STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

REVISIONS		
NO.	DATE	DESCRIPTION

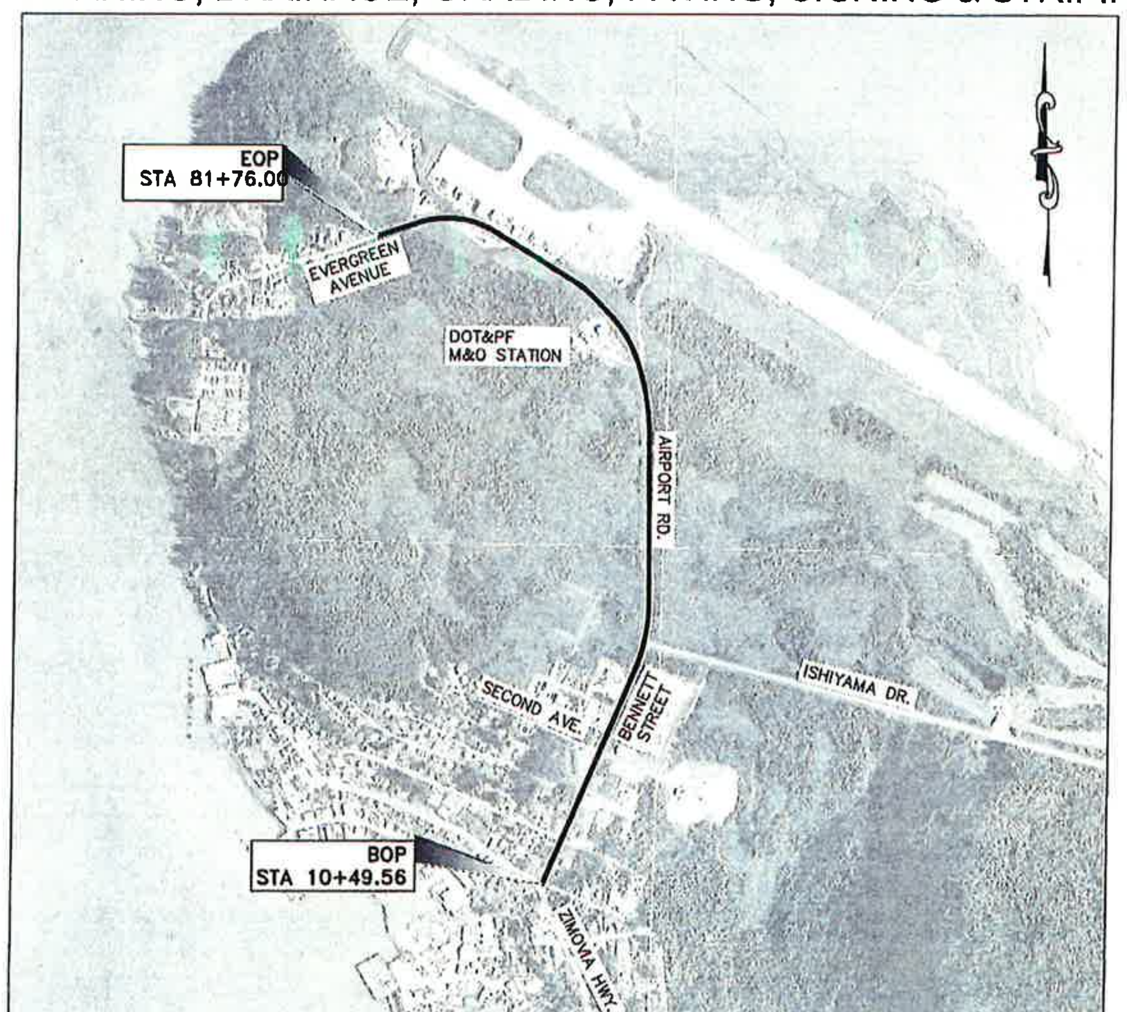
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL "A" SHEETS
ALASKA	0943026/SFHWY00067	2018	A1	A7
			PLAN SET TOTAL	69

CDS ROUTE:	293315	MILEPOINT:	0 TO 0.4
CDS ROUTE:	293310	MILEPOINT:	0 TO 0.8
LATITUDE:	56.475	LONGITUDE:	−132.373

PROPOSED HIGHWAY PROJECT

WRANGELL - BENNETT STREET REHABILITATION AND AIRPORT ROAD RESURFACING
PROJECT NO. 0943026/SFHWY00067

PLANING, DRAINAGE, GRADING, PAVING, SIGNING & STRIPING



VICINITY MAP
NTS

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

February 19, 2019

AS-BUILT PLANS
Contractor: SECON
Project Engineer: Hrant Harutyunyan
Start Date: 5/5/19
End Date: 1/13/20

Project As-Built Drawing have been reviewed by the Project Engineer and represent to the best of my knowledge the Project as Constructed.
Project Engineer:
Hrant Harutyunyan
2020.11.24 15:57:38
-09'00'

PROJECT SUMMARY

ROAD NAME	BENNETT STREET	AIRPORT ROAD
WIDTH OF PAVEMENT (FT)	37 / 28	28 / 32
LENGTH OF GRADING	N/A	N/A
LENGTH OF PAVING (FT)	2,140	4,976
LENGTH OF PROJECT (FT)	2,140	4,976

DESIGN DESIGNATIONS

ROAD NAME	BENNETT STREET	AIRPORT ROAD
FUNCTIONAL CLASS	RURAL MAJOR COLLECTOR	
ADT (2015)	1470	600
ADT (2039) DESIGN YEAR	1560	640
DHV (2015)	160	60
DHV (2039) DESIGN YEAR	170	70
PERCENT TRUCKS (T)	8.8	4.8
DIRECTIONAL SPLIT (D)	55 / 45	55 / 45
DESIGN SPEED (V)	30	45
DESIGN EAL'S (20 YEARS)	500,000	100,000

USE THESE PLANS IN CONJUNCTION WITH THE STATE OF ALASKA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2017 EDITION AND THE PROJECT SPECIAL PROVISIONS.

PLANS DEVELOPED BY: DOWL, LLC
5368 COMMERCIAL BLVD. – JUNEAU, AK 99801
907-780-3533 – #AECL848

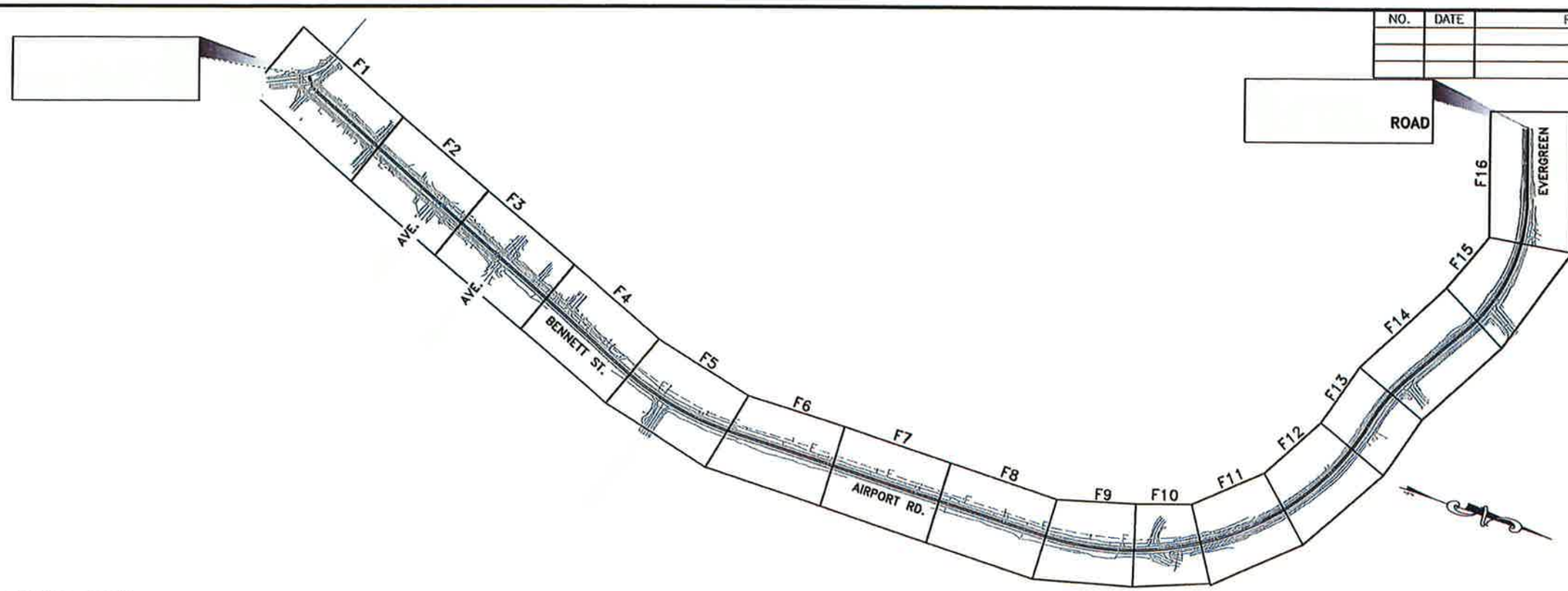
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES

APPROVED:
L. PAT CARROLL, P.E.
REGIONAL PRECONSTRUCTION ENGINEER — DATE 8.17.18

CONCUR:
D. LANCE MEARIG, P.E.
DIRECTOR, SOUTHCOAST REGION — DATE 17 Aug 2018

DATE 8/7/2018 7:49

NO.	DATE	REVISION			YEAR		SHEETS



E1–E5	

THE FOLLOWING STANDARD DRAWINGS APPLY TO THIS PROJECT:

C–04.12, C–05.20,
D–01.02, D–04.21, D–06.10,
D–20.04, D–22.01, D–23.01, D–24.00, D–26.03,
I–20.20, I–21.10
S–00.11, S–05.01, S–20.10, S–30.04, S–31.01
T–06.00, T–20.03, T–21.03, T–22.03, T–23.00

ABBREVIATIONS

@	AT
&	AND
ACI	AMERICAN CONCRETE INSTITUTE
AD	AREA DRAIN
ADA	AMERICANS WITH DISABILITIES ACT
ADOT	ALASKA DEPARTMENT OF TRANSPORTATION
ADT	AVERAGE DAILY TRAFFIC
AKSPC	ALASKA STATE PLANE COORDINATES
APPROX	APPROXIMATE
ATB	ASPHALT TREATED BASE
BFS	BEGIN FULL SUPERELEVATION
BKSW	BACK OF SIDEWALK
BM	BENCH MARK
BOP	BEGINNING OF PROJECT
BOT	BOTTOM
BRG	BEARING
BST	BEGIN SUPERELEVATION TRANSITION
BVCE	BEGIN VERTICAL CURVE ELEVATION
BVCS	BEGIN VERTICAL CURVE STATION
CC	CENTER TO CENTER
C&G	CURB AND GUTTER
CJ	CONSTRUCTION JOINT
CL	CENTER LINE
CLR	CLEAR
CMP	CORRUGATED METAL PIPE
CRA	CURB RETURN ALIGNMENT
CSP	CORRUGATED STEEL PIPE
CMU	CONCRETE MASONRY UNIT
CONC	CONCRETE
CONN	CONNECTION
CONT	CONTINUOUS, CONTINUATION
CPP	CORRUGATED POLYETHYLENE PIPE, TYPE S
CSP	CORRUGATED STEEL PIPE
CTE	CONNECT TO EXISTING
CTR	CENTER
CY	CUBIC YARD
DET	DETAIL
DIA OR ø	DIAMETER
DOT&PF	DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
DWG	
DWT,DW	
E	
EA	
EFS	
EG	
EL	
ENGR	
EOP	
EP	
ESCP	
EST	
EXP	
EXST, EX	
FD	
FDN	
FG	
FL	
FT	
FTG	
GAL	
GB	
HDPE	
HMA	
HORIZ	
HWY	
IN	
INVT, INV	
J, JB	
JT	
L	
LB	
LF	
LG	
LT	
LVC	
MAX	
ME	
MEP	
MIN	
MISC	
TOP BACK OF GUTTER	
TEMPORARY CONSTRUCTION EASEMENT	
TON	
TOP RAMP RUN	
TOP OF SIDEWALK	
TYPICAL	
VEGETATED BUFFER STRIP	
VERTICAL CURVE	
VERTICAL	
VERTICAL POINT OF INTERSECTION	
WEST	

GENERAL NOTES:

1. ALL PAVEMENT CUTS SHALL BE MADE WITH A SAW, OR ALTERNATE METHOD APPROVED BY THE ENGINEER.
2. PLACE TOPSOIL AND SEED ANY AREAS WITHIN THE RIGHT–OF–WAY DISTURBED BY CONSTRUCTION, AND AS DIRECTED BY THE ENGINEER.
3. THE EXISTING INFORMATION SHOWN IN THE PLANS IS FROM AS–BUILTS AND HAS BEEN PARTIALLY FIELD VERIFIED. CONTRACTOR SHALL VERIFY ACTUAL CONDITIONS PRIOR TO CONSTRUCTION.
4. DO NOT SCALE FROM PLANS, USE DIMENSIONS.

JUNEAU, AK 99801
(907) 780-3533
#AECL848

STATE OF ALASKA
49TH
ERIC M. WORKHEES
GE 22961
REGISTERED PROFESSIONAL ENGINEER
8/7/20

C:\Civil 3D Projects\2016\24\62367-01\Civil\SA-CT-CV-A2-62367.dwg | DATE 8/7/20 | DESIGNED TAL | C-IS/JMK

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	A3	69

	RECOVERED	SET
BLM MONUMENT		
GLO MONUMENT		
USC&GS MONUMENT		
PRIMARY MONUMENT		
CENTERLINE MONUMENT IN CASING		
PRIMARY R.O.W. MONUMENT		
BEARING OBJECT		
MISCELLANEOUS MONUMENT		
LINE OF SIGHT MONUMENT		
CONCRETE R.O.W. MONUMENT		
BENCHMARK		BM
REBAR AND CAP		
REBAR		
IRON PIPE		
PK NAIL		
SPIKE		
HUB AND TACK		
CONSTRUCTION CENTERLINE	5+00	
MISCELLANEOUS CENTERLINE	10+00	
STATION EQUATION	"L"48+97.23 POT BK= "O"48+97.23 PC AHD	
PROJECT RIGHT-OF-WAY LINE	R/W	
EXISTING RIGHT-OF-WAY LINE		
EXISTING PROPERTY LINE		
CONTROLLED ACCESS LINE	C/A	
EXISTING EASEMENT LINE		
PROPOSED EASEMENT LINE		
PROPOSED CUT SLOPE LIMIT		
PROPOSED FILL SLOPE LIMIT		
SECTION LINE		
1/4 SECTION LINE		
1/16 SECTION LINE		
TOWNSHIP & RANGE LINE	T. 2 N. / T. 1 N. — T. 1 E. / T. 2 E.	
MEANDER LINE	M1 M2 M3	

	EXISTING	PROPOSED
SANITARY SEWER (FLOW DIRECTION ⟶)	SS	SS
FUEL LINE	O	O
GAS LINE	G	G
WATER LINE	W	W
METER, VALVE, FIRE HYDRANT	W	W
EXISTING STORM DRAIN (FLOW DIRECTION ⟶)	SD	
PROPOSED STORM DRAIN		S-10, S-11, SD, P-10, P-11
FIBER OPTIC LINE	FO	
DIRECT BURIAL TELEPHONE CABLE	T	T
DIRECT BURIAL ELECTRIC CABLE	E	E
ELECTRIC LINE (OVERHEAD)	OHE	OHE
POWER POLE LINE		
JOINT USE POWER & TELEPHONE		
TELEPHONE POLE LINE		
POLE ANCHOR		
STUB POLE (POWER OR TELEPHONE)		
TELEPHONE DUCT	T	T
TELEPHONE PEDESTAL		
BURIED CABLE MARKER		
CATCH BASIN OR DROP INLET		
MANHOLE	MH	MH
SANITARY SEWER CLEAN OUT		
AREA DRAIN		
PIPE CULVERT		
GEOGRID		
POROUS BACKFILL		
BASE COURSE REPAIR		
ROADWAY REHABILITATION		
PAVEMENT PLANING AND OVERLAY		
APPROACH RESURFACING		
TOPSOIL AND SEEDING		
CLEARING		

	EXISTING	PROPOSED
ROADWAY/PAVEMENT EDGE		
FENCE	X	X
CURB AND GUTTER		
DETECTABLE WARNINGS		
GUARDRAIL		
CULVERT PIPE		
SIGN		H
MAILBOX	MB	MB
TREE LINE		
FLOW CENTERLINE		
FLOW DIRECTION		
WETLANDS		
EXISTING BUILDINGS	H	
POST OR BOLLARD		
WELL OR MONITORING WELL	W, MW	
SEPTIC PIPE	S	
FUEL TANK FILL PIPE/VENT	F	
TEST HOLE	TH	
CONIFER TREE		
DECIDUOUS TREE		
THERMOSIPHON		
VEHICLE PLUG-IN		
DELINEATOR/GUIDE MARKER		
DITCH RECONDITIONING		

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

	EXISTING	PROPOSED
SIGN POST & NUMBER		1
PRIVATE SIGN		
4" WHITE SOLID STRIPE		4"W
4" YELLOW SOLID STRIPE		4"Y
4" YELLOW SKIP STRIPE		4"Y SKIP
2' CROSSWALK OR STOPBAR		24"W (TYP)
LADDER CROSSWALK LAYOUT		2' 2' 10'

PLANS DEVELOPED BY:
DOWL, LLC
5368 COMMERCIAL BLVD.
JUNEAU, AK 99801
(907) 780-3533
#AECL848

STATE OF ALASKA 49TH ERIC M. VOORHEES CE 12961 REGISTERED PROFESSIONAL ENGINEER 8/8/2018

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

WRANGELL - BENNETT STREET REHABILITATION AND AIRPORT ROAD RESURFACING

LEGEND

DRAFTED CJS/JMK | CHECKED VARIOUS | DESIGNED TAL | LAYOUT A3 | DATE 8/8/2018 12:59 | FILE C:\Civil 3D Projects\2016\24\62367-01\Civil\SA-CT-CV-A3-62367.dwg

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0943026/SFHWY00067	2018	A4	69

Horizontal Control

Horizontal control for this project is based on the DOT&PF Wrangell Grid 2001 System. A local ground coordinate system based on the National Geodetic Survey Secondary Airport Control Station WRG-D PID AA1883. It relates to Alaska State Plane Coordinate System Zone 1 NAD 83(1992) through the following parameters:

Zone = NAD83 (1992) AKSPCS ZONE 1
Grid Scale = 0.99991097
Convergence = +1°04'53"
Translation about N.G.S. control point WRG-D as follows:
AKSPCS Northing = 1699291.47 FT US
AKSPCS Easting = 2950572.15 FT US
Local Northing = 300000.00 FT US
Local Easting = 300000.00 FT US

Project Specific Horizontal Control

1081: 2" Brass cap in centerline monument case no punch mark. Approximately 80' SW of intersection of Bennett and 2nd
WRG-Grid N 297533.25 FT US, E 296377.18 FT US
AKSPCS N 1696757.01 FT US , E 2946996.85 FT US

1087 : 2" Brass cap in centerline monument case intersection of Zimovia and Bennett
WRG-Grid N 296565.84 FT US, E 295942.30 FT US
AKSPCS N 1695781.65 FT US, E 2946580.34 FT US

VERTICAL CONTROL

The Basis of Vertical Control is the National Ocean Service Benchmark "BM-9" with a published elevation of 45.79' above Mean Lower Low Water This is a N.O.S. Tidal Series 9451205 benchmark. All elevations listed are height above M.L.L.W. = 0.00'

http://co-ops.nos.noaa.gov/benchmarks/9451204.html

Existing Survey Control

Point #	Northing	Easting	Elevation	Description	Station	Offset
74	301887 28	294790.74	66 21	ALCTRL2"_SET_74-2012	77+81.58	25.20R
77	301384.35	296223.67	77.08	ALCTRL2 5"_SET_77-2016	62+55.03	40 92R
78	300923.49	296632.13	107 42	ALCTRL2.5"_SET_78-2016	56+48 36	19 89R
79	300297.00	296801.97	116 25	ALCTRL2 5" SET 79-2016	50+01.60	16.26R
80	299898 23	296778 20	123.52	ALCTRL2.5" SET 80-2016	44+03.41	15.43L
81	299071.01	296785.61	142.07	ALCTRL2 5" SET 81-2016	37+76 14	16.19L
82	298513.31	296797.69	137.25	ALCTRL2.5"_SET_82-2016	32+21.36	25 85R
83	297910.87	296524.77	117.17	ALCTRL2.5"_SET_83-2016	25+63.31	13.95L
84	297420.31	296358.77	117.97	ALCTRL2.5"_SET_84-2016	20+47.12	27.98R
85	297039.01	296150.26	110.87	MAG\WASHER SET	16+14.41	12.40L
86	296464.98	295926.47	73.47	MAG\WASHER SET	N\A	N\A
87	296883.37	295434.67	65.23	MAG\WASHER SET	11+88.01	607.77L
88	297132.93	294957.25	62.75	MAG\WASHER SET	12+28.00	1145.00L

All SURVEY CONTROL monuments in this table are provided strictly for survey control. Should any of them be destroyed during construction they SHALL NOT be replaced.

Bennett Street Design Alignment

Segment	Station	Northing	Easting	Station	Radius	Length	Delta
L1	10+49.56	296531.41	295916.78	10+78.20			
C1	10+78.20	296547.75	295940.30	11+17.13	70.00	38.93	31°51'49"
L2	11+17.13	296577.50	295964.63	29+39.39			
C2	29+39.39	298250.65	296686.58	35+47.28	1446.00	607.89	24°05'13"
L3	35+47.28	298842.39	296804.78	49+84.42			
C3	49+84.42	300279.40	296786.05	58+70.37	1324.50	885.95	38°19'29"
L4	58+70.37	301096.96	296489.95	58+70.52			
C4	58+70.52	301097.08	296489.85	66+15.10	1140.50	744.58	37°24'20"
L5	66+15.10	301487.11	295871.10	66+73.35			
C5	66+73.35	301500.73	295814.46	68+86.97	689.00	213.62	17°45'50"
L6	68+86.97	301581.82	295617.76	72+39.40			
C6	72+39.40	301764.85	295316.58	78+95.82	751.00	656.42	50°04'49"
L7	78+95.82	301834.02	294684.62	82+11.84			

COORDINATES LISTED ABOVE HOLD OVER DISTANCE AND BEARING

Approximate Location of Proposed New Shoulder Monuments

Point #	Northing	Easting	Description	Station	Offset
600	297910.23	296517.91	APPROX_SH_MON	25+60.00	20.00L
601	298513.92	296797.98	APPROX SH MON	32+22.00	26.00R
602	299069.82	296781.82	APPROX SH MON	37+75.00	20.00L
603	299694 80	296775.67	APPROX SH MON	44+00.00	18.00L
604	300295 47	296805 75	APPROX SH MON	50+00.00	20.00R
605	300924.99	296631.40	APPROX_SH_MON	56+50.00	20.00R
606	301384 40	296223.73	APPROX_SH_MON	62+55.00	41.00R

Proposed location of shoulder monuments to be set after construction between fog line and edge of pavement. Shoulder monuments must be line of sight between each monument. Contractor can move the shoulder monuments and cases as needed to maintain sight line between shoulder monuments or as directed by DOT&PF project engineer.

Centerline Monuments to Remain in Place

Point #	Northing	Easting	Description	Station	Offset
72	301612.30	294018 91	CL_MON_DOT	N\A	N\A
73	301704.34	294304.49	CL MON DOT	N\A	N\A
75	301722.85	295708.06	CL_MON_DOT	68+81.77	167.40R
76	301986.77	295275.22	CL MON DOT	73+61.36	180.43R
1081	297533 25	296377.18	BC2"_CL_MON_DOT_NO PUNCH MARK	21+58.12	0.14R
1082	297074.09	296179.32	BC2"_CL_MON_DOT_NO PUNCH MARK	16+58.14	0.38R
1083	296915.47	296092.67	ALCAP3 25"_MON BOX_FLAT DISC_NO PUNCH MARK	14+78.17	16.33L
1084	296635.07	295768.04	BC2"_CL MON_DOH	N\A	N\A
1085	296621.33	295803.06	BC2"_CL MON_DOH_NO PUNCH MARK	N\A	N\A
1087	296565 84	295942 30	BC2"_CL MON_DOTPF	10+92 86	12.46L

Existing CENTERLINE monuments SHALL BE PRESERVED IN PLACE or be REFERENCED prior to disturbance and replaced at their original horizontal position.

A RECORD OF MONUMENT FORM IN ACCORDANCE WITH A.S.34.65.040 SHALL BE SUBMITTED TO DOT&PF PROJECT ENGINEER FOR REVIEW PRIOR TO RECORDING FOR EACH MONUMENT.

MONUMENT NOTES:

1. If any pair of control points disagrees from published value by more than 1:10,000 horizontally or vertically then a third network point must be tied to ascertain which point is in error or has been disturbed.

2. Whether listed or not, all 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 engineer for review prior to recording. Coordinate values listed are for informational purposes and should be used to reset monuments only as a last resort.

Existing Property

Point #	Northing	Easting	Description	Station	Offset
1012	299618.16	296693 51	ROW\BRASS OST	43+22.44	101.16L
1013	299649.40	296653.60	BT8"_BULLPINE	43+56.20	140 65L
1014	299621.64	296636.51	BT5" BULLPINE	43+28.66	158.10L
1015	299513.92	296895.03	BT6"_BULLPINE	42+17.58	99.00R
1016	299502.19	296911 65	BT5"_BULLPINE	42+05.63	115.46R
1063	299614.54	296695 95	ROW_POST_CONC_6X6\W_TACK	43+20.79	98 76L
1064	299490 62	296896 87	ROW_POST_CONC_6X6\W_TACK	41+94.46	100 53R
1065	299492 09	296895.12	ALPRIM2.5" RW ARCEL3A\ASLS84-63\W A R\6268S	41+95.75	98.79R
1066	298748.68	296702.47	ALCAP2.5"RW\L8_BLK66\5485S	34+47.95	100.35L
1067	298695.87	296698 61	ALCAP2.5"RW\L5 BLK61\5485S	33+91.06	100 22L
1068	298527.67	296671.98	ALCAP2.5"RW\L4 L5\5485S	32+07.97	100.01L
1069	298446 64	296650.93	ALCAP1"\6700S	31+18.22	100 18L
1070	298250.53	296794.29	BC2"_FND_W_<_POST_CONC_6X6	29+79 22	99 53R
1071	298586.98	296885.57	ROW_POST_CONC_6X6\W_TACK	32+87.69	102 07R
1072	298568 80	296883.60	ALCAP2.5"_RW	32+89.05	99 83R
1073	298374.00	296836.13	ROW_POST_CONC_6X6\W_TACK	31+01 27	98.11R
1074	298374 34	296838.20	ALCAP2.5"_2" ALUM PIPE	31+02.14	99 99R
1075	298839 66	296705.71	ROW_POST_CONC_6X6\W_TACK	35+45.74	99 10L
1076	298842 38	296905.40	ROW_POST_CONC_6X6\W_TACK	35+46 04	100 61R
1077	298840.59	296904 15	ALCAP1.5"_5/8 REBAR	35+44 39	99 33R
1078	298139 15	296892 79	ROW_POST_CONC_6X6\W_TACK	28+39 47	49 86R
1079	298300 74	296599 24	ROW_POST_CONC_6X6\W_TACK	29+51 63	99 99L
1080	298301.67	296599.54	ALCAP2.5"_2" ALUM PIPE	29+52 67	100 08L
1086	296488.74	295967.07	BC2"_1"PIPE	10+66 50	63.74R
1088	296492.49	296074 24	ALCAP1.5"_FND_2127E	11+05.38	137 24R
23075	298559.14	296882.52	BT	32+79.98	100 38R
23076	298581.60	296864.10	BT	32+97 98	78.51R
23077	298381.43	296834 11	BT	31+07.40	94 02R
23078	298344.79	296844.06	BT	30+77.52	114 41R
23079	298292.73	296593.23	BT	29+41.17	102 39L
23080	298303.57	296597.03	BT	29+53 51	103 13L

All Property Monuments and Bearing Objects in these existing property tables shall be PRESERVED and/or REFERENCED prior to disturbance and replaced at their original horizontal position.

A RECORD OF MONUMENT FORM IN ACCORDANCE WITH A.S.34.65.040 SHALL BE SUBMITTED TO DOT &PF PROJECT ENGINEER FOR REVIEW PRIOR TO RECORDING FOR EACH MONUMENT.

8·7·18
STATE OF ALASKA 49 TH Daniel M Ignatov No. 11296 REGISTERED PROFESSIONAL LAND SURVEYOR

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
6860 Glacier Highway Juneau Ak 99801
(907) 465-1763

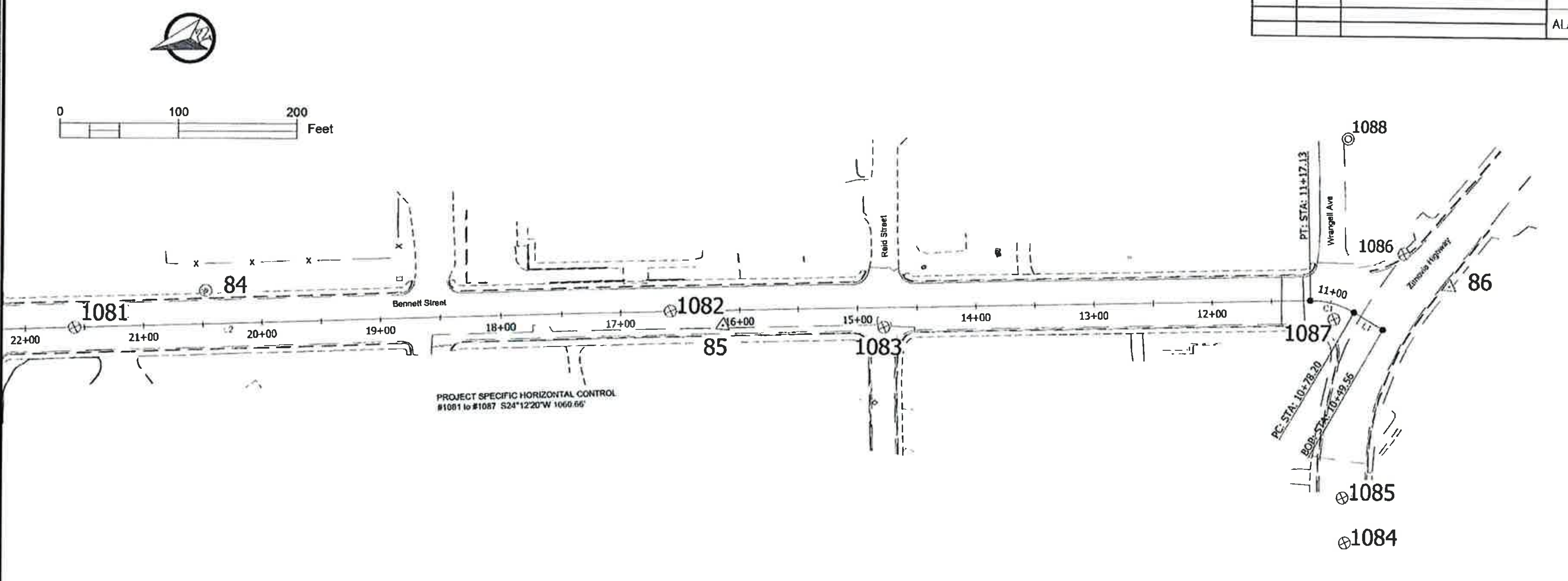
WRANGELL- BENNETT STREET
REHABILITATION AND
AIRPORT ROAD RESURFACING

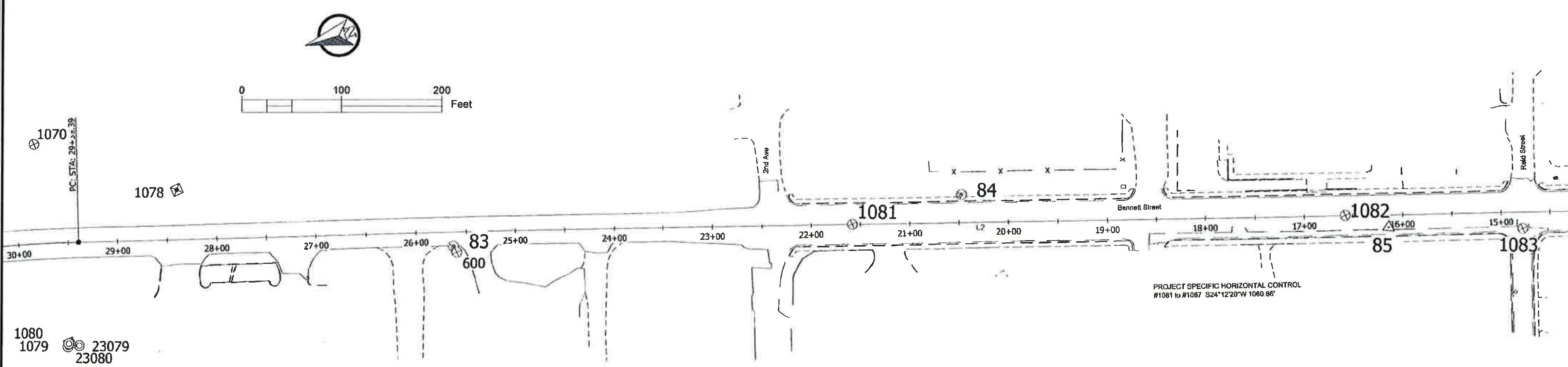
SURVEY CONTROL SHEET

DESIGNED J.PAPOI CHECKED D.IGNATOV DRAFTED J.PAPOI | XREFS | SCALE | LAYOUT SCS 2 | DATE TIME 8/7/2018 14:36 | DRAWING LOCATION ...\SFHY00067\SV\C3D\BASEMAPS\SFHWY00067_SCS_080718.dwg

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0943026/SFHWY00067	2018	A5	69





8.7.18

STATE OF ALASKA 49 TH Daniel M. Ignatov No 11296 REGISTERED PROFESSIONAL LAND SURVEYOR

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
6860 Glacier Highway Juneau Ak 99801
(907) 465-1763

WRANGELL- BENNETT STREET
REHABILITATION AND
AIRPORT ROAD RESURFACING

SURVEY CONTROL SHEET

DESIGNED J.PAPOI CHECKED D.IGNATOV DRAFTED J.PAPOI
XREFS
SCALE
LAYOUT SCS 3
DATE TIME 8/7/2018 14:36
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DESIGNED	CHECKED	DRAFTED
J.APARO	D.IGNATOV	J.APARO

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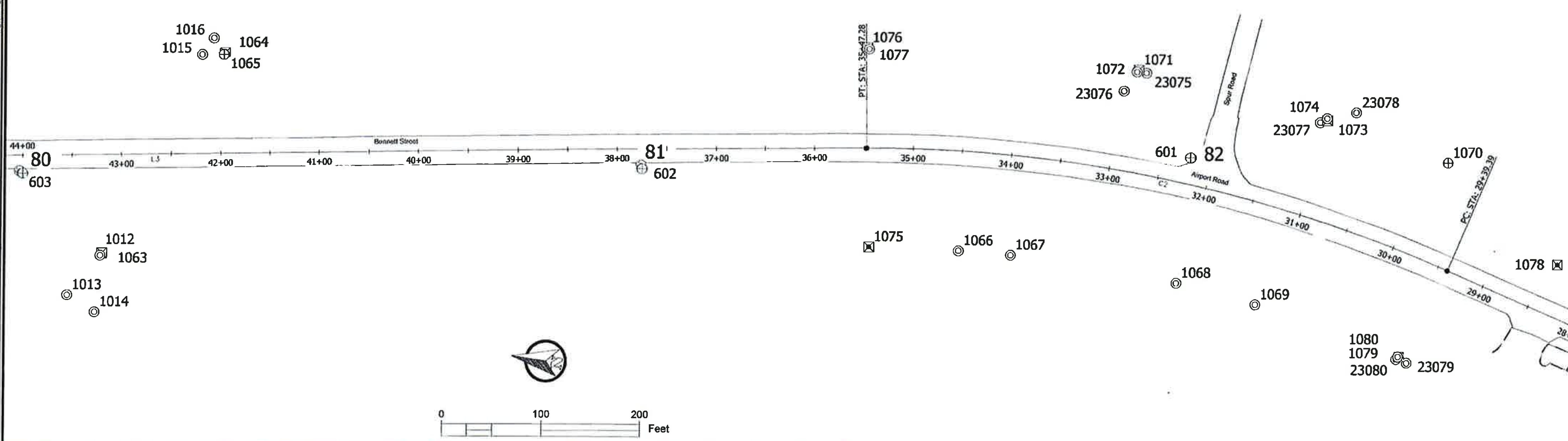
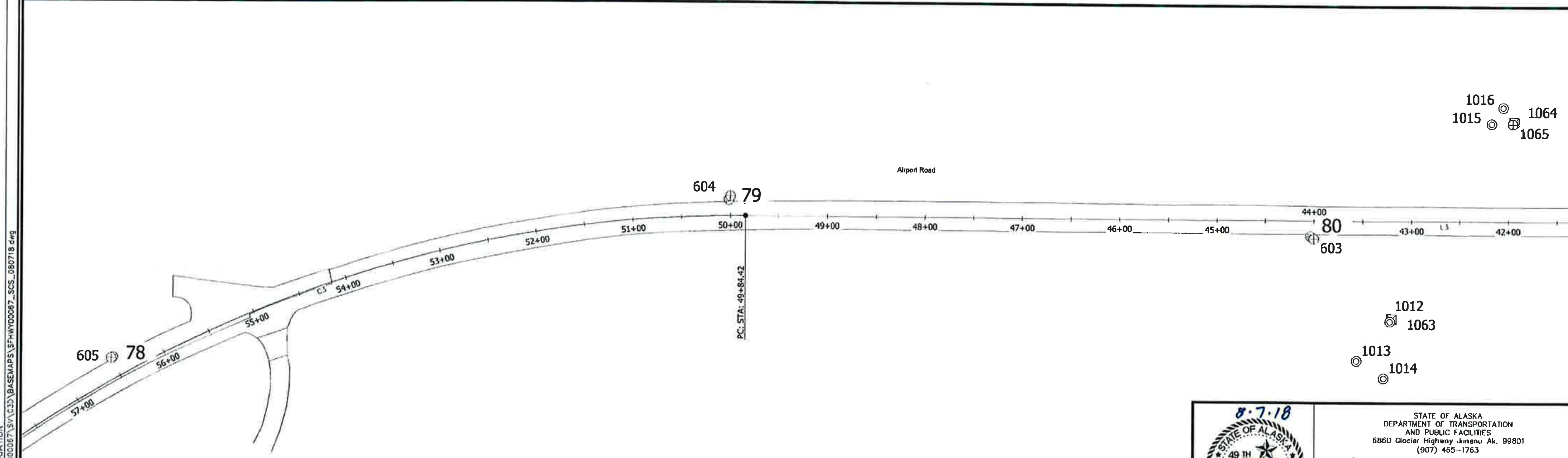
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0943026/SFHWY00067	2018	A6	69





8.7.18

STATE OF ALASKA
49 TH
Daniel M. Ignatov
No 11206
REGISTERED PROFESSIONAL LAND SURVEYOR

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
6860 Glacier Highway Juneau Ak. 99801
(907) 465-1763

WRANGELL- BENNETT STREET
REHABILITATION AND
AIRPORT ROAD RESURFACING

SURVEY CONTROL SHEET

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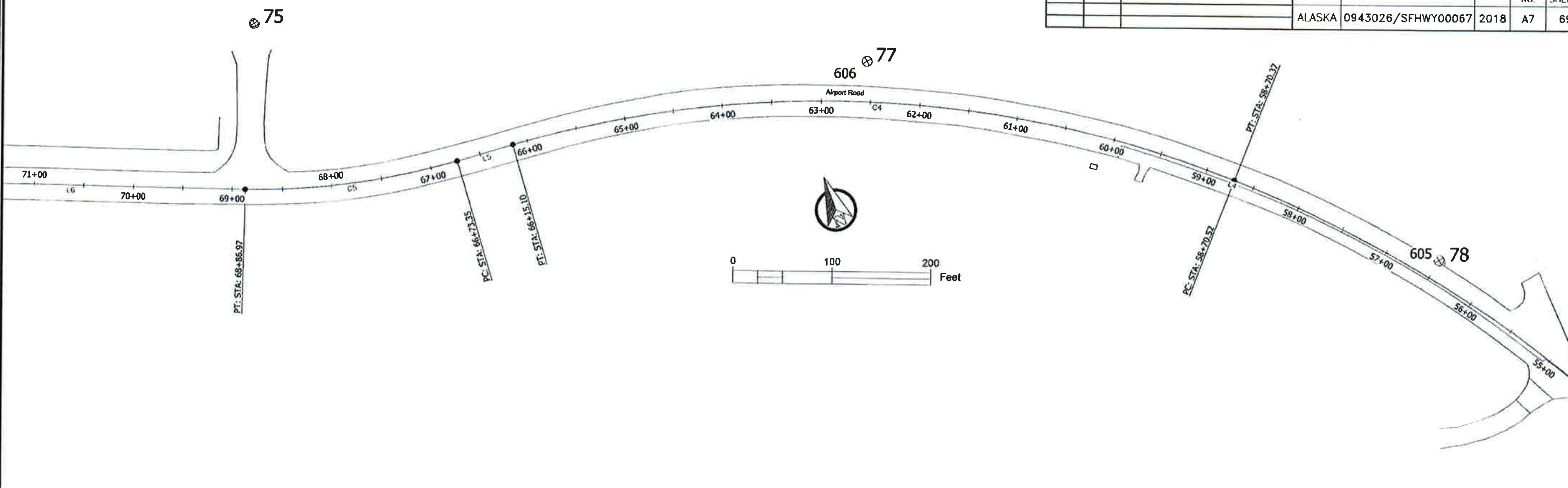
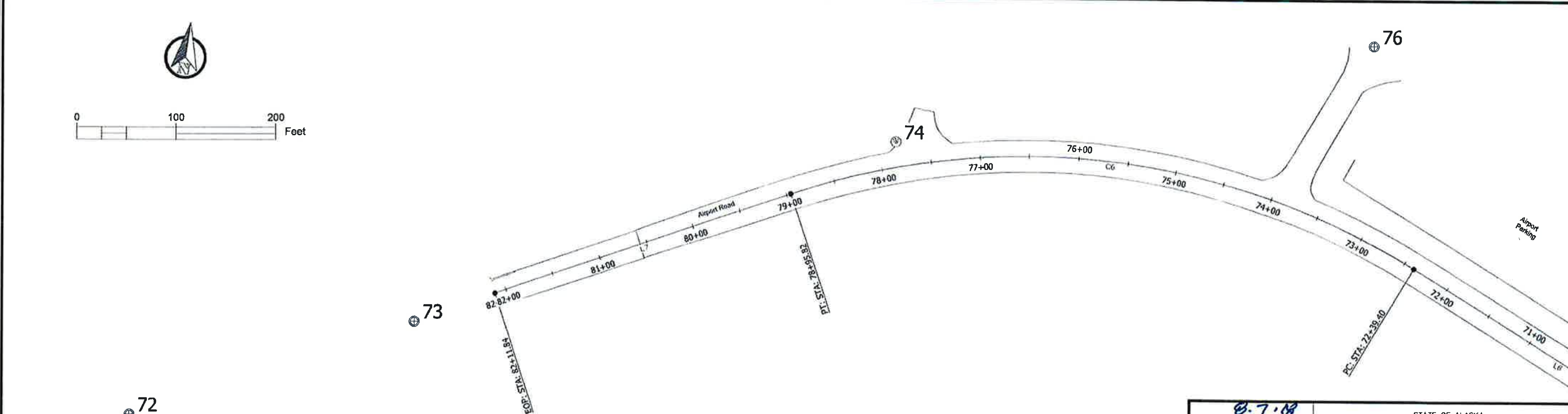
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0943026/SFHWY00067	2018	A7	69





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8.7.18

STATE OF ALASKA 49TH Daniel M. Ignatov No 11296 REGISTERED PROFESSIONAL LAND SURVEYOR

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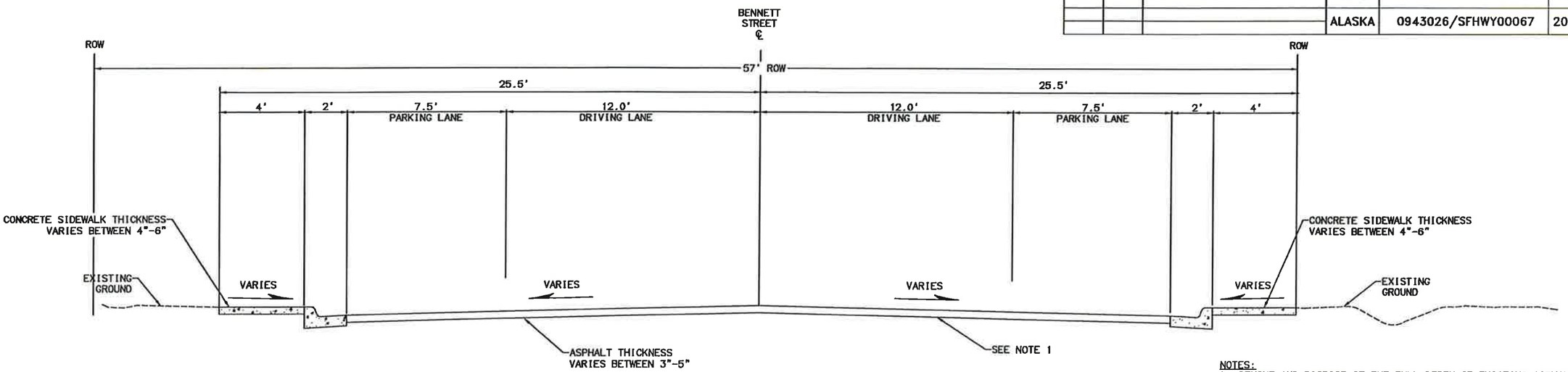
WRANGELL- BENNETT STREET
REHABILITATION AND
AIRPORT ROAD RESURFACING

SURVEY CONTROL SHEET

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	B1	69

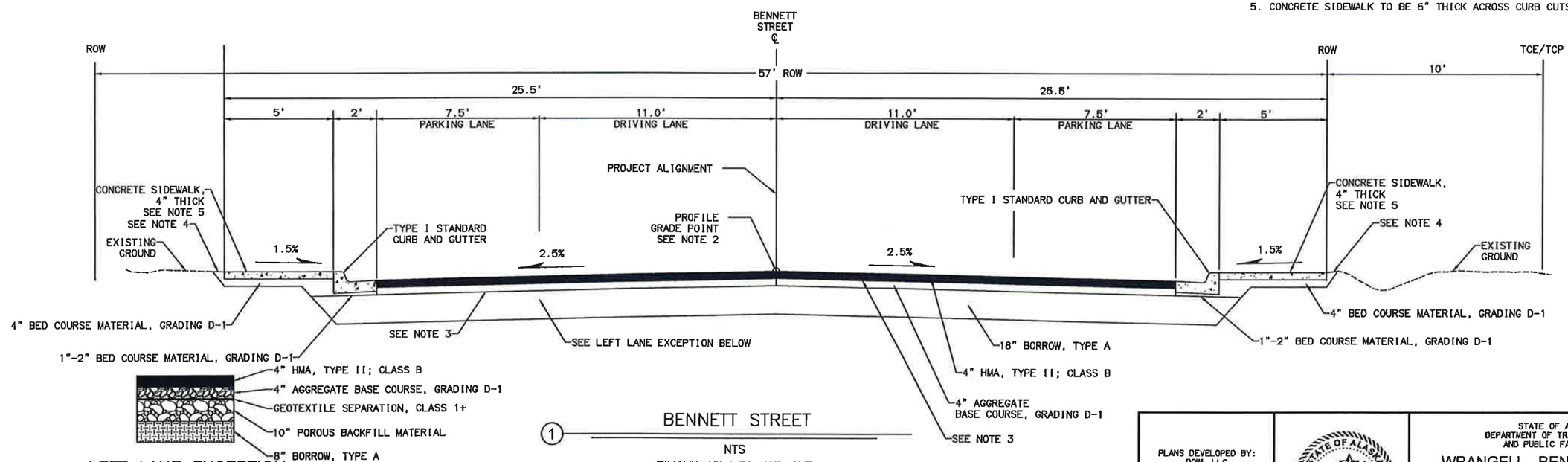


EXISTING SECTION BENNETT STREET

NTS
ZIMOVIA HWY TO 2ND AVE
(STA 10+70 TO 22+85)
SEE NOTE 1

NOTES:

1. REMOVE AND DISPOSE OF THE FULL DEPTH OF EXISTING ASPHALT AND CONCRETE ROADWAY PATCHES BETWEEN APPROXIMATE STATION 10+70 AND 22+85. ASPHALT DEPTHS VARY BETWEEN 3 TO 5 INCHES AND CONCRETE PATCH DEPTHS VARY BETWEEN 6 AND 8 INCHES. REMOVE AND DISPOSE OF EXISTING CONCRETE CURB AND GUTTER AND SIDEWALK FROM BOTH SIDES OF THE STREET TO THE LIMITS SHOWN ON THE G SHEETS.
2. REMOVE THE EXISTING ROAD SECTION FROM APPROXIMATE STATION 10+70 TO 22+85 AND RECONSTRUCT THE TYPICAL SECTION SHOWN FROM THE FINISHED GRADE PROFILE SHOWN ON THE F SHEETS. SEE G SHEETS FOR INTERSECTION LAYOUT.
3. INSTALL GEOGRID BENEATH THE BASE COURSE FROM STATION 20+50 TO 22+85. SEE DETAILS ON SHEET E2.
4. MATCH EXISTING MATERIALS WITH TOPSOIL AND SEEDING, OR AGGREGATE BASE COURSE GRADING D-1, AND GRADE TO DRAIN.
5. CONCRETE SIDEWALK TO BE 6" THICK ACROSS CURB CUTS AND ADA LANDINGS.



LEFT LANE EXCEPTION

(WITHIN LEFT LANE BETWEEN LIP OF GUTTER AND CENTERLINE FROM STA. "B" 11+90 TO 13+00)

① BENNETT STREET

NTS
ZIMOVIA HWY TO 2ND AVE
(STA 10+70 TO 22+85)

PLANS DEVELOPED BY:
DOWL, LLC
5368 COMMERCIAL BLVD.
JUNEAU, AK 99801
(907) 780-3533
#AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

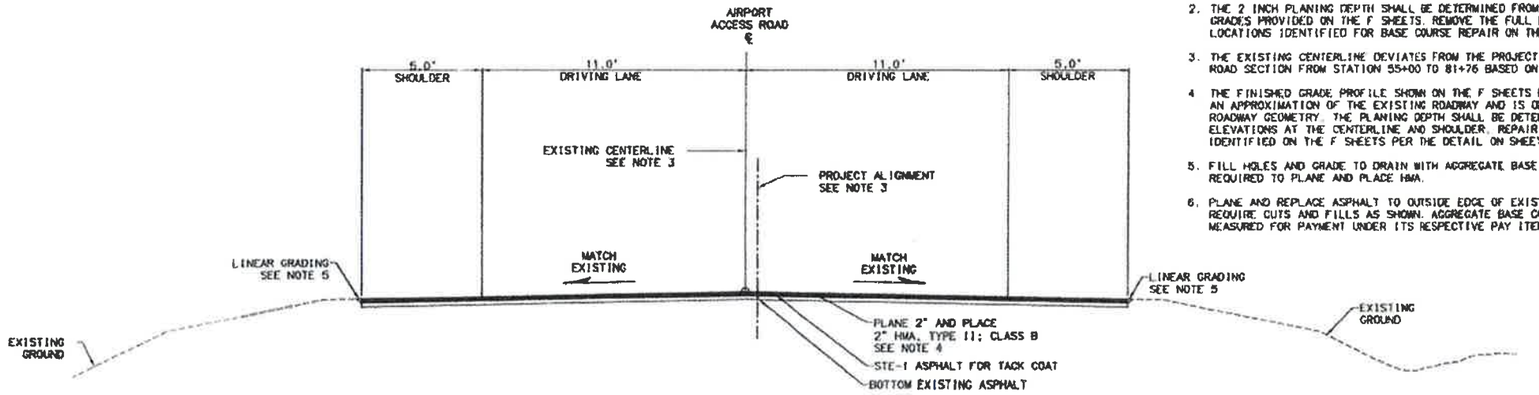
WRANGELL - BENNETT STREET REHABILITATION AND AIRPORT ROAD RESURFACING

TYPICAL SECTIONS

Change Order #9, Attachment #1.

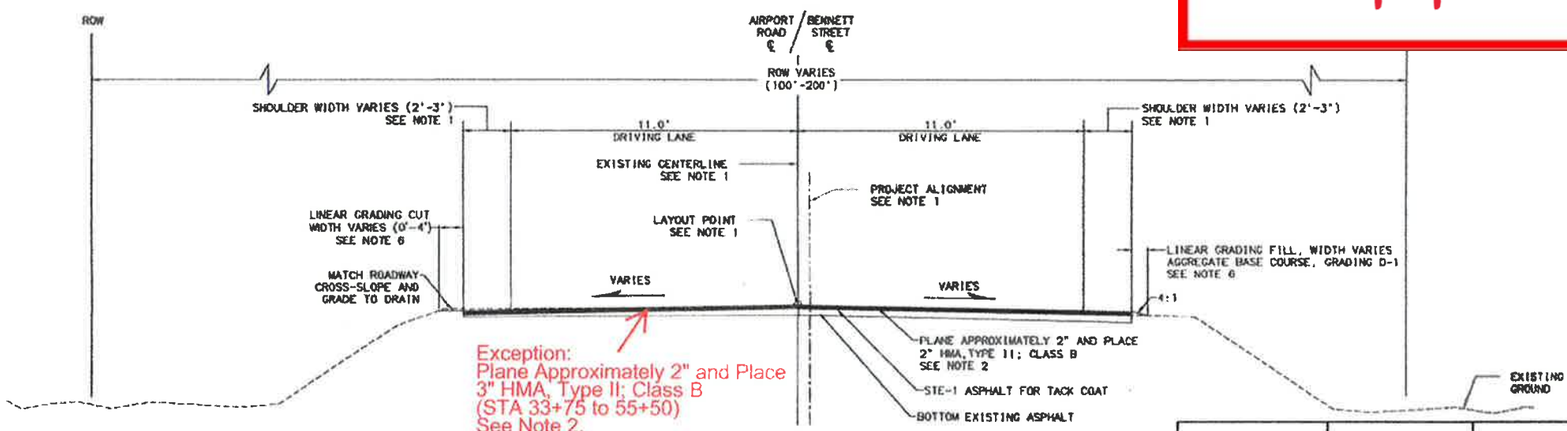
NO	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	82	69

NOTES:
1. THE EXISTING CENTERLINE DEVIATES FROM THE PROJECT ALIGNMENT. RESURFACE THE EXISTING ROAD SECTION FROM APPROXIMATE STATION 22+85 TO 55+00 BASED ON THE LAYOUT POINTS PROVIDED ON THE F SHEETS. THE FINISHED GRADE PROFILE SHOWN ON THE F SHEETS BETWEEN STATION 22+85 AND 55+00 IS AN APPROXIMATION OF THE EXISTING ROADWAY AND IS ONLY INTENDED TO DEPICT GENERAL ROADWAY GEOMETRY. THE LAYOUT POINTS PROVIDED ON THE F SHEETS FOR CENTERLINE AND EDGE OF ASPHALT SHALL GOVERN.
2. THE 2 INCH PLANING DEPTH SHALL BE DETERMINED FROM THE FINISHED ASPHALT SURFACE GRADES PROVIDED ON THE F SHEETS. REMOVE THE FULL DEPTH OF EXISTING ASPHALT IN LOCATIONS IDENTIFIED FOR BASE COURSE REPAIR ON THE F SHEETS.
3. THE EXISTING CENTERLINE DEVIATES FROM THE PROJECT ALIGNMENT. RESURFACE THE EXISTING ROAD SECTION FROM STATION 55+00 TO 81+76 BASED ON THE EXISTING CENTERLINE.
4. THE FINISHED GRADE PROFILE SHOWN ON THE F SHEETS BETWEEN STATION 55+00 AND 81+76 IS AN APPROXIMATION OF THE EXISTING ROADWAY AND IS ONLY INTENDED TO DEPICT GENERAL ROADWAY GEOMETRY. THE PLANING DEPTH SHALL BE DETERMINED FROM THE EXISTING ASPHALT ELEVATIONS AT THE CENTERLINE AND SHOULDER. REPAIR BASE COURSE AT LOCATIONS IDENTIFIED ON THE F SHEETS PER THE DETAIL ON SHEET E3.
5. FILL HOLES AND GRADE TO DRAIN WITH AGGREGATE BASE COURSE, GRADING D-1, ONLY AS REQUIRED TO PLANE AND PLACE HMA.
6. PLANE AND REPLACE ASPHALT TO OUTSIDE EDGE OF EXISTING ASPHALT. LINEAR GRADING WILL REQUIRE CUTS AND FILLS AS SHOWN. AGGREGATE BASE COURSE REQUIRED FOR FILLS WILL BE MEASURED FOR PAYMENT UNDER ITS RESPECTIVE PAY ITEM.



③ AIRPORT ACCESS ROAD
NTS
DOT&PF MAINTENANCE STATION TO EOP
(STA 55+00 TO 81+76) SEE NOTE 3.

Project As-Built Drawing have been reviewed by the Project Engineer and represent to the best of my knowledge the Project as Constructed.
Project Engineer: HH



Exception:
Plane Approximately 2" and Place
3" HMA, Type II; Class B
(STA 33+75 to 55+50)
See Note 2.

② BENNETT STREET & AIRPORT ACCESS ROAD
NTS
2ND AVE TO DOT&PF MAINTENANCE STATION
(STA 22+85 TO 55+00) SEE NOTE 1
33+25

PLANS DEVELOPED BY:
DOWL, LLC
5368 COMMERCIAL BLVD.
JUNEAU, AK 99801
(907) 780-2533
8AECL84B

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

WRANGELL - BENNETT STREET
REHABILITATION AND
AIRPORT ROAD RESURFACING

TYPICAL SECTIONS

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	C1	69

ESTIMATE OF QUANTITIES

SSHC 2017 ITEM NO.	ITEM NO.	ITEM DESCRIPTION	PAY UNIT	TOTAL QUANTITY
201(1B)	201.0007.0000	CLEARING	LS	ALL REQUIRED
201(2B)	201.0008.0000	GRUBBING	LS	ALL REQUIRED
201(7)	201.2001.0000	INVASIVE PLANT SPECIES CONTROL, REMOVAL, AND DISPOSAL	SY	~~829~~ 1633
202(2A)	202.0002.0000	REMOVAL OF PAVEMENT	SY	~~12,500~~ 13047
202(2B)	202.0002.0000	REMOVAL OF PAVEMENT CONCRETE PAVEMENT	SY	~~218~~ 227
202(3)	202.0003.0000	REMOVAL OF SIDEWALK	SY	~~1,160~~ 1116
202(4)	202.0004.0000	REMOVAL OF CULVERT PIPE	LF	~~1,870~~ 1924
202(8)	202.0008.0000	REMOVAL OF INLET	EA	8
202(9)	202.0009.0000	REMOVAL OF CURB AND GUTTER	LF	~~2,320~~ 2425
203(3)	203.0003.0000	UNCLASSIFIED EXCAVATION	CY	~~4,970~~ 4475
203(6A)	203.0006.0000	BORROW, TYPE A	TON	~~6,840~~ 9093
205(4)	205.0004.0000	POROUS BACKFILL MATERIAL	CY	~~185~~ 72
301(1)	301.0001.00D1	AGGREGATE BASE COURSE, GRADING D-1	TON	~~3,670~~ 5694
303(3)	303.2000.0000	LINEAR GRADING	STA	~~120~~ 116
303(4)	303.2003.0000	DITCH RECONDITIONING	LF	265
401(1B)	401.0001.002B	HMA, TYPE II; CLASS B	TON	~~8,160~~ 4684
401(4)	401.0004.5828	ASPHALT BINDER, GRADE PG 58-28	TON	~~370~~ 4684
401(8B)	401.0008.002B	HMA PRICE ADJUSTMENT, TYPE II; CLASS B	CS	ALL REQUIRED
401(9)	401.0009.0000	LONGITUDINAL JOINT DENSITY PRICE ADJUSTMENT	CS	ALL REQUIRED
402(1)	402.0001.STE1	STE-1 ASPHALT FOR TACK COAT	TON	~~10~~ 7
408(1)	410.2001.0000	PAVEMENT COLD PLANING	SY	~~14,060~~ 13691
603(20-18)	603.0020.0018	END SECTION FOR 18 INCH PIPE	EA	7
603(20-24)	603.0020.0024	END SECTION FOR 24 INCH PIPE	EA	11
603(20-30)	603.0020.0030	END SECTION FOR 30 INCH PIPE	EA	1
603(20-36)	603.0020.0036	END SECTION FOR 36 INCH PIPE	EA	4
603(21-18)	603.0021.0018	18 INCH CORRUGATED POLYETHYLENE PIPE	LF	~~1,413~~ 1426
603(21-24)	603.0021.0024	24 INCH CORRUGATED POLYETHYLENE PIPE	LF	~~448~~ 459
603(21-30)	603.0021.0030	30 INCH CORRUGATED POLYETHYLENE PIPE	LF	~~83~~ 91
603(21-36)	603.0021.0036	36 INCH CORRUGATED POLYETHYLENE PIPE	LF	~~184~~ 180
603(22)	603.0016.0000	6 INCH STORM DRAIN LATERAL	EA	3
603(23)	683.2001.0000	UTILITY LOCATING SERVICES	LS	ALL REQUIRED
604(1)	604.0001.0000	STORM SEWER MANHOLE	EA	1
604(4)	604.0004.0000	ADJUST EXISTING MANHOLE	EA	4
604(5)	604.0005.000A	INLET, TYPE A	EA	12
605(7-6)	605.0007.0006	6 INCH PERFORATED PVC PIPE FOR UNDERDRAIN	LF	~~44~~ 47.5
608(1A)	608.0001.0004	CONCRETE SIDEWALK, 4 INCHES THICK	SY	~~1,000~~ 1007
608(1B)	608.0001.0006	CONCRETE SIDEWALK, 6 INCHES THICK	SY	~~150~~ 249
608(6)	608.0006.0000	CURB RAMP	EA	13
609(2)	609.0002.0001	CURB AND GUTTER, TYPE I	LF	~~2,380~~ 2492
615(1)	615.0001.0000	STANDARD SIGN	SF	312
618(2)	618.0002.0000	SEEDING	LBS	~~17~~ 10
620(2)	620.2001.0000	TOPSOIL	CYM	~~110~~ 100
627(10)	627.0010.0000	ADJUSTMENT OF VALVE BOX	EA	12
630(1)	630.0001.0000	GEOTEXTILE, SEPARATION, CLASS 1+	SY	~~365~~ 309
634(2)	634.0002.0000	GEOGRID, REINFORCEMENT, CLASS 1+	SY	~~1,170~~ 1314
635(2)	635.0002.0000	INSULATION BOARD	SF	~~100~~ 91
639(3)	639.2000.0000	APPROACH	EA	26
640(1)	640.0001.0000	MOBILIZATION AND DEMOBILIZATION	LS	ALL REQUIRED
640(4)	640.0004.0000	WORKER MEALS AND LODGING, OR PER DIEM	LS	ALL REQUIRED
641(1)	641.0001.0000	EROSION, SEDIMENT AND POLLUTION CONTROL ADMINISTRATION	LS	ALL REQUIRED
641(3)	641.0003.0000	TEMPORARY EROSION, SEDIMENT AND POLLUTION CONTROL	LS	ALL REQUIRED

ESTIMATE OF QUANTITIES

SSHC 2017 ITEM NO.	ITEM NO.	ITEM DESCRIPTION	PAY UNIT	TOTAL QUANTITY
641(5)	641.0005.0000	TEMPORARY EROSION SEDIMENT AND POLLUTION CONTROL BY DIRECTIVE	CS	ALL REQUIRED
641(6)	641.0006.0000	WITHHOLDING	CS	ALL REQUIRED
642(1)	642.0001.0000	CONSTRUCTION SURVEYING	LS	ALL REQUIRED
642(3)	642.0003.0000	THREE PERSON SURVEY PARTY	HR	~~60~~ 5
642(5)	642.0005.0000	SET SECONDARY MONUMENT	EA	7
642(6)	642.0006.0000	REPLACE EXISTING WITH PRIMARY MONUMENT	EA	4
642(10)	642.0010.0000	MONUMENT CASE	EA	11
643(2)	643.0002.0000	TRAFFIC MAINTENANCE	LS	ALL REQUIRED
643(3)	643.0003.0000	PERMANENT CONSTRUCTION SIGNS	LS	ALL REQUIRED
643(15)	643.0032.0000	FLAGGING	CS	ALL REQUIRED
643(23)	643.0023.0000	TRAFFIC PRICE ADJUSTMENT	CS	ALL REQUIRED
643(25)	643.0025.0000	TRAFFIC CONTROL	CS	ALL REQUIRED
644(1)	644.0001.0000	FIELD OFFICE	LS	ALL REQUIRED
644(2)	644.0002.0000	FIELD LABORATORY	LS	ALL REQUIRED
644(6)	644.0006.0000	VEHICLES	LS	ALL REQUIRED
644(15)	644.0015.0000	NUCLEAR TESTING EQUIPMENT STORAGE SHED	EA	1
645(1)	645.0001.0000	TRAINING PROGRAM, ONE TRAINEE/APPRENTICE	LH	~~300~~
660(2)	660.0002.0000	FLASHING BEACON SYSTEM COMPLETE AT EVERGREEN ELEMENTARY SCHOOL	LS	ALL REQUIRED
661(3)	661.0003.0000	LOAD CENTER, TYPE 2	EA	1
670(1)	670.0001.0000	PAINTED TRAFFIC MARKINGS	LS	ALL REQUIRED
670(8)	670.0008.0000	RECESSED PAVEMENT MARKER	EA	~~72~~ 80

BASIS OF ESTIMATE

ITEM NO.	ITEM DESCRIPTION	ESTIMATING FACTOR
203(6A)	BORROW, TYPE A	1.90 TN/CY
301(1)	AGGREGATE BASE COURSE, GRADING D-1	1.95 TN/CY
401(1B)	HMA, TYPE II; CLASS B	119 LB/SY-IN
401(4)	ASPHALT BINDER, GRADE PG 58-28	6.0% WEIGHT OF 401(1B)
402(1)	STE-1 ASPHALT FOR TACK COAT	0.10 GAL/SY, 240 GAL/TN
670(1)	PAINTED TRAFFIC MARKINGS	825 LF 24" WHITE
		13160 LF 4" SOLID WHITE
		10780 LF 4" SOLID YELLOW
		1850 LF 4" SKIP YELLOW

PLANS DEVELOPED BY:
DOWL,LLC
5368 COMMERCIAL BLVD,
JUNEAU, AK 99801
(907) 780-3533
#AECL848

STATE OF ALASKA
ERIC N. VOORHEES
9861
REGISTERED PROFESSIONAL ENGINEER
10/17/2018

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

WRANGELL - BENNETT STREET
REHABILITATION AND
AIRPORT ROAD RESURFACING

ESTIMATE OF QUANTITIES

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	D1	69

201(1B)	CLEARING				
SHEET	FROM STATION	TO STATION	OFFSET	AREA (SF)	REMARKS
F5	32+30	32+90	RT	414	INCLUDES ONE 18-INCH DIAMETER EVERGREEN
			TOTAL:	414	SF

201(2B)	GRUBBING				
SHEET	FROM STATION	TO STATION	OFFSET	AREA (SF)	REMARKS
F2-F3	18+35	21+06	LT	3,017	GRASS AND SOD REMOVAL ONLY
			TOTAL:	3,017	SF

201(7)	INVASIVE PLANT SPECIES CONTROL, REMOVAL, AND DISPOSAL			
SHEET	STATION	OFFSET	AREA (SY)	REMARKS
P1	10+97	42.6' RT	5	REED CANARY GRASS
P1	11+26	33.9' RT	3	REED CANARY GRASS
P1	14+10	35.2' LT	1	ORANGE HAWKWEED
P1	17+53	29.1' LT	1	MEADOW HAWKWEED
P2	21+55	25.6' RT	7	MEADOW HAWKWEED
P2	21+50	39.3' LT	18	MEADOW HAWKWEED
P2	21+82	30.4' LT	7	ORANGE HAWKWEED
P2	22+86	26.9' LT	35	MEADOW HAWKWEED/ORANGE HAWKWEED
P2	24+34	13.9' LT	30	MEADOW HAWKWEED/ORANGE HAWKWEED
P2	28+88	18.1' LT	4	MEADOW HAWKWEED
P2	29+12	18.1' LT	37	MEADOW HAWKWEED
P3	34+85	16.7' RT	54	MEADOW HAWKWEED
P3	37+81	19.4' LT	1	MEADOW HAWKWEED
P3	39+24	20.6' LT	1	MEADOW HAWKWEED
P4	40+21	16.1' LT	1	MEADOW HAWKWEED
P4	45+36	18.4' LT	1	MEADOW HAWKWEED
P4	46+26	22.5' LT	1	MEADOW HAWKWEED
P4	46+79 - 47+68	14.9' RT	37	MEADOW HAWKWEED
P5	54+10	29.8' LT	3	MEADOW HAWKWEED
P5	54+61	19.8' RT	4	MEADOW HAWKWEED
P5	55+57	22.8' LT	19	MEADOW HAWKWEED
P5	56+08	23.8' RT	12	MEADOW HAWKWEED/OXEYE DAISY
P5	56+88	22.7' LT	3	MEADOW HAWKWEED
P6	58+14	24.0' LT	240	MEADOW HAWKWEED
P6	58+96	13.7' RT	37	MEADOW HAWKWEED
P6	60+08	19.1' RT	1	OXEYE DAISY
P6	62+75	18.6' RT	1	MEADOW HAWKWEED/OXEYE DAISY
P6	62+76	18.3' RT	1	OXEYE DAISY
P7	72+39	11.8' RT	3	ORANGE HAWKWEED
P8	73+71	33.0' RT	95	MEADOW HAWKWEED
P8	74+03	17.6' LT	74	MEADOW HAWKWEED
P8	76+53	9.1' RT	1	MEADOW HAWKWEED
P8	76+93	17.0' RT	1	MEADOW HAWKWEED
P8	77+98	12.3' LT	85	MEADOW HAWKWEED
P8	80+28	4.2' LT	5	MEADOW HAWKWEED/REED CANARY GRASS
		TOTAL:	829	SY

202(2A)	REMOVAL OF PAVEMENT			
SHEET	FROM STATION	TO STATION	AREA (SY)	REMARKS
F1	10+89	14+25	1,418	ROADWAY - URBAN
F2	14+25	19+50	2,324	ROADWAY - URBAN
F3	19+50	22+85	1,410	ROADWAY - URBAN
F3	22+85	23+50	228	BASE COURSE REPAIR AREA
F3-F4	24+40	26+25	584	BASE COURSE REPAIR AREA
F4-F5	26+25	31+75	1,685	BASE COURSE REPAIR AREA
F5	32+50	33+25	242	BASE COURSE REPAIR AREA
F6	35+11	37+50	749	BASE COURSE REPAIR AREA
F6	39+14	40+00	276	BASE COURSE REPAIR AREA
F8	45+27	45+55	89	BASE COURSE REPAIR AREA
F8-F9	48+55	51+50	1,103	BASE COURSE REPAIR AREA
F9	53+18	53+44	81	BASE COURSE REPAIR AREA
F14	71+50	72+00	89	BASE COURSE REPAIR AREA
F16	79+80	81+76	633	BASE COURSE REPAIR AREA
F1-F16	10+71	77+89	1,545	APPROACHES
		TOTAL:	12,436	SY
		ROUNDED TOTAL:	12,500	SY

202(2B)	REMOVAL OF CONCRETE PAVEMENT			
SHEET	FROM STATION	TO STATION	AREA (SY)	REMARKS
F1	11+90	12+32	65	
F3	22+28	22+33	39	
F3	22+41	22+65	39	
F4	28+16	25+57	67	
		TOTAL:	210	SY
		ROUNDED TOTAL:	210	SY

202(3)	REMOVAL OF SIDEWALK				
SHEET	FROM STATION	TO STATION	OFFSET	AREA (SY)	REMARKS
F1	10+65	10+86	RT	22	
F1-F2	10+70	14+50	LT	175	
F1-F2	10+86	14+60	RT	179	
F2	14+90	18+43	LT	236	
F2	14+92	18+43	RT	183	
F2-F3	18+75	22+23	LT	180	
F2-F3	18+72	22+23	RT	180	
			TOTAL:	1,155	SY
			ROUNDED TOTAL:	1,160	SY

