

STATE	PROJECT	SHEET NUMBER
AK	IRR FORT 1002(1)	A.1

U. S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION



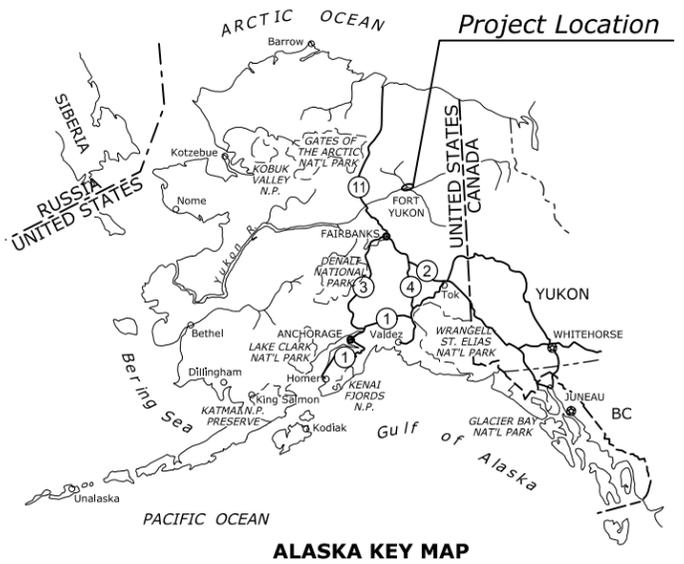
PLANS FOR PROPOSED PROJECT
AK IRR FORT 1002(1)

IVARS ROAD BRIDGE REPLACEMENT

NATIVE VILLAGE OF FORT YUKON
YUKON - KOYUKUK CENSUS AREA
ALASKA

LENGTH 0.109 MILES

95% REVIEW



TYPE OF CONSTRUCTION:

Bridge replacement and road approaches

DESIGN DESIGNATION:

ADT (2015)	<400
ADT (2035)	<400
V	15 MPH
e (max)	0.025

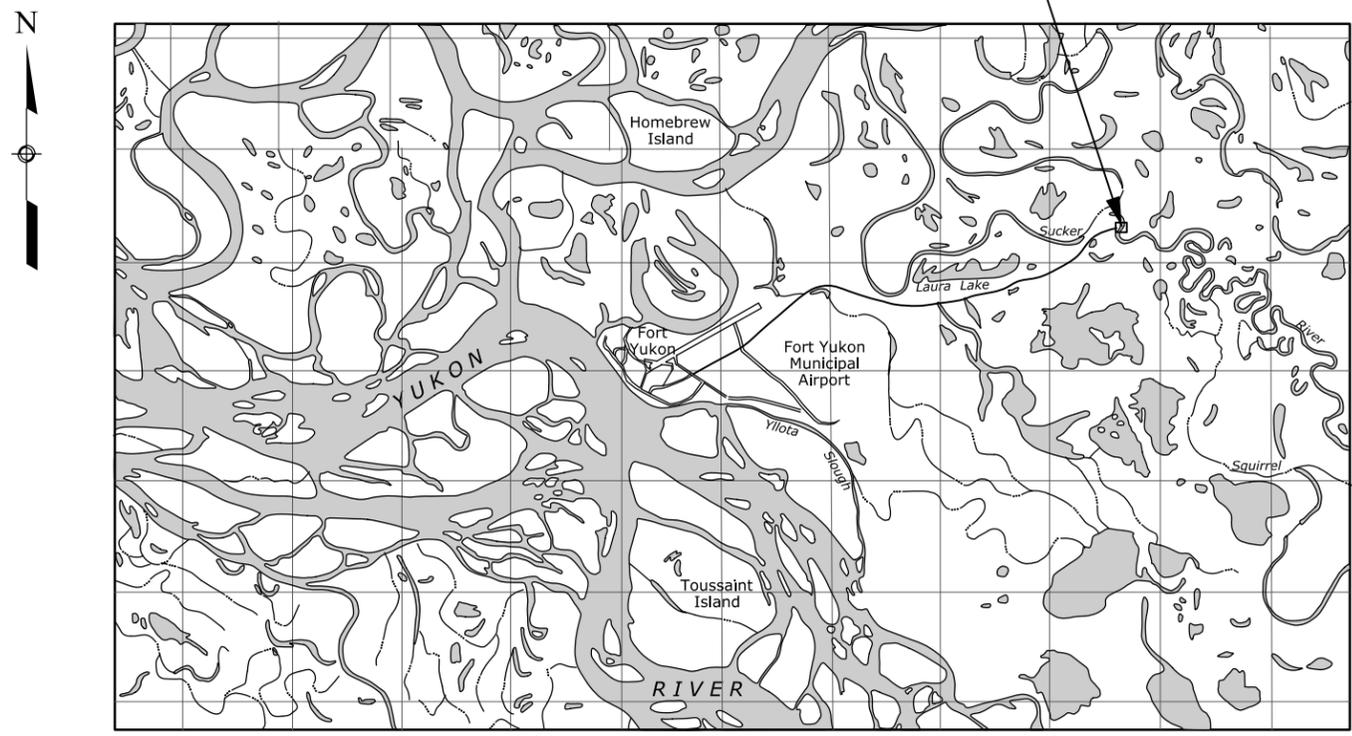
SPECIFICATION:

Standard Specifications for
Construction of Roads and Bridges
on Federal Highway Projects, FP-14

PLANS PREPARED BY
**U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION**
WESTERN FEDERAL LANDS HIGHWAY DIVISION
VANCOUVER, WASHINGTON

PROJECT MANAGER
T. LONERGAN

PROJECT LOCATION



INDEX TO SHEETS

- A. GENERAL INFORMATION**
 - A.1 TITLE SHEET
 - A.2 PLAN SYMBOLS AND ABBREVIATIONS
 - A.3 VICINITY MAP
- B. SUMMARIES**
 - B.1-2 SUMMARY OF QUANTITIES
- C. TYPICAL SECTION**
 - C.1 TYPICAL SECTION
- D. PLAN-PROFILE**
 - D.1 TABULATION OF PLAN QUANTITIES
 - D.2 PLAN AND PROFILE
 - D.3 G4 W-BEAM GUARDRAIL LOW SPEED TERMINAL TYPE LST, WOOD POSTS
 - D.4 APPROACH RAILING DETAILS
 - D.5-7 STANDARD DRAWINGS
- E. EROSION CONTROL**
 - E.1 TABULATION OF EROSION CONTROL QUANTITIES
 - E.2 EROSION CONTROL PLAN
 - E.3 STD. DRWG. 157-1, SILT FENCE
- F. RIPRAP DETAILS**
 - F.1 TABULATION OF BRIDGE RIPRAP QUANTITIES
 - F.2 IVARS BRIDGE RIPRAP DETAIL
- G. BRIDGE PLANS**
 - G.1 PLAN AND ELEVATION
 - G.2 GENERAL NOTES
 - G.3 FOUNDATION PLAN
 - G.4 ABUTMENT LAYOUT
 - G.5 ABUTMENT REINFORCEMENT
 - G.6 TYPICAL SECTION
 - G.7 MISCELLANEOUS DETAILS
 - G.8 GRS-IBS PLAN AND ELEVATION
 - G.9-12 GRS-IBS DETAILS
- H. TEMPORARY TRAFFIC CONTROL PLAN**
 - H.1 TABULATION OF TEMPORARY TRAFFIC CONTROL QUANTITIES
 - H.2 TEMPORARY TRAFFIC CONTROL ROAD CLOSURE PLAN

APPROVED:

Director, Project Delivery,
Western Federal Lands Highway Division

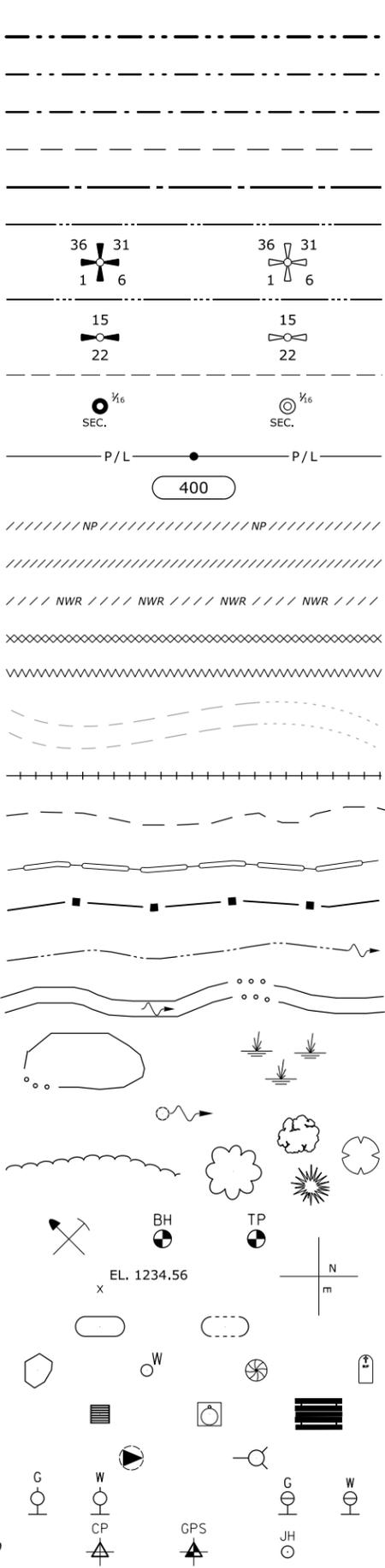
DATE _____

Checked by: _____
 Designed by: _____
 c:\myfiles\pw_production\0123983\ak-t-fort1002\1.a.dgn [US_Sur_f2D]
 15 October 2015 8:39 AM

Δ	total central angle
Δc	curve central angle
\emptyset	diameter
θ_s	spiral central angle
abut.	abutment
ADT	average daily traffic
AH	ahead
appr.	approach
BK	back
BM	bench mark
BP	balance point
br.	bridge
brg.	bearing
cc or c. to c.	center to center
$\text{\textcircled{E}}$	centerline
clr.	clear
CMP	corrugated metal pipe
col.	column
conc.	concrete
conn.	connection
constr. jt.	construction joint
cont.	continuous
CS	point of curve to spiral
ctrs.	centers
CUFT	cubic foot (feet)
culv.	culvert
CUYD	cubic yard(s)
D	diameter
DHV	design hourly volume
dia.	diameter
diag.	diagonal
diaph.	diaphragm
dist.	distance
drwg(s).	drawing(s)
E	east
e	superelevation rate
El. 94.16 ft	elevation with number
elev.	elevation
emb.	embankment
EP	edge of pavement
EQ or eq.	equation
ER	edge of road
EW	edge of water
exc.	excavation
exp. jt.	expansion joint
fin.	finish
flg.	flange
ft2	square foot
ft3	cubic foot (feet)
ftg.	footing
ga.	gage (gauge)
galv.	galvanized
hdwl.	headwall
hex.	hexagon
HW	high water
ID	inside diameter
jt.	joint
L	length of curve
lam.	lamination
lat.	latitude
LNFT	linear foot (feet)
long.	longitudinal
LPSM	lump sum
Ls	length of spiral
lt. or LT	left
LW	low water

M.L.	main line
M.P.	mile post
matl.	material
max.	maximum
MGAL	thousand gallon
min.	minimum
mon.	monument
N	north
NC	normal crown
o. c.	on center
o. to o.	out to out
OD	outside diameter
OG	original ground
PC	point of curve
PCC	point of compound curve
PCS	point of curve to spiral
PI	point of intersection
pl.	plate
POC	point on curve
POS	point on spiral
POT	point on tangent
PS	point of tangent to spiral
PSC	point of spiral to curve
PST	point of spiral to tangent
PT	point of tangent
pvmt.	pavement
R	radius
R.	range
R/W	right-of-way
rdwy.	roadway
reinf.	reinforcement
reqd.	required
rt. or RT	right
rte.	route
S	south
SADT	seasonal average daily traffic
SC	point of spiral to curve
sec.	section
shldr.	shoulder
SLRY	slurry unit
spa.	spacing, spaces or spaced
SQFT	square foot
SQYD	square yard
SRS	point of spiral to reverse spiral
SS	point of spiral to spiral (no curve)
ST	point of spiral to tangent
STA, Sta.	station
std.	standard
stgr.	stringer
stiff.	stiffener
struc.	structural
STS	point of spiral to tangent spiral
sym.	symmetrical
T	tangent distance
T.	township
TBM	temporary bench mark
thd.	thread
TS	point of tangent to spiral
Ts	tangent distance (spiraled curve)
typ.	typical
V	design speed
vph	vehicles per hour
VPI	vertical point of intersection
W	west
yd2	square yard
yd3	cubic yard(s)

National Boundary	
State Boundary	
County Boundary	
City Boundary	
Township or Range Line	
Section Line	
Section Corner (Found, Projected)	
1/4 Section Line	
1/4 Section Corner (Found, Projected)	
1/16 Section Line	
1/16 Section Corner (Found, Projected)	
Property Line w/Found Property Corner	
Parcel Number	
National Park Boundary	
National Forest Boundary	
National Wildlife Refuge Boundary	
BLM Lands Boundary	
Indian Reservation Boundary	
Existing Roadway (Road, Paved, Gravel)	
Railroad	
Trail	
Fiber Roll or Wattle	
Silt Fence	
Intermittent Drainage or Small Creek	
Large Creek or River	
Lake, Pond or Reservoir; Marshland	
Spring or Seep	
Treeline; Individual Trees	
Material Source; Bore Hole; Test Pit	
Spot Elevation; Coordinate Grid Tick	
Above Ground Tank; Underground Tank	
Boulder; Well; Satellite Dish; Grave	
Cooking Grate; Garbage Can; Picnic Table	
Flagpole; Fire Hydrant	
Gas & Water Meter; Gas & Water Valve	
Control Point (Terrestrial and GPS); Jump Hub	



North Arrow



	EXISTING	PROPOSED
Slope Stake Limits		
Fence		
Gate with Fence		
Cattleguard		
Guardrail		
Concrete Barrier		
Retaining Wall		
Signs (single, double post; portable)		
Delineators		
Pipe Culvert (arrow shows flow)		
Pipe Culvert with End Section		
Pipe Culvert with Headwall		
Pipe Culvert with Drop Inlet		
Box Culvert		
Underdrain		
Overhead/Above Ground Utilities		
Underground Utilities		
Poles (Power, Telephone, Joint Use, Light, Support w/Anchor)		
Miscellaneous Utility Features		
Building		
Right-of-Way Line with Monument		
Permanent Easement		
Construction Easement	- no symbol -	
Riprap		

FM = force main, FO = fiber optic, G = gas, IRR = irrigation, O = oil, P = power, SA = sanitary sewer, SD = storm drain, SS = storm sewer, STEAM = steam, T = telephone, TV = CATV, W = water

EM = electric meter, T = telephone pedestal, TV = CATV pedestal, UP = transformer or junction box, WF = water fountain

NO SCALE

NOTE:

1. Other symbols used in the plans will be shown in a legend on the appropriate plan sheet.

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 WESTERN FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL

PLAN SYMBOLS AND ABBREVIATIONS

DETAIL APPROVED FOR USE 11/2001
 REVISSED: 9/2005 1/2007 10/2009 10/2014

DETAIL W101-1

22 June 2015 4:52 PM c:\myfiles\pw_production\0123983\ak-t-fort100201ab.dgn [USC]

STATE	PROJECT	SHEET NUMBER
AK	IRR FORT 1002(1)	A.3



PROJECT LOCATION
IVARS ROAD
BRIDGE REPLACEMENT

NOTE:
 1. Project location (66°35'N, 145°06'W)



VICINITY MAP

11-August 2015 10:04 AM c:\myfiles\pw_production\00123983\ak-t-fort100201ac.dgn [US_Sur_ft2D] Designed by: Checked by:

SUMMARY OF QUANTITIES - Schedule A

STATE	PROJECT	SHEET NUMBER
AK	IRR FORT 1002(1)	B.1

A M E N D	Line Item No.	Pay Item Number	Pay Item Description	Unit	Sheet and Description													Estimated Quantities	Remarks and/or Determination of Estimated Quantity	
					Section C	Section D	Section E	Section F	Section G	Section H							ALLOWANCE	Bid Schedule		
					Typical Section	Plan & Profile	Erosion Control	Riprap Details	Bridge Plans	Temporary Traffic Control										
	A0020	15101-0000	MOBILIZATION	LPSM															ALL	
	A0040	15201-0000	CONSTRUCTION SURVEY AND STAKING	LPSM															ALL	
	A0060	15301-0010	CONTRACTOR QUALITY CONTROL AND ASSURANCE	LPSM															ALL	
	A0080	15401-0000	CONTRACTOR TESTING	LPSM															ALL	
	A0100	15501-0000	CONSTRUCTION SCHEDULE	LPSM															ALL	
	A0120	15705-0100	SOIL EROSION CONTROL, SILT FENCE	LNFT				700									50	750		
	A0140	20101-0000	CLEARING AND GRUBBING	ACRE		0.6											0.4	1.0		
	A0160	20301-1900	REMOVAL OF PIPE CULVERT	EACH		24												24		
	A0180	20401-0000	ROADWAY EXCAVATION	CUYD		212											38	250		
	A0200	20701-0300	SEPARATION-STABILIZATION GEOTEXTILE, CLASS 1, TYPE C	SQYD				413									37	450		
	A0220	25101-0500	PLACED RIPRAP, METHOD A, CLASS 5	CUYD				620									50	670		
	A0240	30202-2000	ROADWAY AGGREGATE, METHOD 2	TON		537											38	575		
	A0260	55210-0400	PRECAST STRUCTURAL CONCRETE, CLASS A(AE), ABUTMENT, Abutment	CUYD					47									47		
	A0280	55235-0000	EXPANSION JOINTS	LNFT					34									34		
	A0300	55504-0000	PRE-FABRICATED STEEL BRIDGE	LPSM														ALL		
	A0320	57401-0000	GRS-IBS, GEOSYNTHETIC REINFORCEMENT	SQYD					3,500									3,500		
	A0340	57402-0000	GRS-IBS, OPEN-GRADED BACKFILL	TON					1,100									1,100		
	A0360	57403-0000	GRS-IBS, CONCRETE MASONRY UNIT	SQYD					2,800									2,800		
	A0380	61702-1200	TERMINAL SECTION, TYPE LST	EACH					4									4		
	A0400	61707-1000	STRUCTURE TRANSITION RAILING, G4 SYSTEM	LNFT					52									52		
	A0420	62201-0250	DUMP TRUCK, 10 CUBIC YARD MINIMUM CAPACITY	HOUR		20												20		
	A0440	62201-0350	BACKHOE	HOUR		20												20		
	A0460	62201-0700	BACKHOE LOADER, 1 CUBIC YARD MINIMUM CAPACITY FRONTEND BUCKET, 10 CUBIC FOOT MINIMUM CAPACITY BACKHOE BUCKET, 90 HP MINIMUM FLYWHEEL	HOUR		20												20		

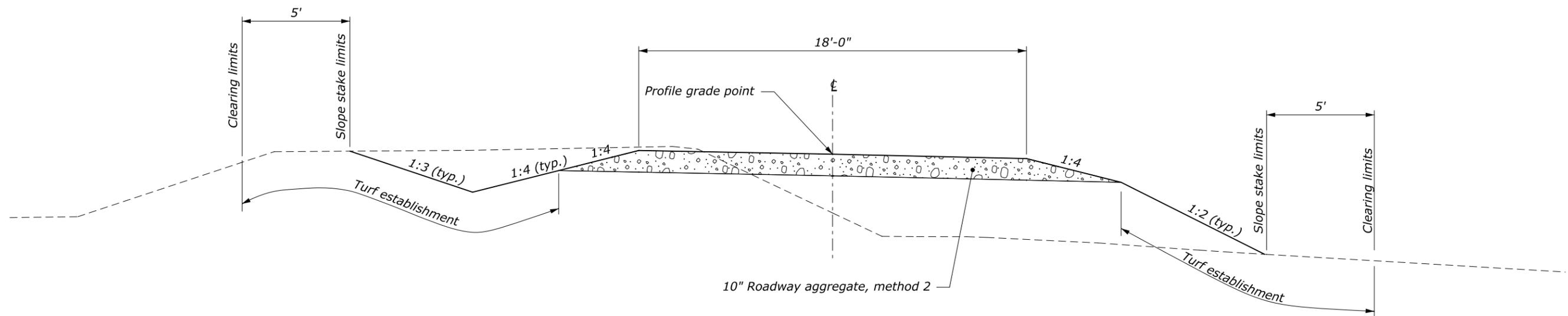
SUMMARY OF QUANTITIES - Schedule A

STATE	PROJECT	SHEET NUMBER
AK	IRR FORT 1002(1)	B.2

A M E N D	Line Item No.	Pay Item Number	Pay Item Description	Unit	Sheet and Description												Estimated Quantities		Remarks and/or Determination of Estimated Quantity
					Section C	Section D	Section E	Section F	Section G	Section H							ALLOWANCE	Bid Schedule	
					Typical Section	Plan & Profile	Erosion Control	Riprap Details	Bridge Plans	Temporary Traffic Control									
	A0480	62201-3150	HYDRAULIC EXCAVATOR, CRAWLER MOUNTED, 1.0 CUBIC YARD MINIMUM CAPACITY WITH THUMB ATTACHMENT	HOUR		20												20	
	A0500	62301-0000	GENERAL LABOR	HOUR		40												40	
	A0520	62501-0000	TURF ESTABLISHMENT	ACRE		0.3												0.3	
	A0540	63308-3000	OBJECT MARKER, TYPE 3	EACH		4												4	
	A0560	63502-0600	TEMPORARY TRAFFIC CONTROL, BARRICADE TYPE 3	EACH						4								4	
	A0580	63502-1500	TEMPORARY TRAFFIC CONTROL, WARNING LIGHT TYPE A	EACH						8								8	
	A0600	63504-1000	TEMPORARY TRAFFIC CONTROL, CONSTRUCTION SIGN	SQFT						29						6		35	
	A0620	63507-0700	TEMPORARY TRAFFIC CONTROL, TRAFFIC CONTROL SUPERVISOR	DAY						60								60	
	A0640	65001-1000	CONSTRUCT AND MAINTAIN DIVERSION, Detour Road	LPSM														ALL	

