

FILE Z:\PROJECT\2747.02 HDR STERLING HIGHWAY MP 45-60 DESIGN\CIVIL\ACAD\2747.02-A01.DWG  
DATE/TIME 3/6/2020 2:56 PM LAYOUT A1  
DESIGNED BDR DESIGN CHECKED BDR CHECK DRAFTED BDR DRAFT

# STATE OF ALASKA

## DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

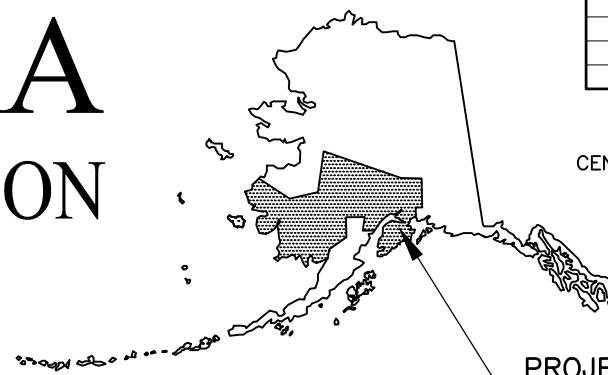
### PROPOSED HIGHWAY PROJECT

## STERLING HIGHWAY MP 45-60

## SUNRISE TO SKILAK LAKE RD RECONSTRUCTION STAGE 1B

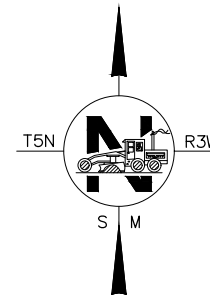
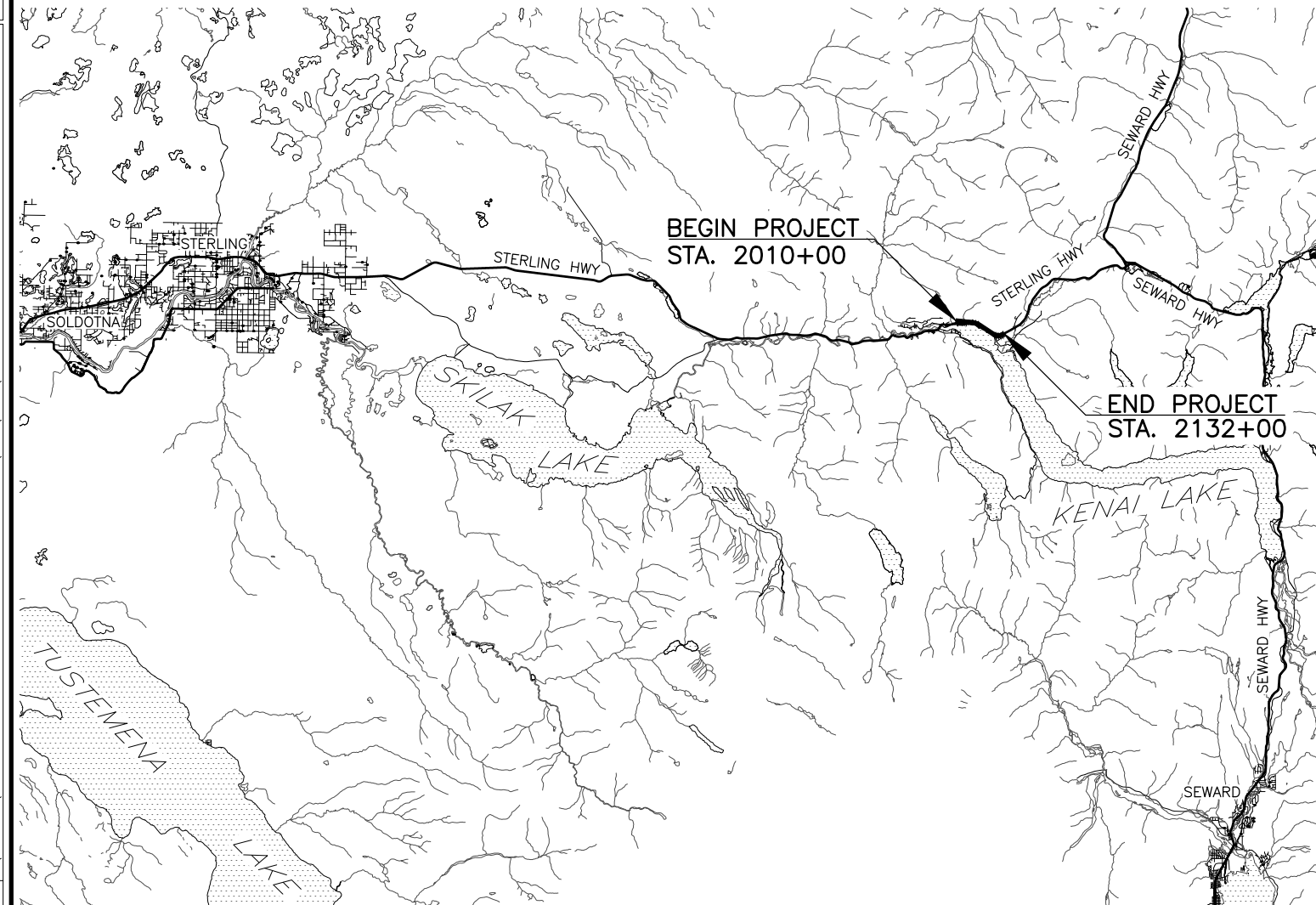
## PROJECT NO. CFHWY00694

### GRADING, DRAINAGE, PAVING, PATHWAYS, RETAINING WALLS, SIGNING, AND STRIPING



PROJECT LOCATION  
M&O STATION: QUARTZ CREEK

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	CFHWY00694	2020	A1	78
ROUTE ID			110000	MILEPOINT	7.645 - 10.119		
LATITUDE			60.493001	LONGITUDE	-149.753134		



PROJECT SUMMARY		
ROADWAY	WIDTH	LENGTH
STERLING HWY MP 45-47	52 FT	2.3 MILES
PATHWAY	10 FT	2.0 MILES

DESIGN DESIGNATIONS	
	STERLING HIGHWAY
FUNCTIONAL CLASS	INTERSTATE
AADT (2019)	4,450
AADT (2045)	5,764
DESIGN SPEED (V) (MPH)	60
DHV (2019)	20%
DHV (2045)	20%
T-PERCENT COMMERCIAL TRUCKS (%)	7%
D-DIRECTIONAL DISTRIBUTION (%)	60/40
ESALs	2,670,000

PLANS DEVELOPED BY: R&M CONSULTANTS, INC.

STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES  
4111 AVIATION AVENUE, ANCHORAGE, AK 99502  
(907)269-0590

APPROVED:

REGIONAL PRE-CONSTRUCTION ENGINEER DATE

CONCUR:

REGIONAL CONSTRUCTION ENGINEER DATE

PLANS-IN-HAND  
MARCH 2020

**GENERAL NOTES:**

1. ALL CONSTRUCTION SHALL BE CONTAINED WITHIN THE RIGHT-OF-WAY, TEMPORARY CONSTRUCTION EASEMENTS, AND TEMPORARY CONSTRUCTION PERMITS. NO EXCESS MATERIAL SHALL BE DISPOSED OF WITHIN THE RIGHT-OF-WAY, UNLESS SPECIFICALLY CALLED FOR IN THE PLANS OR DIRECTED BY THE ENGINEER.
2. THE EXISTING ROW LINES SHOWN WERE COMPUTED AND DRAWN ON THE PLANS USING INFORMATION FROM DOT&PF, PLATTED SUBDIVISIONS, AND SURVEYED MONUMENTS ON THE GROUND IN THE ANCHORAGE LDP COORDINATE SYSTEM CREATED BY THE DOT&PF.
3. NO EXISTING PAVEMENT SHALL BE REMOVED WITHOUT PRIOR APPROVAL BY THE ENGINEER.
4. THE CONTRACTOR SHALL PROVIDE FOR SURFACE AND SUBSURFACE DRAINAGE UNTIL COMPLETION OF THE PERMANENT DRAINAGE INSTALLATION.
5. ALL PAVEMENT CUTS SHALL BE MADE WITH A SAW OR ALTERNATE METHOD APPROVED BY THE ENGINEER.
6. CLEARING LIMITS SHALL BE 10 FEET BEYOND SLOPE CATCH POINTS OR 1 FOOT INSIDE THE RIGHT-OF-WAY LINE, OR AS DIRECTED BY THE ENGINEER, WHICHEVER IS LESS. GRUBBING LIMITS ARE TO SLOPE CATCH POINTS.
7. LONGITUDINAL TRANSITIONS FOR SLOPE CHANGES SHALL BE 50 FEET IN LENGTH OR AS DIRECTED BY THE ENGINEER.
8. IN ROCK EXCAVATION AREAS, THE CONTRACTOR SHALL FRACTURE THE ROCK BY DITCH LINE / SUBGRADE BLASTING OR RIPPING PARALLEL TO THE CENTERLINE TO A DEPTH OF 2 FEET BELOW THE SELECTED MATERIAL, TYPE A LAYER.
9. PLACE 4" TOPSOIL AND SEED ALL 2:1 OR FLATTER CUT AND FILL SLOPES AND AREAS DISTURBED BY CONSTRUCTION AS DIRECTED BY THE ENGINEER.
10. THE EXISTING INFORMATION SHOWN IN THE PLANS IS FROM A COMBINED FIELD AND AERIAL SURVEY. FIELD CONDITIONS MAY NOT BE ACCURATELY REPRESENTED AND/OR MAY HAVE CHANGED. ADJUST INSTALLATIONS AS DIRECTED BY THE ENGINEER.
11. FOR PARALLEL GUARDRAIL TERMINALS, USE AN END OFFSET OF 2 FEET.

## ABBREVIATIONS

Δ	DELTA ANGLE	NIC	NOT IN CONTRACT
AADT	ANNUAL AVERAGE DAILY TRAFFIC	NO	NUMBER
BOP	BEGINNING OF PROJECT	NTS	NOT TO SCALE
CL, CL	CENTERLINE	PC	POINT OF CURVATURE
CS	CONTINGENT SUM	PCC	POINT OF COMPOUND CURVATURE
CY	CUBIC YARD	PCF	POUNDS PER CUBIC FOOT
D	DEGREE OF CURVATURE, DIAMETER	PRC	POINT OF REVERSE CURVATURE
DHV	DESIGN HOURLY VOLUME	PG	PROFILE GRADE
DOT&PF	DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES	PGP	PROFILE GRADE POINT
		PI	POINT OF INTERSECTION
DWG	DRAWING	POR	POINT OF ROTATION
E	EAST, EASTING	POC	POINT ON CURVE
EA	EACH	POT	POINT ON TANGENT
EL, ELEV	ELEVATION	PT	POINT OF TANGENCY
EOP	END OF PROJECT	ROW	RIGHT-OF-WAY
FG	FINISHED GRADE	R	RADIUS
FT	FEET, FOOT	RP	RADIUS POINT
HDPE	HIGH DENSITY POLYETHYLENE	RT	RIGHT
HMA	HOT MIX ASPHALT	S	SUPERELEVATION
IN	INCH	SF	SQUARE FEET
L	LENGTH	SHLD	SHOULDER
LB	POUND	SPP	STRUCTURAL PLATE PIPE
LF	LINEAR FEET	STA	STATION
LS	LUMP SUM	SY	SQUARE YARD
LT	LEFT	T	TANGENT, TRUCKS
MAX	MAXIMUM	TYP	TYPICAL
ME	MATCH EXISTING	V	DESIGN SPEED
MI	MILE	VC	VERTICAL CURVE
MIN	MINIMUM	VPC	VERTICAL POINT OF CURVATURE
MP	MILEPOST	VPI	VERTICAL POINT OF INTERSECTION
MSE	MECHANICALLY STABILIZED EARTH	VPT	VERTICAL POINT OF TANGENCY
N	NORTH, NORTHING	W	WEST

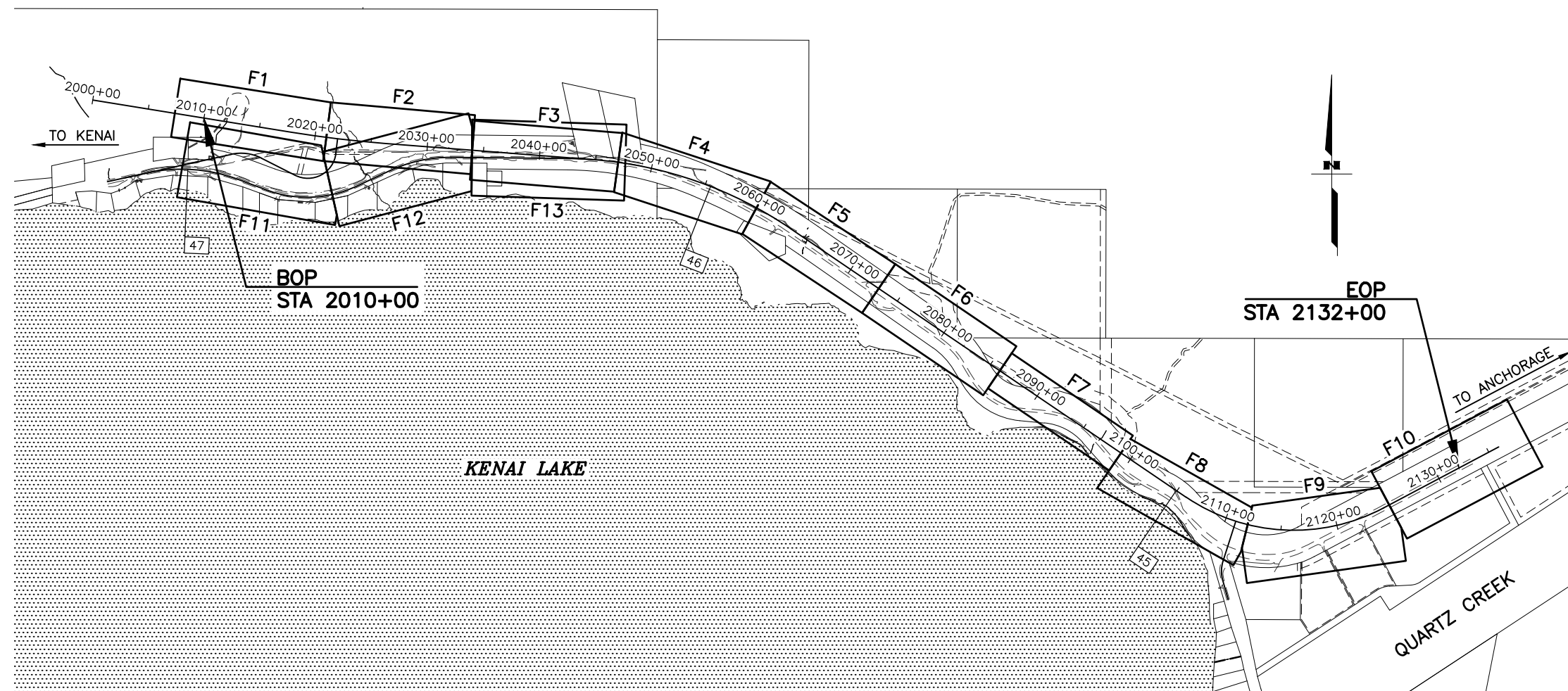
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	CFHWY00694	2020	A2	A4

## INDEX

SHEET NO.	DESCRIPTION
A1	TITLE SHEET
A2	SHEET LAYOUT, INDEX, AND GENERAL NOTES
A3	LEGEND
A4	PHASING PLAN
A5-AX	SURVEY CONTROL SHEETS (TO BE COMPLETED)
B1-B9	TYPICAL SECTIONS
C1-C2	ESTIMATE OF QUANTITIES
D0-D3	SUMMARY TABLES
E1-E14	DETAILS
F1-F13	PLAN AND PROFILE SHEETS - MAINLINE
F14-F22	PLAN AND PROFILE SHEETS - PATHWAY
F23-F30	PLAN AND PROFILE SHEETS - APPROACHES
H1-H12	SIGNING AND STRIPING
M1-M3	RETAINING WALL SHEETS

THE FOLLOWING ALASKA STANDARD PLANS APPLY TO THIS PROJECT

C-04.12, C-05.20
D-01.02, D-04.21, D-06.10, D-07.00, D-30.11, D-31.01
G-00.04, G-05.11S, G-05.11W, G-10.20, G-20.12, G-46.12
S-00.11, S-05.01, S-30.04, S-31.01, S-32.00
T-05.10, T-20.04, T-21.03, T-22.04



**SPECIFICATION:**

CONSTRUCT THE IMPROVEMENTS COVERED BY THESE PLANS IN ACCORDANCE WITH THE ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES 2020 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND THE PROJECT SPECIAL PROVISIONS.



STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

**STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B**

SHEET LAYOUT, INDEX,  
AND GENERAL NOTES



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A3

LAYOUT

3/6/2020 3:12 PM

DATE/TIME

ROADWAY

EXISTING

PROPOSED

EDGE OF PAVEMENT		
LIMIT OF CUT SLOPE & FILL SLOPE		
GRAVEL EDGE		
SIDEWALK AND PATH/TRAIL		
CONCRETE CURB & GUTTER		
CONCRETE CURB CUT		
PARALLEL CURB RAMP		
PERPENDICULAR CURB RAMP		
UNIDIRECTIONAL CURB RAMP & MID-BLOCK CURB RAMP		
DETECTABLE WARNING TILE		
BRIDGE		
TUNNEL		
GUARDRAIL		
END & PARALLEL END SECTIONS		
ROADWAY OBLITERATION		
FENCE		
STONE FENCE		
NOISE BARRIER		
RETAINING WALL		
HEADWALL & WINGWALL		
BOTTOM OF DITCH		
SPECIAL DITCH		
FLAT BOTTOM DITCH		
BERM		
RIPRAP		
BOULDER OR BOULDERS		
PRIVATE SIGN, MAILBOX		
POST, BOLLARD		
DITCH LINING		
TOP OF SELECTED MATERIAL, TYPE A		
PAVED SURFACE		
GRAVEL SURFACE		

TOPOGRAPHY

EXISTING

LAKE OR POND, WETLANDS	
TREE (CONIFER/DECIDUOUS)	
TREELINE (EDGE OF VEGETATION)	
PLANTER	
BUILDING OR FOUNDATION	

UTILITIES

EXISTING

PROPOSED

STORM DRAIN		
STORM DRAIN MANHOLE, CLEANOUT		
CURB INLET CATCH BASIN		
FIELD INLET CATCH BASIN		
PIPE CULVERT WITH END SECTION		
SANITARY SEWER		
SANITARY SEWER MANHOLE, CLEANOUT		
SEPTIC VENT, SEWER SERVICE CONNECTION		
WATER		
FIRE HYDRANT, VALVE OR RISER		
WELL, WATER SERVICE CONNECTION		
NATURAL GAS		
OIL OR GASOLINE PIPELINE		
TANKS (ABOVE GROUND, UNDERGROUND)		
ELECTRIC		
UTILITY POLE, POLE WITH LUMINAIRE		
GUY POLE, GUY WIRE ANCHOR		
TRANSMISSION TOWER (WOOD, STEEL)		
ELECTRIC PEDESTAL, TRANSFORMER		
ELECTRIC MANHOLE, METER		
ELECTRIC OUTLET, LANDSCAPE LIGHT		
TELEPHONE		
TELEPHONE MANHOLE, PEDESTAL		
FIBER OPTIC		
FIBER OPTIC MANHOLE		
CABLE TV		
CABLE TV PEDESTAL, SATELLITE DISH		
UNDERGROUND DUCT, UTILIDOR (ELECTRIC, TELEPHONE, FIBER OPTIC)		
VENT		
TEST HOLE LOCATION		

TRAFFIC

EXISTING

PROPOSED

LOAD CENTER		
STATE TRAFFIC, MOA TRAFFIC, & BEACON CONTROLLER		
ARROW INDICATES DOOR LOCATION		
TYPE 1A, II, III, IV JUNCTION BOX		
FIBER OPTIC VAULT		
ELECTROLIER		
HIGHTOWER		
SIGNAL POLE WITH MASTARM		
PEDESTRIAN PUSH BUTTON & SIGNAL		
VEHICULAR SIGNAL		
VEHICULAR SIGNAL LEFT & RIGHT		
OPTICAL, CAMERA, RADAR, AND GPS DETECTOR		
LOOP DETECTOR		
COMMUNICATION ANTENNA		
MASTARM BEACON		
RURAL & SCHOOL ZONE BEACON		
LOOP DETECTOR CONDUIT		
SIGNAL CONDUIT		
LIGHTING CONDUIT		
SIGNAL & LIGHTING CONDUIT		
CONDUIT BORING		
CONDUIT SIZE IN INCHES		
INTERCONNECT		
SIGN POST		

PAVEMENT MARKINGS

PROPOSED

TRAFFIC PROJECT CENTERLINE	
8" & 4" WHITE SOLID STRIPE	
4" WHITE SKIP STRIPE	
10' STRIPES AND 30' SPACES	
8" WHITE LANE GUIDE SKIP	
LANE CONTINUATION OR TURN SKIP	
1" STRIPES AND 3' SPACES	
8" & 4" YELLOW SOLID STRIPE	
4" YELLOW SKIP STRIPE	
10' STRIPES AND 30' SPACES	
STRIPING CHANGE STATION INTERVAL	
2' CROSSWALK OR STOPBAR	
LADDER CROSSWALK LAYOUT	
2' WIDE RUNGS WITH 2' SPACES	
ALIGNED TO AVOID TIRE PATHS	
TYPICAL PAINTED MEDIAN	

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	CFHWY00694	2020	A3	A4

RIGHT-OF-WAY

RECOVERED

SET THIS PROJECT

FEDERAL GOV'T SURVEY MONUMENT		
GOV'T CONTROL STATION		
PRIMARY MONUMENT (BRASS/AL CAP)		
MISC SECONDARY CORNER		
PRIMARY CENTERLINE MONUMENT		
SECONDARY CENTERLINE MONUMENT		
RANDOM CONTROL MONUMENT		
PRIMARY GPS CONTROL POINT		
HORIZONTAL CONTROL POINT		
SECONDARY CONTROL POINT		
VERTICAL BENCHMARK		
TEMPORARY BENCHMARK		
TOWNSHIP AND RANGE LINES		
SECTION LINE		
1/4 SECTION LINE		
1/16 SECTION LINE		
CORPORATE or CITY LIMITS		
EXISTING RIGHT-OF-WAY		
RIGHT-OF-WAY OR EASEMENT REQUIRED		
PROJECT RIGHT-OF-WAY LINE		
EXISTING RIGHT-OF-WAY EASEMENT		
EXISTING PROPERTY LINE		
CONTROLLED ACCESS LINE		
EXISTING UTILITY EASEMENT		
PROPOSED UTILITY EASEMENT		
EXISTING CENTERLINE		
RAILROAD CENTERLINE		
TEMPORARY CONSTRUCTION EASEMENT		
TEMPORARY CONSTRUCTION PERMIT		

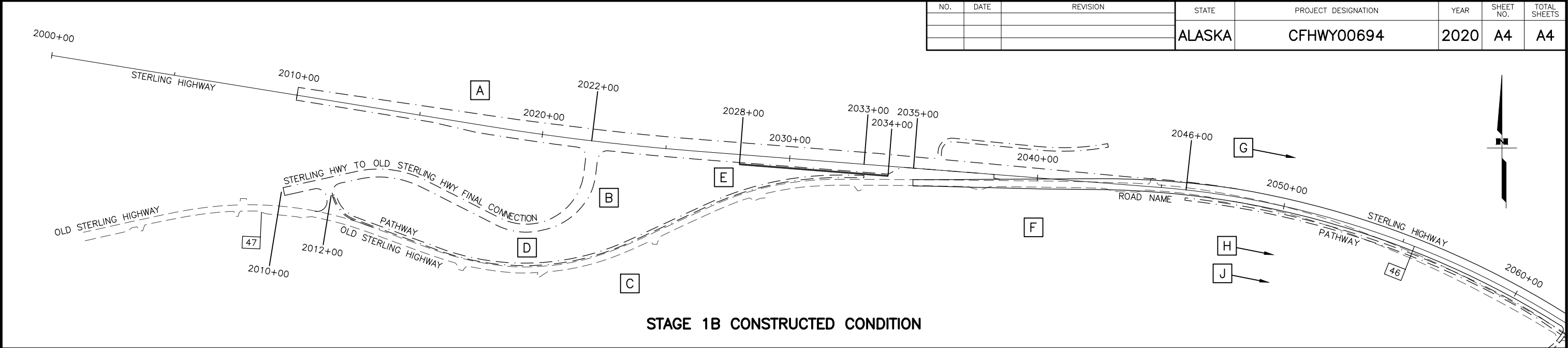


STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES  
**STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B**

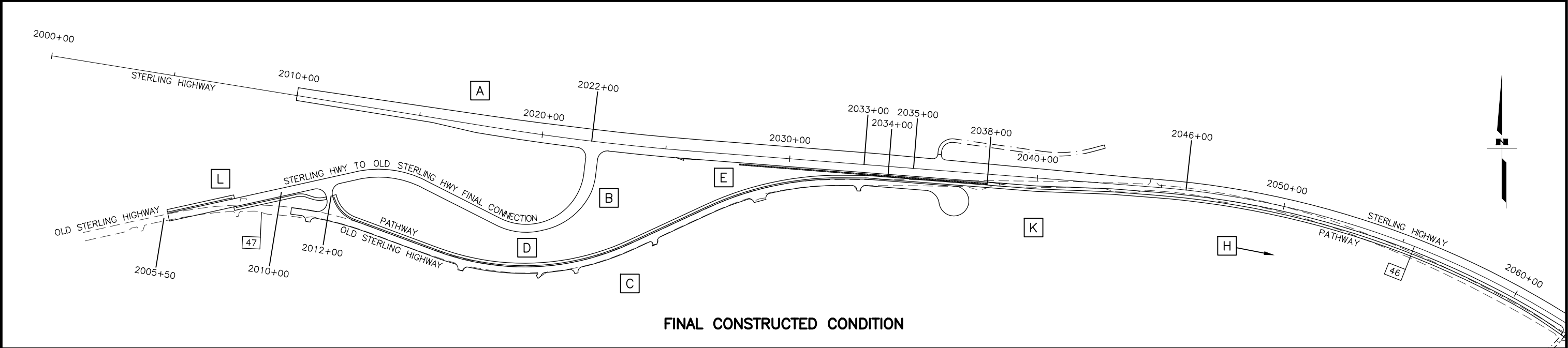
LEGEND SHEET

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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	CFHWY00694	2020	A4	A4



STAGE 1B CONSTRUCTED CONDITION



FINAL CONSTRUCTED CONDITION

GENERAL PROJECT CONSTRUCTION PHASING

STATION RANGE		ELEMENT		STAGE	DESCRIPTION OF CONSTRUCTED ELEMENTS
BEGIN	END				
2010+00	2046+00	A	STERLING HWY	1B	COMPLETE EXCAVATIONS & CONSTRUCT FINAL EMBANKMENT & STRUCTURAL SECTION TO TOP SELECTED MATERIAL, TYPE A
2010+00	2022+00	B	FINAL CONNECTION	1B	COMPLETE EXCAVATIONS & CONSTRUCT FINAL EMBANKMENT & STRUCTURAL SECTION TO TOP SELECTED MATERIAL, TYPE A
2010+00	2035+00	C	OLD STERLING HWY	1B	EXISTING PAVEMENT TO REMAIN
2012+00	2033+00	D	PATHWAY	1B	COMPLETE EXCAVATIONS & CONSTRUCT FINAL EMBANKMENT & STRUCTURAL SECTION TO TOP OF AGGREGATE BASE COURSE, GRADING D-1
2028+00	2034+00	E	MSE RETAINING WALL #1	1B	CONSTRUCT MSE RETAINING WALL #1
2035+00	2046+00	F	TEMPORARY CONNECTION	1B	CONSTRUCT STERLING HWY TO OLD STERLING HWY TEMPORARY CONNECTION
2046+00	2132+00	G	STERLING HWY	1B	COMPLETE EXCAVATIONS, INSTALL CULVERTS, CONSTRUCT FINAL EMBANKMENT, MSE RETAINING WALL #2, & STRUCTURAL SECTION TO FINAL LIFT HMA, & SIGNING & STRIPING
2046+00	2073+00	H	PATHWAY	1B	COMPLETE EXCAVATIONS & CONSTRUCT FINAL EMBANKMENT & STRUCTURAL SECTION TO TOP OF AGGREGATE BASE COURSE, GRADING D-1
2073+00	2112+00	J	PATHWAY	1B	COMPLETE EXCAVATIONS & CONSTRUCT FINAL EMBANKMENT & STRUCTURAL SECTION TO TOP OF ASPHALT
2010+00	2046+00	A	STERLING HWY	3 & 5	CONSTRUCT STRUCTURAL SECTION TO FINAL LIFT HMA & SIGNING & STRIPING
2010+00	2022+00	B	FINAL CONNECTION	3 & 5	CONSTRUCT STRUCTURAL SECTION TO FINAL LIFT HMA & SIGNING & STRIPING
2033+00	2038+00	C	OLD STERLING HWY	3 & 5	CONSTRUCT STRUCTURAL SECTION TO FINAL LIFT HMA, CUL-DE-SEC TERMINATION, & SIGNING & STRIPING
2012+00	2033+00	D	PATHWAY	3 & 5	PAVE PATHWAY
2034+00	2038+00	E	MSE RETAINING WALL #1	3 & 5	COMPLETE CONSTRUCTION OF MSE RETAINING WALL #1
2035+00	2046+00	F	TEMPORARY CONNECTION	3 & 5	REMOVE STERLING HWY TO OLD STERLING HWY TEMPORARY CONNECTION
2046+00	2073+00	H	PATHWAY	3 & 5	PAVE PATHWAY
2033+00	2046+00	K	PATHWAY	3 & 5	COMPLETE EXCAVATIONS & CONSTRUCT FINAL EMBANKMENT & STRUCTURAL SECTION TO TOP OF ASPHALT
2005+50	2010+00	L	FINAL CONNECTION	3 & 5	CONSTRUCT FINAL TIE-IN TO OLD STERLING HWY
2005+50	2012+00	L	PATHWAY	3 & 5	COMPLETE EXCAVATIONS & CONSTRUCT FINAL EMBANKMENT & STRUCTURAL SECTION TO TOP OF ASPHALT

FOR REVIEW ONLY

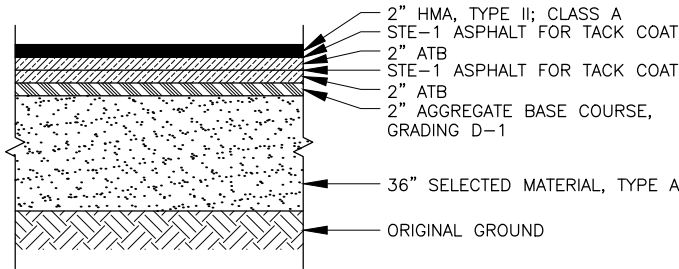


STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES  
STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

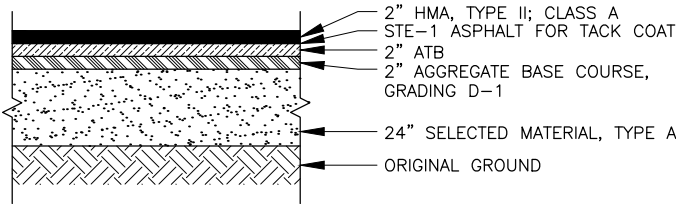
PHASING PLAN

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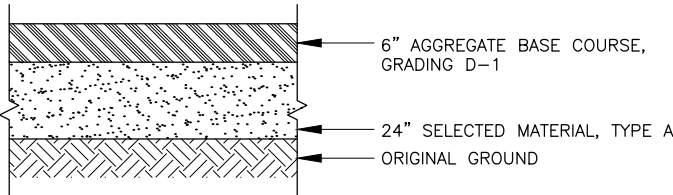
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	CFHWY00694	2020	B1	B9



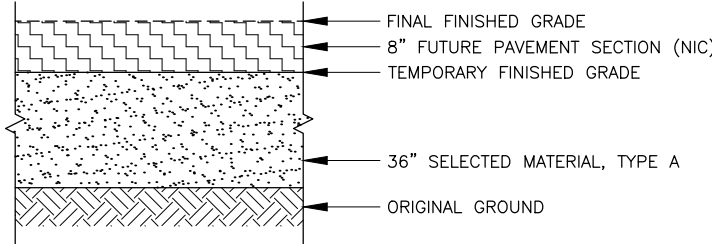
ROADWAY STRUCTURAL SECTION 1



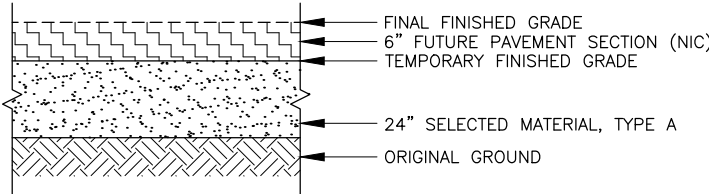
APPROACH STRUCTURAL SECTION 1



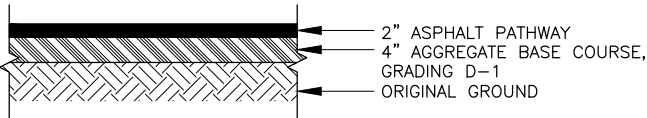
PATHWAY STRUCTURAL SECTION 1



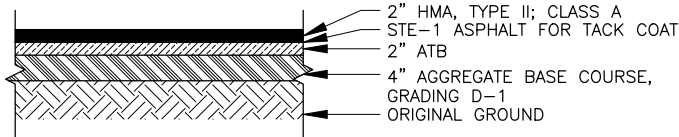
ROADWAY STRUCTURAL SECTION 2



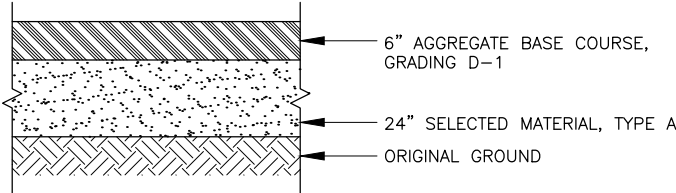
APPROACH STRUCTURAL SECTION 2



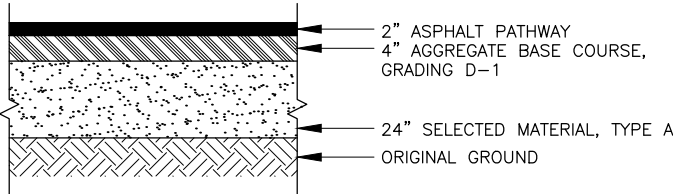
PATHWAY STRUCTURAL SECTION 2



ROADWAY STRUCTURAL SECTION 3



APPROACH STRUCTURAL SECTION 3



PATHWAY STRUCTURAL SECTION 3

- NOTES:
- ANY TEMPORARY GRAVEL OR DRIVING SURFACE IS THE RESPONSIBILITY OF THE CONTRACTOR.

STATE OF ALASKA  
PLANS-IN-HAND  
MARCH 2020  
0000  
REGISTERED PROFESSIONAL ENGINEER

R&M CONSULTANTS, INC.  
9101 VANGUARD DRIVE  
ANCHORAGE, AK 99507  
(907) 522-1707  
CERT. OF AUTH. NO. AECC111

STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

TYPICAL SECTIONS



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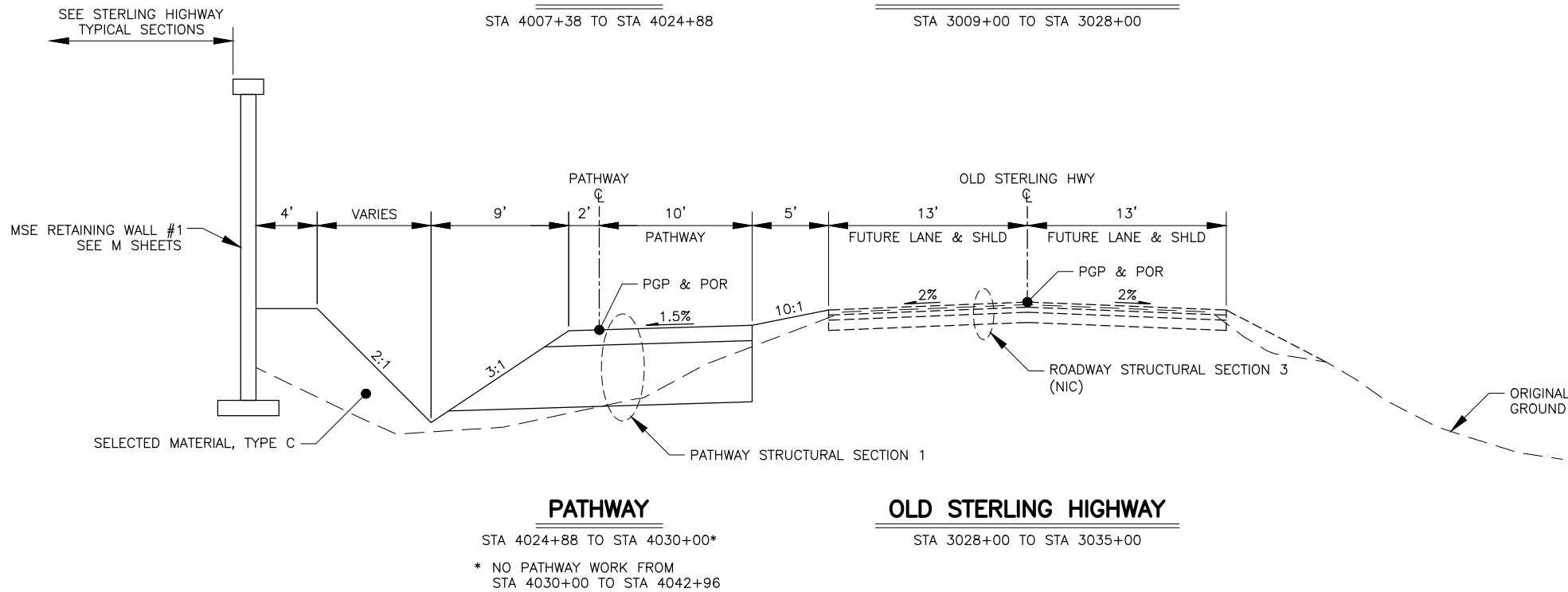
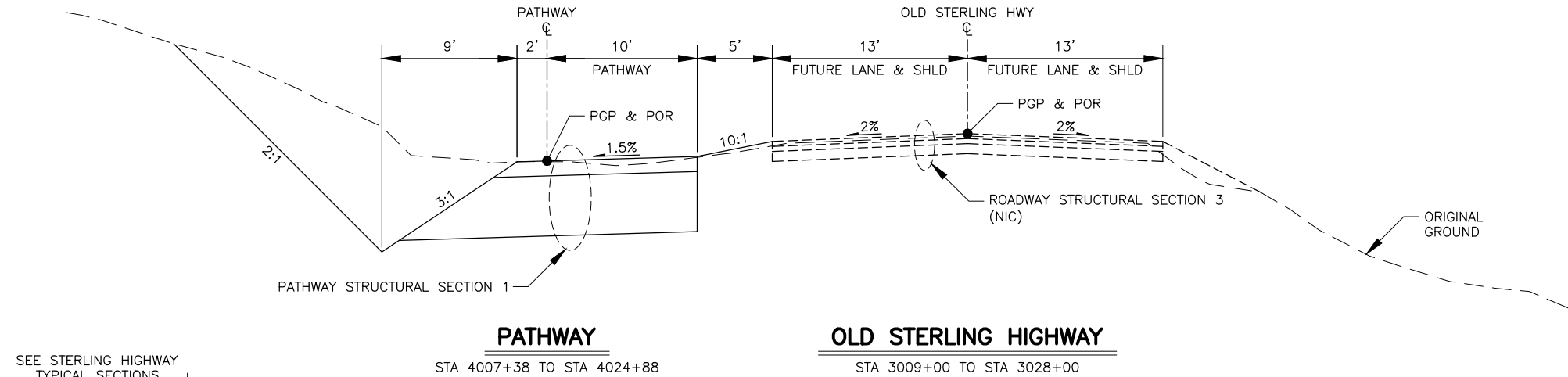
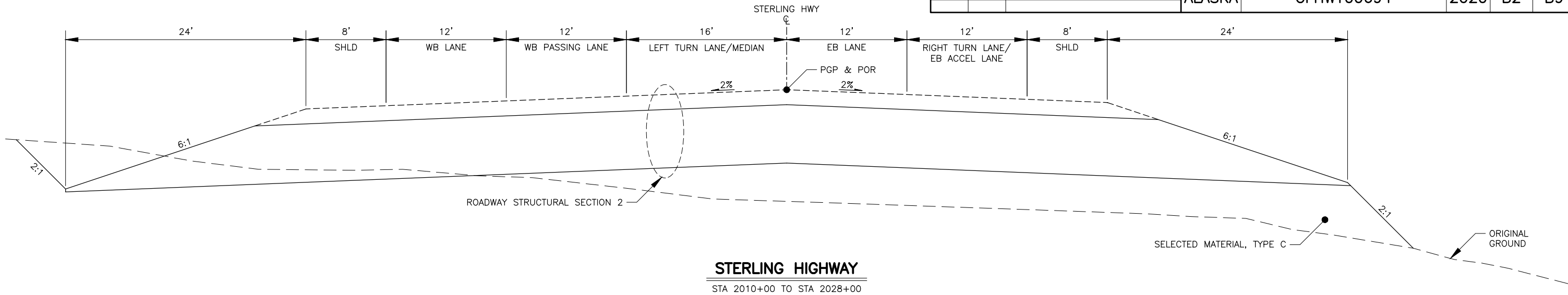
DESIGNED

B2

LAYOUT

DATE/TIME 3/6/2020 2:57 PM

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STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

**STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B**

**TYPICAL SECTIONS**

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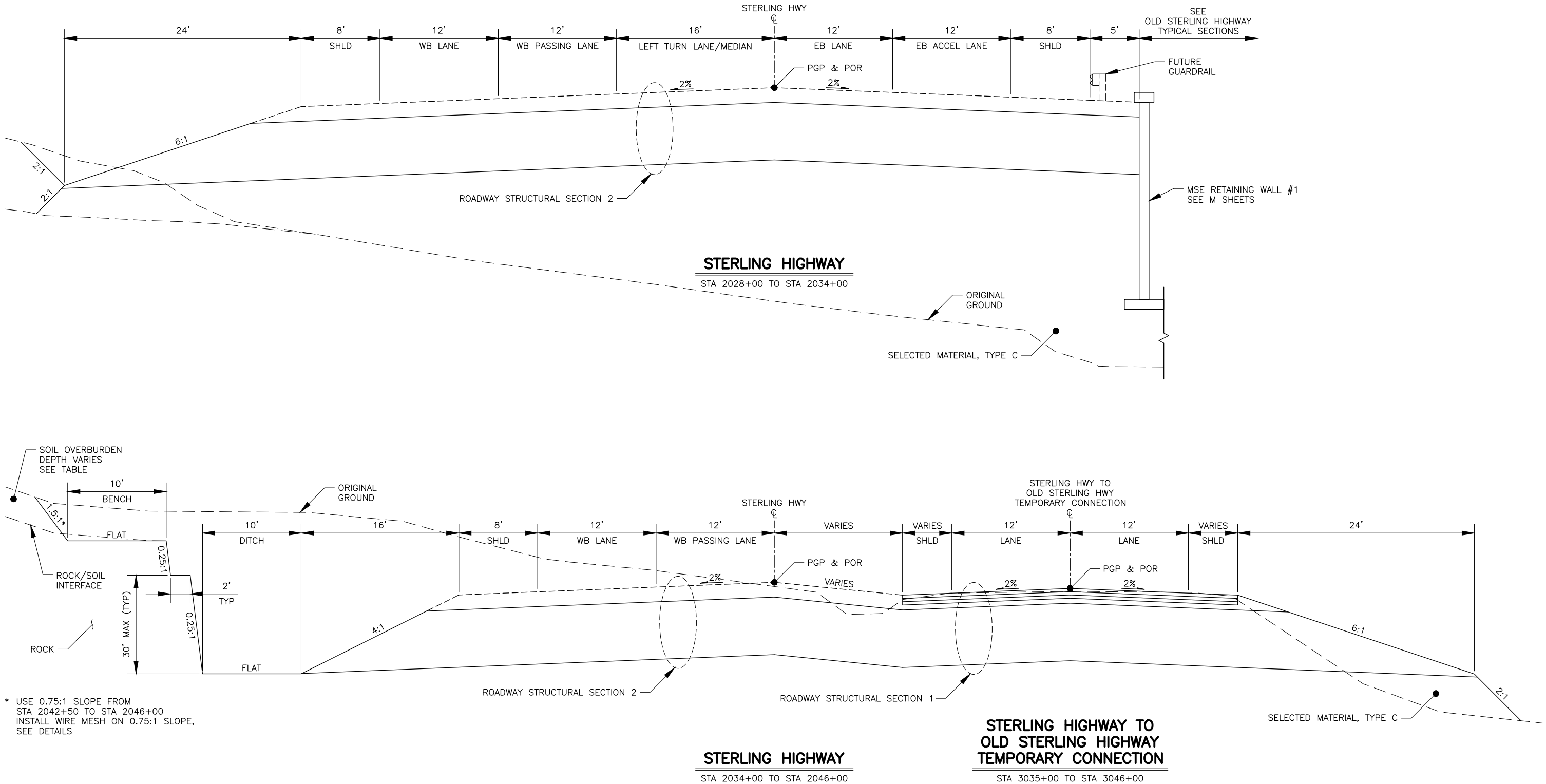
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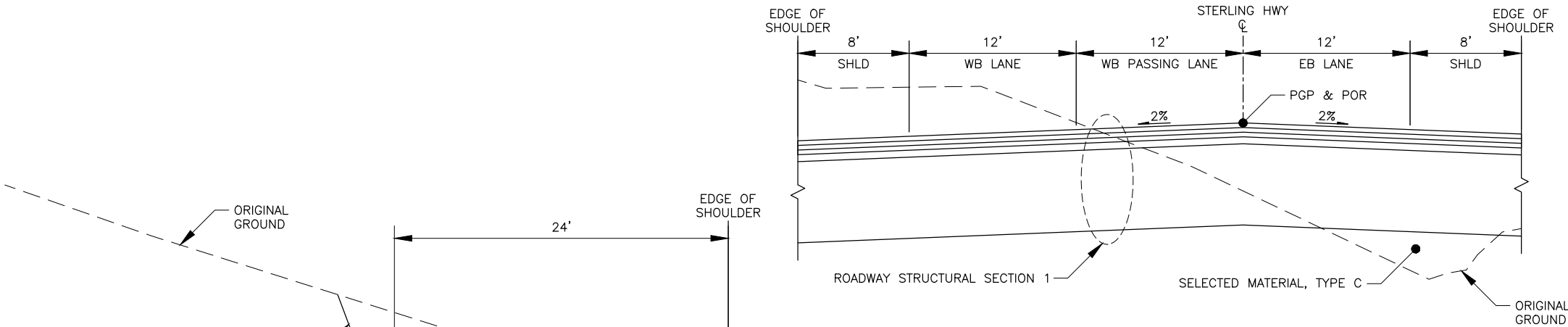
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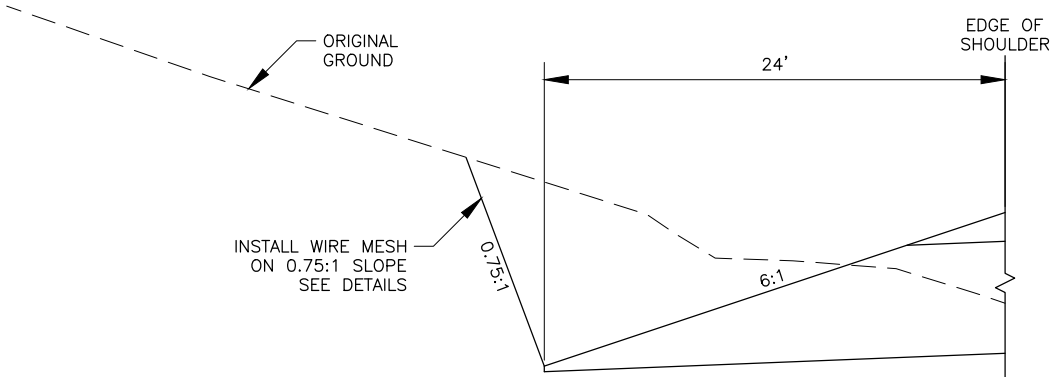
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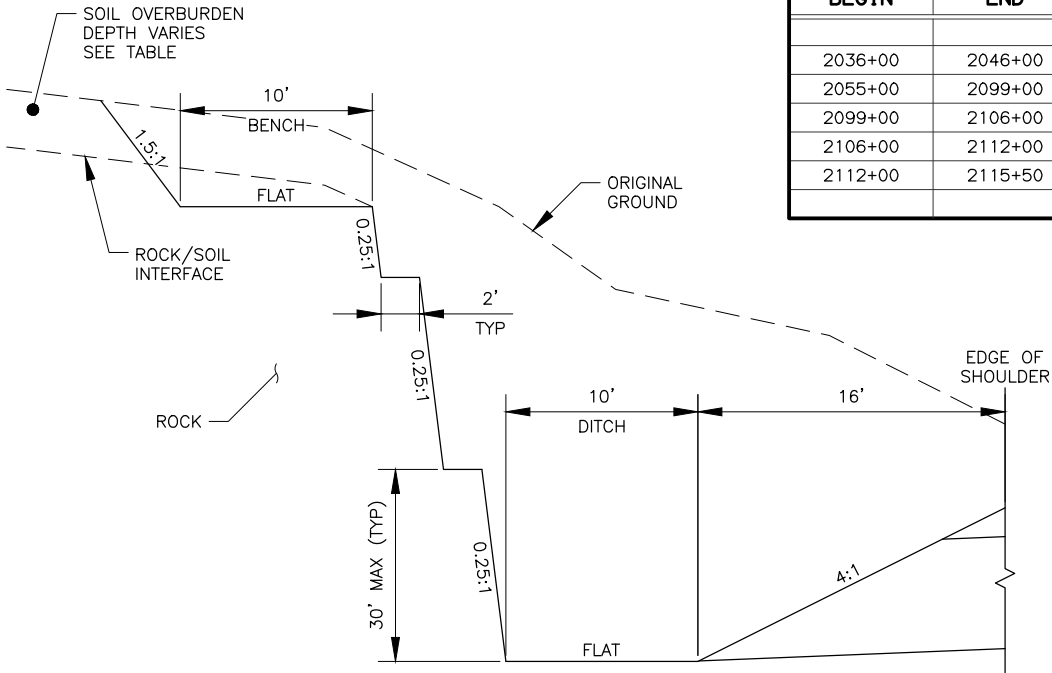


**STERLING HIGHWAY**  
STA 2046+00 TO STA 2098+95

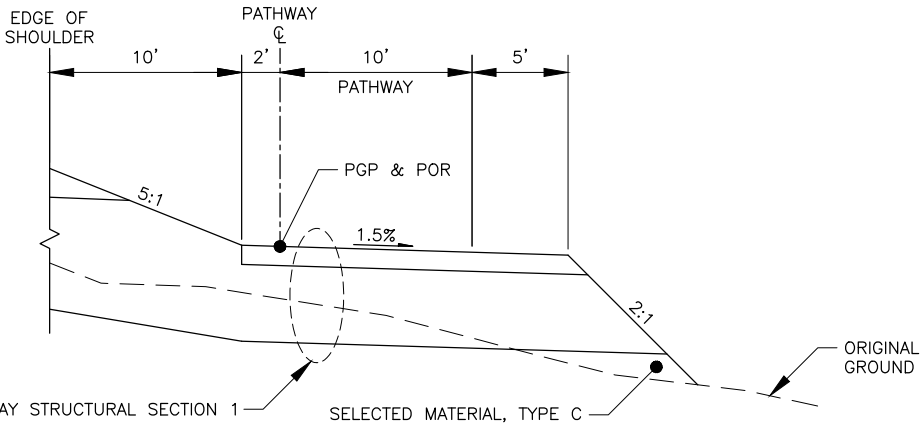


**STERLING HIGHWAY  
LT SHLD CONDITION**  
STA 2046+00 TO STA 2055+00

SOIL OVERBURDEN TABLE		
STATION RANGE		ESTIMATED OVERBURDEN DEPTH (FT)
BEGIN	END	
2036+00	2046+00	6
2055+00	2099+00	5
2099+00	2106+00	8
2106+00	2112+00	2
2112+00	2115+50	8



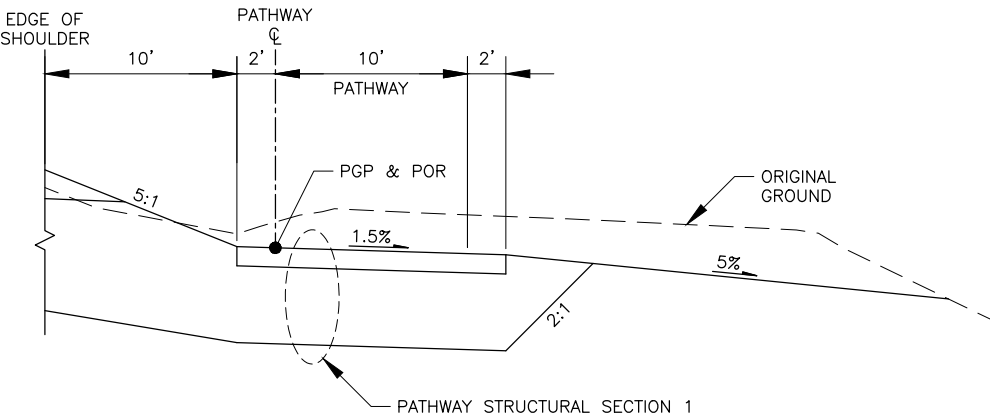
**STERLING HIGHWAY  
LT SHLD CONDITION**  
STA 2055+00 TO STA 2072+00  
STA 2079+00 TO STA 2092+50  
STA 2097+50 TO STA 2115+50



**STERLING HIGHWAY  
RT SHLD CONDITION**  
STA 2046+00 TO STA 2052+50

**PATHWAY**  
STA 4042+96\* TO STA 4049+41

\* NO PATHWAY WORK FROM  
STA 4030+00 TO STA 4042+96



**STERLING HIGHWAY  
RT SHLD CONDITION**  
STA 2052+50 TO STA 2054+75

**PATHWAY**  
STA 4049+41 TO STA 4051+64



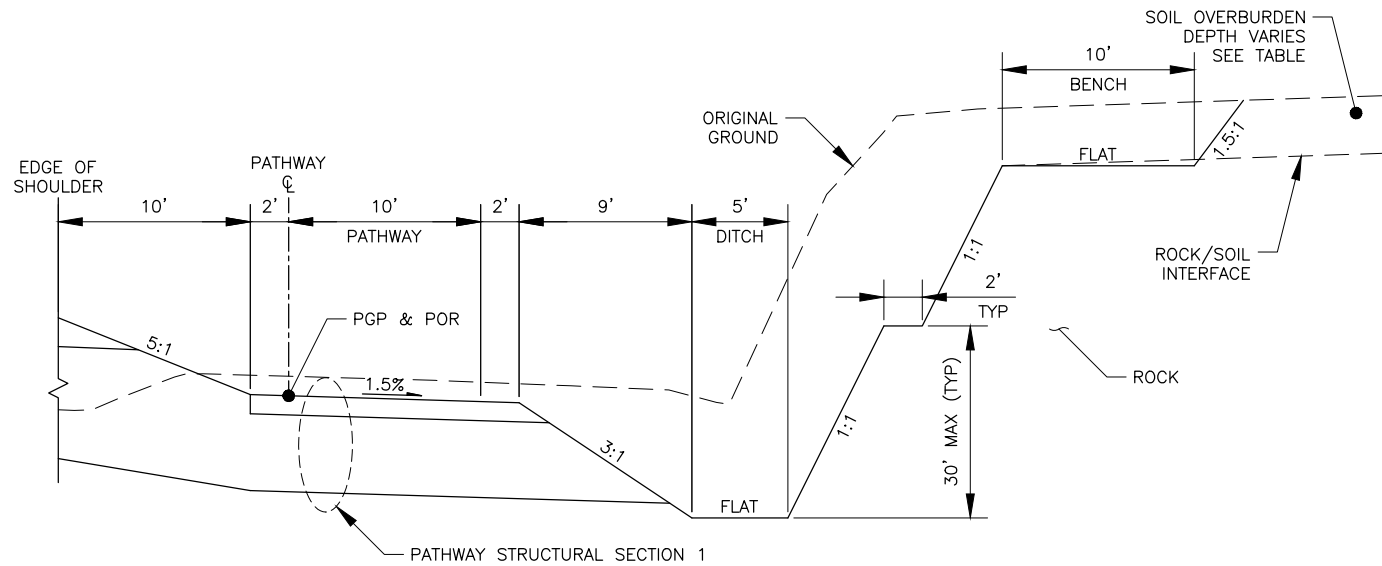
STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

**STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B**

**TYPICAL SECTIONS**

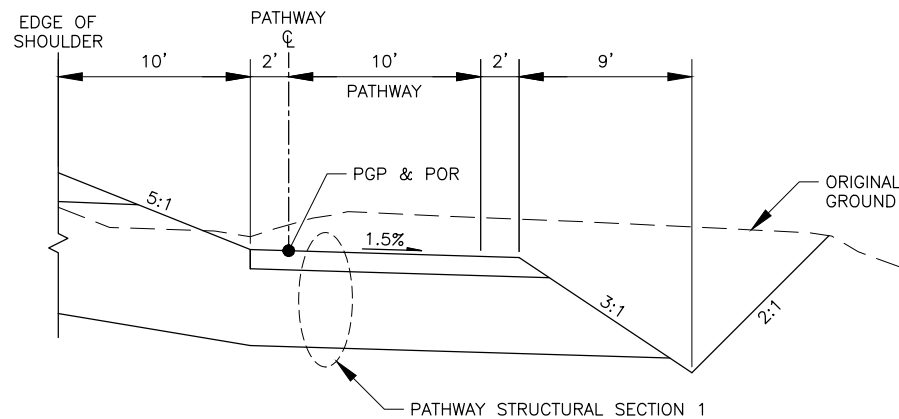


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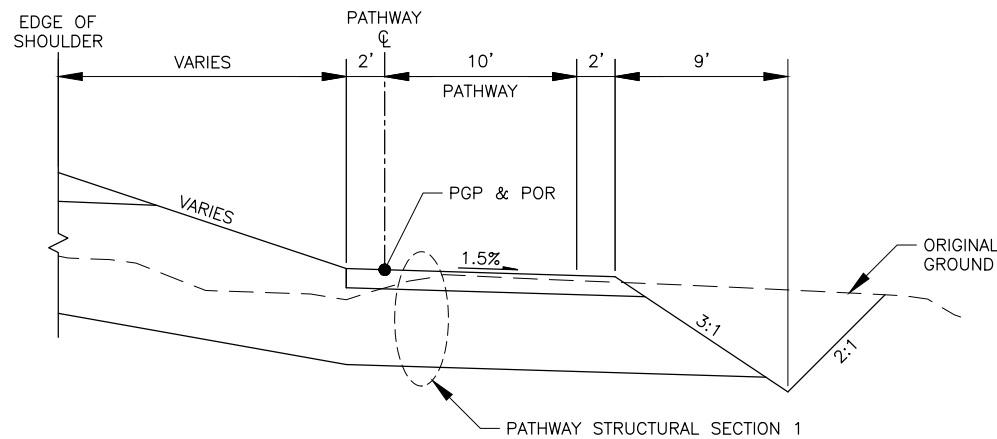
**STERLING HIGHWAY  
RT SHLD CONDITION**  
STA 2054+75 TO STA 2057+00

