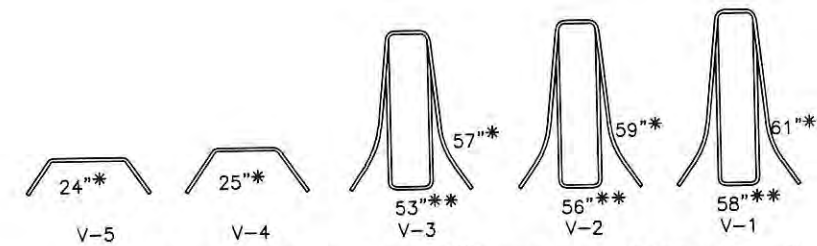
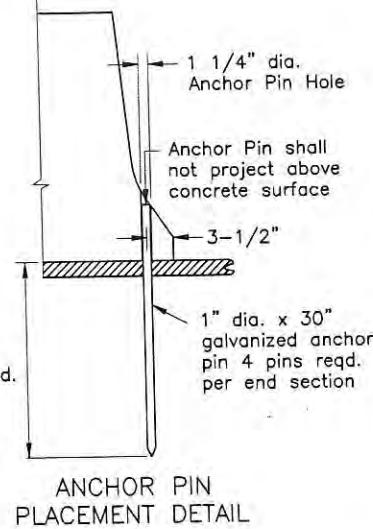
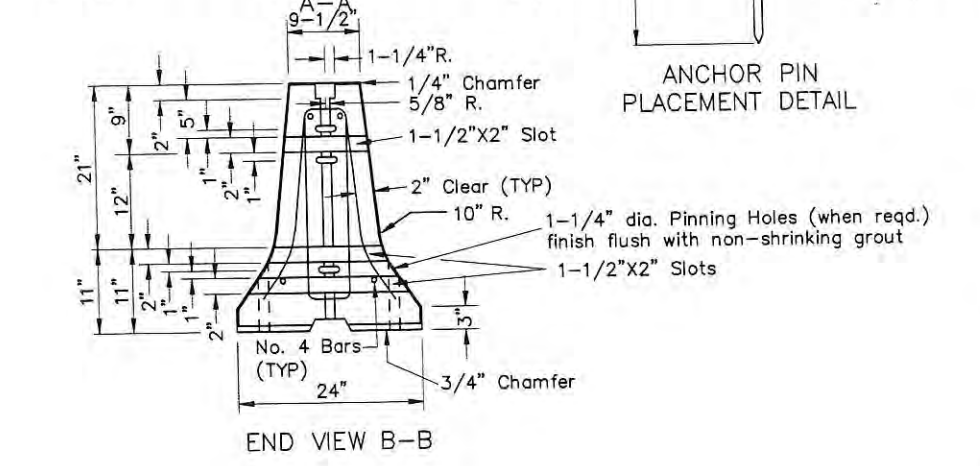
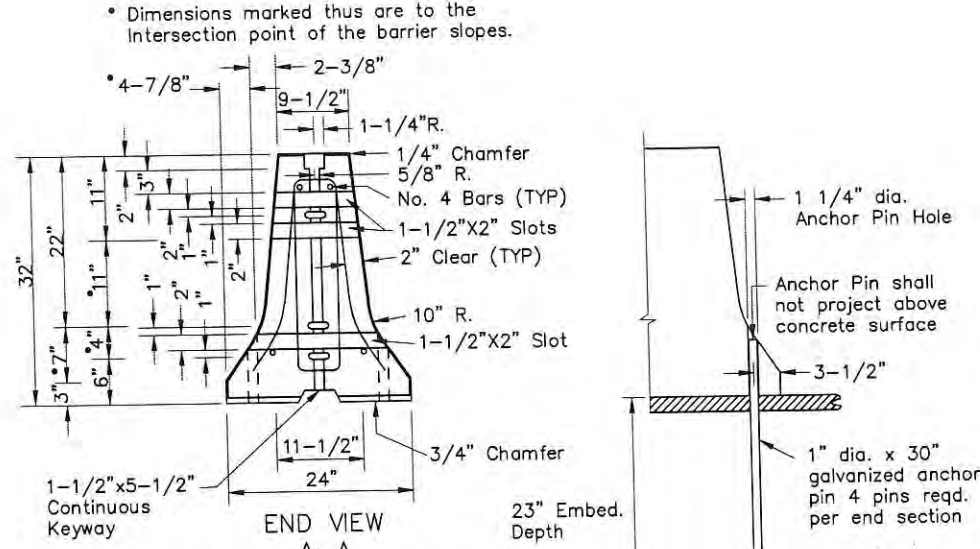
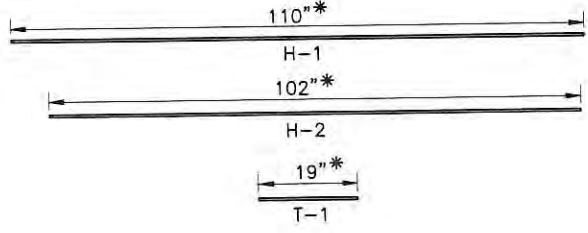
Date 5/31/12