STATE	PROJECT	SHEET NUMBER
AK	IRR FORT 1002(1)	C.1

30 September 2015 12:03 PM c:\myfiles\pw_production\d01239988\ak-t-fort100201_ca.dgn [US_Sur_f2D] Designed by: --/---- Checked by: --/----



TYPICAL SECTION
103+50.93 to 109+28

NO SCALE

TYPICAL SECTION

**ITEM 20101-0000
CLEARING AND GRUBBING**

LOCATION	QUANTITY (ACRE)
103+50 to 105+92	0.3
107+45 to 109+28	0.3
TOTAL	0.6

**ITEM 61702-1200
TERMINAL SECTION,
TYPE LST**

LOCATION	LT/RT	QUANTITY (EACH)
105+56.26 to 105+81.44	LT	1
105+56.26 to 105+81.44	RT	1
107+56.51 to 107+81.69	LT	1
107+56.51 to 107+81.69	RT	1
TOTAL		4

**ITEM 63308-3000
OBJECT MARKER, TYPE 3**

LOCATION	LT/RT	QUANTITY (EACH)
105+92.81	LT	1
105+92.81	RT	1
107+45.14	LT	1
107+45.14	RT	1
TOTAL		4

**ITEM 20401-0000
ROADWAY EXCAVATION**

LOCATION	QUANTITY (CUYD)
103+50 to 105+92	84
107+45 to 109+28	128
TOTAL	212

**ITEM 61707-1000
STRUCTURE TRANSITION RAILING,
G4 SYSTEM**

LOCATION	LT/RT	QUANTITY (LNFT)
105+81.44 to 105+94.52	LT	13
105+81.44 to 105+94.52	RT	13
107+43.43 to 107+56.51	LT	13
107+43.43 to 107+56.51	RT	13
TOTAL		52

**FOR INFORMATION ONLY
EMBANKMENT**

LOCATION	QUANTITY (CUYD)
103+50 to 109+28	3,766
TOTAL	3,766

**ITEM 30202-2000
ROADWAY AGGREGATE
METHOD 2**

LOCATION	QUANTITY (TON)
103+50 to 105+92	349
107+45 to 109+28	264
TOTAL	613

**ITEM 62501-0000
TURF ESTABLISHMENT**

LOCATION	QUANTITY (ACRE)
103+50 to 105+92	0.2
107+45 to 109+28	0.1
TOTAL	0.3

**TABULATION OF PLAN
QUANTITIES**

19 October 2015 7:40 AM
 c:\myfiles\pw_production\00123981\ak-t-fort100201_fa.dgn [US_Sur_R2D]
 Designed by:
 Checked by:

STATE	PROJECT	SHEET NUMBER
AK	IRR FORT 1002(1)	D.2

CONTROL POINTS

NAME	NORTHING	EASTING	ELEVATION
13102	10068.296	20273.922	1000.083
13103	10118.846	20475.072	996.335
13104	9975.814	20739.831	994.632
13105	9975.122	20844.973	995.810
13106	9991.389	20952.564	996.340

Curve= PRO_MAIN_6
 $\Delta = 28^\circ 05' 57''$ (LT)
 R= 90.00'
 T= 22.52'
 L= 44.14'
 e= 0.025

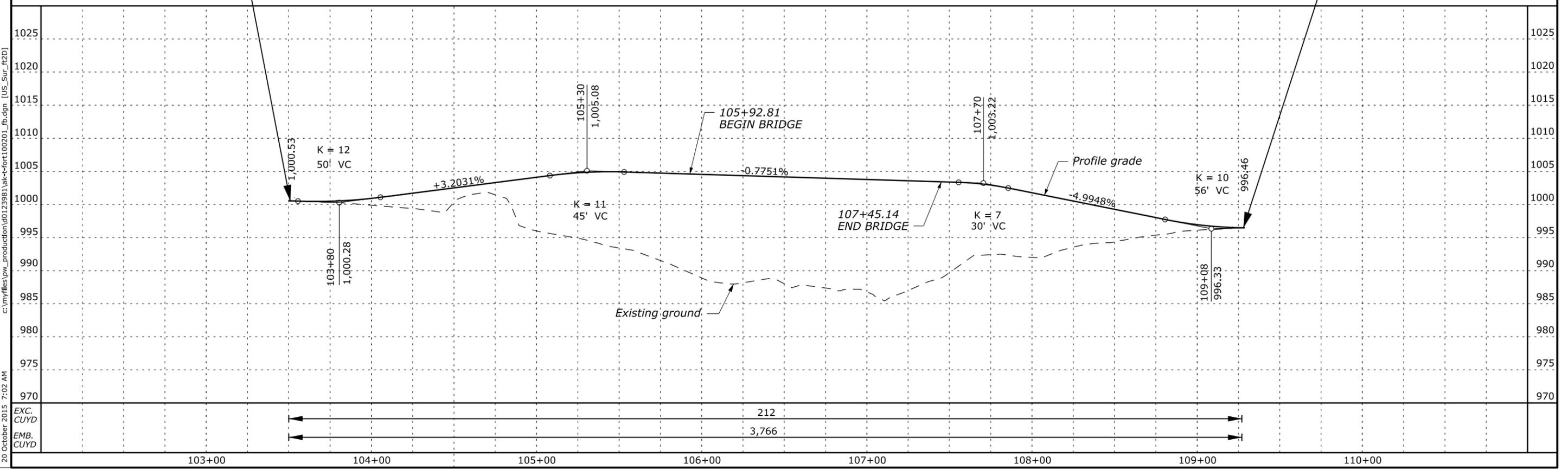
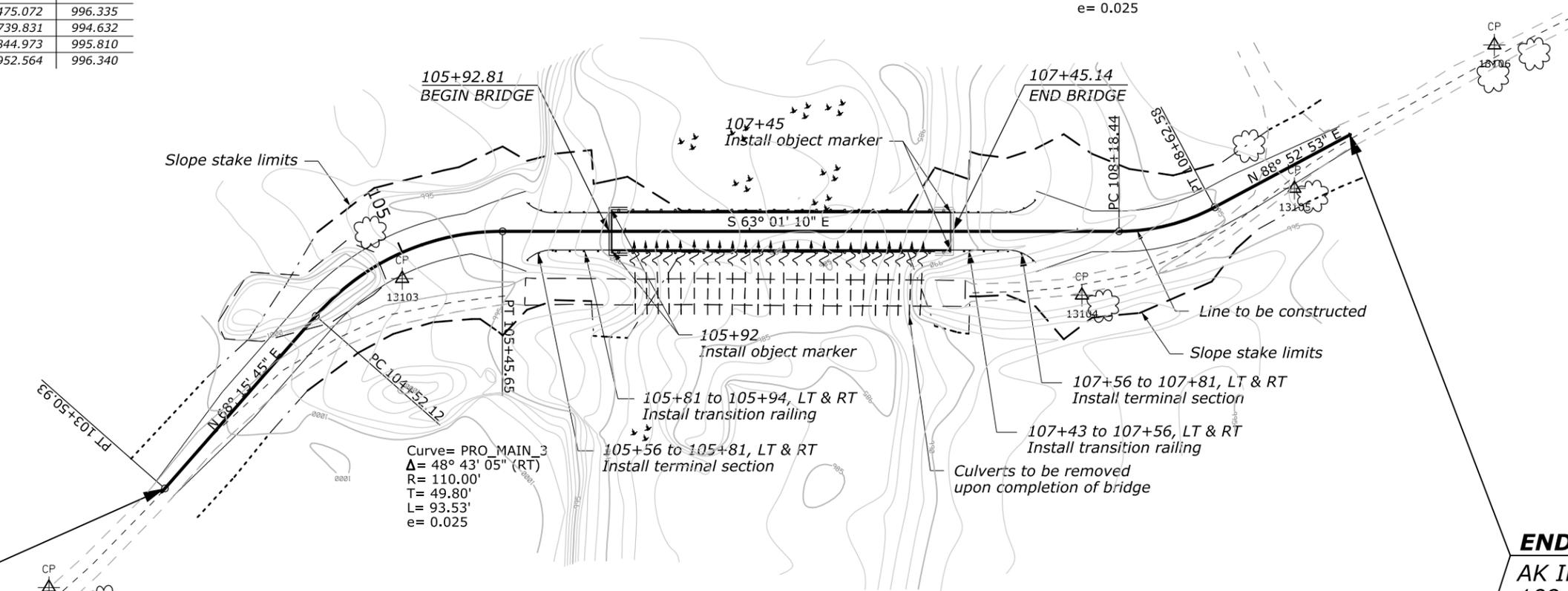
Curve= PRO_MAIN_3
 $\Delta = 48^\circ 43' 05''$ (RT)
 R= 110.00'
 T= 49.80'
 L= 93.53'
 e= 0.025



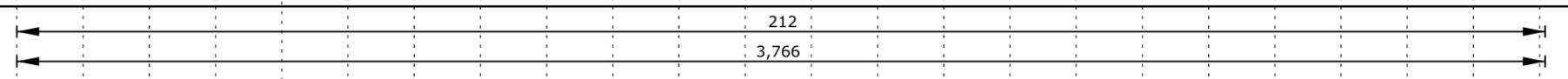
Checked by: _____
 Designed by: _____

BEGIN PROJECT
 AK IRR FORT 1002(1)
 103+50.93
 N=10083.952
 E=20339.505
 El=1000.54

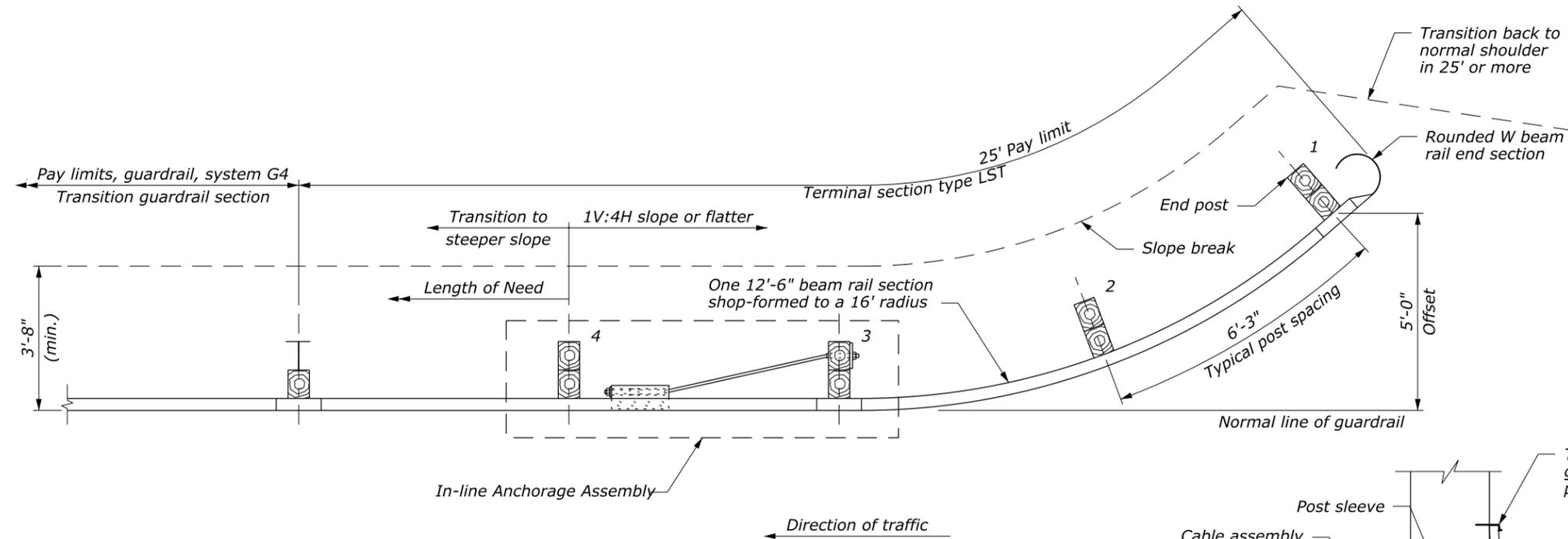
END PROJECT
 AK IRR FORT 1002(1)
 109+28.00
 N=9985.017
 E=20875.242
 El=996.46



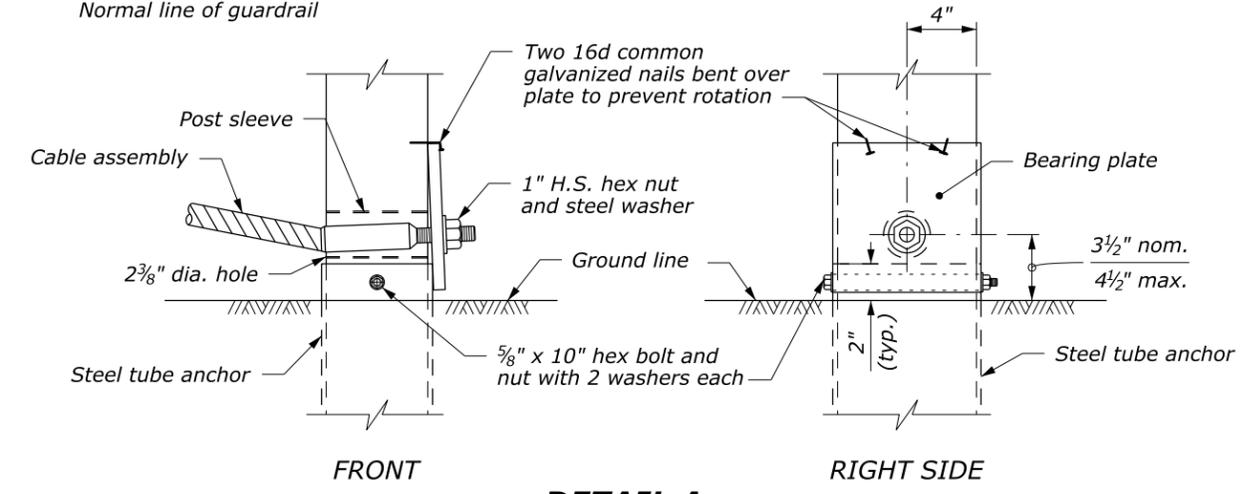
20 October 2015 7:02 AM
 EXC. CUYD
 EMB. CUYD



STATE	PROJECT	SHEET NUMBER
AK	IRR FORT 1002(1)	D.3



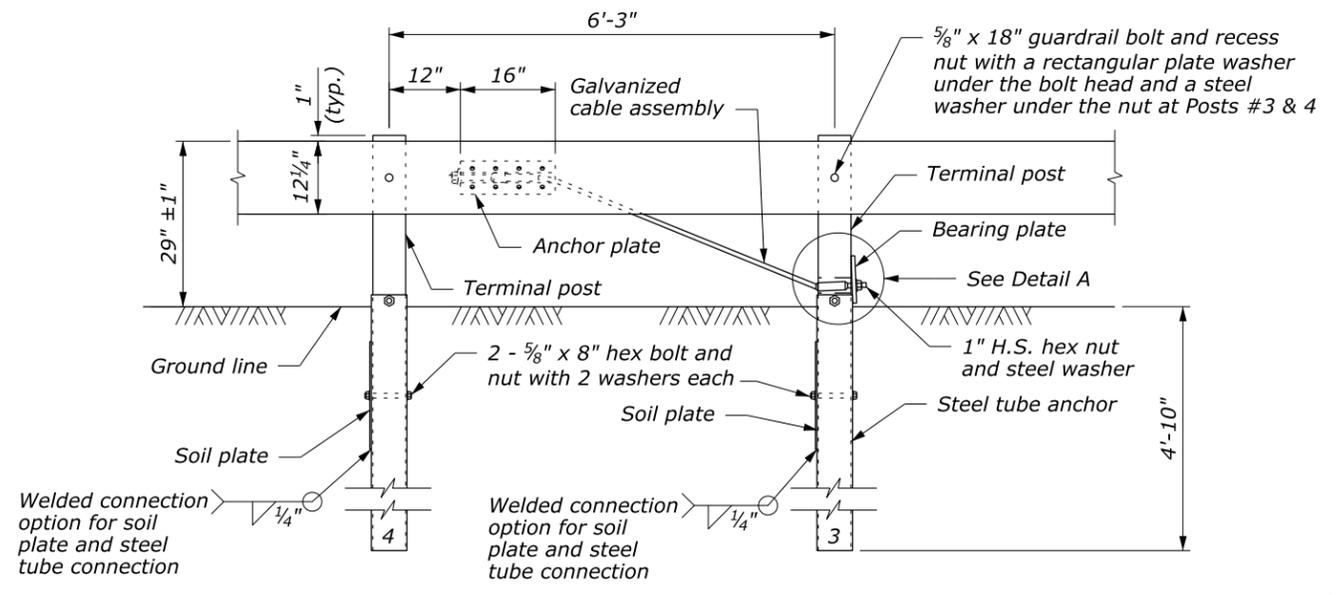
PLAN



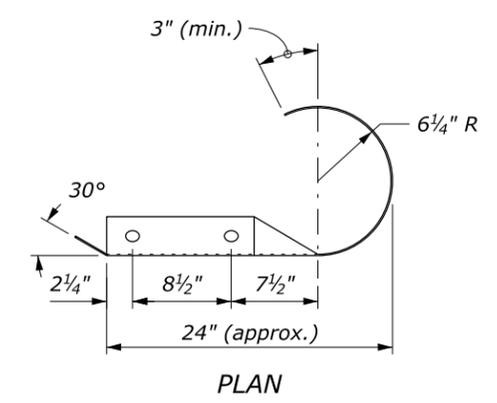
FRONT

RIGHT SIDE

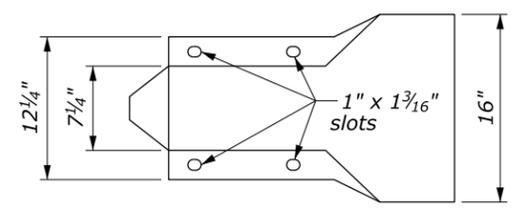
**DETAIL A
POST #3 ASSEMBLY**



**ELEVATION
IN-LINE ANCHORAGE ASSEMBLY**



PLAN



**ELEVATION
ROUNDED END SECTION**

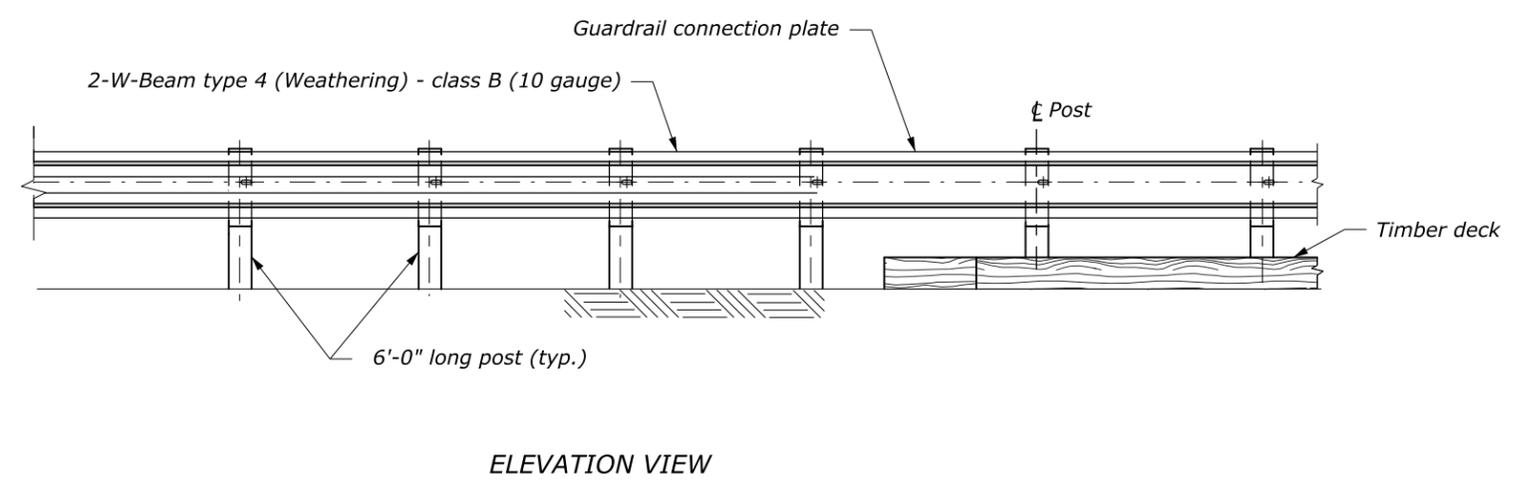
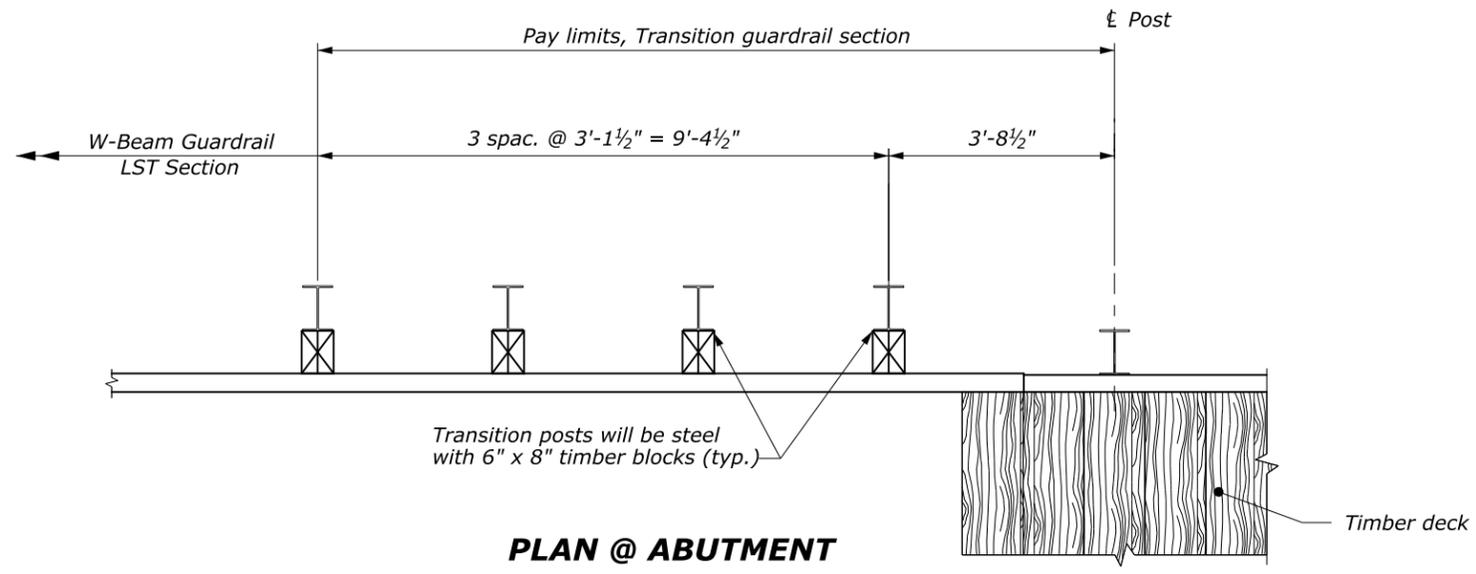
NOTE:

1. Pay limits for terminal section type LST include the in-line anchorage assembly and posts 1-4.
2. Use offset from face of rail to slope break as shown unless otherwise shown on plan.
3. Posts 1 and 2 are standard guardrail posts. See Standard 617-10 for details.
4. See Standard 617-15 for other details.
5. Do not use LST terminal where speeds are in excess of 45 MPH.

