ALASKA RAILROAD CORPORATION

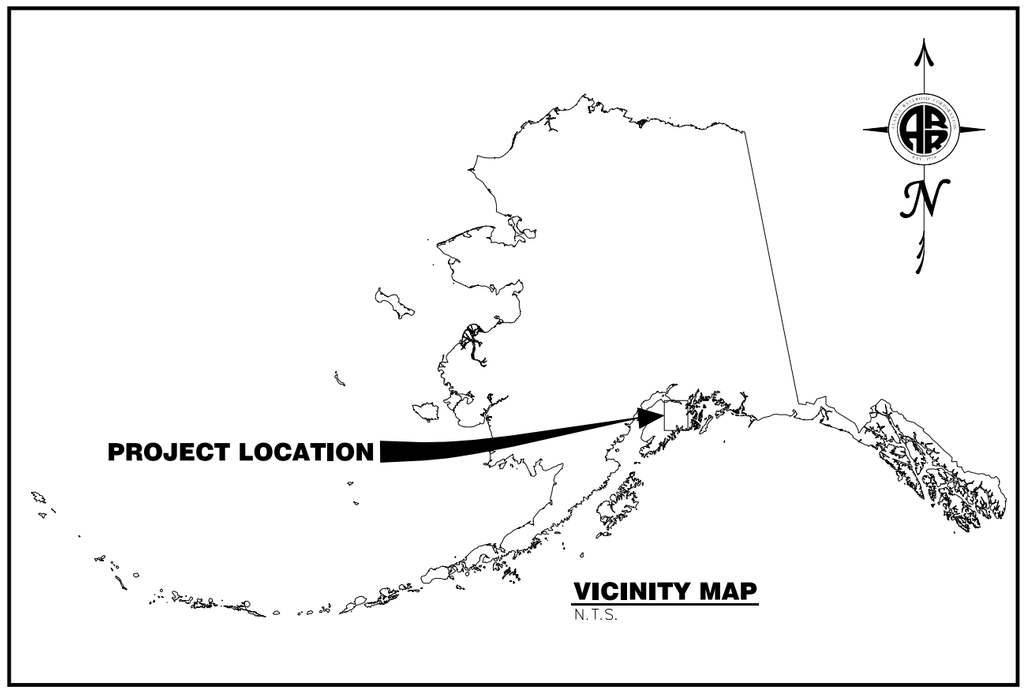
CAPITAL PROJECTS

P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

TRAIL RIVER BRIDGE REPLACEMENT

LATITUDE: 60.4352°, LONGITUDE: -149.3725°

NEAR CROWN POINT, ALASKA



VICINITY MAP

N.T.S.

INDEX OF SHEETS

06/17/2022

READY TO ADVERTISE

ABBREVIATIONS

MISCELLANEOUS

Ac.	Acres
ARRC	Alaska Railroad Corporation
Ave.	Avenue
Blvd.	Boulevard
Bldg.	Building
Br	Bridge
C.Y.	Cubic Yards
CBD	Concrete Ballast Deck
CMP	Corrugated Metal Pipe
Conc.	Concrete
Cr	Creek
CS	Cut Section
CUL	Culvert
°	Degree (s)
DG	Deck Girder
DGBD	Deck Girder Ballast Deck
DR	Drive
DT	Deck Truss
DTBD	Deck Truss Ballast Deck
Dia.	Diameter
Dr.	Drive
Dwg.	Drawing
E	East
Elev.	Elevation
EOP	Edge of Pavement
EOT	End of Track
Exist.	Existing
'	Foot, Feet or Minute (s)
F.S.	Finished Surface
FRT	Freight
GDR	Girder
HDPE	High Density Polyethylene
Horiz.	Horizontal
HWY	Highway
"	Inch, Inches or Second (s)
IB	I Beam
IBBD	I Beam Ballast Deck
Inv.	Invert
IP	Iron Pipe
Lt.	Left
L	Length
L.F.	Lineal Feet
Max.	Maximum
Min.	Minimum
MP	Milepost
MPH	Miles Per Hour
N	North
NTS	Not to Scale
No.	Number
OHP	Overhead Power
OHW	Ordinary High Water
Prop.	Proposed
PT	Pony Truss
RR	Railroad
Rwy	Railway
R/W	Right of Way
Rt.	Right
S	South
S.F.	Square Feet
Sta.	Station
Std.	Standard
St.	Street
TG	Thru Girder
TR	Trestle
TT	Thru Truss
Twp.	Township
Typ.	Typical
UG	Underground
V	Velocity
WD	Wood Deck
Wt.	Weight
W	West
X-ing	Crossing

SIGNAL

ABS	Automatic Block Signal
ATC	Automatic Train Control
CTC	Centralized Traffic Control
DED	Dragging Equipment Detector
DTC	Direct Traffic Control
ELTO	Electric Lock Turnout
HBD	Hot Box Detector
HTTO	Hand Throw Turnout
HWD	High Wide Dectector
POTO	Power Operated Turnout
TWC	Track Warrant Control
WILD	Wheel Impact Load Dectector

STRUCTURES

Bldg.	Building
Br.	Bridge
CB	Catch Basin
CPT	Concrete Pile Trestle - Ballast Deck
CIP	Cast Iron Pipe
CMP	Corrugated Metal Pipe
CMPA	Corrugated Metal Pipe Arch
CSP	Corrugated Steel Pipe
Culv.	Culvert
DI	Drop Inlet
DPGBD	Deck Plate Girder - Ballast Deck
DPGOD	Deck Plate Girder - Open Deck
EBW	East Backwall
F.L.	Flowline
F.F.	Finished Floor
GIP	Galvanized Iron Pipe
Hdwl	Headwall
NBW	North Backwall
PSCT	Prestressed Concrete Trestle
RCA	Reinforced Concrete Arch
RCB	Reinforced Concrete Box
RCP	Reinforced Concrete Pipe
SBW	South Backwall
SSP	Smooth Steel Pipe
SPTBD	Steel Pile Trestle - Ballast Deck
SPTOD	Steel Pile Trestle - Open Deck
SPP	Structural Plate Pipe
TPGBD	Through Plate Girder - Ballast Deck
TPGOD	Through Plate Girder - Open Deck
TPTBD	Timber Pile Trestle - Ballast Deck
TPTOD	Timber Pile Trestle - Open Deck
TTBD	Through Truss - Ballast Deck
TTOD	Through Truss - Open Deck
TWB	Treated Wood Box
VCP	Vitrified Clay Pipe
Viad.	Viaduct
WBW	West Backwall
WIP	Wrought Iron Pipe

TRACK

ATR	Above Top of Rail
Align.	Alignment
BBR	Below Base of Rail
Cntrs.	Centers
CWR	Continuous Welded Rail
D	Degree of Curve
DSPD	Double Switch Point Derail
EOT	End of Track
HH	Head Hardened
Jtd.	Jointed Rail
LH	Left Hand
ML	Main Line
MM	Mile Marker
MP	Mile Post
NSC	Not Sufficient Clearance
OTM	Other Track Material
PCC	Point of Compound Curve
PC	Point of Curve
PCS	Point of Curve to Spiral
POC	Point on Curve
PF	1/2" Point of Frog
PI	Point of Intersection
PITO	Point of Intersection of Turnout
PS	Point of Spiral
PSC	Point of Spiral to Curve
POB	Point of Beginning
POS	Point on Spiral
PT	Point of Tangent
POT	Point on Tangent
Pt. Sw.	Point of Switch
PVC	Point of Vertical Curve
PVI	Point of Vertical Intersection
PVT	Point of Vertical Tangent
R	Radius
RH	Right Hand
SH	Second Hand
S/L	Spiral Length
SSPD	Single Switch Point Derail
TC	Track Centers
T.F.	Track Feet
Trk.	Track
UXO	Universal Cross-Over
X-Over	Cross-Over

UTILITIES

- Compressed Air
- Fiber Optic Cable
- Gas Pipeline
- Overhead Power Line
- Sanitary Sewer
- Overhead Signal Line
- Underground Signal Line
- Steam Line
- Storm Sewer
- Telephone
- Underground Electric
- Water Main
- Underground Wire
- Under Drain
- Valve
- Manhole
- Catch Basin
- Fire Hydrant
- Junction Box
- Electric Meter
- Gas Meter
- Water Meter
- Monitoring Well
- Pump

TRACK

- Existing Mainline
- Proposed Track
- Resurface Track
- Turnout (Switch Stand)

PROPERTY

- Right of Way

SYMBOLS

ROAD CROSSING WARNING DEVICES

- Crossbuck Sign
- Flashing Light Warning Device
- Flashing Light Warning Device with Gate
- Cantilever Flashing Light Warning Device
- Cantilever Flashing Light Signal with Gate

SIGNAL

- Absolute Signal
- Signal Bridge
- Cantilever Signal
- ACS or CTC Signal
- Dwarf Signal
- Begin CTC
- Microwave Tower
- AEI
- Battery Box
- Dragging Equipment Detector
- Generator
- Hot Box Detector

STRUCTURES

- Culvert
- Culvert with Headwalls
- Double Culvert
- Railroad Bridge
- Highway Overpass
- Highway Underpass
- Tunnel
- Building
- Flag Pole

SIGNS

- Stop
- Yard Limit
- 1 Mile to Yard Limit
- Whistle Post
- Flanger
- Station
- Reduce Speed
- Resume Speed
- General Purpose

FENCES

- Barbed Wire
- Chain Link
- Snow / Sand
- Cattle Guard

ROADS

- Paved Road
- Unimproved Road
- Interstate Highway
- Federal Highway
- State Highway
- County Highway

OTHER

- Flow Line
- Milepost
- Milemarker
- Control Point
- Revision Number
- Revision Cloud

CONSTRUCTION

- Grading Limit
- Silt Fence

REV	DATE	DESCRIPTION	BY / SUB	APP

DESIGNED BY JRW
DRAWN BY JRW
CHECKED BY ZDH
APPROVED BY ZDH
DATE 06/17/2022

ALASKA RAILROAD

ALASKA RAILROAD

BR. 25.4 & 25.7 RAIL RAISE

ABBREVIATIONS & LEGEND

CONTRACT NO.

REVISION

SHEET NO. C2

SCALE NONE

0 400 800 1200

SCALE: 1" = 400 FEET

CONTROL POINT LIST

Point	Northing	Easting	Elevation	Description
126	2349093.98	1754096.83	485.55	PK IN TIE
206	2349593.05	1754017.98	485.50	60D IN TIE
2037	2349710.76	1754008.93	484.58	5/8" RBAR W/ YPC
2039	2349853.10	1753947.78	484.45	5/8" RBAR W/ YPC
416	2350395.26	1753891.33	479.86	PK IN TIE
101	2350576.08	1753821.89	480.22	PK IN ASPH
572	2351083.35	1753783.13	475.69	PK IN TIE
1956	2351471.24	1753757.48	475.55	5/8" RBAR W/ YPC
869	2351848.53	1753820.61	474.80	5/8" RBAR W/ YPC
992	2352322.34	1753858.34	476.05	set pk in tie
1092	2352915.87	1753804.90	475.68	PK IN TIE
1170	2353415.22	1753762.59	475.87	PK IN TIE
2043	2353909.77	1753854.42	474.33	5/8" RBAR W/ YPC
1288	2354202.35	1753876.88	475.48	PK IN TIE
1405	2354775.71	1754237.58	475.38	PK IN TIE
1486	2355205.57	1754463.53	475.87	PK IN TIE
1559	2355692.60	1754392.09	476.46	PK IN TIE
1644	2356259.93	1754222.02	477.35	PK IN TIE
1678	2356496.51	1754253.72	477.55	PK IN TIE
1679	2357143.05	1754375.59	474.94	PK IN TIE
1749	2357545.35	1754451.36	474.02	60D IN TIE
2045	2357625.27	1754479.67	473.31	5/8" RBAR W/ YPC
1818	2358080.86	1754549.98	476.64	PK IN TIE
100	2350580.89	1753825.35	479.98	BASE OPUS

NOTES

1) HORIZONTAL AND VERTICAL DATUM IS ALASKA STATE PLANE COORDINATE SYSTEM ZONE 4, NAD83(2011), GEOID12B ORTHOMETRIC HEIGHTS BASED ON OPUS PROCESSSING OF CONTROL POINT 100.
2) CONTROL POINT 100 IS NOT SHOWN IN PLAN ABOVE.

LEGEND

- CONTROL POINT, SEE POINT LIST
- APPROXIMATE LOT LINES PER KPB GIS

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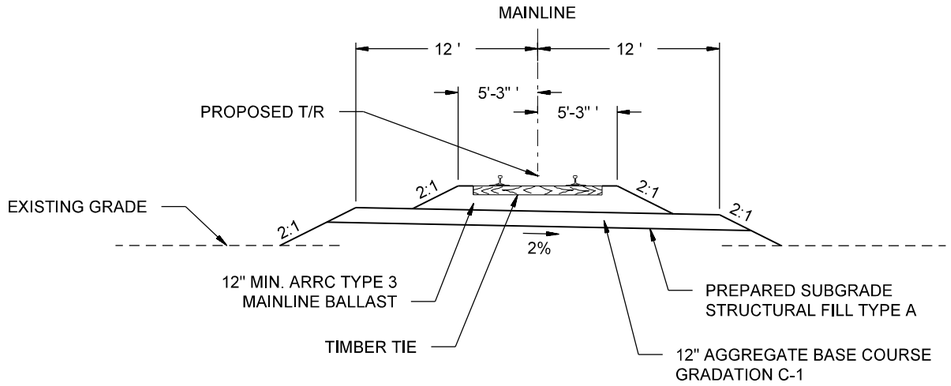
ALASKA RAILROAD

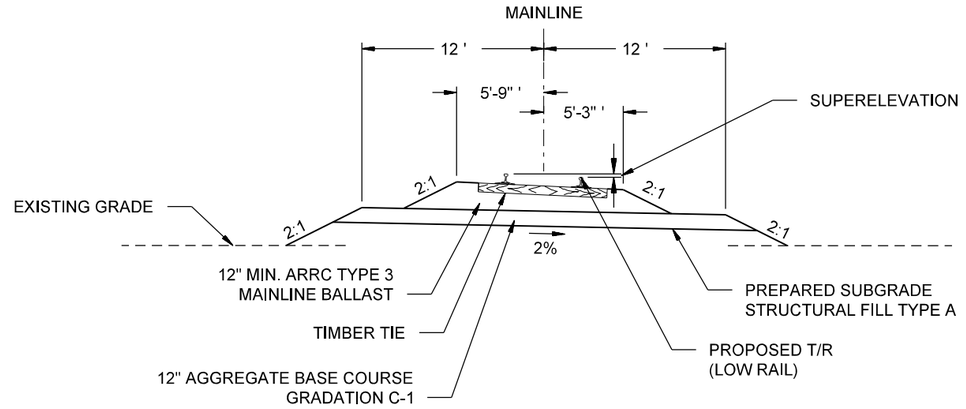
ALASKA RAILROAD
BR. 25.4 & 25.7 RAIL RAISE
SURVEY CONTROL

CONTRACT NO.
REVISION
SHEET NO. C3
SCALE NONE



TANGENT MAINLINE SECTION

SCALE: NOT TO SCALE



CURVE MAINLINE SECTION

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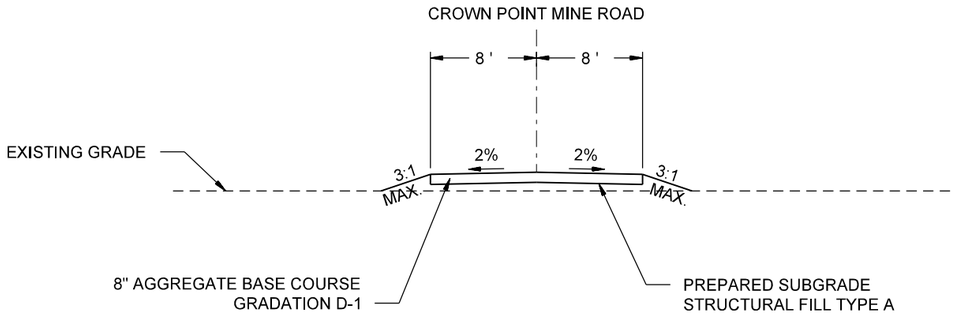

CROWN POINT MINE ROAD SECTION

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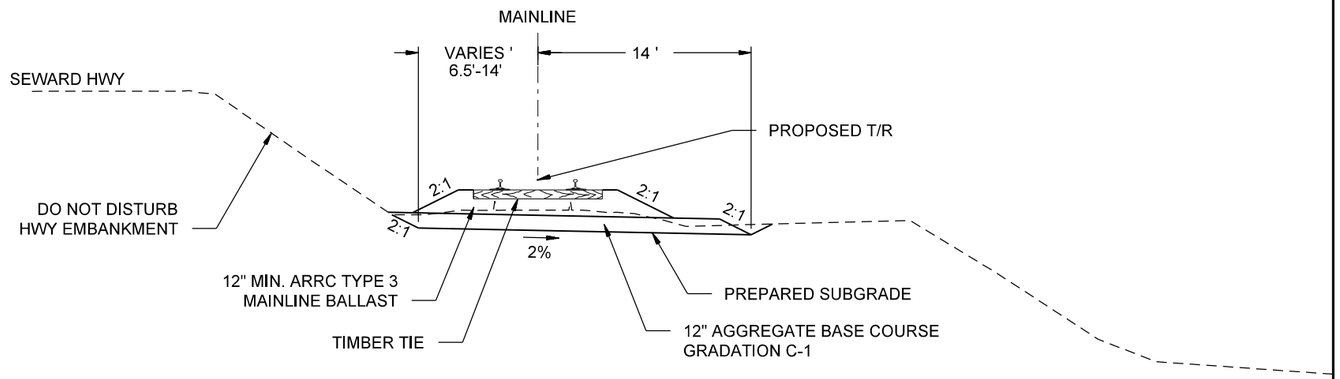

VARYING SHOULDER MAINLINE SECTION
STA. 1203+17 TO 1209+50

SCALE: NOT TO SCALE

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ALASKA RAILROAD

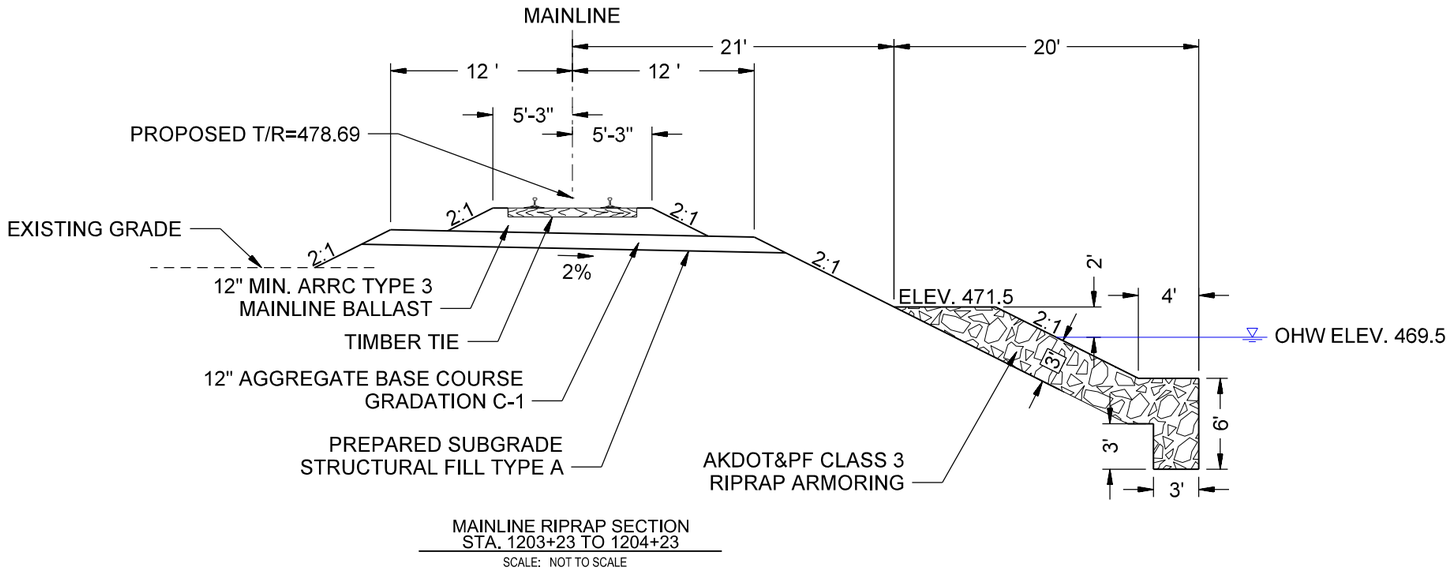
ALASKA RAILROAD
BR. 25.4 & 25.7 RAIL RAISE
TYPICAL SECTIONS

CONTRACT NO.

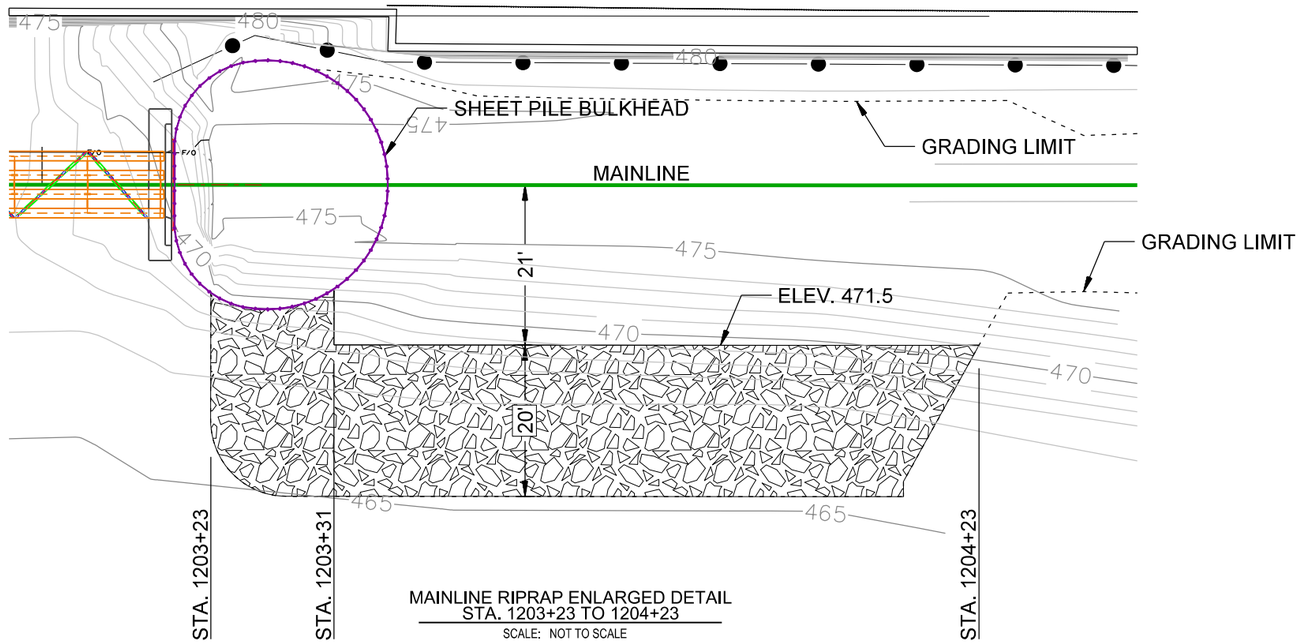
REVISION

SHEET NO. C4

SCALE NONE



MAINLINE RIPRAP SECTION
STA. 1203+23 TO 1204+23
SCALE: NOT TO SCALE



MAINLINE RIPRAP ENLARGED DETAIL
STA. 1203+23 TO 1204+23
SCALE: NOT TO SCALE

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ALASKA RAILROAD

BR. 25.4 & 25.7 RAIL RAISE

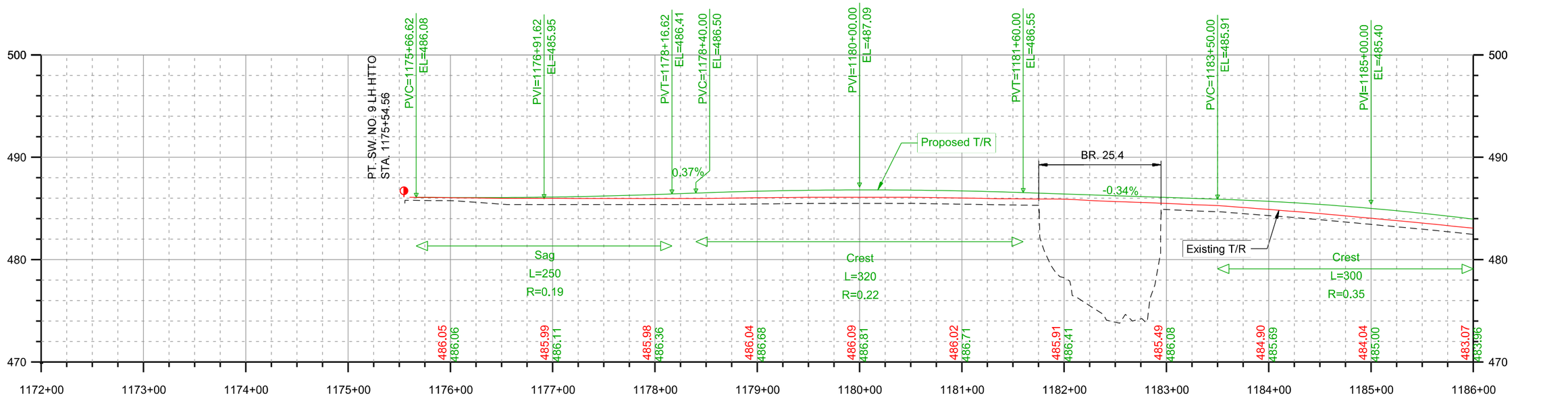
TYPICAL SECTIONS

CONTRACT NO.

REVISION

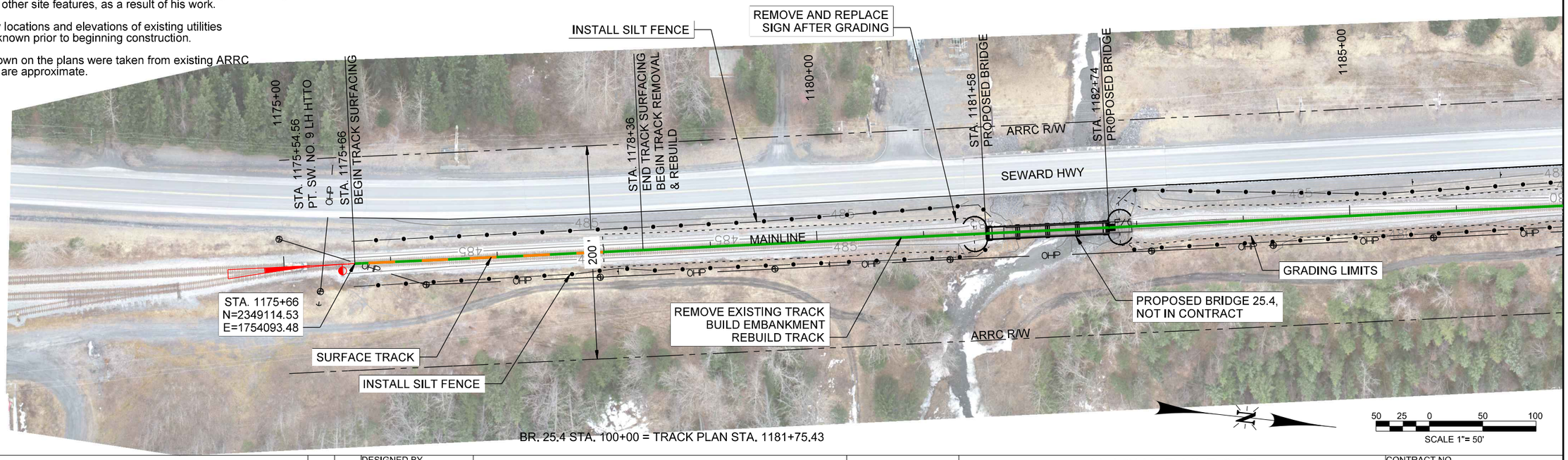
SHEET NO. C5

SCALE NONE



NOTES:

1. Contractor shall be responsible for coordinating with all Utility agencies.
2. Contractor shall protect in place (by any means necessary) all existing utilities to remain unless otherwise specified herein, contractor shall be responsible for the complete repair at his expense, for any damage to existing utilities, structures, or other site features, as a result of his work.
3. Contractor shall verify locations and elevations of existing utilities whether known or unknown prior to beginning construction.
4. Right-of-way lines shown on the plans were taken from existing ARRC right-of-way map and are approximate.
5. R = V/L



BR. 25.4 STA. 100+00 = TRACK PLAN STA. 1181+75.43

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ALASKA RAILROAD

ALASKA RAILROAD

BR. 25.4 & 25.7 RAIL RAISE

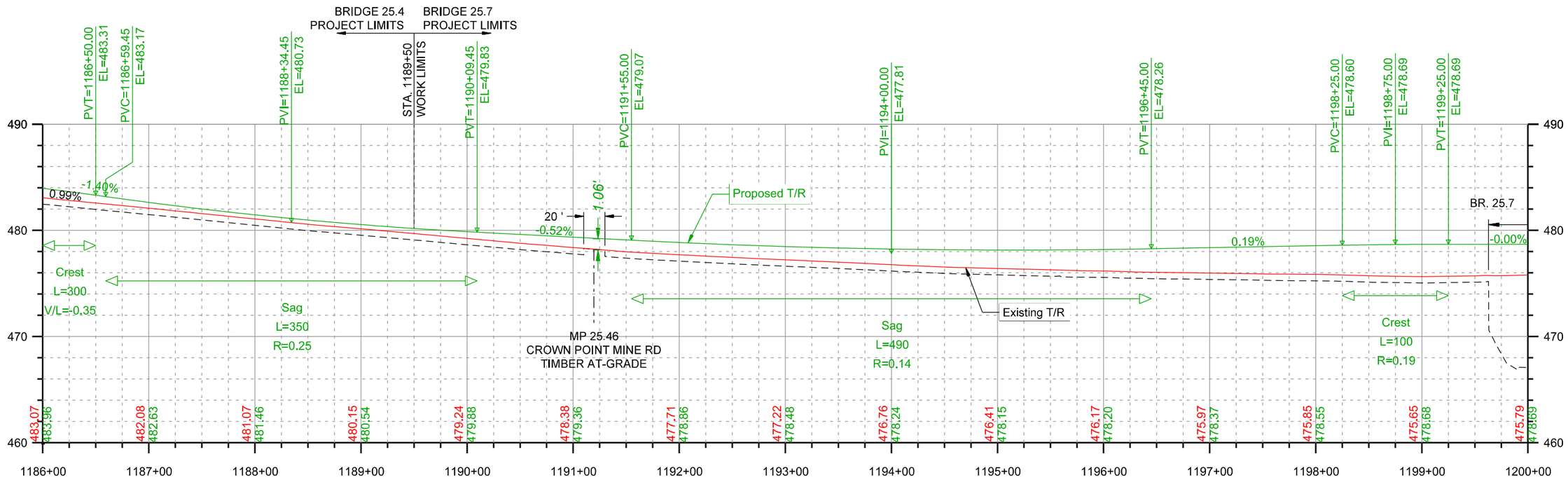
PLAN & PROFILE
STA. 1172+00 TO STA. 1186+00

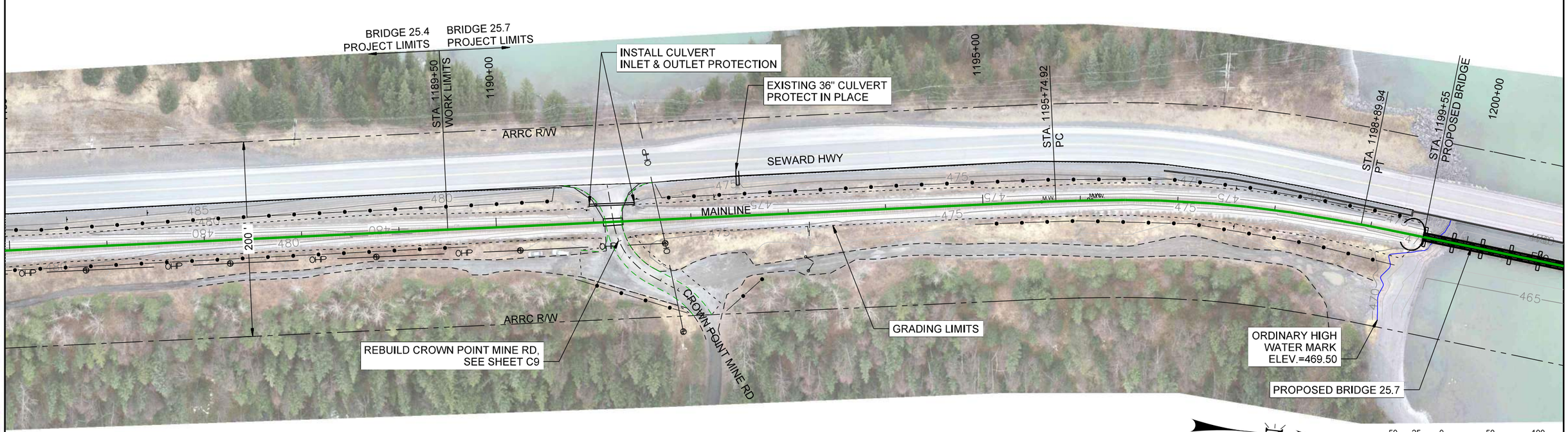
CONTRACT NO.

REVISION

SHEET NO. C6

SCALE AS SHOWN





BR. 25.7 STA. 100+00 = TRACK PLAN STA. 1199+61.77

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ALASKA RAILROAD

ALASKA RAILROAD

BR. 25.4 & 25.7 RAIL RAISE

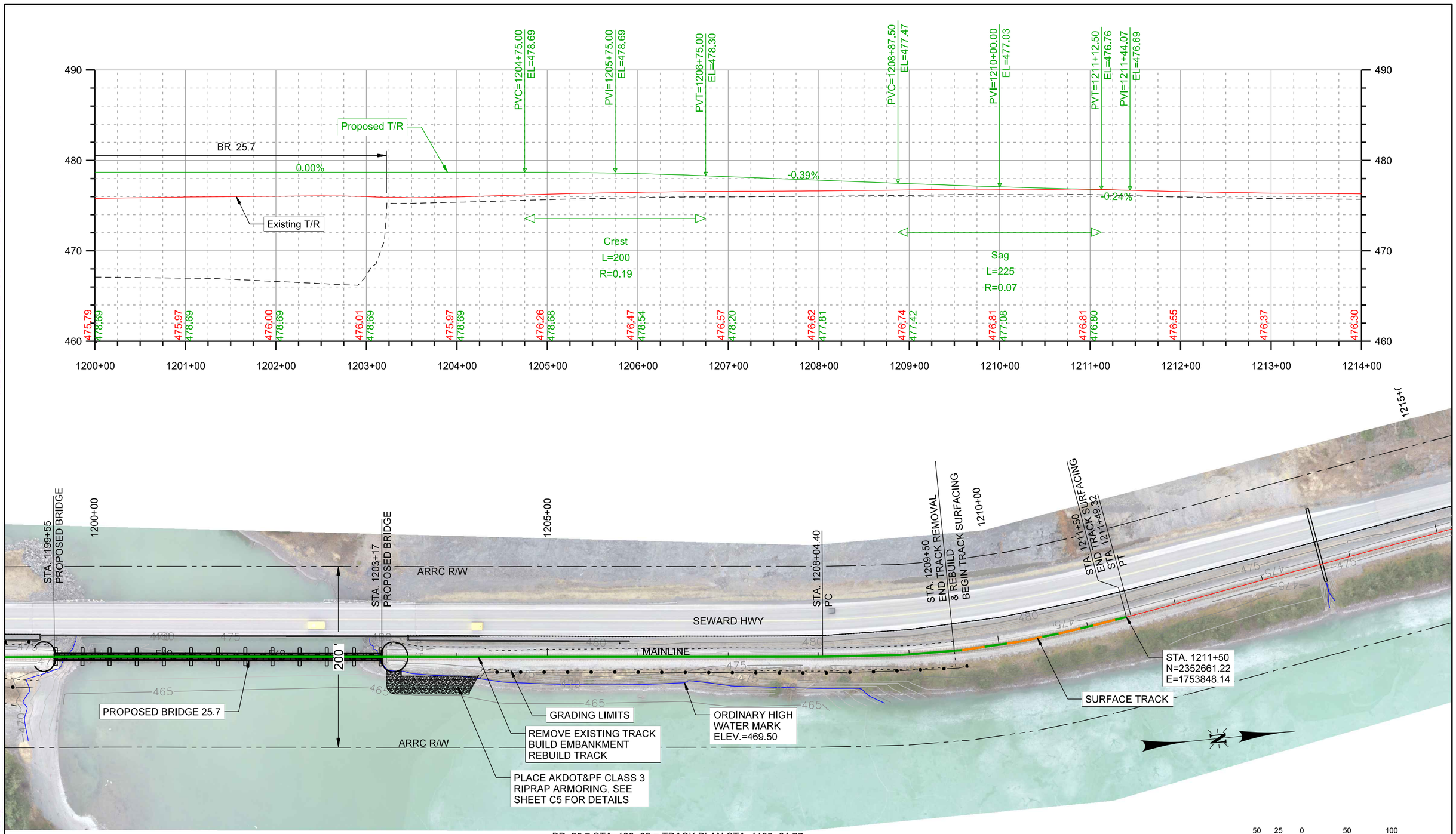
PLAN & PROFILE
STA. 1186+00 TO STA. 1200+00

CONTRACT NO.

REVISION

SHEET NO. C7

SCALE AS SHOWN



BR. 25.7 STA. 100+00 = TRACK PLAN STA. 1199+61.77

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ALASKA RAILROAD

ALASKA RAILROAD

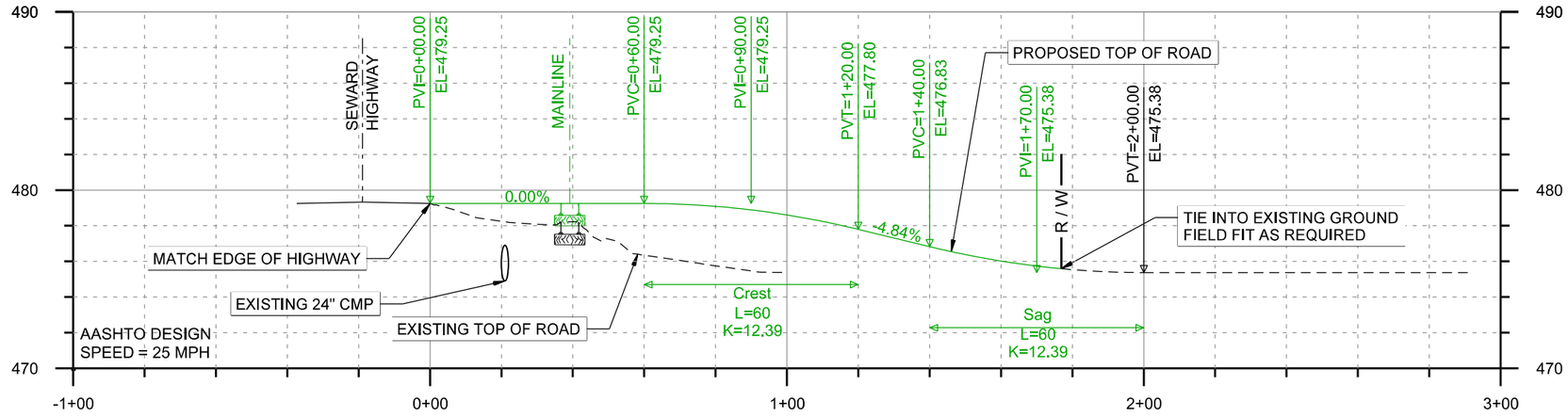
BR. 25.4 & 25.7 RAIL RAISE

PLAN & PROFILE
STA. 1200+00 TO STA. 1214+00

CONTRACT NO.

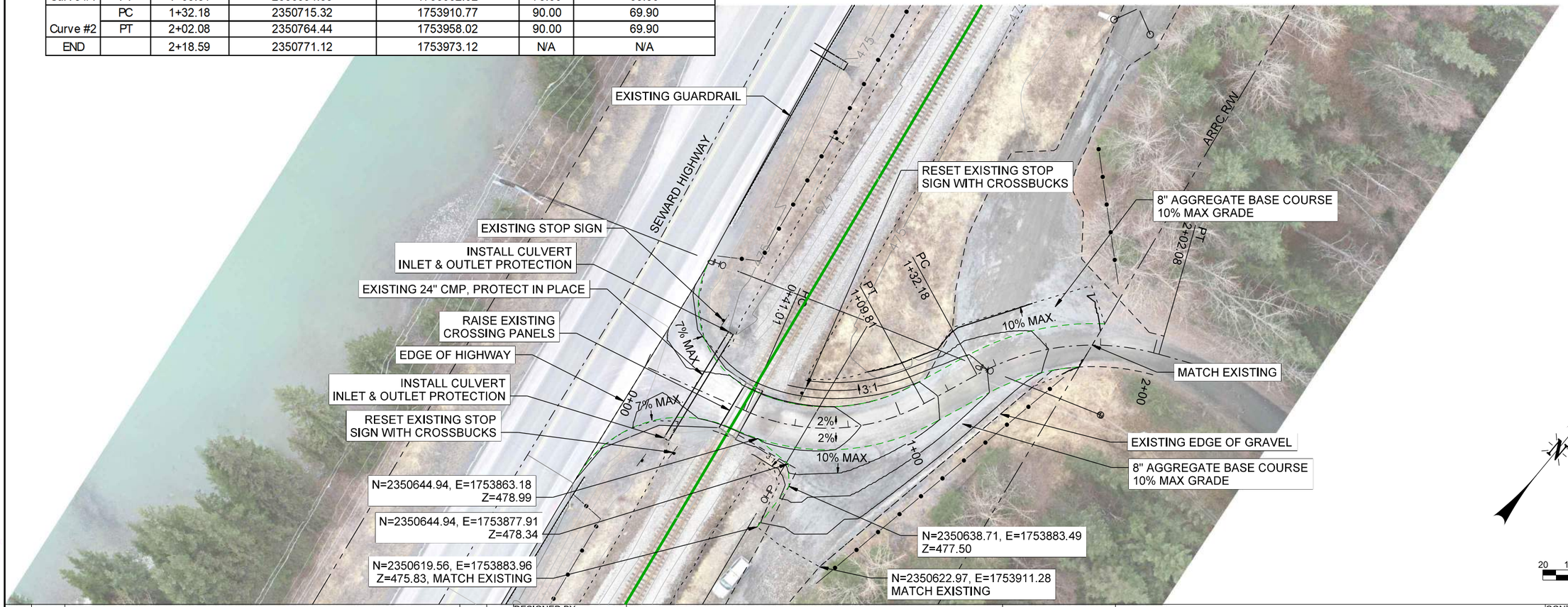
REVISION | SHEET NO. C8

SCALE AS SHOWN



CURVE DATA - CROWN POINT MINE ROAD						
CURVE	POINT		NORTHING	EASTING	RADIUS	CURVE LENGTH
POB	POB	0+00.00	2350638.85	1753813.77	N/A	N/A
Curve #1	PC	0+41.01	2350650.02	1753853.23	75.00	68.80
	PT	1+09.81	2350694.53	1753902.52	75.00	68.80
Curve #2	PC	1+32.18	2350715.32	1753910.77	90.00	69.90
	PT	2+02.08	2350764.44	1753958.02	90.00	69.90
END		2+18.59	2350771.12	1753973.12	N/A	N/A

Notes:
1. Reference AKDOT&PF's SSHC for temporary traffic control measures adjacent to proposed work and coordinate with the Department to receive Lane Closure Permit (LCP)s as needed. LCP's are required to have along with approved traffic control plans.



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ALASKA RAILROAD

ALASKA RAILROAD

BR. 25.4 & 25.7 RAIL RAISE

CROWN POINT MINE ROAD PLAN & PROFILE

CONTRACT NO.