GENERAL NOTES

1. Use tapered end sections only where:
 - a. Barriers terminate outside the clear zone, or
 - b. The regulatory speed limit is 25 MPH or below, or 30 MPH if the Engineer determines NCHRP 350 or MASH compliant end treatments are unfeasible.
2. Use air entrained concrete with minimum compressive strength of 3,000 p.s.i.
3. Provide a minimum of two inches clear cover for reinforcing steel bars except as shown otherwise.
4. Galvanize all exposed hardware in accordance with AASHTO M 232.
5. Provide reinforcing steel bars conforming to AASHTO M 31-86, grade 60.
6. Provide anchor pins conforming to AASHTO M 183 steel.
7. Provide connecting pins conforming to AASHTO M 164-86.
8. Provide four anchor pins per unit.



REINFORCEMENT DETAIL



*Length of No. 4 Rebar **Length of No. 4 Rebar (Inner Core)
REINFORCING STEEL

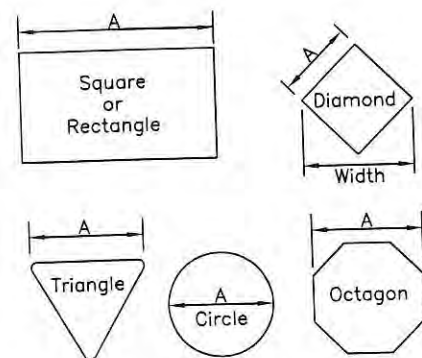
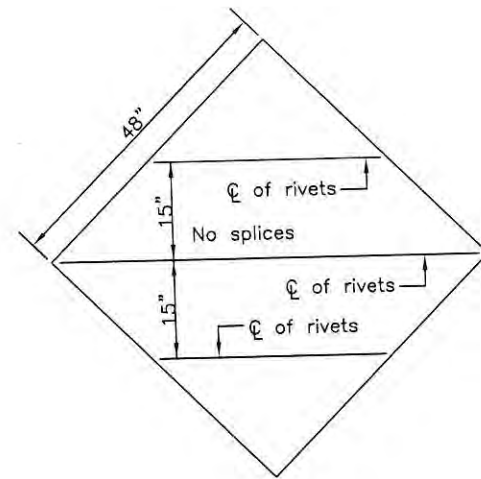
REVISIONS		
Date	Description	By
4/28/10	Correct dimensioning	KJS

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State of Alaska
Department of Transportation
& Public Facilities

