

FILE Q:\Ktn\SFHwy00072\PlanSet\00072_A1.dwg DATE 6/18/2021 16:02 LAYOUT A1 DESIGNED STAFF CHECKED STAFF DRAFTED STAFF

STATE OF ALASKA

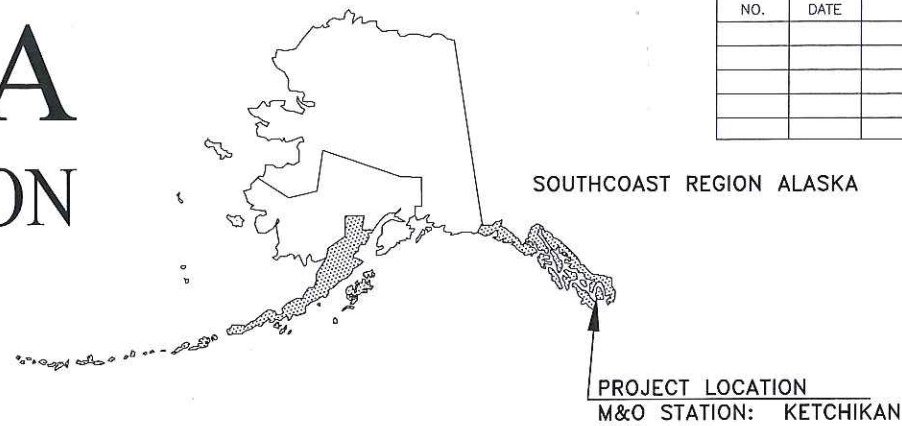
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES

PROPOSED HIGHWAY PROJECT

KTN HERRING COVE BRIDGE IMPROVEMENTS

PROJECT NO. 0902043/SFHwy00072

GRADING, DRAINAGE, PAVING, PATHWAYS, SIGNING, STRIPING, ILLUMINATION, BRIDGE AND SIDE SLOPE STABILIZATION




NO.	DATE	REVISIONS	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHwy00072	2021	A1	124
CDS ROUTE: 291400				MILEPOINT: 10.30 TO 10.58			
LATITUDE: 55°19'34"N				LONGITUDE: 131°31'32"E			

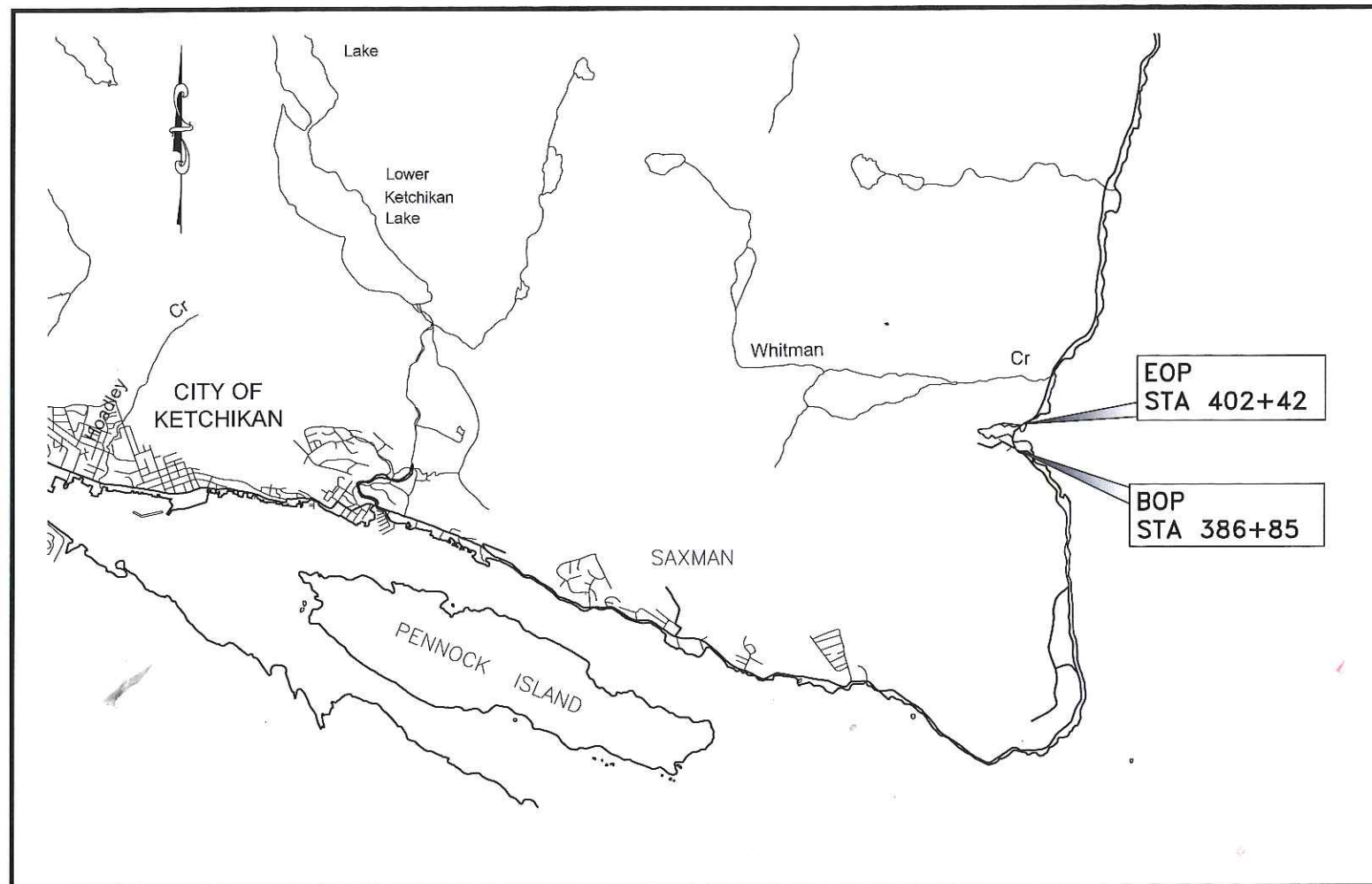
PROJECT SUMMARY	
WIDTH OF PAVEMENT	20' TO 28'
LENGTH OF PAVING	1,765'
LENGTH OF PROJECT	1,557'

DESIGN DESIGNATIONS	
PROJECT TYPE	3R
FUNCTIONAL CLASS	MAJOR COLLECTOR
ADT (2018)	761
ADT (2041)	871
DHV (2018)	100
DHV (2041)	110
PERCENT TRUCKS (T)	16%
DIRECTIONAL SPLIT (D)	50 / 50
DESIGN SPEED (V)	45 MPH
DESIGN EAL'S (20 YEARS)	350,000

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




November 15, 2021




VICINITY MAP

USE THESE PLANS IN CONJUNCTION WITH THE STATE OF ALASKA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2020 EDITION AND THE PROJECT SPECIAL PROVISIONS.

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

APPROVED:  8/12/2021
REGIONAL PRECONSTRUCTION ENGINEER DATE
KIRK D. MILLER, P.E.

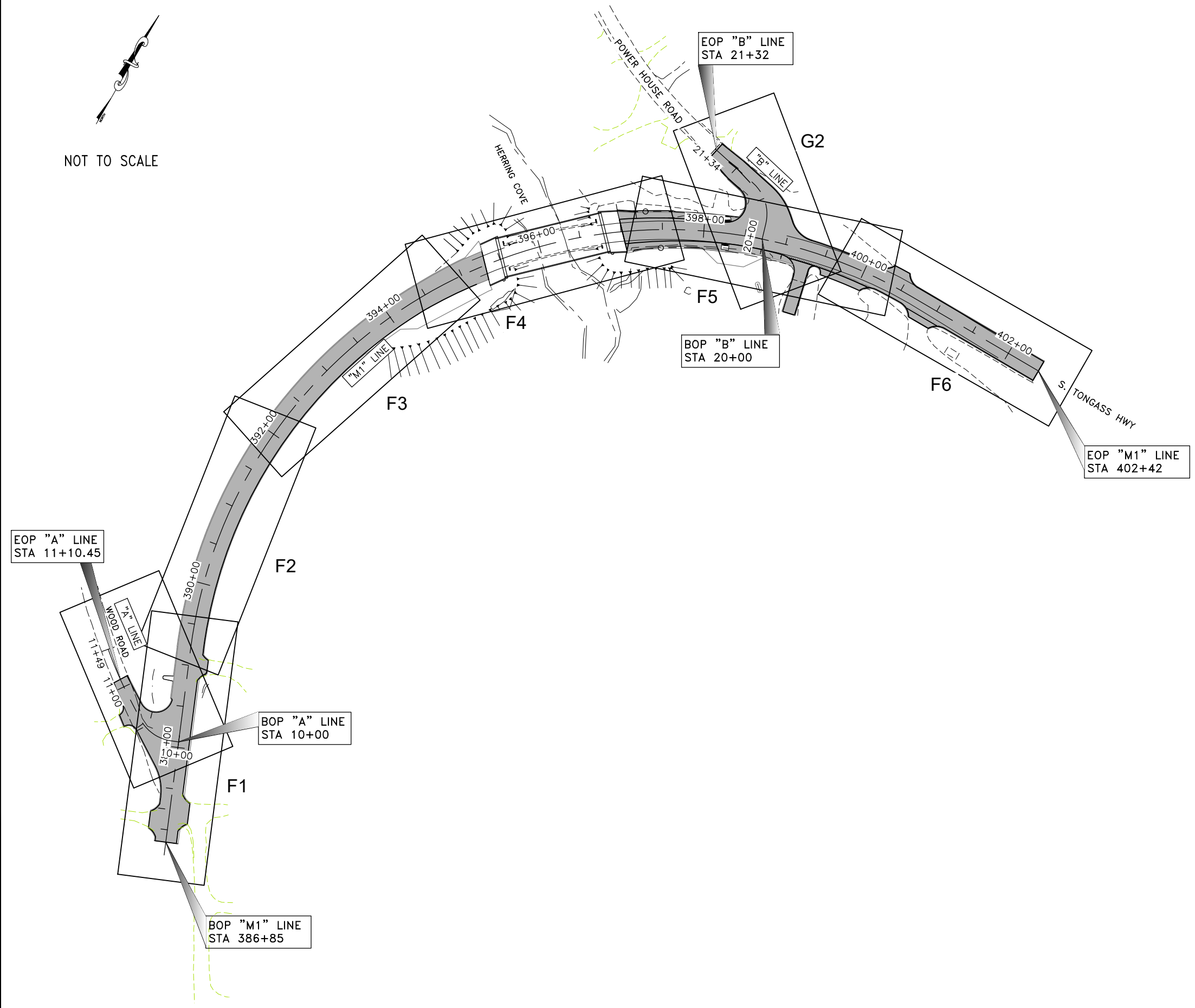
CONCUR:  22 Aug 2021
REGIONAL DIRECTOR DATE
D. LANCE MEARIG, P.E.

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	A2	5

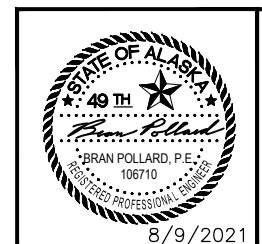
INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
A1	TITLE SHEET
A2	LAYOUT & INDEX OF SHEETS
A3	LEGEND & SYMBOLS
A4-A5	SURVEY CONTROL
B1-B2	TYPICAL SECTIONS
C1	ESTIMATE OF QUANTITIES
D1-D3	SUMMARIES
E1-E9	MISCELLANEOUS DETAILS
F1-F6	PLAN & PROFILE
G1	WOOD ROAD INTERSECTION PLAN & PROFILE
G2	POWERHOUSE ROAD INTERSECTION PLAN & PROFILE
G3-G4	BRIDGE APPROACH GRADING PLAN
H1-H4	SIGNING & STRIPING PLANS
H5	SIGNING & STRIPING DETAILS & SUMMARIES
M1-M5	SOLDIER PILE WALL PLAN & PROFILE
N1-N22	BRIDGE PLANS
P1-P2	STORMDRAIN PLAN & PROFILE
Q1-Q5	EROSION SEDIMENT CONTROL PLANS
S1-S6	PHASING PLANS
T1-T4	PERMANENT CONSTRUCTION SIGNS
U1-U45	ELECTRICAL PLANS

THE FOLLOWING STANDARD PLANS APPLY TO THIS PROJECT:

C-04.12	G-00.05	I-20.20	T-06.00
C-05.20	G-05.11S	I-81.00	T-20.04
D-01.02	G-05.11W	L-03.10	T-21.04
D-04.22	G-10.20	L-23.02	
D-20.05	G-14.01	L-25.01	
D-22.01	G-20.12	L-30.11	
	G-29.00	M-13.01	
	G-47.00	M-16.01	
		M-20.15	
		M-23.13	
		S-01.02	
		S-05.02	
		S-20.10	
		S-30.05	
		S-32.02	



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 DATE 8/9/2021 11:37
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 DESIGNED STAFF
 CHECKED STAFF
 DRAFTED STAFF



STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 AND PUBLIC FACILITIES

**KTN HERRING COVE BRIDGE
 IMPROVEMENTS**

PROJECT LAYOUT

FILE: G:\ktn\SFHWY00072\Plan\set\00072_A3.dwg DATE: 8/9/2021 11:37 LAYOUT: A3 CHECKED: STAFF DESIGNED: STAFF DRAFTED: STAFF

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWY00072	2021	A3	5

	RECOVERED	SET
BLM MONUMENT		
GLO MONUMENT		
USC&GS MONUMENT		
PRIMARY MONUMENT		
CENTERLINE MONUMENT IN CASING		
PRIMARY R.O.W. MONUMENT		
BEARING OBJECT		
MISCELLANEOUS MONUMENT		
LINE OF SIGHT MONUMENT		
CONCRETE R.O.W. MONUMENT		
BENCHMARK		
REBAR AND CAP		
REBAR		
IRON PIPE		
PK NAIL		
SPIKE		
HUB AND TACK		
CONSTRUCTION CENTERLINE		
MICELLANEOUS CENTERLINE		
STATION EQUATION	"L"48+97.23 POT BK= "O"48+97.23 PC AHD	
PROJECT RIGHT-OF-WAY LINE		
EXISTING RIGHT-OF-WAY LINE		
EXISTING PROPERTY LINE		
CONTROLLED ACCESS LINE		
EXISTING EASEMENT LINE		
PROPOSED EASEMENT LINE		
PROPOSED CUT SLOPE LIMIT		
PROPOSED FILL SLOPE LIMIT		
SECTION LINE		
1/4 SECTION LINE		
1/16 SECTION LINE		
TOWNSHIP & RANGE LINE		
MEANDER LINE		

	EXISTING	PROPOSED
SANITARY SEWER (FLOW DIRECTION →)		
FUEL LINE		
GAS LINE		
WATER LINE		
METER, VALVE, FIRE HYDRANT		
EXISTING STORM DRAIN (FLOW DIRECTION →)		
PROPOSED STORM DRAIN		
FIBER OPTIC LINE		
DIRECT BURIAL TELEPHONE CABLE		
DIRECT BURIAL ELECTRIC CABLE		
ELECTRIC LINE (OVERHEAD)		
POWER POLE LINE		
JOINT USE POWER & TELEPHONE		
TELEPHONE POLE LINE		
POLE ANCHOR		
STUB POLE (POWER OR TELEPHONE)		
TELEPHONE DUCT		
TELEPHONE PEDESTAL		
BURIED CABLE MARKER		
PIPELINE MARKER OR VALVE		
CATCH BASIN OR DROP INLET		
MANHOLE		
SANITARY SEWER CLEAN OUT		
RIPRAP		
SPECIAL DITCH CENTERLINE		
HIGH TIDE LINE		
D-1 SHOULDER		

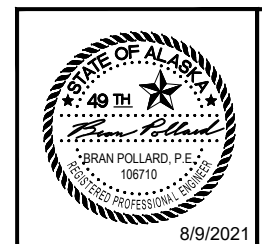
	EXISTING	PROPOSED
ROADWAY/PAVEMENT EDGE		
FENCE		
CURB AND GUTTER		
DETECTABLE WARNINGS		
GUARDRAIL		
CULVERT PIPE		
SIGN		
MAILBOX		
RAILROAD TRACKS		
RAILROAD DEVICES		
TREE LINE		
WATER BOUNDARY		
ORDINARY HIGH WATER LINE		
FLOW CENTERLINE		
FLOW DIRECTION		
WETLANDS		
EXISTING BUILDINGS		
POST OR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

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

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

ABBREVIATIONS:

CPP	CORRUGATED POLYETHYLENE PIPE
CMP	CORRUGATED METAL PIPE
(E)	EXISTING
GRAIL	GUARDRAIL
HMA	HOT MIX ASPHALT
N.T.S.	NOT TO SCALE
P.O.C.	POINT ON CURVE
PC	POINT OF CURVATURE
PT	POINT OF TANGENCY
SHLDR	SHOULDER



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

KTN HERRING COVE BRIDGE IMPROVEMENTS

LEGEND / SYMBOLS

DESIGNED: JFAPOI
 CHECKED: DIGNOTOV
 DATE: 7/29/2021 16:06
 SCALE: A4
 LAYOUT: A4
 XREFS:
 DRAWING LOCATION: G:\KIN\SFHWY00072\SV\3D\BASEMAPS\SFHWY00072_SCS_090220.dwg

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWY00072	2021	A4	108

HERRING COVE ROAD DESIGN ALIGNMENT									
SEGMENT	STATION	NORTHING	EASTING	DISTANCE	BEARING	STATION	RADIUS	LENGTH	DELTA
L1	386+69.32	331626.73	670762.43	251.05	N23° 01' 14"W	389+20.37			
C1	389+20.37	331857.79	670664.25			400+62.44	578.74	1142.07	113°03'56"
L2	400+62.44	332662.86	671197.37	179.66	S89° 57' 18"E	402+42.11			

WOOD ROAD DESIGN ALIGNMENT									
SEGMENT	STATION	NORTHING	EASTING	DISTANCE	BEARING	STATION	RADIUS	LENGTH	DELTA
L4	10+00.00	331773.71	670699.98	23.85	S66° 58' 46"W	10+23.85			
C2	10+23.85	331764.38	670678.03			10+75.74	50.00	51.89	59°27'48"
L5	10+75.74	331770.18	670628.78	61.91	N53° 33' 25"W	11+37.65			
C3	11+37.65	331806.95	670578.98			11+62.93	408.49	25.28	3°32'46"

POWER HOUSE ROAD DESIGN ALIGNMENT									
SEGMENT	STATION	NORTHING	EASTING	DISTANCE	BEARING	STATION	RADIUS	LENGTH	DELTA
L6	20+00.00	332631.62	671009.32	19.01	N16° 52' 30"W	20+19.01			
C4	20+19.01	332649.81	671003.81			20+72.61	50.00	53.60	61°25'04"
L7	20+72.61	332684.26	670966.10	61.56	N78° 17' 33"W	21+34.17			

COORDINATES LISTED ABOVE HOLD OVER DISTANCE AND BEARING

HORIZONTAL CONTROL

Horizontal Control for this project is based on the DOT/PF South Tongass Grid 2000.

The DOT/PF Ketchikan South Tongass Grid -2000 System is a local ground coordinate system based at DOT/PF GPS control station 95-K-4 (#36). It relates to AKSPC zone 1 NAD83 (92) through the following parameters:

- Zone = NAD83 AKSPC ZONE 1
- Grid Scale = 0.999900264
- Convergence = +144'48"
- Translation about DOT/PF control point 95-K-4 as follows:
- AKSPC Northing = 1277612.23 FT US
- AKSPC Easting = 3117379.87 FT US
- Local Northing = 328083.33 FT US
- Local Easting = 656166.67 FT US

95-K-4 : 2" Brass Cap located in the breakwater of Saxman harbor.

NAD83(1992) Lat 5518'51.88" N Long 13135'43.15"W
 KTN_S-Tongass-Grid N 328083.33' E 656166.67'
 AKSPC N=1277612.23' E=3117379.87'

95-K-6 : 2" Brass Cap in bedrock on beach located adjacent to 2976 S. Tongass

NAD83(1992) Lat 5518'49.09"N Long 13135'23.73"W
 KTN_S-Tongass-Grid N 327799.94' E 657290.48'
 AKSPC N 1277363.24' E 3118511.69'

ALL EXISTING PROPERTY & SHOULDER MONUMENTS IN THESE TABLES SHALL BE REFERENCED PRIOR TO DISTURBANCE FROM CONSTRUCTION AND RE-ESTABLISHED IN THEIR ORIGINAL HORIZONTAL POSITION AND A RECORD OF MONUMENT FORM IN ACCORDANCE WITH A.S.34.65.040 SHALL BE SUBMITTED TO DOT FOR REVIEW PRIOR TO RECORDING.

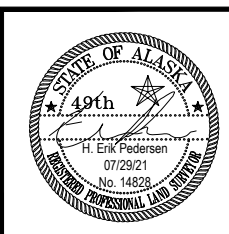
* **THE EXISTING SHOULDER MONUMENTS LISTED IN THE ABOVE TABLE ARE TO BE USED AS ADDITIONAL HORIZONTAL AND VERTICAL SURVEY PROJECT CONTROL POINTS.**

Existing Property					
Point #	Northing	Easting	Description	Station	Offset
1234	331679.72	670799.13	BC3"_1E_395+61.8_1932	387+03.74	54.50R
1235	331902.27	670528.57	BC2.5"_GLO_1942	389+99.16	113.90L
1236	331921.81	670559.02	BC2.5"_GLO_1942	390+08.70	79.47L
1240	332724.47	670951.17	BC-2.5"_GLO_S2403/TR-A/L85-C4/L86-C1/ROW	398+49.92	107.15L
1244	331783.85	670738.16	PLASCAP_3408-S	388+23.42	39.10R
1245	331799.04	670742.52	PLASCAP_3408-S	388+35.69	49.05R
1246	331918.77	670691.80	PLASCAP_8408-S	389+69.82	47.26R
1248	332657.61	670951.14	BC2.5"_GLO_S2218/ROW/C3_L94B_TRA/S2403	398+27.67	45.20L
1249	332722.20	670746.42	BC2.5"_GLO-S2403/TR/C3_L95A/C3_L94A/C2_L94B	397+06.21	202.33L
1250	332607.62	671115.39	IP1"	399+72.58	48.93R
1251	332439.63	671151.40	SPINHOLE_FND BENT NAIL	399+88.31	220.33R
1252	332233.65	671170.17	FND_BRASS STEM	399+59.58	426.84R

Existing Property Monuments To Be Referenced & Replaced					
Point #	Northing	Easting	Description	Station	Offset
1241	332527.03	670846.94	BC3"_BPR	396+74.98	14.25R
1242	332496.79	670774.28	ALCAP3"_WC/ATS200/TR-A/LS7213	396+00.54	11.95L
1243	332562.38	670801.11	REBAR	396+61.89	42.05L
1255	332526.81	670891.53	SPINHOLE_REBAR W/1.5"ALCAP	397+12.51	40.94R

Existing Shoulder Monuments To Be Referenced & Replaced						
Point #	Northing	Easting	Elev	Description	Station	Offset
238	331639.58	670743.91	27.54	GPS_SH_MON_BC	386+88.39	12.02L
239	332084.42	670606.10	27.64	SH_MON_BC	391+53.20	12.07L
240	332404.75	670699.67	31.12	GPS_SH_MON_BC	394+84.36	12.91L
241	332628.31	670965.10	32.49	GPS_SH_MON_BC	398+28.94	12.76L

* Survey Control Table						
Point #	Northing	Easting	Elevation	Description	Station	Offset
242	332706.22	671653.14	47.44	GPS_SH_MON_BC	N/A	N/A



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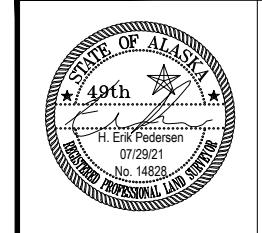
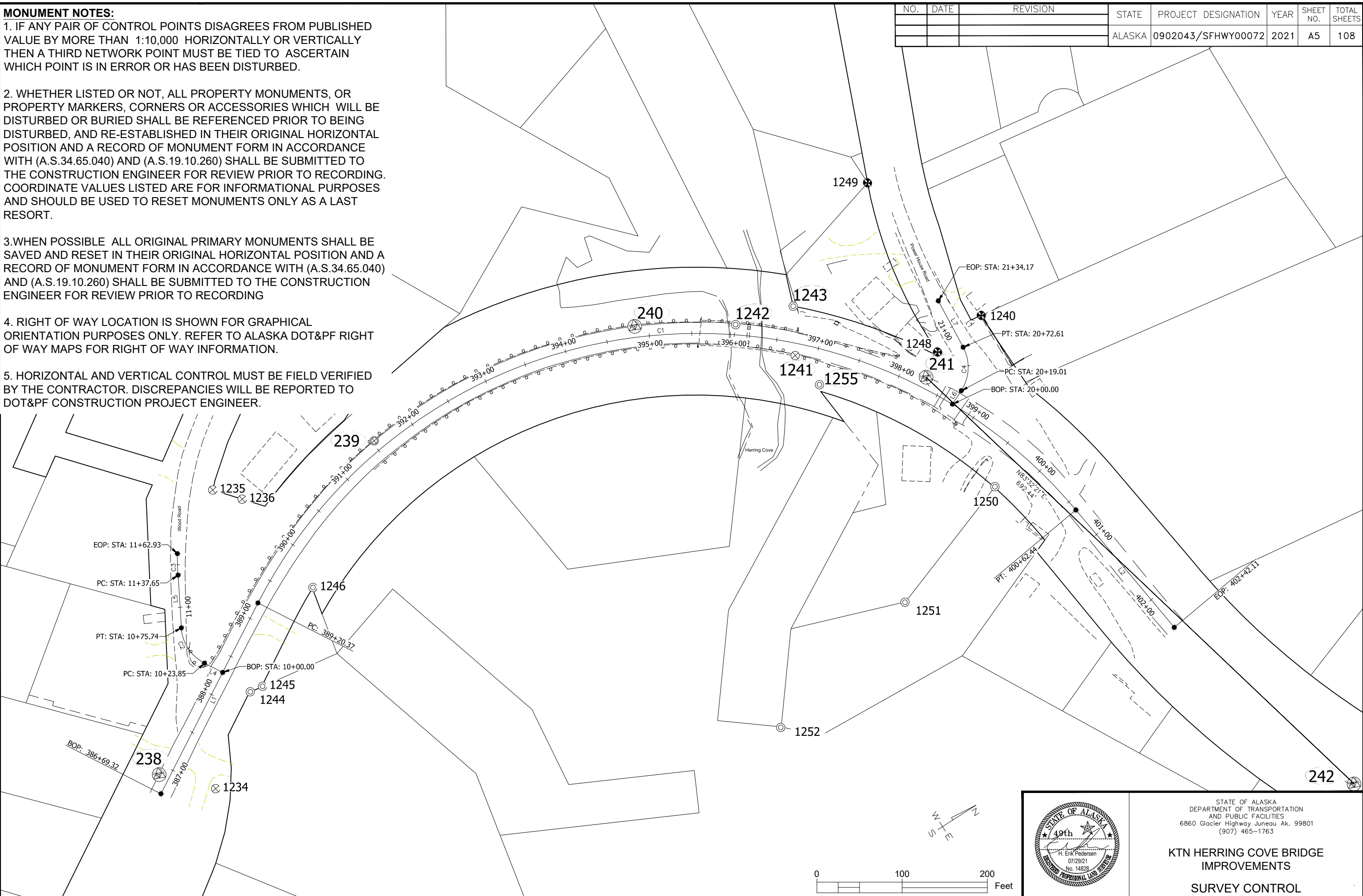
**KTN HERRING COVE BRIDGE
 IMPROVEMENTS
 SURVEY CONTROL**

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 TIME: 16:06
 LAYOUT: A5
 SCALE: XREFS
 DESIGNED: JFAPOL
 CHECKED: DIGNOTOV
 DRAFTED: JFAPOL

MONUMENT NOTES:

1. IF ANY PAIR OF CONTROL POINTS DISAGREES FROM PUBLISHED VALUE BY MORE THAN 1:10,000 HORIZONTALLY OR VERTICALLY THEN A THIRD NETWORK POINT MUST BE TIED TO ASCERTAIN WHICH POINT IS IN ERROR OR HAS BEEN DISTURBED.
2. WHETHER LISTED OR NOT, ALL PROPERTY MONUMENTS, OR PROPERTY MARKERS, CORNERS OR ACCESSORIES WHICH WILL BE DISTURBED OR BURIED SHALL BE REFERENCED PRIOR TO BEING DISTURBED, AND RE-ESTABLISHED IN THEIR ORIGINAL HORIZONTAL POSITION AND A RECORD OF MONUMENT FORM IN ACCORDANCE WITH (A.S.34.65.040) AND (A.S.19.10.260) SHALL BE SUBMITTED TO THE CONSTRUCTION ENGINEER FOR REVIEW PRIOR TO RECORDING. COORDINATE VALUES LISTED ARE FOR INFORMATIONAL PURPOSES AND SHOULD BE USED TO RESET MONUMENTS ONLY AS A LAST RESORT.
3. WHEN POSSIBLE ALL ORIGINAL PRIMARY MONUMENTS SHALL BE SAVED AND RESET IN THEIR ORIGINAL HORIZONTAL POSITION AND A RECORD OF MONUMENT FORM IN ACCORDANCE WITH (A.S.34.65.040) AND (A.S.19.10.260) SHALL BE SUBMITTED TO THE CONSTRUCTION ENGINEER FOR REVIEW PRIOR TO RECORDING
4. RIGHT OF WAY LOCATION IS SHOWN FOR GRAPHICAL ORIENTATION PURPOSES ONLY. REFER TO ALASKA DOT&PF RIGHT OF WAY MAPS FOR RIGHT OF WAY INFORMATION.
5. HORIZONTAL AND VERTICAL CONTROL MUST BE FIELD VERIFIED BY THE CONTRACTOR. DISCREPANCIES WILL BE REPORTED TO DOT&PF CONSTRUCTION PROJECT ENGINEER.

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
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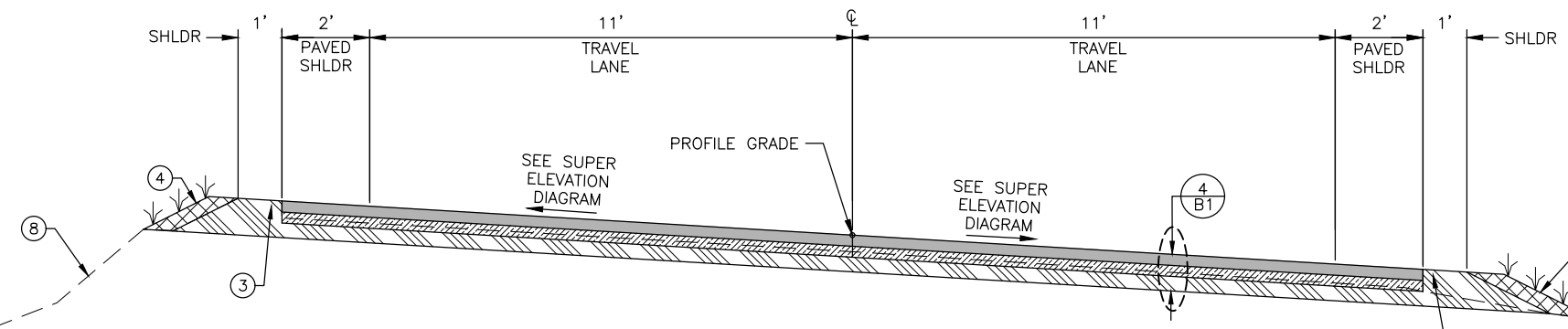


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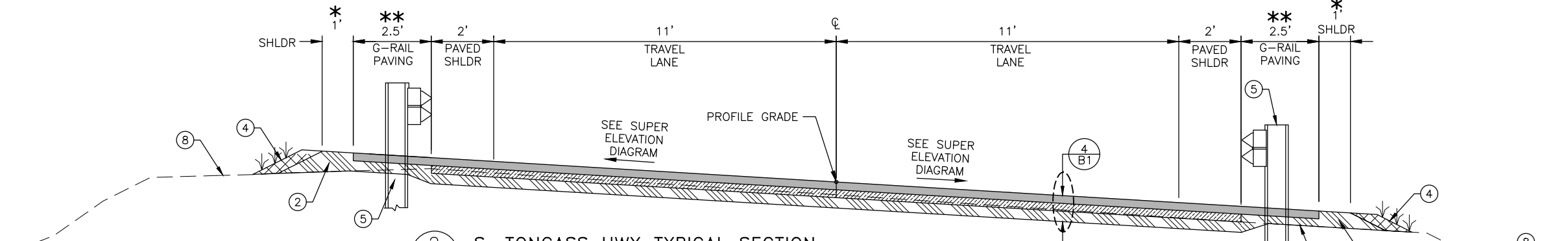
**KTN HERRING COVE BRIDGE
 IMPROVEMENTS**
SURVEY CONTROL

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	B1	2

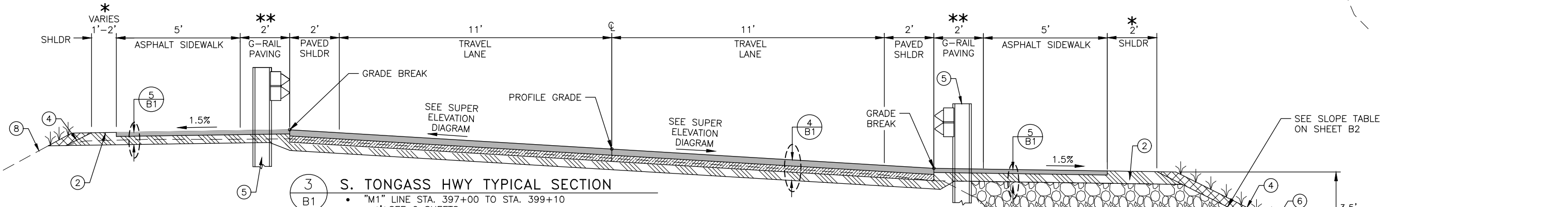
LEGEND	
①	4" AGGREGATE BASE COURSE, GRADING D-1
②	6" AGGREGATE BASE COURSE, GRADING D-1
③	10" AGGREGATE BASE COURSE, GRADING D-1
④	SEEDING, BFM AND 4" OF TOPSOIL ON DISTURBED SLOPES UNLESS OTHERWISE SPECIFIED
⑤	W-BEAM GUARDRAIL
⑥	SELECTED MATERIAL, TYPE B AS REQUIRED
⑦	BORROW, SHOT ROCK
⑧	EXISTING GROUND



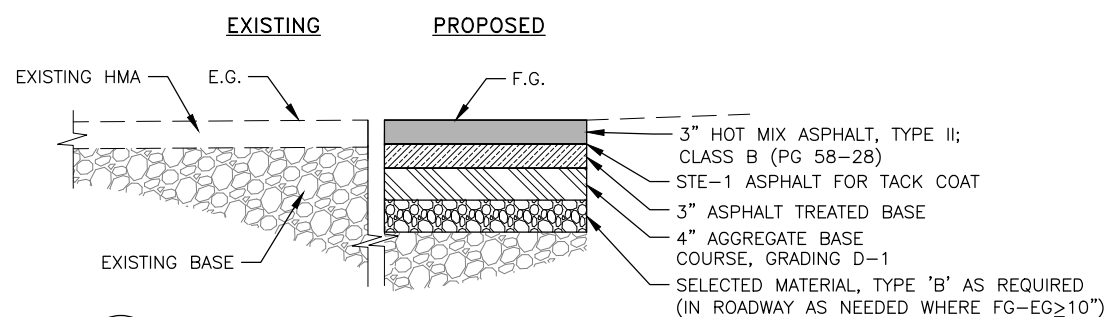
1 S. TONGASS HWY TYPICAL SECTION
 B1
 • "M1" LINE BOP TO STA. 388+70
 • "M1" LINE STA. 399+10 TO EOP



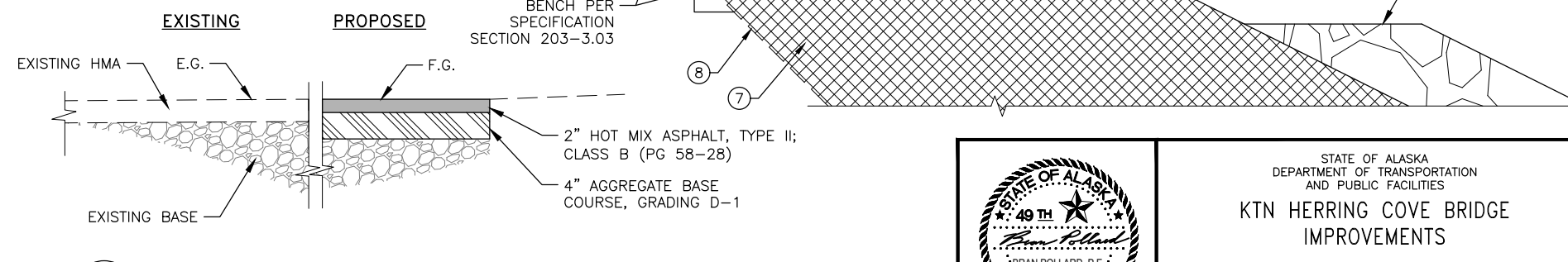
2 S. TONGASS HWY TYPICAL SECTION
 B1
 • "M1" LINE STA. 388+70 TO STA. 395+30
 *SEE G SHEETS
 **SEE STD PLAN G-20.12



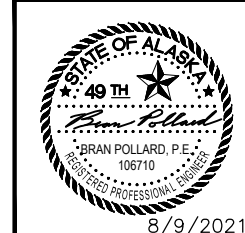
3 S. TONGASS HWY TYPICAL SECTION
 B1
 • "M1" LINE STA. 397+00 TO STA. 399+10
 *SEE G SHEETS
 **SEE STD PLAN G-20.12



4 S. TONGASS HWY & INTERSECTIONS
 B1
 SCALE: NOT TO SCALE



5 PEDESTRIAN PATHS AND APPROACHES
 B1
 SCALE: NOT TO SCALE



STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 AND PUBLIC FACILITIES
**KTN HERRING COVE BRIDGE
 IMPROVEMENTS**
 TYPICAL SECTIONS

FILE: C:\Ktn\SFHWHY00072\PlanSet\00072_B1.dwg
 DATE: 8/9/2021 11:39
 LAYOUT: B1
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 CHECKED: STAFF
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	B2	2

LEGEND

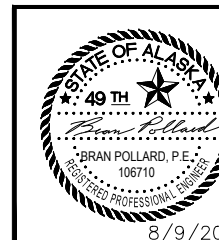
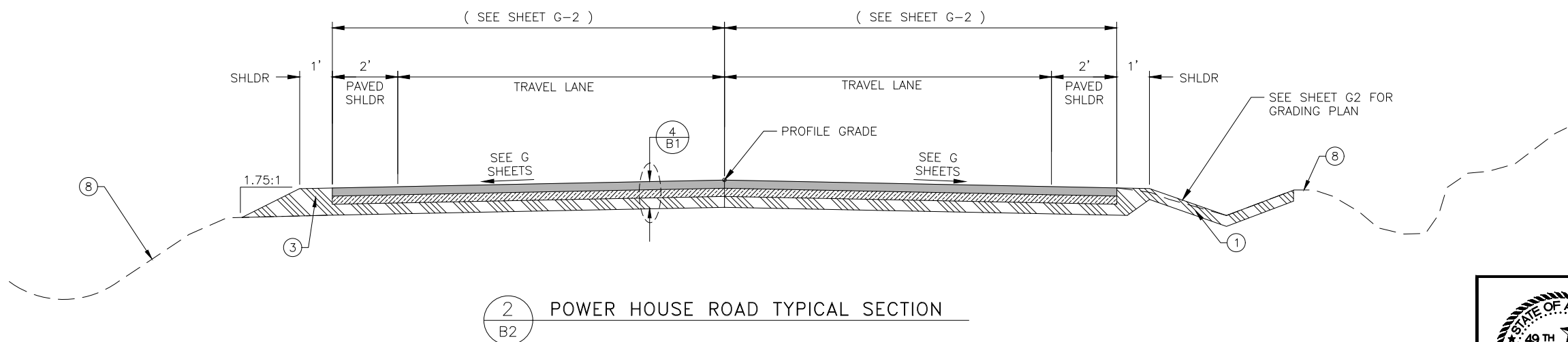
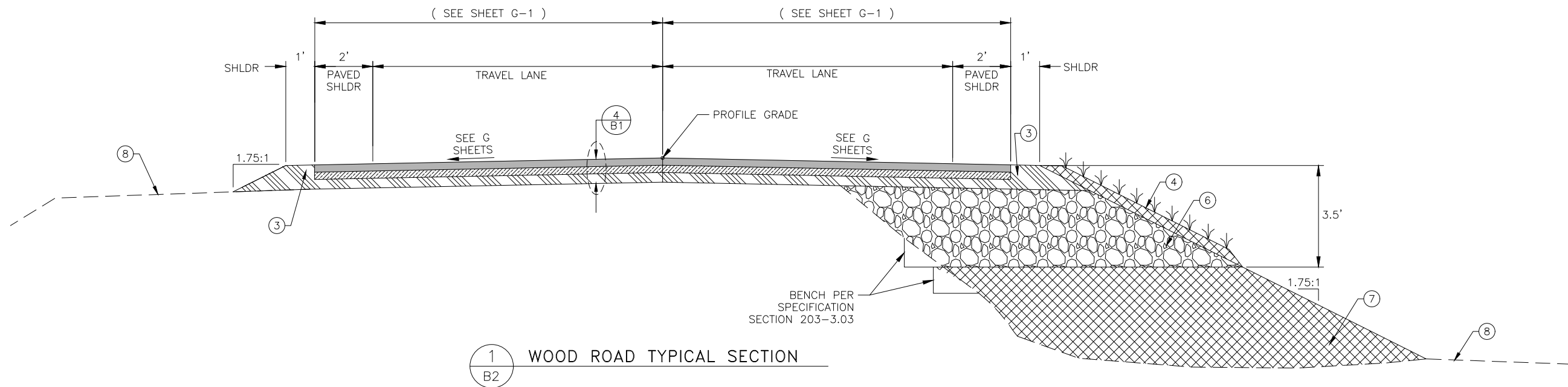
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- ② 6" AGGREGATE BASE COURSE, GRADING D-1
- ③ 10" AGGREGATE BASE COURSE, GRADING D-1
- ④ SEEDING, BFM AND 4" OF TOPSOIL ON DISTURBED SLOPES UNLESS OTHERWISE SPECIFIED
- ⑤ W-BEAM GUARDRAIL
- ⑥ SELECTED MATERIAL, TYPE B AS REQUIRED
- ⑦ BORROW, SHOT ROCK
- ⑧ EXISTING GROUND

LEFT FORESLOPES

Begin STA	End STA	Cut/Fill	Slope
BOP	387+44	FILL	4:1
387+44	388+68	FILL	1.5:1
388+68	391+42	FILL	1.75:1
391+42	393+21	CUT	50:1
393+21	393+43	FILL	50:1
393+43	393+78	CUT	50:1
393+78	395+34	FILL	1.75:1
396+98	398+38	FILL	1.75:1
399+28	400+28	FILL	4:1
400+28	400+50	CUT	50:1
400+50	EOP	FILL	1.75:1

RIGHT FORESLOPES

Begin STA	End STA	Cut/Fill	Slope
BOP	387+02	FILL	1.75:1
387+02	387+43	CUT	20:1
387+43	388+98	FILL	1.75:1
388+98	389+16	CUT	25:1
389+16	393+56	FILL	1.75:1
393+56	395+27	FILL	2:1
397+05	399+16	FILL	1.75:1
399+16	400+05	FILL	3:1
400+05	400+40	CUT	20:1
400+40	401+76	FILL	3:1
401+76	EOP	CUT	20:1



STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
**KTN HERRING COVE BRIDGE
IMPROVEMENTS**

TYPICAL SECTIONS

8/9/2021

FILE C:\ktr\SFHWHY00072\Plansset\00072_B1.dwg DATE 8/9/2021 11:39 LAYOUT B2 DESIGNED STAFF CHECKED STAFF DRAFTED STAFF

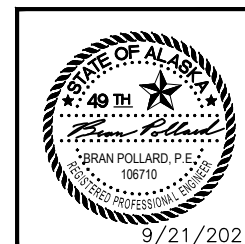
FILE G:\Ktn\SFHWY00072\Planset\00072_C1.dwg DATE 9/21/2021 9:28 LAYOUT C1 DESIGNED STAFF CHECKED STAFF DRAFTED STAFF

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
▲	9/9/21	Deleted 2 Pay Items, Added 1 Pay Item.	ALASKA	0902043/SFHWY00072	2021	C1	1
▲	9/21/21	Deleted 1 Pay Item, Added 2 Pay Items.					

ESTIMATE OF QUANTITIES			
ITEM No.	PAY ITEM	PAY UNIT	QTY.
201.0009.0000	CLEARING AND GRUBBING	LUMP SUM	ALL REQUIRED
201.2001.0000	INVASIVE PLANT SPECIES CONTROL, REMOVAL, AND DISPOSAL	SQUARE YARD	1765
202.0001.0000	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LUMP SUM	ALL REQUIRED
202.0002.0000	REMOVAL OF PAVEMENT	SQUARE YARD	4570
202.0004.0000	REMOVAL OF CULVERT PIPE	LINEAR FOOT	89
202.0010.0000	SINGLE MAIL BOX INSTALLATION	EACH	1
202.0012.0000	DOUBLE BOX INSTALLATION	EACH	11
202.0023.0000	REMOVAL OF BRIDGE, NO. 253	LUMP SUM	ALL REQUIRED
203.0002.0000	ROCK EXCAVATION	CUBIC YARD	750
203.0003.0000	UNCLASSIFIED EXCAVATION	CUBIC YARD	1158
203.0006.0000	BORROW, SHOT ROCK	TON	4730
203.0006.000B	BORROW, TYPE B	TON	1386
203.2008.0000	SPECIAL DITCH	LINEAR FOOT	121
205.0001.0000	EXCAVATION FOR STRUCTURES	CUBIC YARD	650
205.0006.0000	STRUCTURAL FILL	CUBIC YARD	689
▲ 205.2002.0000	SHEETING, SHORING AND BRACING	LUMP SUM	ALL REQUIRED
301.0001.00D1	AGGREGATE BASE COURSE, GRADING D-1	TON	1634
306.0001.0000	ATB	TON	965
401.0001.002B	HMA, TYPE II, CLASS B	TON	1163
401.0004.5828	ASPHALT BINDER, GRADE PG 58-28	TON	70
401.0005.002B	HMA, TEMPORARY, TYPE II, CLASS B	TON	120
▲ 401.0010.0001	PAVEMENT SMOOTHNESS PRICE ADJUSTMENT, METHOD 1	CONTINGENT SUM	ALL REQUIRED
401.0015.0000	ASPHALT MATERIAL PRICE ADJUSTMENT	CONTINGENT SUM	ALL REQUIRED
402.0001.STE1	STE-1 ASPHALT FOR TACK COAT	TON	2.2
501.0001.0000	CLASS A CONCRETE	LUMP SUM	ALL REQUIRED
501.0007.0000	PRECAST CONCRETE MEMBER, 129'-0" DECKED BULB-TEE	EACH	11
501.0007.0000	PRECAST CONCRETE MEMBER, LAGGING	EACH	64
503.0001.0000	REINFORCING STEEL	LUMP SUM	ALL REQUIRED
503.0002.0000	EPOXY-COATED REINFORCING STEEL	LUMP SUM	ALL REQUIRED
▲ 505.0005.0001	FURNISH STRUCTURAL STEEL H PILES, HP 12x74	LINEAR FOOT	218.0
505.0005.0001	FURNISH STRUCTURAL STEEL H PILES, HP 14x117	LINEAR FOOT	279.8
505.2006.0000	INSTALL STRUCTURAL STEEL H PILES, HP 12x74	EACH	10
505.2006.0000	INSTALL STRUCTURAL STEEL H PILES, HP 14x117	EACH	13
507.0001.0003	STEEL BRIDGE RAILING, 3-TUBE	LINEAR FOOT	342
507.0002.0000	PEDESTRIAN RAILING	LINEAR FOOT	342
507.0006.0000	CABLE SAFETY RAILING	LINEAR FOOT	102
508.0001.0000	WATERPROOFING MEMBRANE, SPRAY-APPLIED	LUMP SUM	ALL REQUIRED
603.0009.0048	CORRUGATED ALUMINUM PIPE 48 INCH	LINEAR FOOT	56
603.0021.0024	CORRUGATED POLYETHYLENE PIPE 24 INCH	LINEAR FOOT	128
604.0001.0001	STORM SEWER MANHOLE, TYPE I	EACH	1
604.0004.0000	ADJUST EXISTING MANHOLE	EACH	1
606.0001.0000	W-BEAM GUARDRAIL	LINEAR FOOT	1336
606.0006.0000	REMOVING AND DISPOSING OF GUARDRAIL	LINEAR FOOT	1771
606.0013.0000	PARALLEL GUARDRAIL TERMINAL	EACH	4
606.0016.0000	TRANSITION RAIL	EACH	4
606.2014.0000	GUARDRAIL PAVING	LINEAR FOOT	1645
606.2015.0000	GUARDRAIL POST DRILLING OR SPUDDING	EACH	245
608.0001.0004	CONCRETE SIDEWALK, 4 INCHES THICK	SQUARE YARD	14
608.0003.0000	ASPHALT SIDEWALK	SQUARE YARD	226
608.0006.0000	CURB RAMP	EACH	2
609.2004.0000	VALLEY GUTTER	LINEAR FOOT	181
611.0001.0001	RIPRAP, CLASS I	CUBIC YARD	570
611.0001.0003	RIPRAP, CLASS III	CUBIC YARD	3100
615.0001.0000	STANDARD SIGN	SQUARE FOOT	80
618.0004.0000	SEEDING	SQUARE YARD	1161
619.2013.0000	BONDED FIBER MATRIX (BFM)	POUND	960
620.0001.0000	TOPSOIL	SQUARE YARD	1161
625.0001.0000	PIPE HAND RAIL	LINEAR FOOT	158
627.0003.0000	INSTALL VALVE BOX	EACH	1
627.0006.0000	FIRE HYDRANT RELOCATION	EACH	1
627.0010.0000	ADJUSTMENT OF VALVE BOX	EACH	9
▲ 627.2018.0000	RELOCATE WATER MAIN	CONTINGENT SUM	ALL REQUIRED

ESTIMATE OF QUANTITIES			
ITEM No.	PAY ITEM	PAY UNIT	QTY.
627.2028.0000	WATER LINE SURVEY	EACH	4
639.0001.0000	DRIVEWAY	EACH	7
640.0001.0000	MOBILIZATION AND DEMOBILIZATION	LUMP SUM	ALL REQUIRED
640.0004.0000	WORKER MEALS AND LODGING, OR PER DIEM	LUMP SUM	ALL REQUIRED
641.0001.0000	EROSION, SEDIMENT AND POLLUTION CONTROL ADMINISTRATION	LUMP SUM	ALL REQUIRED
641.0003.0000	TEMPORARY EROSION, SEDIMENT AND POLLUTION CONTROL	LUMP SUM	ALL REQUIRED
641.0005.0000	TEMPORARY EROSION, SEDIMENT AND POLLUTION CONTROL BY DIRECTIVE	CONTINGENT SUM	ALL REQUIRED
641.0006.0000	WITHHOLDING	CONTINGENT SUM	ALL REQUIRED
642.0001.0000	CONSTRUCTION SURVEYING	LUMP SUM	ALL REQUIRED
642.0003.0000	THREE PERSON SURVEY PARTY	HOURLY	100
642.0006.0000	REPLACE EXISTING WITH PRIMARY MONUMENT	EACH	6
642.0007.0000	REPLACE EXISTING WITH SECONDARY MONUMENT	EACH	2
642.0009.0000	REFERENCE EXISTING MONUMENT	EACH	8
642.0010.0000	MONUMENT CASE	EACH	4
643.0002.0000	TRAFFIC MAINTENANCE	LUMP SUM	ALL REQUIRED
643.0003.0000	PERMANENT CONSTRUCTION SIGNS	LUMP SUM	ALL REQUIRED
643.0023.0000	TRAFFIC PRICE ADJUSTMENT	CONTINGENT SUM	ALL REQUIRED
643.0025.0000	TRAFFIC CONTROL	CONTINGENT SUM	ALL REQUIRED
643.0031.0000	INTERIM PAVEMENT MARKING	LUMP SUM	ALL REQUIRED
643.0032.0000	FLAGGING	CONTINGENT SUM	ALL REQUIRED
644.0001.0000	FIELD OFFICE	LUMP SUM	ALL REQUIRED
644.0002.0000	FIELD LABORATORY	LUMP SUM	ALL REQUIRED
644.0003.0000	CURING SHED	LUMP SUM	ALL REQUIRED
644.0015.0000	NUCLEAR TESTING EQUIPMENT STORAGE SHED	EACH	1
644.2004.0000	ENGINEERING COMMUNICATIONS	CONTINGENT SUM	ALL REQUIRED
644.2008.0000	WEB-BASED SUBMITTALS	LUMP SUM	ALL REQUIRED
645.0001.0000	TRAINING PROGRAM, 2 TRAINEES/APPRENTICES	LABOR HOUR	1000
660.0003.0000	HIGHWAY LIGHTING SYSTEM COMPLETE, HERRING COVE	LUMP SUM	ALL REQUIRED
660.0007.0000	TEMPORARY SIGNAL SYSTEM COMPLETE, HERRING COVE BRIDGE	LUMP SUM	ALL REQUIRED
670.0001.0000	PAINTED TRAFFIC MARKINGS	LUMP SUM	ALL REQUIRED
670.0008.0000	RECESSED PAVEMENT MARKER	EACH	34
670.2009.0000	MMA PAVEMENT MARKINGS, TRANSVERSE AND GORE SURFACE APPLIED	SQUARE FOOT	140
680.2000.0000	TELECOMMUNICATIONS UTILITY RELOCATION	LUMP SUM	ALL REQUIRED
684.2000.0000	TELEVISION UTILITY RELOCATION	LUMP SUM	ALL REQUIRED
687.2000.0000	POWER UTILITY RELOCATION	LUMP SUM	ALL REQUIRED

BASIS OF ESTIMATE		
ITEM No.	PAY ITEM	ESTIMATING FACTOR
203.0006.000B	BORROW, TYPE B	1.85 TONS/CY
301.0001.00D1	AGGREGATE BASE COURSE, GRADING D-1	1.95 TONS/CY
401.0001.002B	HMA, TYPE II, CLASS B	120 LBS/SY/IN
401.0004.5828	ASPHALT BINDER, GRADE PG-58-28	6.0% OF ITEM 401(1)
402.0001.STE1	STE-1 ASPHALT FOR TACK COAT	0.10 GAL/S.Y. 243 GAL/TON
501.0001.0000	CLASS A CONCRETE	291.5 Cu.Yd
503.0001.0000	REINFORCING STEEL	13,563 LBS
503.0002.0000	EPOXY-COATED REINFORCING STEEL	33,261 lbs
508.0001.0000	WATERPROOFING MEMBRANE, SPRAY-APPLIED	569 Sq.Yd.
618.0004.0000	SEEDING	1.2 LB/ 1000 SF
619.2013.0000	BONDED FIBER MATRIX (BFM)	4000 LB/ ACRE
670.0001.0000	PAINTED TRAFFIC MARKINGS	SOLID, WHITE 4" = 3322 L.F.
		STOP BAR, WHITE 24" = 68 L.F
		SOLID DOUBLE, YELLOW 4" = 1546 L.F
670.2009.0000	MMA PAVEMENT MARKINGS, TRANSVERSE AND GORE SURFACE APPLIED	CROSSWALK, WHITE 24" = 70 L.F



STATE OF ALASKA
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**KTN HERRING COVE BRIDGE
IMPROVEMENTS**

EST OF QUANTITIES

FILE: G:\Ktn\SFHWY00072\Plan\set\00072_D1.dwg
 DATE: 8/9/2021 12:08
 LAYOUT: D1
 DESIGNED: STAFF
 CHECKED: STAFF
 DRAFTED: STAFF

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWY00072	2021	D1	3

201.2003.0000 INVASIVE PLANT SPECIES CONTROL, REMOVAL, AND DISPOSAL			
BEGIN STATION	END STATION	AREA (SY)	SPECIES
396+80.00	398+25.00	135.03	orange hawkweed/oxeye daisy
399+50.00	400+76.00	53.88	reed canary grass
397+50.00	397+51.00	0.11	Japanese knotweed
387+70.00	395+60.00	73.15	orange hawkweed/oxeye daisy
390+00.00	393+75.00	41.67	reed canary grass
388+30.00	388+40.00	11.11	Japanese knotweed
387+55.00	389+80.00	300.00	reed canary grass
389+80.00	395+60.00	773.33	orange hawkweed /oxeye daisy
396+80.00	397+70.00	120.00	orange hawkweed/oxeye daisy
397+70.00	398+80.00	146.67	reed canary grass/orange hawkweed/oxeye daisy
399+25.00	402+42.00	110.22	reed canary grass
TOTAL =		1765.17	

603.0021.0024 CORRUGATED POLYETHYLENE PIPE 24 INCH								
PIPE	INLET			OUTLET			LENGTH (FT)	REMARKS
	STATION	OFFSET	ELEV.	STATION	OFFSET	ELEV.		
P-2	398+19.49	16.56	23.00	396+89.04	55.08	19.50	128.0	INSTALL PER D-01.02 & D-04.22

604.0001.0001 STORM SEWER MANHOLE, TYPE I			
STATION	OFFSET	QUANTITY(EA)	REMARKS
398+19.48	16.57 RT	1	INSTALL MANHOLE LID, FRAME & GRATE PER D-22.01. SEE DETAIL ON SHEET E3.
TOTAL =		1	

202.0001.0000 REMOVAL OF STRUCTURES AND OBSTRUCTIONS		
BEGIN STATION	OFFSET	REMARKS
388+27.90	25.62 LT	VALVE BOX NEAR FIRE HYDRANT

604.0004.0000 ADJUST EXISTING MANHOLE			
STATION	OFFSET	QUANTITY(EA)	REMARKS
399+61.00	18 RT	1	LOCATION IS APPROXIMATE
TOTAL =		1	

202.0002.0000 REMOVAL OF PAVEMENT			
BEGIN STA.	END STA.	AREA (S.Y.)	REMARKS
10+20	11+61	448	WOOD RD.
386+85	395+31	2363	S. TONGASS
397+02	402+42	1703	S. TONGASS
399+28	399+56	56	POWERHOUSE RD. ASPHALT PAD
TOTAL =		4570	

606.0001.0000 W-BEAM GUARDRAIL				
BEGIN STA	END STA	OFFSET	LENGTH (LF)	REMARKS
389+08	395+16	LT	622	INSTALL PER DETAIL 4/E1 & G-05.11S. TYPE II POSTS
389+65	395+11	RT	533	INSTALL PER DETAIL 4/E1 & G-05.11S. TYPE II POSTS
397+16	397+72	LT	59	INSTALL PER DETAIL 4/E1 & G-05.11S. TYPE II POSTS
397+21	397+71	RT	48	INSTALL PER DETAIL 4/E1 & G-05.11S. TYPE II POSTS
398+24	399+01	RT	74	INSTALL PER G-05.11S. TYPE II POSTS
TOTAL =			1336	

202.0004.0000 REMOVAL OF CULVERT PIPE					
INLET		OUTLET		LENGTH (LF)	REMARKS
STATION	OFFSET	STATION	OFFSET		
388+00.50	56.96 LT	388+33.38	32.97 LT	41.00	18" DIA, CORRUGATED POLYETHYLENE PIPE
388+01.95	58.59 LT	388+35.22	34.89 LT	41	18" DIA, CORRUGATED POLYETHYLENE PIPE
398+20.10	15.75 RT	398+15.65	21.37 RT	7	
TOTAL =				89	

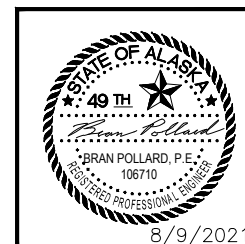
606.0006.0000 REMOVAL & DISPOSAL OF GUARDRAIL				
BEGIN STA	END STA	OFFSET	LENGTH	REMARKS
388+22	395+59	LT	793	
389+15	395+57	RT	642	
396+73	397+91	LT	126	
396+75	398+87	RT	210	
TOTAL =			1771	

202.0010.0000 SINGLE MAIL BOX INSTALLATION			
STATION	OFFSET	QUANTITY(EA)	REMARKS
10+77	11' R	1	WOOD RD. INSTALL WOOD CANTILEVER PER M-20.15 & M-23.13

202.0012.0000 DOUBLE MAIL BOX INSTALLATION			
STATION	OFFSET	QUANTITY(EA)	REMARKS
20+92.00	19' L	11	POWER HOUSE RD. INSTALL GANG BOX PER M-20.15 & M-23.13

203.2008.0000 SPECIAL DITCH			
BEGIN STA.	END STA.	LENGTH	REMARKS
398+73	399+94	121	POWER HOUSE RD.
TOTAL =		121	

603.0009.0048 CORRUGATED ALUMINUM PIPE 48 INCH								
PIPE	INLET			OUTLET			LENGTH (FT)	REMARKS
	STATION	OFFSET	ELEV.	STATION	OFFSET	ELEV.		
P-1	388+00.81	58.00 LT	18.27	388+52.74	37.94 LT	17.60	55.7	INSTALL PER D-01.02 & D-04.22. SEE DETAIL 1/E1



STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 AND PUBLIC FACILITIES
**KTN HERRING COVE BRIDGE
 IMPROVEMENTS**
 SUMMARIES
 8/9/2021

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
1	9/21/21	Changed Item Name	ALASKA	0902043/SFHWY00072	2021	D2	3

606.0013.0000 PARALLEL GUARDRAIL TERMINAL			
STATION	OFFSET	QUANTITY(EA)	REMARKS
388+58.00	14.5' LT	1	INSTALL PER G-20.12. ALTERNATE GUARDRAIL TERMINAL WIDENING
389+14.50	14.5' RT	1	INSTALL PER G-20.12. ALTERNATE GUARDRAIL TERMINAL WIDENING
398+22.00	13' LT	1	INSTALL PER G-20.12. ALTERNATE GUARDRAIL TERMINAL WIDENING
398+21.54	13' RT	1	INSTALL PER G-20.12. ALTERNATE GUARDRAIL TERMINAL WIDENING
	TOTAL =	4	

609.2004.0000 VALLEY GUTTER				
BEGIN STA	END STA	OFFSET	LENGTH (LF)	REMARKS
399+00.0	400+22.0	13 RT	122.0	INSTALL PER I-20.20, TYPE: GUTTER
400+59.0	401+18.0	13 RT	59.0	INSTALL PER I-20.20, TYPE: GUTTER
		TOTAL =	181.0	

606.0016.0000 TRANSITION RAIL					
BEGIN STA	END STA	OFFSET*	LENGTH	QUANTITY (EA)	REMARKS
395+16.26	395+33.02	14.62 LT	17.20	1	SEE N SHEETS
395+10.92	395+28.56	14.61 RT	17.20	1	SEE N SHEETS
396+99.43	397+16.19	14.62 LT	17.20	1	SEE N SHEETS
397+03.89	397+21.53	14.61 RT	17.20	1	SEE N SHEETS
			TOTAL =	4	*Offset given at Bridge Rail transition

625.0001.0000 PIPE HAND RAIL				
BEGIN STA	END STA	OFFSET	LENGTH (FT)	REMARKS
396+98	397+62	LT	66.5	INSTALL PER DETAILS ON SHEET E5
397+12	398+03	RT	91	INSTALL PER DETAILS ON SHEET E5
		TOTAL =	158	

627.0003.0000 INSTALL VALVE BOX			
STATION	OFFSET	QUANTITY(EA)	REMARKS
388+81	25.5' L	1	FOR HYDRANT RELOCATION AT WOOD RD INTERSECTION. INSTALL PER DETAIL 1/E6

606.2014.0000 GUARDRAIL PAVING				
BEGIN STA	END STA	OFFSET	LENGTH (LF)	REMARKS
388+58	395+33	LT	675	
389+14	395+28	RT	614	
396+99	398+22	LT	123	
397+04	398+22	RT	118	
397+99	399+14	RT	115	
			TOTAL =	1645

627.0006.0000 FIRE HYDRANT RELOCATION			
STATION	OFFSET	QUANTITY (EA)	REMARKS
388+81	27.5' L	1	INSTALL PER DETAIL 1/E6

627.0010.0000 ADJUSTMENT OF VALVE BOX			
STATION	OFFSET	QUANTITY(EA)	REMARKS
387+82.35	23.21 LT	1	S. TONGAS HWY. SEE DETAIL 3/E8
387+87.86	19.91 LT	1	S. TONGAS HWY. SEE DETAIL 3/E8
10+22.47	12.97 LT	1	WOOD RD. SEE DETAIL 3/E8
20+23.52	12.34 LT	1	WOOD RD. SEE DETAIL 3/E8
10+22.92	10.78 LT	1	WOOD RD. SEE DETAIL 3/E8
20+23.19	15.04 RT	1	POWER HOUSE RD. SEE DETAIL 3/E8
20+22.52	16.29 RT	1	POWER HOUSE RD. SEE DETAIL 3/E8
20+23.79	16.51 RT	1	POWER HOUSE RD. SEE DETAIL 3/E8
20+23.01	17.72 RT	1	POWER HOUSE RD. SEE DETAIL 3/E8
		TOTAL =	9

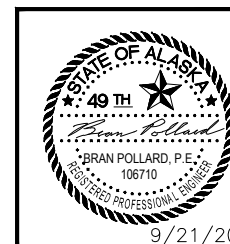
608.0001.0004 CONCRETE SIDEWALK, 4 INCHES THICK			
STATION	OFFSET	AREA (S.Y.)	REMARKS
398+27.41	14.07	6.0	
398+27.71	13.97	7.5	
		TOTAL =	14

627.2018.0000 RELOCATE, WATER MAIN				
BEGIN STA	END STA	OFFSET	QUANTITY (EA)	REMARKS
388+18	388+25	41' L	1	FISH CULVERT AT WOOD RD. INSTALL PER DETAIL 3/E4
395+22	395+75	33' L	2	BRIDGE WING-WALL. INSTALL PER DETAIL 3/E6
		TOTAL =	3	

608.0003.0000 ASPHALT SIDEWALK				
BEGIN STATION	END STATION	OFFSET	AREA (S.Y.)	REMARKS
396+98.11	398+39.83	LT	84	INSTALL PER DETAIL 5/B1
397+03.89	399+14.47	RT	142	INSTALL PER DETAIL 5/B1
		TOTAL =	226	

627.2028.0000 WATER LINE SURVEY				
BEGIN STA	END STA	OFFSET	QUANTITY (EA)	REMARKS
388+18	388+25	41' L	1	FISH CULVERT NEAR WOOD RD, DETAIL 3/E6
388+81	388+81	27' L	1	FIRE HYDRANT RELOCATION, DETAIL 1/E6
395+22	395+75	33' L	2	BRIDGE WING-WALL, DETAIL 3/E6
		TOTAL =	4	

608.0006.0000 CURB RAMP		
STA.	OFFSET	REMARKS
398+27.41	14.07	INSTALL DETECTABLE WARNING TILE, DETAIL 1/E7. SEE STD PLAN I-20.20
398+27.71	13.97	INSTALL DETECTABLE WARNING TILE, DETAIL 1/E7. SEE STD PLAN I-20.20
	TOTAL =	2



STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
KTN HERRING COVE BRIDGE
IMPROVEMENTS

9/21/2022

SUMMARIES

FILE G:\Ktn\SFHWY00072\Plans\00072_D1.dwg DATE 8/9/2021 12:18 LAYOUT D2 DESIGNED STAFF CHECKED STAFF DRAFTED STAFF

FILE G:\Ktn\SFH\00072\Plans\00072_D1.dwg
 DATE 8/9/2021 12:08
 LAYOUT D3
 DESIGNED STAFF
 CHECKED STAFF
 DRAFTED STAFF

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFH\00072	2021	D3	3

639.2000.0000 APPROACH

STATION	OFFSET	WIDTH (FT)		RADIUS(FT)		DEPTH (FT)	QUANTITY (EA)	REMARKS
		FRONT	BACK	R1	R2			
387+10.00	LT	40	20	20	20	10	1	GRADE TO MATCH EXISTING GRAVEL
387+22.00	RT	45	25	20	20	10	1	INTERSECTION
389+00.83	RT	33	15	20	20	10	1	GRADE TO MATCH EXISTING GRAVEL
399+25.55	RT	34	15	20	7	66	1	GRADE TO MATCH EXISTING DRIVEWAY
399+81.05	RT	67	51	7	20	8	1	GRADE TO MATCH EXISTING GRAVEL
400+40.00	LT	53	20	20	20	10	1	GRADE TO MATCH EXISTING GRAVEL
400+88.00	RT	61	28	20	20	10	1	GRADE TO MATCH EXISTING GRAVEL
10+64.00	LT	34	14	20	20	11	1	DRIVEWAY ON WOOD RD.
TOTAL =							8	

STREET LIGHT FOUNDATIONS

STATION	OFFSET	POLE	TOP OF FOUNDATION ELEVATION	REMARKS
387+86.94	24.84' RT	LP 1	24.84	INSTALL PER L-30.11
398+20.98	25.16' RT	LP 4	31.70	INSTALL PER L-30.11
398+36.51	50.28' LT	LP 5	34.40	INSTALL PER L-30.11
399+32.59	18.59' LT	LP 6	32.77	INSTALL PER L-30.11

642.0006.0000 REPLACE EXISTING WITH PRIMARY MONUMENT

STATION	OFFSET	POINT #	QUANTITY (EA)	REMARKS
396+74.98	14.25 RT	1241	1	RESET WITH ORIGINAL MONUMENT IF POSSIBLE. 3" ALCAP SET FLUSH IN BRIDGE DECK.
396+00.54	11.95 LT	1242	1	RESET WITH ORIGINAL MONUMENT IF POSSIBLE. 3" ALCAP SET FLUSH IN BRIDGE DECK.
386+88.39	12.02 LT	238	1	RESET WITH ORIGINAL MONUMENT IF POSSIBLE. 3" ALCAP SET IN MONUMENT CASE.
391+53.20	12.07 LT	239	1	RESET WITH ORIGINAL MONUMENT IF POSSIBLE. 3" ALCAP SET IN MONUMENT CASE.
394+84.36	12.91 LT	240	1	RESET WITH ORIGINAL MONUMENT IF POSSIBLE. 3" ALCAP SET IN MONUMENT CASE.
398+28.94	12.76 LT	241	1	RESET WITH ORIGINAL MONUMENT IF POSSIBLE. 3" ALCAP SET IN MONUMENT CASE.
TOTAL =			6	

642.0007.0000 REPLACE EXISTING WITH SECONDARY MONUMENT

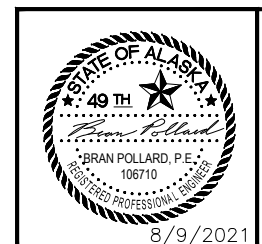
STATION	OFFSET	POINT #	QUANTITY (EA)	REMARKS
396+61.89	42.05	1243	1	RESET WITH 5/8" REBAR AND PLASTIC OR 2" ALUM. CAP.
397+12.51	40.94 RT	1255	1	RESET WITH 5/8" REBAR AND PLASTIC OR 1.5" ALUM. CAP.
TOTAL =			2	

642.0009.0000 REFERENCE EXISTING MONUMENTS

STATION	OFFSET	POINT #	QUANTITY	REMARKS
386+88.39	12.02 LT	238	1	RESET WITH ORIGINAL MONUMENT IF POSSIBLE. 3" ALCAP SET IN MONUMENT CASE.
391+53.20	12.07 LT	239	1	RESET WITH ORIGINAL MONUMENT IF POSSIBLE. 3" ALCAP SET IN MONUMENT CASE.
394+84.36	12.91 LT	240	1	RESET WITH ORIGINAL MONUMENT IF POSSIBLE. 3" ALCAP SET IN MONUMENT CASE.
396+74.98	14.25 RT	1241	1	RESET WITH ORIGINAL MONUMENT IF POSSIBLE. 3" ALCAP SET FLUSH IN BRIDGE DECK.
396+00.54	11.95 LT	1242	1	RESET WITH ORIGINAL MONUMENT IF POSSIBLE. 3" ALCAP OR BC SET FLUSH IN BRIDGE ABUTMENT IF POSSIBLE
396+61.89	42.05 LT	1243	1	RESET WITH 5/8" REBAR AND PLASTIC OR 2" ALUM. CAP.
397+12.51	40.94 RT		1	RESET WITH 5/8" REBAR AND PLASTIC OR 1.5" ALUM. CAP.
398+28.94	12.76 LT	241	1	RESET WITH ORIGINAL MONUMENT IF POSSIBLE. 3" ALCAP SET IN MONUMENT CASE.
TOTAL =			8	

642.0010.0000 MONUMENT CASE

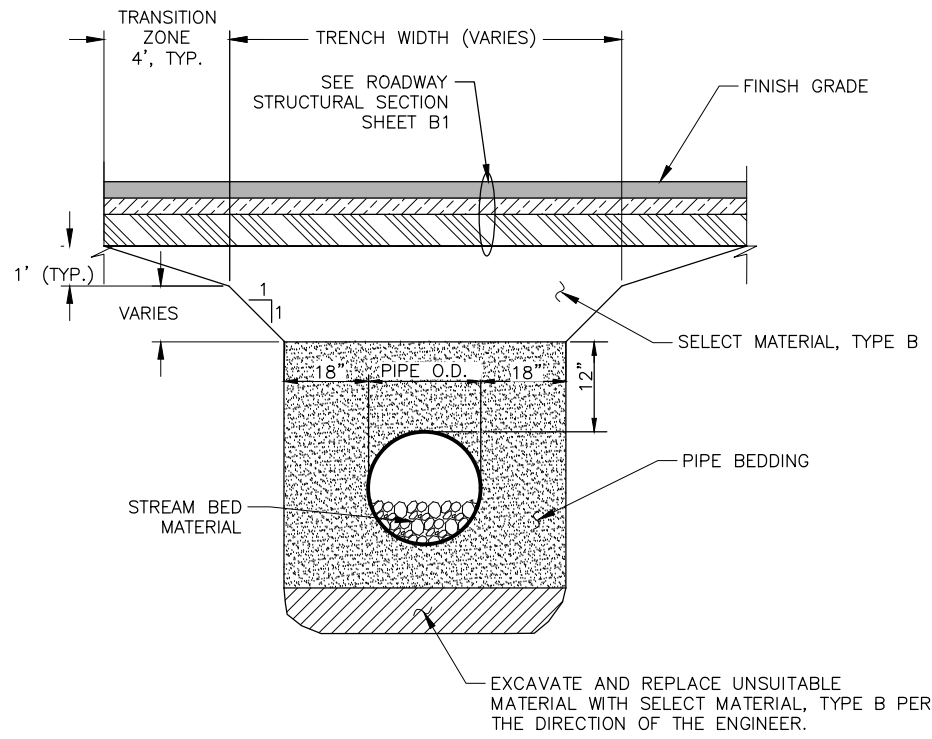
STATION	OFFSET	POINT #	QUANTITY	REMARKS
386+88.39	12.02 LT	238	1	REPLACE MONUMENT CASE AND LID UNLESS THE ORIGINAL CAN BE REUSED.
391+53.20	12.07 LT	239	1	REPLACE MONUMENT CASE AND LID UNLESS THE ORIGINAL CAN BE REUSED.
394+84.36	12.91 LT	240	1	REPLACE MONUMENT CASE AND LID UNLESS THE ORIGINAL CAN BE REUSED.
398+28.94	12.76 LT	241	1	REPLACE MONUMENT CASE AND LID UNLESS THE ORIGINAL CAN BE REUSED.
TOTAL =			4	



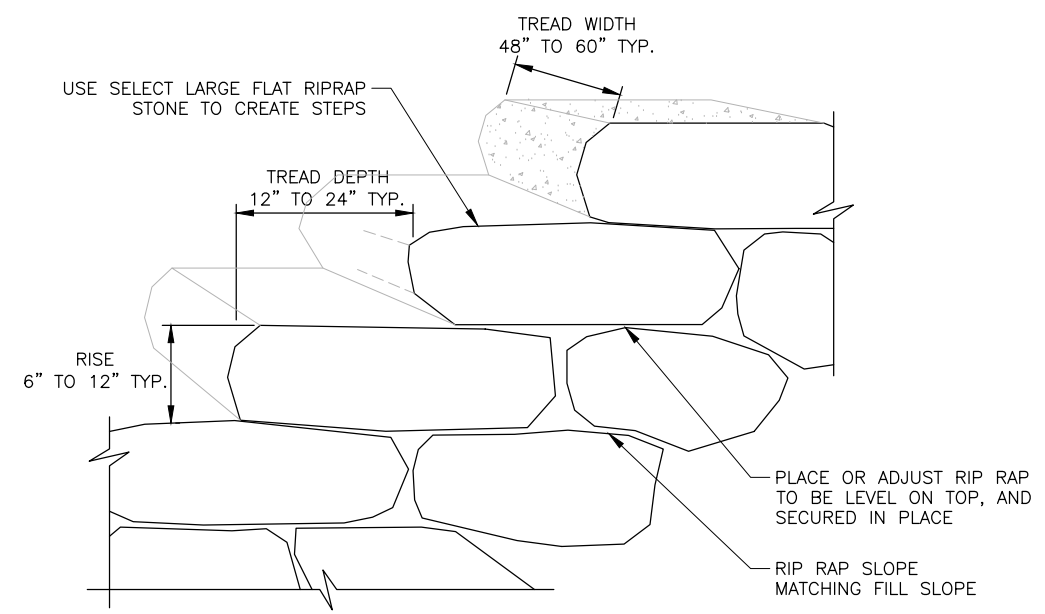
STATE OF ALASKA
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**KTN HERRING COVE BRIDGE
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 SUMMARIES

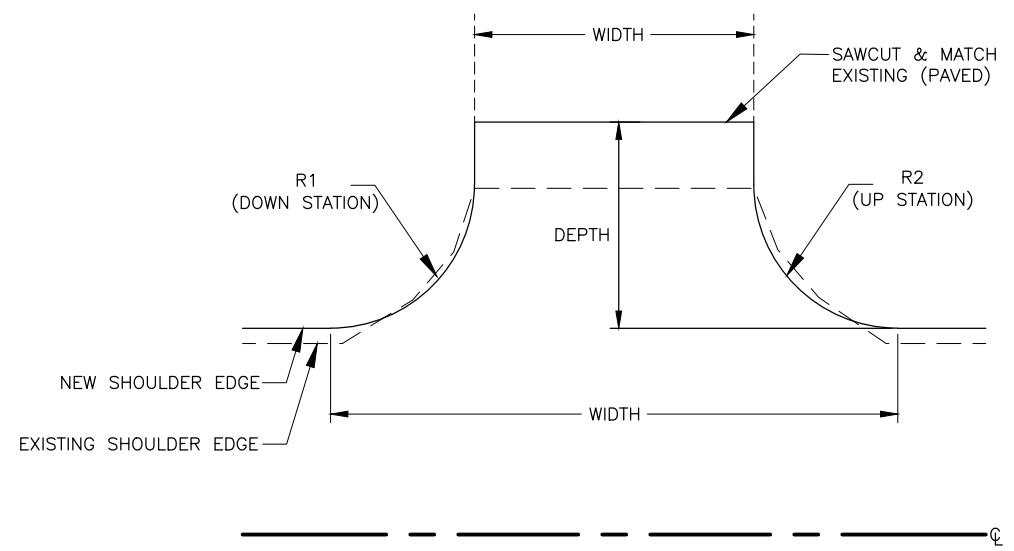
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			ALASKA	0902043/SFHwy00072	2021	E1	9



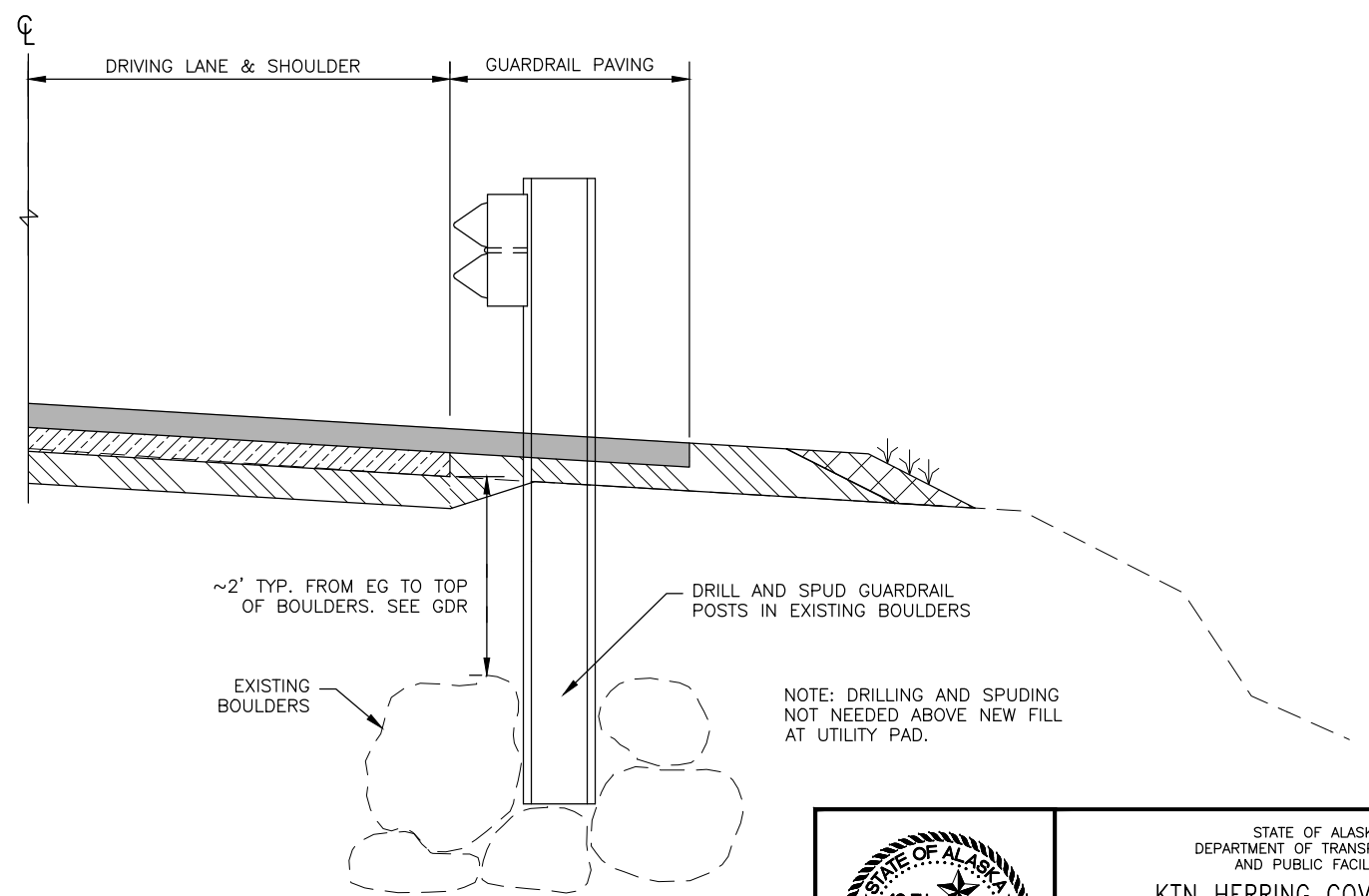
1 CULVERT BEDDING/BACKFILL DETAIL
 SCALE: N.T.S.
 NOTE: D-1 BEDDING PLUG AT INVERT PER SPECIFICATION 204-2.01



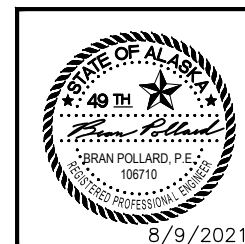
3 RIPRAP STEPPING STONES
 SCALE: N.T.S.
 NOTE: CAREFULLY PLACE STONES TO LOCK IN PLACE AND CREATE FIRM SURFACE.



2 PAVED APPROACH - PLAN VIEW
 SCALE: N.T.S.



4 DRILL AND SPUD GUARDRAIL POSTS
 SCALE: N.T.S.



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MISCELLANEOUS DETAILS

8/9/2021

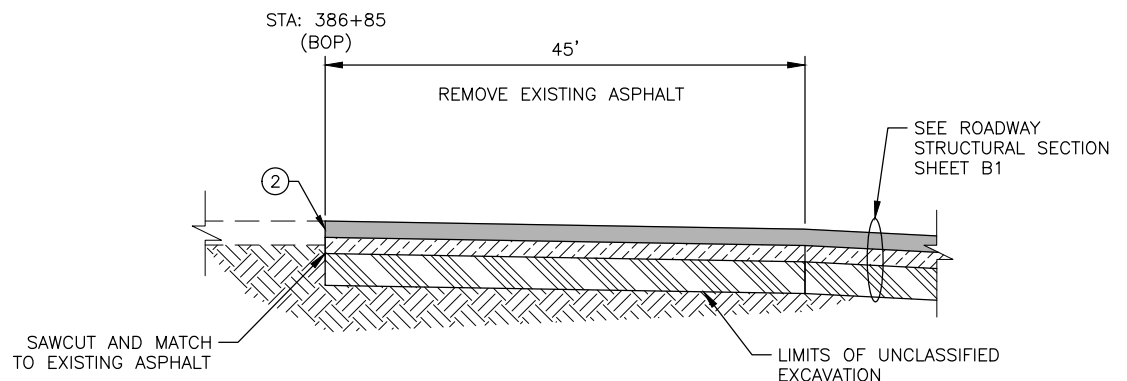
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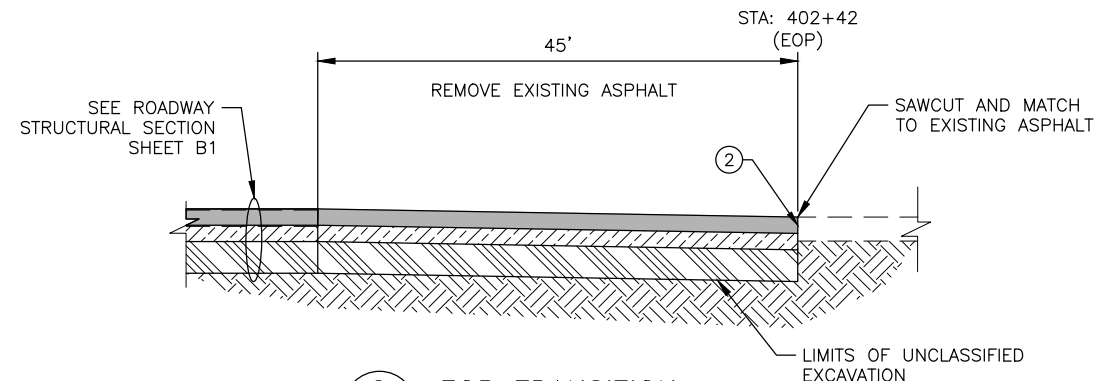
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LEGEND

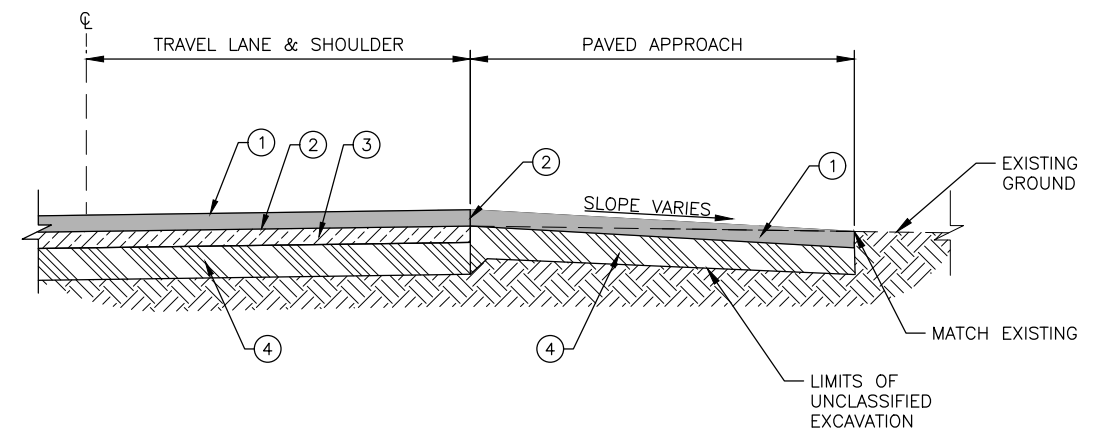
- ① 3" HOT MIX ASPHALT, TYPE II, CLASS B
- ② STE-1 ASPHALT FOR TACK COAT
- ③ 3" ASPHALT TREATED BASE COURSE
- ④ 4" AGGREGATE BASE COURSE, GRADING D-1



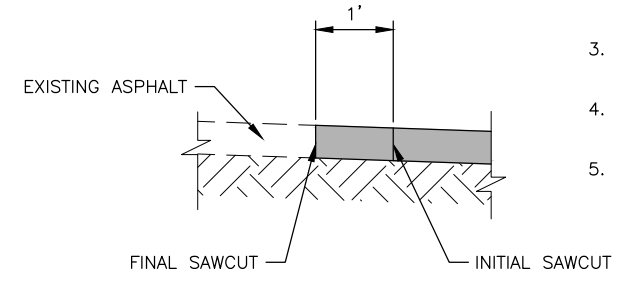
① BOP TRANSITION
E2 SCALE: NOT TO SCALE



② EOP TRANSITION
E2 SCALE: NOT TO SCALE



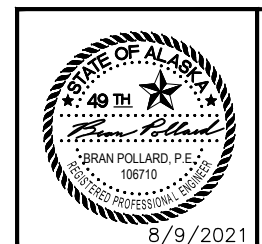
③ APPROACH PROFILE
E2 SCALE: NOT TO SCALE



④ SAWCUT
E2 SCALE: NOT TO SCALE

NOTES:

1. THIS DETAIL APPLIES TO ALL ASPHALT SAWCUTS.
2. INITIALLY SAWCUT EXISTING ASPHALT TO PROTECT FINAL CUT EDGE DURING ASPHALT REMOVAL & BASE COURSE PREPARATION.
3. FINAL SAWCUT WITHIN 24 HOURS PRIOR TO PAVING. PROTECT FINAL SAWCUT EDGE FROM DAMAGE.
4. INITIAL SAWCUT MAY BE ELIMINATED IF PAVING IS TO TAKE PLACE WITHIN 24 HRS AND SAWCUT EDGE IS PROTECTED FROM DAMAGE, PRIOR TO PAVING.
5. FINAL SAWCUT SHALL BE STRAIGHT & THE FULL DEPTH OF EXISTING ASPHALT.

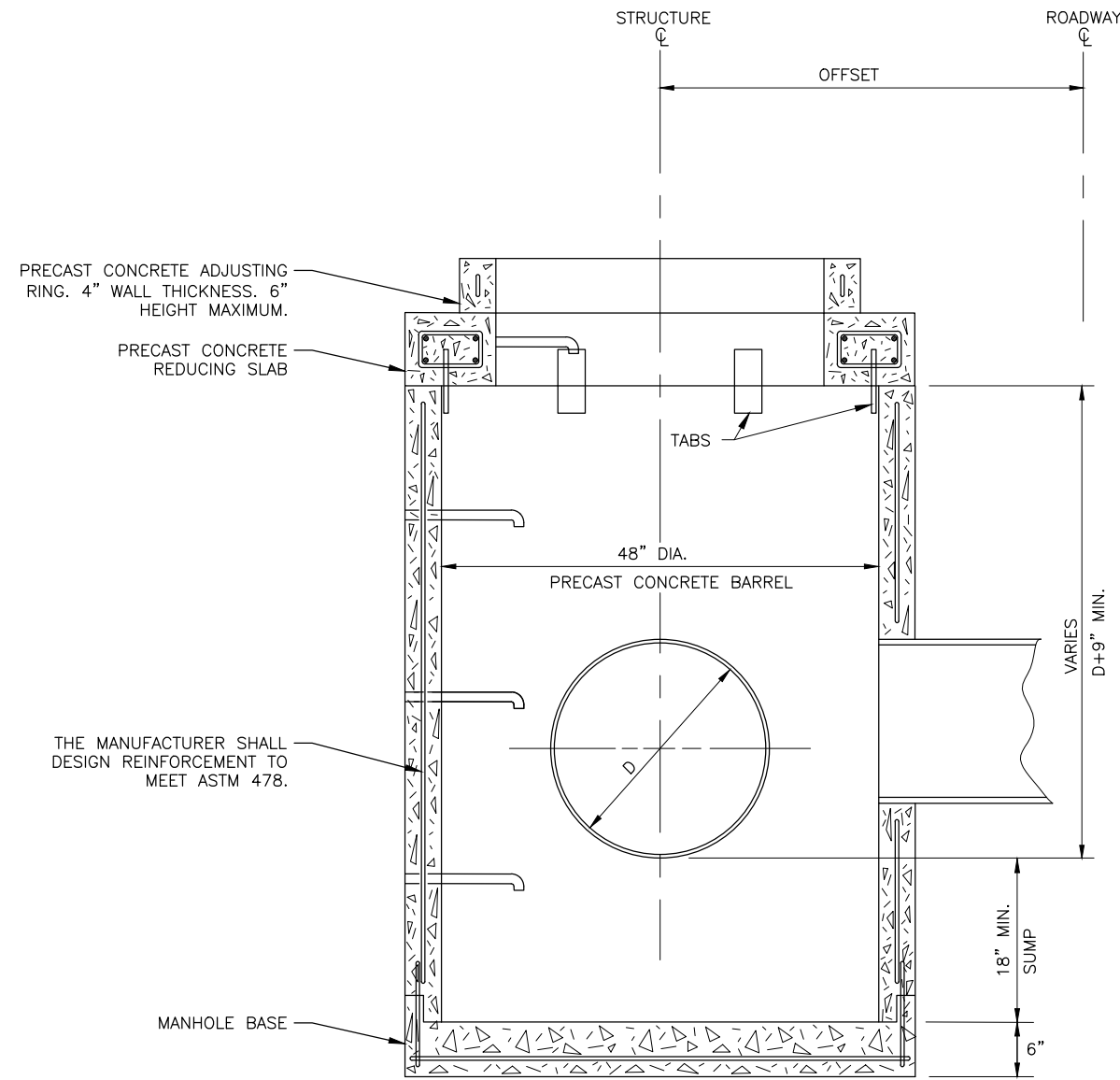


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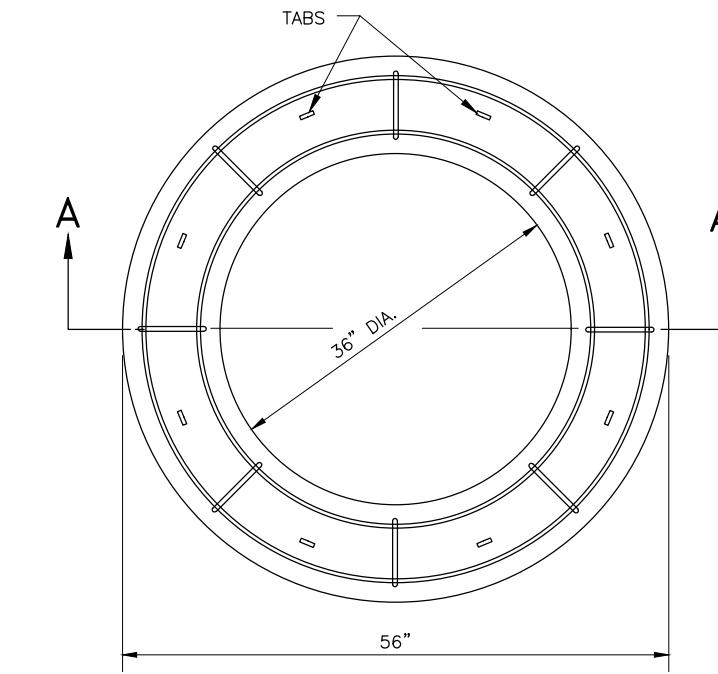
**KTN HERRING COVE BRIDGE
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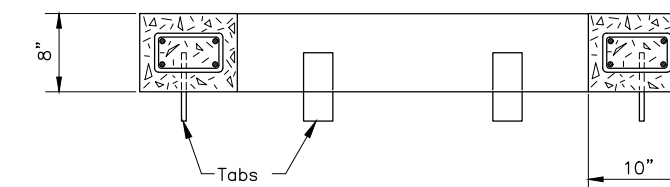
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	E3	9



STORM DRAIN MANHOLE, TYPE I



NOTE:
EVENLY SPACE 8 TABS
AROUND EACH SLAB.

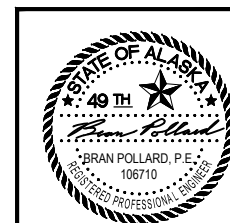


**SECTION A-A
PRECAST CONCRETE REDUCING SLAB**

56" TO 36" WITH CENTERED HOLE.

GENERAL NOTES:

1. ALL DRAINAGE STRUCTURES AND APPURTENANCES SHALL MEET THE REQUIREMENTS OF ASTM C-478.
2. ALL BLOCKOUTS SHALL BE FORMED.
3. MANHOLES AND INLETS SHALL HAVE 18" MINIMUM SUMPS.
4. STEPS SHALL BE PLACED 12" O.C. ON THE UNOBSTRUCTED SIDE OF THE STRUCTURE, 20" FROM TOP OF CASTING AND 18" MAXIMUM FROM MANHOLE BASE.
5. OFFSETS ARE MEASURED FROM ϕ OF THE ROAD TO ϕ OF THE STRUCTURE.



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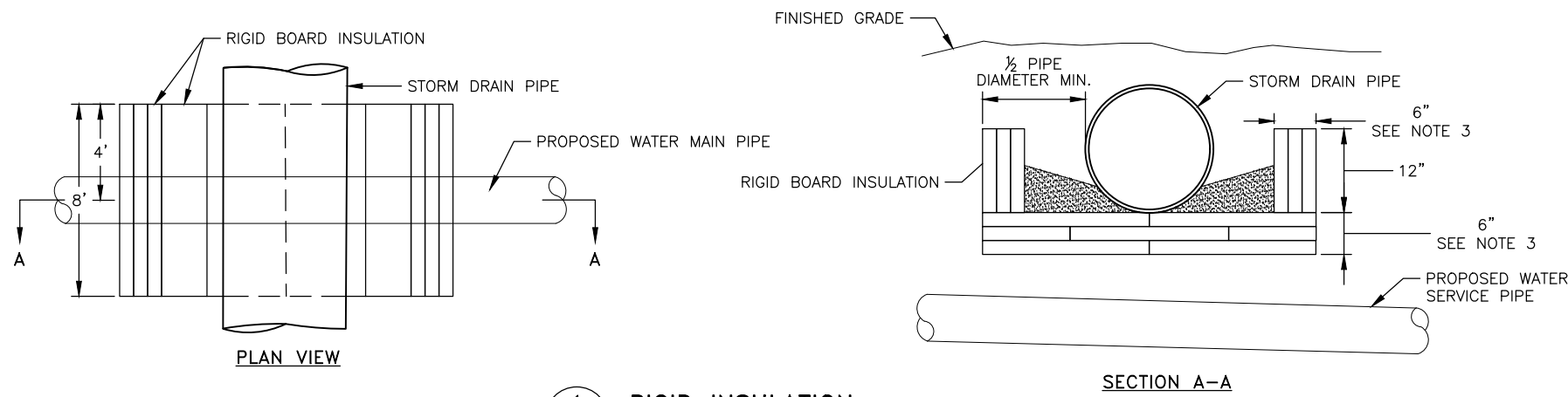
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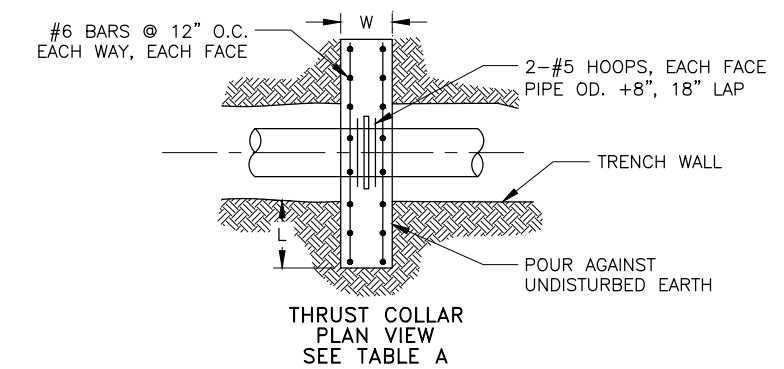
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHwy00072	2021	E4	9

NOTES 1/E4:

- PIPE INSULATION SHALL BE 8' IN LENGTH, CENTERED OVER EXISTING WATER PIPE.
- PIPE INSULATION WITH R-FACTOR EQUAL TO RIGID BOARD MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.
- CROSSING SHALL BE PROTECTED WITH A MINIMUM OF 6" OF INSULATION BOARDS WITH A 12" OVER LAP AS SHOWN.



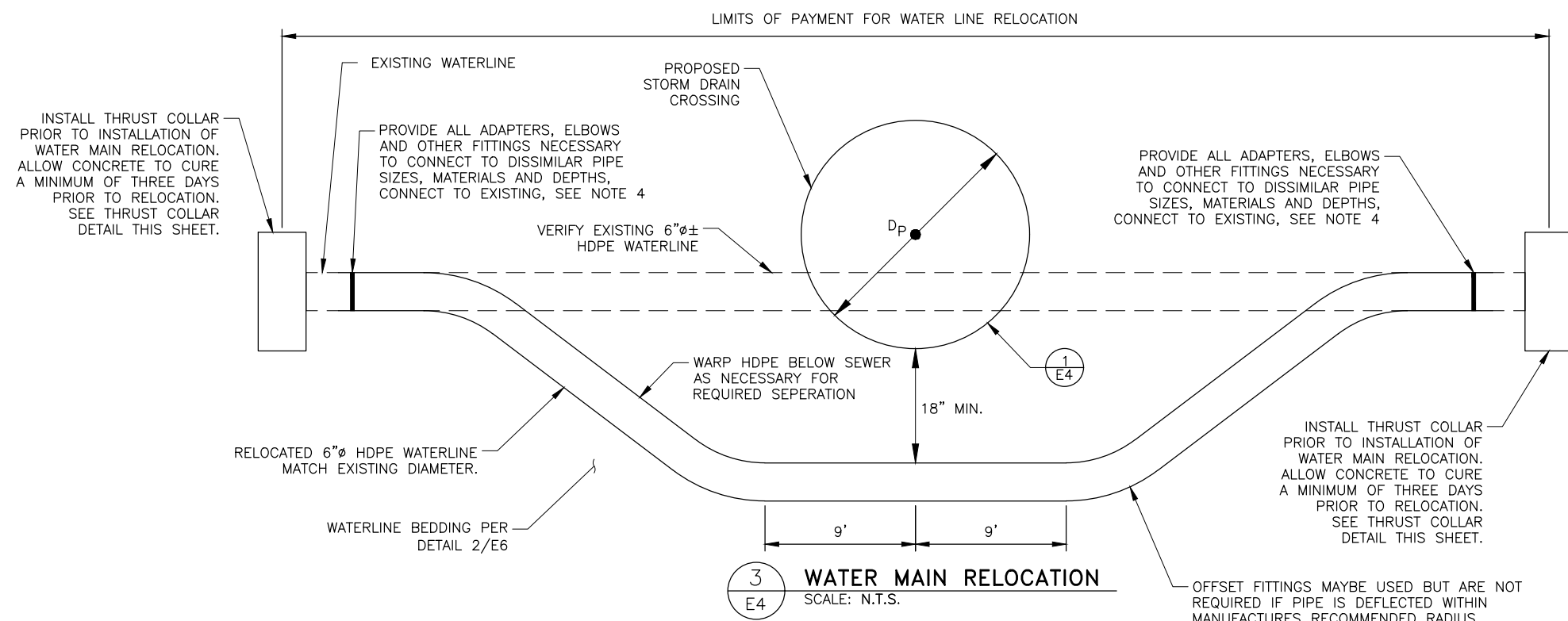
1 RIGID INSULATION
E4 SCALE: N.T.S.



2 THRUST BLOCKING DETAILS
E4 SCALE: N.T.S.

PIPE SIZE	H	W	L
12" AND UNDER	1'-6"	2'	1'-6"

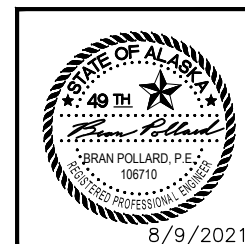
NOTE: TABLE VALUES ARE BASED ON 200 PSI WATER PRESSURE AND 2000 PSF SOIL BEARING CAPACITY.



3 WATER MAIN RELOCATION
E4 SCALE: N.T.S.

DETAIL 3/E4 NOTES:

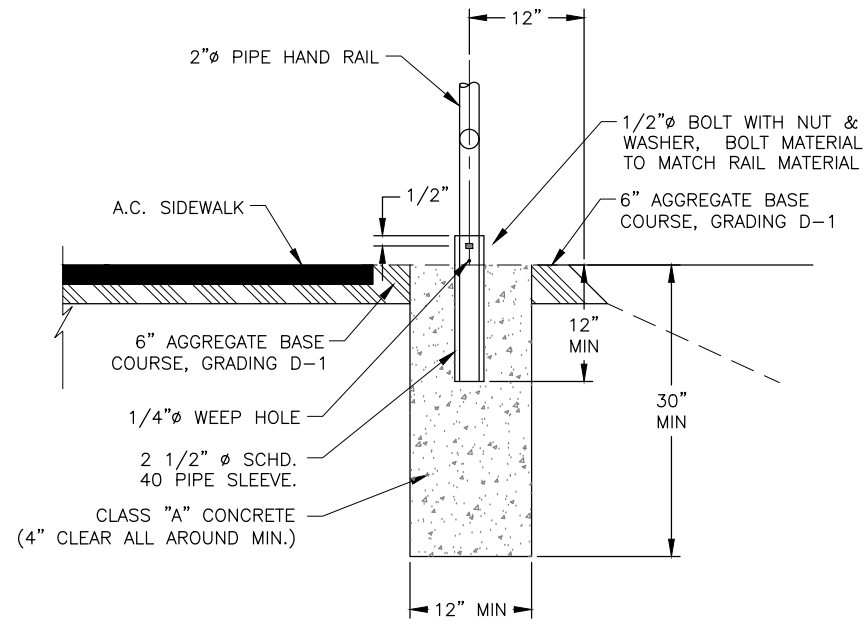
- WATER MAIN RELOCATION MAY NOT BE REQUIRED. THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING WATERLINE TOP OF PIPE ELEVATION, PIPE TYPE, AND DIAMETER AT THE STORM DRAIN CROSSING. SUBMIT RESULTS OF THE WATER LINE SURVEY TO THE ENGINEER.
- THE ENGINEER WILL DETERMINE IF WATER MAIN RELOCATION IS REQUIRED BASED ON THE CONTRACTOR'S WATER LINE SURVEY. OBTAIN THE ENGINEER'S APPROVAL TO PROCEED WITH WATER MAIN RELOCATION PRIOR TO ORDERING ANY WATER MAIN RELOCATION MATERIALS.
- PIPE INSULATION (NOT SHOWN) SHALL BE INSTALLED PER THE RIGID INSULATION DETAIL.
- ELECTROFUSION CUPPLINGS MAYBE USED TO JOIN WATERMAIN RELOCATION TO EXISTING WATERLINE.
- ALL NEW MATERIALS SHALL BE CLEANED AND DISINFECTED IN ACCORDANCE WITH THE AMERICAN WATER WORKS ASSOCIATION (AWWA) GUIDANCE. CONTRACTOR SHALL DISINFECT PRIOR TO MAKING CONNECTION. AFTER INSTALLATION CONTRACTOR SHALL FLUSH TO THE NEAREST HYDRANT.
- NEW PIPE WORK INSTALLED WILL BE VISUALLY CHECKED FOR LEAKS AT LINE PRESSURE. VERIFICATION OF RESTRAINT REQUIREMENTS AND VISUAL INSPECTION WILL BE PERFORMED BY THE ENGINEER PRIOR TO PIPE BURIAL.



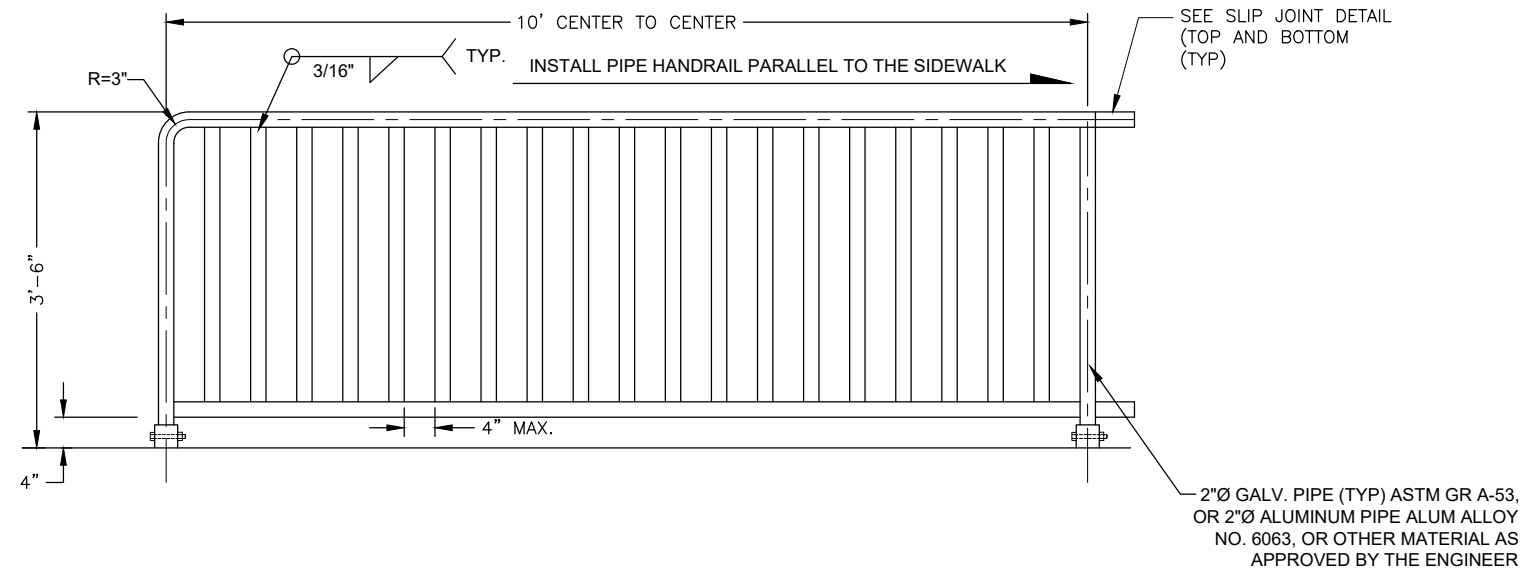
STATE OF ALASKA
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IMPROVEMENTS**
MISCELLANEOUS DETAILS

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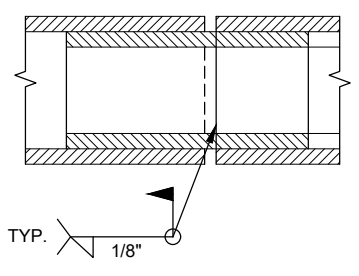
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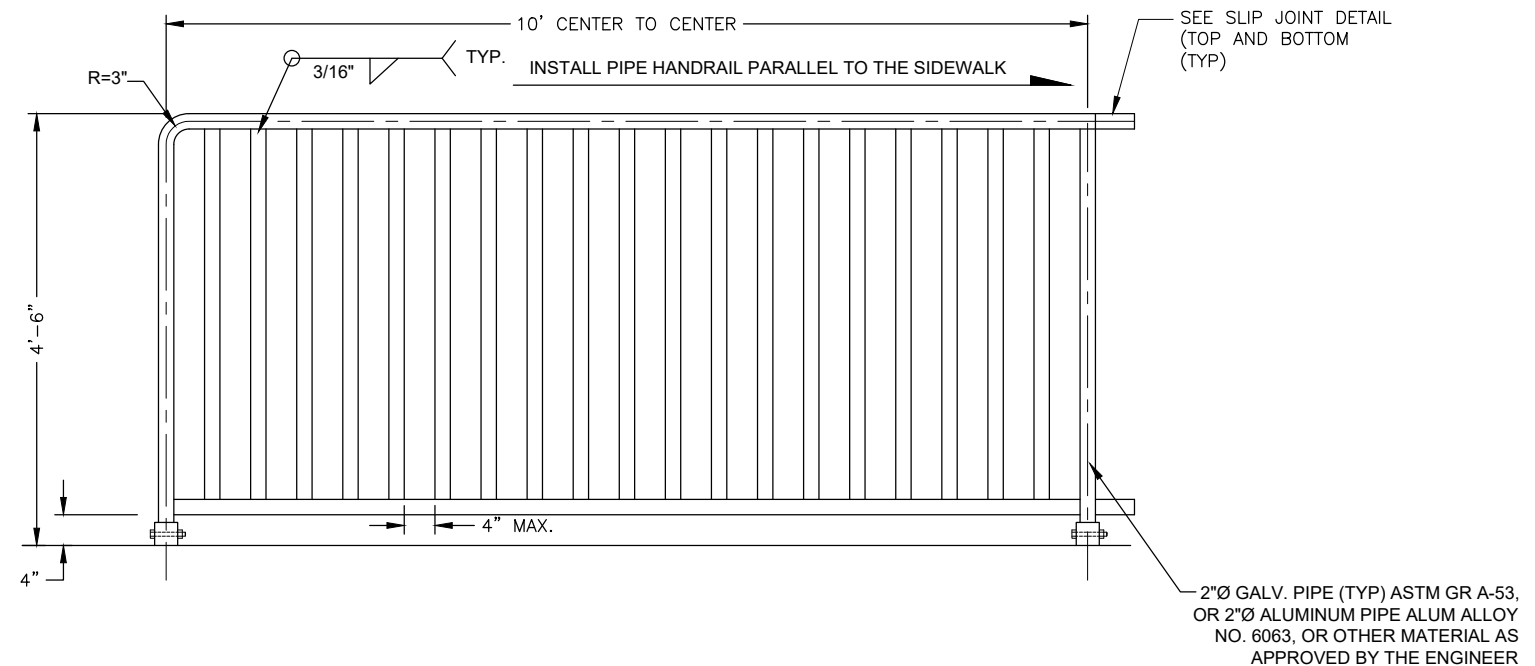
1 CAST IN PLACE FOUNDATION
SCALE: NOT TO SCALE



2 PIPE HANDRAIL ELEVATION (TYP)
SCALE: NOT TO SCALE



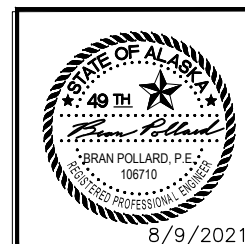
SLIP JOINT DETAIL
NTS



3 PIPE HANDRAIL ELEVATION (TYP)
SCALE: NOT TO SCALE

HANDRAIL NOTES:

- HANDRAIL STATIONING IS APPROXIMATE. THE CONTRACTOR SHALL MARK POST HOLE FOUNDATION LOCATIONS BEFORE INSTALLING FOUNDATIONS. ADJUST POST HOLE LOCATIONS AS NECESSARY TO ENSURE THAT NO POST HOLE LOCATIONS CONFLICT WITH UNDERGROUND UTILITIES.
- CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF ALL PEDESTRIAN RAILING, PRIOR TO FABRICATION, FOR THE ENGINEER'S REVIEW AND APPROVAL.
- THE 6" DIMENSION BETWEEN PIPE RAIL SECTIONS IS TYPICAL. THE CONTRACTOR MAY ADJUST THE SPACING BETWEEN RAIL SECTIONS +/- 3" AS REQUIRED TO AVOID UNDERGROUND UTILITIES AND OTHER CONFLICTS.



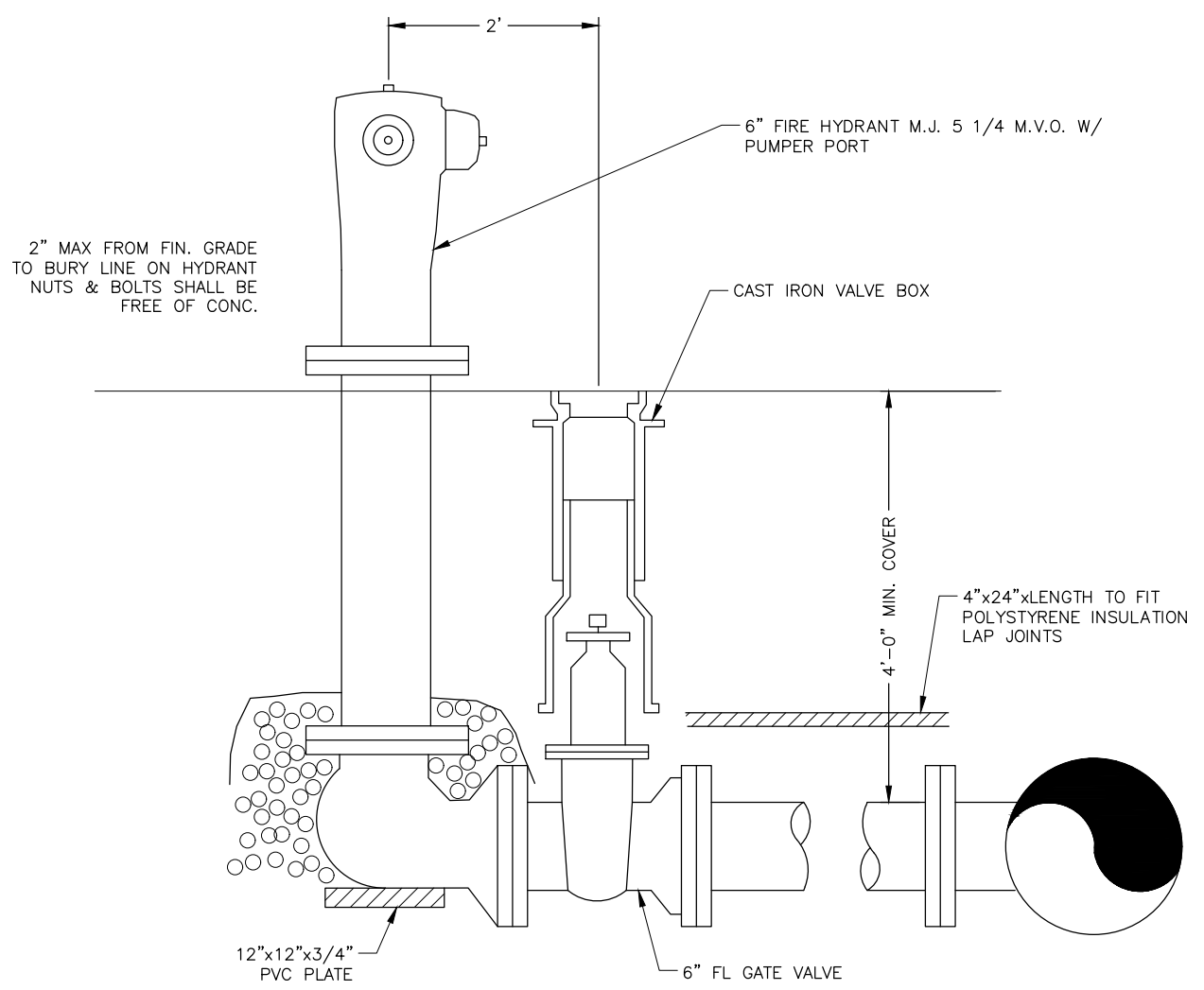
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MISCELLANEOUS DETAILS

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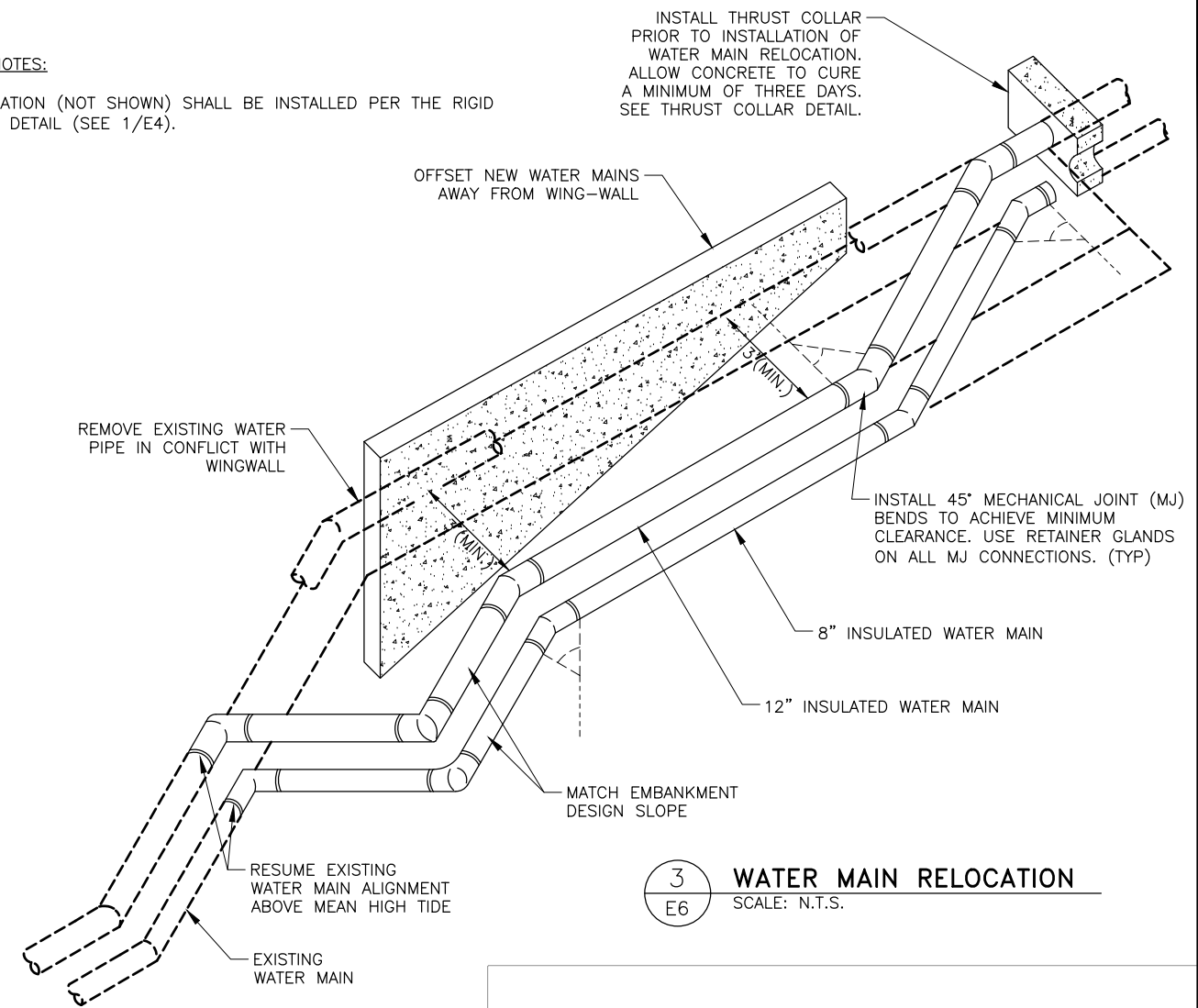
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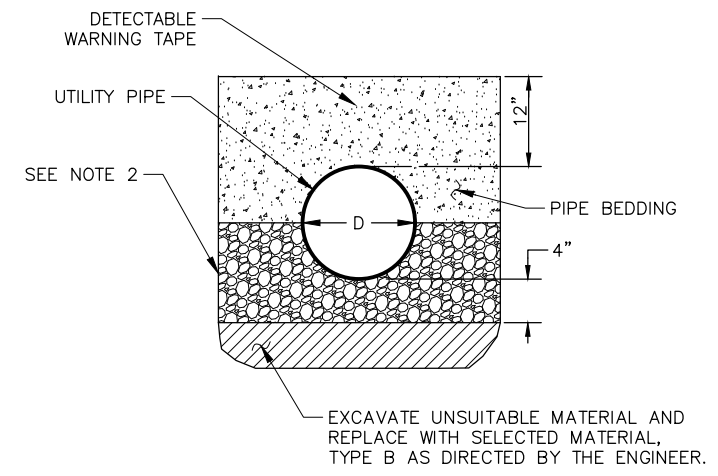
- NOTES:**
1. ALL BOLT THREADS TO BE GREASED PRIOR TO INSTALLATION.
 2. ALL JOINTS RESTRAINED WITH FOLLOWMER GLANDS.
 3. HYDRANT SHALL BE PAINTED 7745 SUNSET YELLOW (SUSTOLEUM).
 4. NUTS AND BOLTS SHALL BE FREE OF CONCRETE.

1 FIRE HYDRANT SERVICE RELOCATION
SCALE: N.T.S.

- DETAIL 3/E6 NOTES:**
1. PIPE INSULATION (NOT SHOWN) SHALL BE INSTALLED PER THE RIGID INSULATION DETAIL (SEE 1/E4).



3 WATER MAIN RELOCATION
SCALE: N.T.S.



2 WATER LINE BEDDING
SCALE: N.T.S.

- NOTES 2/E6:**
1. THE MAXIMUM CLEAR WIDTH OF THE TRENCH AT THE TOP OF THE PIPE SHALL NOT EXCEED THE PIPE OD + 2'. MINIMUM TRENCH WIDTH SHALL BE PIPE OD + 1'
 2. WHERE DIRECTED BY THE ENGINEER, GRANULAR TRENCH STABILIZATION SHALL BE PLACED PRIOR TO PLACEMENT OF THE BEDDING. SIZE AND DEPTH ARE DEPENDENT ON SOIL CONDITIONS.
 3. FOR ROCK OR OTHER INCOMPRESSIBLE MATERIALS, THE TRENCH SHALL BE OVEREXCAVATED A MINIMUM OF 6" AND REFILLED WITH GRANULAR MATERIAL AS DIRECTED BY THE ENGINEER.
 4. BEDDING AND BACKFILL MATERIALS IN THE PIPE ZONE SHALL BE COMPACTED AS SPECIFIED PRIOR TO BACKFILLING THE REMAINDER OF THE TRENCH.
 5. INSTALL BEDDING & BACKFILL IN ACCORDANCE WITH SECTION 204.
 6. PIPE INSULATION (NOT SHOWN) SHALL BE INSTALLED PER THE RIGID INSULATION DETAIL (SEE 1/E4).

- DETAIL 1/E6 NOTES:**
1. FIRE HYDRANT RELOCATION MAY NOT BE REQUIRED. THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING WATERLINE TOP OF PIPE ELEVATION, PIPE TYPE, AND DIAMETER AT THE STORM DRAIN CROSSING. SUBMIT RESULTS OF THE WATER LINE SURVEY TO THE ENGINEER.
 2. THE ENGINEER WILL DETERMINE IF FIRE HYDRANT RELOCATION IS REQUIRED BASED ON THE CONTRACTOR'S WATER LINE SURVEY. OBTAIN THE ENGINEER'S APPROVAL TO PROCEED WITH WATER MAIN RELOCATION PRIOR TO ORDERING ANY WATER FIRE HYDRANT RELOCATION MATERIALS.
 3. PIPE INSULATION (NOT SHOWN) SHALL BE INSTALLED PER THE RIGID INSULATION DETAIL (SEE 1/E4).
 4. ALL NEW MATERIALS SHALL BE CLEANED AND DISINFECTED IN ACCORDANCE WITH THE AMERICAN WATER WORKS ASSOCIATION (AWWA) PROCEDURES. CONTRACTOR SHALL DISINFECT PRIOR TO MAKING CONNECTION. AFTER INSTALLATION CONTRACTOR SHALL FLUSH TO THE HYDRANT.
 5. NEW PIPE WORK INSTALLED WILL BE VISUALLY CHECKED FOR LEAKS AT LINE PRESSURE. VERIFICATION OF RESTRAINT REQUIREMENTS AND VISUAL INSPECTION WILL BE PERFORMED BY THE ENGINEER, PRIOR TO BACKFILL PLACEMENT.



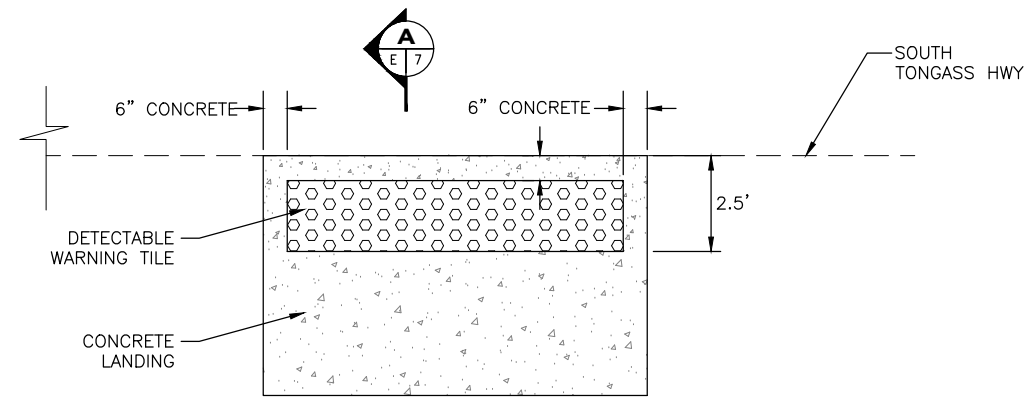
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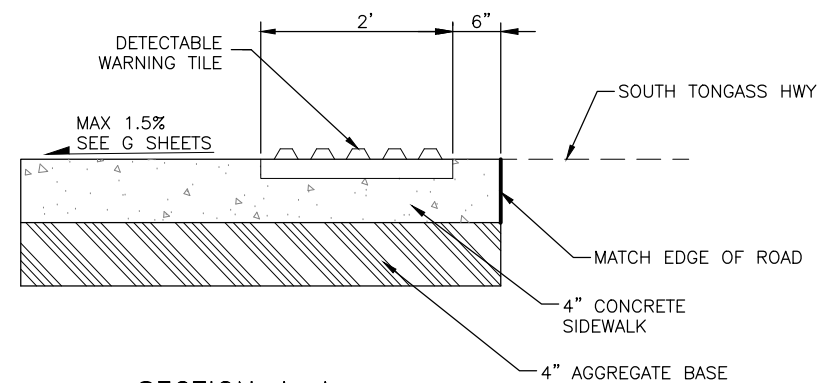
MISCELLANEOUS DETAILS

8/9/2021

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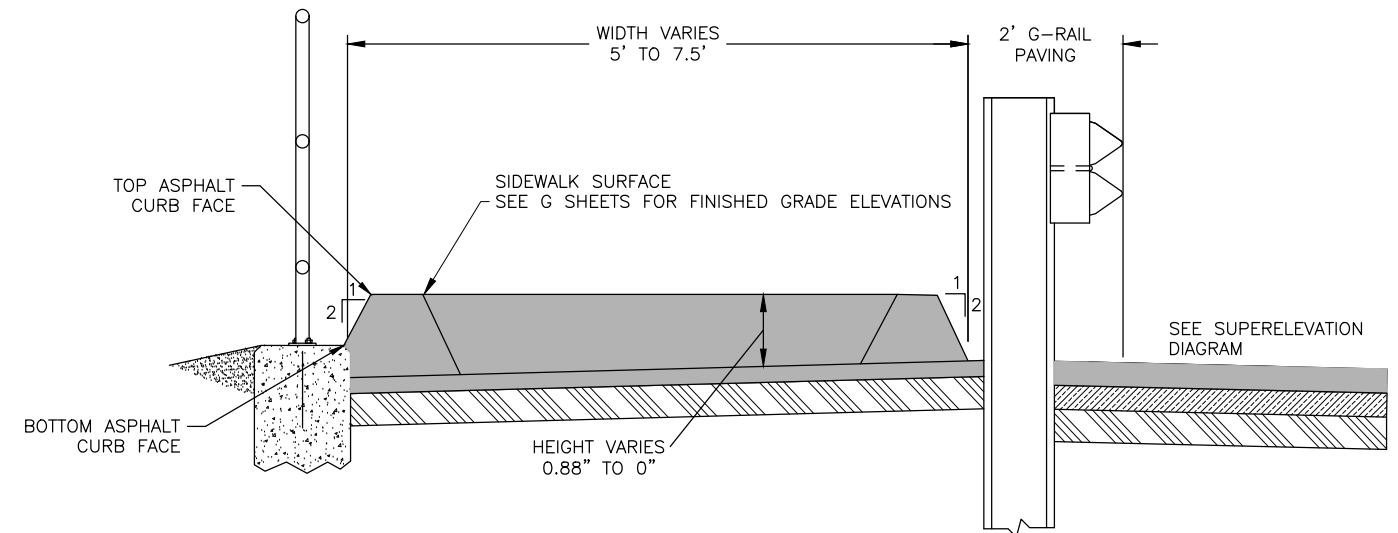


PLAN VIEW
NTS



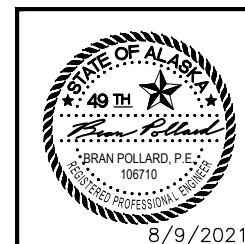
SECTION A-A
NTS

1 PEDESTRIAN LANDING
SCALE: NOT TO SCALE
SEE G SHEETS



2 SIDEWALK TRANSITION TO BRIDGE
SCALE: NOT TO SCALE

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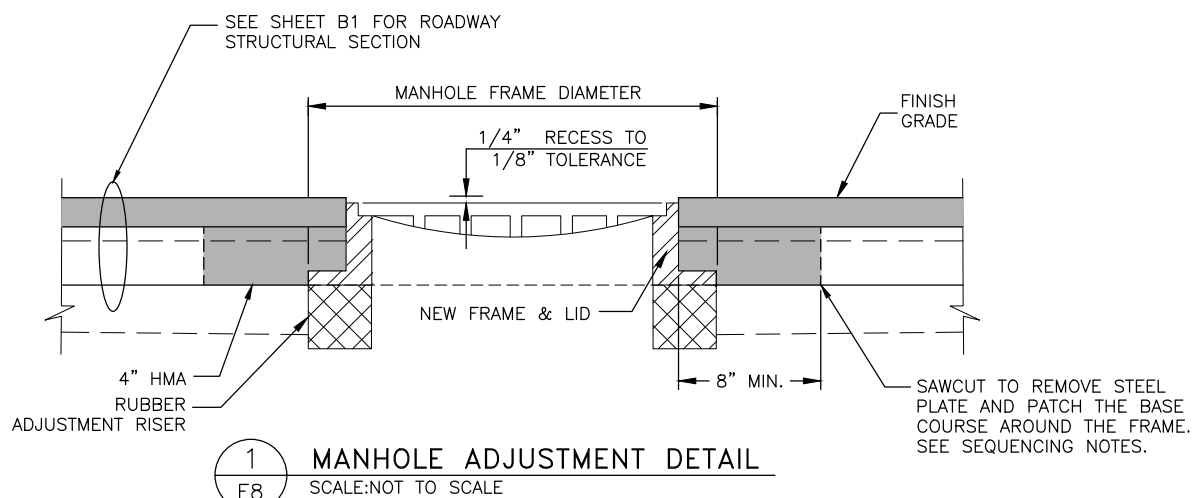
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E7 MISCELLANEOUS DETAILS

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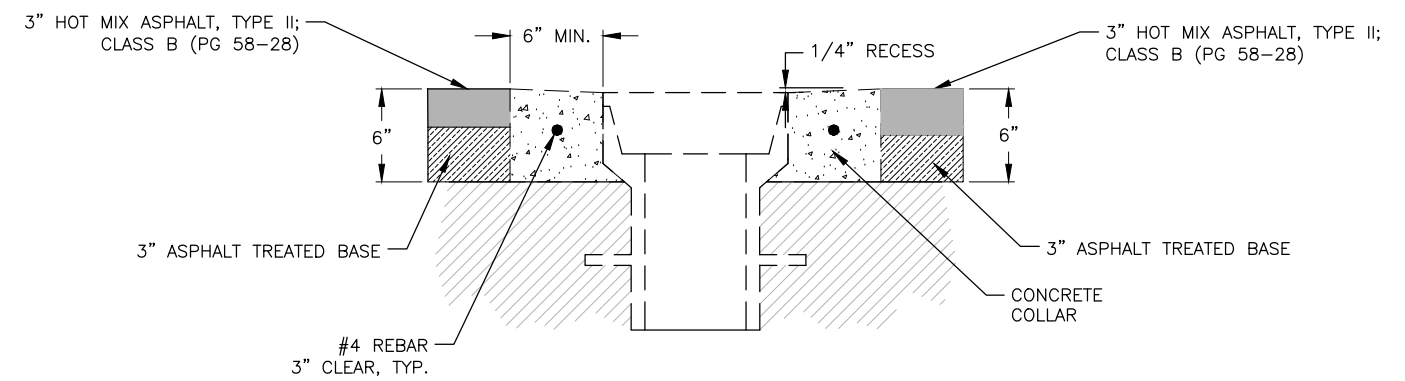
1 MANHOLE ADJUSTMENT DETAIL
E8 SCALE: NOT TO SCALE

MANHOLE ADJUSTMENT CONSTRUCTION SEQUENCING NOTES:

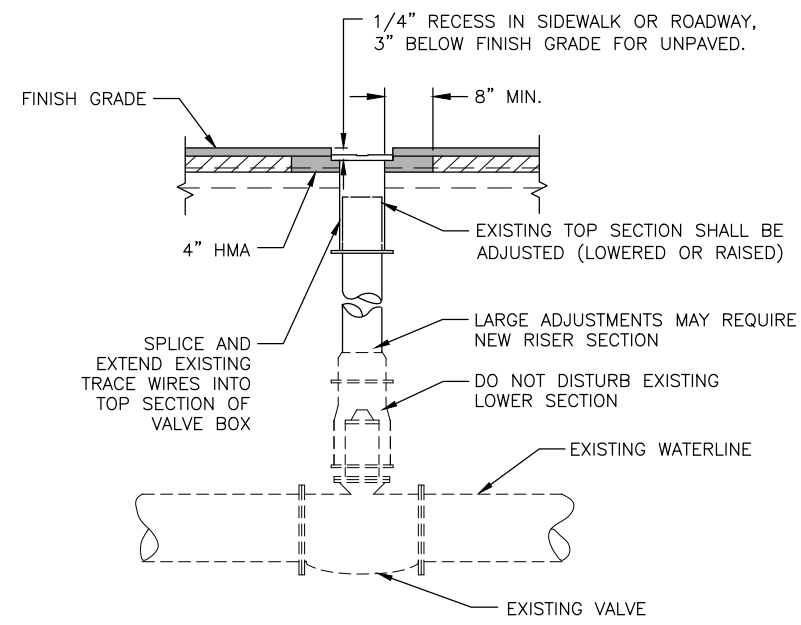
1. SAW CUT AND REMOVE FULL DEPTH OF EXISTING ASPHALT CONCRETE A MINIMUM OF 8" AROUND EXISTING MANHOLE FRAMES.
2. REMOVE EXISTING MANHOLE FRAMES, LIDS, & ADJUSTING RINGS.
3. INSTALL STEEL PLATE OVER MANHOLE OPENING AS A TEMPORARY MEASURE.
4. AFTER PLACING THE BASE COURSE, SAWCUT THE BASE COURSE AND REMOVE THE STEEL PLATE AND INSTALL NEW RISERS, FRAME AND LID. ADJUST FRAMES TO FINISHED GRADE.
5. PRIOR TO FINAL PAVING, CONSTRUCT 4" OF HOT MIX ASPHALT (HMA) AROUND FRAME. CONSTRUCT HMA PER SECTION 408.
6. CONSTRUCT FINAL HMA IN ACCORDANCE WITH SECTION 408.