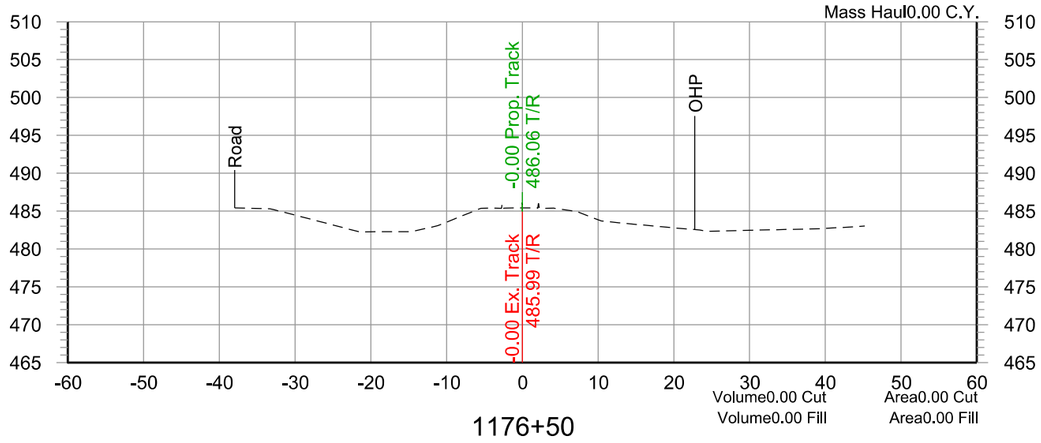
REVISION

SHEET NO. C9

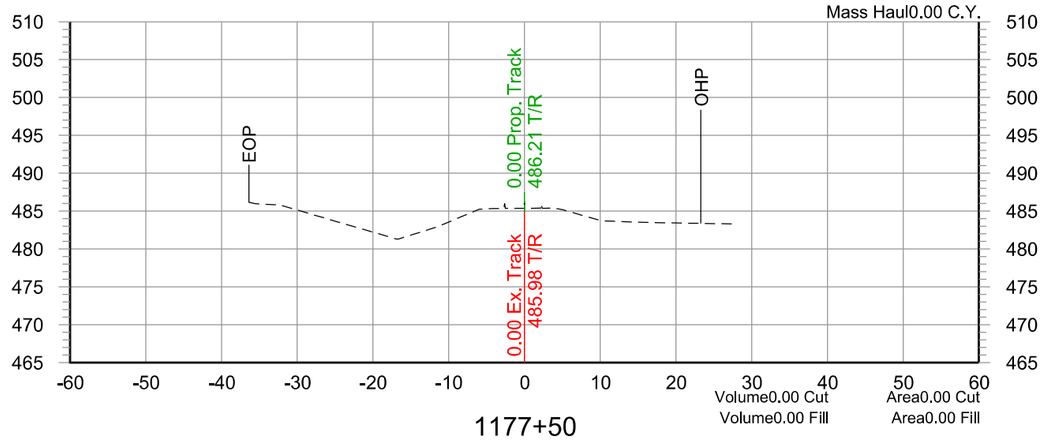
SCALE AS SHOWN

NOTES:

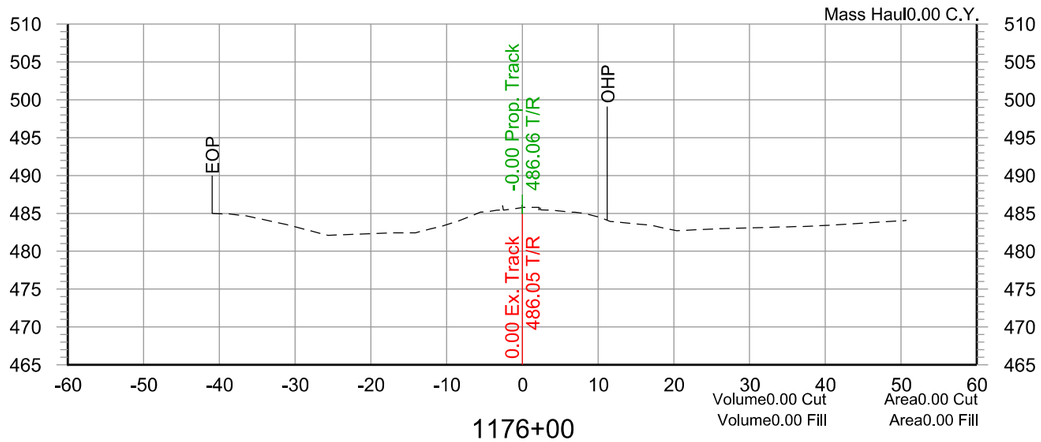
1) ELEVATION AND OFFSETS ARE TO TOP OF SUBGRADE.
2) 0' OFFSET REPRESENTS CENTERLINE OF EXISTING MAINLINE.



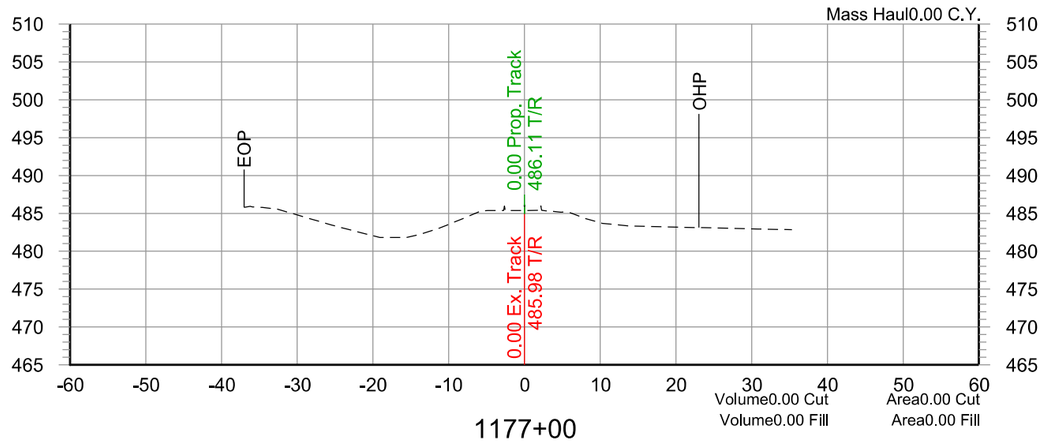
1176+50



1177+50



1176+00



1177+00

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ALASKA RAILROAD

ALASKA RAILROAD

BR. 25.4 & 25.7 RAIL RAISE

CROSS SECTIONS STA.1176+00 TO STA.1177+50

CONTRACT NO.

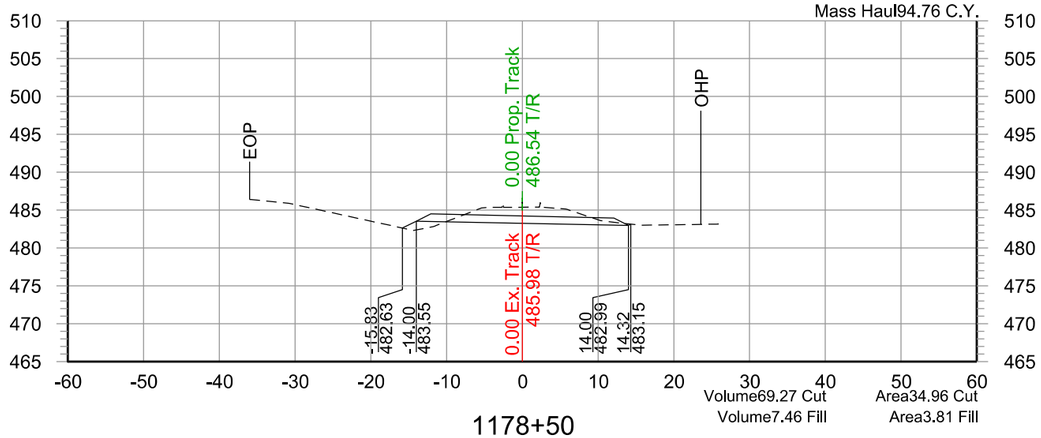
REVISION

SHEET NO. C10

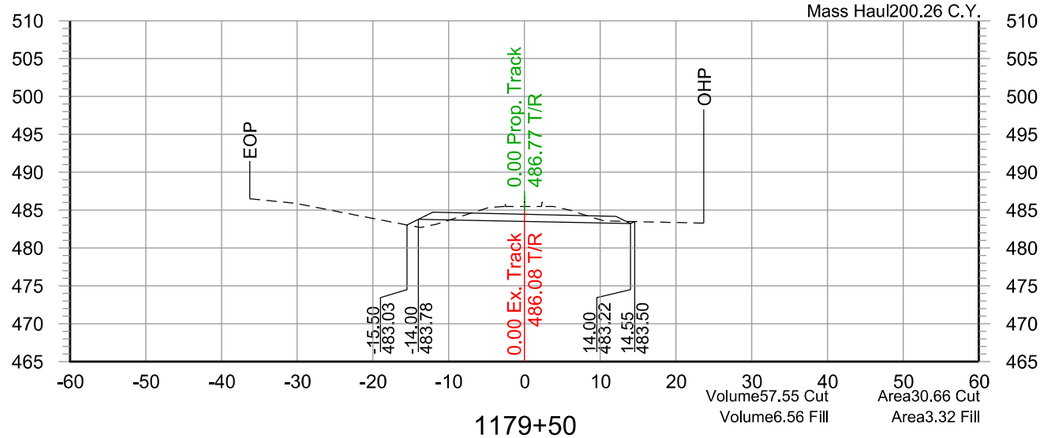
SCALE 1"=20'

NOTES:

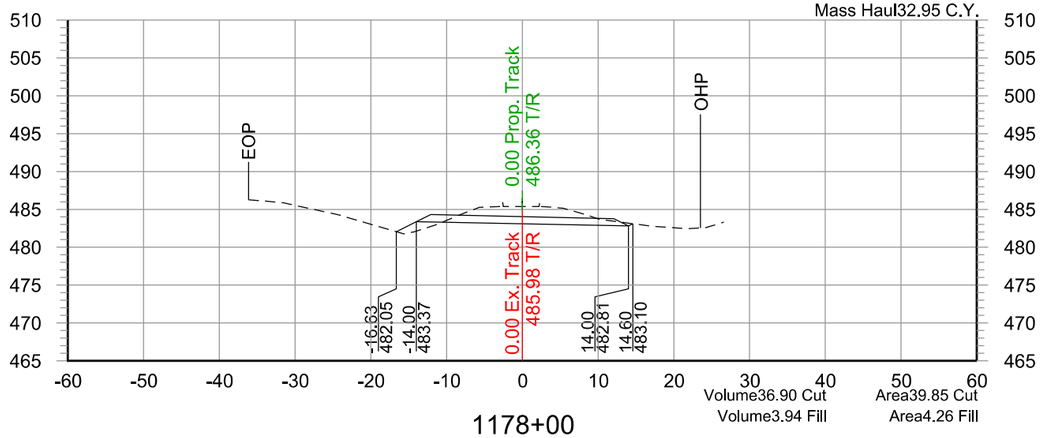
1) ELEVATION AND OFFSETS ARE TO TOP OF SUBGRADE.
2) 0' OFFSET REPRESENTS CENTERLINE OF EXISTING MAINLINE.



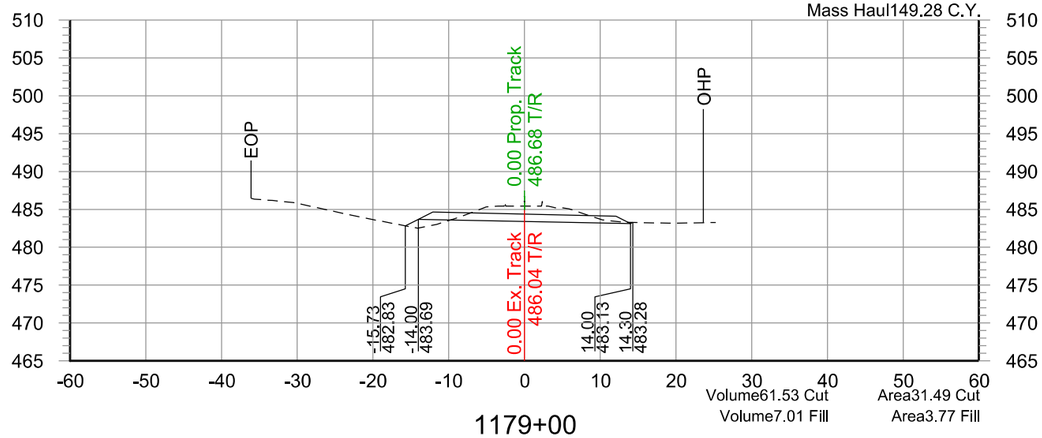
1178+50



1179+50



1178+00



1179+00

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ALASKA RAILROAD

ALASKA RAILROAD

BR. 25.4 & 25.7 RAIL RAISE

CROSS SECTIONS STA.1178+00 TO STA.1179+50

CONTRACT NO.

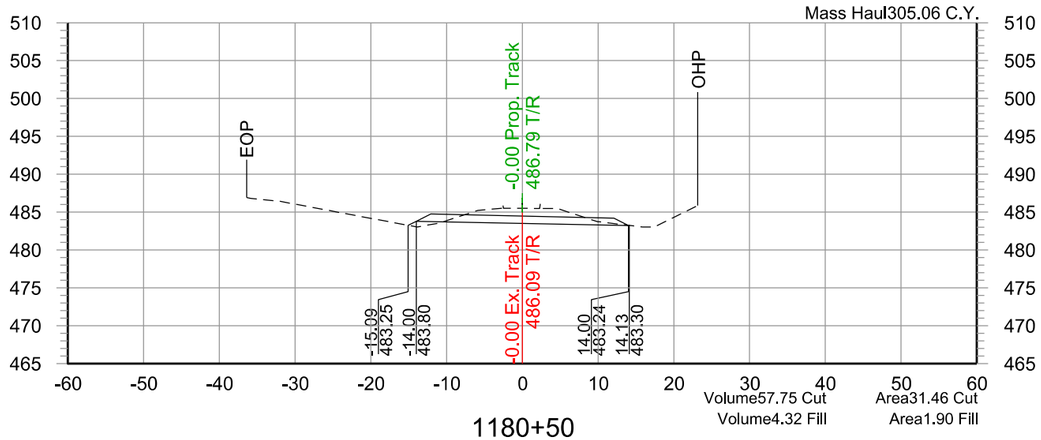
REVISION

SHEET NO. C11

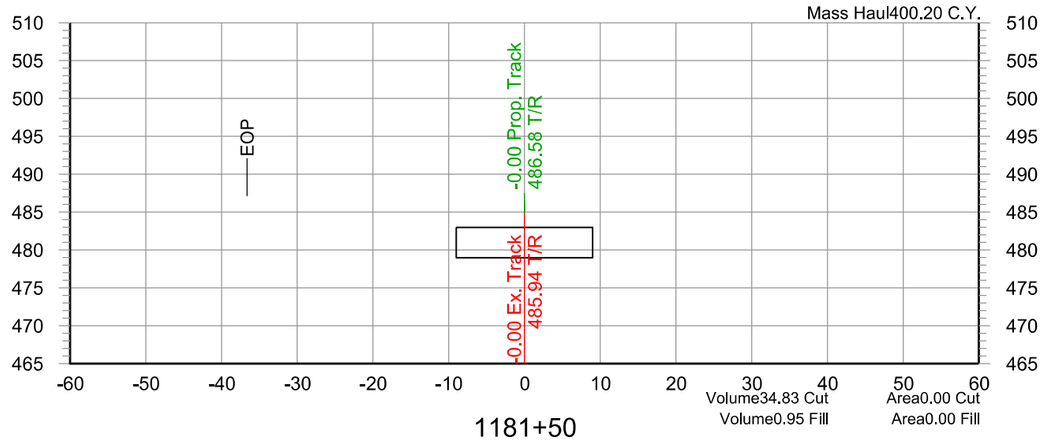
SCALE 1"=20'

NOTES:

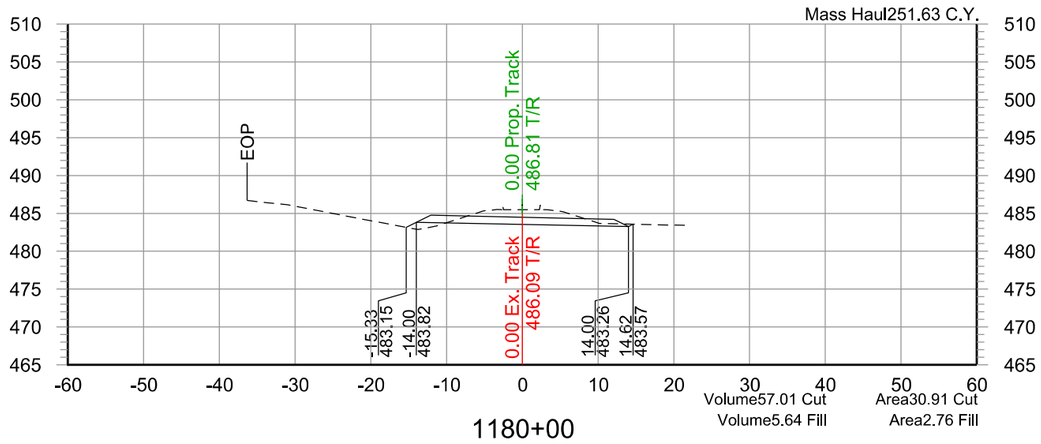
1) ELEVATION AND OFFSETS ARE TO TOP OF SUBGRADE.
2) 0' OFFSET REPRESENTS CENTERLINE OF EXISTING MAINLINE.



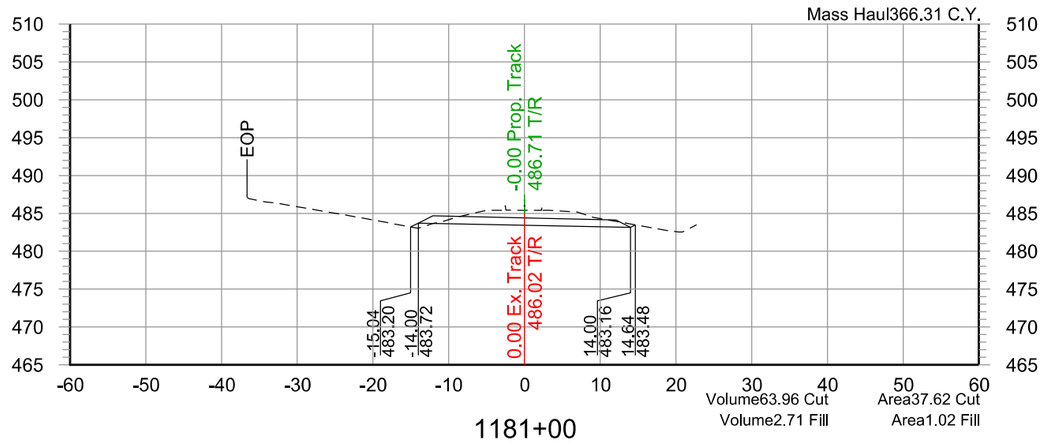
1180+50



1181+50



1180+00



1181+00

REV	DATE	DESCRIPTION	BY	SUB	APP

DESIGNED BY JRW
DRAWN BY JRW
CHECKED BY ZDH
APPROVED BY BWB
DATE 06/17/2022

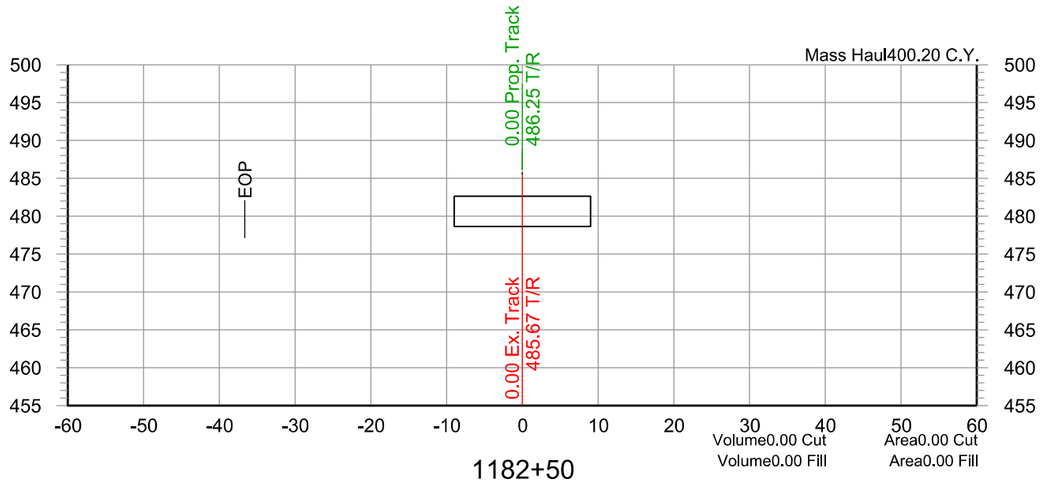
ALASKA RAILROAD

ALASKA RAILROAD
BR. 25.4 & 25.7 RAIL RAISE
CROSS SECTIONS STA.1180+00 TO STA.1181+50

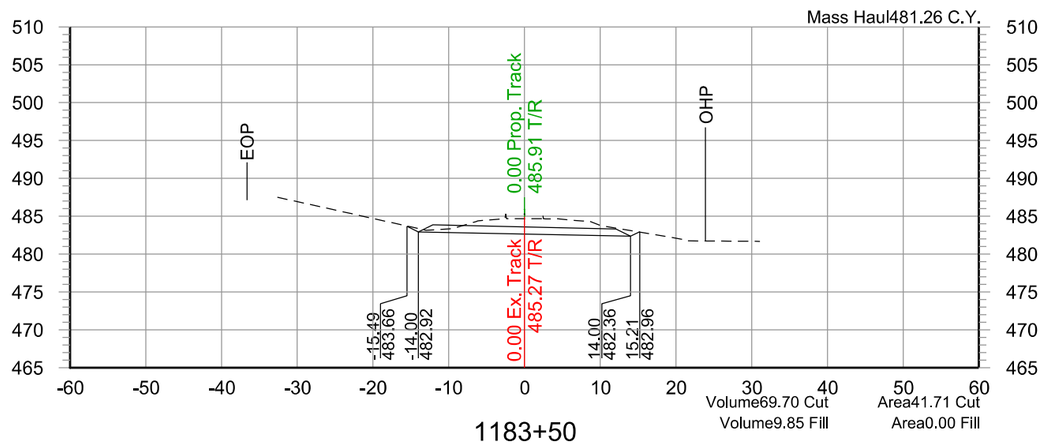
CONTRACT NO.
REVISION
SHEET NO. C12
SCALE 1"=20'

NOTES:

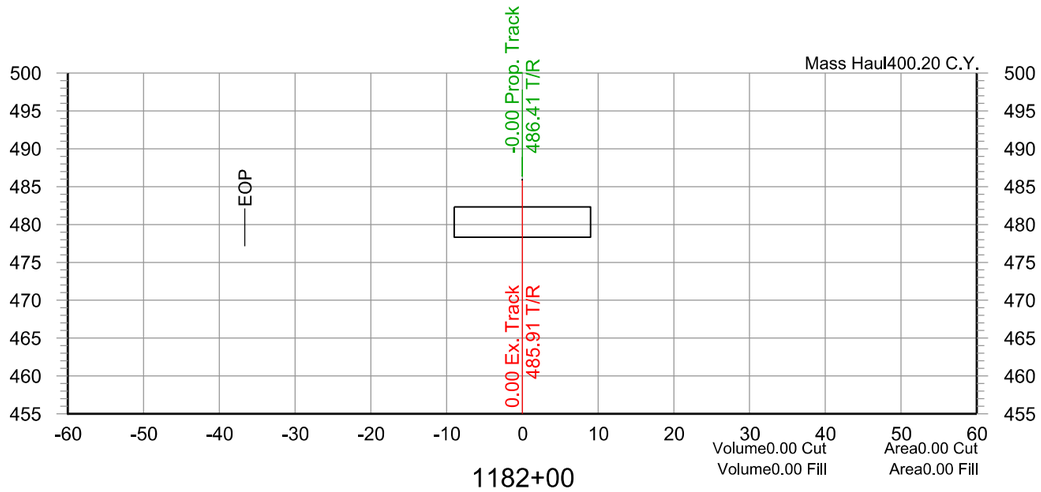
1) ELEVATION AND OFFSETS ARE TO TOP OF SUBGRADE.
2) 0' OFFSET REPRESENTS CENTERLINE OF EXISTING MAINLINE.



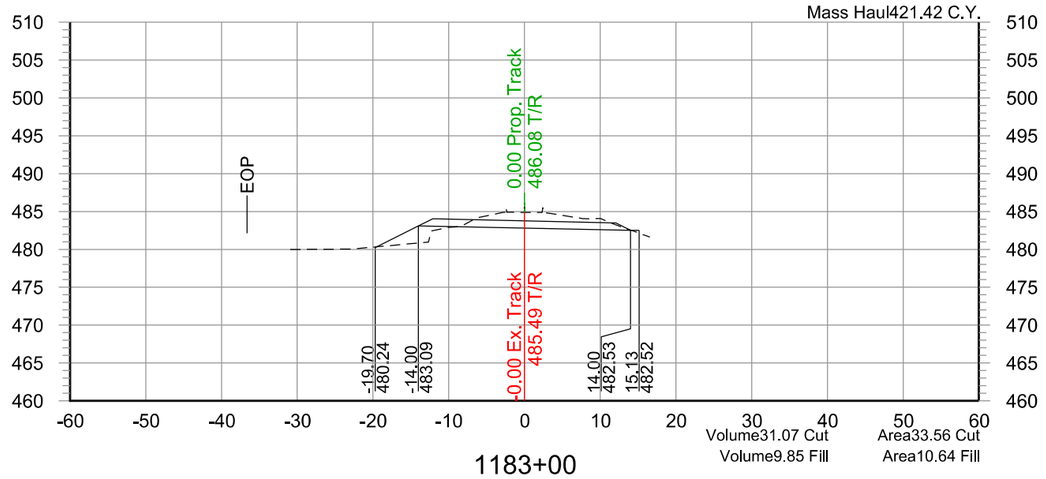
1182+50



1183+50



1182+00



1183+00

REV	DATE	DESCRIPTION	BY	SUB	APP

DESIGNED BY JRW
DRAWN BY JRW
CHECKED BY ZDH
APPROVED BY BWB
DATE 06/17/2022

ALASKA RAILROAD

ALASKA RAILROAD

BR. 25.4 & 25.7 RAIL RAISE

CROSS SECTIONS STA.1182+00 TO STA.1183+50

CONTRACT NO.

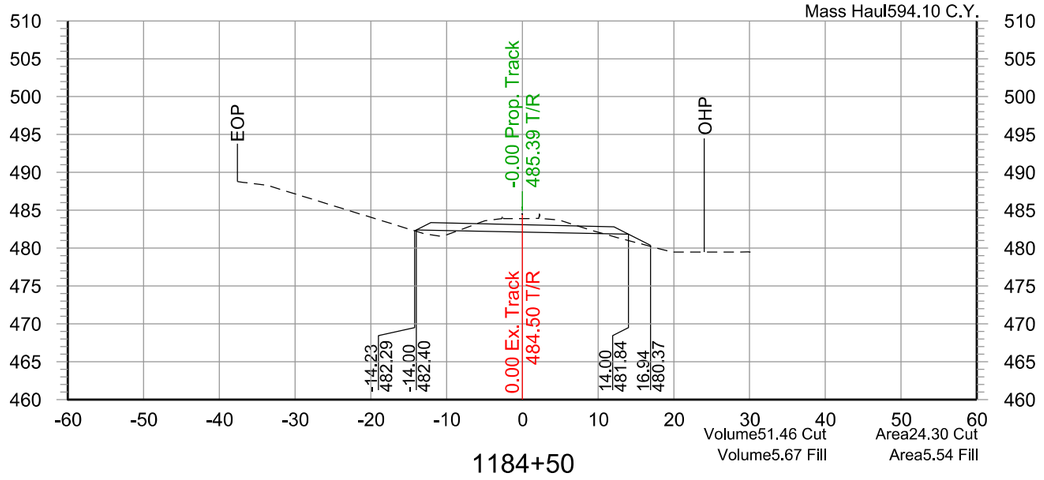
REVISION

SHEET NO. C13

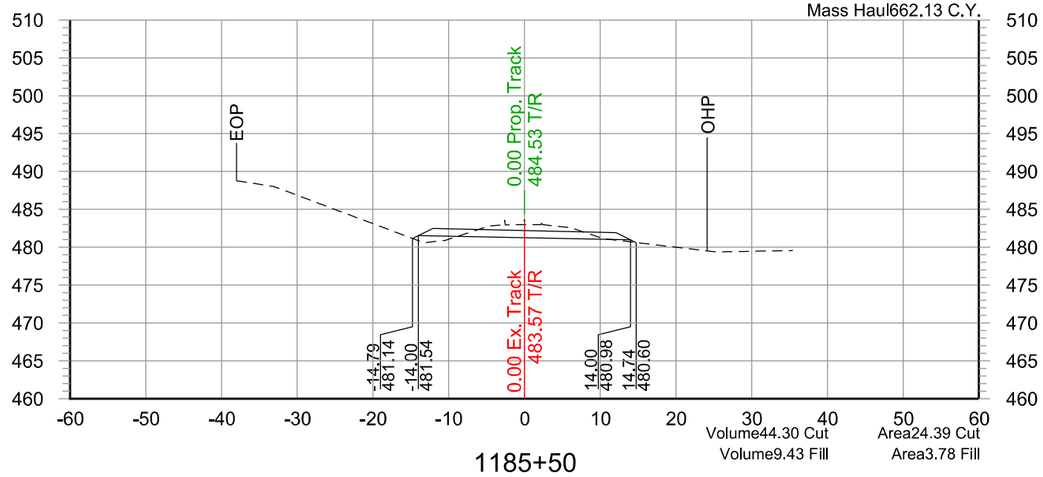
SCALE 1"=20'

NOTES:

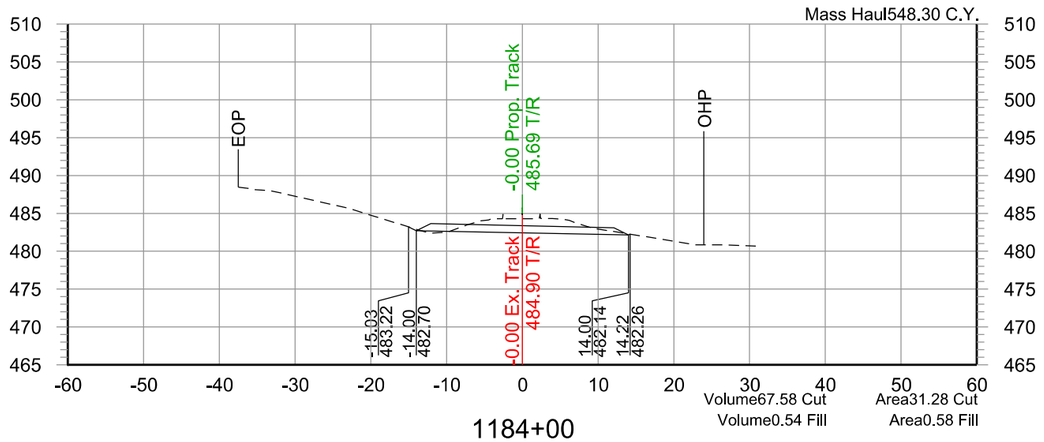
1) ELEVATION AND OFFSETS ARE TO TOP OF SUBGRADE.
2) 0' OFFSET REPRESENTS CENTERLINE OF EXISTING MAINLINE.



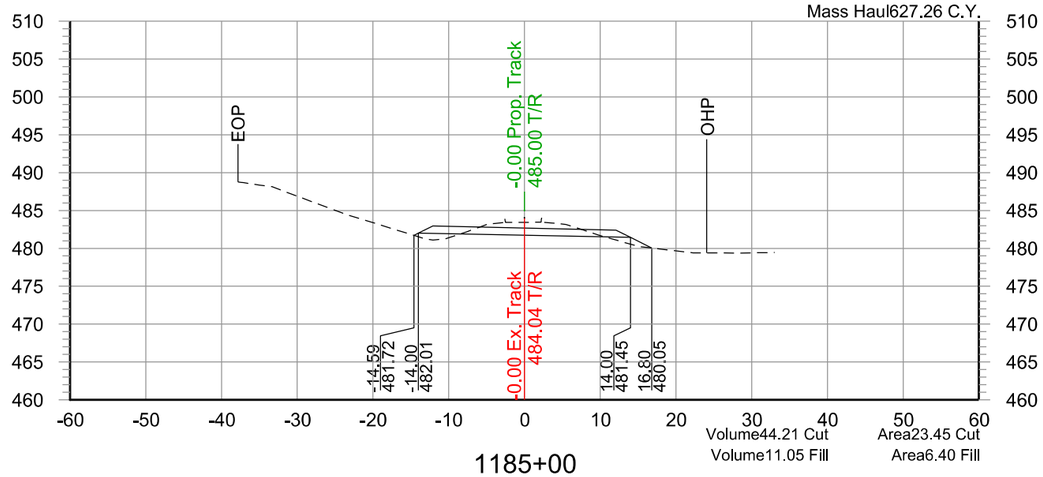
1184+50



1185+50



1184+00



1185+00

REV	DATE	DESCRIPTION	BY	SUB	APP

DESIGNED BY JRW
DRAWN BY JRW
CHECKED BY ZDH
APPROVED BY BWB
DATE 06/17/2022

ALASKA RAILROAD

ALASKA RAILROAD

BR. 25.4 & 25.7 RAIL RAISE

CROSS SECTIONS STA.1184+00 TO STA.1185+50

CONTRACT NO.

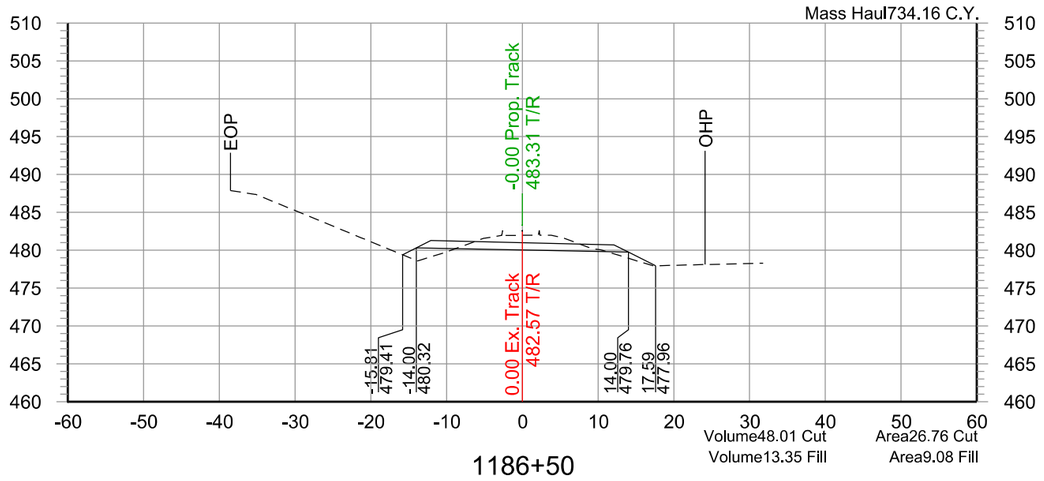
REVISION

SHEET NO. C14

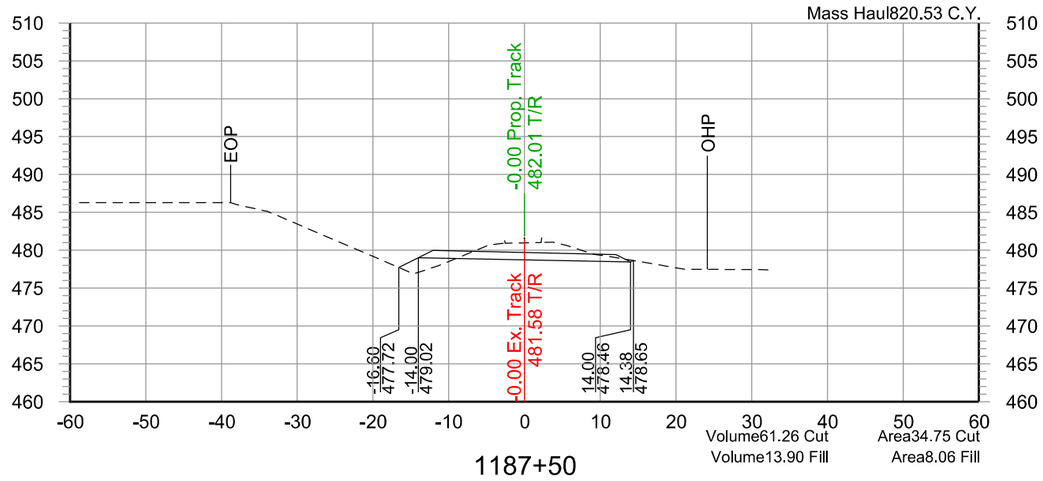
SCALE 1"=20'

NOTES:

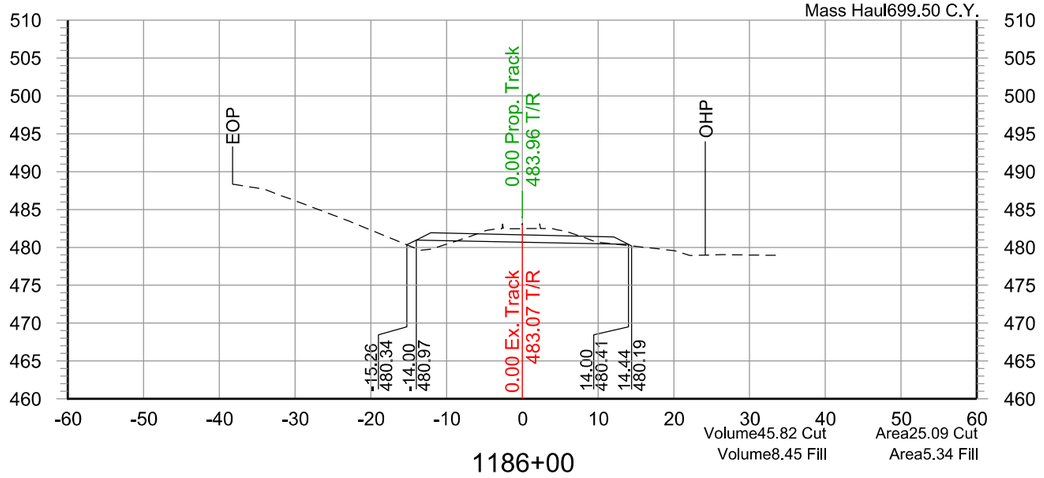
1) ELEVATION AND OFFSETS ARE TO TOP OF SUBGRADE.
2) 0' OFFSET REPRESENTS CENTERLINE OF EXISTING MAINLINE.



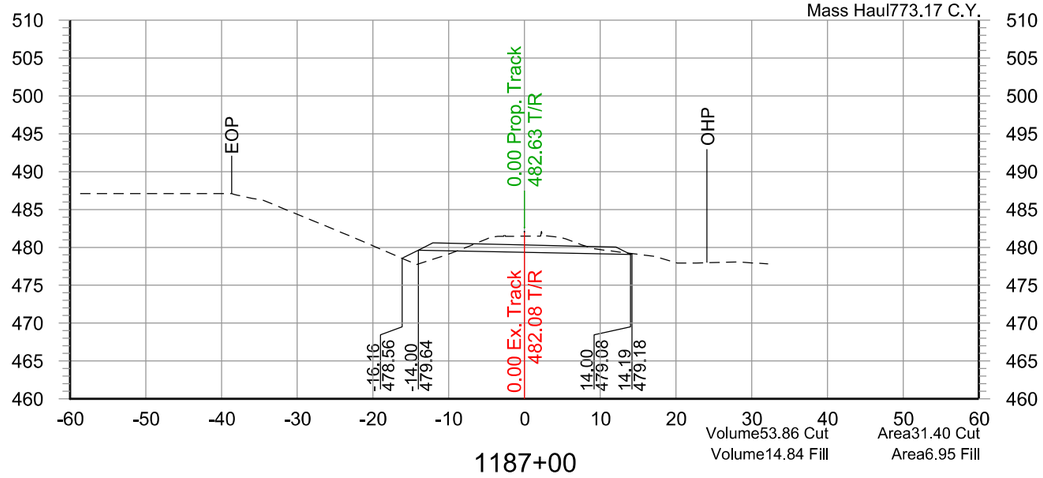
1186+50



1187+50



1186+00



1187+00

REV	DATE	DESCRIPTION	BY / SUB	APP

DESIGNED BY JRW
DRAWN BY JRW
CHECKED BY ZDH
APPROVED BY BWB
DATE 06/17/2022

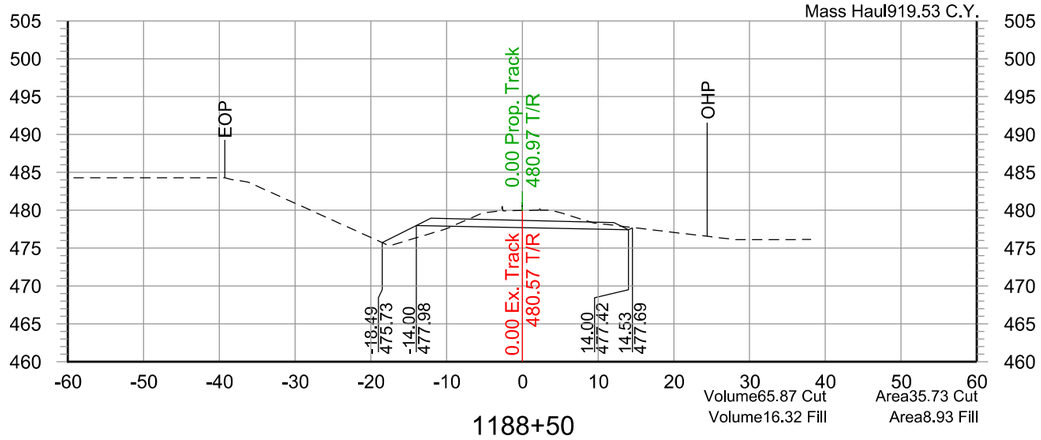
ALASKA RAILROAD

ALASKA RAILROAD
BR. 25.4 & 25.7 RAIL RAISE
CROSS SECTIONS STA.1186+00 TO STA.1187+50

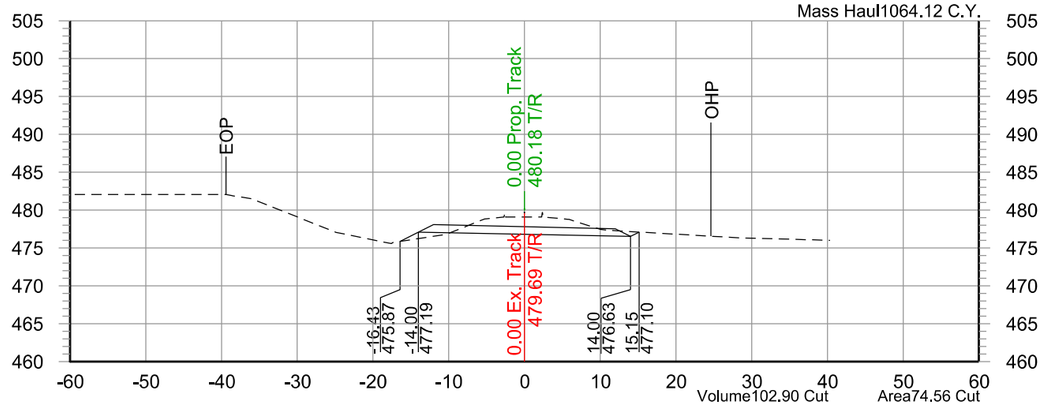
CONTRACT NO.
REVISION
SHEET NO. C15
SCALE 1"=20'

NOTES:

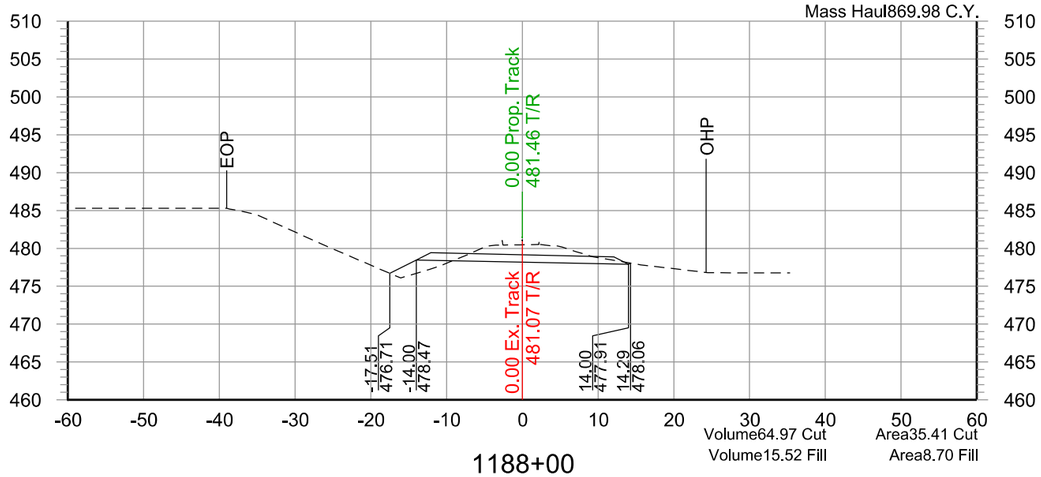
1) ELEVATION AND OFFSETS ARE TO TOP OF SUBGRADE.
2) 0' OFFSET REPRESENTS CENTERLINE OF EXISTING MAINLINE.