**PRECAST CONCRETE
"F" SHAPE BARRIER
TAPERED END SECTION**

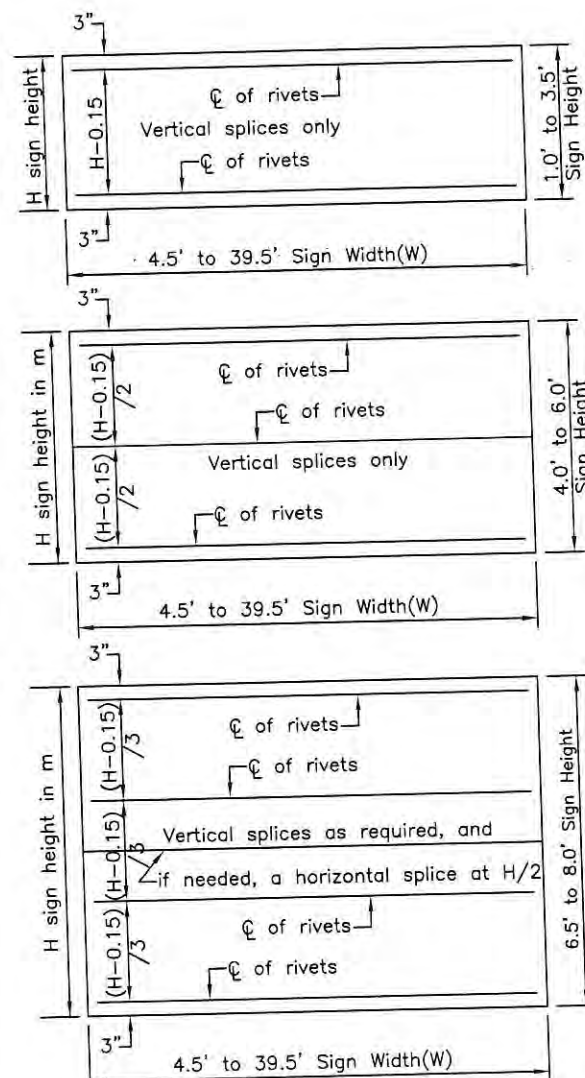
APPROVED
4/28/10
Date 5/31/12



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

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

LIGHT SIGNS

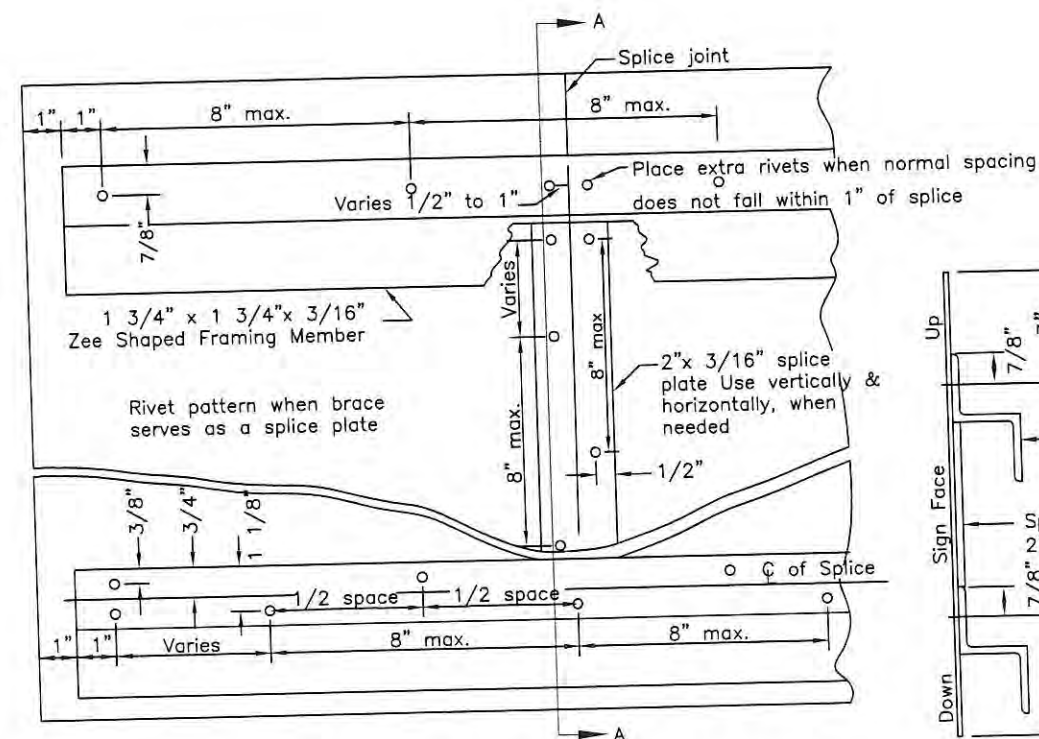


WIND FRAMING LOCATIONS

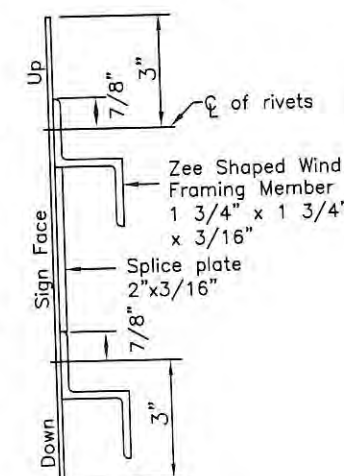
TUBE SIGN POST SPACING							
Sign Width (feet)	No. of Posts	Distance Between Posts	Sign Overhang	Post Type			
				P.S.T.	Wood	Steel Tube	W-Shape
0.5 to 4.0	1	—	0.5W	X	X	X	
4.5 to 10.0	2	0.6W	0.2W	X	X	X	
10.5 to 11.0	2	6	Varies	X	X	X	
11.5 to 13.0	2	8	Varies				X
13.5 to 20.0	2	0.6W	0.2W				X
20.5 to 22.5	3	8	Varies				X
23.0 to 29.5	3	0.35W	0.15W				X
30.0 to 31.5	4	8	Varies				X
32.0 to 40.0	4	0.25W	0.125W				X

SIGN POST SPACING NOTES:

- Install sign support in accordance with the table above, unless otherwise required by plans or specifications.
- Exceptions:
 - Use one post for all E5-1 gore signs, regardless of width.