PLANS DEVELOPED BY:
DOWL, LLC
5368 COMMERCIAL BLVD.
JUNEAU, AK 99801
(907) 780-3533
#AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

WRANGELL - BENNETT STREET REHABILITATION AND AIRPORT ROAD RESURFACING

SUMMARY TABLES

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DESIGNED | TAL
CHECKED | VARIOUS
DRAFTED | CJS/JMK

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	D2	69

202(4) REMOVAL OF CULVERT PIPE

SHEET	FROM STATION	OFFSET	TO STATION	OFFSET	LENGTH (LF)	REMARKS
F1	10+91	43.3' RT	11+14	49.9' RT	39	18" CMP
F1	11+07	24.2' LT	11+33	20.1' RT	51	18" CMP
F1	11+19	38.0' RT	11+33	21.5' RT	22	18" CMP
F1–F2	11+34	20.9' RT	15+03	20.8' RT	369	18" CMP
F2	15+05	20.3' RT	15+05	19.2' LT	40	18" CMP
F2	15+06	20.8' RT	18+83	21.0' RT	378	18" CMP
F2	18+85	20.4' RT	18+85	19.5' LT	40	18" CMP
F3	22+11	19.6' LT	22+11	20.1' RT	40	18" CMP
F3	22+11	21.3' RT	22+11	39.7' RT	18	18" CMP
F3	22+79	53.5' LT	22+81	32.7' RT	86	24" CMP
F3	23+91	33.2' LT	24+41	33.6' LT	50	18" CMP
F3	24+88	36.7' LT	24+41	43.9' RT	93	30" CMP
F4	25+07	33.8' LT	25+51	29.8' LT	43	18" CMP
F4	25+85	29.4' LT	26+33	30.6' LT	48	18" CMP
F4	29+46	48.6' LT	28+77	41.3' RT	113	36" CMP
F5	31+57	38.4' RT	32+33	36.7' RT	78	24" CMP
F8	45+45	32.7' LT	45+35	37.0' RT	70	36" CMP
F8	49+04	31.8' LT	48+99	38.3' RT	67	24" CMP
F9	53+42	32.3' LT	53+20	31.8' RT	68	24" CMP
F14	68+36	32.0' RT	69+26	31.8' RT	89	24" CMP
F16	77+23	27.4' RT	77+89	31.6' RT	68	24" CMP
				TOTAL:	1,870	LF

202(8) REMOVAL OF INLET

SHEET	STATION	OFFSET	QUANTITY (EA)	REMARKS
F1	11+08	25.2' LT	1	
F1	11+33	20.7' RT	1	
F2	15+05	20.7' RT	1	
F2	15+05	19.8' LT	1	
F2	18+85	20.0' LT	1	
F2	18+85	20.7' RT	1	
F3	22+11	20.8' RT	1	
F3	22+11	20.0' LT	1	
		TOTAL:	8	EA

202(9) REMOVAL OF CURB AND GUTTER

SHEET	FROM STATION	OFFSET	TO STATION	OFFSET	LENGTH (LF)	REMARKS
F1	10+65	56.1' RT	10+86	34.4' RT	29	
F1	10+70	51.0' LT	14+66	33.8' LT	409	
F1	11+14	31.4' RT	14+62	27.7' RT	354	
F1–F2	14+90	31.8' LT	18+43	28.1' LT	388	
F1–F2	14+92	31.1' RT	18+43	30.8' RT	369	
F2–F3	18+72	31.2' RT	22+23	30.7' RT	355	
F2–F3	18+75	30.7' LT	22+23	30.1' LT	353	
F4	27+37	36.5' LT	27+47	25.2' LT	18	
F4	28+05	25.6' LT	28+18	40.6' LT	26	
F4	28+56	25.6' LT	28+58	41.7' LT	16	
				TOTAL:	2,317	LF
				ROUNDED TOTAL:	2,320	LF

203(3) UNCLASSIFIED EXCAVATION

SHEET	FROM STATION	TO STATION	AREA (SF)	DEPTH (FT)	VOLUME (CY)	REMARKS
F1	10+71	14+25	14,148	1.83	1,057	ROADWAY
F2	14+25	19+50	19,425	1.83	1,451	ROADWAY
F3	19+50	22+85	12,277	1.83	918	ROADWAY
F1–F3	11+89	13+00	2,051	0.83	70	POROUS BACKFILL
F1–F3	10+65	22+30	4,659	0.33	350	CURB AND GUTTER
F1–F3	10+66	22+28	8,582	0.33	123	4 INCH SIDEWALK
F1–F3	12+51	21+43	1,329	0.33	21	6 INCH SIDEWALK
F1–F3	10+70	22+30	1,129	0.33	16	CURB RAMPS
F3	22+85	23+50	2,047	0.50	42	BASE COURSE REPAIR AREA
F3–F4	24+40	26+25	5,257	0.50	108	BASE COURSE REPAIR AREA
F4–F5	26+65	31+75	15,019	0.50	306	BASE COURSE REPAIR AREA
F5	32+50	33+25	2,172	0.50	45	BASE COURSE REPAIR AREA
F6	35+11	37+50	6,740	0.50	138	BASE COURSE REPAIR AREA
F6	39+14	40+00	2,484	0.50	51	BASE COURSE REPAIR AREA
F8	45+27	45+55	799	0.50	17	BASE COURSE REPAIR AREA
F8–F9	48+55	51+50	8,484	0.50	173	BASE COURSE REPAIR AREA
F9	53+18	53+44	723	0.50	15	BASE COURSE REPAIR AREA
F14	71+50	72+00	800	0.50	17	BASE COURSE REPAIR AREA
F16	79+80	81+76	5,694	0.50	116	BASE COURSE REPAIR AREA
				TOTAL:	4,964	CY
				ROUNDED TOTAL:	4,970	CY

203(6A) BORROW, TYPE A

SHEET	FROM STATION	TO STATION	OFFSET	VOLUME (CY)	WEIGHT (TON)	REMARKS
F1	10+71	14+25	CL	822	2,030	ROADWAY
F2	14+25	19+50	CL	1,319	3,007	ROADWAY
F3	19+50	22+85	CL	834	1,901	ROADWAY
				TOTAL:	6,938	TON
				ROUNDED TOTAL:	6,940	TON

205(4) POROUS BACKFILL MATERIAL

SHEET	FROM STATION	TO STATION	OFFSET	WIDTH (FT)	DEPTH (FT)	VOLUME (CY)	REMARKS
F1	11+90	13+00	LT	18.5	0.83	69	ROADWAY
F1	11+92	11+92	LT/RT	2.5	7.75	34	P-5
					TOTAL:	103	CY
					ROUNDED TOTAL:	105	CY

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FILE | C:\Civil 3D Projects\2016\24\62367-01\Civil\SA-CT-D1-62367.dwg | DATE | 8/7/2018 11:58 | LAYOUT | D2 | DESIGNED | TAL | CHECKED | VARIOUS | DRAFTED | CJS/JMK

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301(1)	AGGREGATE BASE COURSE, GRADING D-1						
SHEET	FROM STATION	TO STATION	AREA (SF)	DEPTH (FT)	VOLUME (CY)	WEIGHT (TON)	REMARKS
F1	10+71	14+25	14,148	0.33	175	375	ROADWAY
F2	14+25	19+50	19,425	0.33	240	515	ROADWAY
F3	19+50	22+85	12,277	0.33	152	326	ROADWAY
F1–F3	10+19	22+14	1,380	0.33	14	30	CURB RAMPS
F1–F3	10+97	22+05	9,126	0.33	106	233	4 INCH SIDEWALK
F1–F3	12+51	21+43	846	0.33	16	39	6 INCH SIDEWALK
F1–F3	10+15	22+28	4,678	0.33	29	65	CURB AND GUTTER
F3	22+85	23+50	2,047	0.50	38	82	BASE COURSE REPAIR AREA
F3–F9	22+85	55+00	6,430	0.17	40	86	DITCH LINEAR GRADING
F3–F4	24+40	26+25	5,257	0.50	97	209	BASE COURSE REPAIR AREA
F4–F5	26+65	31+75	15,019	0.50	278	597	BASE COURSE REPAIR AREA
F5	32+50	33+25	2,172	0.50	40	87	BASE COURSE REPAIR AREA
F6	35+11	37+50	6,740	0.50	125	268	BASE COURSE REPAIR AREA
F6	39+14	40+00	2,484	0.50	46	99	BASE COURSE REPAIR AREA
F8	45+27	45+55	799	0.50	15	32	BASE COURSE REPAIR AREA
F8–F9	48+55	51+50	8,484	0.50	157	338	BASE COURSE REPAIR AREA
F9	53+18	53+44	723	0.50	13	29	BASE COURSE REPAIR AREA
F14	71+50	72+00	800	0.50	15	32	BASE COURSE REPAIR AREA
F16	79+80	81+76	5,694	0.50	105	227	BASE COURSE REPAIR AREA
					TOTAL:	3,669	TON
					ROUNDED TOTAL:	3,670	TON

303(3)	LINEAR GRADING				
SHEET	TO STATION	FROM STATION	OFFSET	LENGTH (STA)	NOTES
F3–F16	22+85	82+12	LT/RT	119	
			TOTAL:	119	STA
			ROUNDED TOTAL:	120	STA

401(1B)	HMA, TYPE II; CLASS B						
SHEET	FROM STATION	TO STATION	AREA (SF)	DEPTH (FT)	VOLUME (CY)	WEIGHT (TON)	REMARKS
F1	10+71	14+25	14,148	0.33	157	370	ROADWAY – URBAN
F2	14+25	19+50	19,425	0.33	240	566	ROADWAY – URBAN
F3	19+50	22+85	12,277	0.33	152	358	ROADWAY – URBAN
F3	22+85	23+50	2,047	0.17	13	30	BASE COURSE REPAIR AREA – BOTTOM LIFT
F3	22+85	25+00	6,020	0.17	37	88	ROADWAY – TOP LIFT
F3–F4	24+40	26+25	5,257	0.17	32	77	BASE COURSE REPAIR AREA – BOTTOM LIFT
F4	25+00	30+00	14,000	0.17	86	204	ROADWAY – TOP LIFT
F4–F5	26+65	31+75	15,019	0.17	278	656	BASE COURSE REPAIR AREA – BOTTOM LIFT
F5	30+00	35+00	14,000	0.17	86	204	ROADWAY – TOP LIFT
F5	32+50	33+25	2,172	0.17	40	95	BASE COURSE REPAIR AREA – BOTTOM LIFT
F6	35+00	40+00	14,000	0.17	86	204	ROADWAY – TOP LIFT
F6	35+11	37+50	6,740	0.17	125	295	BASE COURSE REPAIR AREA – BOTTOM LIFT
F6	39+14	40+00	2,484	0.17	46	109	BASE COURSE REPAIR AREA – BOTTOM LIFT
F7	40+00	45+00	14,000	0.17	86	204	ROADWAY – TOP LIFT
F8	45+00	50+00	14,000	0.17	86	204	ROADWAY – TOP LIFT
F8	45+27	45+55	799	0.17	15	35	BASE COURSE REPAIR AREA – BOTTOM LIFT
F8–F9	48+55	51+50	9,922	0.17	184	433	BASE COURSE REPAIR AREA – BOTTOM LIFT
F9	50+00	54+00	11,200	0.17	69	163	ROADWAY – TOP LIFT
F9	53+18	53+44	723	0.17	13	32	BASE COURSE REPAIR AREA – BOTTOM LIFT
F10	54+00	57+00	9,506	0.17	59	139	ROADWAY – TOP LIFT
F11	57+00	61+00	12,928	0.17	80	189	ROADWAY – TOP LIFT
F12	61+00	65+00	12,780	0.17	79	186	ROADWAY – TOP LIFT
F13	65+00	68+00	9,558	0.17	59	140	ROADWAY – TOP LIFT
F14	68+00	73+00	15,910	0.17	98	232	ROADWAY – TOP LIFT
F14	71+50	72+00	800	0.17	15	35	BASE COURSE REPAIR AREA – BOTTOM LIFT
F15	73+00	77+00	12,707	0.17	78	185	ROADWAY – TOP LIFT
F16	77+00	82+12	15,665	0.17	97	228	ROADWAY – TOP LIFT
F16	79+80	82+12	5,694	0.17	105	249	BASE COURSE REPAIR AREA – BOTTOM LIFT
F1–F16	10+83	77+91	15,485	0.17	96	226	APPROACHES
F1–F2	12+60	18+00	18+00	0.17	3	9	DRIVEWAY TIE–INS BEHIND CURB CUT
					TOTAL:	6,159	TON
					ROUNDED TOTAL:	6,160	TON

408(1)	PAVEMENT COLD PLANING			
SHEET	FROM STATION	TO STATION	AREA (SY)	REMARKS
F3	23+50	24+40	307	
F4	26+25	26+65	128	
F5	31+75	32+50	240	
F5–F6	33+25	35+11	593	
F6	37+50	39+14	522	
F7–F8	40+00	45+27	1,683	
F8	45+55	48+55	987	
F9	51+50	53+19	379	
F9–F16	53+44	79+80	9,238	
		TOTAL:	14,055	SY
		ROUNDED TOTAL:	14,080	SY

303(4)	DITCH RECONDITIONING				
SHEET	TO STATION	FROM STATION	OFFSET	LENGTH (LF)	NOTES
F3	22+81	23+96	LT	115	
F3	24+44	24+85	LT	41	
F3–F4	24+89	25+04	LT	15	
F4	25+52	25+83	LT	30	
F4	26+35	26+99	LT	63	
		TOTAL:		264	LF
		ROUNDED TOTAL:		265	LF

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			ALASKA	0943026/SFHWY00067	2018	D4	69

603(21-18) 18 INCH CORRUGATED POLYETHYLENE PIPE

				INLET				OUTLET					
SHEET	PIPE ID	SIZE (IN)	GRADE	STATION	OFFSET	INVERT (FT)	STRUCTURE	STATION	OFFSET	INVERT (FT)	STRUCTURE	LENGTH (LF)	REMARKS
F1	P-1	18	5.33%	11+14	49.9' RT	74.48'	-	10+91	43.3' RT	72.72'	-	33	
F1	P-2	18	3.31%	11+36	19.5' RT	70.69'	S-2	11+00	24.3' LT	68.88'	S-1	55	
F1	P-3	18	10.56%	11+19	25.8' RT	NOTE 2	EXISTING CMP	11+36	19.5' RT	70.82'	S-2	10	CONNECT TO EXISTING PIPE AT ROW
F1	P-4	18	5.72%	11+92	19.5' RT	74.50'	S-3	11+36	19.5' RT	71.31'	S-2	56	
F1	P-6	18	7.01%	13+72	19.5' RT	87.70'	S-4	11+92	19.5' RT	75.10'	S-3	180	
F1-F2	P-7	18	6.88%	15+16	19.5' RT	97.74'	S-5	13+72	19.5' RT	87.80'	S-4	145	
F2	P-8	18	2.23%	15+16	19.5' LT	100.72'	S-6	15+16	19.5' RT	99.85'	S-5	39	
F2	P-9	18	4.93%	17+10	19.5' RT	107.68'	S-7	15+16	19.5' RT	98.13'	S-5	194	
F2	P-10	18	0.99%	18+86	19.5' RT	109.52'	S-8	17+10	19.5' RT	107.78'	S-7	176	
F2	P-11	18	2.92%	18+86	19.5' LT	110.44'	S-9	18+86	19.5' RT	109.33'	S-8	38	
F2-F3	P-12	18	1.01%	20+20	19.5' RT	110.97'	S-10	18+86	19.5' RT	109.62'	S-8	134	
F3	P-13	18	1.00%	21+58	19.5' RT	112.45'	S-11	20+20	19.5' RT	111.07'	S-10	138	
F3	P-14	18	3.00%	21+58	19.5' LT	112.16'	S-12	21+58	19.5' RT	111.05'	S-11	37	
F3	P-15	18	9.32%	22+29	47.3' LT	116.00'	S-13	22+72	47.2' LT	112.00'	END SECTION	43	
F3	P-17	18	2.28%	23+99	33.3' LT	111.72'	END SECTION	24+41	33.5' LT	110.74'	END SECTION	43	SEE NOTE 1
F4	P-19	18	6.04%	25+51	29.7' LT	112.24'	END SECTION	25+07	33.8' LT	109.65'	END SECTION	44	SEE NOTE 1 & 2
F4	P-20	18	2.07%	26+33	30.7' LT	113.04'	END SECTION	25+85	29.4' LT	112.05'	END SECTION	48	SEE NOTE 1
											TOTAL:	1,413	LF

1.) REPLACE EXISTING CMP WITH CPP AT SAME LINE AND GRADE.
2.) FIELD VERIFY INLET INVERT ELEVATION PRIOR TO CONSTRUCTION.

603(21-24) 24 INCH CORRUGATED POLYETHYLENE PIPE

				INLET				OUTLET					
SHEET	PIPE ID	SIZE (IN)	GRADE	STATION	OFFSET	INVERT (FT)	STRUCTURE	STATION	OFFSET	INVERT (FT)	STRUCTURE	LENGTH (LF)	REMARKS
F3	P-16	24	4.20%	22+79	40.9' LT	108.63'	MH	22+81	32.7' RT	105.56'	END SECTION	74	SEE NOTES 1 AND 2
F5	P-22	24	5.29%	32+33	36.7' RT	132.39'	END SECTION	31+57	38.4' RT	128.26'	END SECTION	78	SEE NOTE 2
F8	P-24	24	4.60%	49+05	31.8' LT	109.00'	END SECTION	48+96	38.3' RT	105.74'	END SECTION	71	SEE NOTE 2 AND 3
F9	P-25	24	5.90%	53+42	32.3' LT	104.38'	END SECTION	53+20	31.8' RT	100.36'	END SECTION	68	SEE NOTE 2 AND 3
F14	P-26	24	0.78%	68+35	32.0' RT	39.30'	END SECTION	69+13	32.1' RT	38.16'	END SECTION	89	SEE NOTE 2
F16	P-27	24	6.41%	77+89	31.6' RT	63.10'	END SECTION	77+23	27.4' RT	58.74'	END SECTION	68	SEE NOTE 2
											TOTAL:	448	LF

1.) CULVERT PASSES THROUGH AN EXISTING CONFLICT MANHOLE AT 22+78.8, 40.9' LT. DISCONTINUE CULVERT ACROSS MANHOLE AND CTE ON EITHER SIDE OF STRUCTURE.
2.) REPLACE EXISTING CMP WITH CPP AT SAME LINE AND GRADE.
3.) FIELD VERIFY INLET INVERT ELEVATION PRIOR TO CONSTRUCTION.

603(21-30) 30 INCH CORRUGATED POLYETHYLENE PIPE

				INLET				OUTLET					
SHEET	PIPE ID	SIZE (IN)	GRADE	STATION	OFFSET	INVERT (FT)	STRUCTURE	STATION	OFFSET	INVERT (FT)	STRUCTURE	LENGTH (LF)	REMARKS
F3	P-18	30	3.12%	24+88	36.7' LT	104.44'	EXIST 48" MH	24+41	43.9' RT	101.54'	END SECTION	93	CTE 48" MH AT INLET, SEE NOTE 1
											TOTAL:	93	LF

1.) REPLACE EXISTING CMP WITH CPP AT SAME LINE AND GRADE.

603(21-36) 36 INCH CORRUGATED POLYETHYLENE PIPE

				INLET				OUTLET					
SHEET	PIPE ID	SIZE (IN)	GRADE	STATION	OFFSET	INVERT (FT)	STRUCTURE	STATION	OFFSET	INVERT (FT)	STRUCTURE	LENGTH (LF)	REMARKS
F4	P-21	36	2.40%	29+46	48.6' LT	112.49'	END SECTION	28+77	41.3' RT	109.75'	END SECTION	114	SEE NOTE 1
F8	P-23	36	2.74%	45+45	32.7' LT	112.39'	END SECTION	45+36	37.0' RT	110.47'	END SECTION	70	SEE NOTE 1
											TOTAL:	184	LF

1.) REPLACE EXISTING CMP WITH CPP AT SAME LINE AND GRADE.

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603(22)	6 INCH STORM DRAIN LATERAL										
		INLET				OUTLET						
SHEET	GRADE	STATION	OFFSET	INVERT	STRUCTURE	STATION	OFFSET	INVERT	STRUCTURE	LENGTH (LF)	QUANTITY	REMARKS
F2	1.00%	15+06	27.5' LT	101.84	–	15+16	18.5' LT	101.72	S–6	13.2	1	CTE 18" CMP INLET STRUCTURE
F2	1.00%	16+36	25.5' RT	105.47	–	16+36	18.5' RT	105.4	SADDLE TEE	7.0	1	ADJUST SADDLE TEE LOCATION AS REQUIRED TO CTE MEDICAL CENTER ROOF DRAIN
F2	–	18+90	31.2' LT	–	–	18+86	18.5' LT	111.44	S–9	12.4	1	CTE 6" PVC DRAIN AT ROW. ADJUST PIPE GRADE AS REQUIRED.
										TOTAL:	3	EA

604(1)	STORM SEWER MANHOLE						
SHEET	STRUCTURE ID	STATION	OFFSET	GRATE ELEVATION	TYPE	QUANTITY	REMARKS
F1	S–1	11+00	24.9' LT	75.49'	CURB INLET	1	CUSTOM HOOD
					TOTAL:	1	EA

604(4)	ADJUST EXISTING MANHOLE			
SHEET	STATION	OFFSET	QUANTITY (EA)	REMARKS
F1	10+99	6.6' LT	1	SANITARY SEWER
F2	14+75	27.7' RT	1	SANITARY SEWER
F2	18+59	36.7' RT	1	SANITARY SEWER
F3	22+43	38.8' LT	1	SANITARY SEWER
	TOTAL:		4	EA

604(5)	INLET, TYPE A						
SHEET	STRUCTURE ID	STATION	OFFSET	GRATE ELEVATION	TYPE	QUANTITY	REMARKS
F1	S–2	11+36	19.5' RT	77.87'	CURB INLET	1	
F1	S–3	11+92	19.5' RT	82.04'	CURB INLET	1	
F1	S–4	13+72	19.5' RT	95.22'	CURB INLET	1	
F2	S–5	15+16	19.5' RT	105.15'	CURB INLET	1	
F2	S–6	15+16	19.5' LT	105.15'	CURB INLET	1	
F2	S–7	17+10	19.5' RT	113.41'	CURB INLET	1	
F2	S–8	18+86	19.5' RT	116.48'	CURB INLET	1	
F2	S–9	18+86	19.5' LT	116.28'	CURB INLET	1	
F3	S–10	20+20	19.5' RT	117.78'	CURB INLET	1	
F3	S–11	21+58	19.5' RT	117.29'	CURB INLET	1	
F3	S–12	21+58	19.5' LT	117.05'	CURB INLET	1	
F3	S–13	22+29	47.3' LT	116.84'	FIELD INLET	1	
					TOTAL:	12	EA

605(7–6)	6 INCH PERFORATED PVC PIPE FOR UNDERDRAIN										
				INLET			OUTLET				
SHEET	PIPE ID	SIZE (IN)	GRADE	STATION	OFFSET	INVERT	STATION	OFFSET	INVERT	LENGTH (LF)	REMARKS
F1	P–5	6	2.00%	11+92	25.5' LT	75.88	11+92	18.5' RT	75.00	44	CONNECT TO S–3
									TOTAL:	44	LF

As-Built Area (SY)
6.0
5.7
3.1
80.0
118.1
81.1
41.1
55.3
51.7
79.1
46.7
62.2
4.8
121.6
178.2
34.4
37.9

608(1A)	CONCRETE SIDEWALK, 4 INCHES THICK					
SHEET	FROM STATION	OFFSET	TO STATION	OFFSET	AREA (SY)	REMARKS
F1	10+68	60.4' RT	10+72	53.4' RT	4	
F1	10+71	49.0' LT	10+73	42.8' LT	4	
F1	10+81	39.9' RT	10+85	37.5' RT	4	
F1	11+11	25.7' LT	12+51	23.0' LT	77	
F1	11+35	23.0' RT	13+39	23.0' RT	113	
F1–F2	13+07	23.0' LT	14+50	23.0' LT	79	
F1–F2	13+70	23.0' RT	14+45	23.0' RT	42	
F2	15+14	23.0' LT	16+11	23.0' LT	53	
F2	15+15	23.0' RT	15+95	23.0' RT	45	
F2	16+36	23.0' RT	17+77	23.0' RT	78	
F2	16+43	23.0' LT	17+27	23.0' LT	46	
F2	17+53	23.0' LT	18+65	23.0' LT	63	
F2	18+13	23.0' RT	18+24	23.0' RT	6	
F2–F3	18+82	23.0' LT	20+99	23.0' LT	121	
F2–F3	18+84	23.0' RT	22+05	23.0' RT	179	
F3	21+43	23.0' LT	22+05	23.0' LT	34	
F1–F3	12+75	––	20+50	––	48	DRIVEWAY TIE–INS BEHIND CURB CUT
				TOTAL:	996	SY
				ROUNDED TOTAL:	1,000	SY

608(1A) Final Total Quantity 1007 SY

As-Built Area (SY)
29.1
17.8
21.9
17.8
14.6
20.0
23.9
103.5

608(1B)	CONCRETE SIDEWALK, 6 INCHES THICK					
SHEET	FROM STATION	OFFSET	TO STATION	OFFSET	AREA (SY)	REMARKS
F1	12+51	23.0' LT	13+07	23.0' LT	31	
F1	13+39	23.0' RT	13+70	23.0' RT	17	
F2	15+95	23.0' RT	16+36	23.0' RT	23	
F2	16+11	23.0' LT	16+43	23.0' LT	18	
F2	17+27	23.0' LT	17+53	23.0' LT	14	
F2	17+77	23.0' RT	18+13	23.0' RT	20	
F3	20+99	23.0' LT	21+43	23.0' LT	24	
				TOTAL:	147	SY
				ROUNDED TOTAL:	150	SY

608(1B) Final Total Quantity 248.6 SY

Project As-Built Drawing have been reviewed by the Project Engineer and represent to the best of my knowledge the Project as Constructed.
Project Engineer: HH

PLANS DEVELOPED BY:
DOWL, LLC
5368 COMMERCIAL BLVD,
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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

WRANGELL - BENNETT STREET
REHABILITATION AND
AIRPORT ROAD RESURFACING

SUMMARY TABLES

FILE C:\Civil 3D Projects\2016\24\62367-01\Civil\SA-CT-01-62367.dwg | DATE 8/7/2018 11:58 | LAYOUT D5 | DESIGNED TAL | CHECKED VARIOUS | DRAFTED CJS/JMK

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	D6	69

608(6)	CURB RAMP				
SHEET	STATION	OFFSET	TYPE	QUANTITY (EA)	REMARKS
F1	10+76	RT	PARALLEL	1	
F1	10+92	RT	PARALLEL	1	
F1	10+81	LT	PARALLEL	1	
F1	11+17	RT	PARALLEL	1	
F1	14+55	RT	UNIDIRECTIONAL	1	
F1	14+59	LT	PARALLEL	1	
F1	14+98	RT	PARALLEL	1	
F1	14+96	LT	PARALLEL	1	
F2	18+32	RT	UNIDIRECTIONAL	1	
F2	18+74	LT	PARALLEL	1	
F2	18+74	RT	PARALLEL	1	
F3	22+14	LT	PARALLEL	1	
F3	22+14	RT	PARALLEL	1	
			TOTAL:	13	EA

609(2)	CURB AND GUTTER, TYPE I					
SHEET	FROM STATION	OFFSET	TO STATION	OFFSET	LENGTH (LF)	REMARKS
F1	10+65	58.5' RT	10+98	37.0' RT	53	
F1–F2	10+66	47.7' LT	14+66	33.8' LT	401	
F1–F2	11+13	32.4' RT	14+65	32.7' RT	367	
F2–F3	14+89	32.7' RT	18+42	32.8' RT	367	
F2–F3	14+89	42.5' LT	22+30	31.9' LT	763	
F2–F3	18+66	32.8' RT	22+30	32.0' RT	378	
F4	27+37	36.5' LT	27+47	25.2' LT	18	
F4	28+05	25.6' LT	28+18	40.6' LT	23	
F4	28+57	35.8' LT	28+58	41.7' LT	6	
				TOTAL:	2,376	LF
				ROUNDED TOTAL:	2,380	LF

618(2)	SEEDING			
SHEET	FROM STATION	TO STATION	WEIGHT (LB)	REMARKS
F1	10+71	10+94	0.10	
F1–F2	10+73	14+63	0.89	
F1–F2	11+18	14+60	0.78	
F2	14+96	18+38	0.77	
F2–F3	14+97	22+23	1.61	
F2–F3	18+35	21+06	6.64	
F2–F3	18+73	22+16	0.78	
F3	22+81	23+96	2.28	DITCH RECONDITIONING AREA
F3	24+44	24+85	0.81	DITCH RECONDITIONING AREA
F3–F4	24+89	25+04	0.30	DITCH RECONDITIONING AREA
F4	25+52	25+83	0.59	DITCH RECONDITIONING AREA
F4	26+35	26+99	1.25	DITCH RECONDITIONING AREA
		TOTAL	16.78	LB
		ROUNDED TOTAL:	17	LB

627(10)	ADJUSTMENT OF VALVE BOX			
SHEET	STATION	OFFSET	QUANTITY (EA)	REMARKS
F1	10+76	9' RT	1	
F1	11+01	36' RT	1	
F2	14+65	28' LT	1	
F2	14+67	25' LT	1	
F2	14+68	34' LT	1	
F2	14+72	27' LT	1	
F2	17+67	5' LT	1	
F2	17+68	21' LT	1	
F2	18+42	24' LT	1	
F3	22+49	29' LT	1	
F3	22+50	30' LT	1	
F3	22+52	30' LT	1	
		TOTAL:	12	EA

620(2)	TOPSOIL					
SHEET	FROM STATION	TO STATION	OFFSET	AREA (SY)	VOLUME (CYVM)	REMARKS
F1	10+71	10+94	RT	5	1	4" DEPTH
F1–F2	10+73	14+63	LT	49	5	4" DEPTH
F1–F2	11+18	14+60	RT	43	5	4" DEPTH
F2	14+96	18+38	RT	43	5	4" DEPTH
F2–F3	14+97	22+23	LT	90	10	4" DEPTH
F2–F3	18+35	21+06	LT	369	103	10" DEPTH
F2–F3	18+73	22+16	RT	43	5	4" DEPTH
			TOTAL:		134	CYVM
			ROUNDED TOTAL:		140	CYVM

630(1)	GEOTEXTILE, SEPARATION, CLASS 1+				
SHEET	FROM STATION	TO STATION	OFFSET	AREA (SY)	REMARKS
F1	11+88	13+02	LT/RT	234	ROADWAY POROUS BACKFILL
F1	11+92	11+92	LT/RT	102	P–5
F3	21+51	21+65	LT	29	S–12
			TOTAL:	365	SY

634(2)	GEOGRID, REINFORCEMENT, CLASS 1+				
SHEET	FROM STATION	TO STATION	OFFSET	AREA (SY)	REMARKS
F3	20+50	22+85	LT	1,110	BENNETT ST
F3	21+41	21+75	LT	51	S–12
			TOTAL:	1,161	SY
			ROUNDED TOTAL:	1,170	SY

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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

WRANGELL - BENNETT STREET REHABILITATION AND AIRPORT ROAD RESURFACING

SUMMARY TABLES

FILE C:\Civil 3D Projects\2016\24\62367-01\Civil\SA-CT-01-62367.dwg | DATE 8/7/2018 11:58 | LAYOUT D6 | DESIGNED TAL | CHECKED VARIOUS | DRAFTED CJS/JMK

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	D7	69

635(2)	INSULATION BOARD			
SHEET	FROM STATION	OFFSET	AREA (SF)	REMARKS
F1	11+02	44.8' RT	16	P-1
F1	11+17	10.5' LT	16	P-2
F1	11+92	22.0' LT	16	P-5
F2	14+66	19.6' RT	16	P-7
F2	17+68	19.5' RT	16	P-10
F2	18+42	19.5' RT	16	P-10
		TOTAL:	96	SF
		ROUNDED TOTAL:	100	SF

639(3)	APPROACH									
SHEET	STATION	OFFSET	TYPE			RADIUS R1 (FT)	RADIUS R2 (FT)	WIDTH (FT)	QUANTITY (EA)	REMARKS
			PUBLIC (EA)	RES. (EA)	COMM. (EA)					
F1	10+70	CT	1			27.7	31.0	57.4	1	ZIMOVIA HWY
F1	11+05	RT	1			27.7	13.5	22.8	1	WRANGELL AVE
F1	12+64	LT		1		CURB CUT	CURB CUT	13.7	1	MTE ASPHALT DRIVEWAY AT 7.5' BEHIND BACK OF SIDEWALK
F1	12+95	LT		1		CURB CUT	CURB CUT	14.1	1	5' ASPHALT DRIVEWAY APRON
F1	13+62	RT		1		CURB CUT	CURB CUT	18.7	1	CTE CONCRETE SIDEWALK AND CONSTRUCT 5'X15' ASPHALT DRIVEWAY APRON
F2	14+77	RT	1			13.5	13.5	24.0	1	REID ST
F2	14+77	LT	1			13.5	18.3	20.5	1	REID ST
F2	16+15	RT			1	CURB CUT	CURB CUT	27.5	1	CTE CONCRETE SIDEWALK AND CONSTRUCT 5' ASPHALT DRIVEWAY APRON
F2	16+27	LT		1		CURB CUT	CURB CUT	20.0	1	5' ASPHALT DRIVEWAY APRON
F2	17+40	LT		1		CURB CUT	CURB CUT	14.0	1	5' ASPHALT DRIVEWAY APRON
F2	17+95	RT			1	CURB CUT	CURB CUT	24.0	1	5' ASPHALT DRIVEWAY APRON
F2	18+54	RT	1			13.5	13.5	24.0	1	FIRST AVE
F3	21+21	LT		1		CURB CUT	CURB CUT	32.0	1	CTE ASPHALT DRIVEWAY AT 15' BEHIND BACK OF SIDEWALK
F3	22+42	RT	1			13.5	20.0	24.0	1	SECOND AVE
F3	22+46	LT	1			20.0	13.5	29.6	1	SECOND AVE
F3	24+17	LT	1			12.0	32.0	25.3	1	HOWELL AVE
F4	25+37	LT		1		29.6	13.4	21.6	1	DRIVEWAY
F4	26+09	LT	1			21.9	20.9	29.9	1	THIRD AVE
F4	27+22	LT			1	32.0	32.0	27.4	1	DRIVEWAY
F4	28+36	LT			1	20.0	42.0	37.1	1	DRIVEWAY
F5	31+95	RT	1			56.7	32.7	30.6	1	ISHIYAMA DR
F10	54+90	LT			1	32.7	50.7	19.6	1	DOT&PF M&O ACCESS
F10	55+24	RT			1	66.8	23.6	67.7	1	AIRPORT ACCESS
F14	68+83	RT	1			38.3	43.3	28.5	1	AIRPORT ACCESS
F15	73+85	RT	1			16.2	35.1	31.8	1	AIRPORT ACCESS
F16	77+59	RT			1	35.7	65.8	20.0	1	ROCK QUARRY ACCESS
								TOTAL:	26	EA

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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

WRANGELL - BENNETT STREET REHABILITATION AND AIRPORT ROAD RESURFACING

SUMMARY TABLES

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	D8	69

642(5)	SET SECONDARY MONUMENT			
SHEET	STATION	OFFSET	QUANTITY (EA)	REMARKS
F4	25+60	20.0' LT	1	PT # 600
F5	32+22	26.0' RT	1	PT # 601
F6	37+75	20.0' LT	1	PT # 602
F7	44+00	18.0' LT	1	PT # 603
F8	50+00	20.0' RT	1	PT # 604
F10	56+50	20.0' RT	1	PT # 605
F12	62+55	41.0' RT	1	PT # 606
		TOTAL:	7	EA

642(6)	REPLACE EXISTING WITH PRIMARY MONUMENT			
SHEET	STATION	OFFSET	QUANTITY (EA)	REMARKS
F1	10+93	12.5' LT	1	PT # 1087
F2	14+78	16.3' LT	1	PT # 1083
F2	16+58	0.4' RT	1	PT # 1082
F3	21+58	0.1' RT	1	PT # 1081
		TOTAL:	4	EA

642(10)	MONUMENT CASE			
SHEET	STATION	OFFSET	QUANTITY (EA)	REMARKS
F1	10+93	12.5' LT	1	PT # 1087
F2	14+78	16.3' LT	1	PT # 1083
F2	16+58	0.4' RT	1	PT # 1082
F3	21+58	0.1' RT	1	PT # 1081
F4	25+60	20.0' LT	1	PT # 600
F5	32+22	26.0' RT	1	PT # 601
F6	37+75	20.0' LT	1	PT # 602
F7	44+00	18.0' LT	1	PT # 603
F8	50+00	20.0' RT	1	PT # 604
F10	56+50	20.0' RT	1	PT # 605
F12	62+55	41.0' RT	1	PT # 606
		TOTAL:	11	EA

670(8)	RECESSED PAVEMENT MARKER				
SHEET	TO STATION	FROM STATION	OFFSET	QUANTITY (EA)	NOTES
H3–H7	33+33	68+43	CL	48	
H7–H8	69+19	73+59	CL	10	
H8	74+15	81+76	CL	14	
			TOTAL:	72	EA

Project As-Built Drawing have been reviewed by the Project Engineer and represent to the best of my knowledge the Project as Constructed.
Project Engineer:
HH

Final Total of Recessed Pavement Marker is 80
Per 6-10-20 Computation Sheet

PLANS DEVELOPED BY:
DOWL, LLC
5368 COMMERCIAL BLVD.
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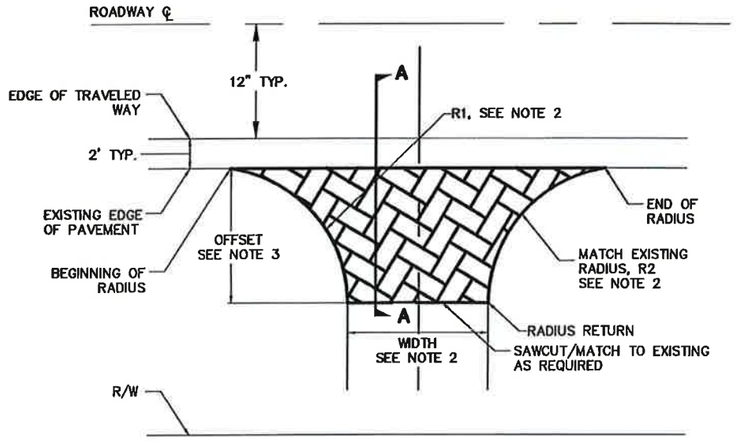
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

WRANGELL - BENNETT STREET REHABILITATION AND AIRPORT ROAD RESURFACING

SUMMARY TABLES

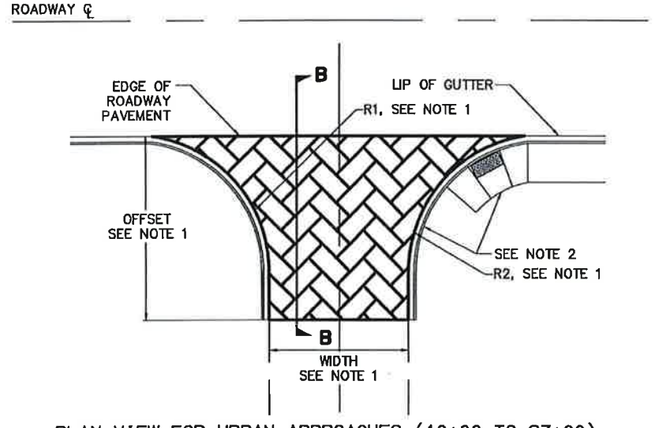
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	E1	69



PLAN VIEW FOR RURAL APPROACHES (23+00 TO 56+00)

RURAL APPROACH NOTES

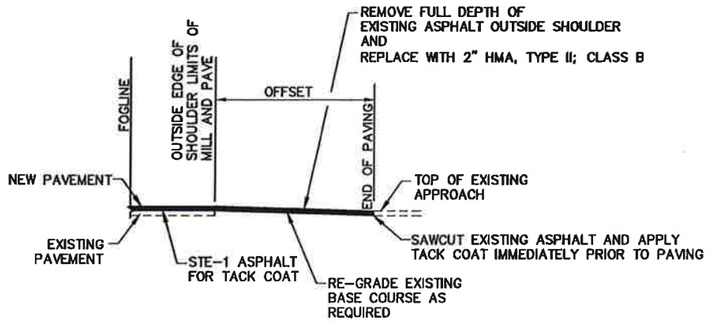
1. DIMENSIONS SHOWN FOR WIDTH, OFFSET, R1, AND R2 CORRESPOND TO D SHEET APPROACH SUMMARY TABLE.
2. APPROACH RADII AND WIDTH TO MATCH EXISTING.
3. OFFSET SHALL EXTEND TO RADIUS RETURN OR 10 FEET, WHICHEVER IS LESS, UNLESS OTHERWISE SHOWN ON THE F SHEETS.



PLAN VIEW FOR URBAN APPROACHES (10+00 TO 23+00)

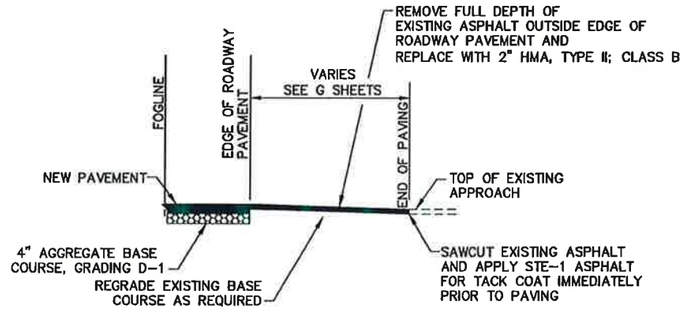
URBAN APPROACH NOTES

1. DIMENSIONS SHOWN FOR WIDTH, OFFSET, R1, AND R2 CORRESPOND TO D SHEET APPROACH SUMMARY TABLE.
2. SEE G SHEETS FOR URBAN APPROACH AND ADA RAMP LAYOUT INFORMATION.



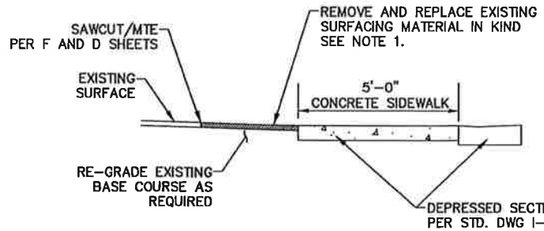
PAVED RURAL APPROACH TRANSITION

SECTION A-A



PAVED URBAN APPROACH TRANSITION

SECTION B-B



APPROACH TRANSITION FOR DRIVEWAY CURBCUTS

NOTES

1. IF EXISTING SURFACING IS ASPHALT REPLACE WITH EQUAL THICKNESS OF HMA, OR 2", WHICHEVER IS GREATER. IF EXISTING SURFACE IS CONCRETE REPLACE WITH CONCRETE SIDEWALK, 6 INCHES THICK. IF EXISTING SURFACING IS GRAVEL CONSTRUCT 5'-0" APRON WITH 2" HMA AND 6" CRUSHED AGGREGATE BASE COURSE, GRADING D-1.

PLANS DEVELOPED BY:
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STATE OF ALASKA
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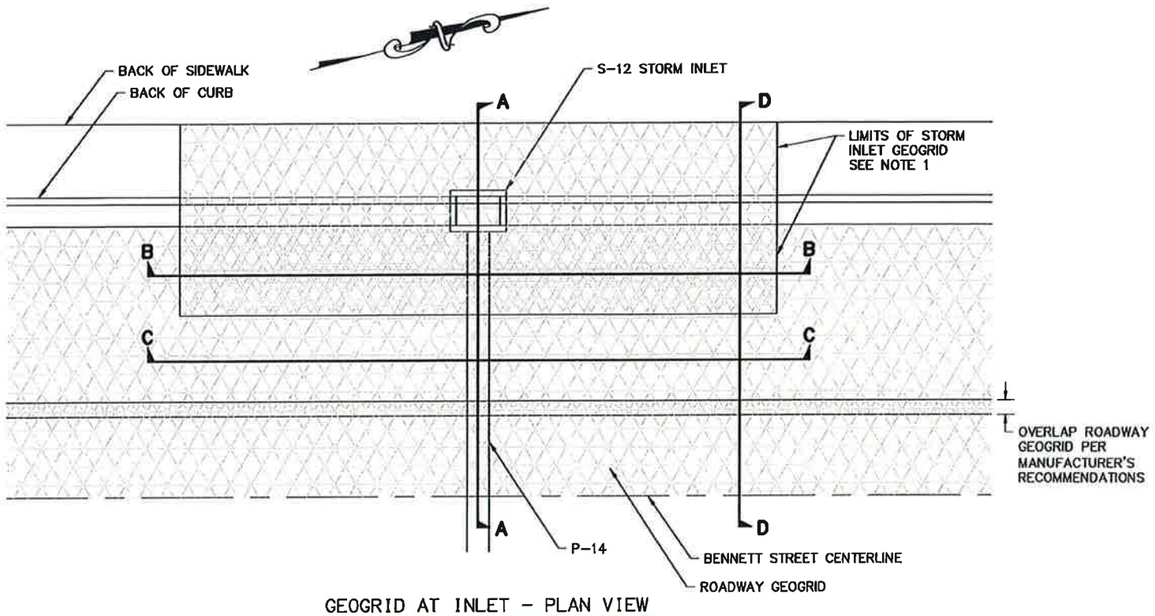
WRANGELL - BENNETT STREET REHABILITATION AND AIRPORT ROAD RESURFACING

PAVEMENT TRANSITION & DRIVEWAY DETAILS

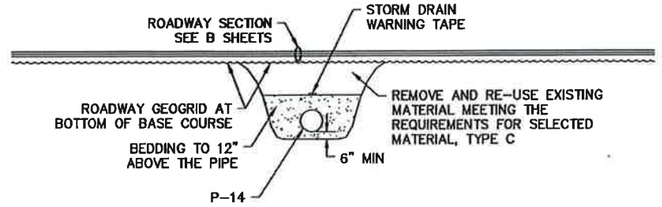
FILE C:\Civil 3D Projects\2016\24\62367-01\Civil\SA-CT-CT-E-62367.dwg | DATE 8/6/2018 14:38 | LAYOUT E1 | DESIGNED TAL | CHECKED VARIOUS | DRAFTED CJS/JMK

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	E2	69

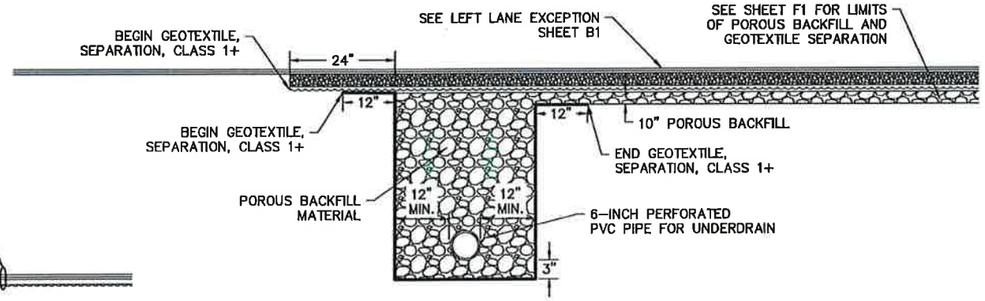
NOTES:
1. IN ADDITION TO THE ROADWAY GEOGRID, INSTALL A CONTINUOUS LENGTH OF STORM INLET GEOGRID BENEATH THE STORM INLET TO A POINT 10-FT BEYOND THE TOP OF THE TRENCH WALL AS SHOWN. INSTALL GEOTEXTILE SEPARATION BENEATH THE STORM INLET GEOGRID ALONG THE CROSS-SECTION OF THE TRENCH AS SHOWN.



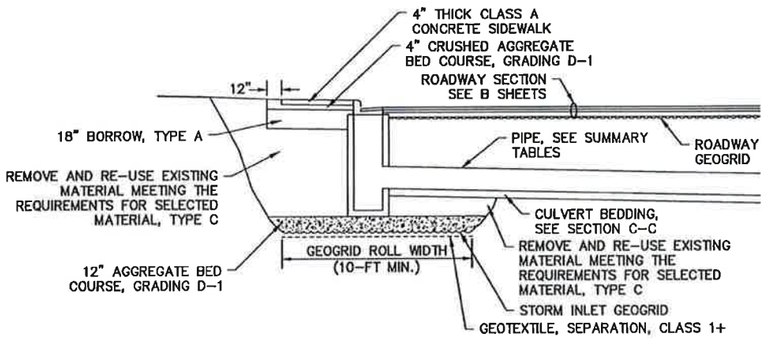
GEOGRID AT INLET - PLAN VIEW



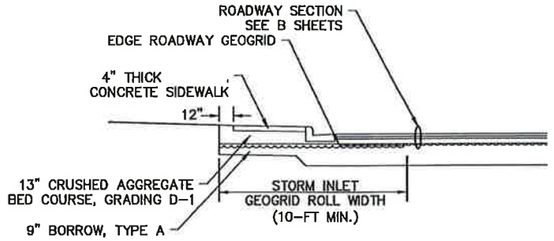
SECTION C-C



UNDERDRAIN @ STA. 11+90



SECTION A-A



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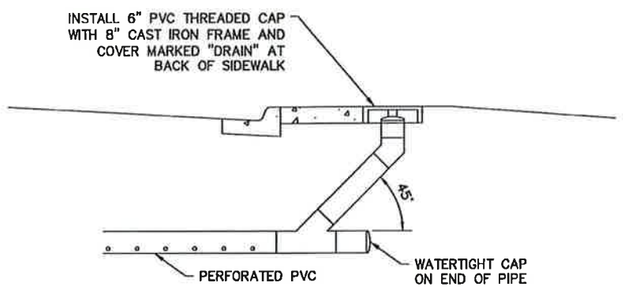
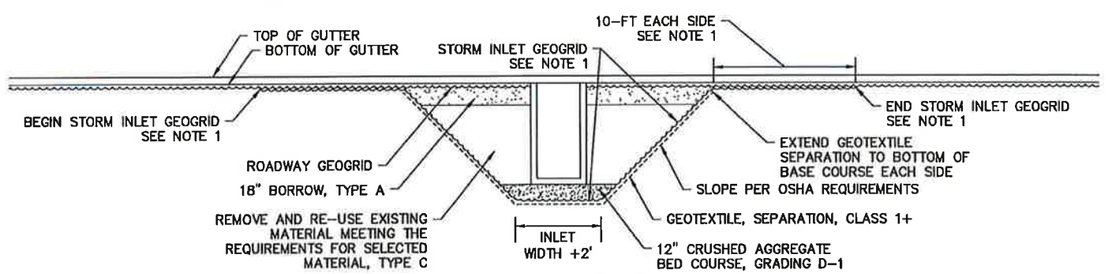


UNDERDRAIN CLEANOUT



SECTION B-B

PLANS DEVELOPED BY:
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STATE OF ALASKA
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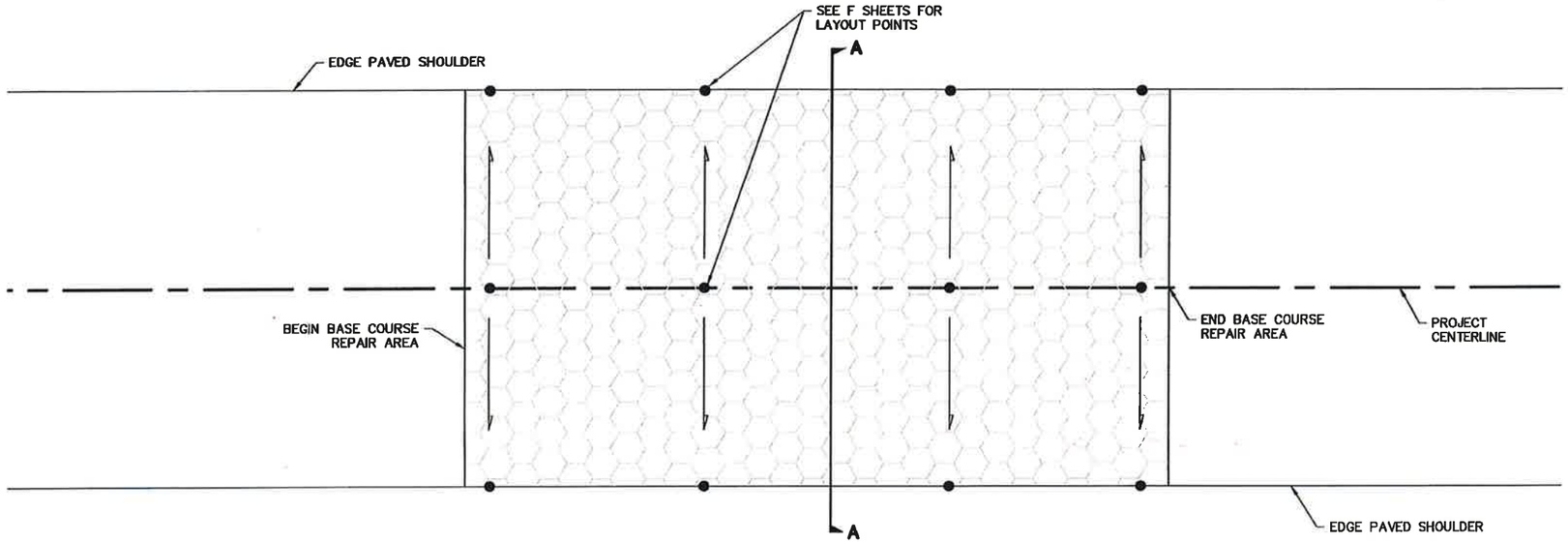
WRANGELL - BENNETT STREET REHABILITATION AND AIRPORT ROAD RESURFACING
GEOGRID AND UNDERDRAIN DETAILS

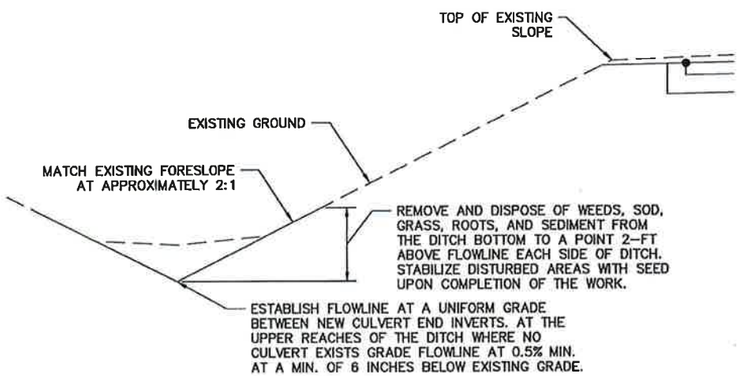
FILE| C:\Civil 3D Projects\2016\24\62367-01\Civil\SA-CT-CT-E-62367.dwg
DATE| 8/6/2018 14:38
LAYOUT| E2
DESIGNED| TAL
CHECKED| VARIOUS
DRAFTED| CJS/JMK

NOTES:
1. IN AREAS DESIGNATED FOR BASE COURSE REPAIR ON THE F SHEETS, REMOVE THE ENTIRE THICKNESS OF EXISTING ASPHALT AND RECONSTRUCT WITH 6" OF AGGREGATE BASE COURSE, GRADING D-1 AND 4" HMA, TYPE II; CLASS B TO THE LAYOUT POINTS SHOWN ON THE F SHEETS.

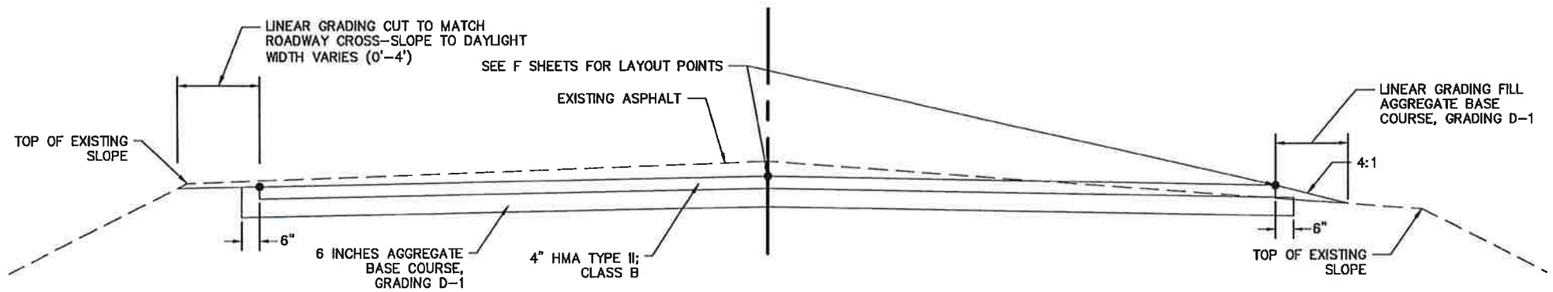
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	E3	69



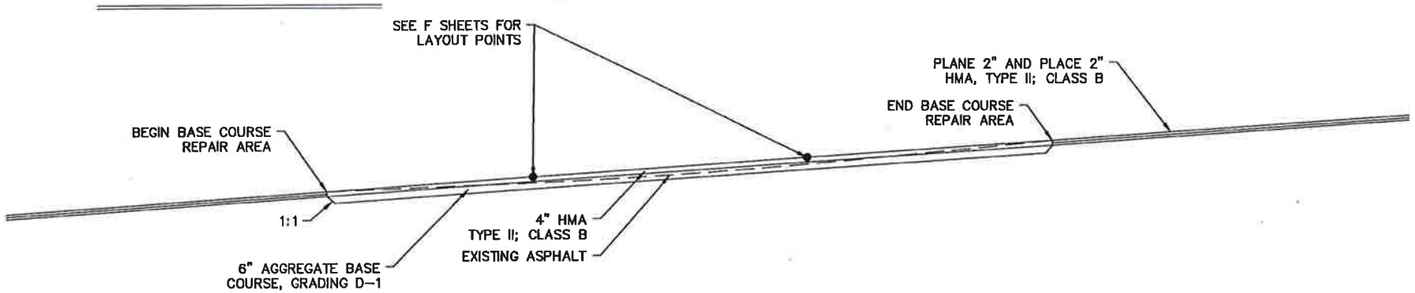
BASE COURSE REPAIR AREA - PLAN VIEW



DITCHLINE RECONDITIONING



SECTION A-A



BASE COURSE REPAIR AREA PROFILE AT CENTERLINE

PLANS DEVELOPED BY:
DOWL, LLC
5368 COMMERCIAL BLVD.
JUNEAU, AK 99801
(907) 780-3533
#AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

WRANGELL - BENNETT STREET REHABILITATION AND AIRPORT ROAD RESURFACING

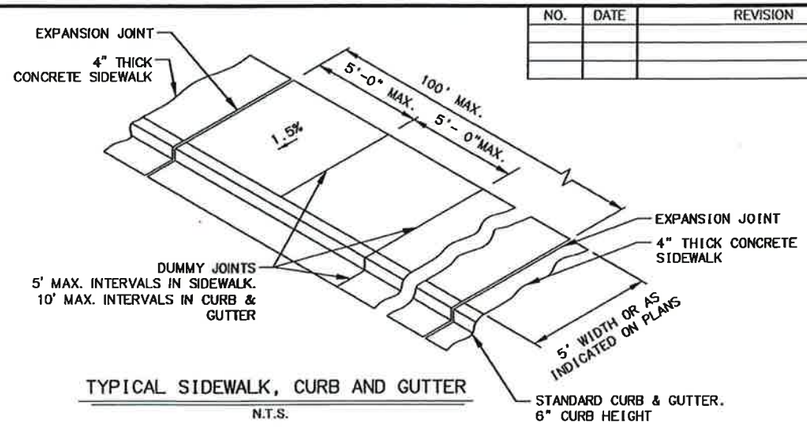
BASE COURSE REPAIR AREA AND DITCH RECONDITIONING DETAILS

CJS/JNK | DRAFTED | VARIOUS | CHECKED | TAL | DESIGNED | E3 | LAYOUT | DATE 8/6/2018 14:38 | FILE C:\Civil 3D Projects\2016\24\62367-01\Civil\SA-CT-GT-E-62367.dwg

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	E4	69

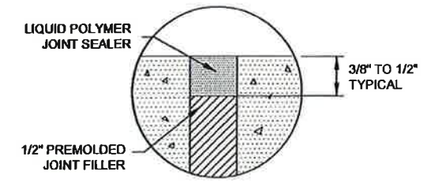
SIDEWALK, CURB AND GUTTER NOTES:

1. THE SIDEWALK CROSS-SLOPE WILL TARGET 1.5% AND WILL IN NO CASE EXCEED 2% IN ORDER TO MEET ADA REQUIREMENTS. SURFACE DRAINAGE WILL BE TOWARDS THE ROADWAY.
2. CONCRETE SIDEWALK AND CURB & GUTTER EXPANSION JOINTS SHALL BE PLACED AT EACH END OF CURB RETURNS AND IMMEDIATELY PRECEDING AND FOLLOWING ALL CURB AND SIDEWALK CUTS. THEREAFTER, THEY SHALL BE PLACED AT 100' MAXIMUM INTERVALS. INSTALL EXPANSION JOINTS WHEN ABUTTING EXISTING FEATURES SUCH AS RETAINING WALLS, FOUNDATIONS, STAIRS, ETC.
3. CONCRETE SIDEWALK DUMMY JOINTS SHALL EXTEND INTO CONCRETE 1/3 THE DEPTH OF THE CONCRETE AND 1/8" WIDE AT 5' MAXIMUM INTERVALS BETWEEN EXPANSION JOINTS. PLACE CURB & GUTTER DUMMY JOINTS AT 10' MAXIMUM INTERVALS.
4. ALL CONCRETE WITHIN THE CURB CUT LIMITS FOR DRIVEWAYS SHALL BE 6" THICK.
5. ALL JOINTS AND SEAMS SHALL BE EDGED.
6. STEEL TROWELING FINISH REQUIRED PRIOR TO BROOM FINISHING ON ALL SURFACES.
7. CURING COMPOUND SHALL BE APPLIED TO THE CONCRETE. APPLICATION SHALL CONFORM TO THE MANUFACTURER'S RECOMMENDATIONS.



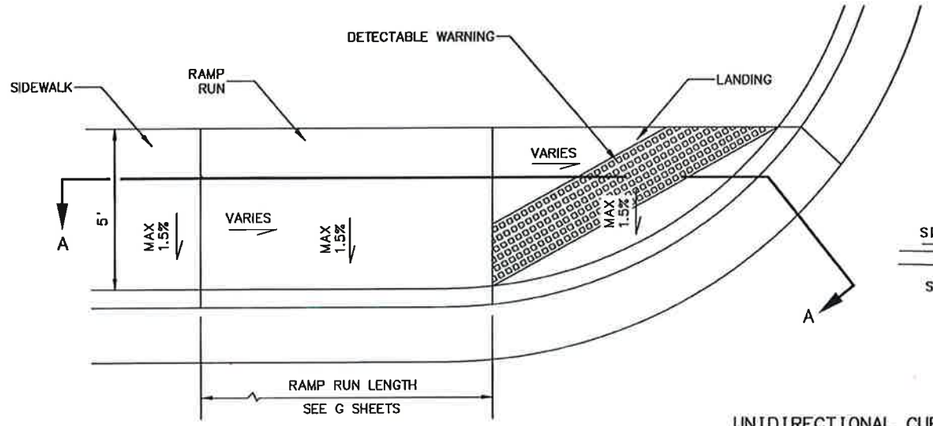
TYPICAL SIDEWALK, CURB AND GUTTER

N.T.S.

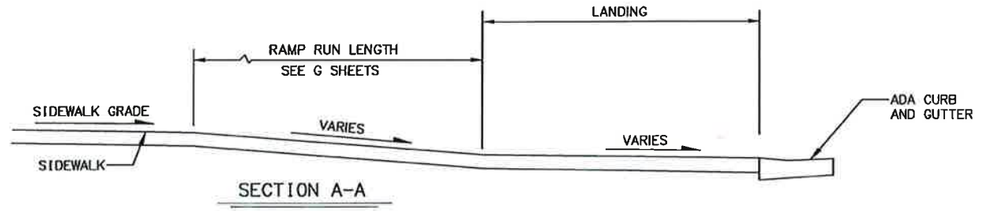


EXPANSION JOINT DETAIL

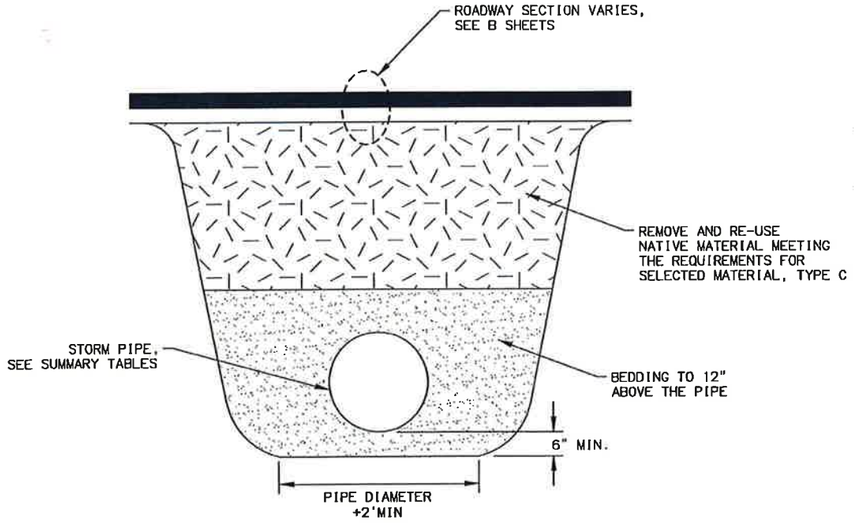
N.T.S.



PLAN



SECTION A-A

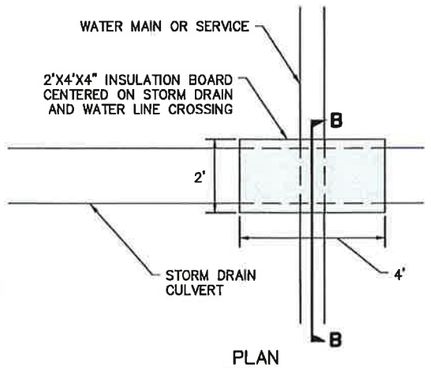


STORM DRAIN TRENCH

N.T.S.

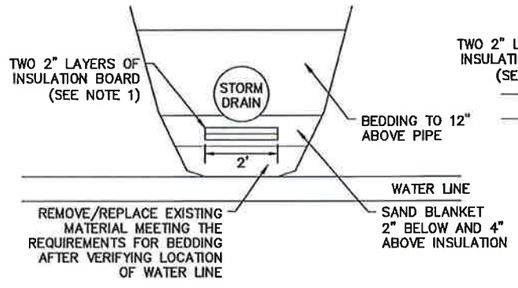
UNIDIRECTIONAL CURB RAMP

N.T.S.



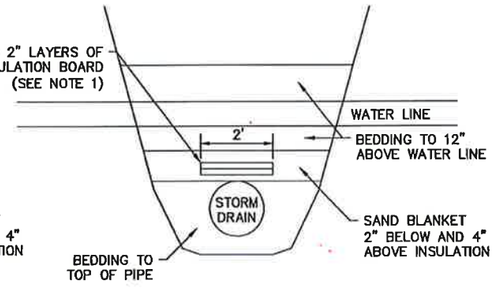
PLAN

N.T.S.



SECTION B-B
CASE A - STORM ABOVE WATER

N.T.S.



SECTION B-B
CASE B - WATER ABOVE STORM

N.T.S.

UTILITY CROSSING INSULATION NOTES:

1. WHERE WATER SERVICE IS FOUND TO BE WITHIN 12" OF STORM DRAIN, UTILIZE THREE 2" LAYERS OF INSULATION BOARD.
2. WHERE WATER SERVICE IS FOUND TO BE GREATER THAN 24" FROM STORM DRAIN, NO INSULATION IS REQUIRED.

UTILITY CROSSING INSULATION

N.T.S.

PLANS DEVELOPED BY:
DOWL, LLC
5368 COMMERCIAL BLVD.
JUNEAU, AK 99801
(907) 780-3533
#AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

WRANGELL - BENNETT STREET REHABILITATION AND AIRPORT ROAD RESURFACING
STORM DRAIN, CURB RAMP AND SIDEWALK DETAILS

FILE C:\Civil 3D Projects\2016\24\62367-01\Civil\SA-CT-E-62367.dwg | DATE 8/6/2018 14:38 | LAYOUT E4 | DESIGNED TAL | CHECKED VARIOUS | DRAFTED CJS/JMK

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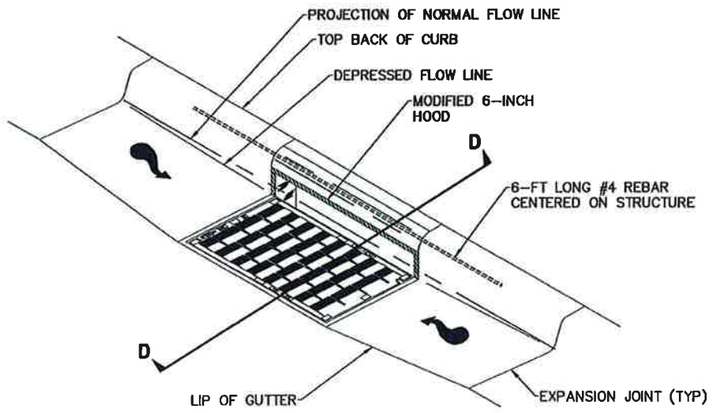
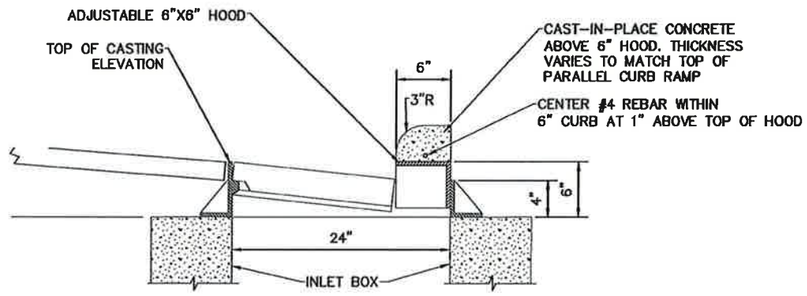


MODIFIED CURB INLET INSTALLATION FOR STRUCTURE S-1

N.T.S.

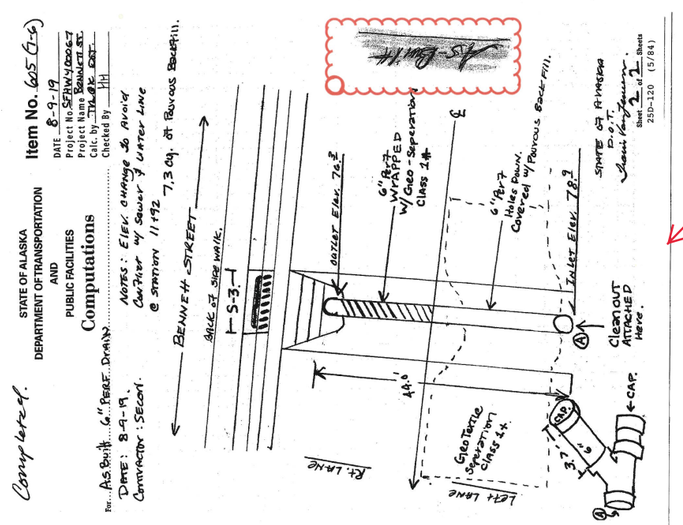


MODIFIED SECTION D

N.T.S.

NOTES:

1. UNLESS OTHERWISE MODIFIED BY THE DETAILS ABOVE, ALL OTHER FEATURES FOR THE FRAME AND GRATE AT STRUCTURE S-1 SHALL BE IN ACCORDANCE WITH DOT STD D-25.00 HIGH CAPACITY CURB INLET BOX FRAME AND GRATE.