**PATHWAY**  
STA 4051+64 TO STA 4053+87



**STERLING HIGHWAY  
RT SHLD CONDITION**  
STA 2057+00 TO STA 2060+00

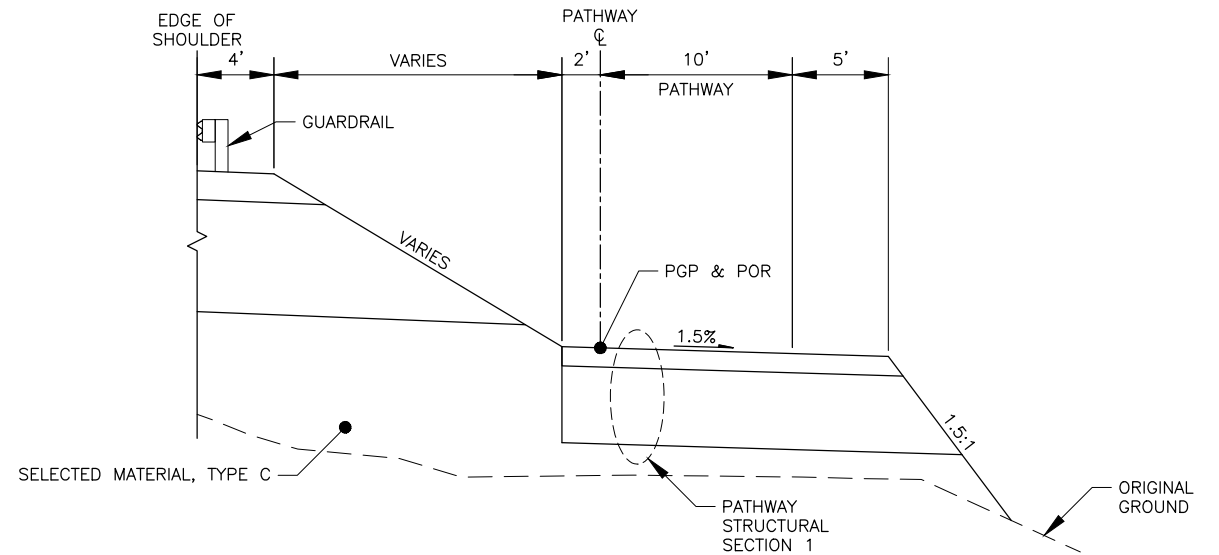
**PATHWAY**  
STA 4053+87 TO STA 4056+84



**STERLING HIGHWAY  
RT SHLD CONDITION**  
STA 2060+00 TO STA 2064+19

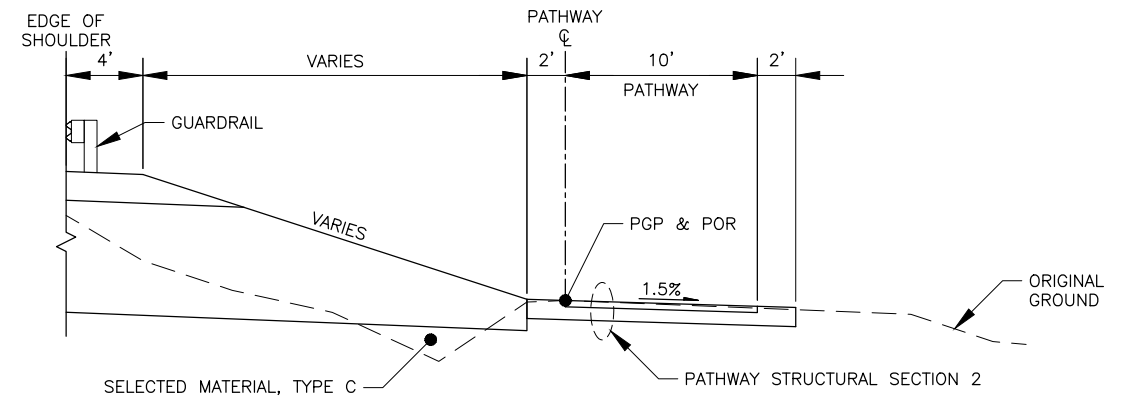
**PATHWAY**  
STA 4056+84 TO STA 4061+00

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	CFHWY00694	2020	B5	B9



**STERLING HIGHWAY  
RT SHLD CONDITION**  
STA 2064+19 TO STA 2073+00

**PATHWAY**  
STA 4061+00 TO STA 4069+81



**STERLING HIGHWAY  
RT SHLD CONDITION**  
STA 2073+00 TO STA 2082+25  
STA 2090+50 TO STA 2091+93  
STA 2104+56 TO STA 2106+25

**PATHWAY**  
STA 4069+81 TO STA 4079+12  
STA 4087+91 TO STA 4089+50  
STA 4102+25 TO STA 4103+97



STATE OF ALASKA  
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**STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B**

**TYPICAL SECTIONS**

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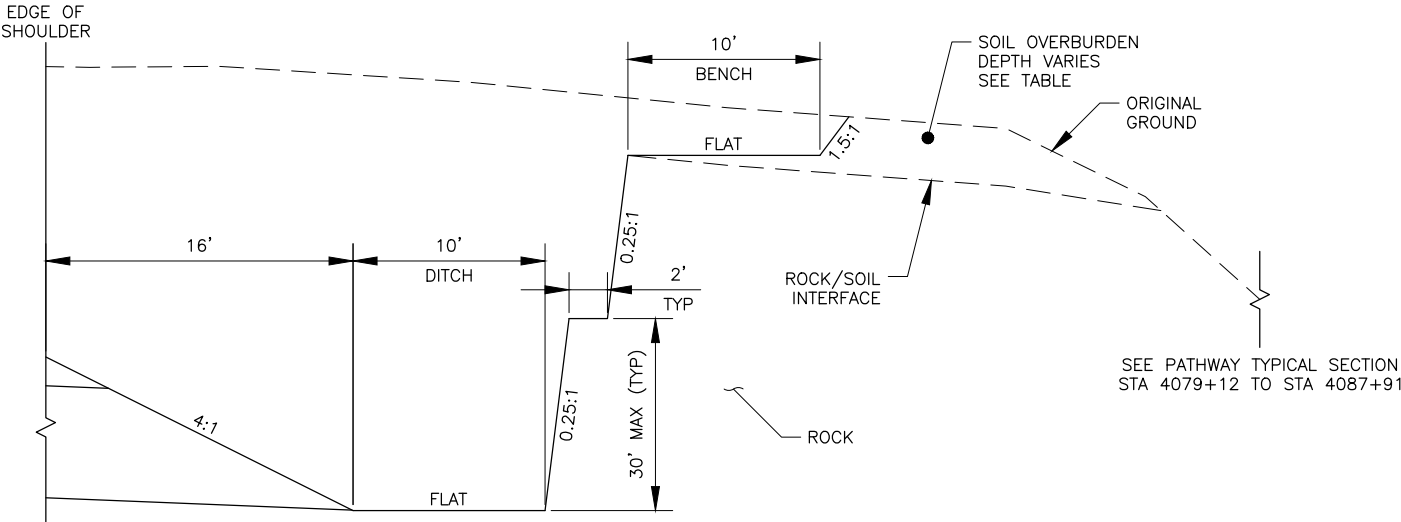
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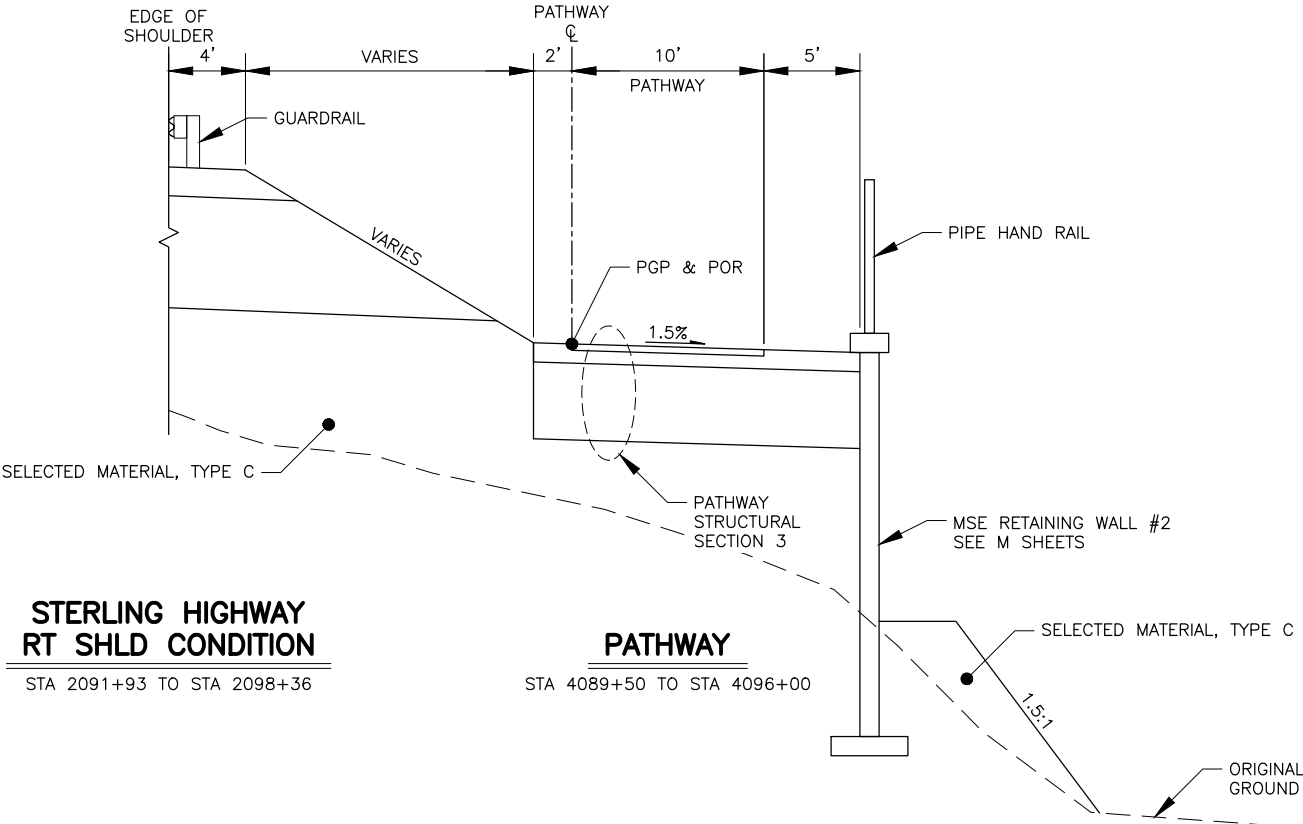
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	CFHWY00694	2020	B6	B9



**STERLING HIGHWAY  
RT SHLD CONDITION**

STA 2082+25 TO STA 2090+50

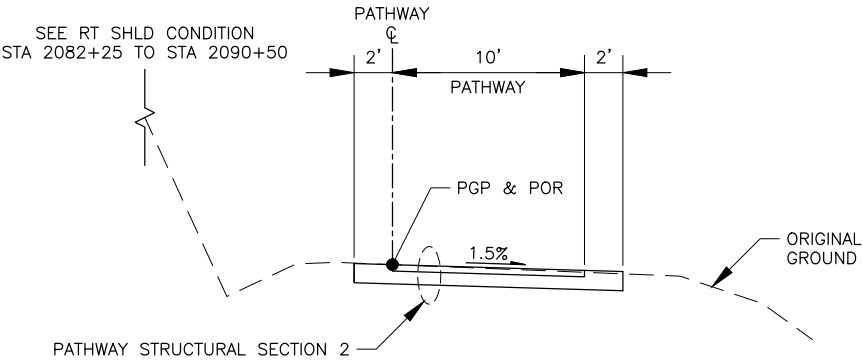


**STERLING HIGHWAY  
RT SHLD CONDITION**

STA 2091+93 TO STA 2098+36

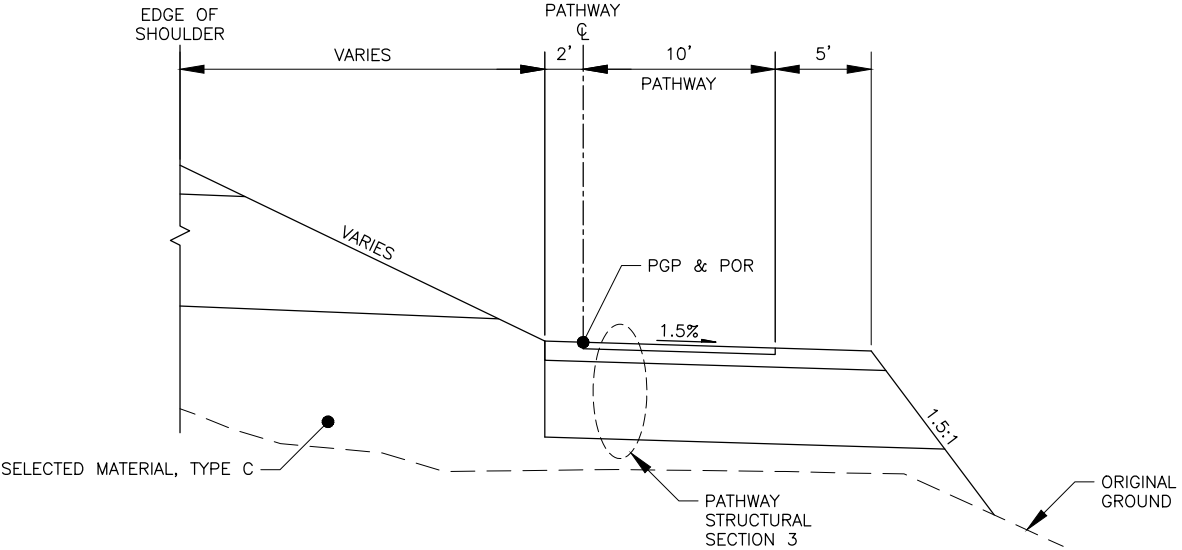
**PATHWAY**

STA 4089+50 TO STA 4096+00



**PATHWAY**

STA 4079+12 TO STA 4087+91



**STERLING HIGHWAY  
RT SHLD CONDITION**

STA 2098+36 TO STA 2104+56

**PATHWAY**

STA 4096+00 TO STA 4102+25



STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES  
**STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B**

TYPICAL SECTIONS

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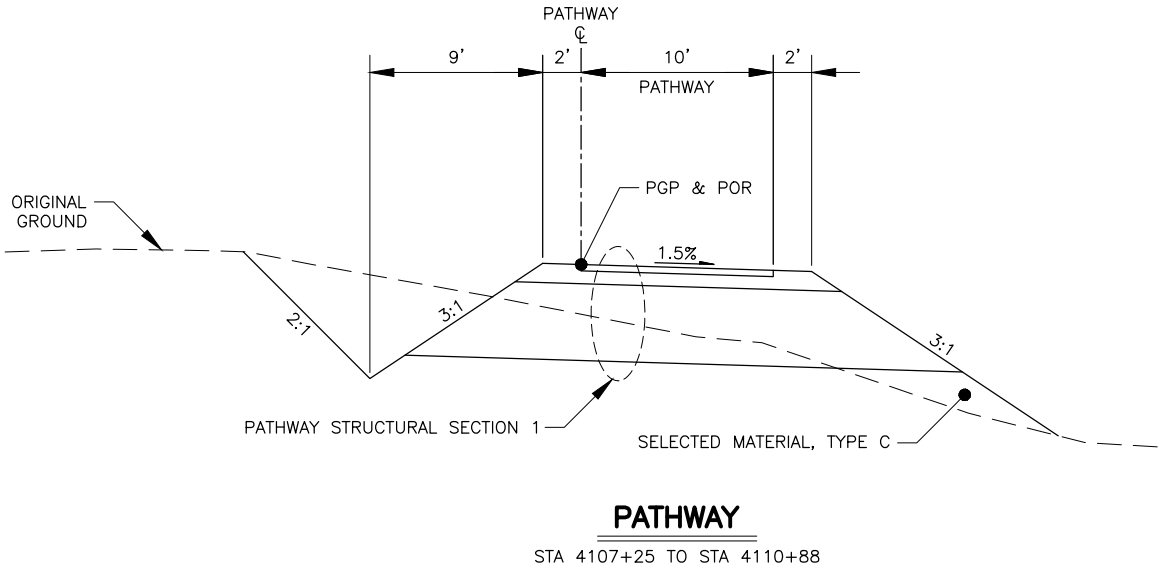
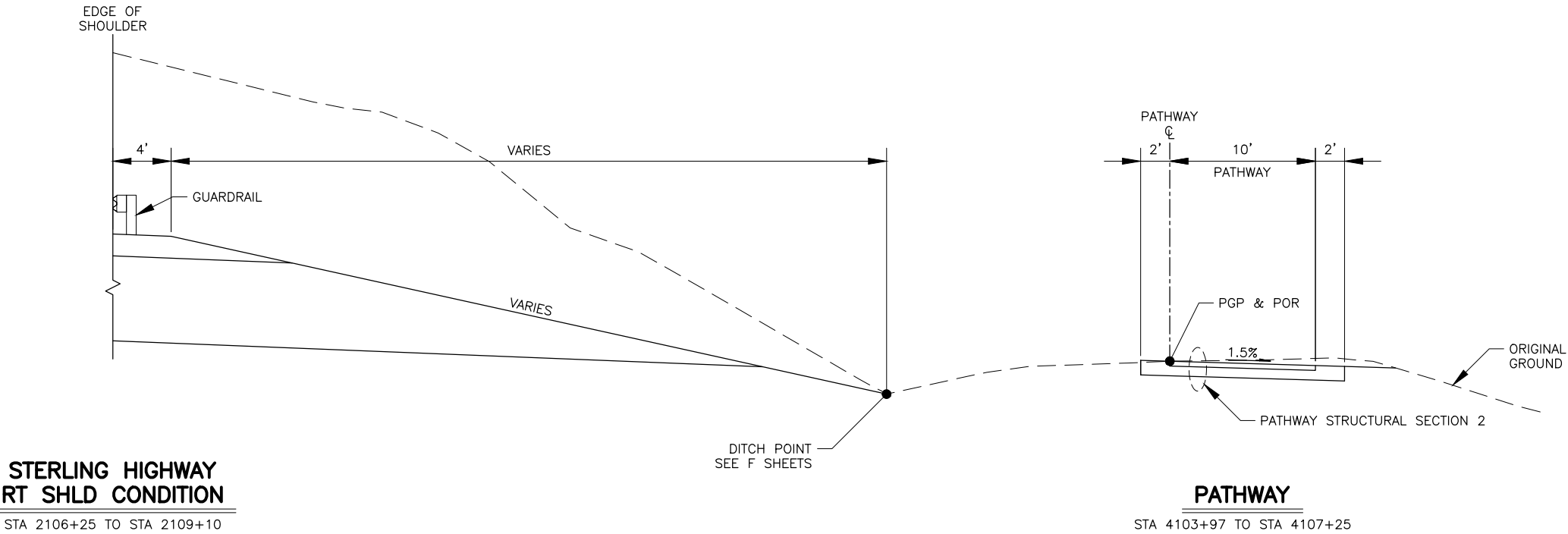
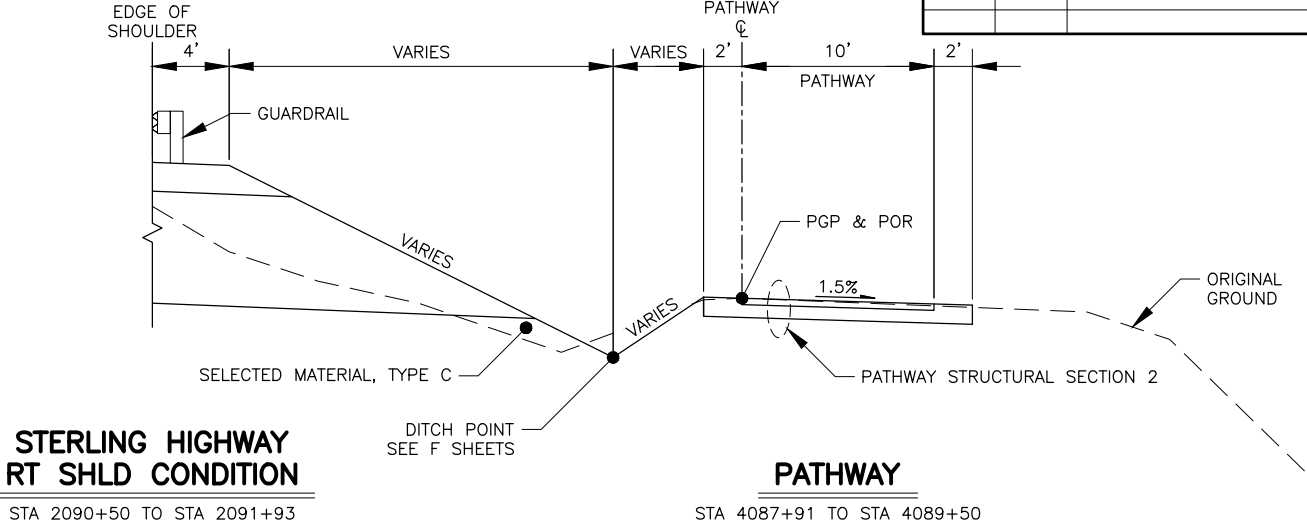
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DATE/TIME 3/6/2020 2:57 PM

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	CFHWY00694	2020	B7	B9



STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
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**STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B**

**TYPICAL SECTIONS**



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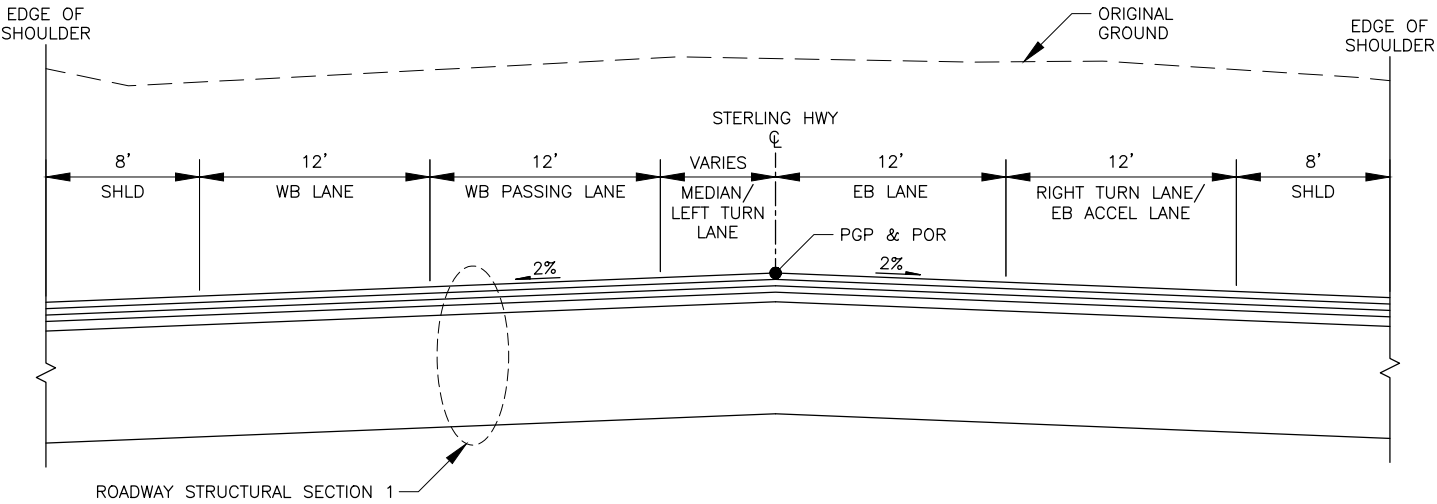
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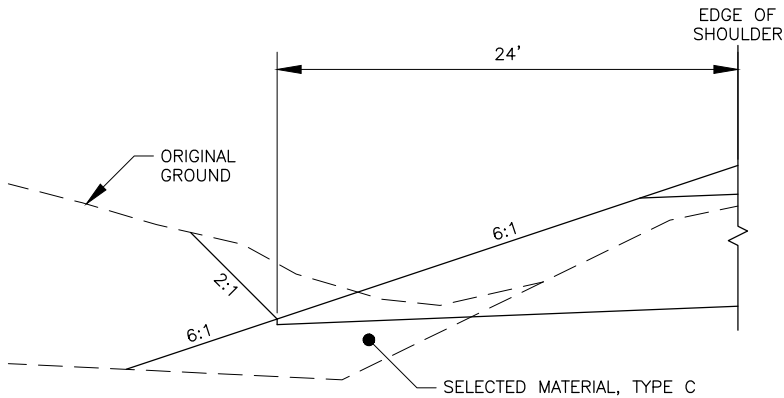
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	CFHWY00694	2020	B8	B9



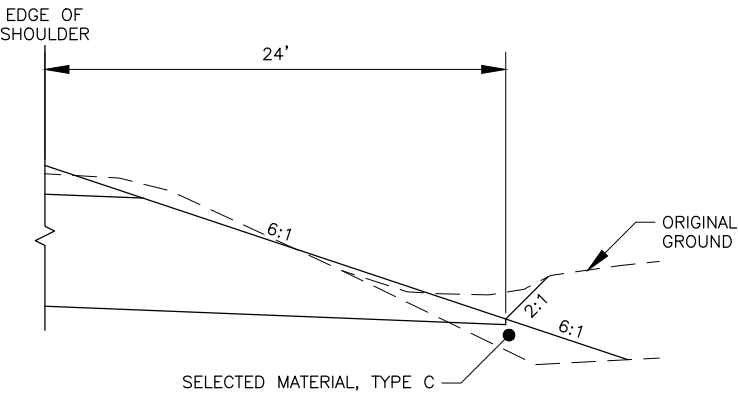
**STERLING HIGHWAY**

STA 2098+95 TO STA 2132+00



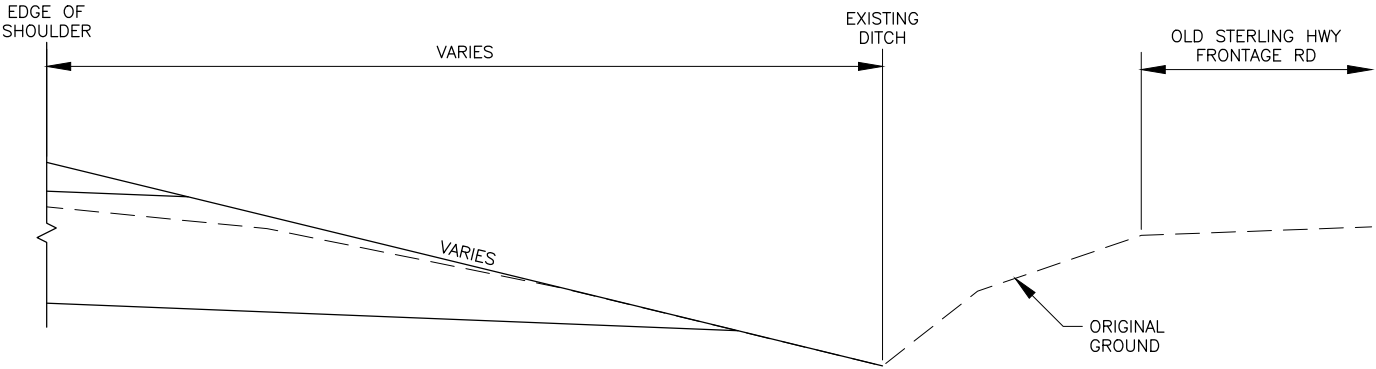
**STERLING HIGHWAY  
LT SHLD CONDITION**

STA 2072+00 TO STA 2079+00  
STA 2092+50 TO STA 2097+50  
STA 2115+50 TO STA 2132+00



**STERLING HIGHWAY  
RT SHLD CONDITION**

STA 2119+00 TO STA 2132+00



**STERLING HIGHWAY  
RT SHLD CONDITION**

STA 2109+10 TO STA 2119+00



STATE OF ALASKA  
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AND PUBLIC FACILITIES  
**STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B**

TYPICAL SECTIONS

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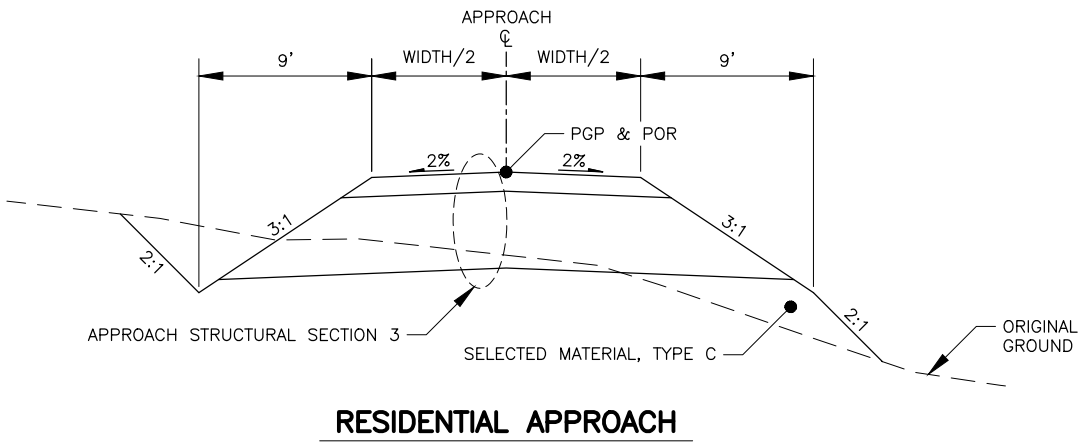
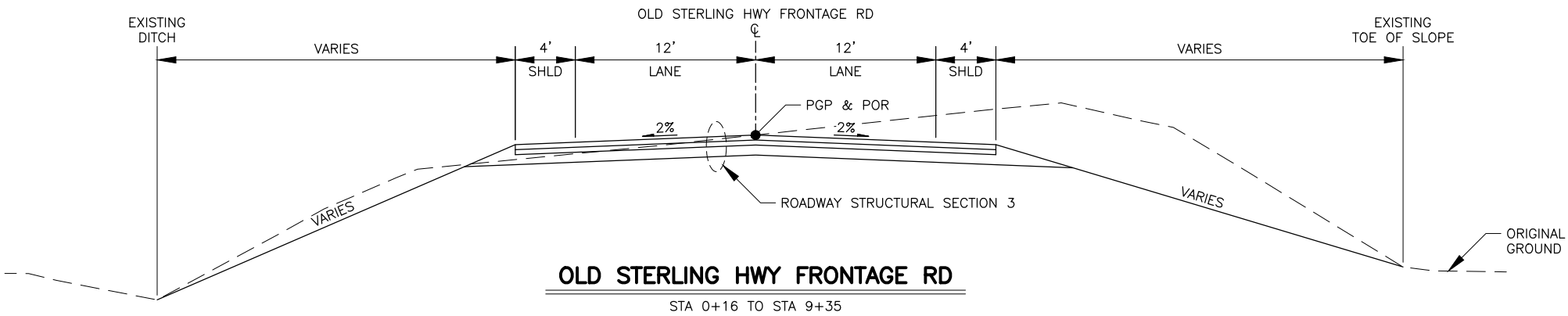
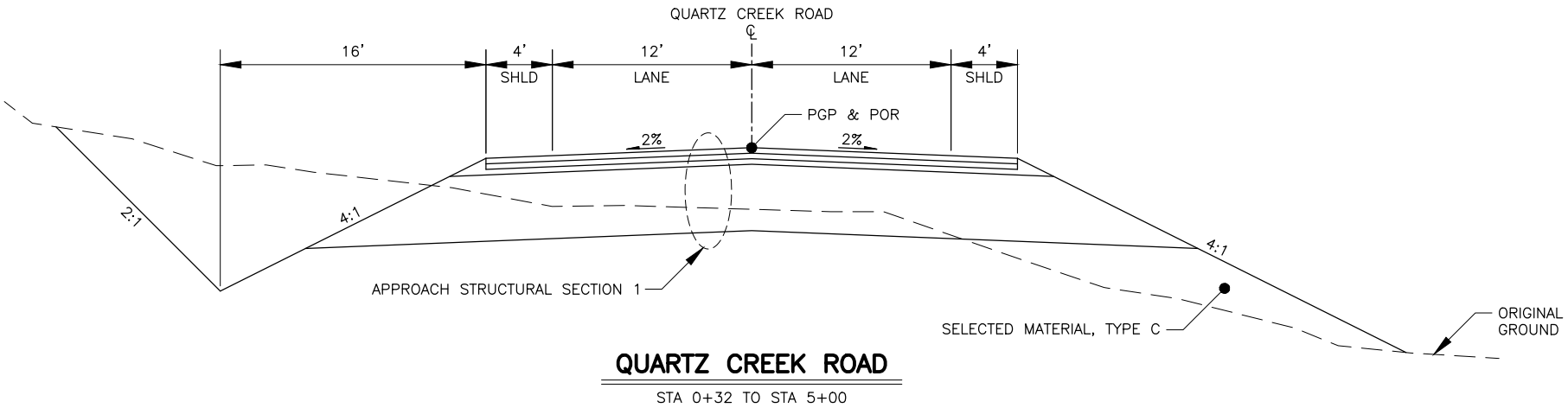
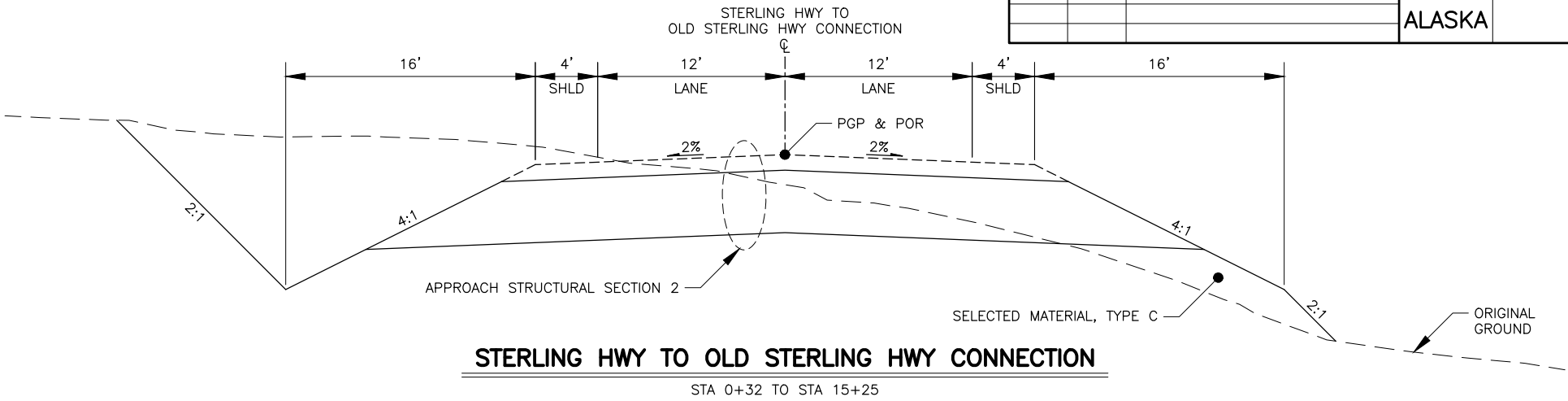
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DATE/TIME 3/6/2020 2:57 PM

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	CFHWY00694	2020	B9	B9



STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

**STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B**

**TYPICAL SECTIONS**

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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	CFHWY00694	2020	C1	C2

ESTIMATE OF QUANTITIES			
ITEM NO	ITEM DESCRIPTION	PAY UNIT	TOTAL QUANTITY
201.0001.0000	CLEARING	ACRE	52
201.0002.0000	GRUBBING	ACRE	46
202.0001.0000	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LUMP SUM	ALL REQUIRED
202.0002.0000	REMOVAL OF PAVEMENT	SQUARE YARD	36,200
202.0004.0000	REMOVAL OF CULVERT PIPE	LINEAR FOOT	1,250
203.0001.0000	COMMON EXCAVATION	CUBIC YARD	455,000
203.0002.0000	ROCK EXCAVATION	CUBIC YARD	885,000
203.0017.0000	ROCKFALL MITIGATION - WIRE MESH	SQUARE YARD	3,900
301.0001.00D1	AGGREGATE BASE COURSE, GRADING D-1	TON	16,300
306.0001.0000	ATB	TON	14,700
306.0002.5240	ASPHALT BINDER, GRADE PG 52-40 V	TON	780
401.0001.002A	HMA, TYPE II; CLASS A	TON	7,750
401.0004.5240	ASPHALT BINDER, GRADE PG 52-40 V	TON	410
401.0008.002A	HMA PRICE ADJUSTMENT, TYPE II; CLASS A	CONTINGENT SUM	ALL REQUIRED
401.0015.0000	ASPHALT MATERIAL PRICE ADJUSTMENT	CONTINGENT SUM	ALL REQUIRED
402.0001.STE1	STE-1 ASPHALT FOR TACK COAT	TON	44
406.0008.0000	RUMBLE STRIPS, SHOULDERS	MILE	4
406.0012.0000	RUMBLE STRIPS, CENTERLINE	MILE	3
501.2007.0001	HEADWALL, TYPE I	EACH	1
511.0001.0000	MECHANICALLY STABILIZED EARTH WALL	SQUARE FOOT	30,200
602.0001.0168	STRUCTURAL PLATE PIPE 168" DIAMETER, 10 GAUGE	LINEAR FOOT	110
603.0001.0072	CSP 72 INCH	LINEAR FOOT	244
603.2032.0024	CORRUGATED HDPE PIPE 24 INCH	LINEAR FOOT	286
603.2032.0036	CORRUGATED HDPE PIPE 36 INCH	LINEAR FOOT	856
603.2032.0048	CORRUGATED HDPE PIPE 48 INCH	LINEAR FOOT	452
603.2033.0024	END SECTION FOR CORRUGATED HDPE PIPE 24 INCH	EACH	12
603.2033.0036	END SECTION FOR CORRUGATED HDPE PIPE 36 INCH	EACH	16
603.2033.0048	END SECTION FOR CORRUGATED HDPE PIPE 48 INCH	EACH	6
606.0001.0000	W-BEAM GUARDRAIL	LINEAR FOOT	2,900
606.0006.0000	REMOVING AND DISPOSING OF GUARDRAIL	LINEAR FOOT	2,050
606.0013.0000	PARALLEL GUARDRAIL TERMINAL	EACH	6
606.2005.0000	ESSENTIAL REPLACEMENT PARTS	LUMP SUM	ALL REQUIRED
606.2006.0000	ESSENTIAL REPLACEMENT PARTS - INSTALLATION	CONTINGENT SUM	ALL REQUIRED
608.2002.0000	ASPHALT PATHWAY	TON	580
610.0002.0000	DITCH LINING	TON	800
611.0002.0001	RIPRAP, CLASS I	TON	900
615.0001.0000	STANDARD SIGN	SQUARE FOOT	394
615.0004.0000	DELINEATOR, RIGID	EACH	24

STATE OF ALASKA

PLANS-IN-HAND

MARCH 2020

0000

REGISTERED PROFESSIONAL ENGINEER

R&M CONSULTANTS, INC.

9101 VANGUARD DRIVE

ANCHORAGE, AK 99507

(907) 522-1707

CERT. OF AUTH. NO. AECC111

STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

ESTIMATE OF QUANTITIES



FILE Z:\PROJECT\2747.02 HDR STERLING HIGHWAY MP 45-60 DESIGN\CIVIL\ACAD\2747.02-C01.DWG

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3/6/2020 2:57 PM

DATE/TIME

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	CFHWY00694	2020	C2	C2

ESTIMATE OF QUANTITIES			
ITEM NO	ITEM DESCRIPTION	PAY UNIT	TOTAL QUANTITY
618.0002.0000	SEEDING	POUND	2,650
620.0001.0000	TOPSOIL	SQUARE YARD	197,000
625.0001.0000	PIPE HAND RAIL	LINEAR FOOT	642
639.2000.0000	APPROACH	EACH	12
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
641.0005.0000	TEMPORARY EROSION, SEDIMENT AND POLLUTION CONTROL BY DIRECTIVE	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
642.0003.0000	THREE PERSON SURVEY PARTY	HOURL	400
642.2005.0000	CONTRACTOR-FURNISHED COMPUTATIONS	LUMP SUM	ALL REQUIRED
642.2006.0000	CONTRACTOR-FURNISHED ENGINEERING TOOLS	CONTINGENT SUM	ALL REQUIRED
642.2008.0000	PASSING SIGHT DISTANCE MEASUREMENT	STATION	180
643.0002.0000	TRAFFIC MAINTENANCE	LUMP SUM	ALL REQUIRED
643.0003.0000	PERMANENT CONSTRUCTION SIGNS	LUMP SUM	ALL REQUIRED
643.0023.0000	TRAFFIC PRICE ADJUSTMENT	CONTINGENT SUM	ALL REQUIRED
643.0025.0000	TRAFFIC CONTROL	CONTINGENT SUM	ALL REQUIRED
643.0032.0000	FLAGGING	CONTINGENT SUM	ALL REQUIRED
644.0001.0000	FIELD OFFICE	LUMP SUM	ALL REQUIRED
644.0002.0000	FIELD LABORATORY	LUMP SUM	ALL REQUIRED
644.0015.0000	NUCLEAR TESTING EQUIPMENT STORAGE SHED	EACH	1
644.0016.0000	STORAGE CONTAINER	EACH	1
644.2004.0000	ENGINEERING COMMUNICATIONS	CONTINGENT SUM	ALL REQUIRED
644.2007.0000	VEHICLE (LT/SUV)	EACH	2
645.0001.0000	TRAINING PROGRAM, _ TRAINEES / APPRENTICES	LABOR HOUR	2,000
646.0001.0000	CPM SCHEDULING	LUMP SUM	ALL REQUIRED
647.2000.0000	WIDE PAD DOZER, 65-HP MINIMUM	CONTINGENT SUM	ALL REQUIRED
670.2006.0000	MMA PAVEMENT MARKINGS, LONGITUDINAL INLAID	LINEAR FOOT	60,000
670.2007.0000	MMA PAVEMENT MARKINGS, SYMBOLS AND ARROW(S) INLAID	EACH	6
670.2008.0000	MMA PAVEMENT MARKINGS, TRANSVERSE AND GORE INLAID	LINEAR FOOT	2,500

TABLE OF ESTIMATING FACTORS		
ITEM NO.	ITEM DESCRIPTION	FACTOR
203.0006.000A	BORROW, TYPE A	144 PCF
301.0001.00D1	AGGREGATE BASE COURSE, GRADING D-1	144 PCF
306.0001.0000	ATB	151 PCF
306.0002.5240	ASPHALT BINDER, GRADE PG 52-40 V	5.3% OF 306.0001.0000
401.0001.002A	HMA, TYPE II; CLASS A	151 PCF
401.0004.5240	ASPHALT BINDER, GRADE PG 52-40 V	5.3% OF 401.0001.002A
402.0001.STE1	STE-1 ASPHALT FOR TACK COAT	0.000334 TON/SY
608.2002.0000	ASPHALT PATHWAY	151 PCF
610.0002.0000	DITCH LINING	110 PCF
611.0002.0001	RIPRAP, CLASS I	108 PCF
618.0003.0000	WATER FOR SEEDING	1 GAL/SF

STATE OF ALASKA

PLANS-IN-HAND

MARCH 2020

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9101 VANGUARD DRIVE

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STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

ESTIMATE OF QUANTITIES

FILE [Z:\PROJECT\2747.02 HDR STERLING HIGHWAY MP 45-60 DESIGN\CIVIL\ACAD\2747.02-D01.DWG] DATE/TIME 3/6/2020 2:58 PM LAYOUT D0 DESIGNED CHECKED DRAFTED

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	CFHWY00694	2020	D0	D3

203.0001.0000, 203.0002.0000, 301.0001.00D1																	
EARTHWORK SUMMARY																	
SHEET	STATION RANGE			EXCAVATION						EMBANKMENT						EXCESS MATERIAL	
				[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
				NEATLINE	GRUBBING	COMMON	ROCK	USABLE AS SELECTED MATERIAL, TYPE C OR A	UNUSABLE	NEATLINE	GRUBBING	TOTAL	SELECTED MATERIAL, TYPE A	AGGREGATE BASE COURSE, GRADING D-1	MSE STRUCTURE BACKFILL	EXCESS USABLE EXCAVATION	UNUSABLE
F1	2010+00	T0	2021+00	109,660	3,090	106,570	0	95,920	3,090	27,540	1,350	28,890	11,310	0	0		
F2	2021+00	T0	2034+00	161,680	4,640	157,040	0	141,340	4,640	80,000	2,940	82,940	23,180	0	9,890		
F3	2034+00	T0	2047+00	112,450	1,660	20,320	90,470	140,430	1,660	180	20	200	8,340	330	0		
F4	2047+00	T0	2060+00	83,900	1,770	41,110	41,020	92,380	1,770	2,660	360	3,020	12,000	920	0		
F5	2060+00	T0	2073+00	77,230	1,680	11,150	64,400	96,990	1,680	23,790	460	24,250	12,390	1,040	0		
F6	2073+00	T0	2086+00	185,250	800	7,350	177,100	245,710	800	34,080	1,150	35,230	11,280	920	0		
F7	2086+00	T0	2099+00	182,460	1,400	8,150	172,910	240,770	1,400	44,770	1,180	45,950	12,610	1,060	4,900		
F8	2099+00	T0	2112+00	290,400	3,720	11,430	275,250	381,880	3,720	23,390	690	24,080	16,770	1,250	0		
F9	2112+00	T0	2125+00	129,620	3,920	62,050	63,650	141,780	3,920	1,040	320	1,360	16,920	1,630	0		
F10	2125+00	T0	2132+00	7,310	0	7,310	0	6,580	0	1,020	260	1,280	7,070	350	0		
F11	3009+00	T0	3021+00	7,280	490	6,790	0	6,120	490	10	20	30	1,220	240	0		
F12	3021+00	T0	3034+00	8,550	330	8,220	0	7,400	330	340	20	360	1,570	310	0		
F13	3034+00	T0	3046+00	7,130	70	7,060	0	6,360	70	4,000	600	4,600	6,620	330	0		
SUBTOTAL				1,362,920	23,570	454,550	884,800	1,603,660	23,570	242,820	9,370	252,190	141,280	8,380	14,790	1,195,400	32,940
LESS USABLE EXCAVATION												252,190	141,280		14,790		
PROJECT TOTALS				1,362,920	23,570	454,550	884,800	1,603,660	23,570			0	0	8,380	0	1,195,400	32,940
				CY	CY	CY	CY	CY	CY			CY	CY	CY	CY	CY	CY
ESTIMATE OF QUANTITIES						455,000	885,000							16,300			
						CY	CY							TON			

NOTES:

- [GENERAL NOTE] VOLUMES ARE ROUNDED UP TO THE NEAREST 10 CY.
- [1] EXCAVATION VOLUME COMPUTED BY AVERAGE END AREA. END AREA IS THE AREA CALCULATED BETWEEN THE SURVEYED ORIGINAL GROUND CROSS SECTIONS AND DESIGN TYPICAL SECTIONS. [1] = [2] + [3] + [4]
- [2] ESTIMATED VOLUME OF MATERIAL THAT IS REMOVED BY GRUBBING TO AN AVERAGE DEPTH OF 0.5 FEET.
- [3] ESTIMATED QUANTITY OF EXCAVATION THAT IS COMMON EXCAVATION AS DEFINED IN ACCORDANCE WITH SPECIFICATION 203-2.01. COMMON EXCAVATION SHRINKAGE FACTOR IS 0.90.
- [4] ESTIMATED QUANTITY OF EXCAVATION THAT IS ROCK EXCAVATION AS DEFINED IN ACCORDANCE WITH SPECIFICATION 203-2.01. ROCK EXCAVATION SWELL FACTOR IS 1.35.
- [5] ESTIMATED QUANTITY OF EXCAVATION THAT IS USABLE AS SELECTED MATERIAL, TYPE C & A. QUANTITY DOES NOT INCLUDE ADJUSTMENTS FOR MATERIAL LOSS. [5] = (0.9\*[3]) + (1.35\*[4])
- [6] ESTIMATED VOLUME OF GRUBBING IN EXCAVATION AREAS THAT ARE UNUSABLE.
- [7] SELECTED MATERIAL, TYPE C EMBANKMENT VOLUME COMPUTED BY AVERAGE END AREA. END AREA IS THE AREA CALCULATED BETWEEN THE SURVEYED ORIGINAL GROUND CROSS SECTIONS AND DESIGN TYPICAL SECTIONS.
- [8] ESTIMATED VOLUME OF MATERIAL THAT IS REMOVED BY GRUBBING TO AN AVERAGE DEPTH OF 0.5 FEET.
- [9] TOTAL SELECTED MATERIAL, TYPE C VOLUME REQUIRED TO CONSTRUCT FINAL ROADWAY EMBANKMENT TO BOTTOM OF SELECTED MATERIAL, TYPE A LAYER ACCORDING TO THE TYPICAL SECTIONS. [9] = [7] + [8]
- [10] SELECTED MATERIAL, TYPE A QUANTITY AS SHOWN IN THE TYPICAL SECTIONS. MATERIAL EXCAVATED FROM STATION 2099+00 TO STATION 2112+00 IS EXPECTED TO MEET THE REQUIREMENTS FOR TYPE A.
- [11] AGGREGATE BASE COURSE GRADING, D-1 QUANTITY AS SHOWN IN THE TYPICAL SECTIONS.
- [12] MSE STRUCTURE BACKFILL QUANTITY AS SHOWN IN THE RETAINING WALL DETAILS.
- [13] ESTIMATED EXCESS USABLE EXCAVATION VOLUME. [13] = [5] - [9] - [10] - [12]
- [14] ESTIMATED TOTAL VOLUME OF MATERIAL THAT IS UNUSABLE. [14] = [6] + [8]

FOR REVIEW ONLY



STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

SUMMARY TABLES

FILE Z:\PROJECT\2747.02 HDR STERLING HIGHWAY MP 45-60 DESIGN\CIVIL\ACAD\2747.02--D01.DWG

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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	CFHWY00694	2020	D1	D3

202.0002.0000					
REMOVAL OF PAVEMENT					
SHEET	STATION RANGE			AREA (SY)	REMARKS
F1	2010+00	T0	2021+00	0	
F2	2021+00	T0	2034+00	0	
F3	2034+00	T0	2047+00	269	
F4	2047+00	T0	2060+00	3,543	
F5	2060+00	T0	2073+00	3,617	
F6	2073+00	T0	2086+00	3,622	
F7	2086+00	T0	2099+00	3,682	
F8	2099+00	T0	2112+00	6,615	
F9	2112+00	T0	2125+00	7,788	
F10	2125+00	T0	2132+00	3,705	
F11	3009+00	T0	3021+00	0	
F12	3021+00	T0	3034+00	0	
F13	3034+00	T0	3046+00	3,274	
TOTAL				36,115	
ROUNDED TOTAL				36,200	

606.0001.0000, 606.0013.0000							
GUARDRAIL SUMMARY							
SHEET	STATION RANGE			OFFSET	GUARDRAIL LENGTH (LF)	PARALLEL GUARDRAIL TERMINAL (50' LENGTH)	REMARKS
F5-F6	2062+75.00	T0	2082+50.00	RT	1,875.00	2	
F7	2090+00.00	T0	2098+25.00	RT	725.00	2	
F8	2104+25.00	T0	2108+25.00	RT	300.00	2	
TOTAL					2,900.00	6	
ROUNDED TOTAL					2,900	6	

606.0006.0000					
REMOVING AND DISPOSING OF GUARDRAIL					
SHEET	STATION RANGE			OFFSET	LENGTH (LF)
F4	2048+50	T0	2055+06	RT	650
F7-F8	2088+20	T0	2101+54	RT	1,399
TOTAL					2,049
ROUNDED TOTAL					2,050

202.0001.0000			
REMOVAL OF STRUCTURES AND OBSTRUCTIONS			
SHEET	STATION	OFFSET	DESCRIPTION
F12	3024+50	LT	SAFETY TRAIL BRIDGE
F24	2011+14	RT	DONAHUE PROPERTY STRUCTURES
F25	2042+80	LT	POLE BARN
F25	2042+85	LT	SHED

\* CENTERLINE MONUMENTS WILL BE REPLACED BY OTHERS (NOT IN CONTRACT)

202.0004.0000				
REMOVAL OF CULVERT PIPE				
SHEET	STATION	OFFSET	LENGTH (LF)	REMARKS
F3	2037+69.1	50.8 RT	50	24" CMP
F3	2040+48.7	-	49	18" CMP
F3	2043+71.2	-	61	24" CMP
F3	2045+36.0	-	49	24" CMP
F3	2045+89.6	75.4 LT	62	12" CMP
F4	2048+77.0	-	41	18" CMP
F4	2051+29.1	-	47	24" CMP
F4	2054+20.4	33.0 RT	40	36" CMP
F5	2065+41.1	51.2 RT	44	36" CMP
F5	2067+53.4	50.2 RT	44	36" CMP
F6	2079+77.4	67.8 RT	59	36" CMP
F6	2084+47.8	204.8 RT	59	24" CMP
F7	2092+82.6	-	87	24" CMP
F7	2096+65.1	43.4 RT	55	36" CMP
F8	2102+13.8	121.6 RT	44	24" CMP
F8	2104+64.1	93.1 RT	61	24" CMP
F8	2107+46.6	156.6 RT	75	24" CMP
F8	2110+88.4	319.1 RT	89	24" CMP
F11	3015+10.4	-	44	24" CMP
F11	3017+86.9	-	44	36" CMP
F12	3024+71.5	-	53	60" CMP
F12	3030+80.8	-	54	36" CMP
TOTAL			1,211	
ROUNDED TOTAL			1,250	



STATE OF ALASKA  
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STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

SUMMARY TABLES

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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	CFHWY00694	2020	D2	D3

501.2007.0001, 602.0001.0168, 603.0001.0072, 603.2032.0024, 603.2032.0036, 603.2032.0048, 603.2033.0024, 603.2033.0036, 603.2033.0048

PIPE SUMMARY															
SHEET	PIPE	PAY LENGTH (FT)					STATION RANGE						SLOPE (%)	END SECTIONS	REMARKS
		HDPE			CSP	SPP	STATION	OFFSET	INVERT	STATION	OFFSET	INVERT			
		24 IN	36 IN	48 IN	72 IN	168 IN									
F2	P2-1				174		2022+61.7	70.7 LT	553.94	2023+49.9	78.8 RT	541.65	7.1		LANGILLE CREEK
F2	P2-2		190				2028+49.2	74.4 LT	539.42	2027+51.5	88.2 RT	528.77	5.6	2	
F3	P3-1	34					2036+17.0	65.3 LT	536.32	2035+83.1	67.9 LT	536.04	0.8	2	
F3	P3-2			140			2045+38.5	45.0 LT	559.97	2045+31.7	92.1 RT	532.48	20.0	2	
F5	P5-1			140			2065+15.1	44.8 LT	594.51	2065+47.2	89.1 RT	568.77	18.7	2	
F5	P5-2	68					2072+69.1	56.0 LT	576.29	2073+37.1	56.0 LT	574.25	3.0	2	
F6	P6-1					110	2074+00.0	63.1 LT	557.78	2074+00.0	46.8 RT	552.29	5.0		PATHWAY UNDERCROSSING
F6	P6-2		144				2079+75.0	45.2 LT	553.61	2079+75.0	95.9 RT	525.21	20.1	2	
F6	P6-3	58					2084+60.7	178.5 RT	526.07	2084+35.3	230.6 RT	522.94	5.4	2	
F7	P7-1		90				2090+50.0	44.0 LT	511.25	2090+50.0	46.0 RT	508.84	2.7	2	
F7	P7-2		40				2091+00.8	75.5 RT	501.02	2091+19.5	110.9 RT	500.32	1.8	2	
F7	P7-3	34					2092+33.0	53.5 LT	504.72	2092+67.0	55.5 LT	503.63	3.2	2	
F7	P7-4			172			2096+82.4	74.8 LT	488.74	2096+59.9	92.2 RT	454.30	20.4	2	
F8	P8-1		72				2107+57.9	124.5 RT	455.54	2107+34.3	191.6 RT	452.16	4.7	2	
F8	P8-2		168				2109+45.3	59.2 LT	466.18	2109+48.0	108.7 RT	464.71	0.9	2	
F8	P8-3	30					2110+49.5	300.5 RT	459.73	2110+50.1	330.5 RT	458.83	3.0	2	
F8	P8-4		90				2111+25.6	221.9 RT	460.22	2110+48.1	199.4 RT	459.35	1.0	2	
F11	P11-1	62					3015+07.9	37.2 LT	489.62	3015+11.7	24.6 RT	485.15	7.2	2	
F11	P11-2		62				3017+87.1	36.8 LT	487.80	3017+86.8	25.1 RT	485.24	4.1	2	
F12	P12-1				70		3024+71.8	39.4 LT	491.75	3024+71.8	30.2 RT	484.04	11.1		LANGILLE CREEK, HEADWALL, TYPE I AT INLET
TOTAL LENGTH		286	856	452	244	110									
TOTAL END SECTIONS		12	16	6	0	0									



STATE OF ALASKA  
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STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

SUMMARY TABLES

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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	CFHWY00694	2020	D3	D3