MANHOLE & VALVE ADJUSTMENT NOTES:

1. MANHOLE CASTING SHALL BE ADJUSTED TO CONFORM WITH SLOPE AND GRADE OF PROPOSED PAVEMENT.
2. ADJUSTING RINGS SHALL BE PROPERLY SIZED FOR THE EXISTING CONE OR FLAT TOP OPENING.
3. INSTALLATION OF FRAME, COVER, AND ADJUSTMENT RINGS, ONTO THE EXISTING STRUCTURE SHALL BE WATER-TIGHT.
4. APPLY WATERPROOF MASTIC AND MEMBRANE AROUND RINGS. RUBBER GRADE RING ADJUSTMENT RISERS SHALL BE BONDED TO ADJACENT SURFACES BY LAYING AT LEAST 3 BEADS, A MINIMUM OF 1/8" THICK OF POLYURETHANE CONSTRUCTION ADHESIVE ON EACH SIDE OF THE RUBBER RISERS OR THE TOP SURFACE OF THE CONCRETE COURSE. TWO OF THE ADHESIVE BEADS SHALL BE WITHIN 1" OF THE EDGES OF THE RUBBER GRADE RING ADJUSTMENT RISER, THE THIRD SHALL BE EQUIDISTANT BETWEEN THE TWO OUTER BEADS. THE BEADS SHALL BE CONTINUOUS AROUND THE RUBBER GRADE RING ADJUSTMENT RISER.



2 MONUMENT CASE ADJUSTMENT DETAIL
E8 SCALE: NOT TO SCALE



3 VALVE BOX ADJUSTMENT DETAIL
E8 SCALE: NOT TO SCALE

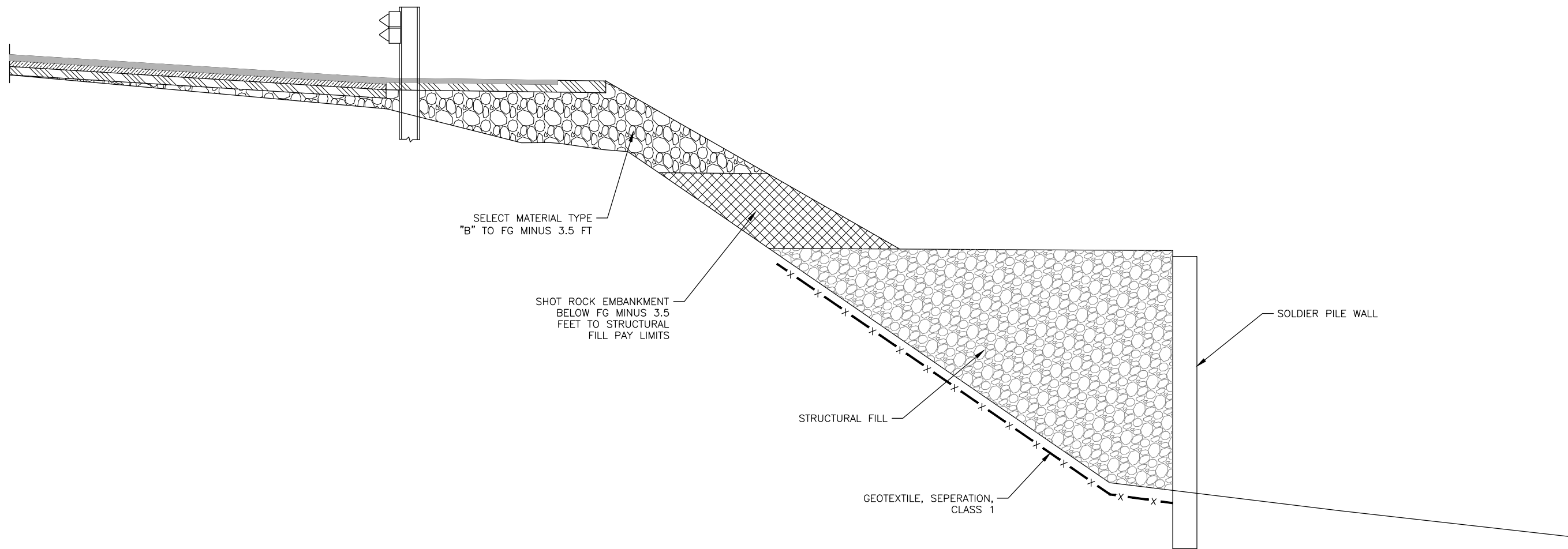


STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 AND PUBLIC FACILITIES

KTN HERRING COVE BRIDGE
 IMPROVEMENTS

E8 MISCELLANEOUS DETAILS

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHwy00072	2021	E9	9



SELECT MATERIAL TYPE
"B" TO FG MINUS 3.5 FT

SHOT ROCK EMBANKMENT
BELOW FG MINUS 3.5
FEET TO STRUCTURAL
FILL PAY LIMITS

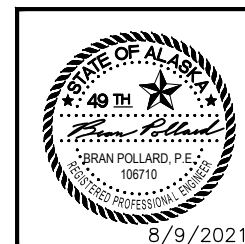
STRUCTURAL FILL

GEOTEXTILE, SEPERATION,
CLASS 1

SOLDIER PILE WALL

1
E9 **SOLDIER PILE WALL BACKFILL**
SCALE: NOT TO SCALE
STA 397+59 RT to 398+69 RT

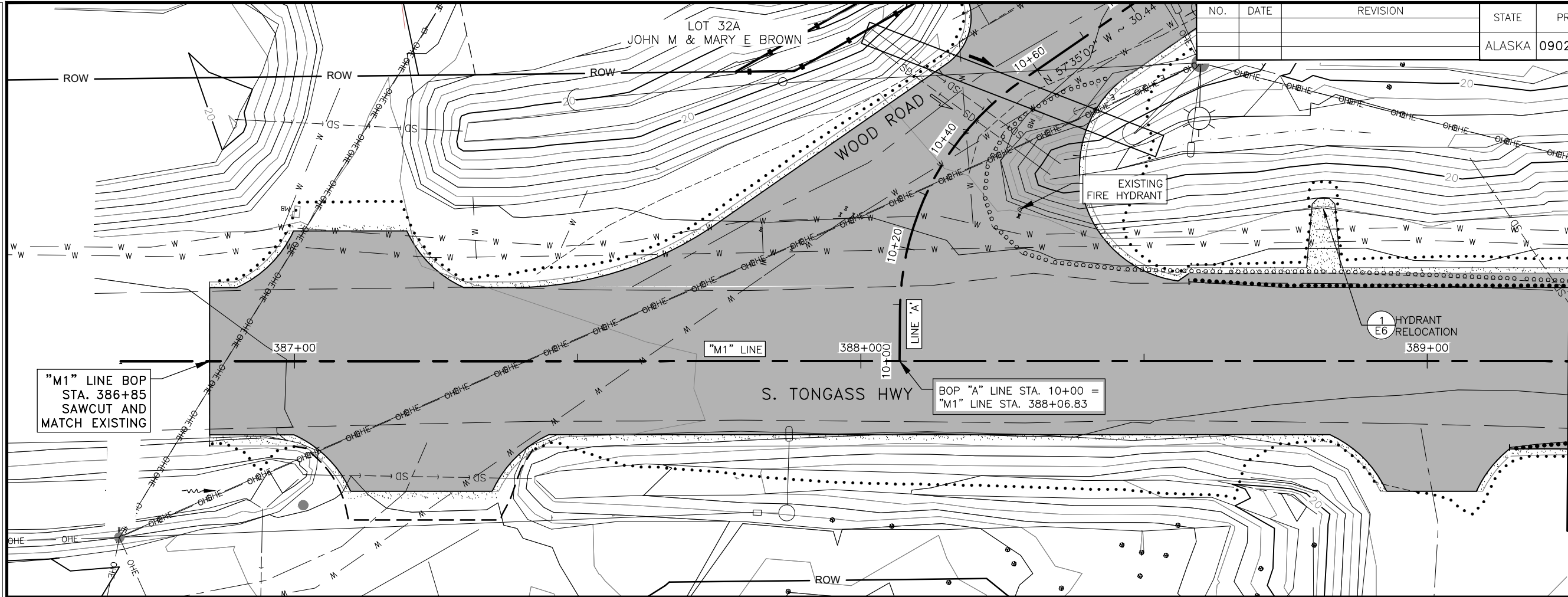
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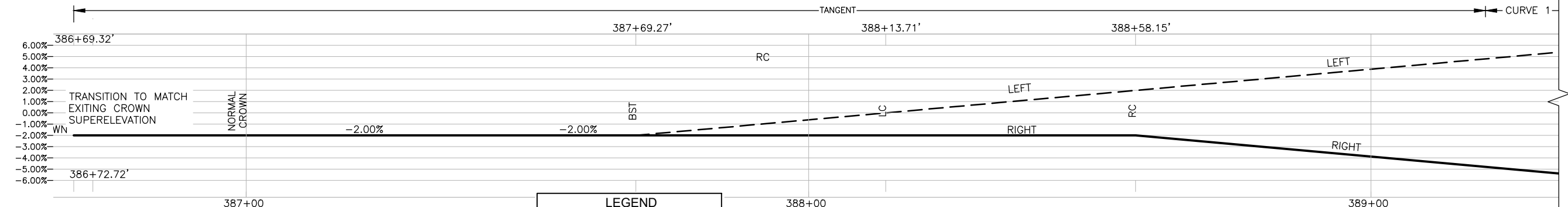
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
**KTN HERRING COVE BRIDGE
IMPROVEMENTS**
E9 MISCELLANEOUS DETAILS

FIRM STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
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 ADDRESS 6860 GLACIER HWY, JUNEAU, AK 99811
 DATE 6/22/2021 9:57 LAYOUT F1
 PHONE (907) 465-1763
 DESIGNED STAFF
 CHECKED STAFF
 DRAFTED STAFF
 CERTIFICATE OF AUTH #:
 STAFF

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWY00072	2021	F1	6

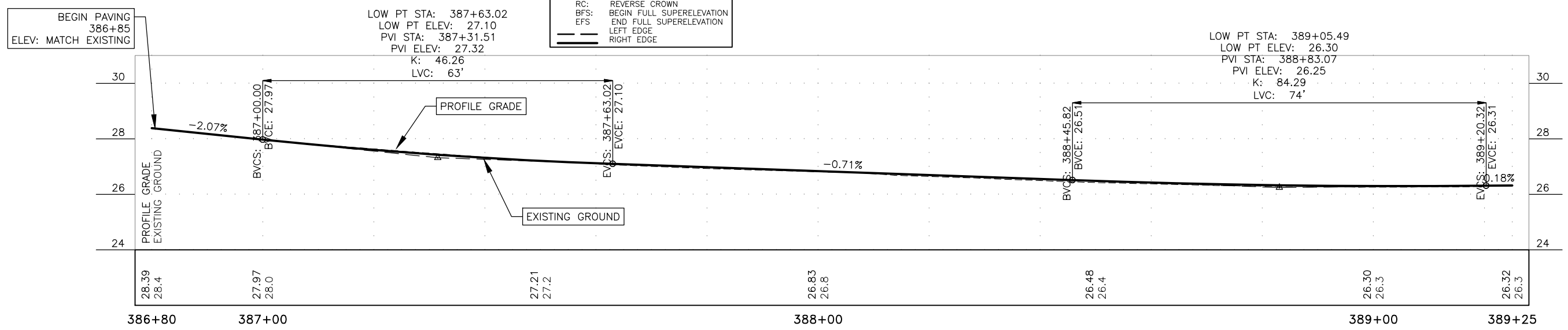


SUPERELEVATION



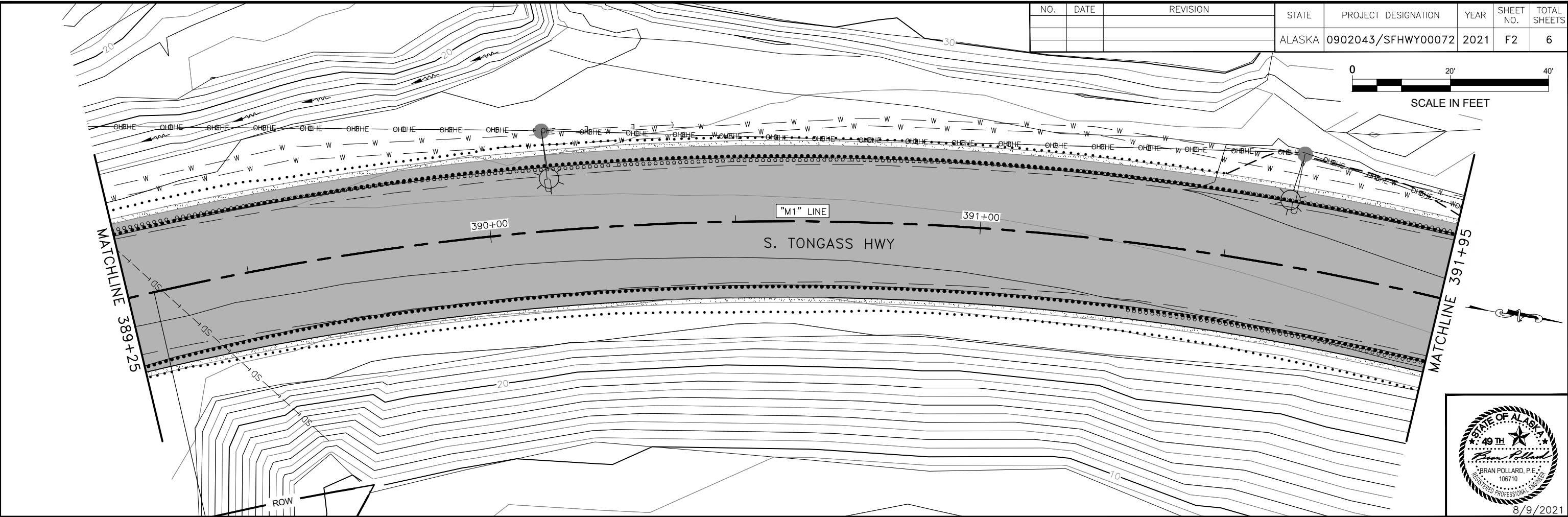
LEGEND

ENC:	END NORMAL CROWN
LC:	LEVEL CROWN
RC:	REVERSE CROWN
BFS:	BEGIN FULL SUPERELEVATION
EFS:	END FULL SUPERELEVATION
---	LEFT EDGE
---	RIGHT EDGE

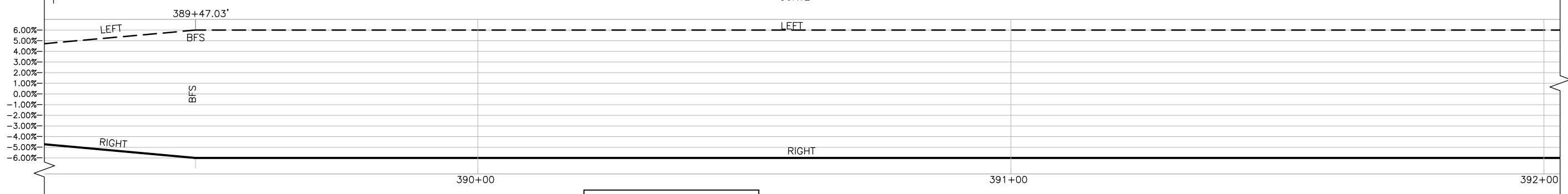


FIRM STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
 ADDRESS 6860 GLACIER HWY, JUNEAU, AK 99811
 PHONE (907) 465-1763
 CERTIFICATE OF AUTH #:
 FILE Q:\kth\SFHWY00072\Planset\00072_F1.dwg
 DATE 6/22/2021 9:57 LAYOUT F2
 DESIGNED STAFF
 CHECKED STAFF
 DRAFTED STAFF

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
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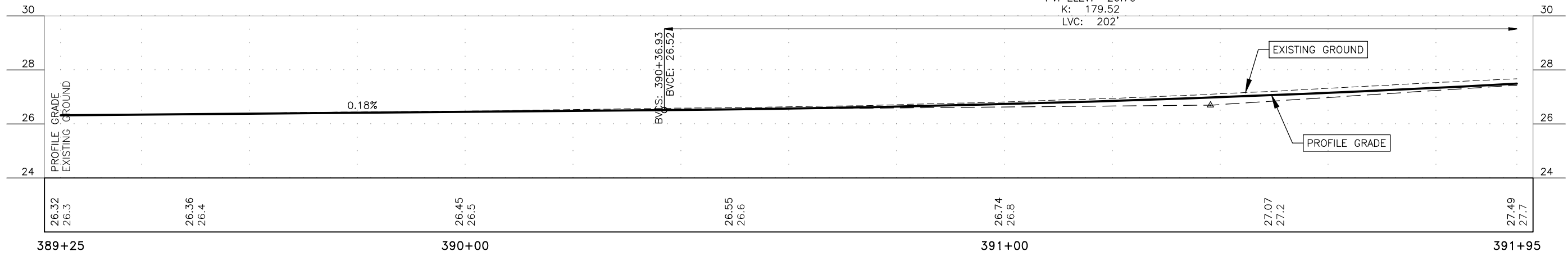
SUPERELEVATION



LEGEND

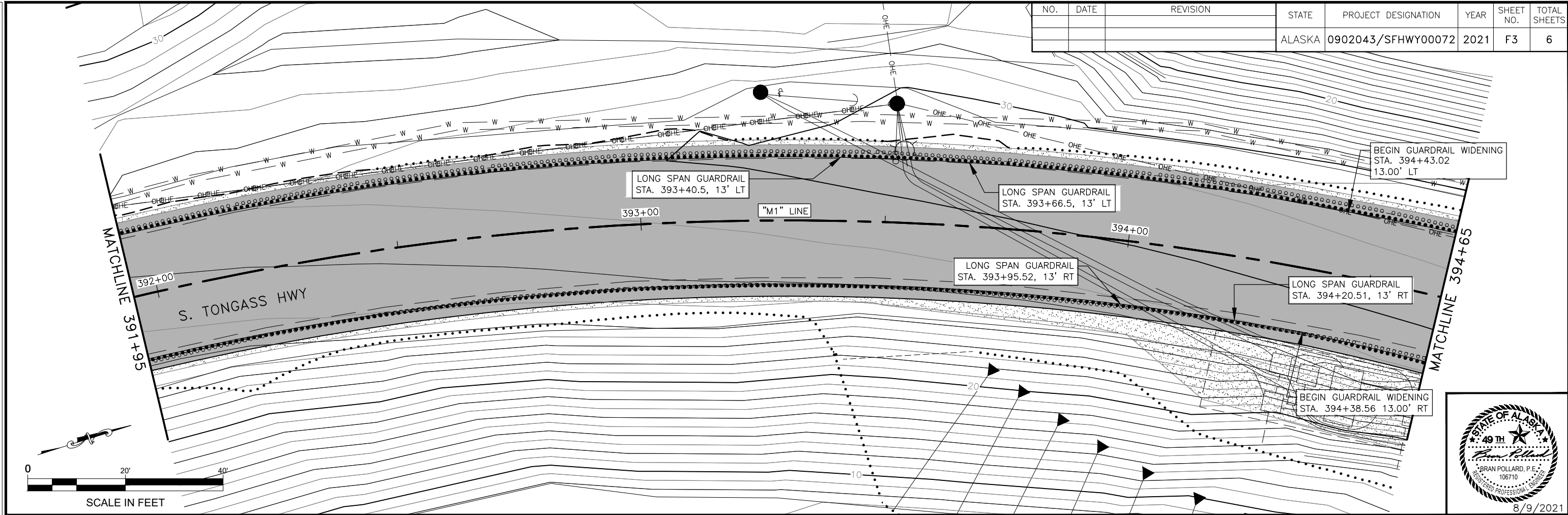
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LC:	LEVEL CROWN
RC:	REVERSE CROWN
BFS:	BEGIN FULL SUPERELEVATION
EFS:	END FULL SUPERELEVATION
---	LEFT EDGE
---	RIGHT EDGE

LOW PT STA: 390+36.93
 LOW PT ELEV: 26.52
 PVI STA: 391+38.18
 PVI ELEV: 26.70
 K: 179.52
 LVC: 202'

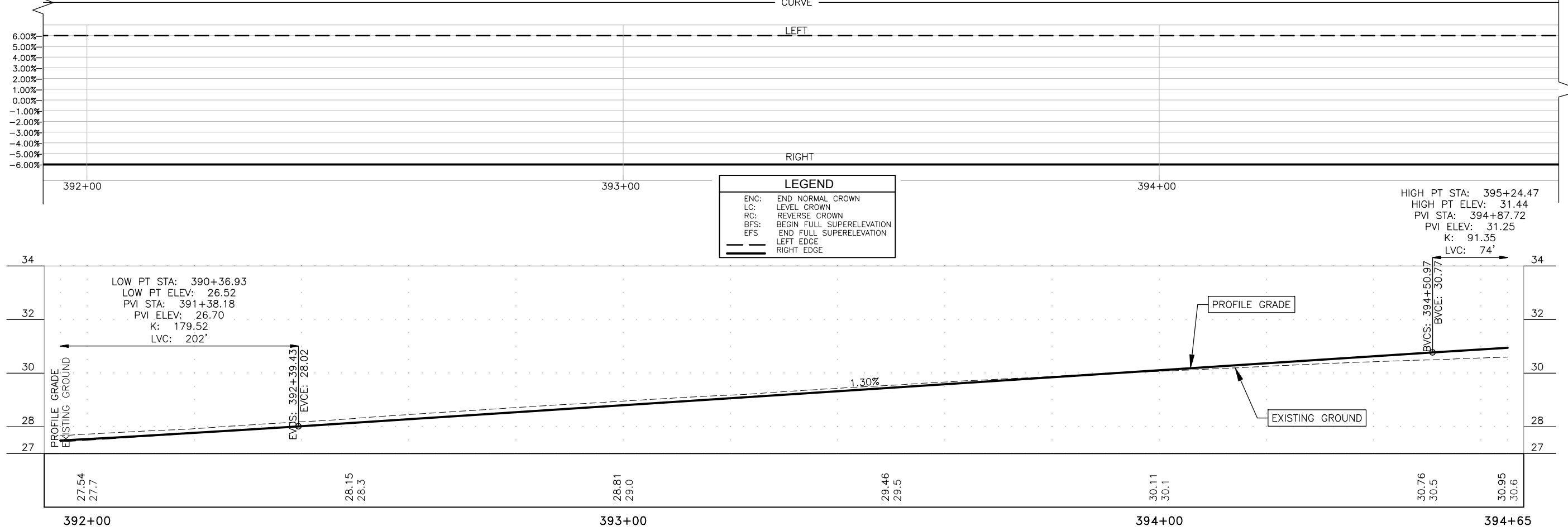


FIRM STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
 ADDRESS 6860 GLACIER HWY, JUNEAU, AK 99811
 PHONE (907) 465-1763
 CERTIFICATE OF AUTH #: STAFF DRAFTED STAFF
 DESIGNED STAFF
 CHECKED STAFF
 DATE 6/22/2021 9:57 LAYOUT F3
 FILE Q:\kth\SFHWY00072\PlanSet\00072_F1.dwg

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWY00072	2021	F3	6

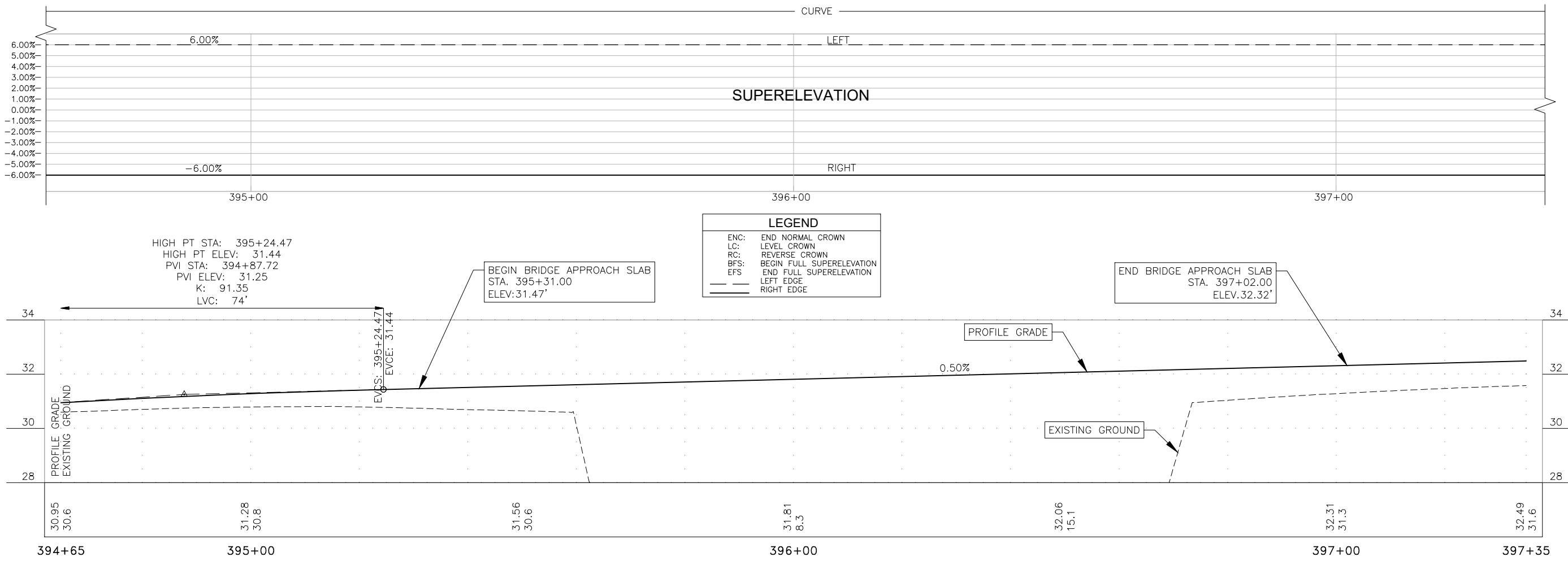
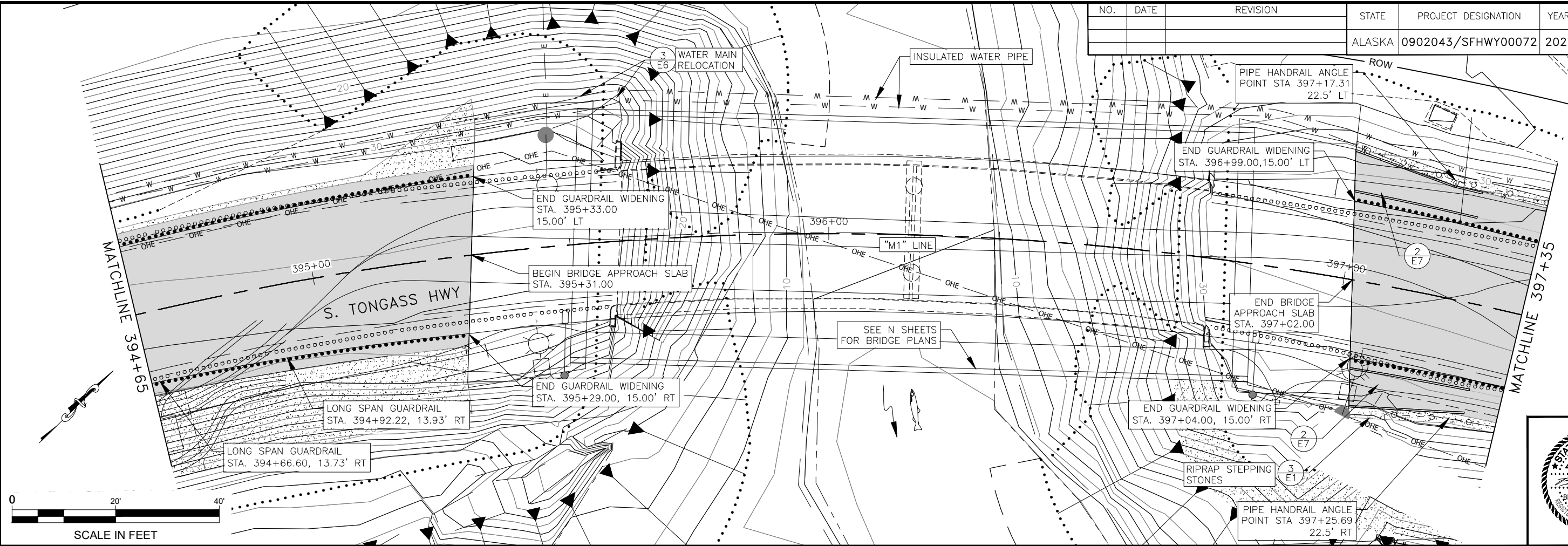


SUPERELEVATION



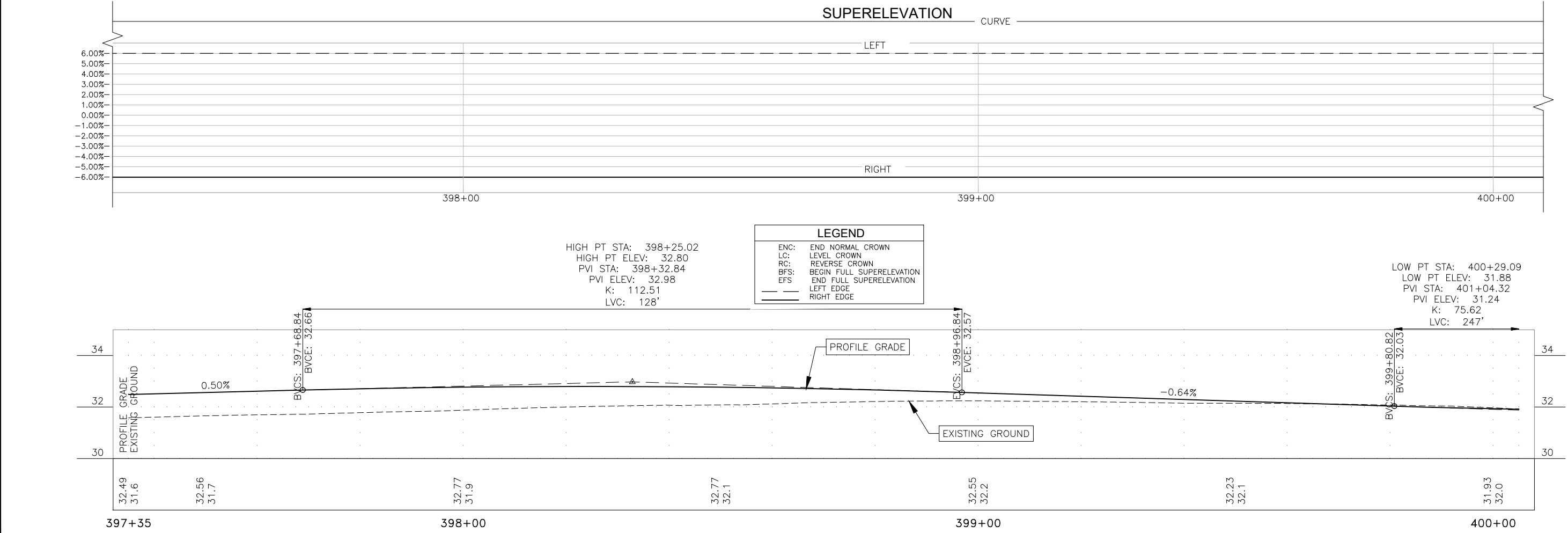
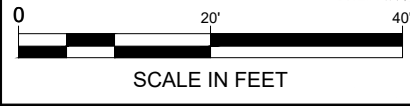
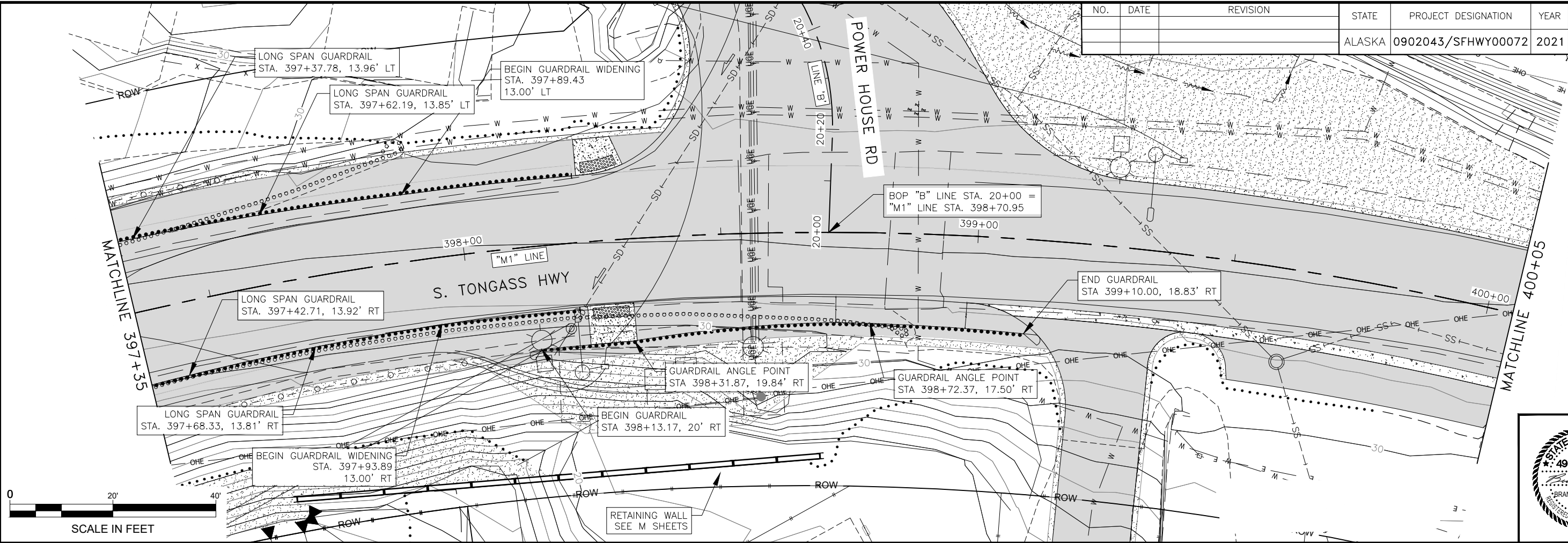
FIRM STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
 FILE Q:\ktn\SFHWY00072\Planset\00072_F1.dwg
 ADDRESS 6860 GLACIER HWY, JUNEAU, AK 99811
 PHONE (907) 465-1763
 CERTIFICATE OF AUTH #:
 DESIGNED STAFF
 CHECKED STAFF
 DRAFTED STAFF
 DATE 6/22/2021 9:57 LAYOUT F4

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHwy00072	2021	F4	6

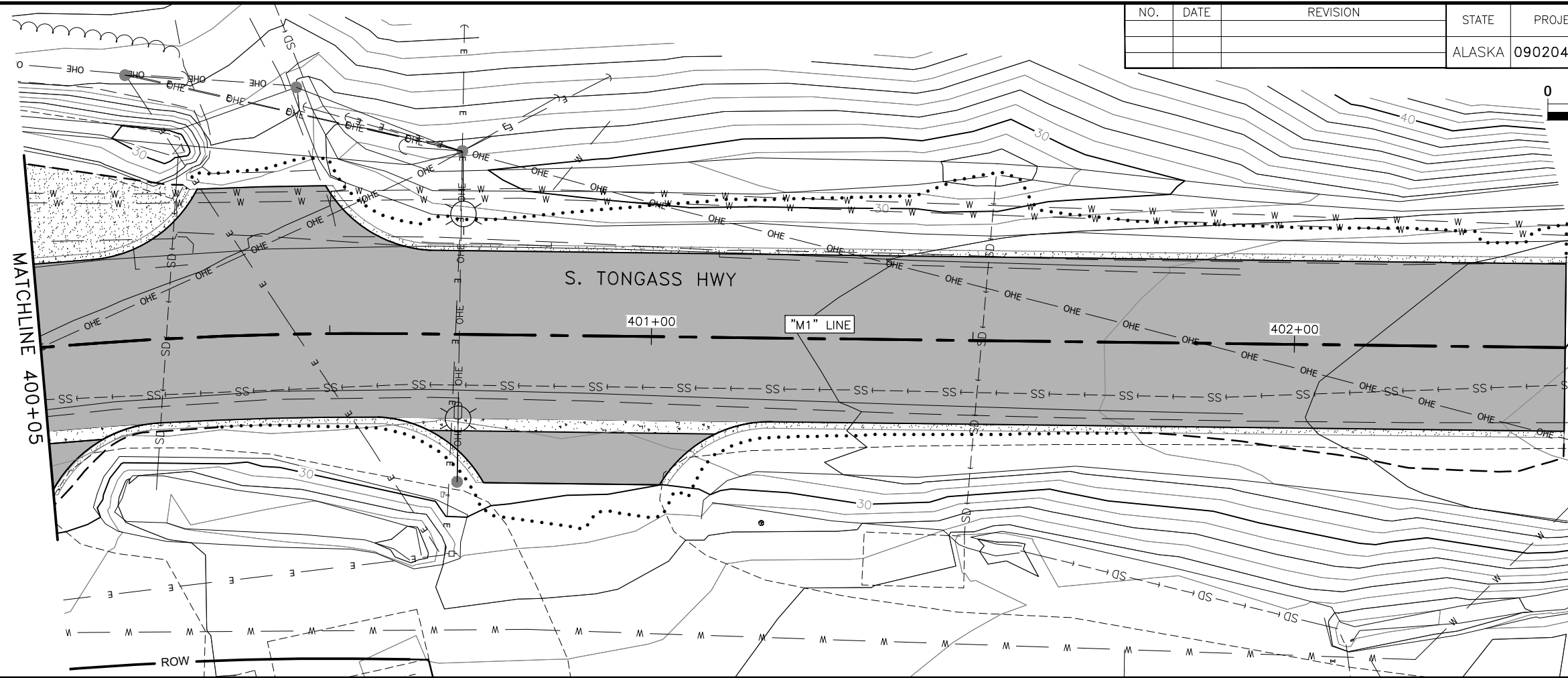


FIRM STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
 ADDRESS 6860 GLACIER HWY, JUNEAU, AK 99811
 PHONE (907) 465-1763
 CERTIFICATE OF AUTH #:
 FILE Q:\kth\SFHWY00072\Planset\00072_F1.dwg
 DATE 6/22/2021 9:57 LAYOUT F5
 DESIGNED STAFF
 CHECKED STAFF
 DRAFTED STAFF

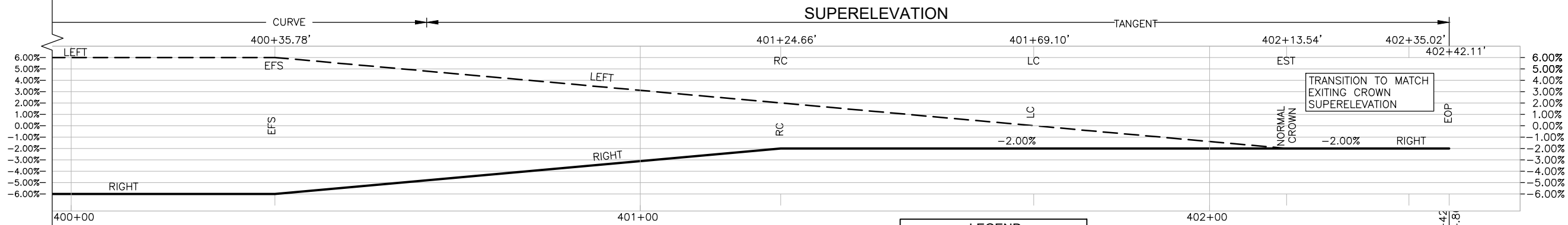
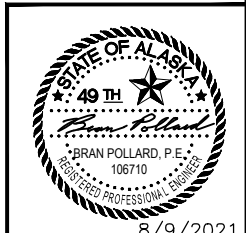
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHwy00072	2021	F5	6



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWY00072	2021	F6	6



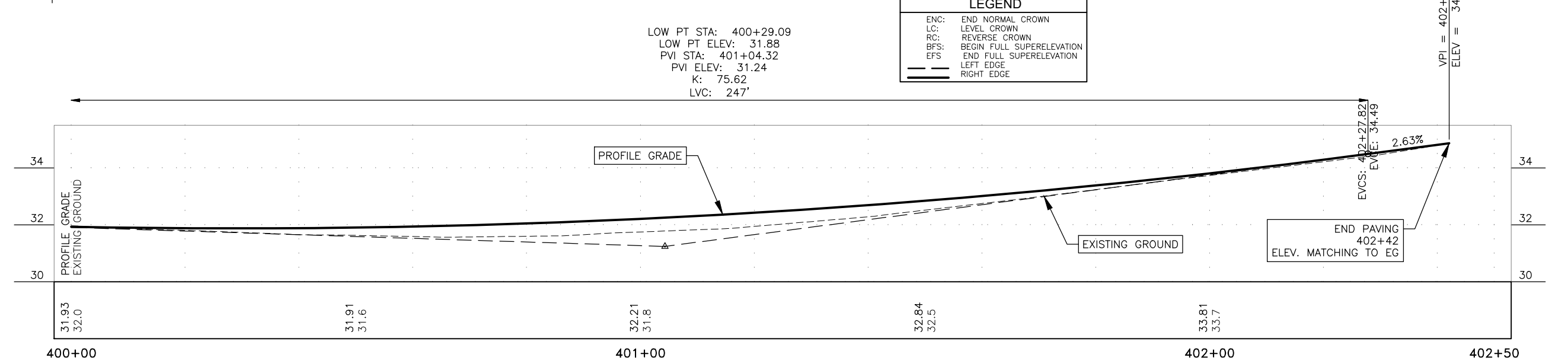
EOP "M1" LINE
 STA. 402+42
 SAWCUT AND
 MATCH EXISTING



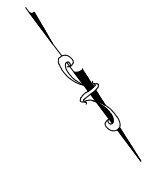
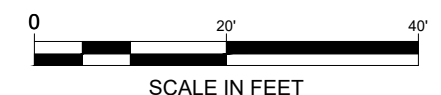
LOW PT STA: 400+29.09
 LOW PT ELEV: 31.88
 PVI STA: 401+04.32
 PVI ELEV: 31.24
 K: 75.62
 LVC: 247'

LEGEND

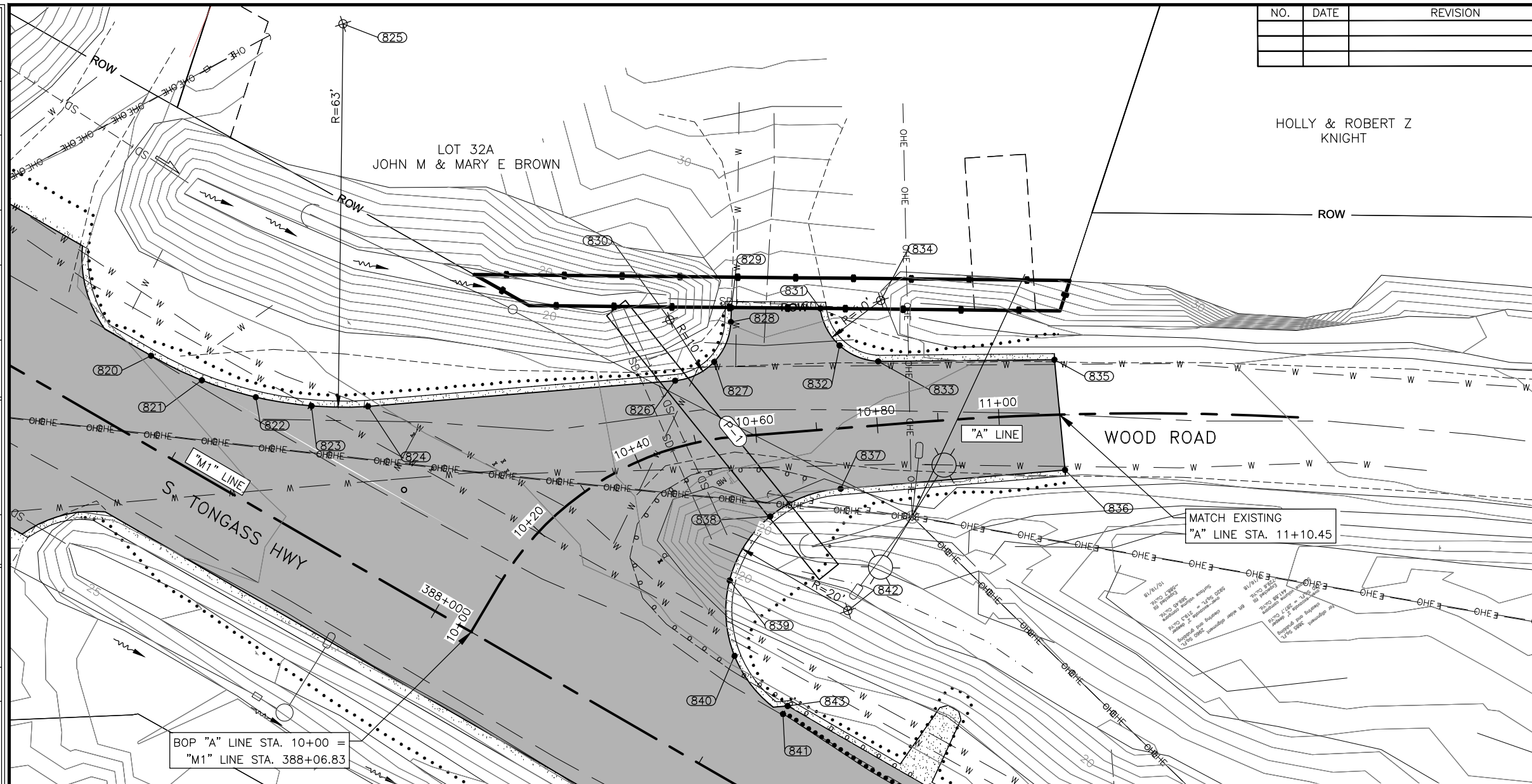
ENC:	END NORMAL CROWN
LC:	LEVEL CROWN
RC:	REVERSE CROWN
BFS:	BEGIN FULL SUPERELEVATION
EFS:	END FULL SUPERELEVATION
---	LEFT EDGE
---	RIGHT EDGE



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	G1	4

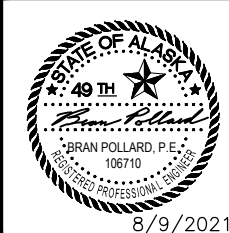
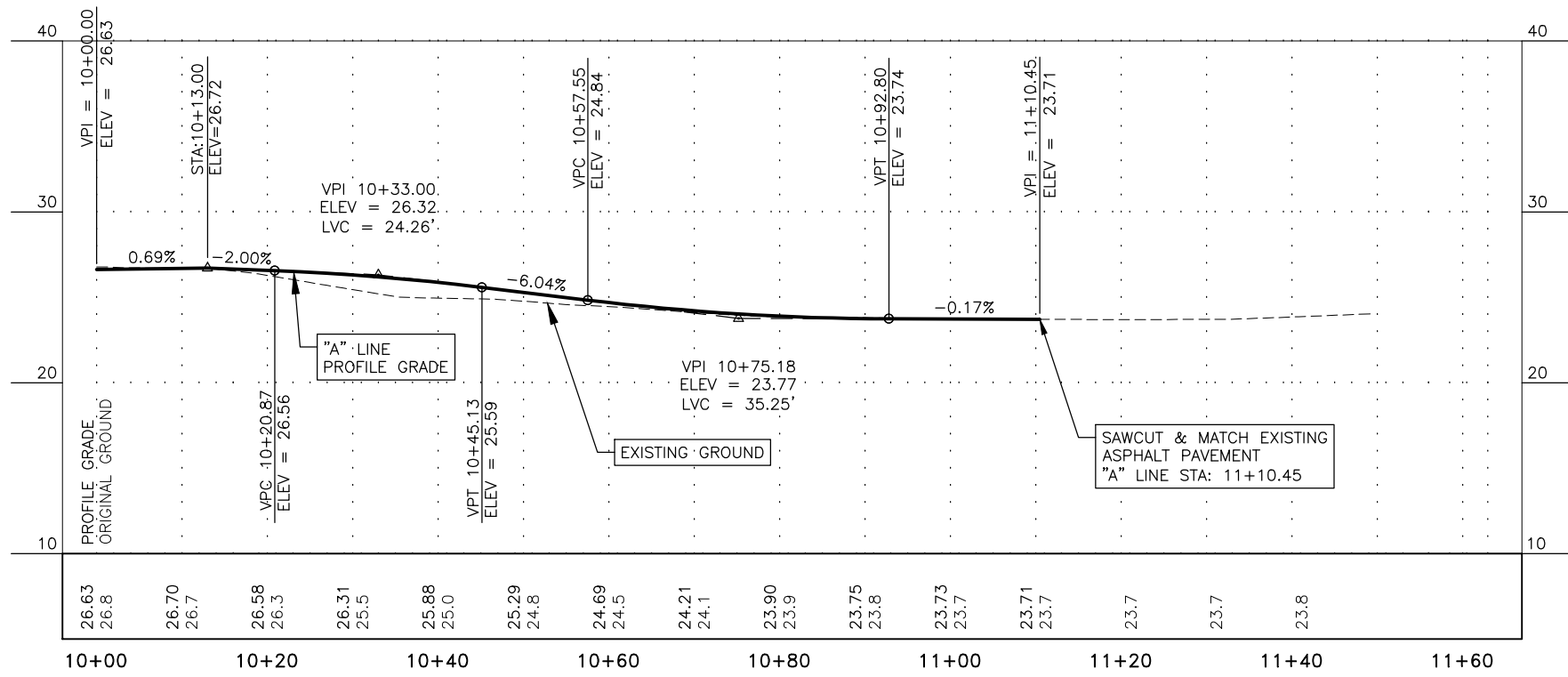


POINTS COORDINATE TABLE					
POINT	STATION	OFFSET	ELEVATION	DESCRIPTION	DESCRIPTION
820	387+38.61	13.00L	27.07	EP	BC
821	387+47.84	14.70L	27.36	EP	Δ/4
822	10+12.09	50.28L	27.33	EP	Δ/4
823	10+14.23	41.94L	27.01	EP	Δ/4
824	10+17.46	34.67L	26.71	EP	EC
825	10+34.41	86.22L		RP	
826	10+49.09	10.69L	25.03	EP	BC
827	10+54.66	12.58L	24.77	EP	Δ/2
828	10+57.36	18.84L	24.61	EP	EC
829	10+57.63	21.20L	24.57	EP	MTE
830	10+50.16	20.59L		RP	
831	10+72.18	19.90L	24.32	EP	BC
832	10+74.86	13.58L	24.36	EP	Δ/2
833	10+80.97	10.47L	24.29	EP	EC
834	10+82.19	20.42L		PR	
835	11+09.41	9.02L	23.75	EP	MTE
836	11+10.63	9.13R	23.32	EP	MTE
837	10+73.17	9.92R	24.10	EP	EC
838	10+61.28	3.54R	25.06	EP	Δ/4
839	10+51.14	23.30R	25.96	EP	Δ/4
840	388+46.25	18.25L	26.34	EP	Δ/4
841	388+57.91	13.96L	26.57	EP	BC
842	10+72.78	29.97R		RP	
843	388+57.91	5.50L	26.32	EP	



BOP "A" LINE STA. 10+00 =
"M1" LINE STA. 388+06.83

- LAYOUT POINT DESCRIPTIONS:**
- MTE = MATCH TO EXISTING
 - OFF = OFFSET
 - EP = EDGE OF PAVEMENT
 - RP = RADIUS POINT
 - GP = GRADING POINT
 - MP = MATCH POINT
 - BC = BEGIN CURVE
 - EC = END CURVE
 - PCC = POINT OF COMPOUND CURVE



STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

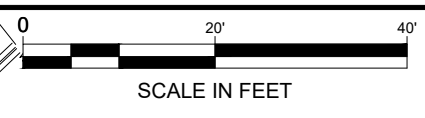
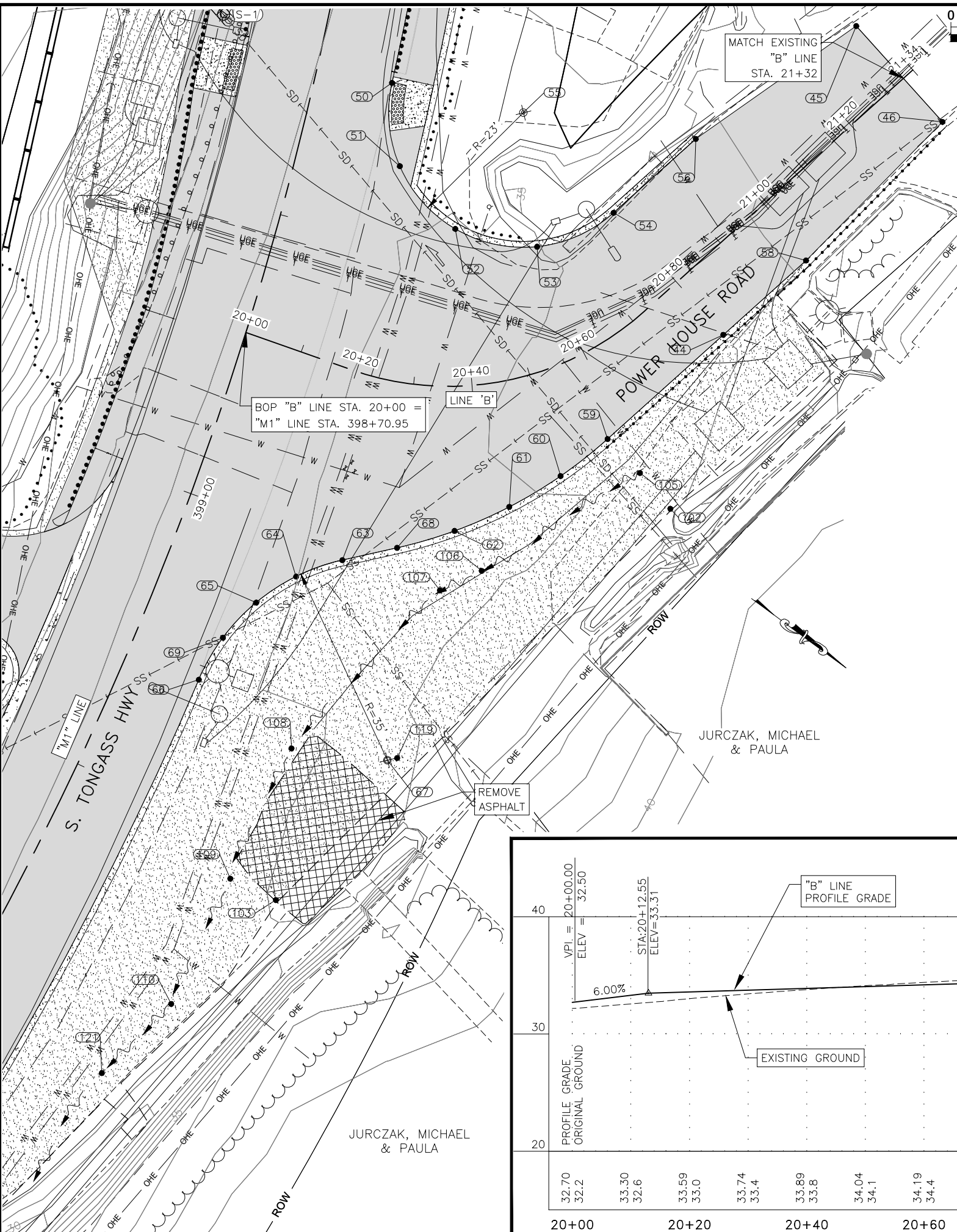
**KTN HERRING COVE BRIDGE
IMPROVEMENTS**

**WOOD ROAD INTERSECTION
PLAN & PROFILE**

8/9/2021

FILE: G:\ktn\SFHWHY00072\PlanSet\00072_G1.dwg
 DATE: 6/18/2021 17:13 LAYOUT G1
 DESIGNED: STAFF
 CHECKED: STAFF
 DRAFTED: STAFF

FILE: G:\Ktn\SFHWY00072\Plan\set\00072_01.dwg DATE: 6/18/2021 17:13 LAYOUT: G2 DESIGNED: STAFF CHECKED: STAFF DRAFTED: STAFF

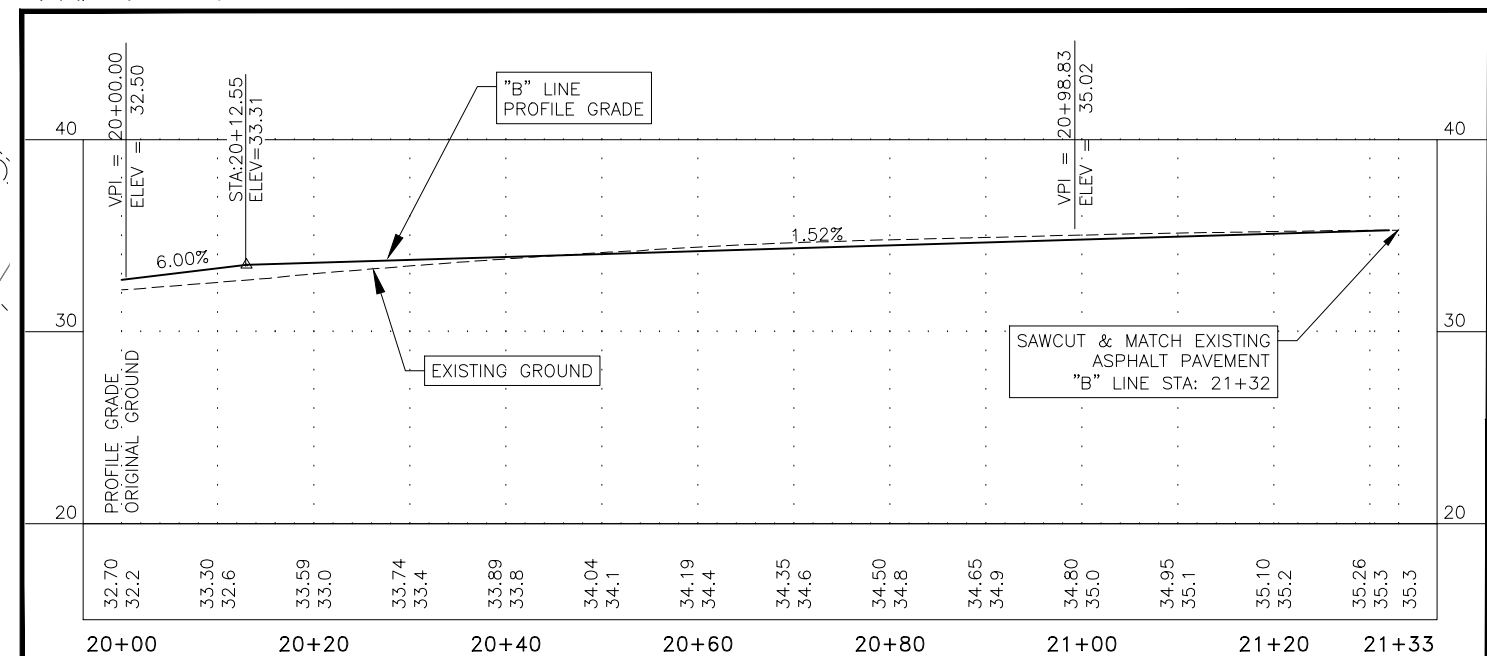


NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWY00072	2021	G2	4

POINT	STATION	OFFSET	ELEVATION	DESCRIPTION	DESCRIPTION
44	20+79.91	12.00R	34.72	EP	EC
50	398+23.85	13.00L	33.59	EP	BC
51	398+37.03	17.59L	33.82	EP	Δ/4
52	20+38.47	26.84L	34.06	EP	Δ/4
53	20+62.15	19.78L	34.29	EP	Δ/4
54	20+79.91	16.00L	34.53	EP	EC
55	20+79.91	39.00L		RP	
56	20+98.76	16.00L	34.83	EP	MTE
58	20+00.00		35.03	EP	MTE
59	20+57.55	14.92R	34.28	EP	EC
60	20+50.23	18.05R	34.11	EP	Δ/4
61	20+43.28	21.33R	33.94	EP	Δ/4
62	20+36.67	24.68R	33.77	EP	Δ/4
63	20+24.81	31.68R	33.45	EP	EC
64	20+20.71	36.46R	33.31	EP	Δ/4
65	20+17.00	42.86R	33.17	EP	Δ/4
66	20+12.15	58.52R	33.14	EP	BC
67	20+31.42	64.27R	33.73	RP	
68	20+30.35	28.04R	33.60	EP	BC
69	20+13.65	50.41R	33.04	EP	Δ/4

POINT	STATION	OFFSET	ELEVATION	DESCRIPTION	DESCRIPTION
45	21+32.00	12.00L	32.23	GP	MTE
46	21+32.00	10.00R	32.23	GP	MTE
102	398+77.14	78.13L	34.86	GP	MTE
103	399+56.17	40.55L	33.10	GP	MTE
105	398+73.40	71.32L	33.84	GP	FL
106	398+95.54	51.12L	33.34	GP	FL
107	399+00.69	45.58L	33.26	GP	FL
108	399+33.01	32.17L	32.88	GP	FL
109	399+56.26	31.95L	32.64	GP	FL
110	399+78.64	32.66L	32.40	GP	FL
119	399+27.76	49.38L	33.93	GP	MTE
121	399+93.89	27.97L	32.23	GP	FL

LAYOUT POINT DESCRIPTIONS:
MTE = MATCH TO EXISTING
OFF = OFFSET
EP = EDGE OF PAVEMENT
RP = RADIUS POINT
GP = GRADING POINT
MP = MATCH POINT
BC = BEGIN CURVE
EC = END CURVE
PCC = POINT OF COMPOUND CURVE



STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

**KTN HERRING COVE BRIDGE
IMPROVEMENTS**

POWERHOUSE ROAD
INTERSECTION PLAN & PROFILE

8/9/2021

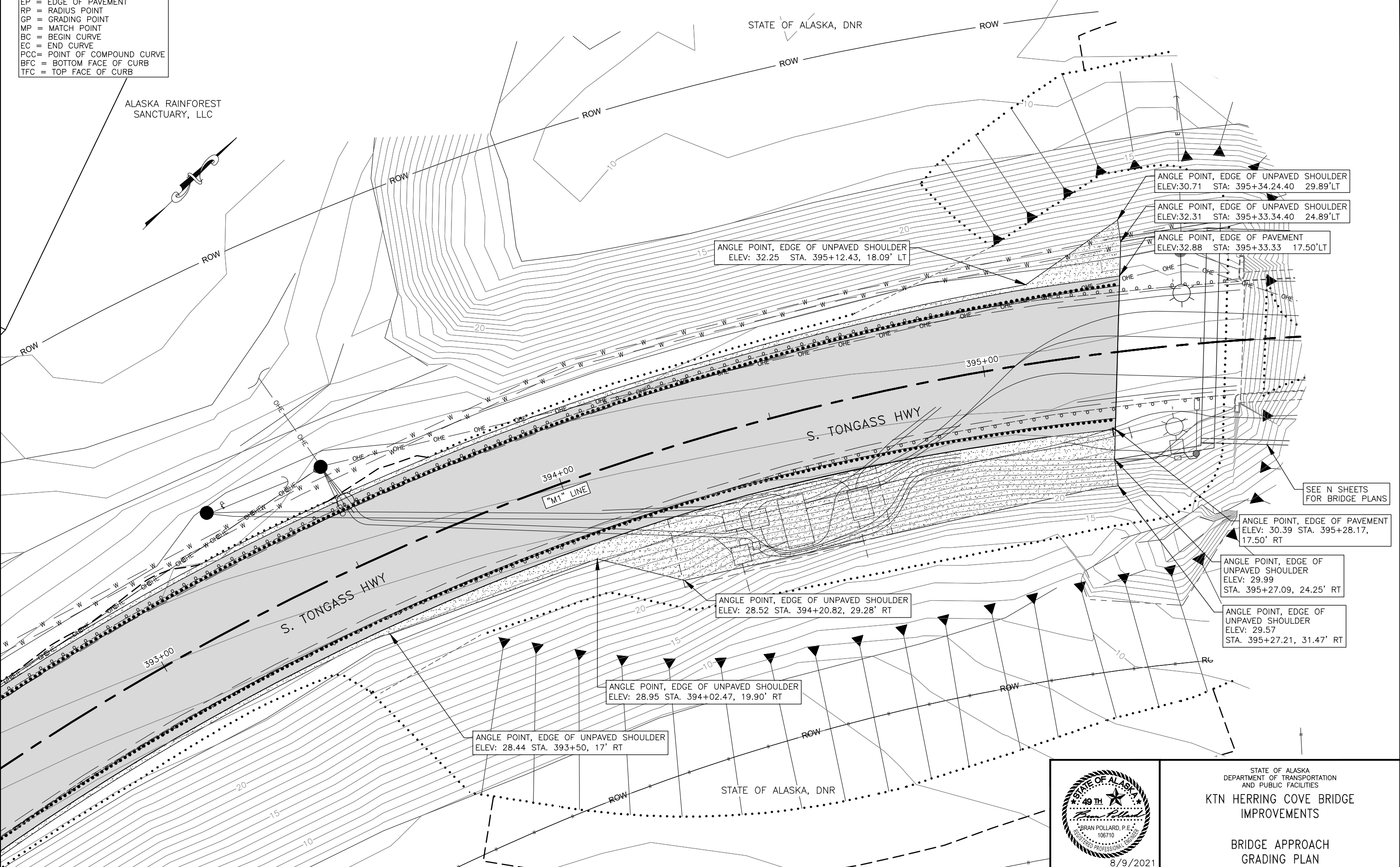
FILE G:\Ktn\SFHWY00072\Plan\set\00072_04.dwg DATE 6/18/2021 17:07 LAYOUT G3 BRIDGE APPROACH DESIGNED\INSTAFF CHECKED\STAFF DRAFTED\STAFF

LAYOUT POINT DESCRIPTIONS:

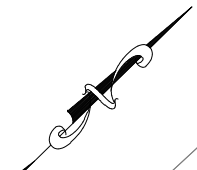
- MTE = MATCH TO EXISTING
- OFF = OFFSET
- EP = EDGE OF PAVEMENT
- RP = RADIUS POINT
- GP = GRADING POINT
- MP = MATCH POINT
- BC = BEGIN CURVE
- EC = END CURVE
- PCC = POINT OF COMPOUND CURVE
- BFC = BOTTOM FACE OF CURB
- TFC = TOP FACE OF CURB



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWY00072	2021	G3	4



ALASKA RAINFOREST SANCTUARY, LLC



ANGLE POINT, EDGE OF UNPAVED SHOULDER
ELEV: 32.25 STA. 395+12.43, 18.09' LT

ANGLE POINT, EDGE OF UNPAVED SHOULDER
ELEV: 30.71 STA: 395+34.24.40 29.89' LT

ANGLE POINT, EDGE OF UNPAVED SHOULDER
ELEV: 32.31 STA: 395+33.34.40 24.89' LT

ANGLE POINT, EDGE OF PAVEMENT
ELEV: 32.88 STA: 395+33.33 17.50' LT

SEE N SHEETS FOR BRIDGE PLANS

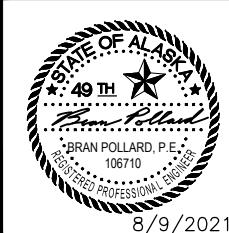
ANGLE POINT, EDGE OF PAVEMENT
ELEV: 30.39 STA. 395+28.17, 17.50' RT

ANGLE POINT, EDGE OF UNPAVED SHOULDER
ELEV: 29.99
STA. 395+27.09, 24.25' RT

ANGLE POINT, EDGE OF UNPAVED SHOULDER
ELEV: 29.57
STA. 395+27.21, 31.47' RT

ANGLE POINT, EDGE OF UNPAVED SHOULDER
ELEV: 28.95 STA. 394+02.47, 19.90' RT

ANGLE POINT, EDGE OF UNPAVED SHOULDER
ELEV: 28.44 STA. 393+50, 17' RT



STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

**KTN HERRING COVE BRIDGE
IMPROVEMENTS**

BRIDGE APPROACH
GRADING PLAN

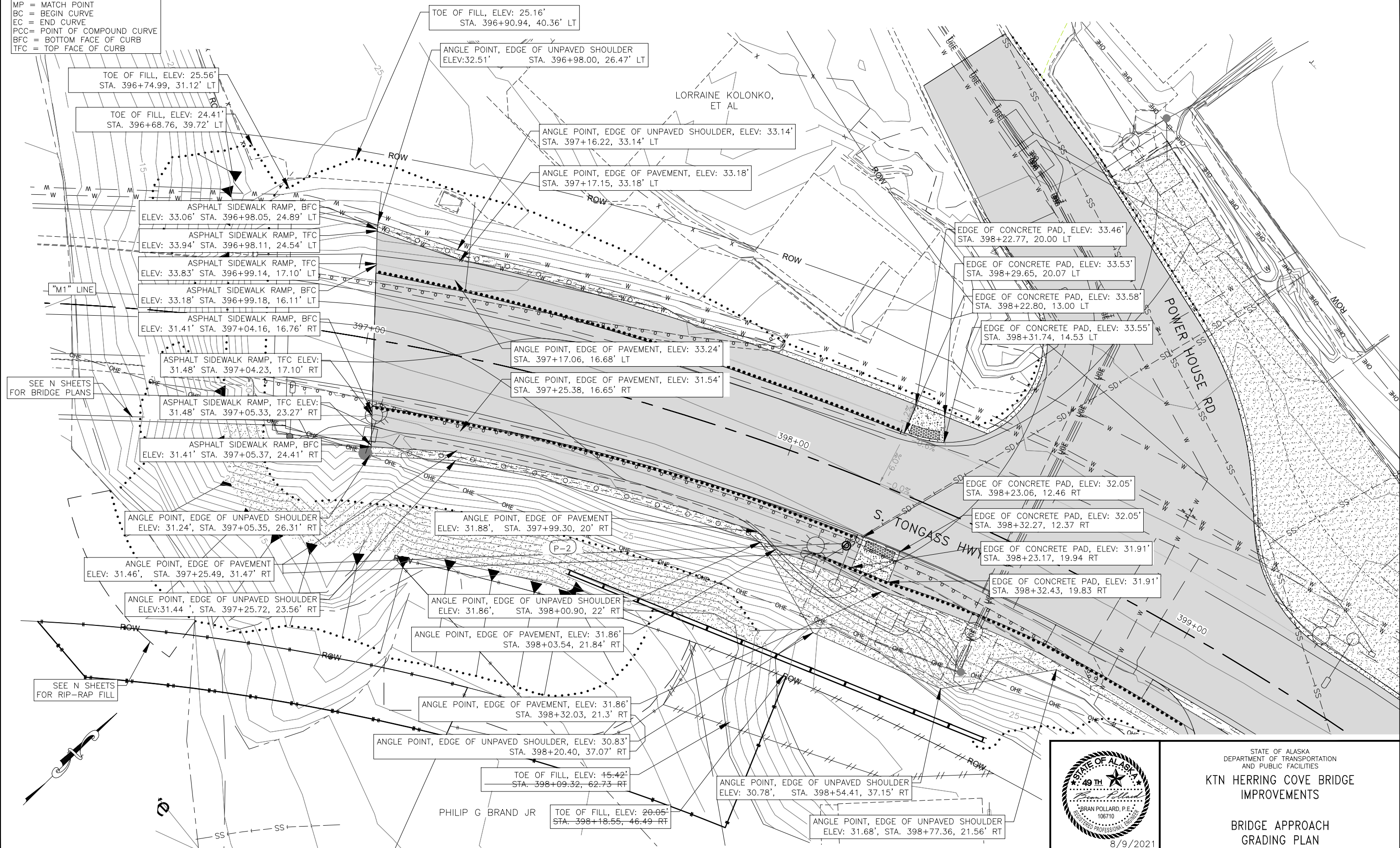
FILE G:\ktn\SFHWY00072\Plan\set\00072_04.dwg
 DATE 6/18/2021 17:07
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 DESIGNED BY STAFF
 CHECKED BY STAFF
 DRAFTED BY STAFF

LAYOUT POINT DESCRIPTIONS:

MTE = MATCH TO EXISTING
 OFF = OFFSET
 EP = EDGE OF PAVEMENT
 RP = RADIUS POINT
 GP = GRADING POINT
 MP = MATCH POINT
 BC = BEGIN CURVE
 EC = END CURVE
 PCC = POINT OF COMPOUND CURVE
 BFC = BOTTOM FACE OF CURB
 TFC = TOP FACE OF CURB



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWY00072	2021	G4	4



STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

**KTN HERRING COVE BRIDGE
IMPROVEMENTS**

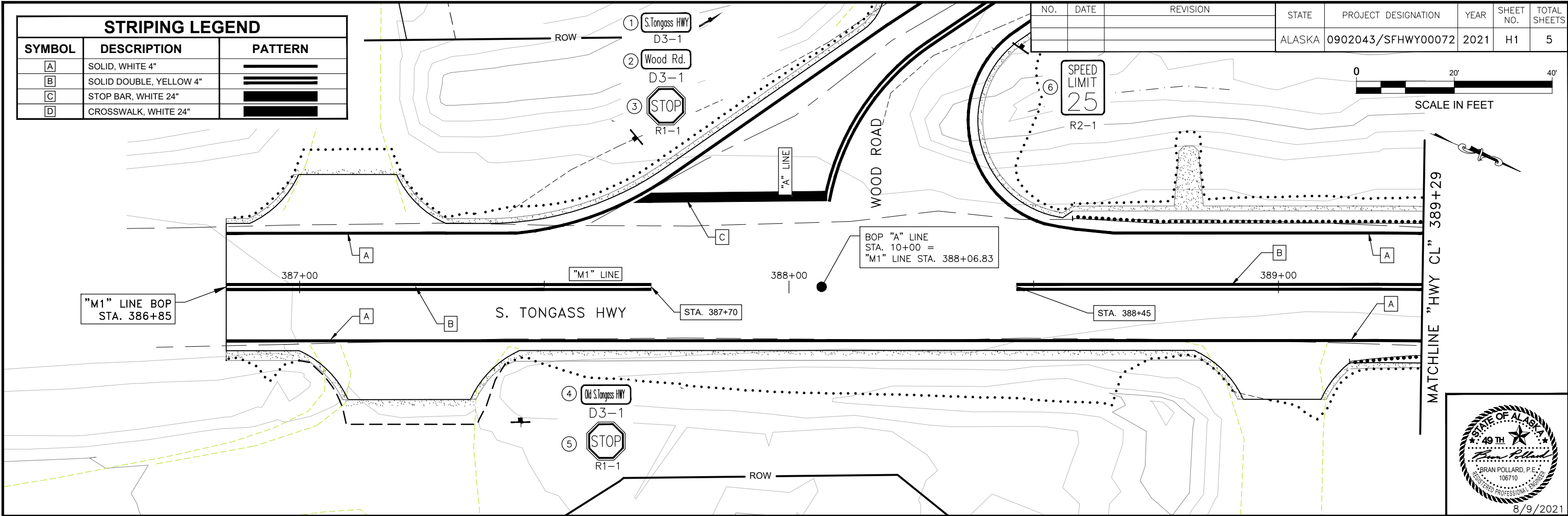
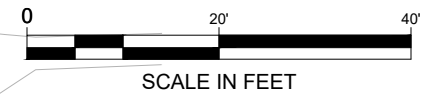
BRIDGE APPROACH
GRADING PLAN

8/9/2021

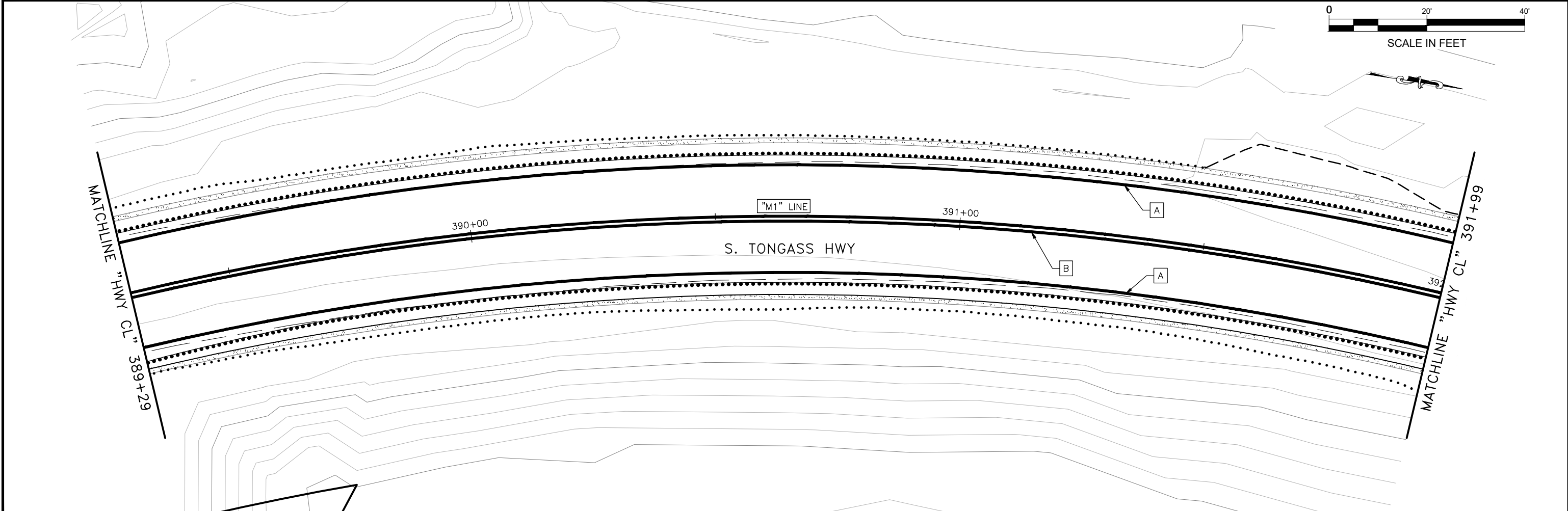
TOE OF FILL: changing with Soldier Pile Wall

STRIPING LEGEND		
SYMBOL	DESCRIPTION	PATTERN
A	SOLID, WHITE 4"	
B	SOLID DOUBLE, YELLOW 4"	
C	STOP BAR, WHITE 24"	
D	CROSSWALK, WHITE 24"	

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFW00072	2021	H1	5



8/9/2021

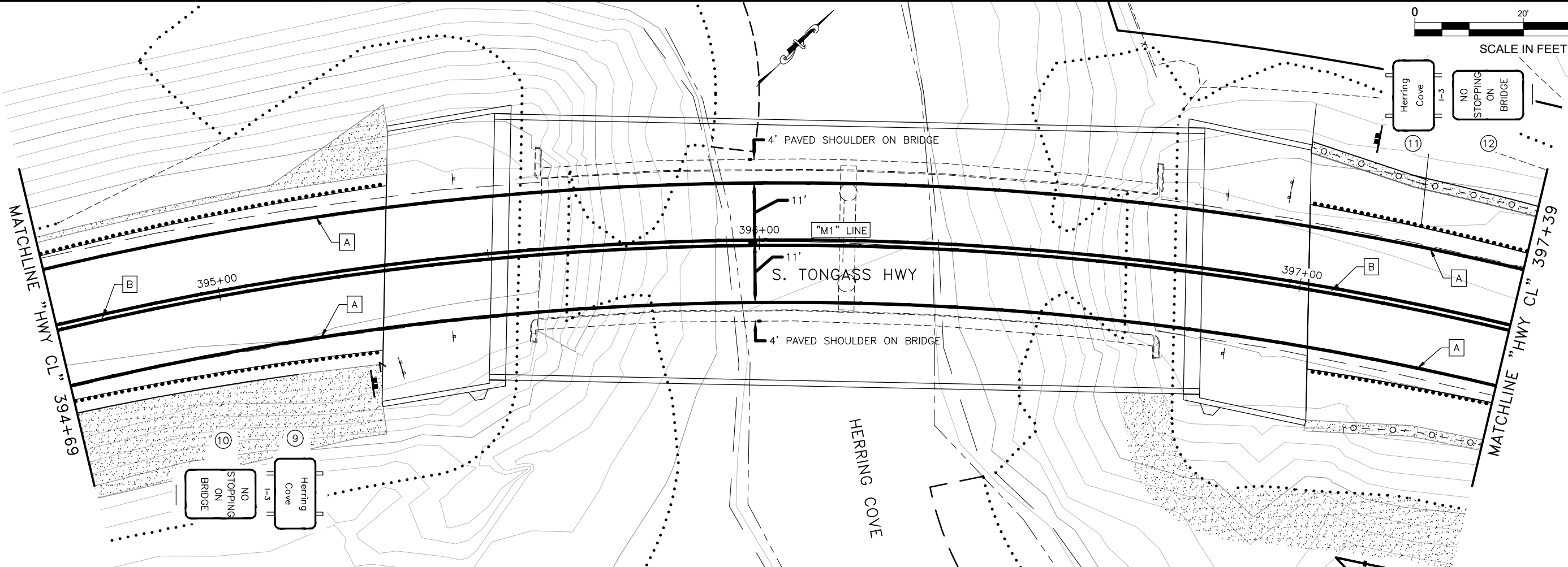
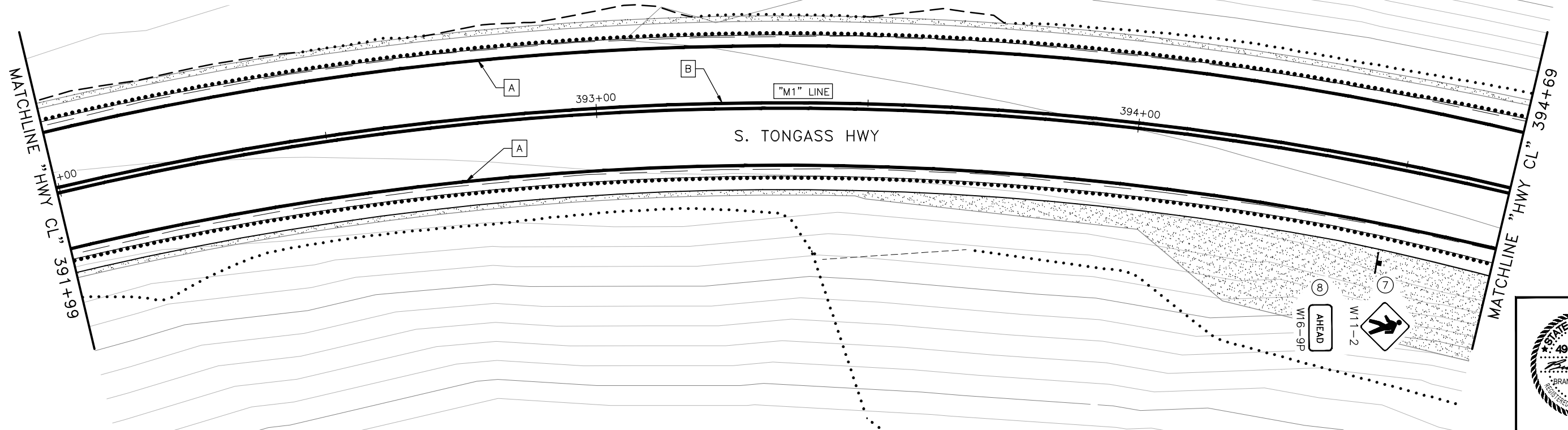


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 FILE Q:\k\h\SFHWY00072\Plan\set\00072_H1.dwg
 ADDRESS 6860 GLACIER HWY, JUNEAU, AK 99811
 DATE 6/18/2021 16:27 LAYOUT H2
 PHONE (907) 465-1763 DESIGNED STAFF
 CERTIFICATE OF AUTH #:
 DRAFTED STAFF
 CHECKED STAFF

STRIPING LEGEND		
SYMBOL	DESCRIPTION	PATTERN
A	SOLID, WHITE 4"	
B	SOLID DOUBLE, YELLOW 4"	
C	STOP BAR, WHITE 24"	
D	CROSSWALK, WHITE 24"	



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	H2	5

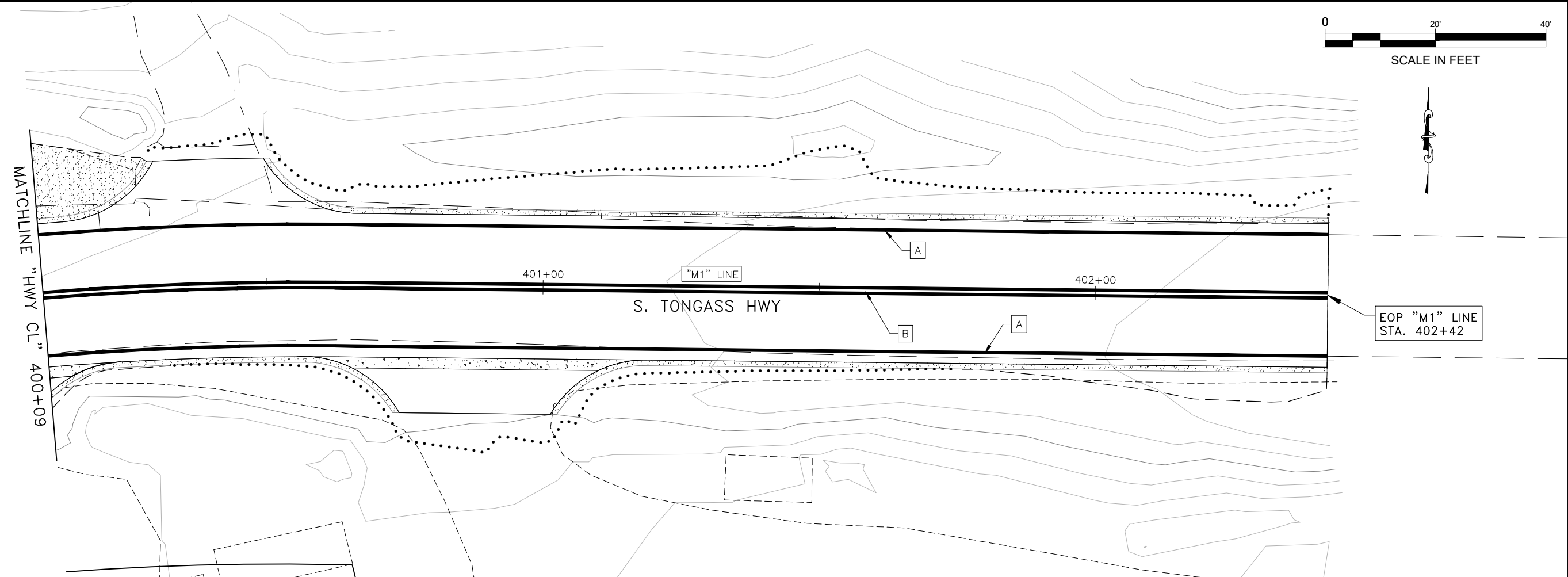
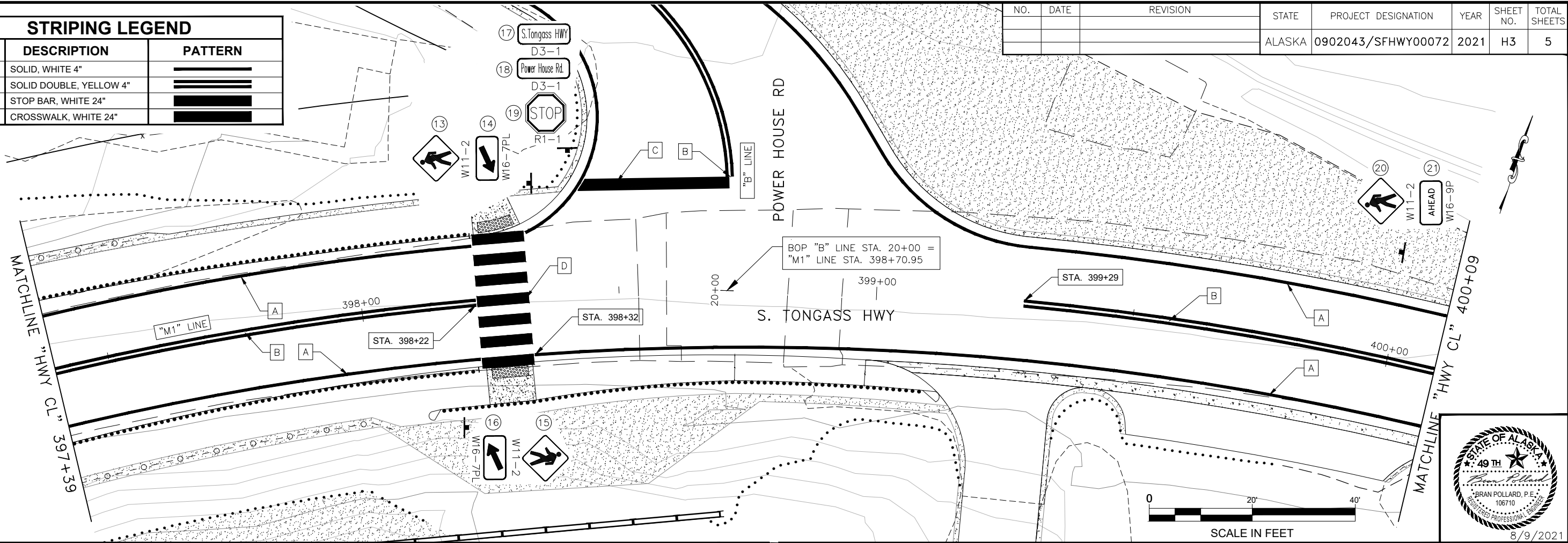


STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
 6/18/2021 16:27 LAYOUT H2

FIRM STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
 FILE Q:\kth\SFW\00072\Planset\00072_H1.dwg
 ADDRESS 6860 GLACIER HWY, JUNEAU, AK 99811
 DATE 6/18/2021 16:27 LAYOUT H3
 PHONE (907) 465-1763
 DESIGNED STAFF
 CHECKED STAFF
 DRAFTED STAFF
 CERTIFICATE OF AUTH #:

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFWHY00072	2021	H3	5

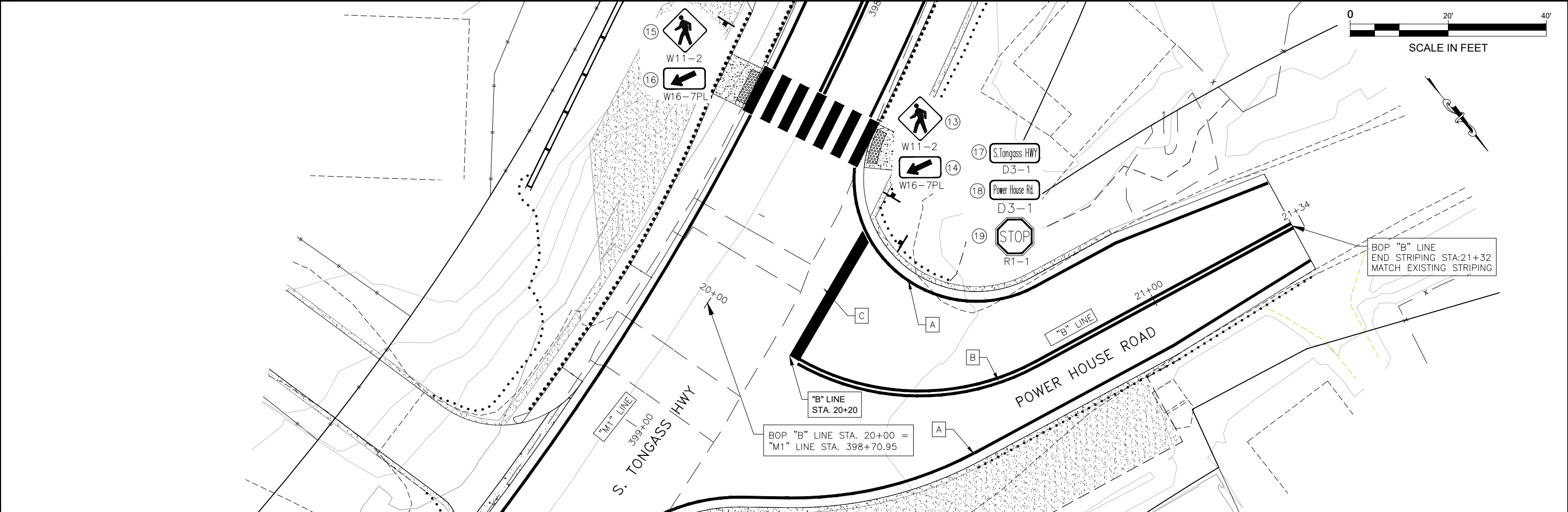
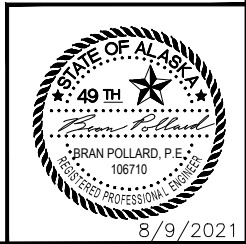
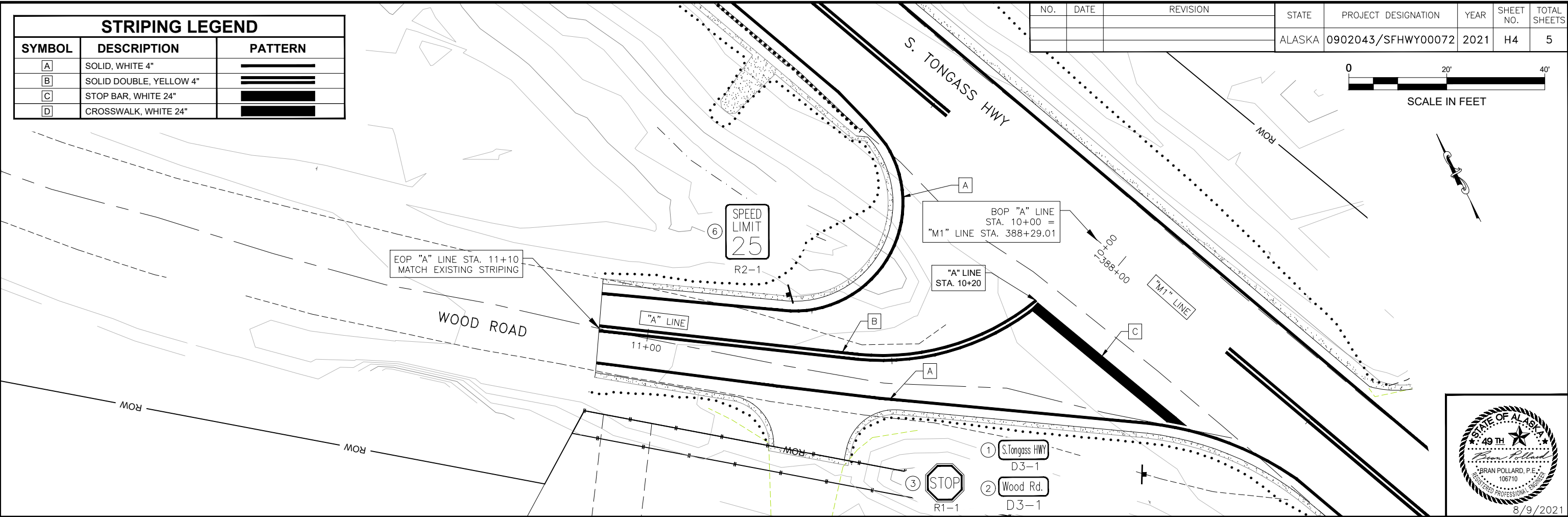
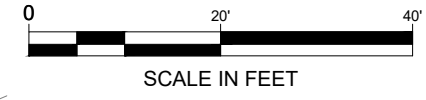
SYMBOL	DESCRIPTION	PATTERN
A	SOLID, WHITE 4"	
B	SOLID DOUBLE, YELLOW 4"	
C	STOP BAR, WHITE 24"	
D	CROSSWALK, WHITE 24"	



FIRM STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
 FILE Q:\ktn\SFH\00072\Plan\set\00072_H1.dwg
 ADDRESS 6860 GLACIER HWY, JUNEAU, AK 99811
 PHONE (907) 465-1763
 DESIGNED STAFF
 CHECKED STAFF
 DRAFTED STAFF
 CERTIFICATE OF AUTH #:
 DATE 6/18/2021 16:27 LAYOUT H4

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFH00072	2021	H4	5

STRIPING LEGEND		
SYMBOL	DESCRIPTION	PATTERN
A	SOLID, WHITE 4"	
B	SOLID DOUBLE, YELLOW 4"	
C	STOP BAR, WHITE 24"	
D	CROSSWALK, WHITE 24"	



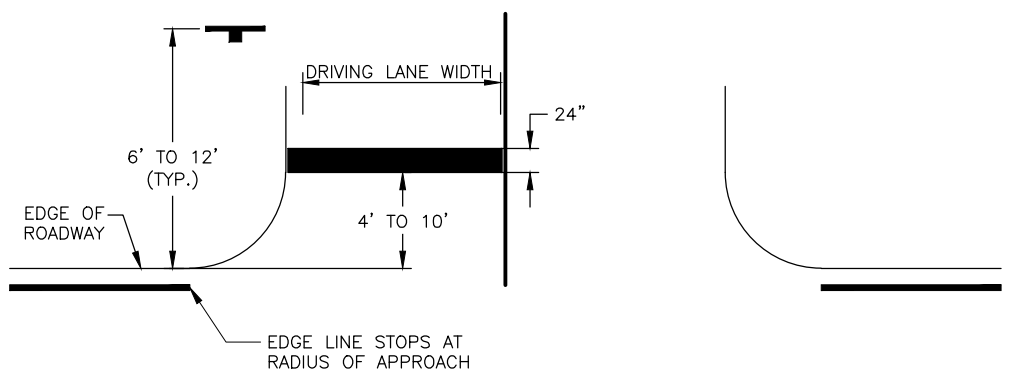
STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES

FILE G:\Ktn\SFHWY00072\Plan\set\00072_H1.dwg
 DATE 6/18/2021 16:27
 LAYOUT H5 SIGNING AND STRIPING
 DESIGNED BY ASTA
 CHECKED BY STAFF
 DRAFTED BY STAFF

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWY00072	2021	H5	5

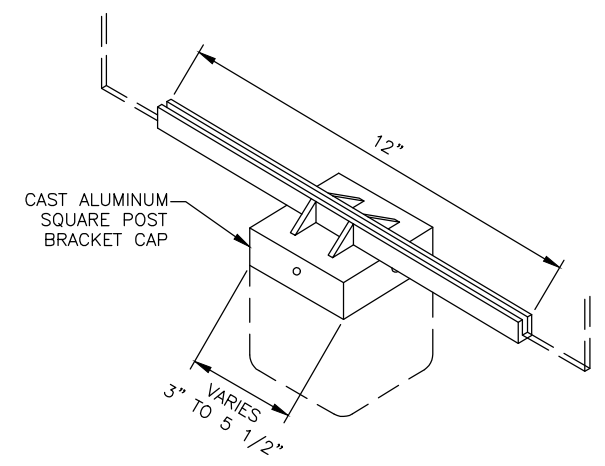
615.0001.0000 STANDARD SIGN SUMMARY											
SIGN NO.	LEGEND	STATION	OFFSET	ASDS CODE	WIDTH (IN)	HEIGHT (IN)	AREA (SF)	POST	SIGN FACING	REMARKS	
1	S Tongass HWY	387+68	24' LT	D3-1	36	8	2.00	2.5 PST	E-W	2-SIDED SIGN. USE 4" UC/3" LC B-FONT	
2	Wood Rd	387+68	24' LT	D3-1	42	12	3.50		N-S	2-SIDED SIGN. USE 6" UC/4" LC C-FONT	
3	STOP	387+68	24' LT	R1-1	30	30	6.25		W	MOUNT BELOW SIGN 3	
4	Old S Tongass HWY	387+45	27' RT	D3-1	48	8	2.67	2.5 PST	N-S	2-SIDED SIGN. USE 4" UC/3" LC B-FONT	
5	STOP	387+45	27' RT	R1-1	30	30	6.25		S	MOUNT BELOW SIGN 5	
6	SPEED LIMIT 25	388+47	48' LT	R2-1	30	36	7.50	2.5 PST	E		
7	CROSSING	394+48	18' RT	W11-2	30	30	6.25	2.5 PST			
8	AHEAD	394+48	18' RT	W16-9P	24	12	2.00				
9	Herring Cove	395+26	23' RT	I-3	30	18	3.75	2 4x6 W	SW	USE 4" UC / 3" LC EMOD-FONT. TWO LINE	
10	NO STOPPING ON BRIDGE	395+26	23' RT						SW	REUSE, ATTACH TO HERRING COVE SIGN	
11	Herring Cove	397+09	29' LT	I-3	30	18	3.75	2 4x6 W	NE	USE 4" UC / 3" LC EMOD-FONT. TWO LINE	
12	NO STOPPING ON BRIDGE	397+09	29' LT						NE	REUSE, ATTACH TO HERRING COVE SIGN	
13	CROSSING	398+34	22' LT	W11-2	30	30	6.25	2.5 PST	SW		
14	ARROW	398+34	22' LT	W16-7pL	24	12	2.00		SW		
15	CROSSING	398+18	24' RT	W11-2	30	30	6.25	2.5 PST	E		
16	ARROW	398+18	24' RT	W16-7pL	24	12	2.00		E		
17	S Tongass HWY	398+42	28' LT	D3-1	36	8	2.00	2.5 PST	N-S	2-SIDED SIGN. USE 4" UC/3" LC B-FONT	
18	Power House Rd	398+42	28' LT	D3-1	48	8	2.67		E-W	2-SIDED SIGN. 4" UC/LC C-FONT	
19	STOP	398+42	28' LT	R1-1	30	30	6.25		N	MOUNT BELOW SIGN 23	
20	CROSSING	399+98	21' LT	W11-2	30	30	6.25				
21	AHEAD	399+98	21' LT	W16-9P	24	12	2.00				
TOTAL =							79.58				

NOTE: OFFSET SIGNS PER S-05.02.



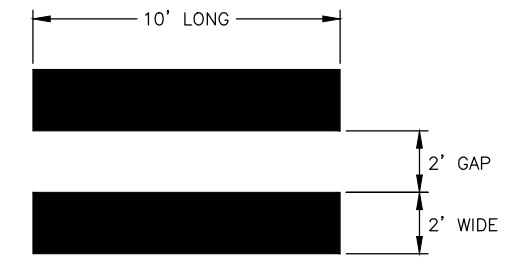
1 STOP BAR DETAIL
H5 SCALE: NOT TO SCALE

1. STRIPE TO CENTERLINE OF APPROACH.



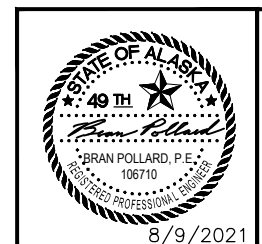
2 HEAVY DUTY SIGN TO POST BRACKET
H5 SCALE: NOT TO SCALE

1. THIS REPLACES DETAIL SHOWN ON STD. S-20.10.



3 LONGITUDINAL CROSSWALK DETAIL
H5 SCALE: N.T.S.

GAP MAY BE ADJUSTED TO 3' MAX SO MARKING IS OUTSIDE OF THE WHEEL PATH. CENTER CROSSWALK AT CURB RAMP.

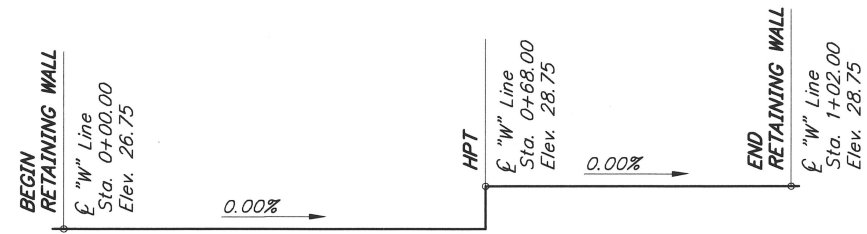


STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

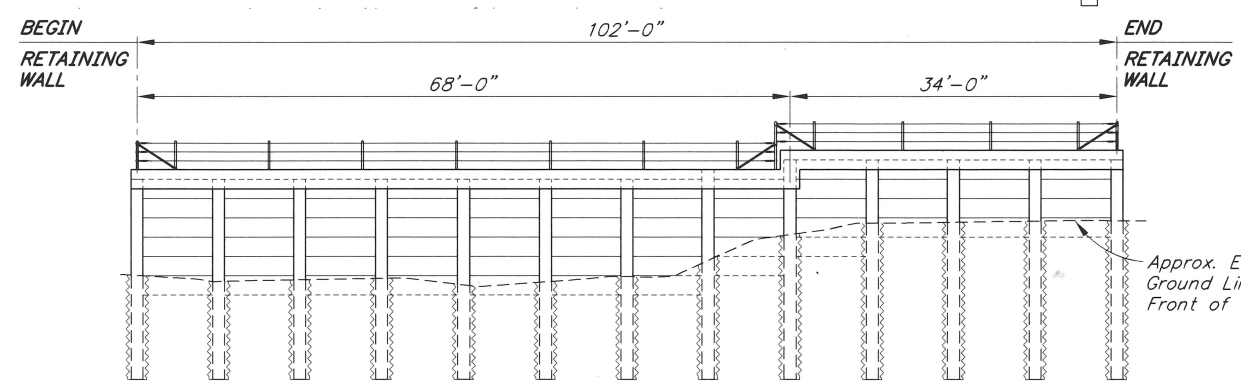
KTN HERRING COVE BRIDGE
IMPROVEMENTS

SIGNING AND STRIPING DETAILS
AND SUMMARY TABLE

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	SFHWO0072/0902043	2021	M1	M5



PROFILE GRADE DATA

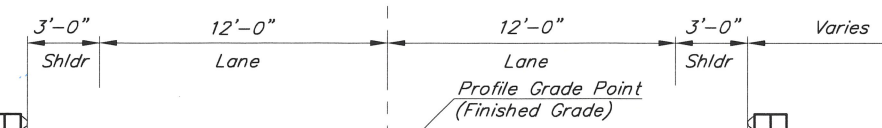


Existing Ground

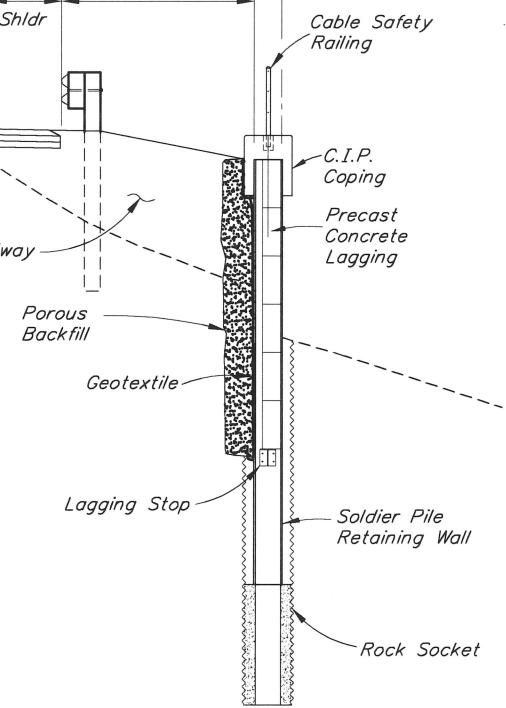
South Tongass Highway

Varies

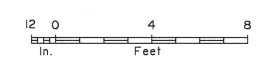
"W" Line = Outside face of H-Pile



See Roadway Sheets

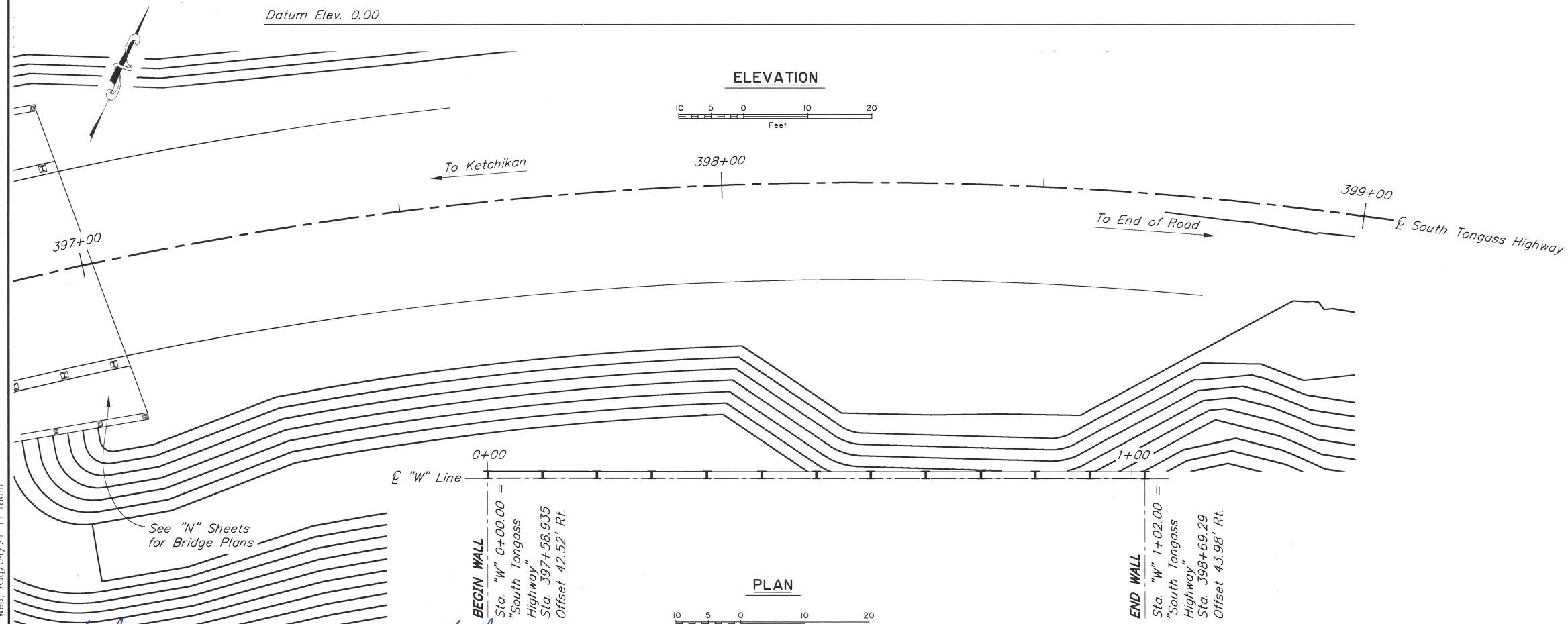


TYPICAL SECTION

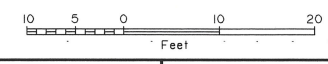


Datum Elev. 0.00

ELEVATION



PLAN



DRAWING INDEX	
TITLE	DWG. NO.
GENERAL LAYOUT	1
SITE PLAN	2
WALL DETAILS 1	3
WALL DETAILS 2	4
CABLE SAFETY RAILING	5

DESIGNED BY: Nick Murray	CHECKED BY: Ben Still	LAYOUT BY: Nick Murray	CHECKED BY: Ben Still
DRAWN BY: Sam Sollie	CHECKED BY: Nick Murray	SPECIFICATIONS BY: Nick Murray	P S & E COMPARED: Ben Still
QUANTITIES BY: Nick Murray	CHECKED BY: Ben Still	APPROVAL RECOMMENDED BY: Rich Pratt	

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
BRIDGE SECTION
3132 Channel Drive
Juneau, Alaska 99801
907-465-2975



HERRING COVE RETAINING WALL
SOUTH TONGASS HIGHWAY
GENERAL LAYOUT



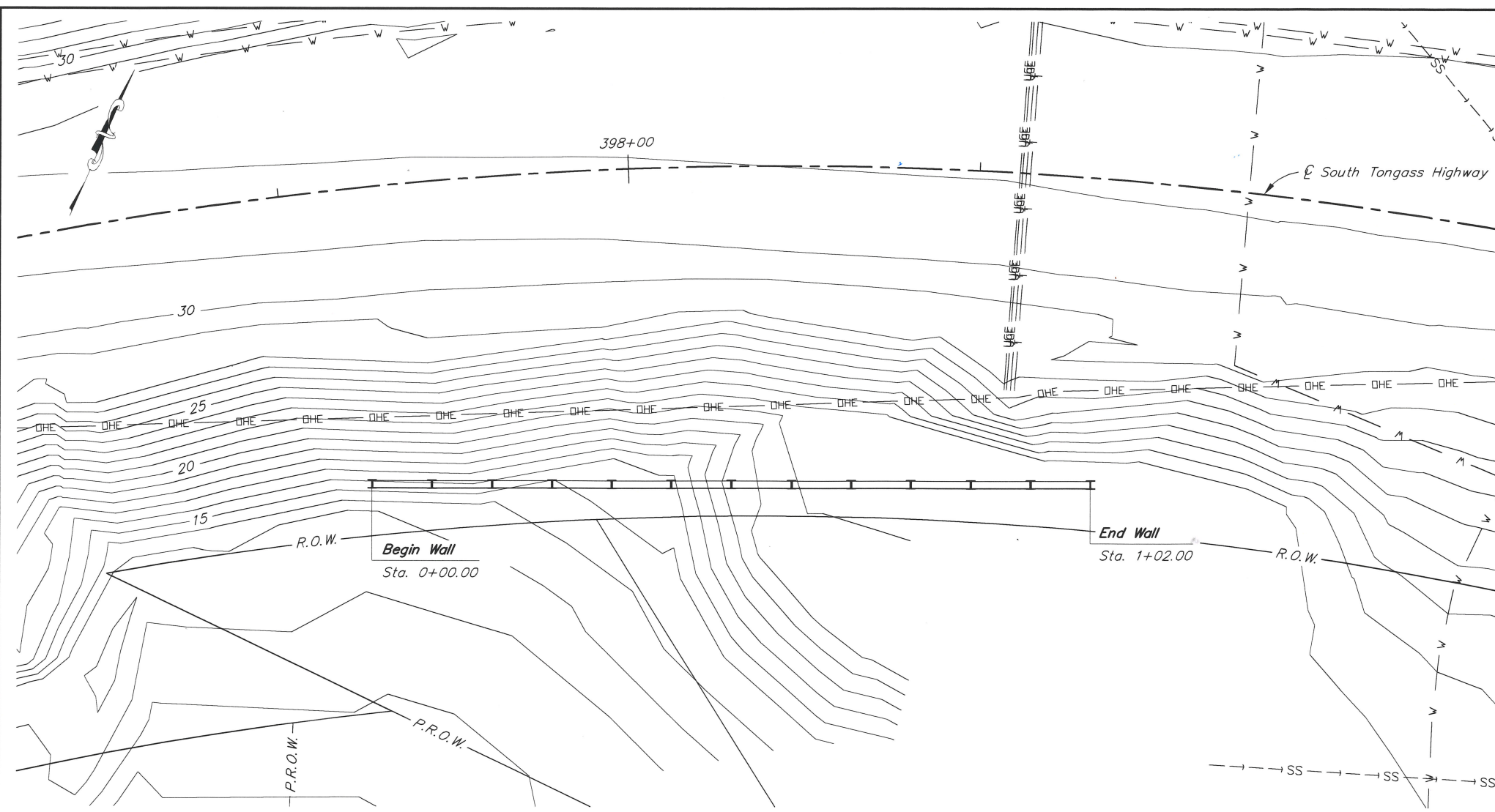
DWG. NO. 1

R:\cod\253\Retaining Wall-1 Wed, Aug/04/21 11:18am

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	SFWY00072/0902043	2021	M2	M5

GENERAL NOTES

- DESIGN:..... AASHTO LRFD Bridge Design Specifications, 9th Edition, 2020, with latest interim revisions
- LIVE LOAD:..... Two foot live load surcharge.
- REINFORCEMENT:..... Epoxy-coated ASTM A706, Grade 60, $F_y = 60,000$ psi. Space reinforcement evenly unless otherwise noted.
- CAST-IN-PLACE CONCRETE: Class A Concrete unless otherwise noted, $f'c = 4,000$ psi.
- STRUCTURAL STEEL:..... ASTM A709, Grade 36T3, $F_y = 36,000$ psi
Galvanize structural steel in accordance with AASHTO M111 unless shown otherwise.
- PRECAST CONCRETE:..... Class P Concrete unless otherwise noted, $f'c = 5,000$ psi.
- STRUCTURAL STEEL PILING:..ASTM A709, GR50T3, $F_y = 50,000$ psi.
Embed piles into rock sockets
- HIGH STRENGTH BOLTS:..... ASTM F3125, Grade A325, $F_u = 120,000$ psi. Galvanize in accordance with AASHTO M232.



SITE PLAN



ABBREVIATIONS:

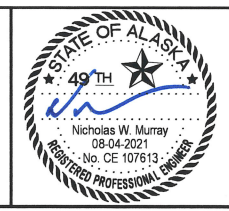
- | | | | |
|---------|--|--------|---|
| CL | = centerline | f'c | = specified concrete compressive strength |
| P | = plate | Fy | = yield stress |
| & | = and | Galv. | = galvanize |
| @ | = at | HPT | = horizontal point of tangent |
| ∅ | = diameter | Hwy | = highway |
| ± | = approximate | ksf | = 1000 pounds per square foot |
| AASHTO | = American Association of State Highway and Transportation Officials | LB | = pound |
| ASTM | = American Society for Testing and Materials | LF | = linear foot |
| Abut. | = abutment | LS | = lump sum |
| Approx. | = approximate | Lt. | = left |
| b.f. | = back/dirt face | max. | = maximum |
| bot. | = bottom | min. | = minimum |
| Br. | = bridge | n.f. | = near face |
| btwn. | = between | No. | = number |
| Brg. | = Bearings | o.c. | = on center |
| C.I.P. | = cast in place | O.H.W. | = ordinary high water |
| Clr. | = clear, clearance | pcf | = pounds per cubic foot |
| CY | = cubic yard | psf | = pounds per square foot |
| dia. | = diameter | psi | = pounds per square inch |
| Dwg. | = drawing | PVC | = point of vertical curve |
| E | = expansion | PVI | = point of vertical intersection |
| (E) | = existing | PVT | = point of vertical tangent |
| EA | = each | R.O.W. | = right of way |
| Elev. | = elevation | Rt. | = right |
| e.f. | = each face | Rd. | = road |
| e.w. | = each way | spc. | = space, spaces |
| F | = fixed | Sta. | = station |
| f.f. | = front/air face | SF | = square feet |
| | | SY | = square yard |
| | | Symm. | = symmetric |
| | | Typ. | = typical |
| | | w/ | = with |

ESTIMATE OF QUANTITIES				
ITEM NO.	ITEM	PAY UNIT	ESTIMATING UNIT	TOTAL QUANTITY
501.0001.0000	Class A Concrete	LS	CY	20.0
501.0007.0000	Precast Concrete Member, Lagging	EA	EA	64
503.0002.0000	Epoxy-Coated Reinforcing Steel	LS	LBS	767
505.0005.0001	Furnish Structural Steel H-Piles, HP 14x117	LF	LF	279.8
505.2006.0000	Install Structural Steel H-Piles, HP 14x117	EA	EA	13
507.0006.0000	Cable Safety Railing	LF	LF	102.0

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

DESIGNED BY:	Nick Murray	CHECKED:	Ben Still
DRAWN BY:	Sam Sallie	CHECKED:	Nick Murray
QUANTITIES BY:	Nick Murray	CHECKED:	Ben Still

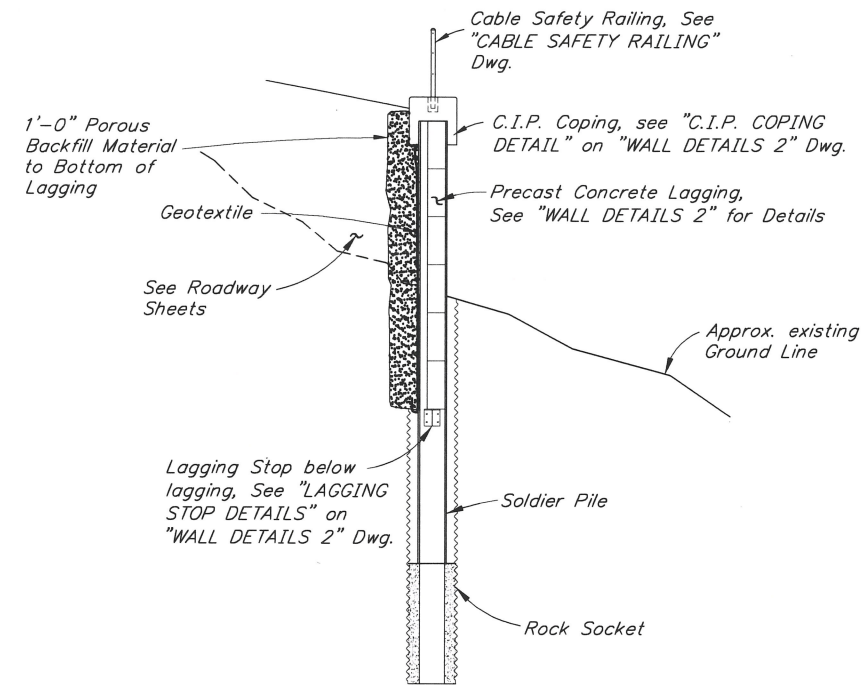
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
BRIDGE SECTION
3132 Channel Drive
Juneau, Alaska 99801
907-465-2975



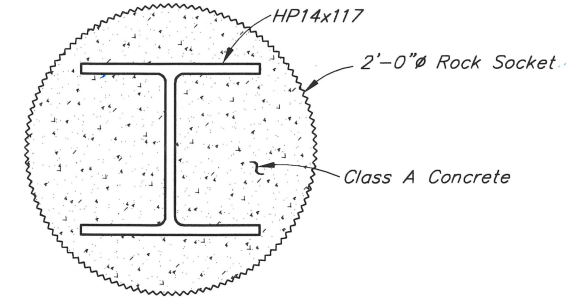
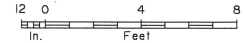
HERRING COVE RETAINING WALL
SOUTH TONGASS HIGHWAY
SITE PLAN



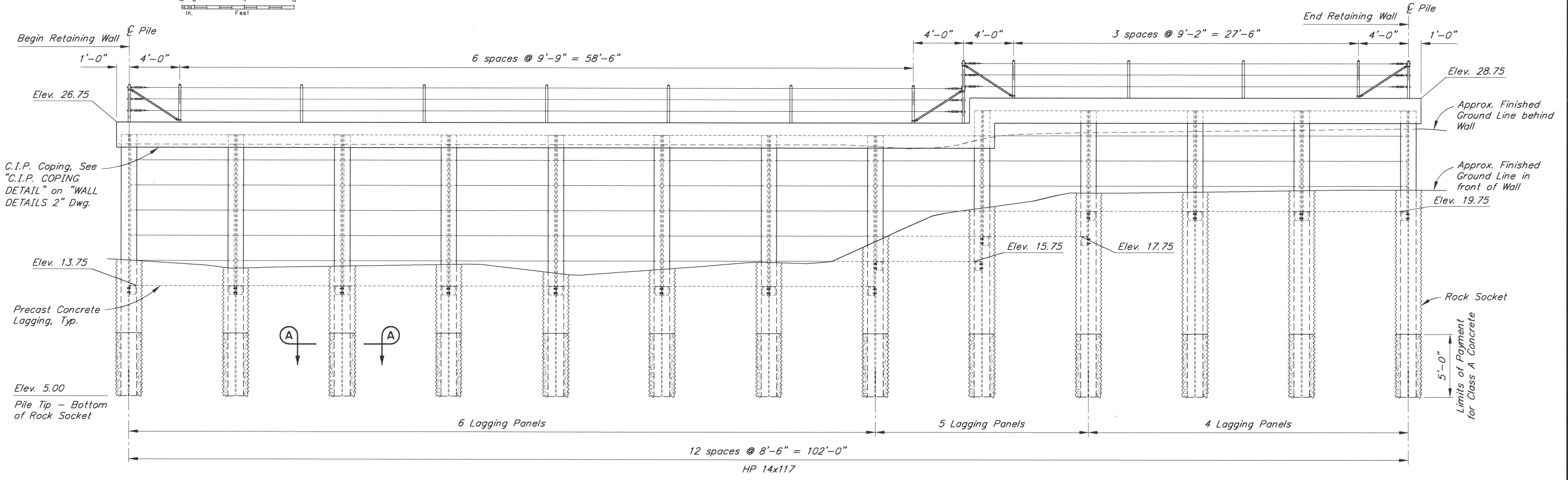
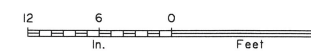
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	SFWY00072/0902043	2021	M3	M5



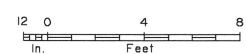
TYPICAL WALL SECTION



SECTION A-A



ELEVATION



R:\oad\253\Retaining Wall-3 Wed, Aug/04/21 11:18am

DESIGNED BY: Nick Murray	CHECKED: Ben Still
DRAWN BY: Sam Sallie	CHECKED: Nick Murray
QUANTITIES BY: Nick Murray	CHECKED: Ben Still

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
BRIDGE SECTION
3132 Channel Drive
Juneau, Alaska 99801
907-465-2975



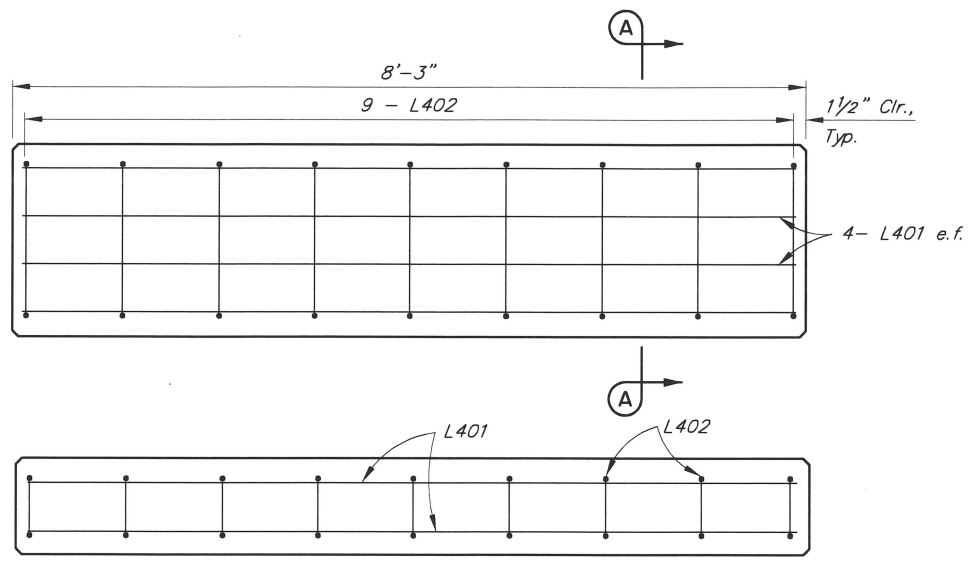
HERRING COVE RETAINING WALL
SOUTH TONGASS HIGHWAY
WALL DETAILS 1



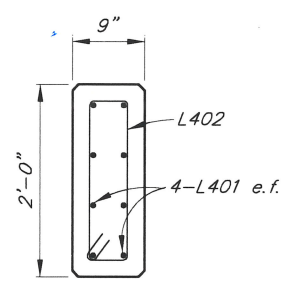
DWG. NO. 3

REINFORCING STEEL						
MARK	NOTE	SIZE	NO.	LENGTH	TYPE	BENDING DIAGRAM
C401	E,L	4	12	VARIES	---	35'-3" min. 69'-3" max.
C402	E	4	69	5'-0"	BENT	
C403	E	4	12	5'-0"	BENT	
P401	E,P	4	56	0'-9"	---	
P402	E,P	4	28	2'-5"	HOOP	
L401	E,U	4	8	9'-0"	BENT	
L402	E,U	4	9	4'-11"	STIRRUP	

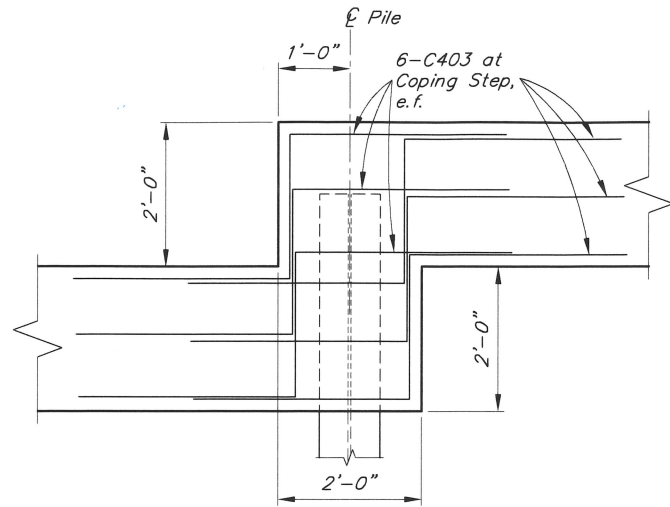
E - Epoxy-Coated
L - Length does not include lap splices
P - Per post
U - Per precast unit



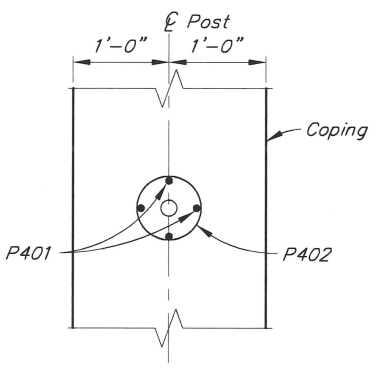
PRECAST CONCRETE LAGGING



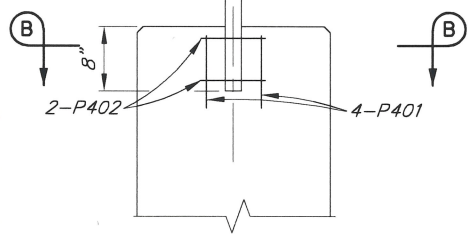
SECTION A-A



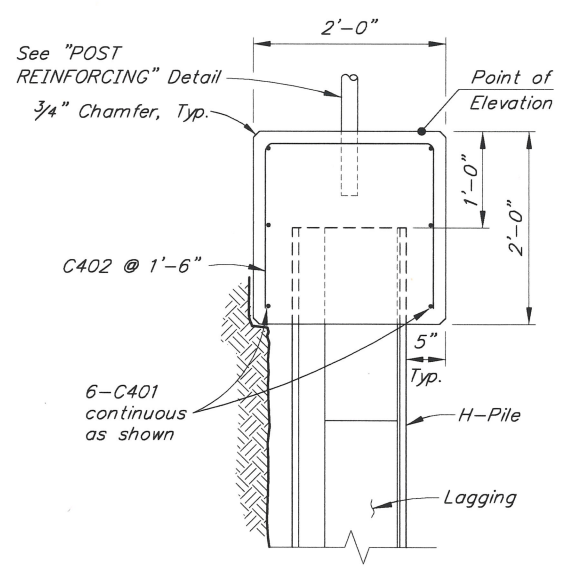
REINFORCING AT COPING STEP



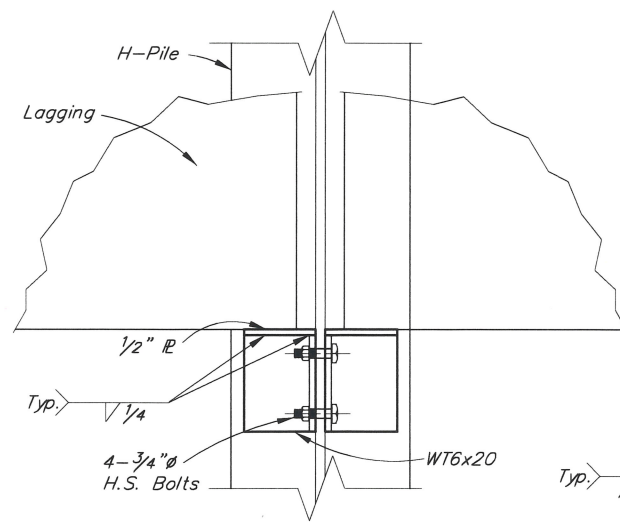
SECTION B-B
No Scale



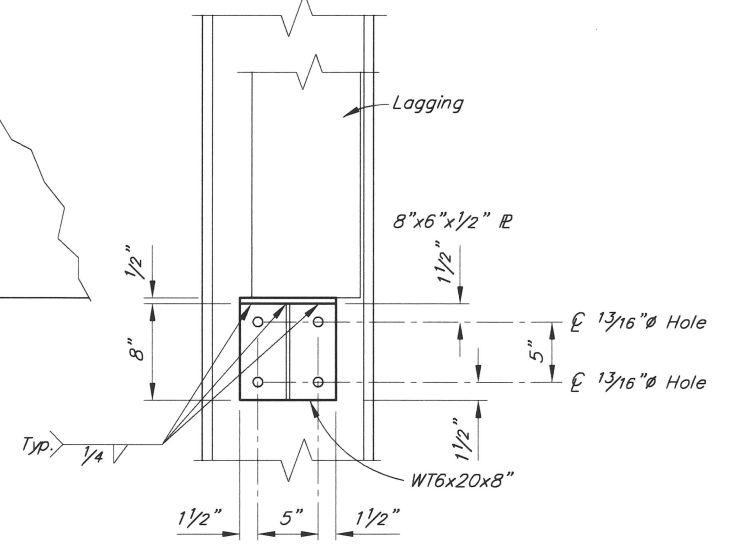
POST REINFORCING
No Scale



C.I.P. COPING DETAIL
No Scale

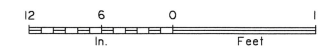


SECTION



ELEVATION

LAGGING STOP DETAILS



* Place 1/8" deep crack control joints at 50'-0" max.