See sheet F1

Project As-Built Drawing have been reviewed by the Project Engineer and represent to the best of my knowledge the Project as Constructed.
Project Engineer: HH

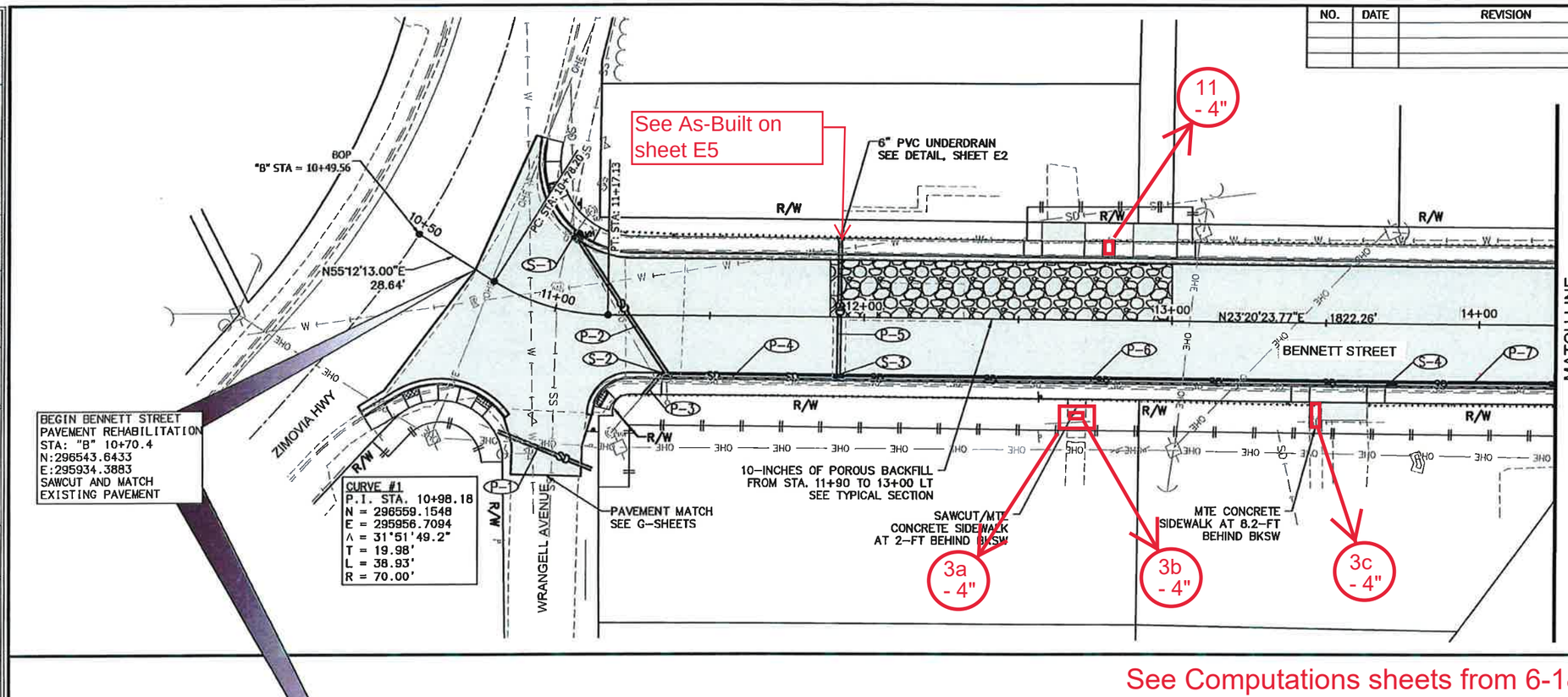
PLANS DEVELOPED BY:
DOWL, LLC
5368 COMMERCIAL BLVD,
JUNEAU, AK 99801
(907) 780-3533
#AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

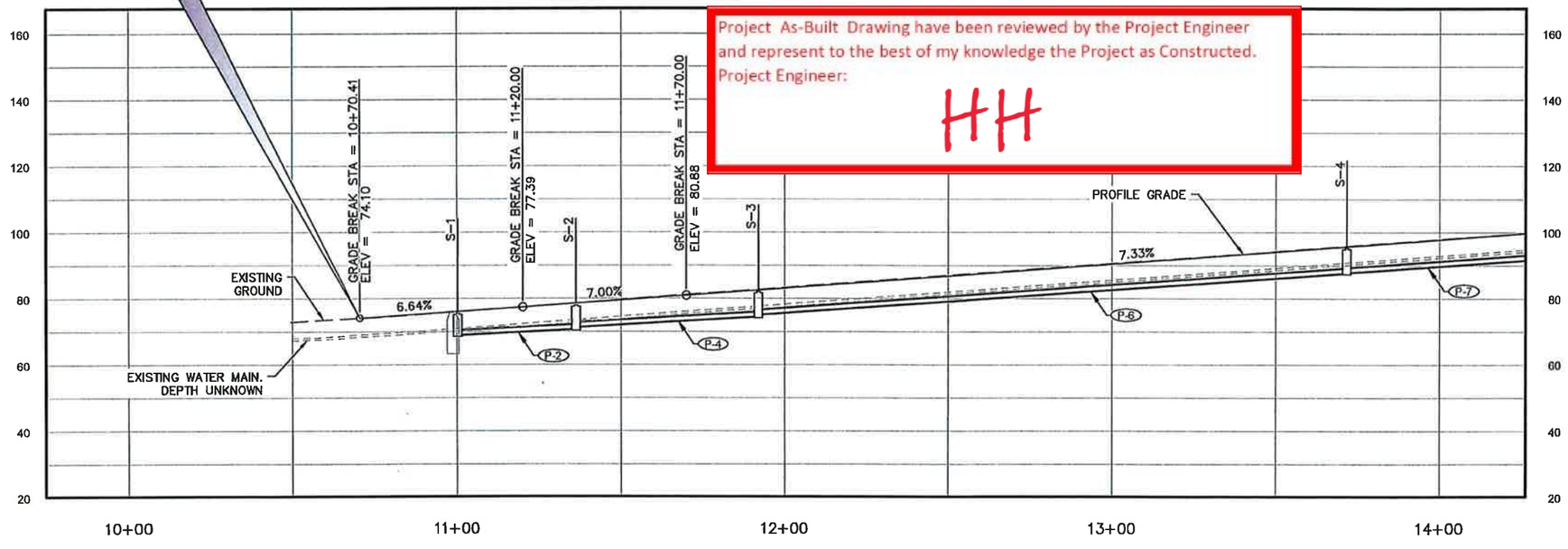
WRANGELL - BENNETT STREET REHABILITATION AND AIRPORT ROAD RESURFACING MODIFIED CURB INLET DETAIL

FILE C:\Civil 3D Projects\2016\24\62367-01\Civil\SA-CT-CT-E-62367.dwg | DATE 8/6/2018 14:38 | LAYOUT E5 | DESIGNED TAL | CHECKED VARIOUS | DRAFTED CJS/JMK

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	F1	69



See Computations sheets from 6-18-20



FIRM DOWL | ADDRESS 5368 COMMERCIAL BLVD, JUNEAU, AK 99801 | PHONE (907) 780-3533 | CERTIFICATE OF AUTH #: AECL848
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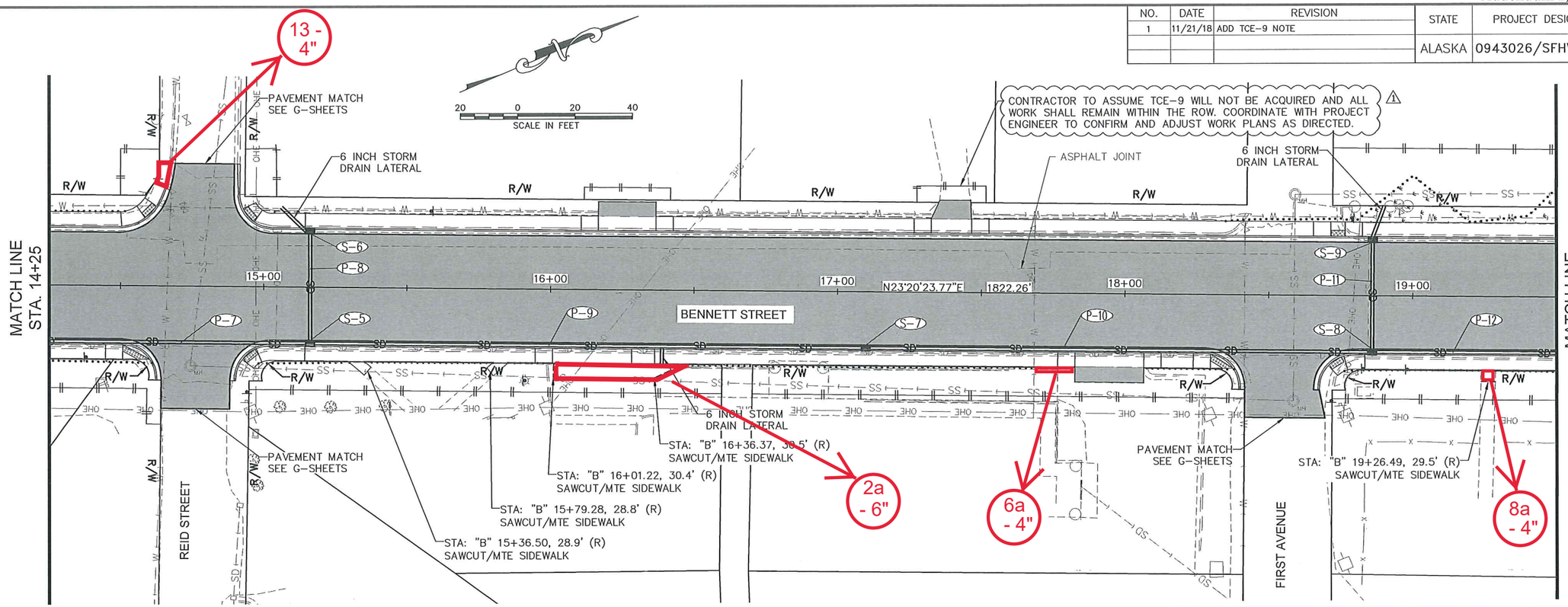
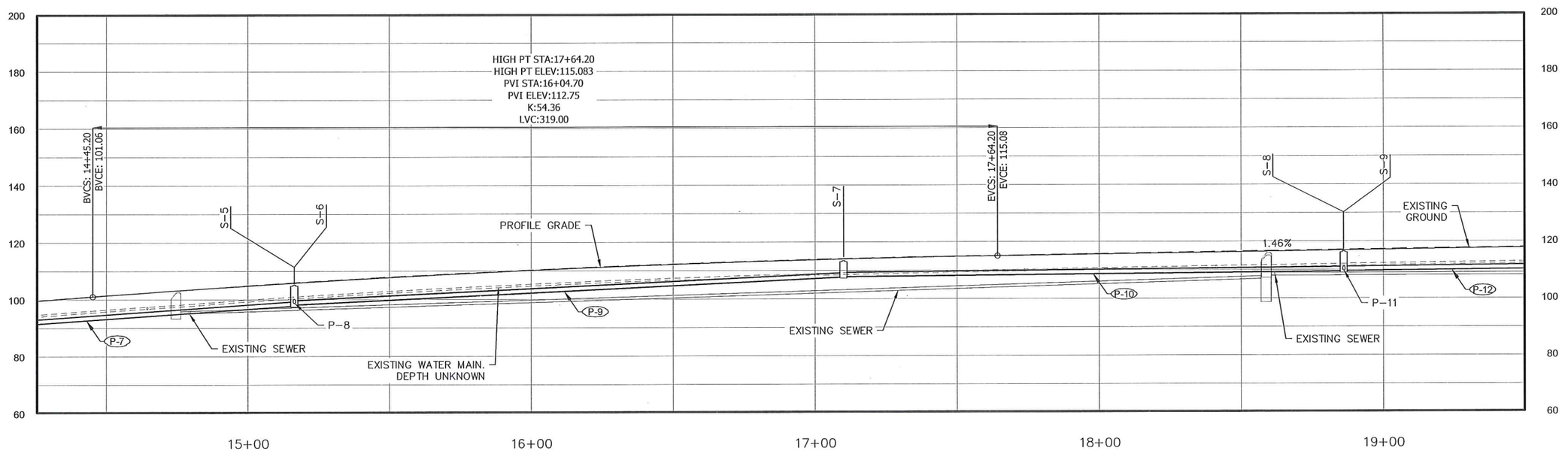
NO.	DATE	REVISION
1	11/21/18	ADD TCE-9 NOTE

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0943026/SFHWY00067	2018	F2	69



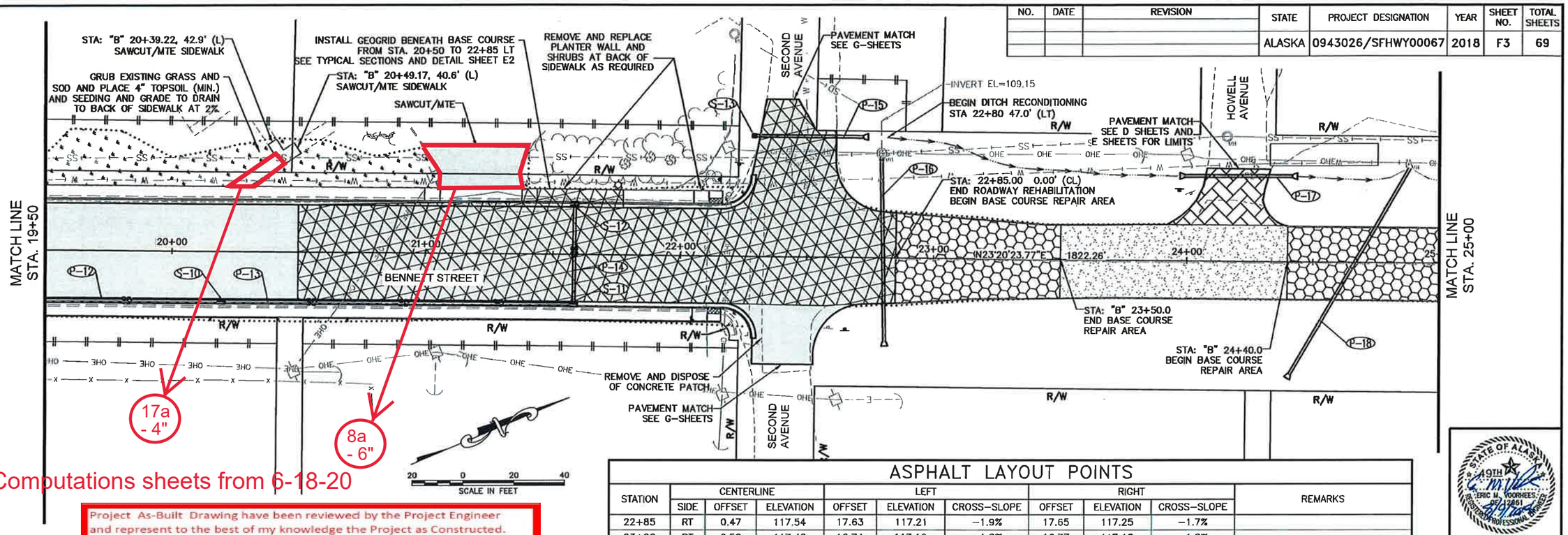
See Computations sheets from 6-18-20



STATE OF ALASKA
49TH
TOBIAS A. LOCKHART, JR.
CE 12602
REGISTERED PROFESSIONAL ENGINEER
11-23-18

ADDRESS | 5368 COMMERCIAL BLVD, JUNEAU, AK 99801 | PHONE | (907) 780-3533 | CERTIFICATE OF AUTH #: AECL848
DATE | 8/15/2018 12:43 | LAYOUT | F2 | DESIGNED | LOCKHART | CHECKED | VARIOUS | DRAFTED | CJS/JMK
FIRM | DOWL
FILE | C:\Civil 3D Projects\2016\24\62367-01\Civil\SC-CT-RD-62367.dwg

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	F3	69



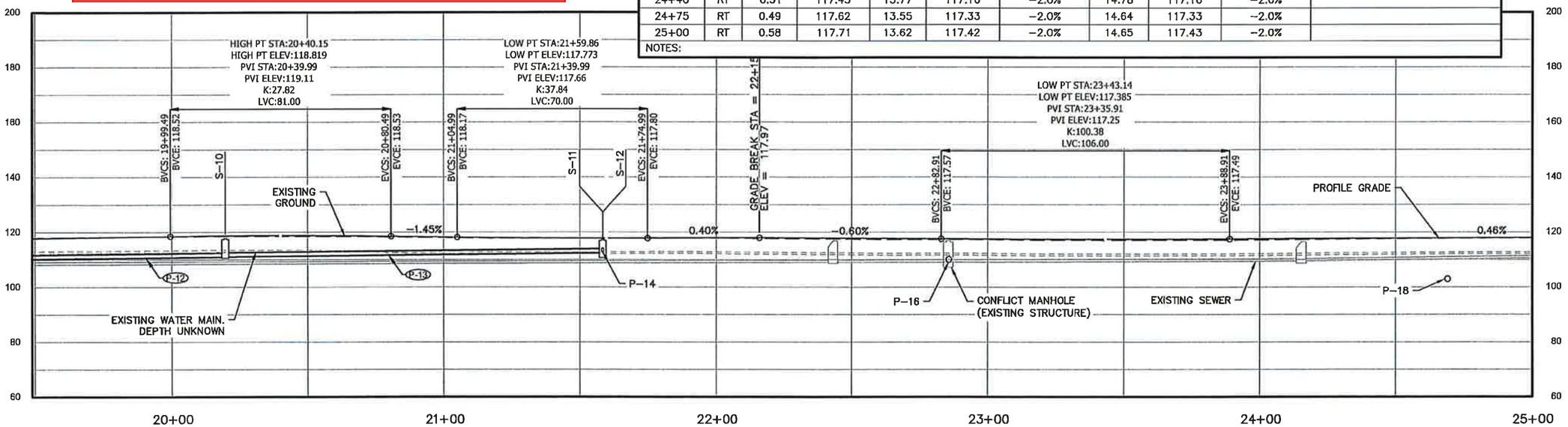
See Computations sheets from 6-18-20

Project As-Built Drawing have been reviewed by the Project Engineer and represent to the best of my knowledge the Project as Constructed.
Project Engineer:
HH

ASPHALT LAYOUT POINTS

STATION	CENTERLINE SIDE	CENTERLINE OFFSET	CENTERLINE ELEVATION	LEFT OFFSET	LEFT ELEVATION	LEFT CROSS-SLOPE	RIGHT OFFSET	RIGHT ELEVATION	RIGHT CROSS-SLOPE	REMARKS
22+85	RT	0.47	117.54	17.63	117.21	−1.9%	17.65	117.25	−1.7%	
23+00	RT	0.50	117.42	16.74	117.10	−1.8%	16.77	117.12	−1.8%	
23+25	RT	0.50	117.23	15.12	116.92	−2.0%	15.44	116.93	−2.0%	
23+50	RT	0.51	117.08	13.64	116.80	−2.0%	14.80	116.79	−2.0%	
24+00	RT	0.61	117.13	13.84	116.84	−2.0%	14.51	116.85	−2.0%	
24+40	RT	0.51	117.45	13.77	117.16	−2.0%	14.78	117.16	−2.0%	
24+75	RT	0.49	117.62	13.55	117.33	−2.0%	14.64	117.33	−2.0%	
25+00	RT	0.58	117.71	13.62	117.42	−2.0%	14.65	117.43	−2.0%	

NOTES:



FIRM DOWL | ADDRESS 5368 COMMERCIAL BLVD, JUNEAU, AK 99801 | PHONE (907) 780-3533 | CERTIFICATE OF AUTH #: AECL848
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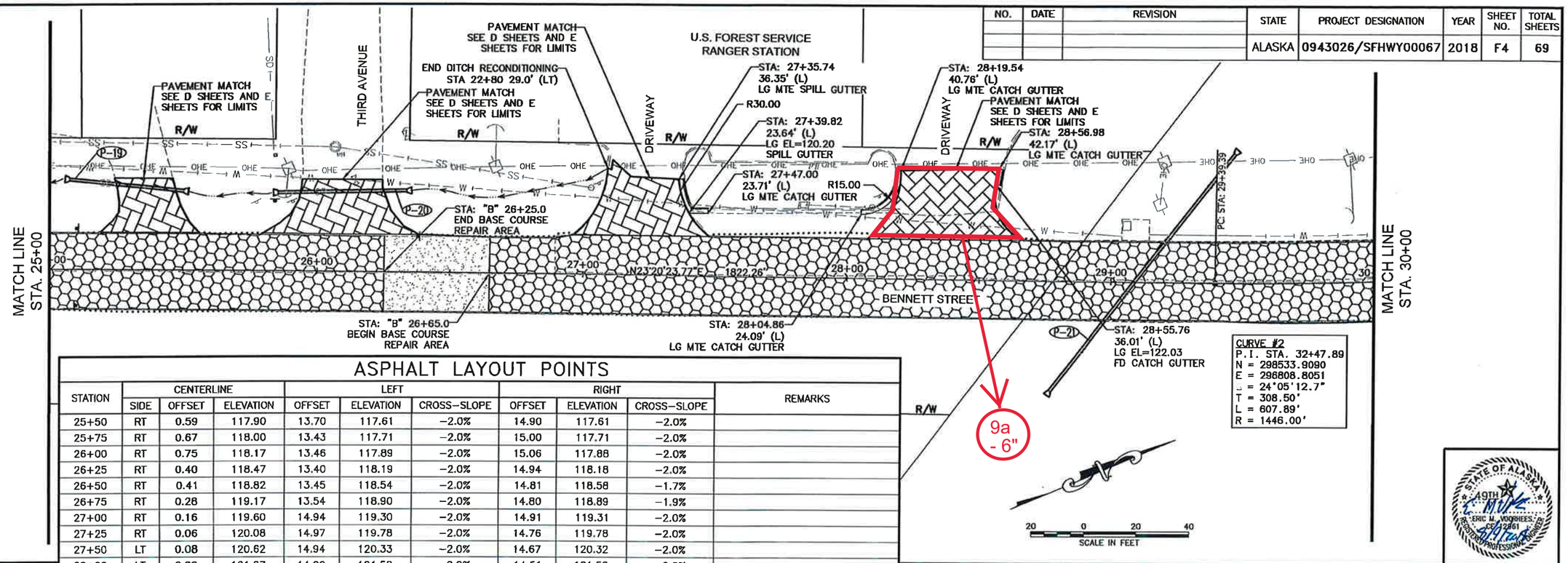
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	F4	69

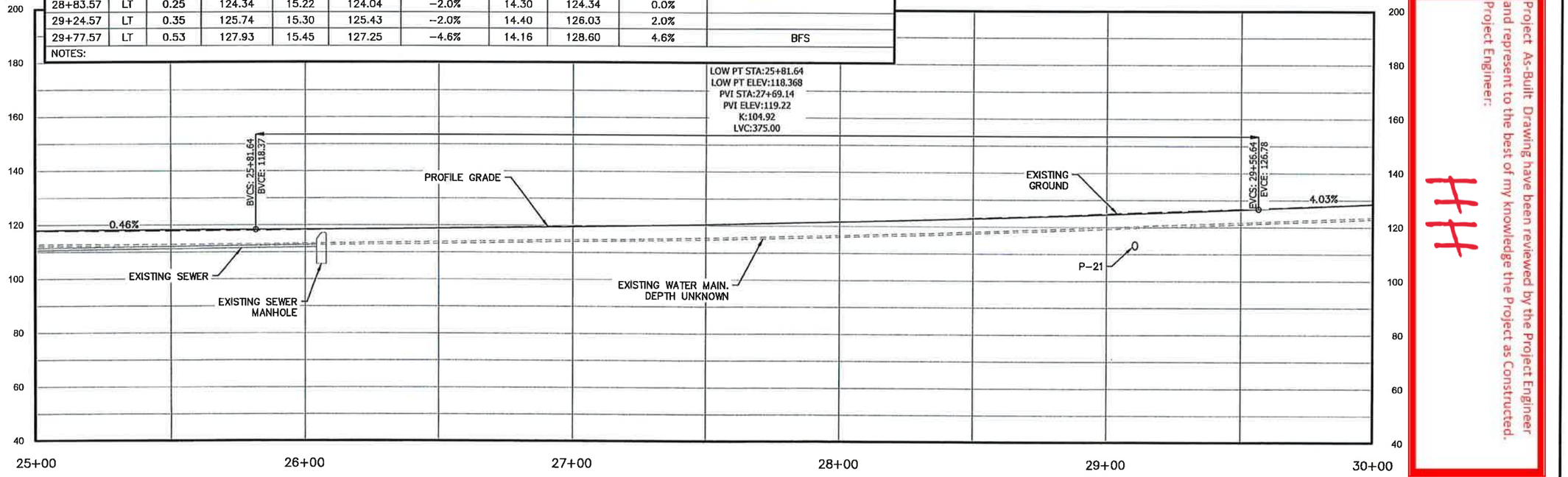


ASPHALT LAYOUT POINTS

STATION	CENTERLINE			LEFT			RIGHT			REMARKS
	SIDE	OFFSET	ELEVATION	OFFSET	ELEVATION	CROSS-SLOPE	OFFSET	ELEVATION	CROSS-SLOPE	
25+50	RT	0.59	117.90	13.70	117.61	-2.0%	14.90	117.61	-2.0%	
25+75	RT	0.67	118.00	13.43	117.71	-2.0%	15.00	117.71	-2.0%	
26+00	RT	0.75	118.17	13.46	117.89	-2.0%	15.06	117.88	-2.0%	
26+25	RT	0.40	118.47	13.40	118.19	-2.0%	14.94	118.18	-2.0%	
26+50	RT	0.41	118.82	13.45	118.54	-2.0%	14.81	118.58	-1.7%	
26+75	RT	0.28	119.17	13.54	118.90	-2.0%	14.80	118.89	-1.9%	
27+00	RT	0.16	119.60	14.94	119.30	-2.0%	14.91	119.31	-2.0%	
27+25	RT	0.06	120.08	14.97	119.78	-2.0%	14.76	119.78	-2.0%	
27+50	LT	0.08	120.62	14.94	120.33	-2.0%	14.67	120.32	-2.0%	
28+00	LT	0.20	121.87	14.90	121.58	-2.0%	14.51	121.58	-2.0%	
28+25	LT	0.12	122.58	15.05	122.28	-2.0%	14.32	122.29	-2.0%	
28+42.57	LT	0.22	123.06	15.10	122.77	-2.0%	14.26	122.78	-2.0%	BST
28+83.57	LT	0.25	124.34	15.22	124.04	-2.0%	14.30	124.34	0.0%	
29+24.57	LT	0.35	125.74	15.30	125.43	-2.0%	14.40	126.03	2.0%	
29+77.57	LT	0.53	127.93	15.45	127.25	-4.6%	14.16	128.60	4.6%	BFS

NOTES:

See Computations sheets from 6-18-20



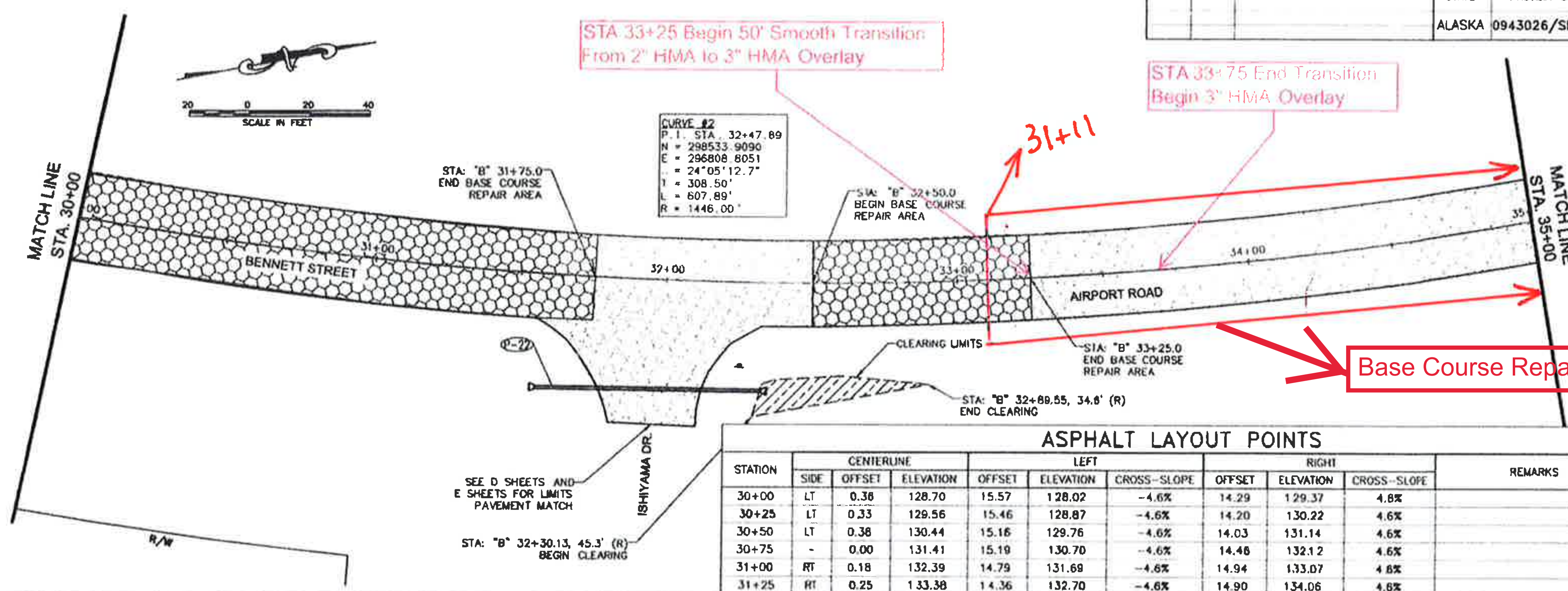
Project As-Built Drawing have been reviewed by the Project Engineer and represent to the best of my knowledge the Project as Constructed.
Project Engineer:

44

FIRM DOWL | ADDRESS 5368 COMMERCIAL BLVD, JUNEAU, AK 99801 | PHONE (907) 780-3533 | CERTIFICATE OF AUTH #: AECL848
FILE C:\Civil 3D Projects\2016\24\62367-01\Civil\SC-CT-RD-62367.dwg | DATE 8/8/2018 12:33 | LAYOUT F4 | DESIGNED LOCKHART | CHECKED VARIOUS | DRAFTED CJS/JMK

Change Order #9, Attachment #3

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	F5	69



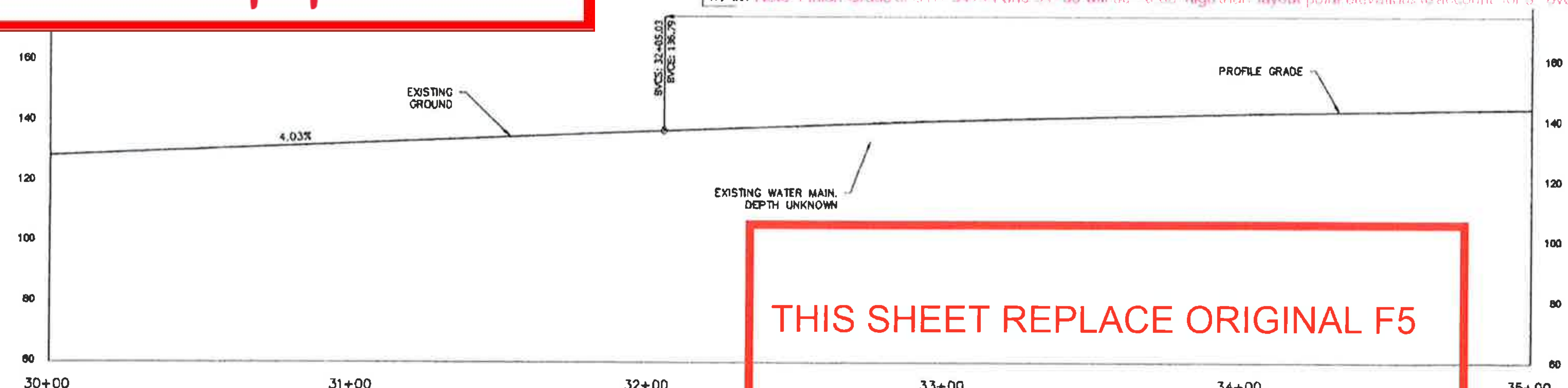
ASPHALT LAYOUT POINTS

STATION	CENTERLINE			LEFT			RIGHT			REMARKS
	SIDE	OFFSET	ELEVATION	OFFSET	ELEVATION	CROSS-SLOPE	OFFSET	ELEVATION	CROSS-SLOPE	
30+00	LT	0.38	128.70	15.57	128.02	-4.6%	14.29	129.37	4.8%	
30+25	LT	0.33	129.56	15.46	128.87	-4.6%	14.20	130.22	4.6%	
30+50	LT	0.38	130.44	15.16	129.76	-4.6%	14.03	131.14	4.6%	
30+75	-	0.00	131.41	15.19	130.70	-4.6%	14.48	132.12	4.6%	
31+00	RT	0.18	132.39	14.79	131.69	-4.6%	14.94	133.07	4.8%	
31+25	RT	0.25	133.38	14.36	132.70	-4.6%	14.90	134.06	4.8%	
31+50	RT	0.36	134.43	14.30	133.74	-4.6%	15.00	135.11	4.6%	
31+75	RT	0.35	135.52	14.17	134.85	-4.6%	14.64	136.18	4.6%	
32+00	RT	0.19	136.56	14.06	135.91	-4.6%	14.45	137.21	4.6%	
32+50	RT	0.05	138.50	14.32	137.84	-4.6%	14.68	139.17	4.8%	
32+75	LT	0.08	139.27	14.42	138.62	-4.6%	14.49	139.94	4.6%	
33+00	LT	0.21	140.05	14.68	139.39	-4.6%	14.26	140.71	4.8%	
33+25	LT	0.40	140.84	14.83	140.18	-4.6%	14.25	141.51	4.6%	
33+50	LT	0.51	141.41	14.82	140.76	-4.6%	14.25	142.09	4.6%	
* 34+00	LT	0.50	142.45	15.00	141.78	-4.6%	14.00	143.12	4.8%	
* 34+50	LT	0.34	143.35	14.83	142.68	-4.6%	14.26	144.01	4.6%	

NOTES: *Note: Finish Grade at STA 34+44 and 34+50 will be +0.08' high than layout point elevations to account for 3" overlay

REVISED LAYOUT POINTS

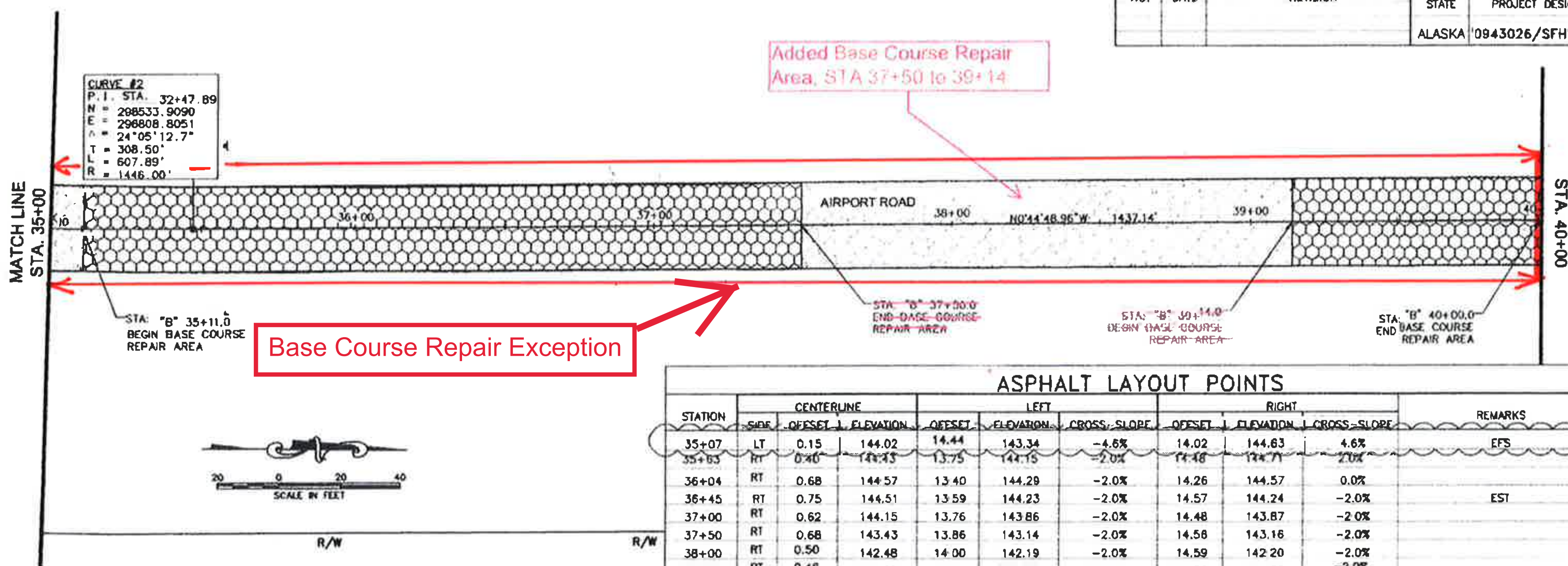
Project As-Built Drawing have been reviewed by the Project Engineer and represent to the best of my knowledge the Project as Constructed.
Project Engineer:
HH



THIS SHEET REPLACE ORIGINAL F5

Change Order #9, Attachment #4

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	F6	69

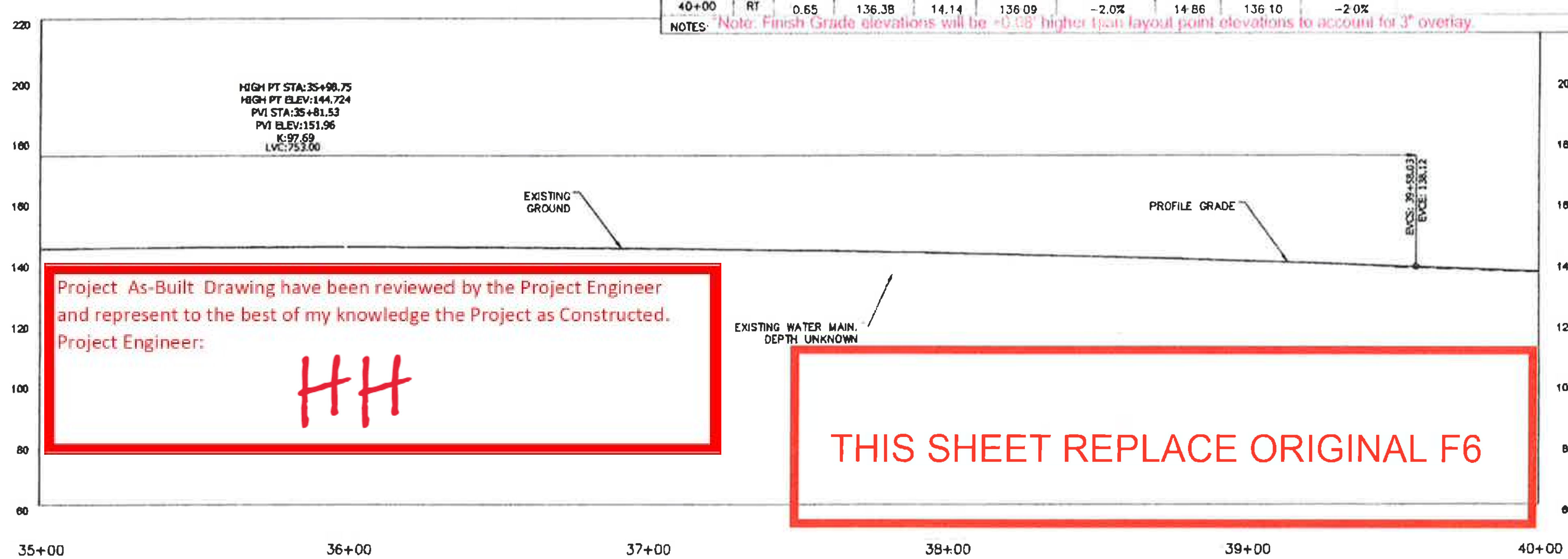


REVISED LAYOUT POINTS

ASPHALT LAYOUT POINTS

STATION	CENTERLINE			LEFT			RIGHT			REMARKS
	SIDE	OFFSET	ELEVATION	OFFSET	ELEVATION	CROSS-SLOPE	OFFSET	ELEVATION	CROSS-SLOPE	
35+07	LT	0.15	144.02	14.44	143.34	-4.6%	14.02	144.63	4.6%	EFS
~~35+63~~	~~RT~~	~~0.40~~	~~144.43~~	~~13.75~~	~~144.15~~	~~-2.0%~~	~~14.48~~	~~144.71~~	~~2.0%~~	
36+04	RT	0.68	144.57	13.40	144.29	-2.0%	14.26	144.57	0.0%	
36+45	RT	0.75	144.51	13.59	144.23	-2.0%	14.57	144.24	-2.0%	EST
37+00	RT	0.62	144.15	13.76	143.86	-2.0%	14.48	143.87	-2.0%	
37+50	RT	0.68	143.43	13.86	143.14	-2.0%	14.58	143.16	-2.0%	
38+00	RT	0.50	142.48	14.00	142.19	-2.0%	14.59	142.20	-2.0%	
38+50	RT	0.46	141.58	14.21	141.29	-2.0%	14.38	141.30	-2.0%	
39+00	RT	0.59	140.23	14.24	139.94	-2.0%	14.51	139.95	-2.0%	
39+25	RT	0.55	139.31	14.17	139.01	-2.0%	14.65	139.03	-2.0%	
39+50	RT	0.58	138.38	14.06	138.09	-2.0%	14.67	138.10	-2.0%	
39+75	RT	0.60	137.39	14.16	137.09	-2.0%	14.55	137.11	-2.0%	
40+00	RT	0.65	136.38	14.14	136.09	-2.0%	14.86	136.10	-2.0%	

NOTES: Note: Finish Grade elevations will be +0.08' higher than layout point elevations to account for 3" overlay



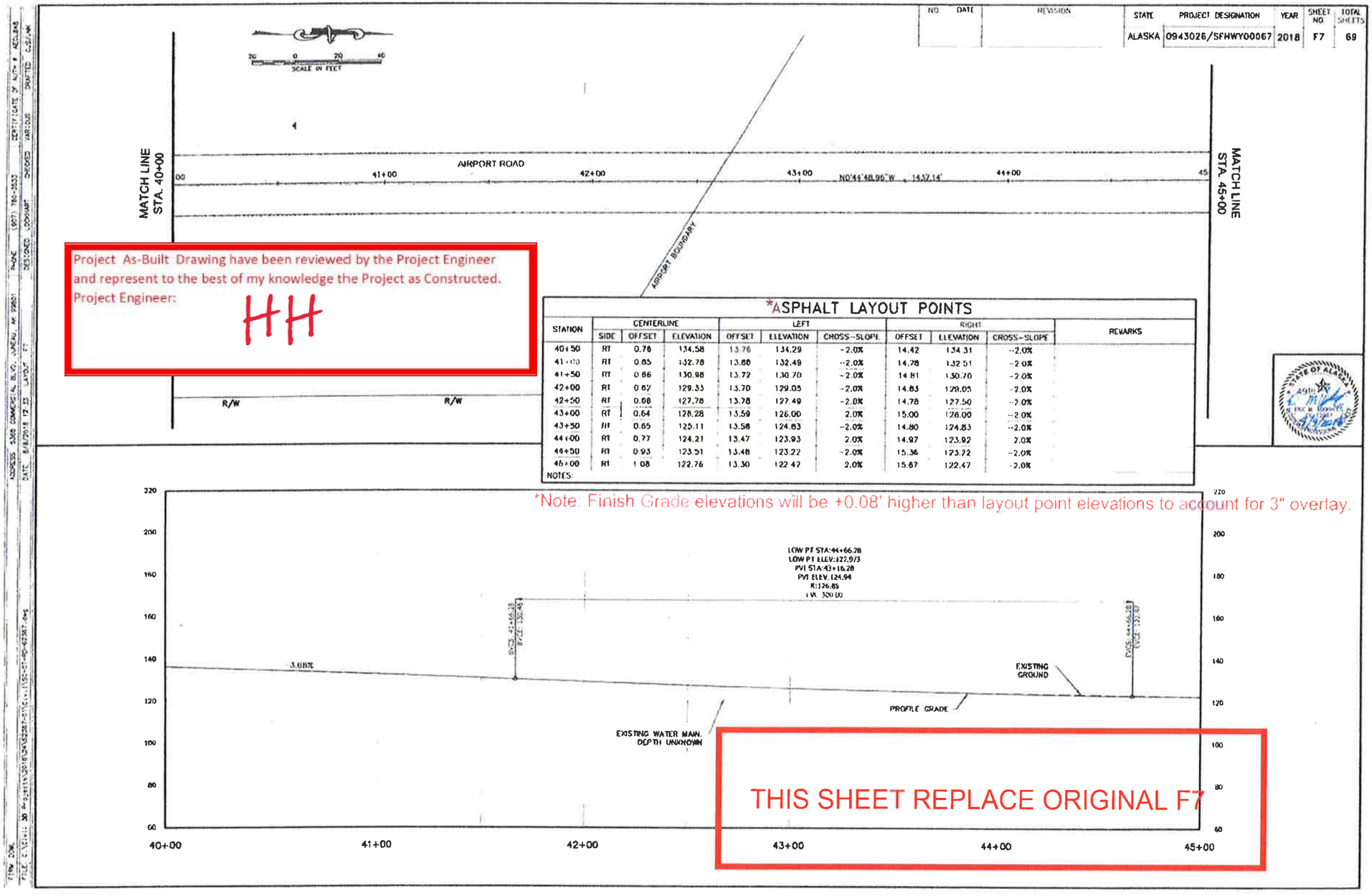
Project As-Built Drawing have been reviewed by the Project Engineer and represent to the best of my knowledge the Project as Constructed.
Project Engineer: HH

THIS SHEET REPLACE ORIGINAL F6

Change Order #9, Attachment #5.

NO	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0943026/SFHWY00067	2018	F7	69



Project As-Built Drawing have been reviewed by the Project Engineer and represent to the best of my knowledge the Project as Constructed.
Project Engineer:
HH

*ASPHALT LAYOUT POINTS

STATION	CENTERLINE SIDE	CENTERLINE OFFSET	CENTERLINE ELEVATION	LEFT OFFSET	LEFT ELEVATION	LEFT CROSS-SLOPE	RIGHT OFFSET	RIGHT ELEVATION	RIGHT CROSS-SLOPE	REMARKS
40+50	RT	0.78	134.58	13.76	134.29	-2.0%	14.42	134.31	-2.0%	
41+00	RT	0.85	132.78	13.68	132.49	-2.0%	14.78	132.51	-2.0%	
41+50	RT	0.86	130.98	13.72	130.70	-2.0%	14.81	130.70	-2.0%	
42+00	RT	0.87	129.33	13.70	129.05	-2.0%	14.83	129.05	-2.0%	
42+50	RT	0.88	127.78	13.78	127.49	-2.0%	14.78	127.50	-2.0%	
43+00	RT	0.64	126.28	13.59	126.00	2.0%	15.00	126.00	-2.0%	
43+50	RT	0.65	125.11	13.58	124.83	-2.0%	14.80	124.83	-2.0%	
44+00	RT	0.77	124.21	13.47	123.93	2.0%	14.97	123.92	2.0%	
44+50	RT	0.93	123.51	13.48	123.22	-2.0%	15.36	123.72	-2.0%	
45+00	RT	1.08	122.76	13.30	122.47	2.0%	15.67	122.47	-2.0%	

NOTES:

*Note: Finish Grade elevations will be +0.08' higher than layout point elevations to account for 3" overlay.

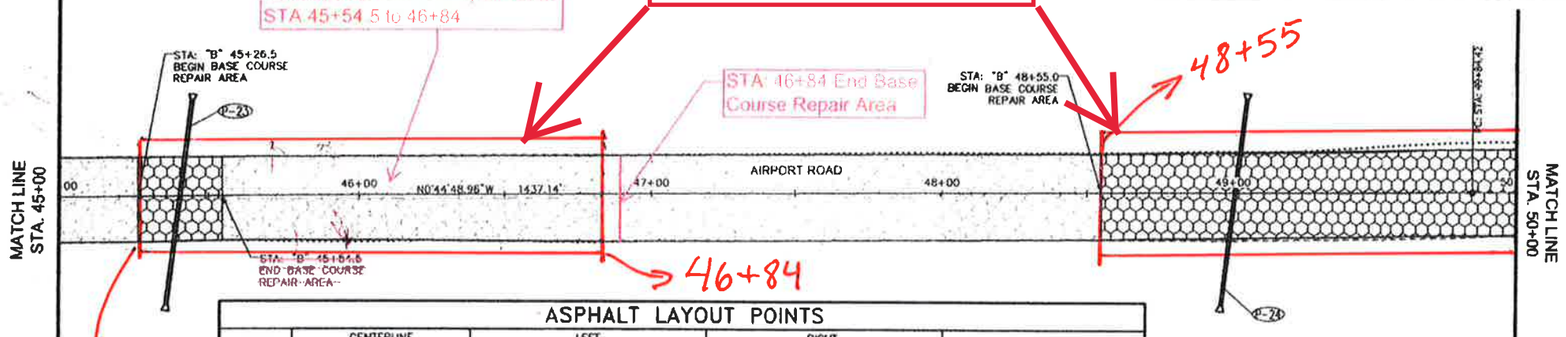
THIS SHEET REPLACE ORIGINAL F7

Change Order #9, Attachment #6

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	F8	89

Added Base Course Repair Area
STA 45+54.5 to 46+84

Base Course Repair Exception

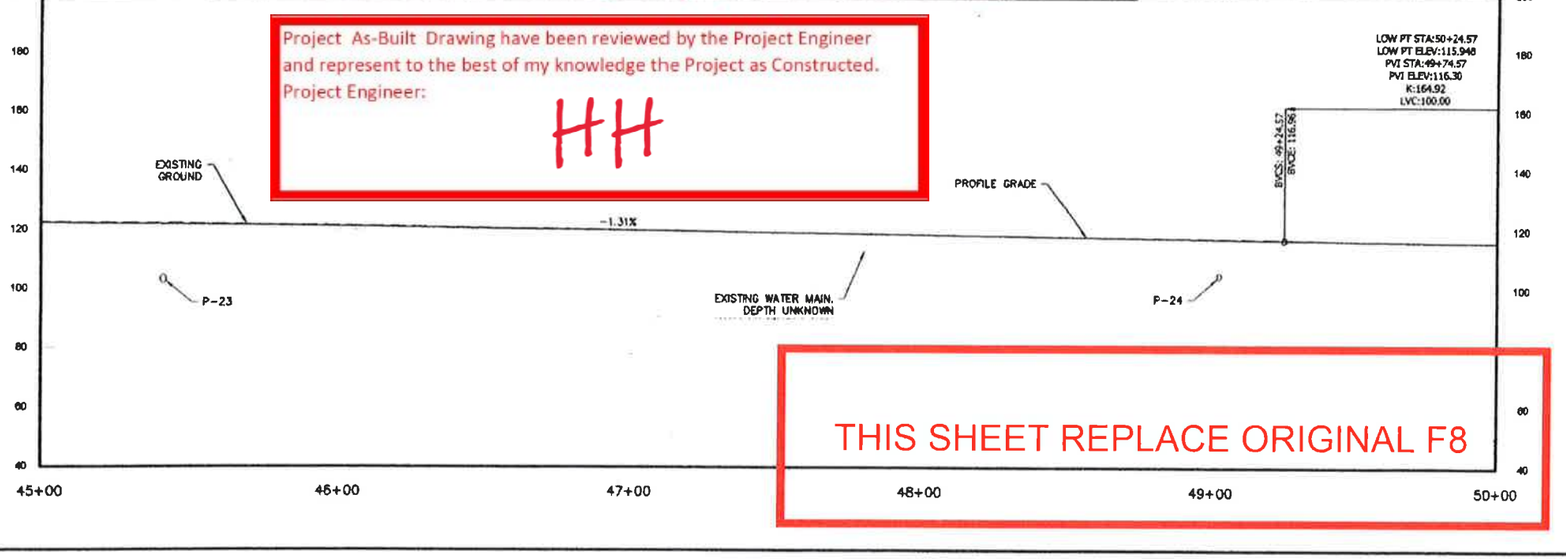


ASPHALT LAYOUT POINTS

STATION	CENTERLINE SIDE	CENTERLINE OFFSET	CENTERLINE ELEVATION	LEFT OFFSET	LEFT ELEVATION	LEFT CROSS-SLOPE	RIGHT OFFSET	RIGHT ELEVATION	RIGHT CROSS-SLOPE	REMARKS
45+27	RT	1.43	122.47	13.32	122.20	-1.9%	15.53	122.18	-2.0%	
45+55	RT	1.17	122.14	13.22	121.88	-1.8%	15.17	121.86	-2.0%	
46+00	RT	1.53	121.43	13.15	121.12	-2.0%	15.79	121.12	-2.0%	
46+50	RT	1.51	120.71	13.16	120.42	-2.0%	15.92	120.42	-2.0%	
47+00	RT	1.41	120.01	13.17	119.72	-2.0%	15.98	119.72	-2.0%	
47+50	RT	1.50	119.31	13.16	119.02	-2.0%	15.90	119.02	-2.0%	
48+00	RT	1.49	118.59	13.17	118.30	-2.0%	15.98	118.30	-2.0%	
48+50	RT	1.39	118.01	13.11	117.72	-2.0%	15.83	117.72	-2.0%	
48+55	RT	1.37	117.97	13.08	117.68	-2.0%	15.87	117.68	-2.0%	
48+75	RT	1.25	117.80	13.05	117.51	-2.0%	15.88	117.51	-2.0%	
49+00	RT	1.02	117.46	13.23	117.17	-2.0%	15.68	117.17	-2.0%	
49+37	RT	0.60	117.01	13.55	116.72	-2.0%	15.14	116.72	-2.0%	BST
49+75	–	0.00	116.42	14.32	116.13	-2.0%	14.87	116.42	0.0%	

NOTES: *Note: Finish Grade elevations will be +0.08' high than layout point elevations to account for 3" overlay.

Project As-Built Drawing have been reviewed by the Project Engineer and represent to the best of my knowledge the Project as Constructed.
Project Engineer:
HH



THIS SHEET REPLACE ORIGINAL F8

ADDRESS: 5388 COMMERCIAL BLVD, JUNEAU, AK 99801 | PHONE: (907) 780-5333 | DESIGNED: LOOKHART | DETAILED: VARIOUS | DRAFTED: CJS/AMK | CERTIFICATE OF AUTH #: AECL848
DATE: 7/3/2019 17:12 | LAYOUT: F8
FILE: C:\Civil 3D Projects\2018\24\62387-01\Civil\SC-CT-RD-62387.dwg
FIRM: DOWL

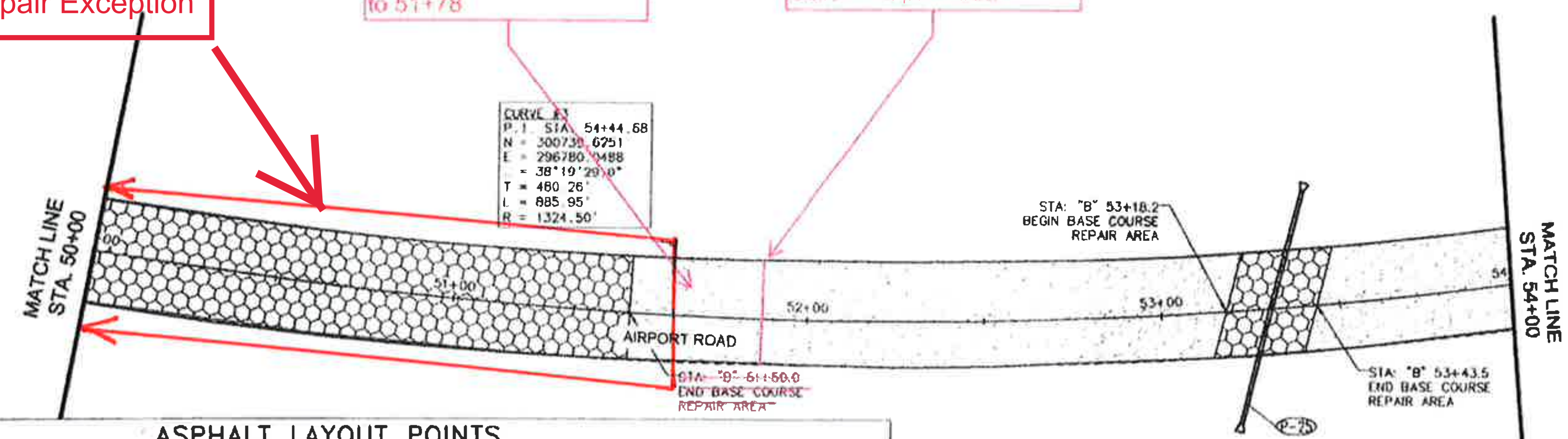
Change Order #9, Attachment #7

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	F9	69

Base Course Repair Exception

Added Base Course Repair Area STA 51+50 to 51+78

STA: 51+78 End Base Course Repair Area

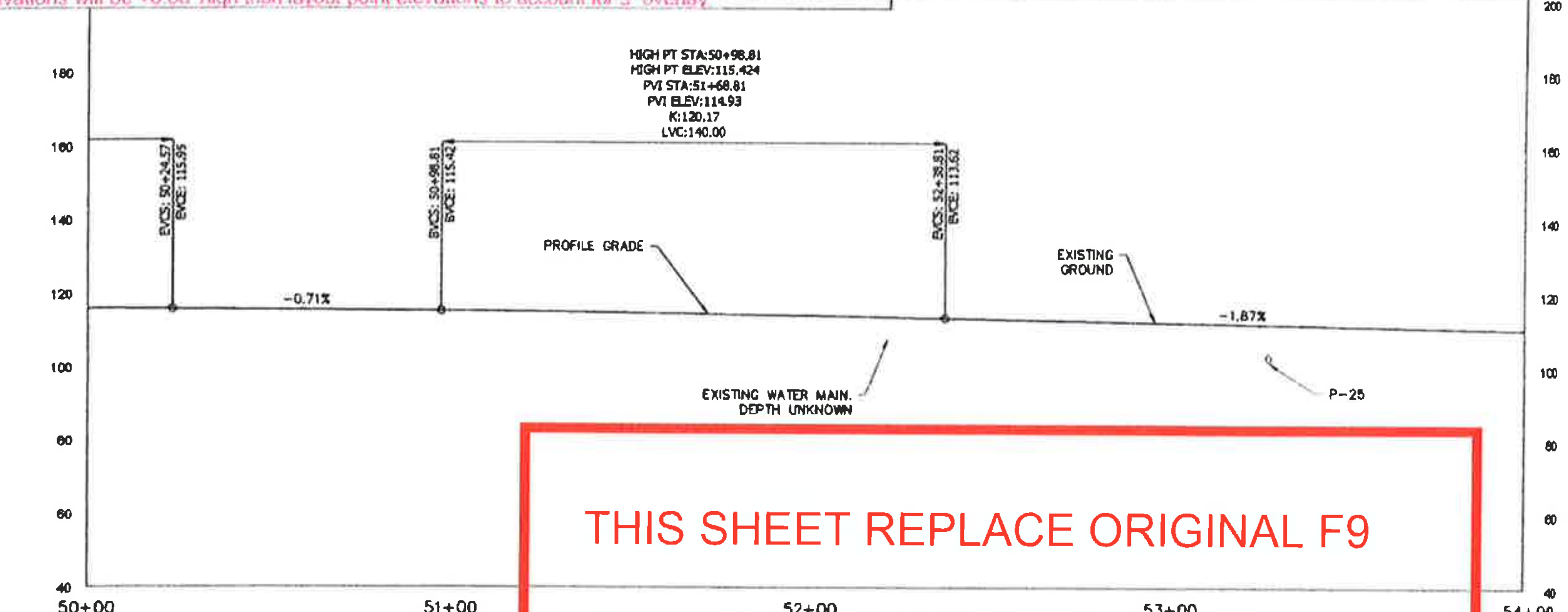


ASPHALT LAYOUT POINTS

STATION	CENTERLINE			LEFT			RIGHT			REMARKS
	SIDE	OFFSET	ELEVATION	OFFSET	ELEVATION	CROSS-SLOPE	OFFSET	ELEVATION	CROSS-SLOPE	
50+14	LT	0.22	115.96	15.05	115.66	-2.0%	13.98	116.24	2.0%	
50+59	LT	0.52	115.59	15.01	114.95	-4.4%	13.75	116.22	4.4%	BFS
51+00	LT	0.85	115.23	15.15	114.60	-4.4%	13.15	115.84	4.4%	
51+25	LT	1.02	115.03	15.35	114.39	-4.4%	13.07	115.65	4.4%	
51+50	LT	1.24	114.83	15.72	114.19	-4.4%	12.85	115.45	4.4%	
52+00	LT	1.47	114.16	16.50	113.50	-4.4%	12.38	114.78	4.4%	
52+50	LT	1.68	113.27	16.62	112.61	-4.4%	12.57	113.89	4.4%	
53+00	LT	1.65	112.27	16.00	111.64	-4.4%	12.59	112.89	4.4%	
53+50	LT	1.66	111.36	15.88	110.74	-4.4%	12.58	111.99	4.4%	
54+00	LT	1.33	110.48	15.79	109.84	-4.4%	12.45	111.08	4.4%	

NOTES: Note: Finish Grade elevations will be +0.08' high than layout point elevations to account for 3" overlay

REVISED LAYOUT POINTS



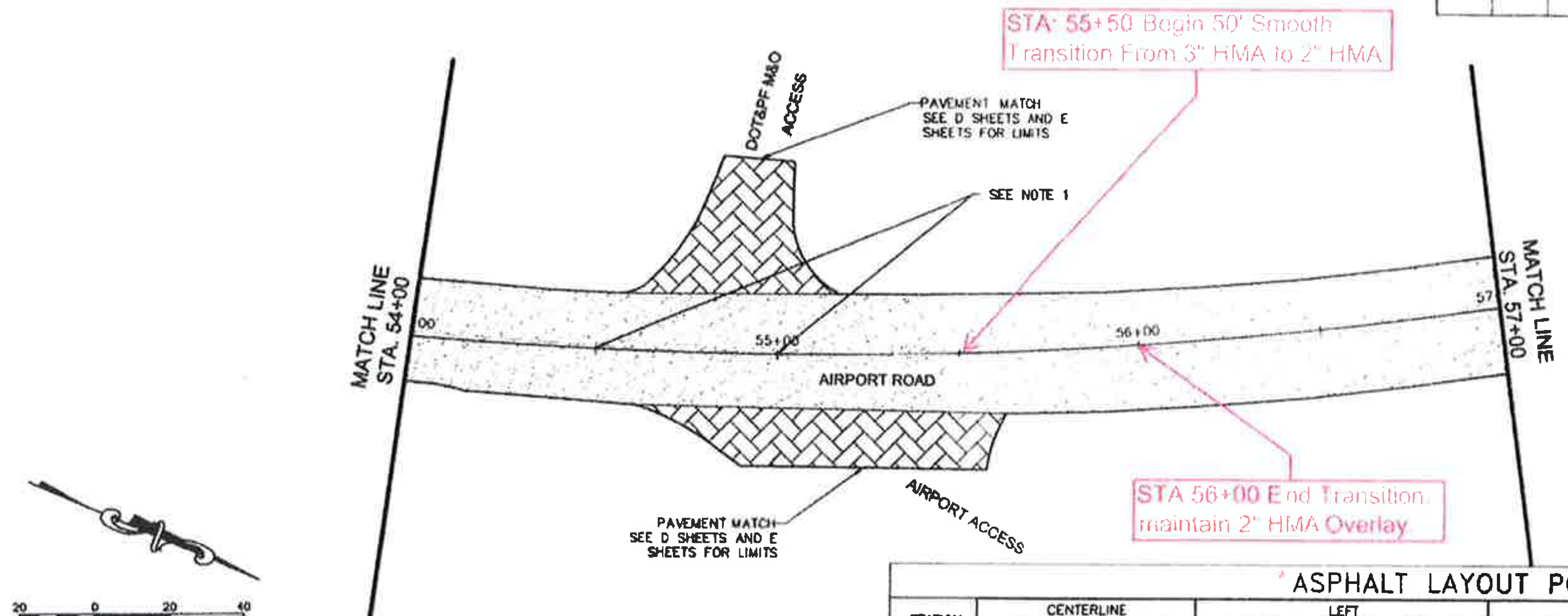
THIS SHEET REPLACE ORIGINAL F9

Project As-Built Drawing have been reviewed by the Project Engineer and represent to the best of my knowledge the Project as Constructed.
Project Engineer:

ADDRESS 5358 COMMERCIAL BLVD., JUNEAU, AK 99801 | PHONE (907) 780-3533 | CERTIFICATE OF AUTH #: AECL848
DATE 7/3/2019 13:50 | LAYOUT F9 | DESIGNED LOCKHART | CHECKED VARIOUS | DRAFTED CJS/JWK

Change Order #9, Attachment #8

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	F10	69



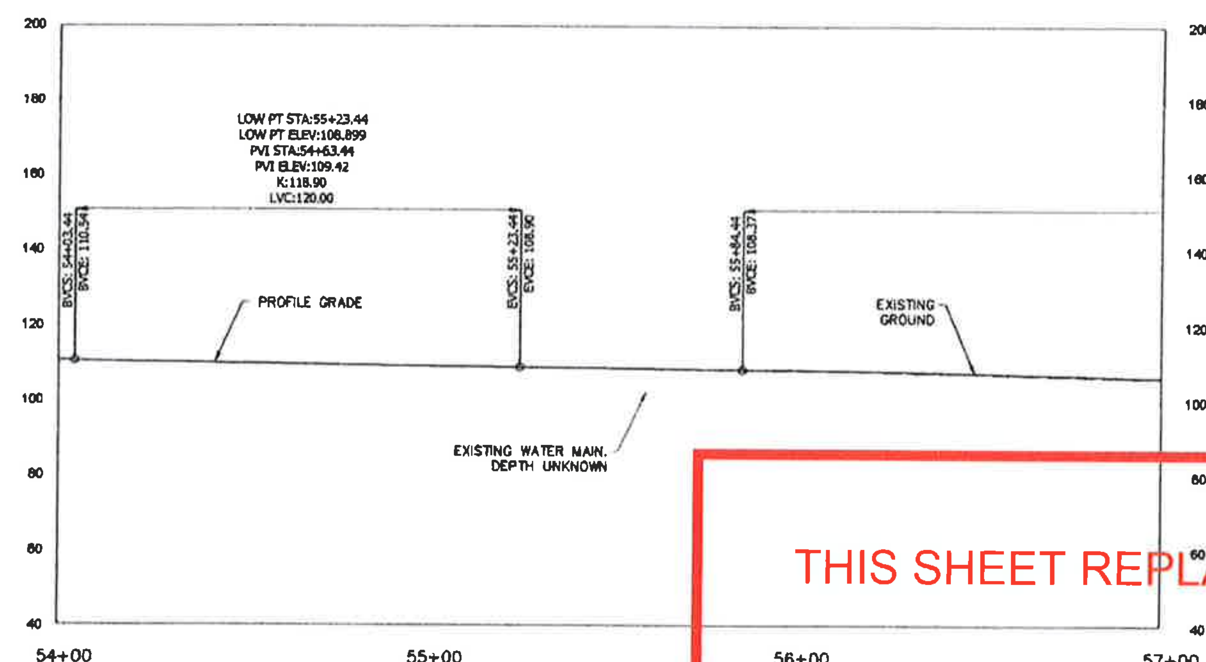
NOTES:

1. END MILL AND PAVE BASED ON LAYOUT POINTS AT STA 54+50. BEGIN MILL AND PAVE BASED ON EXISTING ASPHALT GRADES AT CENTERLINE AND SHOULDER AT STA 55+00. PROVIDE SMOOTH TRANSITION BETWEEN STA 54+50 AND 55+00. SEE B SHEETS FOR THE TWO DIFFERENT TYPICAL SECTIONS.

