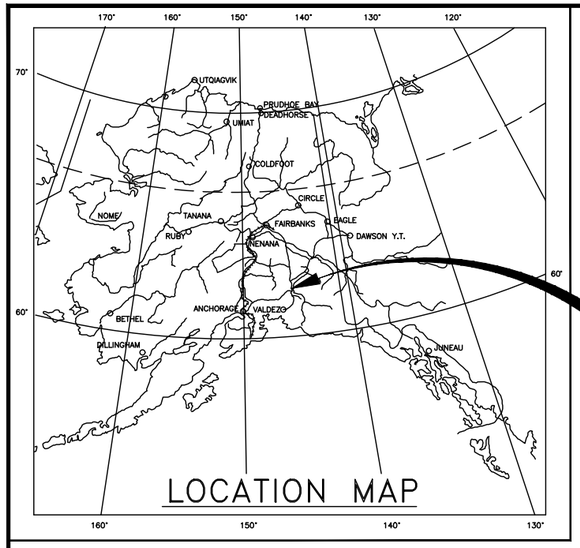
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	A1	A3
CDS ROUTE: 190000	MILEPOINT: 86.09 TO 101.34			

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
&
PUBLIC FACILITIES



PROJECT LOCATION

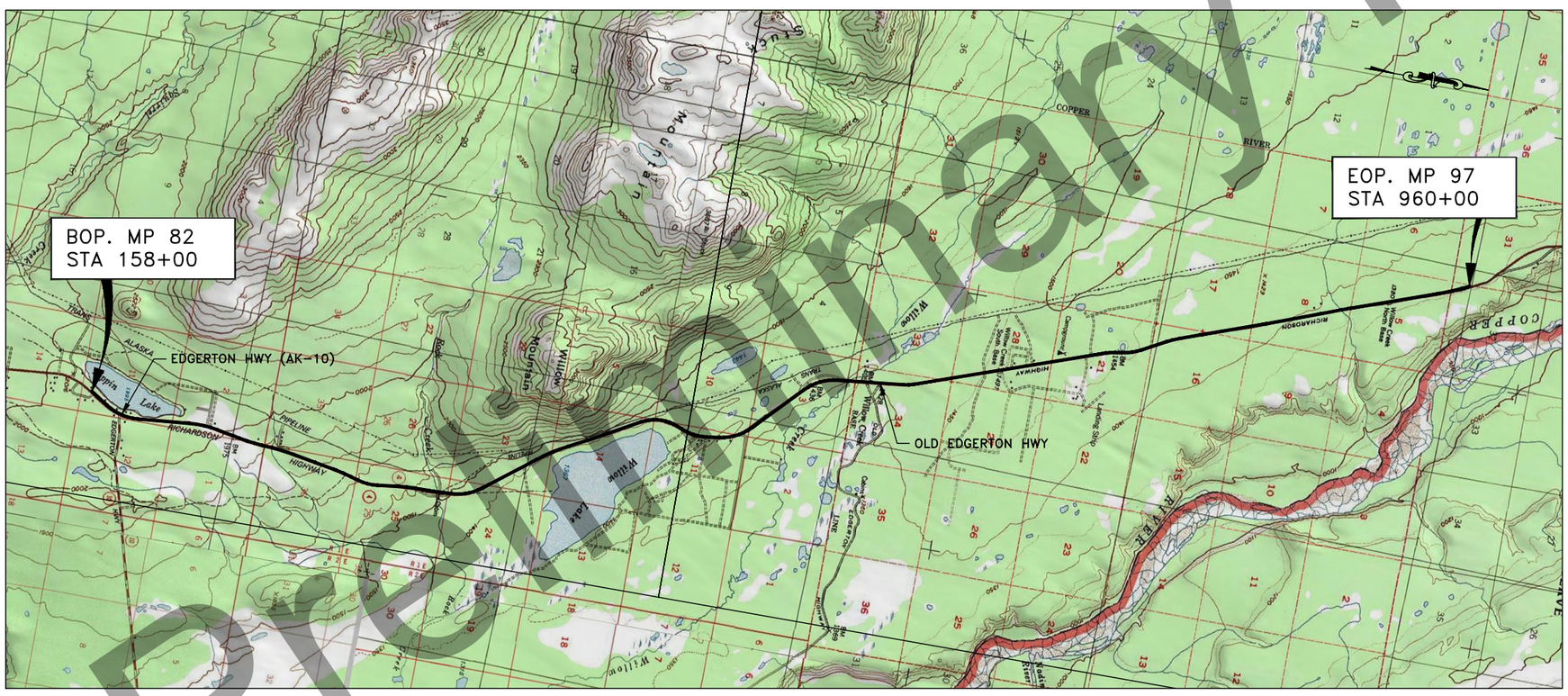
PROPOSED HIGHWAY PROJECT

NFHWY00510

RICHARDSON HWY MP 82–97 RESURFACING

GRADING, DRAINAGE, PAVING

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
A1	TITLE SHEET
A2–A3	LEGEND & CONTROL SHEET
B1–B2	TYPICAL SECTIONS
C1–C2	ESTIMATE OF QUANTITIES & GENERAL NOTES
D1	SUMMARIES
E1–E10	CULVERT/DRAINAGE DETAILS & SUMMARY
F1–F27	PLAN & PROFILE
G1–G5	APPROACH SUMMARY & DETAILS
H1–H12	SIGNING & STRIPING
Q1–Q15	EROSION SEDIMENT CONTROL PLANS
T1	TRAFFIC CONTROL PLANS (and/or DEVICES)
V1–V12	STANDARD DRAWINGS



LOCATED WITHIN

SEC. 1,2,11,14, T002S, R001E;
SEC. 25,36, T001S, R001E;
VALDEZ (C–4), ALASKA

SEC. 3,10,11,14,23,24,25, T001S, R001E;
SEC. 5,8,16,17,21,28,33,34, T001N, R001E;
SEC. 31,32, T002N, R001E;
VALDEZ (D–4), ALASKA

PROJECT SUMMARY	
WIDTH OF PAVEMENT	36 FT
LENGTH OF GRADING	80,200 FT
LENGTH OF PAVING	80,200 FT
LENGTH OF PROJECT	80,200 FT

RUSSELL JOHNSON, P.E., PROJECT MANAGER
JACOB RAHLFS, DESIGNER

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
&
PUBLIC FACILITIES

APPROVED BY:

_____ DATE _____

Sarah E. Schacher, P.E.
Preconstruction Engineer, Northern Region

ACCEPTED FOR CONSTRUCTION:

_____ DATE _____

Ryan F. Anderson, P.E.
Regional Director, Northern Region

Preliminary Plans

HWYS TITLE SHEET
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NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	A2	A3

	RECOVERED	SET
BLM MONUMENT		
GLO MONUMENT		
USC&GS MONUMENT		
PRIMARY MONUMENT		
CENTERLINE MONUMENT IN CASING		
PRIMARY R.O.W. MONUMENT		
BEARING OBJECT		
MISCELLANEOUS MONUMENT		
LINE OF SIGHT MONUMENT		
CONCRETE R.O.W. MONUMENT		
BENCHMARK		BM
REBAR AND CAP		
REBAR		
IRON PIPE		
PK NAIL		
SPIKE		
HUB AND TACK		
CONSTRUCTION CENTERLINE	5+00	
MISCELLANEOUS CENTERLINE	10+00	
STATION EQUATION	"L"48+97.23 POT BK= "O"48+97.23 PC AHD	
PROJECT RIGHT-OF-WAY LINE	R/W	
EXISTING RIGHT-OF-WAY LINE		
EXISTING PROPERTY LINE		
CONTROLLED ACCESS LINE	C/A	
UTILITY EASEMENT LINE	PUE	
TEMPORARY EASEMENT LINE (TCP OR TCE)	TCP	
ACCESS OR SECTION LINE EASEMENT	ACCESS EASEMENT	
PROPOSED CUT SLOPE LIMIT		
PROPOSED FILL SLOPE LIMIT		
SECTION LINE		
1/4 SECTION LINE		
1/16 SECTION LINE		
TOWNSHIP & RANGE LINE	T. 2 N. / T. 1 N.	T. 1 E. / T. 2 E.

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

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

	EXISTING	PROPOSED
JUNCTION BOX, TYPE IA		5
JUNCTION BOX, TYPE II		6
JUNCTION BOX, TYPE III		3
SIGNAL FACE, VEHICULAR	42	42
SIGNAL FACE, BACKPLATE	42	42
SIGNAL FACE, LEFT TURN, BACKPLATE	43	43
SIGNAL FACE, PEDESTRIAN	48	48
LOOP DETECTOR	33	73
VIDEO DETECTOR	2	2
RADAR DETECTOR	4	4A
OPTICOM DETECTOR	1	1
PEDESTRIAN PUSH BUTTON	1	1
SIGNAL POST W/O MAST ARM		1
SIGNAL POLE W/MAST ARM		4
SIGNAL CONTROLLER		
LOAD CENTER		
LUMINAIRE		122
RIGID METAL CONDUIT		

LEGEND

STATE OF ALASKA 49TH
Russell M. Johnson
CE 9963
REGISTERED PROFESSIONAL ENGINEER

Preliminary Plans

PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
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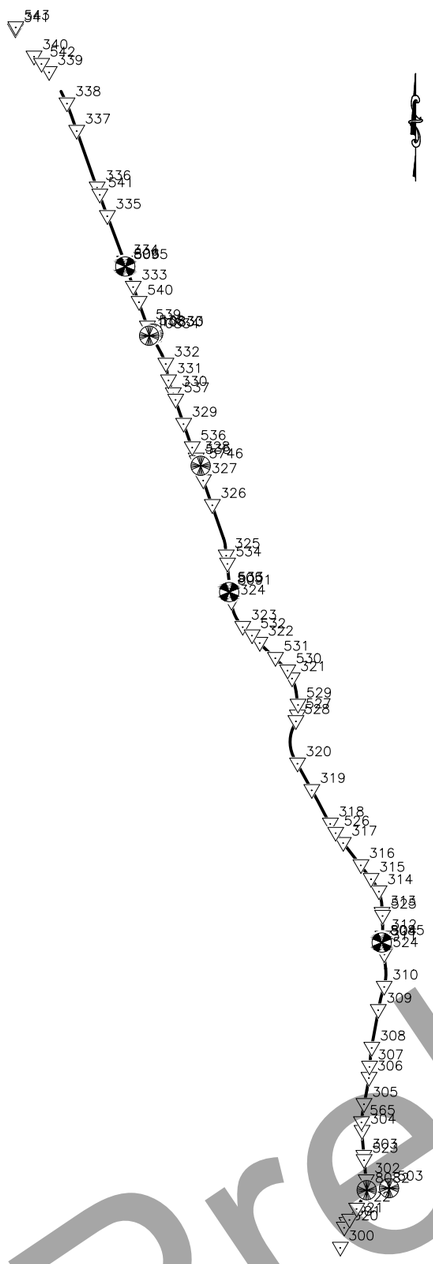
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	A3	A3



HORIZONTAL POINT TABLE

DESCRIPTION	STATION	NORTHING	EASTING
BOP	"0"158+00.00	214737.6598	930304.4296
PC	"0"169+52.83	215706.3388	930929.4632
PT	"0"188+49.36	217514.0114	931376.8497
PC	"0"217+58.78	220412.2312	931121.7642
PT	"0"233+39.64	221985.9872	931201.9113
PC	"0"246+39.51	223262.5802	931446.8365
PT	"0"259+56.09	224567.4522	931615.7645
PC	"0"265+12.63	225122.7149	931653.5426
PT	"0"277+88.10	226387.5194	931812.6356
PI	"0"290+76.24	227654.3078	932046.1944
PI	"0"301+67.73	228727.5484	932244.9373
PC	"0"303+13.35	228870.7144	932271.5993
PT	"0"312+33.06	229764.6553	932486.0509
PC	"0"316+22.68	230138.3604	932596.2553
PT	"0"327+78.58	231282.3310	932691.3144
PC	"0"339+53.35	232448.5225	932549.5626
PT	"0"348+56.23	233349.0713	932492.1152
PC	"0"356+55.99	234148.8189	932486.9546
PT	"0"359+33.85	234426.5689	932479.6834
PC	"0"369+26.20	235417.8684	932434.1569
PT	"0"386+84.90	237043.2593	931837.6091
PC	"0"421+18.14	239760.5033	929739.1070
PT	"0"439+95.33	241340.1113	928729.4492
PI	"0"450+89.93	242311.0961	928224.1278
PI	"0"461+12.78	243207.9918	927732.3879
PC	"0"482+97.58	245118.8943	926673.2473
PT	"0"503+58.53	247108.4028	926555.6328
PC	"0"506+92.44	247417.4955	926681.9693
PT	"0"521+60.62	248857.2691	926868.1773
PC	"0"528+54.33	249545.0524	926777.7146
PT	"0"547+81.78	251234.3231	925926.8986
PC	"0"583+59.82	253721.0929	923354.2861
PT	"0"603+56.63	255479.6347	922496.3850
PC	"0"640+34.87	259137.4581	922109.4382
PT	"0"645+75.67	259664.0035	921991.4394
PC	"0"754+03.99	269888.5264	918426.0955
PT	"0"759+43.06	270411.0284	918296.6254
PC	"0"763+98.30	270861.1322	918228.4736
PT	"0"773+82.11	271790.2423	917919.7756
PC	"0"788+78.90	273110.0102	917213.6543
PT	"0"796+24.06	273790.5712	916911.8306
PI	"0"807+97.99	274895.8847	916516.3860
PI	"0"845+22.57	278405.4680	915269.2593
PI	"0"860+81.84	279866.7712	914725.2732
PI	"0"875+97.80	281286.2972	914193.2279
PI	"0"887+69.60	282383.6938	913782.3311
PC	"0"891+38.10	282729.6419	913655.3841
PT	"0"892+78.03	282861.3020	913608.0095
PC	"0"942+85.61	287583.7248	911942.2761
PT	"0"955+47.57	288748.4086	911458.0789
EOP	"0"960+00.00	289156.0154	911261.7418

HORIZONTAL CONTROL POINT TABLE

DESCRIPTION	STATION	NORTHING	EASTING

BASIS OF CONTROL:

Preliminary Plans

SURVEY CONTROL

STATE OF ALASKA 49TH
Russell M. Johnson
CE 9963
REGISTERED PROFESSIONAL ENGINEER

PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
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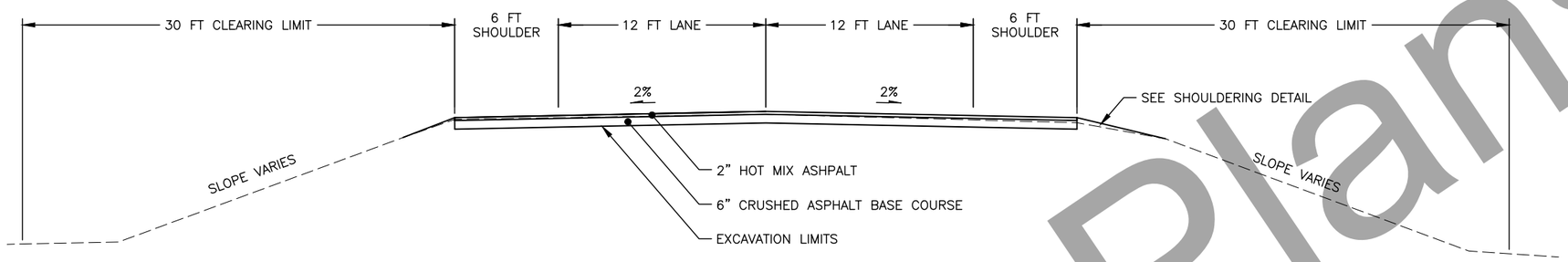
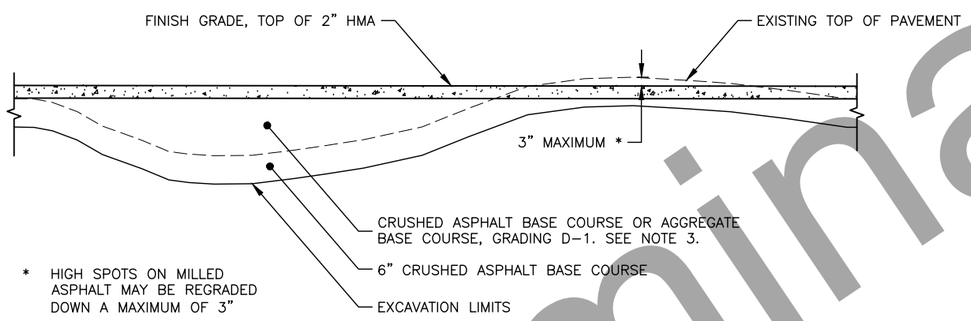
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	B1	B2

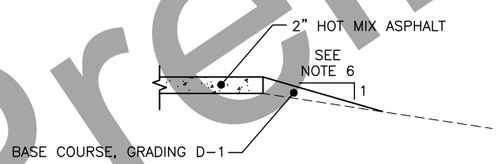


TYPICAL SECTION 1

"0"158+00 TO "0"960+00



PULVERIZING DETAIL



SHOULDERING DETAIL

NOTES:

1. MULTIPLE ASPHALT AND BASE COURSE LAYERS EXIST WITHIN THE ROAD EMBANKMENT. COBBLE SIZED MATERIAL SHOULD BE EXPECTED. SEE SPEC SECTION 308.
2. ALL WORK MUST STAY WITHIN THE EXISTING RIGHT-OF-WAY LIMITS
3. DO NOT PLACE AGGREGATE BASE COURSE, GRADING D-1 UNTIL AFTER THE USABLE CRUSHED ASPHALT BASE COURSE HAS BEEN PLACED IN THE FILL.
4. SEED ALL DISTURBED AREAS OR AS DIRECTED BY THE ENGINEER
5. ELIMINATE PAVEMENT DROP USING SHOULDER DETAIL ON THIS SHEET.
6. SHOULDER SLOPE VARIES. MATCH TO EXISTING FORESLOPE GRADE, NOT TO EXCEED 2:1 (H:V) SLOPE.

Preliminary Plans

TYPICAL SECTION

STATE OF ALASKA 49TH Russell M. Johnson CE 9963 REGISTERED PROFESSIONAL ENGINEER

PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
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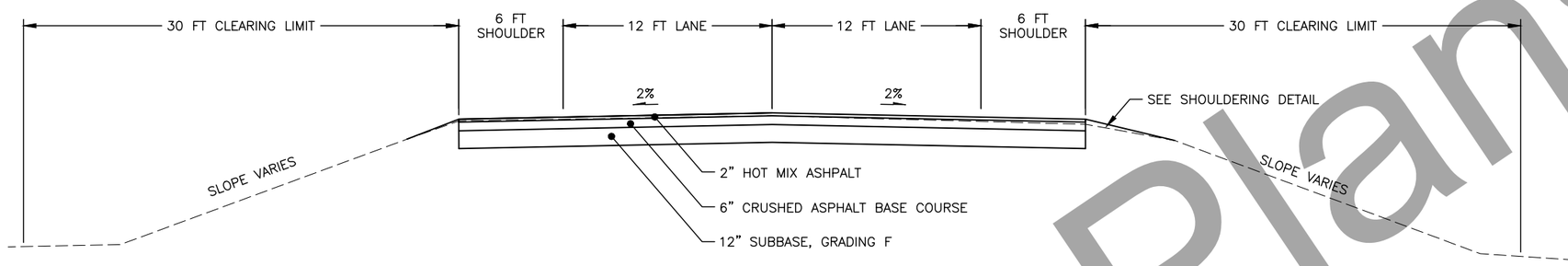
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	B2	B2



TYPICAL SECTION 2
(SEE NOTE 1)

NOTES:

1. TYPICAL SECTION 2 IS TO BE INSTALLED IN ALL LOCATIONS WHERE DIGOUTS ARE DIRECTED OR WHERE CULVERT INSTALLATIONS TAKE PLACE.
2. MULTIPLE ASPHALT AND BASE COURSE LAYERS EXIST WITHIN THE ROAD EMBANKMENT. COBBLE SIZED MATERIAL SHOULD BE EXPECTED. SEE SPEC SECTION 308.
3. ALL WORK MUST STAY WITHIN THE EXISTING RIGHT-OF-WAY LIMITS
4. SEED ALL DISTURBED AREAS OR AS DIRECTED BY THE ENGINEER
5. ELIMINATE PAVEMENT DROP USING SHOULDER DETAIL.
6. SHOULDER SLOPE VARIES. MATCH TO EXISTING FORESLOPE GRADE, NOT TO EXCEED 2:1 (H:V) SLOPE.

Preliminary Plans

TYPICAL SECTION

STATE OF ALASKA 49TH
Russell M. Johnson
CE 9963
REGISTERED PROFESSIONAL ENGINEER

PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
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NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	C1	C2

ESTIMATE OF QUANTITIES

ITEM NO.	PAY ITEM	PAY UNIT	QUANTITY
201.0001.0000	CLEARING	ACRE	160
202.0004.0000	REMOVAL OF CULVERT PIPE	LINEAR FOOT	780
202.0010.0000	SINGLE MAIL BOX INSTALLATION	EACH	13
202.0012.0000	DOUBLE MAIL BOX INSTALLATION	EACH	31
203.0019.0000	UNCLASSIFIED EXCAVATION	CONTINGENT SUM	ALL REQUIRED
204.2003.0000	EMBEDMENT MATERIAL	LUMP SUM	ALL REQUIRED
301.0001.00D1	AGGREGATE BASE COURSE, GRADING D-1	TON	20000
308.0001.0000	CRUSHED ASPHALT BASE COURSE	SQUARE YARD	320800
401.0001.002B	HMA, TYPE II; CLASS B	TON	36752
401.0004.5228	ASPHALT BINDER, GRADE PG 52-28	TON	2205.1
401.0008.002B	HMA PRICE ADJUSTMENT, TYPE II; CLASS B	CONTINGENT SUM	ALL REQUIRED
401.0009.0000	LONGITUDINAL JOINT DENSITY PRICE ADJUSTMENT	CONTINGENT SUM	ALL REQUIRED
401.0010.0001	PAVEMENT SMOOTHNESS PRICE ADJUSTMENT, METHOD 1	CONTINGENT SUM	ALL REQUIRED
401.0015.0000	ASPHALT MATERIAL PRICE ADJUSTMENT	CONTINGENT SUM	ALL REQUIRED
406.0002.0000	RUMBLE STRIPS	STATION	802
603.0001.0024	CSP 24 INCH	LINEAR FOOT	38
603.0001.0036	CSP 36 INCH	LINEAR FOOT	282
603.0001.0060	CSP 60 INCH	LINEAR FOOT	497
611.0001.0001	RIPRAP, CLASS I	CUBIC YARD	99
611.0001.0002	RIPRAP, CLASS II	CUBIC YARD	417
613.0002.0000	CULVERT MARKER POST	EACH	14
615.0001.0000	STANDARD SIGN	SQUARE FOOT	716.08
616.0002.0050	THAW PIPE 1/2 INCH DIAMETER	EACH	7
618.0001.0000	SEEDING	ACRE	27
630.0002.0001	GEOTEXTILE, STABILIZATION, CLASS 1	SQUARE YARD	923
631.0002.0001	GEOTEXTILE, EROSION CONTROL, CLASS 1	SQUARE YARD	803
639.2000.0000	APPROACH	EACH	72
639.2001.0000	PULLOUT	EACH	4
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
641.0004.0000	TEMPORARY EROSION, SEDIMENT AND POLLUTION CONTROL ADDITIVES	CONTINGENT SUM	ALL REQUIRED
641.0006.0000	WITHHOLDING	CONTINGENT SUM	ALL REQUIRED
641.0007.0000	SWPPP MANAGER	LUMP SUM	ALL REQUIRED
642.0001.0000	CONSTRUCTION SURVEYING	LUMP SUM	ALL REQUIRED
642.0013.0000	THREE PERSON SURVEY PARTY	CONTINGENT SUM	ALL REQUIRED
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
644.0001.0000	FIELD OFFICE	LUMP SUM	ALL REQUIRED
644.0002.0000	FIELD LABORATORY	LUMP SUM	ALL REQUIRED
644.0006.0000	VEHICLE	LUMP SUM	ALL REQUIRED
644.0015.0000	NUCLEAR TESTING EQUIPMENT STORAGE SHED	EACH	1
645.0001.0000	TRAINING PROGRAM, __ TRAINEES / APPRENTICES	LABOR HOUR	1000
646.0001.0000	CPM SCHEDULING	LUMP SUM	ALL REQUIRED
670.0001.0000	PAINTED TRAFFIC MARKINGS	LUMP SUM	ALL REQUIRED

TABLE OF ESTIMATING FACTORS

ITEM NO.	DESCRIPTION	ESTIMATING FACTOR
204.2003.0000	EMBEDMENT MATERIAL	2 TON/CY
301.0001.00D1	AGGREGATE BASE COURSE, GRADING D-1	2 TON/CY
401.0001.002B	HMA, TYPE II; CLASS B	115 LB/SY/INCH
401.0004.5228	ASPHALT BINDER, GRADE PG 52-28	6% OF HMA TOTAL
611.0001.0001	RIPRAP, CLASS I	2 TON/CY
611.0001.0002	RIPRAP, CLASS II	2 TON/CY

LUMP SUM PAY ITEMS

ITEM NO.	DESCRIPTION	QUANTITY
204.2003.0000	EMBEDMENT MATERIAL	1500 CY

Preliminary Plans

ESTIMATE OF QUANTITIES

STATE OF ALASKA 49TH
Russell M. Johnson
CE 9963
REGISTERED PROFESSIONAL ENGINEER

PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
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NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	C2	C2

GENERAL NOTES:

1. PRESERVE EXISTING PRIMARY AND SECONDARY MONUMENTS TO THE EXTENT PRACTICABLE. AS DETERMINED BY THE ENGINEER, EITHER DESTROY OR ABANDON IN PLACE THOSE MONUMENTS DISTURBED BY CONSTRUCTION. SUBMIT TO THE ENGINEER A RECORD OF ALL MONUMENTS FOUND, SET, DESTROYED, OR ABANDONED IN PLACE DURING CONSTRUCTION ACTIVITIES; ALL RECORDED MONUMENTS SHALL INCLUDE A DESCRIPTION AND REFERENCE TO THE STATION AND OFFSET OF THE PROJECT "O" ALIGNMENT. THIS WORK WILL NOT BE MEASURED OR PAID FOR DIRECTLY, AND IS SUBSIDIARY TO PAY ITEM 642(1).
2. FUEL STORAGE FACILITIES WILL NOT BE ALLOWED WITHIN 100 FT OF WATER BODIES AND MUST HAVE SECONDARY CONTAINMENT.
3. NOTIFY THE ENGINEER IF GOLDEN OR BALD EAGLE NESTS ARE DISCOVERED IN THE PROJECT AREA, INCLUDING MATERIAL SITES. THE ENGINEER WILL NOTIFY THE U.S. FISH AND WILDLIFE SERVICE.
4. TO MEET THE PROVISIONS OF THE CGP, SEEDING MAY REQUIRE MULTIPLE MOBILIZATIONS. ALL ADDITIONAL MOBILIZATIONS REQUIRED TO MEET THE CGP ARE SUBSIDIARY TO PAY ITEM 641(3).
5. PERFORM WORK IN THE IN DIGOUT AND CULVERT INSTALLATION AREAS BEFORE PLACING HMA.
6. UPON COMPLETION OF PAVING OPERATIONS, GRADE MATERIAL FROM THE SLOPES TO MATCH THE NEW PAVEMENT AND SEED ALL DISTURBED AREAS AS DIRECTED BY THE ENGINEER. SHOULDERING MATERIAL WORK WILL NOT BE MEASURED OR PAID FOR DIRECTLY, AND IS SUBSIDIARY TO OTHER ITEMS OF WORK.
7. 2 WEEKS PRIOR TO EXCAVATION ACTIVITIES, CONTACT AFFECTED UTILITY COMPANIES TO COORDINATE ALL WORK NEAR EXISTING UTILITIES AND PLANNED UTILITY RELOCATIONS.
8. PRIOR TO BEGINNING ANY GROUND DISTURBING WORK, LOCATE ALL EXISTING UTILITIES AND SERVICE CONNECTIONS WITHIN THE PROJECT AREA. PROTECT UTILITIES AND SERVICES FROM CONSTRUCTION DAMAGE FOR THE DURATION OF THE PROJECT. UTILITIES SHOWN IN THESE PLANS ARE FOR VISUAL PURPOSES ONLY. SOME EXISTING UTILITIES MAY NOT APPEAR IN THESE PLANS OR THEY MAY NOT BE PRECISELY WHERE SHOWN.
9. UNDERGROUND UTILITY MARKERS (E.G., CARSONITE DELINEATORS) MAY BE PRESENT WITHIN THE PROJECT AREA. RECORD THE LOCATION OF THESE MARKERS PRIOR TO DISTURBING THEM AND PROVIDE THESE LOCATIONS TO THE ENGINEER. TEMPORARILY REMOVE MARKERS WHERE THEY OBSTRUCT PROJECT WORK, AND THEN REINSTALL THEM AT THEIR ORIGINAL LOCATIONS, OR WHERE DIRECTED BY THE ENGINEER, AFTER WORK HAS BEEN COMPLETED. RECORDING THE LOCATIONS OF THESE MARKERS IS SUBSIDIARY TO PAY ITEM 642(1). REMOVING AND REINSTALLING UTILITY MARKERS IS SUBSIDIARY TO 202 PAY ITEMS.

MATERIAL SOURCE NOTES:

1. MATERIAL SITE MS 850-036-5, LOCATED AT APPROXIMATELY MP 5 ON THE EDGERTON HIGHWAY AND CONTAINING SAND AND GRAVEL, IS AN AVAILABLE MATERIAL SOURCE. SUBMIT A SITE DEVELOPMENT AND RECLAMATION PLAN FOR APPROVAL BY THE ENGINEER AT LEAST TWO WEEKS PRIOR TO PERFORMING ANY WORK IN THIS MATERIAL SITE. WORK MAY NOT COMMENCE IN THIS SITE UNTIL THE PLAN HAS BEEN REVIEWED AND APPROVED BY THE ENGINEER.
2. MATERIAL SITE MS 71-1-006-5, A QUARRY LOCATED AT APPROXIMATELY MP 74.5 ON THE RICHARDSON HIGHWAY, IS AN AVAILABLE MATERIAL SOURCE. SUBMIT A SITE DEVELOPMENT AND RECLAMATION PLAN FOR APPROVAL BY THE ENGINEER AT LEAST TWO WEEKS PRIOR TO PERFORMING ANY WORK IN THIS MATERIAL SITE. WORK MAY NOT COMMENCE IN THIS SITE UNTIL THE PLAN HAS BEEN REVIEWED AND APPROVED BY THE ENGINEER.
3. MATERIAL SITE MS 71-2-005-5, A DOT&PF MAINTENANCE STATION LOCATED AT APPROXIMATELY MP 110 ON THE RICHARDSON HIGHWAY, IS AN AVAILABLE MATERIAL SOURCE. SUBMIT A SITE DEVELOPMENT AND RECLAMATION PLAN FOR APPROVAL BY THE ENGINEER AT LEAST TWO WEEKS PRIOR TO PERFORMING ANY WORK IN THIS MATERIAL SITE. WORK MAY NOT COMMENCE IN THIS SITE UNTIL THE PLAN HAS BEEN REVIEWED AND APPROVED BY THE ENGINEER.
4. UTILIZE ALL EXCESS AND/OR UNUSABLE MATERIALS GENERATED ON THIS PROJECT FOR SLOPE FLATTENING AS DIRECTED BY THE ENGINEER.
5. ALL OTHER MATERIALS SHALL BE CONTRACTOR FURNISHED.

PROJECT LAYOUT AND SURVEY CONTROL NOTES:

1. FOR SURVEY CONTROL INFORMATION, SEE SURVEY CONTROL SHEET.
2. VERIFY HORIZONTAL AND VERTICAL CONTROL PRIOR TO USE.

LIST OF ABBREVIATIONS

AH = AHEAD
AST = ASPHALT SURFACE TREATMENT
ATM = ALASKA TRAFFIC MANUAL
AT&T = AT&T ALASCOM

BFS = BEGIN FULL SUPER
BK = BACK
BNC = BEGIN NORMAL CROWN
BOL = BEGRIMING OF LINE
BOP = BEGINNING OF PROJECT

CABC = CRUSHED ASPHALT BASE COURSE
CF = CUBIC FEET
CFS = CUBIC FEET PER SECOND
CGP = CONSTRUCTION GENERAL PERMIT
CL OR ℄ = CENTERLINE
CLR = CLEAR DISTANCE
CMP = CORRUGATED METAL PIPE
COM = COMMERCIAL
CSP = CORRUGATED STEEL PIPE
CVTC = COPPER VALLEY TELEPHONE COOPERATIVE
CY = CUBIC YARD

D = DEGREE OF CURVE
DIA OR ø = DIAMETER
DWG = DRAWING

EA = EACH
EFS = END FULL SUPERELVATION
EG = EXISTING GROUND
ELEV = ELEVATION
ENC = END NORMAL CROWN
EOL = END OF LINE
EOP = END OF PROJECT
EOTW = EDGE OF TRAVELED WAY
EP = EDGE PAVEMENT
EPAV = EDGE OF PAVEMENT

FO = FIBER OPTIC CABLE
FT OR ' = FOOT, FEET

GA = GAGE
GAL = GALLON
GALV = GALVANIZED
GP = GRADE POINT
GPR = GROUND PENETRATING RADAR

HMA = HOT MIX ASPHALT
HT = HEIGHT
HW/D = HIGH WATER/DIAMETER OF PIPE
HWY = HIGHWAY

IE = INVERT ELEVATION
IN OR " = INCH, INCH

L = LENGTH OF CURVE
LB = POUND
LC = LEVEL CROWN
LF = LINEAR FEET
LT = LEFT
LVC = LENGTH OF VERTICAL CURVE

MAX = MAXIMUM
MIN = MINIMUM
MP = MILEPOST

NC = NORMAL CROWN
NIC = NOT IN CONTRACT
NO. OR # = NUMBER
NTS = NOT TO SCALE
N/A = NOT APPLICABLE

PC = POINT OF CURVATURE
PCC = POINT OF COMPOUND CURVE
PI = POINT OF INTERSECTION
POC = POINT ON CURVE
POT = POINT ON TANGENT
PRC = POINT OF REVERSE CURVATURE
PST = PERFORATED STEEL TUBE
PT = POINT OF TANGENCY
PVMT = PAVEMENT

Q2 = 2 YEAR FLOOD
Q5 = 5 YEAR FLOOD
Q50 = 50 YEAR FLOOD
Q100 = 100 YEAR FLOOD

R/W = RIGHT-OF-WAY
R = RADIUS
RAP = RECLAIMED ASPHALT PAVEMENT
RC = REVERSE CROWN
RD = ROAD
REQ = REQUIRED
RP = RADIUS POINT
RT = RIGHT

S = SUPERELEVATION
SIM = SIMILAR
SPP = STRUCTURAL PLATE PIPE
SQ.IN. =OR IN^2 = SQUARE INCHES
SQ.FT. OR FT^2 OR SF = SQUARE FEET
SH = SHOULDER
SHT = SHEET
STA = STATION
STD = STANDARD
SY = SQUARE YARD
SYM = SYMBOL

VC = VERTICAL CURVE
VPC = VERTICAL POINT OF CURVATURE
VPI = VERTICAL POINT OF INTERSECTION
VPT = VERTICAL POINT OF TANGENCY

T = TANGENT LENGTH
TBM = TEMPORARY BENCH MARK
TCE = TEMPORARY CONSTRUCTION EASEMENT
TCP = TEMPORARY CONSTRUCTION PERMIT
TRANS = TRANSITION
TYP = TYPICAL

VPC = VERTICAL POINT OF CURVATURE
VPI = VERTICAL POINT OF INTERSECTION
VPT = VERTICAL POINT OF TANGENCY
VOL = VOLUME

W/ = WITH
W/O = WITHOUT

@ = AT
& = AND
DDD.DDDDD° = DECIMAL DEGREES (TO FIVE DECIMAL PLACES)
DD°MM'SS" = DEGREES, MINUTES, SECONDS
Δ = DELTA ANGLE

Preliminary Plans

GENERAL NOTES

STATE OF ALASKA 49TH
Russell M. Johnson
CE 9963
REGISTERED PROFESSIONAL ENGINEER

PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
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NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	D1	D1

SUPERELEVATION SUMMARY

CURVE PI	RADIUS (FT)	BEGIN TRANSITION	TRANSITION LENGTH (FT)	CURVE PC	BEGIN FULL SUPERELEVATION	SUPERELEVATION RATE (%)	END FULL SUPERELEVATION	CURVE PT	TRANSITION LENGTH (FT)	END TRANSITION	REMARKS
"0"179+37.17	2870	"0"168+15.00	175	"0"169+52.83	"0"169+90.00	4.6	"0"188+15.00	"0"188+49.36	175	"0"189+90.00	
"0"225+54.31	5700	"0"216+55.00	130	"0"217+58.78	"0"217+85.00	2.8	"0"233+20.00	"0"233+39.64	130	"0"234+50.00	
"0"252+98.61	10825	"0"245+50.00	110	"0"246+39.51	"0"246+60.00	2.0	"0"259+40.00	"0"259+56.09	110	"0"260+50.00	
"0"307+73.61	8960	"0"302+20.00	110	"0"303+13.35	"0"303+30.00	2.0	"0"312+20.00	"0"312+33.06	110	"0"313+30.00	
"0"322+08.77	2835	"0"314+85.00	175	"0"316+22.68	"0"316+60.00	4.6	"0"327+45.00	"0"327+78.58	175	"0"329+20.00	
"0"344+05.28	7885	"0"338+60.00	115	"0"339+53.35	"0"339+75.00	2.2	"0"348+40.00	"0"348+56.23	115	"0"349+55.00	
"0"357+94.94	7045	"0"355+60.00	120	"0"356+55.99	"0"356+80.00	2.4	"0"359+15.00	"0"359+33.85	120	"0"360+35.00	
"0"378+34.04	2875	"0"367+90.00	175	"0"369+26.20	"0"369+65.00	4.6	"0"386+50.00	"0"386+84.90	175	"0"388+25.00	
"0"430+59.21	10560	"0"420+25.00	110	"0"421+18.14	"0"421+35.00	2.0	"0"439+80.00	"0"439+95.33	110	"0"440+90.00	
"0"494+02.68	2305	"0"481+50.00	190	"0"482+97.58	"0"483+40.00	5.2	"0"503+20.00	"0"503+58.53	190	"0"505+10.00	
"0"514+43.45	2830	"0"505+50.00	180	"0"506+92.44	"0"507+30.00	4.6	"0"521+25.00	"0"521+60.62	180	"0"523+05.00	
"0"538+55.99	2870	"0"527+15.00	180	"0"528+54.33	"0"528+95.00	4.6	"0"547+45.00	"0"547+81.78	180	"0"549+25.00	
"0"594+00.71	2865	"0"582+20.00	180	"0"583+59.82	"0"584+00.00	4.6	"0"603+20.00	"0"603+56.63	180	"0"605+00.00	
"0"643+06.47	2350	"0"638+90.00	185	"0"640+34.87	"0"640+75.00	5.0	"0"645+40.00	"0"645+75.67	185	"0"647+25.00	
"0"756+74.30	2910	"0"752+65.00	180	"0"754+03.99	"0"754+45.00	4.6	"0"759+10.00	"0"759+43.06	180	"0"760+90.00	
"0"768+95.02	2885	"0"762+60.00	180	"0"763+98.30	"0"764+40.00	4.6	"0"773+50.00	"0"773+82.11	180	"0"775+30.00	
"0"792+52.16	5045	"0"787+70.00	135	"0"788+78.90	"0"789+05.00	3.0	"0"796+05.00	"0"796+24.06	135	"0"797+40.00	

MAILBOX SUMMARY

STATION	OFFSET		SINGLE MAILBOX INSTALLATION	DOUBLE MAILBOX INSTALLATION	NOTES
	LT	RT			
"0"171+38	X		1		
"0"174+06	X		1		
"0"184+01	X		1		
"0"203+00	X		1		
"0"257+29	X		1		
"0"274+22	X		1	1	
"0"420+01	X		1		
"0"482+80	X		1		
"0"493+65	X		1		
"0"518+50	X			3	
"0"522+71	X			3	
"0"524+06	X		1		
"0"541+73	X			4	
"0"566+60	X		1		
"0"635+72	X			1	
"0"696+55	X		1	5	
"0"699+78	X			2	
"0"714+02	X			1	
"0"743+25	X			8	
"0"780+75	X			3	
"0"810+60	X		1		

Preliminary Plans

SUMMARIES

STATE OF ALASKA 49TH
Russell M. Johnson
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PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
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NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	E1	E10

NEW CULVERTS SUMMARY

PIPE NO.	MILEPOSTS	START			END			SLOPE (%)	LENGTH OF PIPE			CULVERT MARKER POST	CULVERT THAWPIPE	
		STATION	OFFSET	INVERT ELEVATION	STATION	OFFSET	INVERT ELEVATION		24"	36"	60"			
P-100	82.19	"0"158+41.82	39.41 RT	2016.00	"0"158+40.92	39.58 LT	2015.00	1.27		79.00		X	X	
P-101	82.99	"0"200+33.29	41.01 LT	2003.00	"0"200+49.64	70.81 RT	2000.20	2.48		113.00		X	X	
P-102	84.22	"0"264+07.04	35.96 LT	1908.20	"0"264+07.01	54.07 RT	1902.20	6.66		90.00		X	X	
P-103	85.60	"0"337+32.57	61.27 LT	1634.60	"0"337+05.69	80.21 RT	1630.50	2.85			144.00	X	X	POTENTIAL FISH PASS CULVERT
P-104	88.79	"0"508+80.95	56.05 LT	1392.00	"0"508+83.95	57.91 RT	1390.00	1.75			114.00	X	X	POTENTIAL FISH PASS CULVERT
P-105	88.86	"0"513+03.94	60.87 LT	1393.00	"0"512+68.39	60.02 RT	1391.00	1.59			126.00	X	X	POTENTIAL FISH PASS CULVERT
P-106	91.17	"0"631+81.57	33.86 RT	1423.80	"0"632+19.31	34.98 RT	1422.10	4.50	38.00					
P-107	96.20	"0"887+14.04	55.17 LT	1373.00	"0"887+15.15	57.76 RT	1372.00	0.89			113.00	X	X	POTENTIAL FISH PASS CULVERT

Preliminary Plans

NEW CULVERT SUMMARY

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NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	E2	E10

EXISTING CULVERT SUMMARY

PIPE NO.	STATION	MILEPOST	DIAMTER (IN)	REMOVE	REMARKS
P-500	"0"158+41.38	82.19	36	X	
P-501	"0"159+30.92	82.21	24		EXISTING APPROACH CULVERT TO REMAIN
P-502	"0"160+05.17	82.22	24		EXISTING APPROACH CULVERT TO REMAIN
P-503	"0"162+65.83	82.27	24		EXISTING APPROACH CULVERT TO REMAIN
P-504	"0"165+71.84	82.33	36		EXISTING CULVERT TO REMAIN
P-505	"0"166+45.73	82.35	24		EXISTING APPROACH CULVERT TO REMAIN
P-506	"0"175+66.83	82.52	36		EXISTING CULVERT TO REMAIN
P-507	"0"179+95.36	82.60	12		EXISTING APPROACH CULVERT TO REMAIN
P-508	"0"186+39.18	82.72	24		EXISTING APPROACH CULVERT TO REMAIN
P-509	"0"190+97.53	82.81	36		EXISTING CULVERT TO REMAIN
P-510	"0"200+41.41	82.99	36	X	
P-511	"0"202+89.83	83.05	24		EXISTING APPROACH CULVERT TO REMAIN
P-512	"0"211+62.97	83.21	36		EXISTING CULVERT TO REMAIN
P-513	"0"219+59.58	83.37	36		EXISTING CULVERT TO REMAIN
P-514	"0"219+95.33	83.37	24		EXISTING APPROACH CULVERT TO REMAIN
P-515	"0"225+10.32	83.47	36		EXISTING CULVERT TO REMAIN
P-516	"0"231+64.00	83.59	24		EXISTING APPROACH CULVERT TO REMAIN
P-517	"0"238+03.83	83.71	36		EXISTING CULVERT TO REMAIN
P-518	"0"243+00.02	83.81	36		EXISTING CULVERT TO REMAIN
P-519	"0"245+26.25	83.85	36		EXISTING CULVERT TO REMAIN
P-520	"0"250+31.47	83.95	36		EXISTING CULVERT TO REMAIN
P-521	"0"257+81.20	84.11	24		EXISTING APPROACH CULVERT TO REMAIN
P-522	"0"259+66.20	84.14	36		EXISTING CULVERT TO REMAIN
P-523	"0"264+07.03	84.22	36	X	
P-524	"0"267+22.01	84.28	36		EXISTING CULVERT TO REMAIN
P-525	"0"270+94.39	84.35	36		EXISTING CULVERT TO REMAIN
P-526	"0"274+72.95	84.43	24		EXISTING APPROACH CULVERT TO REMAIN
P-527	"0"277+32.54	84.48	36		EXISTING CULVERT TO REMAIN
P-528	"0"280+62.25	84.54	36		EXISTING CULVERT TO REMAIN
P-529	"0"284+97.18	84.62	36		EXISTING CULVERT TO REMAIN
P-530	"0"289+41.57	84.70	36		EXISTING CULVERT TO REMAIN
P-531	"0"298+22.04	84.87	36		EXISTING CULVERT TO REMAIN
P-532	"0"300+85.78	84.92	36		EXISTING CULVERT TO REMAIN
P-533	"0"315+40.63	85.19	36		EXISTING CULVERT TO REMAIN
P-534	"0"332+19.62	85.50	36		EXISTING CULVERT TO REMAIN
P-535	"0"337+18.92	85.60	48	X	POTENTIAL FISH PASS CULVERT
P-536	"0"343+41.03	85.72	36		EXISTING CULVERT TO REMAIN
P-537	"0"345+44.75	85.75	24		EXISTING APPROACH CULVERT TO REMAIN
P-538	"0"348+17.77	85.81	24		EXISTING APPROACH CULVERT TO REMAIN
P-539	"0"349+25.22	85.83	24		EXISTING APPROACH CULVERT TO REMAIN
P-540	"0"349+45.15	85.83	24		EXISTING APPROACH CULVERT TO REMAIN
P-541	"0"353+30.42	85.90	36		EXISTING CULVERT TO REMAIN
P-542	"0"357+81.41	85.99	36		EXISTING CULVERT TO REMAIN
P-543	"0"362+52.36	86.12	120		EXISTING MULTI-PLATE FISH CULVERT TO REMAIN
P-544	"0"363+11.13	86.13	48		EXISTING FISH PASS OVERFLOW CULVERT TO REMAIN
P-545	"0"385+21.20	86.55	36		EXISTING CULVERT TO REMAIN
P-546	"0"388+43.04	86.61	24		EXISTING APPROACH CULVERT TO REMAIN
P-547	"0"392+17.89	86.68	36		EXISTING CULVERT TO REMAIN
P-548	"0"398+71.56	86.80	36		EXISTING CULVERT TO REMAIN
P-549	"0"406+85.61	86.96	36		EXISTING CULVERT TO REMAIN
P-550	"0"418+61.41	87.08	36		EXISTING CULVERT TO REMAIN
P-551	"0"420+52.91	87.11	24		EXISTING APPROACH CULVERT TO REMAIN
P-552	"0"424+70.72	87.19	36		EXISTING CULVERT TO REMAIN
P-553	"0"427+20.42	87.24	36		EXISTING CULVERT TO REMAIN
P-554	"0"429+69.67	87.29	36		EXISTING CULVERT TO REMAIN
P-555	"0"438+37.59	87.45	36		EXISTING CULVERT TO REMAIN

Preliminary Plans

EXISTING CULVERT SUMMARY 1 OF 2

STATE OF ALASKA 49TH
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NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	E3	E10

EXISTING CULVERT SUMMARY

PIPE NO.	STATION	MILEPOST	DIAMTER (IN)	REMOVE	REMARKS
P-556	"0"454+76.45	87.76	36		EXISTING CULVERT TO REMAIN
P-557	"0"467+72.99	88.01	36		EXISTING CULVERT TO REMAIN
P-558	"0"477+77.77	88.20	36		EXISTING CULVERT TO REMAIN
P-559	"0"492+95.48	88.49	36		EXISTING CULVERT TO REMAIN
P-560	"0"495+95.31	88.54	24		EXISTING APPROACH CULVERT TO REMAIN
P-561	"0"496+71.42	88.56	36		EXISTING CULVERT TO REMAIN
P-562	"0"501+43.12	88.65	24		EXISTING CULVERT TO REMAIN
P-563	"0"508+82.87	88.79	48	X	POTENTIAL FISH PASS CULVERT
P-564	"0"512+86.61	88.86	48	X	POTENTIAL FISH PASS CULVERT
P-566	"0"516+34.58	88.93	24		EXISTING APPROACH CULVERT TO REMAIN
P-567	"0"517+72.78	88.96	24		EXISTING APPROACH CULVERT TO REMAIN
P-568	"0"518+37.30	88.97	24		EXISTING APPROACH CULVERT TO REMAIN
P-569	"0"520+27.98	89.01	24		EXISTING APPROACH CULVERT TO REMAIN
P-570	"0"520+42.67	89.01	24		EXISTING APPROACH CULVERT TO REMAIN
P-571	"0"522+50.40	89.05	24		EXISTING APPROACH CULVERT TO REMAIN
P-572	"0"523+79.96	89.08	24		EXISTING APPROACH CULVERT TO REMAIN
P-573	"0"527+67.14	89.15	24		EXISTING APPROACH CULVERT TO REMAIN
P-574	"0"538+73.16	89.36	24		EXISTING APPROACH CULVERT TO REMAIN
P-575	"0"552+99.34	89.63	36		EXISTING CULVERT TO REMAIN
P-576	"0"566+43.08	89.88	24		EXISTING APPROACH CULVERT TO REMAIN
P-577	"0"607+42.04	90.66	36		EXISTING CULVERT TO REMAIN
P-578	"0"607+56.77	90.66	24		EXISTING APPROACH CULVERT TO REMAIN
P-579	"0"611+95.99	90.75	108		EXISTING MULTI-PLATE FISH PASS CULVERT TO REMAIN
P-580	"0"627+19.90	91.08	24		EXISTING APPROACH CULVERT TO REMAIN
P-581	"0"632+00.44	91.17	24	X	REMOVE EXISTING APPROACH CULVERT
P-582	"0"634+64.94	91.22	24		EXISTING APPROACH CULVERT TO REMAIN
P-583	"0"636+18.00	91.25	24		EXISTING APPROACH CULVERT TO REMAIN
P-584	"0"686+43.37	92.17	24		EXISTING APPROACH CULVERT TO REMAIN
P-585	"0"686+44.11	92.17	24		EXISTING APPROACH CULVERT TO REMAIN
P-586	"0"696+32.35	92.36	24		EXISTING APPROACH CULVERT TO REMAIN
P-587	"0"701+45.36	92.45	24		EXISTING APPROACH CULVERT TO REMAIN
P-588	"0"703+27.86	92.49	24		EXISTING APPROACH CULVERT TO REMAIN
P-589	"0"705+47.32	92.53	24		EXISTING CULVERT TO REMAIN
P-590	"0"713+50.07	92.68	24		EXISTING APPROACH CULVERT TO REMAIN
P-591	"0"715+75.50	92.72	24		EXISTING APPROACH CULVERT TO REMAIN
P-592	"0"745+89.29	93.37	24		EXISTING CULVERT TO REMAIN
P-593	"0"746+50.86	93.38	24		EXISTING APPROACH CULVERT TO REMAIN
P-594	"0"779+71.80	94.09	24		EXISTING APPROACH CULVERT TO REMAIN
P-595	"0"780+23.56	94.10	24		EXISTING APPROACH CULVERT TO REMAIN
P-596	"0"782+04.45	94.14	24		EXISTING CULVERT TO REMAIN
P-597	"0"790+24.41	94.29	24		EXISTING CULVERT TO REMAIN
P-598	"0"805+33.70	94.58	24		EXISTING CULVERT TO REMAIN
P-599	"0"810+57.16	94.68	24		EXISTING APPROACH CULVERT TO REMAIN
P-600	"0"814+28.26	94.75	24		EXISTING CULVERT TO REMAIN
P-601	"0"830+18.47	95.13	24		EXISTING CULVERT TO REMAIN
P-602	"0"834+09.80	95.20	24		EXISTING CULVERT TO REMAIN
P-603	"0"836+89.47	95.25	24		EXISTING APPROACH CULVERT TO REMAIN
P-604	"0"857+22.97	95.64	24		EXISTING CULVERT TO REMAIN
P-605	"0"865+89.44	95.80	24		EXISTING CULVERT TO REMAIN
P-606	"0"872+55.36	95.93	24		EXISTING APPROACH CULVERT TO REMAIN
P-607	"0"887+14.59	96.20	48	X	POTENTIAL FISH PASS CULVERT
P-608	"0"896+32.84	96.38	24		EXISTING CULVERT TO REMAIN
P-609	"0"928+14.40	96.98	24		EXISTING CULVERT TO REMAIN
P-610	"0"946+84.65	97.03	24		EXISTING CULVERT TO REMAIN
P-611	"0"954+15.12	97.17	24		EXISTING CULVERT TO REMAIN

Preliminary Plans

EXISTING CULVERT SUMMARY 2 OF 2

STATE OF ALASKA 49TH
Russell M. Johnson
CE 9963
REGISTERED PROFESSIONAL ENGINEER

PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
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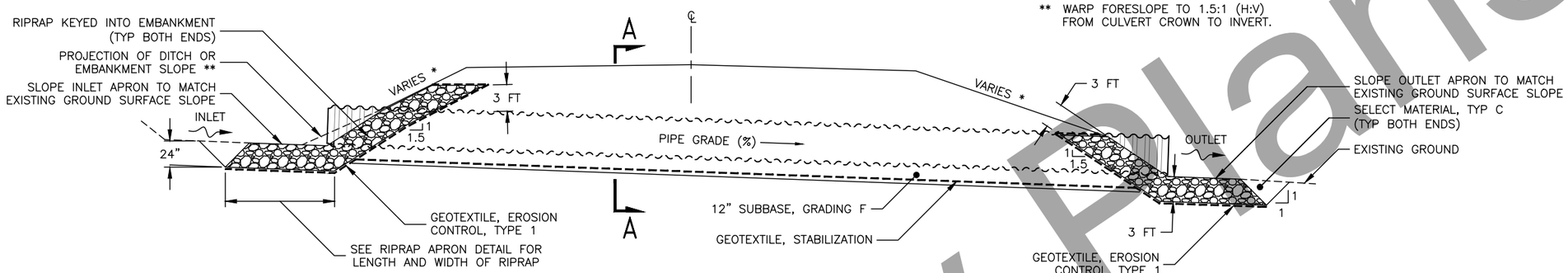
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	E4	E10

* EMBANKMENT FORESLOPE VARIES; SEE ROADWAY TYPICAL SECTION.