R:\cod\253\Retaining Wall-4 Wed, Aug/04/21 11:18am

DESIGNED BY: Nick Murray	CHECKED: Ben Still
DRAWN BY: Sam Sollie	CHECKED: Nick Murray
QUANTITIES BY: Nick Murray	CHECKED: Ben Still

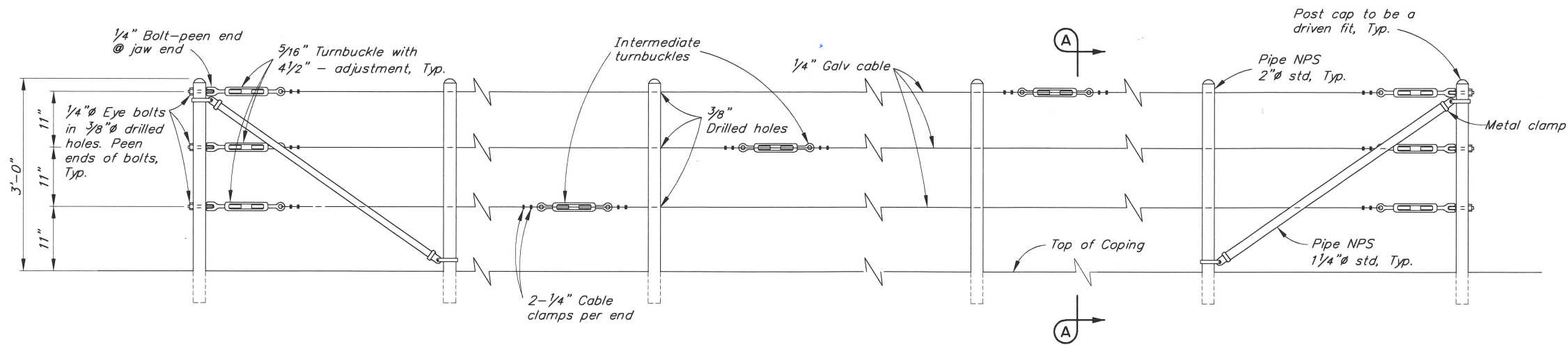
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
BRIDGE SECTION
3132 Channel Drive
Juneau, Alaska 99801
907-465-2975



HERRING COVE RETAINING WALL
SOUTH TONGASS HIGHWAY
WALL DETAILS 2

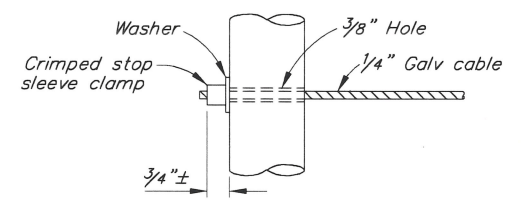


STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	SFWY00072/0902043	2021	M5	M5

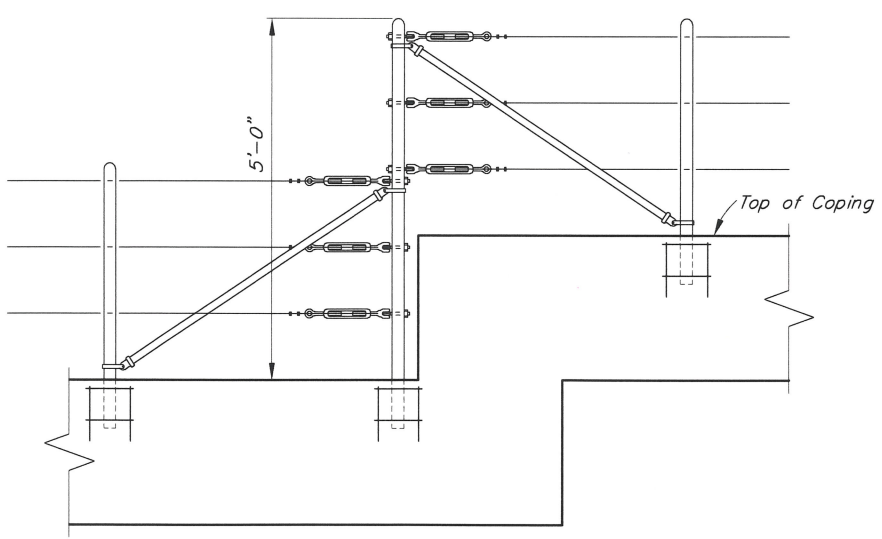


ELEVATION
No Scale

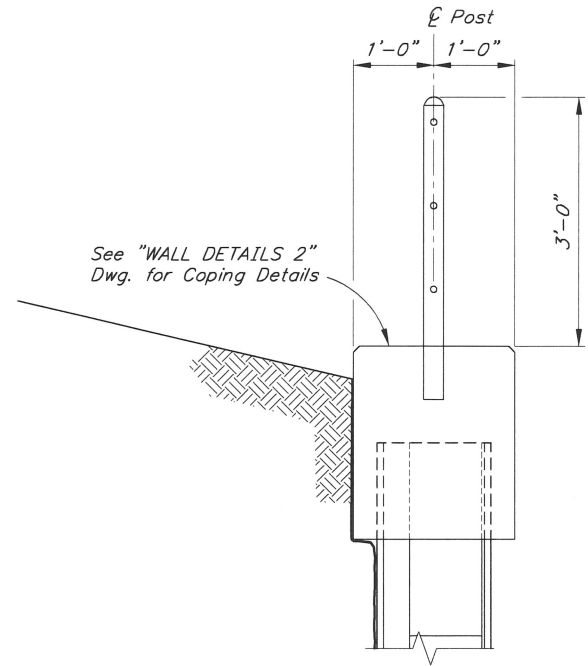
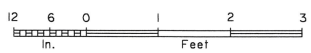
- NOTES:**
1. Intermediate turnbuckles to be placed in adjacent spans.
 2. Do not splice cable between intermediate turnbuckles and end posts.
 3. All posts, cable and hardware to be galvanized.
 4. Posts to be plumb.
 5. Verify all controlling dimensions in the field before ordering or fabricating any material.
 6. Line posts shall be braced horizontally and trussed diagonally in both directions, at each end.
 7. Post pockets to be centered in top of coping.
 8. Provide thimbles at all cable loops.
 9. See "WALL DETAILS 2" Dwg. for post spacing and reinforcing.



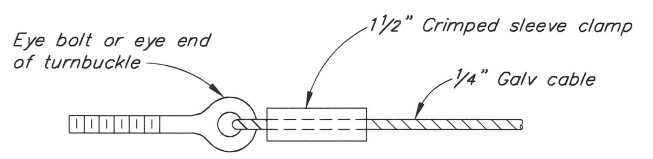
ALTERNATIVE DEAD END ANCHORAGE
No Scale



ELEVATION AT COPING STEP



SECTION A-A
No Scale

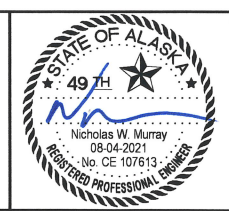


ALTERNATIVE CABLE CONNECTION
No Scale

R:\cad\2533\Retaining Wall-5 Wed, Aug/04/21 11:18am

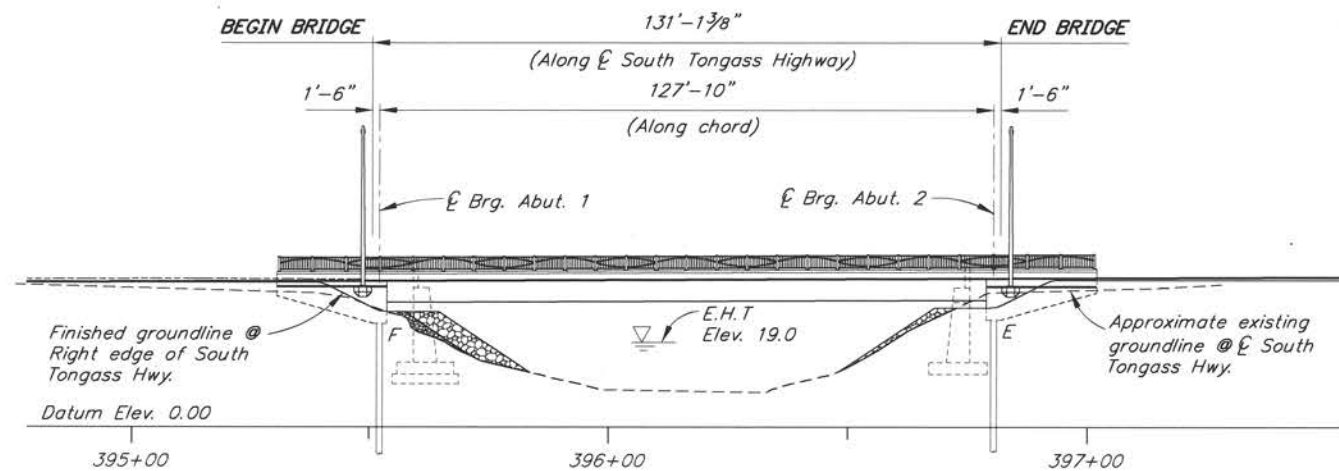
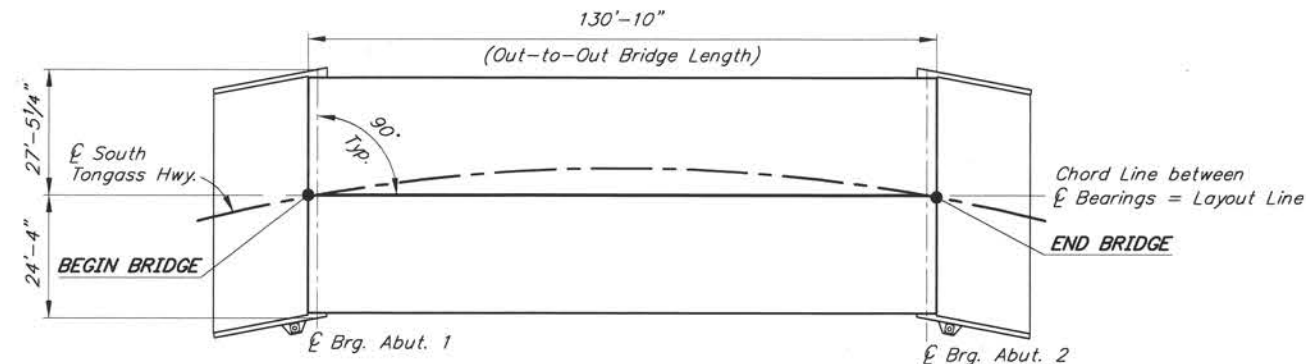
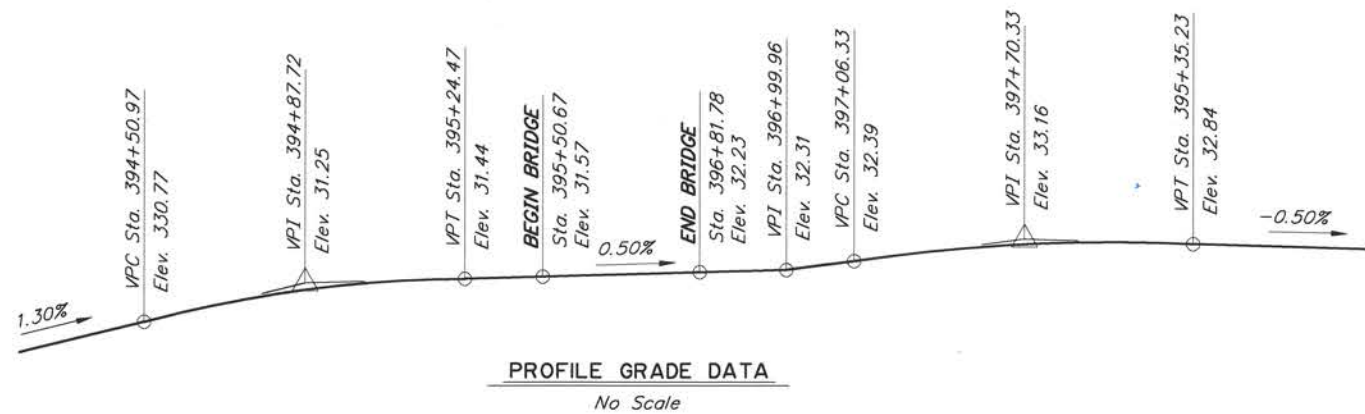
DESIGNED BY: Nick Murray	CHECKED: Ben Still
DRAWN BY: Sam Sollie	CHECKED: Nick Murray
QUANTITIES BY: Nick Murray	CHECKED: Ben Still

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
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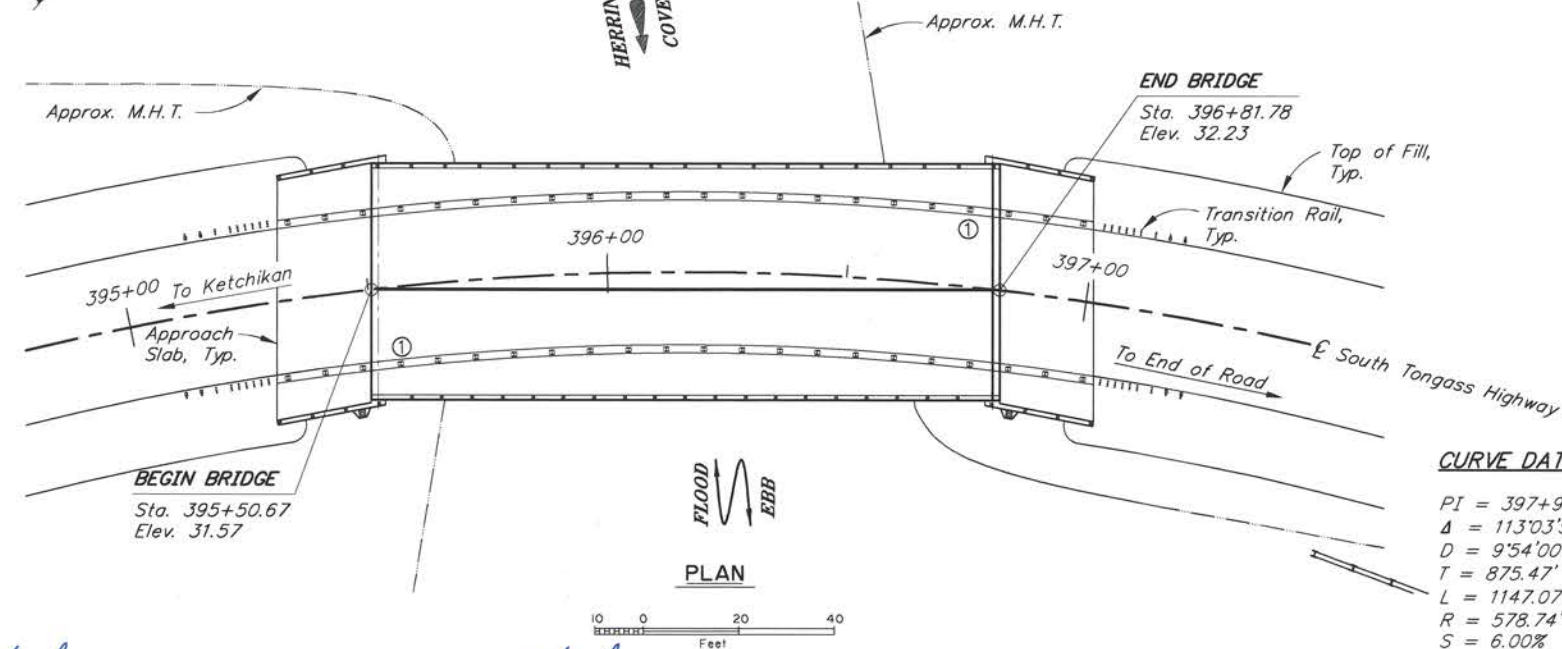


HERRING COVE RETAINING WALL
SOUTH TONGASS HIGHWAY
CABLE SAFETY RAILING





ELEVATION



PLAN



CURVE DATA:

$PI = 397+95.85$
 $\Delta = 113^{\circ}03'56''$
 $D = 9'54'00''$
 $T = 875.47'$
 $L = 1147.07'$
 $R = 578.74'$
 $S = 6.00\%$

DRAWING INDEX

TITLE	DWG. NO.
GENERAL LAYOUT	1
STAGED CONSTRUCTION	2
TEMPORARY CONCRETE BRIDGE BARRIER	3
SITE PLAN	4
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RIPRAP DETAILS	6
EXISTING BRIDGE DETAILS	7
ABUTMENT 1	8
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WINGWALLS	12
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FRAMING PLAN AND TYPICAL SECTION	14
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SIDEWALK DETAILS	18
APPROACH SLABS	19
PEDESTRIAN RAILING	20
STEEL BRIDGE RAILING, 3-TUBE	21
TRANSITION RAIL, 3-TUBE	22
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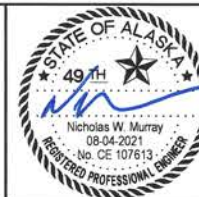
NOTES

① Approximate location of Bridge Number Plate.

R:\cod\253\253-GENERAL LAYOUT Wed, Aug/04/21 10:58am

DESIGNED BY: Nick Murray	CHECKED BY: Douglas Gelineau	LAYOUT BY: Nick Murray	CHECKED BY: Douglas Gelineau
DRAWN BY: Sam Sallie	CHECKED BY: Nick Murray	SPECIFICATIONS BY: Nick Murray	P S & E COMPARED: Douglas Gelineau
QUANTITIES BY: Nick Murray	CHECKED BY: Douglas Gelineau	APPROVAL RECOMMENDED BY: Rich Pratt	

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HERRING COVE BRIDGE
 SOUTH TONGASS HIGHWAY
GENERAL LAYOUT

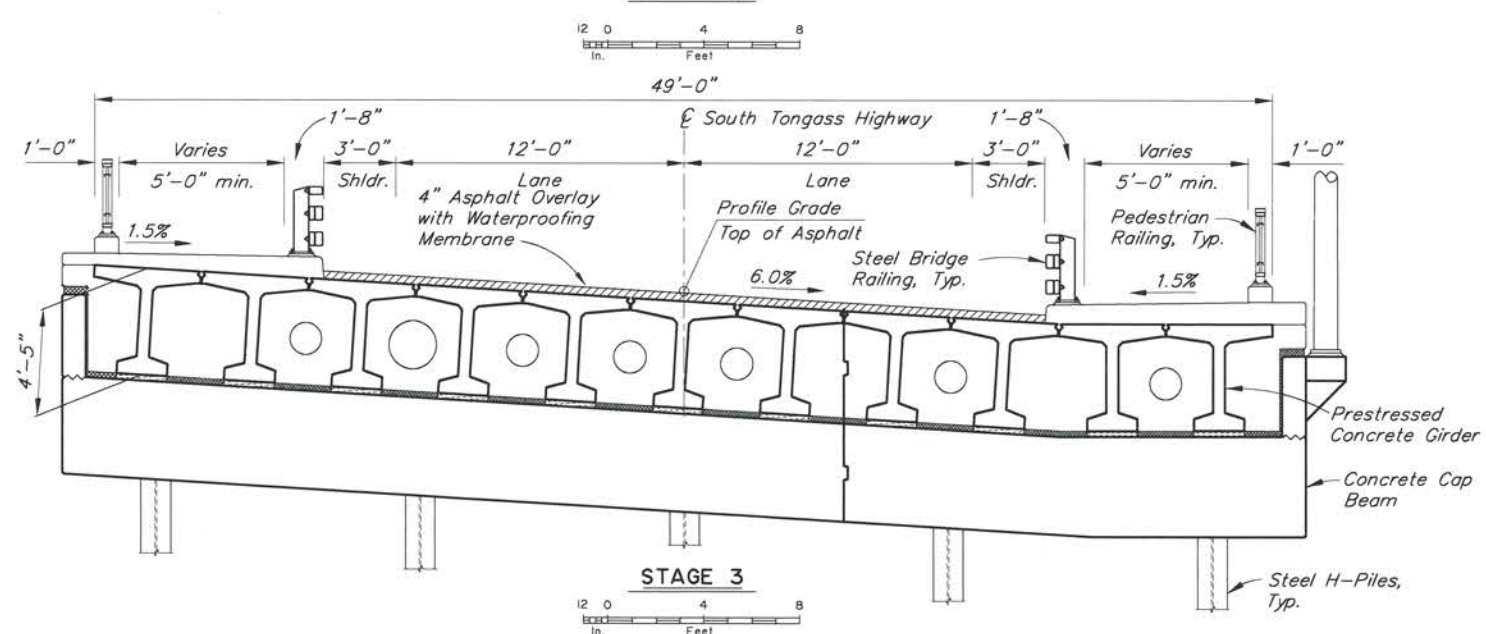
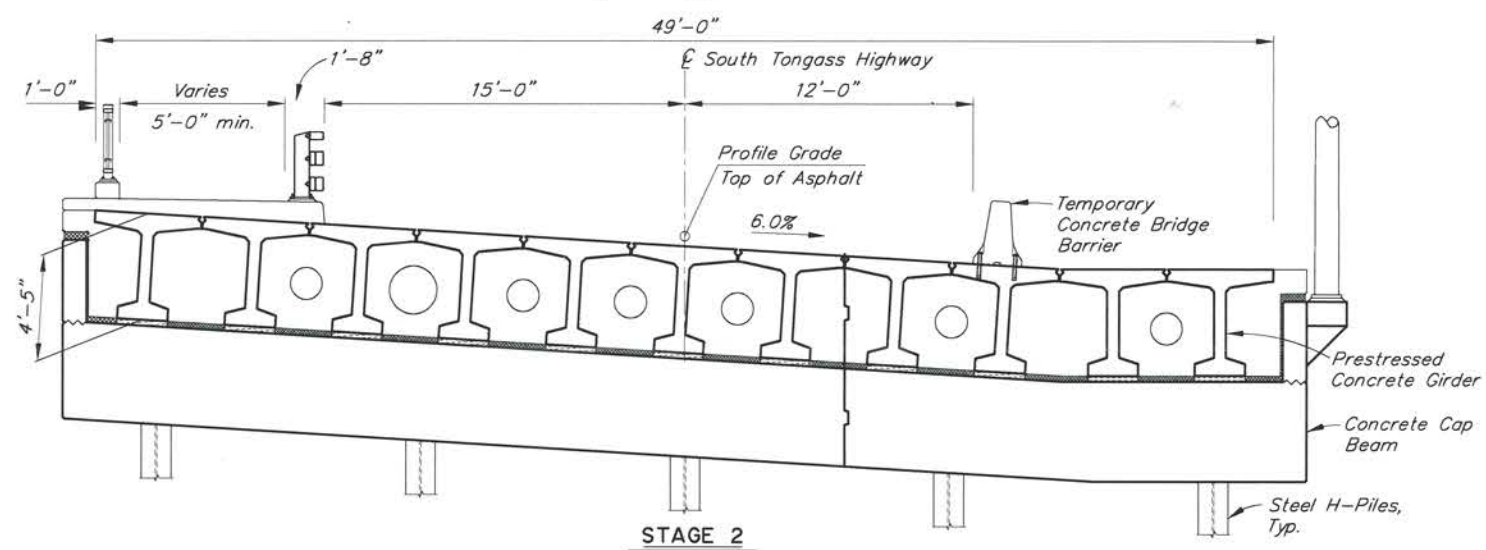
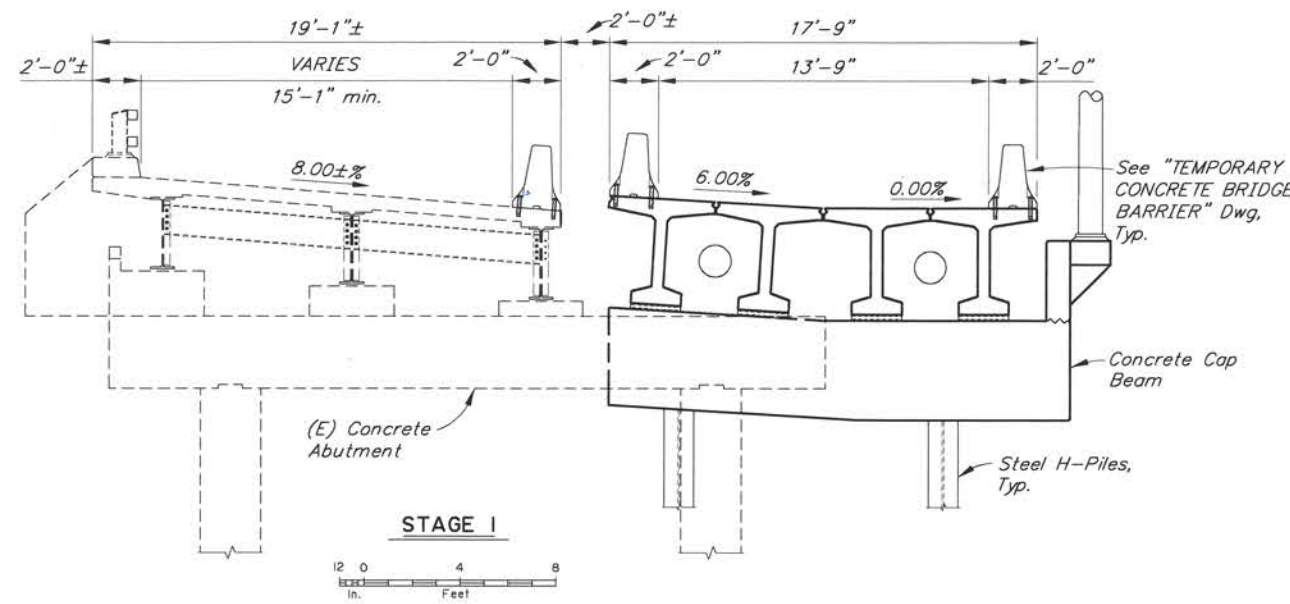


BRIDGE NO. 253
 DWG. NO. 1

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	SFHWHY00072/0902043	2021	N2	N26

STAGED CONSTRUCTION NOTES

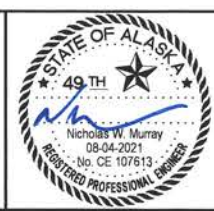
1. Place riprap under first stage of bridge prior to setting girders on bearings.
2. Cast all Diaphragms before applying loads to bridge.
3. Splice all reinforcing steel crossing the vertical construction joint with mechanical couplers. Stagger splices.
4. Roughen the surfaces of all vertical construction joints.
5. Provide earth retaining structure along approach roadway between stages. Remove prior to back filling.
6. See civil drawings for utility details.



R:\cad\253\253-STAGE Wed, Aug/04/21 10:58am

DESIGNED BY: Nick Murray	CHECKED: Douglas Gelineau
DRAWN BY: Sam Sallie	CHECKED: Nick Murray
QUANTITIES BY: Nick Murray	CHECKED: Douglas Gelineau

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
BRIDGE SECTION
3132 Channel Drive
Juneau, Alaska 99801
907-465-2975



HERRING COVE BRIDGE
SOUTH TONGASS HIGHWAY
STAGED CONSTRUCTION

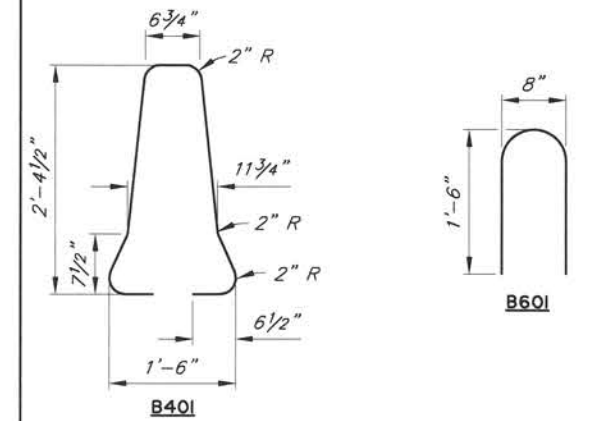

BRIDGE NO. 253
DWG. NO. 2

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	SFWY00072/0902043	2021	N3	N26

REINFORCING STEEL - ONE SEGMENT

MARK	NOTE	SIZE	NO.	LENGTH	TYPE
B401	E	4	13	6'-1"	STIRRUP
B402	E	4	4	12'-2"	---
B501	E	5	4	12'-2"	---
B601	E	6	8	3'-6"	BENT

BENDING DIAGRAM

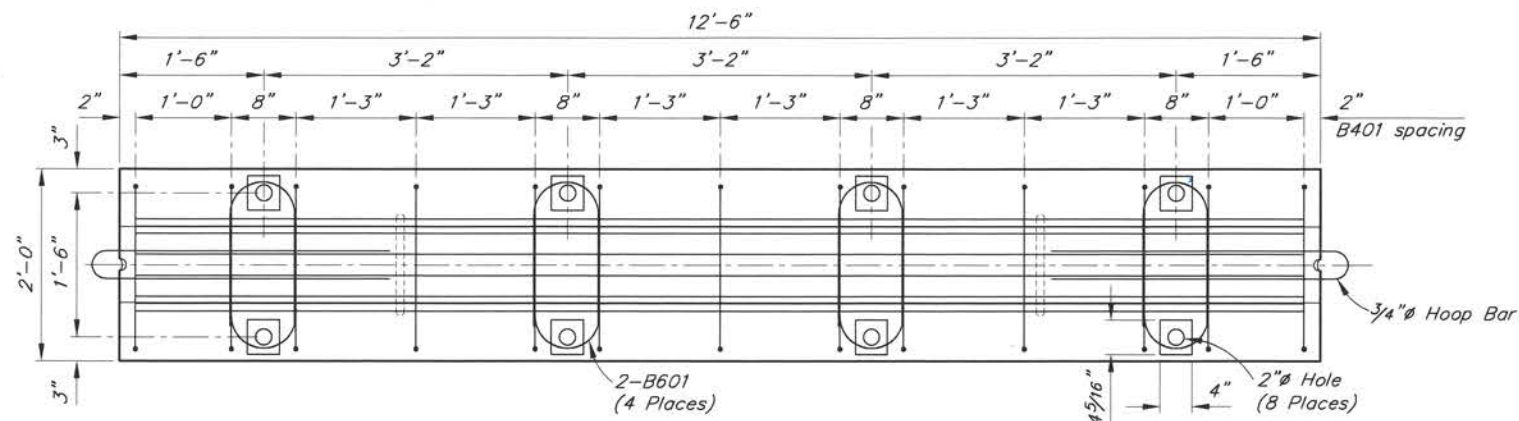


TOP VIEW

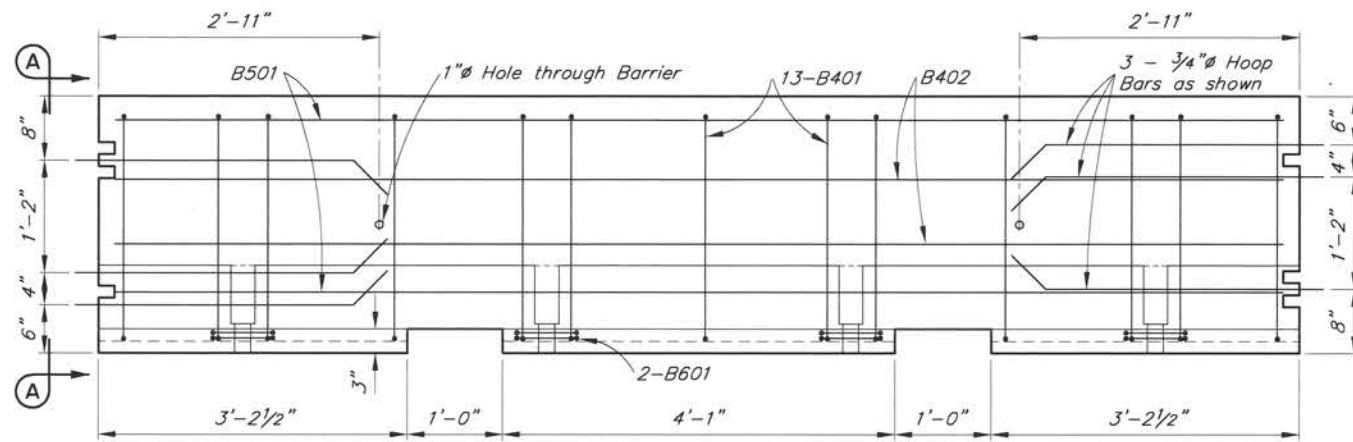
SIDE VIEW

3/4" HOOP BAR

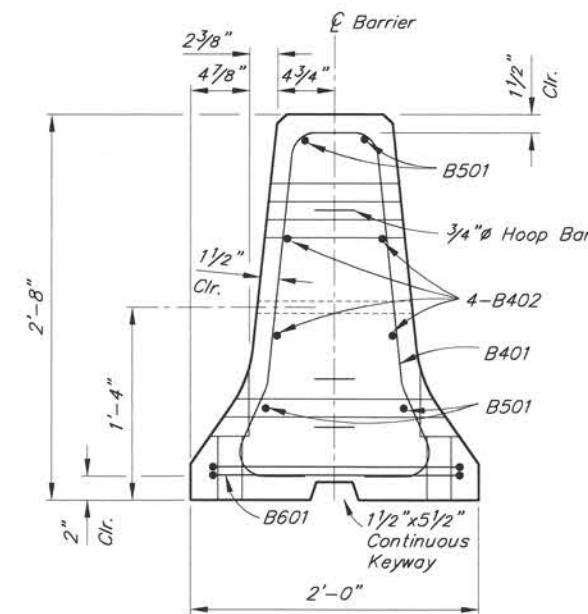
E - Epoxy-Coated



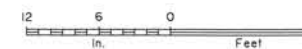
PLAN



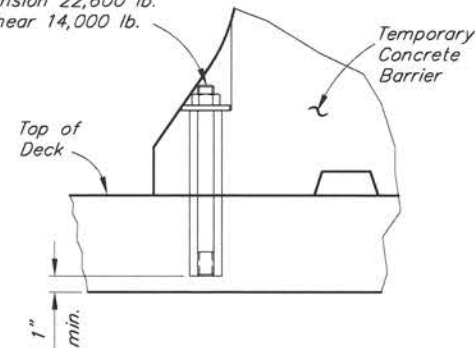
ELEVATION



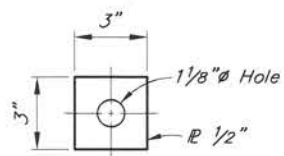
SECTION A-A



Drill and Bond 1" Anchor Rod with 1/2"x3"x3" Top Plate Washer. Minimum Design Resistance: Tension 22,600 lb. Shear 14,000 lb.



ANCHOR DETAIL



TOP PLATE WASHER DETAIL

NOTE:

1. Remove anchor rods in final girders to no less than 1" below top of girder. Patch void with high-strength grout.

R:\cod\253\253-BARRIER Wed, Aug/04/21 10:58am

DESIGNED BY: Nick Murray	CHECKED: Douglas Gelineau
DRAWN BY: Sam Sollie	CHECKED: Nick Murray
QUANTITIES BY: Nick Murray	CHECKED: Douglas Gelineau

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AND PUBLIC FACILITIES
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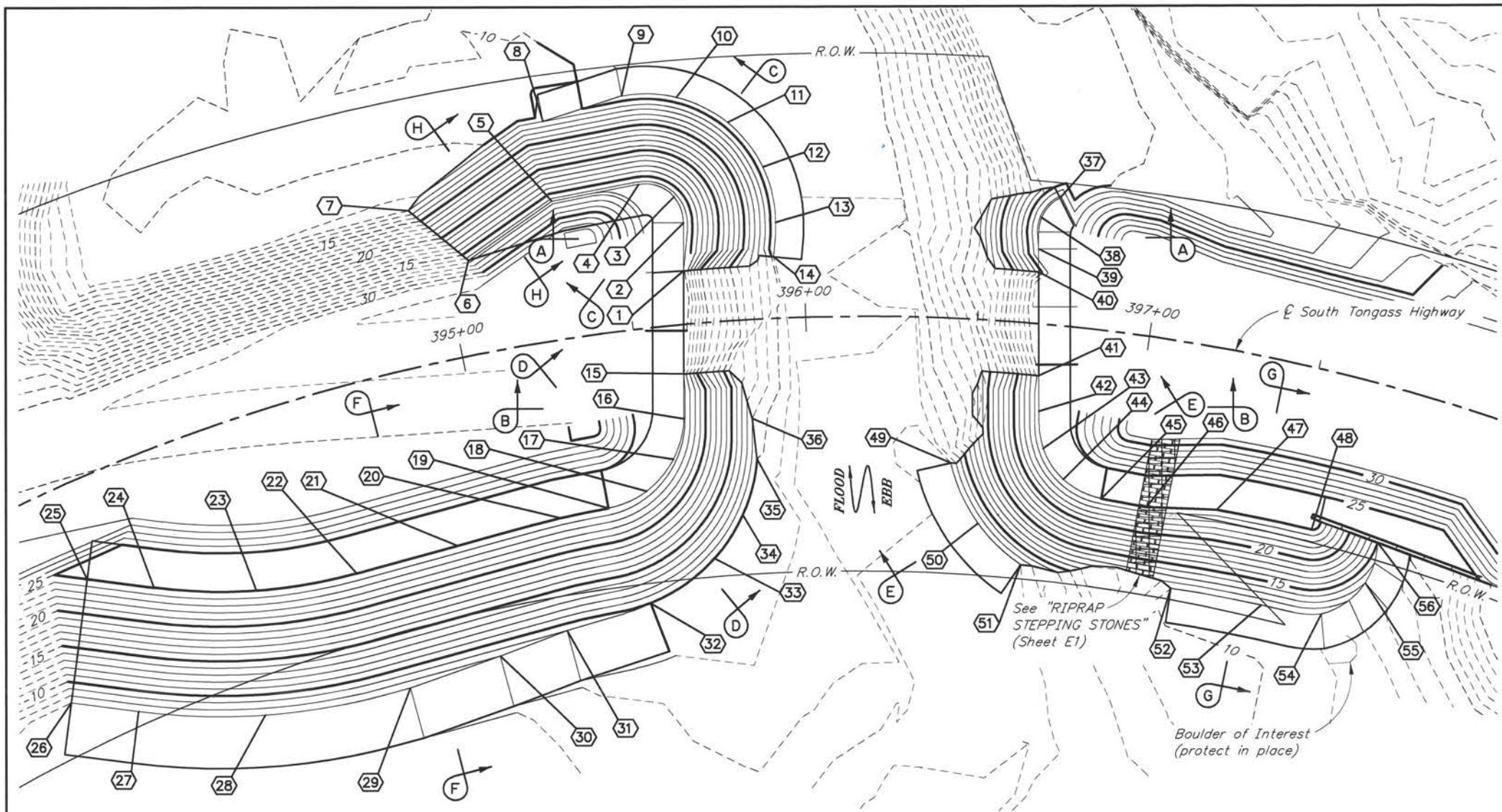


HERRING COVE BRIDGE
SOUTH TONGASS HIGHWAY
TEMPORARY CONCRETE BRIDGE BARRIER



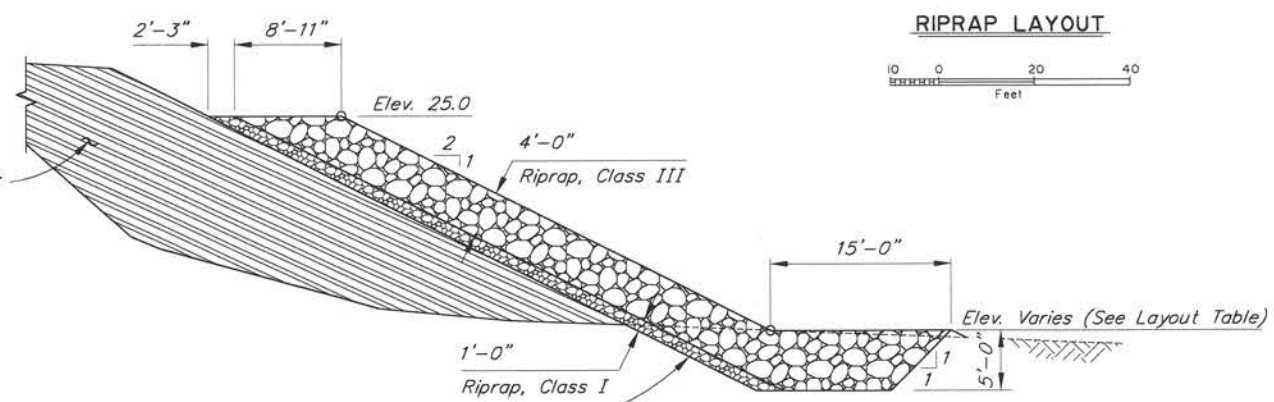
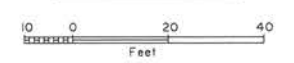
BRIDGE NO. 253
DWG. NO. 3

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	SFH00072/0902043	2021	N5	N26



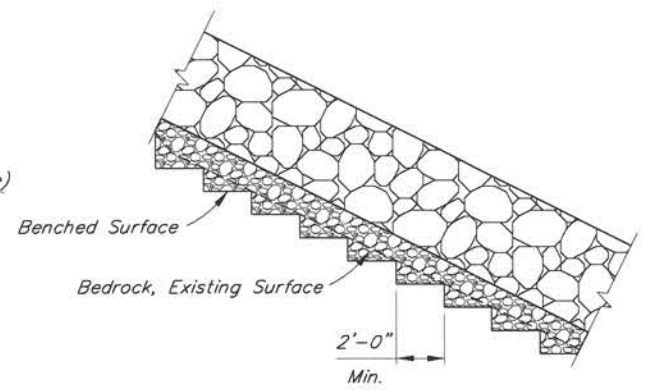
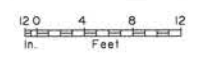
RIPRAP TABLE							
POINT	STATION	OFFSET	ELEVATION	POINT	STATION	OFFSET	ELEVATION
1	395+66.1	15.4' Left	Match O.G.	29	394+59.8	89.2' Right	7.0'
2	395+67.2	29.3' Left	26.5'	30	394+92.1	86.6' Right	8.0'
3	395+65.3	37.1' Left	26.5'	31	395+16.8	83.1' Right	9.0'
4	395+56.0	41.6' Left	26.5'	32	395+46.0	78.9' Right	10.0'
5	395+32.1	40.0' Left	26.5'	33	395+68.5	68.1' Right	10.0'
6	395+06.9	27.2' Left	26.5'	34	395+78.6	56.1' Right	10.0'
7	394+93.6	44.8' Left	12.0'	35	395+84.0	40.3' Right	10.0'
8	395+32.8	63.3' Left	11.0'	36	395+83.2	28.6' Right	11.0'
9	395+54.0	67.8' Left	9.0'	37	396+70.2	36.8' Left	27.3'
10	395+68.2	65.8' Left	9.0'	38	396+65.9	30.7' Left	27.3'
11	395+81.1	57.4' Left	9.0'	39	396+65.8	21.5' Left	27.0'
12	395+89.8	43.9' Left	9.0'	40	396+66.4	14.9' Left	Match O.G.
13	395+92.5	27.6' Left	9.0'	41	396+69.1	14.9' Right	Match O.G.
14	395+91.6	17.8' Left	9.0'	42	396+70.0	25.2' Right	24.8'
15	395+63.5	14.3' Right	Match O.G.	43	396+72.4	35.8' Right	24.9'
16	395+62.2	27.1' Right	24.1'	44	396+79.5	44.0' Right	25.0'
17	395+57.8	38.5' Right	24.5'	45	396+92.1	48.3' Right	25.0'
18	395+48.3	46.8' Right	24.8'	46	397+06.6	48.9' Right	25.0'
19	395+35.7	50.2' Right	25.0'	47	397+28.7	46.1' Right	25.0'
20	395+19.6	50.7' Right	25.0'	48	397+59.2	45.7' Right	25.0'
21	394+86.3	52.8' Right	25.0'	49	396+44.1	41.8' Right	7.0'
22	394+52.9	53.2' Right	25.0'	50	396+53.8	58.8' Right	7.0'
23	394+20.9	49.0' Right	25.0'	51	396+68.5	69.8' Right	7.0'
24	393+91.4	37.7' Right	25.0'	52	397+18.7	70.8' Right	11.0'
25	393+73.4	27.7' Right	25.0'	53	397+49.1	70.3' Right	11.0'
26	393+52.5	58.1' Right	7.0'	54	397+69.0	68.6' Right	11.0'
27	393+71.2	68.7' Right	7.0'	55	397+80.0	56.5' Right	13.0'
28	394+09.7	83.6' Right	7.0'	56	397+80.2	44.4' Right	15.0'

RIPRAP LAYOUT



See "BEDROCK, BENCHED SURFACES" on "RIPRAP LAYOUT" Dwg.

RIPRAP SECTION F-F



BEDROCK, BENCHED SURFACES



HYDRAULIC & HYDROLOGIC SUMMARY, BRIDGE NO. 253

Flood Frequency (Yr.)	50	100	500
Exceedance Probability (%)	2	1	0.2
Discharge (cfs)	524	603	794
Water Surface Elevation (ft)*	19		
Anticipated Add'l Backwater (ft)	0		
Contraction Scour (ft)	0		
Pier Scour (ft)	N/A		
Abutment Scour (ft)	0		
Long-Term Degradation (ft)	3		

Drainage Area: 1.12 square miles
 The hydraulic capacity is >>Q500, excluding tidal effects.
 * Design water surface elevation is based upon tides and coastal storm levels, not riverine floods. The water surface elevation reported above is taken from the Federal Emergency Management Agency's coastal flood analysis for the Ketchikan Gateway Borough, as reported in its Revised Preliminary Flood Insurance Study, dated August 28, 2020.

NOTE:

For riprap sections not on "RIPRAP LAYOUT" Dwg. see "RIPRAP DETAILS" Dwg.

R:\cadd\253\253-RIPRAP LAYOUT Wed, Aug/04/21 10:58am

DESIGNED BY: Michael Knapp	CHECKED:
DRAWN BY: Sam Sallie	CHECKED: Michael Knapp
QUANTITIES BY: Michael Knapp	CHECKED:

STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 AND PUBLIC FACILITIES
 BRIDGE SECTION
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 907-465-2975

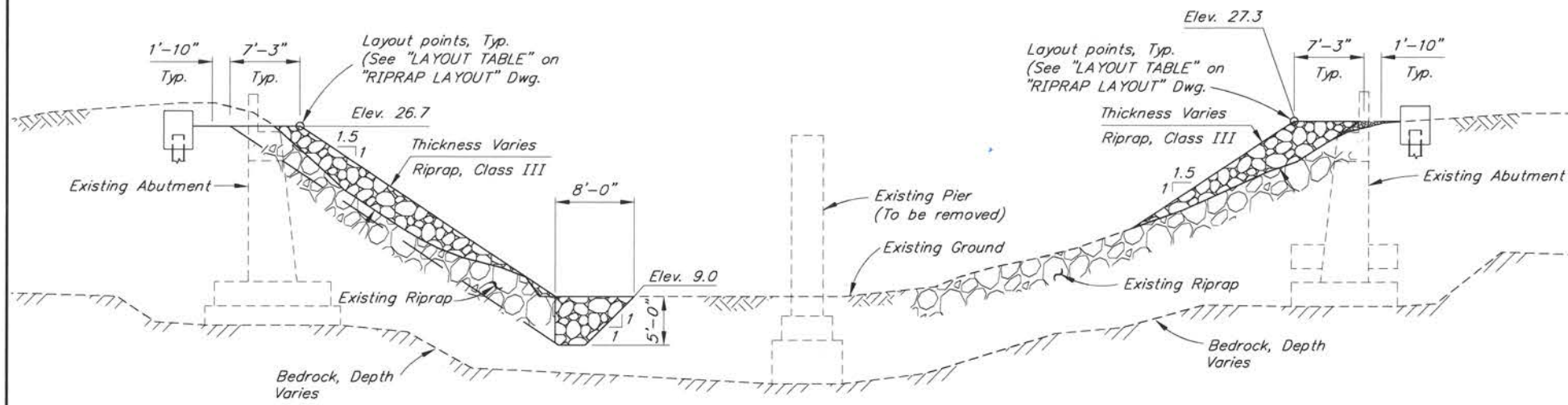


HERRING COVE BRIDGE
 SOUTH TONGASS HIGHWAY
RIPRAP LAYOUT

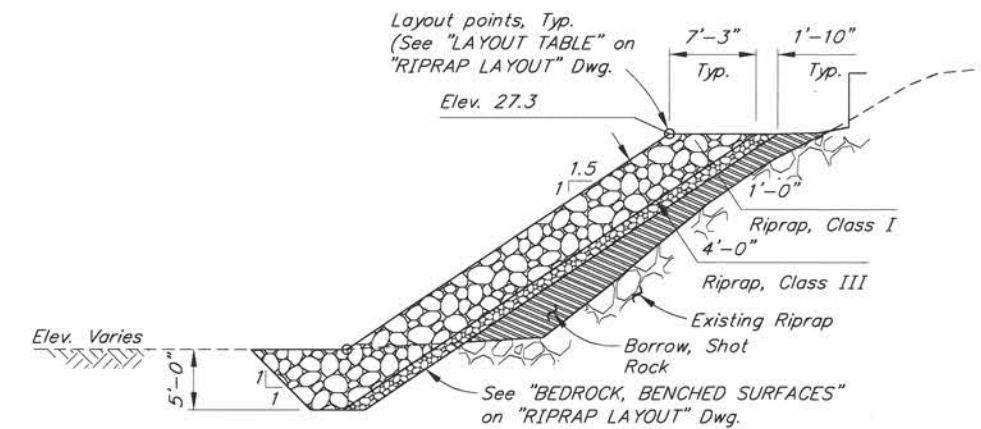


BRIDGE NO. 253
 DWG. NO. 5

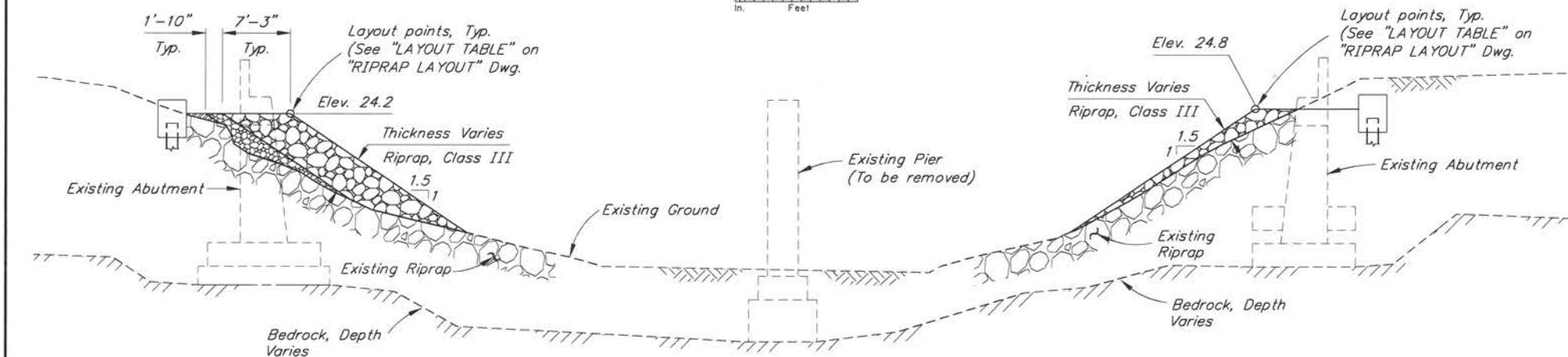
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	SFHWO0072/0902043	2021	N6	N26



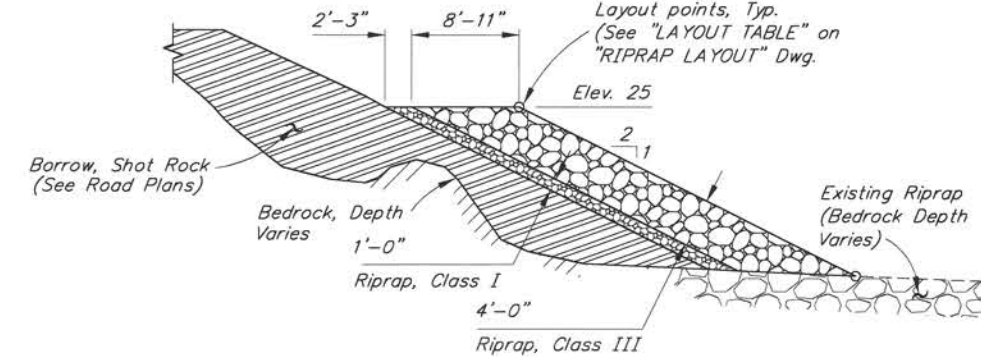
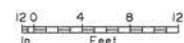
RIPRAP SECTION A-A



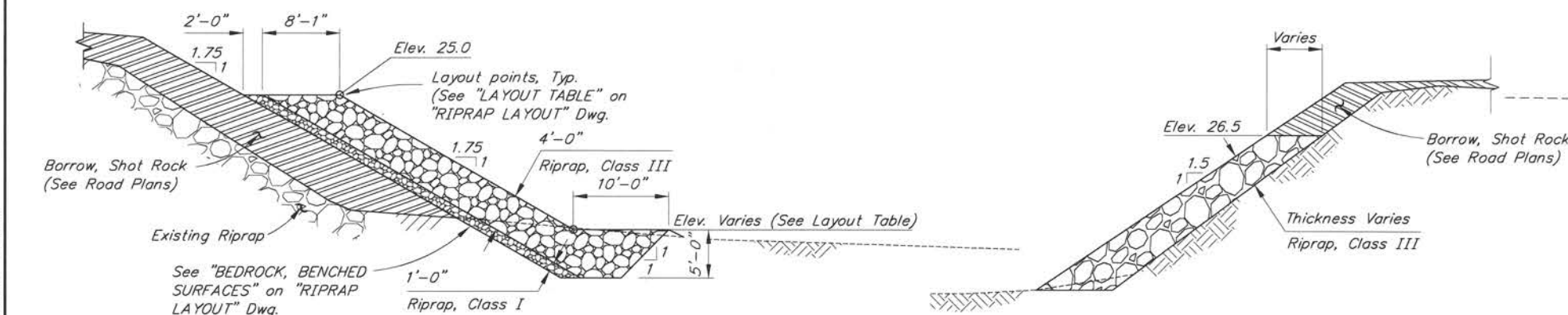
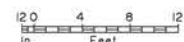
RIPRAP SECTION C-C



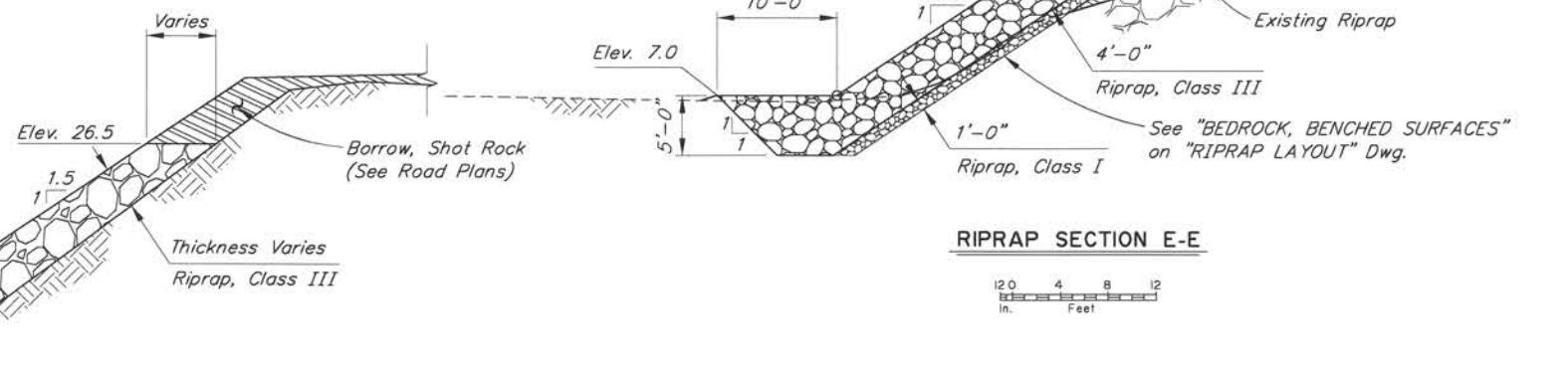
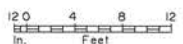
RIPRAP SECTION B-B



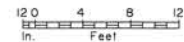
RIPRAP SECTION D-D



RIPRAP SECTION G-G



RIPRAP SECTION H-H



R:\cod\253\253-RIPRAP DETAILS Wed, Aug/04/21 10:59am

DESIGNED BY: Michael Knapp	CHECKED:
<i>Michael Knapp</i>	
DRAWN BY: Sam Sallie	CHECKED: Michael Knapp
<i>Sam Sallie</i>	<i>Michael Knapp</i>
QUANTITIES BY: Michael Knapp	CHECKED:
<i>Michael Knapp</i>	

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907-465-2975

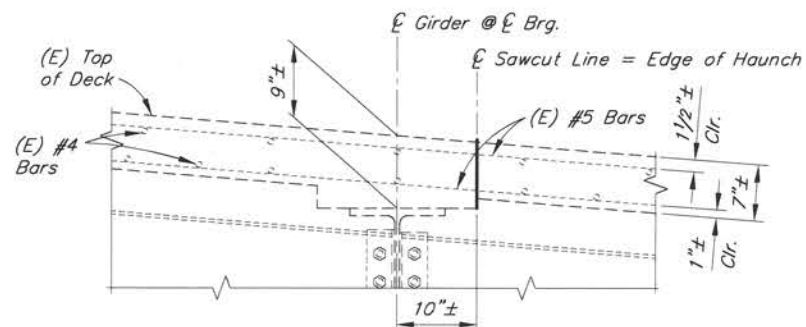
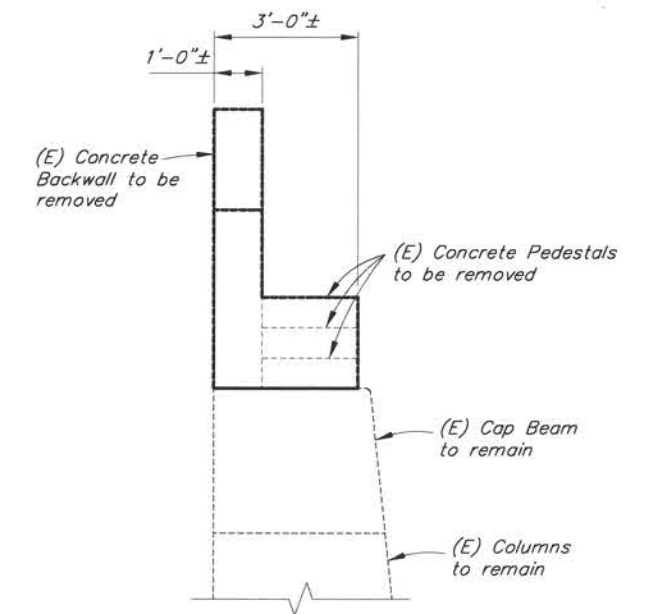
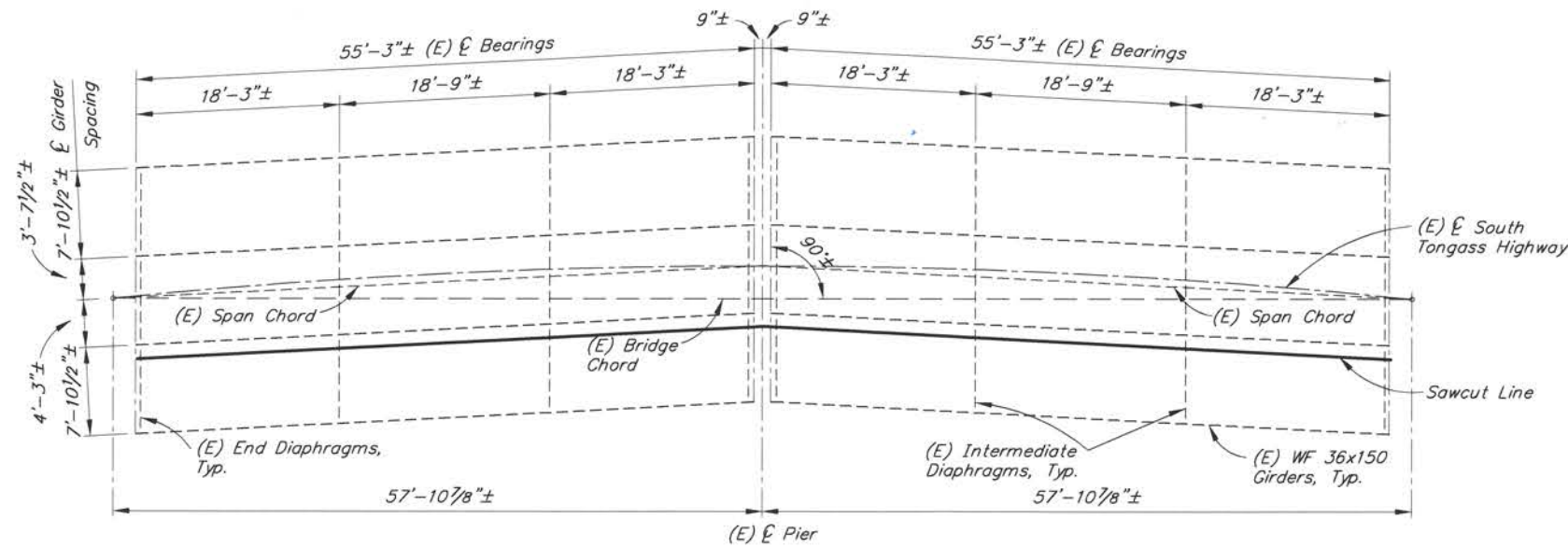


HERRING COVE BRIDGE
SOUTH TONGASS HIGHWAY
RIPRAP DETAILS



BRIDGE NO. 253
DWG. NO. 6

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	SFHWO0072/0902043	2021	N7	N26



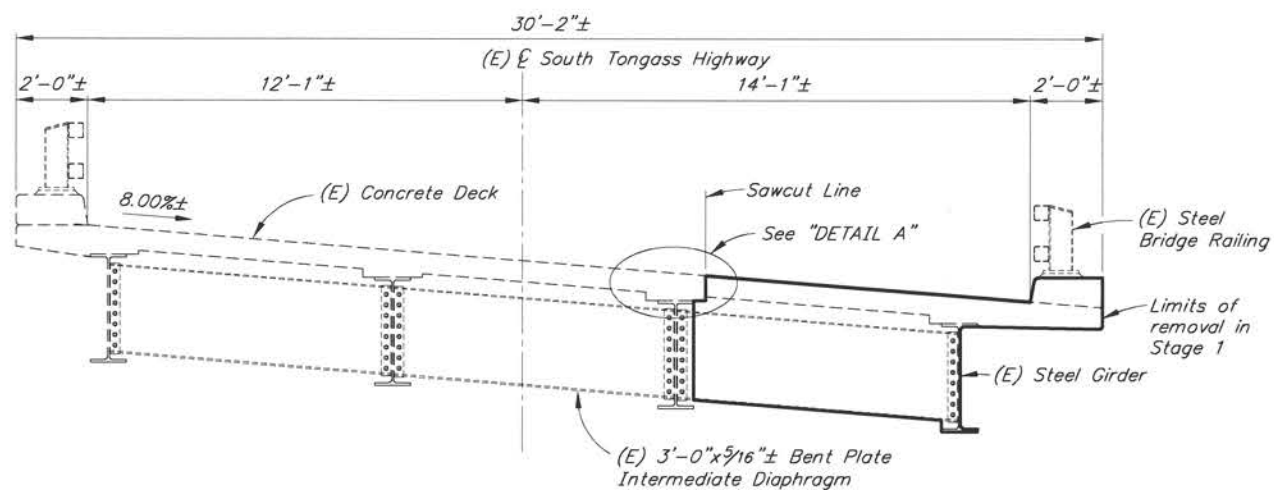
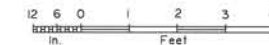
EXISTING FRAMING PLAN



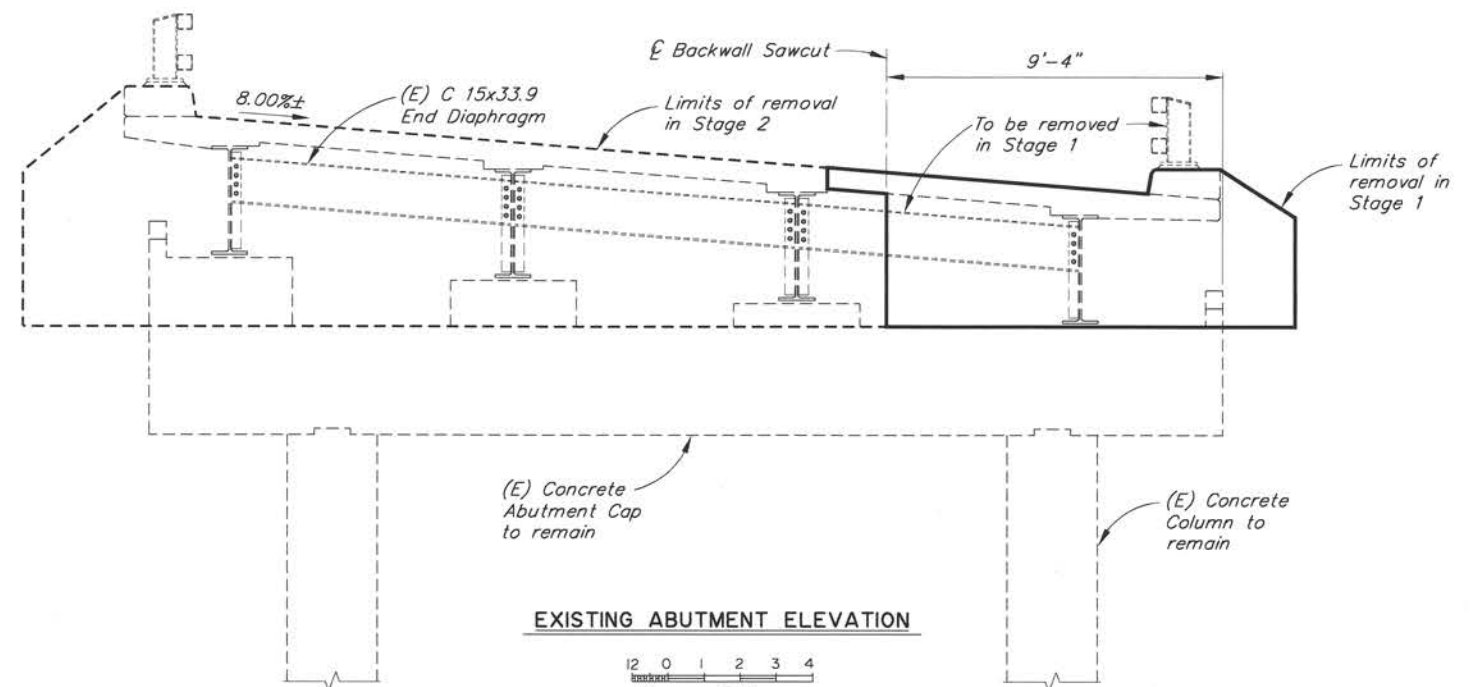
DETAIL A



EXISTING CAP BEAM SECTION



EXISTING TYPICAL SECTION

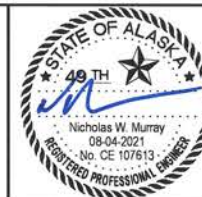


EXISTING ABUTMENT ELEVATION



DESIGNED BY: Nick Murray	CHECKED: Douglas Gelineau
DRAWN BY: Sam Sollie	CHECKED: Nick Murray
QUANTITIES BY: Nick Murray	CHECKED: Douglas Gelineau

STATE OF ALASKA
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3132 Channel Drive
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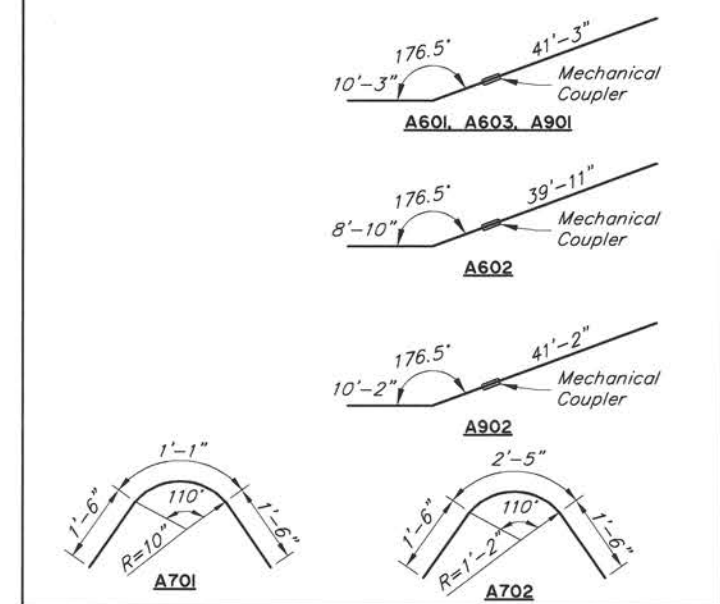
HERRING COVE BRIDGE
SOUTH TONGASS HIGHWAY
EXISTING BRIDGE DETAILS



BRIDGE NO. 253
DWG. NO. 7

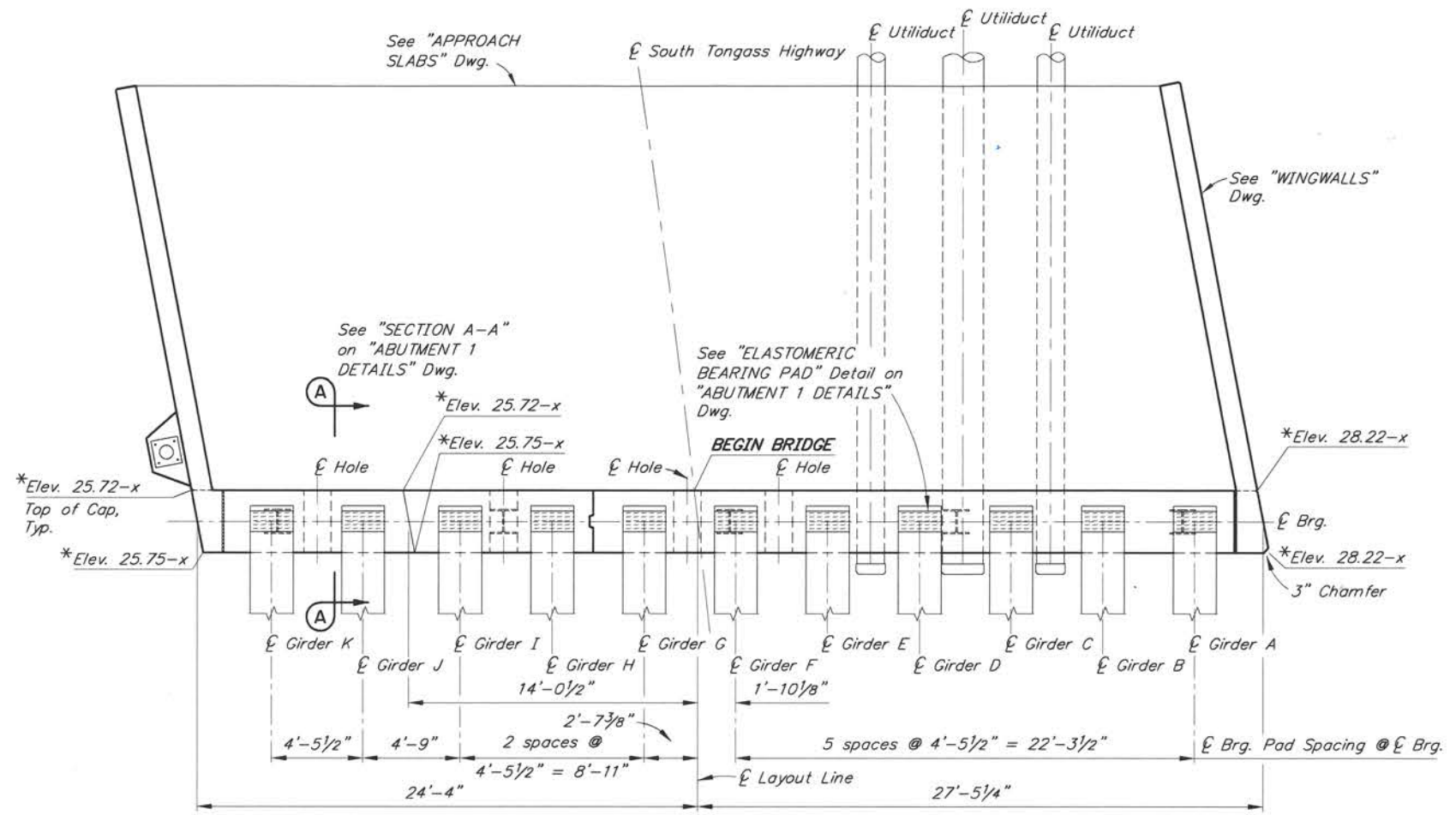
REINFORCING STEEL - ABUTMENT 1

MARK	NOTE	SIZE	NO.	LENGTH	TYPE	BENDING DIAGRAM
A501	E	5	160	12'-3"	STIRRUP	
A502	E	5	38	6'-0"	---	
A503	E	5	42	14'-1" min.	STIRRUP	
A601	C,M,S	6	10	51'-6"	---	
A602	C,E,M,S	6	7	48'-9"	---	
A603	C,E,M,S	6	5	51'-6"	---	
A604	E	6	10	2'-0"	---	
A701	E	7	24	4'-9"	BENT	
A702	E	7	4	5'-5"	BENT	
A901	C,M,S	9	5	51'-6"	---	
A902	C,H,M,S	9	5	51'-4"	HEADED	

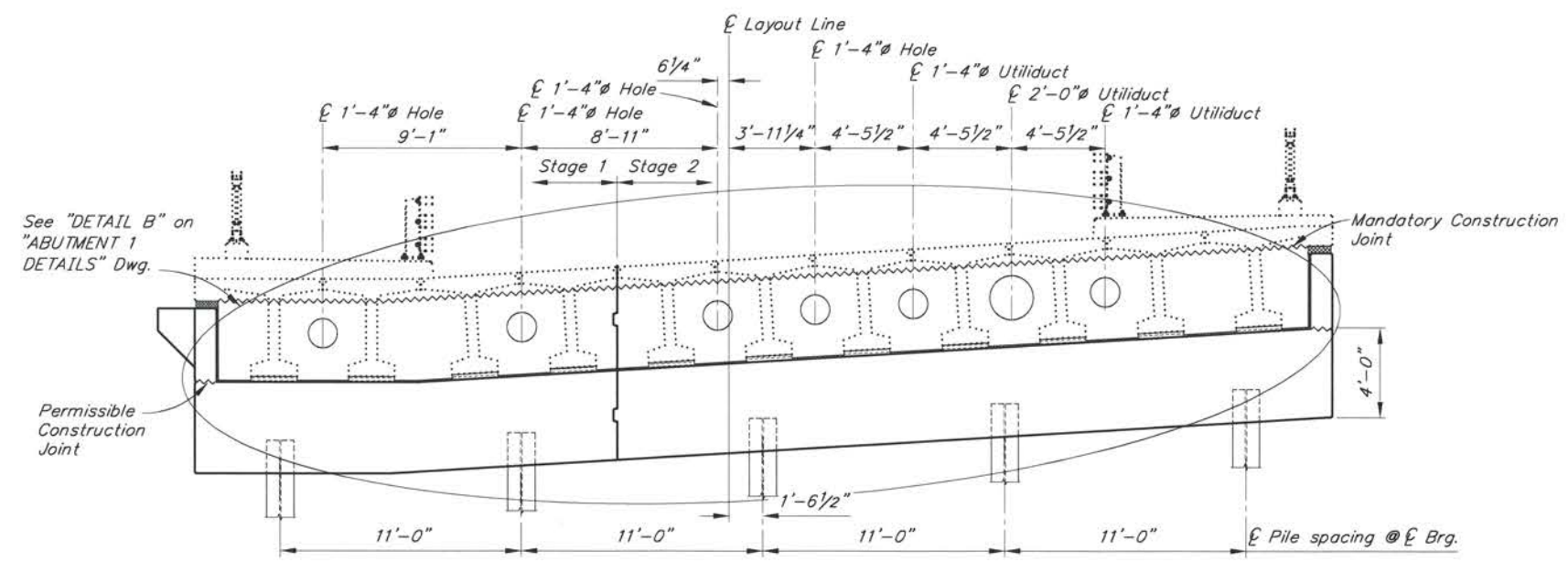


C - Mechanical coupler required. Stagger splices.
 E - Epoxy-Coated
 H - Headed Reinforcing Steel
 M - Match cross slope

NOTE:
 * x Represents the amount of girder top flange thickening at the ends of the girder in feet.



PLAN
 1/2" = 1'-0"
 0 4 8
 Feet



ELEVATION
 (Looking Back on Station)
 1/2" = 1'-0"
 0 4 8
 Feet

DESIGNED BY: Nick Murray	CHECKED: Douglas Gelineau
DRAWN BY: Sam Sollie	CHECKED: Nick Murray
QUANTITIES BY: Nick Murray	CHECKED: Douglas Gelineau

STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 AND PUBLIC FACILITIES
 BRIDGE SECTION
 3132 Channel Drive
 Juneau, Alaska 99801
 907-465-2975

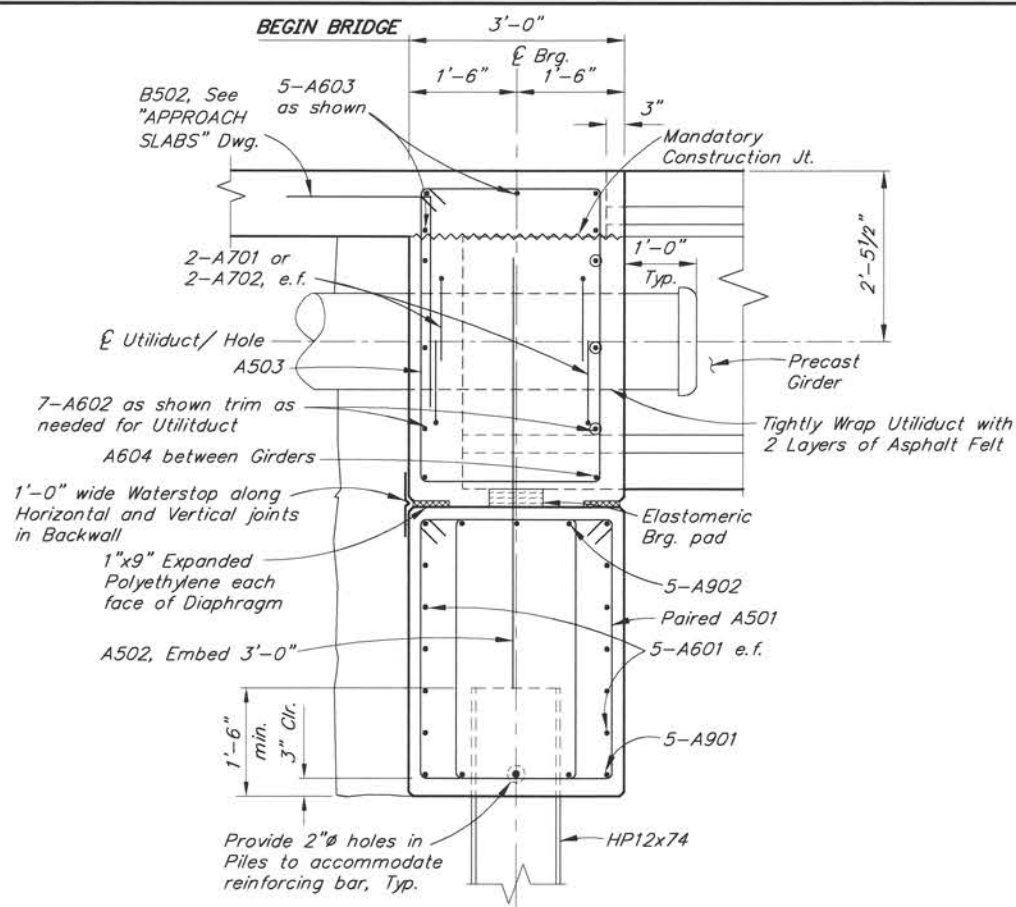


HERRING COVE BRIDGE
 SOUTH TONGASS HIGHWAY
ABUTMENT 1

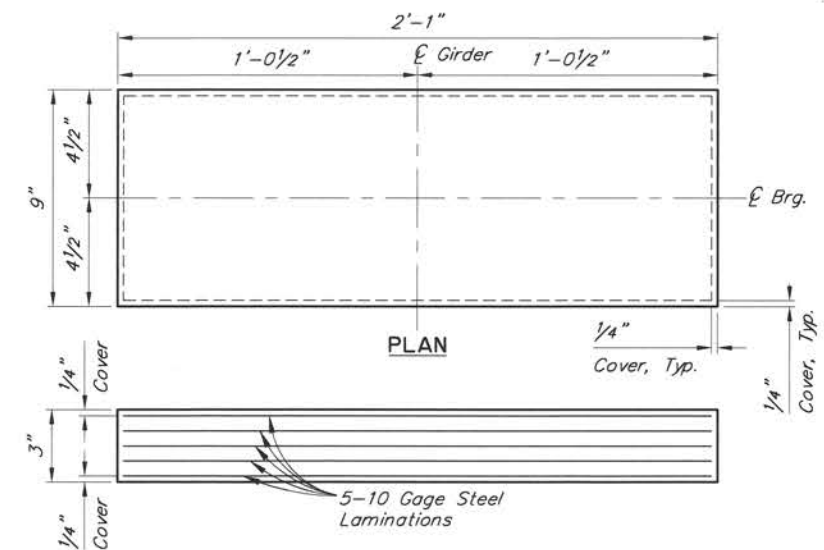

 BRIDGE NO. 253
 DWG. NO. 8

R:\cod\253\253-1 Sidewalks-ABUT 1 Wed, Aug/04/21 11:00am

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	SFWY00072/0902043	2021	N9	N26

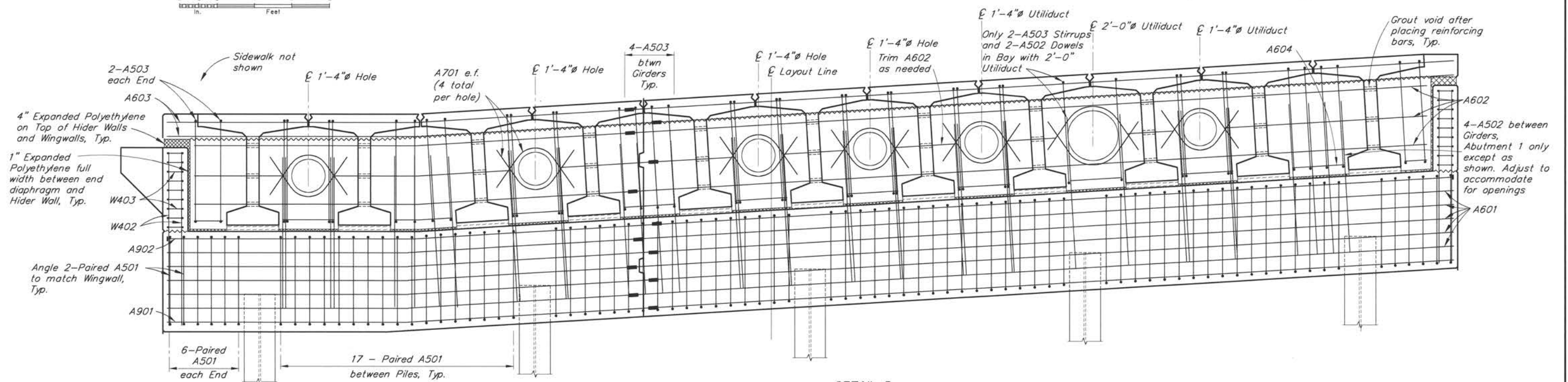


SECTION A-A



ELEVATION
ELASTOMERIC BEARING PAD

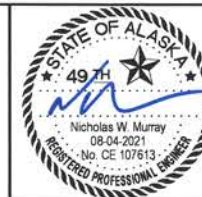
Grade 5
Shear Modulus = 0.115 ksi
Dead Load = 88 k
Live Load = 63 k



DETAIL B



STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
BRIDGE SECTION
3132 Channel Drive
Juneau, Alaska 99801
907-465-2975



HERRING COVE BRIDGE
SOUTH TONGASS HIGHWAY
ABUTMENT 1 DETAILS



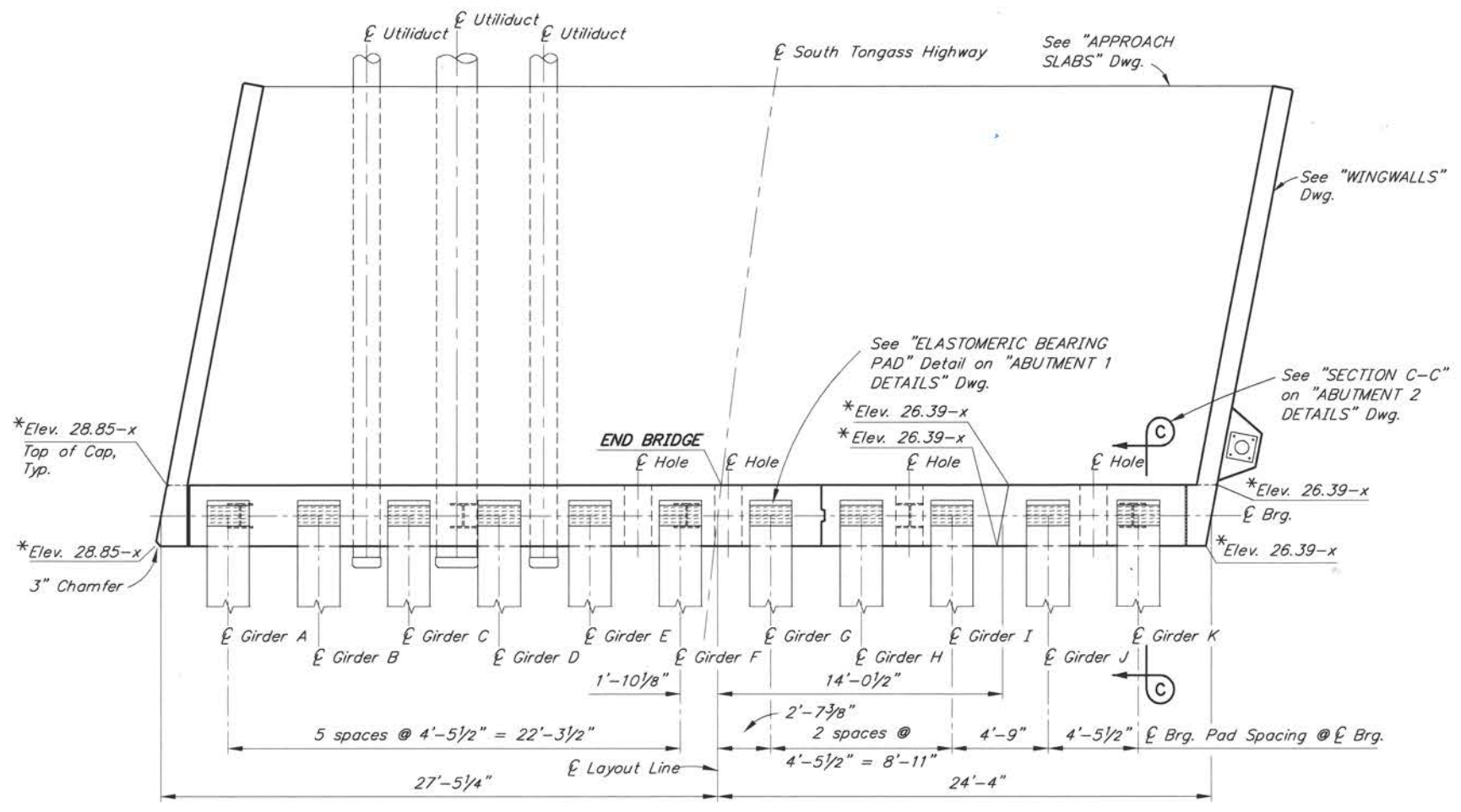
BRIDGE NO. 253
DWG. NO. 9

R:\cad\253\253-1 Sidewalks-ABUT 1DET Wed, Aug/04/21 11:01am

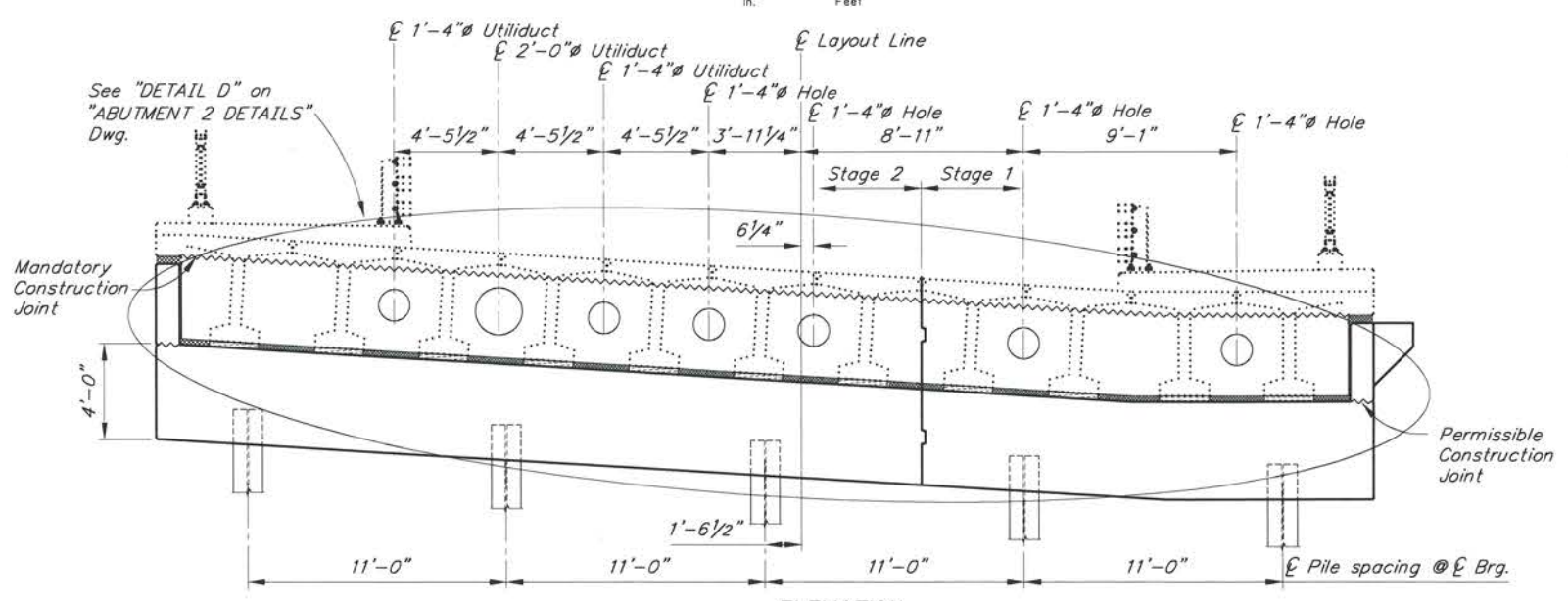
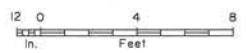
DESIGNED BY: Nick Murray	CHECKED: Douglas Gelineau
DRAWN BY: Sam Sollie	CHECKED: Nick Murray
QUANTITIES BY: Nick Murray	CHECKED: Douglas Gelineau

REINFORCING STEEL - ABUTMENT 2

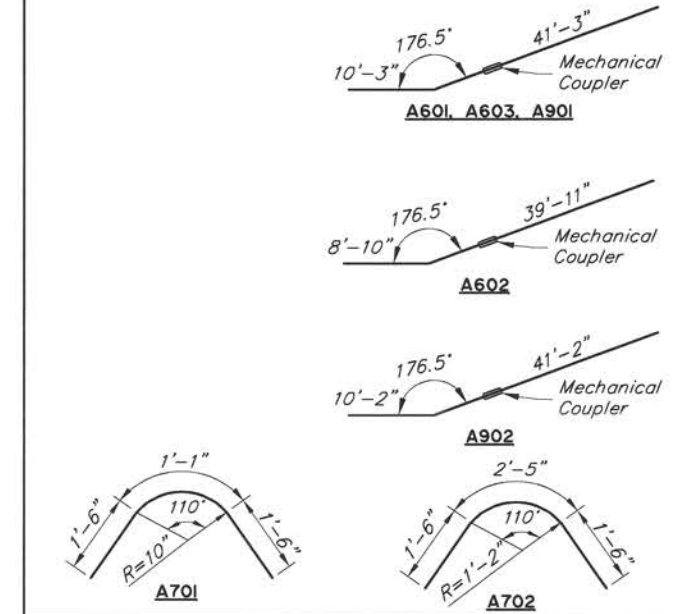
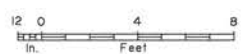
MARK	NOTE	SIZE	NO.	LENGTH	TYPE	BENDING DIAGRAM
A501		5	160	12'-3"	STIRRUP	
A503	E	5	42	14'-1" min.	STIRRUP	
A601	C,M,S	6	10	51'-6"	---	
A602	C,E,M,S	6	7	48'-9"	---	
A603	C,E,M,S	6	5	51'-6"	---	
A604	E	6	10	2'-0"	---	
A701	E	7	24	4'-9"	BENT	
A702	E	7	4	5'-5"	BENT	
A901	C,M,S	9	5	51'-6"	---	
A902	C,H,M,S	9	5	51'-4"	HEADED	



PLAN



ELEVATION



C - Mechanical coupler required. Stagger splices.
 E - Epoxy-Coated
 H - Headed Reinforcing Steel
 M - Match cross slope

NOTE:
 * x Represents the amount of girder top flange thickening at the ends of the girder in feet.

R:\road\253\253-1_Sidewalks-ABUT 2 Wed, Aug/04/21 11:01am

DESIGNED BY: Nick Murray	CHECKED: Douglas Gelineau
DRAWN BY: Sam Sollie	CHECKED: Nick Murray
QUANTITIES BY: Nick Murray	CHECKED: Douglas Gelineau

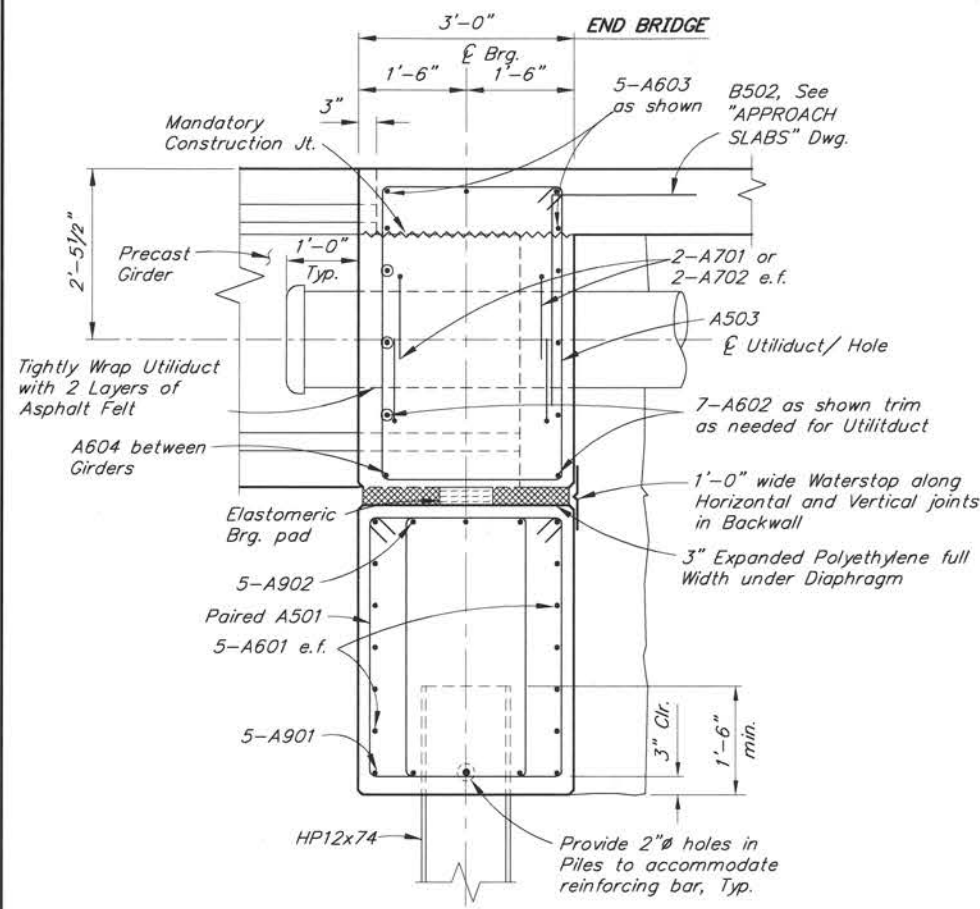
STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 AND PUBLIC FACILITIES
 BRIDGE SECTION
 3132 Channel Drive
 Juneau, Alaska 99801
 907-465-2975



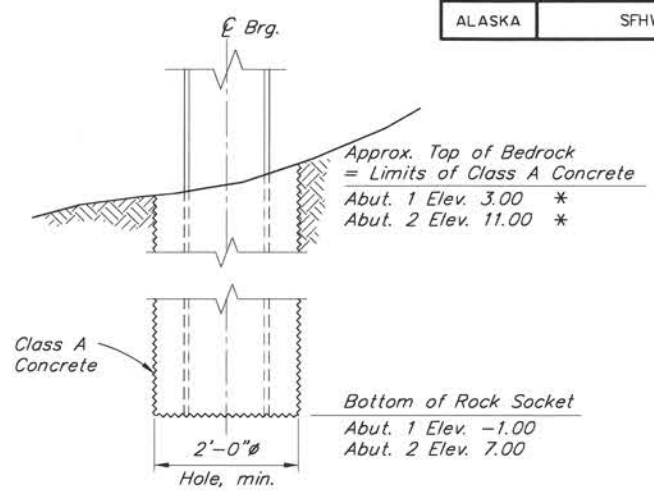
HERRING COVE BRIDGE
 SOUTH TONGASS HIGHWAY
 ABUTMENT 2


 BRIDGE NO. 253
 DWG. NO. 10

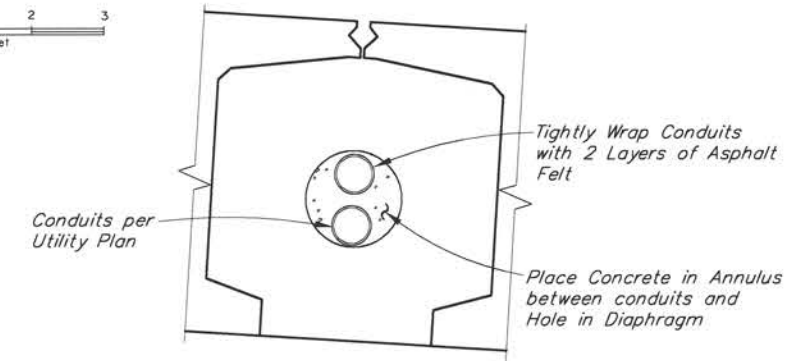
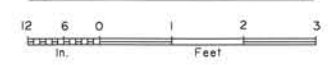
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	SFHwy00072/0902043	2021	N11	N26



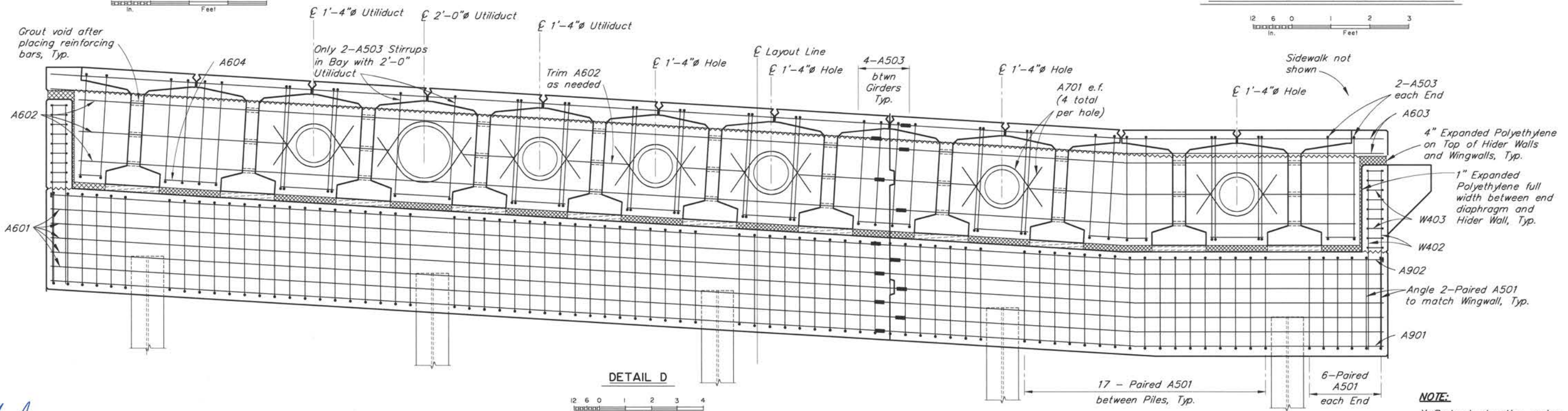
SECTION C-C



ROCK SOCKET DETAIL



UTILITY PENETRATION SEALING DETAIL



DETAIL D

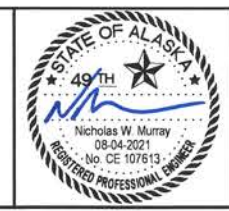


NOTE:
* Bedrock elevation varies.

R:\cod\253\253-1 Sidewalks-ABUT 2 DET Wed, Aug/04/21 11:01am

DESIGNED BY: Nick Murray	CHECKED: Douglas Gelineau
DRAWN BY: Sam Sollie	CHECKED: Nick Murray
QUANTITIES BY: Nick Murray	CHECKED: Douglas Gelineau

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
BRIDGE SECTION
3132 Channel Drive
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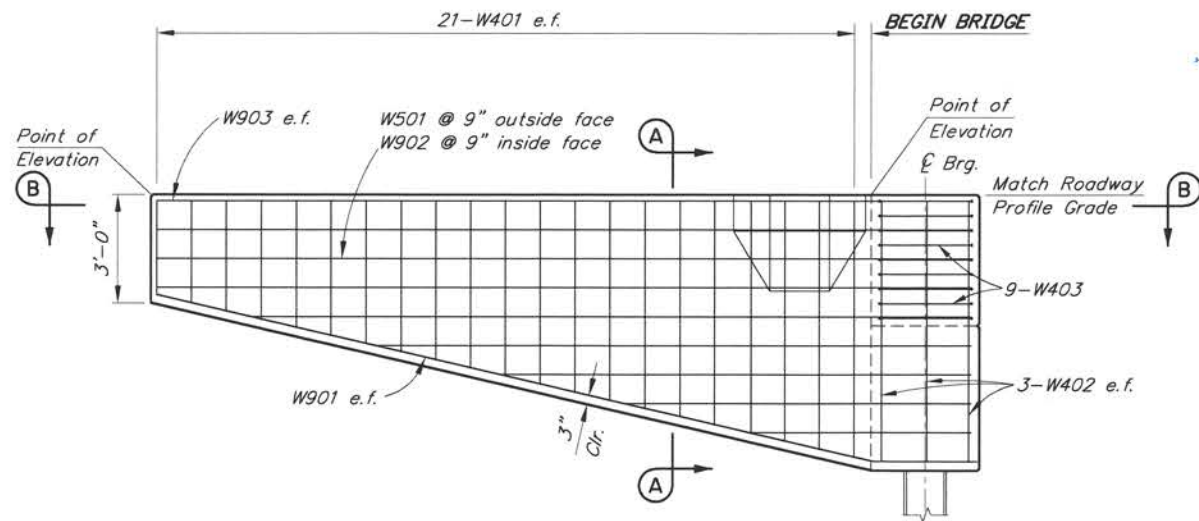
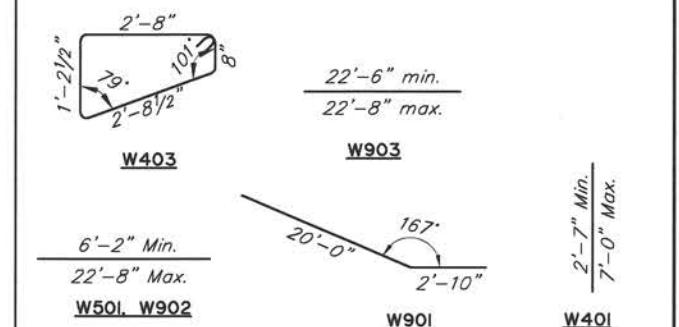
HERRING COVE BRIDGE
SOUTH TONGASS HIGHWAY
ABUTMENT 2 DETAILS

BRIDGE NO. 253
DWG. NO. II

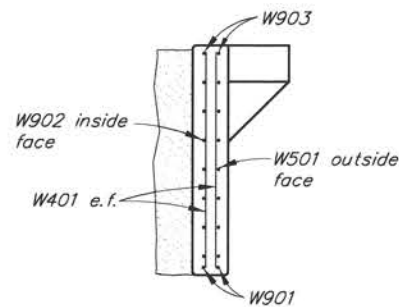
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	SFWY00072/0902043	2021	N12	N26

REINFORCING STEEL - ONE ABUTMENT

MARK	NOTE	SIZE	NO.	LENGTH	TYPE	BENDING DIAGRAM
W401		4	84	VARIES	---	
W402		4	6	7'-0"	---	
W403		4	18	8'-0"	STIRRUP	
W501		5	16	VARIES	---	
W901		9	4	22'-10"	BENT	
W902		9	16	VARIES	---	
W903		9	4	VARIES	BENT	



ELEVATION

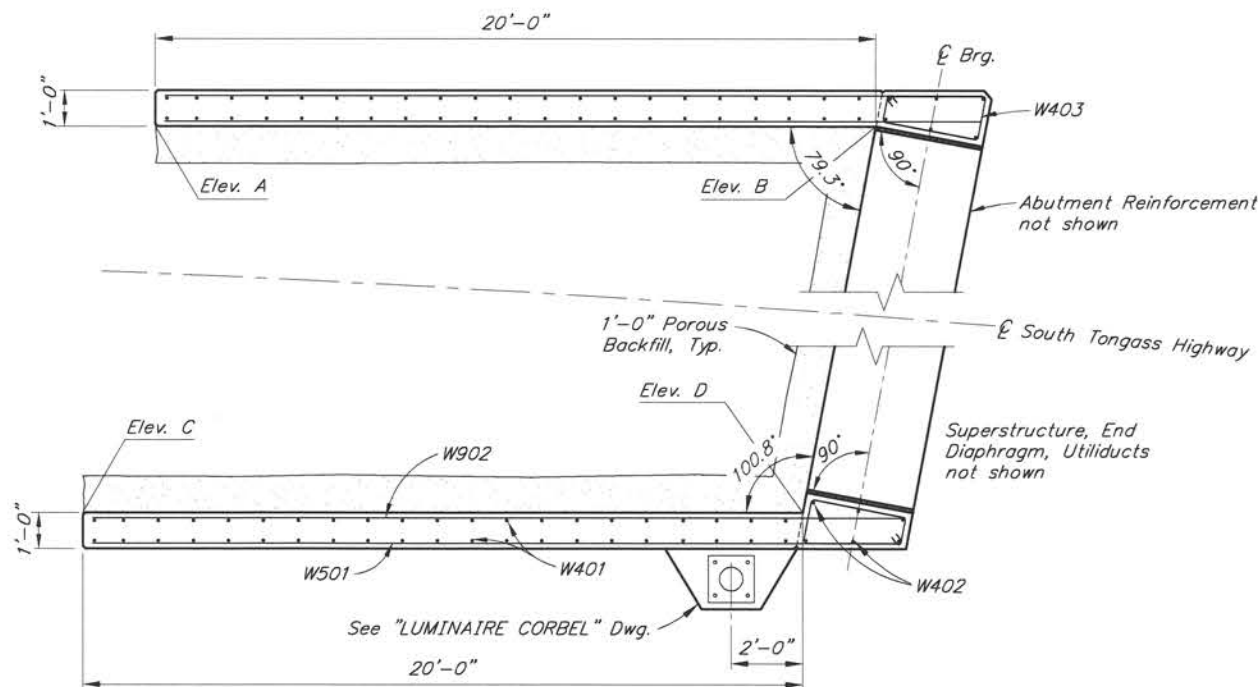


SECTION A-A



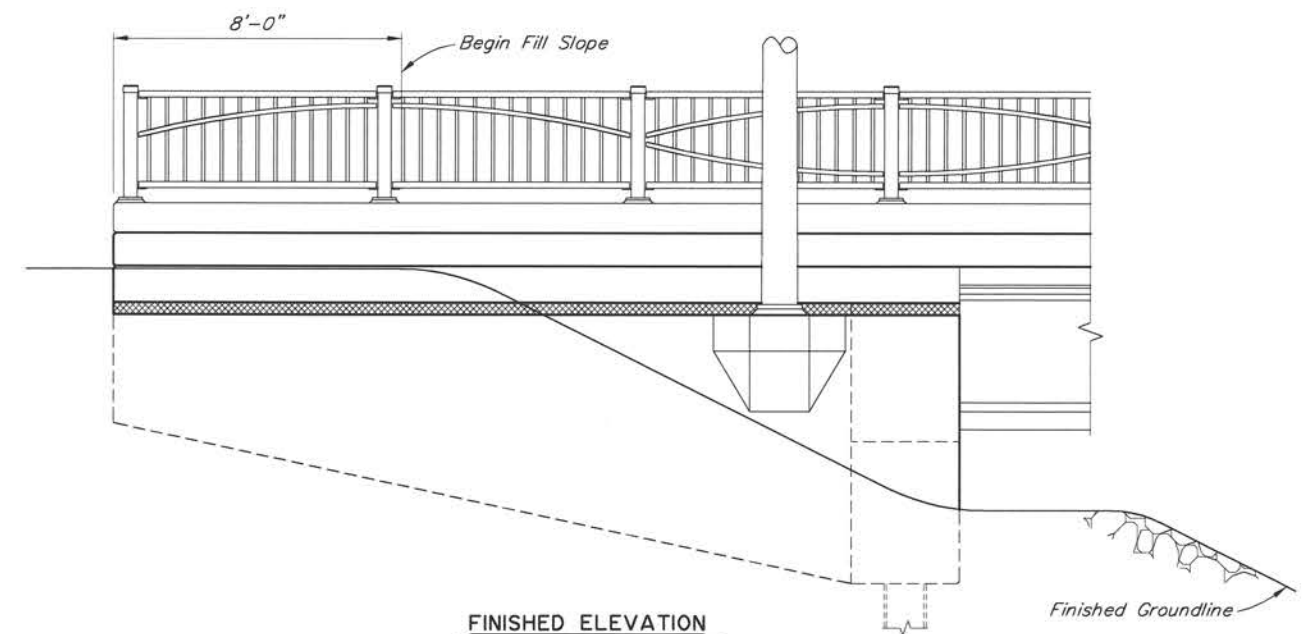
TOP OF WINGWALL ELEVATION TABLE (FT)

LOCATION	A UPSTREAM	B UPSTREAM	C DOWNSTREAM	D DOWNSTREAM
ABUTMENT 1	31.31	31.48	28.94	29.06
ABUTMENT 2	32.13	32.11	29.83	29.71



SECTION B-B

(Abut. 1 shown, Abut. 2 similar)



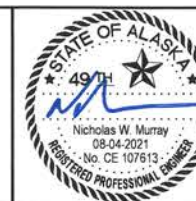
FINISHED ELEVATION



R:\cod\253\253-1 Sidewalks-WINGWALLS Wed, Aug/04/21 11:01am

DESIGNED BY: Nick Murray	CHECKED: Douglas Gelineau
DRAWN BY: Sam Sallie	CHECKED: Nick Murray
QUANTITIES BY: Nick Murray	CHECKED: Douglas Gelineau

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
BRIDGE SECTION
3132 Channel Drive
Juneau, Alaska 99801
907-465-2975



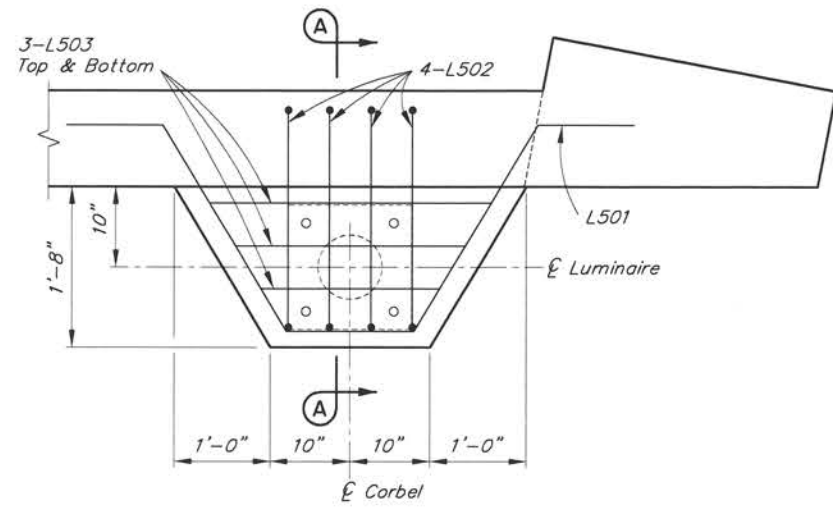
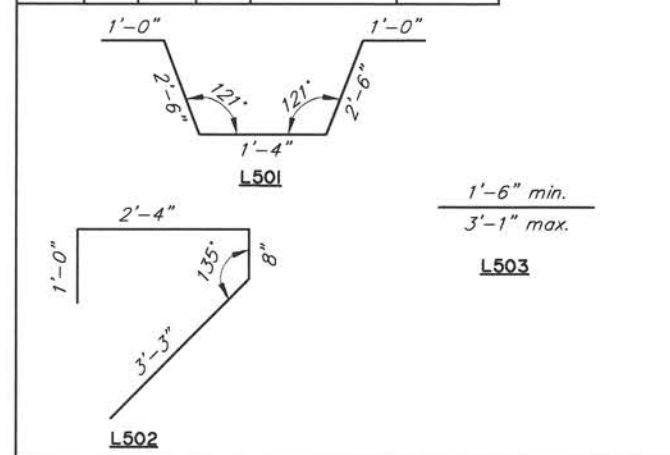
HERRING COVE BRIDGE
SOUTH TONGASS HIGHWAY
WINGWALLS


BRIDGE NO. 253
DWG. NO. 12

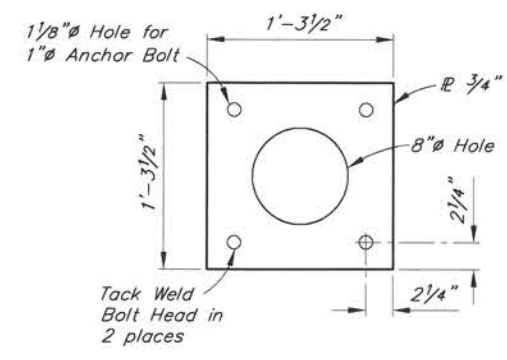
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	SFWY00072/0902043	2021	N13	N26

REINFORCING STEEL - ONE CORBEL

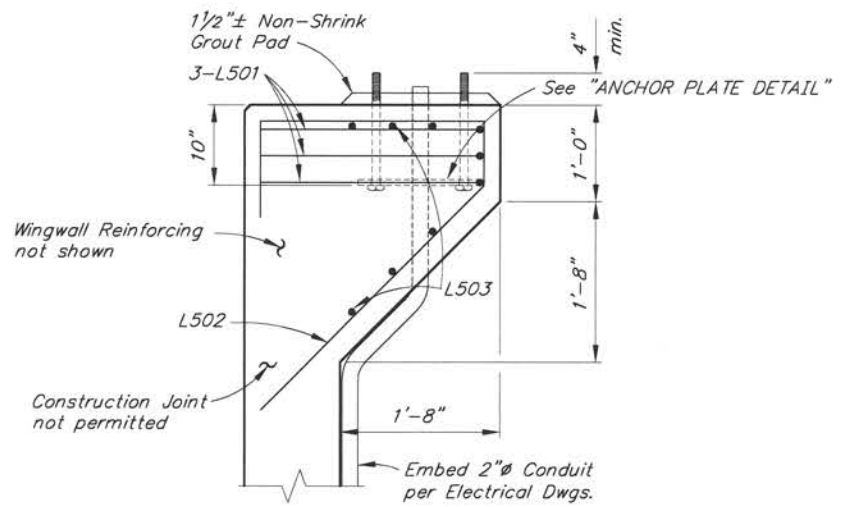
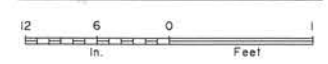
MARK	NOTE	SIZE	NO.	LENGTH	TYPE	BENDING DIAGRAM
L501		5	3	8'-4"	BENT	
L502		5	3	7'-3"	BENT	
L503		5	6	VARIES	---	



CORBEL PLAN



ANCHOR PLATE DETAIL



SECTION A-A

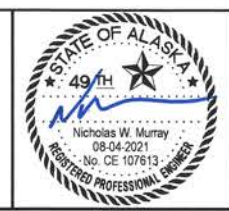


NOTES:
1. Verify anchor bolt layout compatibility with luminaire prior to placing corbel.

R:\cod\253\253-1 Sidewalks-CORBEL Wed, Aug/04/21 11:01am

DESIGNED BY: Nick Murray	CHECKED: Douglas Gelineau
DRAWN BY: Sam Sollie	CHECKED: Nick Murray
QUANTITIES BY: Nick Murray	CHECKED: Douglas Gelineau

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
BRIDGE SECTION
3132 Channel Drive
Juneau, Alaska 99801
907-465-2975

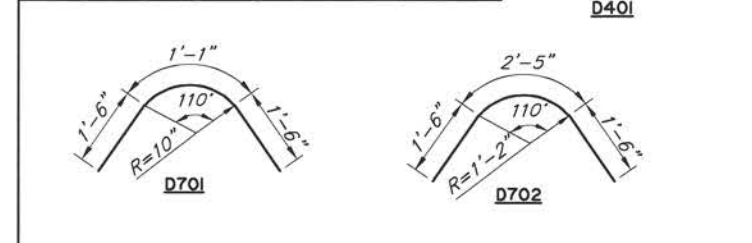


HERRING COVE BRIDGE
SOUTH TONGASS HIGHWAY
LUMINAIRE CORBEL

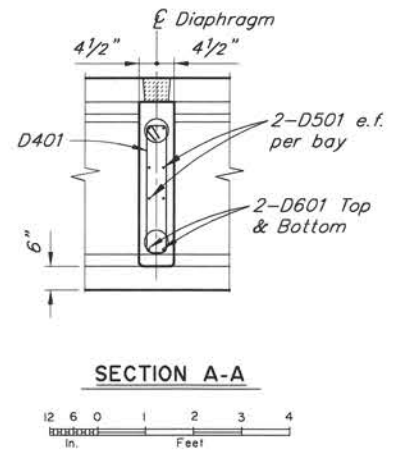
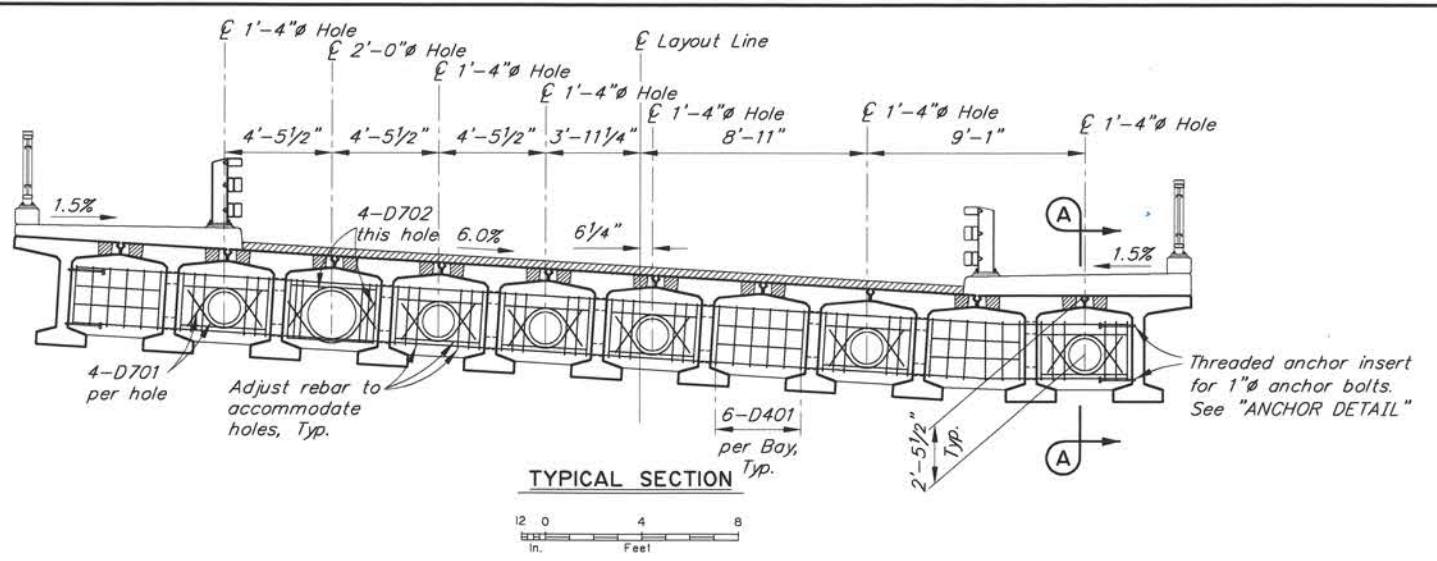

BRIDGE NO. 253
DWG. NO. 13

REINFORCING STEEL - ONE DIAPHRAGM

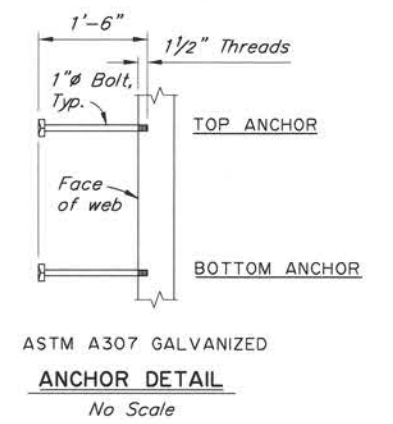
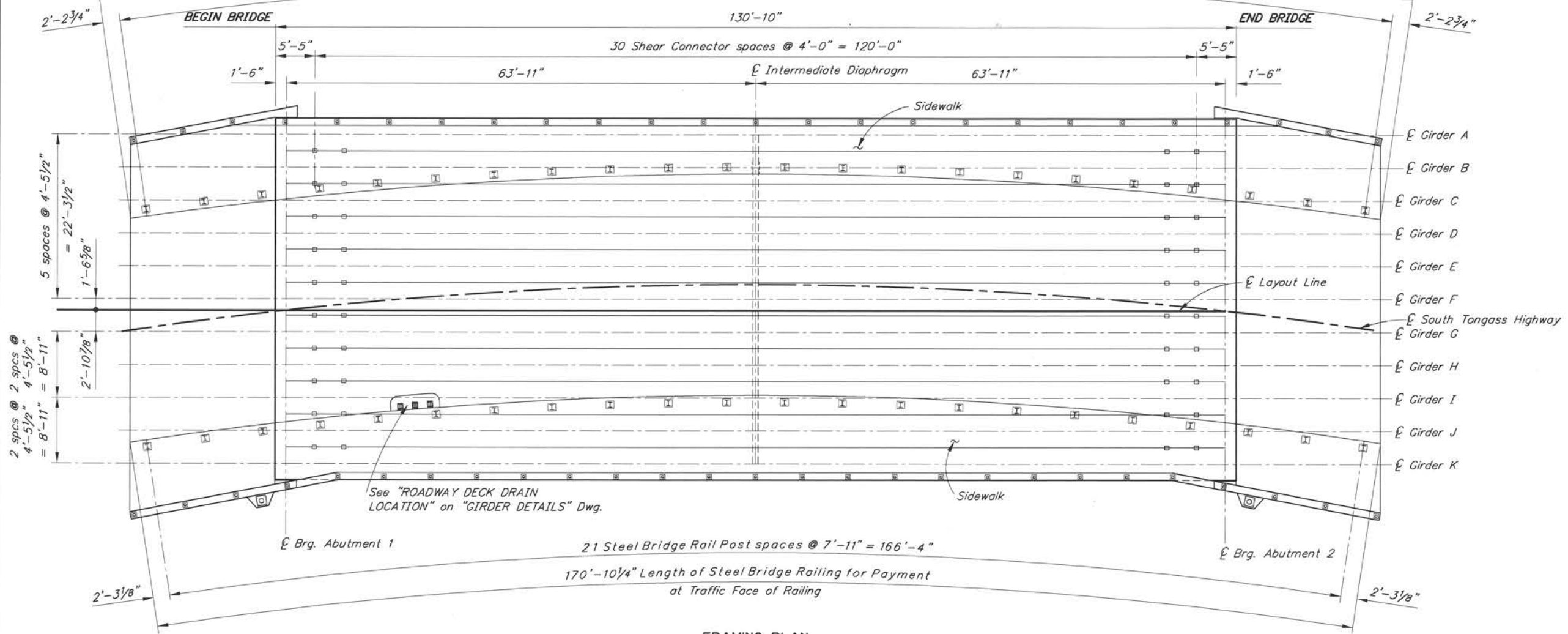
MARK	NOTE	SIZE	NO.	LENGTH	TYPE	BENDING DIAGRAM
D401	E	4	60	6'-9"	STIRRUP	
D501	E	5	40	3'-6"	---	
D601	C,E,S	6	4	44'-7"	---	
D701	E	7	24	4'-9"	BENT	
D702	E	7	4	5'-5"	BENT	



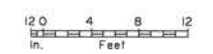
C - Mechanical couplers required. Stagger splices.
 E - Epoxy-Coated
 S - Splice permitted. Length does not include splices



170'-9 1/2" Length of Steel Bridge Railing for Payment
 21 Steel Bridge Rail Post spaces @ 7'-11" = 166'-4"
 at Traffic Face of Railing

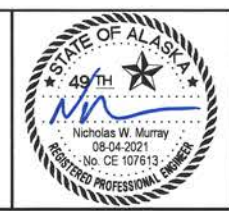


FRAMING PLAN



DESIGNED BY: Nick Murray	CHECKED: Douglas Gelineau
DRAWN BY: Sam Sollie	CHECKED: Nick Murray
QUANTITIES BY: Nick Murray	CHECKED: Douglas Gelineau

STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 AND PUBLIC FACILITIES
 BRIDGE SECTION
 3132 Channel Drive
 Juneau, Alaska 99801
 907-465-2975



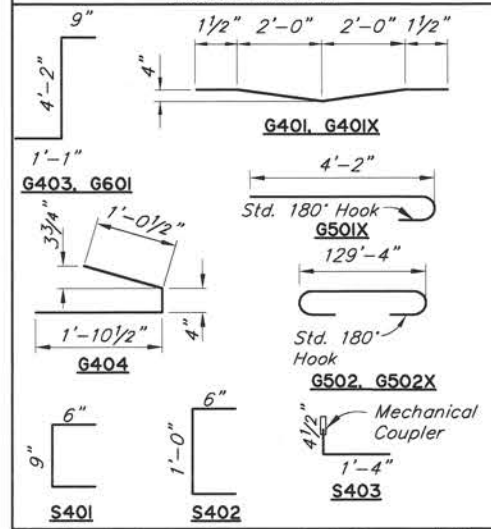
HERRING COVE BRIDGE
 SOUTH TONGASS HIGHWAY
FRAMING PLAN AND TYPICAL SECTION


 BRIDGE NO. 253
 DWG. NO. 14

REINFORCING STEEL-ONE GIRDER

MARK	NOTE	SIZE	NO.	LENGTH	TYPE
G401	E	4	188	4'-2"	BENT
G401X	E	4	215	4'-2"	BENT
G402	E,S	4	8	125'-2"	---
G402X	E,S	4	8	125'-2"	---
G403	E	4	336	6'-0"	BENT
G404	E	4	60	3'-3"	BENT
G501	E	5	188	4'-1"	---
G501X	E	5	215	4'-9"	BENT
G502	E,S	5	8	130'-6"	BENT
G502X	E,S	5	8	130'-6"	BENT
G601	E	6	16	6'-0"	BENT
S401	E,X	4	85	1'-9"	BENT
S402	E,X	4	85	2'-0"	BENT
S403	C,E,X	4	170	1'-9"	BENT

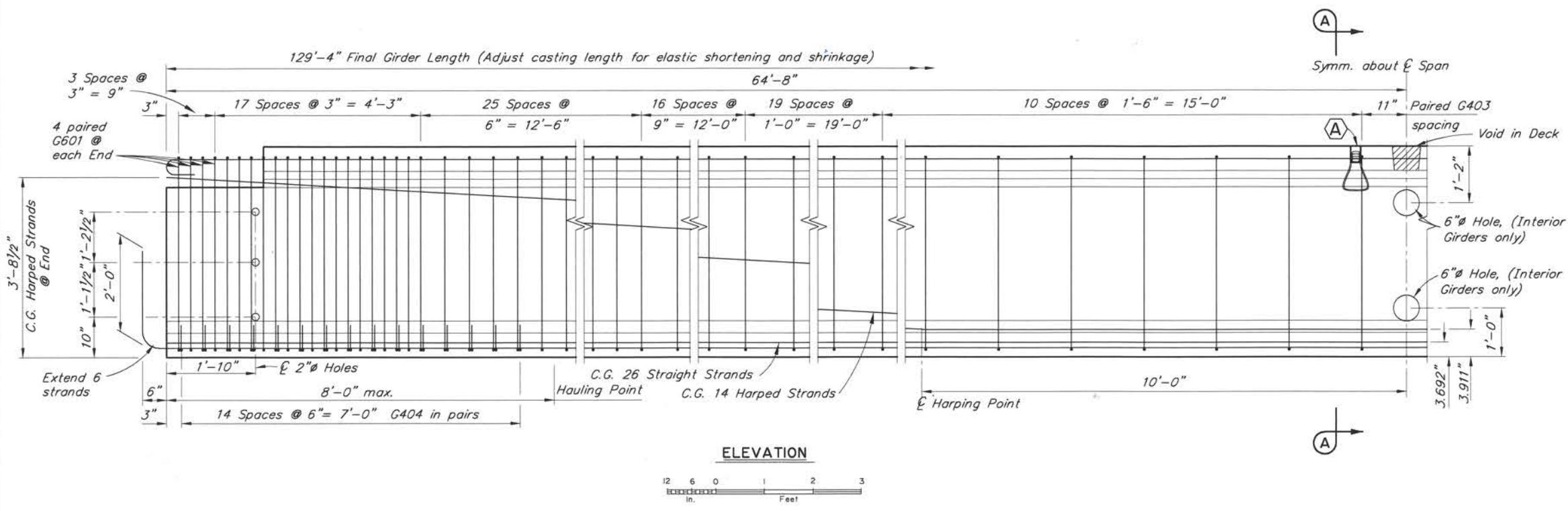
BENDING DIAGRAM



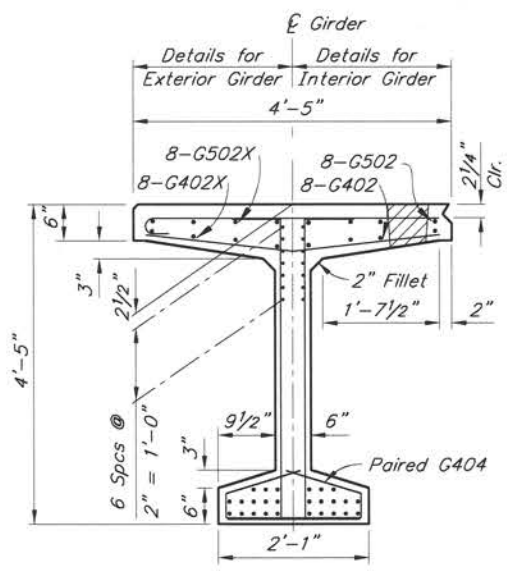
C - Mechanical coupler required. Recess 1/2" below surface
 E - Epoxy-Coated
 S - Length does not include splices
 X - Exterior Girders only

GIRDER NOTES:

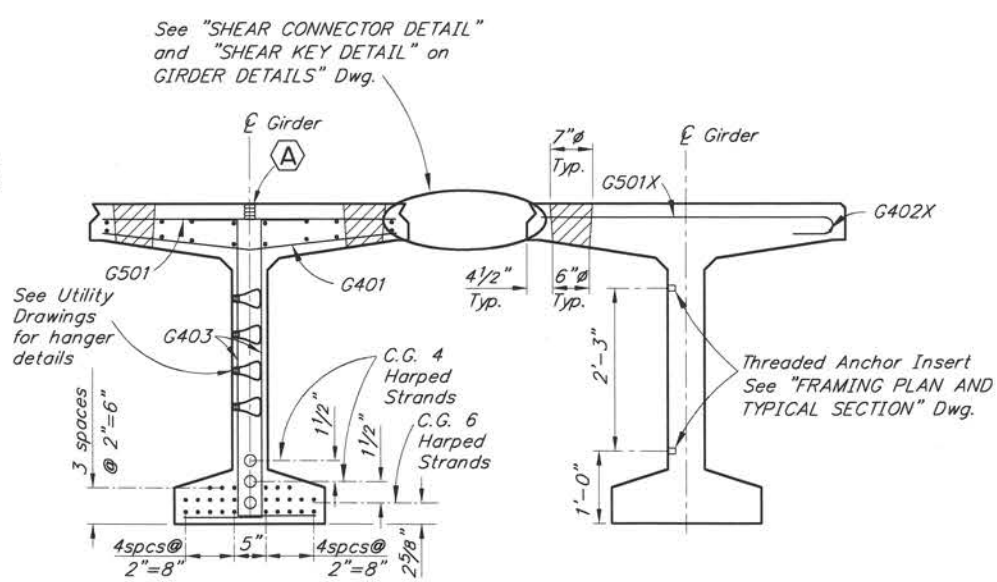
- Class P Concrete: at Stress Transfer..... f'_{ci} = 6,500 psi
at 28 Days..... f'_c = 7,500 psi
- 0.6" low-relaxation prestressing strands with an ultimate strength of 270 ksi and a cross sectional area of 0.217 in².
- Steel stresses: Pretensioning - Jacking Stress 189 ksi
After initial losses 169 ksi
After all losses 139 ksi
- One inch clear cover on reinforcing steel unless otherwise noted.
- See "FRAMING PLAN AND TYPICAL SECTION" Dwg. for Shear Connector spacing.
- Thicken deck to compensate for camber. Calculate camber based on uniform weight of 900 lb/ft and applied uniform load of 225 lb/ft.
- Galvanize structural steel embedded in girders except for shear connectors.
- 1"x1'-0" Coil Anchor Insert for vertical adjustment of girders. Recess 2". Prevent concrete from filling hole.
- Omit Shear Key, Shear Key Connector and Deck Void in exterior face of exterior girders.
- Cast ends of girders plumb with respect to roadway grade. Install web holes and web anchor inserts parallel to bearing.
- Finish top flange with rough broom finish. Roughen the surface under the left sidewalk.