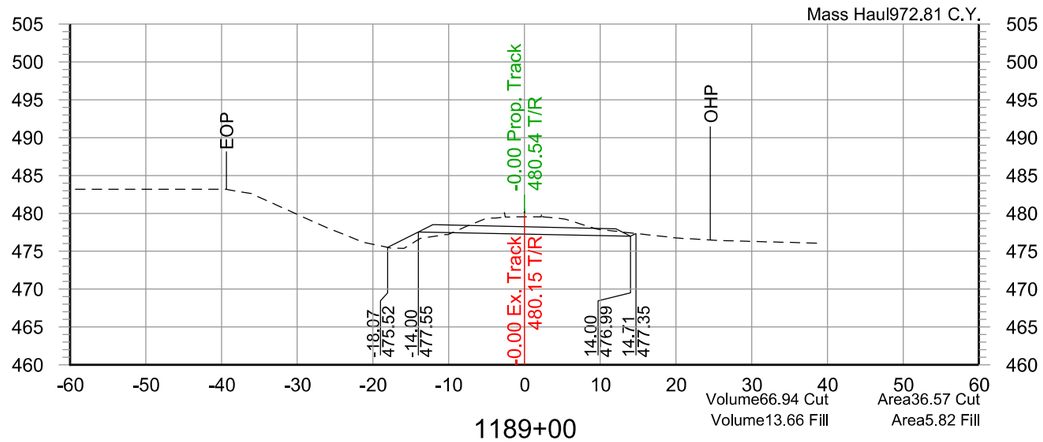
1188+50



1189+50



1188+00



1189+00

REV	DATE	DESCRIPTION	BY	SUB	APP

DESIGNED BY JRW
DRAWN BY JRW
CHECKED BY ZDH
APPROVED BY BWB
DATE 06/17/2022

ALASKA RAILROAD

ALASKA RAILROAD

BR. 25.4 & 25.7 RAIL RAISE

CROSS SECTIONS STA.1188+00 TO STA.1189+50

CONTRACT NO.

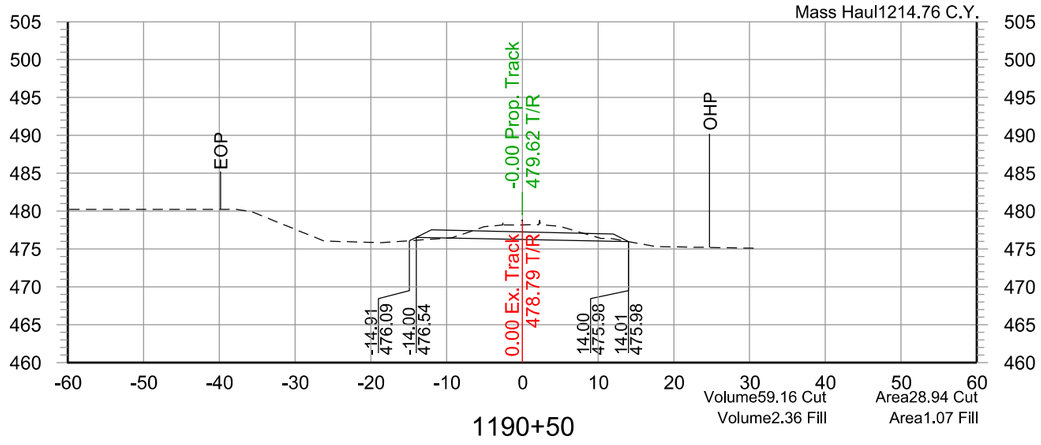
REVISION

SHEET NO. C16

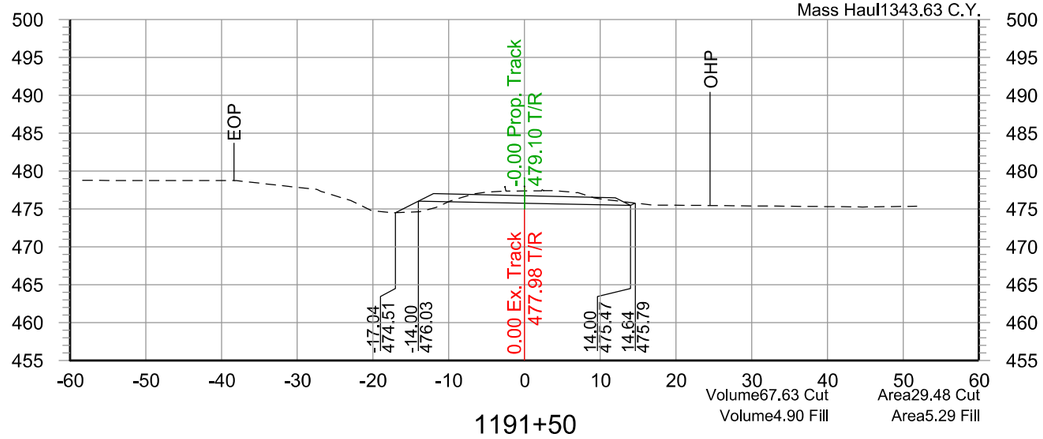
SCALE 1"=20'

NOTES:

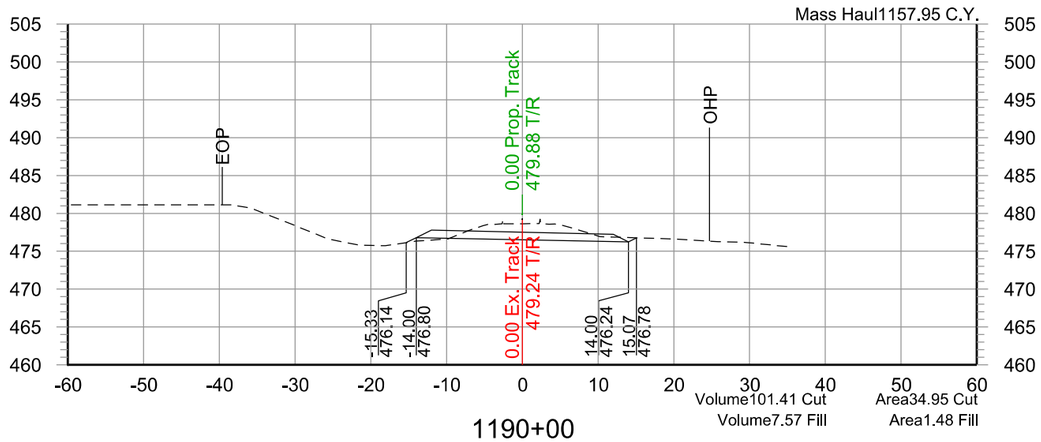
1) ELEVATION AND OFFSETS ARE TO TOP OF SUBGRADE.
2) 0' OFFSET REPRESENTS CENTERLINE OF EXISTING MAINLINE.



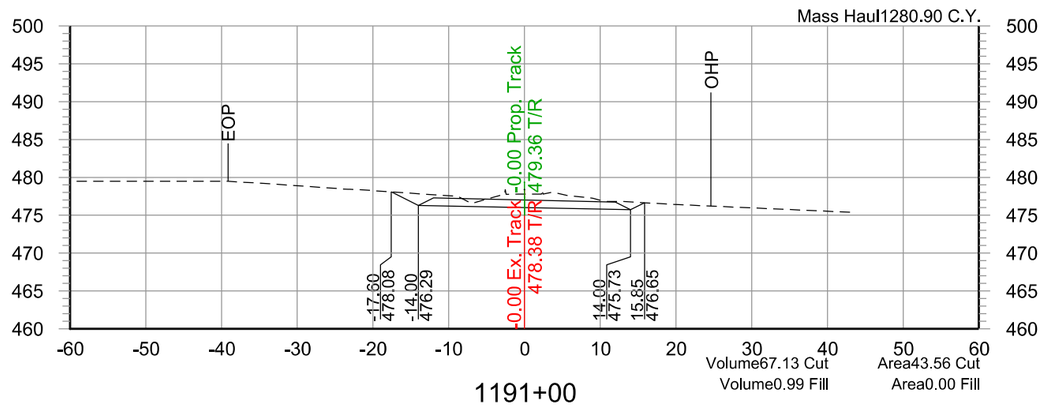
1190+50



1191+50



1190+00



1191+00

REV	DATE	DESCRIPTION	BY / SUB	APP

DESIGNED BY JRW
DRAWN BY JRW
CHECKED BY ZDH
APPROVED BY BWB
DATE 06/17/2022

ALASKA RAILROAD

ALASKA RAILROAD

BR. 25.4 & 25.7 RAIL RAISE

CROSS SECTIONS STA.1190+00 TO STA.1191+50

CONTRACT NO.

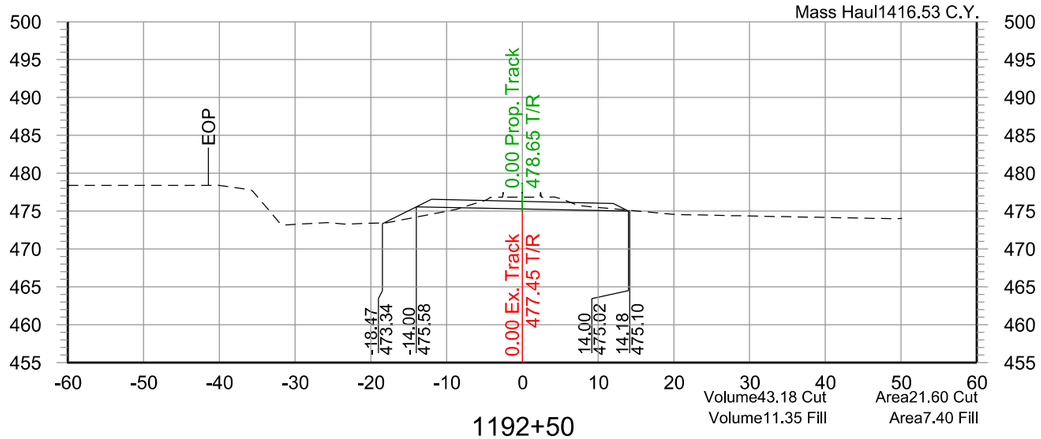
REVISION

SHEET NO. C17

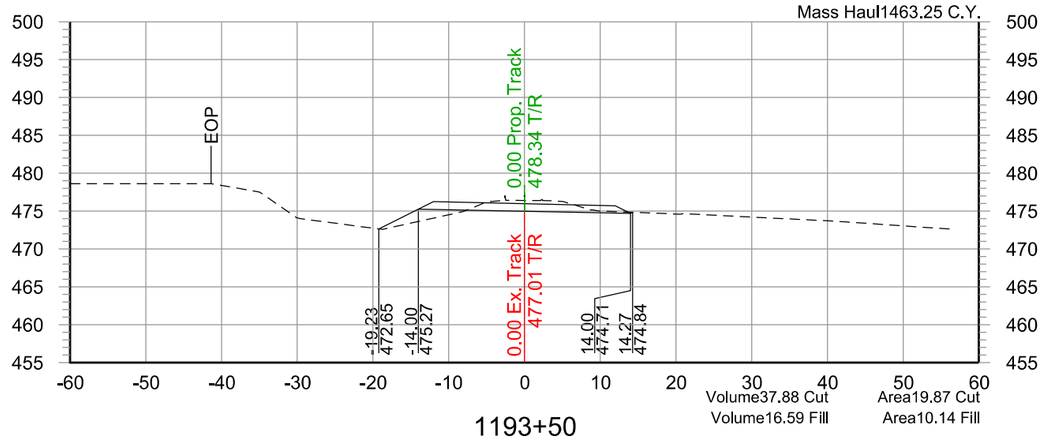
SCALE 1"=20'

NOTES:

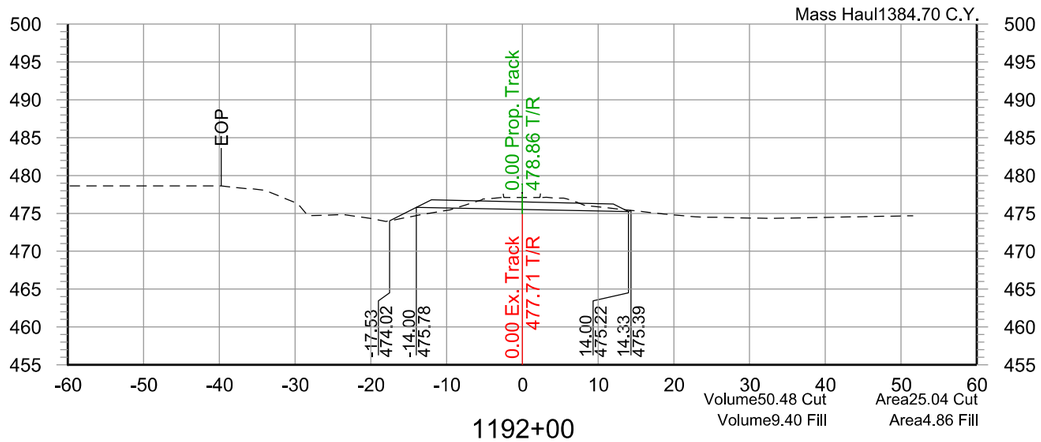
1) ELEVATION AND OFFSETS ARE TO TOP OF SUBGRADE.
2) 0' OFFSET REPRESENTS CENTERLINE OF EXISTING MAINLINE.



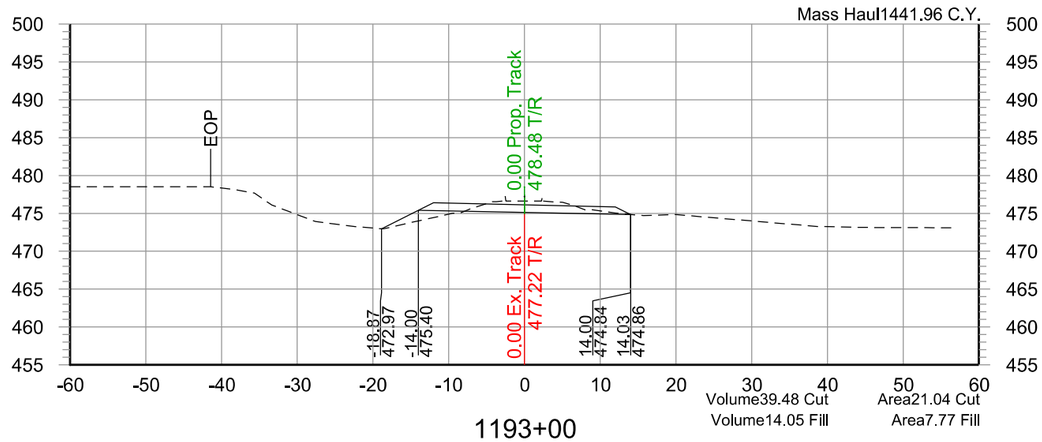
1192+50



1193+50



1192+00



1193+00

REV	DATE	DESCRIPTION	BY	SUB	APP

DESIGNED BY JRW
DRAWN BY JRW
CHECKED BY ZDH
APPROVED BY BWB
DATE 06/17/2022

ALASKA RAILROAD

ALASKA RAILROAD

BR. 25.4 & 25.7 RAIL RAISE

CROSS SECTIONS STA.1192+00 TO STA.1193+50

CONTRACT NO.

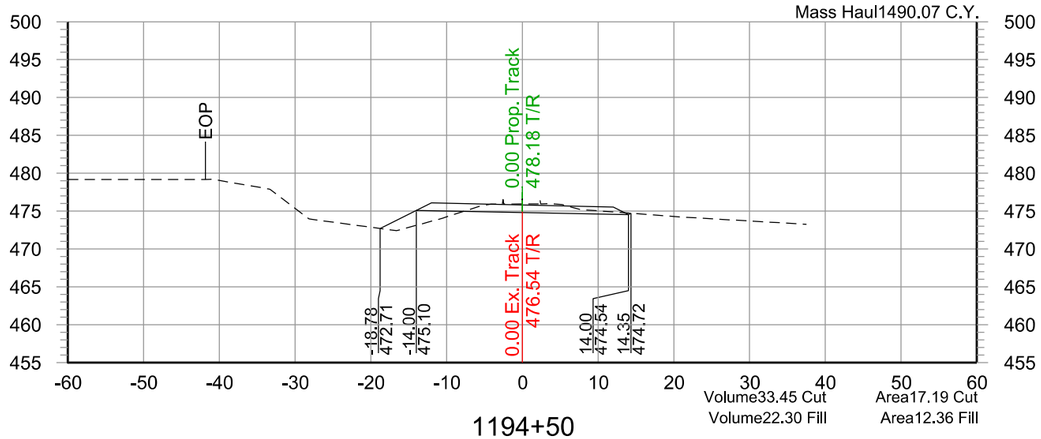
REVISION

SHEET NO. C18

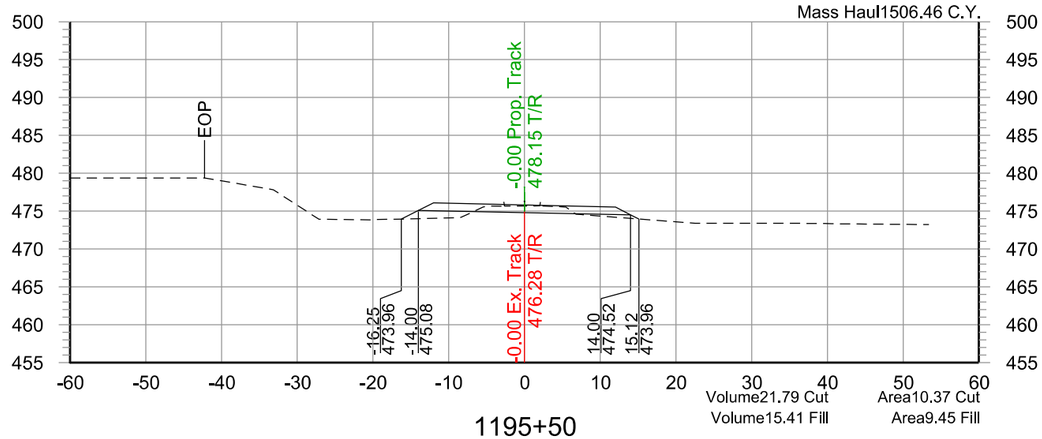
SCALE 1"=20'

NOTES:

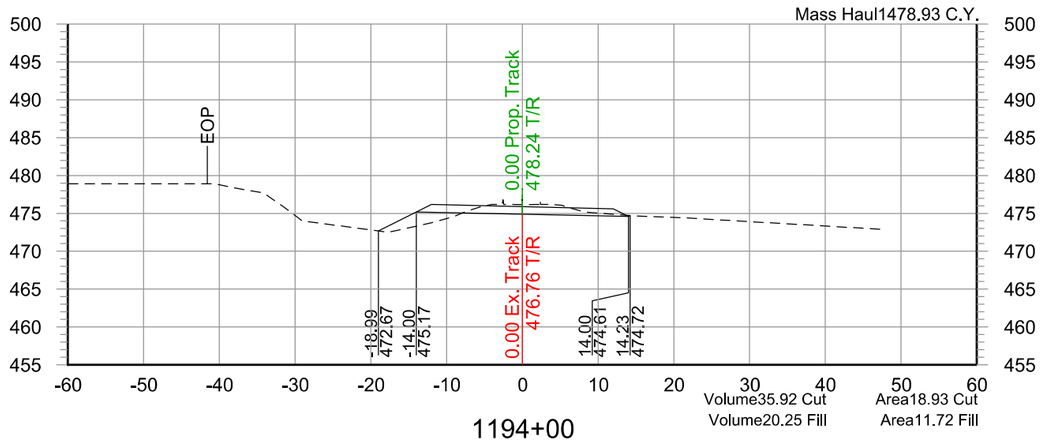
1) ELEVATION AND OFFSETS ARE TO TOP OF SUBGRADE.
2) 0' OFFSET REPRESENTS CENTERLINE OF EXISTING MAINLINE.



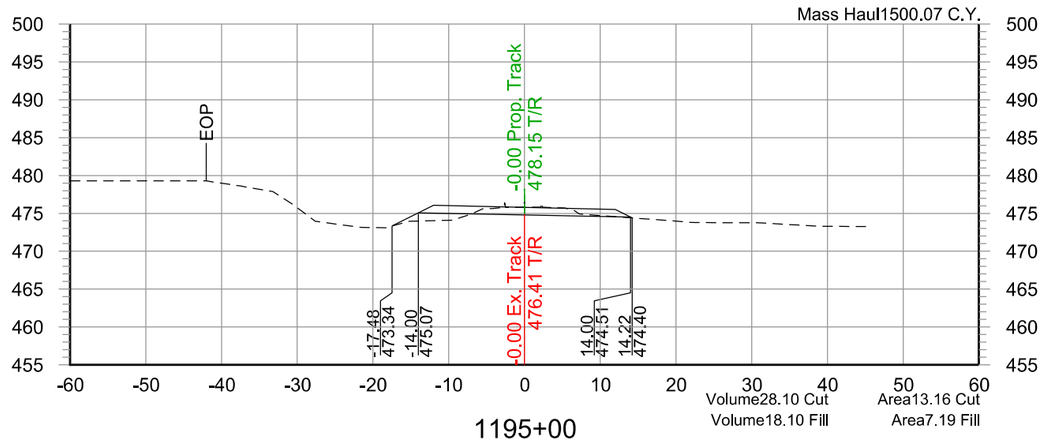
1194+50



1195+50



1194+00



1195+00

REV	DATE	DESCRIPTION	BY	SUB	APP

DESIGNED BY JRW
DRAWN BY JRW
CHECKED BY ZDH
APPROVED BY BWB
DATE 06/17/2022

ALASKA RAILROAD

ALASKA RAILROAD

BR. 25.4 & 25.7 RAIL RAISE

CROSS SECTIONS STA.1194+00 TO STA.1195+50

CONTRACT NO.

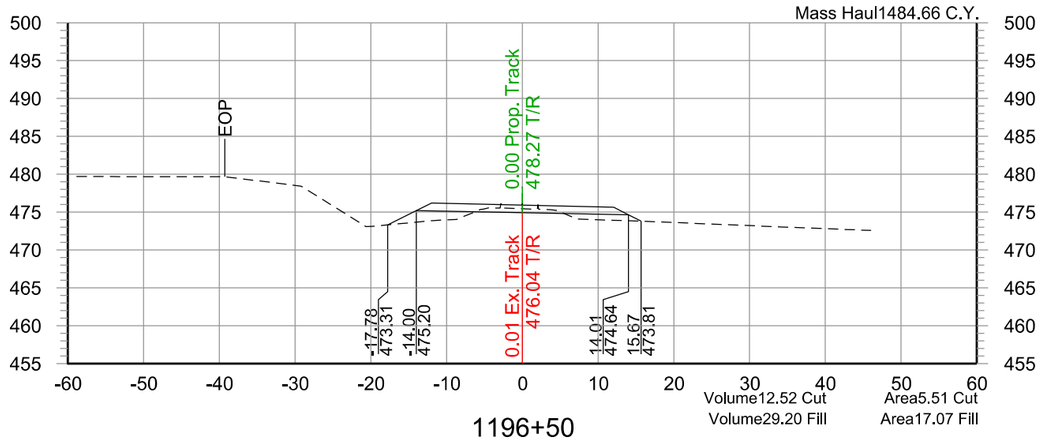
REVISION

SHEET NO. C19

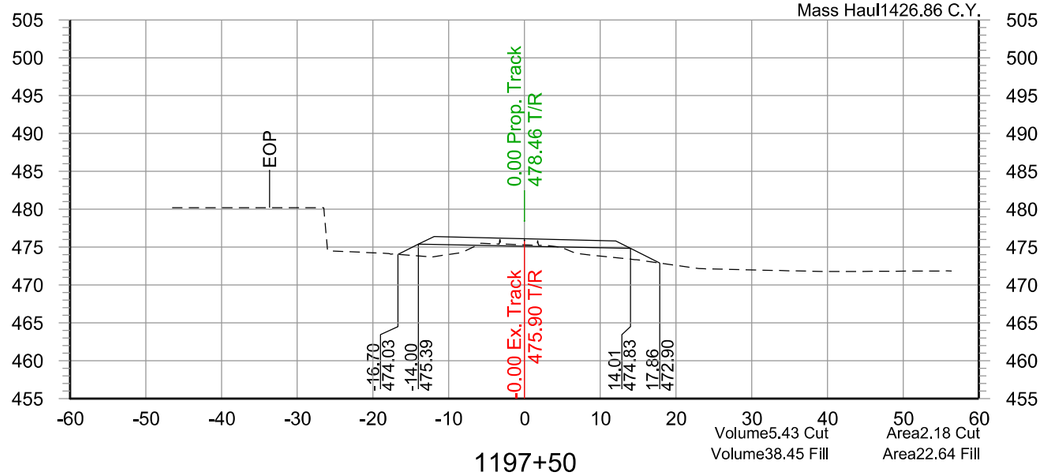
SCALE 1"=20'

NOTES:

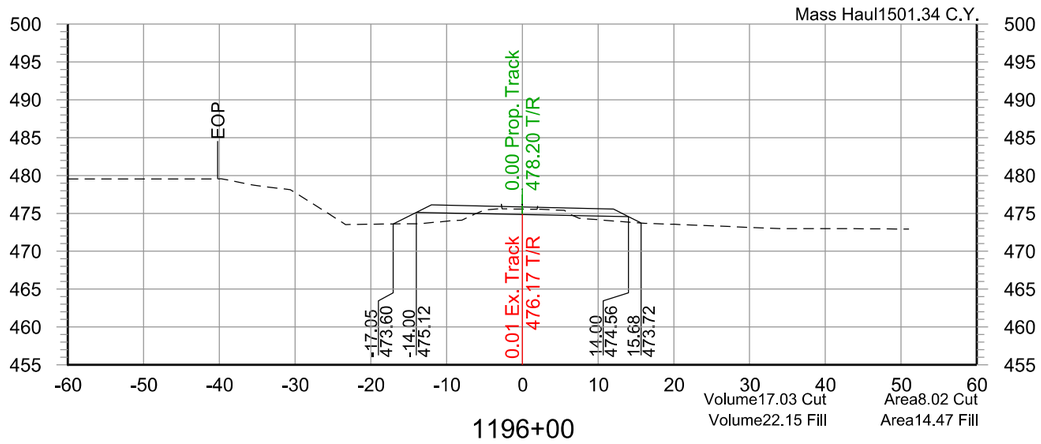
1) ELEVATION AND OFFSETS ARE TO TOP OF SUBGRADE.
2) 0' OFFSET REPRESENTS CENTERLINE OF EXISTING MAINLINE.



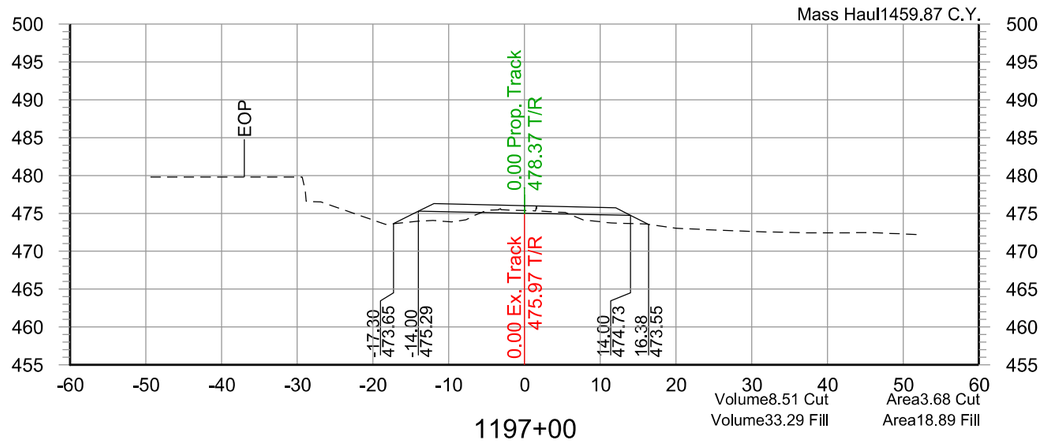
1196+50



1197+50



1196+00



1197+00

REV	DATE	DESCRIPTION	BY	SUB	APP

DESIGNED BY JRW
DRAWN BY JRW
CHECKED BY ZDH
APPROVED BY BWB
DATE 06/17/2022

ALASKA RAILROAD

ALASKA RAILROAD

BR. 25.4 & 25.7 RAIL RAISE

CROSS SECTIONS STA.1196+00 TO STA.1197+50

CONTRACT NO.

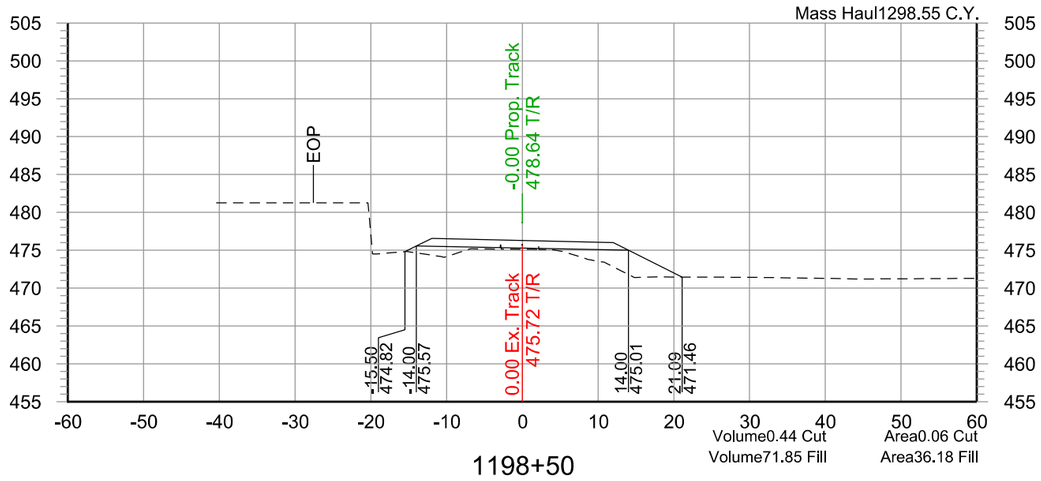
REVISION

SHEET NO. C20

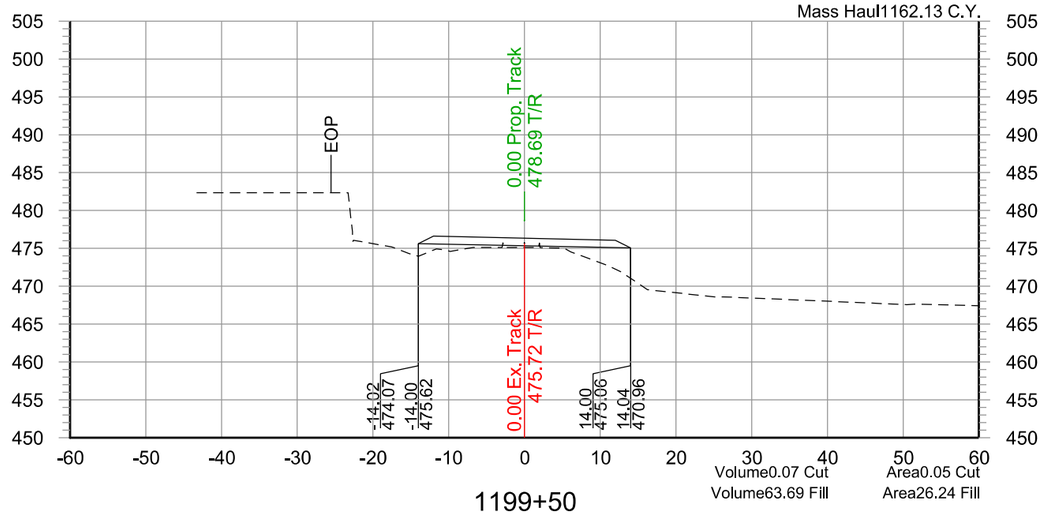
SCALE 1"=20'

NOTES:

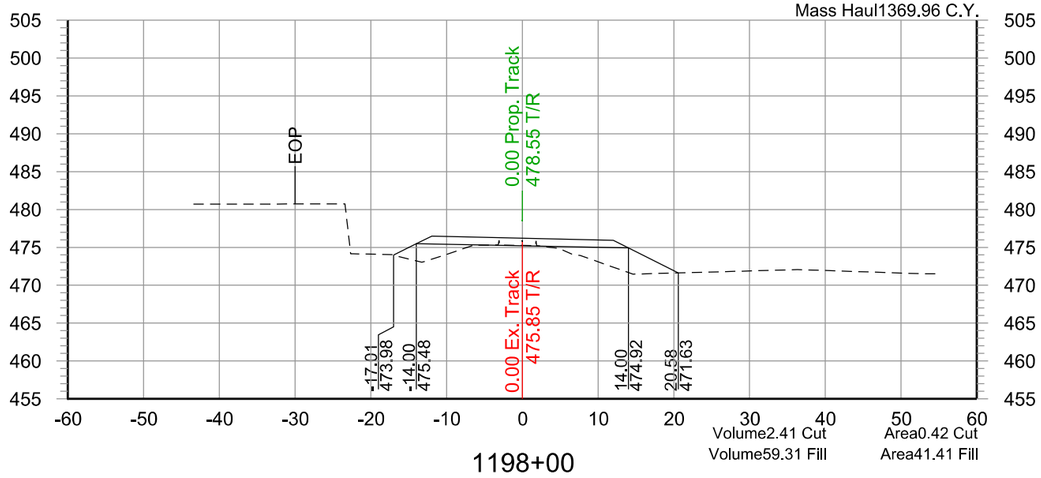
1) ELEVATION AND OFFSETS ARE TO TOP OF SUBGRADE.
2) 0' OFFSET REPRESENTS CENTERLINE OF EXISTING MAINLINE.



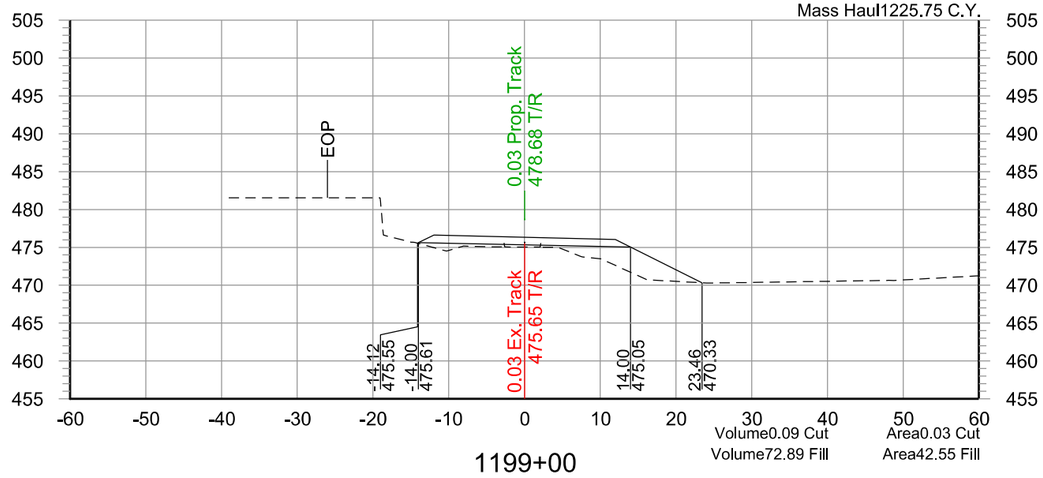
1198+50



1199+50



1198+00



1199+00

REV	DATE	DESCRIPTION	BY / SUB	APP

DESIGNED BY JRW
DRAWN BY JRW
CHECKED BY ZDH
APPROVED BY BWB
DATE 06/17/2022

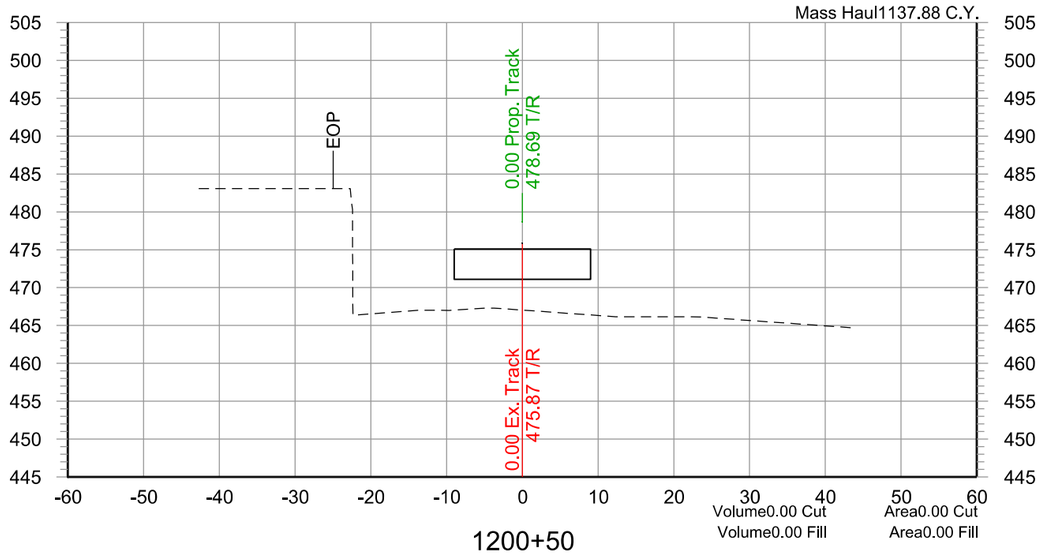
ALASKA RAILROAD

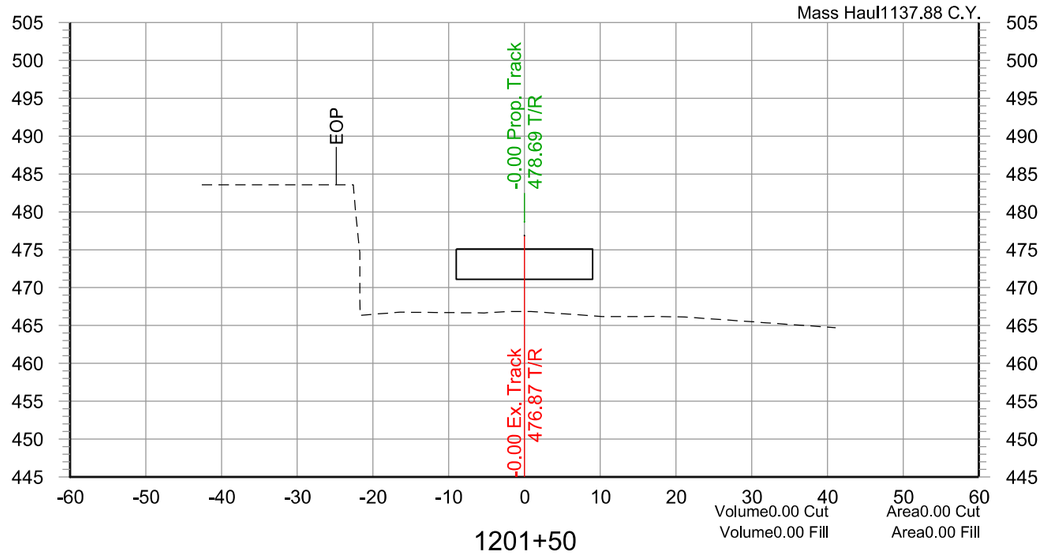
ALASKA RAILROAD
BR. 25.4 & 25.7 RAIL RAISE
CROSS SECTIONS STA.1198+00 TO STA.1199+50

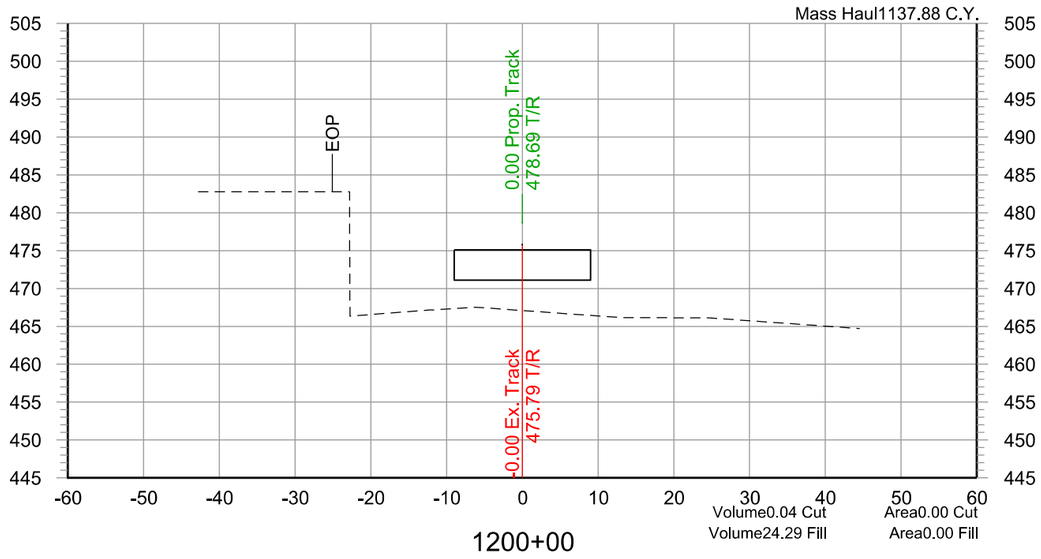
CONTRACT NO.
REVISION
SHEET NO. C21
SCALE 1"=20'

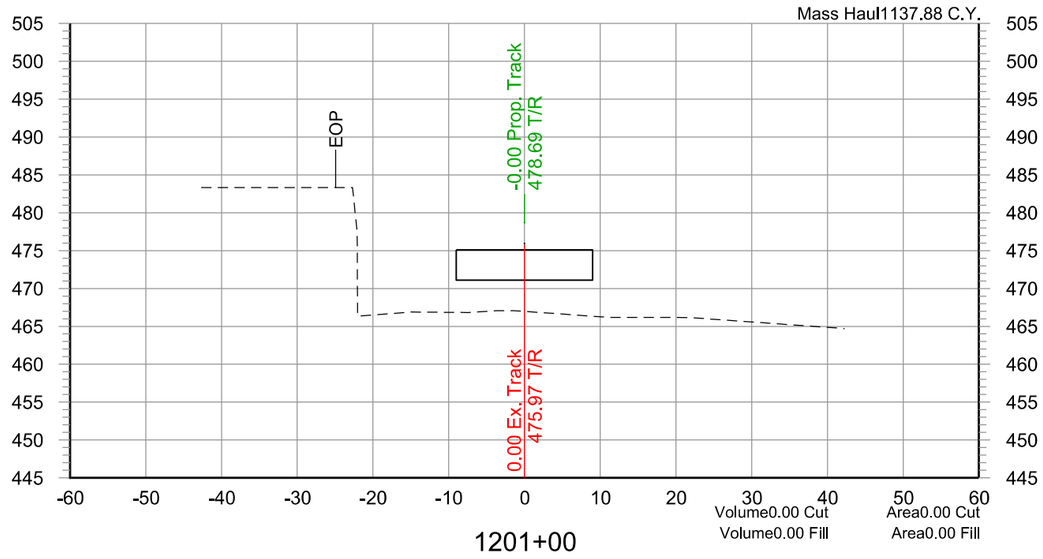
NOTES:

1) ELEVATION AND OFFSETS ARE TO TOP OF SUBGRADE.
2) 0' OFFSET REPRESENTS CENTERLINE OF EXISTING MAINLINE.