639.2000.0000

APPROACH SUMMARY															
MAINLINE SHEET	APPROACH SHEET	REFERENCE ALIGNMENT	STATION	OFFSET	WIDTH	LENGTH	RETURN RADIUS INFORMATION						SKEW	APPROACH TYPE	REMARKS
							APPROACH CL LEFT RETURN			APPROACH CL RIGHT RETURN					
							RADIUS	NORTHING	EASTING	RADIUS	NORTHING	EASTING			
F2	F23 & F24	STERLING HIGHWAY	2023+00	RT	32	1,525	40	182879.2739	215030.1180	40	182894.4203	214903.0172	0°0'0"	PUBLIC	STERLING HWY TO OLD STERLING HWY CONNECTION
F3	F25	STERLING HIGHWAY	2036+00	LT	14	780	20	182907.9707	216340.2440	20	182902.9400	216394.0156	0°0'0"	PRIVATE	
F5	F26	STERLING HIGHWAY	2062+50	RT	14	140	20	182169.5376	218902.5894	20	182198.5978	218857.0757	0°0'0"	PRIVATE	CHUGACH NATIONAL FOREST BROADVIEW GUARD STATION
F6	F26	STERLING HIGHWAY	2073+00	LT	14	100	20	181686.5341	219778.8311	20	181654.8194	219825.5249	0°0'0"	PRIVATE	COYOTE NOTCH TRAIL/UTILITY ACCESS
F7	F27	STERLING HIGHWAY	2092+50	LT	14	460	20	180591.6785	221390.7936	20	180561.3380	221435.4642	0°0'0"	PRIVATE	RUSSIAN GAP TRAIL/UTILITY ACCESS
F8	F28	STERLING HIGHWAY	2110+90	RT	32	500	40	179476.9861	222971.7728	40	179510.9217	222865.0377	0°0'0"	PUBLIC	QUARTZ CREEK ROAD
F8	F29	QUARTZ CREEK ROAD	2+63	LT	32	935	40	179347.4887	222930.6002	40	179240.7536	222896.6647	0°0'0"	PUBLIC	OLD STERLING HIGHWAY FRONTAGE ROAD
F8	-	QUARTZ CREEK ROAD	3+72	LT	42	65	40	179248.5786	222899.1525	40	179129.9237	222869.7998	0°0'0"	PUBLIC	SUNRISE INN & GAS
F9	-	OLD STERLING HIGHWAY FRONTAGE ROAD	4+50	RT	51	56	40	179198.6773	223364.0259	40	179184.5652	223231.9806	0°0'0"	PUBLIC	SUNRISE INN & GAS
F9	F30	OLD STERLING HIGHWAY FRONTAGE ROAD	8+72	RT	26	213	40	179364.7809	223766.9112	40	179316.5910	223672.4986	0°0'0"	PUBLIC	
F9	-	APPROACH CLBC	1+60	RT	26	53	40	179176.7535	223743.8742	40	179271.1661	223695.6843	0°0'0"	PUBLIC	COOPER LANDING BREWING CO.
F9	F30	APPROACH CLBC	1+60	LT	14	150	20	179287.1058	223784.1033	20	179239.0088	223808.6529	0°0'0"	PRIVATE	
TOTAL														12	



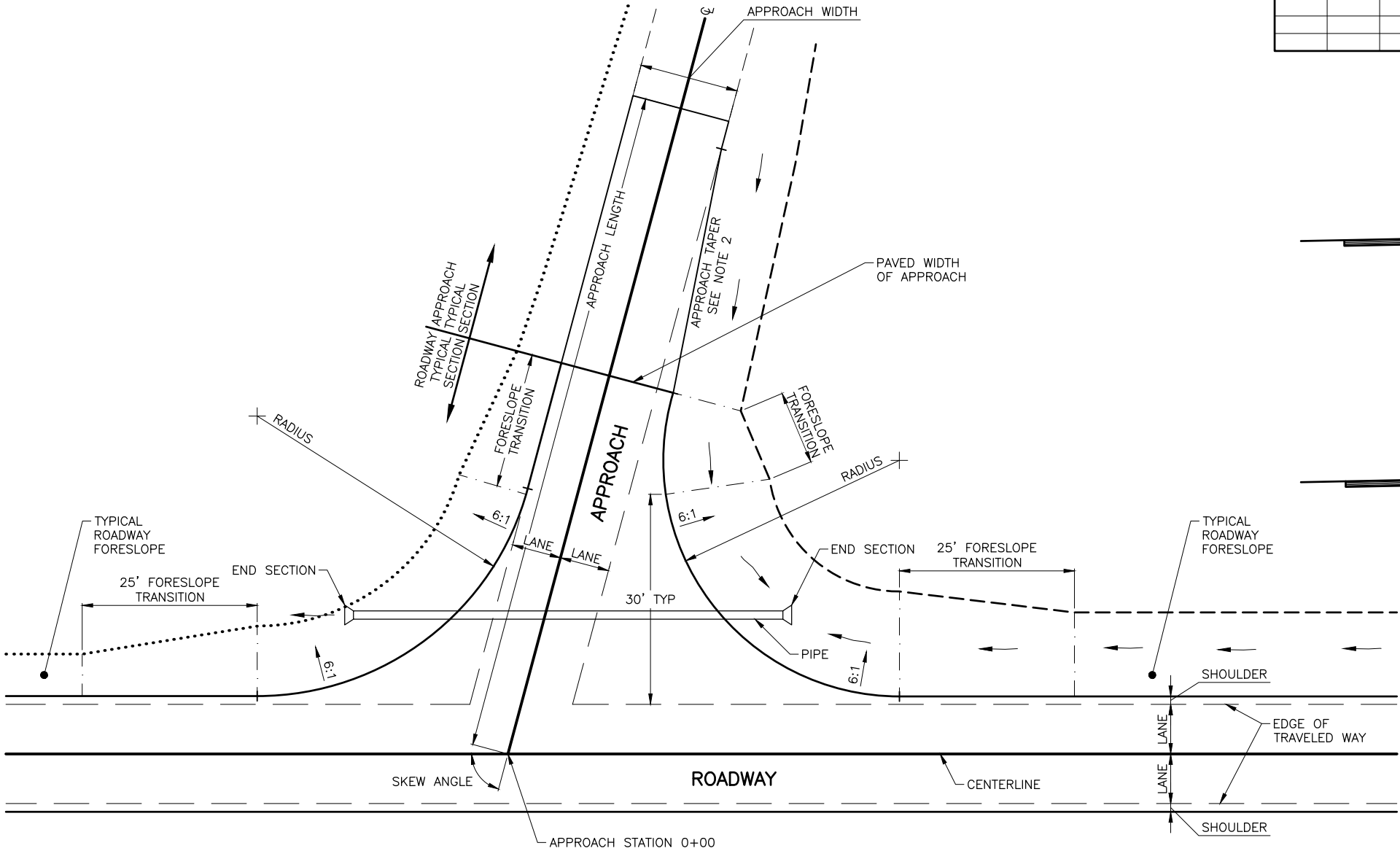
STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

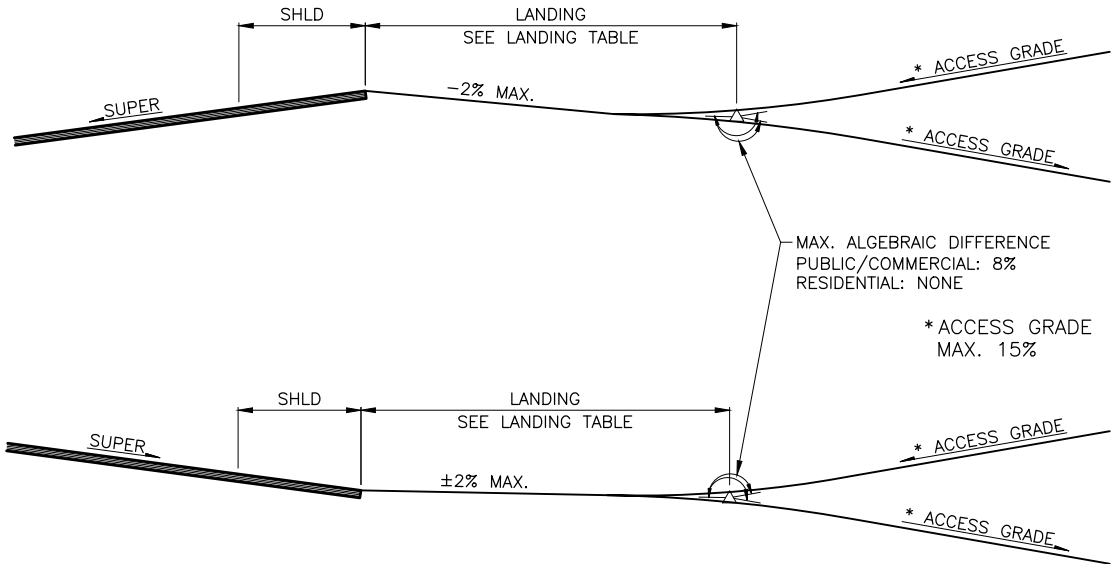
SUMMARY TABLES

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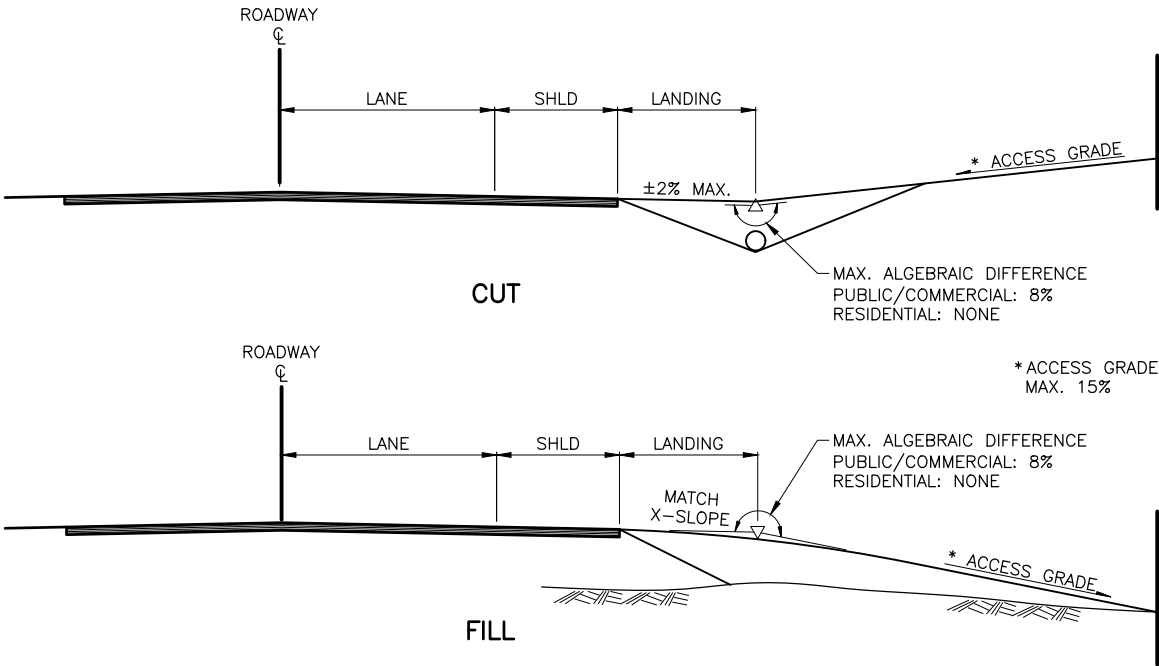
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	CFHWY00694	2020	E1	E14



APPROACH PLAN



APPROACH PROFILES ON SUPER ELEVATED ROADWAY



APPROACH PROFILES

LANDING TABLE	
TYPE	LENGTH
RESIDENTIAL	10'
PUBLIC/COMMERCIAL	30'

NOTES:

- SEE APPROACH SUMMARY FOR APPROACH STATION, LENGTH, WIDTH, SKEW ANGLE, RETURN RADIUS, AND TYPE.
- APPROACH TAPERS SHALL BE 10:1.
- THE RADIUS RETURN PORTION OF THE APPROACH SHALL BE CONSTRUCTED OF THE SAME MATERIAL AS THE ROADWAY STRUCTURAL SECTION. SEE B SHEETS FOR APPROACH AND ROADWAY TYPICAL SECTIONS.
- PAVE TO THE END OF THE RADIUS RETURN UNLESS OTHERWISE INDICATED.
- APPROACH VERTICAL CURVE REQUIREMENTS:  
CREST - 2 1/2" MAXIMUM IN A 10-FOOT CHORD  
SAG - 2" MAXIMUM IN A 10-FOOT CHORD
- CONSTRUCT APPROACH FORESLOPES IN RETURN AT 6:1 BETWEEN ROADWAY SHOULDER TO 30' FROM EDGE OF TRAVELED WAY. TRANSITION SHALL BE 25' BETWEEN TYPICAL ROADWAY FORESLOPE AND APPROACH RETURN FORESLOPE.



STATE OF ALASKA  
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**STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B**

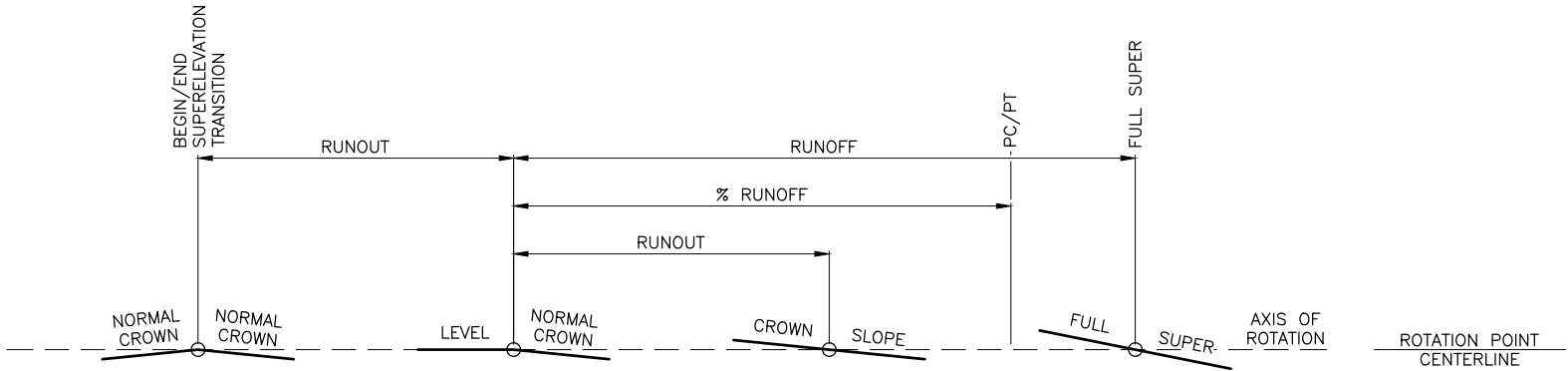
APPROACH DETAILS

R&M CONSULTANTS, INC.  
9101 VANGUARD DRIVE  
ANCHORAGE, AK 99507  
(907) 522-1707  
CERT. OF AUTH. NO. AECC111



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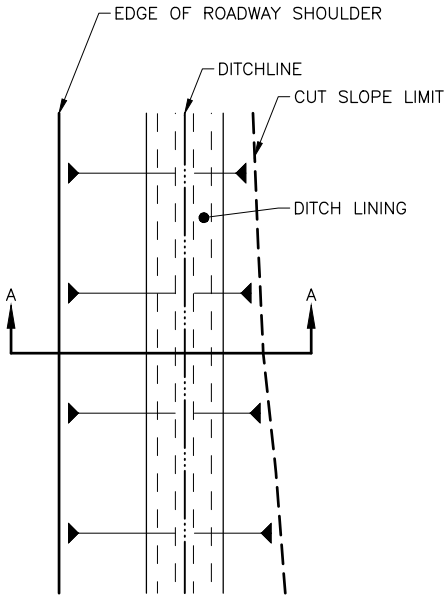
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			ALASKA	CFHWY00694	2020	E2	E14



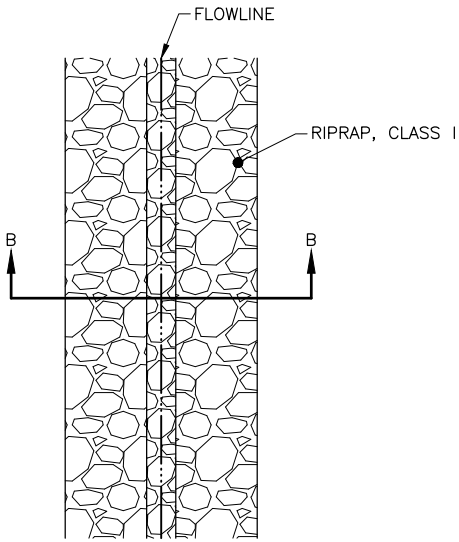
**SUPERELEVATION TRANSITION**

**SUPERELEVATION NOTES:**

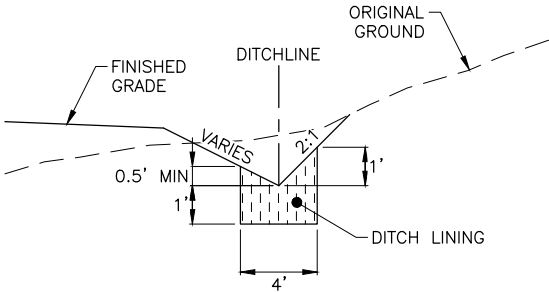
- 1. BUILD SUPERELEVATION INTO SUBGRADE AND CARRY THROUGH SHOULDERS.
- 2. % RUNOFF = PORTION OF RUNOFF ON TANGENT.
- 3. WIDENING FOR GUARDRAIL OR CURVATURE DOES NOT CHANGE THE LOCATION OF THE AXIS OF ROTATION.



PLAN

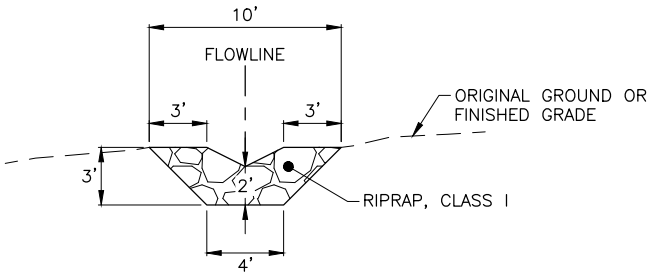


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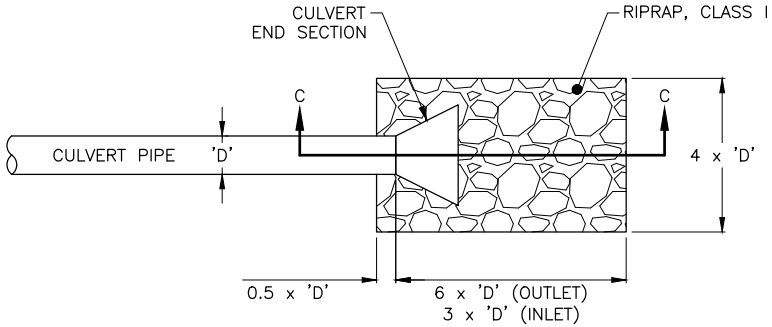
SECTION A-A

**DITCH LINING**

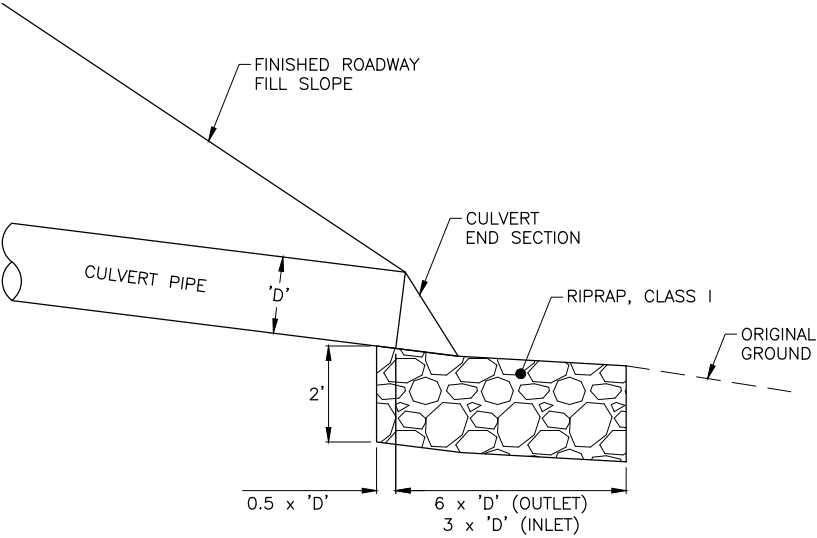


SECTION B-B

**ROCK FLUME**



PLAN



SECTION C-C

**ENERGY DISSIPATER**

STATE OF ALASKA

PLANS-IN-HAND

MARCH 2020

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9101 VANGUARD DRIVE

ANCHORAGE, AK 99507

(907) 522-1707

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STATE OF ALASKA  
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STERLING HIGHWAY MP 45-60  
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SUPERELEVATION AND  
EROSION PROTECTION DETAILS

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STATE OF ALASKA



PLANS-IN-HAND

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STERLING HIGHWAY MP 45-60  
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SHOULDER RUMBLE STRIP  
INSTALLATION DETAILS

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			ALASKA	CFHWY00694	2020	E4	E14

STATE OF ALASKA



PLANS-IN-HAND

MARCH 2020

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STERLING HIGHWAY MP 45-60  
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SHOULDER RUMBLE STRIP  
APPROACH LAYOUT DETAILS

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			ALASKA	CFHWY00694	2020	E5	E14



PLANS-IN-HAND  
MARCH 2020

R&M CONSULTANTS, INC.  
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CENTERLINE RUMBLE STRIP  
INSTALLATION DETAILS

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			ALASKA	CFHWY00694	2020	E6	E14

STATE OF ALASKA

PLANS-IN-HAND

MARCH 2020

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CENTERLINE RUMBLE STRIP  
APPROACH LAYOUT DETAILS



FILE | Z:\PROJECT\2747.02 HDR STERLING HIGHWAY MP 45-60 DESIGN\CIVIL\ACAD\2747.02-E-GENERAL DETAILS.DWG

DRAFTED

CHECKED

DESIGNED

E7

LAYOUT

3/6/2020 2:59 PM

DATE/TIME

TO BE PROVIDED BY DOT TRAFFIC SAFETY SECTION

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	CFHWY00694	2020	E7	E14

STATE OF ALASKA

PLANS-IN-HAND

MARCH 2020

0000

REGISTERED PROFESSIONAL ENGINEER

R&M CONSULTANTS, INC.

9101 VANGUARD DRIVE

ANCHORAGE, AK 99507

(907) 522-1707

CERT. OF AUTH. NO. AECC111

STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

GUIDE MARKER  
DELINEATOR DETAILS

FILE | Z:\PROJECT\2747.02 HDR STERLING HIGHWAY MP 45-60 DESIGN\CIVIL\ACAD\2747.02-E-GENERAL DETAILS.DWG

E8

LAYOUT

3:06 PM

3/6/2020

DATE/TIME

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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	CFHWY00694	2020	E8	E14

TO BE PROVIDED BY DOT TRAFFIC SAFETY SECTION



R&M CONSULTANTS, INC.  
9101 VANGUARD DRIVE  
ANCHORAGE, AK 99507  
(907) 522-1707  
CERT. OF AUTH. NO. AECC111

STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

UN-SIGNALIZED INTERSECTION:  
NONCURBED STOP AND CROSSING  
TRAFFIC SAFETY DETAILS

FILE | Z:\PROJECT\2747.02 HDR STERLING HIGHWAY MP 45-60 DESIGN\CIVIL\ACAD\2747.02-E-GENERAL DETAILS.DWG

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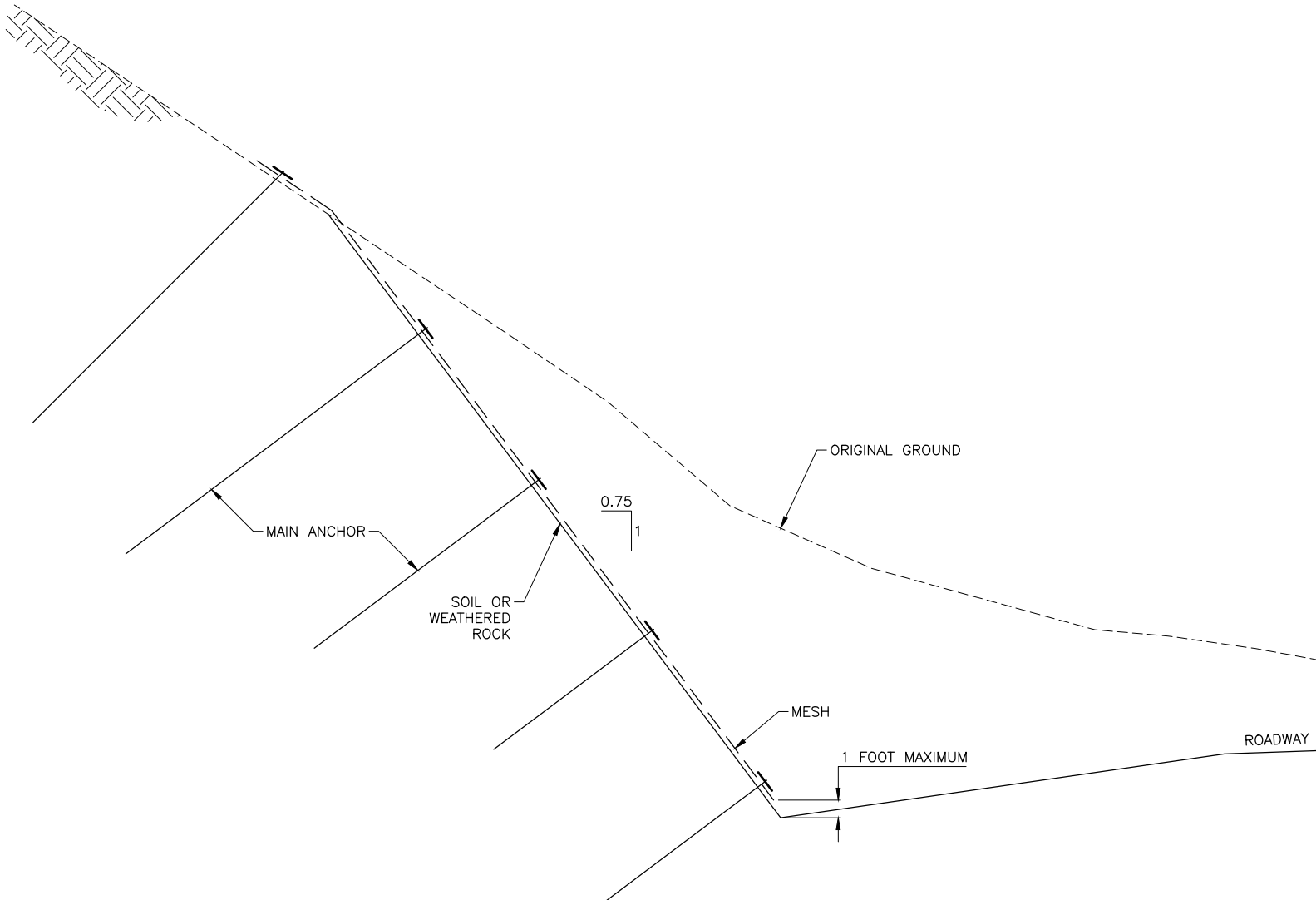
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DESIGNED

E9

LAYOUT

DATE/TIME 3/6/2020 2:59 PM



TYPICAL SECTION

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	CFHWY00694	2020	E9	E14

NOTES:

GENERAL:

- ANCHORS AND MESH SHALL BE INSTALLED FROM THE TOP DOWN AS EXCAVATION PROCEEDS. THE EXCAVATION SHALL PROCEED IN STAGES. THE MESH SHALL BE INSTALLED ON THE EXPOSED PORTION OF THE SLOPE PRIOR TO EXCAVATING THE NEXT LEVEL.
- MESH SHALL BE INSTALLED IN ACCORDANCE WITH THE SLOPE STABILIZATION SYSTEM PRODUCT MANUAL.
- EROSION CONTROL FABRIC MAY BE INSTALLED ON THE SLOPE UNDER THE MESH AT THE DIRECTION OF THE ENGINEER.

WIRE MESH:

- SUPPLY HIGH-TENSILE STRENGTH STEEL WIRE MESH USING WIRE WITH A MINIMUM DIAMETER OF 0.079 INCHES AND A MINIMUM TENSILE STRENGTH EXCEEDING 250,000 POUNDS PER SQUARE INCH WITH A ZINC/ALUMINUM GALVANIZING APPLIED AT A MINIMUM WEIGHT OF 0.40 OUNCES PER SQUARE FOOT. PROVIDE A MESH WITH A MINIMUM LONGITUDINAL TENSILE STRENGTH OF 3,600 POUND PER FOOT AND A MAXIMUM MESH WIDTH OF 3.3 INCHES.

MAIN ANCHORS:

- THE MAIN ANCHORS SHALL BE INSTALLED TO THE MINIMUM LENGTH AS SHOWN ON THE ANCHOR SCHEDULE, AND SHALL HAVE A MINIMUM PULLOUT STRENGTH (DESIGN LOAD) OF 100 kN AS DETERMINED BY PROOF TESTS.

ANCHOR SCHEDULE	
ANCHOR ROW	MINIMUM EMBEDMENT LENGTH (FT)
1 (TOP)	25
2	20
3	15
4	15
5 (IF REQUIRED)	10
6 (IF REQUIRED)	10
7 (IF REQUIRED)	10

- MAIN ANCHORS SHALL BE A MINIMUM 1 INCH DIA. GALVANIZED, CEMENT GROUTED THREAD BAR. ALTERNATIVELY, MINIMUM 1.5 INCH DIA. SELF GROUTING SOIL ANCHORS MAY BE USED.
- CENTRALIZERS ARE REQUIRED ON ANCHORS AT 5 FEET ON CENTERS. SELF GROUTING ANCHORS DO NOT REQUIRE CENTRALIZERS.
- ANCHOR HOLES SHALL BE A MINIMUM DIAMETER OF 1.5 INCHES PLUS THE ANCHOR DIAMETER.
- GROUT MUST BE INJECTED INTO THE BOTTOM OF THE HOLE SO THAT THE ANNULAR SPACE IS FILLED WITH GROUT.
- THE TOP ROW OF MAIN ANCHORS SHALL BE INSTALLED A MINIMUM OF 3 FEET ABOVE THE TOP OF THE CUT SLOPE, AND SHALL BE INSTALLED AT AN ANGLE OF 45 DEGREES FROM HORIZONTAL. ALL OTHER ANCHORS SHALL BE INSTALLED PERPENDICULAR TO THE SLOPE FACE.

SECONDARY NAILS:

- SECONDARY NAILS TO BE USED AS DIRECTED BY THE ENGINEER FOR ADDITIONAL ANCHORAGE ALONG BOUNDARIES, AND IN DEPRESSIONS ON THE SLOPE FACE.
- SECONDARY NAILS SHALL BE A MINIMUM 0.75 INCH DIA. GALVANIZED, CEMENT GROUTED THREAD BAR, AND SHALL HAVE A MINIMUM EMBEDMENT OF 6 FEET.

BOUNDARY ROPES:

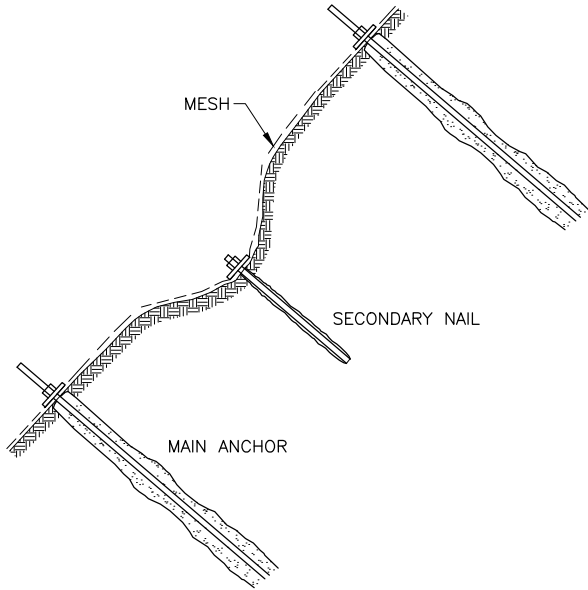
- BOUNDARY ROPES SHALL HAVE A MINIMUM DIAMETER OF 0.5 INCH. THE ROPE SHALL BE 6x12 CONSTRUCTION (OR EQUIVALENT), IWRC AND GALVANIZED, WITH A MINIMUM BREAKING STRENGTH OF 22.5 KIPS.
- THE MAXIMUM LENGTH OF TOP BOUNDARY ROPE SEGMENTS IS 100 FEET, AND THE MAXIMUM LENGTH FOR BOTTOM BOUNDARY ROPE SEGMENTS IS 200 FEET.
- BOTH ENDS OF EACH BOUNDARY ROPE SEGMENT SHALL BE ANCHORED WITH A WIRE ROPE ANCHOR INSTALLED AT 45 DEGREES IN-LINE WITH THE ROPE.



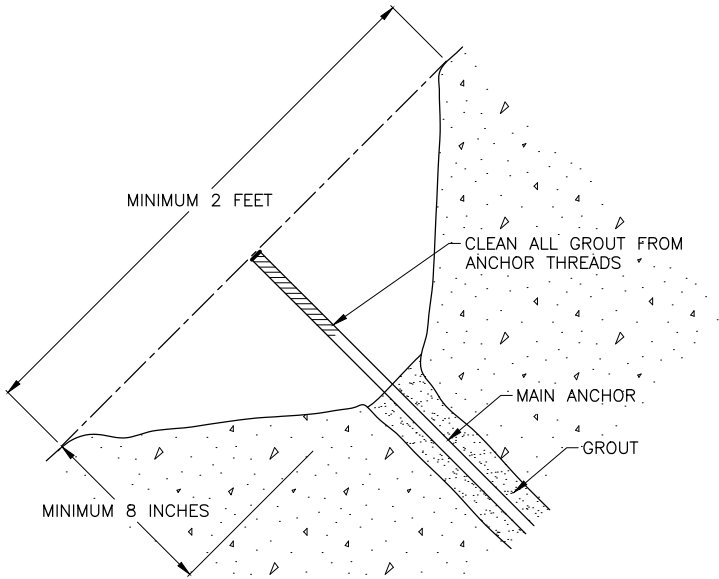
STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES  
  
STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B  
  
SLOPE PROTECTION DETAILS

FILE Z:\PROJECT\2747.02 HDR STERLING HIGHWAY MP 45-60 DESIGN\CIVIL\ACAD\2747.02-E-GENERAL DETAILS.DWG 3/6/2020 2:59 PM E10 LAYOUT 3/6/2020 2:59 PM E10 DESIGNED 3/6/2020 2:59 PM E10 CHECKED 3/6/2020 2:59 PM E10 DRAFTED 3/6/2020 2:59 PM E10

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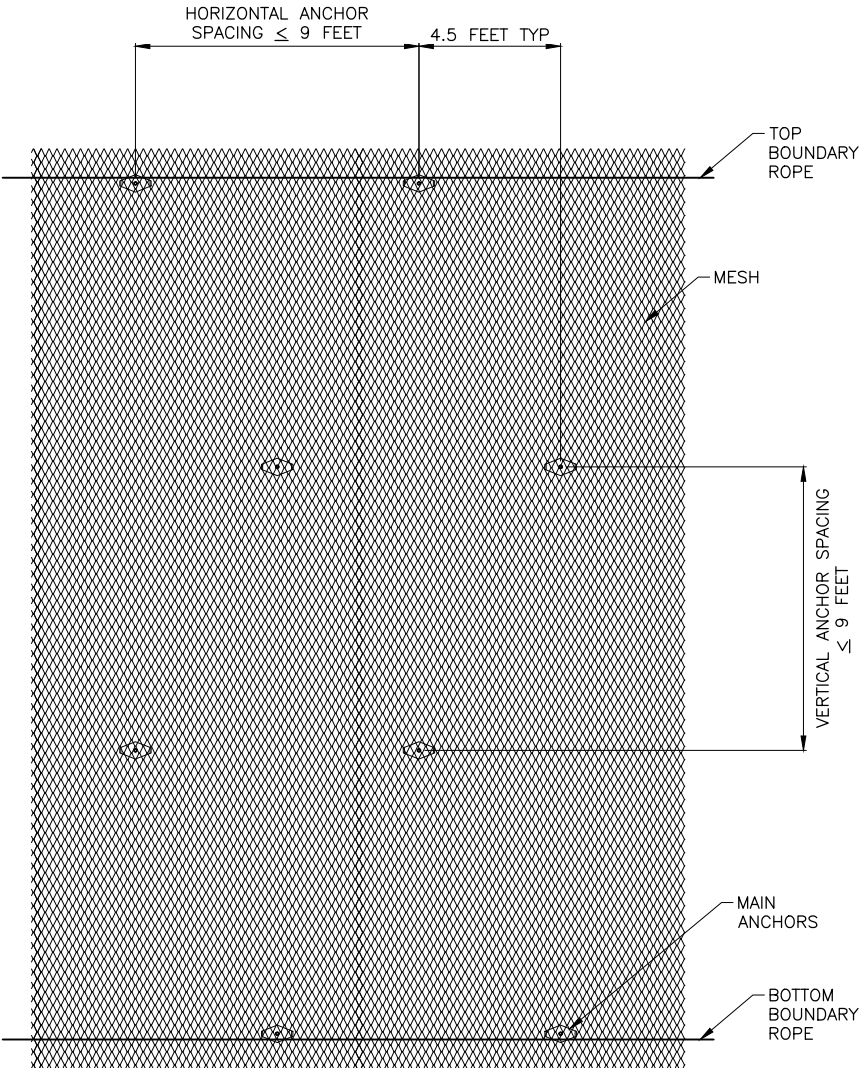


TYP. DEPRESSION W/ SECONDARY NAIL

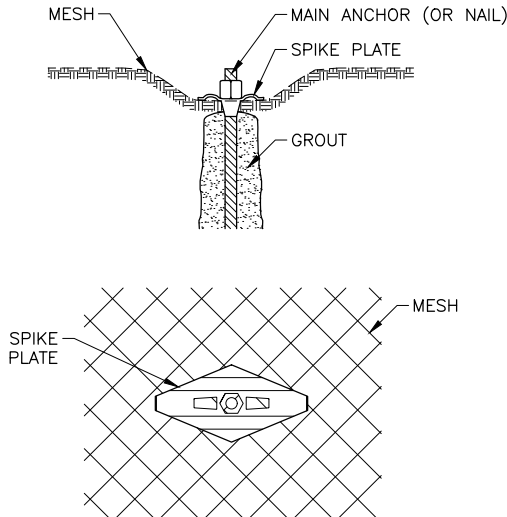


NOTE:  
EXCAVATE A DEPRESSION AROUND THE HEAD OF ALL MAIN ANCHORS, BEFORE GROUT HAS SET.

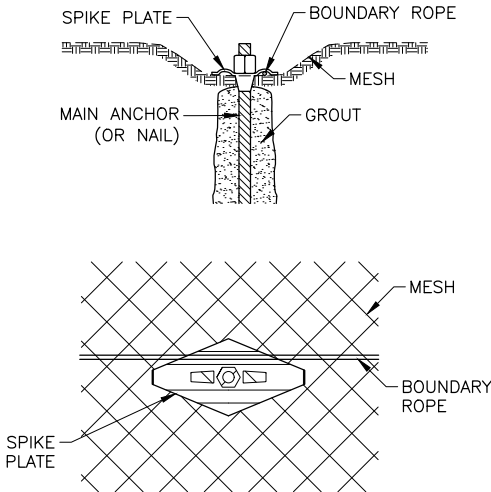
ANCHOR HEAD EXCAVATION DETAIL



MESH DETAIL



NAIL & ANCHOR DETAIL, TYP



NAIL & ANCHOR DETAIL WITH BOUNDARY ROPE



STATE OF ALASKA  
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SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B  
SLOPE PROTECTION DETAILS

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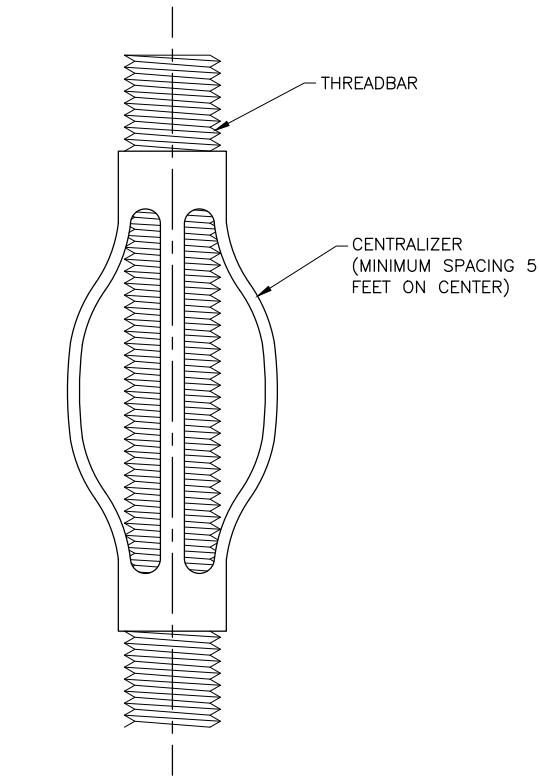
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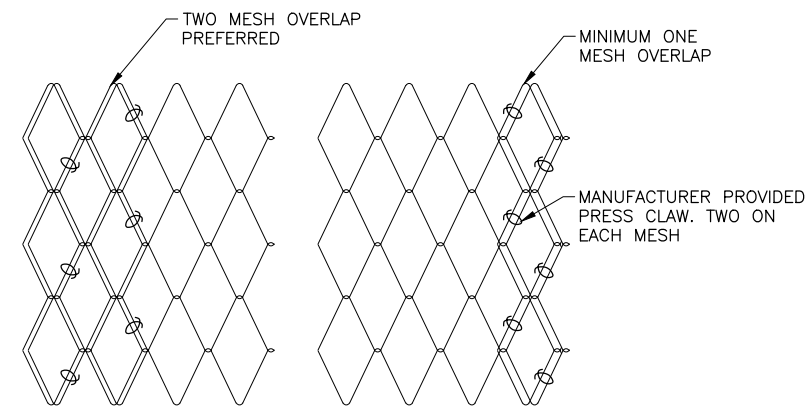
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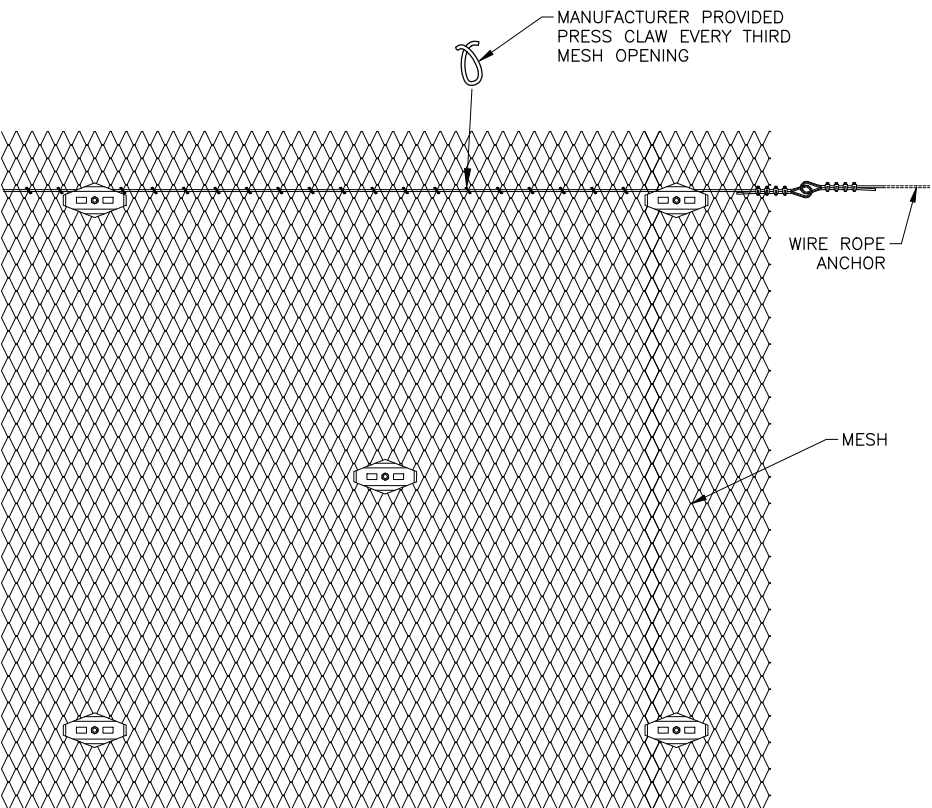
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			ALASKA	CFHWY00694	2020	E11	E14



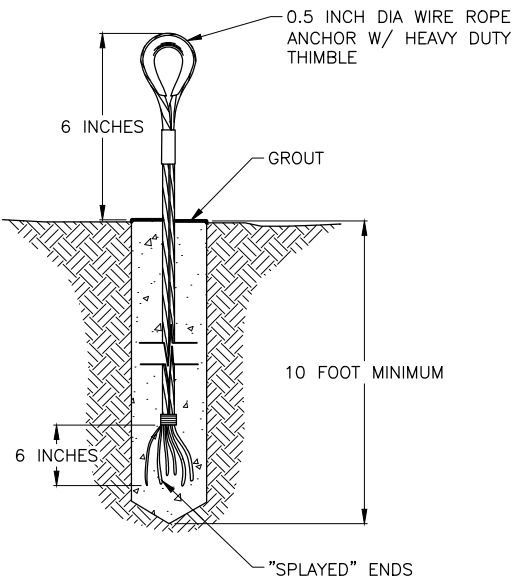
CENTRALIZER DETAIL



VERTICAL CONNECTION OF MESH SHEETS



BOUNDARY ROPE CONNECTION DETAIL



WIRE ROPE ANCHOR DETAIL

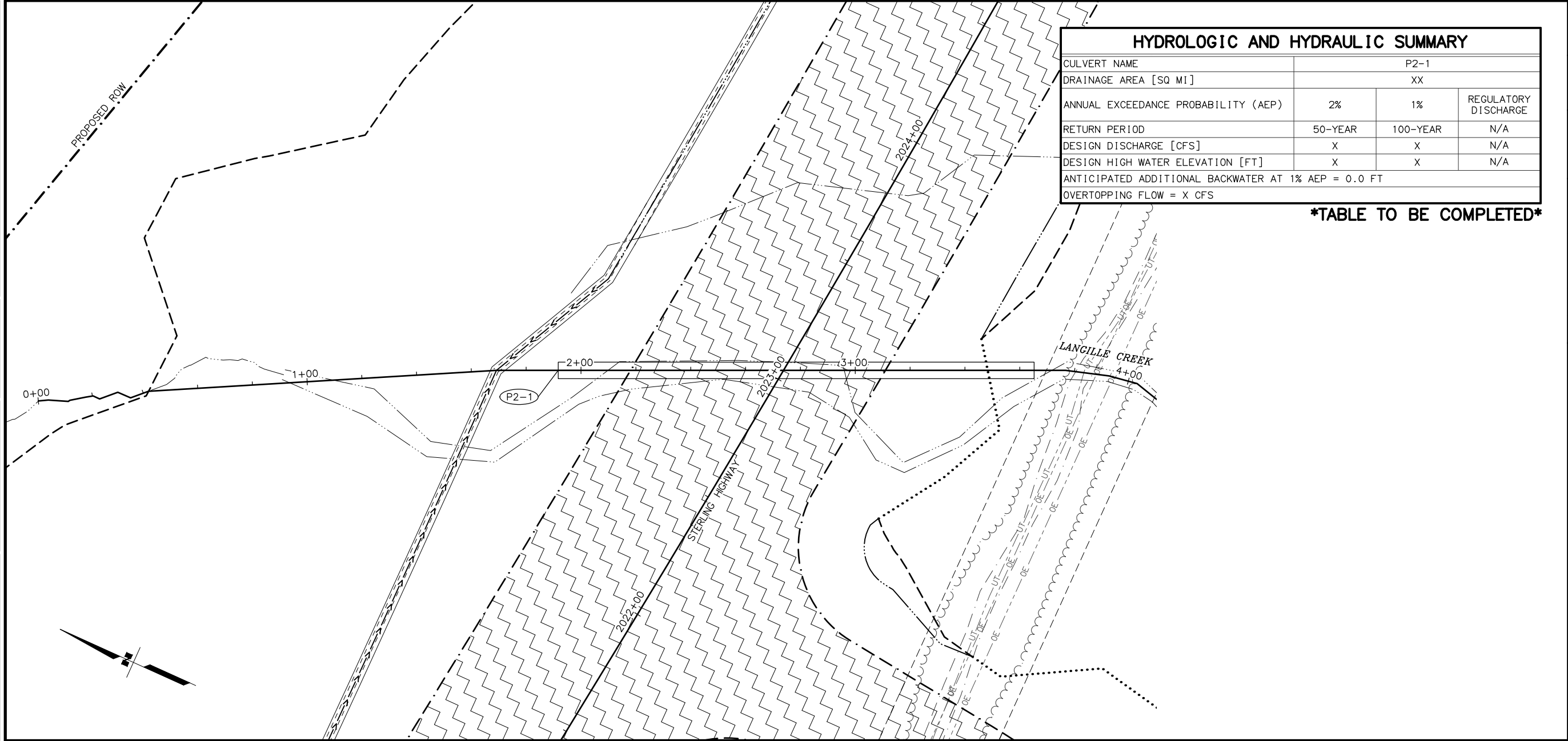


STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

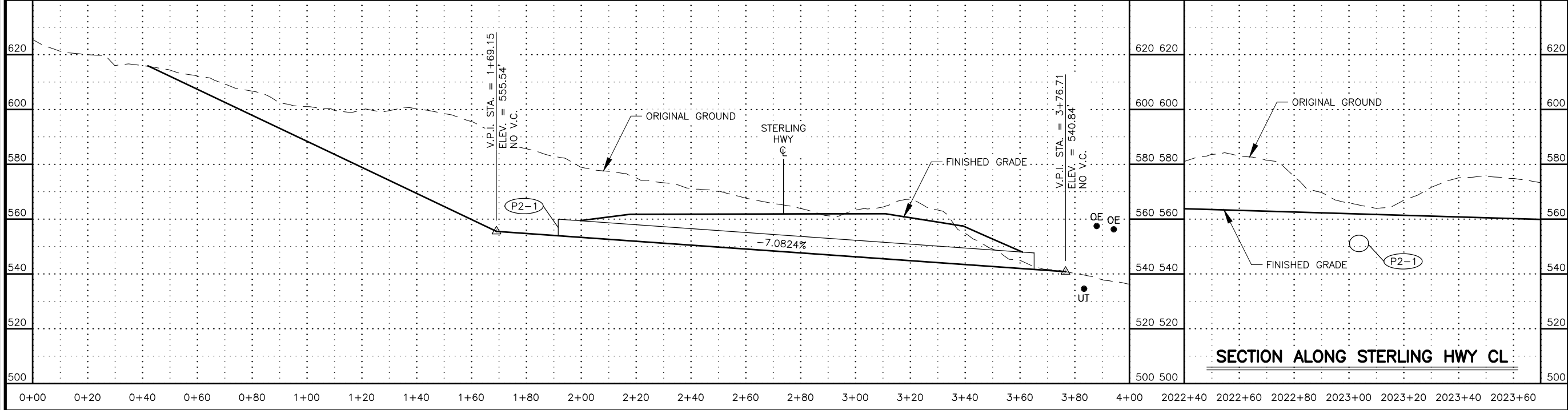
SLOPE PROTECTION DETAILS

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HYDROLOGIC AND HYDRAULIC SUMMARY			
CULVERT NAME	P2-1		
DRAINAGE AREA [SQ MI]	XX		
ANNUAL EXCEEDANCE PROBABILITY (AEP)	2%	1%	REGULATORY DISCHARGE
RETURN PERIOD	50-YEAR	100-YEAR	N/A
DESIGN DISCHARGE [CFS]	X	X	N/A
DESIGN HIGH WATER ELEVATION [FT]	X	X	N/A
ANTICIPATED ADDITIONAL BACKWATER AT 1% AEP = 0.0 FT			
OVERTOPPING FLOW = X CFS			

\*TABLE TO BE COMPLETED\*



SHEET NO.	TOTAL SHEETS
E12	E14
STATE	YEAR
ALASKA	2020
PROJECT DESIGNATION	
CFHWY00694	
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	

STATE OF ALASKA  
PLANS-IN-HAND  
MARCH 2020  
0000  
REGISTERED PROFESSIONAL ENGINEER

R&M CONSULTANTS, INC.  
9101 VANGUARD DRIVE  
ANCHORAGE, AK 99507  
(907) 522-1707  
CERT. OF AUTH. NO. AEC0111

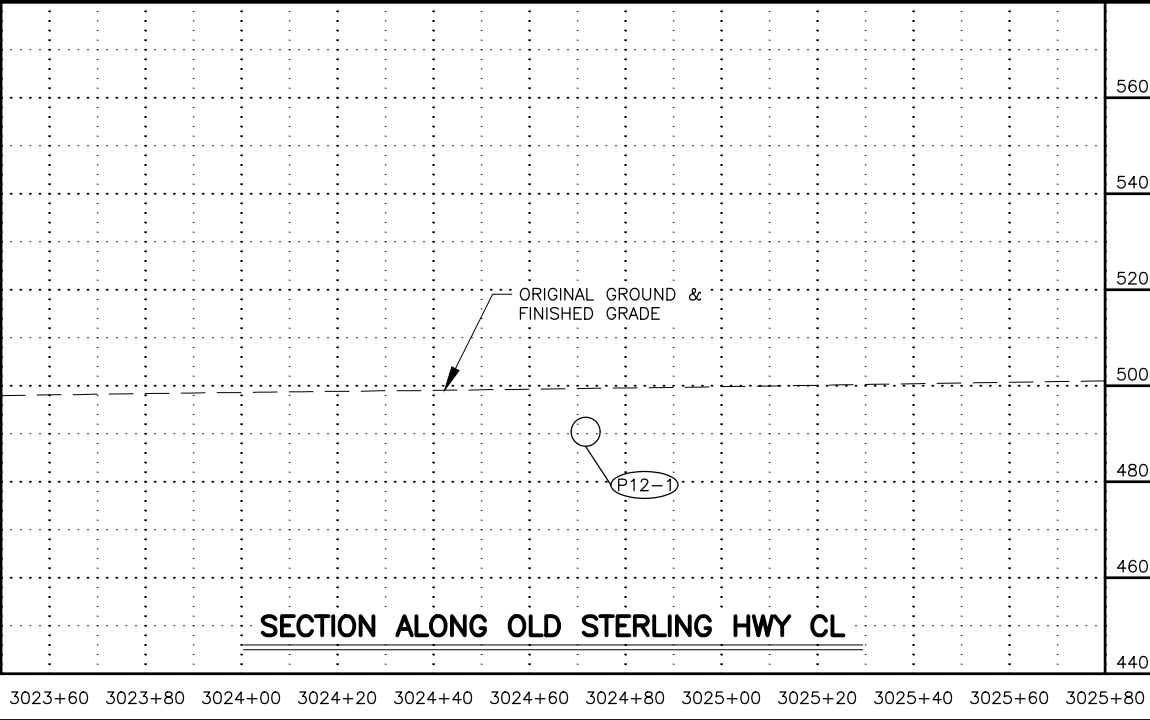
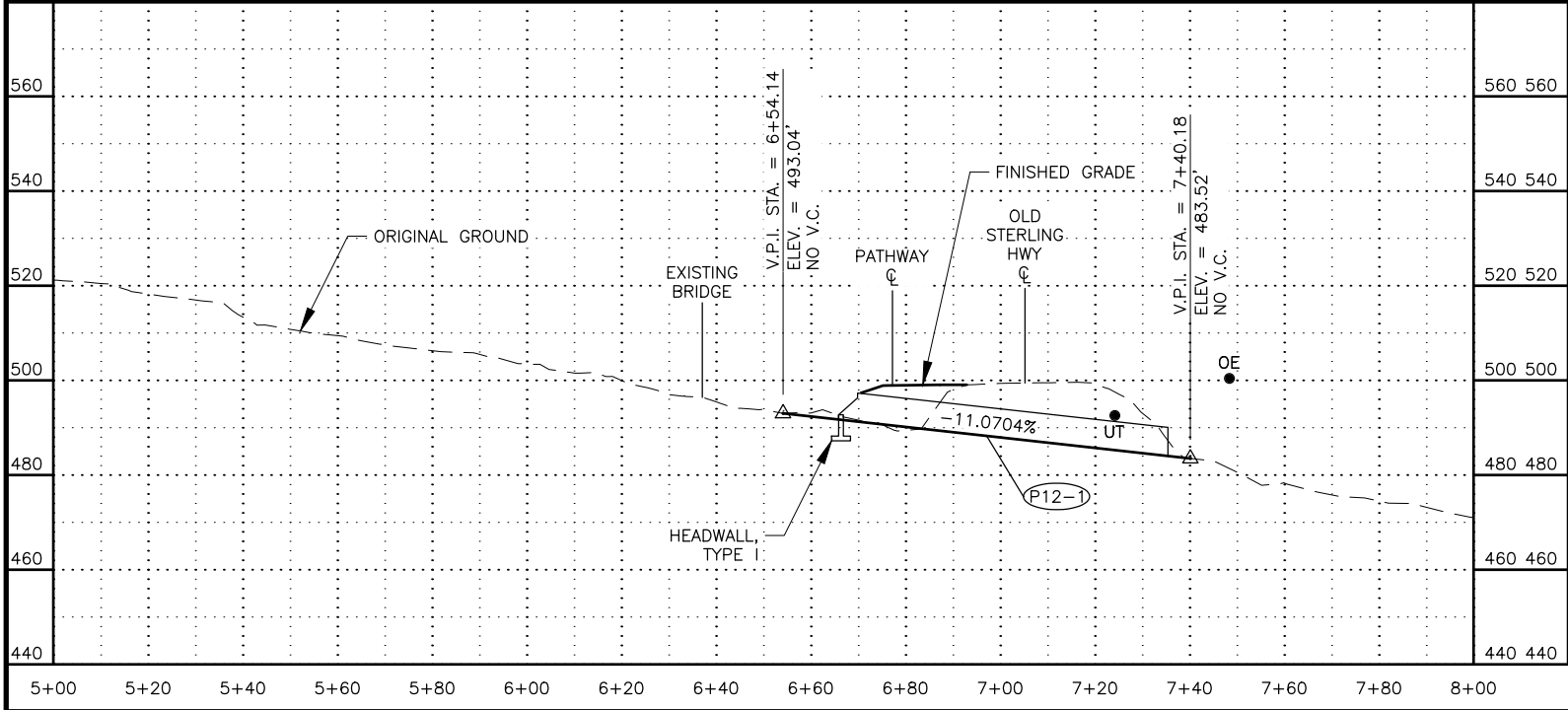
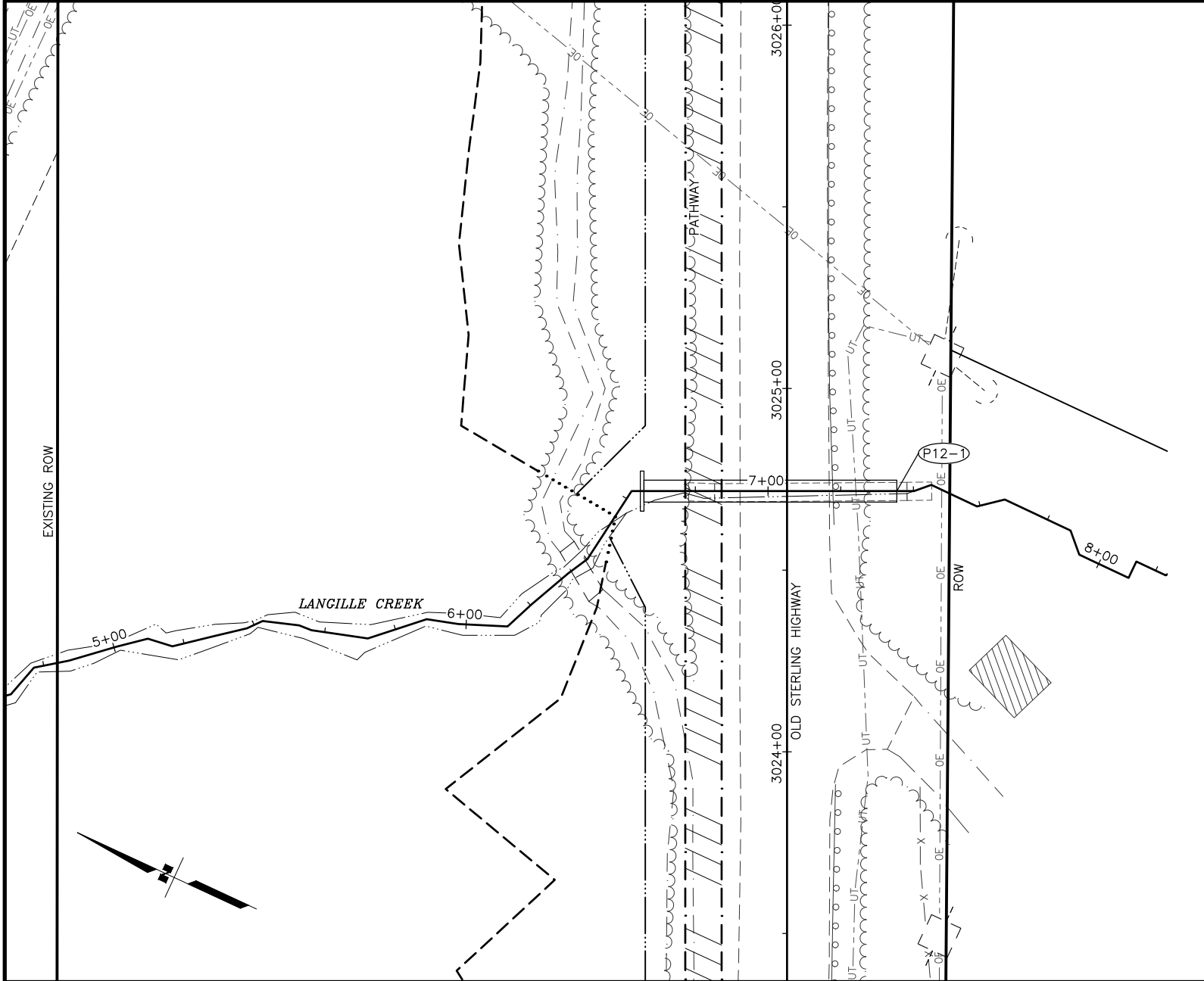
STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

