Addendum #1; Attachment #1

State of Alaska

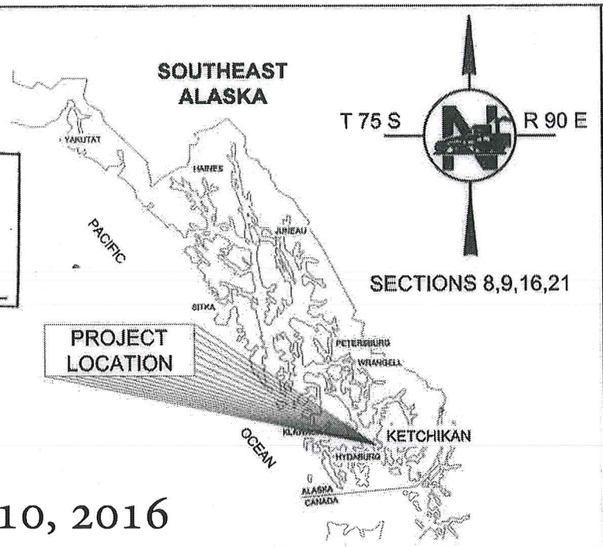
Department of Transportation and Public Facilities
Southcoast Region

KETCHIKAN, ALASKA
GRAVINA ISLAND HIGHWAY

KTN GRAVINA-MILL ACCESS ROAD
PROJECT NO. Z699220000

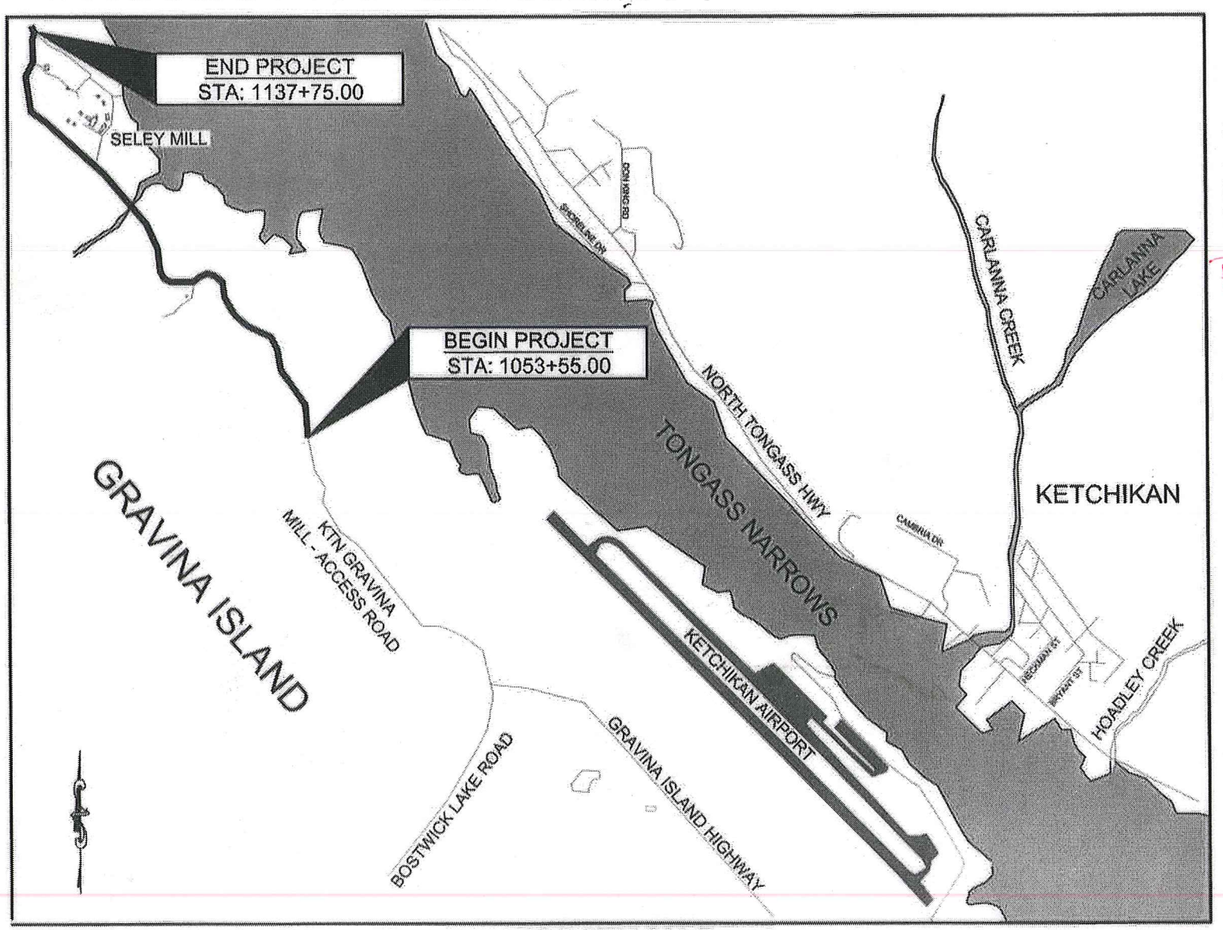
The undersigned hereby certifies that this duplicated document is an exact and true copy of the original.

Cody Sutton



May 10, 2016

Asbuits
Contractor: Glacier State Contractors
Start Date: 6/7/16
End Date: 10/27/16



VICINITY MAP

DESIGN DESIGNATION
GRAVINA MILL ROAD

A.D.T 2015	=	50
A.D.T 2036	=	75
D.H.V. 2015	=	5
%T	=	15%
V	=	25 M.P.H.

Project Engineer: Mandi Pelham

PROJECT SUMMARY

LENGTH OF PROJECT	=	1.59 MILES
LENGTH OF RESURFACING	=	1.05 MILES
WIDTH OF RESURFACING	=	±14 FEET
LENGTH OF NEW CONSTRUCTION	=	0.54 MILES
WIDTH OF NEW CONSTRUCTION	=	16-27 FEET

THE FOLLOWING STANDARD DRAWINGS APPLY TO THIS PROJECT:

D-01.02	E-00.00	S-00.11
D-04.21	E-09.00	S-01.00
	E-13.00	S-05.01
		S-30.03

INDEX

Z1-Z10 Revised Site 3 & 1 6/23

PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 A1-A2_Title Sheets.dwg

Friday, February 26, 2016 11:09:31 AM

PLOT: PSPACE OR MSPACE : 1=1(F)

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
SOUTHCOAST REGION

STATE OF ALASKA — Michael L. Duman No. 13758 — REGISTERED PROFESSIONAL ENGINEER

3-16-2016

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8.23.17 Date

APPROVED: Pat Carroll 3/30/16
REGIONAL PRE-CONSTRUCTION ENGINEER — DATE
L. PAT CARROLL, P.E.

CONCUR: 3/30/16
DIRECTOR, SOUTHCOAST REGION — DATE
MICHAEL J. COFFEY

CERTIFIED TRUE & CORRECT AS-BUILT OF ACTUAL FIELD CONDITION:

CONSTRUCTION PROJECT MANAGER — DATE

PLANS DEVELOPED BY:
LEI ENGINEERING & SURVEYING, LLC

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	Z699220000	2016	A1	48

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LAYOUT: A1
SCALE: NTS
XREFS:
DESIGNED BY: N. DUMAN
CHECKED BY: R. BARTON
DRAWN BY: R. BRIGGS

ABBREVIATIONS

%T	PERCENTAGE TRUCK TRAFFIC DURING PEAK HOURS	INTL.	INTERNATIONAL	RD	ROAD
&	AND	I.E.	INVERT ELEVATION	REF	REFER OR REFERENCE
(TYP.)	TYPICAL	JT	JOINT	REINF	REINFORCED, REINFORCING
@	AT	KTN	KETCHIKAN INTERNATIONAL AIRPORT	ROW	RIGHT-OF-WAY
A.D.T.	AVERAGE DAILY TRAFFIC	L	LENGTH	R	RANGE, RADIUS
AC	ASPHALT CONCRETE	LB	POUNDS	RT	RIGHT
AKDOT&PF	ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES	LB/CU FT	POUNDS PER CUBIC FOOT	S	SOUTH
AL	ALUMINUM	LF	LINEAR FOOT	SB	SOUTHBOUND
B.O.P.	BEGINNING OF PROJECT	LS	LUMP SUM	SHT	SHEET
BM	BENCH MARK	LT	LEFT	SHLD	SHOULDER
BOP	BOTTOM OF PIPE	M GAL	1000 GALLONS (ROMAN NUMERAL M = 1000)	SPECS	SPECIFICATIONS
BRG	BEARING	MAX	MAXIMUM	SQ. FT.	SQUARE FEET
CL	CENTER LINE	MI	MILE	ST	STREET
CLR	CLEAR	MIN	MINIMUM	STA	STATION
CY	CUBIC YARD	MISC	MISCELLANEOUS	STD	STANDARD
D.H.V.	DESIGN HOURLY VOLUME	MUTCD	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES	SPA	STRUCTURAL PLATE ARCH
DIA	DIAMETER	N	NORTH	T	TANGENT, TOWNSHIP
DWG	DRAWING	NB	NORTHBOUND	T&B	TOP AND BOTTOM
E	EAST	NO	NUMBER	TEMP	TEMPERATURE
E.A.L.	EQUIVALENT AXLE LOAD	NTS	NOT TO SCALE	THKN.	THICKNESS
E.O.P.	END OF PROJECT	O.D.	OUTER DIAMETER	TSS	TEMPORARY SIGN SUPPORT
EA	EACH	O.C.	ON CENTER	UG	UNDERGROUND
EB	EASTBOUND	OFF	OFFSET	UNK	UNKNOWN
ELEV.	ELEVATION	OHW	ORDINARY HIGH WATER	V	DESIGN SPEED (VELOCITY)
EP	EDGE OF PAVEMENT	P.C.	POINT OF CURVATURE	V.C.	VERTICAL CURVE
EX	EXISTING	PI	POINT OF INTERSECTION	VERT	VERTICAL
FG	FINISH GRADE	PL	PLACE, PLATE, PROPERTY LINE	VPI	VERTICAL POINT OF INTERSECTION
FIG	FIGURE	PSI	POUNDS PER SQUARE INCH	W	WEST, WATER
FT	FOOT OR FEET	PSST	PERFORATED STEEL SQUARE TUBE	W/	WITH
GA	GAUGE	P.T.	POINT OF TANGENCY	WB	WESTBOUND
HORIZ	HORIZONTAL	PT	POINT	WL	WATER LINE
I.D.	INSIDE DIAMETER	PVC	POLYVINYL CHLORIDE PLASTIC	WS	WATER SURFACE, WATER STOP
IN	INCH	PVI	POINT OF VERTICAL INTERSECTION	WT	WEIGHT
INT.	INTERSECTION	PVMT	PAVEMENT		

LEGEND

PRIMARY MONUMENT (BRASS/AL CAP)

TEST PIT (TP)

DRAINAGE PATHWAY

CHECK DAM

SEDIMENT BARRIER

CENTERLINE (℄)

CULTURALLY MODIFIED TREE

PIPE CULVERT

STRUCTURE

SIGN POST

PUMP

EXISTING ROADWAY

PROPOSED ROADWAY

DITCH LINE

MAJOR CONTOUR (100)

MINOR CONTOUR

RESURFACING

FULL DEPTH CONSTRUCTION

REMOVED EXISTING

BORROW MATERIAL

RIPRAP

FILL

CUT

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. Mandi Peeham Date 8/23/17

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

ABBREVIATIONS & LEGEND

Michael L. Duman, No. 13756, Registered Professional Engineer, 2-22-2016

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER

PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 A1-A2_Title Sheets.dwg
TAB: A2 Wednesday, February 17, 2016 11:38:50 AM Ryan Berger

REVISIONS NO.	DATE	DESCRIPTION	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			Z699220000	2016	A2	48

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
CHECKED BY: S. MARTIN
TRAFFIC BY: R. BERGER

SCALE: NTS
LAYOUT: A2
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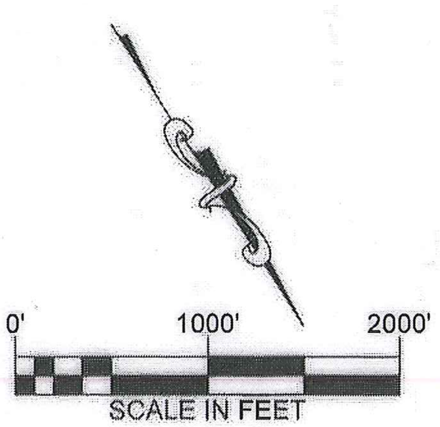

LEGEND

======	EXISTING ROADWAY
■■■■■■■■	EXISTING ROADWAY TO BE RESURFACED
▬▬▬▬	ROADWAY FULL DEPTH CONSTRUCTION

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng: [signature] Date 8/23/17

STATE OF ALASKA
Michael L. Duman
No. 13756
REGISTERED PROFESSIONAL ENGINEER
2-22-2016

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

KEY MAP

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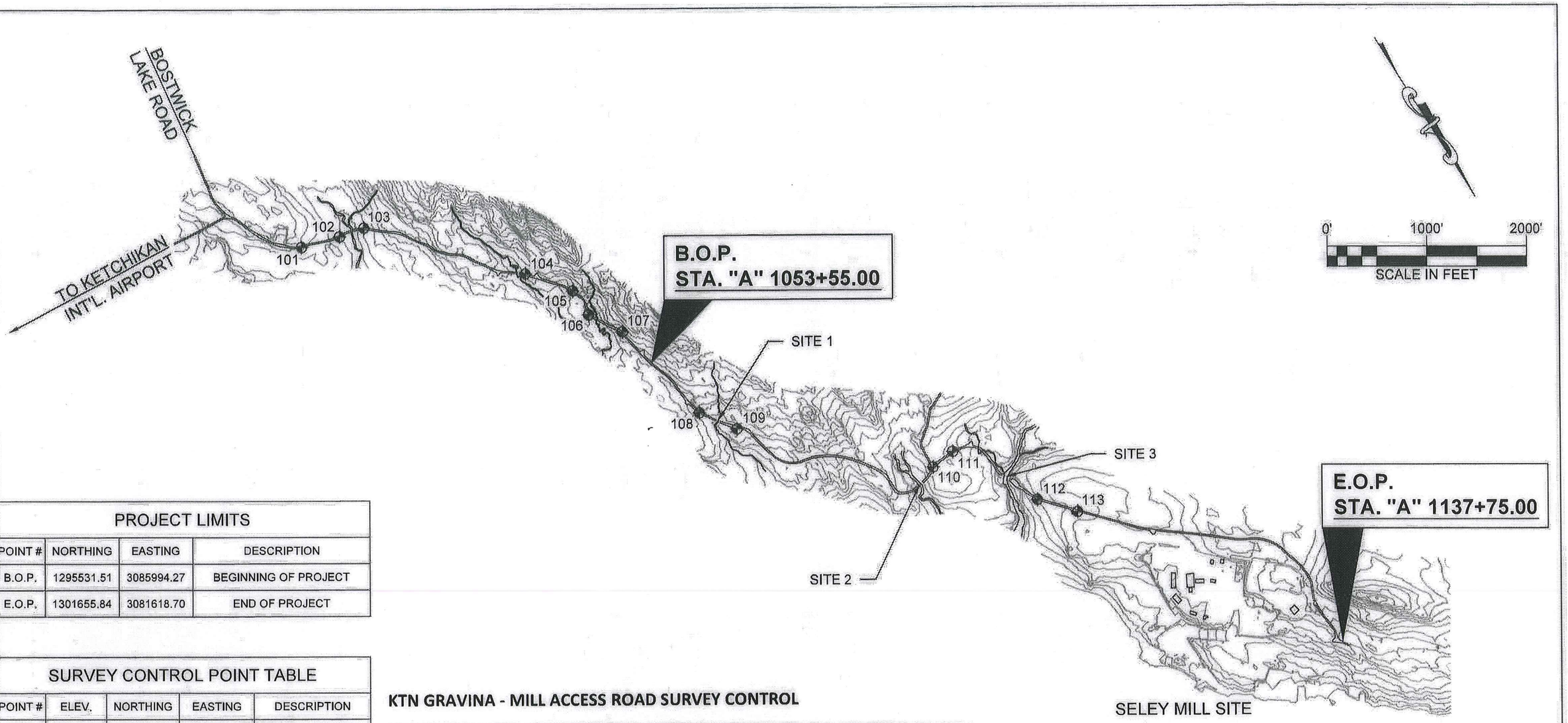

PROJECT LIMITS

POINT #	NORTHING	EASTING	DESCRIPTION
B.O.P.	1295531.51	3085994.27	BEGINNING OF PROJECT
E.O.P.	1301655.84	3081618.70	END OF PROJECT

SURVEY CONTROL POINT TABLE

POINT #	ELEV.	NORTHING	EASTING	DESCRIPTION
101	151.68	1292685.94	3088333.62	ALCAP2_DOT_SET
102	132.65	1292802.23	3087955.45	ALCAP2_DOT_SET
103	141.07	1292858.33	3087702.57	ALCAP2_DOT_SET
104	193.52	1294109.91	3086574.45	ALCAP2_DOT_SET
105	189.07	1294507.82	3086264.61	ALCAP2_DOT_SET
106	178.92	1294793.69	3086257.44	ALCAP2_DOT_SET
107	193.75	1295114.24	3086072.00	ALCAP2_DOT_SET
108	143.83	1296208.96	3085852.45	ALCAP2_DOT_SET
109	136.90	1296545.62	3085620.08	ALCAP2_DOT_SET
110	79.28	1297917.10	3084173.08	ALCAP2_DOT_SET
111	76.17	1297893.03	3083924.69	ALCAP2_DOT_SET
112	63.62	1298752.66	3083464.78	ALCAP2_DOT_SET
113	76.44	1299069.89	3083190.93	ALCAP2_DOT_SET

KTN GRAVINA - MILL ACCESS ROAD SURVEY CONTROL

THE HORIZONTAL DATUM USED FOR THE SURVEY CONTROL IS NAD83(2011) 2010.00 ALASKA STATE PLANE ZONE 1.
ALL COORDINATES, DISTANCES, AND BEARINGS ARE GRID.

THE VERTICAL DATUM USED IS NAVD88 DERIVED FROM STATIC GPS OBSERVATIONS TO THE NATIONAL SPATIAL REFERENCE SYSTEM AND USING THE GEOID MODEL 12A AS DETERMINED BY THE NATIONAL GEODETIC SURVEY.

AKDOT&PF HAS SUPPLIED THE FOLLOWING GROUND MARKS TO BE USED FOR ANY ADDITIONAL SURVEY. SEE ACAD C3D V 2014 DWG FILE "MILL_ROAD_EGA" FOR COGO POINTS AND CORRESPONDING LOCATIONS, COORDINATES, AND DESCRIPTIONS.

- 101 - 113 ARE 2" ALUMINUM CAPS ON REBAR SET ALONG PROJECT CORRIDOR FOR USE IN ADDITIONAL MAPPING.

MONUMENT NOTES

IF ANY PAIR OF CONTROL POINTS DISAGREES FROM PUBLISHED VALUE BY MORE THAN 1:10,000 HORIZONTALLY OR VERTICALLY THEN A THIRD NETWORK POINT MUST BE TIED TO ASCERTAIN WHICH POINT IS IN ERROR OR HAS BEEN DISTURBED.

WHETHER LISTED OR NOT, ALL PROPERTY MONUMENTS, PROPERTY MARKERS, OR ACCESSORIES THAT WILL BE DISTURBED OR BURIED SHALL BE REFERENCED PRIOR TO BEING DISTURBED, AND RE-ESTABLISHED IN THEIR ORIGINAL POSITION AND A RECORD OF MONUMENT FORM IN ACCORDANCE WITH A.S.34.65.040 SHALL BE SUBMITTED TO THE CONSTRUCTION ENGINEERFOR REVIEW PRIOR TO RECORDING.

MONUMENTS 101-113 ARE FOR CONSTRUCTION CONTROL ONLY AND NEED NOT BE REPLACED IF DESTROYED.

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. Mandy Pelham Date 8.23.17

STATE OF ALASKA
Michael L. Duman
No. 13756
REGISTERED PROFESSIONAL ENGINEER
2-22-2016

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

SURVEY CONTROL DIAGRAM

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Survey Diagram.dwg
TAB: A4 Wednesday, February 17, 2016 11:38:52 AM Ryan Berger

REVISIONS NO.	DATE	DESCRIPTION

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
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LAYOUT: A4
SCALE: 1" = 1000'
DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
CHECKED BY: M. DUMAN

SITE 1 ("B" LINE)

Number	Segment	Station	Northing	Easting	Bearing	Length	Radius	Delta
L1	Tangent	100+00.00	1295664.69	3085949.89	N20° 04' 56.27"W	83.3		
C1	Curve	100+83.34	1295742.96	3085921.27	N11° 27' 58.69"W	75.2	250	17
L2	Tangent	101+58.53	1295816.37	3085906.38	N2° 51' 01.11"W	188.7		
C2	Curve	103+47.24	1296004.86	3085897.00	N20° 44' 23.16"W	312.2	500	36
L3	Tangent	106+59.47	1296292.13	3085788.22	N38° 37' 45.22"W	338.2		
C3	Curve	109+97.69	1296556.35	3085577.07	N37° 13' 08.19"W	12.3	250	3

SITE 2 ("C" LINE)

Number	Segment	Station	Northing	Easting	Bearing	Length	Radius	Delta
L1	Tangent	200+00.00	1297705.77	3084630.35	N10° 20' 03.10"W	14.4		
C1	Curve	200+14.45	1297719.99	3084627.76	N65° 54' 18.09"W	591.6	305	111
L2	Tangent	206+06.08	1297925.40	3084168.45	S58° 31' 26.92"W	1.3		
C2	Curve	206+07.37	1297924.73	3084167.36	S73° 35' 20.44"W	78.9	150	30
L3	Tangent	206+86.25	1297902.70	3084092.56	S88° 39' 13.97"W	9.7		

SITE 3 ("D" LINE)

Number	Segment	Station	Northing	Easting	Bearing	Length	Radius	Delta
L1	Tangent	300+00.00	1297916.30	3083806.53	N75° 23' 33.04"W	29.0		
C1	Curve	300+29.00	1297923.61	3083778.46	N46° 10' 37.41"W	305.9	300	58
L2	Tangent	303+34.95	1298126.40	3083567.17	N16° 57' 41.79"W	361.1		
C2	Curve	306+96.04	1298471.79	3083461.83	N3° 59' 05.26"W	90.6	200	26
L3	Tangent	307+86.64	1298561.39	3083455.59	N8° 59' 31.26"E	113.1		
C3	Curve	308+99.70	1298673.06	3083473.26	N10° 33' 55.94"W	75.1	110	39
L4	Tangent	309+74.79	1298745.46	3083459.75	N30° 07' 23.15"W	8.4		
C4	Curve	309+83.17	1298752.71	3083455.55	N30° 31' 41.67"W	2.8	200	1

SITE STATIONING TABLE

			LF
"A" ALIGNMENT	"A" 1053+55.00	"A" 1137+75.00	8420
"B" SITE 1	"A" 1054+95.38 = "B" 100+00.00	"A" 1065+06.80 = "B" 110+10.00	1010
"C" SITE 2	"A" 1080+84.00 = "C" 200+00.00	"A" 1088+84.38 = "C" 206+96.00	696
"D" SITE 3	"A" 1091+63.31 = "D" 300+00.00	"A" 1101+15.21 = "D" 309+86.00	986
"FR" FOREST ROAD	"A" 1088+05.98 = "FR" 0+00.00	"FR" 0+90.69	90.7

FOREST ROAD ("FR" LINE)

Number	Segment	Station	Northing	Easting	Bearing	Length	Radius	Delta
L1	Tangent	0+00.00	1297919.97	3084158.99	S28° 33' 50.30"E	5.9		
C1	Curve	0+05.86	1297914.82	3084161.79	S13° 50' 13.70"E	51.4	100	29
L2	Tangent	0+57.27	1297865.45	3084173.95	S0° 53' 22.91"W	33.4		

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. Mandi Pelham 8.23.17 Date

NOTE: SEE SHEET A6 FOR ILLUSTRATION

STATE OF ALASKA
Michael L. Duman
No. 13756
REGISTERED PROFESSIONAL ENGINEER
2-22-2016

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

ALIGNMENT DATA

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REVISIONS		
NO.	DATE	DESCRIPTION

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	A5	48

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
CHECKED BY: S. MARTIN
CHECKED BY: M. BERGER
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LAYOUT: A5
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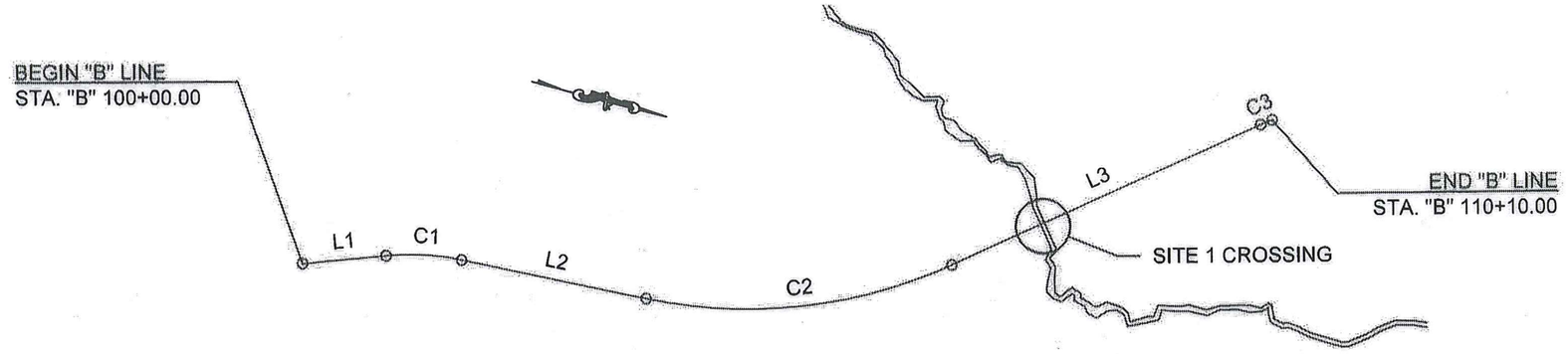

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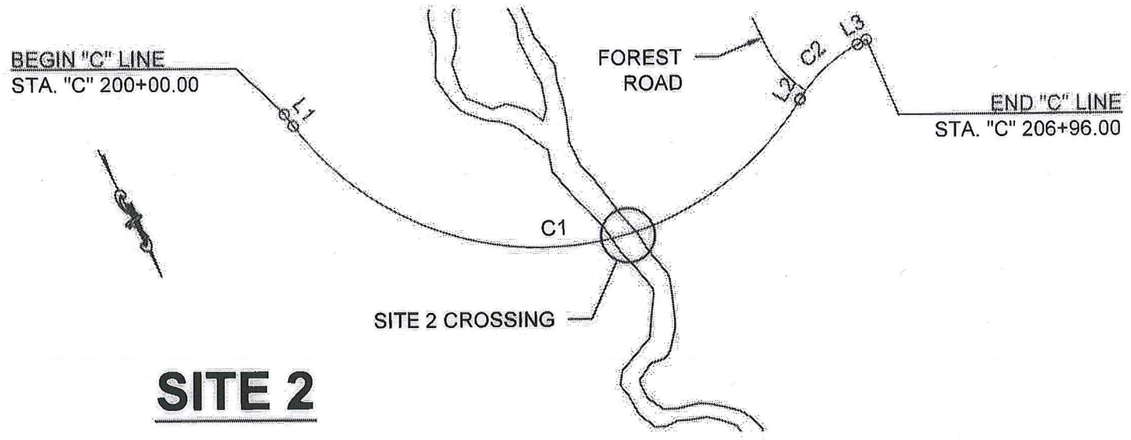
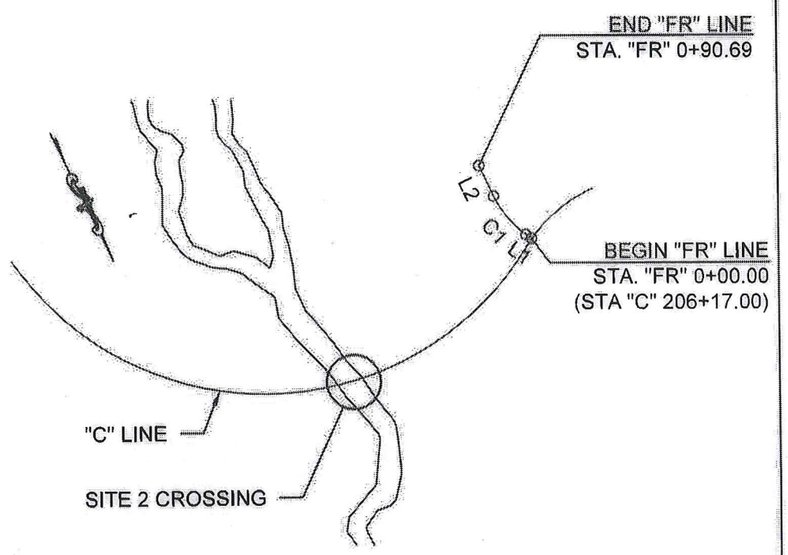
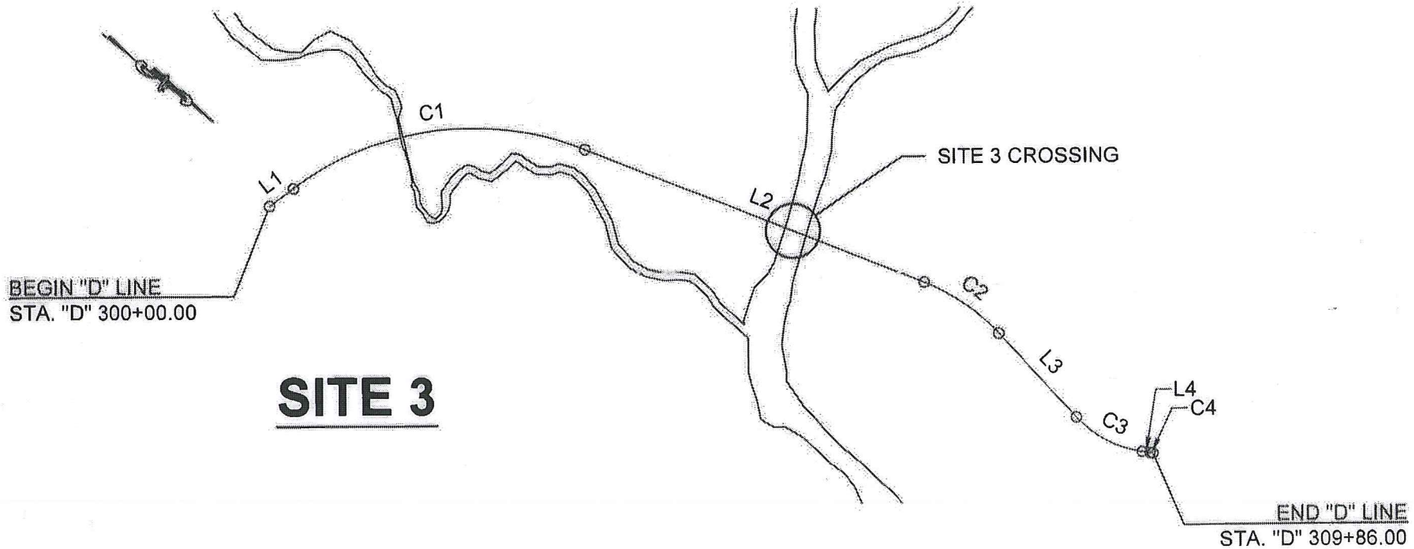


SITE 2



FOREST ROAD



SITE 3

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Engr Mandi Pelham 8.23.17 Date

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

Michael L. Duman
No. 13756
PROFESSIONAL ENGINEER
2-22-2016

KTN GRAVINA - MILL ACCESS ROAD

ALIGNMENT DATA

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 A3-A5-A6_General.dwg
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Wednesday, February 17, 2016 11:38:57 AM Ryan Berger

REVISIONS NO.	DATE	DESCRIPTION

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
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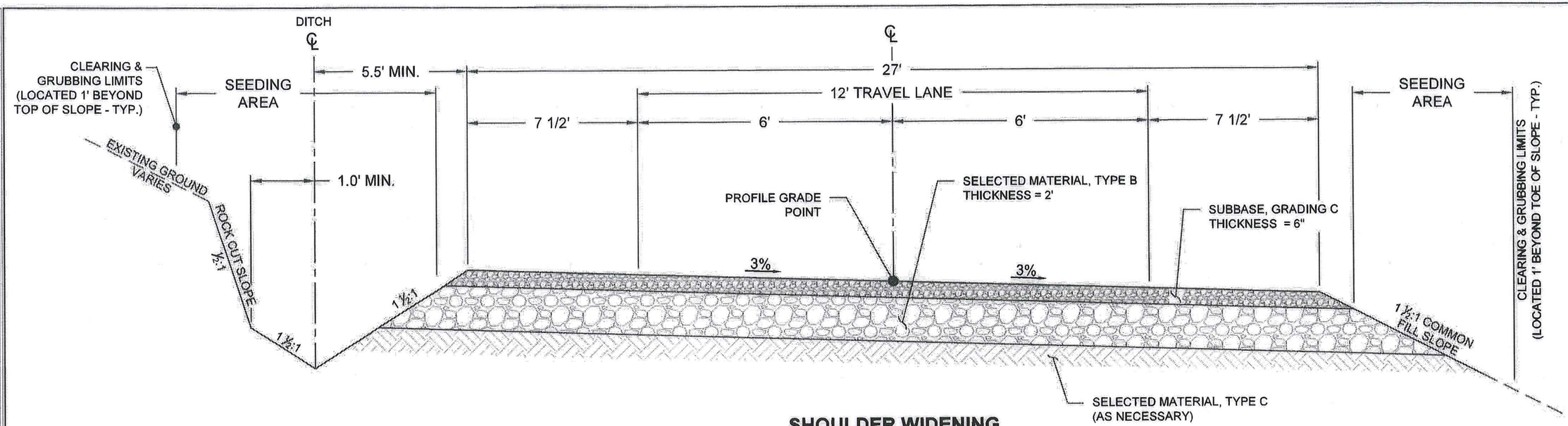
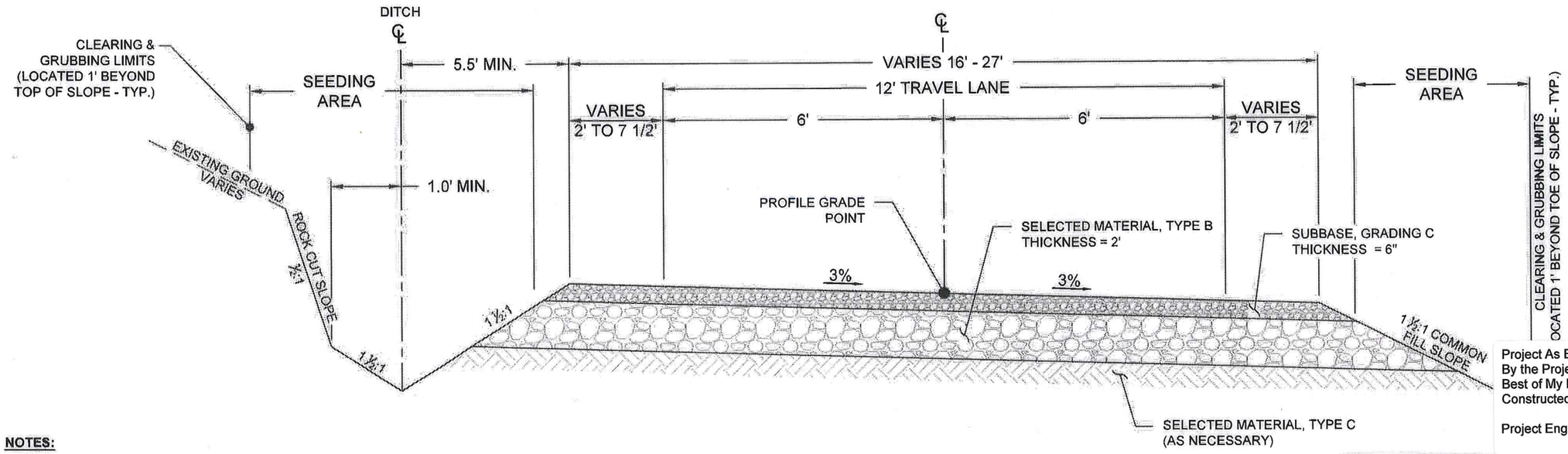


SHOULDER WIDENING

SITE 2: STA "C" 203+52.12 TO "C" 204+07.12
SITE 3: STA "D" 305+24.30 TO "D" 305+90.36



NOTES:

1. CLEARING & GRUBBING LIMITS SHALL BE LOCATED 1' BEYOND TOP / TOE OF SLOPE AS ESTABLISHED BY THE GRADING LIMITS.
2. SEEDING AREA SHALL EXTEND FROM THE EDGE OF SUBBASE TO CLEARING & GRUBBING LIMITS, AND SHALL INCLUDE ANY OTHER CONSTRUCTION DISTURBED AREAS OFF THE ROADWAY.
3. ROCK WITHIN THE PROJECT LIMITS IS SOFT, AND IS EXPECTED TO BE RIPABLE.
4. ROCK SLOPES WILL NOT BE SEEDED.

SHOULDER WIDENING TRANSITION

SITE 2: STA "C" 202+96.12 TO "C" 203+52.12
STA "C" 204+07.12 TO "C" 204+63.12

SITE 3: STA "D" 304+69.26 TO "D" 305+24.30
STA "D" 305+90.36 TO "D" 306+45.40

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8-23-17 Date

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

TYPICAL SECTIONS

Michael L. Duman No. 13756 REGISTERED PROFESSIONAL ENGINEER 2-22-2016

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02_Typical Section.dwg
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REVISIONS NO.	DATE	DESCRIPTION

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
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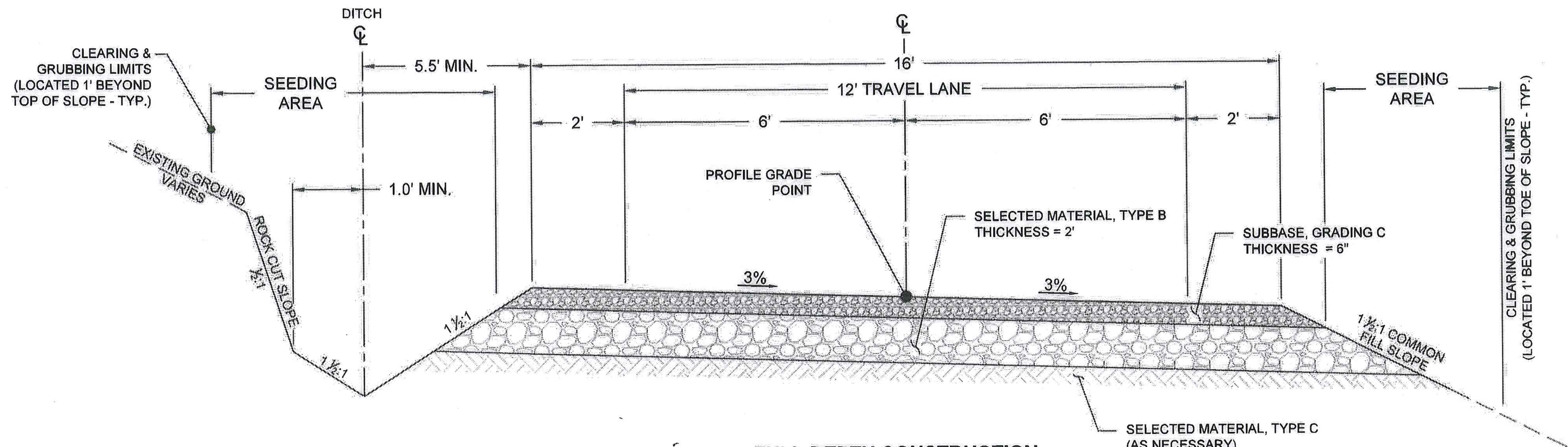
DESIGNED: M. DUMAN
CHECKED: I.S. MARTIN
DRAWN: R. BERGER



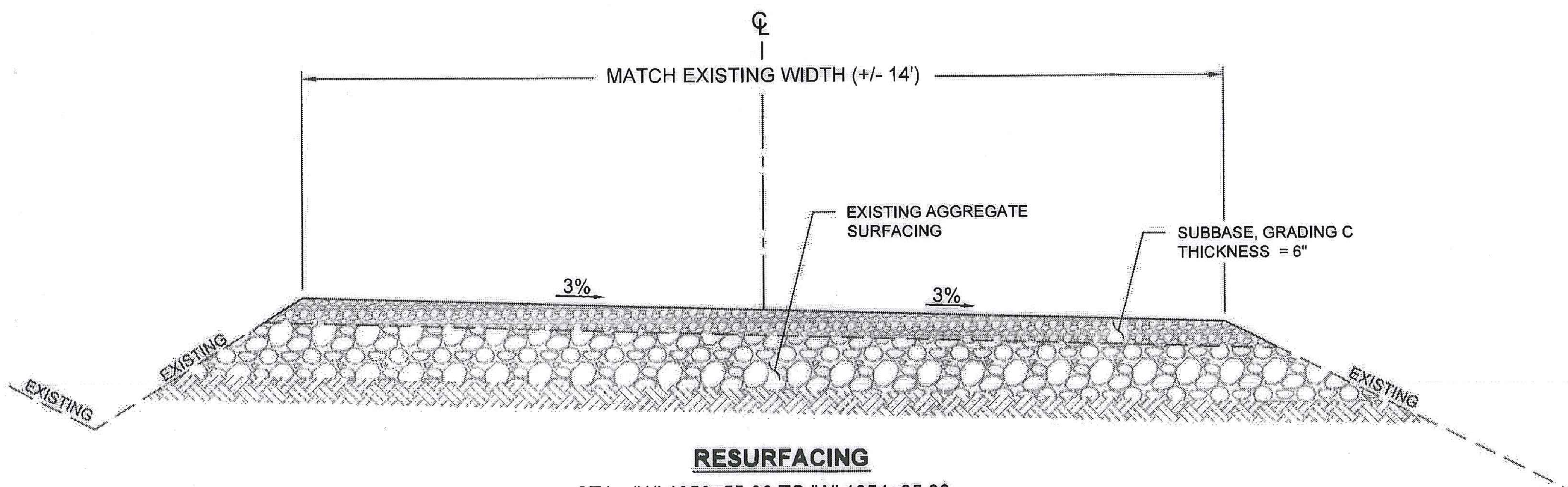
FULL DEPTH CONSTRUCTION

SITE 1: STA "B" 100+00.00 TO "B" 102+15.00
STA "B" 106+40.00 TO "B" 110+10.00

SITE 2: STA "C" 200+00.00 TO "C" 202+96.12
STA "C" 205+13.12 TO "C" 206+96.00

SITE 3: STA "D" 300+00.00 TO "D" 304+69.26
STA "D" 306+45.40 TO "D" 309+86.00

Revision: See 2 sheets
STN 300+00 - 309+86
layback slopes to 1.5:1
To adjust from a rock cut to a soil cut



RESURFACING

STA "A" 1053+55.00 TO "A" 1054+95.38
"A" 1065+06.80 TO "A" 1080+84.00
"A" 1088+84.38 TO "A" 1091+63.31
"A" 1101+15.21 TO "A" 1137+75.00
"B" 102+15.00 TO "B" 106+40.00
"FR" 0+08.00 TO "FR" 0+90.69

NOTES:

1. CLEARING & GRUBBING LIMITS SHALL BE LOCATED 1' BEYOND TOP / TOE OF SLOPE AS ESTABLISHED BY THE GRADING LIMITS.
2. SEEDING AREA SHALL EXTEND FROM THE EDGE OF SUBBASE TO CLEARING & GRUBBING LIMITS, AND SHALL INCLUDE ANY OTHER CONSTRUCTION DISTURBED AREAS OFF THE ROADWAY.
3. ROCK WITHIN THE PROJECT LIMITS IS SOFT, AND IS EXPECTED TO BE RIPABLE.
4. ROCK SLOPES WILL NOT BE SEEDED.

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP   8-23-17 Date

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

TYPICAL SECTIONS

STATE OF ALASKA 49TH Michael L. Duman No. 13756 REGISTERED PROFESSIONAL ENGINEER
2-22-2016

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER

PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02_Typical Section.dwg
TAB: B2   Wednesday, February 17, 2016 11:40:26 AM   Ryan Berger

REVISIONS		
NO.	DATE	DESCRIPTION

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	B2	48

DATE TIME	LAYOUT	SCALE
2/12/2016 12:55 PM	B2	NTS

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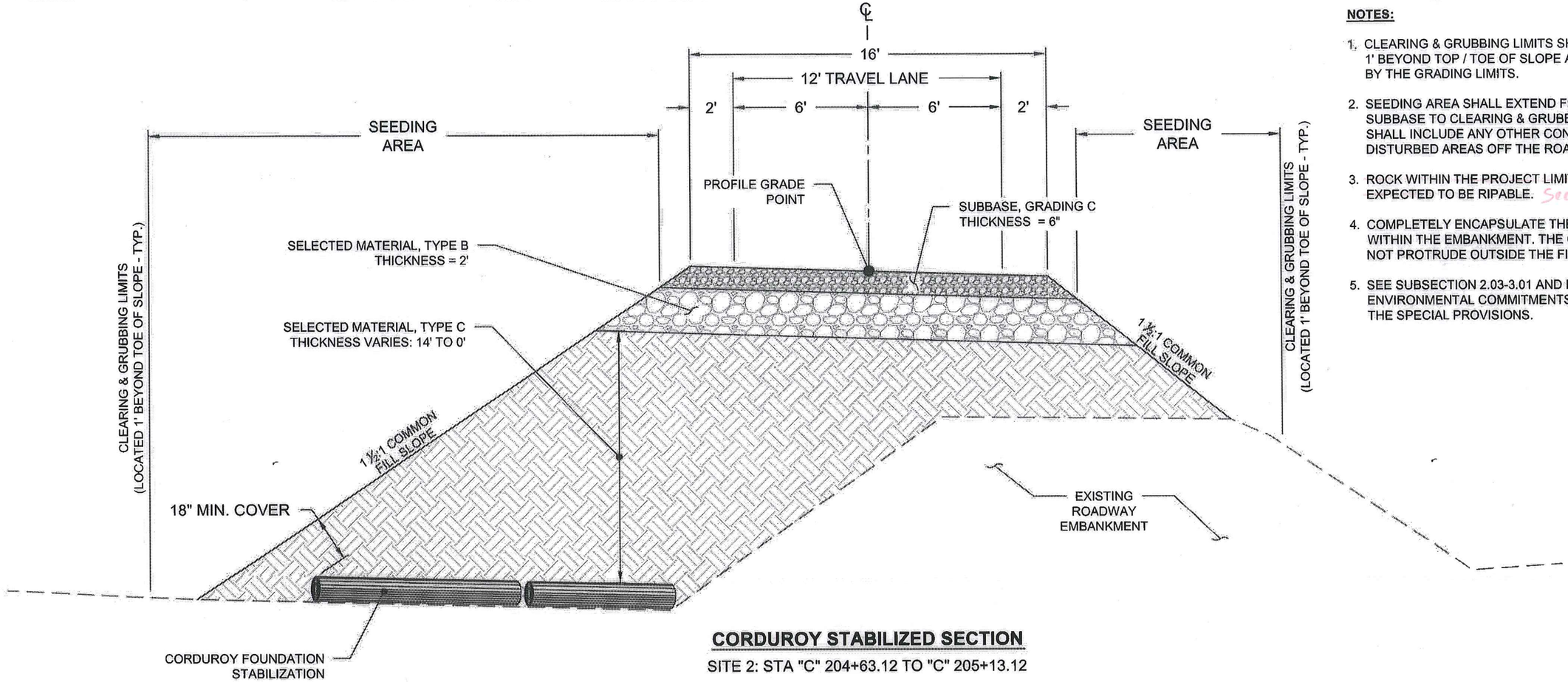
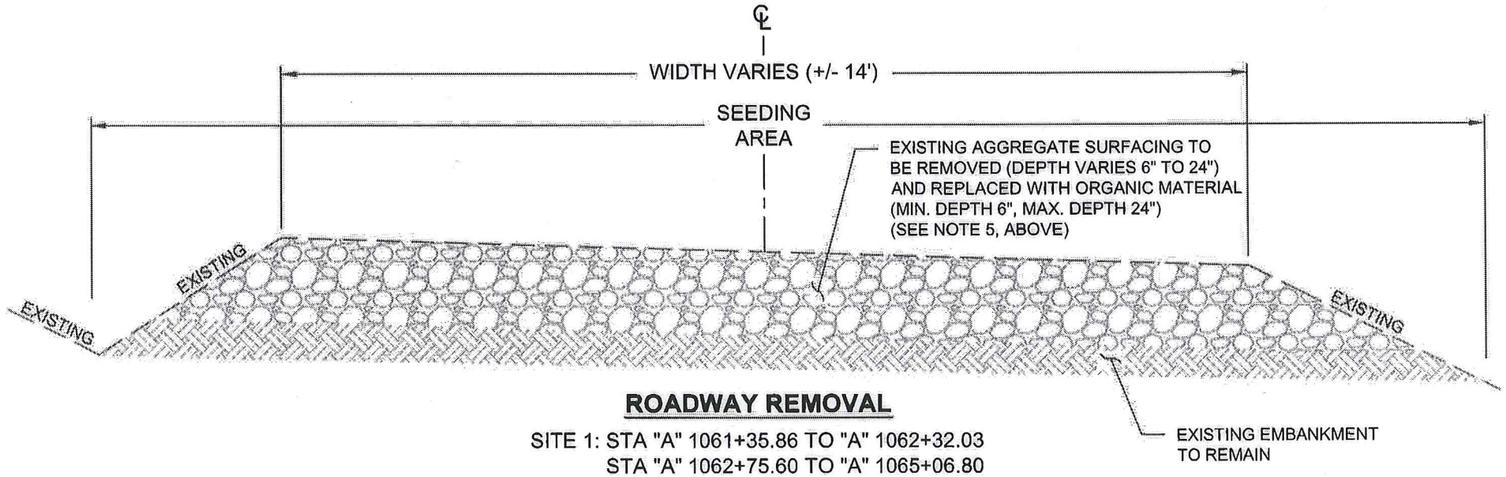
P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02_Typical Section.dwg

Addendum #1; Attachment #2



CORDUROY STABILIZED SECTION

SITE 2: STA "C" 204+63.12 TO "C" 205+13.12



ROADWAY REMOVAL

SITE 1: STA "A" 1061+35.86 TO "A" 1062+32.03
STA "A" 1062+75.60 TO "A" 1065+06.80

SITE 2: STA "A" 1081+23.54 TO "A" 1085+37.78
STA "A" 1086+07.18 TO "A" 1087+22.25

SITE 3: STA "A" 1091+70.91 TO "A" 1096+76.69
STA "A" 1097+61.54 TO "A" 1101+15.21

NOTES:

1. CLEARING & GRUBBING LIMITS SHALL BE LOCATED 1' BEYOND TOP / TOE OF SLOPE AS ESTABLISHED BY THE GRADING LIMITS.
2. SEEDING AREA SHALL EXTEND FROM THE EDGE OF SUBBASE TO CLEARING & GRUBBING LIMITS, AND SHALL INCLUDE ANY OTHER CONSTRUCTION DISTURBED AREAS OFF THE ROADWAY.
3. ROCK WITHIN THE PROJECT LIMITS IS SOFT, AND IS EXPECTED TO BE RIPABLE. See Q's # 6
4. COMPLETELY ENCAPSULATE THE CORDUROY WITHIN THE EMBANKMENT. THE CORDUROY SHALL NOT PROTRUDE OUTSIDE THE FILL SLOPE.
5. SEE SUBSECTION 2.03-3.01 AND REFERENCE THE ENVIRONMENTAL COMMITMENTS IN APPENDIX B OF THE SPECIAL PROVISIONS.