REV	DATE	DESCRIPTION	BY / SUB	APP

DESIGNED BY JRW
DRAWN BY JRW
CHECKED BY ZDH
APPROVED BY BWB
DATE 06/17/2022

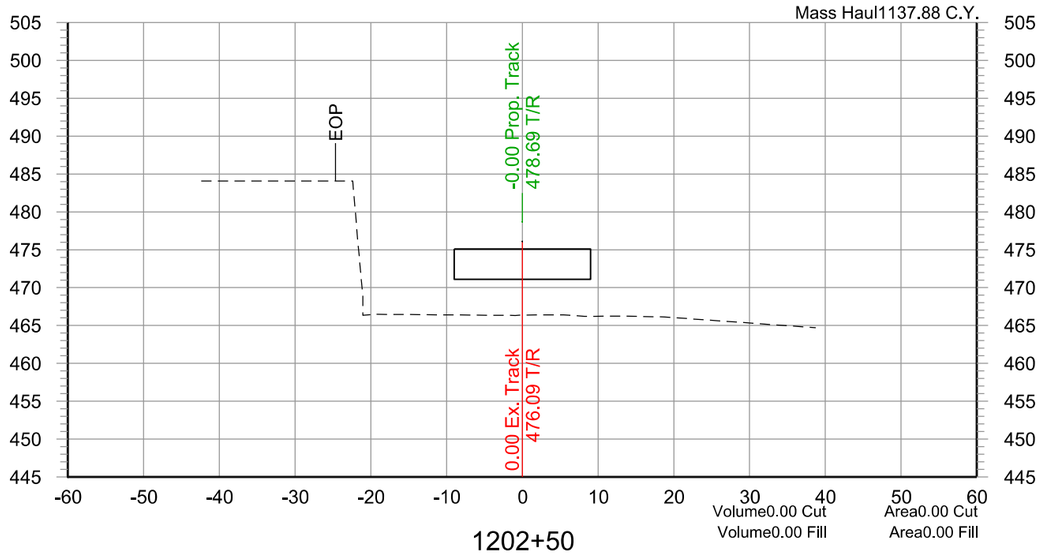
ALASKA RAILROAD

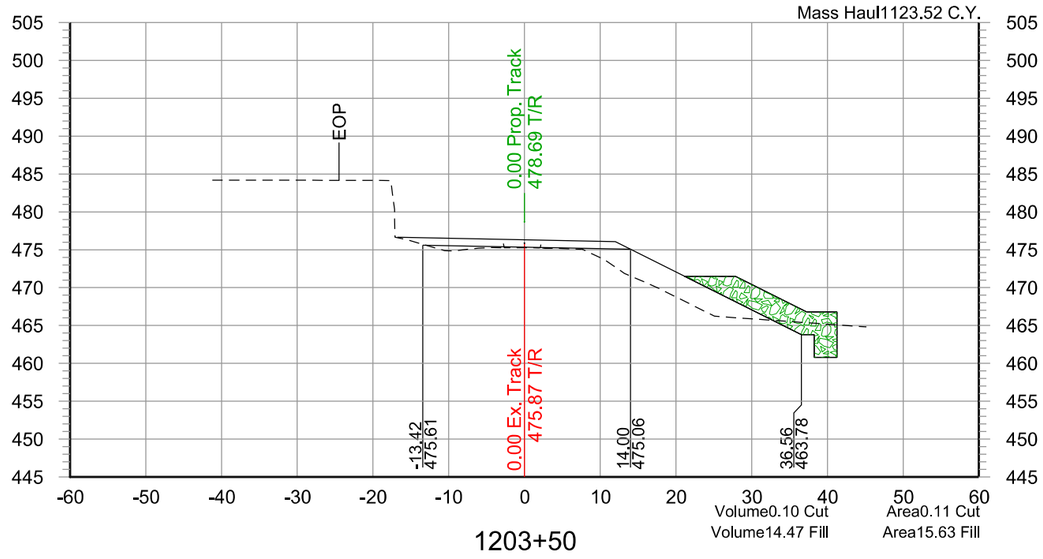
ALASKA RAILROAD
BR. 25.4 & 25.7 RAIL RAISE
CROSS SECTIONS STA.1200+00 TO STA.1201+50

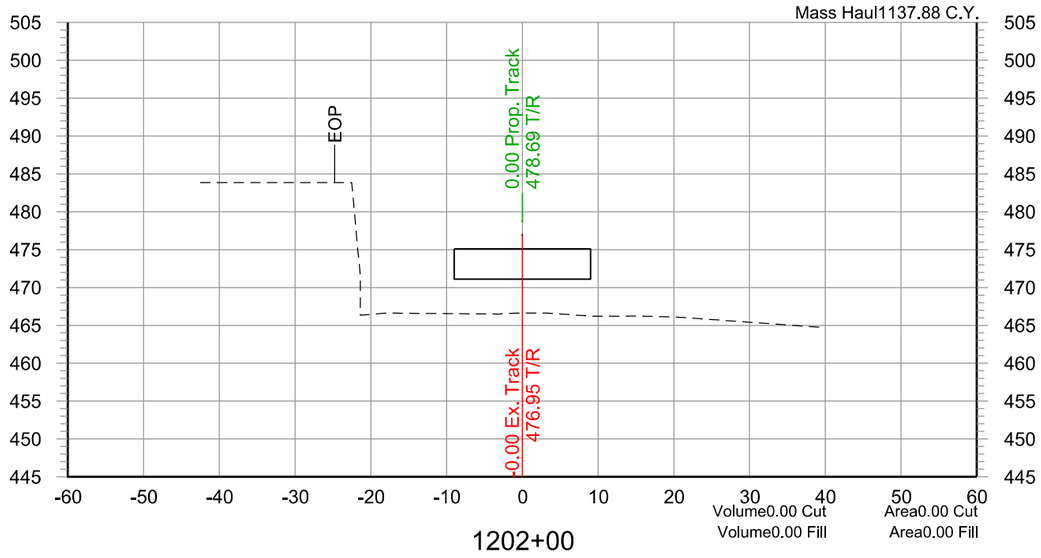
CONTRACT NO.
REVISION
SHEET NO. C22
SCALE 1"=20'

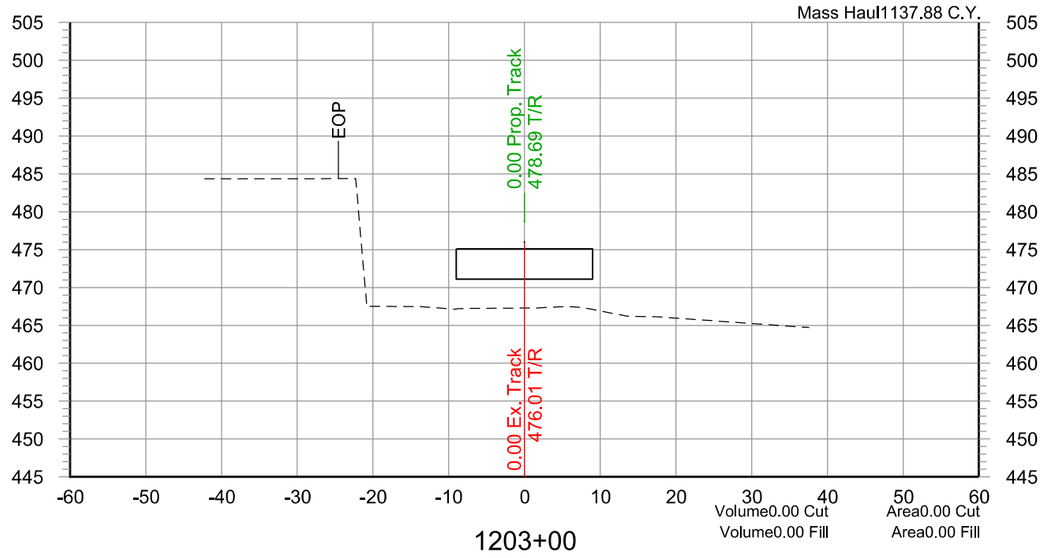
NOTES:

1) ELEVATION AND OFFSETS ARE TO TOP OF SUBGRADE.
2) 0' OFFSET REPRESENTS CENTERLINE OF EXISTING MAINLINE.









REV	DATE	DESCRIPTION	BY / SUB	APP

DESIGNED BY JRW
DRAWN BY JRW
CHECKED BY ZDH
APPROVED BY BWB
DATE 06/17/2022

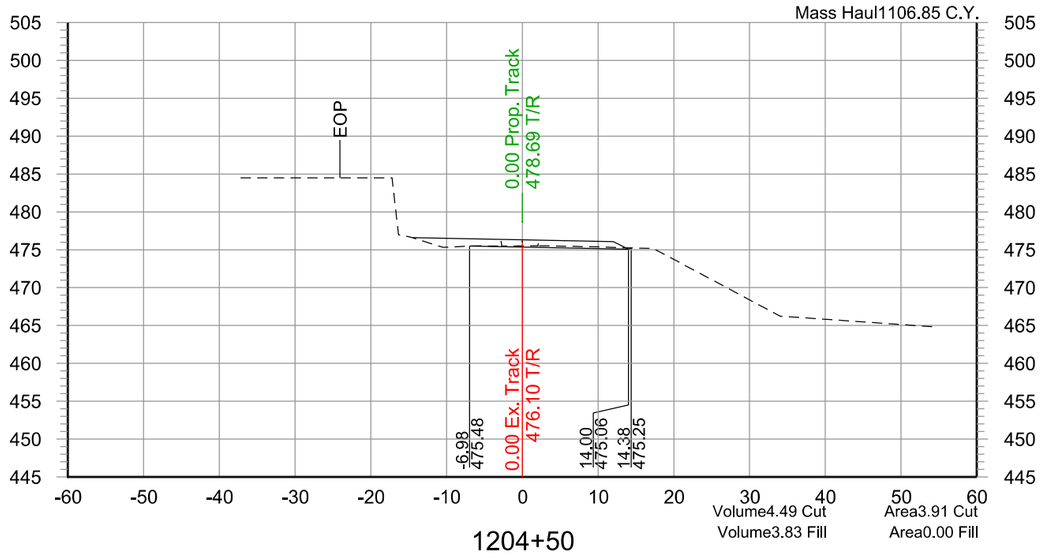
ALASKA RAILROAD

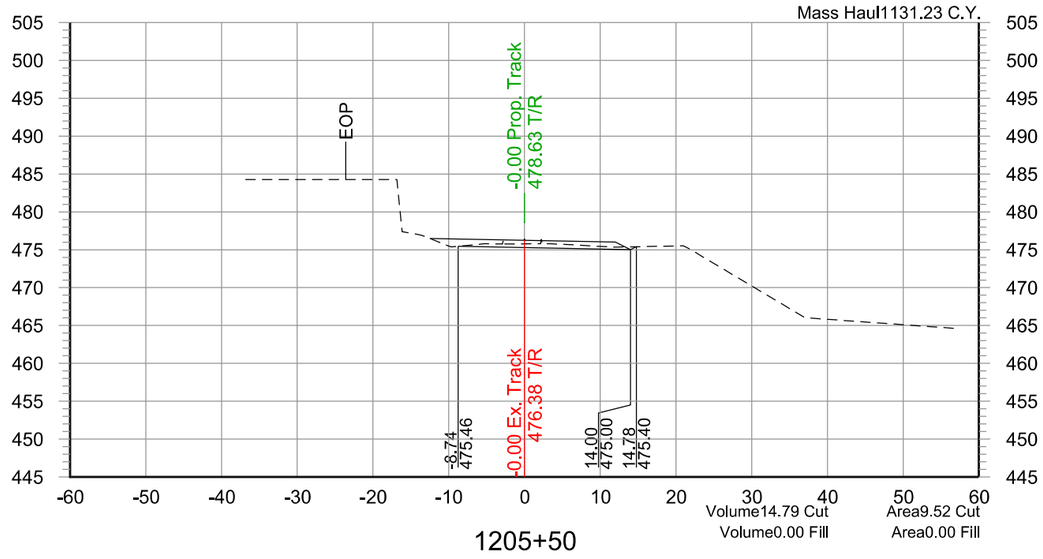
ALASKA RAILROAD
BR. 25.4 & 25.7 RAIL RAISE
CROSS SECTIONS STA.1202+00 TO STA.1203+50

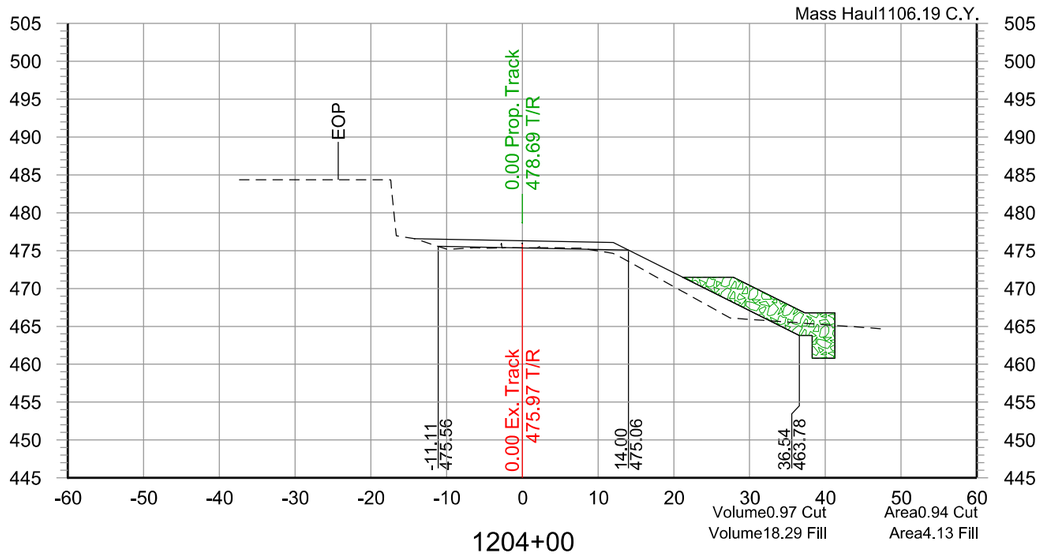
CONTRACT NO.
REVISION
SHEET NO. C23
SCALE

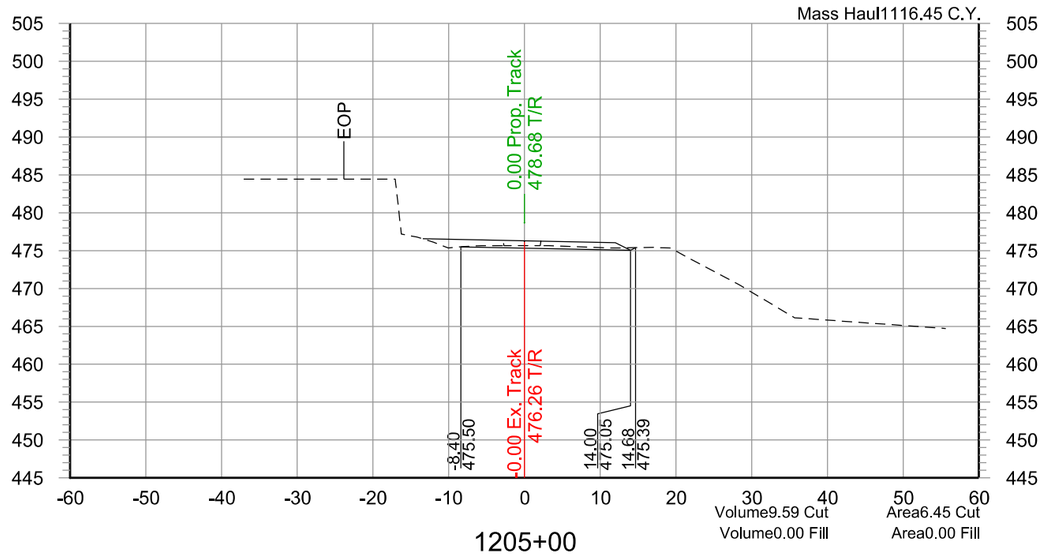
NOTES:

1) ELEVATION AND OFFSETS ARE TO TOP OF SUBGRADE.
2) 0' OFFSET REPRESENTS CENTERLINE OF EXISTING MAINLINE.









REV	DATE	DESCRIPTION	BY / SUB	APP

DESIGNED BY JRW
DRAWN BY JRW
CHECKED BY ZDH
APPROVED BY BWB
DATE 06/17/2022

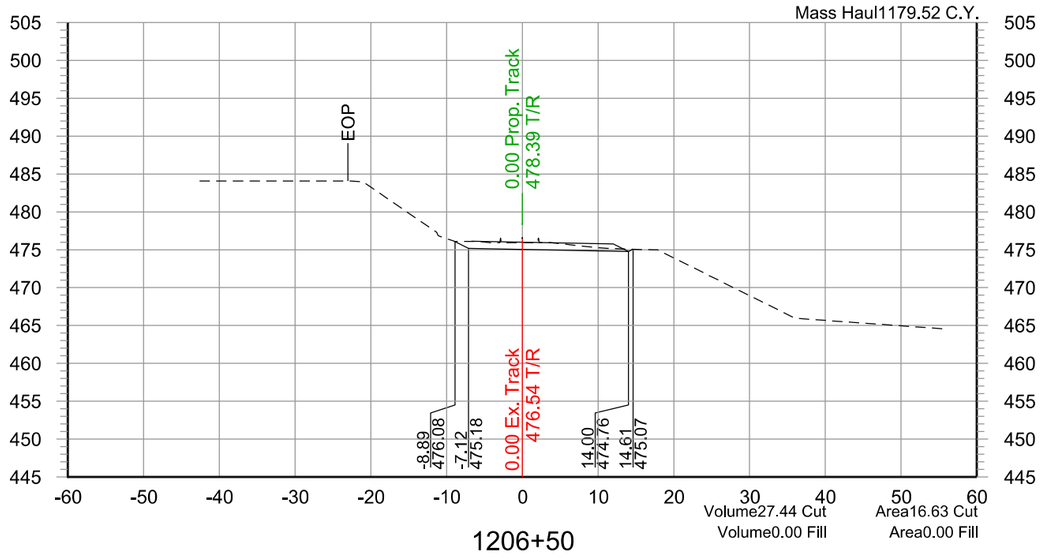
ALASKA RAILROAD

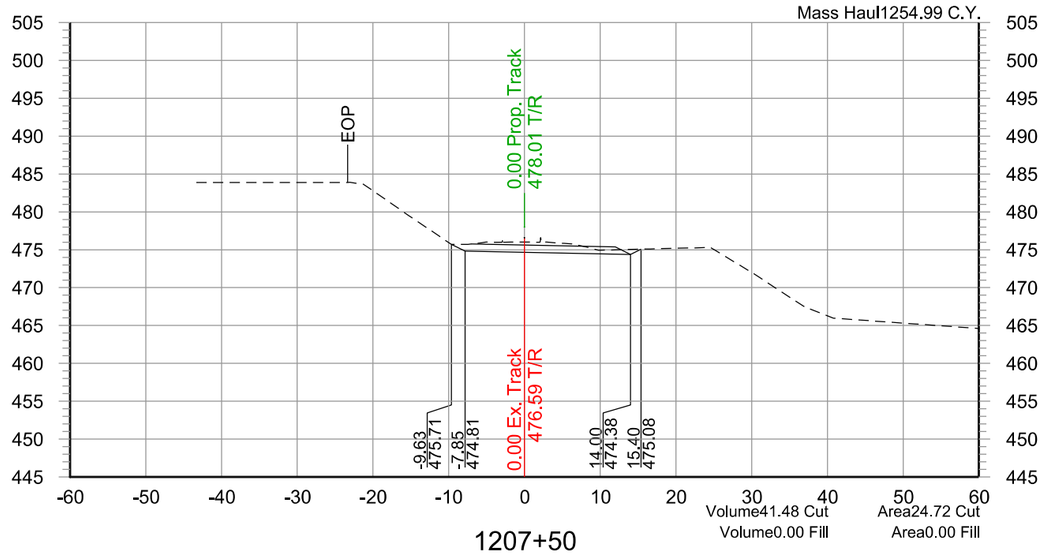
ALASKA RAILROAD
BR. 25.4 & 25.7 RAIL RAISE
CROSS SECTIONS STA.1204+00 TO STA.1205+50

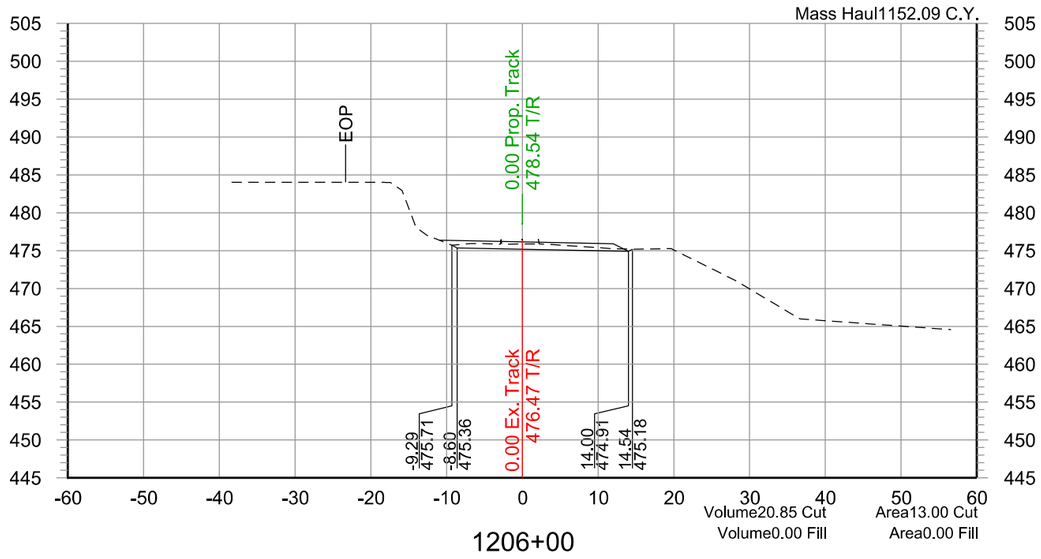
CONTRACT NO.
REVISION
SHEET NO. C24
SCALE

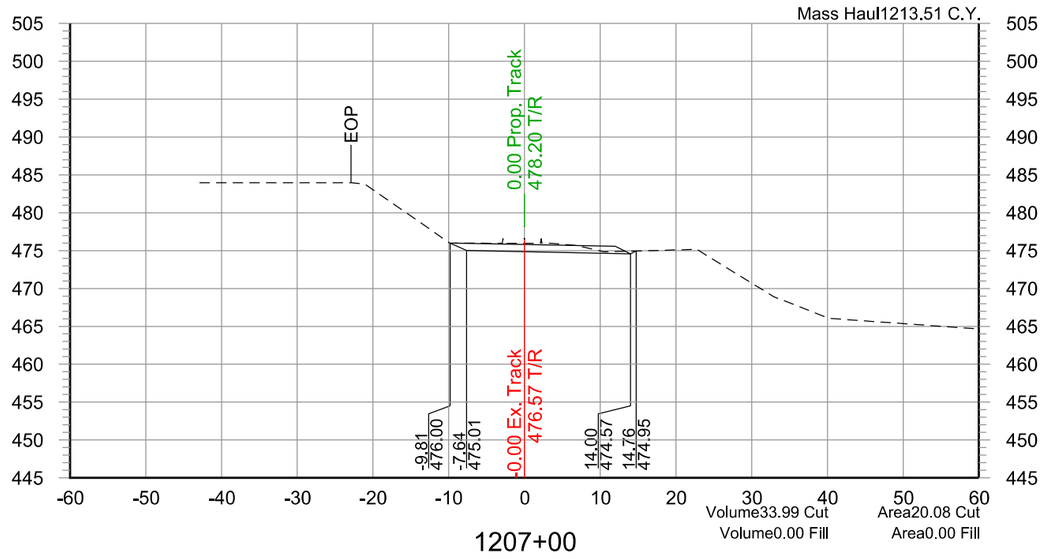
NOTES:

1) ELEVATION AND OFFSETS ARE TO TOP OF SUBGRADE.
2) 0' OFFSET REPRESENTS CENTERLINE OF EXISTING MAINLINE.









REV	DATE	DESCRIPTION	BY / SUB	APP

DESIGNED BY JRW
DRAWN BY JRW
CHECKED BY ZDH
APPROVED BY BWB
DATE 06/17/2022

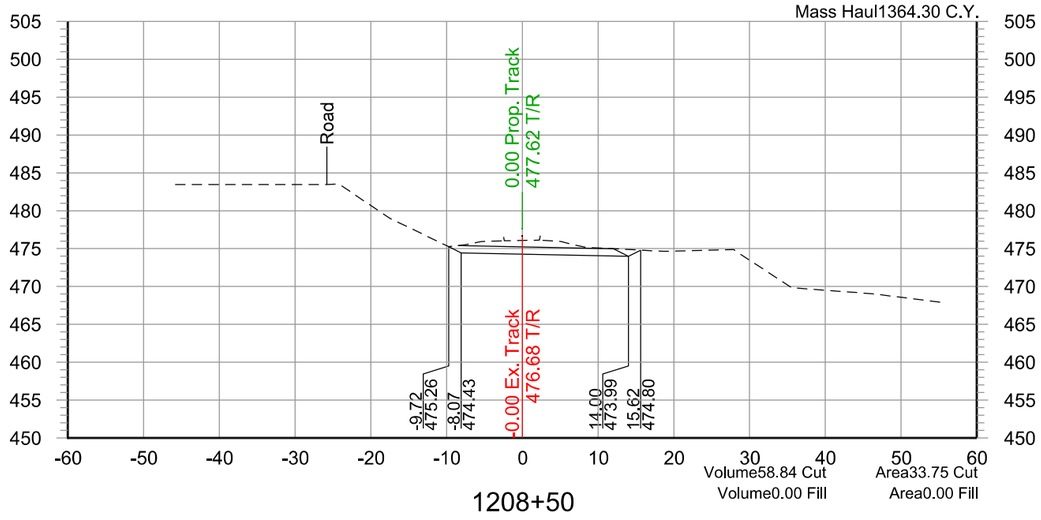
ALASKA RAILROAD

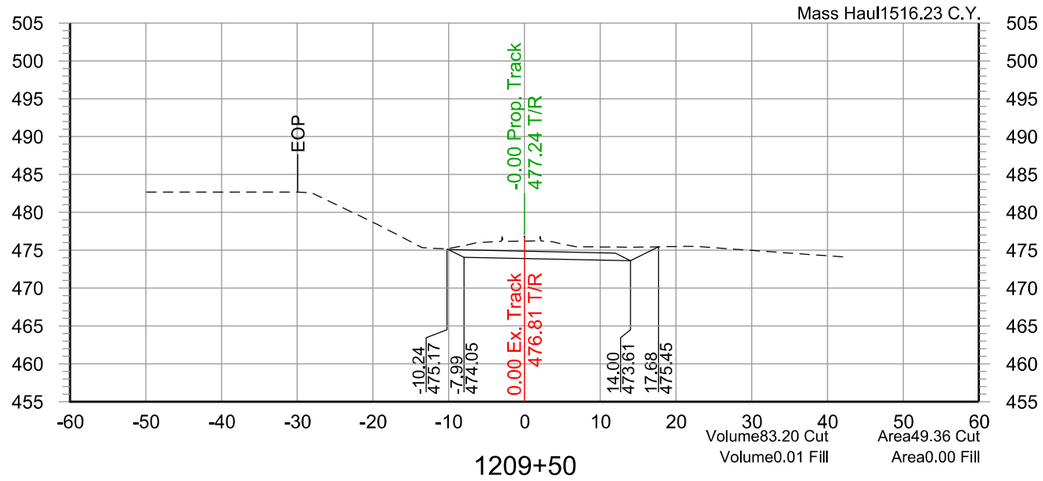
ALASKA RAILROAD
BR. 25.4 & 25.7 RAIL RAISE
CROSS SECTIONS STA.1206+00 TO STA.1207+50

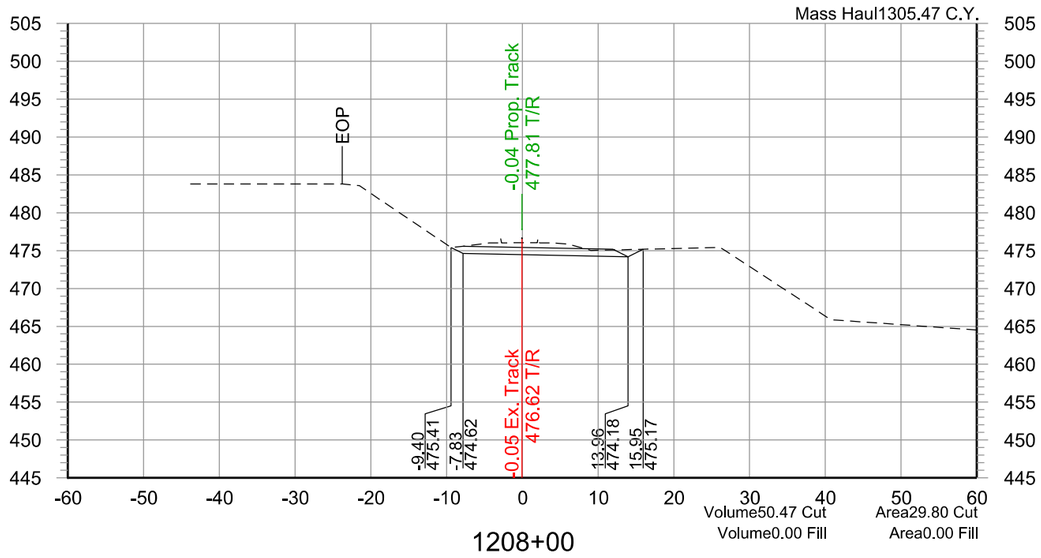
CONTRACT NO.
REVISION
SHEET NO. C25
SCALE

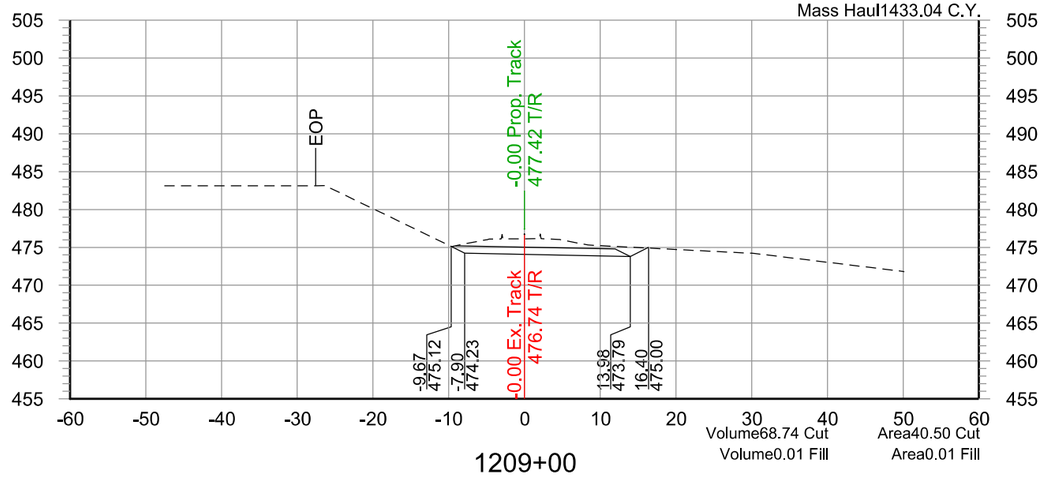
NOTES:

1) ELEVATION AND OFFSETS ARE TO TOP OF SUBGRADE.
2) 0' OFFSET REPRESENTS CENTERLINE OF EXISTING MAINLINE.









REV	DATE	DESCRIPTION	BY / SUB	APP

DESIGNED BY JRW
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CHECKED BY ZDH
APPROVED BY BWB
DATE 06/17/2022

ALASKA RAILROAD

ALASKA RAILROAD

BR. 25.4 & 25.7 RAIL RAISE

CROSS SECTIONS STA.1208+00 TO STA.1209+50

CONTRACT NO.

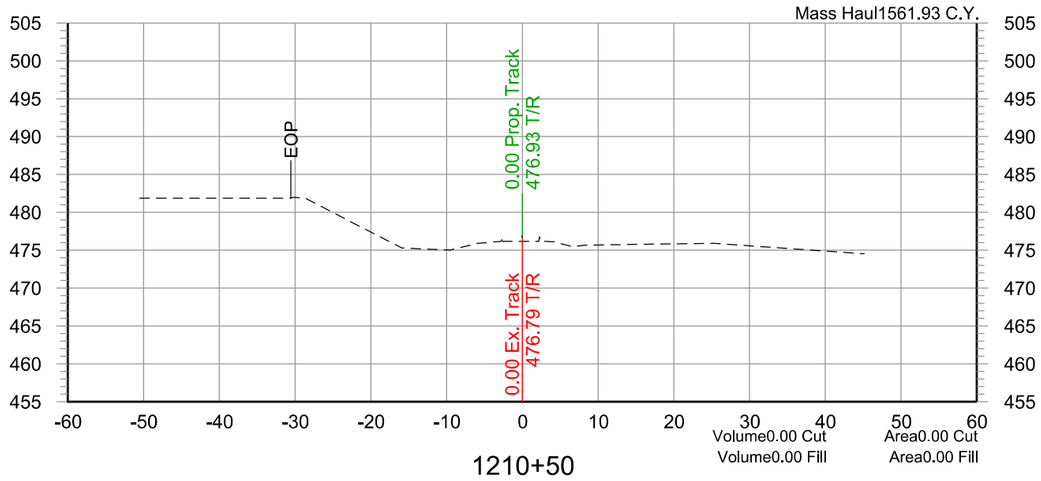
REVISION

SHEET NO. C26

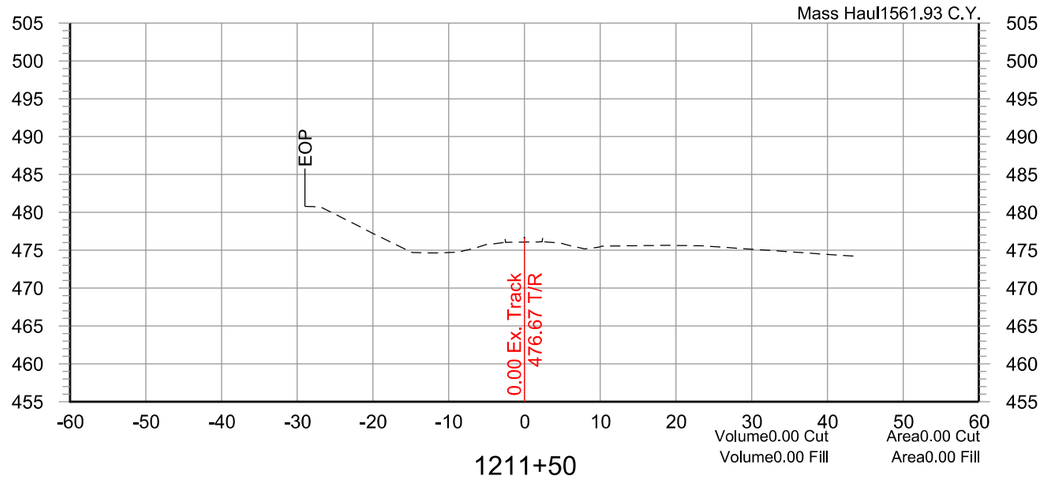
SCALE

NOTES:

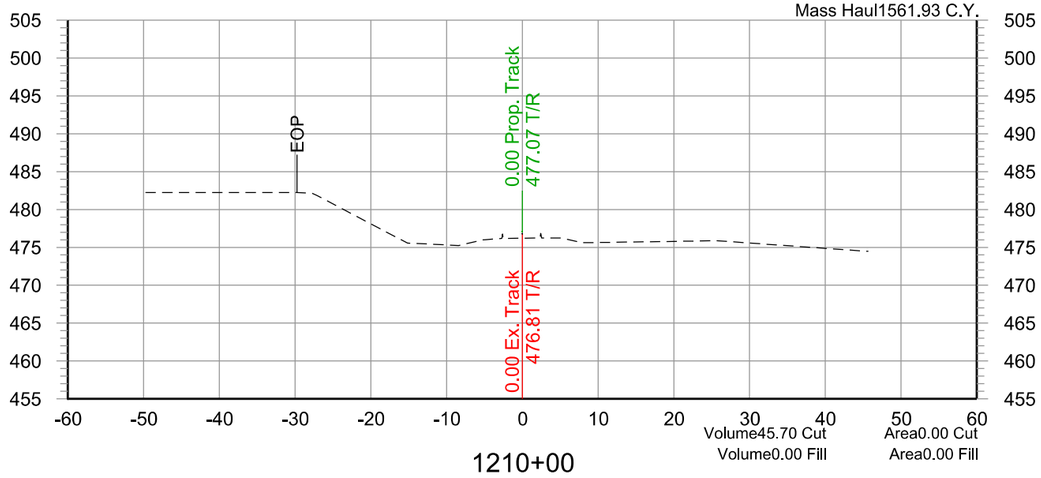
1) ELEVATION AND OFFSETS ARE TO TOP OF SUBGRADE.
2) 0' OFFSET REPRESENTS CENTERLINE OF EXISTING MAINLINE.



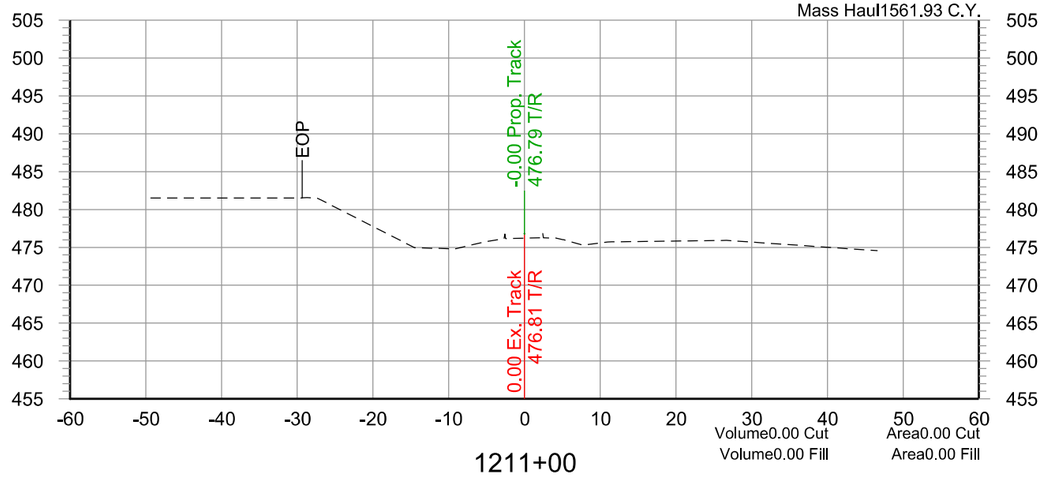
1210+50



1211+50



1210+00



1211+00

REV	DATE	DESCRIPTION	BY / SUB	APP

DESIGNED BY JRW
DRAWN BY JRW
CHECKED BY ZDH
APPROVED BY BWB
DATE 06/17/2022

ALASKA RAILROAD

ALASKA RAILROAD
BR. 25.4 & 25.7 RAIL RAISE
CROSS SECTIONS STA.1210+00 TO STA.1211+50

CONTRACT NO.
REVISION
SHEET NO. C27
SCALE

Station	Cut		Fill		Mass Haul (CY)	Subballast (CY)
	Area (SF)	Volume (CY)	Area (SF)	Volume (CY)		
1176+00.00	0.0	0.0	0.0	0.0	0.0	0
1176+50.00	0.0	0.0	0.0	0.0	0.0	0
1177+00.00	0.0	0.0	0.0	0.0	0.0	0
1177+50.00	0.0	0.0	0.0	0.0	0.0	0
1178+00.00	39.9	36.9	4.3	3.9	33.0	23.18
1178+50.00	35.0	69.3	3.8	7.5	94.8	46.36
1179+00.00	31.5	61.5	3.8	7.0	149.3	46.36
1179+50.00	30.7	57.6	3.3	6.6	200.3	46.36
1180+00.00	30.9	57.0	2.8	5.6	251.6	46.36
1180+50.00	31.5	57.8	1.9	4.3	305.1	46.36
1181+00.00	37.6	64.0	1.0	2.7	366.3	46.36
1181+50.00	0.0	0.0	0.0	0.0	366.3	23.18
1182+00.00	0.0	0.0	0.0	0.0	366.3	0
1182+50.00	0.0	0.0	0.0	0.0	366.3	0
1183+00.00	33.6	31.1	10.6	9.9	421.4	23.18
1183+50.00	41.7	69.7	0.0	9.9	481.3	46.36
1184+00.00	31.3	67.6	0.6	0.5	548.3	46.36
1184+50.00	24.3	51.5	5.5	5.7	594.1	46.36
1185+00.00	23.5	44.2	6.4	11.1	627.3	46.36
1185+50.00	24.4	44.3	3.8	9.4	662.1	46.36
1186+00.00	25.1	45.8	5.3	8.5	699.5	46.36
1186+50.00	26.8	48.0	9.1	13.4	734.2	46.36
1187+00.00	31.4	53.9	7.0	14.8	773.2	46.36
1187+50.00	34.8	61.3	8.1	13.9	820.5	46.36
1188+00.00	35.4	65.0	8.7	15.5	870.0	46.36
1188+50.00	35.7	65.9	8.9	16.3	919.5	46.36
1189+00.00	36.6	66.9	5.8	13.7	972.8	46.36
1189+50.00	74.6	102.9	6.7	11.6	1064.1	47.26
1190+00.00	35.0	101.4	1.5	7.6	1158.0	48.16
1190+50.00	28.9	59.2	1.1	2.4	1214.8	48.16
1191+00.00	43.6	67.1	0.0	1.0	1280.9	48.15
1191+50.00	29.5	67.6	5.3	4.9	1343.6	48.16
1192+00.00	25.0	50.5	4.9	9.4	1384.7	48.17
1192+50.00	21.6	43.2	7.4	11.4	1416.5	48.18
1193+00.00	21.0	39.5	7.8	14.1	1442.0	48.18
1193+50.00	19.9	37.9	10.1	16.6	1463.3	48.18
1194+00.00	18.9	35.9	11.7	20.3	1478.9	48.18
1194+50.00	17.2	33.5	12.4	22.3	1490.1	48.18
1195+00.00	13.2	28.1	7.2	18.1	1500.1	48.19
1195+50.00	10.4	21.8	9.5	15.4	1506.5	48.2
1196+00.00	8.0	17.0	14.5	22.2	1501.3	48.24
1196+50.00	5.5	12.5	17.1	29.2	1484.7	48.26
1197+00.00	3.7	8.5	18.9	33.3	1459.9	48.23
1197+50.00	2.2	5.4	22.6	38.5	1426.9	48.19
1198+00.00	0.4	2.4	41.4	59.3	1370.0	48.16
1198+50.00	0.1	0.4	36.2	71.9	1298.6	48.11
1199+00.00	0.0	0.1	42.6	72.9	1225.8	48.09
1199+50.00	0.1	0.1	26.2	63.7	1162.1	48.13
1200+00.00	0.0	0.0	0.0	24.3	1137.9	24.08
1200+50.00	0.0	0.0	0.0	0.0	1137.9	0
1201+00.00	0.0	0.0	0.0	0.0	1137.9	0
1201+50.00	0.0	0.0	0.0	0.0	1137.9	0
1202+00.00	0.0	0.0	0.0	0.0	1137.9	0
1202+50.00	0.0	0.0	0.0	0.0	1137.9	0
1203+00.00	0.0	0.0	0.0	0.0	1137.9	0
1203+50.00	0.1	0.1	15.6	14.5	1123.5	25.05
1204+00.00	0.9	1.0	4.1	18.3	1106.2	47.75
1204+50.00	3.9	4.5	0.0	3.8	1106.9	43.39
1205+00.00	6.5	9.6	0.0	0.0	1116.5	39.71
1205+50.00	9.5	14.8	0.0	0.0	1131.2	38.94
1206+00.00	13.0	20.9	0.0	0.0	1152.1	39.63
1206+50.00	16.6	27.4	0.0	0.0	1179.5	37.23
1207+00.00	20.1	34.0	0.0	0.0	1213.5	36.78
1207+50.00	24.7	41.5	0.0	0.0	1255.0	37.08
1208+00.00	29.8	50.5	0.0	0.0	1305.5	36.3
1208+50.00	33.8	58.8	0.0	0.0	1364.3	37.57
1209+00.00	40.5	68.7	0.0	0.0	1433.0	38.4
1209+50.00	49.4	83.2	0.0	0.0	1516.2	39.16
1210+00.00	0.0	45.7	0.0	0.0	1561.9	0
1210+50.00	0.0	0.0	0.0	0.0	1561.9	0
1211+00.00	0.0	0.0	0.0	0.0	1561.9	0
1211+50.00	0.0	0.0	0.0	0.0	1561.9	0
Total		**2349.5**		**787.6**		**2435.94**

NOTE:
1) VOLUMES AND AREAS SHOWN IN EARTHWORK TABLE ARE FOR SUBGRADE VS TOP OF EXISTING SURFACE.
2) VOLUMES AND AREAS SHOWN IN EARTHWORK TABLE ARE TAKEN TO THE NEAT LINE OF THE CROSS SECTIONS.

GRAND TOTALS:

CUT: 2,352.5 CY

FILL: 961.6 CY

SUBBALLAST (ABC C-1): 2,436 CY

AGGREGATE BASE COURSE ABC D-1 (CROWN POINT MINE RD): 87 CY

CLEARING & GRUBBING: 2.1 AC

SEEDING: 0.2 AC

AKDOT&PF CLASS 3 RIPRAP: 230 CY

NOTE: CUT AND FILL QUANTITIES INCLUDE CROWN POINT MINE RD WORK.