ELEVATION



END VIEW



SECTION A-A

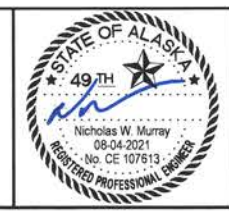
EXTERIOR GIRDER NEAR MID SPAN

(Unrelated Reinforcement not shown)

R:\cod\253\253-1 Sidewalks-GIRDERS Wed, Aug/04/21 11:19am

DESIGNED BY: Nick Murray	CHECKED: Douglas Gelineau
DRAWN BY: Sam Sallie	CHECKED: Nick Murray
QUANTITIES BY: Nick Murray	CHECKED: Douglas Gelineau

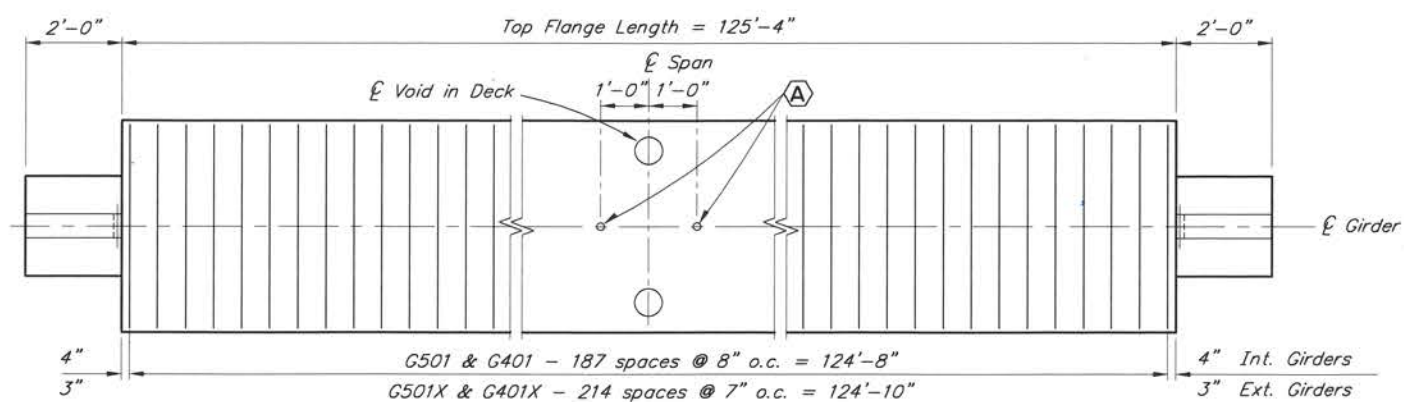
STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 AND PUBLIC FACILITIES
 BRIDGE SECTION
 3132 Channel Drive
 Juneau, Alaska 99801
 907-465-2975



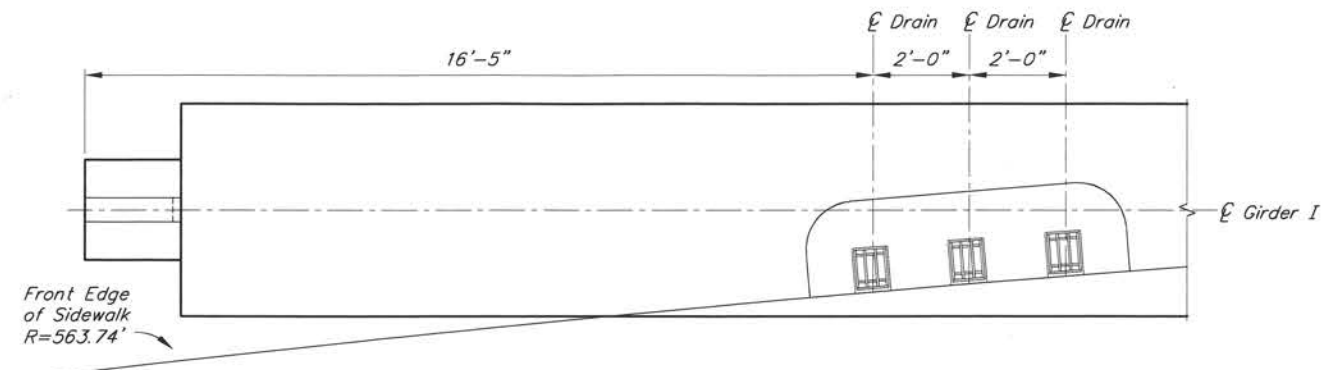
HERRING COVE BRIDGE
 SOUTH TONGASS HIGHWAY
GIRDERS


 BRIDGE NO. 253
 DWG. NO. 15

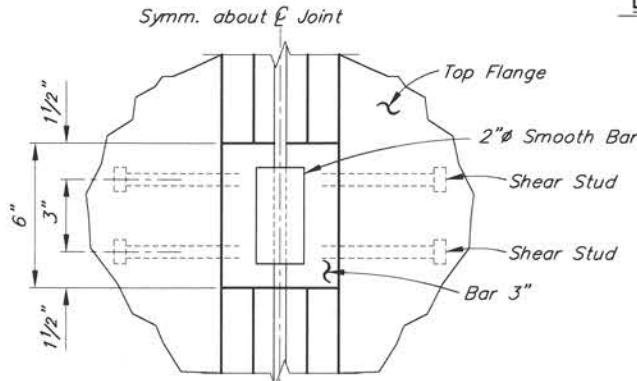
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	SFWY00072/0902043	2021	N16	N26



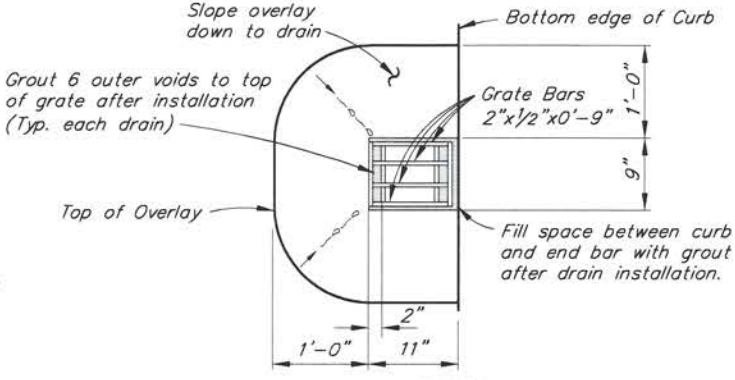
DECK PLAN
No Scale



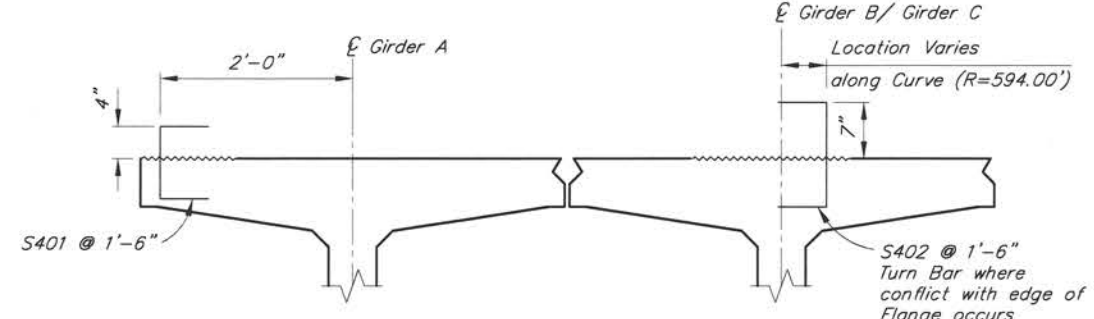
DECK DRAIN LOCATIONS



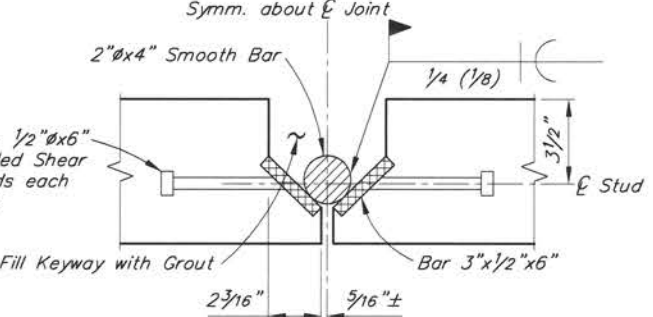
SHEAR CONNECTOR PLAN VIEW



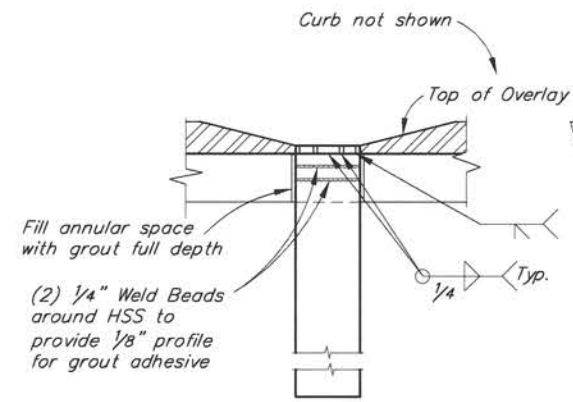
PLAN



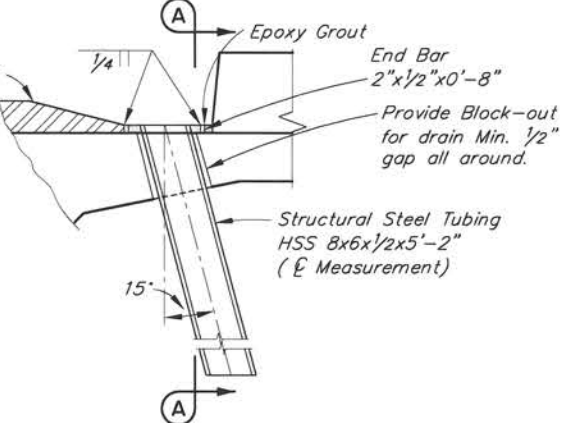
LEFT SIDEWALK REINFORCING



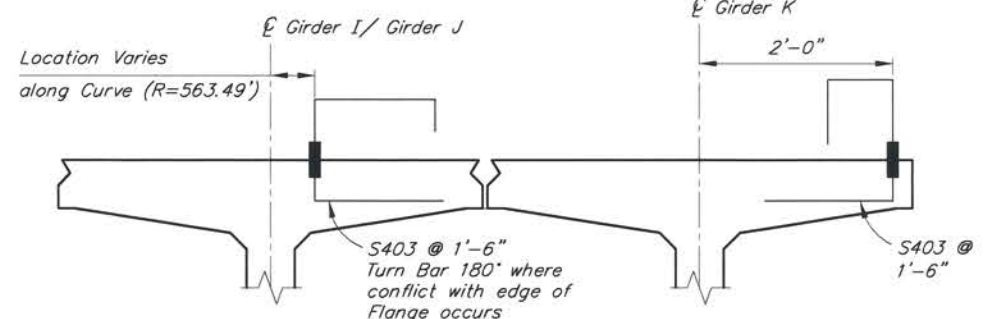
SHEAR CONNECTOR DETAIL



SECTION A-A



DRAIN ELEVATION



RIGHT SIDEWALK REINFORCING



STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
BRIDGE SECTION
3132 Channel Drive
Juneau, Alaska 99801
907-465-2975



HERRING COVE BRIDGE
SOUTH TONGASS HIGHWAY
GIRDER DETAILS

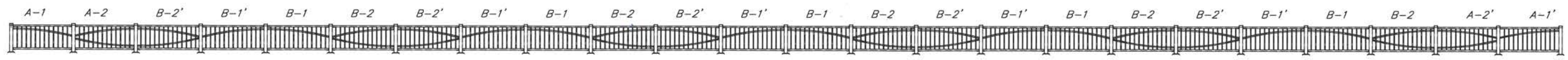


BRIDGE NO. 253
DWG. NO. 16

R:\cod\253\253-1 Sidewalks-GIRDER DETAILS Wed, Aug/04/21 11:19am

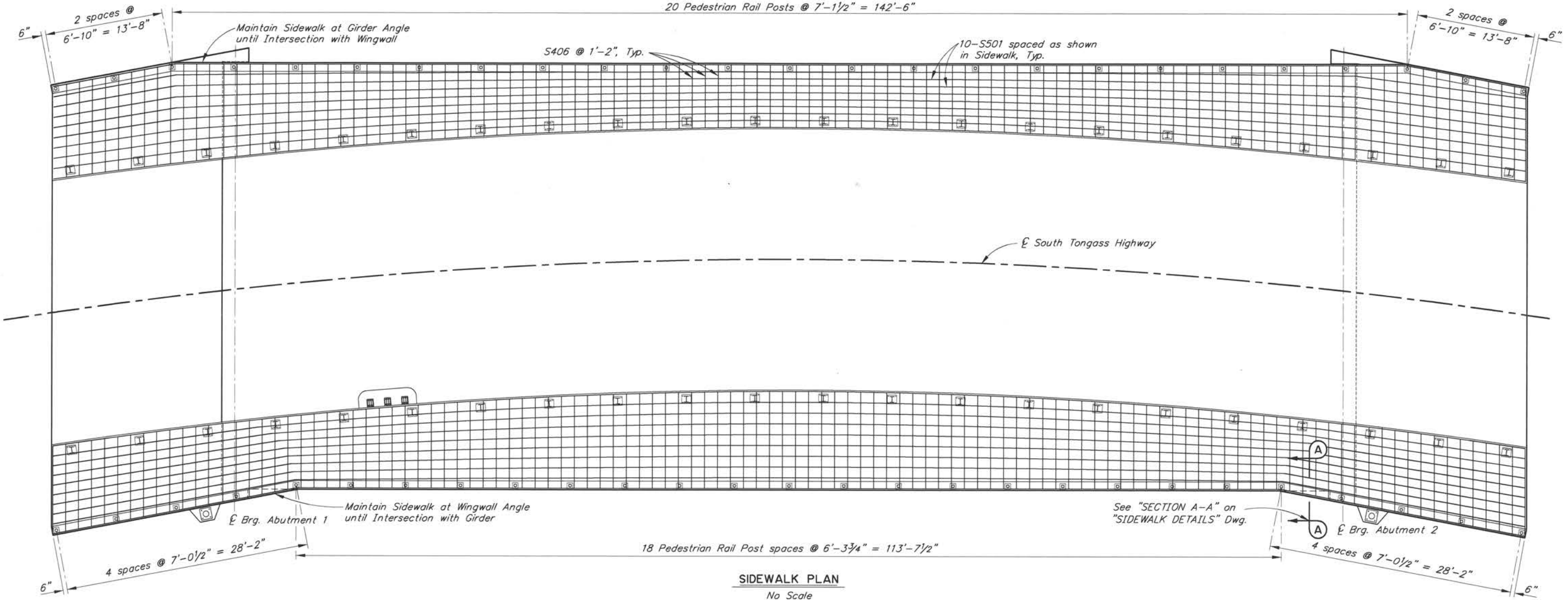
DESIGNED BY: Nick Murray	CHECKED: Douglas Gelineau
DRAWN BY: Sam Sollie	CHECKED: Nick Murray
QUANTITIES BY: Nick Murray	CHECKED: Douglas Gelineau

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	SFHWO0072/0902043	2021	N17	N26

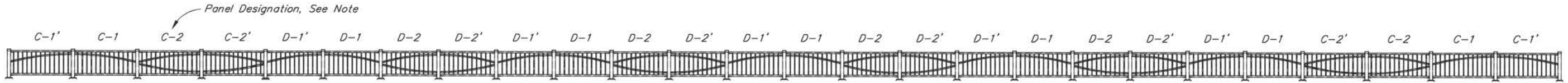


PROJECTED PEDESTRIAN RAILING - LEFT SIDE
No Scale

20 Pedestrian Rail Posts @ 7'-1 1/2" = 142'-6"



SIDEWALK PLAN
No Scale



PROJECTED PEDESTRIAN RAILING - RIGHT SIDE
No Scale

NOTE:
Letter indicates panel length.
Number indicates horizontal tube type.
Apostrophe indicates tube curve direction.

R:\cadd\253\253-1 Sidewalks-SIDEWALK Wed, Aug/04/21 11:19am

DESIGNED BY: <i>Nick Murray</i>	CHECKED: <i>Douglas Gelineau</i>
DRAWN BY: <i>Sam Sallie</i>	CHECKED: <i>Nick Murray</i>
QUANTITIES BY: <i>Nick Murray</i>	CHECKED: <i>Douglas Gelineau</i>

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
BRIDGE SECTION
3132 Channel Drive
Juneau, Alaska 99801
907-465-2975



HERRING COVE BRIDGE
SOUTH TONGRASS HIGHWAY
**SIDEWALK PLAN AND
PEDESTRIAN RAIL PLAN**

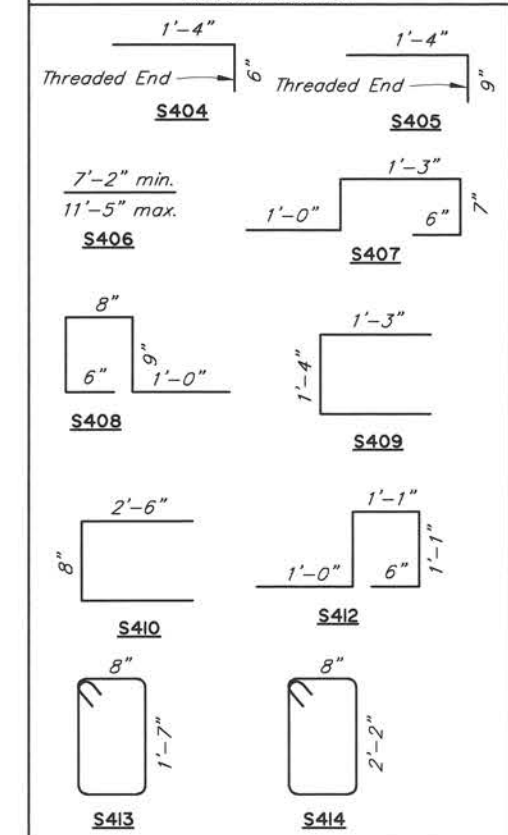


BRIDGE NO. 253
DWG. NO. 17

REINFORCING STEEL

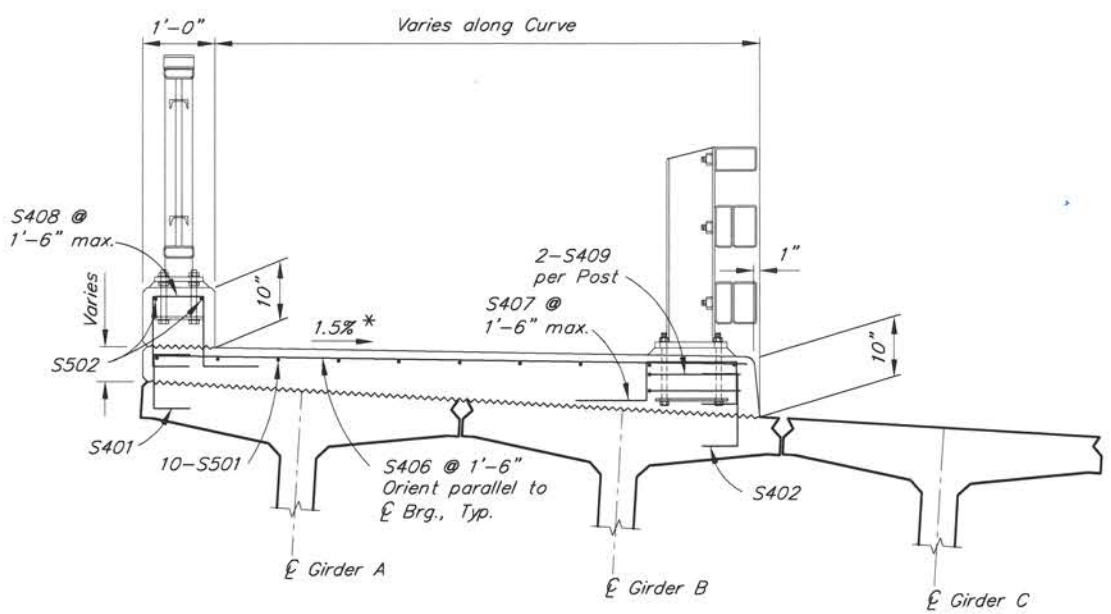
MARK	NOTE	SIZE	NO.	LENGTH	TYPE
S404	E, T	4	85	1'-10"	BENT
S405	E, T	4	85	2'-1"	BENT
S406	E	4	228	VARIES	BENT
S407	E	4	130	3'-11"	BENT
S408	E	4	130	3'-8"	BENT
S409	E	4	36	3'-10"	---
S410	E, R	4	5	5'-8"	BENT
S411	E, R	4	2	10'-0"	---
S412	E	4	56	4'-9"	BENT
S413	E	4	28	5'-3"	STIRRUP
S414	E	4	28	6'-5"	STIRRUP
S501	E, T	5	20	170'-9"	---
S502	E, T	5	4	170'-9"	---

BENDING DIAGRAM

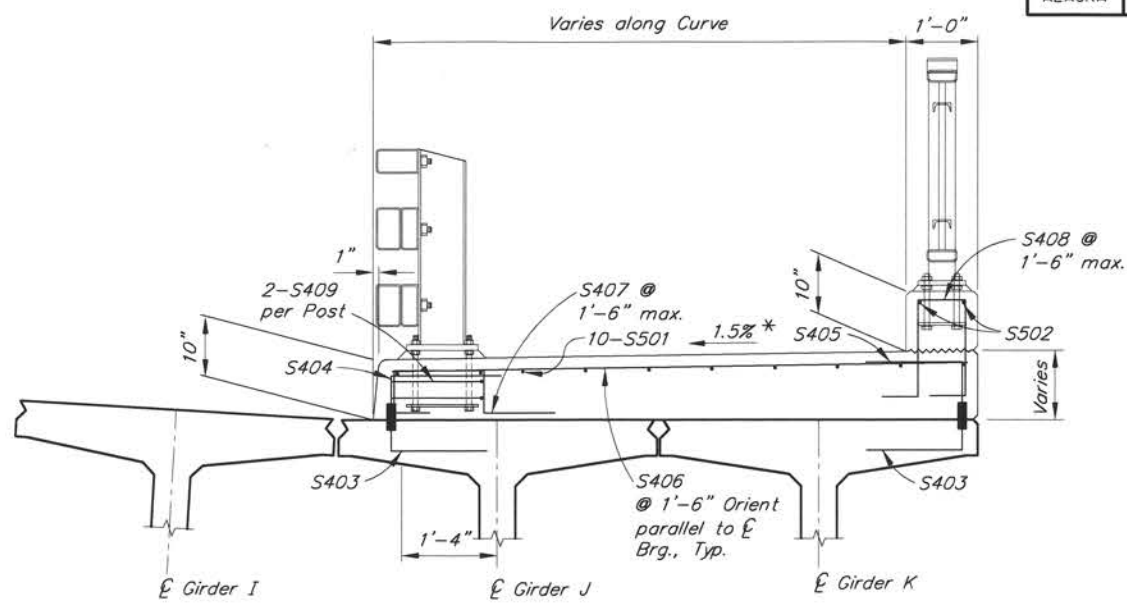


E - Epoxy-Coated
R - Right side only
S - Length does not include splices
T - Threaded

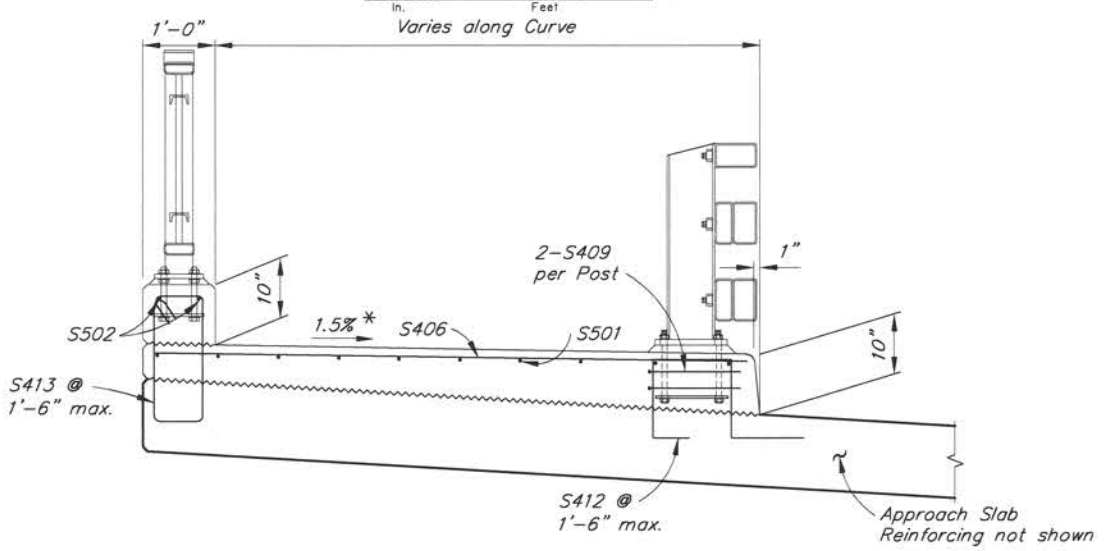
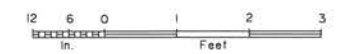
* Cross slope is perpendicular to E South Tongass Highway



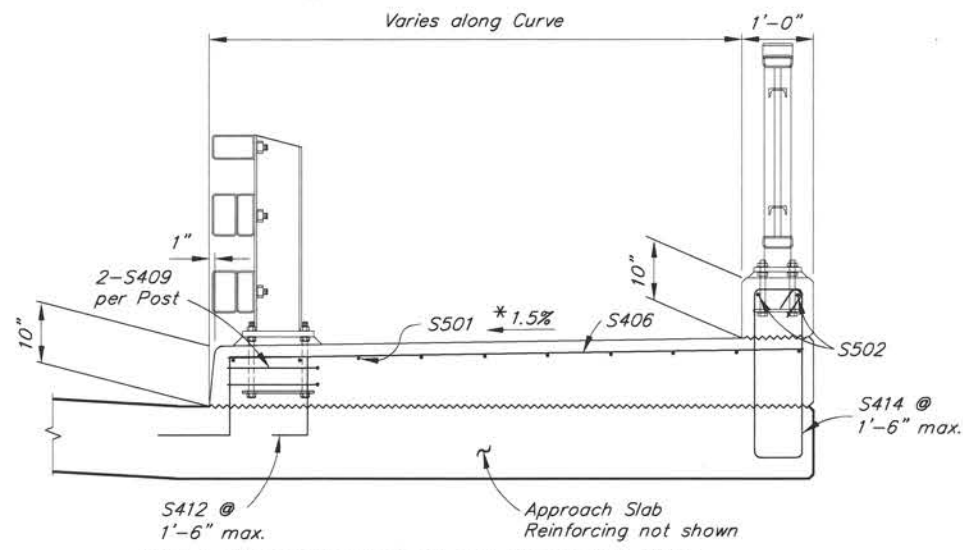
LEFT SIDEWALK SECTION ON BRIDGE



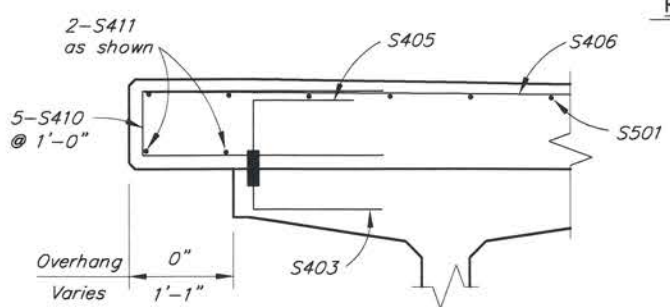
RIGHT SIDEWALK SECTION ON BRIDGE



LEFT SIDEWALK SECTION ON APPROACH SLAB



RIGHT SIDEWALK SECTION ON APPROACH SLAB



SECTION A-A



R:\cod\253\253-1 Sidewalks-SIDEWALK (2) Wed, Aug/04/21 11:20am

DESIGNED BY: Nick Murray	CHECKED: Douglas Gelineau
DRAWN BY: Sam Sallie	CHECKED: Nick Murray
QUANTITIES BY: Nick Murray	CHECKED: Douglas Gelineau

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
BRIDGE SECTION
3132 Channel Drive
Juneau, Alaska 99801
907-465-2975

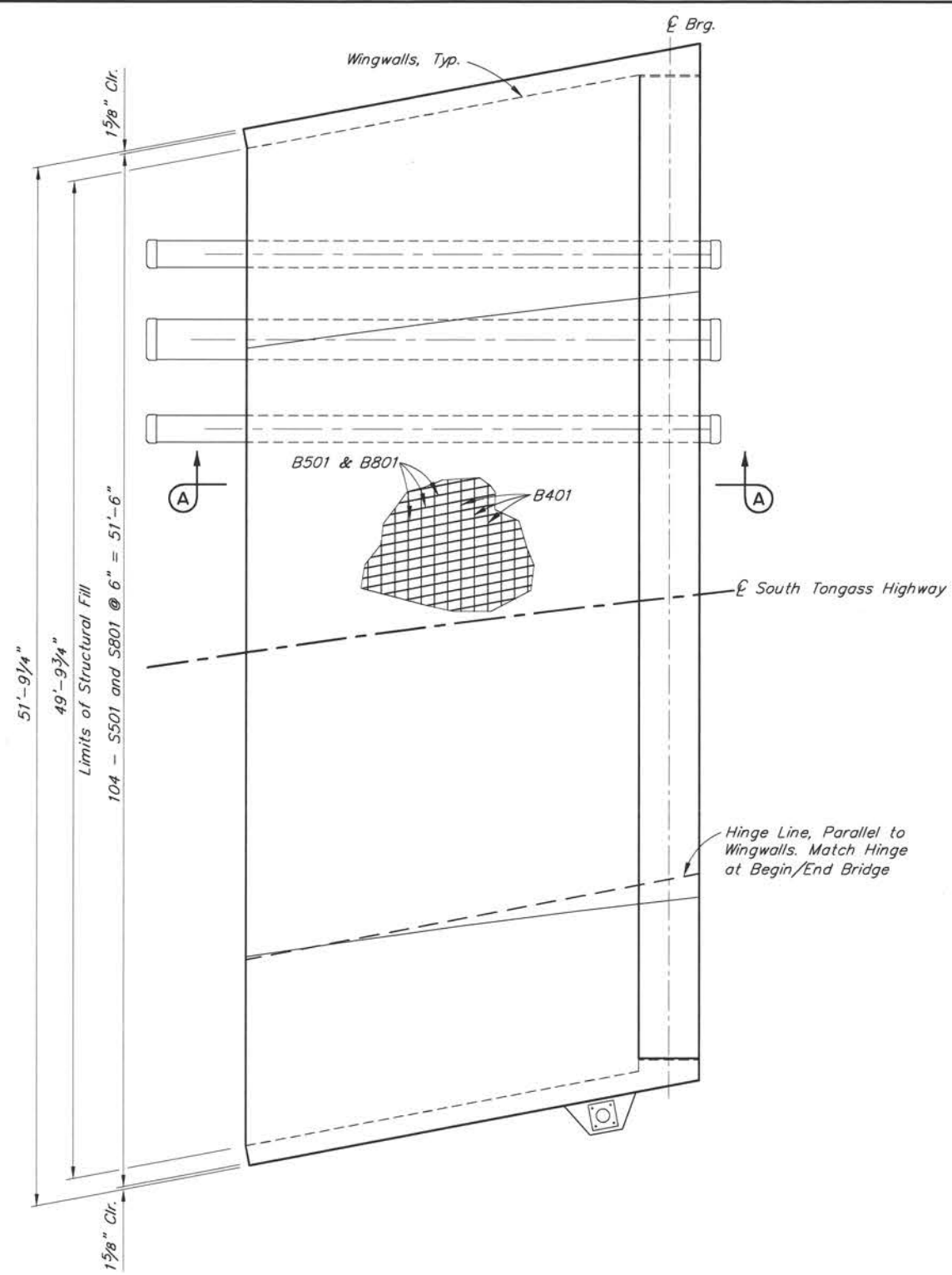


HERRING COVE BRIDGE
SOUTH TONGASS HIGHWAY
SIDEWALK DETAILS

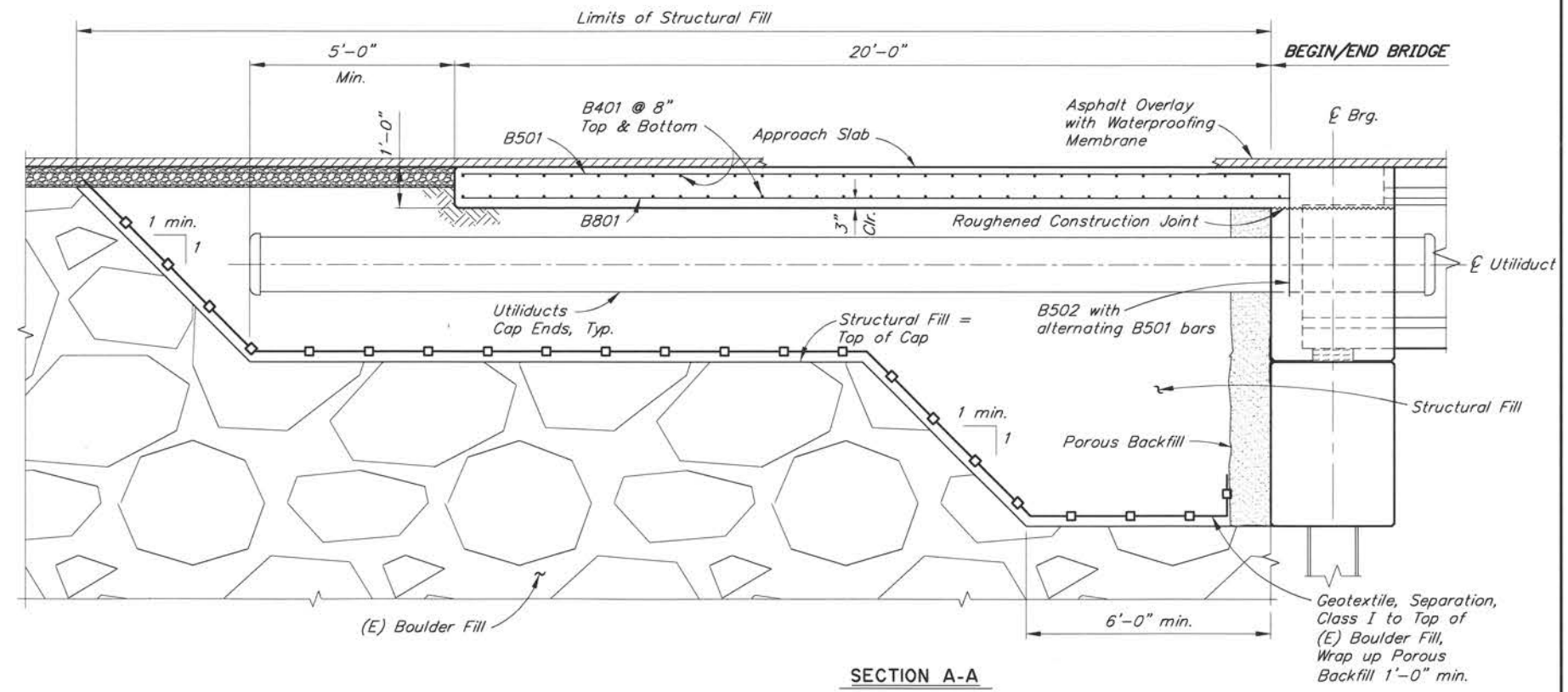
BRIDGE NO. 253
DWG. NO. 18

REINFORCING STEEL - ONE APPROACH SLAB						
MARK	NOTE	SIZE	NO.	LENGTH	TYPE	BENDING DIAGRAM
B401	E,F	4	62	51'-6"	---	
B501	E	5	104	20'-5"	---	
B502	E	5	52	5'-0"	BENT	
B801	E	8	104	20'-5"	---	

E - Epoxy-Coated
 F - Field bend to match cross slope
 T - Threaded



PLAN
 (Abutment 1 shown Abutment 2 similar)



SECTION A-A

R:\cod\253\253-1 Sidewalks-APPROACH SLABS Wed, Aug/04/21 11:20am

DESIGNED BY: Nick Murray	CHECKED: Douglas Gelineau
DRAWN BY: Sam Sallie	CHECKED: Nick Murray
QUANTITIES BY: Nick Murray	CHECKED: Douglas Gelineau

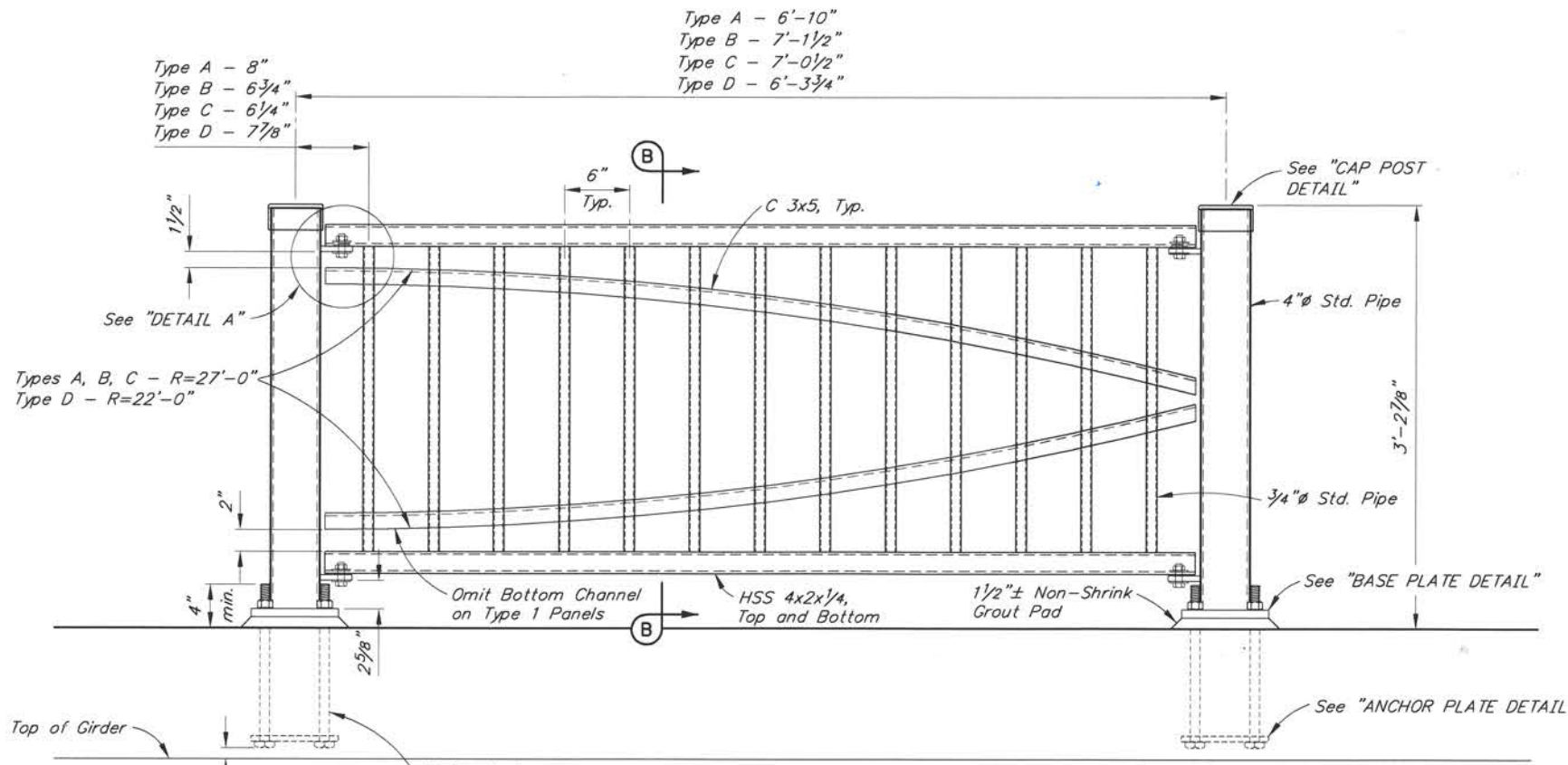
STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 AND PUBLIC FACILITIES
 BRIDGE SECTION
 3132 Channel Drive
 Juneau, Alaska 99801
 907-465-2975



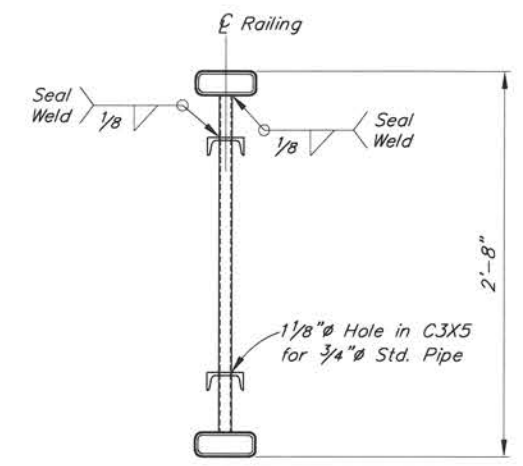
HERRING COVE BRIDGE
 SOUTH TONGASS HIGHWAY
 APPROACH SLABS

BRIDGE NO. 253
 DWG. NO. 19

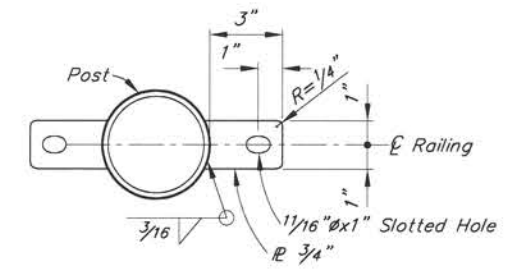
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	SFHwy00072/0902043	2021	N20	N26



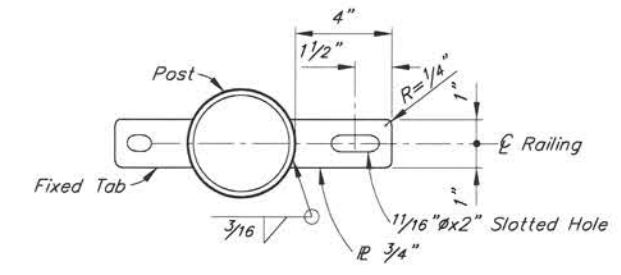
ELEVATION
12 6 0
In. Feet



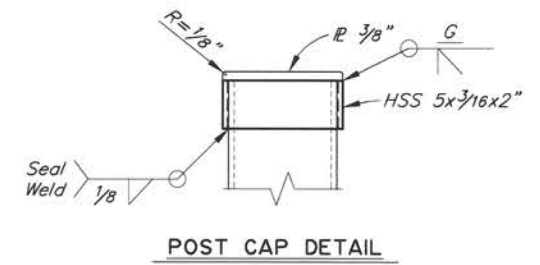
SECTION B-B
12 6 0
In. Feet



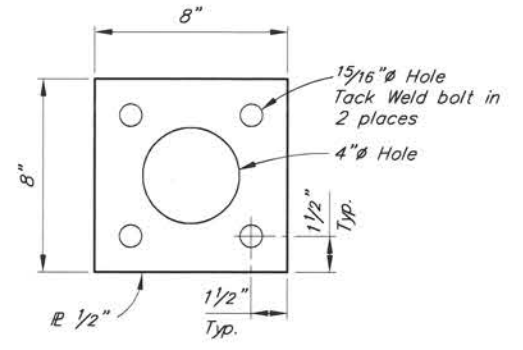
POST ATTACHMENT - FIXED TAB
6 3 0
In. Feet



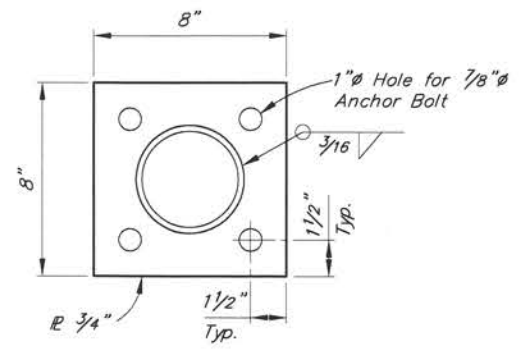
POST ATTACHMENT - EXPANSION TAB
6 3 0
In. Feet



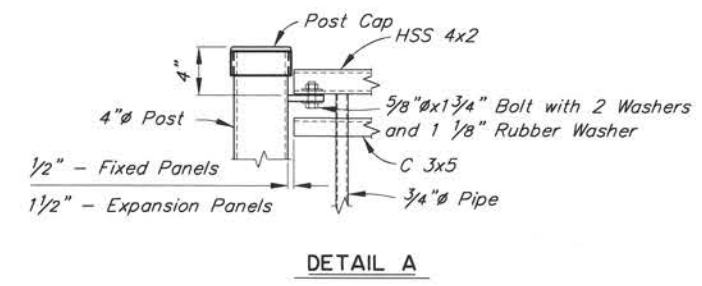
POST CAP DETAIL
6 3 0
In. Feet



ANCHOR PLATE DETAIL
6 3 0
In. Feet



BASE PLATE DETAIL
6 3 0
In. Feet



DETAIL A
12 6 0
In. Feet

- NOTE:**
1. Provide railing expansion points at 50'-0" maximum intervals and where angle change in railing occurs.
 2. See "SIDEWALK PLAN AND PEDESTRIAN RAIL PLAN" for post spacing and panel layout.
 3. Use a grout with a minimum 24 hours f'c of 3,000 psi in a single placement.
 4. Install posts plumb.
 5. Rotate tabs as required at angle change in railing.

R:\cod\253\253-1 Sidewalks-PED RAIL Wed, Aug/04/21 11:20am

DESIGNED BY: Nick Murray	CHECKED: Douglas Gelineau
DRAWN BY: Sam Sallie	CHECKED: Nick Murray
QUANTITIES BY: Nick Murray	CHECKED: Douglas Gelineau

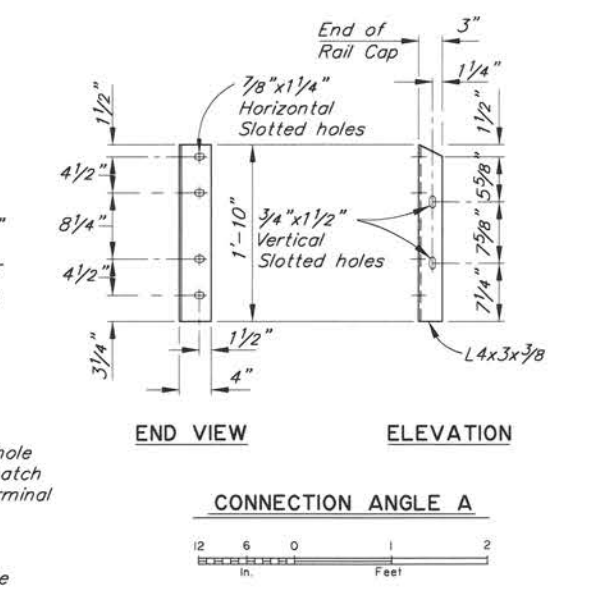
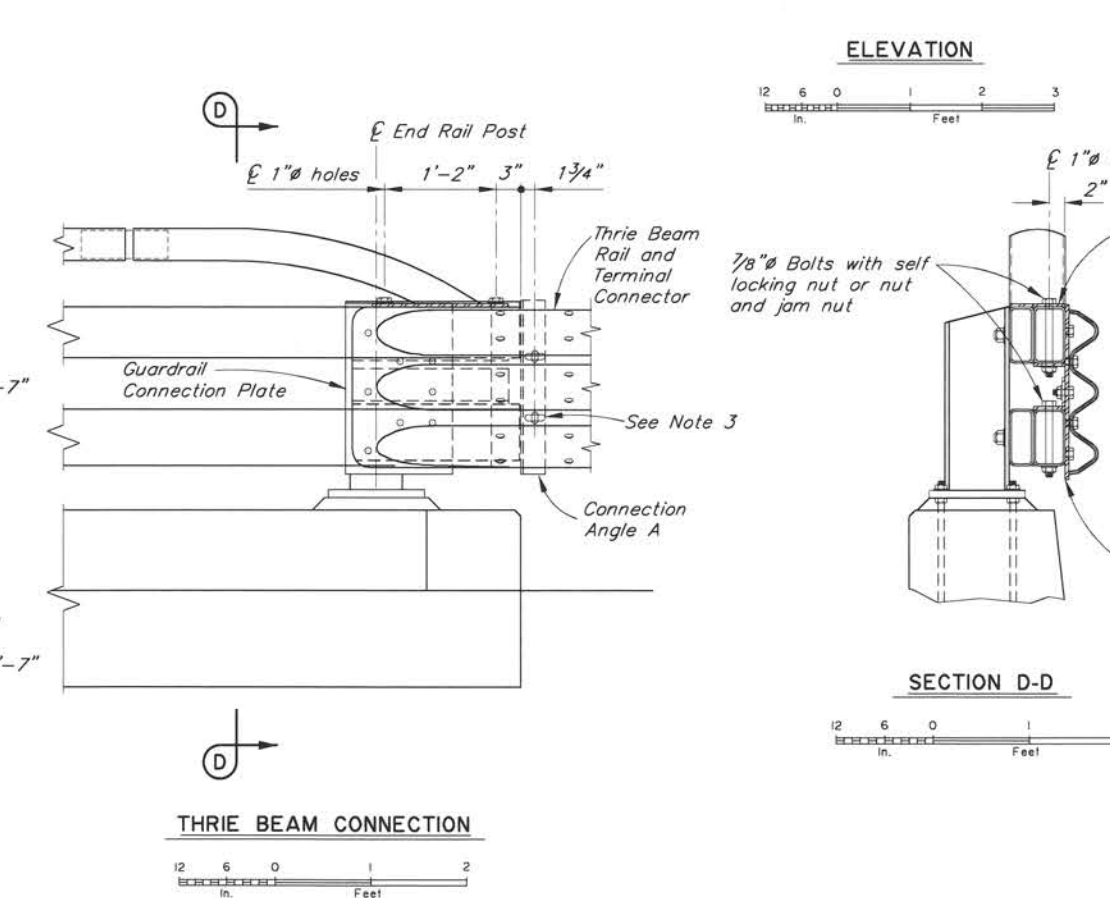
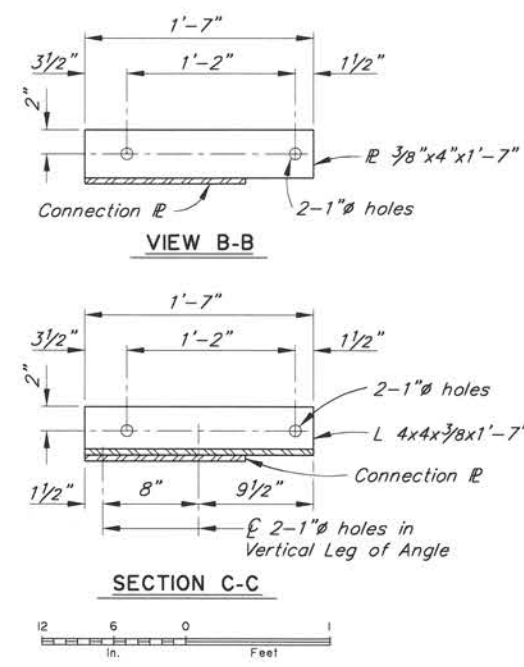
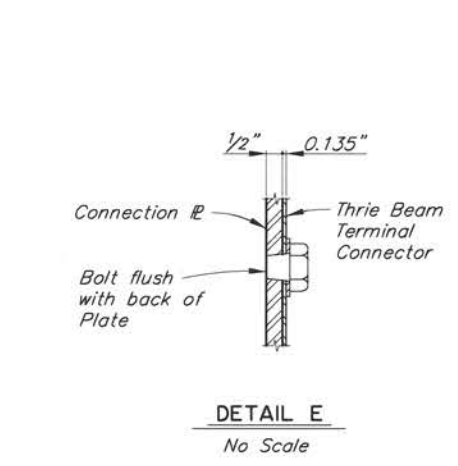
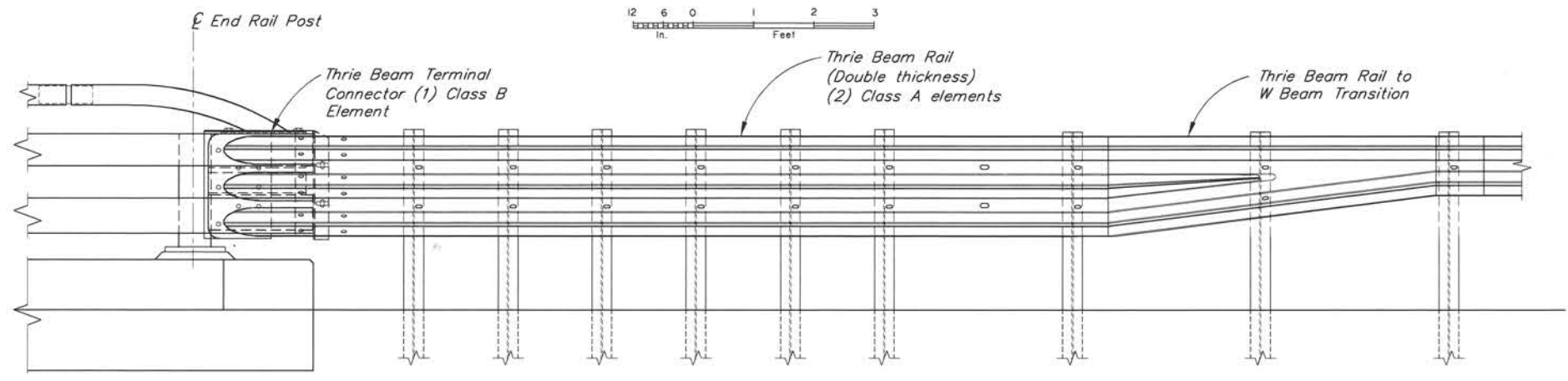
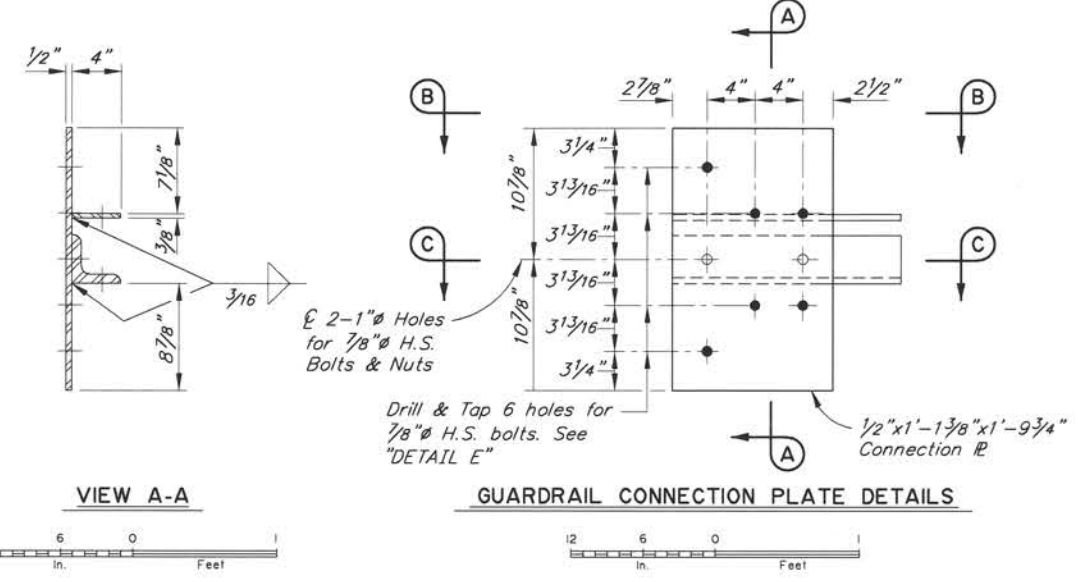
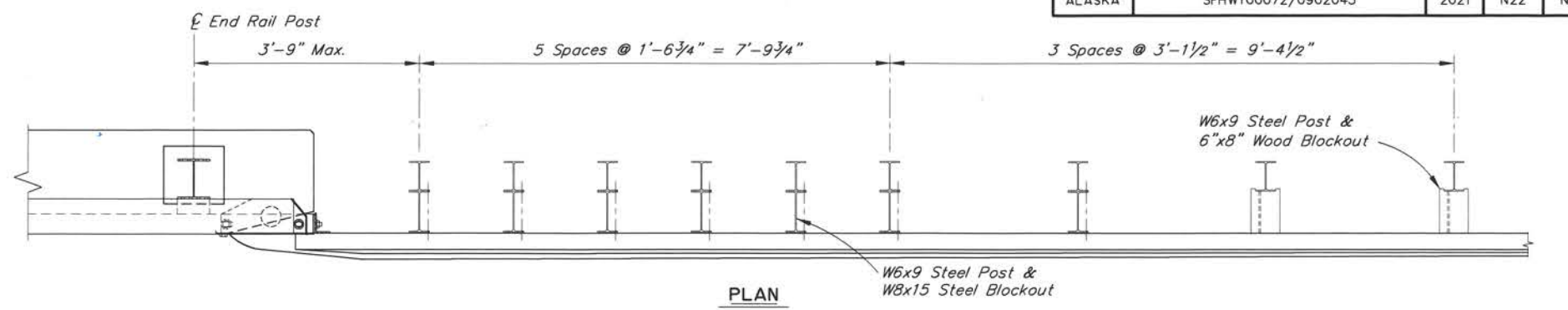
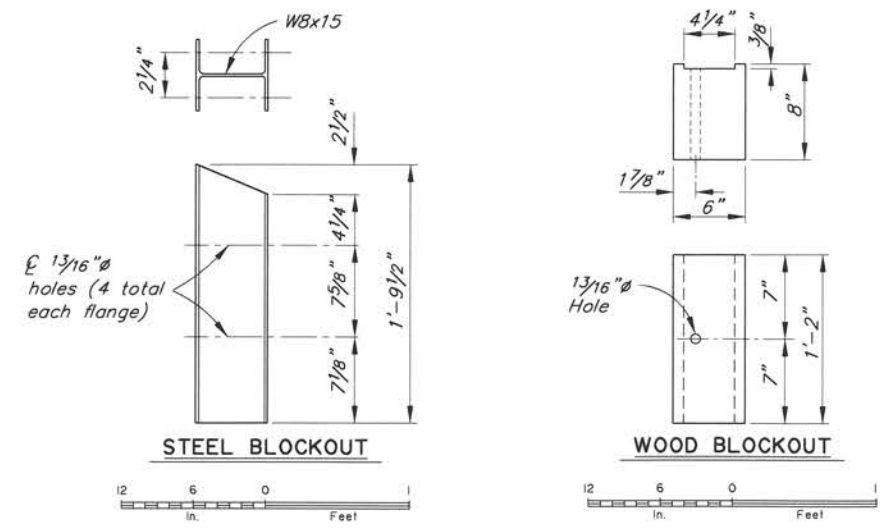
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
BRIDGE SECTION
3132 Channel Drive
Juneau, Alaska 99801
907-465-2975



HERRING COVE BRIDGE
SOUTH TONGASS HIGHWAY
PEDESTRIAN RAILING


BRIDGE NO. 253
DWG. NO. 20

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	SFH00072/0902043	2021	N22	N26



- NOTES:**
- Conform to G-00, G-05 and G-10 for all guardrail details not shown.
 - Lap approach guardrail to prevent snags from oncoming traffic.
 - Provide 4 1/2" horizontal slots in approach guardrail. Adjust guardrail bolts for sliding fit.

R:\Lead\253\253-1 Sidewalks-TRANSITION Wed, Aug/04/21 11:20am

DESIGNED BY: Nick Murray	CHECKED: Douglas Gelineau
DRAWN BY: Sam Sallie	CHECKED: Nick Murray
QUANTITIES BY: Nick Murray	CHECKED: Douglas Gelineau

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
BRIDGE SECTION
3132 Channel Drive
Juneau, Alaska 99801
907-485-2975

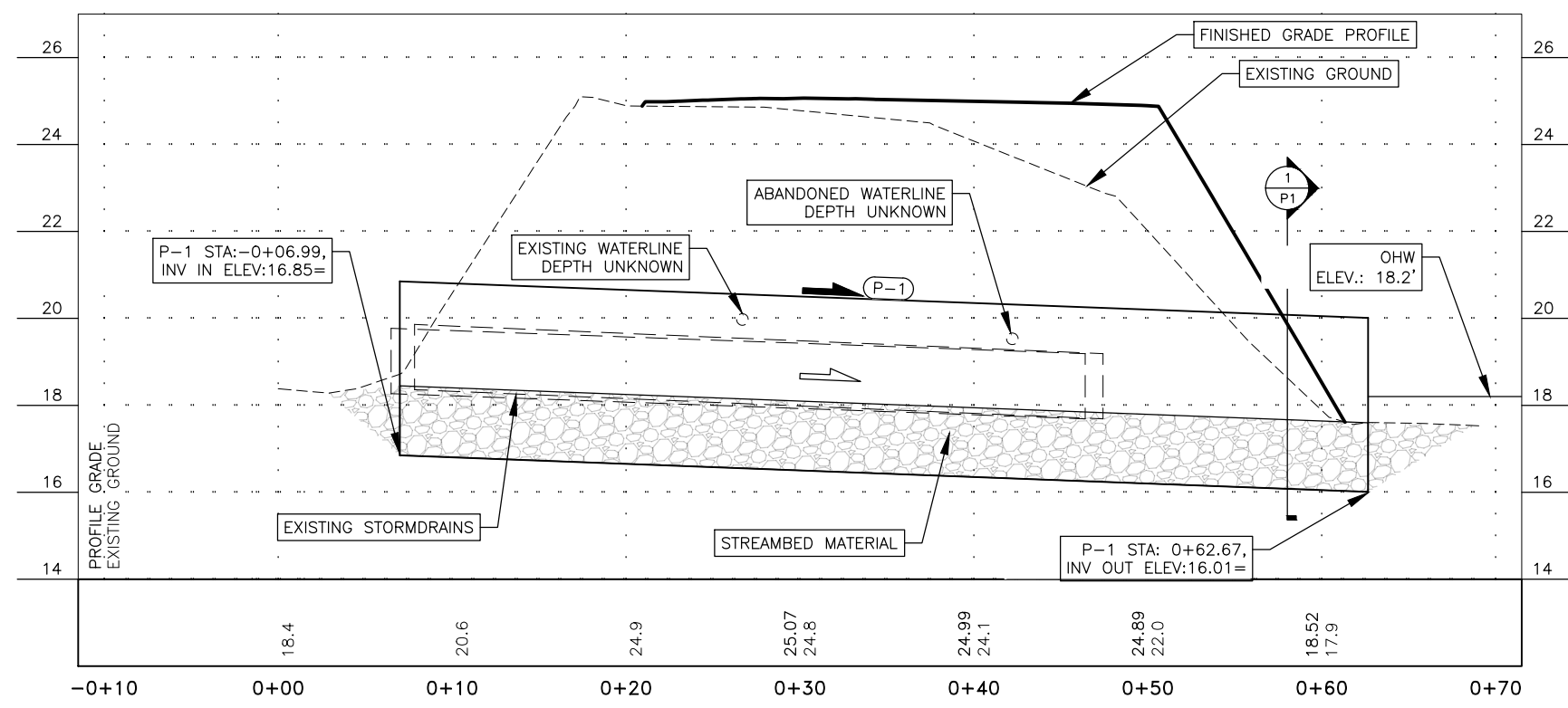
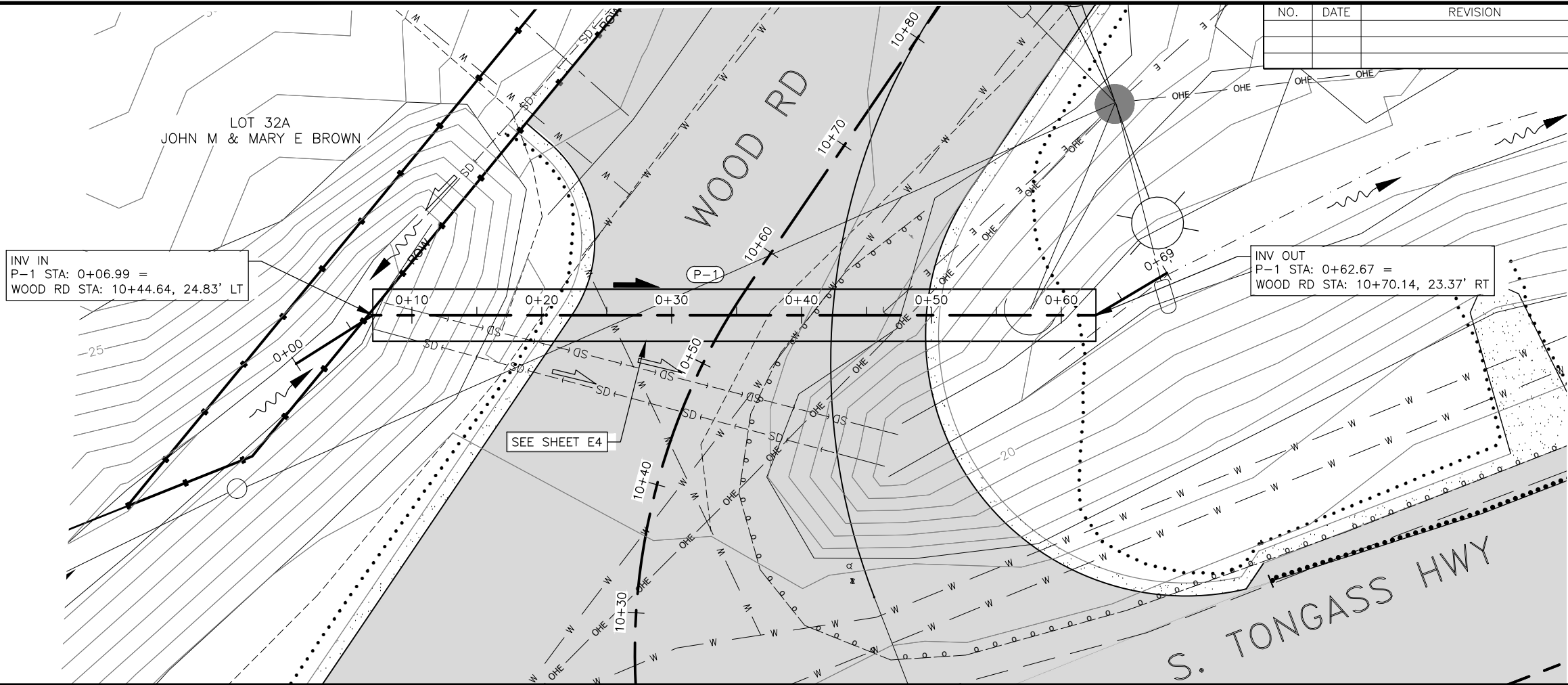
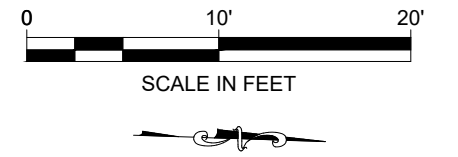


HERRING COVE BRIDGE
SOUTH TONGASS HIGHWAY
TRANSITION RAIL, 3-TUBE

BRIDGE NO. 253
DWG. NO. 22

FIRM STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
 FILE Q:\kth\SFHWY00072\Plans\00072_P1.dwg
 ADDRESS 6860 GLACIER HWY, JUNEAU, AK 99811
 DATE 8/9/2021 12:04 LAYOUT P1 STORMDRAIN PLAN & DISPOSITIONED
 PHONE (907) 465-1763 STAFF STAFF STAFF STAFF STAFF STAFF
 CERTIFICATE OF AUTH #:
 DRAFTED STAFF
 CHECKED STAFF
 STAFF

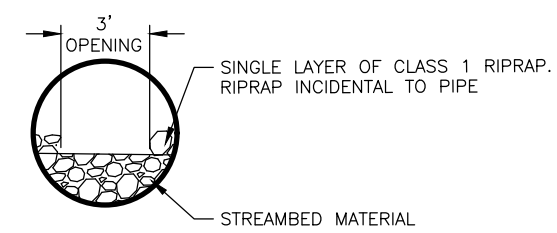
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWY00072	2021	P1	2



LEGEND	
	NEW CULVERT FLOW
	EXISTING CULVERT FLOW
	NEW DITCH RECONSTRUCTION
	LIMITS OF CUT
	LIMITS OF FILL

P-1	
DIAMETER	4 FT
INVERTS	BURIED 1.60' (40%)
SLOPE	1.51%
DITCH SLOPE	0.69%
LENGTH	56 LF
MATERIAL	CORRUGATED ALUMINUM PIPE

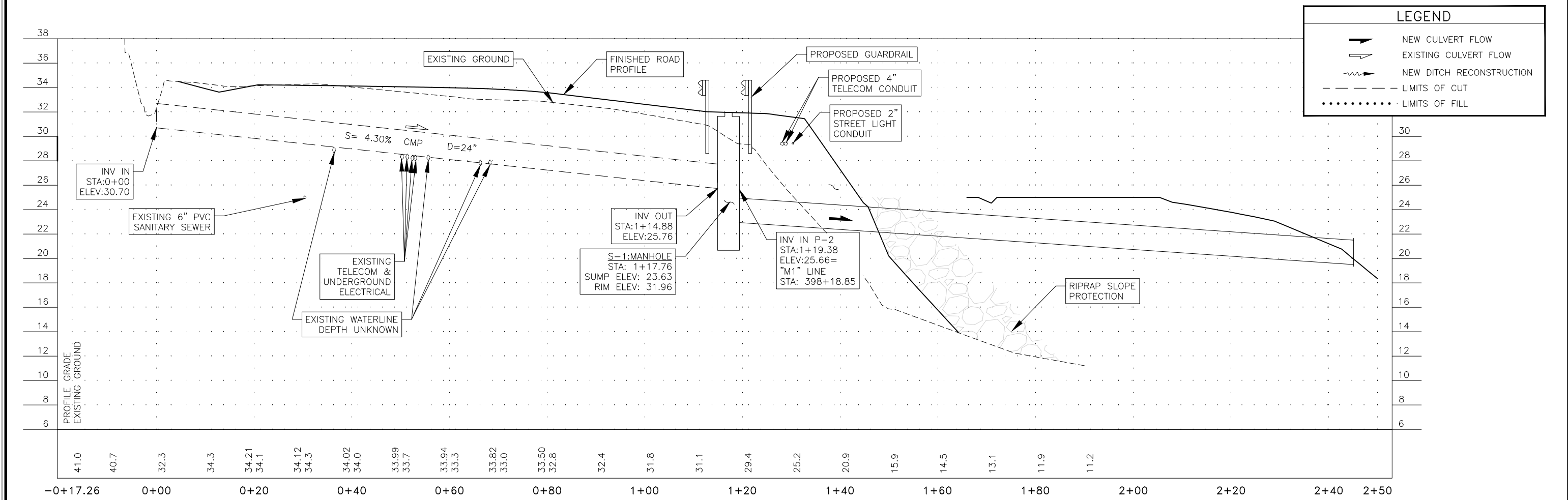
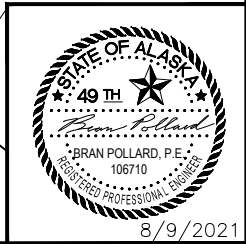
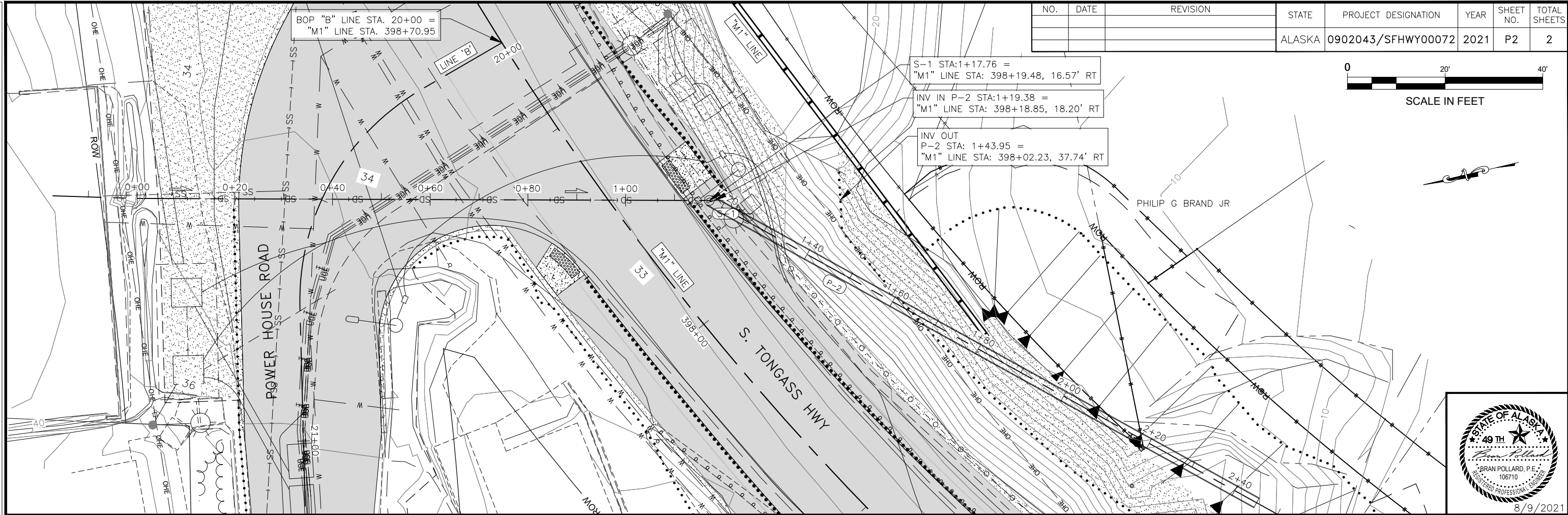
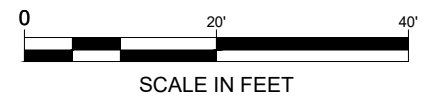
- NOTE:
- EXCAVATION AREA: 1,490 SQ.FT.
EXCAVATION VOLUME: 214 CU.YD.
EXCAVATION BENEATH OHW: 39 CU.YD.
 - AWC STREAM NO. 101-45-10068
 - HYDRAULICS ENGINEER WILL FIELD DETERMINE INVERT ELEVATIONS OF FISH PASSAGE PIPES AT TIME OF INSTALLATION.
 - PLACE STREAM BED MATERIAL TO A DEPTH OF 40% OF THE PIPE DIAMETER



1
P1
STREAMBED MATERIAL DETAIL
SCALE: NOT TO SCALE

FIRM STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
 ADDRESS 6860 GLACIER HWY, JUNEAU, AK 99811
 PHONE (907) 465-1763
 CERTIFICATE OF AUTH #:
 FILE Q:\ktn\SFH\00072\Plan\set\00072_P1.dwg
 DATE 8/9/2021 12:04 LAYOUT P2 STORMDRAIN PLAN DESIGNED STAFF CHECKED STAFF DRAFTED STAFF

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFH00072	2021	P2	2



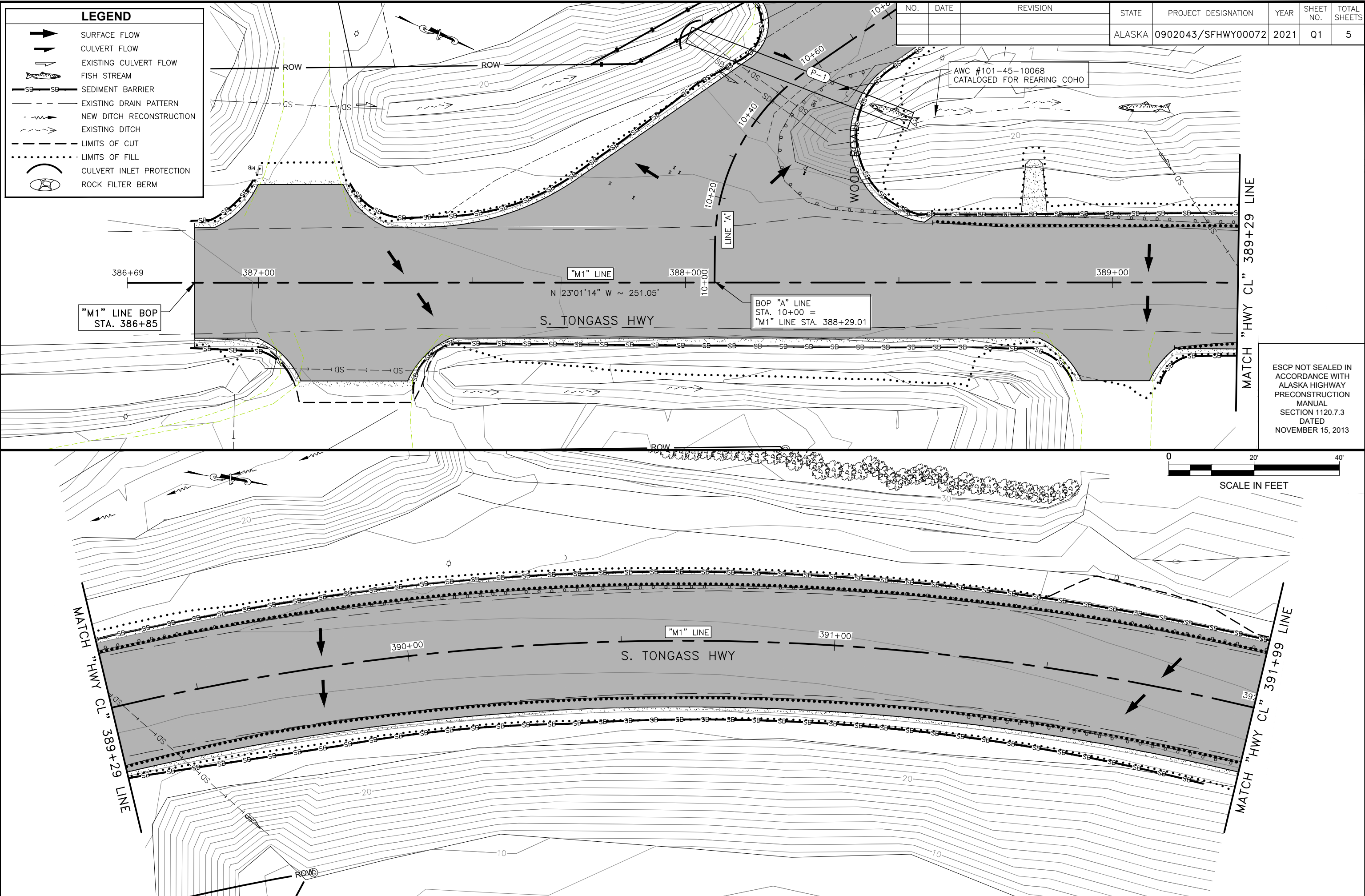
LEGEND	
	NEW CULVERT FLOW
	EXISTING CULVERT FLOW
	NEW DITCH RECONSTRUCTION
	LIMITS OF CUT
	LIMITS OF FILL

FIRM STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
 FILE Q:\kth\SFH\00072\Plan\set\00072_01.dwg
 DATE 8/9/2021 11:57 LAYOUT Q1 EROSION & SEDIMENT CONTROL PLAN
 ADDRESS 6860 GLACIER HWY, JUNEAU, AK 99811
 PHONE (907) 465-1763
 CERTIFICATE OF AUTH #:
 DRAFTED STAFF
 CHECKED STAFF
 DESIGNED STAFF

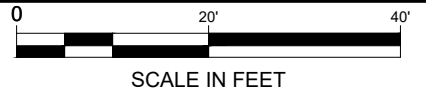
LEGEND

- SURFACE FLOW
- CULVERT FLOW
- EXISTING CULVERT FLOW
- FISH STREAM
- SEDIMENT BARRIER
- EXISTING DRAIN PATTERN
- NEW DITCH RECONSTRUCTION
- EXISTING DITCH
- LIMITS OF CUT
- LIMITS OF FILL
- CULVERT INLET PROTECTION
- ROCK FILTER BERM

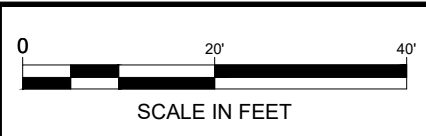
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFH\00072	2021	Q1	5



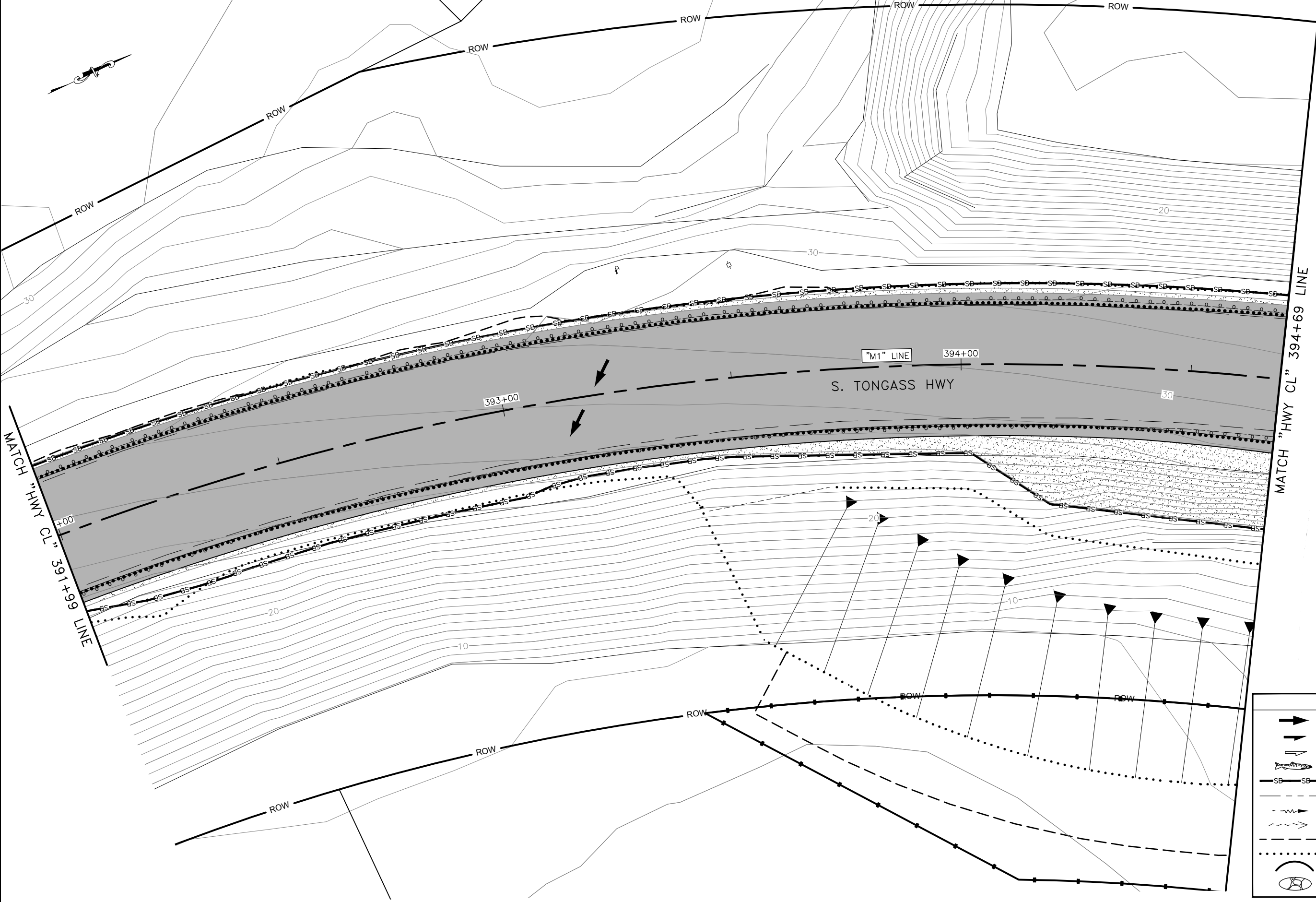
ESCP NOT SEALED IN
 ACCORDANCE WITH
 ALASKA HIGHWAY
 PRECONSTRUCTION
 MANUAL
 SECTION 1120.7.3
 DATED
 NOVEMBER 15, 2013



FIRM STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
 FILE Q:\kth\SFH\00072\Plan\set\00072_01.dwg
 ADDRESS 6860 GLACIER HWY, JUNEAU, AK 99811
 DATE 8/9/2021 11:57
 LAYOUT Q2 EROSION & SEDIMENT CONTROL
 PHONE (907) 465-1763
 CERTIFICATE OF AUTH #:
 CHECKED STAFF
 DRAFTED STAFF



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFH\00072	2021	Q2	5

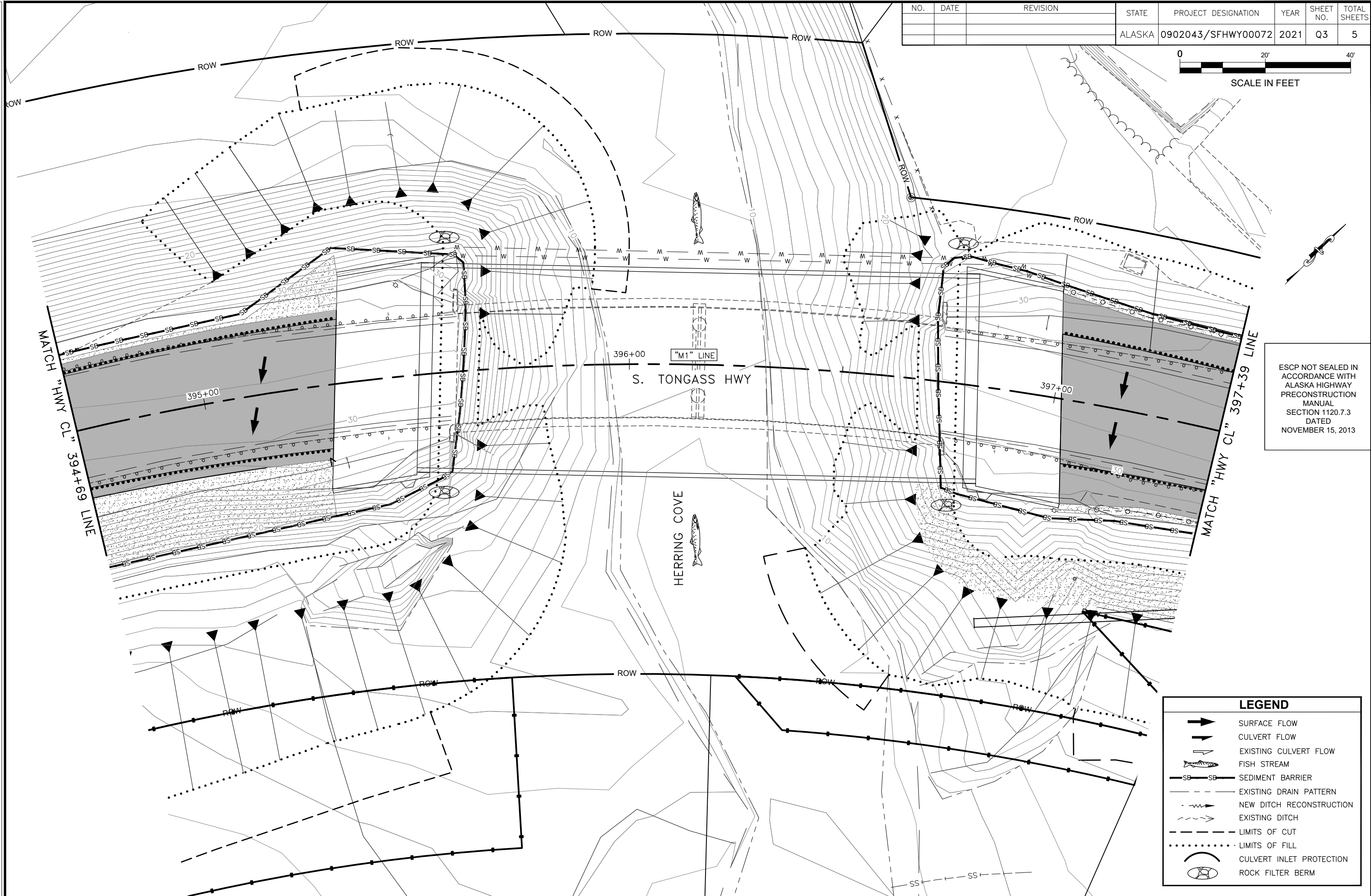
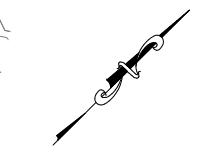
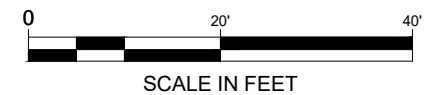


ESCP NOT SEALED IN ACCORDANCE WITH ALASKA HIGHWAY PRECONSTRUCTION MANUAL SECTION 1120.7.3 DATED NOVEMBER 15, 2013

LEGEND	
	SURFACE FLOW
	CULVERT FLOW
	EXISTING CULVERT FLOW
	FISH STREAM
	SEDIMENT BARRIER
	EXISTING DRAIN PATTERN
	NEW DITCH RECONSTRUCTION
	EXISTING DITCH
	LIMITS OF CUT
	LIMITS OF FILL
	CULVERT INLET PROTECTION
	ROCK FILTER BERM

FIRM STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
 FILE Q:\kth\SFHW00072\Planset\00072_Q1.dwg
 ADDRESS 6860 GLACIER HWY, JUNEAU, AK 99811
 DATE 8/9/2021 11:57 LAYOUT 03 EROSION & SEDIMENT DESIGNER: P. STAFF
 PHONE (907) 465-1763 CHECKED STAFF
 CERTIFICATE OF AUTH # DRAFTED STAFF

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFH00072	2021	Q3	5

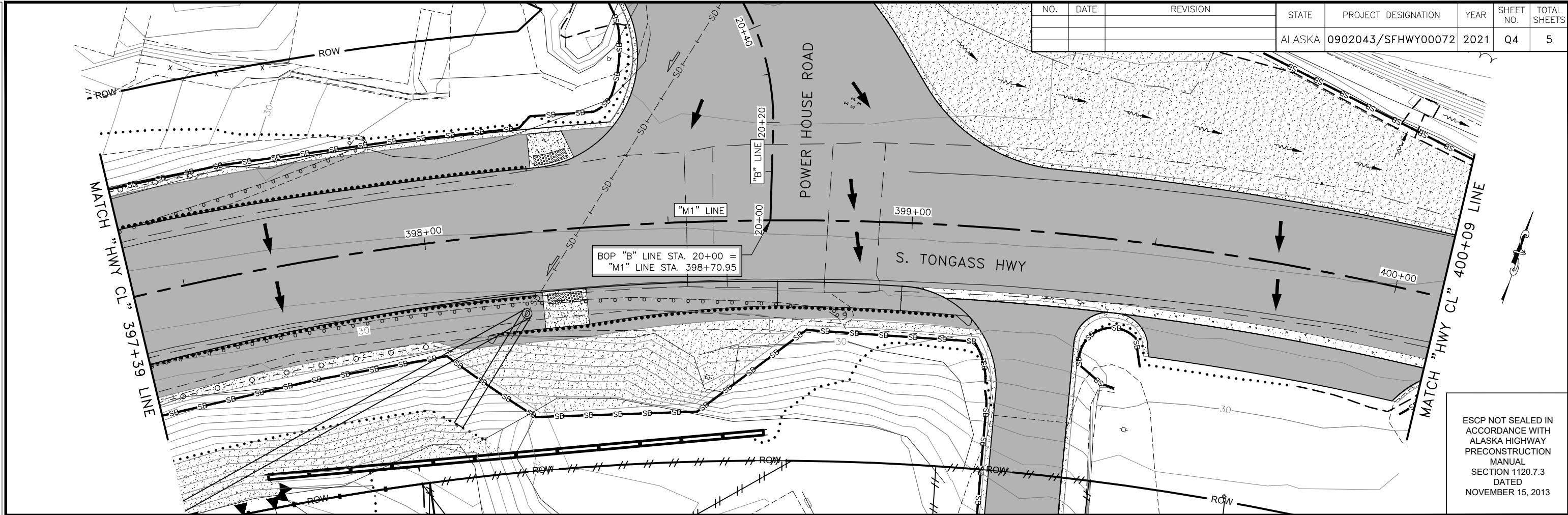


ESCP NOT SEALED IN
 ACCORDANCE WITH
 ALASKA HIGHWAY
 PRECONSTRUCTION
 MANUAL
 SECTION 1120.7.3
 DATED
 NOVEMBER 15, 2013

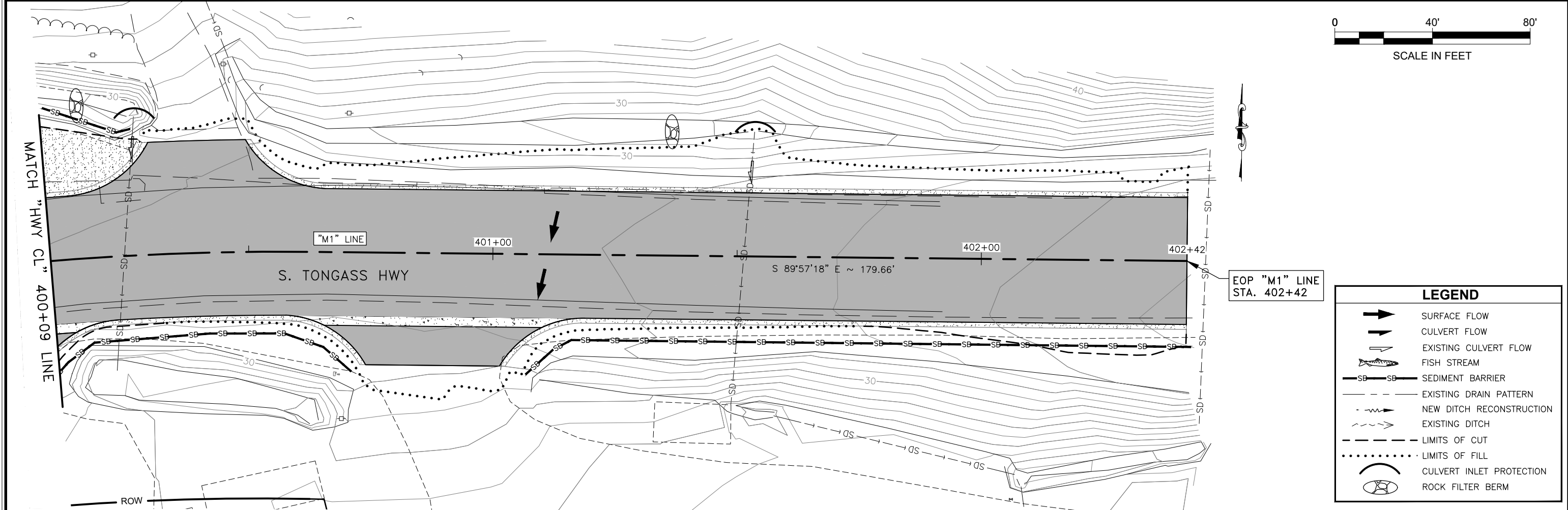
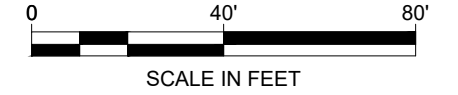
LEGEND	
	SURFACE FLOW
	CULVERT FLOW
	EXISTING CULVERT FLOW
	FISH STREAM
	SEDIMENT BARRIER
	EXISTING DRAIN PATTERN
	NEW DITCH RECONSTRUCTION
	EXISTING DITCH
	LIMITS OF CUT
	LIMITS OF FILL
	CULVERT INLET PROTECTION
	ROCK FILTER BERM

FIRM STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
 FILE Q:\kth\SFH\00072\Plan\set\00072_01.dwg
 ADDRESS 6860 GLACIER HWY, JUNEAU, AK 99811
 DATE 8/9/2021 11:57 LAYOUT 04 EROSION & SEDIMENTATION
 PHONE (907) 465-1763
 CERTIFICATE OF AUTH #:
 CHECKED STAFF
 DRAFTED STAFF

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFH\00072	2021	Q4	5

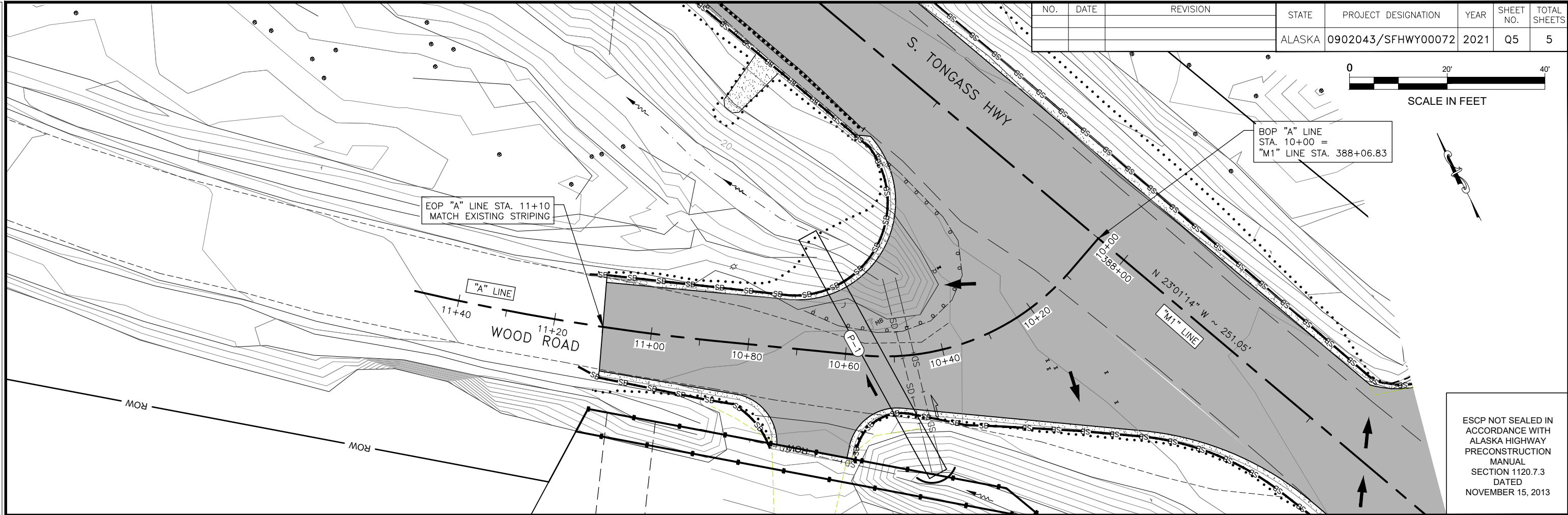


ESCP NOT SEALED IN
 ACCORDANCE WITH
 ALASKA HIGHWAY
 PRECONSTRUCTION
 MANUAL
 SECTION 1120.7.3
 DATED
 NOVEMBER 15, 2013

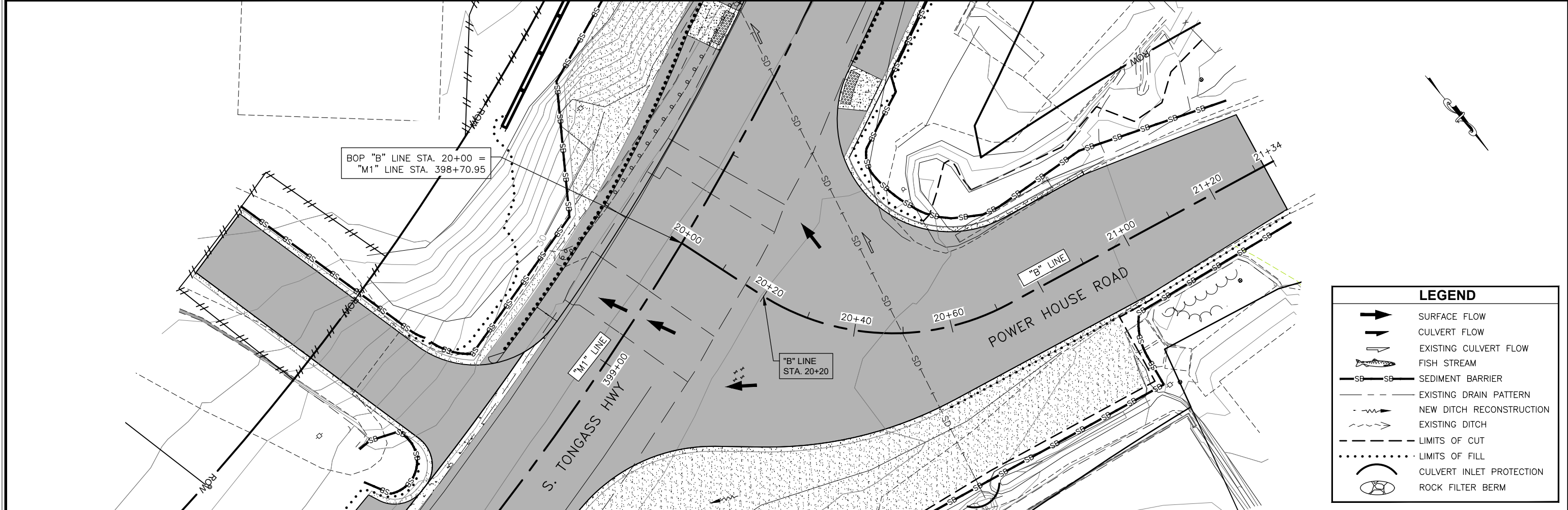


LEGEND	
	SURFACE FLOW
	CULVERT FLOW
	EXISTING CULVERT FLOW
	FISH STREAM
	SEDIMENT BARRIER
	EXISTING DRAIN PATTERN
	NEW DITCH RECONSTRUCTION
	EXISTING DITCH
	LIMITS OF CUT
	LIMITS OF FILL
	CULVERT INLET PROTECTION
	ROCK FILTER BERM

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWY00072	2021	Q5	5



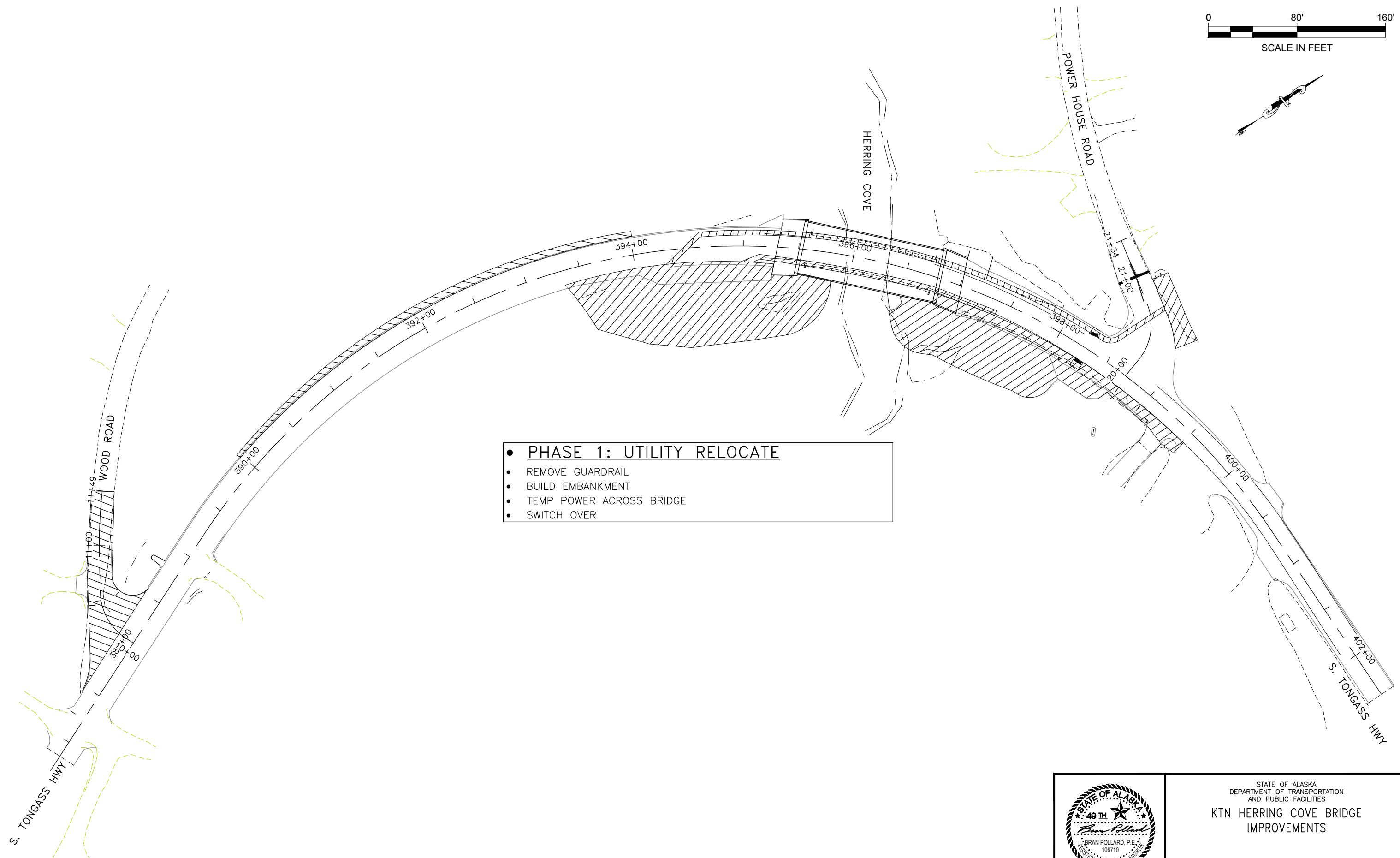
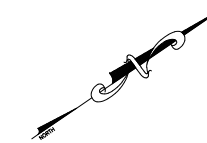
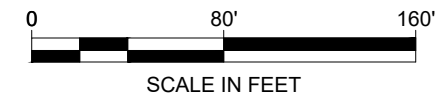
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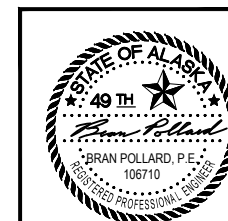
LEGEND	
	SURFACE FLOW
	CULVERT FLOW
	EXISTING CULVERT FLOW
	FISH STREAM
	SEDIMENT BARRIER
	EXISTING DRAIN PATTERN
	NEW DITCH RECONSTRUCTION
	EXISTING DITCH
	LIMITS OF CUT
	LIMITS OF FILL
	CULVERT INLET PROTECTION
	ROCK FILTER BERM

FILE G:\Ktn\SFHwy00072\PlanSet\00072_S1.dwg DATE 8/9/2021 11:51 LAYOUT S1 PHASING PLAN 1 DESIGNED STAFF CHECKED STAFF DRAFTED STAFF

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHwy00072	2021	S1	6



- PHASE 1: UTILITY RELOCATE
- REMOVE GUARDRAIL
- BUILD EMBANKMENT
- TEMP POWER ACROSS BRIDGE
- SWITCH OVER



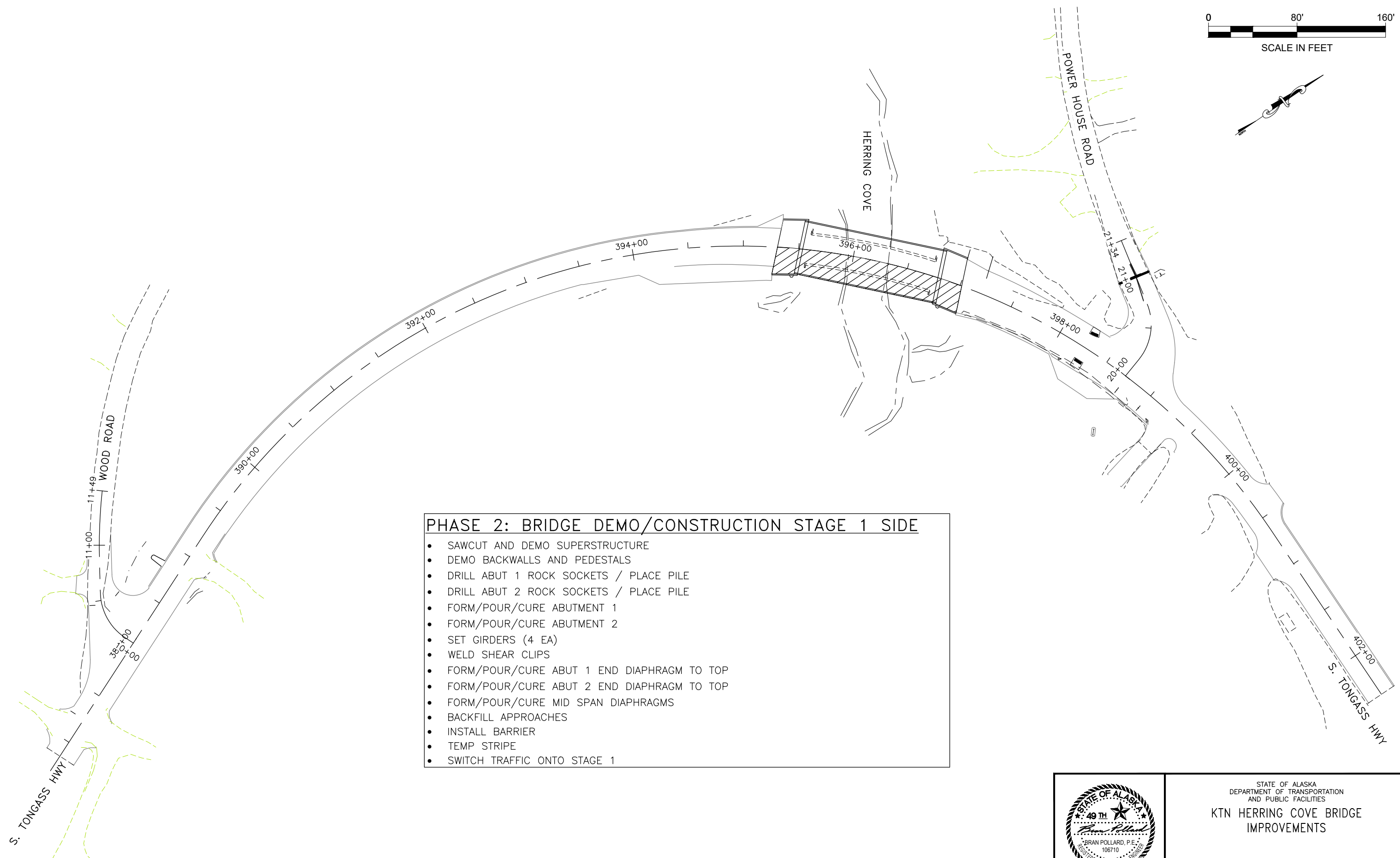
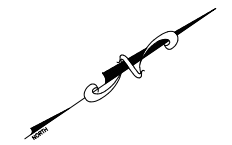
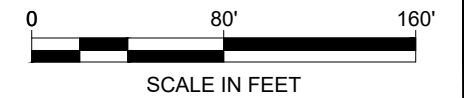
8/9/2021

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AND PUBLIC FACILITIES
**KTN HERRING COVE BRIDGE
IMPROVEMENTS**

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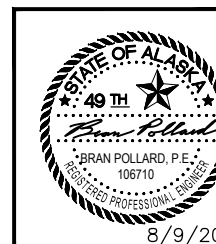
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHwy00072	2021	S2	6



PHASE 2: BRIDGE DEMO/CONSTRUCTION STAGE 1 SIDE

- SAWCUT AND DEMO SUPERSTRUCTURE
- DEMO BACKWALLS AND PEDESTALS
- DRILL ABUT 1 ROCK SOCKETS / PLACE PILE
- DRILL ABUT 2 ROCK SOCKETS / PLACE PILE
- FORM/POUR/CURE ABUTMENT 1
- FORM/POUR/CURE ABUTMENT 2
- SET GIRDERS (4 EA)
- WELD SHEAR CLIPS
- FORM/POUR/CURE ABUT 1 END DIAPHRAGM TO TOP
- FORM/POUR/CURE ABUT 2 END DIAPHRAGM TO TOP
- FORM/POUR/CURE MID SPAN DIAPHRAGMS
- BACKFILL APPROACHES
- INSTALL BARRIER
- TEMP STRIPE
- SWITCH TRAFFIC ONTO STAGE 1

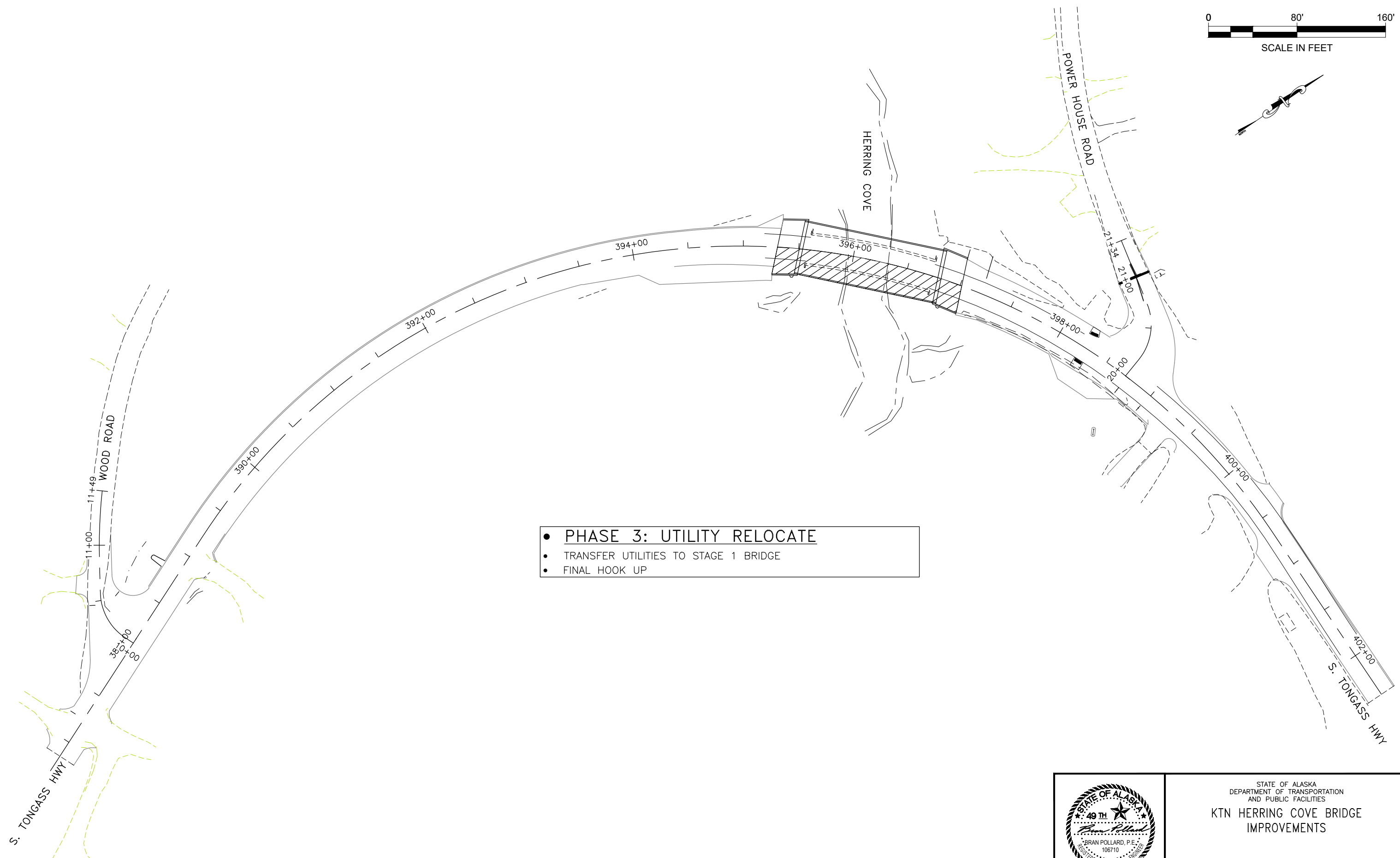
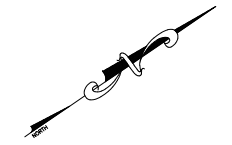
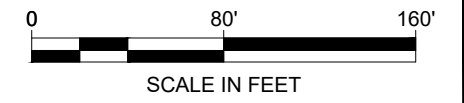


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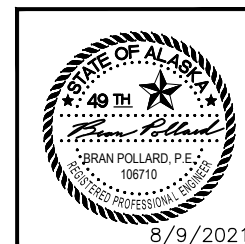
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHwy00072	2021	S3	6



- **PHASE 3: UTILITY RELOCATE**
- TRANSFER UTILITIES TO STAGE 1 BRIDGE
- FINAL HOOK UP



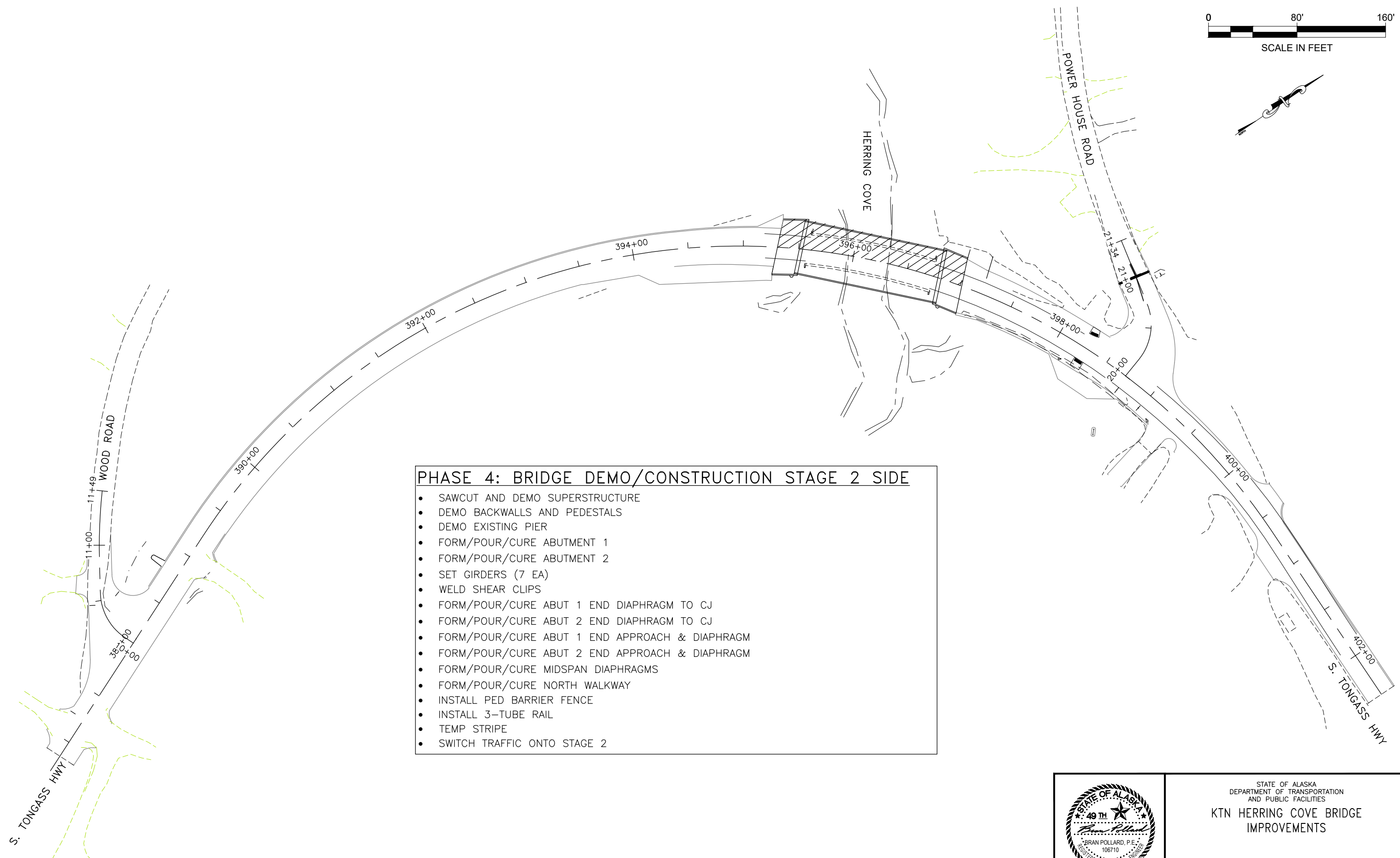
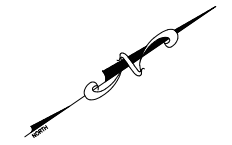
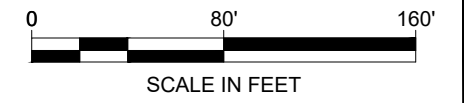
STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 AND PUBLIC FACILITIES

**KTN HERRING COVE BRIDGE
 IMPROVEMENTS**

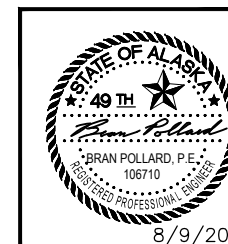
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHwy00072	2021	S4	6



- PHASE 4: BRIDGE DEMO/CONSTRUCTION STAGE 2 SIDE**
- SAWCUT AND DEMO SUPERSTRUCTURE
 - DEMO BACKWALLS AND PEDESTALS
 - DEMO EXISTING PIER
 - FORM/POUR/CURE ABUTMENT 1
 - FORM/POUR/CURE ABUTMENT 2
 - SET GIRDERS (7 EA)
 - WELD SHEAR CLIPS
 - FORM/POUR/CURE ABUT 1 END DIAPHRAGM TO CJ
 - FORM/POUR/CURE ABUT 2 END DIAPHRAGM TO CJ
 - FORM/POUR/CURE ABUT 1 END APPROACH & DIAPHRAGM
 - FORM/POUR/CURE ABUT 2 END APPROACH & DIAPHRAGM
 - FORM/POUR/CURE MIDSPAN DIAPHRAGMS
 - FORM/POUR/CURE NORTH WALKWAY
 - INSTALL PED BARRIER FENCE
 - INSTALL 3-TUBE RAIL
 - TEMP STRIPE
 - SWITCH TRAFFIC ONTO STAGE 2



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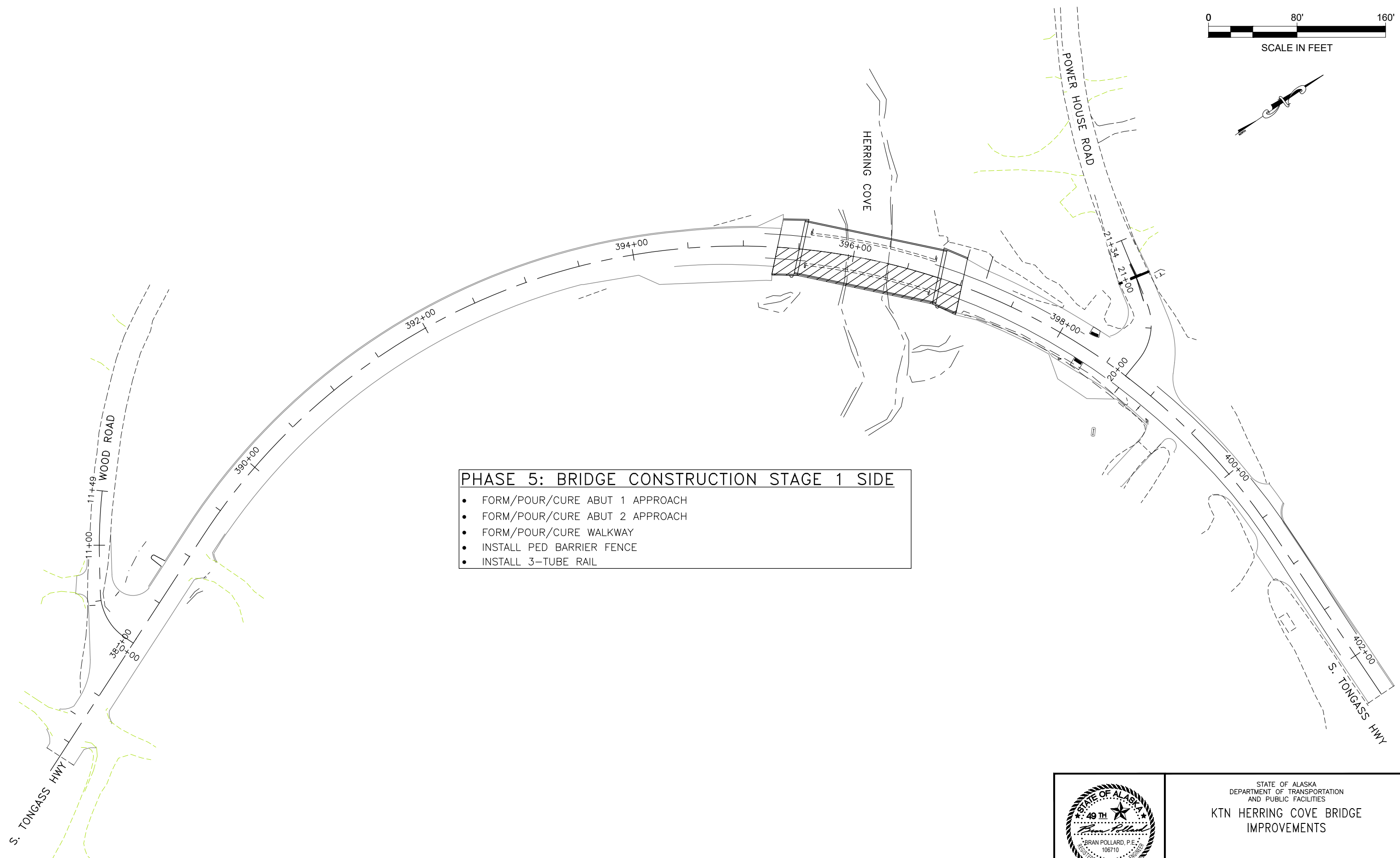
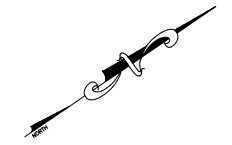
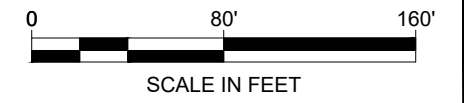
**KTN HERRING COVE BRIDGE
 IMPROVEMENTS**

PHASING PLAN 4

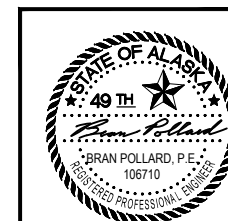
8/9/2021

FILE G:\Ktn\SFHwy00072\PlanSet\00072_S1.dwg DATE 8/9/2021 11:51 LAYOUT S5 PHASING PLAN 5 DESIGNED STAFF CHECKED STAFF DRAFTED STAFF

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHwy00072	2021	S5	6



- PHASE 5: BRIDGE CONSTRUCTION STAGE 1 SIDE**
- FORM/POUR/CURE ABUT 1 APPROACH
 - FORM/POUR/CURE ABUT 2 APPROACH
 - FORM/POUR/CURE WALKWAY
 - INSTALL PED BARRIER FENCE
 - INSTALL 3-TUBE RAIL



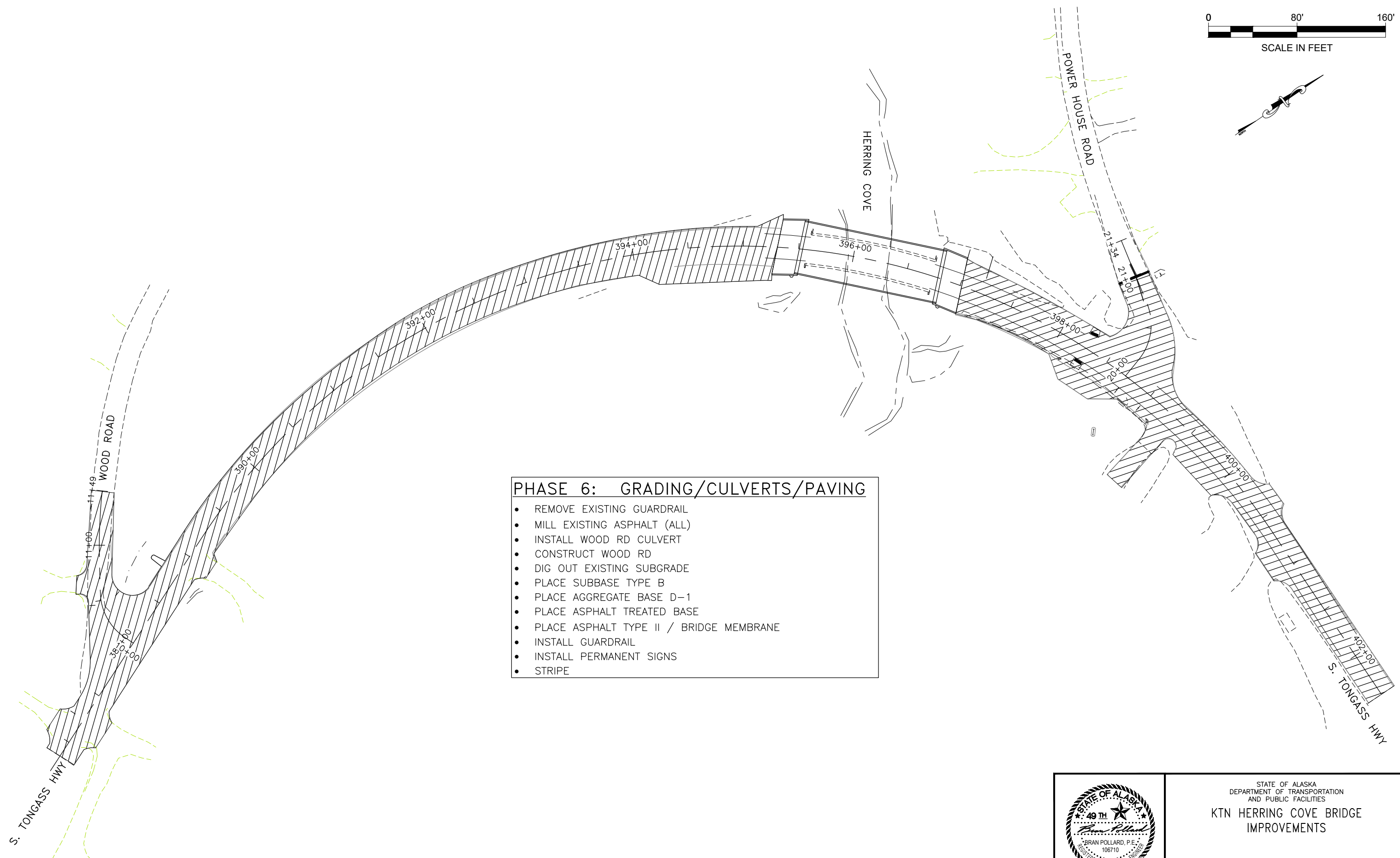
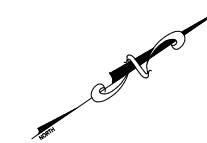
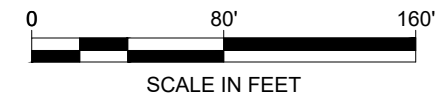
8/9/2021

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
**KTN HERRING COVE BRIDGE
IMPROVEMENTS**

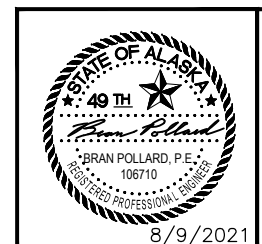
PHASING PLAN 5

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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHwy00072	2021	S6	6



- PHASE 6: GRADING/CULVERTS/PAVING**
- REMOVE EXISTING GUARDRAIL
 - MILL EXISTING ASPHALT (ALL)
 - INSTALL WOOD RD CULVERT
 - CONSTRUCT WOOD RD
 - DIG OUT EXISTING SUBGRADE
 - PLACE SUBBASE TYPE B
 - PLACE AGGREGATE BASE D-1
 - PLACE ASPHALT TREATED BASE
 - PLACE ASPHALT TYPE II / BRIDGE MEMBRANE
 - INSTALL GUARDRAIL
 - INSTALL PERMANENT SIGNS
 - STRIPE