** WARP FORESLOPE TO 1.5:1 (H:V) FROM CULVERT CROWN TO INVERT.

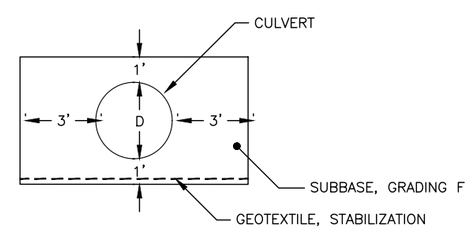


CULVERT WITH RIPRAP APRON

FOR USE ON 36" CULVERTS

CULVERT NOTES:

1. EROSION CONTROL STRUCTURES MAY BE FIELD ADJUSTED BY THE ENGINEER TO TAKE ADVANTAGE OF EXISTING CHANNEL FEATURES.
2. CULVERT DETAILS SHOWN ON THIS SHEET ARE SCHEMATIC AND NOT TO SCALE.
3. GEOTEXTILE, EROSION CONTROL, CLASS I UNDER THE RIPRAP APRONS SHALL BE NON-WOVEN NEEDLE PUNCH.
4. EXCAVATE BELOW EXISTING GROUND WHERE RIPRAP IS REQUIRED AND BACKFILL WITH SPECIFIED DEPTH AND CLASS OF RIPRAP AS SHOWN; THIS WORK IS SUBSIDIARY TO 611 PAY ITEM. THE TOP OF RIPRAP SHALL BE FLUSH WITH THE ADJACENT DITCH OR EXISTING GROUND SURFACE.
5. TRANSITION THE EMBANKMENT WARP FROM THE CULVERT INVERT TO THE NORMAL EMBANKMENT FORESLOPE CATCH OVER A DISTANCE OF 4D LEFT AND RIGHT OF EACH CULVERT OPENING.
6. SEE SECTION A-A DETAIL FOR GEOTEXTILE AND CULVERT BEDDING REQUIREMENTS OF ALL CULVERT DIAMETERS.
7. SEE THE LARGE & ENHANCE HYDRAULIC DESIGN CULVERT DETAILS FOR CULVERTS THAT ARE 48" OR LARGER IN DIAMETER.



SECTION A-A

FOR USE ON ALL CULVERTS

8. CULVERT EXCAVATION LIMITS NOT SHOWN. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCE, AND PROCEDURES OF CONSTRUCTION SAFETY AND QUALITY CONTROL.
9. CONSTRUCT TYPICAL SECTION 2 PAVEMENT STRUCTURE OVER THE PIPE.

CULVERT SECTION VIEW & RIPRAP APRON DETAILS

STATE OF ALASKA 49TH
Russell M. Johnson
CE 9963
REGISTERED PROFESSIONAL ENGINEER

Preliminary Plans

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NO.	DATE	REVISION

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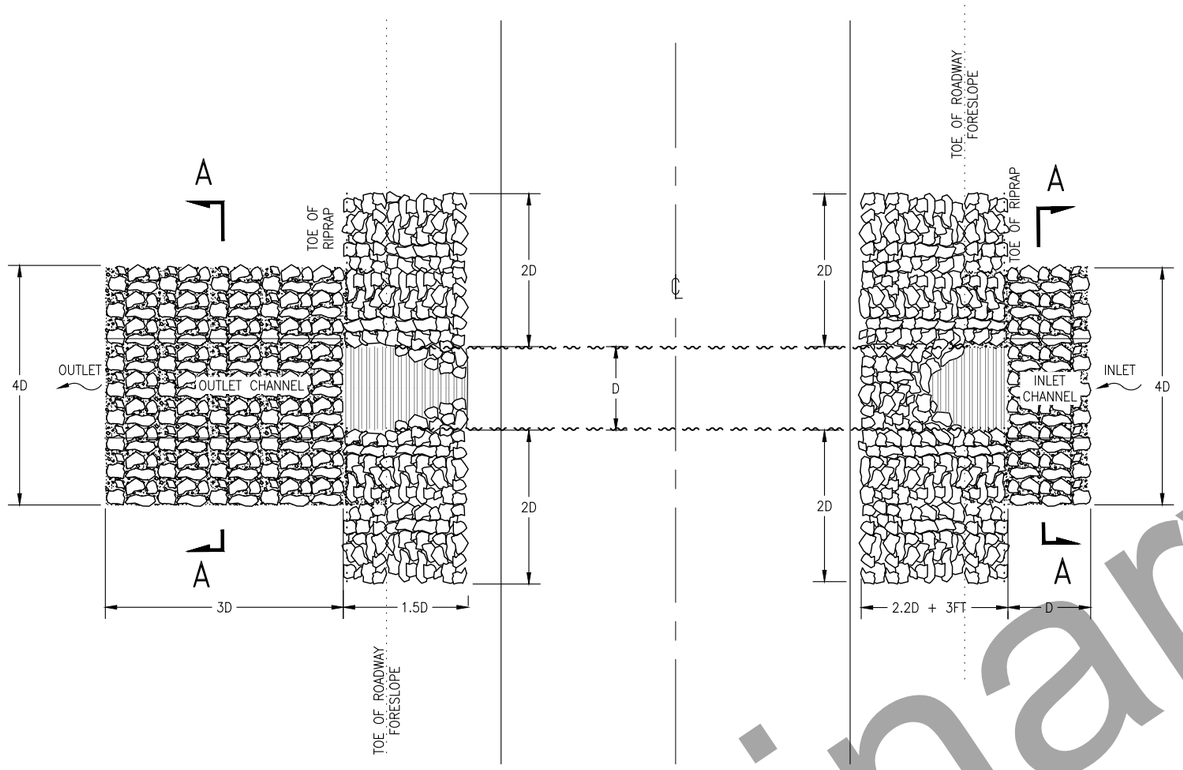
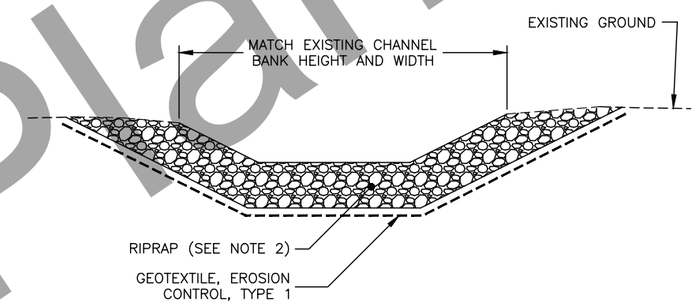
ALASKA	NFHWY00510	2020	E5	E10



RIPRAP APRON DETAIL
FOR USE ON 36" CULVERTS



SECTION A–A
CULVERT INLET AND OUTLET RIPRAP APRONS

NOTES:

1. AT PRE–EXISTING CHANNELS, EXCAVATE THE CHANNEL AND BACKFILL AS SHOWN ON THE PLANS. GRADE AND DAYLIGHT OUTLET APRONS/CHANNELS TO DRAIN AWAY FROM THE ROADWAY.
2. SEE CULVERT SUMMARY FOR CLASS OF RIPRAP TO USE AT INDIVIDUAL CULVERT LOCATIONS.
3. ADJUST RIPRAP APRON DIMENSIONS TO AVOID UTILITY CONFLICTS AS DIRECTED BY THE ENGINEER.
4. RIPRAP APRON DIMENSIONS MAY BE ADJUSTED BY THE ENGINEER TO FIELD FIT EXISTING CONDITIONS.

Preliminary Plans

RIPRAP APRON DETAILS

STATE OF ALASKA 49TH
Russell M. Johnson
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REGISTERED PROFESSIONAL ENGINEER

PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451–2200
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CULVERT INSTALLATION SUMMARY, MILE 85.60

DESCRIPTION	LOCATION	DIAMETER (IN)	LENGTH (FT)	SKEW	ELEVATIONS (FT) *	
					INLET INVERT	OUTLET INVERT
MAIN PIPE 10 GAGE CSPA	337+18.92	60	155	N/A	1632.60	1628.50

HYDROLOGIC & HYDRAULIC SUMMARY

RICHARDSON HIGHWAY MILE 85.60 – STATION 337+18.92 – UNNAMED CREEK

BASIN AREA (SQ MI)	QFISH (CFS)	50% – Q2 (CFS)	20% – Q5 (CFS)	2% – Q50 (CFS)	1% – Q100 (CFS)
0.78	N/A	10.6	21.3	55.1	67.5

HEADWATER ELEVATION @Q50 IS 1635.70 FT, HEADWATER ELEVATION @Q100 IS 1635.95 FT

ROAD OVERTOPS AT APPROXIMATELY 207.11 CFS, Hw/D@1=90.4 CFS

CULVERT PURPOSE: CROSS DRAINAGE / ENHANCED HYDRAULIC DESIGN

ENHANCED HYDRAULIC DESIGN CULVERT SUMMARY, MILE 88.79

DESCRIPTION	LOCATION	DIAMETER (IN)	LENGTH (FT)	SKEW	ELEVATIONS (FT) *	
					INLET INVERT	OUTLET INVERT
MAIN PIPE 10 GAGE SPP	508+82.87	72	128	N/A	1389.50	1387.50

HYDROLOGIC & HYDRAULIC SUMMARY

RICHARDSON HIGHWAY MILE 88.79 – STATION 508+82.87 – UNNAMED CREEK

BASIN AREA (SQ MI)	QFISH (CFS)	50% – Q2 (CFS)	20% – Q5 (CFS)	2% – Q50 (CFS)	1% – Q100 (CFS)
2.34	N/A	23.0	45.4	113.0	137.0

HEADWATER ELEVATION @Q50 IS 1394.90 FT, HEADWATER ELEVATION @Q100 IS 1395.51 FT

ROAD OVERTOPS AT APPROXIMATELY 350.20 CFS, Hw/D@1= 150.00 CFS

CULVERT PURPOSE: CROSS DRAINAGE/ENHANCED HYDRAULIC DESIGN

CULVERT INSTALLATION SUMMARY, MILE 88.87

DESCRIPTION	LOCATION	DIAMETER (IN)	LENGTH (FT)	SKEW	ELEVATIONS (FT) *	
					INLET INVERT	OUTLET INVERT
MAIN PIPE 10 GAGE SPP	512+86.61	60	133	N/A	1390.50	1388.50

HYDROLOGIC & HYDRAULIC SUMMARY

RICHARDSON HIGHWAY MILE 88.87 – STATION 512+86.61 – UNNAMED CREEK

BASIN AREA (SQ MI)	QFISH (CFS)	50% – Q2 (CFS)	20% – Q5 (CFS)	2% – Q50 (CFS)	1% – Q100 (CFS)
1.79	N/A	19.0	36.7	92.4	113.0

HEADWATER ELEVATION @Q50 IS 1395.35 FT, HEADWATER ELEVATION @Q100 IS 1395.91 FT

ROAD OVERTOPS AT APPROXIMATELY 471.90 CFS, Hw/D@1= 146.00 CFS

CULVERT PURPOSE: CROSS DRAINAGE/ENHANCED HYDRAULIC DESIGN

ENHANCED HYDRAULIC DESIGN CULVERT SUMMARY, MILE 96.20

DESCRIPTION	LOCATION	DIAMETER (IN)	LENGTH (FT)	SKEW	ELEVATIONS (FT) *	
					INLET INVERT	OUTLET INVERT
MAIN PIPE 10 GAGE SPP	887+14.59	96	112	N/A	1370.00	1369.00

HYDROLOGIC & HYDRAULIC SUMMARY

RICHARDSON HIGHWAY MILE 54.11 – STATION 2869+77 – SQUAW CREEK

BASIN AREA (SQ MI)	QFISH (CFS)	50% – Q2 (CFS)	20% – Q5 (CFS)	2% – Q50 (CFS)	1% – Q100 (CFS)
1.36	10.3	49.1	86.2	189	225

HEADWATER ELEVATION @Q50 IS 1385.0 FT, HEADWATER ELEVATION @Q100 IS 1385.9 FT

ROAD OVERTOPS AT APPROXIMATELY 336 CFS, Hw/D@1= 260 CFS

CULVERT PURPOSE: CROSS DRAINAGE/ENHANCED HYDRAULIC DESIGN FOR FISH PASSAGE

HYDROLOGIC & HYDRAULIC SUMMARY

RICHARDSON HIGHWAY MILE 95.90 – STATION 887+14.59 – UNNAMED CREEK

BASIN AREA (SQ MI)	QFISH (CFS)	50% – Q2 (CFS)	20% – Q5 (CFS)	2% – Q50 (CFS)	1% – Q100 (CFS)
5.30	N/A	49.00	91.50	216.00	260.00

HEADWATER ELEVATION @Q50 IS 1377.27 FT, HEADWATER ELEVATION @Q100 IS 1378.05 FT

ROAD OVERTOPS AT APPROXIMATELY 701.1 CFS, Hw/D@1 = 270.00 CFS

CULVERT PURPOSE: CROSS DRAINAGE/ENHANCED HYDRAULIC DESIGN

Preliminary Plans

STATE OF ALASKA 49TH JEFFREY P. STUTZKE CE 11357 REGISTERED PROFESSIONAL ENGINEER

LARGE & END CULVERT INSTALLATION DETAILS & H&H SUMMARIES

PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
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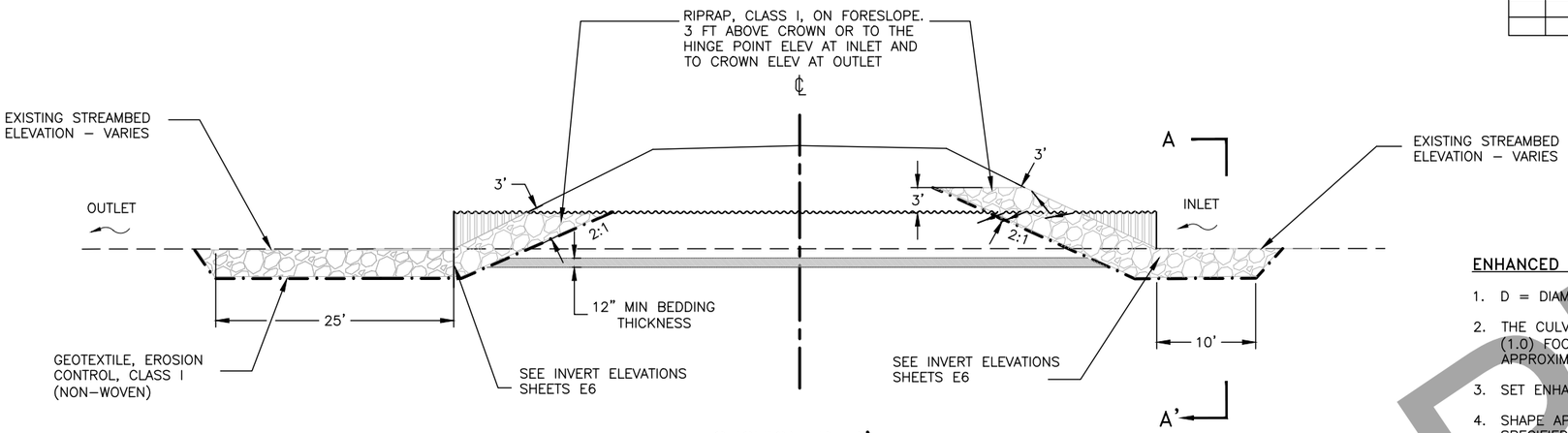
NO.	DATE	REVISION

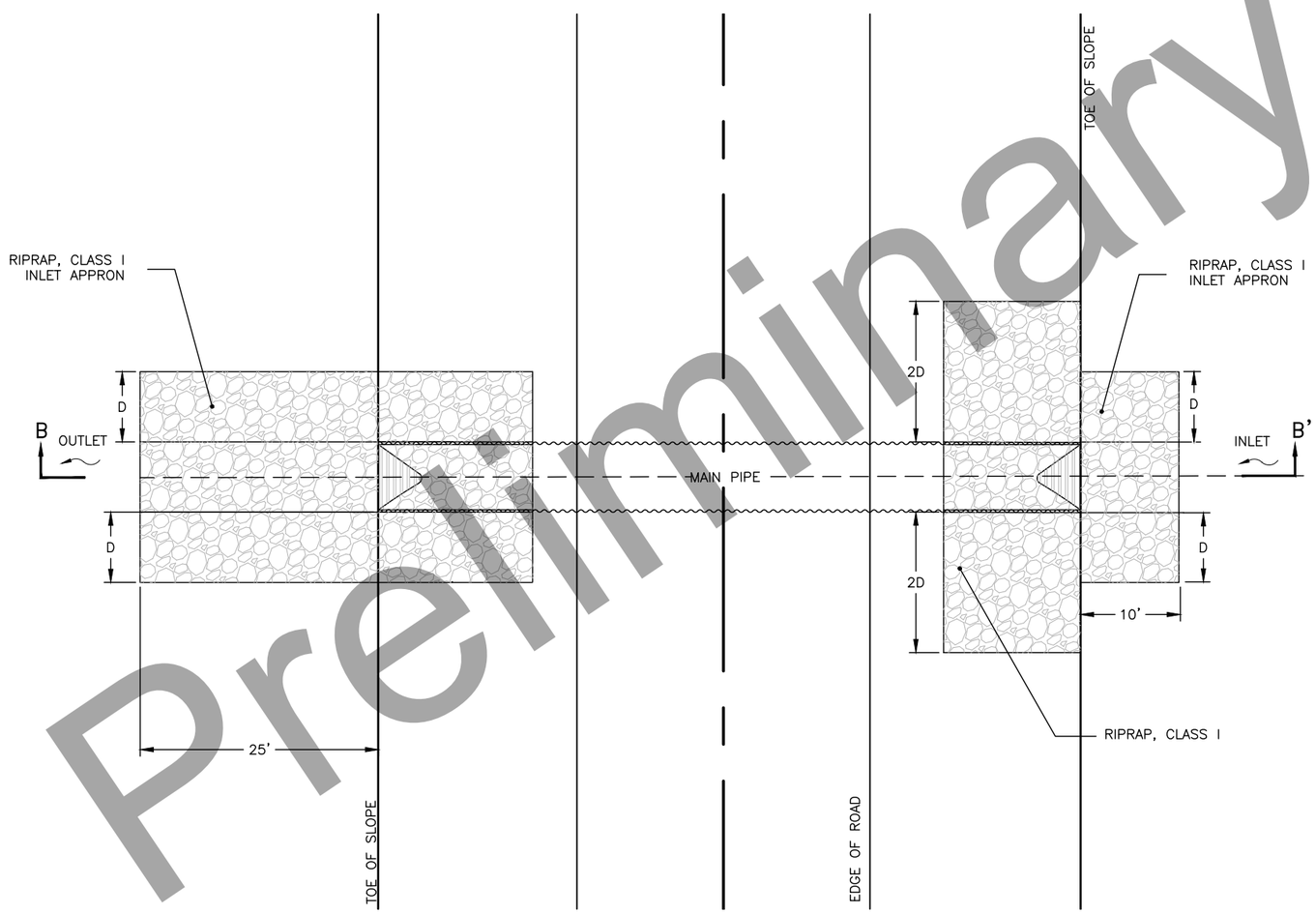
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	E7	E10



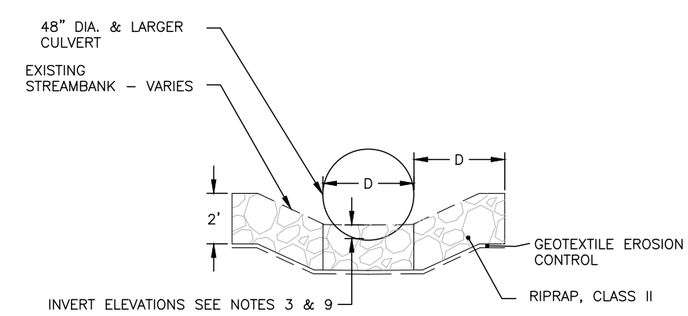
SECTION B–B'

ENHANCED HYDRAULIC DESIGN (EHD) & LARGE CULVERT NOTES:

1. D = DIAMETER FOR ROUND CULVERTS AND SPAN FOR ARCH CULVERTS.
2. THE CULVERT INVERTS SHALL BE SET AT ELEVATIONS IN CULVERT SUMMARY TABLES, APPROXIMATELY ONE (1.0) FOOT BELOW THE STREAMBED ELEVATION (DEPRESSED/EMBEDDED) ON EHD CULVERTS AND APPROXIMATELY MATCHING STREAMBED ELEVATIONS AT NON–EHD CULVERTS.
3. SET ENHANCED HYDRAULIC DESIGN AND LARGE CULVERTS AT STREAM GRADIENT.
4. SHAPE APRON INLET AND OUTLET CHANNELS TO MATCH EXISTING CREEK CHANNEL CROSS SECTION, OR AS SPECIFIED ON THE PLANS. IT MAY BE NECESSARY TO CREATE A V–SHAPED, LOW–FLOW CHANNEL IN THE INLET AND OUTLET APRONS OF EHD CULVERTS.
5. RIPRAP APRON MATERIAL NEED NOT BE PLACED INSIDE THE ENTIRE LENGTH OF THE EHD CULVERT DEPRESSED INVERT. CREATE A RAMP, ON THE INSIDE OF THE CULVERT AT INLET AND OUTLET. GENERALLY, ALLUVIAL STREAMBED MATERIAL WILL EVENTUALLY FILL THE DEPRESSED INVERT.
6. CULVERT APRONS CONSIST OF RIPRAP WITH VOIDS FILLED WITH AGGREGATE SUBBASE GRADING F.



PLAN VIEW



SECTION A–A'

LARGE & ENHANCED HYDRAULIC DESIGN CULVERT DETAILS

STATE OF ALASKA 49TH JEFFREY P. STUTZKE CE 11357 REGISTERED PROFESSIONAL ENGINEER

Preliminary Plans

PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
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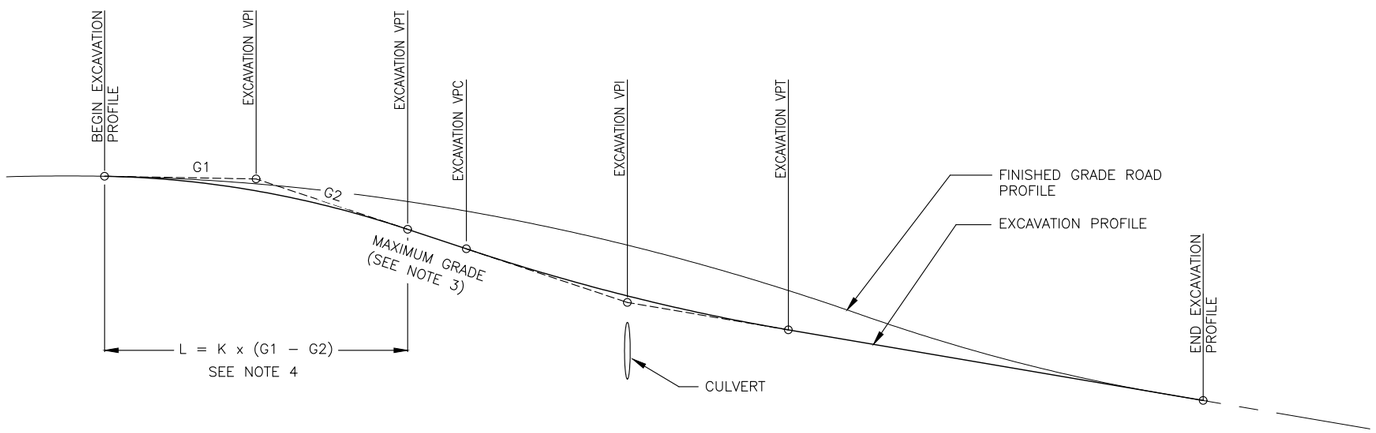
NO.	DATE	REVISION

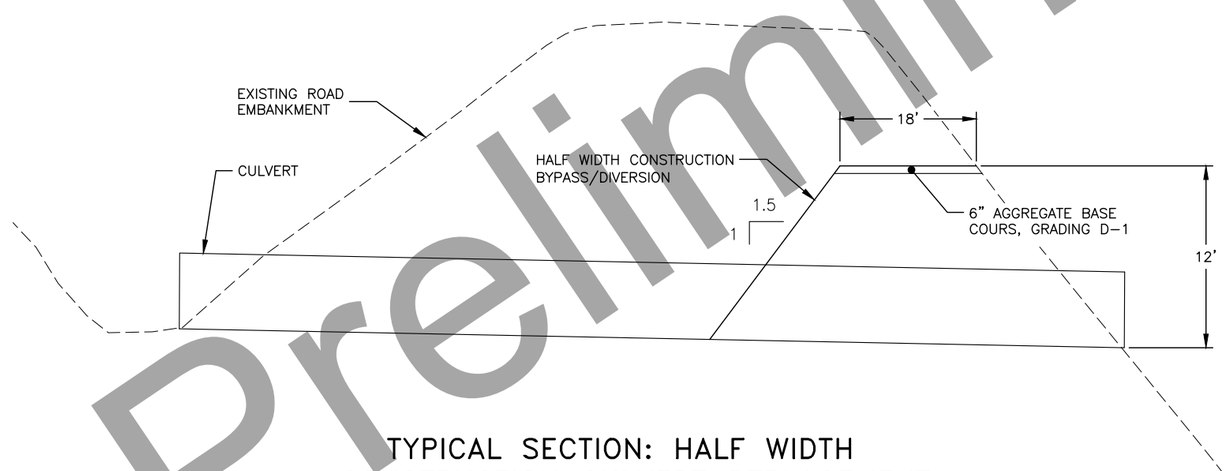
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	E8	E10



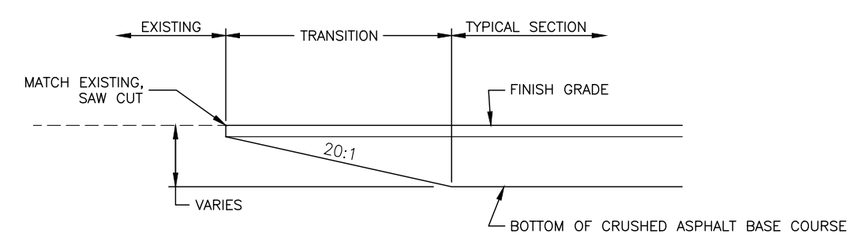
CULVERT EXCAVATION PROFILE

CULVERT EXCAVATION NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR DEVELOPING AND SUBMITTING THE EXCAVATION PROFILE AND HORIZONTAL ALIGNMENT TO THE ENGINEER FOR APPROVAL PRIOR TO BEGINNING CULVERT EXCAVATION WORK.
2. HORIZONTAL AND VERTICAL GEOMETRY MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER TO ADJUST FOR EXISTING CONDITIONS
3. THE MAXIMUM ALLOWABLE VERTICAL GRADE IS 10%
4. DETERMINE THE MINIMUM ALLOWABLE LENGTH OF VERTICAL CURVE (L) BY MULTIPLYING THE ALGEBRAIC DIFFERENCE IN GRADES (G1–G2) BY THE APPLICABLE RATE OF VERTICAL CURVATURE RATE (K) GIVEN BELOW:
   - 4.1. FOR CREST VERTICAL CURVES K = 19
   - 4.2. FOR SAG VERTICAL CURVES K = 37
5. MAINTAIN 2 FEET OR GREATER OF COVER OVER THE TOP OF CULVERTS
6. OBTAIN THE ENGINEER'S APPROVAL ON ALL TRAFFIC CONTROL PLANS PRIOR TO EXCAVATING FOR NEW CULVERTS
7. ALL WORK AND RESOURCES REQUIRED TO DEVELOP EXCAVATION PROFILES AND HORIZONTAL ALIGNMENTS ARE SUBSIDIARY TO SERIES 602 AND 603 SERIES PAY ITEMS



TYPICAL SECTION: HALF WIDTH CONSTRUCTION CULVERT REPLACEMENT



TYPICAL TRANSITION TO EXISTING PAVEMENT DETAIL

Preliminary Plans

HALF WIDTH CONSTRUCTION DETAIL

STATE OF ALASKA 49TH Russell M. Johnson CE 9963 REGISTERED PROFESSIONAL ENGINEER

PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
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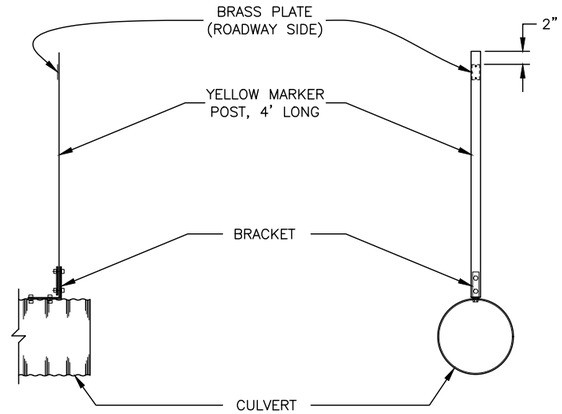
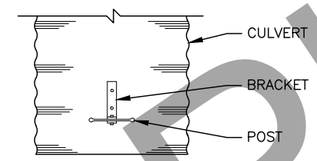
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	E9	E10

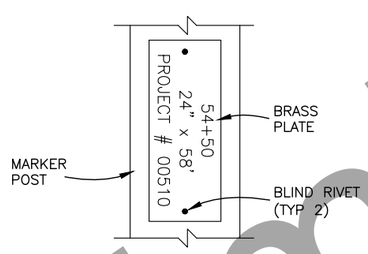


SIDE VIEW END VIEW



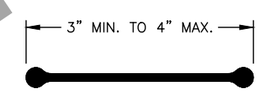
TOP VIEW

CULVERT MARKER POST DETAIL

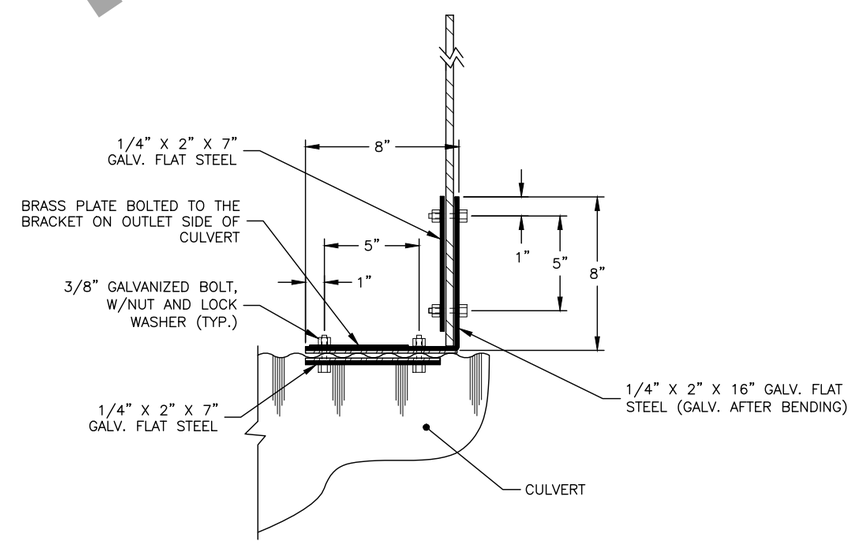


STATION AND SIZE OF PIPE, AND PROJECT NUMBER TO BE STAMPED USING LETTERS A MINIMUM OF 1/4" HIGH INTO A 2" x 6" x .064" THICK BRASS PLATE. FASTEN PLATE TO THE SIDE FACING THE ROADWAY WITH TWO 1/8" DIA. BLIND RIVETS.

BRASS PLATE DETAIL



POST DETAIL



BRACKET DETAIL

CULVERT MARKER POST DETAILS

CULVERT MARKER NOTES:

1. DRILL ALL BOLT HOLES. COAT HOLES IN PIPE WITH ZINC RICH PAINT. FLAME CUTTING SHALL NOT BE PERMITTED.
2. MARKER POST ENDS SHALL BE SQUARE.
3. GASKET MATERIAL SHALL BE PLACED BETWEEN DISSIMILAR METALS. GASKET MATERIAL SHALL BE APPROVED PRIOR TO INSTALLATION.
4. WHEN MORE THAN TWO PIPES ARE LOCATED TOGETHER. ONLY THE FIRST AND LAST PIPE SHALL HAVE A MARKER.

Preliminary Plans

STATE OF ALASKA 49TH
Russell M. Johnson
CE 9963
REGISTERED PROFESSIONAL ENGINEER

CULVERT MARKER POST DETAIL

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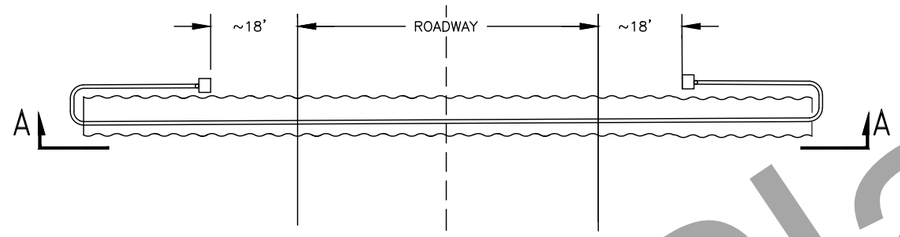
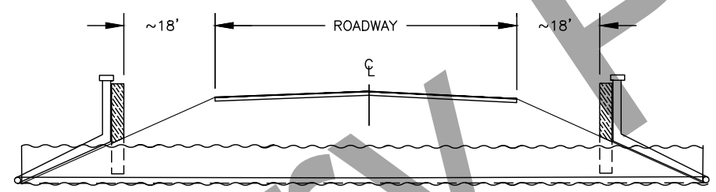
ALASKA	NFHWY00510	2020	E10	E10

THAW PIPE NOTES:

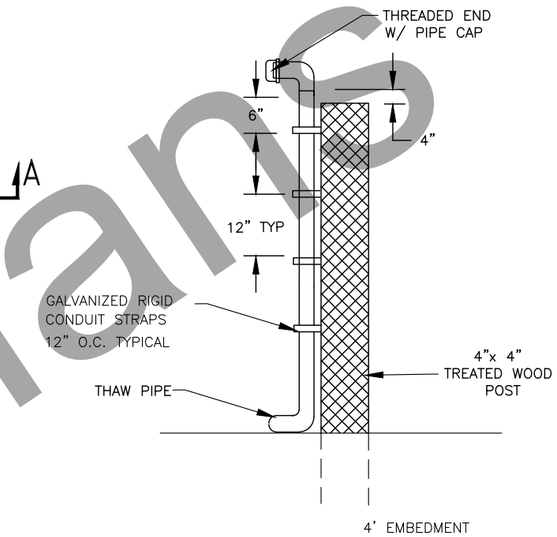
1. INSTALL 1/2 INCH THAW PIPE ALONG THE BOTTOM OF THE CULVERT. THAW PIPES SHALL LAY FREELY WITH NO PIPE HANGERS OR ATTACHMENTS. SEE CULVERT SUMMARY FOR THAW PIPE LOCATIONS.
2. ALL THAW PIPES SHALL RUN THE ENTIRE LENGTH OF THE CULVERT AND HAVE NO JOINTS OR COUPLINGS WITHIN 30" OF INSIDE OF CULVERT ENDS.
3. FIELD BEND ALL CORNERS, WITHOUT KINKS 180' AROUND CULVERT ENDS FROM INSIDE TO OUTSIDE OF THE CULVERT WITH NO GREATER THAN 1' RADIUS. FITTINGS MAY BEGIN ON OUTSIDE OF THE CULVERT AFTER COMING BACK AT LEAST 6" PAST CULVERT ENDS.
4. THAW PIPES SHALL BE WATER TIGHT AND ABLE TO HOLD ANTIFREEZE. USE THREAD SEALANT ON FITTINGS AND CAP THAW PIPE ENDS.
5. NEATLY RUN THAW PIPES ALONG CULVERT OR EMBANKMENT TO TERMINATION BY SECURELY MOUNTING 5' ABOVE THE GROUND ON PRESSURE TREATED SUPPORT POSTS OF HEM-FIR, NO. 2 OR BETTER. USE AMMONIACAL COPPER ZINC ARSENATE (ACZA) OR CHROMATED COPPER ARSENATE (CCA) PRESERVATIVES ON SUPPORT POSTS. PRESSURE TREAT IN ACCORDANCE WITH AASHTO M133.
6. FASTEN THAW PIPE TO SUPPORT POSTS WITH GALVANIZED RIGID CONDUIT STRAPS AND 2" LONG GALVANIZED LAG SCREWS AT MAX. 12" CENTERS.
7. SUPPORT POSTS SHALL BE LOCATED AS DIRECTED BY THE ENGINEER AT MINIMUM 18' FROM THE EDGE OF PAVEMENT.
8. INSTALL STAND PIPE ON INLET AND OUTLET END.
9. CHARGE/FILL THE THAW PIPE WITH NON-TOXIC BIODEGRADABLE ANTIFREEZE RATED TO -60 DEGREES FAHRENHEIT. THIS IS SUBSIDIARY TO 616.0002.0000 PAY ITEM.



PLAN



SECTION A-A



STAND PIPE

Preliminary Plans

CULVERT THAW PIPE DETAIL

STATE OF ALASKA 49TH
Russell M. Johnson
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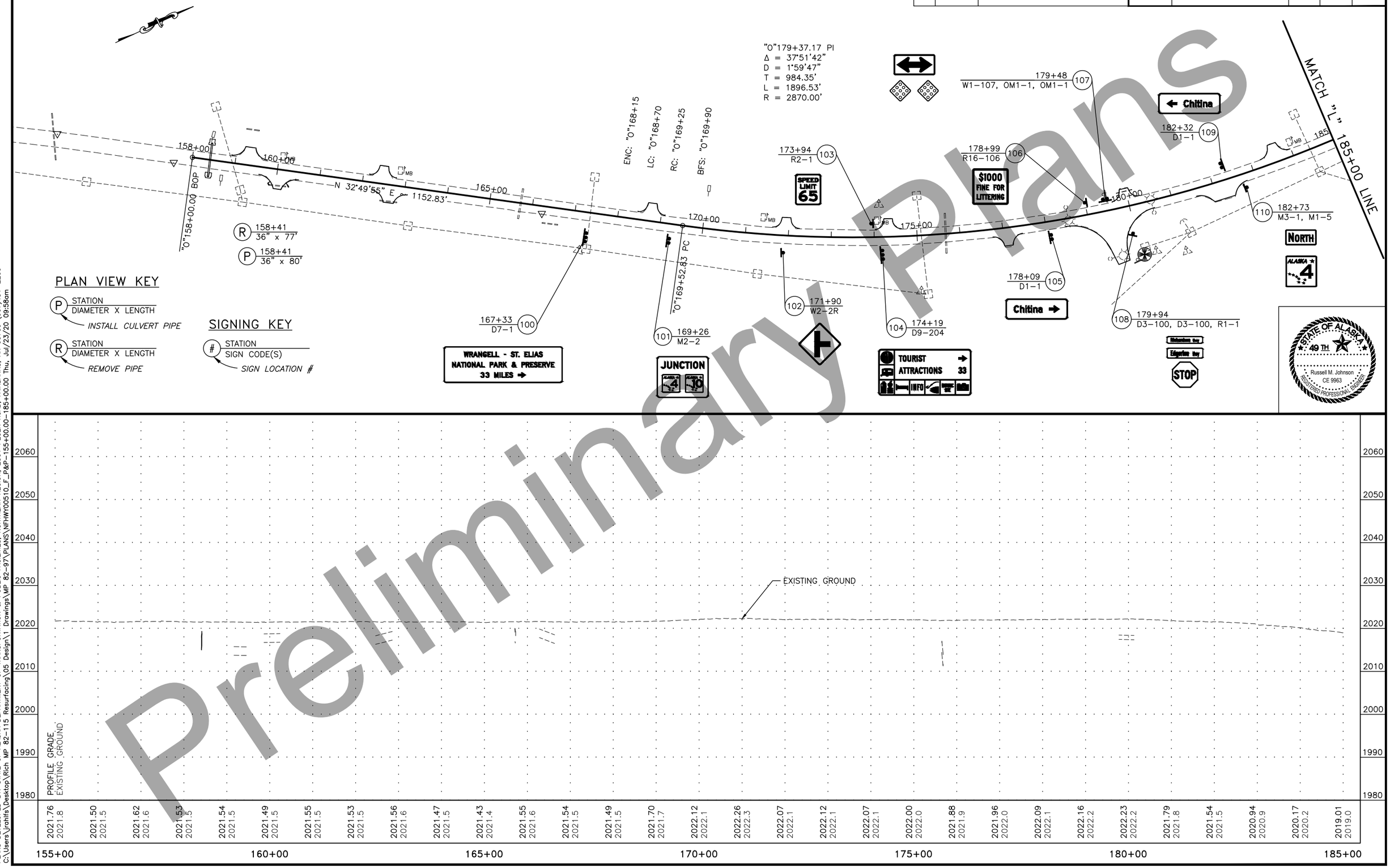
PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
C:\Users\jrothfis\Desktop\Rich MP 82-115 Resurfacing\05 Design\1 Drawings\MP 82-97\PLANS\NFHWY00510_E_DETAILS-THAW PIPE Thu, Jul/23/20 09:56am

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	F1	F27



Preliminary Plans

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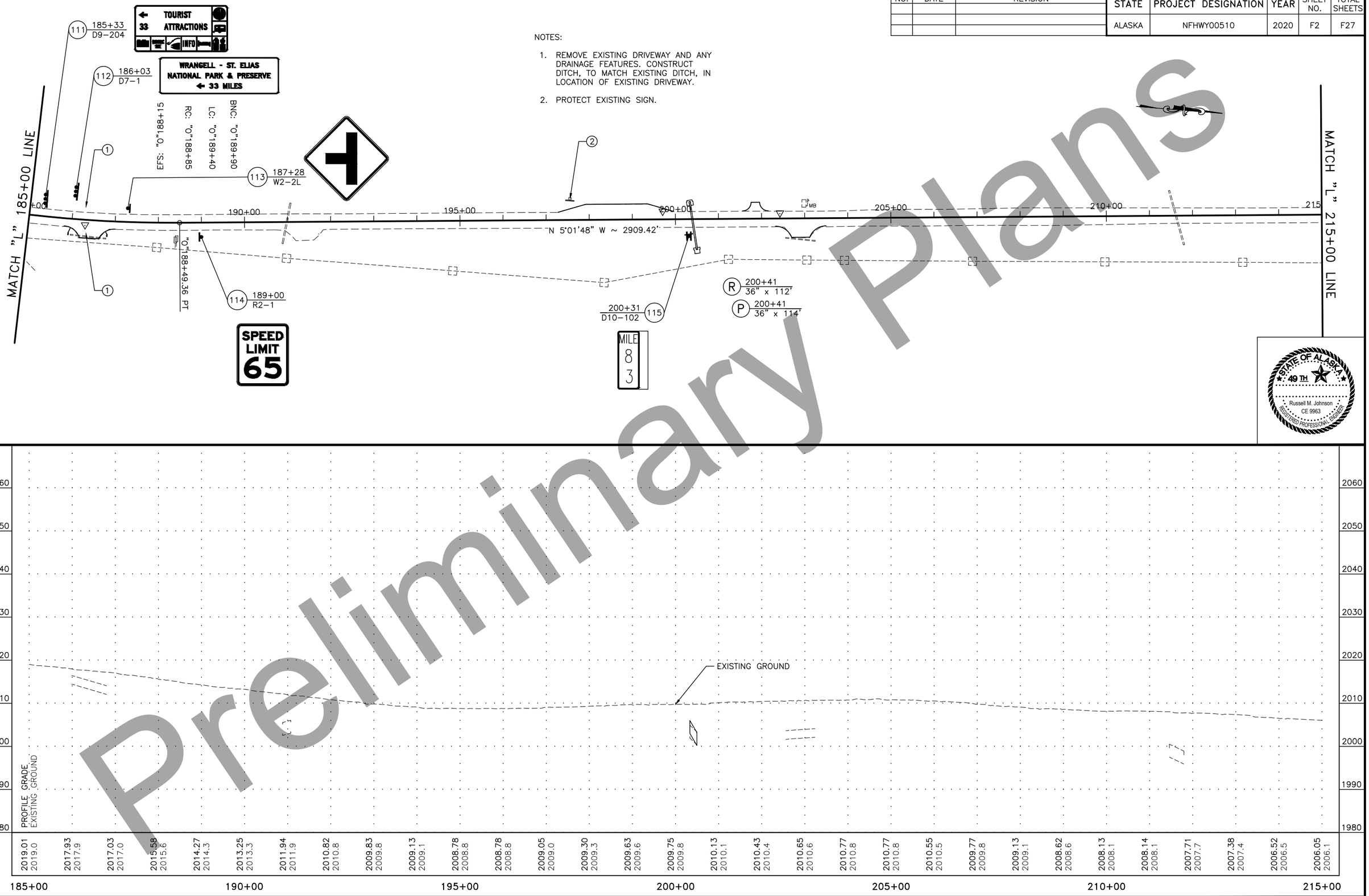
C:\Users\jrollis\Desktop\Rich MP 82-115 Resurfacing\05 Design\1 Drawings\MP 82-97\PLANS\NFHWY00510_F_P&P-155+00.00-185+00.00 Thu, Jul/23/20 09:58am

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	F2	F27

NOTES:

1. REMOVE EXISTING DRIVEWAY AND ANY DRAINAGE FEATURES. CONSTRUCT DITCH, TO MATCH EXISTING DITCH, IN LOCATION OF EXISTING DRIVEWAY.
2. PROTECT EXISTING SIGN.