PLAN & PROFILE  
LANGILLE CREEK CULVERT  
P2-1



FILE Z:\PROJECT\2747.02 HDR STERLING HIGHWAY MP 45-60 DESIGN\CIVIL\ACAD\2747.02-E-PIPE P&PS.DWG 3/6/2020 3:00 PM LAYOUT E13 DESIGNED CHECKED DRAFTED



HYDROLOGIC AND HYDRAULIC SUMMARY			
CULVERT NAME	P12-1		
DRAINAGE AREA [SQ MI]	XX		
ANNUAL EXCEEDANCE PROBABILITY (AEP)	2%	1%	REGULATORY DISCHARGE
RETURN PERIOD	50-YEAR	100-YEAR	N/A
DESIGN DISCHARGE [CFS]	X	X	N/A
DESIGN HIGH WATER ELEVATION [FT]	X	X	N/A
ANTICIPATED ADDITIONAL BACKWATER AT 1% AEP = 0.0 FT			
OVERTOPPING FLOW = X CFS			

\*TABLE TO BE COMPLETED\*

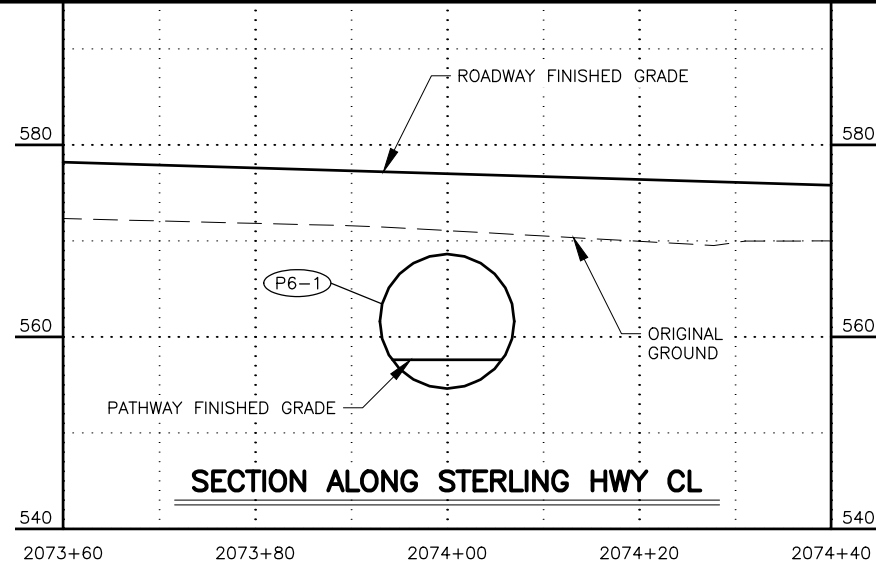
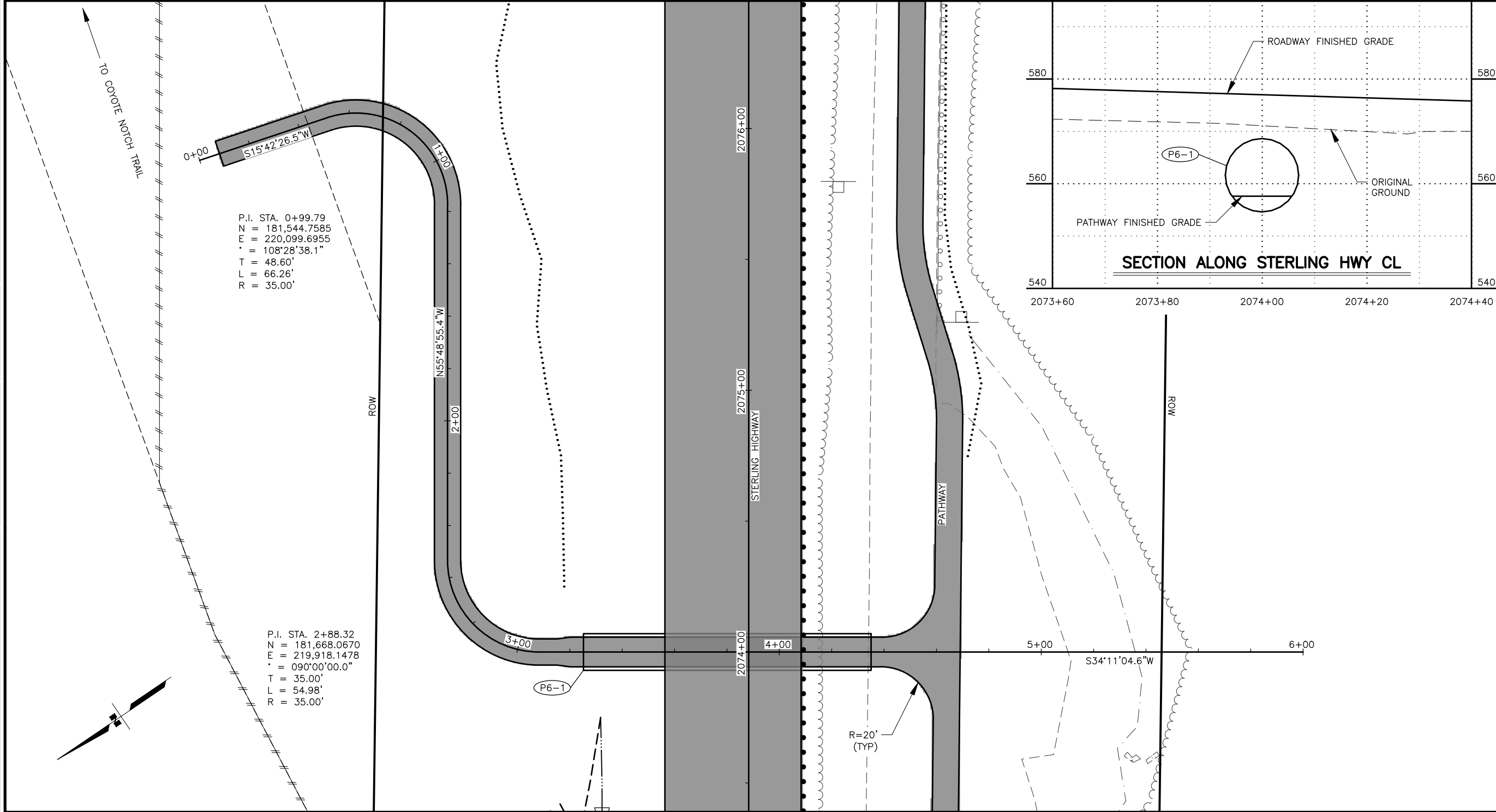
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E13	E14
STATE	YEAR
ALASKA	2020
PROJECT DESIGNATION	
CFHWY00694	
NO.	REVISION
DATE	
NO.	REVISION
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NO.	REVISION
DATE	

STATE OF ALASKA  
PLANS-IN-HAND  
MARCH 2020  
0000  
REGISTERED PROFESSIONAL ENGINEER

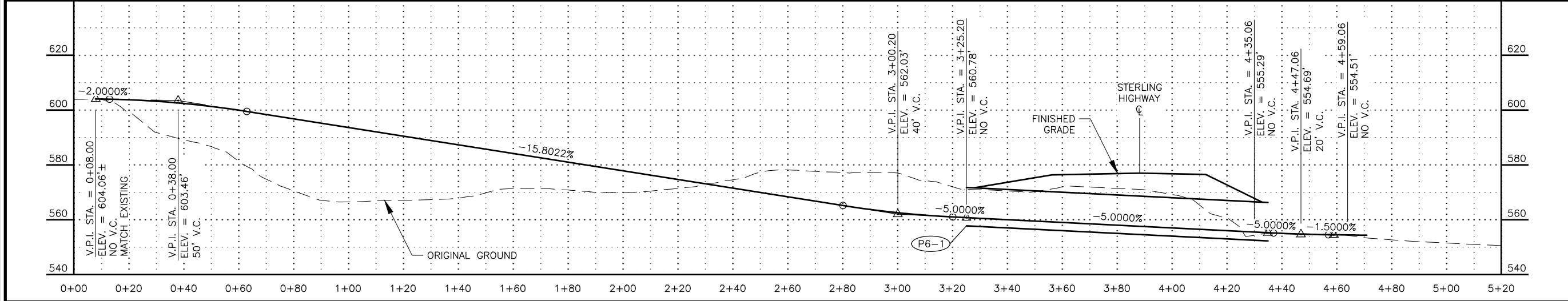
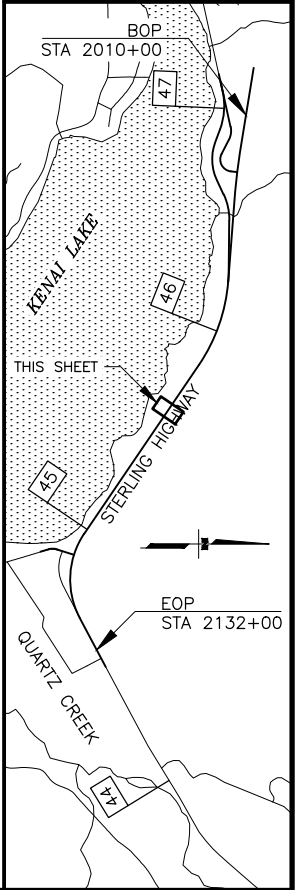
R&M CONSULTANTS, INC.  
9101 VANGUARD DRIVE  
ANCHORAGE, AK 99507  
(907) 522-1707  
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STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
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STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

PLAN & PROFILE  
LANGILLE CREEK CULVERT  
P12-1



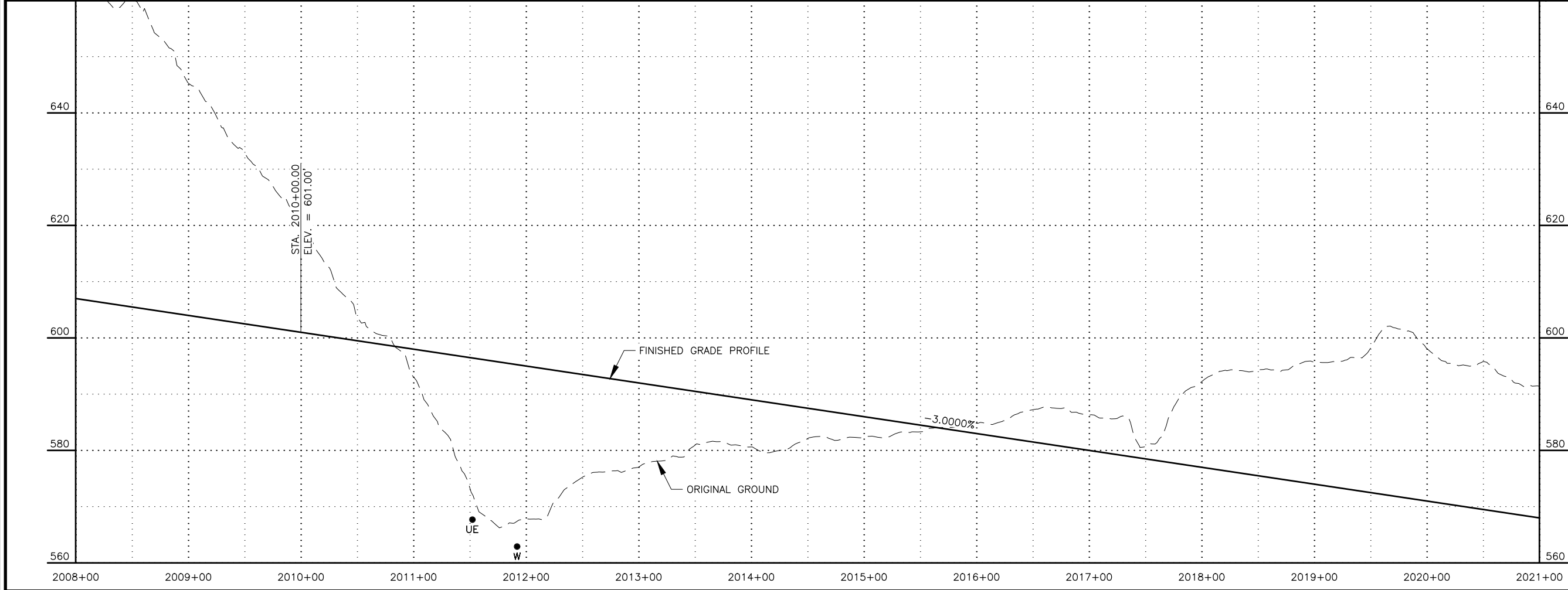
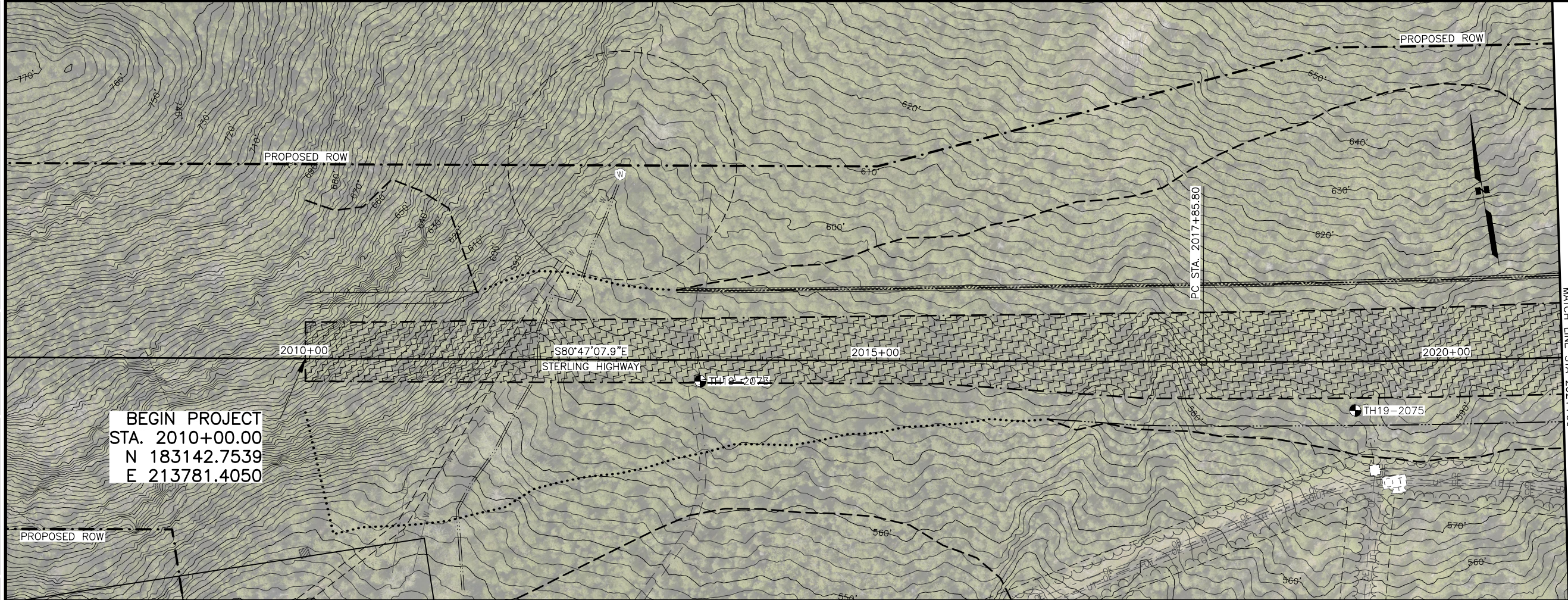
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E14	E14
STATE	YEAR
ALASKA	2020
PROJECT DESIGNATION	
CFHWY00694	
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	



STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES  
STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B  
PLAN & PROFILE  
PATHWAY UNDERCROSSING



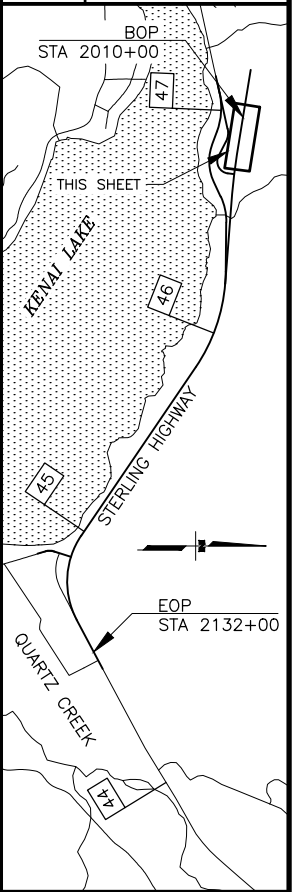
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SHEET NO.	TOTAL SHEETS
F1	F30
STATE	YEAR
ALASKA	2020

PROJECT DESIGNATION  
CFHWY00694

NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	



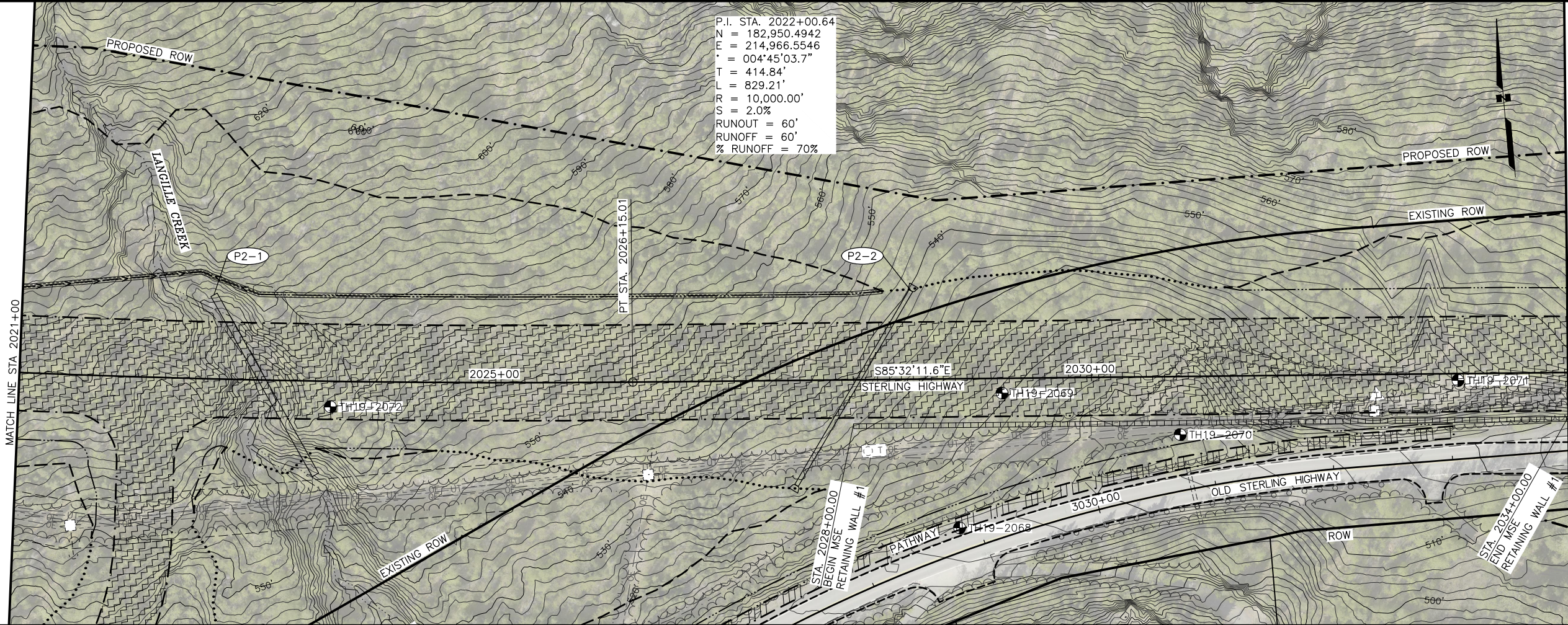
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ANCHORAGE, AK 99507  
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STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES  
STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

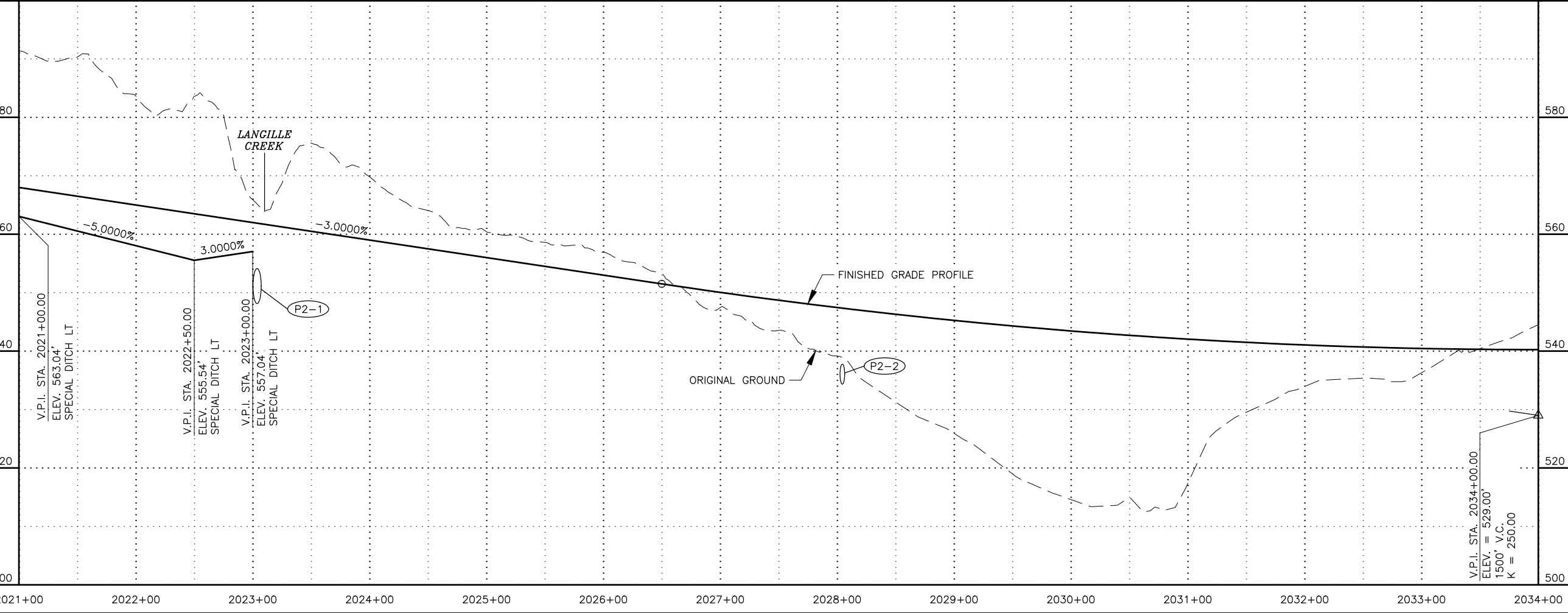
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STERLING HIGHWAY  
BOP TO STA 2021+00



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MATCH LINE STA 2034+00



SHEET NO.	TOTAL SHEETS
F2	F30
STATE	YEAR
ALASKA	2020
PROJECT DESIGNATION	
CFHWY00694	
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	

BOP: STA 2010+00

THIS SHEET

EOP: STA 2132+00

STERLING HIGHWAY

QUARTZ CREEK

KENAI LAKE

STATE OF ALASKA

PLANS-IN-HAND

MARCH 2020

0000

REGISTERED PROFESSIONAL ENGINEER

R&M CONSULTANTS, INC.

9101 VANGUARD DRIVE

ANCHORAGE, AK 99507

(907) 522-1707

CERT. OF AUTH. NO. AECC111

STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60

SUNRISE TO SKILAK LAKE RD

RECONSTRUCTION STAGE 1B

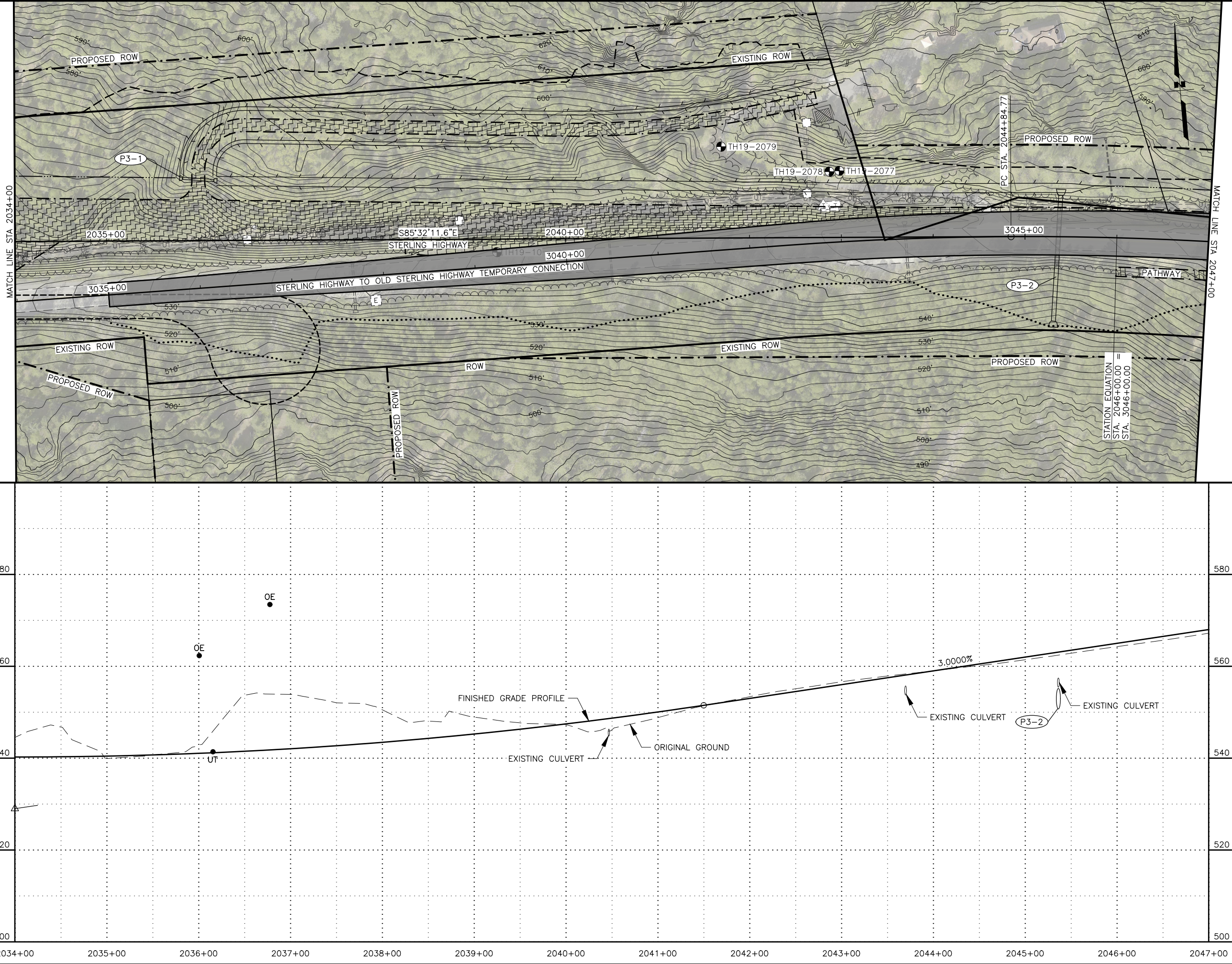
PLAN & PROFILE

STERLING HIGHWAY

STA 2021+00 TO 2034+00



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SHEET NO.	TOTAL SHEETS
F3	F30
STATE	YEAR
ALASKA	2020
PROJECT DESIGNATION	
CFHWY00694	
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	

BOP: STA 2010+00  
EOP: STA 2132+00  
THIS SHEET  
KENAI LAKE  
QUARTZ CREEK  
STERLING HIGHWAY

STATE OF ALASKA  
PLANS-IN-HAND  
MARCH 2020  
0000  
REGISTERED PROFESSIONAL ENGINEER

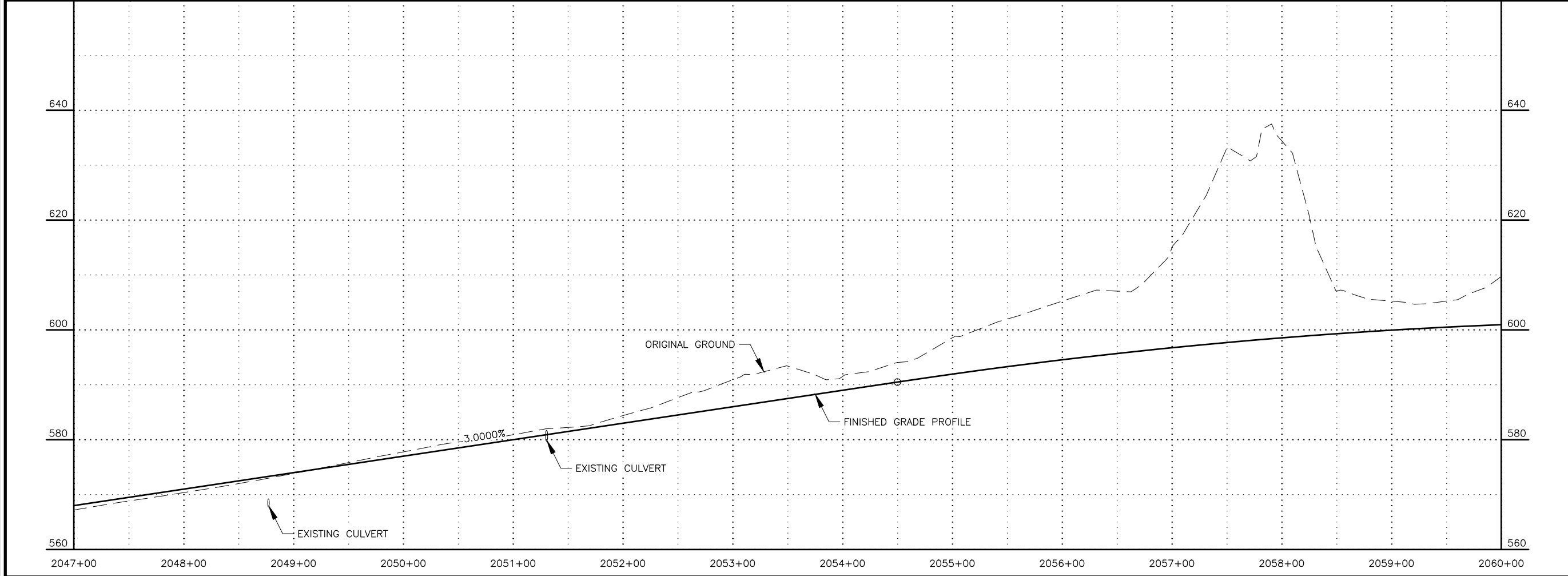
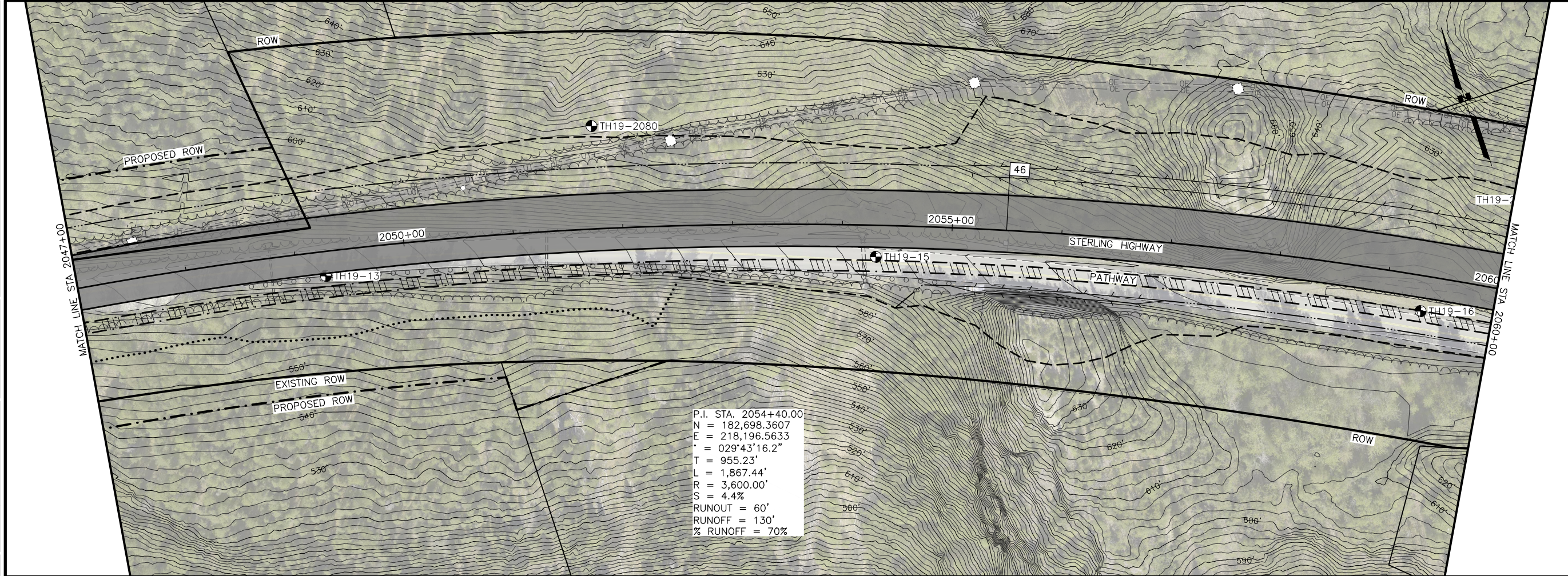
R&M CONSULTANTS, INC.  
9101 VANGUARD DRIVE  
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STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
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STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

PLAN & PROFILE  
STERLING HIGHWAY  
STA 2034+00 TO 2047+00



FILE Z:\PROJECT\2747.02 HDR STERLING HIGHWAY MP 45-60 DESIGN\CIVIL\ACAD\2747.02-F--MAINLINE.DWG DATE/TIME 3/6/2020 12:00 PM LAYOUT F4 DESIGNED CHECKED DRAFTED



SHEET NO.	TOTAL SHEETS
F4	F30
STATE	YEAR
ALASKA	2020
PROJECT DESIGNATION	
CFHWY00694	
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	

STATE OF ALASKA  
PLANS-IN-HAND  
MARCH 2020  
0000  
REGISTERED PROFESSIONAL ENGINEER

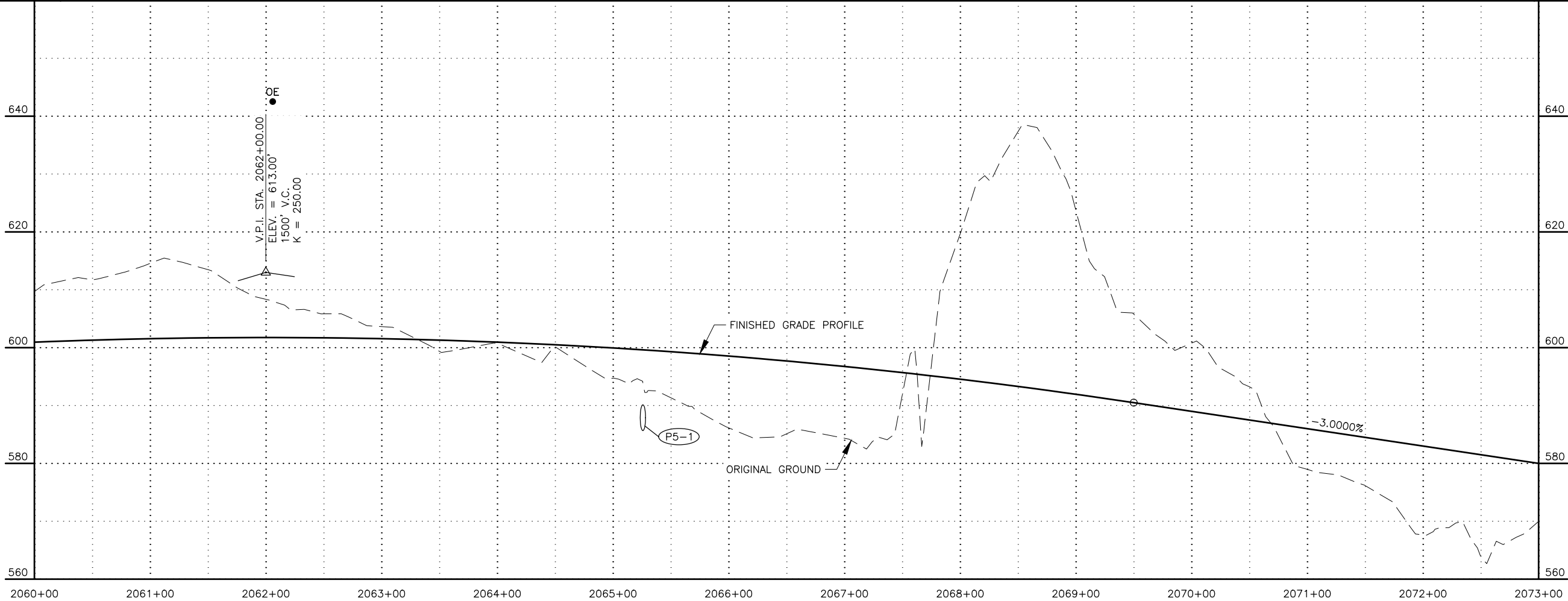
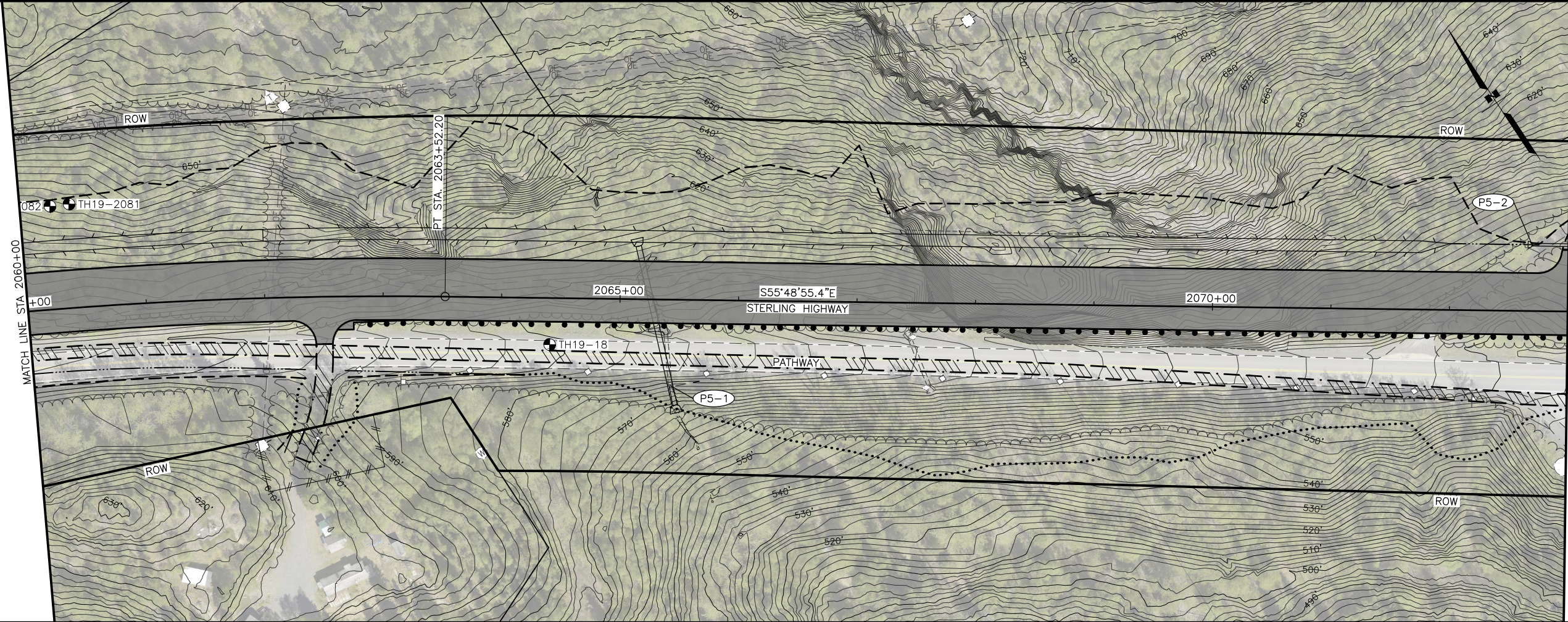
R&M CONSULTANTS, INC.  
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STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
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STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

PLAN & PROFILE  
STERLING HIGHWAY  
STA 2047+00 TO 2060+00



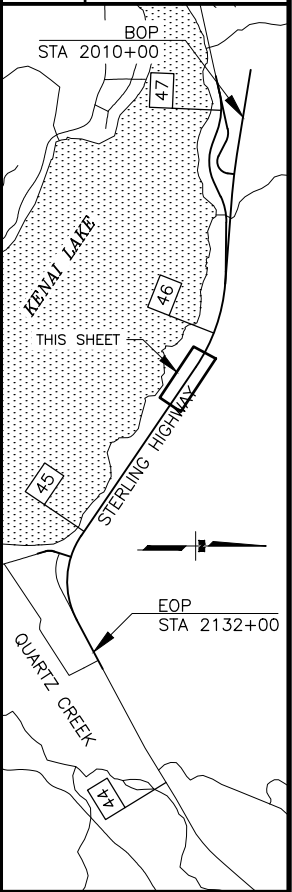
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SHEET NO.	TOTAL SHEETS
F5	F30
STATE	YEAR
ALASKA	2020

PROJECT DESIGNATION  
CFHWY00694

NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	



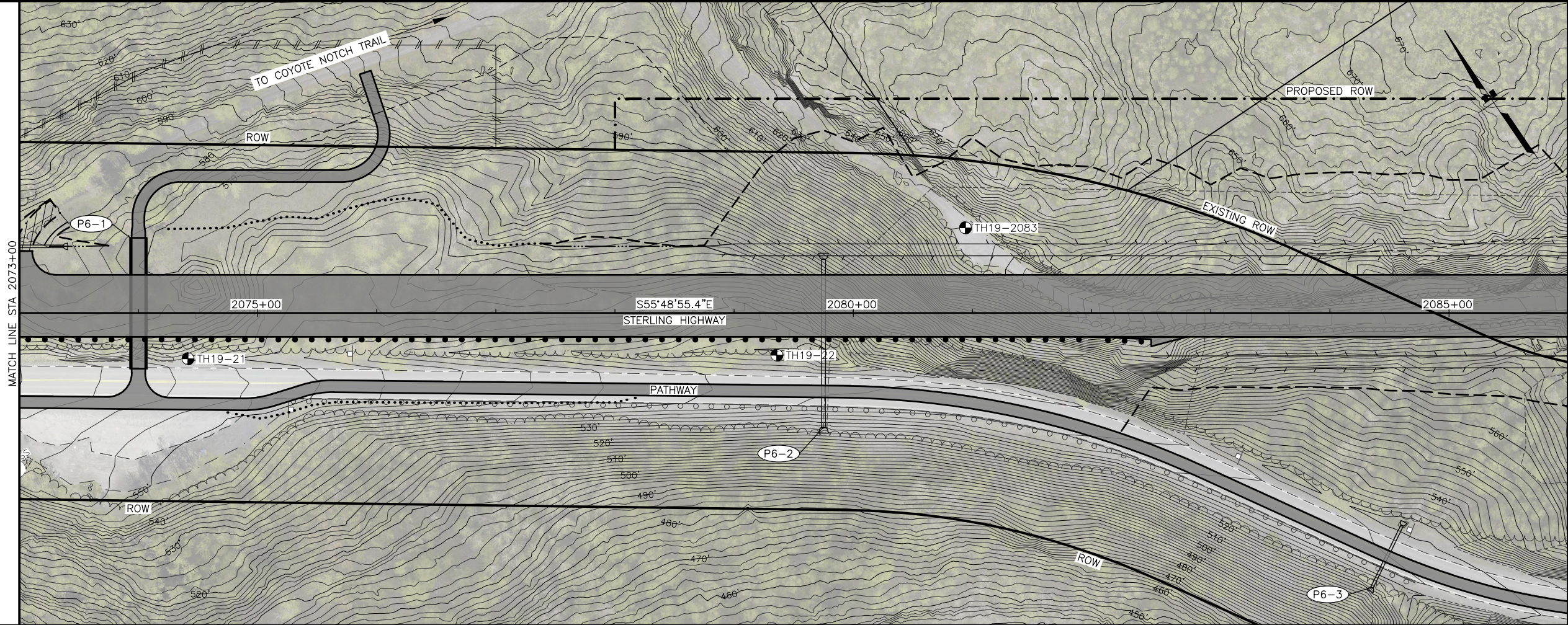
R&M CONSULTANTS, INC.  
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STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
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STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

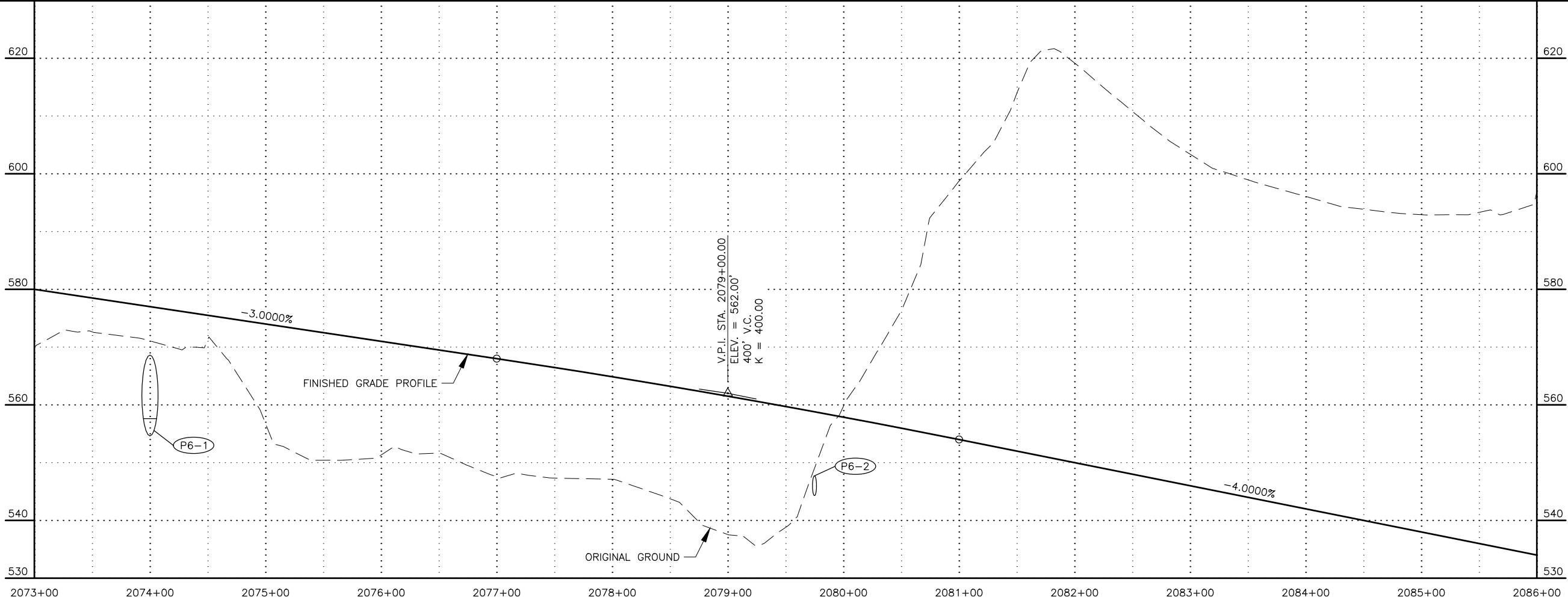
PLAN & PROFILE  
STERLING HIGHWAY  
STA 2060+00 TO 2073+00



FILE Z:\PROJECT\2747.02 HDR STERLING HIGHWAY MP 45-60 DESIGN\CIVIL\ACAD\2747.02-F--MAINLINE.DWG DATE/TIME 3/6/2020 12:01 PM [LAYOUT] F6 DESIGNED CHECKED DRAFTED



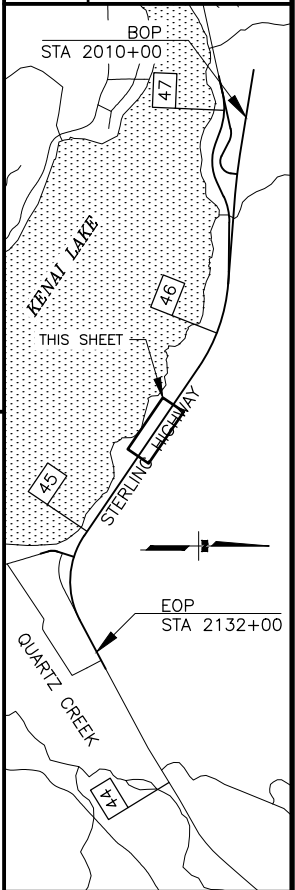
MATCH LINE STA 2086+00



SHEET NO.	TOTAL SHEETS
F6	F30
STATE	YEAR
ALASKA	2020

PROJECT DESIGNATION  
CFHWY00694

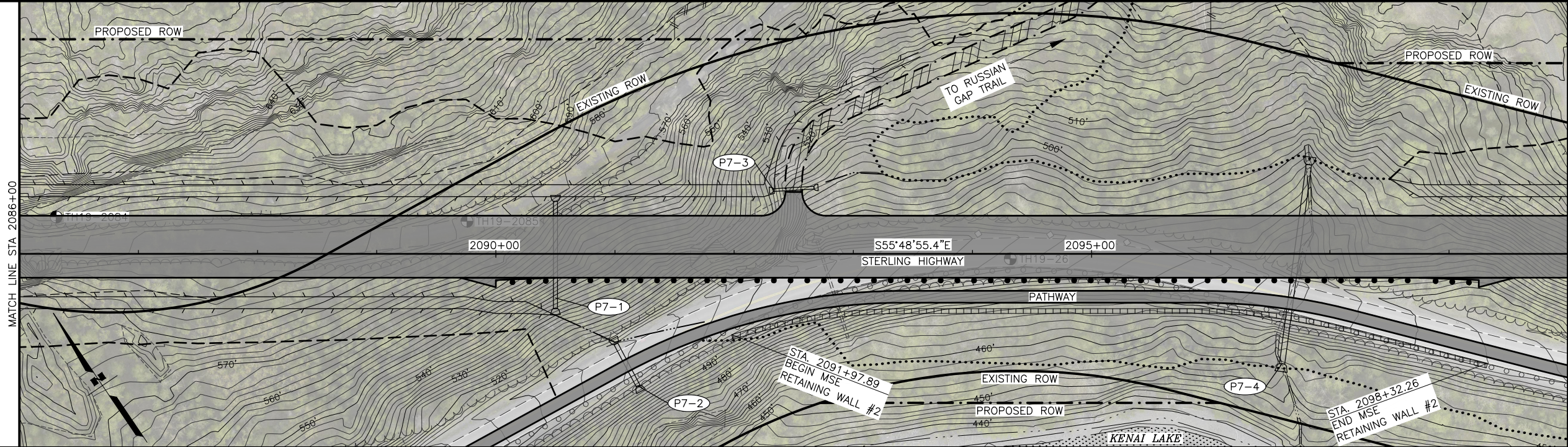
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	



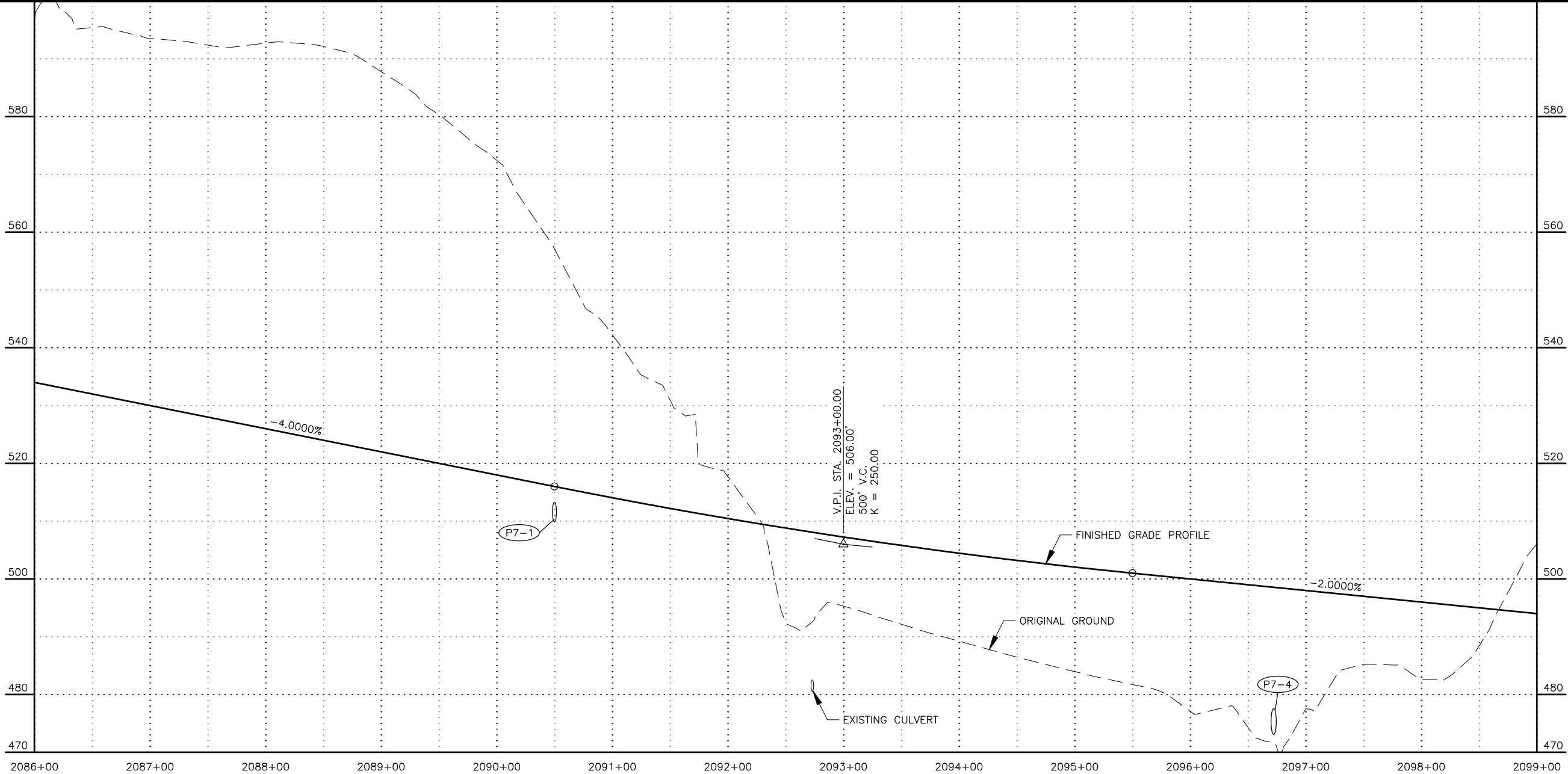
STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES  
STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B  
PLAN & PROFILE  
STERLING HIGHWAY  
STA 2073+00 TO 2086+00



FILE Z:\PROJECT\2747.02 HDR STERLING HIGHWAY MP 45-60 DESIGN\CIVIL\ACAD\2747.02-F--MAINLINE.DWG DATE/TIME 3/6/2020 12:01 PM LAYOUT F7 DESIGNED CHECKED DRAFTED