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 AND PUBLIC FACILITIES

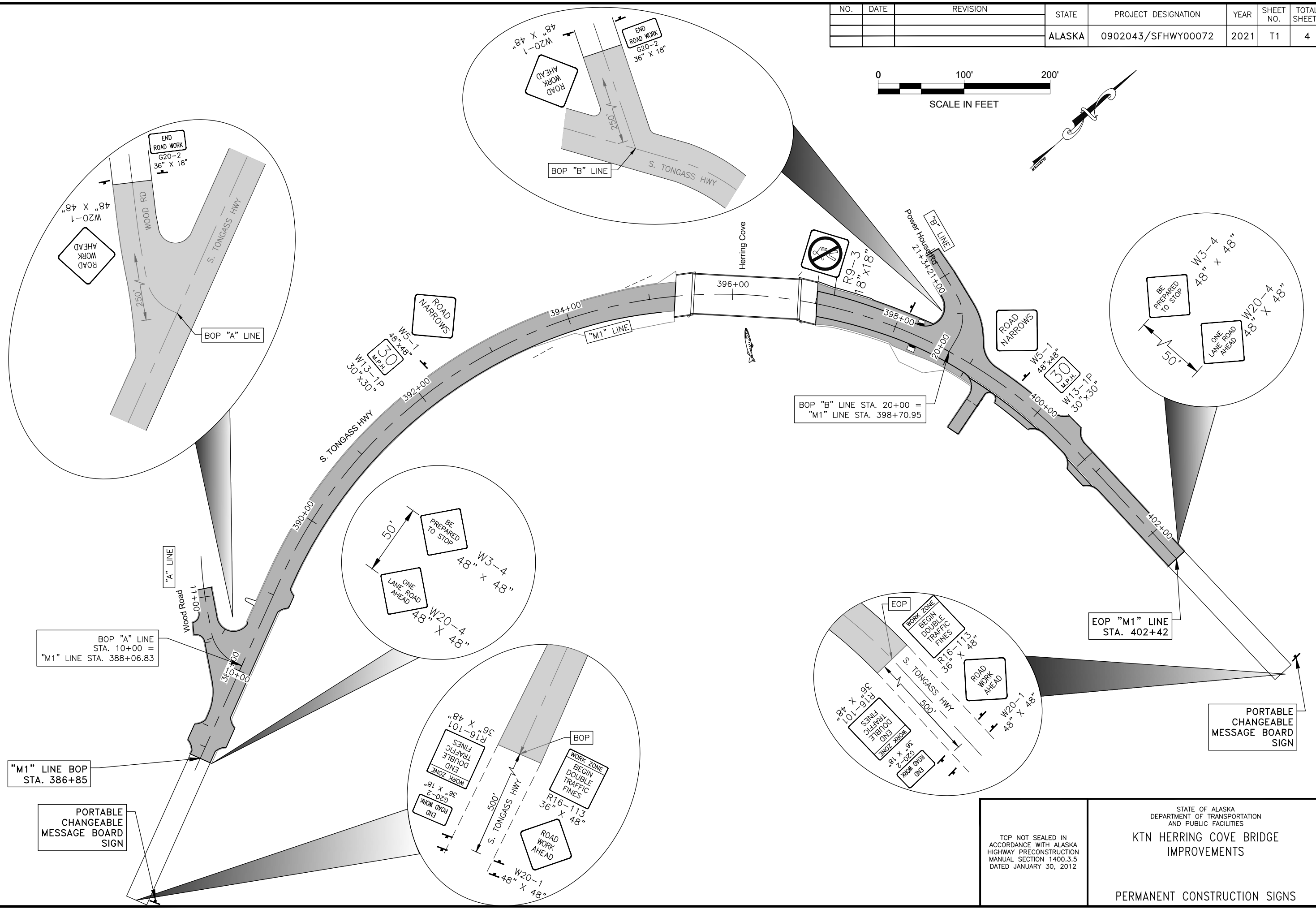
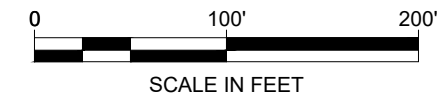
**KTN HERRING COVE BRIDGE
 IMPROVEMENTS**

PHASING PLAN 6

8/9/2021

FILE G:\ktn\SFHwy00072\Planset\00072_T1.dwg DATE 8/9/2021 11:43 LAYOUT T1 TRAFFIC CONTROL DESIGNED STAFF CHECKED STAFF DRAFTED STAFF

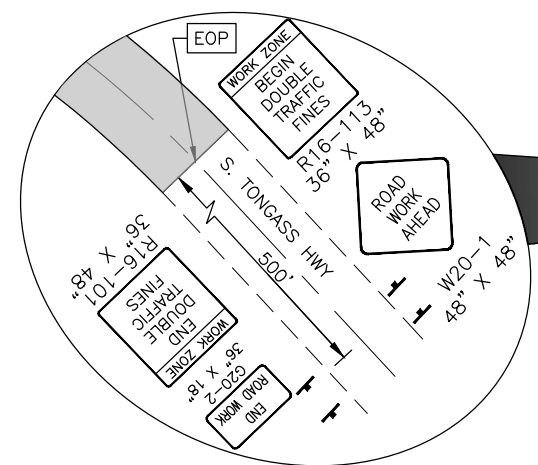
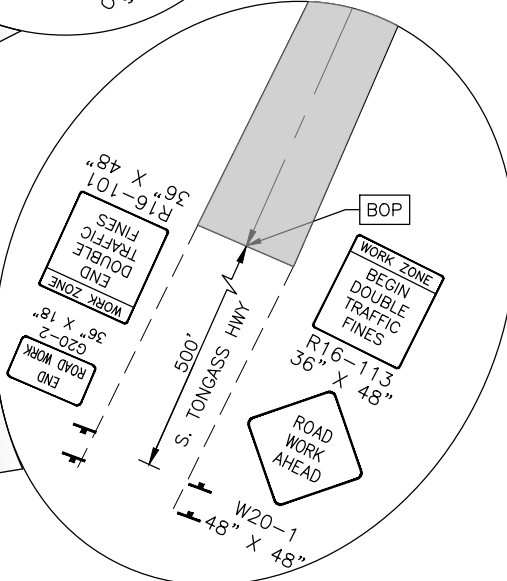
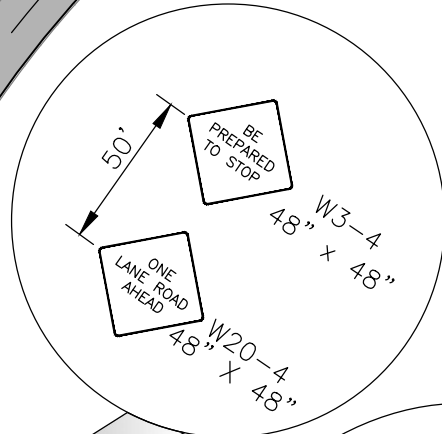
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHwy00072	2021	T1	4



BOP "A" LINE
STA. 10+00 =
"M1" LINE STA. 388+06.83

"M1" LINE BOP
STA. 386+85

PORTABLE
CHANGEABLE
MESSAGE BOARD
SIGN



EOP "M1" LINE
STA. 402+42

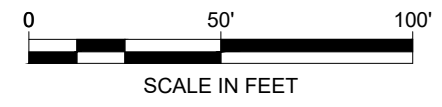
PORTABLE
CHANGEABLE
MESSAGE BOARD
SIGN

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

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
**KTN HERRING COVE BRIDGE
IMPROVEMENTS**

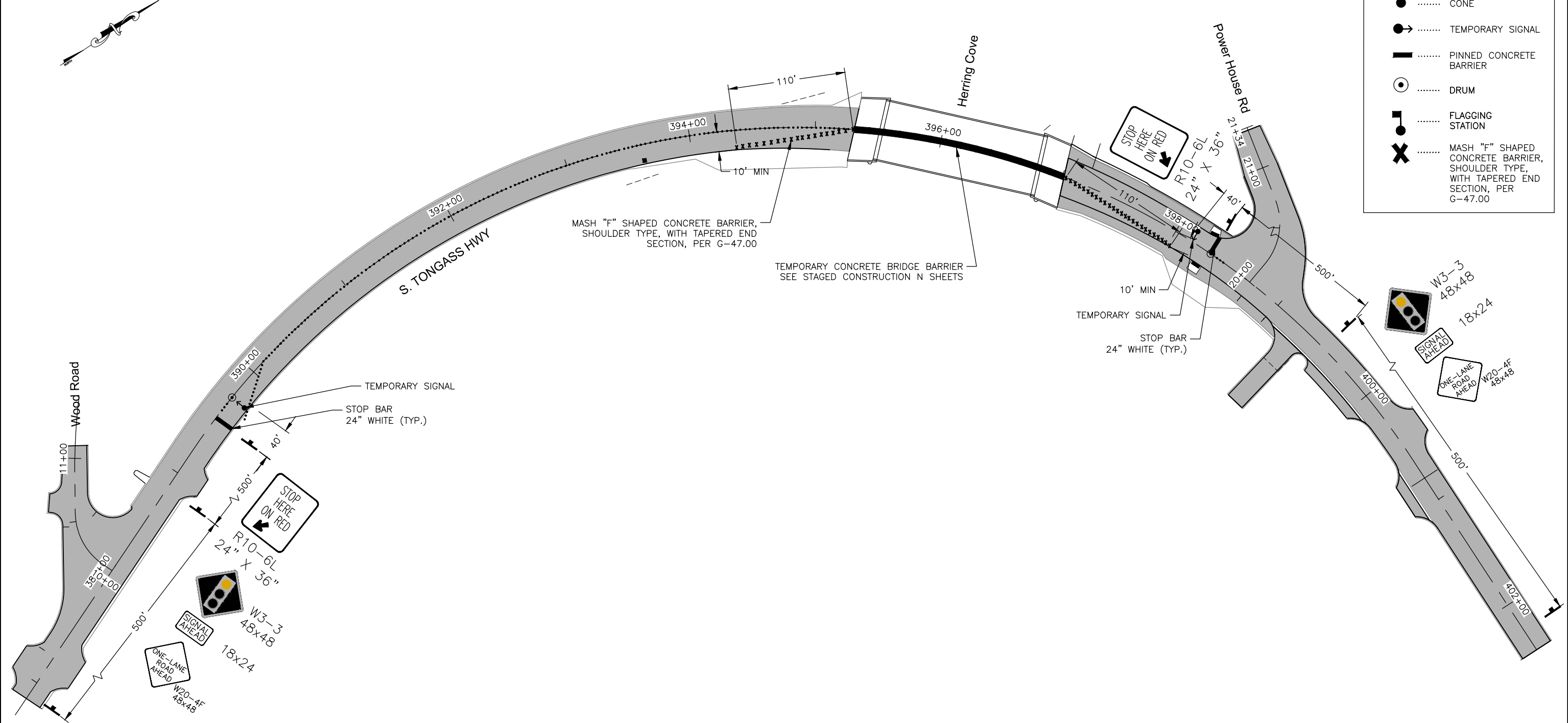
PERMANENT CONSTRUCTION SIGNS

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	T2	4



LEGEND

- SIGN
- CONE
- TEMPORARY SIGNAL
- PINNED CONCRETE BARRIER
- DRUM
- FLAGGING STATION
- MASH "F" SHAPED CONCRETE BARRIER, SHOULDER TYPE, WITH TAPERED END SECTION, PER G-47.00



FILE G:\ktn\SFHWHY00072\PlanSet\00072_T2.dwg DATE 8/9/2021 11:45 LAYOUT T2 TRAFFIC CONTROL DESIGNED STAFF CHECKED STAFF DRAFTED STAFF

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

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

KTN HERRING COVE BRIDGE IMPROVEMENTS

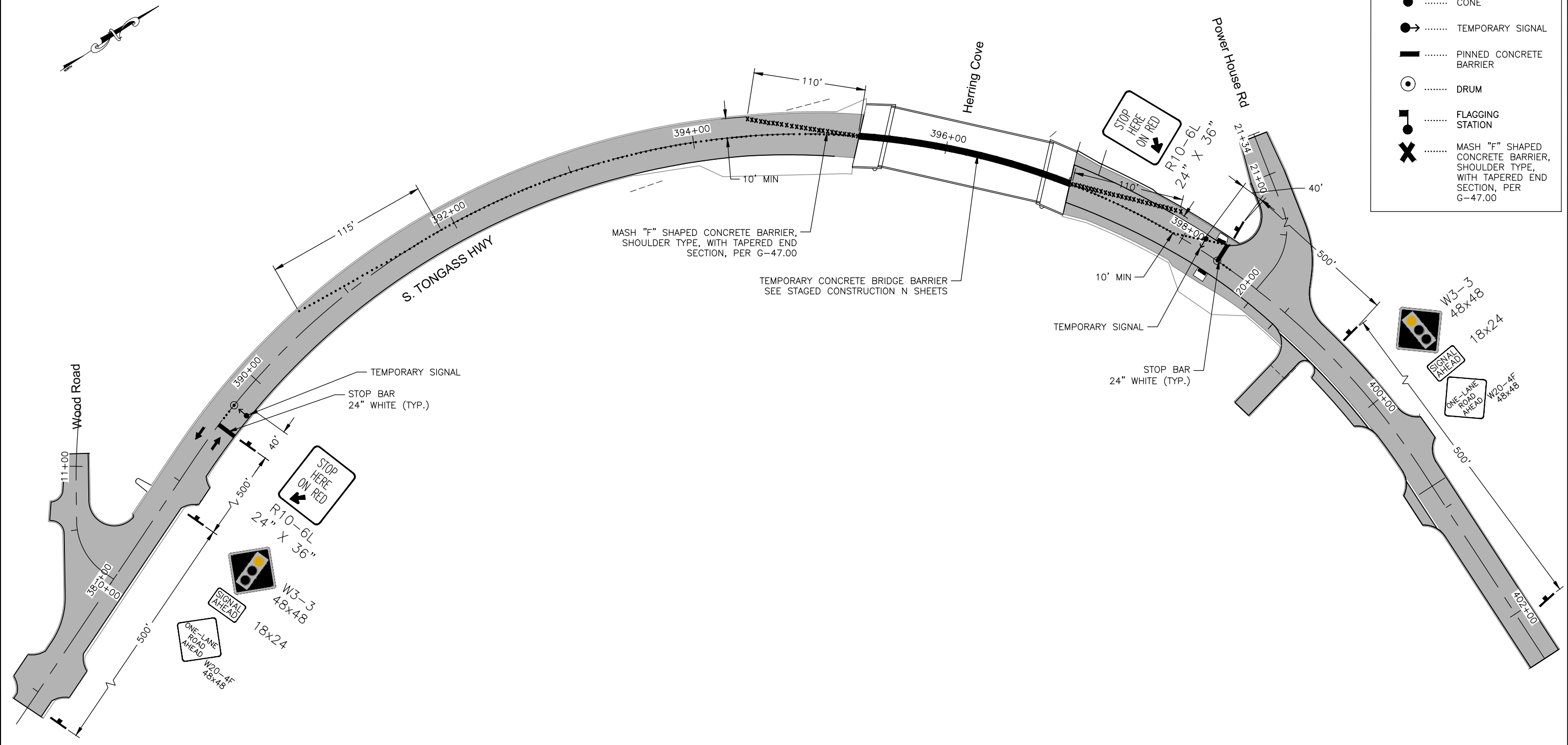
STAGED CONSTRUCTION TEMPORARY SIGNALIZATION

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	T3	4



LEGEND

- SIGN
- CONE
- TEMPORARY SIGNAL
- PINNED CONCRETE BARRIER
- DRUM
- FLAGGING STATION
- MASH "F" SHAPED CONCRETE BARRIER, SHOULDER TYPE, WITH TAPERED END SECTION, PER G-47.00



FILE G:\ktn\SFHWHY00072\Plan\set\00072_T3.dwg DATE 8/9/2021 11:46 LAYOUT T3 TRAFFIC CONTROL DESIGNED STAFF CHECKED STAFF DRAFTED STAFF

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

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

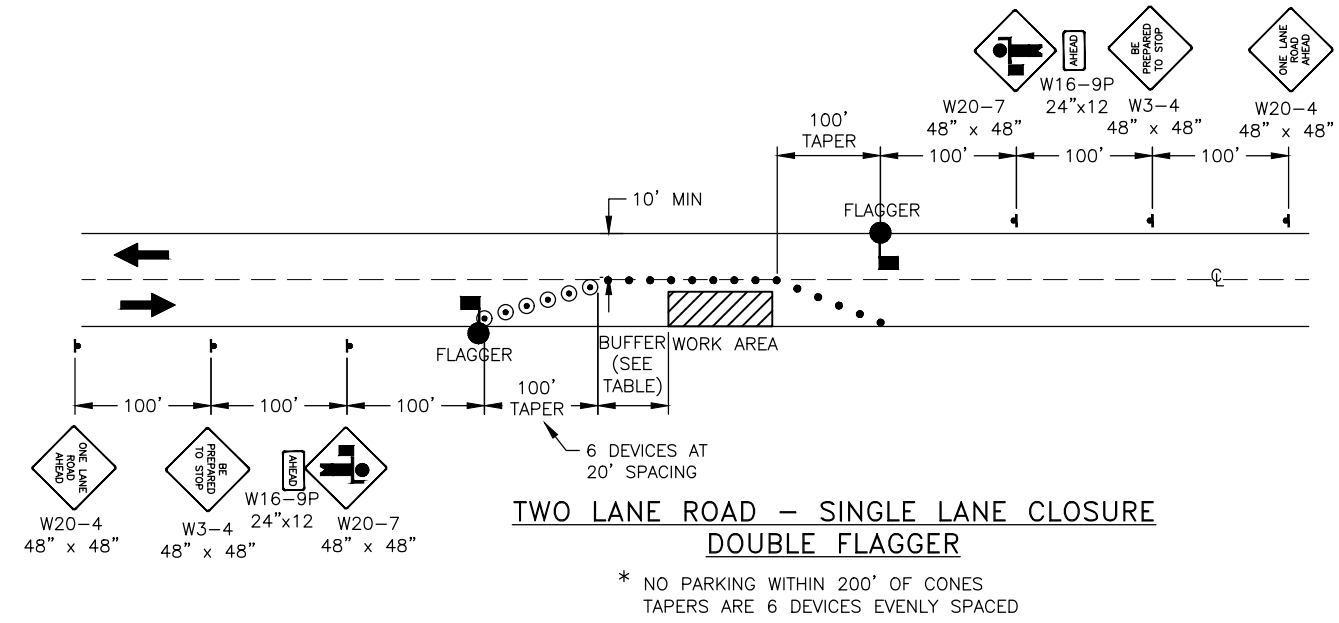
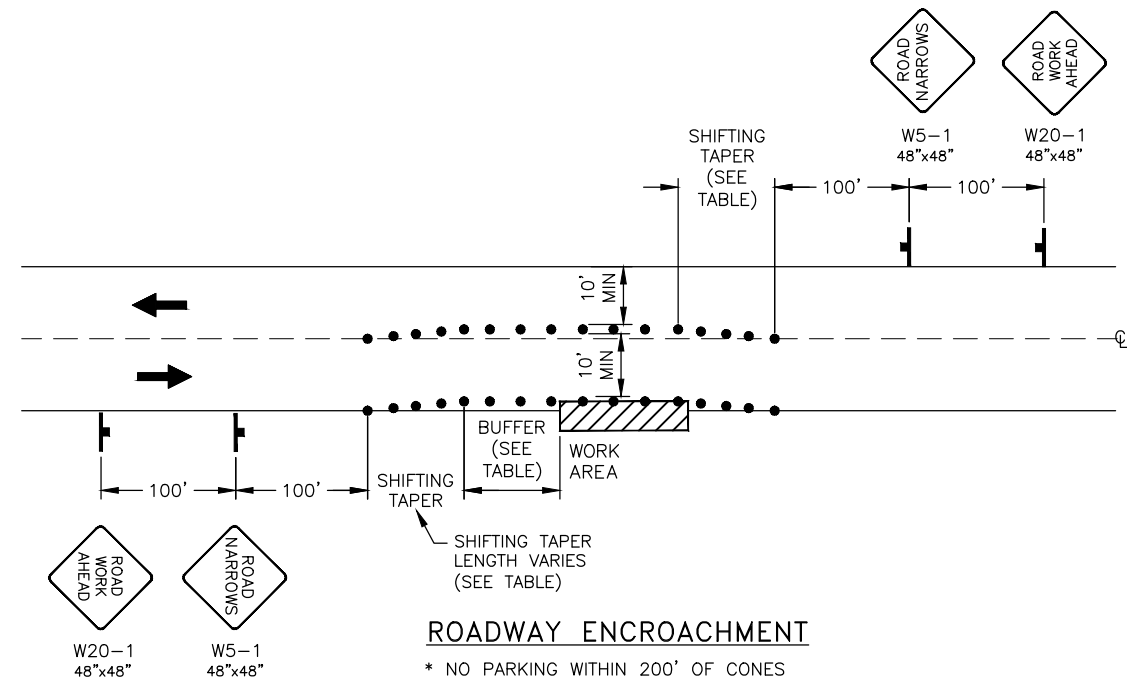
**KTN HERRING COVE BRIDGE
IMPROVEMENTS**

STAGED CONSTRUCTION TEMPORARY
SIGNALIZATION

FILE G:\Ktn\SFH\00072\Plan\set\00072_T1.dwg DATE 8/9/2021 11:43 LAYOUT T4 TRAFFIC CONTROL DESIGNED STAFF CHECKED STAFF DRAFTED STAFF

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFH\00072	2021	T4	4

TCP SETUP TABLE				
FORMULA FOR DETERMINING SHIFTING TAPER LENGTH (40 MPH OR LESS)	MAX DEVICE SPACING (FT)			MIN BUFFER SPACE (FT)
	SPEED	ALONG SHIFTING TAPER	ALONG TANGENT	
$L = WS^2/120$ WHERE: L = TAPER LENGTH IN FEET W = WIDTH OF OFFSET IN FEET S = POSTED SPEED LIMIT (MPH)	25 MPH OR BELOW	25'	50'	155'
	30 MPH	30'	60'	200'



TRAFFIC CONTROL NOTES

1. A MINIMUM OF ONE LANE SHALL BE MAINTAINED AT ALL TIMES, THROUGH ALL WORK AREAS.
2. TWO LANES SHALL BE MAINTAINED AT ALL TIMES IN NON-WORK AREAS DURING NON-WORKING HOURS.
3. TEMPORARY DRIVING LANES SHALL HAVE A MINIMUM WIDTH OF 10'.
4. CONSTRUCTION SIGNS SHALL BE IN PLACE ONLY WHEN THE CONDITIONS THEY WARN ABOUT EXIST.
5. THE CONTRACTOR SHALL PROVIDE VEHICULAR ACCESS THRU WORK ZONES AS REQUIRED BY THE ENGINEER.
6. FLOOD LIGHTS SHALL BE PROVIDED FOR FLAGGER STATIONS DURING NIGHT OPERATIONS.
7. CHANNELIZATION DEVICES, IF USED AT NIGHT, SHALL BE LIT IN ACCORDANCE WITH THE ALASKA TRAFFIC MANUAL.
8. IT IS THE INTENT OF THIS TRAFFIC CONTROL PLAN (TCP) TO ILLUSTRATE SOME, NOT ALL, OF THE TRAFFIC CONTROL SETUPS WHICH WILL BE REQUIRED ON THIS PROJECT. PLANS FOR CONFIGURATIONS NOT COVERED BY THE TCP SHALL BE CREATED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR APPROVAL. WHERE APPROPRIATE, THEY SHALL INCORPORATE APPLICABLE PORTIONS OF DETAILS ON THESE SHEETS.
9. TEMPORARY PAVEMENT MARKINGS WILL BE REQUIRED AS DESCRIBED IN SECTION 643-3.04 OF THE SPECIFICATIONS.
10. THE CONTRACTOR SHALL RESTORE ACCESS TO BUSINESSES AND HOMES AT THE END OF EVERY WORK DAY. ACCESS TO BUSINESSES AND HOMES SHALL NOT BE SHUT OFF FOR MORE THAN A 24-HOUR PERIOD.
11. THE CONTRACTOR SHALL KEEP THE PUBLIC INFORMED OF HIS CONSTRUCTION ACTIVITIES THROUGH THE USE OF THE LOCAL NEWS MEDIA. NEWS RELEASES SHALL BE APPROVED BY THE PROJECT ENGINEER PRIOR TO THEIR RELEASE. NEWS RELEASES WILL BE REQUIRED BUT NOT LIMITED TO, THE ONSET OF WORK, GRINDING, PAVING, AND CHANGES IN THE LANE CONFIGURATIONS.
12. ALL TRAFFIC DETOURS SHALL BE APPROVED BY THE ENGINEERS. PEDESTRIAN TRAFFIC CONTROL PLANS SHALL CONFORM TO THE LATEST COPY OF THE MUTCD. TYPICAL APPLICATIONS TA-28 AND TA-29 ARE RECOMMENDED.
13. THE CONTRACTOR SHALL GIVE 24 HOURS ADVANCE NOTICE BEFORE WORKING ON DRIVEWAYS.
14. IF VEHICLE STOP TIME EXCEEDS FIVE MINUTES, THE CONTRACTOR SHALL SHORTEN HIS WORK ZONE OR RESCHEDULE HIS WORK TO A LESS BUSY HOUR.

LEGEND	
 SIGN
 CONE
 DRUM
 FLAGGING STATION

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

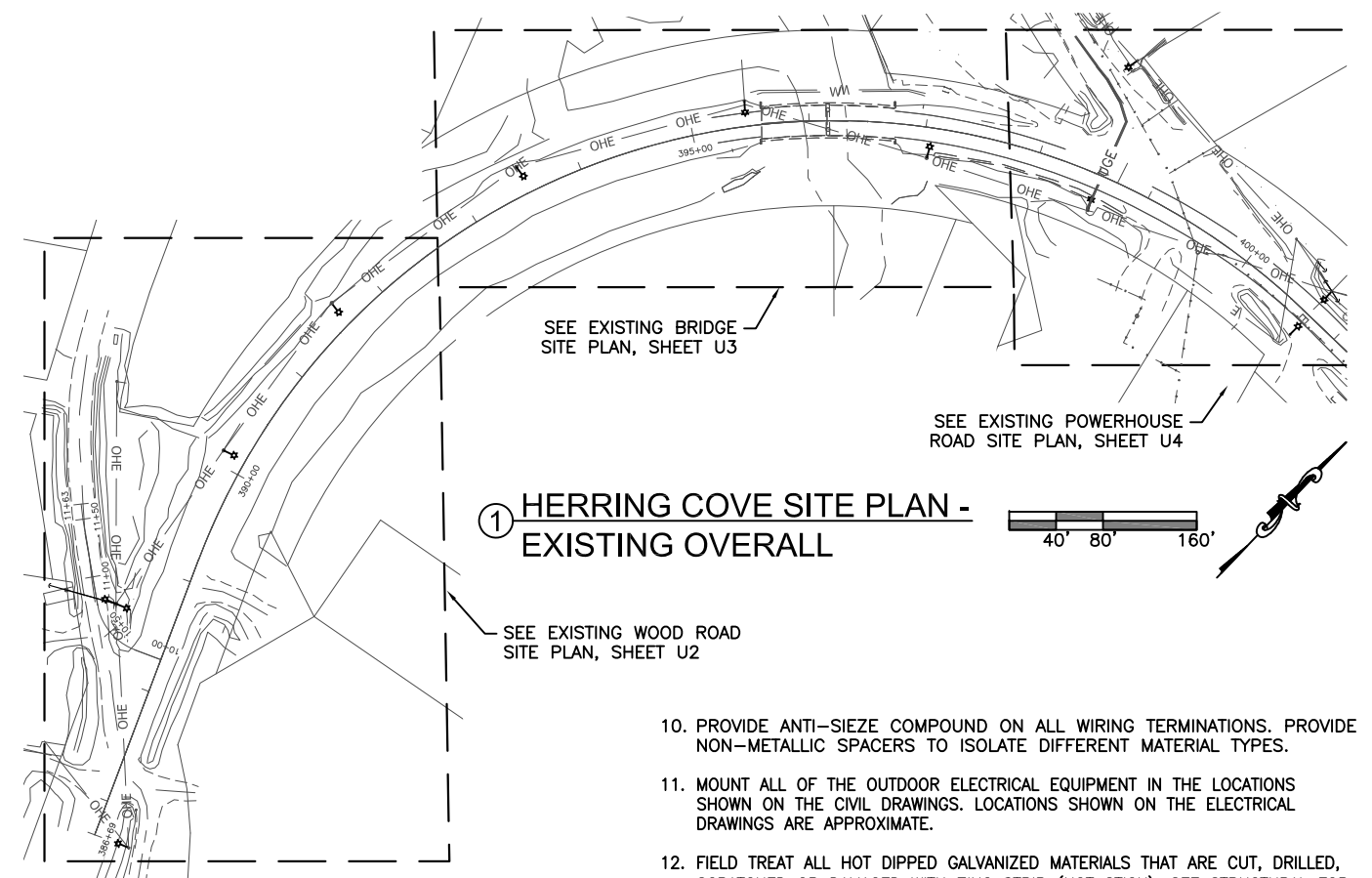
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**KTN HERRING COVE BRIDGE
 IMPROVEMENTS**

TRAFFIC CONTROL

FILE: Y:\02 state of alaska utility relocation design for ketchikan bridges\Working Drawings\00072_U1.dwg
 DATE: 8/6/2021 16:10 LAYOUT U1
 DESIGNED: MCM
 CHECKED: MCM
 DRAFTED: MARTHA

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	U1	45



① HERRING COVE SITE PLAN - EXISTING OVERALL

GENERAL NOTES (APPLICABLE TO THE ENTIRE ELECTRICAL SET OF PLANS AND SPECIFICATIONS, ALL SHEETS U1-U41, AND ALL SPECIFICATION SECTIONS):

- PERFORM ALL WORK PER NATIONAL ELECTRICAL CODE (NEC), 2020 EDITION. PERFORM ALL WORK PER NATIONAL ELECTRICAL SAFETY CODE (NEC), 2017 EDITION.
- PERFORM ALL WORK NEEDED, WORK EXPLICITLY SHOWN, WORK IMPLIED, AND WORK REQUIRED THAT IS NOT SPECIFICALLY NOTED, AS REQUIRED TO PROVIDE COMPLETE AND FULLY FUNCTIONAL POWER, TELECOM, TELEVISION, AND STREET LIGHTING SYSTEMS.
- COORDINATE WITH ALL UTILITIES TO ALLOW THEM TO PERFORM THEIR WORK. UTILITY WORK WILL BE PAID FOR BY OTHERS. DO NOT INSTALL ANYTHING IN CONFLICT WITH UTILITIES. BRING ALL CONFLICTS TO THE ATTENTION OF THE ENGINEER. OBTAIN LOCATES BEFORE WORKING. COORDINATE ALL OUTAGES WITH UTILITIES. ALL SWITCHING AND CLEARANCE ORDERS BY KPU. SEE NOTE 22, THIS SHEET FOR WORK OUTSIDE CONTRACTORS SCOPE.
- UNLESS OTHERWISE NOTED, ALL UNDERGROUND CONDUITS SHALL BE SCHEDULE 80 HDPE, ALL CONDUIT ACROSS BRIDGE SECTIONS SHALL BE FIBERGLASS, AND ALL ABOVE GROUND CONDUITS SHALL BE GR. INSTALL CONDUITS IN TRENCHES PER DETAILS ON SHEET U38. SEE SHEET U18 FOR MORE ON REQUIREMENTS OF HDPE CONDUIT AND INSTALLATION.
- STREET LIGHT WIRING SHALL BE IN CABLE WITH COPPER CONDUCTOR, 600V RATED XHHW INSULATION, AND OVERALL PVC JACKET. PROVIDE ADDITIONAL BARE GROUND. USE BARE GROUND TO GROUND TYPE 1A JUNCTION BOXES, LIGHT POLES, FOUNDATIONS, ETC. BOND GROUND INSIDE CABLE TO LIGHT POLES.
- LOCATE EQUIPMENT WHERE SHOWN ON THE SUMMARY TABLES, SEE SHEET U34. COORDINATE WITH CIVIL. SEE NOTE 11, THIS SHEET.
- THE EXISTING STREET LIGHTING, UTILITIES, ETC. CIRCUITING IS BASED ON THE ORIGINAL DRAWINGS AND MAY NOT BE WHERE SHOWN. OBTAIN PRIVATE LOCATES BEFORE CONSTRUCTION AND PROTECT CONDUIT, EQUIPMENT, ETC. TO REMAIN. ADJUST NEW CONDUIT ROUTING AS REQUIRED TO INTERCEPT, EXTEND, AND RE-USE EXISTING CONDUIT, ETC.
- ALL WORK IS NEW UNLESS OTHERWISE NOTED.
- ALL PART NUMBERS ARE GIVEN AS A GUIDE TO WHAT MATERIAL IS BEING SPECIFIED. THEY ARE BASED UPON INFORMATION AVAILABLE DURING DESIGN AND MAY NOT BE ACCURATE. VERIFY ALL PART NUMBERS DURING BIDDING AND CHANGE AS REQUIRED TO CONFORM TO DRAWINGS AND SPECIFICATIONS. THE DRAWINGS SHALL NOT BE USED AS A BILL OF MATERIALS.

- PROVIDE ANTI-SIEZE COMPOUND ON ALL WIRING TERMINATIONS. PROVIDE NON-METALLIC SPACERS TO ISOLATE DIFFERENT MATERIAL TYPES.
- MOUNT ALL OF THE OUTDOOR ELECTRICAL EQUIPMENT IN THE LOCATIONS SHOWN ON THE CIVIL DRAWINGS. LOCATIONS SHOWN ON THE ELECTRICAL DRAWINGS ARE APPROXIMATE.
- FIELD TREAT ALL HOT DIPPED GALVANIZED MATERIALS THAT ARE CUT, DRILLED, SCRATCHED OR DAMAGED WITH ZINC STRIP (HOT STICK). SEE STRUCTURAL FOR FIELD TREATMENT.
- ALL LOW VOLTAGE CONDUCTORS SHALL BE COPPER, ALL CABLE INSULATION SHALL BE 600V RATED, AND SHALL BE TYPE XHHW. ALL CABLES SHALL BE THE TYPE SPECIFIED, NO SUBSTITUTIONS.
- USE 316 STAINLESS STEEL BOLTS, WASHERS, ETC. TO MOUNT ELECTRICAL EQUIPMENT AND STRUT CHANNEL. ALL FASTENERS AND OTHER EXPOSED HARDWARE SHALL BE 316 STAINLESS STEEL.
- SEAL ALL PENETRATIONS IN ELECTRICAL EQUIPMENT WITH UL LISTED HARDWARE FOR SUCH USE. USE RUBBER OR SILICONE WASHERS IN ADDITION TO STAINLESS STEEL WASHERS.
- PROJECT WILL BE COMPLETED IN PHASES IN CLOSE COORDINATION WITH GENERAL CONSTRUCTION AND CIVIL ACTIVITIES. AN OVERALL PROJECT PHASING PLAN IS REQUIRED. SEE SHEET U5 FOR MORE ON PHASING PLAN REQUIREMENTS.
- PROVIDE OXIDE INHIBITING COMPOUND ON ALL ELECTRICAL CONNECTIONS. BURNDY PENTROX TYPE A OR E AS REQUIRED.
- DRILL A 1/4" HOLE IN ALL CONDUIT ELBOWS INSTALLED UNDERGROUND AND LOW POINTS OF UNDERGROUND CONDUIT TO ALLOW THEM TO DRAIN. DRILL THE HOLES PRIOR TO INSTALLATION. DEBURR THE HOLES AND FIELD TREAT HOT DIPPED GALVANIZED ELBOWS PRIOR TO INSTALLATION. SEE NOTE 12.
- COORDINATE WITH OTHER TRADES TO PERFORM THE ELECTRICAL WORK. STUDY THE OTHER PLANSSETS TO UNDERSTAND HOW OTHER WORK IMPACTS THE ELECTRICAL WORK AND HOW TO INSTALL THE ELECTRICAL EQUIPMENT AND MATERIALS. INSTALL EQUIPMENT AND MATERIALS AS SHOWN ON THE DRAWINGS AND AS REQUIRED TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM. STUDY THE DRAWINGS, COORDINATE WITH OTHER TRADES, DETERMINE HOW AND PROVIDE ALL WORK (MATERIALS AND LABOR) TO MOUNT EQUIPMENT, ROUTE CONDUIT, ROUTE CABLES AND WIRING, AND ALL OTHER DETAILS OF THE INSTALLATION IN ORDER TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM. PROVIDE BACKING PLATES, BLOCKING, MOUNTING HARDWARE, NECESSARY PRODUCT ACCESSORIES AND OPTIONS, SUPPORTS, STRUCTURAL CHANNEL, AS REQUIRED.
- NOTIFY OTHER TRADES AND COORDINATE WITH THEM THE SEQUENCE OF INSTALLING THE ELECTRICAL WORK. IF PORTIONS OF OTHER WORK HAS TO WAIT UNTIL THE ELECTRICAL WORK IS DONE, VERIFY ADEQUATE TIME IS ALLOTTED IN THE CONSTRUCTION SCHEDULE TO ALLOW THE ELECTRICAL WORK TO BE DONE AND MAKE SURE OTHER TRADES HONOR THE SCHEDULE TO ALLOW THE ELECTRICAL WORK TO BE DONE. IT IS UP TO THE GENERAL CONTRACTOR AND ALL SUB-CONTRACTORS TO WORK TOGETHER AS REQUIRED TO PROVIDE THE WORK SHOWN ON THE CONTRACT DOCUMENTS.
- CONDUIT SPACING SHALL BE STRICTLY ENFORCED AND SHALL ADHERE TO SPECIFIC TRENCH SECTION NOTED IN EACH INSTANCE. TRENCH ROUTES AND WIDTHS SHOWN ON THE SITE PLANS ARE GRAPHICAL IN NATURE ONLY AND NOT TO SCALE. SEE SHEET U38 FOR TRENCH DETAILS.

22. **OVERALL PROJECT SCOPE - POWER:** PROVIDE ALL MEDIUM VOLTAGE POWER UTILITY WORK ON THE PROJECT, UNLESS NOTED OTHERWISE. THIS INCLUDES DEMOLITION OF OVERHEAD FACILITIES, RECONFIGURATION OF EXISTING OVERHEAD FACILITIES, AND COORDINATION REQUIRED WITH KPU ELECTRIC. THIS INCLUDES ALL NEW CONDUIT, CONDUCTORS, AND BOXES REQUIRED FOR THE NEW UNDERGROUND DISTRIBUTION SYSTEM, INCLUDING ALL CABLE ELBOW ASSEMBLIES, SPLICES, TERMINATIONS, ETC. THIS INCLUDES ALL POLE INFRASTRUCTURE, EQUIPMENT, MOUNTS, AND ACCESSORIES FOR THE EXISTING TO REMAIN POLES AND THE NEW POLES ON THE PROJECT. WORK INCLUDES ALL PAD MOUNTED SWITCHES, JUNCTION CABINETS, CONCRETE BASEMENTS, TRANSFORMERS, PEDESTALS, AND ASSOCIATED CABLE CONNECTION COMPONENTS, SURGE ARRESTERS, GROUNDING, EQUIPMENT ACCESSORIES, ETC. AS NOTED ON THE PLANS. WORK INCLUDES THE NEW VAULTS IN POWERHOUSE ROAD AND ALL ASSOCIATED CIRCUIT WORK.

ALL CABLING SHALL BE PULLED CONTINUOUS, WITHOUT SPLICES OR TAPS, BETWEEN POLES AND PADS, AND FROM PAD TO PAD. PROVIDE ALL ELECTRICAL WORK REQUIRED, WHETHER SHOWN OR NOT SHOWN, FOR COMPLETE AND FULLY FUNCTIONAL 12.47KV AND 34.5KV UNDERGROUND ELECTRICAL DISTRIBUTION.

CONTRACTOR SHALL PROVIDE TEMPORARY POWER CONNECTIONS DURING CONSTRUCTION. SEE DETAIL 3, SHEET U18.

WORK NOT WITHIN THE CONTRACTOR'S SCOPE INCLUDES: ALL POLE DEMOLITION AND NEW WORK AT POLES P7-P10. ALL UNDERGROUND TO THESE POLES BY CONTRACTOR. SEE PHASING NOTES ON SHEET U5 FOR UTILITY CONTACT INFORMATION.

23. **OVERALL PROJECT SCOPE - TELECOM:** PROVIDE ALL TELECOMMUNICATION (TELEPHONE) WORK ON THE PROJECT, UNLESS NOTED OTHERWISE. THIS INCLUDES ALL DEMOLITION OF OVERHEAD FACILITIES, RECONFIGURATION OF EXISTING OVERHEAD FACILITIES, AND COORDINATION REQUIRED WITH KPU TELECOMMUNICATIONS. THIS INCLUDES ALL NEW CONDUIT, COPPER CABLES, FIBER CABLES, BOXES, AND VAULTS REQUIRED FOR THE NEW UNDERGROUND DISTRIBUTION SYSTEM. ALL CABLES WILL BE PROVIDED, PULLED AND SPLICED, TERMINATED, AND TESTED BY THE CONTRACTOR. WORK INCLUDES ALL POLE CONDUIT RISER AND CABLE WORK, THE EXISTING TO REMAIN POLES, AND THE NEW POLE ON THE PROJECT. WORK INCLUDES ALL PAD MOUNTED AND UNDERGROUND EQUIPMENT AND VAULTS, INCLUDING ALL TELECOMMUNICATIONS GROUNDING NEEDED.

ALL CABLING SHALL BE PULLED CONTINUOUS, WITHOUT SPLICES OR TAPS, BETWEEN POLES AND PADS, AND FROM PAD TO PAD. PROVIDE ALL TELECOMMUNICATIONS WORK REQUIRED, WHETHER SHOWN OR NOT SHOWN, FOR COMPLETE AND FULLY INSTALLED COPPER AND FIBER OPTICAL UNDERGROUND DISTRIBUTION SYSTEM. CONTRACTOR IS RESPONSIBLE FOR ALL COPPER AND FIBER CABLE SPLICING AND TERMINATION WORK.

WORK NOT WITHIN THE CONTRACTOR'S SCOPE INCLUDES: NONE, PROVIDE ALL TELECOMMUNICATIONS WORK ON THE PROJECT. COORDINATE WITH KPU TELECOMMUNICATIONS TO ALLOW THEM TO REVIEW AND APPROVE THE COPPER AND FIBER CABLE BUILDS. SEE PHASING NOTES ON SHEET U5 FOR UTILITY CONTACT INFORMATION.

24. **OVERALL PROJECT SCOPE - TELEVISION:** PROVIDE ALL TELEVISION WORK ON THE PROJECT, UNLESS NOTED OTHERWISE. THIS INCLUDES ALL DEMOLITION OF OVERHEAD FACILITIES, RECONFIGURATION OF EXISTING OVERHEAD FACILITIES, AND COORDINATION REQUIRED WITH GCI UTILITY. THIS INCLUDES ALL NEW CONDUIT, COAXIAL CABLES, AND VAULTS REQUIRED FOR THE NEW UNDERGROUND DISTRIBUTION SYSTEM. ALL CABLES WILL BE PROVIDED, PULLED AND LEFT COILED AS NOTED, TERMINATIONS BY GCI. WORK INCLUDES ALL POLE CONDUIT RISER AND CABLE WORK, THE EXISTING TO REMAIN POLES, AND THE NEW POLE ON THE PROJECT. WORK INCLUDES ALL PAD MOUNTED AND UNDERGROUND EQUIPMENT AND VAULTS, INCLUDING ALL TELEVISION GROUNDING NEEDED.

ALL CABLING SHALL BE PULLED CONTINUOUS, WITHOUT SPLICES OR TAPS, BETWEEN POLES AND PADS, AND FROM PAD TO PAD. PROVIDE ALL TELECOMMUNICATIONS WORK REQUIRED, WHETHER SHOWN OR NOT SHOWN, FOR COMPLETE AND FULLY INSTALLED COAXIAL UNDERGROUND DISTRIBUTION SYSTEM.

WORK NOT WITHIN THE CONTRACTOR'S SCOPE INCLUDES: ALL TELEVISION COAXIAL CABLE SPLICING, TERMINATIONS, CONNECTIONS, TESTING, ETC. ALL SUCH WORK AND THE ACTIVATION OF THE COAXIAL TELEVISION SYSTEM IS BY GCI. SEE PHASING NOTES ON SHEET U5 FOR UTILITY CONTACT INFORMATION.

25. **OVERALL PROJECT SCOPE - STREET LIGHTING:** PROVIDE ALL STREET LIGHTING WORK ON THE PROJECT, UNLESS NOTED OTHERWISE. THIS INCLUDES ALL DEMOLITION OF OVERHEAD FACILITIES, RECONFIGURATION OF EXISTING OVERHEAD FACILITIES, AND COORDINATION REQUIRED WITH KPU UTILITY. THIS INCLUDES ALL NEW CONDUIT, COPPER POWER CONDUCTORS AND CABLES, JUNCTION BOXES, LIGHT POLES, LIGHT FIXTURES, LIGHT POLE BASES, GROUNDING, SURGE AND FUSE PROTECTION, ETC. AS REQUIRED FOR THE NEW UNDERGROUND STREET LIGHTING SYSTEM. WORK INCLUDES A COMPLETE AND FULLY FUNCTIONAL DOT&PF STANDARD TYPE 1A LIGHTING LOAD CENTER, AND WORK INCLUDES ALL STREET LIGHTING GROUNDING REQUIRED AND NOTED. AS WELL, WORK INCLUDES ALL TEMPORARY ROADWAY LIGHTING REQUIRED DURING CONSTRUCTION.

ALL STREET LIGHTING CIRCUITS SHALL BE PULLED CONTINUOUS, WITHOUT SPLICES OR TAPS, BETWEEN POLES, JUNCTION BOXES, AND LIGHTING LOAD CENTER AS REQUIRED. PROVIDE ALL LIGHTING WORK REQUIRED, WHETHER SHOWN OR NOT SHOWN, FOR COMPLETE AND FULLY FUNCTIONAL DOT&PF STREET LIGHTING SYSTEM.

NOTE: SEE SHEET U2 FOR THE SYMBOL LEGEND.

SEE DOT&PF WEBSITE FOR STANDARDS. SEE BELOW:

STANDARD DETAILS THAT APPLY ON PROJECT:
L-03.10 LIGHTING STANDARD
L-23.02 JUNCTION BOXES FOR ELECTROLIER
L-25.01 TYPE 1A LOAD CENTER
L-30.11 CONCRETE STREET LIGHT POLE FOUNDATION

SHEET INDEX

SHEET NO.	SHEET TITLE
U1	HERRING COVE SITE PLAN - EXISTING OVERALL
U2	HERRING COVE SITE PLAN - EXISTING WOOD ROAD
U3	HERRING COVE SITE PLAN - EXISTING BRIDGE
U4	HERRING COVE SITE PLAN - EXISTING POWERHOUSE ROAD
U5	HERRING COVE SITE PLAN - NEW OVERALL & PHASING PLAN
U6	HERRING COVE SITE PLAN - NEW WOOD ROAD
U7A	HERRING COVE SITE PLAN - BRIDGE WORK - STAGE 0
U7B	HERRING COVE SITE PLAN - BRIDGE WORK - STAGE 1
U7C	HERRING COVE SITE PLAN - BRIDGE WORK - STAGE 2
U8	HERRING COVE SITE PLAN - NEW POWERHOUSE ROAD
U9	UTILITY PAD 4 DETAILS
U10	UTILITY PAD 5 & 6 DETAILS
U11	UTILITY PAD 4 - ROADWAY SECTIONS & PAD ELEVATIONS
U12	UTILITY PAD 5 & 6 - ROADWAY SECTIONS & PAD ELEVATIONS
U13	EXISTING BRIDGE TEMP CONDUIT SECTIONS & DETAILS
U14	NEW BRIDGE CONDUIT SECTIONS & DETAILS
U15	DEMOLITION UTILITY SCHEMATIC DIAGRAM
U16	RENOVATION POWER UTILITY SCHEMATIC DIAGRAM
U17	POWER UTILITY RENOVATION SINGLE LINE DIAGRAM
U18	MEDIUM VOLTAGE CABLE DETAILS & CONDUIT SPECS
U19	POLE P2 & P2B ELEVATIONS (KPU#2430-A5-3 & KPU#2430-A5-10)
U20	POLE P5A ELEVATIONS (KPU#2430-B5-12)
U21	POLE P5 ELEVATIONS (KPU#2430-B5-1)
U22	POLE P7 ELEVATIONS (KPU#2430-A4-6)
U23	POLE P8 ELEVATIONS (KPU#2430-A4-7)
U24	POLE P9 ELEVATIONS (KPU#2430-B4-4)
U25	POLE P10 ELEVATIONS (KPU#2430-B4-5)
U26A	UTILITY POLE MATERIAL LISTS
U26B	UTILITY WOOD POLE SPECIFICATION
U27	TRANSFORMER DETAILS
U28	POWER UTILITY SWITCH DETAILS
U29	POWER UTILITY SECTIONALIZING CABINET DETAILS
U30A	POWERHOUSE VAULT ELECTRICAL DETAILS
U30B	POWERHOUSE VAULT STRUCTURAL DETAILS
U31	POWERHOUSE VAULTS - ENLARGED PLAN
U32	DEADBREAK ELBOW DETAILS
U33	LOADBREAK ELBOW DETAILS
U34	SCHEDULES
U35	LIGHTING LOAD CENTER SUMMARY, SCHEMATIC & CALCS.
U36	ELECTROLIER, JUNCTION BOX, & BOLLARD DETAILS
U37	BRIDGE ELECTROLIER & JUNCTION BOX DETAILS
U38	TRENCH DETAILS
U39	RENOVATION TELECOM & TV UTILITY SCHEMATIC DIAGRAM
U40	FIBER CABLE SPLICE DETAILS
U41	TELECOM & TV CKT, PULLING DIAGRAMS, VAULT DETAIL, & COIL TABLE

PLANS DEVELOPED BY:
 MORRIS ENGINEERING GROUP, INC
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UTILITY RELOCATION FOR KETCHIKAN AREA BRIDGES

HERRING COVE SITE PLAN - EXISTING OVERALL

FILE: X:\02 state of al\44 utility relocation design for ketchikan bridges\Working Drawings\00072_U1.dwg
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 DESIGNED: MGM
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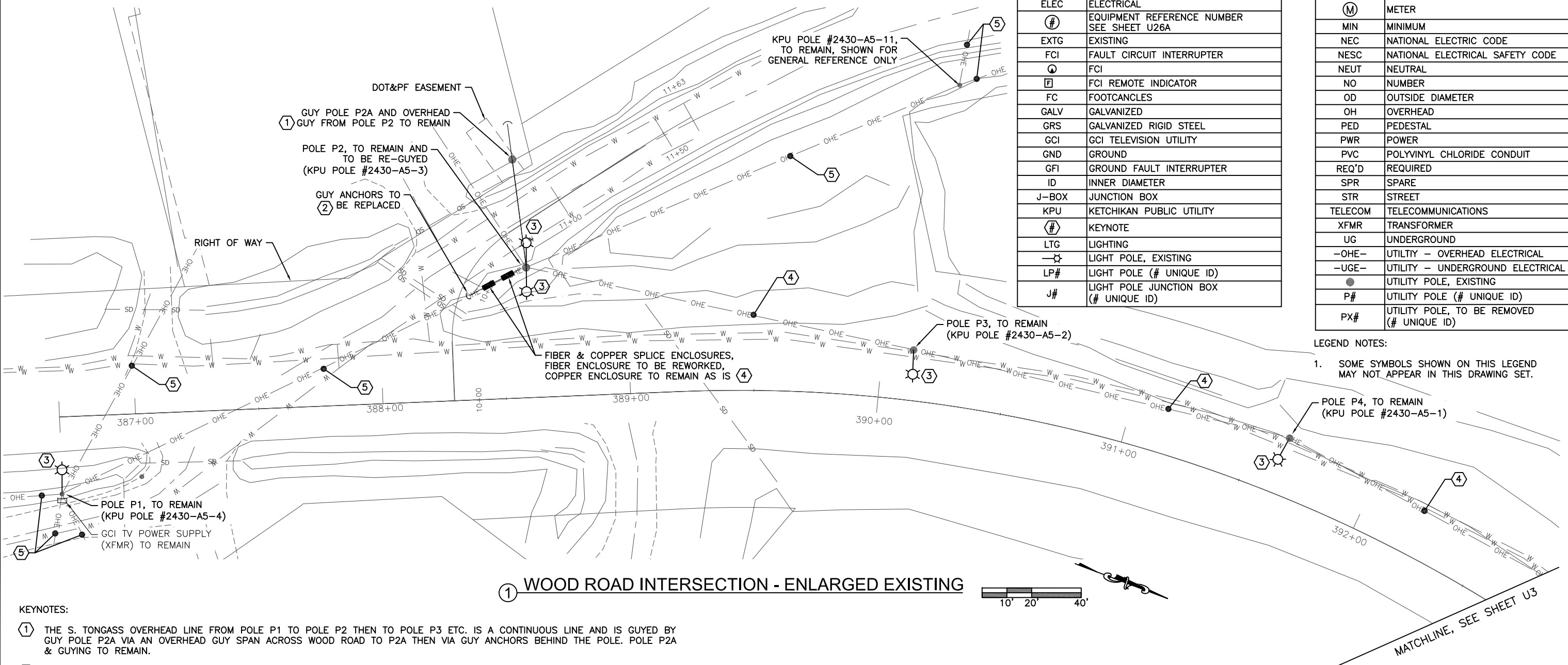
DEMOLITION NOTES (APPLICABLE TO SHEETS U2-U4):

1. AT EXISTING POLES TO REMAIN, GUYING WILL BE REPLACED BY CONTRACTOR AND REWORKING OF OVERHEAD CONNECTIONS SHALL BE BY CONTRACTOR WITH UTILITY SUPPORT. ALL SUCH WORK SHALL BE COORDINATED WITH KPU POWER UTILITY, KPU TELECOM UTILITY, AND GCI TELEVISION UTILITY.
2. REMOVE STREET LIGHTING AND EQUIPMENT MOUNTED TO POLES THAT ARE TO BE DEMOLISHED. KPU POWER HAS FIRST RIGHTS TO SALVAGEABLE MATERIALS AND EQUIPMENT.
3. NO DEMOLITION WORK SHALL BEGIN WITHOUT A WRITTEN AND APPROVED PHASING PLAN THAT INCLUDES DETAILS ON HOW TO MAINTAIN TEMPORARY UTILITIES TO ALL CUSTOMERS THROUGHOUT THE PROJECT. PHASING PLAN GENERAL REQUIREMENTS PER SHEET U5.
4. SOME SITE OVERHEAD UTILITIES ARE TO REMAIN. PROTECT AND MAINTAIN AS REQUIRED.
5. ALL WORK SHALL BE COORDINATED WITH KPU POWER, KPU TELECOMMUNICATIONS, AND GCI TELEVISION UTILITY COMPANIES. SOME WORK IN THE OVERALL PROJECT IS BY UTILITIES, SEE SCOPE DESCRIPTIONS ON SHEET U1.

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	U2	45

AFG	ABOVE FINISHED GRADE
BSMNT	BASEMENT
CU	BARE COPPER
CKT	CIRCUIT
C/B	CIRCUIT BREAKER
20/1	CIRCUIT BREAKER (AMPS/POLES)
C	CONDUIT
	CONTACTOR
ELEC	ELECTRICAL
#	EQUIPMENT REFERENCE NUMBER SEE SHEET U26A
EXTG	EXISTING
FCI	FAULT CIRCUIT INTERRUPTER
Q	FCI
F	FCI REMOTE INDICATOR
FC	FOOTCANDLES
GALV	GALVANIZED
GRS	GALVANIZED RIGID STEEL
GCI	GCI TELEVISION UTILITY
GND	GROUND
GFI	GROUND FAULT INTERRUPTER
ID	INNER DIAMETER
J-BOX	JUNCTION BOX
KPU	KETCHIKAN PUBLIC UTILITY
#	KEYNOTE
LTG	LIGHTING
—○—	LIGHT POLE, EXISTING
LP#	LIGHT POLE (# UNIQUE ID)
J#	LIGHT POLE JUNCTION BOX (# UNIQUE ID)

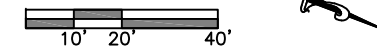
ELECTROLIER	LIGHT POLE, LIGHT POLE BASE FOUNDATION, AND LUMINAIRE
—○—	LIGHT POLE WITH LUMINAIRE
Ⓞ	LIGHTING CONTACTOR
LBOR	LOADBREAK OIL IMMersed ROTARY SWITCH
MAX	MAXIMUM
MCOV	MAXIMUM CONTINUOUS OPERATING VOLTAGE
MV	MEDIUM VOLTAGE
M	METER
MIN	MINIMUM
NEC	NATIONAL ELECTRIC CODE
NESC	NATIONAL ELECTRICAL SAFETY CODE
NEUT	NEUTRAL
NO	NUMBER
OD	OUTSIDE DIAMETER
OH	OVERHEAD
PED	PEDESTAL
PWR	POWER
PVC	POLYVINYL CHLORIDE CONDUIT
REQ'D	REQUIRED
SPR	SPARE
STR	STREET
TELECOM	TELECOMMUNICATIONS
XFMR	TRANSFORMER
UG	UNDERGROUND
-OHE-	UTILITY - OVERHEAD ELECTRICAL
-UGE-	UTILITY - UNDERGROUND ELECTRICAL
●	UTILITY POLE, EXISTING
P#	UTILITY POLE (# UNIQUE ID)
PX#	UTILITY POLE, TO BE REMOVED (# UNIQUE ID)



LEGEND NOTES:

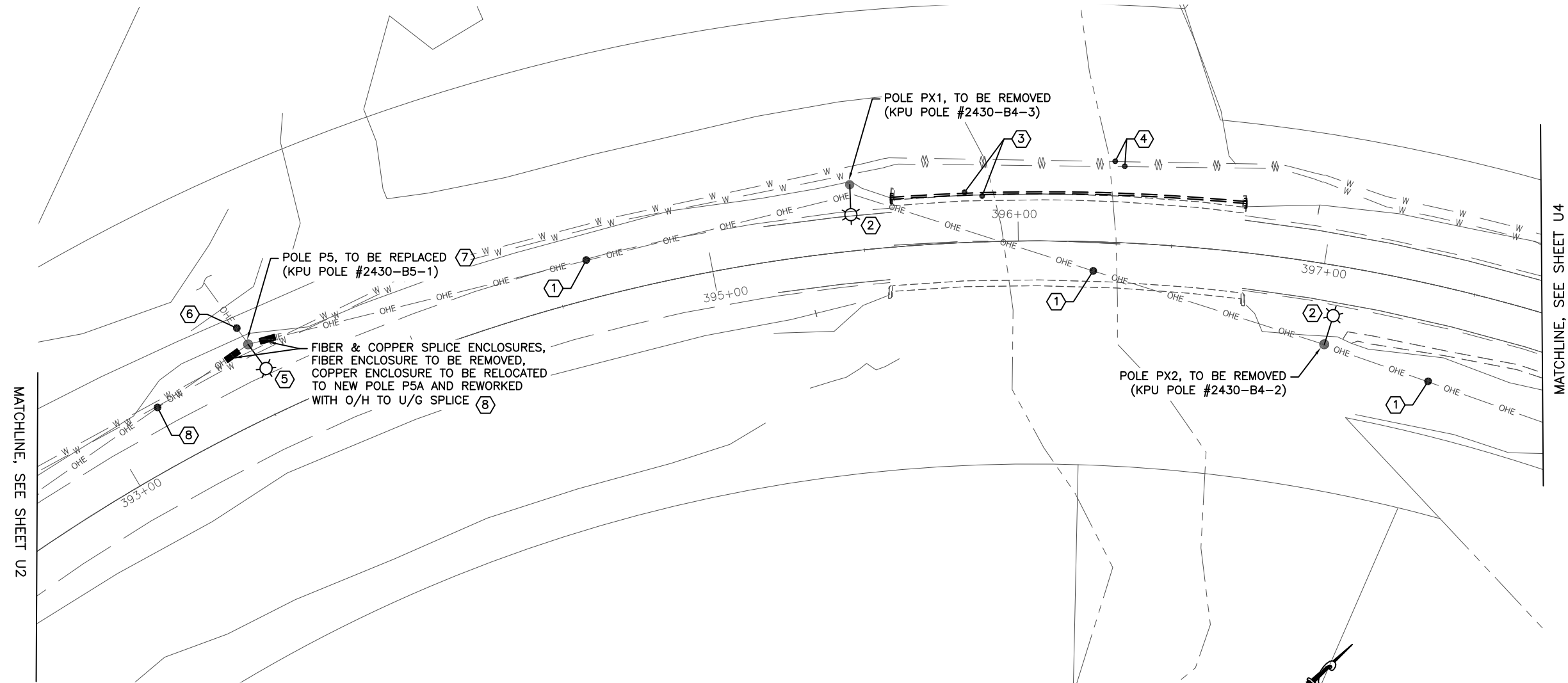
1. SOME SYMBOLS SHOWN ON THIS LEGEND MAY NOT APPEAR IN THIS DRAWING SET.

- KEYNOTES:**
- 1 THE S. TONGASS OVERHEAD LINE FROM POLE P1 TO POLE P2 THEN TO POLE P3 ETC. IS A CONTINUOUS LINE AND IS GUYED BY GUY POLE P2A VIA AN OVERHEAD GUY SPAN ACROSS WOOD ROAD TO P2A THEN VIA GUY ANCHORS BEHIND THE POLE. POLE P2A & GUYING TO REMAIN.
 - 2 THE WOOD ROAD OVERHEAD DEAD ENDS AT POLE P2. IT IS GUYED VIA DOWN GUYS THAT HAVE TO BE MOVED DUE TO THE WOOD ROAD REALIGNMENT. TO REPLACE THESE DOWN GUYS (34.5KV & 12.47KV) A NEW GUY POLE P2B AND DOWN GUYS ARE NEEDED ACROSS WOOD ROAD TO THE SOUTH. THIS CREATES AN ANGLE WITH THE WOOD ROAD OVERHEAD REQUIRING A SECOND SET OF DOWN GUYS, SEE SHEET U6 FOR POLE P2 NEW GUYING WORK.
 - 3 LUMINAIRE AND MAST ARM MOUNTED TO UTILITY POLE TO BE REPLACED IN PLACE WITH NEW. SEE SHEETS U35 & U36 FOR DETAILS. OVERHEAD STREET LIGHTING CIRCUITS TO REMAIN AND BE RE-FED FROM NEW LIGHTING LOAD CENTER AT PAD 4.
 - 4 OVERHEAD POWER AND STREET LIGHTING TO REMAIN. TELECOM: FIBER TO BE REPLACED IN PLACE, COPPER TO REMAIN. TELEVISION: COAX TO BE REPLACED IN PLACE. SEE SHEET U15 FOR DEMO SCHEMATIC, SHEET U39 FOR RENOVATION SCHEMATIC, AND U41 FOR CIRCUIT DIAGRAM.
 - 5 OVERHEAD POWER, STREET LIGHTING, TELECOM, AND TV LINES TO REMAIN. PROTECT AND MAINTAIN AS REQUIRED. EXACT QUANTITIES AND CONFIGURATIONS NOT NOTED HERE.



PLANS DEVELOPED BY: MORRIS ENGINEERING GROUP, INC 2375 JORDAN AVE #7 JUNEAU, AK 99801 907-789-3350 AECL 1010		STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES 6860 GLACIER HIGHWAY, JUNEAU, AK 99801 (907) 465-1763 UTILITY RELOCATION FOR KETCHIKAN AREA BRIDGES HERRING COVE SITE PLAN - EXISTING WOOD ROAD
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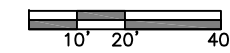
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	U3	45



MATCHLINE; SEE SHEET U2

MATCHLINE; SEE SHEET U4

① HERRING COVE BRIDGE - ENLARGED EXISTING



SHEET NOTES:

- SEE SHEET U2 FOR NOTES APPLICABLE TO THIS PAGE.

KEYNOTES:

- OVERHEAD LINES TO BE REMOVED BY CONTRACTOR. COORDINATE WITH UTILITIES.
- REMOVE LIGHT FIXTURE AND MAST ARM.
- NEW CONDUITS SHALL BE PROVIDED ALONG EXISTING BRIDGE AS PART OF STAGE 0 WORK. SEE SHEETS U7A-U7C FOR BRIDGE WORK DETAILS.
- THERE ARE NUMEROUS EXISTING UNDERGROUND UTILITIES AND INFRASTRUCTURE TO REMAIN. NOT ALL ARE SHOWN ON THE PLANS BUT ALL NEED TO BE PROTECTED AND MAINTAINED THROUGHOUT PROJECT. CONTRACTOR SHALL CALL FOR LOCATES, DIG WITH CAUTION, AND COORDINATE ALL WORK WITH LOCAL UTILITIES, OTHER TRADES, ALASKA DOT&PF, AND CITY OF KETCHIKAN, SO AS TO IDENTIFY AND WORK AROUND UTILITIES TO REMAIN.
- LUMINAIRE AND MAST ARM MOUNTED TO UTILITY POLE TO BE REPLACED IN PLACE WITH NEW. SEE SHEETS U35 & U36 FOR DETAILS. OVERHEAD STREET LIGHTING CIRCUITS TO REMAIN AND BE RE-FED FROM NEW LIGHTING LOAD CENTER AT PAD 4.
- SECONDARY OVERHEAD SERVICE TO CUSTOMER FROM POLE MOUNTED TRANSFORMER AT POLE P5 (TRANSFORMER NOT SHOWN HERE). OVERHEAD TO BE RE-FED FROM NEW PAD MOUNT TRANSFORMER AT PAD 4, POLE TRANSFORMER TO BE REMOVED.
- OVERHEAD UTILITIES WILL TRANSITION TO UNDERGROUND SOUTH OF THE BRIDGE AT EXISTING POLE P5 AND NEW POLE P5A SHOWN IN THE RENOVATION PLANS.
- OVERHEAD POWER (MV CIRCUITS, SECONDARIES, AND STREET LIGHTING) TO BE RECONFIGURED ONTO NEW POLES, TELECOM: FIBER TO BE REPLACED IN PLACE, SOUTHWARD COPPER TO REMAIN, NORTHWARD TO BE REPLACED. TELEVISION: COAX TO BE REPLACED IN PLACE. SEE SHEET U15 FOR DEMO SCHEMATIC, SHEET U39 FOR RENOVATION SCHEMATIC, AND U41 FOR CIRCUIT DIAGRAM.

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 GROUP, INC
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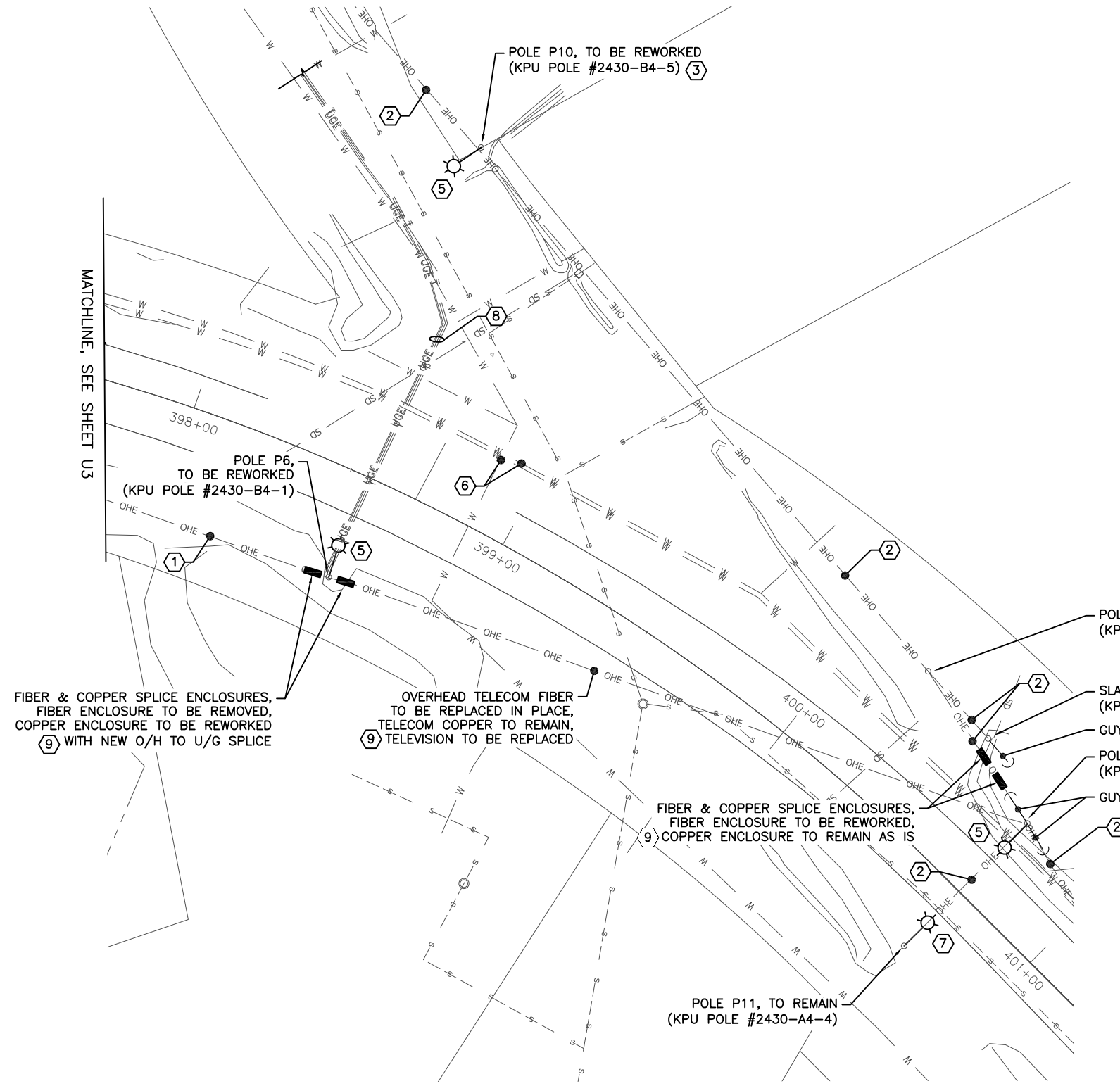
UTILITY RELOCATION FOR
 KETCHIKAN AREA BRIDGES

HERRING COVE SITE PLAN -
 EXISTING BRIDGE

FILE: X:\02 state of ak\44 utility relocation design for ketchikan bridges\Working Drawings\00072_U1.dwg DATE: 8/6/2021 16:10 LAYOUT: U3 CHECKED: MGM DESIGNED: MGM DRAFTED: MARTHA

FILE \\s102 state of al\44 utility relocation design for ketchikan bridges\Working Drawings\00072_U1.dwg DATE 8/6/2021 16:10 LAYOUT U4 DESIGNED MGM CHECKED MGM DRAFTED MARTHA

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	U4	45



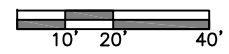
SHEET NOTE:

- SEE SHEET U2 FOR NOTES APPLICABLE TO THIS PAGE.

KEYNOTES:

- OVERHEAD LINES TO BE REMOVED BY CONTRACTOR. COORDINATE WITH UTILITIES.
- OVERHEAD LINES TO BE RECONFIGURED BY UTILITY. PROTECT AND MAINTAIN AS REQUIRED. COORDINATE WITH UTILITIES.
- POLE TO REMAIN AND BE REWORKED AS REQUIRED. ALL WORK BY KPU UTILITIES PER DETAILS IN THIS DRAWINGS PACKAGE.
- POLE TO BE REPLACED AS REQUIRED. ALL WORK BY KPU UTILITIES PER DETAILS IN THIS DRAWINGS PACKAGE.
- REMOVE LIGHT FIXTURE AND MAST ARM.
- THERE ARE NUMEROUS EXISTING UNDERGROUND UTILITIES AND INFRASTRUCTURE TO REMAIN. NOT ALL ARE SHOWN ON THE PLANS BUT ALL NEED TO BE PROTECTED AND MAINTAINED THROUGHOUT PROJECT. CONTRACTOR SHALL CALL FOR LOCATES, DIG WITH CAUTION, AND COORDINATE ALL WORK WITH LOCAL UTILITIES, OTHER TRADES, ALASKA DOT&PF, AND CITY OF KETCHIKAN, SO AS TO IDENTIFY AND WORK AROUND UTILITIES TO REMAIN.
- LUMINAIRE AND MAST ARM MOUNTED TO UTILITY POLE TO BE REPLACED IN PLACE WITH NEW. SEE SHEETS U35 & U36 FOR DETAILS.
- LIVE UNDERGROUND 12.47KV & 34.5KV POWER CIRCUITS, AND SPARE TELECOM CONDUITS ROUTED UP POWERHOUSE ROAD FROM THE OVERHEAD TRANSITION AT POLE P6. LINES WILL BE REWORKED INTO AND PAST NEW VAULTS IN POWERHOUSE ROAD. SEE SHEET U8 FOR DETAILS.
- SEE SHEET U15 FOR TELECOM DEMO SCHEMATIC, SHEET U39 FOR RENOVATION SCHEMATIC, AND U41 FOR CIRCUIT DIAGRAM.

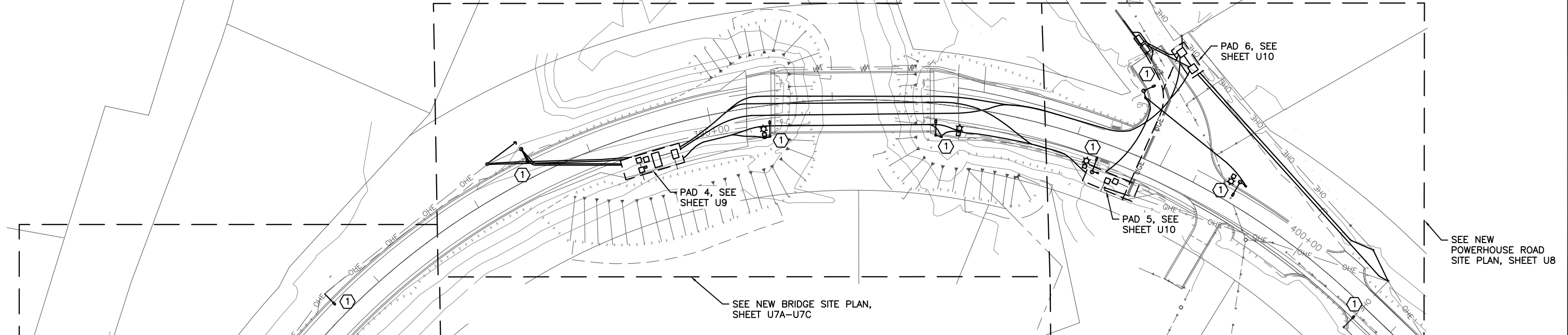
1 POWERHOUSE ROAD INTERSECTION - ENLARGED EXISTING



<p>PLANS DEVELOPED BY: MORRIS ENGINEERING GROUP, INC 2375 JORDAN AVE #7 JUNEAU, AK 99801 907-789-3350 AECL 1010</p>		<p>STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES 6860 GLACIER HIGHWAY, JUNEAU, AK 99801 (907) 465-1763</p> <p>UTILITY RELOCATION FOR KETCHIKAN AREA BRIDGES</p> <p>HERRING COVE SITE PLAN - EXISTING POWERHOUSE ROAD</p>
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWW00072	2021	U5	45



KEYNOTES (APPLICABLE TO SHEETS U5-U10):

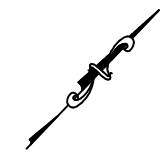
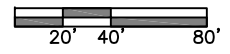
- ① CONTRACTOR IS RESPONSIBLE TO PROVIDE AND MAINTAIN ROADWAY LIGHTING THROUGHOUT CONSTRUCTION. MAINTAINED LIGHT LEVELS DURING CONSTRUCTION SHALL BE NO LESS THAN THE LIGHT LEVELS THAT EXIST PRIOR TO START OF CONSTRUCTION. CONDUCT DARK SKY SURVEY WITH FOOT CANDLE LEVELS NOTED ACROSS SITE AND SHARE WITH ENGINEER PRIOR TO WORK. THE EXACT IMPLEMENTATION OF ROADWAY LIGHTING DURING CONSTRUCTION SHALL BE COORDINATED AND APPROVED BY DOT&PF, PROJECT ENGINEER, AND KPU UTILITY. USE OF EXISTING LIGHTS ON UTILITY POLES, TEMPORARY LIGHT TOWERS, AND NEW LIGHT ON POLES SHOULD ALL BE CONSIDERED. WHAT IS DEPICTED IN THE PLANS AND DESCRIBED IN THE SPECIFICATIONS IS GENERIC, GRAPHIC ONLY REPRESENTATIONS OF THE TEMPORARY LIGHTING SYSTEM. TEMPORARY LIGHTING SYSTEM SHALL BE PAID FOR UNDER THE 660 HIGHWAY LIGHTING SYSTEM PAY ITEM.
- ② (1) 6°C, 34.5KV CIRCUIT. SEE SINGLE LINE ON SHEET U17 FOR DETAILS.
- ③ (1) 6°C, 12.47KV CIRCUIT. SEE SINGLE LINE ON SHEET U17 FOR DETAILS.
- ④ (1) 4°C, WITH KPU TELEPHONE COPPER AND FIBER CABLES. SEE SHEET U41 FOR CABLE DETAILS.
- ⑤ (1) 4°C, GCI COAXIAL CABLE. SEE SHEET U41 FOR CABLE DETAILS.
- ⑥ (1) 6°C, SPARE.
- ⑦ (1) 4°C, SPARE.
- ⑧ (1) 2°C, STREET LIGHTING CIRCUIT. SEE SHEET U35 FOR DETAILS.
- ⑨ (1) 4°C, 120/240V CIRCUIT TO BE SPLICED INTO EXISTING OVERHEAD SERVICE. SEE SINGLE LINE, SHEET U17 FOR DETAILS.
(1) 4°C, SPARE TO POLE.
- ⑩ EXISTING OVERHEAD POWER LINES, STREET LIGHTING CIRCUIT, AND NEW TELECOM AND TV LINES.
- ⑪ (1) 2°C, 7.2KV CIRCUIT TO POLE P10 EXISTING CUSTOMER TRANSFORMER. ALL POLE RISER WORK AND POLE WORK BY KPU UTILITY, COORDINATE AS REQUIRED.
- ⑫ EXISTING POLE TO REMAIN. POLE WILL BE MODIFIED WITH NEW GUYING, TELECOM AND TV, RISER CONDUITS, ETC. SEE PAD 5 DETAIL ON SHEET U10 FOR MORE INFORMATION.
- ⑬ NEW 30' LIGHT POLE WITH NEW LUMINAIRE. SEE ELECTROLIER SUMMARY ON SHEET U34 FOR LUMINAIRE TYPE AND MAST ARM LENGTH. SEE ELECTROLIER SCHEDULE ON SHEET U34 FOR INFORMATION ON LUMINAIRE TYPE.
- ⑭ (1) 2°C, SPARE.
- ⑮ NEW LIGHT POLE JUNCTION BOX NEAR POLE BASE. SEE JUNCTION BOX SUMMARY ON SHEET U34 FOR EXACT LOCATION AND SHEET U36 FOR JUNCTION BOX DETAILS.
- ⑯ EXISTING OVERHEAD POWER STREET LIGHTING, TELECOM, AND TV LINES TO REMAIN. PROTECT AND MAINTAIN.

② CONSTRUCTION PHASING PLAN REQUIREMENTS

1. CONTRACTOR SHALL SUBMIT A WRITTEN PHASING PLAN FOR ALL WORK ON THE PROJECT. THIS PLAN SHALL BE REVIEWED AND APPROVED BY ALL STAKEHOLDERS (DOT&PF PROJECT MANAGEMENT, THE ENGINEER, ALL UTILITIES, ETC.) PRIOR TO COMMENCEMENT OF WORK. NO COMMENCEMENT OF WORK SHALL BEGIN UNTIL THE WRITTEN PHASING PLAN IS REVIEWED AND APPROVED BY ALL STAKEHOLDERS.
2. IN GENERAL, THE PHASING OF THE PROJECT IS EXPECTED TO FOLLOW THESE STEPS:
 - a) CONSTRUCTION OF UNDERGROUND POWER, TELECOM, AND TV INFRASTRUCTURE. PAD MOUNTED SWITCHES AND JUNCTION BOXES HAVE LONG LEAD TIMES, SO INITIAL POWER SPLICES SHALL BE MADE UP WITHIN THE CONCRETE BASEMENTS IN A SAFE BUT TEMPORARY MANNER.
 - b) CONSTRUCTION OF NEW UTILITY POLES AND POLE MOUNTED ELEMENTS.
 - c) CONSTRUCTION OF THE ENTIRE NEW STREET LIGHTING SYSTEM.
 - d) SWITCH OVER TO UNDERGROUND UTILITY CIRCUITS AND NEW UTILITY POLES. THIS INCLUDES THE STAGED TRANSITION TO NEW CIRCUITS AS THE NEW BRIDGE IS REBUILT.
 - e) DEMOLITION OF THE OVERHEAD UTILITIES THAT HAVE BEEN DE-ENERGIZED.
 - f) INSTALLATION OF ABOVEGROUND JUNCTION CABINETS AND SWITCHES AT PAD 4 AND PAD 6.
3. THE PHASING PLAN SHALL ADDRESS, AT A BARE MINIMUM, THE STEPS OUTLINED IN NOTE NUMBER 2 ABOVE. THE PLAN SHALL INCLUDE PROJECTED TIMELINES, SEQUENCE OF WORK STEPS, NECESSARY COORDINATION, STEP-BY-STEP INSTRUCTIONS FOR DETAILED CUTOVER WORK, ETC.
4. THE WRITTEN AND APPROVED PHASING PLAN SHALL BE REVIEWED AND REVISED PERIODICALLY AND RE-SUBMITTED FOR APPROVAL BY ALL STAKEHOLDERS THROUGHOUT THE PROJECT. AT MINIMUM, THE PHASING PLAN SHALL BE RESUBMITTED AND REVIEWED FOR APPROVAL ONCE EVERY TWO WEEKS DURING PROJECT CONSTRUCTION. EVEN IF THERE ARE NO CHANGES TO THE PHASING PLAN, THE PLAN SHALL BE RESUBMITTED, REVIEWED, AND APPROVED FOR USE.
5. EACH PHASING PLAN ITERATION SHALL BE DATED.
6. THE PHASING PLAN SHALL MINIMIZE THE NUMBER AND DURATION OF UTILITY OUTAGES. UTILITY OUTAGE LENGTHS, FREQUENCIES, AND SCHEDULED DATE(S) MUST BE APPROVED BY THE UTILITIES AND INCLUDED IN THE PHASING PLAN.
7. CONTRACTOR IS EXPECTED TO FULLY COORDINATE WITH ALL UTILITIES IN DEVELOPING THE PHASING PLAN. UTILITY CONTACT INFORMATION IS BELOW. PHASING PLAN MUST INCORPORATE UTILITY COMPANY TIME NEEDED FOR CUTOVER WORK, TERMINATIONS, SPLICING, TESTING, COMMISSIONING, CUSTOMER CONTACT AND COORDINATION, EXISTING POLE RECONFIGURATION WORK, ETC. CONTRACTOR SHALL NOT DICTATE THE UTILITY COMPANY TIMELINES FOR THEIR PORTIONS OF WORK BUT RATHER SHALL COORDINATE EARLY AND OFTEN THROUGHOUT THE PROJECT TO ENSURE WORK ACTIVITIES AND TIMELINES FOR WORK CAN BE ACHIEVED.
 - a) KPU POWER UTILITY CONTACT: MARK ADAMS, marka@city.ketchikan.ak.us, 907-225-5505
 - b) KPU TELECOMMUNICATIONS UTILITY CONTACT: JACOB (JAKE) SCHULTZ, jacobs2@city.ketchikan.ak.us, 907-228-5465 (NOTE: ALL KPU TELECOM WORK ON PROJECT BY CONTRACTOR)
 - c) GCI TELEVISION UTILITY CONTACT: EDWIN HARDON, ehardon@gci.com, 907-342-7941

SEE NEW WOOD ROAD SITE PLAN, SHEET U6

① HERRING COVE SITE PLAN - NEW OVERALL



PLANS DEVELOPED BY:
MORRIS ENGINEERING GROUP, INC
2375 JORDAN AVE #7
JUNEAU, AK 99801
907-789-3350
AECL 1010



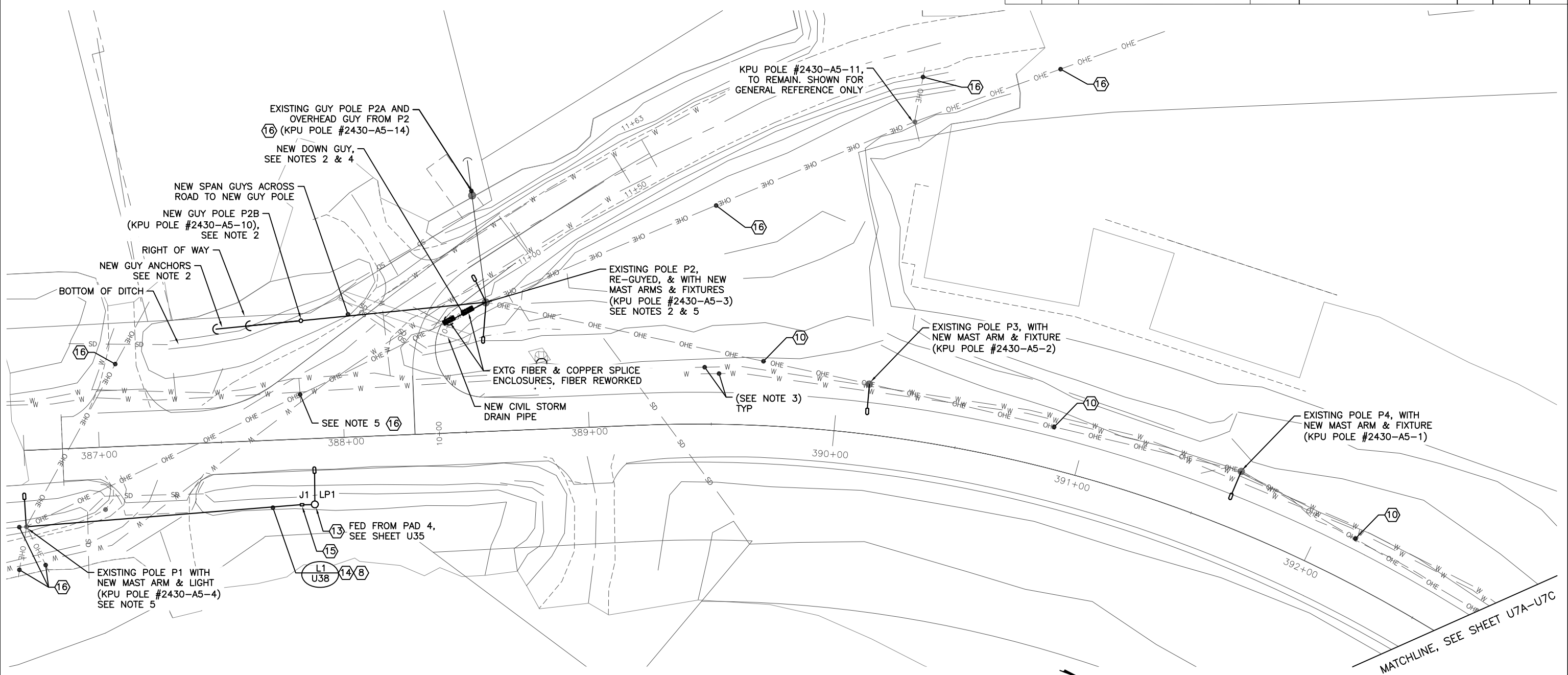
STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
6860 GLACIER HIGHWAY, JUNEAU, AK 99801
(907) 465-1763

UTILITY RELOCATION FOR KETCHIKAN AREA BRIDGES

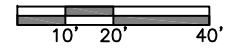
HERRING COVE SITE PLAN - NEW OVERALL & PHASING PLAN

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	U6	45

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 DATE: 8/6/2021 16:10 LAYOUT: U6
 DESIGNED: MGM
 CHECKED: MGM
 DRAFTED: MARTHA



① WOOD ROAD INTERSECTION - ENLARGED NEW



SHEET NOTES:

- SEE SHEET U5 FOR KEYNOTES APPLICABLE TO THIS SHEET.
- PROVIDE NEW GUYING AT POLE, SEE POLE DETAIL SHEET U19 FOR INFORMATION.
- THERE ARE NUMEROUS EXISTING UNDERGROUND UTILITIES AND INFRASTRUCTURE TO REMAIN. NOT ALL ARE SHOWN ON THE PLANS BUT ALL NEED TO BE PROTECTED AND MAINTAINED THROUGHOUT PROJECT. CONTRACTOR SHALL CALL FOR LOCATES, DIG WITH CAUTION, AND COORDINATE ALL WORK WITH LOCAL UTILITIES. OTHER TRADES, ALASKA DOT&PF, AND CITY OF KETCHIKAN. SO AS TO IDENTIFY AND WORK AROUND UTILITIES TO REMAIN.
- COORDINATE EXACT GUY POSITION WITH NEW STORM DRAIN PIPE NOTED ON THIS SHEET. ADJUST ANCHOR DISTANCE FROM WHAT IS SHOWN ON SHEET U19 AS REQUIRED BASED ON FINAL PIPE LOCATION.
- EXISTING STREET LIGHT CIRCUIT OVERHEAD FROM POLE P1 TO POLE P2 TO BE REUSED BUT SOURCED FROM DOT&PF LIGHTING LOAD CENTER AT PAD 4. SPLICE INTO THE CIRCUIT AT POLE P2 AS REQUIRED. EXTEND THE CIRCUIT FROM POLE P1 NEW STREET LIGHT UNDERGROUND TO LIGHT POLE LP1 AS REQUIRED WITH NEW CONDUIT RISERS ON POLE P1 UNDERGROUND TO JUNCTION BOX J1.

PLANS DEVELOPED BY:
 MORRIS ENGINEERING
 GROUP, INC
 2375 JORDAN AVE #7
 JUNEAU, AK 99801
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 AECL 1010



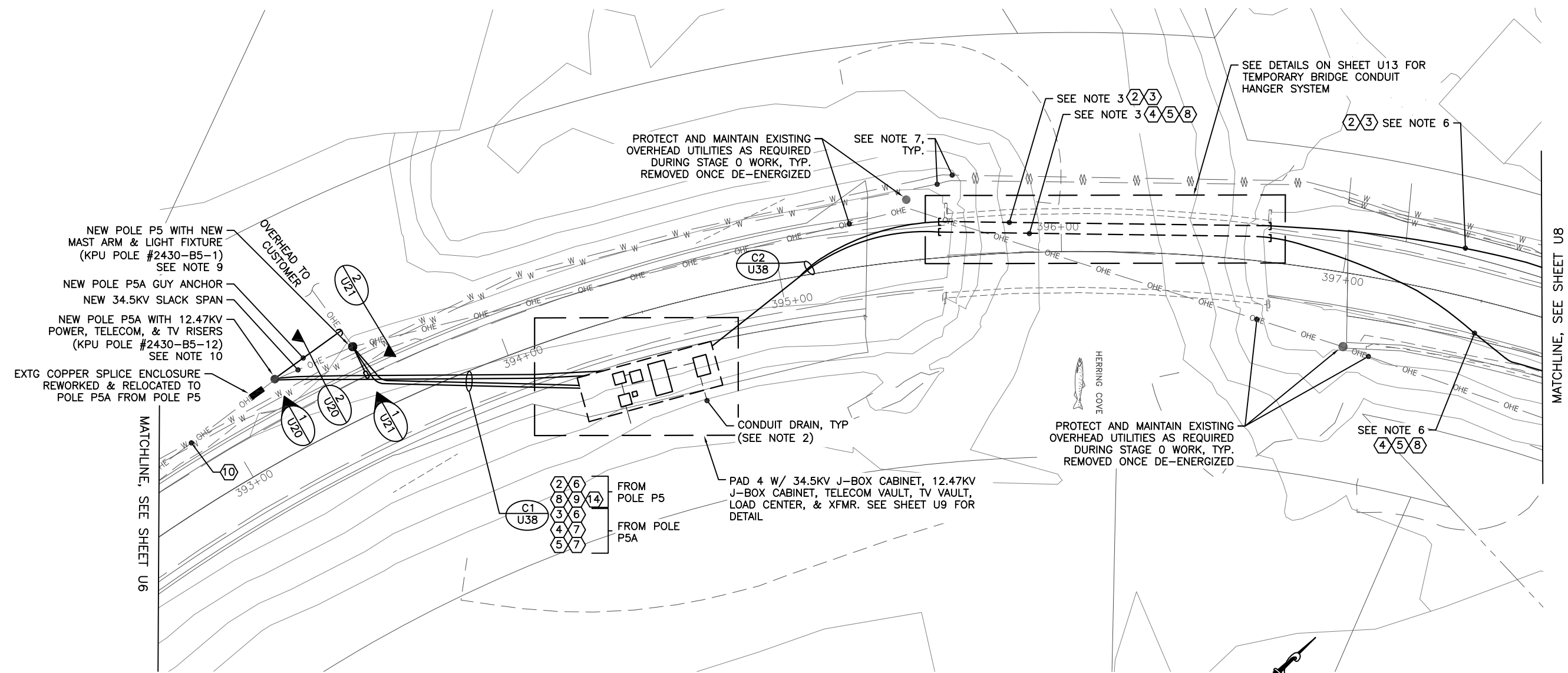
STATE OF ALASKA DEPARTMENT OF TRANSPORTATION
 AND PUBLIC FACILITIES
 6860 GLACIER HIGHWAY, JUNEAU, AK 99801
 (907) 465-1763

UTILITY RELOCATION FOR
 KETCHIKAN AREA BRIDGES

HERRING COVE SITE PLAN -
 NEW WOOD ROAD

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	U7A	45

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1 HERRING COVE BRIDGE - ENLARGED NEW

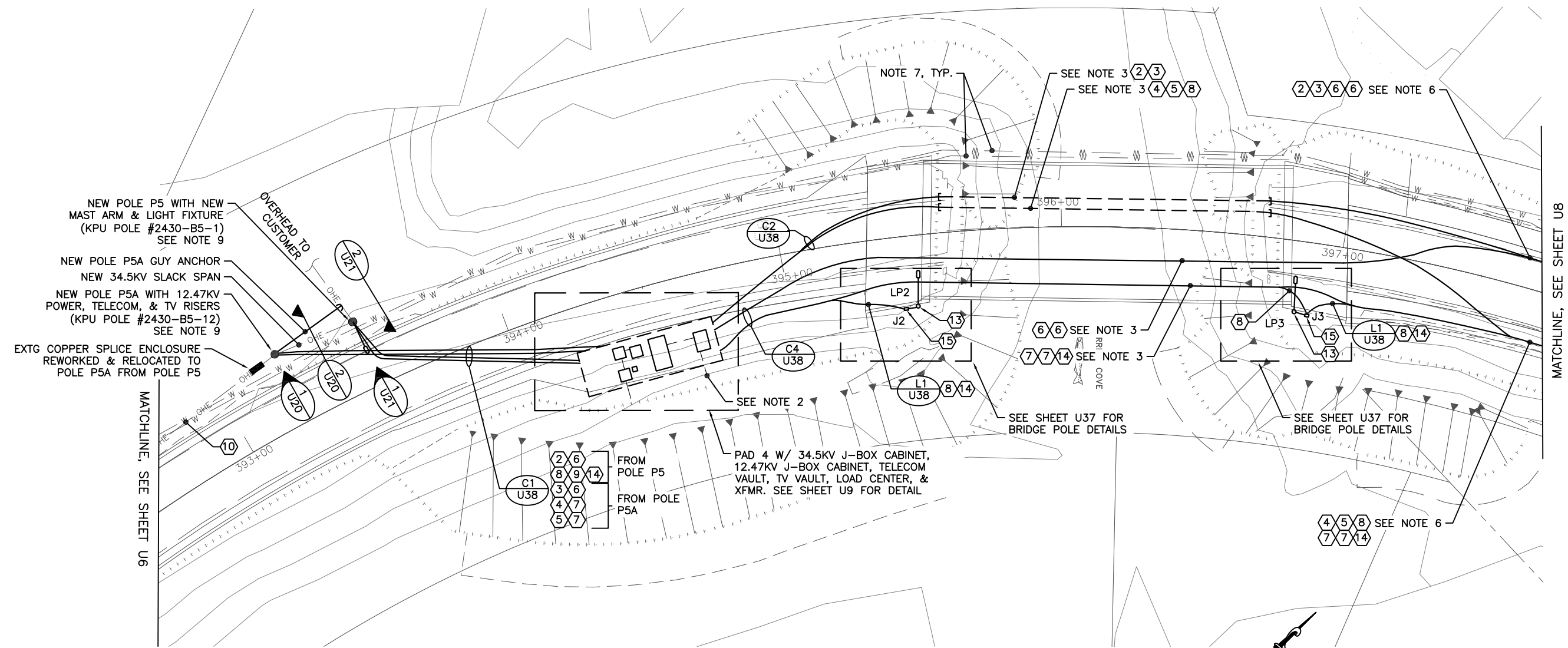
SHEET NOTES:

- SEE SHEET U5 FOR KEYNOTES APPLICABLE TO THIS SHEET.
- BETWEEN EACH UNDERGROUND ELECTRICAL AND TELECOM/TV BASEMENT AND VAULT, PROVIDE A CONDUIT DRAIN TO REMOVE WATER. TIE ADJACENT STRUCTURES TOGETHER WITH A DRAIN AND RUN ANOTHER DRAIN TO DAYLIGHT AS REQUIRED. SLOPE CONDUITS TO DRAIN. SEE INDIVIDUAL EQUIPMENT DETAILS FOR MORE ON THE DRAINS. COORDINATE DRAIN ROUTING WITH CIVIL CONTRACTOR.
- FIBERGLASS CONDUITS ADDED TO EXISTING BRIDGE FOR TEMPORARY UNDERGROUND CIRCUITS NEEDED DURING CONSTRUCTION. SEE SHEET U13 FOR TEMPORARY BRIDGE WORK. CONTINUE CONDUITS TO PAD 4, PAD 5, AND PAD 6 EQUIPMENT CONNECTIONS AS REQUIRED. THESE NEW CONDUITS AT EXISTING BRIDGE WILL BE DEMOLISHED AND CORRESPONDING SECTIONS UNDER ROADWAY ABANDONED AS BRIDGE REPLACEMENT IS COMPLETED.
- THIS SHEET DEPICTS BRIDGE STAGE 0 ELECTRICAL WORK. STAGE 0 WORK INCLUDES ESTABLISHING UNDERGROUND POWER, TELECOM, TV, AND STREET LIGHTING UNDERGROUND ACROSS THE PROJECT SITE, AS WELL AS ACROSS THE EXISTING BRIDGE. THIS WORK IS TO BE COMPLETED BEFORE DEMOLISHING THE EXISTING OVERHEAD ON SITE. STAGE 0 CIRCUITS ACROSS THE EXISTING BRIDGE SHOWN ON THIS SHEET WILL BE ENERGIZED AND USED UNTIL STAGE 1 BRIDGE WORK IS COMPLETE; AFTER WHICH ALL UNDERGROUND SHOWN HERE, FROM PAD 4 TO PADS 5 AND 6, WILL BE DISCONNECTED AND REMOVED WITH CONDUITS DEMOLISHED OR ABANDONED AS APPLICABLE.
- THERE ARE TWO ADDITIONAL STAGES ASSOCIATED WITH WORK BETWEEN PAD 4 AND PADS 5 AND 6. SEE SHEETS U7B AND U7C FOR MORE INFORMATION.
- CONDUITS INDICATED HERE ARE PART OF A LARGER COLLECTION OF CONDUITS IN ONE OVERALL TRENCH THAT HEADS NORTH TO PAD 5 OR PAD 6 AS APPLICABLE. ONLY CONDUITS ASSOCIATED WITH BRIDGE STAGE 0 WORK ARE INDICATED ON THIS SHEET. SEE SHEETS U7B AND U7C FOR MORE CONDUIT WORK.
- THERE ARE NUMEROUS EXISTING UNDERGROUND UTILITIES AND INFRASTRUCTURE TO REMAIN. NOT ALL ARE SHOWN ON THE PLANS BUT ALL NEED TO BE PROTECTED AND MAINTAINED THROUGHOUT PROJECT. CONTRACTOR SHALL CALL FOR LOCATES, DIG WITH CAUTION, AND COORDINATE ALL WORK WITH LOCAL UTILITIES. OTHER TRADES, ALASKA DOT&PF, AND CITY OF KETCHIKAN. SO AS TO IDENTIFY AND WORK AROUND UTILITIES TO REMAIN.
- TRENCH DETAIL REFERENCES ARE CALLED OUT ON THE SITE PLANS AND ARE DEPICTED ON SHEET U38. THE CONTRACTOR IS RESPONSIBLE TO LAYOUT THE CONDUIT TRENCHES THROUGHOUT THE SITE IN COORDINATION WITH GENERAL CONSTRUCTION, FINAL LOCATIONS OF ALL EQUIPMENT AND VAULTS, AND AS NEEDED TO ADJUST TO SITE CONDITIONS NOT CAPTURED IN THE DESIGN DOCUMENTS. KEEP CONDUITS FROM CROSSING ONE ANOTHER AS MUCH AS POSSIBLE, MAINTAIN SEPARATION AND DEPTH DIMENSIONS INDICATED, AND ADJUST SECTIONS DEPICTED IN THE SET AS REQUIRED. THERE WILL BE CASES WHERE A TRENCH REFERENCE ON A SITE PLAN MAY BE MISSING CONDUITS PLANNED IN THAT AREA (i.e. 2" STREET LIGHTING CONDUITS THAT ARE SERVING AREA LIGHT POLES). IN SUCH CASES THE CONTRACTOR IS EXPECTED TO INCLUDE THOSE CONDUITS IN THE OVERALL TRENCH AND ADJUST THE WORK AS REQUIRED.
- REPLACE EXISTING POLE P5 IN PLACE WITH NEW. SEE SHEET U21 FOR POLE P5 DETAILS. POLE TO BE SET AND OVERHEAD LINES CUTOVER AS PART OF BRIDGE STAGE 0 WORK. COORDINATE AS PART OF OVERALL PHASING PLAN, SEE DETAIL 2, SHEET U5.
- PROVIDE NEW POLE P5A ADJACENT TO POLE P5. TO AVOID EXISTING WATERLINES IN THE AREA POLE P5A IS TO BE OFFSET A MINIMUM OF 6 FEET FROM CENTER OF POLE TO NEAREST EDGE OF WATER PIPES PRESENT. FIELD VERIFY AS REQUIRED PRIOR TO WORK. SEE SHEET U20 FOR POLE P5A DETAILS. POLE TO BE SET AND OVERHEAD LINES CUTOVER AS PART OF BRIDGE STAGE 0 WORK. COORDINATE AS PART OF OVERALL PHASING PLAN, SEE DETAIL 2, SHEET U5.

PLANS DEVELOPED BY: MORRIS ENGINEERING GROUP, INC 2375 JORDAN AVE #7 JUNEAU, AK 99801 907-789-3350 AECL 1010		STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES 6860 GLACIER HIGHWAY, JUNEAU, AK 99801 (907) 465-1763 UTILITY RELOCATION FOR KETCHIKAN AREA BRIDGES HERRING COVE SITE PLAN - BRIDGE WORK - STAGE 0
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
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 DESIGNED: MGM
 CHECKED: MGM
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① HERRING COVE BRIDGE - ENLARGED NEW

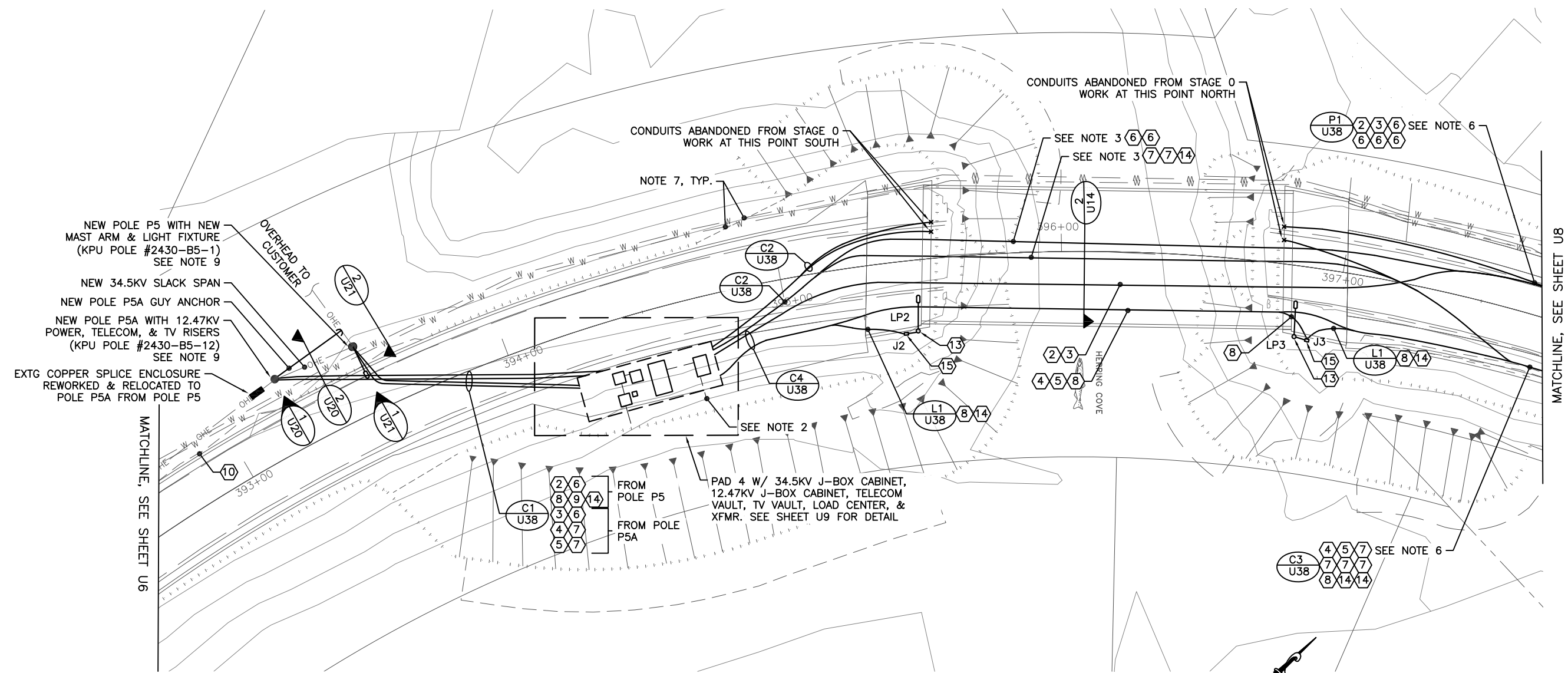
SHEET NOTES:

- SEE SHEET U5 FOR KEYNOTES APPLICABLE TO THIS SHEET.
- INCLUDE DRAINS BETWEEN UNDERGROUND STRUCTURES PER NOTE 2, SHEET U7A.
- UPLAND SIDE CONDUITS AT EXISTING BRIDGE INSTALLED AND ENERGIZED AS PART OF BRIDGE STAGE 0 WORK, SEE SHEET U7A. WATER SIDE CONDUITS AT NEW BRIDGE BUILT AS PART OF STAGE 1 INSTALLED AS SPARE AND THEN ENERGIZED DURING A CUTOVER DURING STAGE 1. AFTER CUTOVER, UPLAND SIDE CONDUITS AND CIRCUITS WILL BE DEMOLISHED OR ABANDONED IN PLACE AS APPLICABLE. SEE DETAILS ON SHEET U14 FOR NEW BRIDGE CONDUIT WORK. CONTRACTOR TO VERIFY ONSITE CONDITIONS AS REQUIRED TO DEVELOP HANGER SYSTEM SPECIFICS (EMBEDMENT, HANGER SPACING, ETC.)
- THIS SHEET DEPICTS BRIDGE STAGE 1 ELECTRICAL WORK. STAGE 1 WORK INCLUDES CONTINUED USE OF STAGE 0 UNDERGROUND ACROSS THE UPLANDS PORTION OF THE EXISTING BRIDGE AND ESTABLISHING UNDERGROUND POWER, TELECOM, TV, AND STREET LIGHTING UNDERGROUND ACROSS THE WATERSIDE PORTION OF THE NEW BRIDGE SEGMENT. THIS WORK IS TO BE COMPLETED AND NEW WATERSIDE CIRCUITS ENERGIZED BEFORE DEMOLISHING THE EXISTING BRIDGE SEGMENT CIRCUITS INSTALLED AS PART OF STAGE 0. ONCE STAGE 1 NEW CIRCUITS SHOWN HERE ARE ENERGIZED, THEY SHALL REMAIN AS THE PERMANENT CIRCUITS UNDERGROUND THROUGH THE END OF CONSTRUCTION. STAGE 0 CONDUITS AND CIRCUITS SHALL BE DEMOLISHED AND ABANDONED ONLY AFTER STAGE 1 CIRCUITS ARE ENERGIZED. STAGE 1 WORK ALSO INCLUDES COMPLETION OF THE BRIDGE STREET LIGHTING WORK DEPICTED HERE, INCLUDING TYING POLES INTO THE STREET LIGHTING CIRCUITS AND INTO THE NEW LIGHTING LOAD CENTER.
- THERE ARE TWO ADDITIONAL STAGES ASSOCIATED WITH WORK BETWEEN PAD 4, PAD 5, AND PAD 6. SEE SHEETS U7A AND U7C FOR MORE INFORMATION.
- CONDUITS INDICATED HERE ARE PART OF A LARGER COLLECTION OF CONDUITS IN ONE OVERALL TRENCH THAT HEADS NORTH TO PAD 5 OR PAD 6 AS APPLICABLE. ONLY CONDUITS ASSOCIATED WITH STAGE 0 AND STAGE 1 WORK INDICATED ON THIS SHEET. SEE SHEET U7C FOR MORE CONDUIT WORK.
- THERE ARE NUMEROUS EXISTING UNDERGROUND UTILITIES AND INFRASTRUCTURE TO REMAIN. NOT ALL ARE SHOWN ON THE PLANS BUT ALL NEED TO BE PROTECTED AND MAINTAINED THROUGHOUT PROJECT. CONTRACTOR SHALL CALL FOR LOCATES, DIG WITH CAUTION, AND COORDINATE ALL WORK WITH LOCAL UTILITIES, OTHER TRADES, ALASKA DOT&PF, AND CITY OF KETCHIKAN, SO AS TO IDENTIFY AND WORK AROUND UTILITIES TO REMAIN.
- TRENCH DETAIL REFERENCES ARE CALLED OUT ON THE SITE PLANS AND ARE DEPICTED ON SHEET U38. THE CONTRACTOR IS RESPONSIBLE TO LAYOUT THE CONDUIT TRENCHES THROUGHOUT THE SITE IN COORDINATION WITH GENERAL CONSTRUCTION, FINAL LOCATIONS OF ALL EQUIPMENT AND VAULTS, AND AS NEEDED TO ADJUST TO SITE CONDITIONS NOT CAPTURED IN THE DESIGN DOCUMENTS. KEEP CONDUITS FROM CROSSING ONE ANOTHER AS MUCH AS POSSIBLE, MAINTAIN SEPARATION AND DEPTH DIMENSIONS INDICATED, AND ADJUST SECTIONS DEPICTED IN THE SET AS REQUIRED. THERE WILL BE CASES WHERE A TRENCH REFERENCE ON A SITE PLAN MAY BE MISSING CONDUITS PLANNED IN THAT AREA (i.e. 2" STREET LIGHTING CONDUITS THAT ARE SERVING AREA LIGHT POLES). IN SUCH CASES THE CONTRACTOR IS EXPECTED TO INCLUDE THOSE CONDUITS IN THE OVERALL TRENCH AND ADJUST THE WORK AS REQUIRED.
- SEE SHEET U7A FOR DETAILS ABOUT EACH POLE.

PLANS DEVELOPED BY: MORRIS ENGINEERING GROUP, INC 2375 JORDAN AVE #7 JUNEAU, AK 99801 907-789-3350 AECL 1010		STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES 6860 GLACIER HIGHWAY, JUNEAU, AK 99801 (907) 465-1763 UTILITY RELOCATION FOR KETCHIKAN AREA BRIDGES HERRING COVE SITE PLAN - BRIDGE WORK - STAGE 1
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
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 DESIGNED: MGM
 CHECKED: MGM
 DRAFTED: MARTHA



1 HERRING COVE BRIDGE - ENLARGED NEW

SHEET NOTES:

- SEE SHEET U5 FOR KEYNOTES APPLICABLE TO THIS SHEET.
- INCLUDE DRAINS BETWEEN UNDERGROUND STRUCTURES PER NOTE 2, SHEET U7A.
- CONDUITS INSTALLED AS PART OF BRIDGE STAGE 2 (FINAL STAGE) WORK SHOWN ON THIS SHEET WILL BE SET AS SPARE CONDUITS AND REMAIN SO THROUGH END OF CONSTRUCTION. SEE DETAILS ON SHEET U14 FOR NEW BRIDGE WORK. PROVIDE ALL SPARES WITH PULLSTRINGS.
- THIS SHEET DEPICTS BRIDGE STAGE 2 ELECTRICAL WORK. STAGE 2 WORK IS THE FINAL STAGE OF WORK. THIS STAGE INCLUDES CONTINUED USE OF STAGE 1 UNDERGROUND ACROSS THE WATERSIDE PORTION OF THE NEW BRIDGE AND INCLUDES INSTALLATION OF NEW UNDERGROUND SPARE POWER, TELECOM, TV, AND STREET LIGHTING CONDUITS ACROSS THE UPLANDS SIDE PORTION OF THE NEW BRIDGE SEGMENT. NEW CONDUITS INSTALLED SHALL BE SPARES, SEE NOTE 3.
- THERE ARE TWO ADDITIONAL STAGES ASSOCIATED WITH WORK BETWEEN PAD 4 AND PADS 5 AND 6. SEE SHEETS U7A AND U7B FOR MORE INFORMATION.
- CONDUITS INDICATED HERE INCLUDE THE COMPLETE COLLECTION OF CONDUITS INSTALLED VIA STAGE 0, 1, AND 2 WORK IN THIS AREA. CONDUITS PROVIDED AS PART OF STAGE 0 WORK WILL BE ABANDONED WITHIN THEIR RESPECTIVE TRENCHES. LABEL AND PLUG ABANDONED CONDUITS AT BOTH ENDS PRIOR TO SUBSTANTIAL COMPLETION.
- THERE ARE NUMEROUS EXISTING UNDERGROUND UTILITIES AND INFRASTRUCTURE TO REMAIN. NOT ALL ARE SHOWN ON THE PLANS BUT ALL NEED TO BE PROTECTED AND MAINTAINED THROUGHOUT PROJECT. CONTRACTOR SHALL CALL FOR LOCATES, DIG WITH CAUTION, AND COORDINATE ALL WORK WITH LOCAL UTILITIES, OTHER TRADES, ALASKA DOT&PF, AND CITY OF KETCHIKAN, SO AS TO IDENTIFY AND WORK AROUND UTILITIES TO REMAIN.
- TRENCH DETAIL REFERENCES ARE CALLED OUT ON THE SITE PLANS AND ARE DEPICTED ON SHEET U38. THE CONTRACTOR IS RESPONSIBLE TO LAYOUT THE CONDUIT TRENCHES THROUGHOUT THE SITE IN COORDINATION WITH GENERAL CONSTRUCTION, FINAL LOCATIONS OF ALL EQUIPMENT AND VAULTS, AND AS NEEDED TO ADJUST TO SITE CONDITIONS NOT CAPTURED IN THE DESIGN DOCUMENTS. KEEP CONDUITS FROM CROSSING ONE ANOTHER AS MUCH AS POSSIBLE, MAINTAIN SEPARATION AND DEPTH DIMENSIONS INDICATED, AND ADJUST SECTIONS DEPICTED IN THE SET AS REQUIRED. THERE WILL BE CASES WHERE A TRENCH REFERENCE ON A SITE PLAN MAY BE MISSING CONDUITS PLANNED IN THAT AREA (i.e. 2" STREET LIGHTING CONDUITS THAT ARE SERVING AREA LIGHT POLES). IN SUCH CASES THE CONTRACTOR IS EXPECTED TO INCLUDE THOSE CONDUITS IN THE OVERALL TRENCH AND ADJUST THE WORK AS REQUIRED.
- SEE SHEET U7A FOR DETAILS ABOUT EACH POLE.

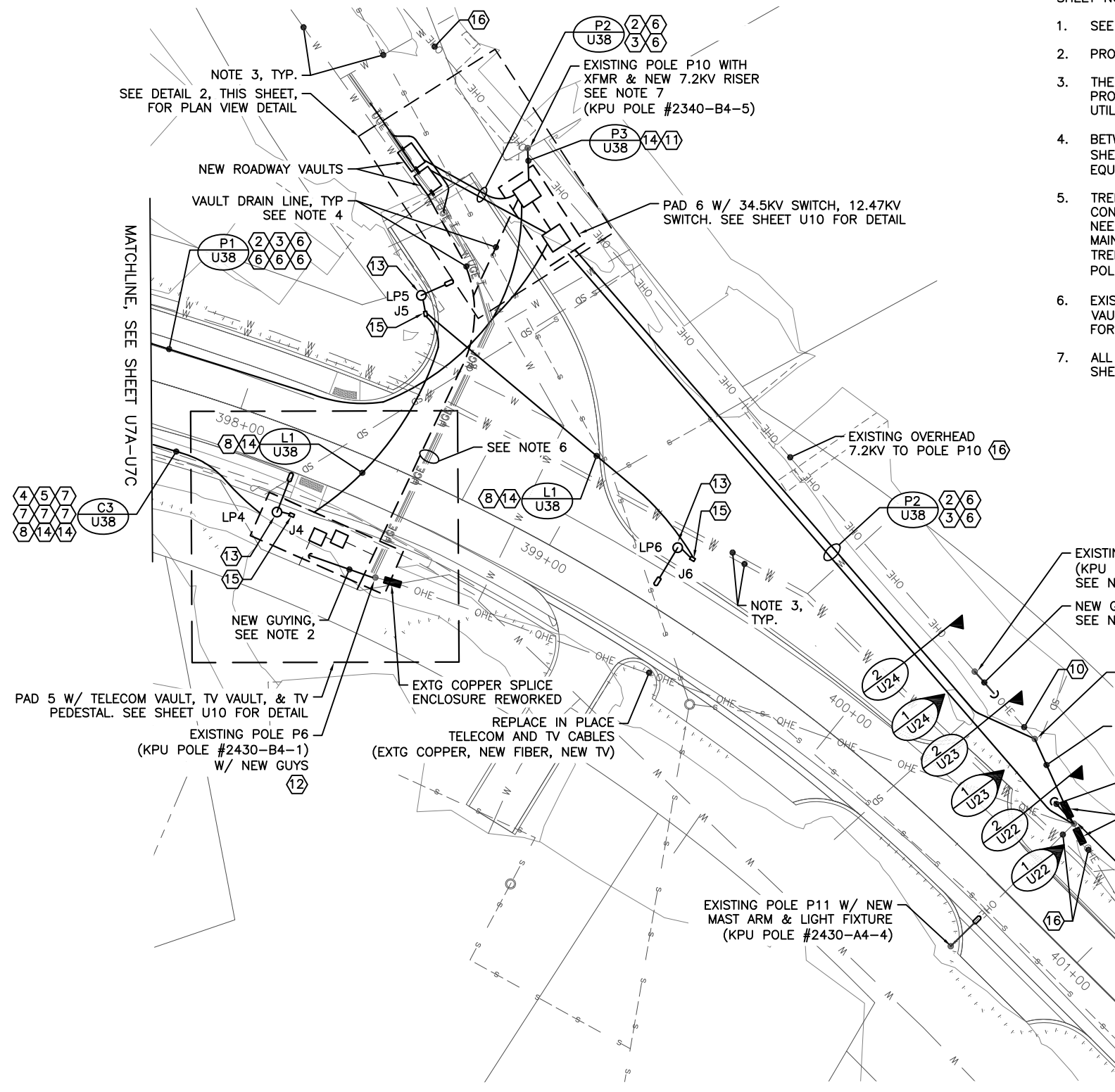
PLANS DEVELOPED BY: MORRIS ENGINEERING GROUP, INC 2375 JORDAN AVE #7 JUNEAU, AK 99801 907-789-3350 AECL 1010		STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES 6860 GLACIER HIGHWAY, JUNEAU, AK 99801 (907) 465-1763 UTILITY RELOCATION FOR KETCHIKAN AREA BRIDGES HERRING COVE SITE PLAN - BRIDGE WORK - STAGE 2
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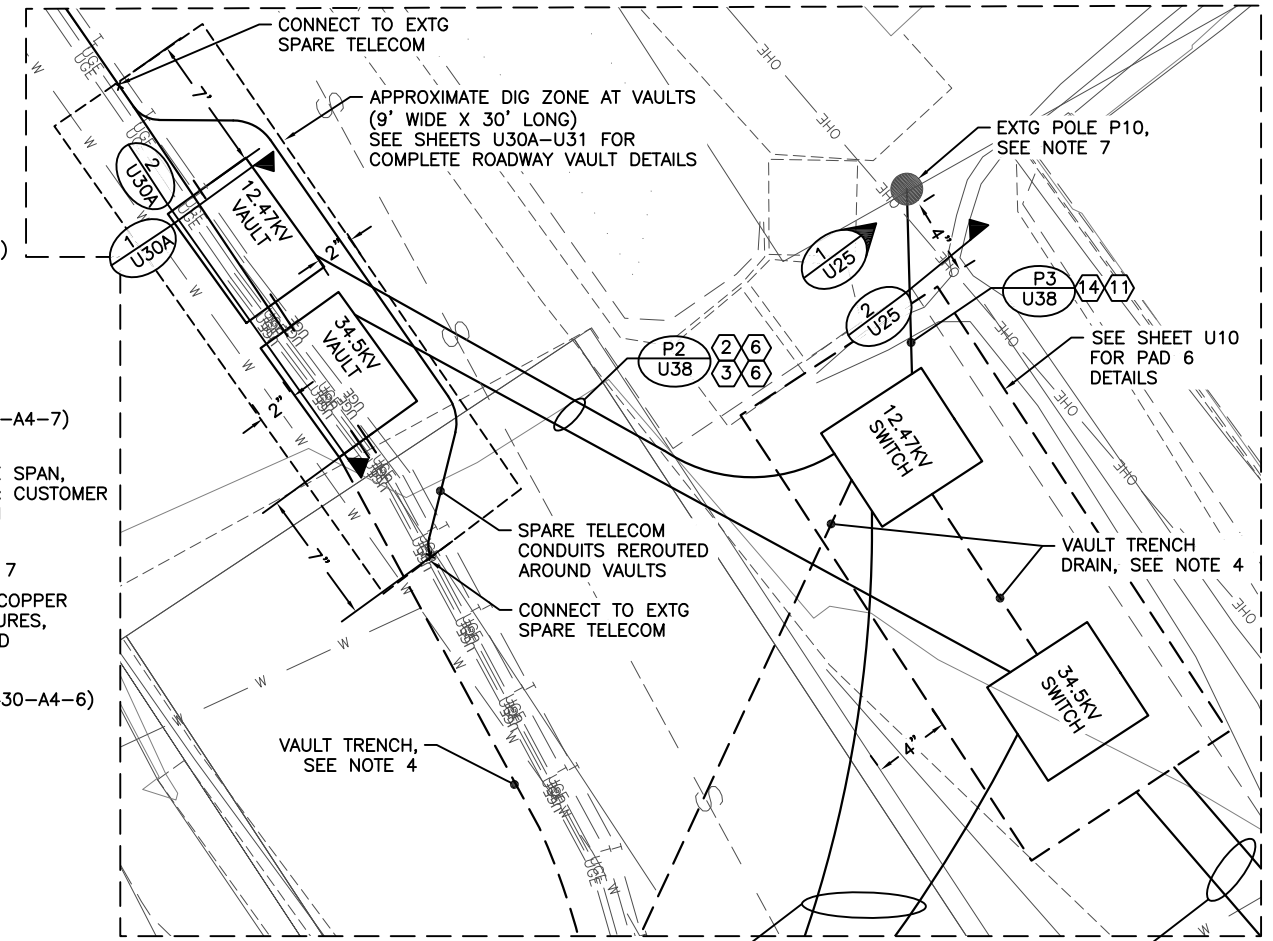
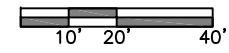
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			ALASKA	0902043/SFHWHY00072	2021	U8	45

SHEET NOTES:

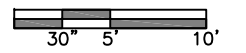
- SEE SHEET U5 FOR KEYNOTES APPLICABLE TO THIS SHEET.
- PROVIDE NEW GUYING AT POLE, SEE SHEET U22 FOR POLE P7 DETAILS AND SHEET U24 FOR POLE P9 DETAILS.
- THERE ARE NUMEROUS EXISTING UNDERGROUND UTILITIES AND INFRASTRUCTURE TO REMAIN. NOT ALL ARE SHOWN ON THE PLANS BUT ALL NEED TO BE PROTECTED AND MAINTAINED THROUGHOUT PROJECT. CONTRACTOR SHALL CALL FOR LOCATES, DIG WITH CAUTION, AND COORDINATE ALL WORK WITH LOCAL UTILITIES, OTHER TRADES, ALASKA DOT&PF, AND CITY OF KETCHIKAN, SO AS TO IDENTIFY AND WORK AROUND UTILITIES TO REMAIN.
- BETWEEN EACH UNDERGROUND ELECTRICAL AND TELECOM/TV BASEMENT AND VAULT, PROVIDE A CONDUIT DRAIN TO REMOVE WATER (LINE DASHED ON THIS SHEET). TIE ADJACENT STRUCTURES TOGETHER WITH A DRAIN AND RUN ANOTHER DRAIN TO DAYLIGHT AT PAD 5. SLOPE CONDUITS TO DRAIN, SEE INDIVIDUAL EQUIPMENT DETAILS FOR MORE ON THE DRAINS. COORDINATE DRAIN ROUTING WITH CIVIL CONTRACTOR.
- TRENCH DETAIL REFERENCES ARE CALLED OUT ON THE SITE PLANS AND ARE DEPICTED ON SHEET U38. THE CONTRACTOR IS RESPONSIBLE TO LAYOUT THE CONDUIT TRENCHES THROUGHOUT THE SITE IN COORDINATION WITH GENERAL CONSTRUCTION, FINAL LOCATIONS OF ALL EQUIPMENT AND VAULTS, AND AS NEEDED TO ADJUST TO SITE CONDITIONS NOT CAPTURED IN THE DESIGN DOCUMENTS. KEEP CONDUITS FROM CROSSING ONE ANOTHER AS MUCH AS POSSIBLE, MAINTAIN SEPARATION AND DEPTH DIMENSIONS INDICATED, AND ADJUST SECTIONS DEPICTED IN THE SET AS REQUIRED. THERE WILL BE CASES WHERE A TRENCH REFERENCE ON A SITE PLAN MAY BE MISSING CONDUITS PLANNED IN THAT AREA (i.e. 2" STREET LIGHTING CONDUITS THAT ARE SERVING AREA LIGHT POLES). IN SUCH CASES THE CONTRACTOR IS EXPECTED TO INCLUDE THOSE CONDUITS IN THE OVERALL TRENCH AND ADJUST THE WORK AS REQUIRED.
- EXISTING CONDUITS TO POLE P6: (1) 6" POWER, (1) 4" POWER, (2) 4" TELECOM. THE POWER CONDUITS TO RISERS AT POLE P6 TO BE REROUTED TO THE VAULTS. THE REMAINDER OF THE CONDUIT SHALL BE ABANDONED IN PLACE. SPARE TELECOM CONDUITS TO BE PROTECTED AND MAINTAINED. SEE SHEET U38 FOR EXISTING POWERHOUSE ROAD TRENCH DETAIL.
- ALL WORK AT AND ON POLES P7-P10 BY KPU UTILITY PER PROJECT PLANS AND SPECIFICATIONS. ALL UNDERGROUND TO THE POLES BY CONTRACTOR. SEE SHEETS U22-U25 FOR POLES P7-P10 DETAILS.



① POWERHOUSE ROAD INTERSECTION - ENLARGED NEW



② POWERHOUSE ROAD VAULT DETAIL



PLANS DEVELOPED BY:
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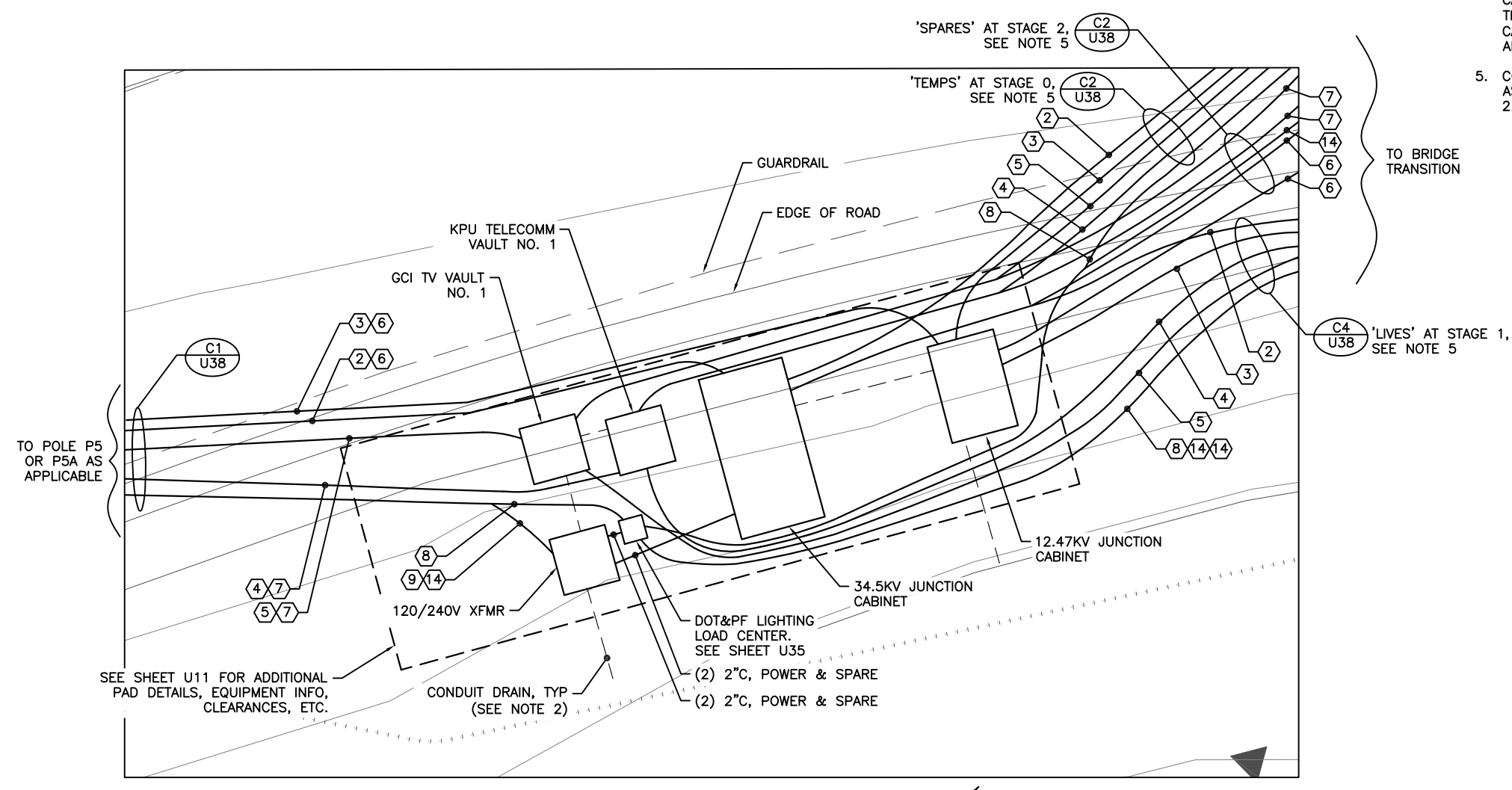
STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
 6860 GLACIER HIGHWAY, JUNEAU, AK 99801
 (907) 465-1763
UTILITY RELOCATION FOR KETCHIKAN AREA BRIDGES
 HERRING COVE SITE PLAN - NEW POWERHOUSE ROAD

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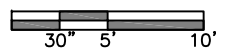
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	U9	45

SHEET NOTES:

- SEE SHEET U5 FOR KEYNOTES APPLICABLE TO THIS SHEET.
- BETWEEN EACH UNDERGROUND ELECTRICAL AND TELECOM/TV BASEMENT AND VAULT, PROVIDE A CONDUIT DRAIN TO REMOVE WATER. TIE ADJACENT STRUCTURES TOGETHER WITH A DRAIN AND RUN ANOTHER DRAIN TO DAYLIGHT AS REQUIRED. SLOPE CONDUITS TO DRAIN, SEE INDIVIDUAL EQUIPMENT DETAILS FOR MORE ON THE DRAINS. COORDINATE DRAIN ROUTING WITH CIVIL CONTRACTOR.
- THERE ARE NUMEROUS EXISTING UNDERGROUND UTILITIES AND INFRASTRUCTURE TO REMAIN. NOT ALL ARE SHOWN ON THE PLANS BUT ALL NEED TO BE PROTECTED AND MAINTAINED THROUGHOUT PROJECT. CONTRACTOR SHALL CALL FOR LOCATES, DIG WITH CAUTION, AND COORDINATE ALL WORK WITH LOCAL UTILITIES, OTHER TRADES, ALASKA DOT&PF, AND CITY OF KETCHIKAN. SO AS TO IDENTIFY AND WORK AROUND UTILITIES TO REMAIN.
- TRENCH DETAIL REFERENCES ARE CALLED OUT ON THE SITE PLANS AND ARE DEPICTED ON SHEET U38. THE CONTRACTOR IS RESPONSIBLE TO LAYOUT THE CONDUIT TRENCHES THROUGHOUT THE SITE IN COORDINATION WITH GENERAL CONSTRUCTION, FINAL LOCATIONS OF ALL EQUIPMENT AND VAULTS, AND AS NEEDED TO ADJUST TO SITE CONDITIONS NOT CAPTURED IN THE DESIGN DOCUMENTS. KEEP CONDUITS FROM CROSSING ONE ANOTHER AS MUCH AS POSSIBLE, MAINTAIN SEPARATION AND DEPTH DIMENSIONS INDICATED, AND ADJUST SECTIONS DEPICTED IN THE SET AS REQUIRED. THERE WILL BE CASES WHERE A TRENCH REFERENCE ON A SITE PLAN MAY BE MISSING CONDUITS PLANNED IN THAT AREA (i.e. 2" STREET LIGHTING CONDUITS THAT ARE SERVING AREA LIGHT POLES). IN SUCH CASES THE CONTRACTOR IS EXPECTED TO INCLUDE THOSE CONDUITS IN THE OVERALL TRENCH AND ADJUST THE WORK AS REQUIRED.
- CONDUITS FROM PAD 4 UNDERGROUND ACROSS EXISTING AND NEW BRIDGE TO PAD 5 OR PAD 6 AS APPLICABLE. WORK TO OCCUR IN CONCORDANCE WITH BRIDGE CONSTRUCTION STAGES 0, 1 AND 2. SEE SHEETS U7A-U7C. FOR STAGES AND ADDITIONAL ROUTING INFORMATION.