REV	DATE	DESCRIPTION	BY / SUB	APP

DESIGNED BY JRW
DRAWN BY JRW
CHECKED BY ZDH
APPROVED BY BWB
DATE 06/17/2022

ALASKA RAILROAD

ALASKA RAILROAD

BR. 25.4 & 25.7 RAIL RAISE

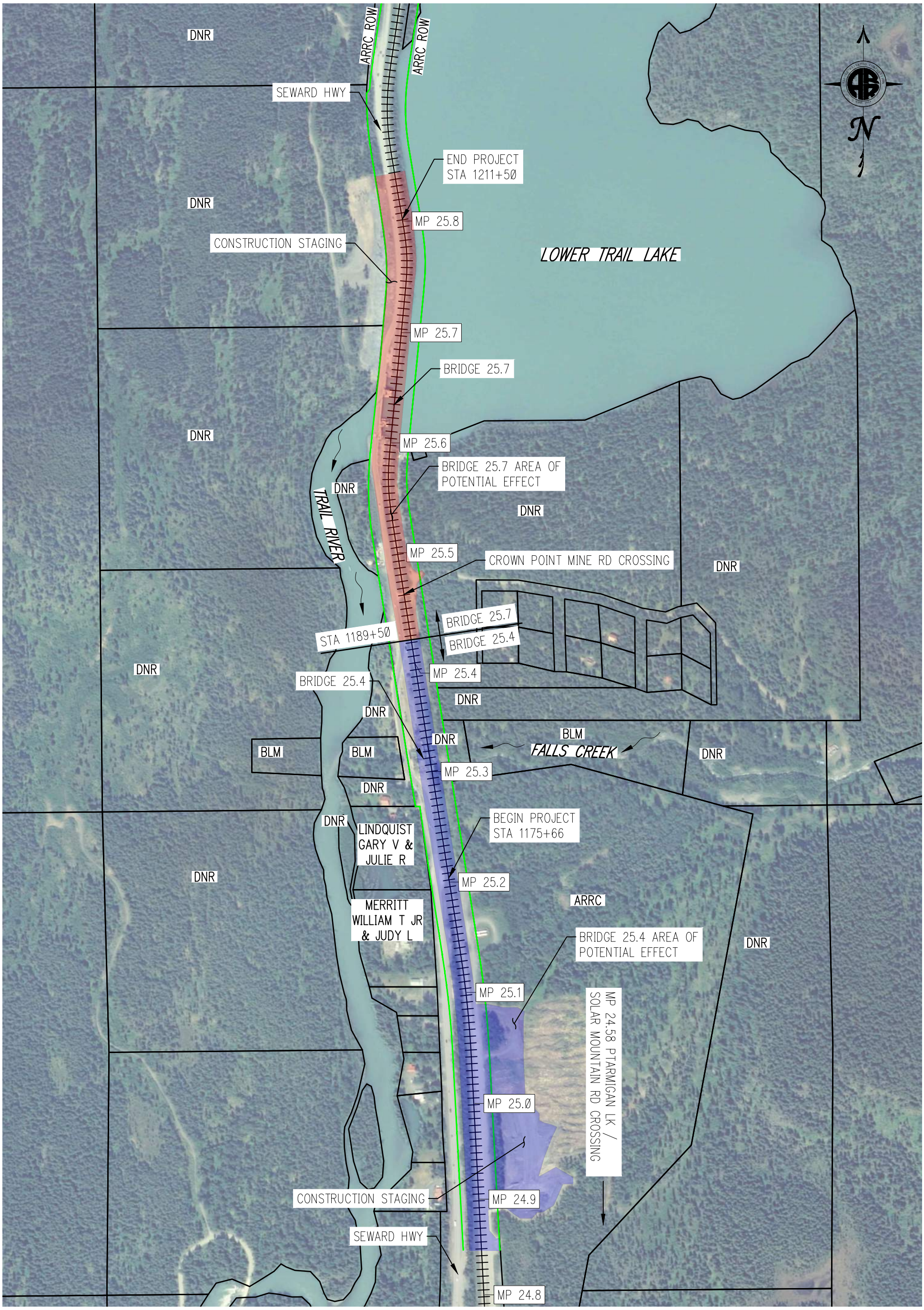
EARTHWORK TABLE

CONTRACT NO.

REVISION

SHEET NO. C28

SCALE

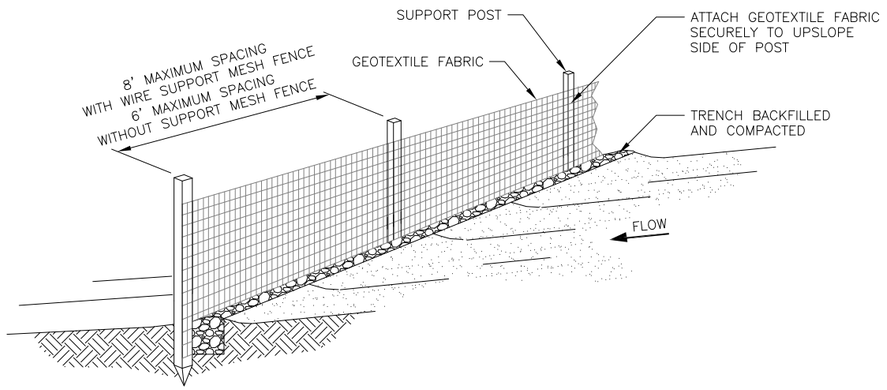


ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

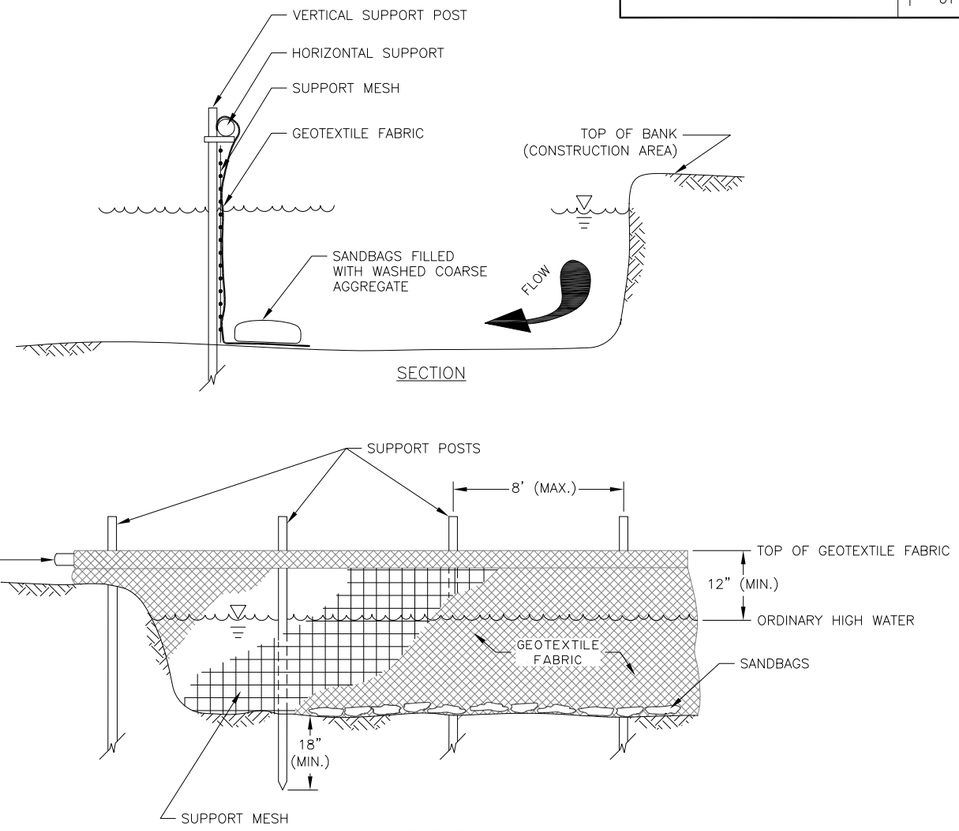
PROJECT :
ARRC: MP 25.4 and 25.7
Bridge Replacement

TITLE:
Area of Potential Effect
Contractor Work / Staging Area

DESIGNED BY:	BAO	SCALE :	AS NOTED	AFE NO.:	
DRAWN BY:	BAO			ACAD FILE:	
CHECKED BY:	GKT	DATE :	3/24/2022	DWG NO.	C29
APPROVED BY:	BJA				



GENERAL INSTALLATION
NOT TO SCALE



STANDING WATER INSTALLATION
NOT TO SCALE

SILT FENCE GENERAL NOTES:

MATERIALS

SILT FENCE: SEE SPECIFICATION SECTION 633, SILT FENCE.

INSTALLATION

1. INSTALL FENCELINE ALONG A LEVEL CONTOUR AND PERPENDICULAR TO ANTICIPATED SHEET FLOW DRAINAGE PATH(S).
2. ORIENT END SECTIONS UPHILL SLIGHTLY IN A J-HOOK TO PREVENT WATER FROM GOING AROUND THE SILT FENCE.
3. DO NOT EXCEED 100 FEET FOR EACH 1/4-ACRE OF DRAINAGE AREA AND DO NOT EXCEED 500 FEET REGARDLESS OF DRAINAGE AREA.
4. THE DIFFERENCE IN ELEVATION BETWEEN THE HIGHEST AND LOWEST POINT ALONG THE TOP OF THE SEDIMENT FENCE SHALL NOT EXCEED ONE-THIRD THE FENCE HEIGHT.
5. WHERE GROUND SURFACES ARE UNEVEN, INSTALL SHORTER FENCES FOLLOWING CONTOURS (RATHER THAN INSTALLING ONE LONG, CONTOUR-CROSSING FENCE THAT DIRECTS DRAINAGE TO ACCUMULATE IN LOW SPOTS).
6. LOCATE FENCE 3 TO 10 FEET BEYOND TOE OF FILL TO LEAVE ROOM FOR A BROAD, SHALLOW SEDIMENTATION POOL AND FOR EQUIPMENT ACCESS DURING FENCE MAINTENANCE AND REMOVAL.
7. IF FEASIBLE, LEAVE A MINIMUM OF 3.5-FOOT BUFFER BETWEEN FENCING AND SENSITIVE RECEIVING AREAS.
8. PLACE GEOTEXTILE ON THE UPSLOPE SIDE OF POSTS OR, WHEN USING SILT FENCE WITH SEWN-IN POCKETS, PLACE POCKETS ON THE UPSLOPE SIDE OF THE FENCE.
9. EXCAVATE TRENCHES NOT WIDER OR DEEPER THAN NECESSARY FOR PROPER INSTALLATION OF THE SILT FENCE. DO NOT EXCAVATE TRENCHES IN PERMAFROST.
10. AT JOINTS, ROLL ENOUGH OF THE ENDS OF SECTIONS TOGETHER AT SUPPORT POST SUCH THAT THE JOINT PREVENTS SILT-LADEN WATER FROM ESCAPING THROUGH THE FENCE.
11. IF USING THE FRONT WHEEL OF A TRACTOR OR ROLLER, COMPACT THE UPSTREAM SIDE FIRST, THEN EACH SIDE TWICE (A TOTAL OF FOUR TRIPS).
12. KEEP FENCE FABRIC TAUT.
13. WHEN USING SUPPORT MESH, ATTACH GEOTEXTILE TO THE SUPPORT MESH WITH FASTENERS SPACED EVERY 24 INCHES AT THE TOP AND MIDSECTION.

MACHINE SLICE INSTALLATION (NOT IN PERMAFROST)

1. USE A SILT FENCE INSTALLATION MACHINE OR ATTACHMENT TO PLOW OR SLICE THE FABRIC DIRECTLY INTO THE SOIL.
2. BACKFILL SOIL LOOSENED BY THE BLADE INTO THE SLICE AND USE THE TRACTOR TO MECHANICALLY COMPACT THE SOIL.
3. TUCK FABRIC DEEPER INTO THE GROUND WHERE NECESSARY.
4. INSTALL SUPPORT POSTS ALONG THE LENGTH OF THE FENCE FOLLOWING SIMILAR PROCEDURES FOR THE TRENCH METHOD.

WINTER INSTALLATION (NOT IN PERMAFROST)

1. DIG A TRENCH.
2. BACKFILL TRENCH WITH THE LOOSENED SOIL AND COMPACT SOIL PRIOR TO POST INSTALLATION.
3. MOISTEN THE BACKFILLED SOIL SO IT WILL FREEZE UP AND GRIP THE SILT FENCE FABRIC IN PLACE.
4. DO NOT LEAVE LARGE FROST CHUNKS AS THE BACKFILL.

INSPECTION

1. INSPECT FENCELINE FOR CONTINUITY, COLLAPSE, UNDERMINED AREAS, AND DAMAGE. DO NOT EXCAVATE TRENCHES IN PERMAFROST.
2. INSPECT FABRIC FOR TEARS, PUNCTURES, FRAYING, WEATHERING, AND COMPROMISED INTEGRITY.
3. CONFIRM THAT THE FENCE POSTS ARE SECURE.
4. ENSURE THE FENCE IS KEYED IN AND THAT THERE IS NO UNDERCUTTING.
5. LOOK FOR EVIDENCE OF SEDIMENT OR EROSION FLOW LEADING OFF THE DOWNHILL EDGE OF THE FENCE. (THIS MAY BE AN INDICATOR OF DRAINAGE BYPASS OR FENCE UNDERMINE.)
6. NOTE DEPTH OF SEDIMENT BUILD UP AT THE FENCE.
7. LOOK FOR SIGNS OF INADEQUATE PROTECTION OF OFF-SITE SENSITIVE AREAS.
8. CHECK FOR SEDIMENT FLOWING THROUGH THE FENCE.
9. CHECK FOR HOLES IN FENCE WHERE WIRE TIES ARE USED TO SECURE GEOTEXTILE FABRIC TO THE SUPPORT POST.

MAINTENANCE

1. INSTALL ALTERNATE OR ADDITIONAL BMPS AS NEEDED TO PREVENT UNDESIRABLE SEDIMENTATION OF SENSITIVE AREAS.
2. REPLACE DAMAGED FABRIC.
3. REMEDY FENCE SAGS AS NEEDED.
4. REMOVE ACCUMULATED SEDIMENT BEFORE IT ACCUMULATES TO ONE-HALF THE CAPACITY, OR ONE-THIRD OF THE AVAILABLE STORAGE IF PROTECTING A WATER BODY OR STORM DRAIN INLET.
5. DISPOSE OF SILT WASTE IN APPROVED MANNER/LOCATION (TYPICALLY IN A NON-EROSION AREA).
6. IF THERE IS EVIDENCE OF EXCESSIVE SEDIMENTATION AGAINST THE SILT FENCE, PROVIDE INCREASED EROSION CONTROL UPSLOPE.

REMOVAL

1. WHEN DISTURBED AREAS ARE PERMANENTLY STABILIZED OR SEDIMENT PROTECTION IS NO LONGER NEEDED, COLLECT AND PROPERLY DISPOSE OF ACCUMULATED SEDIMENT OR SEED IN PLACE.
2. CUT FABRIC AT GROUND LEVEL AND REMOVE SUPPORTS.
3. DISCARD FILTER FENCE AS APPROVED. AVOID DAMAGE TO SENSITIVE AREAS (E.G. WETLAND OR SURFACE WATER).

STANDING WATER NOTES:

INSTALLATION

1. DRIVE SUPPORT POSTS INTO THE GROUND AND ATTACH A HORIZONTAL SUPPORT MEMBER.
2. ATTACH SUPPORT MESH AND GEOTEXTILE ON THE UPSLOPE SIDE OF THE STAKES, EXTEND GEOTEXTILE ON THE GROUND UPSLOPE OF THE FENCE, AND ANCHOR THE GEOTEXTILE WITH SANDBAGS OR EQUIVALENT TO PREVENT GAPS.
3. SPACE SUPPORT POSTS A MAXIMUM OF 8 FEET APART.
4. KEEP FENCE FABRIC TAUT.

REVISIONS		
Date	Description	By

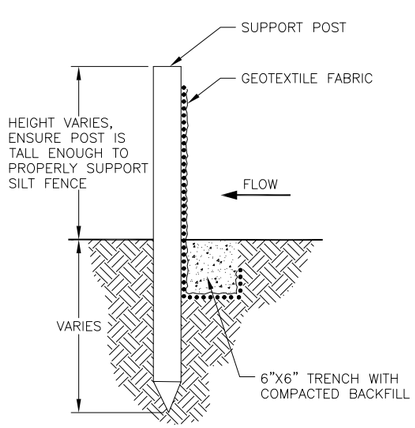
State of Alaska DOT&PF

SILT FENCE (NOTES, GENERAL INSTALLATION, & STANDING WATER INSTALLATION)

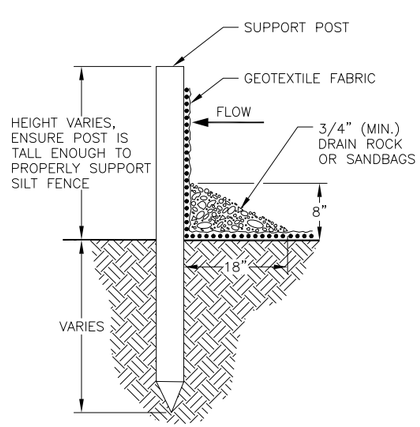
APPROVED

Date 12/2015 X/XX/XX

BMP-20.00



TRENCH DETAIL
NOT TO SCALE



TRENCHLESS DETAIL
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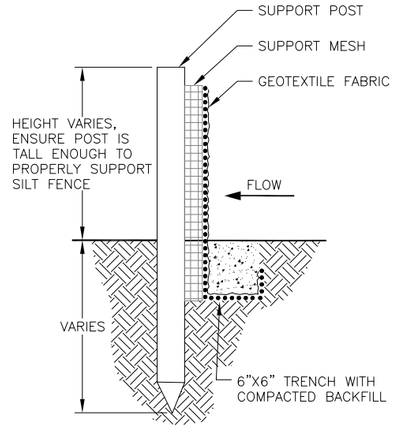

SUPPORT MESH REINFORCED FABRIC DETAIL
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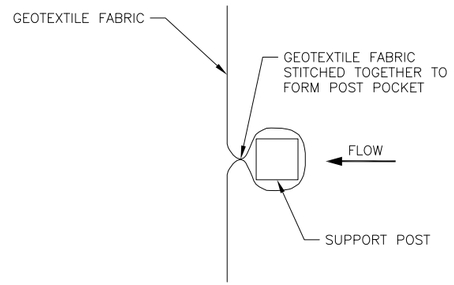


SEWN-IN POCKET DETAIL
NOT TO SCALE

TRENCH NOTES:
INSTALLATION
1. DRIVE SUPPORT POSTS INTO THE GROUND.
2. FOLLOW MANUFACTURER'S SPECIFICATIONS FOR POST BURIAL DEPTH.
3. EXCAVATE A TRENCH ON THE UPHILL SIDE ALONG THE LINE OF THE STAKES.
4. ATTACH GEOTEXTILE TO STAKES AND BURY GEOTEXTILE BOTTOM.
5. BACKFILL TRENCH AND COMPACT TO SECURE FENCE BOTTOM.

TRENCHLESS NOTES:
MATERIALS
CLEAN ROCK OR SANDBAGS.

INSTALLATION
1. DRIVE SUPPORT POSTS INTO THE GROUND.
2. ATTACH GEOTEXTILE ON THE UPHILL SIDE ALONG THE LINE OF THE STAKES.
3. EXTEND GEOTEXTILE ON THE GROUND UPHILL OF THE FENCE.
4. PLACE DRAIN ROCK ON GEOTEXTILE.

REMOVAL
1. WHEN SILT FENCE IS LOCATED IN WETLANDS OR SENSITIVE AREAS, REMOVE CLEAN ROCK OR SANDBAGS WHEN THE SILT FENCE IS REMOVED.

SUPPORT MESH REINFORCED FABRIC NOTES:
INSTALLATION
1. DRIVE SUPPORT POSTS INTO THE GROUND.
2. EXCAVATE A TRENCH ON THE UPHILL SIDE ALONG THE LINE OF THE STAKES. DO NOT EXCAVATE TRENCHES IN PERMAFROST.
3. EXTEND SUPPORT MESH A MINIMUM OF 3 INCHES INTO THE TRENCH.
4. ATTACH GEOTEXTILE TO STAKES AND BURY GEOTEXTILE BOTTOM.
5. BACKFILL TRENCH AND COMPACT TO SECURE FENCE BOTTOM.

REVISIONS		
Date	Description	By

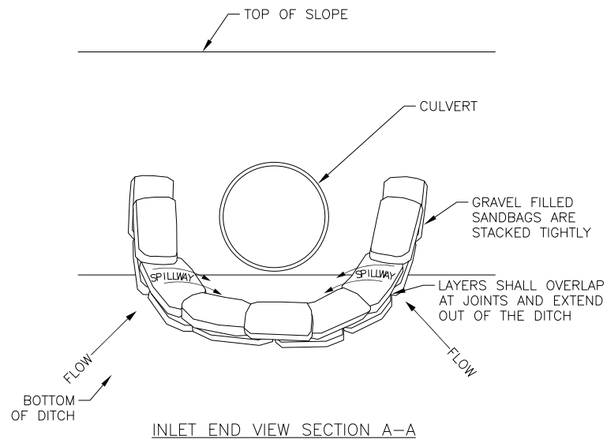
State of Alaska DOT&PF

SILT FENCE (DETAILS)

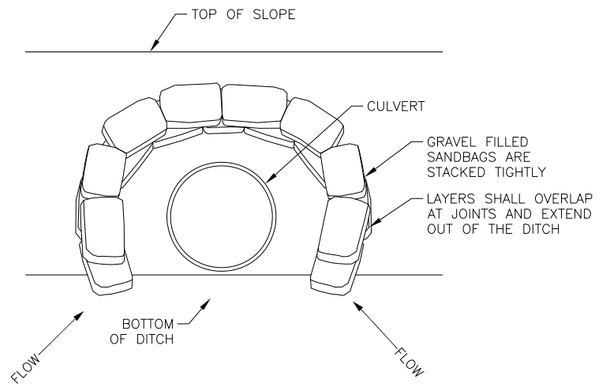
APPROVED

Date X/XX/XX

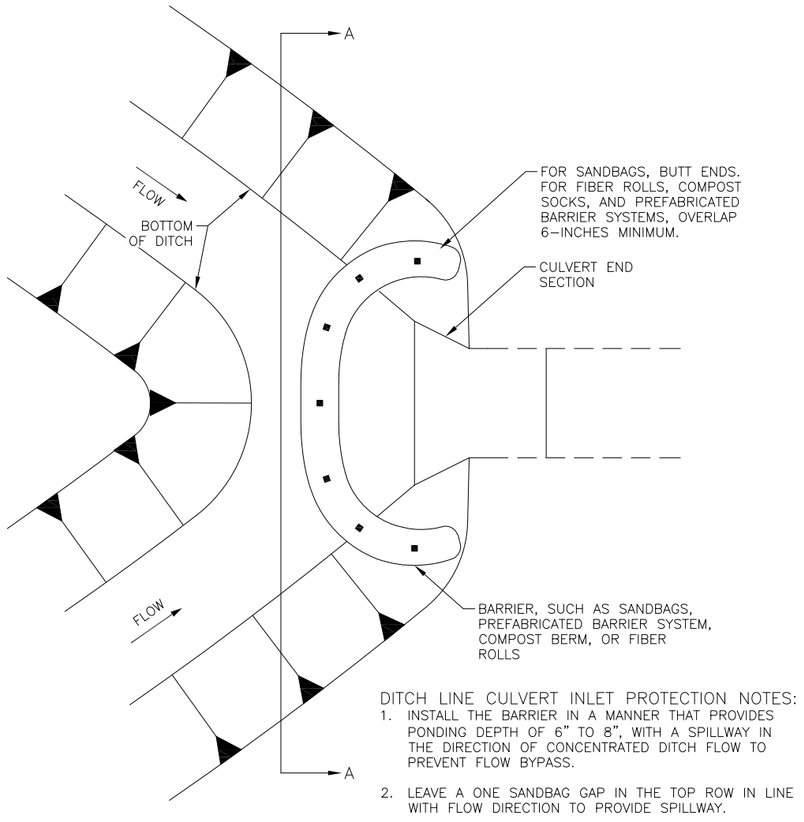
BMP-20.00



INLET END VIEW SECTION A–A
TYPICAL SANDBAG INSTALLATION SHOWN



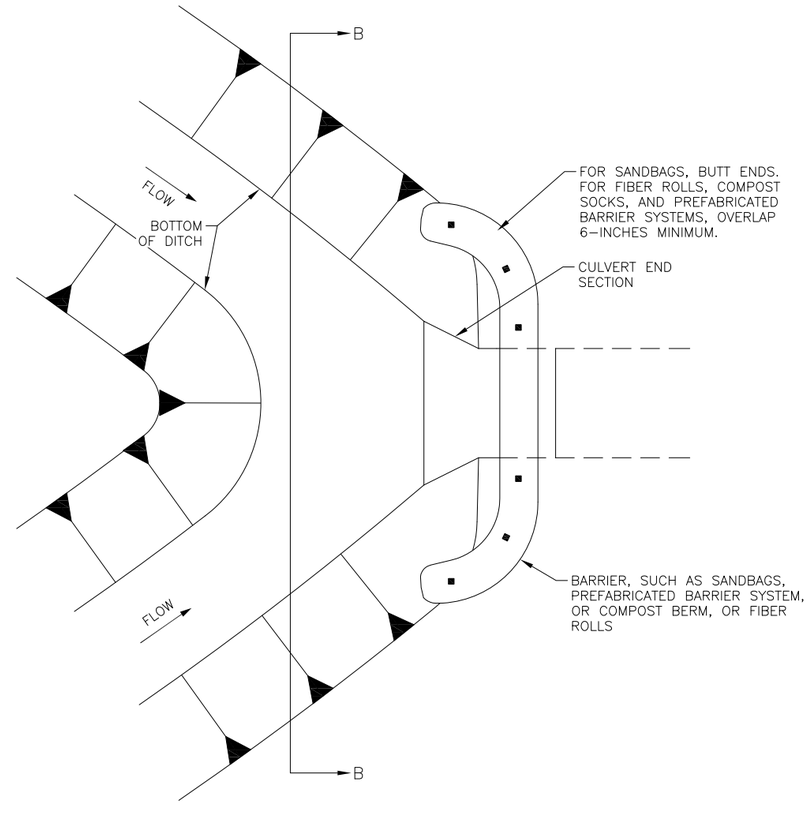
INLET END VIEW SECTION B–B
TYPICAL SANDBAG INSTALLATION SHOWN



DITCH LINE CULVERT INLET PROTECTION NOTES:
1. INSTALL THE BARRIER IN A MANNER THAT PROVIDES PONDING DEPTH OF 6" TO 8", WITH A SPILLWAY IN THE DIRECTION OF CONCENTRATED DITCH FLOW TO PREVENT FLOW BYPASS.
2. LEAVE A ONE SANDBAG GAP IN THE TOP ROW IN LINE WITH FLOW DIRECTION TO PROVIDE SPILLWAY.

PLAN VIEW

DITCH LINE CULVERT INLET PROTECTION
NOT TO SCALE



PLAN VIEW

TOP OF PIPE CULVERT INLET PROTECTION
NOT TO SCALE

CULVERT INLET PROTECTION NOTES:

MATERIALS

BARRIER MATERIALS:

1. PREFABRICATED BARRIER SYSTEM, AS SHOWN ON DRAWING BMP–13.00.
2. SANDBAG BARRIER, CONSISTING OF TIGHTLY WOVEN BURLAP OR WOVEN GEOTEXTILE BAG MATERIAL SUFFICIENTLY DURABLE TO REMAIN INTACT FOR THE TIME INTENDED. BAGS 2/3 FULL OF GRAVEL OR SAND WITH A GRADATION SUCH THAT NO FINE SEDIMENT PASSES THROUGH THE BAG. IF THE SANDBAGS ARE NEEDED FOR MORE THAN ONE SUMMER SEASON, PROVIDE BAG MATERIAL THAT HAS ULTRVIOLET STABILITY OF AT LEAST 70% IN CONFORMANCE WITH ASTM D4355 REQUIREMENTS. SECURELY CLOSE THE SANBAGS.
3. FIBER ROLL, AS SHOWN ON DRAWING BMP–10.00, 8 INCHES MINIMUM DIAMETER.
4. COMPOST SOCK, AS SHOWN ON DRAWING BMP–05.00.

INSTALLATION

1. INSTALL WHERE INDICATED IN THE PLANS OR WHERE APPROVED BY THE ENGINEER.
2. ASSURE THAT BARRIER MAKES FULL CONTACT WITH SOIL ALL AROUND THE INLET.
3. IF PROTECTING BOTH DITCHLINE AND TOP OF PIPE, THE PROTECTION BARRIER CAN BE A SINGLE CONTINOUS CIRCLE.
4. IN ADDITION:
   a. PREFABRICATED BARRIER SYSTEM – ANCHOR WITH WIRE STAPLES ON SOIL, OR ADHESIVE ON PAVEMENT. OVERLAP 6 INCHES.
   b. SANDBAG BARRIER – LAYER AND OVERLAP AT JOINTS.
   c. FIBER ROLL – TRENCH A MINIMUM OF 2 INCHES. SEE STAKING REQUIREMENTS ON DRAWING BMP–10.00.
   d. COMPOST SOCK – SEE STAKING REQUIREMENTS ON DRAWING BMP–05.00. STAKING REQUIRED REQUIRED WHEN PLACED WITHIN FLOWLINE/DITCH.

INSPECTION

1. CONFIRM THAT BARRIERS ARE IN FULL CONTACT WITH THE SOIL AND THAT BYPASS ROUTES ARE NOT PRESENT.
2. INSPECT FOR SEDIMENT ACCUMULATION, DISPLACEMENT, AND STRUCTURAL DAMAGE.

MAINTENANCE

1. REMOVE ACCUMULATED SEDIMENT BEFORE IT REACHES ONE–THIRD OF THE DESIGN DEPTH OF SPILLWAY.
2. RESTORE STRUCTURE TO ITS ORIGINAL DIMENSIONS AND FULL CONTACT WITH SOIL AROUND THE INLET AS SOON AS PRACTICABLE.
3. REPAIR ANY STRUCTURAL DAMAGE, INCLUDING REPLACING DAMAGED SANDBAGS, AS SOON AS PRACTICABLE.

REVISIONS		
Date	Description	By

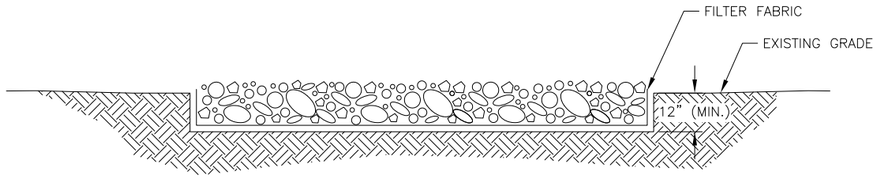
State of Alaska DOT&PF

CULVERT INLET PROTECTION

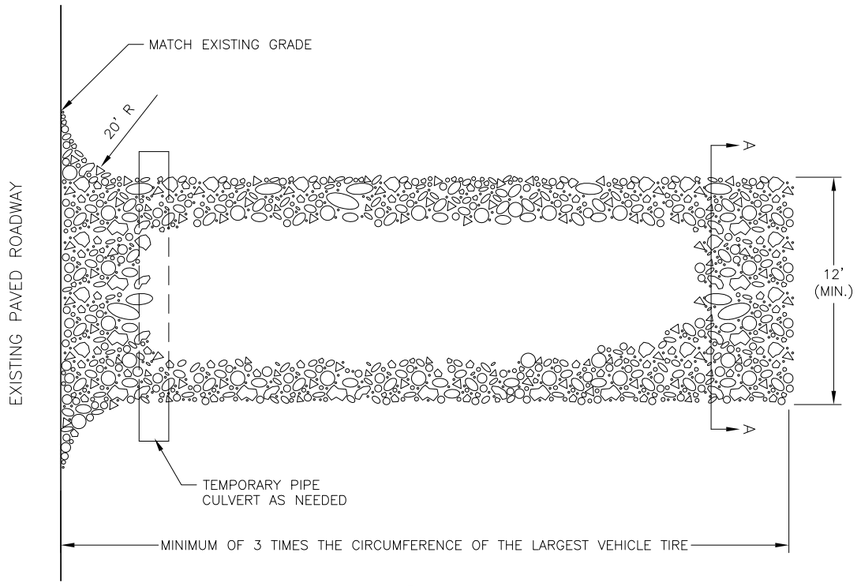
APPROVED

Date 12/2015 X/XX/XX

BMP–08.00



SECTION A–A



PLAN

ROCK CONSTRUCTION EXIT

NOT TO SCALE

ROCK CONSTRUCTION EXIT NOTES:

MATERIALS

ROCK: 2– TO 3–INCH COARSE AGGREGATE OR 3– TO 6–INCH QUARRY SPALL OR ANGULAR ROCK, WHICHEVER IS APPROPRIATE TO THE PROJECT FLEET.

INSTALLATION

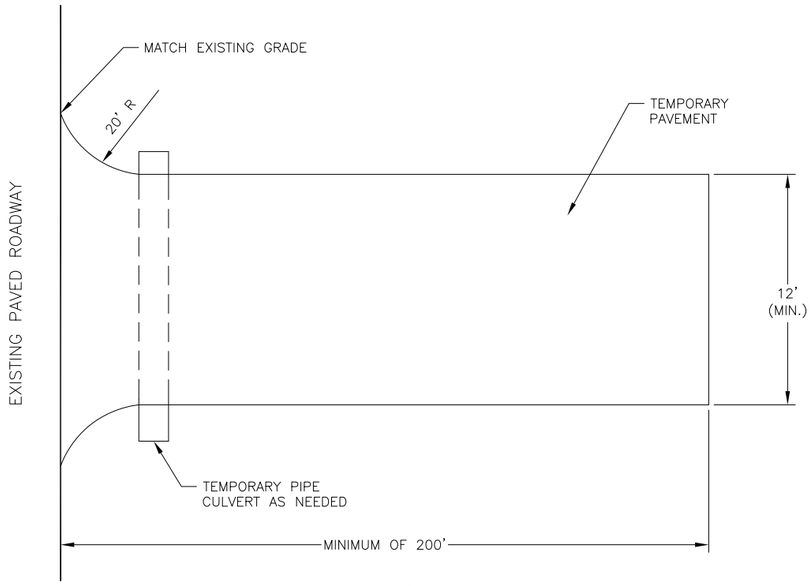
1. PLACE THE FILTER FABRIC AND ROCK TO THE SPECIFIC GRADE SHOWN ON THE PLANS.

MAINTENANCE

1. REMOVE ACCUMULATED SEDIMENT OR MUD.
2. REPLACE ROCK MATERIAL WHEN SURFACE VOIDS ARE FILLED WITH SEDIMENT. REPLACE FABRIC AS NEEDED.
3. TOP DRESS WITH 2 TO 3 INCHES OF COARSE AGGREGATE OR 3– TO 6–INCH COARSE ROCK WHEN THE PAD BECOMES LADEN WITH SEDIMENT.

INSPECTION

1. INSPECT FOR ROCK THAT HAS BEEN DISPLACED FROM THE PAD.



PLAN

TEMPORARY PAVEMENT CONSTRUCTION EXIT

NOT TO SCALE

TEMPORARY PAVEMENT CONSTRUCTION EXIT NOTES:

INSPECTION

1. INSPECT TEMPORARY PAVEMENT FOR DAMAGE.

MAINTENANCE

1. SWEEP DESIGNATED PAVED EXIT TO PREVENT SEDIMENT TRACK–OUT.
2. REPAIR DAMAGED TEMPORARY PAVEMENT.

STABILIZED CONSTRUCTION EXIT GENERAL NOTES:

INSTALLATION

1. INSTALL STABILIZED CONSTRUCTION EXIT PRIOR TO EARTH WORK.
2. CLEAR THE EXIT AREA OF ALL VEGETATION, ROOTS, AND OTHER MATERIAL.
3. PROVIDE DRAINAGE TO CARRY WATER TO A SEDIMENT TRAP, VEGETATIVE SEDIMENT FILTER OR OTHER PROTECTED OUTLET.
4. EXCAVATE AND GRADE THE AREA FOR ROCK PLACEMENT.
5. INSTALL SIGNS, FENCING OR BARRICADES TO CHANNEL OUTGOING TRAFFIC TO THE STABILIZED CONSTRUCTION EXIT.

INSPECTION

1. INSPECT STABILIZED CONSTRUCTION EXIT FOR SEDIMENT ACCUMULATION AND MATERIAL DISPLACEMENT.
2. INSPECT ROADWAY FOR SEDIMENT TRACK–OUT.
3. INSPECT DITCHES TO ENSURE NO SEDIMENT ACCUMULATION.

MAINTENANCE

1. MAINTAIN EACH EXIT IN A CONDITION THAT WILL PREVENT TRACKING OF MUD OR SEDIMENT ONTO PUBLIC RIGHT–OF–WAY.
2. REPAIR AND/OR CLEAN OUT ANY STRUCTURES USED TO TRAP SEDIMENT.
3. REMOVE ALL MUD AND SEDIMENT DEPOSITED ON PAVED ROADWAYS.
4. ADD MORE SIGNS, FENCING OR BARRICADES WHEN VEHICLES ARE EXITING THE PROJECT WITHOUT USING THE STABILIZED CONSTRUCTION EXIT. INSTALL ADDITIONAL STABILIZED CONSTRUCTION EXITS IF NEEDED, YET USE SIGNS AND BARRICADES TO MINIMIZE THE NUIMBER OF STABILIZED CONSTRUCTION EXITS.
5. PREVENT TRACK–OUT BY USING ADDITIONAL BMPs, SUCH AS A TIRE WASH.

REMOVAL

1. REMOVE THE STABILIZED CONSTRUCTION EXIT AND ANY SEDIMENT TRAPPING STRUCTURES AFTER THEY ARE NO LONGER NEEDED, OR WITH FINAL SITE STABILIZATION.
2. REGRADE AND PERMANENTLY STABILIZE THE REMAINING DISTURBED AREAS ACCORDING TO THE PLANS.

REVISIONS		
Date	Description	By

State of Alaska DOT&PF

STABILIZED CONSTRUCTION EXIT (NOTES, ROCK & TEMPORARY PAVEMENT)

APPROVED

Date 12/2015 X/XX/XX

BMP–23.00

CONCRETE WASHOUT GENERAL NOTES:

MATERIALS

PRE-FABRICATED CONTAINERS: MADE OF STURDY MATERIALS THAT ARE WATER TIGHT.

FABRICATED ON-SITE CONTAINMENT:

1. BARRIER/SIDEWALLS: MAKE SIDEWALLS OF AN ABOVE-GRADE CONTAINMENT AREA FROM EARTHEN BERMS, BARRIER WALLS, WOOD PLANKS, OR OTHER MATERIALS THAT WILL BE STRUCTURALLY SOUND WHEN FILLED WITH WASTE MATERIALS.
2. LINER: IMPERMEABLE PLASTIC SHEETING OF AT LEAST 10 MIL THICKNESS, AND FREE OF HOLES, TEARS, AND OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.
3. ANCHORS: SECURE THE LINER FOR ABOVE-GRADE CONTAINMENT AREAS AND SIDEWALL MATERIALS OTHER THAN BERMS WITH ANCHORS. USE SANDBAGS, 6-INCH WIRE STAPLES, AND WOOD OR METAL STAKES AS ANCHORS, BUT NOT LIMITED TO ONLY THEM.

SIGNS: DURABLE, RIGID MATERIAL WITH 6-INCH HIGH CONTRASTING LETTERS, PLACED AT A HEIGHT OF AT LEAST 3 FEET ABOVE GROUND LEVEL.

RAIN COVER: SECURE, NON-COLLAPSING, NON-WATER COLLECTING RAIN COVER, REQUIRED PRIOR TO PREDICTED WET WEATHER TO PREVENT ACCUMULATION AND OVERFLOW OF PRECIPITATION.

INSTALLATION

1. INSTALL SIGNS WITHIN 30 FEET OF THE WASHOUT.
2. IF THE WASHOUT IS LOCATED ON UNDEVELOPED PROPERTY OR OFF-PAVEMENT, PROVIDE A STABILIZED CONSTRUCTION EXIT.
3. PLACE CONCRETE WASHOUT CONTAINMENT A MINIMUM OF 50 FEET FROM STORM DRAINS, OPEN DITCHES, OR WATERBODIES, OR PROVIDE SECONDARY CONTAINMENT FOR THE WASHOUT.
4. PROVIDE SUFFICIENT CAPACITY TO HANDLE THE EXPECTED VOLUME OF SOLIDS AND WASH WATER AT 50% MAX CAPACITY AND ALLOW 12 INCHES MINIMUM OF FREEBOARD.
5. PRE-FABRICATED WASHOUT CONTAINERS ARE USUALLY DELIVERED ASSEMBLED. IF ASSEMBLY IS REQUIRED, FOLLOW MANUFACTURER'S INSTRUCTIONS.
6. SELF-INSTALLED CONTAINMENT:
   a. ABOVE-GRADE WASHOUT: CONSTRUCT THE SIDEWALLS TO THE DIMENSIONS SHOWN ON THE DRAWINGS. IF NOT USING AN EARTHEN BERM FOR THIS PURPOSE, ENSURE THAT THE SIDEWALL MATERIAL IS SECURE AND EACH UNIT IS BUTTED TIGHTLY END TO END. LINE THE ENTIRE AREA WITH THE LINING MATERIAL, BRINGING THE SHEETING UP OVER THE SIDEWALLS AND SECURING THE ENDS WITH SANDBAGS, STAPLES OR OTHER APPROPRIATE ANCHORS.
   b. BELOW-GRADE WASHOUT: EXCAVATE A FLAT, SUBSURFACE PIT TO THE DESIRED SIZE AND CAPACITY FOR THE CONTAINMENT AREA. THE RESULTING SIDEWALL SHOULD NOT EXCEED 3:1 SLOPES. PREVENT DAMAGE TO THE LINER BY KEEPING THE BASE OF THE PIT FREE OF ROCKS AND DEBRIS. USE THE EXCAVATED MATERIAL TO CREATE A BERM ALONG THREE SIDES OF THE PIT, LEAVING THE SIDE PROVIDING ACCESS RELATIVELY FLAT. IT IS RECOMMENDED THAT THE BERM BE AT LEAST 1-FOOT HIGHER THAN EXISTING GROUND. LINE THE ENTIRE AREA WITH THE LINING MATERIAL, BRINGING THE SHEETING UP OVER THE SIDEWALLS AND BERM, AND SECURING THE ENDS WITH SANDBAGS OR OTHER APPROPRIATE ANCHORS.

INSPECTION

1. INSPECT AND VERIFY THAT CONCRETE WASHOUT BMPS ARE IN PLACE PRIOR TO THE COMMENCEMENT OF CONCRETE WORK.
2. DETERMINE IF THE CONCRETE WASHOUT IS FILLED TO 50 PERCENT CAPACITY.
3. FOR SELF-INSTALLED CONTAINMENT:
   a. INSPECT THE PLASTIC LINER TO ENSURE IT IS SECURELY ANCHORED AND INTACT.
   b. INSPECT THE SIDEWALLS FOR LEAKS. ENSURE THE CONSTRUCTION DOESN'T DAMAGE THE SIDEWALLS.
4. FOR PRE-FABRICATED CONTAINMENT, INSPECT THE UNIT FOR LEAKS AND POTENTIAL DAMAGE.
5. CHECK TO ENSURE THAT EACH WASHOUT SIGN IS STILL SECURE AND VISIBLE.
6. IF THERE IS EVIDENCE THAT WASHOUTS ARE OCCURRING IN LOCATIONS OTHER THAN THE DESIGNATED WASHOUT: IMPROVE EXISTING SIGNAGE, INSTALL ADDITIONAL SIGNAGE, INCREASE COMMUNICATION WITH CONCRETE TRUCK DRIVERS, AND PROVIDE CONCRETE TRUCK DRIVERS WITH MAPS OF WASHOUT LOCATIONS WITH RESPECT TO POUR LOCATIONS.

MAINTENANCE

1. CLEAN EXISTING WASHOUTS BEFORE THE WASHOUT IS 50 PERCENT FULL. SOLIDIFY WITH BAGGED GROUT, VACUUM AND DISPOSE OF LIQUIDS IN AN APPROVED MANNER, OR ALLOW FOR EVAPORATION (CHECK WITH THE LOCAL SANITARY SEWER AUTHORITY TO DETERMINE IF THERE ARE SPECIAL DISPOSAL REQUIREMENTS FOR CONCRETE WASH WATER).
2. IF NECESSARY, PROVIDE AN ALTERNATE WASHOUT DURING EXISTING WASHOUT CLEANING.
3. RELINE SELF-INSTALLED CONTAINERS AFTER EACH CLEANING, BECAUSE EQUIPMENT CAN DAMAGE THE LINER. BEFORE RELINING, INSPECT THE CONTAINMENT STRUCTURE FOR SIGNS OF WEAKENING OR DAMAGE AND MAKE ANY NECESSARY REPAIRS. THEN LINE THE STRUCTURE WITH NEW PLASTIC SHEETING, CHECKING THAT IT IS FREE OF HOLES, TEARS, AND OTHER DAMAGE.
4. REPAIR DAMAGED WASHOUTS BEFORE THE NEXT CONCRETE POUR. IF NECESSARY, PROVIDE NEW WASHOUTS UNTIL THE EXISTING WASHOUTS ARE OPERATIONAL.
5. CONTAIN ANY SPILL OR DISCHARGE OF CONCRETE WASTE MATERIALS.
6. REPLACE OR INSTALL NEW SIGNAGE AS NEEDED.

REMOVAL

1. AN OPERATIONAL CONCRETE WASHOUT SHOULD REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT (OR PHASE OF THE PROJECT) IS POURED. WHEN THE CONCRETE WASHOUT IS NO LONGER NEEDED, THE LIQUID MUST BE EVAPORATED OR VACUUMED FOR DISPOSAL AND THE HARDENED SOLIDS MUST BE BROKEN UP, REMOVED, AND PROPERLY DISPOSED OF. DISPOSAL LOCATION TO BE APPROVED BY ENGINEER.
2. REMOVE FROM THE SITE PRE-FABRICATED WASHOUTS AND MATERIALS USED TO CONSTRUCT ABOVE-GRADE CONTAINMENT AREA AND PROPERLY DISPOSE OF THEM.
3. BACKFILL AND STABILIZE HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE CAUSED BY THE CREATION OR REMOVAL OF THE WASHOUT WITH AN APPROVED BMP.