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8.23.17 Date

STATE OF ALASKA
Michael L Duman
No. 13758
REGISTERED PROFESSIONAL ENGINEER
3-18-2016

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02_Typical Section.dwg
TAB: B3 Monday, March 14, 2016 3:37:17 PM Ryan Berger

REVISIONS		
NO.	DATE	DESCRIPTION

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

TYPICAL SECTIONS

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	B3	48

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Addendum #1; Attachment #3

ESTIMATE OF QUANTITIES - ADDITIVE ALTERNATE A (SITE 1)

ITEM NO	ITEM DESCRIPTION	PAY UNIT	QUANTITY
201(3B)A	CLEARING AND GRUBBING	LS	ALL REQUIRED
202(1)A	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LS	ALL REQUIRED
203(3)A	UNCLASSIFIED EXCAVATION	CY	784
203(5B)A	BORROW: SELECTED MATERIAL, TYPE B	CY	919
203(9)A	OBLITERATION OF ROADWAY	SY	312
304(3)A	SUBBASE, GRADING C	CYVM	245
603(9-48)A	48 INCH CORRUGATED ALUMINUM PIPE	LF	38
618(2)A	SEEDING	POUND	32
619(3)A	BONDED FIBER MATRIX	POUND	1700
640(1)A	MOBILIZATION AND DEMOBILIZATION	LS	ALL REQUIRED
640(4)A	WORKERS MEALS AND LODGING, OR PER DIEM	LS	ALL REQUIRED
641(1)A	EROSION, SEDIMENT AND POLLUTION CONTROL ADMINISTRATION	LS	ALL REQUIRED
641(3)A	TEMPORARY EROSION, SEDIMENT AND POLLUTION CONTROL	LS	ALL REQUIRED
641(6)	WITHHOLDING	CONTINGENT SUM	ALL REQUIRED
642(1)A	CONSTRUCTION SURVEYING	LS	ALL REQUIRED
643(2)A	TRAFFIC MAINTENANCE	LS	ALL REQUIRED
644(1)A	FIELD OFFICE	LS	ALL REQUIRED
644(15)A	NUCLEAR TESTING EQUIPMENT STORAGE SHED	EA	1

BASIS OF ESTIMATE - ADDITIVE ALTERNATE A (SITE 1)

ITEM NO.	ITEM DESCRIPTION	ESTIMATING FACTOR
201(3B)A	CLEARING AND GRUBBING	0.35 ACRES
304(3)A	SUBBASE, GRADING C	1.34 CYVM/1.00 CY COMPACTED

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8-23-17 Date

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL
ACCESS ROAD

ESTIMATE OF QUANTITIES
ADDITIVE ALTERNATE 1

Michael L. Duman
No. 13756
REGISTERED PROFESSIONAL ENGINEER
3-16-2016

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 C1 & D1.dwg
TAB: C1 Friday, February 26, 2016 10:53:26 AM Carey Spielman

REVISIONS NO.	DATE	DESCRIPTION

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
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DESIGNED BY: M. DUMAN
DRAWN BY: S. MARTIN
CHECKED BY:
SUPERVISED BY: R. BERGER

XREFS

SCALE: NO SCALE

LAYOUT: C1

DATE / TIME: 2/17/2016 11:43 AM

DRAWING LOCATION: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 C1 & D1.dwg

ESTIMATE OF QUANTITIES - BASIC BID (SITES 2&3)

ITEM NO	ITEM DESCRIPTION	PAY UNIT	QUANTITY
201(3B)	CLEARING AND GRUBBING	LS	ALL REQUIRED
202(1)	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LS	ALL REQUIRED
203(3)	UNCLASSIFIED EXCAVATION	CY	6448
203(5B)	BORROW: SELECTED MATERIAL, TYPE B	CY	7040
203(5C)	BORROW: SELECTED MATERIAL, TYPE C	CY	4045
203(9)	OBLITERATION OF ROADWAY	SY	23680
203(19)	CORDUROY FOUNDATION STABILIZATION	SY	131
205(1)	EXCAVATION FOR STRUCTURES	CY	880
304(3)	SUBBASE, GRADING C	CYVM	3620
602(3)A	STRUCTURAL PLATE ARCH 26'-1" SPAN, 13'-1" RISE, 5 GA (SITE 2)	LS	ALL REQUIRED
602(3)B	STRUCTURAL PLATE ARCH 26'-1" SPAN, 13'-1" RISE, 5 GA (SITE 3)	LS	ALL REQUIRED
603(9-24)	24 INCH CORRUGATED ALUMINUM PIPE	LF	127
611(1)	RIPRAP, CLASS II	CY	1109
615(1)	STANDARD SIGN	SQ FT	124
618(2)	SEEDING	POUND	180
619(3)	BONDED FIBER MATRIX	POUND	9200
640(1)	MOBILIZATION AND DEMOBILIZATION	LS	ALL REQUIRED
640(4)	WORKERS MEALS AND LODGING, OR PER DIEM	LS	ALL REQUIRED
641(1)	EROSION, SEDIMENT AND POLLUTION CONTROL ADMINISTRATION	LS	ALL REQUIRED
641(3)	TEMPORARY EROSION, SEDIMENT AND POLLUTION CONTROL	LS	ALL REQUIRED
641(6)	WITHHOLDING	CONTINGENT SUM	ALL REQUIRED
642(1)	CONSTRUCTION SURVEYING	LS	ALL REQUIRED
642(3)	THREE PERSON SURVEY PARTY	HR	10
643(2)	TRAFFIC MAINTENANCE	LS	ALL REQUIRED
644(1)	FIELD OFFICE	LS	ALL REQUIRED
644(15)	NUCLEAR TESTING EQUIPMENT STORAGE SHED	EA	1

BASIS OF ESTIMATE - BASIC BID (SITES 2&3)

ITEM NO.	ITEM DESCRIPTION	ESTIMATING FACTOR
201(3B)	CLEARING AND GRUBBING	1.75 ACRES
304(3)	SUBBASE, GRADING C	1.34 CYVM/1.00 CY COMPACTED

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8.23.17 Date

STATE OF ALASKA
Michael L. Duman
No. 13756
REGISTERED PROFESSIONAL ENGINEER
2-22-2016

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

ESTIMATE OF QUANTITIES

REVISIONS NO.	DATE	DESCRIPTION

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	C2	48

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C2
SCALE
NO SCALE
GRADE
CHECKED BY
M. MARTIN
DRAWN BY
R. BERGER
DESIGNED BY
M. DUMAN

EARTHWORK SUMMARY - ADDITIVE ALTERNATE A

SITE	STATION TO STATION	EXCAVATION							EMBANKMENT							
									TOTAL REQUIRED MATERIAL		ONSITE AVAILABLE		BORROW MATERIAL		BALANCE	
		TOTAL UNCLASSIFIED EXCAVATION (CY)	MUCK EXCAVATION (CY)	ROCK EXCAVATION (CY)	COMMON EXCAVATION (CY)	RECLAIMED ROADWAY MATERIAL FROM ABANDONED ROADWAY SEGMENTS (CY)	TOTAL UNUSABLE EXCAVATION (CY)	TOTAL USABLE EXCAVATION (CY)	SELECTED MATERIAL TYPE B (CY)	SELECTED MATERIAL TYPE C (CY)	SELECTED MATERIAL TYPE B (CY)	SELECTED MATERIAL TYPE C (CY)	SELECTED MATERIAL TYPE B (CY)	SELECTED MATERIAL TYPE C (CY)	TOTAL EMBANKMENT (CY)	EXCESS MATERIAL (CY)
1	"B" 100+00.00 to "B" 110+10.00	784	314	329	141	52*	314**	522*	919	81	0	522*	919	0	1000	441*

EARTHWORK NOTES:
* - USED AN ASSUMED DEPTH OF 6" OF USABLE MATERIAL FROM RECLAIMED ROADWAY.
** - MATERIAL VOLUME MAY BE MORE OR LESS THAN LISTED VALUE, BASED ON SITE CONDITIONS AT THE TIME OF CONSTRUCTION.

CULVERT INSTALLATION SUMMARY - ADDITIVE ALTERNATE A

PIPE	INLET				OUTLET				LENGTH (FT)	SIZE	REMARKS	APPROX GRADE
	STATION	OFFSET		INVERT	STATION	OFFSET		INVERT				
P-1	"B" 107+59.00	17'	LEFT	132.13	"B" 107+59.00	22'	RIGHT	128.66	38'	48" CORRUGATED ALUMINUM PIPE		9.13%

REMOVAL OF STRUCTURES AND OBSTRUCTIONS - ADDITIVE ALTERNATE (SITE 1)

STATION	OFFSET	DESCRIPTION	REMARKS
"B" 107+57	13.5' RT	STEEL I-BEAMS WITH SHEET METAL COVERING	APPROXIMATE DIMENSIONS 20' X 14'

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8-23-17 Date

STATE OF ALASKA
Michael L. Duman
No. 13756
REGISTERED PROFESSIONAL ENGINEER
2-22-2016

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

SUMMARY TABLES ADD ALTERNATE A

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 C1 & D1.dwg
TAB: D1
Wednesday, February 17, 2016 11:43:27 AM Ryan Berger

REVISIONS		
NO.	DATE	DESCRIPTION

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	D1	48

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
CHECKED BY: M. MARTIN
QUALITY CHECK BY: R. BERGER
SCALE: NO SCALE
LAYOUT: D1
DATE / TIME: 2/9/2015 11:50 AM
DRAWING LOCATION: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 C1 & D1.dwg

EARTHWORK SUMMARY - BASIC BID

SITE	STATION TO STATION	EXCAVATION							EMBANKMENT							
									TOTAL REQUIRED MATERIAL		ONSITE AVAILABLE		BORROW MATERIAL		BALANCE	
		TOTAL UNCLASSIFIED EXCAVATION (CY)	MUCK EXCAVATION (CY)	ROCK EXCAVATION (CY)	COMMON EXCAVATION (CY)	RECLAIMED ROADWAY MATERIAL FROM ABANDONED ROADWAY SEGMENTS (CY)	TOTAL UNUSABLE EXCAVATION (CY)	TOTAL USABLE EXCAVATION (CY)	SELECTED MATERIAL TYPE B (CY)	SELECTED MATERIAL TYPE C (CY)	SELECTED MATERIAL TYPE B (CY)	SELECTED MATERIAL TYPE C (CY)	SELECTED MATERIAL TYPE B (CY)	SELECTED MATERIAL TYPE C (CY)	TOTAL EMBANKMENT (CY)	EXCESS MATERIAL (CY)
2	"C" 200+00.00 TO "C" 206+96.00	268	107	38	123	125*	107**	286*	3824	7386	0	286*	3824	4045***	11210	0
3	"D" 300+00.00 TO "D" 309+86.00	6180	2472	2595	1113	315*	2472**	4023*	3216	968	0	4023*	3216	0	4184	3055***
TOTAL		6448	2579	2633	1236	440*	2579**	4309*	7040	8354	0	4309*	7040	4045***	15394	3055***

EARTHWORK NOTES:

* - USED AN ASSUMED DEPTH OF 6" OF USEABLE MATERIAL FROM RECLAIMED ROADWAY.
** - MATERIAL VOLUME MAY BE MORE OR LESS THAN LISTED VALUE, BASED ON SITE CONDITIONS AT THE TIME OF CONSTRUCTION.
*** - EXCESS MATERIAL FROM SITE #3 APPLIED TO BORROW VALUE FOR SELECT MATERIAL, TYPE C ON SITE #2.

CULVERT INSTALLATION SUMMARY - BASIC BID

PIPE	INLET				OUTLET				LENGTH (FT)	SIZE	REMARKS	APPROX GRADE
	STATION	OFFSET		INVERT	STATION	OFFSET		INVERT				
P-2	"D" 301+50.00	18'	LEFT	50.49	"D" 301+50.00	19'	RIGHT	49.75	36'	24" CORRUGATED ALUMINUM PIPE		2.05%
P-3	"D" 309+20.10	14'	LEFT	55.87	"D" 309+20.10	13'	RIGHT	55.33	26'	24" CORRUGATED ALUMINUM PIPE		2.07%
P-4	"FR" 0+22.73	37'	RIGHT	77.22	"FR" 0+26.61	28'	LEFT	74.82	65'	24" CORRUGATED ALUMINUM PIPE		3.70%

REMOVAL OF STRUCTURES AND OBSTRUCTIONS - BASIC BID

STATION	OFFSET	DESCRIPTION	REMARKS
"C" 203+93	30' RT	TWO STEEL RAIL CARS PLACED SIDE BY SIDE	APPROXIMATE DIMENSION: 70' X 18'
"D" 301+49	32' RT	24" CULVERT	APPROXIMATE LENGTH: 31'
"D" 305+76	124' RT	TWO STEEL RAIL CARS PLACED SIDE BY SIDE	APPROXIMATE DIMENSION: 70' X 18'

STANDARD SIGN SUMMARY - BASIC BID

SIGN NO.	STA	OFFSET		ASDS CODE	LEGEND	TRAFFIC TRAVELING	HEIGHT (IN)	WIDTH (IN)	AREA (SQ FT)	POST			REMARKS
		L	R							NO.	SIZE (IN)	TYPE	
1	"A" 1054+00		X	R2-1	SPEED LIMIT 25	NB	30"	24"	5.00	1	2.5"X2.5"	PSST	
2	"A" 1080+25		X	W1-1L	(SYMBOL) TURN LEFT	NB	36"	36"	9.00	1	2.5"X2.5"	PSST	
3	"C" 203+52		X	CUSTOM	EAST FORK LEWIS REEF CREEK	NB	2'-6"	6'-6"	16.25	2	2.5"X2.5"	PSST	SEE CUSTOM SIGN DETAIL, SHT. H1
4	"C" 204+08	X		CUSTOM	EAST FORK LEWIS REEF CREEK	SB	2'-6"	6'-6"	16.25	2	2.5"X2.5"	PSST	SEE CUSTOM SIGN DETAIL, SHT. H1
5	"C" 205+32	X		R1-2	YIELD	EB (FOREST ROAD)	24"	24"	4.00	1	2.5"X2.5"	PSST	INTERSECTION "FR" LINE @ "C" LINE
6	"A" 1088+94	X		W1-1R	(SYMBOL) TURN RIGHT	SB	36"	36"	9.00	1	2.5"X2.5"	PSST	
7	"D" 304+92		X	CUSTOM	WEST FORK LEWIS REEF CREEK	NB	2-6"	6'-6"	16.25	2	2.5"X2.5"	PSST	SEE CUSTOM SIGN DETAIL, SHT. H2. MAINTAIN 100' FROM SIGN #8.
8	"D" 305+92		X	W1-3R	(SYMBOL) REVERSE TURN RIGHT	NB	36"	36"	9.00	1	2.5"X2.5"	PSST	
9	"D" 306+19	X		CUSTOM	WEST FORK LEWIS REEF CREEK	SB	2'-6"	6'-6"	16.25	2	2.5"X2.5"	PSST	SEE CUSTOM SIGN DETAIL, SHT. H2
10	"A" 1102+68	X		W1-3R	(SYMBOL) REVERSE TURN RIGHT	SB	36"	36"	9.00	1	2.5"X2.5"	PSST	
11	"A" 1135+57	X		R2-1	SPEED LIMIT 25	SB	30"	24"	5.00	1	2.5"X2.5"	PSST	
12	"A" 1137+70		X	W14-1	DEAD END	NB	36"	36"	9.00	1	2.5"X2.5"	PSST	

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8.23.17 Date

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

SUMMARY TABLES

Michael L. Duman No. 13756 2-22-2016

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER

PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 C1 & D1.dwg
TAB: D2 Wednesday, February 17, 2016 11:43:27 AM Ryan Berger

REVISIONS			PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
NO.	DATE	DESCRIPTION	Z699220000	2016	D2	48

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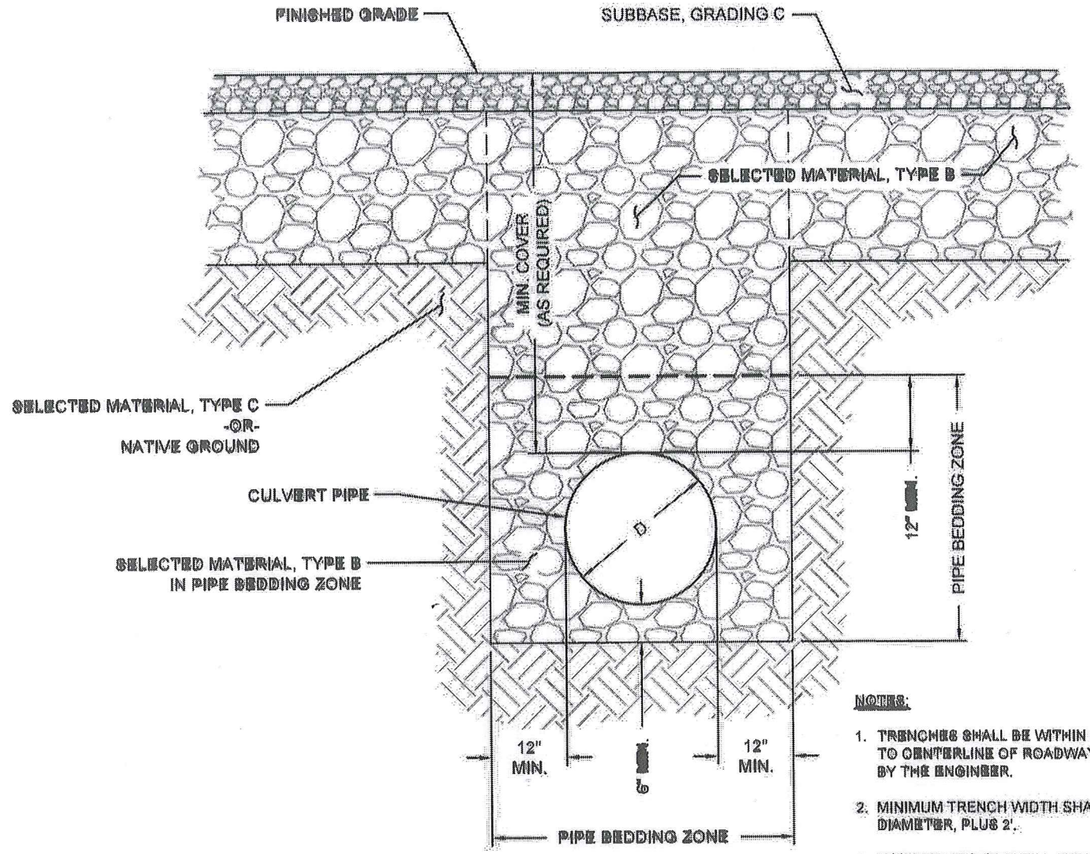

NOTES:

1. TRENCHES SHALL BE WITHIN 20° OF PERPENDICULAR TO CENTERLINE OF ROADWAY UNLESS APPROVED BY THE ENGINEER.
2. MINIMUM TRENCH WIDTH SHALL BE NOMINAL PIPE DIAMETER, PLUS 2'.
3. BEDDING AND BACKFILL SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY THROUGHOUT THE DEPTH OF EACH LIFT. LIFT DEPTH SHALL BE A MAXIMUM OF 12". ADDITIONAL DEPTH UP TO 18" MAXIMUM MAY BE APPROVED BY THE ENGINEER.

PIPE TRENCH DETAIL

N.T.S.

Revision
Relocate P.3 to Sta 1054+55

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8.23.17 Date

STATE OF ALASKA
Michael L. Duman
No. 13756
REGISTERED PROFESSIONAL ENGINEER
2-22-2016

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

DETAILS

DESIGNED BY:	M. DUMAN
DRAWN BY:	R. BERGER
PATH:	P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Details.dwg
TAB:	E1
	Wednesday, February 17, 2016 11:46:29 AM Ryan Berger

REVISIONS NO.	DATE	DESCRIPTION	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			Z699220000	2016	E1	48

DRAWING LOCATION
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DATE	TIME	LAYOUT	SCALE	REMARKS	DESIGNED BY	DRAWN BY	CHECKED BY
2/2/2016	1:14 PM	E1	NO SCALE		M. DUMAN	R. BERGER	B. MARTIN

ADDITIVE ALTERNATE A "B" LINE PLAN

0' 100' 200'
SCALE IN FEET

ORDINARY HIGH WATER (OHW)

BEGIN SITE 1
STA: "A" 1054+95.38 =
STA: "B" 100+00.00

END SITE 1
STA: "A" 1065+06.80 =
STA: "B" 110+10.00

GRADING LIMITS (TYP.)

EXISTING QUARRY (AVAILABLE ROCK SOURCE)

EXISTING TURNOUT

SOIL TEST PIT #4

EXISTING EDGE OF GRAVEL

INSTALL 48" X 38' CORRUGATED ALUMINUM PIPE (PIPE P-1)

KTN GRAVINA - MILL ACCESS ROAD

MATCH EXISTING

MATCH EXISTING

ROCK KNOB

NEW EDGE OF GRAVEL

EXISTING STRUCTURE:
STEEL I-BEAMS WITH SHEET METAL
(APPROXIMATE DIMENSIONS 20' X 14')

STA. "B" 102+15.00
END FULL DEPTH CONST.
BEGIN RESURFACING

STA. "B" 106+40.00
END RESURFACING
BEGIN FULL DEPTH CONST.

109

108

LEGEND

- CUT
- FILL
- EDGE OF GRAVEL (EXISTING)
- EDGE OF GRAVEL
- TP-# SOIL TEST PIT (NUMBERED)
- 109 SURVEY CONTROL POINT
- STRUCTURE (EXISTING)
- CULVERT

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP Date 8.23.17

SURVEY CONTROL POINTS

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
109	1296545.6190	3085620.0830	136.9000	2" AL. CAP SET BY DOT
108	1296208.9630	3085852.4460	143.8320	2" AL. CAP SET BY DOT

*HORIZONTAL DATUM IS NAD83(2011) 2010.00 ALASKA STATE PLANE ZONE 1. VERTICAL DATUM IS NAD88.

STATE OF ALASKA
Michael L. Duman
No. 13756
REGISTERED PROFESSIONAL ENGINEER
2-23-2016

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

ADDITIVE ALTERNATE A
SITE EXHIBIT SITE 1

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Site Exhibits.dwg
TAB: E2 Wednesday, February 17, 2016 11:46:31 AM Ryan Berger

REVISIONS NO.	DATE	DESCRIPTION	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			Z699220000	2016	E2	48

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
CHECKED BY: R. BERGER
DATE: 2/18/2016 11:54 AM
LAYOUT: E2
SCALE: 1" = 100'
JOB#:
DRAWING LOCATION: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Site Exhibits.dwg

KTN GRAVINA - MILL ACCESS ROAD

INSTALL 24" X 65' CORRUGATED ALUMINUM PIPE (PIPE P-4)

FOREST ROAD

END SITE 2
STA: "A" 1088+84.38 =
STA: "C" 206+96.00

BEGIN SITE 3
(SEE SHEET E4)

111

EXISTING EDGE OF GRAVEL

MATCH EXISTING

110

MATCH EXISTING

INTERSECTION REGRADE
(SEE SHEET G1)

BEGIN SITE 2
STA: "A" 1080+84.00 =
STA: "C" 200+00.00

TP-5

TP-6

SOIL TEST PIT #6

INSTALL 26'-1" SPAN X 13'-1" RISE X 122.5' L STRUCTURAL PLATE ARCH
(SEE SHEET N1)

NEW EDGE OF GRAVEL

EXISTING STRUCTURE:
TWO COMPLETE STEEL RAIL CARS SIDE BY SIDE
(APPROXIMATE DIMENSIONS 70' X 18')

GRADING LIMITS
(TYP.)

SOIL TEST PIT #5

ORDINARY HIGH WATER
(OHW)

0' 100' 200'
SCALE IN FEET

LEGEND

- CUT
- FILL
- EDGE OF GRAVEL (EXISTING)
- EDGE OF GRAVEL
- TP-# SOIL TEST PIT (NUMBERED)
- 109 SURVEY CONTROL POINT
- STRUCTURE (EXISTING)
- CULVERT

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8.23.17 Date

SURVEY CONTROL POINTS

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
111	1297893.0330	3083924.6920	76.1700	2" AL. CAP SET BY DOT
110	1297917.1020	3084173.0810	79.2820	2" AL. CAP SET BY DOT

*HORIZONTAL DATUM IS NAD83(2011) 2010.00 ALASKA STATE PLANE ZONE 1. VERTICAL DATUM IS NAD88.

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
SOUTHCOAST REGION

Michael L. Duman
No. 13756
REGISTERED PROFESSIONAL ENGINEER
2-22-2016

KTN GRAVINA - MILL ACCESS ROAD

SITE EXHIBIT SITE 2

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Site Exhibits.dwg
TAB: E3 Wednesday, February 17, 2016 11:46:33 AM Ryan Berger

REVISIONS NO.	DATE	DESCRIPTION

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	E3	48

DRAWING LOCATION
P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Site Exhibits.dwg

DATE TIME
2/17/2016 11:54

LAYOUT
E3

SCALE
1" = 100'

DESIGNED BY	M. DUMAN
CHECKED BY	E. MARTIN
DRAFTED BY	R. BERGER

0' 100' 200'

SCALE IN FEET

INSTALL 26'-1" SPAN X 13'-1" RISE X 96' L
STRUCTURAL PLATE ARCH
(SEE SHEET N2)

SOIL TEST PIT #8

SOIL TEST PIT #9

GRADING
LIMITS (TYP.)

NEW EDGE
OF GRAVEL

END SITE 3
STA: "A" 1101+15.21 =
STA: "D" 309+86.00

EXISTING EDGE OF GRAVEL

113

KTN GRAVINA - MILL ACCESS ROAD

EXISTING
TURNOUT

TP-10

TP-9

TP-7

SOIL TEST PIT #10

INSTALL 24" X 36'
CORRUGATED ALUMINUM PIPE
(PIPE P-2)

EXISTING 24" CULVERT
(TO BE REMOVED)

MATCH
EXISTING

112

MATCH EXISTING

SOIL TEST PIT #7

INSTALL 24" X 26'
CORRUGATED ALUMINUM PIPE
(DITCH OUT PAST END AS NEEDED)

EXISTING CULVERT
(BURIED, NOT VISIBLE)

BEGIN SITE 3
STA: "A" 1091+63.31 =
STA: "D" 300+00.00

111

ORDINARY
HIGH WATER
(OHW)

EXISTING STRUCTURE:
TWO COMPLETE STEEL RAIL CARS SIDE BY SIDE
(APPROXIMATE DIMENSIONS 70' X 18.5')

END SITE 2
(SEE SHEET E3)

FOREST ROAD

110

LEGEND

- CUT
- FILL
- EDGE OF GRAVEL (EXISTING)
- EDGE OF GRAVEL
- TP-# SOIL TEST PIT (NUMBERED)
- 109 SURVEY CONTROL POINT
- STRUCTURE (EXISTING)
- CULVERT

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8.23.17 Date

SURVEY CONTROL POINTS

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
113	1299069.8880	3083190.9300	76.4420	2" AL. CAP SET BY DOT
112	1298752.6600	3083464.7800	63.6160	2" AL. CAP SET BY DOT
111	1297893.0330	3083924.6920	76.1700	2" AL. CAP SET BY DOT
110	1297917.1020	3084173.0810	79.2820	2" AL. CAP SET BY DOT

*HORIZONTAL DATUM IS NAD83(2011) 2010.00 ALASKA STATE PLANE ZONE 1. VERTICAL DATUM IS NAD88.

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

Michael L. Duman
No. 13756
REGISTERED PROFESSIONAL ENGINEER
2-22-2016

KTN GRAVINA - MILL ACCESS ROAD

SITE EXHIBIT
SITE 3

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Site Exhibits.dwg
TAB: E4 Wednesday, February 17, 2016 11:46:35 AM Ryan Berger

REVISIONS NO.	DATE	DESCRIPTION

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	E4	48

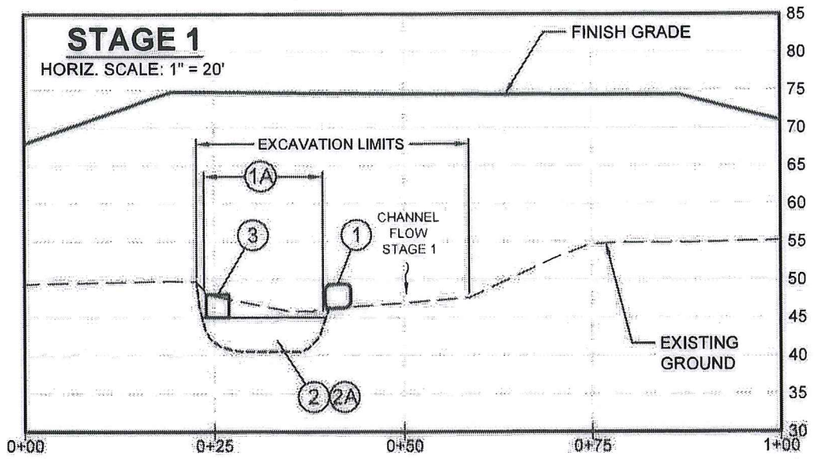
DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
CHECKED BY: M. MARTIN
CREATED BY: R. BERGER

SCALE: 1" = 100'

LAYOUT: E4

DATE / TIME: 2/9/2016 11:54 AM

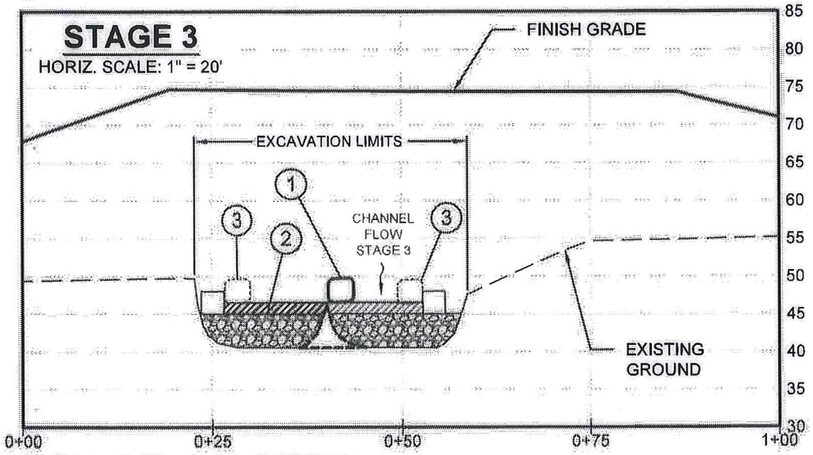
DRAWING LOCATION: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Site Exhibits.dwg



NOTE:ALL IN-WATER WORK MUST BE COMPLETED WITHIN THE DATES LISTED IN THE FISH HABITAT PERMITS. SEE APPENDIX B OF THE SPECIFICATIONS.

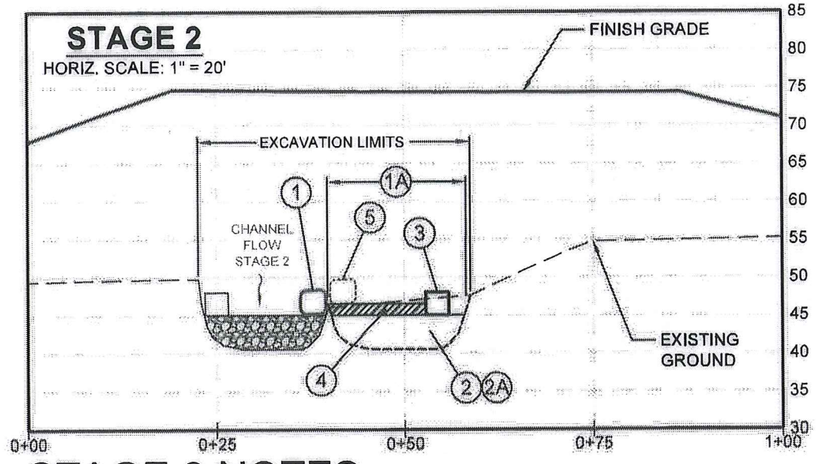
STAGE 1 NOTES

1. INSTALL SUPERSACK ISOLATION BAGS WITH IMPERMEABLE MEMBRANE TO ISOLATE STREAM ON THE EAST SIDE OF THE CHANNEL. FLOW IS ON THE WEST SIDE OF THE CHANNEL.
1A. REMOVE FISH FROM THE ISOLATED SIDE OF THE CHANNEL.
2. REMOVE RIVERBED COBBLE DOWN TO THE BOTTOM OF PROPOSED RIPRAP SCOUR PAD.
2A. INSTALL 54" THICK RIPRAP SCOUR PAD BELOW FOOTING FOR THE WIDTH OF EXCAVATION IN THIS STAGE.
3. INSTALL PRECAST FOOTING ON BEDDING IN RIPRAP.
4. ALLOW WATER BACK INTO STAGE 1 ISOLATION.



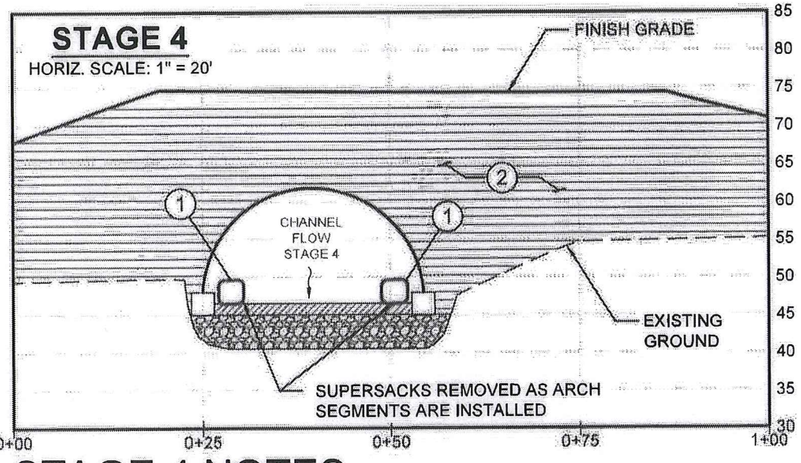
STAGE 3 NOTES

1. ISOLATE STREAM TO STAGE 1 CONDITION. REMOVE FISH FROM ISOLATION.
2. INSTALL 12" THICK NATIVE BEDLOAD CONSERVED FROM EXCAVATION BACK OVER THE RIPRAP ON THE EAST SIDE OF THE CHANNEL. FLOW IS ON THE WEST SIDE OF THE CHANNEL.
3. AT THE COMPLETION OF THIS STAGE, MOVE AND INSTALL ADDITIONAL SUPERSACKS OUT NEAR THE PRECAST FOOTINGS TO ISOLATE EACH FOOTING RESULTING IN CHANNEL FLOW TO THE CENTER OF THE STREAM.



STAGE 2 NOTES

1. MOVE SUPERSACKS & MEMBRANE OVER ONTO RIPRAP BEDDING TO SHIFT LIVE FLOW TO THE EAST SIDE OF THE CHANNEL.
1A. REMOVE FISH FROM THE ISOLATED SIDE OF THE CHANNEL.
2. REMOVE RIVERBED COBBLE DOWN TO THE BOTTOM OF PROPOSED RIPRAP SCOUR PAD.
2A. INSTALL 54" THICK RIPRAP SCOUR PAD BELOW FOOTING FOR THE WIDTH OF EXCAVATION IN THIS STAGE.
3. INSTALL PRECAST FOOTING ON BEDDING IN RIPRAP.
4. INSTALL 12" THICK NATIVE BEDLOAD CONSERVED FROM EXCAVATION BACK OVER THE RIPRAP.
5. MOVE SUPERSACKS & MEMBRANE BACK TO STAGE 1 PLACEMENT.



STAGE 4 NOTES

1. IT IS RECOMMENDED TO HAVE THE ARCH COMPLETELY ASSEMBLED WITH BOLTS TIGHTENED PRIOR TO PLACEMENT ONTO FOOTINGS. THE ARCH CAN BE DISASSEMBLED INTO WORKABLE SEGMENT LENGTHS ('20') FOR EASE OF PLACEMENT ONTO THE FOOTINGS, FOR EASE OF MATCHING BOLT HOLES, AND ACCESS FOR REMOVAL OF SUPERSACKS. BEGIN INSTALLING SEGMENTS AT THE DOWNSTREAM END. AS EACH SEGMENT IS INSTALLED, REMOVE THE SUPERSACKS WITHIN THE SEGMENT PRIOR TO INSTALLING THE SUBSEQUENT SEGMENT. ACCESS INTO THE COMPLETED ARCH TO REMOVE SUPERSACKS IS NOT ALLOWED.
2. COMMENCE BACKFILL ON BOTH SIDES OF ARCH IN EQUAL LIFTS. BACKFILL STRUCTURAL PLATE ARCH. INSTALL RIPRAP ARMOR ON THE FACE OF BOTH ENDS OF THE STRUCTURE TO ABOVE THE ORDINARY HIGH WATER ELEVATION TO COMPLETE THE IN-WATER WORK.

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP Date 8.23.17

STATE OF ALASKA
Michael L. Duman
No. 13756
2-22-2016

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

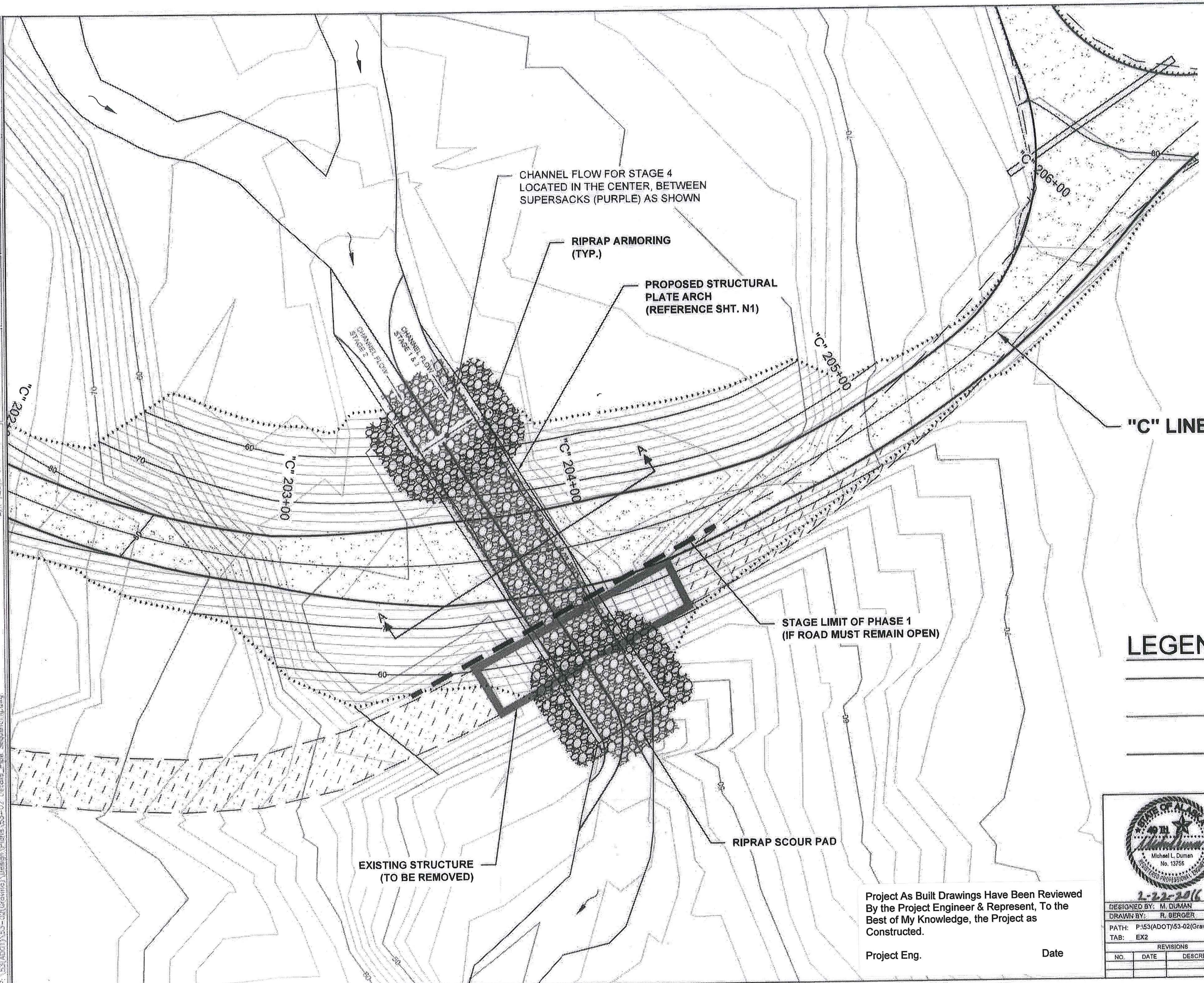
PIPE CONSTRUCTION SEQUENCING

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Details_Pipe Sequencing.dwg
TAB: EX2A Wednesday, February 17, 2016 11:46:38 AM Ryan Berger

REVISIONS NO.	DATE	DESCRIPTION

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	EX2A	48

DRAWING LOCATION: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Details_Pipe Sequencing.dwg
DATE, TIME: 2/17/2016 9:47 AM
LAYOUT: EX2A
SCALE: 1" = 20'



Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MD 8-23-17 Date

LEGEND

- STAGE 1 & 3: EAST SIDE ISOLATION & FOOTING INSTALL (SUPERSACK LOCATION)
- STAGE 2: WEST SIDE ISOLATION & FOOTING INSTALL (SUPERSACK LOCATION)
- STAGE 4: EAST & WEST FOOTING ISOLATION FOR STRUCTURAL PLATE INSTALLATION (SUPERSACK LOCATION)

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. Date

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

PIPE CONSTRUCTION SEQUENCING

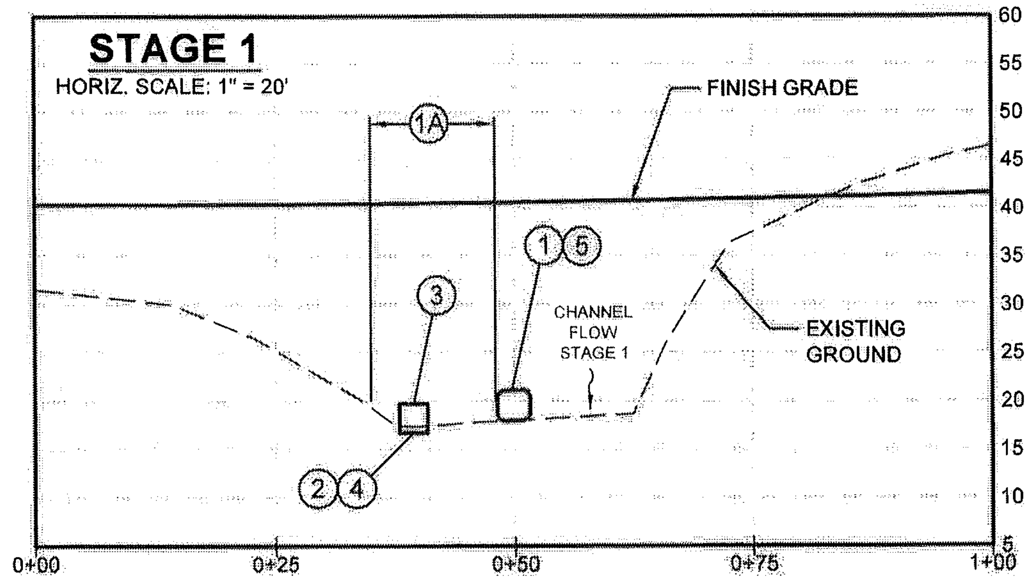
STATE OF ALASKA 49TH Michael L. Duman No. 13756 REGISTERED PROFESSIONAL ENGINEER
2-22-2016

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER

PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Details_Pipe Sequencing.dwg
TAB: EX2 Wednesday, February 17, 2016 11:46:41 AM Ryan Berger

REVISIONS			PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
NO.	DATE	DESCRIPTION	Z699220000	2016	EX2	48

DESIGNED BY	CHECKED BY	DRAFTED BY	REFS	SCALE	LAYOUT	DATE TIME	DRAWING LOCATION
M. DUMAN	S. MARTIN	R. BERGER		1" = 30'	EX2	2/17/2016 9:47 AM	P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Details_Pipe Sequencing.dwg



NOTE: ALL IN-WATER WORK MUST BE COMPLETED WITHIN THE DATES LISTED IN THE FISH HABITAT PERMITS. SEE APPENDIX B OF THE SPECIFICATIONS.

STAGE 1 NOTES

(1) INSTALL SUPERSACK ISOLATION BAGS WITH IMPERMEABLE LAYER FABRIC ON FACE.

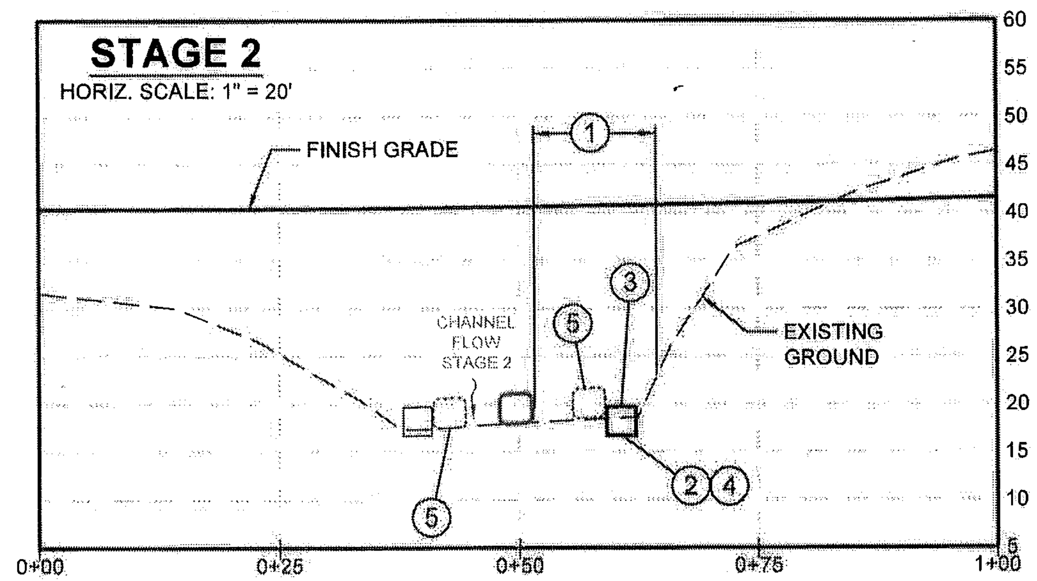
(1A) REMOVE FISH FROM ISOLATION.

(2) "HOE-PICK" OUT FOOTING BASE FOR PRECAST FOUNDATION.

(3) INSTALL PRECAST FOUNDATION OVER BEDROCK BEDDING.

(4) GROUT PRECAST FOOTING TO BEDROCK. (CURE TIME: 3 DAYS)

(5) MOVE INLET/OUTLET OF ISOLATION OVER TO ISOLATE NORTH SIDE OF CHANNEL.



STAGE 2 NOTES

(1) REMOVE FISH FROM ISOLATION.

(2) "HOE-PICK" OUT FOOTING BASE FOR PRECAST FOUNDATION.

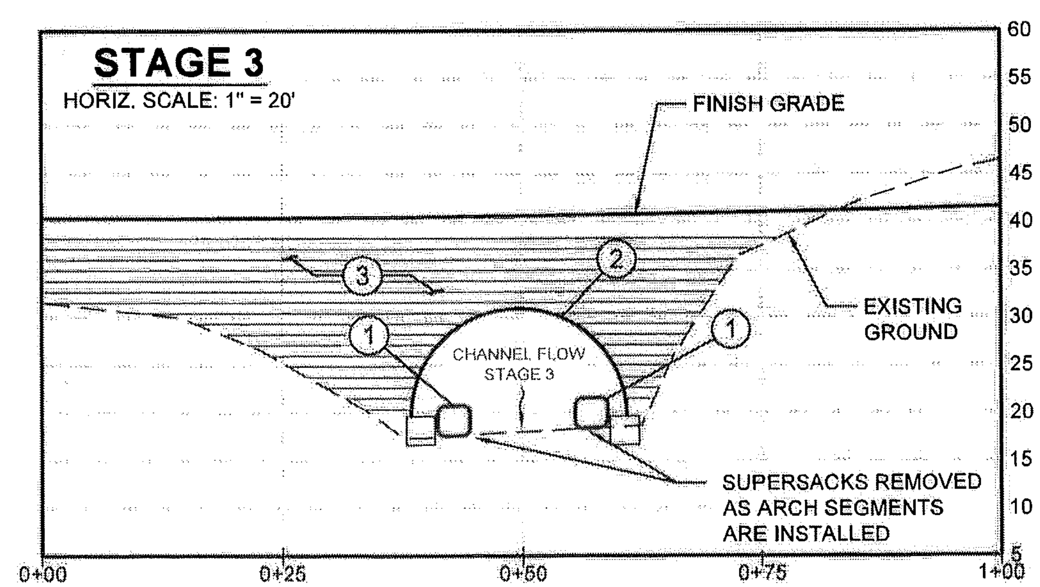
(3) INSTALL PRECAST FOUNDATION OVER BEDROCK BEDDING.

(4) GROUT PRECAST FOOTING TO BEDROCK. (CURE TIME: 3 DAYS)

(5) AT THE CONCLUSION OF THIS STAGE, MOVE AND INSTALL ADDITIONAL SUPERSACKS OUT NEAR THE PRECAST FOOTINGS TO ISOLATE EACH FOOTING RESULTING IN CHANNEL FLOW TO THE CENTER OF THE STREAM.

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. Date

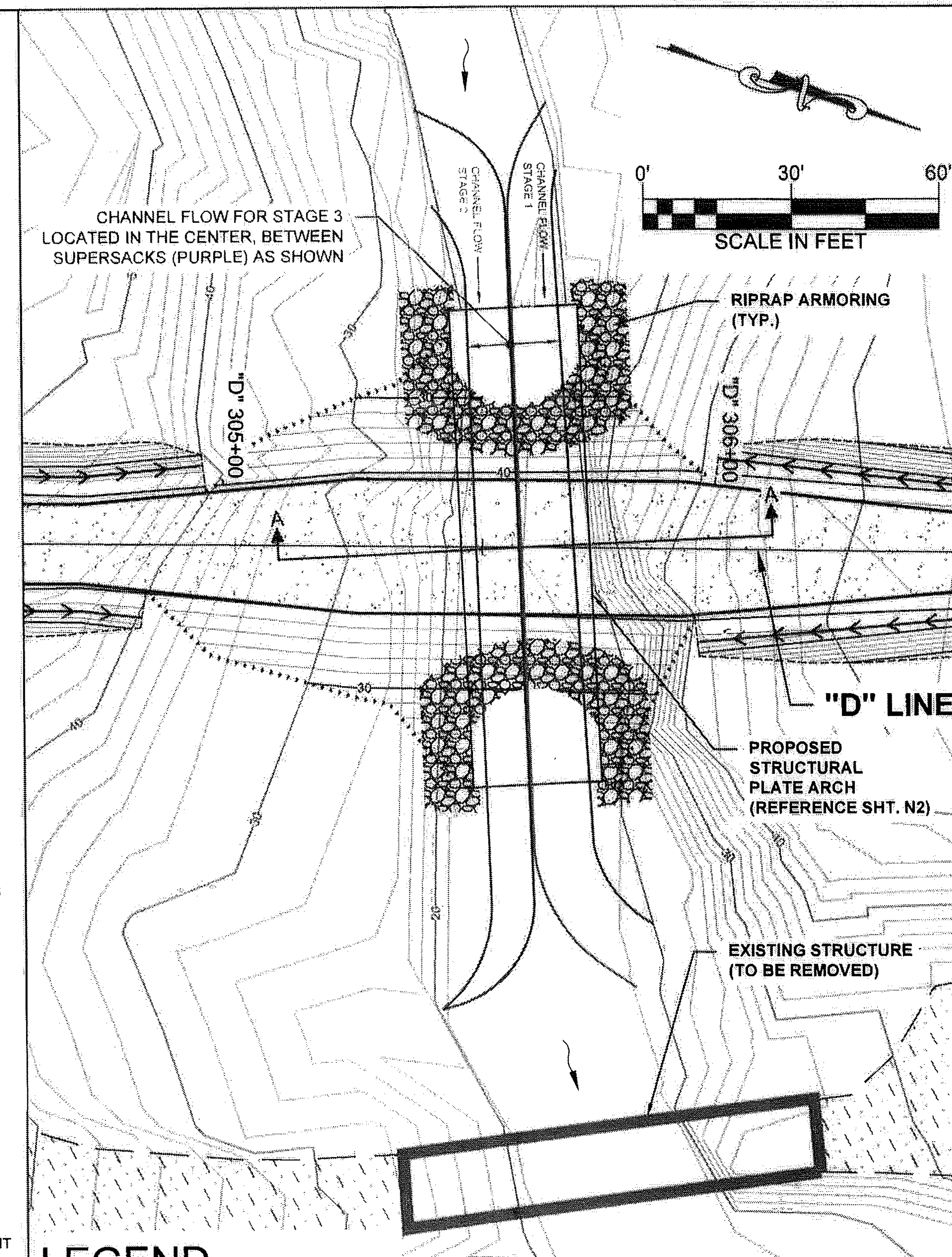


STAGE 3 NOTES

(1) IT IS RECOMMENDED TO HAVE THE ARCH COMPLETELY ASSEMBLED WITH BOLTS TIGHTENED PRIOR TO PLACEMENT ONTO FOOTINGS. THE ARCH CAN BE DISASSEMBLED INTO WORKABLE SEGMENT LENGTHS ('20') FOR EASE OF PLACEMENT ONTO THE FOOTINGS, FOR EASE OF MATCHING BOLT HOLES, AND ACCESS FOR REMOVAL OF SUPERSACKS. BEGIN INSTALLING SEGMENTS AT THE DOWNSTREAM END. AS EACH SEGMENT IS INSTALLED, REMOVE THE SUPERSACKS WITHIN THE SEGMENT PRIOR TO INSTALLING THE SUBSEQUENT SEGMENT. ACCESS INTO THE COMPLETED ARCH TO REMOVE SUPERSACKS IS NOT ALLOWED.

(2) INSTALL STRUCTURAL PLATE ARCH. (BOLT TO PRECAST FOOTING)

(3) COMMENCE BACKFILL ON BOTH SIDES OF ARCH IN EQUAL LIFTS. BACKFILL STRUCTURAL PLATE ARCH AND INSTALL RIPRAP ARMOR ON THE FACE OF BOTH ENDS OF THE STRUCTURE TO ABOVE THE ORDINARY HIGH WATER ELEVATION TO COMPLETE THE IN-WATER WORK.