 - Use one 2.5" P.S.T. for all STOP signs, with or without street name signs.
- Supports placed within 7' of each other must be acceptable for that use. See Standard Drawing S-30 for the sizes of wood posts and P.S.T.s that may be used within 7'. See Manufacturer's documentation for breakaway couplings and tubes that may be used within 7'.
- See Standard Drawing S-31 for frangible couplings, hinges, and foundations for tube and W-shape sign supports.



RIVET DETAIL FOR ZEE SHAPED WIND FRAMING & SPLICE PLATE



SECTION A-A

GENERAL NOTES

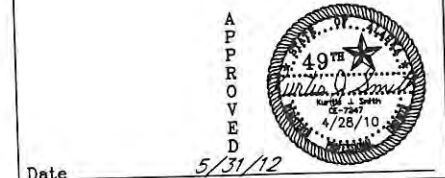
- See the standard specifications for the aluminum alloys that you may use for sign sheeting and wind framing members.
- Fabricate all signs from 0.125" thick aluminum sheeting.
- Sign fabricators may use alternates to the zee shaped framing member with approval of the engineer, if the frame manufacturer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

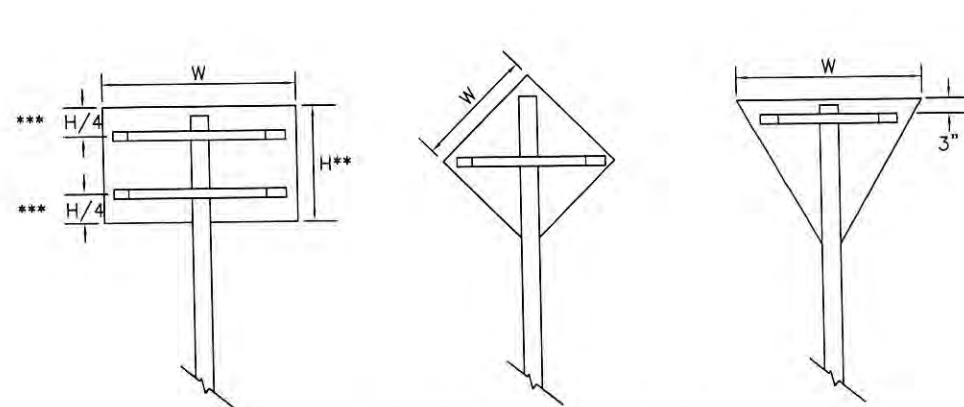
REVISIONS		
Date	Description	By
4/28/10	Delete pipe, rev notes	KJS