ASPHALT LAYOUT POINTS

STATION	CENTERLINE			LEFT			RIGHT			REMARKS
	SIDE	OFFSET	ELEVATION	OFFSET	ELEVATION	CROSS-SLOPE	OFFSET	ELEVATION	CROSS-SLOPE	
54+50	LT	.86	109.70	15.38	109.08	-4.3%	14.31	110.26	3.7%	END MILL AND PAVE BASED ON LAYOUT POINTS. SEE NOTE 1

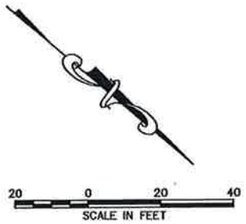
NOTES: Note: Finish grade elevation will be +0.08' higher than layout point elevation to account for 3" HMA Overlay

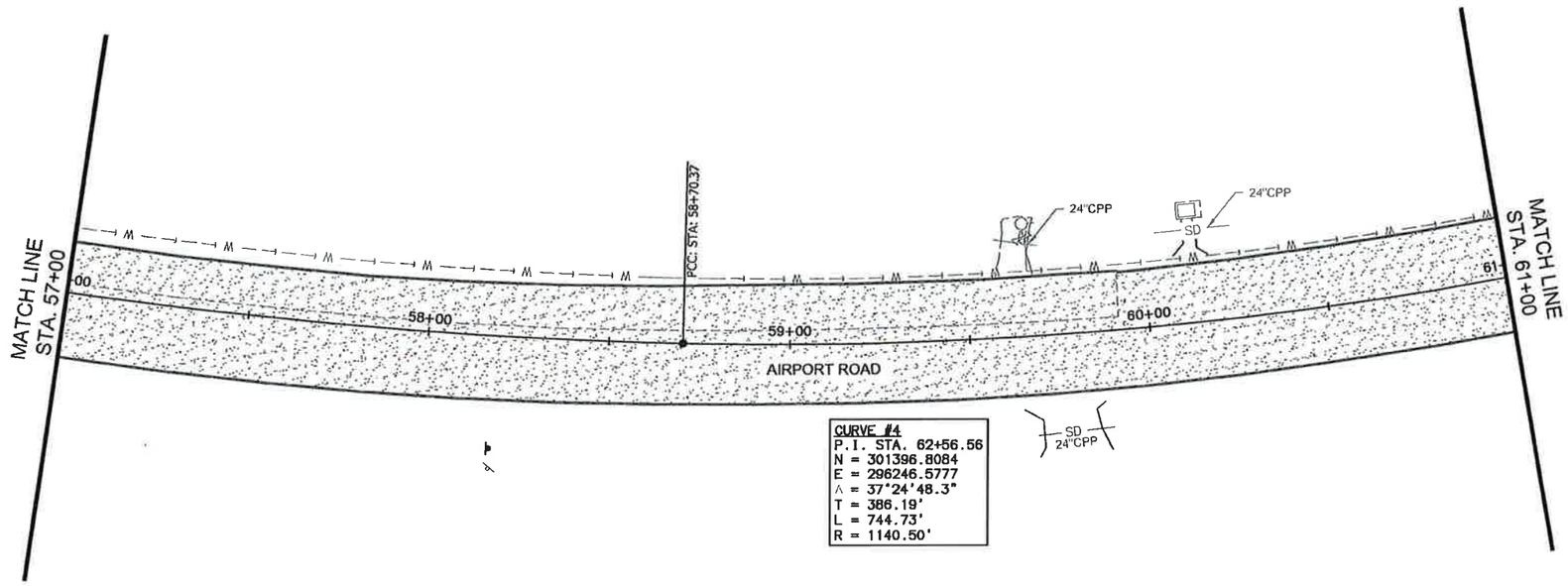


Project As-Built Drawing have been reviewed by the Project Engineer and represent to the best of my knowledge the Project as Constructed.
Project Engineer: HH

THIS SHEET REPLACE ORIGINAL F10

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	F11	69





CURVE #4
P.I. STA. 62+56.56
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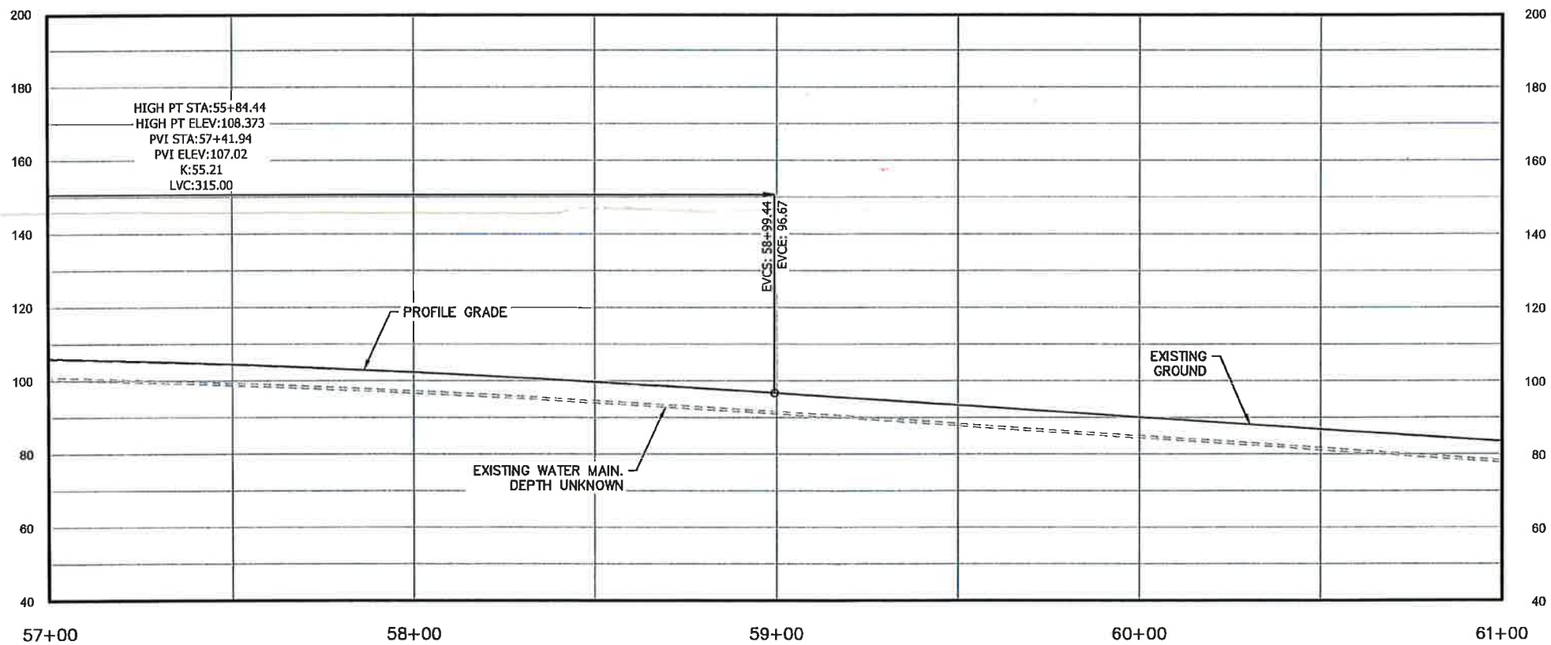
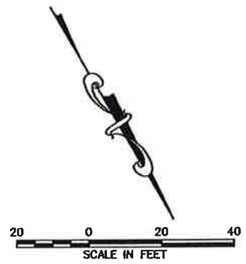
E = 296246.5777
Δ = 37°24'48.3"
T = 386.19'
L = 744.73'
R = 1140.50'

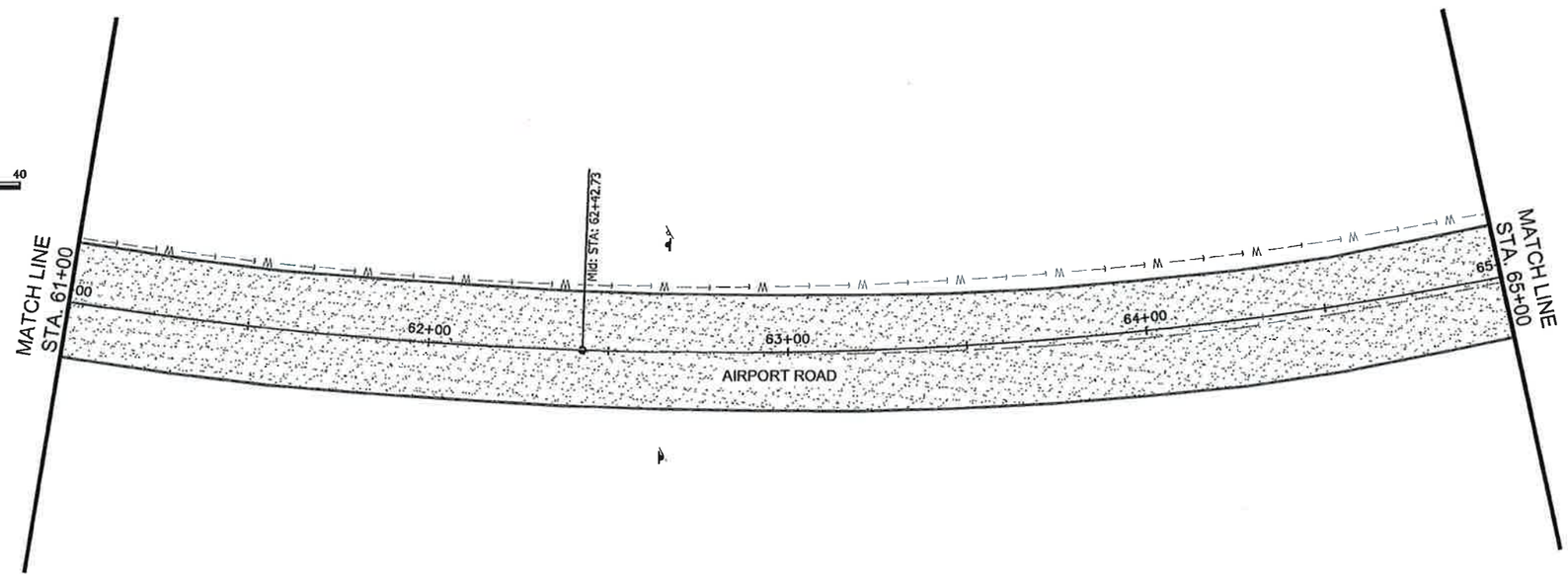


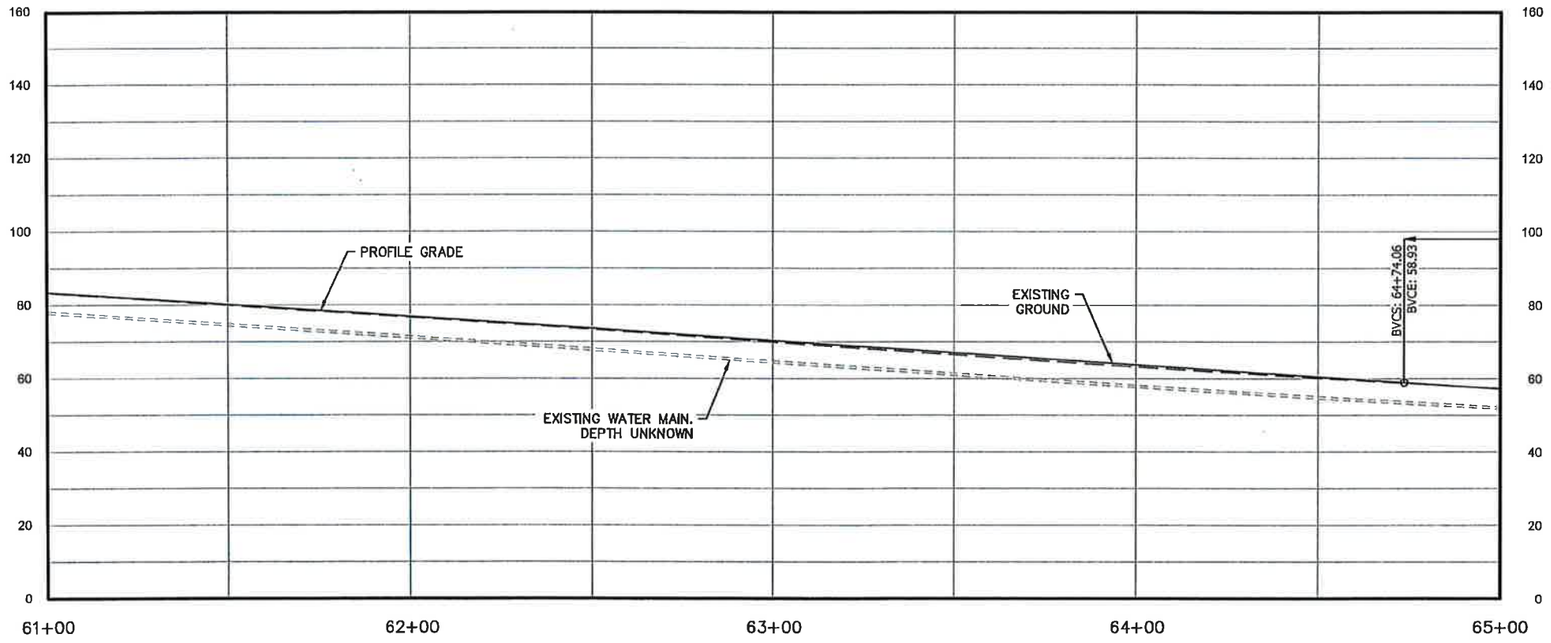
STATE OF ALASKA
49TH
ERIC M. VOORHEES
AE 12361
REGISTERED PROFESSIONAL ENGINEER
5/17/2019

FIRM DOWL | ADDRESS 5368 COMMERCIAL BLVD, JUNEAU, AK 99801 | PHONE (907) 780-3533 | CERTIFICATE OF AUTH #: AECL848
FILE C:\Civil 3D Projects\2018\24\62367-01\Civil\SC-CT-RD-62367.dwg | DATE 8/8/2018 12:33 | LAYOUT F11 | DESIGNED LOCKHART | CHECKED VARIOUS | DRAFTED CJS/JMK

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	F12	69

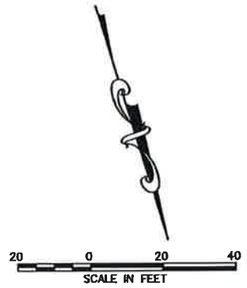


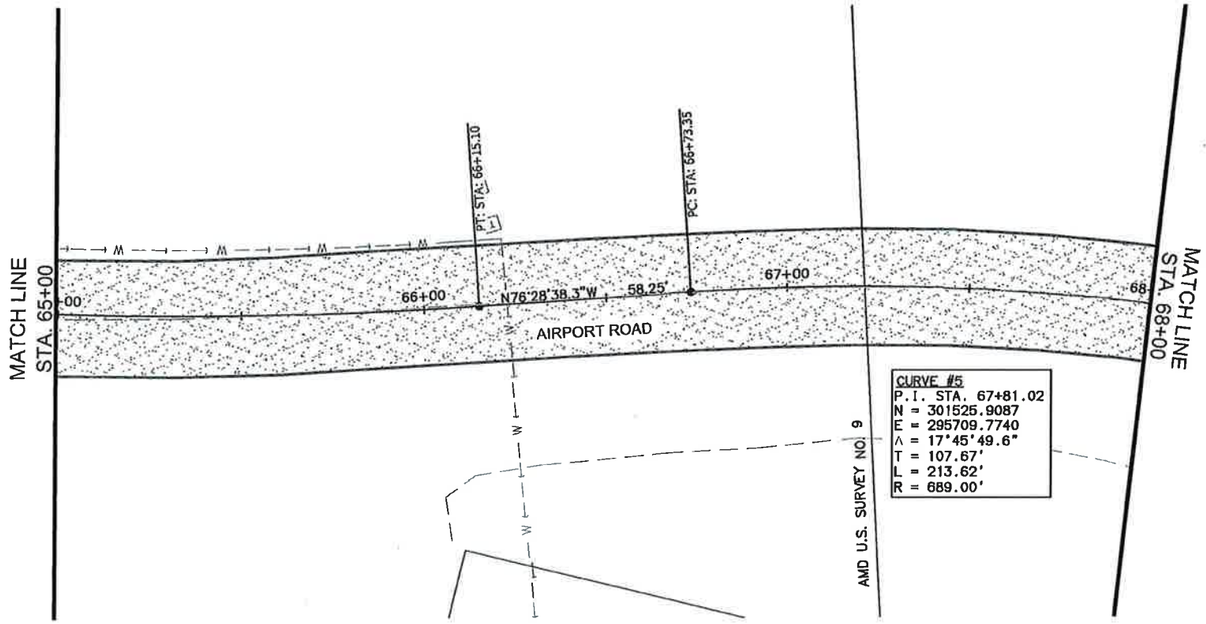


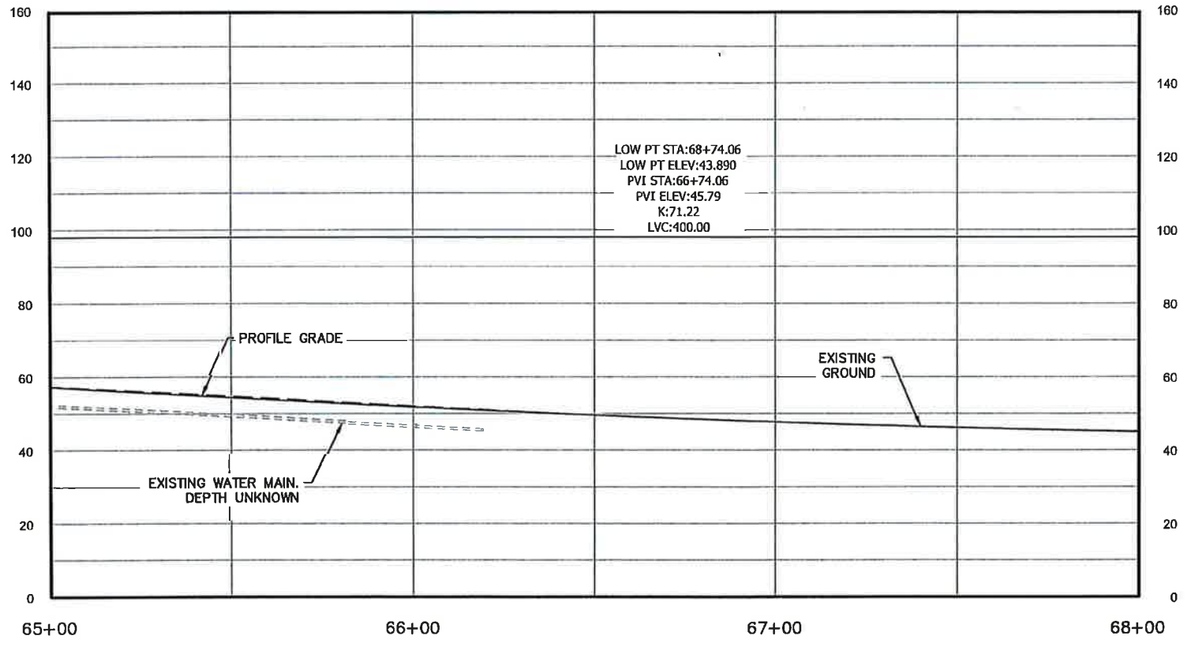


FIRM	DOWL
FILE	C:\Civil 3D Projects\2018\24\62367-01\Civil\SC-CT-RD-62367.dwg
DATE	8/8/2018 12:33
ADDRESS	5368 COMMERCIAL BLVD, JUNEAU, AK 99801
PHONE	(907) 780-3533
DESIGNED	LOCKHART
CHECKED	VARIOUS
DRAFTED	CJS/JNK
LAYOUT	F12
CERTIFICATE OF AUTH #:	AECL848

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	F13	69

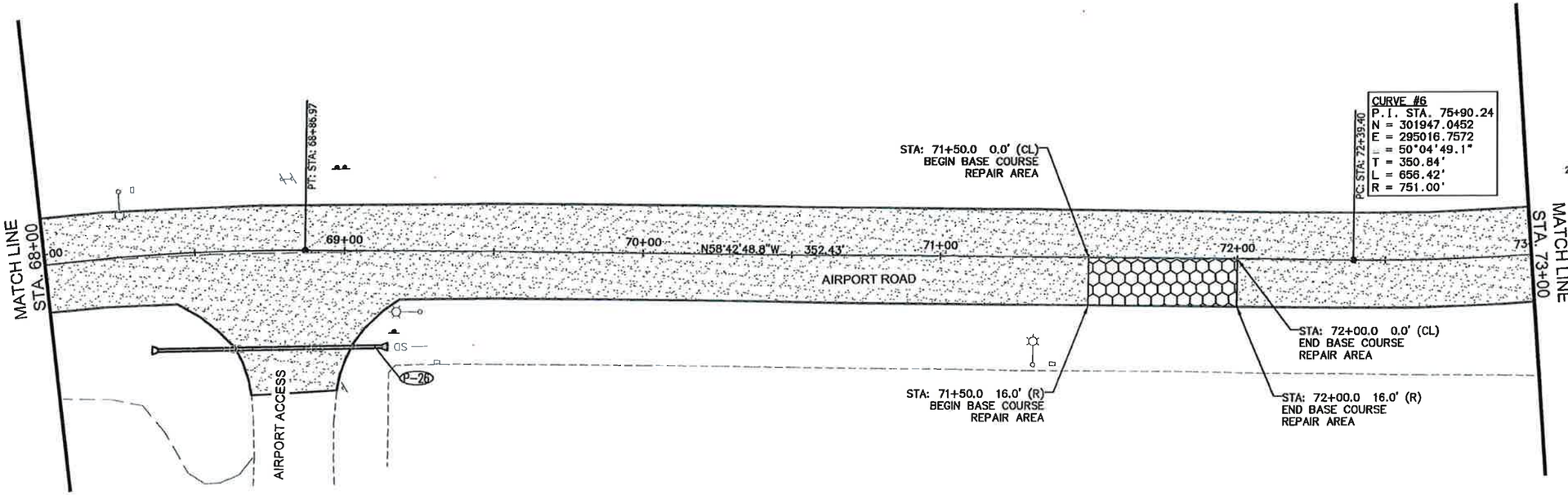


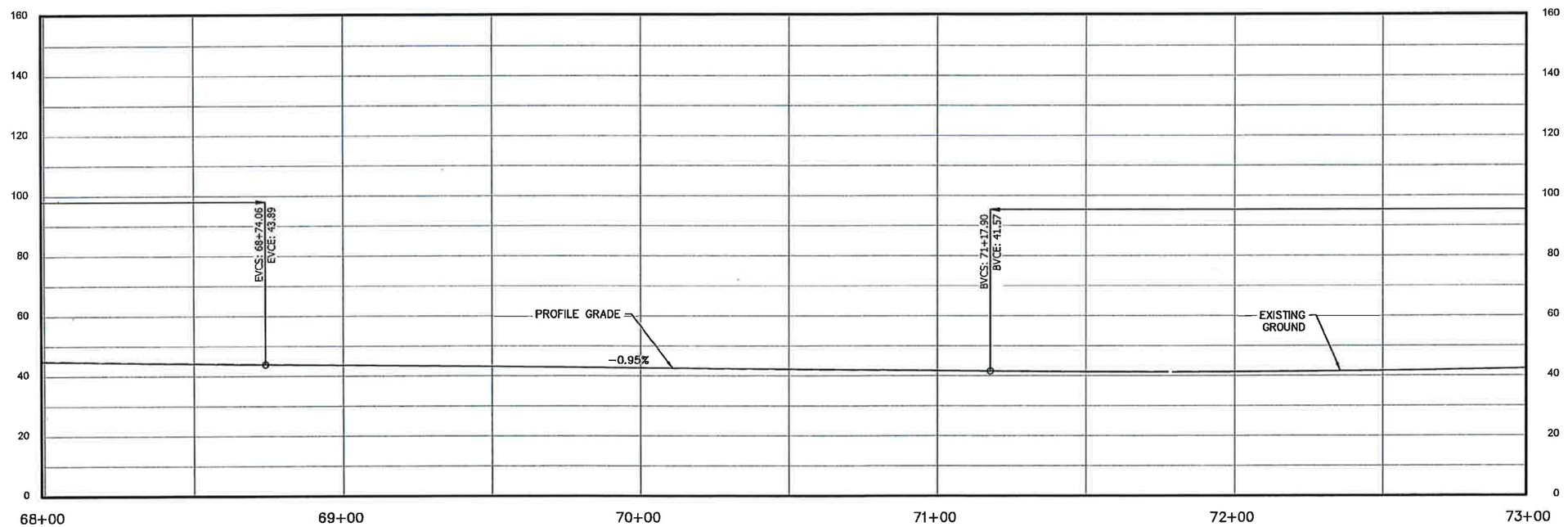




FIRM DOWL
ADDRESS 5368 COMMERCIAL BLVD, JUNEAU, AK 99801 | PHONE (907) 780-3533 | CERTIFICATE OF AUTH #: AECL848
DATE 8/8/2018 12:33 | LAYOUT F13 | DESIGNED LOCKHART | CHECKED VARIOUS | DRAFTED CJS/JNK
FILE C:\Civil 3D Projects\2016\24\62367-01\Civil\SC-CT-RD-62367.dwg

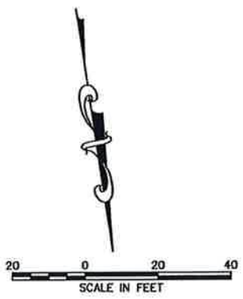
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	F14	69

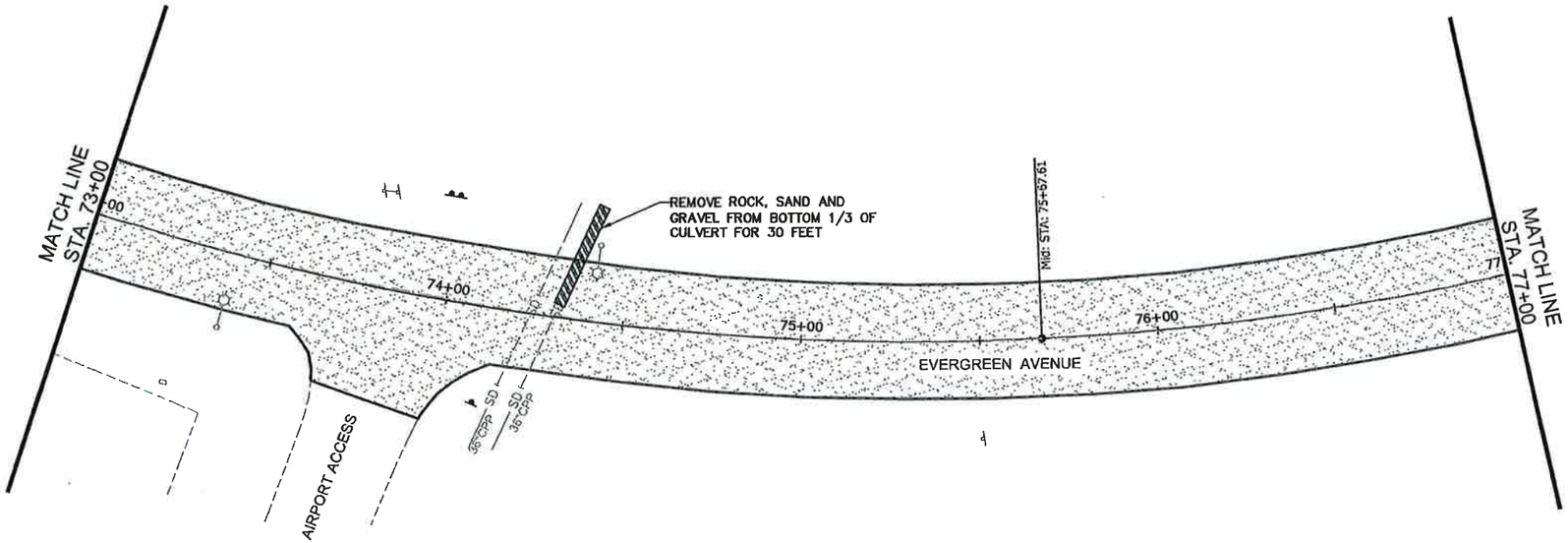


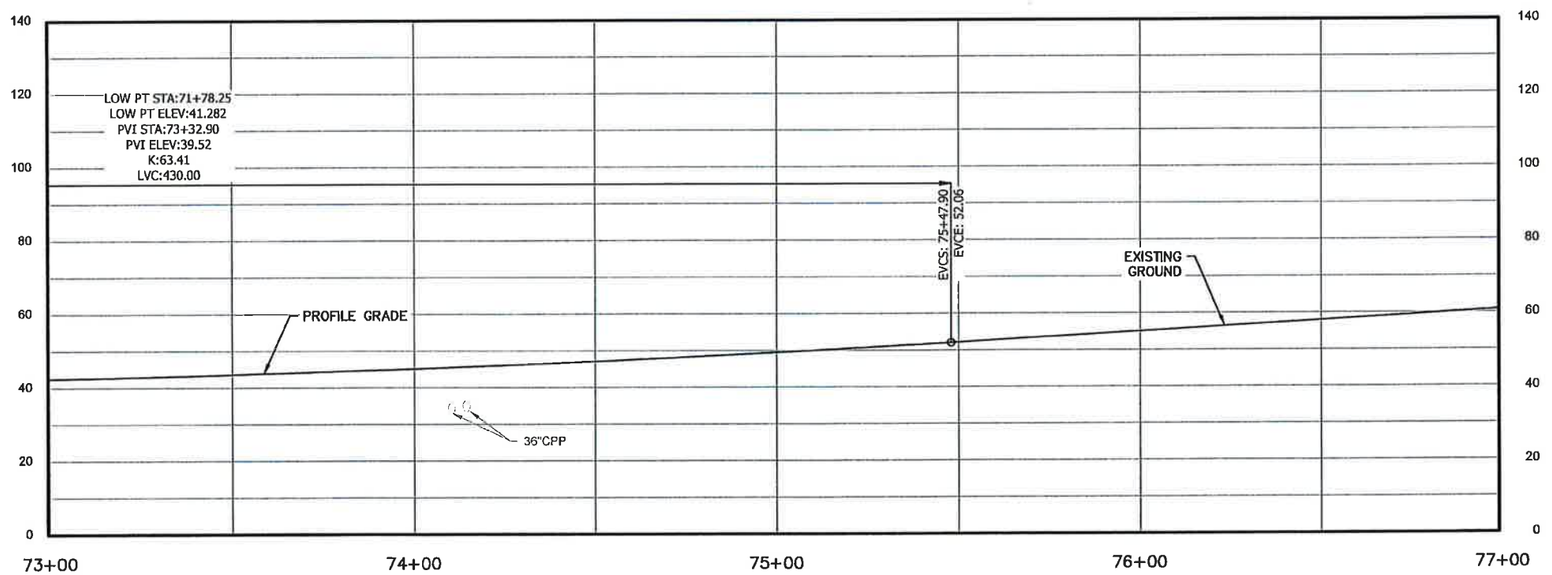


FIRM DOWL | ADDRESS 5368 COMMERCIAL BLVD, JUNEAU, AK 99801 | PHONE (907) 780-3533 | CERTIFICATE OF AUTH #: AECL848
FILE C:\Civil 3D Projects\2016\24\62367-01\Civil\SC-CT-RD-62367.dwg | DATE 8/8/2018 12:33 | LAYOUT F14 | DESIGNED LOCKHART | CHECKED VARIOUS | DRAFTED CJS/JMK

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	F15	69



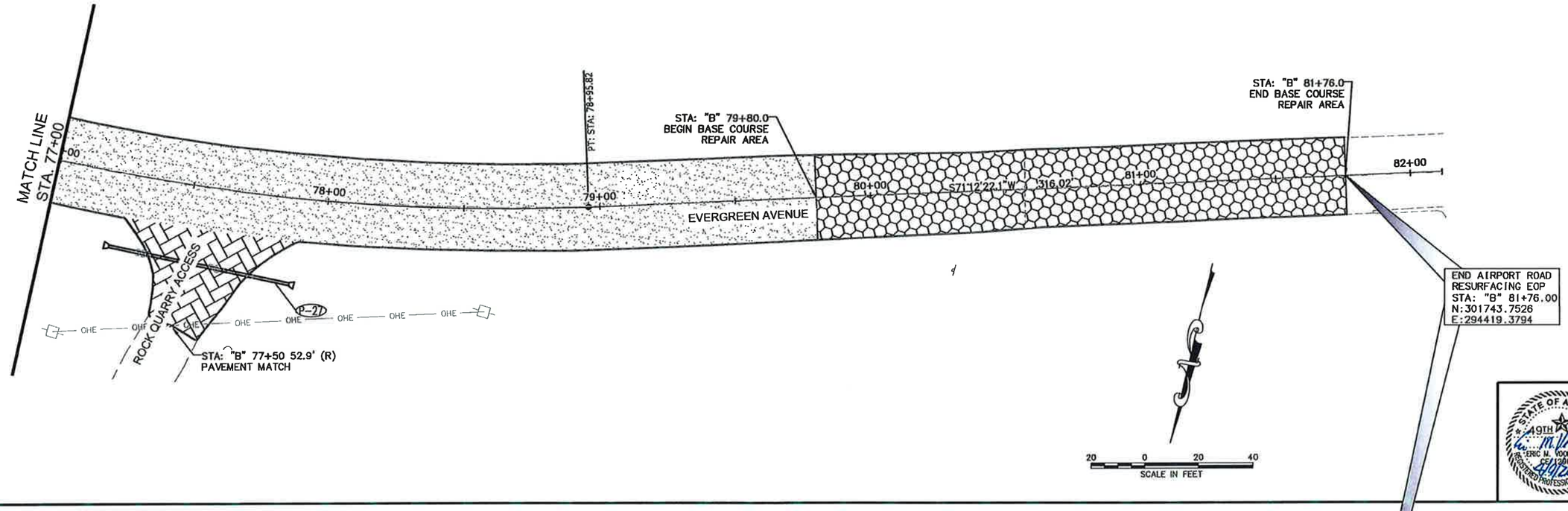


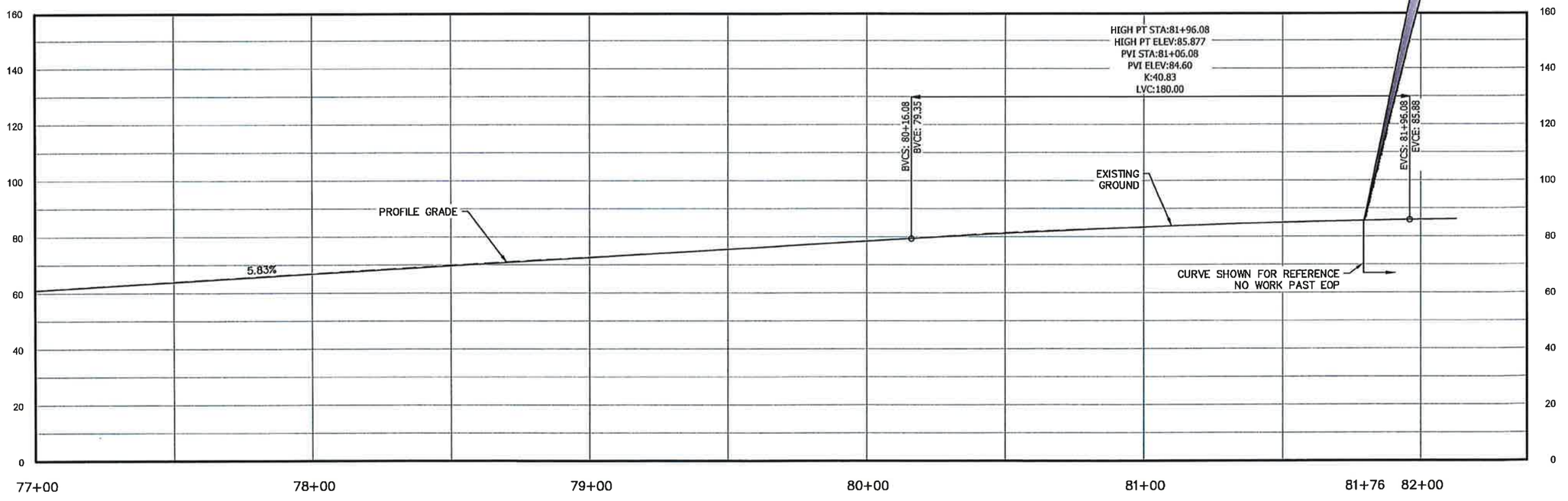


STATE OF ALASKA
49TH
ERIC M. MORRISEY
CE 12961
REGISTERED PROFESSIONAL ENGINEER

FIRM DOWL | ADDRESS 5368 COMMERCIAL BLVD, JUNEAU, AK 99801 | PHONE (907) 780-3533 | CERTIFICATE OF AUTH #: AECL848
FILE C:\Civil 3D Projects\2016\24\62367-01\Civil\SC-CT-RD-62367.dwg | DATE 8/8/2018 12:33 | LAYOUT F15 | DESIGNED LOCKHART | CHECKED VARIOUS | DRAFTED CJS/JNK

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	F16	69



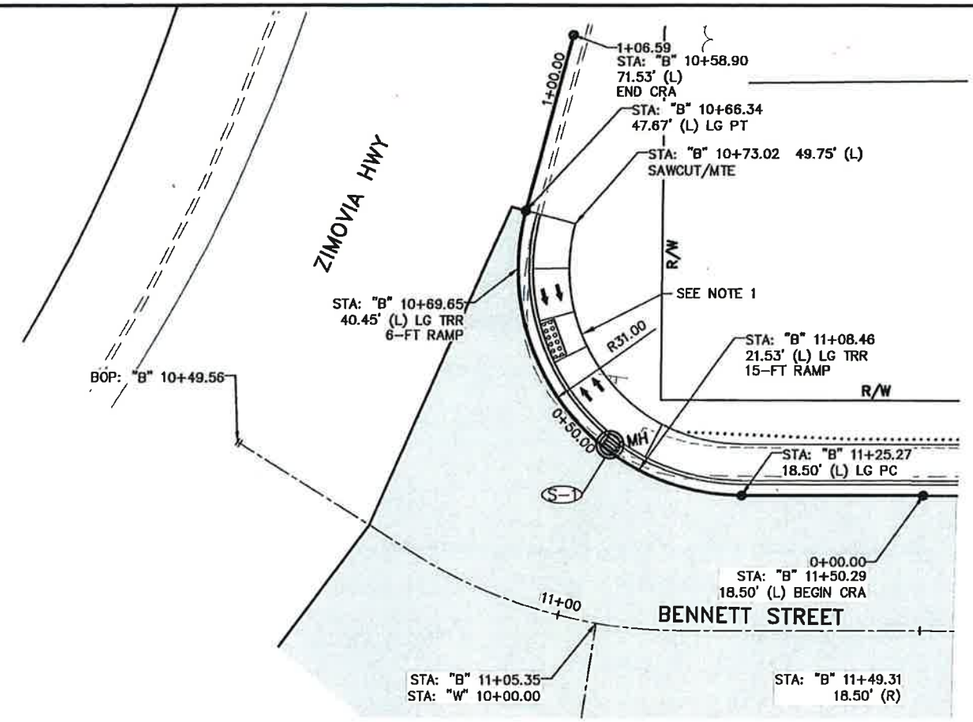


STATE OF ALASKA
49TH
ERIC M. MOORHEES
CE 12061
REGISTERED PROFESSIONAL ENGINEER

FIRM DOWL | ADDRESS 5368 COMMERCIAL BLVD, JUNEAU, AK 99801 | PHONE (907) 780-3533 | CERTIFICATE OF AUTH #: AECL848
FILE C:\Civil 3D Projects\2016\24\62367-01\Civil\SC-CT-RD-62367.dwg | DATE 8/8/2018 15:49 | LAYOUT F16 | DESIGNED LOCKHART | CHECKED VARIOUS | DRAFTED CJS/JMK

NOTES:

1. INSTALL PARALLEL CURB RAMP PER STANDARD DRAWING I.21.10 WITH RAMP RUNS AS SHOWN, 5-FT LANDING, 2-FT X 5-FT DETECTABLE WARNING TILE AND NO BACKING CURB.

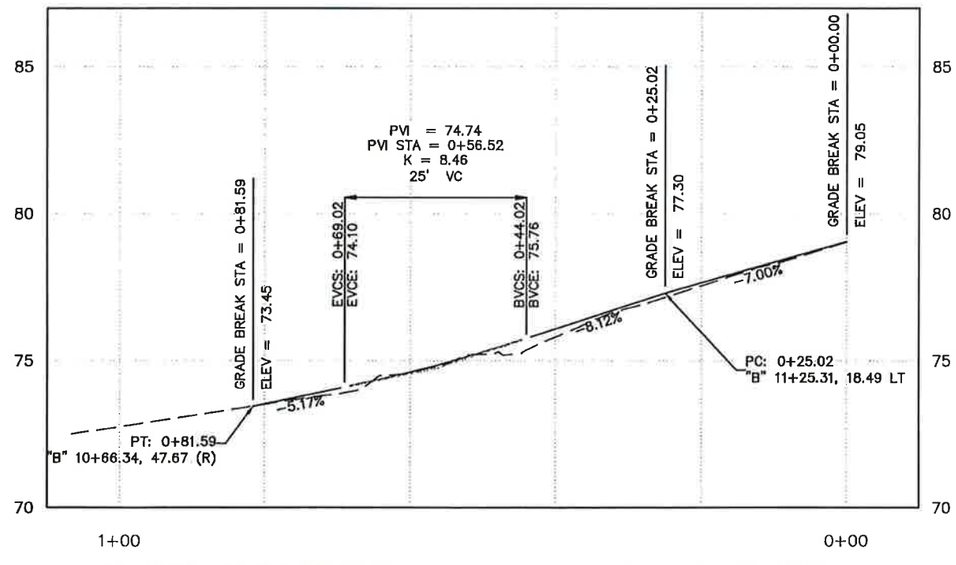


ZIMOVIA HWY / BENNETT STREET WEST PLAN

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	G1	69

10 0 10 20
SCALE IN FEET

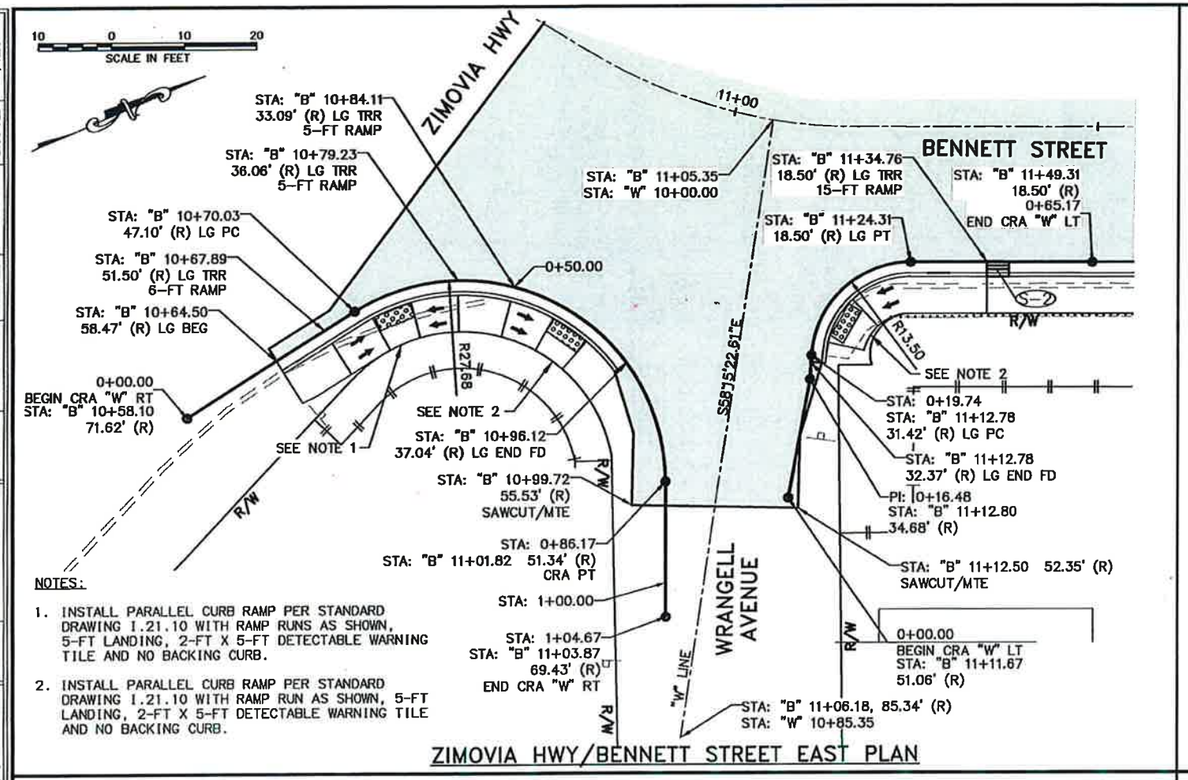
STATE OF ALASKA
49TH
ERIC M. VOORHEES
CE 12961
PROFESSIONAL ENGINEER
8/9/2018



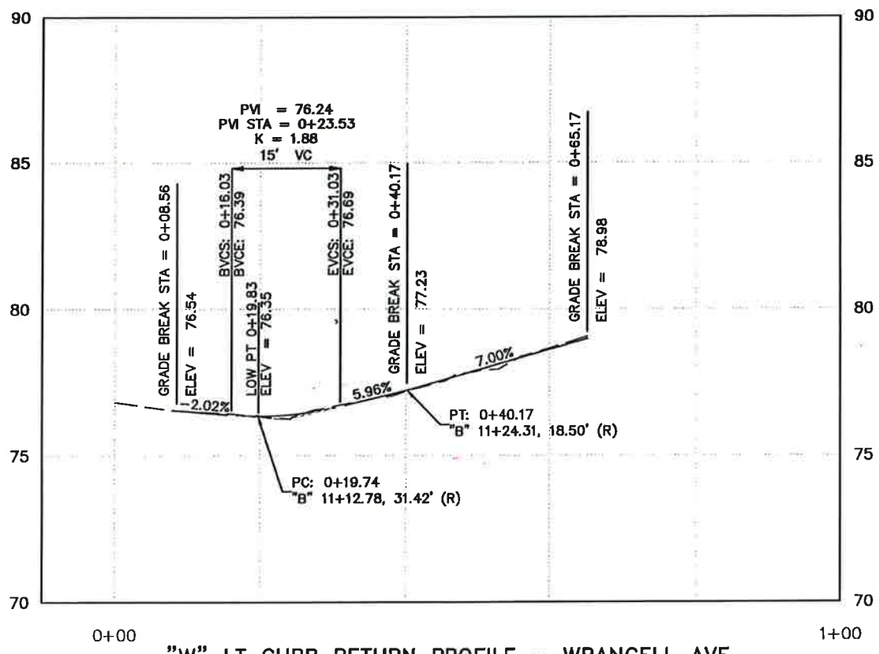
BENNETT STREET WEST CURB RETURN PROFILE – ZIMOVIA HWY

ADDRESS | 5368 CONNECTOR BLVD, JUNEAU, AK 99801 | PHONE | (907) 780-3533 | CERTIFICATE OF AUTH #: AECL848
DATE | 8/8/2018 14:01 | LAYOUT | G1 | DESIGNED | LOCKHART | CHECKED | VARIOUS | DRAFTED | CJS/JMK
FILE | C:\Civil 3D Projects\2016\24\62367-01\Civil\SO-CT-GR-62367.dwg | FIRM | DOWL

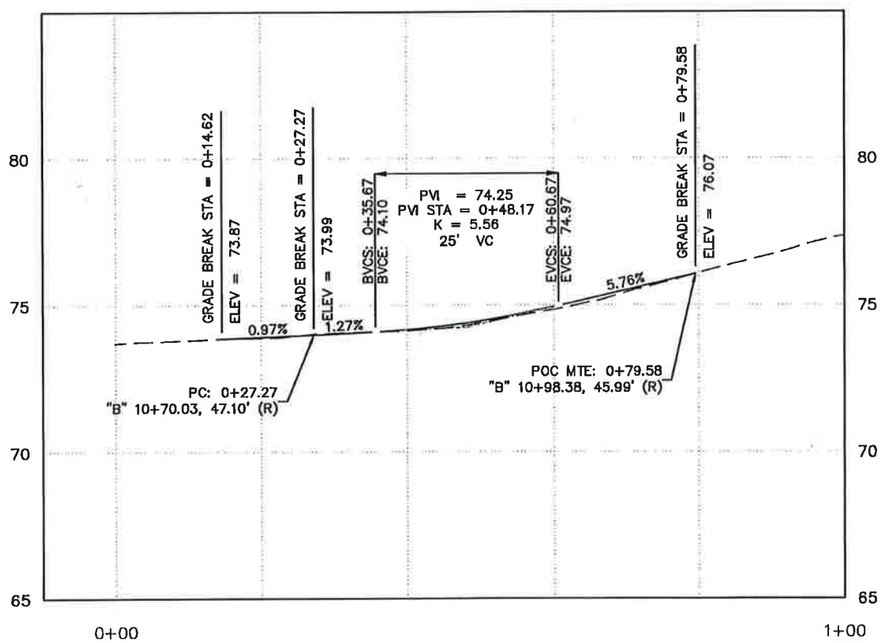
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	G2	69



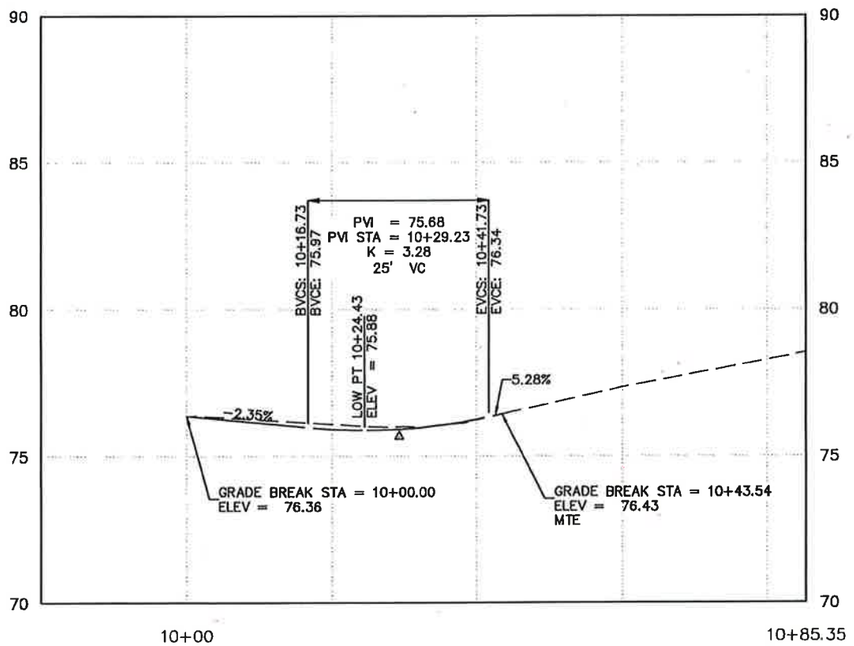
ZIMOVIA HWY/BENNETT STREET EAST PLAN



"W" LT CURB RETURN PROFILE – WRANGELL AVE



"W" RT CURB RETURN PROFILE – WRANGELL AVE



"W" CENTERLINE PROFILE – WRANGELL AVE

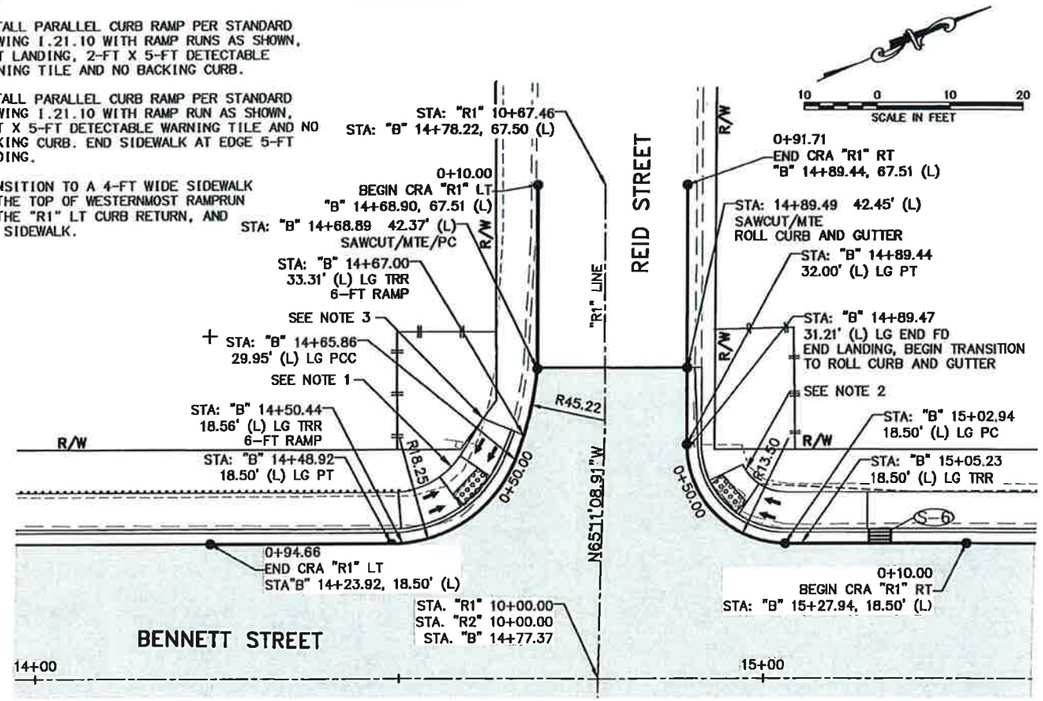
STATE OF ALASKA
49TH
ERIC M. VOORHEES
CE 12981
REGISTERED PROFESSIONAL ENGINEER

FIRM DOWL | ADDRESS 5368 COMMERCIAL BLVD, JUNEAU, AK 99801 | PHONE (907) 780-3533 | CERTIFICATE OF AUTH #: AECL848
FILE C:\Civil 3D Projects\2016\24\62367-01\Civil\SC-CT-GR-62367.dwg | DATE 8/8/2018 14:01 | LAYOUT G2 | DESIGNED LOCKHART | CHECKED VARIOUS | DRAFTED CJS/JMK

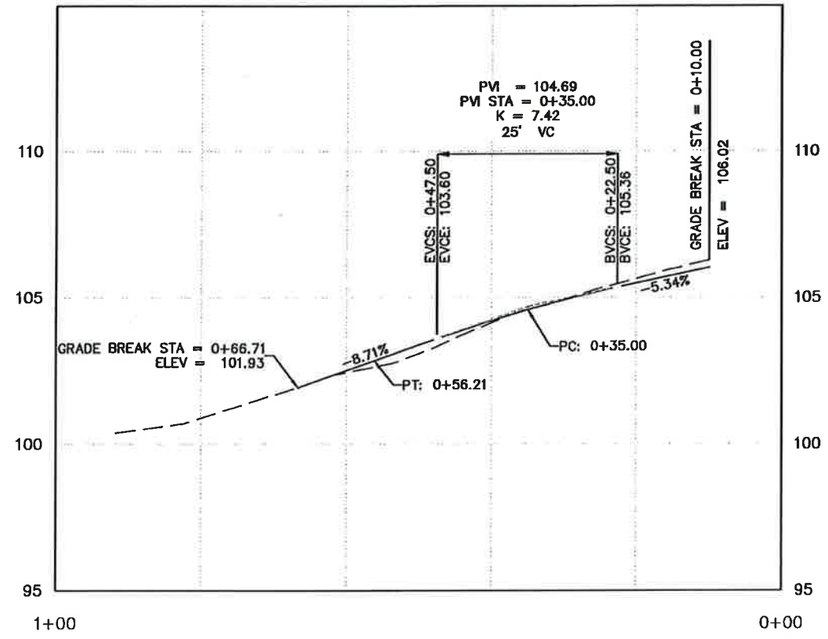
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	G3	69

NOTES:

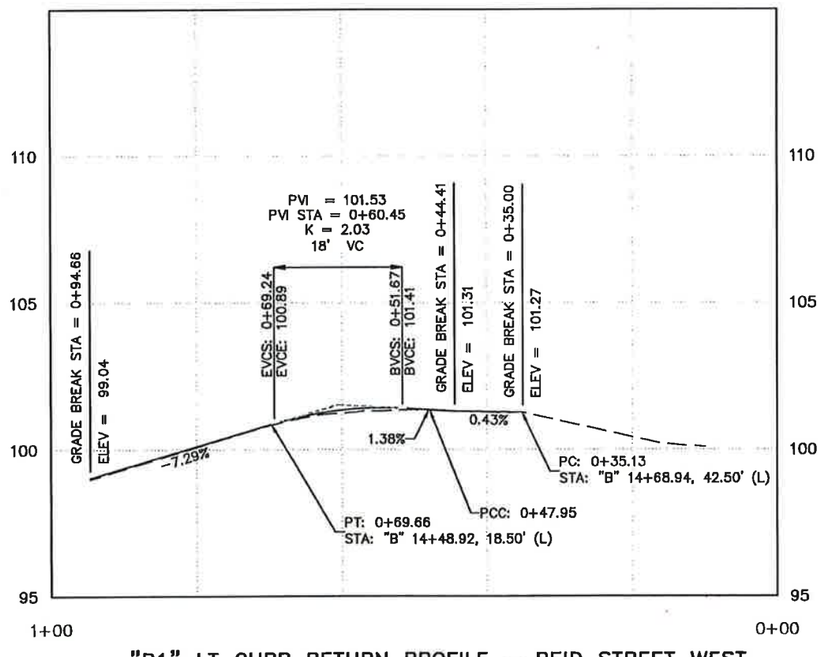
1. INSTALL PARALLEL CURB RAMP PER STANDARD DRAWING I.21.10 WITH RAMP RUNS AS SHOWN, 5-FT LANDING, 2-FT X 5-FT DETECTABLE WARNING TILE AND NO BACKING CURB.
2. INSTALL PARALLEL CURB RAMP PER STANDARD DRAWING I.21.10 WITH RAMP RUN AS SHOWN, 2-FT X 5-FT DETECTABLE WARNING TILE AND NO BACKING CURB. END SIDEWALK AT EDGE 5-FT LANDING.
3. TRANSITION TO A 4-FT WIDE SIDEWALK AT THE TOP OF WESTERNMOST RAMPRUN OF THE "R1" LT CURB RETURN, AND MTE SIDEWALK.



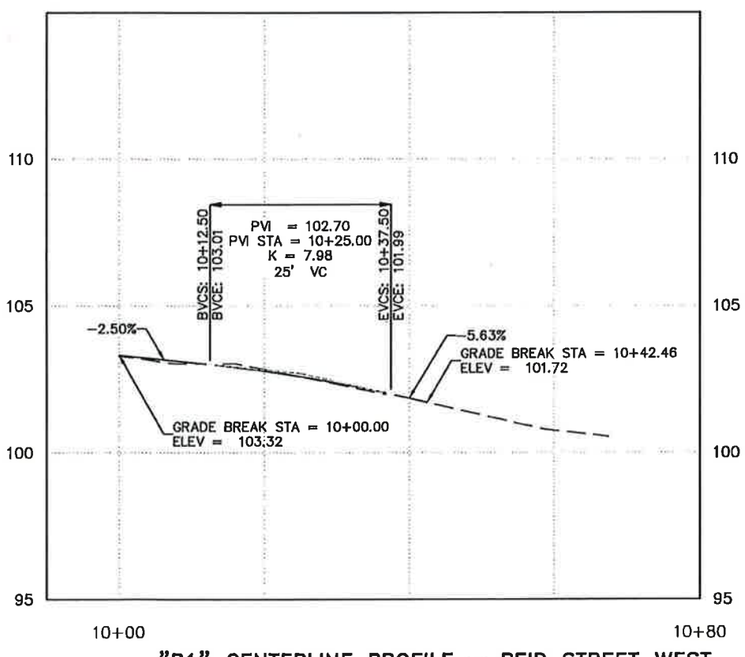
BENNETT STREET/REID STREET WEST PLAN



"R1" RT CURB RETURN PROFILE – REID STREET WEST



"R1" LT CURB RETURN PROFILE – REID STREET WEST



"R1" CENTERLINE PROFILE – REID STREET WEST

STATE OF ALASKA
9TH
ERIC M. VOORHEES
CE-12861
REGISTERED PROFESSIONAL ENGINEER
4/9/2018

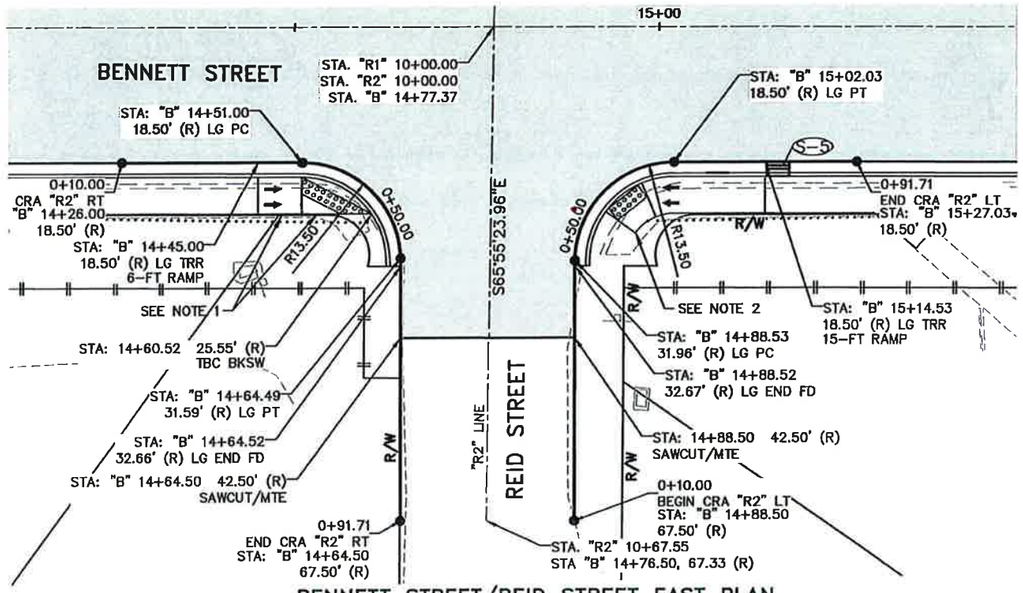
FIRM DOWL | ADDRESS 5368 COMMERCIAL BLVD, JUNEAU, AK 99801 | PHONE (907) 780-3533 | CERTIFICATE OF AUTH #: AECL848
DESIGNED LOCKHART | CHECKED VARIOUS | DRAFTED CJS/JMK
DATE 8/8/2018 14:01 | LAYOUT G3
FILE C:\Civil 3D Projects\2016\24\62367-01\Civil\SC-GT-GR-62367.dwg

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	G4	69

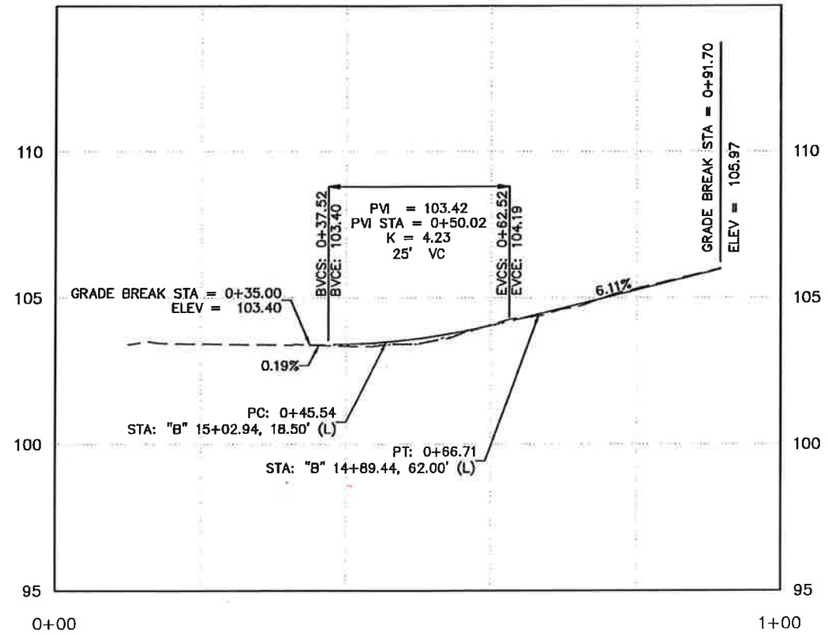
NOTES:

1. SEE UNIDIRECTIONAL CURB RAMP DETAIL, SHEET E4.
2. INSTALL PARALLEL CURB RAMP PER STANDARD DRAWING I.21.10 WITH RAMP RUN AS SHOWN, 2-FT X 5-FT DETECTABLE WARNING TILE AND NO BACKING CURB. END SIDEWALK AT EDGE 5-FT LANDING.

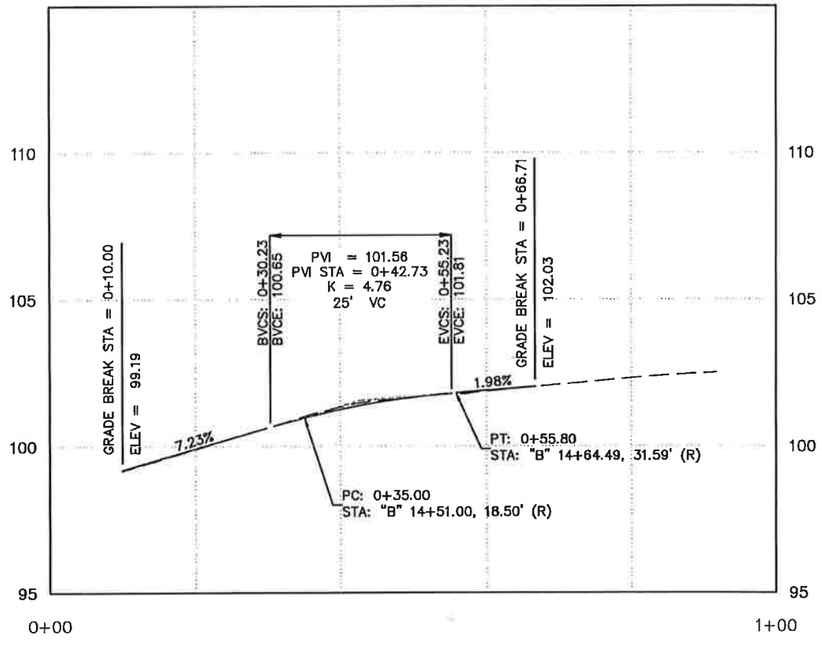
10 0 10 20
SCALE IN FEET



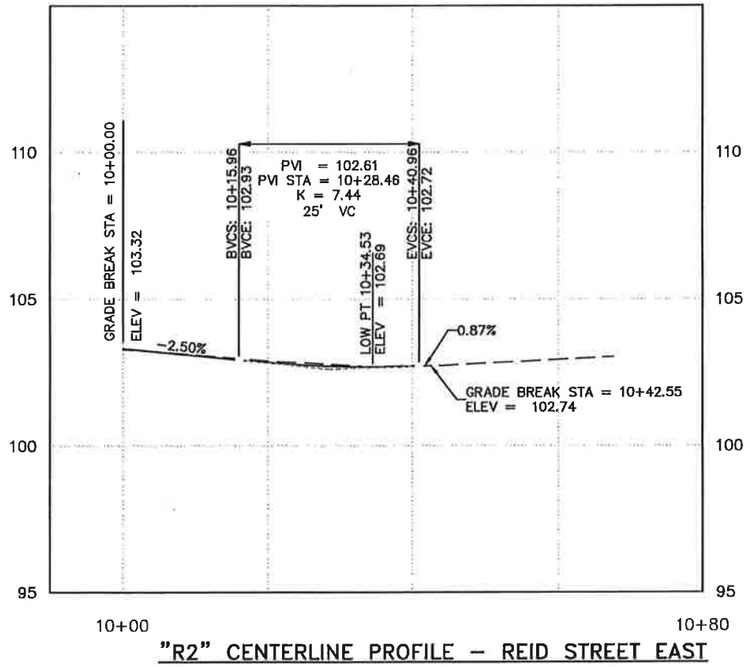
BENNETT STREET/REID STREET EAST PLAN



"R2" LT CURB RETURN PROFILE – REID STREET EAST



"R2" RT CURB RETURN PROFILE – REID STREET EAST



"R2" CENTERLINE PROFILE – REID STREET EAST

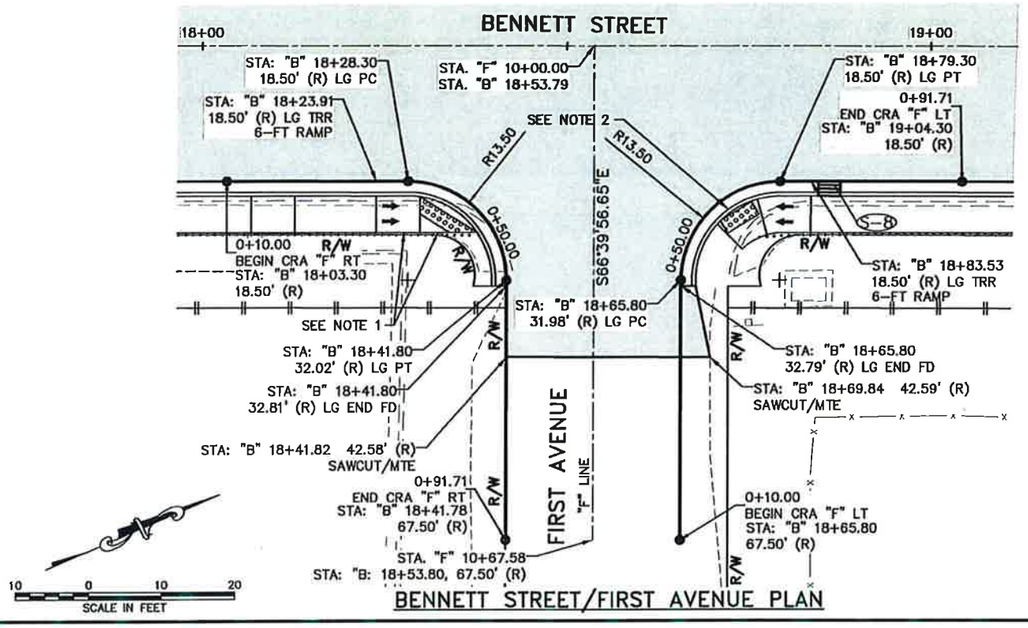
STATE OF ALASKA
49TH
ERIC M. VOORHEES
CE-12861
REGISTERED PROFESSIONAL ENGINEER
4/9/18

FIRM DOWL | ADDRESS 5368 COMMERCIAL BLVD, JUNEAU, AK 99801 | PHONE (907) 780-3533 | CERTIFICATE OF AUTH #: AECL848
FILE C:\Civil 3D Projects\2016\24\62367-01\Civil\SC-CT-GR-62367.dwg | DATE 8/8/2018 14:01 | LAYOUT G4 | DESIGNED LOOKHART | CHECKED VARIOUS | DRAFTED CJS/JMK

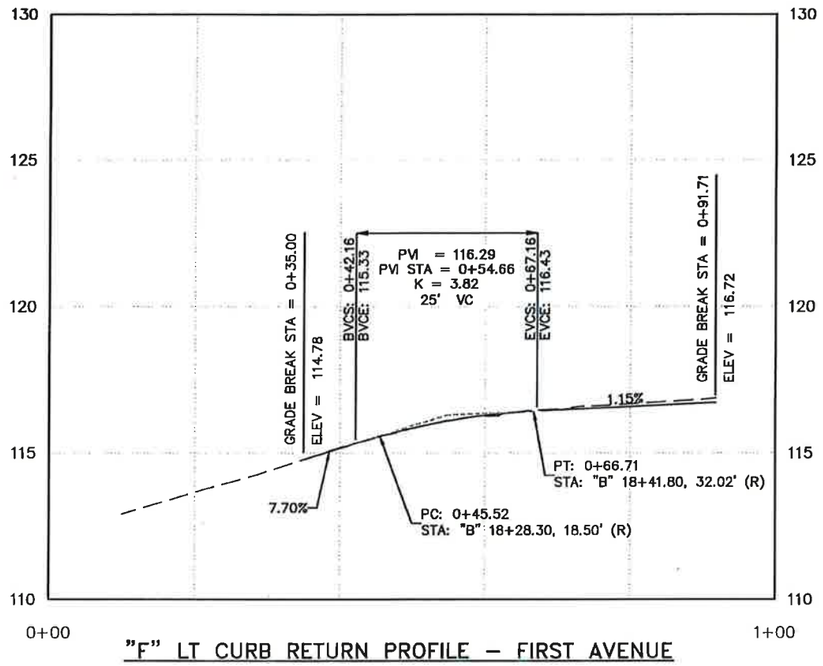
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	G5	69

NOTES:

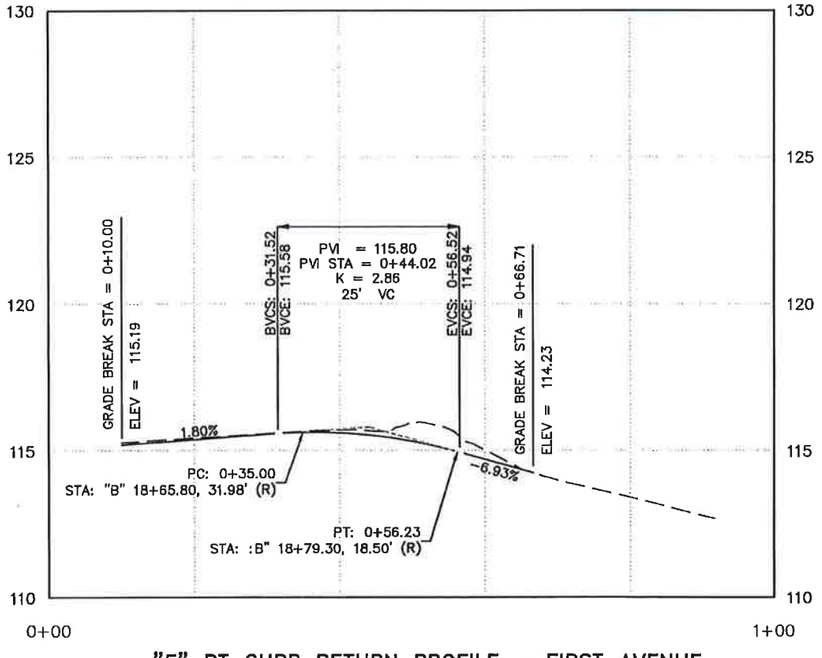
1. SEE UNIDIRECTIONAL CURB RAMP DETAIL, SHEET E4.
2. INSTALL PARALLEL CURB RAMP PER STANDARD DRAWING 1.21.10 WITH ONE 6-FT RAMP RUN, 2-FT X 5-FT DETECTABLE WARNING TILE AND NO BACKING CURB. END SIDEWALK AT EDGE 5-FT SIDEWALK.