LEGEND

STAGE 1: SOUTH SIDE ISOLATION & FOOTING INSTALL (SUPERSACK LOCATION)

STAGE 2: NORTH SIDE ISOLATION & FOOTING INSTALL (SUPERSACK LOCATION)

STAGE 3: NORTH AND SOUTH FOOTING ISOLATION FOR STRUCTURAL PIPE ARCH INSTALLATION (SUPERSACK LOCATION)

STATE OF ALASKA 49TH Michael L. Duman No. 13756 REGISTERED PROFESSIONAL ENGINEER

2-23-2016

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER

PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Details_Pipe Sequencing.dwg
TAB: EX3 Wednesday, February 17, 2016 11:46:44 AM Ryan Berger

REVISIONS		
NO.	DATE	DESCRIPTION

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

PIPE CONSTRUCTION SEQUENCING

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	EX3	48

DESIGNED BY M. DUMAN; CHECKED BY; DRAFTED BY R. BERGER
SCALE VARIES
LAYOUT EX3
DATE TIME 2/17/2016 9:47 AM
DRAWING LOCATION P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Details_Pipe Sequencing.dwg

ADDITIVE ALTERNATE A "B" LINE PLAN

SCALE IN FEET 0' 100' 200'

"B" LINE

STA. "B" 100+27.00 TO 102+15.00, RT
DAYLIGHT CUT AT ROADWAY
CROSS SLOPE

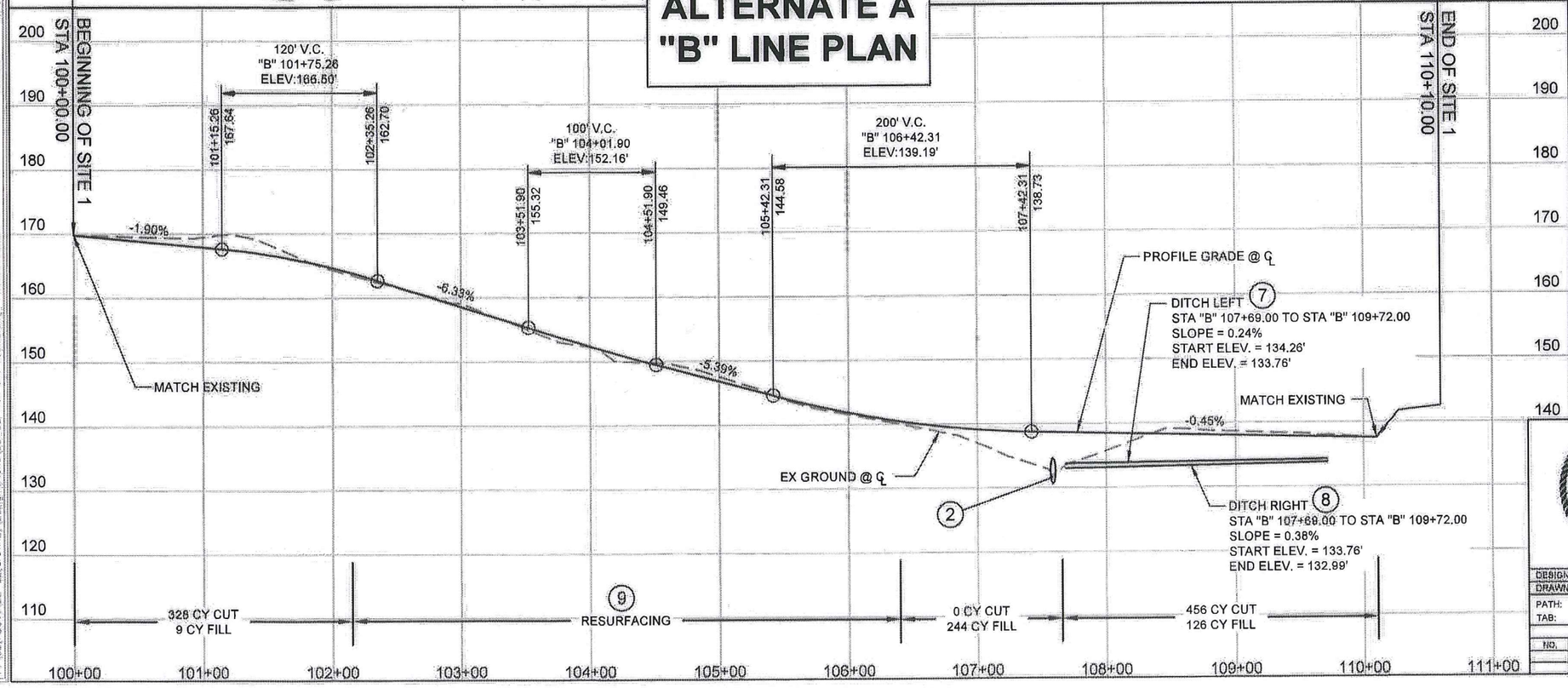
END OF RESURFACING
BETWEEN B.O.P. & SITE 1
(STA. "A" 1053+55.00 TO 1054+95.38)
(SEE TYPICAL ON SHEET B2)

(9) RESURFACING
(STA. "B" 102+15.00 TO 106+40.00)
(SEE TYPICAL ON SHEET B2)

BEGIN
RESURFACING
BETWEEN SITE 1 & SITE 2
(SEE TYPICAL ON SHT. B2)

STA. "B" 109+72.00 TO 110+10.00, RT
DAYLIGHT CUT AT ROADWAY
CROSS SLOPE

"B" 100+00 | "B" 101+00 | "B" 102+00 | "B" 103+00 | "B" 104+00 | "B" 105+00 | "B" 106+00 | "B" 107+00 | "B" 108+00 | "B" 109+00 | "B" 110+00 | "B" 110+10



CONSTRUCTION NOTES

1. REMOVE AND DISPOSE OF EXISTING STRUCTURE. STEEL I-BEAMS WITH SHEET METAL COVERING. APPROXIMATE DIMENSION: 20' X 14'
2. STA 107+59.00: INSTALL 48" X 38' CORRUGATED ALUMINUM PIPE AS SHOWN. (PIPE P-1)
   I.E. IN: 132.13' 17' LT, STA: 107+59.00
   I.E. OUT: 128.66' 22' RT, STA: 107+59.00
   SLOPE: 9.13%
3. STA 100+00.00 TO 102+15.00
   STA 106+40.00 TO 110+10.00:
   FULL DEPTH CONSTRUCTION AS SHOWN.
   (SEE SHEET B2 FOR TYPICAL SECTION)
4. REMOVE EXISTING SURFACING.
   (DEPTH VARIES 6" TO 2.0')
   (SEE SHEET B3 FOR TYPICAL SECTION)
5. WASTE DISPOSAL AREA FOR SOIL AND ORGANICS.
6. STA. "B" 100+42.00 TO 101+80.00, LEFT
   CONSTRUCT V-BOTTOM DITCH AS SHOWN (L = 138')
   (SEE SHEET B1 & B2 FOR TYPICAL SECTIONS)
7. STA. "B" 107+69.00 TO 109+72.00, LEFT
   CONSTRUCT V-BOTTOM DITCH AS SHOWN (L = 203')
   (SEE SHEET B1 & B2 FOR TYPICAL SECTIONS)
8. STA. "B" 107+69.00 TO 109+72.00, RIGHT
   CONSTRUCT V-BOTTOM DITCH AS SHOWN (L = 203')
   (SEE SHEET B1 & B2 FOR TYPICAL SECTIONS)
9. MATCH EXISTING ALIGNMENT & PROFILE GRADE FOR RESURFACING. PROPOSED ALIGNMENT SHOWN IS FOR FUTURE PROJECT.

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8.23.17 Date

LEGEND

- EXISTING SURFACING
- PROPOSED FINISH GRADE
- WASTE DISPOSAL AREA FOR ORGANICS
- CUT
- FILL
- DITCH LINE

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL
ACCESS ROAD

ADDITIVE ALTERNATE A
PLAN AND PROFILE SITE 1

Michael L. Duman
No. 13756
REGISTERED PROFESSIONAL ENGINEER
2-22-2016

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Plan and Profile.dwg
TAB: F1 Wednesday, February 17, 2016 11:48:50 AM Ryan Berger

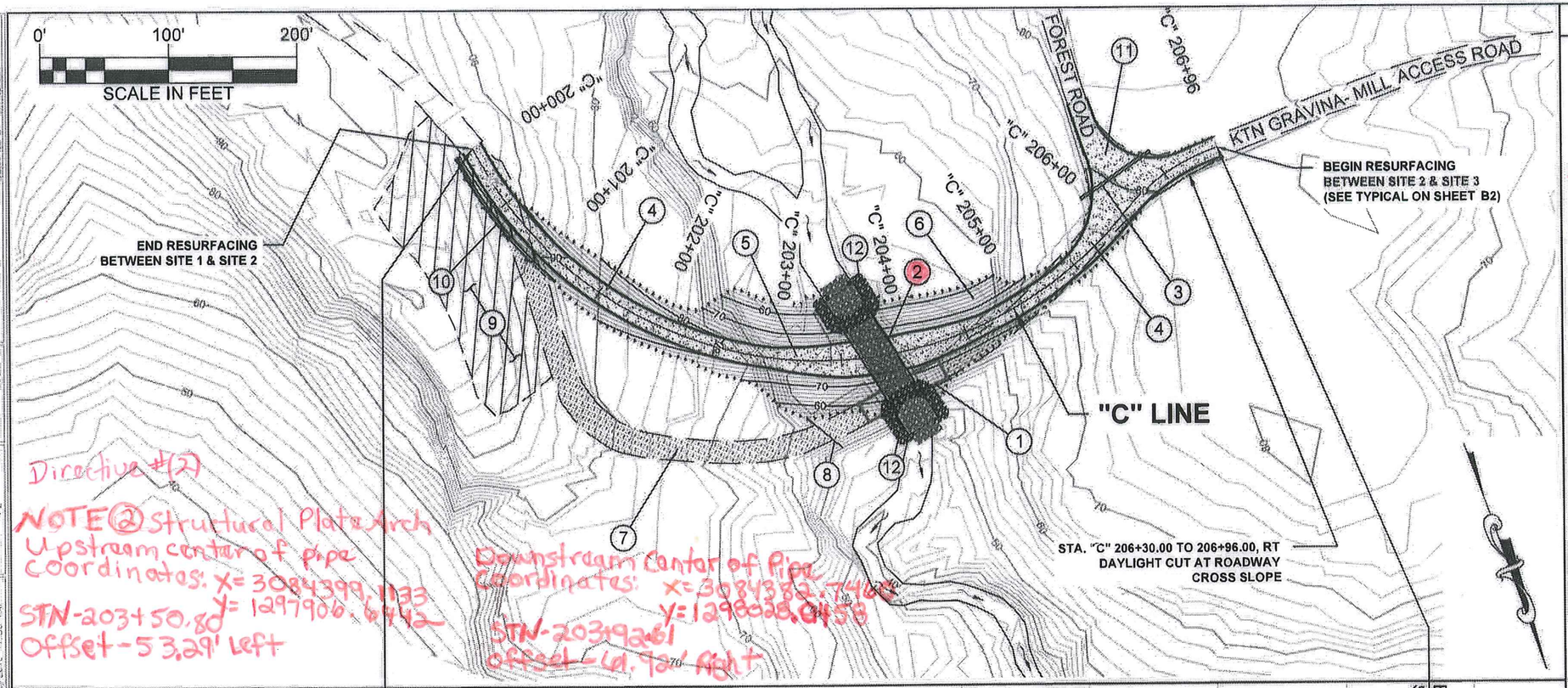
REVISIONS		
NO.	DATE	DESCRIPTION

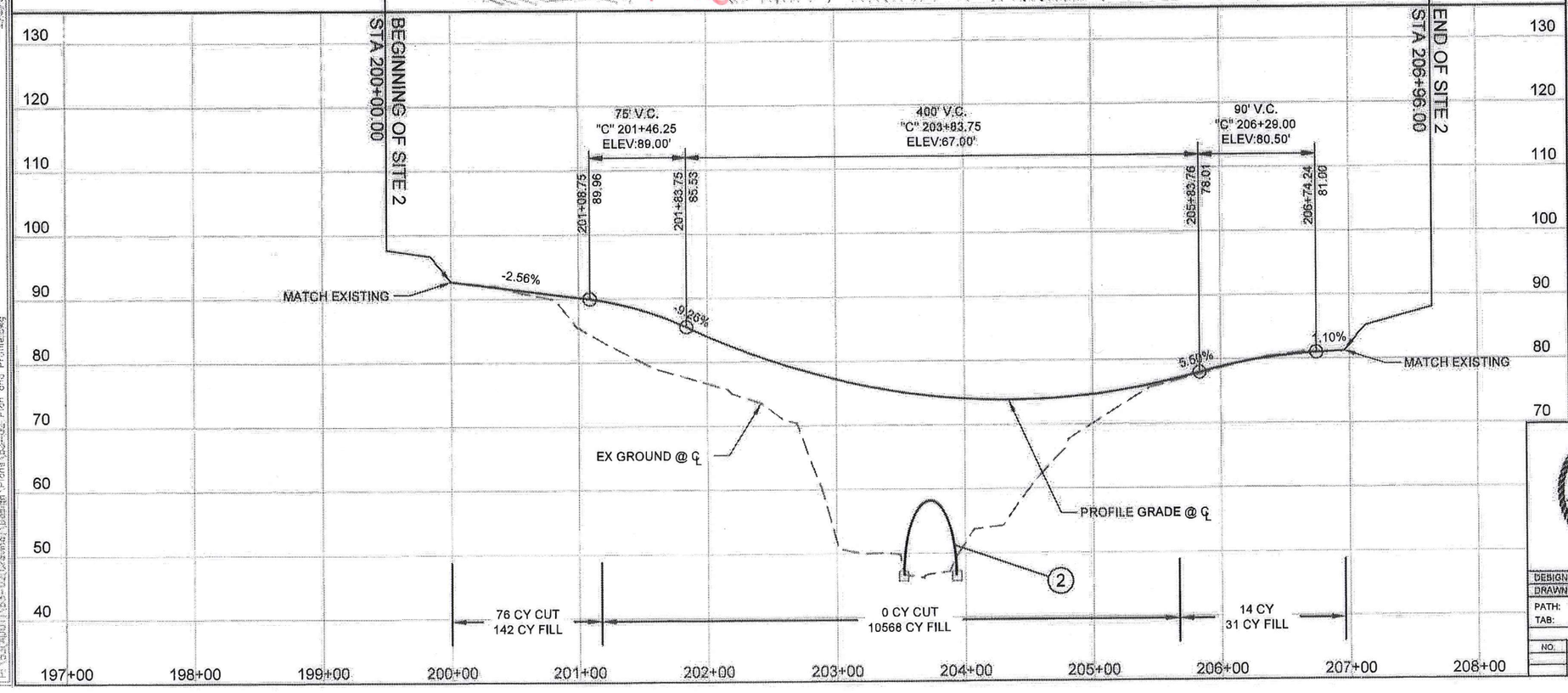
PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	F1	48

DRAWING LOCATION
P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Plan and Profile.dwg

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
CHECKED BY: M. DUMAN
QUALITY CK BY: R. BERGER

DATE TIME 2/9/2016 11:56 AM
LAYOUT F1
SCALE 1" = 100'
UNITS





CONSTRUCTION NOTES

1. REMOVE AND DISPOSE OF EXISTING STRUCTURE:
TWO STEEL RAIL CARS PLACED SIDE BY SIDE.
APPROXIMATE DIMENSION: 70' X 18'

2. STA 203+79.62: CONSTRUCT 26'-1" SPAN x 13'-1" RISE X 122.5' L
STRUCTURAL PLATE ARCH AS SHOWN.
(SEE SHEET N1 FOR DETAIL)
THALWEG IN: 49.50' 52' LT, STA: 203+51.40
THALWEG OUT: 43.37' 60' RT, STA: 204+01.16
CHANNEL BED SLOPE: 5.00%
See Note

3. STA 0+25.60: INSTALL 24" X 65' CORRUGATED ALUMINUM PIPE
AS SHOWN (PIPE P-4).
I.E. IN: 77.22' 37' RT, STA: 0+22.73
I.E. OUT: 74.82' 28' LT, STA: 0+26.61
SLOPE: 3.70%
GRADE INLET AND OUTLET TO DRAIN AS SHOWN IN PROFILE,
SHT. J12.

4. STA 200+00.00 TO 202+96.12
STA 205+13.12 TO 206+96.00
FULL DEPTH CONSTRUCTION AS SHOWN.
(SEE SHEET B2 FOR TYPICAL SECTION)

5. SHOULDER WIDENING SHALL BE CONSTRUCTED AS SHOWN.
(SEE SHEET B1 FOR TYPICAL SECTION)
TRANSITION: STA 202+96.12 TO 203+52.12
FULL: STA 203+52.12 TO 204+07.12
TRANSITION: STA 204+07.12 TO 204+63.12

6. STA 204+63.12 TO 205+13.12:
INSTALL CORDUROY FOUNDATION STABILIZATION.
(SEE SHEET B3 FOR TYPICAL SECTION)

7. REMOVE EXISTING SURFACING.
(DEPTH VARIES 6" TO 2.0')
(SEE SHEET B3 FOR TYPICAL SECTION)

8. DITCH RELIEF SHALL BE CONSTRUCTED AS SHOWN.

9. EXISTING ORGANIC WOOD WASTE AREA MAY BE USED FOR
WASTE DISPOSAL AREA FOR ORGANICS.

10. STA. "C" 200+00.00 TO 201+17.00, RIGHT
CONSTRUCT V-BOTTOM DITCH AS SHOWN (L = 117')
(SEE SHEET B2 FOR TYPICAL SECTION)

11. REGRADE INTERSECTION. (SEE APPROACH PLAN, SHEET G1)

12. CONSTRUCT CLASS 2 RIPRAP ARMORING AS SHOWN.
(SEE SHEET N1

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8-23-17 Date

LEGEND

- EXISTING SURFACING
- PROPOSED FINISH GRADE
- WASTE DISPOSAL AREA FOR ORGANICS
- CUT
- FILL
- DITCH LINE

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

Michael L. Duman
No. 13756
REGISTERED PROFESSIONAL ENGINEER
2-22-2016

KTN GRAVINA - MILL
ACCESS ROAD

PLAN AND PROFILE
SITE 2

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Plan and Profile.dwg
TAB: F2 Wednesday, February 17, 2016 11:48:54 AM Ryan Berger

REVISIONS		
NO.	DATE	DESCRIPTION

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	F2	48

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
CHECKED BY: M. MARTIN
CHECKED BY: M. MARTIN
SCALE: 1" = 100'
LAYOUT: F2
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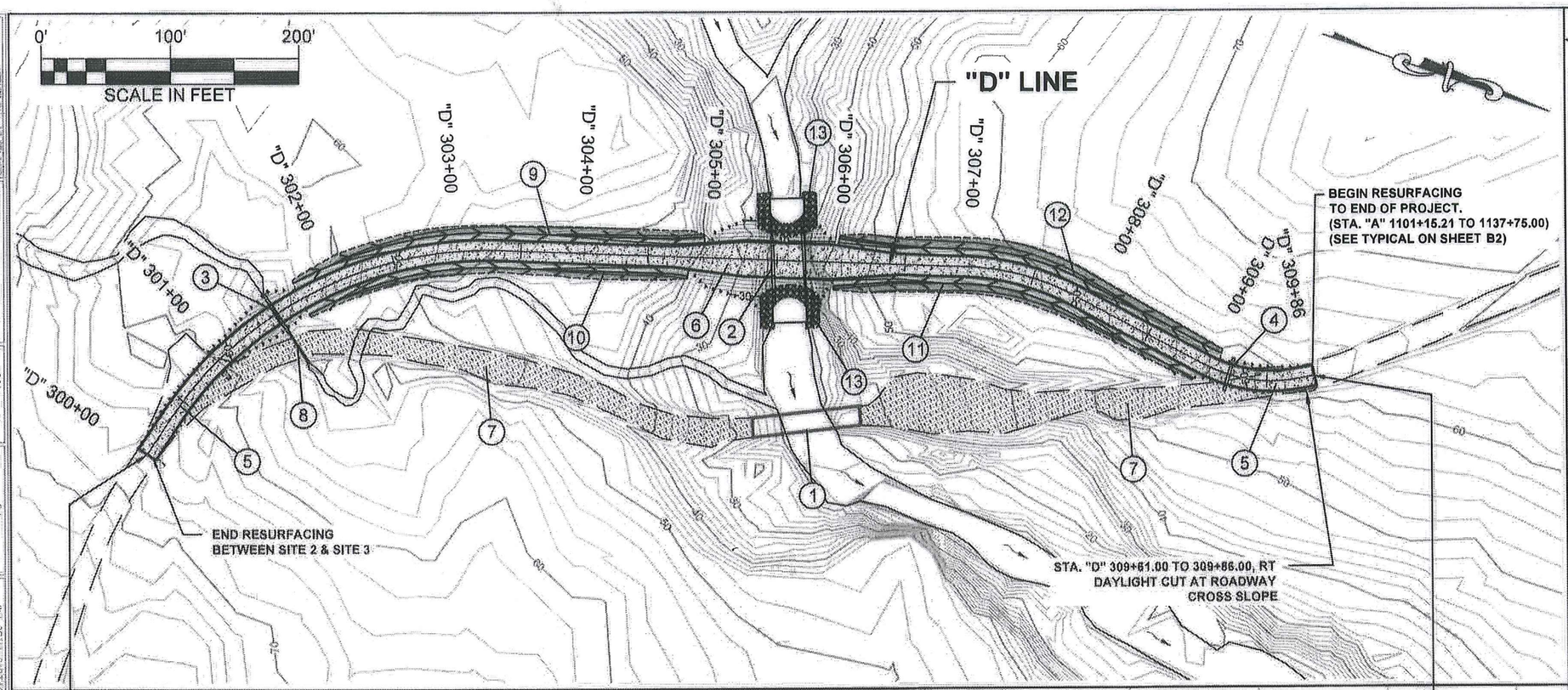

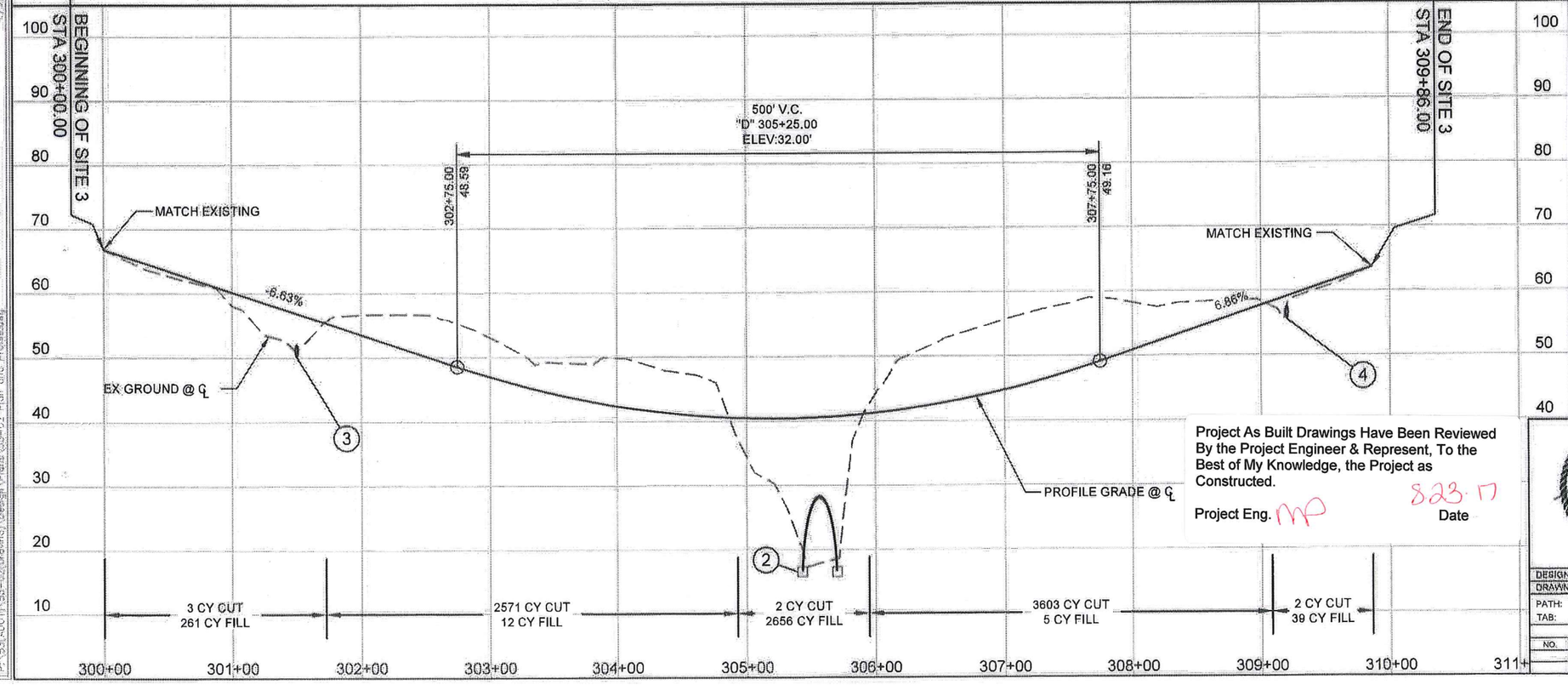

CONSTRUCTION NOTES

1. REMOVE AND DISPOSE OF EXISTING STRUCTURE:
TWO STEEL RAIL CARS PLACED SIDE BY SIDE.
APPROXIMATE DIMENSION: 70' X 18'

2. STA 305+58.68: CONSTRUCT 26'-1" SPAN x 13'-1" RISE x 96' L STRUCTURAL PLATE ARCH AS SHOWN.
(SEE SHEET N2 FOR DETAIL)
THALWEG IN: 17.97' 48' LT, STA: 305+55.90
THALWEG OUT: 17.43' 48' RT, STA: 305+61.43
CHANNEL BED SLOPE: 0.56%

3. STA 301+50.00: INSTALL 24" X 36' CORRUGATED ALUMINUM PIPE AS SHOWN (PIPE P-2).
I.E. IN: 50.49' 18' LT, STA: 301+50.00
I.E. OUT: 49.75' 19' RT, STA: 301+50.00
SLOPE: 2.05%
GRADE OUTLET TO DRAIN AS SHOWN IN PROFILE, SHT. J12.

4. STA 309+20.10: INSTALL 24" X 26' CORRUGATED ALUMINUM PIPE AS SHOWN (PIPE P-3).
I.E. IN: 55.87' 14' LT, STA: 309+20.10
I.E. OUT: 55.33' 13' RT, STA: 309+20.10
SLOPE: 2.07%
GRADE INLET & OUTLET TO DRAIN AS SHOWN IN PROFILE, SHT. J12.

5. STA 300+00.00 TO 304+69.26
STA 306+45.40 TO 309+86.00:
FULL DEPTH CONSTRUCTION AS SHOWN.
(SEE SHEET B2 FOR TYPICAL SECTION)

6. CONTRACTOR SHALL CONSTRUCT SHOULDER WIDENING AS SHOWN. (SEE SHEET B1 FOR TYPICAL SECTION)
TRANSITION: STA 304+69.26 TO 305+24.30
FULL: STA 305+24.30 TO 305+90.36
TRANSITION: STA 305+90.36 TO 306+45.40

7. REMOVE EXISTING SURFACING.
(DEPTH VARIES 6" TO 2.0')
(SEE SHEET B3 FOR TYPICAL SECTION)

8. REMOVE & DISPOSE OF EXISTING CULVERT. RE-OPEN CHANNEL ACROSS EXISTING ROADWAY & RESTORE NATURAL FLOW.

9. STA. "D" 301+73.00 TO 304+93.00, LEFT
CONSTRUCT V-BOTTOM DITCH AS SHOWN (L = 320')
(SEE SHEET B1 & B2 FOR TYPICAL SECTIONS)

10. STA. "D" 301+72.00 TO 304+81.00, RIGHT
CONSTRUCT V-BOTTOM DITCH AS SHOWN (L = 309')
(SEE SHEET B1 & B2 FOR TYPICAL SECTIONS)

11. STA. "D" 305+94.00 TO 308+96.00, RIGHT
CONSTRUCT V-BOTTOM DITCH AS SHOWN (L = 302')
(SEE SHEET B1 & B2 FOR TYPICAL SECTIONS)

12. STA. "D" 305+98.00 TO 309+08.00, LEFT
CONSTRUCT V-BOTTOM DITCH AS SHOWN (L = 310')
(SEE SHEET B1 & B2 FOR TYPICAL SECTIONS)

13. CONSTRUCT CLASS 2 RIPRAP ARMORING AS SHOWN.
(SEE SHEET N2 FOR DETAILS)

LEGEND

- EXISTING SURFACING
- PROPOSED FINISH GRADE
- WASTE DISPOSAL AREA FOR ORGANICS
- CUT
- FILL
- DITCH LINE

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP Date 8.23.17

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

PLAN AND PROFILE
SITE 3

STATE OF ALASKA 49TH — Michael L. Dumas No. 13756 — REGISTERED PROFESSIONAL ENGINEER
2-22-2016

DESIGNED BY: M.DUMAS
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Plan and Profile.dwg
TAB: F3
Wednesday, February 17, 2016 11:48:59 AM Ryan Berger

REVISIONS		
NO.	DATE	DESCRIPTION

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	F3	48

DRAWING LOCATION
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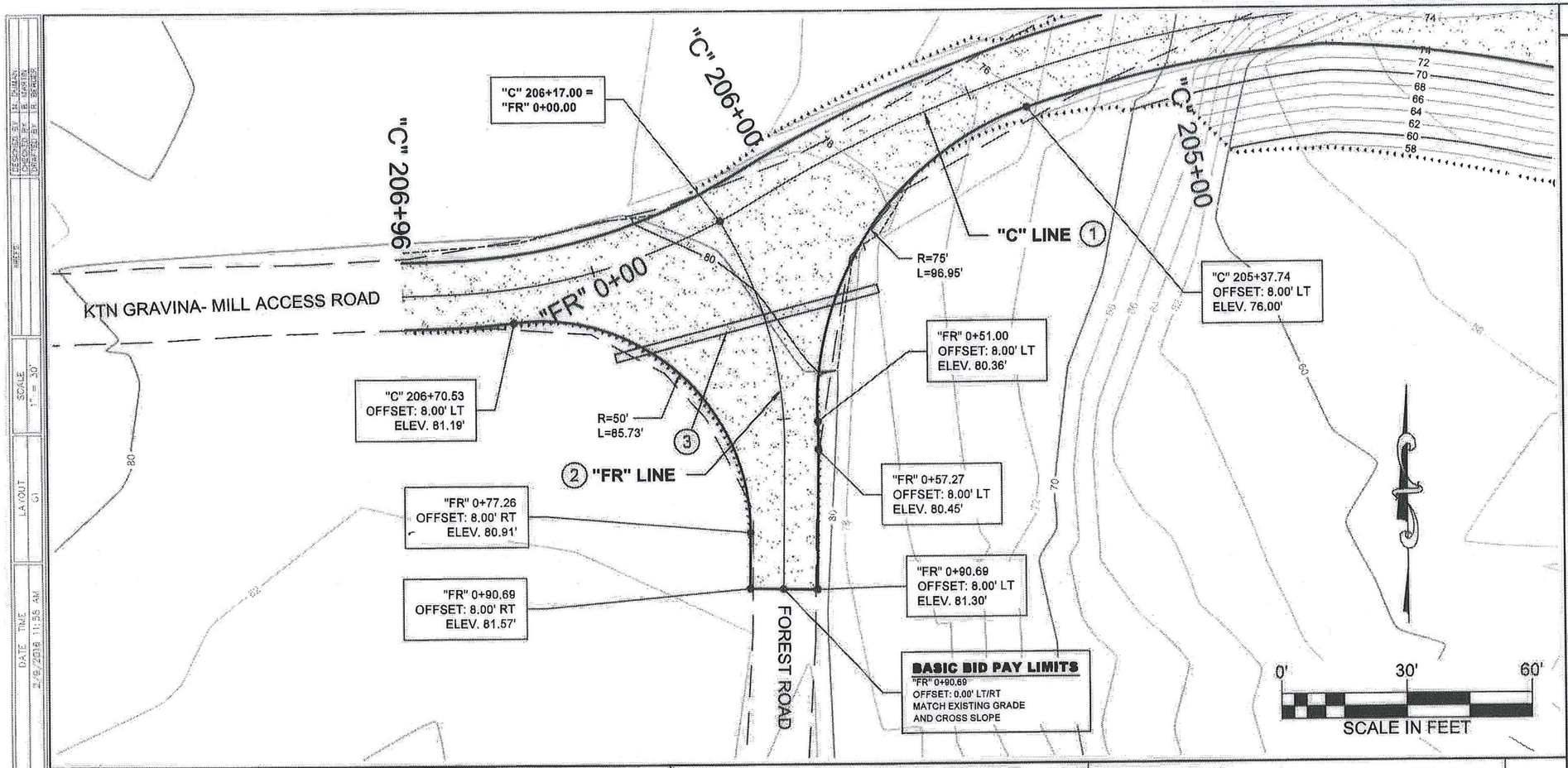
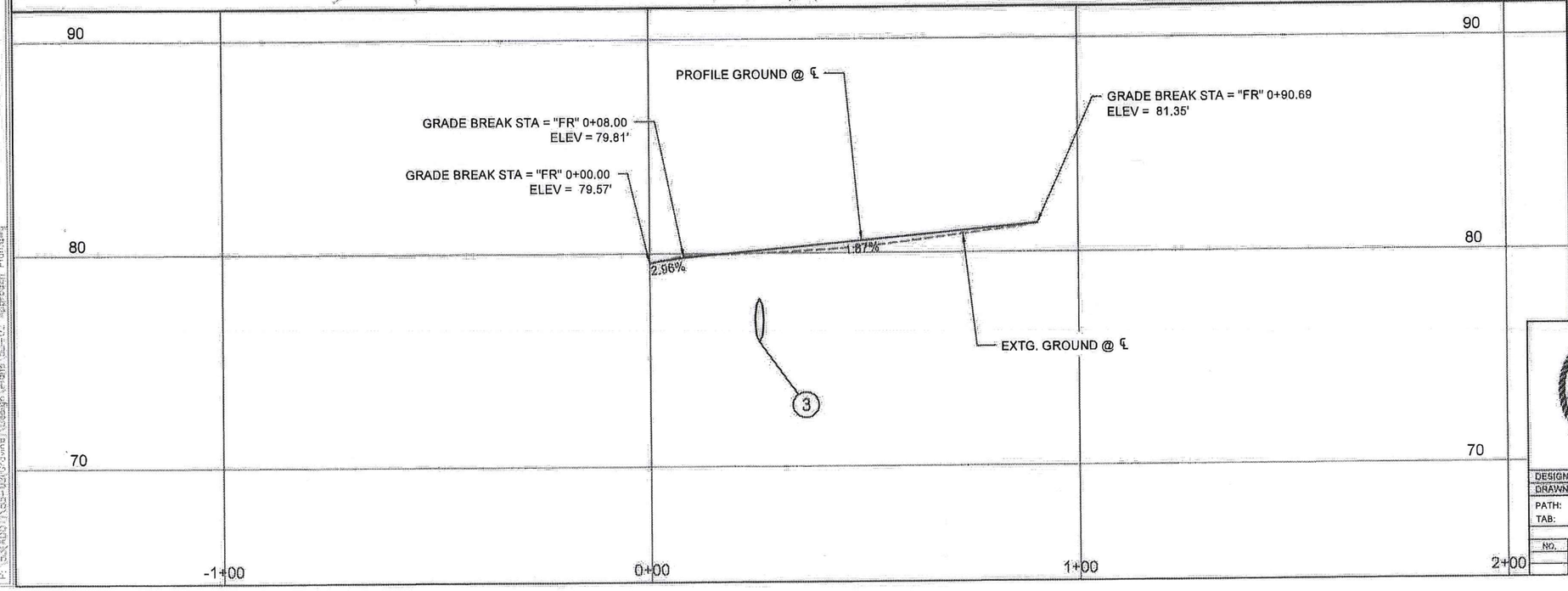
DATE TIME 2/9/2016 11:55 AM
LAYOUT F3
SCALE 1" = 100'
DESIGNED BY M.DUMAS
DRAWN BY R. BERGER
CHECKED BY
QUALITY CONTROL BY
PE REGISTRATION

CONSTRUCTION NOTES

1. FOR "C" LINE ALIGNMENT DATA, REFERENCE SHT. A5 & A6.
2. FOR "FR" LINE ALIGNMENT DATA, REFERENCE SHT. A5 & A6.
3. 24" X 65' CORRUGATED ALUMINUM PIPE SEE NOTE 3, SHEET F2.





Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8-23-17 Date

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

APPROACH PLAN FOREST ROAD INT.

Michael L. Duman No. 13756 REGISTERED PROFESSIONAL ENGINEER
2-22-2016

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Approach Plan.dwg
TAB: G1 Wednesday, February 17, 2016 11:50:34 AM Ryan Berger

REVISIONS NO.	DATE	DESCRIPTION	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			Z699220000	2016	G1	48

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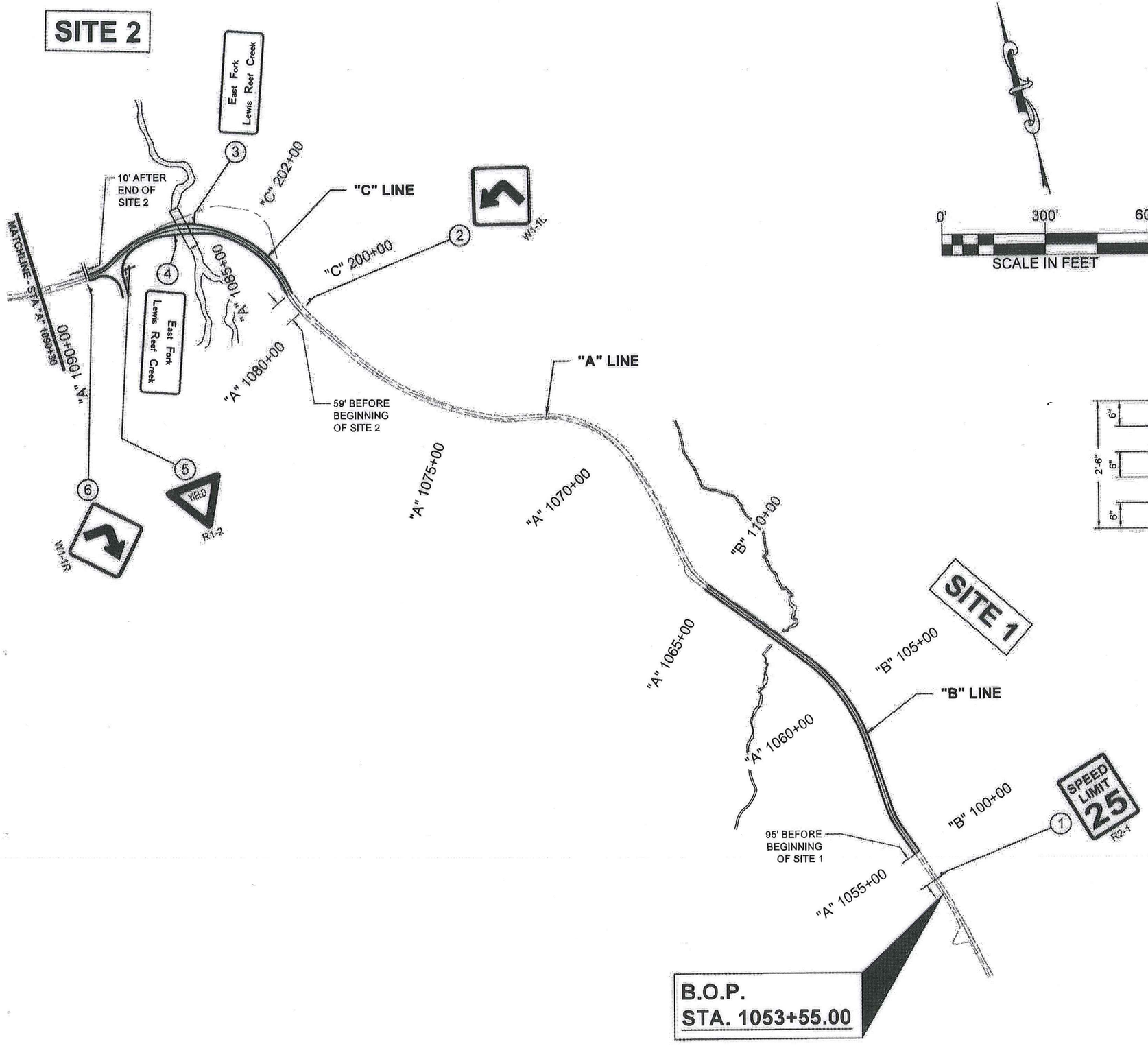
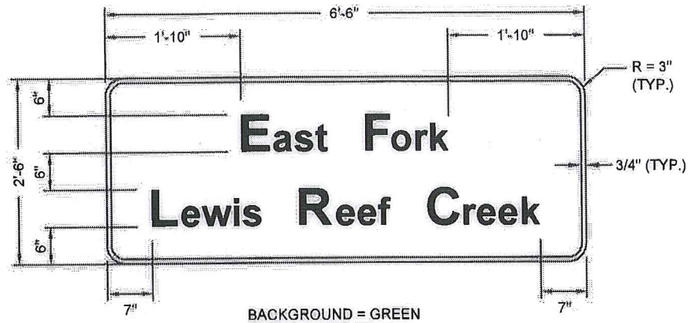
DATE 2/9/2016 TIME 11:55 AM
LAYOUT G1
SCALE 1" = 30'
DESIGNED BY M. DUMAN
DRAWN BY R. BERGER
CHECKED BY R. MARTIN
DRAFTED BY R. BERGER

SITE 2



GENERAL NOTES

1. INSTALL ALL SIGNS ON GALVANIZED 2 ½" X 2 ½" PSST. REFERENCE AKDOT&PF STD. DWG. S-00.11 AND S-01.00.
2. FOR SIGN INSTALLATION OFFSET, REFERENCE AKDOT&PF STD. DWG. S-05.01
3. FOR SIGN POST FOUNDATIONS, REFERENCE AKDOT&PF STD. DWG. S-30.03.
4. REFERENCE STANDARD SIGN SUMMARY TABLE, SHT. D2.



BACKGROUND = GREEN
BORDER = WHITE
LEGEND = WHITE
FIRST LETTER = 6" C UPPERCASE
AFTER LETTERS = 4 ½" C LOWERCASE

CUSTOM SIGN DETAIL
"EAST FORK LEWIS REEF CREEK"
N.T.S.

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8.23.17 Date

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

SIGNING PLAN

Michael L. Duman No. 13756 Registered Professional Engineer
2-22-2016

DESIGNED BY:	M. DUMAN
DRAWN BY:	R. BERGER
PATH:	P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Signing Plan.dwg
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REVISIONS NO.	DATE	DESCRIPTION	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
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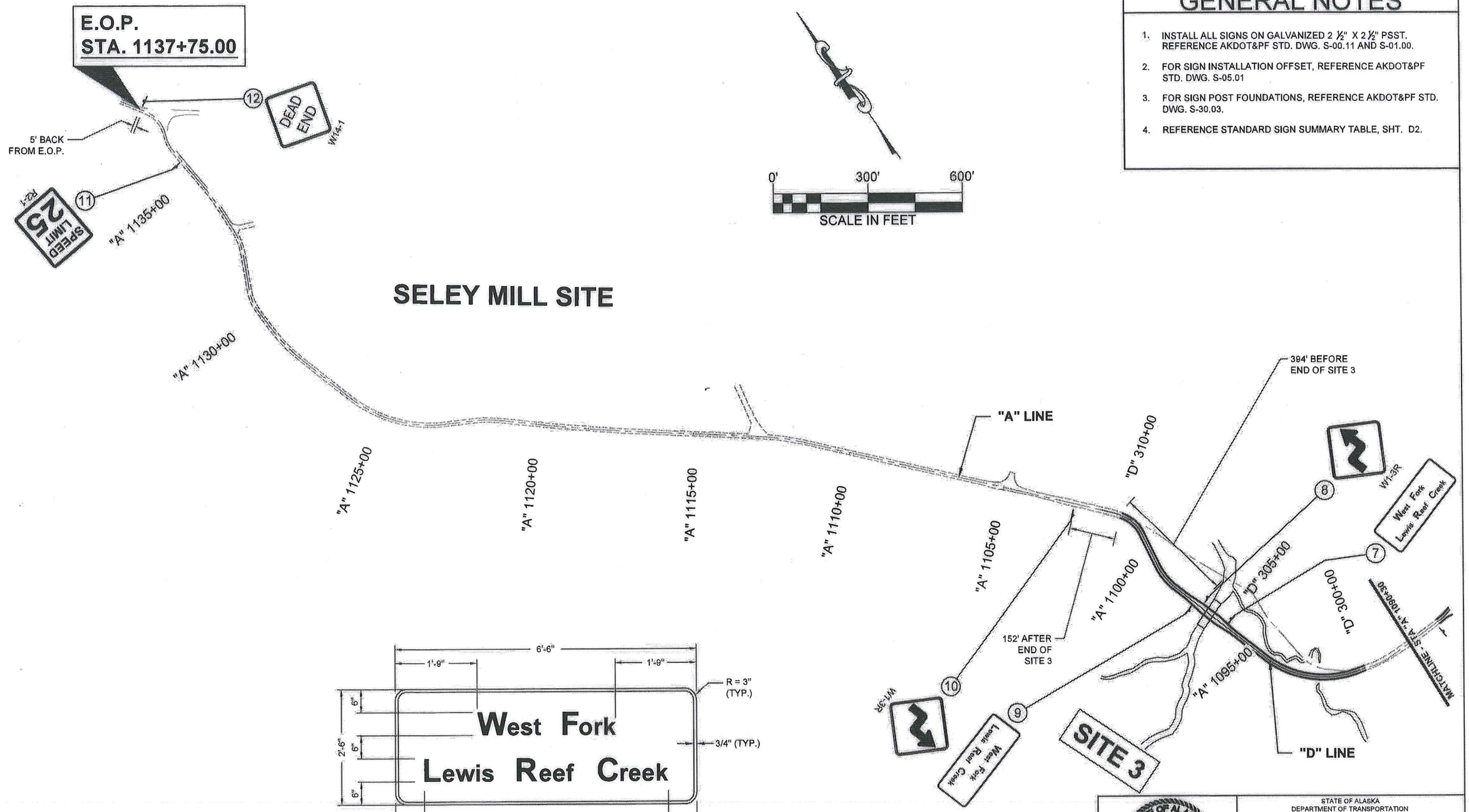
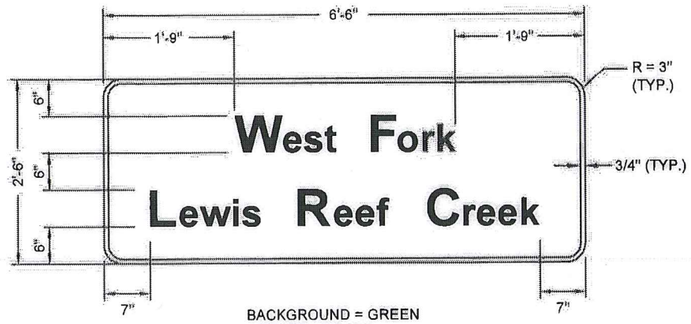
DRAWING LOCATION: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Signing Plan.dwg
DATE - TIME: 2/17/2016 11:59 AM
LAYOUT: H1
SCALE: 1" = 300'
DESIGNED BY: M. DUMAN
CHECKED BY: R. MARTIN
DRAFTED BY: R. BERGER

GENERAL NOTES

1. INSTALL ALL SIGNS ON GALVANIZED 2 ½" X 2 ½" PSST. REFERENCE AKDOT&PF STD. DWG. S-00.11 AND S-01.00.
2. FOR SIGN INSTALLATION OFFSET, REFERENCE AKDOT&PF STD. DWG. S-05.01
3. FOR SIGN POST FOUNDATIONS, REFERENCE AKDOT&PF STD. DWG. S-30.03.
4. REFERENCE STANDARD SIGN SUMMARY TABLE, SHT. D2.



SELEY MILL SITE



BACKGROUND = GREEN
BORDER = WHITE
LEGEND = WHITE
FIRST LETTER = 6" C UPPERCASE
AFTER LETTERS = 4 ½" C LOWERCASE

CUSTOM SIGN DETAIL
"WEST FORK LEWIS REEF CREEK"
N.T.S.