**G4 W-BEAM GUARDRAIL
LOW SPEED TERMINAL
TYPE LST, WOOD POSTS**

11 September 2015 10:56 AM
 c:\myfiles\pw_production\00123981\ak-t-fort100201_fc.dgn [US_Sur_f2D]
 Designed by:
 Checked by:

STATE	PROJECT	SHEET NUMBER
AK	IRR FORT 1002(1)	D.4

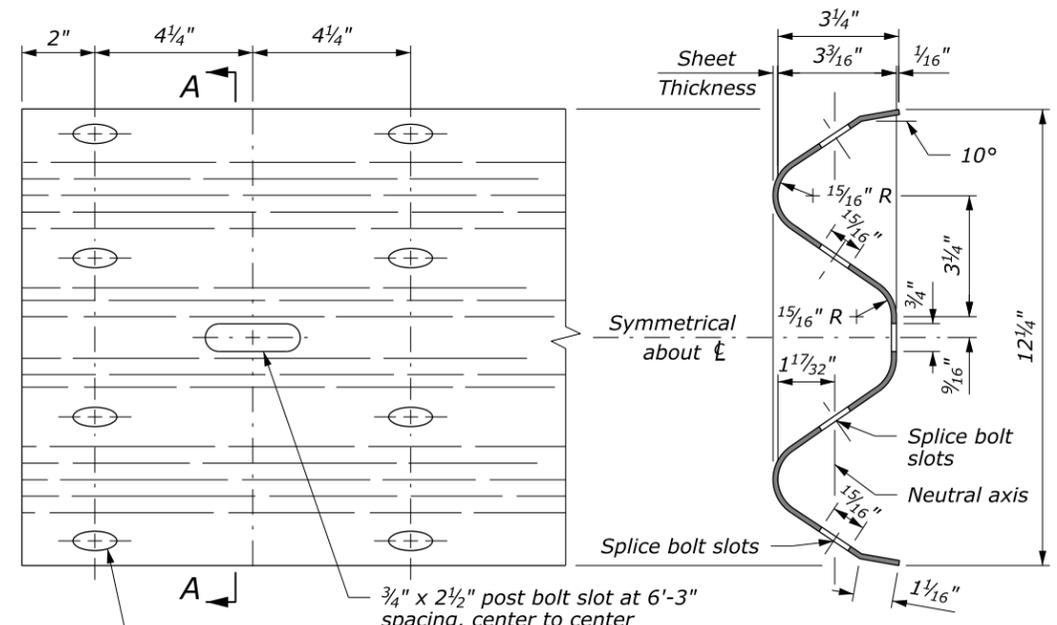


NOTE:
 1. See Sheet D.6, Standard 617-11, for other details.

**APPROACH RAILING
 DETAILS**

NO SCALE

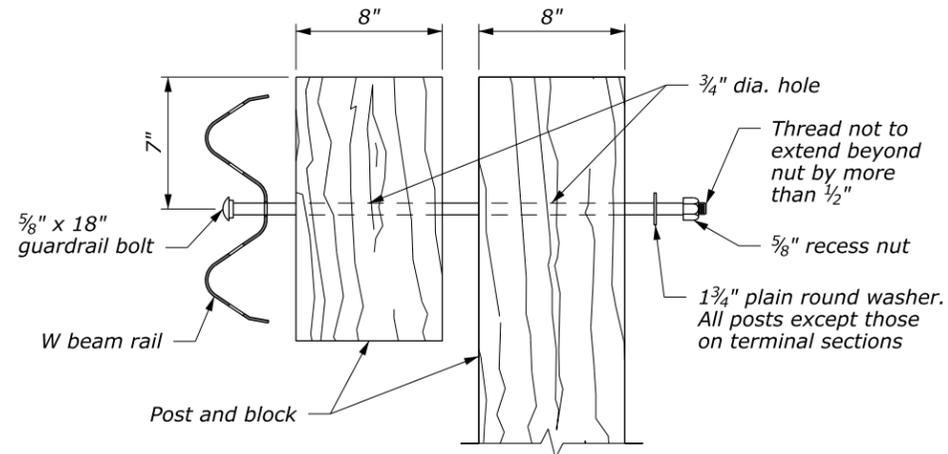
21 September 2015 10:59 AM c:\myfiles\pw_production\00123981\ak-t-fort100201_fd.dgn [US_Sur_R2D] Designed by: Checked by:



3/4" x 2 1/2" post bolt slot at 6'-3" spacing, center to center

29/32" x 1 1/8" splice bolt slot. 8 required, each end of rail

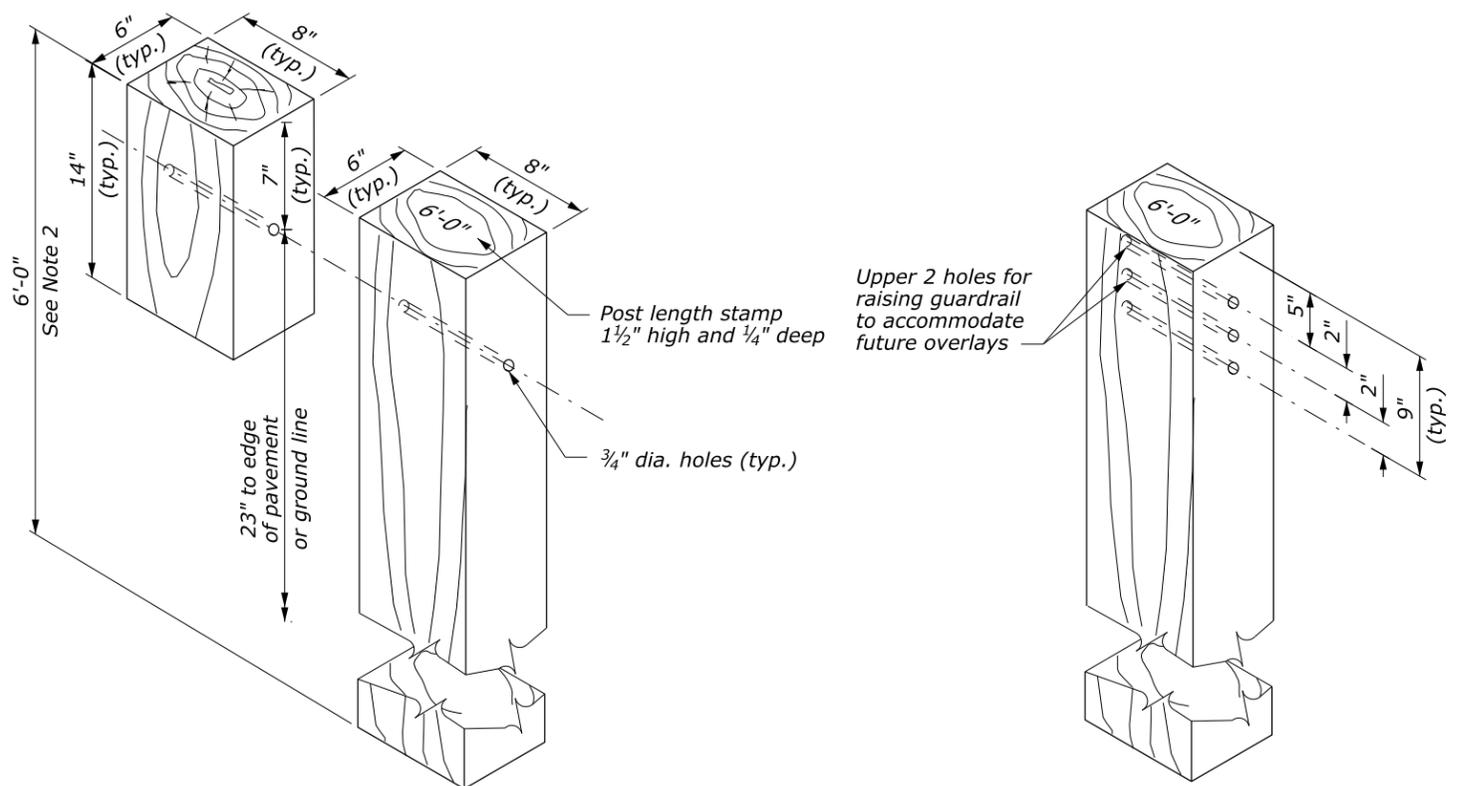
W BEAM RAIL



POST BOLT ASSEMBLY

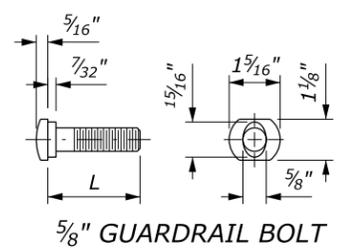
NOTE:

1. When encountering impenetrable material, see Standards 617-13 or 617-24.
2. See Special Contract Requirements when 7'-0" or longer posts are specified.
3. See Special Contract Requirements when the alternative hole arrangement is specified.
4. Install reflector tab between post bolt and rail, every fourth post. Alternate reflector tab shapes are acceptable.
5. Dimensional tolerances not shown or implied are intended to be those consistent with the proper functioning of the part, including its appearance, and accepted manufacturing practices.

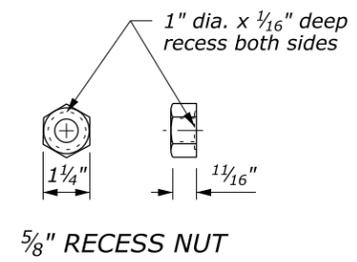


STANDARD HOLE ARRANGEMENT POST AND BLOCK DETAIL

ALTERNATE HOLE ARRANGEMENT POST AND BLOCK DETAIL

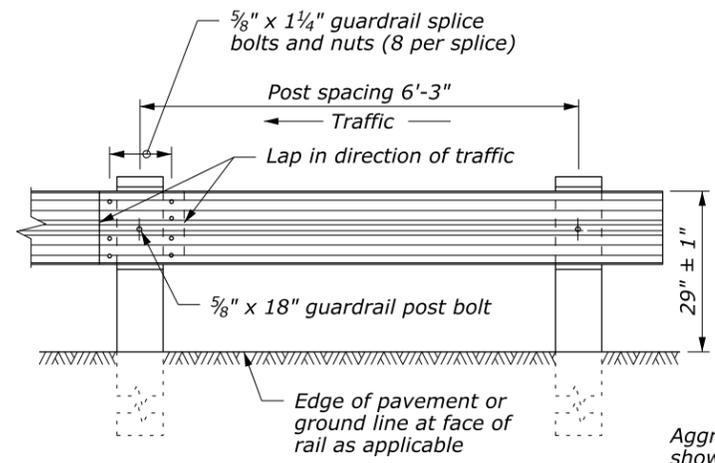


L	Thread Length
1 1/4"	1 1/8" minimum
2"	1 3/4" minimum
10"	4" minimum
18"	4" minimum
25"	4" minimum

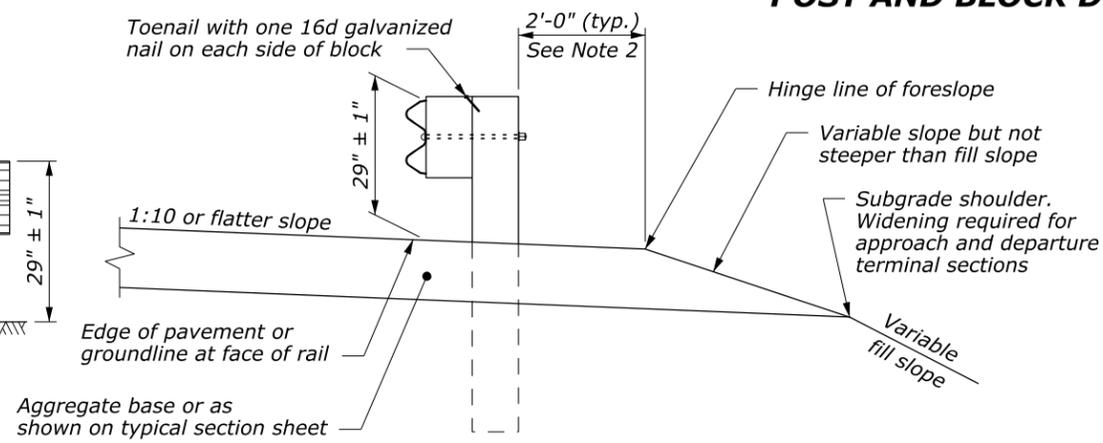


GUARDRAIL BOLT AND RECESS NUT

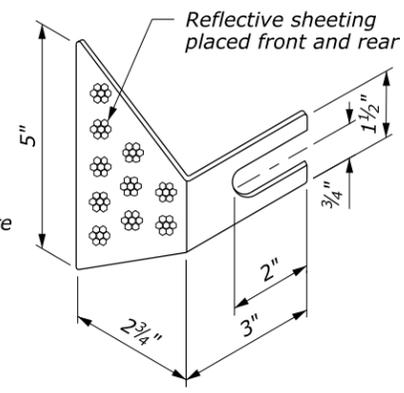
5/8" RECESS NUT



POST SPACING STANDARD POST SECTION



TYPICAL GUARDRAIL CROSS SECTION

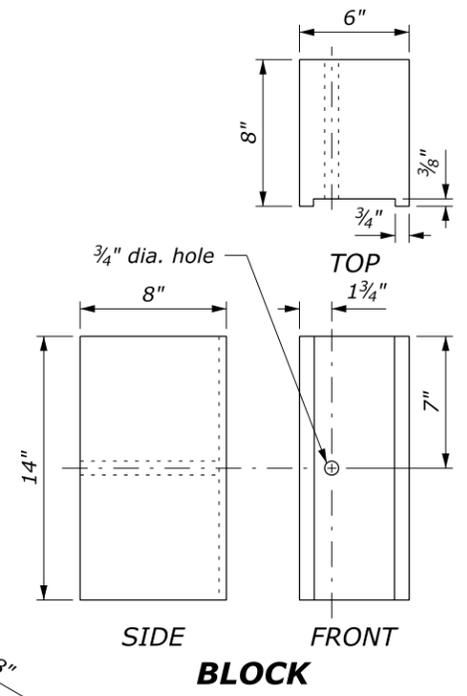
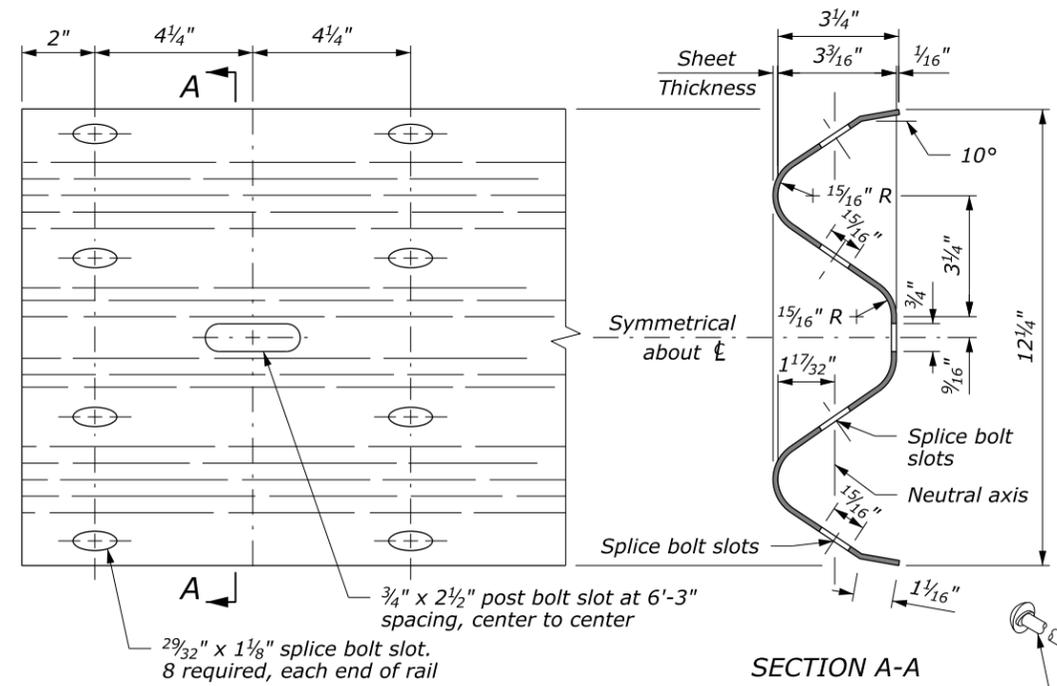


REFLECTOR TAB (See Note 4)

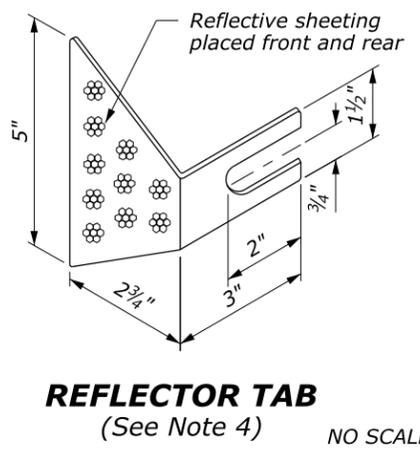
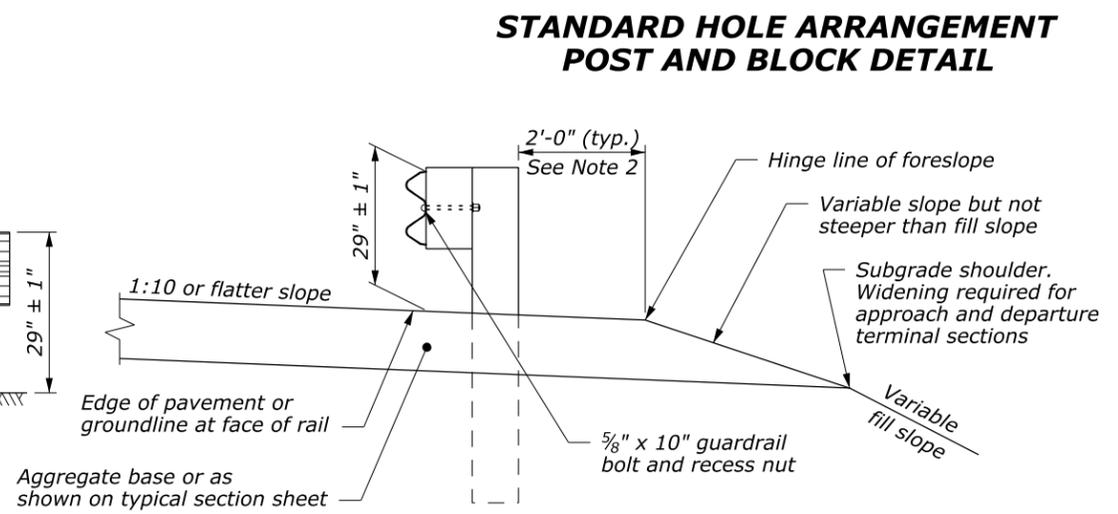
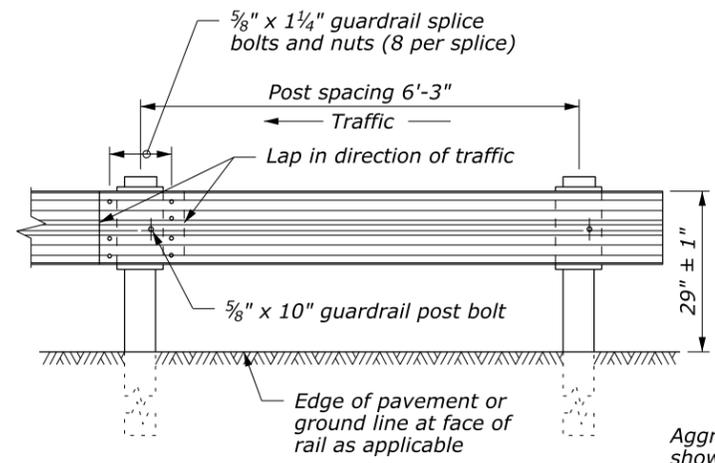
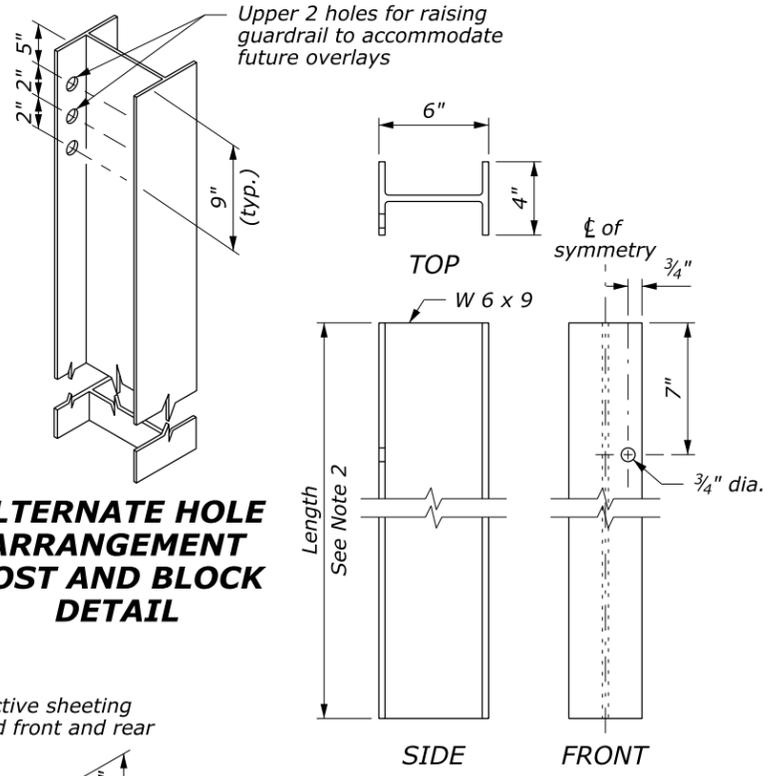
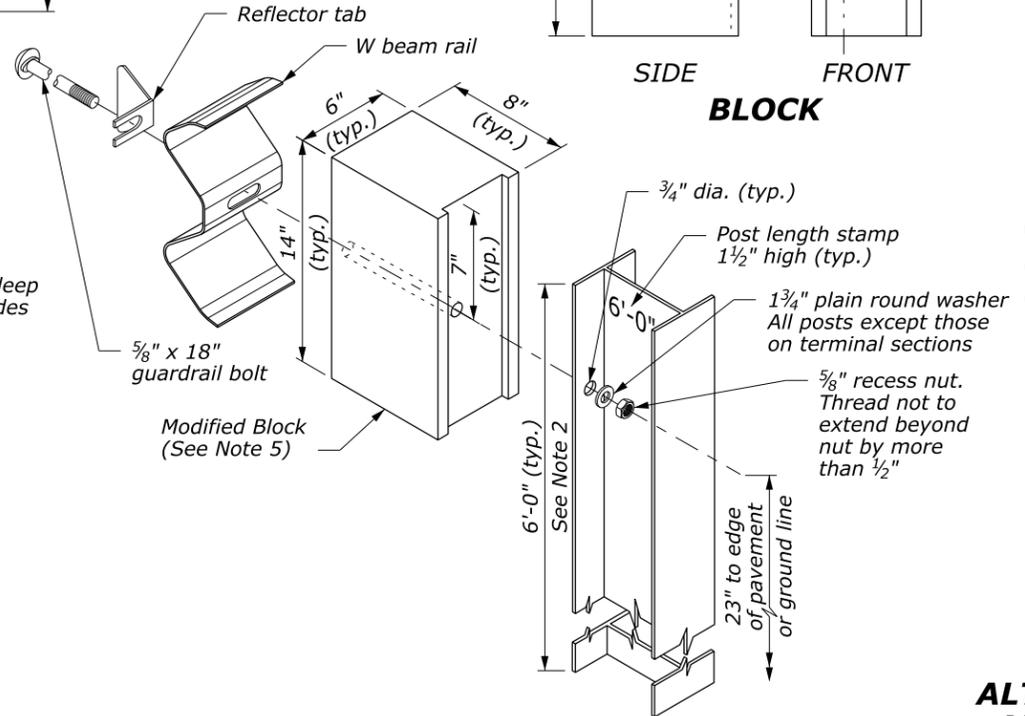
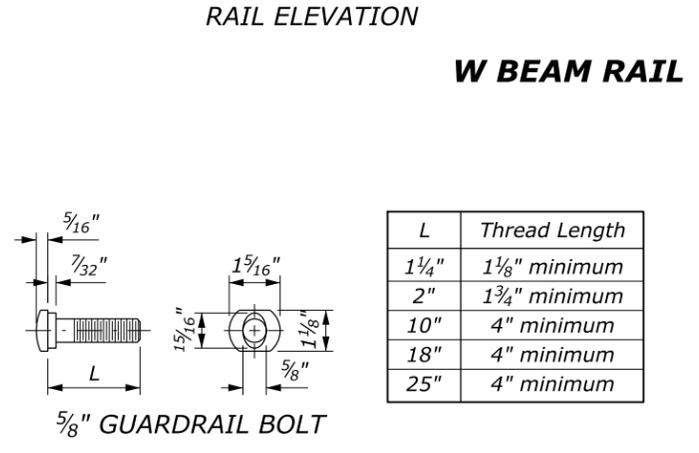
NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION FEDERAL LANDS HIGHWAY	
U.S. CUSTOMARY STANDARD	
G4 W-BEAM GUARDRAIL WOOD POSTS	
STANDARD APPROVED FOR USE 1/1994	STANDARD
REVISED: 4/1994 6/2005	617-10
DRAFT: 10/2013	