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Department of Transportation
& Public Facilities

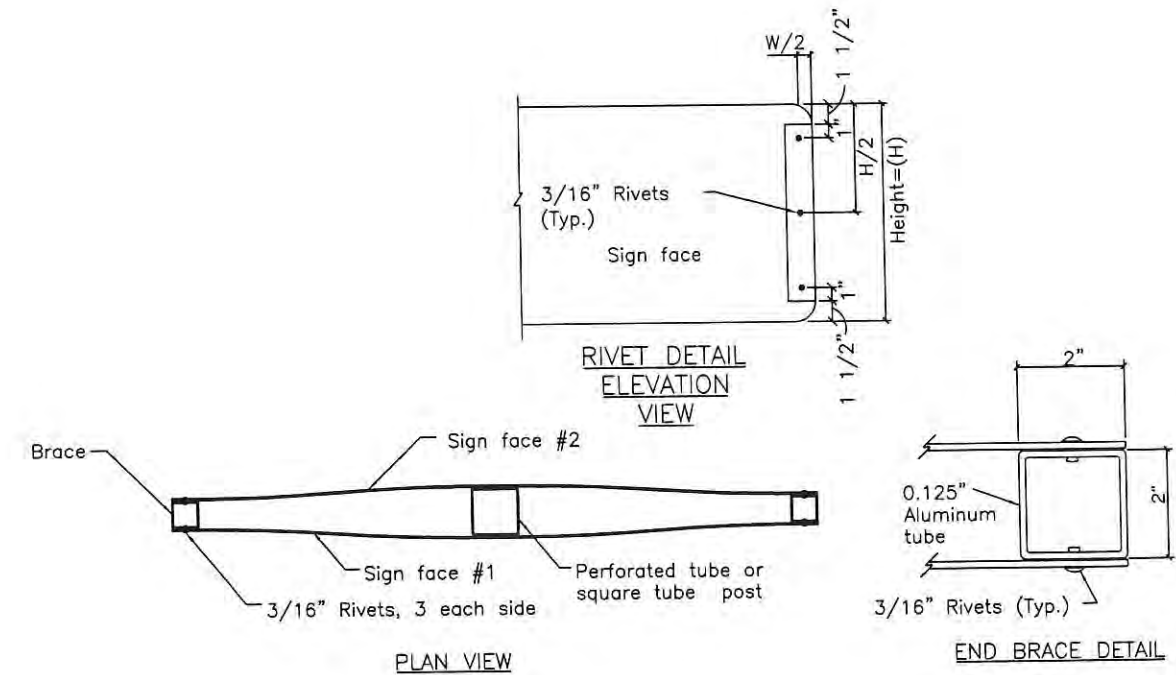
SIGN FRAMING AND POST SPACING



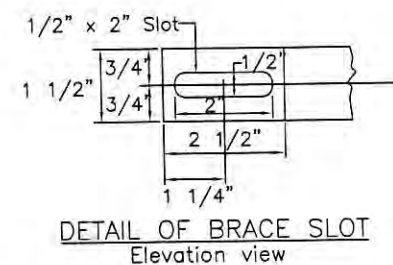


*** Use one brace when $H \leq 18"$
 Use two braces when $18" < H < 48"$
 Use three braces when $H \geq 48"$
 ** Position of brace may be varied to match
 Predrilled mounting holes in panel