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MAP 8.24.17 Date

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

SIGNING PLAN

Michael L. Duman No. 13756 REGISTERED PROFESSIONAL ENGINEER 2-22-2016

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Signing Plan.dwg
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REVISIONS		
NO.	DATE	DESCRIPTION

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	H2	48

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
CHECKED BY: S. MARTIN
QA/QC'ED BY: S. MARTIN
SCALE: NTS
LAYOUT: H2
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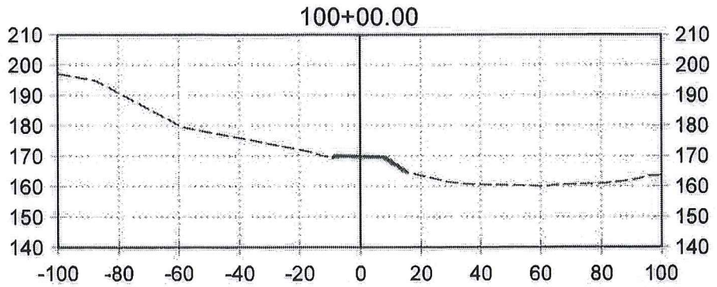
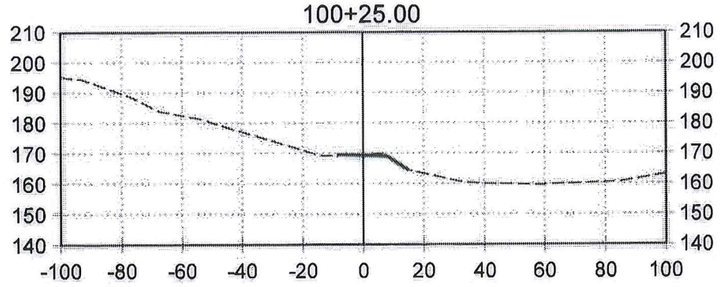
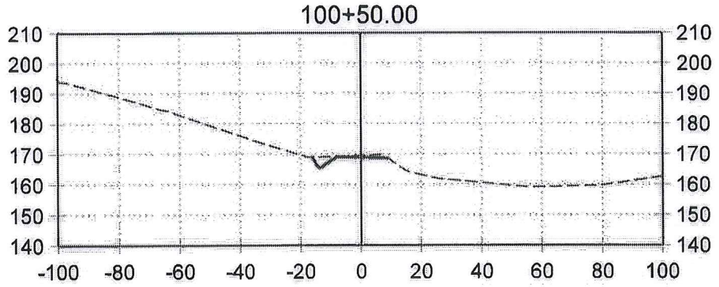
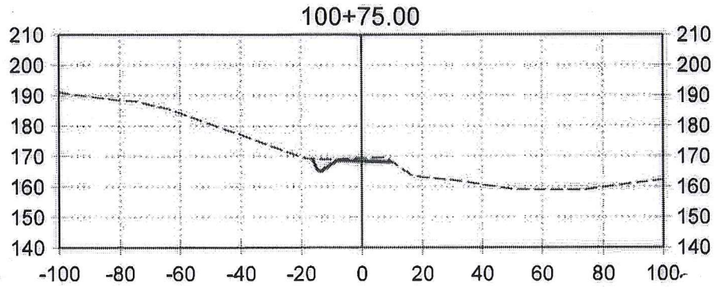
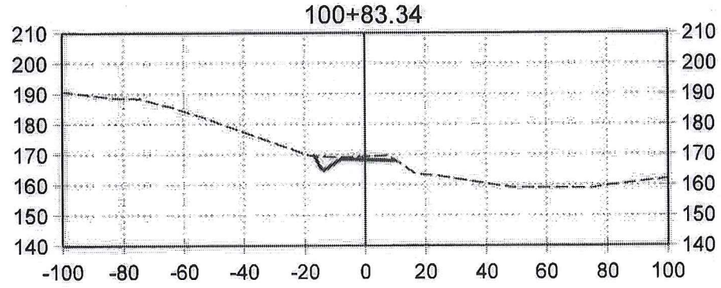
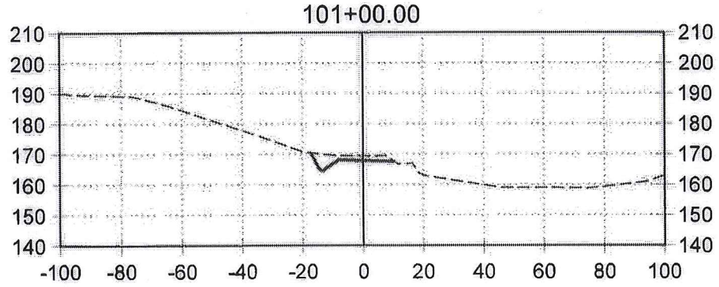


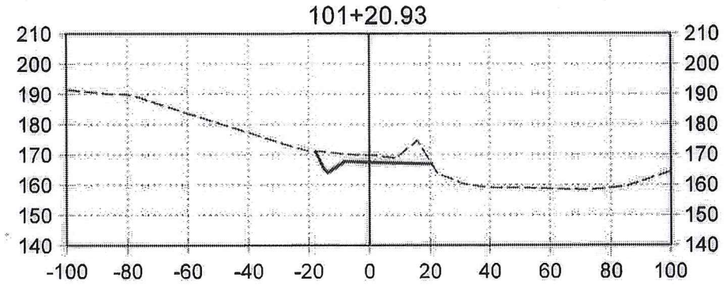


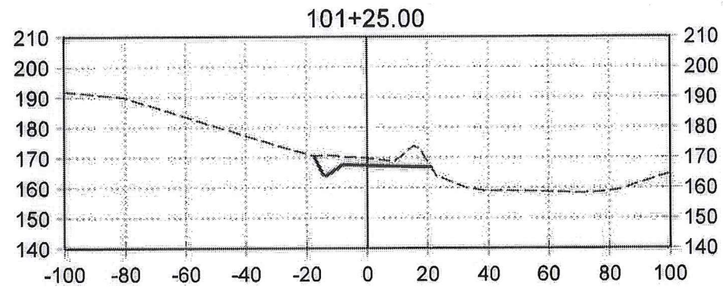


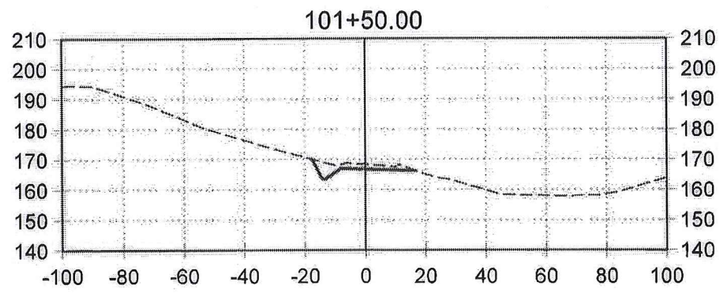


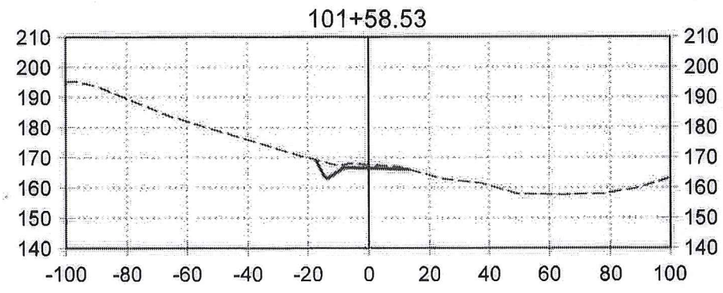


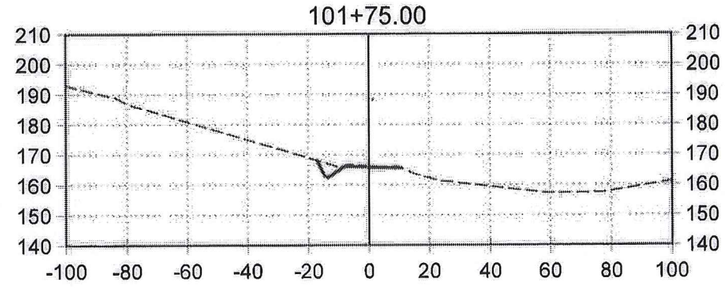


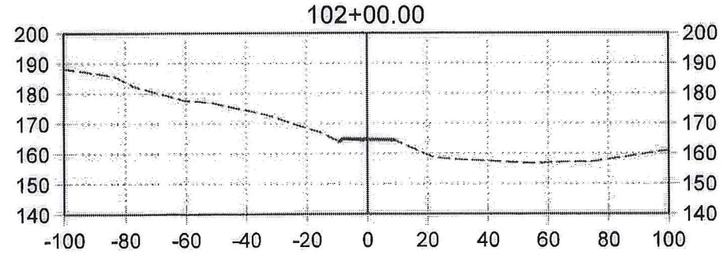












ADDITIVE ALTERNATE A "B" LINE PLAN

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8.23.17 Date

LEGEND

- EXISTING GROUND
- FINISHED GROUND
- ALIGNMENT CENTERLINE

STATE OF ALASKA
Michael L Duman
No. 13756
REGISTERED PROFESSIONAL ENGINEER
7-22-2016

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD
ADDITIVE ALTERNATE A
SITE 1 CROSS SECTIONS
100+00 - 102+00

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Cross Sections_Site 1.dwg
TAB: J1 Wednesday, February 17, 2016 11:53:46 AM Ryan Berger

REVISIONS		
NO.	DATE	DESCRIPTION

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	J1	48

See Total Cut/Fill Quantities Sheets

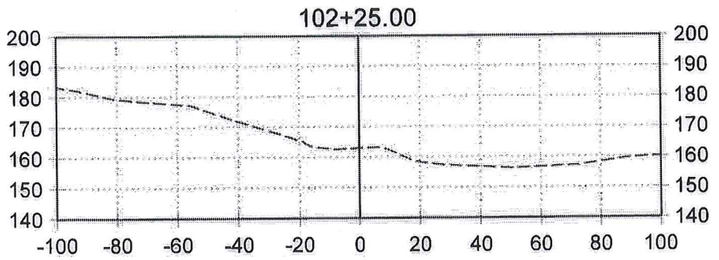
DRAWING LOCATION
P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Cross Sections_Site 1.dwg

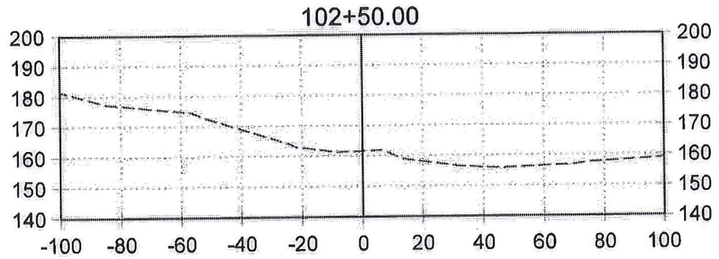
DESIGNED BY M. DUMAN
CHECKED BY R. MARTIN
DRAFTING BY R. BERGER

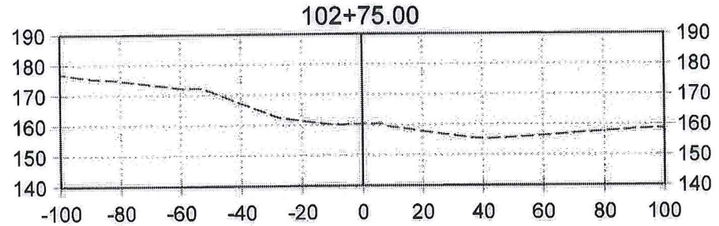
SCALE 1" = 50'

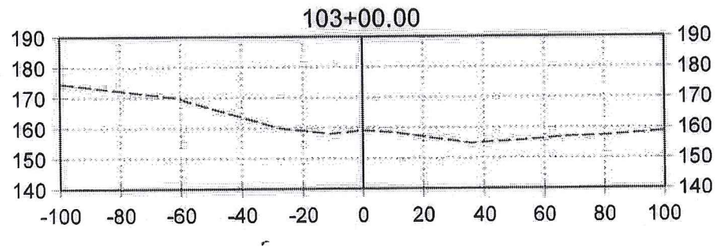
LAYOUT J1

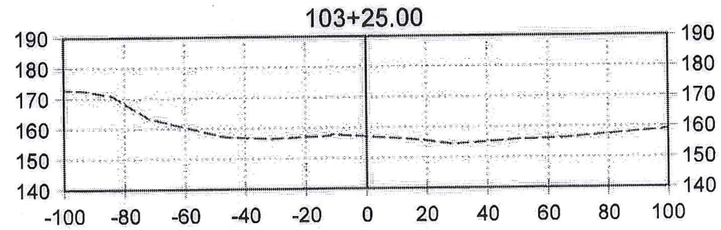
DATE TIME 2/17/2016 8:42 AM

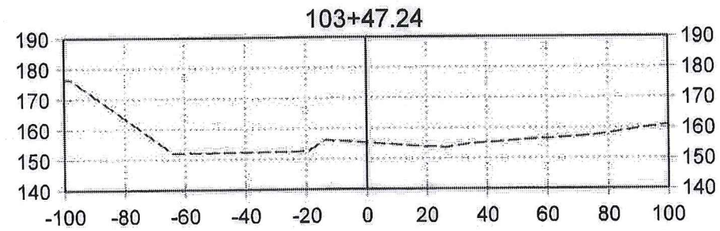


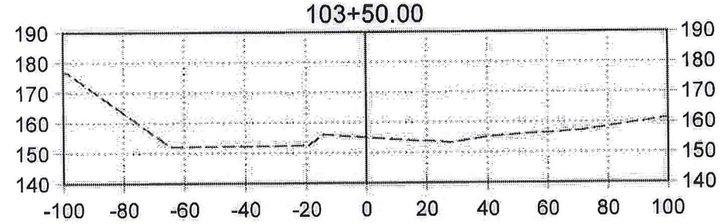


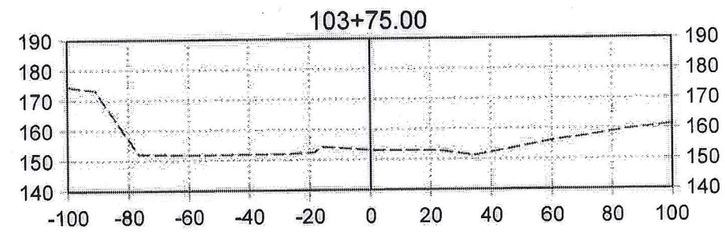


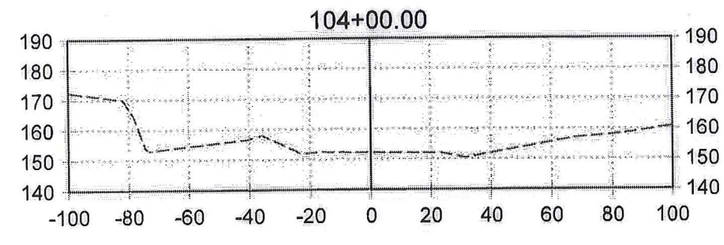


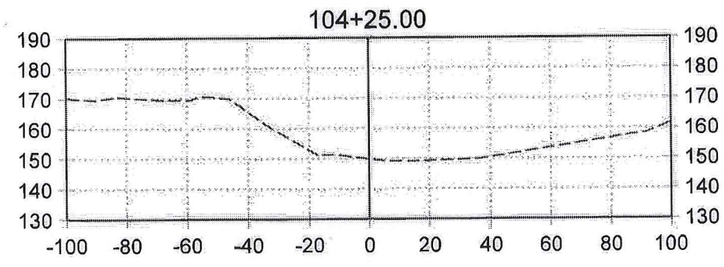


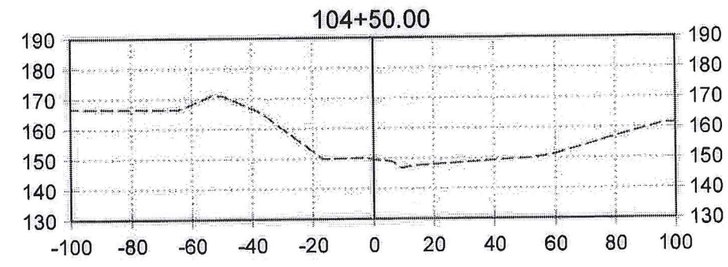


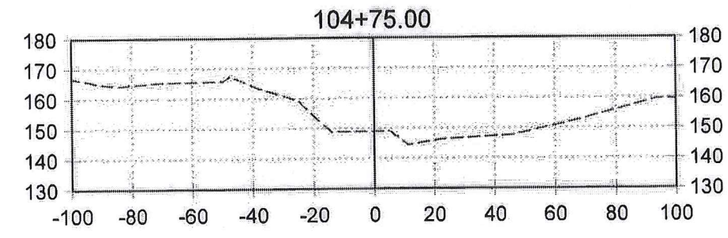












ADDITIVE ALTERNATE A "B" LINE PLAN

NOTE:

RESURFACING
STA "B" 102+15.00 TO 106+40.00

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8.23.17 Date

LEGEND

- EXISTING GROUND
- FINISHED GROUND
- ALIGNMENT CENTERLINE

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL
ACCESS ROAD
ADDITIVE ALTERNATE A
SITE 1 CROSS SECTIONS
102+25 - 104+75

Michael L. Duman No. 13756 Registered Professional Engineer
2-22-2016

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Cross Sections_Site 1.dwg
TAB: J2 Wednesday, February 17, 2016 11:53:48 AM Ryan Berger

REVISIONS		
NO.	DATE	DESCRIPTION

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	J2	48

See Total Cut/Fill Quantities Sheets

DESIGNED BY: M. DUMAN
CHECKED BY: B. MARTIN
DRAFTED BY: R. BERGER

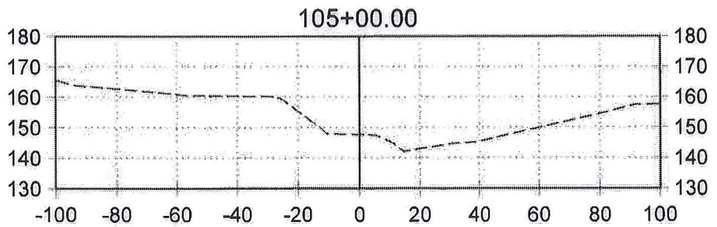
SHEET

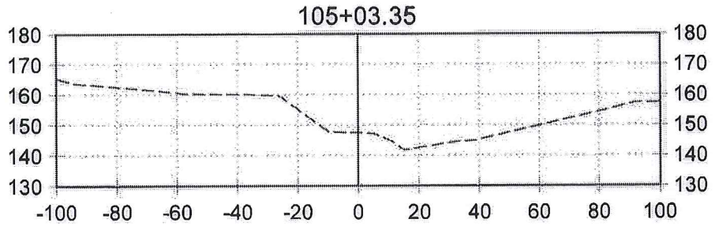
SCALE 1" = 50'

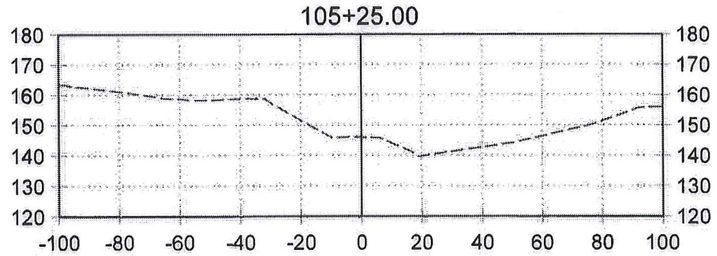
LAYOUT J2

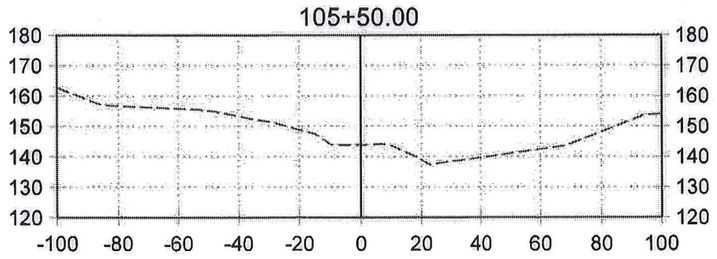
DATE TIME 2/22/2016 8:42 AM

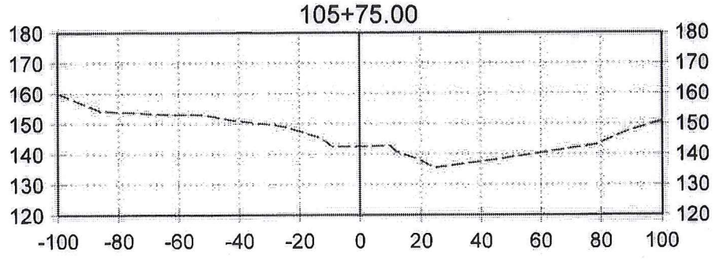
DRAWING LOCATION P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Cross Sections_Site 1.dwg

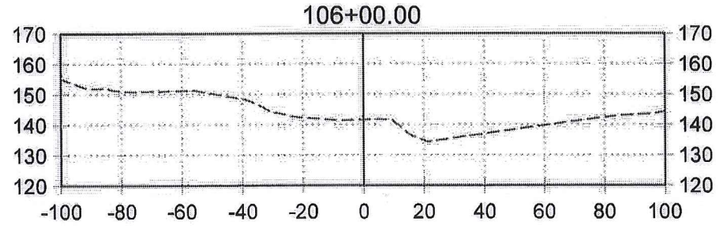


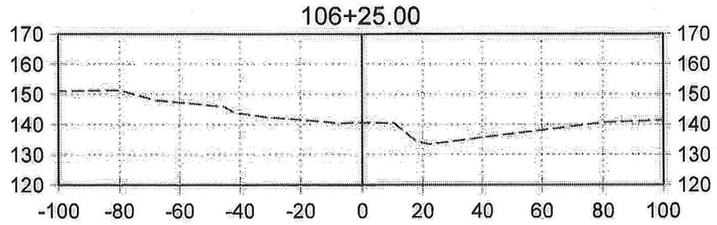


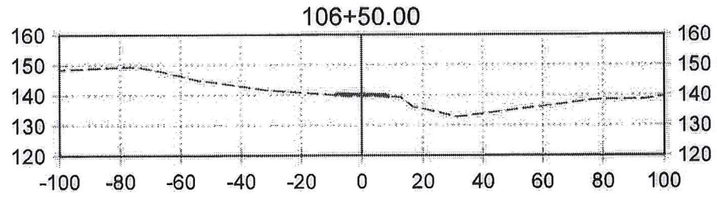


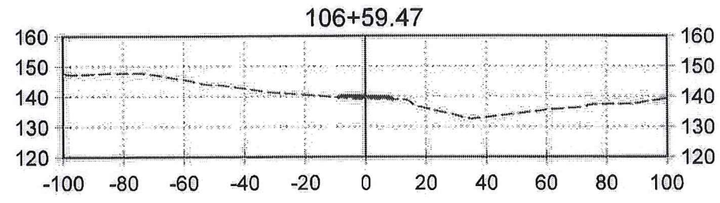


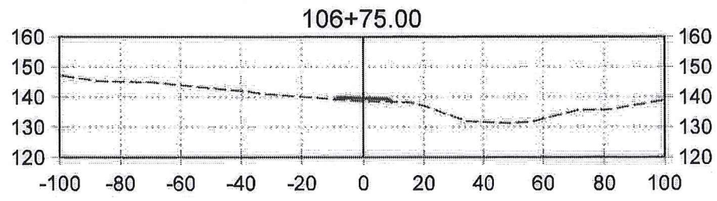


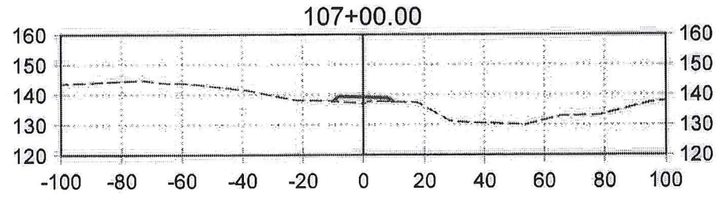


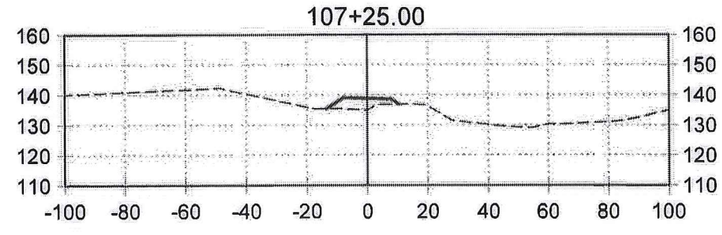












ADDITIVE ALTERNATE A "B" LINE PLAN

NOTE:
RESURFACING
STA "B" 102+15.00 TO 106+40.00

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8.23.17 Date

LEGEND
- EXISTING GROUND
- FINISHED GROUND
- ALIGNMENT CENTERLINE

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD
ADDITIVE ALTERNATE A
SITE 1 CROSS SECTIONS
105+00 - 107+25

Michael L. Duman No. 13756 — 8-22-2016

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Cross Sections_Site 1.dwg
TAB: J3 Wednesday, February 17, 2016 11:53:50 AM Ryan Berger

REVISIONS NO.	DATE	DESCRIPTION

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	J3	48

See Total Cut/Fill Quantities Sheets

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
CHECKED BY: M. DUMAN
DRAFTED BY: R. BERGER

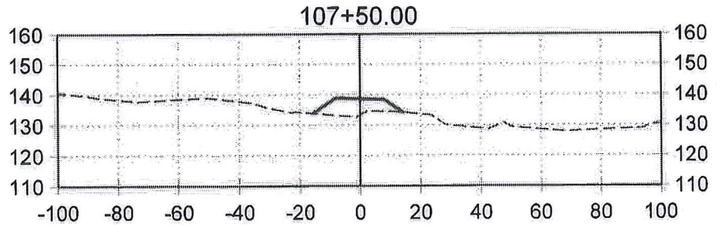
XREFS

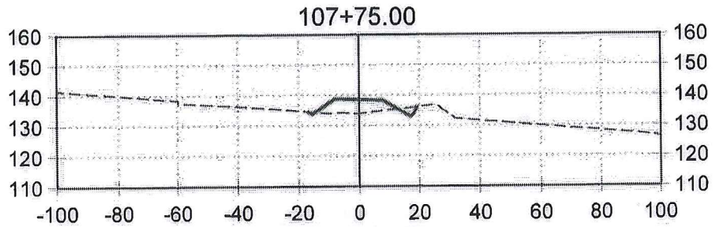
SCALE: 1" = 50'

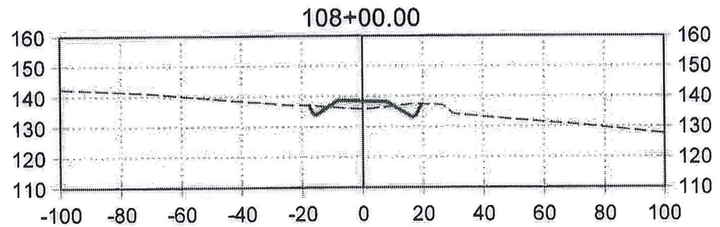
LAYOUT: J3

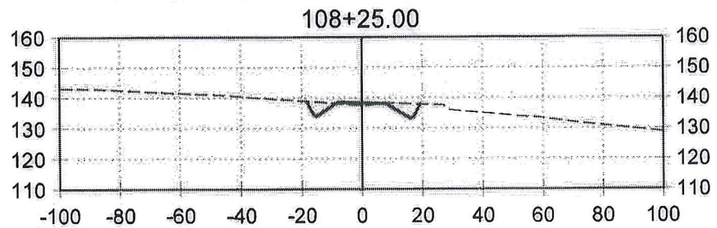
DATE TIME: 9/29/2015 8:47 AM

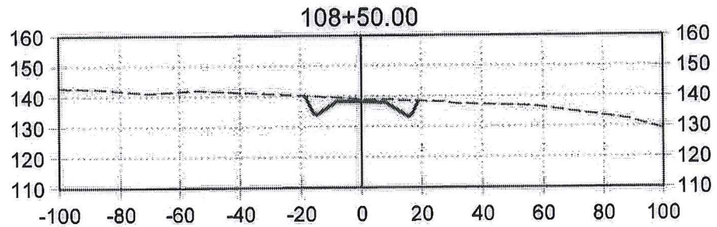
DRAWING LOCATION: P:\53(ADOT)\53-02(Gravina)\Plans\53-02 Cross Sections_Site 1.dwg

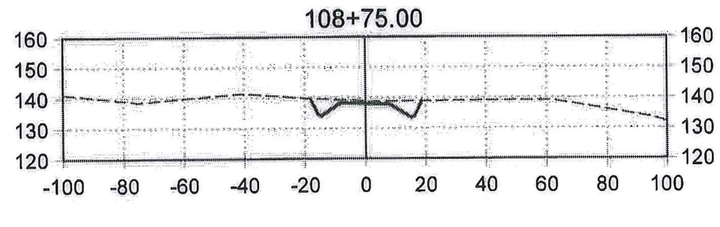


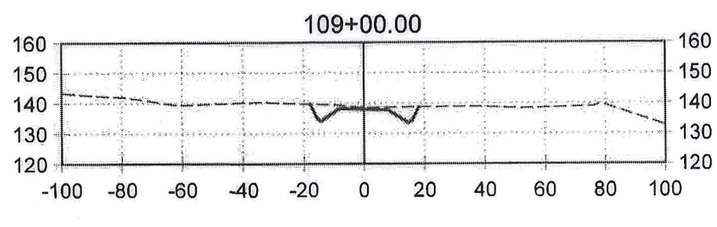


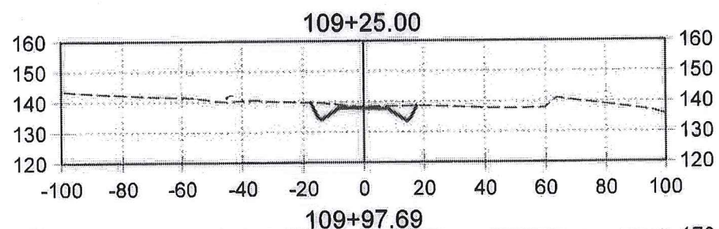


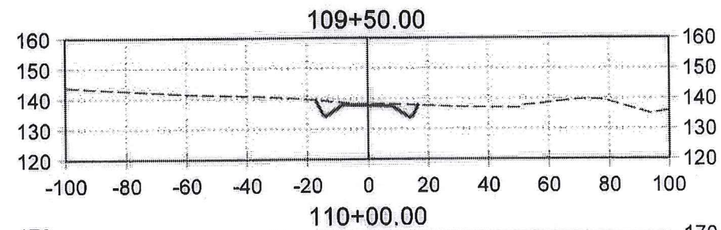


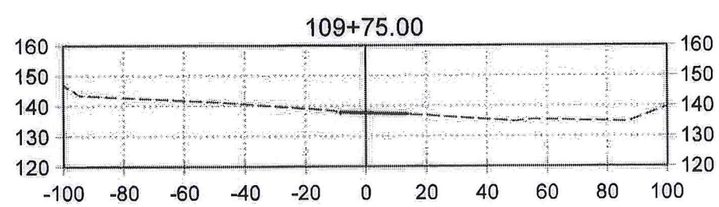


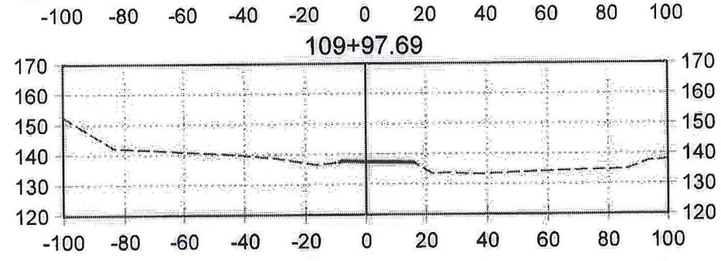


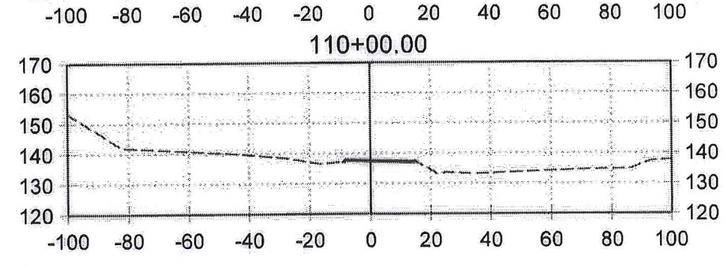












ADDITIVE ALTERNATE A "B" LINE PLAN

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8.23.17 Date

LEGEND

- EXISTING GROUND
- FINISHED GROUND
- ALIGNMENT CENTERLINE

STATE OF ALASKA
Michael L. Duman
No. 13756
REGISTERED PROFESSIONAL ENGINEER
2-23-2016

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Cross Sections_Site 1.dwg
TAB: J4 Wednesday, February 17, 2016 11:53:52 AM Ryan Berger

REVISIONS		
NO.	DATE	DESCRIPTION

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD
ADDITIVE ALTERNATE A
SITE 1 CROSS SECTIONS
107+50 - 110+10

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	J4	48

See Total Cut/Fill Quantities Sheets

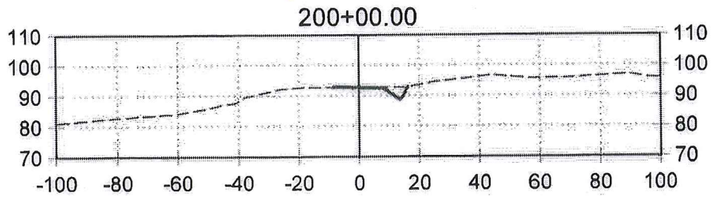
DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
CHECKED BY: S. MARTIN
DRAFTED BY: R. BERGER

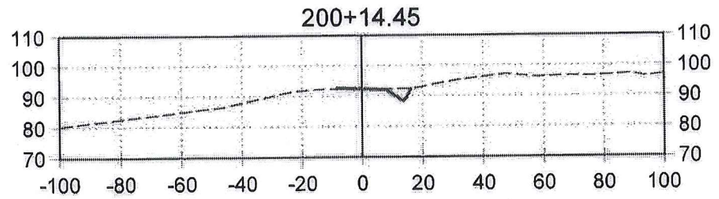
SCALE: 1" = 50'

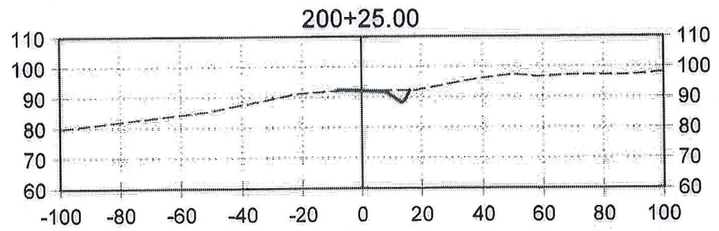
LAYOUT: J4

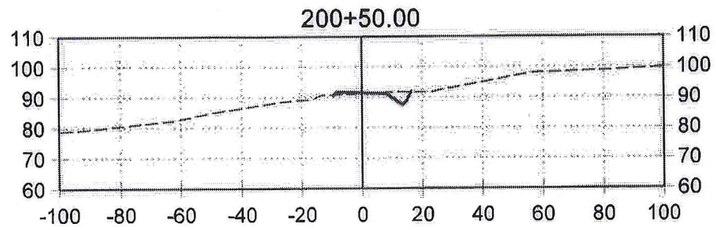
DATE TIME: 9/28/2015 8:42 AM

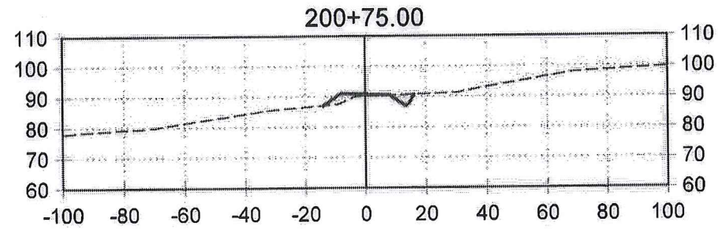
DRAWING LOCATION: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Cross Sections_Site 1.dwg

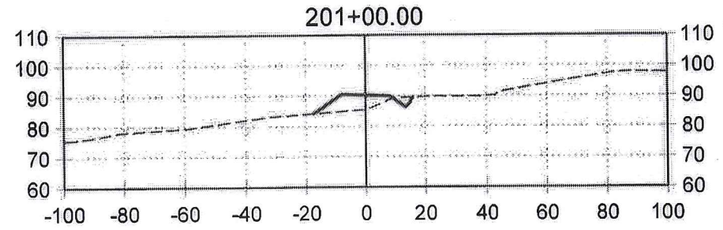


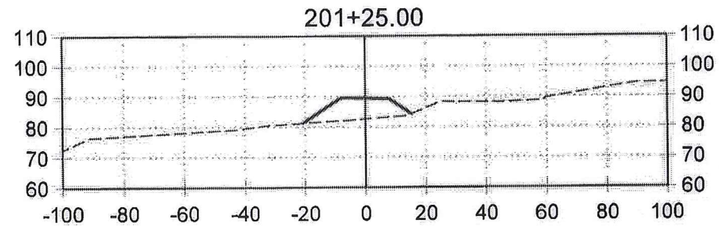


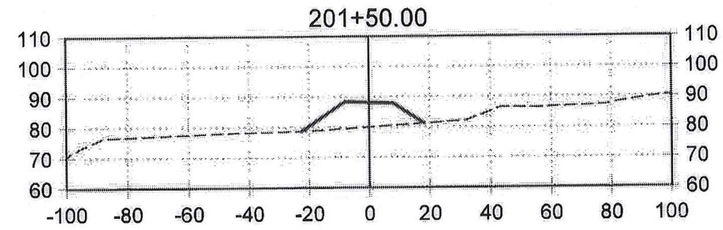


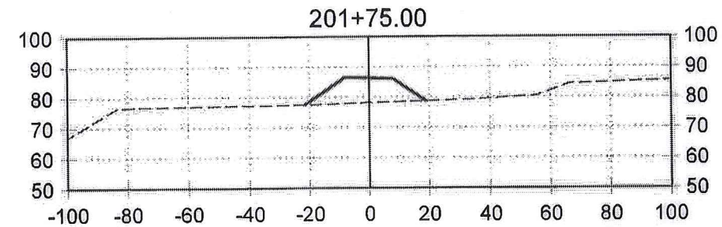


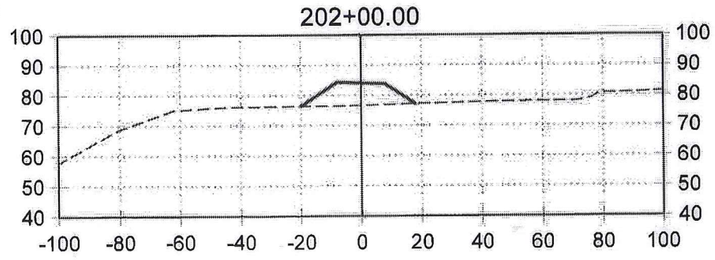


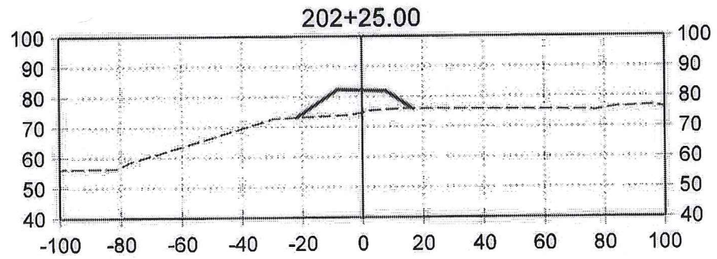


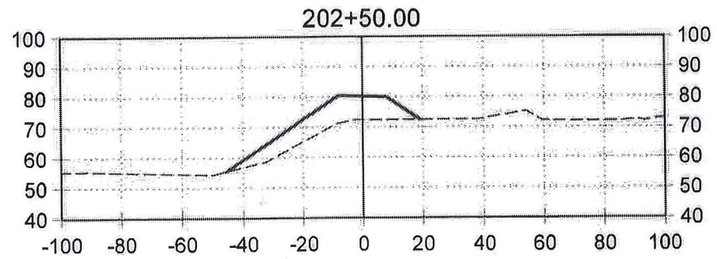












DESIGNED BY: M. DUMAN
CALCULATED BY: B. MURPHY
DRAFTED BY: R. BERGER

VARIES

SCALE: 1" = 50'

LAYOUT: J5

DATE TIME: 9/27/2015 12:09 PM

DRAWING LOCATION: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Cross Sections_Site 2.dwg

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8.23.17 Date

LEGEND

- EXISTING GROUND
- FINISHED GROUND
- ALIGNMENT CENTERLINE

STATE OF ALASKA
Michael L. Duman
No. 13756
REGISTERED PROFESSIONAL ENGINEER
8-22-2016

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

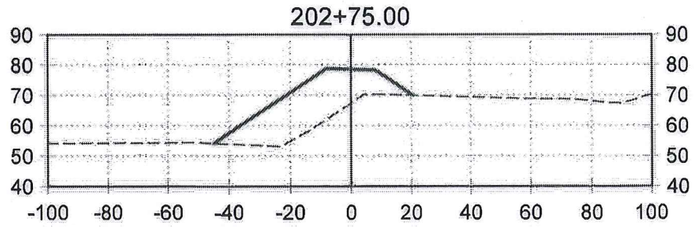
SITE 2 CROSS SECTIONS
200+00 - 202+75

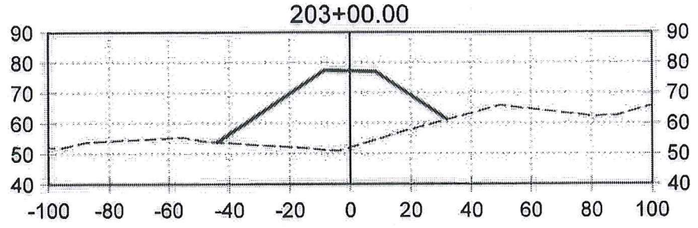
DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Cross Sections_Site 2.dwg
TAB: J5 Wednesday, February 17, 2016 11:53:55 AM Ryan Berger

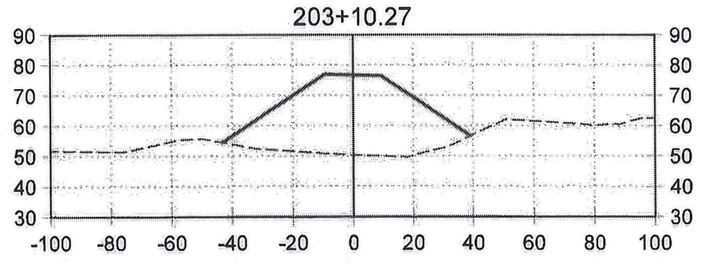
REVISIONS		
NO.	DATE	DESCRIPTION

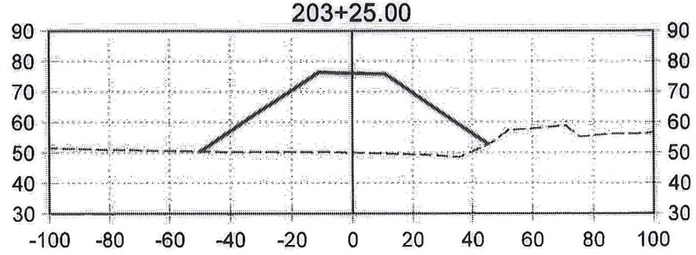
PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	J5	48

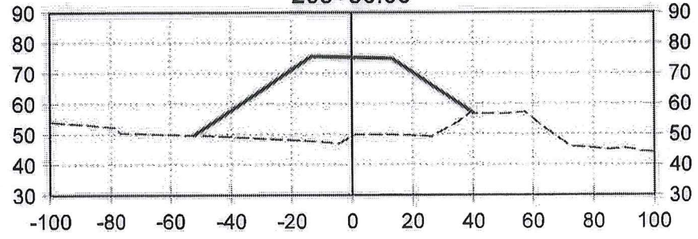
See Total Cut/Fill Quantities Sheets

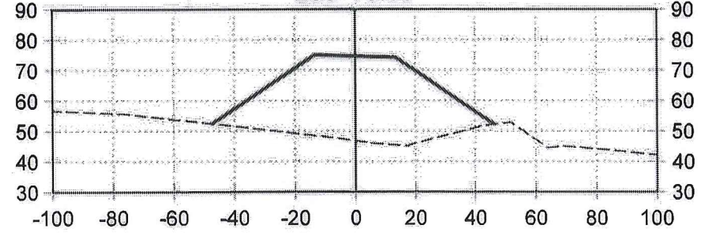


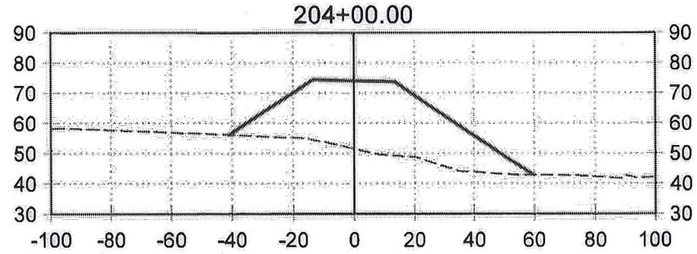


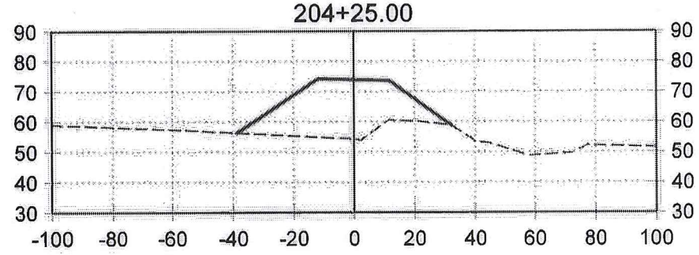


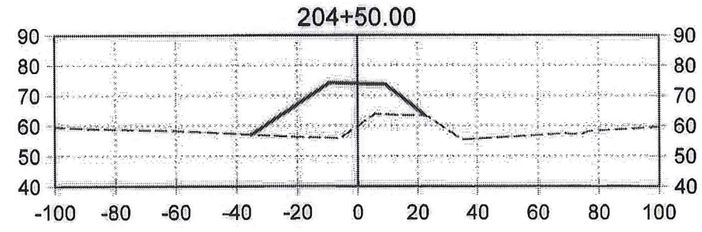


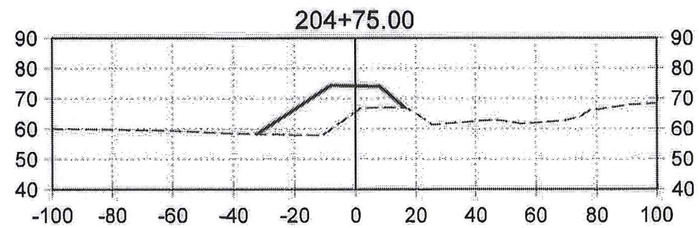


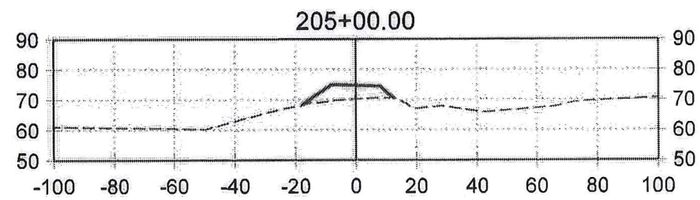


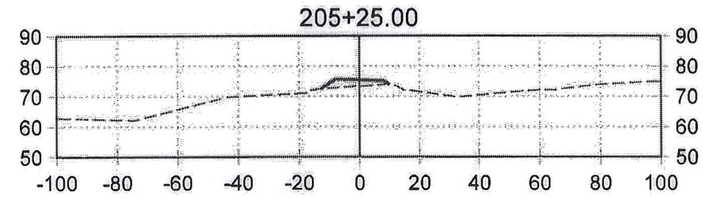












Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MD 8.23.17 Date

LEGEND

- EXISTING GROUND
- FINISHED GROUND
- ALIGNMENT CENTERLINE

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

Michael L. Duman
No. 13756
REGISTERED PROFESSIONAL ENGINEER
2-23-2016

KTN GRAVINA - MILL ACCESS ROAD

SITE 2 CROSS SECTIONS
203+00 - 205+25

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Cross Sections_Site 2.dwg
TAB: J6 Wednesday, February 17, 2016 11:53:57 AM Ryan Berger

REVISIONS		
NO.	DATE	DESCRIPTION

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	J6	48

See Total Cut/Fill Quantities Sheets

DESIGNED BY M. DUMAN
DRAWN BY R. BERGER
CHECKED BY M. DUMAN
APPROVED BY M. BERGER

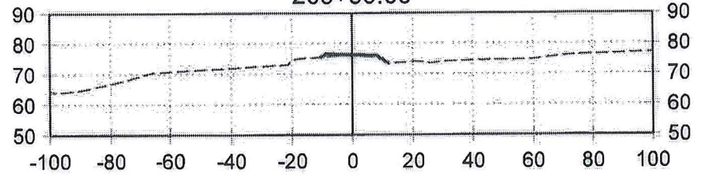
AS-BUILTS

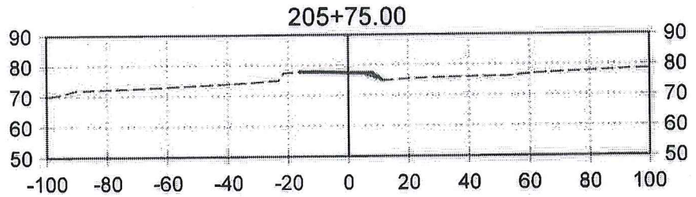
SCALE 1" = 50'

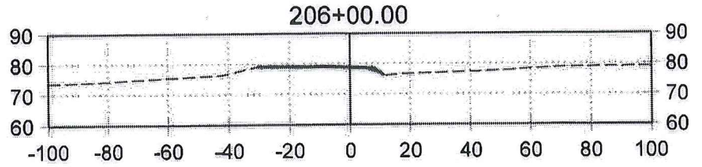
LAYOUT J6

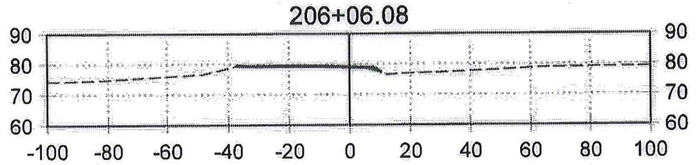
DATE TIME 9/21/2015 12:09 PM

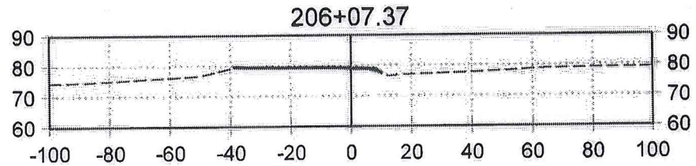
DRAWING LOCATION P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Cross Sections_Site 2.dwg

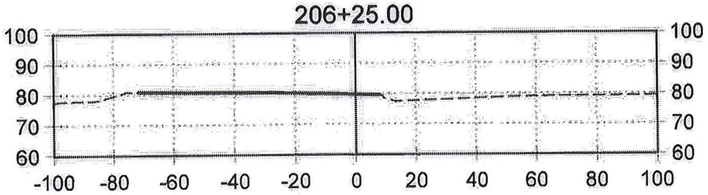


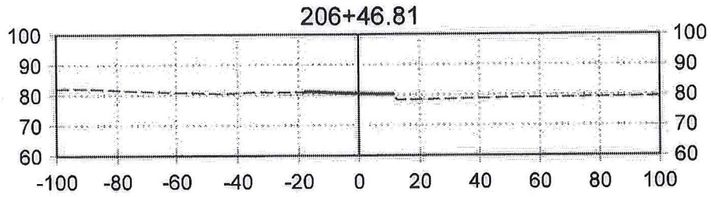


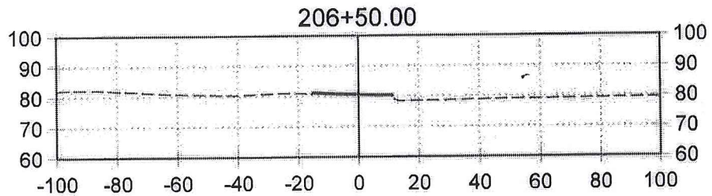


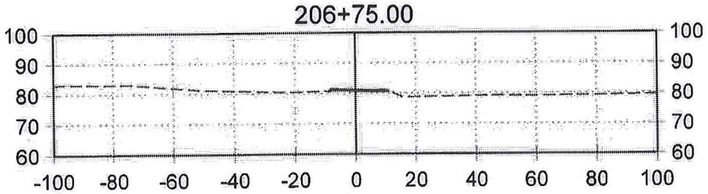


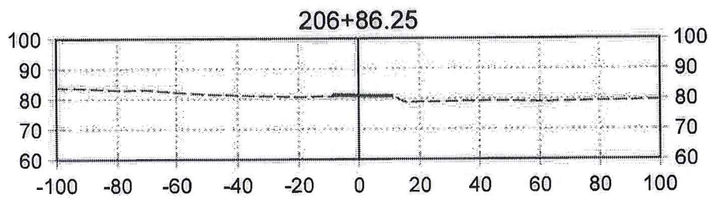


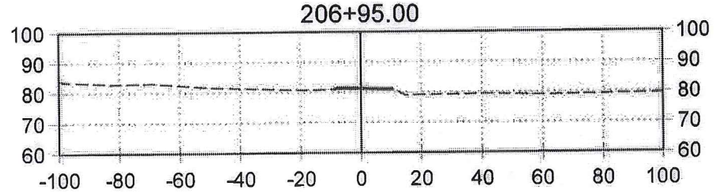












Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8.23.17 Date

LEGEND

- EXISTING GROUND
- FINISHED GROUND
- ALIGNMENT CENTERLINE

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

SITE 2 CROSS SECTIONS
205+50 - 206+95

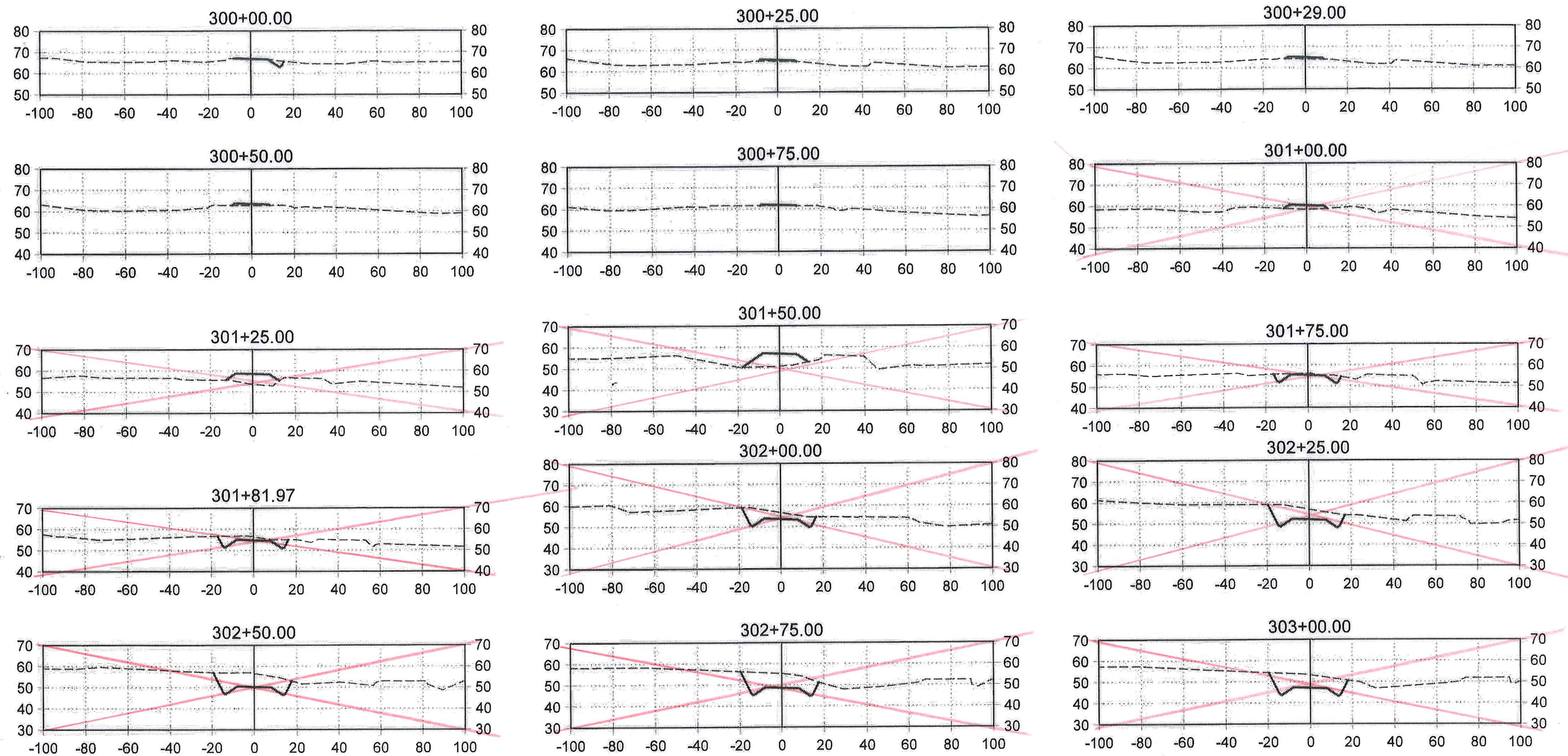
Michael L. Duman
No. 13756
REGISTERED PROFESSIONAL ENGINEER
2-22-2016

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Cross Sections_Site 2.dwg
TAB: J7
Wednesday, February 17, 2016 11:53:58 AM Ryan Berger

REVISIONS		
NO.	DATE	DESCRIPTION

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	J7	48

DRAWING LOCATION
P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Cross Sections_Site 2.dwg
DATE TIME
9/21/2015 12:09 PM
LAYOUT J7
SCALE 1" = 50'
DESIGNED BY M. DUMAN
DRAWN BY R. MARTIN
CHECKED BY R. BERGER



See plan sheet Z3

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MO   8-23-17 Date

LEGEND

- - - -	EXISTING GROUND
▬▬	FINISHED GROUND
——	ALIGNMENT CENTERLINE

Michael L. Duman No. 13756 — 2-22-2016

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

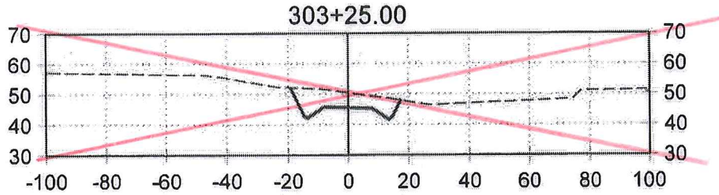
SITE 3 CROSS SECTIONS 300+00 - 303+00

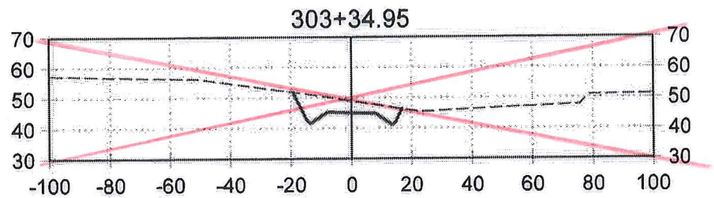
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Cross Sections_Site 3.dwg
TAB: J8   Wednesday, February 17, 2016 11:54:01 AM   Ryan Berger

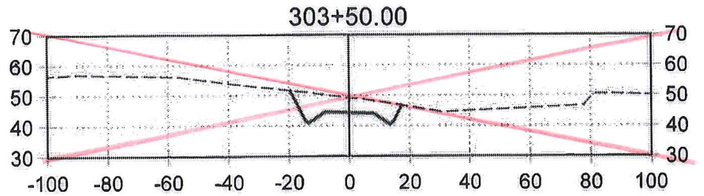
REVISIONS		
NO.	DATE	DESCRIPTION

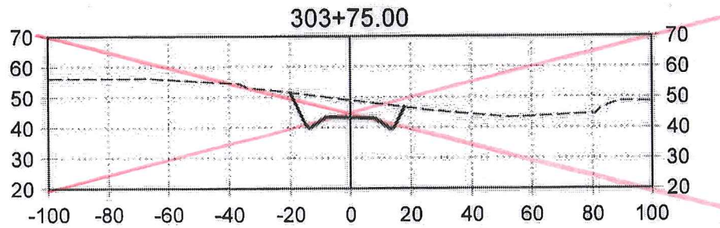
PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	J8	48

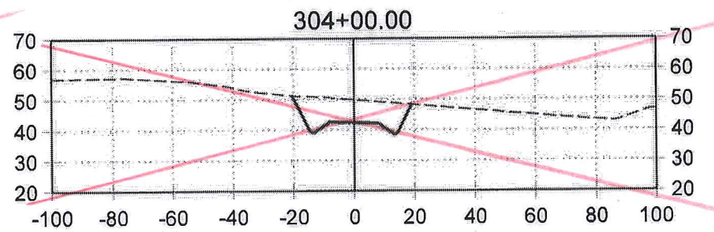
DRAWING LOCATION P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Cross Sections_Site 3.dwg | DATE TIME 2/9/2016 12:03 PM | LAYOUT J8 | SCALE 1" = 50'