14 September 2015 11:17 AM c:\myfiles\pw_production\10123981\ak-t-fort100201_fe.dgn [USC]



- NOTE:**
- When encountering impenetrable material, see Standards 617-13 or 617-24.
 - See Special Contract Requirements when 7'-0" or longer posts are specified.
 - See Special Contract Requirements when the alternative hole arrangement is specified.
 - Install reflector tab between post bolt and rail, every fourth post. Alternate reflector tab shapes are acceptable.
 - Modified block may be wood, plastic, or composite material. Use consistent material throughout the length of guardrail run.
 - Dimensional tolerances not shown or implied are intended to be those consistent with the proper functioning of the part, including its appearance, and accepted manufacturing practices.



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY

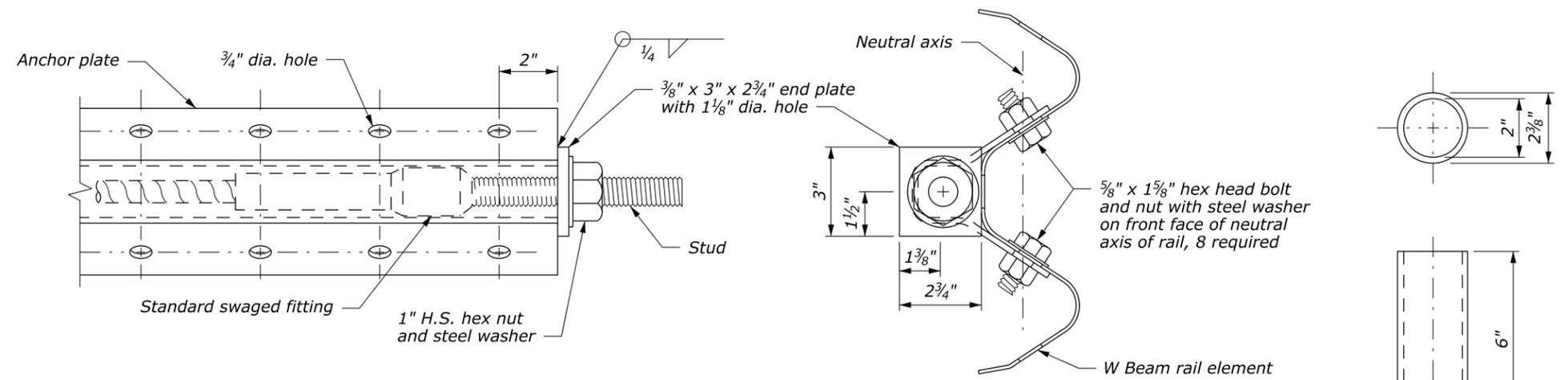
U.S. CUSTOMARY STANDARD

**G4 W-BEAM GUARDRAIL
STEEL POSTS**

STANDARD APPROVED FOR USE 1/1994
REVISED: 4/1994 6/2005
DRAFT: 10/2013

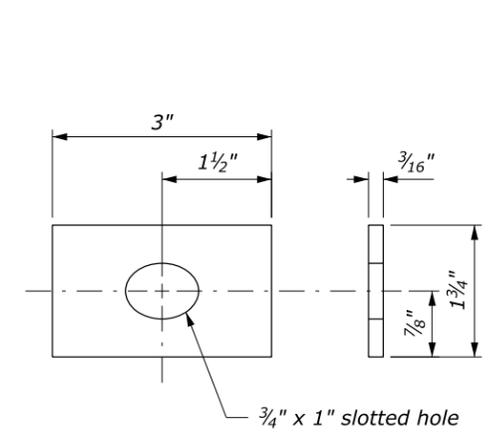
STANDARD
617-11

2 October 2014 10:06 AM c:\myfiles\pw_production\gd123981\ak-t-fort100201_ff.dgn [USC]

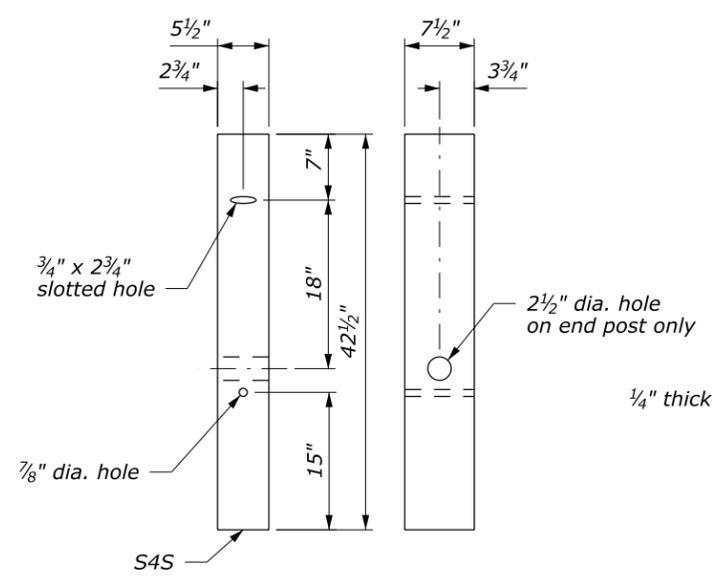


ANCHOR PLATE DETAILS FOR LST ANCHORAGE ASSEMBLY

NOTE:
 1. Dimensional tolerances not shown or implied are intended to be those consistent with the proper functioning of the part, including its appearance, and accepted manufacturing practices.

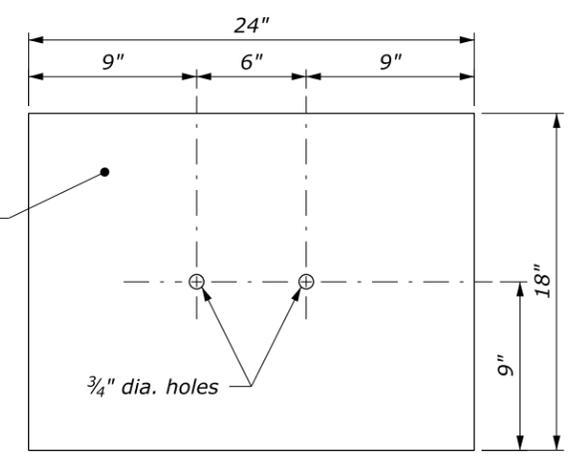


RECTANGULAR PLATE WASHER
 (Use to attach the section to the post of anchorage assembly)

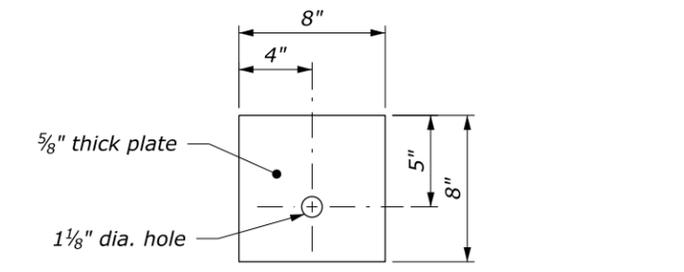


TERMINAL POST

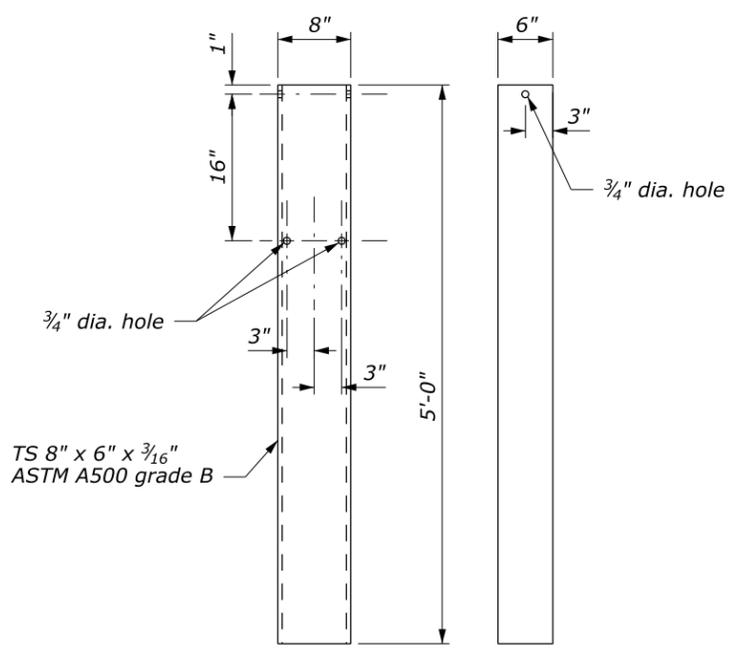
POST SLEEVE



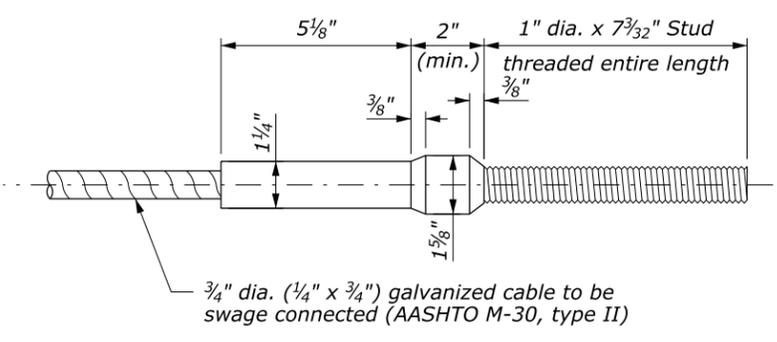
SOIL PLATE
 (2 REQUIRED)



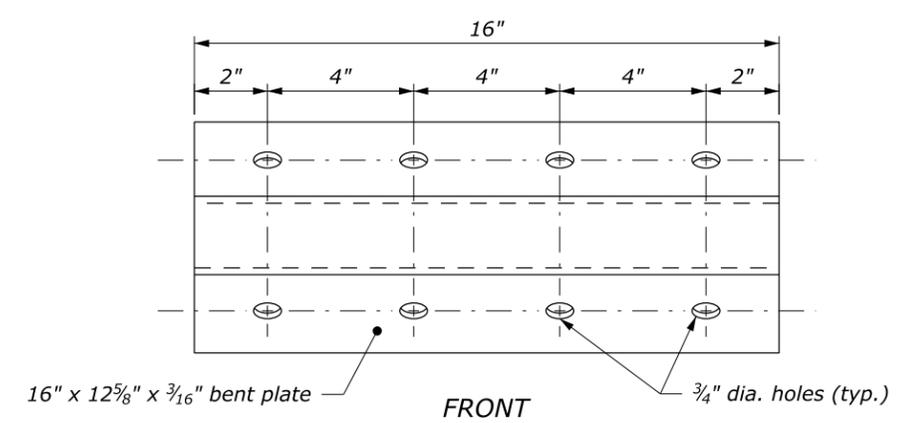
BEARING PLATE



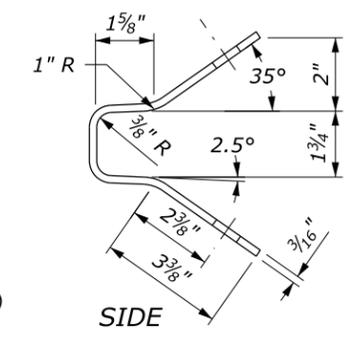
STEEL TUBE ANCHOR



CABLE ASSEMBLY
 (Standard swaged fitting and stud)



GUARDRAIL ANCHOR PLATE



NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 FEDERAL LANDS HIGHWAY

U.S. CUSTOMARY STANDARD

**G4 W-BEAM GUARDRAIL
 MELT, LST & CRT ANCHORAGE
 ASSEMBLY DETAILS**

STANDARD APPROVED FOR USE 1/1994
 STANDARD 617-15

REVISED: 4/1994 6/2005
 DRAFT: 5/2014

14 September 2015 11:23 AM c:\myfiles\pw_production\10123981\ak-t-fort100201_fg.dgn [USC]

STATE	PROJECT	SHEET NUMBER
AK	IRR FORT 1002(1)	E.1

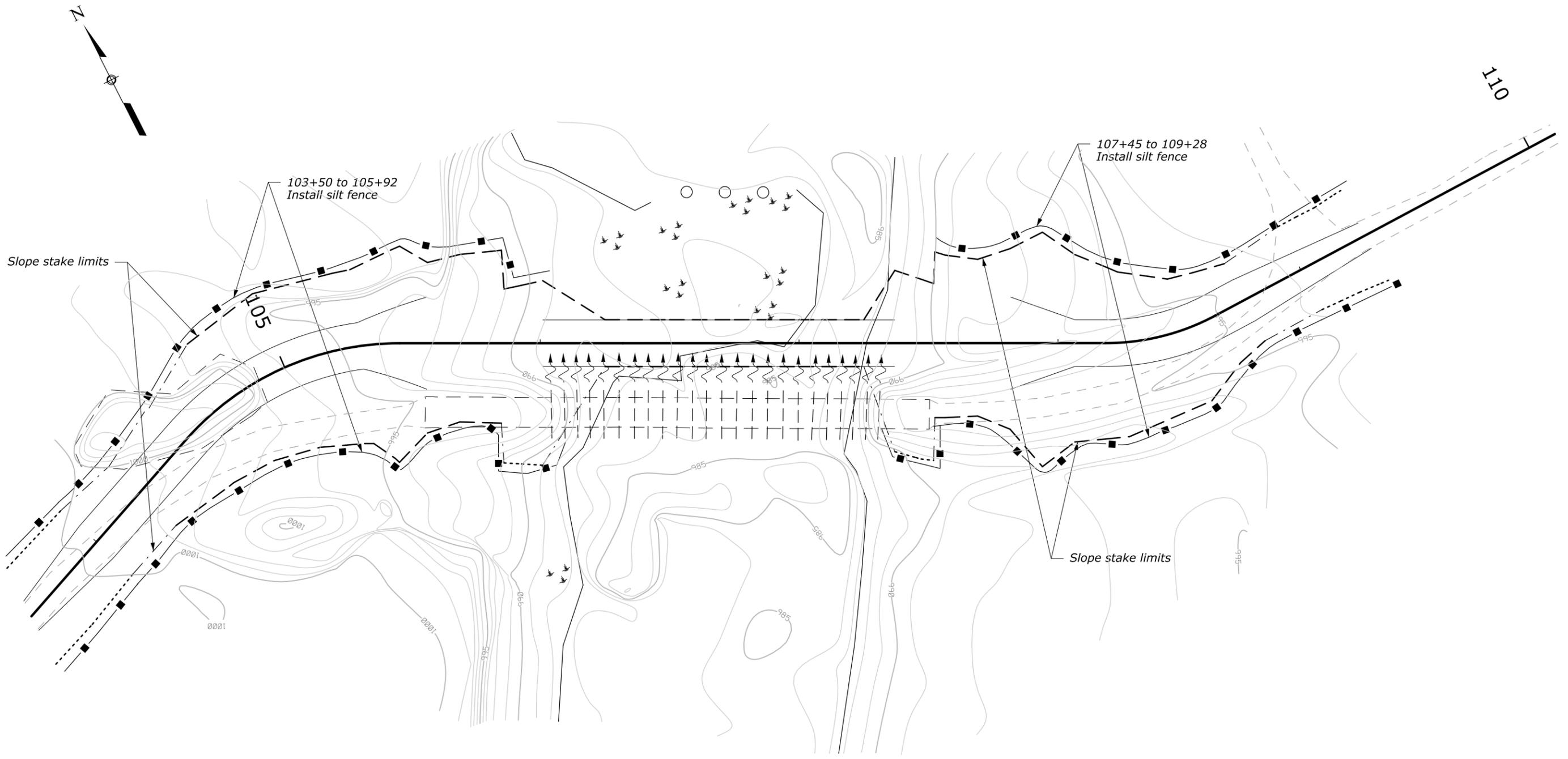
4 August 2015 10:32 AM c:\myfiles\pw_production\00123990\ak-t-forti00201_da.dgn [US_Sur_ft2D] Designed by: Checked by: --/--

ITEM 15705-0100 SOIL EROSION CONTROL, SILT FENCE	
<i>LOCATION</i>	<i>QUANTITY (LNFT)</i>
<i>103+50 to 105+92</i>	<i>340</i>
<i>107+45 to 109+28</i>	<i>360</i>
TOTAL	700