REVISIONS		
Date	Description	By

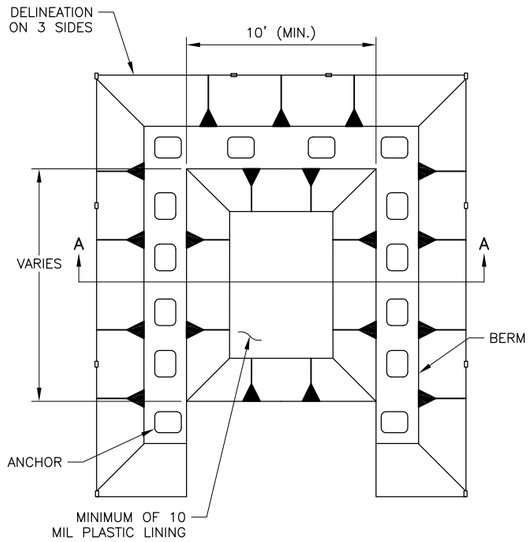
State of Alaska DOT&PF

CONCRETE WASHOUT (NOTES)

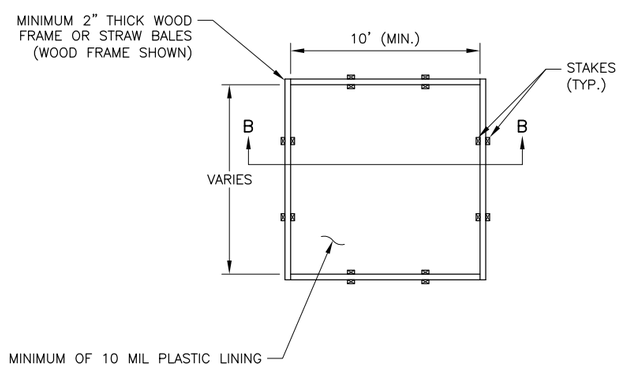
APPROVED

Date 12/2015 XXXXXX

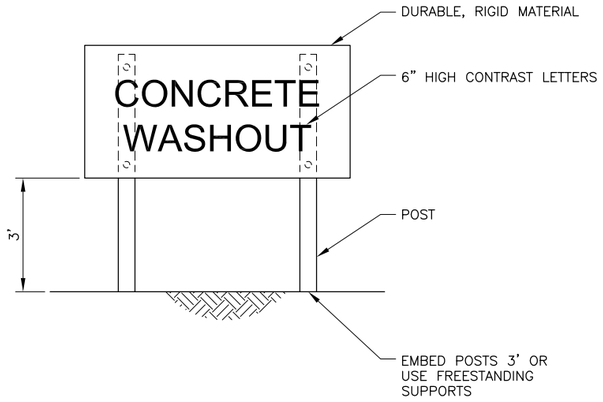
BMP-6.00



PLAN

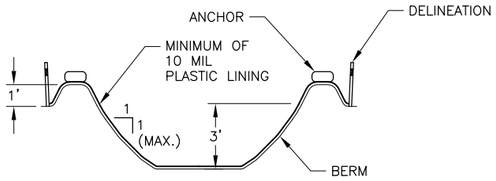


PLAN

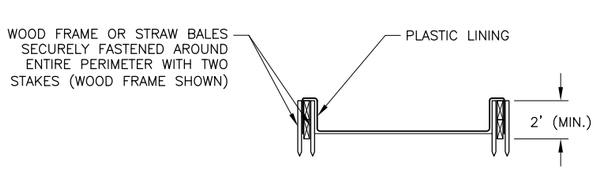


WASHOUT SIGN

NOT TO SCALE



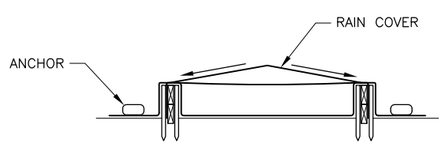
SECTION A–A



SECTION B–B

BELOW–GRADE CONCRETE WASHOUT
FABRICATED ON–SITE

NOT TO SCALE



SECTION B–B
WITH PLASTIC RAIN COVER

ABOVE GRADE CONCRETE WASHOUT
FABRICATED ON–SITE

NOT TO SCALE

REVISIONS		
Date	Description	By

State of Alaska DOT&PF

CONCRETE WASHOUT
(FABRICATED ON–SITE)

APPROVED

Date X/XX/XX

BMP–06.00

GENERAL NOTES

1. All work requirements on these drawings and not otherwise detailed shall be accomplished as specified in the current edition of the American Railway Engineering and Maintenance-of-Way Association (AREMA) Manual for Railway Engineering.

2. Field verify all dimensions and elevations prior to start of construction.

3. Stationing for these plans can be converted to Br. 25.7 Civil Plans by adding 1099+61.77 at inside face of backwall existing bent #1.

4. Information used to prepare this drawing:

   Geotechnical Investigation and recommendations prepared by Northern Geotechnical Engineering, Inc. d.b.a. Terra Firma Testing, Dated 10/30/19

   Hydraulic and hydrologic investigation and recommendations prepared by Michael Baker International, Dated 05/04/20.

DESIGN NOTES

1. The proposed structure has been designed in accordance with the AREMA Manual for Railway Engineering, Chapter 8: Concrete Structures and Foundations, Chapter 9: Seismic Design for Railway Structures and Chapter 15: Steel Structures.

2. This structure was designed for Cooper E80 Live Load plus Impact.

CONSTRUCTION NOTES

1. Field welding of any kind is prohibited unless specifically called out for in the plans or approved by the engineer.

STRUCTURAL STEEL NOTES

1. Materials, fabrication and shop assembly shall be in accordance with Chapter 15: Steel Structures of the current AREMA Manual for Railway Engineering.

2. Fabrication of structural steel shall be performed by a Fabricator certified under AISC Quality Certification Program for SimpleSteel Bridges (SBR).

3. Material shall conform to the following requirements:

Beams, Diaphragms and Bearing Stiffeners	ASTM A709 Gr. 50W T3
All Other Structural Steel	ASTM A709 Gr. 50W OR ASTM A588
Anchor Rods	ASTM F1554 Gr. 55
Bearing Pads	Natural Rubber (60 Durometer)
High-Strength Bolts	ASTM F3125 Grade A325, Type 3
M. Bolts	ASTM A307

4. All faying surfaces, regardless of location, shall be cleaned to a minimum of SSPC-SP6, Commercial Blast Cleaning. All exterior steel surfaces shall be cleaned to a minimum SSPC-SP6, commercial blast cleaning. All other surfaces not noted herein shall be cleaned to a minimum of SSPC-SP1, Solvent Cleaning.

5. Structural steel shall not be painted.

6. Structural steel shall be of the type and quality as designated on the drawings.

7. All shop and field bolted connections shall use high strength bolts (including nuts and washers) conforming to ASTM F3125 Grade A325 Type 3, except as otherwise noted. Nuts shall conform to ASTM A563. All bolts shall be ⅞" diameter unless noted otherwise. Diameter of bolt holes shall be 1/16" larger than nominal bolt diameter, unless noted otherwise. All bolts shall have one hardened steel washer conforming to ASTM F436 per bolt under the element to be turned.

8. High strength steel bolts shall be installed in accordance with the "Turn of the Nut Method". The procedure for installation is as specified by the Research Council on Riveted and Bolted Structural Joints of the Engineering Foundation. Alternative bolt installation methods are subject to approval by the Railroad.

9. Bolts and nuts shall be furnished by the same supplier to enusre proper fit.

10. Bolts shall be of such length that they will extend entirely through their nuts and approximately ¼" beyond them and the full threads shall extend no more than ⅜" into the grip.

11. Any open bolt hole shall be filled in with high strength steel bolt if not used.

12. Bolted parts shall fit solidly together when assembled and shall not be seperated by gaskets or any other interposed compressible material.

13. When assembled, all joint surfaces, including those adjacent to the bolt heads, nuts or washers, shall be free of scale, except tight mill scale; and shall also be free of dirt, loose scale, burrs, other foreign material and other defects that would prevent solid seating of the parts.

14. Contact surfaces within the joints shall be free of oil, paint, lacquer or rust inhibitor.

15. When tested with the inspecting wrench, each fastener shall provide, when all fasteners in the joint are tight, at least the minimum bolt tension shown in Table 15-3-2 of AREMA Chapter 15, Section 15.3.2.3 for the size of fastener used.

16. Bolts shall be installed so that the bolt heads are on the outside (exposed) surface of the member unless shown otherwise on the drawings. Threads shall be excluded from the shear plane in all connections.

17. Any machine bolts required for shipment shall be ASTM A307.

STRUCTURAL STEEL NOTES CONTINUED:

18. All welding shall be in accordance with the Bridge Welding Code, AWS D1.5. Welding of fracture critical members shall also conform to the applicable provisions of the current AREMA Manual for Railway Engineering, Chapter 15: Steel Structures. Welding to be allowed only as shown on the drawings and approved shop drawings.

19. No temporary or permanent welds, if not shown on the plans, shall be made without specific written authorization by the engineer. No electroslag or electrogas welding shall be used.

20. Welded joints are to be AWS prequalified. Alternate joint details are subject to approval by the Railroad. All welding shall be done to minimize distortion. The welding sequence and procedures to be used shall be submitted for approval to the Railroad.

21. When welding A709 Grade 50W steel, weld metal shall be equivalent to A709, Grade 50W steel in strength, corrosion resistance and weathered appearance.

22. The Fabricator shall submit copies of welders' certificates for all welding processes. Welders shall possess valid qualifications.

23. The fabricator shall, at his own cost, provide an approved inspection service for nondestructive testing of all welds as specified. Nondestructive testing of welds shall be performed in accordance with the AREMA Manual for Railway Engineering Chapter 15: Steel Structures, the Bridge Welding Code, AWS D1.5, Section 3.5 and as follows:

   a. 100% MP inspection of fillet welds on bearing stiffeners.
   b. 25% UT or MP inspection of all other welds. If any defects are found, then 100% UT or MP inspection shall be required.

   Test results shall be furnished to the Railroad.

24. All joints and edge preparation, removal of unacceptable weld or base metal, and backgouging shall be completed by machining. Rough removals may be completed by non-mechanical means.

25. The Fabricator shall submit detailed shop drawings prior to beginning fabrication. Fabrication shall not begin until shop drawings are approved.

26. The fabricator is responsible for the design and detailing of lifting devices. Details for all lifting devices required for handling and shipping shll be submitted with the shop drawings.

27. Fabricator shall submit a quality control plan to include inspection and documentation of fabrication to the Railroad.

28. The Fabricator shall shop assemble the steel framing prior to shipping. All bolts shall be placed in holes as work progresses to assure proper fit.

29. Shop assembled steel framing shall be made available for inspection by the Railroad at the Fabricator's plant before the steel is disassembled and shipped to the erection site at the Railroad's discretion. Units and pieces shall be match-marked as required.

30. Reaming of holes during field erection is not allowed, unless approved by the Railroad.

31. All steel components shall be inspected by the Fabricator before shipment.

32. All material certifications and quality control test results shall be submitted to the Railroad at project completion.

33. All materials shall be carefully loaded so as to avoid damage in transit. Members weighing more than three tons shall have the weight marked theron. All small parts such as bolts, pins washers and small connection plates shall be packed in containers of adequate strength. The contents of each unit shall be plainly marked on the top of each container.

34. Structural steel shall be of the type and quality as designated on the drawings. If specified as "T3", material supplied shall meet the longitudinal Charpy V-notch impact testing requirements for Temperature Zone 3 as specified in the AREMA Manual for Railway Engineering.

BEARING NOTES

1. Bearing fabrication, finishing, tolerances, testing requirements and installation requirements shall conform to AREMA Chapter 15, Part 5.

2. Sole plates shall be in full contact with rubber pads.

3. The surface finish of bearing and base plates and other bearing surfaces that are to come in contact with each other or with concrete shall meet the American National Standard Institute (ANSI) surface roughness requirements as defined in ANSI Standard B46.1, "Surface Roughness, Waviness, and Lay" and shown on the plans, or in the following listing:

Bearing plates (surfaces in contact with rubber)	500
Heavy plates in contact to be welded or bolted	250

4. All plates in bearing assemblies shall be flat and level.

PRECAST CONCRETE NOTES

CONCRETE

1. All concrete materials, placement and workmanship shall be in accordance with Chapter 8: Concrete Structures and Foundations of the AREMA Manual for Railway Engineering.

2. Minimum compressive strength at 28 days shall be 4000 psi.

3. Exposed surfaces shall be formed in a manner which shall produce a smooth and uniform appearance without rubbing or plastering. Exposed edges of 90° or less are to be chamfered ¾" x ¾". Top surface to have a smooth finish, free of all float or trowel marks.

4. Concrete shall be proportioned such that the water - cement ratio (by weight) does not exceed 0.45. Concrete shall contain a minimum of 6½ sacks of cement per cubic yard of concrete.

5. Cement shall be Type I or Type II Portland Cement, blended hydraulic cement, fly ash, ground granulated blast-furnace slag, or silica fume in accordance with AKDOT 501 specifications

6. Aggregates shall be graded in accordance with AKDOT Standard Specifications for Highway Construction 2020 Edition.

7. Air content shall be between 5.5% and 6.5% (by volume).

8. Admixtures shall not be used without approval by the Railroad.

9. Curing shall be accomplished by wet curing or application of a Type 2 membrane.

10. The Fabricator shall stencil the Fabricator's name, date of fabrication, bridge number and piece mark at location shown on the drawings.

11. Production procedures for the manufacture of precast members shall be in accordance with the AREMA Manual for Railway Engineering and the Prestressed Concrete Institute's Manual MNL 116 for Quality Control.

12. Dimensional tolerances governing the manufacture of precast members shall conform to Division VI, Section 6.4 of the Precast Concrete Institute's Manual MNL 116 for Quality Control for the appropriate shape. Tolerance for location of lifting devices shall be +/- ½".

13. The Fabricator shall be responsible for loading and properly securing all precast concrete members for shipment. All concrete components shall be made available for inspection by the Railroad at the Fabricator's plant prior to shipment, at the Railroad's discretion.

REINFORCING STEEL

1. Reinforcing steel shall be deformed, new billet bars per ASTM A615 specifications and meet Grade 60 requirements.

2. Fabrication of reinforcing steel shall be per Chapter 7 of the CRSI Manual of Standard Practice. Dimensions of bending details are out to out of bar.

3. Reinforcing steel shall be blocked and tied to proper location and securely wired against displacement. Tie wires shall be installed at every other bar intersection so that at least 50% of the intersections are tied. Tack welding of reinforcing is prohibited. Minimum concrete cover on reinforcing not otherwise noted shall meet the AREMA Manual for Railway Engineering requirements.

STRUCTURAL STEEL

1. Steel plates shall conform to ASTM A36 or A709-Grade 36 specifications.

2. Studs shall be C1015, C1017 or C1020 cold drawn steel which conforms to ASTM A108 specifications. Shear studs are welded to embed plates as shown on Dwg. No. 12.

3. Deformed bar anchors shall conform to ASTM A706 specifications. Welding of deformed bar anchors shall conform to AWS D1.4. Welding shall be performed by certified welder.

4. Where galvanizing is not indicated, material shall be plain.

LIFTING ANCHORS

1. Swift lift anchors shall be Dayton Richmond P-52 anchors or approved alternate with a safe working load sufficient for the weight of the precast element including form removal. The safe working load shall provide a minimum safety factor of 4.

FIELD WELDING

1. Welding shall be accomplished with the SMAW or FCAW Process.

2. Welding shall be in compliance with the requirements specified in AWS D1.5, except ⅝" fillet welds may be made with a single pass.

3. Welding electrodes shall be E7018 for SMAW or E71T-7 for FCAW.

4. Welders shall possess valid qualifications, which shall be furnished to the Railroad for approval prior to commencing welding.

SUMMARY OF ESTIMATED QUANTITIES

DESCRIPTION	ESTIMATING UNIT	QUANTITY
PRECAST CONCRETE ABUTMENT CAP CAC-1 (PER NOTES, DWG. NO. 1 AND MATERAL SCHEDULE/DETAILS, DWG NO. 12)	EA.	2
PRECAST CONCRETE PILE CAP CPC-1 (PER NOTES, DWG. NO. 1 AND MATERAL SCHEDULE/DETAILS, DWG NO. 13)	EA.	11
29'-10" STEEL BEAM SPAN (4-W30x173) INCL. BEARING PADS AND ANCHOR RODS (PER NOTES, DWG NO. 1 AND DETAILS, DWG NOS. 9-11)	EA.	12
GALVANIZED STEEL PIPE PILE 24" DIA. x ⅞" THICKNESS, 40'-0" LENGTH, NO END BEVELS, WITH CUTTING SHOE O-14001, OR APPROVED ALTERNATE, SHOP ATTACHED (ASTM A252, GRADE 3) (SHOP GALVANIZE PER NOTES THIS SHEET)	EA.	39
GALVANIZED STEEL PIPE PILE 24" DIA. x ⅞" THICKNESS, 40'-0" LENGTH, ONE END BEVELED, (ASTM A252, GRADE 3) (SHOP GALVANIZE PER NOTES THIS SHEET)	EA.	39
STEEL PIPE PILE 12" DIA. x ½" THICKNESS, 15'-0" LENGTH, ONE END BEVELED, (ASTM A252, GRADE 3)	EA.	2
4,000 PSI CONCRETE FOR PIPE PILES AND PILE SOCKETS (PER DETAILS, DWG. NO 5)	CU. YD.	159
FLOWABLE FILL FOR PIPE PILE FILL (PER DETAILS, DWG. NO .5)	LOT	1
REINFORCING STEEL FOR PIPE PILES (PER SCHEDULES, DWG. NO. 5)	LOT	1
BACKING RING, APF S-40000, t=¼" min. (PER NOTES, DWG NO. 1 AND DETAILS, DWG NO. 5)	EA.	39
PLATE TAB PT-1 (PER NOTES DWG NO. 1, AND DETAILS, DWG NO. 6)	EA.	60
PLATE TAB PT-2 (PER NOTES DWG NO. 1, AND DETAILS, DWG NO. 6)	EA.	36
PLATE TAB PT-3 (PER NOTES DWG NO. 1, AND DETAILS, DWG NO. 6)	EA.	36
PS31 SHEET PILE, 25'-0" LENGTH (ASTM A572, GRADE 50)	EA.	120
C12x20.7x 20'-0" (ASTM A572, GRADE 50)	EA.	2
DECK AND FOOTWALK MATERIAL SCHEDULE (PER DWG NO. 14)	LOT	1
COLD GALVANIZING COMPOUND SPRAY	LOT	1

EST. WT. OF STEEL PIPE PILING = 674,900 LB.
EST. WT. OF STEEL SHEET PILING = 138,705 LB.
QUANTITIES PROVIDED FOR ESTIMATING AND PLANNING PURPOSES ONLY.
CONTRACTOR IS RESPONSIBLE TO FURNISH ALL PROJECT MATERIAL TO MEET PLAN REQUIREMENTS.

PILE DRIVING NOTES

DESIGN

1. All piles shall be driven to 100 ton capacity.

   Minimum pile penetration depth = 35' below groundline.
   Estimated pile driving depth = 54' below groundline.

2. Estimated capacity of driven piles shall be calculated using the Modified ENR formula, with Factor of Safety of 5. Pile driving records and estimated capacities shall be submitted to the engineer. Alternate methods such as Gates or PDA testing may also be considered at the Railroad's discretion.

3. Vibratory hammers are only permitted for 20' max of pile advancement below the mudline.

4. Mark every pile with a dimension indicating the pile depth from cutoff to point of pile. The dimension shall be rounded to the nearest foot. The mark shall be welded on the outside face, low mile post side on the pile flange, approximately 1'-0" below the bottom of the cap, and in numbers of approximately 3" in height. If a pile is not exposed, no mark is required.

STEEL

1. Piles - ASTM A252, GRADE 3, SPLIT SEAM WELDED

2. Pile splices - ASTM A572 GRADE 50

GALVANIZED PIPE PILE

1. Galvanized coating for pipe piles shall conform to ASTM A123. Pickle per SSPC No. 8 and Hot-Dipped Galv. per current ASTM A123. Coating weight 2.3 oz. per sq. ft. (Grade 100).

2. Provide 3" Mask on each end of Pile.

SPLICES

1. Splices shall be made a sufficient distance above the ground or water (not less than one foot) so that the splice can be observed during driving. The number of splices shall be kept to a minimum. Splicing cut-offs or short pieces to make a main bearing pile is not permitted. The pile shall be driven so that the upper splice is at least 10 feet below the ground surface.

TOLERANCE

1. Variations greater than ¼" per foot from vertical or batter line shall not be allowed. The deviation of the top of the piles in a bent shall not exceed one inch from the plan location. Piles not meeting tolerance requirements or out of line as to impair usefulness, or piles that are damaged in driving as to impair structural capacity, shall be pulled and redriven or an additional pile shall be driven to provide added support.

LETTER SERIES
SHEET NO. CUT ON — SHEET NO. SHOWN ON

SECTION DESIGNATION

REV.	DATE	BY	REVISION

ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

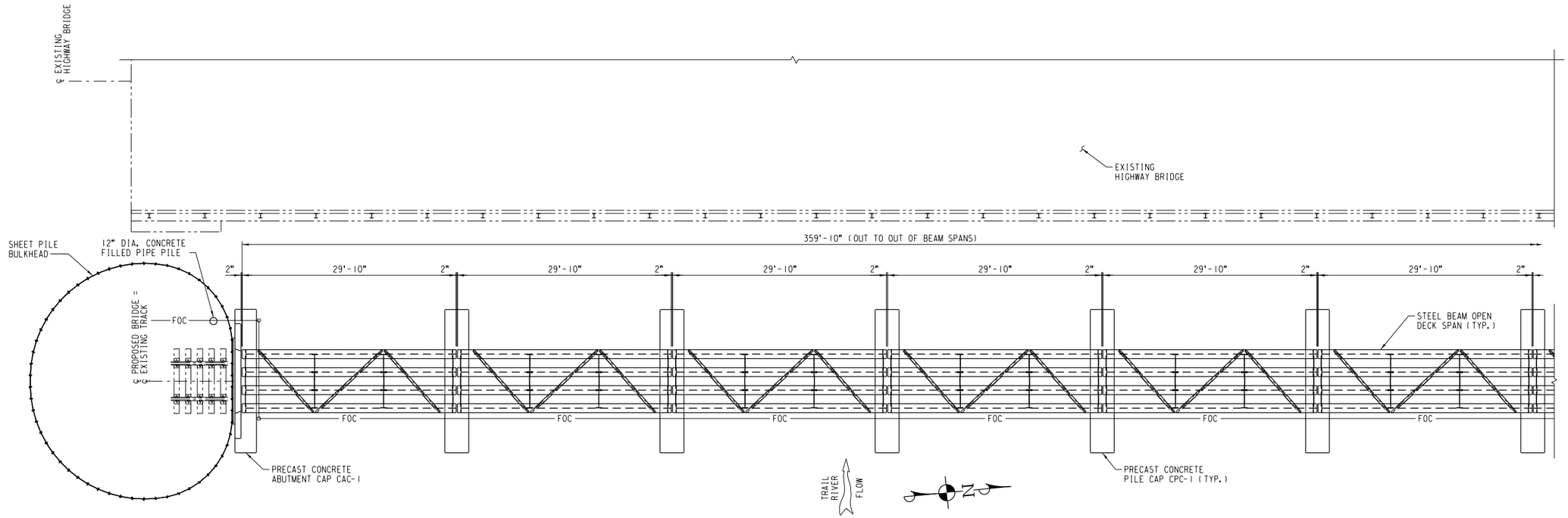
PROJECT:
TRAIL RIVER BRIDGE REPLACEMENT

TITLE:
GENERAL NOTES AND QUANTITIES

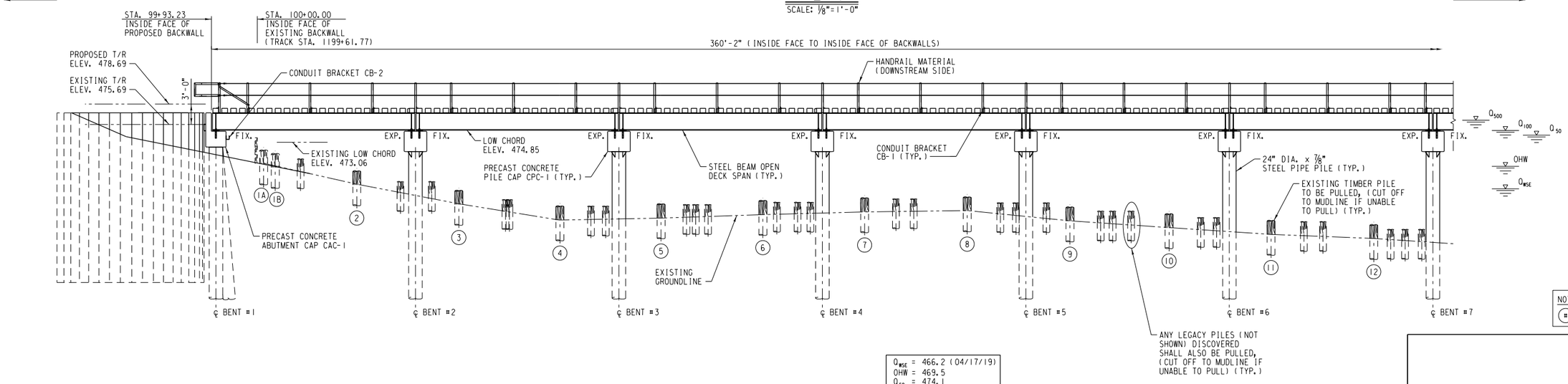
DESIGNED BY: BJB
DRAWN BY: DTP
CHECKED BY: BWB
APPROVED BY:

SCALE: AS NOTED
DATE: 03/01/2022

DWG NO.
S1 OF S19



PLAN
SCALE: 1/8"=1'-0"



Q_{WSE} = 466.2 (04/17/19)
OHW = 469.5
Q_{50} = 474.1
Q_{100} = 474.9
Q_{500} = 476.3

ELEVATION
SCALE: 1/8"=1'-0"

REV.	DATE	BY	REVISION

ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

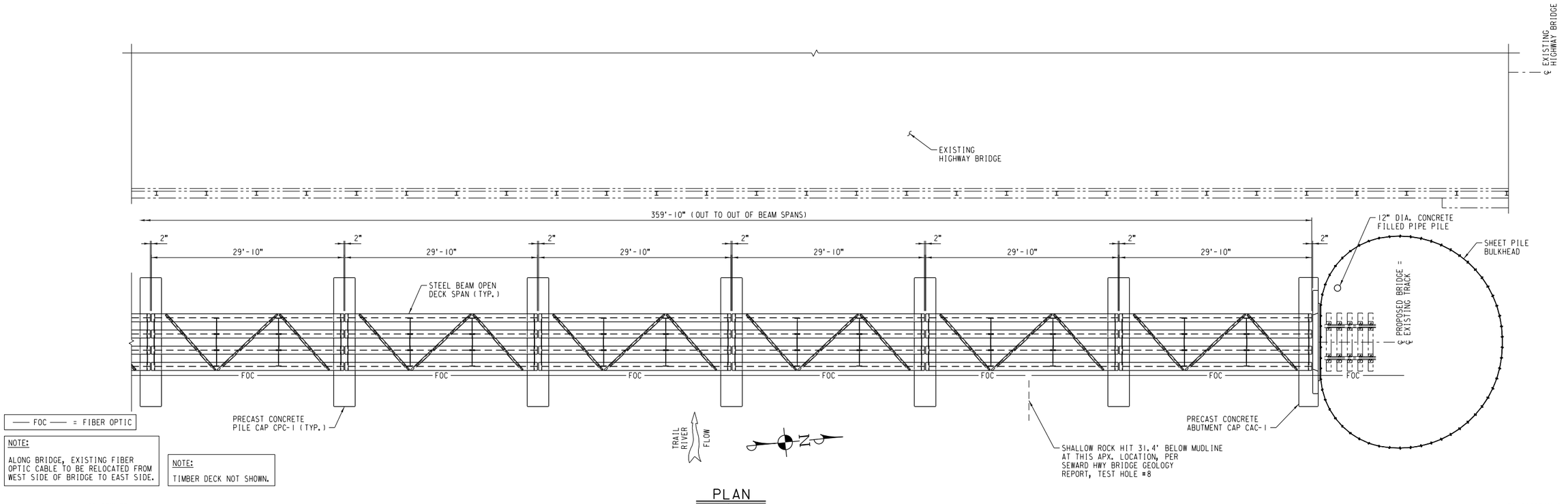
PROJECT:
TRAIL RIVER BRIDGE REPLACEMENT

TITLE:
GENERAL ARRANGEMENT (SHEET 1 OF 2)

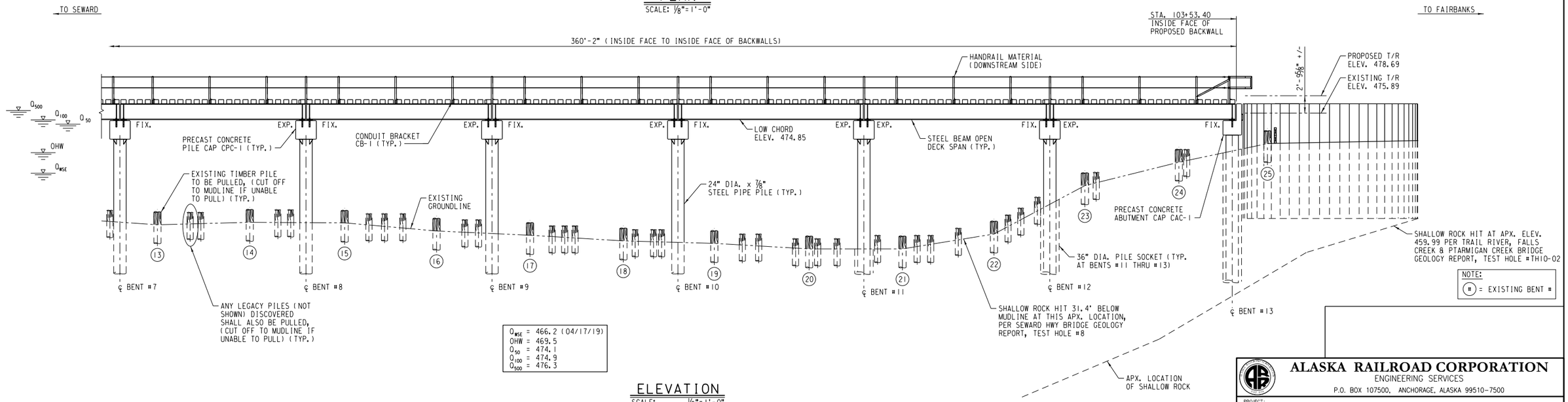
DESIGNED BY: BJB
DRAWN BY: DTP
CHECKED BY: BWB
APPROVED BY:

SCALE: AS NOTED
DATE: 03/01/2022

DWG NO.
S2 OF S19



PLAN
SCALE: 1/8"=1'-0"



Q_{WSE} =	466.2 (04/17/19)
QHW =	469.5
Q_{50} =	474.1
Q_{100} =	474.9
Q_{500} =	476.3

ELEVATION
SCALE: 1/8"=1'-0"

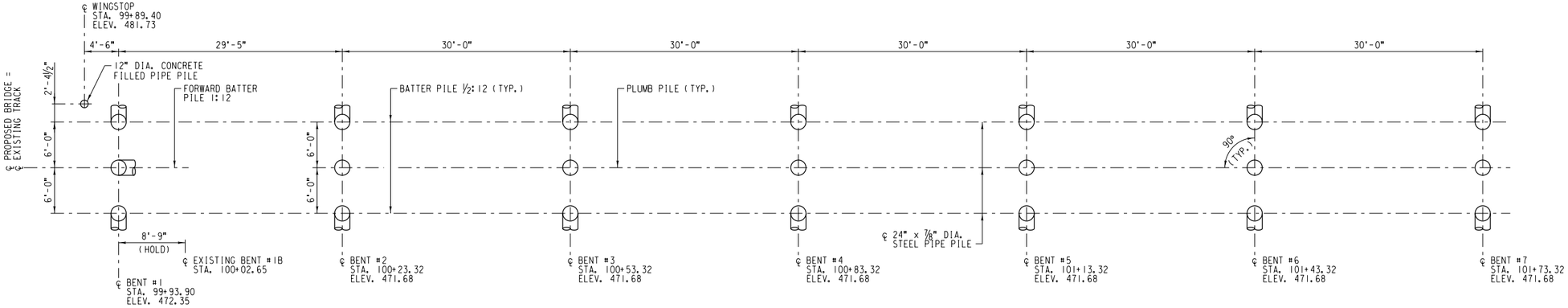
ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

PROJECT:
TRAIL RIVER BRIDGE REPLACEMENT

TITLE:
GENERAL ARRANGEMENT
(SHEET 2 OF 2)

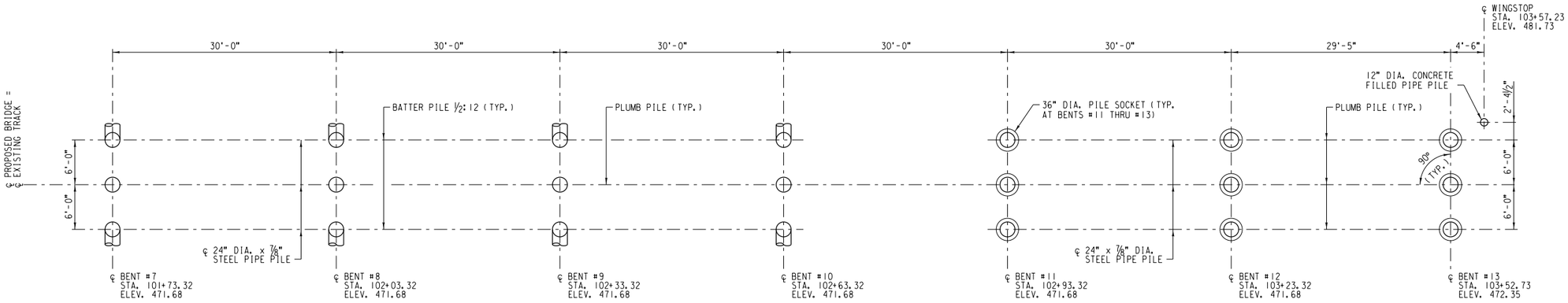
DESIGNED BY: BJB	SCALE: AS NOTED	DWG NO.	S3 OF S19
DRAWN BY: DTP			
CHECKED BY: BWB	DATE: 03/01/2022		
APPROVED BY:			

REV.	DATE	BY	REVISION



PILE LAYOUT

SCALE: ⅛"=1'-0"
AT PILE CUTOFF



PILE LAYOUT

SCALE: ⅛"=1'-0"
AT PILE CUTOFF

NOTE:

FOR BENTS #11 THRU 13, IF SHALLOW BEDROCK IS NOT FOUND, DRIVE EXTERIOR PILES AT BATTER INDICATED FOR BENTS #1 THRU #10.

REV.	DATE	BY	REVISION

ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

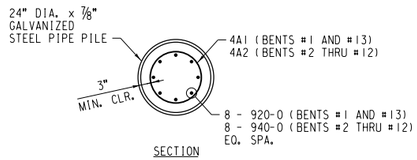
PROJECT:
TRAIL RIVER BRIDGE REPLACEMENT

TITLE:
PILE LAYOUT

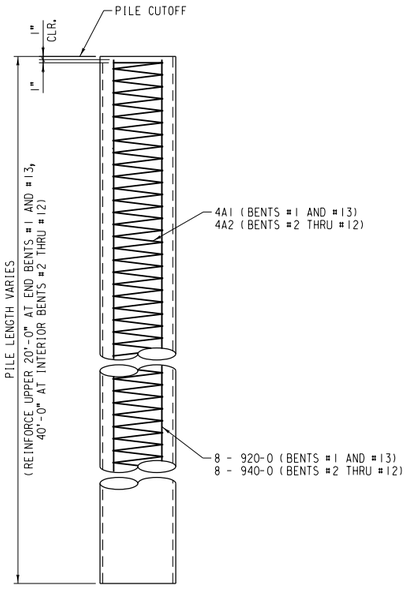
DESIGNED BY: BJB
DRAWN BY: DTP
CHECKED BY: BWB
APPROVED BY:

SCALE: AS NOTED
DATE: 03/01/2022

DWG NO.
S4 OF S19



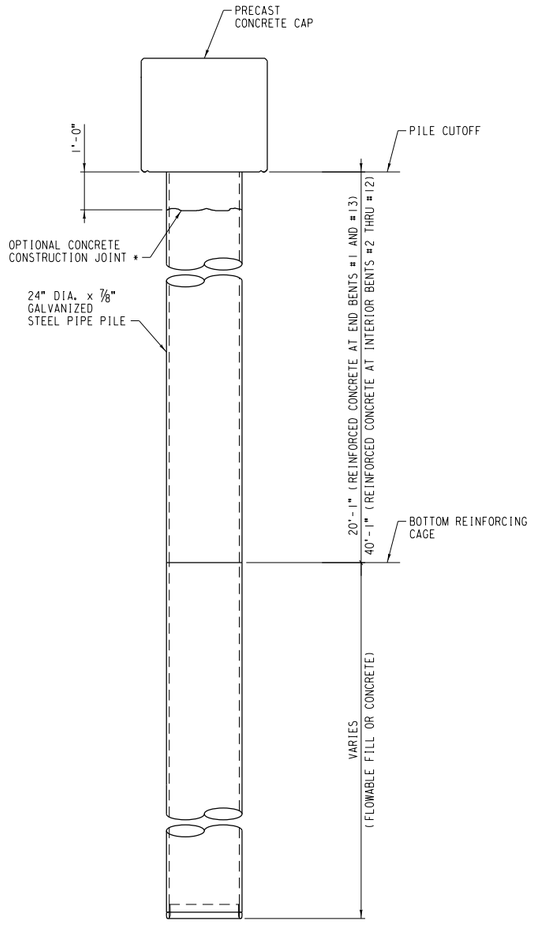
SECTION



ELEVATION

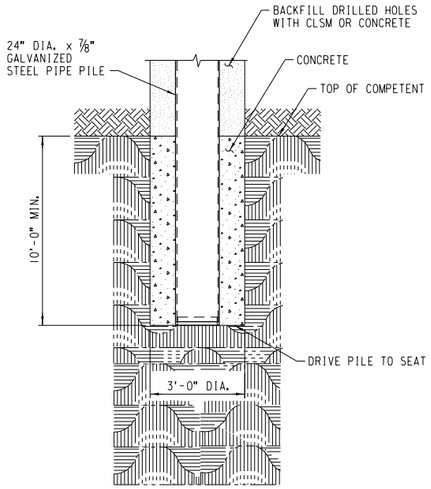
CAGE REINFORCING DETAIL

SCALE: 1/2"=1'-0"



PILE FILL DETAIL

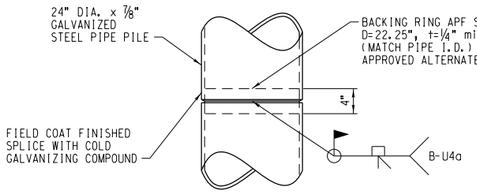
SCALE: 1/2"=1'-0"



PILE SOCKET DETAIL

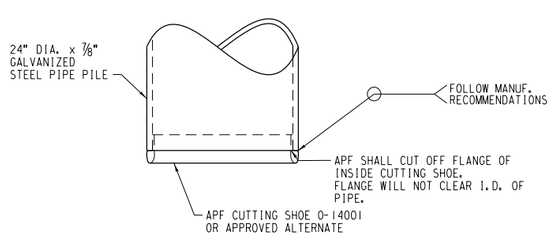
SCALE: NONE

EST. VOLUME OF CONCRETE = 1.5 CU. YD. PER 10' SOCKET DEPTH



PIPE PILE SPLICE DETAIL

SCALE: 1"=1'-0"



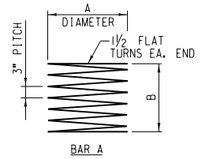
PIPE PILE CUTTING SHOE DETAIL

SCALE: 1"=1'-0"

END BENTS PIPE PILE REINFORCING SCHEDULE (BENTS #1 AND #13)

NAME	SIZE	TYPE	A	B	LENGTH	PER PILE
920-0	#9	STR.	-	-	20'-0"	8
4A1	#4	A	1'-4"	19'-10"	344'-11"	1

BENDING DIAGRAM
(DIMENSIONS ARE OUT TO OUT)



BAR A

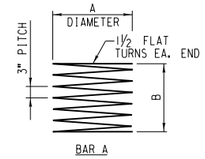
DIMENSIONS ARE OUT-TO-OUT OF BARS

EST. WT. OF REINFORCING STEEL PER PIPE PILE = 775 LB.

INTERIOR BENTS PIPE PILE REINFORCING SCHEDULE (BENTS #2 THRU #12)

NAME	SIZE	TYPE	A	B	LENGTH	PER PILE
940-0	#9	STR.	-	-	40'-0"	8
4A2	#4	A	1'-4"	39'-10"	680'-0"	1

BENDING DIAGRAM
(DIMENSIONS ARE OUT TO OUT)



BAR A

DIMENSIONS ARE OUT-TO-OUT OF BARS

EST. WT. OF REINFORCING STEEL PER PIPE PILE = 1,545 LB.

CAST-IN-PLACE CONCRETE NOTES

CONCRETE

1. All concrete materials, placement and workmanship shall be in accordance with Chapter 8: Concrete Structures and Foundations of the AREMA Manual for Railway Engineering. This section of notes applies to all concrete work except for drilled shafts.
2. Formwork tolerances shall be in accordance with ACI 347 specifications.
3. Minimum compressive strength at 28 days shall be 4000 psi.
4. Concrete shall be proportioned such that the water - cement ratio (by weight) does not exceed 0.45.
5. Cement shall be Type I or Type II Portland Cement, blended hydraulic cement, fly ash, ground granulated blast-furnace slag, or silica fume in accordance with AKDOT 501 specifications.
6. Aggregates shall be graded in accordance with AKDOT Standard Specifications for Highway Construction 2020 Edition.
7. Air content shall be between 5.5% and 6.5% (by volume).
8. Admixtures shall not be used without approval by the Railroad.
9. Curing shall be accomplished by wet curing or application of a Type 2 membrane.
10. Concrete work shall conform to all requirements of ACI 306.1, Standard Specification for Cold Weather Concreting. Contractor shall submit detailed procedures for the production, transportation, placement, protection, curing, and temperature monitoring of concrete during cold weather to the Railroad for approval.

REINFORCING STEEL

1. Reinforcing steel shall be deformed, new billet bars per ASTM A615 specifications and meet Grade 60 requirements. Bars shall be non-coated.
2. Fabrication of reinforcing steel shall be per Chapter 7 of the CRSI Manual of Standard Practice. Dimensions of bending details are out to out of bar.
3. Reinforcing steel shall be blocked and tied to proper location and securely wired against displacement. Tie wires shall be installed at every other bar intersection so that at least 50% of the intersections are tied. Tack welding of reinforcing is prohibited. Minimum concrete cover on reinforcing not otherwise noted shall meet the AREMA Manual for Railway Engineering requirements.