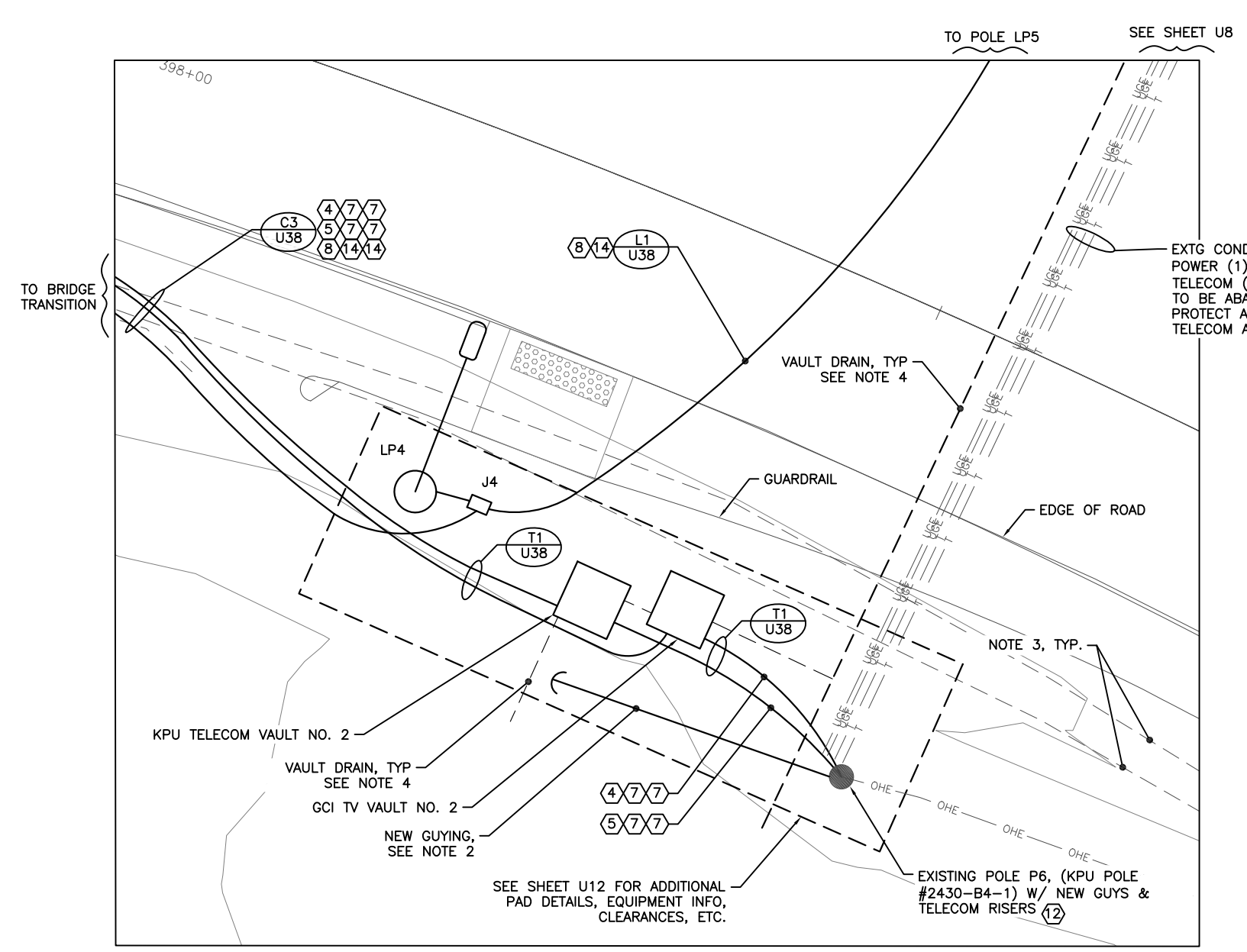
① PAD 4 - DETAIL



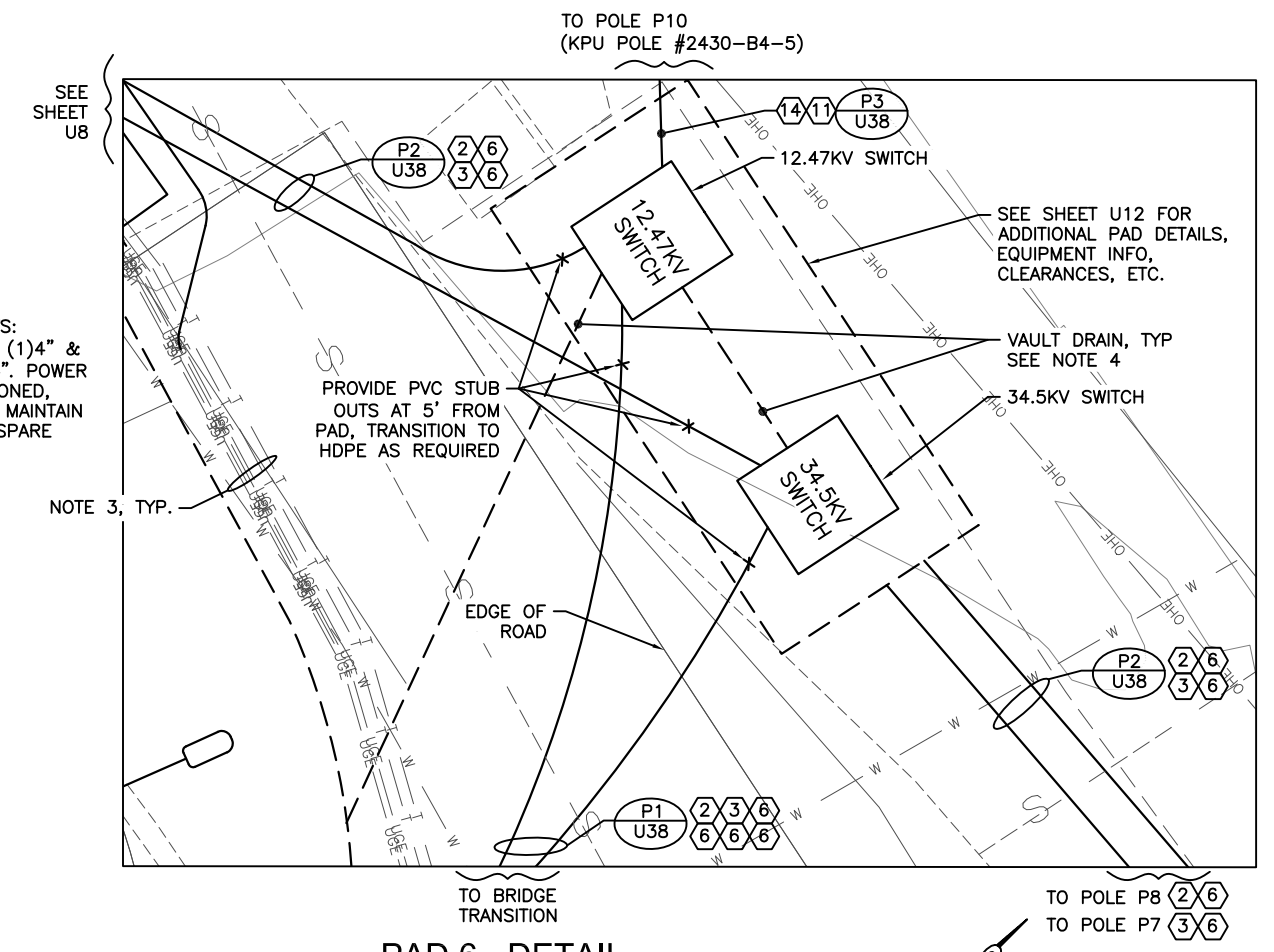
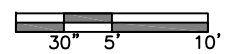
PLANS DEVELOPED BY: MORRIS ENGINEERING GROUP, INC. 2375 JORDAN AVE #7 JUNEAU, AK 99801 907-789-3350 AECL 1010		STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES 6860 GLACIER HIGHWAY, JUNEAU, AK 99801 (907) 465-1763 UTILITY RELOCATION FOR KETCHIKAN AREA BRIDGES UTILITY PAD 4 DETAILS
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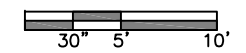
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	U10	45



① PAD 5 - DETAIL



② PAD 6 - DETAIL



SHEET NOTES:

- SEE SHEET U5 FOR KEYNOTES APPLICABLE TO THIS SHEET.
- PROVIDE NEW GUYING AT POLE, SEE SHEET U12 FOR INFORMATION.
- THERE ARE NUMEROUS EXISTING UNDERGROUND UTILITIES AND INFRASTRUCTURE TO REMAIN. NOT ALL ARE SHOWN ON THE PLANS BUT ALL NEED TO BE PROTECTED AND MAINTAINED THROUGHOUT PROJECT. CONTRACTOR SHALL CALL FOR LOCATES, DIG WITH CAUTION, AND COORDINATE ALL WORK WITH LOCAL UTILITIES. OTHER TRADES, ALASKA DOT&PF, AND CITY OF KETCHIKAN. SO AS TO IDENTIFY AND WORK AROUND UTILITIES TO REMAIN.
- BETWEEN EACH UNDERGROUND ELECTRICAL AND TELECOM/TV BASEMENT AND VAULT, PROVIDE A CONDUIT DRAIN TO REMOVE WATER. TIE ADJACENT STRUCTURES TOGETHER WITH A DRAIN AND RUN ANOTHER DRAIN TO DAYLIGHT AS REQUIRED. SLOPE CONDUITS TO DRAIN, SEE INDIVIDUAL EQUIPMENT DETAILS FOR MORE ON THE DRAINS. COORDINATE DRAIN ROUTING WITH CIVIL CONTRACTOR.
- TRENCH DETAIL REFERENCES ARE CALLED OUT ON THE SITE PLANS AND ARE DEPICTED ON SHEET U38. THE CONTRACTOR IS RESPONSIBLE TO LAYOUT THE CONDUIT TRENCHES THROUGHOUT THE SITE IN COORDINATION WITH GENERAL CONSTRUCTION, FINAL LOCATIONS OF ALL EQUIPMENT AND VAULTS, AND AS NEEDED TO ADJUST TO SITE CONDITIONS NOT CAPTURED IN THE DESIGN DOCUMENTS. KEEP CONDUITS FROM CROSSING ONE ANOTHER AS MUCH AS POSSIBLE, MAINTAIN SEPARATION AND DEPTH DIMENSIONS INDICATED, AND ADJUST SECTIONS DEPICTED IN THE SET AS REQUIRED. THERE WILL BE CASES WHERE A TRENCH REFERENCE ON A SITE PLAN MAY BE MISSING CONDUITS PLANNED IN THAT AREA (i.e. 2" STREET LIGHTING CONDUITS THAT ARE SERVING AREA LIGHT POLES). IN SUCH CASES THE CONTRACTOR IS EXPECTED TO INCLUDE THOSE CONDUITS IN THE OVERALL TRENCH AND ADJUST THE WORK AS REQUIRED.

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 GROUP, INC
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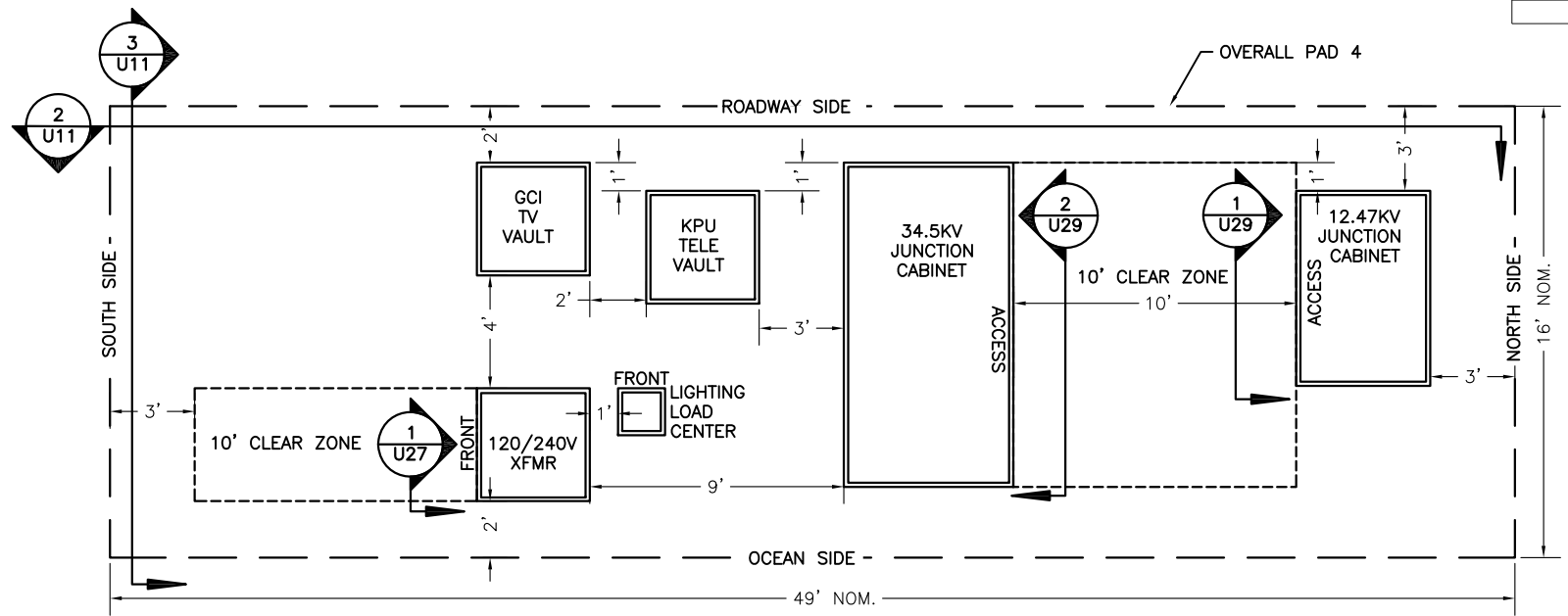


STATE OF ALASKA DEPARTMENT OF TRANSPORTATION
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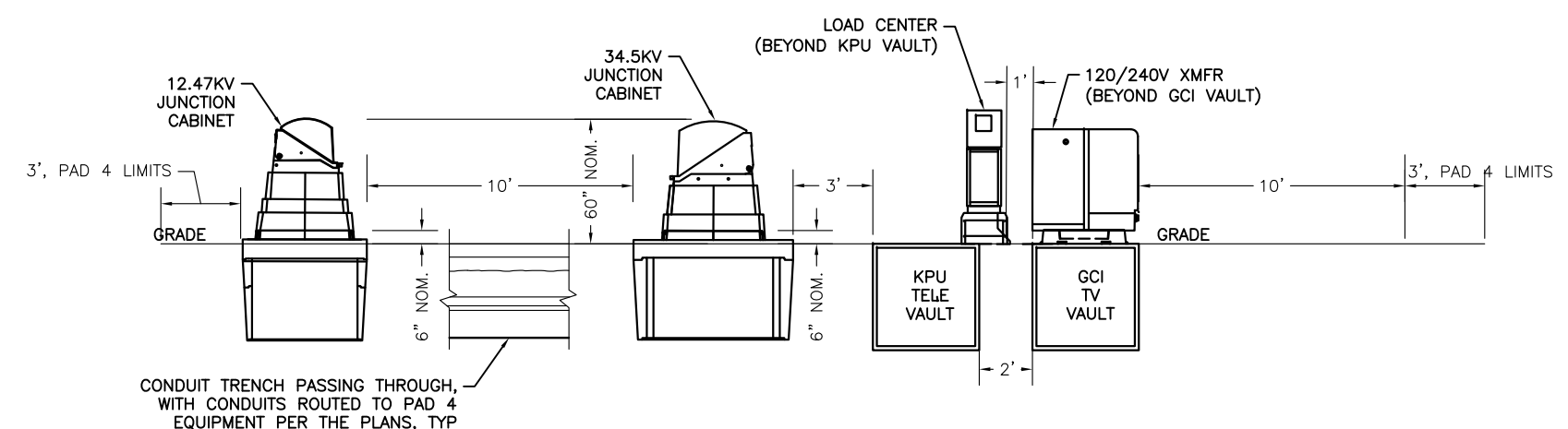
UTILITY RELOCATION FOR
 KETCHIKAN AREA BRIDGES

UTILITY PAD 5 & 6 DETAILS

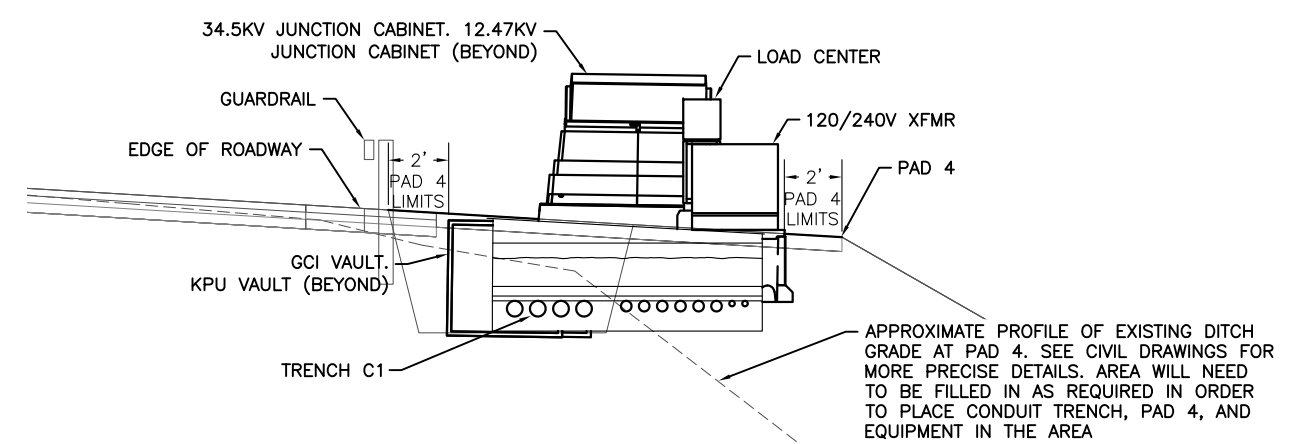
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	U11	45



① PAD 4 - DIMENSIONED PLAN VIEW



② PAD 4 - ROADWAY PARALLEL SECTION



③ PAD 4 - ROADWAY CROSS SECTION

FILE: s:\02 state of al\44 utility relocation design for ketchikan bridges\Working Drawings\UTILITY PAD 1 & PAD 2 ROADWAY CROSS SECTIONS\6/2021 16:10 LAYOUT U11

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DRAFTED: NADJA

PLANS DEVELOPED BY:
MORRIS ENGINEERING GROUP, INC
2375 JORDAN AVE #7
JUNEAU, AK 99801
907-789-3350
AECL 1010

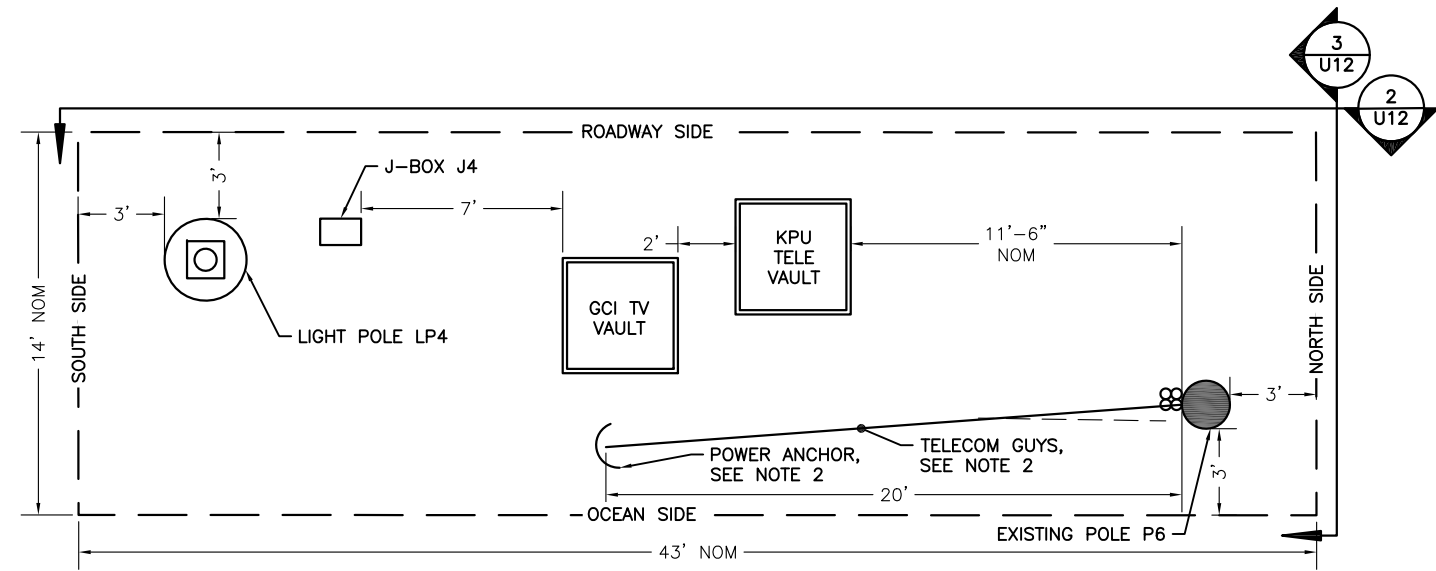


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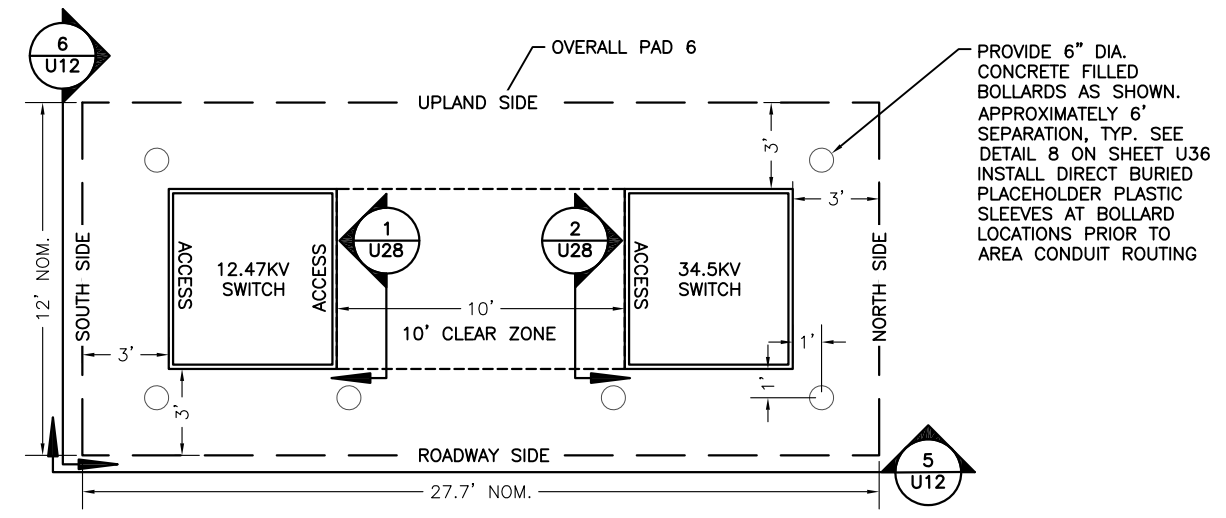
UTILITY RELOCATION FOR KETCHIKAN AREA BRIDGES

UTILITY PAD 4 - ROADWAY SECTIONS & PAD ELEVATIONS

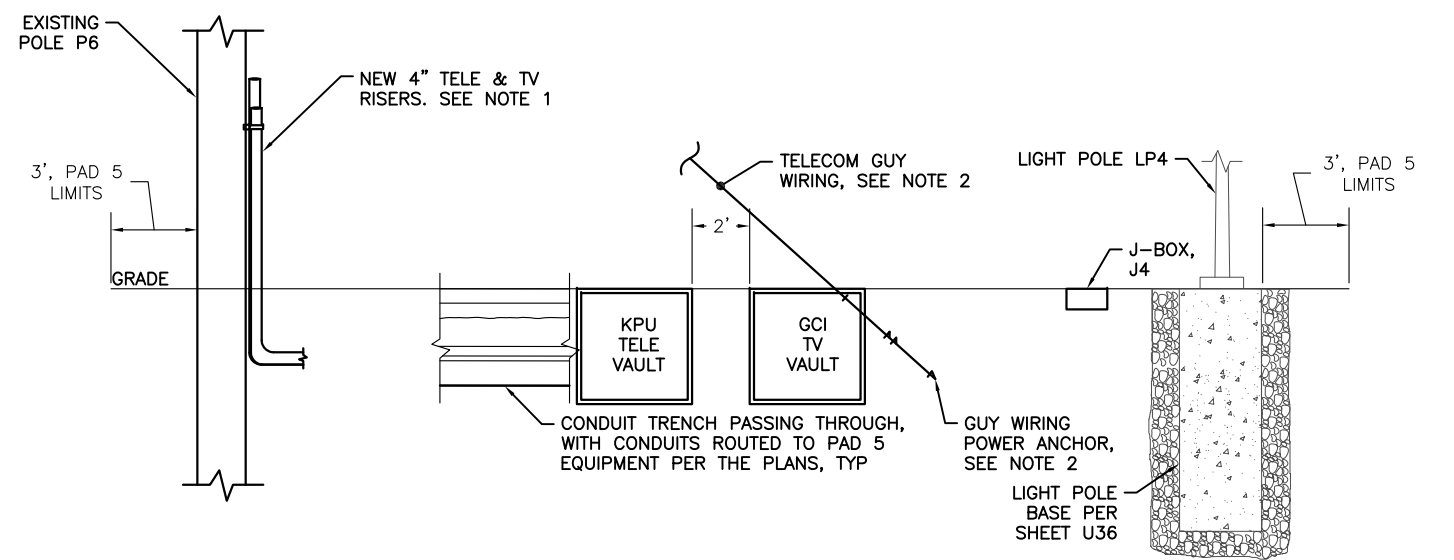
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			ALASKA	0902043/SFHWHY00072	2021	U12	45



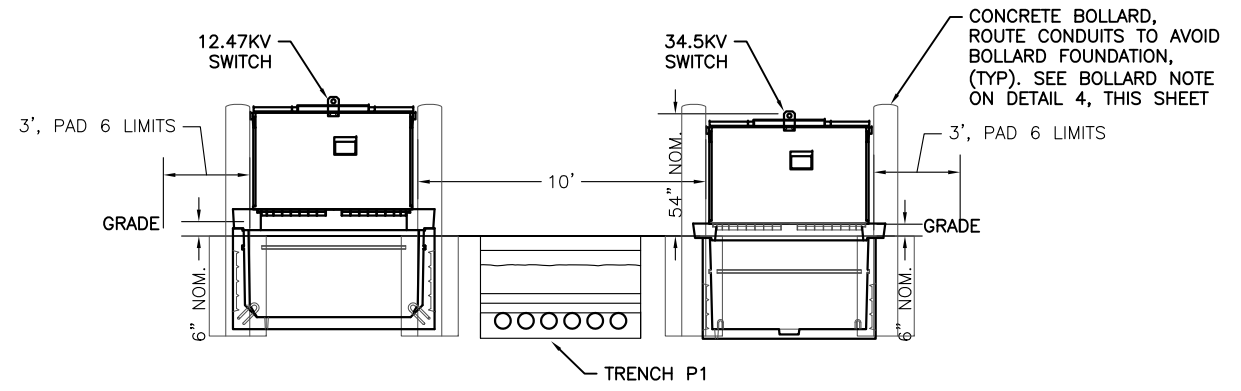
1 PAD 5 - DIMENSIONED PLAN VIEW



4 PAD 6 - DIMENSIONED PLAN VIEW

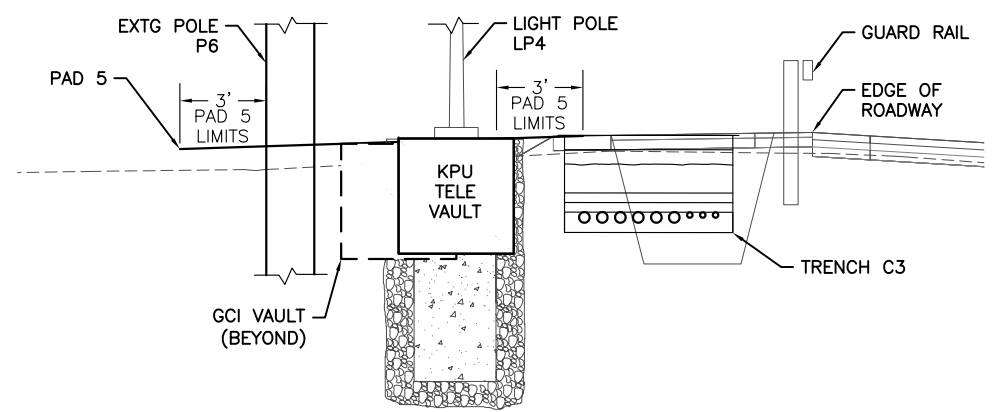


2 PAD 5 - ROADWAY PARALLEL SECTION

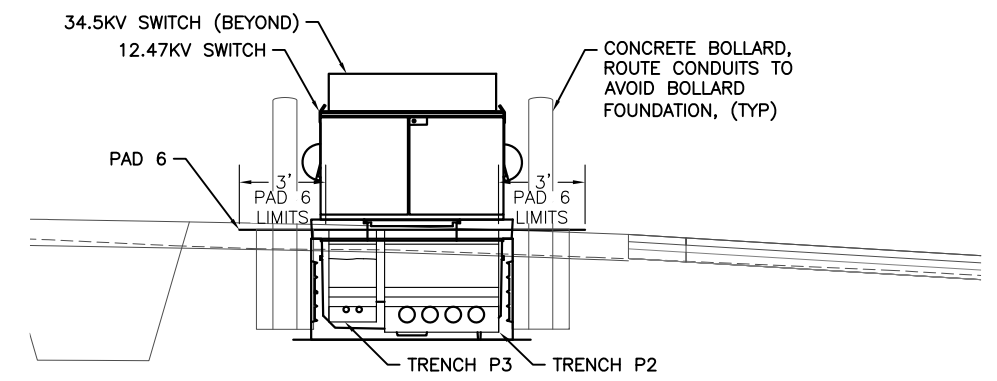


5 PAD 6 - ROADWAY PARALLEL SECTION

- SHEET NOTES:
1. PROVIDE (2) 4" TELEPHONE, (2) 4" TV CONDUIT RISERS AT POLE P6. GENERAL ARRANGEMENT AND POLE SETUPS PER POLE P5A DETAILS ON SHEET U20.
 2. PROVIDE COMMUNICATION GUYING WORK AND GENERAL ARRANGEMENT PER POLE P2 DETAILS ON SHEET U19



3 PAD 5 - ROADWAY CROSS SECTION



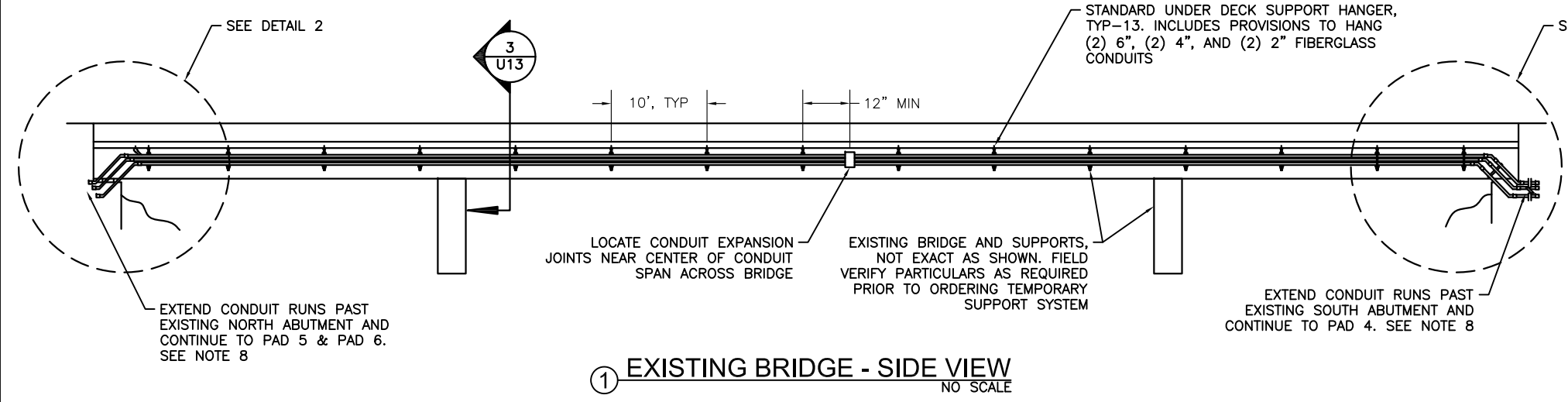
6 PAD 6 - ROADWAY CROSS SECTION

<p>PLANS DEVELOPED BY: MORRIS ENGINEERING GROUP, INC 2375 JORDAN AVE #7 JUNEAU, AK 99801 907-789-3350 AECL 1010</p>		<p>STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES 6860 GLACIER HIGHWAY, JUNEAU, AK 99801 (907) 465-1763</p> <p>UTILITY RELOCATION FOR KETCHIKAN AREA BRIDGES</p> <p>UTILITY PAD 5 & 6 - ROADWAY SECTIONS & PAD ELEVATIONS</p>
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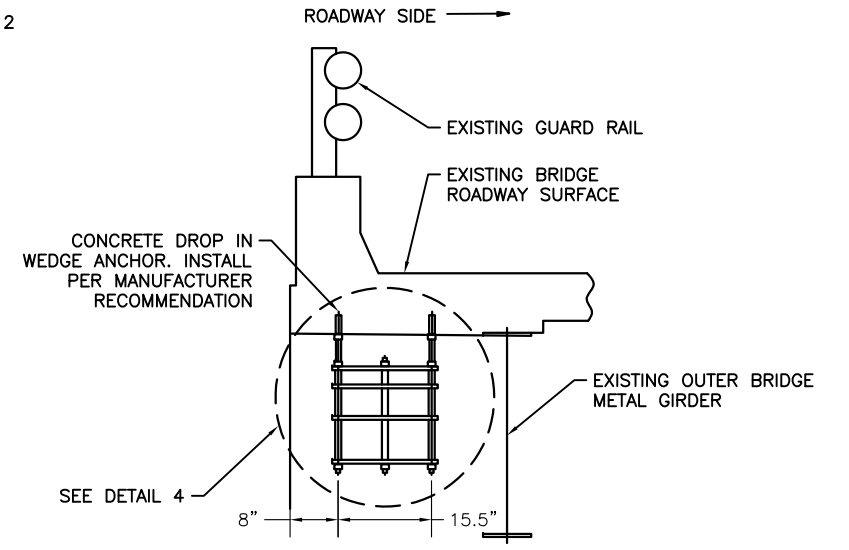
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
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CITY OF KETCHIKAN →



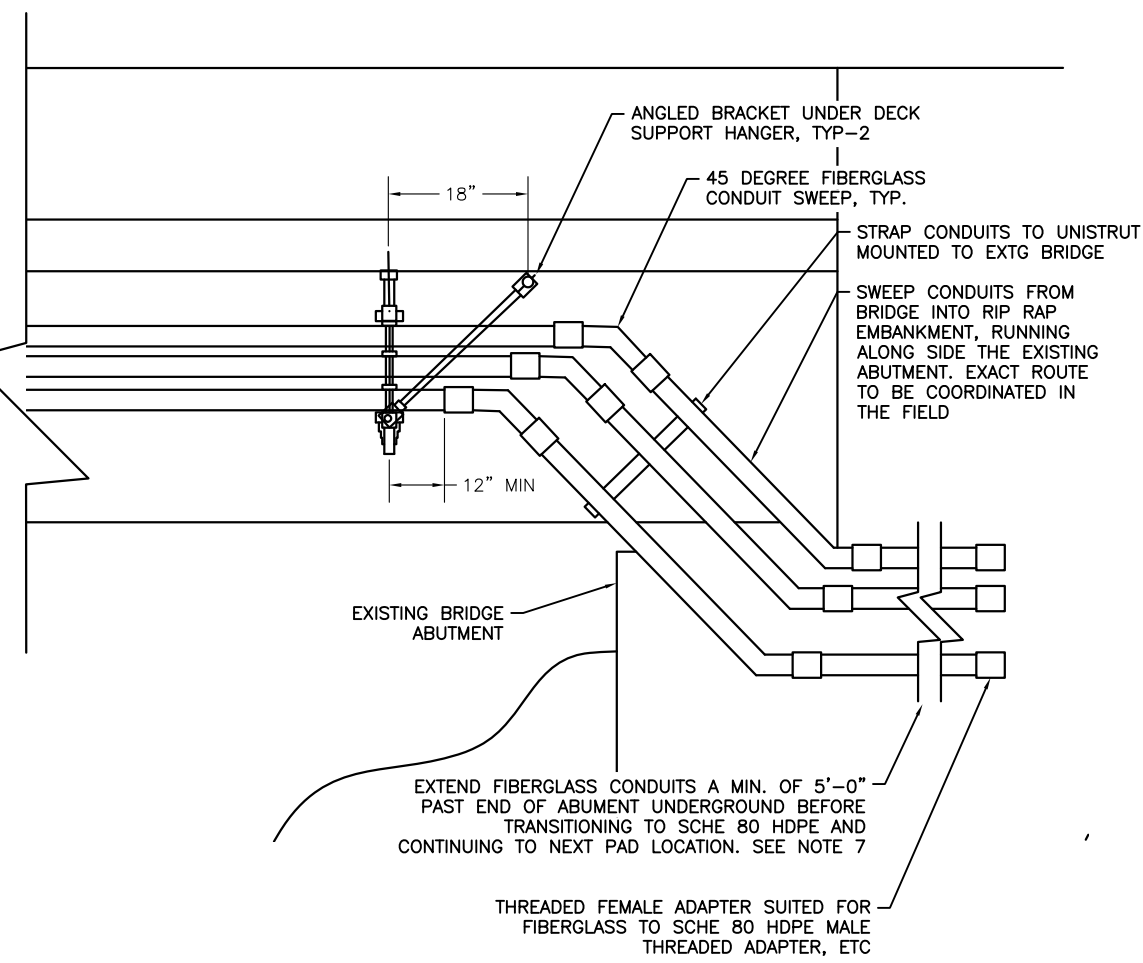
① EXISTING BRIDGE - SIDE VIEW
NO SCALE



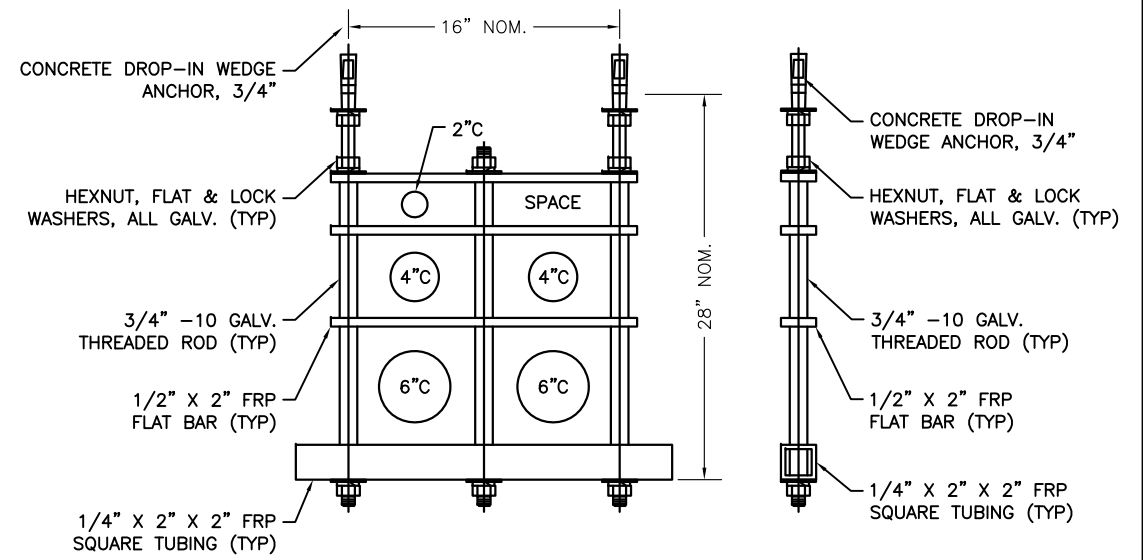
③ BRIDGE HANGERS - ENLARGED SECTION
NO SCALE

SHEET NOTES:

1. PROVIDE FIBERGLASS CONDUIT, SUPPORT HANGERS, ALL ASSOCIATED FITTINGS, AND MOUNTING HARDWARE THE ENTIRE LENGTH OF BRIDGE. ALL NON-METALLIC COMPONENTS SHALL BE LIGHT GRAY COLORED.
2. HANGER SYSTEM SHALL MEET MINIMUM TENSILE, FLEXURAL, AND COMPRESSIVE STRENGTH REQUIREMENTS OF ASTM D638, D790, D695, ETC. PROVIDE ALL 316L STAINLESS STEEL MOUNTING HARDWARE, BRACKETS, ETC. ALL METALLIC ELEMENTS ASSOCIATED WITH THE FIBERGLASS CONDUIT SYSTEM SHALL BE 316L STAINLESS STEEL. PROVIDE CONDUX INTERNATIONAL HANGER SYSTEM OR EQUAL. SEE NOTE 9.
3. MEET NEC REQUIREMENTS FOR CONDUIT SUPPORT SEPARATION. 10 FEET IS RECOMMENDED AS SHOWN HERE, 11 FEET SEPARATION MAXIMUM.
4. ALL CONDUITS ALONG BRIDGE SHALL BE FIBERGLASS MEETING TC-14A REQUIREMENTS.
5. ALL FIBERGLASS CONDUIT JOINTS SHALL BE EPOXY BELL AND SPIGOT.
6. ALL BRIDGE WORK TO BE COORDINATED WITH STRUCTURAL ENGINEER AND OVERALL BRIDGE DESIGN AND LAYOUT. THIS INCLUDES PRECISE LAYOUT OF SUPPORTS, ABUTMENT SLEEVE POSITIONS, CONDUIT EXTENSIONS PAST ABUTMENT INTO ROADWAY, HANGAR EMBEDMENT INTO CONCRETE DECK, ETC. STRUCTURAL ENGINEER MUST APPROVE SUBMITTALS PRIOR TO ORDERING. SEE NOTE 9.
7. PROVIDE EXPANSION JOINT ON WATER SIDE OF ABUTMENT INTERFACE. EXTEND FIBERGLASS CONDUIT 5 FEET PAST ABUTMENT INTO ROAD BEFORE TRANSITIONING TO SCHEDULE 80 PVC CONDUIT. EXPANSION JOINTS SHALL BE O-RING SLIDING SLEEVE TYPE WITH 8" OF TRAVEL, NOMINAL. PROVIDE ADDITIONAL SUPPORTS AT JOINT AS REQUIRED. DETAIL 1 ON SHEET U37 HAS A DEPICTION OF THE EXPANSION JOINTS BELOW THE BRIDGE.
8. CONDUIT WORK ACROSS EXISTING BRIDGE AND THE NEW BRIDGE WILL BE INSTALLED IN A SPECIFIC SEQUENCE THROUGH STAGES '0', '1' AND '2'. SEE SHEETS U7A-U7C FOR MORE ON THE STAGES OF CONSTRUCTION INVOLVED.
9. THE COMPLETE DESIGN OF THE UNDER BRIDGE FIBERGLASS CONDUIT SUPPORT SYSTEM IS NOT DEPICTED ON THIS SHEET. NUMEROUS ELEMENTS ARE REQUIRED NOT DETAILED HERE (CONCRETE SETTING PLUGS, CONDUIT STOP COUPLINGS, THREADED ADAPTERS, HDG BOLTS, NUTS, WASHERS, EPOXY KIT & APPLICATION GUN, ETC.) CONTRACTOR SHALL WORK WITH HANGER MANUFACTURER TO DEVELOP A COMPLETE BILL OF MATERIAL, WORK THROUGH LAYOUT AND INSTALLATION DETAILS AS REQUIRED, ETC. COORDINATE WITH BRIDGE CONTRACTOR AS NEEDED.



② ENLARGED BRIDGE - SECTION VIEW
NO SCALE



④ TEMPORARY BRIDGE HANGERS - DETAIL
NO SCALE

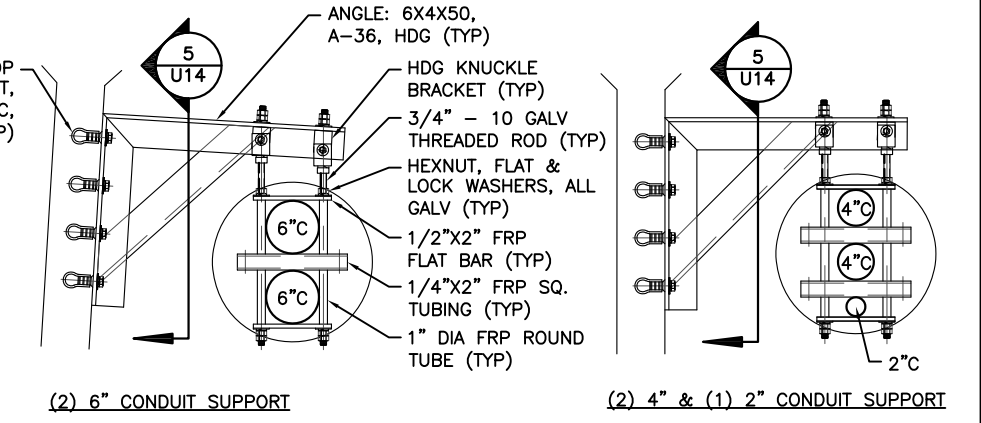
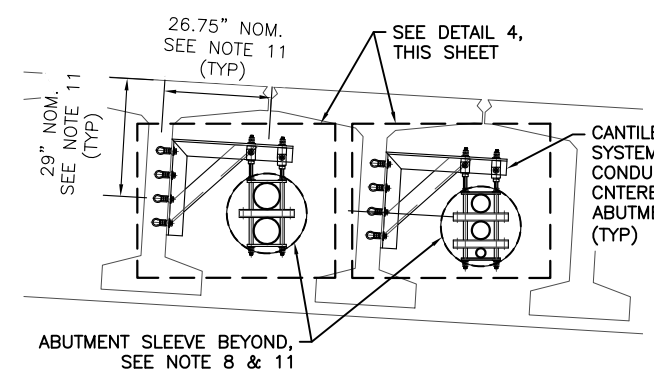
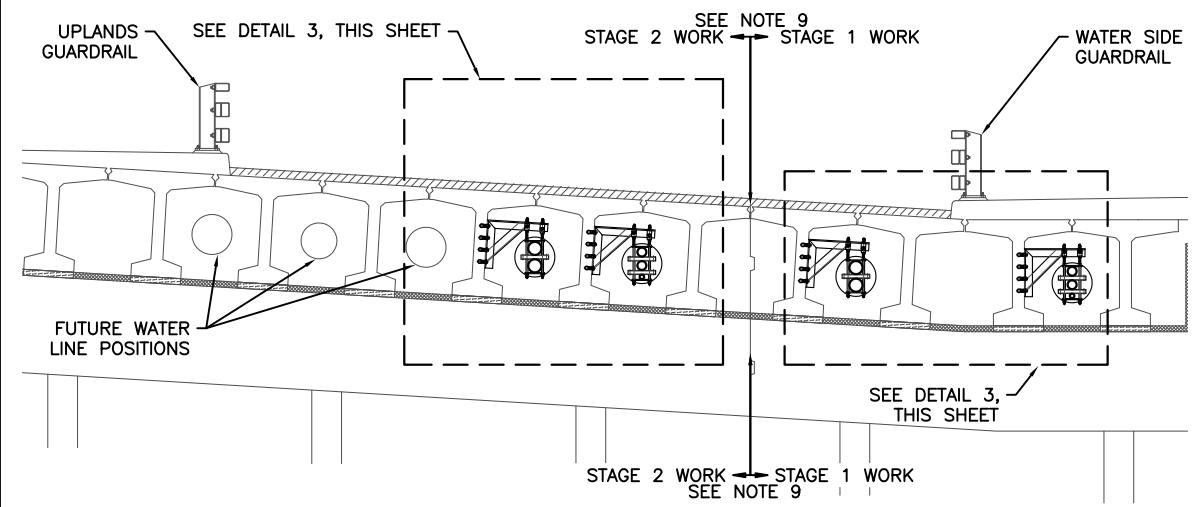
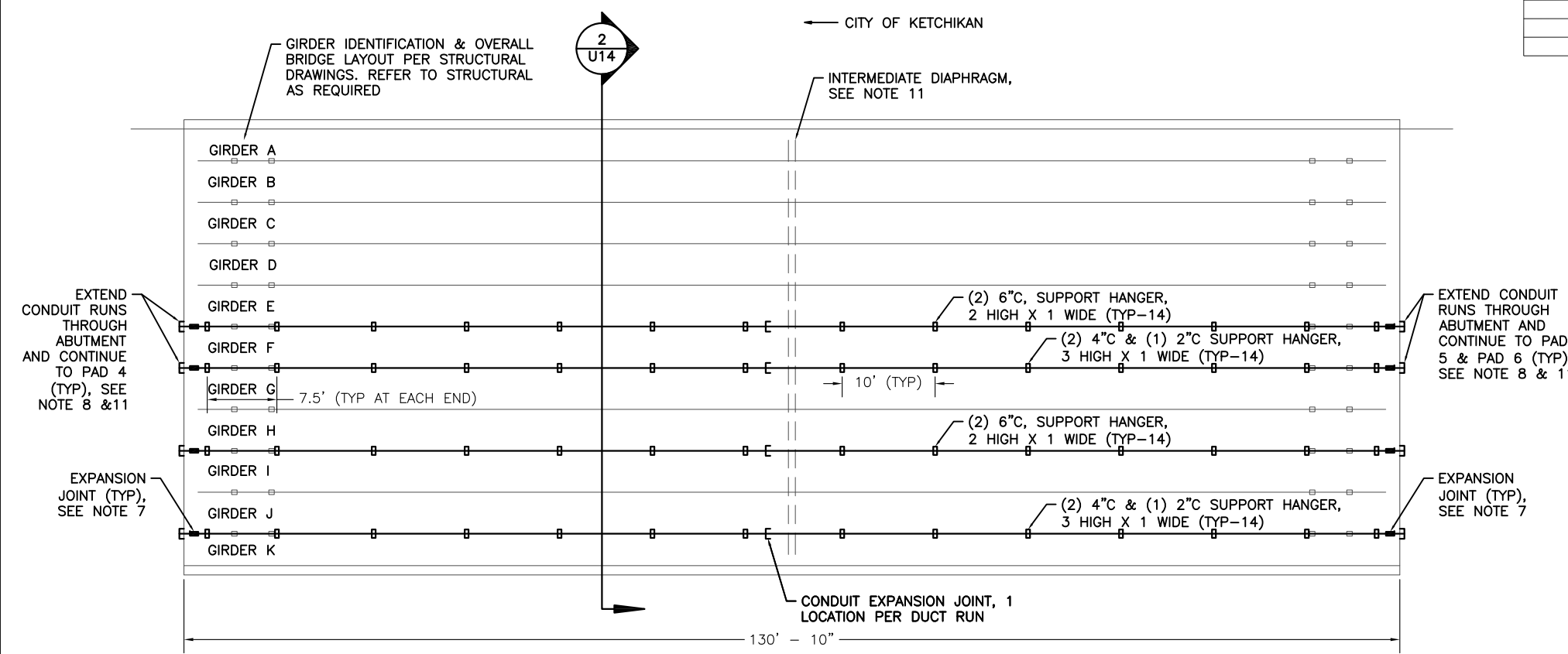
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<p>PLANS DEVELOPED BY: MORRIS ENGINEERING GROUP, INC 2375 JORDAN AVE #7 JUNEAU, AK 99801 907-789-3350 AECL 1010</p>		<p>STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES 6860 GLACIER HIGHWAY, JUNEAU, AK 99801 (907) 465-1763</p> <p>UTILITY RELOCATION FOR KETCHIKAN AREA BRIDGES</p> <p>EXISTING BRIDGE TEMP CONDUIT SECTIONS & DETAILS</p>
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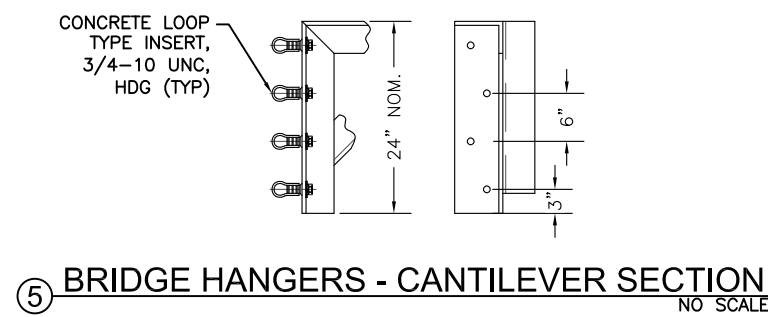
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	U14	45

SHEET NOTES:

1. PROVIDE FIBERGLASS CONDUIT, SUPPORT HANGERS, ALL ASSOCIATED FITTINGS, AND MOUNTING HARDWARE THE ENTIRE LENGTH OF BRIDGE. ALL NON-METALLIC COMPONENTS LIGHT GRAY COLORED.
2. HANGER SYSTEMS SHALL MEET MINIMUM TENSILE, FLEXURAL, AND COMPRESSIVE STRENGTH REQUIREMENTS OF ASTM D638, D790, D695, ETC. PROVIDE ALL 316L STAINLESS STEEL MOUNTING HARDWARE, BRACKETS, ETC. ALL METALLIC ELEMENTS ASSOCIATED WITH THE FIBERGLASS CONDUIT SYSTEM SHALL BE 316L STAINLESS STEEL. PROVIDE CONDUX INTERNATIONAL HANGER SYSTEM OR EQUAL. SEE NOTE 10.
3. MEET NEC REQUIREMENTS FOR CONDUIT SUPPORT SEPARATION. 10 FEET IS RECOMMENDED AS SHOWN HERE, 11 FEET SEPARATION MAXIMUM.
4. ALL CONDUITS ALONG UNDERSIDE OF BRIDGE SHALL BE FIBERGLASS MEETING TC-14A REQUIREMENTS.
5. FIBERGLASS CONDUIT JOINTS SHALL BE EPOXY BELL AND SPIGOT.
6. ALL BRIDGE WORK TO BE COORDINATED WITH STRUCTURAL ENGINEER AND OVERALL BRIDGE DESIGN AND LAYOUT. THIS INCLUDES PRECISE LAYOUT OF SUPPORTS, ABUTMENT SLEEVE POSITIONS, CONDUIT EXTENSIONS PAST ABUTMENT INTO ROADWAY, HANGAR EMBEDMENT INTO CONCRETE DECK, ETC. STRUCTURAL ENGINEER MUST APPROVE SUBMITTALS PRIOR TO ORDERING. SEE NOTE 10.
7. PROVIDE EXPANSION JOINT ON WATER SIDE OF ABUTMENT INTERFACE. EXTEND FIBERGLASS CONDUIT 5 FEET PAST ABUTMENT INTO ROAD BEFORE TRANSITIONING TO SCHEDULE 80 HDPE CONDUIT. EXPANSION JOINTS SHALL BE O-RING SLIDING SLEEVE TYPE WITH 8" OF TRAVEL, NOMINAL. PROVIDE ADDITIONAL SUPPORTS AT JOINT AS REQUIRED. SEE DETAIL 1 ON SHEET U37 FOR EXAMPLE DEPICTION OF AN EXPANSION JOINT BELOW THE BRIDGE.
8. STRUCTURAL WILL PROVIDE A UTILIDUCT SLEEVE THROUGH ABUTMENT FOR CONDUIT ROUTING. WRAP CONDUITS WITHIN ABUTMENT IN 2 LAYERS OF BUILDING PAPER AND GROUT ANNULUS BETWEEN CONDUITS AND SLEEVE FULL.
9. CONDUIT WORK ACROSS EXISTING BRIDGE AND THE NEW BRIDGE WILL BE INSTALLED IN A SPECIFIC SEQUENCE THROUGH STAGES '0', '1' AND '2'. SEE SHEETS U7A-U7C FOR MORE ON THE STAGES OF CONSTRUCTION INVOLVED.
10. THE COMPLETE DESIGN OF THE UNDER BRIDGE FIBERGLASS CONDUIT SUPPORT SYSTEM IS NOT DEPICTED ON THIS SHEET. NUMEROUS ELEMENTS ARE REQUIRED NOT DETAILED HERE (CONCRETE SETTING PLUGS, CONDUIT STOP COUPLINGS, THREADED ADAPTERS, HDG BOLTS, NUTS, WASHERS, EPOXY KIT & APPLICATION GUN, ETC.) CONTRACTOR SHALL WORK WITH HANGER MANUFACTURER TO DEVELOP A COMPLETE BILL OF MATERIAL, WORK THROUGH LAYOUT AND INSTALLATION DETAILS AS REQUIRED, ETC. COORDINATE WITH BRIDGE CONTRACTOR AS NEEDED.
11. ENSURE THAT CONDUITS RUNNING ALONG THE BRIDGE HANGERS ARE POSITIONED TO BE CENTERED AS MUCH AS POSSIBLE THROUGH THE ABUTMENT SLEEVE AND INTERMEDIATE DIAPHRAGM.



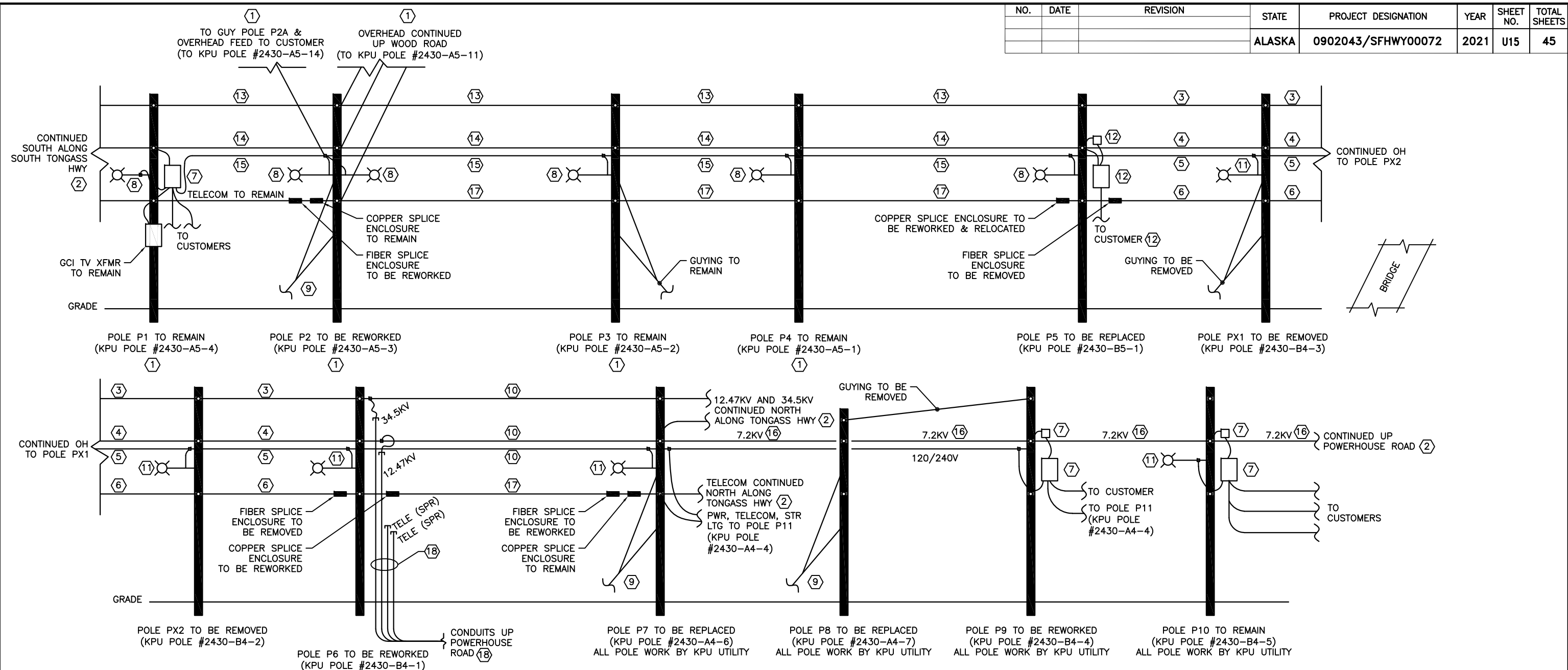
DETAIL 4 NOTE: ALL CALLOUTS APPLY TO BOTH HANGER SETUPS SHOWN.



<p>PLANS DEVELOPED BY: MORRIS ENGINEERING GROUP, INC 2375 JORDAN AVE #7 JUNEAU, AK 99801 907-789-3350 AECL 1010</p>		<p>STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES 6860 GLACIER HIGHWAY, JUNEAU, AK 99801 (907) 465-1763</p> <p>UTILITY RELOCATION FOR KETCHIKAN AREA BRIDGES</p> <p>NEW BRIDGE CONDUIT SECTIONS & DETAILS</p>
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	U15	45



① DEMOLITION UTILITY SCHEMATIC DIAGRAM

SHEET NOTES:

- THIS SCHEMATIC DEPICTS OVERALL OVERHEAD DISTRIBUTION OF POWER AND TELECOM ALONG SOUTH TONGASS HIGHWAY WITHIN THE PROJECT AREA. SEE SITE PLANS FOR MORE SPECIFICS AND EXTENTS.
- THIS SCHEMATIC IS A GENERAL REFERENCE ONLY AND SHOULD BE USED AS SUCH. VERIFY ONSITE ALL EXISTING POLE ELEMENTS, NOT ALL ELEMENTS ARE SHOWN.
- ALL DEMOLITION WORK SHALL BE COORDINATED WITH KPU, GCI, AND DOT&PF PROJECT MANAGER PRIOR TO COMMENCEMENT OF WORK. TEMPORARY FACILITIES WILL BE PROVIDED BUT ARE NOT SHOWN ON THIS SCHEMATIC.
- NEW POWER UTILITY WORK PER SCHEMATIC ON SHEET U16, NEW TELECOM UTILITY WORK PER SCHEMATIC ON SHEET U39.
- THE OVERHEAD NEUTRAL CONDUCTORS ARE NOT DEPICTED AT THE UTILITY POLES ON THE SCHEMATIC DIAGRAMS.

KEYNOTES:

- UTILITY POLE AND POLE MOUNTED ELEMENTS TO REMAIN, UNLESS NOTED OTHERWISE. PROTECT AND MAINTAIN AS REQUIRED.
- OVERHEAD UTILITIES CONTINUE PAST PROJECT LIMITS. PROTECT AND MAINTAIN AS REQUIRED.
- 34.5KV OVERHEAD POWER UTILITY LINES TO BE REMOVED. THESE LINES ARE AT THE TOP OF THE POLE.
- 12.47KV OVERHEAD POWER UTILITY LINES TO BE REMOVED. THESE LINES ARE BELOW THE 34.5KV LINES.
- STREET LIGHTING CIRCUIT TO BE REMOVED. THESE LINES ARE BELOW THE 12.47KV LINES.
- TELECOM AND TELEVISION UTILITY LINES TO BE REMOVED. THESE LINES ARE BELOW ALL POWER LINES.
- FUSED CUTOUT AND SINGLE PHASE STEP-DOWN POLE MOUNTED TRANSFORMER SERVING CUSTOMER LOADS AND STREET LIGHTING TO REMAIN, FUSED CUTOUT TO BE REFEED FROM 7200V SERVICE FROM PAD 6 12.47KV SWITCH.
- POLE MOUNTED STREET LIGHT MASTS AND FIXTURES TO BE REPLACED IN PLACE WITH NEW MAST AND LED LIGHT.
- POLE GUYS TO BE REMOVED AND REPLACED WITH NEW CONFIGURATION.
- AT POLE P6, KPU POWER UTILITY WILL DISCONNECT AND REMOVE THE EXISTING 34.5KV AND 12.47KV OVERHEAD, AND THE STREET LIGHTING CIRCUIT THAT RUNS TO POLE P7.
- DISCONNECT AND REMOVE LIGHT FIXTURE AND MAST ARM.
- POLE MOUNTED FUSED CUTOUT AND TRANSFORMER TO BE REMOVED, CUSTOMER OVERHEAD DROP TO BE REFEED FROM PAD 4 TRANSFORMER.
- 34.5KV OVERHEAD POWER UTILITY LINES TO REMAIN. THESE ARE AT THE TOP OF THE POLE. LINES TO BE REWORKED AT POLE LOCATIONS AS NOTED ON THE RENOVATION SCHEMATIC AND PLANS.

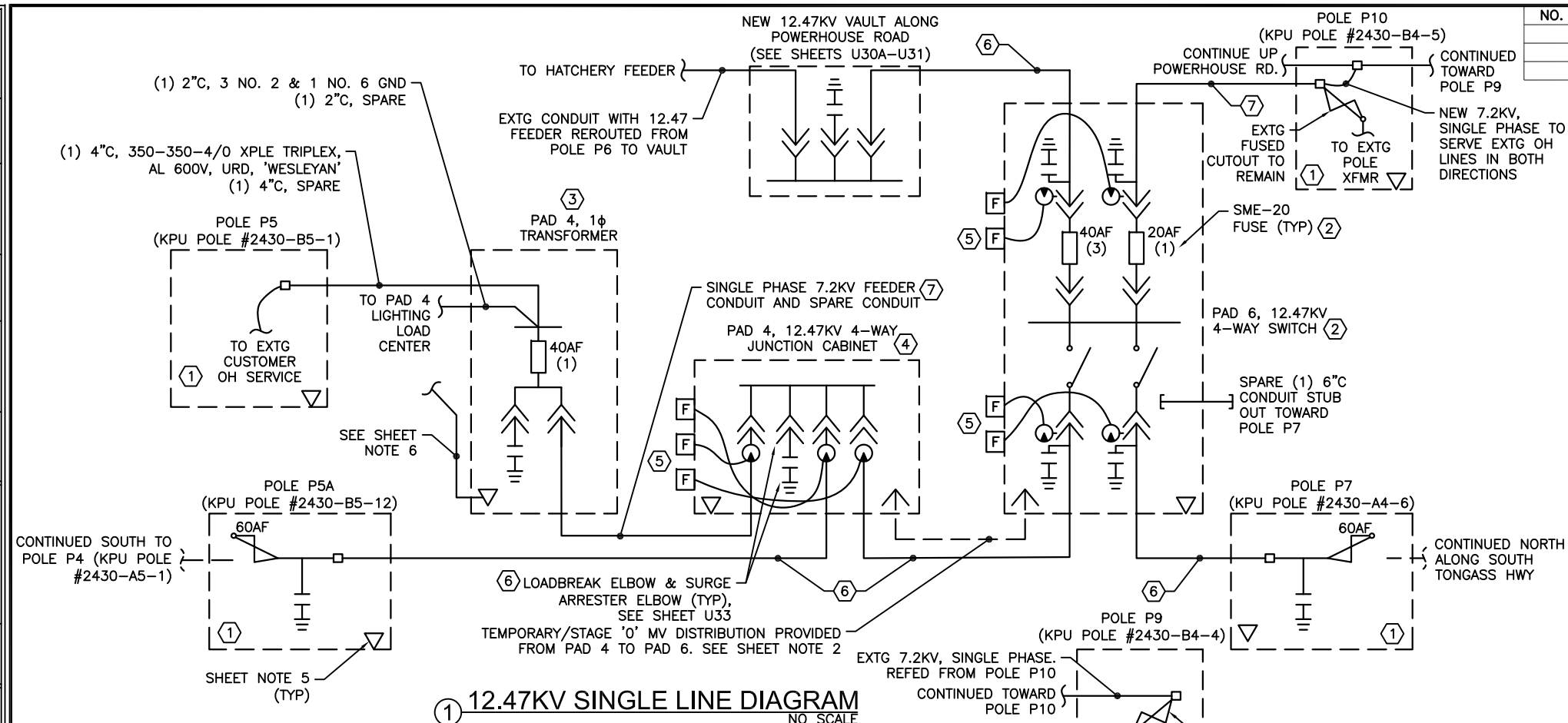
- 12.47KV OVERHEAD POWER UTILITY LINES TO REMAIN. THESE ARE AT THE TOP OF THE POLE. LINES TO BE REWORKED AT POLE LOCATIONS AS NOTED ON THE RENOVATION SCHEMATIC AND PLANS.
- STREET LIGHTING CIRCUIT TO REMAIN. CIRCUIT WILL BE REFEED FROM PAD 4 LIGHTING LOAD CENTER.
- THE 12.47KV OVERHEAD SERVES A SINGLE PHASE 7.2KV CIRCUIT THAT RUNS FROM POLE P7 TO P9 TO P10, THEN CONTINUES UP POWERHOUSE ROAD. THIS 7.2KV CIRCUIT TO BE REFEED FROM A DEDICATED CIRCUIT FROM THE 12.47KV SWITCH AT PAD 6 VIA NEW RISER TO POLE P10. 7.2KV SPAN FROM POLE P7 TO POLE P9 TO BE REMOVED.
- TELECOM: FIBER TO BE REPLACED IN PLACE, COPPER TO REMAIN. TELEVISION: COAX TO BE REPLACED IN PLACE. SEE SHEET U39 FOR RENOVATION SCHEMATIC, AND U41 FOR CIRCUIT DIAGRAM.
- 4" AND 6" POWER RISERS (LIVE) AND 4" TELECOM RISERS (SPARE) RUN UNDERGROUND UP POWERHOUSE ROAD. CONDUITS TO BE REWORKED DURING POWERHOUSE VAULT INSTALLATION WORK. SEE RENOVATION PLANS FOR MORE INFORMATION. POWER CONDUITS TO BE ABANDONED IN PLACE, TELECOM TO REMAIN AS SPARES. REMOVE 12.47KV AND 34.5KV FEEDERS FROM POLE AND REROUTE INTO VAULT IN POWERHOUSE ROAD. SEE SHEETS U17, AND U30A-U31.

<p>PLANS DEVELOPED BY: MORRIS ENGINEERING GROUP, INC 2375 JORDAN AVE #7 JUNEAU, AK 99801 907-789-3350 AECL 1010</p>		<p>STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES 6860 GLACIER HIGHWAY, JUNEAU, AK 99801 (907) 465-1763</p> <p>UTILITY RELOCATION FOR KETCHIKAN AREA BRIDGES</p> <p>DEMOLITION UTILITY SCHEMATIC DIAGRAM</p>
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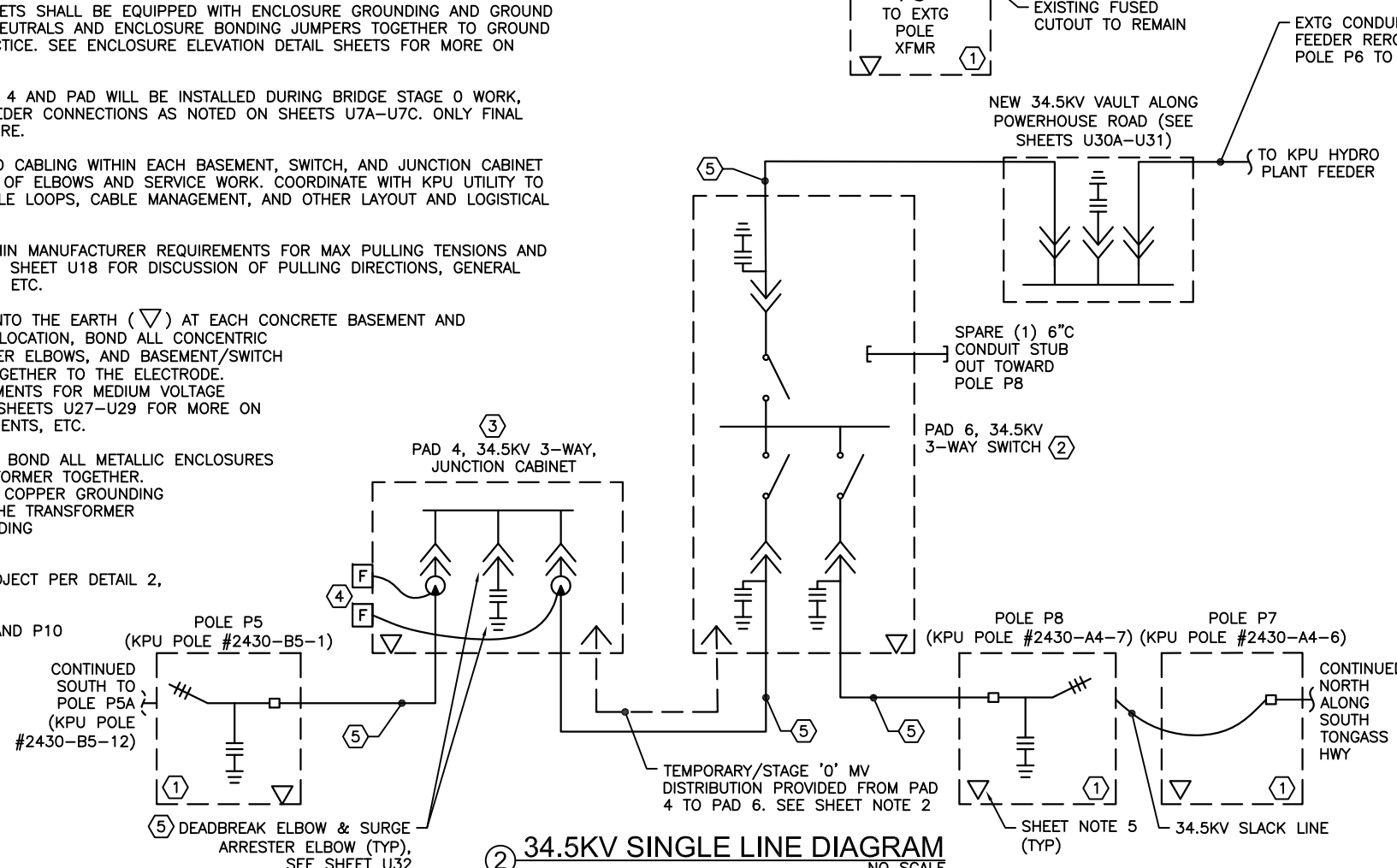
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① 12.47KV SINGLE LINE DIAGRAM NO SCALE

SHEET NOTES (APPLICABLE TO ALL DETAILS):

- ALL SWITCHES AND JUNCTION CABINETS SHALL BE EQUIPPED WITH ENCLOSURE GROUNDING AND GROUND ROD BELOW THE UNIT. TIE CABLE NEUTRALS AND ENCLOSURE BONDING JUMPERS TO GROUND ROD PER INDUSTRY STANDARD PRACTICE. SEE ENCLOSURE ELEVATION DETAIL SHEETS FOR MORE ON GROUNDING.
- TEMPORARY FEEDERS BETWEEN PAD 4 AND PAD 6 WILL BE INSTALLED DURING BRIDGE STAGE 0 WORK, AFTER REPLACED WITH STAGE 1 FEEDER CONNECTIONS AS NOTED ON SHEETS U7A-U7C. ONLY FINAL FEEDER CONFIGURATIONS SHOWN HERE.
- NEATLY TRAIN ALL CONDUCTORS AND CABLING WITHIN EACH BASEMENT, SWITCH, AND JUNCTION CABINET TO ALLOW FOR ROUTINE MOVEMENT OF ELBOWS AND SERVICE WORK. COORDINATE WITH KPU UTILITY TO DETERMINE REQUIREMENTS FOR CABLE LOOPS, CABLE MANAGEMENT, AND OTHER LAYOUT AND LOGISTICAL CABLE EXPECTATIONS.
- ALL CABLES SHALL BE PULLED WITHIN MANUFACTURER REQUIREMENTS FOR MAX PULLING TENSIONS AND CONDUIT SIDEWALL PRESSURES. SEE SHEET U18 FOR DISCUSSION OF PULLING DIRECTIONS, GENERAL EXPECTATIONS, USE OF LUBRICANTS, ETC.
- PROVIDE GROUNDING ELECTRODES INTO THE EARTH (▽) AT EACH CONCRETE BASEMENT AND UTILITY POLE. AT EACH ELECTRODE LOCATION, BOND ALL CONCENTRIC NEUTRALS, LIGHTING SURGE ARRESTER ELBOWS, AND BASEMENT/SWITCH CABINET GROUNDING PROVISIONS TOGETHER TO THE ELECTRODE. FOLLOW NESC GROUNDING REQUIREMENTS FOR MEDIUM VOLTAGE UNDERGROUND DISTRIBUTION. SEE SHEETS U27-U29 FOR MORE ON GROUNDING AT ENCLOSURES, BASEMENTS, ETC.
- PER NESC BONDING REQUIREMENTS, BOND ALL METALLIC ENCLOSURES WITHIN 6 FEET OF THE PAD TRANSFORMER TOGETHER. PROVIDE DIRECT BURIED, STRANDED COPPER GROUNDING ELECTRODE CONDUCTOR BETWEEN THE TRANSFORMER AND LIGHTING LOAD CENTER GROUNDING PROVISIONS AND BOND TOGETHER.
- LABEL ALL MV CABLES ON THE PROJECT PER DETAIL 2, SHEET U18.
- ALL WORK AT POLES P7, P8, P9, AND P10 BY KPU UTILITY.
- CONTRACTOR SHALL PROVIDE TEMPORARY POWER CONNECTIONS WITHIN THE SWITCH AND JUNCTION BOX CABINET BASEMENTS AS REQUIRED (NOT SHOWN HERE). SEE DETAIL 3, SHEET U18.



② 34.5KV SINGLE LINE DIAGRAM NO SCALE

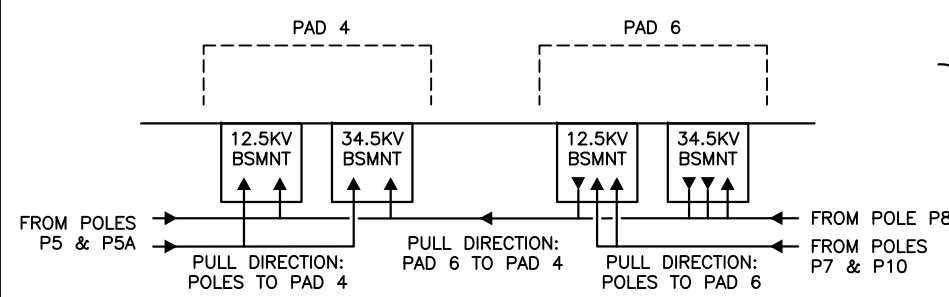
- KEYNOTES (APPLICABLE TO DETAIL 1):
- POLE MOUNTED FUSED CUTOUPS, GANGED SWITCH, SURGE ARRESTERS, RISER CONNECTIONS, ETC., ARE SHOWN ON SPECIFIC POLE ELEVATION DETAILS. SEE SHEET U20-U25 FOR SPECIFIC POLE ELEVATIONS AND FURTHER DETAILS. ALL WORK AT POLES P7, P8, P9, AND P10 BY KPU UTILITY.
 - PROVIDE PAD MOUNTED, 14.4KV RATED, 4-WAY UTILITY SWITCH. UNIT SHALL BE 600A CONTINUOUS RATED, 95 BIL, 65KA PEAK, 25KA RMS SYM. RATED. ALL STAINLESS STEEL CONSTRUCTION. COMPLETE WITH 200A LOADBREAK BUSHINGS AND SME-20 FUSES. PROVIDE S&C PME-9 SWITCH OR EQUAL. PROVIDE FUSES AS SHOWN AND WITH ONE COMPLETE SPARE SET OF FUSES. MOUNT ON CONCRETE BASEMENT PER DETAIL ON SHEET U28. SEE KEYNOTE 6 BELOW FOR LOADBREAK INFORMATION.
 - PROVIDE SINGLE PHASE PAD MOUNTED TRANSFORMER TO SERVE MULTIPLE CUSTOMER LOADS AND STREET LIGHTING LOAD CENTER. MOUNT ON CONCRETE BASEMENT. SEE SHEET U27 FOR COMPLETE DETAILS AND SPECIFICATIONS OF THE TRANSFORMER AND ASSOCIATED WORK. PROVIDE WITH SPARE FUSE.
 - PROVIDE PAD MOUNTED FIBERGLASS JUNCTION CABINETS COMPLETE WITH CPS 200 AMP LOADBREAK JUNCTIONS AND SURGE ARRESTER. MULTI-POINT JUNCTIONS WITH PROVISIONS FOR SURGE ARRESTER AS WELL AS MV DISTRIBUTION. SEE SHEET U29 FOR COMPLETE CABINET INFORMATION. SEE KEYNOTE 6 BELOW FOR LOADBREAK AND ARRESTER INFORMATION.
 - PROVIDE FAULT CIRCUIT INDICATORS (FCIs) AT EACH JUNCTION CABINET. CONNECT AN FCI TO EACH ELBOW AT THE JUNCTION PER ELBOW DETAILS ON SHEET U32 AND U33. PROVIDE WITH REMOTE LED INDICATORS FIELD INSTALLED ON THE OUTSIDE OF THE CABINET FOR VISUAL CONFIRMATION OF FAULT WITHOUT OPENING CABINET. INSTALL INDICATORS PER DETAIL 3, ON SHEET U28. PROVIDE CPS S.T.A.R. FCIs #STVTA SERIES OR EQUAL.
 - (1) 6" C, 12.47KV FEEDER CIRCUIT AND (1) 6" C, SPARE. 12.47KV CIRCUIT SHALL CONSIST OF 3 NO. 1/0 AWG COPPER CONDUCTORS, MV-105, 220 MIL, 15KV RATED WITH FULL CONCENTRIC NEUTRAL, AND 133% SHIELDING. PROVIDE OKONITE OKOGUARD #141-23-3072 CONDUCTORS OR EQUAL. PROVIDE 15KV RATED, 200A LOADBREAK ELBOWS AT CABLE TERMINATION POINTS, CPS #LEJ215DD06 OR EQUAL. SEE SHEET U33 FOR ADDITIONAL LOADBREAK INFORMATION. PROVIDE 9KV RATED (7.65KV MCOV) SURGE ARRESTER ELBOWS AT JUNCTION CABINETS AND SWITCHES, CPS #3238018C09M OR EQUAL. MOUNT ONE SURGE ELBOW TO THE BACK OF EACH PHASE CONDUCTOR ELBOW AT THE SWITCHES, AND ONE PER JUNCTION BAR IN THE JUNCTION CABINETS.
 - (1) 2" C, WITH (1) 12.47KV MV CABLE AS SPECIFIED IN KEYNOTE 6 ABOVE, (1) 2" C SPARE.

- KEYNOTES (APPLICABLE TO DETAIL 2):
- POLE MOUNTED FUSED CUTOUPS GANGED SWITCH, SURGE ARRESTERS, RISER CONNECTIONS, ETC., ARE SHOWN ON SPECIFIC POLE ELEVATION DETAILS. SEE SHEETS U20-U25 FOR SPECIFIC POLE ELEVATIONS AND FURTHER DETAILS.
 - PROVIDE PAD MOUNTED, 35KV RATED, 3-WAY UTILITY SWITCH. UNIT SHALL CONSIST OF SOLID DIELECTRIC INSULATED OPERATORS, 600A CONTINUOUS RATED, 150 BIL, 70KA PEAK, 20KA RMS SYM. RATED. ALL STAINLESS STEEL CONSTRUCTION. COMPLETE WITH 600A DEADBREAK BUSHINGS WITH VOLTAGE SENSORS, CONTROL POWER TRANSFORMER, AND FCI'S FACTORY INSTALLED. PROVIDE G&W TRIDENT-S SWITCH OR EQUAL. MOUNT ON CONCRETE BASEMENT PER DETAIL ON SHEET U28. SEE KEYNOTE 5 BELOW FOR DEADBREAK INFORMATION.
 - PROVIDE PAD MOUNTED FIBERGLASS JUNCTION CABINETS COMPLETE WITH CPS 600 AMP DEADBREAK JUNCTIONS AND SURGE ARRESTER. SEE SHEET U29 FOR COMPLETE CABINET INFORMATION. SEE KEYNOTE 5 BELOW FOR DEADBREAK AND ARRESTER INFORMATION.
 - PROVIDE FAULT CIRCUIT INDICATORS (FCIs) AT EACH JUNCTION CABINET. CONNECT AN FCI TO EACH ELBOW AT THE JUNCTION PER ELBOW DETAILS ON SHEET U33. PROVIDE WITH REMOTE LED INDICATORS FIELD INSTALLED ON THE OUTSIDE OF THE CABINET FOR VISUAL CONFIRMATION OF FAULT WITHOUT OPENING CABINET. INSTALL INDICATORS PER DETAIL 3 ON SHEET U29. PROVIDE CPS S.T.A.R. FCIs #STVTA SERIES OR EQUAL.
 - (1) 6" C, 34.5KV FEEDER CIRCUIT AND (1) 6" C, SPARE. 34.5KV CIRCUIT SHALL CONSIST OF 3 NO. 500 KCMIL COPPER CONDUCTORS, MV-105, 420 MIL, 35KV RATED WITH 1/3 CONCENTRIC NEUTRAL, AND 133% SHIELDING. PROVIDE OKONITE OKOGUARD #141-23-9943 CONDUCTORS OR EQUAL. PROVIDE 35KV RATED, 600A DEADBREAK ELBOWS AT CABLE TERMINATION POINTS, CPS #BT635U22C1T. SEE SHEET U32 FOR ADDITIONAL DEADBREAK INFORMATION. PROVIDE 27KV RATED (22KV MCOV) SURGE ARRESTER ELBOWS AT JUNCTION CABINETS AND SWITCHES, CPS #DCEA635M27. MOUNT ONE SURGE ELBOW TO THE BACK OF EACH PHASE CONDUCTOR ELBOW AT THE SWITCHES, AND ONE PER JUNCTION BAR IN THE JUNCTION CABINET.

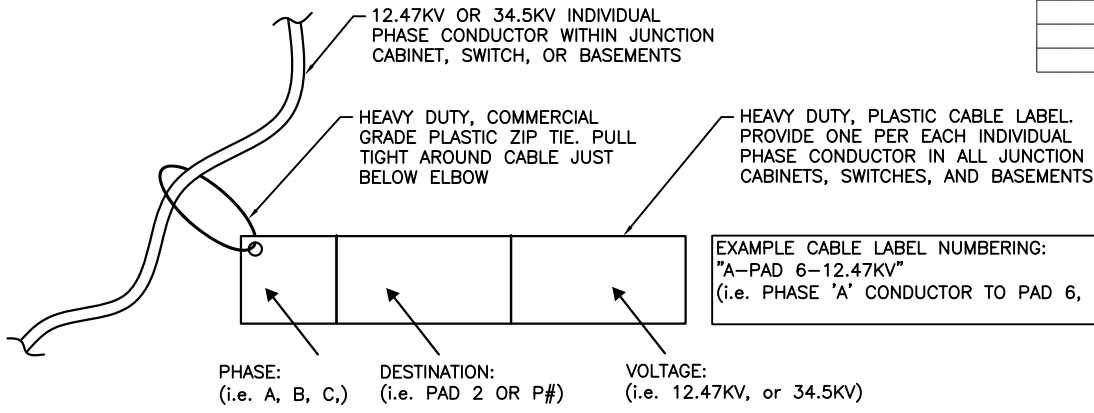
<p>PLANS DEVELOPED BY: MORRIS ENGINEERING GROUP, INC 2375 JORDAN AVE #7 JUNEAU, AK 99801 907-789-3350 AECIL 1010</p>		<p>STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES 6860 GLACIER HIGHWAY, JUNEAU, AK 99801 (907) 465-1763</p> <p>UTILITY RELOCATION FOR KETCHIKAN AREA BRIDGES</p> <p>POWER UTILITY RENOVATION SINGLE LINE DIAGRAM</p>
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NOTE:
PULLING DIRECTIONS SHOWN PROVE TO PUT LESS STRESS ON CABLES AND CONDUIT. HOWEVER, OPPOSITE DIRECTION IS WITHIN LIMITS AND MAY BE UTILIZED AT CONTRACTOR'S OPINION.



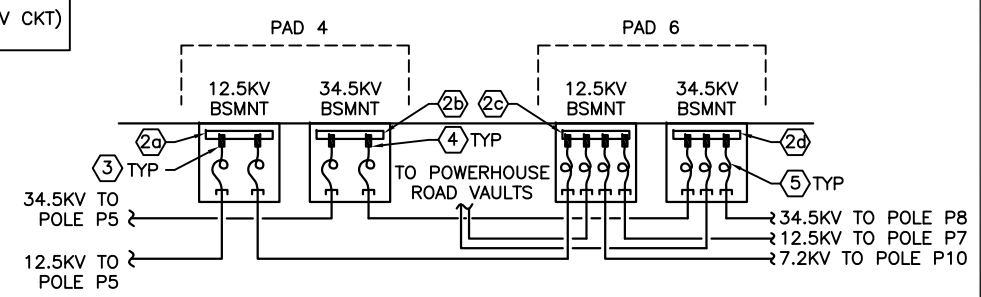
① MEDIUM VOLTAGE CABLE PULLING DIAGRAM



NOTES (APPLICABLE TO DETAIL 2):

1. PROVIDE LABELS WITHIN 18" OF EACH ELBOW AT ALL JUNCTION CABINETS AND SWITCHES.
2. POSITION LABELS SO THEY FACE OUTWARDS TOWARDS SERVICE ELECTRICIAN.

② MEDIUM VOLTAGE CABLE LABELING



NOTES (APPLICABLE TO DETAIL 3):

1. DURING CONSTRUCTION TEMPORARY UNDERGROUND MV CABLE SPLICES ARE ANTICIPATED PRIOR TO PAD MOUNT SWITCHES AND JUNCTION CABINETS ARRIVE ONSITE. PROVIDE TEMPORARY CONNECTIONS VIA BASEMENT MOUNTED JUNCTION BARS AND ELBOWS AS DESCRIBED IN THIS DETAIL OR APPROVED EQUAL CONFIGURATION.
- 2a. PROVIDE (3) 2-POSITION LOADBREAK J-BARS MOUNTED TO CONCRETE WALL OF BASEMENT. ADJUSTABLE, STAINLESS STEEL, 200A, 15KV CLASS J-BARS WITH UP TO 90° OF TILT IN 10° INCREMENTS. INCLUDES PARKING STANDS AND DRAIN WIRE CLAMP. COOPER POWER SYSTEMS (CPS) LJ215C2B OR EQUAL. STAGGER J-BARS AS REQUIRED TO ALLOW ELBOWS TO LAND AND CABLES TO BE TRAINED PROPERLY.
- 2b. PROVIDE (3) 2-POSITION DEADBREAK J-BARS MOUNTED TO CONCRETE WALL OF BASEMENT. ADJUSTABLE, STAINLESS STEEL, 600A, 35KV CLASS J-BARS WITH UP TO 45° OF TILT IN 10° INCREMENTS. INCLUDES PARKING STANDS AND DRAIN WIRE CLAMP. CPS DJ635C2B OR EQUAL. STAGGER J-BARS AS REQUIRED TO ALLOW ELBOWS TO LAND AND CABLES TO BE TRAINED PROPERLY.
- 2c. PROVIDE (3) 4-POSITION LOADBREAK J-BARS MOUNTED TO CONCRETE WALL OF BASEMENT. ADJUSTABLE, STAINLESS STEEL, 200A, 15KV CLASS J-BARS WITH UP TO 90° OF TILT IN 10° INCREMENTS. INCLUDES PARKING STANDS AND DRAIN WIRE CLAMP. COOPER POWER SYSTEMS (CPS) LJ215C4B OR EQUAL. STAGGER J-BARS AS REQUIRED TO ALLOW ELBOWS TO LAND AND CABLES TO BE TRAINED PROPERLY.
- 2d. PROVIDE (3) 3-POSITION DEADBREAK J-BARS MOUNTED TO CONCRETE WALL OF BASEMENT. ADJUSTABLE, STAINLESS STEEL, 600A, 35KV CLASS J-BARS WITH UP TO 45° OF TILT IN 10° INCREMENTS. INCLUDES PARKING STANDS AND DRAIN WIRE CLAMP. CPS DJ635C3B OR EQUAL. STAGGER J-BARS AS REQUIRED TO ALLOW ELBOWS TO LAND AND CABLES TO BE TRAINED PROPERLY.
3. PROVIDE 200A, 15KV RATED LOADBREAKS ON THE J-BARS. SEE SHEET U17 FOR LOADBREAK REQUIREMENTS AND SHEET U33 FOR LOADBREAK DETAIL.
4. PROVIDE 600A, 35KV RATED DEADBREAKERS ON THE J-BARS. SEE SHEET U17 FOR DEADBREAK REQUIREMENTS AND SHEET U32 FOR DEADBREAK DETAIL.
5. PROVIDE SUFFICIENT CABLE SLACK FOR ALL FEEDERS IN BASEMENTS TO ALLOW THEM TO BE EXTENDED UP TO THE FINAL POSITIONS ON THE SWITCHES AND JUNCTION CABINETS ABOVE GROUND. COIL CABLES NEATLY IN THE BASEMENTS. PROVIDE LABELS ON ALL CABLES PER DETAIL 2, THIS SHEET.

③ MEDIUM VOLTAGE TEMPORARY VAULT SETUPS

④ HDPE CONDUIT SPECIFICATION & INSTALLATION NOTES

GENERAL REQUIREMENTS AND STANDARDS:

1. PROVIDE HDPE CONDUIT THAT MEETS THE FOLLOWING STANDARDS: ASTM F2160, NEMA TC 7, AND UL 651A, ALL LATEST EDITIONS.
2. HDPE CONDUIT SHALL BE FURNISHED, PREPARED, AND INSTALLED IN ACCORDANCE WITH THE PLASTIC PIPE INSTITUTE (PPI) INDUSTRY STANDARD TECHNICAL NOTES INCLUDING:
 - a. TN-47, 'PIPE STIFFNESS AND DEFLECTION TESTING OF COILABLE HDPE CONDUIT AS RELATED TO BURIAL DEPTH'. LATEST EDITION.
 - b. TN-50, 'GUIDE TO SPECIFYING HDPE CONDUIT', LATEST EDITION.
 - c. TN-58, 'HDPE CONDUIT AND DUCT HANDLING GUIDE', LATEST EDITION.

THE CONTRACTOR SHALL REVIEW THIS LITERATURE TO FAMILIARIZE HIMSELF WITH THE EXPECTED TREATMENT, PREPARATION, AND INSTALLATION OF HDPE CONDUIT UTILIZED ON THE PROJECT.

INSTALLATION CONSIDERATIONS:

1. SOLID PRESSURE ON UNDERGROUND CONDUIT RESULTS FROM THE COMBINATION OF SOIL WEIGHT AND SURFACE LOADS. AS BACKFILL IS PLACED AROUND AND OVER HDPE CONDUIT, THE SOIL PRESSURE INCREASES AND THE PIPE DEFLECTS VERTICALLY AND EXPANDS LATERALLY INTO THE SURROUNDING SOIL. THE MAGNITUDE OF THE DEFLECTION AND THE STRESS DEPENDS NOT ONLY ON THE PIPE'S PROPERTIES BUT ALSO ON THE PROPERTIES OF THE SURROUNDING SOIL. THE MAGNITUDE OF DEFLECTION AND STRESS MUST BE KEPT SAFELY WITHIN HDPE PIPE'S PERFORMANCE LIMITS. EXCESSIVE DEFLECTION MAY CAUSE LOSS OF STABILITY AND FLOW RESTRICTION, WHILE EXCESSIVE COMPRESSIVE STRESS MAY CAUSE WALL CRUSHING OR RING BUCKLING.
2. IN ORDER TO ACHIEVE PROPER, LONG TERM PERFORMANCE OF UNDERGROUND HDPE CONDUIT, THE FOLLOWING IS REQUIRED:
 - a. HDPE PIPE IS MADE FROM HIGH QUALITY, STRESS-RATED PE MATERIAL.
 - b. THE EMBEDMENT MATERIAL MUST BE COARSE-GRAINED, COMPACTED TO 95% PER MODIFIED PROCTOR DENSITY METHOD, AND SHALL HAVE A MODULUS OF ELASTICITY ('E') OF A LEAST 1000 PSI.
 - c. THE NATIVE SOIL MUST BE STABLE WITH A UNIT WEIGHT NOT TO EXCEED 120 PCF.
 - d. THE HDPE CONDUIT IS INSTALLED PER MANUFACTURER REQUIREMENTS AND RECOMMENDATIONS FOR CONTROLLING SHEAR, BENDING LOADS, AND MINIMUM BENDING RADIUS.
 - e. CONDUITS MUST BE INSTALLED PER ASTM D2321 FOR NOM-PRESSURE PIPES.
 - f. LIMIT CONDUIT DEFLECTIONS TO 7.5% OR LESS.
 - g. MAINTAIN THE MINIMUM BEDDING BELOW CONDUIT AND BACKFILL ABOVE THE CONDUIT, AS DEPICTED IN THE PROJECT TRENCH DETAILS. IN ALL CASES, MAINTAIN A MINIMUM OF 4 INCHES OF TAMPED BEDDING MATERIAL BELOW AND ABOVE THE CONDUIT.
 - h. USE A VIBRATION TAMPER FOR COMPACTION WORK, NOT AN IMPACT TAMPER.

THE CONTRACTOR IS EXPECTED TO VERIFY SITE AND INSTALLATION CONDITIONS AS NECESSARY TO ADHERE TO MANUFACTURER REQUIREMENTS FOR PROPER HDPE CONDUIT INSTALLATION. WHEN MANUFACTURER DOES NOT SPECIFICALLY ADDRESS AN INSTALLATION QUESTION OR ASPECT, ADHERE TO INDUSTRY BEST PRACTICES AS OUTLINED IN THE PPI TECHNICAL NOTES REFERENCED ABOVE.

3. AS MUCH AS POSSIBLE, UTILIZE LARGE SWEEPING BENDS INSTEAD OF TIGHTER BENDS. MINIMUM BENDING RADIUS IS 11 TIMES THE O.D. OF THE CONDUIT.

CONDUIT SPECIFICATIONS:

1. HDPE CONDUIT SHALL BE MADE FROM HIGH QUALITY, STRESS-RATED PE MATERIAL WITH MINIMUM MODULUS VALUE OF 80,000 PSI AND MINIMUM TENSILE STRENGTH OF 3,000 PSI PER ASTM D 3350 REQUIREMENTS.
2. HDPE SHALL BE UL 651A LISTED, SCHEDULE 80, SUITABLE FOR UNDERGROUND OPEN TRENCH CONSTRUCTION METHODS.
3. HDPE RESIN PER ASTM D 3350 STANDARDS.
4. PROVIDE HDPE COUPLINGS, CONNECTORS, AND END PLUGS AS REQUIRED AND FROM THE SAME MANUFACTURER AS THE HDPE CONDUIT ITSELF. PROVIDE TRANSITION COUPLINGS TO FIBERGLASS, AND EXPANSION COUPLINGS AS REQUIRED.
5. PROVIDE DURALINE STANDARD UL 651A SCHEDULE 80 HDPE OR EQUAL.

NOTES (APPLICABLE TO DETAIL 1):

1. RECOMMENDED PULLING DIRECTION FOR MEDIUM VOLTAGE CABLES ARE SHOWN HERE. THIS APPLIES TO 12.47KV AND 34.5KV CABLES. TECHNICAL DATA USED IN PULLING CALCULATIONS INCLUDE:
 - a. COEFFICIENT OF FRICTION: 0.35
 - b. AMPLE LUBRICATION USED (SEE NOTES 2,3,4)
 - c. BACK TENSION: 100 POUNDS
 - d. 6" SCHEDULE 80 MIN I.D.: 5.657 INCHES
 - e. 4" SCHEDULE 80 MIN I.D.: 3.746 INCHES
 - f. MAX ALLOWABLE CABLE TENSION: 2500 LBS/FT (1/0), 10,000 LBS/FT (500 KCMIL)
 - g. MAX ALLOWABLE SIDEWALL PRESSURE: 500 LBS/FT (1/0), 2000 LBS/FT (500 KCMIL)
 - h. CONDUIT ELBOW RADII: 24 INCHES (MINIMUM)
2. CONTRACTOR IS EXPECTED TO UTILIZE LIBERAL AMOUNTS OF PULLING LUBRICANT. THIS INCLUDES COMPLETE LUBRICATION OF THE CONDUIT SYSTEM PRIOR TO CABLE PULLING, AS WELL AS LUBRICATION APPLIED DURING THE CABLE PULLING EFFORT. RECOMMENDED LUBRICANT QUANTITY PER INDUSTRY STANDARD EQUATION: $Q = k \times L \times D$ (Q-QUANTITY IN GALLONS, k=0.0015, L-LENGTH OF CONDUIT RUN IN FEET, D-ID OF CONDUIT IN INCHES).
3. THE CABLE PULLING LUBRICANT SHALL PROVIDE EXCELLENT FRICTION REDUCTION WITH SLOW DRYING, GOOD CLING AND WETTING CHARACTERISTICS THROUGH LONG PULLS AND MULTIPLE BENDS. THE LUBRICANT SHALL LEAVE MINIMAL NONCOMBUSTIBLE RESIDUE, AND SHALL BE NON-STAINING. IT SHALL BE COMPATIBLE WITH ALL CABLE JACKET TYPES USED ON THIS PROJECT. CABLE JACKET COMPATIBILITY SHALL BE TESTED WITH THE SPECIFIC JACKET MATERIAL USED ON EACH CABLE AND TEST DATA SHALL BE PROVIDED BY THE CABLE MANUFACTURER OR LUBRICANT MANUFACTURER. LUBRICANT SHALL BE UL LISTED, MEET IEEE 1210 STRESS CRACKING AND VOLUME RESISTIVITY REQUIREMENTS. PROVIDE POLYMER LUBRICANT OR EQUAL.
4. CONTRACTOR IS EXPECTED TO PRE-LUBRICATE ALL CONDUITS THROUGHOUT THE PROJECT PRIOR TO PULLING IN CABLES AND CONDUCTORS. UTILIZE BAG PACKAGES, POLYMER 'FRONT END PACKS' OR EQUAL. THESE PACKAGES ATTACH TO THE WINCH LINE AND PRE-LUBRICATE THE CONDUIT INNER SURFACES AS THEY ARE PULLED THROUGH THE CONDUIT. IN ADDITION, CONTRACTOR IS TO LUBRICATE THE CABLES AND CONDUCTORS AS THEY ARE FED INTO THE CONDUIT SYSTEM DURING THE PULLING WORK. FOLLOW MANUFACTURER INSTRUCTIONS.
5. CAREFULLY CONSIDER THE USE OF PULLING EYES AND BOLTS, BASKET GRIPS, AND CABLE SHEAVES IN THE PULLING PROCESS. CONTRACTOR IS EXPECTED TO IMPLEMENT NECESSARY PULLING MEANS AND METHODS TO MINIMIZE CABLE TENSIONS AND CONDUIT SIDEWALL PRESSURES. CONSIDER THE AMBIENT TEMPERATURES, WEATHER CONDITIONS, AND OTHER SITE FACTORS WHEN PLANNING THE WORK. IN ALL CASES, PULLING EFFORTS SHALL NOT RESULT IN EXCESSIVE CABLE TENSIONS BASED ON MANUFACTURER CABLE DATA SHEETS. CONTRACTOR SHALL REFER TO THE OKONITE 'YELLOW BOOK' TITLED 'INSTALLATION PRACTICES FOR CABLE RACEWAY SYSTEMS' FOR GENERAL GUIDELINES AND EXPECTATIONS OF THE OVERALL PULLING PROCESS PLANNING, DESIGN, AND SUCCESSFUL IMPLEMENTATION.
6. LABEL ALL MV CABLES ON THE PROJECT PER DETAIL 2, THIS SHEET.

PLANS DEVELOPED BY:
MORRIS ENGINEERING GROUP, INC
2375 JORDAN AVE #7
JUNEAU, AK 99801
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STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
6860 GLACIER HIGHWAY, JUNEAU, AK 99801
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UTILITY RELOCATION FOR KETCHIKAN AREA BRIDGES
MEDIUM VOLTAGE CABLE DETAILS & CONDUIT SPECS

FILE | 1/102 state of alaska utility relocation design for ketchikan bridges | Working Drawings | POWER UTILITY DEMOLITION SINGLE LINE DIAGRAMS | 8/6/2021 16:07 | LAYOUT | U18 | DESIGNED | MGM | CHECKED | MGM | DRAFTED | NADJA

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	U19	45

EXTG POLE P2 & NEW POLE P2B - MATERIAL LIST

REF ID	QUANTITY	DESCRIPTION	BRAND (NOTE 2)	PART NUMBER
①	1	45 FOOT LONG, CLASS 2 WOOD POLE, DOUGLAS FIR, 8" DIA. AT TOP	NOTE 3	NOTE 3
②	5	(1) 5/8" X 10" BOLT, (2) 2-1/4" X (2)-1/4" CURVED WASHERS, (2) LOCKNUTS	MPS	J8810 BOLT, J1075 WASHERS, J8583 LOCKNUTS
③	5	UNIVERSAL GUY ATTACHMENT, DUCTILE IRON, HOT DIPPED GALV.	MPS	MGA-345-A
④	9	FORMED DEADEND WIRE GUY GRIP, 3/8" EHS, 35" APPLIED LENGTH	MPS	DE-S1107
⑤	AS REQ'D	GALV STEEL GUY WIRE, 3/8", 7W STRAND		
⑥	2	PORCELAIN GUY STRAIN INSULATOR	MPS	L502
⑦	2	AUTOMATIC GUY DEADEND, 3/16" BAIL, WITH INSTALL BAIL	MPS	(2) DE-S1108 GRIPS & (2) 5202 VISES
⑧	2	8FT. POLYETHYLENE GUY MARKER, YELLOW	MPS	J5718
⑨	2	POWER INSTALL SCREW ANCHOR KIT, SQ SHAFT, 21K LBS RATED, 10 FT. LONG	CU	#SS5 SERIES (NOTE 4)
⑩	1	GUY STRAIN INSULATOR, 21K LBS RATED, 78" ROD SILICONE COATED	MPS	GYCTE21-78-SC

- THE MATERIAL LIST IS NOT MEANT TO BE COMPREHENSIVE. THE CONTRACTOR SHALL DO A FULL TAKE OFF FROM THE PLANS AND NOT DEPEND ON THIS LIST ALONE.
- BRAND ABBREVS: AF = ALUMA-FORM, CPS = COPPER POWER SYSTEMS, CU = CHANCE UTILITY, HEN = HENDRICKS, HUB = HUBBELL, MPS = MACLEAN POWER SYSTEMS, PP = PREFORMED PRODUCTS, SIE = SIEMENS, SW = SOUTHWIRE.
- SEE SHEET U26B FOR NEW WOOD POLE SPECIFICATIONS, TECHNICAL REQUIREMENTS, APPROVED MANUFACTURERS, ETC.
- EACH SQUARE SHAFT, POWER SCREW ANCHOR ASSEMBLY IS A KIT CONSISTING OF:
(1) SCREW HEAD LEADER
(MULTIPLE) EXTENSION BARS
(1) GUY ADAPTER
PROVIDE NUMBER OF EXTENSION BARS NEEDED BASED ON INSTALLATION CONDITIONS.
PROVIDE EACH GUY ADAPTER WITH TWO (2) GUY EYES AND ONE (1) PULLING EYE.
- COMPLETE ARRANGEMENT OF GUYING FROM POLE TO ANCHOR IN GROUND NOTE SHOWN ON POLE DETAIL THIS SHEET FOR GENERAL DEPICTION OF WHAT IS REQUIRED. COORDINATE EXACT CONFIGURATION NEEDED PRIOR TO WORK.
- KPU UTILITY STOCKS MANY OF THE COMMON POLE ELEMENTS NEEDED ON THIS PROJECT. COORDINATE AS REQUIRED TO ENSURE COMPLIANCE.

WILDLIFE PROTECTION GENERAL NOTE (APPLICABLE TO POWER UTILITY POLES: P5, P5A, P7, P8, P9, P10):

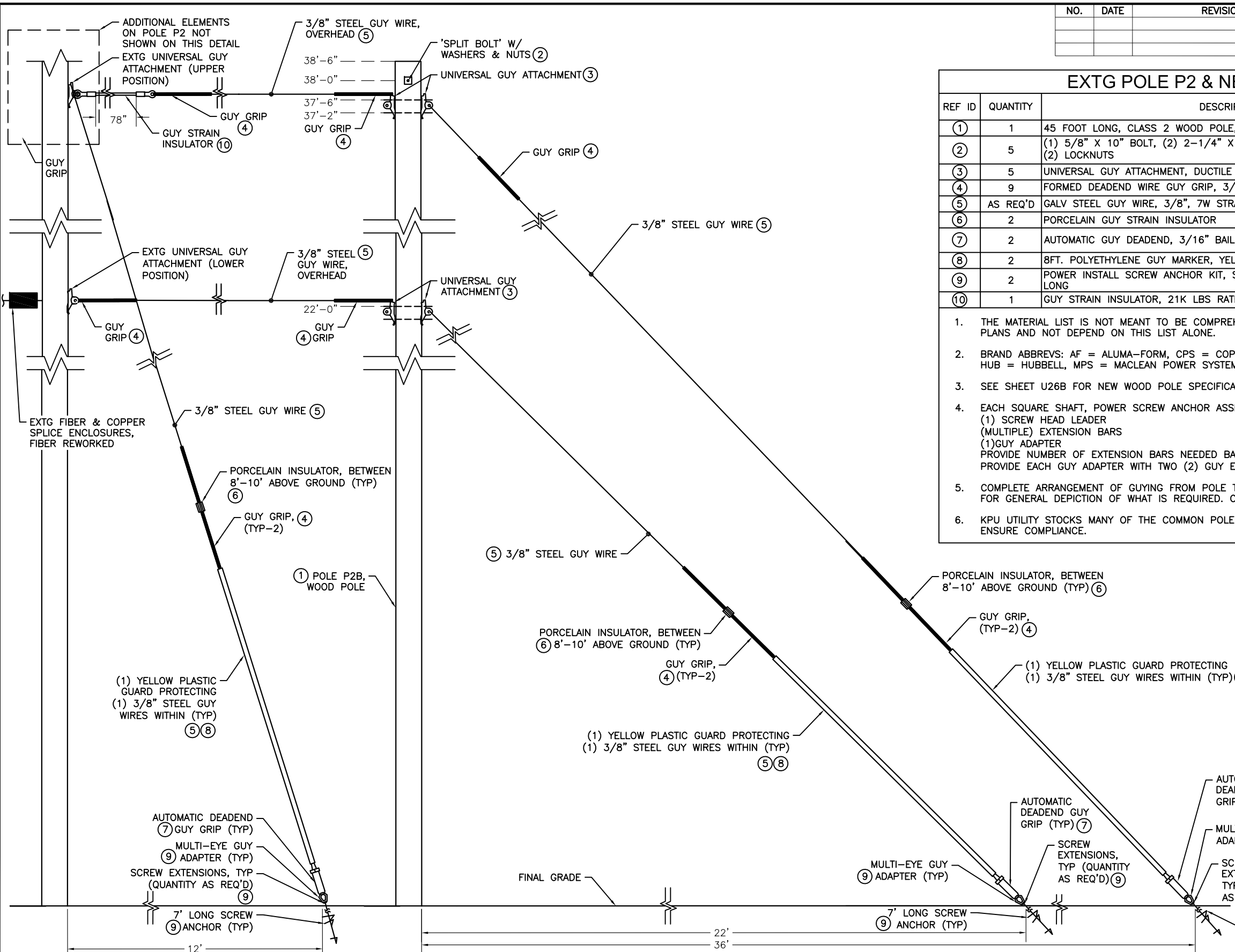
- ALL NEW OVERHEAD ELECTRICAL IN THE PROJECT WILL BE DESIGNED AND ARRANGED TO MAXIMIZE WILDLIFE PROTECTION FROM THE HAZARDS OF OVERHEAD ELECTRICAL LINES. MEASURES SUCH AS: NON-RATED ARRESTER WIRE INSULATION (I.E. COVERED WIRE), 60"+ PHASE CONDUCTOR SEPARATION, AND TERMINAL WILDLIFE GUARDS ON ALL EXPOSED ELECTRICAL 'TOPS' WILL BE INCLUDED IN THE DESIGN AND CONSTRUCTION AS MUCH AS POSSIBLE. ALL PROPOSED SOLUTIONS PROVIDED SHALL BE IN CONJUNCTION WITH DOT&PF AND KPU UTILITY REQUIREMENTS AND SUBJECT TO REVIEW.

PROTECTIVE ELEMENTS THAT SHALL BE INCLUDED ARE NOT ALL SHOWN ON THE UTILITY POLE DETAIL SHEETS BUT ALL SHALL BE PROVIDED FOR COMPLETE PROTECTION. ELEMENTS INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

- ARRESTER GUARDS
- FUSED CUTOFF GUARDS
- TERMINATOR GUARDS
- PIN INSULATOR GUARDS
- PERCH PREVENTERS (ON PUPI ARMS & EQUIPMENT MOUNTS)
- BIRD FLIGHT DIVERTERS

PROVIDE BIRD FLIGHT DIVERTER 'PIGTAILS' ON ALL TOPS OF POLE OVERHEAD POWER LINES ACROSS ENTIRE PROJECT, INCLUDING BETWEEN POLES AT EITHER END OF THE PROJECT TO THE NEXT POLE NOT WITHIN PROJECT SCOPE. EVENLY SPACE THEM PER KPU UTILITY TYPICAL REQUIREMENTS.

PROVIDE RELIAGUARD, PREFORMED LINE PRODUCTS, OR APPROVED AS REQUIRED WILDLIFE PROTECTION ELEMENTS.



① POLE P2 & POLE P2B COMBINED ELEVATION
NOT TO SCALE

PLANS DEVELOPED BY:
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UTILITY RELOCATION FOR KETCHIKAN AREA BRIDGES

POLE P2 & P2B ELEVATIONS (KPU #2430-A5-3 & #2430-A5-10)

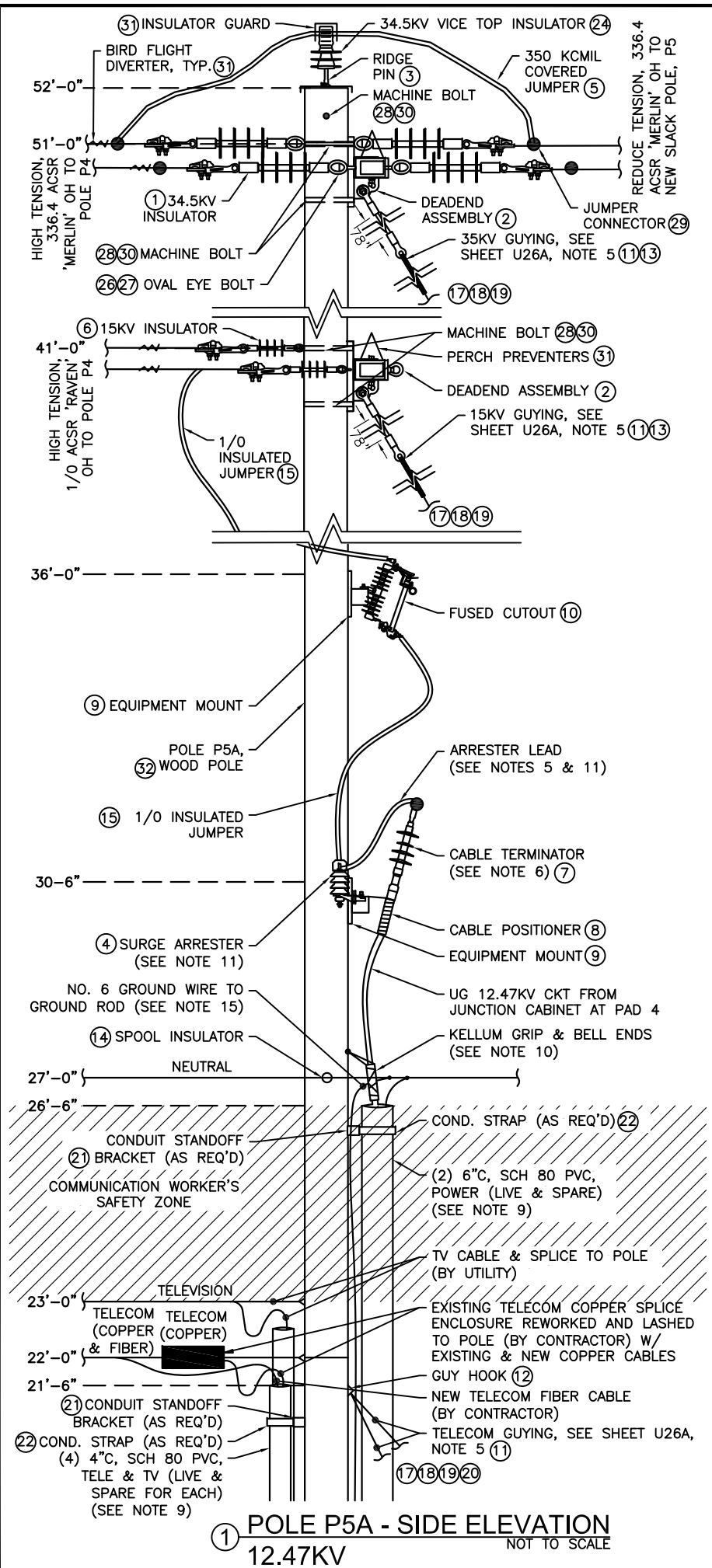
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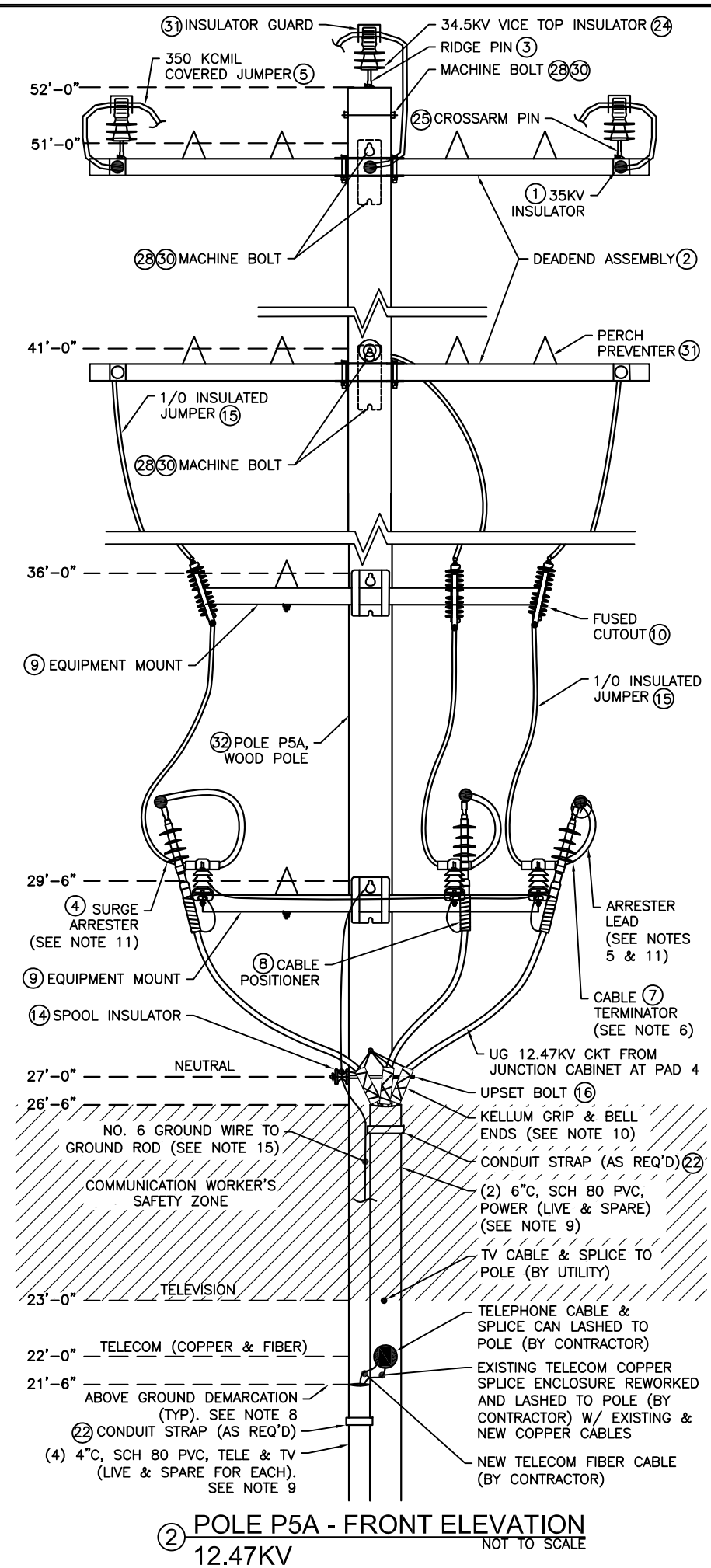
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWW00072	2021	U20	45

NOTES:

- ALL NUMBERS INSIDE CIRCLES REFER TO SHEET U26A FOR MATERIALS TABLE. SEE TABLE FOR MATERIAL DESCRIPTIONS, QUANTITIES, MANUFACTURERS, ETC. COMMODITY MATERIALS ARE SHOWN AS PRODUCTS OF MACLEAN POWER SYSTEMS, BUT MAY BE SUBSTITUTED FOR IDENTICAL MATERIALS OF OTHER MANUFACTURERS.
- UTILITY POLES, POLE MOUNTED EQUIPMENT, POWER CABLES, COMMUNICATION CABLES, POLE SUPPORTS, GUYS, GROUNDING, AND CONDUIT RISERS SHALL ALL ADHERE TO MINIMUM CLEARANCES AS SPECIFIED IN THE LATEST EDITION OF THE NATIONAL ELECTRICAL SAFETY CODE (NEC, ANSI STANDARD C2) AS ADOPTED BY THE STATE OF ALASKA AND LOCAL AGENCIES, THE AFFECTED UTILITIES AND ALL REQUIREMENTS OF STATE AND LOCAL AGENCIES.
- CODE REQUIRED CLEARANCES AND DIMENSIONS ARE THE MINIMUM ALLOWED IN THIS PROJECT. PROVIDE ADDITIONAL DISTANCES AS DIMENSIONED SPECIFICALLY ON THIS SHEET.
- ADHERE TO KETCHIKAN PUBLIC UTILITIES/ELECTRIC (KPU/E) CONSTRUCTION SPECIFICATION STANDARDS. NOTES ON THIS PAGE ARE BORROWED, IN PART, FROM THOSE STANDARDS. BUT NOT ALL KPU/E STANDARDS ARE NOTED HEREIN. THE CONTRACTOR SHALL REVIEW KPU/E STANDARDS PRIOR TO COMMENCING WORK ASSOCIATED WITH THE PROJECT. CONTRACTOR SHALL PROMPTLY BRING TO THE ATTENTION OF THE ENGINEER SALIENT CONFLICTS BETWEEN THESE PLANS AND SPECIFICATIONS AND THE KPU/E CONSTRUCTION SPECIFICATION STANDARDS.
- ALL SURGE ARRESTER LEADS SHALL BE KEPT AS SHORT AND AS STRAIGHT AS PRACTICABLE. WHERE POSSIBLE, TOTAL ARRESTER LEAD LENGTH (IN AND OUT) SHALL NOT EXCEED 30'.
- NO POWER CABLE BENDS ARE PERMITTED WITHIN 12" OF THE CABLE TERMINAL BASE ABOVE THE CONDUIT RISER.
- ALL LIVE PARTS AT UTILITY POLE SHALL HAVE A MINIMUM 20' CLEARANCE ABOVE FINISHED GRADE. MAINTAIN A MINIMUM OF 6" SEPARATION BETWEEN THE NEUTRAL CONDUCTOR AND ALL OTHER CABLES.
- DURING SUBMITTAL PROCESS, CONTRACTOR SHALL PROVIDE POLE ELEVATION DETAILS SIMILAR TO WHAT IS SHOWN ON THIS SHEET THAT CALL OUT SPECIFIC EQUIPMENT AND ALL SPACING DIMENSIONS PLANNED FOR THE INSTALLED POLE BASED ON SUBMITTED PRODUCTS. SUBMITTED DETAILS SHALL BE TO SCALE. ELEVATIONS SHALL INCLUDE ABOVE GRADE HEIGHT MARKERS SO THAT OVERALL ARRANGEMENT CAN BE REVIEWED AND APPROVED. ORDERING OF PRODUCTS AND ONSITE WORK SHALL NOT COMMENCE UNTIL SUBMITTED POLE ELEVATIONS ARE REVIEWED AND APPROVED BY THE ENGINEER AND THE KPU/E UTILITY MANAGER OR DESIGNEE.
- CONDUIT ELBOWS AT GRADE AND THE FIRST 10' OF CONDUIT RISERS ABOVE GRADE SHALL BE RIGID STEEL CONDUIT. TRANSITION TO SCHEDULE 80 PVC ABOVE THAT POINT.
- PROVIDE A STAINLESS-STEEL CABLE GRIP SUPPORT AND CONDUIT BELL ENDS AT TOP OF CONDUIT FOR EACH 15 KV CONDUCTOR CABLE, SECURE TO POLE WITH MACHINE BOLT AND WASHER AS REQUIRED. PROVIDE KELLUM GRIPS, HUBBEL #02406011 OR EQUAL.
- SURGE ARRESTER SHALL BE WIRED IN PARALLEL WITH PHASE JUMPER, OR TERMINATOR (OR OTHER PROTECTED EQUIPMENT, ONE ARRESTER PER PHASE. PROVIDE EACH ARRESTER WITH WILDLIFE PROTECTIVE TOP CAP. ARRESTERS EQUIPPED WITH ~30" OF ARRESTER LEAD WIRE, TRAIN LEAD WIRE TO BE AS SHORT AND STRAIGHT AS POSSIBLE. INSTALL LEAD WIRE WITHIN AN OVERALL RUBBER INSULATION MATERIAL.
- COORDINATE ARRANGEMENT OF POLE ASSEMBLIES, EQUIPMENT, AND STRUCTURES AT TOP OF POLE WITH KPU/E. NOT ALL DIMENSIONS ARE SHOWN ON THIS SHEET.
- TO LIMIT THE LIKELIHOOD OF CORROSION DUE TO DISSIMILAR METALS, CONNECTIONS SHALL ALL BE CONFIGURED SO THAT IN ALL CASES OF ALUMINUM-TO-COPPER CONDUCTOR CONNECTIONS, THE ASSOCIATED CONNECTORS SHALL ALLOW FOR THE ALUMINUM PORTION OF THE CONNECTION TO PHYSICALLY BE ABOVE THE COPPER PORTION OF THE CONNECTIONS.
- IN GENERAL, FOR CLARITY, SIDE VIEW (ELEVATION) DEPICTIONS INCLUDES ONLY ONE OR TWO OF THREE PHASES. PROVIDE THE OTHER PHASE CONNECTIONS IN A NEAT, SYMMETRICAL AND SIMILAR MANNER, CONSISTENT WITH THE DEPICTED PHASES, NOT ALL PHASE EQUIPMENT, CONNECTIONS, ETC. ARE SHOWN ON THE SIDE (ELEVATION) VIEW DETAIL.
- FOR EACH INSTALLED SURGE ARRESTER, INSTALL A NO. 6 BARE, SOFT DRAWN, SOLID, CU GROUND WIRE FROM THE GROUND CONNECTION OF THE ARRESTER DIRECTLY TO THE MULTI-GROUNDED NEUTRAL (SYSTEM NEUTRAL) AND THE POLE GROUND CONDUCTOR. BOND THE COPPER CONCENTRIC NEUTRAL OF ALL MEDIUM VOLTAGE CABLE AND THE SHIELD FROM EACH OF THE CABLE TERMINATORS TOGETHER AND BOND ALL THREE TERMINATOR GROUNDS TOGETHER AND CONTINUE THIS CONDUCTOR TO THE SYSTEM NEUTRAL. BOND ALL GROUND CONDUCTORS AT THAT LOCATION. CONTINUE THE POLE GROUND CONDUCTOR DOWN THE POLE TO THE DRIVEN POLE GROUND ROD. VERTICAL GROUND WIRES SHALL BE STAPLED TO POLE AS REQUIRED AND NEATLY TRAINED. THE LOWEST 10' OF THE GROUND WIRE SHALL BE PROTECTED BY WOOD OR PLASTIC MOLDING, EXPRESSLY DESIGNED AND MANUFACTURED FOR THE PURPOSE. NOT ALL GROUND WIRING SEGMENTS ARE DEPICTED ON THE DETAILS ON THIS SHEET BUT ALL SHALL BE CONSISTENT WITH INDUSTRY PRACTICES AND PROVIDED AS DESCRIBED.