**TABULATION OF
EROSION CONTROL
QUANTITIES**

STATE	PROJECT	SHEET NUMBER
AK	IRR FORT 1002(1)	E.2

19 October 2015 9:26 AM c:\myfiles\pw_production\00123990\ak-t-fort100201_db.dgn [US_Sur_ft2D] Designed by: Checked by:

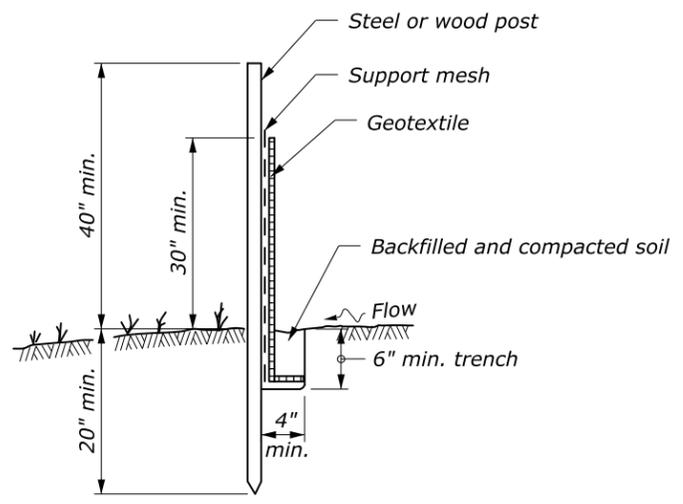


**EROSION CONTROL
PLAN**

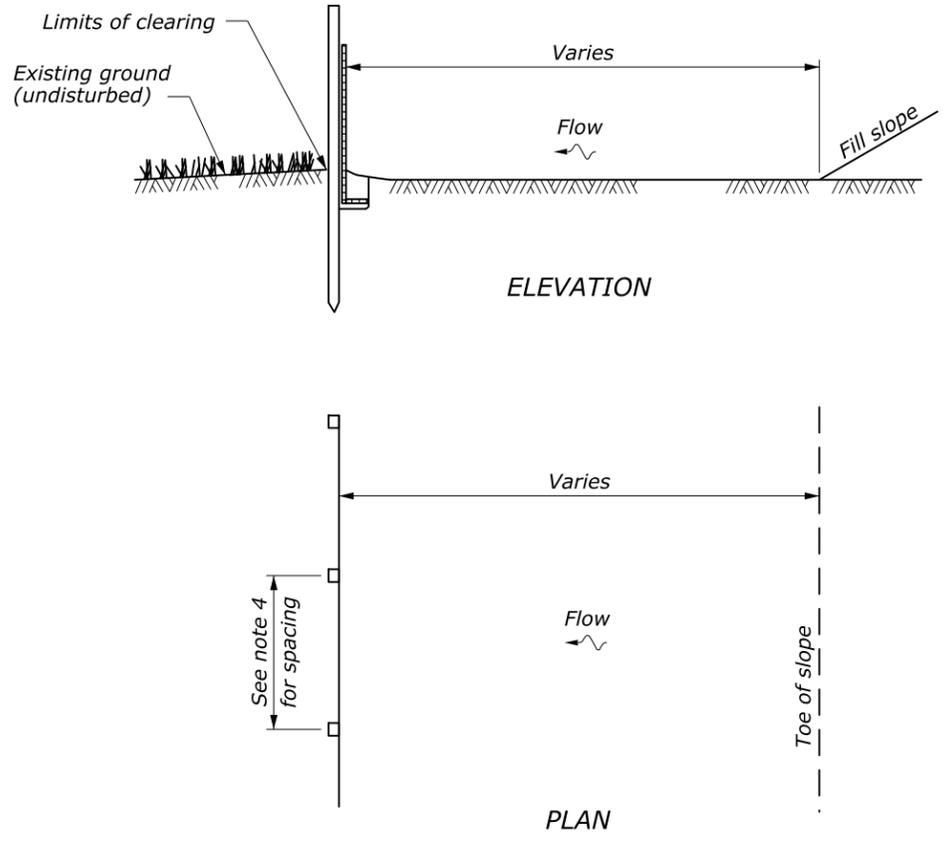
STATE	PROJECT	SHEET NUMBER
AK	IRR FORT 1002(1)	E.3

NOTE:

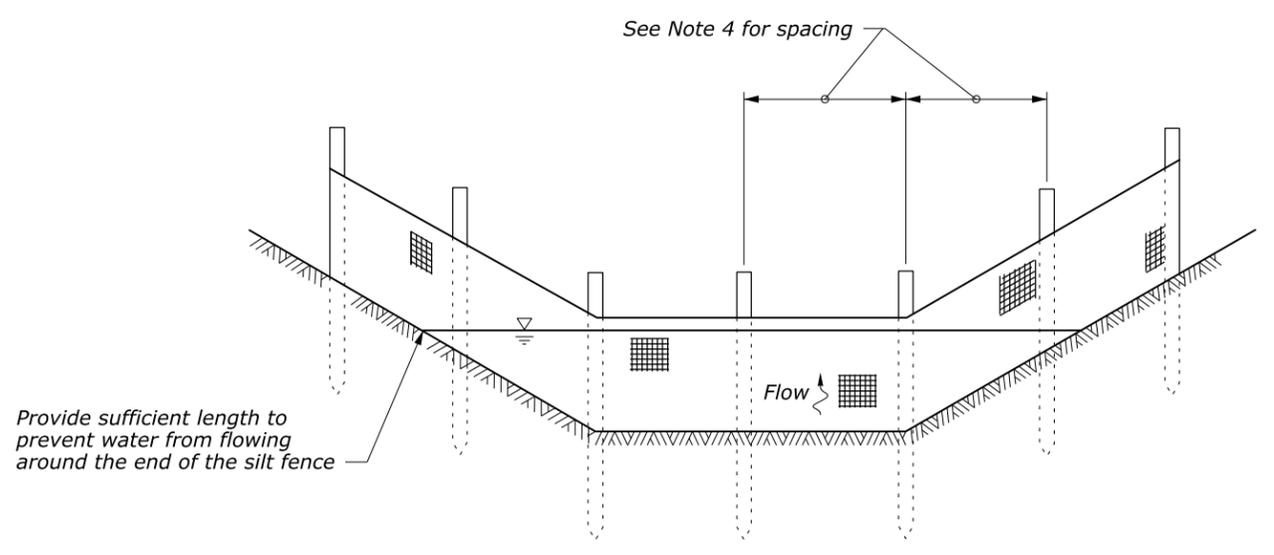
1. Use drainage ditch installation for low flow conditions only when specified on Erosion Control Plan.
2. Alternate preassembled silt fence options will be allowed as long as specified dimensions are satisfied. Follow manufacturer's recommendations for installation procedures. All types must ensure silt fence remains attached to, and does not slide down, supporting posts.
3. Install silt fence along ground contours. Curve ends of silt fence upgrade to prevent water from running around the ends.
4. 10 ft. (max.) spacing with fence support.
6 ft. (max.) spacing without fence support.



POST AND GEOTEXTILE INSTALLATION DETAIL



SILT FENCE INSTALLATION AT TOE OF FILL



SILT FENCE INSTALLATION IN A DRAINAGE DITCH
See Note 1

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION FEDERAL LANDS HIGHWAY	
U.S. CUSTOMARY STANDARD	
SILT FENCE	
STANDARD APPROVED FOR USE 6/2005	STANDARD
REVISED: 6/2007 DRAFT: 3/2014	157-1

NO SCALE

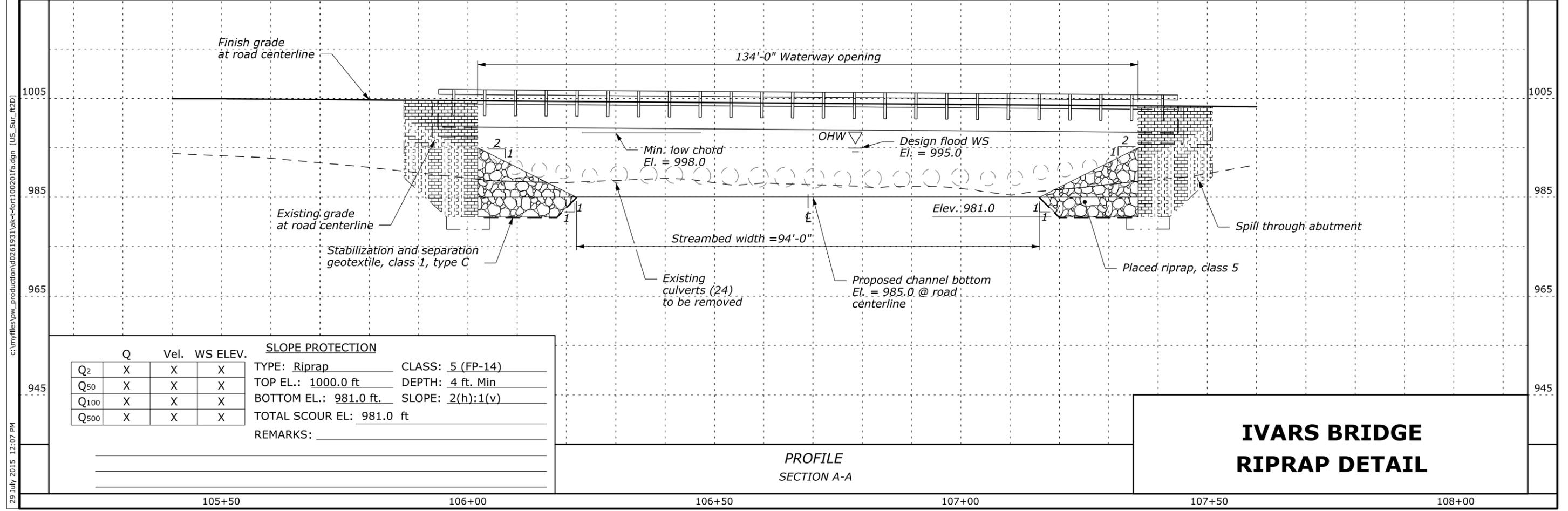
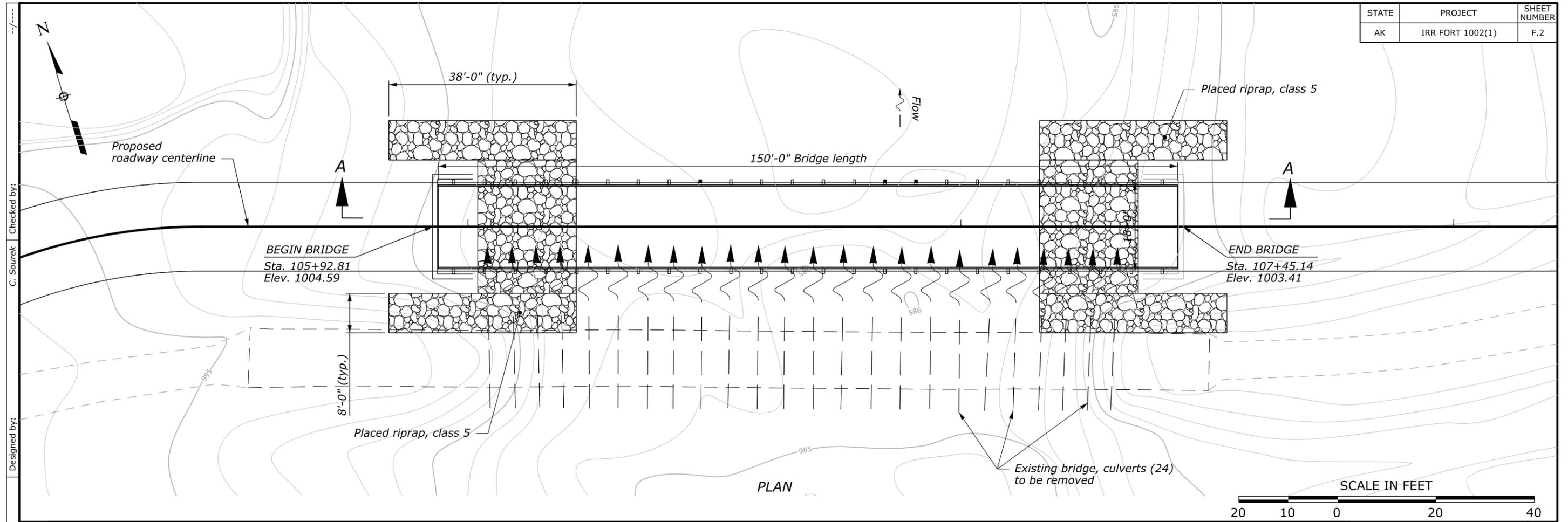
ITEM 25101-0500 PLACED RIPRAP, METHOD A, CLASS 5	
<i>LOCATION</i>	<i>QUANTITY (CUYD)</i>
105+92 to 107+45	537
TOTAL	537

ITEM 20701-0300 SEPERATION-STABILIZATION GEOTEXTILE, CLASS 1, TYPE C	
<i>LOCATION</i>	<i>QUANTITY (SQYD)</i>
105+92 to 107+45	413
TOTAL	413

**TABULATION OF
BRIDGE RIPRAP
QUANTITIES**

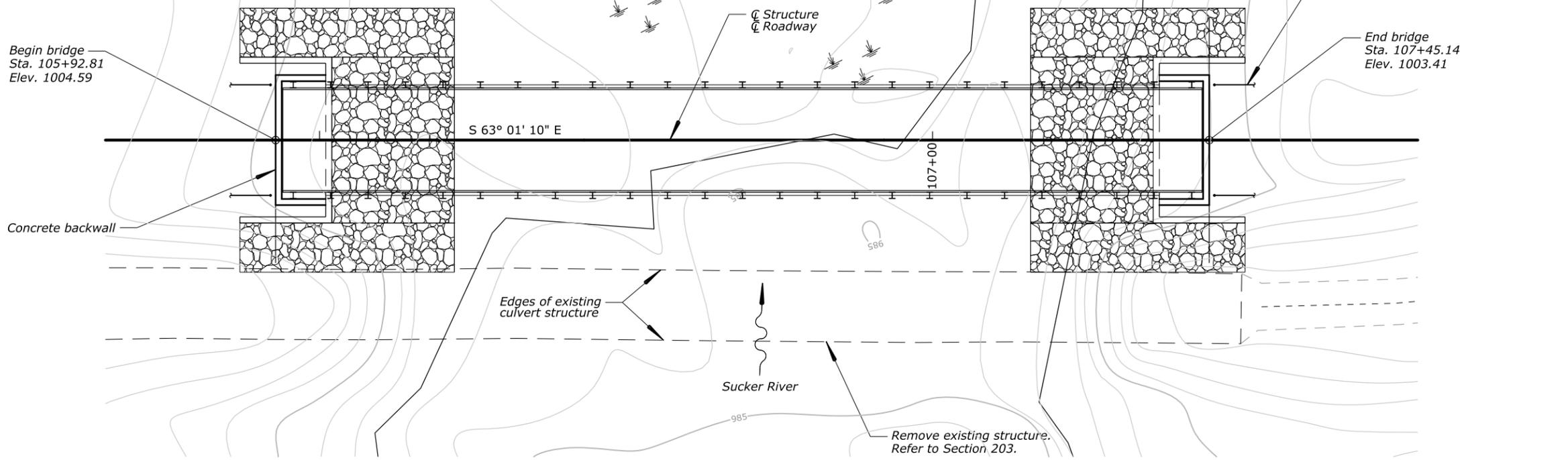
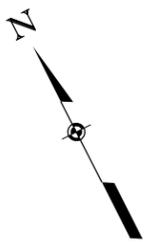
14 October 2015 7:17 AM c:\myfiles\pw_production\00123986\ak-t-forti00201_qa.dgn [US_Sur_ft2D] Designed by: Checked by: --/--/----

STATE	PROJECT	SHEET NUMBER
AK	IRR FORT 1002(1)	F.2

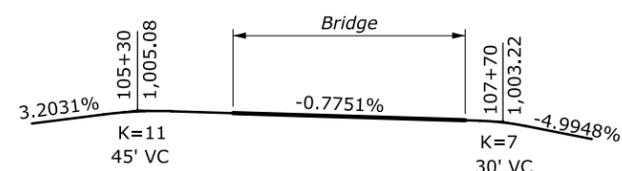


c:\myfiles\pw_production\00261931\ak-irr-fort100201fa.dgn [US_Sur_ft2D] 29 July 2015 12:07 PM

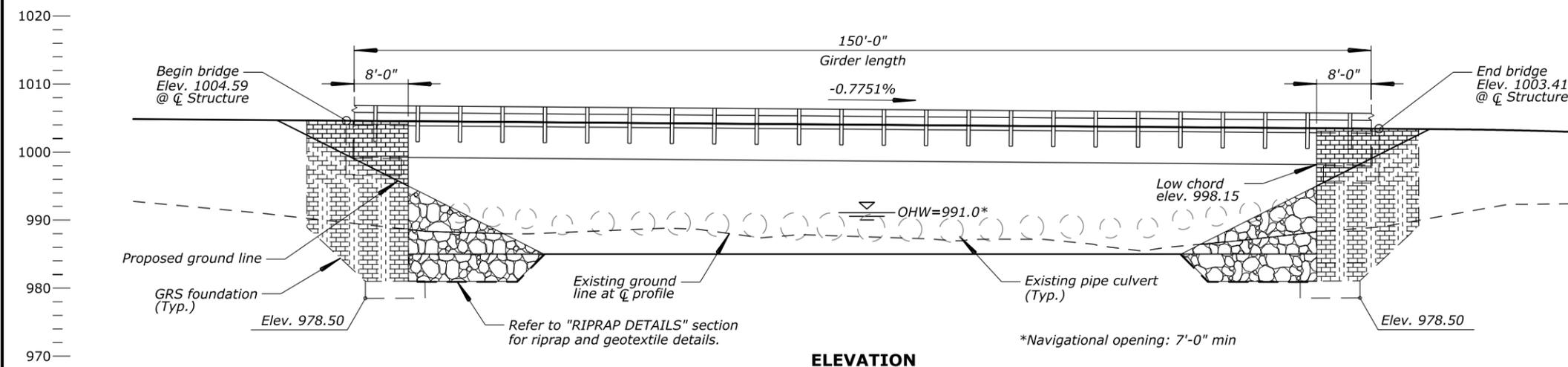
STATE	PROJECT	SHEET NO.
AK	IRR FORT 1002(1)	G.1



PLAN



PROFILE GRADE
Not to scale



ELEVATION

PRELIMINARY
NOT FOR CONSTRUCTION

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

NATIVE VILLAGE OF FORT YUKON
YUKON-KOYUKUK CENSUS AREA

IVARS BRIDGE

PLAN AND ELEVATION

ACTUAL FILE: G01 FORT 1002(1) PE .DGN

c:\myfiles\pw_production\00124080\G01_FORT 1002(1)_PE.DGN [Default]

14 October 2015 3:10 PM

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								AF	AF		1" = 10'	B. Oltmann	1 of 12	October, 2015	RG3005-A

STATE	PROJECT	SHEET NO.
AK	IRR FORT 1002(1)	G.2

GENERAL NOTES

SPECIFICATIONS:

Construction:

Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, FP-14 (U.S. Customary Units).

Design:

AASHTO LRFD Bridge Design Specifications 2014, 7th edition.
AASHTO Guide Specifications for LRFD Seismic Bridge Design, 2011.

DESIGN LOADS:

Dead loads:

Concrete: 150 pcf
Lateral Earth Pressure: equivalent fluid weight of soil, 120 pcf

Live loads:

HL-93

Seismic Parameters:

PGA = 0.098
Ss = 0.226
S1 = 0.085
Site Class = D
Liquefaction Potential = Low
AASHTO 7% chance of exceedence in 75 years

MATERIALS:

Precast Concrete:

Furnish Class A(AE) for abutments.
f'c = 4,000 psi at 28 days.
Chamfer exposed edges of all concrete 3/4" unless noted otherwise on the plans.

Reinforcing Steel:

Furnish reinforcing steel conforming to AASHTO M31, Grade 60 deformed.
Provide 2" cover for reinforcing steel unless otherwise noted.

Structural steel:

Furnish high-strength low alloy structural steel conforming to ASTM A709 Grade 50W, unpainted.
Furnish structural steel for bearings and sole plates conforming to ASTM A709, Grade 36.
Furnish main load carrying member components subjected to tensile stress conforming to the ASTM A847 Supplemental Requirements, 583 (for Zone 2), and 593.
Furnish slip critical, friction type, Class A, field connections conforming to AASHTO M164, type 1, (ASTM A325 TYPE 1) with ASTM A563 Grade C nuts and ASTM F463 washer unless otherwise noted on the plans.

Miscellaneous Structural Steel:

Furnish diaphragm anchor bolts conforming to ASTM A307.
Furnish structural metal for guard angles and precast abutment connection assemblies conforming to ASTM A36. Galvanize guard angle and connection assemblies after fabrication.

Welding:

Perform all welding in accordance with the current AASHTO/AWS D1.5 Bridge Welding Code.
Perform welding process manual shielded metal arc welding (SMAW) using low hydrogen electrodes classified E7028.
Perform non-destructive testing of welds as follows:
Fillet welds - Visual - 100%
- MT. - 10% min.

Timber:

Treat timber according to American Wood Protection Association standards for Use Category 4B (UC4B).

Bearings:

Provide elastomeric bearing pads conforming to the requirements of Section 18.2 of the AASHTO LRFD Bridge Construction Specifications with 60 durometer hardness, Grade 5. Follow AASHTO LRFD design Method A.

GEOTECHNICAL REPORT:

For boring logs and other geotechnical information, see Geotechnical Memorandum No. 29-15, dated 08-2015.