REV.	DATE	BY	REVISION

ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

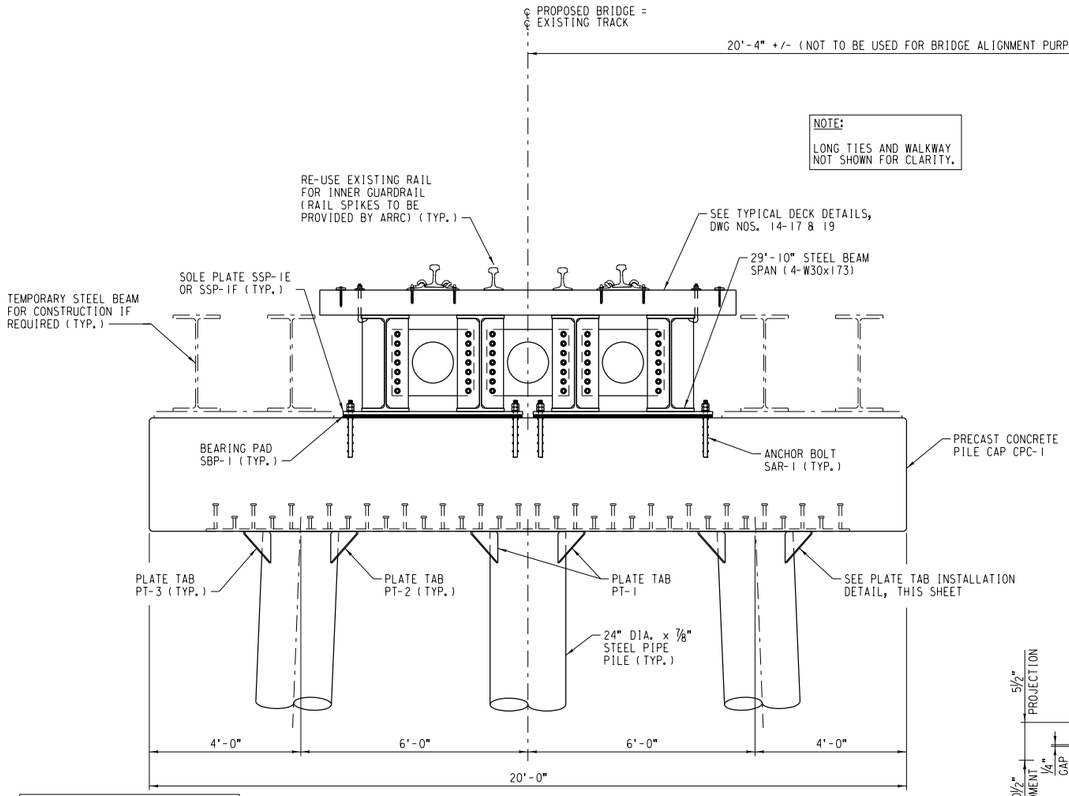
PROJECT:

TRAIL RIVER BRIDGE REPLACEMENT

TITLE:

PILE DETAILS

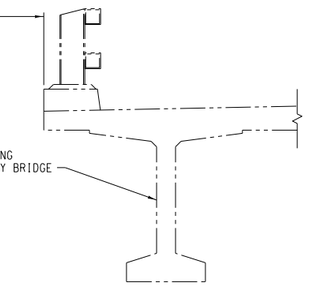
DESIGNED BY: BJB	SCALE: AS NOTED	DWG NO.	
DRAWN BY: DTP		S5 OF S19	
CHECKED BY: BWB	DATE: 03/01/2022		
APPROVED BY:			

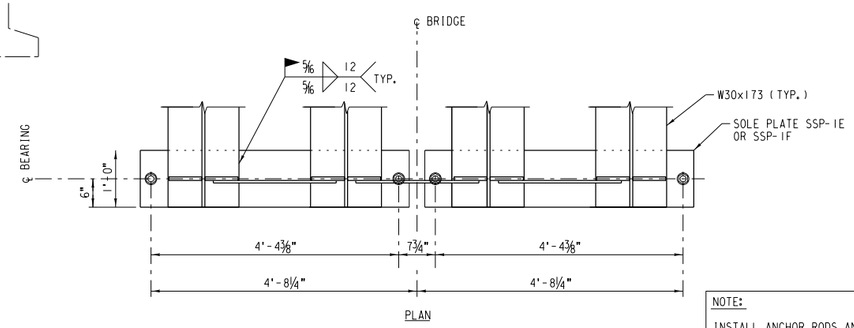


TYPICAL SECTION

SCALE: 1/2"=1'-0"

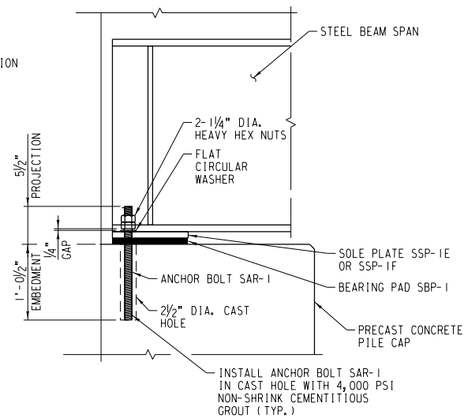
INTERIOR BENT SHOWN, END BENTS SIMILAR
(DO NOT INSTALL PLATE TABS AT END BENTS)





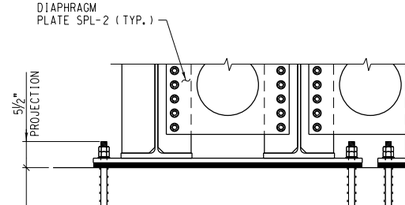
PLAN

NOTE:
INSTALL ANCHOR RODS AND SOLE PLATES BEFORE SETTING SPANS, OTHERWISE ANCHOR RODS WILL CONFLICT WITH END DIAPHRAGMS.



ANCHOR BOLT INSTALLATION DETAIL

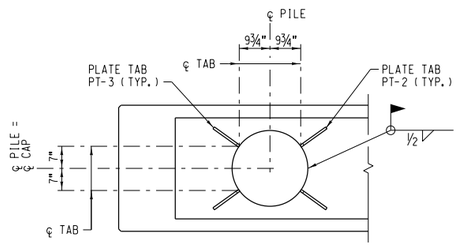
SCALE: 1"=1'-0"



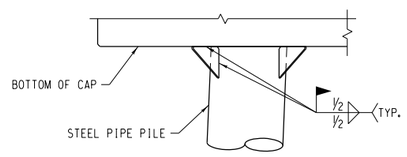
ELEVATION

BEARING ASSEMBLY DETAIL

SCALE: 3/4"=1'-0"



BOTTOM PLAN

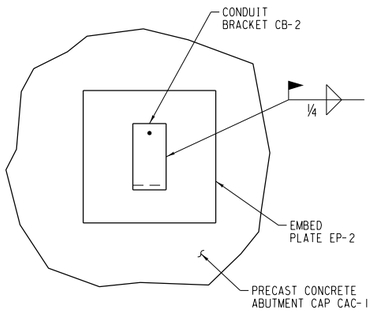


ELEVATION

PLATE TAB INSTALLATION DETAIL

SCALE: 1/2"=1'-0"

EXTERIOR PILE SHOWN, INTERIOR PILE SIMILAR



CONDUIT BRACKET CB-2 CONNECTION DETAIL

SCALE: 1 1/2"=1'-0"

(BENT #1 ONLY)

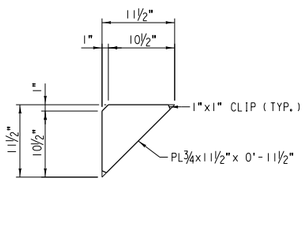


PLATE TAB PT-1

SCALE: 1"=1'-0"

EST. WT. = 28.2 LB. EA.

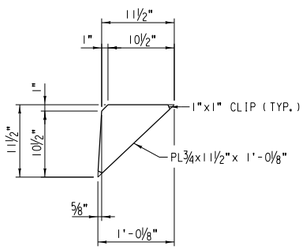


PLATE TAB PT-2

SCALE: 1"=1'-0"

EST. WT. = 29.7 LB. EA.

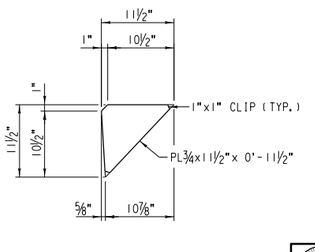


PLATE TAB PT-3

SCALE: 1"=1'-0"

EST. WT. = 28.2 LB. EA.

ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

PROJECT:
TRAIL RIVER BRIDGE REPLACEMENT

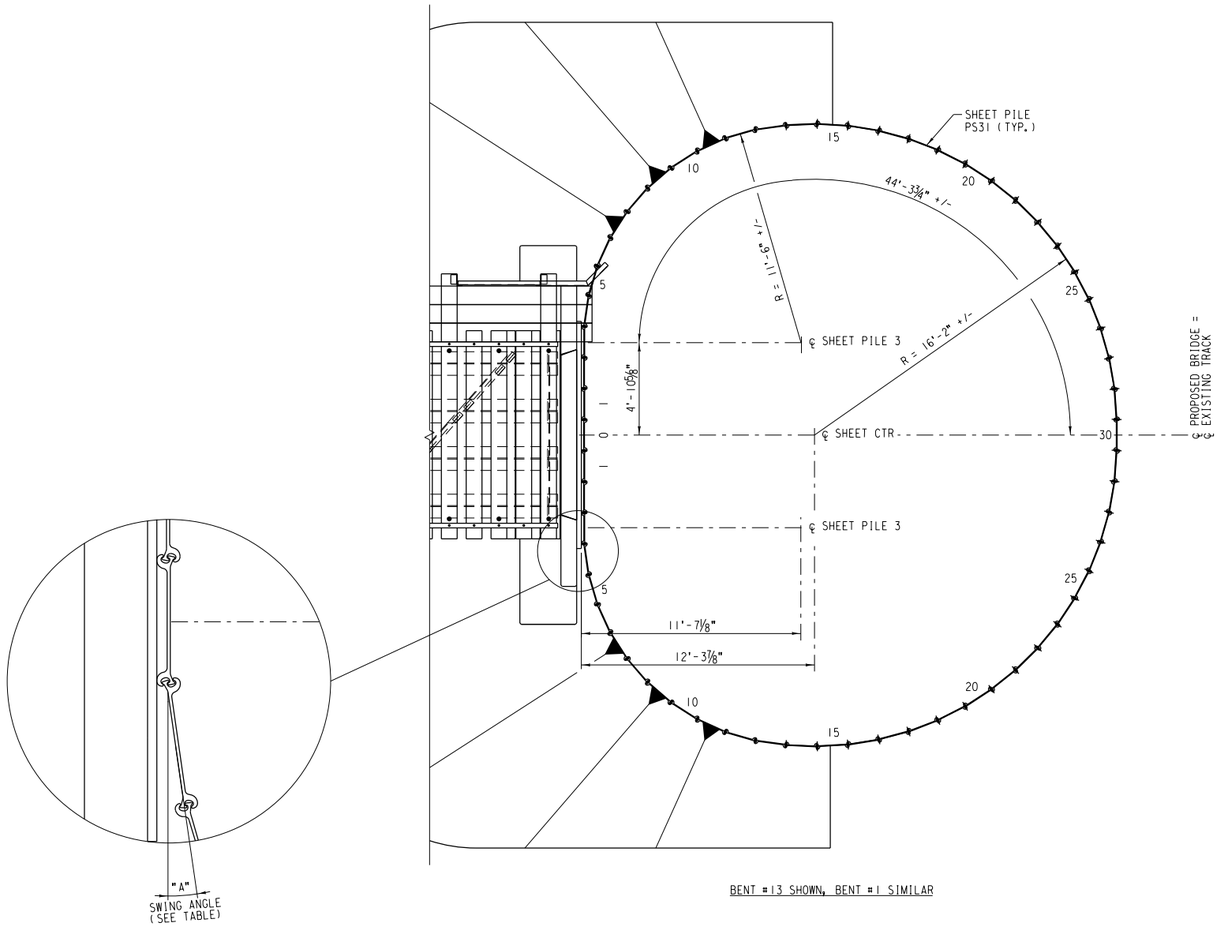
TITLE:
TYPICAL SECTION

REV.	DATE	BY	REVISION

DESIGNED BY: BJB
DRAWN BY: DTP
CHECKED BY: BWB
APPROVED BY:

SCALE: AS NOTED
DATE: 03/01/2022

DWG NO.
S6 OF S19



BENT #13 SHOWN, BENT #1 SIMILAR

PLAN - SHEET PILE BULKHEAD

SCALE: 1/4"=1'-0"

SHEET PILE SWING ANGLE TABLE	
BENT #1 AND #13	
SHEET PILES	ANGLE "A"
0 - 3	0.0°
4 - 13	8.2°
14	5.5°
15 - 29	5.9°
30	4.0°

REV.	DATE	BY	REVISION

ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

PROJECT:
TRAIL RIVER BRIDGE REPLACEMENT

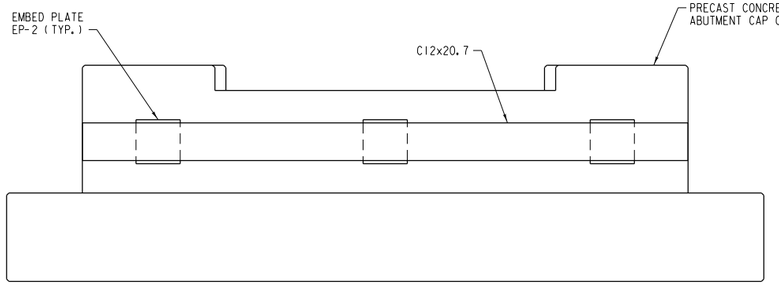
TITLE:
SHEET PILE BULKHEAD DETAILS
(SHEET 1 OF 2)

DESIGNED BY: BJB
DRAWN BY: DTP
CHECKED BY: BWB
APPROVED BY:

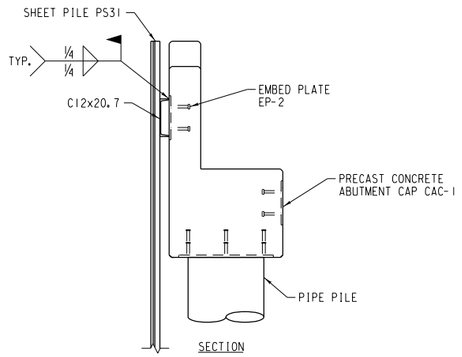
SCALE: AS NOTED

DATE: 03/01/2022

DWG NO.
S7 OF S19



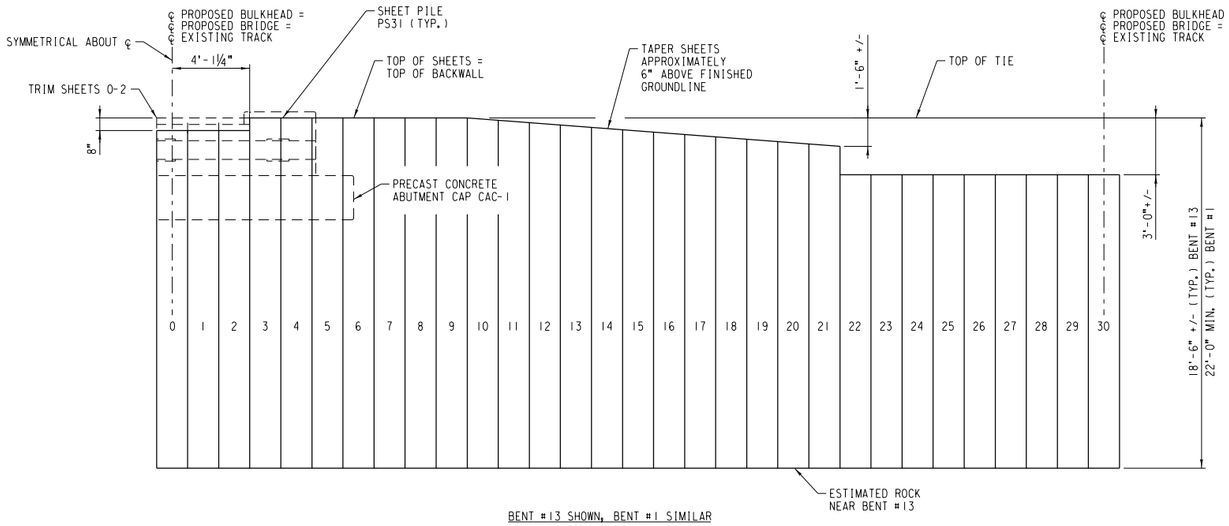
ELEVATION



SECTION

BULKHEAD FENDER ASSEMBLY DETAIL

SCALE: 1/2"=1'-0"



BENT #13 SHOWN, BENT #1 SIMILAR

NOTE:

ALL SHEET TO BE DRIVEN TO HIGHER ELEVATION AND CUT DOWN TO FINAL ELEVATION, REMOVING LIFTING HOLES IN SHEET PILE.

BULKHEAD ELEVATION

SCALE: 1/4"=1'-0"

NOTES:

1. FILL INSIDE BULKHEAD SHALL BE STRUCTURAL FILL FURNISHED, SHAPED, AND COMPACTED IN ACCORDANCE WITH AKDOT AND PUBLIC FACILITIES STANDARD SPECIFICATION FOR HIGHWAY CONSTRUCTION 2020 EDITION, SECTION 205, EXCAVATION AND FILL FOR MAJOR STRUCTURES.
2. SUBBALLAST ABOVE STRUCTURAL FILL SHALL BE A MINIMUM 1'-0" GRADING C-1 FURNISHED, PLACED, SHAPED, AND COMPACTED TO AKDOT AND PUBLIC FACILITIES STANDARD SPECIFICATION FOR HIGHWAY CONSTRUCTION 2020 EDITION, SECTION 301, AGGREGATE BASE AND SURFACE COURSE.
3. AFTER INSTALLATION OF BULKHEAD SHEET PILES CONTRACTOR SHALL FIELD DRILL 1" DIAMETER DRAIN HOLES IN THE SHEET PILES 1'-0" ABOVE THE GROUND SURFACE ON THE OUTSIDE OF THE SHEET PILES. DRAIN HOLES SHALL BE A MAXIMUM OF 5'-0" SPACING LONGITUDINALLY AROUND THE CONSTRUCTED BULKHEAD.

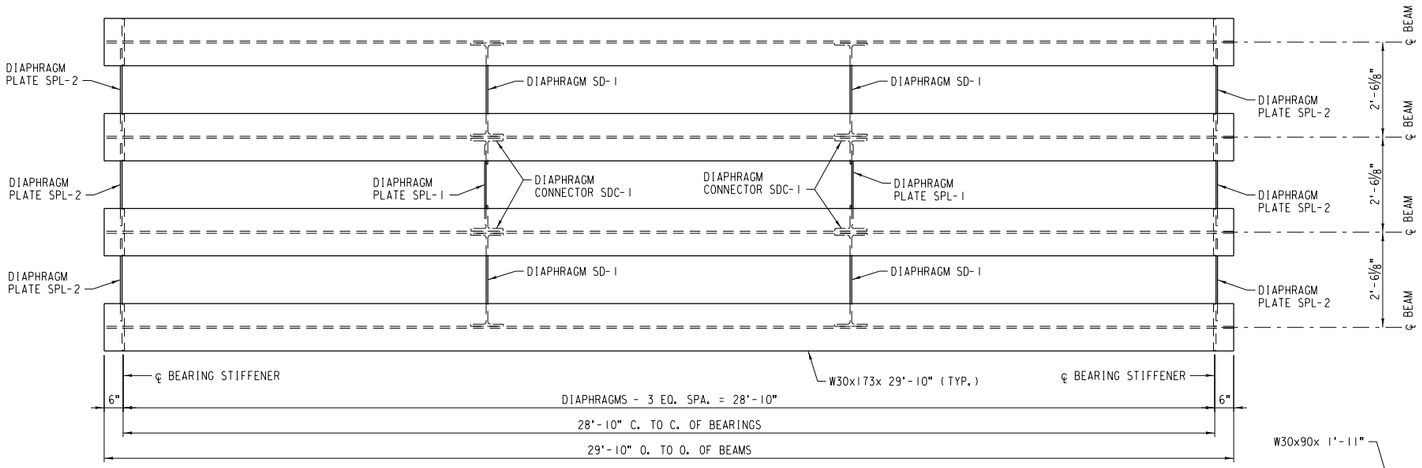
REV.	DATE	BY	REVISION

ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

PROJECT:
TRAIL RIVER BRIDGE REPLACEMENT

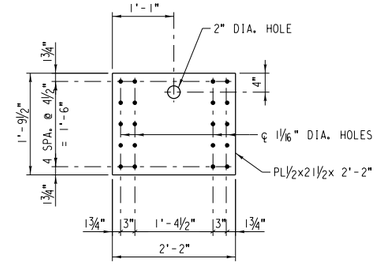
TITLE:
SHEET PILE BULKHEAD DETAILS
(SHEET 2 OF 2)

DESIGNED BY: BJB	SCALE: AS NOTED	DWG NO.
DRAWN BY: DTP		S8 OF S19
CHECKED BY: BWB	DATE: 03/01/2022	
APPROVED BY:		



STEEL FRAMING PLAN

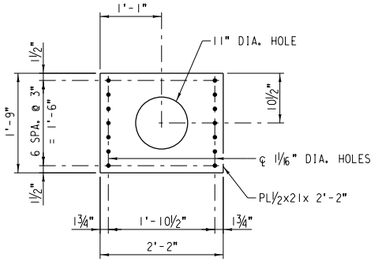
SCALE: ½"=1'-0"



DIAPHRAGM PLATE SPL-1

SCALE: ¾"=1'-0"

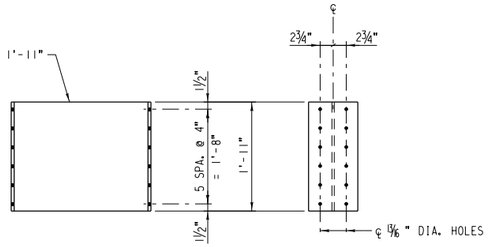
EST. WT. = 79.3 LB. EA.



DIAPHRAGM PLATE SPL-2

SCALE: ¾"=1'-0"

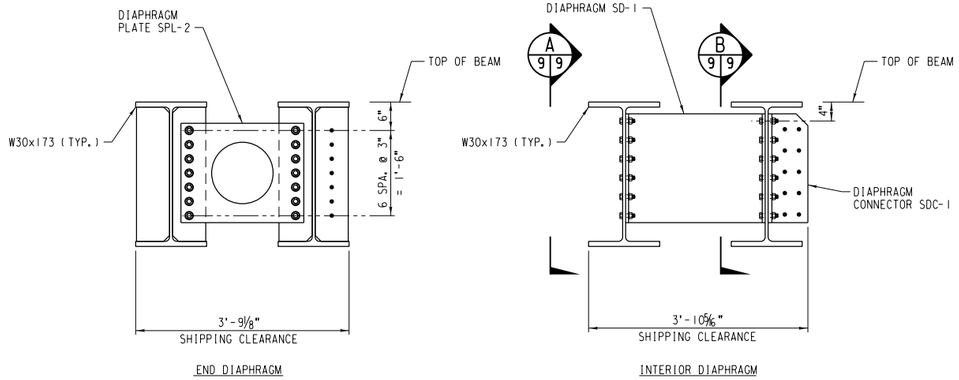
EST. WT. = 77.5 LB. EA.



DIAPHRAGM SD-1

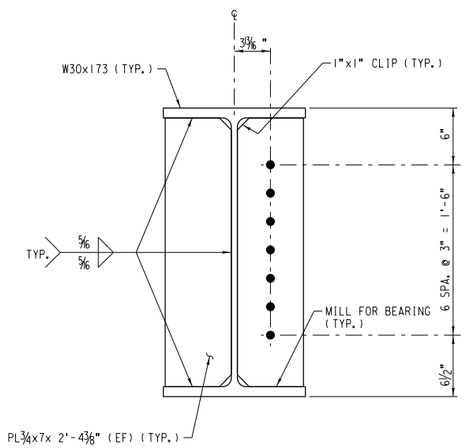
SCALE: ¾"=1'-0"

EST. WT. = 173 LB. EA.



SECTION - SHOP ASSEMBLED UNITS

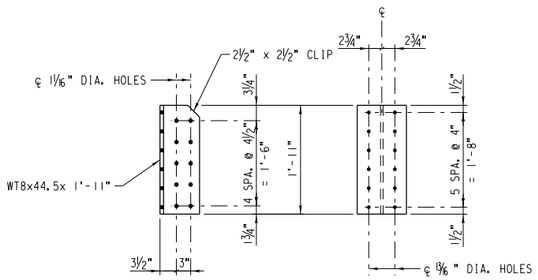
SCALE: ¾"=1'-0"



BEARING STIFFENER DETAIL

SCALE: 1½"=1'-0"

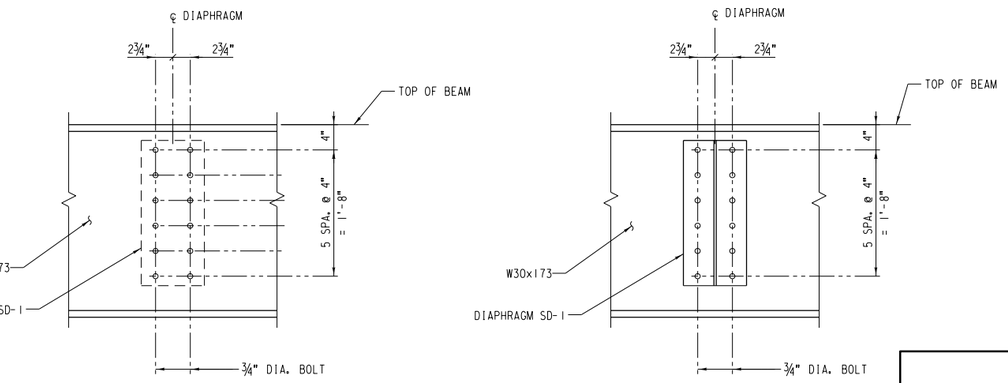
EXTERIOR BEAM SHOWN, INTERIOR BEAM SIMILAR



DIAPHRAGM CONNECTOR SDC-1

SCALE: ¾"=1'-0"

EST. WT. = 85.3 LB. EA.



SECTION A 9 9

SCALE: 1"=1'-0"

SECTION B 9 9

SCALE: 1"=1'-0"

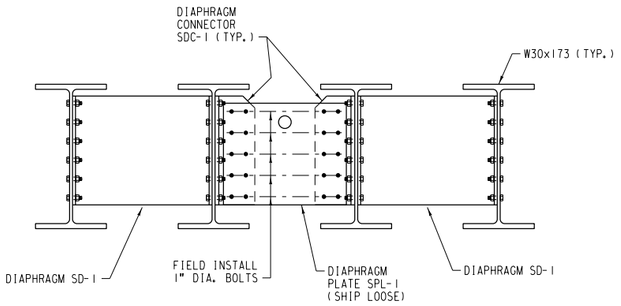
REV.	DATE	BY	REVISION

ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

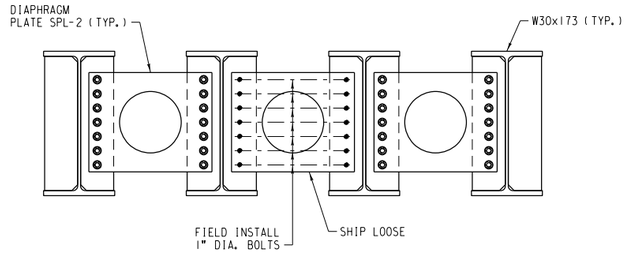
PROJECT:
TRAIL RIVER BRIDGE REPLACEMENT

TITLE:
STRUCTURAL STEEL DETAILS
(SHEET 1 OF 3)

DESIGNED BY:	BJB	SCALE: AS NOTED	DWG NO.
DRAWN BY:	DTP		S9 OF S19
CHECKED BY:	BWB	DATE: 03/01/2022	
APPROVED BY:			



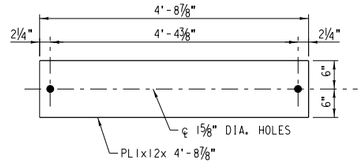
INTERIOR DIAPHRAGM



END DIAPHRAGM

SECTION - ASSEMBLED SPAN

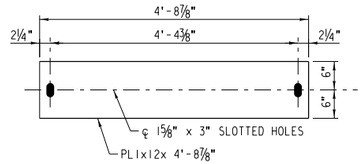
SCALE: 3/4"=1'-0"



SOLE PLATE SSP-1F

SCALE: 3/4"=1'-0"

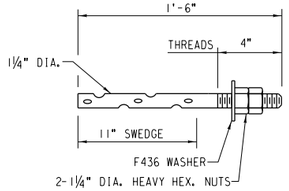
(24 TOTAL)



SOLE PLATE SSP-1E

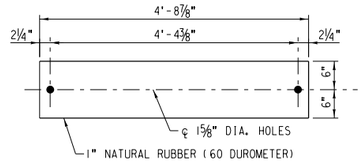
SCALE: 3/4"=1'-0"

(24 TOTAL)



ANCHOR BOLT SAR-1

NO SCALE



BEARING PAD SBP-1

SCALE: 3/4"=1'-0"

(48 TOTAL)

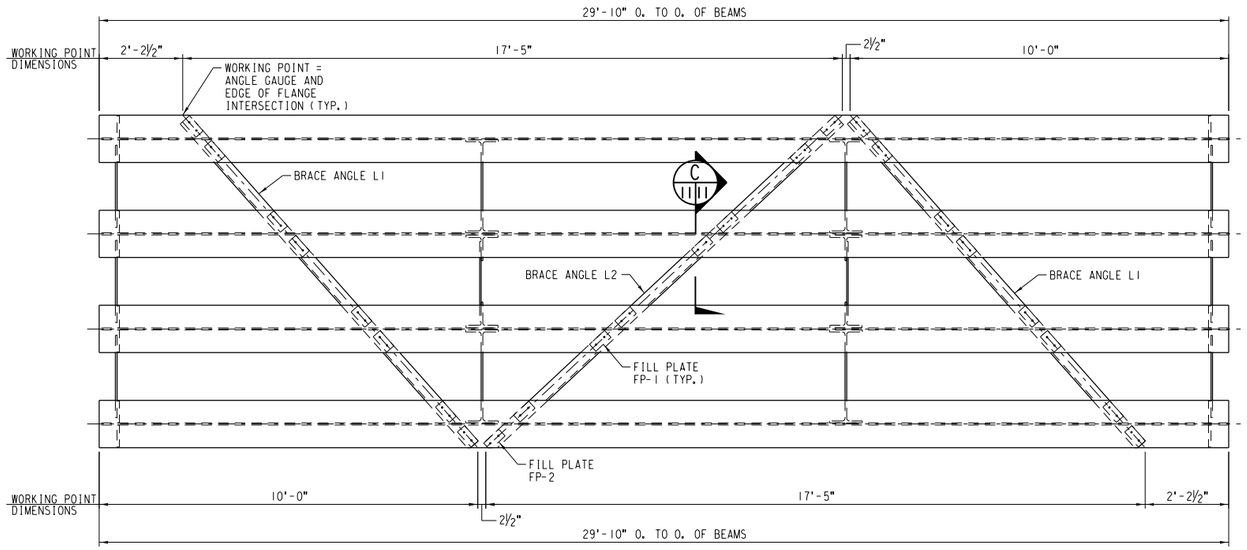
REV.	DATE	BY	REVISION

ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

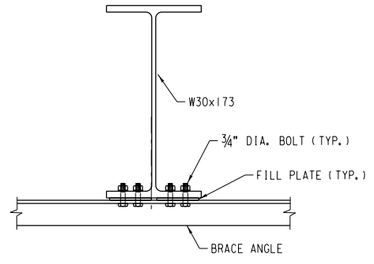
PROJECT:
TRAIL RIVER BRIDGE REPLACEMENT

TITLE:
STRUCTURAL STEEL DETAILS
(SHEET 2 OF 3)

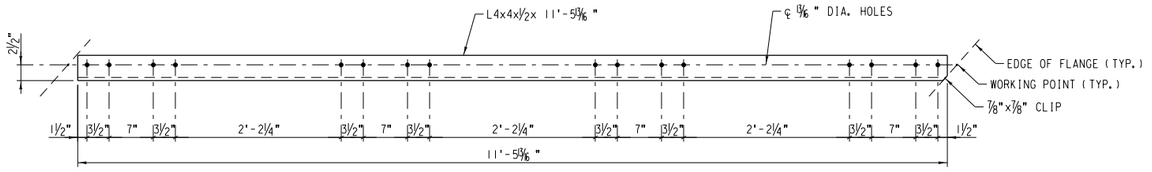
DESIGNED BY: BJB	SCALE: AS NOTED	DWG NO.	
DRAWN BY: DTP		S10 OF S19	
CHECKED BY: BWB	DATE: 03/01/2022		
APPROVED BY:			



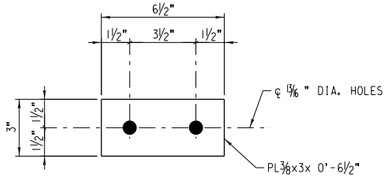
BOTTOM LATERAL BRACING PLAN
SCALE: ½"=1'-0"



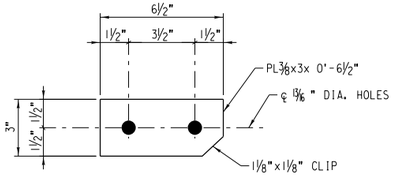
SECTION C
SCALE: 1"=1'-0"



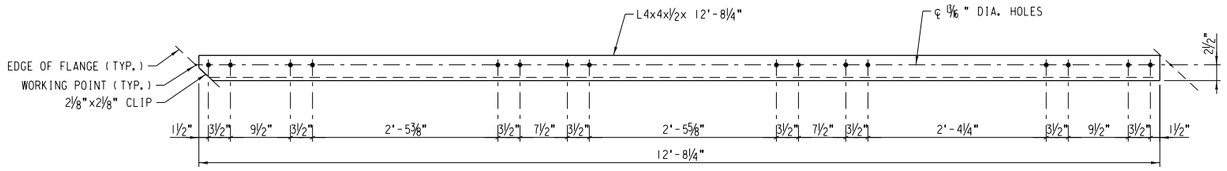
BRACE ANGLE L1
SCALE: 1"=1'-0"
EST. WT. = 147 LB. EA.



FILL PLATE FP-1
SCALE: 3"=1'-0"
EST. WT. = 2.1 LB. EA.



FILL PLATE FP-2
SCALE: 3"=1'-0"
EST. WT. = 2.1 LB. EA.



BRACE ANGLE L2
SCALE: 1"=1'-0"
EST. WT. = 163 LB. EA.

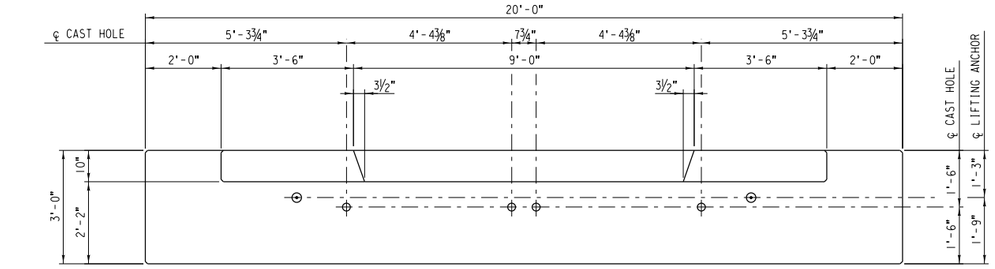
REV.	DATE	BY	REVISION

ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

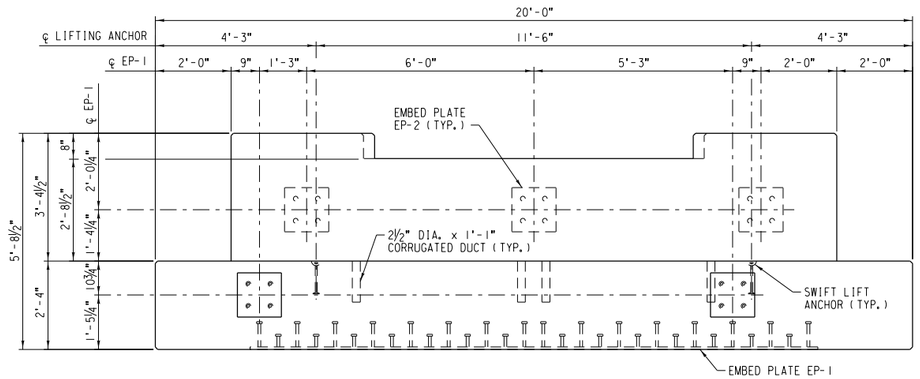
PROJECT:
TRAIL RIVER BRIDGE REPLACEMENT

TITLE:
STRUCTURAL STEEL DETAILS
(SHEET 3 OF 3)

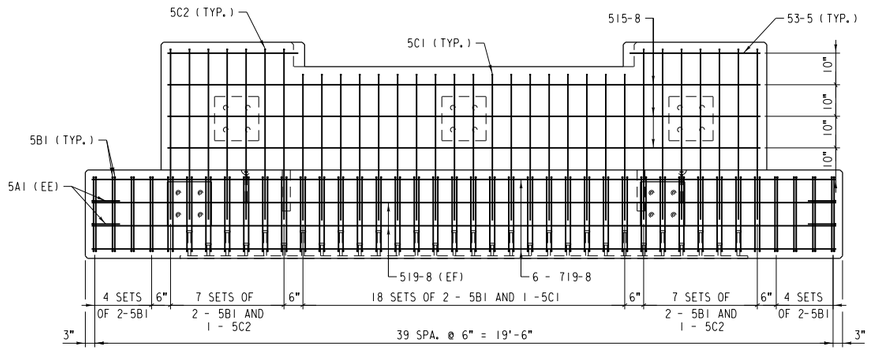
DESIGNED BY: BJB	SCALE: AS NOTED	DWG NO.	
DRAWN BY: DTP		S11 OF S19	
CHECKED BY: BWB	DATE: 03/01/2022		
APPROVED BY:			



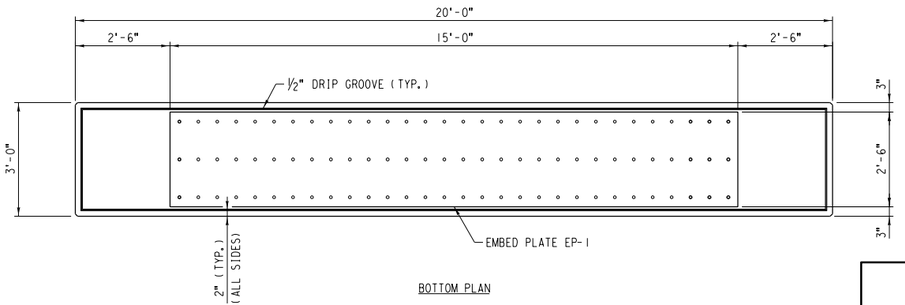
FRAMING - PLAN



FRAMING - ELEVATION



REINFORCING - ELEVATION

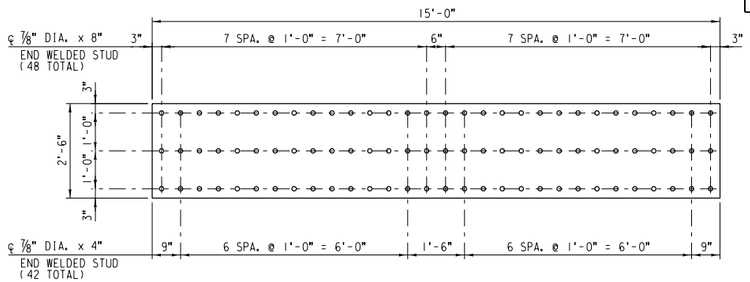


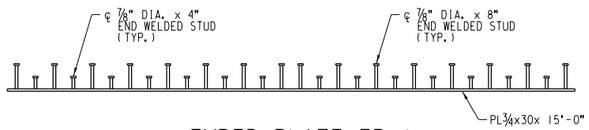
BOTTOM PLAN

PRECAST CONCRETE ABUTMENT CAP CAC-1

SCALE: ½"=1'-0"

EST. WT. = 27,500 LB. EA.

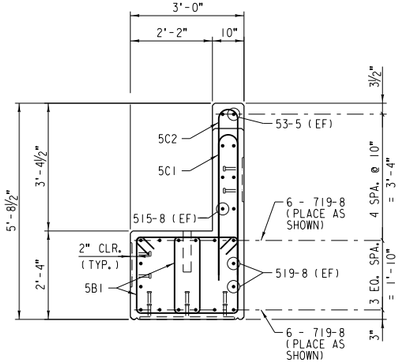




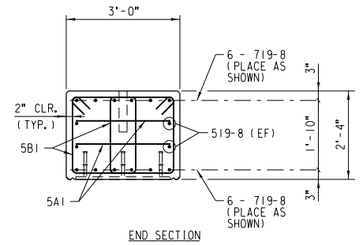
EMBED PLATE EP-1

SCALE: ½"=1'-0"

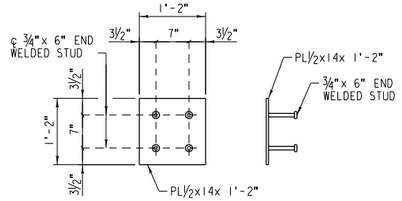
EST. WT. = 1,250 LB. EA.



INTERIOR SECTION



END SECTION



EMBED PLATE EP-2

SCALE: ¾"=1'-0"

EST. WT. = 31.7 LB. EA.

GALVANIZE AFTER FABRICATION

CONCRETE ABUTMENT CAP CAC-1 MATERIAL SCHEDULE

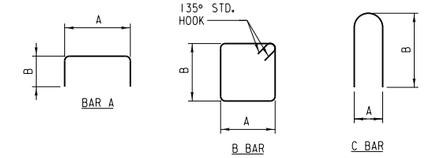
PER ABUTMENT CAP	UNIT	DESCRIPTION
6.7	CU. YD.	4,000 PSI CONCRETE (PER NOTES, DWG NO. 1)
1	LOT	REINFORCING STEEL (PER NOTES, DWG NO. 1 AND SCHEDULE DWG NO. 12)
1	EA.	EMBED PLATE EP-1 (PER DETAIL, DWG NO. 12)
5	EA.	EMBED PLATE EP-2 (PER DETAIL, DWG NO. 12)
2	EA.	8-TON SWIFT LIFT ANCHOR, L=13⅜" (PER NOTES, DWG NO. 1 AND DETAIL DWG NO. 13)

CONCRETE ABUTMENT CAP CAC-1 REINFORCING SCHEDULE

NAME	SIZE	TYPE	A	B	LENGTH	PER CAP
53-5	#5	STR.	-	-	3'-5"	4
515-8	#5	STR.	-	-	15'-8"	6
519-8	#5	STR.	-	-	19'-8"	4
719-8	#7	STR.	-	-	19'-8"	12
5A1	#5	A	2'-6"	0'-10"	4'-2"	4
5B1	#5	B	1'-8"	2'-0"	8'-3"	80
5C1	#5	C	6"	3'-10"	8'-2"	18
5C2	#5	C	6"	4'-6"	9'-6"	14

BENDING DIAGRAM

(DIMENSIONS ARE OUT TO OUT)



DIMENSIONS ARE OUT-TO-OUT OF BARS

EST. WT. OF REINFORCING STEEL PER ABUTMENT CAP = 1,675 LB.

NOTES:

1. MINIMALLY ADJUST REINFORCING AS REQUIRED TO CLEAR EMBEDDED ITEMS AND HOLES.
2. EF = EACH FACE
   EE = EACH END

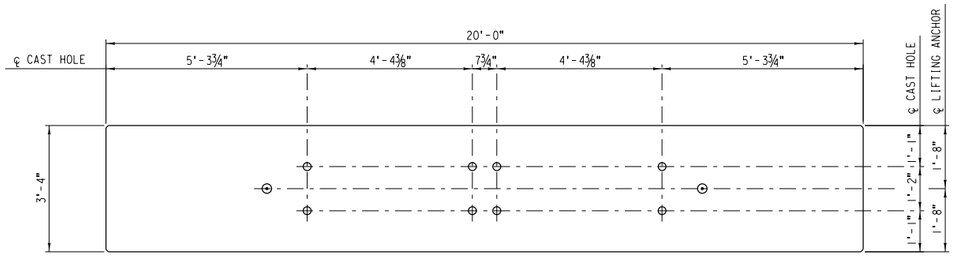
REV.	DATE	BY	REVISION

ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

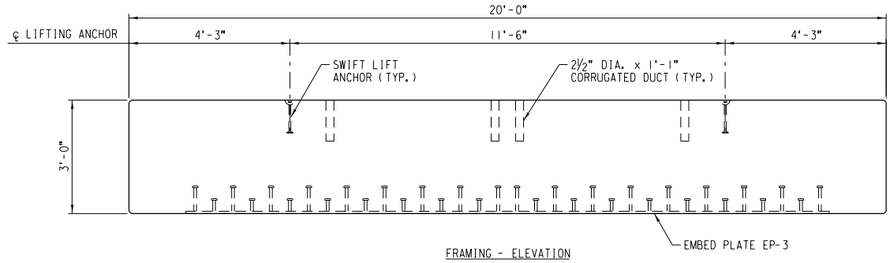
PROJECT: TRAIL RIVER BRIDGE REPLACEMENT

TITLE: PRECAST CONCRETE ABUTMENT CAP CAC-1

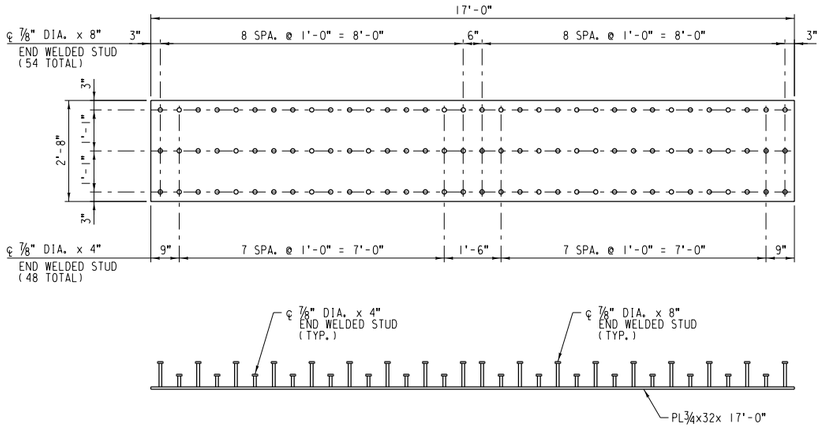
DESIGNED BY:	BJB	SCALE: AS NOTED	DWG NO. S12 OF S19
DRAWN BY:	DTP		
CHECKED BY:	BWB	DATE: 03/01/2022	
APPROVED BY:			



FRAMING - PLAN



FRAMING - ELEVATION



EMBED PLATE EP-3

SCALE: ½"=1'-0"

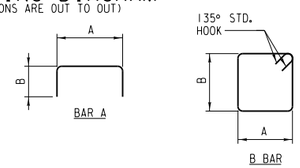
EST. WT. = 1,510 LB. EA.