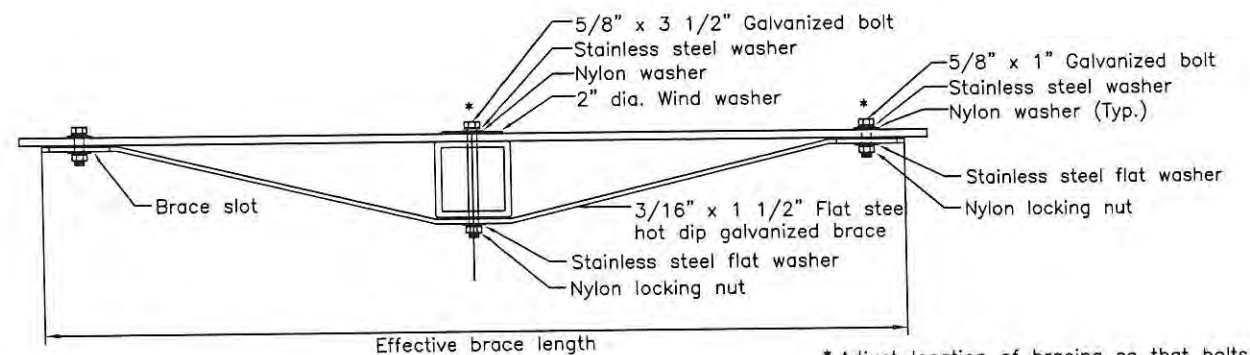
SIGN BRACING PLACEMENT



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



DETAIL OF BRACE SLOT
Elevation view



TUBE POST SIGN BRACING
Plan view

SIGN WIDTH(W)	EFFECTIVE BRACE LENGTH		
	WARNING	YIELD	OTHER
30"	36"	24"	24"
36"	42"	30"	30"
42"	48"	—	36"
48"	TWO POSTS	36"	42"

< 30" No bracing required and use square tube

REVISIONS		
Date	Description	By

Sheet 1 of 1

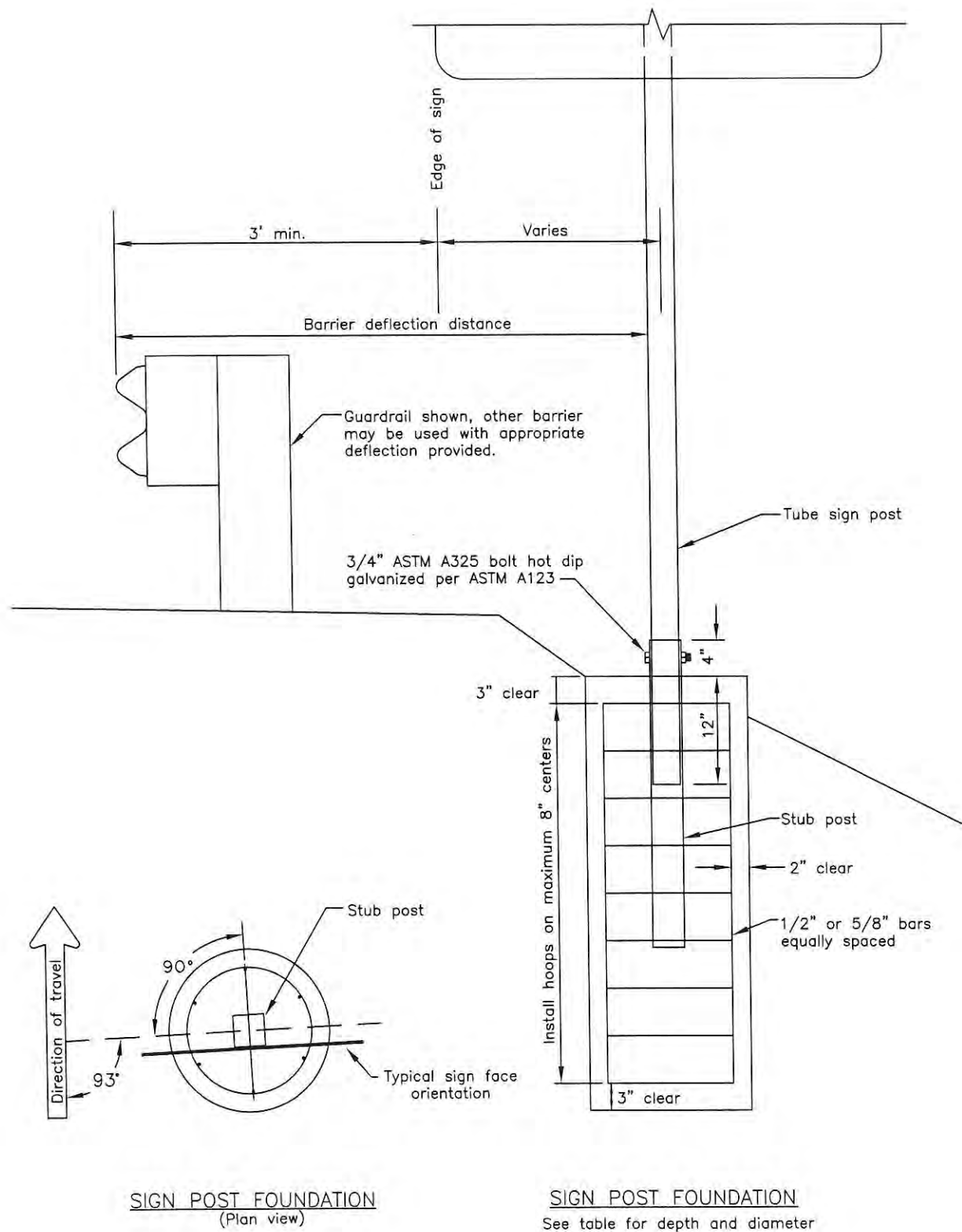
State of Alaska
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BRACING FOR SIGNS
 MOUNTED ON SINGLE POST