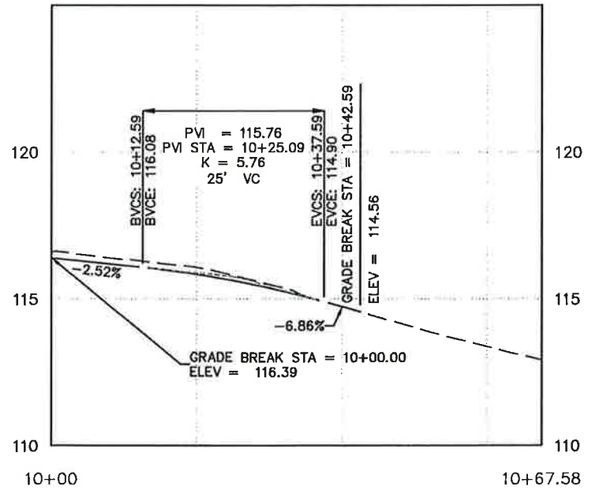
BENNETT STREET/FIRST AVENUE PLAN



"F" LT CURB RETURN PROFILE – FIRST AVENUE



"F" RT CURB RETURN PROFILE – FIRST AVENUE



"F" CENTERLINE PROFILE – FIRST AVENUE

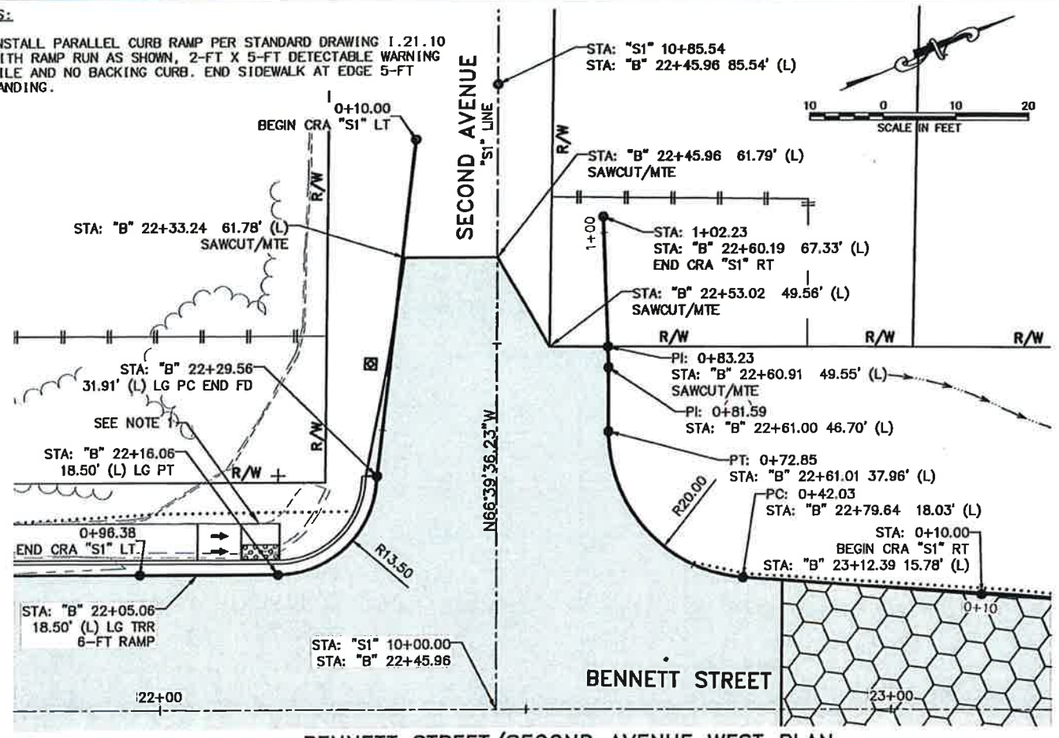
STATE OF ALASKA
49TH
ERIC M. VOORHEES
CE-12861
REGISTERED PROFESSIONAL ENGINEER
8/9/2018

FIRM: DOWL | ADDRESS: 5368 COMMERCIAL BLVD, JUNEAU, AK 99801 | PHONE: (907) 780-3533 | CERTIFICATE OF AUTH #: AECO.848
FILE: C:\Civil 3D Projects\2016\24\62367-01\Civil\SC-CT-GR-62367.dwg | DATE: 8/8/2018 14:01 | LAYOUT: G5 | DESIGNED: LOCKHART | CHECKED: VARIOUS | DRAFTED: CJS/JMK

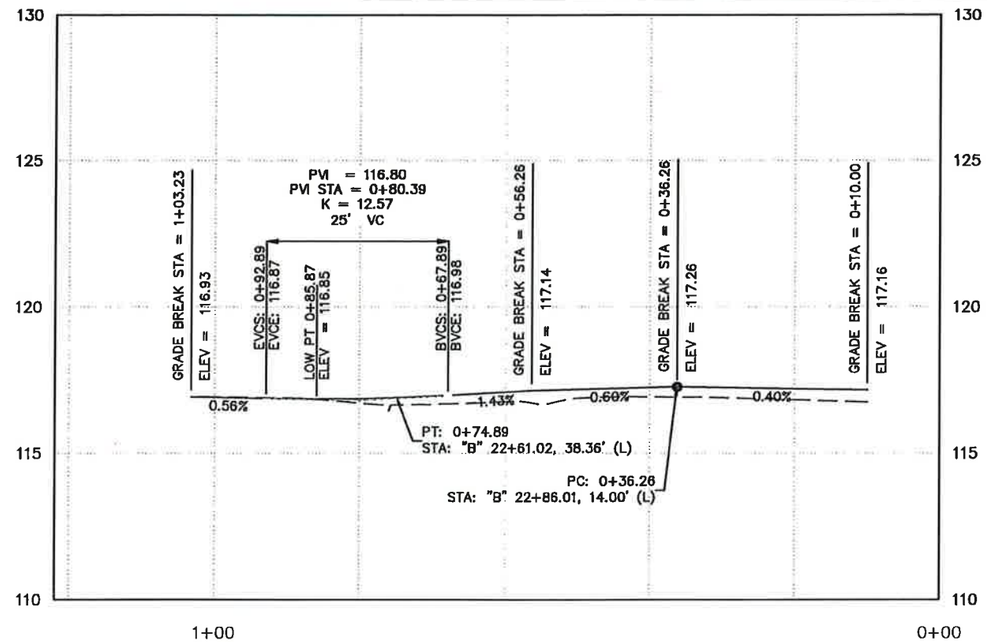
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	G6	69

NOTES:

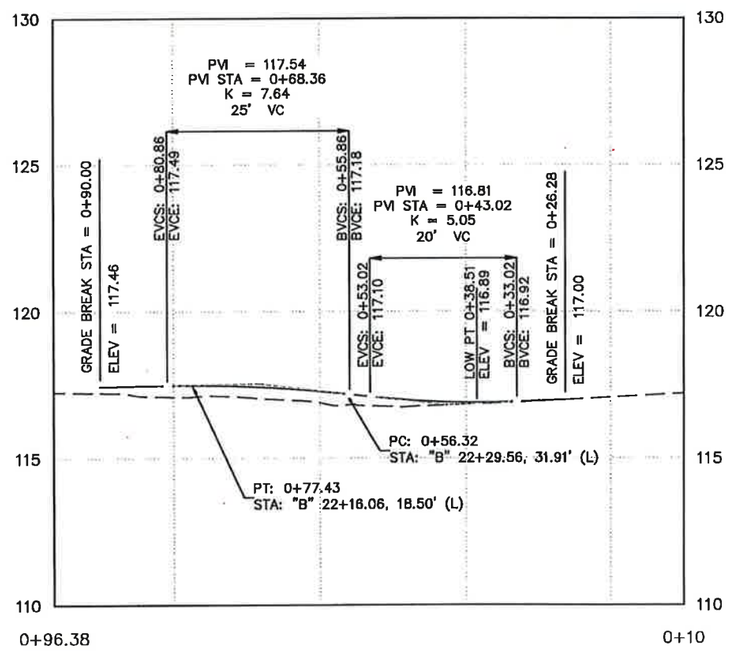
1. INSTALL PARALLEL CURB RAMP PER STANDARD DRAWING I.21.10 WITH RAMP RUN AS SHOWN, 2-FT X 5-FT DETECTABLE WARNING TILE AND NO BACKING CURB. END SIDEWALK AT EDGE 5-FT LANDING.



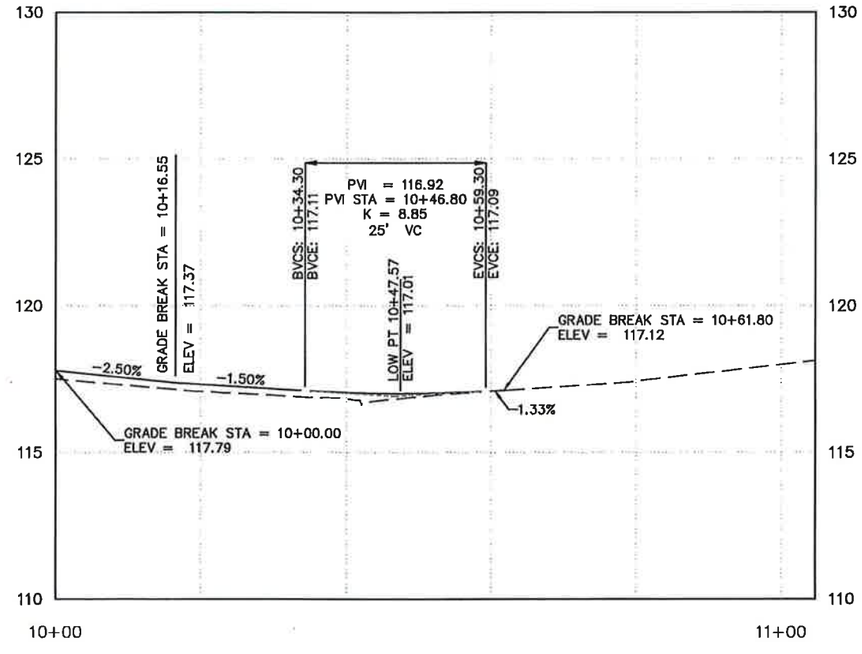
BENNETT STREET/SECOND AVENUE WEST PLAN



"S1" RT CURB RETURN PROFILE – SECOND AVENUE WEST



"S1" LT CURB RETURN PROFILE – SECOND AVENUE WEST



"S1" CENTERLINE PROFILE – SECOND AVENUE WEST

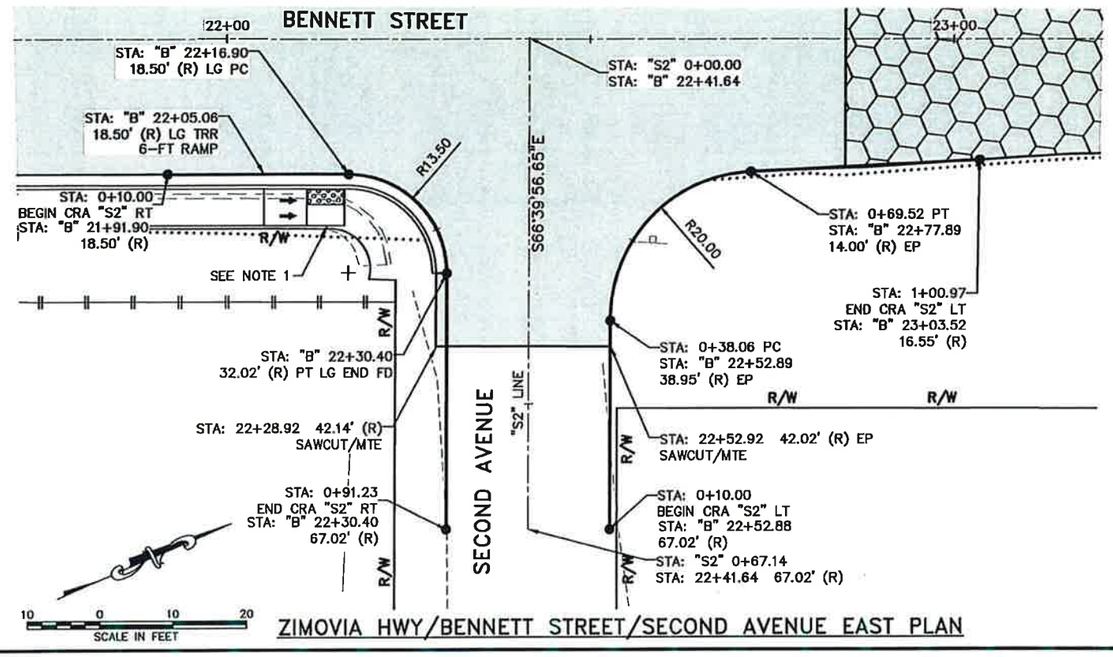
STATE OF ALASKA
9TH
ERIC M. VOORHEES
CE-12161
REGISTERED PROFESSIONAL ENGINEER

FIRM	DOWL								
ADDRESS	5368 COMMERCIAL BLVD, JUNEAU, AK 99801	PHONE	(907) 780-2533	CERTIFICATE OF AUTH #: AECL848					
DATE	8/8/2018 14:01	LAYOUT	G6	DESIGNED	LOCKHART	CHECKED	VARIOUS	DRAFTED	CJS/JMK
FILE	C:\Civil 3D Projects\2018\24\62367-01\Civil\SC-CT-GR-62367.dwg								

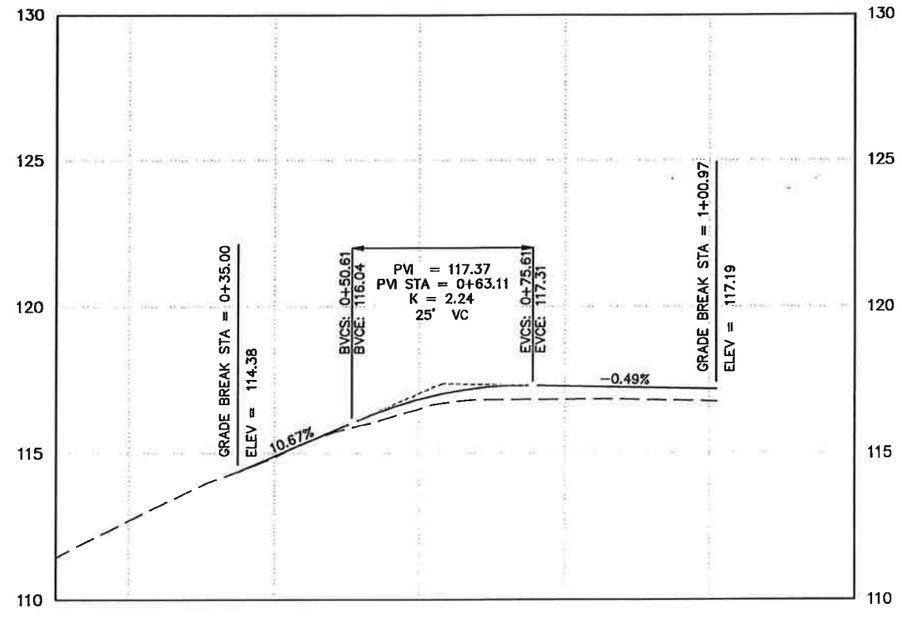
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	G7	69

NOTES:

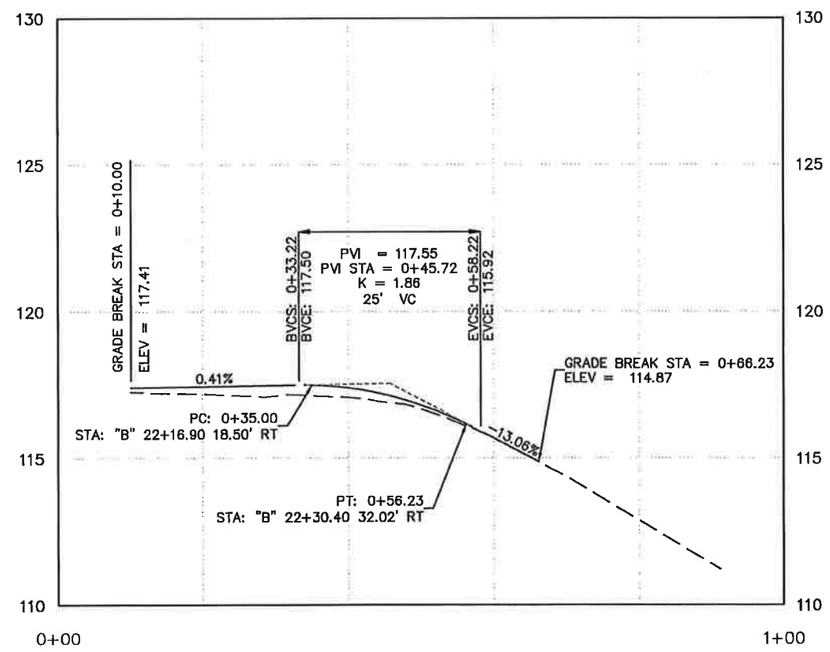
1. INSTALL PARALLEL CURB RAMP PER STANDARD DRAWING 1.21.10 WITH ONE 6-FT RAMP RUN, 2-FT X 5-FT DETECTABLE WARNING TILE AND NO BACKING CURB. END SIDEWALK AT EDGE LANDING.



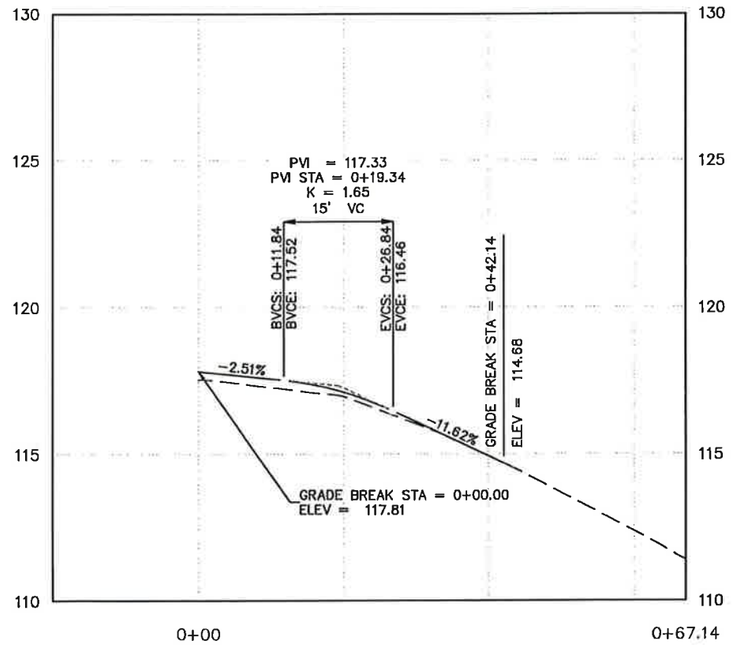
ZIMOVIA HWY/BENNETT STREET/SECOND AVENUE EAST PLAN



"S2" LT CURB RETURN PROFILE – SECOND AVENUE EAST



"S2" RT CURB RETURN PROFILE – SECOND AVENUE EAST



"S2" CENTERLINE PROFILE – SECOND AVENUE EAST

FIRM DOWL | ADDRESS 5368 COMMERCIAL BLVD, JUNEAU, AK 99801 | PHONE (907) 780-3533 | CERTIFICATE OF AUTH #: AECL848
FILE C:\Civil 3D Projects\2016\24\62367-01\Civil\SC-GT-GR-62367.dwg | DATE 8/8/2018 14:01 | LAYOUT G7 | DESIGNED LOCKHART | CHECKED VARIOUS | DRAFTED CJS/JMK

NO.	DATE	REVISION
1	09/04/19	ADD FLASHER & LOAD CENTER

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0943026/SFHWY00067	2018	H1	69

CO - #11, Attachment #1.
Revised Plans Sheet H1.

20 0 20 40
SCALE IN FEET

CONNECTS TO EXISTING CROSSWALK

ZIMOVIA HWY

BEGIN BENNETT STREET
PAVEMENT REHABILITATION
STA: "B" 10+70.4
N:296543.6433
E:295934.3883
SAWCUT AND MATCH
EXISTING PAVEMENT

10+50 11+00 12+00 13+00 14+00

BENNETT STREET

+91.4 26.6' L
STA 10+98 OFF 32.5' LT
③ Bennett St D3-1
② Zimovia Hwy D3-1
① STOP R1-1

+44.3 11.0' L
+24.3 0.0'
+44.3 11.0' R
4 IN W
4 IN Y
4 IN Y
4 IN W

+80.2 35.2' R
+95.3 38.7' R
+12.8 32.4' R
10'
10'
R/W
R/W
WRANGELL AVENUE

STA 11+14 OFF 37.5' RT
⑥ Wrangell Ave D3-1
⑤ Bennett St D3-1
④ STOP R1-1
SPEED LIMIT 25 R2-1 ⑦
STA 12+58 OFF 25.0' RT

MATCH LINE STA. 14+25

4" SOLID WHITE
4" SOLID OR SKIP YELLOW
11'
4" SOLID OR SKIP YELLOW
4" SOLID WHITE
5 1/2"
4" SKIP YELLOW
EDGE OF PAVEMENT
EDGE OF PAVEMENT
EXISTING CENTERLINE

STRIPING DETAIL

* SEE STRIPING NOTES ON H11.

Project As-Built Drawing have been reviewed by the Project Engineer and represent to the best of my knowledge the Project as Constructed.
Project Engineer:
HH

STATE OF ALASKA 49TH
ERIC M. VOORHEES, JR.
CERTIFIED PROFESSIONAL ENGINEER
9/3/19

MATCH LINE STA. 14+25

⑩ STOP D3-1
⑪ Bennett St
⑫ Reid St D3-1
STA 14+63 OFF 36.5' LT
+66.4 31.6' L
+89.5 31.4' L
+94.7 17.0' L
STA 15+58 OFF 27.0' LT
SPEED LIMIT 25 R2-1 ⑰
END SCHOOL ZONE S5-2 ⑱
+29.4 11.0' L
+50.0 0.0'
+30.6 11.0' R
15+00 16+00 17+00 18+00 19+00
+19.7 11.0' L
+99.9 0.0'
+20.0 11.0' R
+28.3 0.0'
+78.9 0.0' L
+73.9 17.0' R
+95.1 17.0' R
+88.5 31.4' R
+64.5 31.6' R
STA 14+95 OFF 36.5' RT
⑮ SPEED LIMIT 20 WHEN FLASHING SCHOOL S5-1
STA 15+91 OFF 31.7' RT
1"RMC
STA 15+91, OFF 31.7' RT
REMOVE AND REPLACE EXISTING FLASHING BEACON SYSTEM WITH NEW PER DETAILS ON SHEET H12.
STA 15+95, OFF 36.0' RT
INSTALL NEW LOAD CENTER PER DETAIL SHEET H13
WRANGELL MEDICAL CENTER
⑭ Bennett St D3-1
⑬ STOP R1-1
REID STREET
⑧ S1-1
⑨ AHEAD W16-9P
STA 14+38 OFF 25.0' RT
+08.3 11.0' R
+41.8 31.6' R
STA 18+72 OFF 36.5' RT
⑳ First Ave D3-1
⑲ Bennett St D3-1
⑲ STOP R1-1
FIRST AVENUE
STA 18+79 OFF 27.0' LT
㉒ S1-1
㉓ W16-7PL
+73.9 17.0' L
+65.8 31.3' R
+98.9 11.0' R
STA 18+83 OFF 25.0' RT
STA 18+99 OFF 25.0' RT
㉔ S1-1
㉕ R7P-107
10 MINUTE BUS ZONE

MATCH LINE STA. 19+50

20 0 20 40
SCALE IN FEET

FIRM DOWL
FILE C:\Civil 3D Projects\2018\24\62367-01\Civil\SC-CT-SG-62367.dwg
ADDRESS 5368 COMMERCIAL BLVD. JUNEAU, AK 99801
DATE 9/3/2019

PHONE	(907) 780-3533	CERTIFICATE OF AUTH #:	AECL848
DESIGNED	LOOKHART	CHECKED	VARIOUS
LAYOUT	H1	DRAFTED	CJS/JMK

NO.	DATE	REVISION
1	11/21/18	CONDUIT SIZE FOR FLASHING BEACON

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0943026/SFHWY00067	2018	H2	69

MATCH LINE STA. 19+50

STA 21+75, 27.4' LT
REMOVE EXISTING FLASHING BEACON

S1-1 W16-7PL

STA 22+15 OFF 30.0' LT

R/W

BENNETT STREET

4 IN W
4 IN Y
4 IN Y
4 IN W

20+00 21+00 22+00 23+00 24+00 25

+88.6 11.0' L
+13.6 17.1' L
+08.6 0.0' R
+13.6 16.9' R
+88.7 11.0' R
STA 22+05 OFF 25.0' RT

WRANGELL PUBLIC SCHOOLS
(STIKINE MIDDLE SCHOOL AND
EVERGREEN ELEMENTARY)

SECOND AVENUE

R1-1 STOP D3-1 Bennett St

STA 22+23 OFF 36.0' LT

+29.5 30.9' L
+46.2 31.0' L

Second Ave D3-1

+83.0 10.5' L
+78.2 11.4' R
+80.5 0.5' R
+42.3 22.9' R
STA 22+64 OFF 28.5' RT
+59.6 23.2' R

Howell Ave D3-1

STA 23+97 OFF 27.5' LT

+02.5 22.6' L
+18.3 22.5' L
+91.8 10.4' L
+39.9 10.5' L
+91.8 0.6' R
+40.0 0.5' R

HOWELL AVENUE

Bennett St D3-1

Bennett St D3-1

R/W

MATCH LINE STA. 25+00

20 0 20 40
SCALE IN FEET

STATE OF ALASKA 49TH
TOBIN A. LOCKHART CE 12602 REGISTERED PROFESSIONAL ENGINEER
11-28-18

STA 25+10
OFF 12.5' LT
INSTALL FLASHING BEACON SYSTEM
SEE DETAIL, SHEET H12

R1-1 STOP D3-1 Bennett St

Third Ave D3-1

SCHOOL SPEED LIMIT 20 WHEN FLASHING S5-1

STA 25+84
OFF 43.4' LT
LOAD CENTER
SEE DETAIL, SHEET H13

THIRD AVENUE

STA 25+84
OFF 26.5' LT

+90.5 22.5' L
+10.1 22.5' L
+79.5 10.3' L
+38.1 10.6' L
+38.1 0.4' R
+79.5 0.7' R

1"RMC

STA 26+38 OFF 13.5' LT

S1-1 AHEAD W16-9P

U.S. FOREST SERVICE
RANGER STATION

DRIVEWAY

DRIVEWAY

MATCH LINE STA. 25+00

26+00 27+00 28+00 29+00 30

4 IN W
4 IN Y
4 IN Y
4 IN W

BENNETT STREET

STA 25+10 OFF 13.5' RT

S5-2 END SCHOOL ZONE

R2-1 SPEED LIMIT 25

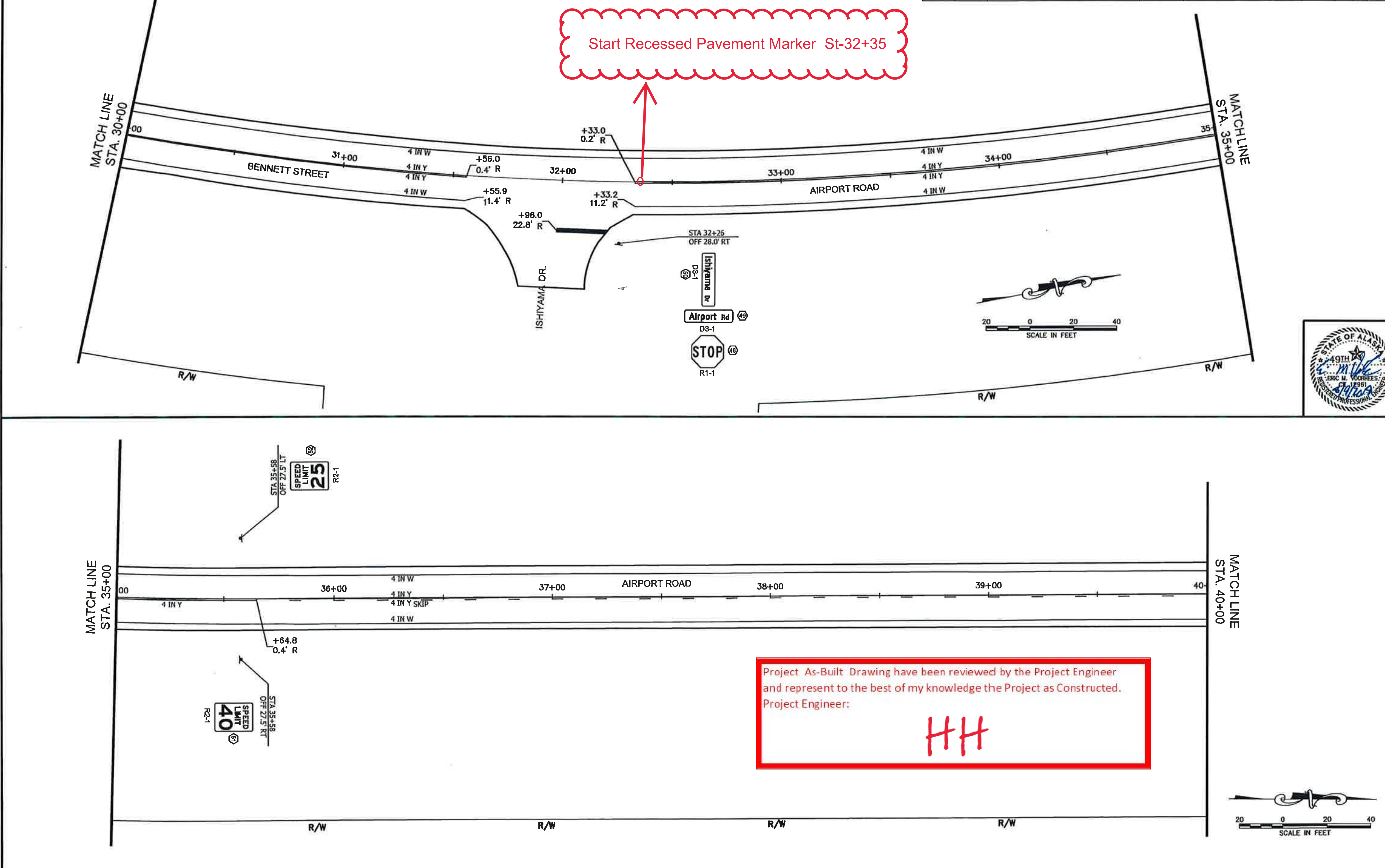
R/W

20 0 20 40
SCALE IN FEET

FIRM	DOWL
FILE	C:\Civil 3D Projects\2018\24\62367-01\Civil\SG-CT-SG-62367.dwg
DATE	11/21/2018 15:32
ADDRESS	5368 COMMERCIAL BLVD, JUNEAU, AK 99801

DESIGNED	LOCKHART	CHECKED	VARIOUS	DRAFTED	CJS/JMK	
LAYOUT	H2	PHONE	(907) 780-3533	CERTIFICATE OF AUTH #:	AECL848	

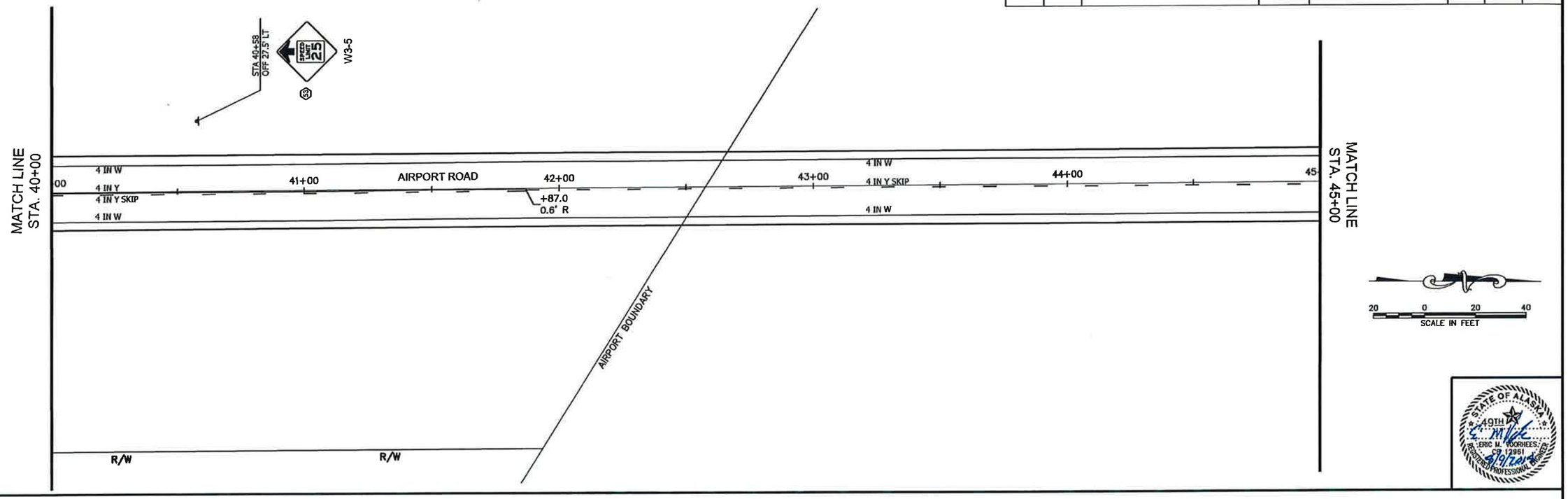
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	H3	69

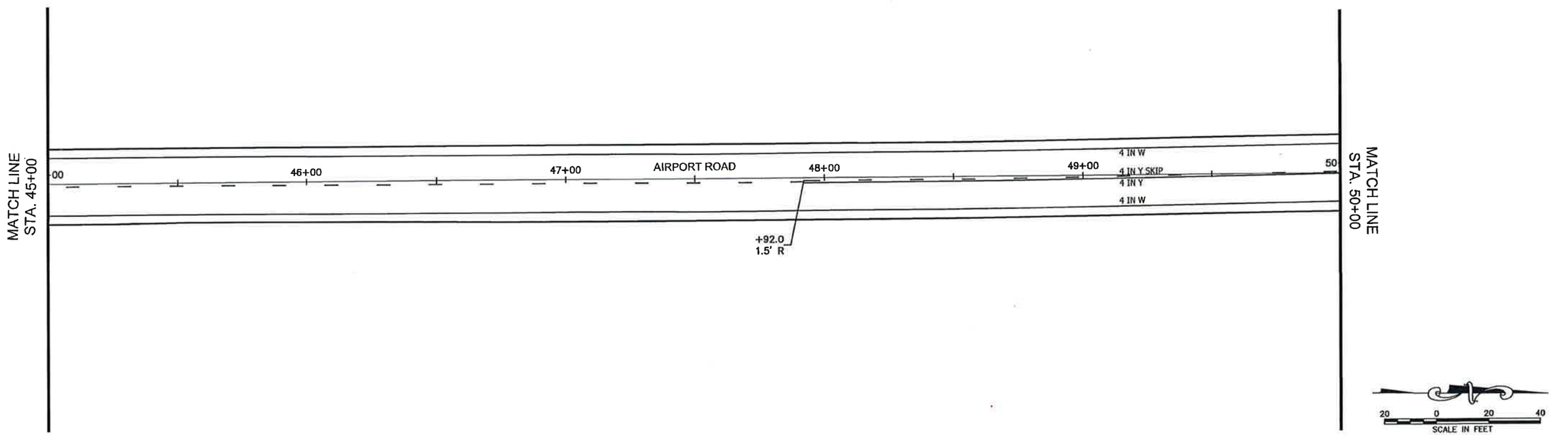


Project As-Built Drawing have been reviewed by the Project Engineer and represent to the best of my knowledge the Project as Constructed.
Project Engineer:
HH

FIRM DOWL | ADDRESS 5368 COMMERCIAL BLVD, JUNEAU, AK 99801 | PHONE (907) 780-3533 | CERTIFICATE OF AUTH #: AECL848
FILE C:\Civil 3D Projects\2016\24\62367-01\Civil\SC-CT-SG-62367.dwg | DATE 8/9/2018 9:54 | LAYOUT H3 | DESIGNED LOCKHART | CHECKED VARIOUS | DRAFTED CJS/JMK

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	H4	69





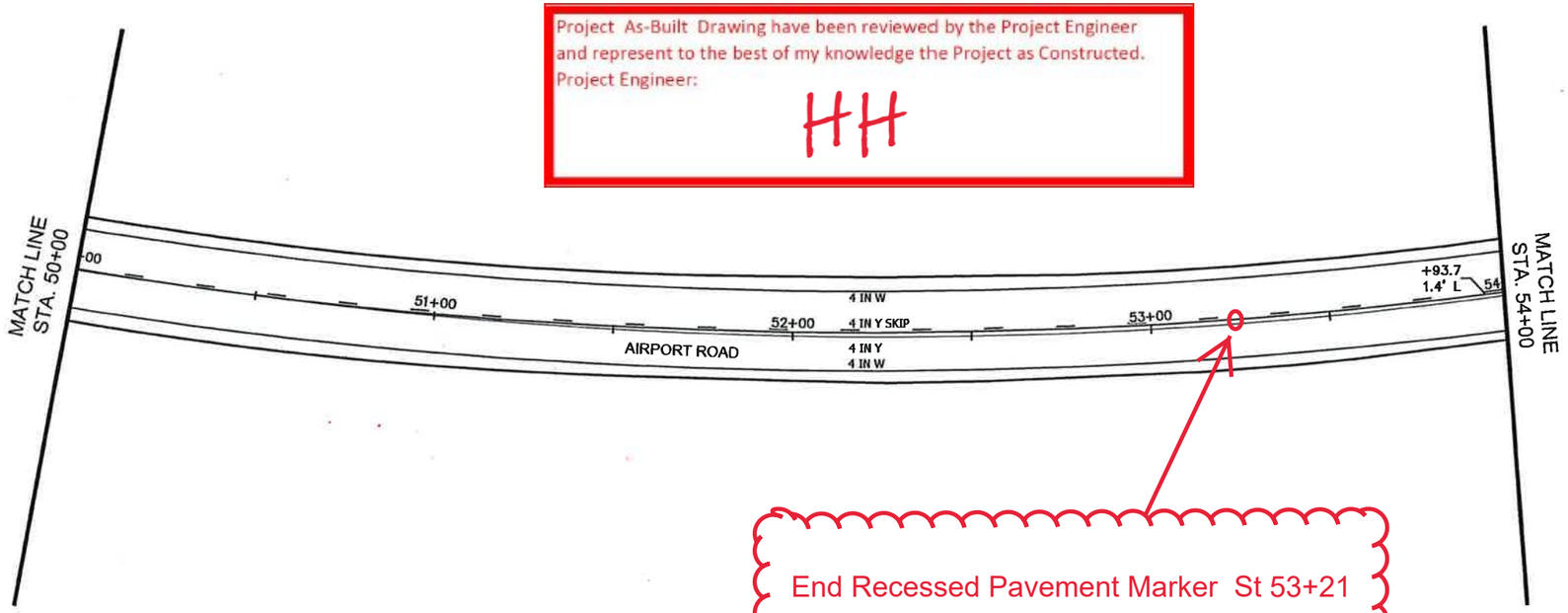
STATE OF ALASKA
49TH
ERIC N. MORRISEES
CR 12961
REGISTERED PROFESSIONAL ENGINEER
8/9/2018

FIRM	DOWL
FILE	C:\Civil 3D Projects\2016\24\62367-01\Civil\SC-GT-SG-62367.dwg
ADDRESS	5368 COMMERCIAL BLVD, JUNEAU, AK 99801
DATE	8/9/2018 9:54
PHONE	(907) 780-3533
DESIGNED	LAYOUT
LOCKHART	H4
CHECKED	VARIOUS
DRAFTED	CJS/JMK
CERTIFICATE OF AUTH #:	AECL848

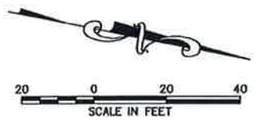
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	H5	69

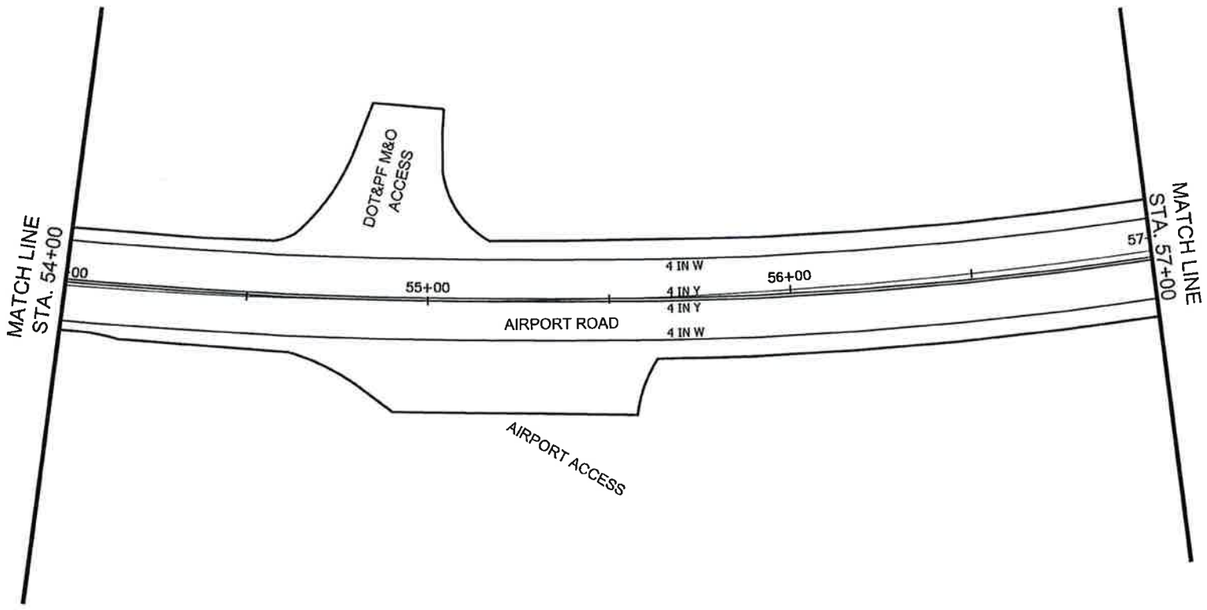
Project As-Built Drawing have been reviewed by the Project Engineer and represent to the best of my knowledge the Project as Constructed.
Project Engineer:

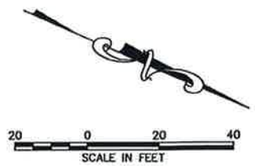
HH



End Recessed Pavement Marker St 53+21

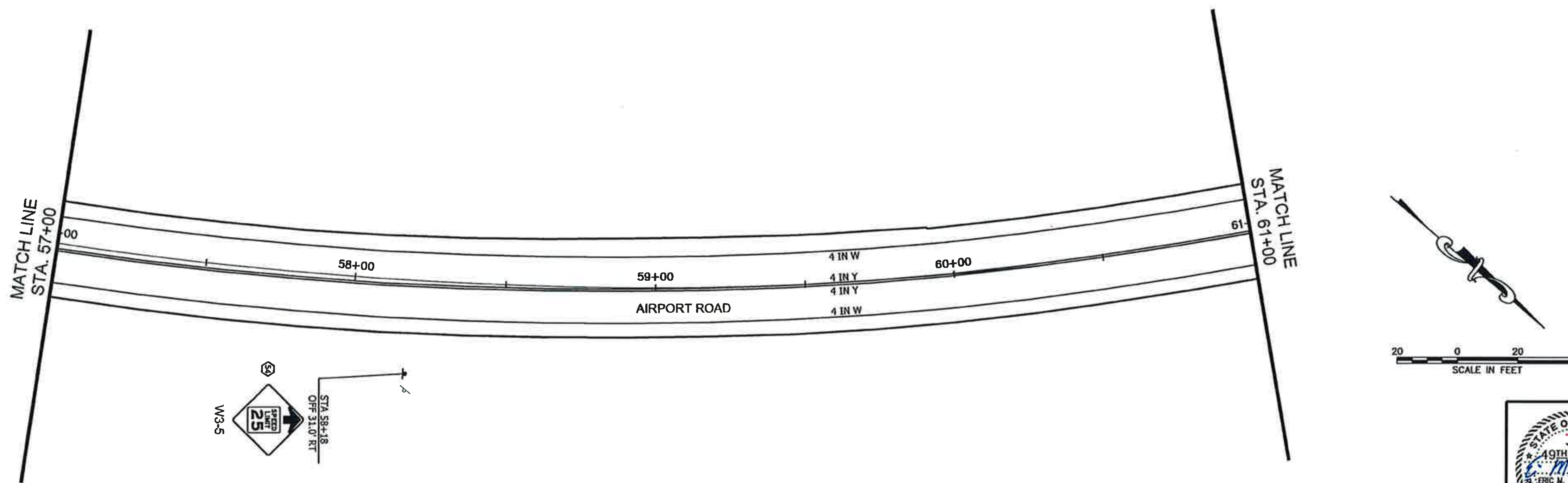


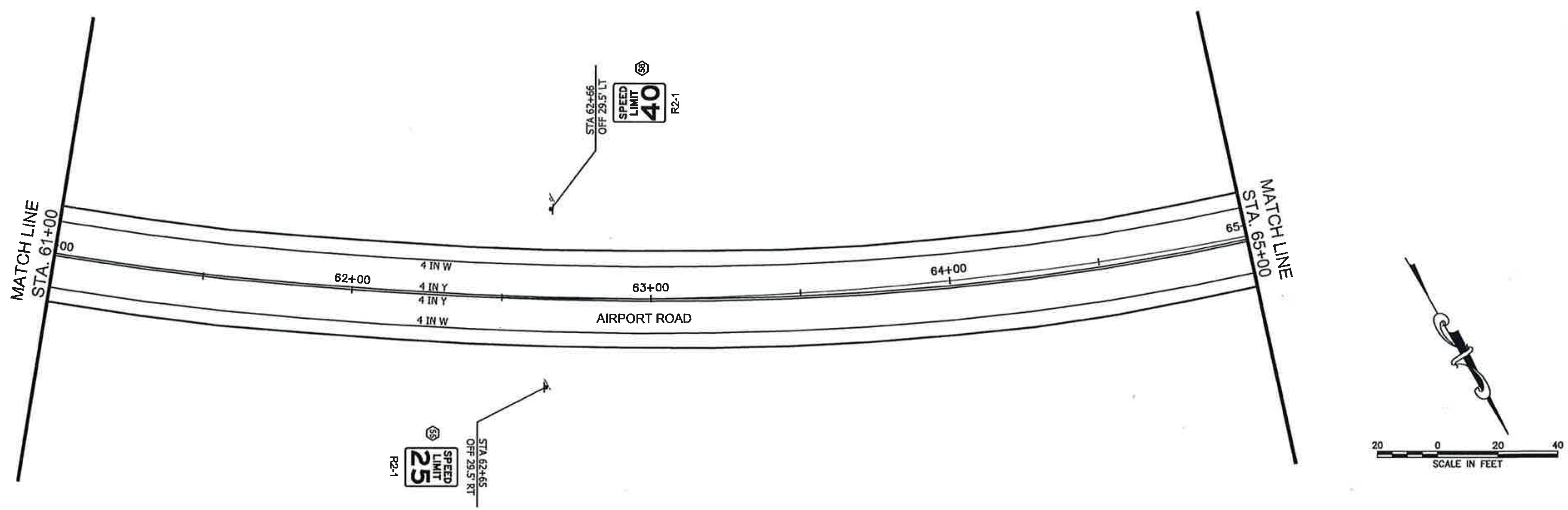




FIRM DOWL | ADDRESS 5368 COMMERCIAL BLVD, JUNEAU, AK 99801 | PHONE (907) 780-3533 | CERTIFICATE OF AUTH #: AECL848
FILE C:\Civil 3D Projects\2016\24\62367-01\Civil\SC-CT-SG-62367.dwg | DATE 8/9/2018 9:54 | LAYOUT H5 | DESIGNED LOCKHART | CHECKED VARIOUS | DRAFTED CJS/JMK

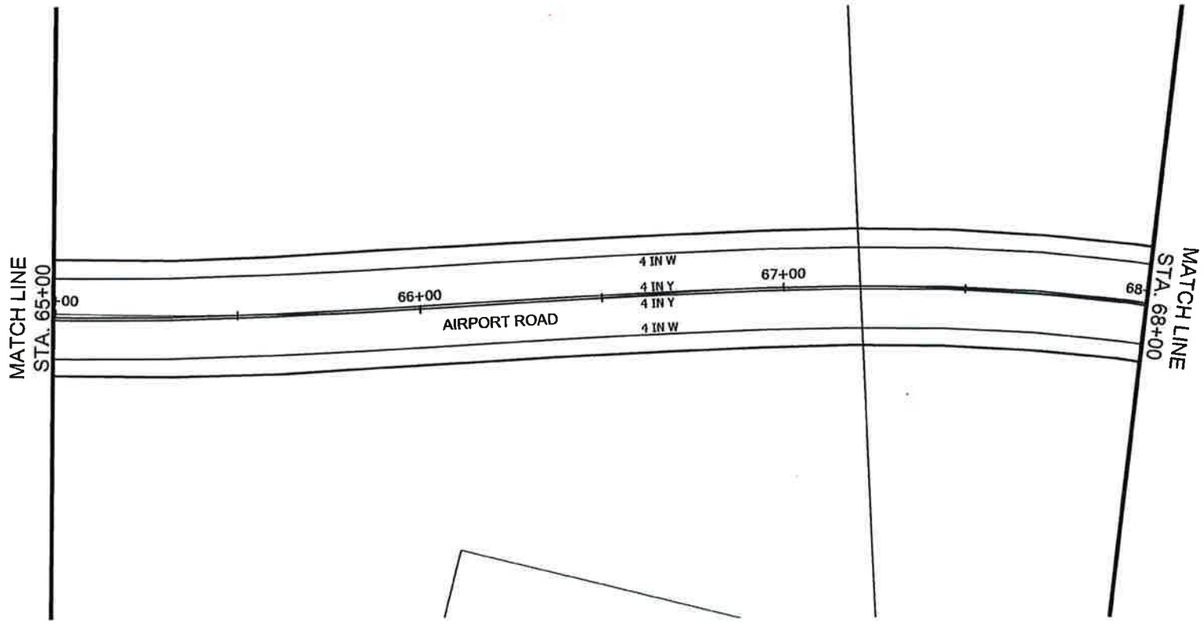
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	H6	69

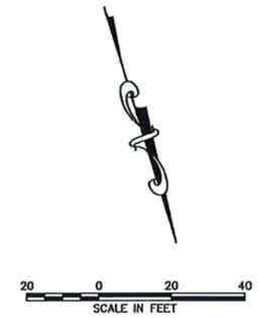


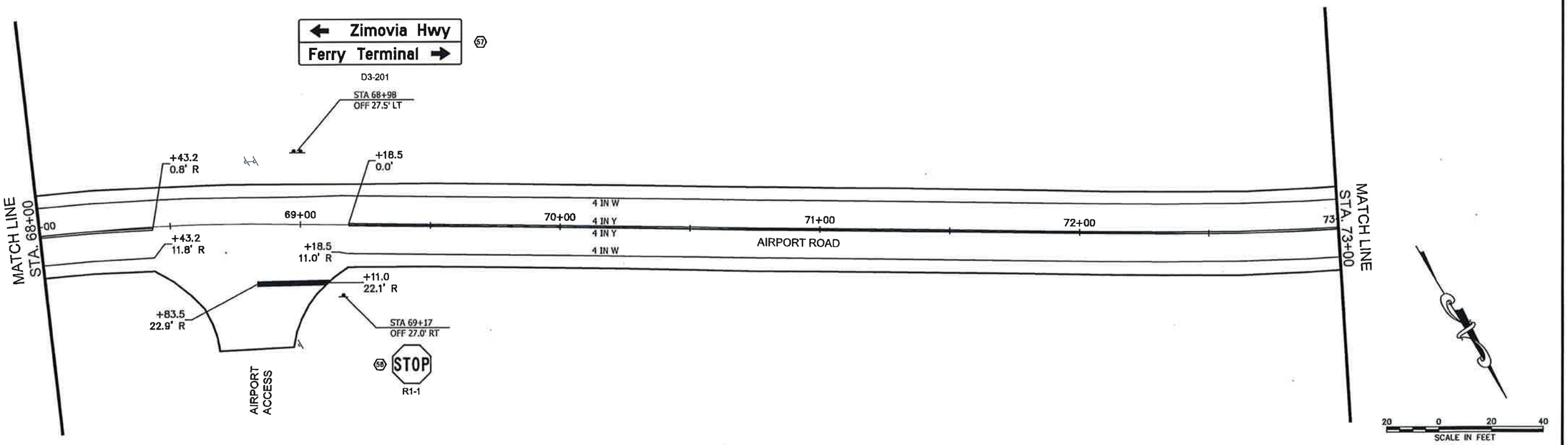


FIRM	DOWL	ADDRESS	5368 COMMERCIAL BLVD, JUNEAU, AK 99801	PHONE	(907) 780-3533	CERTIFICATE OF AUTH #:	AECL848
FILE	C:\Civil 3D Projects\2016\24\62367-01\Civil\SC-CT-SG-62367.dwg	DATE	8/9/2018 9:54	LAYOUT	H6	DESIGNED	LOCKHART
		CHECKED	VARIOUS	DRAFTED	CJS/JMK		

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	H7	69

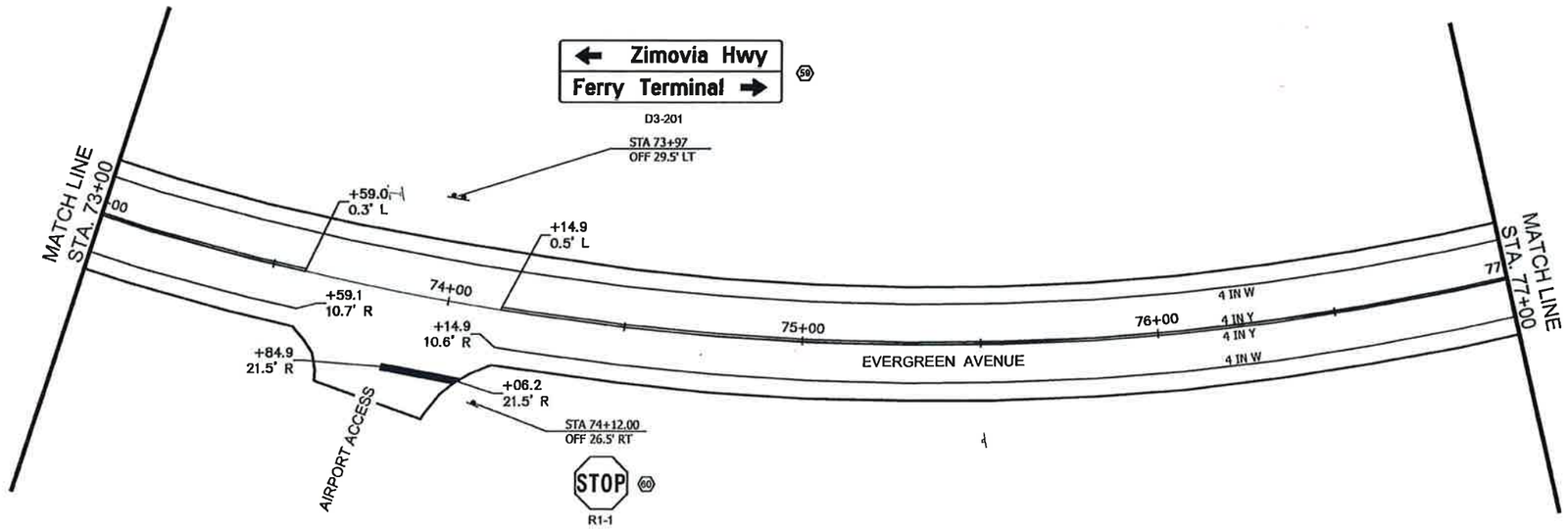


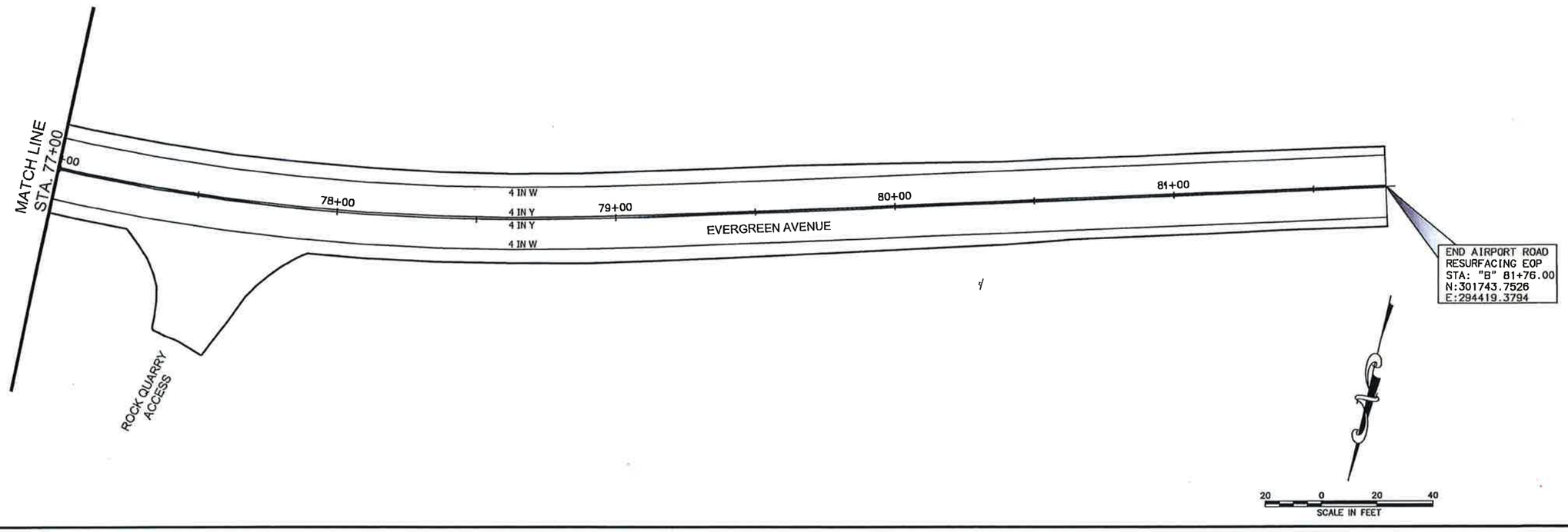




FIRM DOWL | ADDRESS 5368 COMMERCIAL BLVD, JUNEAU, AK 99801 | PHONE (907) 780-3533 | CERTIFICATE OF AUTH #: AECL848
FILE C:\Civil 3D Projects\2016\24\62367-01\Civil\SC-CT-SG-62367.dwg | DATE 8/9/2018 9:54 | LAYOUT H7 | DESIGNED LOCKHART | CHECKED VARIOUS | DRAFTED CJS/JMK

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	H8	69





FIRM DOWL | ADDRESS 5368 COMMERCIAL BLVD, JUNEAU, AK 99801 | PHONE (907) 780-3533 | CERTIFICATE OF AUTH #: AECL848
FILE C:\Civil 3D Projects\2016\24\62367-01\Civil\SC-CT-SG-62367.dwg | DATE 8/9/2018 9:54 | LAYOUT H8 | DESIGNED LOCKHART | CHECKED VARIOUS | DRAFTED CJS/JMK

NO.	DATE	REVISION
4	12/3/18	UPDATE SIGN DIMENSIONS

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0943026/SFHWY00067	2018	H9	69

615 (1) STANDARD SIGN SUMMARY

SHEET	SIGN NO.	STATION	CL OFFSET (FT)	CL REF	TYPE	LEGEND	WIDTH (IN)	HEIGHT (IN)	AREA (SF)	SIGN FACES	POSTS (NO., SIZE, & TYPE)	FRAMED (Y/N)	REMARKS
H1	1	10+98	32.5	LT	R1-1	STOP	30	30	6.25	N	1-2.5"x2.5" PST	N	
H1	2				D3-1	ZIMOVIA HWY	42	8	2.33	N/S		Y	4" UC / 3" LC D-FONT; MOUNT ABOVE SIGN NO. 1; BI-DIRECTIONAL, SEE NOTE 8 ON SHEET H11
H1	3				D3-1	BENNETT ST	30	8	1.67	E/W		N	4" UC / 3" LC D-FONT; MOUNT ABOVE SIGN NO. 2; BI-DIRECTIONAL, SEE NOTE 8 ON SHEET H11
H1	4	11+14	37.5	RT	R1-1	STOP	30	30	6.25	E	1-2.5"x2.5" PST	N	
H1	5				D3-1	BENNETT ST	30	8	1.67	E/W		Y	4" UC / 3" LC D-FONT; MOUNT ABOVE SIGN NO. 4; BI-DIRECTIONAL, SEE NOTE 8 ON SHEET H11
H1	6				D3-1	WRANGELL AVE	42	8	2.33	N/S		N	4" UC / 3" LC D-FONT; MOUNT ABOVE SIGN NO. 5; BI-DIRECTIONAL, BI-DIRECTIONAL, SEE NOTE 8 ON SHEET H11
H1	7	12+58	25.0	RT	R2-1	SPEED LIMIT 25	30	36	7.50	S	1-2.5"x2.5" PST	N	
H1	8	14+38	25.0	RT	S1-1	SCHOOL SIGN (SYMBOL)	36	36	9.00	S	1-2.5"x2.5" T	Y	
H1	9				W16-9P	AHEAD (PLAQUE)	36	24	6.00	S		Y	MOUNT BELOW SIGN NO. 8
H1	10	14+63	36.5	LT	R1-1	STOP	30	30	6.25	W	1-2.5"x2.5" PST	N	
H1	11				D3-1	BENNETT ST	30	8	1.67	4 E/W		Y	4" UC / 3" LC D-FONT; MOUNT ABOVE SIGN NO. 10; BI-DIRECTIONAL, SEE NOTE 8 ON SHEET H11
H1	12				D3-1	REID ST	24	8	1.33	N/S		N	4" UC / 3" LC D-FONT; MOUNT ABOVE SIGN NO. 11; BI-DIRECTIONAL, SEE NOTE 8 ON SHEET H11
H1	13	14+95	36.5	RT	R1-1	STOP	30	30	6.25	E	1-2.5"x2.5" PST	N	
H1	14				D3-1	BENNETT ST	30	8	1.67	4 E/W		Y	4" UC / 3" LC D-FONT; MOUNT ABOVE SIGN NO. 13; BI-DIRECTIONAL, SEE NOTE 8 ON SHEET H11
H1	15				D3-1	REID ST	24	8	1.33	N/S		N	4" UC / 3" LC D-FONT; MOUNT ABOVE SIGN NO. 14; BI-DIRECTIONAL, SEE NOTE 8 ON SHEET H11
H1	16	15+91	31.7	RT	S5-1	SCHOOL SPEED LIMIT 20 WHEN FLASHING	24	48	8.00	S		Y	REPLACE SIGN IN EXISTING LOCATION, FLASHING BEACON SYSTEM TO REMAIN
H1	17	15+58	27.0	LT	R2-1	SPEED LIMIT 25	30	36	7.50	N	1-2.5"x2.5" T	N	
H1	18				S5-2	END SCHOOL ZONE	24	30	5.00	N		N	MOUNT BELOW SIGN NO. 17
H1	19	18+72	36.5	RT	R1-1	STOP	30	30	6.25	E	1-2.5"x2.5" PST	N	
H1	20				D3-1	BENNETT ST	30	8	1.67	E/W		Y	4" UC / 3" LC D-FONT; MOUNT ABOVE SIGN NO. 19; BI-DIRECTIONAL, SEE NOTE 8 ON SHEET H11
H1	21				D3-1	FIRST AVE	30	8	1.67	N/S		N	4" UC / 3" LC D-FONT; MOUNT ABOVE SIGN NO. 20; BI-DIRECTIONAL, SEE NOTE 8 ON SHEET H11
H1	22	18+79	27.0	LT	S1-1	SCHOOL SIGN (SYMBOL)	36	36	9.00	N	1-2.5"x2.5" T	Y	
H1	23				W16-7P L	LEFT DIAGONAL ARROW	24	12	2.00	4 N		N	MOUNT BELOW SIGN NO. 22
H1	24	18+83	25.0	RT	S1-1	SCHOOL SIGN (SYMBOL)	36	36	9.00	S	1-2.5"x2.5" T	Y	
H1	25				W16-7P L	LEFT DIAGONAL ARROW	24	12	2.00	4 S		N	MOUNT BELOW SIGN NO. 24
H1	26	18+98	25.0	RT	R7P-107	NO PARKING BUS STOP	12	18	1.50	S	1-2.5"x2.5" PST	N	
H2	27	22+05	25.0	RT	S1-1	SCHOOL SIGN (SYMBOL)	36	36	9.00	S	1-2.5"x2.5" T	Y	
H2	28				W16-7P L	LEFT DIAGONAL ARROW	24	12	2.00	4 S		N	MOUNT BELOW SIGN NO. 27
H2	29	22+15	32.0	LT	S1-1	SCHOOL SIGN (SYMBOL)	36	36	9.00	N	1-2.5"x2.5" T	Y	
H2	30				W16-7P L	LEFT DIAGONAL ARROW	24	12	2.00	4 N		N	MOUNT BELOW SIGN NO. 29
H2	31	22+23	36.0	LT	R1-1	STOP	30	30	6.25	W	1-2.5"x2.5" PST	N	
H2	32				D3-1	BENNETT ST	30	8	1.67	E/W		Y	4" UC / 3" LC D-FONT; MOUNT ABOVE SIGN NO. 31; BI-DIRECTIONAL, SEE NOTE 8 ON SHEET H11
H2	33				D3-1	SECOND AVE	36	8	2.00	N/S		Y	4" UC / 3" LC D-FONT; MOUNT ABOVE SIGN NO. 32; BI-DIRECTIONAL, SEE NOTE 8 ON SHEET H11
H2	34	22+64	28.5	RT	R1-1	STOP	30	30	6.25	W	1-2.5"x2.5" PST	N	
H2	35				D3-1	BENNETT ST	30	8	1.67	E/W		Y	4" UC / 3" LC D-FONT; MOUNT ABOVE SIGN NO. 34; BI-DIRECTIONAL, SEE NOTE 8 ON SHEET H11
H2	36				D3-1	SECOND AVE	36	8	2.00	N/S		Y	4" UC / 3" LC D-FONT; MOUNT ABOVE SIGN NO. 35; BI-DIRECTIONAL, SEE NOTE 8 ON SHEET H11
H2	37	23+97	27.5	LT	R1-1	STOP	30	30	6.25	N	1-2.5"x2.5" PST	N	
H2	38				D3-1	BENNETT ST	30	8	1.67	E/W		Y	4" UC / 3" LC D-FONT; MOUNT ABOVE SIGN NO. 37; BI-DIRECTIONAL, SEE NOTE 8 ON SHEET H11
H2	39				D3-1	HOWELL AVE	36	8	2.00	N/S		Y	4" UC / 3" LC D-FONT; MOUNT ABOVE SIGN NO. 38; BI-DIRECTIONAL, SEE NOTE 8 ON SHEET H11
H2	40	25+10	12.5	LT	S5-1	SCHOOL SPEED LIMIT 20 WHEN FLASHING	24	48	8.00	N	SEE DETAIL ON SHEET H12	Y	SEE DETAIL ON SHEET H12
									174.85	4			

Project As-Built Drawing have been reviewed by the Project Engineer and represent to the best of my knowledge the Project as Constructed.
Project Engineer: HH

PLANS DEVELOPED BY:
DOWL,LLC
5368 COMMERCIAL BLVD,
JUNEAU, AK 99801
(907) 780-3533
#AECL648

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

WRANGELL - BENNETT STREET
REHABILITATION AND
AIRPORT ROAD RESURFACING

FILE | C:\Civil 3D Projects\2016\24\62367-01\Civil\SC-CT-SG-62367.dwg | LAYOUT | H9 | DESIGNED | TAL | CHECKED | VARIOUS | DRAFTED | CJS/JMK | DATE | 12/3/2018 13:42

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	H10	69

615 (1) STANDARD SIGN SUMMARY

SHEET	SIGN NO.	STATION	CL OFFSET (FT)	CL REF	TYPE	LEGEND	WIDTH (IN)	HEIGHT (IN)	AREA (SF)	SIGN FACES	POSTS (NO., SIZE, & TYPE)	FRAMED (Y/N)	REMARKS
H2	41	25+10	26.0	RT	R2-1	SPEED LIMIT 25	30	36	7.50	S	1-2.5"x2.5" T	N	
H2	42				S5-2	END SCHOOL ZONE	24	30	5.00	S		N	MOUNT BELOW SIGN NO. 41
H2	43	25+84	26.5	LT	R1-1	STOP	30	30	6.25	W	1-2.5"x2.5" PST	N	
H2	44				D3-1	BENNETT ST	30	8	1.67	E/W		Y	4" UC / 3" LC D-FONT; MOUNT ABOVE SIGN NO. 43; BI-DIRECTIONAL, SEE NOTE 8 ON SHEET H11
H2	45				D3-1	THIRD AVE	30	8	1.67	N/S		N	4" UC / 3" LC D-FONT; MOUNT ABOVE SIGN NO. 44; BI-DIRECTIONAL, SEE NOTE 8 ON SHEET H11
H2	46	26+38	26.5	LT	S1-1	SCHOOL SIGN (SYMBOL)	36	36	9.00	N	1-2.5"x2.5" T	Y	
H2	47				W16-9P	AHEAD (PLAQUE)	36	24	6.00	N		Y	MOUNT BELOW SIGN NO. 46
H3	48	32+26	36.5	RT	R1-1	STOP	30	30	6.25	E	1-2.5"x2.5" PST	N	
H3	49				D3-1	AIRPORT RD	30	8	1.67	E/W		N	4" UC / 3" LC D-FONT; MOUNT ABOVE SIGN NO. 48; BI-DIRECTIONAL, SEE NOTE 8 ON SHEET H11
H3	50				D3-1	ISHIYAMA DR	48	8	2.67	N/S		Y	4" UC / 3" LC D-FONT; MOUNT ABOVE SIGN NO. 49; BI-DIRECTIONAL, SEE NOTE 8 ON SHEET H11
H3	51	35+58	27.5	RT	R2-1	SPEED LIMIT 40	30	36	7.50	S	1-2.5"x2.5" PST	N	
H3	52	35+58	27.5	LT	R2-1	SPEED LIMIT 25	30	36	7.50	N	1-2.5"x2.5" PST	N	
H4	53	40+58	27.5	LT	W3-5	SPEED LIMIT 25	36	36	9.00	N	1-2.5"x2.5" PST	N	
H6	54	58+18	31.0	RT	W3-5	SPEED LIMIT 25	36	36	9.00	S	1-2.5"x2.5" PST	N	
H6	55	62+65	29.5	RT	R2-1	SPEED LIMIT 25	30	36	7.50	E	1-2.5"x2.5" PST	N	
H6	56	62+66	29.5	LT	R2-1	SPEED LIMIT 40	30	36	7.50	W	1-2.5"x2.5" PST	N	
H7	57	68+98	27.5	LT	D3-201	<== ZIMOVIA HWY FERRY TERMINAL == >	84	24	14.00	N	2-4.0"x6.0" W	Y	6" YC,4.5" LC D.FONT
H7	58	69+17	27.0	RT	R1-1	STOP	30	30	6.25	N	1-2.5"x2.5" PST	N	
H8	59	73+97	29.5	LT	D3-201	<== ZIMOVIA HWY FERRY TERMINAL == >	84	24	14.00	N	2-4.0"x6.0" W	Y	6" YC,4.5" LC D.FONT
H8	60	74+12	26.5	RT	R1-1	STOP	30	30	6.25	N	1-2.5"x2.5" PST	N	
									136.17				

Project As-Built Drawing have been reviewed by the Project Engineer and represent to the best of my knowledge the Project as Constructed.
Project Engineer:

HH

PLANS DEVELOPED BY:
DOWL,LLC
5368 COMMERCIAL BLVD.
JUNEAU, AK 99801
(907) 780-3533
#AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

WRANGELL - BENNETT STREET
REHABILITATION AND
AIRPORT ROAD RESURFACING

FILE C:\Civil 3D Projects\2018\24\62367-01\Civil\SC-CT-SG-62367.dwg | DATE 8/9/2018 9:54 | LAYOUT H10 | DESIGNED TAL | CHECKED VARIOUS | DRAFTED CJS/JMK

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	H11	69

SALVAGE SIGN				
SHEET	STATION	OFFSET	QUANTITY (EA)	REMARKS
H1	10+73	62' RT	1	S1-1
H1	10+73	53' LT	1	S1-1
H1	10+99	33' LT	1	R1-1
H1	11+14	42' RT	1	R1-1
H1	12+58	38' RT	1	R2-1
H1	14+46	35' RT	1	S1-1
H1	14+58	32' LT	1	R1-1, D3-1
H1	14+94	40' RT	1	R1-1
H1	18+75	38' RT	1	R1-1
H1	18+81	27' RT	1	D1-1
H1	18+87	27' LT	1	S1-1
H1	18+93	29' RT	1	S1-1, R8-2
H2	22+22	38' LT	1	R1-1
H2	22+59	27' RT	1	R1-1
H2	23+55	23' LT	1	S1-1
H2	24+01	26' LT	1	R1-1, D3-1, D3-1
H2	25+77	26' LT	1	R2-1
H2	25+91	26' LT	1	R1-1, D3-1
H2	27+05	34' LT	1	R1-1
H2	28+11	31' LT	1	R1-1
H3	32+28	49' RT	1	R1-1, D3-1
H3	35+58	23' RT	1	R2-1
H6	58+18	37' RT	1	R2-5C
H6	62+65	29' RT	1	R2-1
H6	62+66	33' LT	1	R2-1
H7	68+81	24' LT	1	D3-1C
H7	69+00	46' RT	1	R1-1
H8	73+79	27' LT	1	D3-1C
H8	74+00	46' RT	1	R1-1
H8	75+50	27' RT	1	R2-1
H8	80+29	29' RT	1	R2-1
		TOTAL:	31	EA

NOTE: SALVAGE SIGN IS SUBSIDIARY TO PAY ITEM 615(1), STANDARD SIGN.

SIGNING & STRIPING NOTES:

1. FROM ISHIYAMA TO EOP, INSTALL RECESSED PAVEMENT MARKERS ALONG CENTERLINE STRIPING. RECESSED PAVEMENT MARKERS AND CENTERLINE STRIPING SHALL BE CONSTRUCTED PER STANDARD DRAWING T-06.00.
2. FROM BOP TO STA 22+85, STRIPING FOLLOW THE PROJECT ALIGNMENT. FROM STA 22+85 TO EOP, STRIPING SHALL BE BASED ON EXISTING ROADWAY CENTERLINE. FROM STA 22+85 TO 55+00, EXISTING CENTERLINE IS CALLED OUT EVERY 50' ON THE F SHEETS. FROM STA 55+00 TO EOP, CONTRACTOR TO REFERENCE EXISTING CENTERLINE STRIPING EVERY 50' PRIOR TO PAVEMENT PLANING.
3. ALL STATION LOCATIONS FOR SIGN INSTALLATION ARE APPROXIMATE. INSTALL SIGNS AT LOCATIONS AS DIRECTED BY THE ENGINEER.
4. USE THE FOLLOWING DEFINITIONS TO DECIPHER THE ABBREVIATED SIGN POST TYPES IN THE SIGN SUMMARY SHEETS.
   A. PST MEANS A PERFORATED STEEL TUBE.
   B. W MEANS TREATED WOOD.
   C. T MEANS A SQUARE STEEL TUBE
5. FABRICATE GUIDE SIGNS ACCORDING TO THE SHOP DRAWINGS INCLUDED IN THE APPENDIX OF THE SPECIAL PROVISIONS.
6. STATION/OFFSET FOR STRIPING IS CALLED OUT AT CENTER OF STRIPE WITH THE EXCEPTION OF THE LADDER CROSSWALKS. LADDER CROSSWALKS ARE CALLED OUT AT THE MIDPOINT OF THE OUTSIDE EDGE OF STRIPE.
7. IF THE NEW AND EXISTING PAVEMENT MARKINGS ARE NOT ALIGNED AT MATCH LINE, TRANSITION BETWEEN THE TWO USING A 55:1 TAPER ON THE NEW PAVEMENT.
8. SIGNS WITH BI-DIRECTIONAL "SIGN FACES" ENTRIES SHALL BE FABRICATED WITH LEGEND ON BOTH SIDES.
9. Install sign post bases per S-30.04. Constractor may employ soil embedment or concrete foundation.