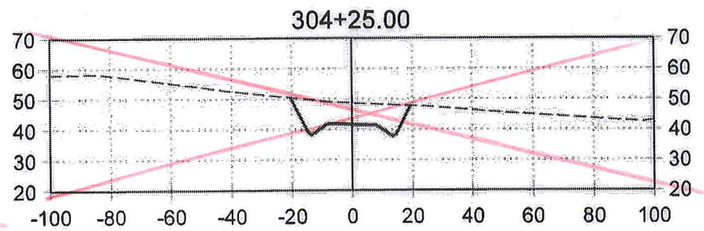


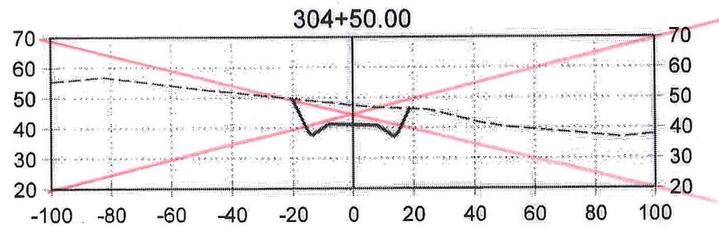


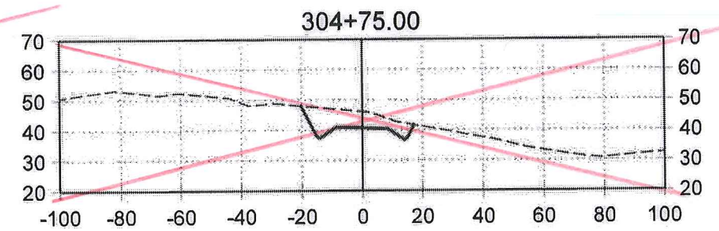


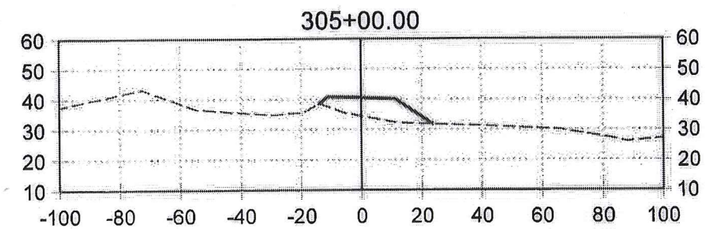


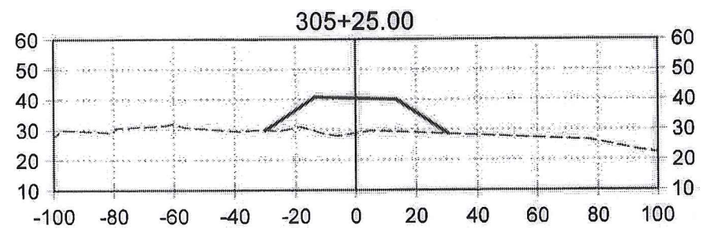


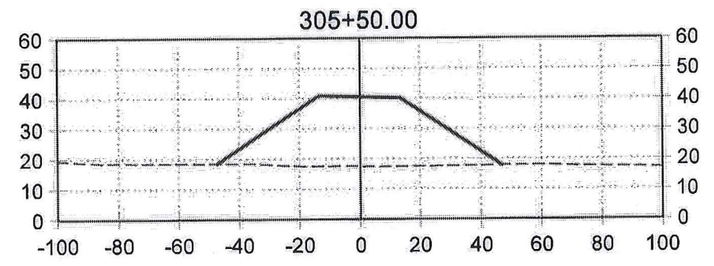


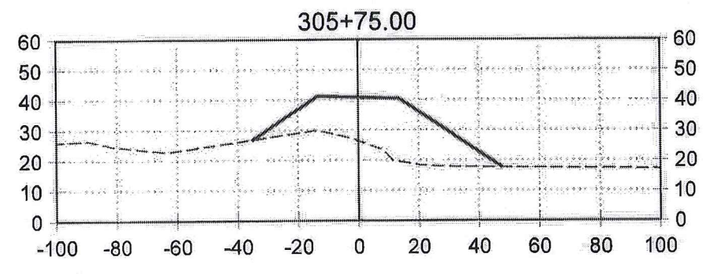












See Plan Sheet Z:3

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. WP 8.23.17 Date

LEGEND

- EXISTING GROUND
- FINISHED GROUND
- ALIGNMENT CENTERLINE

STATE OF ALASKA
Michael L. Duman
No. 13756
PROFESSIONAL ENGINEER
2-29-2016

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Cross Sections_Site 3.dwg
TAB: J9 Wednesday, February 17, 2016 11:54:03 AM Ryan Berger

REVISIONS		
NO.	DATE	DESCRIPTION

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

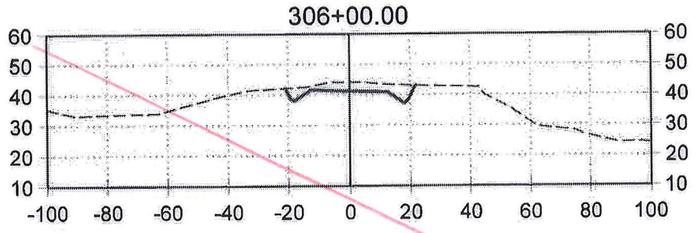
SITE 3 CROSS SECTIONS
303+25 - 305+75

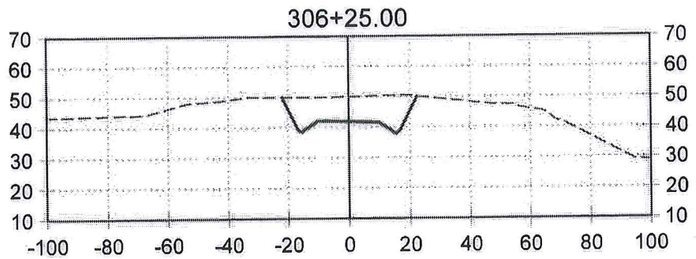
PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	J9	48

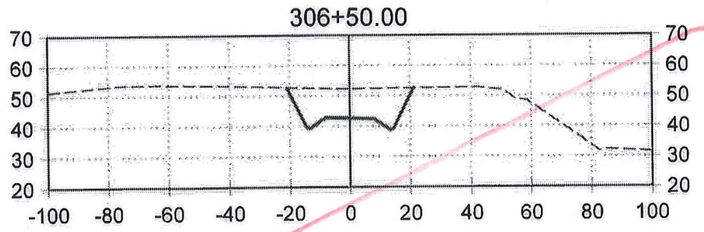
DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
CHECKED BY: M. MARTIN
APPROVED BY: R. BERGER

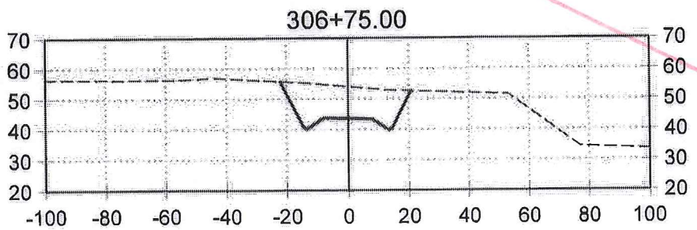
DATE TIME 2/29/2016 12:03 PM
LAYOUT J9
SCALE 1" = 50'

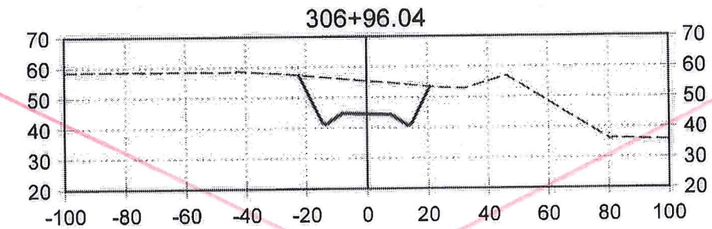
DRAWING LOCATION
P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Cross Sections_Site 3.dwg

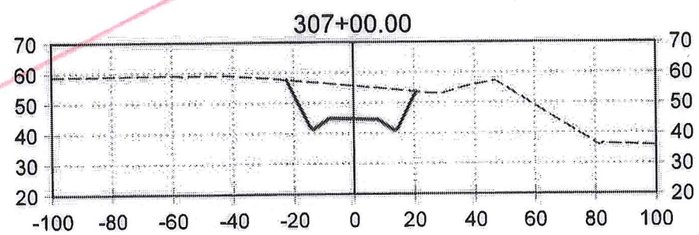


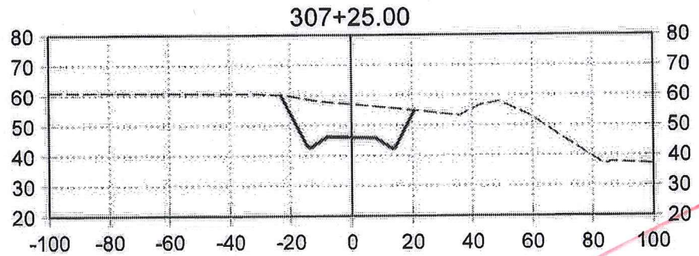


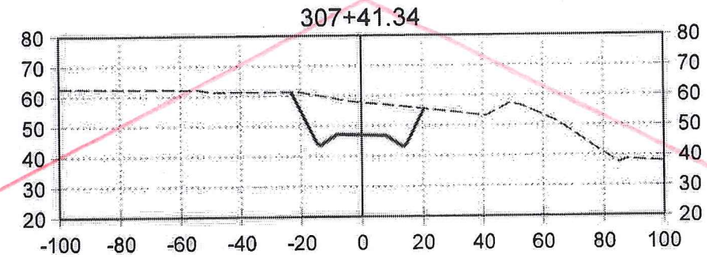


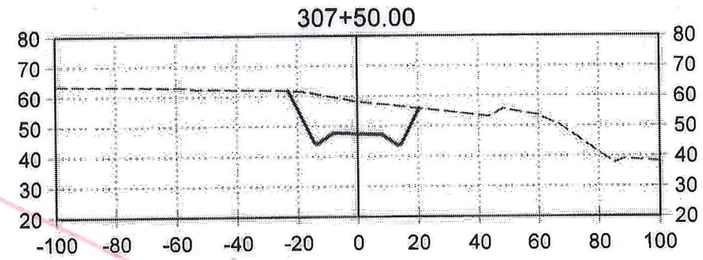


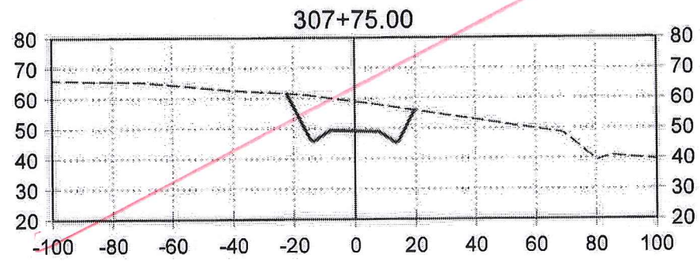


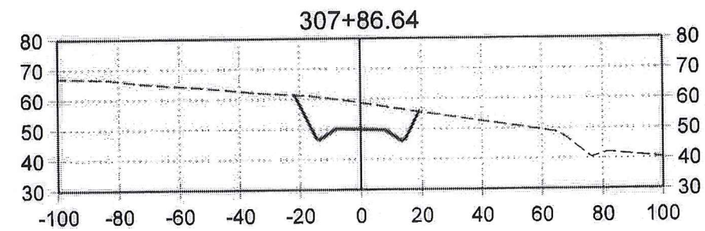


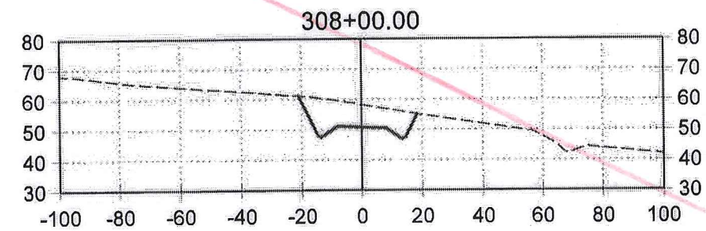












See Plan Sheet Z:4

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8.23.17 Date

LEGEND

- EXISTING GROUND
- FINISHED GROUND
- ALIGNMENT CENTERLINE

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

SITE 3 CROSS SECTIONS
306+00 - 308+00

Michael L. Duman No. 13758 REGISTERED PROFESSIONAL ENGINEER
2-22-2016

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Cross Sections_Site 3.dwg
TAB: J10 Wednesday, February 17, 2016 11:54:05 AM Ryan Berger

REVISIONS NO.	DATE	DESCRIPTION

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	J10	48

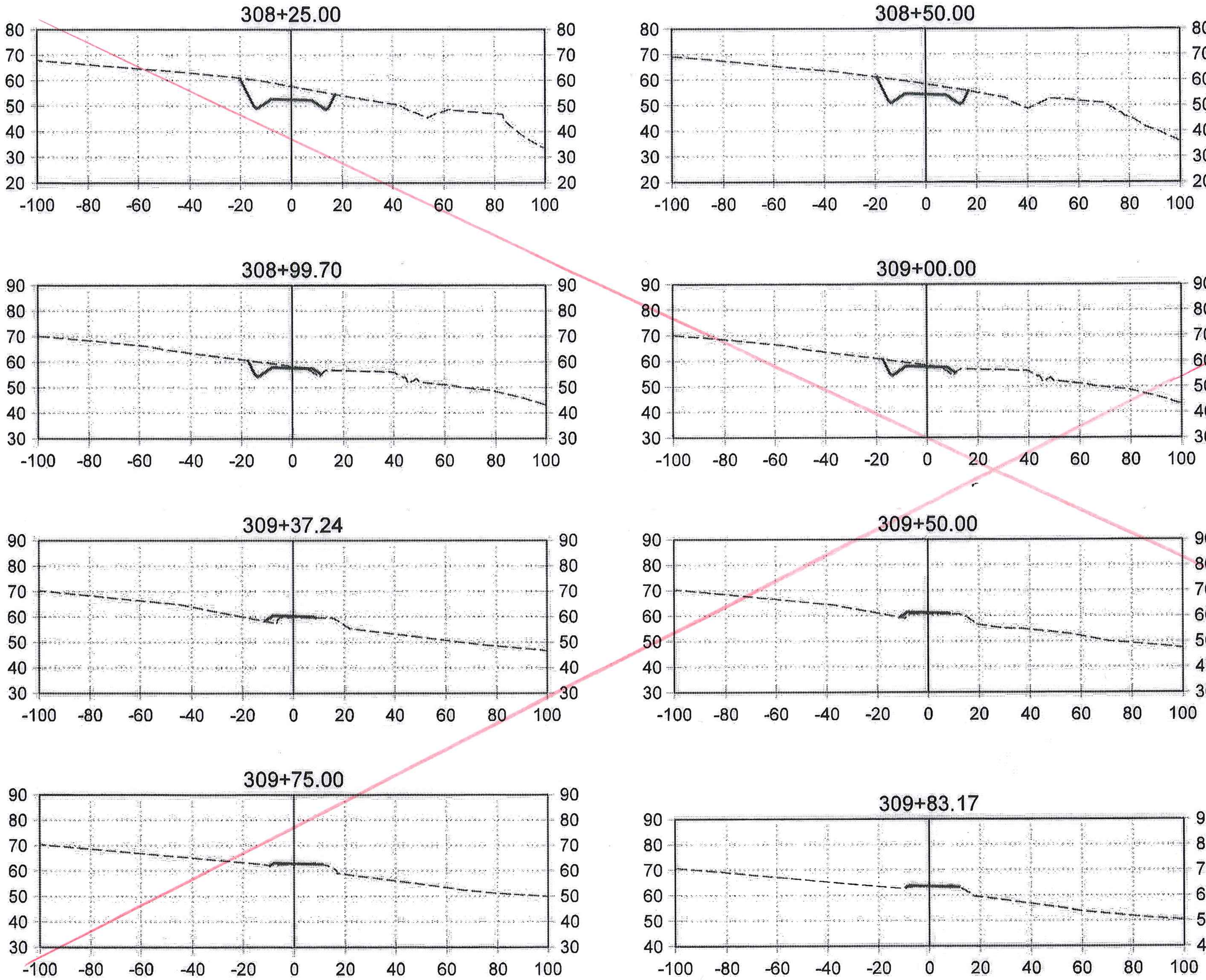
DRAWING LOCATION
P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Cross Sections_Site 3.dwg

DESIGNED BY M. DUMAN
DRAWN BY R. BERGER
CHECKED BY M. DUMAN
APPROVED BY R. BERGER

SCALE 1" = 50'

LAYOUT J10

DATE TIME 2/17/2016 12:03 PM



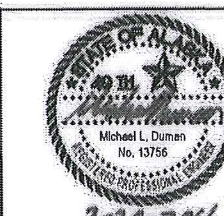
See Plan Sheet Z:4

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8.23.17 Date

LEGEND

- - - -	EXISTING GROUND
———	FINISHED GROUND
———	ALIGNMENT CENTERLINE



DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

SITE 3 CROSS SECTIONS 308+25 - 309+86

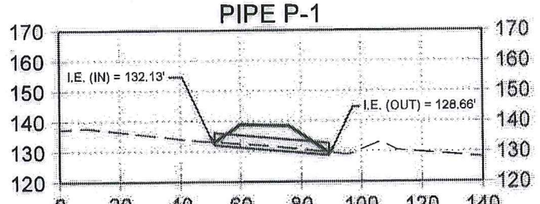
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Cross Sections_Site 3.dwg
TAB: J11 Wednesday, February 17, 2016 11:54:07 AM Ryan Berger

REVISIONS			PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
NO.	DATE	DESCRIPTION	Z699220000	2016	J11	48

DRAWING LOCATION P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Cross Sections_Site 3.dwg | DATE TIME 2/9/2016 12:03 PM | LAYOUT J11 | SCALE 1" = 50' | XREFS: | DESIGNED BY M. DUMAN | CHECKED BY | DRAFTED BY R. BERGER

HYDROLOGIC & HYDRAULIC SUMMARY (SITE 1) ADDITIVE ALTERNATE "A"		
DRAINAGE AREA	0.044 SQUARE MILES	
EXCEEDANCE PROBABILITY	2%	1%
RETURN PERIOD	50-YEAR (Q50)	100-YEAR (Q100)
DESIGN DISCHARGE	52 CFS	57 CFS
DESIGN HIGH WATER ELEVATION	132.84 FT	132.91 FT
ANTICIPATED ADDITIONAL BACKWATER =	0.0 FT	

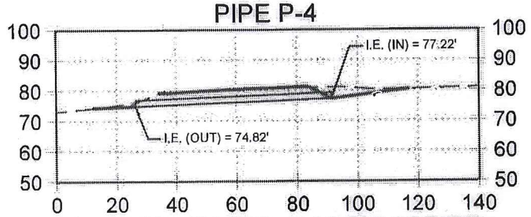
(SITE 1) STA. "B" 107+59.00
PIPE P-1



48" CORRUGATED ALUMINUM PIPE

ADDITIVE ALTERNATE "A"

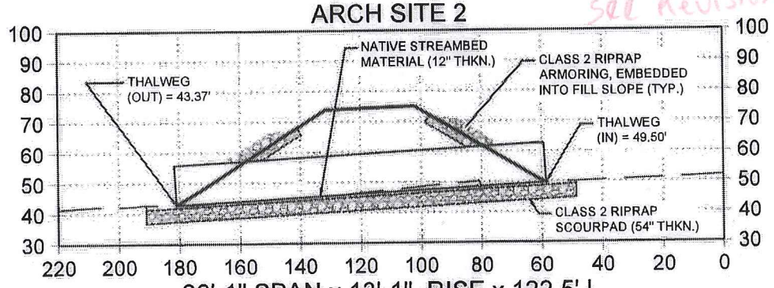
(SITE 2) STA. "FR" 0+22.73
PIPE P-4



24" CORRUGATED ALUMINUM PIPE

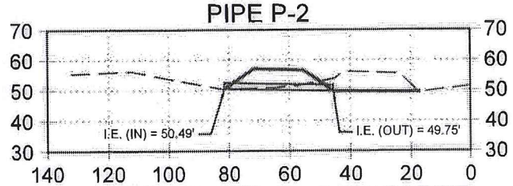
(SITE 2) STA. "C" 203+79.62
ARCH SITE 2

See Revision Sheet FR



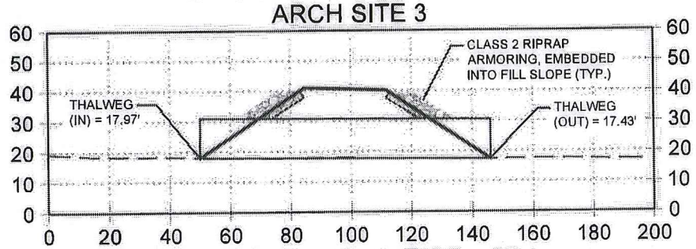
26'-1" SPAN x 13'-1" RISE x 122.5' L
STRUCTURAL PLATE ARCH

(SITE 3) STA. "D" 301+50.00
PIPE P-2



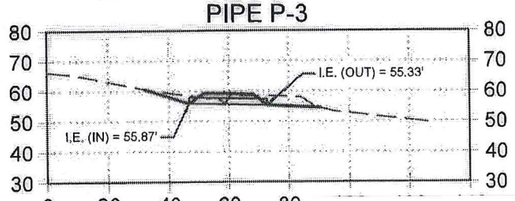
24" CORRUGATED ALUMINUM PIPE

(SITE 3) STA. "D" 305+58.68
ARCH SITE 3



26'-1" SPAN x 13'-1" RISE x 96' L
STRUCTURAL PLATE ARCH

(SITE 3) STA. "D" 309+20.10
PIPE P-3



24" CORRUGATED AL

HYDROLOGIC & HYDRAULIC SUMMARY (ARCH SITE 2)		
DRAINAGE AREA	0.87 SQUARE MILES	
EXCEEDANCE PROBABILITY	2%	1%
RETURN PERIOD	50-YEAR (Q50)	100-YEAR (Q100)
DESIGN DISCHARGE	618 CFS	677 CFS
DESIGN HIGH WATER ELEVATION	49.21 FT	50.67 FT
ANTICIPATED ADDITIONAL BACKWATER =	0.0 FT	

HYDROLOGIC & HYDRAULIC SUMMARY (ARCH SITE 3)		
DRAINAGE AREA	2.57 SQUARE MILES	
EXCEEDANCE PROBABILITY	2%	1%
RETURN PERIOD	50-YEAR (Q50)	100-YEAR (Q100)
DESIGN DISCHARGE	1510 CFS	1653 CFS
DESIGN HIGH WATER ELEVATION	21.83 FT	22.96 FT
ANTICIPATED ADDITIONAL BACKWATER =	0.0 FT	

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8.23.17 Date

LEGEND

- EXISTING GROUND
- FINISHED GROUND
- ALIGNMENT CENTERLINE

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

PIPE PROFILES

STATE OF ALASKA — Michael L. Duman No. 13758 — REGISTERED PROFESSIONAL ENGINEER — 2-22-2016

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Cross Sections_Site 3.dwg
TAB: J12 Wednesday, February 17, 2016 11:54:10 AM Ryan Berger

REVISIONS		
NO.	DATE	DESCRIPTION

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	J12	48

DESIGNED BY M. DUMAN
DRAWN BY R. BERGER
CHECKED BY E. MARTIN
QUALITY BY R. BERGER

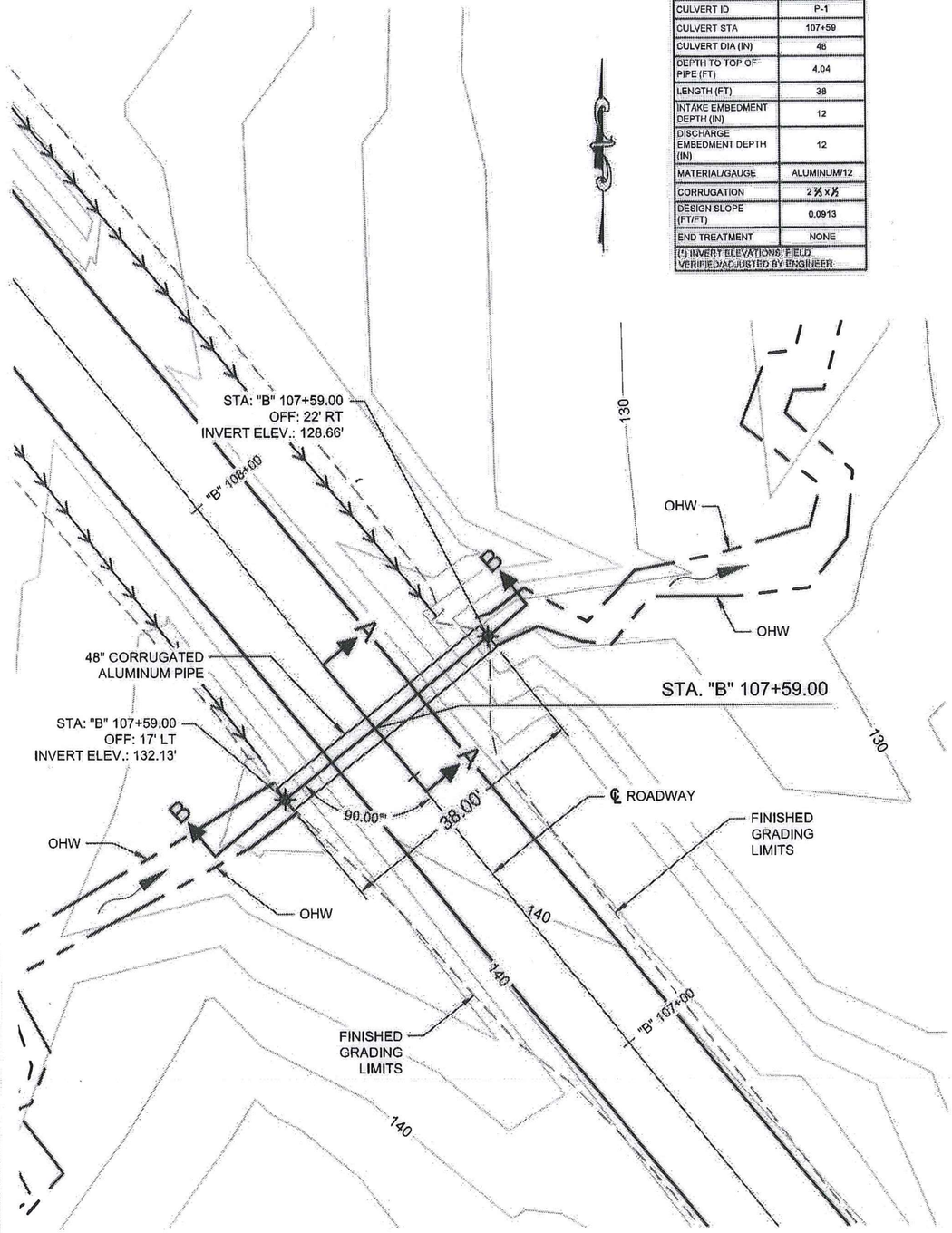
SCALE 1" = 50'

LAYOUT J12

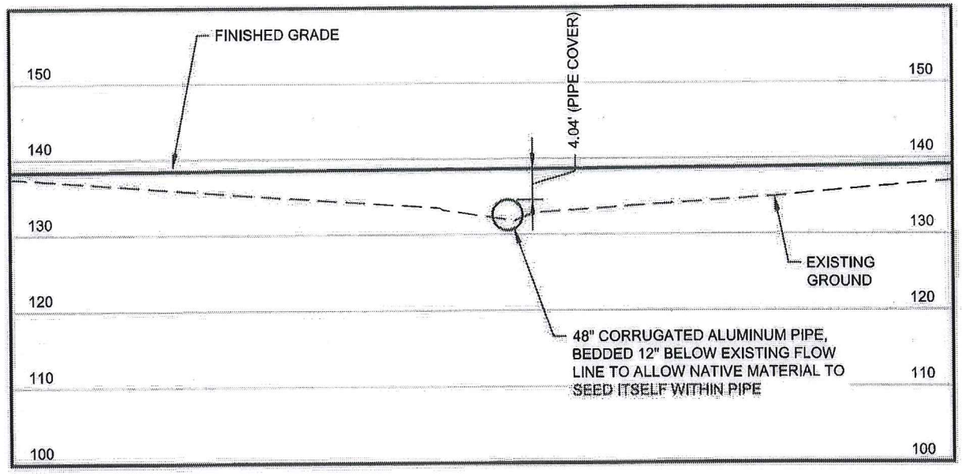
DATE TIME 2/9/2016 12:03 PM

DRAWING LOCATION P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Cross Sections_Site 3.dwg

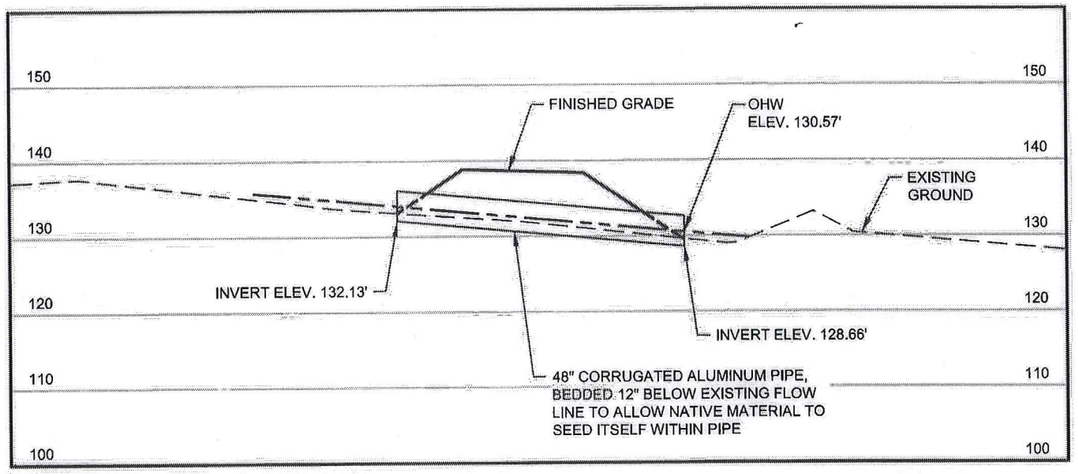
CULVERT DATA	
CULVERT ID	P-1
CULVERT STA	107+59
CULVERT DIA (IN)	48
DEPTH TO TOP OF PIPE (FT)	4.04
LENGTH (FT)	38
INTAKE EMBEDMENT DEPTH (IN)	12
DISCHARGE EMBEDMENT DEPTH (IN)	12
MATERIAL/GAUGE	ALUMINUM/12
CORRUGATION	2⅔ x ½
DESIGN SLOPE (FT/FT)	0.0913
END TREATMENT	NONE
(*) INVERT ELEVATIONS, FIELD VERIFIED/ADJUSTED BY ENGINEER.	



PLAN
SCALE IN FEET
0 10 20



SECTION A-A
SCALE IN FEET
0 10 20



SECTION B-B
SCALE IN FEET
0 10 20

NOTES:

1. FOR PIPE TRENCH DETAIL, SEE SHEET E1.

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8-23-17 Date

STATE OF ALASKA
Michael L. Duman
No. 13756
REGISTERED PROFESSIONAL ENGINEER
2-22-2016

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Grevina)\Design\Plans\53-02 J13_Pipe P&P.dwg
TAB: J13 Wednesday, February 17, 2016 11:54:12 AM Ryan Berger

REVISIONS		
NO.	DATE	DESCRIPTION

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

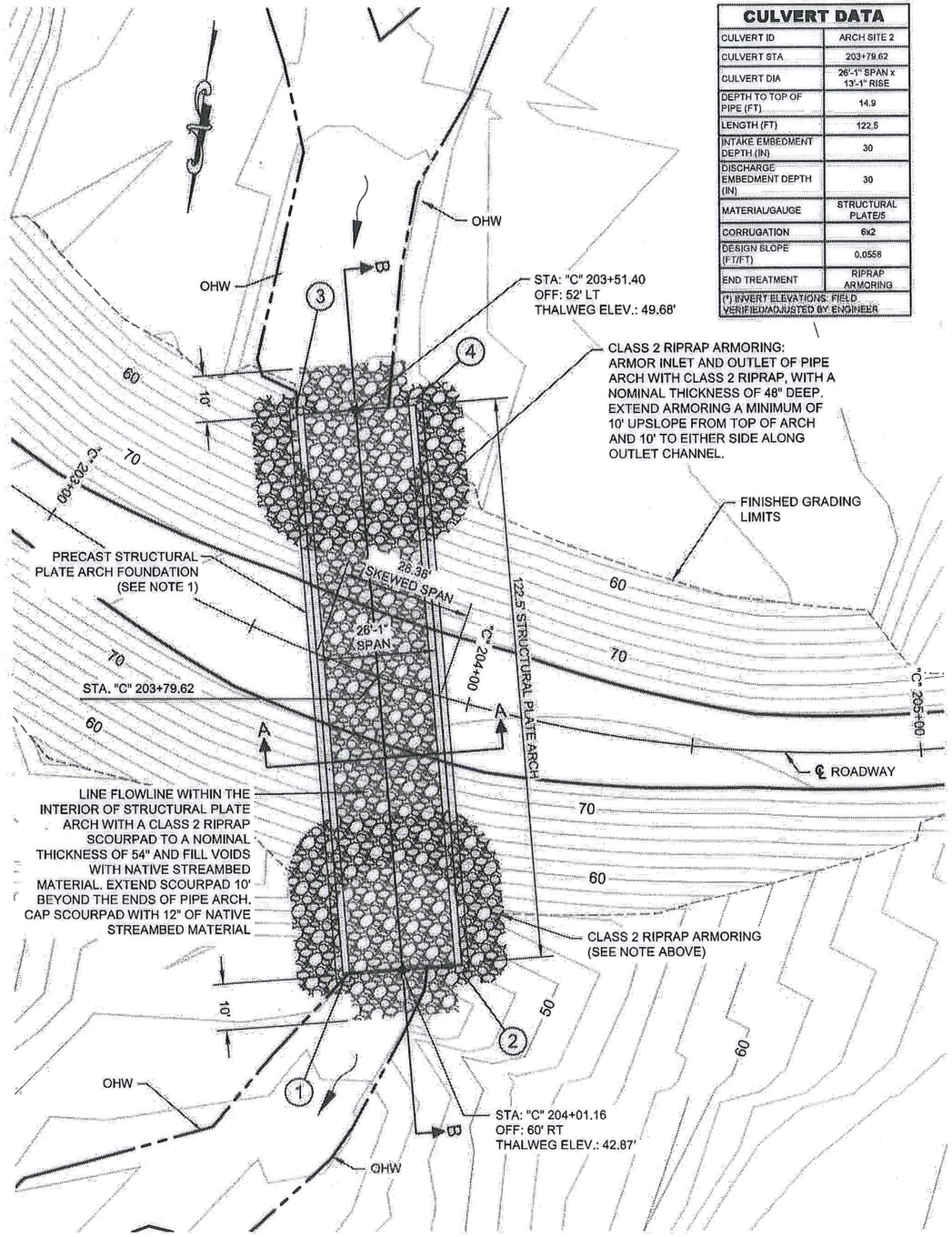
ADDITIVE ALTERNATE A
PIPE PLAN & PROFILE

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	J13	48

DESIGNED BY M. DUMAN
CHECKED BY R. MARTIN
DRAFTED BY R. BERGER

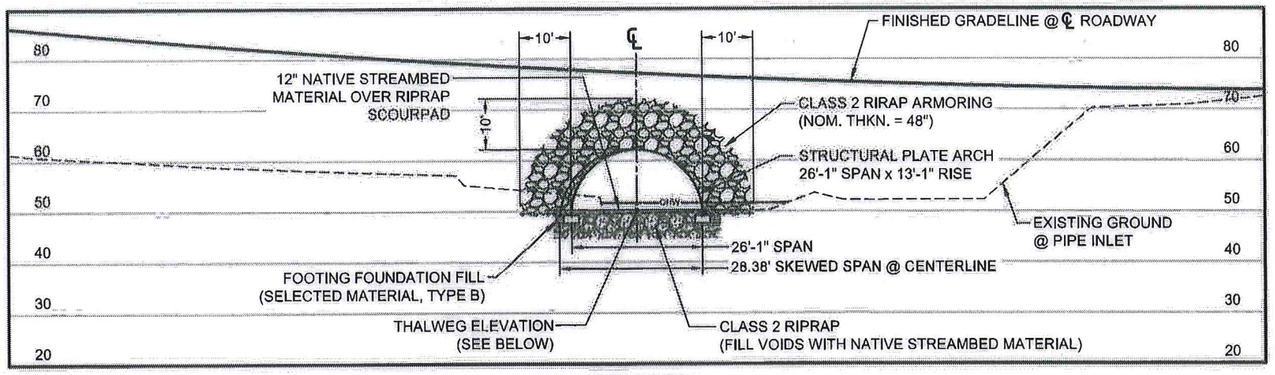
USER:
SCALE: 1" = 20'
LAYOUT: J13
DATE, TIME: 2/9/2016 12:03 PM

DRAWING LOCATION:
P:\53(ADOT)\53-02(Grevina)\Design\Plans\53-02 J13_Pipe P&P.dwg

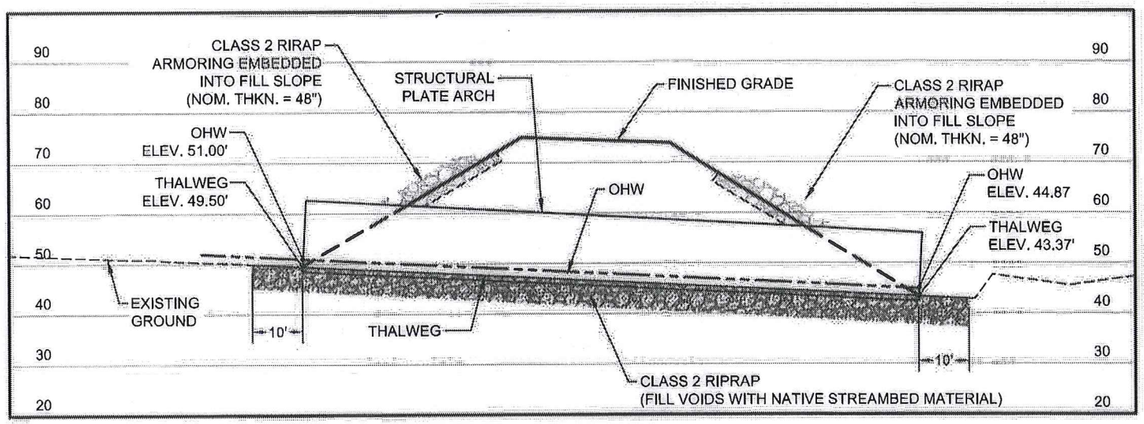


PLAN
SCALE IN FEET
0 15 30

CULVERT DATA	
CULVERT ID	ARCH SITE 2
CULVERT STA	203+79.62
CULVERT DIA	26'-1" SPAN x 13'-1" RISE
DEPTH TO TOP OF PIPE (FT)	14.9
LENGTH (FT)	122.5
INTAKE EMBEDMENT DEPTH (IN)	30
DISCHARGE EMBEDMENT DEPTH (IN)	30
MATERIAL/GAUGE	STRUCTURAL PLATE/5
CORRUGATION	6x2
DESIGN SLOPE (FT/FT)	0.0558
END TREATMENT	RIPRAP ARMORING
(*) INVERT ELEVATIONS. FIELD VERIFIED/ADJUSTED BY ENGINEER	



ELEVATION
SCALE IN FEET
0 15 30



SECTION B-B
SCALE IN FEET
0 15 30

See Revision Sheet F2

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8.24.17 Date

NOTES:

1. FOR PRECAST STRUCTURAL PLATE ARCH FOUNDATION DETAIL, SEE SHEET N3.
2. FOR SECTION A-A, SEE SHEET N3.

FOOTING ELEVATIONS (BOTTOM)	
CORNER	ELEVATION (FT)
1	40.87
2	40.87
3	47.00
4	47.00

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

STRUCTURES SITE 2

Michael L. Duman No. 13756 — 2-23-2016

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
CHECKED BY: S. MARTIN
UPDATED BY: R. BERGER

PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 N1_Structures Site 2.dwg
TAB: N1
Wednesday, February 17, 2016 11:55:54 AM Ryan Berger

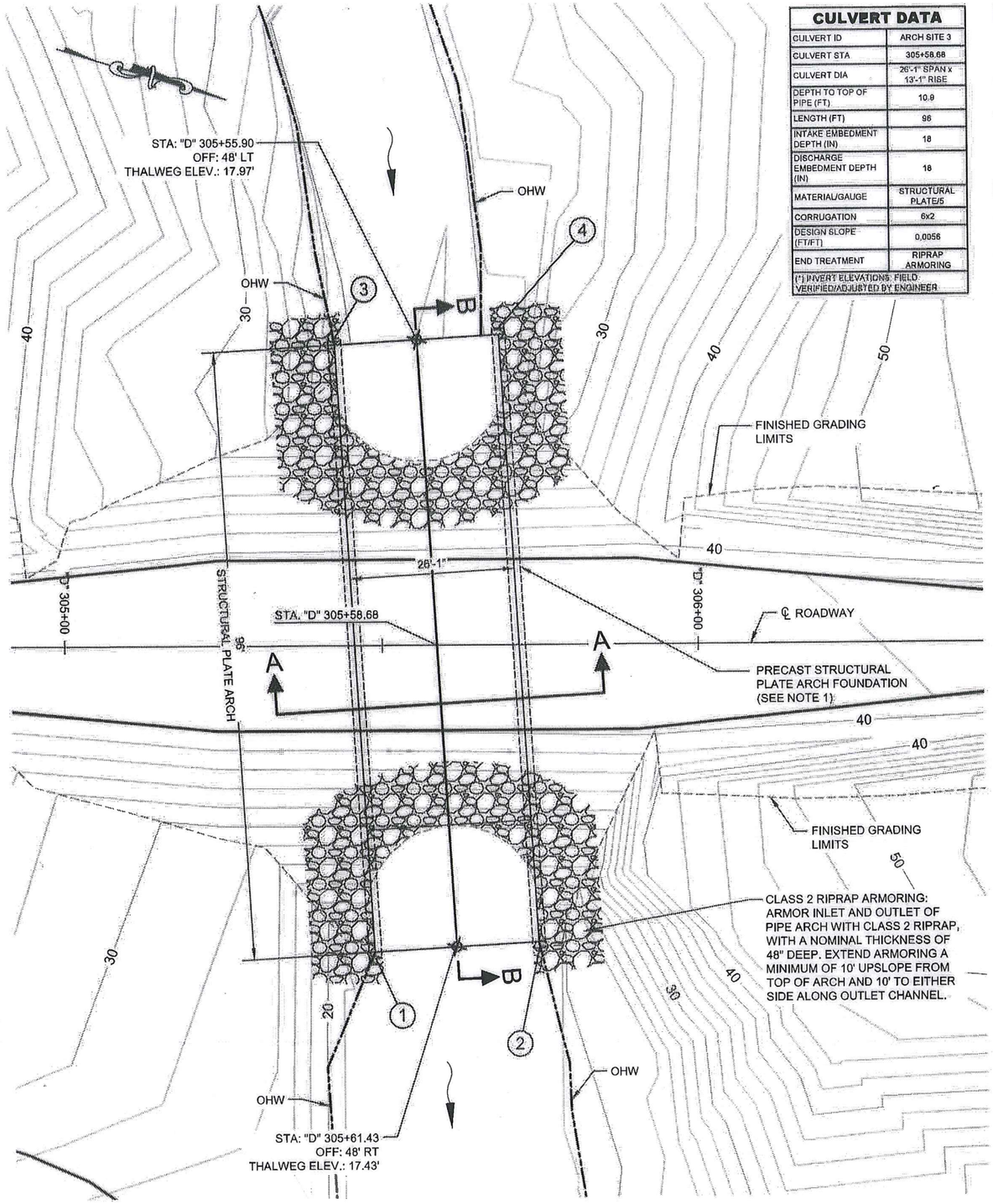
REVISIONS		
NO.	DATE	DESCRIPTION

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	N1	48

DRAWING LOCATION: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 N1_Structures Site 2.dwg
DATE: 2/9/2016 TIME: 12:04 PM
LAYOUT: N1 SCALE: 1" = 30"
USERS:

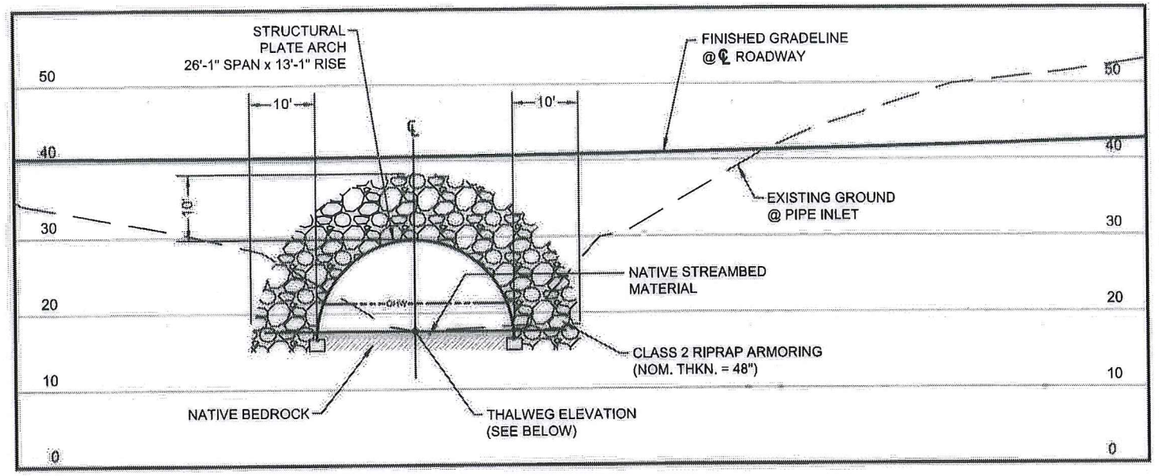
CULVERT DATA	
CULVERT ID	ARCH SITE 3
CULVERT STA	305+58.68
CULVERT DIA	26'-1" SPAN x 13'-1" RISE
DEPTH TO TOP OF PIPE (FT)	10.9
LENGTH (FT)	96
INTAKE EMBEDMENT DEPTH (IN)	18
DISCHARGE EMBEDMENT DEPTH (IN)	18
MATERIAL/GAUGE	STRUCTURAL PLATE/5
CORRUGATION	6x2
DESIGN SLOPE (FT/FT)	0.0056
END TREATMENT	RIPRAP ARMORING

(*) INVERT ELEVATIONS: FIELD VERIFIED/ADJUSTED BY ENGINEER



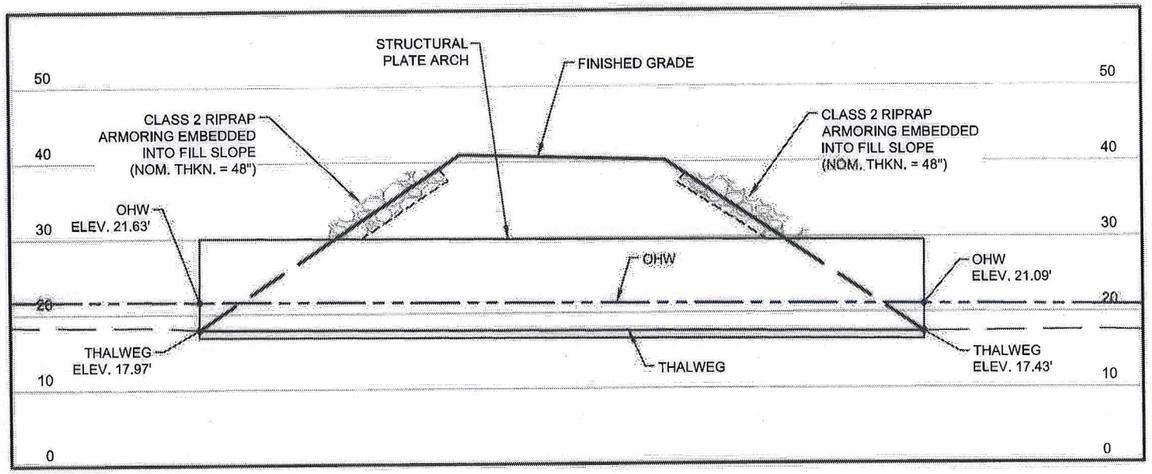
PLAN

SCALE IN FEET 0 10 20



ELEVATION

SCALE IN FEET 0 10 20



SECTION B-B

SCALE IN FEET 0 10 20

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8.28.17 Date

NOTES:

1. FOR PRECAST STRUCTURAL PLATE ARCH FOUNDATION DETAIL, SEE SHEET N3.
2. FOR SECTION A-A, SEE SHEET N3.

FOOTING ELEVATIONS (BOTTOM)	
CORNER	ELEVATION (FT)
1	14.93
2	14.93
3	15.47
4	15.47

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

STRUCTURES SITE 3

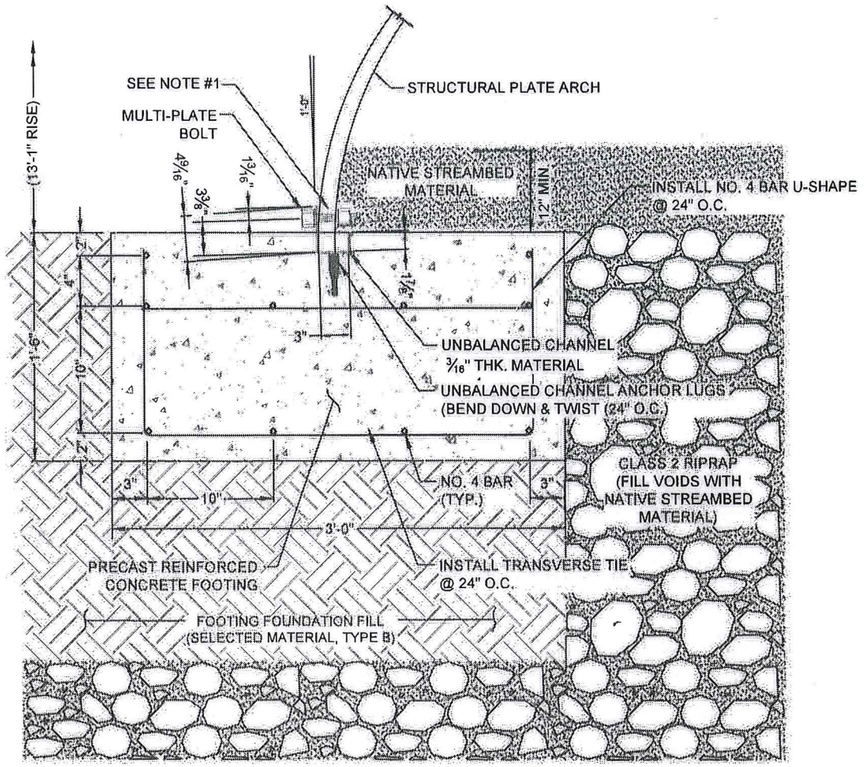
Michael L. Duman No. 13755 REGISTERED PROFESSIONAL ENGINEER 2-22-2016

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 N2_Structures Site 3.dwg
TAB: N2 Wednesday, February 17, 2016 11:55:59 AM Ryan Berger

REVISIONS		
NO.	DATE	DESCRIPTION

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	N2	48

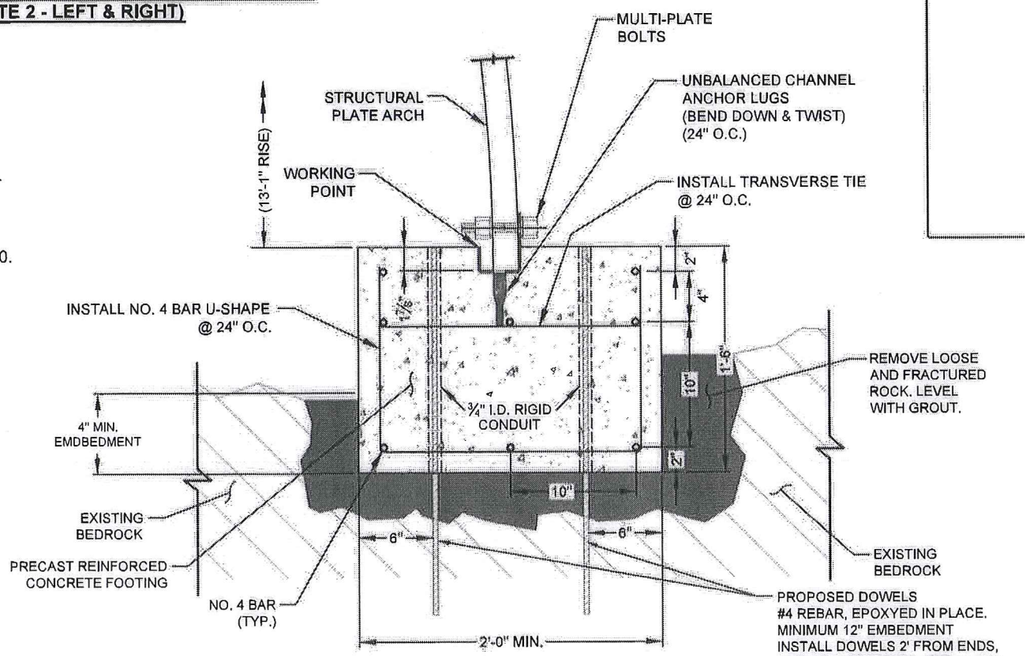
DRAWING LOCATION: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 N2_Structures Site 3.dwg
DATE TIME: 2/22/2016 11:54 PM
LAYOUT: N2
SCALE: 1" = 20'
DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
CHECKED BY:



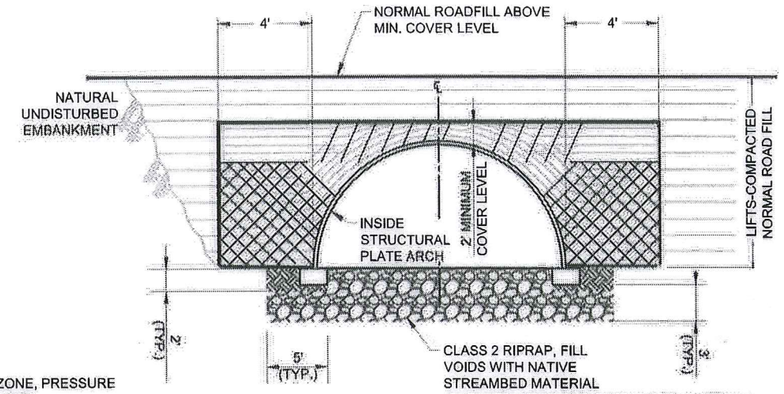
PRECAST STRUCTURAL PLATE ARCH FOUNDATION
(SITE 2 - LEFT & RIGHT)

GENERAL NOTES:

1. PROVIDE CLASS A CONCRETE FOR ALL PRECAST FOUNDATIONS SECTIONS.
2. PROVIDE ALL REINFORCING STEEL ACCORDING TO AASHTO M31 GRADE 60.
3. SHORT BOLT CONNECTION TO THE UNBALANCED CHANNEL SHOWN. OPPOSITE SIDE OF STRUCTURE REQUIRES 3" LONG BOLTS.
4. LENGTH OF PRECAST SECTION DETERMINED PURSUANT TO MANUFACTURER'S SPECIFICATIONS.