Date 2/28/03





GENERAL NOTES

- 1. This is a non-crashworthy sign support. It may only be used at locations shielded by a guardrail, barrier, or wall. It may not be used if the sign post is within 20' of the rail and is closer than 75' from the guardrail end post (measured along the rail). For this case use a breakaway sign support. See Standard Drawing G-20.
- 2. Furnish steel tube sign post and stub post that conform to ASTM A500, grade B, and meet ASTM A123 for hot dip galvanizing.
- 3. Install tubes and stub post with a 0.1875" wall thickness.
- 4. For Perforated Tubes use Standard Drawing S-30.
- 5. Spiral reinforcing steel may be substituted for hoops in concrete foundation. Spiral option shall consist of No. 3 plain spiral with 6" pitch with three flat turns at the top and one flat turn at the bottom.

POST SIZE & TYPE	FOUNDATION *			REINFORCEMENT				STUB POST	
	DIA.	MIN. DEPTH	C.Y. CONC.	VERTICAL BARS		HOOPS		SLEEVE	
2 1/2" TUBE	1'-0"	4'-6"	0.13	6	1/2"	4'-0"	1/2" 8"	3"	3'
3" TUBE	1'-6"	4'-0"	0.25	6	1/2"	3'-6"	1/2" 1'-2"	3 1/2"	3'
3 1/2" TUBE	1'-6"	4'-6"	0.27	6	1/2"	4'-0"	1/2" 1'-2"	4"	3'
4" TUBE	2'-6"	4'-0"	0.69	7	5/8"	3'-6"	1/2" 2'-2"	4 1/2"	3'
4 1/2" TUBE	2'-6"	4'-6"	0.78	7	5/8"	4'-0"	1/2" 2'-2"	5"	3'

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

REVISIONS

Date	Description	By

Sheet 1 of 1

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SIGN POST BASE AND
FOUNDATION BEHIND
BARRIER

49th

Alaska

CE-17347

APPROVED

49th

Alaska

CE-8849

Date 2/28/03