ESTIMATE OF QUANTITIES				
ITEM NO.	ITEM	QUANTITY	UNIT	NOTES
55210-0400	Precast Structural Concrete, Class A (AE), Abutment	47	CUYD	
55235-0000	Expansion Joints	34	LNFT	
55504-0000	Pre-Fabricated Steel Bridge	1	LPSM	
57401-0000	GRS-IBS, Geosynthetic Reinforcement	3500	SQYD	
57402-0000	GRS-IBS, Open-Graded Backfill	1100	TON	
57403-0000	GRS-IBS, Concrete Masonry Unit	2800	SQYD	

SHEETS INDEX

SHEET NO.	DRAWING TITLE
G.1	Plan and Elevation
G.2	General Notes
G.3	Foundation Plan
G.4	Abutment Layout
G.5	Abutment Reinforcement
G.6	Typical Section
G.7	Miscellaneous Details
G.8	GRS-IBS Plan & Elevation
G.9	GRS-IBS Details (1 of 4)
G.10	GRS-IBS Details (2 of 4)
G.11	GRS-IBS Details (3 of 4)
G.12	GRS-IBS Details (4 of 4)

ACTUAL FILE: G02 FORT 1002(1) GN .DGN

c:\myfiles\pw_production\00124080\G02_FORT 1002(1)_GN.DGN [Default]

8 October 2015 11:01 AM

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

NATIVE VILLAGE OF FORT YUKON
YUKON-KOYUKUK CENSUS AREA

IVAR'S BRIDGE

GENERAL NOTES

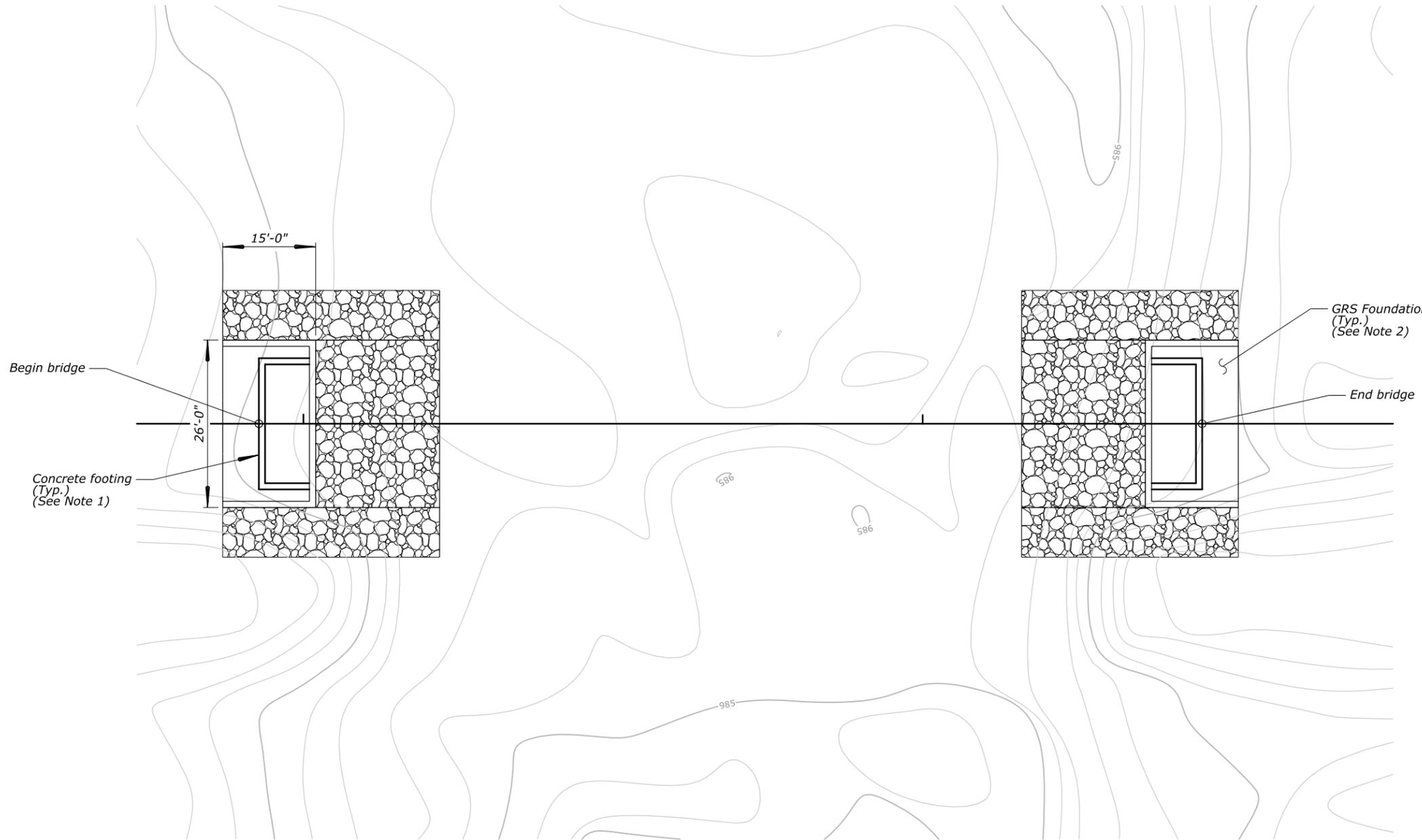
PRELIMINARY
NOT FOR CONSTRUCTION

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								AF	AF		No Scale	B. Oltmann	2 of 12	October, 2015	RG3005-B

STATE	PROJECT	SHEET NO.
AK	IRR FORT 1002(1)	G.3

Notes:

1. See "ABUTMENT LAYOUT" sheet for concrete footing details.
2. See "GRS-IBS PLAN & ELEVATION" sheet for GRS foundation details.



FOUNDATION PLAN

PRELIMINARY
NOT FOR CONSTRUCTION

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 WESTERN FEDERAL LANDS HIGHWAY DIVISION

 NATIVE VILLAGE OF FORT YUKON
 YUKON-KOYUKUK CENSUS AREA

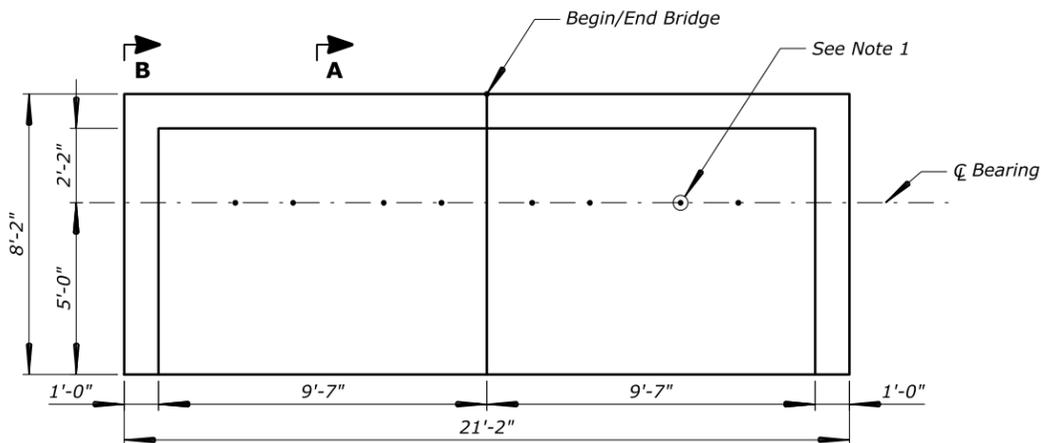
 IVAR'S BRIDGE

FOUNDATION PLAN

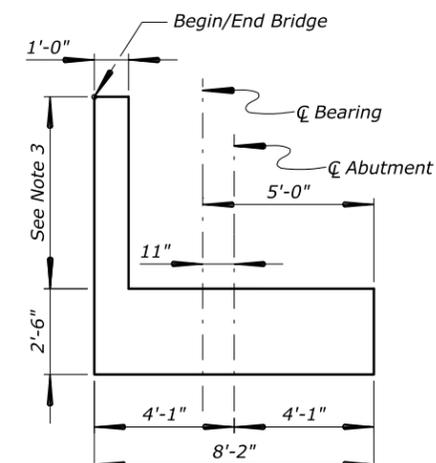
8 October 2015 11:19 AM c:\myfiles\pw_production\0124080\G03_FORT 1002(1)_FOUNDATION.DGN [Default] ACTUAL FILE: G03 FORT 1002(1) FOUNDATION .DGN

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								AF	AF		1" = 10'	B. Oltmann	3 of 12	October, 2015	RG3005-C

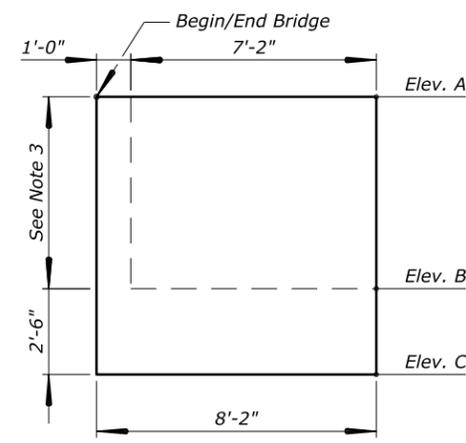
STATE	PROJECT	SHEET NO.
AK	IRR FORT 1002(1)	G.4



ABUTMENT PLAN
Scale: $\frac{3}{8}$ " = 1'-0"
(Abutment 1 shown, Abutment 2 similar)



SECTION A-A
Scale: $\frac{3}{8}$ " = 1'-0"

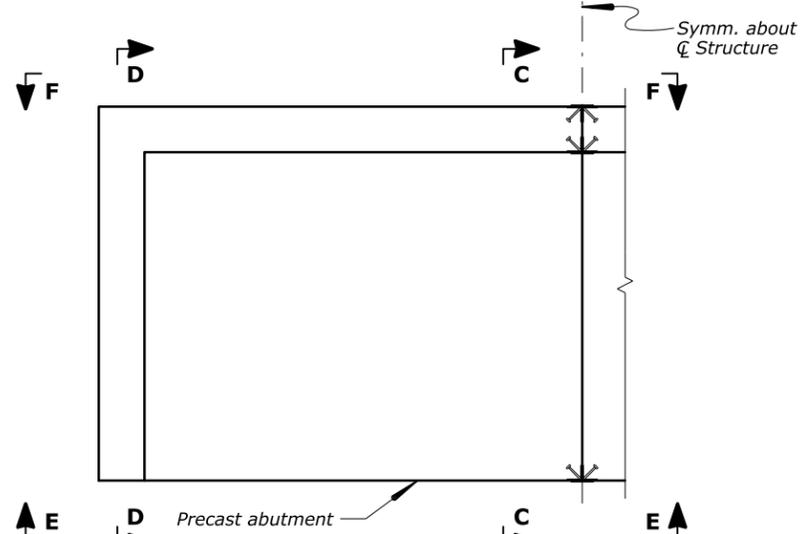


SECTION B-B
Scale: $\frac{3}{8}$ " = 1'-0"

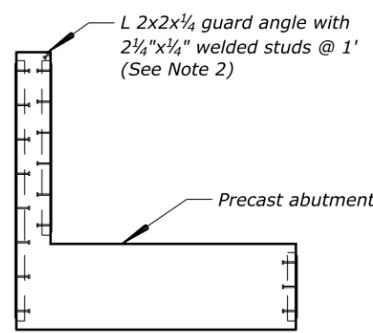
- Notes:
- Anchor bolt size and locations determined by bridge manufacturer. Anchor inserts may be cast into precast footer, or holes may be drilled in the field.
 - Match guard angle length to width of timber bridge deck. Verify guard backwall with bridge manufacturer's approved shop drawings.
 - Match backwall and cheekwall height to sum of bearing assembly height, girder depth, and deck thickness. Verify backwall and cheekwall height with bridge manufacturer's approved shop drawings.
 - Provide structural plates and shapes conforming to AASHTO M 270, Grade 36. Provide welded studs conforming to AASHTO M 169. Perform welding for studs according to AWS D1.5. Galvanize all steel components for connections to AASHTO M 111. Fabricate assemblies prior to galvanizing.
 - Perform field welding according to AWS D1.5. Repair areas damaged by field welding by cleaning and recoating with two coats of zinc dust-zinc oxide paint meeting Federal specification TT-P-641 or Military specification MIL-P-21035.

ELEVATIONS		
ELEV.	ABUT. 1	ABUT. 2
A	1004.59	1003.41
B*	998.92	997.74
C*	996.42	995.24

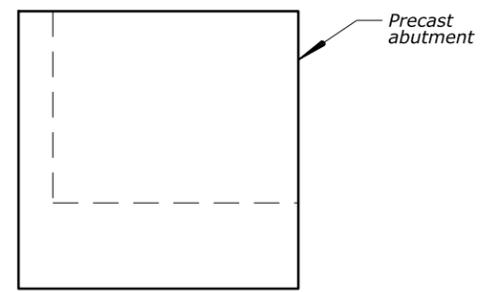
*Estimated elevations. Verify final elevations with bridge manufacturer's approved shop drawings.



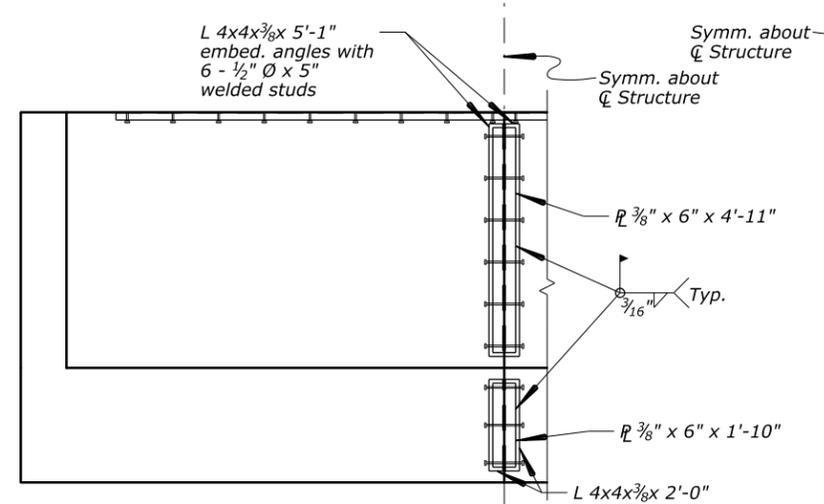
PRECAST CONNECTION PLAN
Scale: $\frac{1}{2}$ " = 1'-0"
(Abutment 1 shown, Abutment 2 similar)



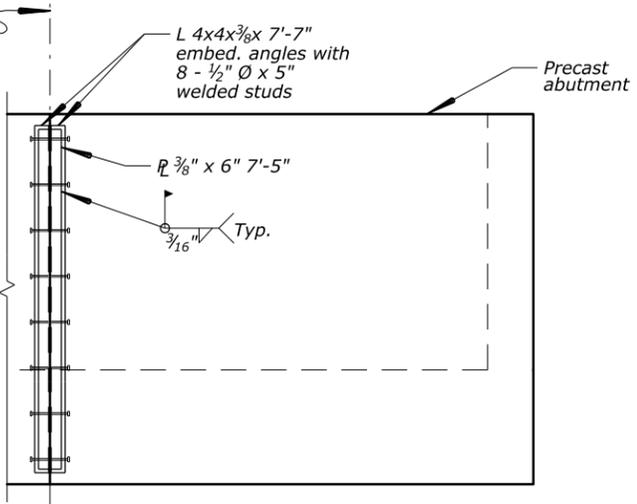
SECTION C-C
Scale: $\frac{3}{8}$ " = 1'-0"



SECTION D-D
Scale: $\frac{3}{8}$ " = 1'-0"



VIEW E-E
Scale: $\frac{1}{2}$ " = 1'-0"



VIEW F-F
Scale: $\frac{1}{2}$ " = 1'-0"

PRELIMINARY
NOT FOR CONSTRUCTION

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

NATIVE VILLAGE OF FORT YUKON
YUKON-KOYUKUK CENSUS AREA

IVAR'S BRIDGE

ABUTMENT LAYOUT

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								AF	AF		As Shown	B. Oltmann	4 of 12	October, 2015	RG3005-D

ACTUAL FILE: G04 FORT 1002(1) ABUT LAYOUT.DGN

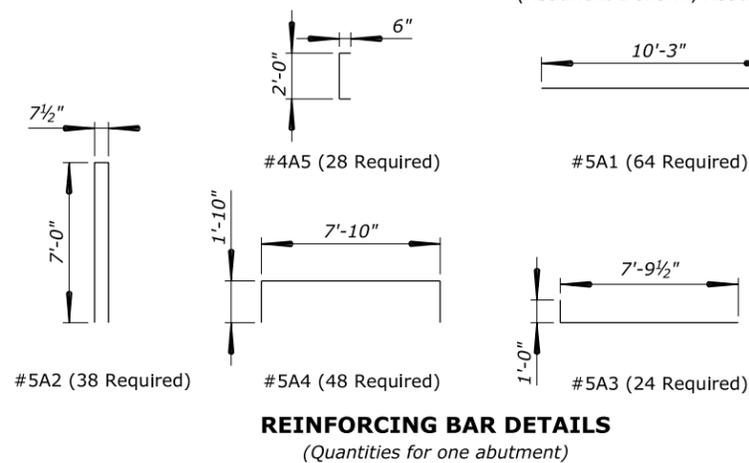
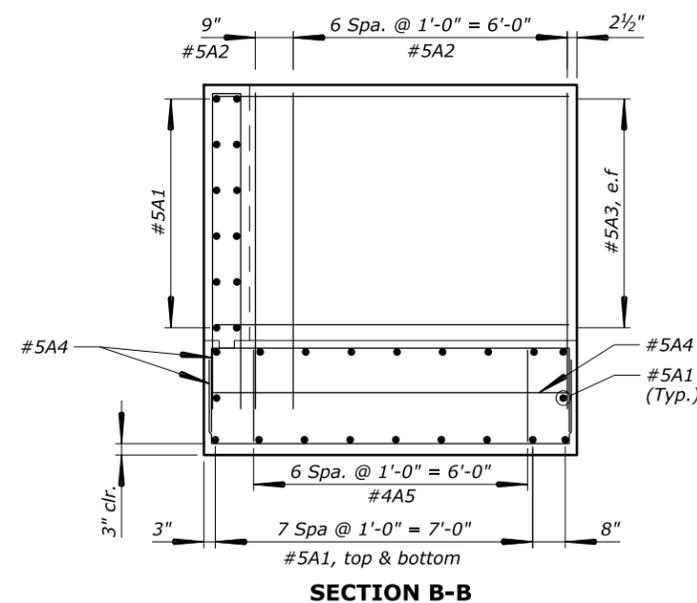
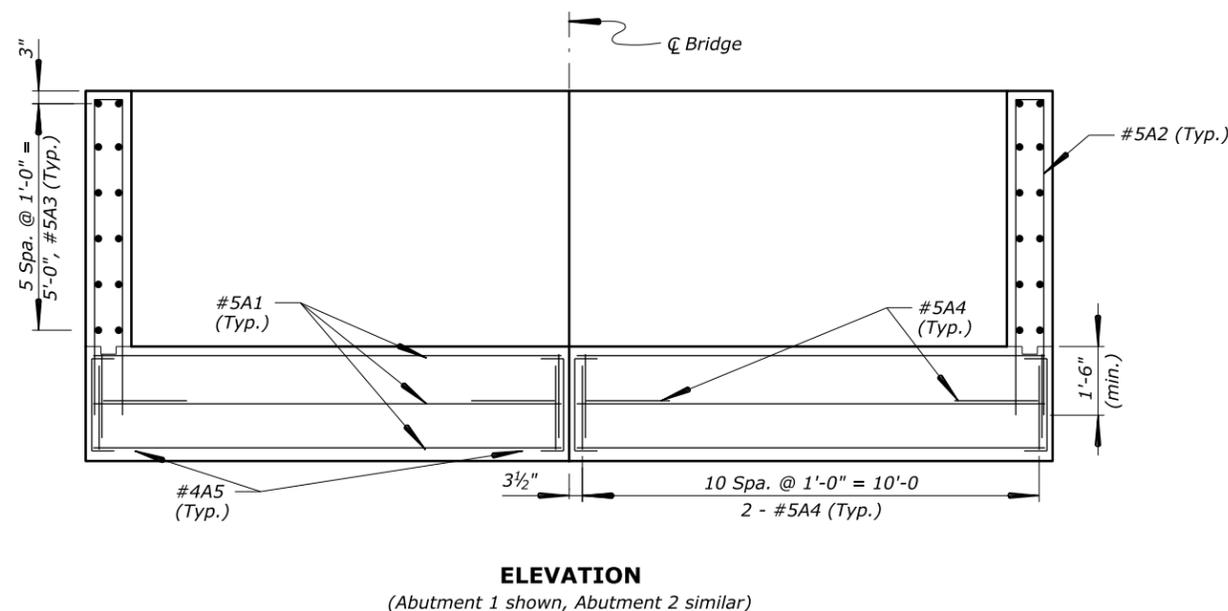
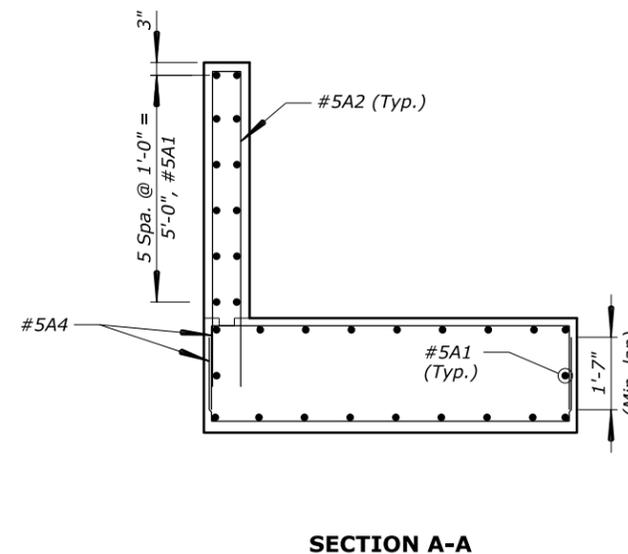
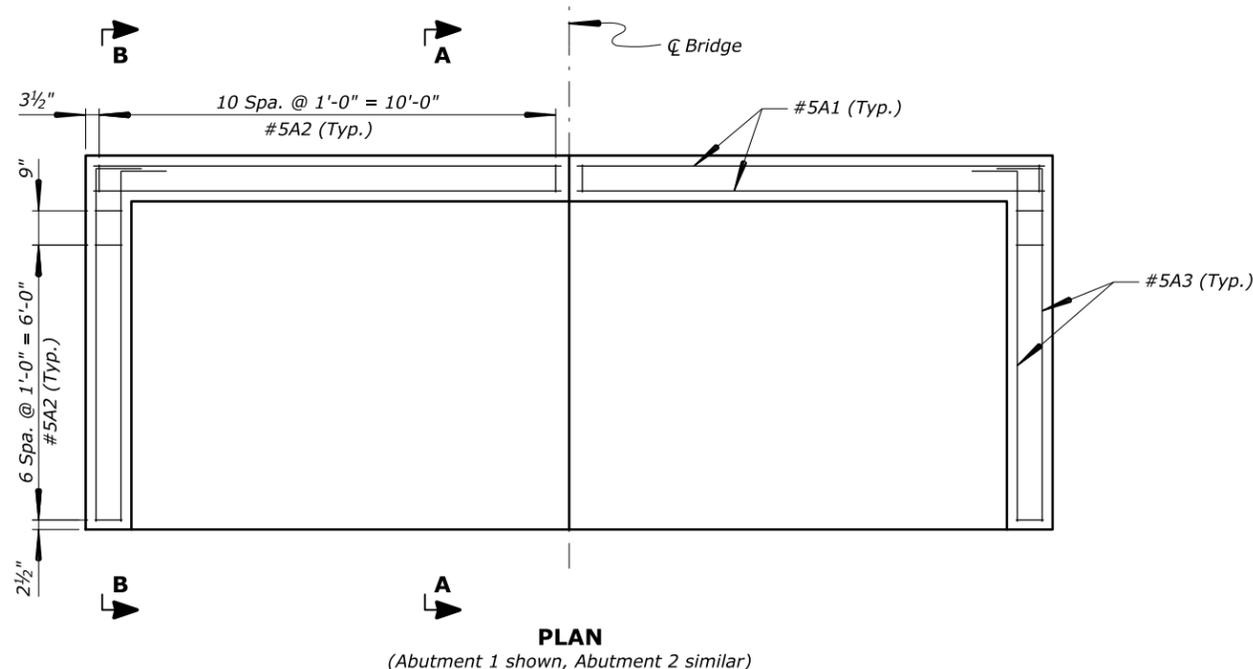
c:\myfiles\pw_production\00124080\G04_FORT 1002(1)_ABUT LAYOUT.DGN [Default]

8 October 2015 11:07 AM

STATE	PROJECT	SHEET NO.
AK	IRR FORT 1002(1)	G.5

Note:

Verify height of backwall and cheekwall with bridge manufacturer's approved shop drawings. See "ABUTMENT LAYOUT" sheet. Provide additional horizontal reinforcement as needed in backwall and cheekwall at spacing no greater than 1'-0" c-c. Maintain concrete cover over reinforcement.