STATE OF ALASKA 49TH
Russell M. Johnson
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Preliminary Plans

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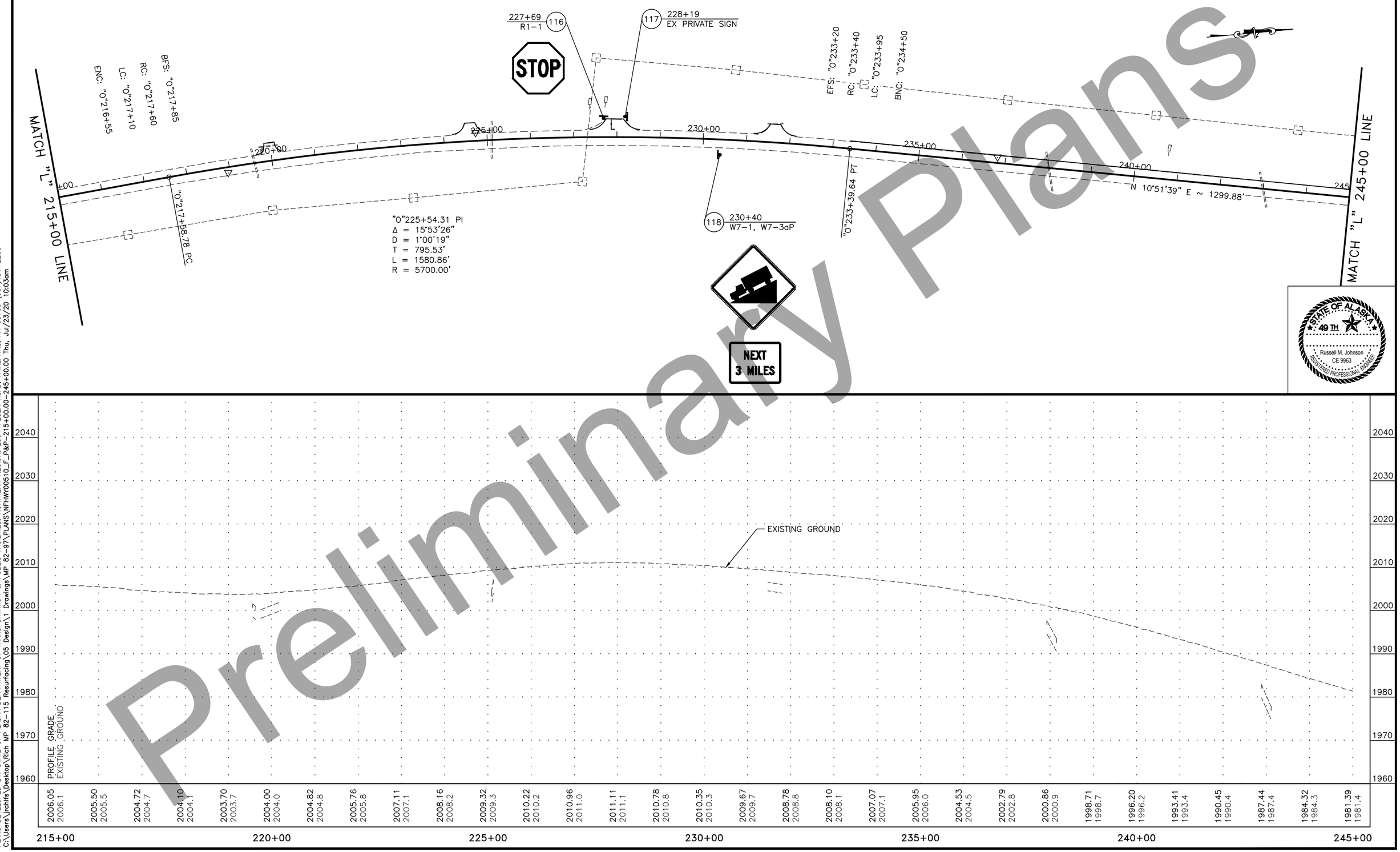
C:\Users\jrahis\Desktop\Rich MP 82-115 Resurfacing\05 Design\1 Drawings\MP 82-97\PLANS\NFHWY00510_F_P&P-185+00.00-215+00.00 Thu, Jul/23/20 10:00am

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	F3	F27



Preliminary Plans

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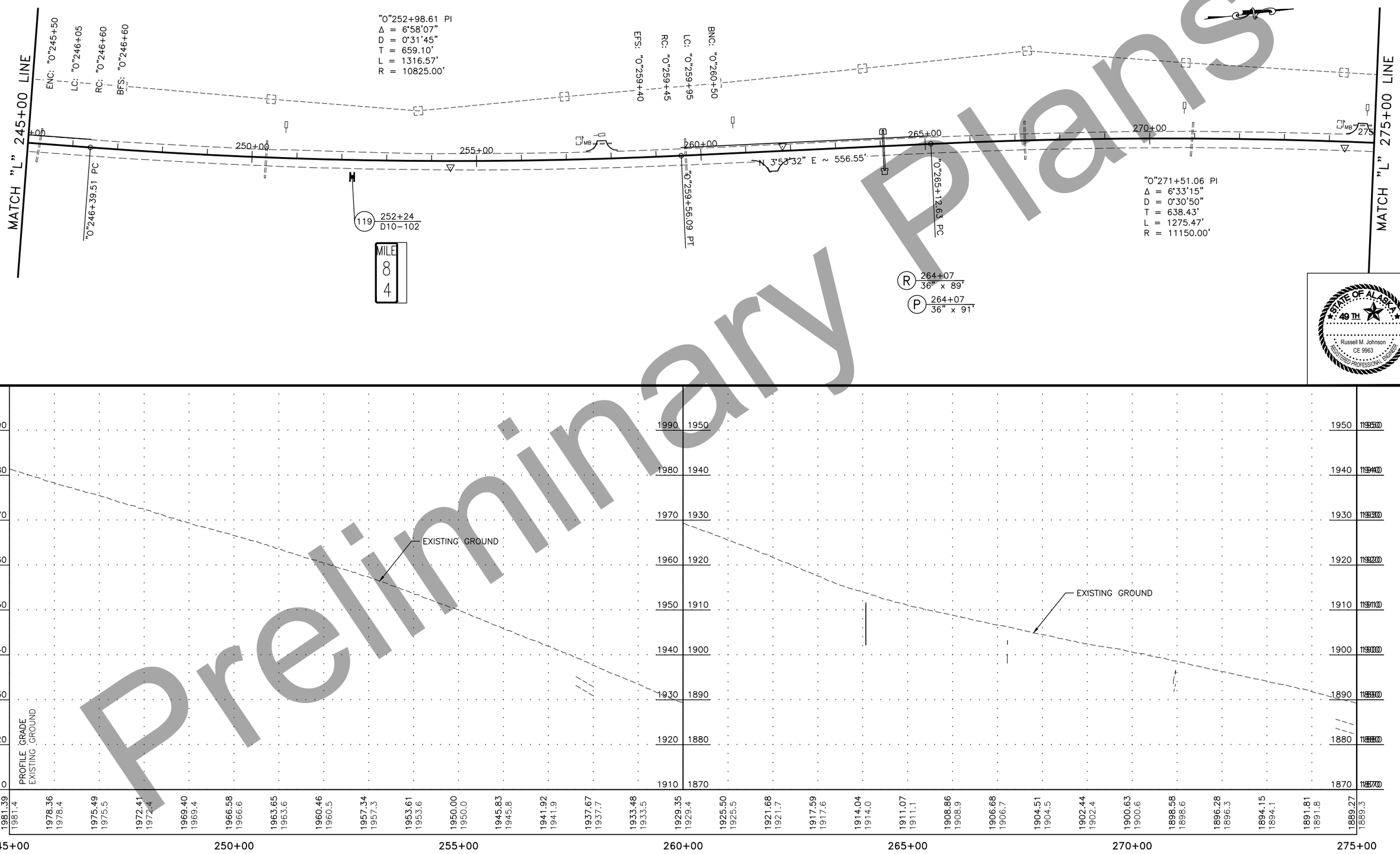
C:\Users\jrahlfs\Desktop\Rich MP 82-115 Resurfacing\05 Design\1 Drawings\MP 82-97\PLANS\NFHWY00510_F_P&P-215+00.00-245+00.00 Thu, Jul/23/20 10:03am

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	F4	F27



Preliminary Plans

PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
C:\Users\jrahlfs\Desktop\Rich MP 82-115 Resurfacing\05 Design\1 Drawings\MP 82-97\PLANS\NFHWY00510_F_P&P-245+00.00-275+00.00 Thu, Jul/23/20 10:05am

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
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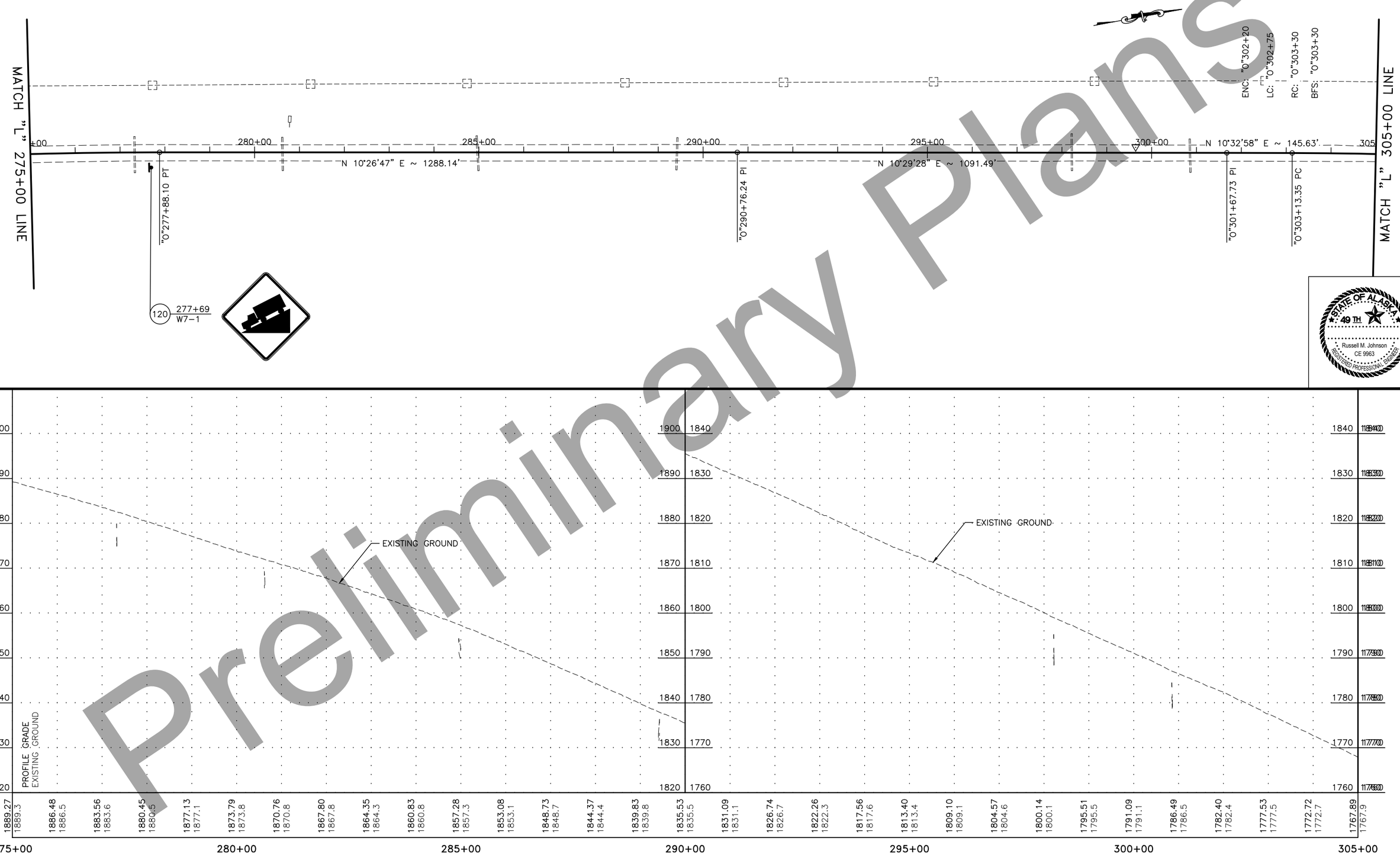

STATE OF ALASKA
49 TH
Russell M. Johnson
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Preliminary Plans

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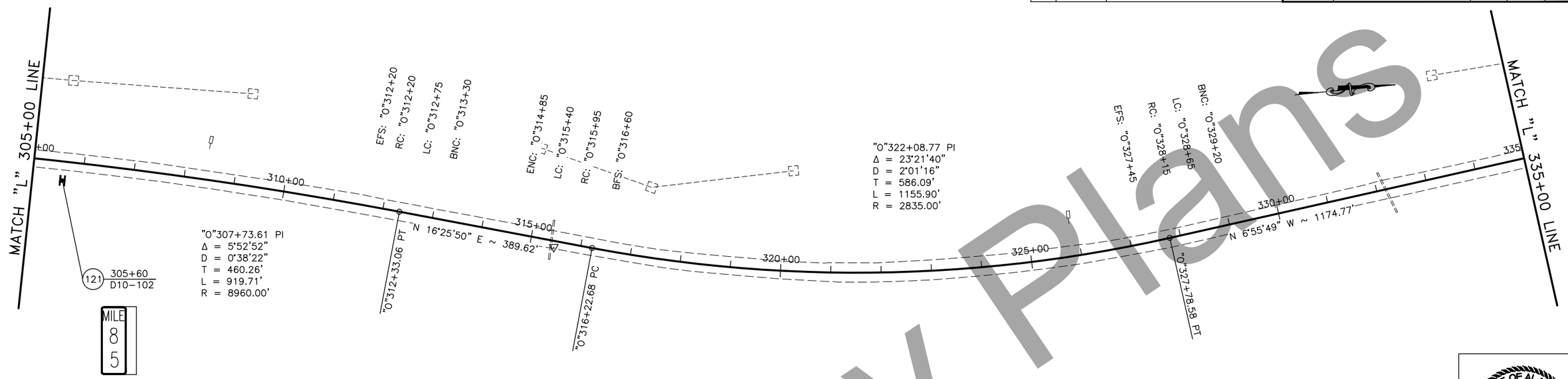
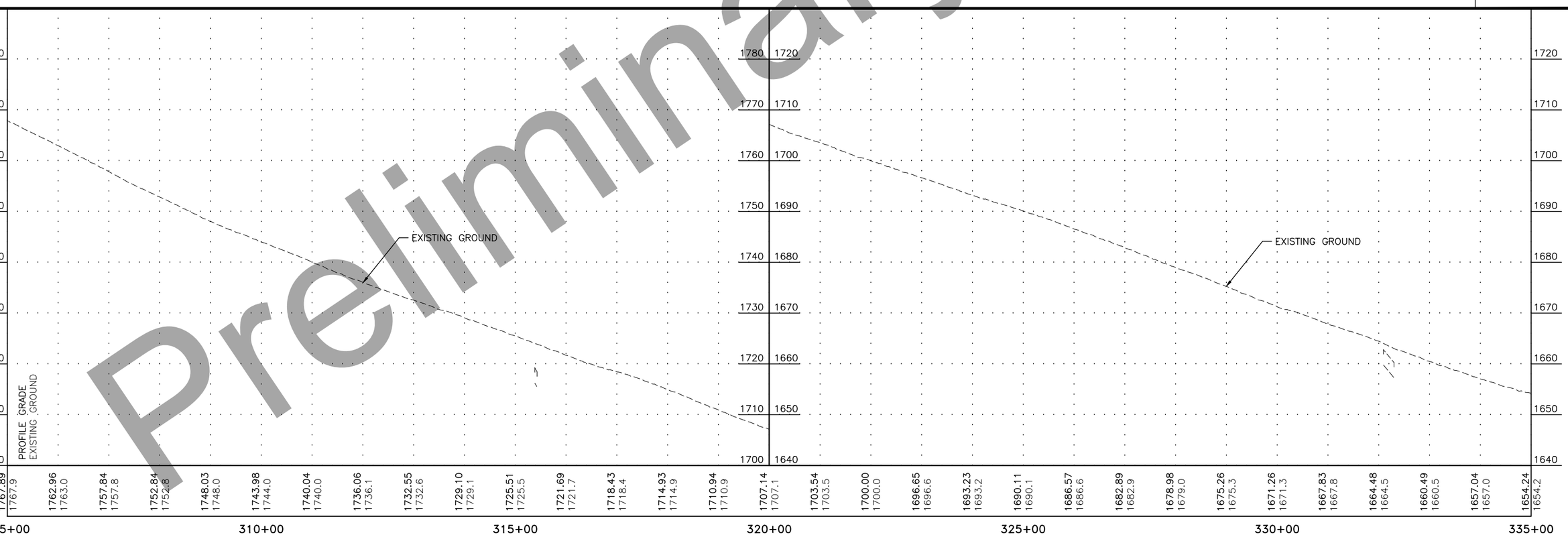
C:\Users\jrollis\Desktop\Rich MP 82-115 Resurfacing\05 Design\1 Drawings\MP 82-97\PLANS\NFHWY00510_F_P&P-275+00.00-305+00.00 Thu, Jul/23/20 10:07am

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	F6	F27





STATE OF ALASKA
49TH
Russell M. Johnson
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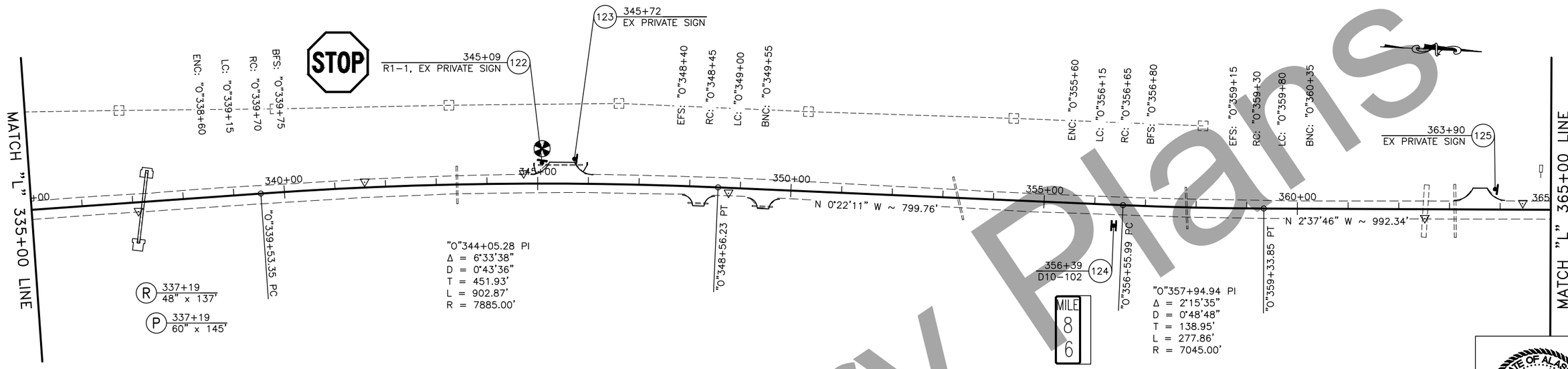
REGISTERED PROFESSIONAL ENGINEER

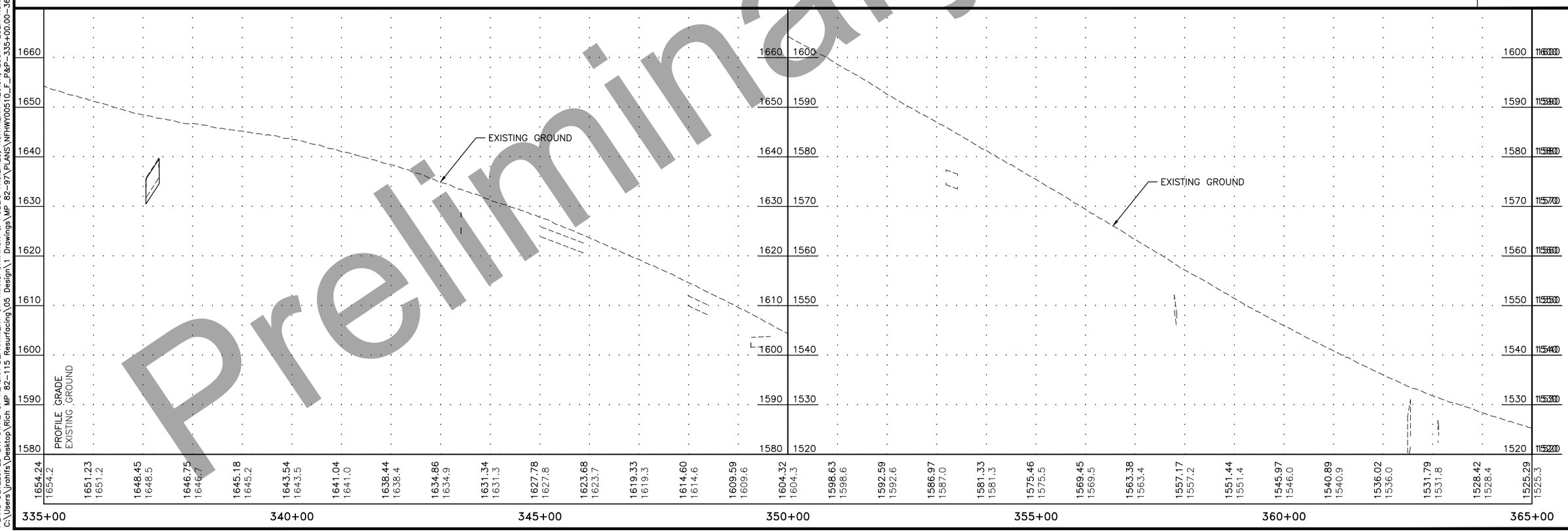
Preliminary Plans

PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
C:\Users\jrahlfs\Desktop\Rich MP 82-115 Resurfacing\05 Design\1 Drawings\MP 82-97\PLANS\NFHWY00510_F_P&P-305+00.00-335+00.00 Thu, Jul/23/20 10:09am

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	F7	F27





Preliminary Plans

STATE OF ALASKA 49TH
Russell M. Johnson
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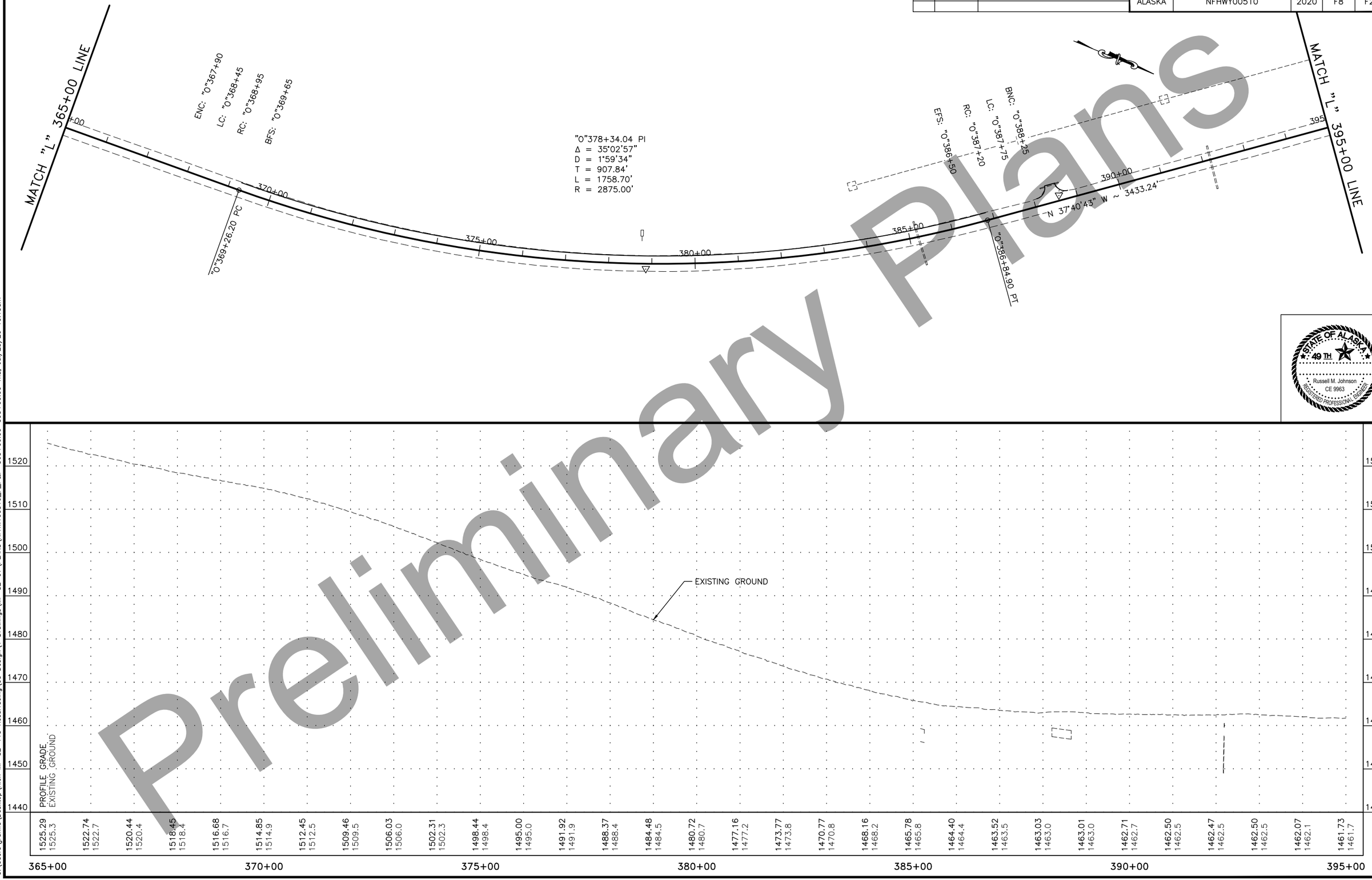
C:\Users\jrollis\Desktop\Rich MP 82-115 Resurfacing\05 Design\1 Drawings\MP 82-97\PLANS\NFHWY00510_F_P&P-335+00.00-365+00.00 Thu, Jul/23/20 10:11am

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	F8	F27



STATE OF ALASKA
49 TH
Russell M. Johnson
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Preliminary Plans

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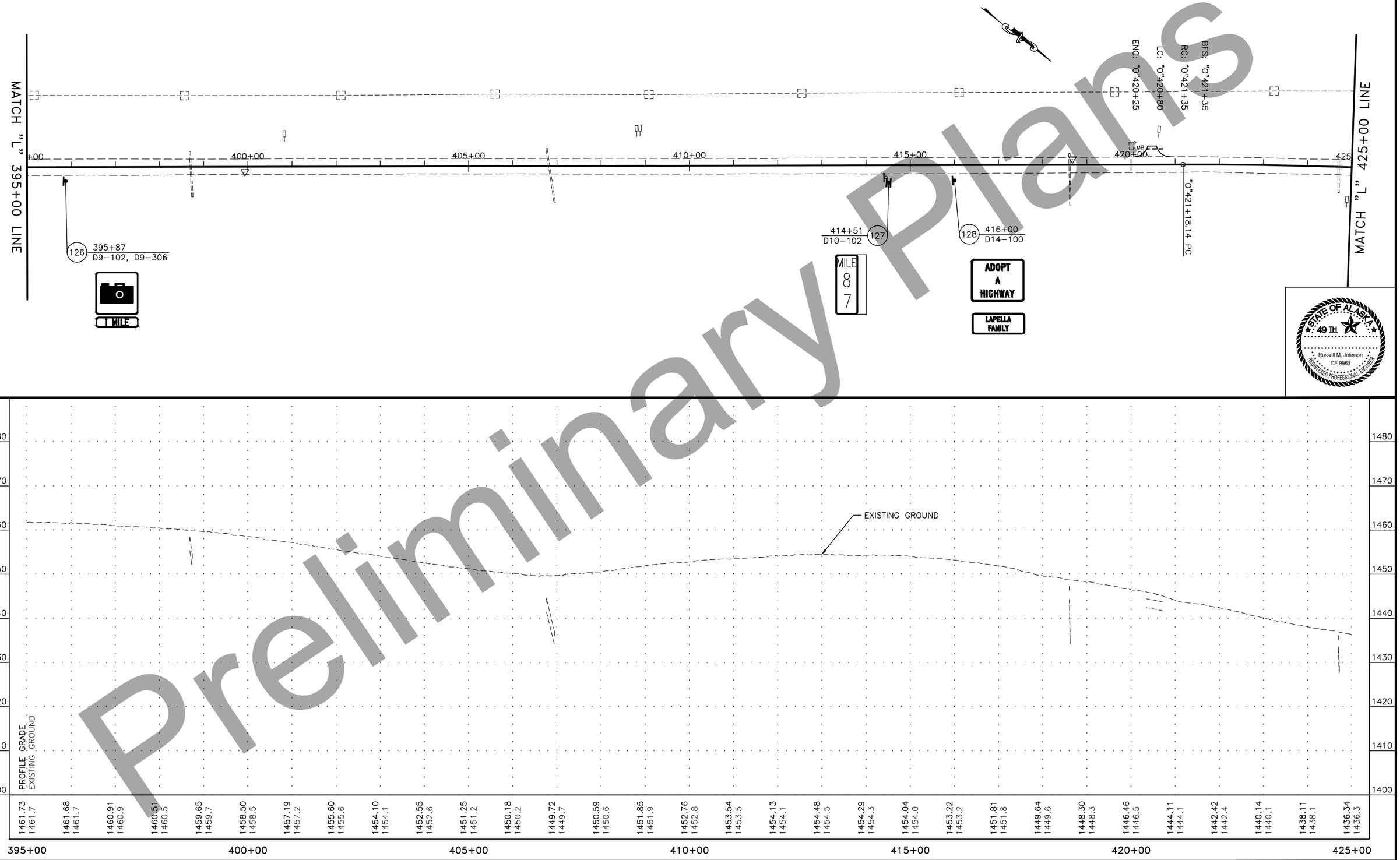
C:\Users\jrahlfs\Desktop\Rich MP 82-115 Resurfacing\05 Design\1 Drawings\MP 82-97\PLANS\NFHWY00510_F_P&P-365+00.00-395+00.00 Thu, Jul/23/20 10:13am

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	F9	F27



STATE OF ALASKA 49TH
Russell M. Johnson
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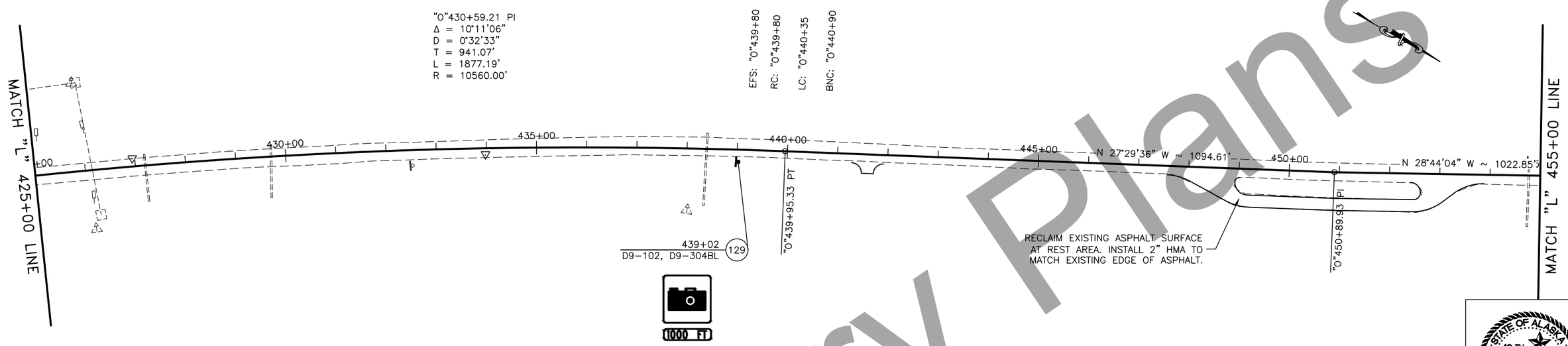
C:\Users\jrollis\Desktop\Rich MP 82-115 Resurfacing\05 Design\1 Drawings\MP 82-97\PLANS\NFHWY00510_F_P&P-395+00.00-425+00.00 Thu, Jul/23/20 10:16am

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	F10	F27



STATE OF ALASKA
49TH
Russell M. Johnson
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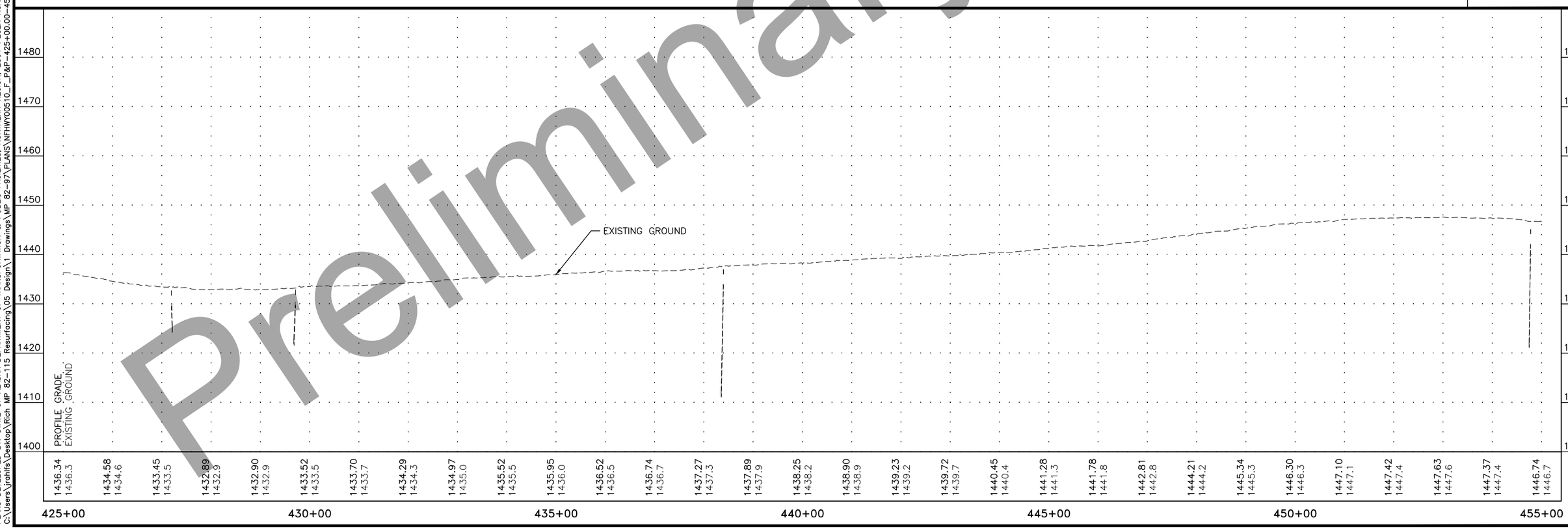
REGISTERED PROFESSIONAL ENGINEER



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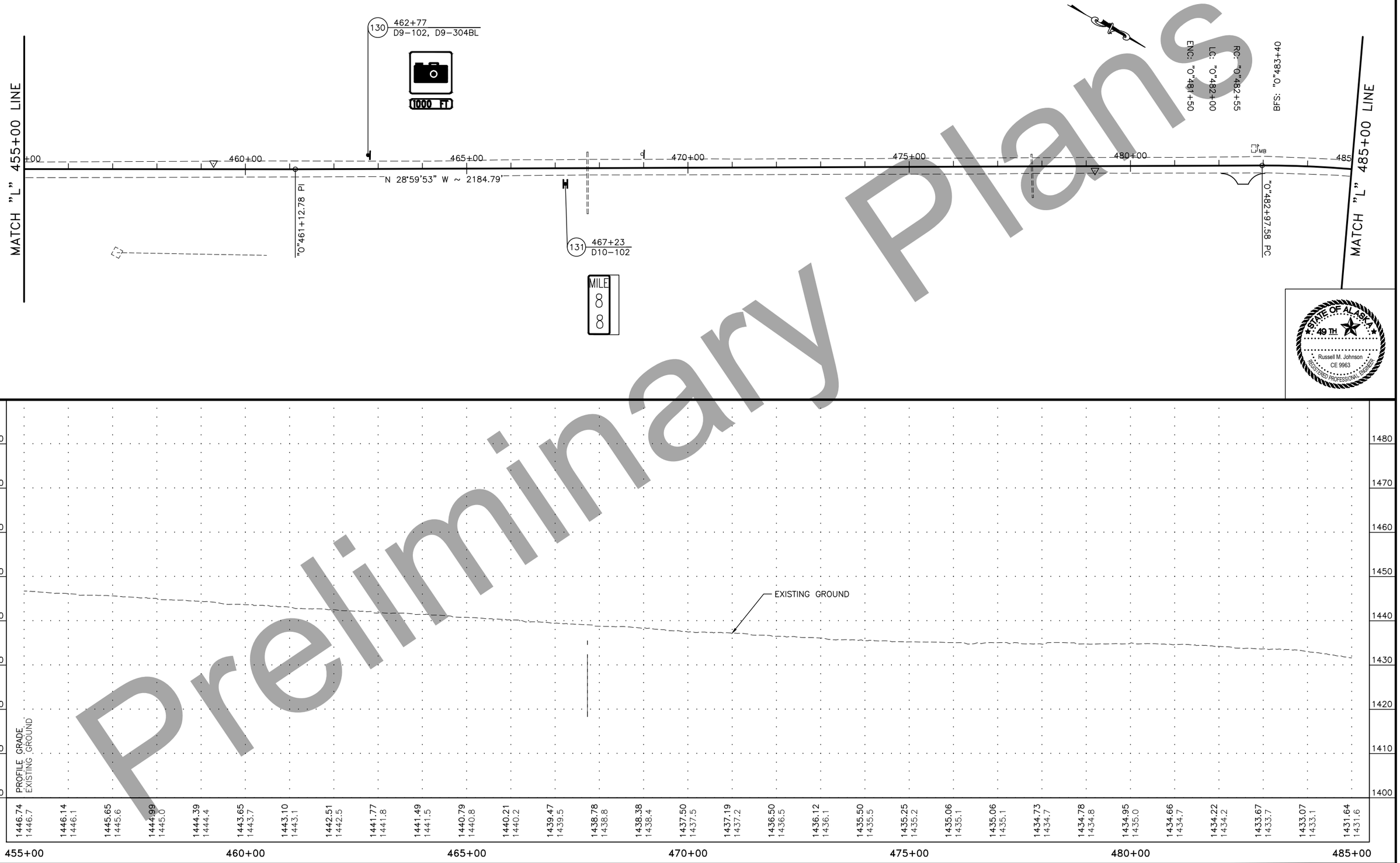
C:\Users\jrollis\Desktop\Rich MP 82-115 Resurfacing\05 Design\1 Drawings\MP 82-97\PLANS\NFHWY00510_F_P&P-425+00.00-455+00.00 Thu, Jul/23/20 10:18am

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	F11	F27



STATE OF ALASKA 49TH
Russell M. Johnson
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REGISTERED PROFESSIONAL ENGINEER

Preliminary Plans

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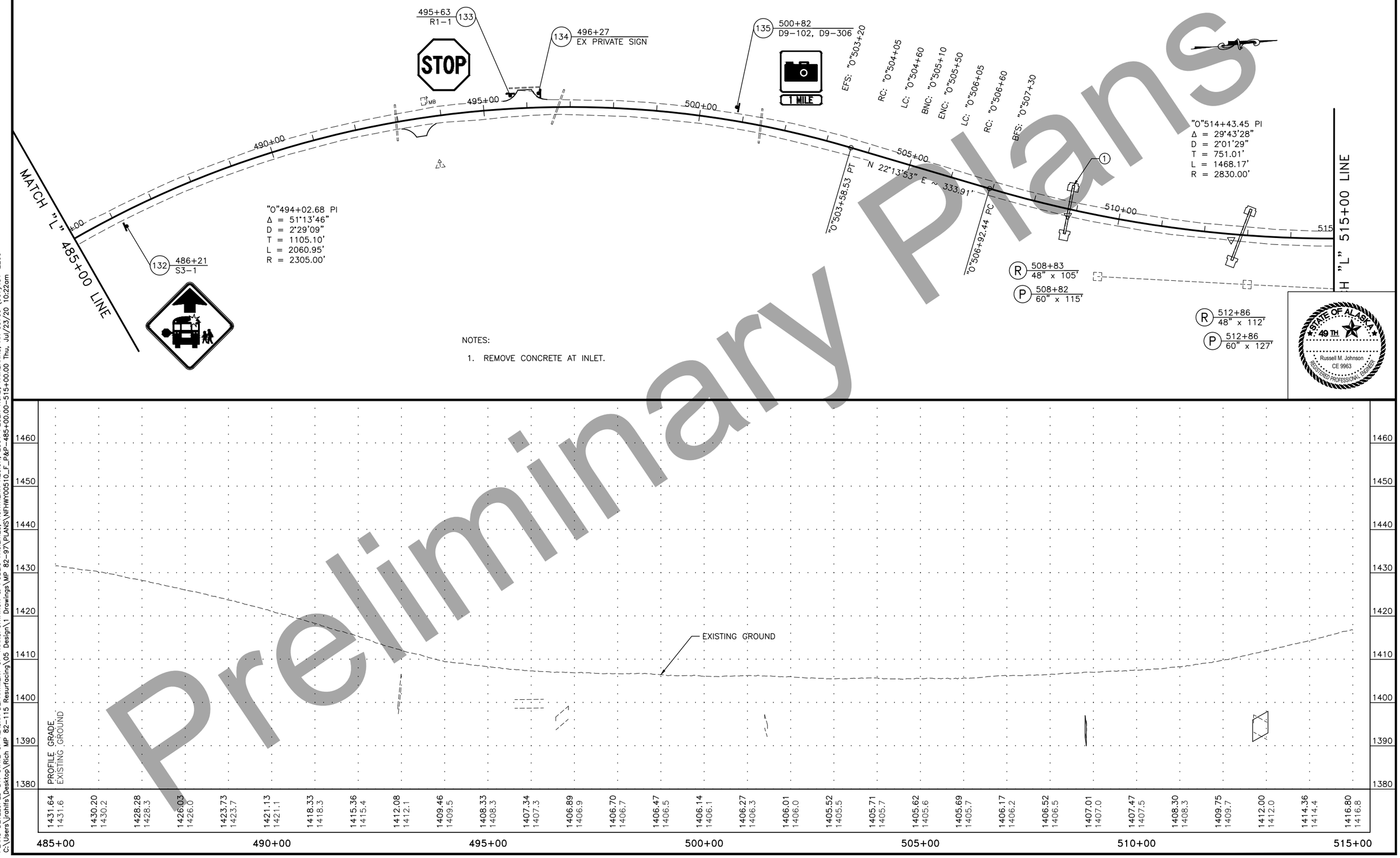
C:\Users\jrahlfs\Desktop\Rich MP 82-115 Resurfacing\05 Design\1 Drawings\MP 82-97\PLANS\NFHWY00510_F_P&P-455+00.00-485+00.00 Thu, Jul/23/20 10:20am

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	F12	F27



Preliminary Plans

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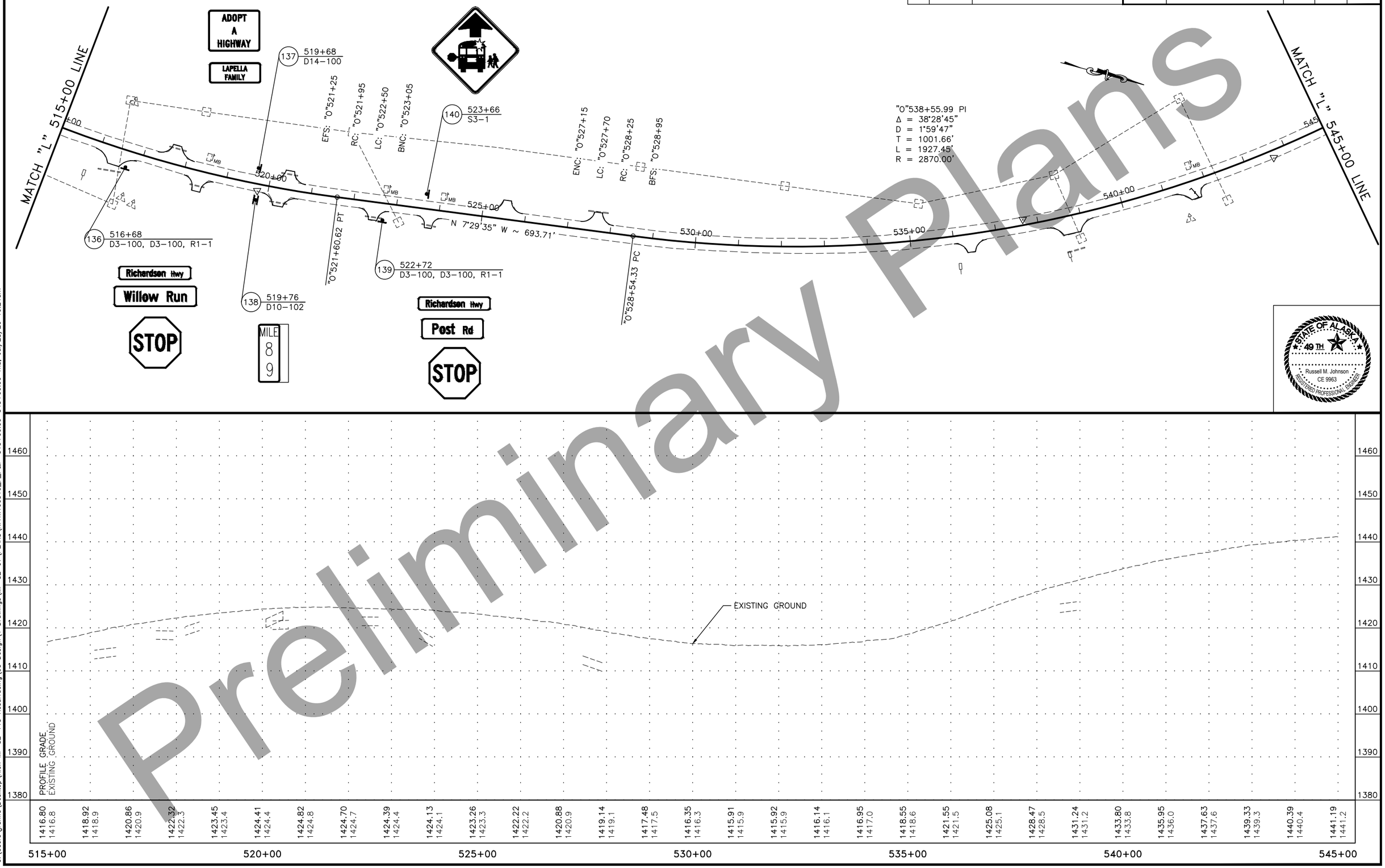
C:\Users\jrollis\Desktop\Rich MP 82-115 Resurfacing\05 Design\1 Drawings\MP 82-97\PLANS\NFHWY00510_F_P&P-485+00.00-515+00.00 Thu, Jul/23/20 10:22am

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	F13	F27



STATE OF ALASKA 49TH
Russell M. Johnson
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Preliminary Plans

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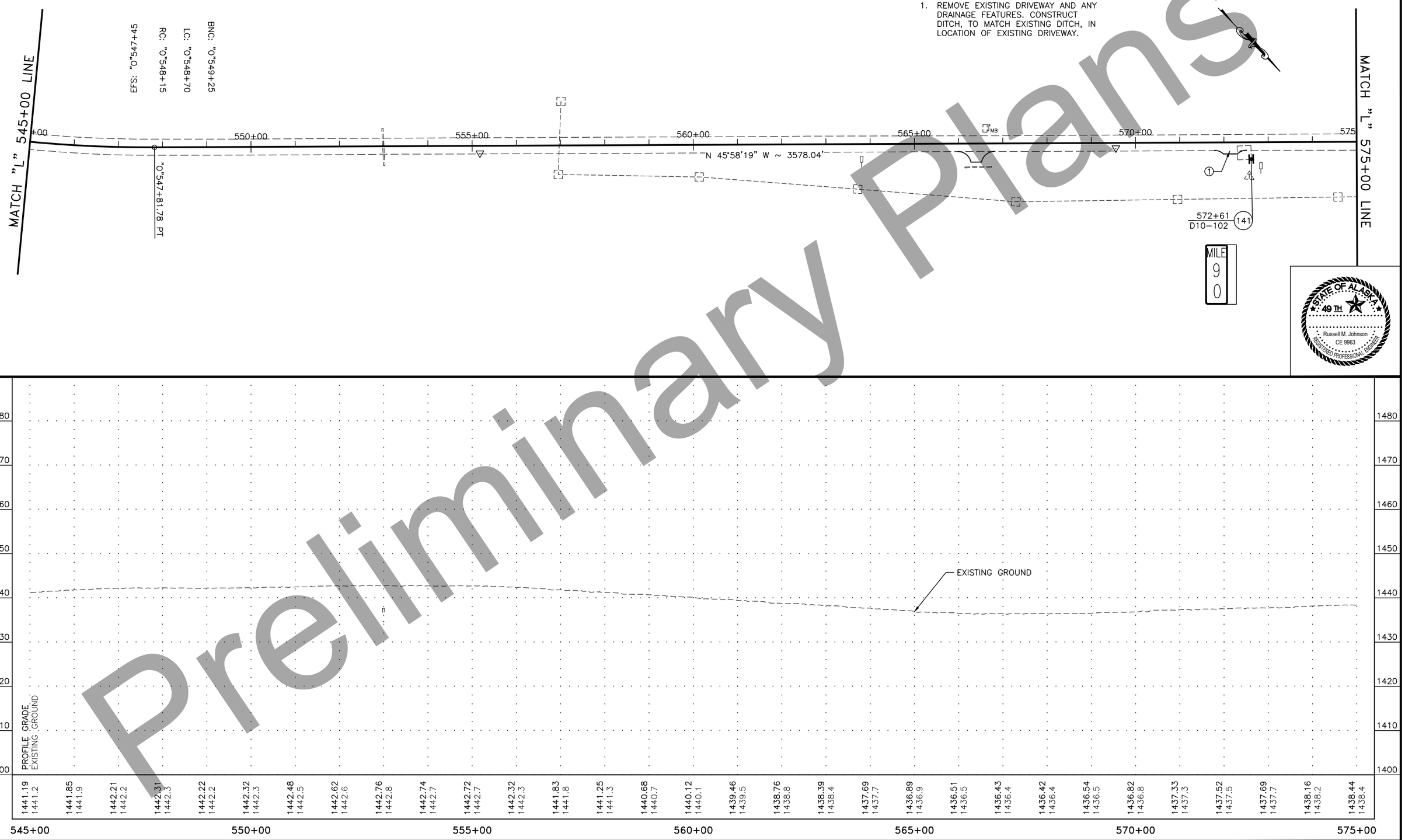
C:\Users\jrollis\Desktop\Rich MP 82-115 Resurfacing\05 Design\1 Drawings\MP 82-97\PLANS\NFHWY00510_F_P&P-515+00.00-545+00.00 Thu, Jul/23/20 10:24am

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	F14	F27

NOTES:

1. REMOVE EXISTING DRIVEWAY AND ANY DRAINAGE FEATURES. CONSTRUCT DITCH, TO MATCH EXISTING DITCH, IN LOCATION OF EXISTING DRIVEWAY.



STATE OF ALASKA
49TH
Russell M. Johnson
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Preliminary Plans

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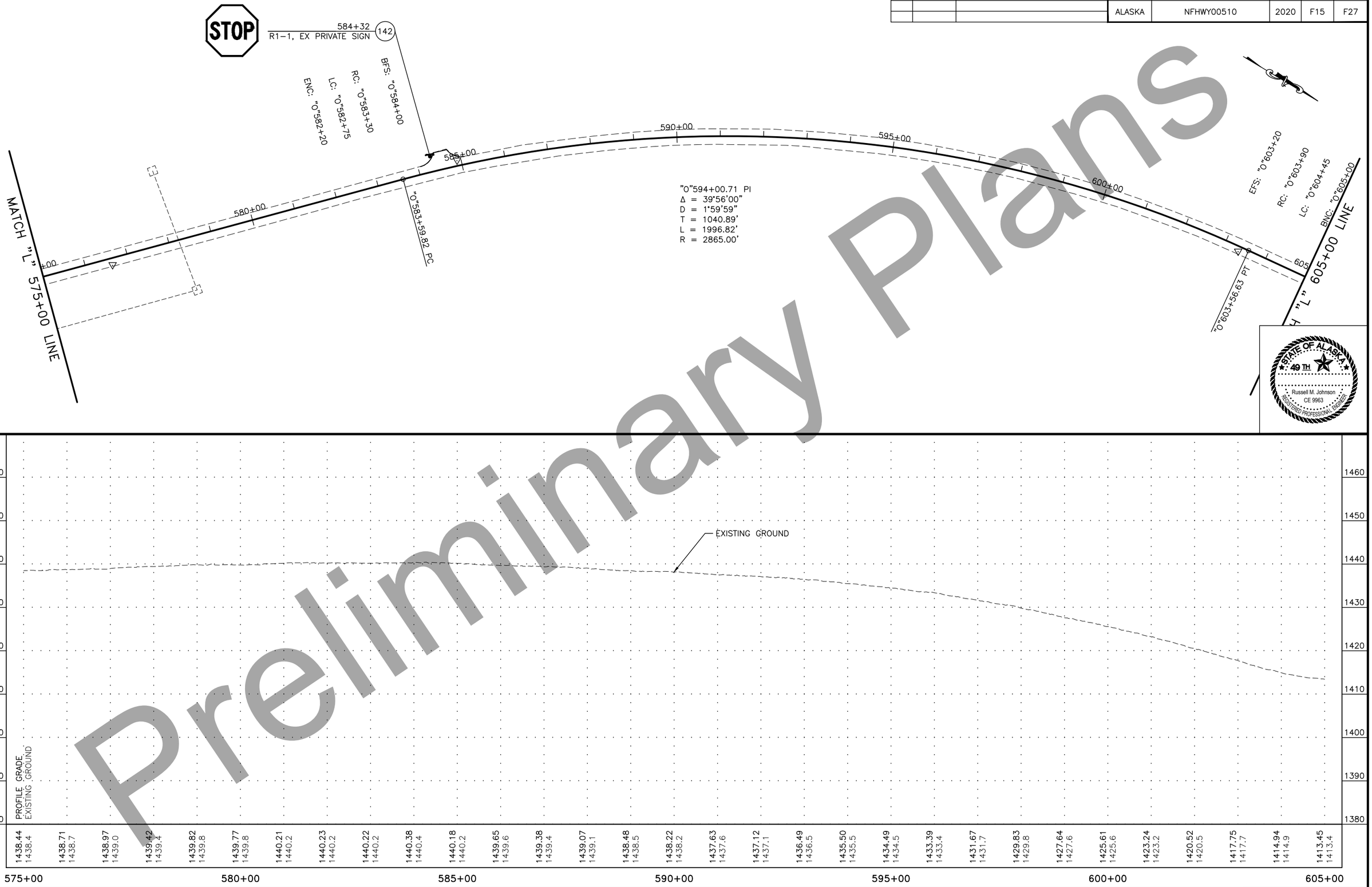
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	F15	F27



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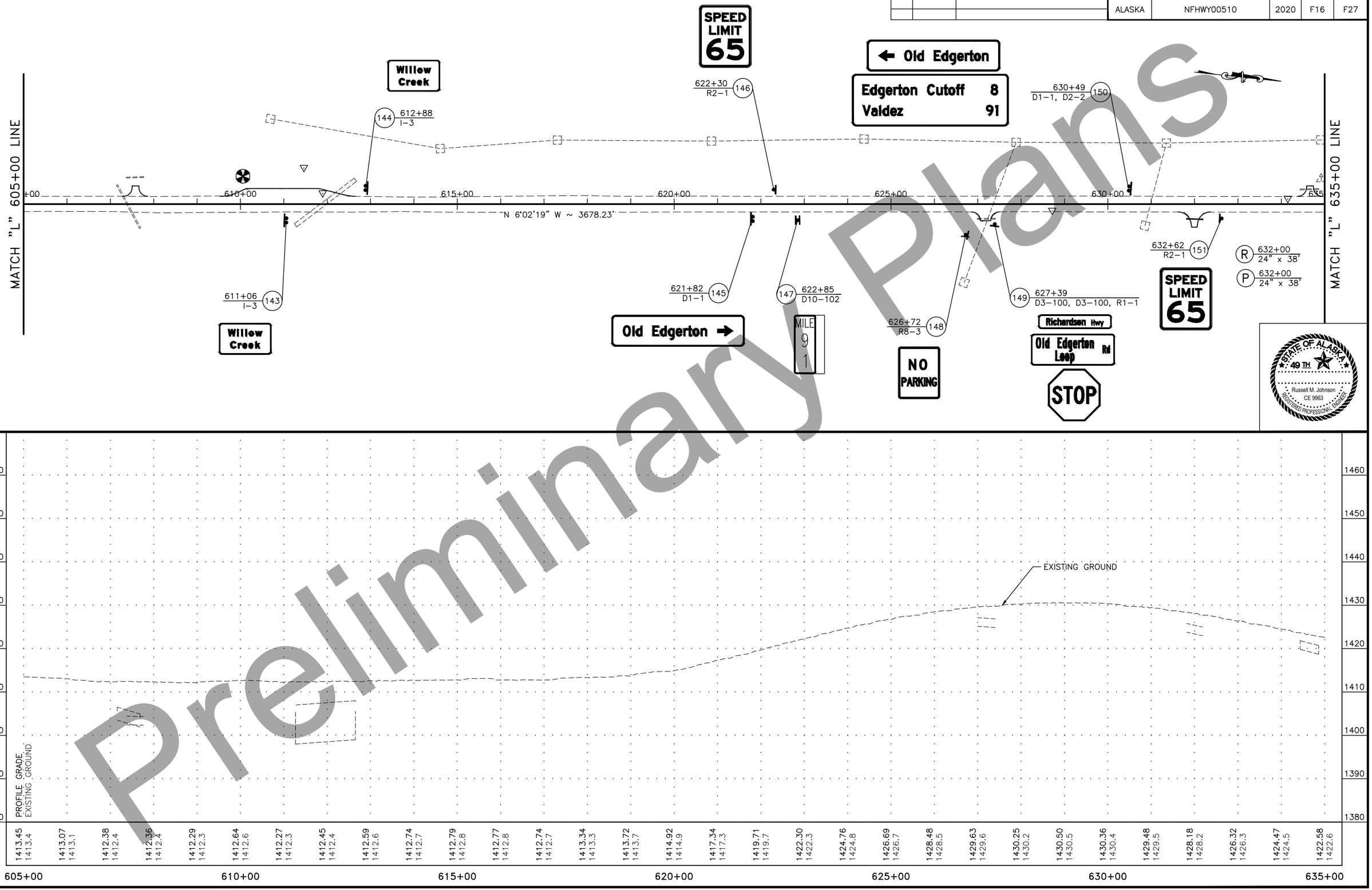
C:\Users\jrahlfs\Desktop\Rich MP 82-115 Resurfacing\05 Design\1 Drawings\MP 82-97\PLANS\NFHWY00510_F_P&P-575+00.00-605+00.00 Thu, Jul/23/20 10:28am

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	F16	F27



Preliminary Plans

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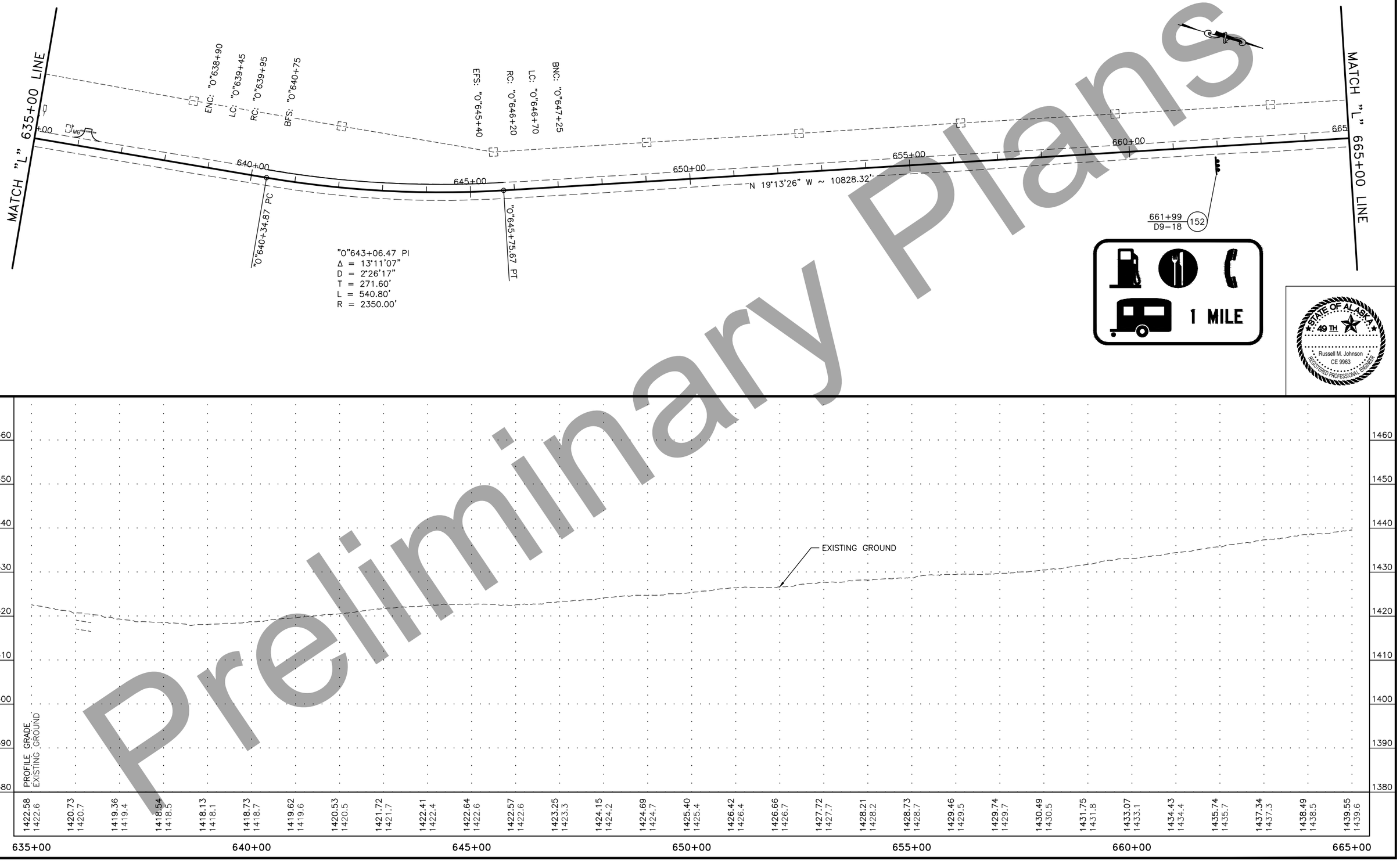
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	F17	F27



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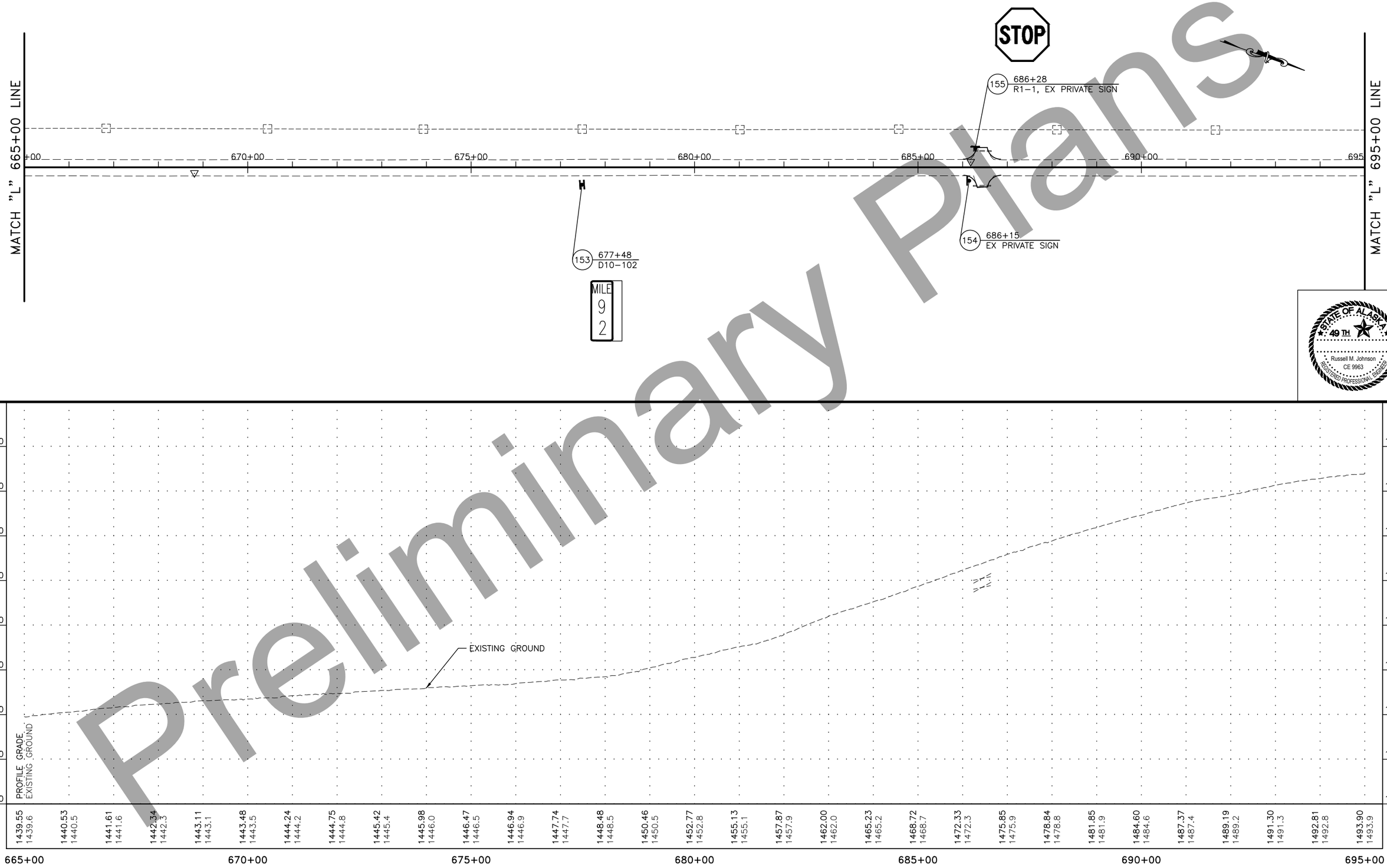
C:\Users\jrollis\Desktop\Rich MP 82-115 Resurfacing\05 Design\1 Drawings\MP 82-97\PLANS\NFHWY00510_F_P&P-635+00.00-665+00.00 Thu, Jul/23/20 10:33am

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	F18	F27



STATE OF ALASKA
49 TH
Russell M. Johnson
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Preliminary Plans

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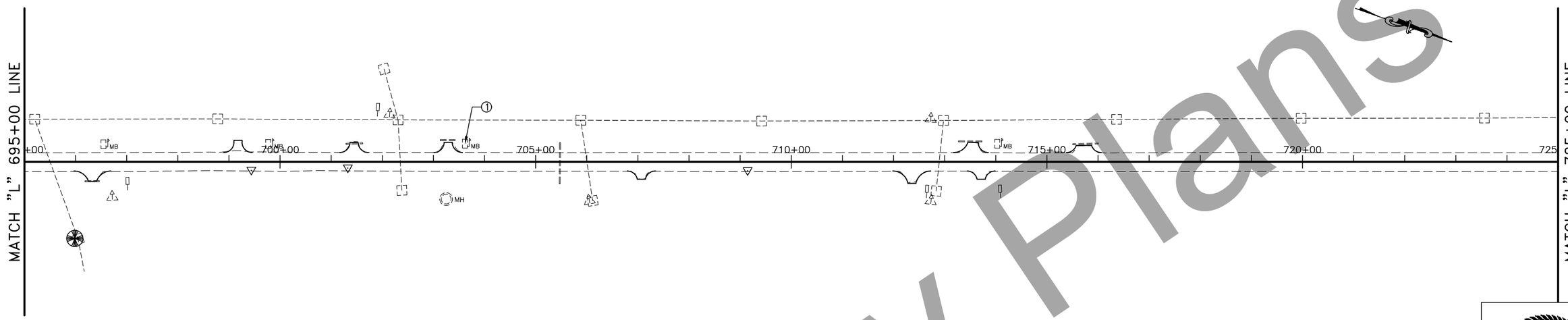
C:\Users\jrahifa\Desktop\Rich MP 82-115 Resurfacing\05 Design\1 Drawings\MP 82-97\PLANS\NFHWY00510_F_P&P-665+00.00-695+00.00 Thu, Jul/23/20 10:35am

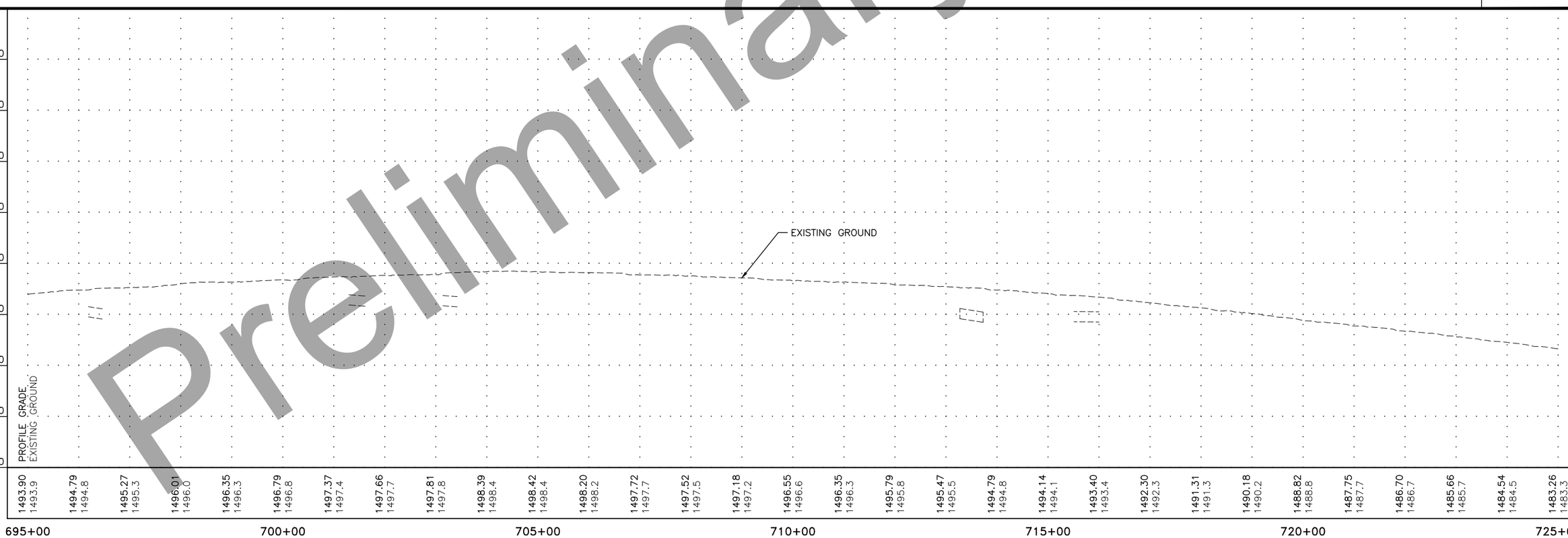
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	F19	F27

NOTES:

1. REMOVE EX MAILBOX





STATE OF ALASKA
49 TH
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Preliminary Plans

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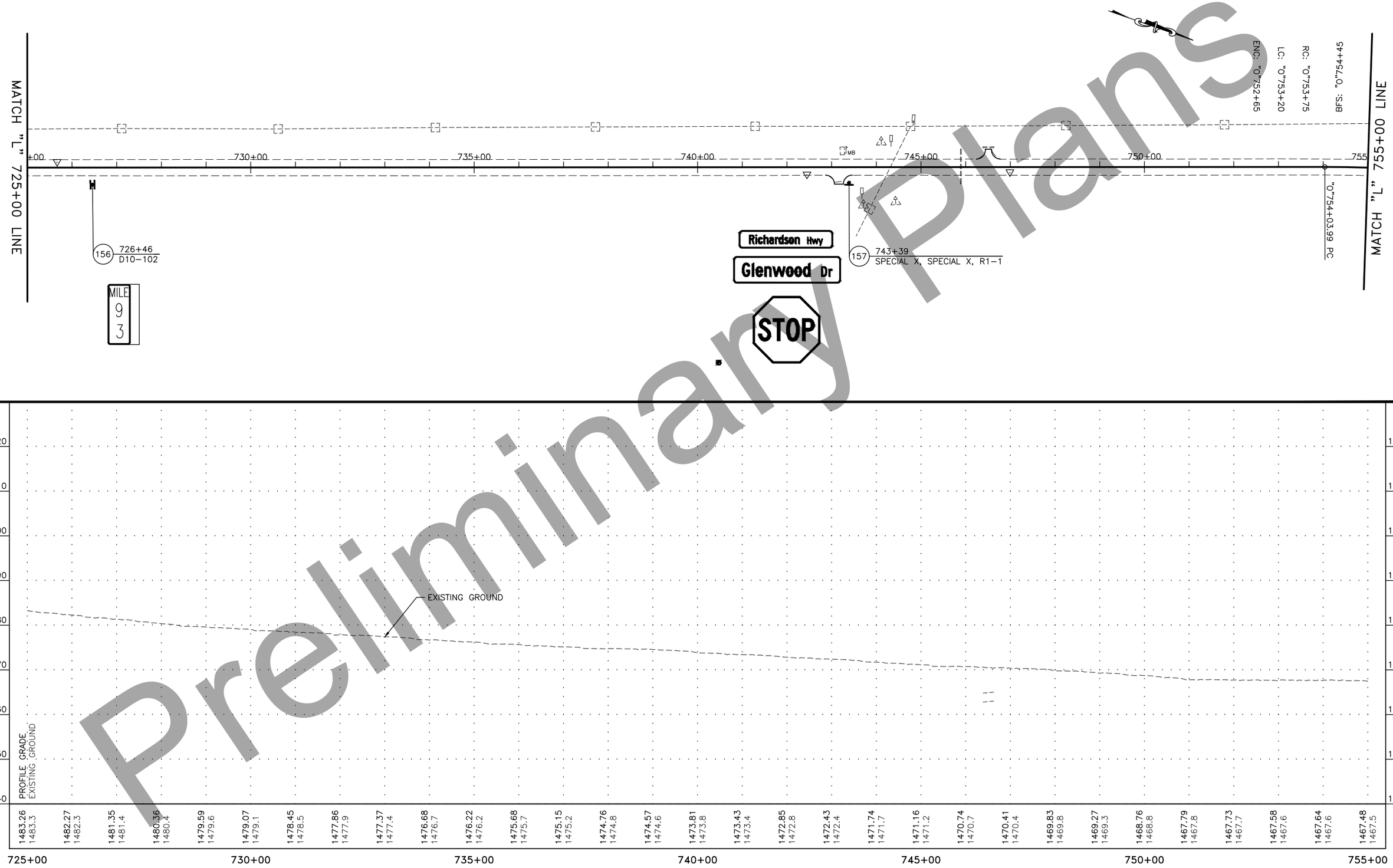
C:\Users\jrollis\Desktop\Rich MP 82-115 Resurfacing\05 Design\1 Drawings\MP 82-97\PLANS\NFHWY00510_F_P&P-695+00.00-725+00.00 Thu, Jul/23/20 10:37am

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	F20	F27



Preliminary Plans

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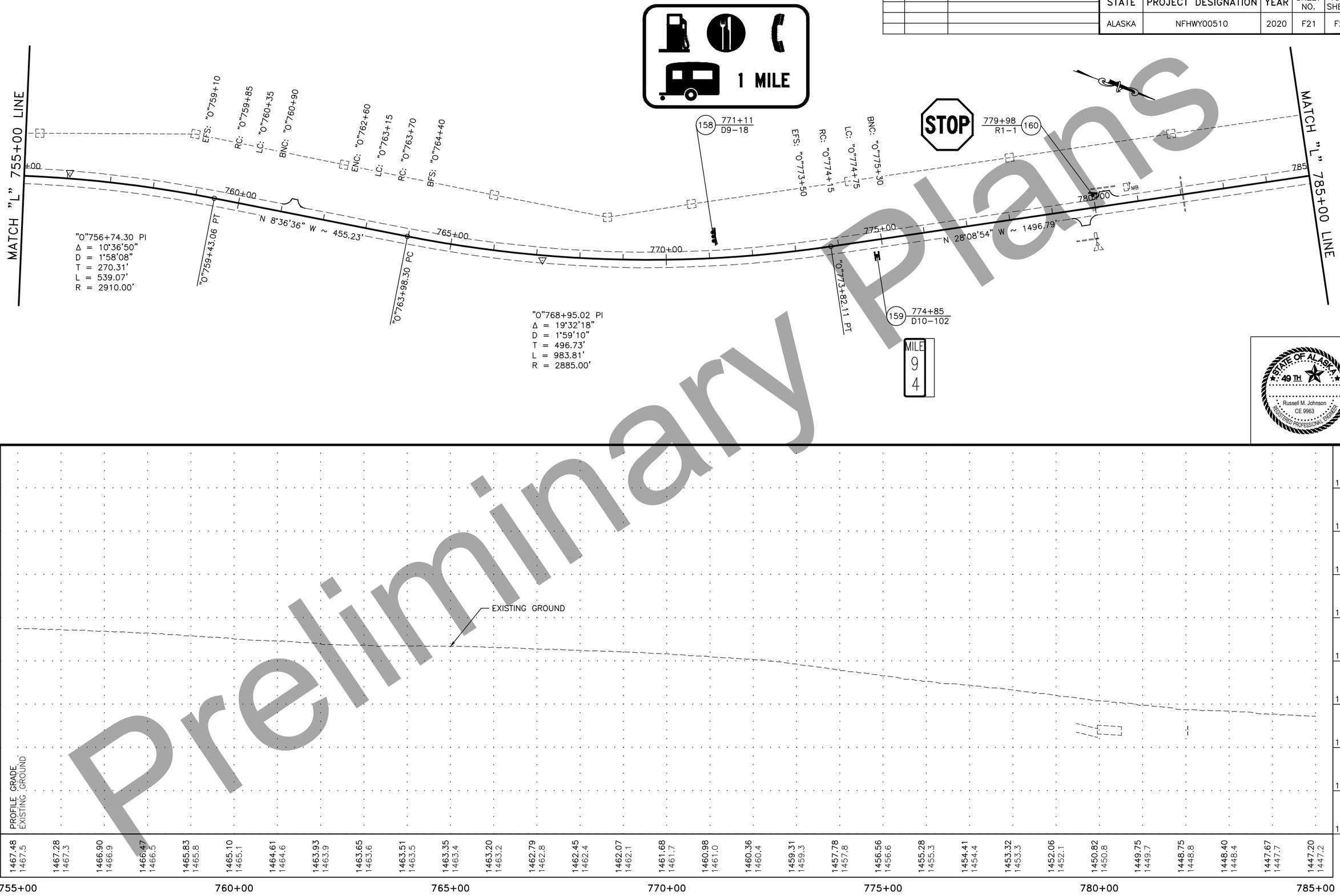
C:\Users\jrahlfs\Desktop\Rich MP 82-115 Resurfacing\05 Design\1 Drawings\MP 82-97\PLANS\NFHWY00510_F_P&P-725+00.00-755+00.00 Thu, Jul/23/20 10:39am

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	F21	F27



STATE OF ALASKA 49TH
Russell M. Johnson
CE 9963
REGISTERED PROFESSIONAL ENGINEER

Preliminary Plans

PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
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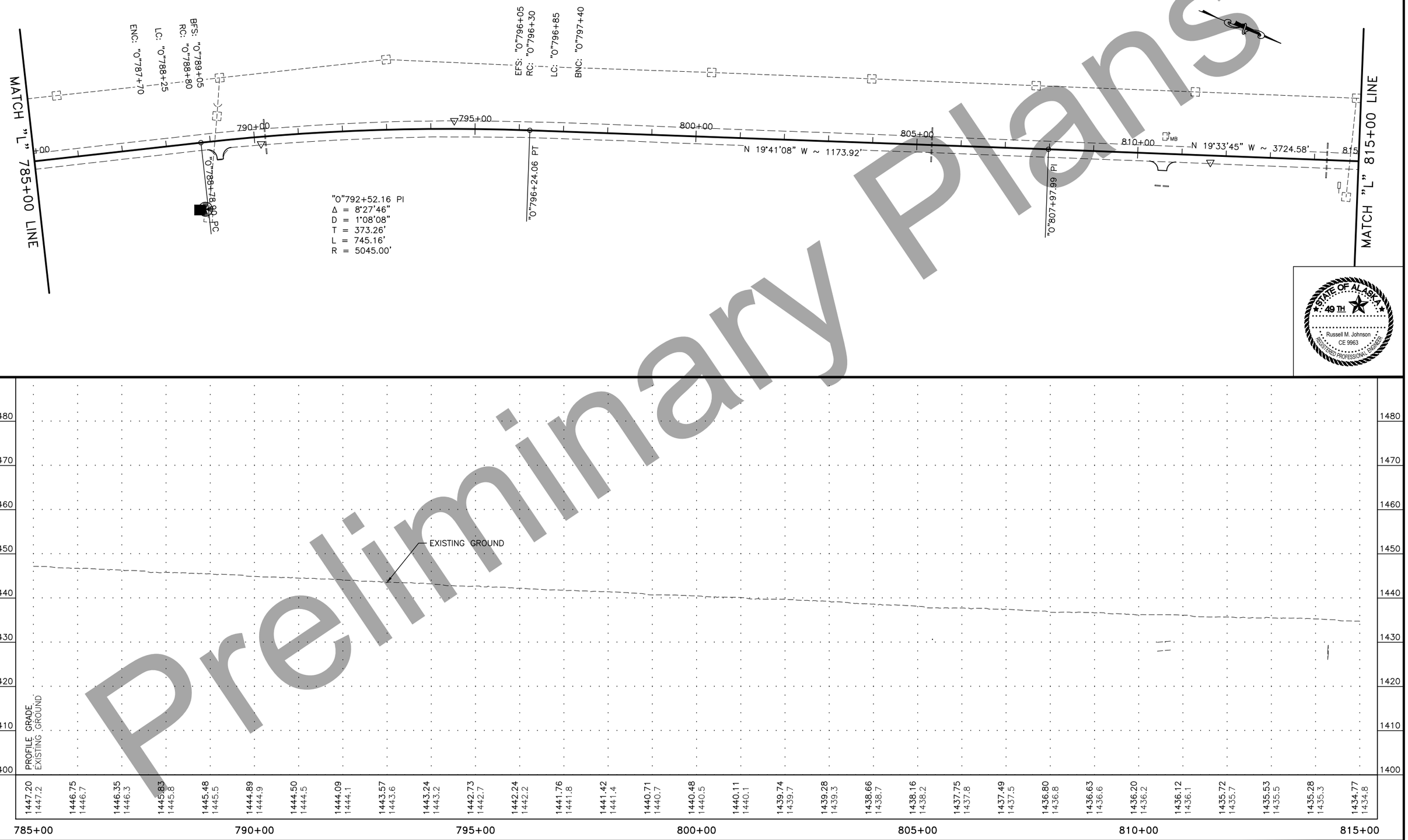
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	F22	F27



STATE OF ALASKA
49 TH
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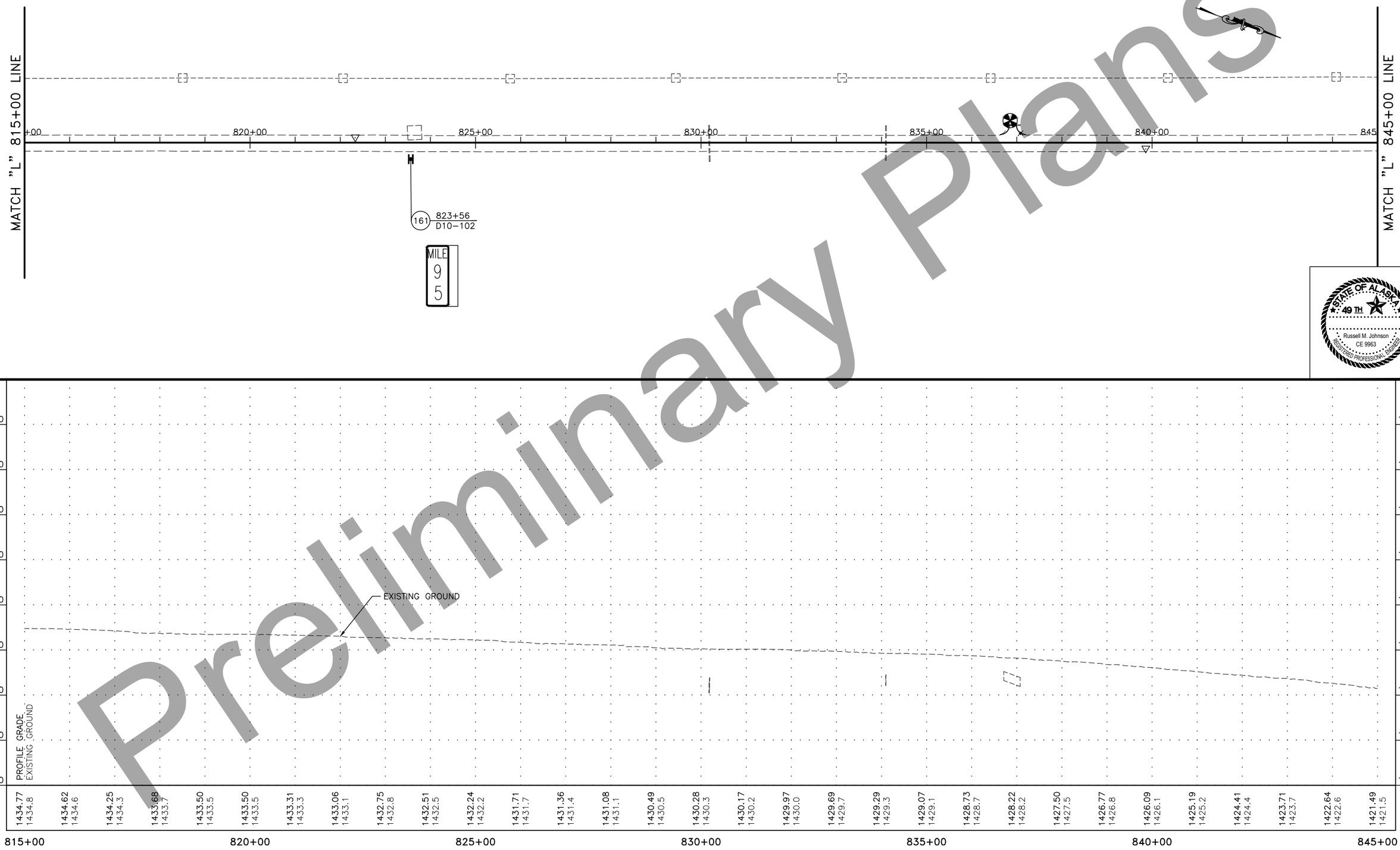
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	F23	F27



STATE OF ALASKA
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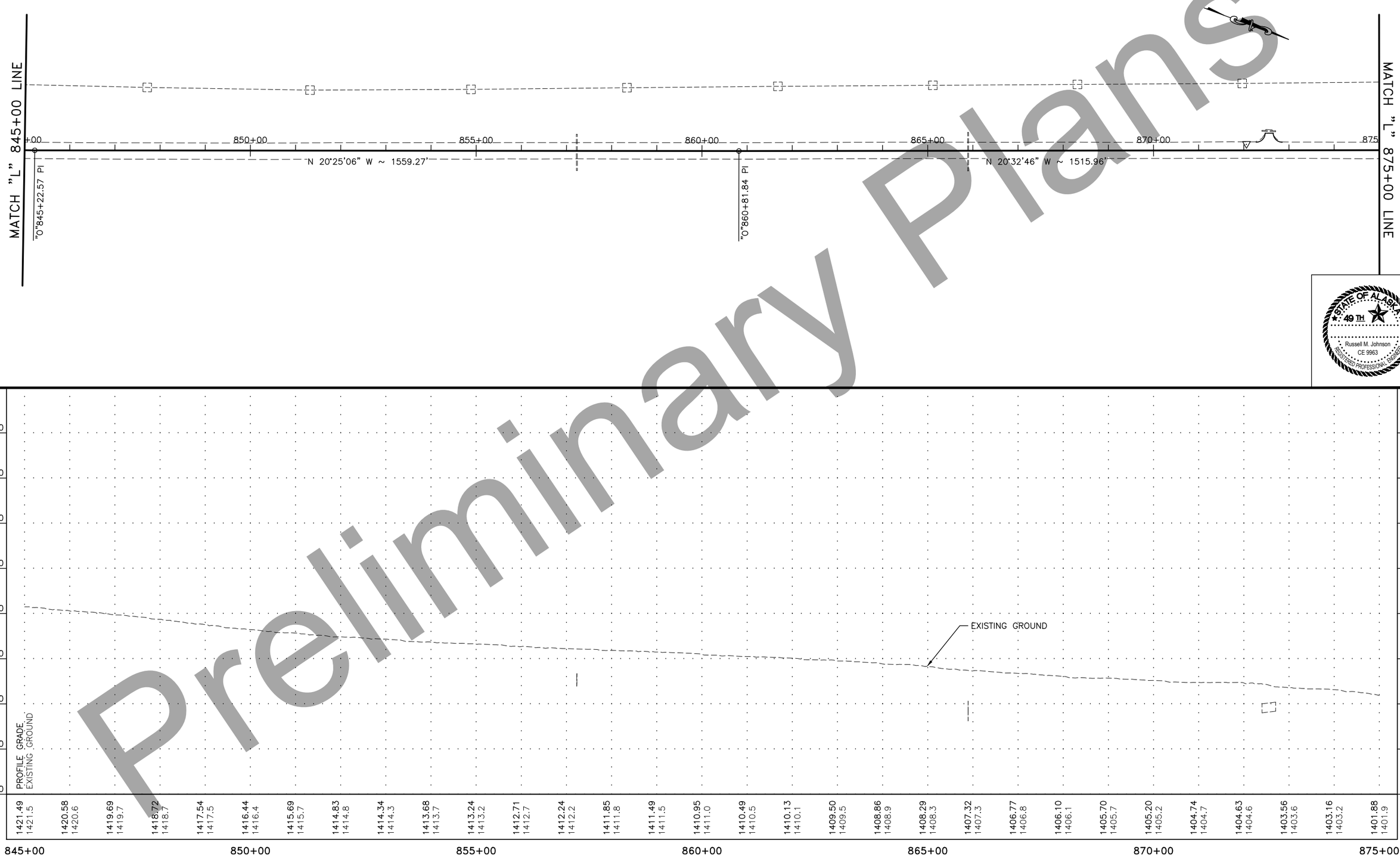
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	F24	F27



STATE OF ALASKA
49 TH
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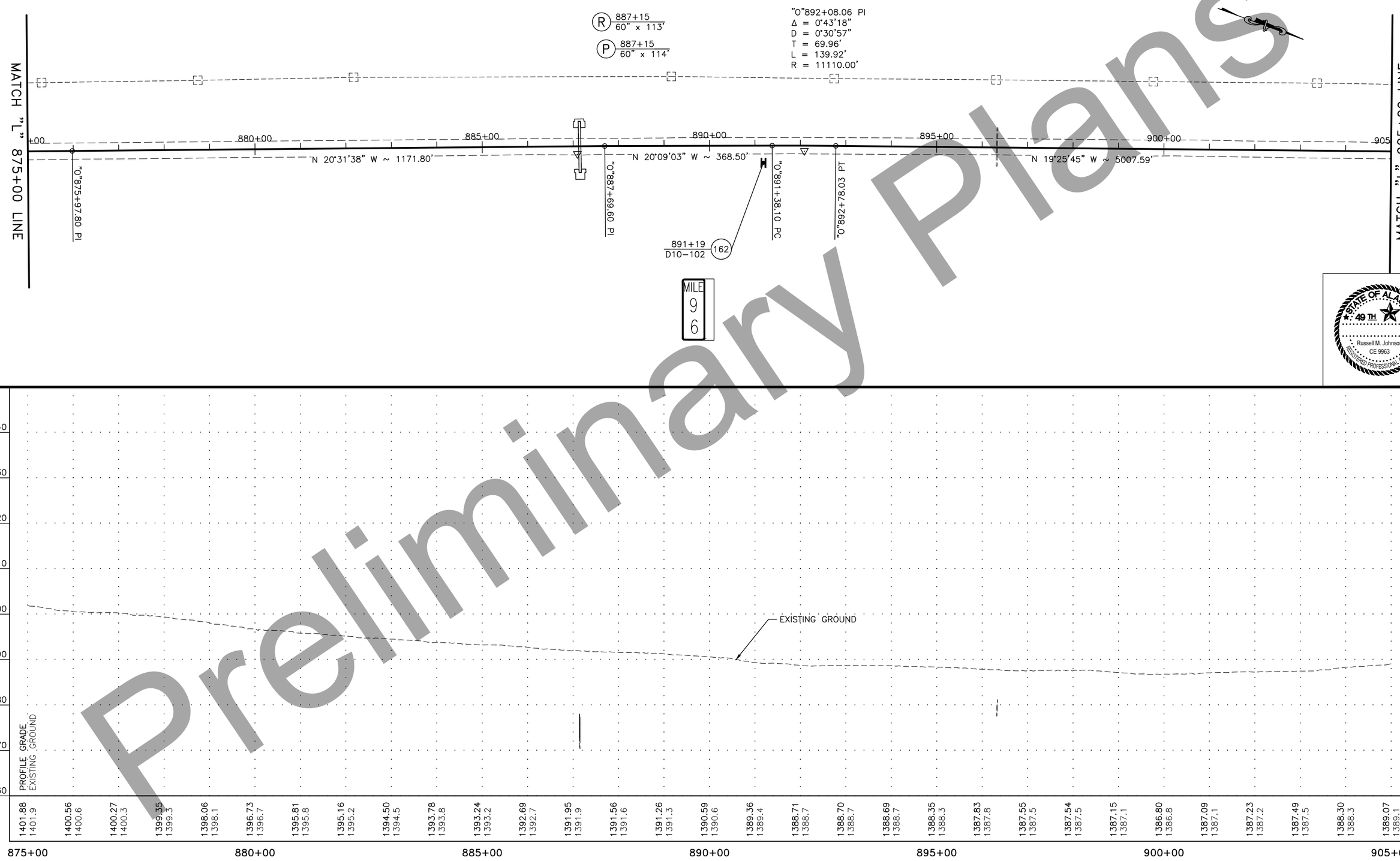
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	F25	F27



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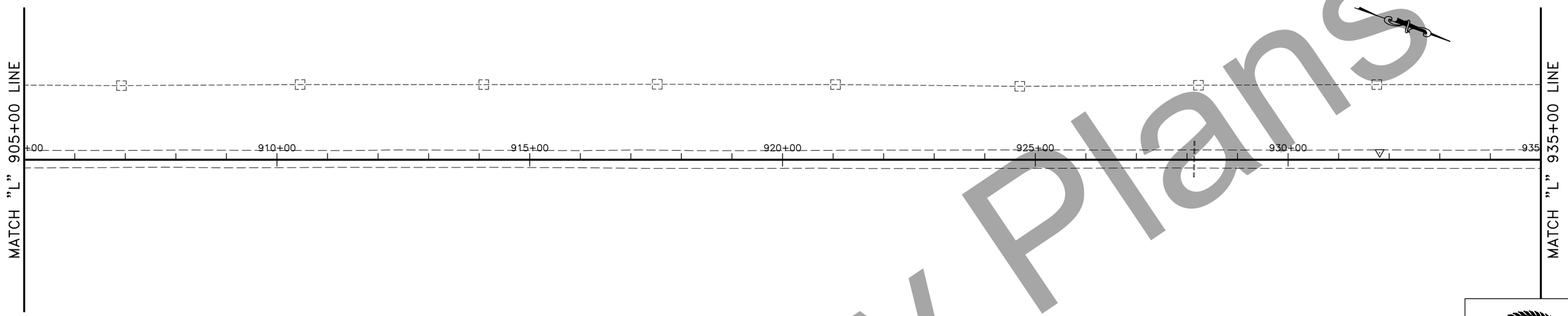
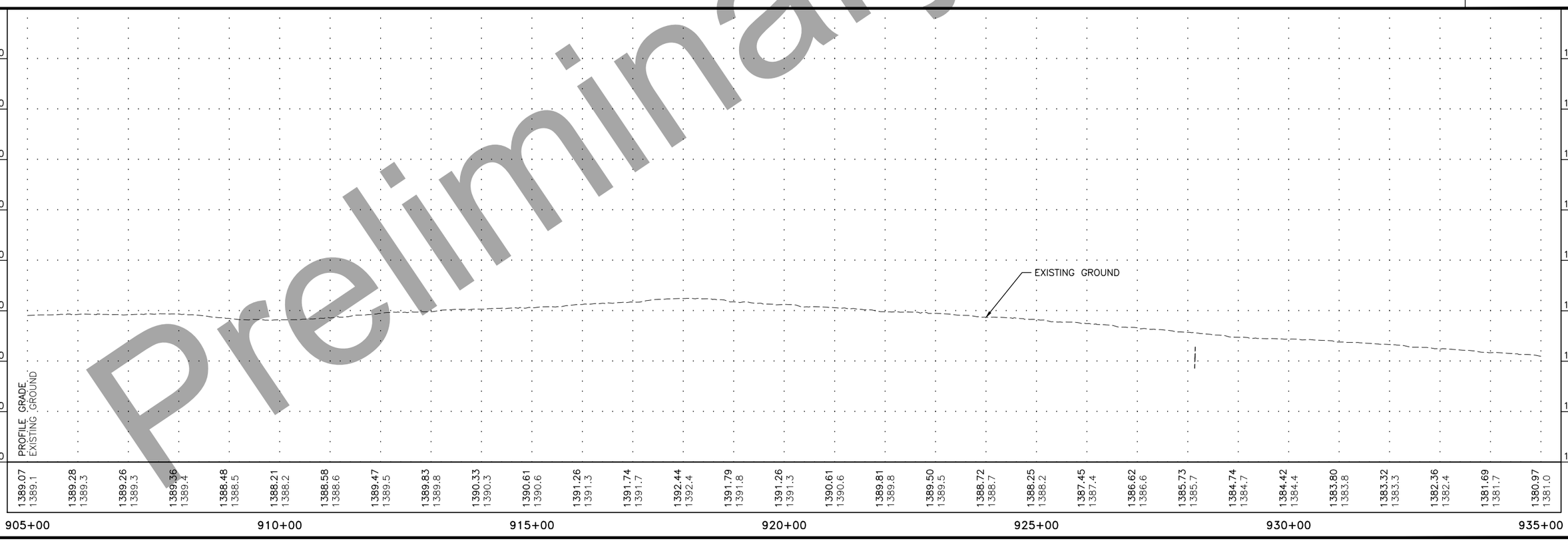
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	F26	F27





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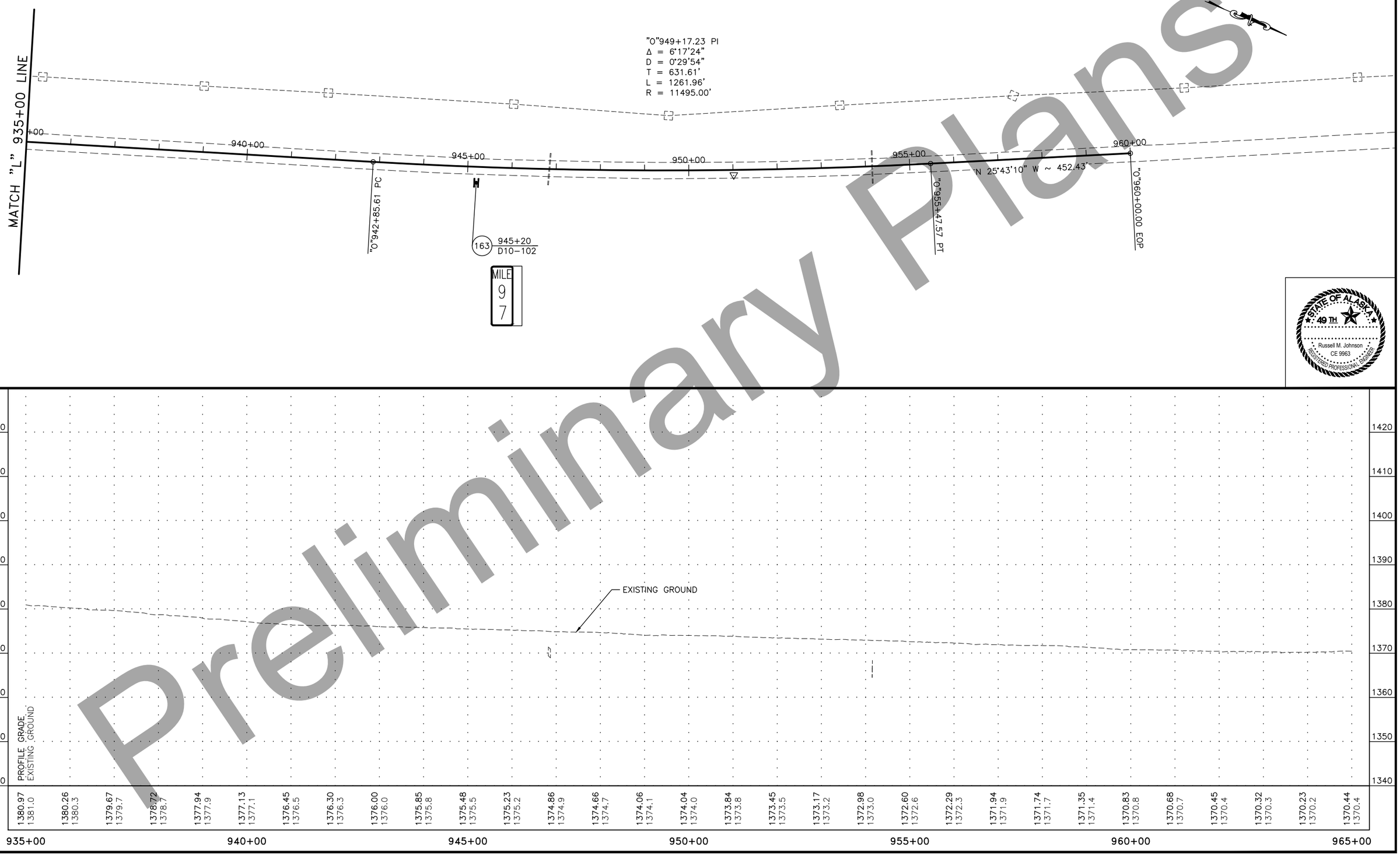
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	F27	F27



STATE OF ALASKA
49 TH
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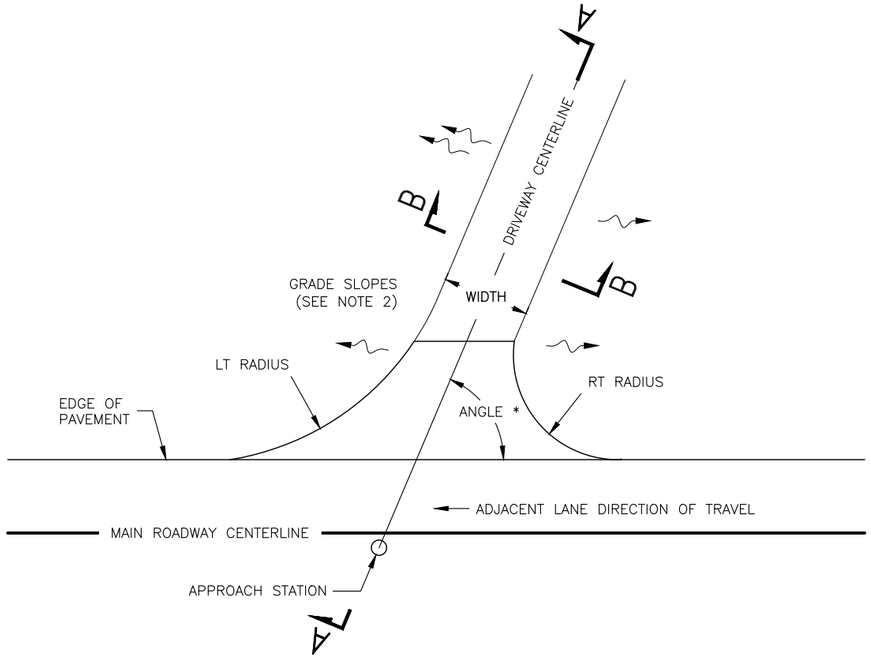
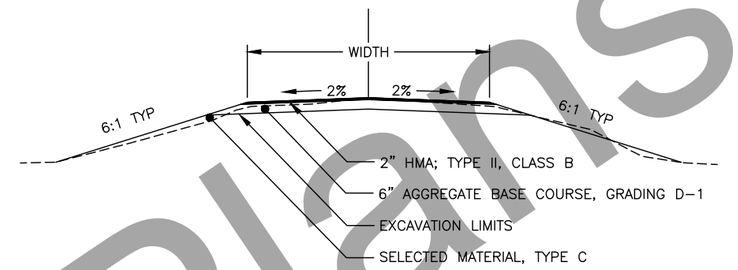
NO.	DATE	REVISION

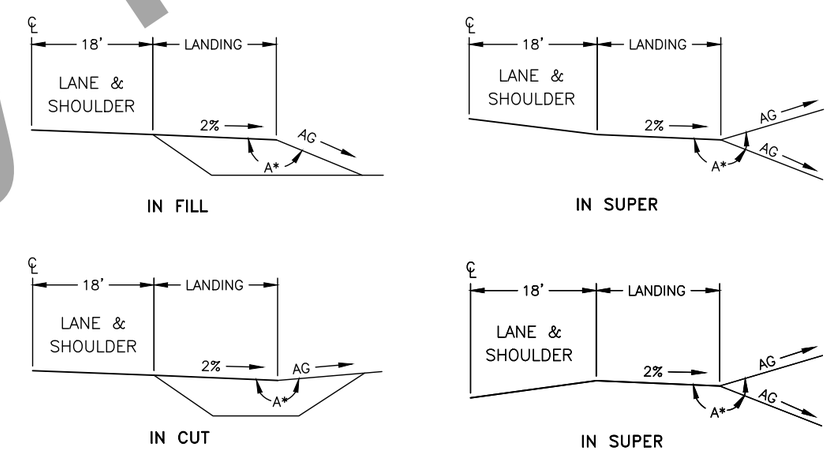
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	G1	G5



APPROACH DETAILS
PLAN VIEW



SECTION B–B



SECTION A–A

APPROACH DETAIL NOTES:

1. REMOVAL OF EXISTING APPROACH EMBANKMENT WILL NOT BE MEASURED FOR PAYMENT AND IS SUBSIDIARY TO THE APPROACH PAY ITEMS.
2. APPROACH FILL SLOPES SHALL BE 6:1 (H:V) PARALLEL TO THE ROADWAY BETWEEN THE SHOULDER AND THE PAVING LIMIT. BEYOND THE PAVING LIMIT, WARP EMBANKMENT SLOPES FROM 6:1 (H:V) TO 3:1 (H:V) OVER 30 FT OR AS APPROVED BY THE ENGINEER. GRADING OF SLOPES IS SUBSIDIARY TO EMBANKMENT CONSTRUCTION.
3. GRADE AND PAVE APPROACH LANDINGS TO MATCH NEW ROADWAY PAVEMENT.
4. CONSTRUCT THE DRIVEWAY TO THE SPECIFIED GRADE AND TYPICAL SECTION ALONG THE DRIVEWAY CENTERLINE. WARP CROSS–SLOPES TO MATCH INTO THE PAVED APPROACH.
5. BLEND AND GRADE FOR A SMOOTH TRANSITION BETWEEN THE DRIVEWAY AND THE EXISTING GROUND.
6. ENSURE POSITIVE DRAINAGE AWAY FROM THE ROADWAY AND DRIVEWAY EMBANKMENTS.

TYPICAL APPROACH GRADES

	RESIDENTIAL	COMMERCIAL
A(MAX)*	13%	8%
AG(MAX)	15%	8%

* ALGEBRAIC DIFFERENCE

Preliminary Plans

STATE OF ALASKA
49 TH
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APPROACH DETAILS

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NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	G2	G5

APPROACH SUMMARY

APPROACH NUMBER	CENTERLINE STATION	LT	RT	ANGLE (DEG)	WIDTH (FT)	LENGTH (FT)	RADIUS (FT) (NOTE 4)	AREA (SF)	REMARKS
A1	"0"159+32	X		90	24	24	30	930	
A2	"0"160+05		X	90	18	28	40	1075	
A3	"0"162+46	X		90	20	24	20	705	
A4	"0"162+66		X	90	24	24	30	950	
A5	"0"168+77	X		90	20	24	20	725	
A6	"0"171+94	X		90	20	24	20	700	
A7	"0"174+34	X		90	20	24	20	670	
A8	"0"176+37	X		90	20	20	20	570	
A9	"0"177+10		X	90	20	24	25	770	
A10	"0"179+47		X	83	28	110	85 / 100	7400	EDGERTON HIGHWAY APPROACH. CONSTRUCT OF 6" CABC AND 2" HMA. MATCH EXISTING PAVING LIMITS.
A11	"0"179+95	X		90	20	24	20	725	
A12	"0"182+19		X	90	50	24	40	1780	
A13	"0"183+61	X		90	20	26	25	855	
A14	"0"186+42		X	90	45	24	40	1610	
A15	"0"201+86	X		90	20	20	20	570	
A16	"0"202+91		X	90	42	26	40	1630	
A17	"0"219+99	X		90	24	24	20	770	
A18	"0"224+62	X		90	24	24	30	955	
A19	"0"227+95	X		90	40	24	40	1540	
A20	"0"231+65	X		90	24	24	40	1100	
A21	"0"257+80	X		90	20	22	25	700	
A22	"0"261+60		X	90	20	26	40	1050	
A23	"0"274+73	X		90	20	24	25	770	
A24	"0"345+48	X		90	50	24	40	1705	
A25	"0"348+19		X	90	22	20	20	640	
A26	"0"349+47		X	90	22	20	20	640	

APPROACH SUMMARY TABLE NOTES:

1. A SINGLE VALUE PROVIDED IN THE RADIUS COLUMN INDICATES THAT THE VALUE APPLIES TO BOTH LEFT AND RIGHT APPROACH RADII. WHEN TWO VALUES ARE PROVIDED IN THIS COLUMN, THE FIRST VALUE APPLIES TO THE LEFT APPROACH RADIUS AND THE SECOND VALUE APPLIES TO THE RIGHT APPROACH RADIUS.
2. EXCEPT AS SPECIFIED ELSEWHERE, CONSTRUCT OR RECONSTRUCT APPROACHES AND DRIVEWAYS IDENTIFIED BY THIS TABLE IN ACCORDANCE WITH APPROACH TYPICAL DETAILS.

Preliminary Plans

APPROACH SUMMARY
1 OF 3

STATE OF ALASKA 49TH
Russell M. Johnson
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NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	G3	G5

APPROACH SUMMARY

APPROACH NUMBER	CENTERLINE STATION	LT	RT	ANGLE (DEG)	WIDTH (FT)	LENGTH (FT)	RADIUS (FT) (NOTE 4)	AREA (SF)	REMARKS
A27	"0"363+60	X		90	28	24	40	1165	
A28	"0"388+45	X		90	24	24	25	845	
A29	"0"420+48	X		90	20	24	30	835	
A30	"0"441+61		X	90	24	20	20	655	
A31	"0"482+54		X	90	24	24	40	1070	
A32	"0"493+49		X	90	24	24	40	1010	
A33	"0"495+96	X		90	32	24	40	1285	
A34	"0"516+39		X	90	28	24	40	1180	
A35	"0"517+70	X		90	20	26	30 / 40	960	
A36	"0"518+37		X	90	20	30	25	890	
A37	"0"520+28		X	90	24	24	30	940	
A38	"0"520+43	X		90	20	26	30	885	
A39	"0"522+49		X	90	20	24	25	750	
A40	"0"523+79		X	90	16	26	20	640	
A41	"0"525+55	X		90	18	26	30	840	
A42	"0"527+68	X		90	18	26	30	840	
A43	"0"536+38		X	90	18	24	30	795	
A44	"0"538+73		X	90	40	24	40	1480	
A45	"0"541+52		X	67	24	26	20 / 50	980	
A46	"0"566+40		X	90	24	24	30	930	
A47	"0"584+57	X		90	32	24	40	1285	
A48	"0"607+58	X		90	16	24	20	555	
A49	"0"627+18		X	90	24	20	20	650	
A50	"0"632+00		X	90	12	35	30	900	
A51	"0"634+66	X		90	16	24	20	555	
A52	"0"636+18	X		90	16	24	20	555	

APPROACH SUMMARY TABLE NOTES:

1. A SINGLE VALUE PROVIDED IN THE RADIUS COLUMN INDICATES THAT THE VALUE APPLIES TO BOTH LEFT AND RIGHT APPROACH RADII. WHEN TWO VALUES ARE PROVIDED IN THIS COLUMN, THE FIRST VALUE APPLIES TO THE LEFT APPROACH RADIUS AND THE SECOND VALUE APPLIES TO THE RIGHT APPROACH RADIUS.
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Preliminary Plans

APPROACH SUMMARY
2 OF 3

STATE OF ALASKA 49TH
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NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	G4	G5

APPROACH SUMMARY

APPROACH NUMBER	CENTERLINE STATION	LT	RT	ANGLE (DEG)	WIDTH (FT)	LENGTH (FT)	RADIUS (FT) (NOTE 4)	AREA (SF)	REMARKS
A53	"0"686+43	X		90	24	26	30	1000	
A54	"0"686+44		X	90	24	26	30	1000	
A55	"0"696+33		X	90	16	20	30	630	
A56	"0"699+18	X		90	16	24	20	555	
A57	"0"701+45	X		90	16	20	20	490	
A58	"0"703+29	X		90	16	20	20	490	
A59	"0"707+07		X	90	16	16	20	415	
A60	"0"712+36		X	90	16	24	30	740	
A61	"0"713+38	X		64	20	22	30 / 20	640	
A62	"0"713+72		X	90	16	16	20	415	
A63	"0"715+73	X		90	30	14	20	565	
A64	"0"743+16		X	90	20	20	20	570	
A65	"0"746+51	X		90	14	22	20	480	
A66	"0"761+27	X		90	14	16	20	380	
A67	"0"779+73		X	90	20	20	20	570	
A68	"0"780+26	X		90	24	16	20	540	
A69	"0"789+19		X	90	14	24	20	510	
A70	"0"810+57		X	90	20	20	20	570	
A71	"0"836+92	X		90	16	20	20	490	
A72	"0"872+56	X		90	18	20	20	530	

APPROACH SUMMARY TABLE NOTES:

1. A SINGLE VALUE PROVIDED IN THE RADIUS COLUMN INDICATES THAT THE VALUE APPLIES TO BOTH LEFT AND RIGHT APPROACH RADII. WHEN TWO VALUES ARE PROVIDED IN THIS COLUMN, THE FIRST VALUE APPLIES TO THE LEFT APPROACH RADIUS AND THE SECOND VALUE APPLIES TO THE RIGHT APPROACH RADIUS.
2. EXCEPT AS SPECIFIED ELSEWHERE, CONSTRUCT OR RECONSTRUCT APPROACHES AND DRIVEWAYS IDENTIFIED BY THIS TABLE IN ACCORDANCE WITH APPROACH TYPICAL DETAILS.

Preliminary Plans

APPROACH SUMMARY
3 OF 3

STATE OF ALASKA 49TH
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NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	G5	G5

TURNOUT SUMMARY

TURNOUT NUMBER	LT	RT	WIDTH (FT)	STATION BEGIN TAPER	STATION BEGIN FULL WIDTH	STATION END FULL WIDTH	STATION END TAPER	AREA (SF)	REMARKS
TURNOUT NUMBER	LT	RT	WIDTH (FT)	BEGIN TRANSITION STATION	BEGIN FULL WIDTH STATION	END FULL WIDTH STATION	END TRANSITION STATION	AREA (SF)	REMARKS
T1	X		18	"0"197+29	"0"197+92	"0"199+36	"0"199+95	3715	
T2		X	24	"0"447+67	"0"449+00	"0"452+60	"0"453+80	15500	SEPERATED REST AREA
T3		X	8	"0"571+80	"0"572+00	"0"572+30	"0"572+48	360	
T4	X		18	"0"609+60	"0"610+13	"0"611+80	"0"612+60	3565	

TURNOUT SUMMARY TABLE NOTES:

1. ADJACENT TURNOUT FULL WIDTH SHALL BE PARALLEL/CONCENTRIC TO THE HIGHWAY CENTERLINE
2. MATERIALS REQUIRED TO CONSTRUCT TURNOUTS WILL BE PAID SEPARATELY UNDER THE RESPECTIVE PAY ITEMS LISTED IN THE BID SCHEDULE

Preliminary Plans

TURNOUT SUMMARY

STATE OF ALASKA 49TH
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NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	H1	H12

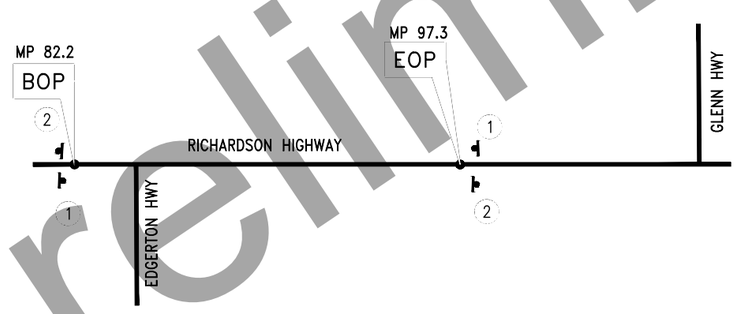
SIGNING NOTES

1. REMOVE AND DISPOSE OF ALL EXISTING SIGN FOUNDATIONS WITHIN THE PROJECT LIMITS, EXCEPT THOSE DESIGNATED FOR REINSTALLATION, SALVAGE OR OTHERWISE NOTED. ALL SALVAGED SIGN PANELS REMOVED AND NOT DESIGNATED FOR REINSTALLATION, SHALL BE DELIVERED TO TAZLINA MAINTENANCE STATION LOCATED AT MP110 ON THE RICHARDSON HIGHWAY.
2. REUSE ALL ALYESKA SIGN PANELS.
3. MOUNTING HEIGHTS ARE PER STANDARD PLAN S-05.01 UNLESS OTHERWISE NOTED.
4. DETERMINE POST LENGTHS IN THE FIELD. DO NOT EXTEND POSTS ABOVE TOP OF SIGN.
5. INSTALL PST SIGN POSTS WITH SLEEVE TYPE SOIL EMBEDMENT PER STANDARD PLAN S-30.04. ATTACH THE SIGN POST TO THE SLEEVE USING GALVANIZED 3/8" BOLT, NUT, SPLIT LOCK WASHER AND TWO FLAT WASHERS.
6. 1/4" X 1 1/2" ALUMINUM ALLOY 6061-T6 BAR MAY ALSO BE USED TO FABRICATE SIGN BRACES.
7. ATTACH ALL SIGNS TO THEIR SUPPORTS WITH 3/8" BOLTS, EXCEPT ATTACH UNFRAMED SIGNS TO PST POSTS WITH ALUMINUM DRIVE RIVETS. WIND WASHERS ARE NOT REQUIRED WITH DRIVE RIVETS. INCLUDE SPLIT LOCK WASHERS WHEN BOLTS ARE USED.
8. ALL FASTENER HARDWARE SHALL MEET THE REQUIREMENTS OF THE "FASTENER SPECIFICATION TABLE" ON SHEET H1.
9. MAINTAIN EXISTING SIGNS UNTIL NEW SIGNS ARE INSTALLED. DO NOT LEAVE DUPLICATE OR CONFLICTING SIGNING UP AT ANY TIME.
10. ALL SIGNS NOTED FOR REMOVAL AND REINSTALLATION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE IF THEY ARE DAMAGED DURING THE RELOCATION EFFORT.
11. LOCATE AND PROTECT ALL NEW AND EXISTING UNDERGROUND UTILITIES, INCLUDING BUT NOT LIMITED TO: PIPELINES, INTERCONNECT CABLES, SIGNAL SYSTEMS, LIGHTING SYSTEMS, STORM AND SANITARY SEWERS, WATER SYSTEMS, AND TELEPHONE AND ELECTRICAL CABLES, PRIOR TO INSTALLING SIGN POSTS. NOT ALL EXISTING UTILITIES MAY BE SHOWN ON THE PLANS.
12. INSTALL WEATHER TIGHT CAPS ON ALL PIPE AND TUBE POSTS, EXCEPT PERFORATED STEEL TUBE.
13. INSTALL FRANGIBLE COUPLING SYSTEMS IN ACCORDANCE WITH STANDARD PLAN S-31.01.
14. HINGED JOINTS WITH FRANGIBLE FUSE PLATES ARE REQUIRED ON ALL MULTIPLE POST SIGNS WITH FRANGIBLE COUPLING SYSTEMS. THE HINGE LOCATION ON ALL POSTS SHALL BE THE SAME DISTANCE BELOW THE SIGN, INSTEAD OF THE 6" MINIMUM SHOWN ON STANDARD PLAN S-31.01. SEE MANUFACTURER'S SPECIFICATION FOR HINGE LOCATION BELOW SIGN.
15. THE 4" MOUNTING AREA ON MILEPOST SIGNS (D10-103 SERIES) SHALL BE BARE ALUMINUM. THIS ELIMINATES THE OPTION OF INSTALLING GREEN REFLECTIVE SHEETING IN THIS AREA AS NOTED IN THE ASDS.
16. ALYESKA APPROACH SIGNS ARE PRIVATELY OWNED AND MAINTAINED. MOST OF THESE SIGNS WILL NEED TO BE RELOCATED DUE TO MODIFICATIONS TO THE APPROACHES. REUSE THE EXISTING SIGNS AND POSTS. NEW SOIL EMBEDMENT SLEEVES ARE REQUIRED. THIS WORK IS SUBSIDIARY TO 615 PAY ITEMS. ANY SIGNS DAMAGED BY THE CONTRACTOR WILL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
17. STOP (R1-1) SIGN LOCATIONS MAY NEED ADJUSTMENT IN THE FIELD. THE ENGINEER WILL APPROVE FINAL LOCATIONS.
18. CLEARING REQUIRED TO ENSURE ADEQUATE VISIBILITY OF SIGNS IS SUBSIDIARY TO PAY ITEM 201.0009.0000.

FASTENER SPECIFICATION TABLE

FASTENERS	STEEL	STAINLESS STEEL
BOLTS	ASTM A 307	ASTM F 593
NUTS	ASTM A 563	ASTM F 594
WASHERS	ASTM F 844	ASTM A 480

THESE SPECIFICATIONS APPLY TO ALL SIGN FASTENER HARDWARE ON THE PROJECT.



SIGN LEGEND

1 G20-1
ROAD WORK
NEXT 15 MILES
60" X 24"

2 G20-2
END
ROAD WORK
48" X 24"

PERMANENT CONSTRUCTION SIGNS

NOTE: INSTALL ALL PERMANENT CONSTRUCTION SIGNS ON WOOD POSTS.

Preliminary Plans

SIGNING NOTES

STATE OF ALASKA 49TH
Russell M. Johnson
CE 9963
REGISTERED PROFESSIONAL ENGINEER

PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
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NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	H2	H12

(SIGN SUMMARY TABLES NOT FORMATTED CORRECTLY)

LOCATION NUMBER	STATION	LOCATION		ASDS CODE	LEGEND	SIZE (IN)			BRACING/FRAMING		AREA (SF)	DIRECTION	POST			REMARKS
		LT	RT			H	X	V	BRACED	FRAMED			TYPE	SIZE (IN)	NUMBER	
100	"0"167+33		X	D7-1	Wrangell - St. Elias	138	X	42		X	40.25	S	PST	2.5	3	
					National Park & Preserve											
					33mi ->											
101	"0"169+26		X	M2-2	JUNCTION	60	x	48		X	20.00	S	PST	2.5	2	
					AK-4 AK-10											
102	"0"171+90		X	W2-2R	INTERSECTION (SYMBOL)	36	X	36	X		9.00	S	PST	2.5	1	
103	"0"173+94	X		R2-1	SPEED LIMIT 65	30	X	36	X		7.50	N	PST	2.5	1	
104	"0"174+19		X	D9-204	TOURIST ->	108	X	54		X	40.50	S	PST	2.5	3	
					ATTRACTIONS 33											
105	"0"178+09		X	D1-1	Chitina ->	72	X	24		X	12.00	S	PST	2.5	2	
106	"0"178+99	X		R16-106	$1000 FINE FOR LITERING	42	X	42	X		12.25	N	PST	2.5	1	
107	"0"179+48	X		W1-7	TWO-DIRECTIONAL LARGE ARROW	48	X	24	X		8.00	E	PST	2.5	2	
				OM1-1	OBJECT MARKER	18	X	18	X		2.25	E				
				OM1-1	OBJECT MARKER	18	X	18	X		2.25	E				
108	"0"179+94		X	D3-100	RICHARDSON HWY	42	X	8	X		4.67	E/W	PST	2.5	1	
				D3-100	EDGERTON HWY	42	X	12	X		7.00	N/S				
				R1-1	STOP	30	x	30	X		6.25	E				
109	"0"182+32	X		D1-1	<- Chitina	72	X	24		X	12.00	N	PST	2.5	2	
110	"0"182+73		X	M3-1	NORTH	36	X	18	X		4.50	S	PST	2.5	1	
				M1-5	AK-4	36	X	36	X		9.00	S				
111	"0"185+33	X		D9-204	<- TOURIST	108	X	54		X	40.50	N	PST	2.5	3	
					33 ATTRACTIONS											
112	"0"186+03	X		D7-1	Wrangell - St. Elias	138	X	42		X	40.25	N	PST	2.5	3	
					National Park & Preserve											
					<- 33mi											
113	"0"187+28	X		W2-2 (L)	INTERSECTION SYMBOL	36	X	36	X		9.00	N	PST	2.5	1	
114	"0"189+00		X	R2-1	SPEED LIMIT 65	30	X	36	X		7.50	S	PST	2.5	1	
115	"0"200+31		X	D10-102	MILE 83	12	X	36			6.00	N/S	PST	2.5	1	
116	"0"227+69	X		R1-1	STOP	30	X	30	X		6.25	W	PST	2.5	1	
										SUBTOTAL	306.92					

Preliminary Plans

SIGN SUMMARY 1 OF 4

STATE OF ALASKA 49TH
Russell M. Johnson
CE 9963
REGISTERED PROFESSIONAL ENGINEER

PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
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NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	H3	H12

LOCATION NUMBER	STATION	LOCATION LT	LOCATION RT	ASDS CODE	LEGEND	SIZE (IN) H	SIZE (IN) X	SIZE (IN) V	BRACING/FRAMING BRACED	BRACING/FRAMING FRAMED	AREA (SF)	DIRECTION	POST TYPE	POST SIZE (IN)	POST NUMBER	REMARKS
117	"0"228+19	X			EXISTING PRIVATE SIGN								PST	2.5	1	REMOVE AND REINSTALL EXISTING PRIVATE SIGN
118	"0"230+40		X	W7-1	HILL (SYMBOL)	36	X	36	X		9.00	S	PST	2.5	1	
				W7-3aP	NEXT 3 MILES	30	X	24	X		5.00					
119	"0"252+24		X	D10-102	MILE 84	12	X	36	X		6.00	N/S	PST	2.5	1	
120	"0"277+69		X	W7-1	HILL (SYMBOL)	36	X	36	X		9.00	S	PST	2.5	1	
121	"0"305+60		X	D10-102	MILE 85	12	X	36			6.00	N/S	PST	2.5	1	
122	"0"345+09	X		R1-1	STOP	30	X	30	X		6.25	W	PST	2.5	1	
					EXISTING PRIVATE SIGN							N/S	PST	2.5	1	REMOVE AND REINSTALL EXISTING PRIVATE SIGN
123	"0"345+72	X			EXISTING PRIVATE SIGN							N/S	PST	2.5	1	REMOVE AND REINSTALL EXISTING PRIVATE SIGN
124	"0"356+39		X	D10-102	MILE 86	12	X	36			6.00	N/S	PST	2.5	1	
125	"0"363+90	X			EXISTING PRIVATE SIGN							N/S	PST	2.5	1	REMOVE AND REINSTALL EXISTING PRIVATE SIGN
126	"0"395+87		X	D9-102	SCENIC VIEWPOINT (SYMBOL)	24	X	24	X		4.00	S	PST	2.5	1	
				D9-306	1 MILE	24	X	6	X		1.00					
127	"0"414+51		x	D10-102	MILE 87	12	X	36			6.00	N/S	PST	2.5	1	
128	"0"416+00		X	D14-100	ADOPT	30	X	24	X		5.00	S	PST	2.5	1	
					A											
					HIGHWAY											
					LAPELLA	30	X	12	X		2.50					
					FAMILY											
129	"0"439+02		X	D9-102	SCENIC VIEWPOINT (SYMBOL)	24	X	24	X		4.00	S	PST	2.5	1	
				D9-304BL	1000FT	24	X	6	X		1.00					
130	"0"462+77	X		D9-102	SCENIC VIEWPOINT (SYMBOL)	24	X	24	X		4.00	N	PST	2.5	1	
				D9-304BL	1000FT	24	X	6	X		1.00					
131	"0"467+23		X	D10-102	MILE 88	12	X	36			6.00	N/S	PST	2.5	1	
132	"0"486+21		X	S3-1	SCHOOL BUS STOP AHEAD (SYMBOL)	30	X	30	X		6.25	S	PST	2.5	1	
133	"0"495+63	X		R1-1	STOP	30	X	30	X		6.25	W	PST	2.5	1	
134	"0"496+27	X			EXISTING PRIVATE SIGN								PST	2.5	1	REMOVE AND REINSTALL EXISTING PRIVATE SIGN
										SUBTOTAL	94.25					

Preliminary Plans

SIGN SUMMARY 2 OF 4

STATE OF ALASKA 49TH
Russell M. Johnson
CE 9963
REGISTERED PROFESSIONAL ENGINEER

PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
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NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	H4	H12

LOCATION NUMBER	STATION	LOCATION LT	LOCATION RT	ASDS CODE	LEGEND	SIZE (IN) H	SIZE (IN) X	SIZE (IN) V	BRACING/FRAMING BRACED	BRACING/FRAMING FRAMED	AREA (SF)	DIRECTION	POST TYPE	POST SIZE (IN)	POST NUMBER	REMARKS
135	"0"500+82	X		D9-102	SCENIC VIEWPOINT (SYMBOL)	24	X	24	X		4.00	S	PST	2.5	1	
				D9-306	1 MILE	24	X	6	X		1.00					
136	"0"516+68		X	D3-100	RICHARDSON HWY	42	X	8	X		4.67	E/W	PST	2.5	1	
				D3-100	WILLOW RUN	48	X	12	X		8.00	N/S				
				R1-1	STOP	30	X	30	X		6.25	E				
137	"0"519+68	X		D14-100	ADOPT	30	X	24	X		5.00	N	PST	2.5	1	
					A											
					HIGHWAY											
					LAPELLA	30	X	12	X		2.50					
					FAMILY											
138	"0"519+76		X	D10-102	MILE 89	12	X	36			6.00	N/S	PST	2.5	1	
139	"0"522+72		X	D3-100	RICHARDSON HWY	42	X	8	X		4.67	E/W	PST	2.5	1	
				D3-100	POST RD	36	X	12	X		6.00	N/S				
				R1-1	STOP	30	X	30	X		6.25	E				
140	"0"523+66	X			SCHOOL BUS STOP AHEAD (SYMBOL)	30	X	30	X		6.25	S	PST	2.5	1	
141	"0"572+63		X	D10-102	MILE 90	12	X	36			6.00	N/S	PST	2.5	1	
142	"0"584+31	X		R1-1	STOP	30	X	30	X		6.25	W	PST	2.5	1	
					EXISTING PRIVE SIGN											REMOVE AND REINSTALL EXISTING PRIVATE SIGN
143	"0"611+06		X	I-3	Willow	30	X	18	X		3.75	S	PST	2.5	2	
					Creek											
144	"0"612+88	X		I-3	Willow	30	X	18	X		3.75	N	PST	2.5	2	
					Creek											
145	"0"621+82		X	D1-1	Old Edgerton ->	78	X	18		X	9.75	S	PST	2.5	2	
146	"0"622+30	X		R2-1	SPEED LIMIT 65	30	X	36	X		7.50					
147	"0"622+85		X	D10-102	MILE 91	12	X	36			6.00	N/S	PST	2.5	1	
148	"0"626+72		X	R8-3	NO	24	X	30	X		5.00	N	PST	2.5	1	
					PARKING											
149	"0"627+39		X	D3-100	RICHARDSON HWY	42	X	8	X		4.67	E/W	PST	2.5	1	
				D3-100	OLD EDGERTON HWY	48	X	18	X		12.00	N/S				
				R1-1	STOP	30	X	30	X		6.25	E				
										SUBTOTAL	131.50					

Preliminary Plans

SIGN SUMMARY 3 OF 4

STATE OF ALASKA 49TH
Russell M. Johnson
CE 9963
REGISTERED PROFESSIONAL ENGINEER

PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
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NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	H5	H12

LOCATION NUMBER	STATION	LOCATION LT	LOCATION RT	ASDS CODE	LEGEND	SIZE (IN) H	SIZE (IN) X	SIZE (IN) V	BRACING/FRAMING BRACED	BRACING/FRAMING FRAMED	AREA (SF)	DIRECTION	POST TYPE	POST SIZE (IN)	POST NUMBER	REMARKS
150	"0"630+49	X		D1-1	<- Old Edgerton	78	X	18		X	9.75	N	PST	2.5	2	
				D2-2	Edgerton Cutoff 8	90	X	30		X	18.75					
					Valdez 91											
151	"0"632+63		X	R2-1	SPEED LIMIT 65	30	X	36	X		7.50	S	PST	2.5	1	
152	"0"661+99		X	D9-18	SERVICES (SYMBOLS) 1 MILE	96	X	60		X	40.00	S	PST	2.5	3	
153	"0"677+48		X	D10-102	MILE 92	12	X	36			6.00	N/S	PST	2.5	1	
154	"0"686+15		X		EXISTING PRIVATE SIGN							N/S	PST	2.5	1	REMOVE AND REINSTALL EXISTING PRIVATE SIGN
155	"0"686+28	X		R1-1	STOP	30	X	30	X		6.25	W	PST	2.5	1	
					EXISTING PRIVATE SIGN											REMOVE AND REINSTALL EXISTING PRIVATE SIGN
156	"0"726+46		X	D10-102	MILE 93	12	X	36			6.00	N/S	PST	2.5	1	
157	"0"743+39		X	D3-100	RICHARDSON HWY	42	X	8	X		4.67	E/W	PST	2.5	1	
				D3-100	GLENWOOD DR	48	X	12	X		8.00	N/S				
				R1-1	STOP	30	X	30	X		6.25	E				
158	"0"771+11		X	D9-18	SERVICES (SYMBOLS) 1 MILE	96	X	60		X	40.00	S	PST	2.5	3	
159	"0"774+85		X	D10-102	MILE 94	12	X	36			6.00	N/S	PST	2.5	1	
160	"0"779+78	X		R1-1	STOP	30	X	30	X		6.25	W	PST	2.5	1	
161	"0"823+56		X	D10-102	MILE 95	12	X	36			6.00	N/S	PST	2.5	1	
162	"0"891+19		X	D10-102	MILE 96	12	X	36			6.00	N/S	PST	2.5	1	
163	"0"945+20		X	D10-102	MILE 97	12	X	36			6.00	N/S	PST	2.5	1	
										SUBTOTAL	183.42					
										TOTAL	716.08					

Preliminary Plans

SIGN SUMMARY 4 OF 4

STATE OF ALASKA 49TH Russell M. Johnson CE 9963 REGISTERED PROFESSIONAL ENGINEER

PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
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NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	H6	H12

BORDER
RADIUS=2.25"
WIDTH=0.75"
INSET=0

COLORS:
BORDER AND LEGEND: WHITE
BACKGROUND: BROWN

Preliminary Plans

SIGN DETAIL
LOCATION NO. 100

STATE OF ALASKA 49TH
Russell M. Johnson
CE 9963
REGISTERED PROFESSIONAL ENGINEER

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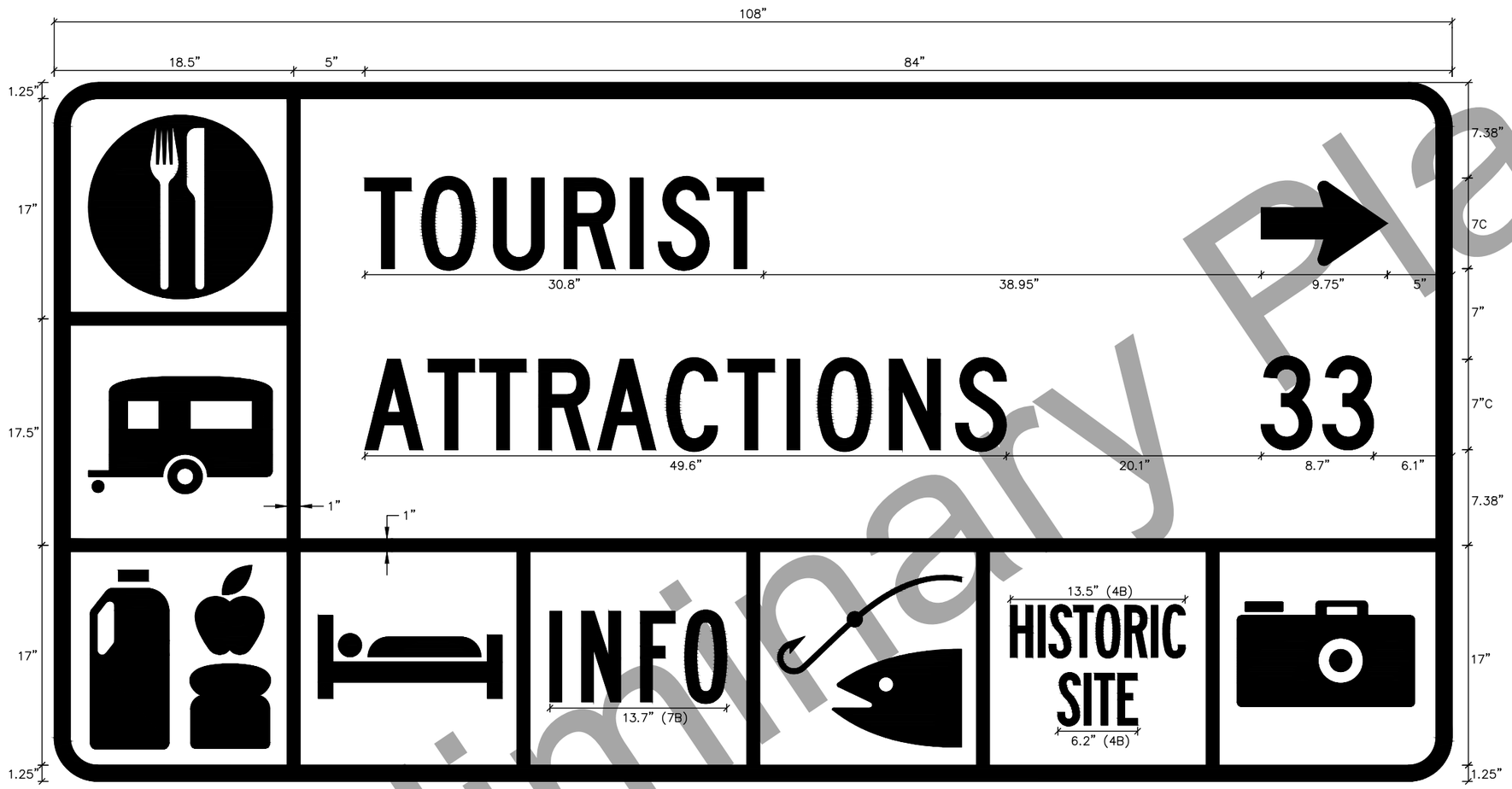
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	H7	H12



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INSET=0

COLORS:
BORDER AND LEGEND: WHITE
BACKGROUND: BLUE

SIGN DETAIL
LOCATION NO. 104

STATE OF ALASKA 49TH
Russell M. Johnson
CE 9963
REGISTERED PROFESSIONAL ENGINEER

Preliminary Plans

PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
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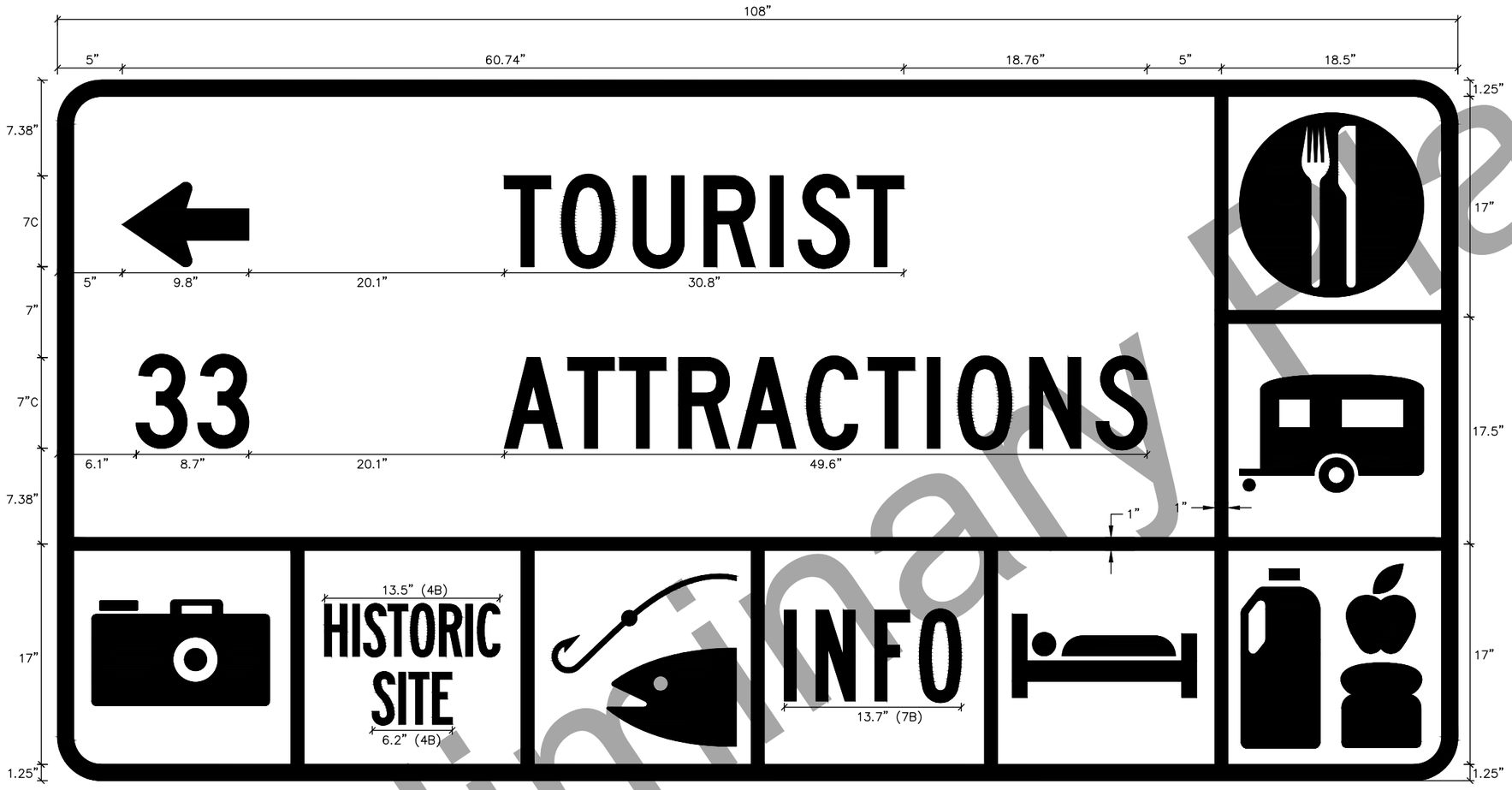
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	H8	H12



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WIDTH=1.25"
INSET=0

COLORS:
BORDER AND LEGEND: WHITE
BACKGROUND: BLUE

SIGN DETAILS
LOCATION NO. 111

STATE OF ALASKA 49TH
Russell M. Johnson
CE 9963
REGISTERED PROFESSIONAL ENGINEER

Preliminary Plans

PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
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NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	H9	H12

BORDER
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WIDTH=0.75"
INSET=0

COLORS:
BORDER AND LEGEND: WHITE
BACKGROUND: BROWN

Preliminary Plans

SIGN DETAILS
LOCATION NO. 112

STATE OF ALASKA 49TH
Russell M. Johnson
CE 9963
REGISTERED PROFESSIONAL ENGINEER

PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
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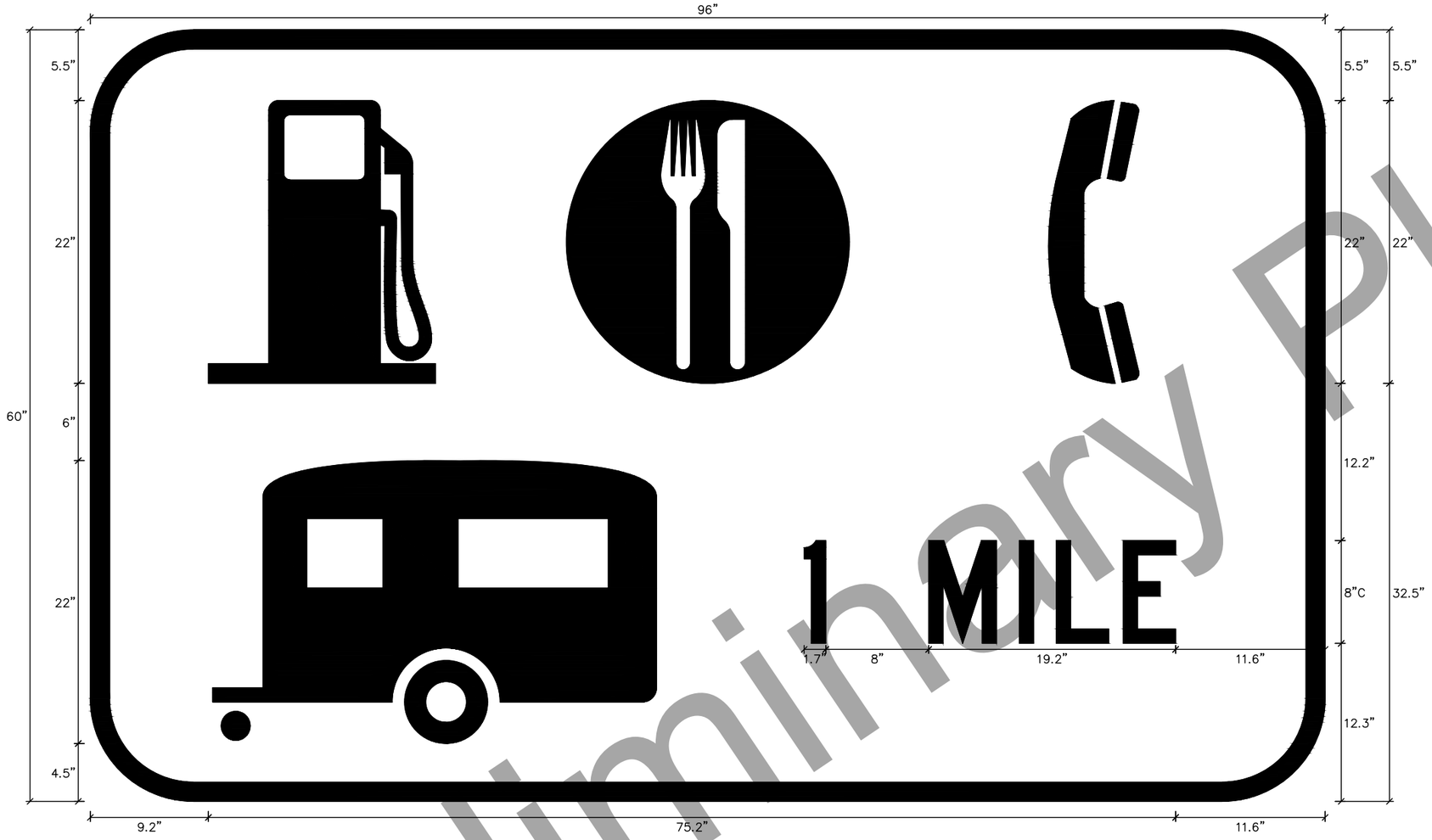
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	H10	H12



BORDER
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WIDTH=1.25"
INSET=0

COLORS:
BORDER AND LEGEND: WHITE
BACKGROUND: BLUE

Preliminary Plans

SIGN DETAILS LOCATION
NO. 152 & 158

STATE OF ALASKA 49TH
Russell M. Johnson
CE 9963
REGISTERED PROFESSIONAL ENGINEER

PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
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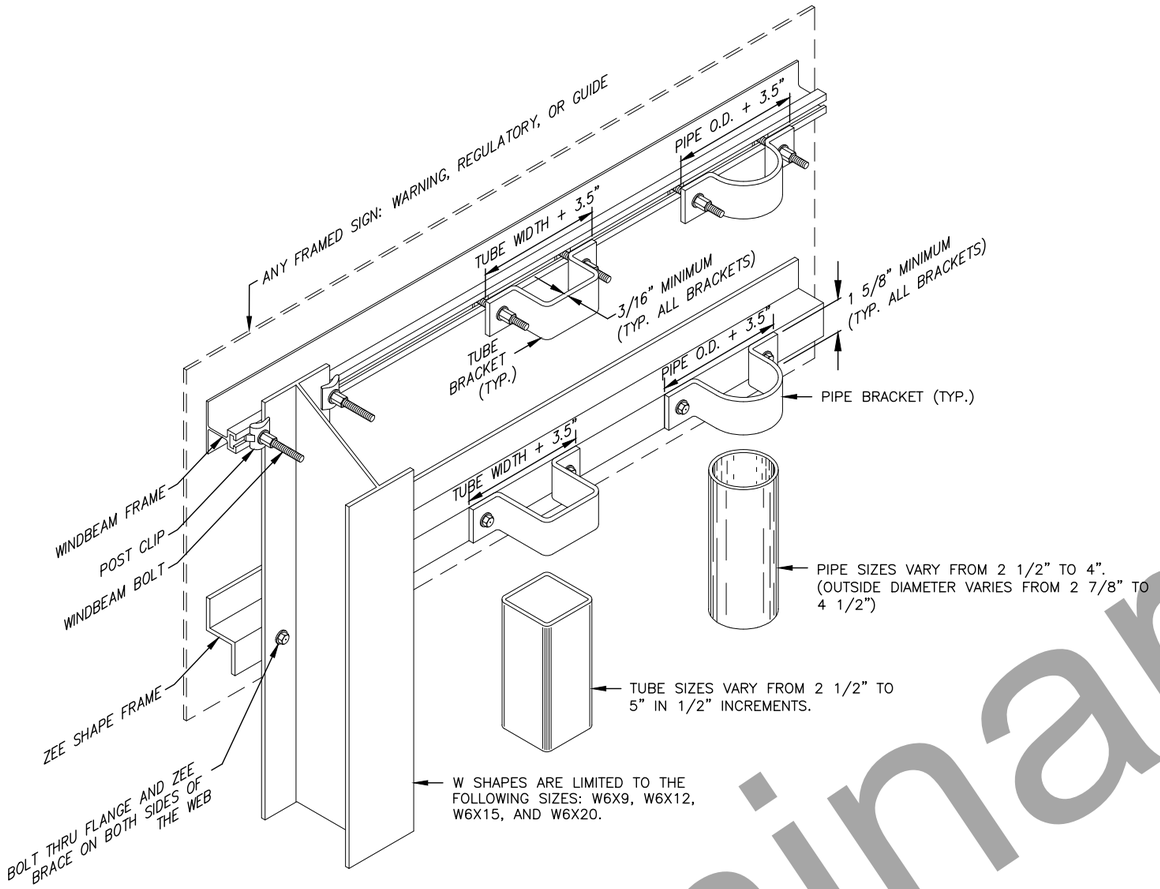
NO.	DATE	REVISION

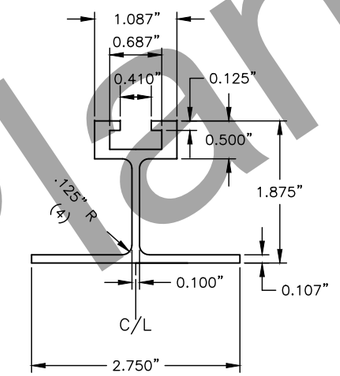
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	H11	H12



FRAMED SIGN ATTACHMENT BRACKETS

NOTES:

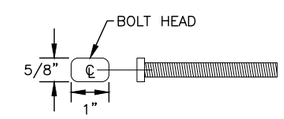
1. ATTACH FRAMED SIGNS TO POSTS WHEREVER THE FRAMES CROSS THE POSTS. AT EACH CROSSING, ATTACH THE SIGN USING TWO POST CLIPS ON W-SHAPE POSTS, A U-SHAPED BRACKET ON PIPES OR A BRACKET WITH SQUARE CORNERS ON TUBES.
2. THE TUBE BRACKETS USED ON EVEN INCH SIZE TUBES MAY ALSO BE USED ON TUBES 1/2" SMALLER IN SIZE.
3. THE BRACKET DETAILS SHOWN INDICATE GENERAL DESIGNS ONLY. DESIGNS MAY VARY BY MANUFACTURER.
4. ALUMINUM ALLOY 6061-T6 SHALL BE USED FOR ZEE SHAPE FRAMING AND RIVETS.
5. ATTACH ALL SIGNS TO THEIR SUPPORTS WITH 3/8" BOLTS, EXCEPT ATTACH UNFRAMED SIGNS TO PERFORATED STEEL TUBE POSTS WITH ALUMINUM DRIVE RIVETS. SEE "FASTENER SPECIFICATION TABLE" ON SHEET H1?



EXTRUDED ALUMINUM WINDBEAM

NOTES:

1. ALUMINUM ALLOY 6061-T6 SHALL BE USED FOR EXTRUDED WINDBEAM AND RIVETS.
2. ATTACH SIGNS TO WINDBEAM WITH 3/16" RIVETS AT 4" STAGGERED SPACING.



3/8" WINDBEAM BOLT

SIGN FRAMING DETAILS

STATE OF ALASKA 49TH
Russell M. Johnson
CE 9963
REGISTERED PROFESSIONAL ENGINEER

Preliminary Plans

PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
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NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	H12	H12

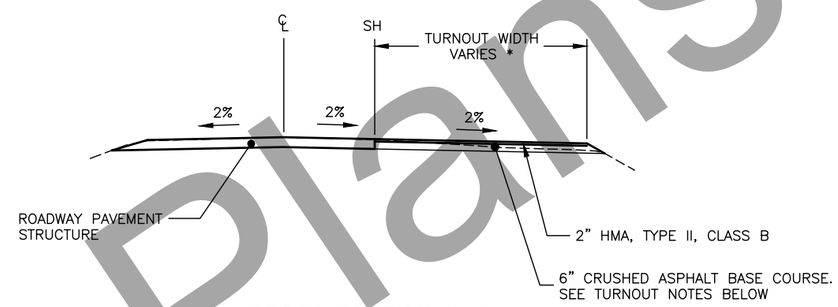
670.0001.0000 PAINTED TRAFFIC MARKINGS SUMMARY

DESCRIPTION	LENGTH (FT)	REMARKS
4" WHITE	160600	
8" WHITE	700	
WHITE STOP BAR	45	EDGERTON HIGHWAY INTERSECTION
4" DOUBLE YELLOW	19700	
4" YELLOW	28800	
4" YELLOW SKIP	60600	

TRAFFIC MARKING NOTES:

1. IF NEW AND EXISTING LONGITUDINAL MARKINGS ARE NOT ALIGNED AT THE MATCH LINE, TRANSITION BETWEEN THE TWO USING A 100:1 TAPER.
2. THE STRIPE/SKIP RATIO FOR THIS PROJECT WILL BE 10 FT/30 FT. THE PASS/NO-PASS ZONES WILL BE DETERMINED IN THE FIELD BY THE CONTRACTOR ACCORDING TO SECTION 670. THIS WORK IS SUBSIDIARY TO PAY ITEM 670.0001.0000 PAINTED TRAFFIC MARKINGS.
3. PAVEMENT MARKINGS WILL BE PLACED IN ACCORDANCE WITH STANDARD DRAWING T-21 AND SECTION 670.
4. LENGTH OF 4" DOUBLE YELLOW IS BASED ON A CONTINUOUS 4" DOUBLE YELLOW STRIPE THROUGH THE LENGTH OF THE PROJECT. NO ADJUSTMENT WILL BE MADE TO THE 670(1) PAY ITEM FOR DIFFERENCES IN QUANTITY OF YELLOW STRIPE INSTALLED ACCORDING TO 670-3.05, PRELIMINARY SPOTTING.

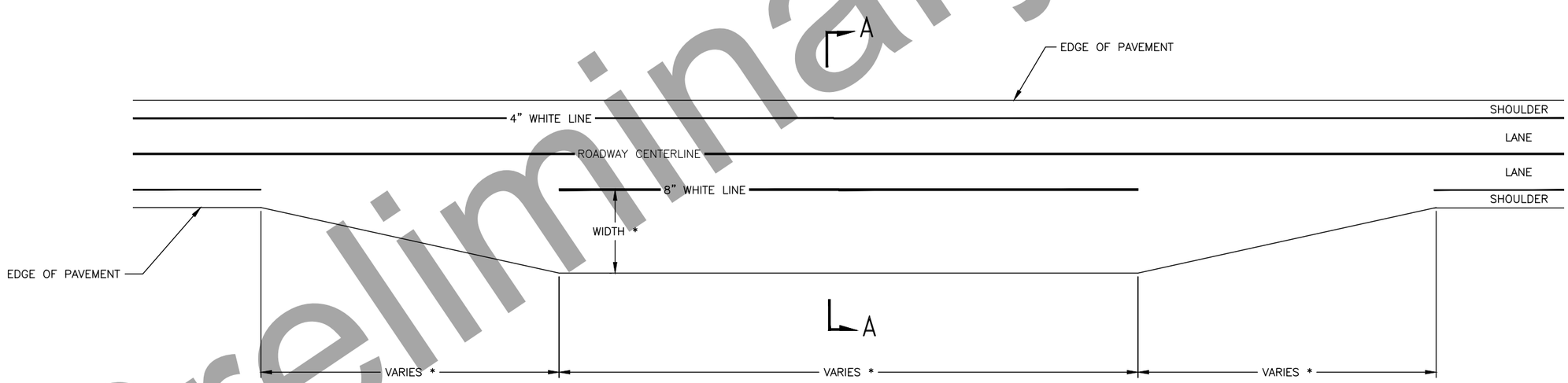
* SEE TURNOUT SUMMARY ON SHT G1



CROSS SECTION A-A

TURNOUT NOTES:

1. USE AGGREGATE BASE COURSE, GRADING D-1 UNDER HMA TO ESTABLISH FINISH GRADE PRIOR TO PAVING



* SEE TURNOUT SUMMARY SHEET G5

TURNOUT STRIPING DETAIL

STATE OF ALASKA 49TH
Russell M. Johnson
CE 9963
REGISTERED PROFESSIONAL ENGINEER

STRIPING SUMMARY & DETAILS

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NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	Q1	Q15

ESCP GENERAL NOTES:

GENERAL:

1. READ AND COMPLY WITH THE CONSTRUCTION GENERAL PERMIT (CGP) AND SECTION 641 OF THE PROJECT SPECIFICATIONS.
2. INITIATE EROSION AND SEDIMENT CONTROLS PRIOR TO ANY EARTH DISTURBING ACTIVITIES.
3. ALL DISTURBED GROUND CAPABLE OF SUPPORTING VEGETATION SHALL BE RE-VEGETATED FOR FINAL STABILIZATION. FINAL STABILIZED AREAS NOT RE-VEGETATED SHALL BE 100% COVERED BY ROCK OR OTHER PERMANENT LOW-ERODIBLE MATERIAL. ATTAINMENT OF FINAL STABILIZATION SHALL BE AS APPROVED IN THE FIELD BY THE ENGINEER.
4. STOCKPILE AND STAGING LOCATIONS SHALL BE RECLAIMED TO THEIR ORIGINAL CONDITION AS APPROVED BY THE ENGINEER.
5. TEMPORARY BMP'S REQUIRED BY THIS ESCP WILL NOT BE MEASURED FOR PAYMENT AND ARE SUBSIDIARY TO PAY ITEM 641.0003.0000.
6. CONSTRUCTION ENTRANCE / EXITS MUST BE ESTABLISHED TO MINIMIZE OFF SITE IMPACTS.
7. NOTIFICATION TO PUBLIC WATER SYSTEM (PWS) OPERATORS IS REQUIRED WHEN POLLUTION, INCLUDING SITE EROSION RESULTS FROM A PROJECT AND OCCURS WITHIN THE SYSTEM DRINKING WATER PROTECTION AREA (DWPA).
8. IF EXCAVATION DEWATERING WILL OCCUR ON THE PROJECT, THE CONTRACTOR MUST COMPLY WITH THE EXCAVATION DEWATERING GENERAL PERMIT AKG0020000 AND SUBMIT A NOI AND A CERTIFIED BMP PLAN TO ADEC FOR APPROVAL BEFORE DEWATERING CAN BEGIN,
9. AVOID CLEARING FROM MAY 1 – JULY 15.

CULVERTS:

10. PROVIDE TEMPORARY INLET AND OUTLET PROTECTION FOR ALL CULVERTS (EXISTING AND PROPOSED) IN THE AREA OF DISTURBANCE PRIOR TO MAKING THEM OPERATIONAL OR BEGINNING EARTH DISTURBING ACTIVITIES.
11. PERMANENT CULVERT INLET AND OUTLET PROTECTION SHALL BE CULVERT RIPRAP APRONS. SEE THE CULVERT SUMMARY FOR RIPRAP CLASS. SEE CULVERT AND CULVERT RIPRAP APRON INSTALLATION DETAILS.

DITCH PROTECTION AND CONCENTRATED FLOWS:

12. DURING CONSTRUCTION, PROTECT DITCHES TO LIMIT RELEASE OF SEDIMENT. IF DITCH LINING PER THE PLANS IS NOT CONSTRUCTED SIMULTANEOUSLY WITH EMBANKMENT CONSTRUCTION, PROVIDE TEMPORARY DITCH PROTECTION IN THE FORM OF VELOCITY CONTROLS OR TEMPORARY NON-ERODIBLE LINING.
13. EXPOSED MATERIAL OF NEW DITCHES CAPABLE OF SUPPORTING VEGETATION SHALL BE SEEDED OR DITCH LINED PER THE PLANS FOR FINAL STABILIZATION.
14. WHEN POSSIBLE, AVOID CONDITIONS WHICH PROMOTE CONCENTRATED FLOWS. OTHERWISE, INSTALL VELOCITY CONTROL BMPS (I.E., WATTLE CHECK DAMS OR ROCK CHECK DAMS) OR NON-ERODIBLE CHANNEL LINING (I.E., DITCH LINING).

PERIMETER CONTROL:

15. VEGETATIVE BUFFER IS THE PREFERRED PERIMETER PROTECTION FOR THIS PROJECT. SEE APPENDIX A FOR COE PERMIT, FOR USING WETLANDS AS A VEGETATIVE BUFFER. IF THERE IS STANDING WATER OR EMERGENT WETLANDS IN THE 10 FT WORK AREA OR 25 FT VEGETATIVE BUFFER THEN CONTRACTOR NEEDS TO INSTALL PERIMETER CONTROL BMPS..

HAULING:

16. ENSURE LOADS ARE STABLE OR COVERED SO THAT NO MATERIAL ESCAPEMENT OCCURS DURING HAULING ACTIVITIES.

STOCKPILE PROTECTION:

17. ALL ERODIBLE STOCKPILES MUST BE PROTECTED BY EROSION AND SEDIMENT CONTROL DEVICES.
18. EROSION AND SEDIMENT CONTROL BMPS MAY HAVE TO BE REMOVED AND RE-INSTALLED EACH SHIFT.
19. COVER MUST BE USED ON STOCKPILES IN ACCORDANCE WITH SUBSECTION 641-3.01.5 TO PROVIDE ADDITIONAL EROSION PROTECTION.

IN WATER WORK

20. ALL IN WATER WORK WILL BE ISOLATED FROM FLOWING WATER.

TIMING OF BMP INSTALLATION:

21. INSTALL EROSION AND SEDIMENT CONTROL BMP'S PRIOR TO THE START OF CONSTRUCTION, AS NECESSARY TO MINIMIZE EROSION FROM DISTURBED SURFACES AND CAPTURE SEDIMENT ONSITE.
22. INSTALL TEMPORARY PERIMETER CONTROL BMP'S BEFORE ANY UP-GRADIENT SOIL DISTURBANCE OCCURS.
23. START PLACEMENT OF DITCH LINING OR OTHER DISSIPATION MEASURES WITHIN 24 HOURS OF PLACEMENT OF THE CULVERT AND COMPLETED IN ON CONTINUOUS OPERATION.

WINTER SHUTDOWN:

24. IF FINAL STABILIZATION IS NOT ACHIEVED BEFORE WINTER SHUTDOWN, EXPOSED GROUND, INCLUDING BUT NOT LIMITED TO EMBANKMENT SLOPES AND STOCKPILES, SHALL BE TEMPORARILY STABILIZED FOR SPRING BREAK-UP AND UNTIL PERMANENT STABILIZATION IS ACHIEVED THE NEXT SEASON. ALL STABILIZATION AND OTHER EROSION CONTROL MEASURES NECESSARY FOR WINTER SHUTDOWN ARE SUBSIDIARY TO PAY ITEM 641.0003.0000.

WETLANDS IN MATERIAL SITES:

25. AVOID IMPACTS OF WETLANDS WITHIN MATERIAL SITES MADE AVAILABLE WITHIN THESE PLANS. IF WETLANDS ARE UNAVOIDABLE, NOTIFY THE ENGINEER AT LEAST 60 DAYS PRIOR TO ANY EARTH DISTURBING ACTIVITY WITHIN THE MATERIAL SITES, AND IDENTIFY ALL POTENTIAL IMPACTS TO WETLANDS WITHIN THE SITE; IDENTIFY WHETHER THESE IMPACTS ARE TEMPORARY OR PERMANENT, AND PROVIDE DETAILED DRAWINGS DELINEATING THE PROPOSED IMPACT AREAS.
26. GRADE MATERIAL SITE FLOOR(S) TO RETAIN ALL WATER WITHIN EACH SITE AND TO AVOID ANY STORM WATER DISCHARGE FROM THE SITES DURING AND AFTER CONSTRUCTION.

THREATENED AND ENDANGERED SPECIES

ACCORDING TO THE LIST PUBLISHED AT:
HTTP://WWW.FAKR.NOAA.GOV/PROTECTEDRESOURCES/ESA/AK_SPECIESLST051110.PDF,
THERE ARE NO THREATENED AND ENDANGERED SPECIES LISTED FOR THIS AREA.

IF EAGLE NEST(S) ARE IDENTIFIED BY DOT&PF OR THE CONTRACTOR STAFF WITHIN 1/2 MILE OF THE CONSTRUCTION ACTIVITY, THE PROJECT ENGINEER SHALL BE INFORMED AND THE ENGINEER SHALL CONSULT THE USFWS FOR MEASURES TO PROTECT THE NEST FROM DISTURBANCES.

WILDLIFE & WATERFOWL REFUGES:

ALL PROJECT WORK WILL TAKE PLACE INSIDE THE EXISTING DOT&PF RIGHT-OF-WAY (ROW)' THE WRANGELL-ST. ELIAS NATIONAL PARK & PRESERVE IS LOCATED EAST OF THE PROJECT CORRIDOR. IT'S NORTHERN MOST BOUNDARY IS THE COPPER RIVER WHICH DOES NOT ABUT THE EXISTING DOT&PF RIGHT-OF-WAY. THE WRANGELL-ST. ELIAS NATIONAL PARK & PRESERVE IS A SECTION 4(f) PROTECTED RESOURCE AND NO IMPACTS WILL OCCUR.

PROJECT AREA	552 ACRES
DISTURBED AREA	76 ACRES
PRE-CONSTRUCTION IMPERVIOUS AREA	330,770 SY
POST-CONSTRUCTION IMPERVIOUS AREA	330,770 SY
PRE-CONSTRUCTION RUNOFF COEFFICIENT	0.7
POST-CONSTRUCTION RUNOFF COEFFICIENT	0.7

NOTE: PROJECT AREA AND DISTURBED AREA CALCULATIONS DO NOT INCLUDE MATERIALS SITES OR ACCESS ROADS TO THOSE SITES.

ENVIRONMENTAL INFORMATION

- RECEIVING WATER BODIES: PIPPEN LAKE, WILLOW LAKE, UNNAMED STREAMS, ADJACENT WETLANDS, TO THE COPPER RIVER.
- IMPAIRED WATER BODIES: NONE
- TOTAL MAXIMUM DAILY LOAD (TMDL) WATERS: NONE
- THREATENED AND ENDANGERED SPECIES: THIS PROJECT AND ITS SUPPORT AREAS DO NOT CONTAIN ANY KNOWN ESA SPECIES OR HABITAT.
- HISTORIC PLACES: NO HISTORIC PROPERTIES HAVE BEEN IDENTIFIED IN THE PROJECT AREA.
- MIGRATORY BIRD TREATY: ALL CONSTRUCTION ACTIVITIES SHALL COMPLY WITH THE MIGRATORY BIRD TREATY ACT TO PREVENT THE KILLING OR TAKING OF MIGRATORY BIRDS OR ANY PART, NEST, OR EGG OF ANY SUCH BIRDS.
- WETLANDS: SHOWN ON SUBSEQUENT Q SHEETS
- REFER TO APPENDIX A FOR PROJECT SPECIFIC PERMITS AND ENVIRONMENTAL COMMITMENTS

GENERAL SITE INFORMATION

- SITE FUNCTION: ROAD
- CLIMATE: AVERAGE ANNUAL TOTAL PRECIPITATION = 12.39 INCHES (SOURCE: WESTERN REGIONAL CLIMATE CENTER WEBSITE FOR COPPER CENTER (502156), AK), 2-YEAR 24-HOUR PRECIPITATION = 1.25 INCHES (SOURCE: http://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_ak.html)
- MATERIAL SITES: M.S.850-036-5 (ALLUVIAL SOURCE), M.S.71-1-006-5 BURMA ROAD QUARRY.
- STAGING AREAS:

Preliminary Plans

ESCP NOTES

STATE OF ALASKA 49TH
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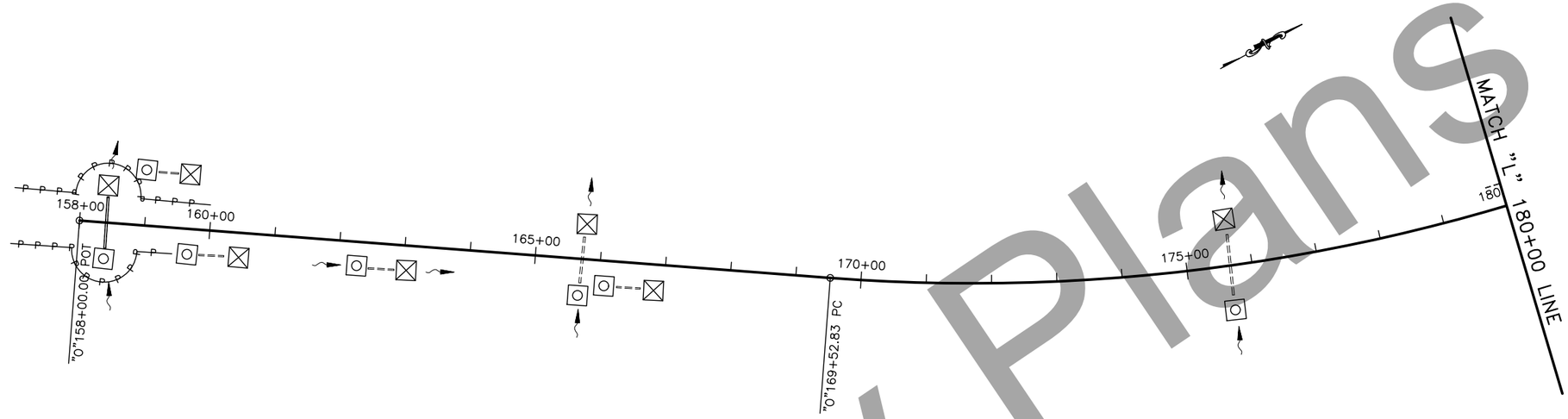
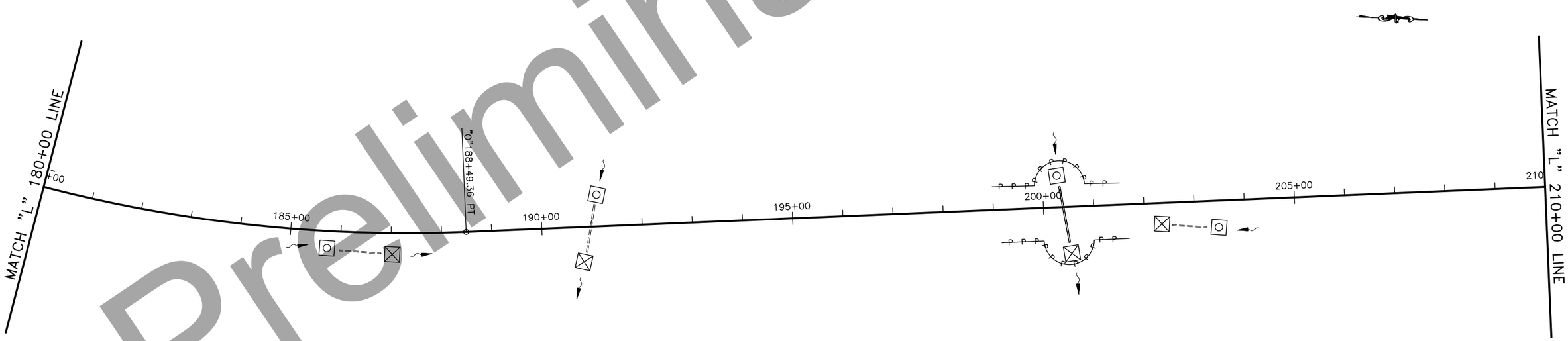
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	Q2	Q15



ESCP LEGEND	
⊡	INLET PROTECTION
⊠	OUTLET PROTECTION
~►	FLOW ARROWS
---P---	PERIMETER CONTROL

NOTE: CONTOURS SHOWN ARE 2-FT ELEVATION INCREMENTS (COUNTOURS NOT SHOWN IN REVIEW SET)



ESCP
158+00.00-210+00.00

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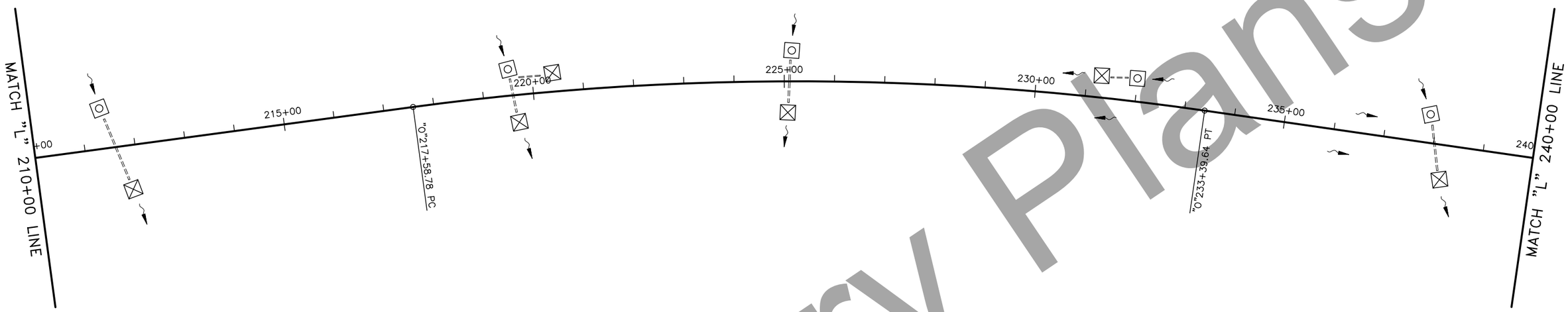
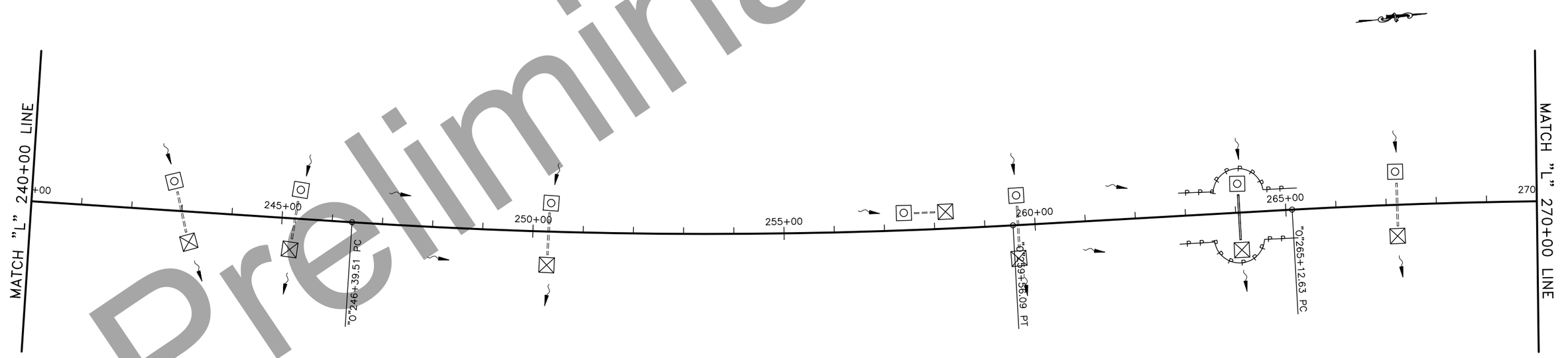
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	Q3	Q15





ESCP
210+00.00–270+00.00

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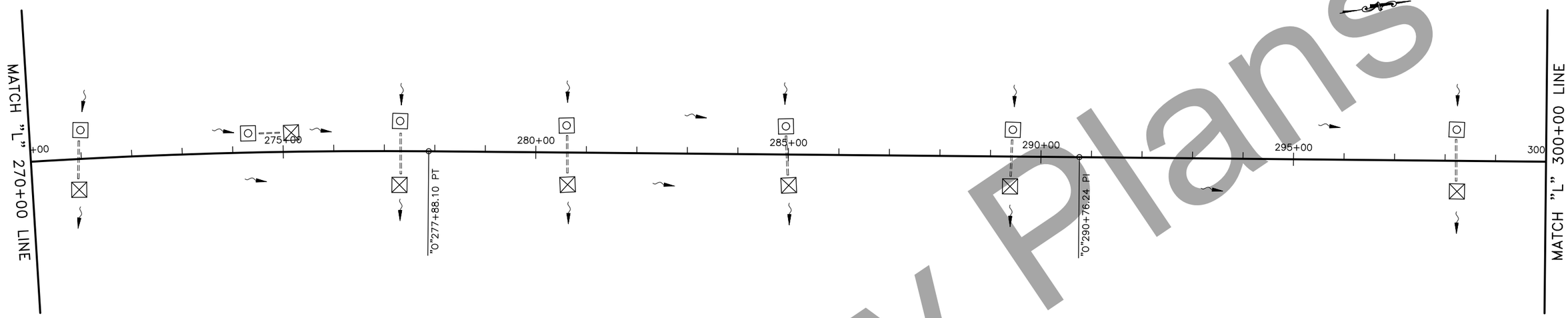

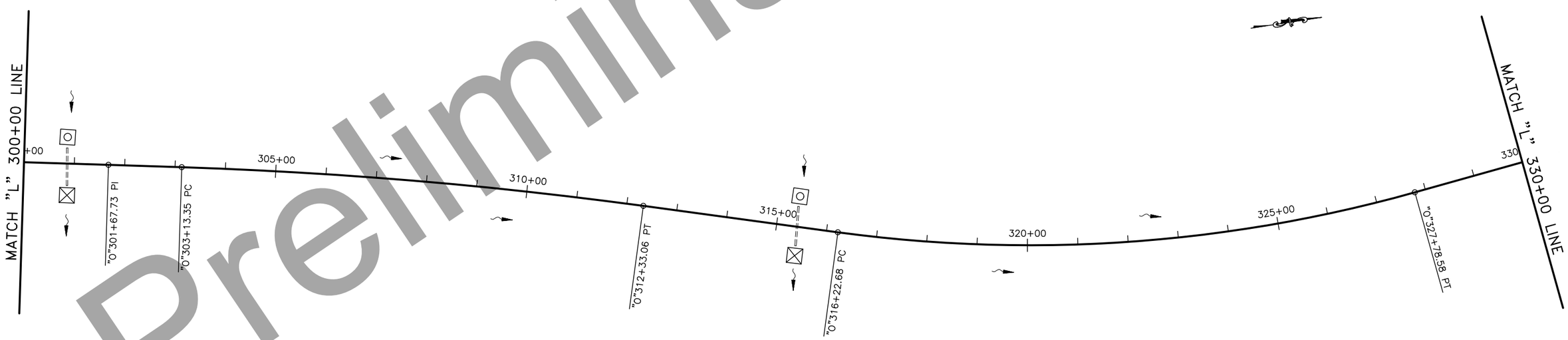

ESCP
270+00.00–330+00.00

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NO.	DATE	REVISION

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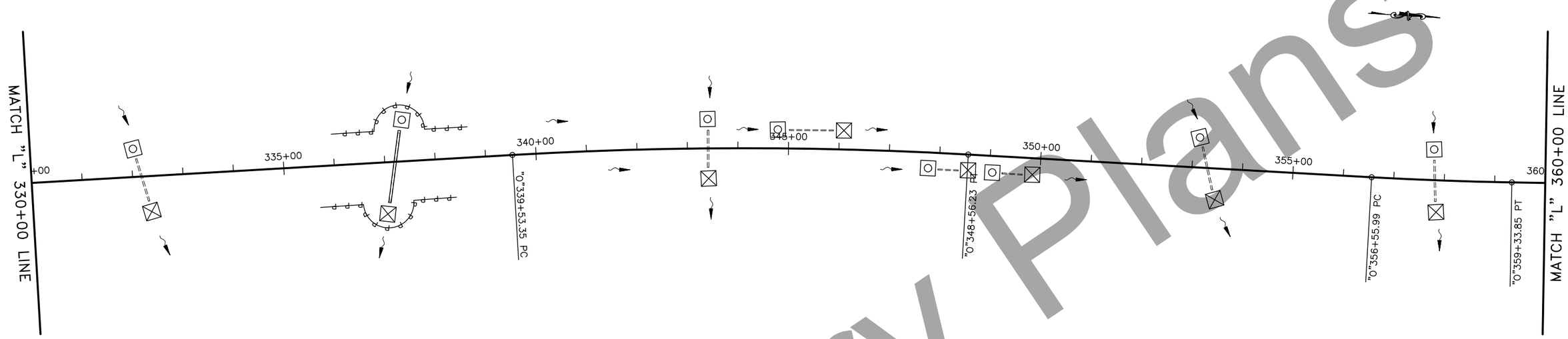

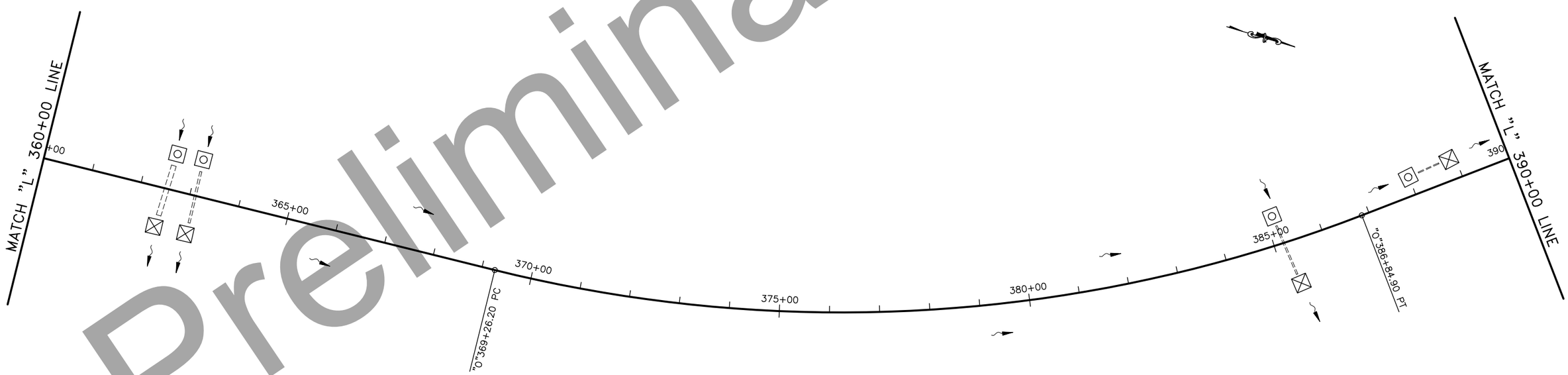

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ESCP
330+00.00–390+00.00

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NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
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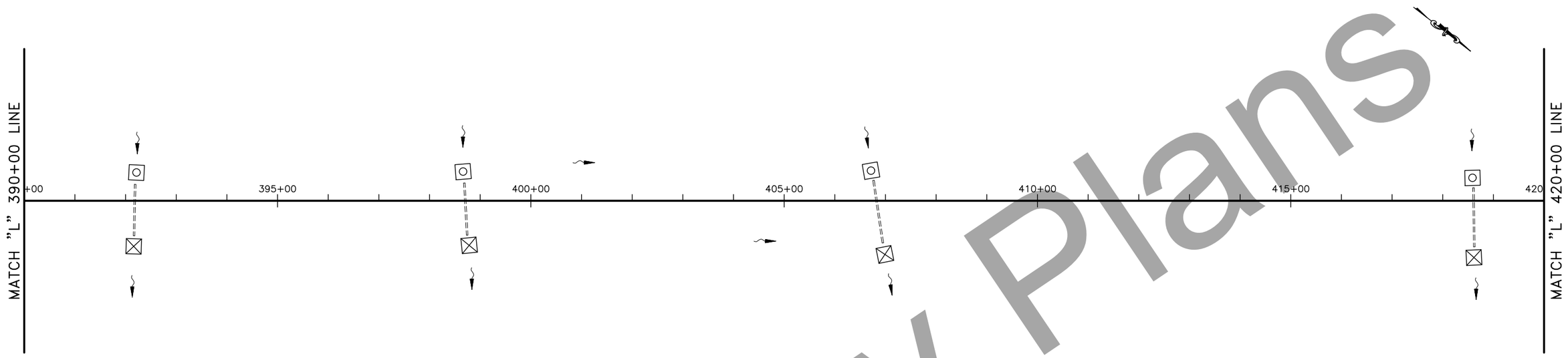

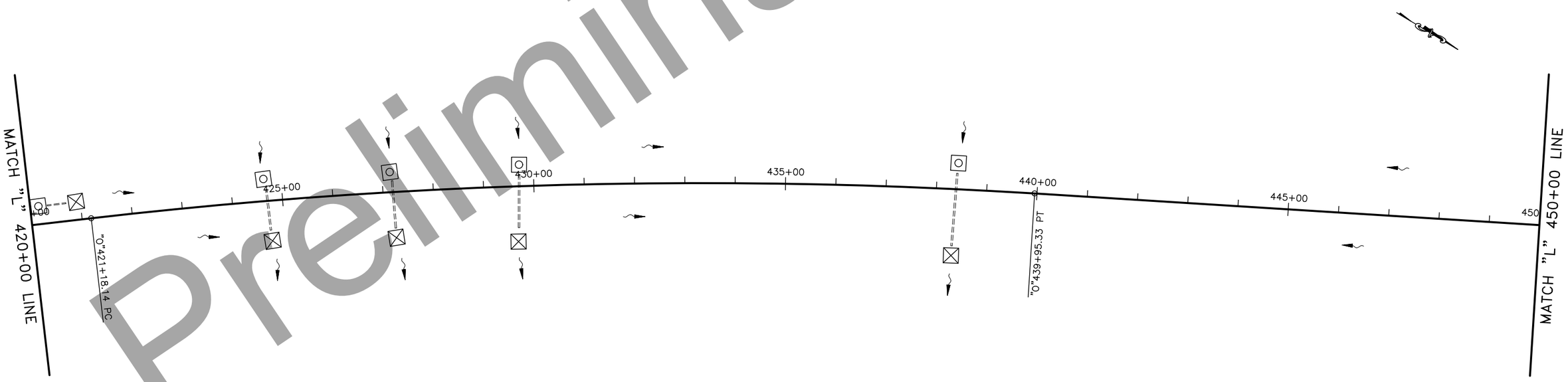

ESCP
390+00.00–450+00.00

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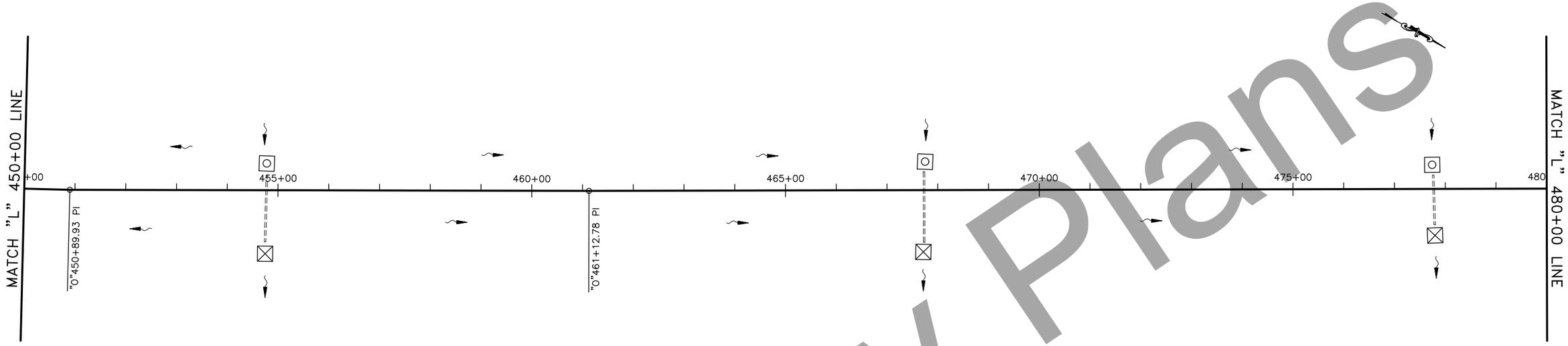

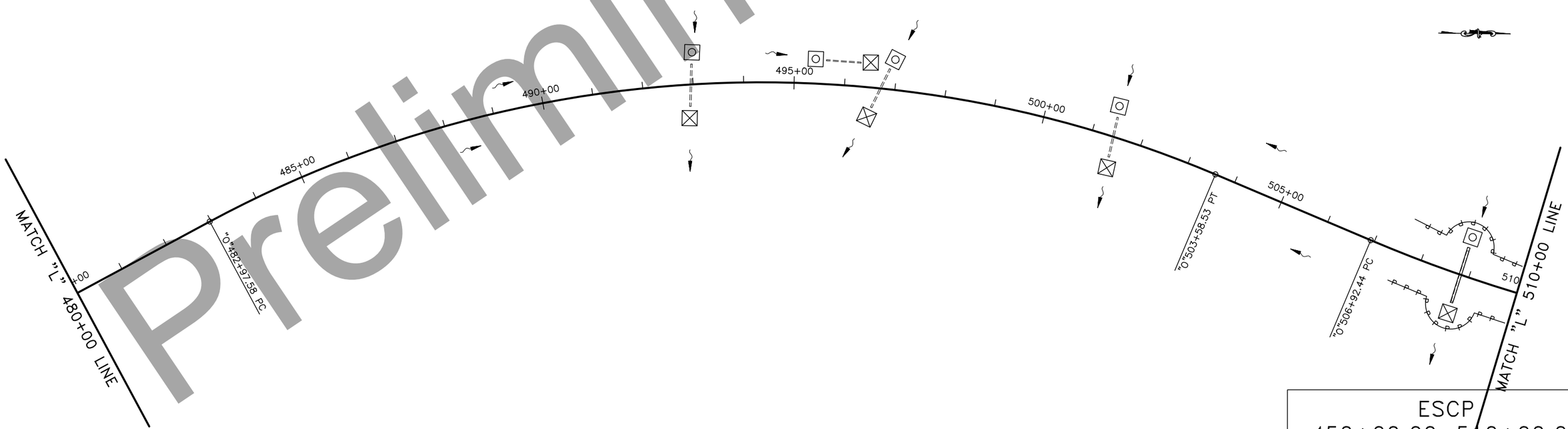

ESCP
450+00.00–510+00.00

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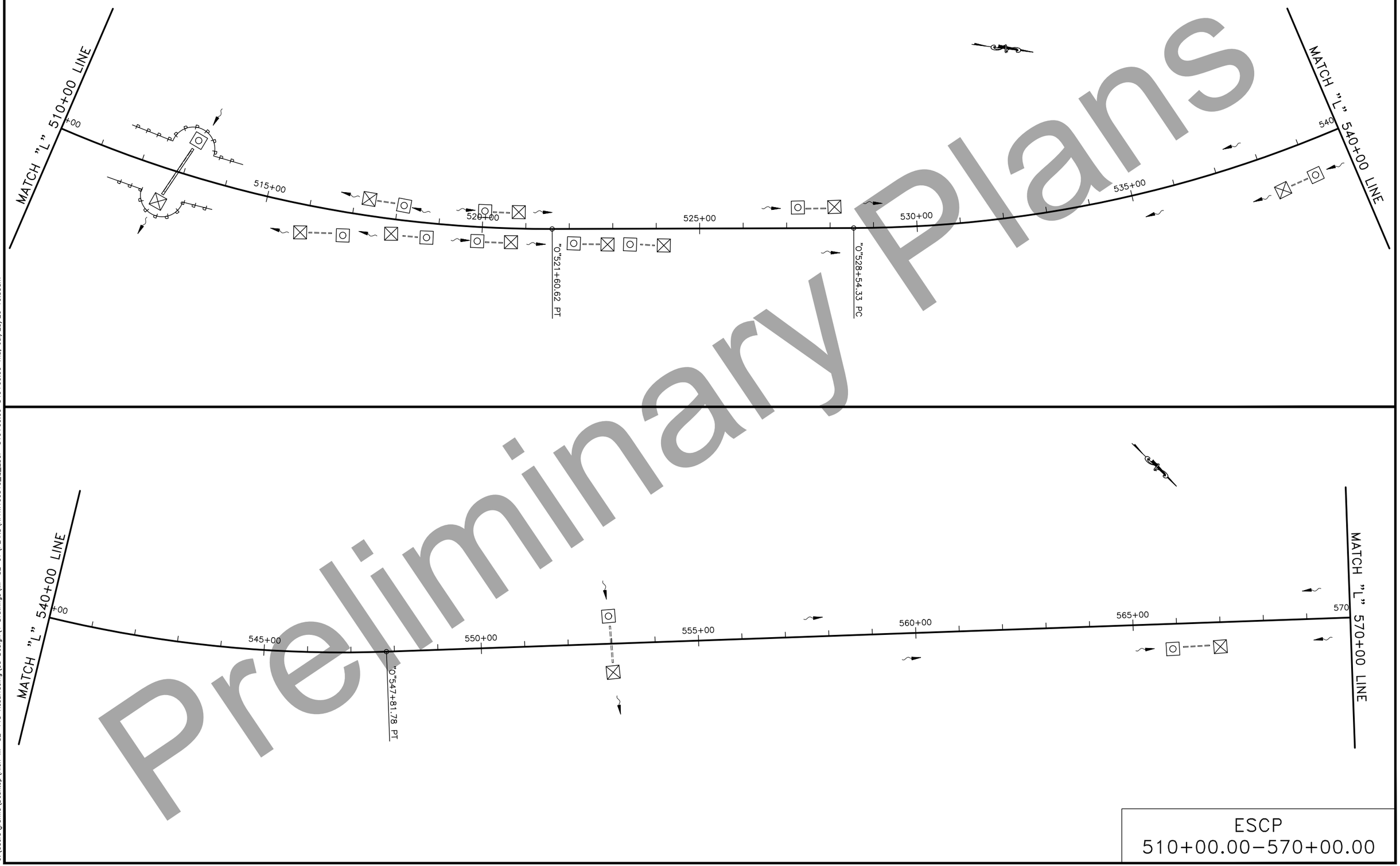

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ESCP
510+00.00–570+00.00

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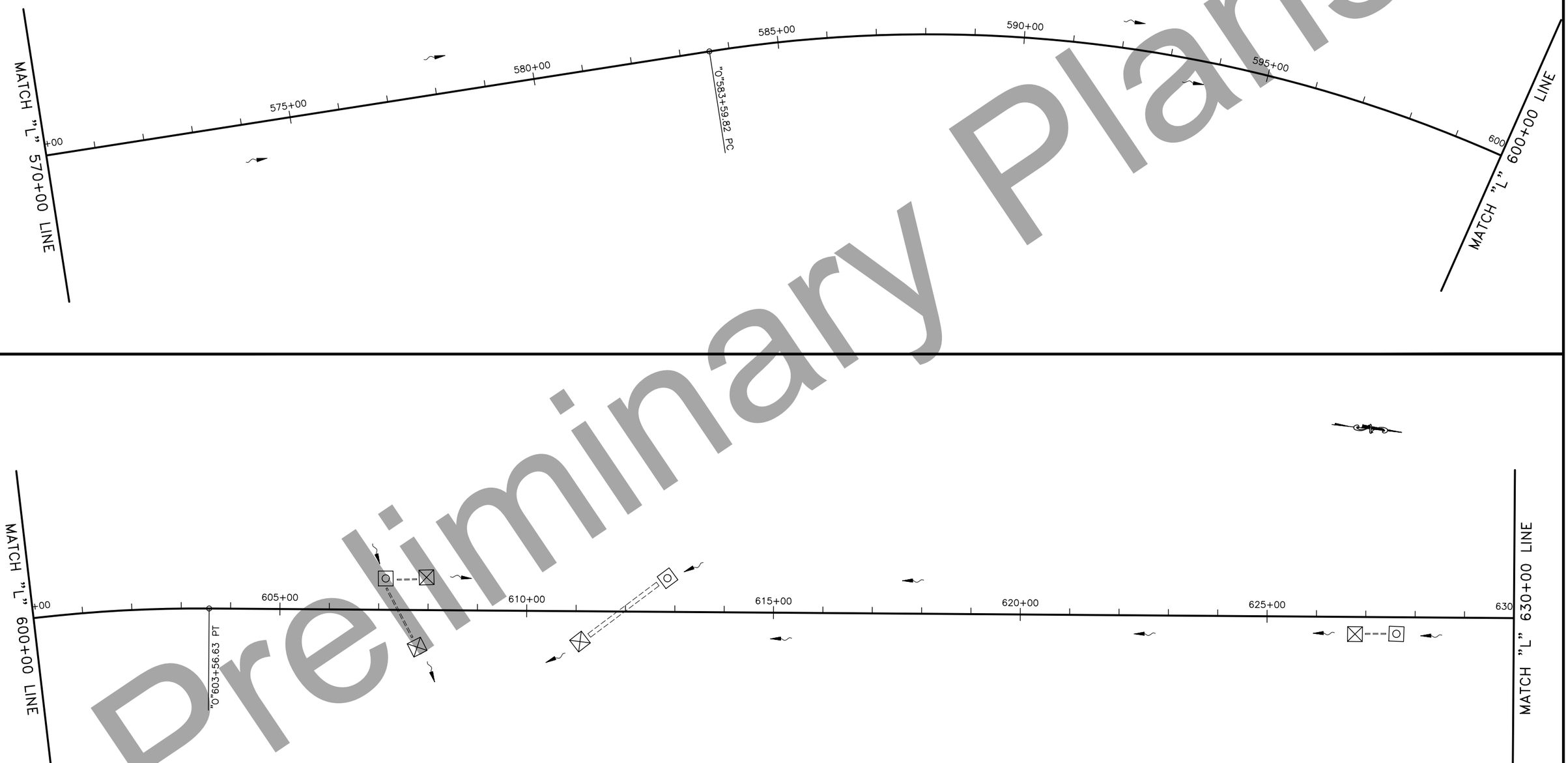
ALASKA	NFHWY00510	2020	Q9	Q15



ESCP
570+00.00–630+00.00

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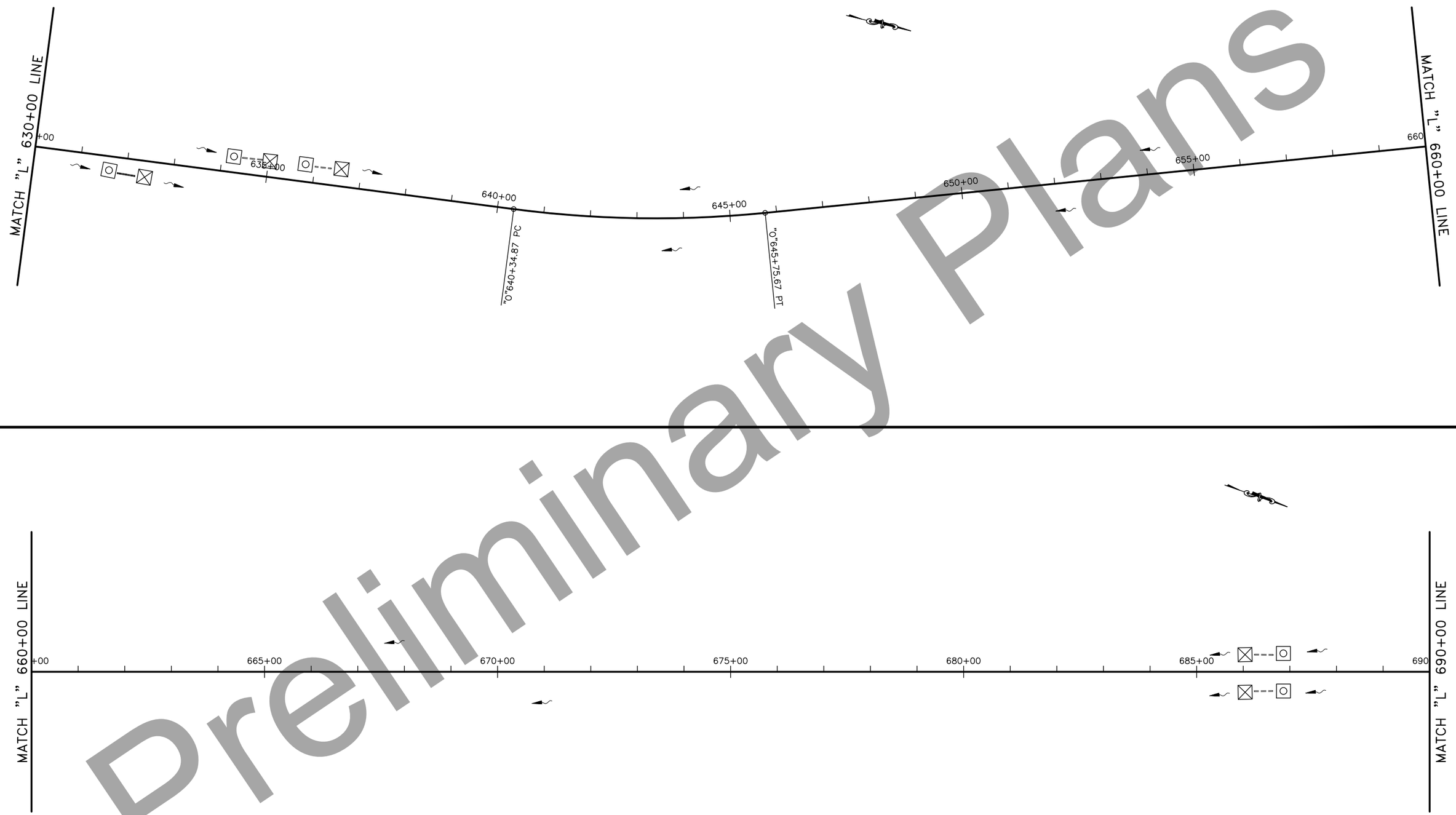
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	Q10	Q15



Preliminary Plans

ESCP
630+00.00–690+00.00

PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
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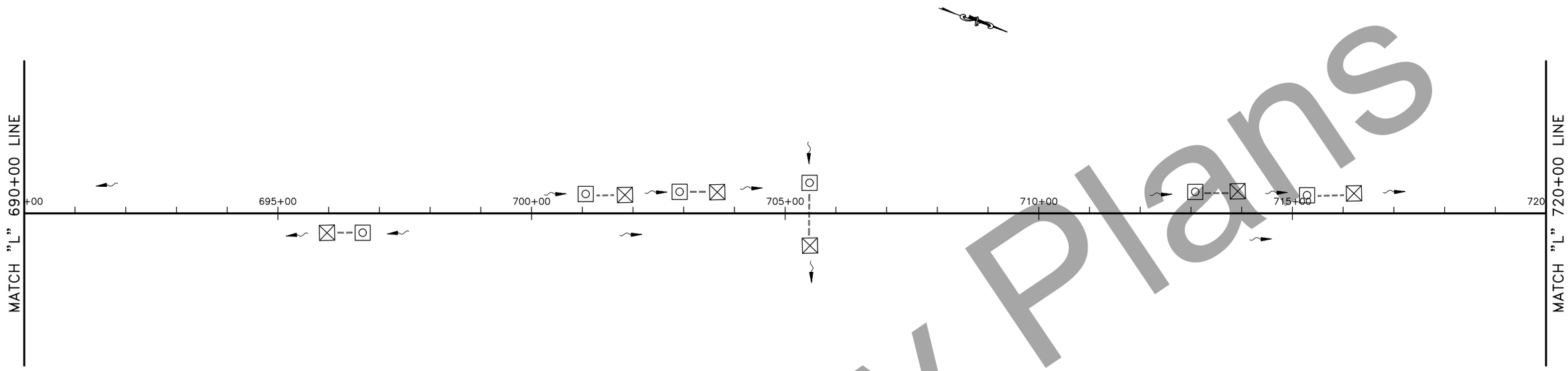
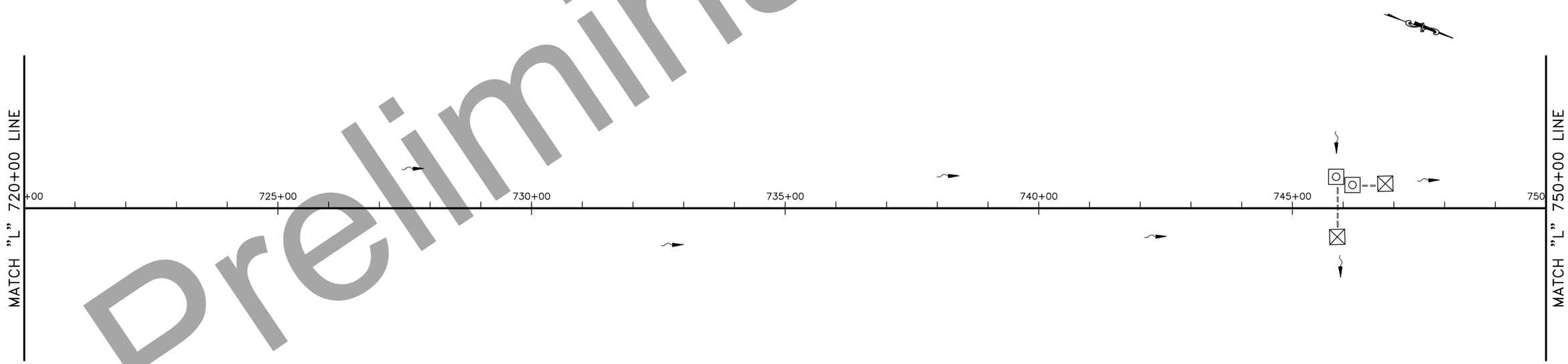
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	Q11	Q15





ESCP
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Preliminary Plans

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NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
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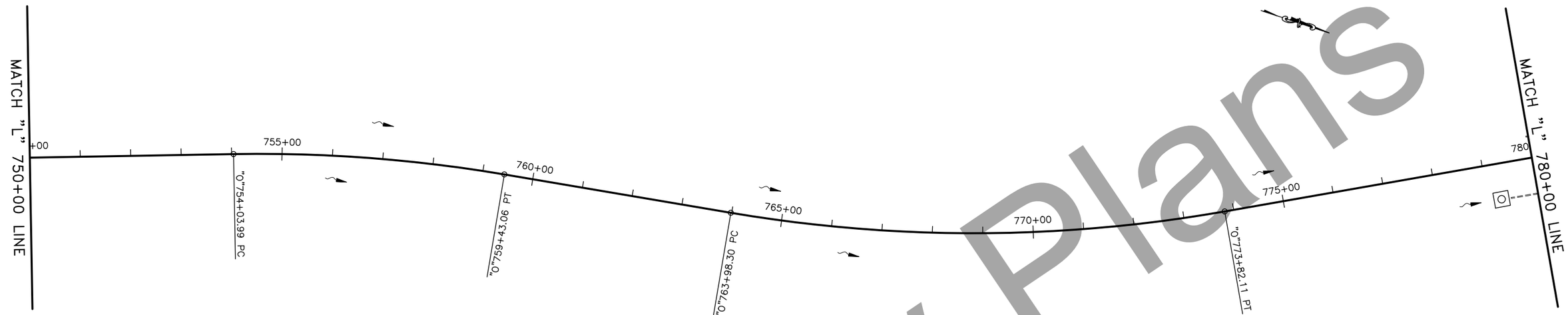

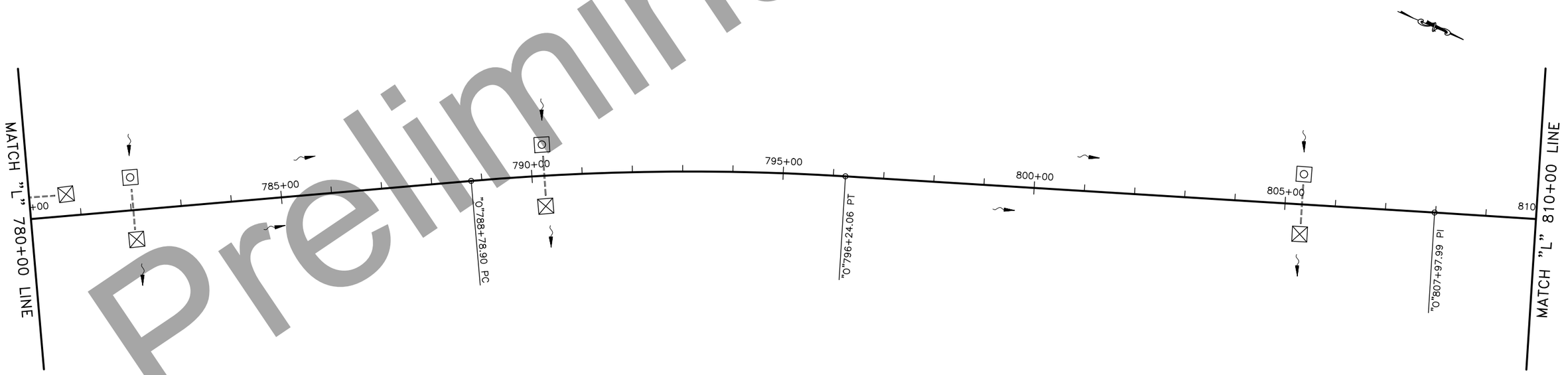

ESCP
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Preliminary Plans

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NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
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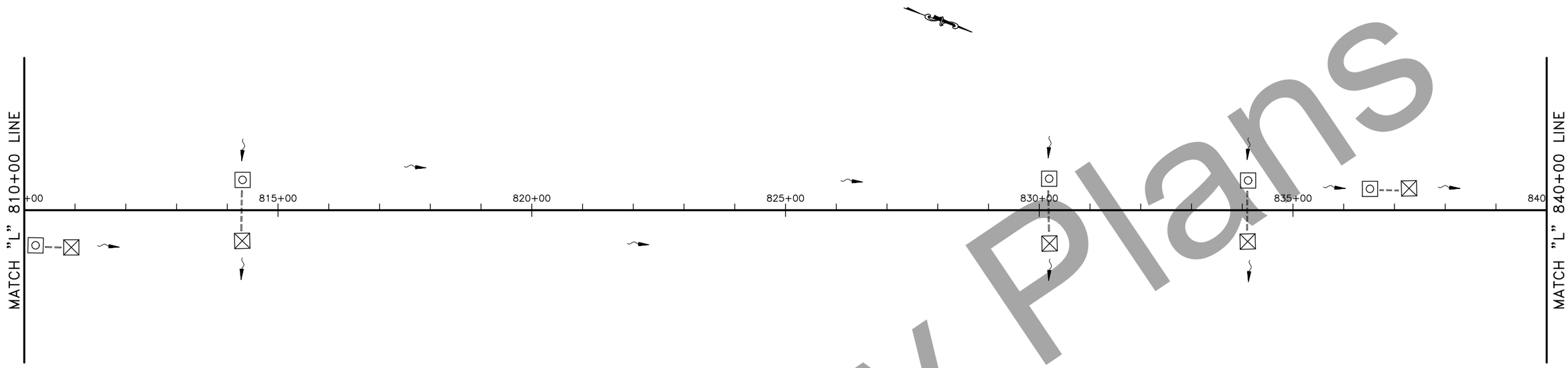

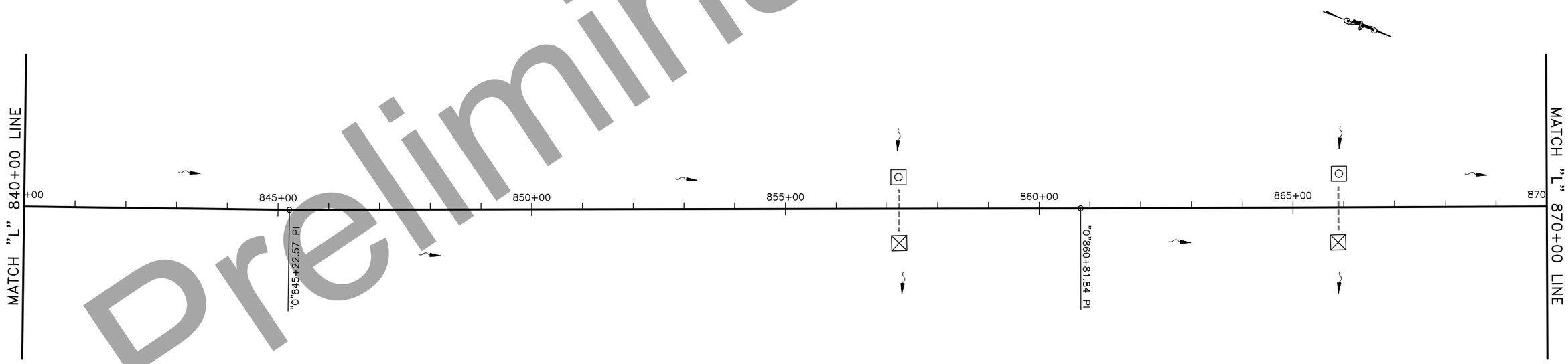

ESCP
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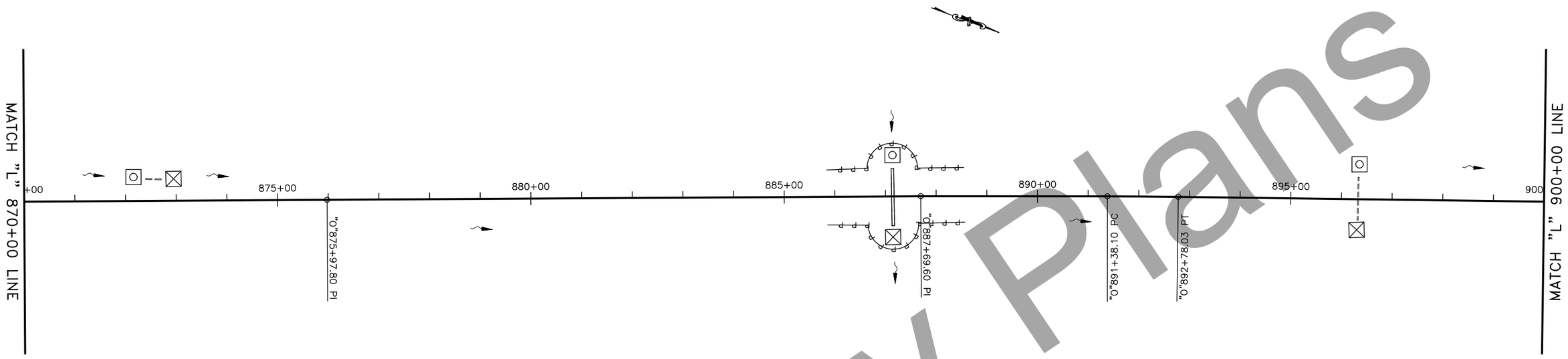
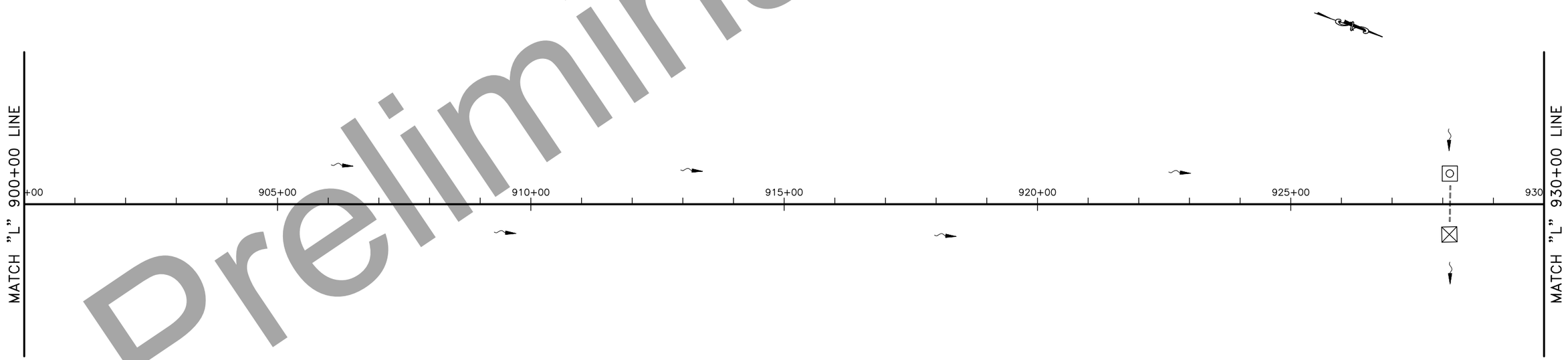
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	Q14	Q15





ESCP
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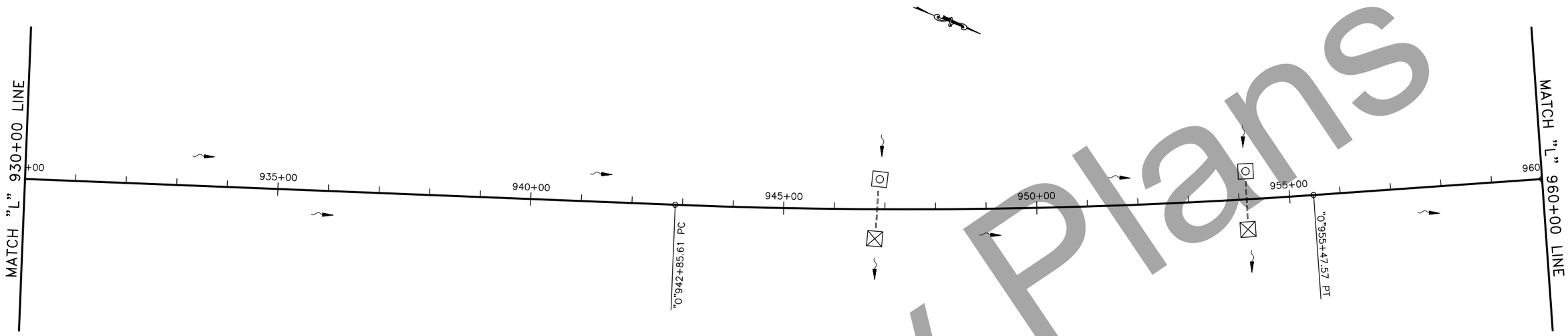
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	Q15	Q15



Preliminary Plans

ESCP
930+00.00–960+00.00

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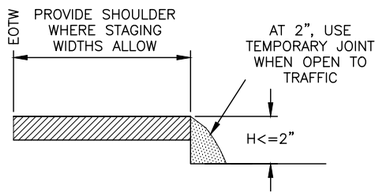
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	T1	T1

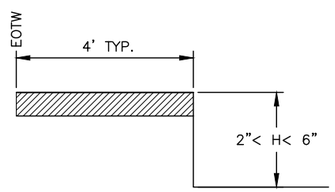
VERTICAL DROP-OFFS



CASE A

DROP-OFFS ≤2 INCHES
(PAVED SURFACES ONLY)

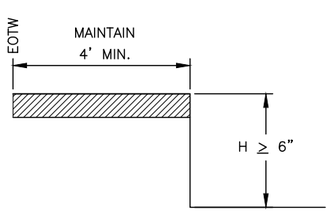
1. USE "UNEVEN LANES" (CW8-11) SIGNS FOR ALL DROP-OFFS IN BETWEEN TRAFFIC LANES.
2. LEAVE NO DROP-OFFS > 1.5" IN THE TRAFFIC LANE OR ACTIVE WHEEL TRACK.



CASE B

2"< DROP-OFFS < 6"
(ALL ROADWAY SURFACES)

1. PLACE CONES OR CANDLES FOR DROP-OFFS ≥ 4 FEET AND ≤ 30 FEET FROM THE EOTW.
2. USE DRUMS OR TYPE II BARRICADES FOR DROP-OFFS < 4 FEET FROM THE EOTW.

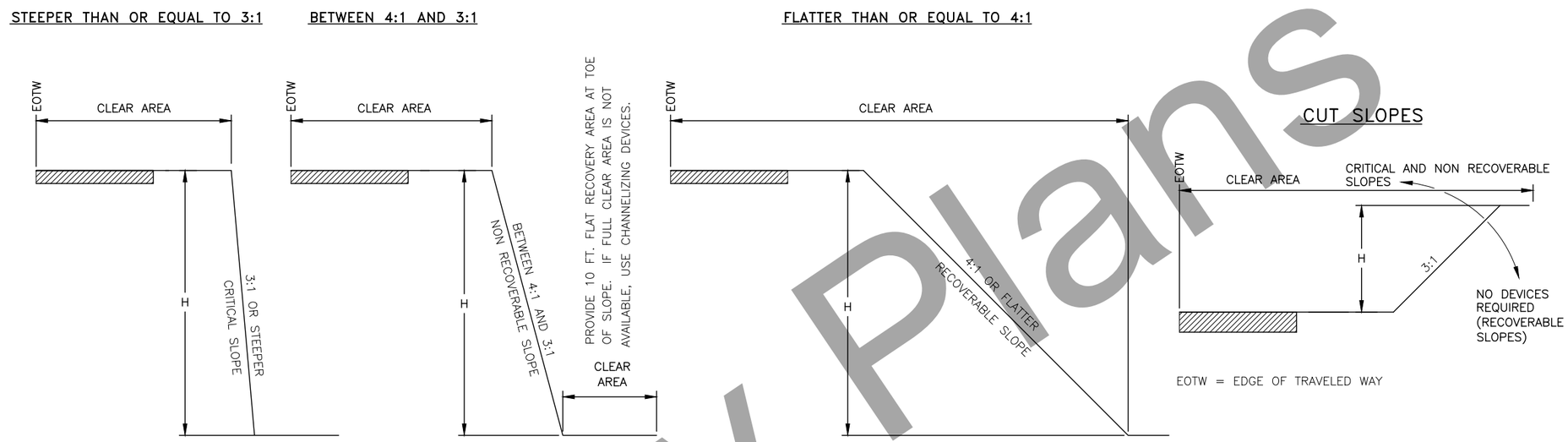


CASE C

DROP-OFFS ≥6"
(ALL ROADWAY SURFACES AND ROADSIDE SLOPES)

1. PLACE DRUMS OR TYPE II BARRICADES FOR DROP-OFFS ≤ 24" WITHIN THE CLEAR AREA.
2. PROVIDE PORTABLE CONCRETE BARRIER FOR DROP-OFFS >24" WITHIN 15 FEET OF THE EOTW. USE DRUMS OR TYPE II BARRICADES IF BEYOND 15 FEET.

FILL SLOPES



CUT SLOPES

EOTW = EDGE OF TRAVELED WAY

CLEAR AREA REQUIREMENTS

	LOW SPEED < = 35 MPH	INTERMEDIATE SPEED 40 MPH TO 45 MPH	HIGH SPEED ≥ = 50 MPH
RURAL	15'	24'	30'
URBAN	10' DITCH SECTIONS, OR 2' BEHIND CURB	15' DITCH CONDITIONS, OR 2' BEHIND CURB	15' DITCH CONDITIONS, OR 2' BEHIND CURB

CHANNELIZING DEVICE REQUIREMENTS FOR SLOPES 3:1 OR STEEPER WITHIN THE CLEAR AREA

	H <= 15'	H > 15'
< 2000 VPD LOW VOLUME	CANDLES OR CONES	TYPE II BARRICADES OR DRUMS
> 2000 VPD	TYPE II BARRICADE OR DRUMS	PORTABLE CONCRETE BARRIER OR TEMPORARY GUARDRAIL

TRAFFIC CONTROL NOTES:

1. USE THE EXISTING CROSS-SECTION (PRIOR TO CONSTRUCTION) AS A BASIS FOR DETERMINING WHEN CHANNELIZING DEVICES ARE NEEDED.
2. INSTALL CHANNELIZING DEVICES WHEN THE HORIZONTAL OR VERTICAL CURVATURE IS MADE MORE SEVERE.
3. INSTALL FLEXIBLE DELINEATORS WHEN ALL VEGETATION OVER 4 FEET HIGH IS CLEARED FROM FILL SLOPES THAT ARE 3:1 OR STEEPER IN THE CLEAR AREA.
4. USE PORTABLE CONCRETE BARRIER FOR WARRANTING CONDITIONS WHICH LAST LONGER THAN 3 DAYS. FOR CONDITIONS LASTING LESS THAN 3 DAYS, OTHER CHANNELIZING DEVICES MAY BE INSTALLED.
5. TERMINATE RUNS OF PORTABLE CONCRETE BARRIER USING THE FOLLOWING METHODS:
   - A) CONNECT TO A PORTABLE CRASH CUSHION, OR
   - B) PROVIDE A CONCRETE BARRIER WITH THRIE BEAM TRANSITION TO W-BEAM GUARDRAIL, TREATED WITH A PARALLEL TERMINAL (SEE SECTION 710).
   - C) FLARE THE ENDS OF THE PORTABLE CONCRETE BARRIER AWAY FROM THE ROADWAY AT A RATE OF 7:1 ON A COMPACTED SLOPE OF 6:1 OR FLATTER, OUTSIDE OF THE CLEAR AREA. INSTALL A SLOPING PORTABLE CONCRETE BARRIER END TREATMENT, OR
   - D) BURY IN THE BACKSLOPE.
6. TERMINATE THE RUNS OF TEMPORARY W-BEAM GUARDRAIL USING THE FOLLOWING METHODS:
   - A) PROVIDE A PARALLEL TERMINAL (SEE SECTION 710)
   - B) FLARE THE ENDS OF THE TEMPORARY GUARDRAIL AWAY FROM THE ROADWAY AT A RATE OF 6:1 ON A COMPACTED SLOPE OF 6:1 OR FLATTER OUTSIDE OF THE CLEAR AREA, TERMINATE WITH A STANDARD W-BEAM END SECTION, OR
   - C) BURY IN THE BACKSLOPE.

EQUIPMENT NOTES:

1. WHEN THERE IS ACTIVE, NONMOBILE CONSTRUCTION EQUIPMENT WITHIN THE CLEAR AREA, DELINEATE THE ROADSIDE WITH TRAFFIC CONES.
2. SEPARATE PROCEDURES ARE REQUIRED FOR MOBILE WORK ZONE OPERATIONS AND SHORT DURATION WORK OF LESS THAN 12 HOURS.

WINTER SHUTDOWN NOTES:

1. WHEN REQUIRED, USE CHANNELIZING DEVICES WHICH CAN BE MAINTAINED OVER WINTER.
2. NO CHANNELIZING DEVICES ARE REQUIRED IF:
   - A) CONSTRUCTION SLOPES ARE RECOVERABLE, AND
   - B) SLOPES ARE SMOOTH AND COMPACTED, AND
   - C) REQUIRED CLEAR AREA IS PROVIDED

Preliminary Plans

TRAFFIC CONTROL PLAN

STATE OF ALASKA 49TH
Russell M. Johnson
CE 9963
REGISTERED PROFESSIONAL ENGINEER

PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
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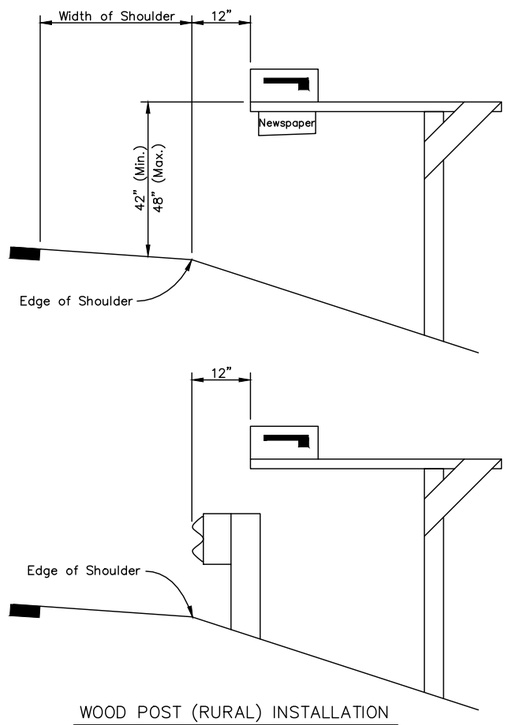
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	V1	V12

M-20.14 SHEET 1 of 1



WOOD POST (RURAL) INSTALLATION

Single or Double Box

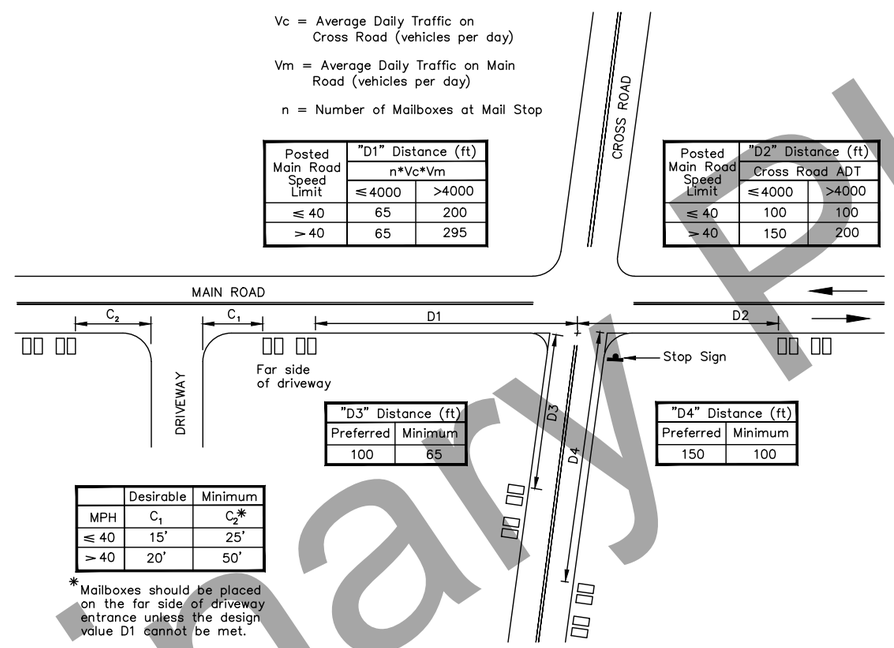
Vc = Average Daily Traffic on Cross Road (vehicles per day)

Vm = Average Daily Traffic on Main Road (vehicles per day)

n = Number of Mailboxes at Mail Stop

Posted Main Road Speed Limit	"D1" Distance (ft) n*Vc*Vm	
	≤4000	>4000
≤ 40	65	200
> 40	65	295

Posted Main Road Speed Limit	"D2" Distance (ft) Cross Road ADT	
	≤4000	>4000
≤ 40	100	100
> 40	150	200



"D3" Distance (ft)	
Preferred	Minimum
100	65

"D4" Distance (ft)	
Preferred	Minimum
150	100

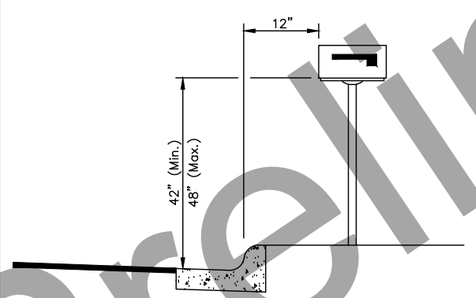
	Desirable	Minimum
MPH	C_1	C_2*
≤ 40	15'	25'
> 40	20'	50'

*Mailboxes should be placed on the far side of driveway entrance unless the design value D1 cannot be met.

MAILBOX LOCATION AT INTERSECTIONS AND DRIVEWAYS

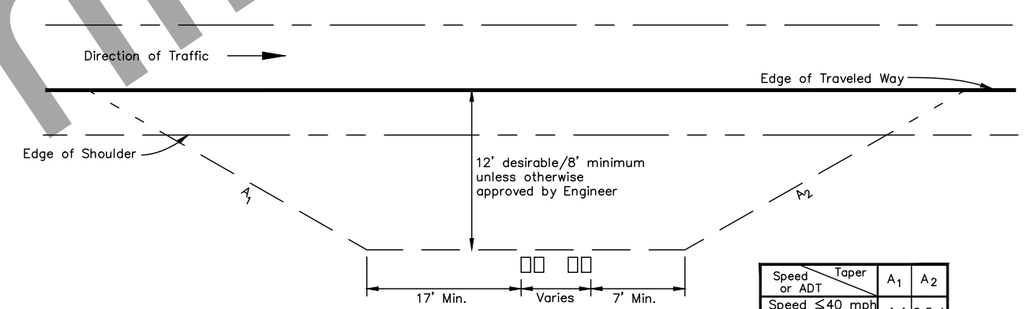
GENERAL NOTES:

1. Install mailboxes conforming to U.S. Postal Service requirements.
2. Mailbox supports shall not present a rigid, unyielding impact resistant hazard to road traffic, but shall be flexible and yielding to vehicular impact. Install crashworthy supports in accordance with Standard Drawing M-23.
3. Installation shall be on the right side of roadway in the direction of mail carrier travel with the exception of one-way streets where they may be placed on either side.
4. Locate mailboxes to minimize dangers to road traffic, carriers and postal recipients.
5. Provide a minimum shoulder width of 8' unless otherwise approved by Engineer. Install single and double mailbox supports separated by at least 3', and desirably 4', from each other. More than two boxes on a single support is allowable only as shown on M-23.
6. Newspaper receptacles shall conform to the same setback and support regulations as mailboxes. Where newspaper receptacles and mailboxes are to be mounted together, the newspaper receptacle may be mounted beneath the mailbox or on the side of the mailbox support opposite the reflecting marker.



METAL POST (URBAN) INSTALLATION

Single or Double Box



TURNOUTS FOR GROUPED BOXES

Speed or ADT \ Taper	A_1	A_2
Speed ≤40 mph and ADT ≤400	4:1	2.5:1
Speed >40 mph or ADT >400	20:1	12:1

TURNOUT TAPERS

REVISIONS		
Date	Description	By
4/28/10	Tables, details & notes	KJS
1/16/17	Revise d/w distances	LRG

State of Alaska DOT&PF

MAILBOX LOCATION

M-20.14

STATE OF ALASKA 49TH Russell M. Johnson CE 9963 REGISTERED PROFESSIONAL ENGINEER

STANDARD DRAWING
M-20.14

Preliminary Plans

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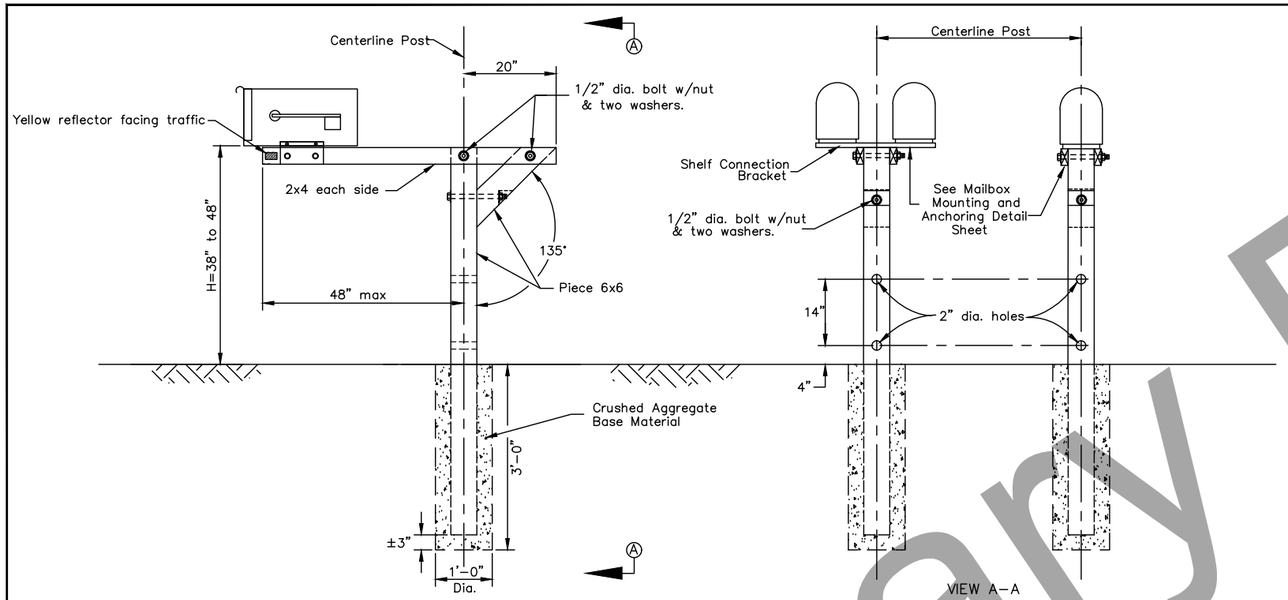
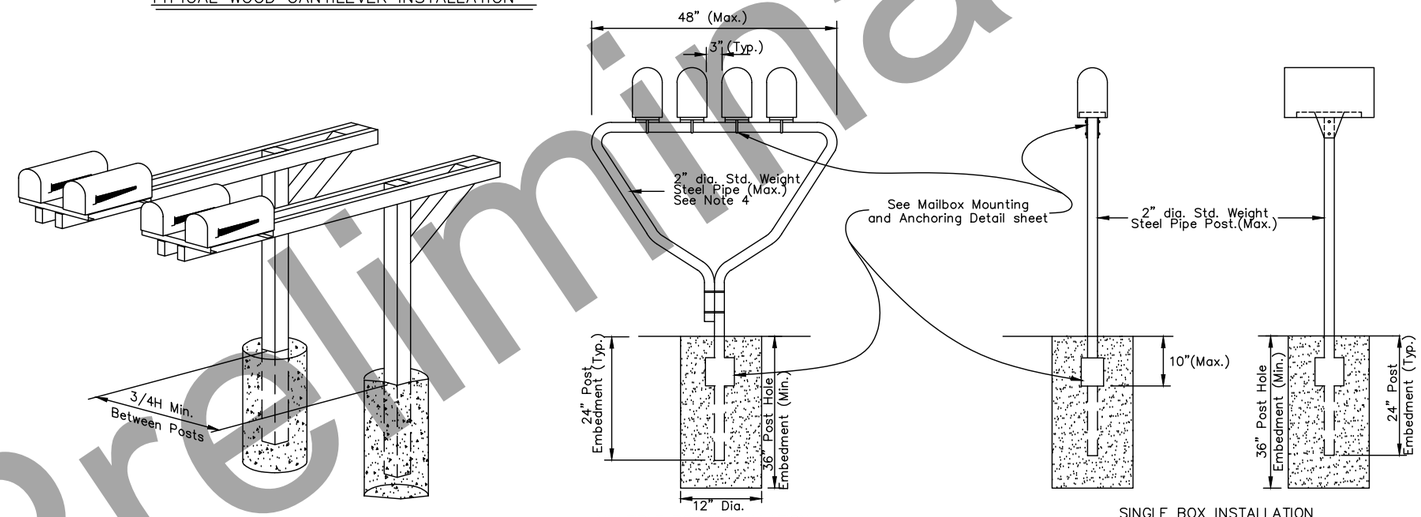
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	V2	V12

M-23.12 SHEET 1 of 2



TYPICAL WOOD CANTILEVER INSTALLATION



TYPICAL GANG BOX INSTALLATION

MULTIPLE BOX INSTALLATION (U.S.P.S. Approved)

SINGLE BOX INSTALLATION

METAL POST SUPPORTS (URBAN ONLY)

GENERAL NOTES:

1. See Standard Drawing, 'Mailbox Location', for locating posts and boxes along roadway.
2. Posts shall be 6"x6" Treated Wood Post S4S or 2" (Max.) Standard Weight Steel Pipe.
3. Each support structure shall not accomodate more than two mailboxes unless the support structure conforms to the requirements of the U.S. Postal Service and is approved by the Engineer.
4. Other steel or aluminum structural sections may be used except, the stiffness properties equivalent to the 2" dia. standard weight steel pipe shall not be exceeded.
5. Reflectors shall have a minimum area of 4.5 sq. in.