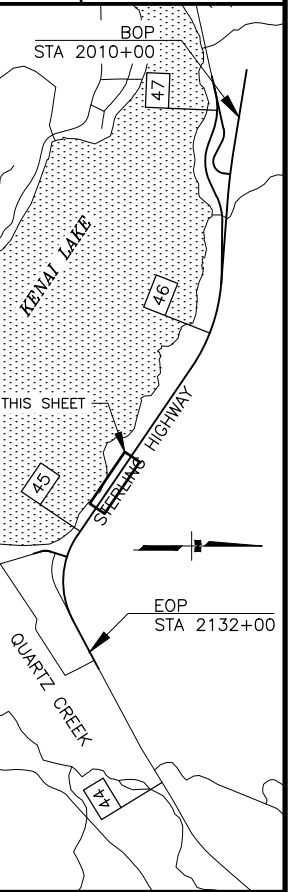
MATCH LINE STA 2099+00



SHEET NO.	TOTAL SHEETS
F7	F30
STATE	YEAR
ALASKA	2020

PROJECT DESIGNATION  
CFHWY00694

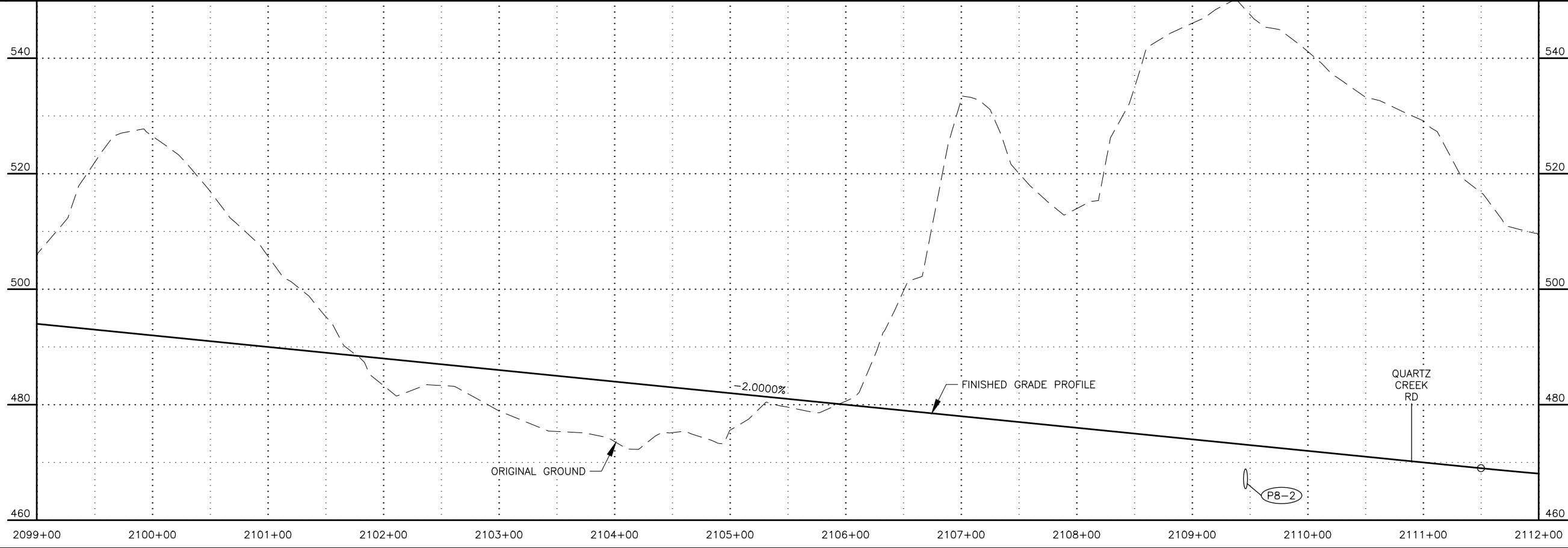
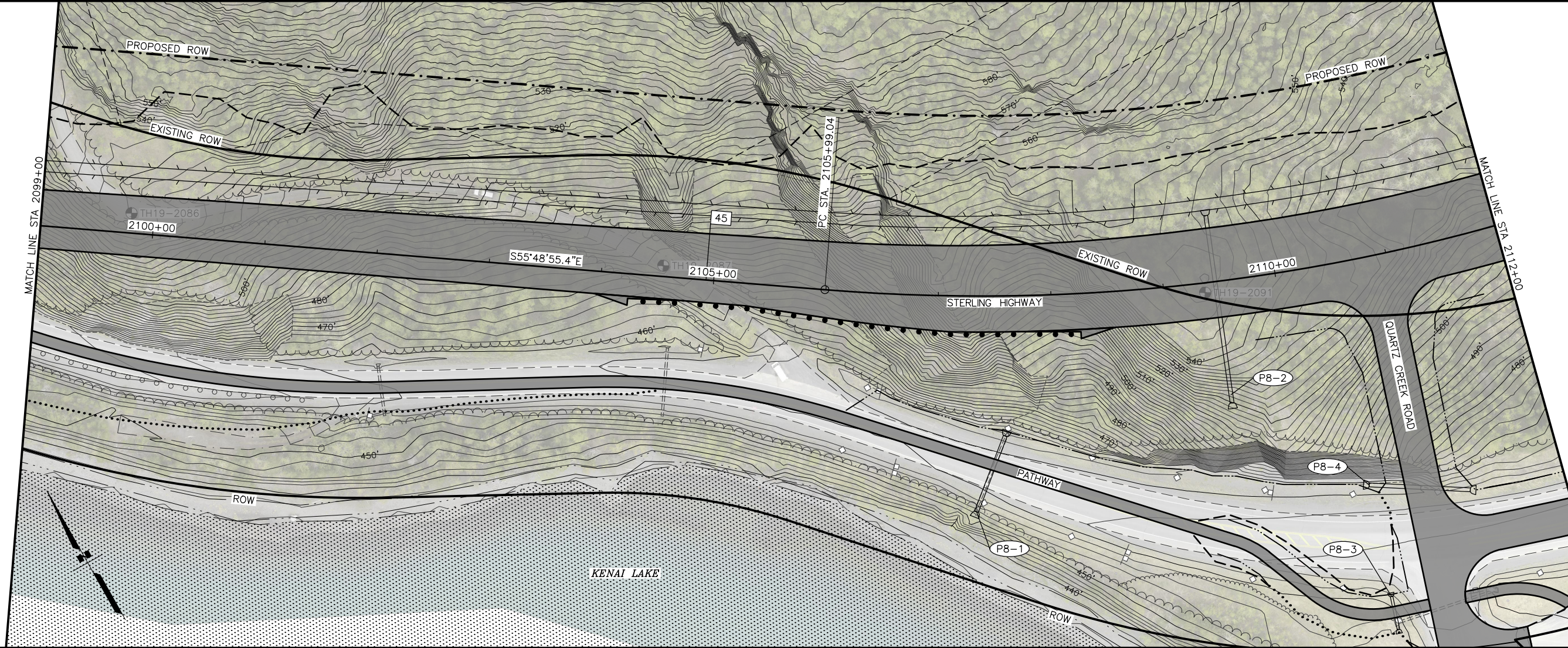
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	



STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES  
STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B  
PLAN & PROFILE  
STERLING HIGHWAY  
STA 2086+00 TO 2099+00



FILE Z:\PROJECT\2747.02 HDR STERLING HIGHWAY MP 45-60 DESIGN\CIVIL\ACAD\2747.02-F-MAINLINE.DWG DATE/TIME 3/6/2020 12:01 PM LAYOUT F8 DESIGNED CHECKED DRAFTED



SHEET NO.	TOTAL SHEETS
F8	F30
STATE	YEAR
ALASKA	2020
PROJECT DESIGNATION	
CFHWY00694	
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	

BOP: STA 2100+00  
EOP: STA 2132+00

THIS SHEET  
EOP  
STA 2132+00

QUARTZ CREEK  
STERLING HIGHWAY  
KENAI LAKE

STATE OF ALASKA  
PLANS-IN-HAND  
MARCH 2020  
0000  
REGISTERED PROFESSIONAL ENGINEER

R&M CONSULTANTS, INC.  
9101 VANGUARD DRIVE  
ANCHORAGE, AK 99507  
(907) 522-1707  
CERT. OF AUTH. NO. AEC0111

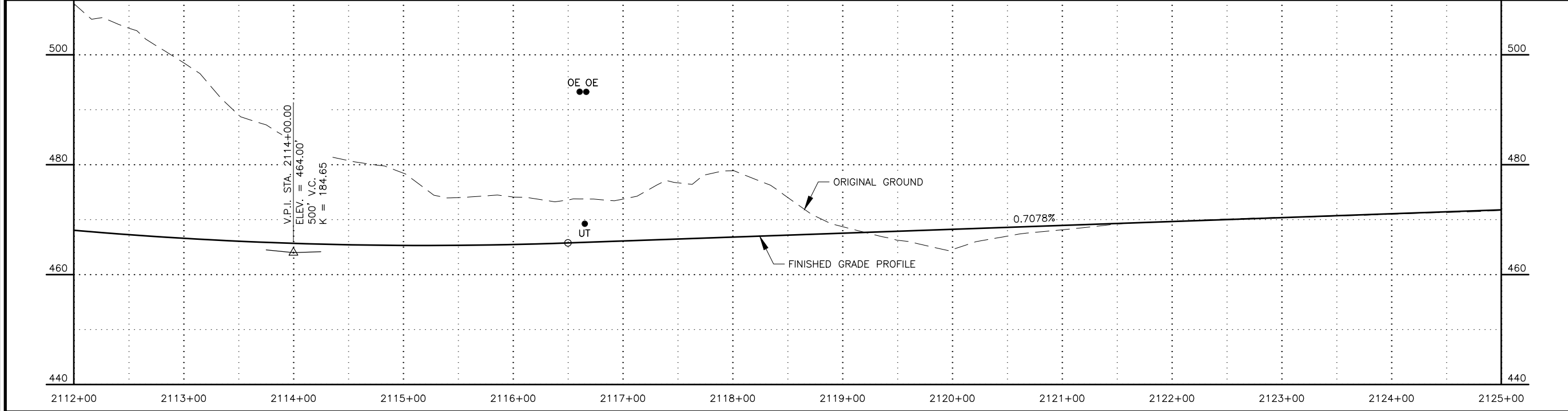
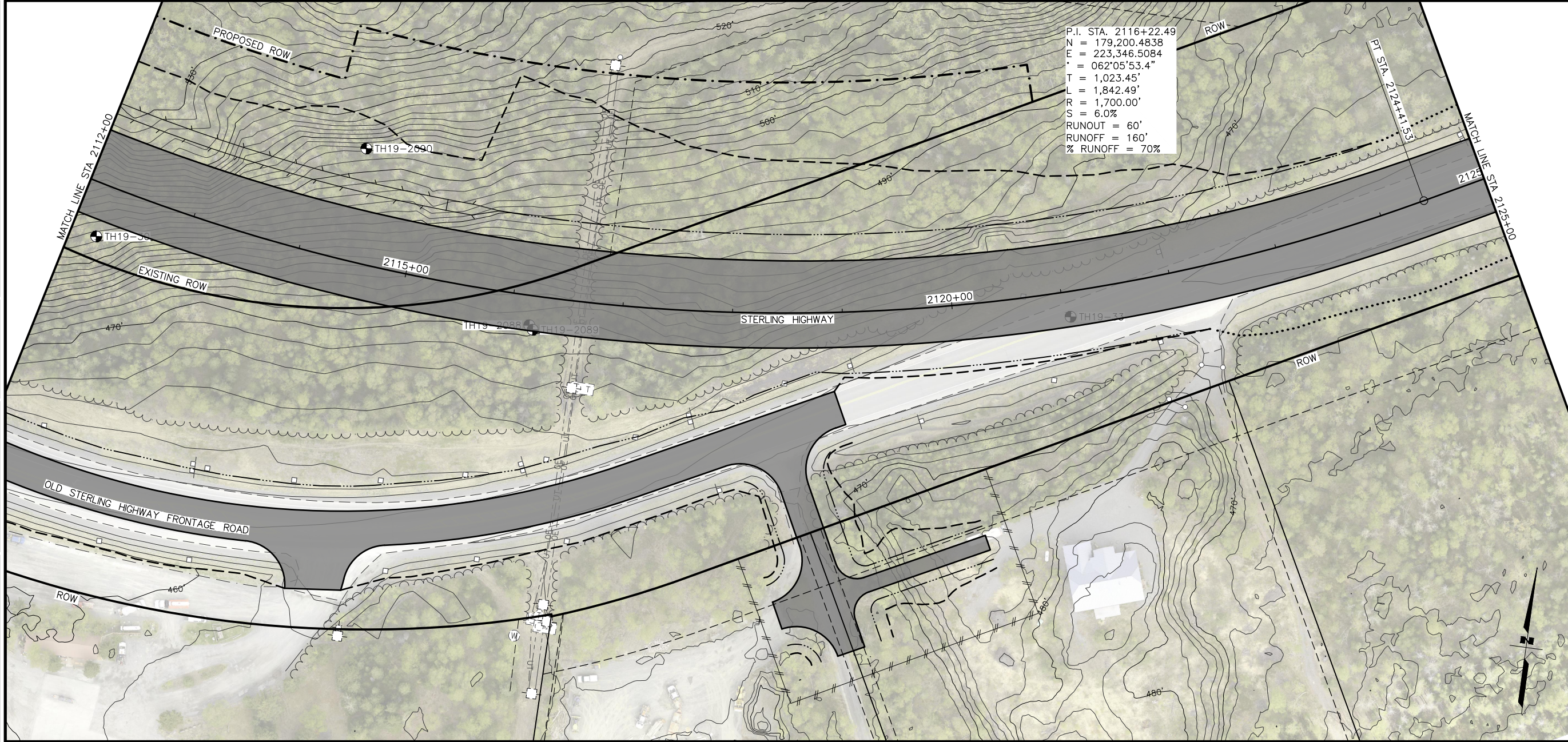
STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

PLAN & PROFILE  
STERLING HIGHWAY  
STA 2099+00 TO 2112+00



FILE Z:\PROJECT\2747.02 HDR STERLING HIGHWAY MP 45-60 DESIGN\CIVIL\ACAD\2747.02-F--MAINLINE.DWG DATE/TIME 3/6/2020 12:02 PM F9 LAYOUT DESIGNED CHECKED DRAFTED



SHEET NO.	TOTAL SHEETS
F9	F30
STATE	YEAR
ALASKA	2020
PROJECT DESIGNATION	
CFHWY00694	
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	

THIS SHEET  
EOP  
STA 2132+00

STATE OF ALASKA  
PLANS-IN-HAND  
MARCH 2020  
0000  
REGISTERED PROFESSIONAL ENGINEER

R&M CONSULTANTS, INC.  
9101 VANGUARD DRIVE  
ANCHORAGE, AK 99507  
(907) 522-1707  
CERT. OF AUTH. NO. AEC0111

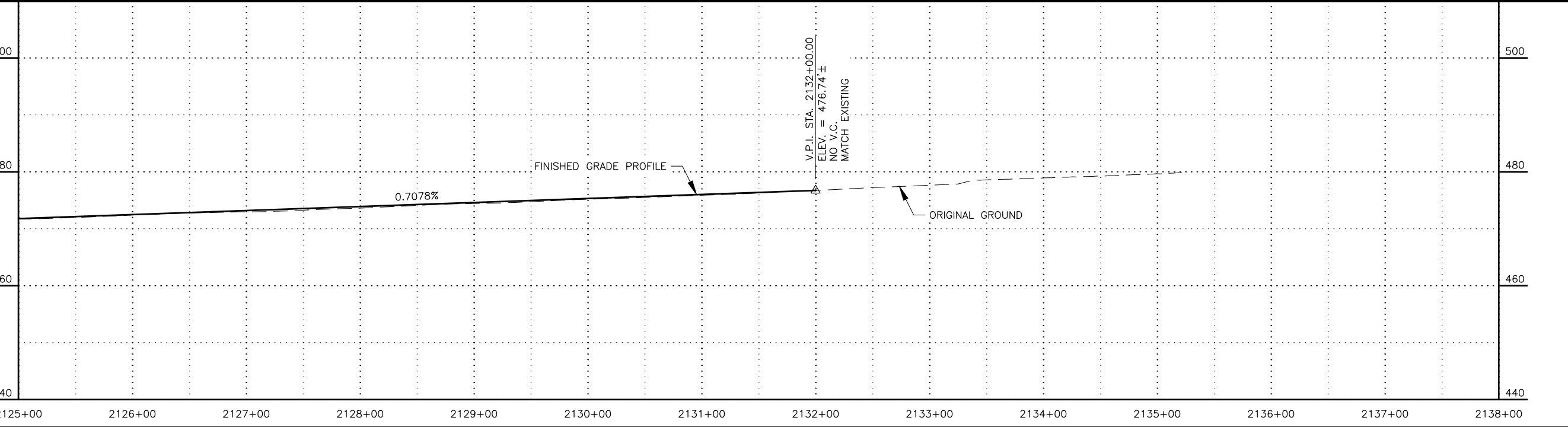
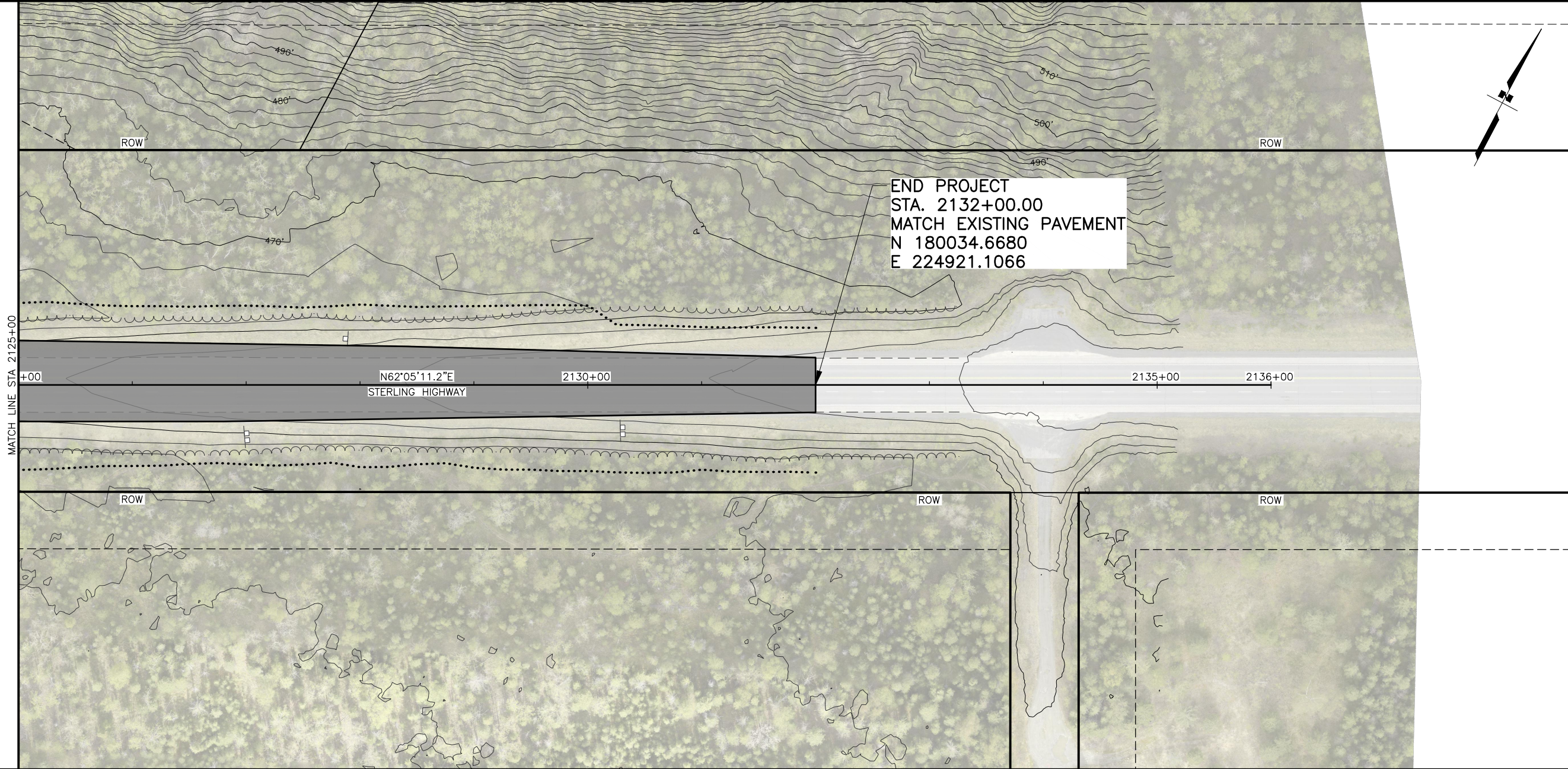
STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

PLAN & PROFILE  
STERLING HIGHWAY  
STA 2112+00 TO 2125+00



FILE Z:\PROJECT\2747.02 HDR STERLING HIGHWAY MP 45-60 DESIGN\CIVIL\ACAD\2747.02-F-MAINLINE.DWG DATE/TIME 3/6/2020 12:02 PM LAYOUT F10 DESIGNED CHECKED DRAFTED



SHEET NO.	TOTAL SHEETS
F10	F30
STATE	YEAR
ALASKA	2020
PROJECT DESIGNATION	
CFHWY00694	
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	

BOP: STA 2010+00

47

46

45

44

STERLING HIGHWAY

QUARTZ CREEK

THIS SHEET EOP STA 2132+00

STATE OF ALASKA

PLANS-IN-HAND

MARCH 2020

0000

REGISTERED PROFESSIONAL ENGINEER

R&M CONSULTANTS, INC.

9101 VANGUARD DRIVE

ANCHORAGE, AK 99507

(907) 522-1707

CERT. OF AUTH. NO. AECC111

STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60

SUNRISE TO SKILAK LAKE RD

RECONSTRUCTION STAGE 1B

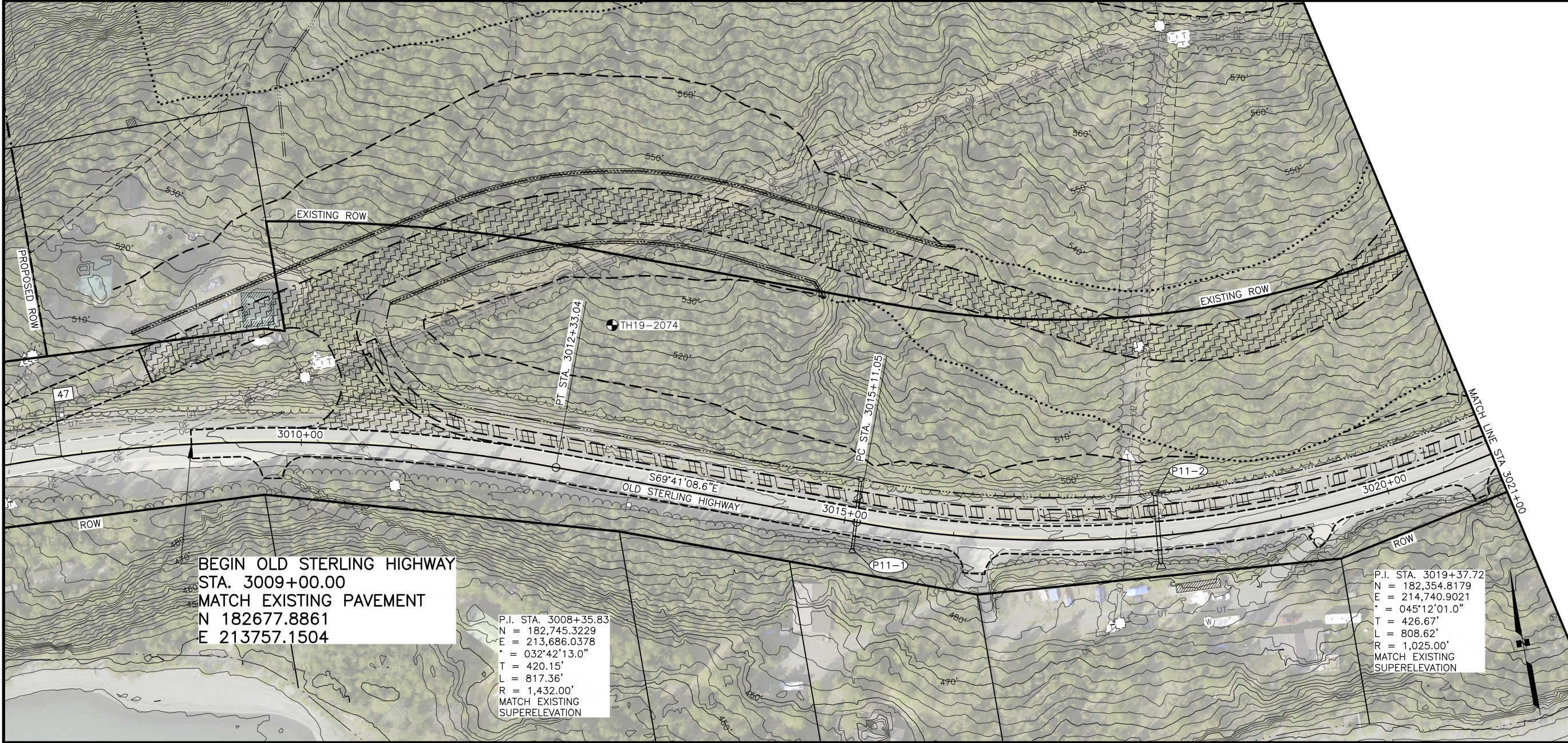
PLAN & PROFILE

STERLING HIGHWAY

STA 2125+00 TO EOP



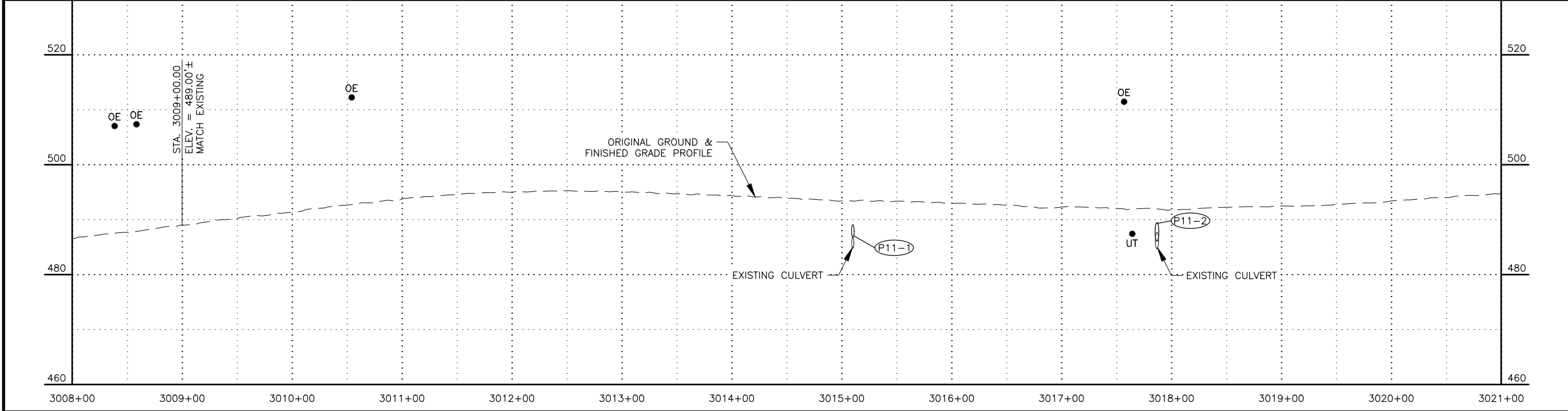
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BEGIN OLD STERLING HIGHWAY  
STA. 3009+00.00  
MATCH EXISTING PAVEMENT  
N 182677.8861  
E 213757.1504

P.I. STA. 3008+35.83  
N = 182,745.3229  
E = 213,686.0378  
• = 032°42'13.0"  
T = 420.15'  
L = 817.36'  
R = 1,432.00'  
MATCH EXISTING  
SUPERELEVATION

P.I. STA. 3019+37.72  
N = 182,354.8179  
E = 214,740.9021  
• = 045°12'01.0"  
T = 426.67'  
L = 808.62'  
R = 1,025.00'  
MATCH EXISTING  
SUPERELEVATION



SHEET NO.	TOTAL SHEETS
F11	F30
STATE	YEAR
ALASKA	2020
PROJECT DESIGNATION	
CFHWY00694	
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	

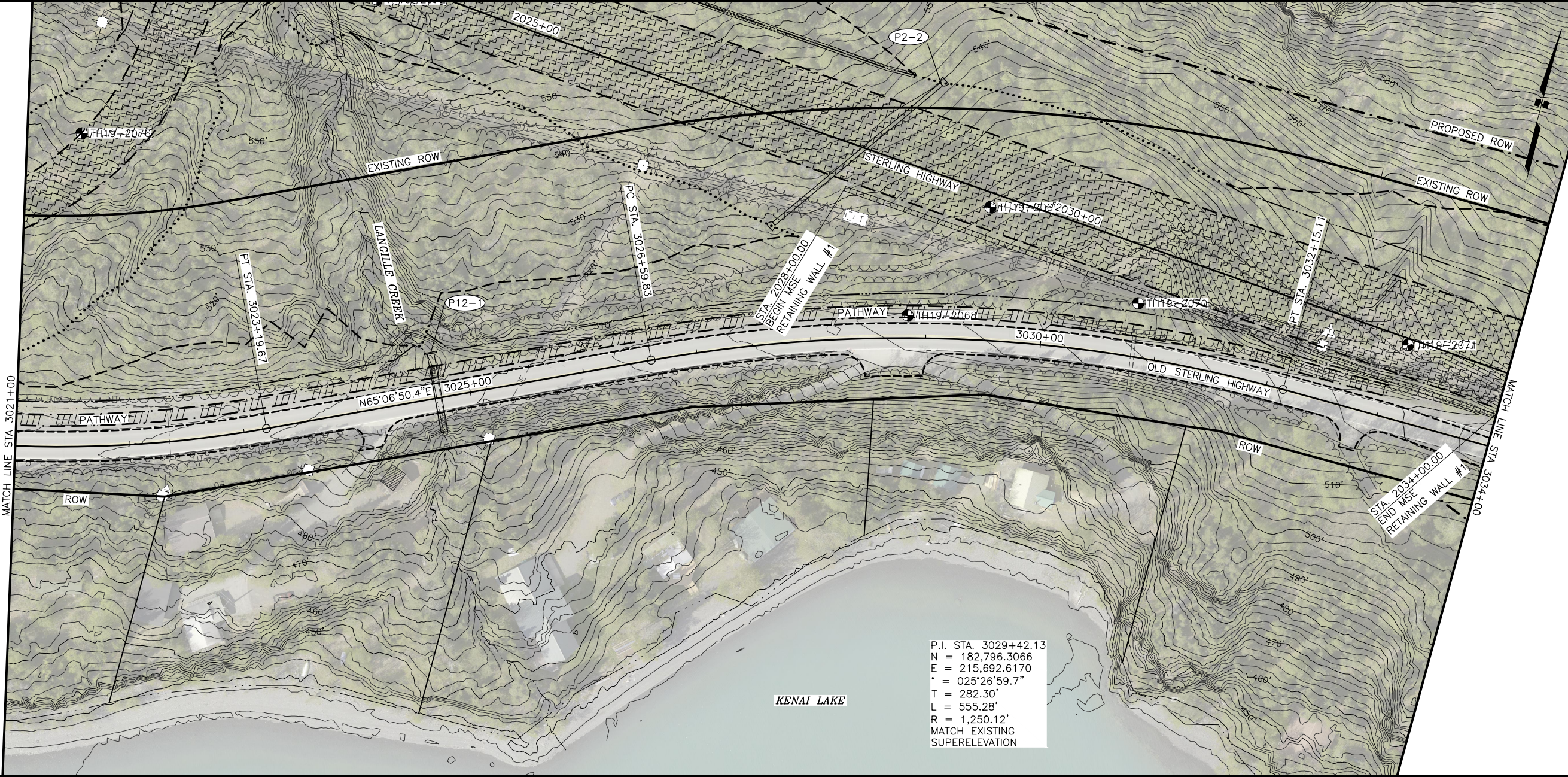
BOP  
STA 2010+00  
THIS SHEET  
KENAI LAKE  
STERLING HIGHWAY  
QUARTZ CREEK  
EOP  
STA 2132+00

STATE OF ALASKA  
PLANS-IN-HAND  
MARCH 2020  
0000  
REGISTERED PROFESSIONAL ENGINEER  
R&M CONSULTANTS, INC.  
9101 VANGUARD DRIVE  
ANCHORAGE, AK 99507  
(907) 522-1707  
CERT. OF AUTH. NO. AECC111

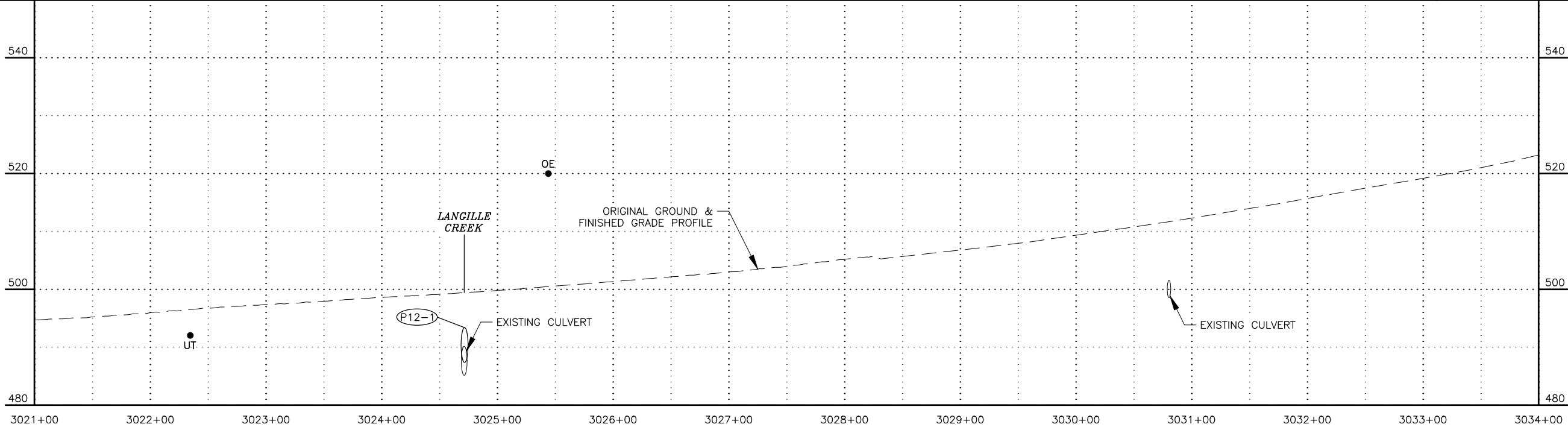
STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES  
STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B  
PLAN & PROFILE  
OLD STERLING HIGHWAY  
STA 3009+00 TO 3021+00



FILE Z:\PROJECT\2747.02 HDR STERLING HIGHWAY MP 45-60 DESIGN\CIVIL\ACAD\2747.02-F--MAINLINE.DWG DATE/TIME 3/6/2020 12:02 PM LAYOUT F12 DESIGNED CHECKED DRAFTED



P.I. STA. 3029+42.13  
N = 182,796.3066  
E = 215,692.6170  
Δ = 025°26'59.7"  
T = 282.30'  
L = 555.28'  
R = 1,250.12'  
MATCH EXISTING  
SUPERELEVATION



SHEET NO.	TOTAL SHEETS
F12	F30
STATE	YEAR
ALASKA	2020
PROJECT DESIGNATION	
CFHWY00694	
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	

**STATE OF ALASKA**  
**PLANS-IN-HAND**  
**MARCH 2020**  
0000  
REGISTERED PROFESSIONAL ENGINEER

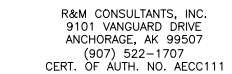
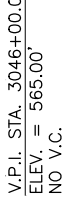
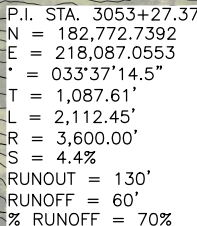
R&M CONSULTANTS, INC.  
9101 VANGUARD DRIVE  
ANCHORAGE, AK 99507  
(907) 522-1707  
CERT. OF AUTH. NO. AECC111

STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

PLAN & PROFILE  
OLD STERLING HIGHWAY  
STA 3021+00 TO 3034+00

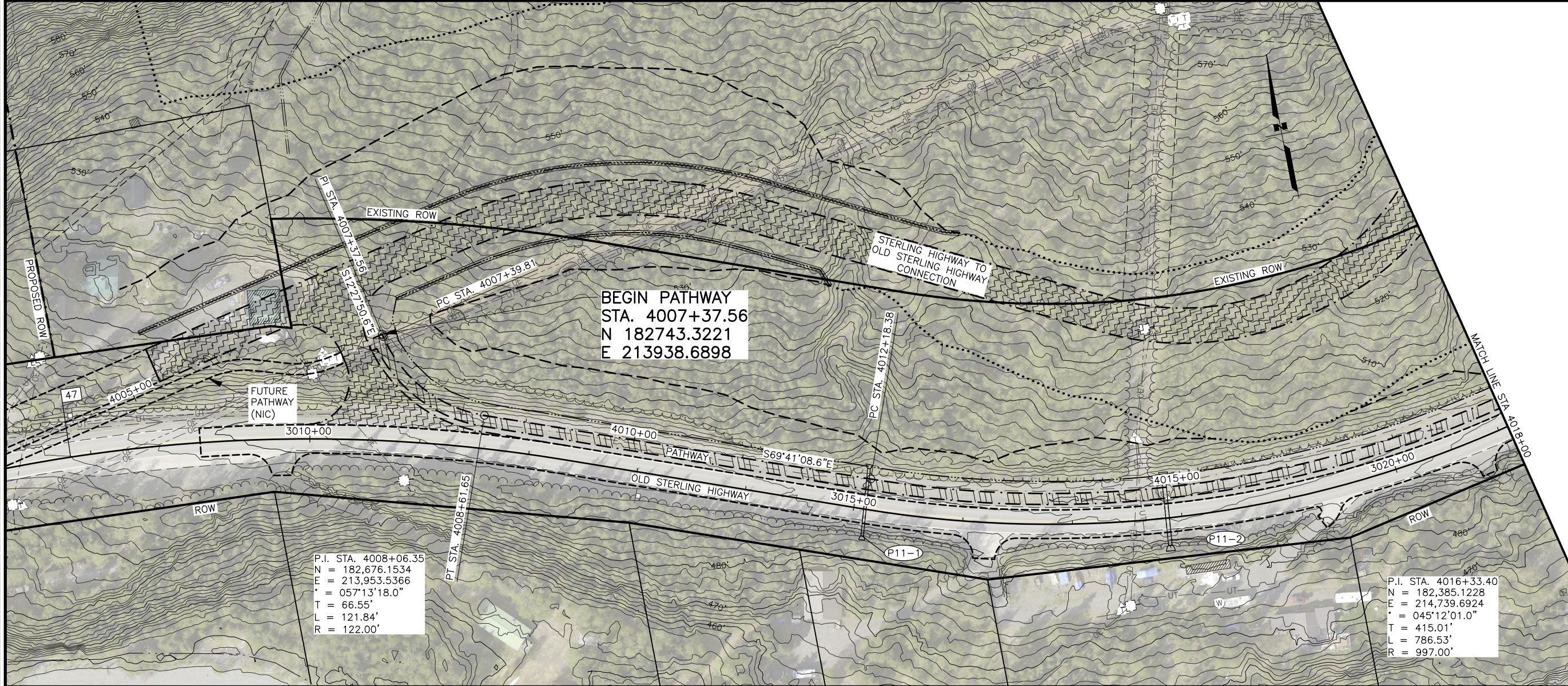




PLAN & PROFILE  
STERLING HWY TO  
OLD STERLING HWY  
TEMPORARY CONNECTION  
STA 3034+00 TO 3046+00

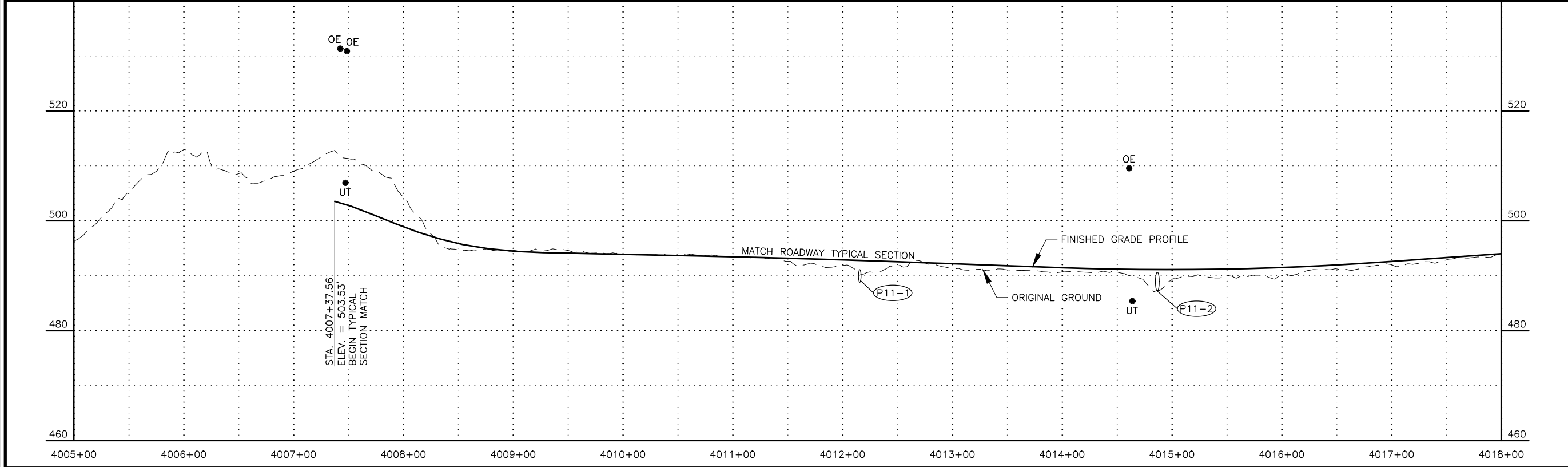


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P.I. STA. 4008+06.35  
N = 182,676.1534  
E = 213,953.5366  
• = 057°13'18.0"  
T = 66.55'  
L = 121.84'  
R = 122.00'

P.I. STA. 4016+33.40  
N = 182,385.1228  
E = 214,739.6924  
• = 045°12'01.0"  
T = 415.01'  
L = 786.53'  
R = 997.00'



SHEET NO.	TOTAL SHEETS
F14	F30
STATE	YEAR
ALASKA	2020
PROJECT DESIGNATION	
CFHWY00694	
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	

STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES  
STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B  
PLANS-IN-HAND  
MARCH 2020  
0000  
REGISTERED PROFESSIONAL ENGINEER  
R&M CONSULTANTS, INC.  
9101 VANGUARD DRIVE  
ANCHORAGE, AK 99507  
(907) 522-1707  
CERT. OF AUTH. NO. AECC111

PLAN & PROFILE  
PATHWAY  
BOP TO STA 4018+00



FILE Z:\PROJECT\2747.02 HDR STERLING HIGHWAY MP 45-60 DESIGN\CIVIL\ACAD\2747.02-F-PATHWAY.DWG DATE/TIME 3/6/2020 11:07 AM LAYOUT F15 DESIGNED CHECKED DRAFTED

SHEET NO.	TOTAL SHEETS
F15	F30
STATE	YEAR
ALASKA	2020
PROJECT DESIGNATION	
CFHWY00694	
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	

BOP STA 2010+00

THIS SHEET

STERLING HIGHWAY

EOP STA 2132+00

QUARTZ CREEK

KENAI LAKE

STATE OF ALASKA

PLANS-IN-HAND

MARCH 2020

0000

REGISTERED PROFESSIONAL ENGINEER

R&M CONSULTANTS, INC.

9101 VANGUARD DRIVE

ANCHORAGE, AK 99507

(907) 522-1707

CERT. OF AUTH. NO. AECC111

STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60

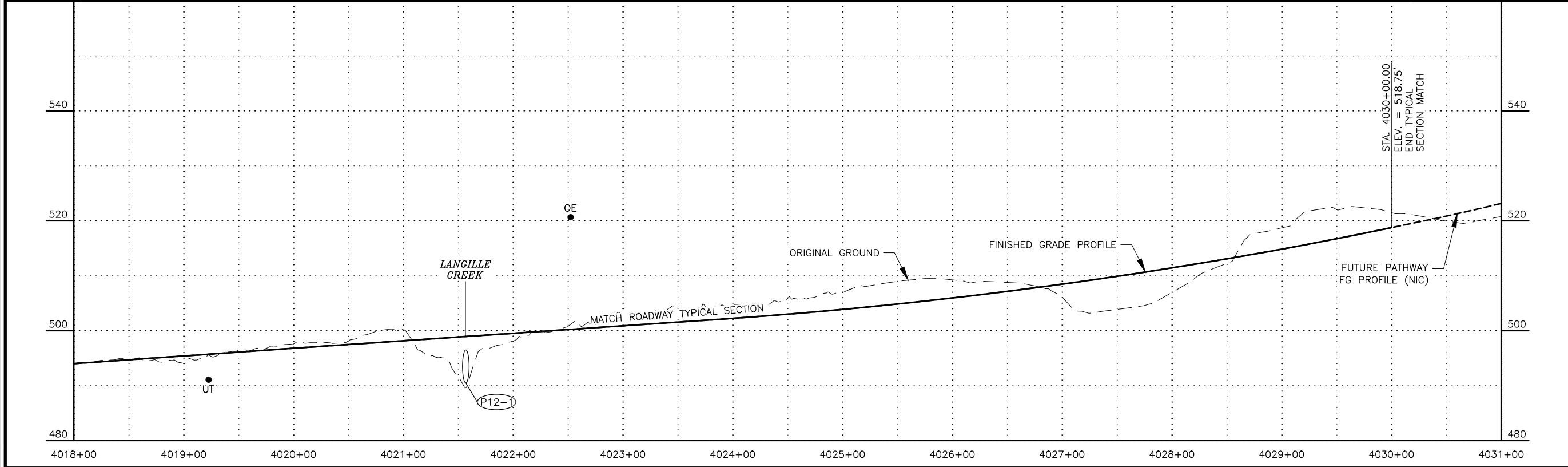
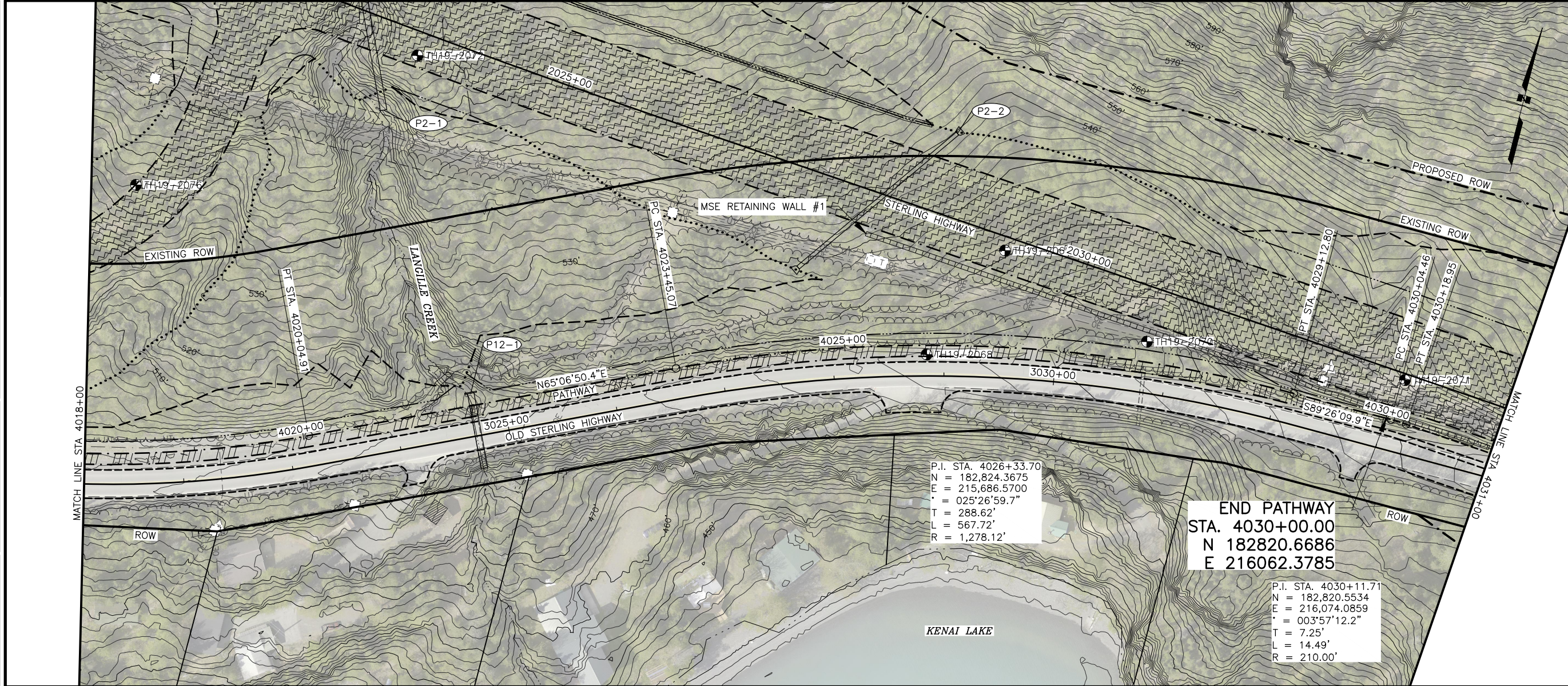
SUNRISE TO SKILAK LAKE RD

RECONSTRUCTION STAGE 1B

PLAN & PROFILE

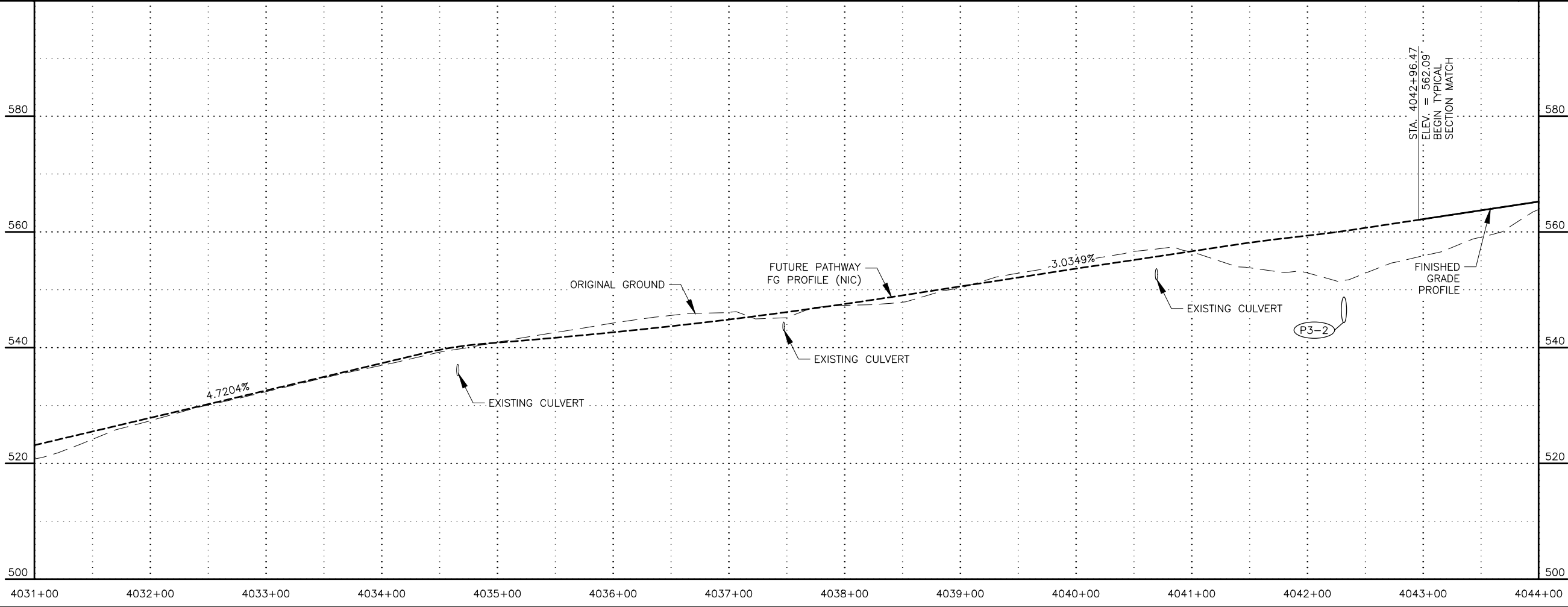
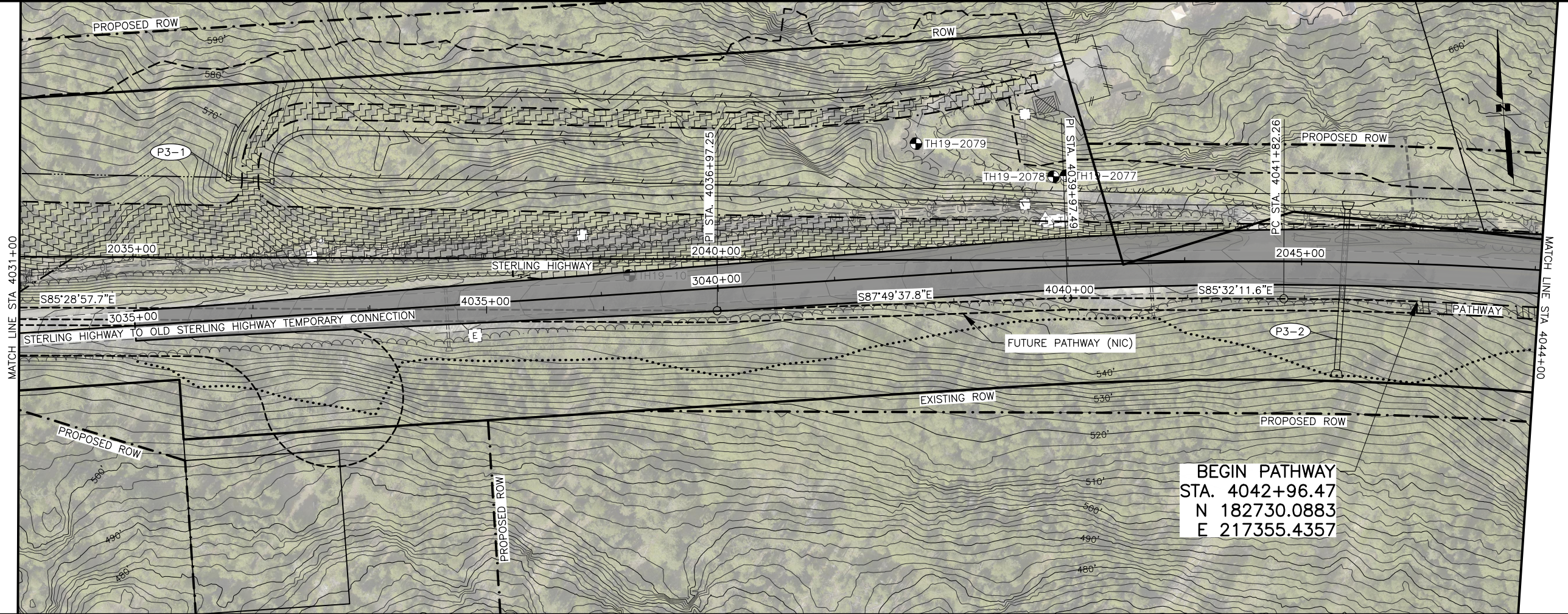
PATHWAY

STA 4018+00 TO 4031+00





FILE Z:\PROJECT\2747.02 HDR STERLING HIGHWAY MP 45-60 DESIGN\CIVIL\ACAD\2747.02-F-PATHWAY.DWG DATE/TIME 3/6/2020 11:07 AM LAYOUT F16 DESIGNED CHECKED DRAFTED



SHEET NO.	TOTAL SHEETS
F16	F30
STATE	YEAR
ALASKA	2020
PROJECT DESIGNATION	
CFHWY00694	
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	

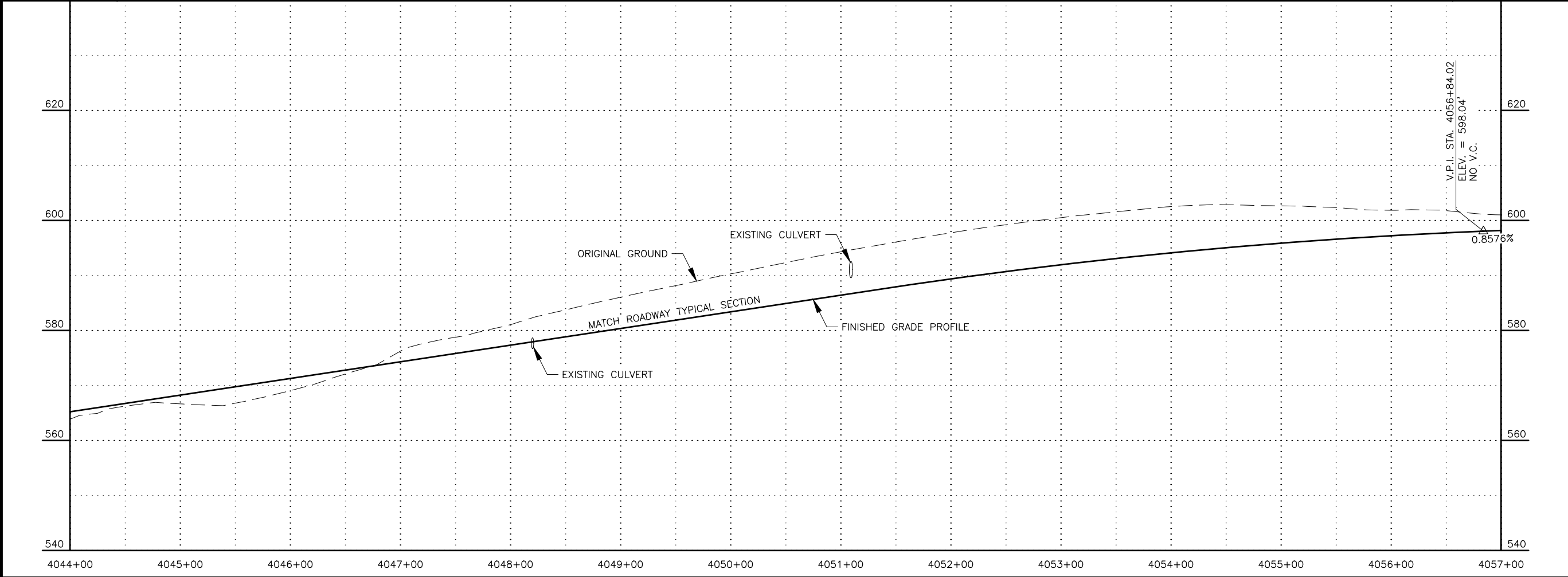
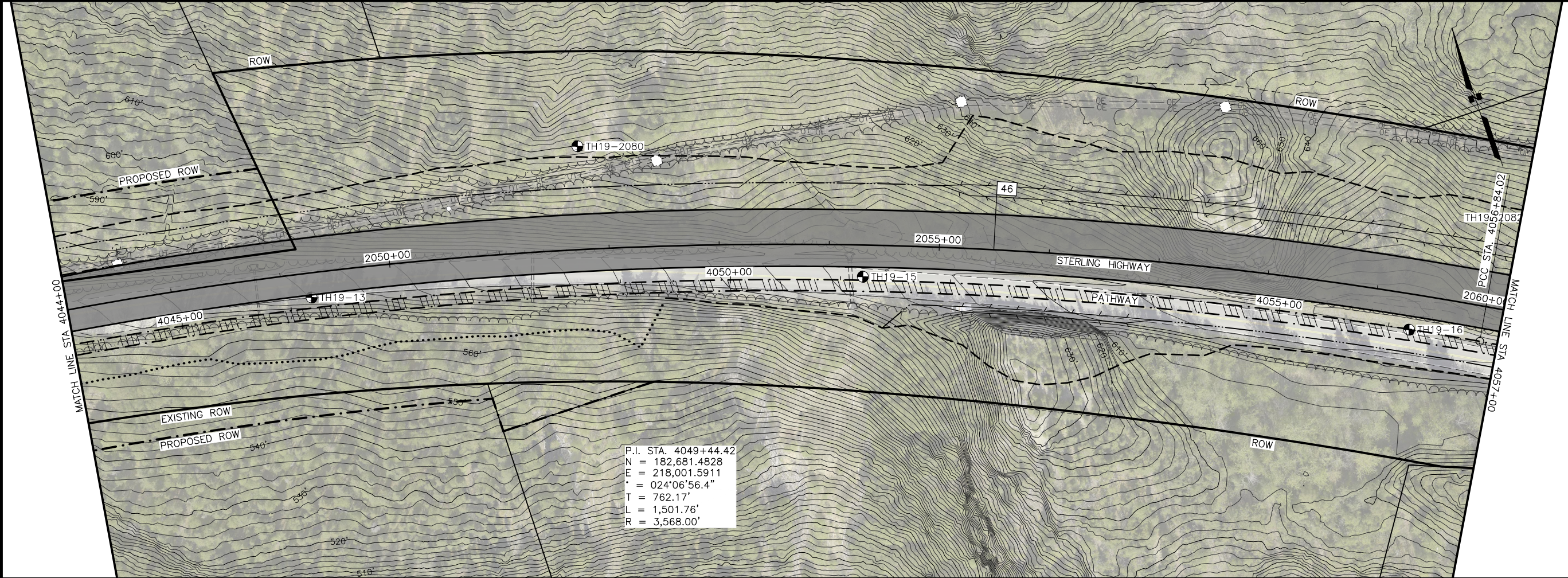
STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

PLAN & PROFILE  
PATHWAY  
STA 4031+00 TO 4044+00



FILE Z:\PROJECT\2747.02 HDR STERLING HIGHWAY MP 45-60 DESIGN\CIVIL\ACAD\2747.02-F-PATHWAY.DWG DATE/TIME 3/6/2020 11:07 AM LAYOUT F17 DESIGNED CHECKED DRAFTED



SHEET NO.	TOTAL SHEETS
F17	F30
STATE	YEAR
ALASKA	2020
PROJECT DESIGNATION	
CFHWY00694	

NO.	REVISION

STATE OF ALASKA  
PLANS-IN-HAND  
MARCH 2020  
0000  
REGISTERED PROFESSIONAL ENGINEER

R&M CONSULTANTS, INC.  
9101 VANGUARD DRIVE  
ANCHORAGE, AK 99507  
(907) 522-1707  
CERT. OF AUTH. NO. AECC111

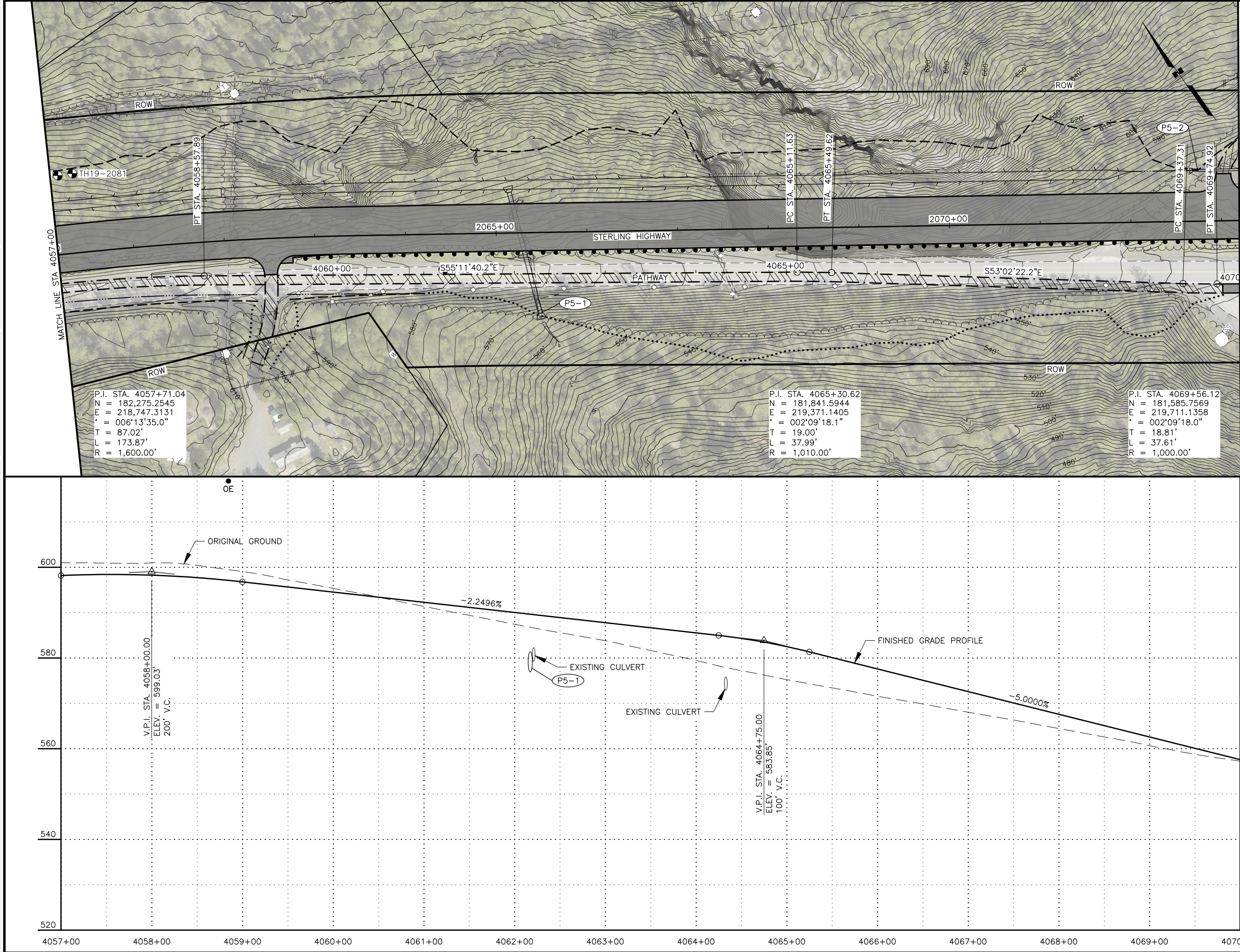
STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

PLAN & PROFILE  
PATHWAY  
STA 4044+00 TO 4057+00



FILE Z:\PROJECT\2747.02 HDR STERLING HIGHWAY MP 45-60 DESIGN\CIVIL\ACAD\2747.02-F-PATHWAY.DWG DATE/TIME 3/6/2020 11:08 AM LAYOUT F18 DESIGNED CHECKED DRAFTED



SHEET NO.	TOTAL SHEETS
F18	F30
STATE	YEAR
ALASKA	2020
PROJECT DESIGNATION	
CFHWY00694	
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	

STATE OF ALASKA  
PLANS-IN-HAND  
MARCH 2020  
0000  
REGISTERED PROFESSIONAL ENGINEER

R&M CONSULTANTS, INC.  
9101 VANGUARD DRIVE  
ANCHORAGE, AK 99507  
(907) 522-1707  
CERT. OF AUTH. NO. AECC111

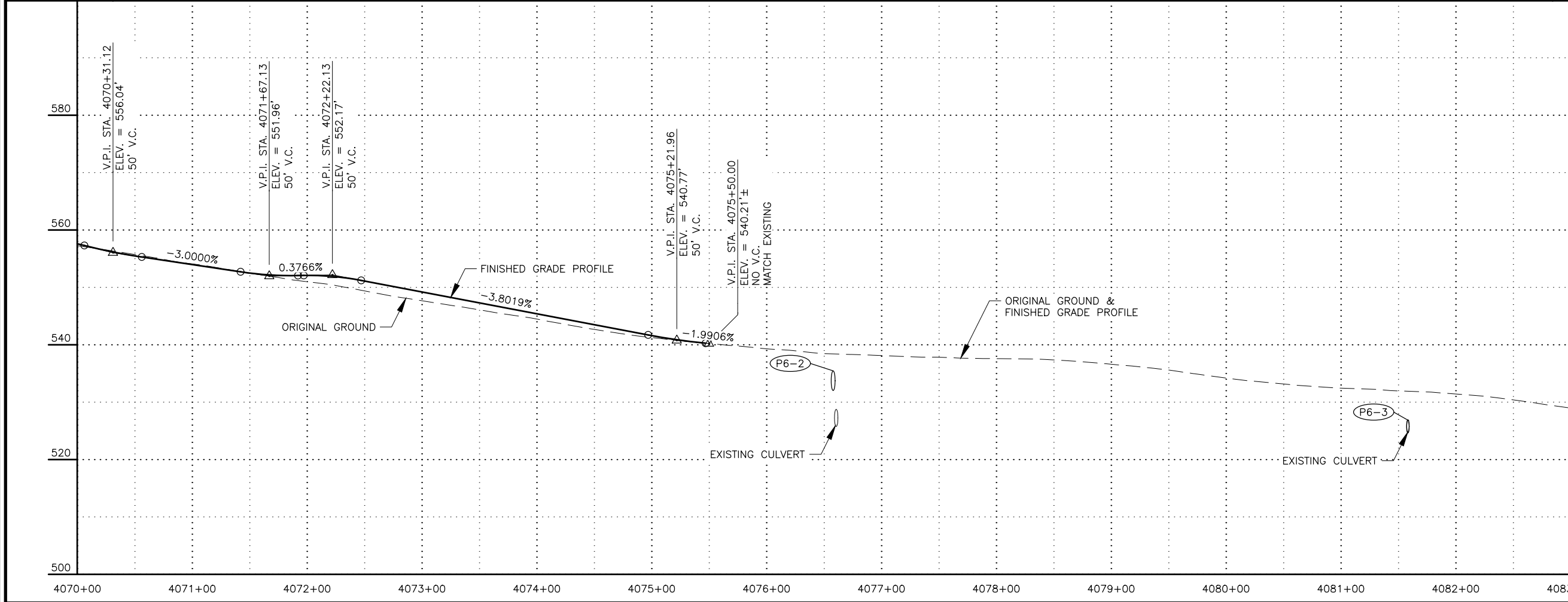
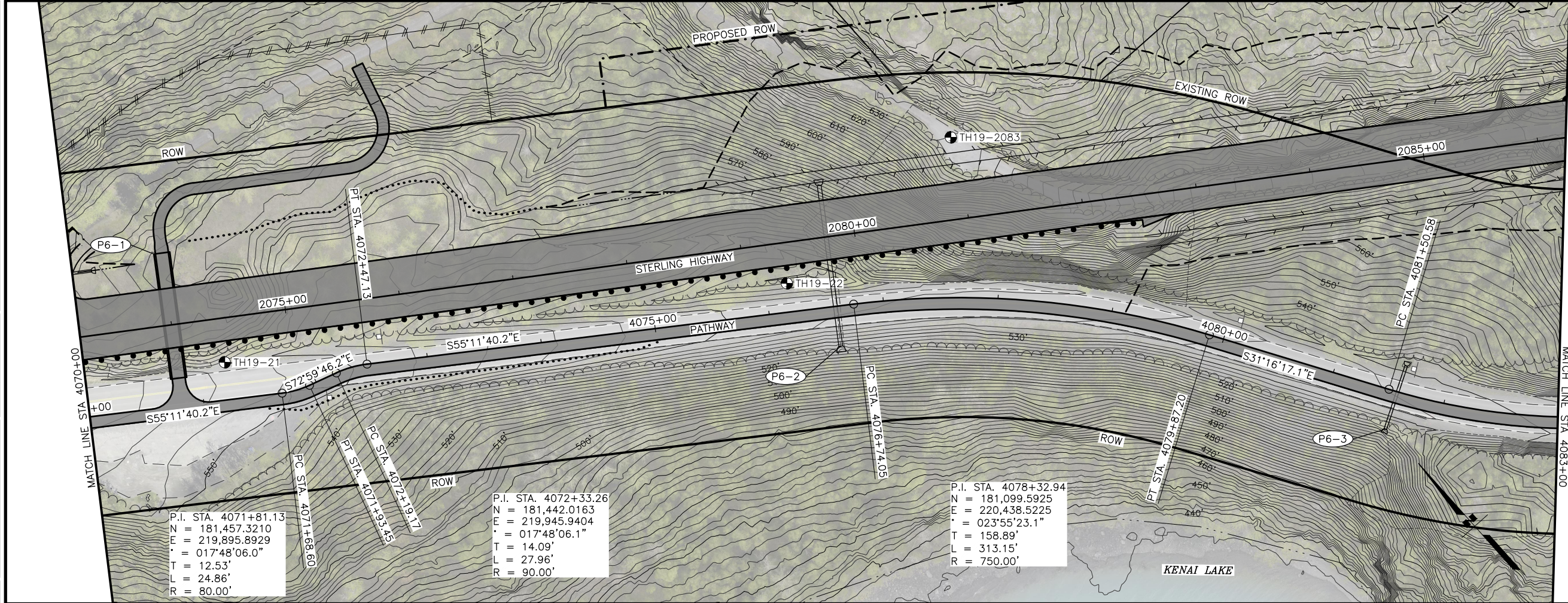
STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

PLAN & PROFILE  
PATHWAY  
STA 4057+00 TO 4070+00



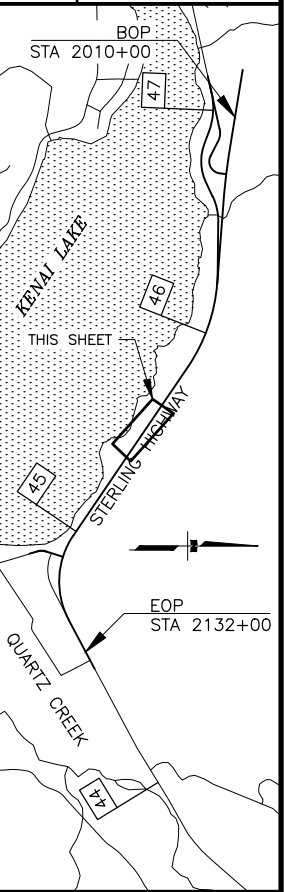
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SHEET NO.	TOTAL SHEETS
F19	F30
STATE	YEAR
ALASKA	2020

PROJECT DESIGNATION  
CFHWY00694

NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	



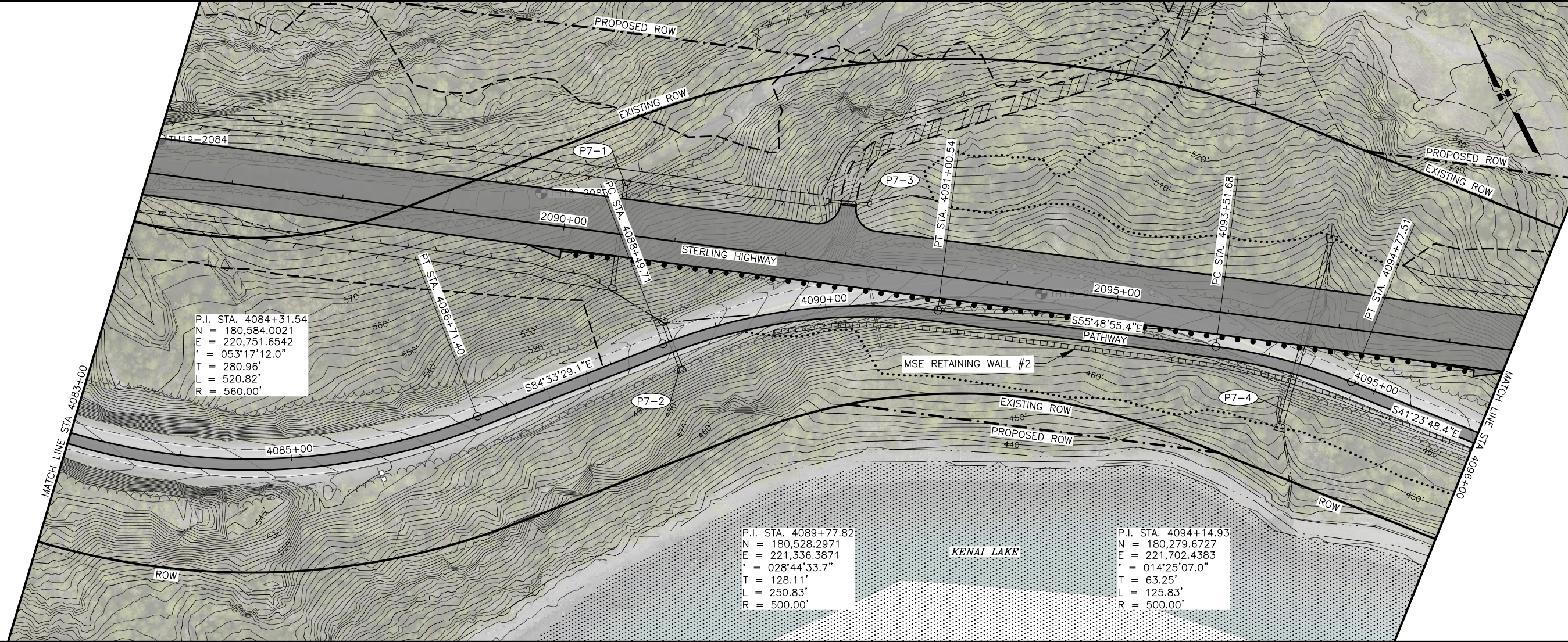
R&M CONSULTANTS, INC.  
9101 VANGUARD DRIVE  
ANCHORAGE, AK 99507  
(907) 522-1707  
CERT. OF AUTH. NO. AECC111

STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES  
STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

PLAN & PROFILE  
PATHWAY  
STA 4070+00 TO 4083+00



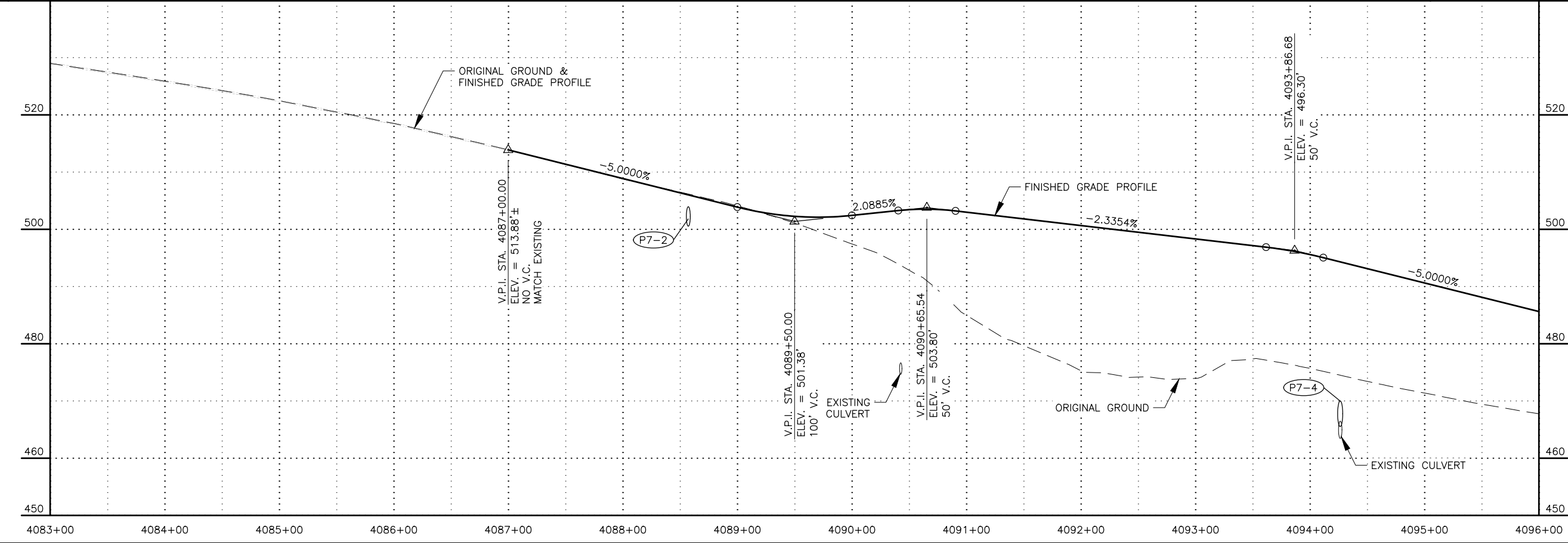
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P.I. STA. 4084+31.54  
N = 180,584.0021  
E = 220,751.6542  
Δ = 053°17'12.0"  
T = 280.96'  
L = 520.82'  
R = 560.00'

P.I. STA. 4089+77.82  
N = 180,528.2971  
E = 221,336.3871  
Δ = 028°44'33.7"  
T = 128.11'  
L = 250.83'  
R = 500.00'

P.I. STA. 4094+14.93  
N = 180,279.6727  
E = 221,702.4383  
Δ = 014°25'07.0"  
T = 63.25'  
L = 125.83'  
R = 500.00'



SHEET NO.	TOTAL SHEETS
F20	F30
STATE	YEAR
ALASKA	2020
PROJECT DESIGNATION	
CFHWY00694	
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	

STATE OF ALASKA  
**PLANS-IN-HAND**  
MARCH 2020  
0000  
REGISTERED PROFESSIONAL ENGINEER

R&M CONSULTANTS, INC.  
9101 VANGUARD DRIVE  
ANCHORAGE, AK 99507  
(907) 522-1707  
CERT. OF AUTH. NO. AEC0111

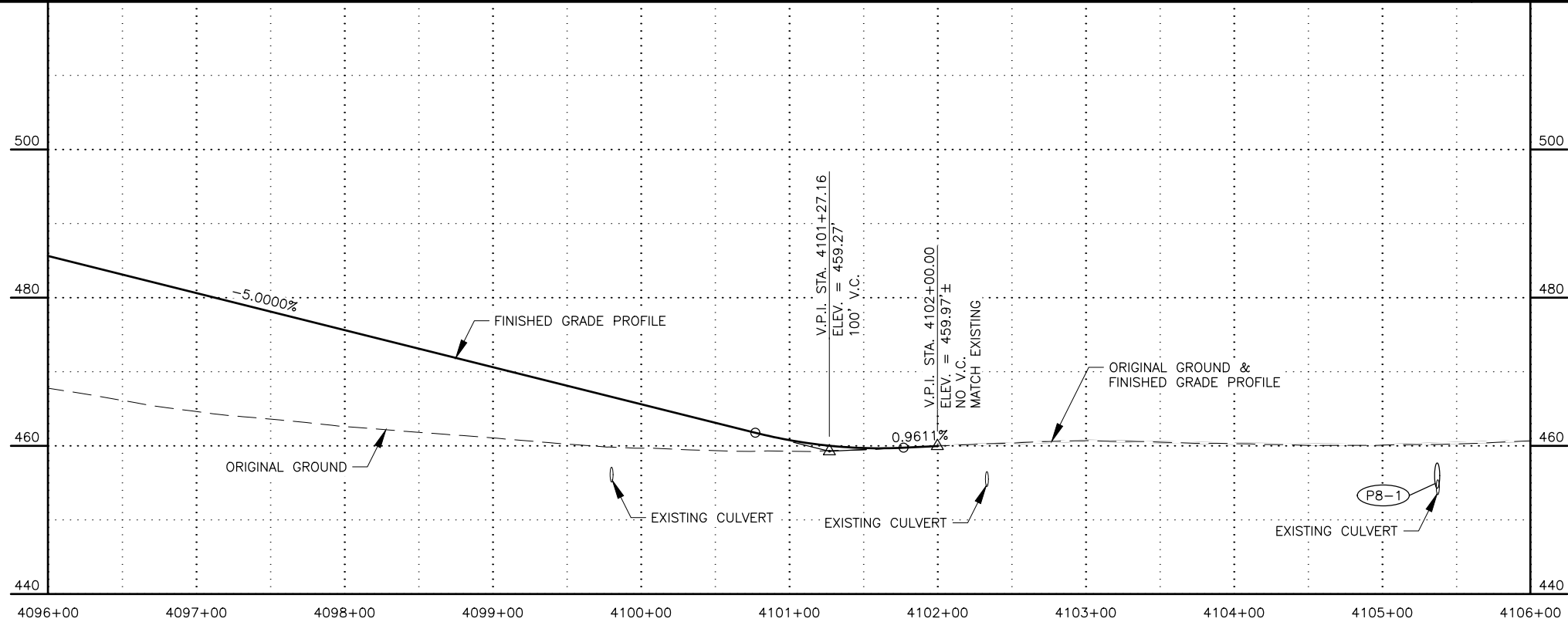
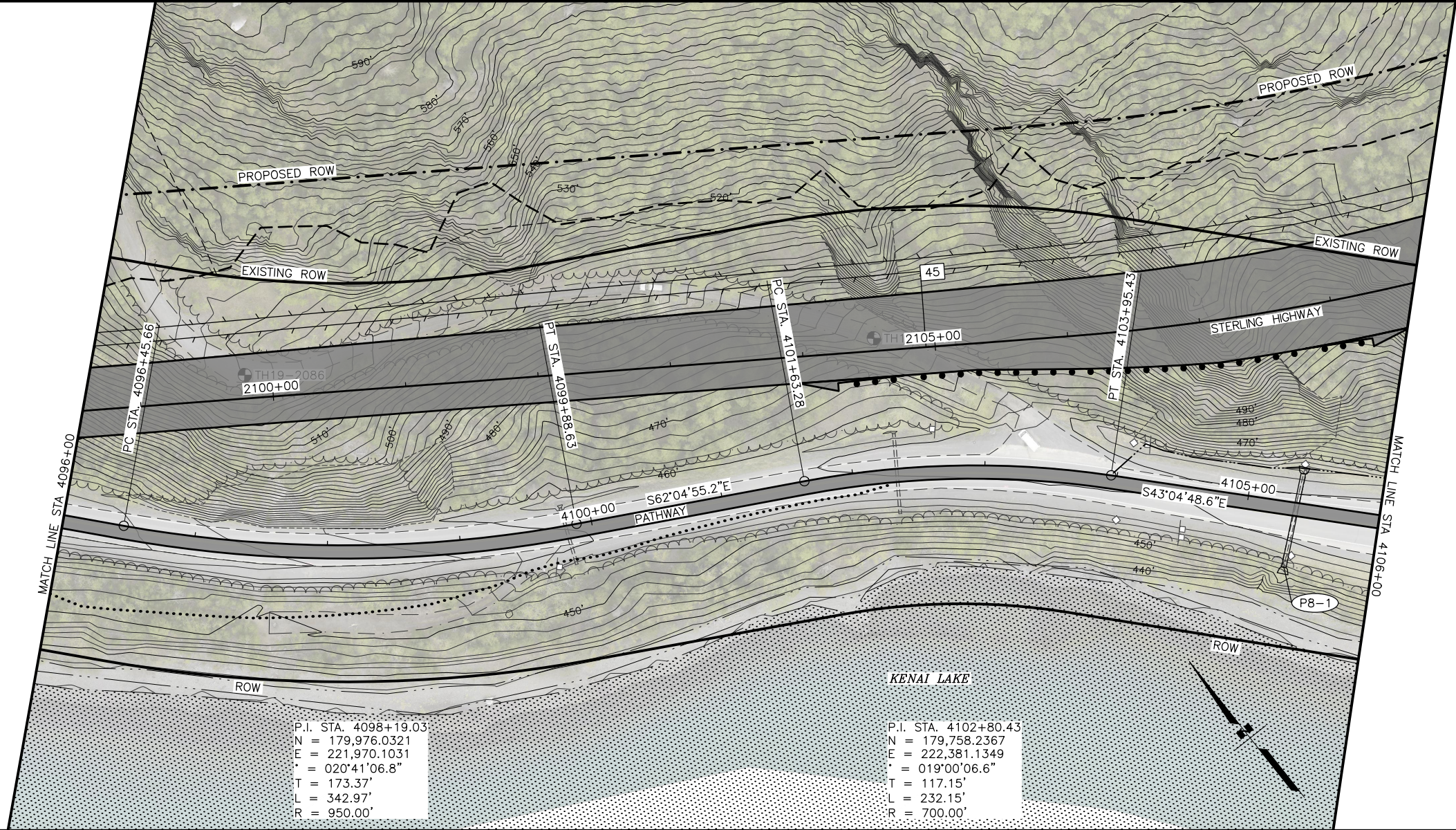
STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

PLAN & PROFILE  
PATHWAY  
STA 4083+00 TO 4096+00



FILE Z:\PROJECT\2747.02 HDR STERLING HIGHWAY MP 45-60 DESIGN\CIVIL\ACAD\2747.02-F-PATHWAY.DWG DATE/TIME 3/6/2020 11:09 AM LAYOUT F21 DESIGNED CHECKED DRAFTED



SHEET NO.	TOTAL SHEETS
F21	F30
STATE	YEAR
ALASKA	2020
PROJECT DESIGNATION	
CFHWY00694	
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	

THIS SHEET  
EOP  
STA 2132+00

QUARTZ CREEK

KENAI LAKE

STERLING HIGHWAY

STATE OF ALASKA  
PLANS-IN-HAND  
MARCH 2020  
0000  
REGISTERED PROFESSIONAL ENGINEER

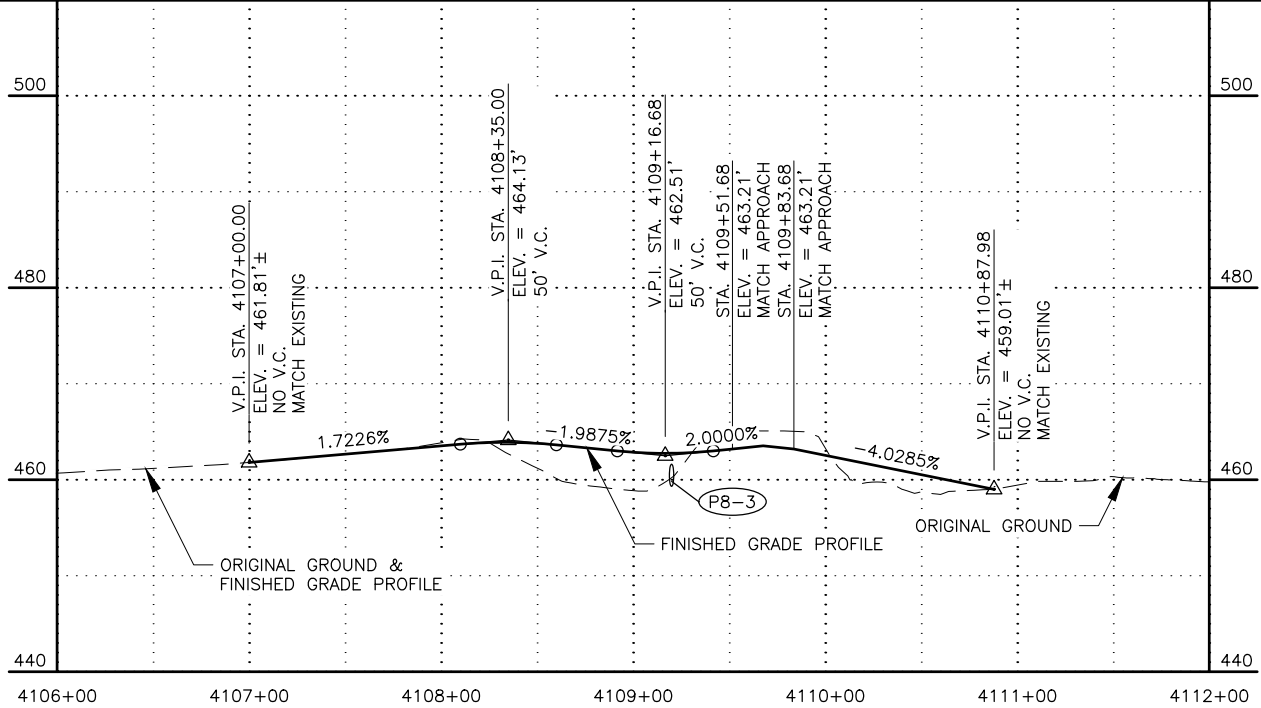
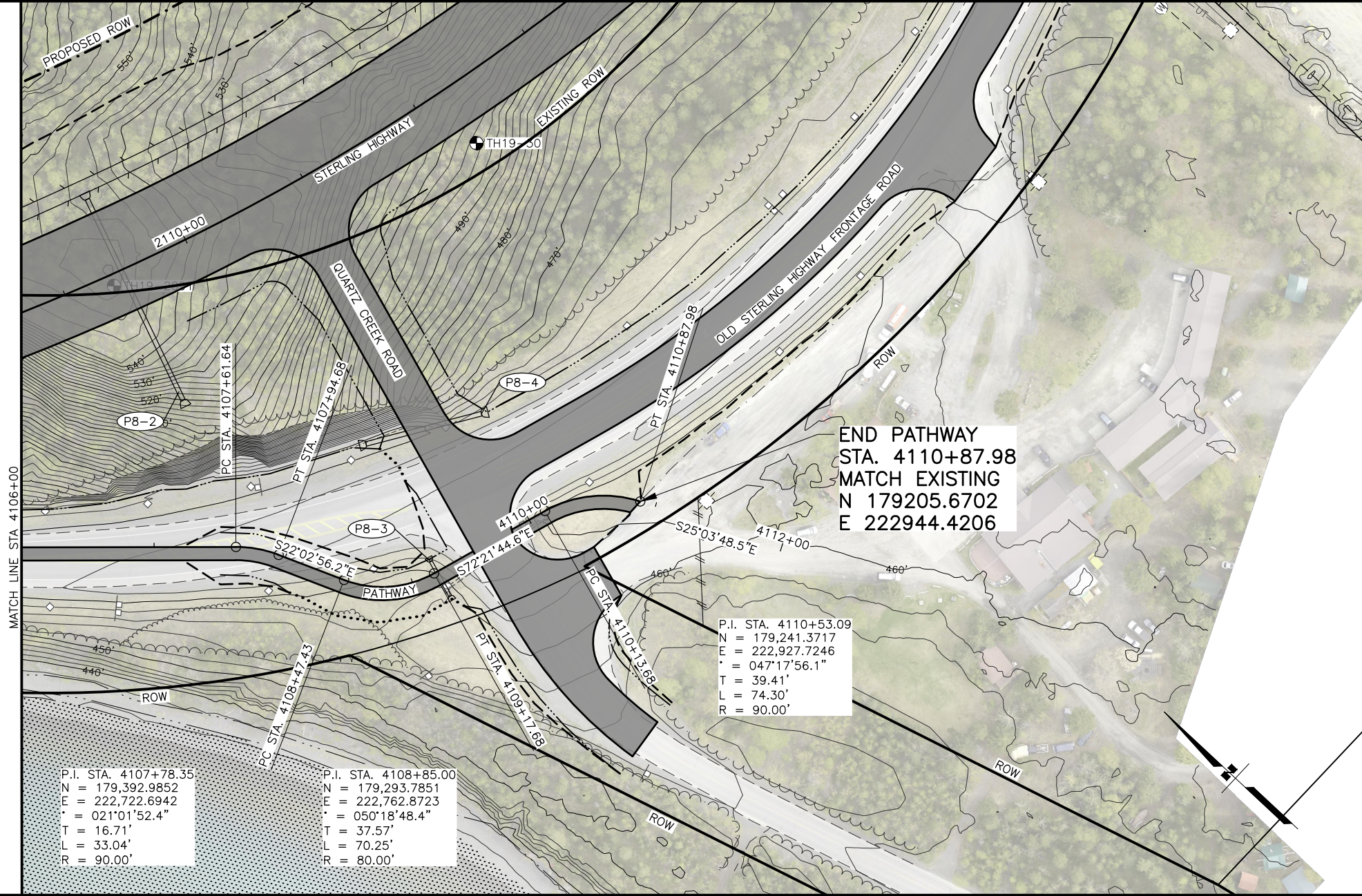
R&M CONSULTANTS, INC.  
9101 VANGUARD DRIVE  
ANCHORAGE, AK 99507  
(907) 522-1707  
CERT. OF AUTH. NO. AECC111

STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

PLAN & PROFILE  
PATHWAY  
STA 4096+00 TO 4106+00





SHEET NO.	TOTAL SHEETS
F22	F30
STATE	YEAR
ALASKA	2020
PROJECT DESIGNATION	
CFHWY00694	
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	

BOP: STA 2010+00

THIS SHEET EOP STA 2132+00

QUARTZ CREEK

STERLING HIGHWAY

KENAI LAKE

STATE OF ALASKA

PLANS-IN-HAND

MARCH 2020

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REGISTERED PROFESSIONAL ENGINEER

R&M CONSULTANTS, INC.

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STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60

SUNRISE TO SKILAK LAKE RD

RECONSTRUCTION STAGE 1B

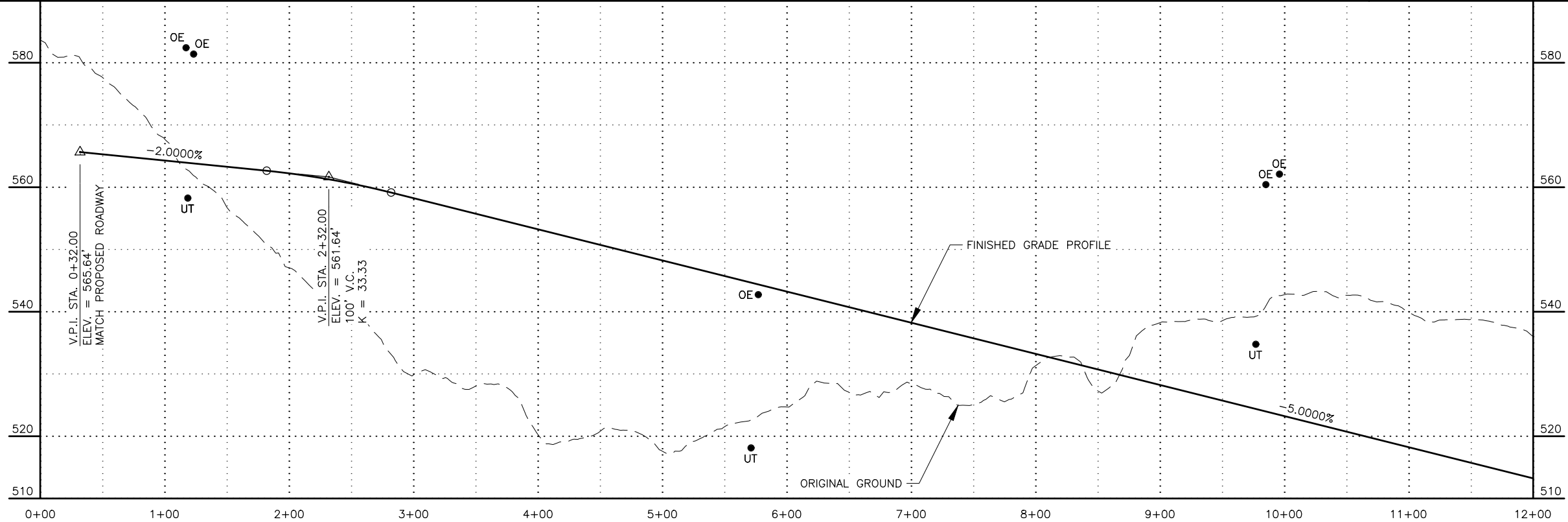
PLAN & PROFILE

PATHWAY

STA 4106+00 TO EOP



FILE | Z:\PROJECT\2747.02 HDR STERLING HIGHWAY MP 45-60 DESIGN\CIVIL\ACAD\2747.02-F-DRIVEWAYS.DWG | DATE/TIME 3/6/2020 11:10 AM | LAYOUT | F23 | DESIGNED | CHECKED | DRAFTED



STERLING HIGHWAY TO OLD STERLING HIGHWAY CONNECTION

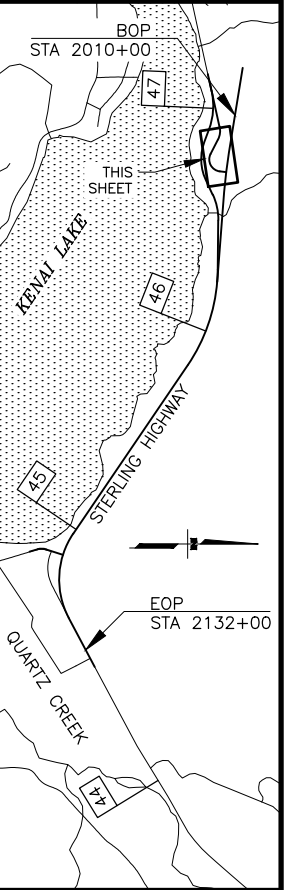
STA 0+00 TO STA 12+00



SHEET NO.	TOTAL SHEETS
F23	F30
STATE	YEAR
ALASKA	2020

PROJECT DESIGNATION  
CFHWY00694

NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	



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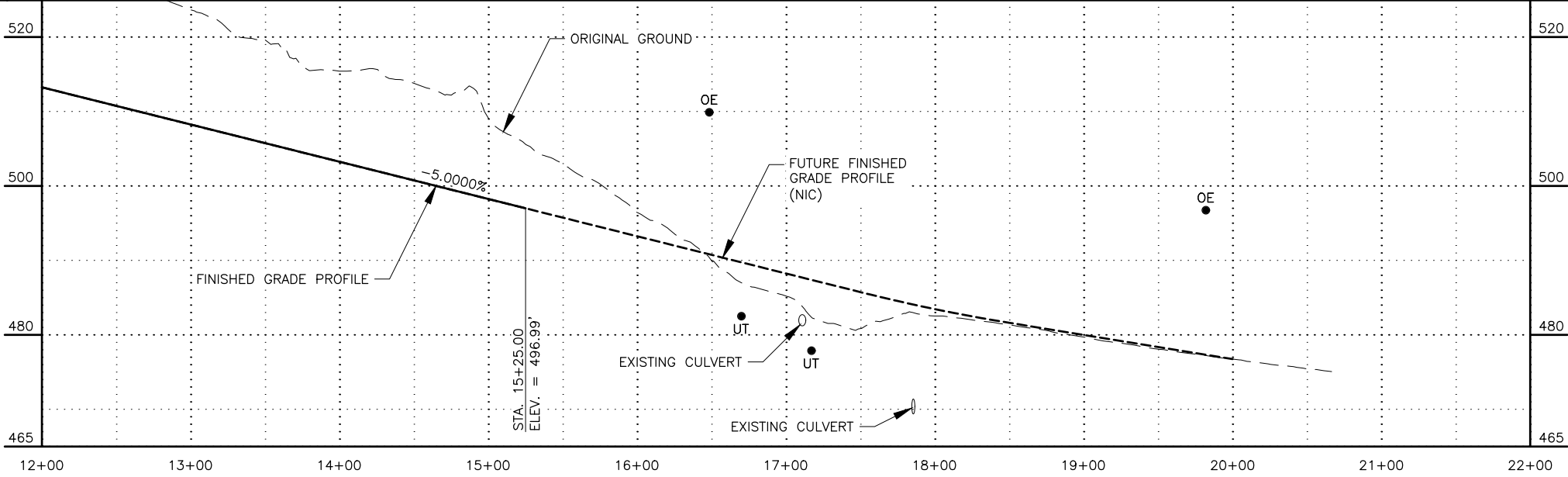
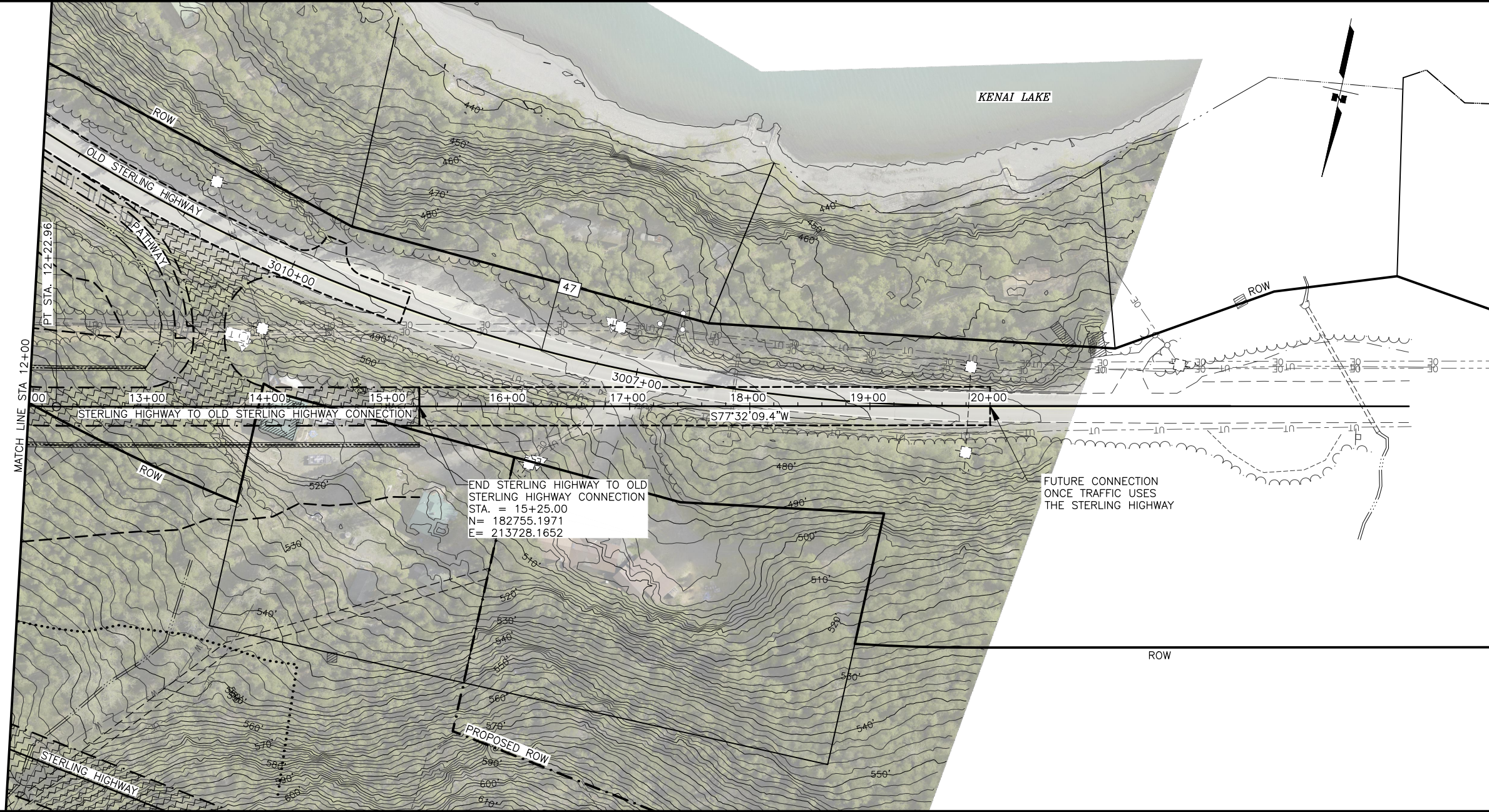
STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

PLAN & PROFILE  
STERLING HIGHWAY TO  
OLD STERLING HIGHWAY  
CONNECTION



FILE | Z:\PROJECT\2747.02 HDR STERLING HIGHWAY MP 45-60 DESIGN\CIVIL\ACAD\2747.02-F-DRIVEWAYS.DWG | DATE/TIME 3/6/2020 11:10 AM | LAYOUT | F24 | DESIGNED | CHECKED | DRAFTED



STERLING HIGHWAY TO OLD STERLING HIGHWAY CONNECTION

STA 12+00 TO STA 20+00

SHEET NO.	TOTAL SHEETS
F24	F30
STATE	YEAR
ALASKA	2020
PROJECT DESIGNATION	
CFHWY00694	
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	

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CERT. OF AUTH. NO. AECC111

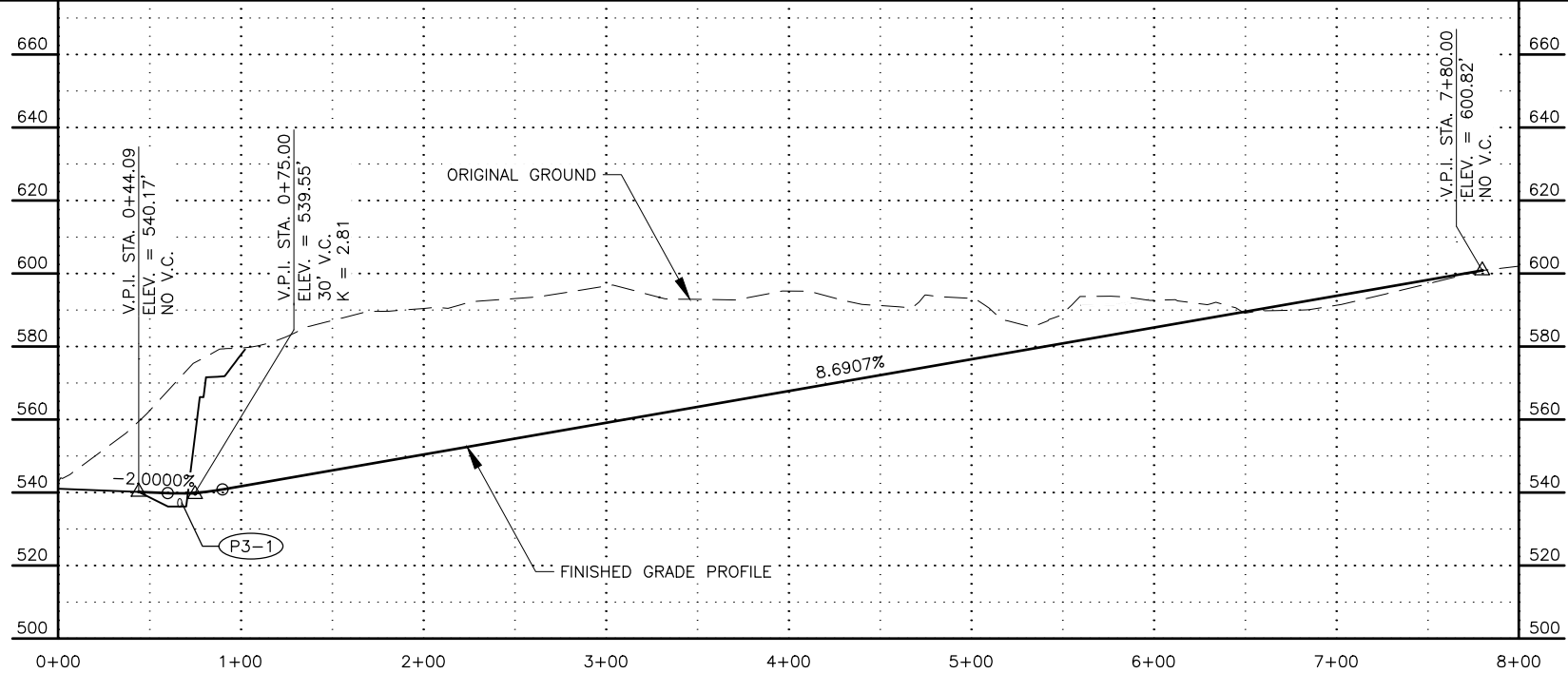
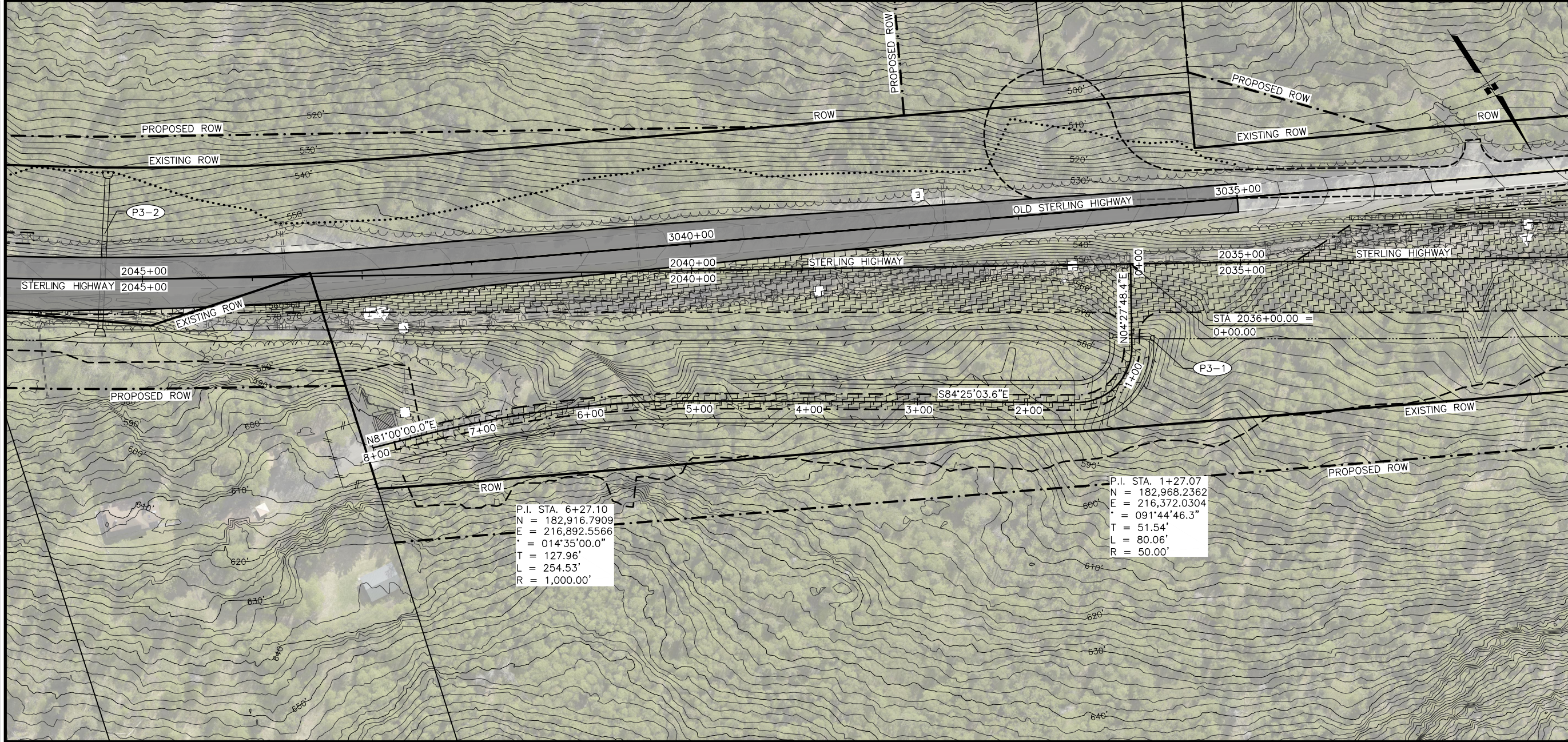
STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

PLAN & PROFILE  
STERLING HIGHWAY TO  
OLD STERLING HIGHWAY  
CONNECTION



FILE Z:\PROJECT\2747.02 HDR STERLING HIGHWAY MP 45-60 DESIGN\CIVIL\ACAD\2747.02-F-DRIVEWAYS.DWG DATE/TIME 3/6/2020 11:11 AM LAYOUT F25 DESIGNED CHECKED DRAFTED



SHEET NO.	F25	TOTAL SHEETS	F30
STATE	ALASKA	YEAR	2020
PROJECT DESIGNATION			
CFHWY00694			
NO.	REVISION		
DATE			
NO.	REVISION		
DATE			
NO.	REVISION		
DATE			

BOP: STA 2010+00

THIS SHEET

STERLING HIGHWAY

QUARTZ CREEK

EOP: STA 2132+00

STATE OF ALASKA

PLANS-IN-HAND

MARCH 2020

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REGISTERED PROFESSIONAL ENGINEER

R&M CONSULTANTS, INC.

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ANCHORAGE, AK 99507

(907) 522-1707

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STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60

SUNRISE TO SKILAK LAKE RD

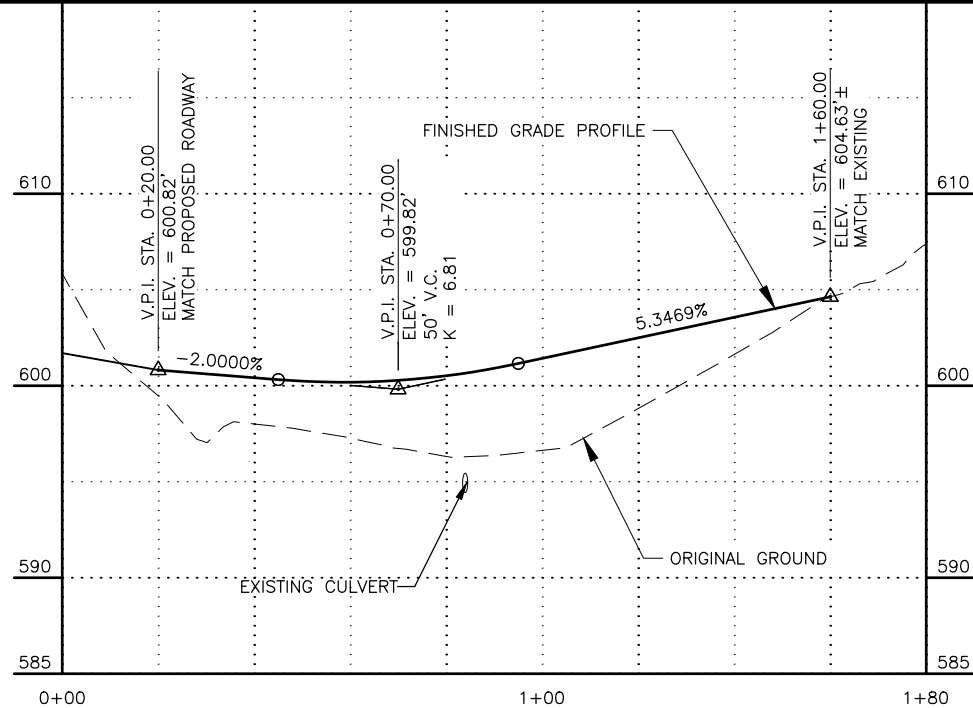
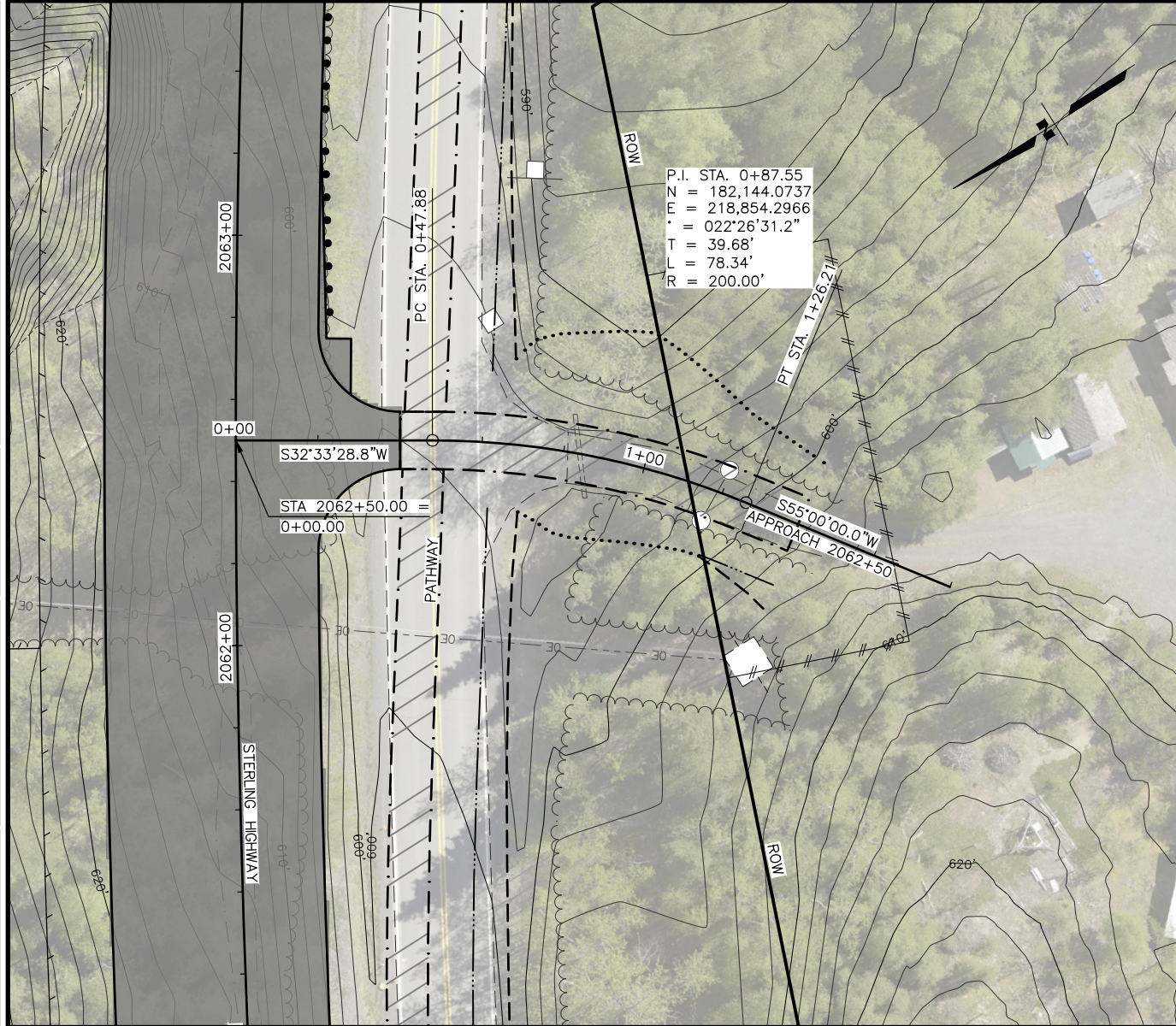
RECONSTRUCTION STAGE 1B

PLAN & PROFILE

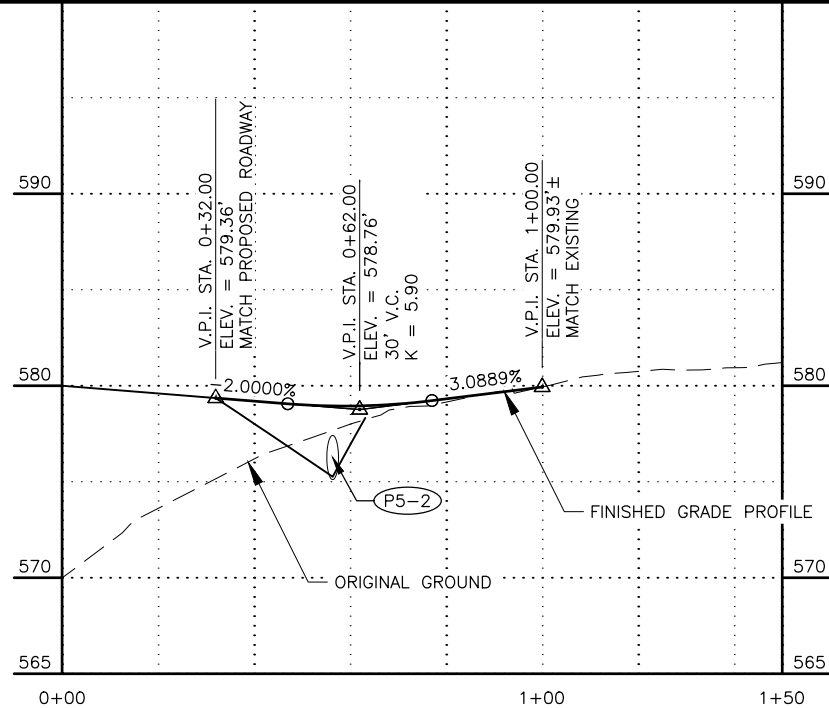
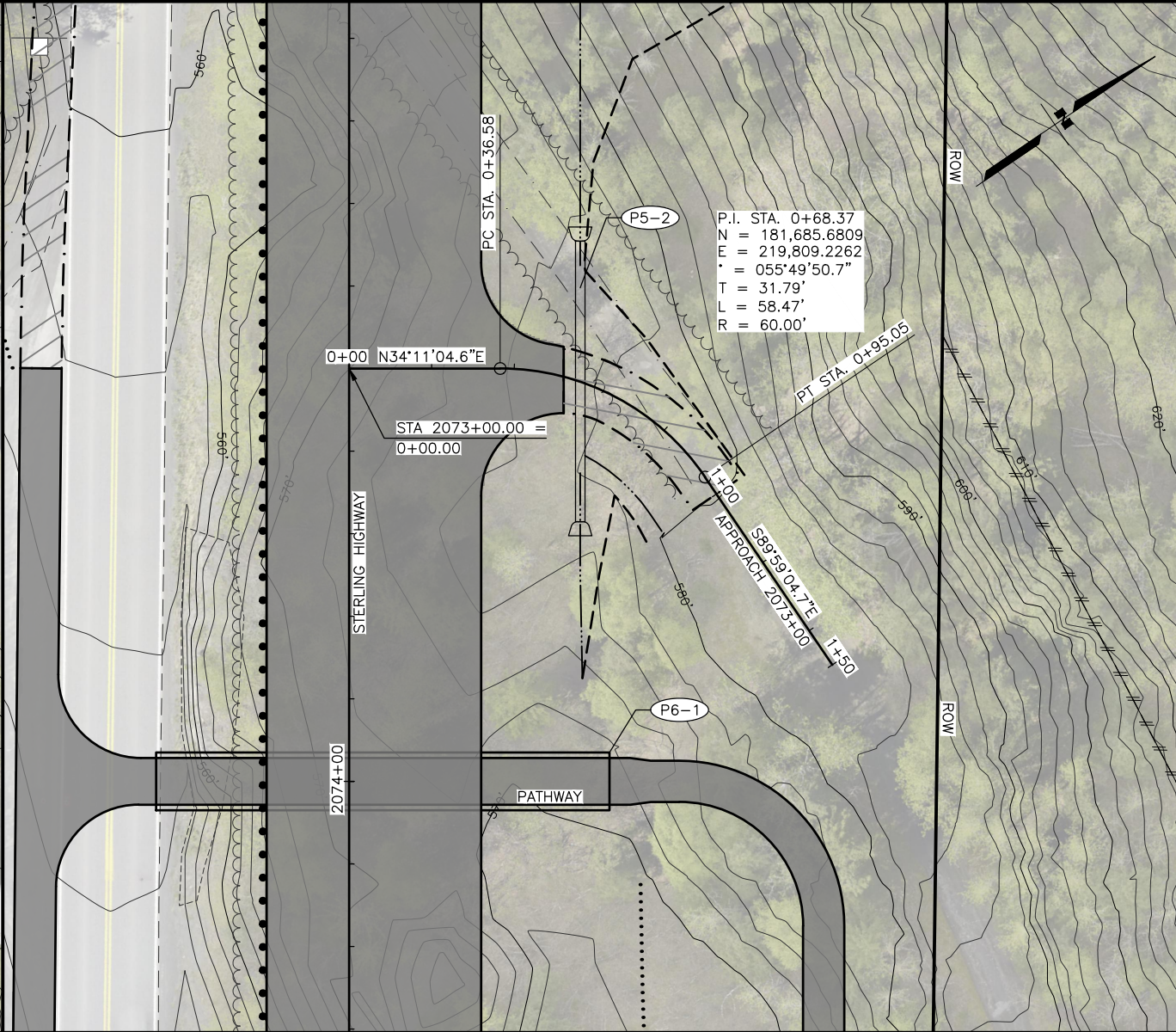
APPROACH

STERLING HWY 2036+00





APPROACH 2062+50



APPROACH 2073+00

SHEET NO.	TOTAL SHEETS
F26	F30
STATE	YEAR
ALASKA	2020
PROJECT DESIGNATION	
CFHWY00694	
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	

STATE OF ALASKA  
PLANS-IN-HAND  
MARCH 2020  
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STATE OF ALASKA  
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AND PUBLIC FACILITIES  
STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B  
PLAN & PROFILE  
APPROACH  
STERLING HWY  
2062+50 & 2073+00



SHEET NO.	TOTAL SHEETS
F27	F30
STATE	YEAR
ALASKA	2020
PROJECT DESIGNATION	
CFHWY00694	
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	

**PLANS-IN-HAND**  
**MARCH 2020**  
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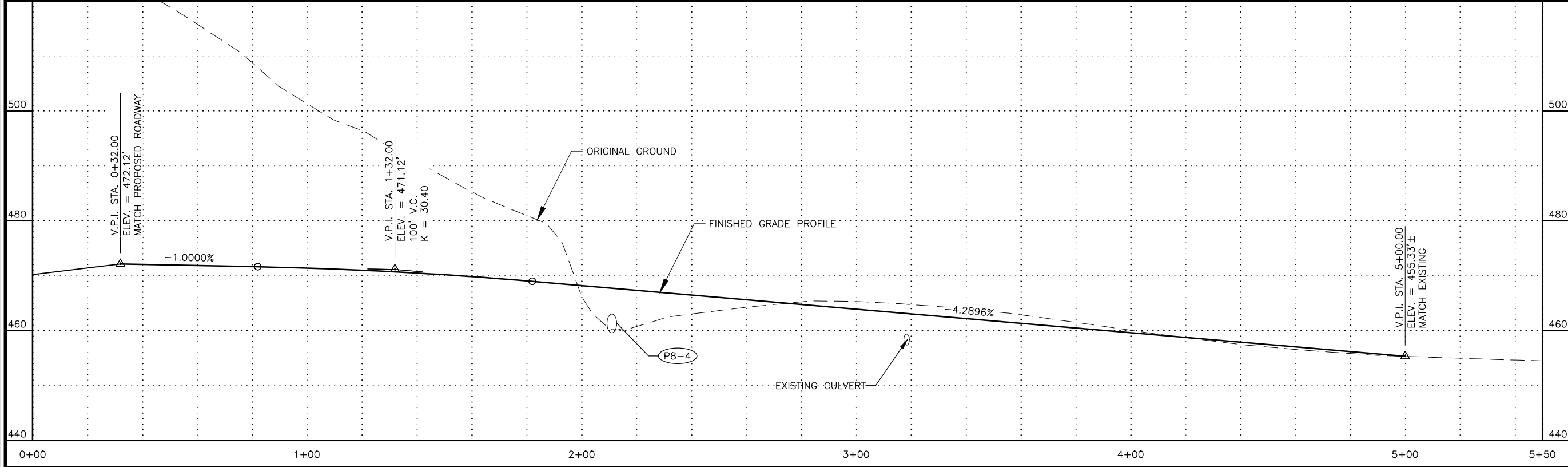
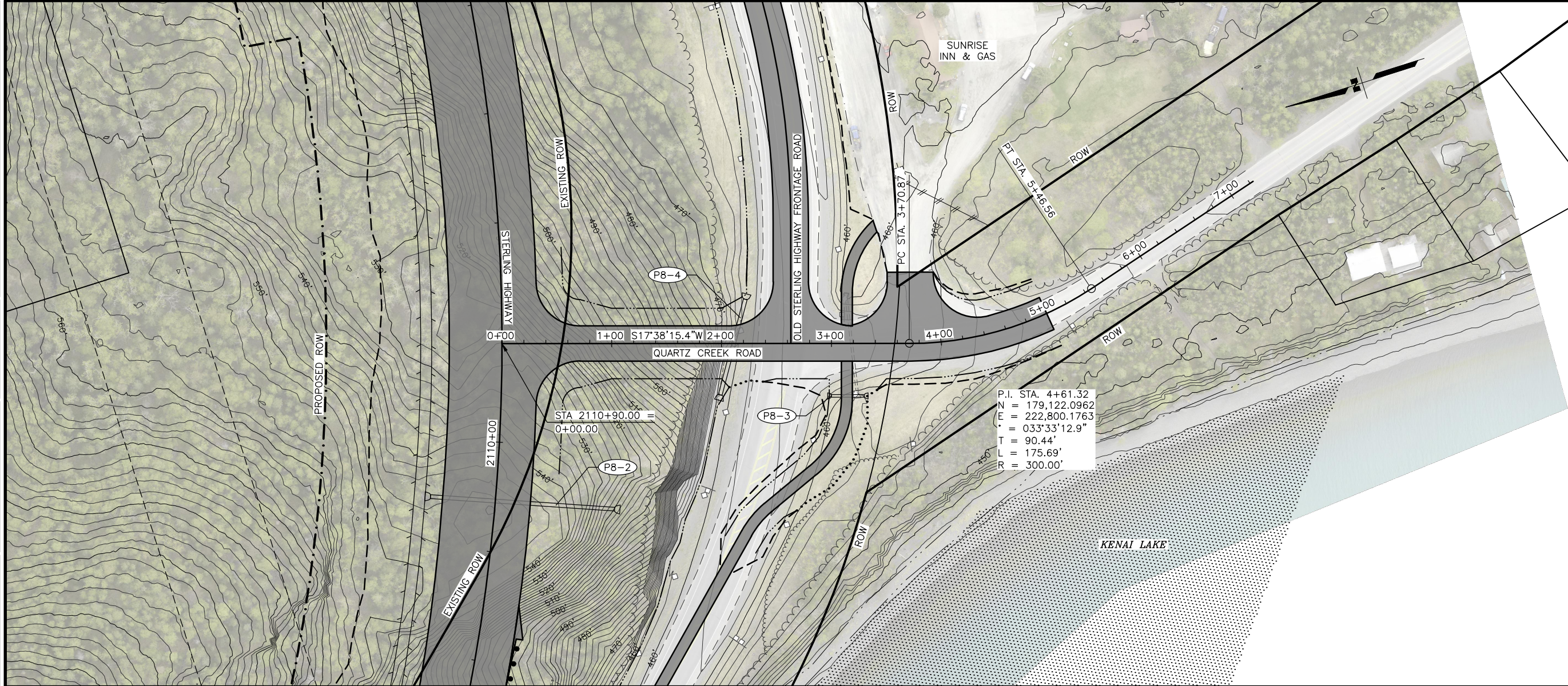
STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

PLAN & PROFILE  
APPROACH  
STERLING HWY 2092+50



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SHEET NO.		TOTAL SHEETS	
F28		F30	
STATE		YEAR	
ALASKA		2020	
PROJECT DESIGNATION			
CFHWY00694			
NO.	REVISION		
DATE			
NO.	REVISION		
DATE			
NO.	REVISION		
DATE			

BOP STA 2010+00

EOP STA 2132+00

THIS SHEET

QUARTZ CREEK

KENAI LAKE

STATE OF ALASKA

PLANS-IN-HAND

MARCH 2020

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REGISTERED PROFESSIONAL ENGINEER

R&M CONSULTANTS, INC.

9101 VANGUARD DRIVE

ANCHORAGE, AK 99507

(907) 522-1707

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STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60

SUNRISE TO SKILAK LAKE RD

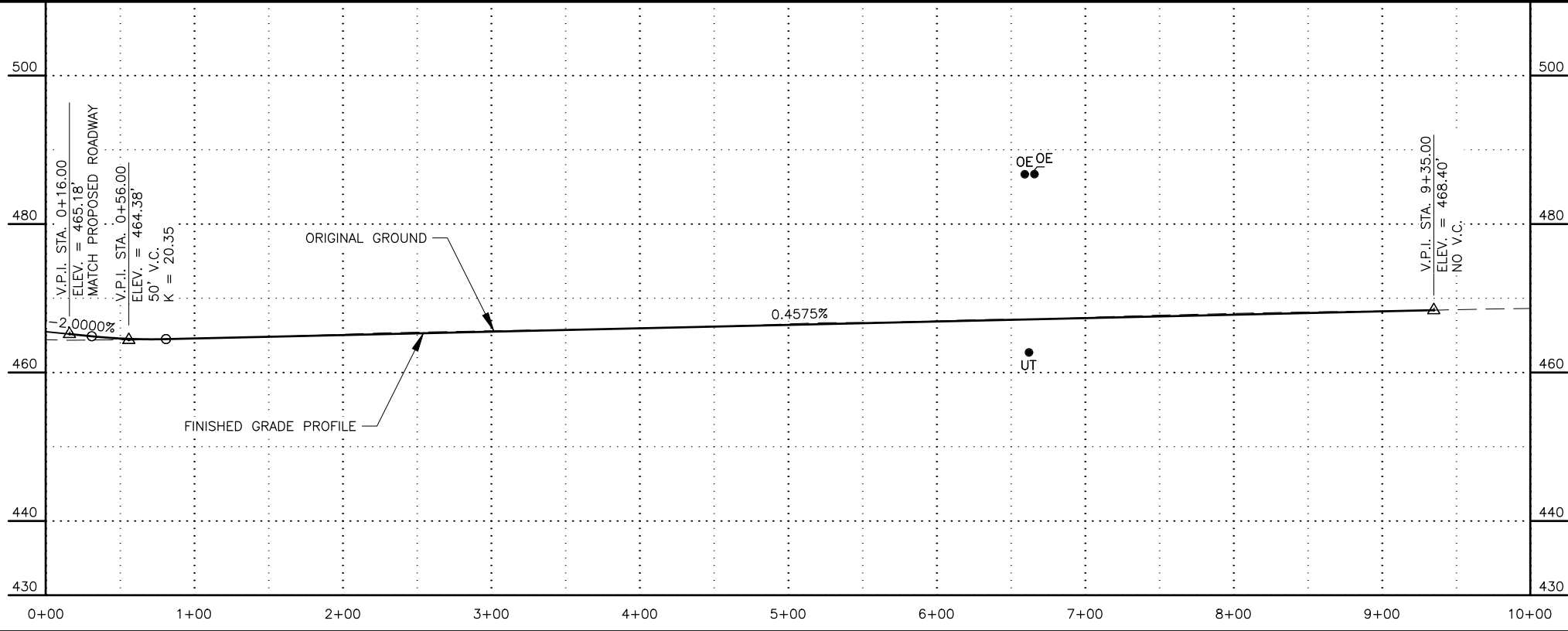
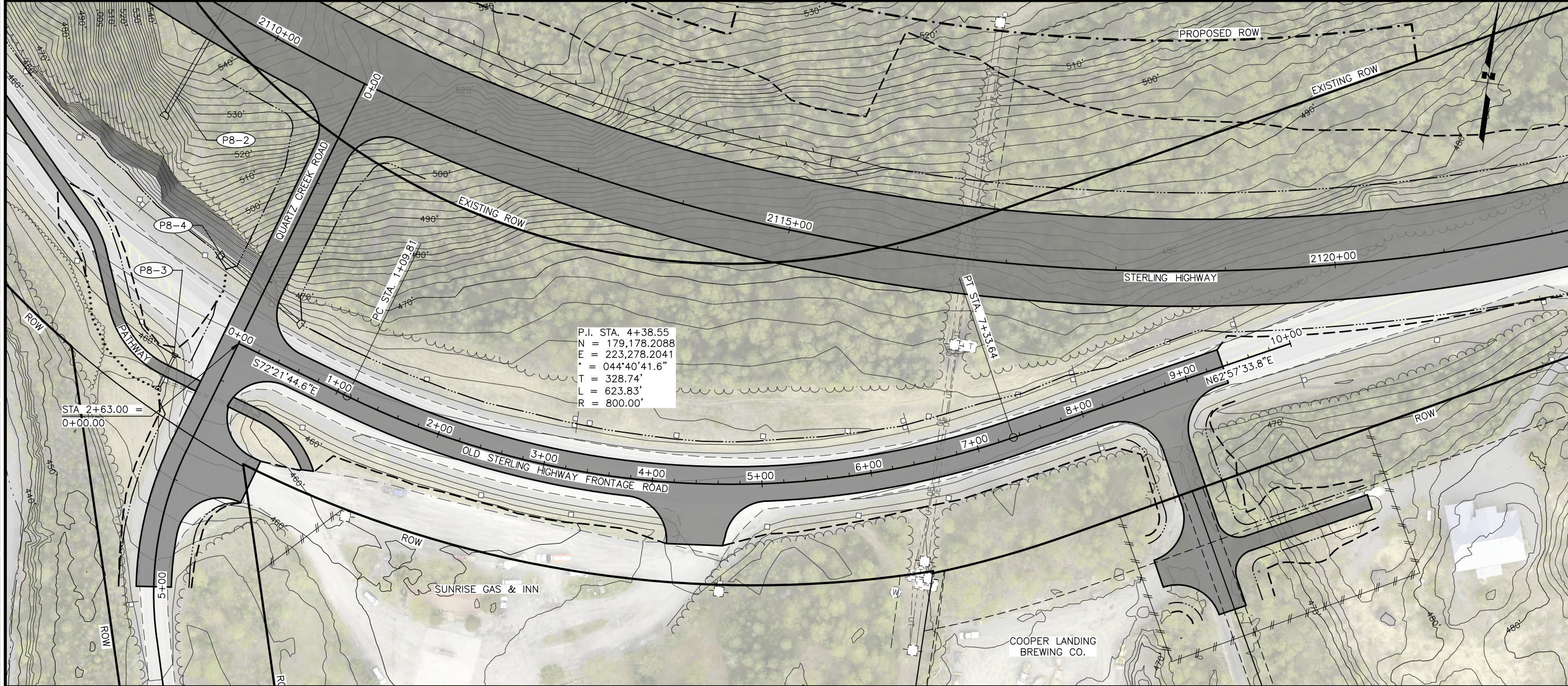
RECONSTRUCTION STAGE 1B

PLAN & PROFILE

QUARTZ CREEK ROAD



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SHEET NO.	TOTAL SHEETS
F29	F30
STATE	YEAR
ALASKA	2020
PROJECT DESIGNATION	
CFHWY00694	
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	

BOP STA 2010+00

THIS SHEET

EOP STA 2132+00

QUARTZ CREEK

KENAI LAKE

STATE OF ALASKA

PLANS-IN-HAND

MARCH 2020

REGISTERED PROFESSIONAL ENGINEER

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STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION

AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60

SUNRISE TO SKILAK LAKE RD

RECONSTRUCTION STAGE 1B

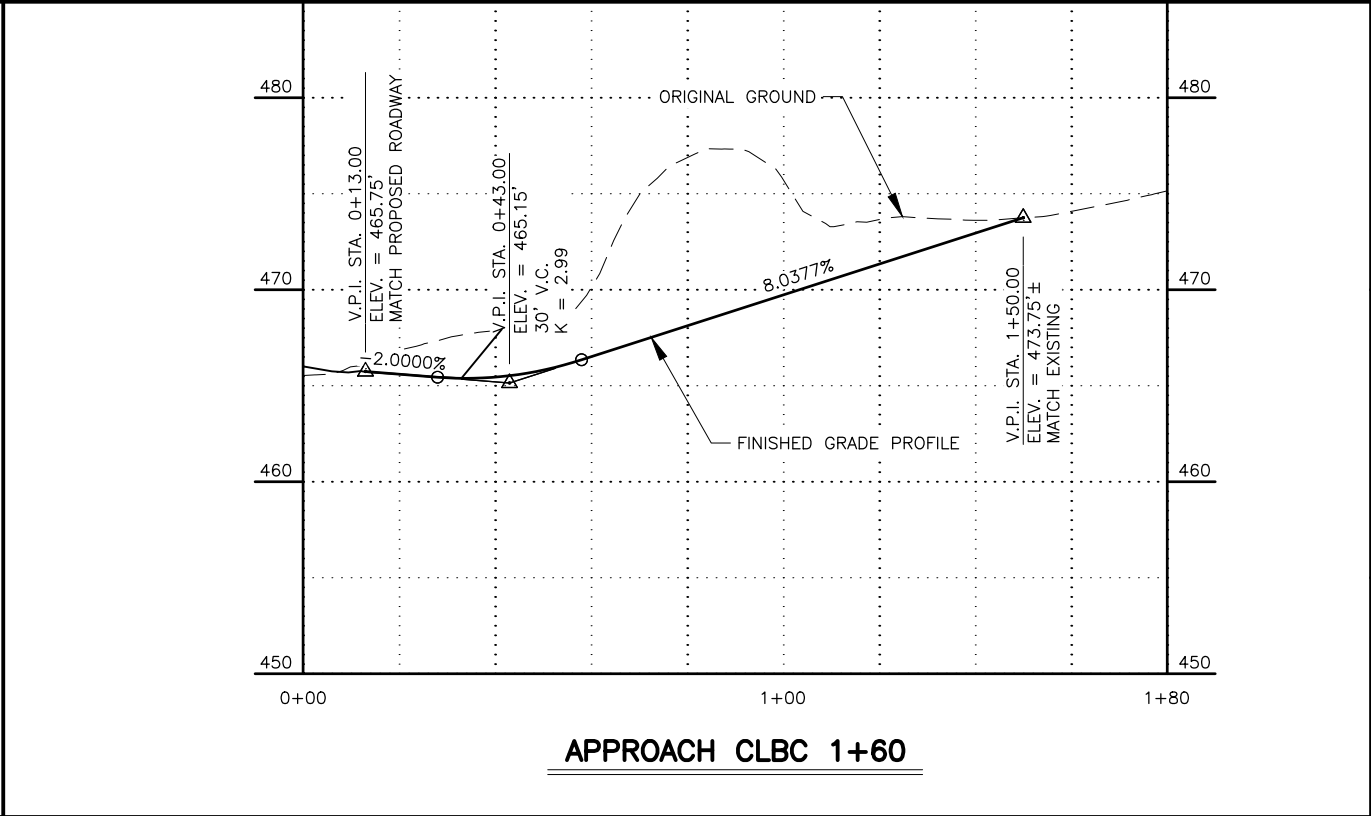
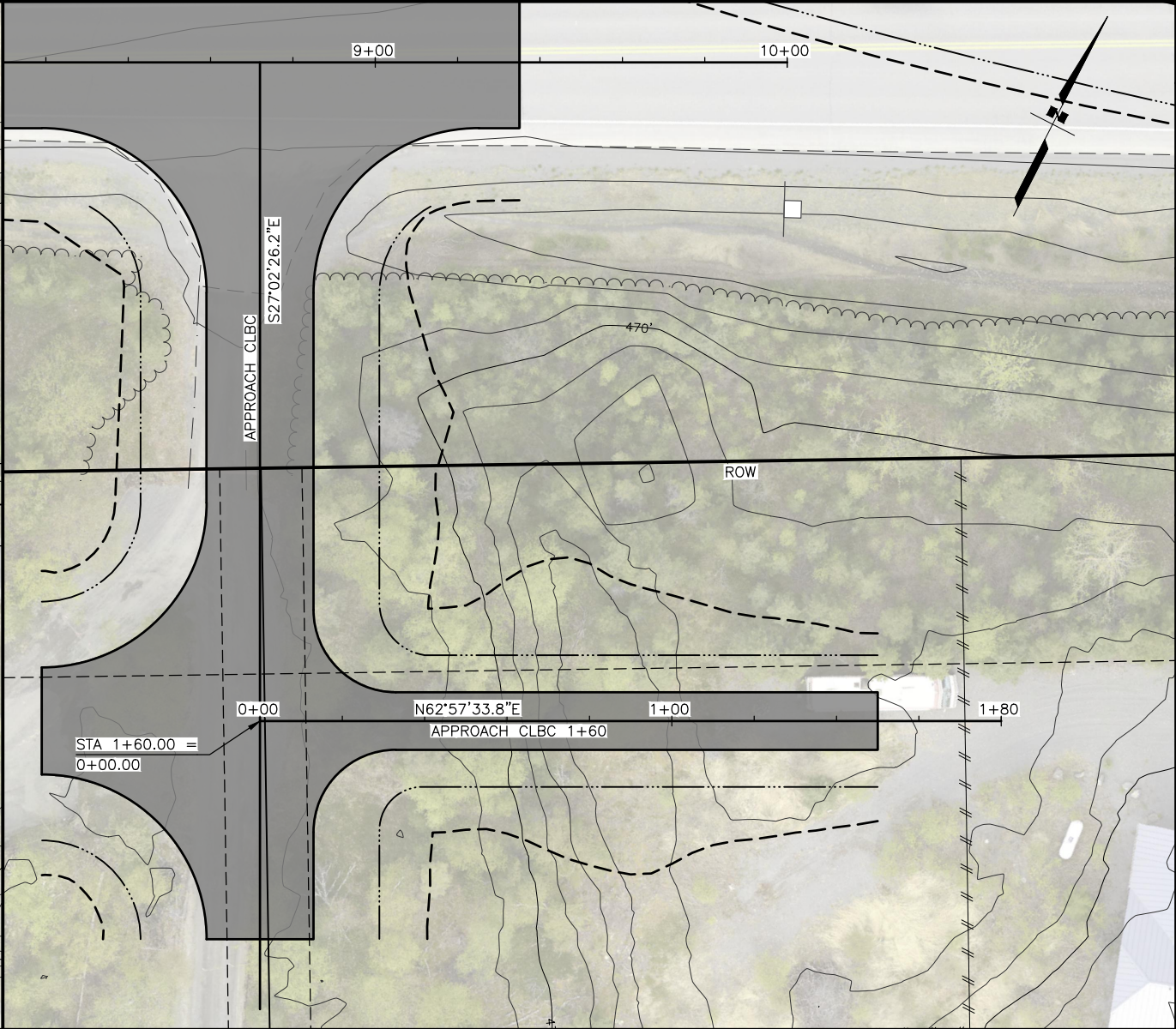
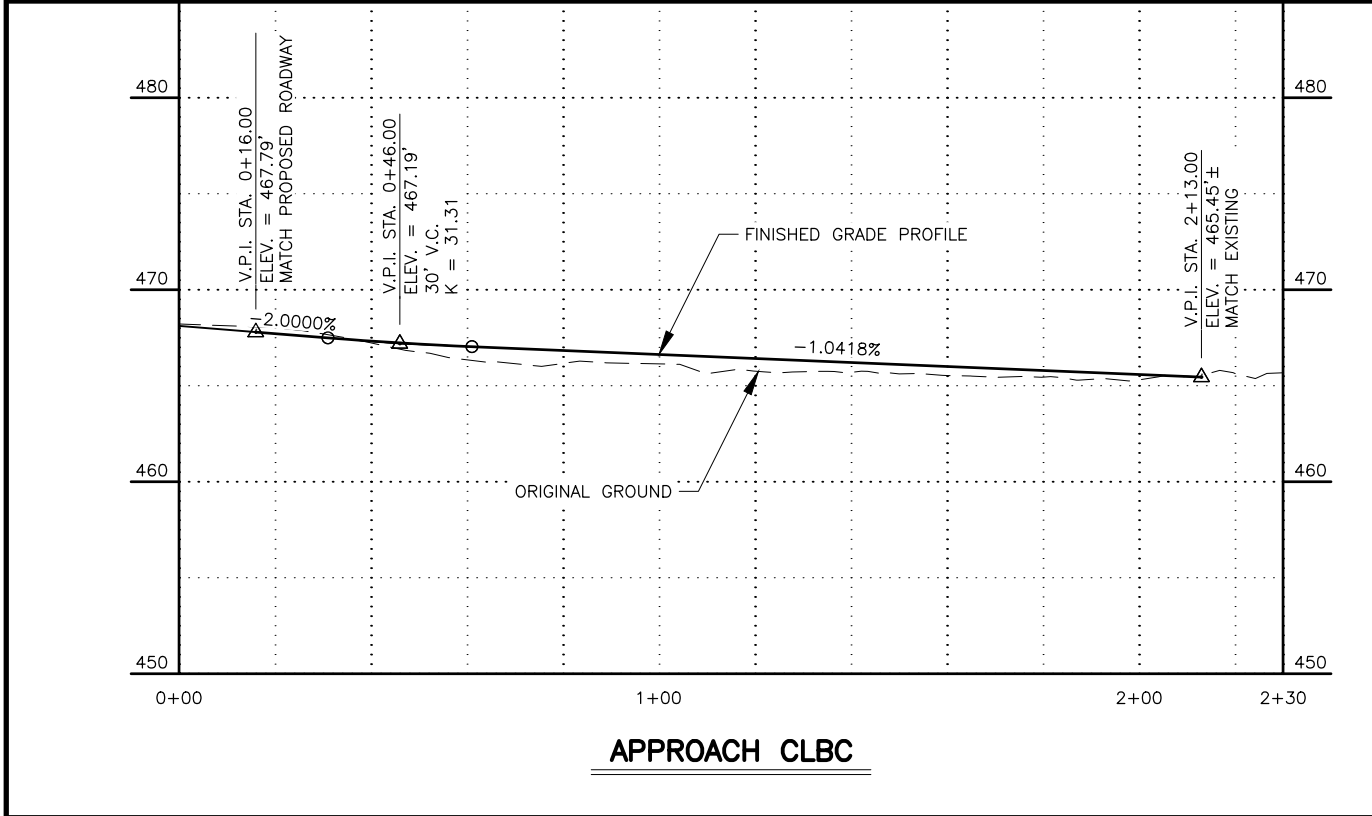
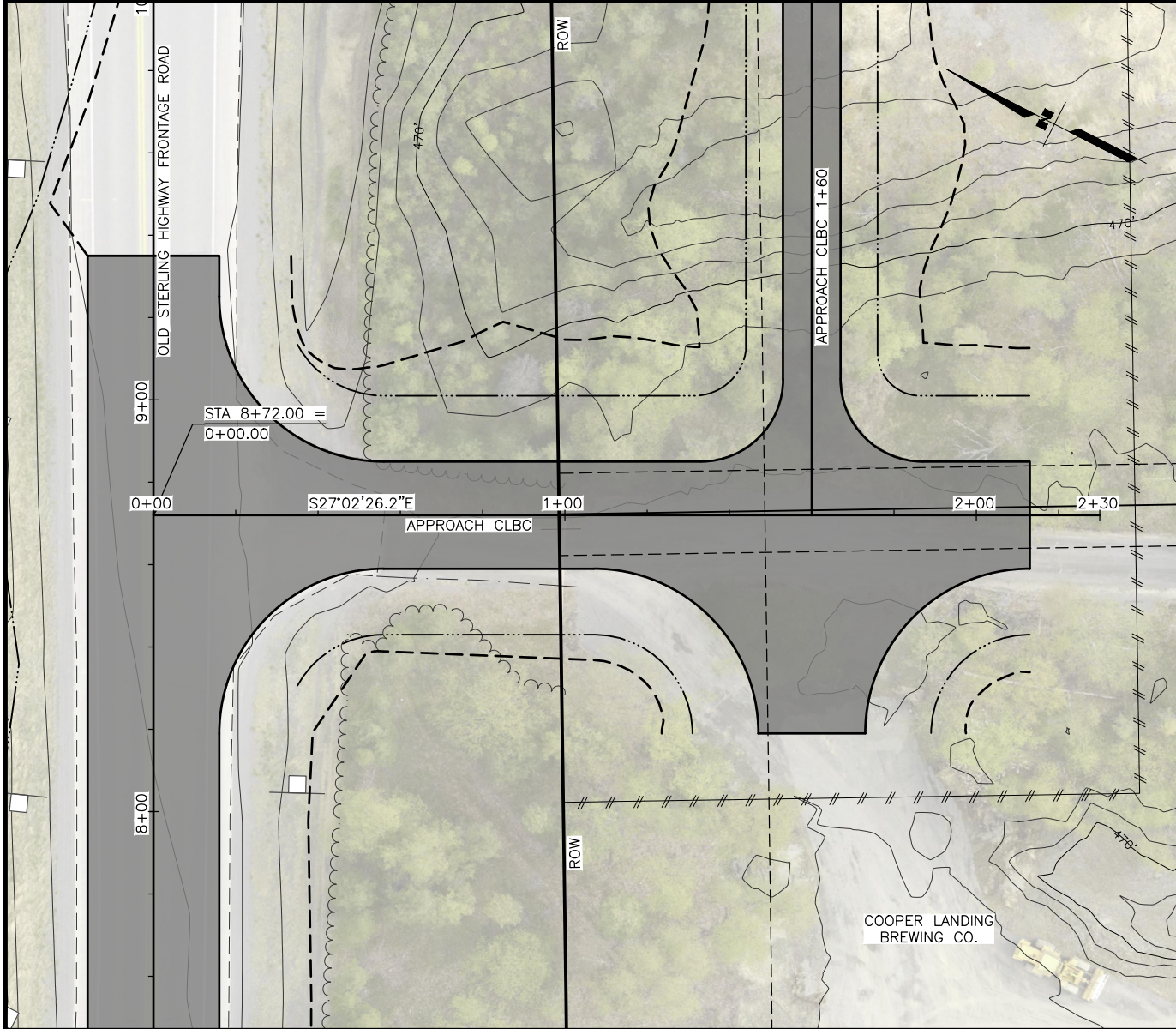
PLAN & PROFILE

OLD STERLING HIGHWAY

FRONTAGE ROAD



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SHEET NO.	TOTAL SHEETS
F30	F30
STATE	YEAR
ALASKA	2020
PROJECT DESIGNATION	
CFHWY00694	
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	

BOP  
STA 2010+00

THIS SHEET

EOP  
STA 2132+00

QUARTZ CREEK

KENAI LAKE

STATE OF ALASKA  
PLANS-IN-HAND  
MARCH 2020  
0000  
REGISTERED PROFESSIONAL ENGINEER

R&M CONSULTANTS, INC.  
9101 VANGUARD DRIVE  
ANCHORAGE, AK 99507  
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CERT. OF AUTH. NO. AECC111

STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

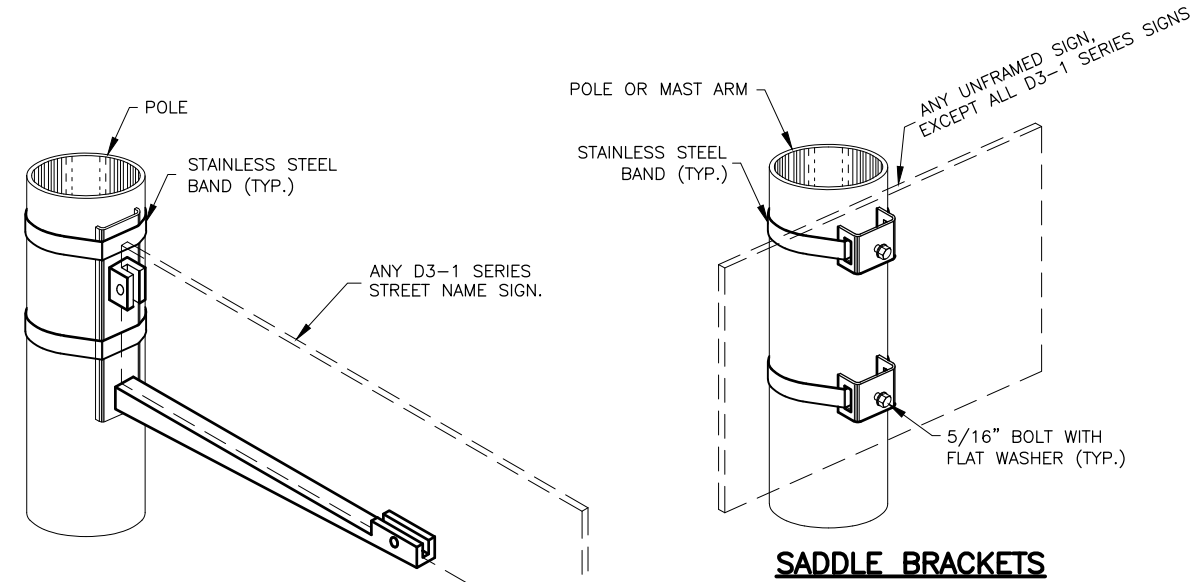
STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

PLAN & PROFILE  
APPROACH  
CLBC & CLBC 1+60

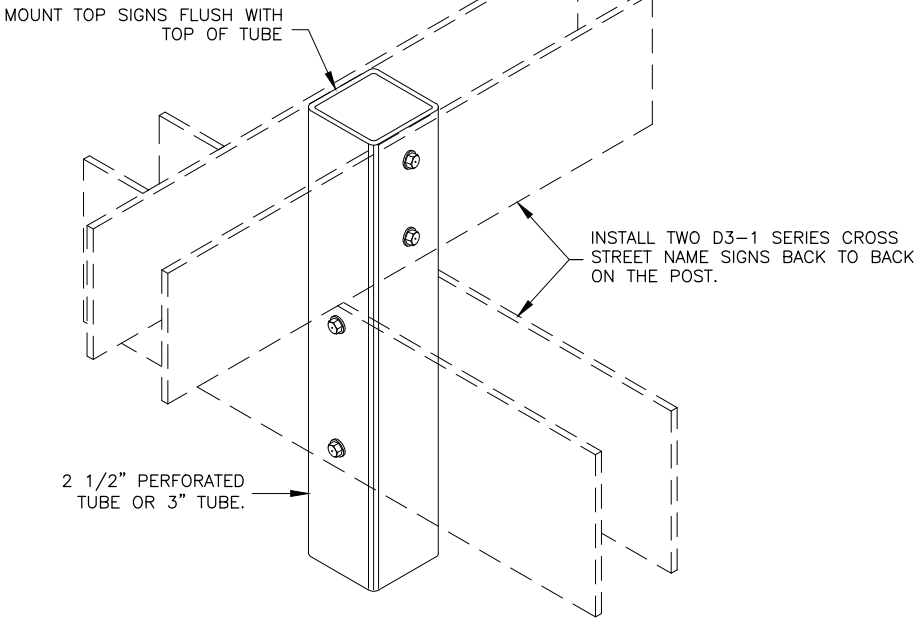


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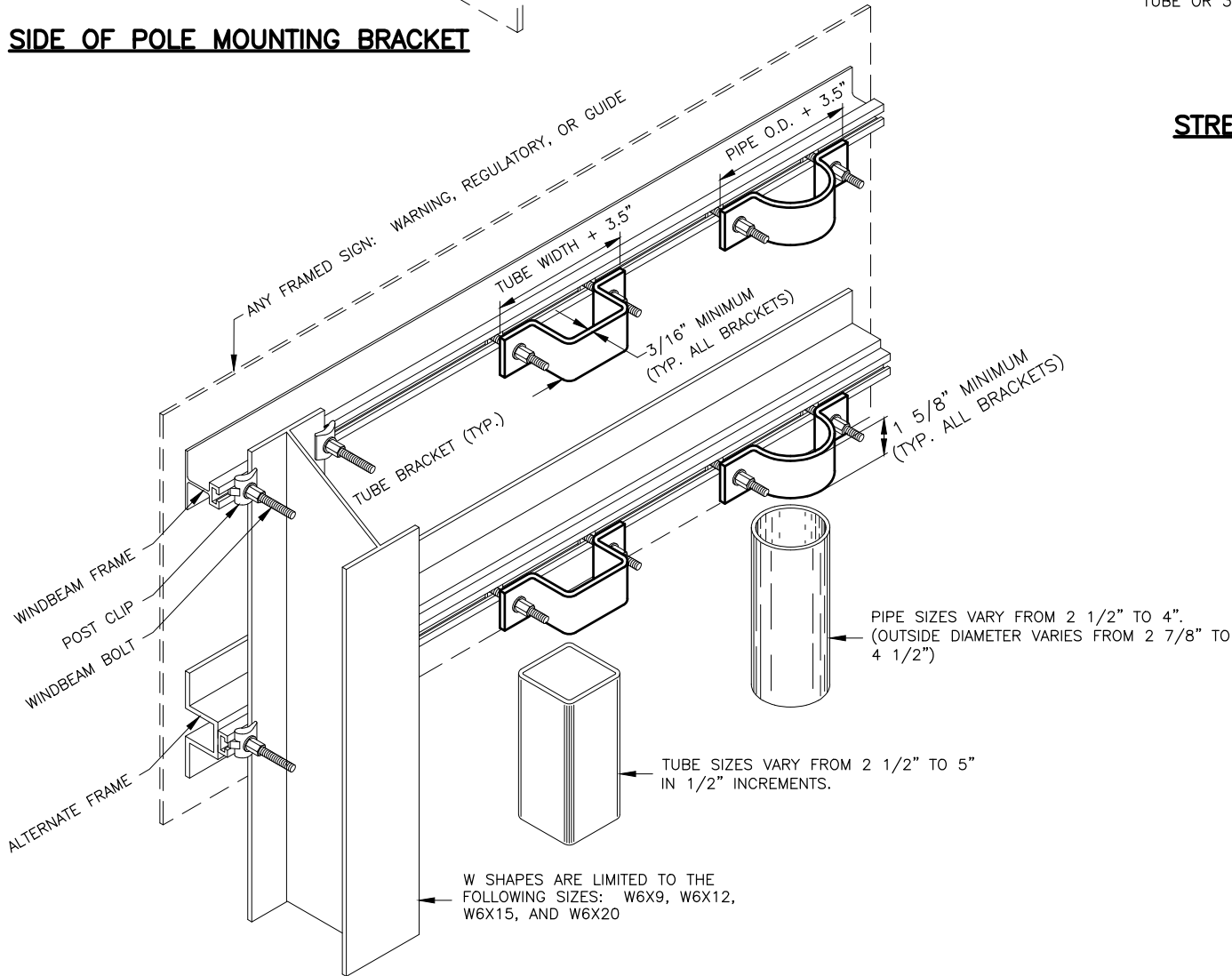
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			ALASKA	CFHWY00694	2020	H1	H12



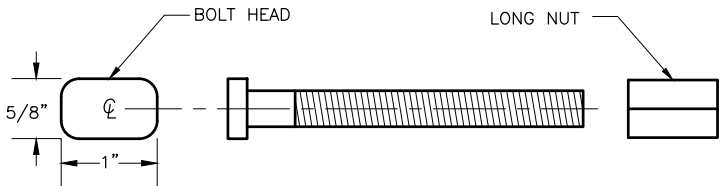
SIDE OF POLE MOUNTING BRACKET



STREET NAME SIGN INSTALLATION



FRAMED SIGN ATTACHMENT BRACKETS

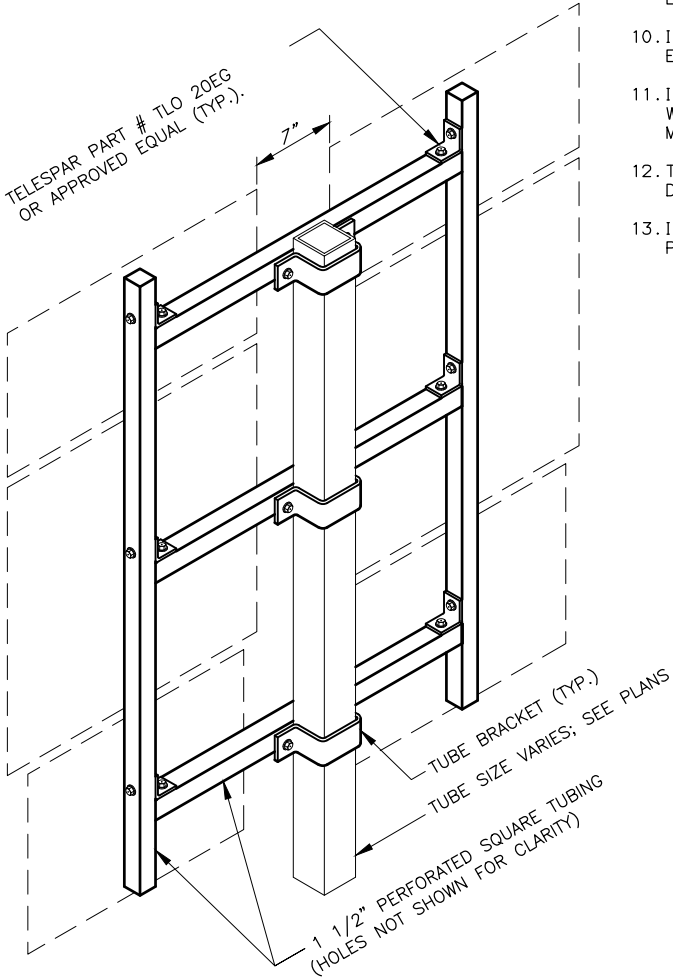


3/8" WINDBEAM BOLT AND LONG NUT

NOTES:

1. EXCEPT FOR POLES AND MAST ARMS, ONLY USE TUBES TO SUPPORT SIGNS MOUNTED ON ONE POST.
2. ATTACH SIGNS, FRAMED AND UNFRAMED TO THEIR SUPPORTS WITH ZINC PLATED 3/8" BOLTS, EXCEPT ATTACH UNFRAMED SIGNS TO PERFORATED TUBES WITH ACCESSORY DRIVE RIVETS AND TO SADDLES WITH 5/16" BOLTS.
3. BOLT UNFRAMED SIGNS DIRECTLY TO TUBES IN TWO LOCATIONS, NEAR TOP AND NEAR BOTTOM OF MATING SURFACE. ATTACH THEM TO POLES AND MAST ARMS WITH TWO SADDLES.
4. ATTACH BRACKETS TO POLES AND MAST ARMS WITH DOUBLE WRAPS OF 3/4" WIDE BY 0.020" THICK STAINLESS STEEL BANDING MATERIAL. TIGHTEN EACH BAND UNTIL IT STOPS MOVING THROUGH THE BUCKLE.
5. 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, AND A BRACKET WITH SQUARE CORNERS ON TUBES.
6. THE TUBE BRACKETS USED ON EVEN INCH SIZE TUBES MAY ALSO BE USED ON TUBES 1/2" SMALLER IN SIZE.
7. ONLY USE THE SPECIAL WINDBEAM BOLTS TO ATTACH SIGNS FRAMED WITH THE WINDBEAM FRAMING MATERIAL.
8. ATTACH FRAMED SIGNS TO POLES AND MAST ARMS USING POLE PLATES INSTALLED ACCORDING TO ALASKA STANDARD PLAN S-23.
9. FOR ROUTE MARKER TREES, CUT PERFORATED TUBES TO ENSURE TIGHT FITTING JOINTS. ASSEMBLE THE PIECES WITH ACCESSORY ELL-SHAPED ANGLE BRACKETS.
10. INSTALL THE TOP EDGE OF SIGNS 1" ABOVE THE TOPS OF POSTS, EXCEPT FOR THE D3-1 STREET NAME SIGNS.
11. INSTALL THE TOP EDGE OF SIGNS 3" BELOW THE TOP OF POST, WHENEVER THEY ARE MOUNTED BELOW SIGNS SECURED BY POST TOP MOUNTING BRACKETS.
12. THE BRACKET DETAILS SHOWN INDICATE GENERAL DESIGNS ONLY. DESIGNS MAY VARY BY MANUFACTURER.
13. INSTALL WEATHER TIGHT CAPS ON ALL PIPE AND TUBE POSTS, EXCEPT PERFORATED TUBING.

FASTENER SPECIFICATION TABLE			
FASTENERS		STEEL	STAINLESS STEEL
BOLTS		ASTM A 307	ASTM F 593
	REGULAR LOCK	ASTM A 563	ASTM F 594
WASHERS		ASTM A 36	ASTM A 480
POST CLIPS			



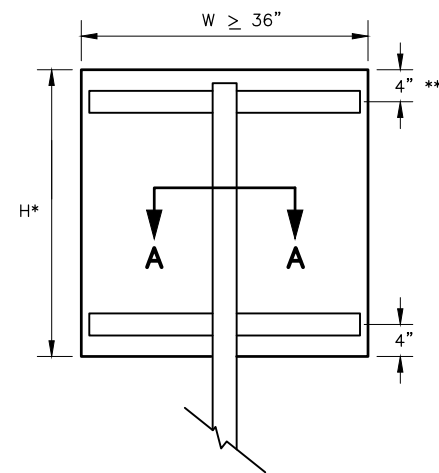
ROUTE MARKER TREE



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**STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B**  
  
SIGN ATTACHMENT DETAILS

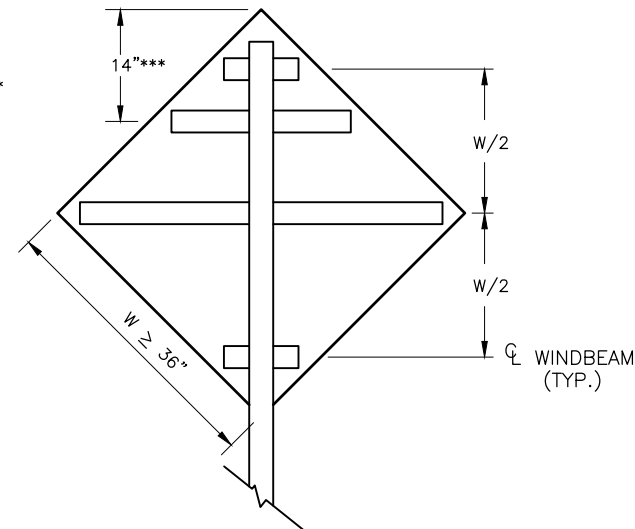


NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	CFHWY00694	2020	H2	H12

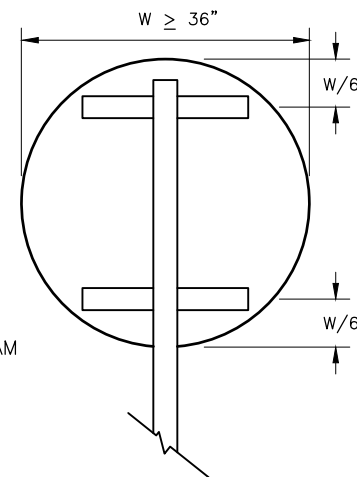


RECTANGLES AND TRAPEZOIDS

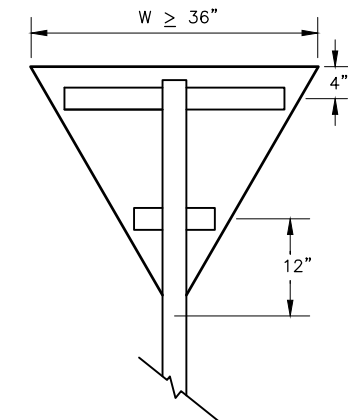
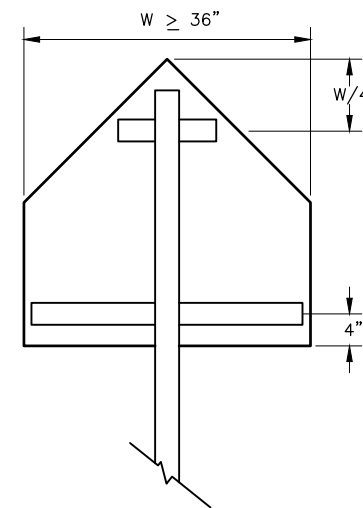
- \* WHEN H > 42 INCHES, INSTALL A 3RD WINDBEAM CENTERED ON THE SIGN.
- \*\* FOR S5-1 SIGNS MOUNTED ON FLASHING BEACON POSTS, USE A 10" OFFSET. OTHERWISE, USE 4".



\*\*\* FOR WARNING SIGNS MOUNTED ON FLASHING  
BEACON POSTS, USE THE 14" OFFSET.  
OTHERWISE, USE W/2.

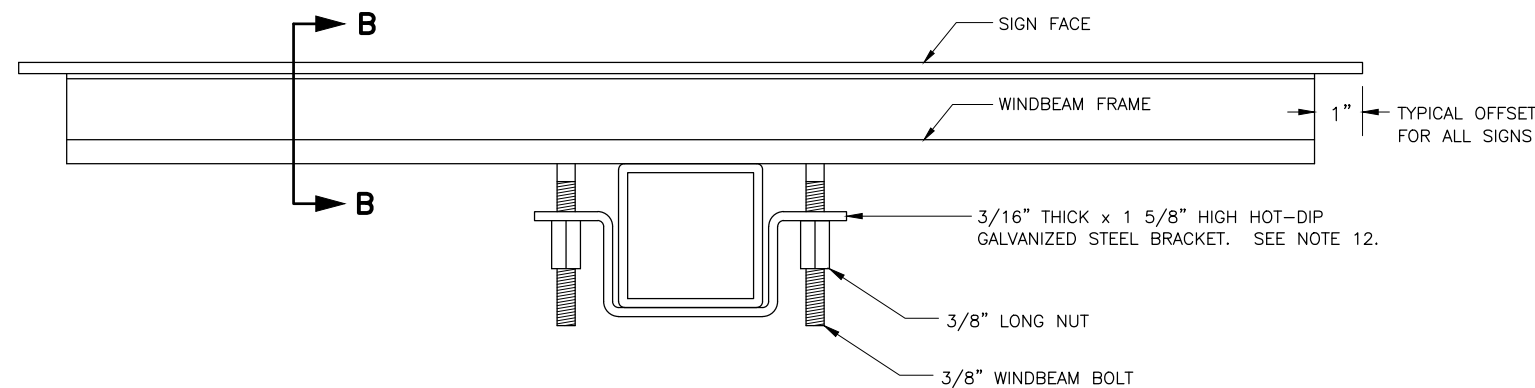


## ROUNDS AND OCTAGONS

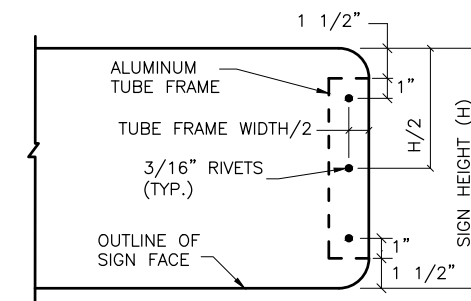


### WINDBEAM LOCATIONS FOR EACH SIGN SHAPE

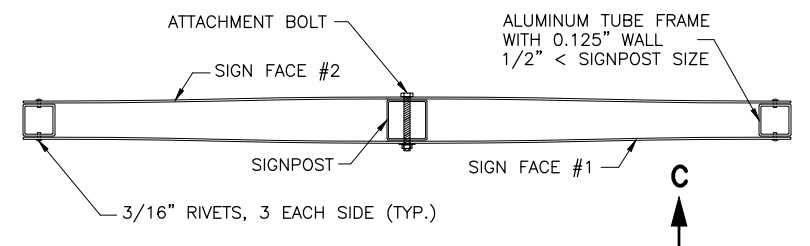
ELEVATION VIEW



SECTION A - A TYPICAL SIGN ATTACHMENT DETAILS AT EACH WINDBEAM

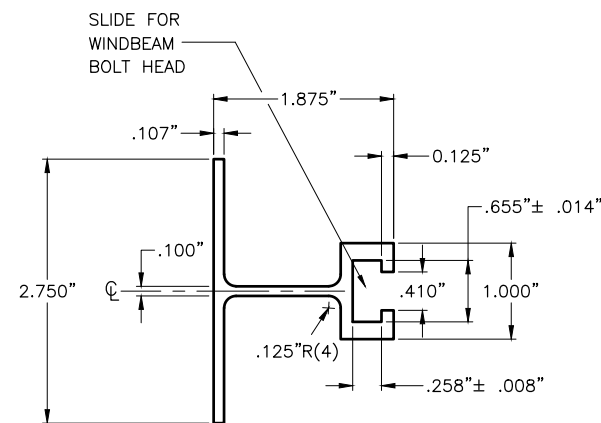


VIEW C - C

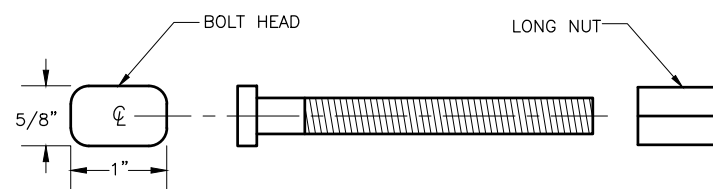


### D3-1 STREET NAME SIGN FRAMING DETAIL

PLAN VIEW



SECTION B - B WINDBEAM CROSS SECTION



3/8" WINDBEAM BOLT AND LONG NUT

NOTES:

1. EXCEPT FOR POLES AND LAST ARMS, ONLY USE SQUARE STEEL TUBES TO SUPPORT SIGNS MOUNTED ON SINGLE POSTS.
2. INSTALL WINDBEAM OR ZEE SHAPED FRAMING MEMBERS ON DIAMOND SHAPED SIGNS 36 INCHES AND LONGER ON A SIDE AND ON OTHER SIGNS 36 INCHES WIDE AND WIDER.
3. IN HIGH WIND AREAS, THE PLANS MAY REQUIRE SIGNS SMALLER THAN THOSE LISTED IN NOTE 2 BE FRAMED AS SHOWN HERE IN.
4. THIS DRAWING DEPICTS THE WINDBEAM FRAMING AND ATTACHMENT SYSTEM. ATTACH SIGNS FRAMED WITH ZEE SHAPED FRAMING ACCORDING TO REGIONAL DRAWING "SIGN ATTACHMENT DETAILS", USING "U" SHAPED BRACKETS AND TWO BOLTS WITH NUTS.
5. THE ENGINEER MAY APPROVE OTHER FRAMING MEMBERS. SUBMIT DOCUMENTS THAT DETAIL THE FRAME'S CROSS SECTION AND STRENGTH, AND METHOD OF ATTACHING THE FRAME TO A POST.
6. USE FRAMING MEMBERS MADE FROM ALUMINUM ALLOY 6061-T6.
7. EACH FRAMING MEMBER SHALL BE ONE CONTINUOUS PIECE.
8. ATTACH FRAMING MEMBERS TO THE SIGN PANELS WITH RIVETS OR AN ENGINEER APPROVED, DOUBLE SIDED, HIGH STRENGTH, ADHESIVE TAPE.
9. WITH THE ADHESIVE TAPE, INSTALL TWO RIVETS IN BOTH ENDS OF EACH FRAMING MEMBER, AND ATTACH THE FRAMING MEMBERS TO THE SIGN PANELS ACCORDING TO THE TAPE MANUFACTURER'S WRITTEN INSTRUCTIONS, INCLUDING:
  - A. THE CLEANING AND HANDLING OF THE SIGN PANELS AND FRAMING MEMBERS.
  - B. THE APPLICATION OF THE ADHESIVE TAPE.
10. WHEN RIVETS ARE USED TO ATTACH FRAMING MEMBERS, INSTALL 2 RIVETS IN EACH END AND THE BALANCE ON 8" MAXIMUM CENTERS.
11. USE 3/16" DIAMETER RIVETS CONFORMING TO ALUMINUM ALLOY 6061-T6 FOR COLD DRIVEN RIVETS, OR ALUMINUM ALLOY 6061-T43 FOR HOT DRIVEN RIVETS.
12. THE BRACKETS USED ON EVEN INCH SIZE TUBES MAY ALSO BE USED ON TUBES 1/2" SMALLER IN SIZE.

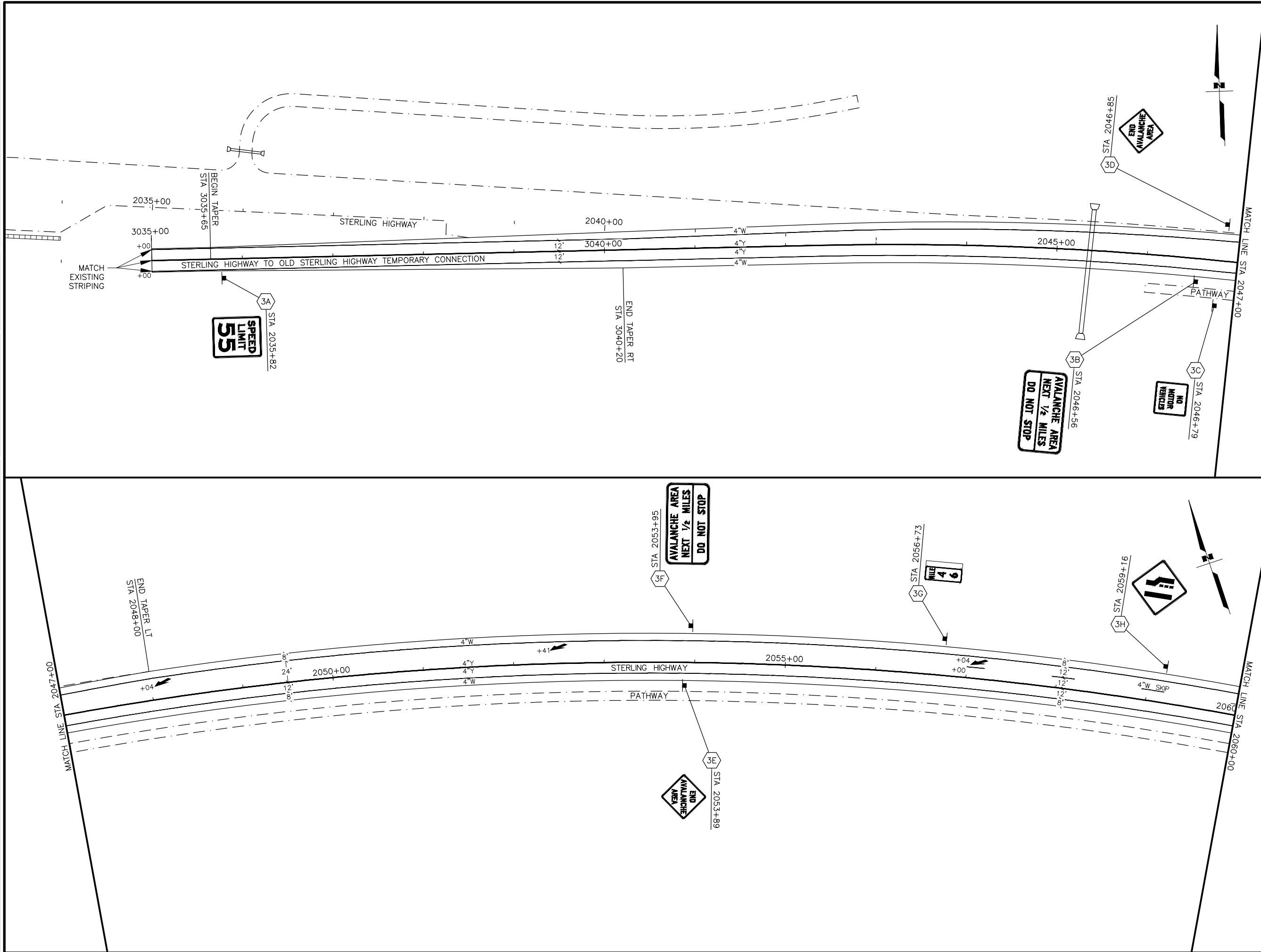


STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

**STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B**

## LIGHT SIGN FRAMING AND ATTACHMENT DETAILS





SHEET NO.	TOTAL SHEETS
H3	H12
STATE	YEAR
ALASKA	2020
PROJECT DESIGNATION	
CFHWY00694	
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	

**R&M CONSULTANTS, INC.**  
 9101 VANGUARD DRIVE  
 ANCHORAGE, AK 99507  
 (907) 522-1707  
 CERT. OF AUTH. NO. AEC111

STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES

**STERLING HIGHWAY MP 45-60  
 SUNRISE TO SKILAK LAKE RD  
 RECONSTRUCTION STAGE 1B**

**PLAN & PLAN  
 STERLING HIGHWAY  
 STA 3021+00 TO 2060+00**



MATCH LINE STA 2060+00

MATCH LINE STA 2073+00

MATCH LINE STA 2073+00

MATCH LINE STA 2086+00

STA 2063+98



4A

2065+00

8'

12'

12'

8'

STERLING HIGHWAY

PATHWAY

2070+00

4"W

4"W SKIP

4"Y

4"W

2075+00

8'

12'

12'

8'

STERLING HIGHWAY

PATHWAY

2080+00

4"W

4"W SKIP

4"Y

4"W

2085+00

SHEET NO.	TOTAL SHEETS
H4	H12
STATE	YEAR
ALASKA	2020
PROJECT DESIGNATION	
CFHWY00694	
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	

BOP  
STA 2010+00

THIS SHEET

STERLING HIGHWAY

QUARTZ CREEK

EOP  
STA 2132+00

STATE OF ALASKA

PLANS-IN-HAND

MARCH 2020

0000

REGISTERED PROFESSIONAL ENGINEER

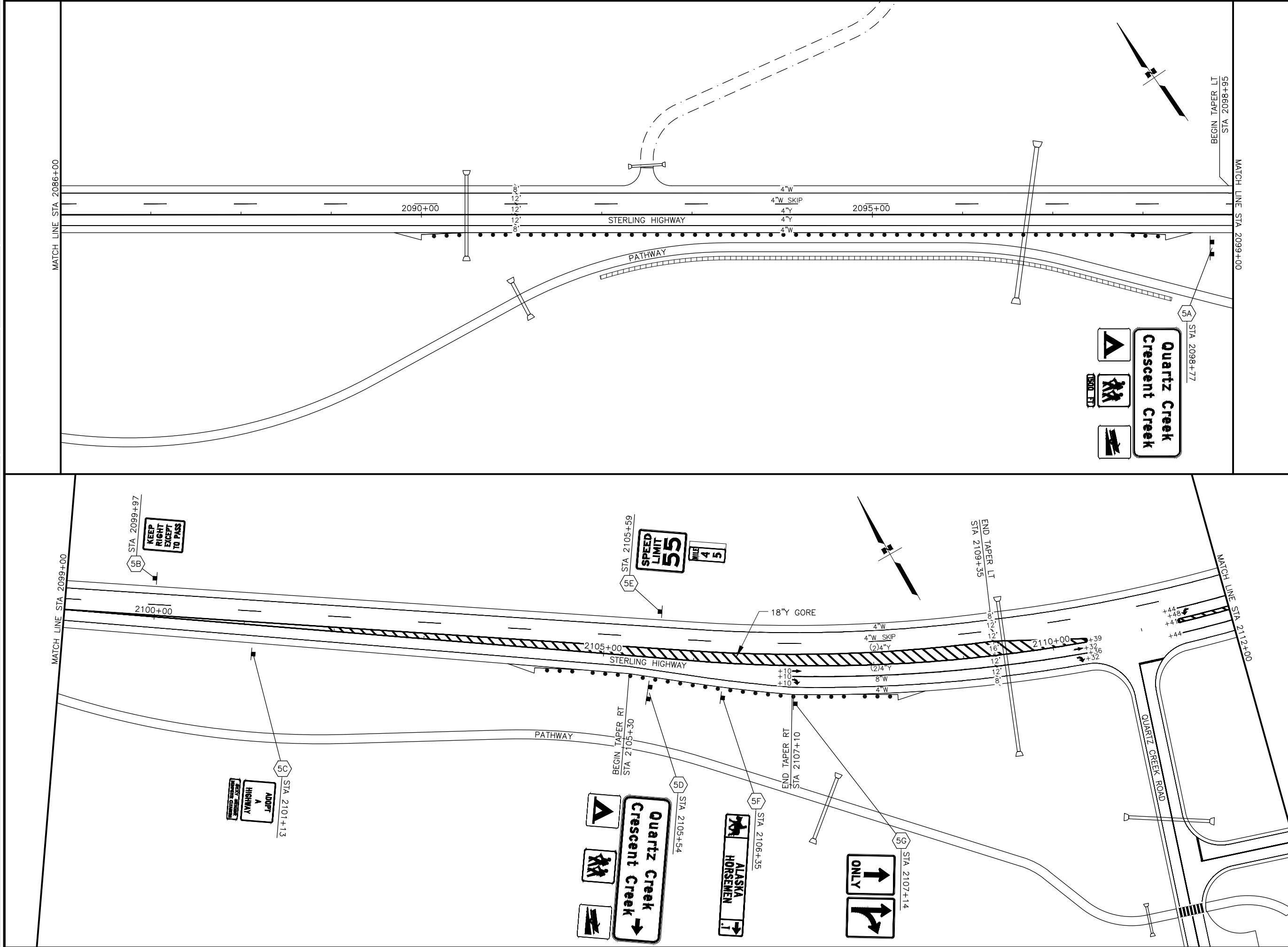
R&M CONSULTANTS, INC.  
9101 VANGUARD DRIVE  
ANCHORAGE, AK 99507  
(907) 522-1707  
CERT. OF AUTH. NO. AECC111

STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

PLAN & PLAN  
STERLING HIGHWAY  
STA 2060+00 TO 2086+00





SHEET NO. <b>H5</b>		TOTAL SHEETS <b>H12</b>	
STATE <b>ALASKA</b>		YEAR <b>2020</b>	
PROJECT DESIGNATION <b>CFHWY00694</b>			
NO.		REVISION	
DATE			
NO.		REVISION	
DATE			
NO.		REVISION	
DATE			

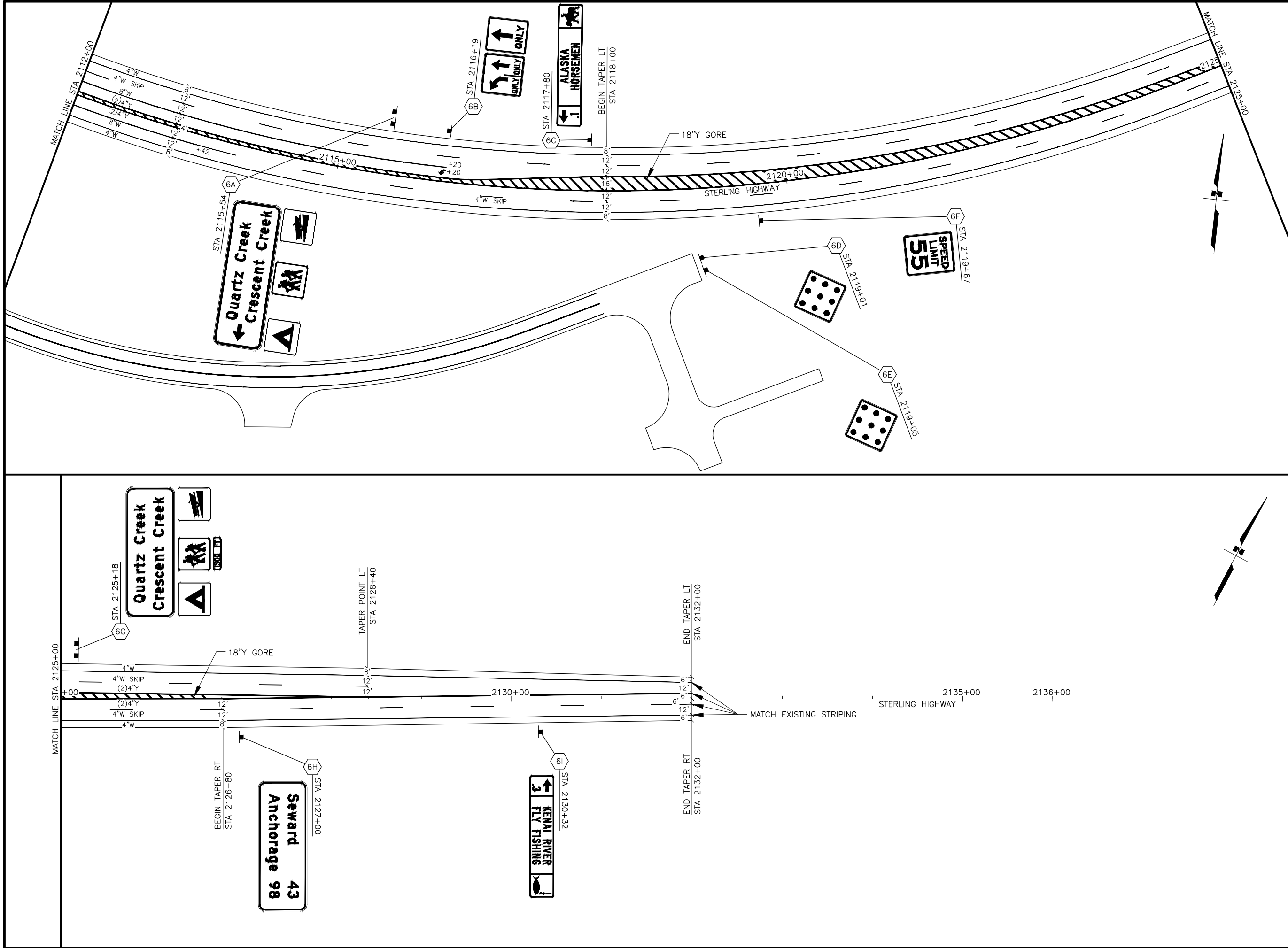
R&M CONSULTANTS, INC.  
9101 VANGUARD DRIVE  
ANCHORAGE, AK 99507  
(907) 522-1707  
CERT. OF AUTH. NO. AECC111

STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

PLAN & PLAN  
STERLING HIGHWAY  
STA 2086+00 TO 2112+00





SHEET NO.	TOTAL SHEETS
H6	H12
STATE	YEAR
ALASKA	2020
PROJECT DESIGNATION	
CFHWY00694	
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	

BOP: STA 2010+00

THIS SHEET EOP: STA 2132+00

QUARTZ CREEK

STERLING HIGHWAY

KENAI LAKE

STATE OF ALASKA

PLANS-IN-HAND

MARCH 2020

0000

REGISTERED PROFESSIONAL ENGINEER

R&M CONSULTANTS, INC.

9101 VANGUARD DRIVE

ANCHORAGE, AK 99507

(907) 522-1707

CERT. OF AUTH. NO. AECC111

STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60

SUNRISE TO SKILAK LAKE RD

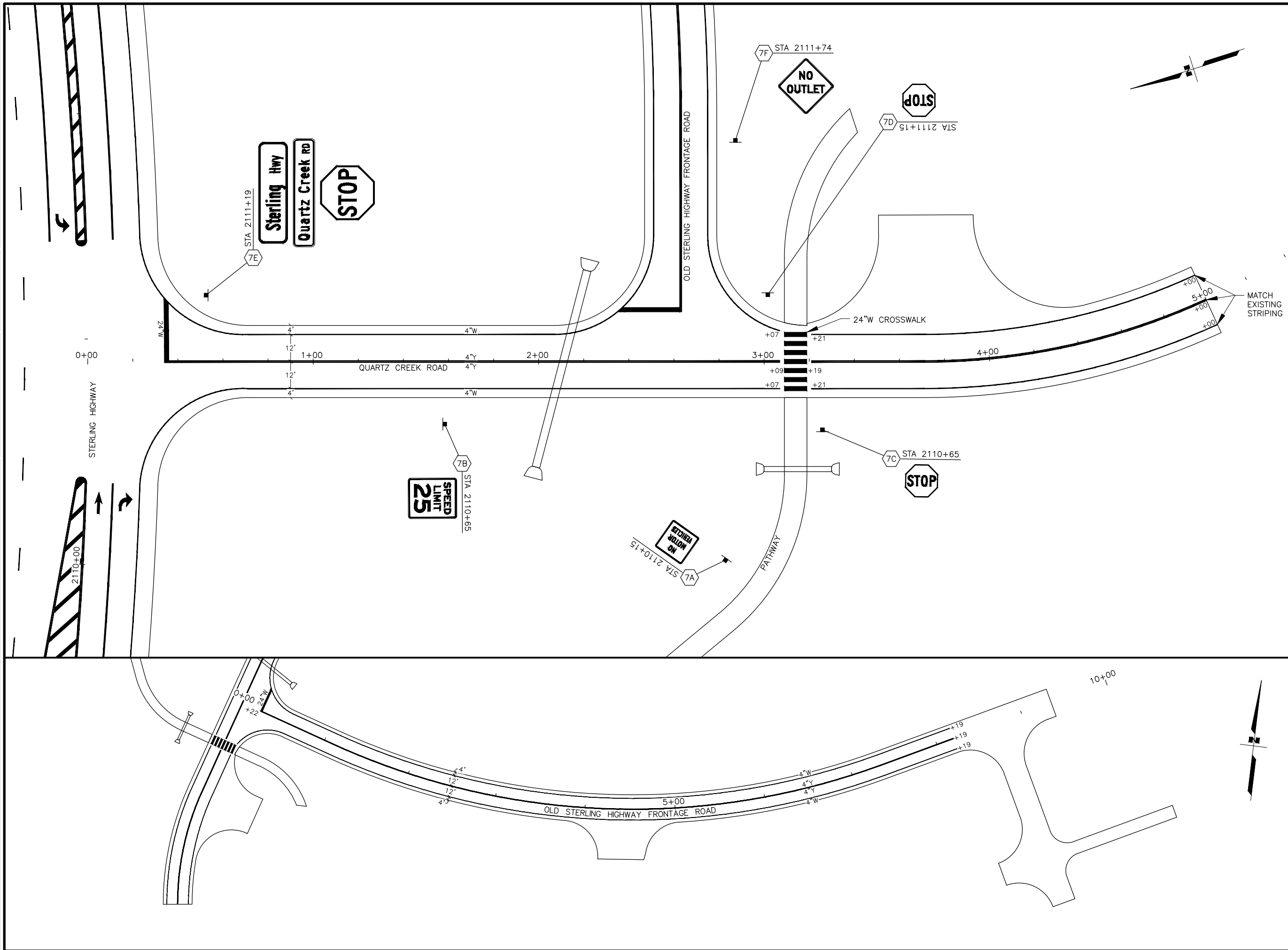
RECONSTRUCTION STAGE 1B

PLAN & PLAN

STERLING HIGHWAY

STA 2112+00 TO EOP





SHEET NO.	TOTAL SHEETS
H7	H12
STATE	YEAR
ALASKA	2020
PROJECT DESIGNATION	
CFHWY00694	
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	

R&M CONSULTANTS, INC.  
 9101 VANGUARD DRIVE  
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STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES






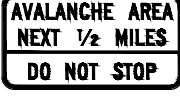








STERLING HIGHWAY MP 45-60  
 SUNRISE TO SKILAK LAKE RD  
 RECONSTRUCTION STAGE 1B

PLAN & PLAN  
 QUARTZ CREEK RD &  
 OLD STERLING HWY  
 FRONTAGE ROAD



FILE [Z:\PROJECT\2747.02 HDR STERLING HIGHWAY MP 45-60 DESIGN\CIVIL\ACAD\2747.02-H01.DWG] DATE/TIME 3/6/2020 3:01 PM LAYOUT H8 CHECKED DRAFTED

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	CFHWY00694	2020	H8	H12

SIGN SUMMARY													
SHEET NO.	POST NO.	STATION	OFFSET	TYPE	LEGEND	SIZE (IN)		AREA (SF)	SIGN FACES	POST SIZE	FRAMED		REMARKS
						W	H				YES	NO	
H3	3A	2035+82	RT	R2-1		30	36	7.5	W	2.5" PST	X		
H3	3B	2046+56	RT	W16-112		90	48	30.0	W	2 - 2.5" PST	X		
H3	3C	2046+79	RT	R5-3		24	24	4.0	W	2.5" PST		X	
H3	3D	2046+85	LT	W16-111		36	36	9.0	E	2.5" PST	X		
H3	3E	2053+89	RT	W16-111		36	36	9.0	W	2.5" PST	X		
H3	3F	2053+95	LT	W16-112		90	48	30.0	E	2 - 2.5" PST	X		
H3	3G	2056+73	LT	D10-202		14	27	2.63	E/W			X	
H3	3H	2059+16	LT	W4-2R		36	36	9.0	E	2.5" PST	X		
H4	4A	2063+98	LT	W9-1R		36	36	9.0	E	2.5" PST	X		
H5	5A	2098+77	RT	I-3		96	36	24.0	W	2 - 2.5" PST	X		
				D7-RM-010		24	24	4.0	W			X	
				RL-100		24	24	4.0	W			X	
				RW-080		24	24	4.0	W			X	
				D9-308		24	6	1.0	W			X	



STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

SIGN SUMMARY TABLE



FILE Z:\PROJECT\2747.02 HDR STERLING HIGHWAY MP 45-60 DESIGN\CIVIL\ACAD\2747.02-H01.DWG

DATE/TIME 3/6/2020 3:01 PM













LAYOUT H9

DESIGNED

CHECKED

DRAFTED

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	CFHWY00694	2020	H9	H12

SIGN SUMMARY													
SHEET NO.	POST NO.	STATION	OFFSET	TYPE	LEGEND	SIZE (IN)		AREA (SF)	SIGN FACES	POST SIZE	FRAMED		REMARKS
						W	H				YES	NO	
H5	5B	2099+97	LT	R4-16		30	36	7.5	E	2.5" PST	X		
H5	5C	2101+13	RT	D14-100		30	24	5.0	W	2.5" PST		X	
				D14-100		30	12	2.5	W			X	
H5	5D	2105+54	RT	I-3R		108	36	27.0	W	2 - 2.5" PST	X		
				D7-RM-010		24	24	4.0	W			X	
				RL-100		24	24	4.0	W			X	
				RW-080		24	24	4.0	W			X	
H5	5E	2105+59	LT	R2-1		30	36	7.5	E	2.5" PST	X		
				D10-202		14	27	2.63	E			X	
H5	5F	2106+35	RT	D9-205R		90	18	11.25	W	2 - 2.5" PST	X		
H5	5G	2107+14	RT	R3-5A		30	36	7.5	W	2 - 2.5" PST	X		
				R3-6R		30	36	7.5	W				

STATE OF ALASKA

PLANS-IN-HAND

MARCH 2020

0000

CERTIFIED PROFESSIONAL ENGINEER

R&M CONSULTANTS, INC.

9101 VANGUARD DRIVE

ANCHORAGE, AK 99507

(907) 522-1707

CERT. OF AUTH. NO. AECC111

STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B











SIGN SUMMARY TABLE



FILE Z:\PROJECT\2747.02 HDR STERLING HIGHWAY MP 45-60 DESIGN\CIVIL\ACAD\2747.02-H01.DWG

DATE/TIME 3/6/2020 3:01 PM LAYOUT H10 DESIGNED CHECKED DRAFTED

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	CFHWY00694	2020	H10	H12

SIGN SUMMARY													
SHEET NO.	POST NO.	STATION	OFFSET	TYPE	LEGEND	SIZE (IN)		AREA (SF)	SIGN FACES	POST SIZE	FRAMED		REMARKS
						W	H				YES	NO	
H6	6A	2115+54	LT	I-3L		108	36	27.0	E	2 - 2.5" PST	X		
				D7-RM-010		24	24	4.0	E			X	
				RL-100		24	24	4.0	E			X	
				RW-080		24	24	4.0	E			X	
H6	6B	2116+19	LT	R3-5A		30	36	7.5	E	2 - 2.5" PST	X		
				R3-108B		30	30	6.25	E		X		
H6	6C	2117+80	LT	D9-205L		90	18	11.25	E	2 - 2.5" PST	X		
H6	6D	2119+01	RT	0M4-1		30	30	6.25	W	2.5" PST		X	
H6	6E	2119+05	RT	0M4-1		30	30	6.25	W	2.5" PST		X	
H6	6F	2119+67	RT	R2-1		30	36	7.5	W	2.5" PST	X		

STATE OF ALASKA  
PLANS-IN-HAND  
MARCH 2020  
0000  
REGISTERED PROFESSIONAL ENGINEER

R&M CONSULTANTS, INC.  
9101 VANGUARD DRIVE  
ANCHORAGE, AK 99507  
(907) 522-1707  
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STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

SIGN SUMMARY TABLE



FILE Z:\PROJECT\2747.02 HDR STERLING HIGHWAY MP 45-60 DESIGN\CIVIL\ACAD\2747.02-H01.DWG

DATE/TIME 3/6/2020 3:01 PM LAYOUT H11 DESIGNED CHECKED DRAFTED

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	CFHWY00694	2020	H11	H12

SIGN SUMMARY													
SHEET NO.	POST NO.	STATION	OFFSET	TYPE	LEGEND	SIZE (IN)		AREA (SF)	SIGN FACES	POST SIZE	FRAMED		REMARKS
						W	H				YES	NO	
H6	6G	2125+18	LT	I-3	<div>Quartz Creek Crescent Creek</div>	96	36	24.0	E	2 - 2.5" PST	X		
				D7-RM-010	<div></div>	24	24	4.0	E			X	
				RL-100	<div></div>	24	24	4.0	E			X	
				RW-080	<div></div>	24	24	4.0	E			X	
				D9-308	<div>1500 FT</div>	24	6	1.0	E			X	
H6	6H	2127+00	RT	D2-2	<div>Seward 43 Anchorage 98</div>	96	36	24.0	W	2 - 2.5" PST	X		
H6	6I	2130+32	RT	D9-205L	<div></div>	90	18	11.25	W	2 - 2.5" PST	X		
H7	7A	2110+15	RT	R5-3	<div>NO MOTOR VEHICLES</div>	24	24	4.0	E	2.5" PST		X	
H7	7B	2110+65	RT	R2-1	<div>SPEED LIMIT 25</div>	30	36	7.5	N	2.5" PST	X		
H7	7C	2110+65	RT	R1-1	<div>STOP</div>	18	18	2.25	W	2.5" PST		X	
H7	7D	2111+15	RT	R1-1	<div>STOP</div>	18	18	2.25	E	2.5" PST		X	
H7	7E	2111+19	RT	D3-100	<div>Sterling Hwy</div>	28	8	1.56	N/S	2.5" PST		X	
				D3-100	<div>Quartz Creek RD</div>	60	12	5.0	E/W		X		
				R2-1	<div>STOP</div>	36	36	9.0	S		X		

STATE OF ALASKA

PLANS-IN-HAND  
MARCH 2020  
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R&M CONSULTANTS, INC.  
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(907) 522-1707  
CERT. OF AUTH. NO. AECC111


STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

SIGN SUMMARY TABLE



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	CFHWY00694	2020	H12	H12

SIGN SUMMARY													
SHEET NO.	POST NO.	STATION	OFFSET	TYPE	LEGEND	SIZE (IN)		AREA (SF)	SIGN FACES	POST SIZE	FRAMED		REMARKS
						W	H				YES	NO	
H7	7F	2111+74	RT	W14-2		30	30	6.25	W	2.5" PST		X	
TOTAL								394					



PLANS-IN-HAND  
MARCH 2020

R&M CONSULTANTS, INC.  
9101 VANGUARD DRIVE  
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STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

SIGN SUMMARY TABLE



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	CFHWY00694	2020	M1	M3

**GENERAL NOTES:**

ALL MATERIAL AND WORKMANSHIP SHALL CONFORM TO THE 2020 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION OF THE ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES AND SUPPLEMENTAL PROJECT SPECIAL PROVISIONS.

DESIGN SHALL CONFORM TO THE REQUIREMENTS FOR LOAD RESISTANCE  
FACTOR DESIGN OF THE 2012 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

PEAK GROUND ACCELERATION EQUAL TO 0.50 (1,000 YEAR RETURN PERIOD.)  
DESIGN HORIZONTAL GROUND ACCELERATION EQUAL TO 0.25 ( $\sim \frac{1}{2}$  OF PGA)  
FOR SEISMIC LATERAL EARTH LOADS.

PROVIDE A MINIMUM DESIGN SERVICE LIFE OF 75 YEARS FOR ALL COMPONENTS.

RETAINING WALL DESIGNED FOR THE FOLLOWING SOIL PROPERTY VALUES:

	DENSITY (PCF)	ANGLE OF INTERNAL FRICTION	c (PSF)	KG
1. MSE STRUCTURE BACKFILL	130	34	0	0.26
2. FOUNDATION FILL	130	34	0	0.26
3. RETAINED MATERIAL	130	34	0	0.26
4. SEISMIC ACTIVE EARTH PRESSURE COEFFICIENT, $K_{AE}=0.72$				

LOAD FACTORS:

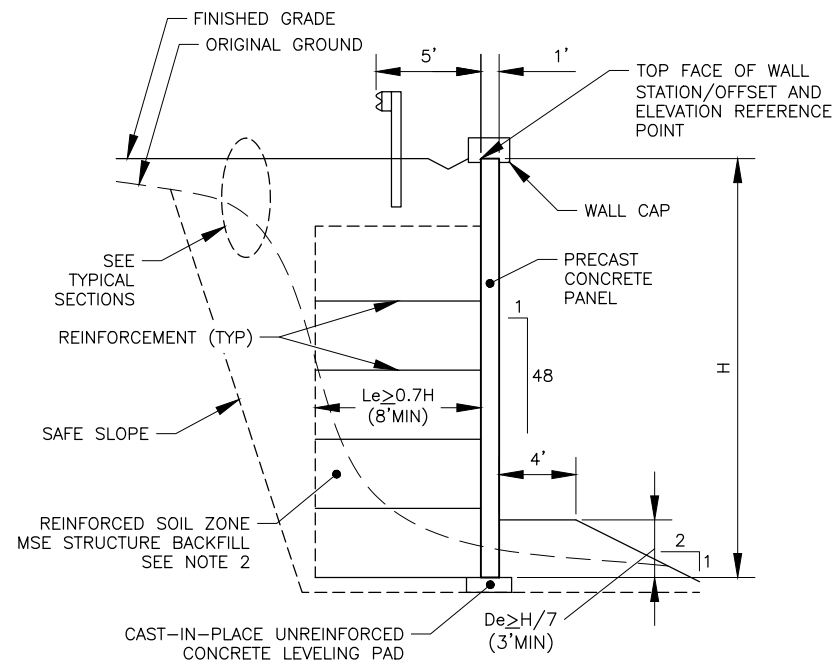
APPLY LOAD FACTORS PER AASHTO LRFD SPECIFICATIONS.

SEISMIC RESISTANCE FACTORS:

SEISMIC RESISTANCE FACTORS: 1.0  
SLIDING  
LIMITING ECCENTRICITY LOCATION OF RESULTANT OF REACTION  
FORCES AS PER SECTION 11.6.3.3 OF 2012  
AASHTO LRFD SPECIFICATIONS.

BEARING CAPACITY

ESTIMATED TOTAL SETTLEMENT OF MSE STRUCTURE = 1 INCH  
ESTIMATED DIFFERENTIAL SETTLEMENT = 1/100



**NOTES:**

1. Le SHOWN ON THESE CONTRACT PLANS IS BASED ON THE OVERALL STABILITY REQUIREMENTS OF THE MATERIAL AND CONDITIONS SURROUNDING THE REINFORCED SOIL ZONE. AN Le GREATER THAN SHOWN MAY BE REQUIRED TO SATISFY EXTERNAL AND INTERNAL STABILITY REQUIREMENTS.
2. MSE STRUCTURE BACKFILL IN ACCORDANCE WITH SECTION 511 OF THE SPECIFICATIONS IS INCLUDED IN PAY ITEM NO. 511(1) AND IS NOT QUANTIFIED SEPARATELY IN THESE DRAWINGS.

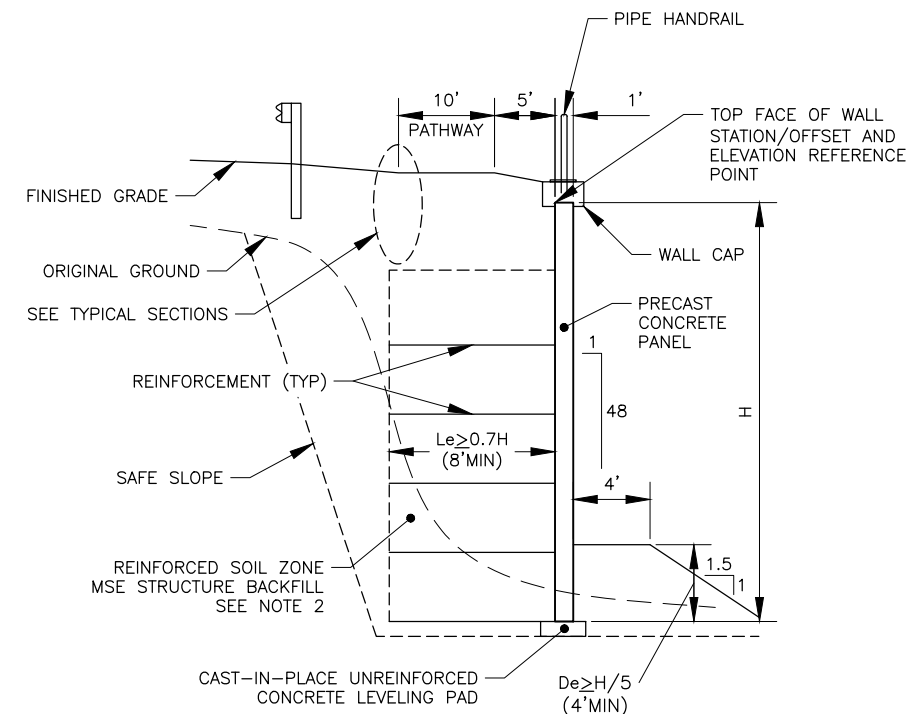
### MSE RETAINING WALL #1

WALL DESIGN TABLE							
WALL	MAX HEIGHT	REQUIRED LENGTH	Le/H	EXTERNAL STABILITY			GLOBAL FACTOR OF SAFETY - STATIC <sup>3</sup>
	H (FT)	Le <sup>1</sup> (FT)		LIMITING ECCENTRICITY SATISFIED?	SLIDING <sup>2</sup>	BEARING CAPACITY <sup>2</sup>	
1							
2							

**NOTES:**

1. MINIMUM STRAP LENGTH IS EITHER  $0.7 \cdot H$  OR 8 FEET, WHICHEVER IS GREATER.
2. MINIMUM CAPACITY DEMAND RATIO (CDR) FOR STATIC EXTERNAL STABILITY IS 1.0.
3. MINIMUM FACTOR OF SAFETY FOR STATIC GLOBAL STABILITY IS 1.5.

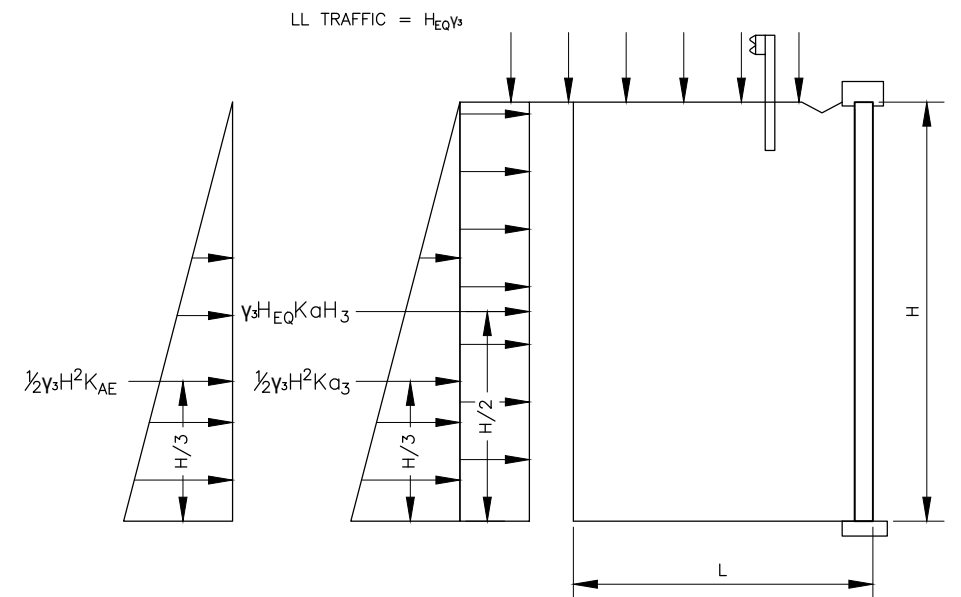
THE MSE WALL DESIGNER SHALL INCLUDE A PERFORATED DRAINAGE PIPE SYSTEM AT THE WALL TOE BEHIND THE FACING OF THE APPROXIMATE FINAL GRADE ELEVATION TO PREVENT POTENTIAL BUILDUP OF HYDROSTATIC FORCES BEHIND THE WALL FACING. MINIMUM PIPE SLOPE SHALL BE 0.5 PERCENT. THE DRAINAGE PIPE SYSTEM SHALL DISCHARGE AT INTERVALS. WALL DRAINAGE PIPING DESIGN IS SUBJECT TO ENGINEER REVIEW AND APPROVAL.



**NOTES:**

1. Le SHOWN ON THESE CONTRACT PLANS IS BASED ON THE OVERALL STABILITY REQUIREMENTS OF THE MATERIAL AND CONDITIONS SURROUNDING THE REINFORCED SOIL ZONE. AN Le GREATER THAN SHOWN MAY BE REQUIRED TO SATISFY EXTERNAL AND INTERNAL STABILITY REQUIREMENTS.
2. MSE STRUCTURE BACKFILL IN ACCORDANCE WITH SECTION 511 OF THE SPECIFICATIONS IS INCLUDED IN PAY ITEM NO. 511(1) AND IS NOT QUANTIFIED SEPARATELY IN THESE DRAWINGS.

## MSE RETAINING WALL #2



**NOTE:**

H<sub>EQ</sub> VARIES FOR PROJECT LOAD  
CONDITION 2 WALLS. SEE  
AASHTO TABLE 3.11.6.4-2

## PROJECT LOAD CONDITIONS



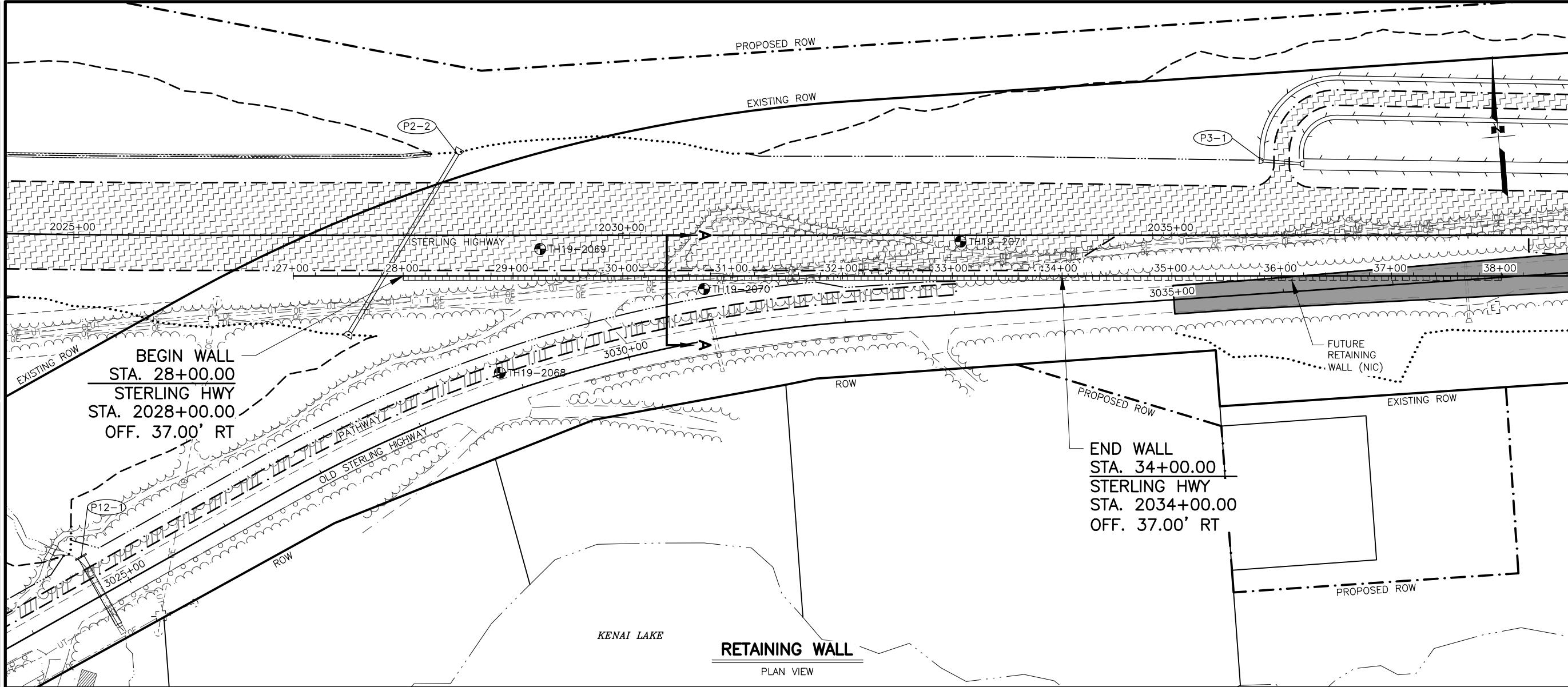
STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

**STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B**

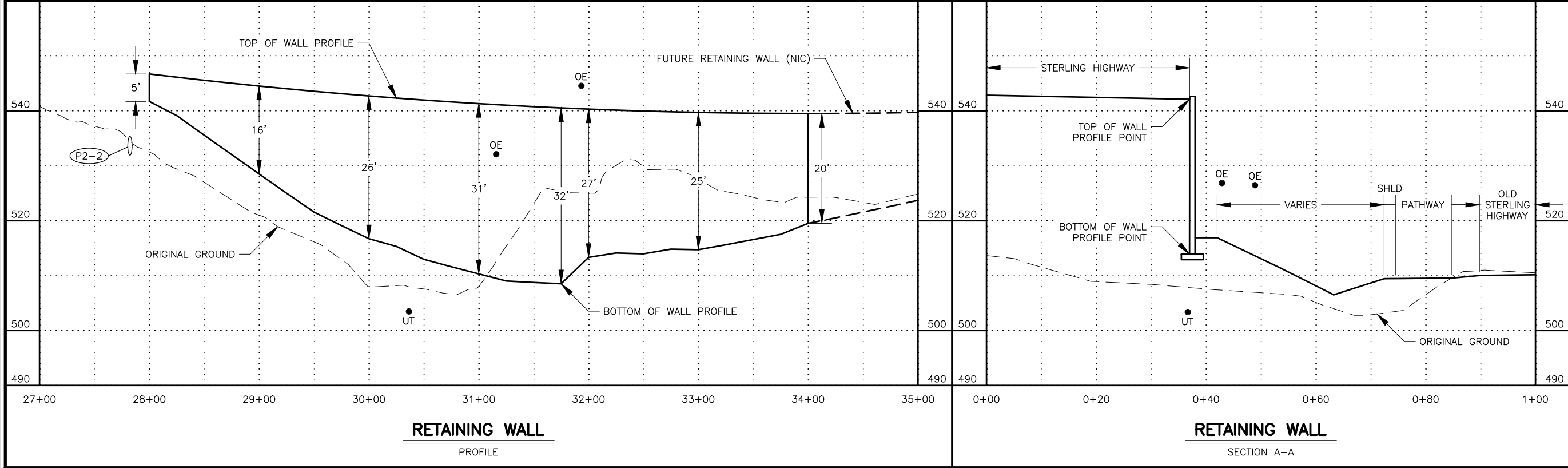
## RETAINING WALL DETAILS



FILE Z:\PROJECT\2747.02 HDR STERLING HIGHWAY MP 45-60 DESIGN\CIVIL\ACAD\2747.02-M-WALL P&PS.DWG DATE/TIME 3/6/2020 3:02 PM LAYOUT M2 DESIGNED CHECKED DRAFTED



RETAINING WALL  
PLAN VIEW



RETAINING WALL  
PROFILE

RETAINING WALL  
SECTION A-A

SHEET NO.	TOTAL SHEETS
M2	M3
STATE	YEAR
ALASKA	2020
PROJECT DESIGNATION	
CFHWY00694	
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	

Location map showing the project area near Kenai Lake and Sterling Highway. Key features include:

- BOP:** STA 2010+00
- EOP:** STA 2132+00
- Quartz Creek:** Located to the south of the highway.
- Points:** 44, 45, 46, 47 are marked.

STATE OF ALASKA  
PLANS-IN-HAND  
MARCH 2020  
0000  
REGISTERED PROFESSIONAL ENGINEER

R&M CONSULTANTS, INC.  
9101 VANGUARD DRIVE  
ANCHORAGE, AK 99507  
(907) 522-1707  
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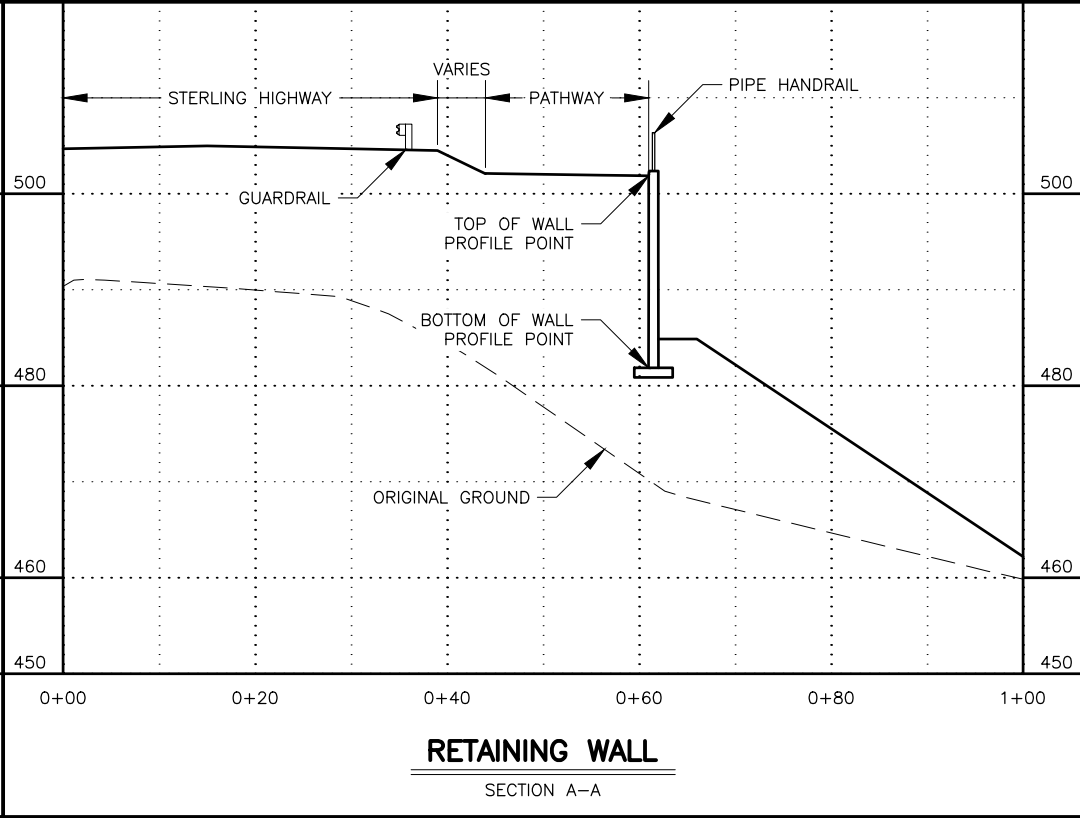
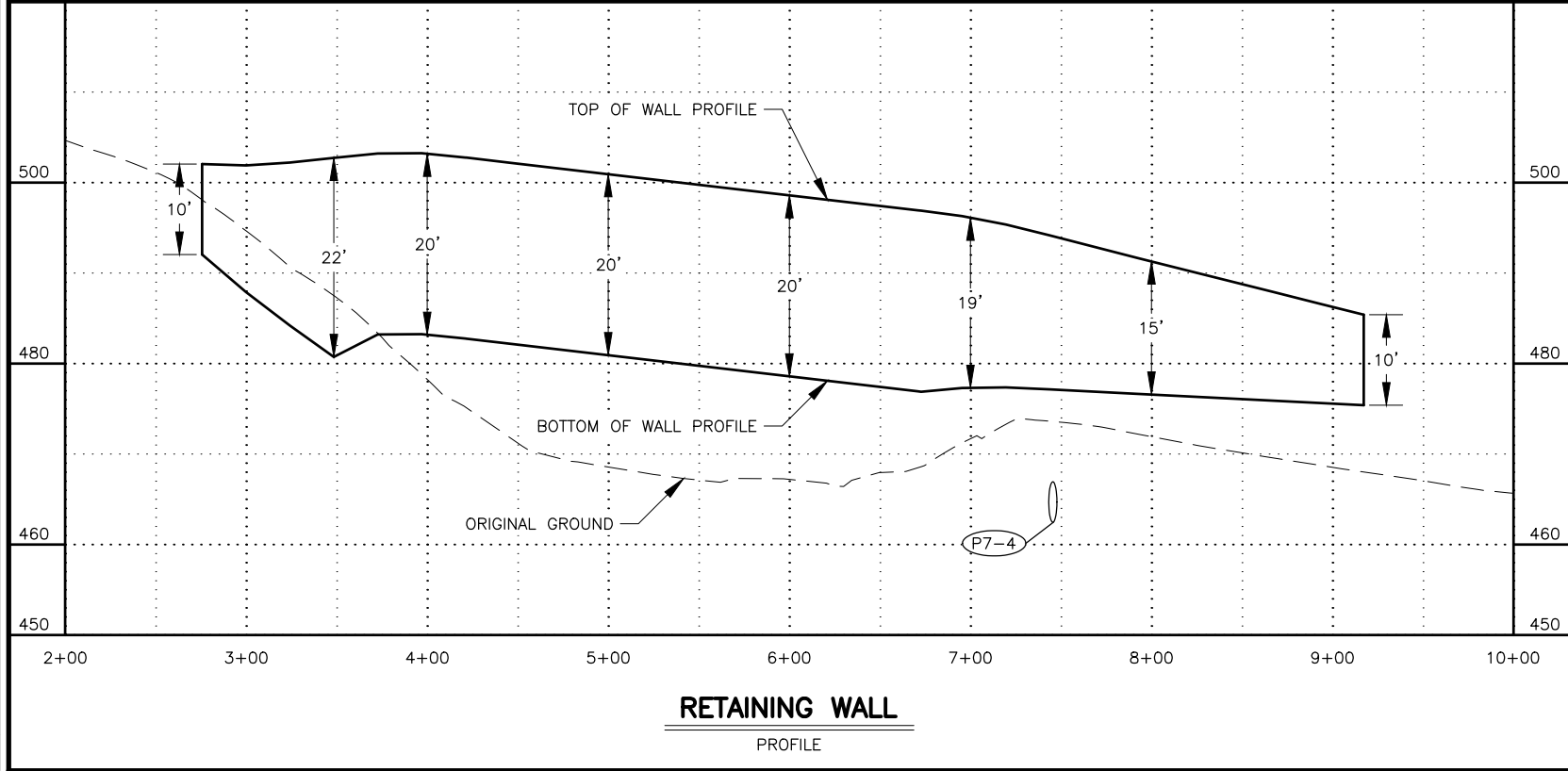
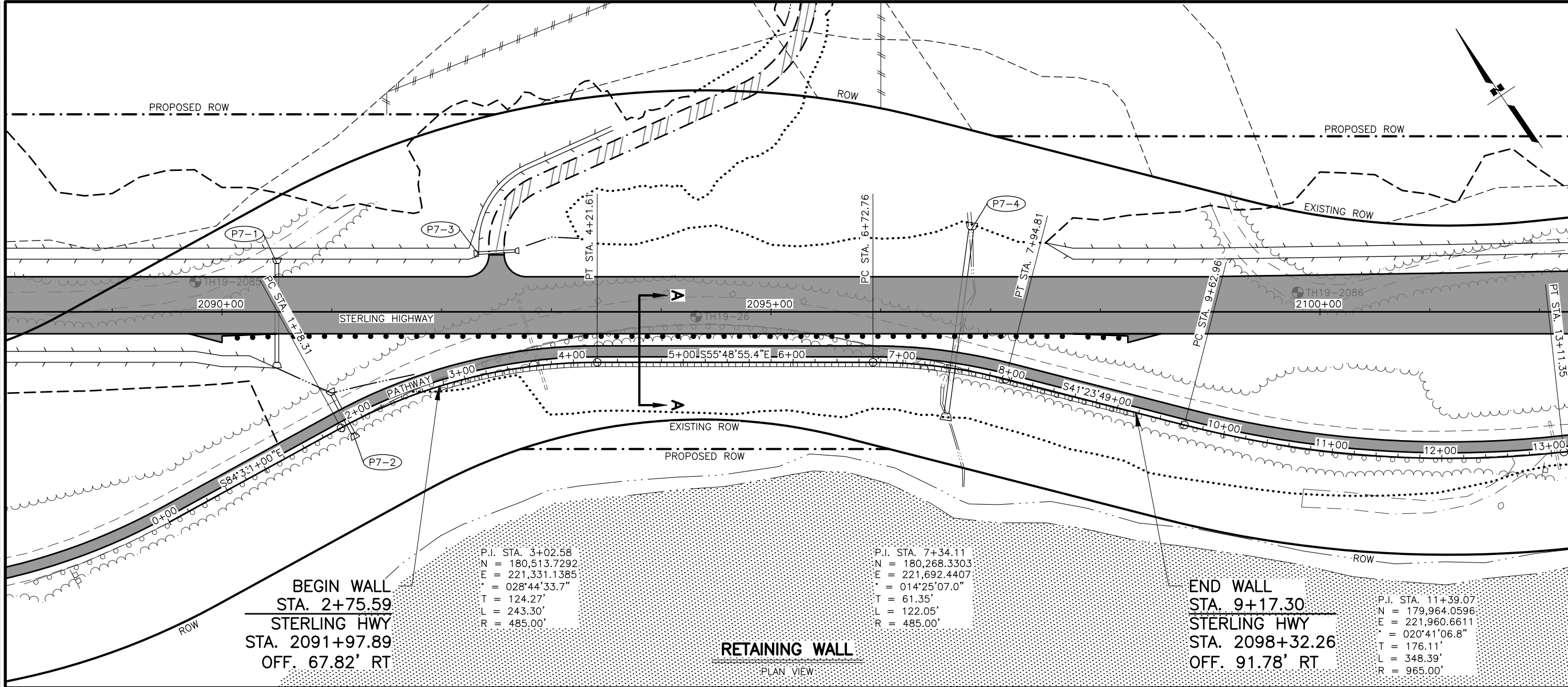
STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B

MSE RETAINING WALL #1



FILE Z:\PROJECT\2747.02 HDR STERLING HIGHWAY MP 45-60 DESIGN\CIVIL\ACAD\2747.02-M-WALL P&PS.DWG DATE/TIME 3/6/2020 3:03 PM LAYOUT M3 DESIGNED CHECKED DRAFTED



SHEET NO.	TOTAL SHEETS
M3	M3
STATE	YEAR
ALASKA	2020
PROJECT DESIGNATION	
CFHWY00694	
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	

Map labels: BOP STA 2010+00, EOP STA 2132+00, KENAI LAKE, QUARTZ CREEK, STERLING HIGHWAY, THIS SHEET.

STATE OF ALASKA  
PLANS-IN-HAND  
MARCH 2020  
0000  
REGISTERED PROFESSIONAL ENGINEER  
R&M CONSULTANTS, INC.  
9101 VANGUARD DRIVE  
ANCHORAGE, AK 99507  
(907) 522-1707  
CERT. OF AUTH. NO. AECC111

STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES  
STERLING HIGHWAY MP 45-60  
SUNRISE TO SKILAK LAKE RD  
RECONSTRUCTION STAGE 1B  
MSE RETAINING WALL #2