Project As-Built Drawing have been reviewed by the Project Engineer and represent to the best of my knowledge the Project as Constructed.
Project Engineer:
HH

PLANS DEVELOPED BY:
DOWL, LLC
5368 COMMERCIAL BLVD,
JUNEAU, AK 99801
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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

WRANGELL - BENNETT STREET REHABILITATION AND AIRPORT ROAD RESURFACING

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NO.	DATE	REVISION
1	11/21/18	REMOVE WEATHERHEAD, ADD RMC, NOTES

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0943026/SFHWY00067	2018	H12	69

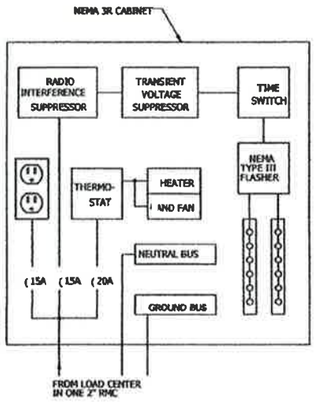
Project As-Built Drawing have been reviewed by the Project Engineer and represent to the best of my knowledge the Project as Constructed.
Project Engineer:

HH

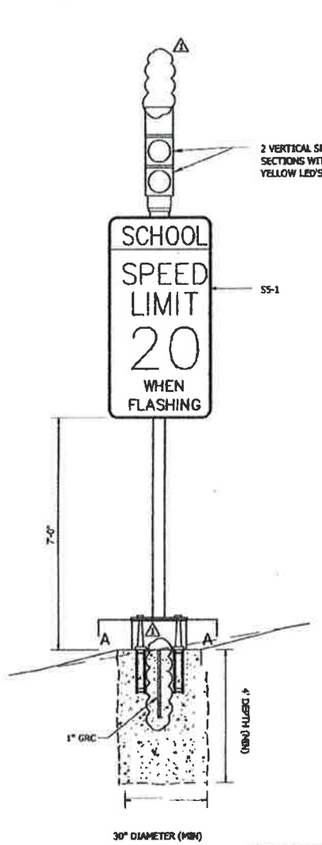
CO - #11, Attachment #2
Revised Plans Sheet H12.

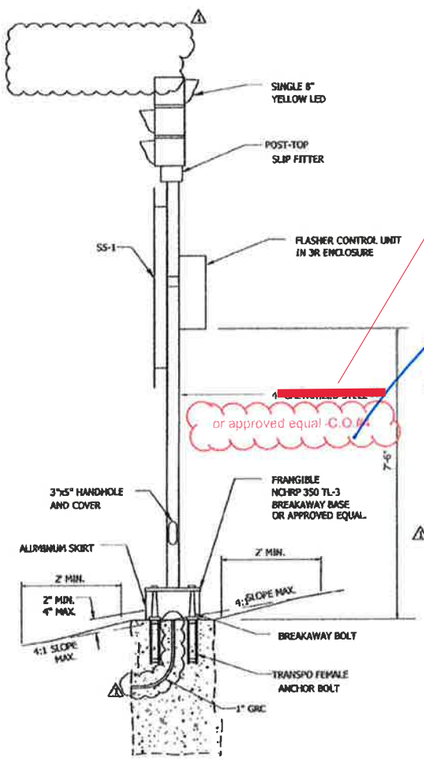
GENERAL NOTES:

1. THE NEMA 3R CABINET HOUSING THE SCHOOL FLASHER CONTROLS SHALL BE MOUNTED ON A 4" GALVANIZED STEEL POLE, AND BE LARGE ENOUGH TO ACCOMMODATE THE FOLLOWING EQUIPMENT AND THE WIRING THEREOF.
   - A. THREE 120 VOLT SINGLE POLE BREAKERS: TWO 15A AND ONE 20A.
   - B. ONE TRANSIENT VOLTAGE SUPPRESSOR.
   - C. ONE RADIO INTERFERENCE SUPPRESSOR.
   - D. ONE TIME SWITCH AS DESCRIBED IN GENERAL NOTE 2.
   - E. ONE NEMA TYPE 3 DUAL CIRCUIT FLASHER.
   - F. TWO 30A SIX CIRCUIT TERMINAL BLOCKS.
   - G. NEUTRAL AND GROUND BUSSES.
   - H. THERMOSTAT AND 150 WATT HEATER.
2. THE TIME SWITCH SHALL BE A MODEL AP41-L AS MANUFACTURED BY RTC MANUFACTURING, OR AN APPROVED EQUAL CONFORMING TO THE FOLLOWING SPECIFICATIONS. THE TIME SWITCH SHALL BE A COMPACT, SOLID STATE, PROGRAMMABLE DEVICE WITH A LIQUID CRYSTAL DISPLAY (LCD) AND KEYBOARD, AND SHALL CONFORM TO THE FOLLOWING MINIMUM REQUIREMENTS:
   - A. THE LCD SHALL PROVIDE 2 LINES OF ALPHA-NUMERIC LEGEND WITH 16 CHARACTERS PER LINE AND SHALL BE BACKLIT. THE DISPLAY SHALL AUTOMATICALLY PROMPT THE OPERATOR DURING THE PROGRAMMING PROCESS FOR EASE OF USE.
   - B. THE TIME SWITCH SHALL BE PROGRAMMABLE THROUGH THE KEYBOARD AND BY DOWN LOADING THROUGH AN INPUT PORT. THE KEYBOARD SHALL BE PUSH BUTTON TYPE.
   - C. THE TIME SWITCH SHALL BE POWERED BY A NOMINAL 120 VOLTS AC, 60 HZ SINGLE PHASE LINE VOLTAGE. THE TIME AND PROGRAM MEMORY SHALL BE RETAINED FOR AT LEAST 48 HOURS UPON REMOVAL FROM AC POWER.
   - D. THE TIME SWITCH SHALL PROVIDE FOUR SINGLE POLE DOUBLE THROW RELAY CONTROLLED OUTPUTS, WHICH ARE RATED AT 15 AMPERES EACH. ALL OF THE RELAYS SHALL BE MANUALLY OPERABLE THROUGH THE KEYBOARD.
   - E. THE TIME SWITCH SHALL AUTOMATICALLY COMPENSATE FOR DAYLIGHT SAVINGS TIME CHANGES AND LEAP YEARS.
   - F. THE TIME SWITCH SHALL PROVIDE TEN BASIC PLANS FOR DAILY AND/OR WEEKLY USE, AND 20 ANNUAL PLANS WHICH ACTIVATE THE BASIC PLANS. EACH BASIC PLAN SHALL PROVIDE UP TO 20 STEPS. EACH STEP SHALL BE ASSIGNABLE TO A SINGLE DAY, A WEEKEND, A WEEKDAY, OR EVERYDAY.



WIRING DIAGRAM FOR FLASHER CONTROL UNIT





(SCHOOL) FLASHER DETAIL

BACK VIEW

4" Aluminum Pole

#8 MH 7-30-20

SCHOOL FLASHER NOTES:

1. THE FLASHER SHALL CONSIST OF THREE 8" SIGNAL FACES WITH YELLOW LED'S AND VISORS.
2. THE CONTRACTOR SHALL WIRE SIGNAL FACES 1 AND 3 ON FLASHER CIRCUITS 1 AND 2, RESPECTIVELY. FACE 2 SHALL BE WIRED TO CIRCUIT 1 OR 2 AS REQUIRED TO BALANCE THE LOAD.
3. THE CONTRACTOR SHALL FURNISH A SINGLE PIECE POST THAT WILL YIELD THE 7' MOUNTING HEIGHT SHOWN.
4. THE SIGN POST AND BREAKAWAY BASE ASSEMBLY SHALL CONFORM TO SECTION 740-2.02 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
5. CONTRACTOR SHALL PROVIDE WRANGELL LIGHT AND POWER WITH AT LEAST 7 DAYS NOTICE FOR THE INSTALLATION OF THE ELECTRICAL SERVICE TO THE NEW LOAD CENTER. WITH THE EXCEPTION OF ALL UNDERGROUND WORK REQUIRED FOR THE INSTALLATION OF THE 2"RMC, THE COST OF THE SERVICE WILL BE PAID BY OTHERS.
6. THE LOAD CENTER METER SHALL FACE AWAY FROM ROAD.
7. THE FLASHER SHALL HAVE ITS OWN LOAD CENTER AND CONTROLLER, NO JUNCTION BOX IS REQUIRED.
8. INSTALL WEATHER CAP USING HEAD SERVICE DETAIL SHOWN IN STD DRAWING D-13.01.

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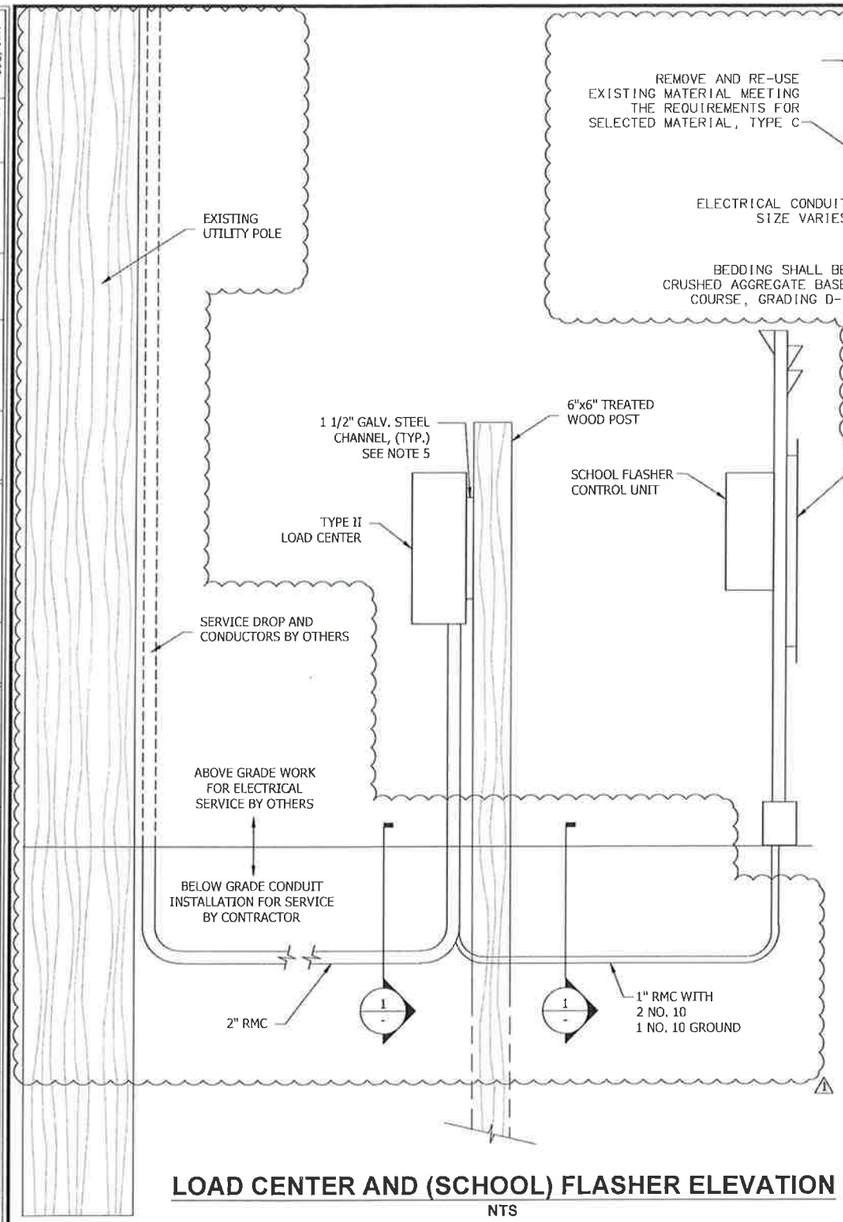
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

WRANGELL - BENNETT STREET REHABILITATION AND AIRPORT ROAD RESURFACING

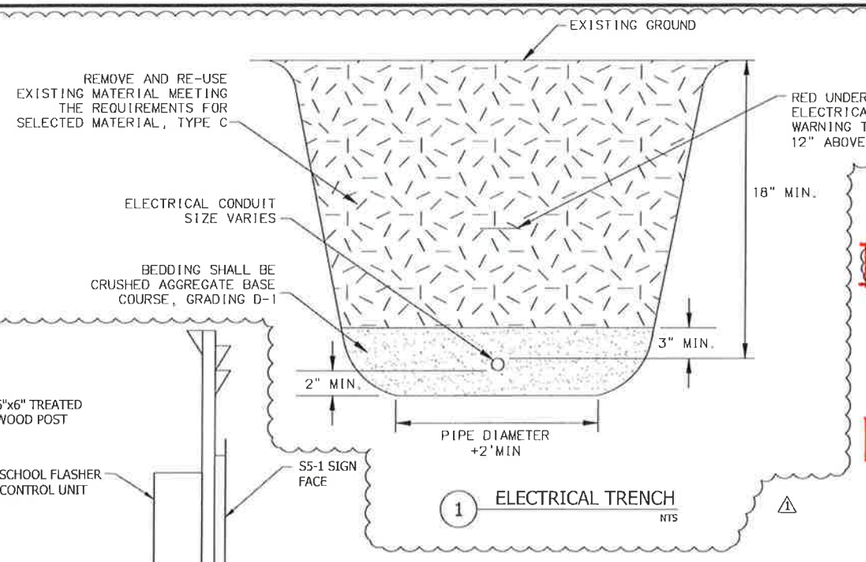
SCHOOL FLASHER DETAILS

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
1	11/21/18	SERVICE CLARIFICATION, TRENCH DETAIL	ALASKA	0943026/SFHWY00067	2018	H13	69
2	09/04/19	ADD 2ND FLASHER & LOAD CENTER					

CO - #11, Attachment #3.
Revised Plan Sheet H13



LOAD CENTER AND (SCHOOL) FLASHER ELEVATION
NTS



1 ELECTRICAL TRENCH
NTS

660(2) FLASHING BEACON SYSTEM COMPLETE AT EVERGREEN ELEMENTARY SCHOOL

SHEET	STATION	OFFSET	QUANTITY	REMARKS
H1	15+91	31.7' RT	1	⚠2
H2	25+10	12.5' LT	1	
		TOTAL:	2	LUMP SUM

661(3) LOAD CENTER, TYPE 2

SHEET	STATION	OFFSET	QUANTITY (EA)	REMARKS
H1	15+95	36.0'	1	FOR SCHOOL FLASHER
H2	25+84	43.4' LT	1	FOR SCHOOL FLASHER
		TOTAL:	2	EA

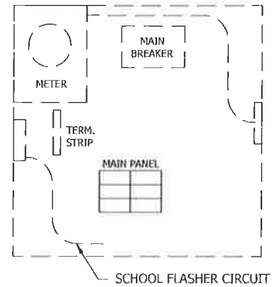
⚠2

SUMMARY OF LOAD CENTER

LOAD CENTER TYPE 2 ⚠2

LOCATION DATA: SEE H1 AND H2

LOAD CENTER:				
POWER SOURCE:	POWER POLE, SEE H2			
PHOTOELECTRIC CONTROL:	NO			
SERVICE VOLTAGE	1 PHASE,	3-WIRE	120/ 240 VOLTS	60 HZ
INTERRUPTING CAPACITY OF CIRCUIT BREAKERS-SERIES RATED			10,000 AIC	
PROVIDE METER SOCKET	YES		SERVICE AMPS	100
MAIN BREAKER A:	120/ 240 VOLT,	2 POLE,	40 AMPERES	



SIMPLIFIED TYPE 2 LOAD CENTER
NTS

LOAD CENTER NOTES:

1. THE CONTRACTOR SHALL INSTALL A NEW 120V, 30A CIRCUIT TO THE NEW SCHOOL FLASHER FROM THE LOAD CENTER.
2. ⚠ THE ELECTRICAL SERVICE TO THE LOAD CENTER WILL BE PROVIDED BY OTHERS, EXCEPT THAT ALL UNDERGROUND WORK REQUIRED FOR THE INSTALLATION OF THE 2"RMC SHALL BE PERFORMED BY THE CONTRACTOR.
3. THE CONTRACTOR SHALL PROVIDE A WEATHERPROOF LABEL FOR THE MAIN CIRCUIT PANEL.
4. UNLESS MODIFIED HEREIN INSTALL LOAD CENTER IN ACCORDANCE WITH STANDARD DRAWING L-26.00, TYPE II LOAD CENTER SINGLE POST STANDARD.
5. LOAD CENTER SHALL BE ATTACHED TO WOOD POST WITH 1 ½" GALVANIZED STEEL CHANNEL.

Project As-Built Drawing have been reviewed by the Project Engineer and represent to the best of my knowledge the Project as Constructed.
Project Engineer:
HH

PLANS DEVELOPED BY:
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STATE OF ALASKA
49TH
STEVEN K. NOBLE
12100
9/3/19
REGISTERED PROFESSIONAL ENGINEER

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

WRANGELL - BENNETT STREET REHABILITATION AND AIRPORT ROAD RESURFACING

LOAD CENTER DETAILS

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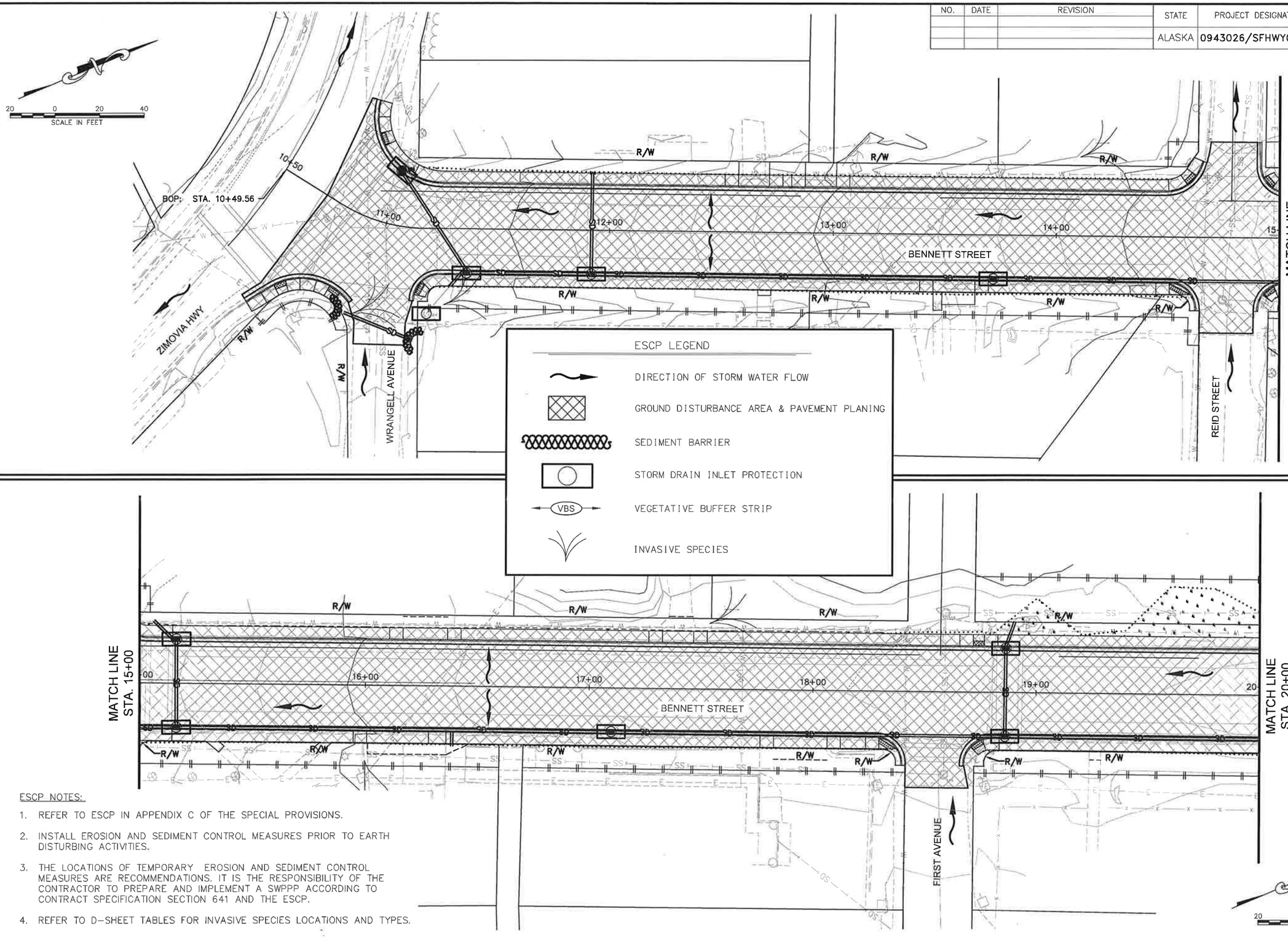

ESCP NOTES:

1. REFER TO ESCP IN APPENDIX C OF THE SPECIAL PROVISIONS.
2. INSTALL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO EARTH DISTURBING ACTIVITIES.
3. THE LOCATIONS OF TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES ARE RECOMMENDATIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PREPARE AND IMPLEMENT A SWPPP ACCORDING TO CONTRACT SPECIFICATION SECTION 641 AND THE ESCP.
4. REFER TO D-SHEET TABLES FOR INVASIVE SPECIES LOCATIONS AND TYPES.

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ALASKA	0943026/SFHWY00067	2018	P3	69

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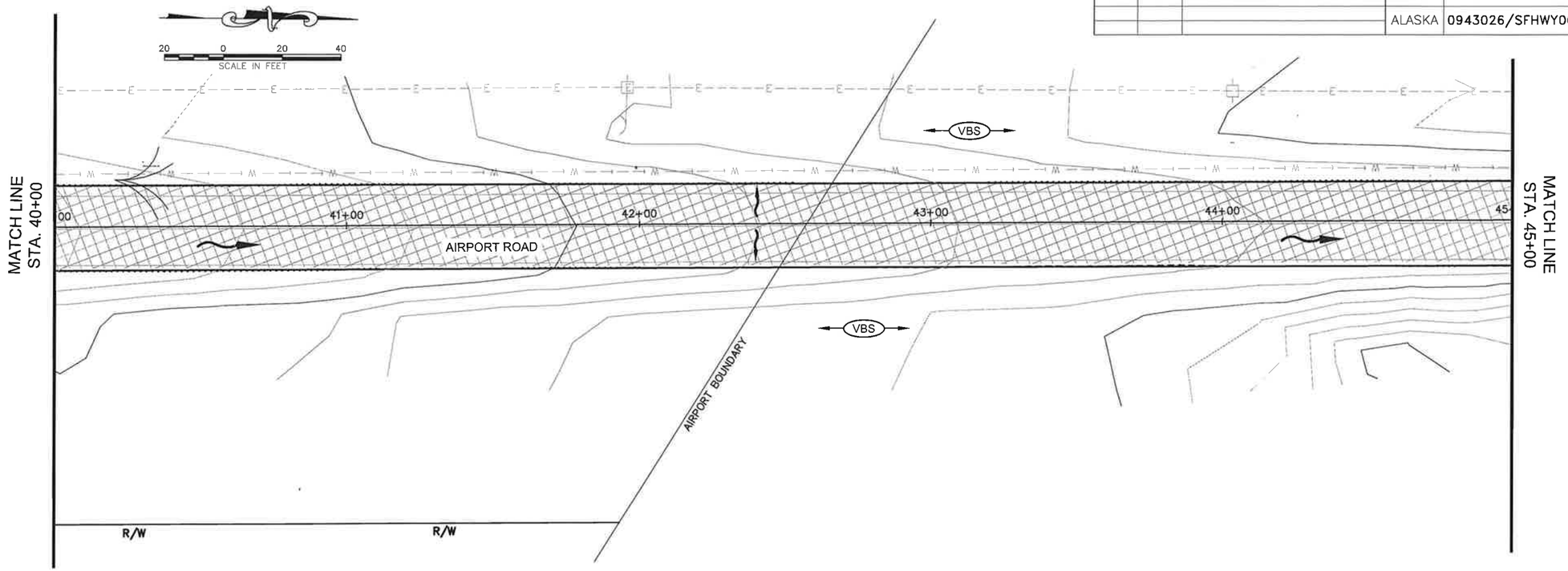

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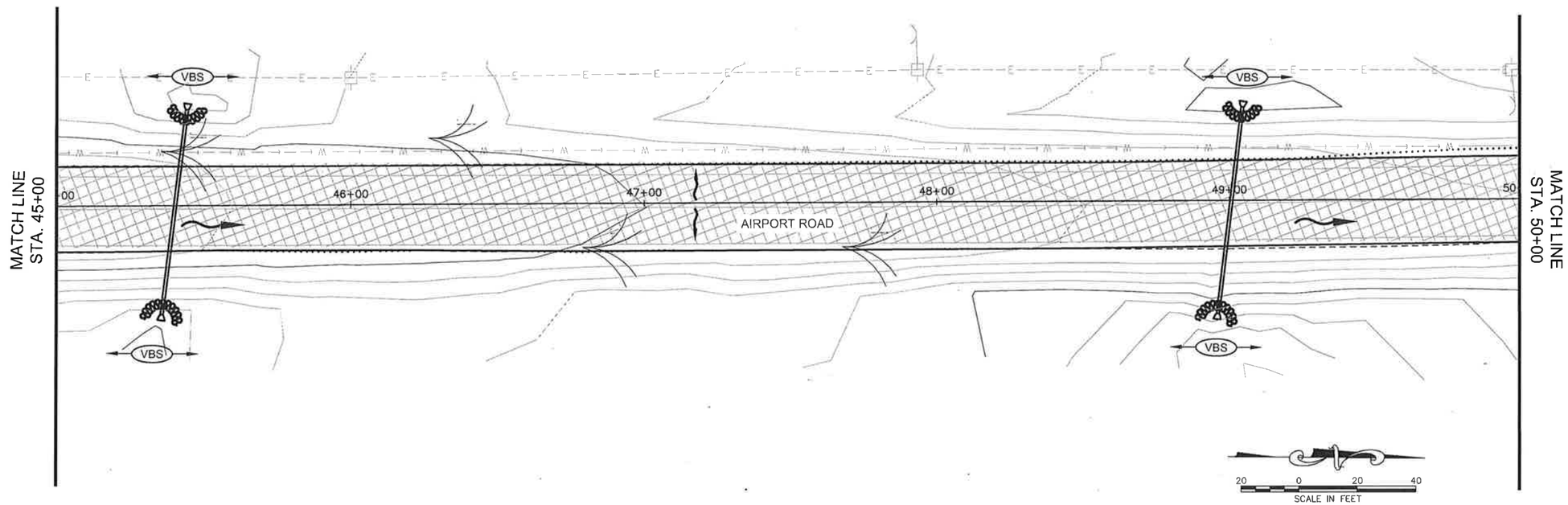

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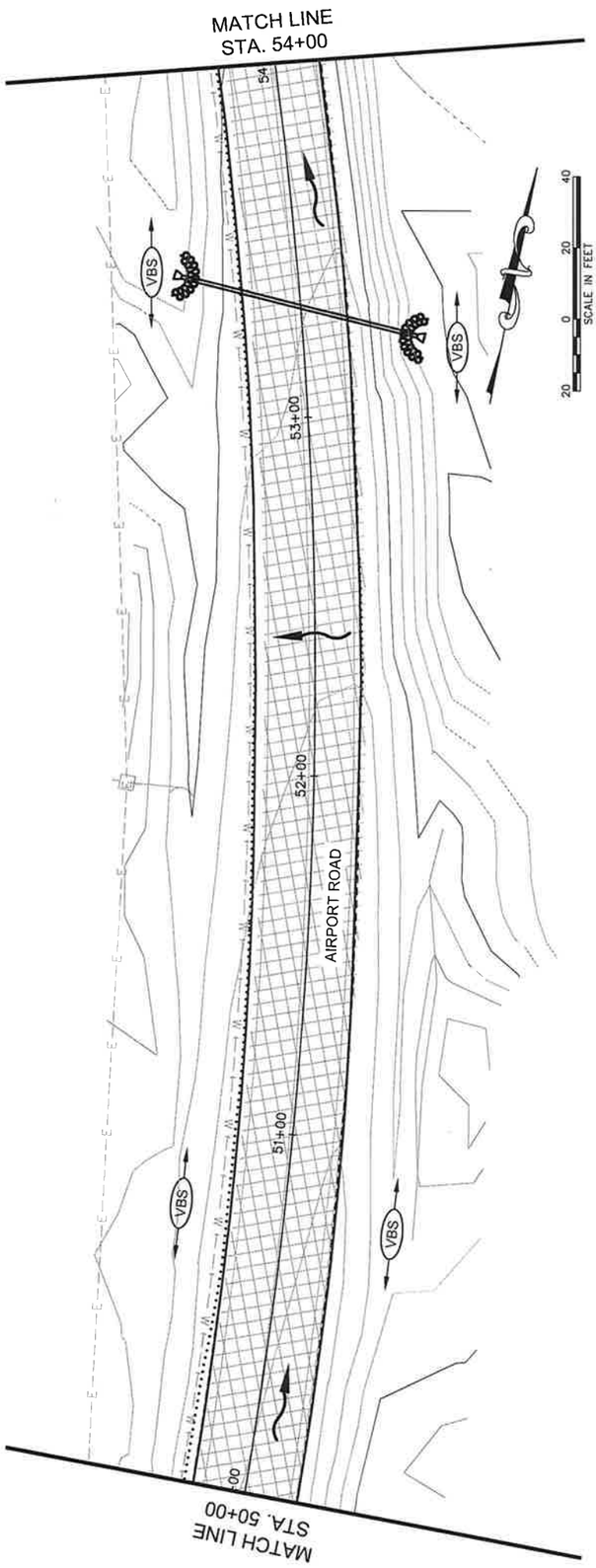

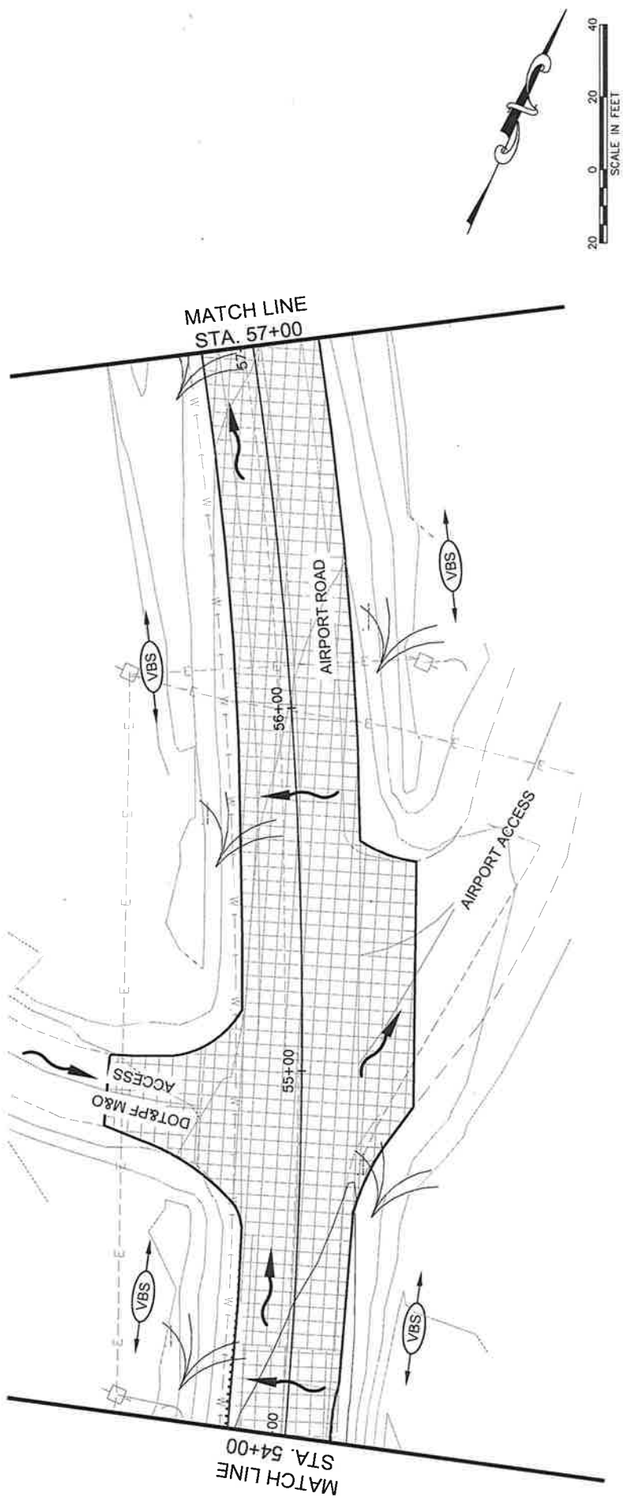

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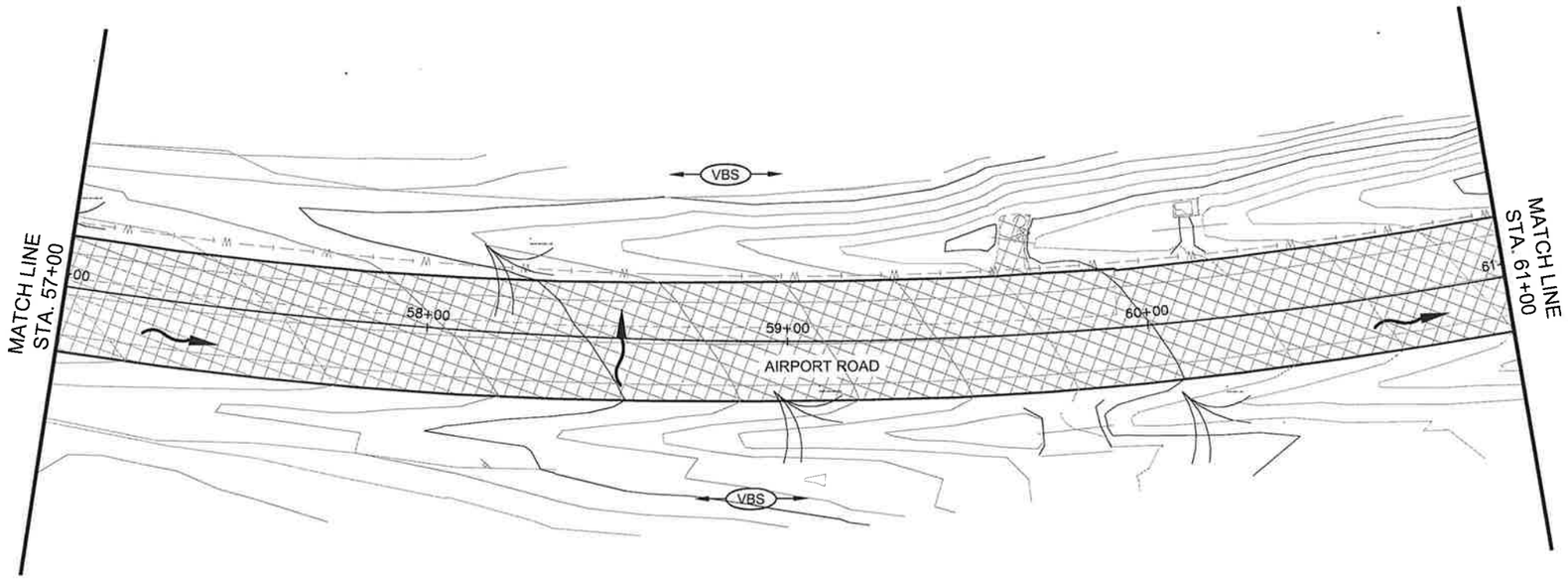

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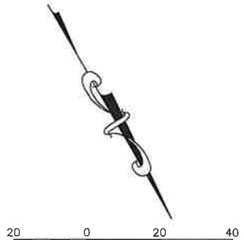

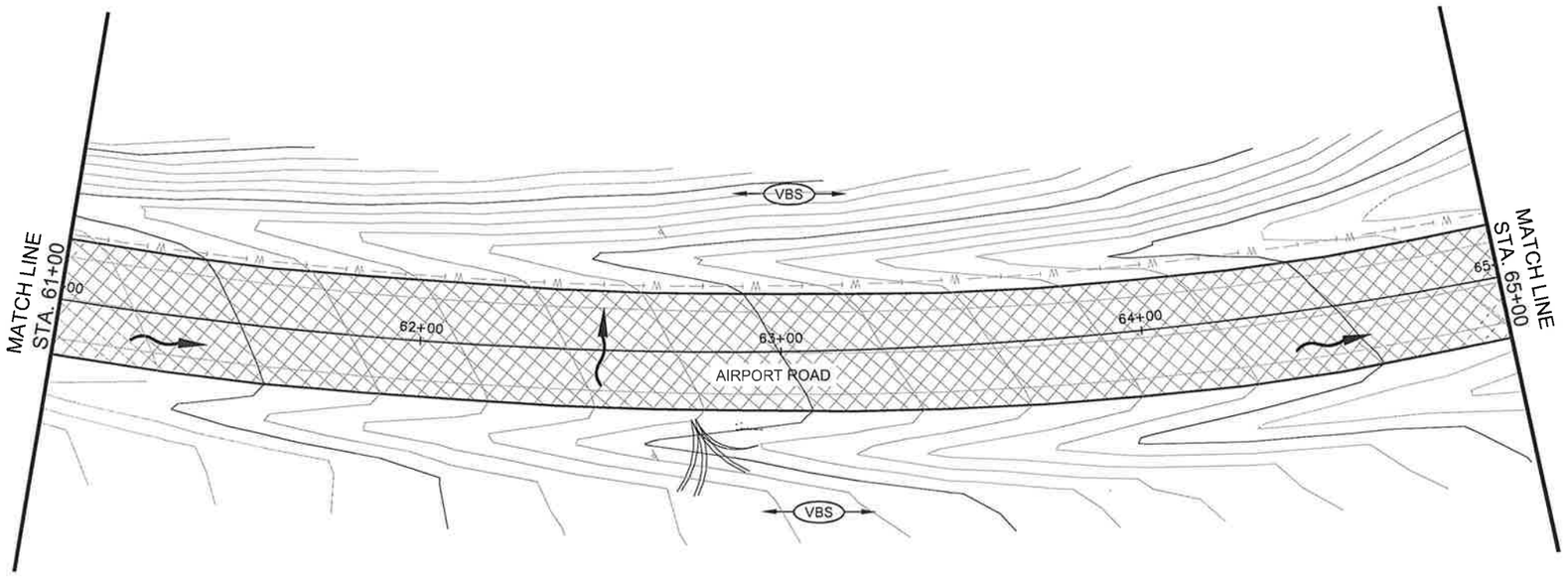

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			ALASKA	0943026/SFHWY00067	2018	P7	69

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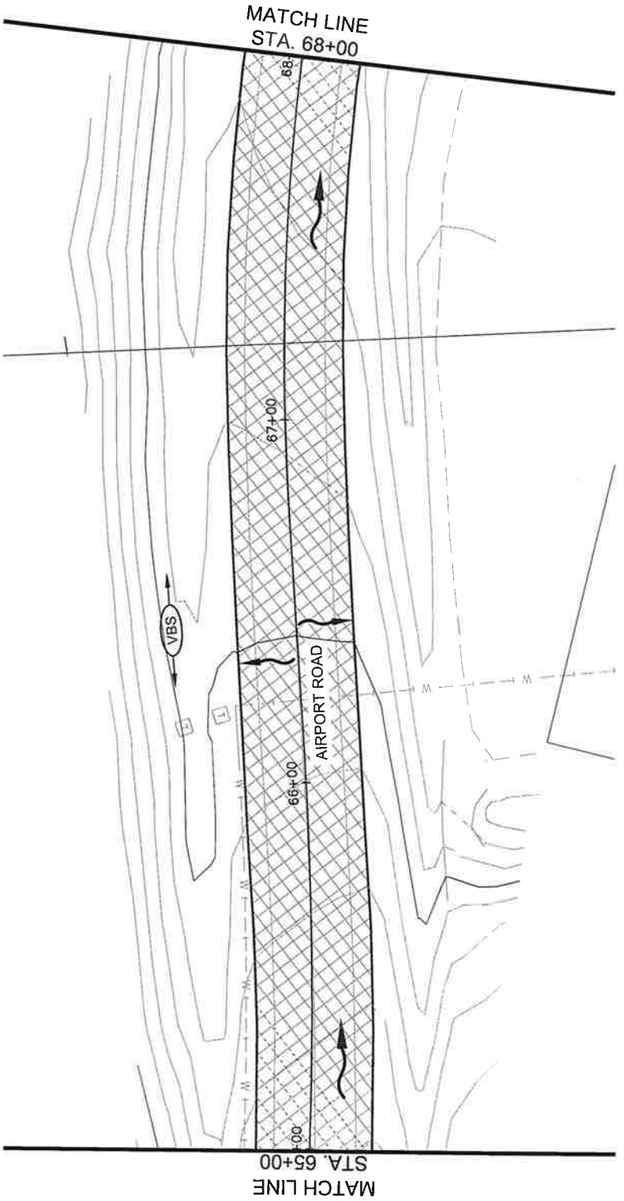

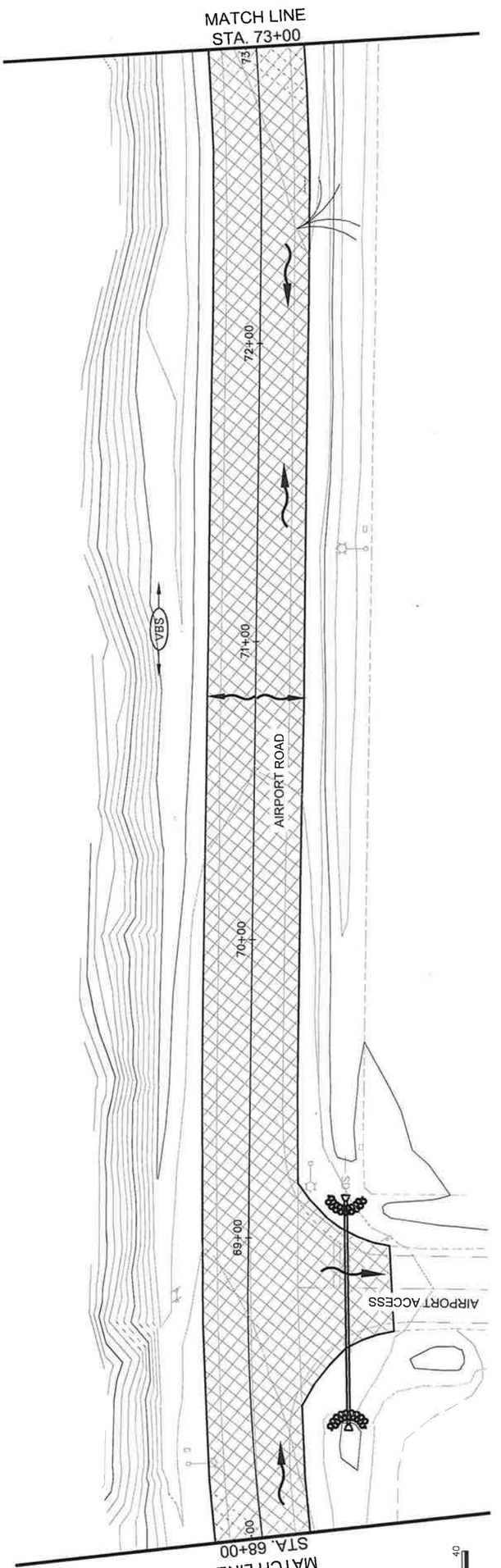

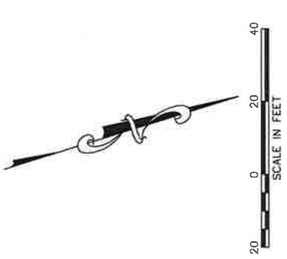

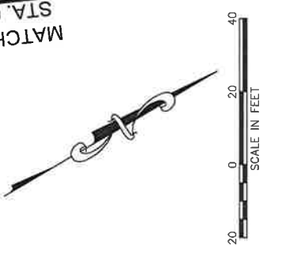

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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
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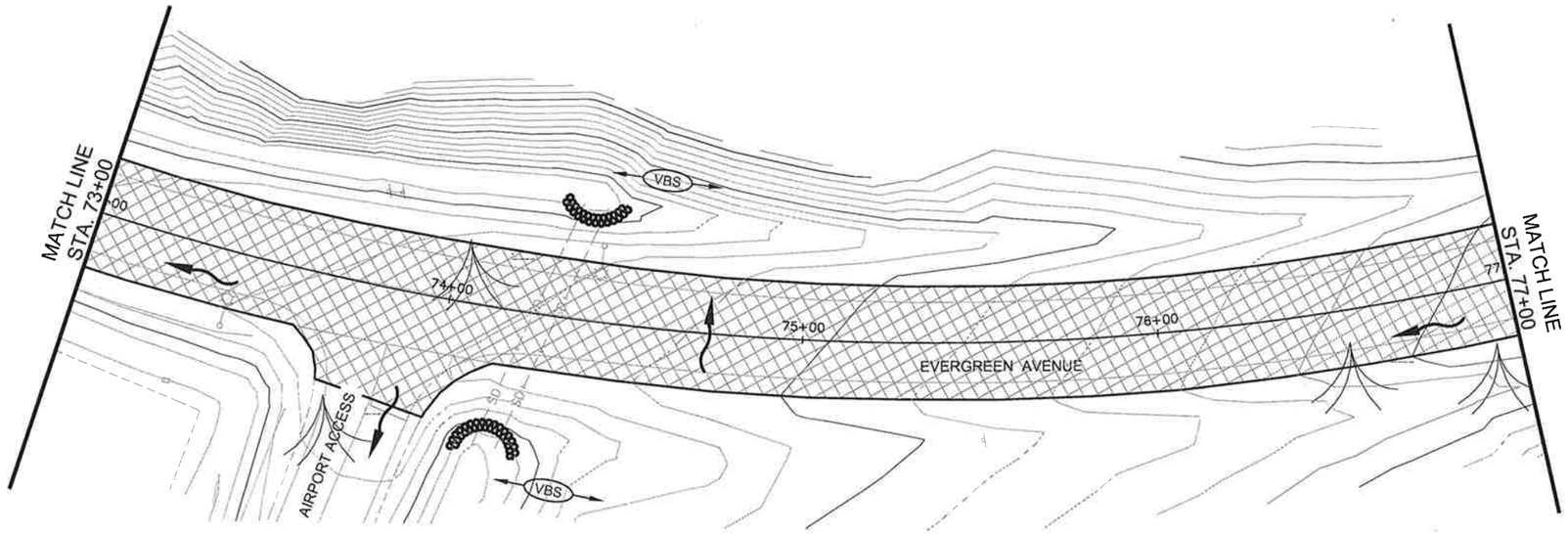

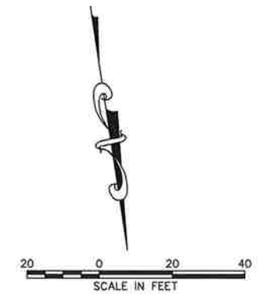

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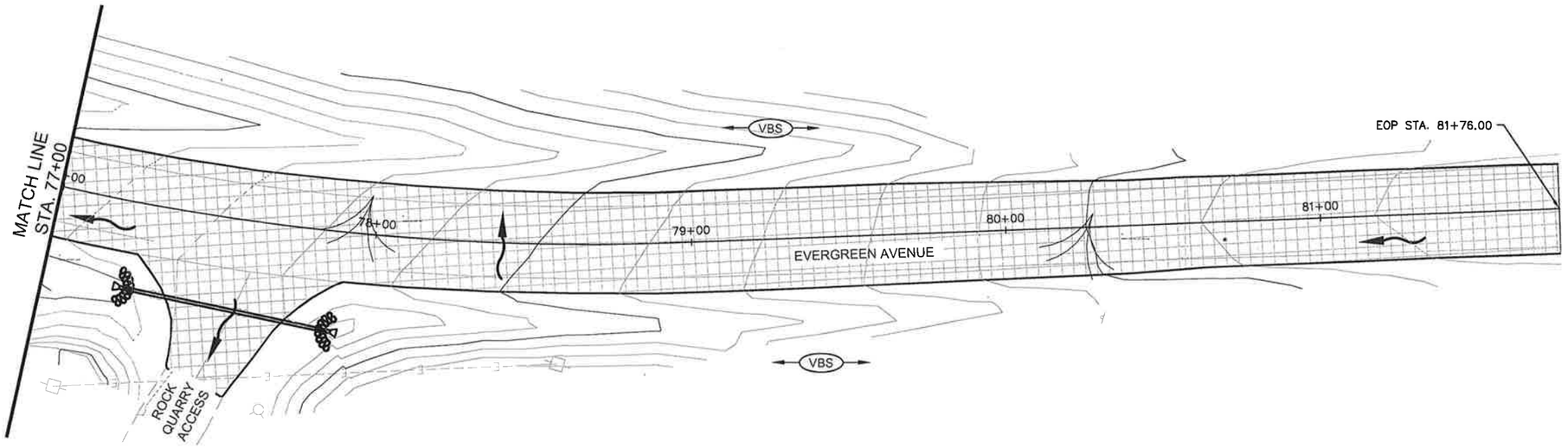

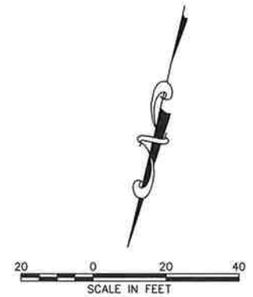

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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	T1	69

TRAFFIC CONTROL NOTES

1. IT IS THE INTENT OF THIS TRAFFIC CONTROL PLAN (TCP) TO ILLUSTRATE SOME BUT NOT ALL OF THE TRAFFIC CONTROL CONFIGURATIONS THAT WILL BE REQUIRED BY THIS PROJECT. TRAFFIC CONTROL PLANS FOR CONFIGURATIONS NOT COVERED BY THIS TCP SHALL BE DEVELOPED BY THE CONTRACTOR. ALL TCP'S MUST BE SUBMITTED FOR APPROVAL BY THE ENGINEER PRIOR TO USE.
2. TWO LANES SHALL BE MAINTAINED AT ALL TIMES IN NON-WORK AREAS AND DURING NON-WORKING HOURS. FLAGGERS MUST BE PRESENT FOR ANY LANE CLOSURES. FLAGGER STATIONS MUST BE ILLUMINATED AT NIGHT.
3. TEMPORARY DRIVING LANES SHALL BE A MINIMUM WIDTH OF 10'-0" WIDE.
4. THE UNEVEN LANES (CW8-11) SIGN SHOULD BE USED DURING OPERATIONS THAT CREATE A DIFFERENCE IN ELEVATION OF 2 INCHES OR GREATER BETWEEN ADJACENT LANES.
5. CHANNELIZATION DEVICES USED AT NIGHT SHALL BE LIT IN ACCORDANCE WITH THE ALASKA TRAFFIC MANUAL.
6. APPROACHES MAY BE CLOSED DURING ACTUAL WORK ON A GIVEN APPROACH, PROVIDED THAT THE CLOSURE DOES NOT EXCEED 4 HOURS AND THE AFFECTED RESIDENTS HAVE BEEN GIVEN 24 HOUR NOTICE OF THE CLOSURE.

TCP LEGEND

- SIGN
- CHANNELIZING DEVICE
- TYPE III BARRICADE
- FLAGGING STATION
- HI-LEVEL WARNING DEVICE
- ONE LANE TWO WAY TRAFFIC

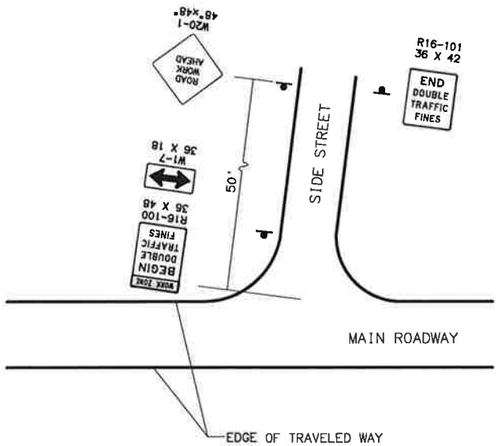
WARNING SIGN SPACING

ROADWAY TYPE	URBAN	RURAL
A	100	500
B	100	500
C	100	500

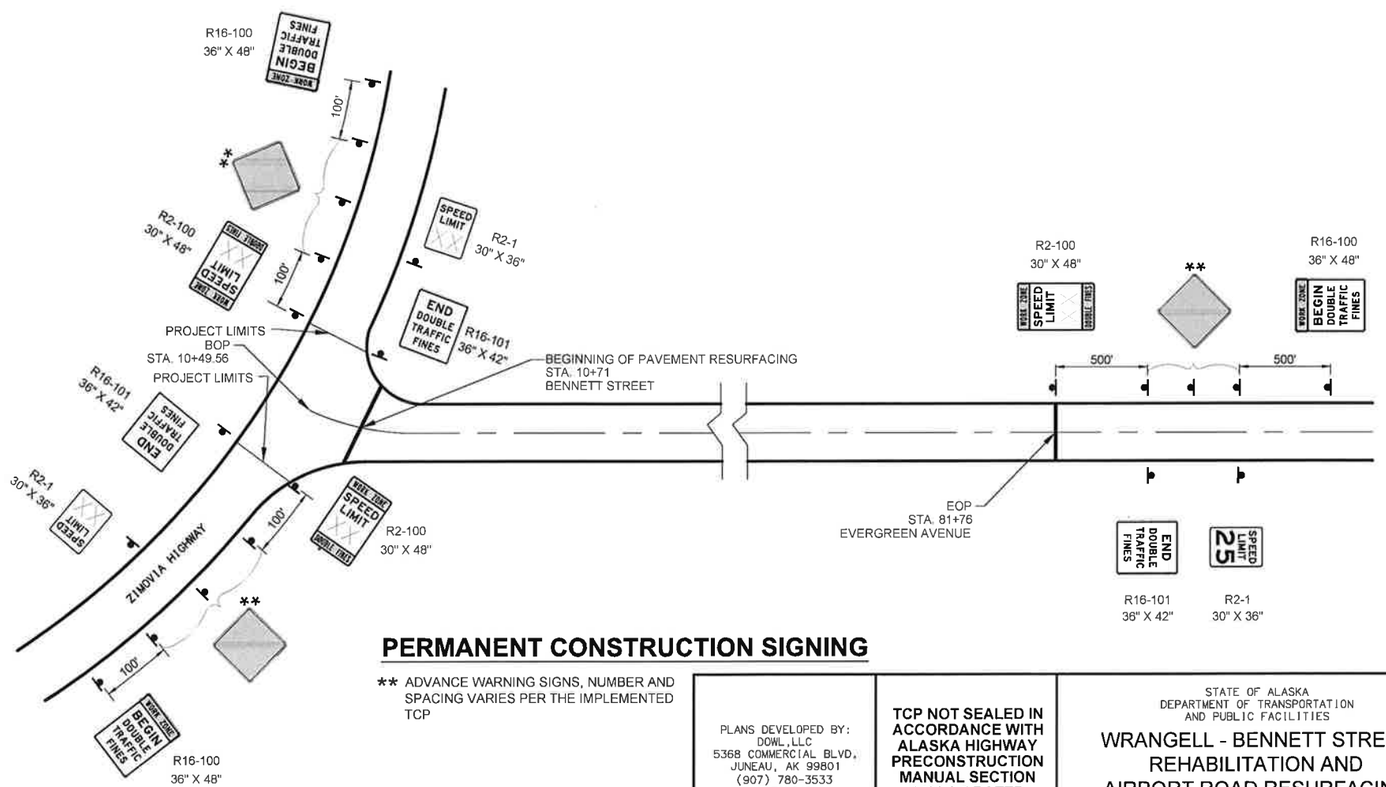
TCP SETUP TABLE

POSTED SPEED OR ANTICIPATED OPERATING SPEED (MPH)	MIN MERGING TAPER LENGTH (L) IN FEET FOR A GIVEN WIDTH OF OFFSET (W) IN FEET			MIN NUMBER OF DEVICES FOR A GIVEN WIDTH OF OFFSET (W) IN FEET			MAX DEVICE SPACING IN FEET		BUFFER SPACE
	10	11	12	10	11	12	ALONG TAPER	ALONG TANGENT	(FT)
20 OR BELOW	70	75	80	5	5	5	25	50	115
25	105	115	125	6	6	6	25	50	155
30	150	165	180	6	7	7	30	60	200
35	205	225	245	7	8	8	35	70	250
40	270	295	320	8	9	9	40	80	305
45	450	495	540	11	12	13	45	90	360
50	500	550	600	11	12	13	50	100	425

SIDE STREETS:
1. WRANGELL AVENUE
2. REID STREET
3. REID STREET
4. FIRST AVENUE
5. SECOND AVENUE
6. SECOND AVENUE
7. HOWELL AVENUE
8. THIRD AVENUE
9. ISHIYAMA DRIVE
10. AIRPORT ACCESS (STA 68+83)
11. AIRPORT ACCESS (STA 73+85)



PERMANENT CONSTRUCTION SIGNING
SIDE STREETS



PERMANENT CONSTRUCTION SIGNING

** ADVANCE WARNING SIGNS, NUMBER AND SPACING VARIES PER THE IMPLEMENTED TCP

PLANS DEVELOPED BY:
DOWL, LLC
5368 COMMERCIAL BLVD.
JUNEAU, AK 99801
(907) 780-3533
#AECL848

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

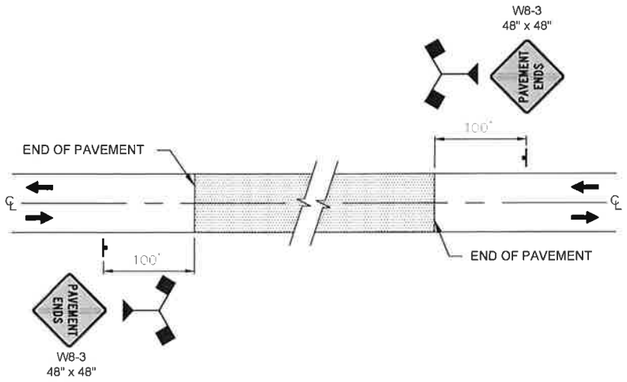
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

WRANGELL - BENNETT STREET
REHABILITATION AND
AIRPORT ROAD RESURFACING

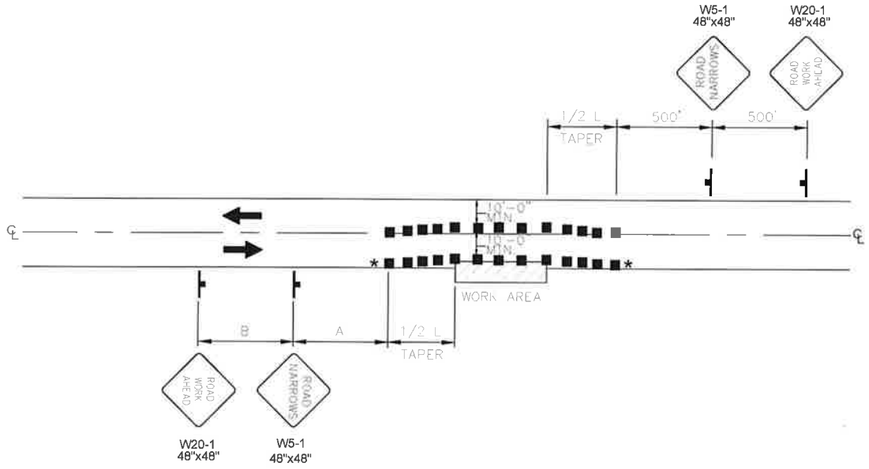
TRAFFIC CONTROL PLAN

FILE C:\Civil 3D Projects\2016\24\62367-01\Civil\SSC-C1-TC-62367.dwg
DATE 8/3/2018 14:45
LAYOUT T1
DESIGNED TAL
CHECKED VARIOUS
DRAFTED C.JS/JMK

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0943026/SFHWY00067	2018	T2	69



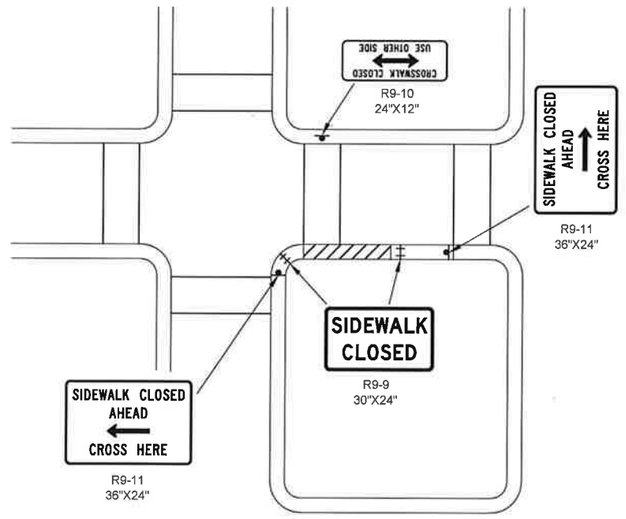
SIGNING FOR UNPAVED AREA



ROADWAY ENCROACHMENT

NOTE:
IF ONLY ONE LANE IS AFFECTED BY ROAD WORK (THAT IS, THE CONES ALONG THE WORK AREA ARE NO CLOSER THAN 10' TO CENTERLINE) THE CENTERLINE CONES FOR THE OPPOSING LANE SHALL BE DELETED.

* NO PARKING WITHIN 200' OF CHANNELING DEVICES.



INTERSECTION SIDEWALK CLOSURE

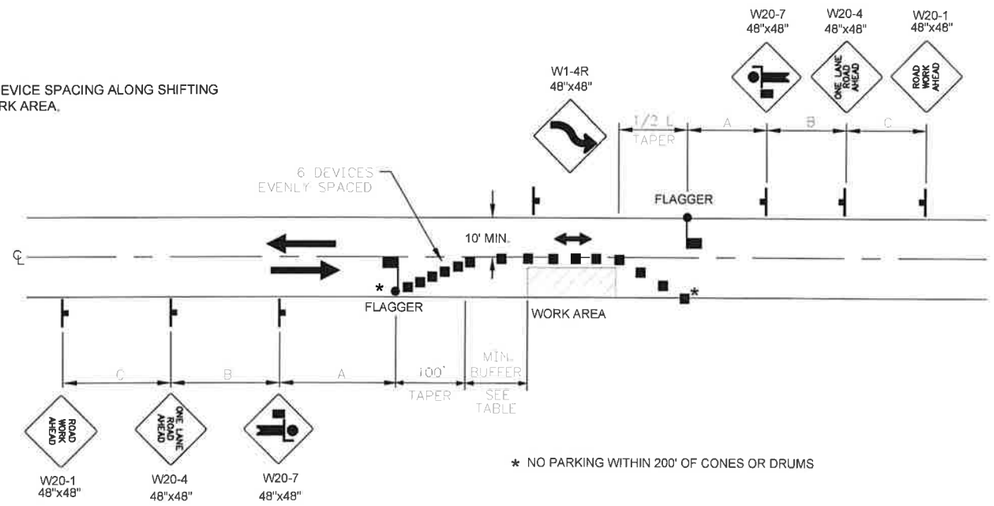
LEGEND

‡ TYPE II BARRICADE OR TUBULAR MARKER

SIGN

WORK AREA

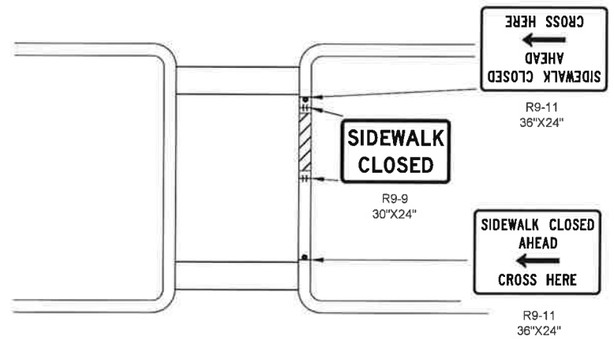
NOTE:
REFER TO TCP SETUP TABLE FOR DEVICE SPACING ALONG SHIFTING TAPERS, BUFFER SPACES, AND WORK AREA.



* NO PARKING WITHIN 200' OF CONES OR DRUMS

TWO LANE ROAD - SINGLE LANE CLOSURE

DOUBLE FLAGGER



MID-BLOCK SIDEWALK CLOSURE

PLANS DEVELOPED BY:
DOWL, LLC
5368 COMMERCIAL BLVD.
JUNEAU, AK 99801
(907) 780-3533
#AECL848

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

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

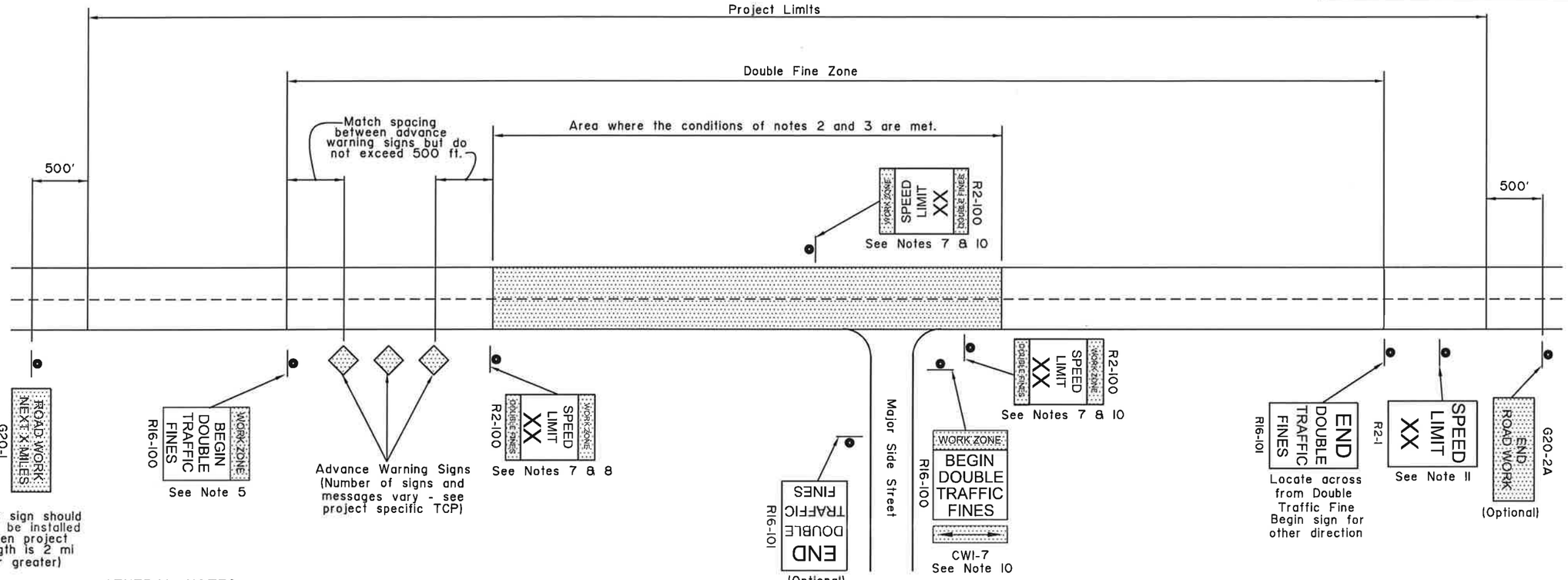
WRANGELL - BENNETT STREET
REHABILITATION AND
AIRPORT ROAD RESURFACING

TRAFFIC CONTROL PLAN

DATE | 6/3/2018 14:45 | LAYOUT | T2 | DESIGNED | TAL | CHECKED | VARIOUS | DRAFTED | CJS/JMK
FILE | C:\Civil 3D Projects\20 16\24\62357-01\Civil\SC-CT-TC-62357.dwg

C-04.12

SHEET 1 of 1



GENERAL NOTES

1. Signs are shown for one direction only (with one exception). Signs for the other direction mirror those shown.
2. Double fine signs shall be used only where one or more of the following conditions exist:
   a. Active work areas (where road workers and/or machines are presently working on or adjacent to a road)
   b. Detours on new temporary roads built for that purpose (this does not include detours on existing streets)
   c. Sections of paved roads where pavement has been removed.
   d. Roads being paved where unmatched asphalt lifts result in a vertical lip between lanes.
3. Double fine signs shall be confined to the areas where the above conditions exist, with the following exceptions:
   a. If the project is 2 miles or shorter in length, the entire project may be posted for double fines when the above conditions exist on any part of the project.
   b. When the above conditions exist at multiple locations separated by less than 2 miles, the locations and the intervening segments may be posted as a single double fine zone.
4. Double fine signs shall be removed or covered when work activity ceases for more than two days and conditions b, c, or d of note 2 are not met.
5. The R16-100 "BEGIN" sign may be used in place of the first advance warning sign. However, when this is done, the appropriate advance warning sign must be reinstalled when the double fine sign is taken down or covered.
6. When a double fine zone is longer than 2 miles, work zone speed limit signs shall be posted at spacings not greater than 2 miles within the double fine zone.
7. "Work zone speed limit signs", as used here, refer either to 1) R2-100 signs or 2) standard R2-1 regulatory speed limit signs with CW20-102 "DOUBLE FINES" plates mounted below.
8. The limit shown on work zone speed limit signs shall be either the existing limit before construction or, if a work zone speed limit order has been approved in accordance with ADOT&PF Procedure 05.05.020 PDR, a reduced limit.
9. All existing regulatory speed limit signs within double fine zones shall either be replaced with R2-100 signs or supplemented with CW20-102 plates.
10. Signs shall be installed at major intersections within the double fine zone to warn entering drivers of double fines. This may be done with a R16-100 sign with a CWI-7 arrow panel on the side street or with two work zone speed limit signs on the main street on either side of the intersection. Use of R16-100 signs on side streets eliminates the need for "Road Work Ahead" signs on those streets. If the speed limit has been reduced, the two work zone speed limit signs are mandatory.
11. At the end of each double fine zone, install an R2-1 sign showing the speed limit for the road beyond the double fine zone.

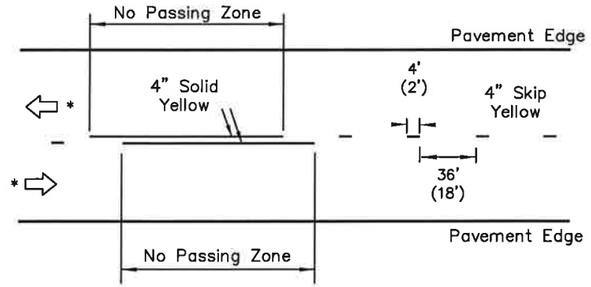
REVISIONS		
Date	Description	By
6/11/99	Revised Notes	KJS
2/28/03	Rev. Notes & Sign No's	KJS

State of Alaska
Department of Transportation
& Public Facilities

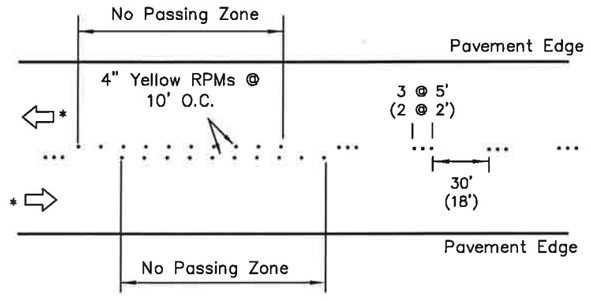
LOCATION OF DOUBLE TRAFFIC FINE SIGNS

APPROVED
Date 3/31/99

C-04.12



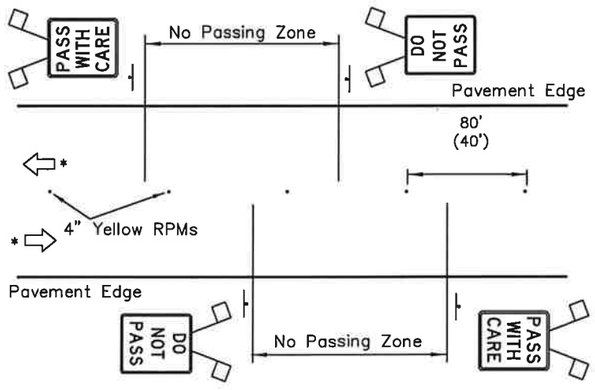
Striping



Temporary Raised Pavement Markers

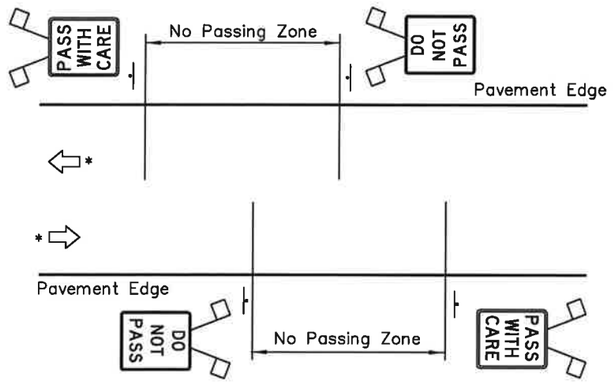
DETAIL A

Two–lane road: No Passing Zones indicated with pavement markings.