REVISIONS

Date	Description	By
9/15/91	Mod w/USPS specs.	Gdo
4/1/93	Revise Embedment Depth	Gdo
1/1/96	Del. Specs./Min. Height	Gdo

State of Alaska
Department of Transportation
& Public Facilities

MAILBOX INSTALLATION

M-23.12

STANDARD DRAWING
M-23.12 SHEET 1 OF 2

STATE OF ALASKA 49TH
Russell M. Johnson
CE 9963
REGISTERED PROFESSIONAL ENGINEER

Preliminary Plans

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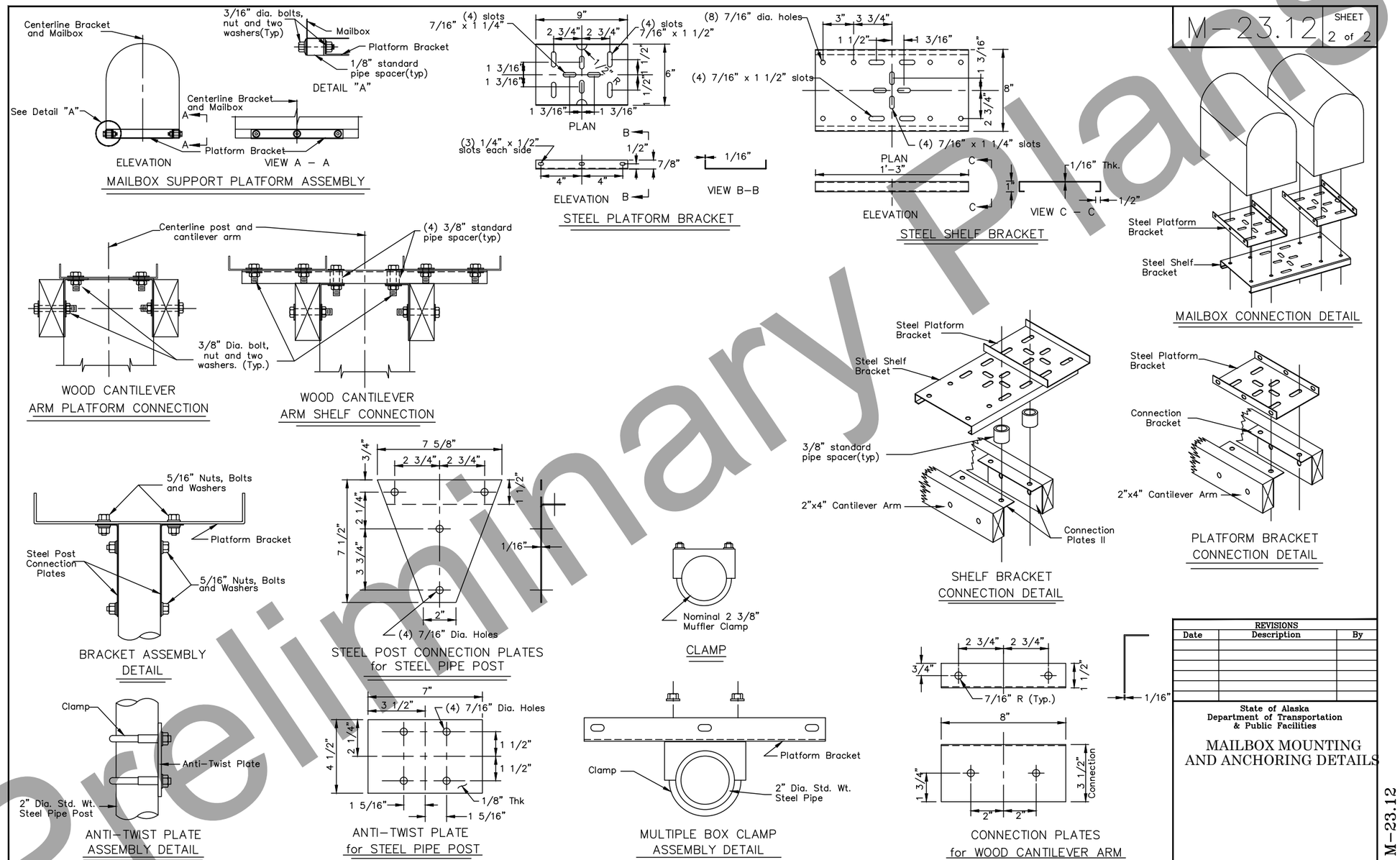
M-23.12 SHEET 2 of 2



REVISIONS		
Date	Description	By

State of Alaska
Department of Transportation
& Public Facilities

MAILBOX MOUNTING AND ANCHORING DETAILS

M-23.12

STANDARD DRAWING
M-23.12 SHEET 2 OF 2

STATE OF ALASKA 49TH Russell M. Johnson CE 9963 REGISTERED PROFESSIONAL ENGINEER

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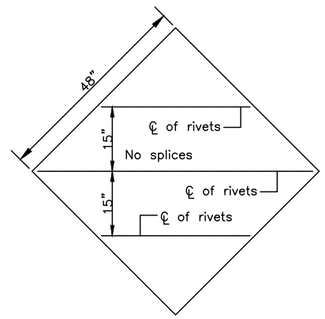
S-00.11



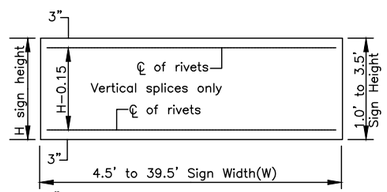
TUBE SIGN POST SPACING								
Sign Width (feet)	No. of Posts	Distance Between Posts	Sign Overhang	Post Type				Notes
				P.S.T.	Wood	Steel Tube	W-Shape	
0.5 to 4.0	1	–	0.5W	X	X	X		See Note 2.
4.5 to 10.0	2	0.6W	0.2W	X	X	X		See Note 3.
10.5 to 11.0	2	6	Varies	X	X	X		See Note 3.
11.5 to 13.0	2	8	Varies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

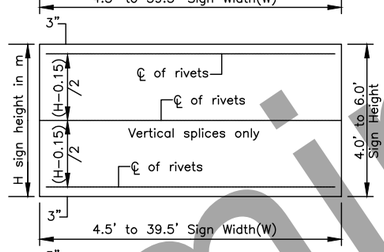
SIGN POST SPACING NOTES:

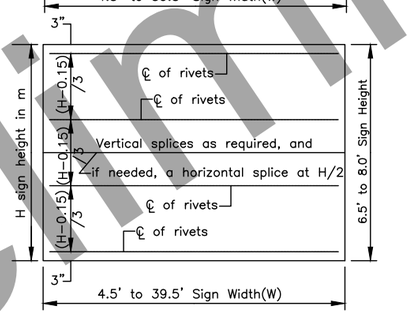
1. Install sign support in accordance with the table above, unless otherwise required by plans or specifications.
2. Exceptions:
   a. Use one post for all E5-1 gore signs, regardless of width.
   b. Use one 2.5" P.S.T. for all STOP signs, with or without street name signs.
3. Supports placed within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

GENERAL NOTES

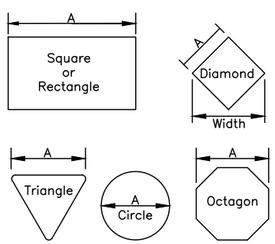
1. See the standard specifications for the aluminum alloys that you may use for sign sheeting and wind framing members.
2. Fabricate all signs from 0.125" thick aluminum sheeting.
3. Sign fabricators may use alternates to the zee shaped framing member with approval of the engineer, if the frame manufacturer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







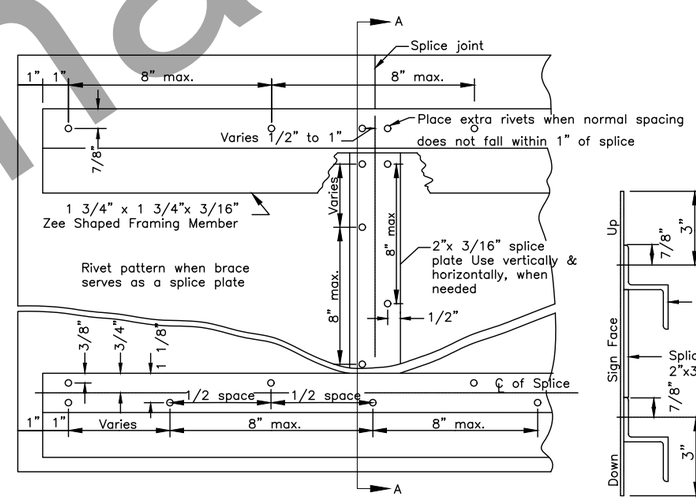
WIND FRAMING LOCATIONS



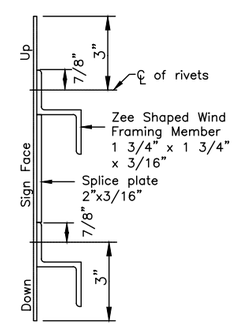
Maximum size unframed signs using 0.125" thick aluminum sheeting.	
Sign Shape	A
Squares, Shields, and Route Markers	48"
Rectangles	48"
Diamonds	48"
Triangles	48"
Rounds and Octagons	48"

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

LIGHT SIGNS



RIVET DETAIL FOR ZEE SHAPED WIND FRAMING & SPLICE PLATE



SECTION A-A

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

Sheet 1 of 1

State of Alaska
Department of Transportation
& Public Facilities

SIGN FRAMING AND POST SPACING

S-00.11

STATE OF ALASKA 49TH
Russell M. Johnson
CE 9963
REGISTERED PROFESSIONAL ENGINEER

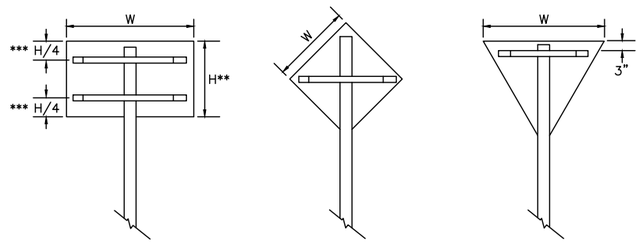
STANDARD DRAWING
S-00.11

Preliminary Plans

PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
C:\Users\rfahlis\Desktop\Rich MP 82-1.15 Resurfacing\05 Design\1 Drawings\MP 82-97\STD_DWGS\s0011_NR-s00.11 Thu, Jul/23/20 10:56am

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	V5	V12

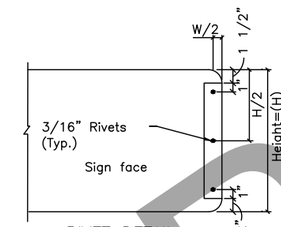
S-01.01



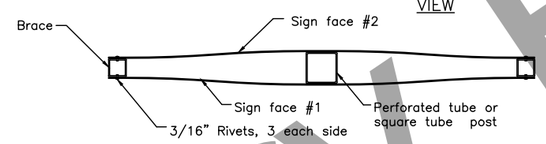
*** Use one brace when H ≤ 18"
Use two braces when 18"< H < 48"
Use three braces when H ≥ 48"

** Position of brace may be varied to match Predrilled mounting holes in panel

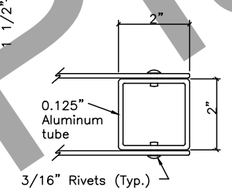
SIGN BRACING PLACEMENT



RIVET DETAIL
ELEVATION
VIEW

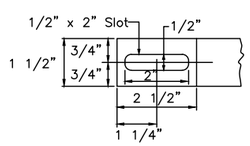


PLAN VIEW

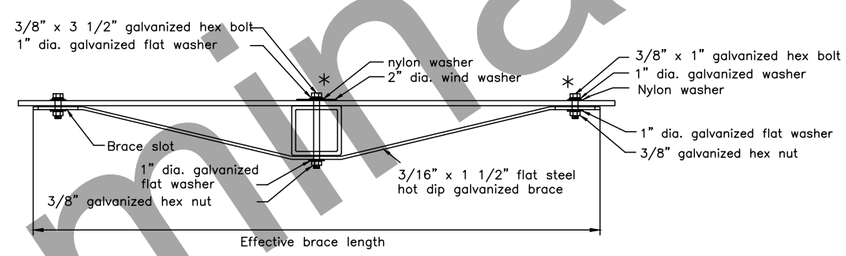


END BRACE DETAIL

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



DETAIL OF BRACE SLOT
Elevation view



TUBE POST SIGN BRACING
Plan view

* Adjust location of bracing so that bolts and washers will miss the sign legend

Sign Width(W)	Effective Brace Length		
	Warning	Yield	Other
30"	36"	24"	24"
36"	42"	30"	30"
42"	48"	–	36"
48"	Two posts	36"	42"

< 30" No bracing required and use square tube

DRAWING NOT TO SCALE

REVISIONS		
Date	Description	By
1/16/17	Bolt size & type	LRG

State of Alaska DOT&PF

BRACING FOR SIGNS
MOUNTED ON SINGLE POST

S-01.01

STATE OF ALASKA 49TH
Russell M. Johnson
CE 9963
REGISTERED PROFESSIONAL ENGINEER

STANDARD DRAWING
S-01.01

Preliminary Plans

PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
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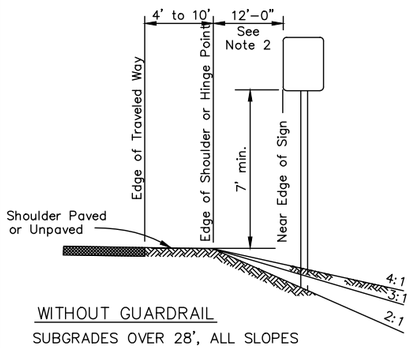
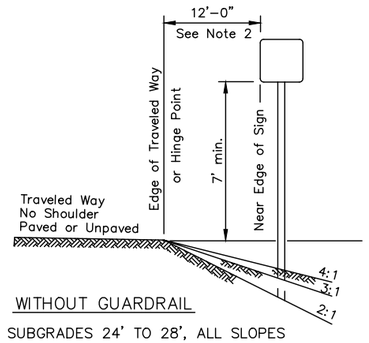
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	V6	V12

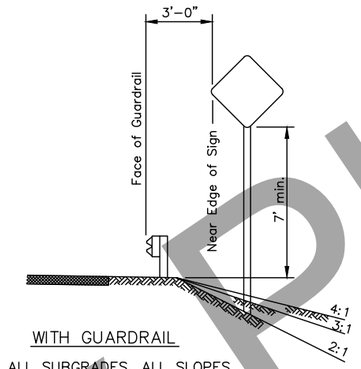
S-05.01



WITHOUT GUARDRAIL
SUBGRADES OVER 28', ALL SLOPES



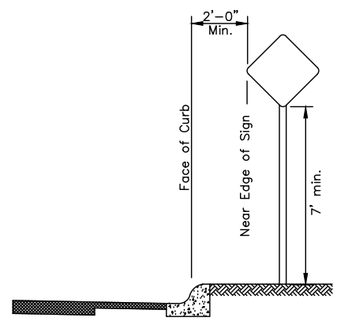
WITHOUT GUARDRAIL
SUBGRADES 24' TO 28', ALL SLOPES



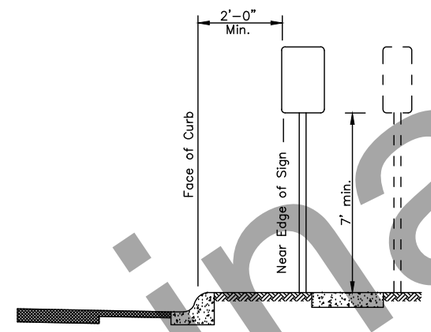
WITH GUARDRAIL
ALL SUBGRADES, ALL SLOPES

GENERAL NOTES

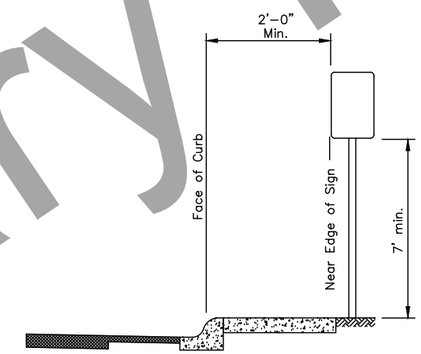
1. Unless shown otherwise on the plans, the standard sign offset is 12'. The minimum is 6'.
2. If signs extend over sidewalks, the minimum vertical clearance is 7'-0".
3. Add 6" to mounting height on unpaved roads.
4. If signs extend over bike paths, the minimum vertical clearance is 8' 0".
5. When signs are placed 30' or more from the edge of traveled way, mount them with the bottom of the sign at least 5' above the road surface at the near edge of the road.
6. When multiple hinged sign supports are used, mount hinges at least 7' above the ground.



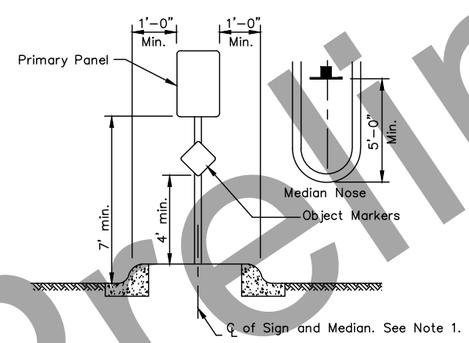
CURB WITHOUT SIDEWALK



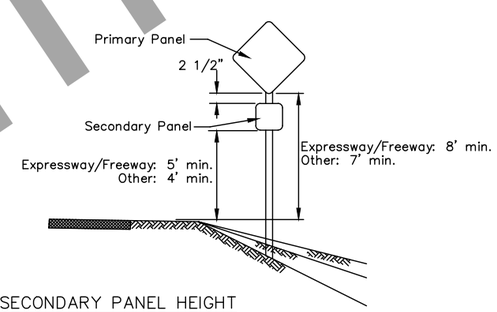
CURB WITH PARKWAY AND SIDEWALK
(If R/W width permits, signs should be placed behind sidewalk.)



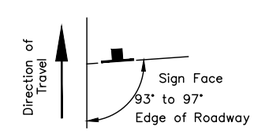
CURB WITH SIDEWALK WITHOUT PARKWAY



RAISED MEDIANS
Minimum 4' Width for Signing



SECONDARY PANEL HEIGHT
ALL TWO PANEL MOUNTING



SIGN POSITIONING

REVISIONS		
Date	Description	By
4/3/01	Revised Sign Heights	KJS

Sheet 1 of 1

State of Alaska
Department of Transportation
& Public Facilities

POST MOUNTED SIGN
OFFSET AND HEIGHT

S-05.01

STATE OF ALASKA 49TH
Russell M. Johnson
CE 9963
REGISTERED PROFESSIONAL ENGINEER

STANDARD DRAWING
S-05.01

Preliminary Plans

PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
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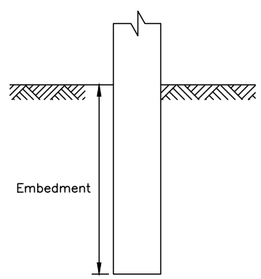
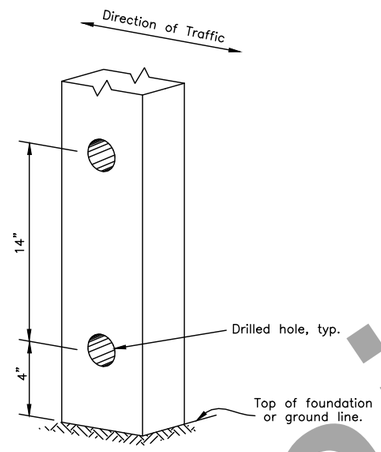
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	V7	V12

S-30.04

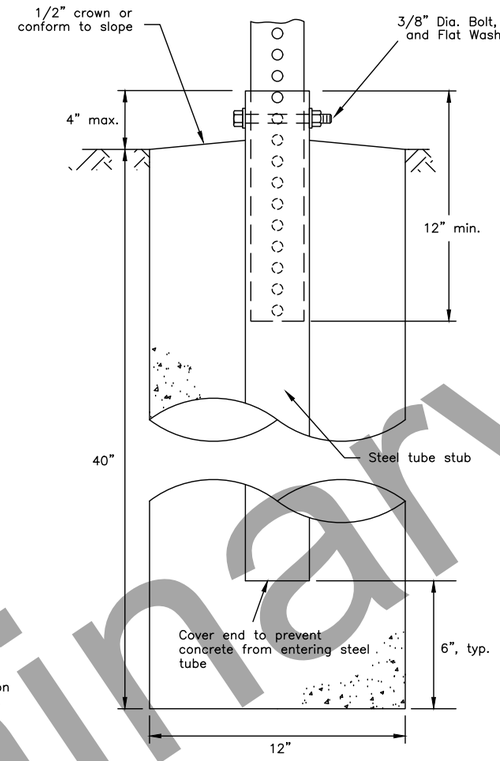




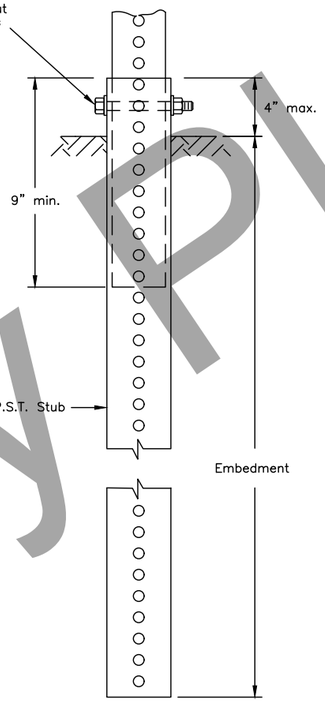
WOOD SIGN POSTS			
SIZE	HOLE DIA.	EMBEDMENT*	NO. OF POSTS WITHIN 7 Ft. PATH
4"x4"	NONE	36"	2
4"x6"	1 1/2"	36"	2
6"x6"	1 1/2"	40"	1
6"x8"	3"	48"	1

* Embedment depth applies in both strong and weak soil.

WOOD POSTS



SLEEVE TYPE
CONCRETE FOUNDATION



SLEEVE TYPE *
SOIL EMBEDMENT

PERFORATED STEEL TUBES (P.S.T.)		
POST SIZE	Embedment Depth	No. of P.S.T.s permitted within 7 ft path
1 1/2" x 1 1/2"	3'-0"	2
1 3/4" x 1 3/4"	3'-0"	2
2" x 2"	3'-6"	2
2 1/4" x 2 1/4"	4'-0"	1
2 1/2" x 2 1/2"	4'-6"	1

* Use 3"x3"x3/16" Stub for 2 1/2"x2 1/2" PST Applications.

PERFORATED STEEL TUBE (PST) POSTS

GENERAL NOTES:

1. Refer to Std Dwg S-00 for sign framing details.
2. See plans for type of post, size and embedment type.
3. To maintain crashworthiness, install no more than the number of P.S.T.s or wood posts specified in the tables within 7' of each other.
4. Do not install wood posts larger than 6"x8".
5. Do not use the supports on this drawing for multiple support signs if supports are separated by more than 7 feet.
6. Treat all field cuts and field drilled holes in wood posts in accordance with Section 730-2.04 of the Standard Specifications.

REVISIONS		
Date	Description	By
4/2/01	Revised PST table Added Note 3	KJS
2/12/02	Revised wood posts	KJS
1/16/17	Rev. note 1, et. al.	LRG

State of Alaska DOT&PF

LIGHT SIGN STRUCTURE
POST EMBEDMENT

S-30.04

STATE OF ALASKA 49TH
Russell M. Johnson
CE 9963
REGISTERED PROFESSIONAL ENGINEER

STANDARD DRAWING
S-30.04

Preliminary Plans

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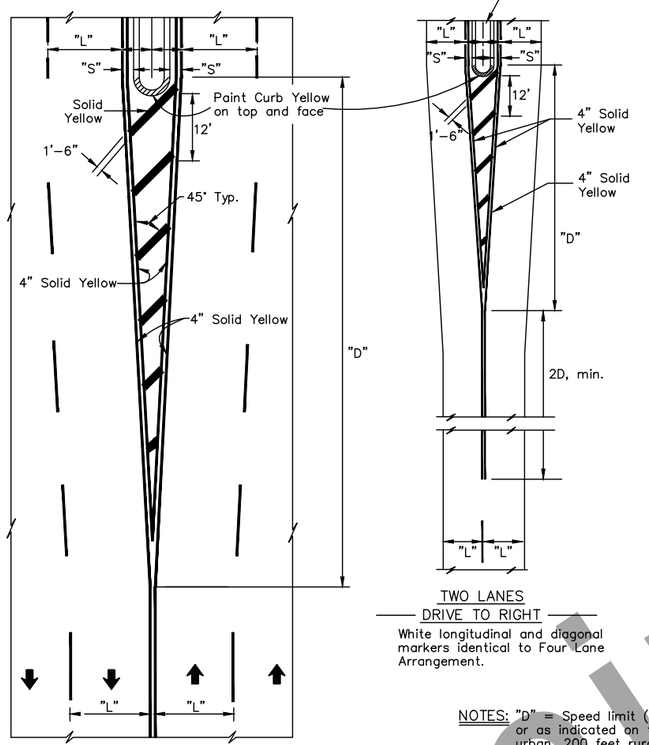
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	V8	V12

T-20.04 SHEET 1 of 1



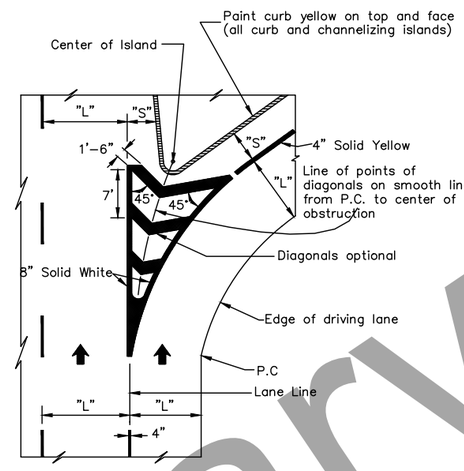
FOUR OR MORE LANES
DRIVE TO RIGHT

TWO LANES
DRIVE TO RIGHT

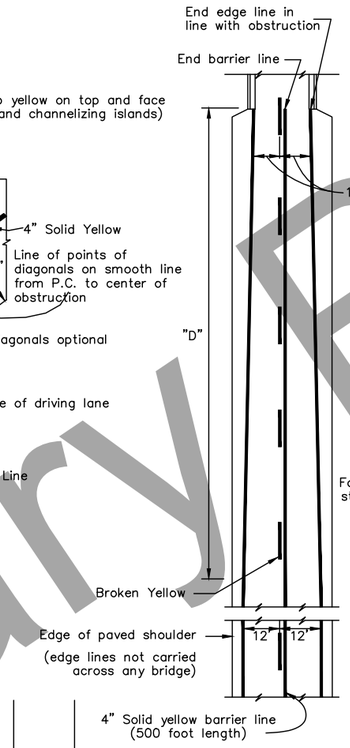
White longitudinal and diagonal markers identical to Four Lane Arrangement.

NOTES: "D" = Speed limit (mph) X "S" (offset width in feet) or as indicated on the plans. Minimum "D" = 100 feet urban, 200 feet rural.

APPROACH TO OBSTRUCTIONS

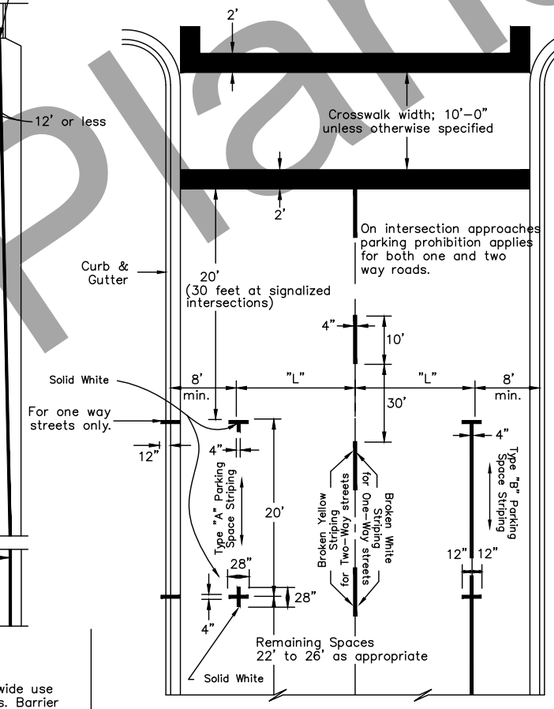


CHANNELIZING ISLAND



Note: On bridges over 24' wide use standard pavement markings. Barrier lines not used unless otherwise required.

EDGE LINE TRANSITION TO NARROW BRIDGE AND APPROACH BARRIER LINE

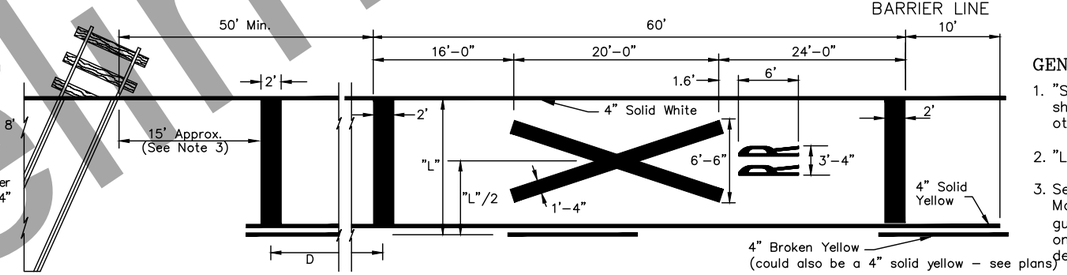


CENTERLINES FOR TWO LANE TWO WAY URBAN ROADS–PARKING LIMIT LINES

RAILROAD CROSSING NOTES:

1. All markings solid while unless indicated otherwise.
2. On 4-lane roadways place railroad crossing approach markings in each lane of the approach.
3. Locate Stop Bar 15' from railroad track or 8' from gate, if present.
4. Place edge lines and lane lines on a uni-directional approach in a normal manner except that the lane line(s) shall be solid 4" white in lieu of broken for a distance of (D+60') in advance of the stop bands.

POSTED LIMIT	D
30 M.P.H.	225'
40	350'
50	475'
60	625'



APPROACH TO RAILROAD CROSSING ON 2 LANE 2 WAY HIGHWAY

GENERAL NOTES:

1. "S"= offset distance as shown on the plans, otherwise 1 to 2 feet.
2. "L"= driving lane width.
3. See the Alaska Traffic Manual for additional guidance and/or restrictions on the use of traffic control devices.

NOT TO SCALE

State of Alaska DOT&PF

PAVEMENT MARKING APPLICATIONS

T-20.04

STANDARD DRAWING
T-20.04

STATE OF ALASKA 49TH Russell M. Johnson CE 9963 REGISTERED PROFESSIONAL ENGINEER

Preliminary Plans

PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
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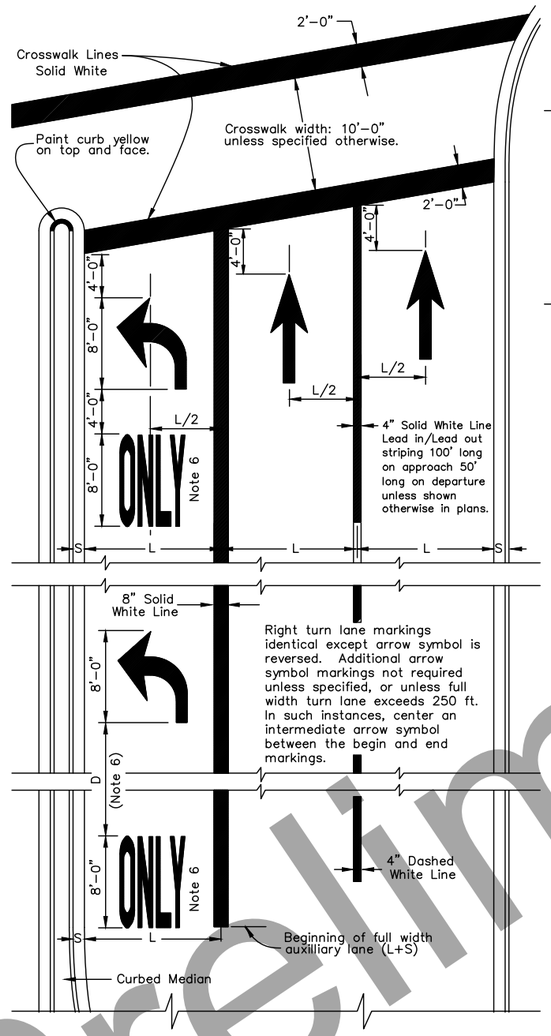
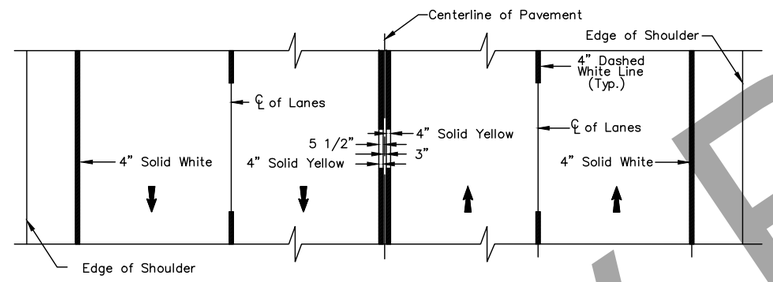
ALASKA	NFHWY00510	2020	V9	V12

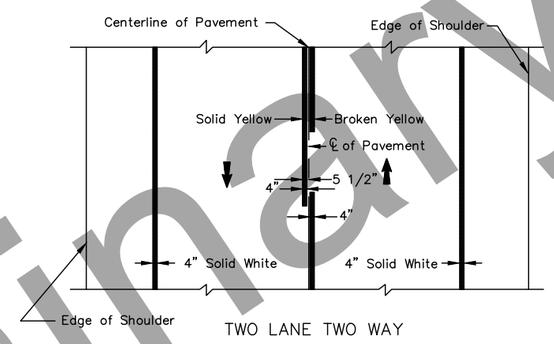
T-21.03 SHEET 1 of 1



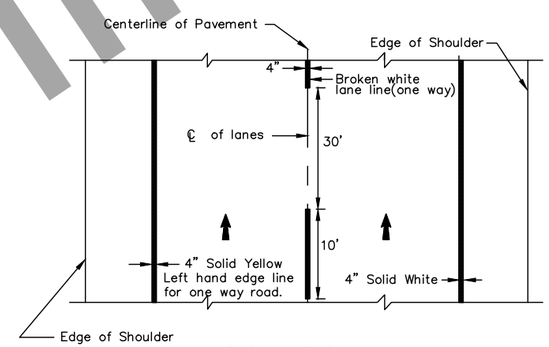
APPROACH TO INTERSECTION



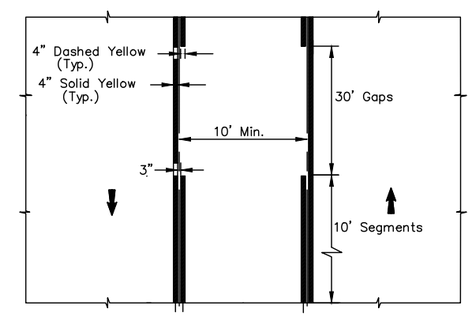
FOUR LANE TWO WAY



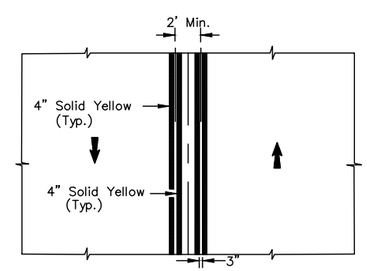
TWO LANE TWO WAY



TWO LANE ONE WAY



TWO-WAY LEFT TURN LANE



STRIPED MEDIAN

GENERAL NOTES:

1. All markings white unless indicated otherwise.
2. Lengths of stripe and gap for lane and center lines identical.
3. Lane lines for auxiliary lanes are unbroken solid lines.
4. "L" = driving lane width.
5. "S" = shy distance as shown on plans, otherwise 1 to 2 feet.
6. ONLY markings are required where through lanes change to turn lanes. In other cases, apply ONLY markings as indicated on plans.
7. See ALASKA TRAFFIC MANUAL for additional instruction on the use of TRAFFIC CONTROL DEVICES.
8. 6. Adjust distance D between ONLY and Turn Arrow based on SPEED vs. D table.

SPEED	D
25 or less	35'
30	45'
35	50'
40	60'
45	65'
50	75'
55 or more	80'

REVISIONS

Date	Description	By
1/1/86	Arrow Dimension	Gdo
1/1/96	Intersect. Note	Gdo
4/28/10	Details, labels, notes	KJS

State of Alaska
Department of Transportation
& Public Facilities

PAVEMENT MARKING APPLICATIONS

T-21.03

STANDARD DRAWING
T-21.03

STATE OF ALASKA 49TH
Russell M. Johnson
CE 9963
REGISTERED PROFESSIONAL ENGINEER

Preliminary Plans

PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
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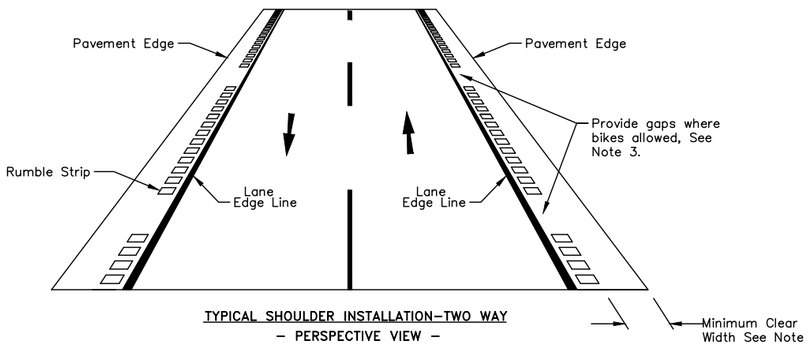
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	V10	V12

T–25.00



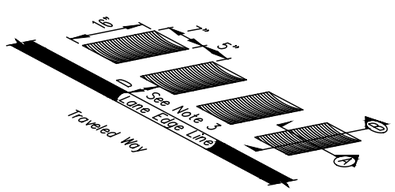
TYPICAL SHOULDER INSTALLATION–TWO WAY

– PERSPECTIVE VIEW –

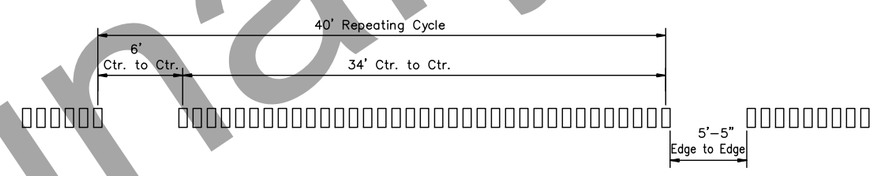
Applies to Two–Way operation where bikes are allowed.

Notes:

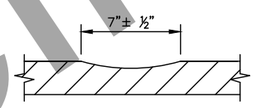
1. Use centerline or lane dividing lines, rather than lane edge lines, for rumble strip alignment control whenever possible.
2. The Offset Distance, D, Shall be:
   2" for 6' or narrower shoulders
   6" for wider than 6' shoulders
3. Where bicycles are allowed on the facility, gaps should be continuous.
4. On divided highways, provide a continuous rumble strip on the inside (left) shoulder.
5. Minimum required clear widths are as follows:
   a. At least 4' where no guardrail is present
   b. At least 5' (to the face of guardrail) where guardrail is present.
   c. No mimimum where bicycles are prohibited.
6. Do not install rumble strips in the following instances:
   a. Bridge decks
   b. Bridge approach slabs
   c. Pavement less than 2" thick
   d. Pavement that has alligatoring, fatigue cracking, or in poor condition.
   e. Pavement joints
   f. Into lane edge line striping.



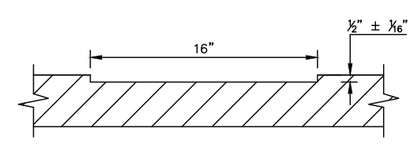
TYPICAL SHOULDER INSTALLATION DETAIL



GAPS AND SPACING FOR
BICYCLE USE ON SHOULDER



SECTION A



SECTION B

NOT TO SCALE

REVISIONS		
Date	Description	By

Sheet 1 of 3

State of Alaska
Department of Transportation
& Public Facilities

MILLED
RUMBLE STRIPS

T–25.00

STATE OF ALASKA 49TH
Russell M. Johnson
CE 9963
REGISTERED PROFESSIONAL ENGINEER

STANDARD DRAWING
T–25.00 SHEET 1 OF 3

Preliminary Plans

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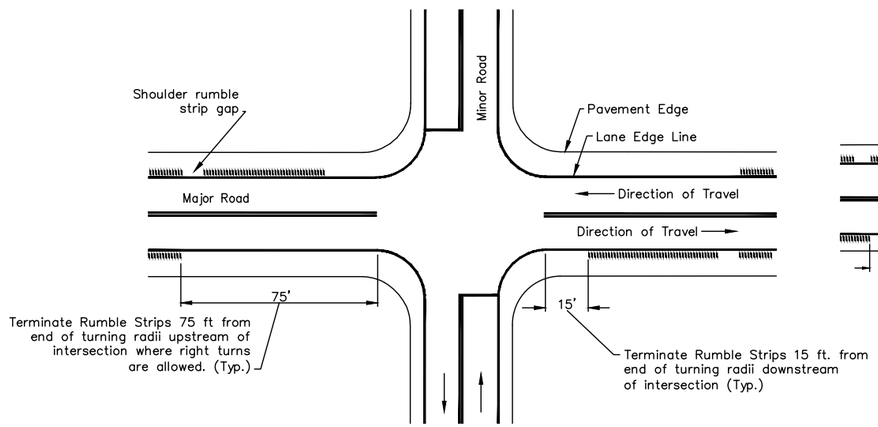
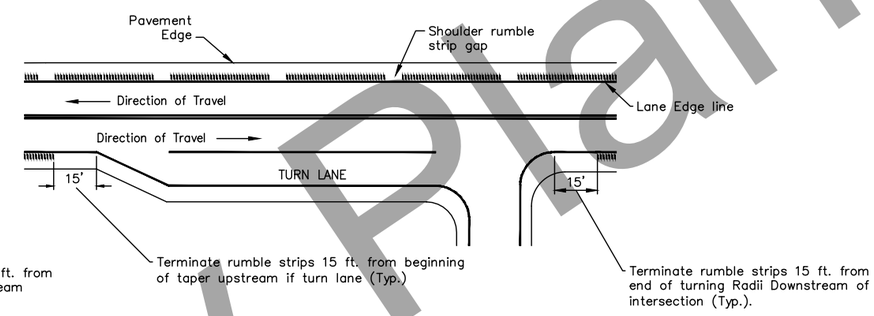
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	V11	V12

T-25.00



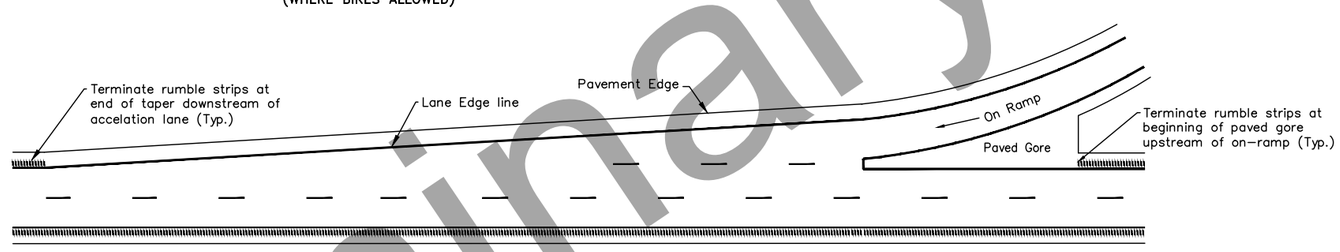
RUMBLE STRIP LAYOUT AT INTERSECTIONS

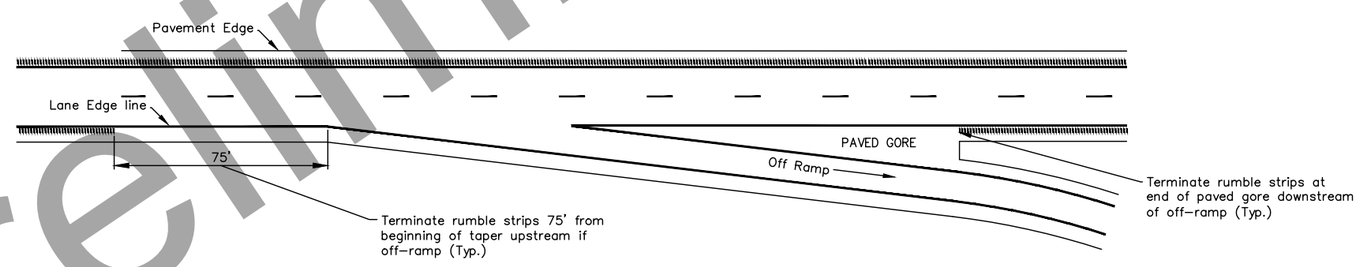
APPLIES TO ALL INTERSECTIONS, PUBLIC TURNOUTS, APPROACHES, AND GANG MAILBOX TURNOUTS
(WHERE BIKES ALLOWED)



RUMBLE STRIP LAYOUT AT TURN LANES

(WHERE BIKES ALLOWED)





RUMBLE STRIP LAYOUT AT ON AND OFF RAMPS ON FREEWAYS

NOTE: THIS DRAWING APPLIES TO BOTH PARALLEL AND TAPERED LANES
(WHERE BIKES PROHIBITED)

NOT TO SCALE

REVISIONS		
Date	Description	By

Sheet 2 of 3

State of Alaska
Department of Transportation
& Public Facilities

MILLED
RUMBLE STRIPS

T-25.00

STATE OF ALASKA 49TH
Russell M. Johnson
CE 9963
REGISTERED PROFESSIONAL ENGINEER

STANDARD DRAWING
T-25.00 SHEET 2 OF 3

Preliminary Plans

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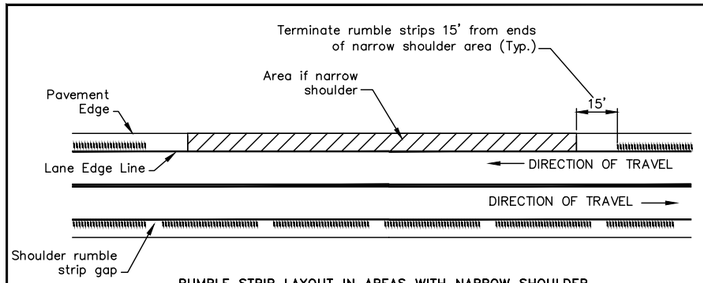
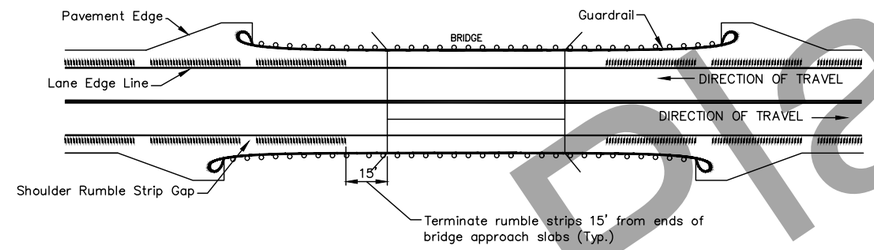
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	NFHWY00510	2020	V12	V12

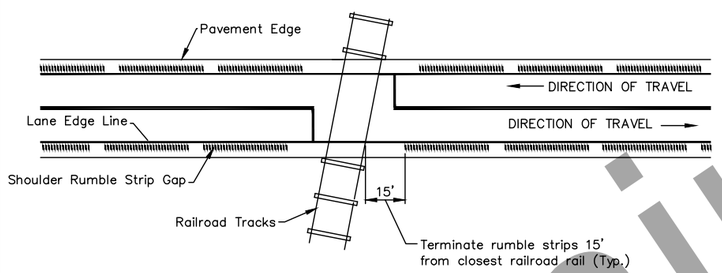
T-25.00



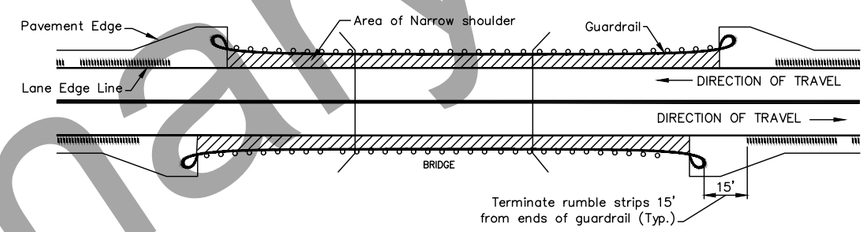
RUMBLE STRIP LAYOUT IN AREAS WITH NARROW SHOULDER
(WHERE BIKES ALLOWED)



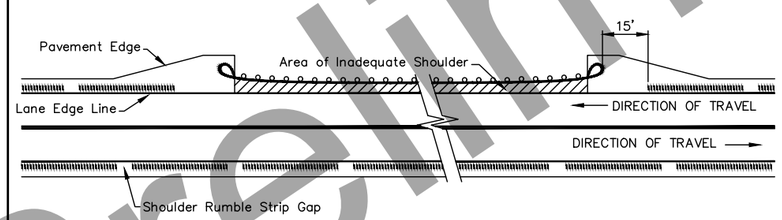
RUMBLE STRIP LAYOUT AT BRIDGES WITH ADEQUATE SHOULDER
(WHERE BIKES ALLOWED)



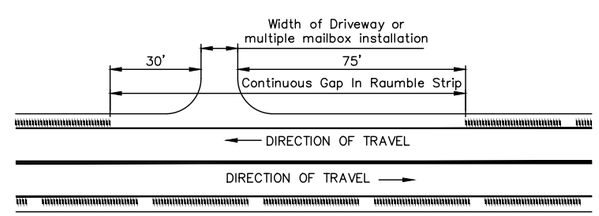
RUMBLE STRIP LAYOUT AT RAILROAD CROSSINGS
(WHERE BIKES ALLOWED)



RUMBLE STRIP LAYOUT AT BRIDGES WITH NARROW SHOULDER
(WHERE BIKES ALLOWED)



RUMBLE STRIP LAYOUT IN AREAS WITH GUARDRAIL AND NARROW SHOULDER
(WHERE BIKES ALLOWED)



RUMBLE STRIP LAYOUT AT DRIVEWAYS AND MULTIPLE MAILBOX INSTALLATIONS

NOT TO SCALE

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Sheet 3 of 3

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T-25.00 SHEET 3 OF 3

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