ESTIMATED QUANTITIES*

One abutment only	
Concrete	23.4 Cu. Yds
Reinforcing steel	1550 lbs

*Information only

PRELIMINARY
NOT FOR CONSTRUCTION

Key:
n.f. = near face
f.f. = far face
e.f. = each face

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

NATIVE VILLAGE OF FORT YUKON
YUKON-KOYUKUK CENSUS AREA

IVAR'S BRIDGE

ABUTMENT REINFORCEMENT

ACTUAL FILE: G05 FORT 1002(1) ABUT REBAR.DGN

8 October 2015 10:37 AM c:\myfiles\pw_production\00124080\G01_FORT 1002(1)_PE.DGN [Default]

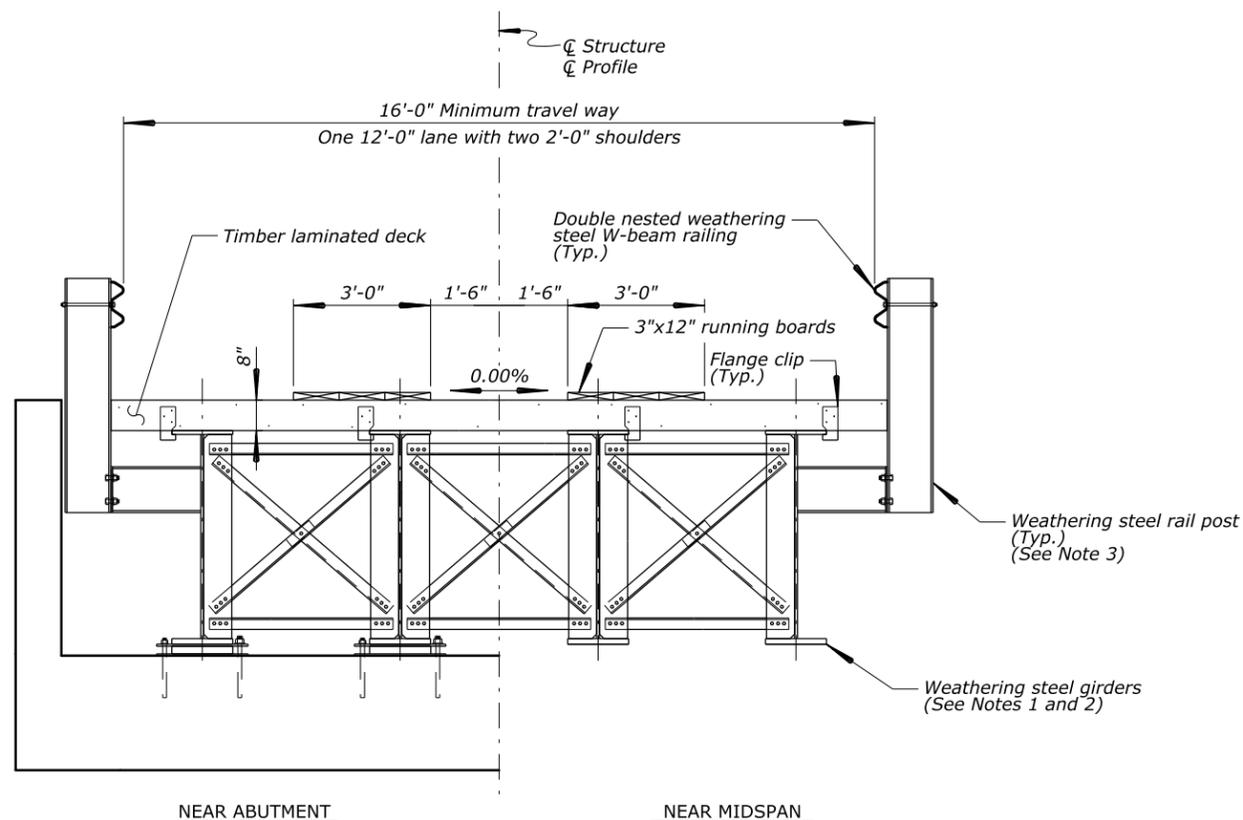
NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								AF	AF		1/2" = 1'-0"	B. Oltmann	5 of 12	October, 2015	RG3005-E

STATE	PROJECT	SHEET NO.
AK	IRR FORT 1002(1)	G.6

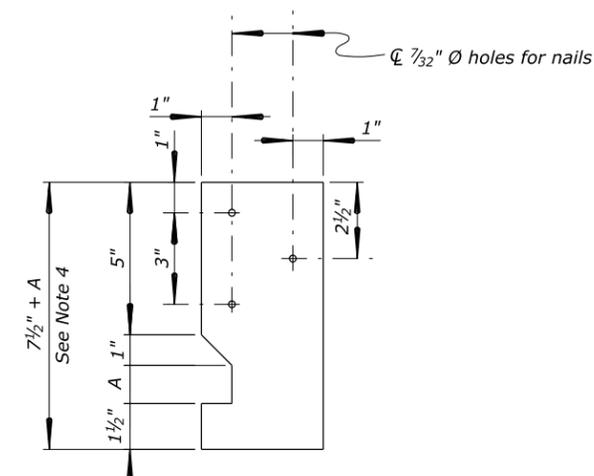
ACTUAL FILE: G06 FORT 1002(1) TYP.XS.DGN

c:\myfiles\pw_production\00124080\G06_FORT 1002(1)_TYP.XS.DGN [Default]

8 October 2015 11:14 AM



TYPICAL SECTION
Scale: 1/2"=1'-0"



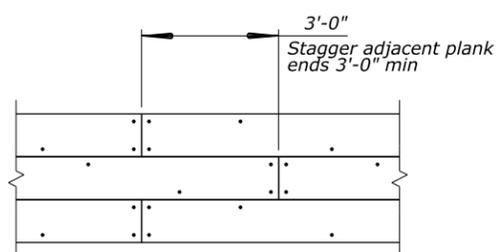
FLANGE CLIP
Scale: 4"=1'-0"

Flange clip notes:

1. Provide flange clips made from 12 gage galvanized sheet or strip steel, ASTM A653, Grade 40 or 50, Coating G90.
2. Place flange clips snugly against bottoms and edges of girder flanges. Use 20 penny galvanized nails.
3. Place flange clips at 2'-0" spacing along each side of each girder. Stagger clip spacing 12" on opposite sides of girder flanges so that a flange clip is located on every girder at 12" spaces.
4. Dimension "A" is equal to thickness of top flange.

Notes:

1. Prefabricated girder bridge is shown for illustrative purposes only.
2. Submit design calculations and detailed shop drawings for superstructure to the CO for approval according to Section 104.
3. Provide weathering steel guardrail system meeting requirements of TL-1. Configuration shown is for illustrative purposes only. See "APPROACH RAILING DETAILS" sheet for additional information.



RUNNING PLANK DETAIL
Scale: 1/2"=1'-0"

Note:

Use two lag screws at ends of planks. Stagger intermediate lag screw connections on two feet centers along the planks. Countersink lag screw heads.

PRELIMINARY
NOT FOR CONSTRUCTION

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

NATIVE VILLAGE OF FORT YUKON
YUKON-KOYUKUK CENSUS AREA

IVAR'S BRIDGE

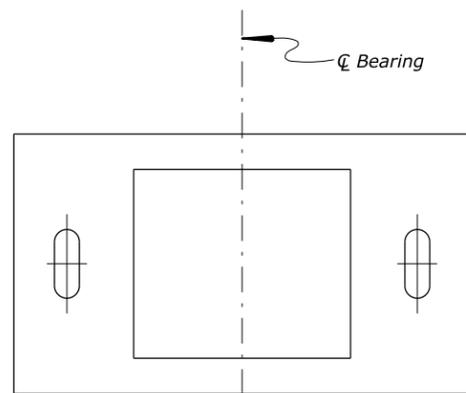
TYPICAL SECTION

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								AF	AF		As shown	B. Oltmann	6 of 12	October, 2015	RG3005-F

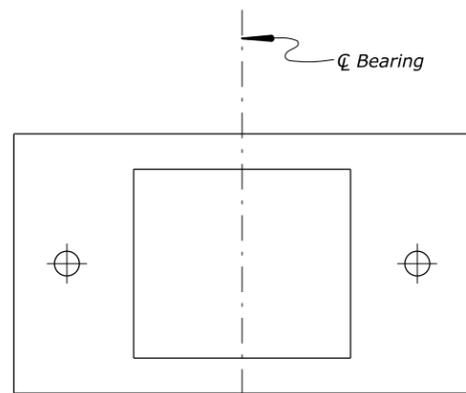
STATE	PROJECT	SHEET NO.
AK	IRR FORT 1002(1)	G.7

ACTUAL FILE: G07 FORT 1002(1) MISC.DGN

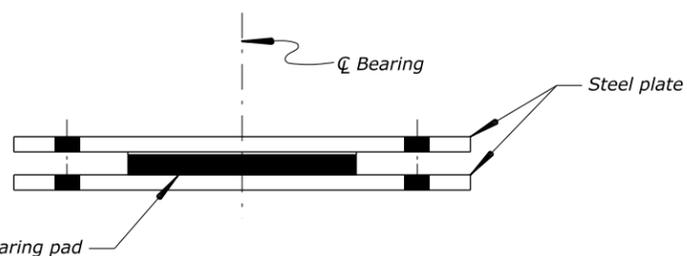
c:\myfiles\pw_production\0124080\G07_FORT 1002(1)_MISC.DGN [Default]
8 October 2015 11:15 AM



EXPANSION TOP PLATE



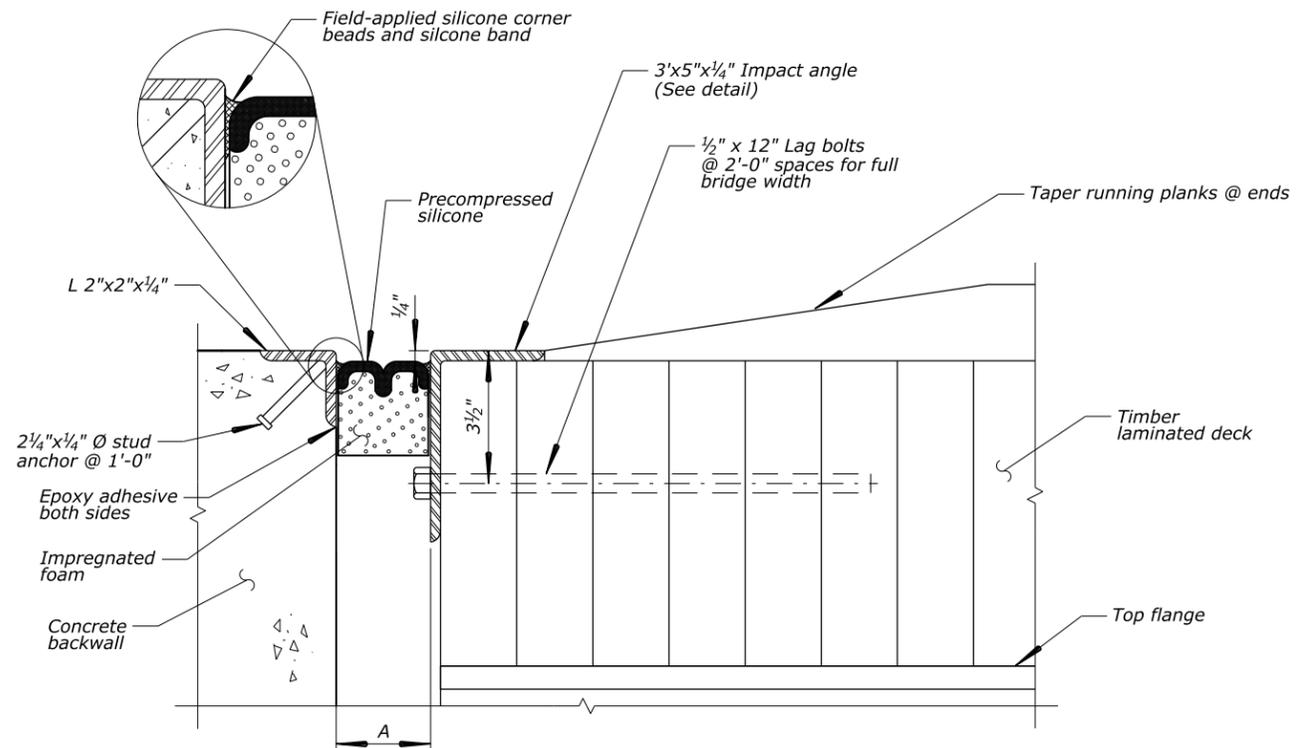
FIXED TOP & BOTTOM & EXPANSION BOTTOM PLATE



BEARING DETAIL

Bearing notes:

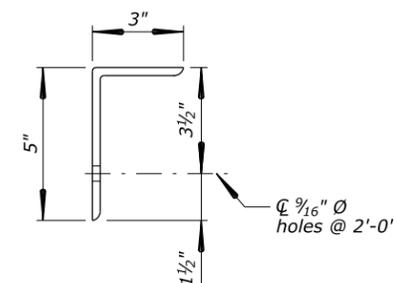
1. The sketch of the bearing is for illustration only.
2. Submit detail and design of bearing to the CO for approval, prior to installation.
3. Furnish galvanized steel for all exposed surfaces of steel for bearing.
4. Furnish and install bearings.



EXPANSION JOINT

Expansion joint note:

1. Provide a watertight, continuous seal system, as shown.
2. Furnish seal capable of 50% expansion and contraction from 2" nominal setting width.



IMPACT ANGLE

Impact angle note:

Use one continuous angle to fit full clear deck width.

TEMPERATURE SETTING TABLE (°F)	
* Temperature (°F)	"A" (in) (Abutments)
5	2 5/8"
20	2 3/8"
35	2 3/16"
50	2
65	1 13/16"
80	1 5/8"
95	1 3/8"

* Ambient temperature at time of expansion joint installation.

PRELIMINARY
NOT FOR CONSTRUCTION

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

NATIVE VILLAGE OF FORT YUKON
YUKON-KOYUKUK CENSUS AREA

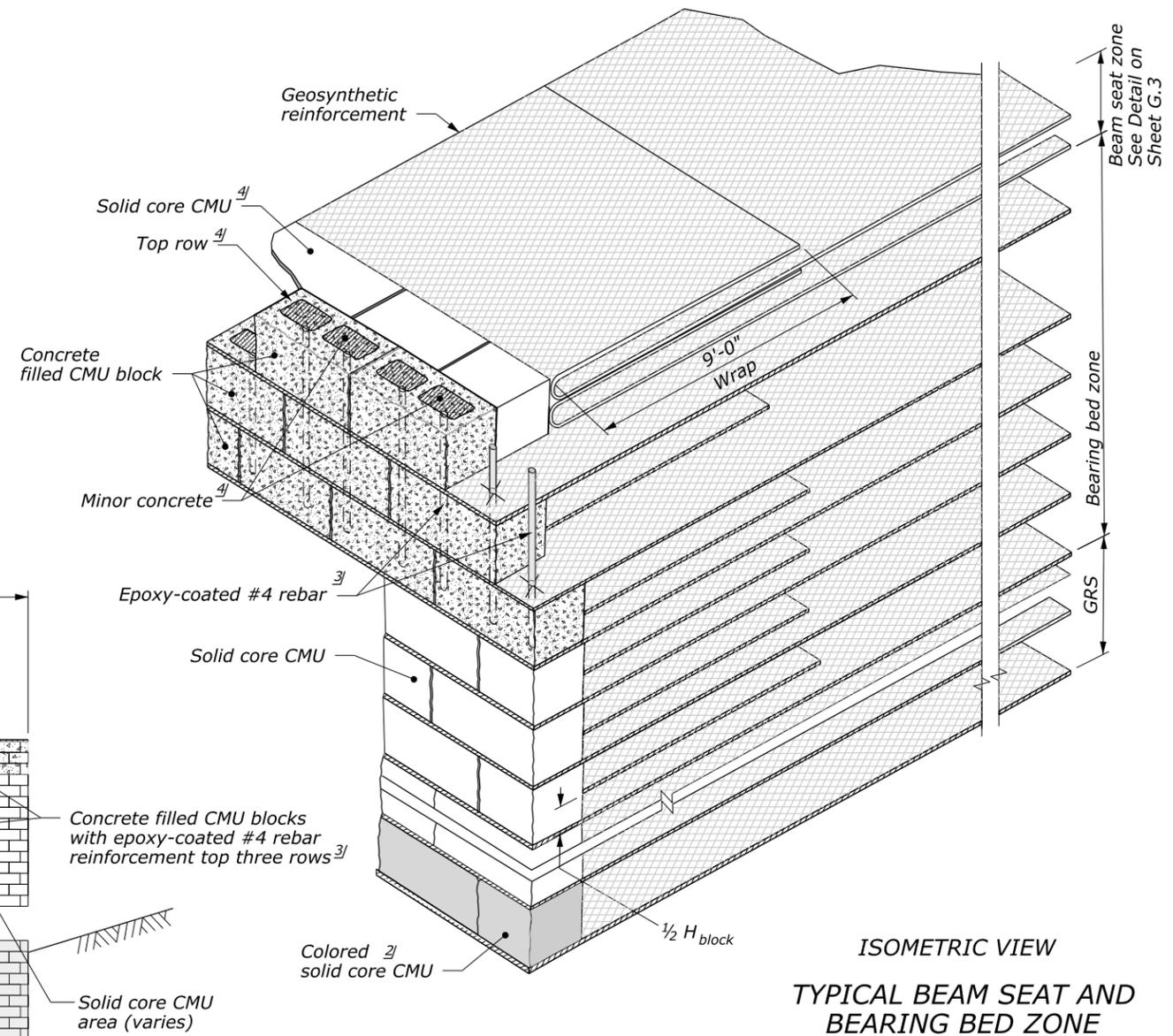
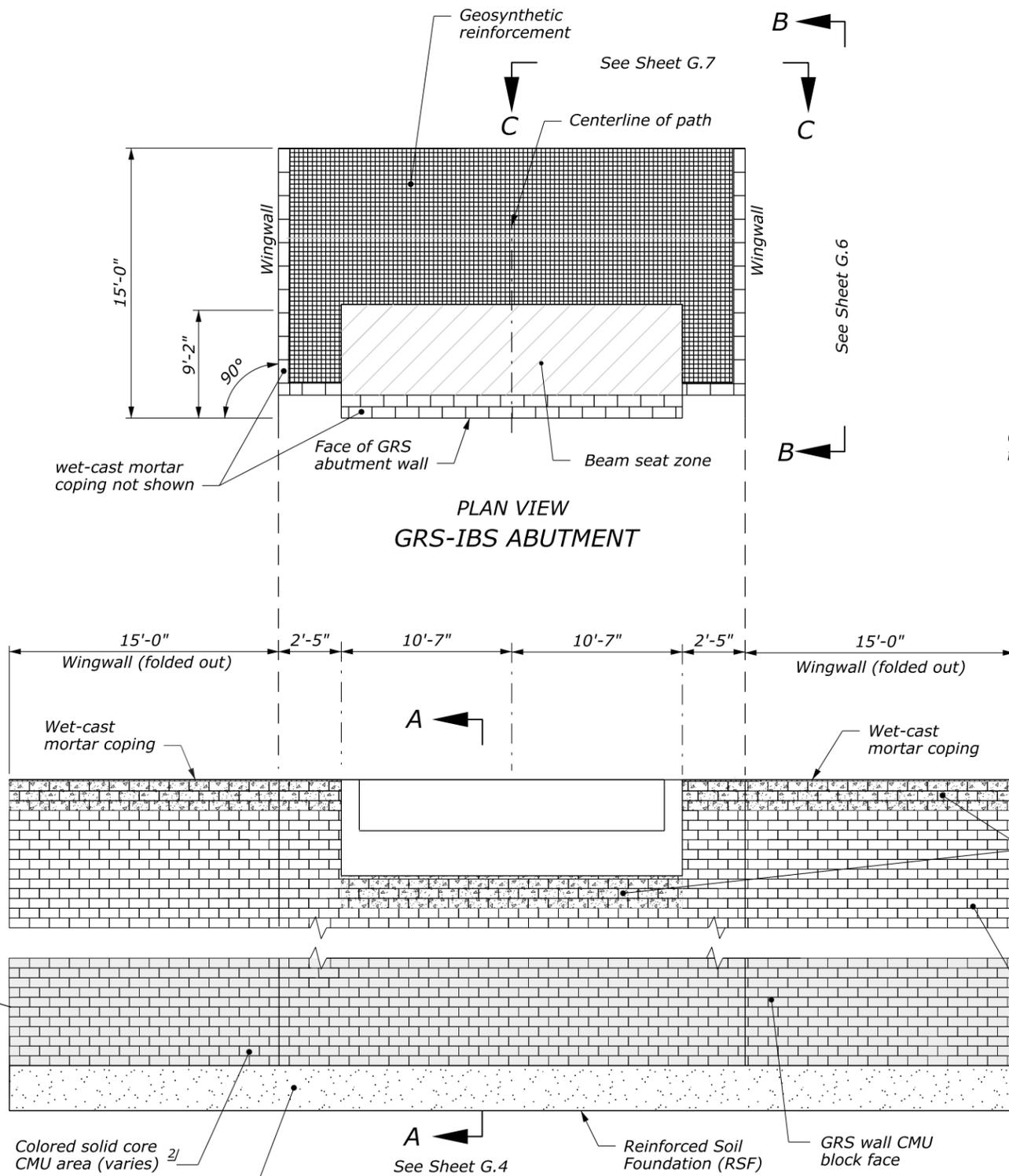
IVAR'S BRIDGE

MISCELLANEOUS DETAILS

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
								AF	AF		No Scale	B. Oltmann	7 of 12	October, 2015	RG3005-G

STATE	PROJECT	SHEET NO.
AK	IRR FORT 1002(1)	G.8

ACTUAL FILE: XXXX .DGN



- GRS-IBS Backfill
- Minor concrete
- Solid core concrete masonry unit (CMU)
- Colored solid core concrete masonry unit (CMU)
- Concrete filled hollow core concrete masonry unit (CMU)

GRS-IBS WEST ABUTMENT Facing Block Schedule

NOTE:

1. Insert epoxy-coated #4 rebars into the top 3 rows of CMU's and fill with concrete.
2. Stagger CMU block vertical joints at 1/2 block width, including corners.
3. On the top row of CMU's create a wet-cast mortar coping 1-inch to 3/4-inch sloped to face to drain.
4. No colorant allowed in the concrete masonry units above elevation 995.0'. Riprap armor not shown.