PRECAST STRUCTURAL PLATE ARCH FOUNDATION
(SITE 3 - LEFT & RIGHT)

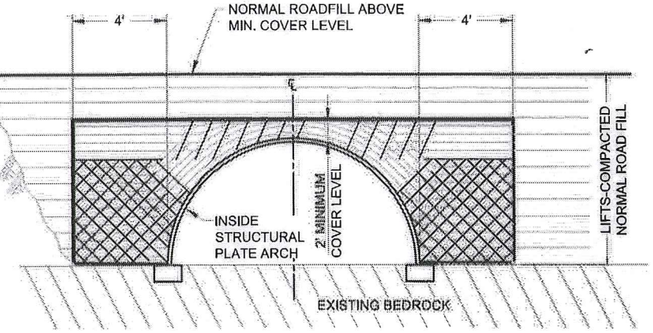


CRITICAL BACKFILL ZONE, PRESSURE ON SOIL GREATEST HERE

INITIAL LIFTS OVER CROWN OF STRUCTURE AS INDICATED BY SHADED AREA TO BE COMPACTED TO REQUIRED DENSITY WITH HAND OPERATED EQUIPMENT OR WITH SMALL TRACTOR (D-4 OR SMALLER) DRAWN EQUIPMENT

SELECT MATERIAL, TYPE B, LIMITS

SECTION A-A
STRUCTURAL PLATE ARCH
(SITE 2)
NOT TO SCALE



SECTION A-A
STRUCTURAL PLATE ARCH
(SITE 3)
NOT TO SCALE

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8.23.17 Date

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

STRUCTURES DETAILS

Michael L. Duman No. 13756 — 2-22-2016

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER

PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 N1_Structures Site 2.dwg
TAB: N3 Wednesday, February 17, 2016 11:56:01 AM Ryan Berger

REVISIONS NO.	DATE	DESCRIPTION	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			Z699220000	2016	N3	48

DESIGNED BY M. DUMAN
DRAWN BY R. BERGER
CHECKED BY R. MARTIN
QA/QC BY R. BERGER

SCALE ########
LAYOUT N3
DATE/TIME 2/18/2016 12:04 PM

DRAWING LOCATION
P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 N1_Structures Site 2.dwg

GENERAL NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE TO IMPLEMENT ALL NECESSARY EROSION CONTROL MEASURES.
2. THE ESCP SHEETS ARE NOT A COMPREHENSIVE REPRESENTATION OF ALL BMPs REQUIRED TO MAINTAIN COMPLIANCE WITH THE CONSTRUCTION GENERAL PERMIT (CGP). BMPs SHOWN ON THE ESCP SHEETS ARE ONLY A STARTING POINT FOR THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING ANY ADDITIONAL BMPs TO ACCOUNT FOR THEIR PHASING AND METHODS OF CONDUCTING THE WORK AND SHOULD BID THE 641 PAY ITEMS ACCORDINGLY.
3. PHASE CLEARING AND GRADING TO THE MAXIMUM EXTENT POSSIBLE TO PREVENT EXPOSED INACTIVE AREAS FROM BECOMING A SOURCE OF EROSION.
4. NO CONSTRUCTION AREA SHALL BE EXPOSED LONGER THAN 7 DAYS, UNLESS THE AREA IS ACTIVELY BEING WORKED.
5. IDENTIFY, MARK AND PROTECT CRITICAL RIPARIAN AREAS AND VEGETATION INCLUDING IMPORTANT TREES AND ASSOCIATED ROOTING ZONES AND VEGETATION AREAS TO BE PRESERVED. IDENTIFY VEGETATIVE BUFFER ZONES BETWEEN SITE AND SENSITIVE AREAS, ESPECIALLY IN PERIMETER AREAS.
6. PRESERVE EXISTING VEGETATION WHEN PRACTICAL AND RE-VEGETATE ABANDONED ROAD SECTIONS WHERE ROCK SURFACING IS REMOVED & REUSED IN THE NEW ALIGNMENT. SEE SECTION 208-3.01 OF THE SPECIAL PROVISIONS.
7. EROSION AND SEDIMENT CONTROL MEASURES, INCLUDING PERIMETER SEDIMENT CONTROL, SHALL BE IN PLACE PRIOR TO CONSTRUCTION.
8. CONTRACTOR SHALL ESTABLISH MATERIAL AND WASTE STORAGE AREAS. WASTE DISPOSAL AREAS MUST BE PERMANENTLY STABILIZED. PROTECT WITH PERIMETER CONTROL UNTIL PERMANENTLY STABILIZED.
9. PREVENT TRACKING OF SEDIMENT ONTO PUBLIC OR PRIVATE ROADWAYS.
10. CONSTRUCTION ACTIVITIES MUST MINIMIZE EXCAVATION AND CREATION OF BARE GROUND DURING WET WEATHER.
11. IN AREAS WHERE A SEDIMENT BARRIER CANNOT BE USED (ROCK HEAVY SOILS) CONTRACTOR SHALL USE AN APPROVED ALTERNATIVE BMP.
12. INTENTIONAL WASHING OF SEDIMENT OR OTHER CONSTRUCTION MATERIAL INTO DRAINAGE WAYS IS PROHIBITED.
13. PROVIDE PERMANENT EROSION CONTROL MEASURES ON ALL EXPOSED AREAS. DO NOT REMOVE TEMPORARY EROSION CONTROL MEASURES UNTIL PERMANENT VEGETATION OR OTHER COVER OF EXPOSED AREAS IS ESTABLISHED.
14. CONTRACTOR SHALL PROPERLY DISPOSE OF TEMPORARY EROSION CONTROL MEASURES AND DEVICES. STRAW WATTLES MUST BE REMOVED OR SCATTERED.
15. THE PROJECT LIMITS ARE SURROUNDED BY NATURAL VEGETATION WHICH SERVES AS A VEGETATIVE BUFFER STRIP.

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8.23.17 Date

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

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\SE(ADOT)\SE-GR(Gravina)\Design\Plans\SE-GR EROSION CONTROL.dwg
TAB: P1 Wednesday, February 17, 2016 11:57:50 AM Ryan Berger

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

EROSION CONTROL NOTES

REVISIONS		
NO.	DATE	DESCRIPTION

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	P-1	48

DESIGNED BY M. DUMAN
DRAWN BY R. BERGER
CHECKED BY S. MARTIN
QA/QC BY R. BERGER

DATE	TIME	LAYOUT	SCALE
2/16/2016	12:06 PM	P1	NO SCALE

DRAWING LOCATION
P:\SE(ADOT)\SE-GR(Gravina)\Design\Plans\SE-GR EROSION CONTROL.dwg

ADDITIVE ALTERNATE A "B" LINE PLAN

0' 100' 200'
SCALE IN FEET

"A" LINE
"B" LINE
BEGIN SITE 1 STA: "B" 100+00.00
END SITE 1 STA: "B" 110+10.00
END FULL DEPTH CONSTRUCTION BEGIN RESURFACING STA: "B" 102+15.00
BEGIN FULL DEPTH CONSTRUCTION END RESURFACING STA: "B" 106+40.00
GRADING LIMITS
SPACING = 40'± COUNT = 5
SPACING = 40'± COUNT = 6
SPACING = 40'± COUNT = 1
SPACING = 40'± COUNT = 6
"A" 1055+00
"A" 1060+00
"A" 1065+00
"B" 101+00
"B" 102+00
"B" 103+00
"B" 104+00
"B" 105+00
"B" 106+00
"B" 107+00
"B" 108+00
"B" 109+00
"B" 110+00
200
190
180
170
160
150
140
130
110

CONSTRUCTION NOTES

1. CONSTRUCT SEDIMENT BARRIER. (AKDOT&PF E-13.00) (QUANTITY: 755')
2. CONSTRUCT ROCK CHECK DAM ALONG DITCH LINE (QUANTITY: 18)
3. CONSTRUCT PUMP BYPASS IMPOUNDMENT. REMOVE FISH PRIOR TO COMMENCEMENT OF PUMPING. (SEE DETAIL, SHT. P5)
4. INSTALL SEDIMENT OUTFALL BAG TO BE USED ON ALL PUMP BYPASS.

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8.23.17 Date

LEGEND

- WASTE DISPOSAL AREA FOR ORGANICS (STABILIZE WITH SEEDING & BONDED FIBER MATRIX)
- AGGREGATE CHECK DAM
- FILL
- CUT
- SEDIMENT BARRIER
- DITCH LINE

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

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

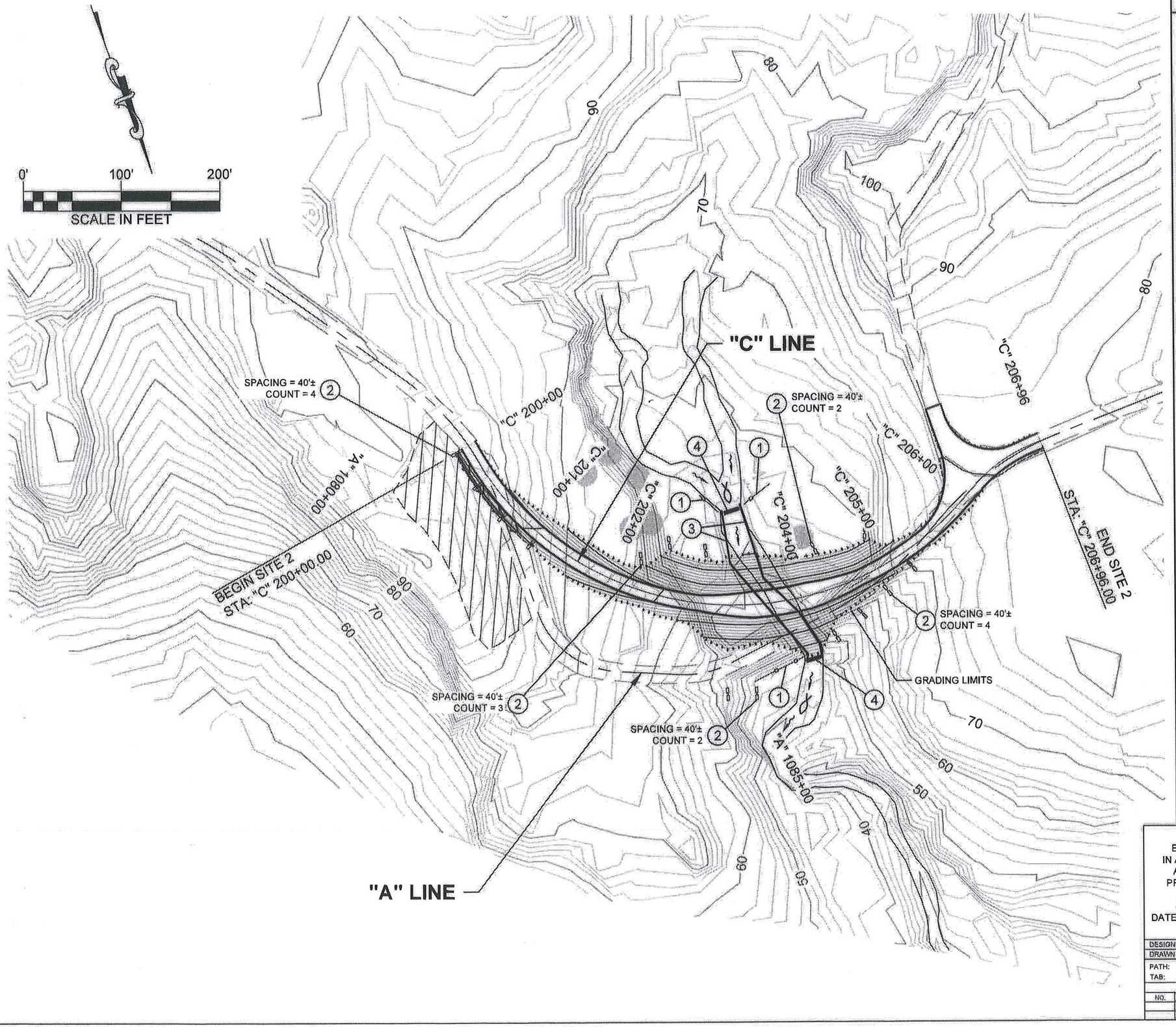
ADDITIVE ALTERNATE A EROSION CONTROL SITE 1

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 EROSION CONTROL.dwg
TAB: P2
Wednesday, February 17, 2016 11:57:40 AM Ryan Berger

REVISIONS NO.	DATE	DESCRIPTION

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	P2	48

DESIGNED BY M. DUMAN
DRAWN BY R. BERGER
CHECKED BY
DRAWING LOCATION P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 EROSION CONTROL.dwg
SCALE 1" = 100'
LAYOUT P2
TIME 12:06 PM
DATE 2/9/2016



CONSTRUCTION NOTES

1. CONSTRUCT SEDIMENT BARRIER (AKDOT&PF E-13.00)
   (QUANTITY: 542')
2. CONSTRUCT ROCK CHECK DAM ALONG DITCH LINE
   (QUANTITY: 15)
3. INSTALL TURBIDITY CURTAIN
   (QUANTITY: 360')
   REMOVE FISH AFTER INSTALLATION
4. INSTALL PUMP BYPASS & SANDBAG BARRIER
   REFERENCE DETAILS, SHEET P5.

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. [signature] 8.23.17 Date

LEGEND

- WASTE DISPOSAL AREA FOR ORGANICS (STABILIZE WITH SEEDING & BONDED FIBER MATRIX)
- AGGREGATE CHECK DAM
- FILL
- CUT
- SEDIMENT BARRIER
- DITCH LINE

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

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

EROSION CONTROL SITE 2

PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 EROSION CONTROL.dwg
TAB: P3 Wednesday, February 17, 2016 11:57:43 AM Ryan Berger

REVISIONS		
NO.	DATE	DESCRIPTION

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	P3	48

DRAWING LOCATION
P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 EROSION CONTROL.dwg

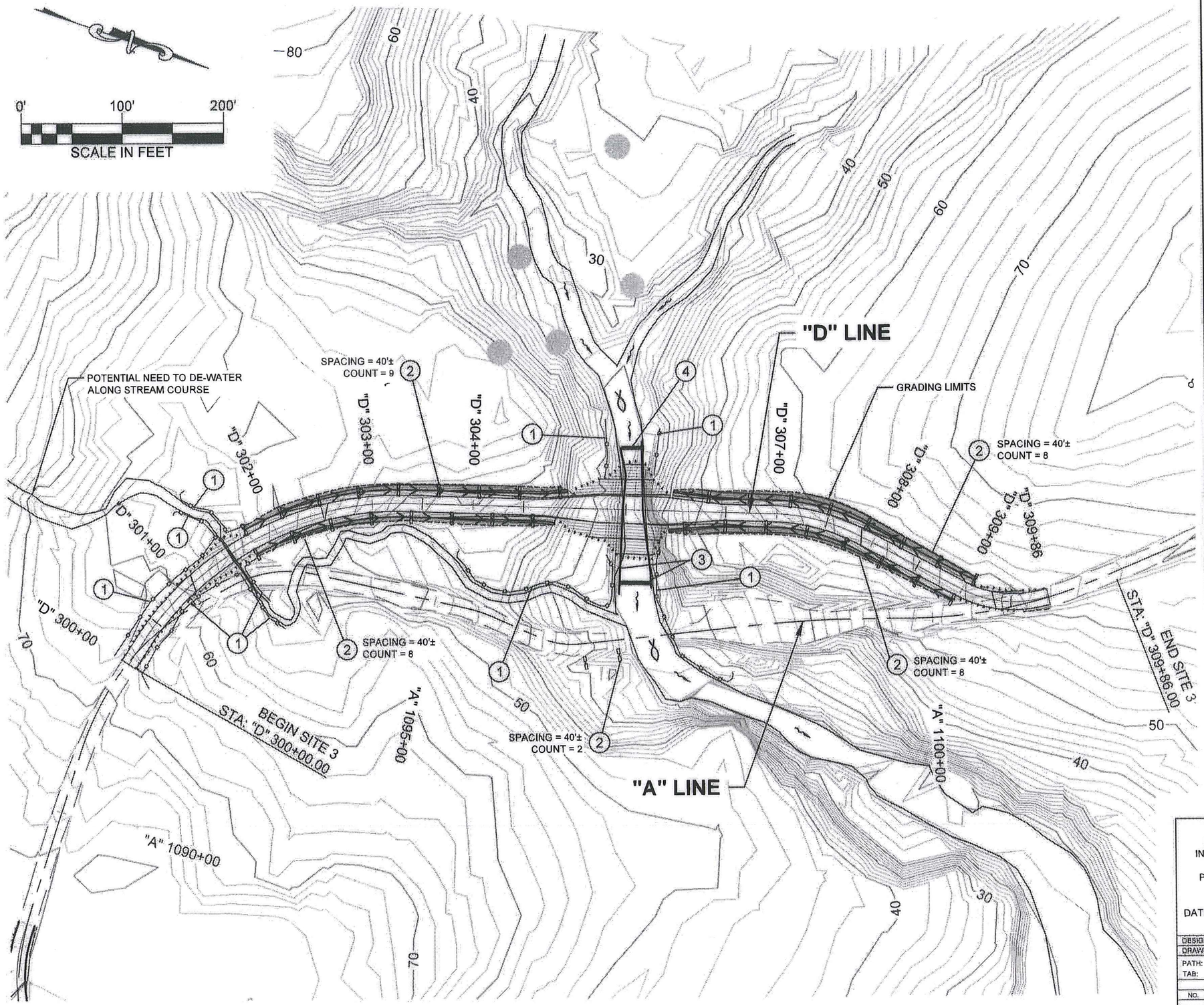
DATE TIME
2/9/2016 12:06 PM

LAYOUT P3

SCALE 1" = 100'

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
CHECKED BY: R. MARTIN
APPROVED BY: R. BERGER

WEDS



CONSTRUCTION NOTES

1. CONSTRUCT SEDIMENT BARRIER (AKDOT&PF E-13.00) (QUANTITY: 1090')
2. CONSTRUCT ROCK CHECK DAM ALONG DITCH LINE (QUANTITY: 35)
3. INSTALL TURBIDITY CURTAIN REMOVE FISH AFTER INSTALLATION (QUANTITY: 300')
4. INSTALL PUMP BYPASS & SANDBAG BARRIER REFERENCE DETAILS, SHEET P5.

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8-23-17 Date

LEGEND

- WASTE DISPOSAL AREA FOR ORGANICS (STABILIZE WITH SEEDING & BONDED FIBER MATRIX)
- AGGREGATE CHECK DAM
- FILL
- CUT
- SEDIMENT BARRIER
- DITCH LINE

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

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

EROSION CONTROL SITE 3

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
CHECKED BY: M. DUMAN
APPROVED BY: R. BERGER

PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 EROSION CONTROL.dwg
TAB: P4 Wednesday, February 17, 2016 11:57:45 AM Ryan Berger

REVISIONS		
NO.	DATE	DESCRIPTION

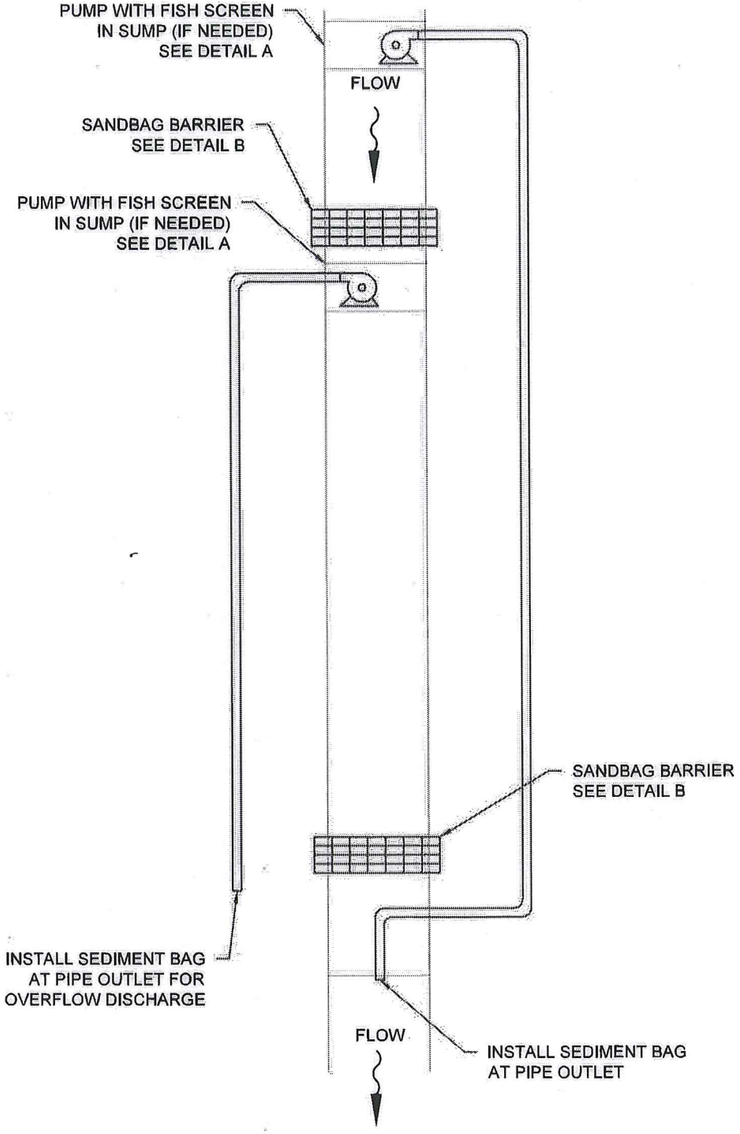
PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	P4	48

DRAWING LOCATION
P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 EROSION CONTROL.dwg

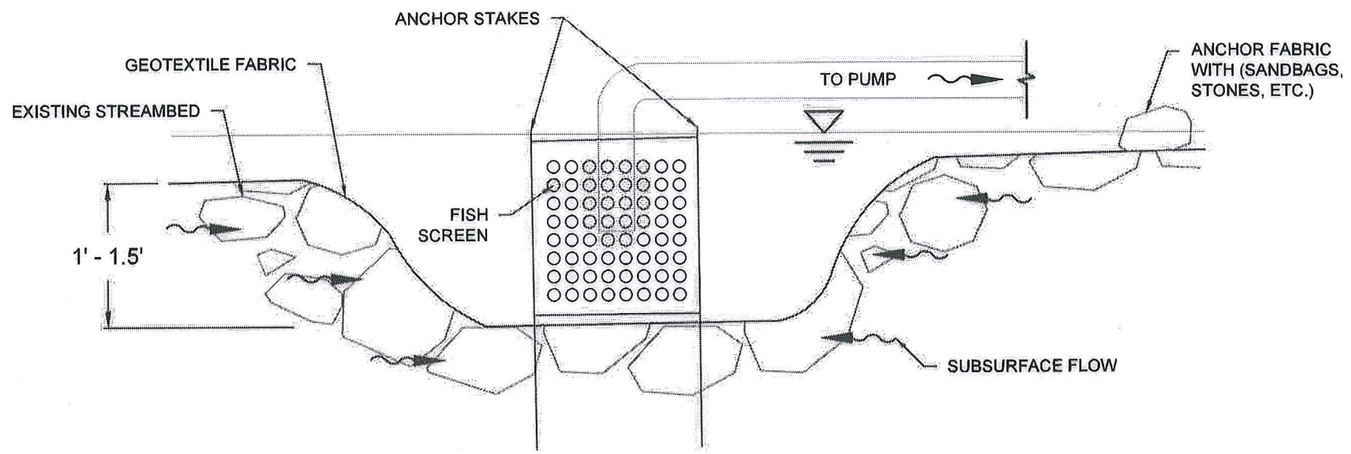
DATE TIME
2/29/2016 12:06 PM

SCALE
1" = 100'

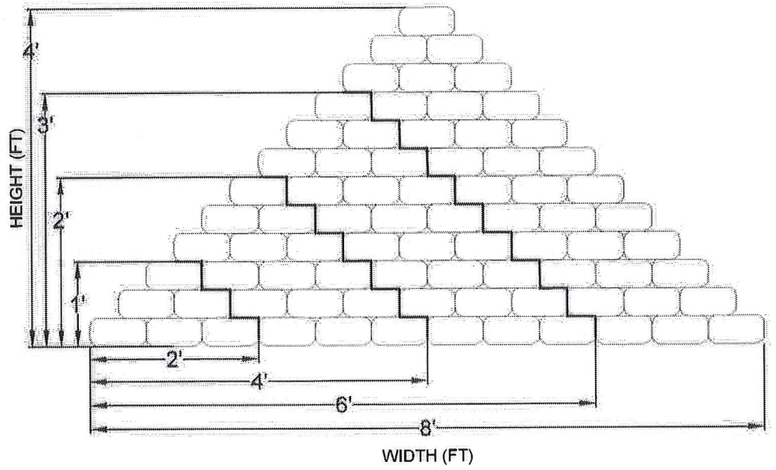
LAYOUT
P4



TYPICAL PUMP BYPASS DETAIL



FISH SCREEN SUMP DETAIL
DETAIL A



SANDBAG BARRIER
DETAIL B

MAKE THE SANDBAG BARRIER TWICE AS WIDE AS ITS HEIGHT (E.G. A ONE FOOT HIGH WALL WOULD HAVE A BASE WIDTH OF 2 FEET). THIS IS THE MINIMUM WIDTH-TO-HEIGHT RATIO THAT SHOULD BE USED TO CONSTRUCT A SANDBAG BARRIER. THIS IS BASED ON EACH BAG HAVING A PLACED DIMENSION OF ABOUT 4 TO 5 INCHES HIGH BY 9 TO 10 INCHES WIDE BY 14 INCHES LONG. THIS IS A 30 LB BAG OF SAND.

THE ESTIMATED NUMBER OF BAGS NEEDED FOR 100 LINEAR FEET OF BARRIER THAT IS TWICE AS WIDE AS ITS HEIGHT IS:

HEIGHT (FT)	# BAGS
1	600
2	1700
3	3000
4	5500

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8.23.17 Date

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

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL
ACCESS ROAD

EROSION CONTROL
DETAILS

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
CHECKED BY: E. MARTIN
DRAFTED BY: R. BERGER

SCALE: NO SCALE
LAYOUT: P5
DATE: 2/9/2016 TIME: 12:06 PM
DRAWING LOCATION: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 EROSION CONTROL.dwg

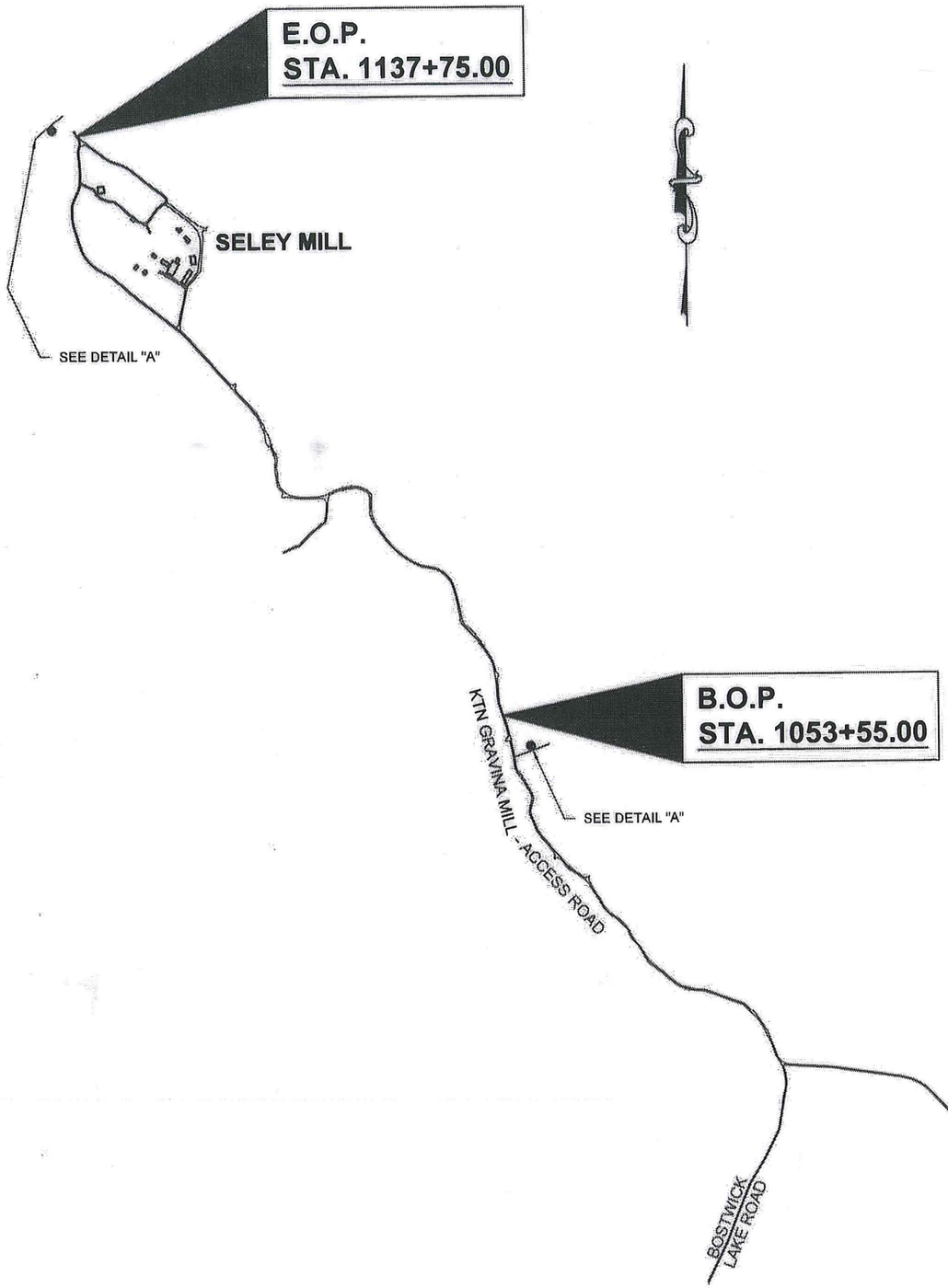
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 EROSION CONTROL.dwg
TAB: P5
Wednesday, February 17, 2016 11:57:47 AM Ryan Berger

REVISIONS NO.	DATE	DESCRIPTION

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	P5	48

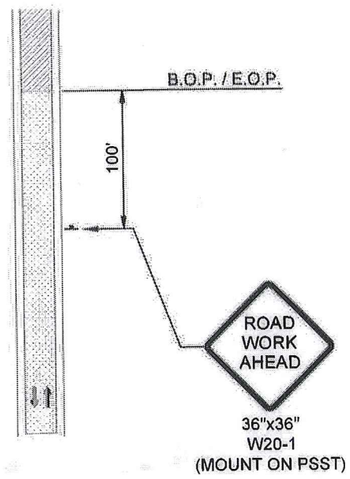
GENERAL NOTES

1. SIGN SPACING SHOWN IS APPROXIMATE AND NOT TO SCALE. CONTRACTOR SHALL ADJUST PLACEMENT AS NECESSARY IN THE FIELD TO AVOID CONFLICTS WITH EXISTING FEATURES. ADJUSTMENT DISTANCE SHALL NOT EXCEED 50'.
2. IF THE VALLENAR BAY ROAD PROJECT IS NOT UNDER CONSTRUCTION, THE CONTRACTOR HAS THE OPTION TO CLOSE THE ROAD.



UNDER TRAFFIC

PROJECT WORK AREA



DETAIL "A"
ADVANCED WARNING SIGN

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP Date 8.23.17

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

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

TRAFFIC CONTROL PLAN

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Traffic Control.dwg
TAB: T1 Wednesday, February 17, 2016 11:58:23 AM Ryan Berger

REVISIONS NO.	DATE	DESCRIPTION

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	T-1	48

DESIGNED BY M. DUMAN
DRAWN BY S. MARTIN
CHECKED BY R. BERGER

AREA

SCALE N.T.S.

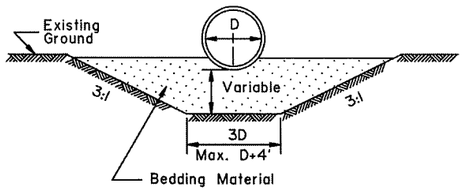
LAYOUT T1

DATE 2/2/2016 TIME 11:58

DRAWING LOCATION P:\53(ADOT)\53-02(Gravina)\Design\Plans\53-02 Traffic Control.dwg

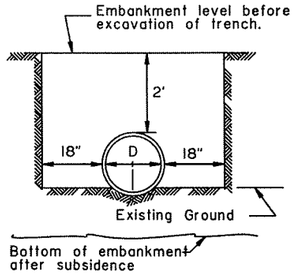
D-01.02

SHEET | of |

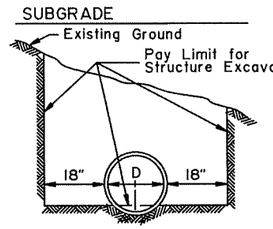


TYPE "A"
FOUNDATION STABILIZATION

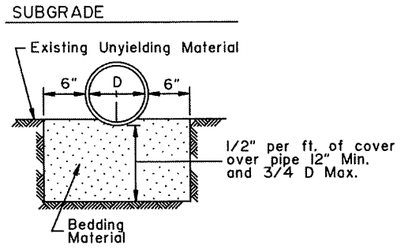
To be used in unstable areas as directed by the Engineer.



TYPE "B"



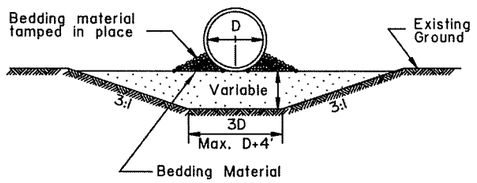
TYPE "C"



TYPE "D"
ROCK OR UNYIELDING MATERIAL

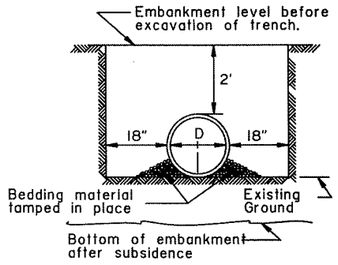
GENERAL NOTES:

1. Sidefill shall be placed and compacted with care under haunches of pipe and shall be brought up evenly and simultaneously on both sides of pipe to 1 foot above the top of the full length of the pipe.
2. Alternate installation methods may only be used when specified or approved by the Engineer.



'ALTERNATE'
TYPE "A"
FOUNDATION STABILIZATION

To be used in unstable areas as directed by the Engineer.



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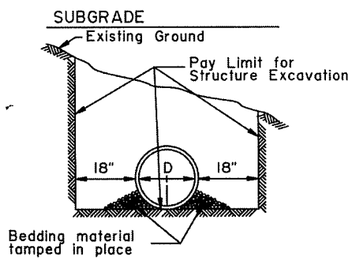
TYPE "B"



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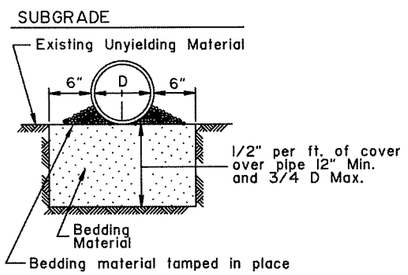
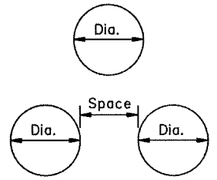


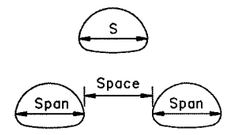
'ALTERNATE' TYPE "D"
ROCK OR UNYIELDING MATERIAL

D = Nominal Pipe Diameter



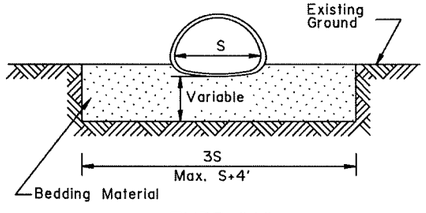
MULTIPLE INSTALLATIONS	
Dia.	Minimum Space Between Pipes
0" - 42"	24"
48" & Over	1/2 Dia. of pipe or 3', whichever is less.

S = Nominal Pipe Arch Span



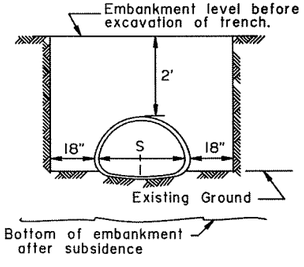
MULTIPLE INSTALLATIONS	
Dia.	Minimum Space Between Pipes
0" - 42"	24"
48" & Over	1/2 Span of pipe arch or 3', whichever is less.

CULVERT PIPE



TYPE "A"
FOUNDATION STABILIZATION

To be used in unstable areas as directed by the Engineer.



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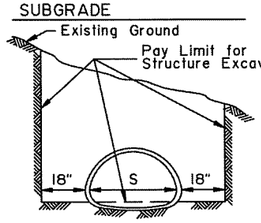
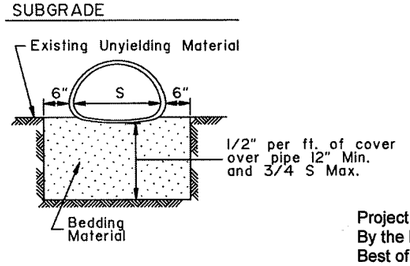


TYPE "C"



TYPE "D"
ROCK OR UNYIELDING MATERIAL

ARCH

REVISIONS		
Date	Description	By
12/1/87	Delete ref. to Specs.	Gdo
4/1/93	Delete All. Arch	Gdo

State of Alaska
Department of Transportation
& Public Facilities

VERT PIPE & ARCH
TALLATION DETAILS

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. Date

APPROVED 7/15/82

Date

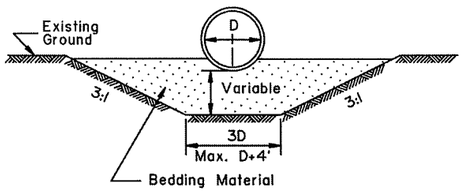
D-01.02

D-01.02

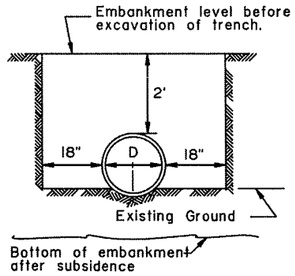
SHEET | of |

GENERAL NOTES:

1. Sidefill shall be placed and compacted with care under haunches of pipe and shall be brought up evenly and simultaneously on both sides of pipe to 1 foot above the top of the full length of the pipe.
2. Alternate installation methods may only be used when specified or approved by the Engineer.



TYPE "A"
FOUNDATION STABILIZATION
To be used in unstable areas as directed by the Engineer.



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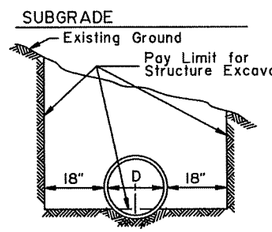

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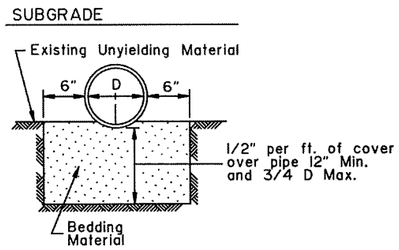
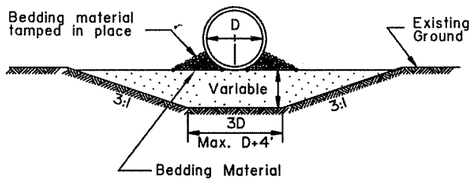
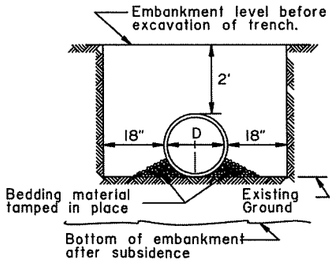


TYPE "D"
ROCK OR UNYIELDING MATERIAL



'ALTERNATE'
TYPE "A"
FOUNDATION STABILIZATION
To be used in unstable areas as directed by the Engineer.



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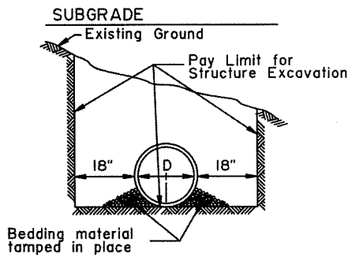
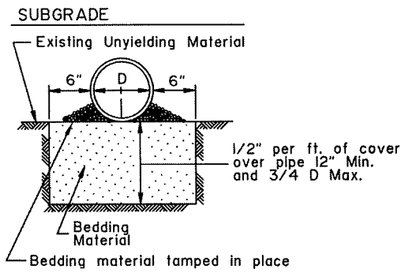
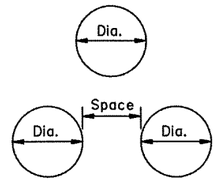


'ALTERNATE'
TYPE "C"



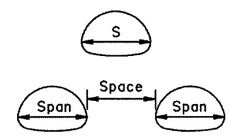
'ALTERNATE' TYPE "D"
ROCK OR UNYIELDING MATERIAL

D = Nominal Pipe Diameter



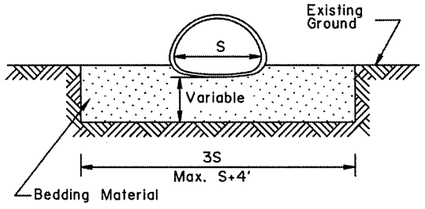
MULTIPLE INSTALLATIONS	
Dia.	Minimum Space Between Pipes
0" - 42"	24"
48" & Over	1/2 Dia. of pipe or 3', whichever is less.

S = Nominal Pipe Arch Span

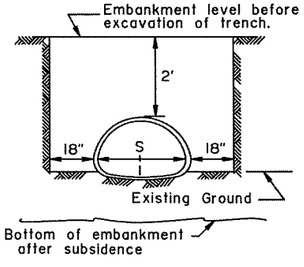


MULTIPLE INSTALLATIONS	
Dia.	Minimum Space Between Pipes
0" - 42"	24"
48" & Over	1/2 Span of pipe arch or 3', whichever is less.

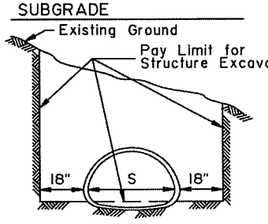
CULVERT PIPE



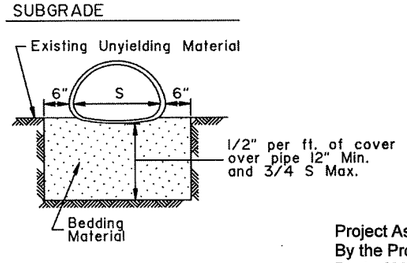
TYPE "A"
FOUNDATION STABILIZATION
To be used in unstable areas as directed by the Engineer.



TYPE "B"



TYPE "C"



TYPE "D"
ROCK OR UNYIELDING MATERIAL

ARCH

REVISIONS		
Date	Description	By
12/1/87	Delete ref. to Specs.	Gdo
4/1/93	Delete All. Arch	Gdo

State of Alaska
Department of Transportation
& Public Facilities

CULVERT PIPE & ARCH STALLATION DETAILS

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. Date

APPROVED
Date 7/15/82

D-01.02

Minimum & Maximum Cover For 2 2/3" x 1/2" Steel Pipe

GAGE	0.064"		0.079"		0.109"		0.138"		0.168"	
Dia. (In)	Min. (In)	Max. (Ft)	Min. (In)	Max. (Ft)	Min. (In)	Max. (Ft)	Min. (In)	Max. (Ft)	Min. (In)	Max. (Ft)
12	12	100+	12	100+	12	100+	12	100+	12	100+
15	12	100+	12	100+	12	100+	12	100+	12	100+
18	12	100+	12	100+	12	100+	12	100+	12	100+
21	12	100+	12	100+	12	100+	12	100+	12	100+
24	12	100+	12	100+	12	100+	12	100+	12	100+
27	12	100+	12	100+	12	100+	12	100+	12	100+
30	12	99	12	100+	12	100+	12	100+	12	100+
36	12	83	12	100+	12	100+	12	100+	12	100+
42	12	71	12	88	12	100+	12	100+	12	100+
48	12	62	12	77	12	100+	12	100+	12	100+
54			12	66	12	93	12	100+	12	100+
60					12	79	12	100+	12	100+
66					12	68	12	88	12	100+
72							12	75	12	93
78									12	79
84									12	66

Minimum & Maximum Cover For 3" x 1" Steel Pipe

GAGE	0.064"		0.079"		0.109"		0.138"		0.168"	
Dia. (In)	Min. (In)	Max. (Ft)	Min. (In)	Max. (Ft)	Min. (In)	Max. (Ft)	Min. (In)	Max. (Ft)	Min. (In)	Max. (Ft)
36	12		12		12	100+	12	100+	12	100+
42	12		12		12	100+	12	100+	12	100+
48	12		12	76	12	100+	12	100+	12	100+
54	12	63	12	79	12	100+	12	100+	12	100+
60	12	56	12	71	12	99	12	100+	12	100+
66	12	52	12	64	12	90	12	100+	12	100+
72	12	47	12	59	12	82	12	100+	12	100+
78	12	44	12	54	12	77	12	98	12	100+
84	12	41	12	51	12	71	12	92	12	100+
90	12	37	12	47	12	67	12	86	12	100+
96	12	35	12	44	12	62	12	80	12	98
102	18	33	18	42	18	59	18	76	18	93
108			18	40	18	55	18	71	18	87
114			18	36	18	51	18	66	18	80
120			18	34	18	46	18	61	18	75
126					18	44	18	56	18	70
132					18	41	18	53	18	64
138					18	37	18	49	18	60
144							18	44	18	55
150									18	52

Minimum & Maximum Cover For 5" x 1" Steel Pipe*

GAGE	0.064"		0.079"		0.109"		0.138"		0.168"	
Dia. (In)	Min. (In)	Max. (Ft)	Min. (In)	Max. (Ft)	Min. (In)	Max. (Ft)	Min. (In)	Max. (Ft)	Min. (In)	Max. (Ft)
36	12	81	12	90	12	100+	12	100+	12	100+
42	12	71	12	77	12	100+	12	100+	12	100+
48	12	62	12	68	12	100+	12	100+	12	100+
54	12	56	12	70	12	98	12	100+	12	100+
60	12	50	12	63	12	88	12	100+	12	100+
66	12	46	12	57	12	80	12	100+	12	100+
72	12	42	12	52	12	73	12	95	12	100+
78	12	39	12	48	12	68	12	87	12	100+
84	12	36	12	45	12	63	12	81	12	99
90	12	33	12	42	12	59	12	76	12	93
96	12	31	12	39	12	55	12	71	12	87
102	18	29	18	37	18	52	18	67	18	82
108			18	35	18	49	18	63	18	77
114			18	32	18	45	18	58	18	71
120			18	30	18	41	18	54	18	66
126					18	39	18	50	18	62
132					18	36	18	47	18	57
138					18	33	18	43	18	53
144							18	39	18	49
150									19	47

*Table for pipe with helical lockseams or helical welded seams ONLY.

Minimum & Maximum Cover For 6" x 2" Steel Structural Plate Pipe**

GAGE	ALL	0.111"	0.140"	0.170"	0.188"	0.218"	0.249"	0.280"
Dia. (In)	Min. (In)	Max. (Ft)	Max. (Ft)	Max. (Ft)	Max. (Ft)	Max. (Ft)	Max. (Ft)	Max. (Ft)
60	12	46	68	90	100+	100+	100+	100+
66	12	42	62	81	93	100+	100+	100+
72	12	38	57	75	86	100+	100+	100+
78	12	35	52	69	79	95	100+	100+
84	12	33	49	64	73	88	100+	100+
90	12	31	45	60	68	82	97	100+
96	12	29	43	56	64	77	91	100+
102	18	27	40	52	60	73	86	94
108	18	25	38	50	57	69	81	88
114	18	24	36	47	54	65	77	84
120	18	23	34	45	51	62	73	80
126	18	22	32	42	49	59	69	76
132	18	21	31	40	46	56	66	72
138	18	20	29	39	44	54	63	69
144	18	19	28	37	43	51	61	66
150	24	18	27	36	41	49	58	64
156	24	17	26	34	39	47	56	61
162	24	17	25	33	38	46	54	59
168	24	16	24	32	36	44	52	57
174	24	16	23	31	35	42	50	55
180	24	15	22	30	34	41	48	53
186	24	15	22	29	33	40	47	51
192	24		21	28	32	38	45	50
198	30		20	27	31	37	44	48
204	30		20	26	30	36	43	47
210	30		19	25	29	35	41	45
216	30			25	28	34	40	44
222	30			24	27	33	39	43
228	30			23	27	32	38	42
234	30			23	26	31	37	41
240	30				25	31	36	40
246	36				25	30	35	39
252	36					29	34	38
258	36					28	34	37
264	36					28	33	36
270	36					27	32	35
276	36						31	34
282	36						31	34
288	42						30	33
294	42							32
300	42							32
306	42							31
312	42							30

**Longitudinal seams use (4) 3/4" dia. bolts per foot.

GENERAL NOTES

1. All material and workmanship shall be in accordance with the State of Alaska, Standard Specifications for Highway Construction.
2. The contractor shall select only pipes that meet specific height of cover criteria shown on the plans or in the special provisions.
3. No more than one type of pipe may be used on any single installation or installation grouping.
4. All structural plate pipes shall be placed on a pre-shaped foundation conforming to the depth of the bottom plates with clearance for assembling to the adjacent plates allowed.
5. See Standard Drawing "Culvert Pipe & Arch Installation Details" for foundation and structural backfill details.
6. Minimum cover shall be measured from the top of pipe to the top of rigid pavement or to the top of flexible pavement subgrade. In all cases, the minimum cover shall not be less than 12". Minimum cover during construction shall be that required to protect the pipe from damage or deflecton.
7. These tables have been developed for an H-20 live load and for compacted soil weighing 120 lbs. per cubic foot or less. If compacted soil cover exceeds 120 lbs. per cubic foot, the contractor shall use the depth of cover shown in the plans for the specific pipe. Where compacted soil cover exceeds 120 lbs. per cubic foot and no specific cover requirements are provided in the plans, the contractor shall determine the required minimum pipe cover in accordance with Section 12 of the 2000 AASHTO "LRFD Bridge Design Specifications"

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. Date

CORRUGATED CIRCULAR STEEL PIPE

CORRUGATED STEEL PIPE-ARCH

Minimum & Maximum Cover For 2 2/3" x 1/2" Steel Pipe-Arch

Span x Rise (In. x In.)	Corner Radius (In)	Minimum Gage (In)	Min. Cover (In)	Max. Cover (Ft) 2 Tons Corner Bearing Pressure	Max. Cover (Ft) 3 Tons Corner Bearing Pressure @
17 x 13	3	0.064	12	16	18
21 x 15	3	0.064	12	15	14
24 x 18	3	0.064	12	15	13
28 x 20	3	0.064	12	15	11
35 x 24	3	0.064	12	15	7
42 x 29	3 1/2	0.064	12	15	7
49 x 33	4	0.079	12	15	6
57 x 38	5	0.109	12	15	8
64 x 43	6	0.109	12	15	9
71 x 47	7	0.138	12	15	10
77 x 52	8	0.168	12	15	10
83 x 57	9	0.168	12	15	10

Minimum & Maximum Cover For 3" x 1" Steel Pipe-Arch

Span x Rise (In. x In.)	Corner Radius (In)	Minimum Gage (In)	Min. Cover (In)	Max. Cover (Ft) 2 Tons Corner Bearing Pressure	Max. Cover (Ft) 3 Tons Corner Bearing Pressure @
40 x 31	5	0.079	12	25	12
46 x 36	6	0.079	12	25	13
53 x 41	7	0.079	12	25	13
60 x 46	8	0.079	15	25	13
66 x 51	9	0.079	15	25	13
73 x 55	12	0.079	18	24	16
81 x 59	14	0.079	18	21	17
87 x 63	14	0.079	18	20	16
95 x 67	16	0.079	18	20	17
103 x 71	16	0.079	18	20	15
112 x 75	18	0.079	21	20	16
117 x 79	18	0.109	21	19	15
128 x 83	18	0.138	24	19	14
137 x 87	18	0.138	24	19	13
142 x 91	18	0.138	24	19	12
150 x 96	18	0.138	30	19	
157 x 96	18	0.138	30	19	
164 x 105	18	0.138	30	19	
171 x 110	18	0.138	30	19	

Minimum & Maximum Cover For 5" x 1" Steel Pipe-Arch

Span x Rise (In. x In.)	Corner Radius (In)	Minimum Gage (In)	Min. Cover (In)	Max. Cover (Ft) 2 Tons Corner Bearing Pressure	Max. Cover (Ft) 3 Tons Corner Bearing Pressure @
40 x 31	5	0.109	12	25	12
46 x 36	6	0.109	15	25	13
53 x 41	7	0.109	15	25	13
60 x 46	8	0.109	18	25	13
66 x 51	9	0.109	18	25	13
73 x 55	12	0.109	18	24	16
81 x 59	14	0.109	18	21	17
87 x 63	14	0.109	18	20	16
95 x 67	16	0.109	18	20	17
103 x 71	16	0.109	18	20	15
112 x 75	18	0.109	21	20	16
117 x 79	18	0.109	21	19	15
128 x 83	18	0.109	24	19	14
137 x 87	18	0.109	24	19	13
142 x 91	18	0.109	24	19	12
150 x 96	18	0.138	30	19	
157 x 96	18	0.138	30	19	
164 x 105	18	0.138	30	19	
171 x 110	18	0.138	30	19	

NS = Not Suitable

Minimum & Maximum Cover For 6" x 2" Steel Structural Plate Pipe-Arch**

Span x Rise (Ft-In x Ft-In)	Corner Radius (In)	Minimum Gage (In)	2 Tons Corner Bearing Pressure Min. Cover (In)	2 Tons Corner Bearing Pressure Max. Cover (Ft)	3 Tons Corner Bearing Pressure @ Min. Cover (In)	3 Tons Corner Bearing Pressure @ Max. Cover (Ft)
6-1 x 4-7	18	0.111	18	16	12	24
7-0 x 5-1	18	0.111	18	14	12	21
7-11 x 5-7	18	0.111	18	13	12	19
8-10 x 6-1	18	0.111	24	11	18	17
9-9 x 6-7	18	0.111	24	10	18	15
10-11 x 7-1	18	0.111	24	9	18	14
11-10 x 7-7	18	0.111	24	7	18	13
12-10 x 8-4	18	0.111	30	6	24	12
14-1 x 8-9	18	0.111	30	5	24	11
15-4 x 9-3	18	0.111	NS	NS	24	10
15-10 x 9-10	18	0.111	NS	NS	24	9
16-7 x 10-1	18	0.111	NS	NS	24	9
13-3 x 9-4	31	0.111	24	13	24	17
14-2 x 9-10	31	0.111	24	12	24	16
15-4 x 10-4	31	0.111	24	11	24	15
16-3 x 10-10	31	0.111	24	11	24	14
17-2 x 11-4	31	0.111	30	10	30	13
18-1 x 11-10	31	0.111	30	10	30	12
19-3 x 12-4	31	0.111	30	9	30	13
19-11 x 12-10	31	0.140	30	9	30	13
20-7 x 13-2	31	0.140	36	7	36	13

@ This column shall not be used unless specified on the plans or approved by the Region Geotechnical Engineer.

**Longitudinal seams use (4) 3/4" dia. bolts per foot.

METAL THICKNESSES & GAGES

STEEL ZINC COATED	STEEL UNCOATED	GAGE NO. (For Info Only)
0.064	0.0598	16
0.079	0.0747	14
0.109	0.1047	12
0.138	0.1345	10
0.168	0.1644	8
0.188	0.1838	7
0.218	0.2145	5
0.249	0.2451	3
0.280	0.2758	1

REVISIONS Date	Description	By
8/10/00	Pipe Tables & G. Notes.	DFD
10/31/03	Pipe Table Updates & New Sheet 4.	LRG

Sheet 2 of 4

State of Alaska
Department of Transportation & Public Facilities

PIPE AND ARCH TABLES

APPROVED — STATE OF ALASKA — 49TH — Lars R. Gregovich CE-8065 — PROFESSIONAL ENGINEER

Date 10/31/03

D-04.21

Minimum & Maximum Cover For Aluminum Spiral Rib Circular Pipe*

GAGE	0.060"		0.075"		0.105"		0.135"	
Dia. (in)	Min. (in)	Max. (Ft)	Min. (in)	Max. (Ft)	Min. (in)	Max. (Ft)	Min. (in)	Max. (Ft)
12	24	35	24	50				
18	24	34	24	49				
24	24	25	24	36	24	63	24	82
30	24	19	24	28	24	50	24	65
36	24	15	24	24	24	41	24	54
42			24	19	24	35	24	46
48			24	17	24	30	24	40
54			24	14	24	27	24	35
60			24	12	24	24	24	30

*¾ x ¾ x 7½ in. or ¾ x 1 x 11½ in. Corrugations

Minimum & Maximum Cover For Aluminum Spiral Rib Pipe-Arch*

Span x Rise (in. x in.)	Min. Cover (in.)	Soil Corner Bearing Capacity of 2 Tons/ s.f. 0.060" Max. Cover (ft.)	0.075" Max. Cover (ft.)	0.105" Max. Cover (ft.)
20 x 16	12	13		
23 x 19	12	14		
27 x 21	12	13		
33 x 26	12	13		
40 x 31	12	13		
46 x 36	12	14		
53 x 41	18		13	
60 x 46	18		20	
66 x 51	18		21	
73 x 55	18			21
81 x 59	18			17
87 x 63	18			17
95 x 67	18			17

*¾ x ¾ x 7½ in. or ¾ x 1 x 11½ in. Corrugations

ALUMINUM SPIRAL RIB PIPE

STEEL SPIRAL RIB PIPE

Minimum & Maximum Cover For Steel and Aluminized Steel Spiral Rib Circular Pipe*

GAGE	0.064"		0.079"		0.109"		0.138"**	
Dia. (in)	Min. (in)	Max. (Ft)	Min. (in)	Max. (Ft)	Min. (in)	Max. (Ft)	Min. (in)	Max. (Ft)
18	12							
24	12	51	12	72	12	121		
30	12	41	12	58	12	97		
36	12	34	12	48	12	81		
42	12	29	12	41	12	69		
48	12	26	12	36	12	61		
54	18	23	18	32	18	54		
60	18	21	18	29	18	49	18	73
66	18	19	18	26	18	44	18	65
72			18	24	18	40	18	59
78			24	22	24	37	24	55
84			24	21	24	35	24	52
90					24	32	24	47
96					24	30	24	44
102					30	29	30	43
108					30	27	30	41

*¾ x ¾ x 7½ in. or ¾ x 1 x 11½ in. Corrugations

**¾ x ¾ x 7½ in. Corrugations Only.

Minimum & Maximum Cover For Steel Spiral Rib Arch-Pipe*

Span x Rise (in. x in.)	Min. Cover (in.)	Soil Corner Bearing Capacity of 2 Tons/ s.f. 0.064" Max. Cover (ft.)	0.079" Max. Cover (ft.)	0.109" Max. Cover (ft.)
20 x 16	12	13		
23 x 19	12	14		
27 x 21	12	13		
33 x 26	12	13		
40 x 31	12	13		
46 x 36	12	14		
53 x 41	18		13	
60 x 46	18		20	
66 x 51	18		21	
73 x 55	18			21
81 x 59	18			17
87 x 63	18			17
95 x 67	18			17

*¾ x ¾ x 7½ in. or ¾ x 1 x 11½ in. Corrugations

D-04.21

GENERAL NOTES

1. All material and workmanship shall be in accordance with the State of Alaska, Standard Specifications for Highway Construction.
2. The contractor shall select only pipes that meet specific height of cover criteria shown on the plans or in the special provisions.
3. No more than one type of pipe may be used on any single installation or installation grouping.
4. All structural plate pipes shall be placed on a pre-shaped foundation conforming to the depth of the bottom plates with clearance for assembling to the adjacent plates allowed.
5. See Standard Drawing "Culvert Pipe & Arch Installation Details" for foundation and structural backfill details.
6. Minimum cover shall be measured from the top of pipe to the top of rigid pavement or to the top of flexible pavement subgrade. In all cases, the minimum cover shall not be less than 12". Minimum cover during construction shall be that required to protect the pipe from damage or deflecton.
7. These tables have been developed for an H-20 live load and for compacted soil weighing 120 lbs. per cubic foot or less. If compacted soil cover exceeds 120 lbs. per cubic foot, the contractor shall use the depth of cover shown in the plans for the specific pipe. Where compacted soil cover exceeds 120 lbs. per cubic foot and no specific cover requirements are provided in the plans, the contractor shall determine the required minimum pipe cover in accordance with Section 12 of the 2000 AASHTO "LRFD Bridge Design Specifications".

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. Date

REVISIONS		
Date	Description	By
8/10/00	Pipe Tables & G. Notes.	DFD
10/31/03	New Sheet 4.	LRG

Sheet 4 of 4

State of Alaska
Department of Transportation
& Public Facilities

PIPE AND ARCH TABLES

APPROVED

Date 10/31/03

D-04.21

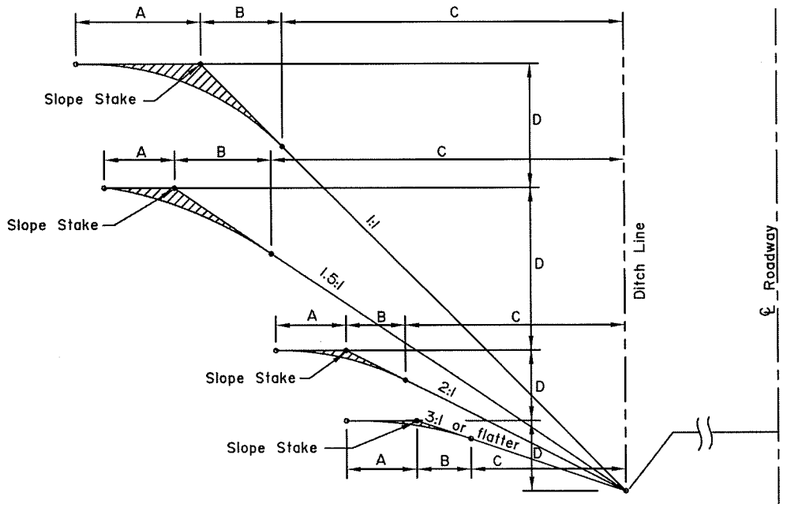


FIG. 1
TYPICAL SECTION OF ROUNDED SLOPES

TABLE OF ROUNDING DIMENSIONS

Rate of Slope	A		B	
	When B's 5.0' or less	When B is more than 5.0'	When D's 15.0' or less	When D is more than 15.0'
3:1 or flatter	B	5.0'	5.0'	5.0'
2:1	B	5.0'	5.0'	D/3
1.5:1	B	5.0'	5.0'	D/3
1:1	B	$\frac{D}{3}$, Max. 10.0'		D/3

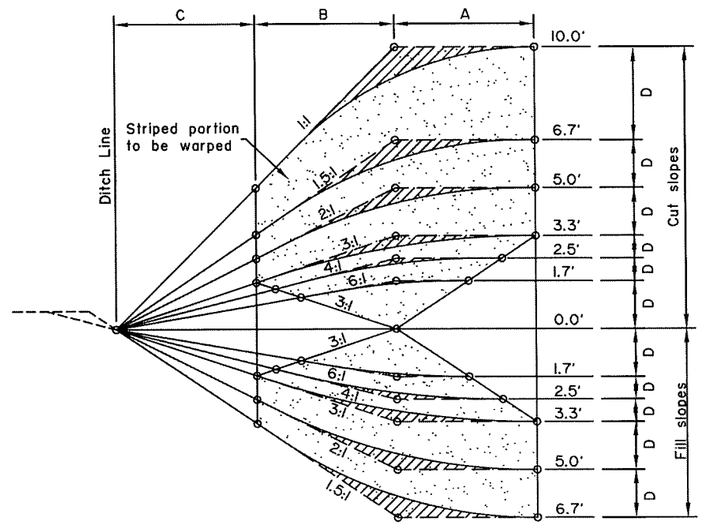


FIG. 4
TYPICAL GRADING FOR WARPING SLOPES

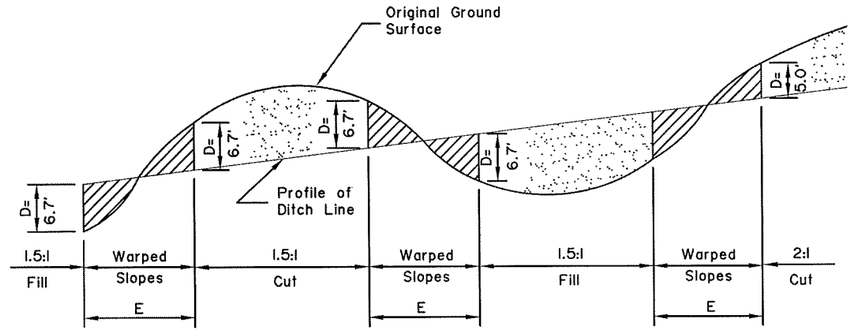


FIG. 5
TYPICAL PROFILE OF WARPED SLOPES

TYPICAL SLOPE WARPING

FIG. 2
TYPICAL TREATMENT
OF
POSITIVE SLOPE INTERSECTION

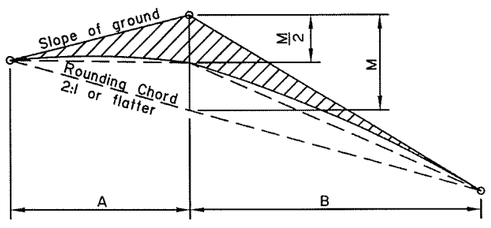


FIG. 3
TYPICAL TREATMENT
OF
NEGATIVE SLOPE INTERSECTION

TYPICAL SLOPE ROUNDING

GENERAL NOTES

1. Cut and fill slopes shall be rounded as shown in fig. 1, 2, and 3 when required by the plans or special provisions. Rounding of fill slopes shall be done in the same manner as shown for cut slopes.

2. Intersections of cut and fill slopes shall be warped as shown in fig. 4 and 5 when required by the plans or special provisions.

3. Warping of cut and fill slopes is for the purpose of attaining a more pleasing appearance and to promote the growth of natural vegetation by causing the fill slope to flow smoothly into the cut slope. The length of slope warping is relatively proportional to the character of the topography, the distance between end limits of warped surfaces being lessended as the terrain steepens and lengthened as the topography flattens out. The procedure as outlined herein is typical and shall be varied to meet special conditions and shall be as staked by the Engineer.

4. SUGGESTED PROCEDURE FOR WARPING SLOPING

A--Select end points for warping to fit specified slope ratios as follows:-

(a) The dimensions A, B, and C shall all be constant throughout the full length of warping, E.

(b) When the average depth of cut or fill is such that the dimension B+C exceeds 10 feet, the ends of warping shall be at points where B+C is 10 feet, provided the warping distance E does not exceed 100 feet. That is, as shown in fig. 4 and 5, warping shall begin at a cut or fill depth of 6.7 feet for 1.5:1 slopes, at 50 feet for 2:1 slopes, etc. if the dimension E exceeds 100 feet, the dimension B+C shall be reduced until the intersections of the prescribed slopes with the natural ground are 100 feet apart.

(c) When the average depth of cut or fill is such that the distance B+C is between 5 feet and 10 feet, the ends of warping shall be at points where C is 0 feet, but such points shall not be more than 150 feet apart.

(d) When the average depth of cut or fill is such that the dimension B is less than 5 feet, the ends of warping shall be 200 feet apart.

B--Set slope stakes at end of warping.

C--Set additional slope stakes at various intervals between end stakes and at the sames distance from centerline.

D--Flatten and round warped slopes as shown in figure 4 for each section.

5. A layer of earth overlying a rock cut shall be rounded as far as possible as though the total height of slope were in earth cut.

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. Date

REVISIONS		
Date	Description	By

State of Alaska
Department of Transportation
& Public Facilities

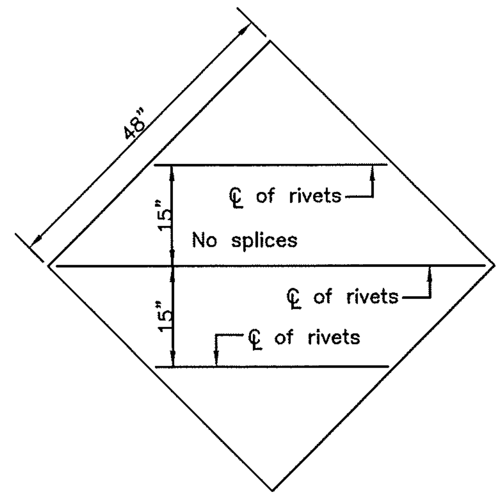
SLOPE
ROUNDING & WARPING

APPROVED
Date 7/15/82

E-09.00

S-00.11

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

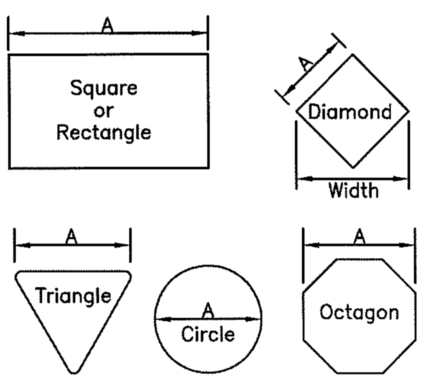


SIGN POST SPACING NOTES:

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

GENERAL NOTES

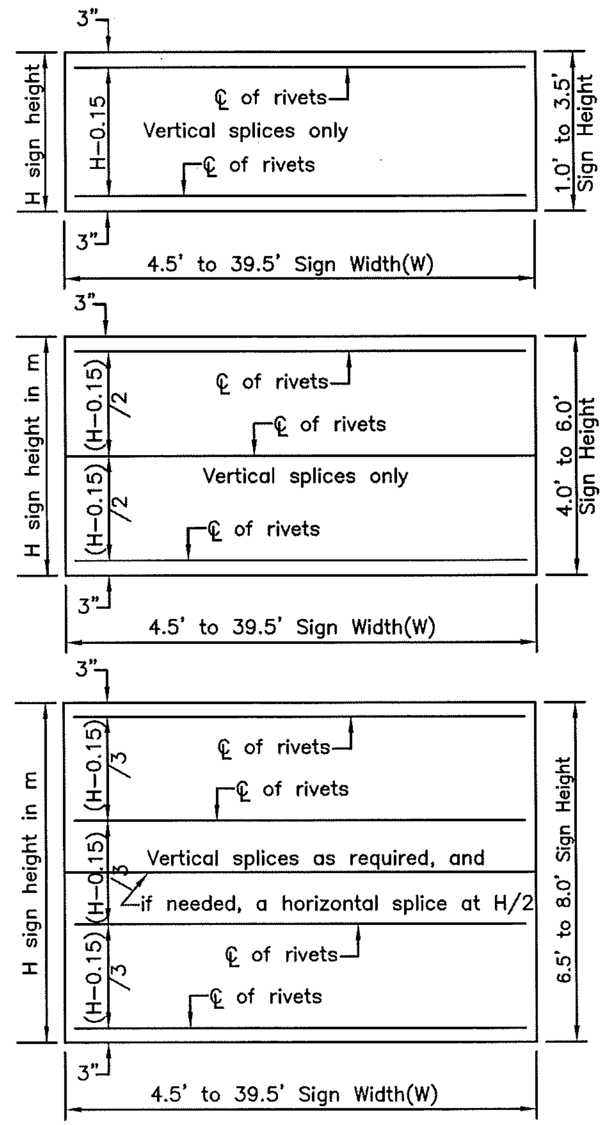
1. See the standard specifications for the aluminum alloys that you may use for sign sheeting and wind framing members.
2. Fabricate all signs from 0.125" thick aluminum sheeting.
3. Sign fabricators may use alternates to the zee shaped framing member with approval of the engineer, if the frame manufacturer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



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

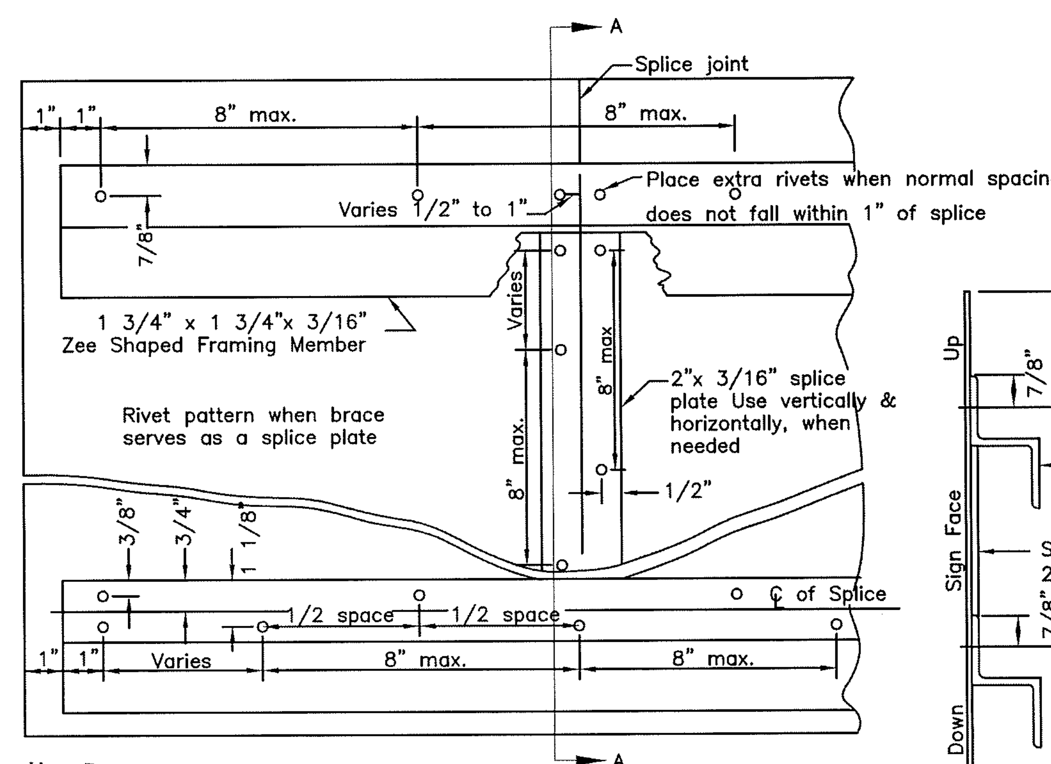
Install wind framing on all signs that exceed the dimensions listed.

LIGHT SIGNS

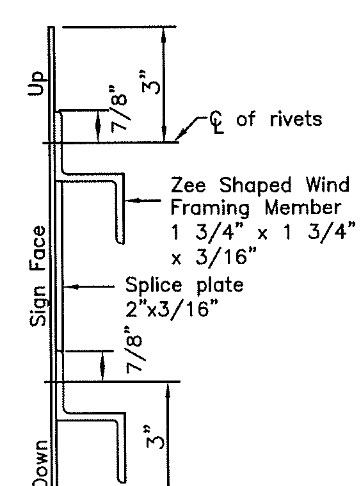


WIND FRAMING LOCATI

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.



RIVET DETAIL FOR ZEE SHAPED WIND FRAMING & SPLICE PLATE



SECTION A–A

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

Sheet 1 of 1

State of Alaska
Department of Transportation & Public Facilities

SIGN FRAMING AND POST SPACING

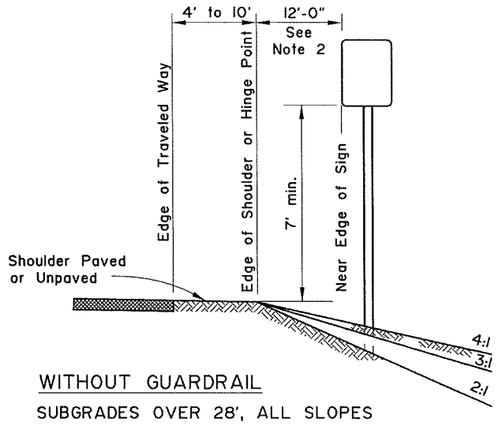
APPROVED

Date 5/31/12

S–00.11

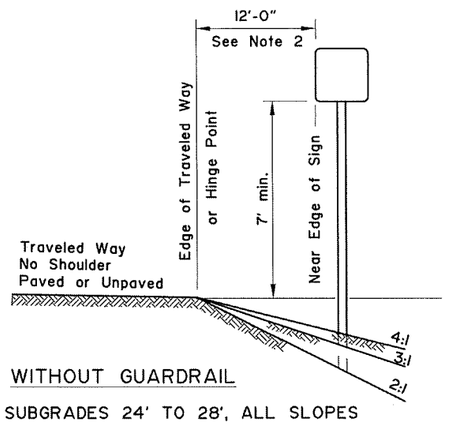
Project Eng. Date

S-05.01



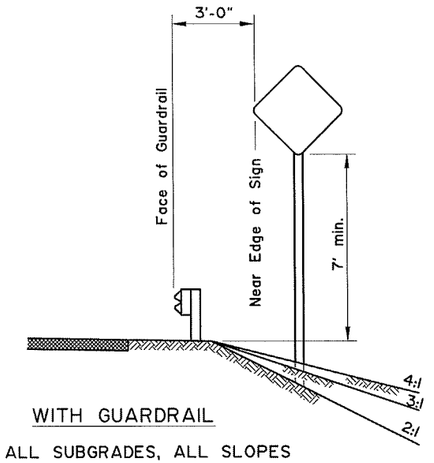
WITHOUT GUARDRAIL

SUBGRADES OVER 28', ALL SLOPES



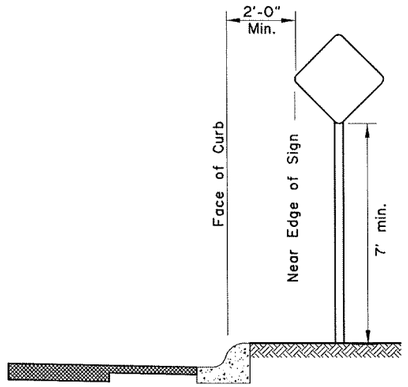
WITHOUT GUARDRAIL

SUBGRADES 24' TO 28', ALL SLOPES

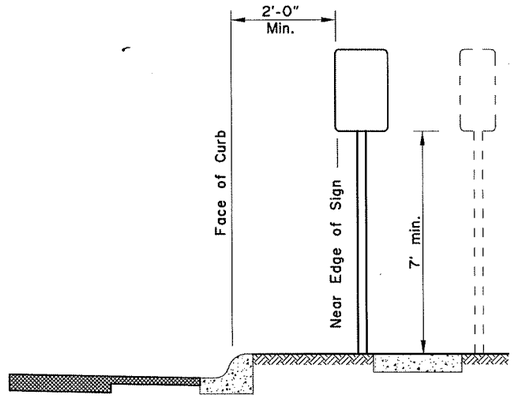


WITH GUARDRAIL

ALL SUBGRADES, ALL SLOPES

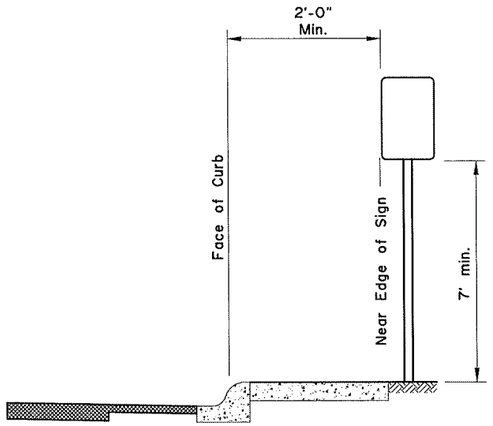


CURB WITHOUT SIDEWALK

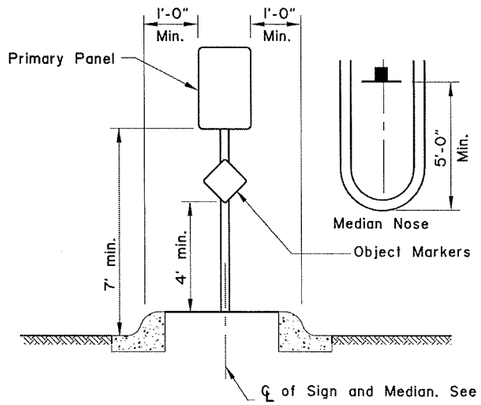


CURB WITH PARKWAY AND SIDEWALK

(If R/W width permits, signs should be placed behind sidewalk.)

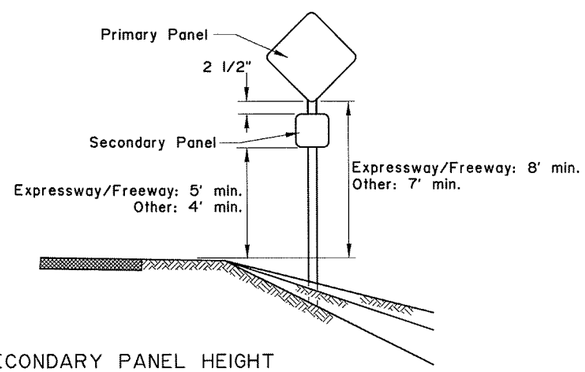


CURB WITH SIDEWALK WITHOUT PARKWAY



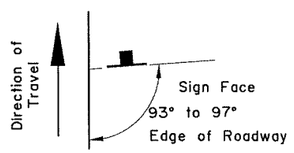
RAISED MEDIANS

Minimum 4' Width for Signing



SECONDARY PANEL HEIGHT

ALL TWO PANEL MOUNTING



SIGN POSITIONING

GENERAL NOTES

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

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. Date

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

Sheet 1 of 1

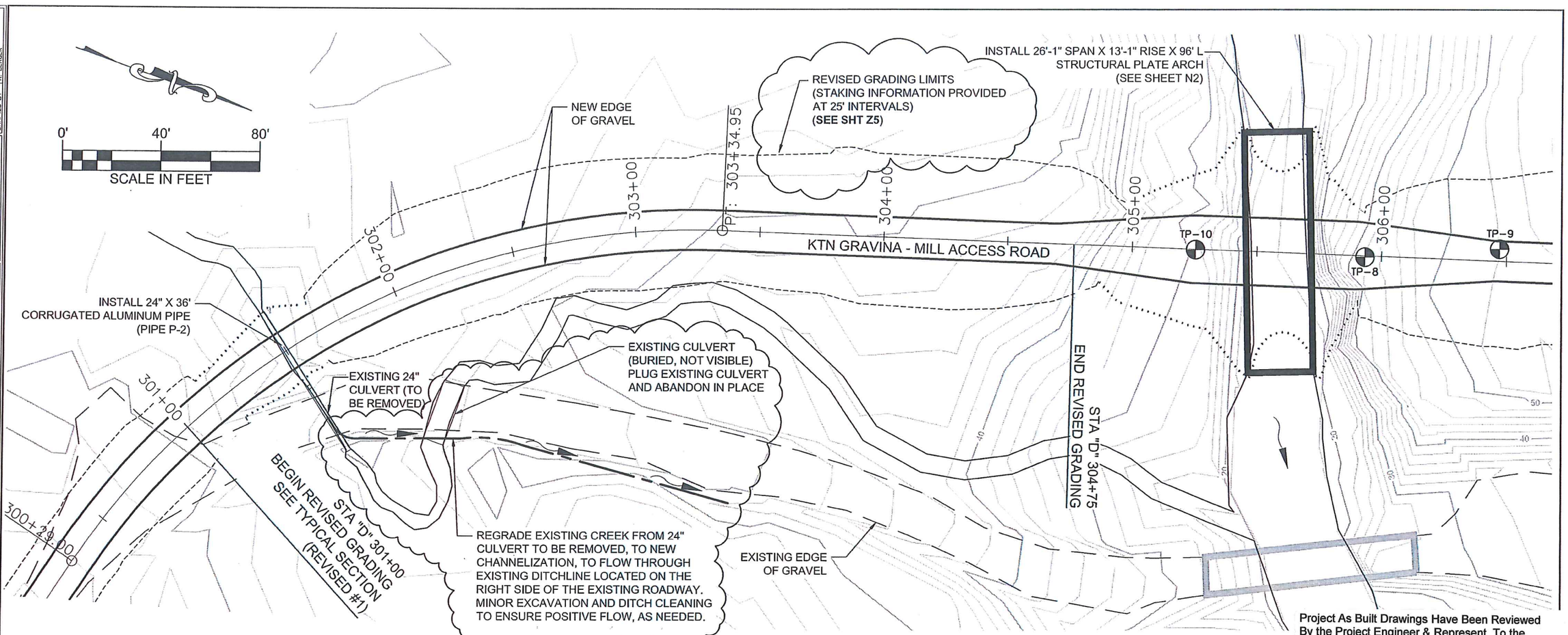
State of Alaska
Department of Transportation
& Public Facilities

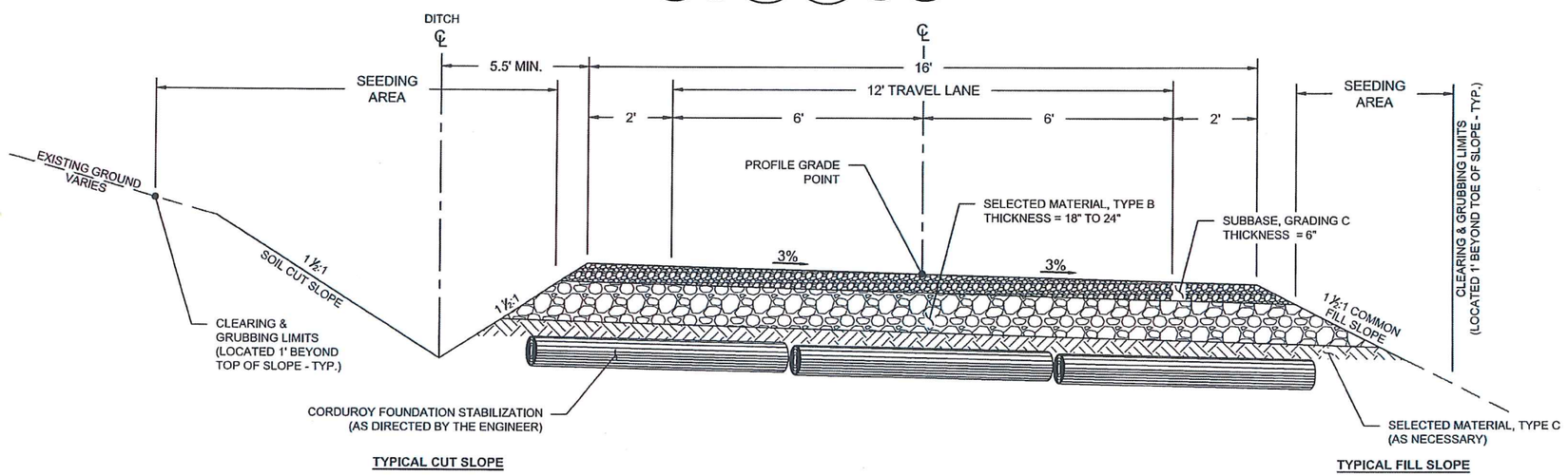
POST MOUNTED SIGN
OFFSET AND HEIGHT

APPROVED

Date 7/15/82

S-05.01





TYPICAL CUT SLOPE

TYPICAL FILL SLOPE

FULL DEPTH CONSTRUCTION (REVISED #1)

SITE 3: STA "D" 300+00.00 TO "D" 309+86.00

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8.23.17 Date

REVISIONS

REV #1	07/08/2016	a. REMOVED 1:1 CUT SLOPE VARIATION BETWEEN STA 302+50 TO 303+50. b. REMOVED "FULL DEPTH CONSTRUCTION (REVISED #2)" TYPICAL SECTION. c. RECHANNELIZATION OF OUTFLOW FROM EXISTING 24" CULVERT ADDED.
REV #2	08/22/2016	a. REGRADED TO 1 ½:1 CUT THROUGH ENTIRE SITE.

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
SOUTHCOAST REGION

Michael L. Duman No. 13756 REGISTERED PROFESSIONAL ENGINEER 8-23-2016

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER

PATH: P:\53(ADOT)\53-02(Gravina)\Design\Construction Services\20160630 Revised Grading Site 3\53-02 Site Exhibit - Site 3 STA 30100 to 30475.dwg
TAB: Z1 Monday, August 22, 2016 10:23:50 AM Ryan Berger

REVISIONS NO.	DATE	DESCRIPTION
#1	07/08/2016	SEE NOTE ABOVE
#2	08/22/2016	SEE NOTE ABOVE

KTN GRAVINA - MILL ACCESS ROAD

SITE EXHIBIT
SITE 3 - REVISED GRADING

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	Z1	5

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
CHECKED BY: R. MARTIN
DRAFTED BY: R. BERGER

XREFS:

SCALE: 1" = 40'

LAYOUT: Z1

DATE TIME: 8/22/2016 10:45:31

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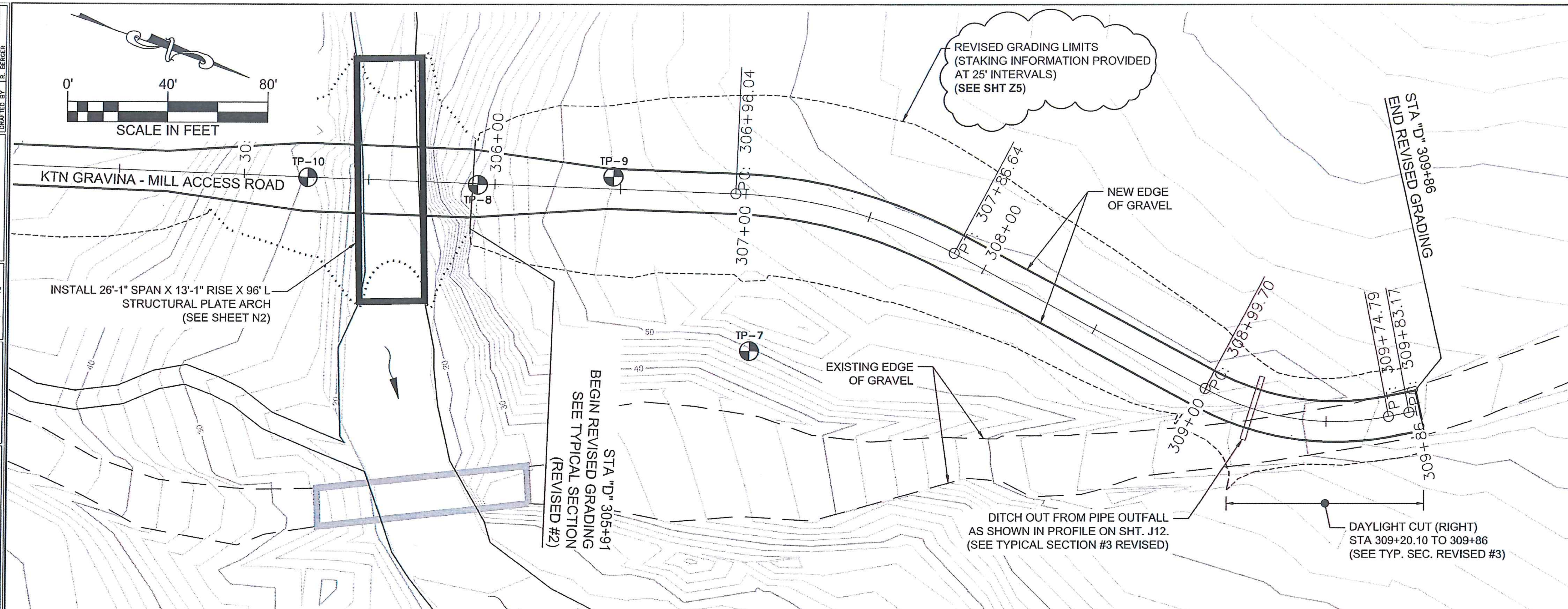

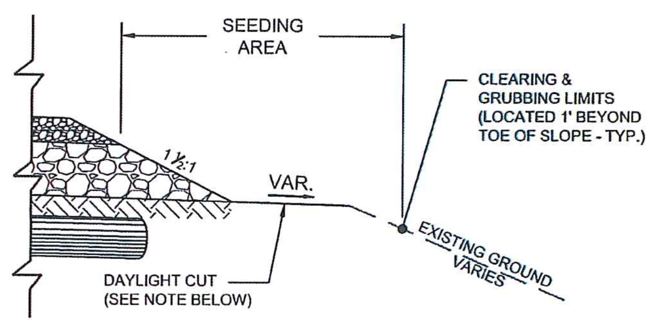

NOTE:
DAYLIGHT CUT SLOPE VARIES FROM 6% TO 3% BETWEEN STA 309+20.10 TO 309+27, FOR THE DITCH OUT ON PIPE P-3. (SEE PIPE PROFILE, SHT. J12) MAINTAIN 3% CUT SLOPE TO THE END OF SITE 3.

FULL DEPTH CONSTRUCTION (REVISED #3)

SITE 3: STA "D" 309+20.10 TO "D" 309+86.00
(RIGHT SIDE ONLY)

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP   8-23-17 Date

REVISIONS

REV #1	07/08/2016	a. ADDED SHEET FOR REVISED GRADING BETWEEN STATION 304+75 TO 309+86.
REV #2	08/22/2016	a. REGRADED TO 1½:1 CUT THROUGH ENTIRE SITE. b. ARCH PIPE AT SITE 2 ROTATED.

STATE OF ALASKA, 49TH, Michael L. Duman, No. 13756, REGISTERED PROFESSIONAL ENGINEER
8-23-2016

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

SITE EXHIBIT
SITE 3 - REVISED GRADING

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Construction Services\20160630 Revised Grading Site 3\53-02 Site Exhibit - Site 3 STA 30100 to 30475.dwg
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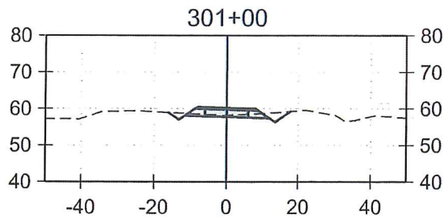
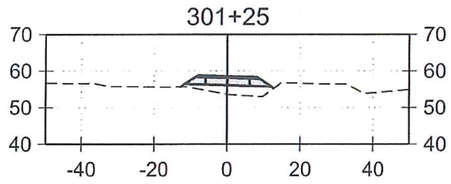
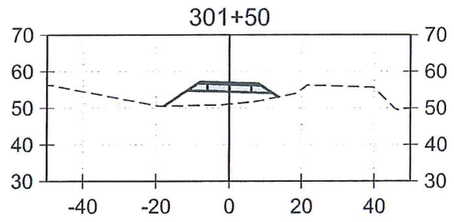
REVISIONS NO.	DATE	DESCRIPTION
#1	07/08/2016	SEE NOTE ABOVE
#2	08/22/2016	SEE NOTE ABOVE

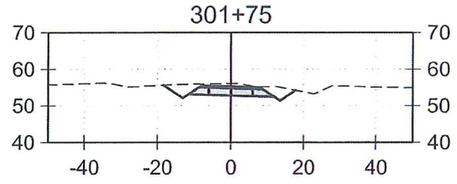
PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	Z2	5

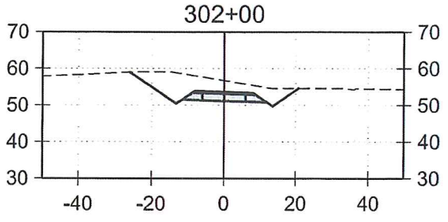
DESIGNED BY M. DUMAN | CHECKED BY B. MARTIN | DRAFTED BY R. BERGER | XREFS | SCALE 1" = 40' | LAYOUT Z2 | DATE TIME | DRAWING LOCATION P:\53(ADOT)\53-02(Gravina)\Design\Construction Services\20160630 Revised Grading Site 3\53-02 Site Exhibit - Site 3 STA 30100 to 30475.dwg

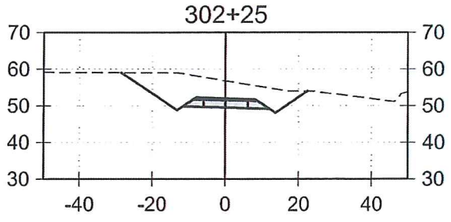


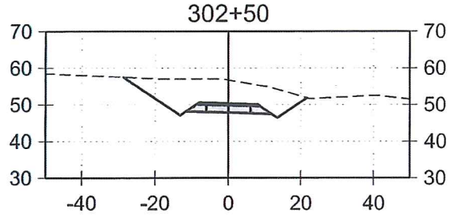


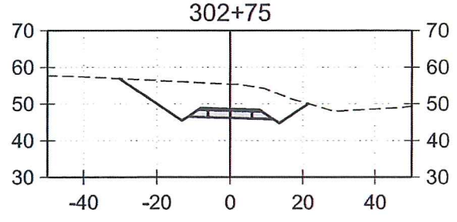


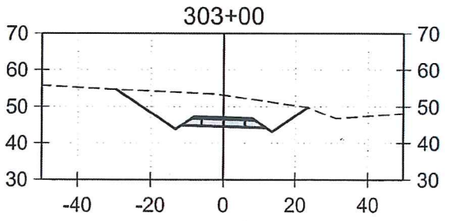


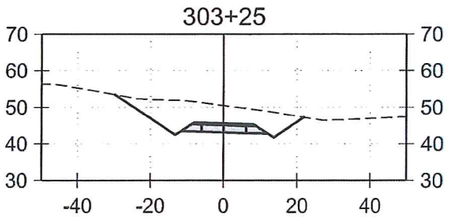


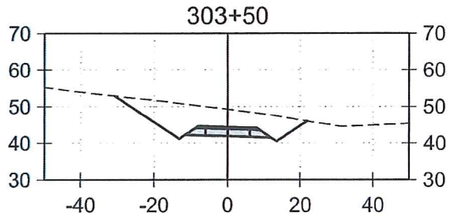


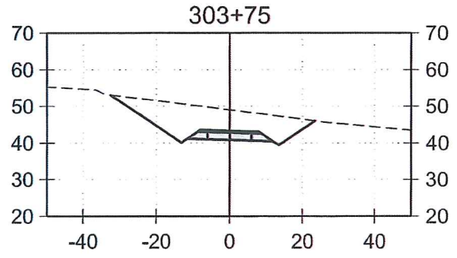


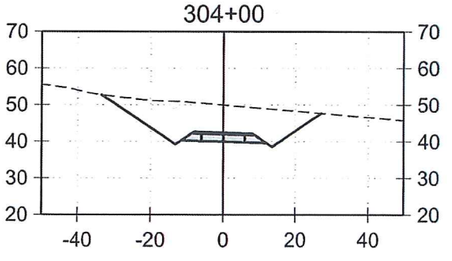


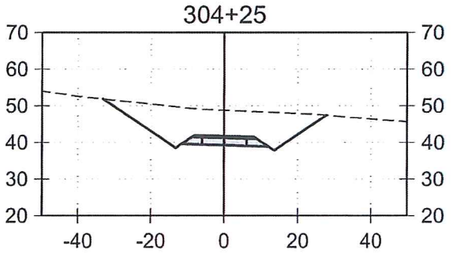


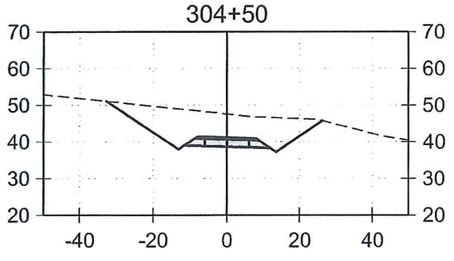


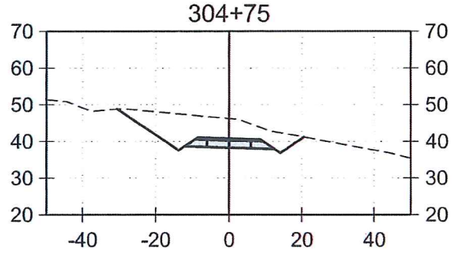












Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8.23.17 Date

REVISIONS

REV #1	07/08/2016	a. ADDED SHEET FOR REGRADING FROM STATION 305+91 TO 309+86.
REV #2	08/22/2016	a. REVISED GRADING TO 1 ½:1 CUT SLOPES.

STATE OF ALASKA
Michael L. Duman
No. 13756
REGISTERED PROFESSIONAL ENGINEER
9-23-2016

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL
ACCESS ROAD

SITE EXHIBIT
SITE 3 - REVISED SECTIONS

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Construction Services\20160630 Revised Grading Site 3\53-02 Site Exhibit - Site 3 STA 30100 to 30475.dwg
TAB: Z3
Monday, August 22, 2016 10:24:42 AM Ryan Berger

REVISIONS NO.	DATE	DESCRIPTION
#1	07/08/2016	SEE NOTE ABOVE
#2	08/22/2016	SEE NOTE ABOVE

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	Z3	5

DESIGNED BY M. DUMAN
CHECKED BY B. MARTIN
DRAFTED BY R. BERGER

XREFS

SCALE ########

LAYOUT Z3

DATE TIME 8/22/2016 3:09:22 PM

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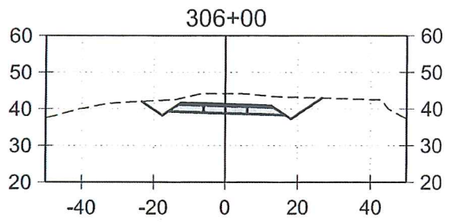
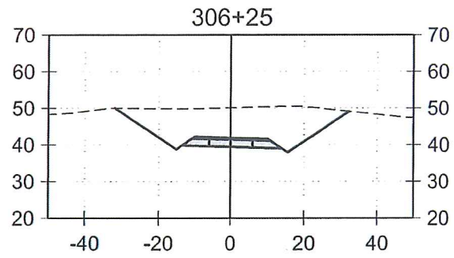
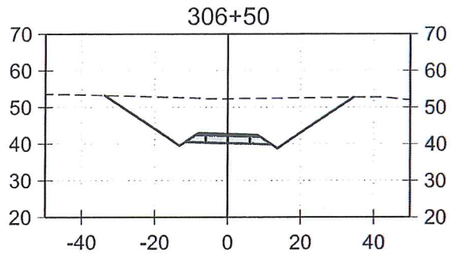
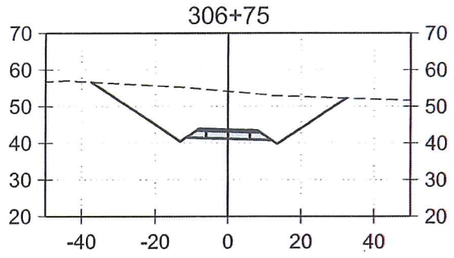
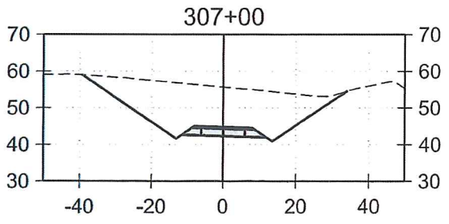
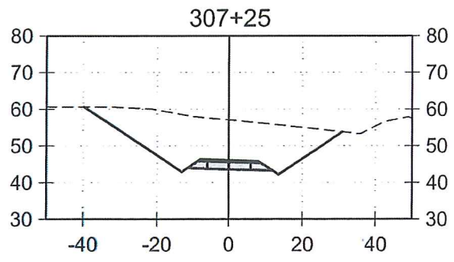


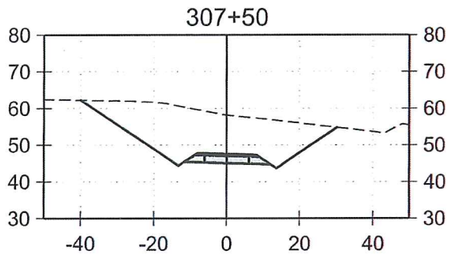


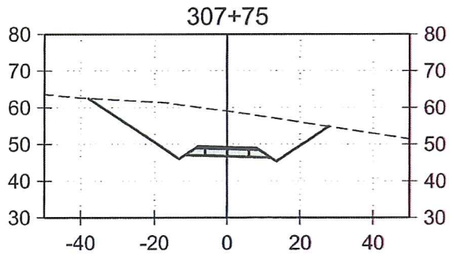


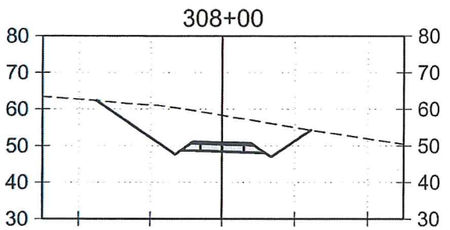


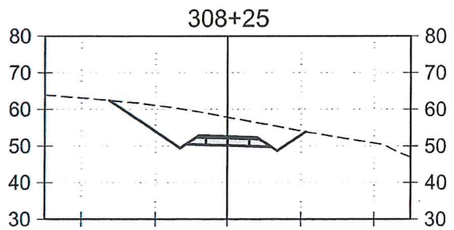


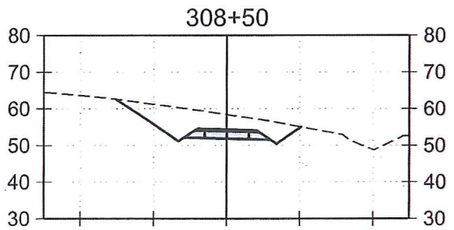


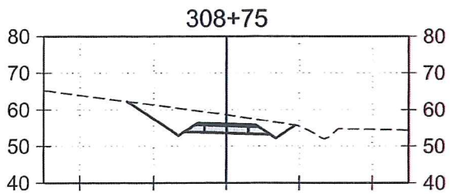


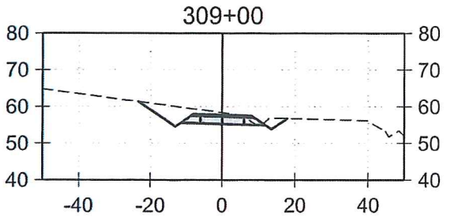


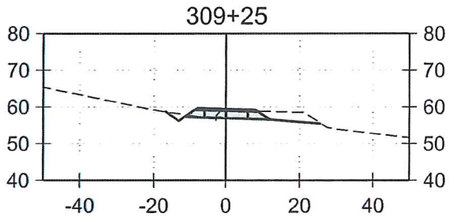


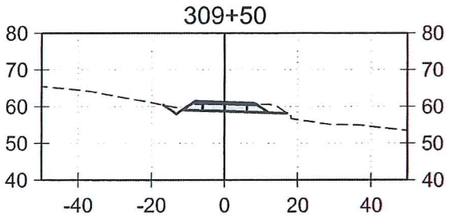


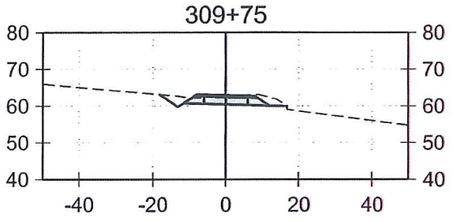


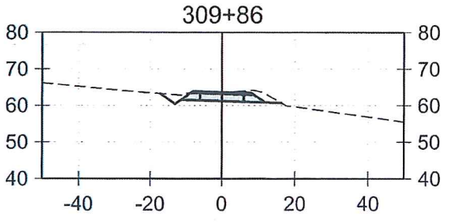












Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8.23.17 Date

REVISIONS

REV #1	07/08/2016	a. ADDED SHEET FOR REGRADING FROM STATION 305+91 TO 309+86.
REV #2	08/22/2016	a. REVISED GRADING TO 1 ½:1 CUT SLOPES.