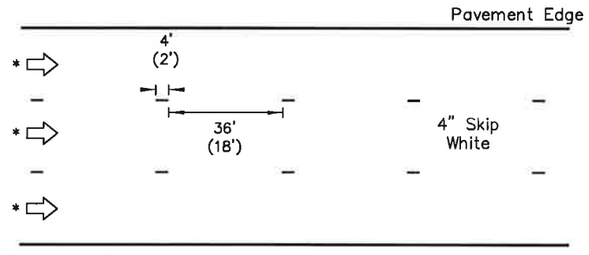
DETAIL B

Two–lane road: No Passing Zones indicated by signs only. Raised pavement markers for centerline delineation.

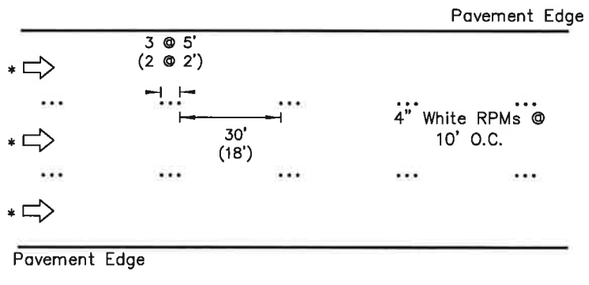


DETAIL C

Two–lane road: No Passing Zones indicated by signs only (see Note 2c). No centerline delineation.



Striping



Temporary Raised Pavement Markers

DETAIL D

Multilane one–way road: Lane dividing lines

* Direction of Travel

GENERAL NOTES:

1. Final pavement markings conforming to Part 3 of the Alaska Traffic Manual should be installed before paved roads are open to public travel. If that is not practical, install interim pavement markings as shown on this drawing. Maintain interim pavement markings until final pavement markings are installed.

2. No interim pavement markings are required:
   a. on projects that will not have permanent markings when finished.
   b. in work zones that are open to public travel for no more than one work shift during daytime or for no more than one hour at night.
   c. where DO NOT PASS and PASS WITH CARE signs are installed on two lane roads as shown in Detail C, no pavement markings are required:
      1) for 3 days if seasonal ADT is above 2000, or
      2) for 1 month if seasonal ADT is below 2000.

3. Interim pavement markings should not be in place longer than 14 calendar days before being replaced with permanent markings conforming to Part 3 of the Alaska Traffic Manual unless the Engineer provides written approval.

4. Where R4-1 DO NOT PASS signs are used, install at the beginning of no passing zones and at no more than 1500' spacings within no passing zones.

5. Install high level warning devices on all DO NOT PASS and PASS WITH CARE signs.

6. Offset temporary markings 8"-12" from the future location of permanent markings if applied on the same lift of pavement.

7. Dimensions in parenthesis apply to curves with a radius of 1000 feet or less or where posted speed limit is 30 mph or less.

REVISIONS		
Date	Description	By
4/28/10	RPM spacing, signs	KJS

Sheet 1 of 1

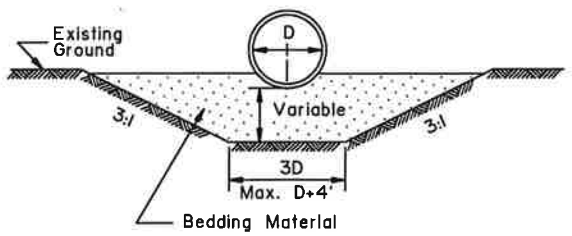
State of Alaska
Department of Transportation & Public Facilities

INTERIM PAVEMENT MARKINGS

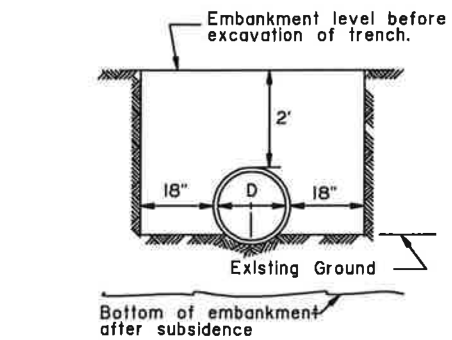
APPROVED
Kurtis J. Smith 4/28/10
Date 5/31/12

D-01.02

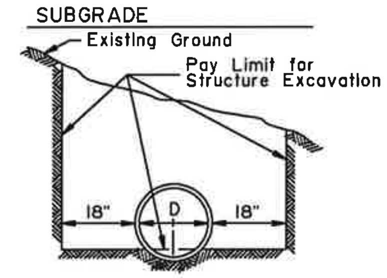
SHEET 1 of 1



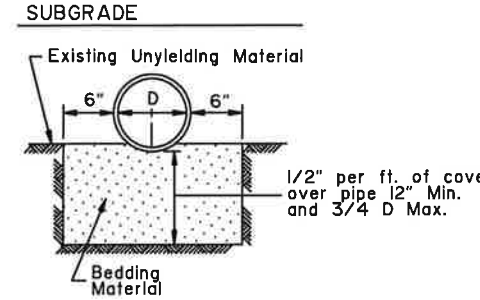
TYPE "A"
FOUNDATION STABILIZATION
To be used in unstable areas as directed by the Engineer.



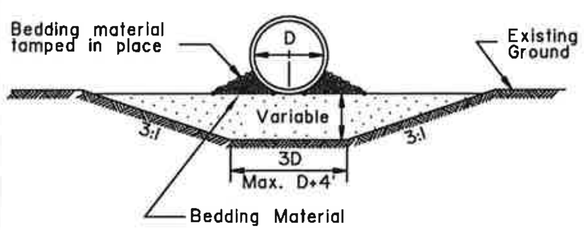
TYPE "B"



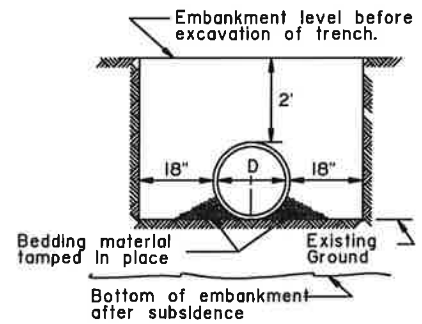
TYPE "C"



TYPE "D"
ROCK OR UNYIELDING MATERIAL



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



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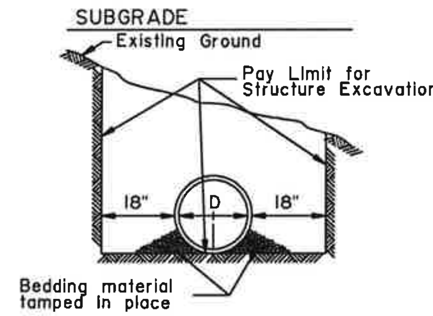
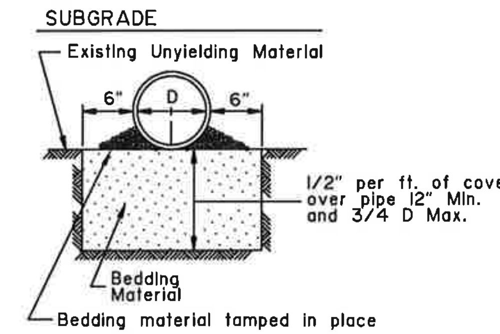
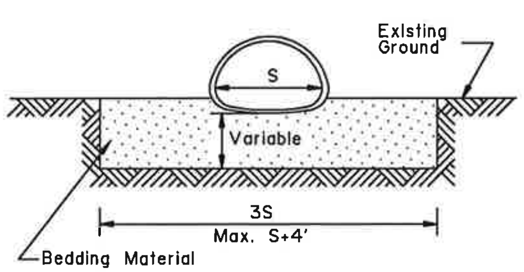


'ALTERNATE'
TYPE "C"

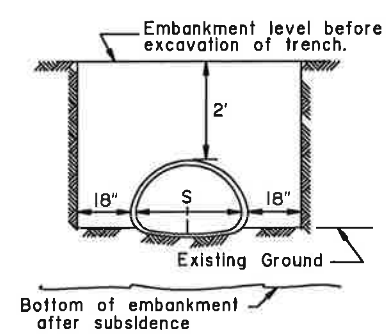


'ALTERNATE' TYPE "D"
ROCK OR UNYIELDING MATERIAL

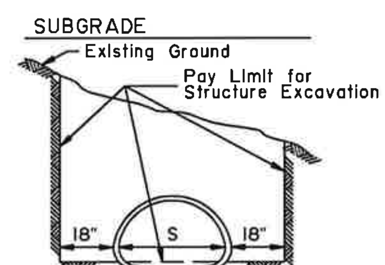
CULVERT PIPE



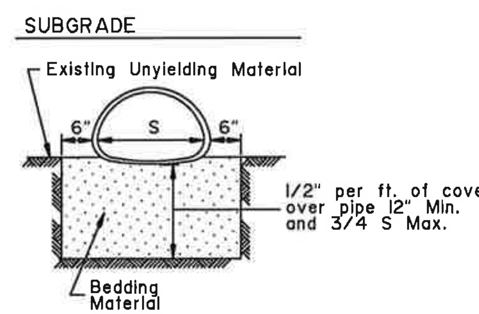
TYPE "A"
FOUNDATION STABILIZATION
To be used in unstable areas as directed by the Engineer.



TYPE "B"



TYPE "C"



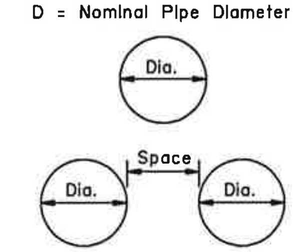
TYPE "D"
ROCK OR UNYIELDING MATERIAL

ARCH

GENERAL NOTES:

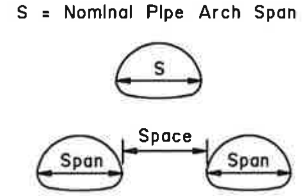
1. Sidefill shall be placed and compacted with care under haunches of pipe and shall be brought up evenly and simultaneously on both sides of pipe to 1 foot above the top of the full length of the pipe.
2. Alternate installation methods may only be used when specified or approved by the Engineer.

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.

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

State of Alaska
Department of Transportation & Public Facilities

CULVERT PIPE & ARCH INSTALLATION DETAILS

APPROVED

Date 7/15/82

D-01.02

D-04.21

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

GAGE	0.060"		0.075"		0.105"		0.135"		0.164"	
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	94	12	100+	12	100+	12	100+	12	100+
18	12	75	12	94	12	100+	12	100+	12	100+
21	12	65	12	82	12	100+	12	100+	12	100+
24	12	56	12	71	12	99	12	100+	12	100+
27	12	48	12	63	12	89	12	100+	12	100+
30			12	56	12	79	12	100+	12	100+
36			12	47	12	66	12	85	12	100+
42			12	55	12	56	12	73	12	100+
48			12	47	12	49	12	63	12	78
54					15	43	15	56	15	69
60							15	50	15	62
66							18	44	18	56
72									18	45

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

GAGE	0.060"		0.075"		0.105"		0.135"		0.164"	
Dia. (in)	Min. (in)	Max. (Ft)	Min. (in)	Max. (Ft)	Min. (in)	Max. (Ft)	Min. (in)	Max. (Ft)	Min. (in)	Max. (Ft)
30	12	52	12	65						
36	12	43	12	54	12	100+	12	100+	12	100+
42	12	36	12	46	12	65	12	100+	12	100+
48	12	32	12	40	12	57	12	73	12	100+
54	15	28	15	35	15	50	12	65	12	100+
60	15	25	15	32	15	45	15	58	15	72
66	18	23	18	28	18	41	18	53	18	65
72	18	21	18	26	18	37	18	48	18	59
78			21	24	21	34	21	44	21	55
84					21	31	21	41	21	57
90					24	29	24	38	21	47
96					24	27	24	36	24	44
102							24	33	24	41
108							24	31	24	39
114									24	37
120									24	35

Minimum & Maximum Cover For 9" x 2 1/2" Aluminum Structural Plate Pipe +

GAGE	0.100"		0.125"		0.150"		0.175"		0.200"		0.225"		0.250"	
Dia. (in)	Min. (in)	Max. (Ft)	Min. (in)	Max. (Ft)	Min. (in)	Max. (Ft)	Min. (in)	Max. (Ft)	Min. (in)	Max. (Ft)	Min. (in)	Max. (Ft)	Min. (in)	Max. (Ft)
60	12	29 31	12	38 45	12	49 60	12	58 70	12	58 81	12	58 92	12	58 100+
66	12	26 28	12	35 41	12	44 54	12	53 64	12	53 74	12	53 84	12	53 94
72	13	24 25	12	32 37	12	41 50	12	48 58	12	48 67	12	48 77	12	48 86
78	14	22 23	12	29 35	12	37 46	12	45 54	12	45 62	12	45 71	12	45 79
84	15	20 22	13	27 32	12	35 42	12	41 50	12	41 58	12	41 66	12	41 73
90	16	19 20	14	25 30	13	32 40	12	39 47	12	39 54	12	39 61	12	39 68
96	17	18 19	15	24 28	14	30 37	13	36 44	12	36 50	12	36 57	12	36 64
102	18	17 18	16	22 26	15	29 35	14	34 41	13	34 47	13	34 54	13	34 60
108	19	16 17	17	21 25	16	27 33	14	32 39	14	32 45	14	32 51	14	32 57
114	20	15 16	18	20 23	16	25 31	15	30 37	15	30 42	15	30 48	15	30 54
120	21	14 15	19	19 22	17	24 30	16	29 35	15	29 40	15	29 46	15	29 51
126	22	13 14	20	18 21	18	23 28	17	27 33	16	27 38	16	27 44	16	27 49
132	23	13 14	21	17 20	19	22 27	18	26 32	17	26 37	17	26 42	17	26 47
138	24	12 13	22	16 19	20	21 26	18	25 30	18	25 35	18	25 40	18	25 44
144	25	12 12	22	16 18	21	20 25	19	24 29	18	24 33	18	24 38	18	24 43
150			23	15 18	21	19 24	20	23 28	19	23 32	19	23 36	19	23 41
156			24	14 17	22	18 23	21	22 27	20	22 31	20	22 35	20	22 39
162					23	18 22	21	21 26	21	21 30	21	21 34	21	21 38
168					24	17 21	22	20 25	21	20 29	21	20 33	21	20 36
174					25	17 20	23	20 24	22	20 28	22	20 31	22	20 35
180							24	19 23	23	19 27	23	19 30	23	19 34

+Longitudinal seams use (5 1/3) 3/4" dia. bolts per foot.

58 — Upper figure for pipe with aluminum bolts. (FOR TABLE ABOVE ONLY.)
100+ — Lower figure for pipe with galvanized steel bolts.

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".

CORRUGATED CIRCULAR ALUMINUM PIPE

CORRUGATED ALUMINUM PIPE-ARCH

Minimum & Maximum Cover For 2 2/3" x 1/2" Aluminum 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	0.060	12	13	20
21 x 15	3	0.060	12	12	19
24 x 18	3	0.060	12	11	16
28 x 20	3	0.075	12	10	16
35 x 24	3	0.075	12	9	14
42 x 29	3 1/2	0.105	12	7	13
49 x 33	4	0.105	15	6	12
57 x 38	5	0.135	15	6	12
64 x 43	6	0.135	18	6	12
71 x 47	7	0.164	18	6	12

Minimum & Maximum Cover For 3" x 1" Aluminum 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	0.075	30	8	12
46 x 36	6	0.075	24	8	13
53 x 41	7	0.075	24	8	13
60 x 46	8	0.075	24	13	20
66 x 51	9	0.075	18	13	20
73 x 55	12	0.075	18	16	24
81 x 59	14	0.105	18	14	22
87 x 63	14	0.105	18	13	20
95 x 67	16	0.105	18	12	18
103 x 71	16	0.135	24	11	17
112 x 75	18	0.164	24	10	16
117 x 79	18	0.164	24	10	15

Minimum & Maximum Cover For 9" x 2 1/2" Aluminum Structural Plate Pipe-Arch +

Span x Rise (Ft-In x Ft-In)	Corner Radius (In)	Minimum Gage (In)	Min. Cover (Ft)	Max. Cover in Feet For Soil Bearing Capacity of: 2 Tons/Ft²	3 Tons/Ft²
5 - 11 x 5 - 5	31.8	0.100	2	24 ++	24 ++
6 - 11 x 5 - 9	31.8	0.100	2	22 ++	22 ++
7 - 3 x 5 - 11	31.8	0.100	2	20 ++	20 ++
7 - 9 x 6 - 0	31.8	0.100	2	28 ++	18 ++
8 - 5 x 6 - 3	31.8	0.100	2	17 ++	17 ++
9 - 3 x 6 - 5	31.8	0.100	2	15 ++	15 ++
10 - 3 x 6 - 9	31.8	0.100	2	14 ++	14 ++
10 - 9 x 6 - 10	31.8	0.100	2	13 ++	13 ++
11 - 5 x 7 - 1	31.8	0.100	2	12 ++	12 ++
12 - 7 x 7 - 5	31.8	0.125	2	14	16 ++
12 - 11 x 7 - 6	31.8	0.150	2	13	14 ++
13 - 1 x 8 - 2	31.8	0.150	2	13	18 ++
13 - 11 x 8 - 5	31.8	0.150	2	12	17 ++
14 - 8 x 9 - 8	31.8	0.175	2	12	18
15 - 4 x 10 - 0	31.8	0.175	2	11	17
16 - 1 x 10 - 4	31.8	0.200	2	10	16
16 - 9 x 10 - 8	31.8	0.200	2.17	10	15
17 - 3 x 11 - 0	31.8	0.225	2.25	10	15
18 - 0 x 11 - 4	31.8	0.255	2.25	9	14
18 - 8 x 11 - 8	31.8	0.250	2.33	9	14

+Longitudinal seams use (5 1/3) 3/4" dia. bolts per foot.

++Fill limited by the seam strength of the bolts. 3/4" dia. bolts per foot.

METAL THICKNESSES & GAGES

ALUMINUM	GAGE NO. (For Info Only)
0.060	16
0.075	14
0.105	12
0.135	10
0.164	8

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

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

Sheet 1 of 4

State of Alaska
Department of Transportation & Public Facilities

PIPE AND ARCH TABLES

APPROVED
Date 10/31/03

D-04.21

D-04.21

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".

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	

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

NS = Not Suitable

@ 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 Upgrades & New Sheet 4.	LFD

Sheet 2 of 4

State of Alaska
Department of Transportation & Public Facilities

PIPE AND ARCH TABLES

APPROVED

Date 10/31/03

D-04.21

D-04.21

Maximum Cover for Type S Corrugated Polyethelene Pipe	
Size (In.)	Max. Cover (ft.)
12	30.0
15	30.0
18	30.0
24	30.0
30	30.0
36	30.0
40	20.0
48	20.0

GENERAL NOTES

1. All materials and workmanship shall be in accordance with the State of Alaska Standard Specifications for Highway Construction.

2. For foundation and structural backfill details see Standard Drawing "Culvert Pipe & Arch Installation Details".

3. Pipe cover height is measured from top of the pipe to top of rigid pavement, or to the top of subgrade for flexible pavement. In all cases the minimum cover shall be no less than 2 ft. Where loads traverse the culvert during construction minimum cover shall be no less than 4 ft.

REVISIONS		
Date	Description	By
10/31/03	New Sheet 4.	LRG

Sheet 3 of 4

State of Alaska
Department of Transportation
& Public Facilities

PIPE AND ARCH TABLES

APPROVED

Date 10/31/03

D-04.20

ALUMINUM SPIRAL RIB PIPE

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 1½ in. Corrugations

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

		Soil Corner Bearing Capacity of 2 Tons/ s.f.		
		0.060"	0.075"	0.105"
Span x Rise (In. x In.)	Min. Cover (in.)	Max. Cover (ft.)	Max. Cover (ft.)	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 1½ in. Corrugations

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 1½ in. Corrugations
++¾ x ¾ x 7½ in. Corrugations Only.

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

		Soil Corner Bearing Capacity of 2 Tons/ s.f.		
		0.064"	0.079"	0.109"
Span x Rise (In. x In.)	Min. Cover (in.)	Max. Cover (ft.)	Max. Cover (ft.)	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 1½ 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".

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

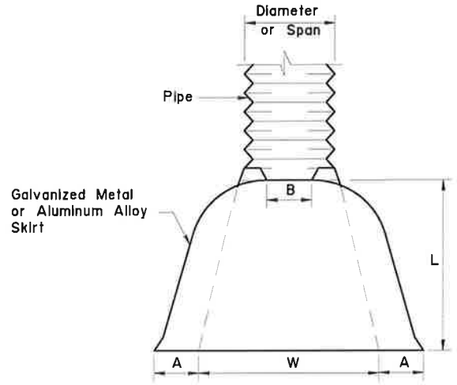
PIPE AND ARCH TABLES

APPROVED

Date 10/31/03

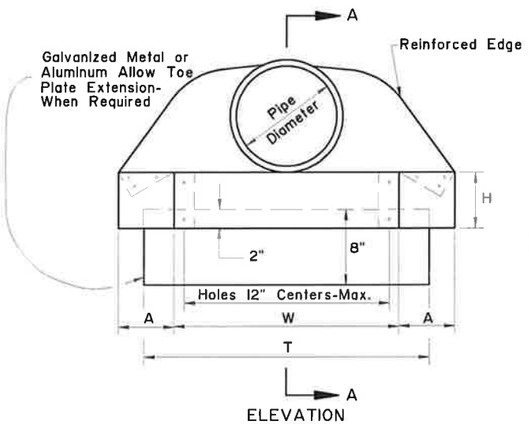
D-04.21

D-06.10



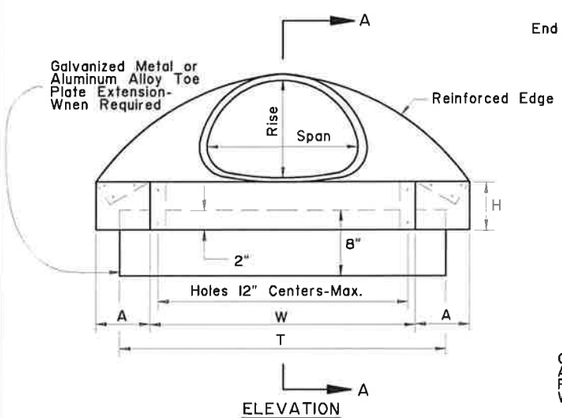
PLAN

ROUND AND PIPE ARCH



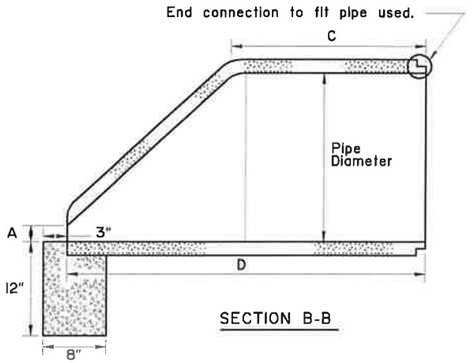
ELEVATION

ROUND PIPE



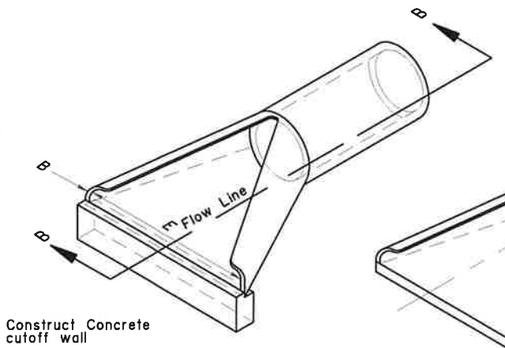
ELEVATION

PIPE ARCH

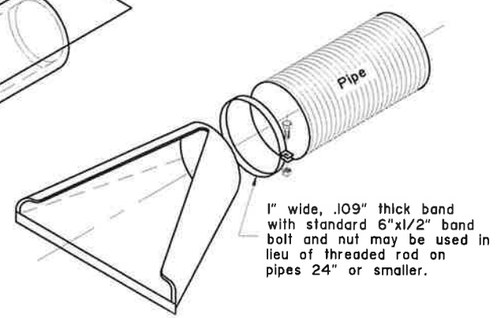


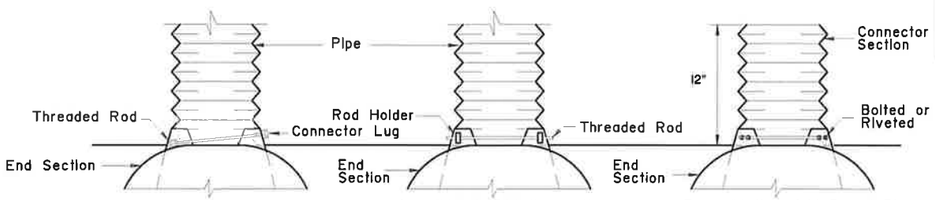
SECTION B-B

MINIMUM DIMENSIONS					
Pipe Diameter	A	B	C	D	E
12"	4"	1 3/4"	24"	46"	24"
18"	9"	2"	25"	50"	36"
24"	9 1/2"	2 1/2"	30"	72"	48"
30"	12"	3"	20"	73"	60"
36"	15"	3 3/8"	35"	97"	72"
42"	21"	3 3/4"	35"	98"	78"
48"	24"	4 1/4"	26"	98"	84"
54"	27"	4 5/8"	33"	99"	82"



PRECAST CONCRETE END SECTION



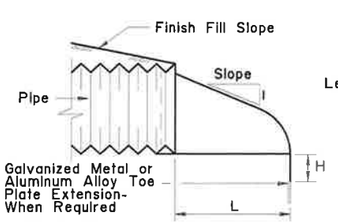


For 12" thru 24" Round Pipe with Annular Corrugations

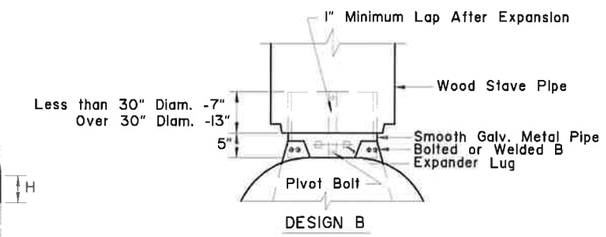
For 30" & 36" Round Pipe and 18"x11" thru 58"x36" Pipe Arch with Annular Corrugations.

DESIGN A

For 42" thru 84" Round Pipe and 65"x40" thru 85"x54" Pipe Arch with Annular Corrugations and All Helically Corrugated Pipe and Pipe Arch.



SECTION A-A



DESIGN B

METAL END SECTION CONNECTED TO WOOD STAVE PIPE

ROUND PIPE									
Pipe Diam. Inches	Thickness For Aluminum	Thk. for Galv. Metal	Dimension Inches A 1" Tol.	B Max.	H 1" Tol.	L 1 1/2" Tol.	W 2" Tol.	T 2" Tol.	Skirt	Approx. Slope
12"	0.060	0.064	6"	6"	6"	21"	24"	34"	1 Pc.	2 1/2
15"	0.060	0.064	7"	8"	6"	26"	30"	40"	1 Pc.	2 1/2
18"	0.060	0.064	8"	10"	6"	31"	36"	46"	1 Pc.	2 1/2
21"	0.060	0.064	9"	12"	6"	36"	42"	52"	1 Pc.	2 1/2
24"	0.075	0.064	10"	13"	6"	41"	48"	58"	1 Pc.	2 1/2
30"	0.075	0.079	12"	16"	8"	51"	60"	70"	1 Pc.	2 1/2
36"	0.105	0.079	14"	19"	9"	60"	72"	94"	2 Pc.	2 1/2
42"	0.105	0.109	16"	22"	11"	69"	84"	106"	2 Pc.	2 1/2
48"	0.105	0.109	18"	27"	12"	78"	90"	112"	2 Pc.	2 1/4
54"	0.105	0.109	18"	30"	12"	84"	102"	122"	2 Pc.	2 1/4
60"	0.135	0.109	18"	33"	12"	87"	114"	134"	3 Pc.	2 1/4
66"	0.135	0.109	18"	36"	12"	87"	120"	142"	3 Pc.	2 1/4
72"	0.135	0.109	18"	39"	12"	87"	126"	146"	3 Pc.	2 1/4
78"	— —	0.109	18"	42"	12"	87"	132"	152"	3 Pc.	1 1/4
84"	— —	0.109	18"	45"	12"	87"	138"	158"	3 Pc.	1 1/6

PIPE-ARCH											
Pipe-Arch Dimension Inches Span	Rise	Thickness for Aluminum	Thk. for Galv. Metal	Dimension Inches A 1" Tol.	B Max.	H 1" Tol.	L 1 1/2" Tol.	W 2" Tol.	T 2" Tol.	Skirt	Approx. Slope
17"	13"	0.060	0.064	7"	9"	6"	19"	30"	40"	1 Pc.	2 1/2
21"	15"	0.060	0.064	7"	10"	6"	23"	36"	46"	1 Pc.	2 1/2
24"	18"	0.060	0.064	8"	12"	6"	28"	42"	52"	1 Pc.	2 1/2
28"	20"	0.075	0.064	9"	14"	6"	32"	48"	58"	1 Pc.	2 1/2
35"	24"	0.075	0.079	10"	16"	6"	39"	60"	70"	1 Pc.	2 1/2
42"	29"	0.105	0.079	12"	18"	8"	46"	75"	85"	1 Pc.	2 1/2
49"	33"	0.105	0.109	13"	21"	9"	53"	85"	103"	2 Pc.	2 1/2
57"	38"	0.105	0.109	18"	26"	12"	63"	90"	114"	2 Pc.	2 1/2
64"	43"	0.105	0.109	18"	30"	12"	70"	102"	130"	2 Pc.	2 1/4
71"	47"	0.135	0.109	18"	33"	12"	77"	114"	144"	3 Pc.	2 1/4
77"	52"	0.135	0.109	18"	36"	12"	84"	120"	158"	3 Pc.	2 1/4
83"	57"	0.135	0.109	18"	39"	12"	90"	126"	170"	3 Pc.	2 1/4

GENERAL NOTES:

1. Toe plate extensions will be required only when provided for on the plans. When required, the toe plate extensions shall be punched with holes to match those in lip of skirt and fastened with 3/8 inch or larger galvanized nuts and bolts and shall be the same gage as the end section.
2. Galvanized Metal or Aluminum Alloy End Sections may be used on Wood Stave and Plastic Pipe.
3. All 3 piece bodies shall have 12 gage sides and 10 gage center panels. Multiple panel bodies shall have lap seams which are to be tightly joined by 3/8" galvanized rivets or bolts.

REVISIONS		
Date	Description	By
3/1/83	Arch Dimensions	WJF/HA
8/10/00	Note 2	DFD

Sheet 1 of 3

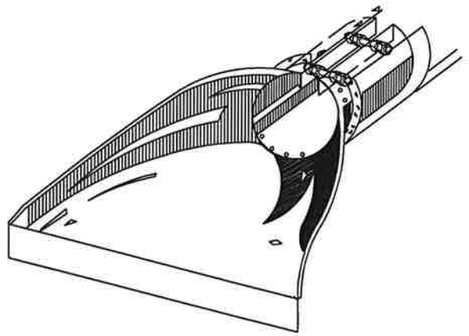
State of Alaska
Department of Transportation
& Public Facilities

CULVERT END SECTIONS

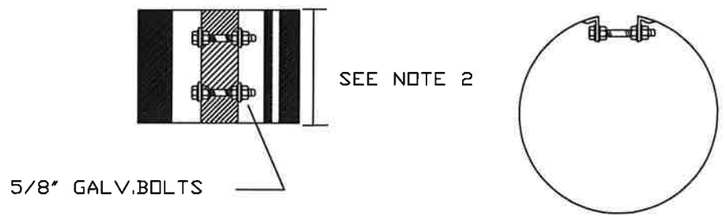
APPROVED

Date 7/15/82

D-06.10



FOR CONNECTING CONCRETE PIPE OR CORRUGATED POLYETHYLENE PIPE TO METAL END SECTION.



GENERAL NOTES

1. See general notes on sheet 1 of 3.
2. See sheet 1 of 3 for metal end section dimensions.
3. Insert bolts, washers and rivets shall be galvanized. Insert thickness is the same as the end section.
4. Use culvert inserts only at inlet.

METAL INSERTS FOR USE WITH CORRUGATED PLASTIC PIPE AND METAL END SECTIONS

REVISIONS		
Date	Description	By

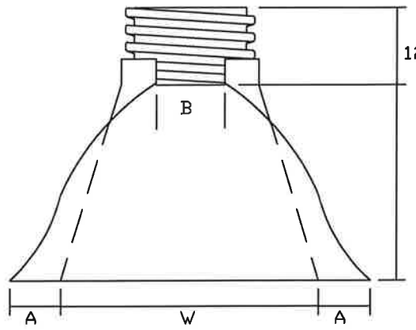
Sheet 2 of 3

State of Alaska
Department of Transportation
& Public Facilities

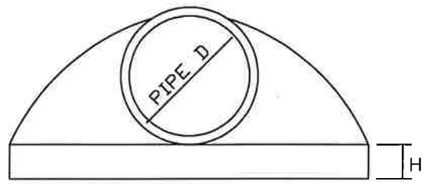
CULVERT END SECTIONS

APPROVED

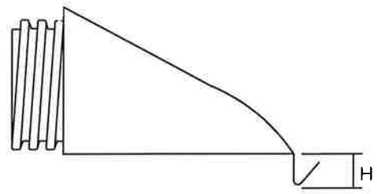
Date 5/15/01



TOP VIEW



END VIEW



SIDE VIEW

PIPE DIAMETER	DIMENSIONS IN MILLIMETERS				
	A(1"±)	B MAX	H(1"±)	L(1/2"±)	W(2"±)
12" and 15"	6 1/2"	10"	6 1/2"	25"	29"
18"	7 1/2"	15"	6 1/2"	32"	35"
24"	7 1/2"	18"	6 1/2"	36"	45"
30"	10 1/2"	N/A	7"	53"	68"
36"	10 1/2"	N/A	7"	53"	68"

PLASTIC END SECTION FOR CORRUGATED PLASTIC PIPE

D-06.10

GENERAL NOTES

1. Plastic flared end sections may be used with HDPE corrugated culvert pipes where noted in project plans or approved by project engineer.
2. Consult manufacturer's recommendations for proper sizing and coupling devices. Recommended fasteners may include connecting bands or cinch ties. Fittings across dimension B may include threaded rods with wing nuts or bolts and washers. plastic welds may be recommended.
3. Align coupling to accomodate pipe corrugations.
4. Metal components e.g. bolts or washers must be galvanized.
5. Attachment of end section should preserve culvert alignment and not impair pipe function. Use end sections only on culvert inlet.
6. Toe plate extensions will be required only when designated on the plans.
7. End sections will not be used on HDPE culvert pipes larger than 36" unless indicated by project plans or approved by the Engineer.

REVISIONS		
Date	Description	By

Sheet 3 of 3

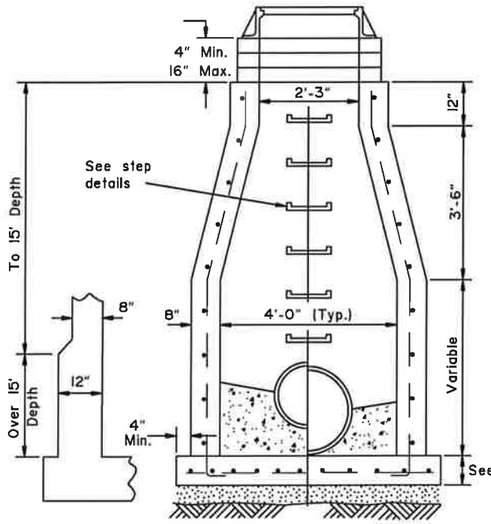
State of Alaska
Department of Transportation
& Public Facilities

CULVERT END SECTIONS

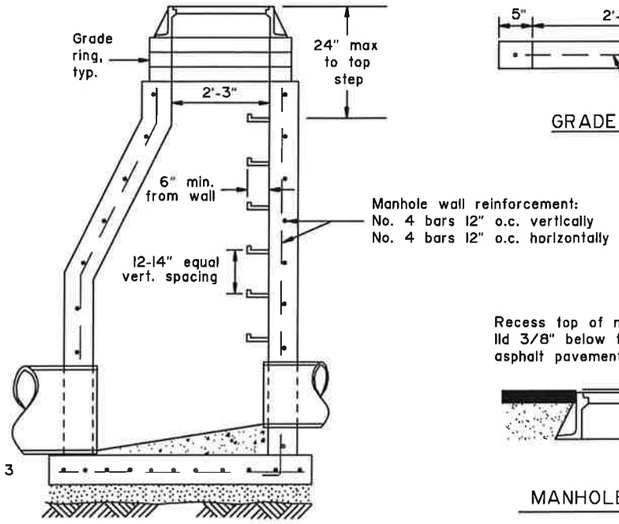
APPROVED

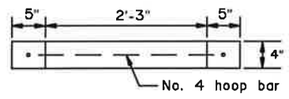
Date 5/15/01

D-06.10

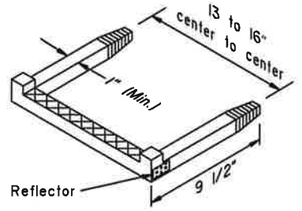


CAST-IN-PLACE MANHOLE

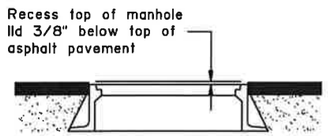




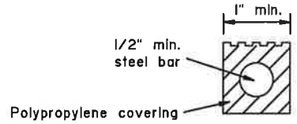
GRADE RING



STEP DETAIL



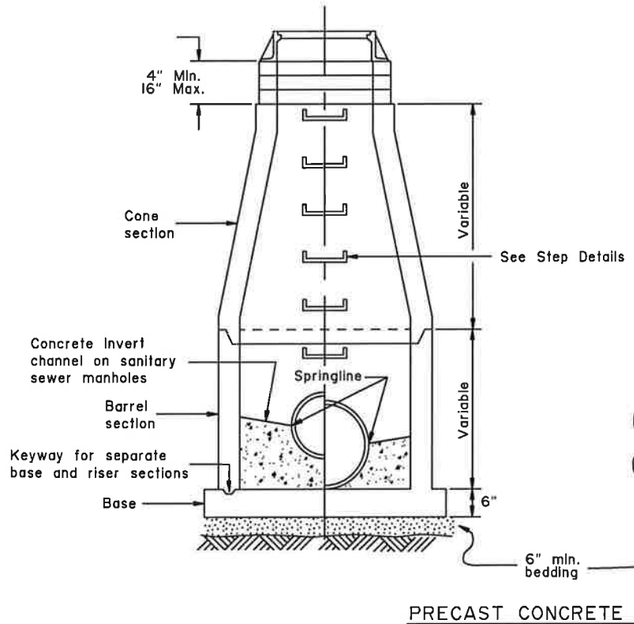
MANHOLE IN PAVEMENT

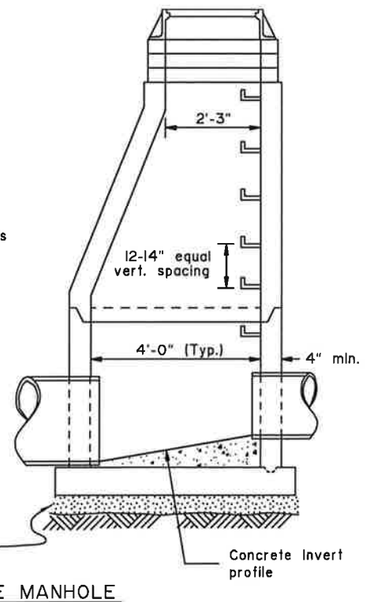


STEP CROSS SECTION

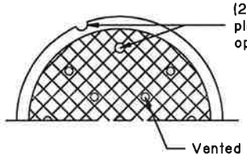
GENERAL NOTES:

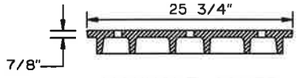
1. Either precast or cast-in-place manholes may be used.
2. Details for manhole frame, cover and step are generic in nature and may vary from shown depending on manufacturer
3. Use 8" thick cast-in-place concrete bases for depths less than 15' and 12" thick bases for depths 15' or greater.
4. Manhole frames shall have a depth of 6" unless specified otherwise on the plans.
5. Step requirements:
   a. 18" max. vertical clearance to bottom of manhole or concrete invert.
   b. 3" minimum embedment.
   c. 1,500 lb. min. pullout force.
   d. ASTM A-615 grade 60 steel bar.
   e. Injection molded polypropylene covering meeting ASTM D-41010
   f. Slip resistant foot tread with "wings" to prevent feet from sliding off the edge.
   g. Reflectors at step corners



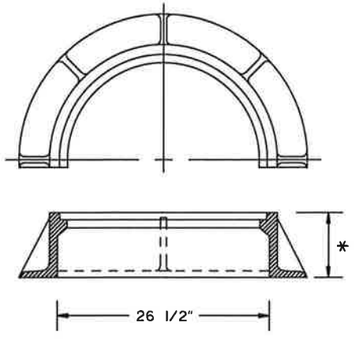


PRECAST CONCRETE MANHOLE





MANHOLE COVER



MANHOLE FRAME

MANHOLE FRAME & COVER MINIMUM WEIGHT		
* Depth	6"	380 lbs
	7"	400 lbs
	8"	440 lbs
	9"	470 lbs
	10"	500 lbs

REVISIONS		
Date	Description	By
9/15/91	Added grade rings	GDO
3/15/99	Remove steps in rings	EMR
1/16/17	Revised concrete/rebar	LRG

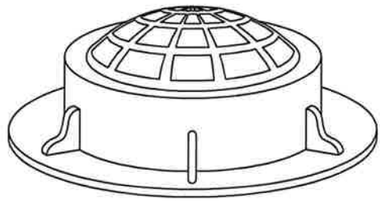
State of Alaska DOT&PF
3132 Channel Dr., Juneau, AK
Phone: (907) 465-2960

MANHOLES, FRAME AND COVER

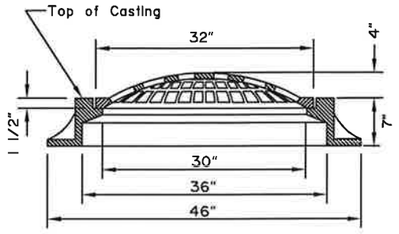
Eff. Date: 1/16/17

D-20.04

D-22.01

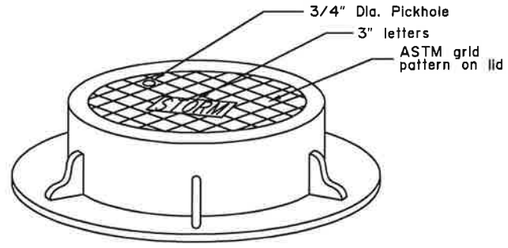


Surround field inlets with a 24" wide rock rubble collar 10" deep, 3" maximum size rock.



FIELD INLET FRAME & GRATE

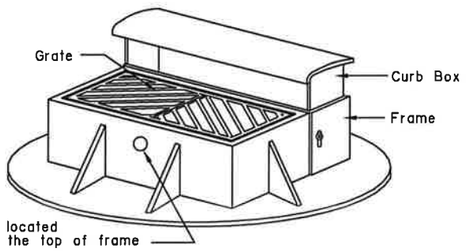
To be supplied for storm drain manholes where field inlets are specified. Field inlet frame and grate shall have a Minimum total weight of 525 lb.



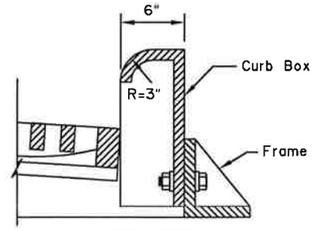
MANHOLE LID FRAME AND GRATE

NOTES:

1. Details shown are to indicate general design only. Dimensions and design may vary among the manufacturers, except that inlet grate shall be within ¼"± of dimensions shown on this drawing.
2. Manhole lids shall be 32" in diameter and may be used with field inlet frames.
3. Type A field inlet frame inside dimensions shall be 24" x 36". Lugs will not protrude outside the concrete surface of the inlet box.
4. Grates shall be bicycle safe. Where high capacity grates are called for on the plans, they shall conform to Std. Dwg. D-25.
5. Frame and grate casting types are identified by the following abbreviations:
   C.I. = Curb Inlet
   F.I. = Field Inlet
   M.H. = Manhole
6. Flowline depression shall conform to Std. Dwg. D-23 for an on grade or sag point conditions.
7. These are the default frames and grates to be used unless shown otherwise on the drainage plans or drainage structure summary.

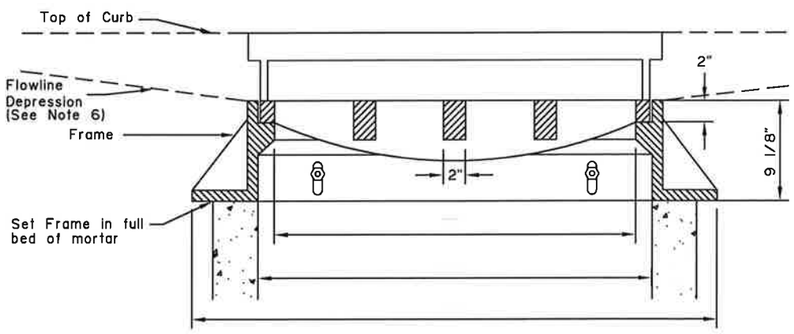


NOTE:
Curb Box, Grate and frame shall have a minimum total weight of 725 lb.

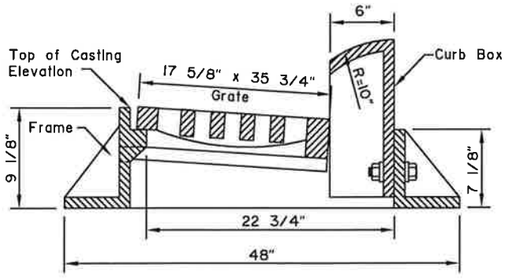


SIDE VIEW
MOUNTABLE CURB AND GUTTER

REQUIRED FRAME AND GRATES (See Note 7)			
STRUCTURE	INLET TYPE	CURB TYPE	TYPE FRAME AND GRATE
INLET BOX, TYPE A	Curb		
	Curb	Expressway	Mountable Curb Inlet
	Curb	Rolled Curb	Depressed Inlet
	Field	------	Field Inlet
STORM DRAIN MANHOLES, TYPE I, II AND III	Curb	Mountable	Mountable Curb Inlet
	Curb	Expressway	Expressway Curb Inlet
	Curb	Rolled Curb	Depressed Inlet
	Field	------	Field Inlet
	Manhole Lids	------	Field Inlet Frame, Solid MH. Lid



FRONT VIEW



SIDE VIEW
EXPRESSWAY CURB AND GUTTER

CURB INLET FRAME AND GRATE

To be supplied for storm drain manholes Type I, Type II and Type III where curb inlets are specified.

NOT TO SCALE

REVISIONS		
Date	Description	By
10/31/03	Misc. Revisions/ Corrections	LRG

Sheet 1 of 1

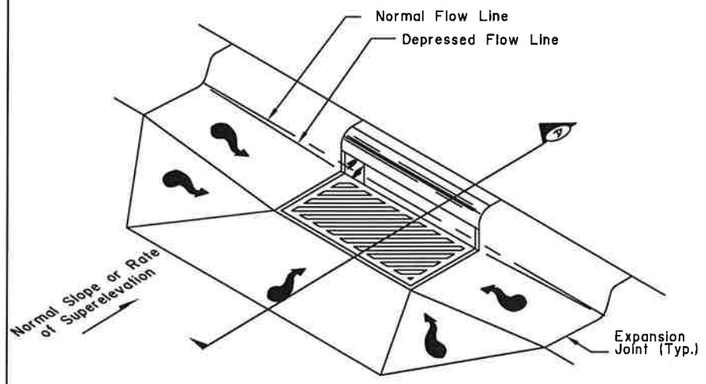
State of Alaska
Department of Transportation & Public Facilities

STORMDRAIN MANHOLE FRAME AND GRATE DETAILS

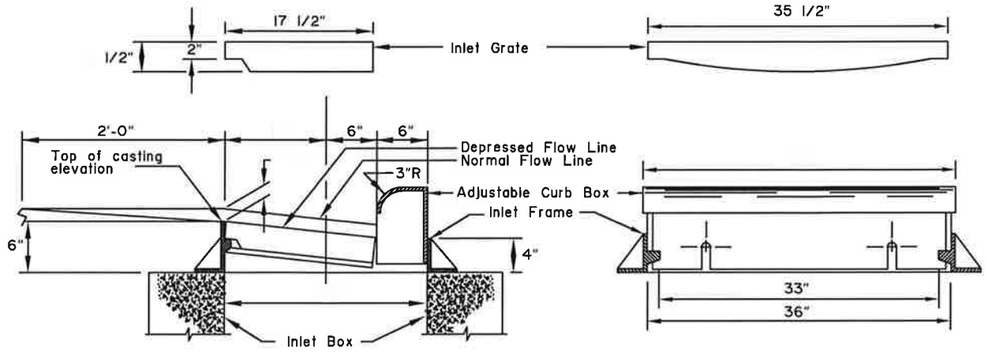
APPROVED
Date 10/31/03

D-22.01

D-23.01



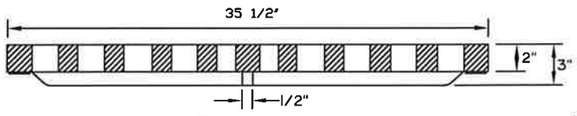
STANDARD CURB INLET INSTALLATION

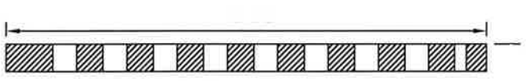


SECTION A

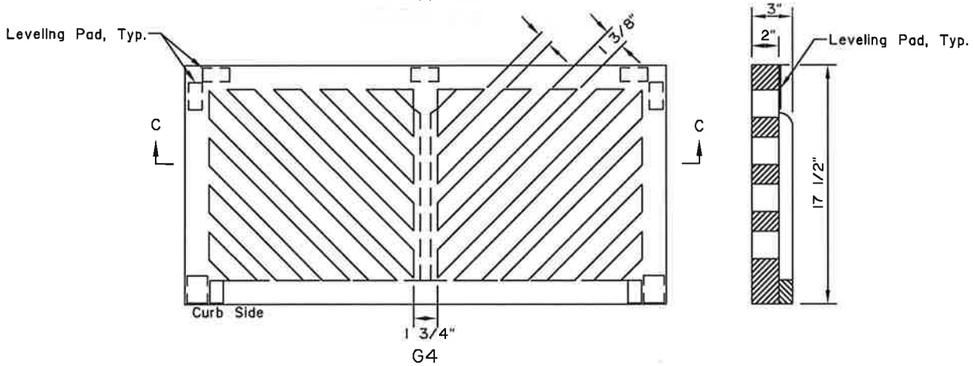
GENERAL NOTES:

1. Details shown are to indicate general design only. Dimensions and design may vary among the manufacturers.
2. Minimum casting weight shall be 330 lbs for Curb Inlet Frame with Curb Box and 200 lbs. for Inlet Grate.
3. The outside dimensions of Inlet Grate shall be 35 1/2" x 17 1/2" and all grates shall be interchangeable.
4. Minimum drainage area of Inlet Grate shall be 255 square inches.
5. Inlet Grate type G-3R or G-3L shall be used in all cases except where drainage is from both directions, in which case type G-4 shall be used.

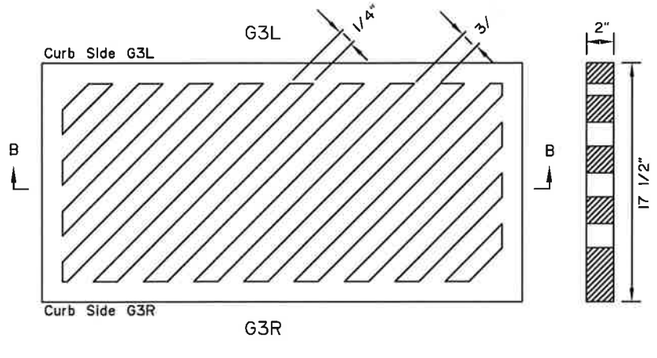




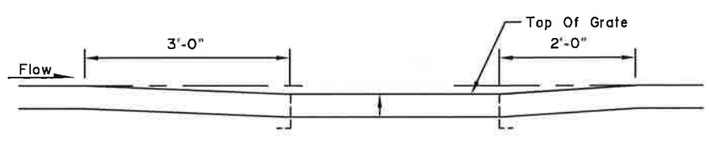
SECTION B-B



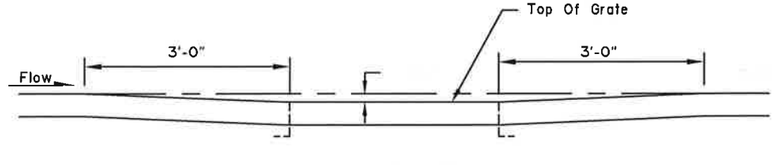
G4



G3R



ON GRADE



AT LOW POINT

DEPRESSION IN FLOW LINE AT INLET CONSTRUCTION DETAILS

NOT TO SCALE

REVISIONS		
Date	Description	By
10/31/03	Misc. Minor Corrections	LRG

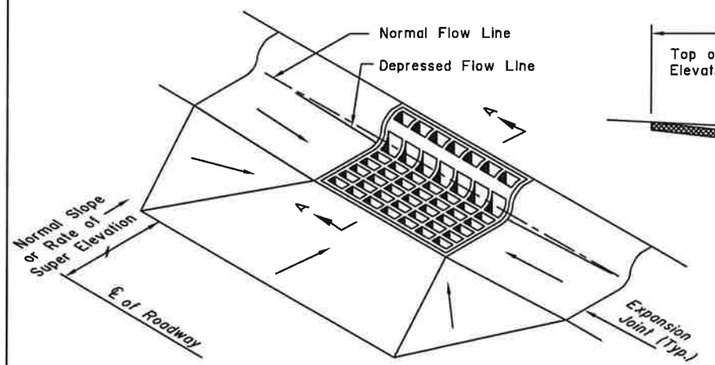
Sheet 1 of 1

State of Alaska
Department of Transportation
& Public Facilities

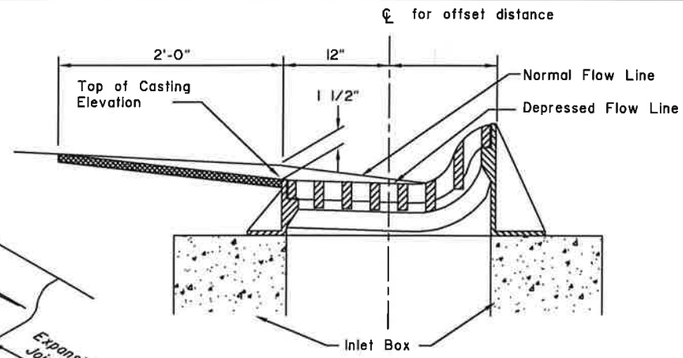
CURB INLET BOX FRAME & GRATE

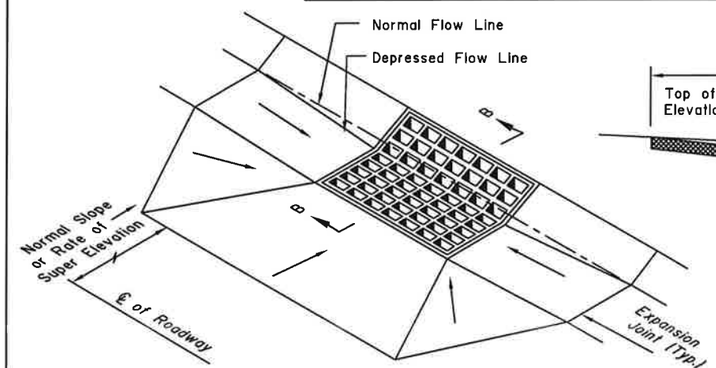
APPROVED
Lora R. Gregovich
CE-8065
Date 10/31/03

D-23.01

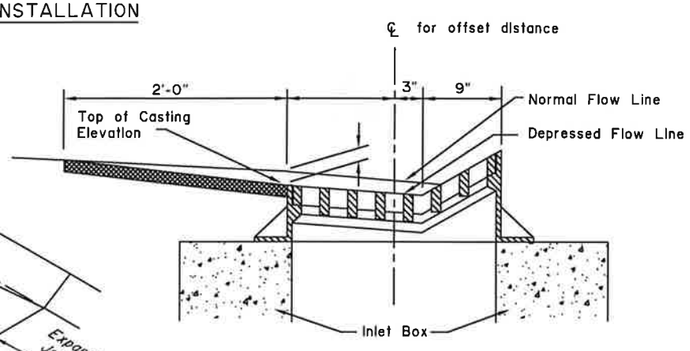


MOUNTABLE CURB INLET INSTALLATION

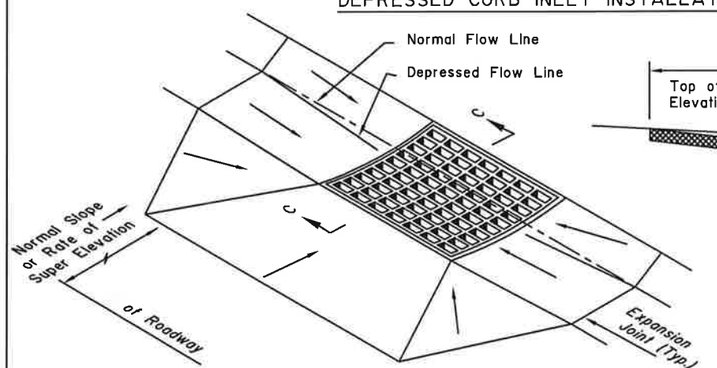




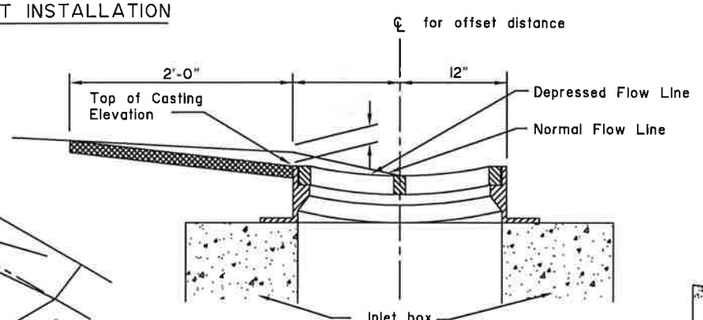
DEPRESSED CURB INLET INSTALLATION



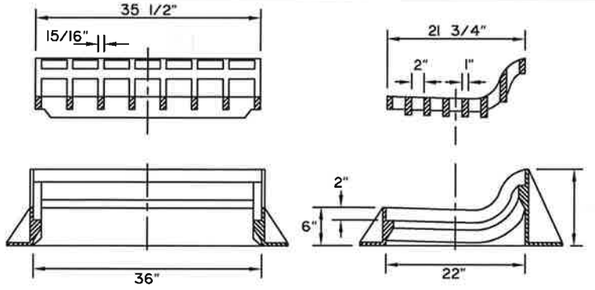
SECTION B-B



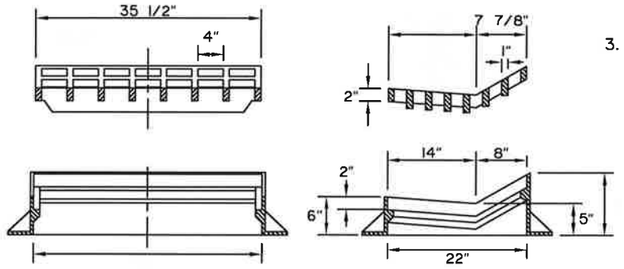
GUTTER INLET INSTALLATION



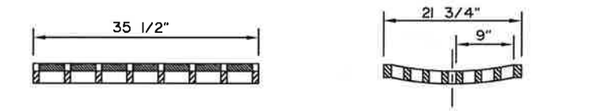
SECTION C-C



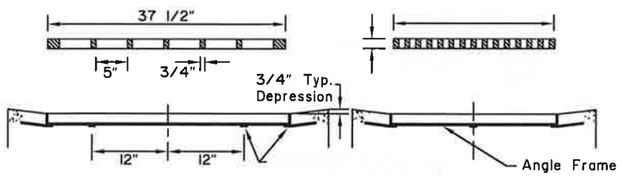
MOUNTABLE CURB INLET FRAME AND GRATE



DEPRESSED CURB INLET FRAME AND GRATE

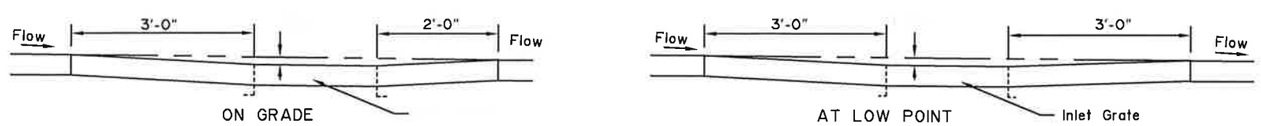


GUTTER INLET FRAME AND GRATE



NOTE: All Angle Frame shall have Anchor Lugs

FIELD INLET FRAME AND GRATE



DEPRESSION IN FLOW LINE AT INLET CONSTRUCTION DETAILS

D-24.00

SHEET 1 of 1

GENERAL NOTES:

1. Details shown are to indicate general design only. Dimensions and design may vary among the manufacturers. Except inlet grate outside dimension shall be as shown on this drawing.
2. Minimum casting weight shall be 550lbs. for Curb Inlet Frame and Grate, 450lbs. for Gutter Inlet Frame and Grate, and 300lbs. for Field Inlet Frame and Grate.
3. Field Inlet Frame may be welded assembly of L 1 3/4"x1 3/4"x1/4" angle equivalent to ASTM A-36 steel.

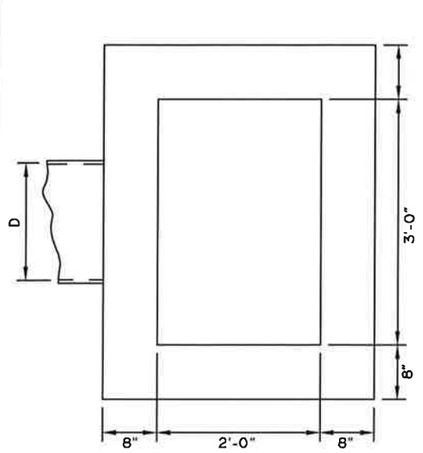
REVISIONS		
Date	Description	By

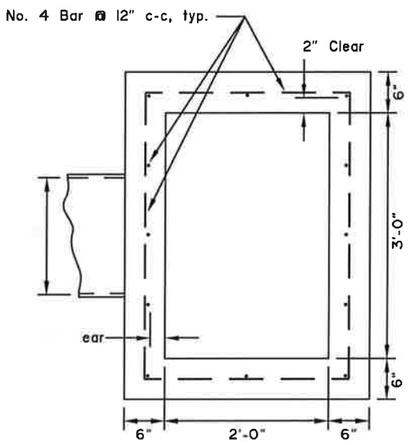
State of Alaska
Department of Transportation
& Public Facilities

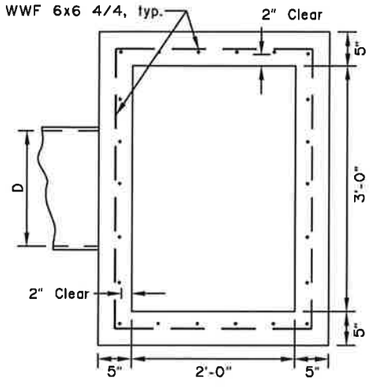
INLET FRAMES AND GRATES

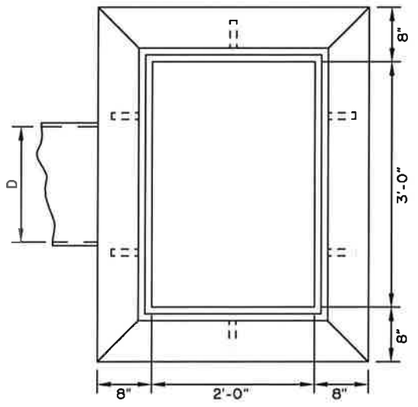
APPROVED
Date 7/15/82

D-24.00



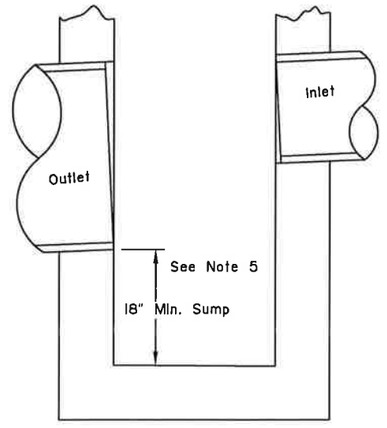




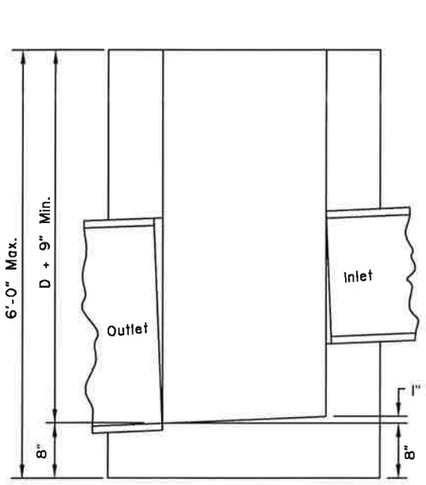


GENERAL NOTES:

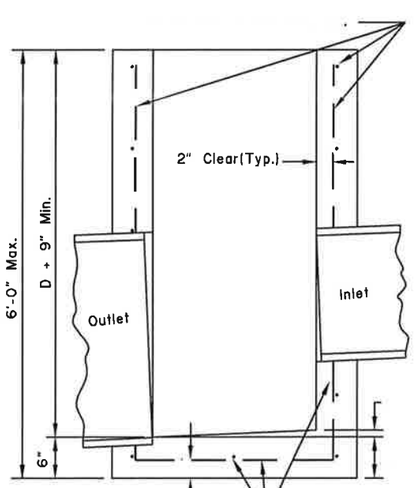
1. Install inlet boxes parallel to the curb line.
2. The plans will indicate which inlet boxes require a sump.
3. Shape floors to drain.
4. Use Grade 40 minimum reinforcing steel.



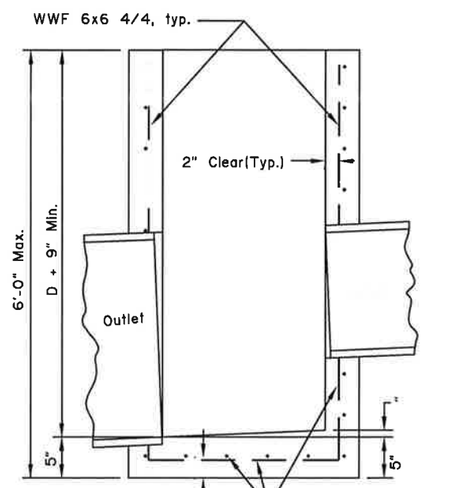
SUMP DETAIL



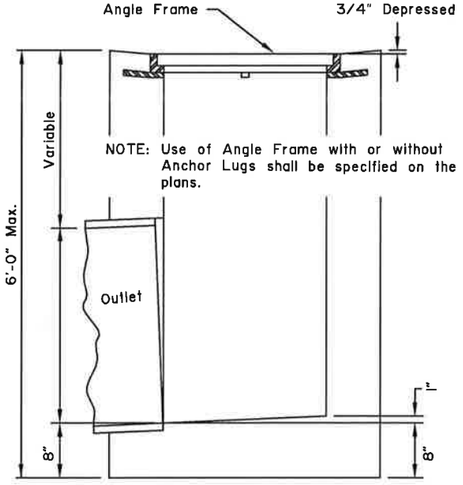
CAST IN PLACE



REINFORCED
CAST IN PLACE



PRECAST



NOTE: Use of Angle Frame with or without Anchor Lugs shall be specified on the plans.

FIELD INLET BOX
CAST* IN PLACE

* May be Precast or Reinforced Cast-In-Place Box.

TYPE "A" CONCRETE INLET BOXES

REVISIONS		
Date	Description	By
3/1/83	Gen. notes revision	
1/1/96	Added 6'0" Box Ht.	GDO
1/16/17	Removed conc. class	LRG

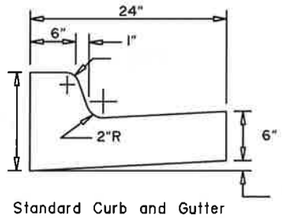
State of Alaska DOT&PF
3132 Channel Dr., Juneau, AK
Phone: (907) 465-2960

TYPE "A" INLET BOXES

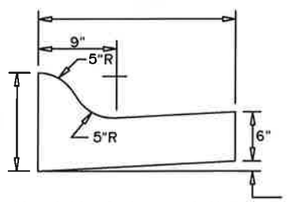
STATE OF ALASKA 49th
Lars R. Gregovich CE-8065 REGISTERED PROFESSIONAL ENGINEER
Jan. 11 2017

Eff. Date:
1/16/17

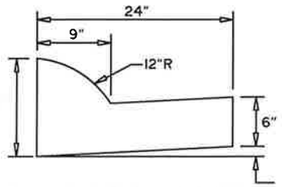
D-26.03



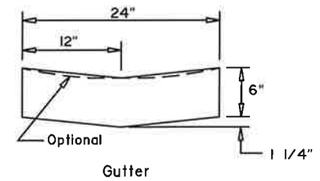
Standard Curb and Gutter



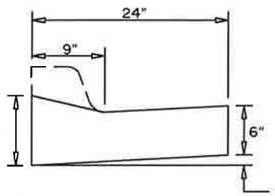
Mountable Curb and Gutter



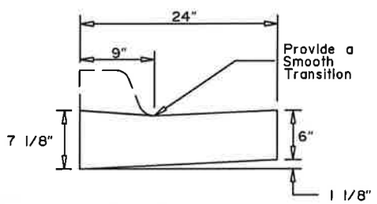
Expressway Curb and Gutter



Gutter

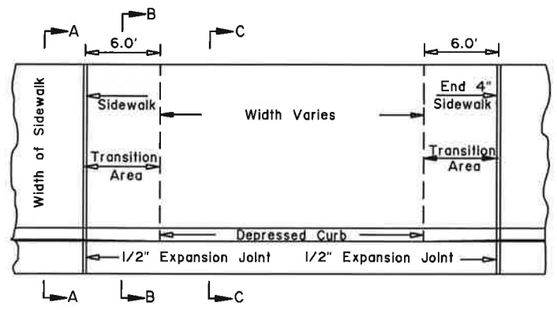


Depressed Curb and Gutter

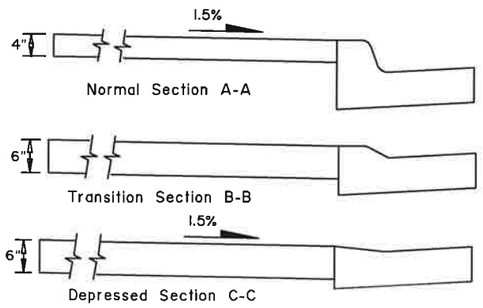


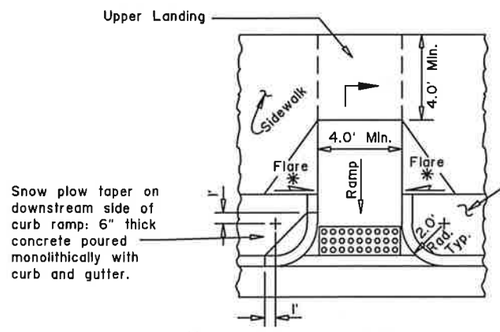
ADA Curb and Gutter

CURB and GUTTER DETAILS

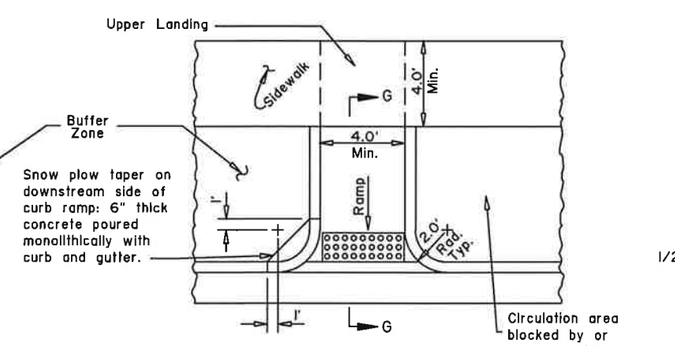


DRIVEWAY CURB CUT DETAILS



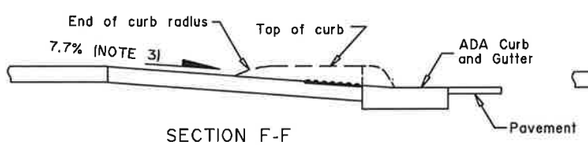


PLAN

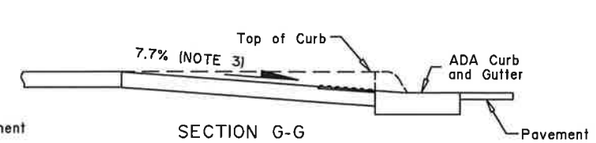


PLAN

= Detectable Warning Tile (see Note 8)



SECTION F-F
Returned Curb Ramp with Sidewalk for Pedestrians



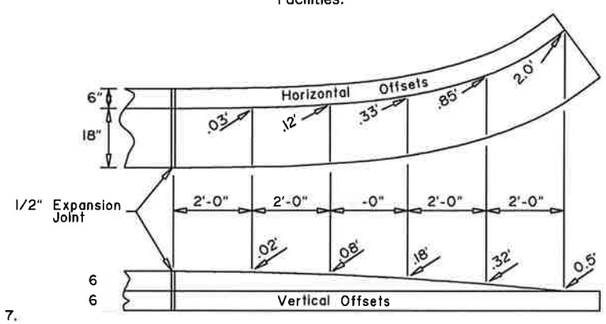
SECTION G-G
Returned Curb Ramp for Pedestrians

CONSTRUCTION NOTES:

1. Use the type of curb and gutter shown on the plans.
2. Construct ramp runs and landings of concrete, regardless of whether the sidewalk is asphalt or concrete.
3. Construct ramp slopes at a 7.7% nominal grade, or flatter. Ramp slopes may be increased to a maximum of 8.3% when site conditions warrant it. Ramp lengths should be increased to keep grades under the 8.3% maximum, but are not required to exceed 15.0 feet. The resulting ramp grade at a 15.0 foot ramp length is acceptable even if it exceeds 8.3%.
4. Construct flare slopes at 8.3% (measured parallel to the curb line) or flatter, sidewalk cross slopes at 1.5% nominal (1.0% min. and 2.0% max), and ADA Curb and Gutter gutter pan slopes at 4.7% nominal. Construct grade breaks perpendicular to ramp runs.
5. Do not construct flare slopes steeper than 10.0%, sidewalk cross slopes steeper than 2.0% and ADA Curb and Gutter gutter pan slopes steeper than 5.0%. These are the steepest slopes allowed under the 2006 ADA Standards for Transportation Facilities.
6. Provide a coarse broomed finish on ramp runs perpendicular to the ramp slope.
7. When approved by the Engineer, curb returns may be replaced with flares at locations where access to the side of a ramp run is free of poles, utility boxes, other obstructions, or non-accessible surfaces such as a dirt planter strips. See Standard Drawing I-22 for flare details.
8. Install 24" wide detectable warning tiles for the full width of the ramp. Provide tiles with truncated domes meeting Section 705.1 of the 2006 ADA Standards for Transportation Facilities. Align truncated dome pattern in the predominant direction of wheelchair travel to permit wheels to roll between domes.
9. Maximum cross slope on upper landings, measured in any direction, is 2.0%. Maximum cross slope on ramps is 2.0% measured perpendicular to the ramp run.