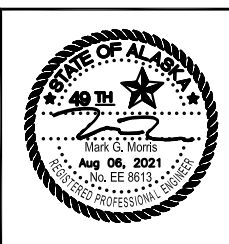


① POLE P5A - SIDE ELEVATION
12.47KV
NOT TO SCALE



② POLE P5A - FRONT ELEVATION
12.47KV
NOT TO SCALE

PLANS DEVELOPED BY:
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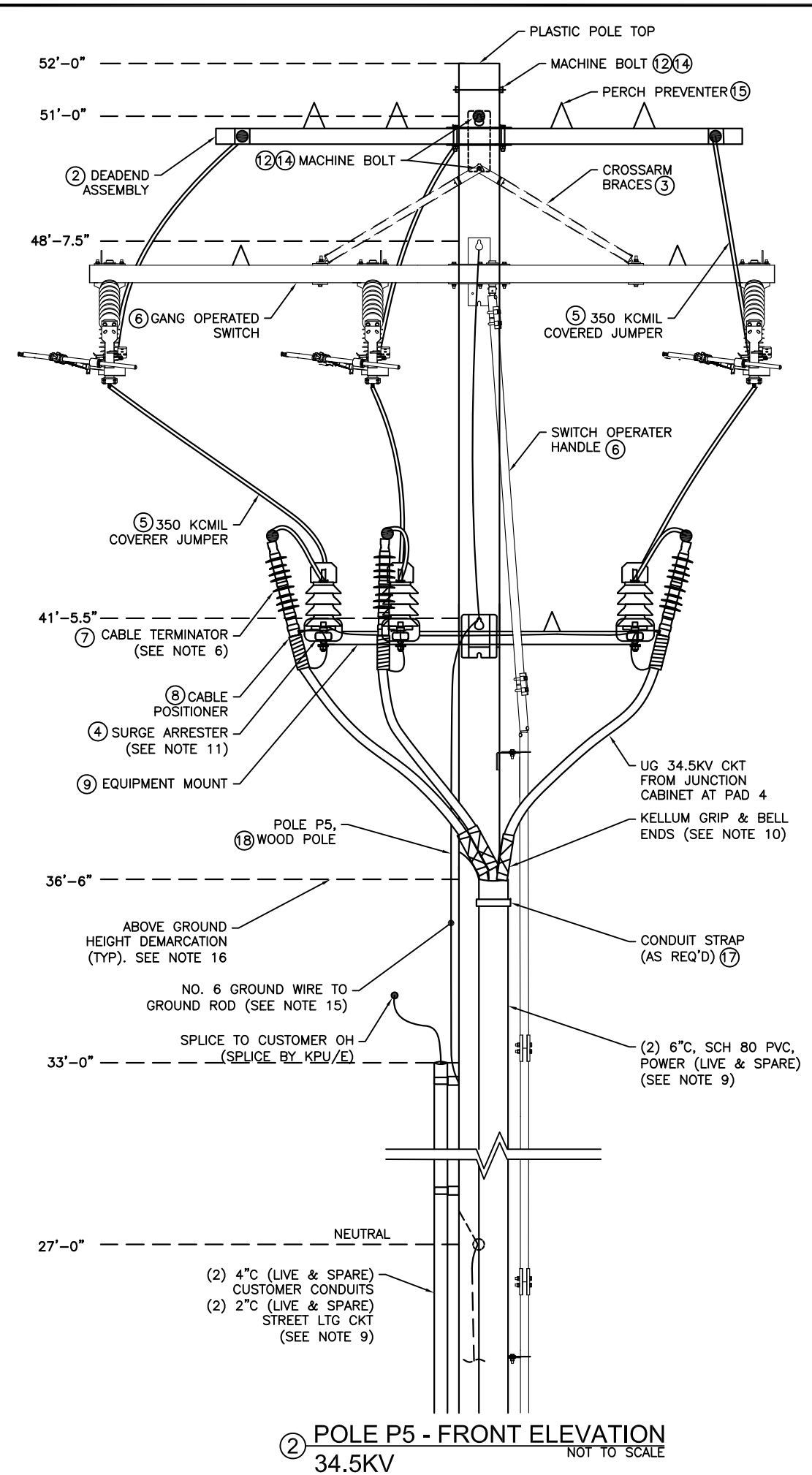
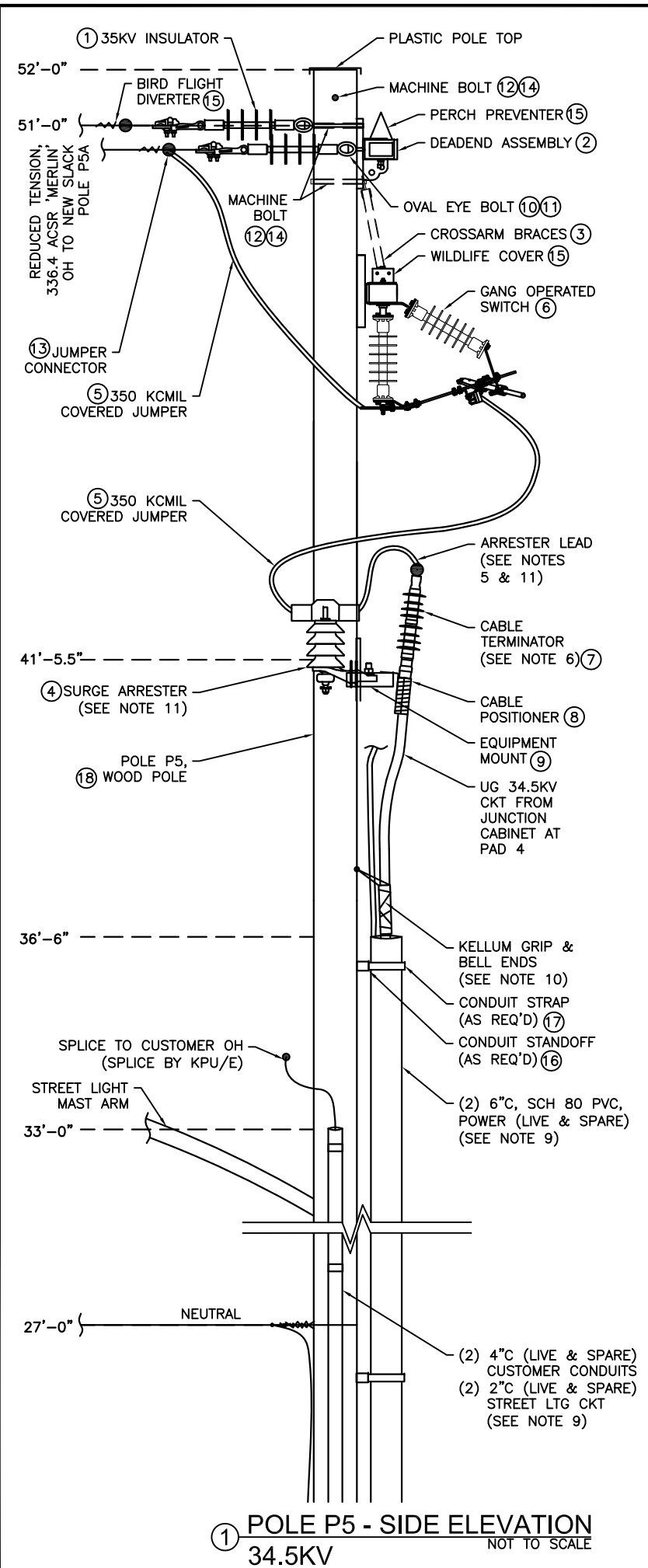


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UTILITY RELOCATION FOR
KETCHIKAN AREA BRIDGES

POLE P5A ELEVATIONS
(KPU #2430-B5-12)

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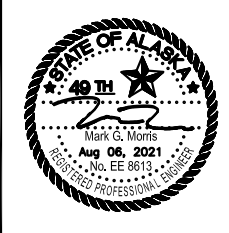


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- ALL LIVE PARTS AT UTILITY POLE SHALL HAVE A MINIMUM 20' CLEARANCE ABOVE FINISHED GRADE. MAINTAIN A MINIMUM OF 6" SEPARATION BETWEEN THE NEUTRAL CONDUCTOR AND ALL OTHER CABLES.
- UTILITY POLE P5 HAS A STREET LIGHTING MAST ARM AND LED FIXTURE NOT SHOWING ON THIS ELEVATION (BELOW THE AREA SHOWN)
- CONDUIT ELBOWS AT GRADE AND THE FIRST 10' OF CONDUIT RISERS ABOVE GRADE SHALL BE RIGID STEEL CONDUIT. TRANSITION TO SCHEDULE 80 PVC ABOVE THAT POINT.
- PROVIDE A STAINLESS-STEEL CABLE GRIP SUPPORT AND CONDUIT BELL ENDS AT TOP OF CONDUIT FOR EACH 35 KV CONDUCTOR CABLE, SECURE TO POLE WITH MACHINE BOLT AND WASHER AS REQUIRED. PROVIDE KELLUM GRIPS, HUBBEL #02406013 OR EQUAL.
- SURGE ARRESTER SHALL BE WIRED IN PARALLEL WITH PHASE JUMPER, OR TERMINATOR (OR OTHER PROTECTED EQUIPMENT, ONE ARRESTER PER PHASE. PROVIDE EACH ARRESTER WITH WILDLIFE PROTECTIVE TOP CAP. ARRESTERS EQUIPPED WITH ~30" OF ARRESTER LEAD WIRE, TRAIN LEAD WIRE TO BE AS SHORT AND STRAIGHT AS POSSIBLE. INSTALL LEAD WIRE WITHIN AN OVERALL RUBBER INSULATION MATERIAL.
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PLANS DEVELOPED BY:
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**UTILITY RELOCATION FOR
 KETCHIKAN AREA BRIDGES**

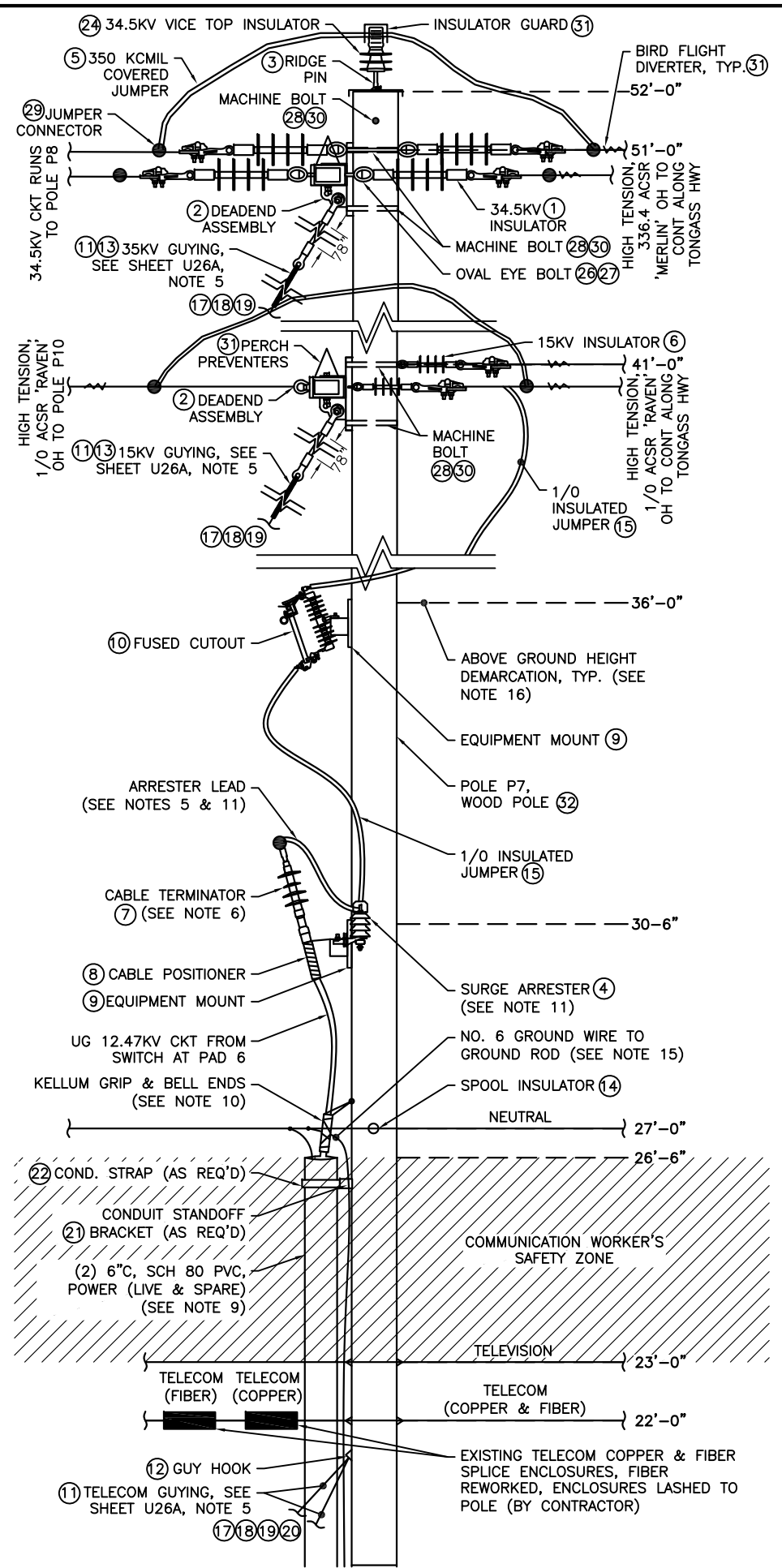
**POLE P5 ELEVATIONS
 (KPU #2430-B5-1)**

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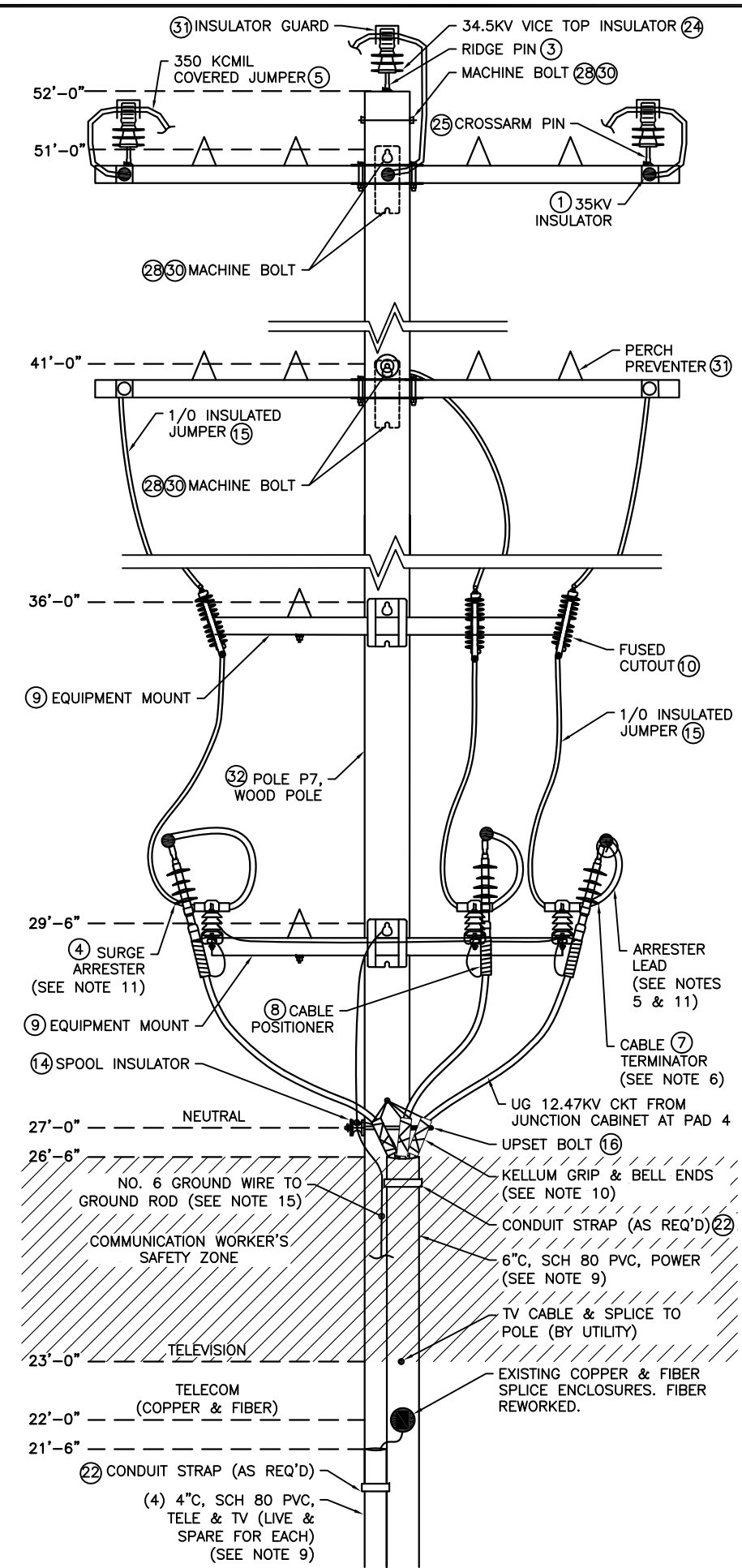
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	U22	45

NOTES:

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- NO POWER CABLE BENDS ARE PERMITTED WITHIN 12" OF THE CABLE TERMINAL BASE ABOVE THE CONDUIT RISER.
- ALL LIVE PARTS AT UTILITY POLE SHALL HAVE A MINIMUM 20' CLEARANCE ABOVE FINISHED GRADE. MAINTAIN A MINIMUM OF 6" SEPARATION BETWEEN THE NEUTRAL CONDUCTOR AND ALL OTHER CABLES.
- MAINTAIN ALL COMMUNICATION CABLES (TELEPHONE AND TELEVISION) BELOW THE POWER CABLES WITHIN A DEDICATED SPACE. MAINTAIN THE "COMMUNICATION WORKERS' SAFETY ZONE" AS REQUIRED BY THE NESC.
- CONDUIT ELBOWS AT GRADE AND THE FIRST 10' OF CONDUIT RISERS ABOVE GRADE SHALL BE RIGID STEEL CONDUIT. TRANSITION TO SCHEDULE 80 PVC ABOVE THAT POINT.
- PROVIDE A STAINLESS-STEEL CABLE GRIP SUPPORT AND CONDUIT BELL ENDS AT TOP OF CONDUIT FOR EACH 15KV CONDUCTOR CABLE, SECURE TO POLE WITH MACHINE BOLT AND WASHER AS REQUIRED. PROVIDE KELLUM GRIPS, HUBBEL #02406011 OR EQUAL.
- SURGE ARRESTER SHALL BE WIRED IN PARALLEL WITH PHASE JUMPER, OR TERMINATOR (OR OTHER PROTECTED EQUIPMENT, ONE ARRESTER PER PHASE. PROVIDE EACH ARRESTER WITH WILDLIFE PROTECTIVE TOP CAP. ARRESTERS EQUIPPED WITH ~30" OF ARRESTER LEAD WIRE, TRAIN LEAD WIRE TO BE AS SHORT AND STRAIGHT AS POSSIBLE. INSTALL LEAD WIRE WITHIN AN OVERALL RUBBER INSULATION MATERIAL.
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1 POLE P7 - SIDE ELEVATION
12.47KV
NOT TO SCALE



2 POLE P7 - FRONT ELEVATION
12.47KV
NOT TO SCALE

PLANS DEVELOPED BY:
MORRIS ENGINEERING
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JUNEAU, AK 99801
907-789-3350
AECL 1010



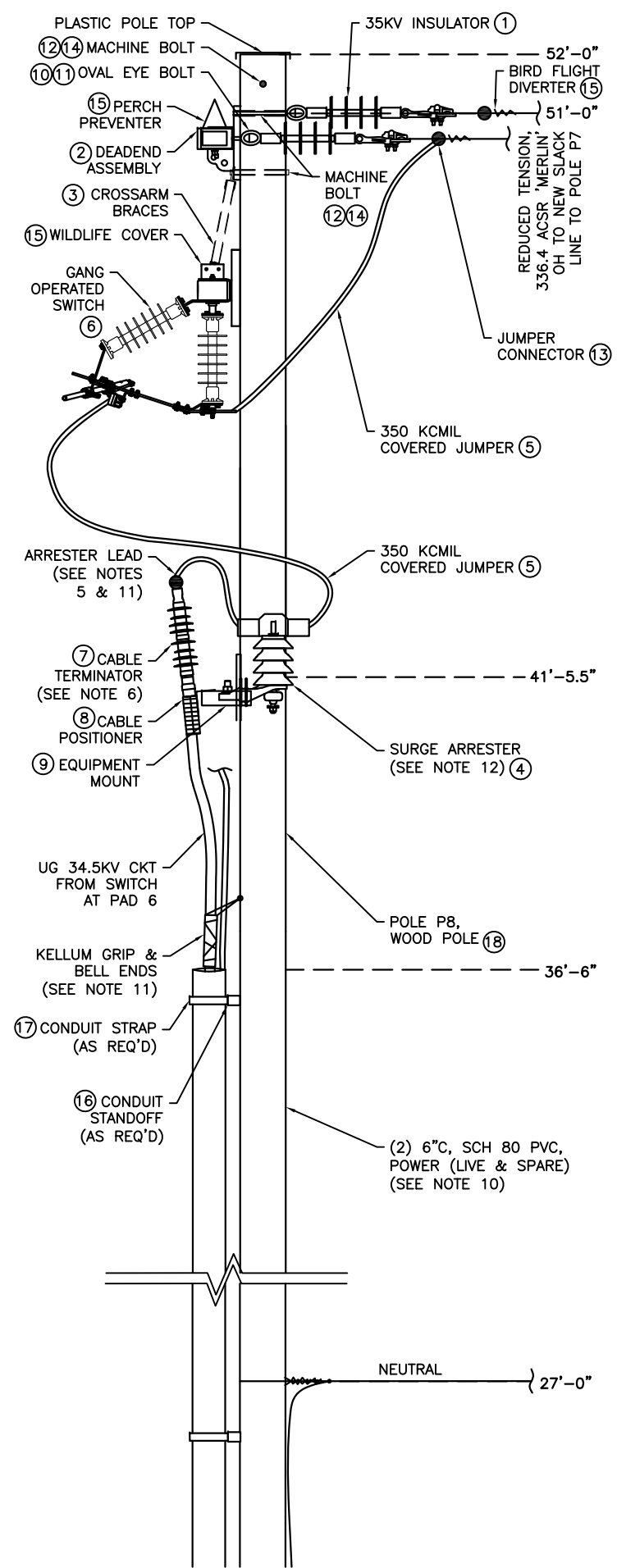
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(907) 465-1763

UTILITY RELOCATION FOR
KETCHIKAN AREA BRIDGES

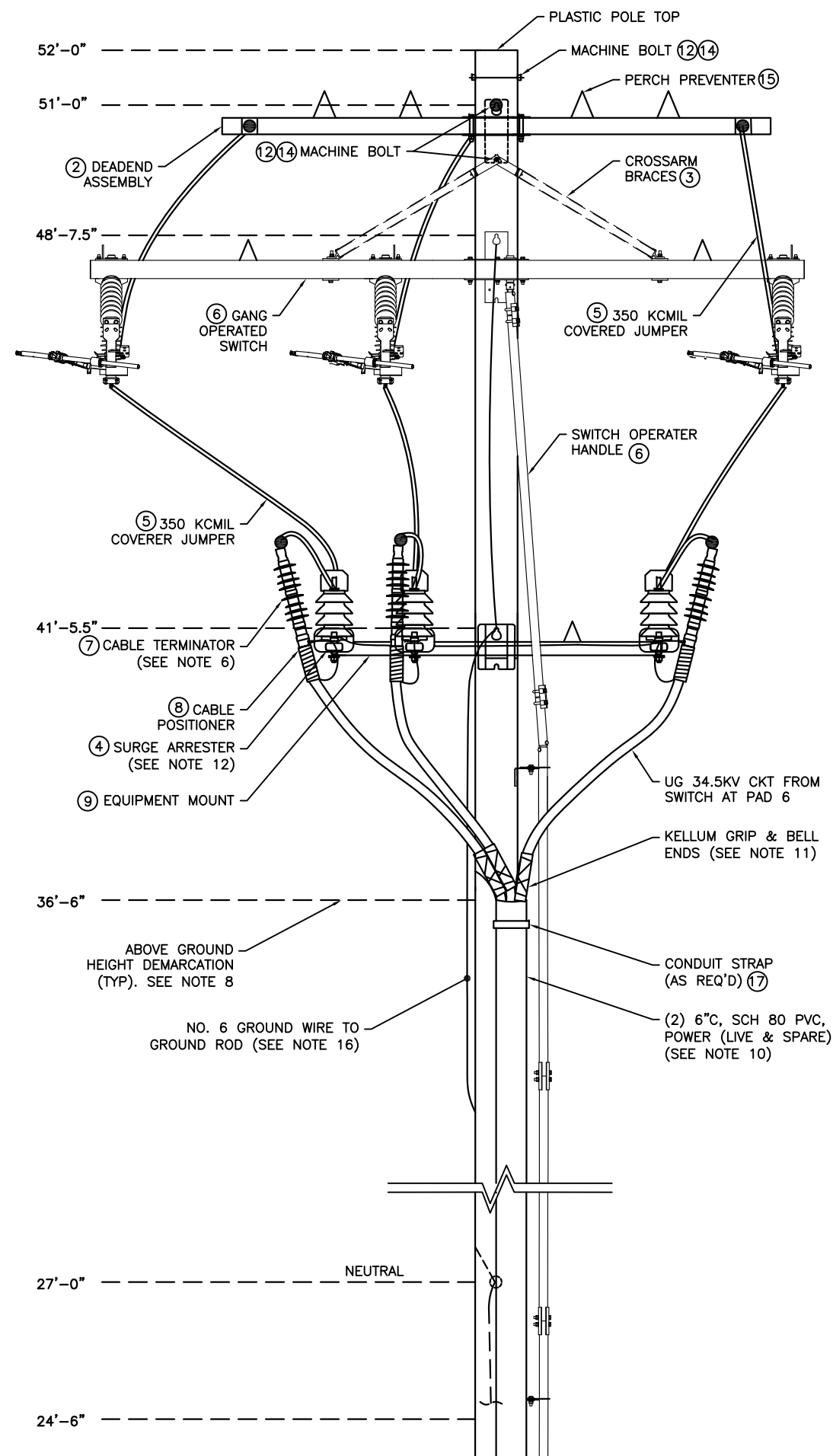
POLE P7 ELEVATIONS
(KPU #2430-A4-6)

FILE: Y:\02 state of ak\44 utility relocation design for ketchikan bridges\Working Drawings\15 KV RISER POLE AND SWITCH CONFIGURATION\DWG 8/6/2021 16:10 LAYOUT U23
 DESIGNED: MGM
 CHECKED: MGM
 DRAFTED: MADJA

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWW00072	2021	U23	45



① POLE P8 - SIDE ELEVATION
34.5KV
NOT TO SCALE

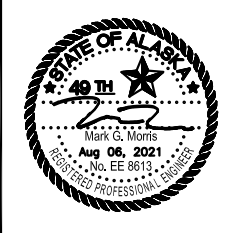


② POLE P8 - FRONT ELEVATION
34.5KV
NOT TO SCALE

NOTES:

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- CONDUIT ELBOWS AT GRADE AND THE FIRST 10' OF CONDUIT RISERS ABOVE GRADE SHALL BE RIGID STEEL CONDUIT TRANSITION TO SCHEDULE 80 PVC ABOVE THAT POINT.
- PROVIDE A STAINLESS-STEEL CABLE GRIP SUPPORT AND CONDUIT BELL ENDS AT TOP OF CONDUIT FOR EACH 35 KV CONDUCTOR CABLE, SECURE TO POLE WITH MACHINE BOLT AND WASHER AS REQUIRED. PROVIDE KELLUM GRIPS, HUBBEL #02406013 OR EQUAL.
- SURGE ARRESTER SHALL BE WIRED IN PARALLEL WITH PHASE JUMPER, OR TERMINATOR (OR OTHER PROTECTED EQUIPMENT, ONE ARRESTER PER PHASE. PROVIDE EACH ARRESTER WITH WILDLIFE PROTECTIVE TOP CAP. ARRESTERS EQUIPPED WITH ~30" OF ARRESTER LEAD WIRE, TRAIN LEAD WIRE TO BE AS SHORT AND STRAIGHT AS POSSIBLE. INSTALL LEAD WIRE WITHIN AN OVERALL RUBBER INSULATION MATERIAL.
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PLANS DEVELOPED BY:
MORRIS ENGINEERING
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907-789-3350
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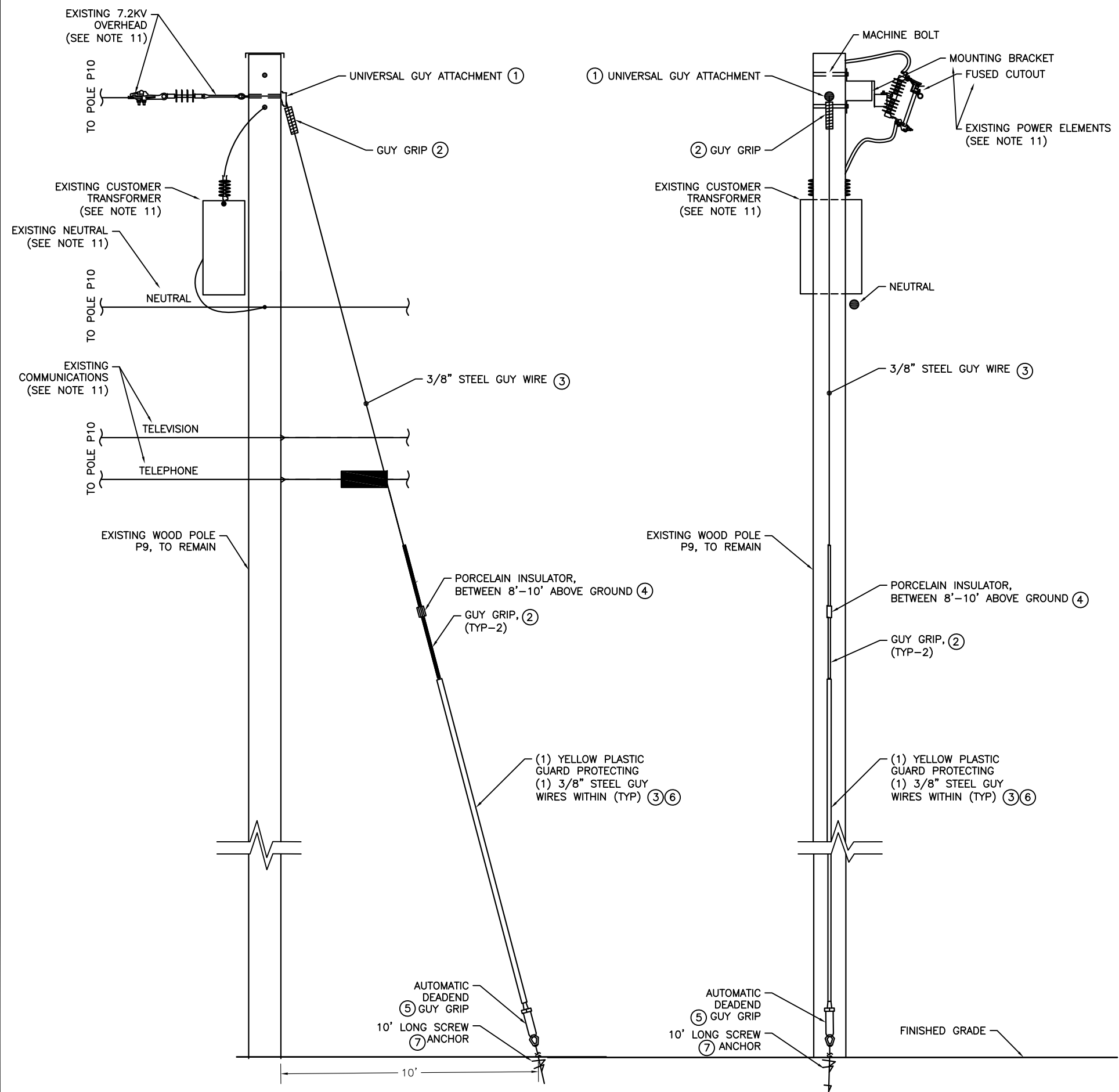
UTILITY RELOCATION FOR
KETCHIKAN AREA BRIDGES

POLE P8 ELEVATIONS
(KPU #2430-A4-7)

FILE: Y:\02 state of al\44 utility relocation design for ketchikan bridges\Working Drawings\15 KV RISER POLE AND SWITCH CONFIGURATION\DWG 8/6/2021 16:10 LAYOUT U24

DRAFTED: NADJA
CHECKED: MGM
DESIGNED: MGM

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	U24	45



NOTES:

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① POLE P9 - SIDE ELEVATION
12.47KV
NOT TO SCALE

② POLE P9 - FRONT ELEVATION
12.47KV
NOT TO SCALE

PLANS DEVELOPED BY:
MORRIS ENGINEERING
GROUP, INC
2375 JORDAN AVE #7
JUNEAU, AK 99801
907-789-3350
AECL 1010



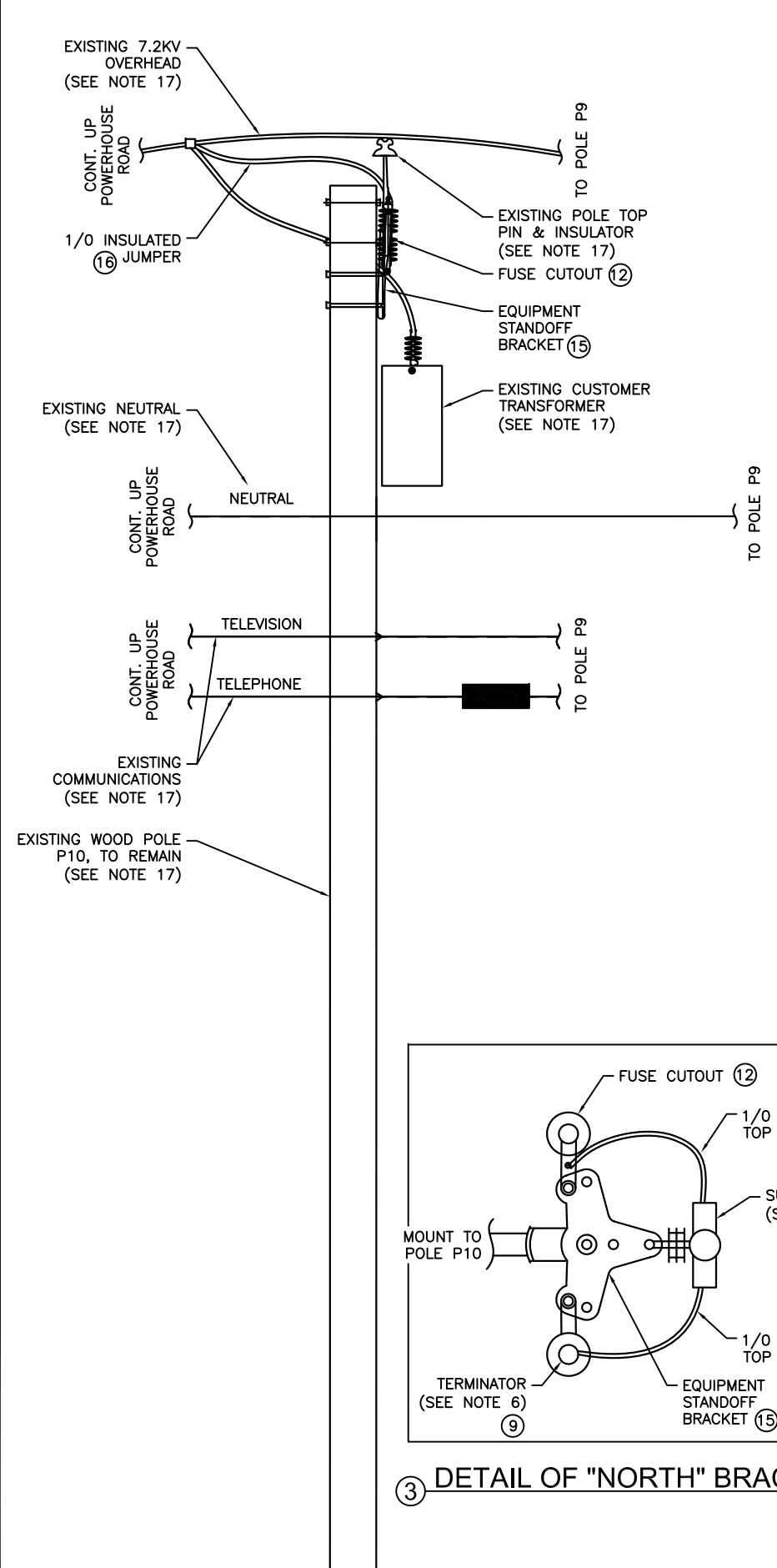
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UTILITY RELOCATION FOR
KETCHIKAN AREA BRIDGES

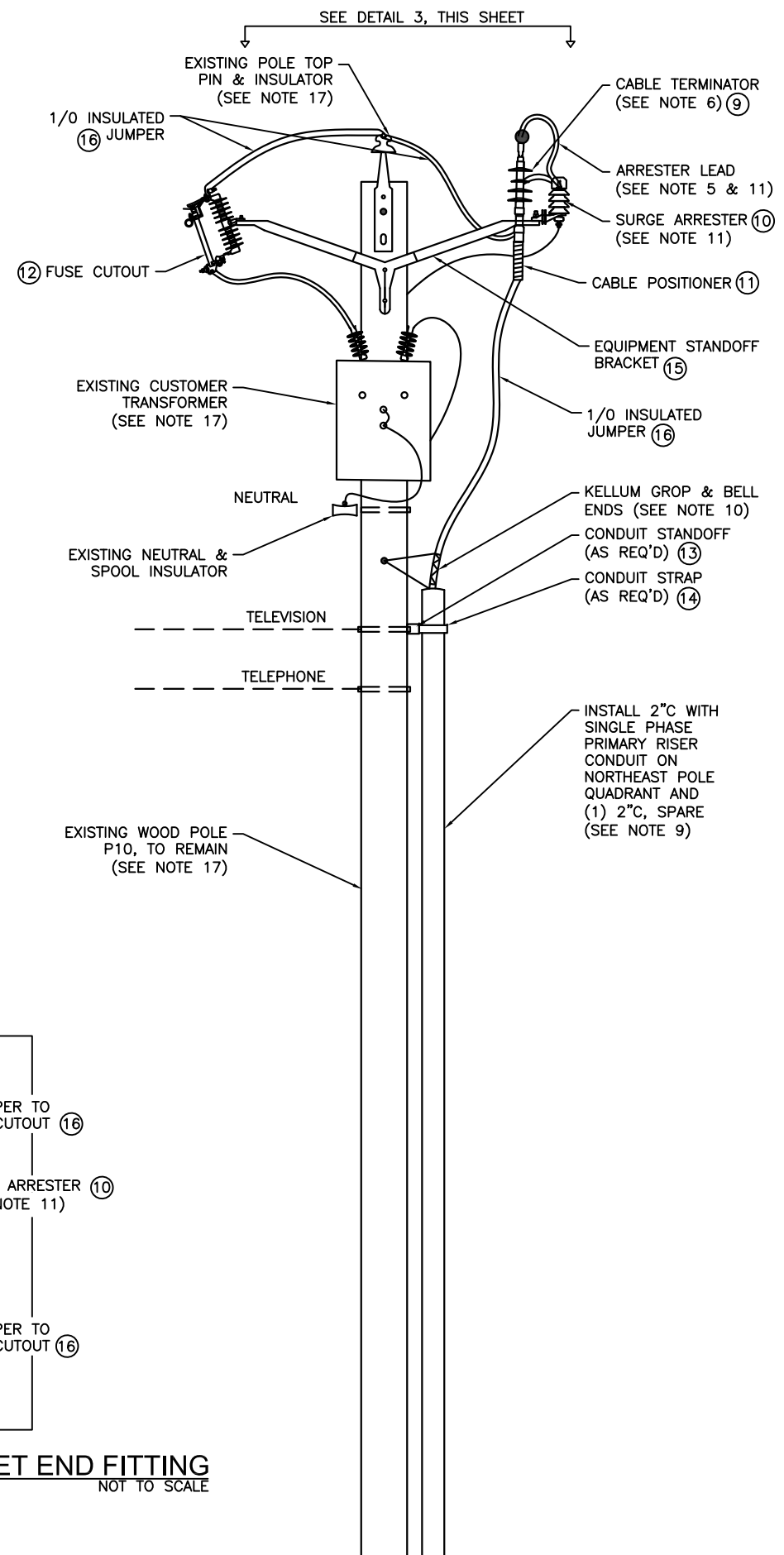
POLE P9 ELEVATIONS
(KPU #2430-B4-4)

FILE: Y:\02 state of ak\44 utility relocation design for ketchikan bridges\Working Drawings\15 KV RISER POLE AND SWITCH CONFIGURATION\DWG 8/6/2021 16:10 LAYOUT U25 CHECKED MGM DESIGNED MGM DRAFTED NADJA

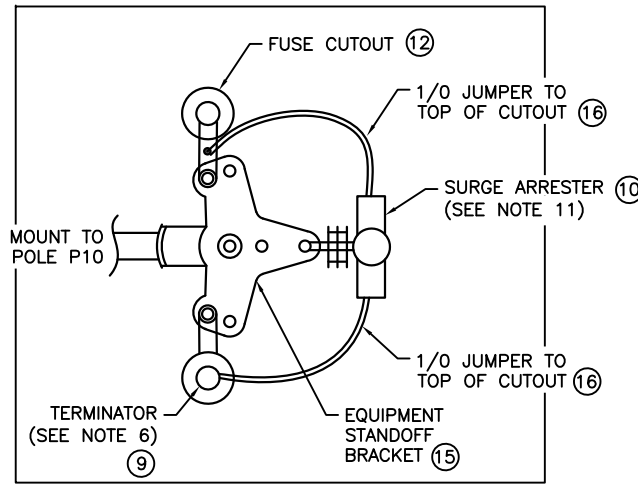
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	U25	45



① POLE P10 - SIDE ELEVATION
12.47KV
NOT TO SCALE



② POLE P10 - FRONT ELEVATION
12.47KV
NOT TO SCALE



③ DETAIL OF "NORTH" BRACKET END FITTING
NOT TO SCALE

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<p>PLANS DEVELOPED BY: MORRIS ENGINEERING GROUP, INC 2375 JORDAN AVE #7 JUNEAU, AK 99801 907-789-3350 AECL 1010</p>		<p>STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES 6860 GLACIER HIGHWAY, JUNEAU, AK 99801 (907) 465-1763</p> <p>UTILITY RELOCATION FOR KETCHIKAN AREA BRIDGES</p> <p>POLE P10 ELEVATIONS (KPU #2430-B4-5)</p>
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FILE: Y:\02 state of ak\44 utility relocation design for ketchikan bridges\MATERIAL LIST.dwg
 DATE: 8/6/2021 16:09
 LAYOUT: U26A
 DESIGNED: MGM
 CHECKED: MGM
 DRAFTED: MADJA

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	U26A	45

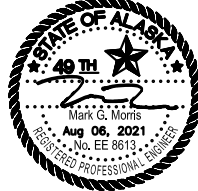
POLE P5A & P7 - MATERIAL LIST (SEE SHEETS U20 & U22 FOR POLE DETAILS)				
REF NO.	QUANTITY	DESCRIPTION	MANF	PART NO.
①	6	35KV DEADEND INSULATOR & BOLTED DEADEND CLAMP	MPS	DS-35M & ASD-45-N
②	2	FIBERGLASS DEADEND ASSEMBLY, 6" X 4" X 120", 10KLS CAPACITY (MIN)	PUPI	DA3000120E4B9X
③	1	RIDGE PIN WITH MOUNTING HARDWARE	MPS	G1HOR118ASTSC
④	3	SURGE ARRESTER - MOV, 15KV	CPS	URS09058X1A1A1A
⑤	3	COVERED JUMPER CONDUCTOR, 350KCMIL, CU, RHH/RHW-2/USE-2, LENGTH AS REQ'D.	SW	KPU STOCK #19220.00, SEE NOTE 6
⑥	3	15KV DEADEND INSULATOR & BOLTED DEADEND CLAMP	MPS	DS-15M & ASD-34-N
⑦	3	15KV CABLE TERMINATOR	3M	7642-S-2-T1
⑧	3	CABLE POSITIONER	AF	CS-820
⑨	2	EQUIPMENT MOUNT, SEE NOTE 6	AF	W4CA-72-6, KPU STOCK #10365.00
⑩	3	FUSED CUTOFF, TYPE C POLYMER PARALLEL GROOVE CLAMP, SS, 200A, 15KV	HUB	CP710143SP_S
⑪	AS REQ'D	GALVANIZED STEEL GUY WIRE, 3/8", 7W STRAND, COLOR GREEN (PWR & TELE)	PP	GDE-1108
⑫	1	POLE GUY HOOK ATTACHMENT, SEE NOTE 5 & NOTE 6	MPS	P-135-AXW, KPU STOCK #15442.00
⑬	2	PUPI ARM ANCHOR SHACKLE, 11/16" RADIUS EYE, 7/8" OPENING, STEEL	MPS	J2742
⑭	1	SPOOL INSULATOR, PORCELAIN, 5/8" DIAMETER	MPS	J101
⑮	6	COVERED JUMPER CONDUCTOR, 1/0 AWG, CU, RHH/RHW-2/USE-2, LENGTH AS REQ'D.	SW	KPU STOCK #19420.00, SEE NOTE 6
⑯	1	UPSET BOLT, 13K LBS MIN. TENSION STRENGTH, 14" SHANK	MPS	J2348-1/2
⑰	2	PLASTIC GUY MARKER, YELLOW, 8 FOOT LENGTH, SEE NOTE 5	PP	PG-5718
⑱	4	AUTOMATIC GUY DEADEND, 7/16" BAIL WITH INSTALL BAIL (PWR & TELE)	MPS	DES-1108 GRIP & (2) 5203L VISES
⑲	2	POWER INSTALL SCREW ANCHOR KIT, SQUARE SHAFT, 37KLS RATING, 7 FOOT LONG	CU	SS5 SERIES (SEE NOTE 4)
⑳	2	PORCELAIN INSULATOR (TELE & TV)	MPS	L504
㉑	AS REQ'D	CONDUIT STANDOFF BRACKET, HDG (USED FOR BOTH 4" & 6" RISERS)	AF	6-CSO-12
㉒	AS REQ'D	CONDUIT RISER STRAP, HDG	AF	STK SERIES, STK-4 & STK-6
㉓	1	NOT USED	HEN	HPI-15VTP
㉔	1	35KV VISE TOP POLYMER INSULATOR	HEN	HPI-35VTP
㉕	2	LONG SHANK CROSSARM PIN - 1" THREADS	MPS	J203Z
㉖	1	5/8" OVAL EYE NUT	MPS	J1092
㉗	1	5/8" X 14" OVAL EYE BOLT	MPS	J9414
㉘	2	(1) 5/8" X 14" MACHINE BOLT, (2) 2-1/4" X 2/14" CURVED WASHERS	MPS	(1) J8814 & (2) J1075
㉙	6	336.4 ACSR TO 350KCMIL CU CONNECTOR (MATCH KPU REQUIREMENTS)		AS REQ'D, COORD. WITH KPU
㉚	2	3" X 3" X 1/4" CURVED WASHER	MPS	J113
㉛	AS REQ'D	WILDLIFE PROTECTION ELEMENTS, AS REQUIRED		SEE WILDLIFE NOTE, SHEET U19
㉜	1	60 FOOT LONG, CLASS 2 WOOD POLE, DOUGLAS FIR, 8" DIA. AT TOP.		SEE NOTE 3

POLE P5 & P8 - MATERIAL LIST (SEE SHEETS U21 & U23 FOR POLE DETAILS)				
REF NO.	QUANTITY	DESCRIPTION	MANF	PART NO.
①	3	35KV DEADEND INSULATOR & BOLTED DEADEND CLAMP	MPS	DS-35M & ASD-45-N
②	1	FIBERGLASS DEADEND ASSEMBLY, 6" X 4" X 120", 10KLS CAPACITY (MIN)	PUPI	DA3000120E4B9X
③	1	CROSS ARM BRACE, WOOD, 72IN SPAN (1-PAIR)	MPS	JA4772R
④	3	SURGE ARRESTER, MOV, 36KV	CPS	URT36140X1A1A1A
⑤	6	COVERED JUMPER CONDUCTOR, 350KCMIL, CU, RHH/RHW-2/USE-2, LENGTH AS REQ'D	SW	KPU STOCK #19220.00, SEE NOTE 6
⑥	1	MANUAL, GROUP-OPERATED SWITCH, 900A, 38KV, 200KV BIL RATED	SIE	994VF-45AEFKLMW
⑦	3	CABLE TERMINATOR	3M	7642-S-2-T1
⑧	3	CABLE POSITIONER	AF	CS-820
⑨	1	EQUIPMENT MOUNT, SEE NOTE 6	AF	W4CA-72-6, KPU STOCK #10365.00
⑩	1	5/8" OVAL EYE NUT	MPS	J1092
⑪	1	5/8" X 14" OVAL EYE BOLT	MPS	J9414
⑫	3	(1) 5/8" X 14" MACHINE BOLT, (2) 2-1/4" X 2/14" CURVED WASHERS	MPS	(1) J8814 & (2) J1075
⑬	3	336.4 ACSR TO 350KCMIL CU CONNECTOR (MATCH KPU REQUIREMENTS)		AS REQ'D, COORD. WITH KPU
⑭	3	3" X 3" X 1/4" CURVED WASHER	MPS	J113
⑮	AS REQ'D	WILDLIFE PROTECTION ELEMENTS, AS REQUIRED		SEE WILDLIFE NOTE, SHEET U19
⑯	AS REQ'D	CONDUIT STANDOFF BRACKET, HDG (USED FOR BOTH 4" & 6" RISERS)	AF	6-CSO-12
⑰	AS REQ'D	CONDUIT RISER STRAP, HDG	AF	STK SERIES, STK-4 & STK-6
⑱	1	60 FOOT LONG, CLASS 2 WOOD POLE, DOUGLAS FIR, 8" DIA. AT TOP.		SEE NOTE 3

POLE P9 & P10 - MATERIAL LIST (SEE SHEETS U24 & U25 FOR POLE DETAILS)				
REF NO.	QUANTITY	DESCRIPTION	MANF	PART NO.
①	1	UNIVERSAL GUY ATTACHMENT, DUCTILE IRON, HOT DIPPED GALV.	MPS	MGA-345-A
②	3	FORMED DEADEND WIRE GUY GRIP, 3/8" EHS, 35" APPLIED LENGTH	MPS	DE-S1107
③	AS REQ'D	GALV STEEL GUY WIRE, 3/8", 7W STRAND		
④	1	PORCELAIN GUY STRAIN INSULATOR	MPS	L502
⑤	1	AUTOMATIC GUY DEADEND, 3/16" BAIL, WITH INSTALL BAIL	MPS	(2) DE-S1108 GRIPS & (2) 5202 VISES
⑥	1	8FT. POLYETHYLENE GUY MARKER, YELLOW	MPS	J5718
⑦	1	POWER INSTALL SCREW ANCHOR KIT, SQ SHAFT, 21K LBS RATED, 10 FT. LONG	CU	#SS5 SERIES (NOTE 4)
⑧	1	GUY STRAIN INSULATOR, 21K LBS RATED, 78" ROD SILICONE COATED	MPS	GYCTE21-78-SC
⑨	1	15KV CABLE TERMINATOR	3M	7642-S-2-T1
⑩	1	SURGE ARRESTER - ZINC OXIDE, RISER POLE STYLE, 9KV	MPS	ZRP0090000101_#P
⑪	1	CABLE POSITIONER	AF	CS-820
⑫	1	FUSED CUTOFF, TYPE C POLYMER PARALLEL GROOVE CLAMP, 100A, 10KA	MPS	SC15HS110_D
⑬	AS REQ'D	CONDUIT STANDOFF BRACKET, HDG (USED FOR BOTH 4" & 6" RISERS)	AF	6-CSO-12
⑭	AS REQ'D	CONDUIT RISER STRAP, HDG	AF	STK SERIES, STK-4 & STK-6
⑮	1	15 DEG. EQUIPMENT STANDOFF BRACKET, 2 PHASE, 3 POSITION, 'T' END FITTING	MPS	G2MAA148AT-SC-F
⑯	1	COVERED JUMPER CONDUCTOR, 1/0 AWG, CU, RHH/RHW-2/USE-2, LENGTH AS REQ'D.	SW	KPU STOCK #19420.00, SEE NOTE 6

TABLE NOTES:

- THE MATERIAL LIST IS NOT MEANT TO BE COMPREHENSIVE. THE CONTRACTOR SHALL DO A FULL TAKE OFF FROM THE PLANS AND NOT DEPEND ON THIS LIST ALONE.
- BRAND ABBREVS: AF = ALUMA-FORM, CPS = COPPER POWER SYSTEMS, CU = CHANCE UTILITY, HEN = HENDRICKS, HUB = HUBBELL, MPS = MACLEAN POWER SYSTEMS, PP = PREFORMED PRODUCTS, SIE = SIEMENS, SW = SOUTHWIRE.
- SEE SHEET U26B FOR NEW WOOD POLE SPECIFICATIONS, TECHNICAL REQUIREMENTS, APPROVED MANUFACTURERS, ETC.
- EACH SQUARE SHAFT, POWER SCREW ANCHOR ASSEMBLY IS A KIT CONSISTING OF:
 (1) SCREW HEAD LEADER
 (MULTIPLE) EXTENSION BARS
 (1) GUY ADAPTER
 PROVIDE NUMBER OF EXTENSION BARS NEEDED BASED ON INSTALLATION CONDITIONS.
 PROVIDE EACH GUY ADAPTER WITH TWO (2) GUY EYES AND ONE (1) PULLING EYE.
- COMPLETE ARRANGEMENT OF GUYING FROM POLE TO ANCHOR IN GROUND NOTE SHOWN ON POLE DETAIL SHEETS. SEE SHEET U19 FOR GENERAL DEPICTION OF WHAT IS REQUIRED. COORDINATE EXACT CONFIGURATION NEEDED PRIOR TO WORK.
- KPU UTILITY STOCKS MANY OF THE COMMON POLE ELEMENTS NEEDED ON THIS PROJECT. COORDINATE AS REQUIRED TO ENSURE COMPLIANCE.

PLANS DEVELOPED BY: MORRIS ENGINEERING GROUP, INC 2375 JORDAN AVE #7 JUNEAU, AK 99801 907-789-3350 AECL 1010		STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES 6860 GLACIER HIGHWAY, JUNEAU, AK 99801 (907) 465-1763 UTILITY RELOCATION FOR KETCHIKAN AREA BRIDGES UTILITY POLE MATERIAL LISTS
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWY00072	2021	U26B	45

UTILITY POLE & STRUCTURAL REQUIREMENTS:

GENERAL REQUIREMENTS:

- THE FOLLOWING UTILITY POLE REQUIREMENTS ARE MINIMUMS. KPU ELECTRIC CONSTRUCTION STANDARDS ARE ALSO TO BE REVIEWED AND FOLLOWED AND MAY BE MORE STRINGENT THAN REQUIREMENTS BELOW.
- THE DESIGN AND OPERATION OF THE PROJECT UTILITY POLE AND ALL POLE MOUNTED STRUCTURES, GUYS, AND ASSOCIATED MATERIALS SHALL MEET THE MINIMUM CLEARANCES AS SPECIFIED IN THE LATEST EDITION OF THE NATIONAL ELECTRICAL SAFETY CODE (NEC, ANSI STANDARD C2) AS ADOPTED BY THE STATE OF ALASKA AND LOCAL AGENCIES. THE AFFECTED UTILITIES AND ALL REQUIREMENTS OF STATE AND LOCAL AGENCIES. ALL NEC LOAD CASES THAT APPLY SHALL BE MET.
- SWITCH STRUCTURES ARE TO BE MOUNTED ON THE UTILITY POLE. THE STRUCTURAL DESIGN SHALL HAVE ADEQUATE STRENGTH AND RIGIDITY TO ENSURE THE RELIABLE OPERATION OF THE LINE AND SWITCHES.
- THE UTILITY POLE SUPPORTS NON-ELECTRIC FACILITIES (TELECOMMUNICATIONS, FIBER-OPTIC CABLES, ETC.) AND SHALL BE CAPABLE OF RESISTING THE STRUCTURAL LOADS RESULTING FROM THESE FACILITIES WITHIN THE STRENGTH REQUIREMENTS. THE LOCATING OF SUCH NON-ELECTRIC FACILITIES ON UTILITY POLES SHALL NOT JEOPARDIZE THE OPERATION, MAINTENANCE, AND RELIABILITY OF THE TRANSMISSION LINES. PRIOR TO INSTALLATION OF NON-POWER FACILITIES, COORDINATE WITH KPU ELECTRIC TO REVIEW AND EVALUATE SUCH FACILITIES.
- THE CONTRACTOR IS RESPONSIBLE TO PROVIDE A POLE LOADING ANALYSIS (PLA) THAT IS SIGNED AND SEALED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF ALASKA. ANALYSIS SHALL CONFIRM THE CHOSEN POLE, POLE STRUCTURES, GUYS, AND MATERIALS MEET THE MINIMUM LOADING AND STRENGTH REQUIREMENTS IN ACCORDANCE WITH PROJECT SPECIFICATIONS, KPU ELECTRIC STANDARDS, AND ALL APPLICABLE AND CITED CODES AND REFERENCES.
- APPROVED POLE & POLE TREATMENT COMPANIES:
 - STELLA-JONES CORP. (MCFARLAND CASCADE)
 - BELL POLE & LUMBER
 - THE OESER COMPANY

UTILITY POLE GENERAL REQUIREMENTS:

- POLE SHALL MEET ALL PERTINENT REQUIREMENTS OF ANSI 05.1-LATEST REVISION, AND AMERICAN WOOD PROTECTION ASSOCIATION (AWPA) STANDARDS T1-10 AND U1-10, LATEST REVISIONS.
- POLE SHALL BE TREATED IN ACCORDANCE WITH THE AWPA AND ANSI REQUIREMENTS. POLE SHALL BE TREATED WITH PENTACHLOROPHENOL PER AWPA P8-9A TO A MINIMUM NET RETENTION OF 0.60 POUNDS PER CUBIC FOOT PER AWPA U1 FOR POLE COMMODITY SPECIFICATION D, CATEGORY 4B.
- CONTRACTOR MUST OBTAIN A CERTIFICATE OF TREATMENT OR A LETTER FROM A SUPPLIER INDICATING THAT THE POLE WAS TREATED IN ACCORDANCE WITH AWPA AND ANSI REQUIREMENTS.
- POLE SPECIFICATIONS:
 - POLE SPECIES: DOUGLAS FIR
 - LENGTH: 60' TYPICAL, SEE POLE DETAILS FOR VARIATIONS
 - MINIMUM DIMENSIONS (DIAMETER): 29 INCHES AT TOP, 47.5 INCHES SIX FEET FROM BUTT
 - POLE CLASS: CLASS 2

CLEARANCE REQUIREMENTS:

- WIRE-TO-GROUND: THE MINIMUM ALLOWED CLEARANCE BETWEEN THE LOWEST TRANSMISSION LINE CONDUCTOR(S) SHALL MEET THE REQUIRED NEC MINIMUM PLUS ADDITIONAL DISTANCES AS NOTED IN THE PLANS. THE NEC MINIMUM SHALL BE CALCULATED WITH THE CONDUCTOR AT MAXIMUM OPERATING VOLTAGE AND THE MAXIMUM OPERATING TEMPERATURE OR MAXIMUM CONDUCTOR LOADING. THE MINIMUM CLEARANCES SHOULD TAKE INTO ACCOUNT THE LIMITATION OF A 5-MA SHOCK CURRENT AS GIVEN IN NEC RULE 232D3C. ALL AREAS BENEATH THE LINE SHALL BE ASSUMED TO ALLOW VEHICLE ACCESS BENEATH THE LINE.
- WIRE-TO-SIGNS, STRUCTURES, ETC., UNDER THE WIRES: THE MINIMUM ALLOWED CLEARANCE FROM LOWEST/NEAREST PHASE CONDUCTOR SHALL MEET THE REQUIRED NEC MINIMUM PLUS ADDITIONAL DISTANCES NOTED IN THE PLANS. THE NEC MINIMUM SHALL BE CALCULATED WITH THE CONDUCTOR AT MAXIMUM OPERATING VOLTAGE, THE MAXIMUM OPERATING TEMPERATURE, AND MAXIMUM NEC WIND DISPLACEMENT. ONLY ADOT&PF APPROVED INFRASTRUCTURE IS PERMITTED IN THE RIGHT-OF-WAY.
- WIRE-TO-SUPPORT-STRUCTURES: THE MINIMUM CLEARANCES BETWEEN THE PHASE CONDUCTORS AND THE SUPPORTING POLE SHALL NOT BE LESS THAN DIMENSIONS SHOWN ON THE PLANS. THESE CLEARANCES ARE TO APPLY FOR ALL ANTICIPATED CONDUCTOR POSITIONS FROM AN EVERYDAY CONDITION TO A DISPLACED CONDITION DUE TO A 9 PSF WIND AT 60' F (BASED ON UTILITY PRACTICE) THESE CLEARANCES DO NOT HAVE ANY ADDERS PROVIDED FOR BIRDS OR OTHER ANIMALS, BUT ARE BASED UPON SWITCHING SURGE VALUES.
- WIRE-TO-WIRE: CLEARANCE BETWEEN THE BOTTOM TRANSMISSION CONDUCTOR AND ANY LOWER WIRE SHALL MEET THE REQUIRED CLEARANCE OF NEC RULE 233 AND 235 AS A MINIMUM. WHEN THE LOWER WIRE IS A NON-TRANSMISSION WIRE, THEN THE CLEARANCE SHOULD BE AT LEAST 8 FEET FOR VOLTAGES LESS THAN OR EQUAL TO 230 KV. THESE CLEARANCES SHOULD BE CALCULATED WITH THE TRANSMISSION CONDUCTOR AT MAXIMUM OPERATING TEMPERATURES OR HEAVY ICE, WHICHEVER PROVIDES GREATER CONDUCTOR SAG, AND THE NON-TRANSMISSION CONDUCTOR AT 0°F. LINE CROSSING CLEARANCES SHALL MATCH REQUIREMENTS OF WIRE-TO-WIRE CLEARANCES NOTED ABOVE.
- LINE SAG: FOR PURPOSES OF CLEARANCES TO OBJECTS UNDER THE LINE, THE CONDUCTOR WILL BE ASSUMED TO OPERATE AT OR ABOVE MINIMUM AND MAXIMUM TEMPERATURES FOR TYPE 336.4 ACSR OVERHEAD TRANSMISSION CABLE. CONTACT KPU ELECTRIC FOR SPECIFIC TEMPERATURE RANGES. WHILE THE LINE CONDUCTOR MAY BE DESIGNED TO OPERATE AT A LOWER TEMPERATURE, THE LINE SHALL BE SAGGED ASSUMING THE CONDUCTOR TEMPERATURE IS AT OR ABOVE THE MINIMUM SHOWN. FOR DESIGNED OPERATING TEMPERATURES ABOVE THE MINIMUM SHOWN, AND STILL BELOW THE MAXIMUM, THE LINE SAG AND CLEARANCES WILL BE CALCULATED FOR THAT OPERATING TEMPERATURE AFTER ROUNDING UP TO THE NEAREST 10°C. IN NO CASE WILL A CONDUCTOR OPERATING TEMPERATURE BE ALLOWED ABOVE THE MAXIMUM SHOWN IN THE TABLE.
- WILDLIFE PROTECTION ELEMENTS SHALL BE PROVIDED AS REQUIRED TO FULLY PROTECT RAPTORS AND CRITTERS FROM HARM AT OR AROUND THE UTILITY POLE. SEE POLE DETAILS ON SHEET U19 FOR MORE ON REQUIRED WILDLIFE PROTECTION.

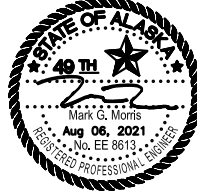
DESIGN LOADING CONDITIONS:

- DEAD-END STRUCTURES: WHERE THE PHASE CONDUCTORS AND STATIC WIRES ARE ATTACHED TO THE STRUCTURE BY USE OF DEAD-END INSULATORS AND HARDWARE AND WHERE THE ABILITY OF THE STRUCTURE TO RESIST A CONDITION WHERE ALL WIRES ARE BROKEN ON ONE SIDE UNDER FULL LOADING IS REQUIRED. BOTH INTACT AND BROKEN CONDUCTOR CONDITIONS SHALL BE EVALUATED IN THE DESIGN OF THESE STRUCTURES.
- POLE CONSTRUCTION GRADE: THE PROVISIONS OF NEC GRADE B CONSTRUCTION SHALL APPLY.
- LOADING DISTRICT: THE PROVISIONS OF NEC HEAVY LOADING DISTRICT SHALL APPLY.
- ICE AND WIND LOADING: THE PROVISIONS OF NEC FOR EXTREME ICE WITH CONCURRENT WIND SHALL APPLY. THE ICE AND WIND LOAD FACTORS SHALL BE 1.00. THE PROVISION IN NEC PERMITTING EXCLUSION OF STRUCTURES LESS THAN 60 FT. IN HEIGHT FROM EXTREME WIND CRITERIA SHALL NOT APPLY.
- LONGITUDINAL LOADING: ALL CONDUCTORS AND STATIC WIRES ARE TO BE INTACT ON ONE SIDE OF THE STRUCTURE ONLY. LOAD FACTOR OF 1.00.
- FOUNDATION LOADING: THE ULTIMATE STRENGTH OF OVERTURNING MOMENT AND UPLIFT FOUNDATIONS SHALL BE NOT LESS THAN 1.25 TIMES THE DESIGN FACTORED LOAD REACTIONS OF THE STRUCTURE. THE ULTIMATE STRENGTH OF FOUNDATIONS SUBJECTED PRIMARILY TO COMPRESSION LOAD SHALL BE NOT LESS THAN 1.10 TIMES THE DESIGN FACTORED LOAD REACTIONS OF THE STRUCTURE. FOUNDATIONS DESIGNED BY ROTATION OR PIER DEFLECTION PERFORMANCE CRITERIA SHALL USE UNFACTORED STRUCTURE REACTIONS FOR DETERMINATION OF THE FOUNDATION PERFORMANCE BUT SHALL USE FACTORED REACTIONS FOR THE 1.25 TIMES ULTIMATE STRENGTH CHECK.
- GUYING OR BRACING: POLE SHALL BE PROPERLY GUYED AGAINST THE PULL OF OVERHEAD CONDUCTORS. SEE SHEETS U19-U25 FOR TYPICAL GUY ASSEMBLIES. THE POLE LOADING ANALYSIS SHALL ACCOUNT FOR GUYING OF DEAD-END STRUCTURE.

INSULATION & GROUNDING REQUIREMENTS:

- INSULATION REQUIREMENTS: THE INSULATION SYSTEM FOR THE TRANSMISSION LINE SHALL HAVE VALUES IN EXCESS OF THE LEAKAGE DISTANCE, 60 HZ WET, AND CRITICAL IMPULSE FLASHOVER OF THE SYSTEM. CERAMIC OR GLASS INSULATORS SHALL BE USED FOR STRAIN APPLICATIONS.
- GROUNDING: THIS SYSTEM IS TO BE MEASURED ON THE INDIVIDUAL STRUCTURE PRIOR TO THE INSTALLATION OF ANY OVERHEAD CONDUCTORS OR WIRES. THE MAXIMUM ACCEPTABLE RESISTANCE MEASUREMENT OF THIS GROUNDING SYSTEM IS 25 OHMS. THE GROUNDING SYSTEM MAY INCLUDE RADIAL COUNTERPOISE WIRES, EQUIPOTENTIAL RINGS, OR BOTH. KPU ELECTRIC SHALL APPROVE ALL GROUNDING METHODS, AND CONNECTIONS TO THE GROUNDING SYSTEM THAT ARE BELOW GRADE. THESE RESISTANCE REQUIREMENTS ARE TO ASSURE ACCEPTABLE LIGHTNING PERFORMANCE ON THE LINE AS WELL AS PROVIDE FOR THE SAFE GROUNDING OF THE LINE BY CONSTRUCTION AND MAINTENANCE FORCES.

INDIVIDUAL STRUCTURE GROUNDING MEASUREMENTS WILL BE ALLOWED TO EXCEED THE 25 OR 15 OHMS REQUIRED ONLY IF THE AVERAGE VALUE FOR THE 5 ADJACENT STRUCTURES ALONG THE LINE IS LESS THAN THE 25 OR 15 OHM RESTRICTION. DURING RECONDUCTORING PROJECTS, EVERY OPPORTUNITY SHOULD BE TAKEN TO VERIFY STRUCTURE GROUNDING RESISTANCE. TO DO THIS THE STATIC WIRES AND OTHER CONDUCTORS MAY NEED TO BE INSULATED FROM THE STRUCTURE.
- LIGHTNING PROTECTION: PROVIDE LIGHTNING PROTECTION IN THE FORM OF SURGE ARRESTERS, ONE PER EACH PHASE, AT THE POLE. ARRESTERS SHALL BE WIRED IN PARALLEL AND CONNECTED BETWEEN THE OVERHEAD TRANSMISSION LINES AND THE CABLE RISER TERMINATORS. SEE SHEET U26A FOR SPECIFIC QUANTITIES AND DESCRIPTIONS OF ARRESTERS. VERIFY PLACEMENT WITH CITY OF KETCHIKAN. IN NO CASE WILL CHEMICAL GROUND TREATMENTS BE ALLOWED TO IMPROVE STRUCTURE GROUNDING.

<p>PLANS DEVELOPED BY: MORRIS ENGINEERING GROUP, INC 2375 JORDAN AVE #7 JUNEAU, AK 99801 907-789-3350 AECL 1010</p>		<p>STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES 6860 GLACIER HIGHWAY, JUNEAU, AK 99801 (907) 465-1763</p> <p>UTILITY RELOCATION FOR KETCHIKAN AREA BRIDGES</p> <p>UTILITY WOOD POLE SPECIFICATION</p>
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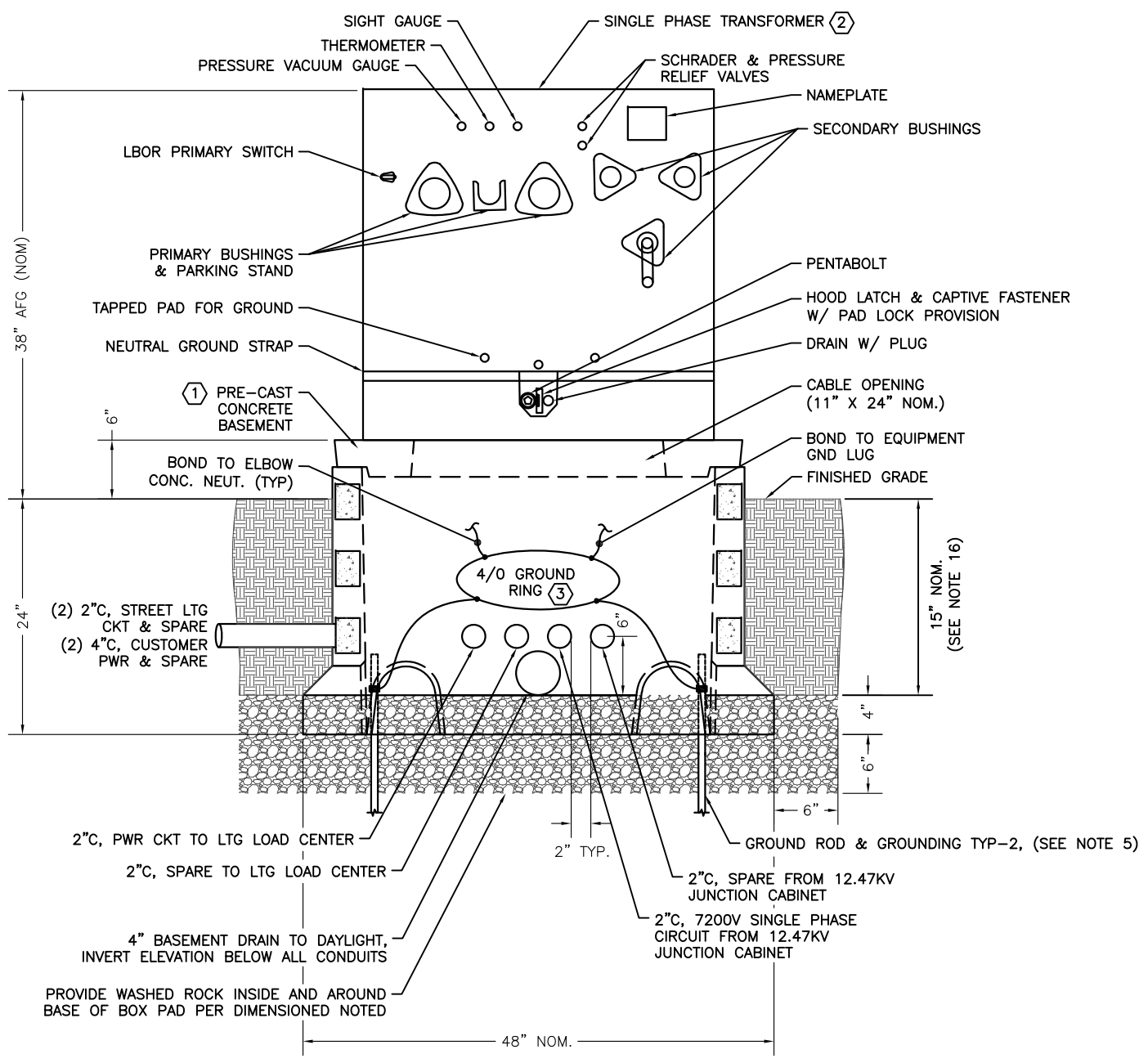
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	U27	45

SHEET NOTES:

1. PROVIDE EXCAVATION AS REQUIRED TO ENSURE GRAVEL TO DEPTH SHOWN ON DETAIL CAN BE PROVIDED AT BOTTOM OF TRANSFORMER BASEMENT. DIG A HOLE APPROXIMATELY 6" DEEPER AND 12" WIDER THEN THE BOTTOM FLANGE DIMENSIONS OF THE BASEMENT. FOLLOW MANUFACTURER INSTRUCTIONS.
2. DUE TO LIMITED CONDUIT DEPTH, THE TRANSFORMER BASEMENT CONDUIT PENETRATIONS SHALL BE ALONG THE SIDEWALLS AS INDICATED HERE. REVIEW PENETRATION LOCATIONS AND ENSURE PENETRATIONS DO NOT REDUCE STRUCTURAL INTEGRITY OF BASEMENT. LOCATIONS SHOWN MAY NEED TO BE ADJUSTED, COORDINATE WITH BASEMENT MANUFACTURER.
3. ALL CONDUITS EXPOSED ABOVE BASEMENT GRAVEL SHALL BE VERTICAL. PROVIDE ALL SPARE CONDUITS WITH PULL STRINGS AND EDPM RUBBER STOPPERS (NOT SIMPLY PLASTIC CAPS). COORDINATE CONDUIT STUB-UP LOCATIONS WITH EXACT TRANSFORMER FOOTPRINT.
4. COORDINATE WITH KPU UTILITY, ENGINEER, AND INSPECTOR TO ALLOW FOR ANY REQUIRED INSPECTIONS BEFORE, DURING AND AFTER CONSTRUCTION OF PAD.
5. AT EACH POWER EQUIPMENT CONCRETE BASEMENT PROVIDE GROUNDING PER UTILITY REQUIREMENTS. THIS INCLUDES (2) 5/8" X 8' COPPER CLAD STEEL GROUND RODS WITH BRONZE GROUND ROD CLAMPS USING NON-GALVANIC LOCKING BOLTS. ROUTE A 4/0 AWG BRAIDED, BARE COPPER SOLID GROUND LOOP WITHIN THE BASEMENT CAVITY AND BOND TO BASEMENT AND ABOVEGROUND EQUIPMENT (TRANSFORMER, JUNCTION CABINET, OR SWITCH) GROUNDING PROVISIONS. POND GROUND RODS AND GROUND RING TO ELBOW CONCENTRIC NEUTRALS AND LIGHTING ARRESTER ELBOWS. SEE NOTE 7.
6. TRANSFORMER IS ANTICIPATED TO BE APPROXIMATELY 38" X 38" FOOTPRINT. PROVIDE PAD AS REQUIRED SUCH THAT PAD EXTENDS AT LEAST 4" PAST TRANSFORMER ON ALL SIDES. PAD TO PROJECT ABOVE FINISHED GRADE AS SHOWN ON DETAILS.
7. LEAVE SUFFICIENT SLACK IN NEUTRAL EXTENSION AND GROUND BUS WIRING TO FACILITATE REMOVAL AND PARKING OF PRIMARY CABLES AND LOADBREAKS. DO NOT TIGHTLY BUNDLE BLEED WIRES AND COMMON PARALLEL GROUNDING WIRING SO THAT CABLES CAN BE FREELY REPOSITIONED. NEATLY TRAIN AND ROUTE GROUND BUS WIRING IN FRONT OF PRIMARY CABLES.
8. PROVIDE SUFFICIENT SLACK IN PRIMARY AND SECONDARY FEEDERS TO ALLOW FREE MOVEMENT OF CABLES ON AND OFF BUSHING WELLS AND PARKING STANDS WITHOUT STRAINING THE CABLES AND TO ALLOW FOR FLEXIBLE ROUTING OF CABLES FROM BASEMENT BELOW.
9. WHERE TANK HAS MULTIPLE GROUND LUGS EXTEND GROUND BUS THROUGH ALL LUGS IN SERIES VIA A NO. 6 BARE COPPER WIRE.
10. AT PRIMARY ELBOW JACKETED CONCENTRIC NEUTRALS ATTACH A NEUTRAL STRAND TO GROUNDING EYE ON ELBOW (EYE NOT SHOWN HERE). SEE DETAIL 2, SHEET U33. CONNECT REMAINING NEUTRAL BUNDLE TO SYSTEM GROUND BUS. SEE NOTE 14.
11. TRANSFORMER SHALL BE PLACED SYMMETRICAL ON TOP OF BASEMENT.
12. MAINTAIN 10' OF CLEARANCE IN FRONT OF TRANSFORMER FRONT ACCESS.
13. TOP OF TRANSFORMER BASEMENT TO BE SMOOTH AND LEVEL PRIOR TO TRANSFORMER INSTALLATION. MOUNT TRANSFORMER TO BASEMENT WITH STAINLESS STEEL MOUNTING HARDWARE PER MANUFACTURER REQUIREMENTS.
14. LOADBREAK ELBOW HOUSINGS SHALL BE CAREFULLY ASSEMBLED AND PROPERLY FITTED INTO TRANSFORMER BUSHING WELLS. SEE SHEET U33 FOR LOADBREAK DETAIL. ELBOWS AND CONDUCTORS INSIDE TRANSFORMER NOT SHOWN ON THIS SHEET.
15. LABEL ALL MV CABLES ON THE PROJECT PER DETAIL 2, SHEET U18.
16. CONDUIT DEPTHS WILL SHALLOW AS THEY APPROACH AND ENTER THE SIDES OF THE EQUIPMENT BASEMENTS. MAINTAIN TRENCH DEPTHS PER SHEET U38 WHEREVER POSSIBLE.
17. STUB ALL CONDUITS INTO BASEMENTS A DISTANCE OF 2" IN FROM THE INSIDE FACE OF THE BASEMENT WALL.

KEYNOTES:

1. PRE-CAST CONCRETE BASEMENT WITH OPEN BOTTOM. 48" X 48" X 30" NOMINAL, WITH 11" X 25" NOMINAL CABLE OPENING. OLD CASTLE #4242-PTV OR EQUAL. OVERALL DEPTH AS SHOWN WITH PROJECTION ABOVE GRADE. COORDINATE FINAL SELECTION PROCESS WITH TRANSFORMER SELECTION TO ENSURE FOOTPRINT AND CABLE OPENING ALIGNMENTS. CAREFULLY CUT CONDUIT PENETRATIONS INTO BASEMENT WALLS OR USE KNOCKOUTS WHERE AVAILABLE.
2. PROVIDE 7.2KV:120/240V, SINGLE PHASE, 75 KVA, PAD MOUNTED TRANSFORMER. UNIT SHALL INCLUDE DUAL HIGH VOLTAGE BUSHING WELLS AND INSERTS, STICK-OPERATED, LOOP-FEED, LBOR SWITCH. ADDITIONAL FEATURES AS NOTED ON THE DETAIL. PROVIDE ARRESTER ELBOW IN SECOND BUSHING WELL AND INSERT. MUNSELL GREEN COLOR AND PCB-FREE (0 PPM) MINERAL OIL PER ASTM D3487. PROVIDE ABB MTR MAXI-PAK SERIES OR EQUAL.
 TRANSFORMER SHALL ADHERE TO THE FOLLOWING MINIMUM REQUIREMENTS:
 a) STANDARDS: IEEE C57.12.00, C57.12.25, C57.12.28, C57.12.34, AND C57.12.90. ADDITIONALLY MEET ALL APPLICABLE NESC, ANSI, AND U.S. DOE 2016 EFFICIENCY REQUIREMENTS.
 b) BASIC LIGHTING IMPULSE INSULATION (BIL) RATING: 95KV
 c) AVERAGE WINDING RISE (AWR): 65 DEG C ABOVE AMBIENT @ TRANSFORMER RATING
 d) CONSTRUCTION: ALL STEEL HARDWARE AND WELDS EXPOSED TO EXTERIOR SHALL BE 304 STAINLESS STEEL. TRANSFORMER SHALL BE SUITABLE FOR INSTALLATION IN A MARINE ENVIRONMENT.
 e) TERMINALS: PRIMARY SIDE LOOP-FEED CONFIGURATION WITH 200A BUSHING WELLS AND INSERTS. SECONDARY SIDE SPADE TERMINALS, TIN PLATED COPPER, AND SHALL HAVE NUMBER OF HOLES NEEDED FOR SECONDARY CONNECTIONS PLUS AN ADDITIONAL (2) SPARE HOLES.
 f) TAPS: PRIMARY WINDING DE-ENERGIZED OPERATION TAP CHANGER, WITH (2) TAPS @ 2.5% ABOVE AND (2) TAPS @ 2.5% BELOW RATED VOLTAGE.
 g) CERTIFICATION: PROVIDE EVIDENCE THAT DESIGN PASSED THE SHORT CIRCUIT CRITERIA PER ANSI C57.12.00 AND C57.12.90.
3. BOND ALL METAL EQUIPMENT ENCLOSURES, CABLE ELBOW CONCENTRIC NEUTRALS, GROUND RODS, ETC. TOGETHER VIA A GROUND RING WITHIN THE BASEMENT OF THE EQUIPMENT.

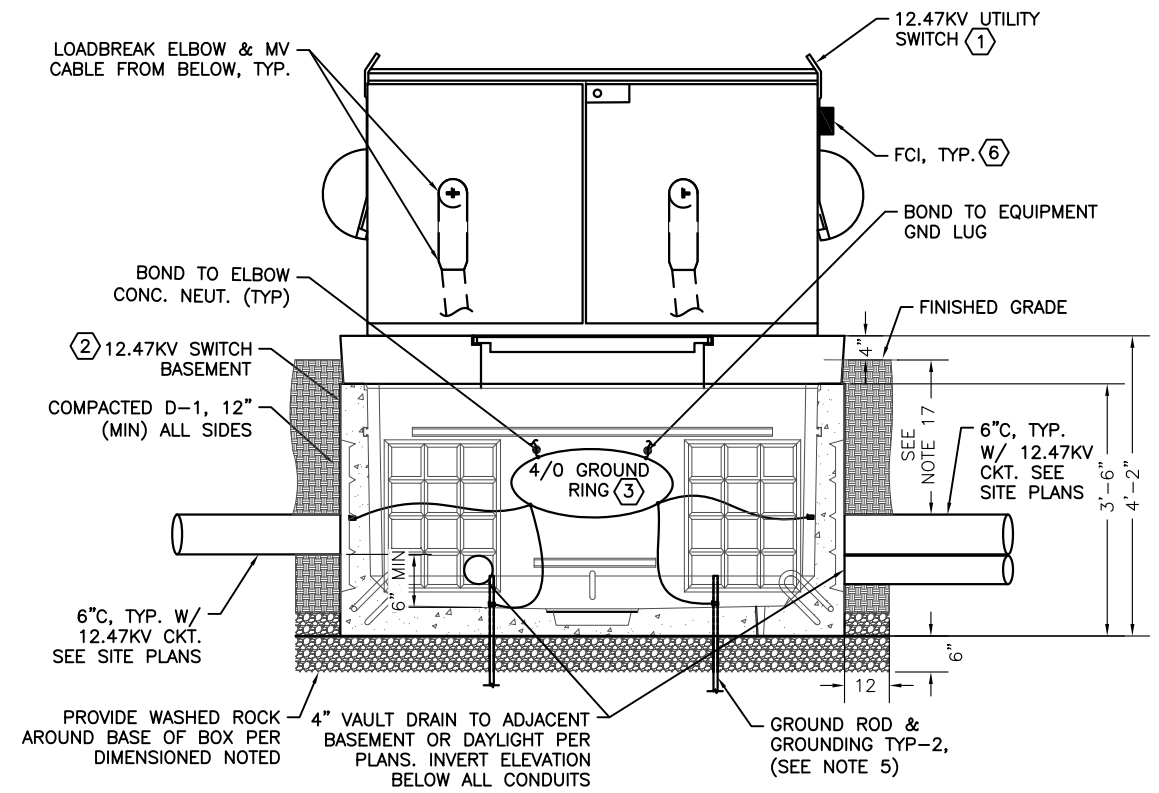


1 TRANSFORMER PAD DETAIL
AT PAD 4

<p>PLANS DEVELOPED BY: MORRIS ENGINEERING GROUP, INC 2375 JORDAN AVE #7 JUNEAU, AK 99801 907-789-3350 AECL 1010</p>		<p>STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES 6860 GLACIER HIGHWAY, JUNEAU, AK 99801 (907) 465-1763</p> <p>UTILITY RELOCATION FOR KETCHIKAN AREA BRIDGES</p> <p>TRANSFORMER DETAILS</p>
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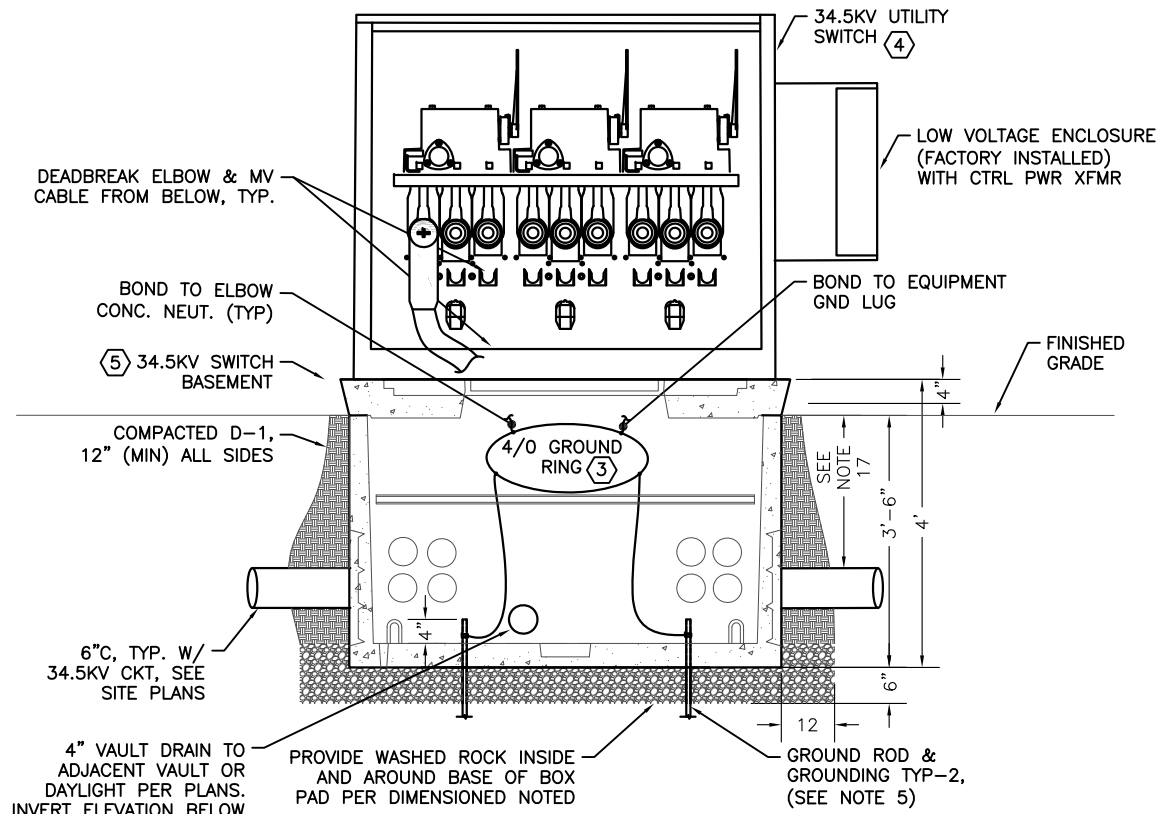
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	U28	45

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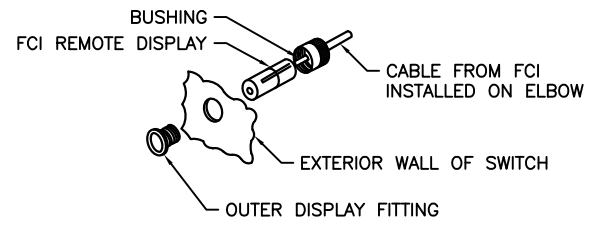


1 12.47KV SWITCH - DETAIL
AT PAD 6

CONDUITS VARY AT EACH PAD. SEE SITE PLANS, SINGLE-LINES, FOR SPECIFIC CONDUIT SIZES AND COUNTS.



2 34.5KV SWITCH DETAIL
AT PAD 6



3 FCI REMOTE INDICATOR
(TYPICAL - ONE PER MV ELBOW INSIDE ENCLOSURE)

SHEET NOTES:

- PROVIDE EXCAVATION AS REQUIRED TO ENSURE GRAVEL TO DEPTH SHOWN ON DETAIL. DIG A HOLE APPROXIMATELY 6" DEEPER AND 12" WIDER THEN THE BOTTOM DIMENSIONS OF THE BASEMENT. FOLLOW MANUFACTURER INSTRUCTIONS.
- DUE TO LIMITED CONDUIT DEPTH, THE BASEMENT CONDUIT PENETRATIONS SHALL BE ALONG THE SIDEWALLS AS INDICATED HERE. REVIEW PENETRATION LOCATIONS AND ENSURE PENETRATIONS DO NOT REDUCE STRUCTURAL INTEGRITY OF BASEMENT. LOCATIONS SHOWN MAY NEED TO BE ADJUSTED. COORDINATE WITH MANUFACTURER.
- PROVIDE ALL SPARE CONDUITS WITH PULL STRINGS AND EDPM RUBBER STOPPERS (NOT SIMPLY PLASTIC CAPS). COORDINATE CONDUIT STUB-UP LOCATIONS WITH EXACT SWITCH FOOTPRINT.
- COORDINATE WITH KPU UTILITY, ENGINEER, AND INSPECTOR TO ALLOW FOR ANY REQUIRED INSPECTIONS BEFORE, DURING AND AFTER CONSTRUCTION OF PAD.
- AT EACH POWER EQUIPMENT BASEMENT PROVIDE GROUNDING PER UTILITY REQUIREMENTS. THIS INCLUDES (2) 5/8" X 8' COPPER CLAD STEEL GROUND RODS WITH BRONZE GROUND ROD CLAMPS USING NON-GALVANIC LOCKING BOLTS. ROUTE A 4/0 AWG BRAIDED, BARE COPPER SOLID GROUND LOOP WITHIN THE BASEMENT CAVITY AND BOND TO BASEMENT AND ABOVEGROUND EQUIPMENT (TRANSFORMER, JUNCTION CABINET, OR SWITCH) GROUNDING PROVISIONS. BOND GROUND RODS AND GROUND RING TO ELBOW CONCENTRIC NEUTRALS AND LIGHTING ARRESTER ELBOWS. SEE NOTE 7.
- PROVIDE BASEMENT AS REQUIRED SUCH THAT IT EXTENDS AT LEAST 2" PAST SWITCH ON ALL SIDES. BASEMENT TO PROJECT ABOVE FINISHED GRADE AS SHOWN ON DETAILS.
- LEAVE SUFFICIENT SLACK IN NEUTRAL EXTENSION AND GROUND BUS WIRING TO FACILITATE REMOVAL AND PARKING OF CABLES. DO NOT TIGHTLY BUNDLE BLEED WIRES AND COMMON PARALLEL GROUNDING WIRING SO THAT CABLES CAN BE FREELY REPOSITIONED. NEATLY TRAIN AND ROUTE GROUND BUS WIRING IN FRONT OF PRIMARY CABLES.
- PROVIDE SUFFICIENT SLACK IN FEEDERS TO ALLOW FREE MOVEMENT OF CABLES ON AND OFF BUSHING WELLS AND PARKING STANDS WITHOUT STRAINING THE CABLES AND TO ALLOW FOR FLEXIBLE ROUTING OF CABLES FROM BASEMENT BELOW.
- WHERE SWITCH HAS MULTIPLE GROUND LUGS EXTEND GROUND BUS THROUGH ALL LUGS IN SERIES VIA A NO. 6 BARE COPPER WIRE.
- AT ELBOW JACKETED CONCENTRIC NEUTRALS ATTACH A NEUTRAL STRAND TO GROUNDING EYE ON ELBOW (EYE NOT SHOWN HERE). SEE DETAILS ON SHEETS U32 AND U33. CONNECT REMAINING NEUTRAL BUNDLE TO SYSTEM GROUND BUS. SEE NOTE 14.
- SWITCH SHALL BE PLACED SYMMETRICAL ON TOP OF BASEMENT.
- MAINTAIN 10' OF CLEARANCE IN FRONT OF SWITCH DOORS.
- TOP OF SWITCH BASEMENT TO BE SMOOTH AND LEVEL PRIOR TO SWITCH INSTALLATION. MOUNT SWITCH TO BASEMENT WITH STAINLESS STEEL MOUNTING HARDWARE PER MANUFACTURER REQUIREMENTS.
- DEADBREAK AND LOADBREAK ELBOW ASSEMBLIES SHALL BE CAREFULLY ASSEMBLED AND PROPERLY FITTED INTO BUSHING WELLS. SEE SHEETS U32 AND U33 FOR DETAILS.
- THERE ARE MULTIPLE CONDUITS AND DRAINS AT EACH SWITCH BASEMENT. NOT ALL ARE DEPICTED ON THIS SHEET. SEE SITE PLANS FOR ADDITIONAL INFORMATION.
- LABEL ALL MV CABLES ON THE PROJECT PER DETAIL 2, SHEET U18.
- CONDUIT DEPTHS WILL SHALLOW AS THEY APPROACH AND ENTER THE SIDES OF THE EQUIPMENT BASEMENTS. MAINTAIN TRENCH DEPTHS PER SHEET U38 WHEREVER POSSIBLE.
- PROVIDE BENTONITE WATERSTOP AT ALL BASEMENT SEAMS AND INTERFACES BETWEEN SURFACES.
- COAT ALL SURFACES ON BASEMENT WITH 1/8" COAT OF SONNEBORN HYDROCIDIC MASTIC DAMPPROOFING, COMPLETELY INSIDE AND OUTSIDE OF BASEMENT. INCLUDE COATING ON ALL EXTERIOR PULLING IRON HARDWARE.
- DETAILS ON THIS SHEET DEPICT GENERAL LAYOUT AND FEATURES OF CAST-IN-PLACE CONCRETE BASEMENTS WITH PRECAST CONCRETE LID, RISER, AND MANHOLES, CONTRACTOR MAY CONSIDER ALTERNATIVE DESIGNS IF SUBMITTED AND APPROVED BY AKDOT&PF PROJECT MANAGER.
- STUB ALL CONDUITS INTO THE BASEMENT A DISTANCE OF 2" FROM THE INSIDE FACE OF THE BASEMENT.

KEYNOTES:

- 4-WAY PAD MOUNTED UTILITY SWITCH MOUNTED TO BASEMENT. SEE SHEET U17, DETAIL 1, KEYNOTE 2 FOR DETAILS.
- PRE-CAST CONCRETE BASEMENT WITH SOLID BOTTOM. 84" X 84" X 50" NOMINAL, WITH DUAL 12" X 69" NOMINAL CABLE OPENING IN LID. OLD CASTLE #774-LA OR EQUAL. OVERALL DEPTH AS SHOWN WITH PROJECTION ABOVE GRADE. COORDINATE FINAL SELECTION PROCESS WITH SWITCH SELECTION TO ENSURE FOOTPRINT AND CABLE OPENING ALIGNMENTS. CAREFULLY CUT CONDUIT PENETRATIONS INTO BASEMENT WALLS OR USE KNOCKOUTS WHERE AVAILABLE.
- BOND ALL METAL EQUIPMENT ENCLOSURES, CABLE ELBOW CONCENTRIC NEUTRALS, GROUND RODS, ETC. TOGETHER VIA A GROUND RING WITHIN BASEMENT OF THE EQUIPMENT.
- 3-WAY PAD MOUNTED UTILITY SWITCH MOUNTED TO BASEMENT. SEE SHEET U17, DETAIL 2, KEYNOTE 2 FOR DETAILS.
- PRE-CAST CONCRETE BASEMENT WITH SOLID BOTTOM. 72" X 48" X 48" NOMINAL, WITH A SINGLE 20" X 60" NOMINAL CABLE OPENING IN LID. OLD CASTLE #664-LA OR EQUAL. OVERALL DEPTH AS SHOWN WITH PROJECTION ABOVE GRADE. COORDINATE FINAL SELECTION PROCESS WITH SWITCH SELECTION TO ENSURE FOOTPRINT AND CABLE OPENING ALIGNMENTS. CAREFULLY CUT CONDUIT PENETRATIONS INTO BASEMENT WALLS OR USE KNOCKOUTS WHERE AVAILABLE.
- PROVIDE FAULT CIRCUIT INDICATORS (FCI) WITHIN ENCLOSURE, ONE PER MV CABLE ELBOW INSTALLED. SEE SHEET U17 FOR MORE FCI DETAILS AND SHEET U33 FOR ELBOW INSTALLATION DETAIL. ROUTE FCI REMOTE INDICATOR CABLE TO REMOTE DISPLAY ASSEMBLY INSTALLED THROUGH THE SIDE OF THE ENCLOSURE. SEE DETAIL 3, THIS SHEET FOR ASSEMBLY INFO. GANG DISPLAY ON SIDE OF ENCLOSURE AND LABEL WITH PERMANENT, PHENOLIC LABELS. COORDINATE EXACT REMOTE INDICATOR PLACEMENT ON ENCLOSURE AND INDICATOR LABELS WITH UTILITY. ADEQUATE ROOM SHALL BE PROVIDED BETWEEN PLACARDS SO LEGIBLE LABELS CAN BE APPLIED, COORDINATE WITH UTILITY.

PLANS DEVELOPED BY: MORRIS ENGINEERING GROUP, INC 2375 JORDAN AVE #7 JUNEAU, AK 99801 907-789-3350 AECL 1010		STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES 6860 GLACIER HIGHWAY, JUNEAU, AK 99801 (907) 465-1763 UTILITY RELOCATION FOR KETCHIKAN AREA BRIDGES POWER UTILITY SWITCH DETAILS
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	U29	45

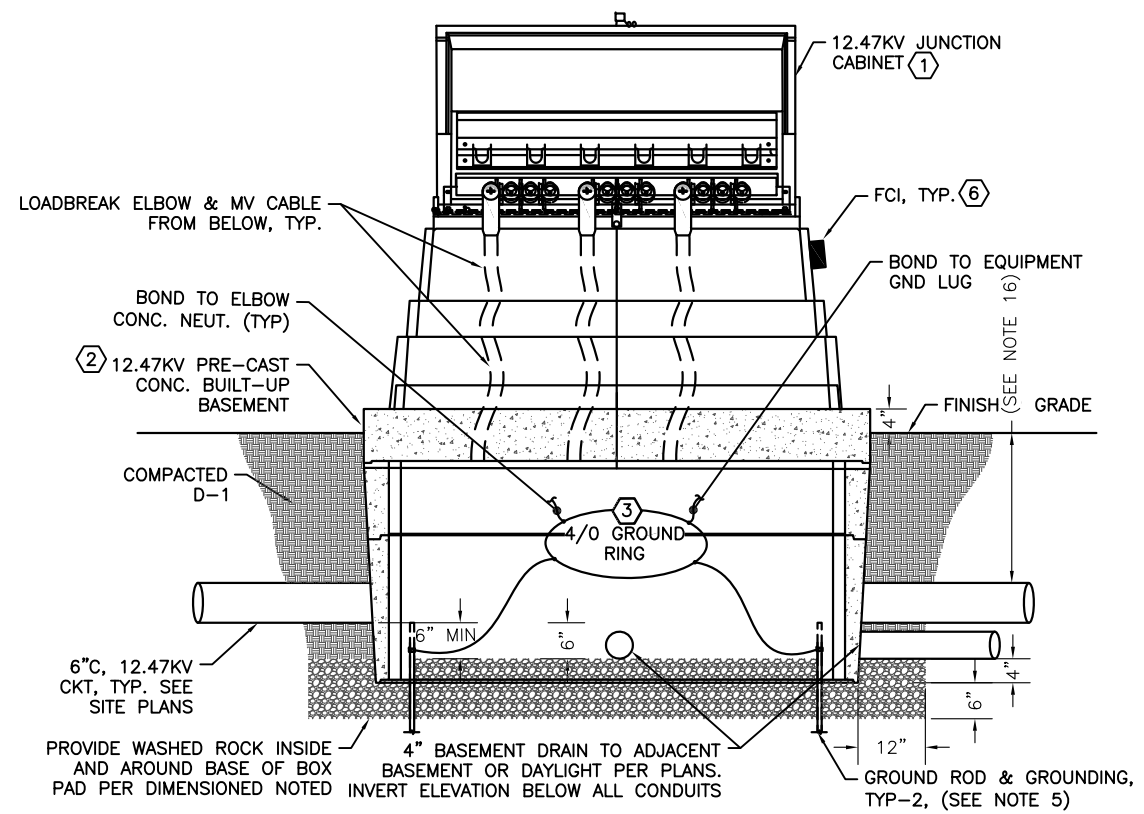
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SHEET NOTES:

- PROVIDE EXCAVATION AS REQUIRED TO ENSURE GRAVEL TO DEPTH SHOWN ON DETAIL. DIG A HOLE APPROXIMATELY 6" DEEPER AND 12" WIDER THEN THE BOTTOM DIMENSIONS OF THE BASEMENT. FOLLOW MANUFACTURER INSTRUCTIONS.
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- PROVIDE ALL SPARE CONDUITS WITH PULL STRINGS AND EDPM RUBBER STOPPERS (NOT SIMPLY PLASTIC CAPS). COORDINATE CONDUIT STUB-UP LOCATIONS WITH EXACT SWITCH FOOTPRINT.
- COORDINATE WITH KPU UTILITY, ENGINEER, AND INSPECTOR TO ALLOW FOR ANY REQUIRED INSPECTIONS BEFORE, DURING AND AFTER CONSTRUCTION OF PAD.
- AT EACH POWER EQUIPMENT BASEMENT PROVIDE GROUNDING PER UTILITY REQUIREMENTS. THIS INCLUDES (2) 5/8" X 8' COPPER CLAD STEEL GROUND RODS WITH BRONZE GROUND ROD CLAMPS USING NON-GALVANIC LOCKING BOLTS. ROUTE A 4/0 AWG BRAIDED, BARE COPPER SOLID GROUND LOOP WITHIN THE BASEMENT CAVITY AND BOND TO BASEMENT AND ABOVEGROUND EQUIPMENT (TRANSFORMER, JUNCTION CABINET, OR SWITCH) GROUNDING PROVISIONS. BOND GROUND RODS AND GROUND RING TO ELBOW CONCENTRIC NEUTRALS AND LIGHTING ARRESTER ELBOWS. SEE NOTE 7.
- PROVIDE BASEMENT AS REQUIRED SUCH THAT BASEMENT EXTENDS AT LEAST 2" PAST JUNCTION ON ALL SIDES. BASEMENT, TO PROJECT ABOVE FINISHED GRADE AS SHOWN ON DETAILS.
- LEAVE SUFFICIENT SLACK IN NEUTRAL EXTENSION AND GROUND BUS WIRING TO FACILITATE REMOVAL AND PARKING OF CABLES. DO NOT TIGHTLY BUNDLE BLEED WIRES AND COMMON PARALLEL GROUNDING WIRING SO THAT CABLES CAN BE FREELY REPOSITIONED. NEATLY TRAIN AND ROUTE GROUND BUS WIRING IN FRONT OF PRIMARY CABLES.
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- WHERE JUNCTION HAS MULTIPLE GROUND LUGS EXTEND GROUND BUS THROUGH ALL LUGS IN SERIES VIA A NO. 6 BARE COPPER WIRE.
- AT ELBOW JACKETED CONCENTRIC NEUTRALS ATTACH A NEUTRAL STRAND TO GROUNDING EYE ON ELBOW (EYE NOT SHOWN HERE). SEE DETAILS ON SHEETS U32 AND U33. CONNECT REMAINING NEUTRAL BUNDLE TO SYSTEM GROUND BUS. SEE NOTE 14.
- JUNCTION SHALL BE PLACED SYMMETRICAL ON TOP OF BASEMENT.
- MAINTAIN 10' OF CLEARANCE IN FRONT OF SWITCH DOORS.
- TOP OF JUNCTION BASEMENT TO BE SMOOTH AND LEVEL PRIOR TO SWITCH INSTALLATION. MOUNT SWITCH TO BASEMENT WITH STAINLESS STEEL MOUNTING HARDWARE PER MANUFACTURER REQUIREMENTS.
- DEADBREAK AND LOADBREAK ELBOW ASSEMBLIES SHALL BE CAREFULLY ASSEMBLY AND PROPERLY FITTED INTO BUSHING WELLS. SEE SHEETS U32 AND U33 FOR DETAILS.
- LABEL ALL MV CABLES ON THE PROJECT PER DETAIL 2, SHEET U18.
- CONDUIT DEPTHS WILL SHALLOW AS THEY APPROACH AND ENTER THE SIDES OF THE EQUIPMENT BASEMENTS. MAINTAIN TRENCH DEPTHS PER SHEET U38 WHEREVER POSSIBLE.
- THERE ARE MULTIPLE CONDUITS AND DRAINS AT EACH SWITCH BASEMENT. NOT ALL ARE DEPICTED ON THIS SHEET. SEE SITE PLANS FOR ADDITIONAL INFORMATION.
- PROVIDE BENTONITE WATERSTOP AT ALL BASEMENT SEAMS AND INTERFACES BETWEEN SURFACES.
- COAT ALL SURFACES ON BASEMENT WITH 1/8" COAT OF SONNEBORN HYDROCIDIC MASTIC DAMPPROOFING, COMPLETELY INSIDE AND OUTSIDE OF BASEMENT. INCLUDE COATING ON ALL EXTERIOR PULLING IRON HARDWARE.
- DETAILS ON THIS SHEET DEPICT GENERAL LAYOUT AND FEATURES OF CAST-IN-PLACE CONCRETE BASEMENTS WITH PRECAST CONCRETE LID, RISER, AND MANHOLES, CONTRACTOR MAY CONSIDER ALTERNATIVE DESIGNS IF SUBMITTED AND APPROVED BY AKDOT&PF PROJECT MANAGER.
- STUB ALL CONDUITS INTO THE BASEMENT A DISTANCE OF 2" FROM THE INSIDE FACE OF THE BASEMENT WALL.

KEYNOTES:

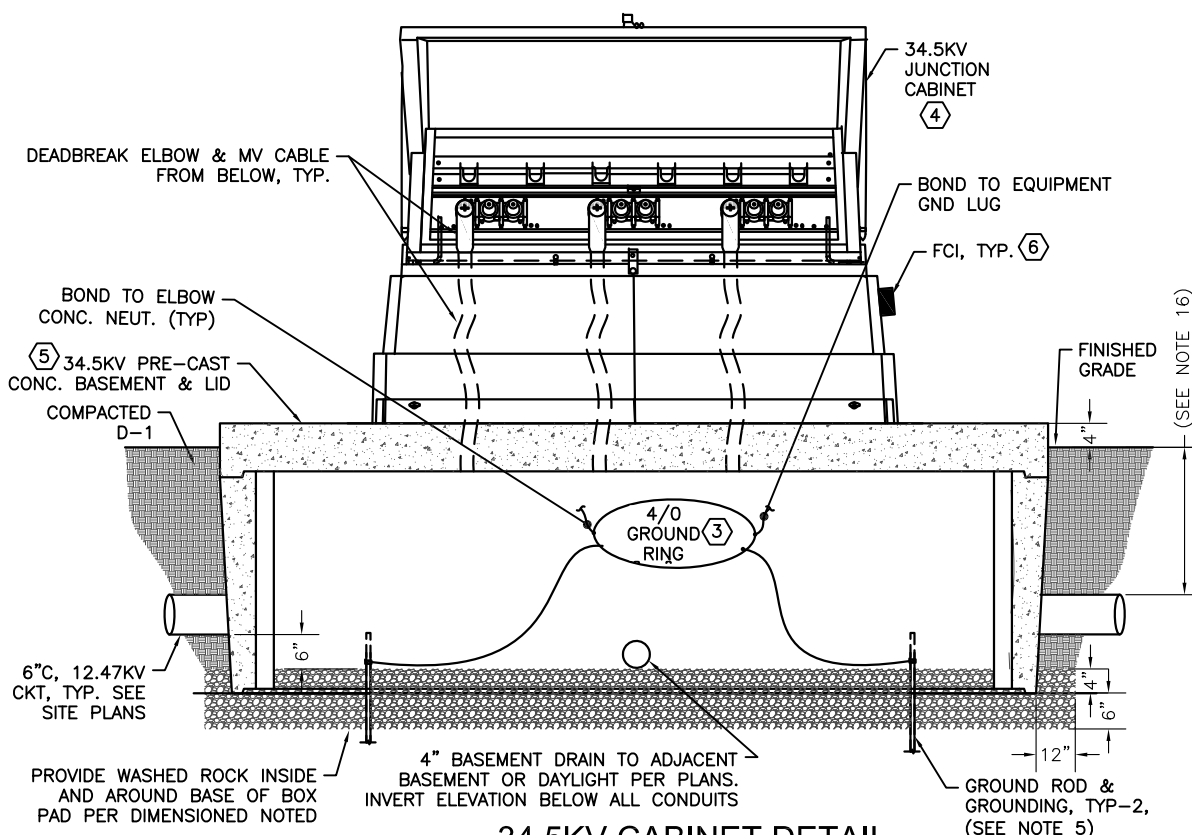
- PAD MOUNTED FIBERGLASS JUNCTION CABINET, 15KV RATED, WITH MULTI-POINT JUNCTION, PARKING STANDS, AND ALL STAINLESS STEEL BAR AND HARDWARE CONSTRUCTION. INCLUDES PROVISIONS FOR 200A DEADBREAKS AND A SURGE ARRESTER PER JUNCTION. UV AND FIRE RESISTANT, CHOPPER GLASS AND WOVEN ROVING LAMINATE CONSTRUCTION WITH ENCAPULATED 2' X 4' STRUCTURAL REINFORCEMENT. MUNSEL GREEN COLOR WITH GROUNDING LUGS, PENTA-BOLT AND PAD LOCK PROVISIONS. PROVIDE NORDIC FIBERGLASS #ND-552454-MG-PA58-4152-W3A OR EQUAL.
- DUAL PRE-CAST CONCRETE BASEMENTS (1-24" TALL, 1-12" TALL), 6" THICK WALLS, WITH OPEN BOTTOM. 84" X 56" FOOTPRINT, NOMINAL. INCLUDES ONE 6" THICK LID. LID WITH A SINGLE 20" X 60" NOMINAL CABLE OPENING IN LID. OLD CASTLE #57R-24 AND 57R-12 WITH LID OR EQUAL. OVERALL DEPTH AS SHOWN WITH PROJECTION ABOVE GRADE. COORDINATE FINAL SELECTION PROCESS WITH SWITCH SELECTION TO ENSURE FOOTPRINT AND CABLE OPENING ALIGNMENTS. CAREFULLY CUT CONDUIT PENETRATIONS INTO BASEMENT WALLS OR USE KNOCKOUTS WHERE AVAILABLE.
- BOND ALL METAL EQUIPMENT ENCLOSURES, CABLE ELBOW CONCENTRIC NEUTRALS, GROUND RODS, ETC. TOGETHER VIA A GROUND RING WITHIN BASEMENT OF THE EQUIPMENT.
- PAD MOUNTED FIBERGLASS JUNCTION CABINET, 35KV RATED, WITH MULTI-POINT JUNCTION, PARKING STANDS, AND ALL STAINLESS STEEL BAR AND HARDWARE CONSTRUCTION. INCLUDES PROVISIONS FOR 600A DEADBREAKS AND A SURGE ARRESTER PER JUNCTION. UV AND FIRE RESISTANT, CHOPPER GLASS AND WOVEN ROVING FIBERGLASS LAMINATE CONSTRUCTION WITH ENCAPULATED 2' X 4' STRUCTURAL REINFORCEMENT. MUNSEL GREEN COLOR WITH GROUNDING LUGS, PENTA-BOLT AND PAD LOCK PROVISIONS. PROVIDE NORDIC FIBERGLASS #ND-683054-MG-PA71-42564-W3E OR EQUAL.
- PRE-CAST CONCRETE BASEMENT, 6" THICK WALLS, WITH OPENED BOTTOM. 134" X 68" X 36" NOMINAL WITH 8" THICK LID. LID WITH A SINGLE 20" X 60" NOMINAL CABLE OPENING IN LID. OLD CASTLE #5106-3X WITH LID OR EQUAL. OVERALL DEPTH AS SHOWN WITH PROJECTION ABOVE GRADE. COORDINATE FINAL SELECTION PROCESS WITH SWITCH SELECTION TO ENSURE FOOTPRINT AND CABLE OPENING ALIGNMENTS. CAREFULLY CUT CONDUIT PENETRATIONS INTO BASEMENT WALLS OR USE KNOCKOUTS WHERE AVAILABLE.
- PROVIDE FAULT CIRCUIT INDICATORS (FCI) WITHIN EACH ENCLOSURE, ONE PER MV CABLE ELBOW INSTALLED. SEE SHEET U17 FOR MORE FCI DETAILS AND SHEETS U32 AND U33 FOR ELBOW INSTALLATION DETAIL. ROUTE FCI REMOTE LED INDICATOR CABLE TO REMOTE DISPLAY ASSEMBLY INSTALLED THROUGH THE SIDE OF THE ENCLOSURE. SEE DETAIL 3, THIS SHEET FOR ASSEMBLY INFO. GANG DISPLAYS ON SIDE OF ENCLOSURE AND LABEL WITH PERMANENT, PHENOLIC LABELS. COORDINATE EXACT REMOTE PLACEMENT ON ENCLOSURE AND INDICATOR LABELS WITH UTILITY. ADEQUATE ROOM SHALL BE PROVIDED BETWEEN PLACARDS SO LEGIBLE LABELS CAN BE APPLIED, COORDINATE WITH UTILITY.



12.47KV CABINET DETAIL

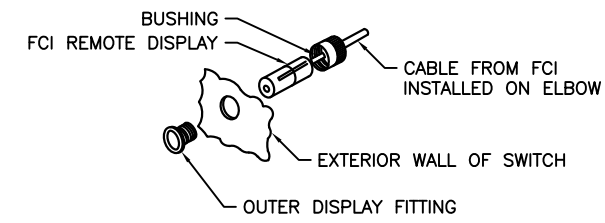
AT PAD 4

CONDUITS VARY AT EACH PAD. SEE SITE PLANS, SINGLE-LINES, FOR SPECIFIC CONDUIT SIZES AND COUNTS.



34.5KV CABINET DETAIL

AT PAD 4



FCI REMOTE INDICATOR
(TYPICAL - ONE PER MV ELBOW INSIDE ENCLOSURE)

PLANS DEVELOPED BY:
MORRIS ENGINEERING GROUP, INC
2375 JORDAN AVE #7
JUNEAU, AK 99801
907-789-3350
AECL 1010



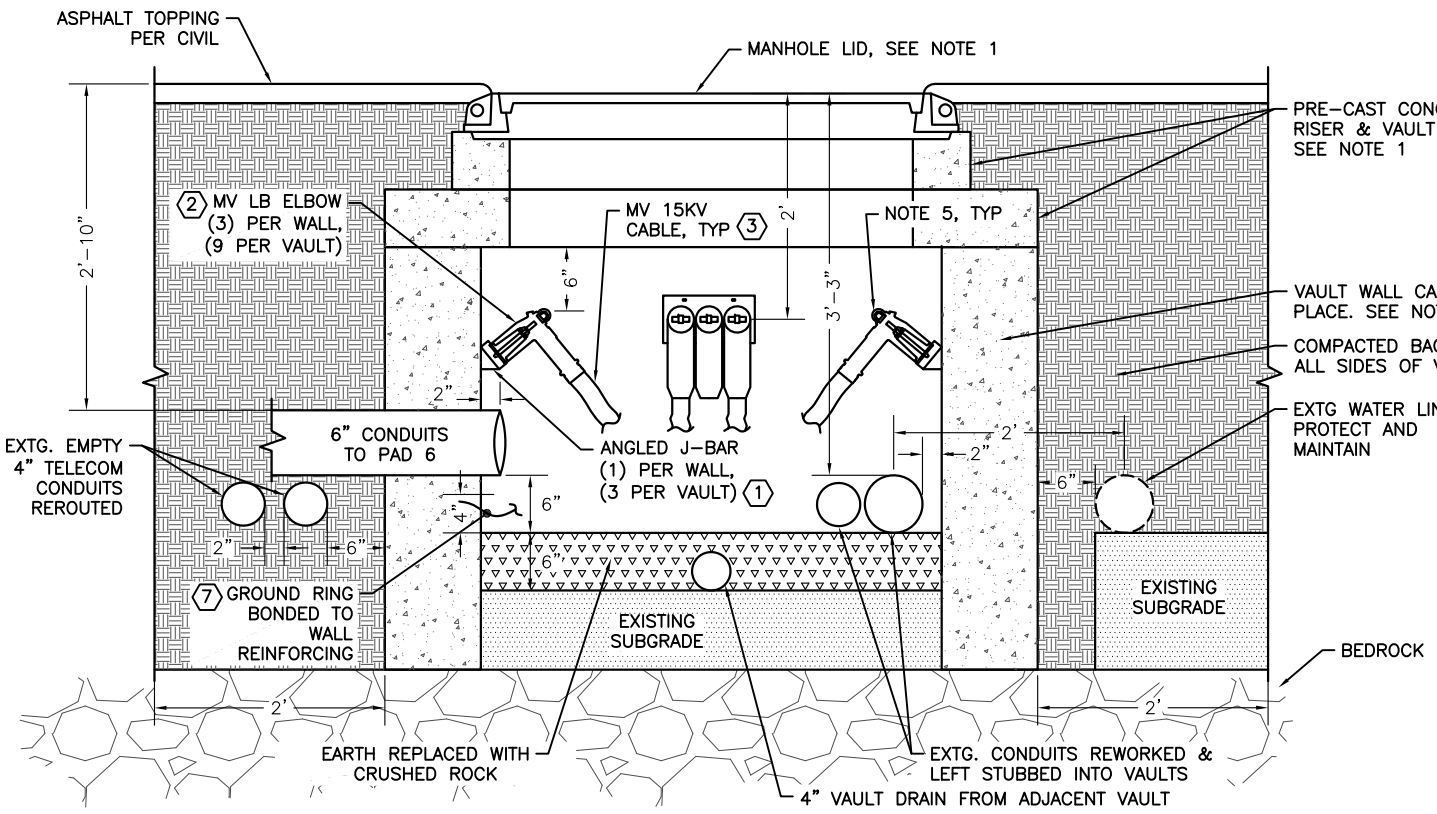
STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
6860 GLACIER HIGHWAY, JUNEAU, AK 99801
(907) 465-1763

UTILITY RELOCATION FOR KETCHIKAN AREA BRIDGES

POWER UTILITY SECTIONALIZING CABINET DETAILS

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
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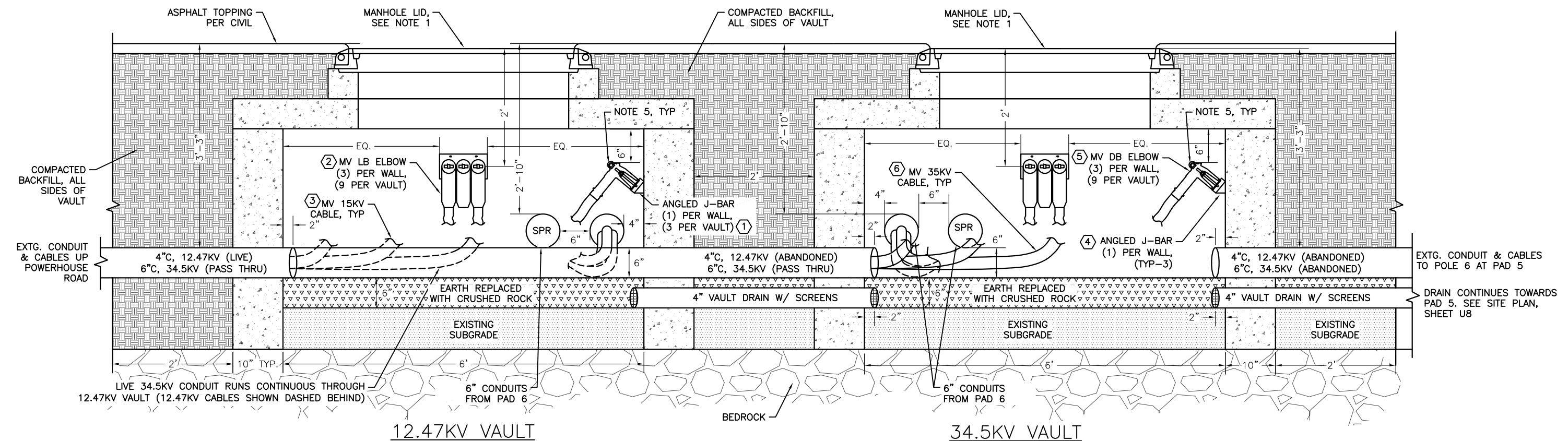
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1 POWERHOUSE VAULT - SECTION (TYP)
(SHOWING 12.47KV VAULT, SAME SETUP FOR 34.5KV VAULT)

SHEET NOTES (APPLICABLE TO ALL DETAILS):

- SEE SHEET U30B FOR STRUCTURAL DIMENSIONS, DETAILS, AND SPECIFICATIONS PERTAINING TO THE CAST IN PLACE VAULT WALLS, LIDS, RISERS, AND MANHOLE COVERS.
 - ABBREVIATION USED ON THIS SHEET: 'MV LB' = MEDIUM VOLTAGE LOADBREAK, 'MV DB' = MEDIUM VOLTAGE DEADBREAK.
 - DETAILS ON SHEETS U30A, U30B, AND U31 DEPICT GENERAL LAYOUT AND FEATURES OF CAST-IN-PLACE CONCRETE VAULTS WITH PRECAST CONCRETE LID, RISER, AND MANHOLES. CONTRACTOR MAY CONSIDER ALTERNATIVE DESIGNS IF SUBMITTED AND APPROVED BY AKDOT PROJECT MANAGER.
 - PROVIDE SCREENS ON DRAIN ENDS, SEE SHEET U30B.
 - ELBOW ANGLES AND WALL MOUNTING HEIGHTS MUST ALLOW FOR ROUTINE ELBOW WORK VIA HOT STICK FROM WORKER AT GRADE. ADJUST FINAL POSITION AS REQUIRED.
- KEY NOTES (APPLICABLE TO ALL DETAILS):
- PROVIDE A 3-POSITION LOADBREAK JUNCTION BAR CENTERED ON THREE OF THE FOUR VAULT WALLS. ADJUSTABLE, WALL MOUNTED, STAINLESS STEEL, 200A, 15KV CLASS JUNCTIONS, 3-POSITIONS PER BAR, WITH UP TO 90 DEGREES OF TILT IN 10 DEGREE INCREMENTS. INCLUDES PARKING STANDS AND DRAIN WIRE CLAMPS. PROVIDE COOPER POWER SYSTEMS (CPS) LJ215C3B OR EQUAL. COORDINATE FINAL ADJUSTMENT ANGLE WITH KPU POWER UTILITY.
 - ALL 12.47KV CABLES TO TERMINATE ON LOADBREAK ELBOWS MOUNTED TO JUNCTION BARS. COORDINATE ARRANGEMENT OF ELBOWS IN ACCORDANCE WITH KPU UTILITY REQUIREMENTS. LOADBREAK ELBOWS TO MEET REQUIREMENTS AS NOTED FOR LOADBREAKS DESCRIBED ON SHEET U17, DETAIL 1.
 - ALL 12.47KV CABLES TO ADHERE TO CABLE REQUIREMENTS DESCRIBED ON SHEET U17, DETAIL 1. ALL CABLES TO BE CAREFULLY ROUTED WITHIN VAULT TO MINIMIZE CABLE AND LOADBREAK ELBOW STRESS. ROUTE CABLES ALONG RACKING PROVIDED WITHIN THE VAULT, SEE SHEET U30B FOR RACKING INFORMATION.
 - PROVIDE A 3-POSITION COPPER DEADBREAK JUNCTION BAR CENTERED ON THREE OF THE FOUR VAULT WALLS. ADJUSTABLE, WALL MOUNTED, STAINLESS STEEL, 600A, 35KV CLASS JUNCTIONS, 3-POSITIONS PER BAR, WITH UP TO 45 DEGREES OF TILT. INCLUDES PARKING STANDS AND DRAIN WIRE CLAMPS. PROVIDE COOPER POWER SYSTEMS (CPS) DJ635C3B OR EQUAL. COORDINATE FINAL ADJUSTMENT ANGLE WITH KPU POWER UTILITY.
 - ALL 34.5KV CABLES TO TERMINATE ON DEADBREAK ELBOWS MOUNTED TO JUNCTION BARS. COORDINATE ARRANGEMENT OF ELBOWS TO MEET REQUIREMENTS AS NOTED FOR DEADBREAKS DESCRIBED ON SHEET U17, DETAIL 2.
 - ALL 34.5KV CABLES TO ADHERE TO CABLE REQUIREMENTS DESCRIBED ON SHEET U17, DETAIL 1. ALL CABLE IS TO BE CAREFULLY ROUTED WITHIN VAULT TO MINIMIZE CABLE AND DEADBREAK ELBOW STRESS. ROUTE CABLES ALONG RACKING PROVIDED WITHIN THE VAULT, SEE SHEET U30B FOR RACKING INFORMATION.
 - AT EACH POWERHOUSE VAULT, PROVIDE GROUNDING PER UTILITY REQUIREMENTS. A 4/0 AWG BRAIDED, BARE COPPER GROUND LOOP WITHIN EACH VAULT. LOOP TO BE BONDED TO A 4/0 BARE COPPER GROUND EMBEDDED INTO THE WALL BONDED TO WALL REINFORCING (2 LOCATIONS). BOND TO EACH DRAIN WIRE CONNECTION SUPPLIED ON EACH JUNCTION BAR. BOND ALL JUNCTION BAR DRAIN WIRE CONNECTIONS TO ELBOW CONCENTRIC NEUTRALS PER KPU REQUIREMENTS. SEE SHEET U31 FOR ADDITIONAL LOCATION INFORMATION. ROUTE GROUND RING ALONG VAULT RACKING OFF OF VAULT FLOOR.



2 POWERHOUSE VAULTS - ELEVATION

PLANS DEVELOPED BY: MORRIS ENGINEERING GROUP, INC 2375 JORDAN AVE #7 JUNEAU, AK 99801 907-789-3350 AECL 1010		STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES 6860 GLACIER HIGHWAY, JUNEAU, AK 99801 (907) 465-1763 UTILITY RELOCATION FOR KETCHIKAN AREA BRIDGES POWERHOUSE VAULT ELECTRICAL DETAILS
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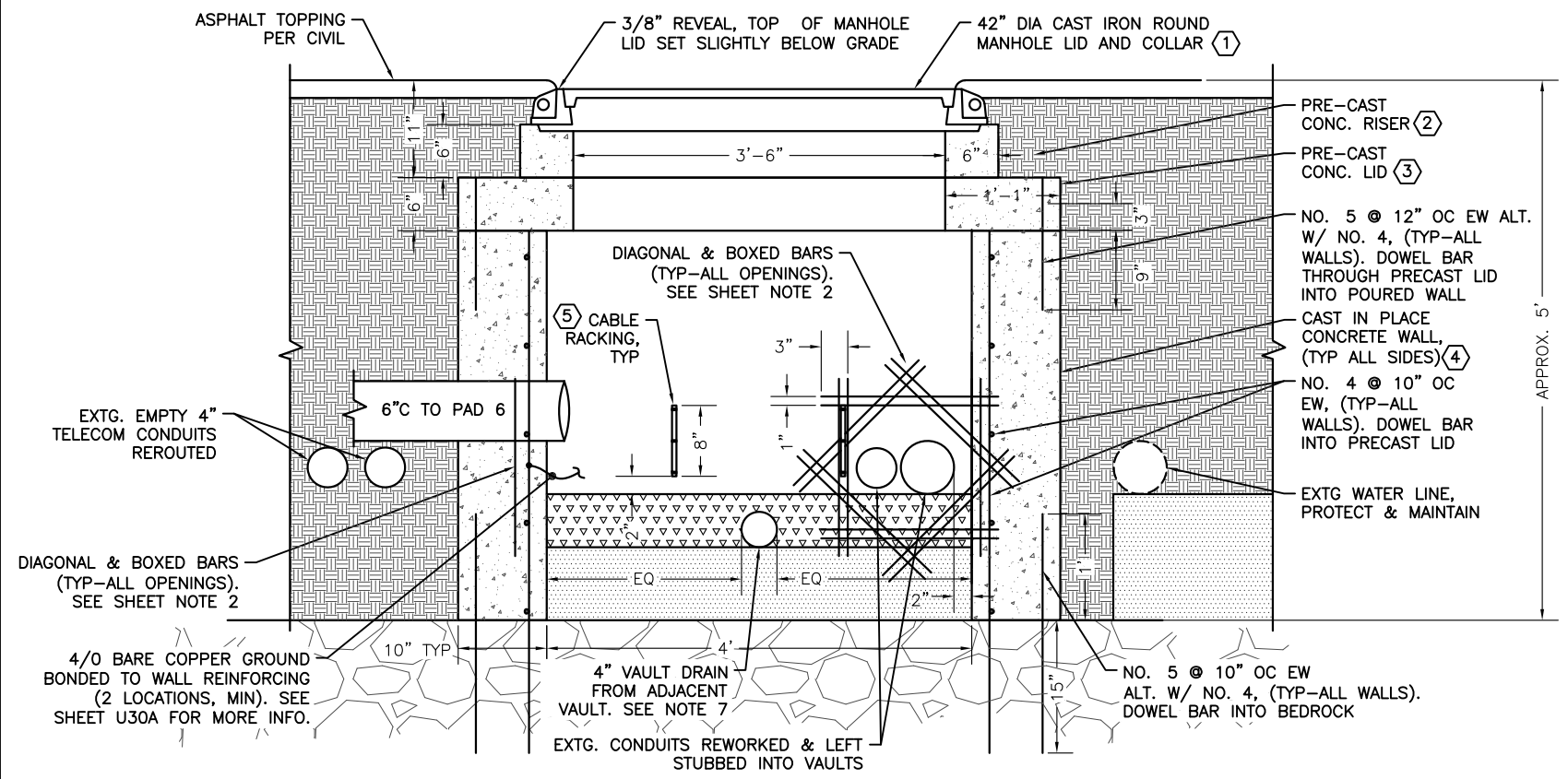
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWY00072	2021	U30B	45

SHEET NOTES (APPLICABLE TO ALL DETAILS):

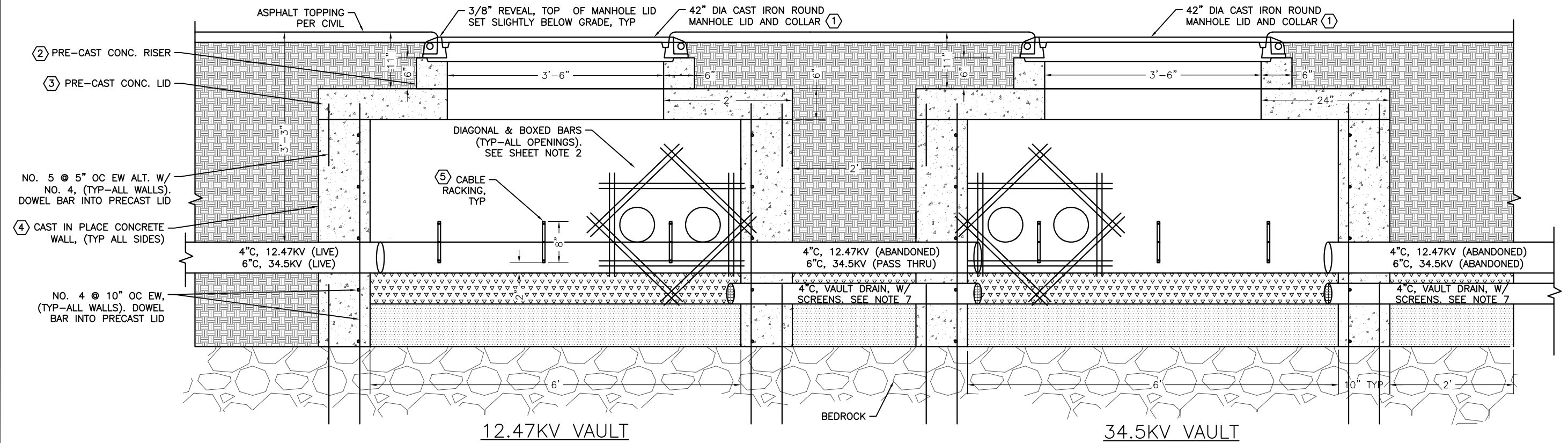
- SEE SHEET U30A AND U31 FOR ELECTRICAL DIMENSIONS, DETAILS, AND SPECIFICATIONS PERTAINING AND ASSOCIATED WITH WORK WITHIN THE POWERHOUSE VAULTS.
- FRAME EACH CONDUIT PENETRATION WITHIN THE POURED VAULT WALLS WITH (2) NO. 5 DIAGONAL AND BOXED BARS. DIMENSIONS BETWEEN PARALLEL BARS AND OVERALL SEGMENT LENGTHS SHOULD BE ADDED DIAMETER OF THE CONDUIT PAIRS PLUS 10". BARS APPROPRIATELY CENTERED WITH SPACING BETWEEN BARS AS SHOWN ON DETAIL 1.
- PROVIDE BENTONITE WATERSTOP AT ALL VAULT SEAMS AND INTERFACES BETWEEN SURFACES.
- COAT ALL SURFACES ON VAULT WITH 1/8" COAT OF SONNEBORN HYDROCIDIC MASTIC DAMPPROOFING, COMPLETELY INSIDE AND OUTSIDE OF BASEMENT, RISERS, AND LID. INCLUDE COATING ON ALL EXTERIOR PULLING IRON HARDWARE.
- DETAILS ON SHEETS U30A, U30B, AND U31 DEPICT GENERAL LAYOUT AND FEATURES OF CAST-IN-PLACE CONCRETE VAULTS WITH PRECAST CONCRETE LID, RISER, AND MANHOLES, CONTRACTOR MAY CONSIDER ALTERNATIVE DESIGNS IF SUBMITTED AND APPROVED BY AKDOT&PF PROJECT MANAGER.
- MAINTAIN A 3" EMBEDMENT DEPTH AND STOP SHORT DISTANCE FOR ALL REBAR IN THE WALLS, IN ALL DIRECTIONS.
- PROVIDE STAINLESS STEEL MESH SCREEN ON DRAIN ENDS.

KEY NOTES (APPLICABLE TO ALL DETAILS):

- PROVIDE 42" I.D. ROUND MANHOLE LID, LID RING, AND COLLAR, OLD CASTLE OR EQUAL. INSET JUST BELOW FINISHED GRADE AS NOTED.
- PROVIDE 6" TALL PRE-CAST CONCRETE RISER. NOMINAL FOOTPRINT 7'-6" X 5'-2" X 6" THICK. OLD CASTLE #57R6-CLX OR EQUAL.
- PROVIDE 6" TALL PRE-CAST CONCRETE COVER. NOMINAL FOOTPRINT 7'-6" X 5'-2" X 6" THICK WITH 42" DIAMETER HOLE. OLD CASTLE #57-CLX-42C OR EQUAL. PIN TO POURED WALLS AS INDICATED.
- PROVIDE 10" THICK CAST IN PLACE WALLS WITH REINFORCING AS NOTED HERE. 3500 PSI CONCRETE MINIMUM. PROVIDE OPENING BLOCK OUTS FOR CONDUITS (NEW AND EXISTING) AND OPENING BOXED REINFORCING AS INDICATED. PIN POURED WALLS TO PRE-CAST LID AND TO BED ROCK BELOW.
- PROVIDE HEAVY DUTY CABLE RACKING. HOT DIPPED GALVANIZED, MEETING ASTM A123/153, MOUNT 2" ABOVE CRUSH ROCK AT BOTTOM OF VAULT. LOCATE EQUI-DISTANCE ALONG EACH WALL FACE - MINIMUM OF THREE RACKS ALONG EACH LONG WALL, AND TWO ALONG EACH SHORT WALL IN EACH VAULT. INCLUDE WITH S-STRAIPS, AND ALL HDG HARDWARE REQUIRED HEX BOLTS, NUTS, ETC. FOR CLARITY, NOT ALL RACK POSITIONS SHOWN ON THIS SHEET. COORDINATE EXACT RACK LOCATIONS WITH WALL PENETRATIONS.