STATE OF ALASKA
Michael L. Duman
No. 13756
REGISTERED PROFESSIONAL ENGINEER
8-23-2016

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53\(ADOT)\53-02(Gravina)\Design\Construction Services\20160630 Revised Grading Site 3\53-02 Site Exhibit - Site 3 STA 30100 to 30475.dwg
TAB: Z4 Monday, August 22, 2016 10:25:07 AM Ryan Berger

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

SITE EXHIBIT
SITE 3 - REVISED SECTIONS

REVISIONS NO.	DATE	DESCRIPTION	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
#1	07/08/2016	SEE NOTE ABOVE	Z699220000	2016	Z4	5
#2	08/22/2016	SEE NOTE ABOVE				

DRAWING LOCATION
P:\53\(ADOT)\53-02(Gravina)\Design\Construction Services\20160630 Revised Grading Site 3\53-02 Site Exhibit - Site 3 STA 30100 to 30475.dwg

DATE TIME
Site 3 STA 30100 to 30475.dwg

LAYOUT
Z4

SCALE
########

XREFS

DESIGNED BY M. DUMAN
CHECKED BY B. MARTIN
DRAFTED BY R. BERGER

STAKING DATA - SITE 3

STATION	OFFSET (RT)	OFFSET (LT)	CONDITION (RT)	CONDITION (LT)	NOTES
300+00	17.25'	16.35'	CUT	CUT	
300+25	16.96'	16.29'	CUT	CUT	
300+50	17.63'	16.97'	CUT	CUT	
300+75	18.61'	17.55'	CUT	CUT	
301+00	17.84'	16.02'	CUT	CUT	
301+25	12.60'	12.72'	FILL	FILL	
301+50	13.52'	17.95'	FILL	FILL	
301+75	17.77'	18.49'	CUT	CUT	
302+00	20.83'	25.99'	CUT	CUT	
302+25	22.43'	28.58'	CUT	CUT	
302+50	21.65'	28.74'	CUT	CUT	
302+75	21.44'	30.32'	CUT	CUT	
303+00	23.50'	29.50'	CUT	CUT	
303+25	21.86'	29.77'	CUT	CUT	
303+50	21.85'	30.78'	CUT	CUT	
303+75	23.43'	32.46'	CUT	CUT	
304+00	27.22'	33.35'	CUT	CUT	
304+25	27.88'	33.19'	CUT	CUT	
304+50	26.24'	32.86'	CUT	CUT	
304+75	20.56'	30.61'	CUT	CUT	
305+00	23.56'	17.18'	FILL	CUT	
305+25	30.62'	30.10'	FILL	FILL	
305+50	47.16'	36.36'	FILL	FILL	*CATCHES AGAINST SPA*
305+75	44.74'	38.85'	FILL	FILL	*RT CATCHES AGAINST SPA*
306+00	26.60'	23.40'	CUT	CUT	
306+25	32.30'	32.07'	CUT	CUT	
306+50	34.37'	33.76'	CUT	CUT	
306+75	32.24'	37.43'	CUT	CUT	
307+00	33.95'	39.21'	CUT	CUT	
307+25	30.93'	39.78'	CUT	CUT	
307+50	30.19'	39.98'	CUT	CUT	
307+75	27.78'	37.96'	CUT	CUT	
308+00	24.42'	35.09'	CUT	CUT	
308+25	21.25'	32.60'	CUT	CUT	
308+50	20.36'	30.25'	CUT	CUT	
308+75	18.83'	27.21'	CUT	CUT	
309+00	17.84'	23.38'	CUT	CUT	
309+20.10	33.65'	18.02'	DAYLIGHT CUT	CUT	*DAYLIGHT SLOPE VARIES 6% TO 3%*
309+25	25.54'	16.78'	DAYLIGHT CUT	CUT	
309+27	23.66'	16.38'	DAYLIGHT CUT	CUT	*DAYLIGHT SLOPE 3% TO END*
309+50	17.01'	16.84'	DAYLIGHT CUT	CUT	
309+75	16.80'	18.27'	DAYLIGHT CUT	CUT	
309+86	16.39'	17.32'	DAYLIGHT CUT	CUT	*END SITE 3*

REVISED
08/22/2016

REVISIONS

REV #1	07/08/2016	a. REVISED STAKING DATA.
REV #2	08/22/2016	a. REVISED STAKING DATA.

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. NP 8.23.17 Date

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

SITE EXHIBIT
SITE 3 - STAKING DATA

Michael L. Duman
No. 13756
REGISTERED PROFESSIONAL ENGINEER
8-23-2016

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Construction Services\20160630 Revised Grading Site 3\53-02 Site Exhibit - Site 3 STA 30100 to 30475.dwg
TAB: Z5 Monday, August 22, 2016 10:25:26 AM Ryan Berger

REVISIONS NO.	DATE	DESCRIPTION
#1	07/08/2016	SEE NOTE ABOVE
#2	08/22/2016	SEE NOTE ABOVE

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
Z699220000	2016	Z5	5

DESIGNED BY M. DUMAN
DRAWN BY R. BERGER
CHECKED BY M. DUMAN
DRAFTED BY R. BERGER

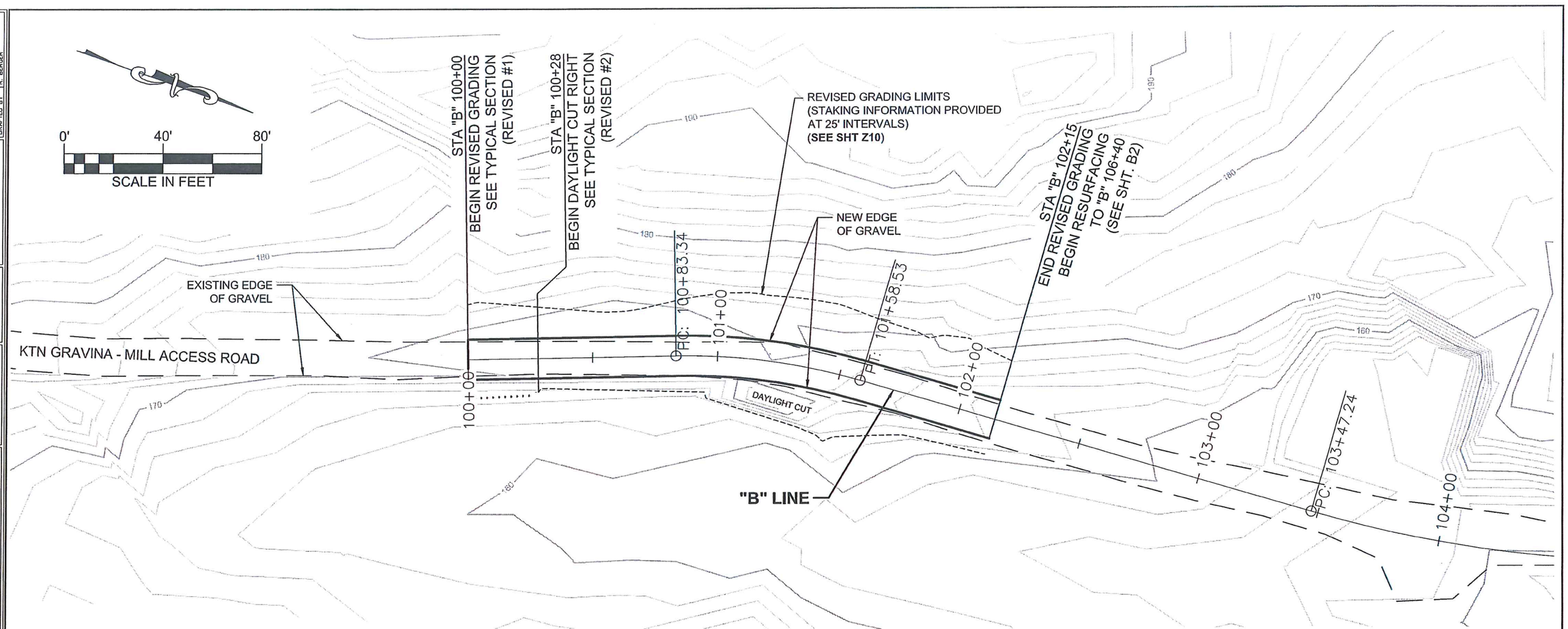
XREFS

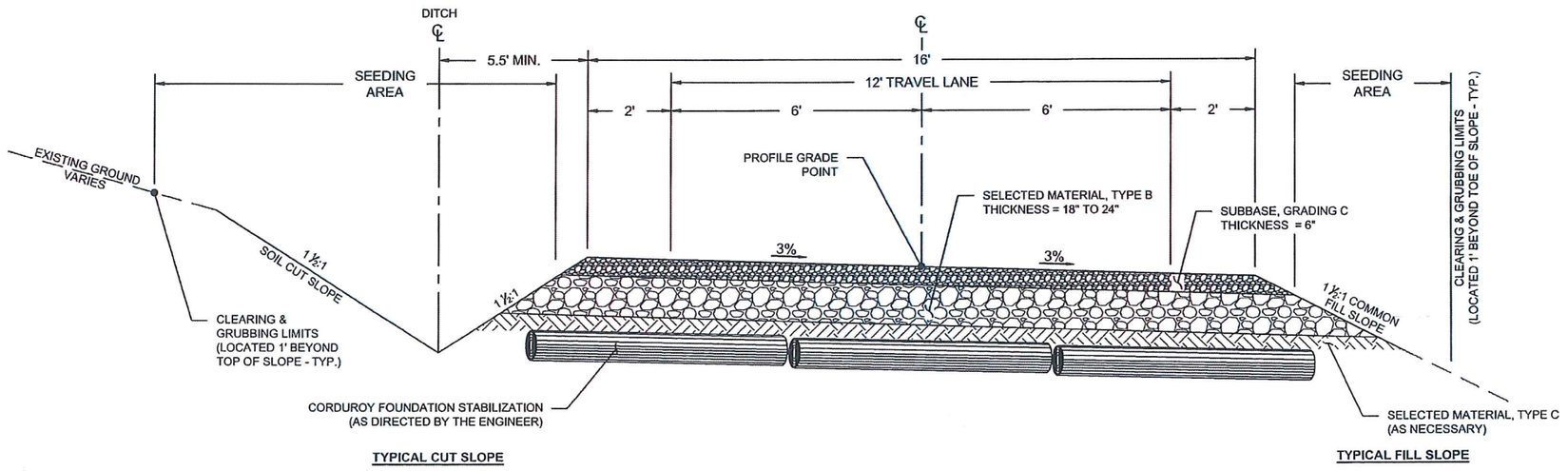
SCALE ########

LAYOUT Z5

DATE TIME
8/22/2016 3:08:02 PM

DRAWING LOCATION
P:\53(ADOT)\53-02(Gravina)\Design\Construction Services\20160630 Revised Grading Site 3\53-02 Site Exhibit - Site 3 STA 30100 to 30475.dwg





TYPICAL CUT SLOPE

TYPICAL FILL SLOPE

FULL DEPTH CONSTRUCTION (REVISED #1)

SITE 1: STA "B" 100+00 TO "B" 102+15
STA "B" 106+40 TO "B" 110+10

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. [signature] 8-23-17 Date

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL ACCESS ROAD

SITE EXHIBIT
SITE 1 - REVISED GRADING

Michael L. Duman
No. 13756
REGISTERED PROFESSIONAL ENGINEER
8-30-2016

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Construction Services\20160826 Revised Grading Site 1\53-02 Site Exhibit - Site 1.dwg
TAB: Z6
Friday, August 26, 2016 2:52:41 PM Ryan Berger

REVISIONS			PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
NO.	DATE	DESCRIPTION				
			Z699220000	2016	Z6	5

DRAWING LOCATION
P:\53(ADOT)\53-02(Gravina)\Design\Construction Services\20160826 Revised Grading Site 1\53-02 Site Exhibit - Site 1.dwg 8/26/2016 2:51 PM

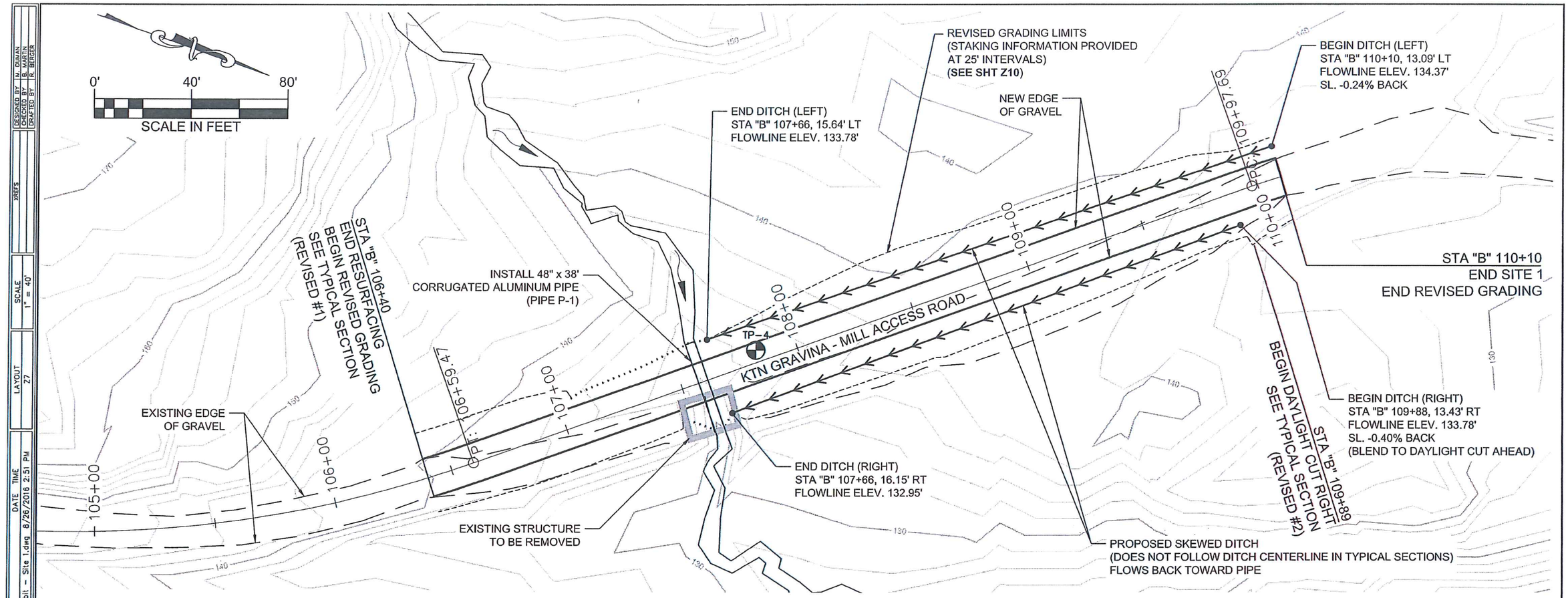
DESIGNED BY	M. DUMAN
CHECKED BY	B. MARTIN
DRAFTED BY	R. BERGER

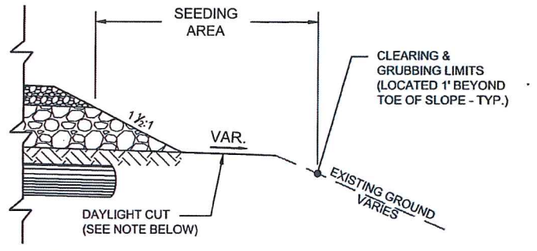
XREFS

SCALE 1" = 40'

LAYOUT Z6

DATE TIME





NOTE:
BLEND DAYLIGHT CUT TO FULL DITCH SECTION BETWEEN "B" 109+89
AND START OF DITCH RIGHT.

FULL DEPTH CONSTRUCTION (REVISED #2)

SITE 1: STA "B" 100+28 TO "B" 102+15
STA "B" 109+89 TO "B" 110+10
(RIGHT SIDE ONLY)

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MD 8.28.17 Date

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

Michael L. Duman
No. 13756
REGISTERED PROFESSIONAL ENGINEER
8-30-2016

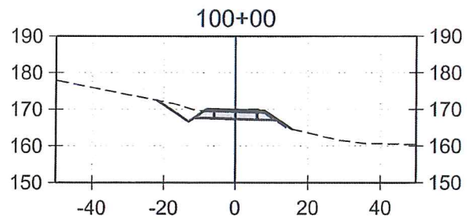
KTN GRAVINA - MILL
ACCESS ROAD

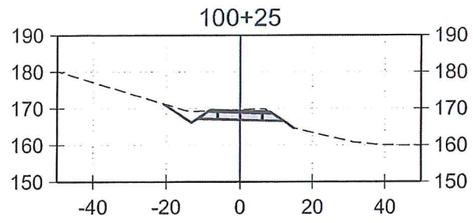
SITE EXHIBIT
SITE 1 - REVISED GRADING

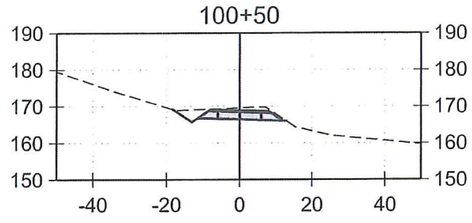
DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Construction Services\20160826 Revised Grading Site 1\53-02 Site Exhibit - Site 1.dwg
TAB: Z7 Friday, August 26, 2016 2:53:09 PM Ryan Berger

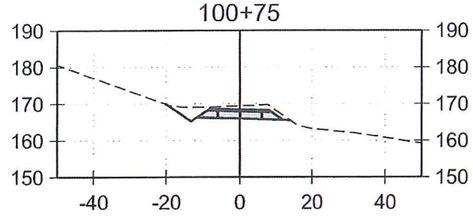
REVISIONS			PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
NO.	DATE	DESCRIPTION				
			Z699220000	2016	Z7	5

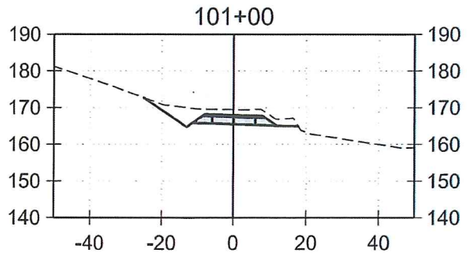
DESIGNED BY: M. DUMAN
CHECKED BY: B. MARTIN
DRAFTED BY: R. BERGER
XREFS
SCALE: 1" = 40'
LAYOUT: Z7
DATE: 8/26/2016
TIME: 2:51 PM
DRAWING LOCATION
P:\53(ADOT)\53-02(Gravina)\Design\Construction Services\20160826 Revised Grading Site 1\53-02 Site Exhibit - Site 1.dwg

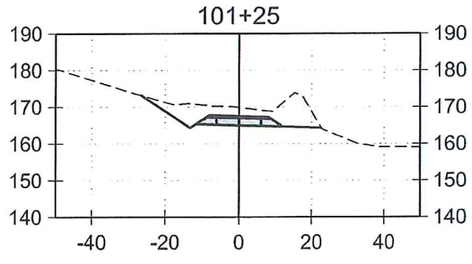


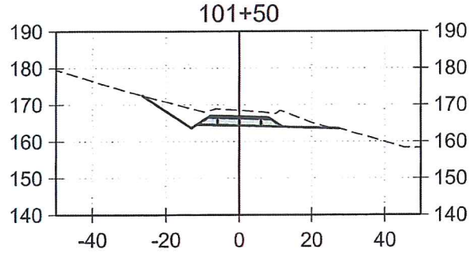


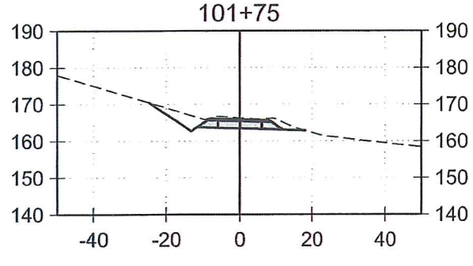


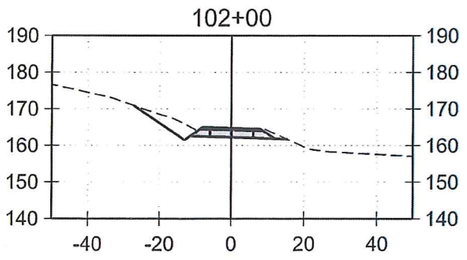












DRAWING LOCATION
P:\53(ADOT)\53-02(Gravina)\Design\Construction Services\20160826 Revised Grading Site 1\53-02 Site Exhibit - Site 1.dwg 8/26/2016 2:51 PM

DATE TIME

LAYOUT
Z8

SCALE
##########

XREFS

DESIGNED BY M. DUMAN
CHECKED BY B. MARTIN
DRAFTED BY R. BERGER

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MD 8-23-17 Date

STATE OF ALASKA
Michael L. Duman
No. 13756
REGISTERED PROFESSIONAL ENGINEER
8-30-2016

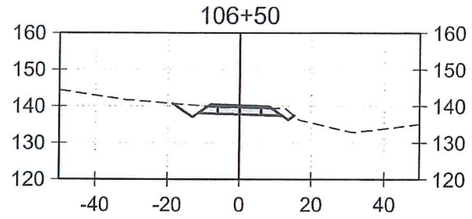
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

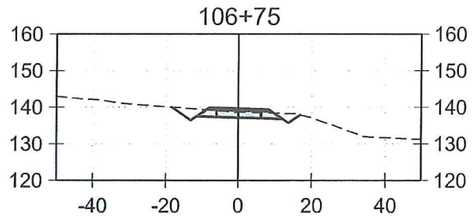
KTN GRAVINA - MILL ACCESS ROAD

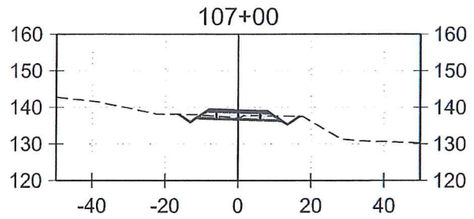
SITE EXHIBIT
SITE 1 - REVISED SECTIONS

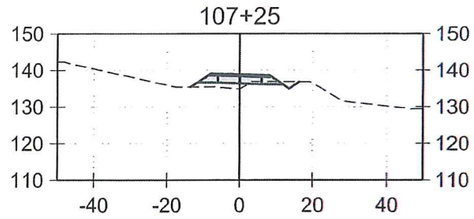
DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Construction Services\20160826 Revised Grading Site 1\53-02 Site Exhibit - Site 1.dwg
TAB: Z8 Friday, August 26, 2016 2:53:27 PM Ryan Berger

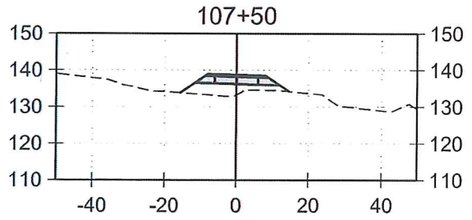
REVISIONS			PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
NO.	DATE	DESCRIPTION				
			Z699220000	2016	Z8	5

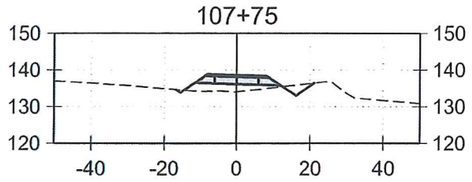


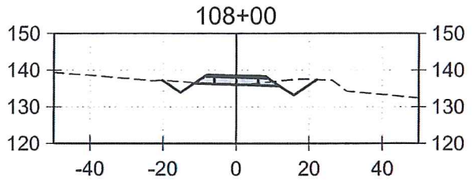


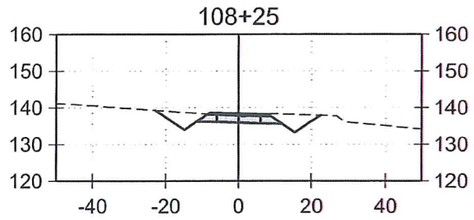


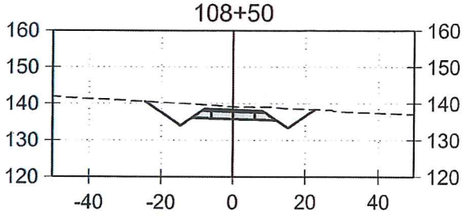


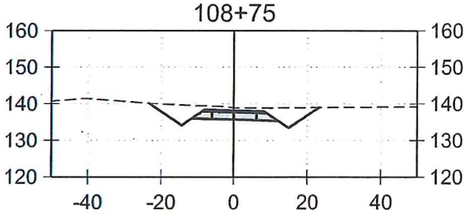


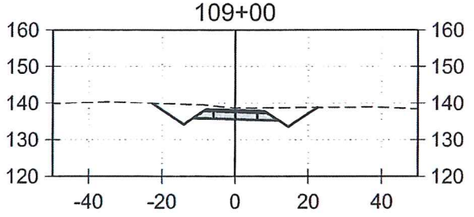


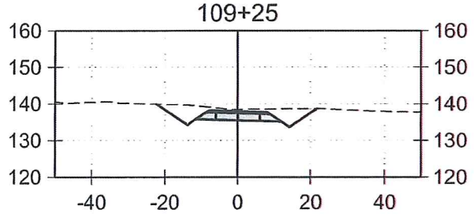


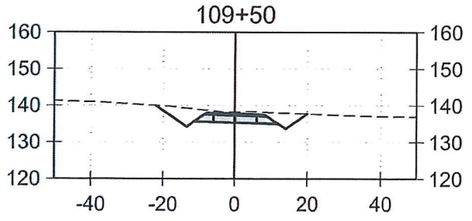


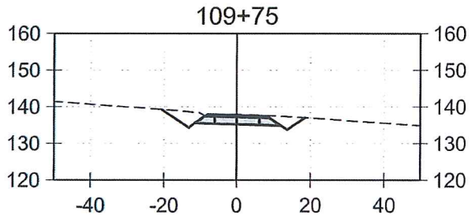


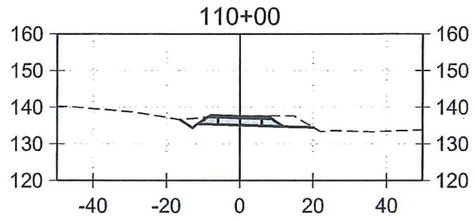


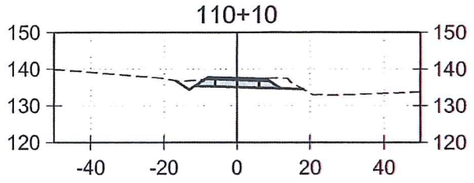












Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MD 8.23.17 Date

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL
ACCESS ROAD

SITE EXHIBIT
SITE 1 - REVISED SECTIONS

STATE OF ALASKA
Michael L. Duman
No. 13756
REGISTERED PROFESSIONAL ENGINEER
8-30-2016

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Construction Services\20160826 Revised Grading Site 1\53-02 Site Exhibit - Site 1.dwg
TAB: Z9 Friday, August 26, 2016 2:53:51 PM Ryan Berger

REVISIONS			PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
NO.	DATE	DESCRIPTION				
			Z699220000	2016	Z9	5

DRAWING LOCATION
P:\53(ADOT)\53-02(Gravina)\Design\Construction Services\20160826 Revised Grading Site 1\53-02 Site Exhibit - Site 1.dwg

DATE TIME 8/26/2016 2:51 PM
LAYOUT Z9
SCALE ########
XREFS
DESIGNED BY M. DUMAN
CHECKED BY B. MARTIN
DRAFTED BY R. BERGER

STAKING DATA - SITE 1

STATION	OFFSET (RT)	OFFSET (LT)	CONDITION (RT)	CONDITION (LT)	NOTES
100+00	15.53'	21.84'	FILL	CUT	*BEGIN SITE 1*
100+25	14.76'	20.83'	FILL	CUT	
100+50	12.83'	18.40'	DAYLIGHT CUT	CUT	
100+75	13.85'	20.19'	DAYLIGHT CUT	CUT	
101+00	17.85'	25.05'	DAYLIGHT CUT	CUT	
101+25	22.68'	26.38'	DAYLIGHT CUT	CUT	
101+50	27.39'	26.50'	DAYLIGHT CUT	CUT	
101+75	18.01'	24.81'	DAYLIGHT CUT	CUT	
102+00	15.13'	27.08'	DAYLIGHT CUT	CUT	
102+15	14.47'	24.26'	DAYLIGHT CUT	CUT	*END FULL DEPTH, BEGIN RESURFACE*
106+40	14.56'	18.92'	CUT	CUT	*END RESURFACE, BEGIN FULL DEPTH*
106+50	15.10'	18.73'	CUT	CUT	
106+75	16.74'	18.51'	CUT	CUT	
107+00	16.84'	16.34'	CUT	CUT	
107+25	16.32'	13.49'	CUT	FILL	
107+50	14.44'	15.66'	FILL	FILL	
107+75	21.12'	16.74'	CUT	CUT	
108+00	22.14'	20.25'	CUT	CUT	
108+25	22.41'	22.94'	CUT	CUT	
108+50	22.68'	24.57'	CUT	CUT	
108+75	23.19'	23.57'	CUT	CUT	
109+00	22.47'	22.77'	CUT	CUT	
109+25	21.69'	22.40'	CUT	CUT	
109+50	19.93'	22.13'	CUT	CUT	
109+75	18.50'	20.61'	CUT	CUT	
109+89	18.73'	17.70'	DAYLIGHT CUT	CUT	*BEGIN DAYLIGHT CUT RIGHT*
110+00	20.15'	16.24'	DAYLIGHT CUT	CUT	
110+10	18.15'	16.69'	DAYLIGHT CUT	CUT	*END SITE 1*

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8.12.17 Date

STATE OF ALASKA
Michael L. Duman
No. 13756
REGISTERED PROFESSIONAL ENGINEER
8-30-2016

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
SOUTHCOAST REGION

KTN GRAVINA - MILL
ACCESS ROAD

SITE EXHIBIT
SITE 1 - STAKING DATA

DESIGNED BY: M. DUMAN
DRAWN BY: R. BERGER
PATH: P:\53(ADOT)\53-02(Gravina)\Design\Construction Services\20160826 Revised Grading Site 1\53-02 Site Exhibit - Site 1.dwg
TAB: Z10 Friday, August 26, 2016 2:54:04 PM Ryan Berger

REVISIONS			PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
NO.	DATE	DESCRIPTION				
			Z699220000	2016	Z10	5

DESIGNED BY M. DUMAN
CHECKED BY B. MARTIN
DRAFTED BY R. BERGER

XREFS

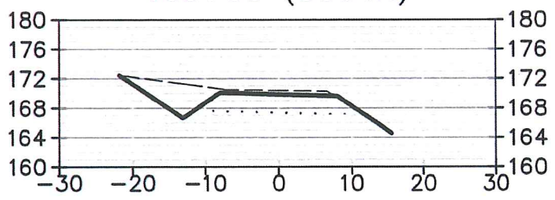
SCALE ########

LAYOUT Z10

DATE TIME 8/26/2016 2:51 PM

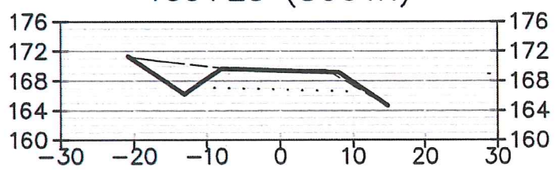
DRAWING LOCATION
P:\53(ADOT)\53-02(Gravina)\Design\Construction Services\20160826 Revised Grading Site 1\53-02 Site Exhibit - Site 1.dwg

100+00 (SOUTH)



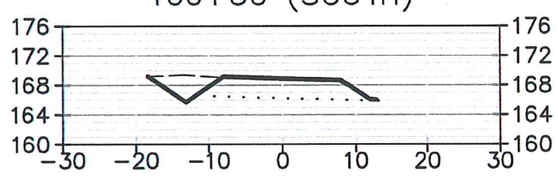
Total Volume at Station 100+00	
Cut Area	89.97 (ft^2)
Cut Vol	0.00 (yd^3)
Cum Cut Vol	0.00 (yd^3)
Fill Area	0.00 (ft^2)
Fill Volume	0.00 (yd^3)
Cum Fill Vol	0.00 (yd^3)

100+25 (SOUTH)



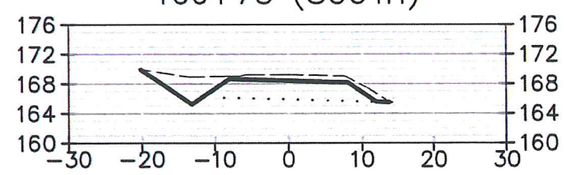
Total Volume at Station 100+25	
Cut Area	77.05 (ft^2)
Cut Vol	77.32 (yd^3)
Cum Cut Vol	77.32 (yd^3)
Fill Area	0.00 (ft^2)
Fill Volume	0.00 (yd^3)
Cum Fill Vol	0.00 (yd^3)

100+50 (SOUTH)



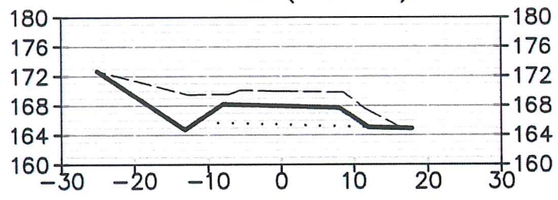
Total Volume at Station 100+50	
Cut Area	71.50 (ft^2)
Cut Vol	68.77 (yd^3)
Cum Cut Vol	146.10 (yd^3)
Fill Area	0.00 (ft^2)
Fill Volume	0.00 (yd^3)
Cum Fill Vol	0.00 (yd^3)

100+75 (SOUTH)



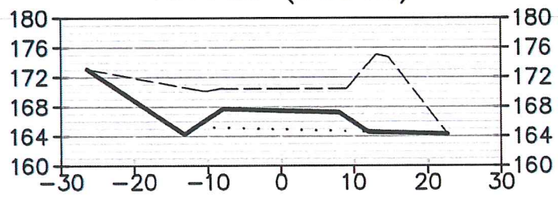
Total Volume at Station 100+75	
Cut Area	89.95 (ft^2)
Cut Vol	74.75 (yd^3)
Cum Cut Vol	220.84 (yd^3)
Fill Area	0.00 (ft^2)
Fill Volume	0.00 (yc
Cum Fill Vol	0.00 (yc

101+00 (SOUTH)



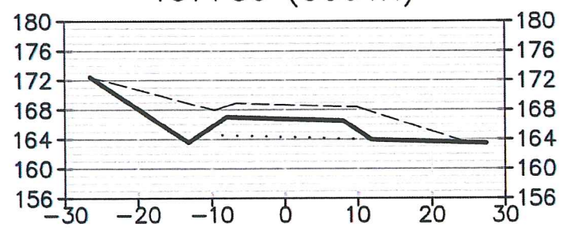
Total Volume at Station 101+00	
Cut Area	140.43 (ft^2)
Cut Vol	106.66 (yd^3)
Cum Cut Vol	327.50 (yd^3)
Fill Area	0.00 (ft^2)
Fill Volume	0.00 (yd^3)
Cum Fill Vol	0.00 (yd^3)

101+25 (SOUTH)



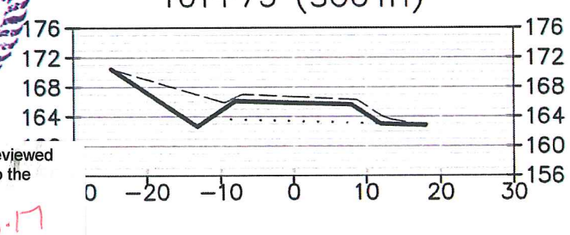
Total Volume at Station 101+25	
Cut Area	229.63 (ft^2)
Cut Vol	171.32 (yd^3)
Cum Cut Vol	498.821 (yd^3)
Fill Area	0.00 (ft^2)
Fill Volume	0.00 (yd^3)
Cum Fill Vol	0.00 (yd^3)

101+50 (SOUTH)



Total Volume at Station 101+50	
Cut Area	147.50 (ft^2)
Cut Vol	174.60 (yd^3)
Cum Cut Vol	673.42 (yd^3)
Fill Area	0.00 (ft^2)
Fill Volume	0.00 (yd^3)
C	

101+75 (SOUTH)



Total Volume at Station 101+75	
Cut Area	102.01 (ft^2)
Cut Vol	115.51 (yd^3)
Cum Cut Vol	788.94 (yd^3)
Fill Area	0.00 (ft^2)
Fill Volume	0.00 (yd^3)
Cum Fill Vol	0.00 (yd^3)

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. Date

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8.23.17 Date

STATE OF ALASKA 49TH Jared M. Leavitt LS 14826 10/29/16

0 20 40 Feet

LEGEND

PROPOSED FINISHED GRADE
PROPOSED SUBGRADE
EXISTING GROUND

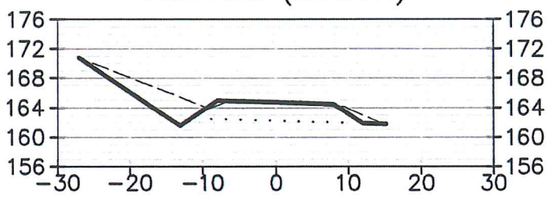
NOTE: THESE VOLUMES ARE DERIVED FROM THE AREA CUT/FILLED FROM ORIGINAL GROUND TO PROPOSED SUBGRADE

DOWL
WWW.DOWL.COM

GRAVINA - MILL ACCESS ROAD
SITE 1
TOTAL CUT/FILL QUANTITIES

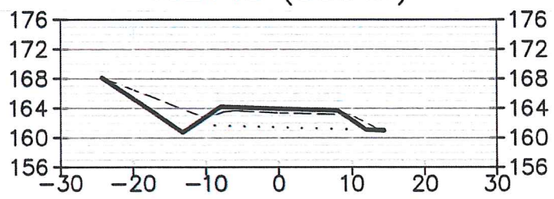
PROJECT:	1227.70866
DATE:	10/29/2016
DRAWN BY:	I.M.D.
CHECKED BY:	J.M.L.

102+00 (SOUTH)



Total Volume at Station 102+00	
Cut Area	83.43 (ft^2)
Cut Vol	85.85 (yd^3)
Cum Cut Vol	874.79 (yd^3)
Fill Area	0.00 (ft^2)
Fill Volume	0.00 (yd^3)
Cum Fill Vol	0.00 (yd^3)

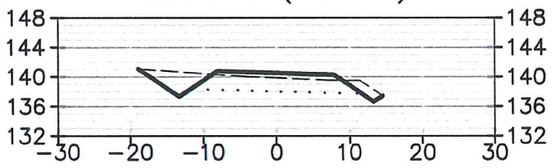
102+15 (SOUTH)



Total Volume at Station 102+15	
Cut Area	64.52 (ft^2)
Cut Vol	41.10 (yd^3)
Cum Cut Vol	915.88 (yd^3)
Fill Area	0.00 (ft^2)
Fill Volume	0.00 (yd^3)
Cum Fill Vol	0.00 (yd^3)

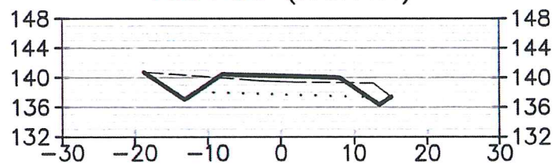
STA: 102+15 – 106+40 RESURFACE ONLY

106+40 (NORTH)



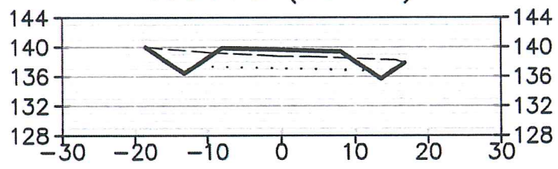
Total Volume at Station 106+40	
Cut Area	61.65 (ft^2)
Cut Vol	0.00 (yd^3)
Cum Cut Vol	0.00 (yd^3)
Fill Area	0.00 (ft^2)
Fill Volume	0.00 (yd^3)
Cum Fill Vol	0.00 (yd^3)

106+50 (NORTH)



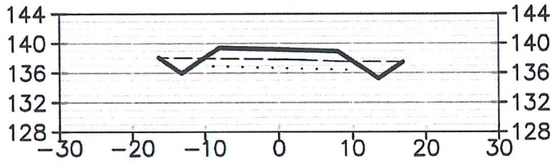
Total Volume at Station 106+50	
Cut Area	62.38 (ft^2)
Cut Vol	22.97 (yd^3)
Cum Cut Vol	22.97 (yd^3)
Fill Area	0.00 (ft
Fill Volume	0.00 (y
Cum Fill Vol	0.00 (y

106+75 (NORTH)



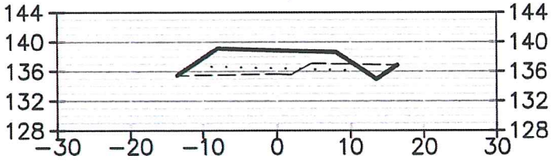
Total Volume at Station 106+75	
Cut Area	60.83 (ft^2)
Cut Vol	57.04 (yd^3)
Cum Cut Vol	80.01 (yd^3)
Fill Area	0.00 (ft^2)
Fill Volume	0.00 (yd^3)
Cum Fill Vol	0.00 (yd^3)

107+00 (NORTH)



Total Volume at Station 107+00	
Cut Area	38.84 (ft^2)
Cut Vol	46.14 (yd^3)
Cum Cut Vol	126.15 (yd^3)
Fill Area	0.00 (ft^2)
Fill Volume	0.00 (yd^3)
Cum Fill Vol	0.00 (yd^3)

107+25 (NORTH)

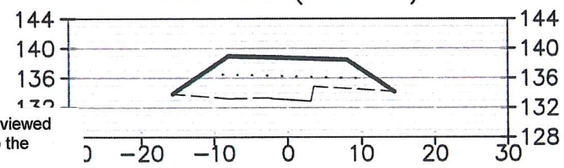


Total Volume at Station 107+25	
Cut Area	11.60 (ft^2)
Cut Vol	23.35 (yd^3)
Cum Cut Vol	149.51 (yd^3)
Fill Area	15.19 (ft^2)
Fill Volume	7.03 (yd^3)
Cur	

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. Date

107+50 (NORTH)



Total Volume at Station 107+50	
Cut Area	0.00 (ft^2)
Cut Vol	5.37 (yd^3)
Cum Cut Vol	154.88 (yd^3)
Fill Area	67.84 (ft^2)
Fill Volume	38.44 (yd^3)
Cum Fill Vol	45.47 (yd^3)

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP Date 8.23.17

0 20 40 Feet

LEGEND

PROPOSED FINISHED GRADE
PROPOSED SUBGRADE
EXISTING GROUND

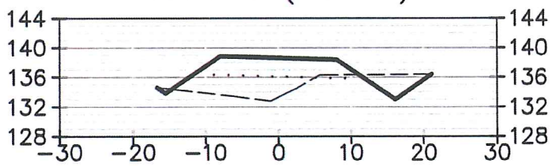
NOTE: THESE VOLUMES ARE DERIVED FROM THE AREA CUT/FILLED FROM ORIGINAL GROUND TO PROPOSED SUBGRADE

DOWL
WWW.DOWL.COM

GRAVINA - MILL ACCESS ROAD
SITE 1
TOTAL CUT/FILL QUANTITIES

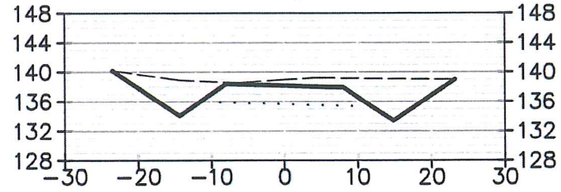
PROJECT:	1227.70866
DATE:	10/29/2016
DRAWN BY:	I.M.D.
CHECKED BY:	J.M.L.

107+75 (NORTH)



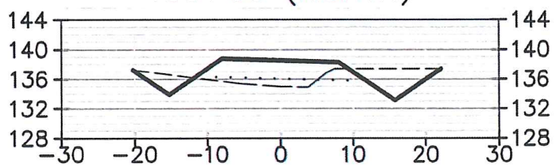
Total Volume at Station 107+75	
Cut Area	2.81 (ft²)
Cut Vol	1.30 (yd³)
Cum Cut Vol	156.18 (yd³)
Fill Area	61.46 (ft²)
Fill Volume	59.86 (yd³)
Cum Fill Vol	105.33 (yd³)

108+75 (NORTH)



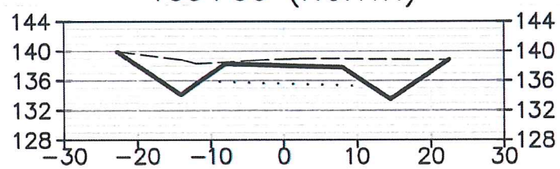
Total Volume at Station 108+75	
Cut Area	147.17 (ft²)
Cut Vol	137.29 (yd³)
Cum Cut Vol	499.80 (yd³)
Fill Area	0.00 (ft²)
Fill Volume	0.00 (yd³)
Cum Fill Vol	145.88 (yd³)

108+00 (NORTH)



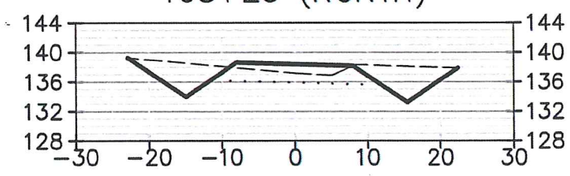
Total Volume at Station 108+00	
Cut Area	45.73 (ft²)
Cut Vol	22.47 (yd³)
Cum Cut Vol	178.65 (yd³)
Fill Area	13.06 (ft²)
Fill Volume	34.50 (yd³)
Cum Fill Vol	139.83 (yd³)

109+00 (NORTH)



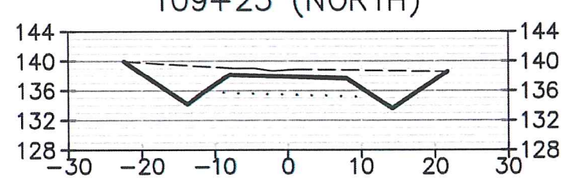
Total Volume at Station 109+00	
Cut Area	138.49 (ft²)
Cut Vol	132.25 (yd³)
Cum Cut Vol	632.05 (yd³)
Fill Area	0.00 (ft²)
Fill Volume	0.00 (yd³)
Cum Fill Vol	145.88 (yd³)

108+25 (NORTH)



Total Volume at Station 108+25	
Cut Area	101.01 (ft²)
Cut Vol	67.94 (yd³)
Cum Cut Vol	246.58 (yd³)
Fill Area	0.00 (ft²)
Fill Volume	6.05 (yd³)
Cum Fill Vol	145.88 (yd³)

109+25 (NORTH)

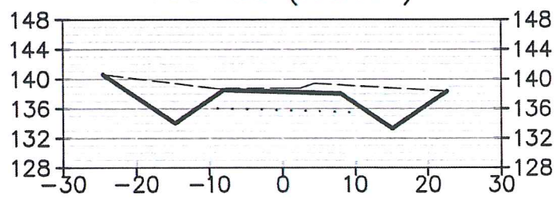


Total Volume at Station 109+25	
Cut Area	142.73 (ft²)
Cut Vol	130.19 (yd³)
Cum Cut Vol	762.24 (yd³)
Fill Area	0.00 (ft²)
Fill Volume	0.00 (yd³)

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. Date

108+50 (NORTH)

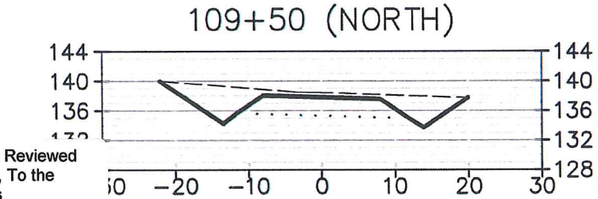


Total Volume at Station 108+50	
Cut Area	149.38 (ft²)
Cut Vol	115.92 (yd³)
Cum Cut Vol	362.51 (yd³)
Fill Area	0.00 (ft²)
Fill Volume	0.00 (yd³)
Cum Fill Vol	145.88 (yd³)

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP Date 8-23-17

109+50 (NORTH)



Total Volume at Station 109+50	
Cut Area	124.12 (ft²)
Cut Vol	123.54 (yd³)
Cum Cut Vol	885.78 (yd³)
Fill Area	0.00 (ft²)
Fill Volume	0.00 (yd³)
Cum Fill Vol	145.88 (yd³)

0 20 40 Feet

LEGEND

PROPOSED FINISHED GRADE
PROPOSED SUBGRADE
EXISTING GROUND

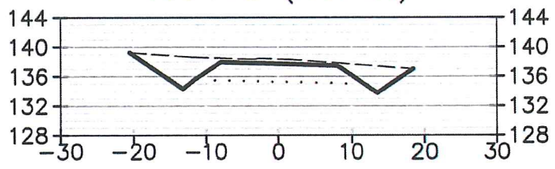
NOTE: THESE VOLUMES ARE DERIVED FROM THE AREA CUT/FILLED FROM ORIGINAL GROUND TO PROPOSED SUBGRADE

DOWL
WWW.DOWL.COM

GRAVINA - MILL ACCESS ROAD
SITE 1
TOTAL CUT/FILL QUANTITIES

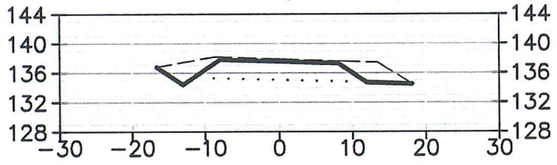
PROJECT:	1227.70866
DATE:	10/29/2016
DRAWN BY:	I.M.D.
CHECKED BY:	J.M.L.

109+75 (NORTH)



Total Volume at Station 109+75	
Cut Area	105.06 (ft²)
Cut Vol	106.10 (yd³)
Cum Cut Vol	991.89 (yd³)
Fill Area	0.00 (ft²)
Fill Volume	0.00 (yd³)
Cum Fill Vol	145.88 (yd³)

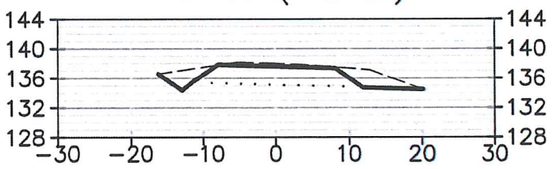
110+10 (NORTH)



Total Volume at Station 110+10	
Cut Area	76.99 (ft²)
Cut Vol	27.36 (yd³)
Cum Cut Vol	1100.63 (yd³)
Fill Area	0.00 (ft²)
Fill Volume	0.00 (yd³)
Cum Fill Vol	145.88 (yd³)

0 20 40 Feet

110+00 (NORTH)

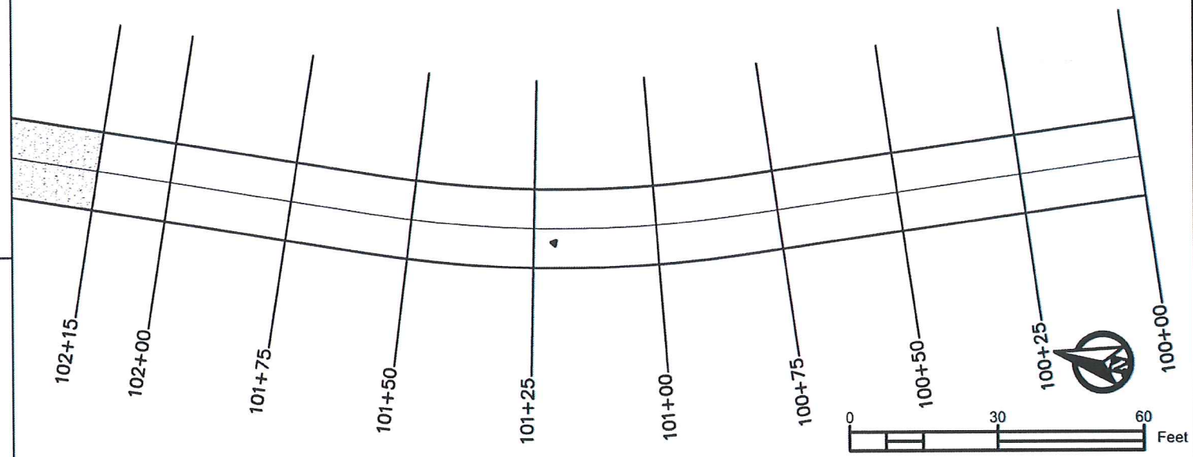


Total Volume at Station 110+00	
Cut Area	70.74 (ft²)
Cut Vol	81.39 (yd³)
Cum Cut Vol	1073.27 (yd³)
Fill Area	0.00 (ft²)
Fill Volume	0.00 (yd³)
Cum Fill Vol	145.88 (yd³)

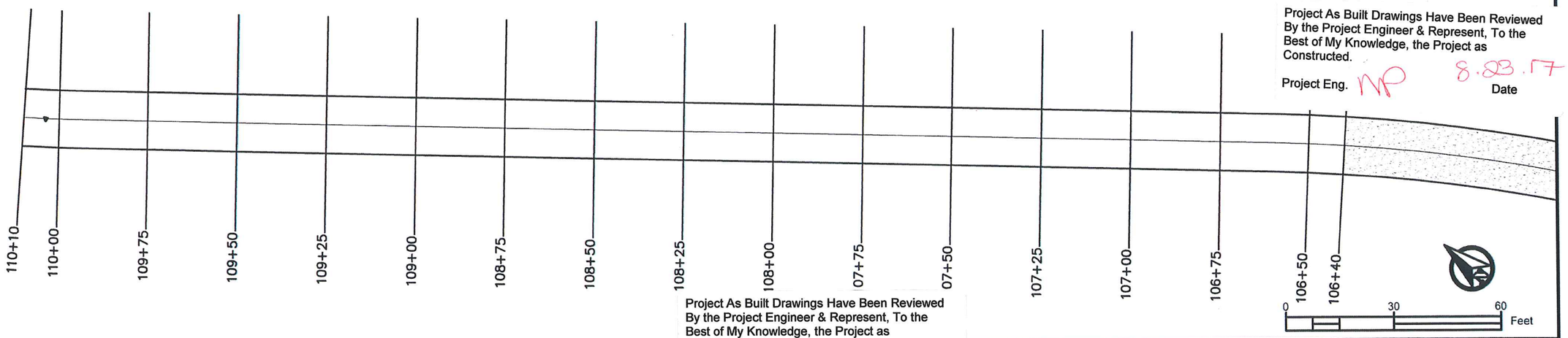
SOUTH CUM. CUT: 915.88 YD³
NORTH CUM. CUT: 1100.63 YD³
TOTAL CUT VOL: 2016.51 YD³

SOUTH CUM. FILL: 0.00 YD³
NORTH CUM. FILL: 145.88 YD³
TOTAL FILL VOL: 145.88 YD³

SITE 1 SOUTH



SITE 1 NORTH



Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. MP 8.23.17 Date

Project As Built Drawings Have Been Reviewed By the Project Engineer & Represent, To the Best of My Knowledge, the Project as Constructed.

Project Eng. Date

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PROPOSED SUBGRADE
EXISTING GROUND

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