DESIGN NOTES:

1. Use Mountable or Expressway curbs on medians and traffic islands.
. These details are compliant with the 2006 ADA Standards for Transportation Facilities.



CURB and GUTTER TERMINATION TRANSITIONS

Note: Drawing not to scale

REVISIONS		
Date	Description	By
5/31/12	ADA Updates	[illegible]
3/31/15	Slopes and cross slope	JCJ
7/1/16	2006 ADA Stds Update	LRG

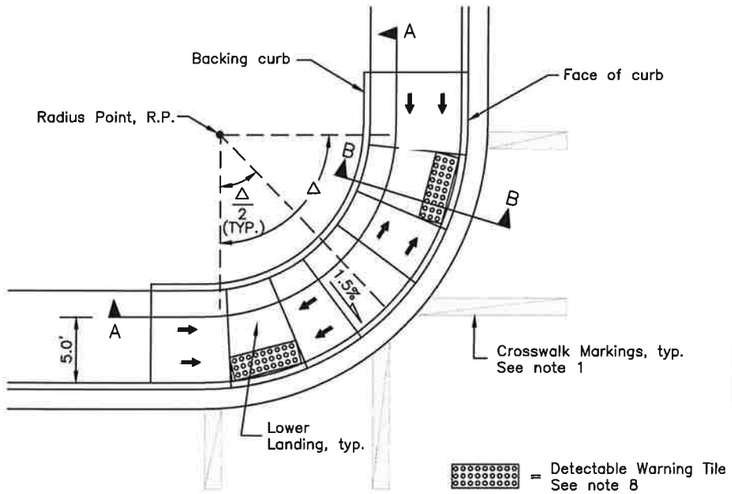
State of Alaska DOT&PF
3132 Channel Dr., Juneau, AK
Phone: (907) 465-2980

CURB CUT, CURB & GUTTER AND CURB RAMP DETAILS

STATE of ALASKA 49th — Lars R. Gregovich CE-8065 REGISTERED PROFESSIONAL ENGINEER — 6-15-16

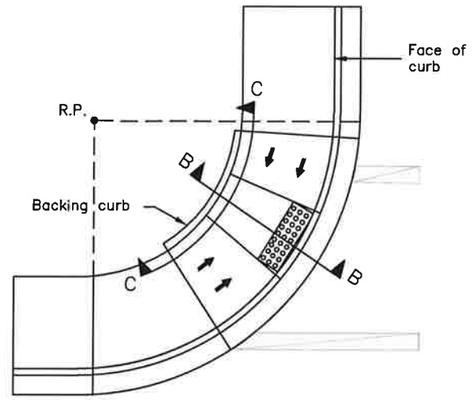
Eff. Date: 7/1/16

I-20.20

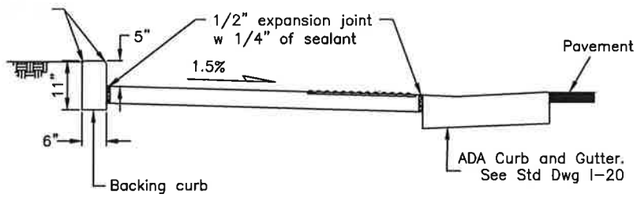


= Detectable Warning Tile See note 8

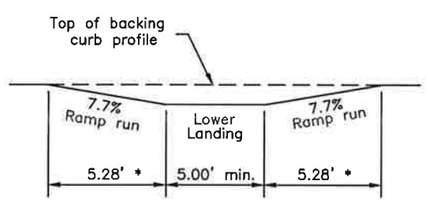
TWO CROSSING DIRECTIONS
At corner



ONE CROSSING DIRECTION
At corner – generic location shown

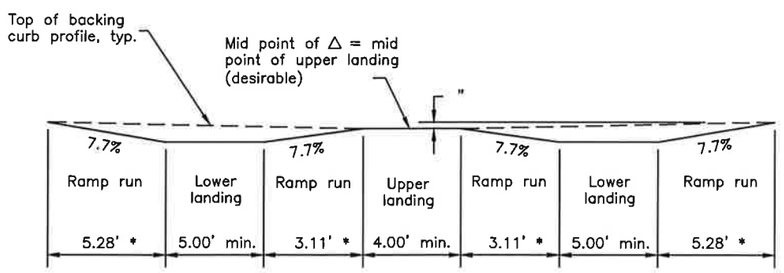


SECTION B–B



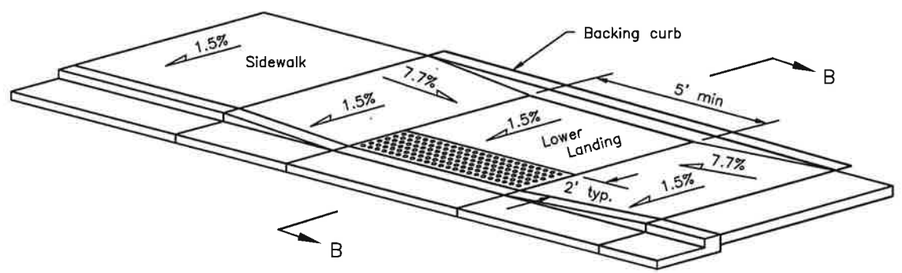
* See Note 5

PROFILE C–C



* See Note 5

PROFILE A–A



MID–BLOCK

Note: Drawing not to scale

CONSTRUCTION NOTES:

1. See plans for ramp type at specific locations. See striping plans for crosswalk layouts.
2. Construct ramp runs and landings of concrete, regardless of whether the sidewalk is asphalt or concrete.
3. When one parallel curb ramp will serve two directions, use the One Crossing Direction detail and refer to the striping plans for crosswalk layouts.
4. Ramp run lengths are shown for a flat sidewalk grade. For other sidewalk grades, increase or decrease ramp and flare lengths to maintain the slopes shown.
5. Construct ramp slopes at a nominal 7.7% grade, or flatter. Ramp slopes may be increased to a maximum of 8.3% when site conditions warrant it. Ramp lengths should be increased to keep grades under the 8.3% maximum, but are not required to exceed 15.0 feet. The resulting ramp grade at a 15.0 foot ramp length is acceptable even if it exceeds 8.3%.
6. Construct sidewalk cross slopes at 1.5% nominal (1.0% min. and 2.0% max).
7. Provide a coarse broomed finish running perpendicular to the curb on ramp runs and upper landings and parallel to the curb on lower landings.
8. Install 24" detectable warning tiles meeting Section 705.1 of the 2006 ADA Standards for Transportation Facilities for the full width of the ramp. Align truncated dome pattern in the predominant direction of wheelchair travel to permit wheels to roll between domes.
9. Maximum cross slope on lower landings is 2.0% as measured in any direction. Maximum cross slope on ramps is 2.0% measured perpendicular to the ramp run.

DESIGN NOTES

1. Parallel curb ramps are typically used when the sidewalk is at least 4' wide but can not be constructed wide enough for perpendicular ramps.
2. When one curb ramp is installed in a curb radius to serve both directions of pedestrian traffic, construct it in accordance with the One Crossing Direction detail.
3. Locate lower landings within the inner edges of marked crosswalks or, if crosswalks are not marked, within the area a standard marked crosswalk would enclose. See Standard Drawing T–23 for standard crosswalk layout.
4. Avoid drainage grates within marked crosswalks or, if crosswalks aren't marked, within the area a standard marked crosswalk would enclose. If a drainage grate is located directly in the pedestrian accessible route (e.g. a wheel chair must pass over it), install a grate meeting the requirements of Section 302.3 of the 2006 ADA Standards.
5. These details are compliant with the 2006 ADA Standards for Transportation Facilities.

REVISIONS		
Date	Description	By
5/31/12	ADA Updates	---
3/31/15	[illegible]	JCJ
7/1/16	2006 ADA Stds Update	LRG

State of Alaska DOT&PF
3132 Channel Dr., Juneau, AK
Phone: (907) 465-2960

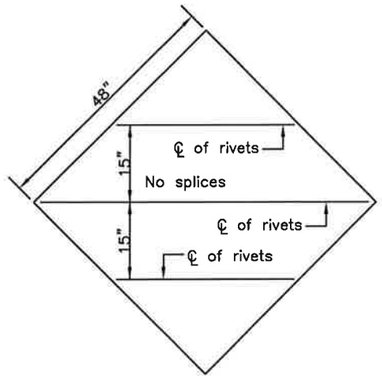
PARALLEL CURB RAMP

STATE OF ALASKA 49th Lars R. Gregovich CE-6065 REGISTERED PROFESSIONAL ENGINEER 6-16-16

Eff. Date: 7/1/16

I-21.10

S-00.11



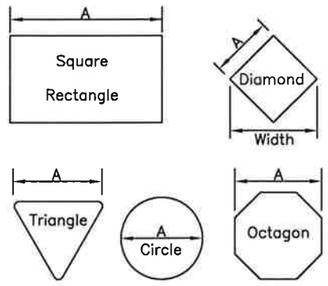
TUBE SIGN POST SPACING								
Sign Width (feet)	No. of Posts	Distance Between Posts	Sign Overhang	Post Type				Notes
				P.S.T.	Wood	Steel Tube	W–Shape	
0.5 to 4.0	1	–	0.5W	X	X	X		See Note 2.
4.5 to 10.0	2	0.6W	0.2W	X	X	X		See Note 3.
10.5 to 11.0	2	6	Varies	X	X	X		See Note 3.
11.5 to 13.0	2	8	Varies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

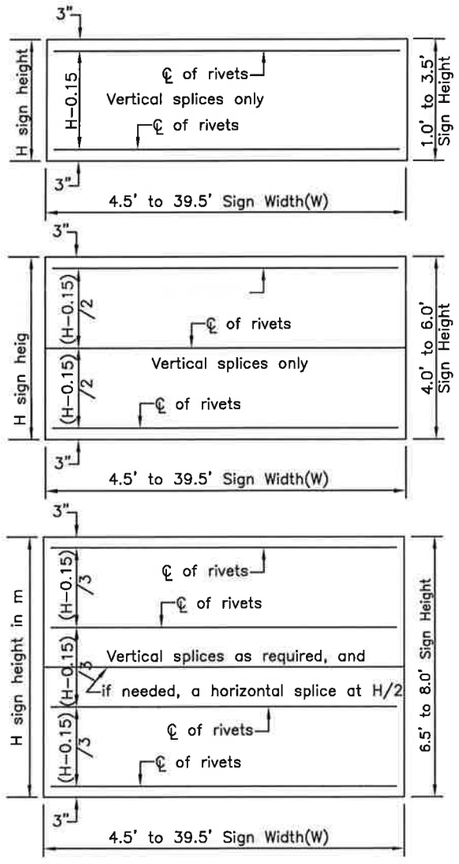
1. See the standard specifications for the aluminum alloys that you may use for sign sheeting and wind framing members.
2. Fabricate all signs from 0.125" thick aluminum sheeting.
3. Sign fabricators may use alternates to the zee shaped framing member with approval of the engineer, if the frame manufacturer 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.



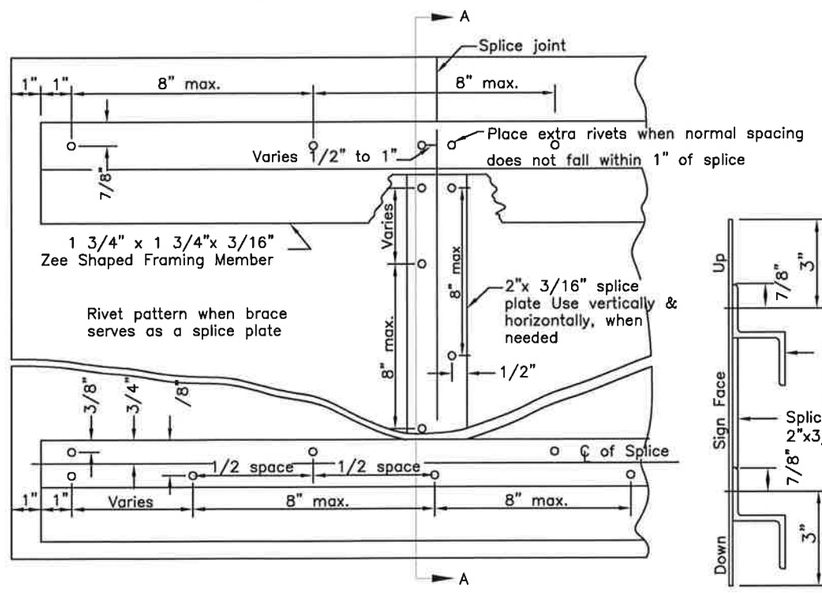
Maximum size unframed signs using 0.125" thick aluminum sheeting.	
Sign Shape	A
Squares, Shields, and Route Markers	48"
Rectangles	48"
Diamonds	48"
Triangles	48"
Rounds and Octagons	48"

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

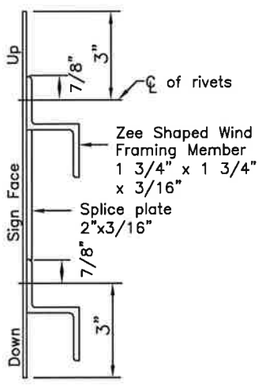
LIGHT SIGNS



WIND FRAMING LOCATIONS



RIVET DETAIL FOR ZEE SHAPED WIND FRAMING & SPLICE PLATE



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

Sheet 1 of 1

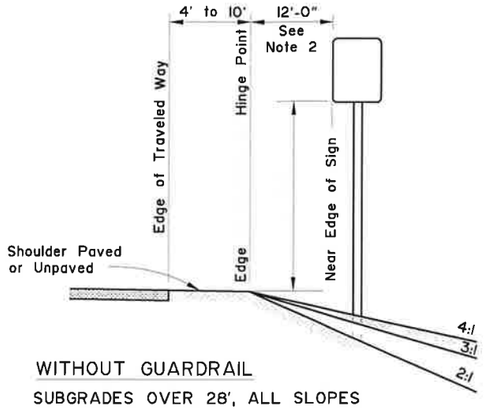
State of Alaska
Department of Transportation
& Public Facilities

SIGN FRAMING AND POST SPACING

APPROVED
Date 5/31/12

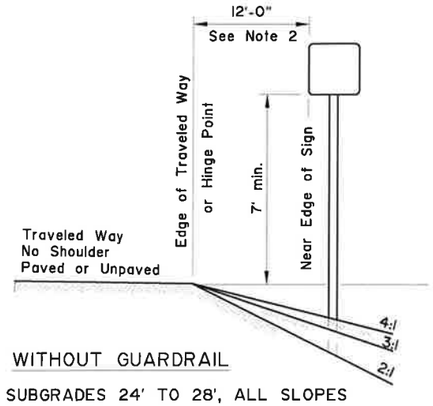
S–00.11

S-05.01



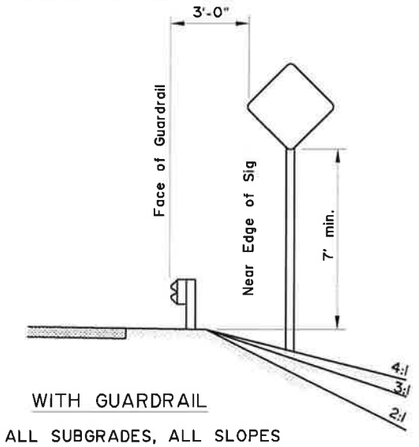
WITHOUT GUARDRAIL

SUBGRADES OVER 28', ALL SLOPES



WITHOUT GUARDRAIL

SUBGRADES 24' TO 28', ALL SLOPES

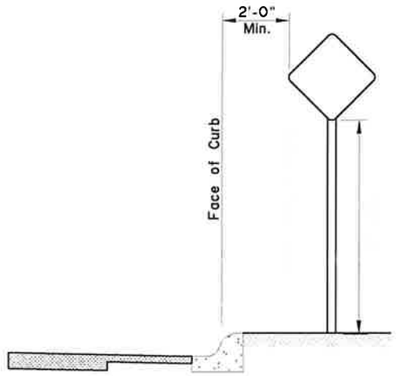


WITH GUARDRAIL

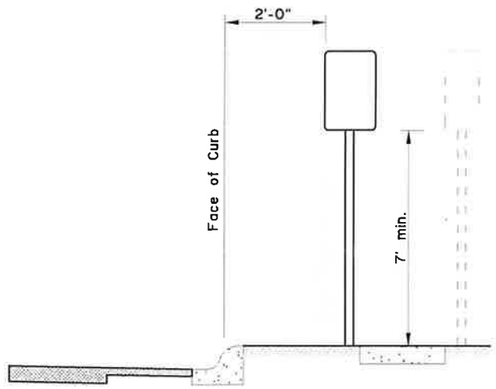
ALL SUBGRADES, ALL SLOPES

GENERAL NOTES

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

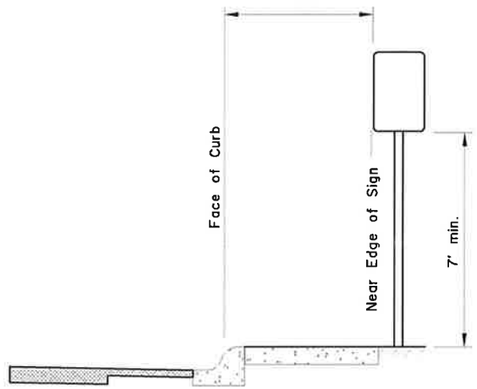


CURB WITHOUT SIDEWALK

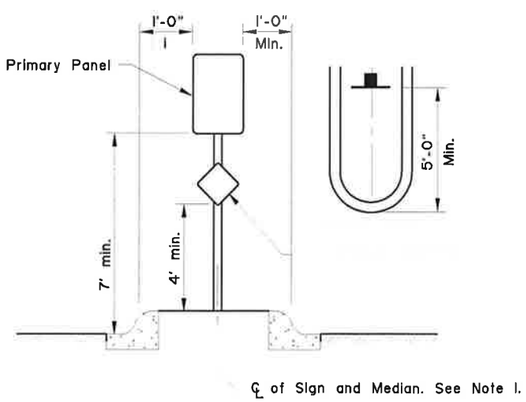


CURB WITH PARKWAY AND SIDEWALK

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

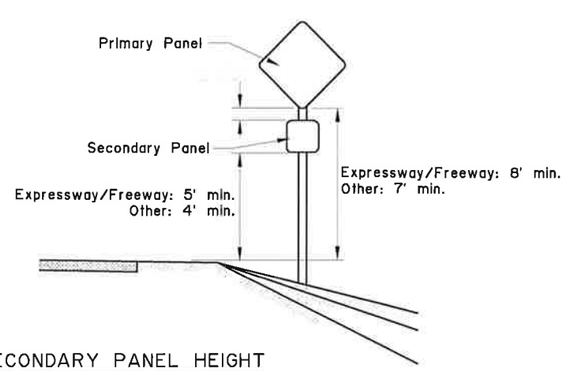


CURB WITH SIDEWALK WITHOUT PARKWAY



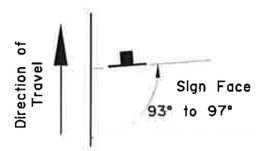
℄ of Sign and Median. See Note 1.

RAISED MEDIANS



SECONDARY PANEL HEIGHT

ALL TWO PANEL MOUNTING



SIGN POSITIONING

REVISIONS		
Date	Description	

Sheet 1 of 1

State of Alaska
Department of Transportation
& Public Facilities

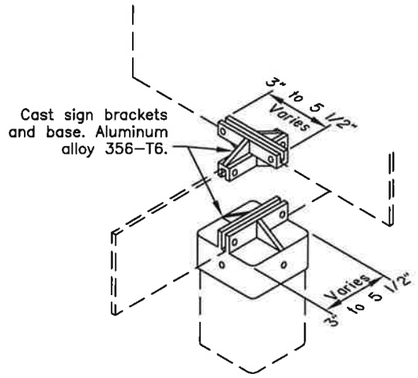
POST MOUNTED SIGN OFFSET AND HEIGHT

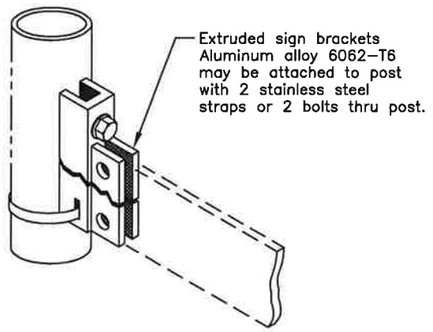
APPROVED

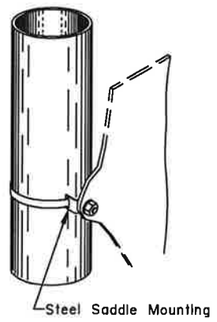
Kurtis J. Smith

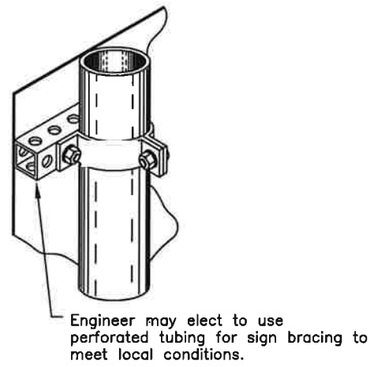
Date

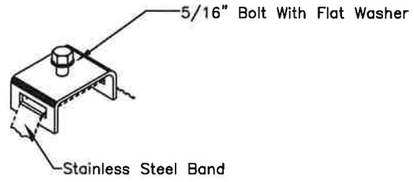
S-05.01

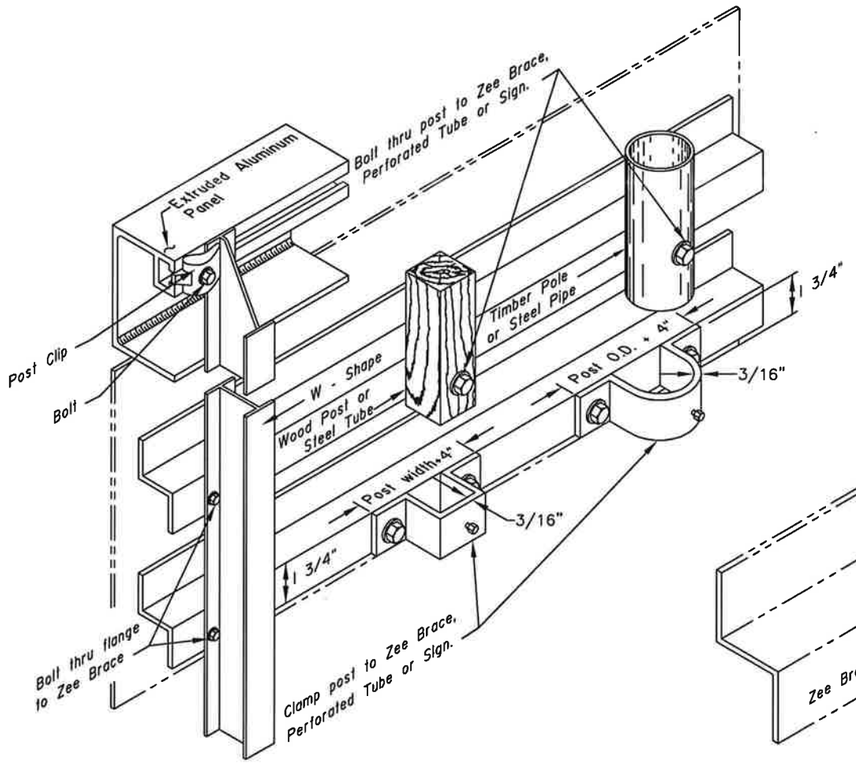


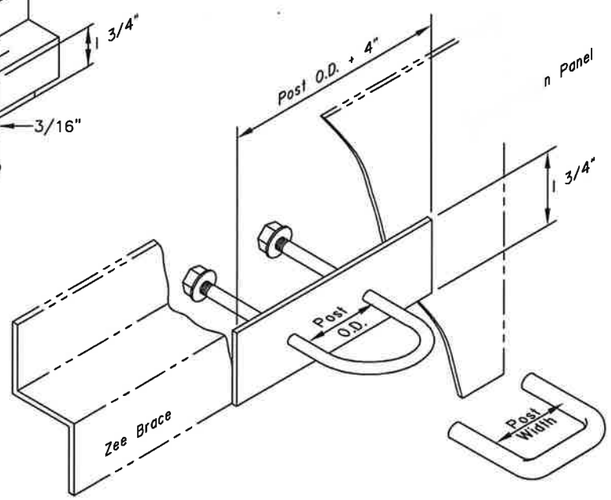


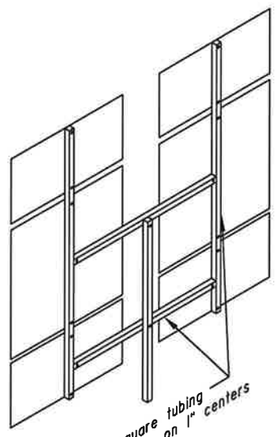












GENERAL NOTES

1. Details shown indicate general design only. Dimensions and design may vary among the manufacturers.
2. Install weather tight caps on all pipe and tube post (except perforated tubing).
3. Protect sign posts installed using driving methods with drive caps during installation.
4. Bolt braces to posts at each point where they cross posts.
5. Install signs with top of post, mounting brackets, etc. with a minimum of 3" below top of sign.
6. Paint all sign mounting fasteners on sign face a color closely matching the sign face.
7. Attach all signs, zees and braces mounted to the posts with 5/16" bolts.
8. Furnish all aluminum nuts, bolts and washers with anodized finish.

FASTENER SPECIFICATION TABLE			
		STEEL	STAINLESS STEEL
BOLTS	2024–T4	A–307	A–276
NUTS	6061–T6 2017–T4	A–307	A–276
WASHERS	2024–T4	A–36	A–276
POST CLIP	356–T6		

REVISIONS		
Date	Description	By

Sheet 1 of 1

State of Alaska
Department of Transportation
& Public Facilities

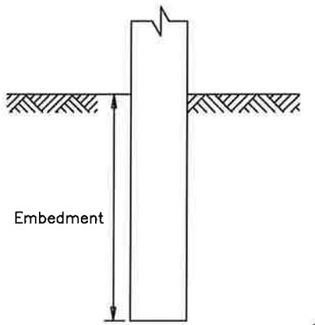
SIGN TO SIGN POST CONNECTIONS

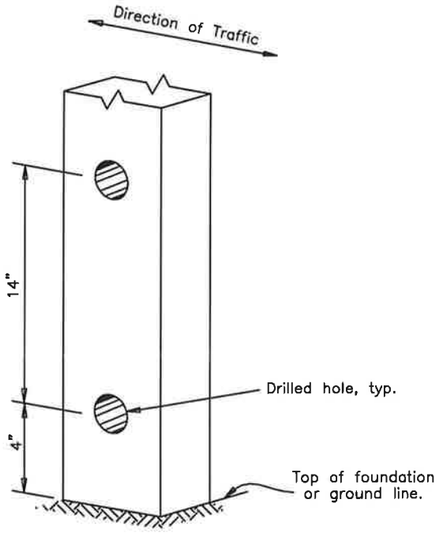
APPROVED

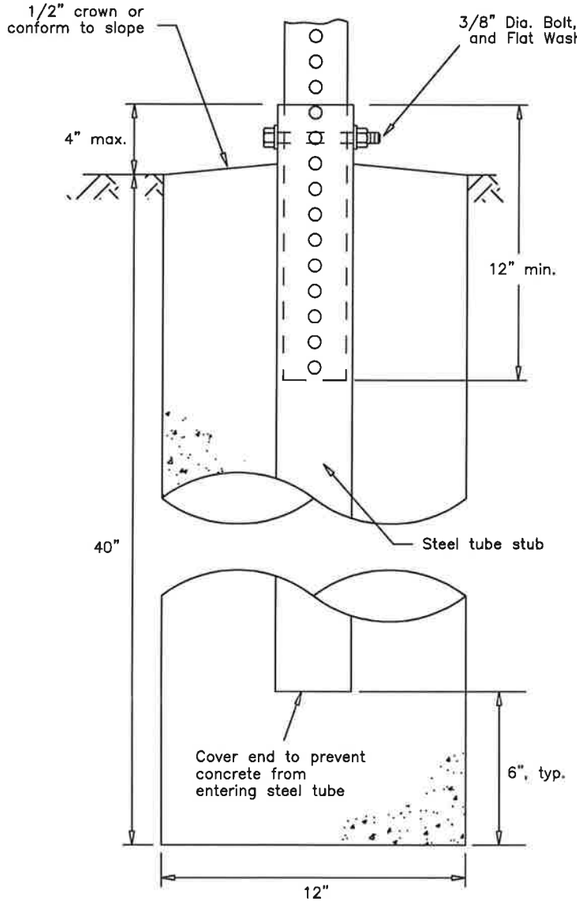
Date 2/28/03

S-20.10

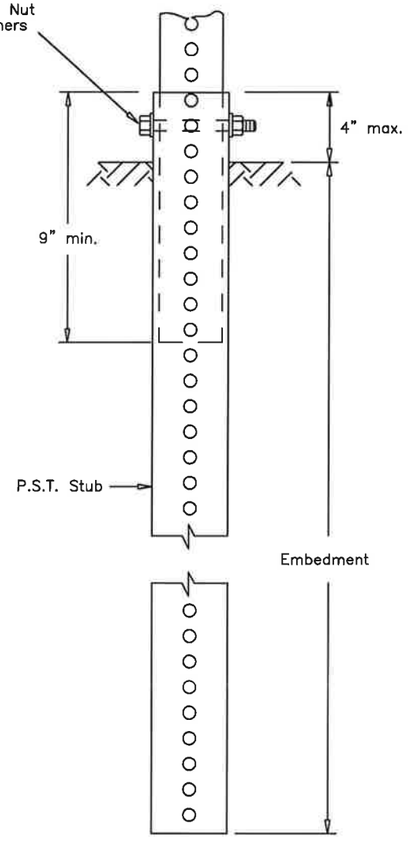
S-30.04







SLEEVE TYPE
CONCRETE FOUNDATION



SLEEVE TYPE *
SOIL EMBEDMENT

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

* Embedment depth applies in both strong and weak soil.

WOOD POSTS

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

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

PERFORATED STEEL TUBE (PST) POSTS

GENERAL NOTES:

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

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

State of Alaska DOT&PF
3132 Channel Dr., Juneau, AK
Phone: (907) 465-2960

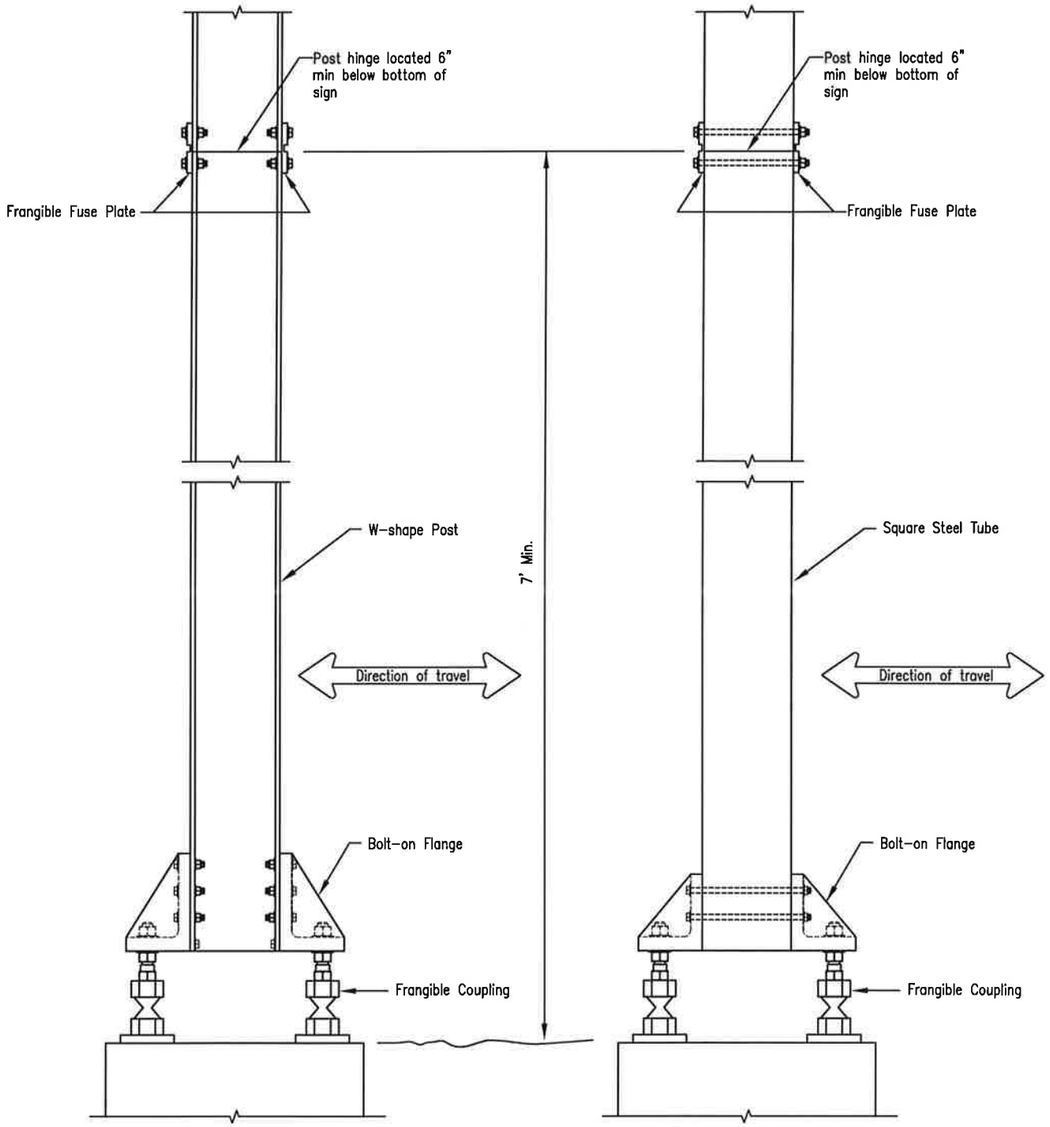
LIGHT SIGN STRUCTURE
POST EMBEDMENT

Eff. Date:
1/16/17

S-30.04

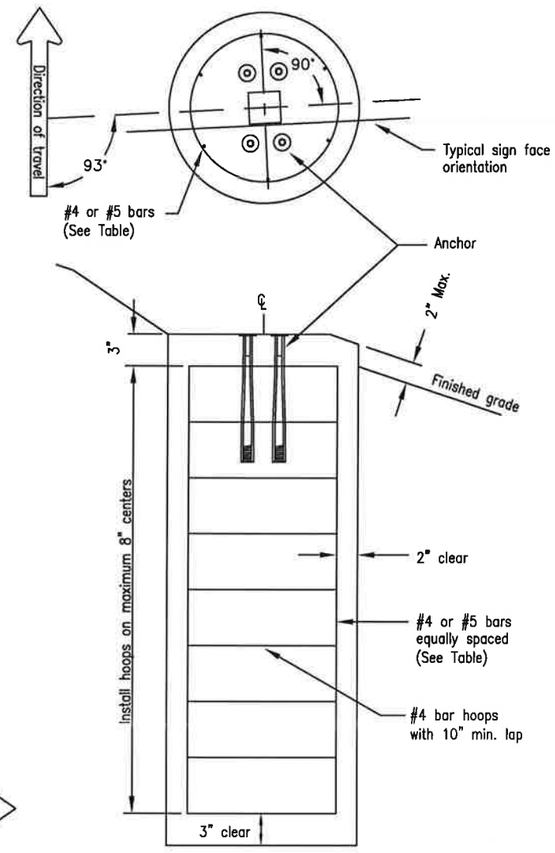
S-31.01

NOTE:
Install hinges when more than one post is used to support a sign. Do not install hinges on single post installations.



FRANGIBLE COUPLING SYSTEM FOR W-SHAPE POST

FRANGIBLE COUPLING SYSTEM FOR SQUARE STEEL TUBES



SIGN POST FOUNDATION

See Table for depth and diameter

POST SIZE & TYPE	FOUNDATION *			REINFORCEMENT					
	DIA.	MIN. DEPTH	CY^3 CONC.	VERTICAL BARS QTY.	SIZE	LGTH.	HOOPS QTY.	SIZE	DIA.
2 1/2" TUBE	1'-6"	4'-0"	0.26	6	#4	3'-6"	7	#4	1'-2"
3" TUBE	1'-6"	4'-0"	0.26	6	#4	3'-6"	7	#4	1'-2"
3 1/2" TUBE	1'-6"	4'-6"	0.30	6	#4	4'-0"	8	#4	1'-2"
4" TUBE	2'-6"	4'-0"	0.72	7	#5	3'-6"	7	#4	2'-2"
4 1/2" TUBE	2'-6"	4'-6"	0.81	7	#5	4'-0"	8	#4	2'-2"
5" TUBE	2'-6"	5'-6"	1.00	7	#5	5'-0"	9	#4	2'-2"
W6 x 9	2'-6"	4'-0"	0.95	8	#5	3'-6"	7	#4	2'-2"
W6 x 12	2'-6"	4'-6"	1.07	8	#5	4'-0"	8	#4	2'-2"
W6 x 15	3'-0"	6'-6"	1.69	8	#5	6'-0"	11	#4	2'-8"
W6 x 30	3'-0"	7'-6"	1.95	8	#5	7'-0"	12	#4	2'-8"

FOUNDATION TABLE

* Foundations sized for use where there are no loose, high moisture, or fine grained soils.

GENERAL NOTES

1. Furnish sign posts with NCHRP 350 or MASH compliant FHWA-approved frangible couplings designed to break away safely when struck from any direction. The frangible couplings shall not have specific installation torque requirements.
2. Furnish frangible coupling systems with bolt-on flanges.
3. Details on this sheet illustrate only the general components of a frangible coupling system, and are not intended to specify a particular product.
4. Install frangible fuse plates as specified by the manufacturer and hinged joints when multiple posts are used to support a sign. Do not use round pipes.
5. Install the components of the breakaway system, including hinges, in accordance with the written instructions of the system manufacturer.
6. Use Class A concrete conforming to section 501 of the Standard Specifications. Furnish ASTM A615 grade 60 steel bars for concrete reinforcement conforming to AASHTO M31.
7. Spiral reinforcing steel may be substituted for hoops in concrete foundation. Spiral option shall consist of #3 plain spiral with 6" pitch with three flat turns at the top and one flat turn at the bottom.
8. Install the concrete anchors using a rigid template. Locate the anchors on centers and within tolerances specified by the manufacturer.
9. Install the anchors in fresh concrete as recommended by the manufacturer. Adjust the template's final position until it is level. Remove and replace all foundations that need more than 2 shims under any 1 coupling or more than a total of 3 shims under any pair of couplings to plumb the post.
10. Drill the holes for attaching brackets before the sign posts are hot dip galvanized. Test fit templates in the holes to ensure the brackets can be installed square to the posts.

REVISIONS		
Date	Description	By
4/28/10	Delete pipe, Add hinge	KJS

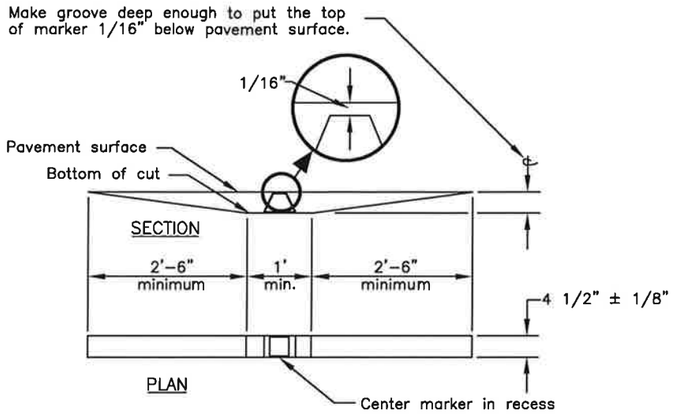
Sheet 1 of 1

State of Alaska
Department of Transportation
& Public Facilities

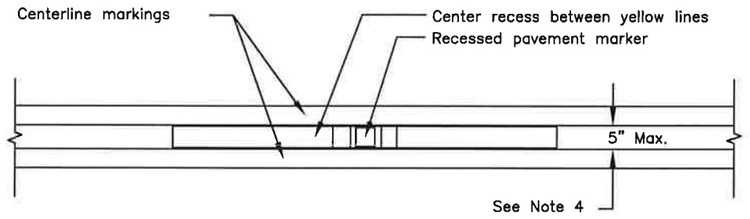
SIGN POST BASE AND FOUNDATION

APPROVED
Date 5/31/12

S-31.01



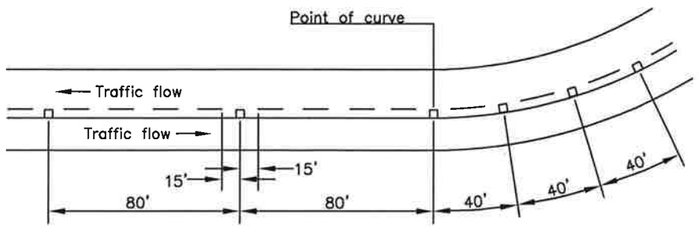
RECESSED PAVEMENT MARKER SLOT



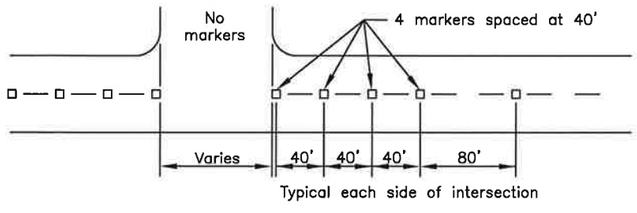
RECESSED PAVEMENT MARKERS WITH DOUBLE CENTERLINE INSTALLATION

GENERAL NOTES

1. Install recessed pavement markers spaced at 80' on tangent sections of roadway and on curves with a radius greater than 1,600'.
2. Install recessed pavement markers spaced at 40' on curves with a radius 1,600' or less.
3. Install recessed pavement markers between the lines on sections with double lines (either broken or solid.)
4. Increase the distance between yellow painted lines from the standard 3" up to a maximum of 5" to minimize paint overspray onto the marker.
5. Install recessed pavement markers on the centerline of the line, midpoint between stripe segments on sections with single broken lines.
6. Install reflectors of the same color as the pavement markings they supplement, except when red reflectors are specified on the departure side of markers on one-way roads to warn motorists they are going the wrong way.
7. Unless otherwise specified on one-way roads, reflectors are required only on the approaching traffic side of markers. In these cases, the 2'-6" taper may be omitted on the departure side.



RECESSED PAVEMENT MARKERS ON CURVES WITH A RADIUS LESS THAN 1,600'



RECESSED PAVEMENT MARKERS AT INTERSECTION APPROACHES

REVISIONS		
Date	Description	By

Sheet 1 of 1

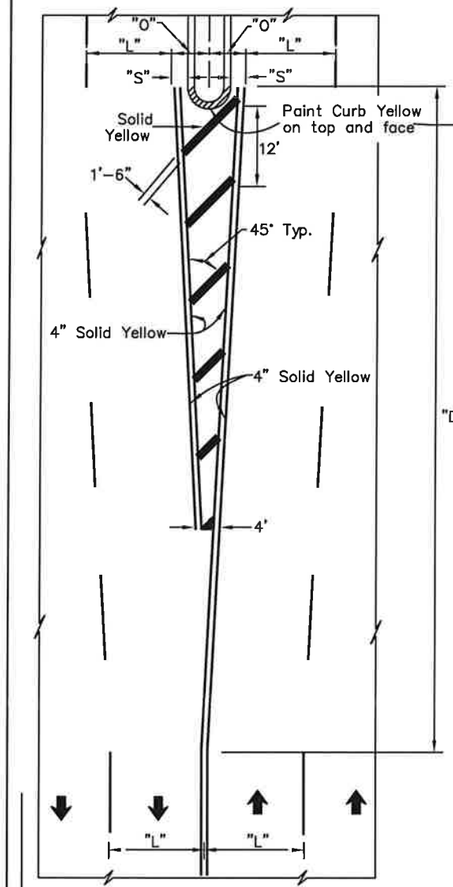
State of Alaska
Department of Transportation
& Public Facilities

RECESSED PAVEMENT MARKERS

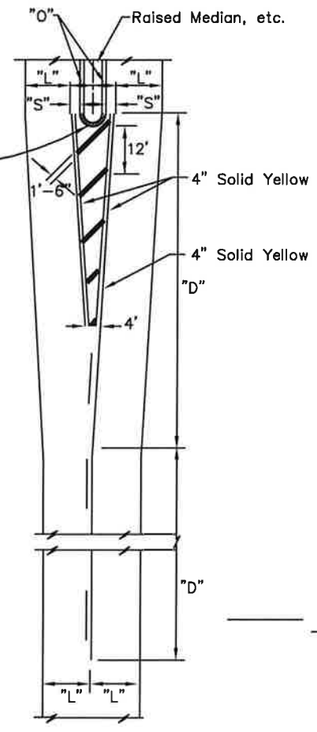
APPROVED

Date 3/28/03

T-20.03



FOUR OR MORE LANES
— DRIVE TO RIGHT —



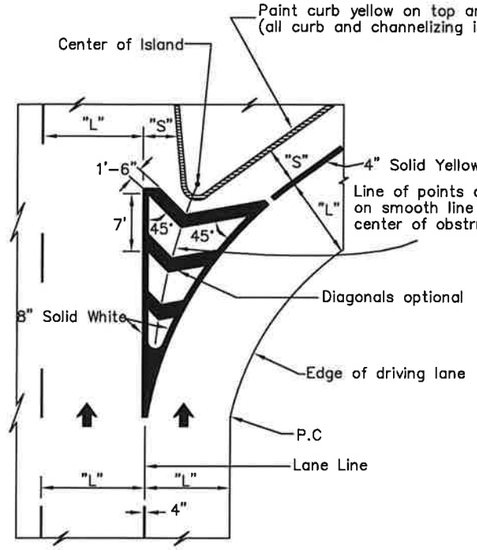
TWO LANES
— DRIVE TO RIGHT —

White longitudinal and diagonal markers identical to Four Lane Arrangement.

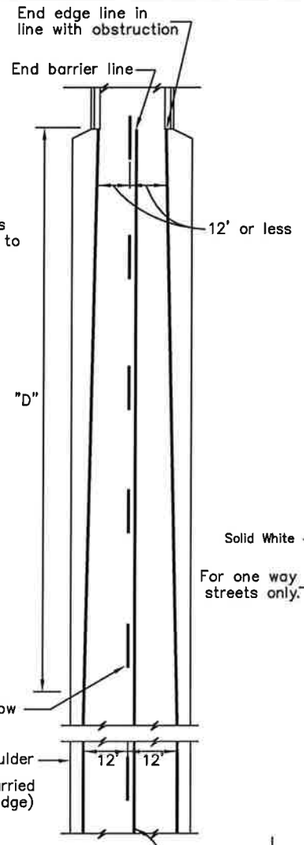
NOTES:

1. "D" = Speed limit (mph) X "0" (offset width in feet) or as indicated on the plans. Minimum "D" = 100 feet urban, 200 feet rural.

APPROACH TO OBSTRUCTIONS

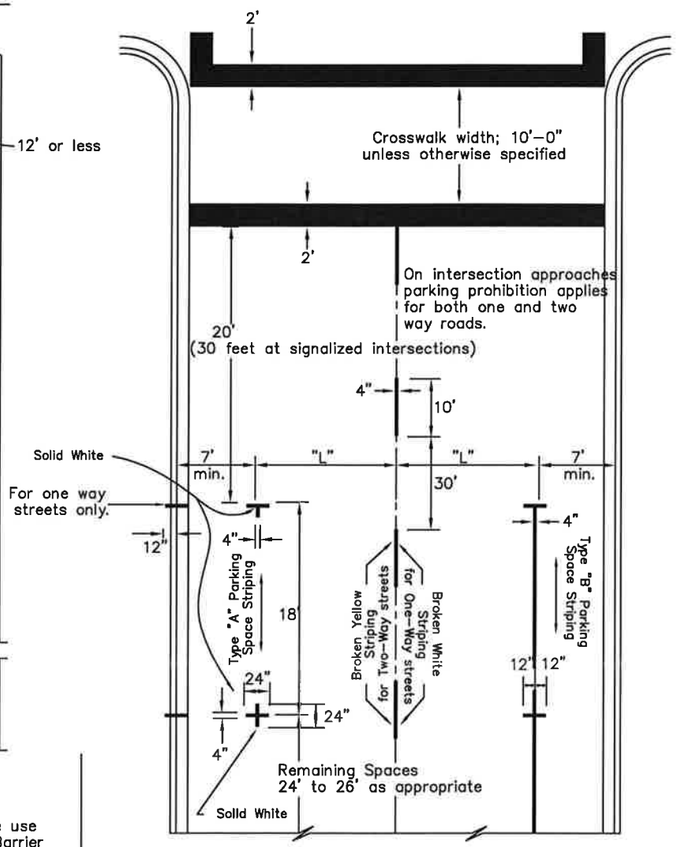


CHANNELIZING ISLAND



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

EDGE LINE TRANSITION TO NARROW BRIDGE AND APPROACH BARRIER LINE

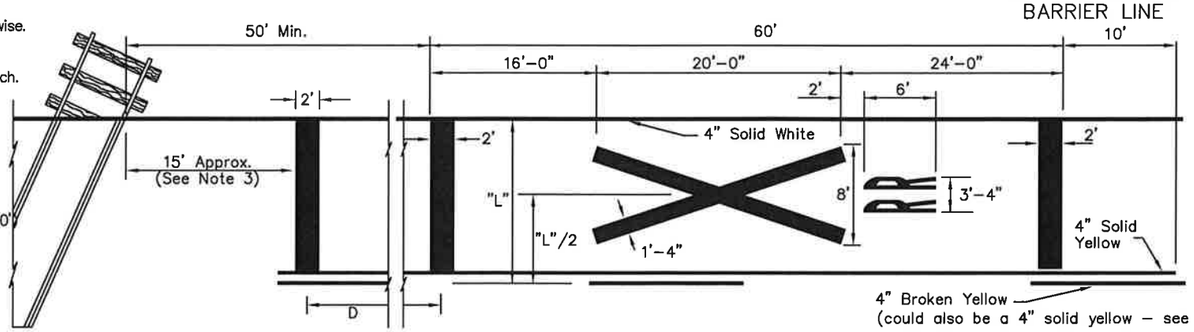


CENTERLINES FOR TWO LANE TWO WAY URBAN ROADS—PARKING LIMIT LINES

NOTES:

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

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



APPROACH TO RAILROAD CROSSING ON 2 LANE 2 WAY HIGHWAY

NOT TO SCALE

GENERAL NOTES:

1. "S"—offset distance as designated, otherwise 1 to 2 feet.
2. "L"—driving lane width.
3. See Alaska Traffic Manual for additional instruction and/or restriction on the use of TRAFFIC CONTROL DEVICES.

REVISIONS		
Date	Description	By
2/15/00	Changed "RR" location	KJS
10/31/03	Correct dim / text errors	LRG
4/28/10	Notes/details to MUTCD	KJS

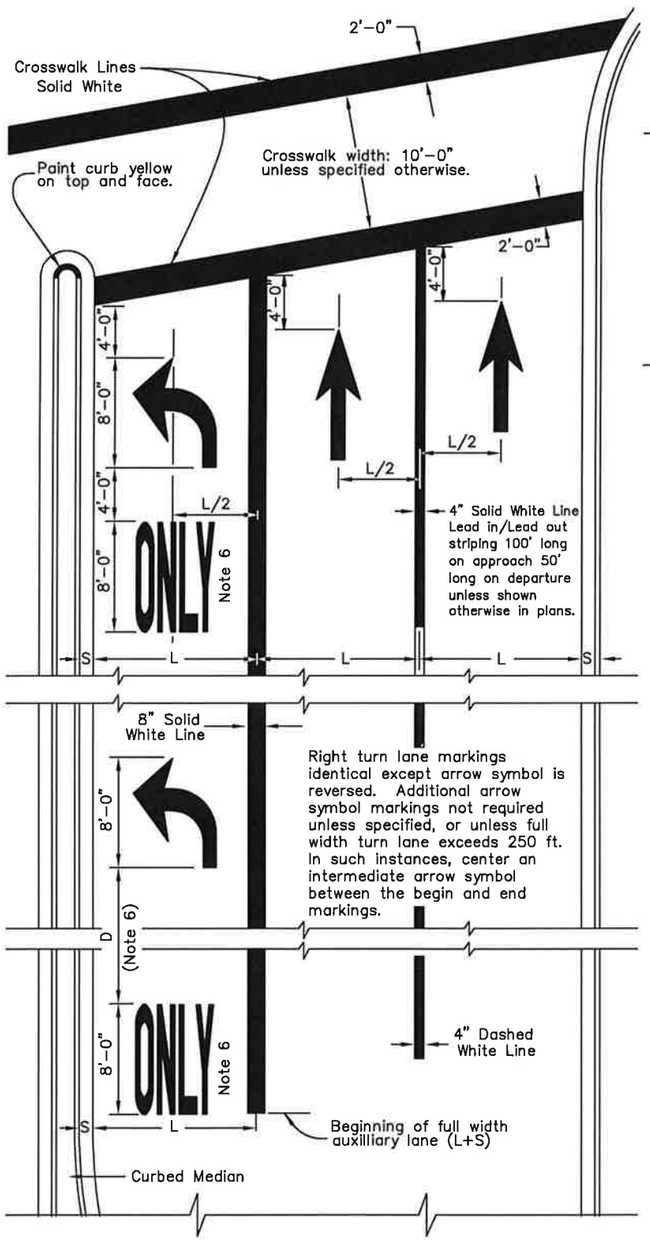
Sheet 1 of 1

State of Alaska
Department of Transportation & Public Facilities

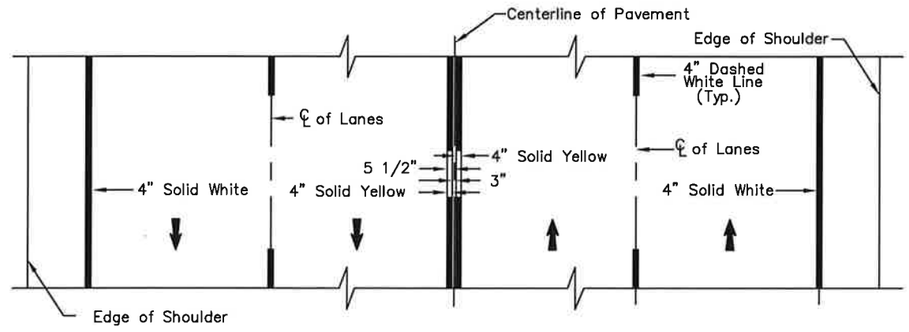
PAVEMENT MARKING APPLICATIONS

APPROVED 49TH STATE 4/28/10
Date 5/31/12

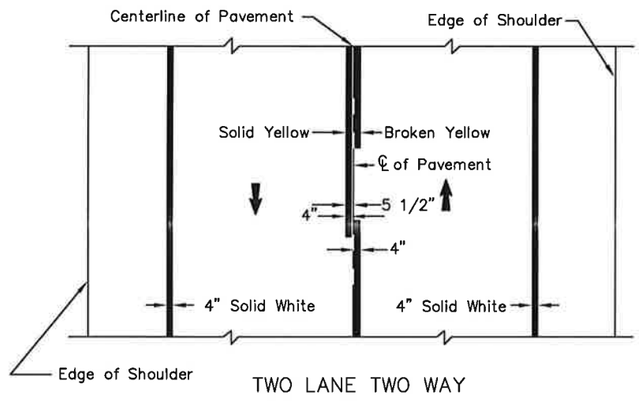
T-20.03



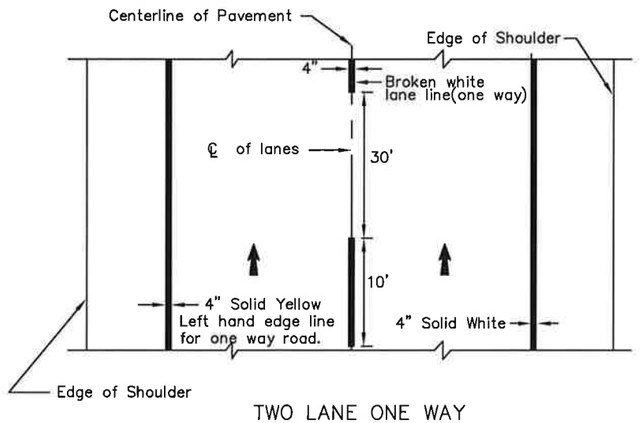
APPROACH TO INTERSECTION



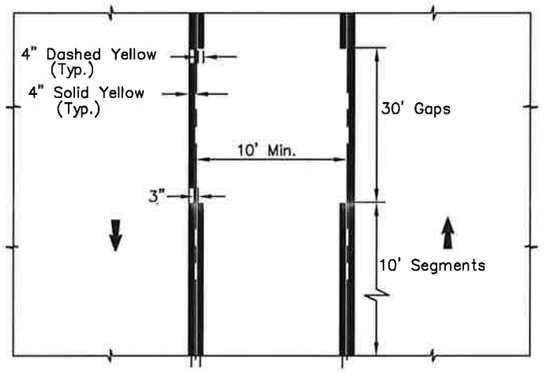
FOUR LANE TWO WAY



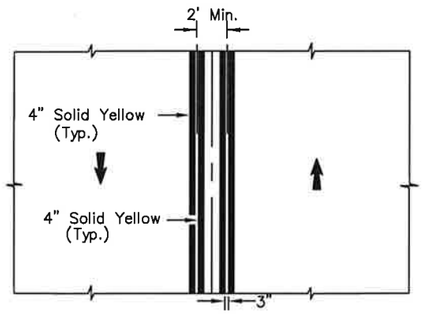
TWO LANE TWO WAY



TWO LANE ONE WAY



TWO-WAY LEFT TURN LANE



STRIPED MEDIAN

GENERAL NOTES:

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

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

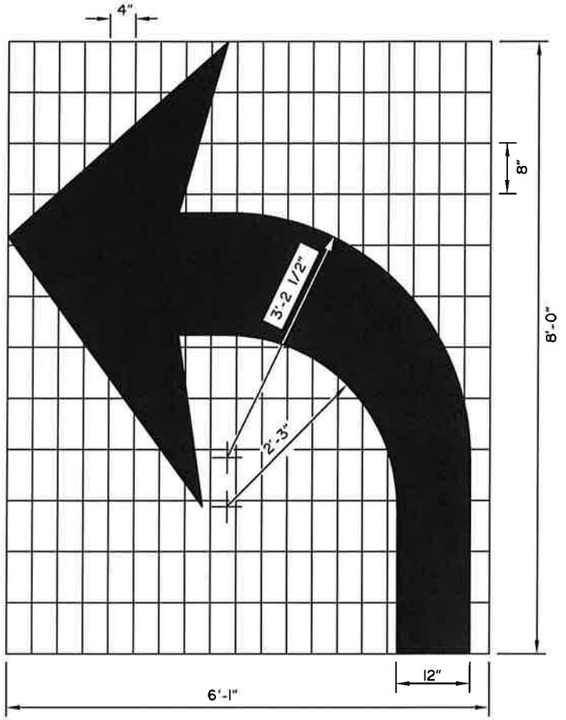
REVISIONS		
Date	Description	By
1/1/86	Arrow Dimension	Gdo
1/1/96	Intersect. Note	Gdo
4/28/10	Details, labels, notes	KJS

State of Alaska
Department of Transportation & Public Facilities

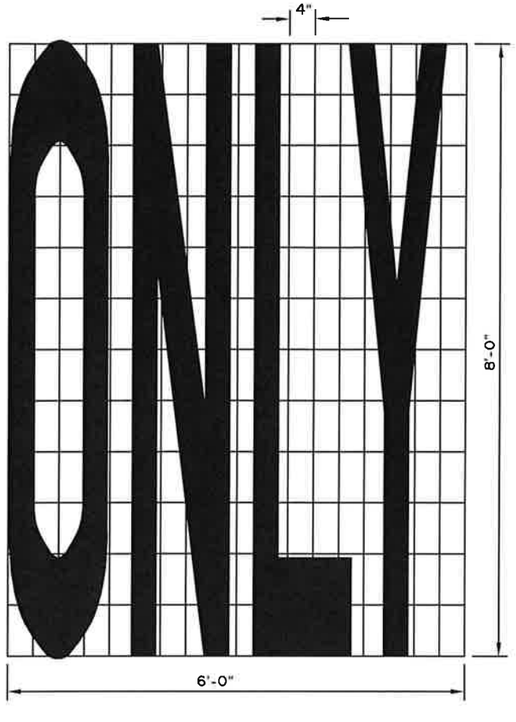
PAVEMENT MARKING APPLICATIONS

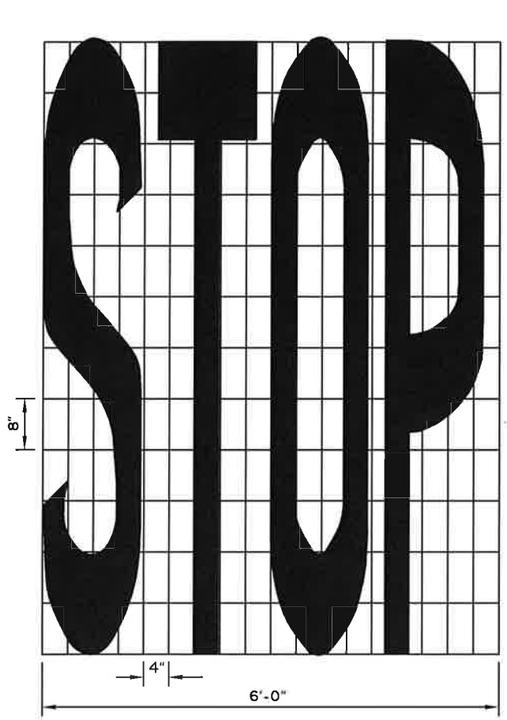
APPROVED
Date 5/31/12

T-21.03

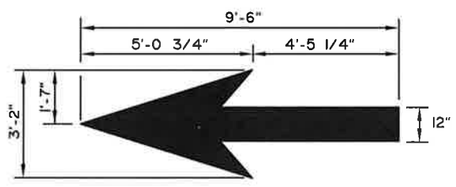


Right turn auxilliary lane usage markings identical except arrow symbol is reversed.

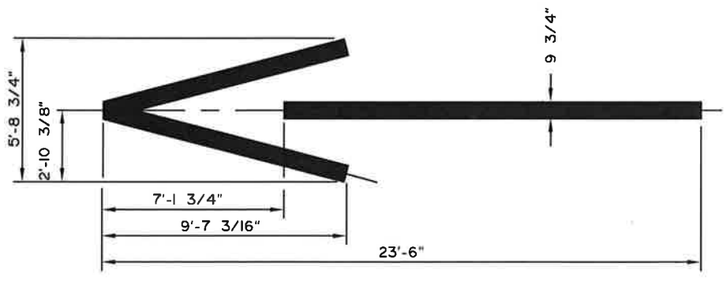




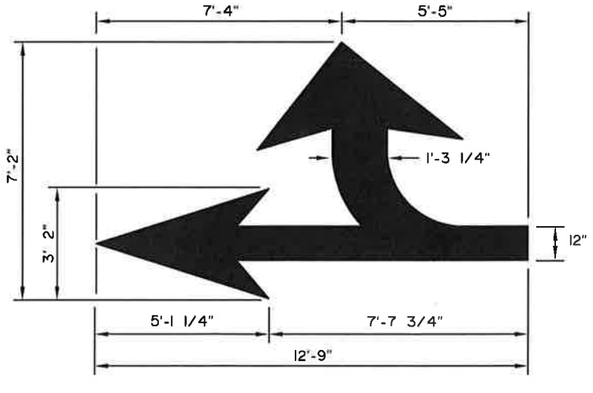
LAYOUT TEMPLATES FOR STENCILS



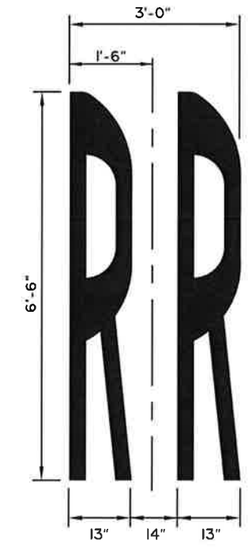
STRAIGHT AHEAD ARROW



WRONG WAY ARROW



COMBINATION ARROW



RAILROAD SYMBOL

T-22.03

SHEET | of |

GENERAL NOTES:

1. All symbols shown shall be white and reflectorized in accordance with the Special Provisions.
2. See "Standard Alphabets for Highway Signs and Pavement Marking" for letter layout.

REVISIONS		
Date	Description	By
1/1/86	Redraft Arrow Dim.	Gdo
4/1/93	Revise Arrow Markings	Gdo
2/15/00	Revise RR Symbol	KJS

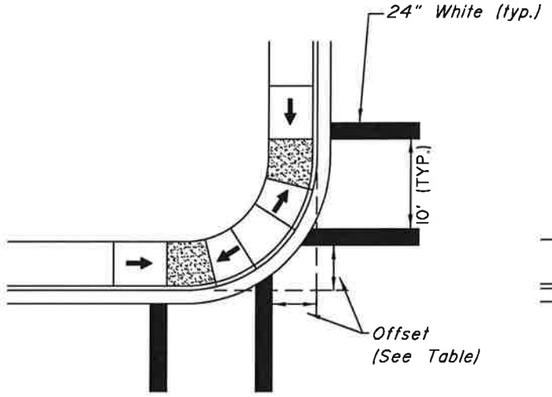
State of Alaska
Department of Transportation
& Public Facilities

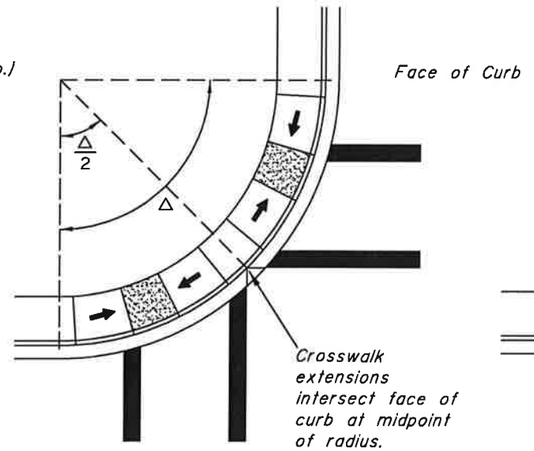
PAVEMENT MARKING SYMBOL DIMENSIONS

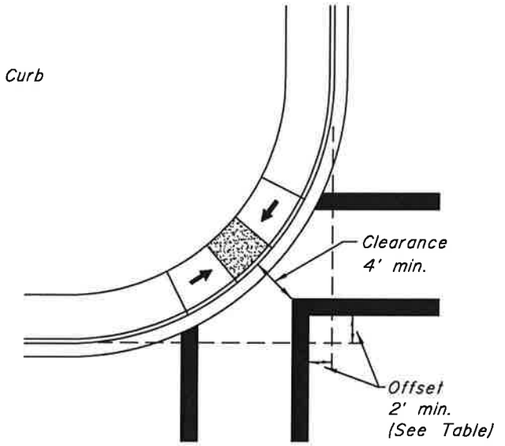
APPROVED

Date 1/1/86

T-22.03







NOTES.

1. The crosswalk locations shown assume a 90-degree intersection - adjust as necessary on skewed intersections to ensure that crosswalk landings (for parallel curb ramps) or ramp runs (for perpendicular curb ramps) fall within the inner edges of crosswalk stripes. If Case 3 (not recommended) is used, the layout should also be adjusted to provide at least the minimum clearance while maximizing the offset.
2. Although border crosswalks are shown, these details apply to ladder crosswalks also. When used, the outside of 10' wide ladder crosswalks should coincide with the inside of border crosswalks as shown here.
3. Border crosswalks should be used at traffic signals or on approaches controlled by stop signs. At other locations, ladder crosswalks should be used.
4. If only one crosswalk connects with a curb radius, it should be located as if there were two connecting crosswalks.
5. These details apply to parallel (shown) as well as perpendicular curb ramps.
6. Case 3, the layout for a single central curb ramp, should be used only when installing two ramps is not feasible. It should not be used for radii under 25 feet. See plans for ramp layout at particular locations.
7. Radius is measured to the face of curb.

CASE 1

Dual Curb Ramps
Radius ≤ 25'

CASE 1	
Crosswalk Offset From Face of Curb	
Radius (ft.)	Offset (ft.)
5	5
10	6
15	7
20	8
25	9

CASE 2

Dual Curb Ramps
25' < Radius ≤ 50'

CASE 3

Single Central Curb Ramp
25' ≤ Radius ≤ 50'
(Not Recommended)

CASE 3	
Crosswalk Offset From Face of Curb	
Radius (ft)	Offset (ft)
25	2
30	3
35	5
40	6
45	8
50	9

REVISIONS		
Date	Description	By

State of Alaska
Department of Transportation
& Public Facilities

CROSSWALK LOCATION AT INTERSECTIONS

APPROVED

Date 2/15/00

T-23.00