CONCRETE PILE CAP CPC-1 MATERIAL SCHEDULE		
PER PILE CAP	UNIT	DESCRIPTION
7.4	CU. YD.	4,000 PSI CONCRETE (PER NOTES, DWG NO. 1)
1	LOT	REINFORCING STEEL (PER NOTES, DWG NO. 1 AND SCHEDULE DWG NO. 13)
1	EA.	EMBED PLATE EP-3 (PER DETAIL, DWG NO. 13)
2	EA.	8-TON SWIFT LIFT ANCHOR, L=13⅜" (PER NOTES, DWG NO. 1 AND DETAIL DWG NO. 13)

CONCRETE PILE CAP CPC-1 REINFORCING SCHEDULE						
NAME	SIZE	TYPE	A	B	LENGTH	PER CAP
519-8	#5	STR.	-	-	19'-8"	4
819-8	#8	STR.	-	-	19'-8"	7
5A1	#5	A	2'-10"	0'-10"	4'-6"	4
9A1	#9	A	19'-8"	1'-7"	22'-10"	7
5B1	#5	B	1'-11"	2'-8"	10'-1"	80

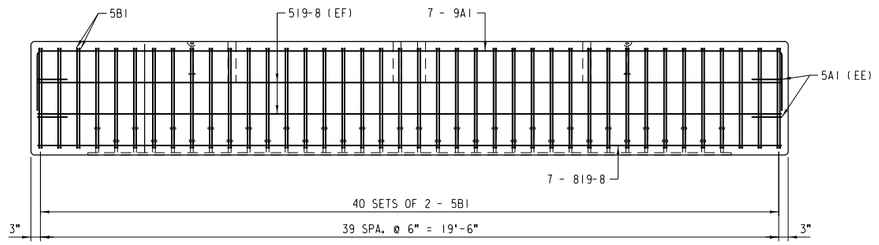
BENDING DIAGRAM

(DIMENSIONS ARE OUT TO OUT)

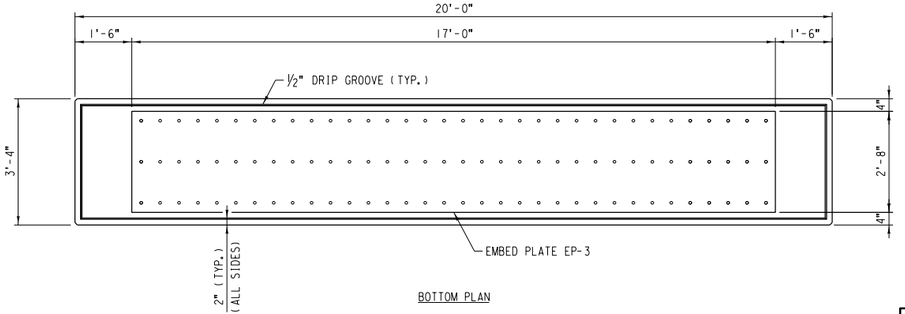


DIMENSIONS ARE OUT-TO-OUT OF BARS

EST. WT. OF REINFORCING STEEL PER PILE CAP = 1,860 LB.



REINFORCING - ELEVATION

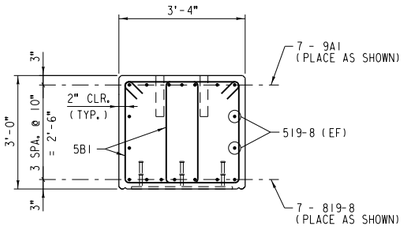


BOTTOM PLAN

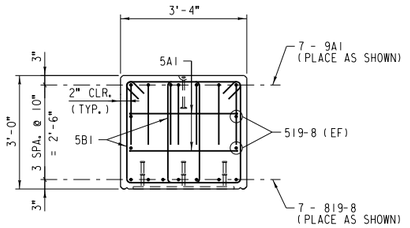
PRECAST CONCRETE PILE CAP CPC-1

SCALE: ½"=1'-0"

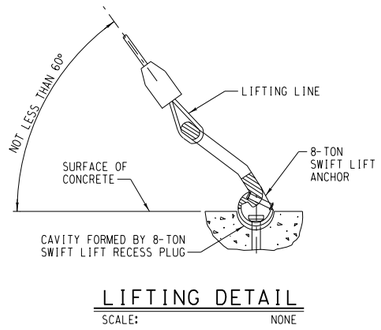
EST. WT. = 31,100 LB. EA.



TYPICAL SECTION



END SECTION



LIFTING DETAIL

SCALE: NONE

NOTE:

8-TON SWIFT LIFT RECESS PLUGS, ANCHORS AND LIFTING EYES ARE AVAILABLE FROM DAYTON SUPERIOR CORP., 1125 BYERS ROAD, MIAMISBURG, OHIO 45342, TELEPHONE (937) 866-0711. THE MATERIALS FOR THIS LIFTING SYSTEM ARE NOT INCLUDED IN THE BILL OF MATERIAL BUT ARE TO BE ORDERED AS REQUIRED.

NOTES:

1. MINIMALLY ADJUST REINFORCING AS REQUIRED TO CLEAR EMBEDDED ITEMS AND HOLES.
2. EF = EACH FACE
   EE = EACH END

REV.	DATE	BY	REVISION

ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

PROJECT:
TRAIL RIVER BRIDGE REPLACEMENT

TITLE:
PRECAST CONCRETE PILE CAP CPC-1

DESIGNED BY: BJB	SCALE: AS NOTED	DWG NO.	
DRAWN BY: DTP		S13 OF S19	
CHECKED BY: BWB	DATE: 03/01/2022		
APPROVED BY:			

GENERAL NOTES:

1. Field verify all dimensions and elevations prior to the start of construction.
2. Timber ties, backwall ties, and closure blocks to be produced from softwood species West Coast Douglas Fir Select Structural or Southern Pine No. 1 Dense.
3. Timber to be well seasoned and conditioned. Timber to be pressure treated with creosote preservative per AREMA Chapter 30-3.7 "Specifications for Treatment" and appropriate AWPA Standards.
4. All hook bolt holes to be field drilled.
5. Apply timber preservative (Copper Naphthenate, or equivalent) to all field drilled holes, cuts, and abrasions.
6. Plank grating shall be 2" deep Grip Strut as manufactured by McNichols (galvanized) or approved alternate.

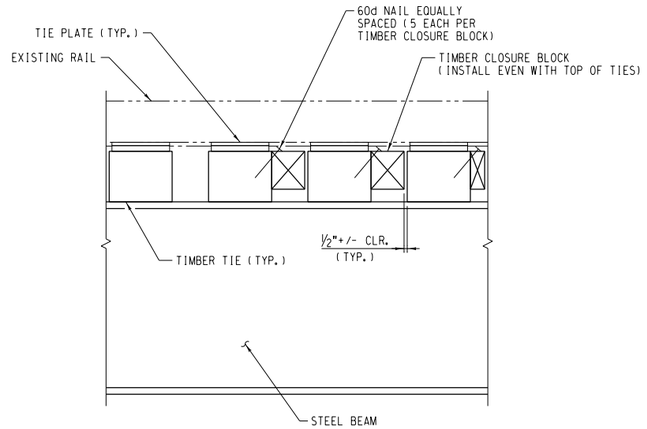
   Website:
   www.mcnichols.com
7. Any cuts made to grating after galvanizing process shall be treated with ZRC Cold-Galvanizing compound.

PLANK GRATING SCHEDULE

REQ'D.	UNIT	DESCRIPTION
12	EA.	MCNICHOLS GRIP STRUT PLANK GRATING, 12 GAUGE, 2" DEEP x 11¾" WIDE x 10'-0" LONG (GALVANIZED)
24	EA.	MCNICHOLS GRIP STRUT PLANK GRATING, 12 GAUGE, 2" DEEP x 11¾" WIDE x 13'-0" LONG (GALVANIZED)
24	EA.	MCNICHOLS GRIP STRUT PLANK GRATING, 12 GAUGE, 2" DEEP x 9½" WIDE x 10'-0" LONG (GALVANIZED)
48	EA.	MCNICHOLS GRIP STRUT PLANK GRATING, 12 GAUGE, 2" DEEP x 9½" WIDE x 13'-0" LONG (GALVANIZED)

EST. WT. OF PLANK GRATING = 7,345 LB.

NOTE: PLANK GRATING SCHEDULE LENGTHS ARE ROUNDED UP ASSUMING EACH PANEL WOULD BE FIELD CUT TO SPECIFIED LENGTHS IN THE DECK PLAN. CONTRACTOR MAY ORDER PANELS IN AN ALTERNATE MANNER.



TIMBER CLOSURE BLOCKING INSTALLATION DETAIL

SCALE: 1"=1'-0"

TIMBER BLOCKING SCHEDULE

REQ'D.	UNIT	SIZE
2	EA.	2¼"W x 6"H x 11'-0"
4	EA.	5¼"W x 6"H x 11'-0"

NOTE: WIDTH (W) SHOWN SHALL BE FULL DIMENSION

DECK AND FOOTWALK MATERIAL SCHEDULE

DESCRIPTION	ESTIMATING UNIT	QUANTITY
8" x 10" x 11'-0" TIMBER TIE (PER DETAIL, DWG NO. 19)	EA.	192
8" x 10" x 14'-0" TIMBER TIE (PER DETAIL, DWG NO. 19)	EA.	84
BACKWALL TIMBER TIE (PER DETAIL, DWG NO. 19)	EA.	2
TIMBER CLOSURE BLOCK (PER SCHEDULE, DWG NO. 14)	LOT	1
60d NAILS	LB.	3
15" TIE PLATE (FOR 5½" RAIL BASE)	EA.	584 *
¼" x 7¾" x 15" TIE PAD, CORDED RUBBER, DUROMETER 70	EA.	584 *
RIGHT HAND "E" CLIP	EA.	1168 *
15/16" DIA. x 6½" RECTANGULAR HEAD TIMBER COACH SCREW (HIGH TENSILE, 120 KSI MIN.)	EA.	2336 *
TIE SPACER TS-1 (PER NOTES, DWG NO. 19 AND DETAILS DWG NO. 19)	EA.	24
TIE SPACER TS-2 (PER NOTES, DWG NO. 19 AND DETAILS DWG NO. 19)	EA.	24
⅝" DIA. x 6" LAG SCREW	EA.	632 *
5/16"x3"x 0'-8" WING GUARD TAB PLATE (PER DETAIL, DWG NO. 17)	EA.	88 *
L3x2½x⅜ WING GUARD (PER DETAIL, DWG NO. 17)	LIN.FT.	365
¾" DIA. x 11" LONG, 2" STANDARD HOOK BOLT (LEWIS BOLT & NUT COMPANY, PART #HK2H2 OR APPROVED ALTERNATE)	EA.	278 *
¾" DIA. NYLON INSERT LOCKNUT (LEWIS BOLT & NUT COMPANY, PART #NFHN OR APPROVED ALTERNATE)	EA.	278 *
#10 MALLEABLE WASHER FOR ¾" DIA. BOLT	EA.	278 *
HANDRAIL POST HP-1 (PER NOTES AND DETAIL, DWG NO. 18)	EA.	1
HANDRAIL POST HP-2 (PER NOTES AND DETAIL, DWG NO. 18)	EA.	1
HANDRAIL POST HP-3 (PER NOTES AND DETAIL, DWG NO. 18)	EA.	47
BRACE B-1 (PER NOTES AND DETAIL, DWG NO. 18)	EA.	1
BRACE B-2 (PER NOTES AND DETAIL, DWG NO. 18)	EA.	1
CONDUIT BRACKET CB-1 (PER NOTES AND DETAIL, DWG NO. 18)	EA.	47
CONDUIT BRACKET CB-2 (PER NOTES AND DETAIL, DWG NO. 18)	EA.	2
¾" DIA. X 1¾" A325 HVY. HEX BOLT, TYPE 1 w/ HVY. HEX NUT (A563, LUBRICATED) AND FLAT CIRCULAR WASHER (F436), EACH COMPONENT HOT DIP OR MECHANICALLY ZINC COATED	EA.	5 *
¾" DIA.x 13" A307 HVY. HEX BOLT w/ HVY. HEX ELASTIC LOCKNUT (MIL-DTL-32258) AND FLAT CIRCULAR WASHER (F436), EACH COMPONENT HOT DIP OR MECHANICALLY ZINC COATED	EA.	103 *
⅜" DIA.x 2" A307 HVY. HEX BOLT w/ HVY. HEX ELASTIC LOCKNUT (MIL-DTL-32258) AND FLAT CIRCULAR WASHER (F436), EACH COMPONENT HOT DIP OR MECHANICALLY ZINC COATED	EA.	52 *
GALV. MALLEABLE IRON U-BOLT w/ 2 ELASTIC LOCKNUTS (MIL-DTL-32258), ZINC PLATED, FOR ⅜" DIA. WIRE ROPE	EA.	99 *
½" DIA. EYEBOLT, 2" LONG SHANK WITH 1" I.D. EYE, PLAIN PATTERN, GALV., DROP FORGED STEEL (A489), WITH ZINC PLATED HEX NYLON INSERT LOCKNUT (A563) AND ZINC PLATED FLAT CIRCULAR WASHER (F436)	EA.	5 *
⅜" EYE TYPE STRANDVISE CABLE GRIP CARTRIDGE	EA.	5 *
⅜" NOMINAL DIAMETER WIRE ROPE, 7 WIRE GALV. STEEL STRAND, SIEMENS MARTINS GRADE A-COATING (6 @ 125' LENGTHS)	LIN.FT.	750
⅜" STRANDLINK CABLE LINK (MACLEAN POWER PRODUCTS NO. 5002 OR APPROVED EQUIVALENT)	EA.	5 *
PLANK GRATING (PER SCHEDULE, DWG NO. 14)	LOT	1
ARDOX SPIKE, 0.313" GAUGE x 7"	LB.	62
GRIP STRUT HOLD DOWN CLIP	EA.	454 *
ZRC COLD GALVANIZING COMPOUND OR APPROVED ALTERNATE	LOT	1

"*" INDICATES ADDITIONAL 5% (OR MINIMUM OF 1 EXTRA) INCLUDED IN QUANTITY.

QUANTITIES PROVIDED FOR ESTIMATING AND PLANNING PURPOSES ONLY. CONTRACTOR IS RESPONSIBLE TO FURNISH ALL PROJECT MATERIAL TO MEET PLAN REQUIREMENTS.

REV.	DATE	BY	REVISION

ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

PROJECT:
TRAIL RIVER BRIDGE REPLACEMENT

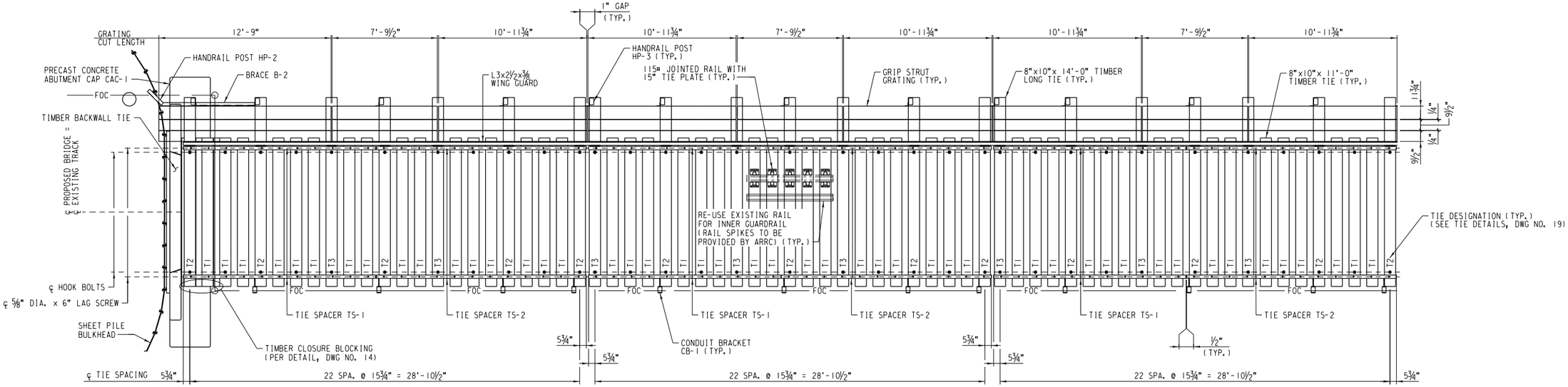
TITLE:
DECK AND FOOTWALK QUANTITIES AND GENERAL DECK NOTES

DESIGNED BY: BJB
DRAWN BY: DTP
CHECKED BY: BWB
APPROVED BY:

SCALE: AS NOTED

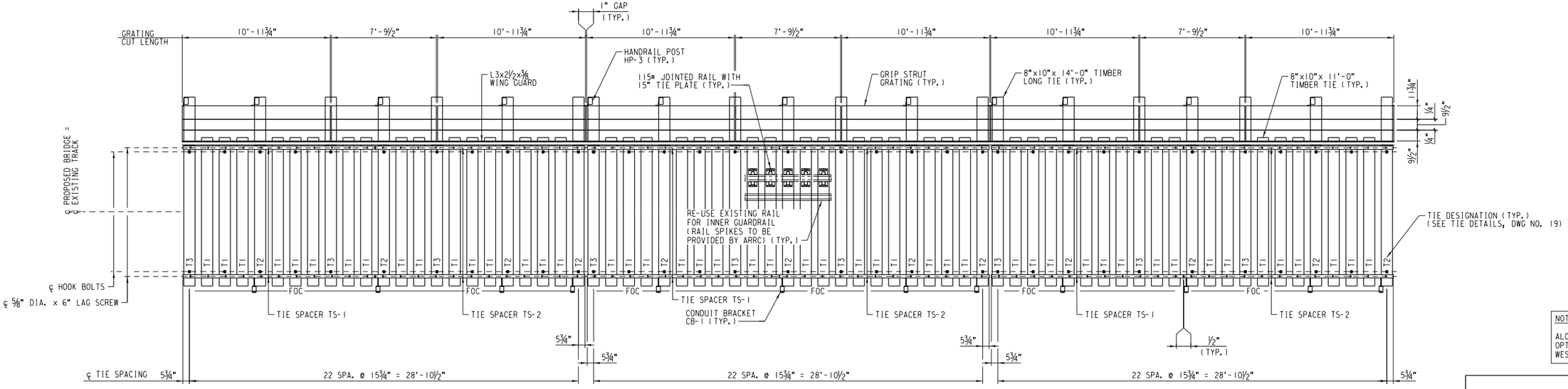
DATE: 03/01/2022

DWG NO.
S14 OF S19



DECK PLAN

SCALE: ¼"=1'-0"



DECK PLAN

SCALE: ¼"=1'-0"

FOC = FIBER OPTIC

NOTE:

ALONG BRIDGE, EXISTING FIBER OPTIC CABLE TO BE RELOCATED FROM WEST SIDE OF BRIDGE TO EAST SIDE.

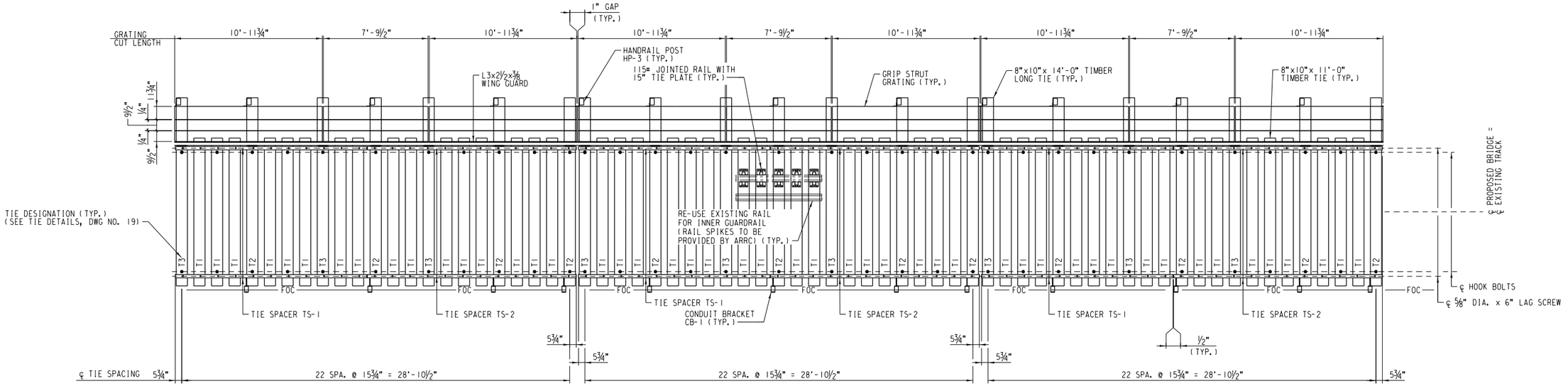
REV.	DATE	BY	REVISION

ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

PROJECT:
TRAIL RIVER BRIDGE REPLACEMENT

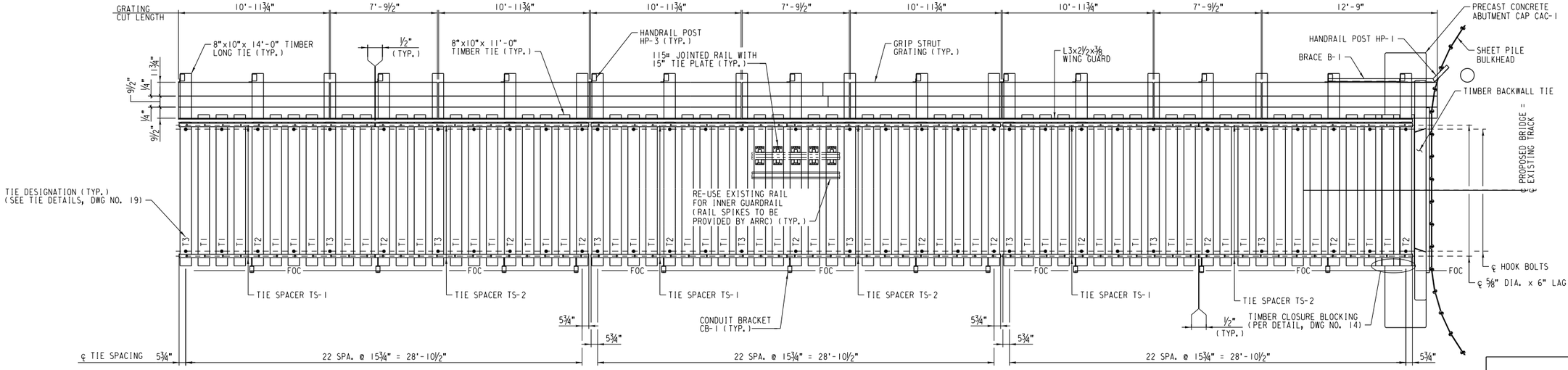
TITLE:
DECK AND FOOTWALK PLAN (SHEET 1 OF 2)

DESIGNED BY: BJB	SCALE: AS NOTED	DWG NO.	
DRAWN BY: DTP		S15 OF S19	
CHECKED BY: BWB	DATE: 03/01/2022		
APPROVED BY:			



DECK PLAN

SCALE: ¼"=1'-0"



FOC = FIBER OPTIC

NOTE:

ALONG BRIDGE, EXISTING FIBER OPTIC CABLE TO BE RELOCATED FROM WEST SIDE OF BRIDGE TO EAST SIDE.

DECK PLAN

SCALE: ¼"=1'-0"

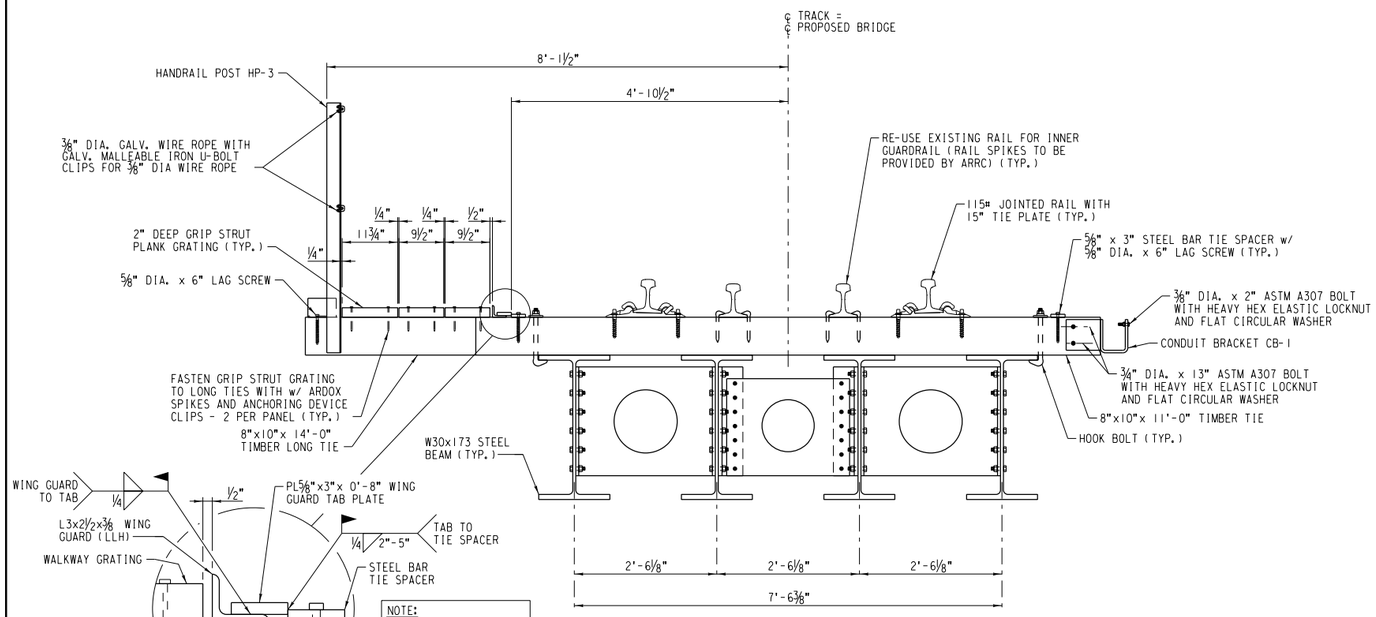
REV.	DATE	BY	REVISION

ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

PROJECT:
TRAIL RIVER BRIDGE REPLACEMENT

TITLE:
DECK AND FOOTWALK PLAN (SHEET 2 OF 2)

DESIGNED BY: BJB	SCALE: AS NOTED	DWG NO. S16 OF S19
DRAWN BY: DTP		
CHECKED BY: BWB	DATE: 03/01/2022	
APPROVED BY:		



TYPICAL DECK SECTION

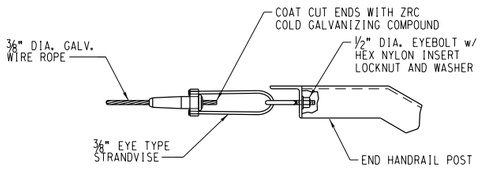
SCALE: ¾"=1'-0"

NOTE:

WING GUARD ATTACHMENT DETAIL REQUIRED AT EVERY WALKWAY TIE.

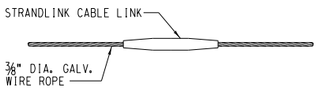
WING GUARD ATTACHMENT DETAIL

SCALE: 3"=1'-0"



WIRE ROPE END CONNECTION DETAIL

SCALE: NONE

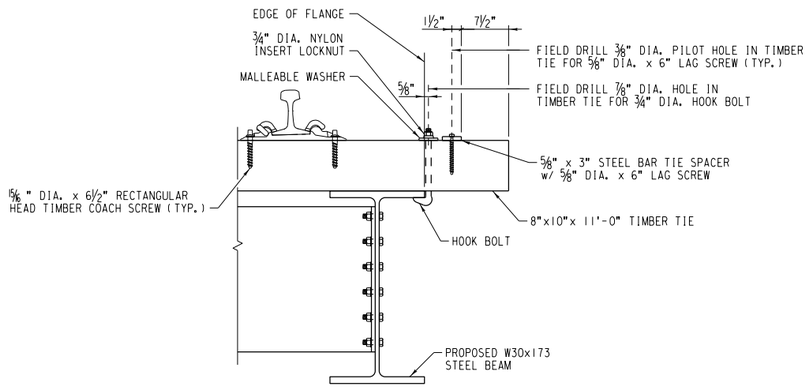


WIRE ROPE SPLICE DETAIL

SCALE: NONE

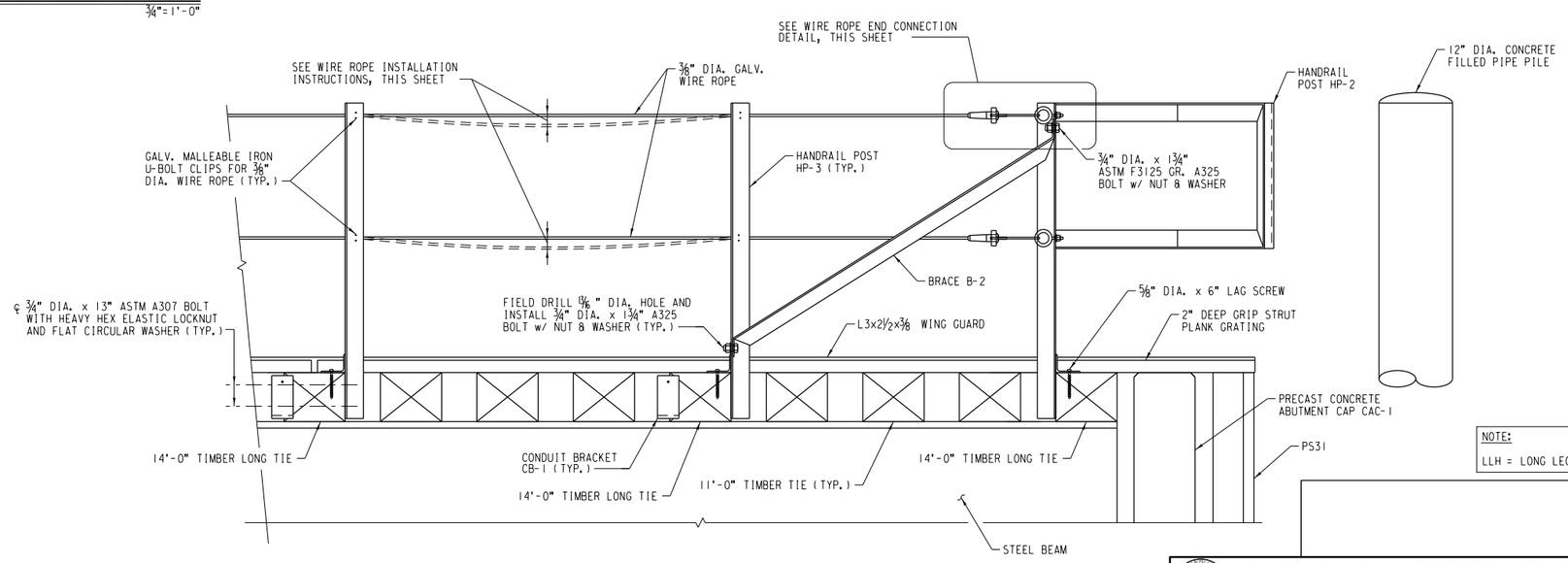
WIRE ROPE INSTALLATION INSTRUCTIONS:

1. THREAD WIRE ROPE THROUGH ALL CLIPS AND STRANDVISES.
2. STRETCH WIRE ROPE, HANG A MINIMUM OF 10 LB. ON CABLE BETWEEN TWO POSTS, AND REMOVE ALL SAG TO A MAXIMUM OF 2 INCHES.
3. TIGHTEN EYEBOLTS AT END HANDRAIL POST.
4. REMOVE WEIGHTS.
5. TIGHTEN CLIPS AT INTERMEDIATE POSTS.
6. COAT CUT ENDS OF WIRE ROPE WITH ZRC COLD GALVANIZING COMPOUND.



DECK HARDWARE DETAIL

SCALE: 1"=1'-0"



HANDRAIL POST INSTALLATION DETAIL

SCALE: 1"=1'-0"

(SOUTH END OF BRIDGE SHOWN, NORTH END SIMILAR)

NOTE:

LLH = LONG LEG HORIZONTAL

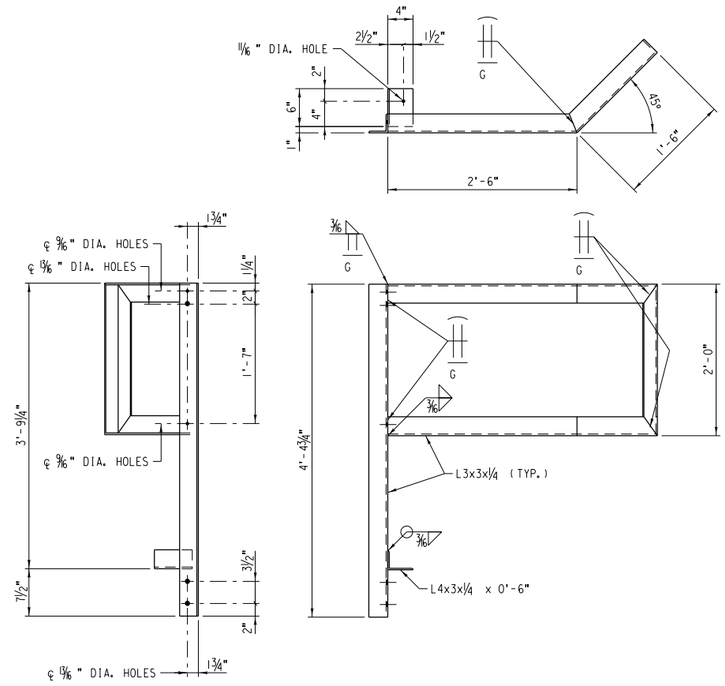
REV.	DATE	BY	REVISION

ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

PROJECT:
TRAIL RIVER BRIDGE REPLACEMENT

TITLE:
DECK DETAILS

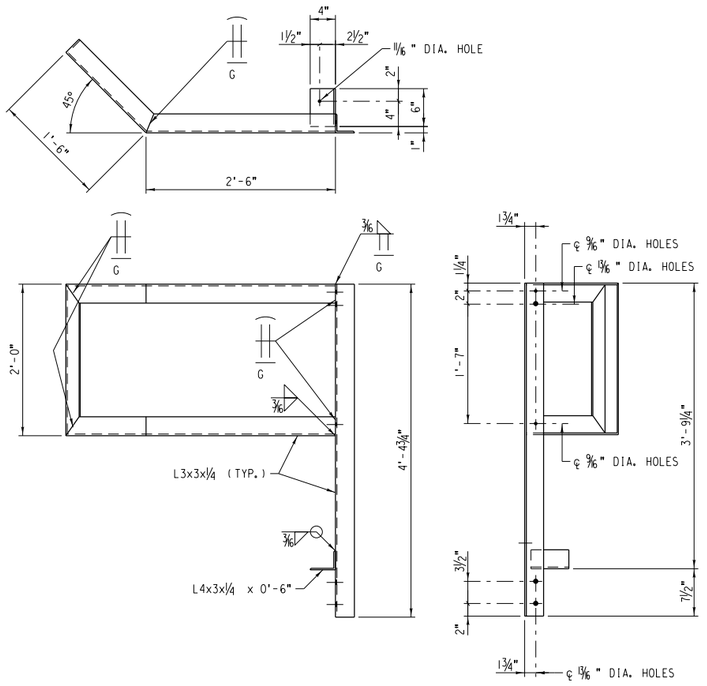
DESIGNED BY: BJB	SCALE: AS NOTED	DWG NO.	
DRAWN BY: DTP		S17 OF S19	
CHECKED BY: BWB	DATE: 03/01/2022		
APPROVED BY:			



HANDRAIL POST HP-1

SCALE: 1"=1'-0"

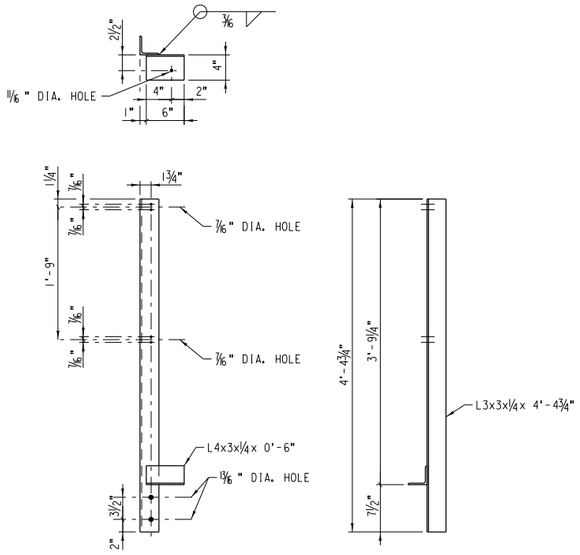
EST. WT. = 73.4 LB. EA.
(GALVANIZE AFTER FABRICATION)



HANDRAIL POST HP-2

SCALE: 1"=1'-0"

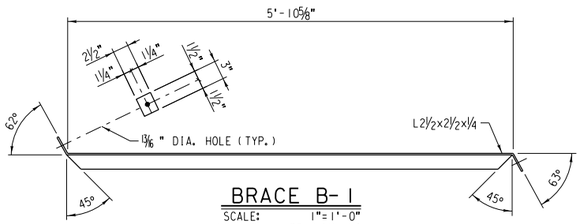
EST. WT. = 73.4 LB. EA.
(GALVANIZE AFTER FABRICATION)



HANDRAIL POST HP-3

SCALE: 1"=1'-0"

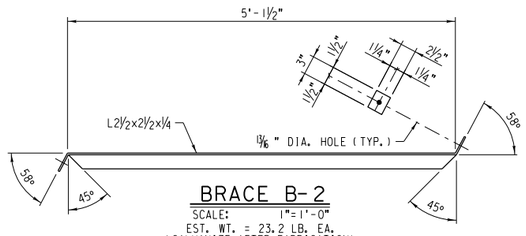
EST. WT. = 24.4 LB. EA.
(GALVANIZE AFTER FABRICATION)



BRACE B-1

SCALE: 1"=1'-0"

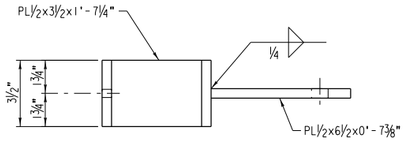
EST. WT. = 26.3 LB. EA.
(GALVANIZE AFTER FABRICATION)

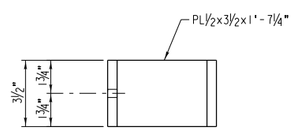


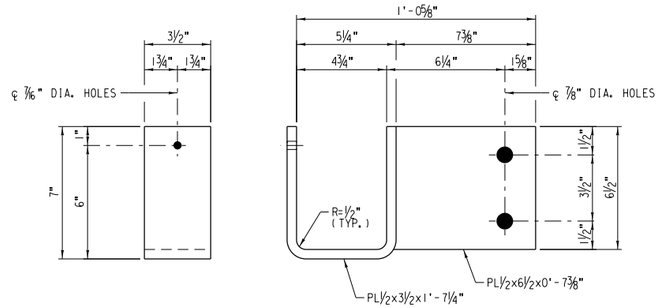
BRACE B-2

SCALE: 1"=1'-0"

EST. WT. = 23.2 LB. EA.
(GALVANIZE AFTER FABRICATION)



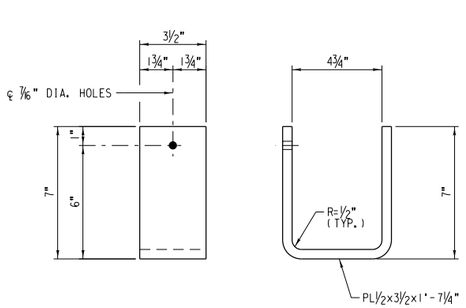




CONDUIT BRACKET CB-1

SCALE: 3"=1'-0"

EST. WT. = 16.3 LB. EA.
(GALVANIZE AFTER FABRICATION)



CONDUIT BRACKET CB-2

SCALE: 3"=1'-0"

EST. WT. = 9.6 LB. EA.
(ASTM A572)

MISCELLANEOUS STEEL SPECIFICATIONS:

Design and Workmanship - Per current AREMA Manual for Railway Engineering.

Miscellaneous Steel - Per current ASTM A36 Specifications, unless otherwise noted.

Steel Coating - Unless otherwise noted, pickle per SSPC No. 8 and Hot-Dipped Galv. per current ASTM A123 (Grade 100). Coating weight 2.3 oz. per sq. ft. Bolts and nuts to be zinc plated.

Welding - Arc Process per current AREMA Manual for Railway Engineering and AWS D1.1 Structural Welding Code.

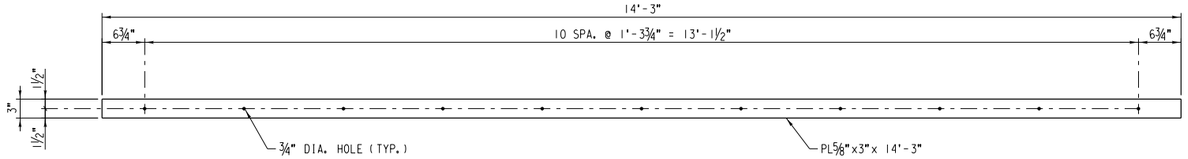
REV.	DATE	BY	REVISION

ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

PROJECT:
TRAIL RIVER BRIDGE REPLACEMENT

TITLE:
MISCELLANEOUS STEEL (SHEET 1 OF 2)

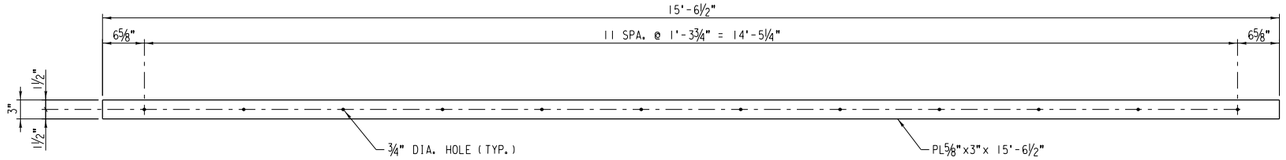
DESIGNED BY: BJB	SCALE: AS NOTED	DWG NO.	
DRAWN BY: DTP		S18 OF S19	
CHECKED BY: BWB	DATE: 03/01/2022		
APPROVED BY:			



TIE SPACER TS-1

SCALE: 1"=1'-0"

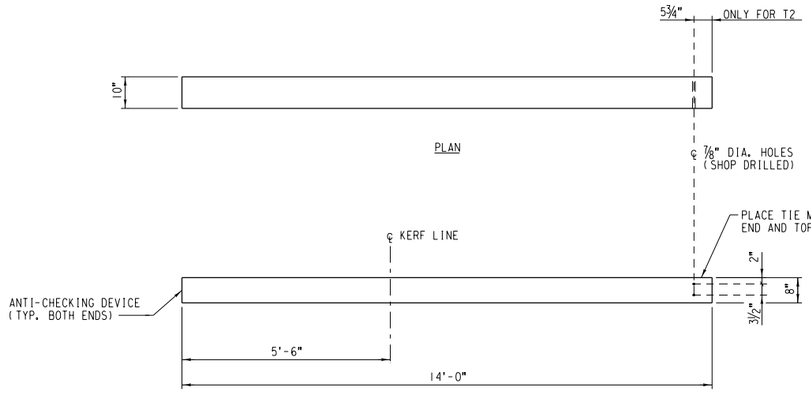
EST. WT. = 90.9 LB. EA.
(GALVANIZE AFTER FABRICATION)



TIE SPACER TS-2

SCALE: 1"=1'-0"

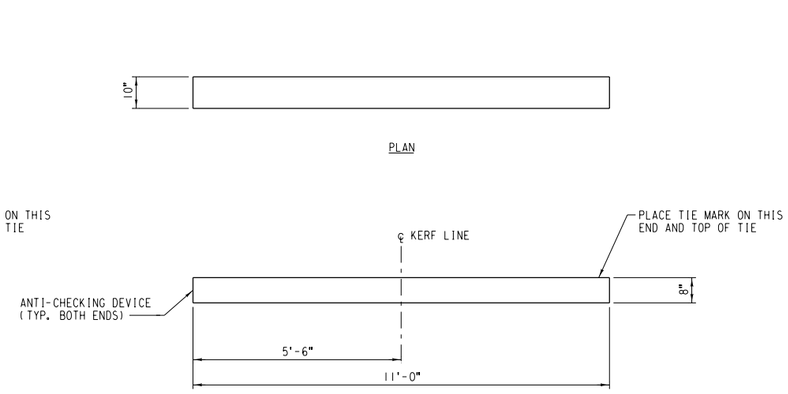
EST. WT. = 99.2 LB. EA.
(GALVANIZE AFTER FABRICATION)



LONG TIE DETAIL

SCALE: ½"=1'-0"

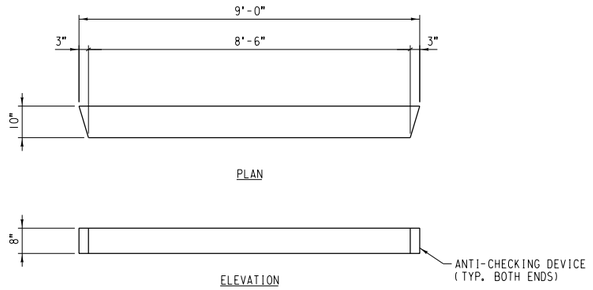
TIE T2 AND T3



TIE DETAIL

SCALE: ½"=1'-0"

TIE T1



BACKWALL TIE DETAIL

SCALE: ½"=1'-0"

REV.	DATE	BY	REVISION

ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

PROJECT:
TRAIL RIVER BRIDGE REPLACEMENT

TITLE:
MISCELLANEOUS STEEL (SHEET 2 OF 2)
AND TIE DETAILS

DESIGNED BY: BJB	SCALE: AS NOTED	DWG NO.
DRAWN BY: DTP		S19 OF S19
CHECKED BY: BWB	DATE: 03/01/2022	
APPROVED BY:		