① POWERHOUSE VAULT - SECTION (TYP - STRUCTURAL)
(SHOWING 12.47KV VAULT, SAME SETUP FOR 34.5KV VAULT)



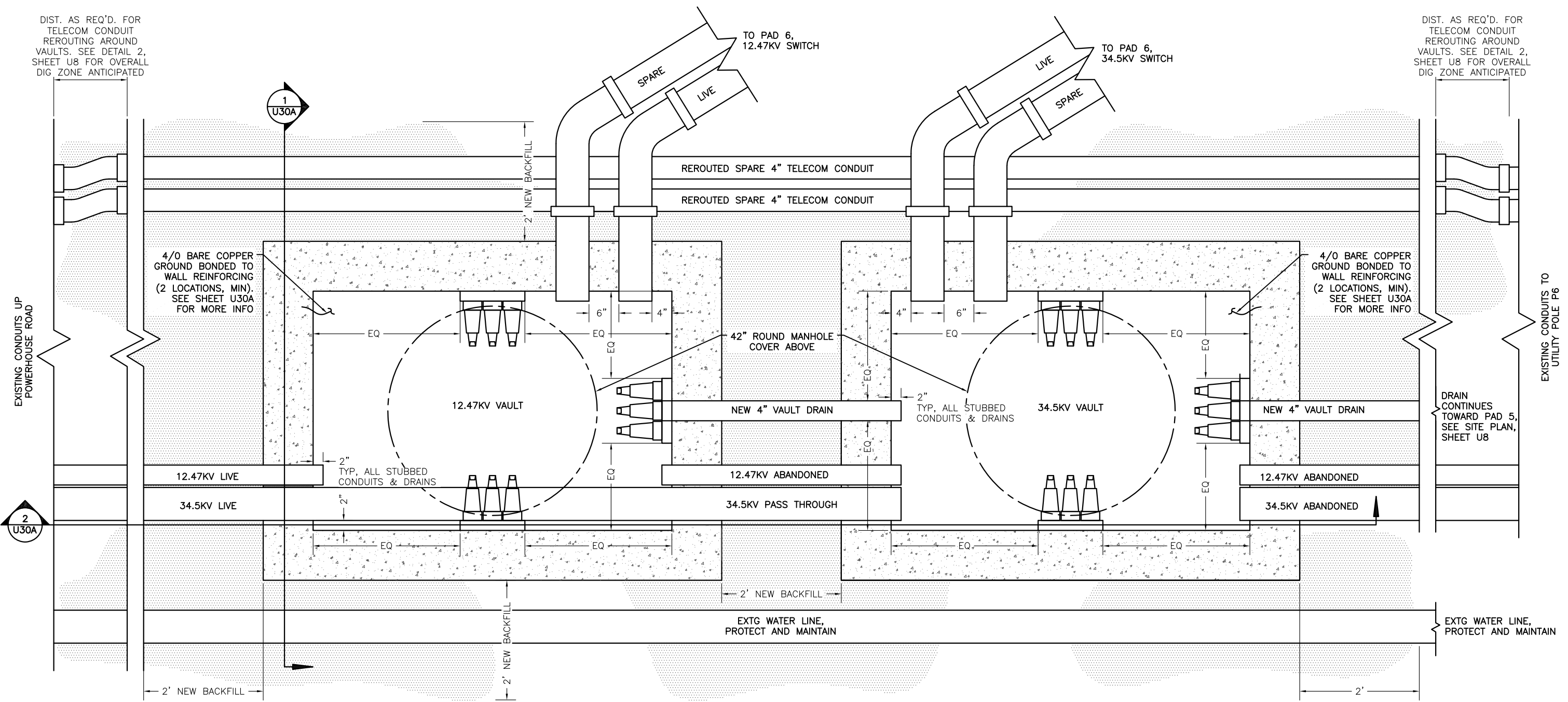
② POWERHOUSE VAULTS - ELEVATION (STRUCTURAL)

<p>PLANS DEVELOPED BY: MORRIS ENGINEERING GROUP, INC 2375 JORDAN AVE #7 JUNEAU, AK 99801 907-789-3350 AECL 1010</p>		<p>STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES 6860 GLACIER HIGHWAY, JUNEAU, AK 99801 (907) 465-1763</p> <p>UTILITY RELOCATION FOR KETCHIKAN AREA BRIDGES</p> <p>POWERHOUSE VAULT STRUCTURAL DETAILS</p>
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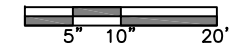
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	U31	45

FILE: Y:\102 state of al\44 utility relocation design for ketchikan bridges\Working Drawings\U31 POWERHOUSE VAULTS - ENLARGED PLAN.dwg 8/6/2021 16:07 LAYOUT U31
 DESIGNED: MGM
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 DRAFTED: NADJA



① POWERHOUSE VAULTS - ENLARGED PLAN



PLANS DEVELOPED BY:
 MORRIS ENGINEERING
 GROUP, INC
 2375 JORDAN AVE #7
 JUNEAU, AK 99801
 907-789-3350
 AECL 1010



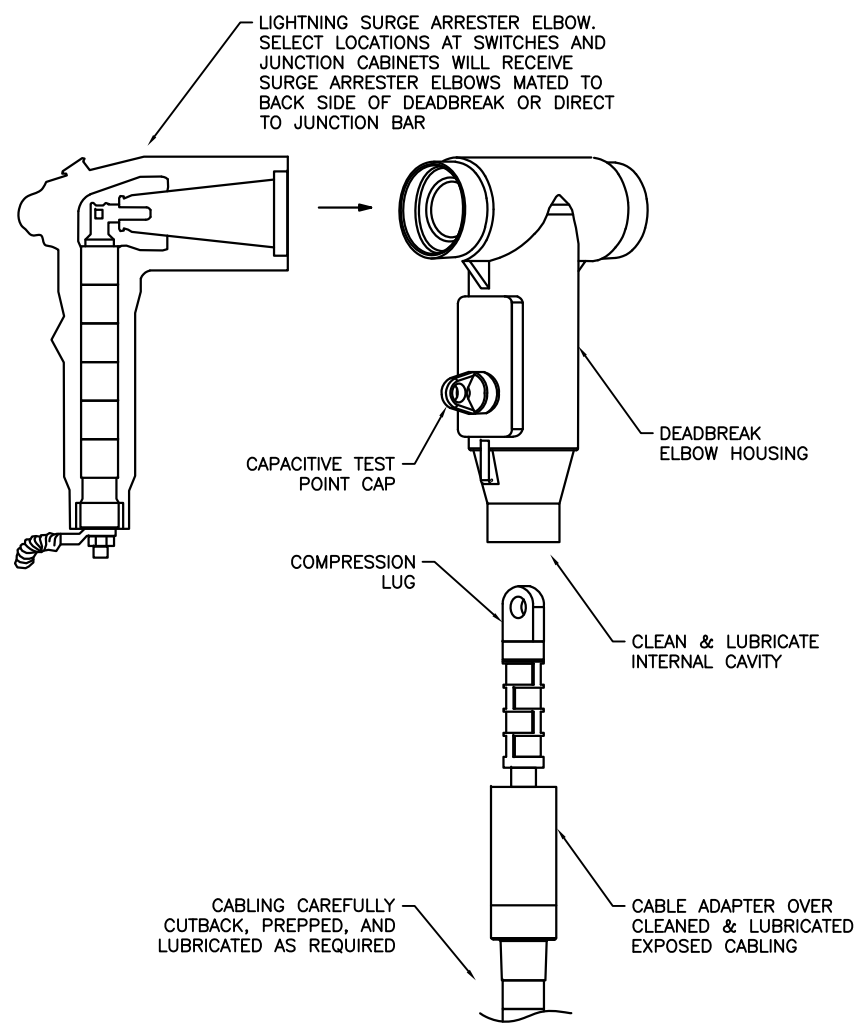
STATE OF ALASKA DEPARTMENT OF TRANSPORTATION
 AND PUBLIC FACILITIES
 6860 GLACIER HIGHWAY, JUNEAU, AK 99801
 (907) 465-1763

UTILITY RELOCATION FOR
 KETCHIKAN AREA BRIDGES

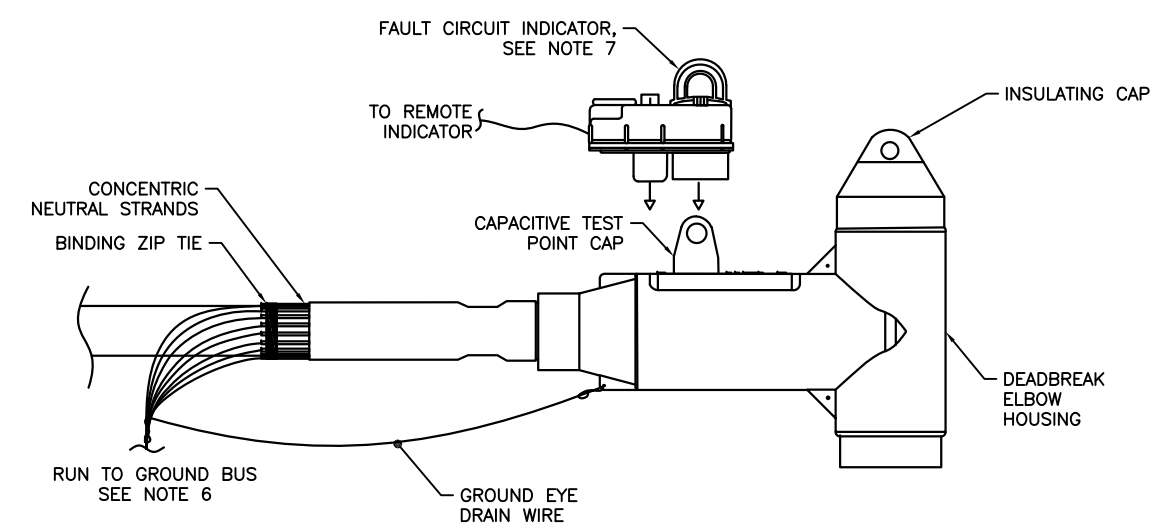
POWERHOUSE VAULTS -
 ENLARGED PLAN

FILE: Y:\02 state of ak\44 utility relocation design for ketchikan bridges\Working Drawings\POWER UTILITY\LOADBREAK & MISC. DETAILS\WHITE 8/3/2021 12:48 LAYOUT U32 DESIGNED: MGM CHECKED: MGM DRAFTED: NADJA

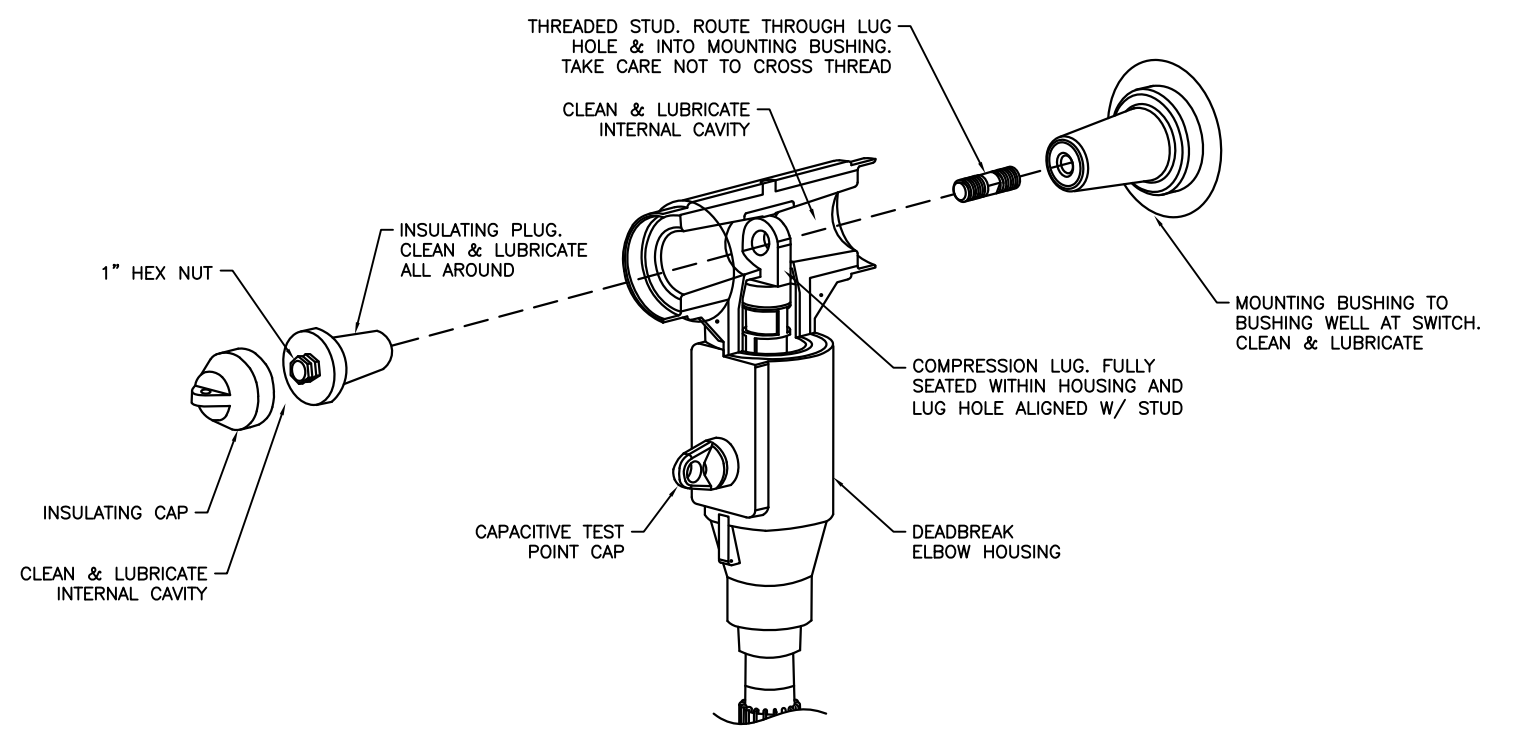
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	U32	45



① DEADBREAK - PRE-INSERT
NO SCALE



③ DEADBREAK - ASSEMBLED
NO SCALE



② DEADBREAK - INSERT
NO SCALE

NOTES:

- SEE SPECIFICATIONS FOR FULL REQUIREMENTS OF MEDIUM VOLTAGE CABLE, CABLE DEADBREAKS, AND CABLE GROUNDING.
- PRIOR TO INSTALL, CONFIRM ALL PARTS AND PIECES ARE UNDAMAGED, CABLES AND MATING COMPONENTS ARE PROPERLY FITTED, AND CHECK THAT STUD THREADS TO COMPRESSION LUG WITH NO RESISTANCE. IF RESISTANCE IS ENCOUNTERED PRIOR TO FULL ASSEMBLY, CHECK FOR DAMAGE AND REPLACE COMPONENTS AS NECESSARY.
- NOTES INCLUDED ON THIS SHEET ARE GENERIC IN NATURE AND FOR GENERAL INSTRUCTION ONLY. FOLLOW MANUFACTURER WRITTEN REQUIREMENTS.
- GENERAL NOTES FOR CABLE TERMINATION WORK:
 - SYSTEM SHALL BE DE-ENERGIZED DURING INSTALLATION.
 - EACH DEADBREAK KIT SHALL BE PROVIDED COMPLETE FROM FACTORY, ALL KIT COMPONENTS NEW AND FROM ONE MANUFACTURER.
 - MINIMUM KIT CONTENTS SHALL INCLUDE: 600A DEADBREAK ELBOW HOUSING INSULATION PLUG & CAP, CABLE ADAPTER AND ASSEMBLY AID, SILICONE LUBRICANT, THREADED STUD, SHEAR BOLT OR COMPRESSION LUG, CRIME AND COMPRESSION CHART, INSTRUCTIONS.
- THERE ARE MANY DISTINCT AND VITAL STEPS IN PREPARING AND TERMINATING CABLES AND DEADBREAKS. BELOW IS A SIMPLE DESCRIPTION OF STEPS ANTICIPATED IN THE PROCESS. CONTRACTOR SHALL HAVE ONLY EXPERIENCED STAFF PERFORM WORK TERMINATING MEDIUM VOLTAGE CABLES AND ASSEMBLING DEADBREAKS. THIS LIST IS PROVIDED TO STRESS THAT THIS WORK IS NOT TO BE DONE BY UNQUALIFIED LINEMEN. UTILIZE ONLY LINEMEN QUALIFIED FOR CABLE SPLICE AND TERMINATION TYPE WORK. KPU TO TERMINATE ALL FINAL CONNECTIONS.

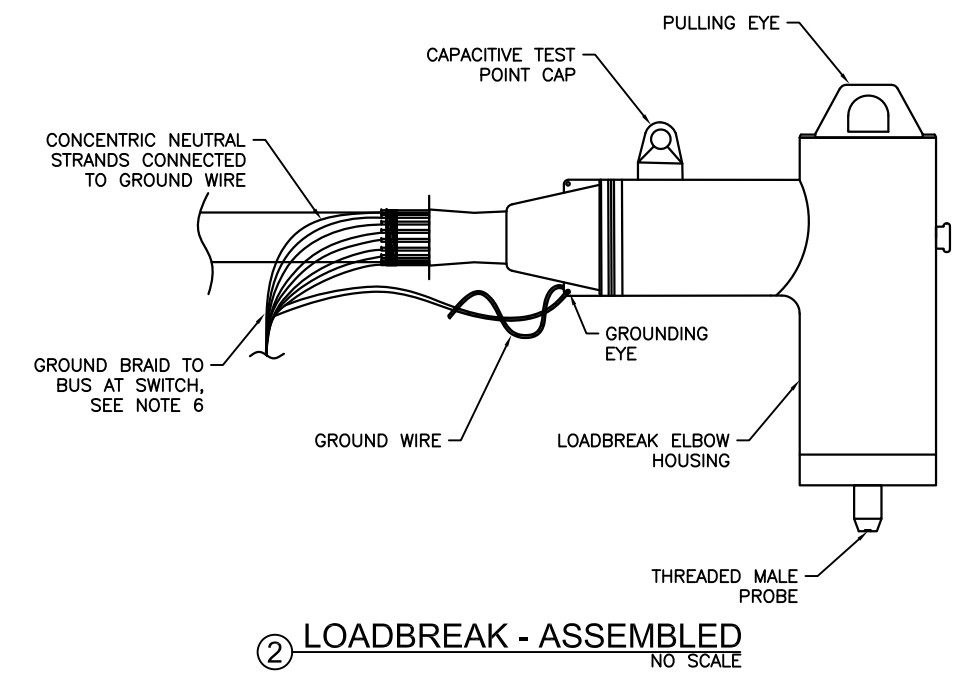
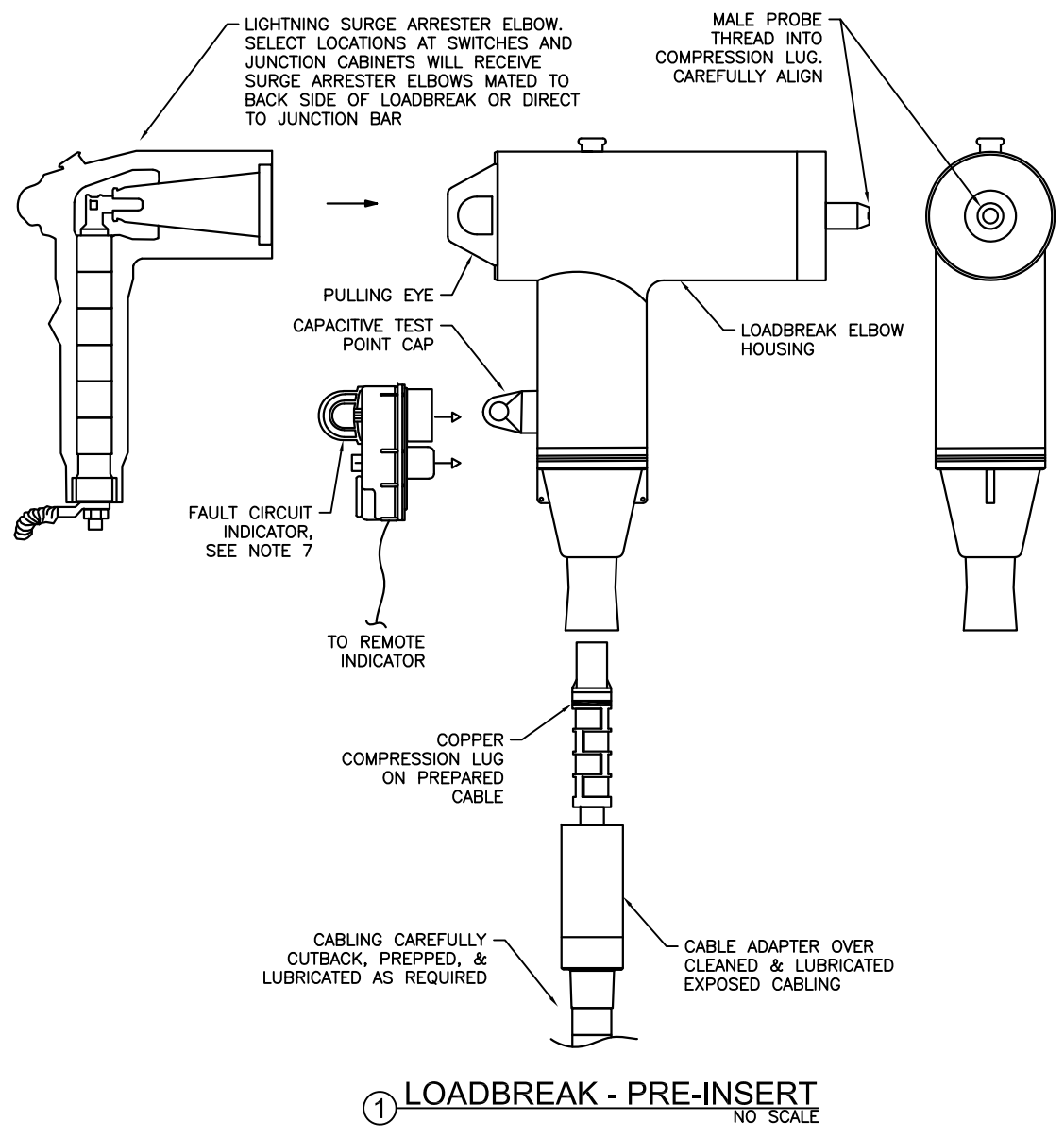
ANTICIPATED DEADBREAK CONNECTION STEPS INCLUDE:

 - PREPARING CABLES (I.E. MEASURING AND CUTTING BACK OUTER JACKET, CONCENTRIC NEUTRAL, SEMI-CON, AND INSULATION LAYERS).
 - MATING THE COMPRESSION LUG TO STUD (I.E. SECURING LUG ONTO CABLE, INSERTING LUGGED CABLE INTO ELBOW, INSERTING AND THREADING STUD INTO LUGGED ELBOW).
 - ELBOW AND CABLE GROUNDING (I.E. GROUND WIRE TO ELBOW GROUND EYE, GROUND WIRE TO EXPOSED NEUTRAL AND BRAID, BRAID COUPLED TO GROUND BUS IN SWITCH).
- SEE SHEETS U28 AND U29 FOR SWITCH AND JUNCTION CABINET ELEVATIONS WITH ADDITIONAL NOTES ON MEDIUM VOLTAGE CABLE GROUNDING AND GROUND BUS CONFIGURATIONS.
- PROVIDE FAULT CIRCUIT INDICATORS (FCIs) AT EACH DEADBREAK ELBOW IN THE JUNCTION CABINET. SEE SHEET U17 FOR DETAILS ON THE FCI UNITS. INSTALL INDICATORS AT THE CAPACITIVE TESTING POINT OF THE ELBOW PER MANUFACTURER REQUIREMENTS. ROUTE REMOTE INDICATOR CABLING FROM EACH FCI TO REMOTE INDICATOR MOUNTED TO OUTER ENCLOSURE, SEE DETAIL 3, SHEET U29 FOR MOUNTING DETAIL.
- LABEL ALL MV CABLES ON THE PROJECT PER DETAIL 2, SHEET U18.

<p>PLANS DEVELOPED BY: MORRIS ENGINEERING GROUP, INC 2375 JORDAN AVE #7 JUNEAU, AK 99801 907-789-3350 AECIL 1010</p>		<p>STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES 6860 GLACIER HIGHWAY, JUNEAU, AK 99801 (907) 465-1763</p> <p>UTILITY RELOCATION FOR KETCHIKAN AREA BRIDGES</p> <p>DEADBREAK ELBOW DETAILS</p>
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FILE: Y:\02 state of ak\44 utility relocation design for ketchikan bridges\Working Drawings\U33 LOADBREAK DETAILS.dwg DATE: 8/6/2021 16:06 LAYOUT: U33 DESIGNED: MGM CHECKED: MGM DRAFTED: NADJA

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	U33	45



- NOTES:
- SEE SPECIFICATIONS FOR FULL REQUIREMENTS OF MEDIUM VOLTAGE CABLE, LOADBREAKS, AND CABLE GROUNDING.
 - PRIOR TO INSTALL, CONFIRM ALL PARTS AND PIECES ARE UNDAMAGED, CABLES AND MATING COMPONENTS ARE PROPERLY FITTED, AND CHECK THAT PROBE THREADS TO COMPRESSION LUG WITH NO RESISTANCE. IF RESISTANCE IS ENCOUNTERED PRIOR TO FULL ASSEMBLY, CHECK FOR DAMAGE AND REPLACE COMPONENTS AS NECESSARY.
 - NOTES INCLUDED ON THIS SHEET ARE GENERIC IN NATURE AND FOR GENERAL INSTRUCTION ONLY. FOLLOW MANUFACTURER WRITTEN REQUIREMENTS.
 - GENERAL NOTES FOR CABLE TERMINATION WORK:
 - SYSTEM SHALL BE DE-ENERGIZED DURING INSTALLATION.
 - EACH LOADBREAK KIT SHALL BE PROVIDED COMPLETE FROM FACTORY, ALL KIT COMPONENTS NEW AND FROM ONE MANUFACTURER.
 - MINIMUM KIT CONTENTS SHALL INCLUDE: 200A LOADBREAK ELBOW, MALE CONTACT PROBE, COMPRESSION LUG, INSTALLATION WRENCH, SILICONE LUBRICANT, MASTICK, COPPER BRAID, COLD SHRINK TUBE, AND INSTRUCTIONS.
 - THERE ARE MANY DISTINCT AND VITAL STEPS IN PREPARING AND TERMINATING CABLES AND LOADBREAKS. BELOW IS A SIMPLE DESCRIPTION OF STEPS ANTICIPATED IN THE PROCESS. CONTRACTOR SHALL HAVE ONLY EXPERIENCED STAFF PERFORM WORK TERMINATING MEDIUM VOLTAGE CABLES AND ASSEMBLING LOADBREAKS. THIS LIST IS PROVIDED TO STRESS THAT THIS WORK IS NOT TO BE DONE BY UNQUALIFIED LINEMEN. UTILIZE ONLY LINEMEN QUALIFIED FOR CABLE SPLICE AND TERMINATION TYPE WORK. KPU TO TERMINATE ALL FINAL CONNECTIONS.

ANTICIPATED LOADBREAK CONNECTION STEPS INCLUDE:

 - PREPARING CABLES (I.E. MEASURING AND CUTTING BACK OUTER JACKET, CONCENTRIC NEUTRAL, SEMI-CON, AND INSULATION LAYERS).
 - MATING THE COMPRESSION LUG TO MALE PROBE (I.E. SECURING LUG ONTO CABLE, INSERTING LUGGED CABLE INTO ELBOW, INSERTING AND THREADING MALE PROBE INTO LUGGED ELBOW).
 - ELBOW AND CABLE GROUNDING (I.E. GROUND WIRE TO ELBOW GROUND EYE, GROUND WIRE TO EXPOSED NEUTRAL AND BRAID, BRAID COUPLED TO GROUND BUS IN SWITCH).
 - SEE SHEET U28 AND U29 FOR SWITCH AND JUNCTION CABINET ELEVATIONS WITH ADDITIONAL NOTES ON MEDIUM VOLTAGE CABLE GROUNDING AND GROUND BUS CONFIGURATIONS.
 - PROVIDE FAULT CIRCUIT INDICATORS (FCIs) AT EACH LOADBREAK ELBOW IN THE SWITCHES AND JUNCTION CABINETS ON THE PROJECT. SEE SHEET U17 FOR DETAILS ON THE FCI UNITS. INSTALL INDICATORS AT THE CAPACITIVE TESTING POINT OF THE ELBOW PER MANUFACTURER REQUIREMENTS. ROUTE REMOTE INDICATOR CABLING FROM EACH FCI TO REMOTE INDICATOR MOUNTED TO OUTER ENCLOSURE, SEE SHEETS U28 AND U29 FOR MOUNTING DETAIL.
 - LABEL ALL MV CABLES ON THE PROJECT PER DETAIL 2, SHEET U18.

<p>PLANS DEVELOPED BY: MORRIS ENGINEERING GROUP, INC 2375 JORDAN AVE #7 JUNEAU, AK 99801 907-789-3350 AECL 1010</p>		<p>STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES 6860 GLACIER HIGHWAY, JUNEAU, AK 99801 (907) 465-1763</p> <p>UTILITY RELOCATION FOR KETCHIKAN AREA BRIDGES</p> <p>LOADBREAK ELBOW DETAILS</p>
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	U34	45

DEMOLITION POLE SUMMARY

NO.	MAST-ARM LENGTH	LUMINAIRE MOUNTING HEIGHT	STATION	OFFSET	KPU POLE NO.	LUMINAIRE TYPE
PX1	UNK	30'	395+47.30	21.56'LT	2430-B4-3	150W HPS
PX2	UNK	30'	397+04.36	25.96'RT	2430-B4-2	150W HPS

KPU UTILITY HAS FIRST RIGHTS TO SALVAGEABLE LIGHT FIXTURE AND POLE COMPONENTS. COORDINATE WITH KPU PRIOR TO DEMOLITION. OTHERWISE, FOLLOW ALL RECYCLING AND DISPOSAL REQUIREMENTS OF STATE OF ALASKA AND CITY OF KETCHIKAN PROJECTS.

ELECTROLIER SUMMARY

NO.	MAST-ARM LENGTH	LUMINAIRE MOUNTING HEIGHT (d)	LUMINAIRE TYPE	STATION (b)(e)	OFFSET (b)(e)	POLE BASE ELEVATION (a)	REMARKS (c)
LP1	12'	30'	B	387+87.09	23.81'RT	24.243	NEW POLE AND LUMINAIRE
LP2	10'	30'	D	395+46.61	25.03'RT	23.998	NEW POLE AT BRIDGE AND LUMINAIRE
LP3	10'	30'	B	396+85.84	25.03'RT	27.736	NEW POLE AT BRIDGE AND LUMINAIRE
LP4	10'	30'	B	398+20.98	25.16'RT	31.699	NEW POLE AND LUMINAIRE
LP5	8'	30'	B	398+36.51	50.27'LT	34.400	NEW POLE AND LUMINAIRE
LP6	10'	30'	B	399+22.90	21.01'LT	32.813	NEW POLE AND LUMINAIRE

a. CONTRACTOR TO FIELD VERIFY FINAL GRADE ELEVATIONS AT EACH POLE POSITION PRIOR TO WORK. ELEVATION AT CENTER OF POLE BASE UNLESS NOTED OTHERWISE. ELEVATION GIVEN TO TOP OF LIGHT POLE CONCRETE FOUNDATION.
 b. STATION AND OFFSET INFORMATION GIVEN TO CENTER OF LIGHT POLE BASE.
 c. ALL POLE AND MAST ARMS ORIENTATED SO THAT MAST ARM IS PERPENDICULAR TO ROADWAY ADJACENT TO BASE LOCATION.
 d. LUMINAIRE MOUNTING HEIGHT IS FROM FISHED GRADE. POLES AT BRIDGE ARE MOUNTED BELOW ROADWAY, POLE HEIGHTS AS REQUIRED.
 e. STATION AND OFFSET ARE FOR GENERAL REFERENCE, SEE DOT&PF DRAWINGS FOR STREET LIGHT FOUNDATION SUMMARY FOR STATION, OFFSET, AND ELEVATION.

LIGHT POLE JUNCTION BOX SUMMARY

NO.	STATION (c)	OFFSET (c)	ELEVATION (a,b)	REMARKS
J1	387+87.70	26.76'RT	24.99	FOR LP1
J2	N/A, ON BRIDGE			FOR LP2
J3	N/A, ON BRIDGE			FOR LP3
J4	398+25.57	24.41'RT	31.74	FOR LP4
J5	398+39.58	45.65'LT	34.40	FOR LP5
J6	399+37.91	18.10'LT	32.73	FOR LP6

a. CONTRACTOR TO FIELD VERIFY FINAL GRADE ELEVATION AT BOX POSITION PRIOR TO WORK. ELEVATION AT CENTER OF BOX LID UNLESS NOTED OTHERWISE.
 b. COORDINATE WITH GENERAL CONTRACTOR TO ADJUST JUNCTION BOXES SO THAT THE TOP OF EACH JUNCTION BOX IS FLUSH WITH FINISHED GRADE.
 c. BOX STATIONS AND OFFSETS TAKEN TO CENTER OF BOX.

UTILITY POLE SUMMARY

NO.	MAST-ARM LENGTH (a,b)	LUMINAIRE MOUNTING HEIGHT	LUMINAIRE TYPE	STATION	OFFSET	KPU POLE NO.	REMARKS
P1	12'	NOTE "c"	A	386+69.34	31.03'RT	2430-A5-4	EXISTING POLE, REPLACE LUMINAIRE
P2	10'/14'	NOTE "c"	B/C	388+60.02	52.63'LT	2430-A5-3	EXISTING POLE, REPLACE LUMINAIRES
P2A	-	-	-	388+56.18	96.38'LT	2430-A5-14	EXISTING GUY POLE
P2B	-	-	-	387+86.25	49.31'LT	2430-A5-10	NEW GUY POLE, SEE NOTE "d"
P3	12'	NOTE "c"	A	390+12.05	20.40'LT	2430-A5-2	EXISTING POLE, REPLACE LUMINAIRE
P4	12'	NOTE "c"	A	391+62.64	23.08'LT	2430-A5-1	EXISTING POLE, REPLACE LUMINAIRE
P5	10'	NOTE "c"	D	393+51.67	24.29'LT	2430-B5-1	REMOVE & REPLACE W/ NEW POLE & LUMINAIRE
P5A	-	-	-	393+24.82	26.24'LT	2430-B5-12	NEW POLE, SEE NOTE "d"
P6	-	-	-	398+57.13	31.78'RT	2430-B4-1	EXISTING POLE W/ NEW GUYS, REMOVE LUMINAIRE
P7	-	-	-	400+70.27	28.50'LT	2430-A4-6	REMOVE & REPLACE W/ NEW POLE & GUYING
P8	-	-	-	400+45.47	38.35'LT	2430-A4-7	REMOVE & REPLACE W/ NEW POLE
P9	-	-	-	400+20.63	41.27'LT	2430-B4-4	EXISTING POLE W/ NEW GUYING
P10	-	-	-	398+46.99	102.73'LT	2430-B4-5	EXISTING POLE, REMOVE LUMINAIRE
P11	12'	NOTE "c"	A	400+70.06	22.92'RT	2430-A4-4	EXISTING POLE, REPLACE LUMINAIRE

a. CONTRACTOR TO VERIFY EXISTING MAST ARM MOUNTING REQUIREMENTS TO FIT NEW LUMINAIRE TO MAST ARM. COORDINATE WITH KPU UTILITY.
 b. ALL POLES AND MAST ARMS ORIENTATED SO THAT MAST ARM IS PERPENDICULAR TO ROADWAY ADJACENT TO BASE LOCATION.
 c. REPLACE ALL EXISTING MAST ARMS AND FIXTURES IN PLACE WITH NEW.
 d. NEW WOOD UTILITY POLE STATION AND SET INFORMATION FOR GENERAL REFERENCE, SEE DOT&PF DRAWINGS FOR EXACT STATION AND OFFSET. COORDINATE FINAL LOCATIONS WITH KPU ELECTRIC PRIOR TO WORK.
 e. STATION AND OFFSET FOR EXISTING POLES TO REMAIN ARE FOR GENERAL REFERENCE ONLY.

ELECTROLIER SCHEDULE

LUMINAIRE TYPE	DESCRIPTION	OPTICAL PERFORMANCE		MANUFACTURER	
		LED	BRAND	PART NO.	
A	ROADWAY LUMINAIRE WITH FOUR MOUNTING BOLTS TO A 2-3/8" OD MAST ARM. DIE CAST ALUMINUM HOUSING, POLYESTER POWDER COAT, 120-277V, ANSI C136.41 7 PIN WITH SHORTING CAP, BUBBLE LEVEL, IP66, DOOR GROUNDING TETHER, TOOL-LESS ENTRY, QUICK DISCONNECTS.	3,000K, 11,000 LUMENS MIN, 98 WATTS MAX, TYPE 2 DISTRIBUTION	(OR)	GE	ERLH-0-11-B3-30-D GRAY ABGIL055
				AEL	ATB2 40BLEDE70 MVOLT R2 BLHK P7SH
B	ROADWAY LUMINAIRE WITH FOUR MOUNTING BOLTS TO A 2-3/8" OD MAST ARM. DIE CAST ALUMINUM HOUSING, POLYESTER POWDER COAT, 120-277V, ANSI C136.41 7 PIN WITH SHORTING CAP, BUBBLE LEVEL, IP66, DOOR GROUNDING TETHER, TOOL-LESS ENTRY, QUICK DISCONNECTS.	3,000K, 11,000 LUMENS MIN, 98 WATTS MAX, TYPE 3 DISTRIBUTION	(OR)	GE	ERLH-0-11-C3-30-D GRAY ABGIL055
				AEL	ATB2 40BLEDE70 MVOLT R3 BLHK P7SH
C	ROADWAY LUMINAIRE WITH FOUR MOUNTING BOLTS TO A 2-3/8" OD MAST ARM. DIE CAST ALUMINUM HOUSING, POLYESTER POWDER COAT, 120-277V, ANSI C136.41 7 PIN WITH SHORTING CAP, BUBBLE LEVEL, IP66, DOOR GROUNDING TETHER, TOOL-LESS ENTRY, QUICK DISCONNECTS.	3,000K, 11,000 LUMENS MIN, 98 WATTS MAX, TYPE 4 DISTRIBUTION	(OR)	GE	ERLH-0-11-D3-30-D GRAY ABGIL055
				AEL	ATB2 40BLEDE70 MVOLT R4 BLHK P7SH
D	ROADWAY LUMINAIRE WITH FOUR MOUNTING BOLTS TO A 2-3/8" OD MAST ARM. DIE CAST ALUMINUM HOUSING, POLYESTER POWDER COAT, 120-277V, ANSI C136.41 7 PIN WITH SHORTING CAP, BUBBLE LEVEL, IP66, DOOR GROUNDING TETHER, TOOL-LESS ENTRY, QUICK DISCONNECTS.	3,000K, 15,300 LUMENS MIN, 149 WATTS MAX, TYPE 2 DISTRIBUTION	(OR)	GE	ERLH-0-16-B3-30-D GRAY ABGIL055
				AEL	ATB2 60BLEDE70 MVOLT R2 BLHK P7SH

PROVIDE THE LUMINAIRES SHOWN OR APPROVED EQUAL. A SUBSTITUTE LUMINAIRE SHALL HAVE EQUIVALENT PHOTOMETRIC PERFORMANCE AS WELL AS THE SAME QUALITY, FEATURES, FUNCTIONALITY, ATTRIBUTES, ETC. AS THE SPECIFIED LUMINAIRE INCLUDING THE REQUIREMENTS SHOWN ON THE PLANS AND INCLUDED IN THE SPECIFICATIONS. IF IT DOES NOT, IT WILL BE REJECTED AS AN EQUAL TO THE SPECIFIED LUMINAIRE. PHOTOMETRIC FILES SHALL BE PROVIDED (*IES) ALONG WITH CATALOG CUT SHEETS DURING SUBMITTALS AND THE LIGHTING DESIGN WILL BE CHECKED BY THE DESIGNER USING THE SUBSTITUTE LUMINAIRE. IF AN EQUIVALENT LIGHT LEVEL AND UNIFORMITY AS WELL AS GLARE CONTROL IS NOT ACHIEVED, THE SUBSTITUTE LUMINAIRE WILL BE REJECTED AS AN EQUAL TO THE SPECIFIED LUMINAIRE.


UTILITY EQUIPMENT SCHEDULE

(FOR COORDINATION ONLY)

DESCRIPTION	PAD	STATION (b)	OFFSET (b)	ELEVATION (a)	REMARKS
34.5KV JUNCTION CABINET	4	394+49.64	24.25'RT	29.30	W/ CONCRETE BASEMENT
12.47KV JUNCTION CABINET	4	394+65.56	23.79'RT	29.53	W/ CONCRETE BASEMENT
KPU TELECOM VAULT NO. 1	4	394+41.35	21.38'RT	29.37	VAULT
GCI TV VAULT NO. 1	4	394+35.20	20.24'RT	29.35	VAULT
LIGHTING LOAD CENTER	4	394+38.99	27.18'RT	28.99	W/ CONCRETE BASE
120/240V TRANSFORMER	4	394+34.93	28.24'RT	28.87	W/ CONCRETE BASEMENT
GCI TV VAULT NO. 2	5	398+42.01	25.67'RT	31.62	VAULT
KPU TELECOM VAULT NO. 2	5	398+35.59	27.55'RT	31.52	VAULT
KPU 34.5KV SWITCH NO. 1	6	398+62.92	81.90'LT	35.09	W/ CONCRETE BASEMENT
KPU 12.47KV SWITCH NO. 2	6	398+51.62	90.31'LT	35.69	W/ CONCRETE BASEMENT
34.5KV POWERHOUSE VAULT		398+26.59	82.39'LT	35.09	VAULT, W/ RECESSED LID
12.47KV POWERHOUSE VAULT		398+20.54	87.14'LT	35.16	VAULT, W/ RECESSED LID

a. ELEVATION GIVEN TO TOP OF CONCRETE SLAB WHERE EQUIPMENT IS MOUNTED OR TO FINISHED GRADE. ADJUST TOP OF BASEMENT STRUCTURE PER DETAIL.
 b. STATION & OFFSET GIVEN TO CENTER OF EQUIPMENT BASEMENT OR CONCRETE SLAB LOCATION.

- #### ELECTROLIER GENERAL NOTES:
- EACH NEW ELECTROLIER SHALL HAVE A JUNCTION BOX INSTALLED ADJACENT TO THE FOUNDATION AS SHOWN IN THE POLE AND JUNCTION BOX WIRING DETAIL SHEET U36, UNLESS NOTED OTHERWISE.
 - PROVIDE JUNCTION BOXES PER SUMMARIES ON THIS SHEET. SEE AK DOT&PF STANDARD DRAWING L-23.01 AND DETAILS ON SHEET U36.
 - NEW ELECTROLIER FOUNDATIONS SHALL BE PER AK DOT&PF STANDARD DRAWING L-30.11. SEE SHEET U36 FOR POLE BASE FOUNDATION DETAIL.
 - ILLUMINATION CIRCUIT WIRES SHALL BE NO. 8 AWG. 4-CONDUCTOR CABLE WITH COPPER CONDUCTORS, XHHW INSULATION, AND AN OVERALL PVC JACKET.
 - PROVIDE ELECTROLIERS PER DETAILS ON SHEET U36, ELECTROLIER SUMMARY TABLES ON THIS SHEET, AND AK DOT&PF STANDARD DRAWING L-03.10.
 - COORDINATE WITH GENERAL CONTRACTOR TO ADJUST JUNCTION BOXES SO THAT THE TOP OF EACH JUNCTION BOX IS FLUSH WITH FINISHED GRADE.
 - PROVIDE GROUNDING BUSHING ON CONDUIT ENTERING JUNCTION BOXES, POLES, AND AS REQUIRED PER THE NEC.
 - SIZE POLE WITH MAST ARM AND LUMINAIRE AS REQUIRED FOR SUSTAINED WINDS OF 100 MPH AND GUSTS TO 120 MPH, EXPOSURE B (2003).

PLANS DEVELOPED BY: MORRIS ENGINEERING GROUP, INC 2375 JORDAN AVE #7 JUNEAU, AK 99801 907-789-3350 AECL 1010		STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES 6860 GLACIER HIGHWAY, JUNEAU, AK 99801 (907) 465-1763 UTILITY RELOCATION FOR KETCHIKAN AREA BRIDGES SCHEDULES
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	U35	45

FILE: Y:\102 state of al\44 utility relocation design for ketchikan bridges\LOAD CENTER SUMMARIES.dwg
 DATE: 8/6/2021 15:51 LAYOUT U35
 DESIGNED: MGM
 CHECKED: MGM
 DRAFTED: JODI

SUMMARY OF LIGHTING LOAD CENTER: NO. 1

(ALL NEW LOADS)

LOAD CENTER TYPE 1A

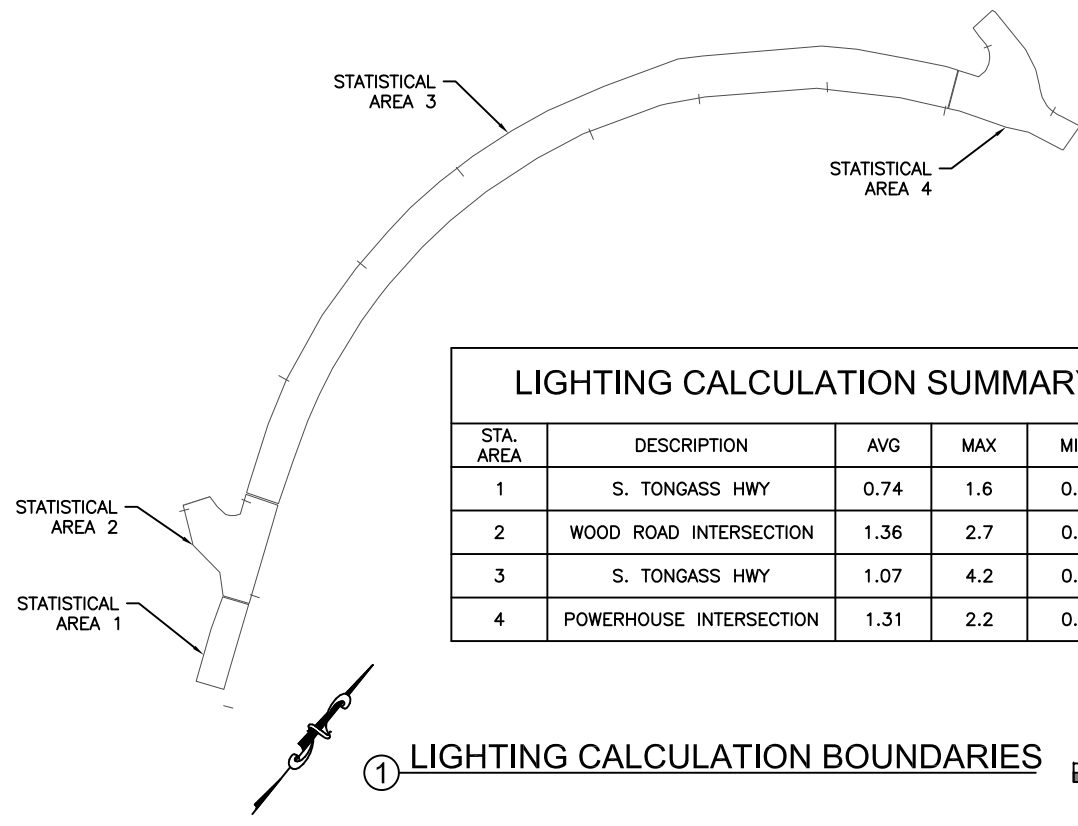
LOCATION DATA: STA. 394+38.99, 27.18'RT
 LOAD CENTER: NEW AT PAD 4
 POWER SOURCE: NEW UTILITY TRANSFORMER AT PAD 4
 PHOTOELECTRIC CONTROL: YES, MOUNTED TO LOAD CENTER

SERVICE VOLTAGE: 1 PHASE, 3 WIRE, 240V, 60HZ
 INTERRUPTING CAPACITY OF CIRCUIT BREAKERS--SERIES RATED: 10,000AIC
 PROVIDE METER SOCKET: YES
 SERVICE AMPS: 100A

MAIN BREAKER A: 240V, 2 POLE, 100A
 PANEL A RATING: 120/240V, 1 PHASE, 3 WIRE, 125A (MIN.)
 CONTACTOR: 240V, 2 POLE, 100A

LOAD PANEL A SUMMARY

CIRCUIT NUMBER	DESCRIPTION	KVA LOAD	BREAKER	
			AMPS	POLES
1,3	SPARE 2-POLE BREAKER	0.0	20	2
2	SPARE BREAKER	0.0	20	1
4	SPARE BREAKER	0.0	20	1
5	CONTRACTOR CONTROL BREAKER	0.0	15	1
5,7	SPARE 2-POLE BREAKER	0.0	20	2
6,8	STREET LIGHTING CIRCUIT #1	0.750	20	2
9,11	2-POLE BREAKER SPACE	-	-	2
10,12	STREET LIGHTING CIRCUIT #2	0.750	20	2
13,15	2-POLE BREAKER SPACE	-	-	2
14,16	SPARE 2-POLE BREAKER	0.0	20	2

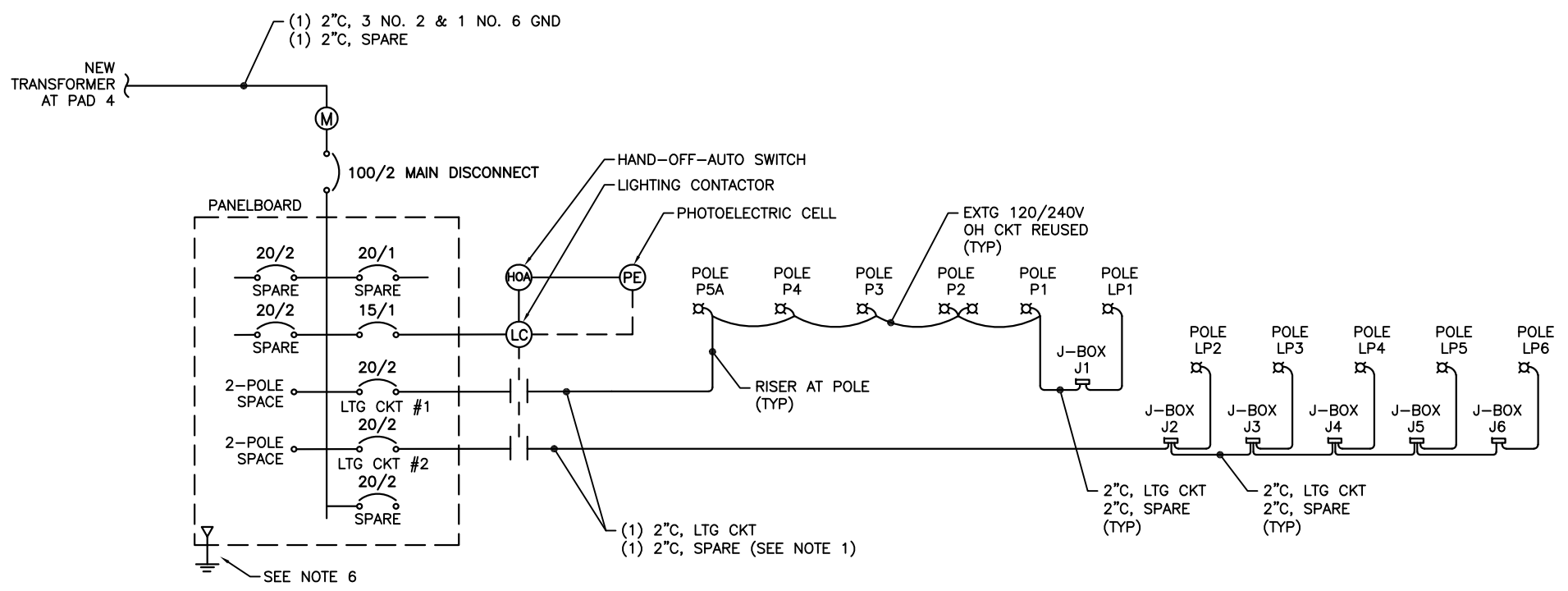


LIGHTING CALCULATION SUMMARY (fc)

STA. AREA	DESCRIPTION	AVG	MAX	MIN	AVG/MIN
1	S. TONGASS HWY	0.74	1.6	0.4	1.85
2	WOOD ROAD INTERSECTION	1.36	2.7	0.6	2.27
3	S. TONGASS HWY	1.07	4.2	0.2	5.35
4	POWERHOUSE INTERSECTION	1.31	2.2	0.8	1.64

- NOTES (APPLICABLE TO DETAIL 1):
- CALCULATIONS FOR ROADWAY BETWEEN INTERSECTIONS ARE IN FOOT CANDLES.
 - TABLE VALUES BASED ON IESNA RP-08-14 GUIDELINES FOR ROADWAY AND INTERSECTION LIGHTING.
 - RANGES ARE PER TABLE 12.1 OF RP-08 (ILLUMINANCE FOR INTERSECTIONS) AND ASSUMES 'COLLECTOR/LOCAL' FUNCTIONAL CLASSIFICATION AND BETWEEN 'LOW' AND 'MEDIUM' PEDESTRIAN AREA CLASSIFICATIONS.
 - CALCULATIONS MUST EXTEND THROUGH THE 'TRAFFIC CONFLICT AREA' AT THE INTERSECTION AS DEFINED BY RP-08.
 - MEET OR EXCEED THE PROVIDED LIGHT LEVELS WITHIN EACH SEGMENT OF THE PROJECT AREA. PROVIDE CALCULATIONS AS PART OF THE SUBMITTALS PROCESS.
 - CONTRACTOR SHALL PROVIDE TEMPORARY LIGHTING AS REQUIRED DURING PROJECT CONSTRUCTION. SEE KEYNOTE 18, SHEET U5 FOR MORE INFORMATION.
 - PROVIDE ROADWAY LIGHTING PER RP-08-14, 2013 EDITION.

① LIGHTING CALCULATION BOUNDARIES



② CONTROLLER SCHEMATIC

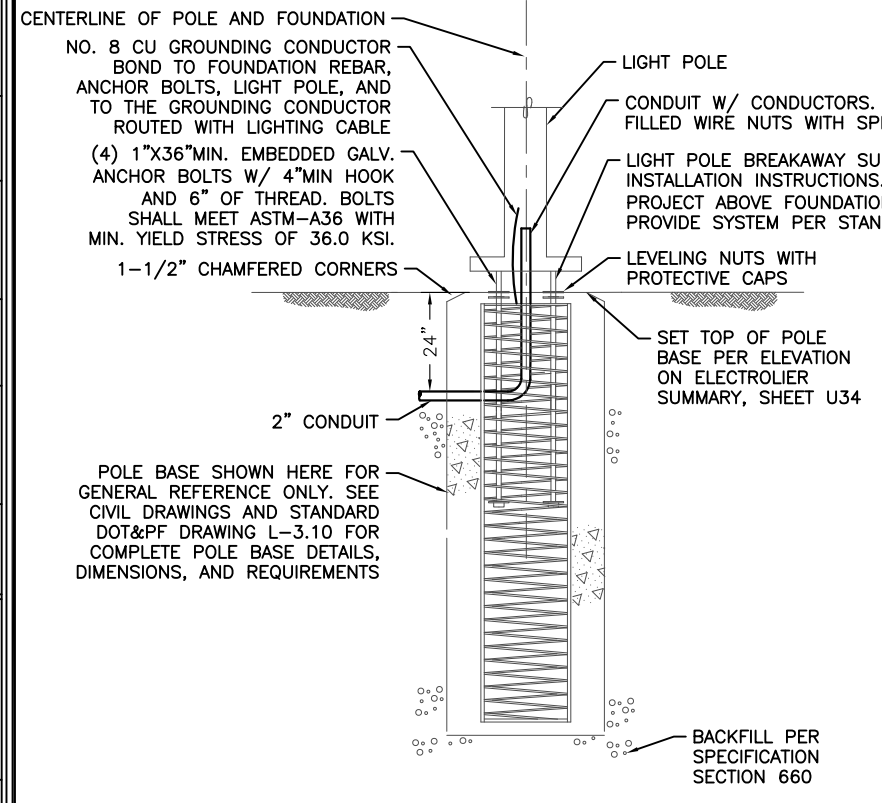
NO SCALE

- NOTES:
- STATION AND OFFSET INFORMATION GIVEN TO CENTER OF LOAD CENTER.
 - EXCAVATE AND BACKFILL 12" MIN ALL SIDES OF LOAD CENTER BASE.
 - SEE DOT&PF STANDARD DETAIL L-25-01.
 - PE CELL IS POWERED FROM CONTACTOR.

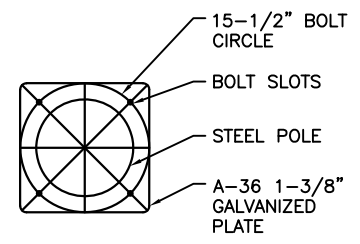
- NOTES (APPLICABLE TO DETAIL 2):
- PROVIDE NO. 8, 4-CONDUCTOR CABLES, WITH GROUND, TO EACH LIGHT FIXTURE. PROVIDE CIRCUIT SPLICES AT JUNCTION BOXES AS REQUIRED. RUN A SPARE CONDUIT INTO EACH LIGHT POLE BASE.
 - PROVIDE CIRCUIT LABELING AT ALL JUNCTION BOXES AND ACCESSIBLE SPICE POINTS.
 - PROVIDE ALL SPARE CONDUITS WITH PULLSTRINGS.
 - LABEL LOAD CENTER PANEL CIRCUITS.
 - NOT ALL DETAILS AND REQUIREMENTS FOR THE LIGHTING LOAD CENTER ARE NOTED IN THE PLANS AND SPECIFICATIONS. REFER TO ALASKA DOT&PF STANDARD DESIGN DRAWING L-25.01 & L-25.00 (2020 EDITION) FOR ADDITIONAL REQUIREMENTS OF THE TYPE 1A LIGHTING LOAD CENTER.
 - GROUND THE LOAD CENTER TO CONCRETE FOUNDATION REINFORCING PER CODE AND AS REQUIRED PER DRAWING L-25.01 (SEE NOTE 5 ABOVE). ESTABLISH NEUTRAL-TO-GROUND BOND AT PANEL, MAINTAIN N-G ISOLATION THEREAFTER.

PLANS DEVELOPED BY: MORRIS ENGINEERING GROUP, INC 2375 JORDAN AVE #7 JUNEAU, AK 99801 907-789-3350 AECL 1010		STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES 6860 GLACIER HIGHWAY, JUNEAU, AK 99801 (907) 465-1763 UTILITY RELOCATION FOR KETCHIKAN AREA BRIDGES LIGHTING LOAD CENTER SUMMARY, SCHEMATIC & CALCS.
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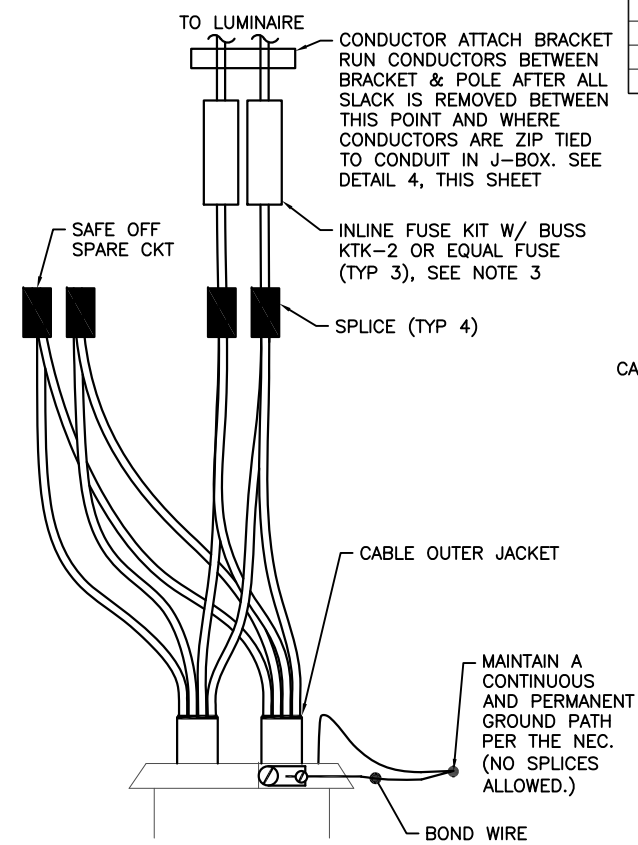
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	U36	45



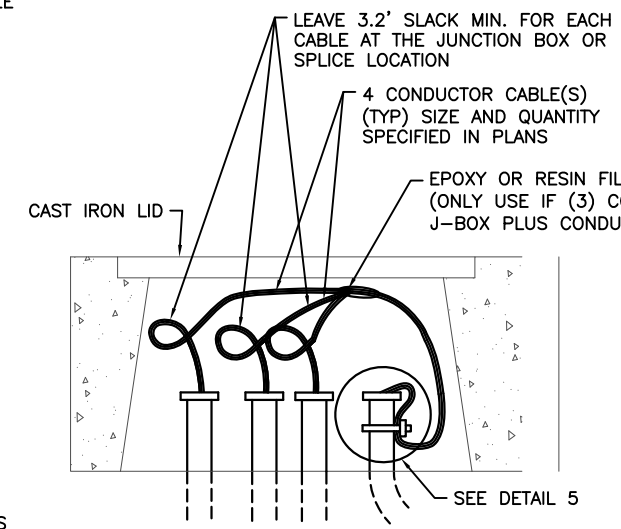
① POLE BASE FOUNDATION
DETAIL
NO SCALE



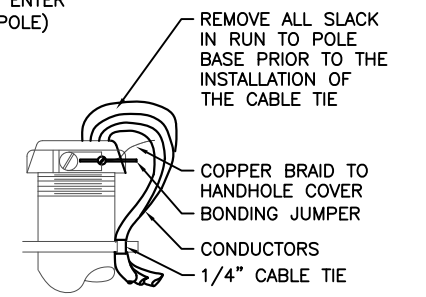
② BOLT CIRCLE DETAIL
NO SCALE



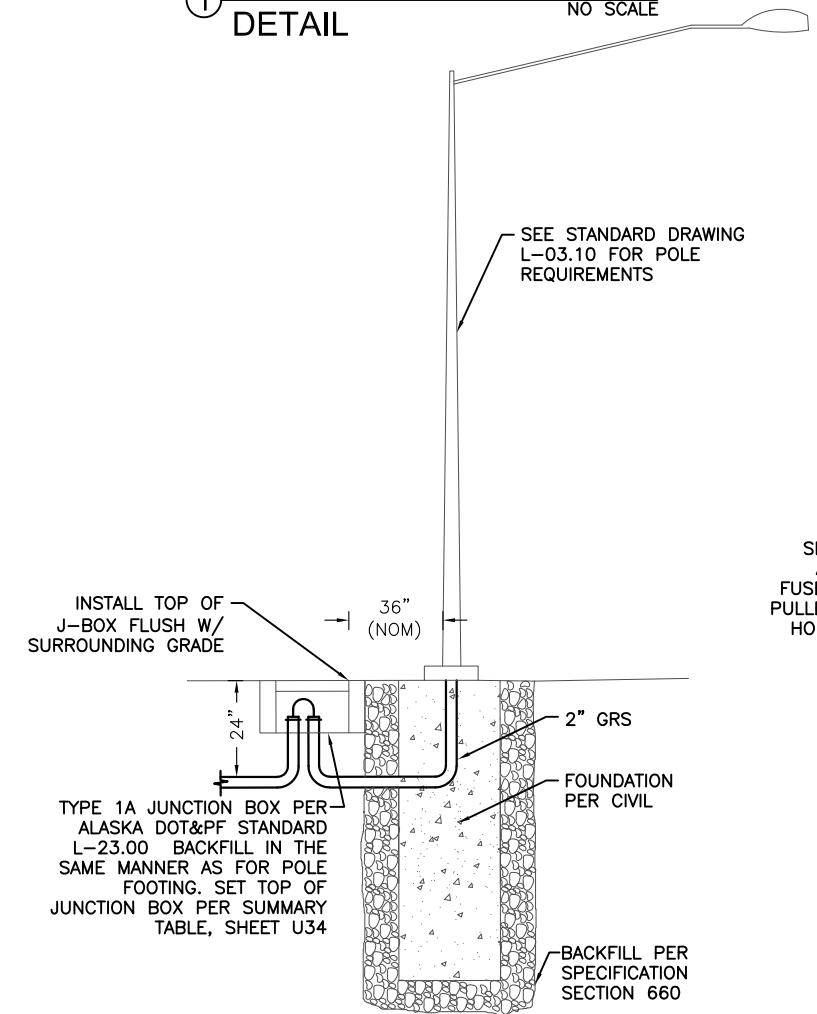
③ POLE WIRING DETAIL
NO SCALE



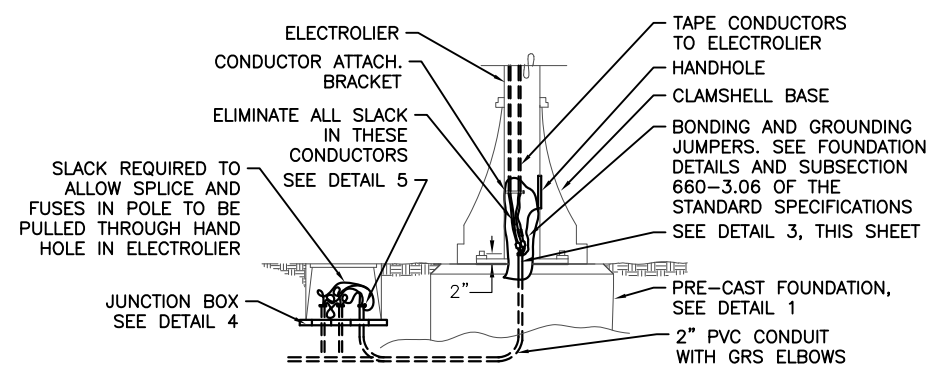
④ JUNCTION BOX
DETAIL
NO SCALE



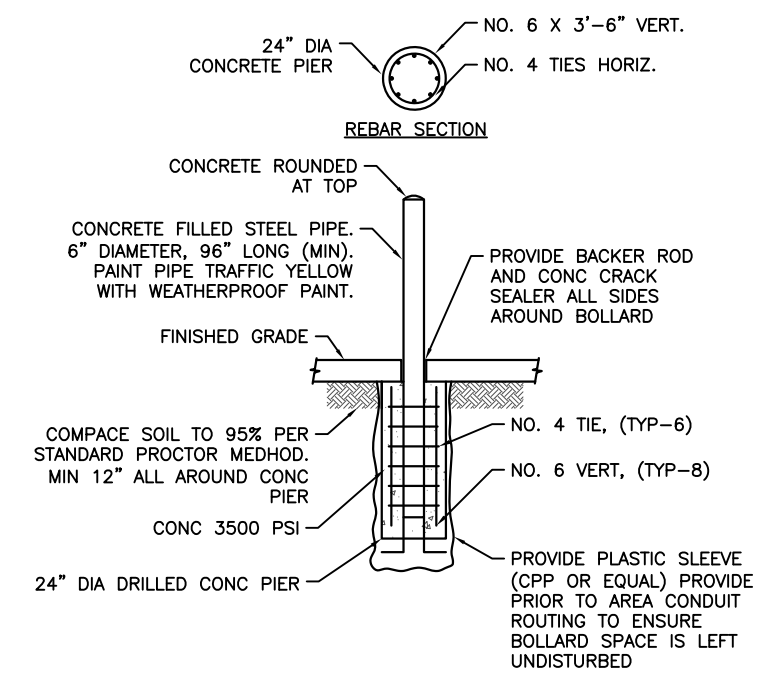
⑤ JUNCTION BOX GROUNDING
DETAIL
NO SCALE



⑥ ELECTROLIER MOUNTING
DETAIL
NO SCALE



⑦ LIGHTING SYSTEM POLE AND JUNCTION BOX
WIRING DETAIL
NO SCALE



⑧ CONCRETE BOLLARD DETAIL
AT PAD 6
NO SCALE

- SHEET NOTES:
- ALL SPLICES SHALL BE IN BASE OF POLE.
 - PROVIDE GROUNDING BUSHINGS ON CONDUIT. BOND GROUNDING CONDUCTOR ROUTED WITH LIGHTING CABLE TO GROUNDING BUSHINGS AND STEEL COVER, AND ROUTE TO LIGHT POLE BASE.
 - PROVIDE DOUBLE FUSED CONNECTOR KITS IN BASE OF POLE. SECTION NO. 1791-DF OR EQUAL. THE FUSES SHALL BE BUSS KTK-5 FAST ACTING DUAL FERRULE TYPE OR APPROVED EQUAL.
 - LOCATE THE LIGHT POLES AND JUNCTION BOXES WHERE SHOWN ON TABLES ON SHEET U34.
 - SIZE POLE WITH LUMINAIRE FOR 100 MPH SUSTAINED WINDS WITH GUSTS TO 120 MPH, EXPOSURE B (IBC 2003).
 - PROVIDE FUSE KITS IN EACH POLE BASE.
 - PROVIDE GROUNDING BUSHINGS ON CONDUIT.
 - SPLICE IN JUNCTION BOX ONLY WHEN CIRCUIT BRANCHES IN TWO DIRECTIONS (3 OR MORE CONDUIT PLUS CONDUIT TO LIGHT POLE). OTHERWISE SPLICE CABLES IN LIGHT POLE PER DETAIL 7. USE RESIN FILLED SPLICE KITS WHEN SPLICING IN JUNCTION BOXES.
 - BOND GROUNDING CONDUCTORS THAT ARE IN CONDUIT TO GROUNDING BUSHINGS AND TO JUNCTION BOX LID BONDING JUMPER.

PLANS DEVELOPED BY:
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JUNEAU, AK 99801
907-789-3350
AECL 1010



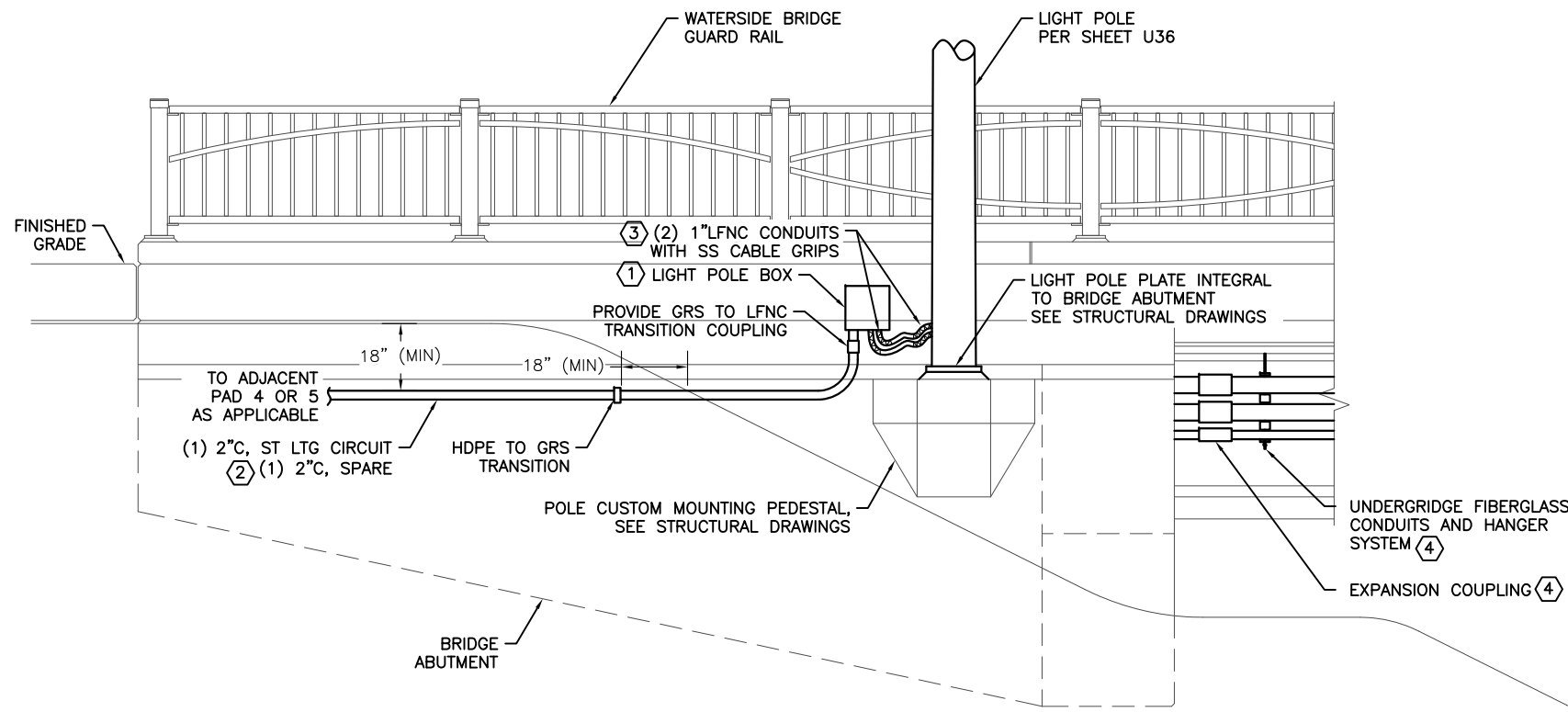
STATE OF ALASKA DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
6860 GLACIER HIGHWAY, JUNEAU, AK 99801
(907) 465-1763

UTILITY RELOCATION FOR
KETCHIKAN AREA BRIDGES

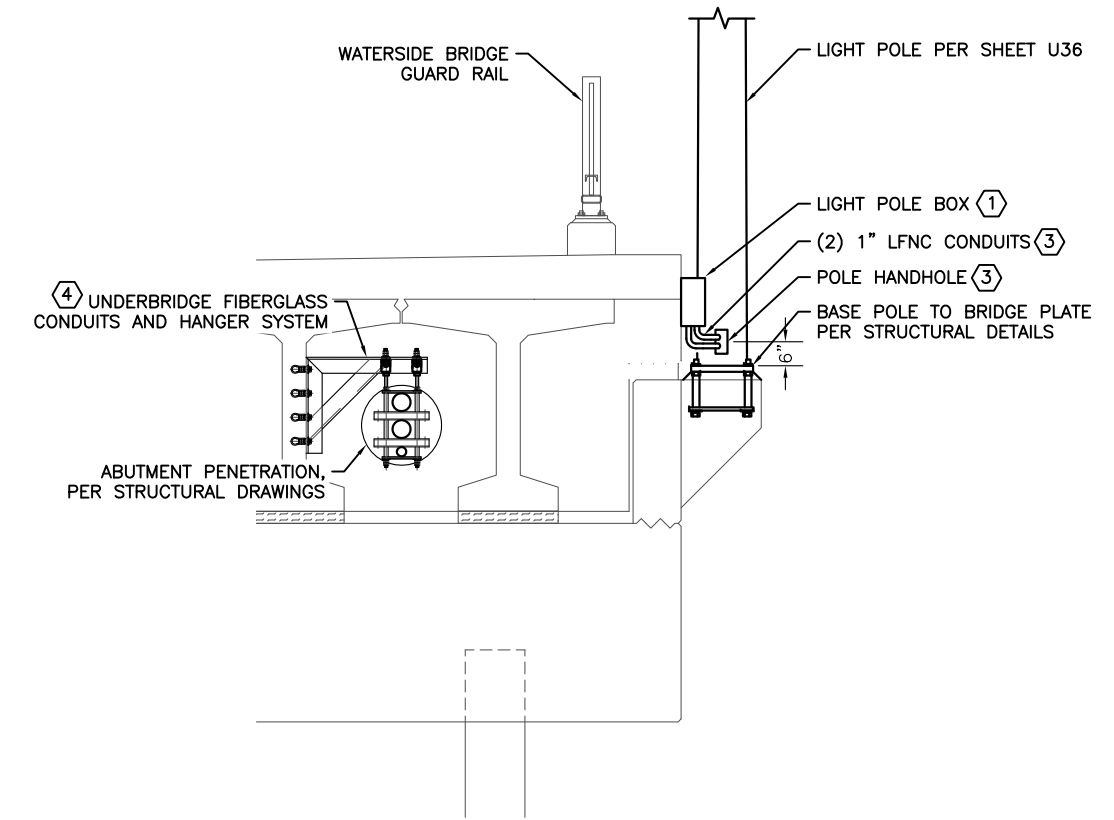
ELECTROLIER, JUNCTION BOX,
& BOLLARD DETAILS

FILE: Y:\02 state of ak\44 utility relocation design for ketchikan bridges\Working Drawings\ELECTROLIER & JUNCTION BOX DETAILS.dwg DATE: 8/6/2021 16:09 LAYOUT: U36 CHECKED: MGM DESIGNED: MGM DRAFTED: JODI

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	U37	45



① BRIDGE ELECTROLIER
(APPLIES TO POLES LP2 & LP3)



② BRIDGE ELECTROLIER - SECTION
(APPLIES TO POLES LP2 & LP3)

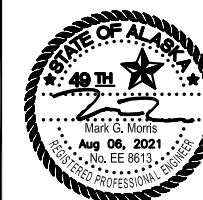
SHEET NOTES:

1. DETAILS ON THIS PAGE ARE TYPICAL FOR BOTH BRIDGE ELECTROLIERS.
2. COORDINATE ALL WORK WITH BRIDGE CONTRACTOR, CIVIL, AND STRUCTURAL DRAWINGS.

KEYNOTES:

- ① PROVIDE A SURFACE MOUNTED LIGHT POLE JUNCTION BOX ADJACENT TO POLE MOUNTING PEDESTAL. 12" X 12" X 6", NEMA 4X, STAINLESS STEEL 316 ENCLOSURE WITH HINGED LID. LOCATE LIGHT POLE FUSING, WITHIN THIS BOX. COORDINATE LOCATION WITH BRIDGE CONTRACTOR, MOUNT AS HIGH ABOVE ADJACENT SLOPED GRADE AS PRACTICAL. MOUNT TO CUT STAINLESS STEEL SUPPORT CHANNEL SEGMENTS ATTACHED TO THE ABUTMENT WALL.
- ② PROVIDE CONDUITS UNDERGROUND TO BOX FROM LAST LIGHT POLE JUNCTION BOX. TRANSITION UNDERGROUND CONDUITS HDPE TO GRS PRIOR TO EXITING THE SLOPE AS INDICTED.
- ③ PROVIDE LFNC CONDUIT FROM BOX ON ABUTMENT TO LIGHT POLE. TERMINATE CONDUITS ONTO POLE HANDHOLE LID. PROVIDE STRAIN RELIEF GRIPS FOR THE FLEX CONDUIT SEGMENTS, KELLUM GRIPS OR EQUAL, AT BOTH ENDS OF THE SEGMENTS.
- ④ UNDERBRIDGE FIBERGLASS CONDUITS AND HANGERS SHOWN HERE FOR GENERAL REFERENCE ONLY. INSTALLED IN STAGES PER SHEETS U7A-U7C. SEE SHEET U14 FOR HANGER SYSTEM DETAILS.

PLANS DEVELOPED BY:
MORRIS ENGINEERING
GROUP, INC
2375 JORDAN AVE #7
JUNEAU, AK 99801
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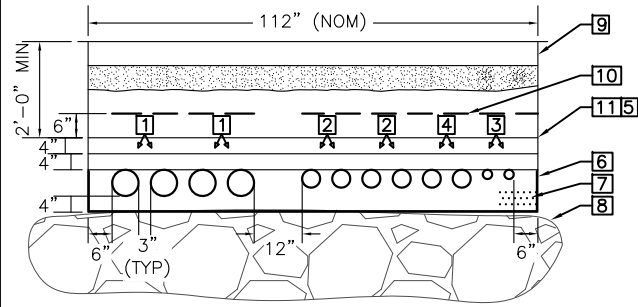
**UTILITY RELOCATION FOR
KETCHIKAN AREA BRIDGES**

**BRIDGE ELECTROLIER &
JUNCTION BOX DETAILS**

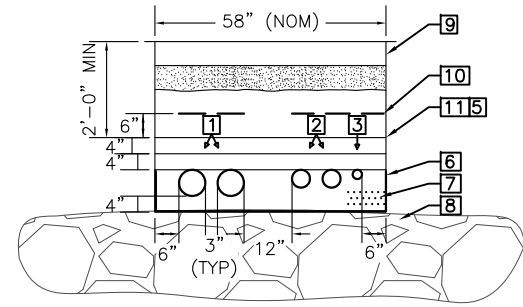
FILE: \\102 state of al\44 utility relocation design for ketchikan bridges\working drawings\BRIDGE ELECTROLIER & JUNCTION BOX DETAILS\DWG 7/26/2021 15:27 LAYOUT U37 DESIGNED MGM CHECKED MGM DRAFTED JODI

FILE: X:\02 state of ak\44 utility relocation design for ketchikan bridges\Working Drawings\TRENCH DETAILS.dwg
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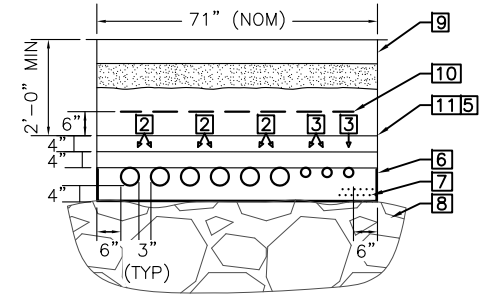
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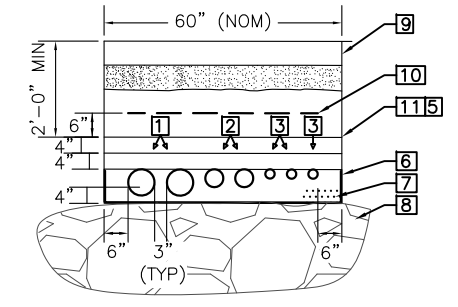
① TRENCH C1 DETAIL
NO SCALE



② TRENCH C2 DETAIL
NO SCALE



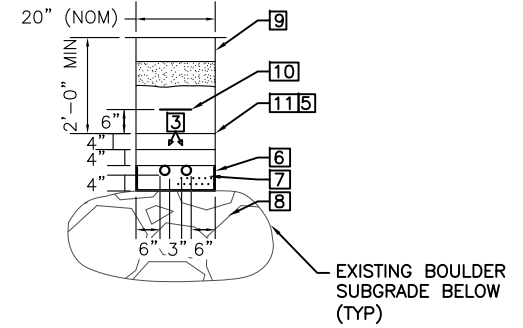
③ TRENCH C3 DETAIL
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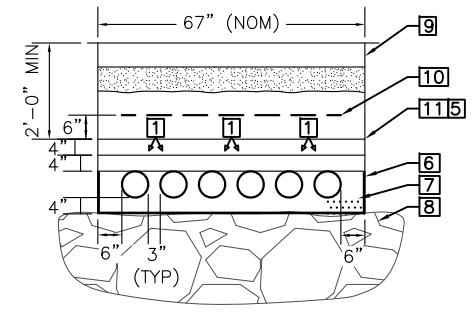
④ TRENCH C4 DETAIL
NO SCALE

- SHEET NOTES:
- ALL DIMENSIONS SHOWN ARE MINIMUM. TRENCH DETAILS ARE NOT TO SCALE. DO NOT SCALE FROM DETAILS.
 - INDIVIDUAL CONDUIT DIAMETERS (2", 4", 6") ARE NOT ACCURATELY SIZED ON THE TRENCH DETAILS. DETAILS ON THIS SHEET EMPHASIZE SPACING OF CONDUITS, NOT THE SIZE OF THE CONDUITS THEMSELVES.
 - SEE CIVIL SHEETS FOR TYPICAL SECTIONS UNDER PAVED AREAS, ROADWAY CROSS SECTIONS, ETC.
 - IN ALL CASES, MEDIUM VOLTAGE POWER CONDUITS (12.47KV & 34.5KV) IN TRENCH SHALL BE SEPARATED FROM ALL OTHER CONDUITS BY 12" MINIMUM.
 - THROUGHOUT THE SITE, CONDUITS CROSS AND SEPARATE FROM COMMON TRENCHES. SEE SITE PLANS FOR SPECIFIC LOCATIONS. CROSSING CONDUITS WILL REQUIRE SPECIAL CONSIDERATION TO ENSURE MINIMUM SEPARATIONS ARE MAINTAINED. ALL CONDUIT CROSSING POINTS SHALL BE DOCUMENTED IN THE AS-BUILTS.
 - SEE SITE PLANS FOR TRENCH DETAIL CALLOUTS.
 - CONDUIT ARRANGEMENTS MAY VARY FROM WHAT IS SHOWN. CONDUITS MAY BE MIRRORED WITHIN A TRENCH, MV CONDUITS MIRRORED, TELECOM CONDUITS MIRRORED, ETC. CONTRACTOR IS EXPECTED TO ARRANGE CONDUITS IN EACH TRENCH TO MINIMIZE CROSSING CONDUITS. TO MINIMIZE NUMBER OF TRENCHES NEEDED, ETC. IN ALL CASES, MINIMUM SEPARATIONS SHOWN MUST BE MAINTAINED.
 - SOME KEYNOTES ON SHEET U5 REFERENCE CABLES APPLICABLE TO THIS SHEET.

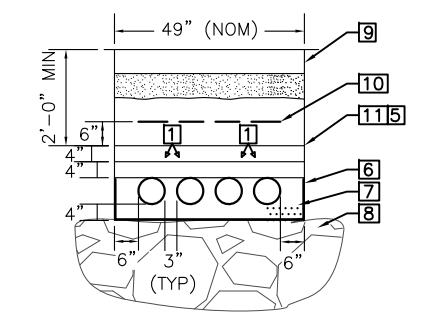
- SHEET KEYNOTES:
- ① 6" MEDIUM VOLTAGE POWER UTILITY CONDUITS OR SPARE(S).
 - ② 4" TELEPHONE & TELEVISION UTILITY CONDUITS OR SPARE(S).
 - ③ 2" STREET LIGHTING CONDUIT OR SPARE(S).
 - ④ 4" CUSTOMER SERVICE CONDUIT OR SPARE.
 - ⑤ 4" CONCRETE CAP. EXTEND 6" BEYOND CONDUIT WIDTH WITHIN THE TRENCH, BOTH SIDES, THE ENTIRE LENGTH OF THE TRENCH.
 - ⑥ PROVIDE TWO LAYERS OF HEAVY DUTY, COMMERCIAL GRADE FILTER FABRIC LINER ON BOTH SIDES AND THE BOTTOM OF THE CONDUIT TRENCH D-1 MATERIAL AREA.
 - ⑦ BEDDING PER CIVIL SPECS (COMPACTED D-1).
 - ⑧ REQUIRED CONDUIT DEPTH WILL LIKELY REQUIRE DRILLING/BLASTING BOULDERS.
 - ⑨ ROADWAY, SEE CIVIL SHEETS.
 - ⑩ DETECTABLE UNDERGROUND ELECTRICAL UTILITY MARKING TAPES (REEF TERRA TAPE OR SCOTCH SERIES 400 BARRICADE TAPE). RED TAPE OVER POWER & ORANGE TAPE OVER COMMUNICATIONS.
 - ⑪ SELECT MATERIAL, TYPE W, SEE CIVIL SHEETS.
 - ⑫ 2" MEDIUM VOLTAGE POWER UTILITY CONDUITS OR SPARE(S).



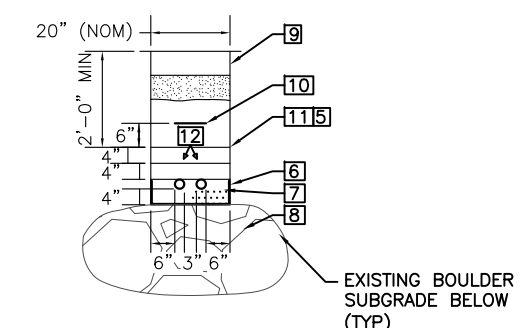
⑤ TRENCH L1 DETAIL
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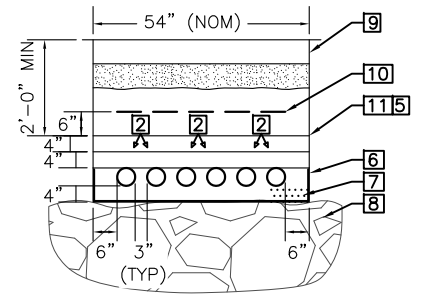
⑥ TRENCH P1 DETAIL
NO SCALE



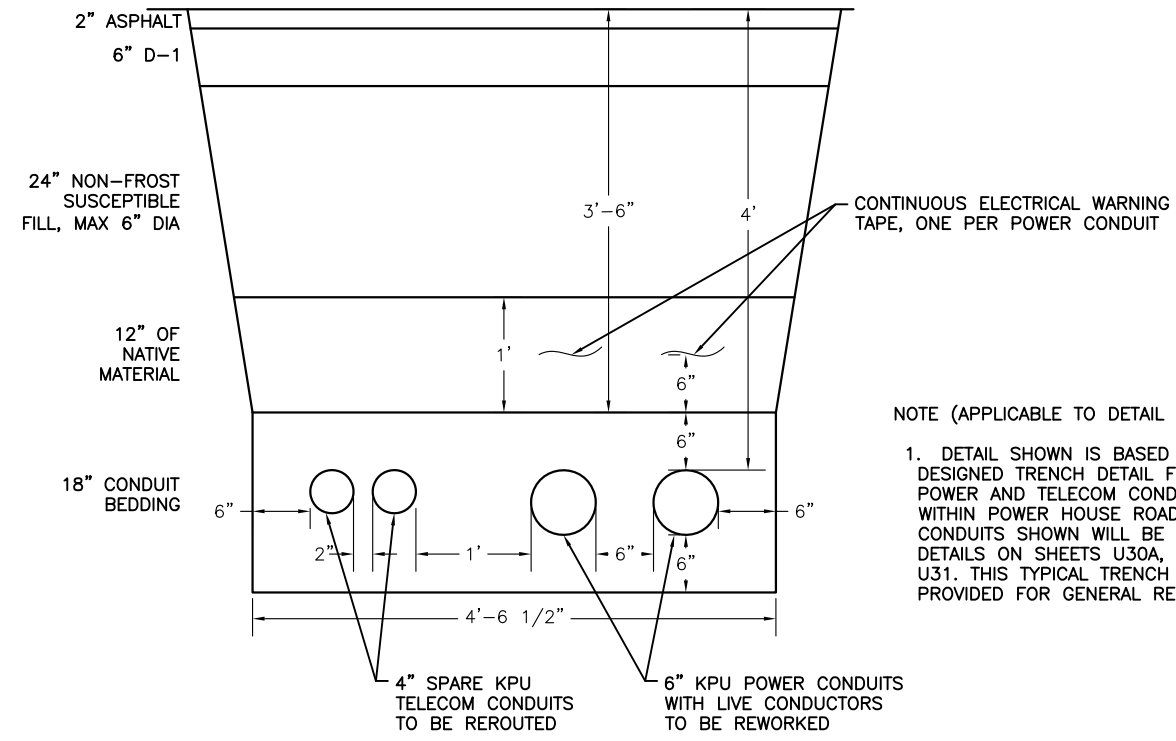
⑦ TRENCH P2 DETAIL
NO SCALE



⑧ TRENCH P3 DETAIL
NO SCALE



⑨ TRENCH T1 DETAIL
NO SCALE

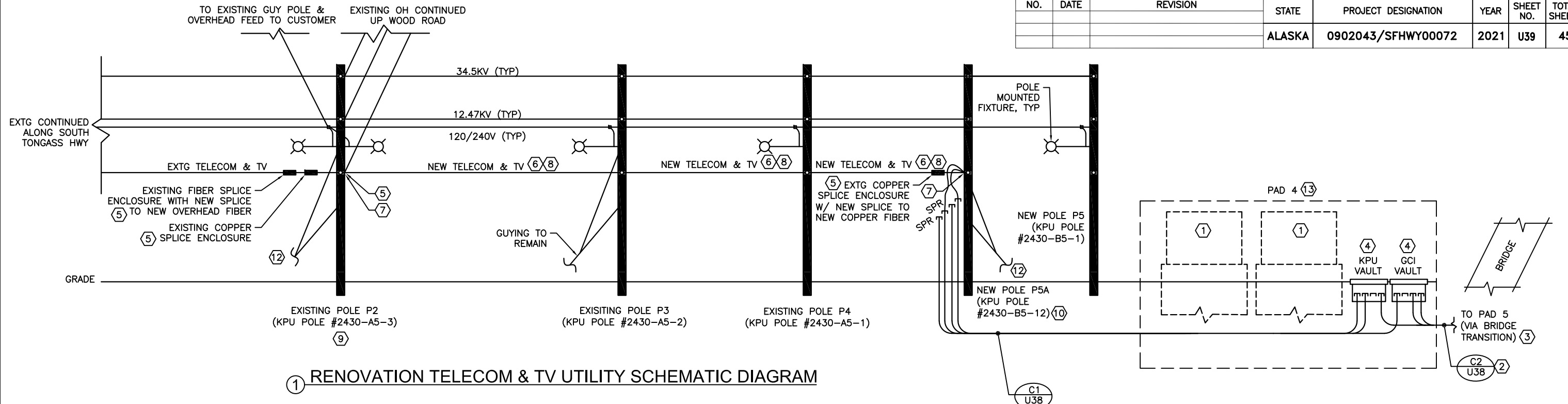


⑩ EXISTING POWERHOUSE ROADWAY TRENCH DETAIL
NO SCALE

NOTE (APPLICABLE TO DETAIL 10):
 1. DETAIL SHOWN IS BASED ON THE DESIGNED TRENCH DETAIL FOR EXISTING POWER AND TELECOM CONDUITS THAT RUN WITHIN POWER HOUSE ROAD. THE FOUR CONDUITS SHOWN WILL BE REWORKED PER DETAILS ON SHEETS U30A, U30B, AND U31. THIS TYPICAL TRENCH DETAIL IS PROVIDED FOR GENERAL REFERENCE ONLY.

PLANS DEVELOPED BY: MORRIS ENGINEERING GROUP, INC 2375 JORDAN AVE #7 JUNEAU, AK 99801 907-789-3350 AECL 1010		STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES 6860 GLACIER HIGHWAY, JUNEAU, AK 99801 (907) 465-1763 UTILITY RELOCATION FOR KETCHIKAN AREA BRIDGES TRENCH DETAILS
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	U39	45

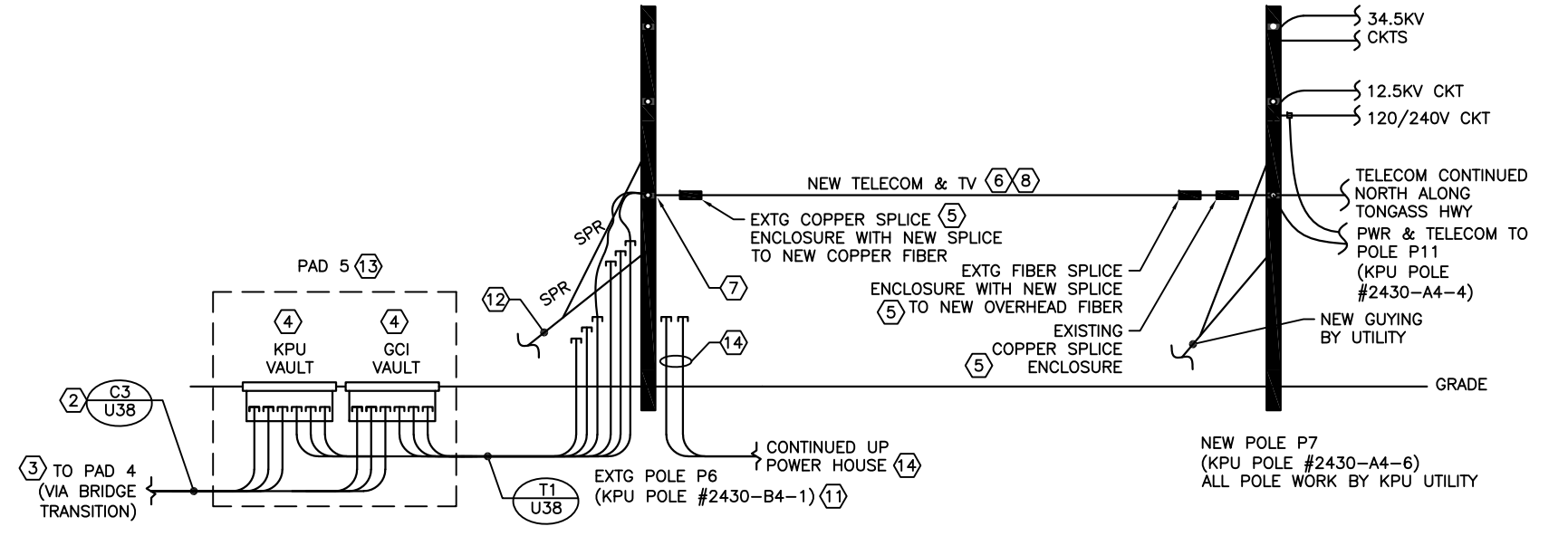


SHEET NOTES:

- SEE SHEET U15 FOR DEMOLITION UTILITY SCHEMATIC.
- THIS SCHEMATIC DEPICTS REMAINING EXISTING OVERHEAD UTILITY WORK AND NEW UNDERGROUND TELECOM AND TV DISTRIBUTION WORK ALONG SOUTH TONGASS HIGHWAY WITHIN THE PROJECT AREA. SEE SITE PLANS FOR MORE SPECIFICS AND EXTENTS.
- THIS SCHEMATIC IS A GENERAL REFERENCE ONLY AND SHOULD BE USED AS SUCH. VERIFY ONSITE ALL EXISTING POLE ELEMENTS, NOT ALL ELEMENTS ARE SHOWN.
- NEARLY ALL NEW TELECOM AND TV CONDUIT TRENCHES HAVE ACCOMPANYING POWER CONDUITS WITHIN THE SAME TRENCH. SEE SITE PLANS FOR SPECIFIC TRENCH LOCATIONS, AND SHEET U38 FOR TRENCH PROFILES.
- TELECOMMUNICATIONS AND TV UNDERGROUND CONDUCTORS AND CABLES NOT SHOWN ON THIS SHEET. ALL NEW TELECOM CONDUCTOR AND CABLE FURNISHED AND INSTALLED BY CONTRACTOR.
- TELECOM AND TV CABLES AND CONDUITS AT NEW VAULTS TO BE LABELED. SEE SHEET U41 FOR LABELING REQUIREMENTS.
- PROVIDE UTILITY CABLE SLACK CABLE COILS PER COIL TABLE, THIS SHEET.

KEYNOTES:

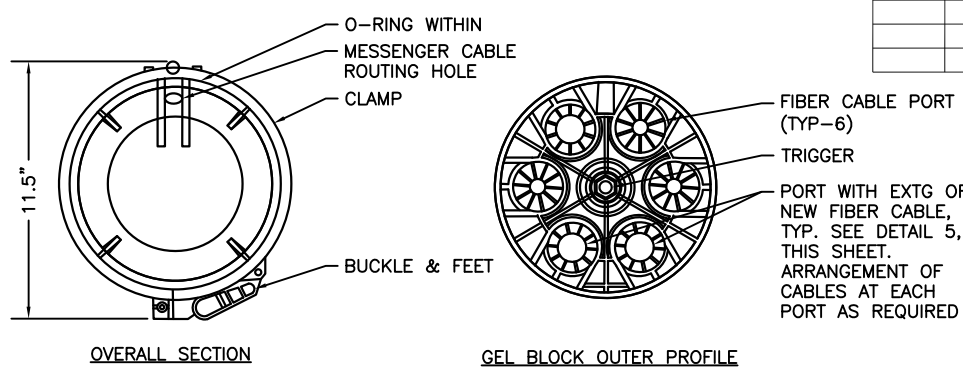
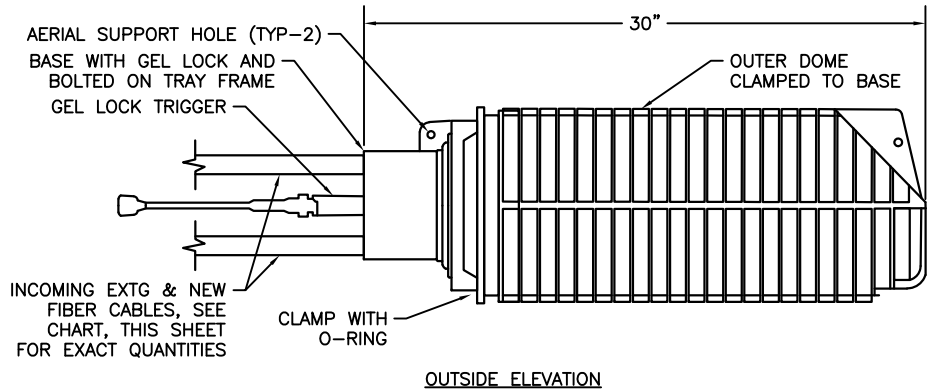
- UTILITY PAD HAS POWER AND TELECOM AND TV EQUIPMENT. POWER EQUIPMENT OUTLINES SHOWN FOR GENERAL REFERENCE ONLY. SEE RENOVATION POWER UTILITY SCHEMATIC ON SHEET U16 FOR ADJACENT POWER UTILITY WORK.
- CONDUITS TRANSITION FROM ONE COMMON TRENCH PROFILE TO ANOTHER BETWEEN END POINTS. SEE SITE PLANS FOR MORE DETAILS.
- CONDUITS SPLIT INTO SEPARATE BAYS IN ROUTING ACROSS UNDERSIDE OF BRIDGE. SEE SHEETS U7A-U7C AND U14 FOR BRIDGE DETAILS.
- SEE SHEET U41 FOR VAULT DETAIL.
- KPU TELECOM FIBER SPLICES TO OCCUR AT EXISTING SPLICE ENCLOSURES AT POLES P2 AND P7. COPPER SPLICES TO OCCUR AT EXISTING ENCLOSURES AT POLES P5A AND P6. CABLE SPLICES, TERMINATIONS, AND TESTING BY CONTRACTOR. COORDINATE WITH UTILITY AS REQUIRED.
- PROVIDE NEW FIBER, COPPER TO REMAIN, KPU TELECOM OVERHEAD. SEE DETAIL 1, SHEET U41 FOR DETAILS.
- GCI TELEVISION CABLE TO SPLICES TO OCCUR AT POLES P2, P5A, P6, AND P7. SPLICES BY GCI. COORDINATE AS REQUIRED.
- PROVIDE NEW TV COAXIAL CABLE OVERHEAD. SEE DETAIL 1, SHEET U41 FOR DETAILS.
- RENOVATED OVERHEAD AT EXISTING POLE P2 PER DETAILS ON SHEET U19.
- NEW OVERHEAD AT NEW POLE P5A PER DETAILS ON SHEET U21.
- RENOVATED OVERHEAD AT EXISTING POLE P6 PER DETAILS ON SHEETS U15 AND U16.
- PROVIDE NEW GUYING FOR POLE. SEE POLE SPECIFIC DETAILS FOR REQUIREMENTS.
- SEE ENLARGED PAD DETAILS ON SHEET U11 (PAD 4) AND SHEET U12 (PAD 5) FOR LAYOUT INFORMATION.
- 4" TELECOM RISERS (SPARE) RUN UNDERGROUND UP POWERHOUSE ROAD. CONDUITS TO BE REWORKED DURING POWERHOUSE VAULT INSTALLATION WORK. SEE SHEET U18 FOR MORE INFORMATION. POWER CONDUITS TO BE ABANDONED IN PLACE, TELECOM TO REMAIN AS SPARES.



FILE: Y:\02 state of al\44 utility relocation design for ketchikan bridges\Working Drawings\USER DRAWING - TV.dwg
 DATE: 8/6/2021 16:09 LAYOUT U39
 DESIGNED: MGM
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 DRAFTED: MADJA

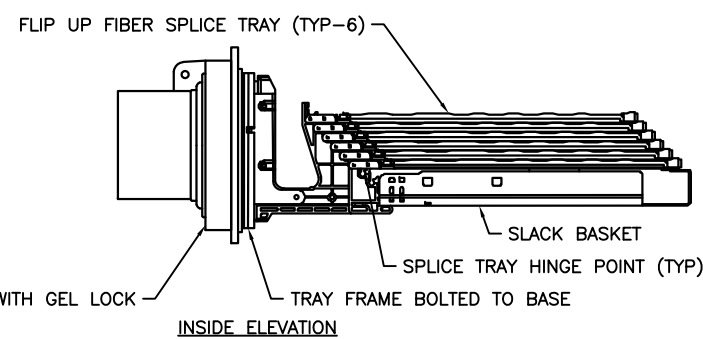
PLANS DEVELOPED BY: MORRIS ENGINEERING GROUP, INC. 2375 JORDAN AVE #7 JUNEAU, AK 99801 907-789-3350 AECL 1010		STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES 6860 GLACIER HIGHWAY, JUNEAU, AK 99801 (907) 465-1763 UTILITY RELOCATION FOR KETCHIKAN AREA BRIDGES RENOVATION TELECOM & TV UTILITY SCHEMATIC DIAGRAM
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	U40	45



① FIBER SPLICE ENCLOSURE END CROSS SECTIONS
NOT TO SCALE

- GENERAL COPPER AND FIBER SPLICING NOTES:
- REFER TO SPECIFICATION SECTION 680 FOR COMPLETE REQUIREMENTS OF FIBER CABLE SPLICING THIS INCLUDES SYSTEM INSTALLER QUALIFICATIONS AND CABLE TESTING AND VERIFICATION REQUIREMENTS.
 - KPU TELECOMMUNICATION UTILITY WILL PROVIDE NO PHYSICAL WORK. HOWEVER, KPU WILL BE INVOLVED AND HAVE FINAL APPROVAL FOR ALL TELECOMMUNICATION (FIBER AND COPPER SYSTEM) RELATED PROJECT DECISIONS. THEY WILL BE INCLUDED IN ALL QUESTIONS & ANSWERS (ASIS, RFIs, CPRs, COs) DESIGN INTENT CLARIFICATIONS, SUBMITTAL REVIEWS, ONSITE AND TELECONFERENCE MEETINGS, AND WILL REVIEW AND APPROVE ALL TESTING AND PERFORMANCE CHECKOUT PROCESSES. SEE SHEET U5 FOR KPU TELECOM UTILITY CONTACT INFORMATION.
 - ALL FIBER AND COPPER CABLE PLANT INSTALLATION WORK INCLUDING SPLICING, CABLE MANAGEMENT, GROUNDING & BONDING, ETC. SHALL ADHERE TO RUS BULLETIN 1753F-201 AND 1753F-401 AS APPLICABLE, AS WELL AS MANUFACTURER INSTALLATION INSTRUCTIONS, AND ESTABLISHED TELECOMMUNICATION INDUSTRY BEST PRACTICES.
 - SEE DETAIL 5, THIS SHEET, FOR EXACT QUANTITIES OF EXISTING CABLES AND NEW CABLES TO BE SPLICED WITHIN EACH EXISTING COPPER AND FIBER SPLICE ENCLOSURE. ALL ENCLOSURES USED ON THIS PROJECT ARE EXISTING.
 - THE EXISTING COPPER AND FIBER SPLICE ENCLOSURES, AND AERIAL COPPER AND FIBER CABLES ARE AS NOTED BELOW. VERIFY EXACT ARRANGEMENTS WITH KPU TELECOM PRIOR TO WORK AND TO DETERMINE IF ANY REPLACEMENT OR ADDITIONAL COMPONENTS ARE REQUIRED:
 - EXISTING FIBER SPLICE ENCLOSURES: COMMSCOPE #FOSC450-D6-6-NT-0-T6V
 - EXISTING FIBER SPLICE TRAYS: COMMSCOPE #FOSC-ACC-D-TRAY-72-KIT
 - EXISTING COPPER SPLICE ENCLOSURES: PREFORMED LINE PRODUCTS ARMADILLO 6.5 STAINLESS STEEL KIT #8000626.
 - EXISTING AERIAL FIBER CABLES: SEE DETAIL 5, THIS SHEET.
 - EXISTING AERIAL COPPER CABLES: SEE DETAIL 5, THIS SHEET.
 - THE EXISTING COPPER PLANT SPLICE ENCLOSURES ARE PRESSURIZED. THE EXISTING ENCLOSURES SHALL BE PROPERLY SEALED AND RE-PRESSURIZED AND TESTED FOR LEAKS. ALL ENCLOSURES USED ON THIS PROJECT ARE EXISTING.
 - ALL FIBER SPLICING WORK SHALL OCCUR AT GRADE UTILIZING THE EXISTING SLACK LOOPS ON THE POLES TO LOWER THE FIBER SPLICE ENCLOSURES TO GRADE. ALL COPPER SPLICING WORK SHALL OCCUR AT THE POLES ABOVEGRADE UTILIZING A BUCKET TRUCK OR EQUAL FOR ACCESS. PROTECT ALL EXPOSED CABLE SPLICES AND OPENED SPLICE ENCLOSURES FROM WEATHER AND DEBRIS WHEN SPLICING VIA TEMPORARY SHELTERS, ETC. AS REQUIRED AND PER STANDARD INDUSTRY PRACTICE.
 - MESSENGER CABLES WILL BE REUSED WHERE POSSIBLE, REPLACED AS NEEDED. DELASH AND RELASH TO EXISTING CABLES, LASH TO NEW CABLES, AND SECURE MESSENGERS TO POLES VIA APPROVED HARDWARE.
 - GROUNDING TO OCCUR AT ALL APPLICABLE POLES, EXISTING GROUNDING TO BE REUSED WHERE POSSIBLE. BONDING IS REQUIRED AT ALL COPPER SPLICE ENCLOSURES AND SHALL BE TESTED PER RUS 1753F-201 STANDARD.
 - ALL COPPER AND FIBER SPLICES SHALL BE AERIAL, NO BURIED SPLICES. ALL SPLICE WORK TO OCCUR IN THE EXISTING SPLICE ENCLOSURES.
 - NEW FIBER CABLE SHALL BE SINGLE MODE, 288-STRAND, LOOSE TUBE, ARMORER CABLE SUITED FOR OUTDOOR INSTALLATIONS (AERIAL & U/G DUCT). SUPERIOR ESSEX #12288310Y OR EQUAL.
 - NEW COPPER CABLE SHALL BE SHIELDED, 24 AWG, 400-PAIR, PRESSURIZED CABLE SUITABLE FOR OUTDOOR INSTALLATIONS (AERIAL & U/G DUCT). SUPERIOR ESSEX #01-112-40 OR EQUAL.

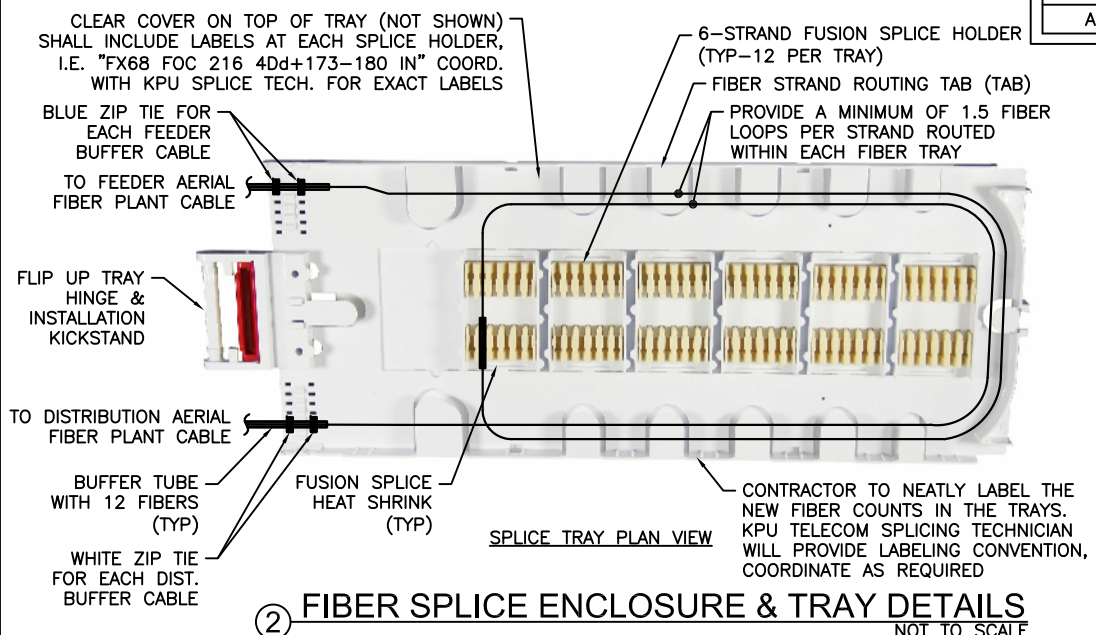


POLE P2 FIBER SPLICE ENCLOSURE NOTES			
CABLE ID	STRANDS		CABLE ID
A	145-172	SPLICED TO	B
A	1-144	SPLICED TO	C
A	173-216	SPLICED TO	D

POLE P7 FIBER SPLICE ENCLOSURE NOTES			
CABLE ID	STRANDS		CABLE ID
A	109-136	SPLICED TO	B
A	137-140	SPLICED TO	C
A	1-108	SPLICED TO	D
A	141-144	SPLICED TO	D

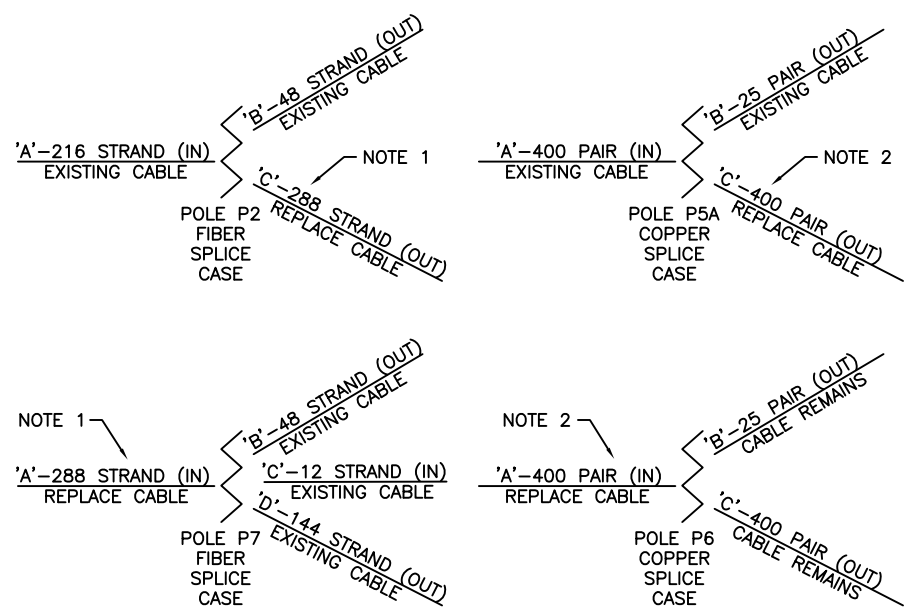
POLE P5A COPPER SPLICE ENCLOSURE NOTES			
CABLE ID	STRANDS		CABLE ID
A	178-189	SPLICED TO	B
A	1-177	SPLICED TO	C
A	190-400	SPLICED TO	C

POLE P6 COPPER SPLICE ENCLOSURE NOTES			
CABLE ID	STRANDS		CABLE ID
A	178-189	SPLICED TO	B
A	1-177	SPLICED TO	C
A	190-400	SPLICED TO	C



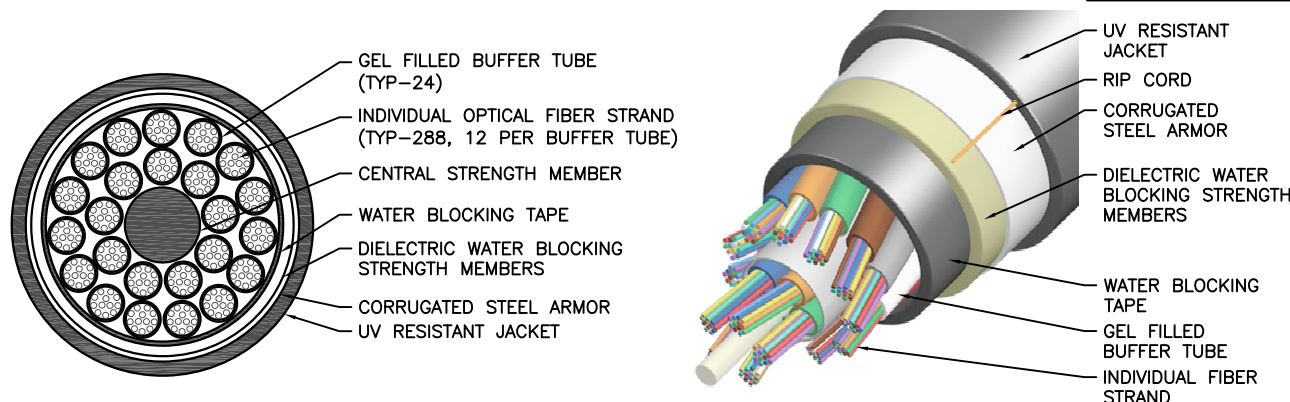
② FIBER SPLICE ENCLOSURE & TRAY DETAILS
NOT TO SCALE

NOTE: SPLICE TRAY IS DEPICTED WITH A SINGLE EXISTING TO NEW STRAND SPLICE. THERE WILL BE MANY SPLICES PER TRAY. NEATLY TRAIN AND ORGANIZE SPLICES AND PERFORM ALL NEW SPLICING WORK PER INDUSTRY STANDARDS, KPU TELECOM STANDARDS, AND APPLICABLE RUS BULLETINS.



- DETAIL 5 NOTES:
- REPLACE THE 216-STRAND TETHERED FIBER CABLE WITH NEW 288-STRAND FIBER. SEE NOTE 11. CABLE SHALL BE RAN CONTINUOUS WITH NO SPLICES BETWEEN THE EXISTING AERIAL SPLICE ENCLOSURES.
 - REPLACE THE 400-PAIR COPPER CABLE WITH NEW 400-PAIR CABLE. SEE NOTE 11. CABLE SHALL BE RAN CONTINUOUS WITH NO SPLICES BETWEEN THE EXISTING AERIAL SPLICE ENCLOSURES.
 - EXTG 216-STRAND FIBER IS CORNING FLEXPAP TETHERED.
 - EXTG 48-STRAND FIBER IS CORNING FLEXPAP TETHERED.
 - EXTG 12-STRAND FIBER IS SUPERIOR ESSEX #120123T01.
 - EXTG 144-STRAND FIBER IS SUPERIOR ESSEX #121443T01.
 - EXTG 400-PAIR COPPER CABLE IS SUPERIOR ESSEX #01-112-40.
 - EXTG 25-PAIR COPPER CABLE IS SUPERIOR ESSEX #01-097-40.
 - STORE ALL SPARE FIBER STRANDS WITHIN SPLICE BASKETS PER MANUFACTURER INSTRUCTIONS. STORE ALL SPARE COPPER PAIRS WITHIN SPLICE ENCLOSURES PER MANUFACTURER INSTRUCTIONS.

⑤ TELECOM SPLICING INSTRUCTIONS



③ FIBER CABLE CROSS SECTION
NOT TO SCALE

④ FIBER CABLE ISOMETRIC

- GENERAL FIBER CABLE PREP & SPLICE NOTES (APPLICABLE TO DETAILS 3 & 4):
- SEE THE GENERAL SPLICING NOTES ON THIS SHEET FOR ADDITIONAL APPLICATION NOTES.
 - SUGGESTED STORAGE LENGTH FOR EACH BUFFER TUBE WITHIN THE FIBER SPLICE ENCLOSURE SLACK BASKET: 110 INCHES.
 - SUGGESTED STRENGTH MEMBER CUT LENGTH FOR MOUNTING WITHIN THE FIBER SPLICE ENCLOSURE BASE ASSEMBLY: 2.5 INCHES.
 - PROVIDE A MINIMUM OF 1.5 LOOPS OF INDIVIDUAL FIBER STRANDS WITHIN EACH SPLICE TRAY IN THE FIBER SPLICE ENCLOSURE.
 - FIBER CABLES HAVE MANY LAYERS AND IMPORTANT INTERNAL ELEMENTS, AS INDICATED BY DETAILS 3 AND 4 ON THIS SHEET. FIBER CABLES SHALL BE CAREFULLY CUT BACK, LAYERS TRIMMED, BUFFER TUBES EXPOSED, AND FIBER STRANDS CUT, PREPPED, ROUTED, AND SPLICED PER MANUFACTURER WRITTEN INSTRUCTIONS, STANDARD INDUSTRY PRACTICE, AND APPLICABLE RUS BULLETINS.
 - EXACT FIBER CABLE CONSTRUCTION, DIAMETER, AND INTERNAL ARRANGEMENT MAY DIFFER FROM WHAT IS SHOWN ON THIS SHEET. REFER TO MANUFACTURER INSTRUCTIONS.

PLANS DEVELOPED BY:
MORRIS ENGINEERING GROUP, INC
2375 JORDAN AVE #7
JUNEAU, AK 99801
907-789-3350
AECL 1010



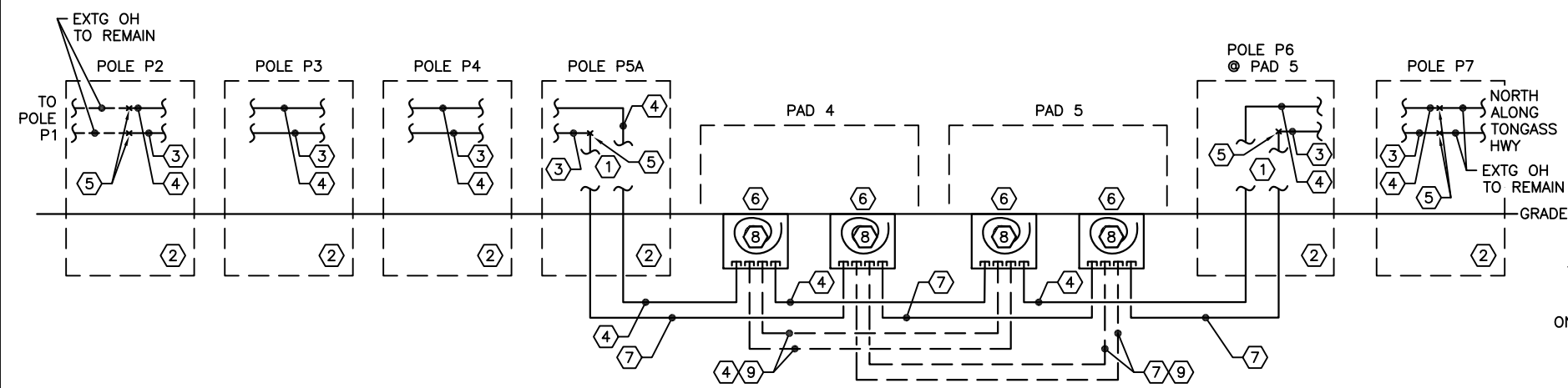
STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
6860 GLACIER HIGHWAY, JUNEAU, AK 99801
(907) 465-1763

UTILITY RELOCATION FOR KETCHIKAN AREA BRIDGES

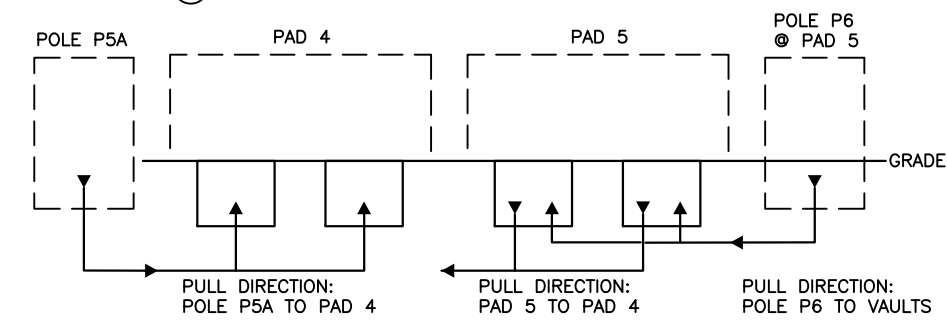
FIBER CABLE SPLICE DETAILS

FILE: Y:\02 state of al\44 utility relocation design for ketchikan bridges\Working Drawings\U40 TELECOM & TV UTILITY VAULT DETAIL.dwg DATE: 8/6/2021 16:08 LAYOUT: U40 DESIGNED: MCM CHECKED: MCM DRAFTED: JODI

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0902043/SFHWHY00072	2021	U41	45



① TELECOM & TV CIRCUIT DIAGRAM



② TELECOM & TV PULLING DIAGRAM

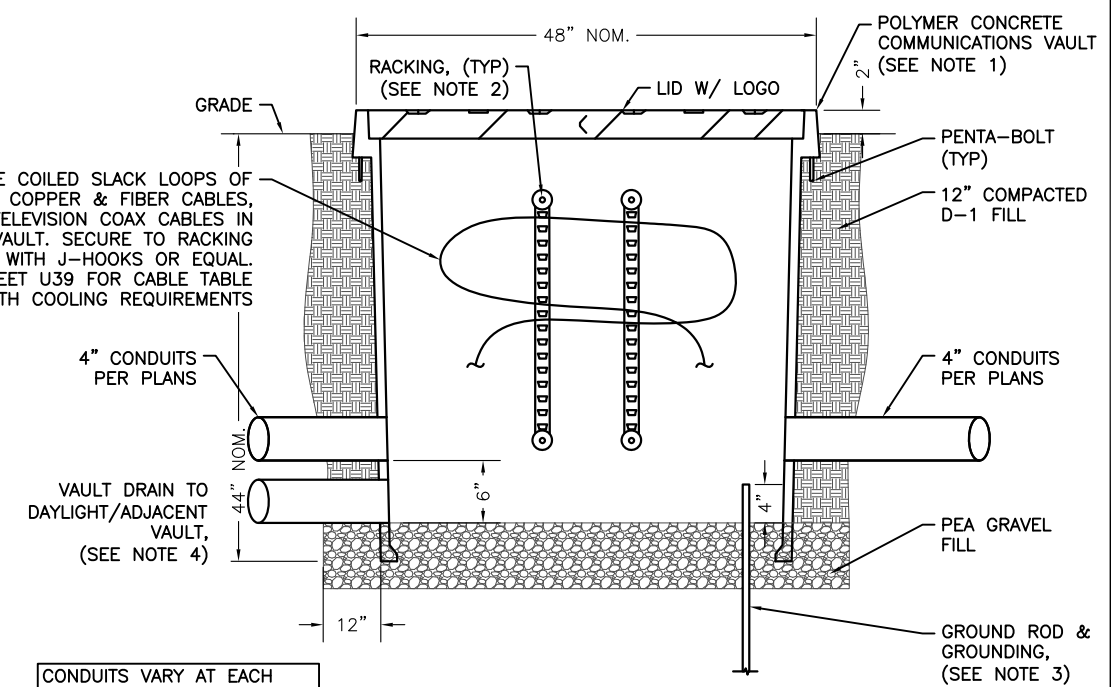
NOTES (APPLICABLE TO DETAIL 2):

- PULLING DIRECTIONS SHOWN HERE PROVE TO PUT LESS STRESS ON CABLES AND CONDUIT. HOWEVER, OPPOSITE DIRECTIONS IS WITHIN LIMITS AND MAY BE UTILIZED AT CONTRACTOR'S OPTION.
- RECOMMENDED PULLING DIRECTION FOR TELECOM AND TV CABLES ARE SHOWN HERE. ASSUMPTIONS USED IN PULLING CALCS INCLUDE:
 - COEFFICIENT OF FRICTION: 0.35
 - AMPLE LUBRICATION USED (SEE NOTES 2,3,4)
 - BACK TENSION: 100 POUNDS
 - 4" SCHEDULE 80 MIN I.D.: 3.746 INCHES
 - 2" SCHEDULE 80 MIN I.D.: 1.887 INCHES
 - MAX ALLOWABLE CABLE TENSION: 600 LBS
 - MAX ALLOWABLE SIDEWALL PRESSURE: 500 POUNDS/FT
 - CONDUIT ELBOW RADII: 24 INCHES (MINIMUM)
- PROVIDE HDP CONDUITS THROUGHOUT, HDPE PER SHEET U18 REQUIREMENTS.
- SEE SHEET U18, DETAIL 1, NOTES 2-5 FOR ADDITIONAL PULLING AND LUBRICATION NOTES APPLICABLE TO TELECOM & TV WORK.

KEYNOTES (APPLICABLE TO DETAIL 1):

- TELECOM & TV RISERS UP POLE. PROVIDE SUFFICIENT COIL OF CABLE AT TOP OF RISER PER UTILITY REQUIREMENTS. SEE SHEET U20 FOR POLE P5A DETAILS AND SHEET U39 FOR POLE P6 DETAILS.
- COORDINATE WITH UTILITIES ON PROPER SUPPORTS, CABLE SLACK AND CABLE TRAINING ALONG UTILITY POLES.
- TV CABLING, (1) 75 OHM TRUNK COAXIAL CABLE FOR AERIAL APPLICATIONS. COMMSCOPE #5309003. LASH TO UTILITY POLES PER POLE DETAILS AND GCI REQUIREMENTS.
- (1) 4" C, SPARE AND (1) 4" C WITH TELECOM CABLING (1) 288-STRAND FIBER CABLES AND (1) 400-PAIR 24 AWG COPPER CABLE SUPERIOR ESSEX #12288310Y FIBER AND SUPERIOR ESSEX #01-112-40 COPPER CABLE. ROUTE CABLE OVERHEAD ALONG UTILITY POLES AND ALONG RACKING IN VAULTS UNDERGROUND.
- CABLES TO BE SPLICED AT UTILITY POLE. COORDINATE WORK WITH UTILITIES. ALL KPU TELECOMM COPPER AND FIBER CABLE SPLICING, TERMINATIONS, AND TESTING BY CONTRACTOR. ALL GCI TELEVISION COAXIAL CABLE SPLICE WORK BY UTILITY.
- PROVIDE 4' X 4' X 4' (NOM.) TELECOM AND TV VAULT AT EQUIPMENT PADS. POLYMER CONCRETE ASSEMBLY, TIER 22 TRAFFIC RATED, STAINLESS STEEL BOLTS, NO FLOOR, WITH CABLE RACKS AND RACKING ARMS ALL SIDES, WITH 'CATV' OR 'TELEPHONE' LABELS ON LID AS APPLICABLE. NEWBASIS #PCA484848-90097 OR EQUAL. SEE SHEET U40 FOR MORE INFORMATION.
- (1) 4" C, SPARE AND (1) 4" C WITH TV CABLING, (1) 75 OHM TRUNK COAXIAL CABLE, FLOODED FOR UNDERGROUND USE. COMMSCOPE #5309003. ROUTE BETWEEN FROM POLE RISERS AND IN UNDERGROUND CONDUITS AND ALONG RACKING IN VAULTS UNDERGROUND.
- CONTRACTOR TO PROVIDE SUFFICIENT TELECOM AND TV SLACK CABLE COILED AND PREPARED WITHIN EACH UNDERGROUND VAULT. COORDINATE WITH UTILITY ON FINAL LENGTH REQUIREMENTS AND HOW TO LEAVE CABLE ENDS OF UTILITIES. ASSUME ONE FULL COIL OF EACH CABLE FOR BIDDING PURPOSES.
- BRIDGE WORK WILL BE COMPLETED IN STAGES. THREE SEPARATE RUNS OF TELECOM AND TV CABLES WILL BE PROVIDED TO CROSS THE EXISTING & NEW SECTIONS OF BRIDGE DURING CONSTRUCTION, EACH USED AS APPLICABLE IN SEQUENCE. SEE SHEETS U7A-U7C FOR INFORMATION.
- PROVIDE UTILITY CABLE SLACK CABLE COILS PER COILS TABLES ON SHEET U39.
- CONDUIT DETAILS, TRENCH DETAILS, AND ROUTING ACROSS SITE NOT INDICATED HERE. SEE SHEET U38 FOR TYPICAL TRENCH DETAILS, AND SITE PLAN SHEETS FOR CONDUIT AND OVERALL ROUTING.
- TELECOM AND TV CABLE PULLING WORK MUST ADHERE TO MANUFACTURER REQUIREMENTS FOR CABLE MAXIMUM PULLING TENSIONS, CABLE BENDING RADII, AND CONDUIT SIDEWALL PRESSURES. SEE DETAIL 2, THIS SHEET FOR CABLE PULLING REQUIREMENTS.
- TELECOM CABLES SHALL BE LABELED WITHIN EACH VAULT. PROVIDE PLASTIC, WEATHERPROOF PLACARDS WITH DESCRIPTIONS ATTACHED VIA ZIP TIES TO THE TELECOM COPPER AND FIBER CABLE COILS WITHIN EACH VAULT, (1) LABEL PER EVERY 20 FEET OF COIL. LABEL DESCRIPTIONS TO BE CONFIRMED WITH TELECOM UTILITY BUT WILL GENERALLY DESCRIBE 'TONGASS - NORTH MAIN COPPER', 'TONGASS - NORTH MAIN FIBER', ETC. PROVIDE LABELS AT SPARE CONDUIT NIPPLES IN VAULT. TELEVISION DOES NOT REQUIRE CABLE OR CONDUIT LABELING OF ANY KIND.
- PROVIDE INFRASTRUCTURE GROUNDING AND BONDING AT ALL TELECOM AND TELEVISION VAULTS, JUNCTION BOX, AND PEDESTALS. SEE DETAIL 3, THIS SHEET, FOR DETAILS.

PROVIDE COILED SLACK LOOPS OF TELECOM COPPER & FIBER CABLES, AND TELEVISION COAX CABLES IN EACH VAULT. SECURE TO RACKING ON WALLS WITH J-HOOKS OR EQUAL. SEE SHEET U39 FOR CABLE TABLE WITH COILING REQUIREMENTS



③ TELECOM & TV VAULT DETAIL AT PADS 4 & 5

NOTES (APPLICABLE TO DETAIL 3):

- PROVIDE 4' X 4' POLYMER CONCRETE VAULTS FOR TELECOMMUNICATIONS AND TELEVISION UNDERGROUND UTILITIES WHERE SHOWN ON THE SITE PLANS. SEE DETAIL 1, THIS SHEET, FOR SPECIFICS ON THE VAULT.
- CABLES WITHIN VAULTS SHALL BE CAREFULLY AND SECURELY HUNG FROM RACKING ALONG THE WALLS. SEE DETAIL 1, THIS SHEET, FOR SPECIFICS ON CABLE COILS.
- AT EACH AND EVERY TELECOM, AND TELEVISION VAULT, PROVIDE GROUNDING PER UTILITY REQUIREMENTS. THIS INCLUDES A 5/8" X 8' COPPER CLAD STEEL GROUND ROD WITH BRONZE GROUND ROD CLAMPS USING NON-GALVANIC LOCKING BOLT. ROUTE A NO. 6 BARE COPPER SOLID GROUND LOOP WITHIN CAVITY AND BOND TO VAULT, GROUND LUGS AS REQUIRED. THIS WORK INCLUDES BONDING TO ADJACENT POWER GROUNDING SCHEME AT PAD 4 PER NESC REQUIREMENTS.
- PROVIDE A 4" SCHEDULE 80 PVC CONDUIT DRAIN BETWEEN ADJACENT TELECOM/TV VAULTS AND FROM EITHER VAULT TO NEAREST DAYLIGHT SLOPED AREA NEARBY. SEE SITE PLANS FOR GENERAL DRAIN ROUTING. SLOPE CONDUITS TO DRAIN.
- CABLES TO VAULTS FURNISHED AND INSTALLED BY CONTRACTOR, CABLES NOT SHOWN ON THIS SHEET. CABLE SPLICES BY OTHERS.
- TELECOM CABLES SHALL BE LABELED WITHIN EACH VAULT. PROVIDE PLASTIC, WEATHERPROOF PLACARDS WITH DESCRIPTIONS ATTACHED VIA ZIP TIES TO THE TELECOM COPPER AND FIBER CABLE COILS WITHIN EACH VAULT. ONE LABEL PER EVERY 20 FEET OF COIL. LABEL DESCRIPTIONS TO BE CONFIRMED WITH TELECOM UTILITY BUT WILL GENERALLY DESCRIBE 'TONGASS - NORTH MAIN COPPER', 'TONGASS - NORTH MAIN FIBER', ETC. PROVIDE LABELS AT SPARE CONDUIT NIPPLES IN VAULT ALSO. TELEVISION DOES NOT REQUIRE CABLE OR CONDUIT LABELING OF ANY KIND.

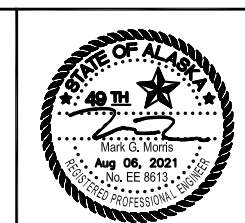
TELECOM & TELEVISION SLACK COIL TABLE

LOCATION	TELECOM-COPPER	TELECOM-FIBER	TELEVISION-COAX
POLE P2	N/A, EXTG CABLE	120 FT MIN, NOTE 7	10 FT MIN, NOTE 7
POLE P5A	10 FT MIN, NOTE 7 & 8	6 FT MIN, NOTE 8	10 FT MIN, NOTES 7 & 8
POLE P6	10 FT MIN, NOTE 7 & 8	6 FT MIN, NOTE 8	10 FT MIN, NOTES 7 & 8
POLE P7	N/A, EXTG CABLE	120 FT MIN, NOTE 7	10 FT MIN, NOTE 7
PAD 4 VAULT	1000 FEET	1200 FEET	NOTE 6
PAD 5 VAULT	300 FEET	400 FEET	NOTE 6

TABLE NOTES:

- PROVIDE CABLE COIL LENGTHS AS SHOWN AT EACH LOCATION.
- PROTECT CABLE COIL ENDS FROM DAMAGE.
- PROPERLY SUPPORT COILS IN VAULTS ON THE RACKS, AND AT THE UTILITY POLES AS REQUIRED.
- ROUTE ALL CABLES ALONG THE WALLS WITHIN THE VAULTS SO THEY ARE NOT A TRIPPING HAZARD.
- A PRE-CONSTRUCTION MEETING WITH ALL UTILITIES SHALL BE CONDUCTED BEFORE BEGINNING WORK.
- GCI DOES NOT REQUIRE A SPECIFIC LENGTH OF COILED COAX PER LOCATION. COAX IS TO BE PULLED STRAIGHT THROUGH VAULTS AND BOXES WITH FORMING AROUND VAULT WALLS SO AS NOT TO PASS CABLE THROUGH CENTER OF VAULT.
- SPLICE TO OCCUR AT THIS POLE, COORDINATE EXACT SLACK AMOUNT AND CONFIGURATION WITH UTILITY. FIBER SPLICING TO OCCUR AT GRADE, COPPER & COAX SPLICING ABOVEGROUND. UTILIZE EXISTING SNOW SHOES FOR ROUTING OF SLACK CABLE AT MOUNTING HEIGHT AS REQUIRED.
- CABLES TRANSITION TO NEW UNDERGROUND AT THIS POLE. COORDINATE EXACT SLACK AMOUNT AND CONFIGURATION WITH UTILITY.

PLANS DEVELOPED BY:
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AECL 1010



STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
6860 GLACIER HIGHWAY, JUNEAU, AK 99801
(907) 465-1763
UTILITY RELOCATION FOR KETCHIKAN AREA BRIDGES
TELECOM & TV CKT, PULLING DIAGRAMS, VAULT DETAIL, & COIL TABLE

FILE: Y:\02 state of ak\44 utility relocation design for ketchikan bridges\Working Drawings\U41 TELECOM & TV CIRCUIT & PULLING DIAGRAMS.dwg 8/6/2021 16:08 LAYOUT U41 DESIGNED MGM CHECKED MGM DRAFTED MADJA