FOOTNOTE:

- 1] Wingwalls folded out for elevation view.
- 2] Use colored solid core CMU below elevation 995.0'. (Riprap armor not shown)
- 3] Cut "X" into bottom geosynthetic reinforcement of upper 2 courses of CMU blocks to accept rebar and concrete.
- 4] Wet-cast mortar coping not shown.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

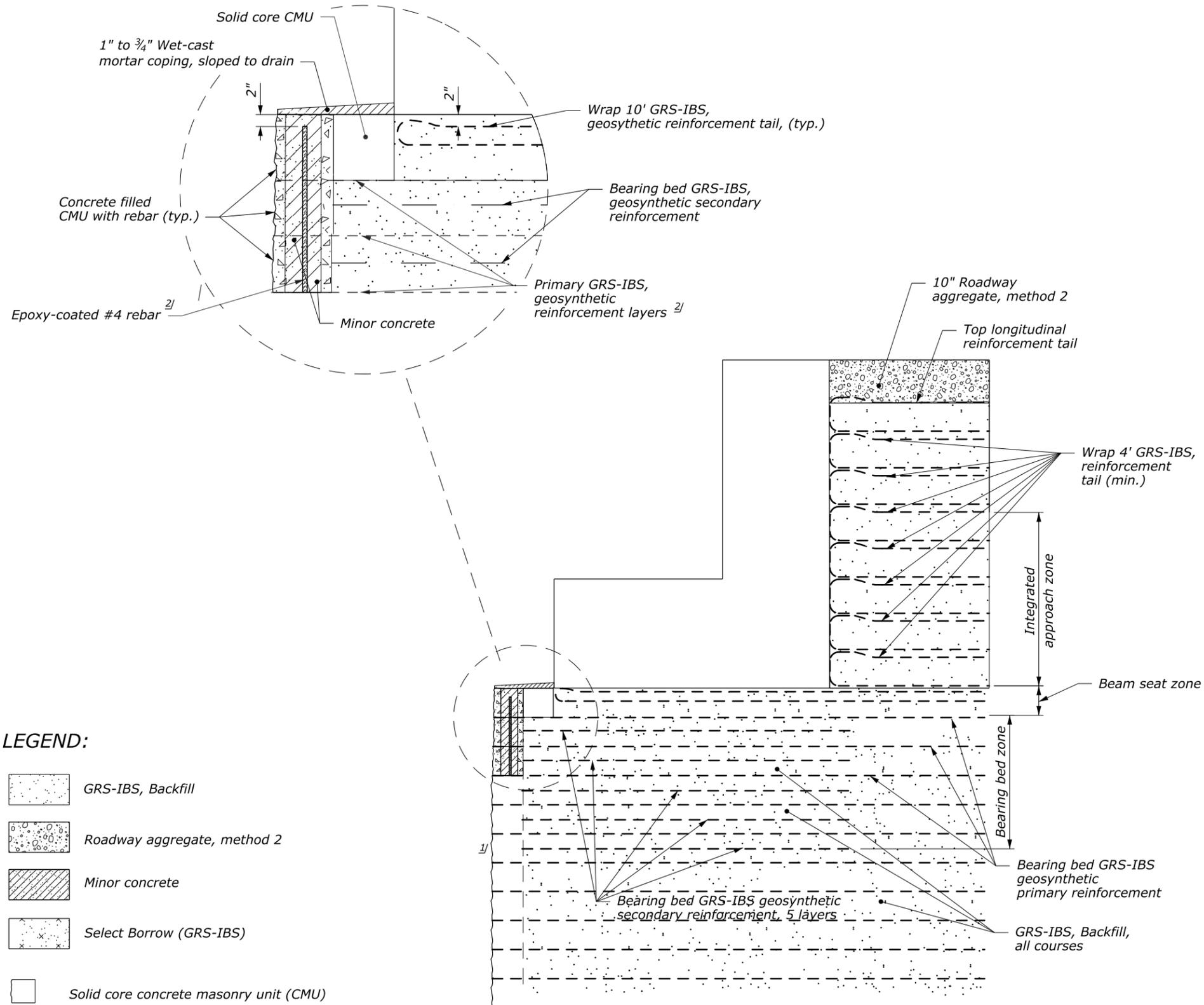
IVARS ROAD BRIDGE REPLACEMENT

GRS-IBS PLAN & ELEVATION

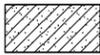
NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
									C.TUTTLE		NO SCALE	B. OLTMANN	8 of 12	October, 2015	RG3005-H

STATE	PROJECT	SHEET NO.
AK	IRR FORT 1002(1)	G.10

ACTUAL FILE: XXXX .DGN



LEGEND:

-  GRS-IBS, Backfill
-  Roadway aggregate, method 2
-  Minor concrete
-  Select Borrow (GRS-IBS)
-  Solid core concrete masonry unit (CMU)
-  Colored solid core concrete masonry unit (CMU)
-  Concrete filled hollow core concrete masonry unit (CMU)

DETAIL A
(Bearing bed zone, beam seat, and integrated approach detail)

NOTE:

1. Insert epoxy-coated #4 rebars into the top 3 rows of CMU's and fill with concrete.
2. On the top row of CMU's create a wet-cast mortar coping 1-inch to 3/4-inch sloped toward face to drain.
3. Strike CMU concrete fill flush with top of CMU's under bridge girders.

FOOTNOTE:

- 1/ Vertical wall face batter = 0°.
- 2/ Cut "X" into bottom geosynthetic reinforcement of upper 2 courses of CMU blocks to accept rebar and concrete.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

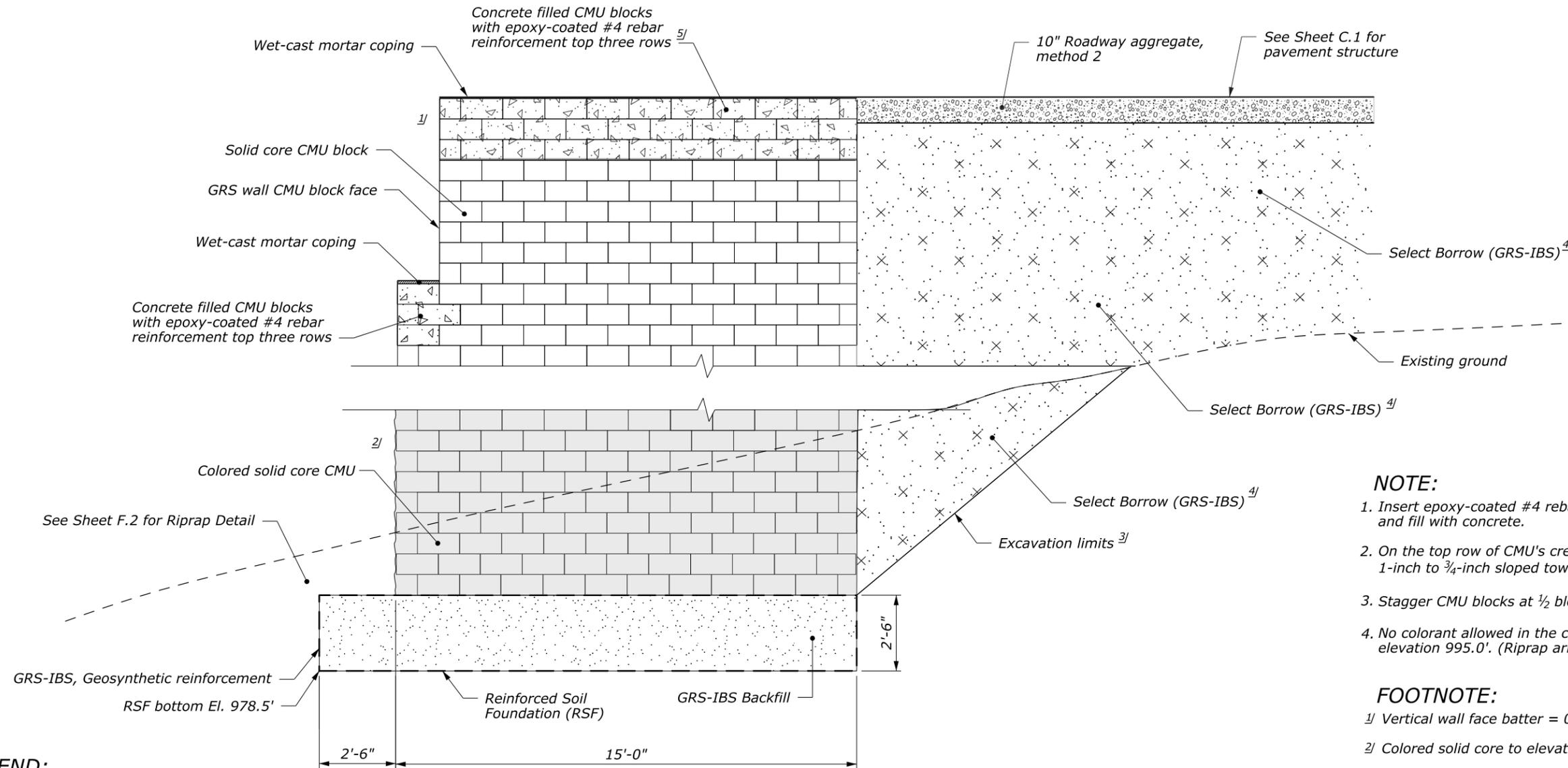
IVARS ROAD BRIDGE REPLACEMENT

GRS-IBS DETAILS
SHEET 2 OF 4

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
									C.TUTTLE		NO SCALE	B. OLTMANN	10 of 12	October, 2015	RG3005-J

STATE	PROJECT	SHEET NO.
AK	IRR FORT 1002(1)	G.11

ACTUAL FILE: XXXX .DGN



- NOTE:**
1. Insert epoxy-coated #4 rebars into the top 3 rows of CMU's and fill with concrete.
 2. On the top row of CMU's create a wet-cast mortar coping 1-inch to 3/4-inch sloped toward face to drain.
 3. Stagger CMU blocks at 1/2 block width, including corners.
 4. No colorant allowed in the concrete masonry units above elevation 995.0'. (Riprap armor not shown)

- FOOTNOTE:**
- 1/ Vertical wall face batter = 0°.
 - 2/ Colored solid core to elevation 995.0'. (Riprap armor not shown)
 - 3/ Short term back slope ratio per OSHA Safety Regulations (29CFR, Part 1926, Subpart P, excavation). Shoring may be required.
 - 4/ Backfill and compact simultaneous to GRS-IBS construction.
 - 5/ Cut "X" into bottom geosynthetic reinforcement of upper 2 courses of CMU blocks to accept rebar and concrete.

LEGEND:

-  GRS-IBS Backfill
-  Select Borrow (GRS-IBS)
-  Roadway aggregate, method 2

-  Solid core concrete masonry unit (CMU)
-  Colored solid core concrete masonry unit (CMU)
-  Concrete filled hollow core concrete masonry unit (CMU)

**WINGWALL ELEVATION
VIEW B-B**

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

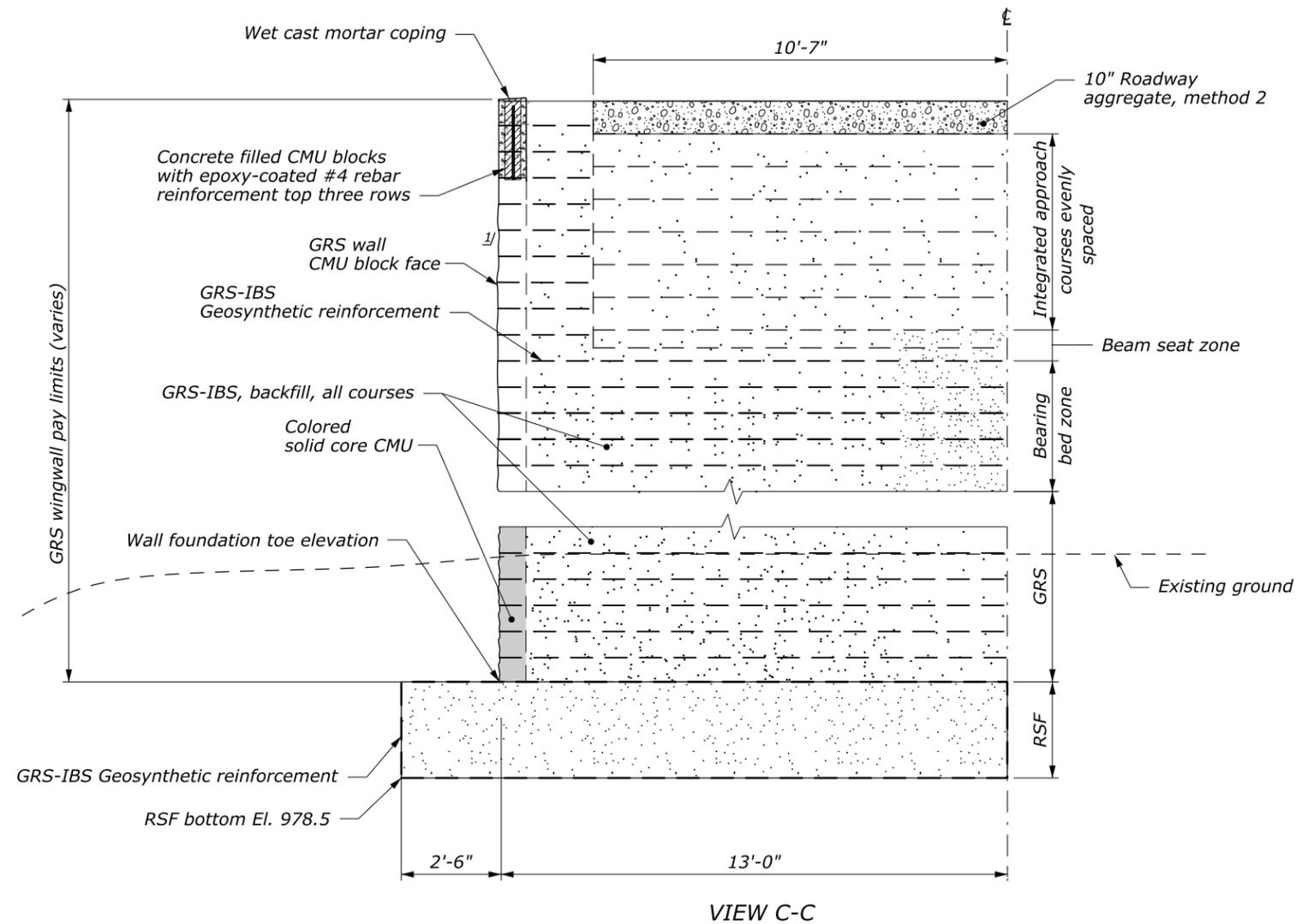
IVARS ROAD BRIDGE REPLACEMENT

GRS-IBS DETAILS
SHEET 3 OF 4

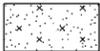
NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
									C.TUTTLE		NO SCALE	B. OLTMANN	11 of 12	October, 2015	RG3005-K

STATE	PROJECT	SHEET NO.
AK	IRR FORT 1002(1)	G.12

ACTUAL FILE: XXXX .DGN



LEGEND:

-  Select borrow
-  GRS-IBS, Backfill
-  Roadway Aggregate, Method 2
-  Minor concrete
-  Solid core concrete masonry unit (CMU)
-  Colored solid core concrete masonry unit (CMU)
-  Concrete filled hollow core concrete masonry unit (CMU)

NOTE:

1. Insert epoxy-coated #4 rebars into the top 3 rows of CMU's and fill with concrete.
2. On the top row of CMU's create a wet-cast mortar coping 1-inch to 3/4-inch sloped toward face to drain.
3. Stagger CMU block vertical joints at 1/2 block width, including corners.
4. No colorant allowed in the concrete masonry units above elevation 995.0'. (Riprap armor not shown)

FOOTNOTE:

∟ Vertical wall face batter = 0°.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

IVARS ROAD BRIDGE REPLACEMENT

GRS-IBS DETAILS
SHEET 4 OF 4

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.
									C.TUTTLE		NO SCALE	B. OLTMANN	12 of 12	October, 2015	RG3005-L

ITEM 63504-1000 TEMPORARY TRAFFIC CONTROL, CONSTRUCTION SIGN						
<i>SIGN NUMBER</i>	<i>MUTCD NUMBER</i>	<i>LEGEND</i>	<i>SIGN SIZE (IN. X IN.)</i>	<i>SQFT</i>	<i>QUANTITY</i>	<i>SQFT</i>
1	R11-2	ROAD CLOSED	48 X 30	10	2	20
1	R20-3	ROAD CLOSED AHEAD ^{1/}	36 X 36	9	1	9
TOTAL						29

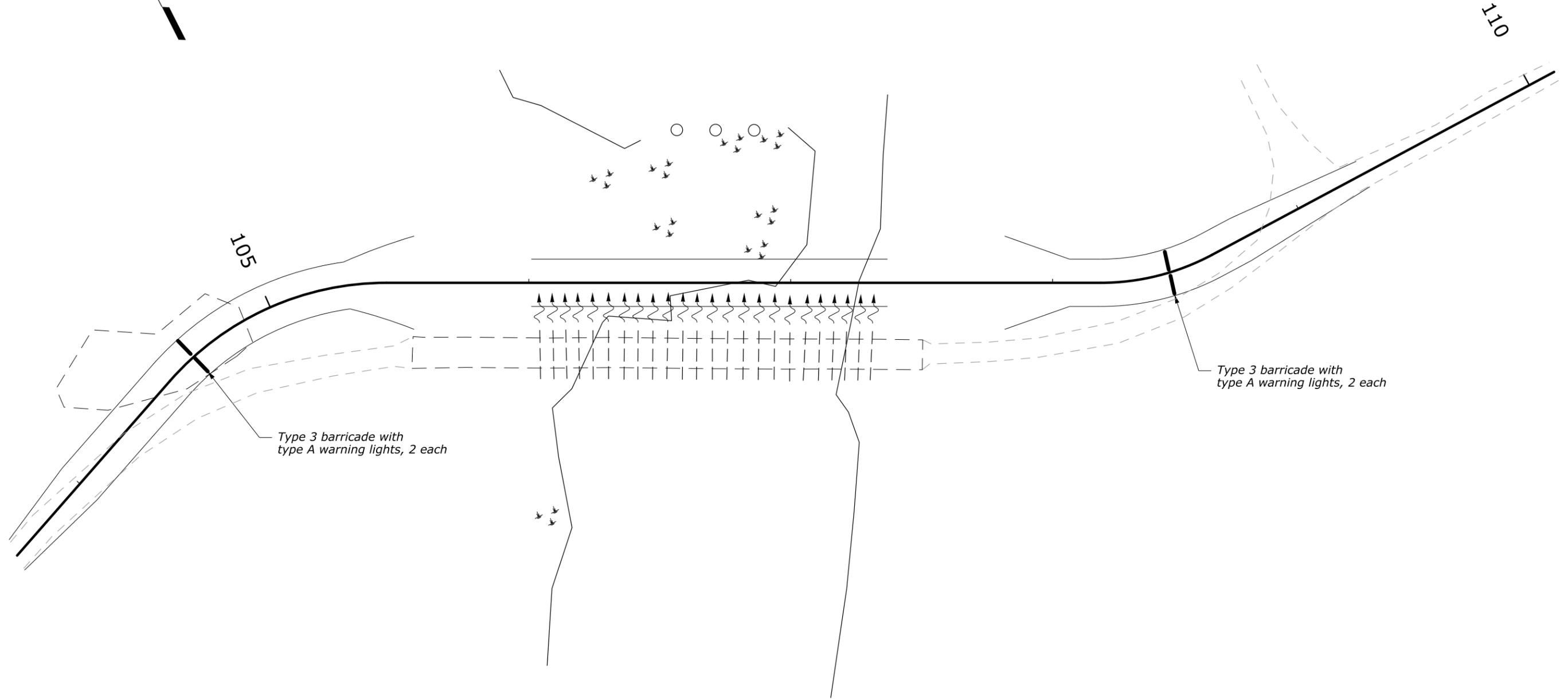
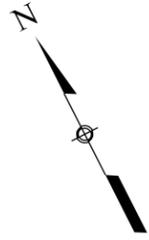
SECTION 635 TEMPORARY TRAFFIC CONTROL QUANTITIES		
<i>ITEM NO.</i>	<i>DESCRIPTION</i>	<i>QUANTITY</i>
63502-0600	TEMPORARY TRAFFIC CONTROL, BARRICADE TYPE 3	4
63502-1500	TEMPORARY TRAFFIC CONTROL, WARNING LIGHT TYPE A	8

FOOTNOTE:
^{1/} Location to be determined by the CO.

TABULATION OF TEMPORARY TRAFFIC CONTROL QUANTITIES

5 August 2015 1:54 PM
 c:\myfiles\pw_production\00123984\ak-t-fort100201_na.dgn [US_Sur_ft2D]
 Designed by:
 Checked by:

STATE	PROJECT	SHEET NUMBER
AK	IRR FORT 1002(1)	H.2



**TEMPORARY
TRAFFIC CONTROL
ROAD CLOSURE
PLAN**

5 August 2015 2:13 PM c:\myfiles\pw_production\00123984\ak-t-fort100201_nb.dgn [US_Sur_ft2D] Designed by: Checked by: