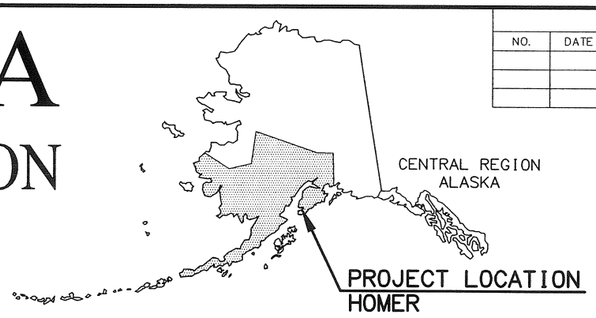
STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES



REVISIONS			STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL "AC" SHEETS
NO.	DATE	DESCRIPTION					
			ALASKA	0211(061)/56176 0211(059)/55260	2014	AC1	AC1

CENTRAL REGION
AS-ADVERTISED
APRIL 2014

PROPOSED HIGHWAY PROJECT

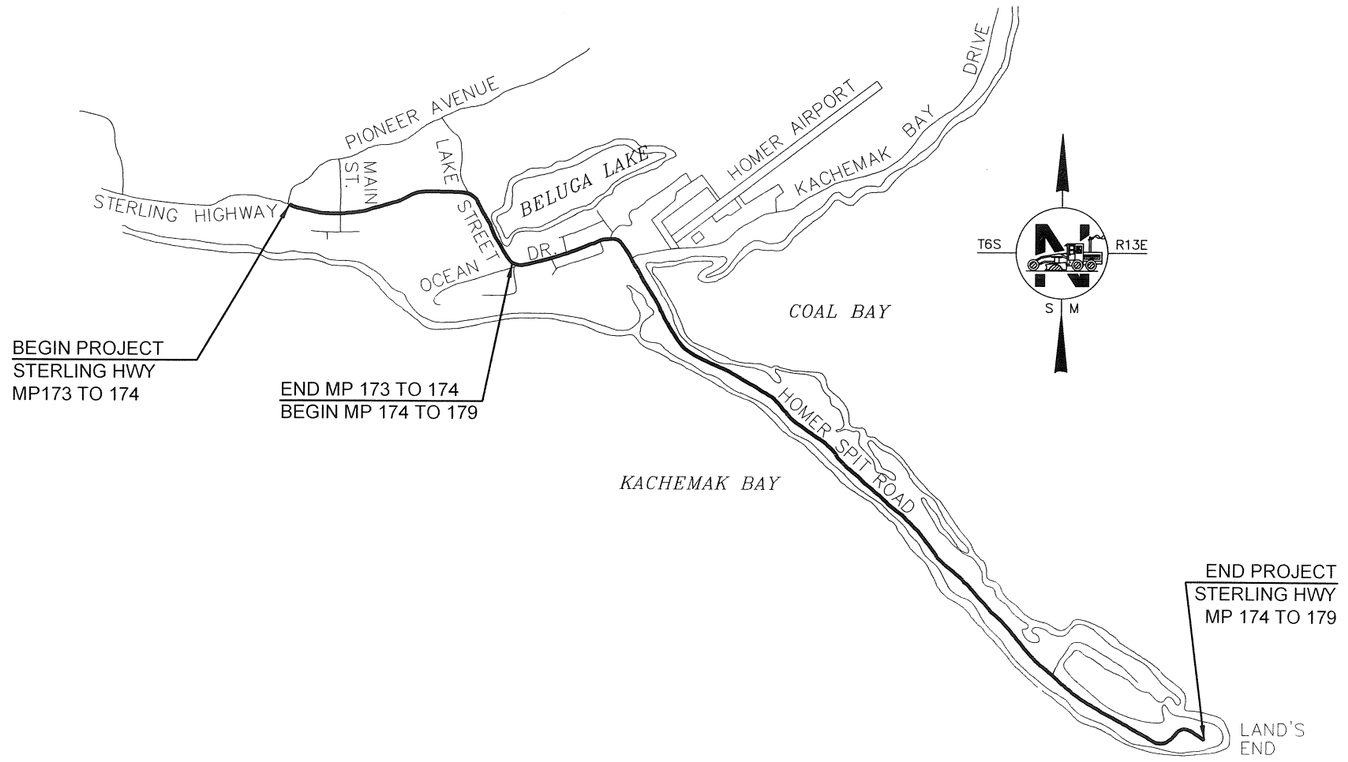
STERLING HIGHWAY MP 173 TO 174 PAVEMENT PRESERVATION
PROJECT NO. 0211(061)/56176

PLANING, PAVING, GUARDRAIL,
DRAINAGE, SIGNING & STRIPING

STERLING HIGHWAY MP 174 - 179 PAVEMENT PRESERVATION
PROJECT NO. 0211(059)/55260

PAVING, GUARDRAIL, DRAINAGE,
SIGNING & STRIPING

VOLUME 1 OF 2



DESIGNED BY
DETAILED BY
DRAFTED BY
XREF1
XREF2
SCALE
LAYOUT AC1
DATE TIME 3/19/2014 9:05 AM
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CHECKED BY	CHECKEDBY
DRAFTED BY	DRAFTEDBY

XREFS
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XREF2

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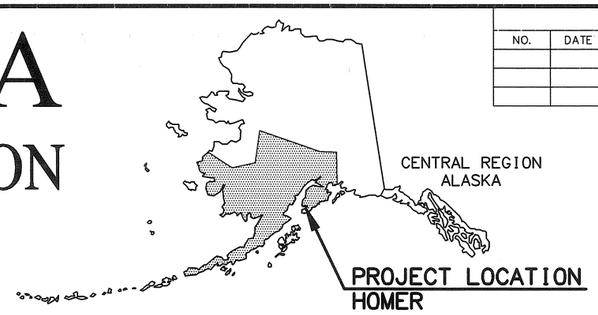
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A1

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STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES



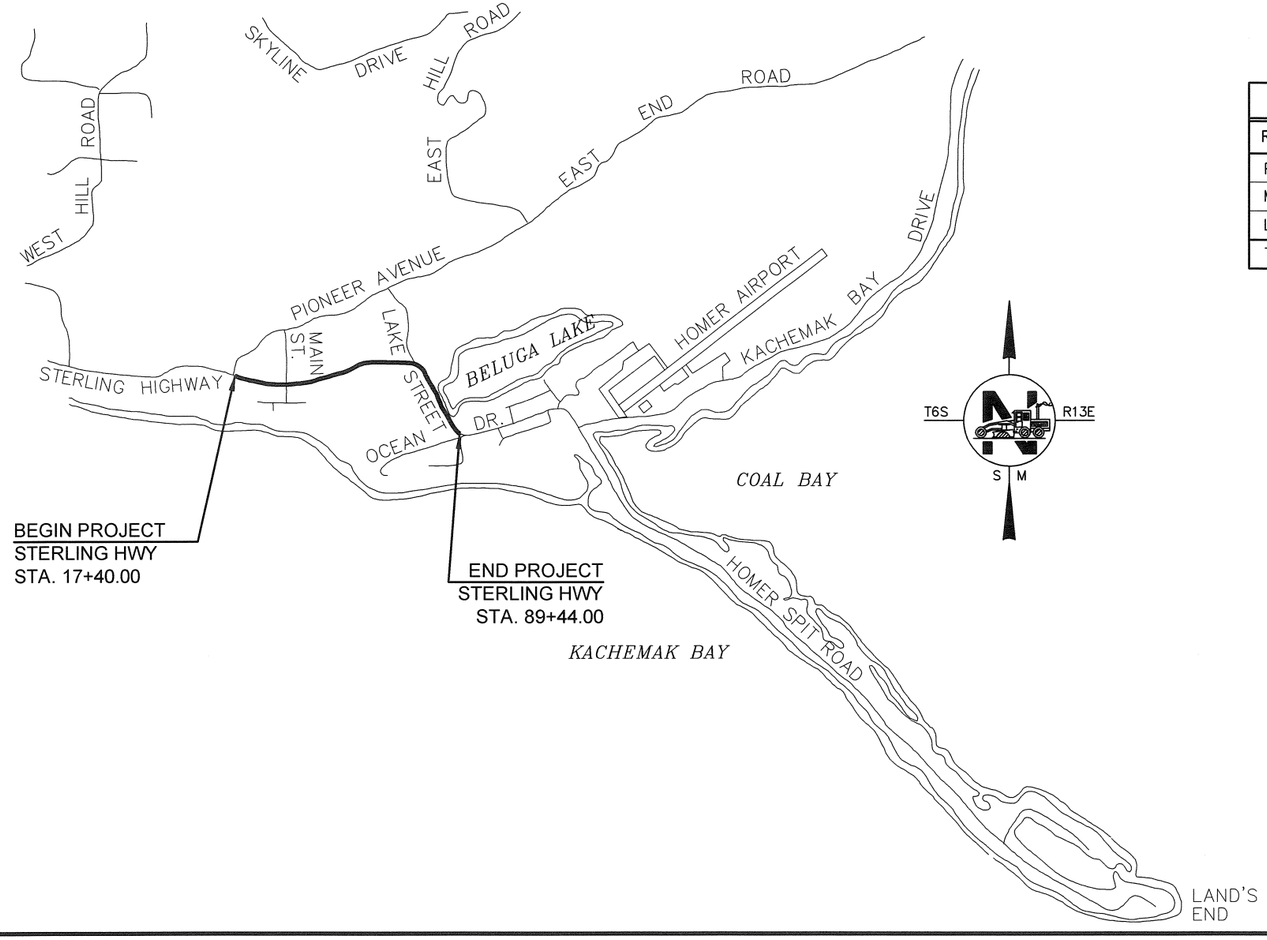
REVISIONS		
NO.	DATE	DESCRIPTION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL 'A' SHEETS
ALASKA	0211(061)/56176	2014	A1	A8
			PLAN SET TOTAL	49

PROPOSED HIGHWAY PROJECT

STERLING HIGHWAY MP 173 TO 174 PAVEMENT PRESERVATION PROJECT NO. 0211(061)/56176

PLANING, PAVING, GUARDRAIL, DRAINAGE, SIGNING & STRIPING



STERLING HIGHWAY MP 173 TO 174 PROJECT SUMMARY					
ROADWAY SEGMENT	FUNCTIONAL CLASS	LENGTH (MI)	WIDTH (FT)	2012 AADT (VPD)	V (MPH)
PIONEER AVE TO MAIN ST	RURAL PRINCIPAL ARTERIAL	0.3	44	8134	35
MAIN ST TO LAKE ST	RURAL PRINCIPAL ARTERIAL	0.7	44	9090	35
LAKE ST TO FAA ST	RURAL PRINCIPAL ARTERIAL	0.3	34	6840	35
TOTAL LENGTH		1.3			

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES

STATE OF ALASKA 49TH Kelly L. Kilpatrick CE-11237 REGISTERED PROFESSIONAL ENGINEER 3/25/14

APPROVED: 3/26/2014
REGIONAL PRE-CONSTRUCTION ENGINEER DATE

CONCUR: 3/27/2014
DIRECTOR, DESIGN & CONSTRUCTION DATE

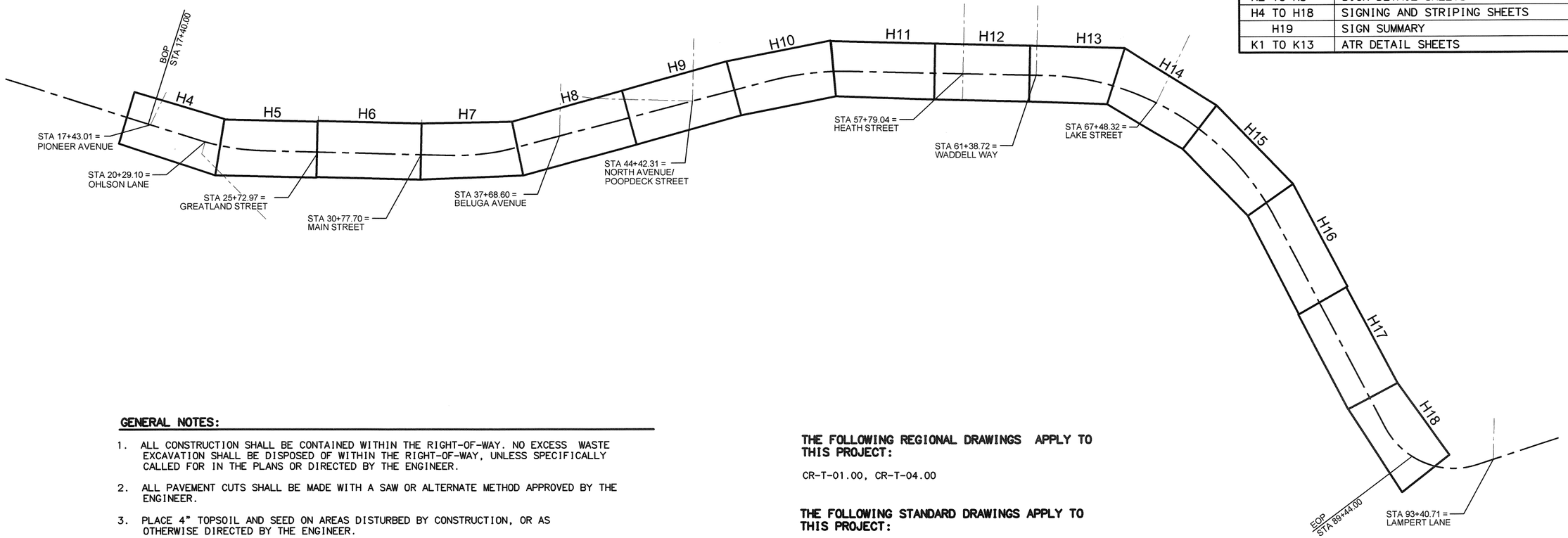
CERTIFIED TRUE & CORRECT AS-BUILT OF ACTUAL FIELD CONDITION:

CONSTRUCTION PROJECT MANAGER DATE

REVISIONS		
NO.	DATE	DESCRIPTION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0211(061)/56176	2014	A2	A8

INDEX	
SHEET NO.	DESCRIPTION
A1	TITLE SHEET
A2	SHEET INDEX, PLAN SCHEMATIC AND GENERAL NOTES
A3	LEGEND SHEET
A4 TO A8	SURVEY CONTROL SHEET
B1 TO B2	TYPICAL SECTIONS
C1	ESTIMATE OF QUANTITIES
D1 TO D4	SUMMARY SHEETS
E1 TO E2	DETAIL SHEETS
H1	TRAFFIC LEGEND AND NOTES
H2 TO H3	SIGN DETAIL SHEETS
H4 TO H18	SIGNING AND STRIPING SHEETS
H19	SIGN SUMMARY
K1 TO K13	ATR DETAIL SHEETS



GENERAL NOTES:

1. ALL CONSTRUCTION SHALL BE CONTAINED WITHIN THE RIGHT-OF-WAY. NO EXCESS WASTE EXCAVATION SHALL BE DISPOSED OF WITHIN THE RIGHT-OF-WAY, UNLESS SPECIFICALLY CALLED FOR IN THE PLANS OR DIRECTED BY THE ENGINEER.
2. ALL PAVEMENT CUTS SHALL BE MADE WITH A SAW OR ALTERNATE METHOD APPROVED BY THE ENGINEER.
3. PLACE 4" TOPSOIL AND SEED ON AREAS DISTURBED BY CONSTRUCTION, OR AS OTHERWISE DIRECTED BY THE ENGINEER.
4. NO WORK OR CONSTRUCTION SHALL OCCUR IN WATER OR WETLAND AREAS, INCLUDING BELUGA LAKE AND BELUGA SLOUGH.
5. THE EXISTING INFORMATION SHOWN IN THE PLANS IS FROM THE 1993 HIGHWAY PAVEMENT REHABILITATION PIONEER AVENUE TO LAND'S END, F-021-1(39)/59342, AS-BUILTS AND LIMITED FIELD VERIFICATION. FIELD CONDITIONS MAY NOT BE ACCURATELY SHOWN AND/OR MAY HAVE CHANGED. ADJUST IMPROVEMENTS AS DIRECTED OR APPROVED BY THE ENGINEER.
6. CLEAR, TRIM, OR GRUB AREAS SHOWN ON PLANS. TRIMMING AND GRUBBING ARE SUBSIDARY TO 201(1B) CLEARING.

THE FOLLOWING REGIONAL DRAWINGS APPLY TO THIS PROJECT:

CR-T-01.00, CR-T-04.00

THE FOLLOWING STANDARD DRAWINGS APPLY TO THIS PROJECT:

C-03.10, C-04.12,
D-04.21, D-23.01, D-24.00, D-26.02,
G-00.02, G-04.10W, G-09.04W, G-13.00,
G-25.21W, G-27.11,
I-20.14*, I-21.02, I-22.02,
S-00.11*, S-05.01, S-23.00, S-30.03,
S-31.01, S-32.00
T-20.03,T-21.03, T-22.03, T-23.00, T-32.10

*AS MODIFIED HEREIN

STATE OF ALASKA
49TH
Kelly J. Kilgatrick
CE 11237
4/10/14
REGISTERED PROFESSIONAL ENGINEER

PLANS DEVELOPED BY:
DOWL HKM

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

STERLING HWY MP 173 TO 174 PAVEMENT PRESERVATION

INDEX, PLAN SCHEMATIC AND GENERAL NOTES

DESIGNED BY KLK
CHECKED BY SKN
DRAFTED BY MAC

XREFS

SCALE

LAYOUT A2

DATE TIME 4/9/2014 9:46 AM

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REVISIONS		
NO.	DATE	DESCRIPTION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0211(061)/56176	2014	A3	A8

DESIGNED BY: K.I.K
DRAFTED BY: S.K.N
CHECKED BY: I.M.C

XREFS

SCALE

LAYOUT A3

DATE TIME 3/27/2014 1:25 PM

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UTILITIES

	EXISTING	PROPOSED
PIPELINES:		
STORM DRAIN STRUCTURE AND PIPE NUMBERS, APPLICABLE IF SHOWN	S1-1, S1-2, P1-1, P1-2	
STORM DRAIN	SD	
MANHOLE STORM DRAIN	SD	SD
CURB INLET CATCH BASIN		
FIELD INLET CATCH BASIN	FI	FI
PIPE CULVERT w/ END SECTION		
CLEANOUT	CO	CO
SANITARY SEWER	SS	S
MANHOLE SANITARY SEWER	SS	SS
SEPTIC VENTS		
WATER	W	W
FIRE HYDRANT		
WELL		
VALVE OR RISER		
NATURAL GAS	G	
OIL OR GASOLINE PIPELINE	O	
ELECTRIC (OVERHEAD)	OE	
ELECTRIC (DIRECT BURY)	UE	
ELECTRIC (OVERHEAD)	OE&OT	
UTILITY POLE		
UTILITY POLE WITH LUMINAIRE		
GUY POLE	GP	
GUY WIRE ANCHOR		
TRANSMISSION TOWER [WOOD]		
TRANSMISSION TOWER [STEEL]		
ELECTRICAL PEDESTAL	E	
ELECTRICAL TRANSFORMER	E	
ELECTRIC METER		
ELECTRICAL OUTLET		
ELECTRIC MANHOLE	E	
TELEPHONE (OVERHEAD)	OT	
TELEPHONE (DIRECT BURY)	UT	
TELEPHONE (DIRECT BURY)	UT&TV	
TELEPHONE PEDESTAL	T	
TELEPHONE MANHOLE	T	
FIBER OPTIC	FO	
FIBER OPTIC MANHOLE	FO	
CABLE TV (OVERHEAD)	OTV	
CABLE TV (DIRECT BURY)	UTV	
CABLE T.V. PEDESTAL	V	
SATELLITE DISH		
U.G. DUCT (E, T, FO)		

UTILITIES

	EXISTING	PROPOSED
ELECTROLIER		
HIGHTOWER		
SIGNAL POLE WITH MAST		
PEDESTRIAN PUSH BUTTON		
RURAL BEACON		
SCHOOL ZONE BEACON		

RIGHT OF WAY

	EXISTING	PROPOSED
PRIMARY CENTERLINE MONUMENT		
SECONDARY CENTERLINE MONUMENT		
PROJECT RIGHT-OF-WAY LINES		ROW
CONTROLLED ACCESS LINE		C/A
TEMPORARY CONSTRUCTION EASEMENT/PERMIT		
PROJECT CENTERLINE	27+00	
RAILROAD CENTERLINE		

EXISTING TOPOGRAPHY

CONIFER TREE OR TREES		
DECIDUOUS TREE OR TREES		
SHRUB OR SHRUBS		
WETLANDS		
CREEK		
RIVER		
LAKE / POND	LAKE	POND

EXISTING/PROPOSED

DRAINAGE FLOW	
CONTOURS - MAJOR	515
CONTOURS - MINOR	

MISCELLANEOUS

	EXISTING	PROPOSED
BUILDING		
TANKS ABOVE GROUND		
TANKS UNDERGROUND		
PRIVATE SIGN		
POST/BOLLARDS		
MAILBOX	MB	MB
TRAFFIC SIGN		
TRAFFIC SIGN POST #		##
VENT		

ROADWAY

	EXISTING	PROPOSED
ROADWAY OBLITERATION		
LIMIT OF CUT SLOPE		
LIMIT OF FILL SLOPE		
EDGE OF PAVEMENT		
CONCRETE CURB		
CONCRETE CURB & GUTTER		
CONCRETE CURB CUT		
SIDEWALK		
CURB RAMPS		
PARALLEL CURB RAMP		
PERPENDICULAR CURB RAMP		
MID-BLOCK CURB RAMP		
UNIDIRECTIONAL CURB RAMP		
DETECTABLE WARNING TILES		
DRIVEWAY APPROACH		
GRAVEL EDGE		
PATH / TRAIL		
BRIDGE		
TUNNEL		
NOISE BARRIER	X	X
FENCE	X	X
RETAINING WALL		
HEAD & WINGWALLS		
GUARDRAIL		
END SECTION		
PARALLEL GUARDRAIL SECTION		
SPECIAL DITCH		
BOTTOM OF DITCH		
RIPRAP		
BOULDER OR BOULDERS		

STATE OF ALASKA
49TH
Kelly K. Kpatrick
GE 17237
REGISTERED PROFESSIONAL ENGINEER
4/3/14

PLANS DEVELOPED BY:
DOWL HKM

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

STERLING HWY MP 173 TO 174
PAVEMENT PRESERVATION

LEGEND SHEET

REVISIONS		
NO.	DATE	DESCRIPTION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0211(61)/56176	2014	A4	A8

DESIGNED BY KLK
CHECKED BY SKA
DRAFTED BY WAC

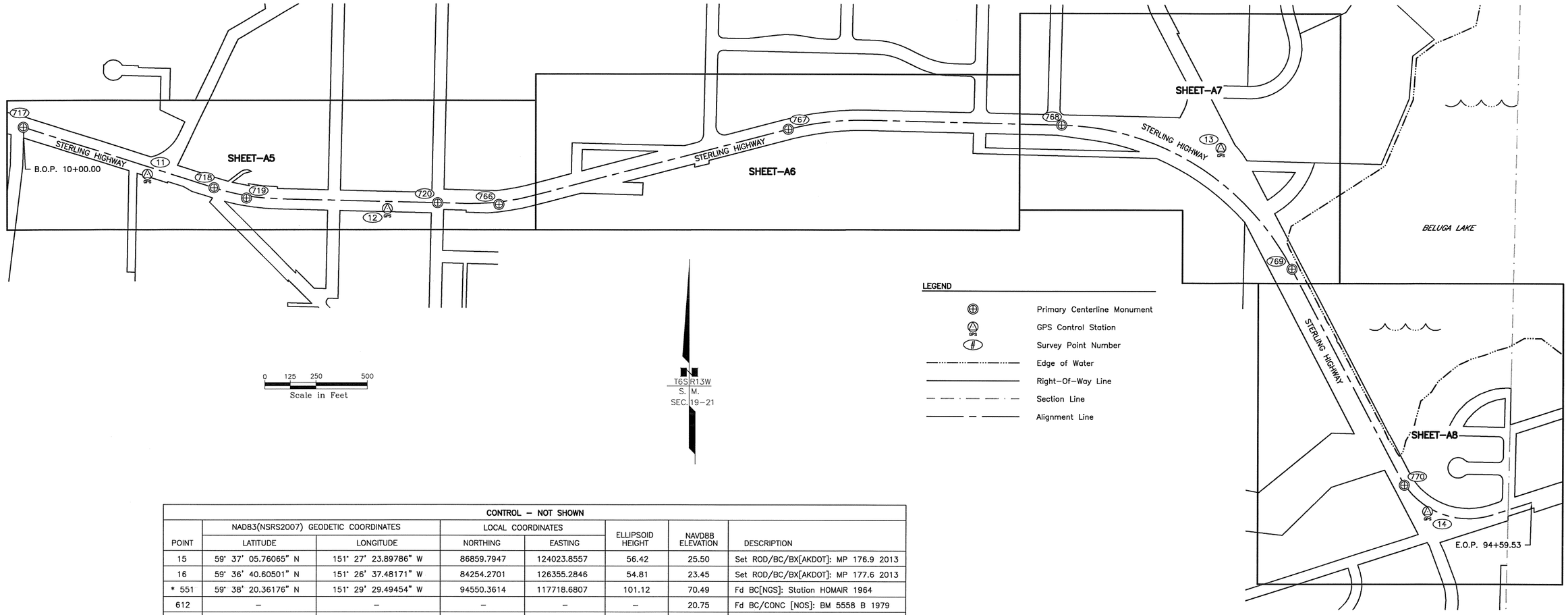
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SHEET-1

DATE TIME
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CONTROL – NOT SHOWN							
POINT	NAD83(NSRS2007) GEODETIC COORDINATES		LOCAL COORDINATES		ELLIPSOID HEIGHT	NAVD88 ELEVATION	DESCRIPTION
	LATITUDE	LONGITUDE	NORTHING	EASTING			
15	59° 37' 05.76065" N	151° 27' 23.89786" W	86859.7947	124023.8557	56.42	25.50	Set ROD/BC/BX[AKDOT]: MP 176.9 2013
16	59° 36' 40.60501" N	151° 26' 37.48171" W	84254.2701	126355.2846	54.81	23.45	Set ROD/BC/BX[AKDOT]: MP 177.6 2013
* 551	59° 38' 20.36176" N	151° 29' 29.49454" W	94550.3614	117718.6807	101.12	70.49	Fd BC[NGS]: Station HOMAIR 1964
612	–	–	–	–	–	20.75	Fd BC/CONC [NOS]: BM 5558 B 1979
* 620	–	–	–	–	–	126.52	Fd BC/CONC [USC&GS]: BM V–85 1964
** 621	–	–	–	–	–	150.74	Fd BC/CONC [USC&GS]: BM U–85 1964

* Point held from AKSAS No. 54130, 54140, 58106: Sterling Highway Pavement Preservation MP150–173, Per ROS 2012–5, Homer Recording District

** Point held from AKSAS No. 55889: HSIP 2012: Overhead Beacons – Pioneer Ave & Main St, Per ROS 2013–39, Homer Recording District

HORIZONTAL CONTROL STATEMENT

Coordinate System:
This project is located entirely within the ADOT&PF Central Region HOM1 adjustment, a local surface grid coordinate system expressed in U.S. Survey Feet units developed by the Alaska Department of Transportation & Public Facilities.

Basis of Coordinates:
The Basis of Coordinates is NGS Station "HOMAIR" (PID=TT0155), a brass disk having HOM1 coordinates of 94,550.3619 N and 117,718.6803 E U.S. Survey Feet.

Basis of Bearings:
Bearings are grid bearings as determined by GPS observations recorded August 9, 2013 using Leica dual frequency GPS receivers.

Translation Parameters:
To convert the local coordinates to NAD83(NSRS2007) State Plane coordinates expressed in U.S. Survey Feet, translate by using +1,968,487.1707 N U.S. Survey Feet, +1,246,708.6707 E U.S. Survey Feet, and scale by using 1.0000060627.

VERTICAL CONTROL STATEMENT

Elevations are NAVD88 expressed in U.S. Survey Feet. The basis of elevations is USC&GS Bench Mark "U–85", a brass cap set flush in the top of the southeast end of a concrete retaining wall along the southwest side of the entrance to the loading ramp at Don Jose's restaurant, located 11.0 feet southwest of the centerline of entrance to loading ramp, 0.6 foot northwest of the north corner of the restaurant, and 0.7 foot above the sidewalk, having an elevation of 150.74 feet.

A Leica DNA10 digital level was used for all leveling on this project. Final elevations were computed in Leica Geo Office (LGO) Version 8.3 software, using a length weighted adjustment. All of the level loops closed within Third–Order tolerances per Federal Geodetic Control Committee Standards and Specifications for Geodetic Control Networks.

All elevations on control points and benchmarks need to be field verified before they are used.

NOTES:

1. Project control coordinates shown on this sheet were established by using least–squares adjusted, conventional closed–traverse, and static GPS.

2. All dimensions and coordinates shown are in U.S. Survey Feet unless otherwise noted.

3. The information shown hereon is based on a field survey performed by DOWL HKM in August 2013. Background information depicted is shown for orientation purposes only and should not be used for any other purpose.

4. It is the Contractor's responsibility to work around all centerline monuments without disturbing the monument or case. Neither the monument nor case is to removed on this project. Monument cases shall have risers added to match final grade if needed.

5. Title research was not performed as part of this survey, a thorough examination of land title is needed to ensure all easements, restrictions and rights are depicted.

6. Refer to Record of Survey/Survey Control Diagram for AKSAS No. 55260 filed as Plat No. 2013–38 in the Homer Recording District, Third Judicial District, State of Alaska.

7. The edge of water along Beluga Lake was located by RTK GPS methods. Beluga Lake water surface elevation was determined by differential leveling.

Whether listed or not, ALL monuments or property markers, corners, or accessories, which will be disturbed or buried, shall be referenced and re–established in their original position (A.S. 19.10.260) and recorded (A.S. 34.65.0440).



PLANS DEVELOPED BY:
DOWL HKM

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

STERLING HWY MP 173 TO 174 PAVEMENT PRESERVATION

SURVEY CONTROL SHEET

REVISIONS		
NO.	DATE	DESCRIPTION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0211(61)/56176	2014	A5	A8

DESIGNED BY KLK
CHECKED BY SKN
DRAFTED BY MAG

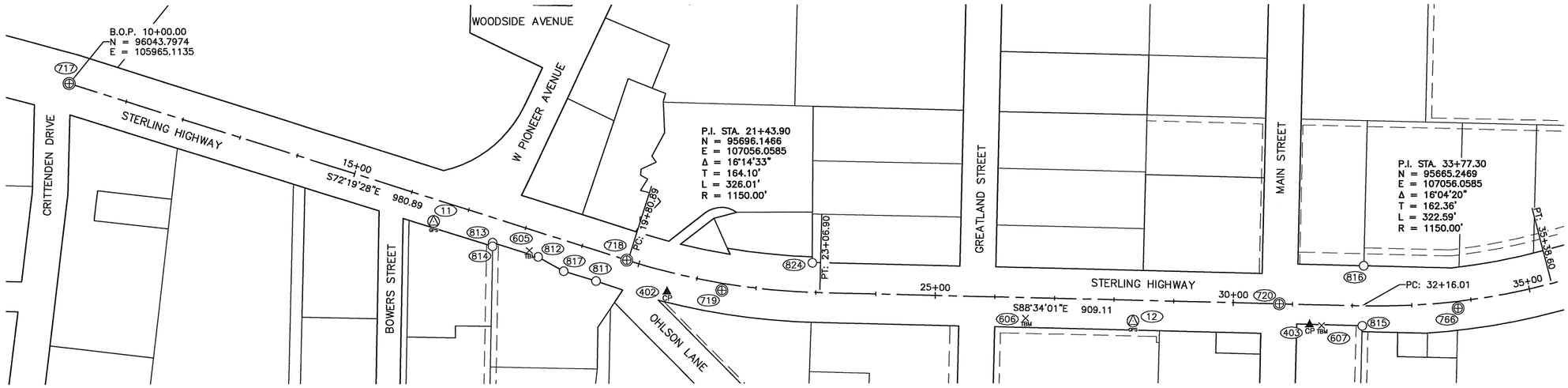
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HORIZONTAL CONTROL HELD

POINT	STATION	OFFSET	NAD83(NSRS2007) GEODETIC COORDINATES		LOCAL COORDINATES		ELLIPSOID HEIGHT	NAVD88 ELEVATION	DESCRIPTION
			LATITUDE	LONGITUDE	NORTHING	EASTING			
*11	16+49.44	36.16 RT	59° 38' 30.27065" N	151° 33' 06.83078" W	95812.1585	106572.9181	131.00	100.61	Fd ROD/BC/BX[AKDOT]: MP 172.8 2012
*12	28+32.47	34.76 RT	59° 38' 28.88631" N	151° 32' 43.96015" W	95644.2065	107744.9148	110.74	80.31	Fd ROD/BC/BX[AKDOT]: MP 173.0 2012

*Points held from AKSAS No. 54130, 54140, 58106: Sterling Highway Pavement Preservation MP150–173, Per ROS 2012–5, Homer Recording District

HORIZONTAL CONTROL SET

POINT	STATION	OFFSET	NAD83(NSRS2007) GEODETIC COORDINATES		LOCAL COORDINATES		ELLIPSOID HEIGHT	NAVD88 ELEVATION	DESCRIPTION
			LATITUDE	LONGITUDE	NORTHING	EASTING			
402	20+55.99	32.42 RT	59° 38' 29.19773" N	151° 32' 59.16866" W	95694.0278	106964.1234	124.68	94.27	Set AC/RBR[6714S]: CP SH173–179 402
403	31+29.32	33.24 RT	59° 38' 28.89623" N	151° 32' 38.19085" W	95638.3071	108041.4106	107.62	77.15	Set AC/RBR[6714S]: CP SH173–179 403

VERTICAL CONTROL – TEMPORARY BENCH MARKS

POINT	STATION	OFFSET	NAD83(NSRS2007) GEODETIC COORDINATES		LOCAL COORDINATES		NAVD88 ELEVATION	DESCRIPTION
			LATITUDE	LONGITUDE	NORTHING	EASTING		
605	18+17.20	34.04 RT	59° 38' 29.83" N	151° 33' 03.69" W	95763	106733	96.08	Chiseled X: TBM–2464–03|N Bolt on Light Pole Across from NE Cor of Sterling–W Pioneer
606	26+52.61	34.39 RT	59° 38' 28.89" N	151° 32' 47.46" W	95649	107565	82.08	Chiseled X: TBM–2464–04A|NE Bolt of Light Pole Across from NE Cor of Sterling–Greatland
607	31+49.91	34.61 RT	59° 38' 28.88" N	151° 32' 37.79" W	95636	108062	78.76	Chiseled X: TBM–2464–04B|N Bolt on Light Pole SE Cor of Sterling–Main

RECOVERED MONUMENTS – CENTERLINE MONS

POINT	STATION	OFFSET	NAD83(NSRS2007) GEODETIC COORDINATES		LOCAL COORDINATES		ELLIPSOID HEIGHT	NAVD88 ELEVATION	DESCRIPTION
			LATITUDE	LONGITUDE	NORTHING	EASTING			
* 717	10+00.02	–	59° 38' 32.41166" N	151° 33' 18.75761" W	96043.7927	105965.1374	–	–	Fd AM/BX[DOT]: PT Sterling Highway
* 718	19+78.57	–	59° 38' 29.70078" N	151° 33' 00.48853" W	95746.6805	106897.4898	–	93.21	Fd AM/BX[DOT]: EOP Sterling Highway
* 719	21+44.10	11.60 RT	59° 38' 29.23942" N	151° 32' 57.37775" W	95696.1208	107056.2518	–	92.04	Fd AC/BX[DOT]: PI Sterling Highway
* 720	30+77.78	–	59° 38' 29.22480" N	151° 32' 39.19195" W	95672.8619	107990.7412	–	77.10	Fd AM/BX[DOT]: SI Sterling Highway/Main Street
766	33+76.96	11.42 RT	59° 38' 29.21765" N	151° 32' 33.35039" W	95665.1575	108290.8959	102.02	71.55	Fd AM/BX[DOT]: PI Sterling Highway

* Points held from AKSAS No. 54130, 54140, 58106: Sterling Highway Pavement Preservation MP150–173, Per ROS 2012–5, Homer Recording District

RECOVERED MONUMENTS – PROPERTY CORNERS

POINT	STATION	OFFSET	NAD83(NSRS2007) GEODETIC COORDINATES		LOCAL COORDINATES		DESCRIPTION
			LATITUDE	LONGITUDE	NORTHING	EASTING	
811	19+39.80	49.06 RT	59° 38' 29.34455" N	151° 33' 01.48100" W	95711.7048	106845.6459	Fd RBR/YPC[8859S]: ROW/Tract A Berry Addition
812	18+34.38	39.87 RT	59° 38' 29.72348" N	151° 33' 03.39876" W	95752.4681	106747.9961	Fd RBR/YPC[8859S]: ROW/Tract A Berry Addition
813	17+54.88	40.08 RT	59° 38' 29.94177" N	151° 33' 04.88417" W	95776.4091	106672.1827	Fd RBR: ROW/Tract A NW Cor Tract A Berry Addition
814	17+56.65	46.03 RT	59° 38' 29.88060" N	151° 33' 04.88339" W	95770.2072	106672.0644	Fd RBR/YPC: ROW/NE Cor Lot 1 Kachemak View Addition
815	32+17.75	33.29 RT	59° 38' 28.89363" N	151° 32' 36.47012" W	95635.9882	108129.8156	Fd RBR: ROW/NE Cor Lot 15–A–1 W. R. Benson Subdivision
816	32+17.64	66.99 LT	59° 38' 29.88132" N	151° 32' 36.46762" W	95736.2442	108132.2751	Fd AC/RBR[3686S]: ROW/SE Cor Lot 1/SW Cor Lot 2 W.R. Benson Subdivision No. 3
817	18+82.56	49.74 RT	59° 38' 29.49668" N	151° 33' 02.55292" W	95728.4422	106790.9102	Fd RBR/YPC[8859S]: ROW/Tract A Berry Addition
824	22+92.52	49.42 LT	59° 38' 29.72457" N	151° 32' 54.45556" W	95741.8692	107207.5590	Fd AC/RBR[5780S]: ROW/SW Cor Lot 30A Chamberlain & Watson Subdivision

0 50 100 200
Scale in Feet

T6S R13W
S. M.
SEC. 19–21

LEGEND

- Primary Centerline Monument
- Property Miscellaneous Corner
- GPS Control Station
- CP Survey Traverse Station
- TBM Temporary Bench Mark
- (#) Survey Point Number
- Right–Of–Way Line
- Property Line
- Easement Line
- 00+00 + 05+00 Alignment Line

STATE OF ALASKA
49th
Stanley E. Ponsness
LS-6714
REGISTERED PROFESSIONAL LAND SURVEYOR
4/2/14

PLANS DEVELOPED BY:
DOWL HKM

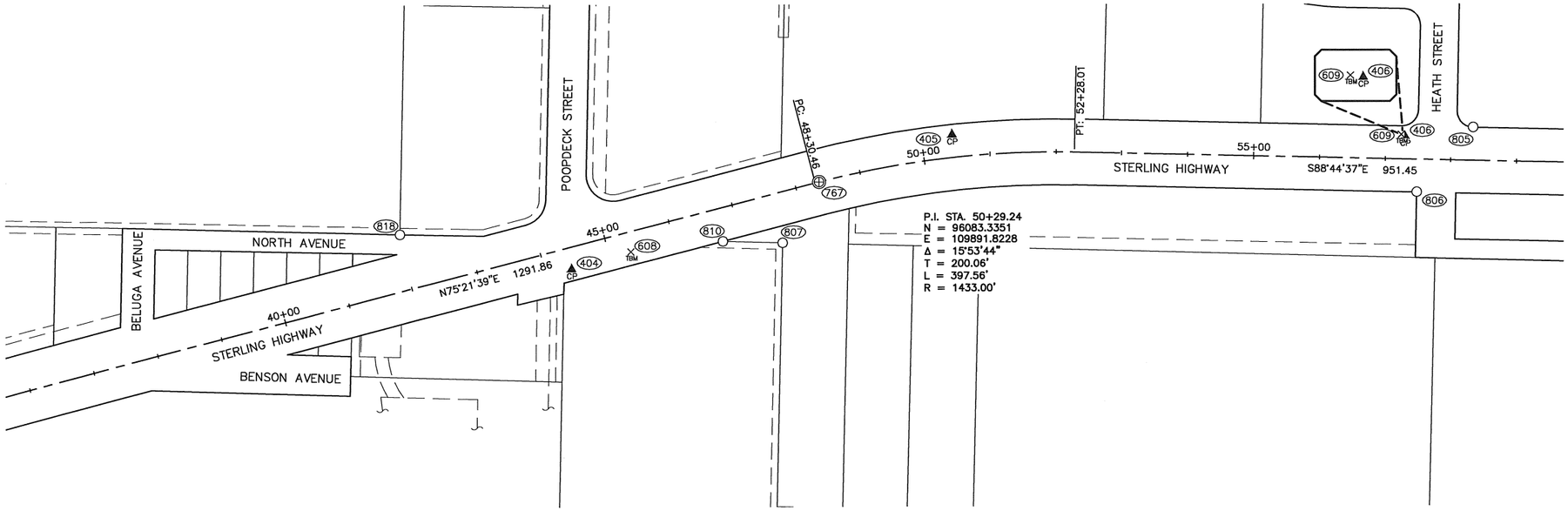
STATE OF ALASKA
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AND PUBLIC FACILITIES

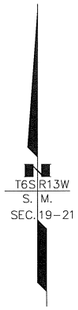
STERLING HWY MP 173 TO 174 PAVEMENT PRESERVATION

SURVEY CONTROL SHEET

REVISIONS		
NO.	DATE	DESCRIPTION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	**0211(61)/56176**	**2014**	A6	A8





0 50 100 200
Scale in Feet

HORIZONTAL CONTROL SET

POINT	STATION	OFFSET	NAD83(NSRS2007) GEODETIC COORDINATES		LOCAL COORDINATES		ELLIPSOID HEIGHT	NAVD88 ELEVATION	DESCRIPTION
			LATITUDE	LONGITUDE	NORTHING	EASTING			
404	44+39.24	32.34 RT	59° 38' 31.79261" N	151° 32' 13.28828" W	95902.6039	109327.8919	95.08	64.59	Set AC/RBR[6714S]: CP SH173-179 404
405	50+45.26	34.84 LT	59° 38' 33.92665" N	151° 32' 02.14176" W	96105.9617	109905.6788	90.77	60.29	Set AC/RBR[6714S]: CP SH173-179 405
406	61+89.28	34.82 LT	59° 38' 34.05151" N	151° 31' 48.76591" W	96102.7788	110593.3070	69.40	38.91	Set AC/RBR[6714S]: CP SH173-179 406

VERTICAL CONTROL – TEMPORARY BENCH MARKS

POINT	STATION	OFFSET	NAD83(NSRS2007) GEODETIC COORDINATES		LOCAL COORDINATES		NAVD88 ELEVATION	DESCRIPTION
			LATITUDE	LONGITUDE	NORTHING	EASTING		
608	45+33.33	30.03 RT	59° 38' 32.07" N	151° 32' 11.54" W	95929	109418	63.80	Chiseled X: TBM-2464-05A|N Bolt on Light Pole Across from NE Cor of Sterling-Poopdeck
609	57+23.49	37.23 LT	59° 38' 34.08" N	151° 31' 48.87" W	96105	110588	39.07	Chiseled X: TBM-2464-05B|S Bolt on Light Pole NW Cor of Sterling-Heath
610	60+42.09	35.09 LT	59° 38' 34.06" N	151° 31' 42.67" W	96096	110906	38.43	Chiseled X: TBM-2464-06|S Bolt on Light Pole North Side of Sterling Hwy by U.S. Post Office

RECOVERED MONUMENTS – CENTERLINE MONS

POINT	STATION	OFFSET	NAD83(NSRS2007) GEODETIC COORDINATES		LOCAL COORDINATES		ELLIPSOID HEIGHT	NAVD88 ELEVATION	DESCRIPTION
			LATITUDE	LONGITUDE	NORTHING	EASTING			
767	48+36.49	–	59° 38' 33.17505" N	151° 32' 06.03084" W	96034.2936	109704.0717	91.16	60.69	Fd BC/BX[DOH]: PC Sterling Highway

RECOVERED MONUMENTS – PROPERTY CORNERS

POINT	STATION	OFFSET	NAD83(NSRS2007) GEODETIC COORDINATES		LOCAL COORDINATES		DESCRIPTION
			LATITUDE	LONGITUDE	NORTHING	EASTING	
805	58+33.52	50.52 LT	59° 38' 34.20727" N	151° 31' 46.72995" W	96116.1781	110698.2904	Fd AC/RBR[6135]: Postal Site/PC SW Cor Tract 1 Waddell Park Subdivision
806	57+49.04	49.45 RT	59° 38' 33.22168" N	151° 31' 48.37152" W	96018.0833	110611.6315	Fd RBR/OPC: NE Cor Lot 1 Glacier View Subdivision No. 18
807	47+59.59	75.16 RT	59° 38' 32.25496" N	151° 32' 07.06730" W	95942.1416	109648.6606	Fd IP: Cor Lot 2 Glacier View Subdivision No. 18
810	46+72.46	49.99 RT	59° 38' 32.25728" N	151° 32' 08.83162" W	95944.4751	109558.0037	Fd RBR: W Cor Lot 2 Glacier View Subdivision No. 18
818	42+02.95	84.37 LT	59° 38' 32.25754" N	151° 32' 18.33263" W	95955.8087	109069.7800	Fd AC/RBR[5780S]: SW Cor Lot 15-A-2 Nils O. Svedlund Subdivision No.12

LEGEND

- Primary Centerline Monument
- Property Miscellaneous Corner
- Survey Traverse Station (CP)
- Temporary Bench Mark (TBM)
- Survey Point Number (#)
- Right-Of-Way Line
- Property Line
- Easement Line
- 00+00 + 05+00 Alignment Line

STATE OF ALASKA
49TH
Stanley E. Pontarelli
LS-6714
REGISTERED PROFESSIONAL LAND SURVEYOR
Helia

PLANS DEVELOPED BY:
DOWL HKM

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

STERLING HWY MP 173 TO 174 PAVEMENT PRESERVATION

SURVEY CONTROL SHEET

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SCALE

LAYOUT
SHEET-3

DATE TIME
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REVISIONS		
NO.	DATE	DESCRIPTION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0211(61)/56176	2014	A7	A8

DESIGNED BY KLK
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SCALE

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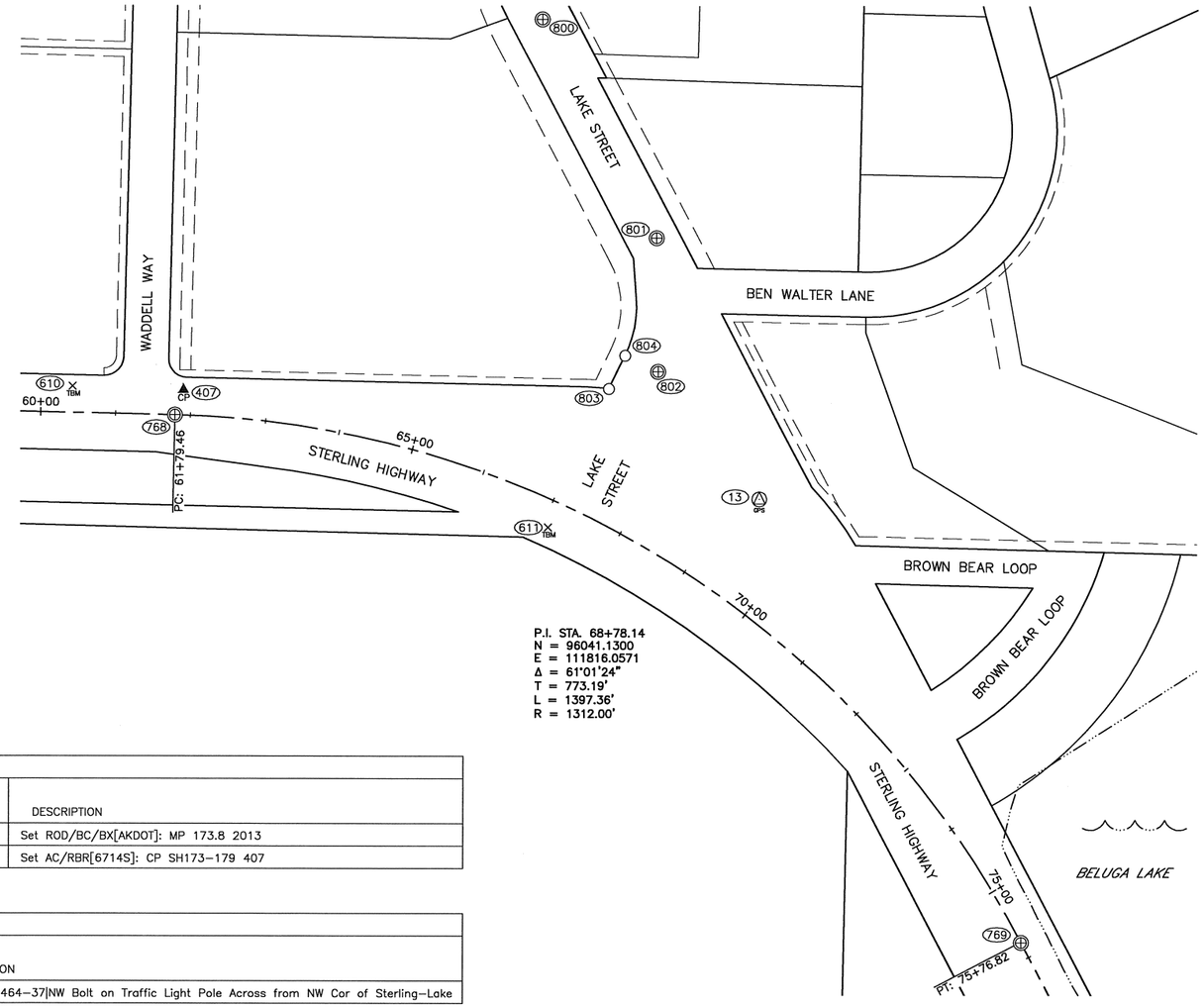
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LEGEND

- Primary Centerline Monument
- Property Miscellaneous Corner
- GPS Control Station
- Survey Traverse Station
- Temporary Bench Mark
- Survey Point Number
- Edge of Water
- Right-Of-Way Line
- Property Line
- Easement Line
- 00+00 + 05+00 Alignment Line

T6S R13W
S. M.
SEC. 19-21

0 50 100 200
Scale in Feet



HORIZONTAL CONTROL SET

POINT	STATION	OFFSET	NAD83(NSRS2007) GEODETIC COORDINATES		LOCAL COORDINATES		ELLIPSOID HEIGHT	NAVD88 ELEVATION	DESCRIPTION
			LATITUDE	LONGITUDE	NORTHING	EASTING			
13	69+29.80	136.27 LT	59° 38' 32.79330" N	151° 31' 24.74656" W	95946.6812	111824.6281	67.32	36.79	Set ROD/BC/BX[AKDOT]: MP 173.8 2013
407	61+89.28	33.83 LT	59° 38' 34.04631" N	151° 31' 39.80307" W	96091.6437	111053.8567	69.10	38.57	Set AC/RBR[6714S]: CP SH173-179 407

VERTICAL CONTROL – TEMPORARY BENCH MARKS

POINT	STATION	OFFSET	NAD83(NSRS2007) GEODETIC COORDINATES		LOCAL COORDINATES		NAVD88 ELEVATION	DESCRIPTION
			LATITUDE	LONGITUDE	NORTHING	EASTING		
611	67+08.56	65.26 RT	59° 38' 32.36" N	151° 31' 30.25" W	95909	111541	35.26	Bolt: TBM-2464-37|NW Bolt on Traffic Light Pole Across from NW Cor of Sterling-Lake

RECOVERED MONUMENTS – CENTERLINE MONS

POINT	STATION	OFFSET	NAD83(NSRS2007) GEODETIC COORDINATES		LOCAL COORDINATES		ELLIPSOID HEIGHT	NAVD88 ELEVATION	DESCRIPTION
			LATITUDE	LONGITUDE	NORTHING	EASTING			
768	61+79.25	0.01 RT	59° 38' 33.71343" N	151° 31' 40.00252" W	96058.0840	111042.8224	67.77	37.26	Fd AM/BX: PC Sterling Highway
769	75+77.85	0.04 LT	59° 38' 27.05376" N	151° 31' 17.64566" W	95355.7342	112176.1563	53.66	23.12	Fd AM/BX[DOT]: PT Sterling Highway
800	65+10.38	599.47 LT	59° 38' 39.02683" N	151° 31' 30.72776" W	96586.4403	111531.8051	86.10	–	Fd AM/BX[DOT]: PC Lake Street
801	66+87.00	375.49 LT	59° 38' 36.18980" N	151° 31' 27.61714" W	96294.8076	111685.0277	74.62	–	Fd AM/BX[DOT]: PT Lake Street
802	67+49.90	214.57 LT	59° 38' 34.43413" N	151° 31' 27.48968" W	96116.4551	111687.4853	68.98	–	Fd AM/BX[DOT]: PC Lake Street

RECOVERED MONUMENTS – PROPERTY CORNERS

POINT	STATION	OFFSET	NAD83(NSRS2007) GEODETIC COORDINATES		LOCAL COORDINATES		DESCRIPTION
			LATITUDE	LONGITUDE	NORTHING	EASTING	
803	67+06.57	165.78 LT	59° 38' 34.19286" N	151° 31' 28.75689" W	96093.4686	111621.8147	Fd AC/RBR[5522S]: Lot 1/ROW SE Cor Lot 1 Waddell Park 2000 Subdivision
804	67+07.96	215.06 LT	59° 38' 34.63356" N	151° 31' 28.35374" W	96137.7248	111643.5581	Fd AC/RBR[5522S]: Lot 1/ROW E Cor Lot 1 Waddell Park 2000 Subdivision

STATE OF ALASKA
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Stanley E. Ponsness
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4/2/14

PLANS DEVELOPED BY:
DOWL HKM

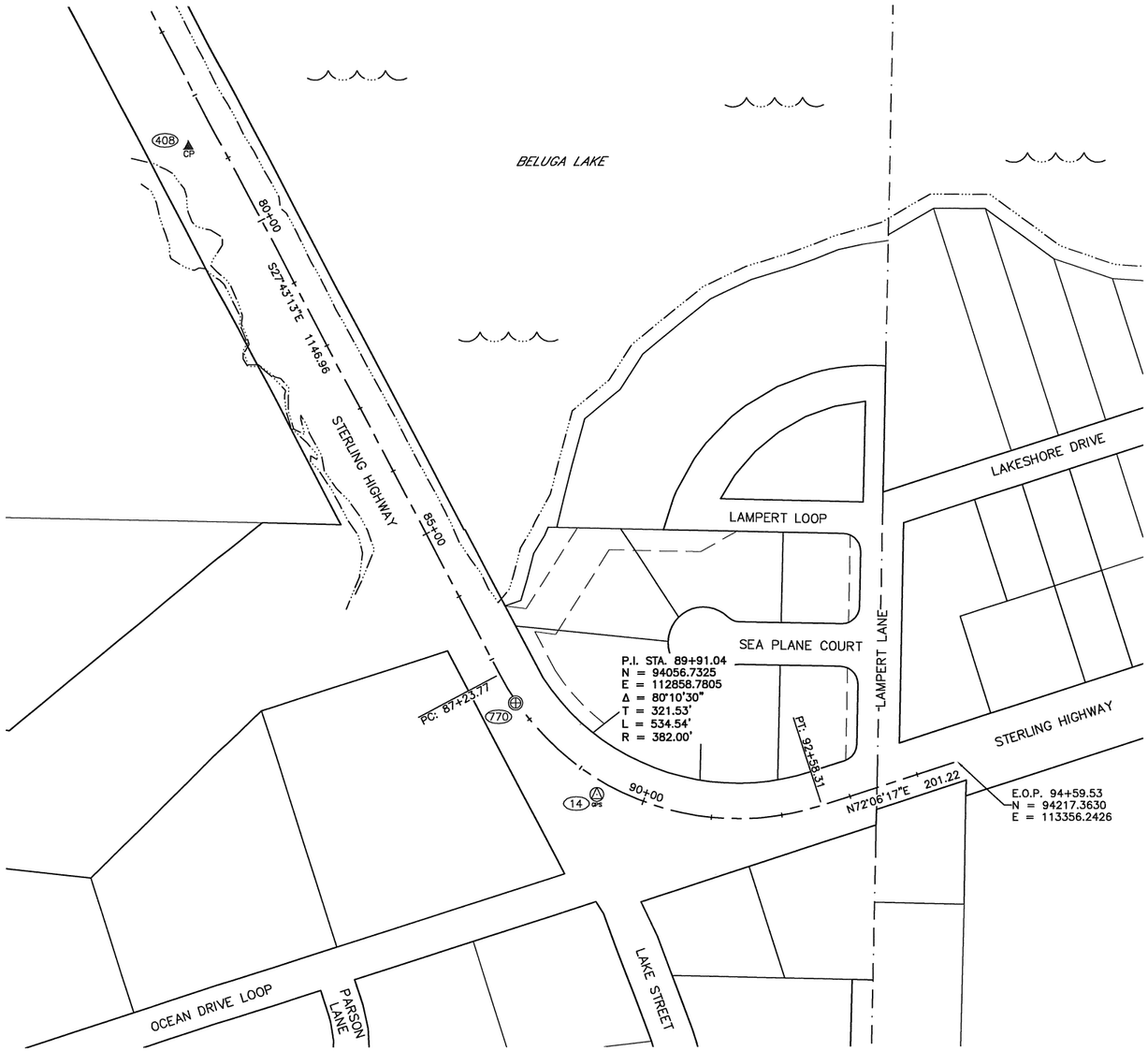
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
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STERLING HWY MP 173 TO 174 PAVEMENT PRESERVATION

SURVEY CONTROL SHEET

REVISIONS		
NO.	DATE	DESCRIPTION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0211(61)/56176	2014	A8	A8



T6S R13W
S. M.
SEC. 19-21

LEGEND

- Primary Centerline Monument
- GPS Control Station
- Survey Traverse Station
- Temporary Bench Mark
- Survey Point Number
- Edge of Water
- Right-Of-Way Line
- Section Line
- Property Line
- Easement Line
- 00+00 + 05+00 Alignment Line

0 50 100 200
Scale in Feet

HORIZONTAL CONTROL HELD

POINT	STATION	OFFSET	NAD83(NSRS2007) GEODETIC COORDINATES		LOCAL COORDINATES		ELLIPSOID HEIGHT	NAVD88 ELEVATION	DESCRIPTION
			LATITUDE	LONGITUDE	NORTHING	EASTING			
408	78+59.46	41.88 RT	59° 38' 24.42846" N	151° 31' 15.69860" W	95086.9816	112270.1151	54.29	23.78	Fd X/CONC: CP SH173-179 408

HORIZONTAL CONTROL SET

POINT	STATION	OFFSET	NAD83(NSRS2007) GEODETIC COORDINATES		LOCAL COORDINATES		ELLIPSOID HEIGHT	NAVD88 ELEVATION	DESCRIPTION
			LATITUDE	LONGITUDE	NORTHING	EASTING			
14	89+38.87	19.17 RT	59° 38' 15.54537" N	151° 31' 04.07780" W	94171.6699	112846.6941	71.74	41.17	Set ROD/BC/BX[AKDOT]: MP 174.2 2013

RECOVERED MONUMENTS - CENTERLINE MONS

POINT	STATION	OFFSET	NAD83(NSRS2007) GEODETIC COORDINATES		LOCAL COORDINATES		ELLIPSOID HEIGHT	NAVD88 ELEVATION	DESCRIPTION
			LATITUDE	LONGITUDE	NORTHING	EASTING			
770	87+69.75	1.77 RT	59° 38' 16.79319" N	151° 31' 06.37448" W	94301.0257	112731.5536	63.62	33.09	Fd BC/BX[DOH]: PC Sterling Highway

STATE OF ALASKA
49TH
Stanley E. Ponsness
LS-6714
PROFESSIONAL LAND SURVEYOR
4/2/14

PLANS DEVELOPED BY:
DOWL HKM

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

STERLING HWY MP 173 TO 174 PAVEMENT PRESERVATION

SURVEY CONTROL SHEET

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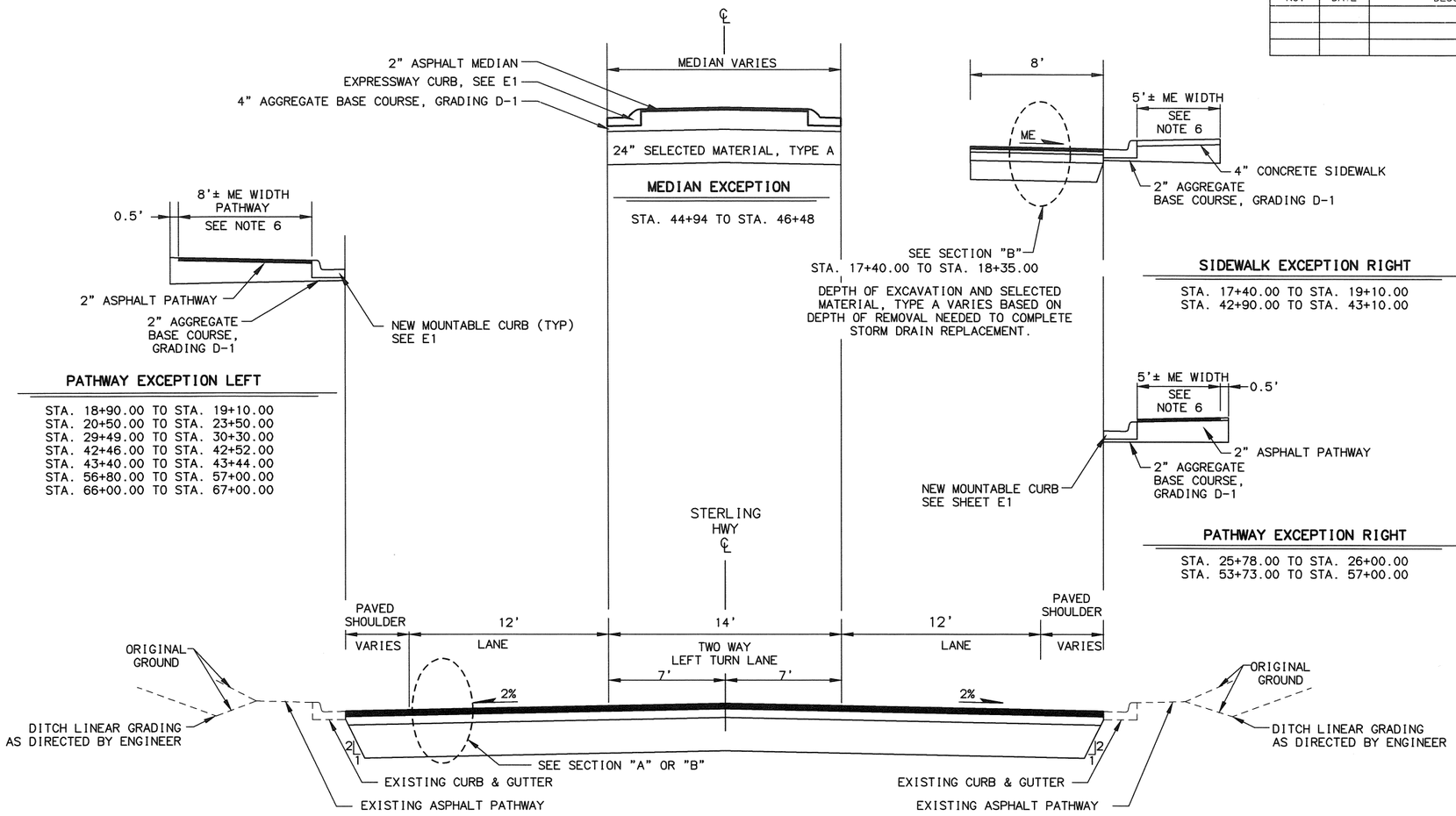
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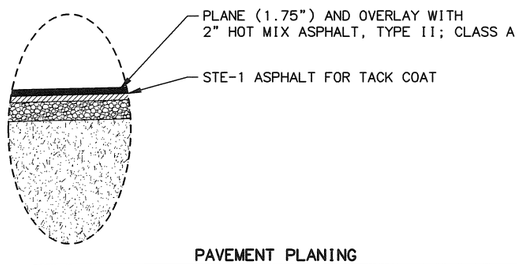
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NO.	DATE	DESCRIPTION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0211(061)/56176	2014	B1	B2



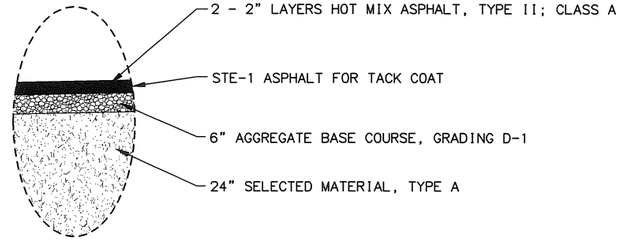
STERLING HIGHWAY

STA. 18+35.00 TO STA. 68+21.00 = "A"
STA. 25+00.00 TO STA. 25+60.00 = "B"
STA. 42+50.00 TO STA. 47+50.00 = "B"



PAVEMENT PLANING

SECTION "A"



FULL DEPTH PAVEMENT REMOVE AND REPLACE

SECTION "B"

TYPICAL SECTION GENERAL NOTES:

1. SHAPE AGGREGATE BASE COURSE, GRADING D-1 AT THE EDGE OF PAVEMENT TO ENSURE THERE IS NO DROP AT THE PAVEMENT'S EDGE WITHIN 48 HOURS AFTER PLACING PAVEMENT.
2. REMOVE EXISTING MATERIAL FROM ROAD AND PATHWAY SHOULDERS TO FACILITATE DRAINAGE FROM PAVED SURFACE. PAID FOR AS "REMOVE FUGITIVE MATERIALS". SEE D SHEETS FOR EXTENTS.
3. ALL ADJUSTMENTS TO MANHOLES, INLETS, VALVE BOXES, AND OTHER FEATURES IN ROADWAY AND PATHWAY PAVEMENT SHALL BE ADJUSTED AND APPROVED BY THE ENGINEER PRIOR TO FINAL LIFT PAVING. NO ADJUSTMENTS WILL BE MADE AFTER FINAL LIFT.
4. APPLY STE-1 ASPHALT FOR TACK COAT TO VERTICAL SURFACES AND EXISTING ASPHALT PRIOR TO PAVING OR OVERLAYING.
5. ALL GROUND DISTURBANCE SHALL REMAIN WITHIN EXISTING DITCH LIMITS UNLESS NOTED OTHERWISE.
6. MATCH EXISTING PATHWAY OR SIDEWALK CROSS SLOPES. SLOPES SHALL NOT BE GREATER THAN 2%, 1.5% IS DESIRABLE.
7. TRANSITION THE FULL DEPTH SECTION "B" TO THE PAVEMENT PLANING SECTION AT A 10:1.

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DRAFTED BY MAC
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LAYOUT B1
DATE TIME 3/31/2014 1:35 PM
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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

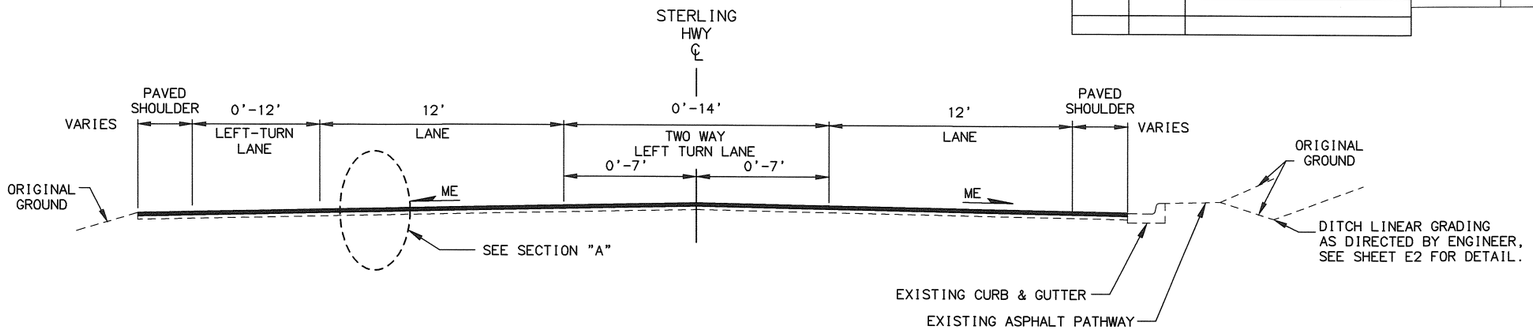
STERLING HWY MP 173 TO 174
PAVEMENT PRESERVATION

TYPICAL SECTIONS

PLANS DEVELOPED BY:
DOWL HKM

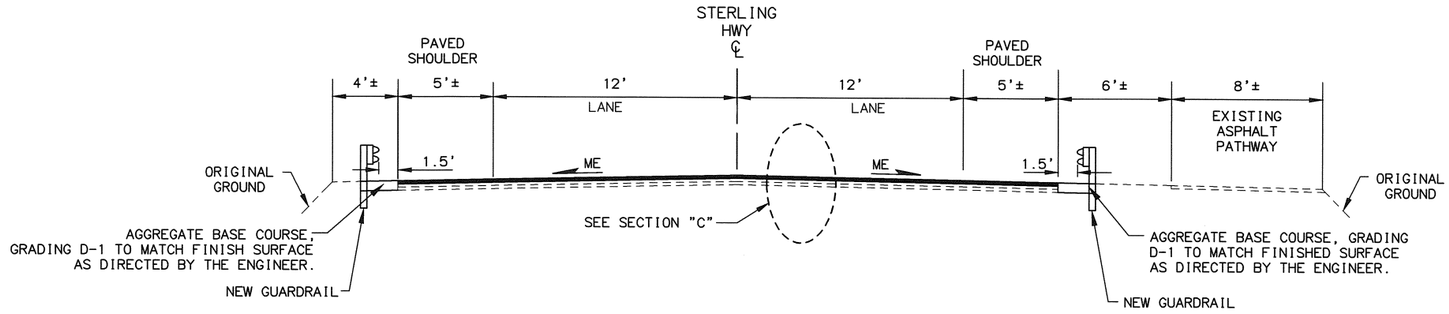
REVISIONS		
NO.	DATE	DESCRIPTION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0211(061)/56176	2014	B2	B2



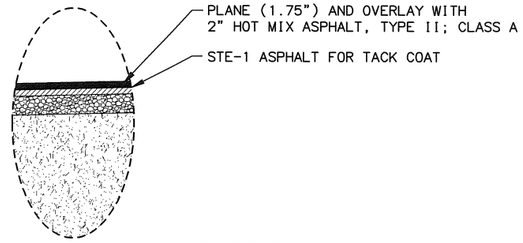
STERLING HIGHWAY

STA. 68+21.00 TO STA. 72+20.00



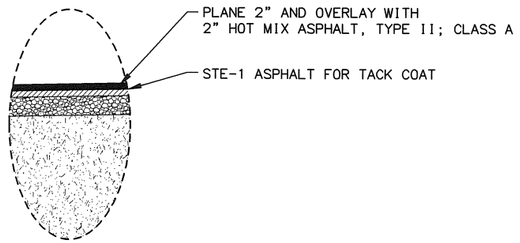
STERLING HIGHWAY

STA. 72+20.00 TO STA. 89+44.00



PAVEMENT PLANING

SECTION "A"



PAVEMENT PLANING

SECTION "C"



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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

STERLING HWY MP 173 TO 174
PAVEMENT PRESERVATION

TYPICAL SECTIONS

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LAYOUT B2

DATE TIME 4/9/2014 10:09 AM

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REVISIONS		
NO.	DATE	DESCRIPTION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0211(061)/56176	2014	C1	C1

ESTIMATE OF QUANTITIES

ITEM NO.	ITEM	UNIT	QUANTITY
201(1B)	CLEARING	LUMP SUM	ALL REQUIRED
202(2)	REMOVAL OF PAVEMENT	SQUARE YARD	4,237
202(3)	REMOVAL OF SIDEWALK	SQUARE YARD	256
202(4)	REMOVAL OF CULVERT PIPE	LINEAR FOOT	575
202(8)	REMOVAL OF INLET	EACH	8
202(9)	REMOVAL OF CURB AND GUTTER	LINEAR FOOT	1,552
202(15)	PAVEMENT PLANING	SQUARE YARD	31,717
202(40)	REMOVE FUGITIVE MATERIALS	LINEAR FOOT	14,186
203(3)	UNCLASSIFIED EXCAVATION	CUBIC YARD	2,710
203(6A)	BORROW, TYPE A	TON	4,159
203(27)	DITCH LINEAR GRADING	STATION	56
301(1)	AGGREGATE BASE COURSE, GRADING D-1	TON	1,034
401(1A)	HOT MIX ASPHALT, TYPE II; CLASS A	TON	4,273
401(2)	ASPHALT CEMENT, GRADE PG 58-34	TON	235
401(6)	ASPHALT PRICE ADJUSTMENT - QUALITY	CONTINGENT SUM	ALL REQUIRED
401(10)	ASPHALT MATERIAL PRICE ADJUSTEMENT - UNIT PRICE	CONTINGENT SUM	ALL REQUIRED
603(1-18)	18 INCH CSP	LINEAR FOOT	578
603(22)	CULVERT CLEANING	LINEAR FOOT	2,885
604(4)	ADJUST EXISTING MANHOLE	EACH	23
604(5)	INLET, TYPE A	EACH	8
606(1)	W-BEAM GUARDRAIL	LINEAR FOOT	3,035
606(6)	REMOVING AND DISPOSING OF GUARDRAIL	LINEAR FOOT	3,348
606(13)	PARALLEL GUARDRAIL TERMINAL	EACH	4
608(1A)	CONCRETE SIDEWALK, 4-INCHES THICK	SQUARE YARD	110
608(6)	CURB RAMP	EACH	13
608(8)	ASPHALT PATHWAY AND MEDIANS	TON	84
609(2)	CURB AND GUTTER, TYPE I	LINEAR FOOT	1,552
610(2)	DITCH LINING	TON	2,463
615(1)	STANDARD SIGN	SQUARE FOOT	33
618(2)	SEEDING	POUND	40
618(3)	WATER FOR SEEDING	M GAL	29
620(1)	TOPSOIL	SQUARE YARD	3,226
627(10)	ADJUSTMENT OF VALVE BOX	EACH	2
639(6)	APPROACH	EACH	16
640(1)	MOBILIZATION AND DEMOBILIZATION	LUMP SUM	ALL REQUIRED
640(4)	WORKER MEALS AND LODGING, OR PER DIEM	LUMP SUM	ALL REQUIRED
641(1)	EROSION, SEDIMENT, AND POLLUTION CONTROL ADMINISTRATION	LUMP SUM	ALL REQUIRED
641(2)	TEMPORARY EROSION, SEDIMENT, AND POLLUTION CONTROL	CONTINGENT SUM	ALL REQUIRED
641(6)	WITHHOLDING	CONTINGENT SUM	ALL REQUIRED
641(7)	SWPPP MANAGER	LUMP SUM	ALL REQUIRED

ESTIMATE OF QUANTITIES

ITEM NO.	ITEM	UNIT	QUANTITY
642(1)	CONSTRUCTION SURVEYING	LUMP SUM	ALL REQUIRED
642(3)	THREE PERSON SURVEY PARTY	HOUR	60
643(2)	TRAFFIC MAINTENANCE	LUMP SUM	ALL REQUIRED
643(3)	PERMANENT CONSTRUCTION SIGNS	LUMP SUM	ALL REQUIRED
643(15)	FLAGGING	CONTINGENT SUM	ALL REQUIRED
643(23)	TRAFFIC PRICE ADJUSTMENT	CONTINGENT SUM	ALL REQUIRED
643(25)	TRAFFIC CONTROL	CONTINGENT SUM	ALL REQUIRED
645(1)	TRAINING PROGRAM, 1 TRAINEE/APPRENTICE	LABOR HOUR	*
646(1)	CPM SCHEDULING	LUMP SUM	ALL REQUIRED
646(2)	SCHEDULE PRICE ADJUSTMENT	CONTINGENT SUM	ALL REQUIRED
647(5)	BACKHOE, 4WD, 1 CY BUCKET, 75 HP MIN, 15 FT DEPTH	CONTINGENT SUM	ALL REQUIRED
669(4-H1)	AUTOMATED TRAFFIC RECORDERS - SITE H1	LUMP SUM	ALL REQ'D
669(4-H2)	AUTOMATED TRAFFIC RECORDERS - SITE H2	LUMP SUM	ALL REQ'D
670(10A)	MMA PAVEMENT MARKINGS, LONGITUDINAL SURFACE APPLIED	LINEAR FOOT	35,210
670(10B)	MMA PAVEMENT MARKINGS, SYMBOLS AND ARROW(S) SURFACE APPLIED	EACH	38
670(10C)	MMA PAVEMENT MARKINGS, TRANSVERSE AND GORE SURFACE APPLIED	LINEAR FOOT	2,452
670(10F)	MMA PAVEMENT MARKINGS, TRANSVERSE AND GORE INLAID	LINEAR FOOT	3,960
682(1)	VAC-TRUCK POTHOLE	CONTINGENT SUM	ALL REQUIRED

* ITEM 645(1) TRAINING QUANTITY IS FOR THE TOTAL CONTRACT COMPRISED OF BOTH STERLING HIGHWAY MP 173 TO 174 PAVEMENT PRESERVATION AND STERLING HIGHWAY MP 174 TO 179 PAVEMENT PRESERVATION PROJECTS. LABOR HOURS MAY BE ACCRUED THROUGH EITHER PROJECT.

TABLE OF ESTIMATING FACTORS

ITEM NO.	ITEM DESCRIPTION	TOTAL QUANTITY
203(6A)	BORROW, TYPE A	145 LB/FT^3
301(1)	AGGREGATE BASE COURSE, GRADING D-1	148 LB/FT^3
401(1A)	HOT MIX ASPHALT, TYPE II; CLASS A	150 LB/FT^3
401(2)	ASPHALT CEMENT, GRADE PG 58-34	5.5% WEIGHT OF 401(1A)
402(1)	STE-1 ASPHALT FOR TACK COAT	0.000316 TON/YD^2
608(8)	ASPHALT PATHWAY AND MEDIANS	150 LB/FT^3
610(2)	DITCH LINING	108 LB/FT^3
611(1)	RIP RAP, CLASS I	108 LB/FT^3
618(2)	SEEDING	60 LB/ACRE
618(3)	WATER FOR SEEDING	1 GAL/FT^2

STATE OF ALASKA 49TH Kelly L. Kilpatrick CE 11237 REGISTERED PROFESSIONAL ENGINEER 4/9/14

PLANS DEVELOPED BY:
DOWL HKM

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

STERLING HWY MP 173 TO 174
PAVEMENT PRESERVATION

ESTIMATE OF QUANTITIES

DESIGNED BY KLK
CHECKED BY SKN
DRAFTED BY MAC

XREFS

SCALE

LAYOUT
C1

DATE TIME
4/9/2014 1:50 PM

DRAWING LOCATION
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REVISIONS		
NO.	DATE	DESCRIPTION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0211(061)/56176	2014	D1	D4

ITEM NO. 201(1B)

CLEARING

SHEET	FROM STATION	TO STATION	LT/RT	REMARKS
H1	19+75		RT	REMOVAL OF VEGETATION BY STORM DRAIN OUTFALLS AS DIRECTED BY ENGINEER
H7-H8	33+50	38+00	LT	CLEARING ONLY
H7-H8	32+20	37+40	RT	TRIM SHRUBS AND TREE BRANCHES THAT EXTEND INTO THE RIGHT OF WAY
H10	46+00	49+50	RT	CLEARING ONLY
H15	74+00	89+30	LT/RT	CLEARING AND GRUBBING

ITEM NO. 202(2)

REMOVAL OF PAVEMENT

SHEET	FROM STATION	TO STATION	LT/RT	AREA (SF)	AREA (SY)	REMARKS
H4	17+40	19+10	RT	1,400	156	OUTER 8 FT OF DRIVING SURFACE
H4	18+90	19+05	LT	140	16	8' PATHWAY
H4/H5	20+50	23+50	LT	2,400	267	8' PATHWAY
H5	25+00	25+60	LT/RT	2,700	300	ROAD FULL DEPTH REMOVAL
H6	25+78	26+00	RT	140	16	5' PATHWAY
H6	29+49	30+30	LT	600	67	8' PATHWAY
H9	42+46	42+52	LT	50	5	8' PATHWAY
H9	42+90	43+10	RT	100	11	5' PATHWAY
H9	43+40	43+44	LT	40	4	8' PATHWAY
H9/H10	SH 42+50	47+50	LT/RT	25,000	2,778	ROAD FULL DEPTH REMOVAL
H9/H10	SH 53+73	57+00	RT	2,700	300	OUTER 8 FT OF DRIVING SURFACE
H9/H10	53+73	57+00	RT	1,800	200	5' PATHWAY
H12	56+80	57+00	LT	170	19	8' PATHWAY
H14	66+00	67+00	LT	900	100	8' PATHWAY
				Total:	**4,237**	

ITEM NO. 202(3)

REMOVAL OF SIDEWALK

SHEET	FROM STATION	TO STATION	LT/RT	AREA (SF)	AREA (SY)	REMARKS
H4	17+40	19+10	RT	1,021	113	INCLUDES CURB RAMP
H6	26+00		LT	138	15	CURB RAMP
H6	26+10		RT	42	5	CURB RAMP
H6	26+40		RT	32	4	CURB RAMP
H6	30+45		LT	144	16	CURB RAMP
H7	31+20		LT	138	15	CURB RAMP
H9	42+60		LT	88	10	CURB RAMP
H9	43+40		LT	42	5	CURB RAMP
H9	44+75	45+00	RT	121	13	INCLUDES CURB RAMP
H14	67+00		LT	306	34	CURB RAMPS
H14	68+00		LT	228	25	CURB RAMPS
				Total:	**256**	

ITEM NO. 202(4)

REMOVAL OF CULVERT PIPE

SHEET	STATION	OFFSET	LENGTH (FT)	REMARKS
H4	17+62 TO 18+95	20.0 RT	134	M&O PIPE P-0142
H4	18+95	0.0	47	M&O PIPE P-0143
H9	43+00	0.0	46	M&O PIPE P-0159
H11/H12	53+94 TO 57+00	RT	302	M&O PIPE P-0168
H12	57+00	0.0	46	M&O PIPE P-0169
		Total:	**575**	

NOTE: CULVERT LENGTHS PER AS-BUILTS, EXCEPT P-0142 WHICH IS FROM M&O-SUPPLIED INFORMATION

STATE OF ALASKA 49TH
Kelly L. Fitzpatrick
CE 10637
REGISTERED PROFESSIONAL ENGINEER
4/3/14

PLANS DEVELOPED BY:
DOWL HKM

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

STERLING HWY MP 173 TO 174
PAVEMENT PRESERVATION

SUMMARY SHEET

DESIGNED BY HLK
DETAILED BY SKN
DRAFTED BY MAC

XREFS

SCALE

LAYOUT
D1

DATE TIME
3/31/2014 12:29 PM

DRAWING LOCATION
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REVISIONS		
NO.	DATE	DESCRIPTION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0211(061)/56176	2014	D2	D4

DESIGNED BY KLK
CHECKED BY SKN
DRAFTED BY MAC

XREFS

SCALE

LAYOUT
D2

DATE TIME
3/31/2014 12:29 PM

DRAWING LOCATION
C:\Users\KSuchodolski\Desktop\Sterling Take home\SA12-CT-D1-SM-61407.dwg

ITEM NO. 202(8)

REMOVAL OF INLETS

SHEET	STATION	OFFSET	REMARKS
H4	17+54	22.0 LT	M&O STRUCTURE NA
H4	18+94	22.0 LT	M&O STRUCTURE S-093
H4	18+94	22.0 RT	M&O STRUCTURE S-094
H9	43+00	22.0 LT	M&O STRUCTURE S-123
H9	43+00	22.0 RT	M&O STRUCTURE S-107
H11	53+87	22.0 RT	M&O STRUCTURE S-114
H12	57+02	22.0 RT	M&O STRUCTURE S-115
H12	57+02	22.0 LT	M&O STRUCTURE S-116
		Total:	**8**

ITEM NO. 203(27)

DITCH LINEAR GRADING

SHEET	FROM STATION	TO STATION	OFFSET	LINEAR FOOT	STATION	REMARKS
H4/H5	18+37	25+30	40' LT	693	6.9	
H6	28+00	30+40	40' LT	240	2.4	
H8/H9	38+00	42+60	40' LT	460	4.6	
H9-H11	43+00	55+80	40' RT	1,280	12.8	
H9	43+30	44+10	40' LT	80	0.8	
H9/H10	45+00	47+50	40' LT	250	2.5	
H10/H11	48+20	52+20	40' LT	400	4.0	
H11	52+90	55+30	40' LT	240	2.4	
H12	56+00	57+30	40' LT	130	1.3	
H12/H13	58+20	66+00	40' RT	780	7.8	
H12/H13	58+20	61+10	40' LT	290	2.9	
H13	61+70	63+40	40' LT	170	1.7	
H13/H14	64+00	66+90	40' LT	290	2.9	
H14	68+10	70+80	40' LT	270	2.7	
H18	88+60	89+28	40' RT	68	0.7	
			Total:	**5,641**	**56.4**	

ITEM NO. 202(9)

REMOVAL OF CURB AND GUTTER

SHEET	STATION	TO STATION	OFFSET	LENGTH (LF)	REMARKS
H4	17+40	19+10	RT	170	
H4	18+90	19+10	LT	20	
H4/H5	20+50	23+50	LT	300	
H5/H6	25+35	26+05	LT	70	
H5/H6	25+78	26+15	RT	42	
H6	26+04		LT	25	
H6	26+41		RT	12	
H6	29+49	30+51	LT	104	
H7	31+05	31+28	LT	25	
H9	42+46	42+83	LT	49	
H9	42+47	43+44	LT	82	GUTTER
H9	43+16	43+44	LT	43	
H9	42+88	43+08	RT	20	
H9	44+74	45+00	RT	26	
H9	44+94	45+48	RT	118	MEDIAN
H11/H12	53+73	57+00	LT	327	
H12	56+80	57+00	RT	20	
H14	66+00	67+26	LT	41	
H14	67+73	68+21	LT	58	
			Total:	**1,552**	

ITEM NO. 202(40)

REMOVE FUGITIVE MATERIAL

SHEET	FROM STATION	TO STATION	OFFSET	LINEAR FOOT	REMARKS
H4	18+35	20+80	LT/RT	490	
H5	20+80	25+75	LT/RT	990	
H6	25+75	30+75	LT/RT	1,000	
H7	30+75	36+00	LT/RT	1,050	
H8	36+00	41+00	LT/RT	1,000	
H9	41+00	46+20	LT/RT	1,040	
H10	46+20	51+00	LT/RT	960	
H11	51+00	56+00	LT/RT	1,000	
H12	56+00	61+00	LT/RT	1,000	
H13	61+00	66+00	LT/RT	1,000	
H14	66+00	71+00	LT/RT	1,000	
H15	71+00	76+00	LT/RT	1,000	
H16	76+00	81+00	LT/RT	1,000	
H17	81+00	86+00	LT/RT	1,000	
H18	86+00	89+28	LT/RT	656	
			Total:	**14,186**	

NOTE: REMOVE FUGITIVE MATERIALS FOR A WIDTH OF 2' FROM BOTH SIDES OF PATHWAYS, SIDEWALKS AND ROADWAY SHOULDERS IN RURAL SECTIONS OR AS DIRECTED BY THE ENGINEER. PROVIDE POSITIVE DRAINAGE AWAY FROM THE ROADWAY OR INTO DRAINAGE SWALE.

STATE OF ALASKA
40TH
Kelly K. Kelly K. Fitzpatrick
CE-12237
3/31/14
REGISTERED PROFESSIONAL ENGINEER

PLANS DEVELOPED BY:
DOWL HKM

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

STERLING HWY MP 173 TO 174 PAVEMENT PRESERVATION

SUMMARY SHEET

REVISIONS		
NO.	DATE	DESCRIPTION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0211(061)/56176	2014	D3	D4

DESIGNED BY KLK
CHECKED BY SKN
DRAFTED BY MAC

XREFS

SCALE

LAYOUT D3

DATE TIME 3/31/2014 12:29 PM

DRAWING LOCATION C:\Users\KSuchodolski\Desktop\Sterling Take home\SA12-CT-D1-SM-61407.dwg

ITEM NO. 604(4)

ADJUST EXISTING MANHOLE

SHEET	STATION	OFFSET	REMARKS
H5	23+10	24' RT	SD INLET
H6	25+90	36' LT	SS MANHOLE
H6	25+90	26' RT	SS MANHOLE
H6	26+46	24' LT	SD INLET
H6	26+47	24' RT	SD INLET
H6	29+33	24' RT	SD INLET
H6	30+20	23' RT	SD INLET
H6	30+20	24' LT	REPLACE FRAME & GRATE
H6	30+60	27' RT	SS MANHOLE
H6	30+81	42' LT	SD MANHOLE
H7	34+31	24' LT	SD INLET
H7	35+05	24' LT	SD INLET
H8	39+68	24' LT	SD INLET
H8	39+68	24' RT	SD INLET
H8	40+58	24' LT	SD INLET
H10	46+56	24' RT	SD INLET
H10	46+56	24' LT	SD INLET
H10	47+72	42' LT	SD INLET
H10	49+96	24' RT	SD INLET
H12	57+52	35' LT	SD INLET
H12	58+08	35' LT	SD INLET
H14	68+16	22' RT	SD INLET
H15	71+74	22' RT	SD INLET
		Total:	**23**

ITEM NO. 606 (1), 606 (6), 606 (13)

GUARDRAIL

SHEET	STATION TO STATION		OFFSET	606(1) W-BEAM GUARDRAIL (LF)	606(6) REMOVING AND DISPOSING OF GUARDRAIL (LF)	606(13) PARALLEL GUARDRAIL TERMINAL (EA)	REMARKS
H15	72+76	76+00	RT	324	333		
H16	76+00	81+00	RT	500	500		
H17	81+00	86+00	RT	500	500		
H18	86+00	88+77	RT	277	329		
H15	74+43	76+00	LT	157	157		
H16	76+00	81+00	LT	500	500		
H17	81+00	86+00	LT	500	500		
H18	86+00	88+77	LT	277	329		
H15	72+40		RT	-	50	1	
H18	89+29		RT		50	1	
H15	74+40		LT	-	50	1	
H18	89+29		LT		50	1	
			Totals:	**3,035**	**3,348**	**4**	

ITEM NO. 608(8)

ASPHALT PATHWAY AND MEDIANS

SHEET	FROM STATION	TO STATION	OFFSET	AREA (SF)	NEW PAVEMNT DEPTH (INCHES)	VOLUME (CU FT)	TONS
H4	18+90	19+10	LT	140	2	23	2
H4/H5	20+50	23+50	LT	2,400	2	400	30
H6	25+78	26+00	RT	140	2	23	2
H6	29+49	30+30	LT	600	2	100	8
H9	42+46	42+52	LT	50	2	8	1
H9	42+90	43+10	RT	100	2	17	1
H9	43+40	43+44	LT	40	2	7	1
H9	44+95	45+48	LT/RT	405	2	68	5
H11/H12	53+73	57+00	RT	1,800	2	300	23
H12	56+80	57+00	LT	170	2	28	2
H14	66+00	67+00	LT	900	2	150	11
						Total:	**84**

ITEM NO. 608(6)

CURB RAMP

SHEET	STATION	OFFSET	REMARKS
H5	17+70	RT	MIDBLOCK
H6	26+00	LT	UNIDIRECTIONAL
H6	26+00	RT	UNIDIRECTIONAL
H6	26+40	RT	UNIDIRECTIONAL
H6	30+40	LT	PARALLEL
H7	31+20	LT	UNIDIRECTIONAL
H9	42+60	LT	UNIDIRECTIONAL
H9	43+40	LT	UNIDIRECTIONAL
H9	44+90	RT	MIDBLOCK
H14	67+20	LT	TWO PARALLEL RAMPS
H14	67+90	LT	TWO PARALLEL RAMPS
	Total:	**13**	



PLANS DEVELOPED BY:
DOWL HKM

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

STERLING HWY MP 173 TO 174 PAVEMENT PRESERVATION

SUMMARY SHEET

REVISIONS		
NO.	DATE	DESCRIPTION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0211(061)/56176	2014	D4	D4

DESIGNED BY KLK
CHECKED BY SKN
DRAFTED BY MAC

XREFS

SCALE

LAYOUT D4

DATE TIME 3/31/2014 12:29 PM

DRAWING LOCATION C:\Users\KSuchodolski\Desktop\Sterling Toke home\SA12-CT-D1-SM-61407.dwg

ITEM NO. 609(2)

CURB AND GUTTER, TYPE I

SHEET	STATION FROM	TO STATION	OFFSET	LENGTH (LF)	REMARKS
H4	17+40	19+10	RT	170	
H4	18+90	19+10	LT	20	
H4/H5	20+50	23+50	LT	300	
H5/H6	25+35	26+05	LT	70	
H5/H6	25+78	26+15	RT	42	
H6	26+04		LT	25	
H6	26+41		RT	12	
H6	29+49	30+51	LT	104	
H7	31+05	31+28	LT	25	
H9	42+46	42+83	LT	49	
H9	42+47	43+44	LT	82	GUTTER
H9	43+16	43+44	LT	43	
H9	42+88	43+08	RT	20	
H9	44+74	45+00	RT	26	
H9	44+94	45+48	RT	118	MEDIAN, EXPRESSWAY CURB AND GUTTER
H11/H12	53+73	57+00	LT	327	
H12	56+80	57+00	RT	20	
H14	66+00	67+26	LT	41	REPLACE CURB CUT WITH MOUNTABLE CURB & GUTTER
H14	67+73	68+21	LT	58	
		Total:		**1,552**	

ITEM NO. 639(6)

APPROACH

SHEET	STATION	OFFSET	REMARKS
H4	18+50	RT	DRIVEWAY
H4	20+35	RT	OHLSON LANE
H5	20+75	LT	GREATLAND STREET
H6	26+20	RT	COMMERCIAL
H6/H7	30+75	LT	MAIN STREET
H6/H7	30+75	RT	MAIN STREET
H9	43+00	LT	COMMERCIAL
H9	44+38	LT	POOPDECK STREET
H10	47+80	LT	SAFEWAY
H11	52+45	LT	SAFEWAY
H12	57+80	LT	HEATH STREET
H12	57+80	RT	HEATH STREET
H13	61+40	LT	WADDELL WAY
H14	67+50	LT	LAKE STREET
H15	72+50	LT	BROWN BEAR LOOP
H15	73+90	LT	BROWN BEAR LOOP
	Total:	**16**	

ITEM NO. 627(10)

ADJUSTMENT OF VALVE BOX

SHEET	STATION	OFFSET	REMARKS
H4	19+00	LT	
H16	80+09	7' RT	
	Total:	**2**	



PLANS DEVELOPED BY:
DOWL HKM

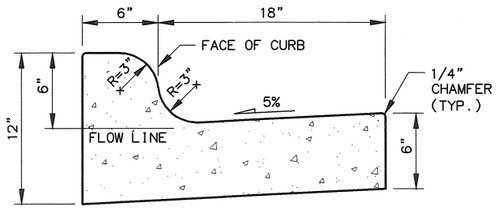
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

STERLING HWY MP 173 TO 174 PAVEMENT PRESERVATION

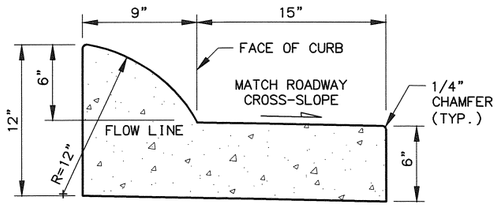
SUMMARY SHEET

REVISIONS		
NO.	DATE	DESCRIPTION

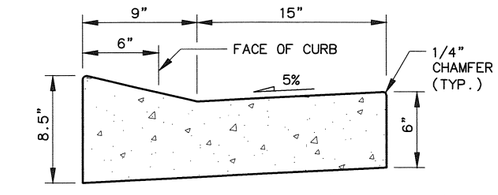
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0211(061)/56176	2014	E1	E2



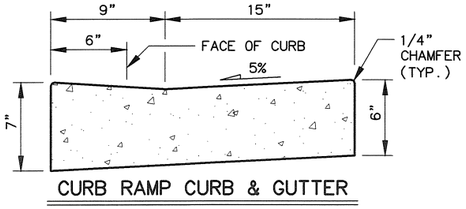
6" MOUNTABLE CURB & GUTTER



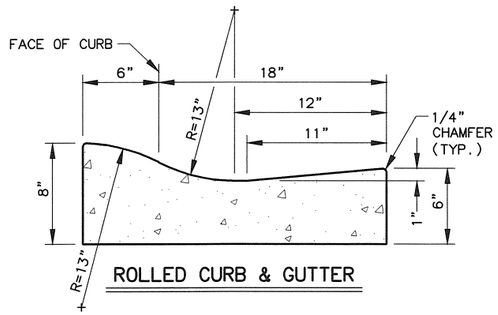
EXPRESSWAY CURB & GUTTER (MEDIAN)



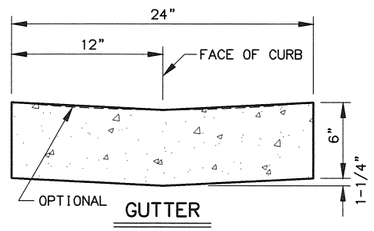
DEPRESSED CURB & GUTTER (CURB CUT)



CURB RAMP CURB & GUTTER



ROLLED CURB & GUTTER

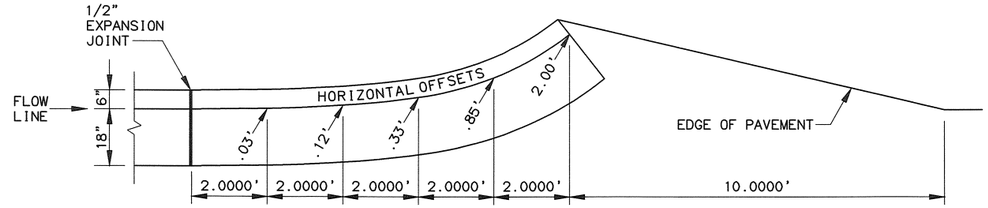


GUTTER

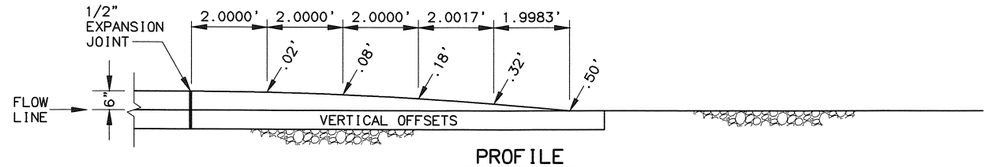
CURBS

CURB NOTE:

MOUNTABLE, DEPRESSED, ROLLED, AND EXPRESSWAY GUTTER PANS SHALL MATCH THE ROADWAY CROSS SLOPE IN THE HIGH SIDE OF SUPER ELEVATED AREAS.

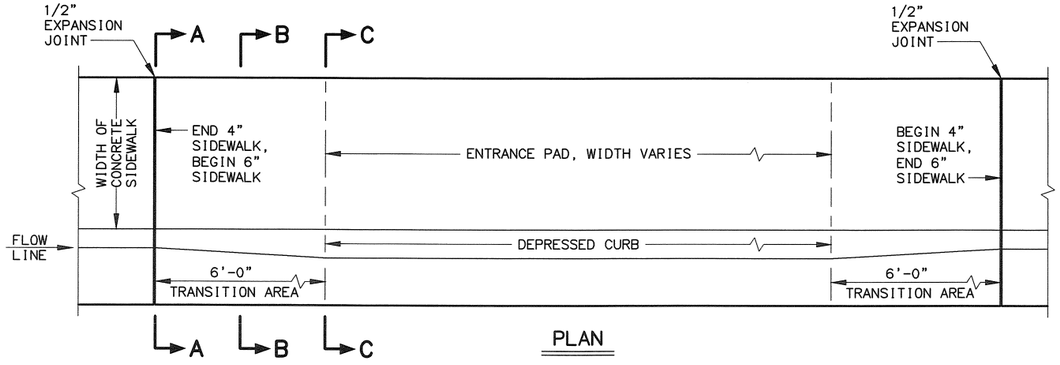


PLAN

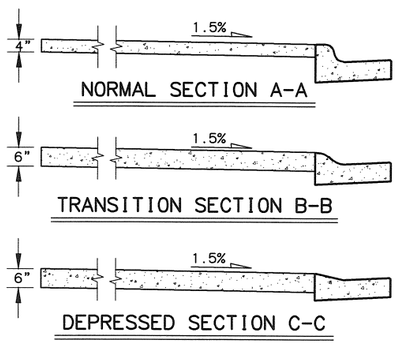


PROFILE

CURB & GUTTER TERMINATION TRANSITIONS



PLAN



NORMAL SECTION A-A

TRANSITION SECTION B-B

DEPRESSED SECTION C-C

VEHICULAR CURB CUT DETAILS



PLANS DEVELOPED BY:
DOWL HKM

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

STERLING HWY MP 173 TO 174
PAVEMENT PRESERVATION

CURB AND GUTTER DETAILS

DESIGNED BY HJK
CHECKED BY SKN
DRAFTED BY MAC

XREFS

SCALE

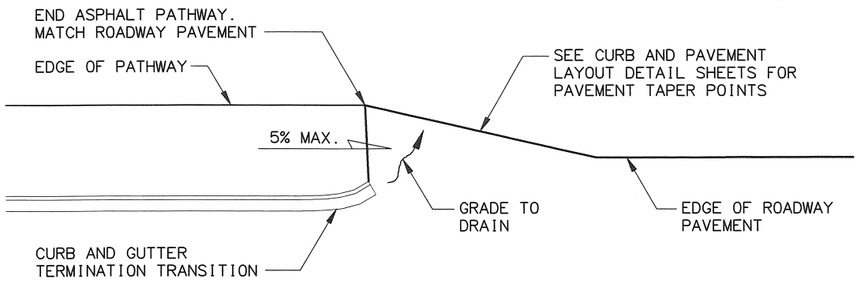
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DATE 3/19/2014
TIME 9:16 AM

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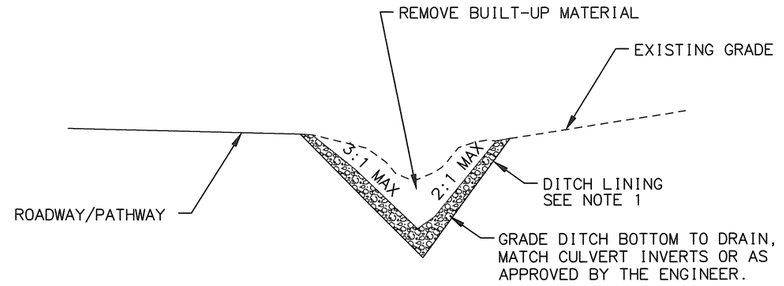
REVISIONS		
NO.	DATE	DESCRIPTION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0211(061)/56176	2014	E2	E2



PATHWAY END AT CURB AND GUTTER TERMINATION TRANSITION

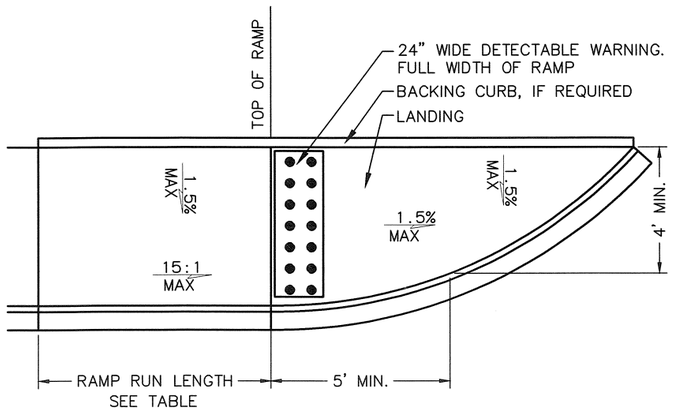
SEE H14 FOR LOCATION



DITCH LINEAR GRADING

NOTES:

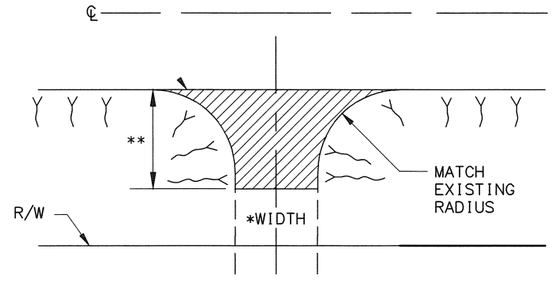
1. LINE DITCH WITH AN 8" LIFT CONSISTING OF ANGULAR CRUSHED STONE AND IN ACCORDING WITH SECTION 610.



UNIDIRECTIONAL CURB RAMPS

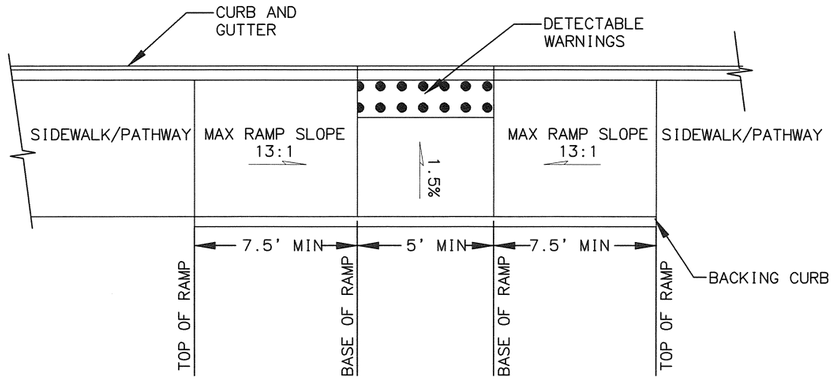
UPHILL PATH/SIDEWALK GRADES	RAMP RUN LENGTH *
0 TO 1.5%	7.5' MAX
1.5% TO 4.0%	12' MAX
STEEPER THAN 4%	15' MAX

TRANSITION FROM MOUNTABLE CURB AND GUTTER WHERE SIDEWALK/PATHWAY SLOPE MAKES IT NECESSARY TO LENGTHEN A RAMP RUN TO AVOID EXCEEDING THE ALLOWABLE SLOPE. IT SHALL NOT BE MADE LONGER THAN 15 FEET FOR A 6 INCH CURB HEIGHT. RAMP SUN LENGTHS AND SLOPES SHALL BE APPROVED BY THE ENGINEER.



APPROACH PLAN VIEW

* MATCH EXISTING WIDTH OR AS DIRECTED BY THE ENGINEER.
** PAVE TO RADIUS RETURN OR 20 FEET, WHICHEVER IS GREATER UNLESS SHOWN OTHERWISE.



CURB RAMP - MIDBLOCK

N.T.S.



PLANS DEVELOPED BY:
DOWL HKM

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

STERLING HWY MP 173 TO 174
PAVEMENT PRESERVATION

APPROACH, PATHWAY AND DRAINAGE

DESIGNED BY KLK
CHECKED BY SKN
DRAFTED BY MAC

XREFS

SCALE

LAYOUT
E2

DATE TIME
3/19/2014 9:16 AM

DRAWING LOCATION
P:\Projects\D61407\CAD\Civil\SA12-CT-EI-DT-61407.dwg

DESIGNED BY	KLK
CHECKED BY	SKN
DRAFTED BY	MAC

XREFS

SCALE

LAYOUT H1

DATE TIME 3/27/2014 1:03 PM

DRAWING LOCATION P:\Projects\061407\CAD\Civil\SA12-CT-RD-61407.dwg

SYMBOL LEGEND

EXISTING	PROPOSED	
		LOAD CENTER
		TRAFFIC CONTROLLER
		BEACON CONTROLLER
##	##	TYPE 1A JUNCTION BOX
##	##	TYPE II JUNCTION BOX
##	##	TYPE III JUNCTION BOX
##	##	TYPE IV JUNCTION BOX
		ELECTROLIER
HT#	HT#	HIGHTOWER
##	##	SIGNAL POLE WITH MASTARM
		PEDESTRIAN PUSH BUTTON
		PEDESTRIAN SIGNAL
		VEHICULAR SIGNAL
		VEHICULAR SIGNAL LEFT
		VEHICULAR SIGNAL RIGHT
A	A	OPTICAL DETECTOR
GPS	GPS	GPS DETECTOR
CAM	CAM	CAMARA DETECTOR
RAD	RAD	RADAR DETECTOR
###	###	LOOP DETECTOR
		ANTENNA, YAGI OR OMNI
		MASTARM BEACON
		RURAL BEACON
		SCHOOL ZONE BEACON
		LOOP DETECTOR CONDUIT
		SIGNAL CONDUIT
		LIGHTING CONDUIT
		SIGNAL & LIGHTING CONDUIT
		CONDUIT BORING
2"	2"	CONDUIT SIZE IN INCHES
	1	SIGN POST

PAVEMENT MARKING LEGEND

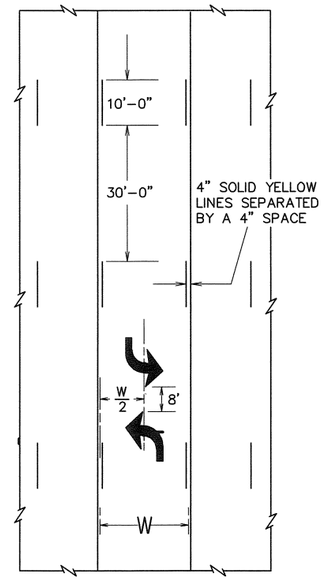
PROPOSED	
	PROJECT CENTERLINE
8"W	8" WHITE SOLID STRIPE
4"W	4" WHITE SOLID STRIPE
4"W SKIP	4" WHITE SKIP STRIPE 10' STRIPES AND 30' SPACES
8"W GUIDE SKIP	8" WHITE LANE GUIDE SKIP LANE CONTINUATION OR TURN SKIP 1' STRIPES AND 3' SPACES
8"Y	8" YELLOW SOLID STRIPE
4"Y	4" YELLOW SOLID STRIPE
4"Y SKIP	4" YELLOW SKIP STRIPE 10' STRIPES AND 30' SPACES
+20	STRIPING CHANGE STATION INTERVAL
24"W (TYP)	2' CROSSWALK OR STOPBAR
10'	LADDER CROSSWALK LAYOUT 2' WIDE RUNGS WITH 2' SPACES ALIGNED TO AVOID TIRE PATHS
12', (2)-4"Y 3" APART, VARIES, 18"Y @ 45°	TYPICAL PAINTED MEDIAN

ABBREVIATIONS

℄ – CENTERLINE
SIG – SERVICE TO CONTROLLER
INTX – INTERSECTION
INTX L – INTERSECTION LIGHTING
LTG – LIGHTING
PRE 2 – PREEMPTION #
PRE CON 2 – PREEMPTION CONTROLLER #
LC – LOAD CENTER
TC – TRAFFIC CONTROLLER
P1 – TRAFFIC SIGNAL POLE #
PEC – PHOTOELECTRIC CELL
YAGI – DIRECTIONAL ANTENNA
OMNI – OMNI DIRECTIONAL ANTENNA
HEAD – VEHICULAR SIGNAL HEAD
PED B 28 – PEDESTRIAN PUSH BUTTON #
PEDI – PEDESTRIAN SIGNAL HEAD
RMC – RIGID METAL CONDUIT
PE – POLYETHYLENE CONDUIT
LFNC – LIQUIDTIGHT FLEXIBLE NONMETALLIC CONDUIT
AWG – AMERICAN WIRE GAUGE
NB – NORTH BOUND
EB – EAST BOUND
SB – SOUTH BOUND
WB – WEST BOUND

REVISIONS		
NO.	DATE	DESCRIPTION
10/15/2013	CENTRAL REGION DETAIL	

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0211(061)/56176	2014	H1	H19



1. INSTALL DUAL TURN LANE ARROWS EVERY 250', UNLESS OTHERWISE SPECIFIED.

TWO WAY CENTER LEFT TURN LANE

SIGNING & STRIPING NOTES:

1. ALL STATION LOCATIONS FOR SIGN INSTALLATION ARE APPROXIMATE. INSTALL SIGNS AT LOCATIONS AS DIRECTED BY THE ENGINEER.
2. USE THE FOLLOWING DEFINITIONS TO DECIPHER THE ABBREVIATED SIGN POST TYPES IN THE SIGN SUMMARY SHEETS.
   A. PT MEANS A PERFORATED STEEL TUBE.
   B. T MEANS A SQUARE STEEL TUBE.
   C. P MEANS A ROUND STEEL PIPE.
   D. W MEANS A WIDE FLANGE BEAM.
   E. POPL MEANS A POLE PLATE INSTALLED PER ITS STANDARD DRAWING S-23
3. FOR SIGNS SUPPORTED BY MULTIPLE POSTS, FABRICATE THE POSTS WITH THEIR TOPS LEVEL WITH ONE ANOTHER.
4. FOR PERFORATED STEEL TUBE SIGNPOSTS, INSTALL THE CONCRETE FOUNDATION OPTION SHOWN ON STANDARD DRAWING S-30.03. TRIM EACH PT POST TO LIMIT THE LENGTH INSERTED INTO THE FOUNDATION TO 12 INCHES.
5. FABRICATE GUIDE SIGNS ACCORDING TO THE SHOP DRAWINGS INCLUDED IN THE APPENDICES OF PART 4, CONTRACT PROVISIONS AND SPECIAL PROVISIONS. TRIM THE CORNERS OF ALL SIGNS TO THE RADIUS SHOWN ON EACH SHOP DRAWING.
6. ERECT NEW SIGNS BEFORE REMOVAL OF EXISTING SIGNS WITH SIMILAR MESSAGE. NOTIFY THE ENGINEER A MINIMUM OF 14 DAYS PRIOR TO BEGINNING SIGN REMOVAL AND SALVAGE OR DISPOSAL ACTIVITIES.
7. FOR SIGNS SUPPORTED BY MULTIPLE TUBES OR PIPES, LOCATE THE OUTER POSTS ON MAXIMUM SIX FEET CENTERS. INSTALL ADJACENT WIDE FLANGE POSTS ON MINIMUM EIGHT FEET CENTERS.
8. FOR ALL FINAL PAVEMENT MARKINGS USE METHYLMETHACRYLATE MATERIALS. LONGITUDINAL MARKINGS, GORE STRIPES, TRANSVERSE AND SYMBOL MARKINGS SHALL BE SURFACE APPLIED AT 60 MILS, STOP BARS AND CROSSWALKS SHALL BE INLAID AT 250 MILS.
9. DIMENSIONS REFER TO THE CENTER OF STRIPE AND THE EDGE OF PAVEMENT OR FACE OF CURB WHEN PRESENT.
10. IF THE NEW AND EXISTING PAVEMENT MARKINGS ARE NOT ALIGNED AT MATCH LINE, TRANSITION BETWEEN THE TWO USING A 100:1 TAPER ON THE NEW PAVEMENT.
11. WHERE NEW STRIPING IS TO EXTEND BEYOND PAVING LIMITS, REMOVE EXISTING STRIPING IN ACCORDANCE WITH SUBSECTION 670-3.04 TO THE EXTENT OF STRIPING LIMITS.

CALL BEFORE YOU DIG!

CONTRACTOR SHALL CALL A MINIMUM OF 3 DAYS IN ADVANCE OF CONSTRUCTION

ALASKA DIGLINE....907-278-3121 OR 800-478-3121

CALL OR GO TO WWW.AKONECALL.COM/STATEWIDE.HTM FOR MEMBER LIST OF WHO WILL BE NOTIFIED

STATE OF ALASKA 49TH Kelly L. Kilpatrick GE 12237 REGISTERED PROFESSIONAL ENGINEER

PLANS DEVELOPED BY: DOWL HKM

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

STERLING HWY MP 173 TO 174
PAVEMENT PRESERVATION

TRAFFIC LEGEND AND NOTES

REVISIONS		
NO.	DATE	DESCRIPTION
08/25/2013		CENTRAL REGION DETAIL - REPLACES STD. DWG. S-20.10

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0211(061)/56176	2014	H2	H19

DESIGNED BY KLK
CHECKED BY SKN
DRAFTED BY MAC

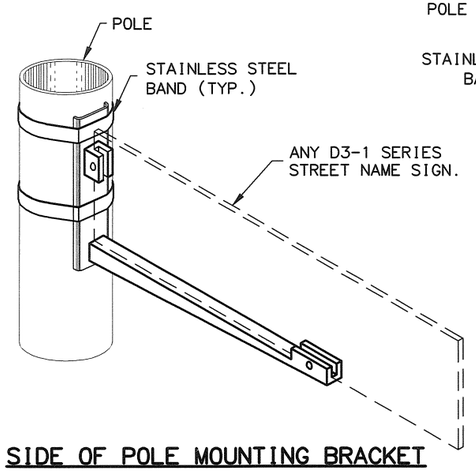
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SCALE

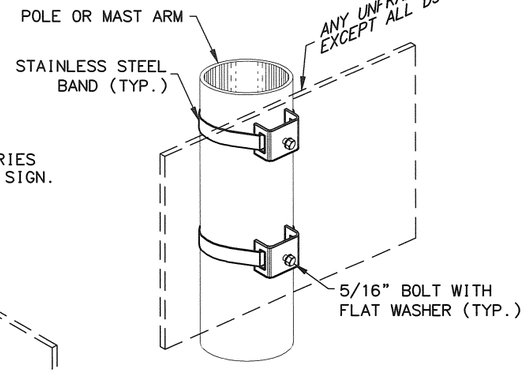
LAYOUT H2

DATE TIME 3/27/2014 1:03 PM

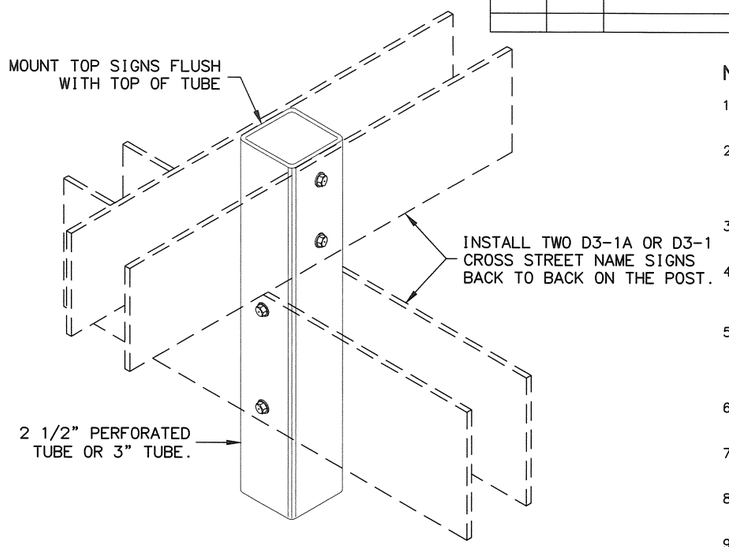
DRAWING LOCATION P:\Projects\061407\CAD\Civil\SA12-CT-RD-61407.dwg



SIDE OF POLE MOUNTING BRACKET



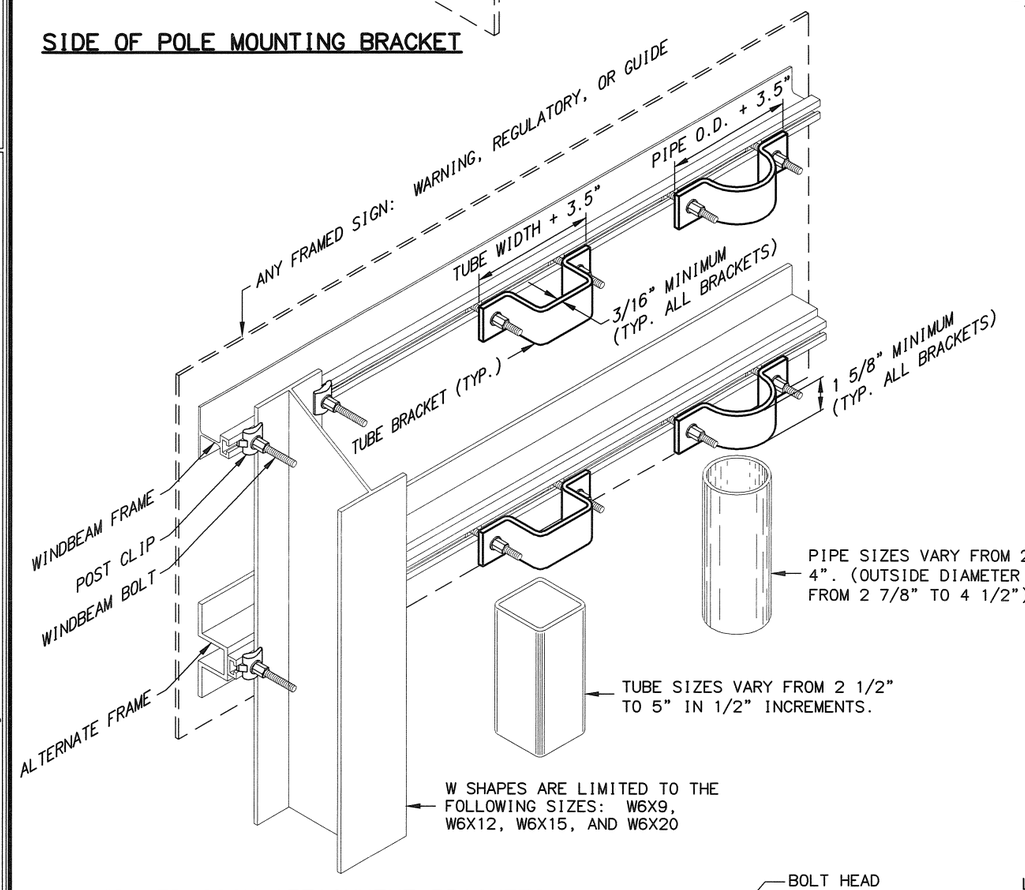
SADDLE BRACKETS



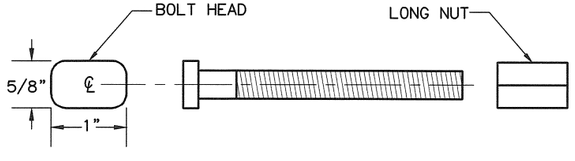
STREET NAME SIGN INSTALLATION

NOTES:

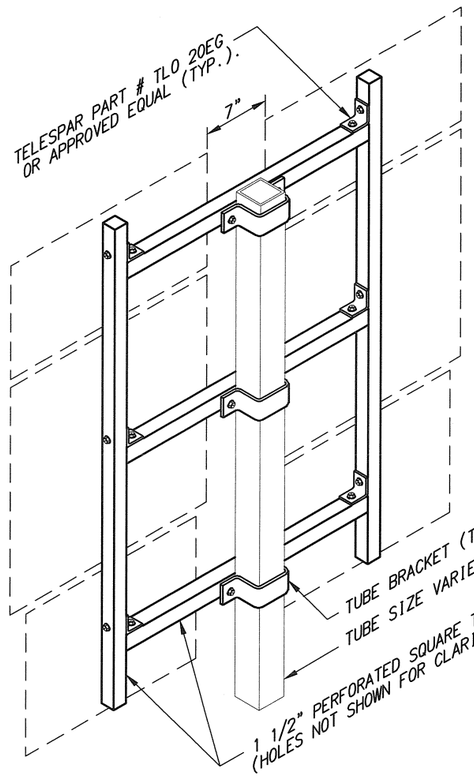
1. EXCEPT FOR POLES AND MAST ARMS, ONLY USE TUBES TO SUPPORT SIGNS MOUNTED ON ONE POST.
2. ATTACH SIGNS, FRAMED AND UNFRAMED TO THEIR SUPPORTS WITH ZINC PLATED 3/8" BOLTS, EXCEPT ATTACH UNFRAMED SIGNS TO PERFORATED TUBES WITH ACCESSORY DRIVE RIVETS AND TO SADDLES WITH 5/16" BOLTS.
3. BOLT UNFRAMED SIGNS DIRECTLY TO TUBES, AND ATTACH THEM TO POLES AND MAST ARMS WITH TWO SADDLES.
4. ATTACH BRACKETS TO POLES AND MAST ARMS WITH DOUBLE WRAPS OF 3/4" WIDE BY 0.020" THICK STAINLESS STEEL BANDING MATERIAL. TIGHTEN EACH BAND UNTIL IT STOPS MOVING THROUGH THE BUCKLE.
5. ATTACH FRAMED SIGNS TO POSTS WHEREVER THE FRAMES CROSS THE POSTS. AT EACH CROSSING, ATTACH THE SIGN USING TWO POST CLIPS ON W-SHAPE POSTS, A U-SHAPED BRACKET ON PIPES, AND A BRACKET WITH SQUARE CORNERS ON TUBES.
6. THE TUBE BRACKETS USED ON EVEN INCH SIZE TUBES MAY ALSO BE USED ON TUBES 1/2" SMALLER IN SIZE.
7. ONLY USE THE SPECIAL WINDBEAM BOLTS TO ATTACH SIGNS FRAMED WITH THE WINDBEAM FRAMING MATERIAL.
8. ATTACH FRAMED SIGNS TO POLES AND MAST ARMS USING POLE PLATES INSTALLED ACCORDING TO STANDARD DRAWING S-23.00
9. FOR ROUTE MARKER TREES, CUT PERFORATED TUBES TO ENSURE TIGHT FITTING JOINTS. ASSEMBLE THE PIECES WITH ACCESSORY ELL-SHAPED ANGLE BRACKETS.
10. INSTALL THE TOP EDGE OF SIGNS 1" ABOVE THE TOPS OF POSTS, EXCEPT FOR THE D3-1 STREET NAME SIGNS.
11. INSTALL THE TOP EDGE OF SIGNS 3" BELOW THE TOP OF POST, WHENEVER THEY ARE MOUNTED BELOW SIGNS SECURED BY POST TOP MOUNTING BRACKETS.
12. THE BRACKET DETAILS SHOWN INDICATE GENERAL DESIGNS ONLY. DESIGNS MAY VARY BY MANUFACTURER.
13. INSTALL WEATHER TIGHT CAPS ON ALL PIPE AND TUBE POSTS, EXCEPT PERFORATED TUBING.



FRAMED SIGN ATTACHMENT BRACKETS



3/8" WINDBEAM BOLT AND LONG NUT



ROUTE MARKER TREE

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

STATE OF ALASKA
49TH
Kelly L. Kincheloe
CE-12267
REGISTERED PROFESSIONAL ENGINEER
3/14

PLANS DEVELOPED BY:
DOWL HKM

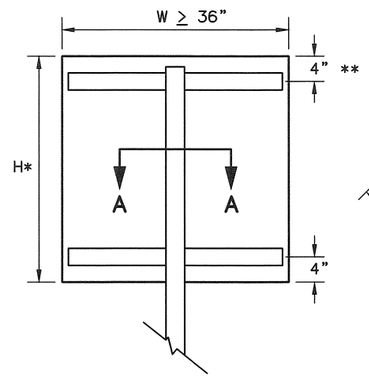
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

STERLING HWY MP 173 TO 174
PAVEMENT PRESERVATION

SIGN ATTACHMENT DETAIL

REVISIONS		
NO.	DATE	DESCRIPTION
06/25/2013		CENTRAL REGION DETAIL - REPLACES CDST&TDS SHEETS 00 ONLY
		THE LIGHT SIGNS FRAMING DETAILS ON STD. DWG. S-00.11
		AND ENTIRELY REPLACES STD. DWG. S-01.00

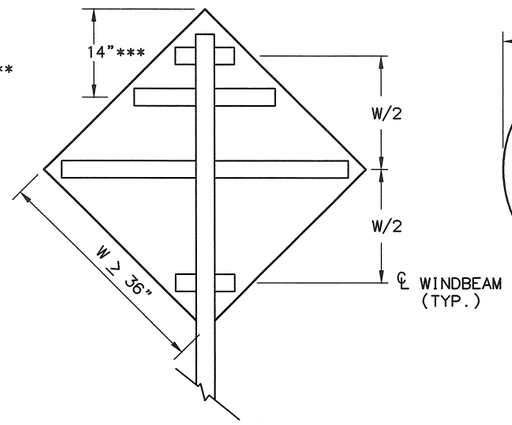
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0211(061)/56176	2014	H3	H19



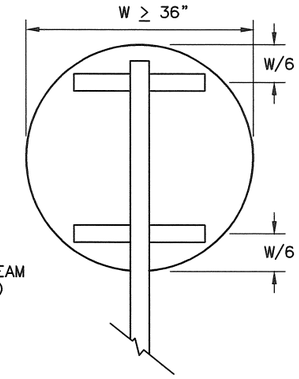
RECTANGLES AND TRAPEZOIDS

* WHEN H > 42 INCHES, INSTALL A 3RD WINDBEAM CENTERED ON THE SIGN.

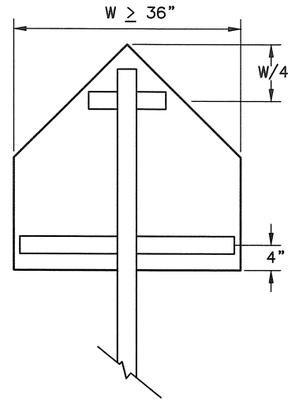
** FOR S5-1 SIGNS MOUNTED ON FLASHING BEACON POSTS, USE A 10" OFFSET. OTHERWISE, USE 4".

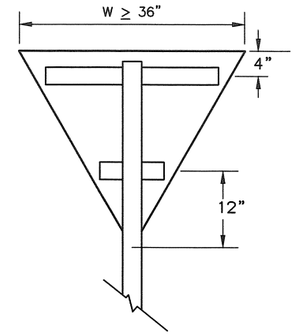


*** FOR WARNING SIGNS MOUNTED ON FLASHING BEACON POSTS, USE THE 14" OFFSET. OTHERWISE, USE W/2.



ROUNDS AND OCTAGONS



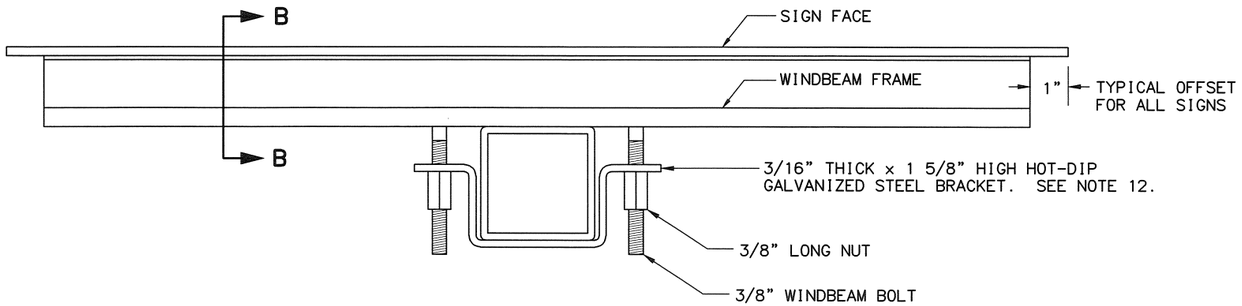


NOTES:

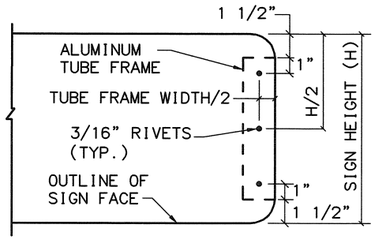
1. EXCEPT FOR POLES AND MAST ARMS, ONLY USE SQUARE STEEL TUBES TO SUPPORT SIGNS MOUNTED ON SINGLE POSTS.
2. INSTALL WINDBEAM OR ZEE SHAPED FRAMING MEMBERS ON DIAMOND SHAPED SIGNS 36 INCHES AND LONGER ON A SIDE AND ON OTHER SIGNS 36 INCHES WIDE AND WIDER.
3. IN HIGH WIND AREAS, THE PLANS MAY REQUIRE SIGNS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

WINDBEAM LOCATIONS FOR EACH SIGN SHAPE

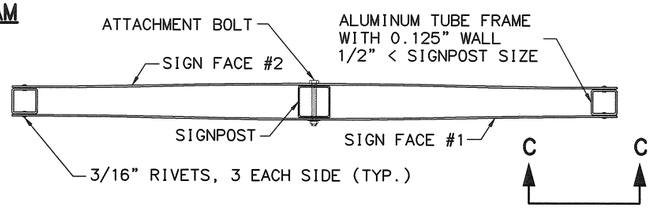
ELEVATION VIEW



SECTION A - A TYPICAL SIGN ATTACHMENT DETAILS AT EACH WINDBEAM

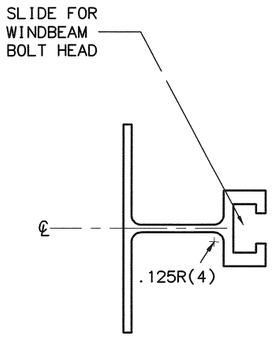


VIEW C - C

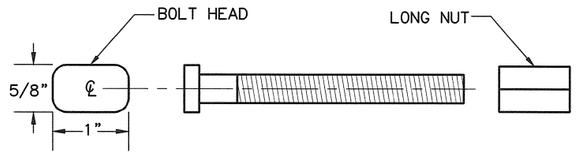


D3-1, D3-1A, D3-1D STREET NAME SIGN FRAMING DETAIL

PLAN VIEW



SECTION B - B WINDBEAM CROSS SECTION



3/8" WINDBEAM BOLT AND LONG NUT



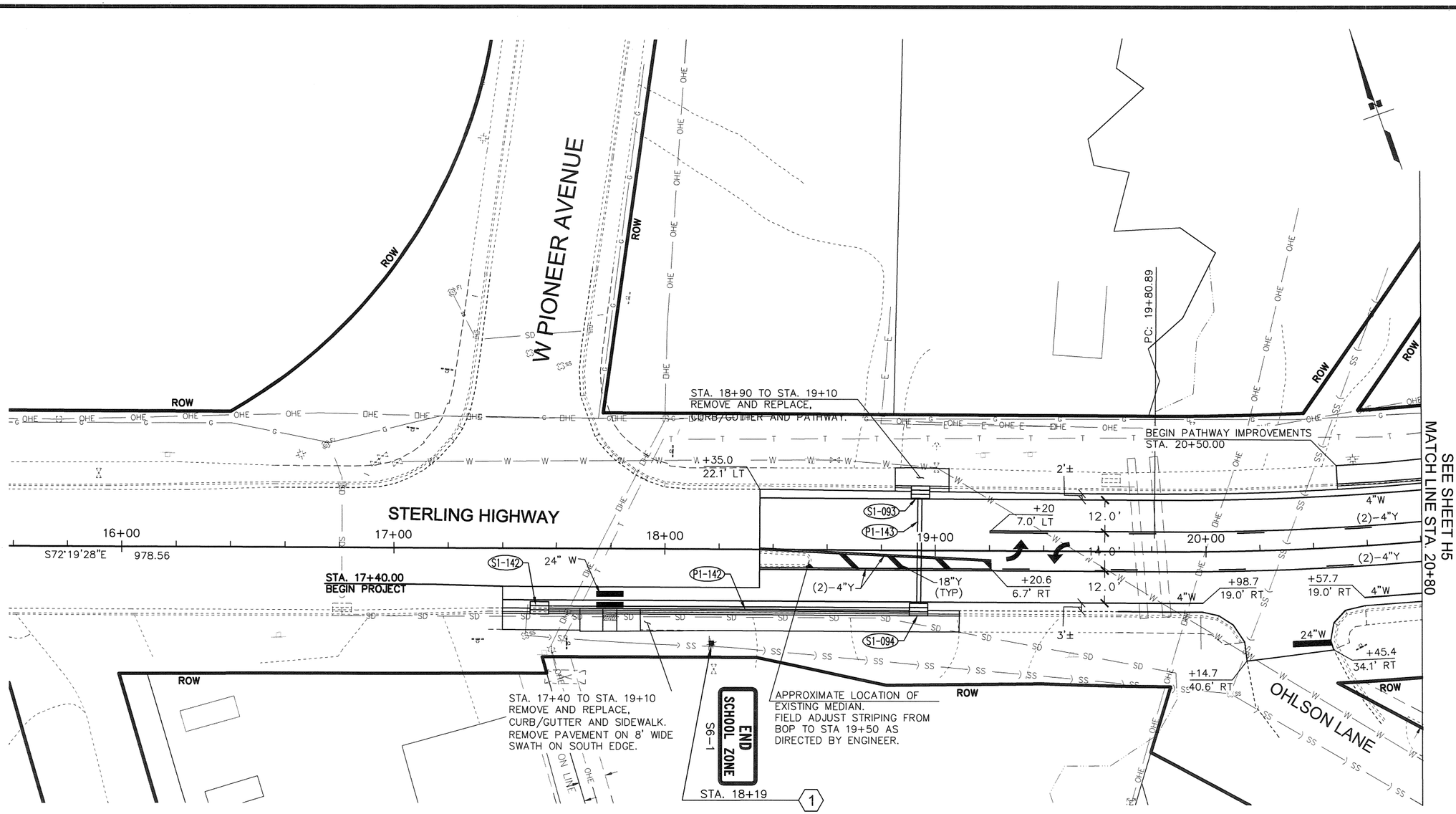
PLANS DEVELOPED BY:
DOWL HKM

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

STERLING HWY MP 173 TO 174
PAVEMENT PRESERVATION

LIGHT SIGN FRAMING AND ATTACHMENT DETAILS

DESIGNED BY KLK
CHECKED BY SKN
DRAFTED BY MAC
XREFS
SCALE
LAYOUT H3
DATE TIME 3/27/2014 1:03 PM
DRAWING LOCATION P:\Projects\061407\CADD\Civil\SA12-CT-RD-61407.dwg



603(17)	PIPE SUMMARY					
PIPE ID	SIZE	PIPE LENGTH	DIRECTION			REMARKS
	(INCHES)	(FEET)	GRADE	FROM	TO	
P1-142	18	134	17+62	S1-142	S1-094	
P1-143	18	47	18+95	S1-093	S1-094	

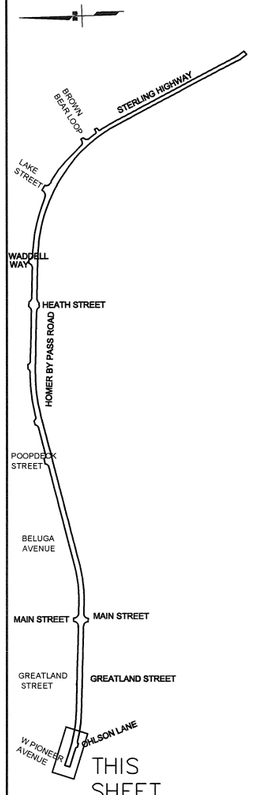
604(5)	INLET, TYPE A									
STRUCTURE				CASTING		INVERT ELEVATION				REMARKS
ID	TYPE	STATION	OFFSET	TOP	TYPE	N	E	S	W	
S1-142	A	17+54	22.0 RT	ME	CI		*			WITH CURB INLET FRAME AND GRATE
S1-093	A	18+94	22.0 LT	ME	CI			*		WITH CURB INLET FRAME AND GRATE
S1-094	A	18+94	22.0 RT	ME	CI	*	82.49		82.41	WITH CURB INLET FRAME AND GRATE

* AS-BUILT INVERT ELEVATIONS NOT OBTAINED

STRUCTURE LOCATIONS ARE APPROXIMATE. FIELD VERIFY PIPES AND STRUCTURES. FINAL LOCATIONS, ELEVATIONS, AND SLOPES SHALL BE APPROVED BY THE ENGINEER.

SHEET NO.	TOTAL SHEETS
H4	H19
STATE	YEAR
ALASKA	2014
PROJECT DESIGNATION	
211(061)/56176	
ADDENDUM NO.	
ATTACHMENT NO.	
REVISIONS	

NO.	DATE	DESCRIPTION



STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

STERLING HIGHWAY
MP 173 TO MP 174
PAVEMENT PRESERVATION

SIGNING AND STRIPING SHEETS
BOP TO STA. 20+80

DESIGNED BY KLK
CHECKED BY KLK
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XREFS

SCALE

LAYOUT
H4

DATE TIME
3/27/2014 1:03 PM

DRAWING LOCATION
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DESIGNED BY	KLK
CHECKED BY	KLK
DRAFTED BY	CJS

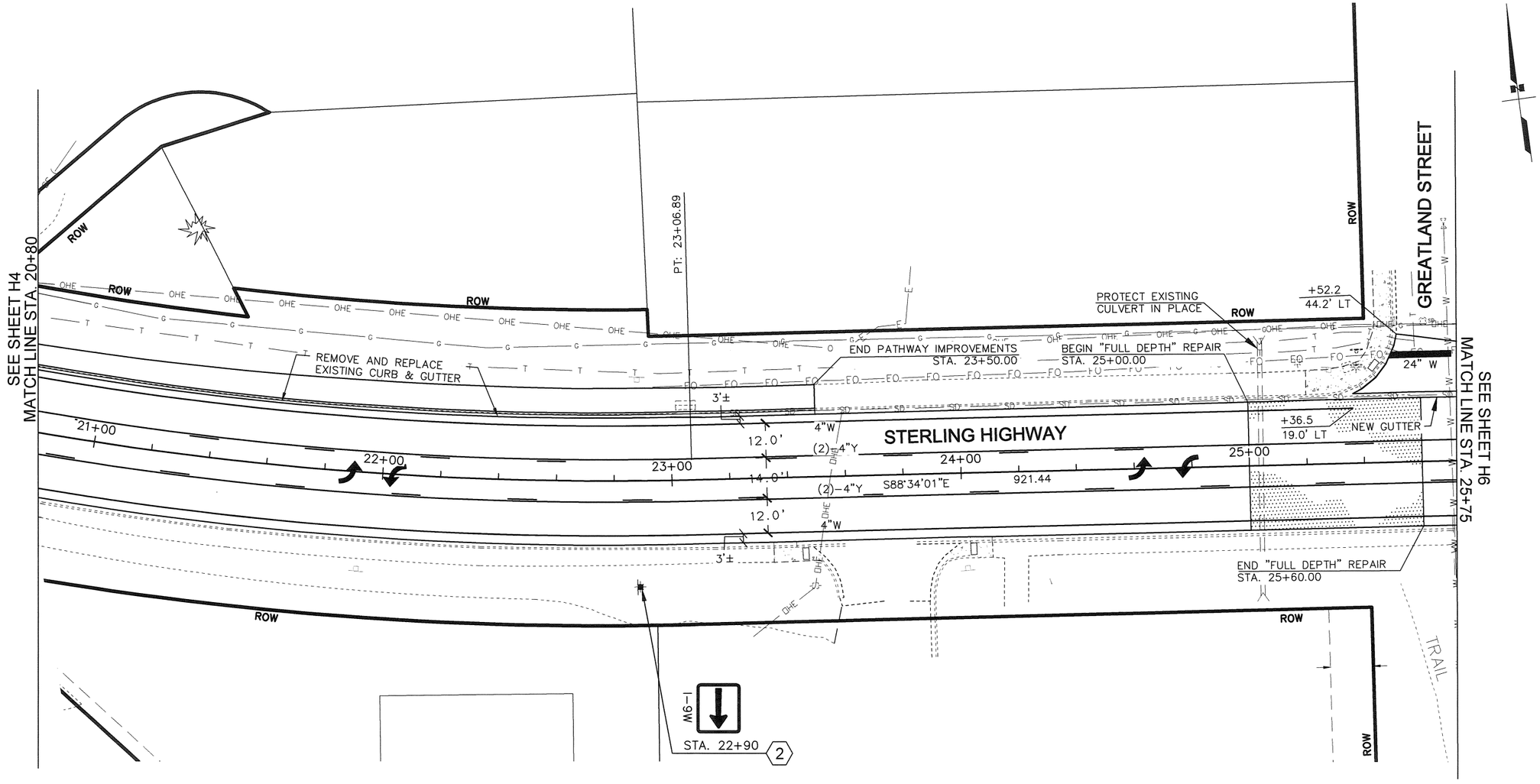
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SCALE

LAYOUT
H5

DATE TIME
3/27/2014 1:03 PM

DRAWING LOCATION
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LEGEND

= FULL DEPTH REMOVAL

SHEET NO.	TOTAL SHEETS
H5	H19
STATE	YEAR
ALASKA	2014

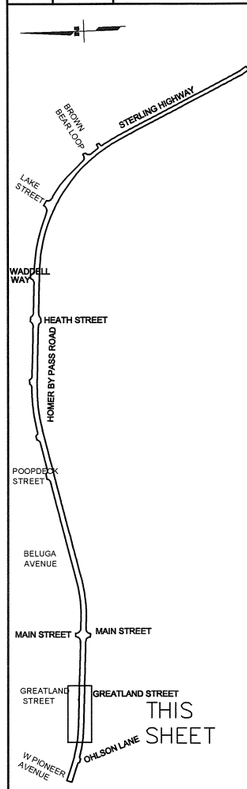
PROJECT DESIGNATION
211(061)/56176

ADDENDUM NO.

ATTACHMENT NO.

REVISIONS

NO.	DATE	DESCRIPTION

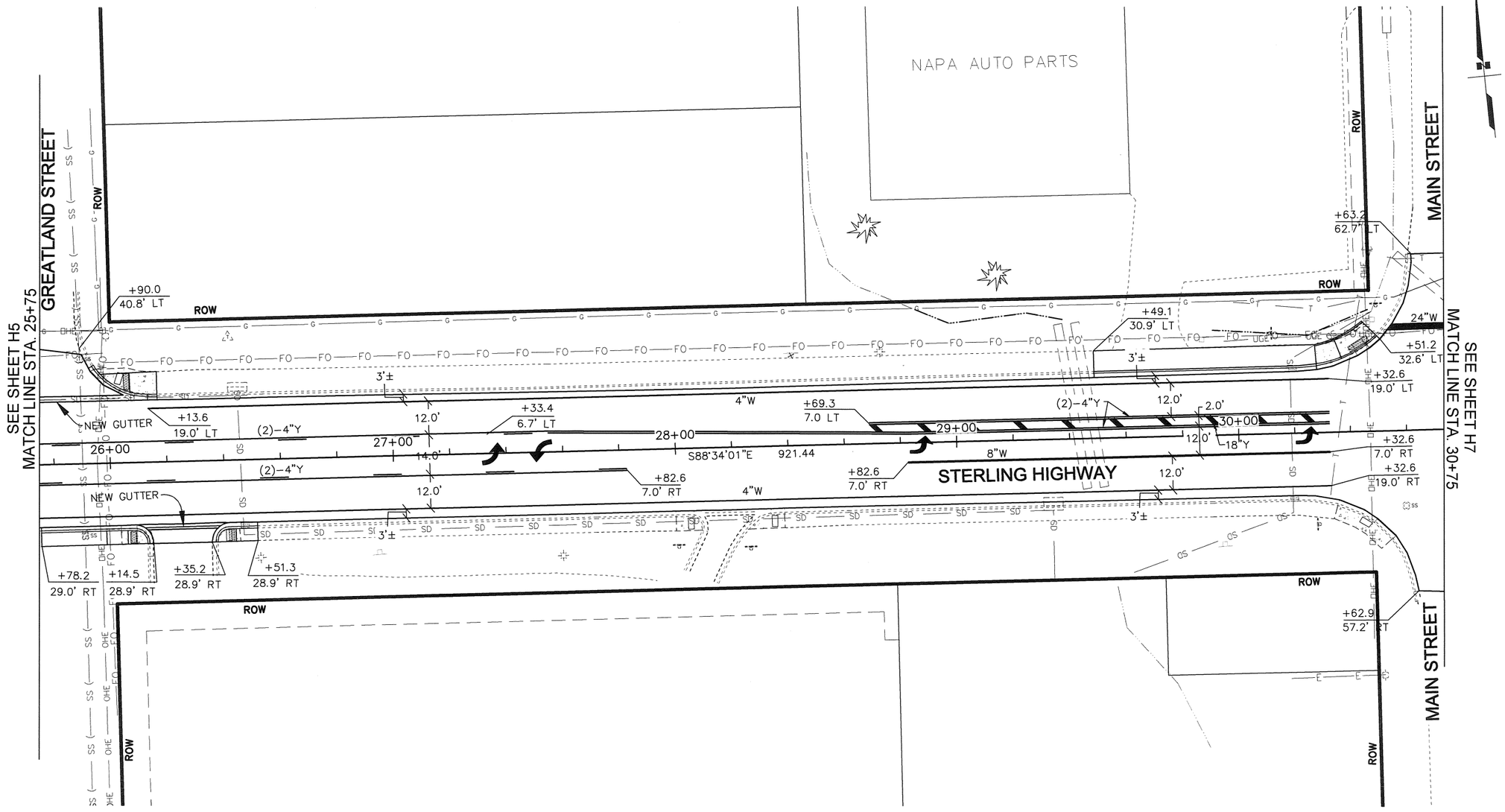


STATE OF ALASKA
49TH
Kelly W. Kilgbrick
CE-11257
REGISTERED PROFESSIONAL ENGINEER
3/27/14

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

STERLING HIGHWAY
MP 173 TO MP 174
PAVEMENT PRESERVATION

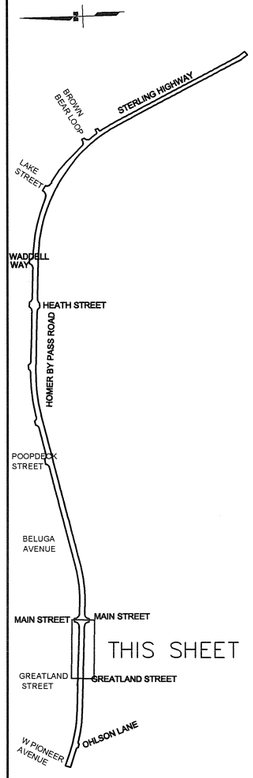
SIGNING AND STRIPING SHEETS
STA. 20+80 TO STA. 25+75



DESIGNED BY	KLK
CHECKED BY	KLK
DRAFTED BY	CJS
XREFS	
SCALE	
LAYOUT	H6
DATE TIME	3/27/2014 1:03 PM
DRAWING LOCATION	P:\Projects\D61407\CAD\Civil\SA12-CT-RD-61407.dwg

SHEET NO.	TOTAL SHEETS
H6	H19
STATE	YEAR
ALASKA	2014
PROJECT DESIGNATION	
211(061)/56176	
ADDENDUM NO.	
ATTACHMENT NO.	
REVISIONS	

NO.	DATE	DESCRIPTION





STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

STERLING HIGHWAY
MP 173 TO MP 174
PAVEMENT PRESERVATION

SIGNING AND STRIPING SHEETS
STA. 25+75 TO STA. 30+75

DESIGNED BY KLK
DRAFTED BY KLK
CHECKED BY CJS

XREFS

SCALE

LAYOUT H7

DATE TIME 3/27/2014 1:03 PM

DRAWING LOCATION P:\Projects\D61407\CAD\Civil\SA12-CT-RD-61407.dwg

SEE SHEET H6
MATCH LINE STA. 30+75

ROW

+91.0
52.5' LT

D9-2

HOSPITAL
D9-13AP

M6-1

BEGIN CLEARING LIMITS
STA. 33+50
CLEAR 10' BEYOND TOE/TOP OF EXISTING SLOPE, WITHIN ROW OR AS DIRECTED BY ENGINEER

STA. 32+50
5

+32.1
21.9' LT

+27.9
19.0' LT

3'±

24"W (TYP)

8"W

12.0'

10.0'

4.0'

31+00

32+00

33+00

34+00

35+00

36+

+10.8
0.0' RT

(2)-4"Y

18"W (TYP)

+71.2
7.0' RT

+72.0
7.0' LT

+48.7

4"W

12.0'

14.0'

24"W

+92.6
58.4' RT

STOP
R1-1

STA. 31+00
4

PC: 32+16.01

PT: 35+38.59

STERLING HIGHWAY

STA. 32+20 TO 37+40
TRIM VEGETATION TO A POINT 15' FROM SIDEWALK EDGE OR AS DIRECTED BY THE ENGINEER WITHIN ROW.

SEE SHEET H8
MATCH LINE STA. 36+00

SHEET NO.	TOTAL SHEETS
H7	H19
STATE	YEAR
ALASKA	2014

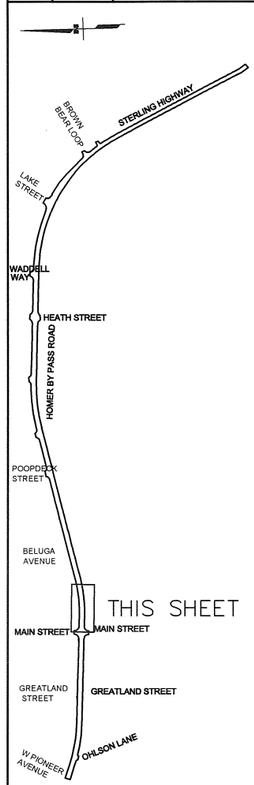
PROJECT DESIGNATION
211(061)/56176

ADDENDUM NO.

ATTACHMENT NO.

REVISIONS

NO.	DATE	DESCRIPTION



STATE OF ALASKA
49TH
Kelly L. Kilpatrick
LS 14257
REGISTERED PROFESSIONAL ENGINEER
4/3/14

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

STERLING HIGHWAY
MP 173 TO MP 174
PAVEMENT PRESERVATION

SIGNING AND STRIPING SHEETS
STA. 30+75 TO STA. 36+00

DESIGNED BY KLK
CHECKED BY KLK
DRAFTED BY CJS

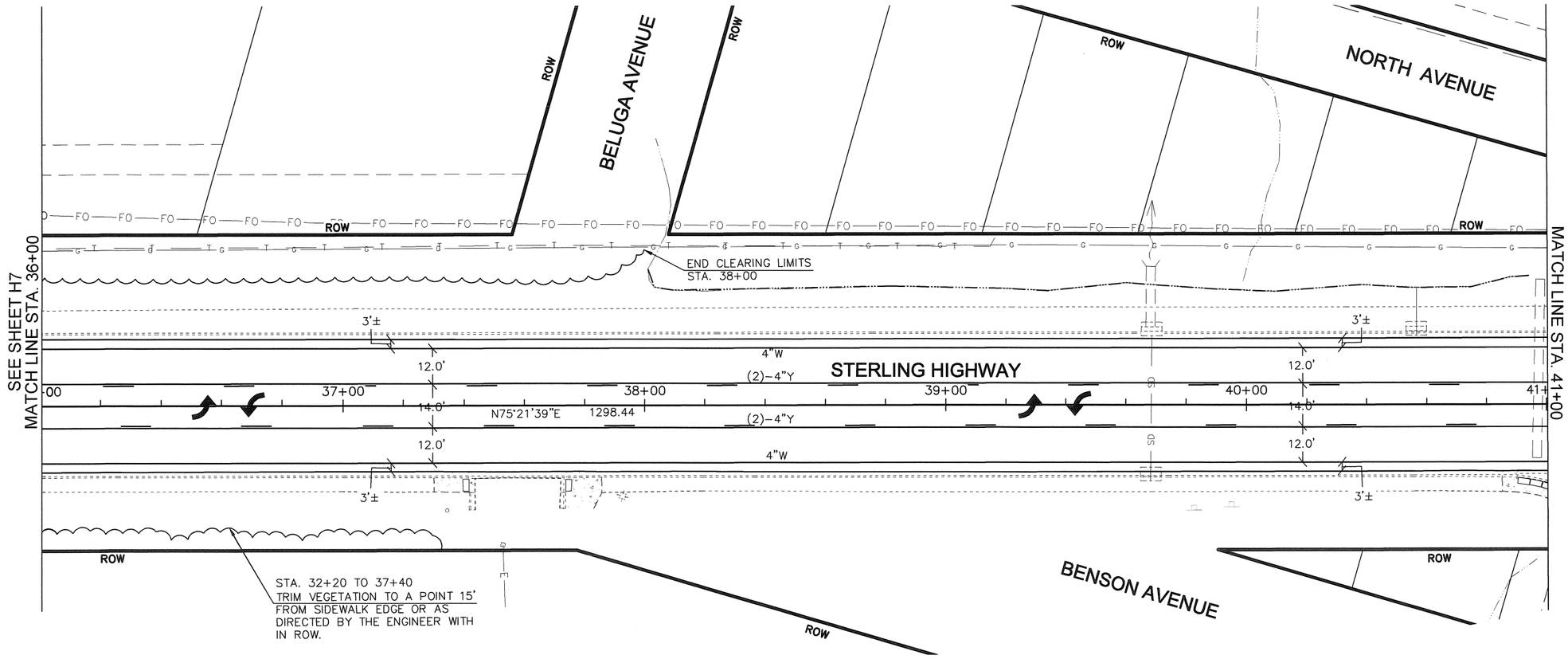
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DATE TIME
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SHEET NO.	TOTAL SHEETS
H8	H19
STATE	YEAR
ALASKA	2014

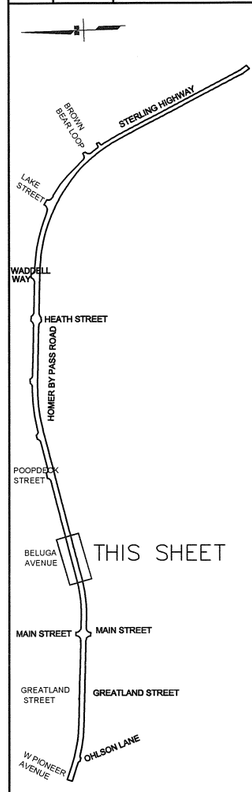
PROJECT DESIGNATION
211(061)/56176

ADDENDUM NO.

ATTACHMENT NO.

REVISIONS

NO.	DATE	DESCRIPTION

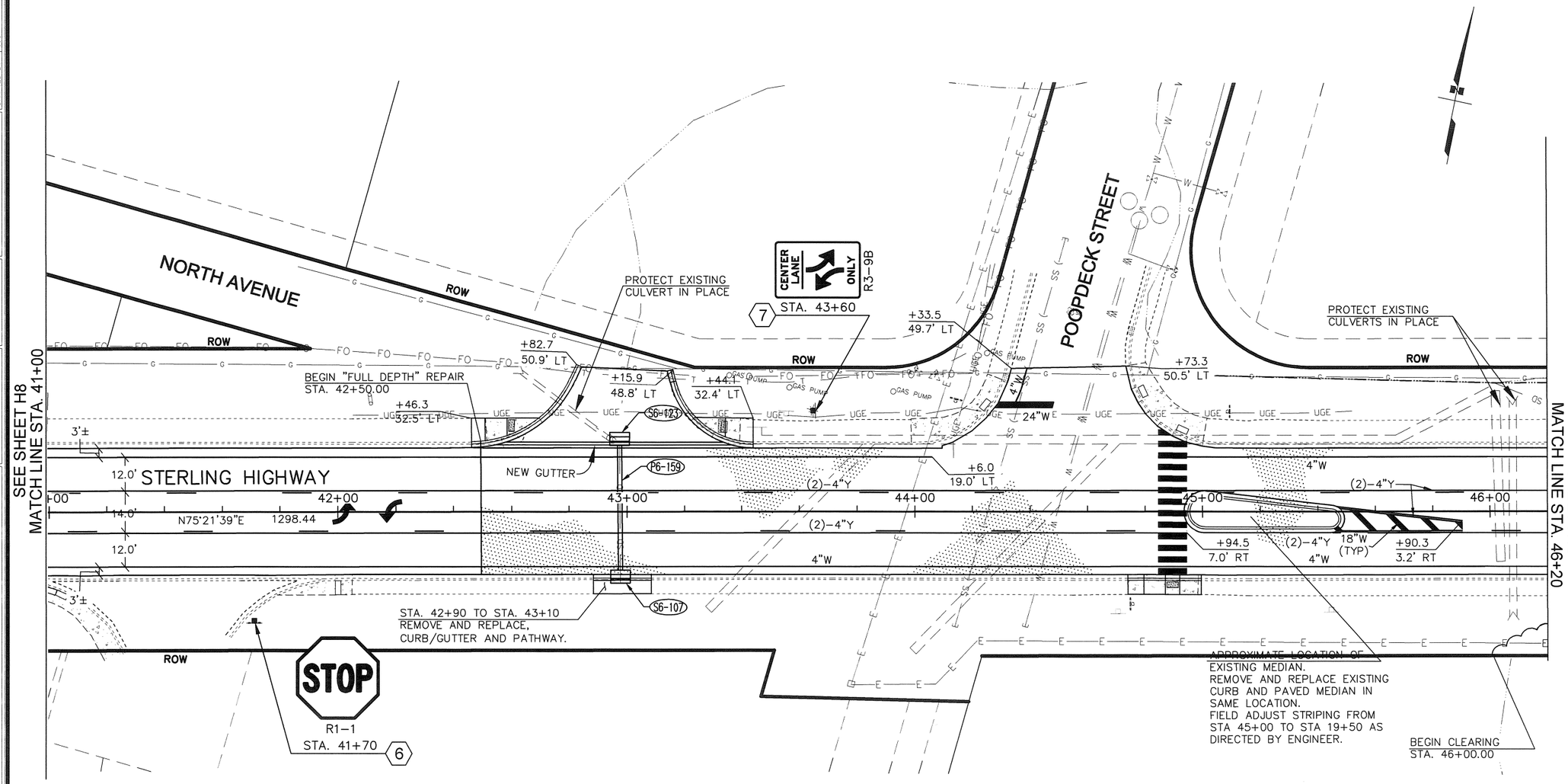




STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

STERLING HIGHWAY
MP 173 TO MP 174
PAVEMENT PRESERVATION

SIGNING AND STRIPING SHEETS
STA. 36+00 TO STA. 41+00



603(17), 603(20)	PIPE SUMMARY					
PIPE ID	SIZE	PIPE LENGTH	DIRECTION			REMARKS
	(INCHES)	(FEET)	GRADE	FROM	TO	
P6-159	18	43		S6-107	S6-123	

604(5)	INLET, TYPE A									
STRUCTURE				CASTING		INVERT ELEVATION				REMARKS
ID	TYPE	STATION	OFFSET	TOP	TYPE	N	E	S	W	
S6-123	A	43+00	22.0 LT	ME	CI	(W) 56.58	--	56.66	--	WITH GUTTER INLET FRAME AND GRATE
S6-107	A	43+00	22.0 RT	ME	CI	57.1	--	--	--	WITH CURB INLET FRAME AND GRATE

STRUCTURE LOCATIONS ARE APPROXIMATE. FIELD VERIFY PIPES AND STRUCTURES.
FINAL LOCATIONS, ELEVATIONS, AND SLOPES SHALL BE APPROVED BY THE ENGINEER.

LEGEND

= FULL DEPTH REMOVAL

SHEET NO.	TOTAL SHEETS
H9	H19
STATE	YEAR
ALASKA	2014

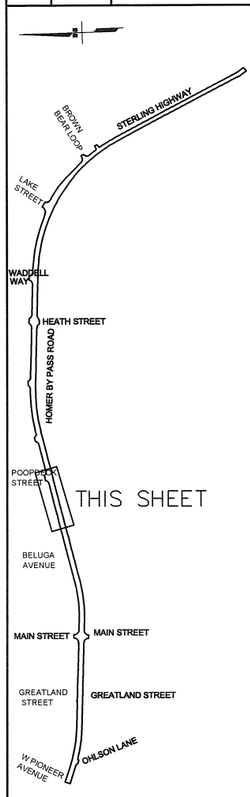
PROJECT DESIGNATION
211(061)/56176

ADDENDUM NO.

ATTACHMENT NO.

REVISIONS

NO.	DATE	DESCRIPTION



STATE OF ALASKA
49TH
Kelly L. Fitzpatrick
CPE 11237
REGISTERED PROFESSIONAL ENGINEER

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

STERLING HIGHWAY
MP 173 TO MP 174
PAVEMENT PRESERVATION

SIGNING AND STRIPING SHEETS
STA. 41+00 TO STA. 46+20

DESIGNED BY KLK
CHECKED BY KLK
DRAFTED BY CJS

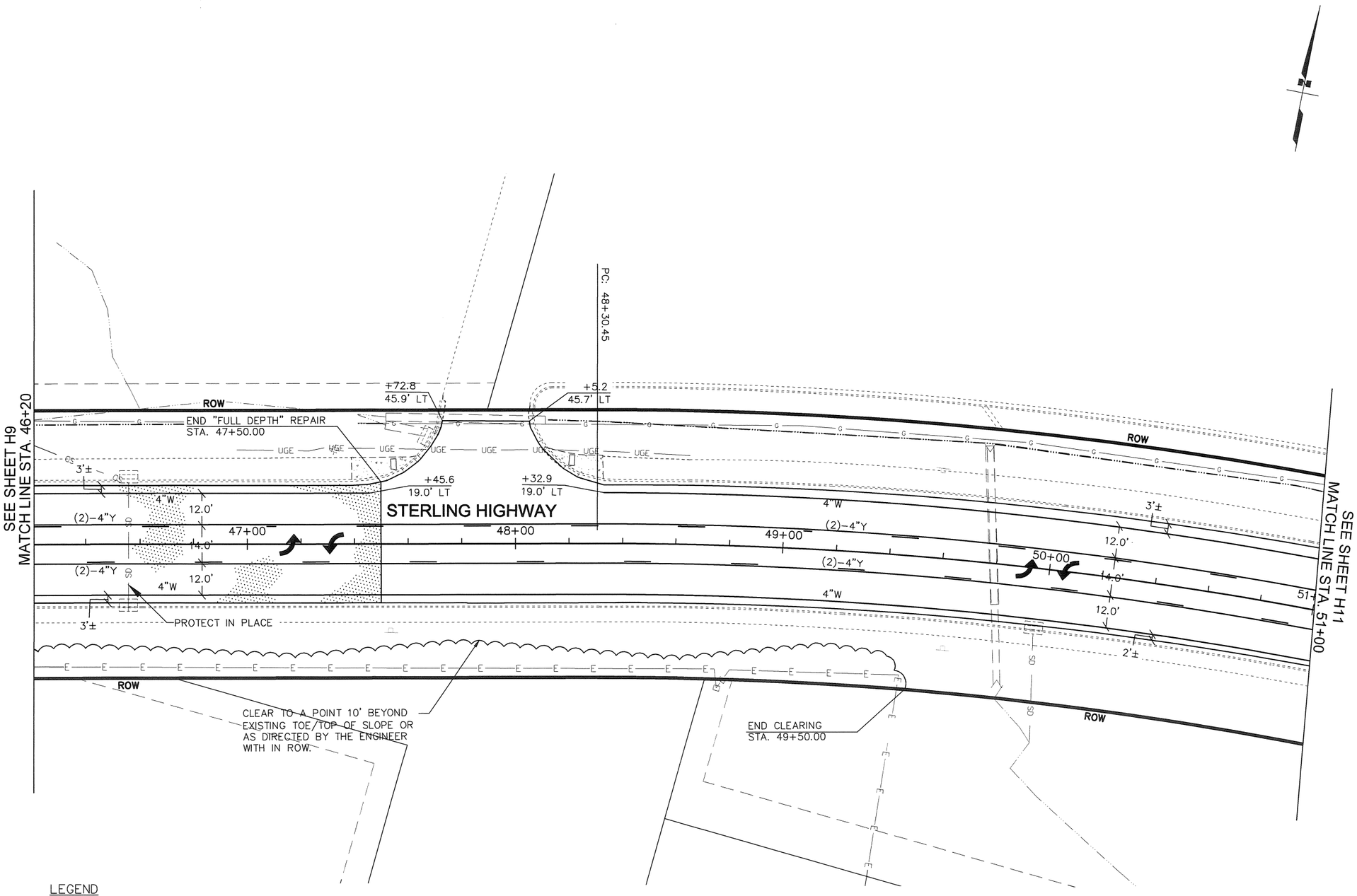
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SCALE

LAYOUT H9

DATE TIME 3/27/2014 1:03 PM

DRAWING LOCATION
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LEGEND

= FULL DEPTH REMOVAL

SHEET NO.	TOTAL SHEETS
H10	H19
STATE	YEAR
ALASKA	2014

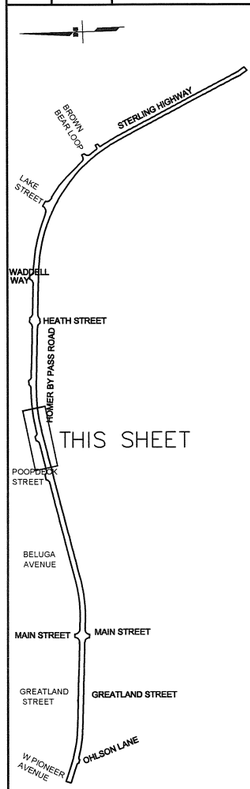
PROJECT DESIGNATION
211(061)/56176

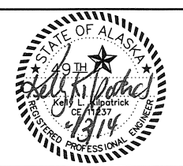
ADDENDUM NO.

ATTACHMENT NO.

REVISIONS

NO.	DATE	DESCRIPTION





STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

STERLING HIGHWAY
MP 173 TO MP 174
PAVEMENT PRESERVATION

SIGNING AND STRIPING SHEETS
STA. 46+20 TO STA. 51+00

DESIGNED BY KLK
CHECKED BY KLK
DRAFTED BY CJS

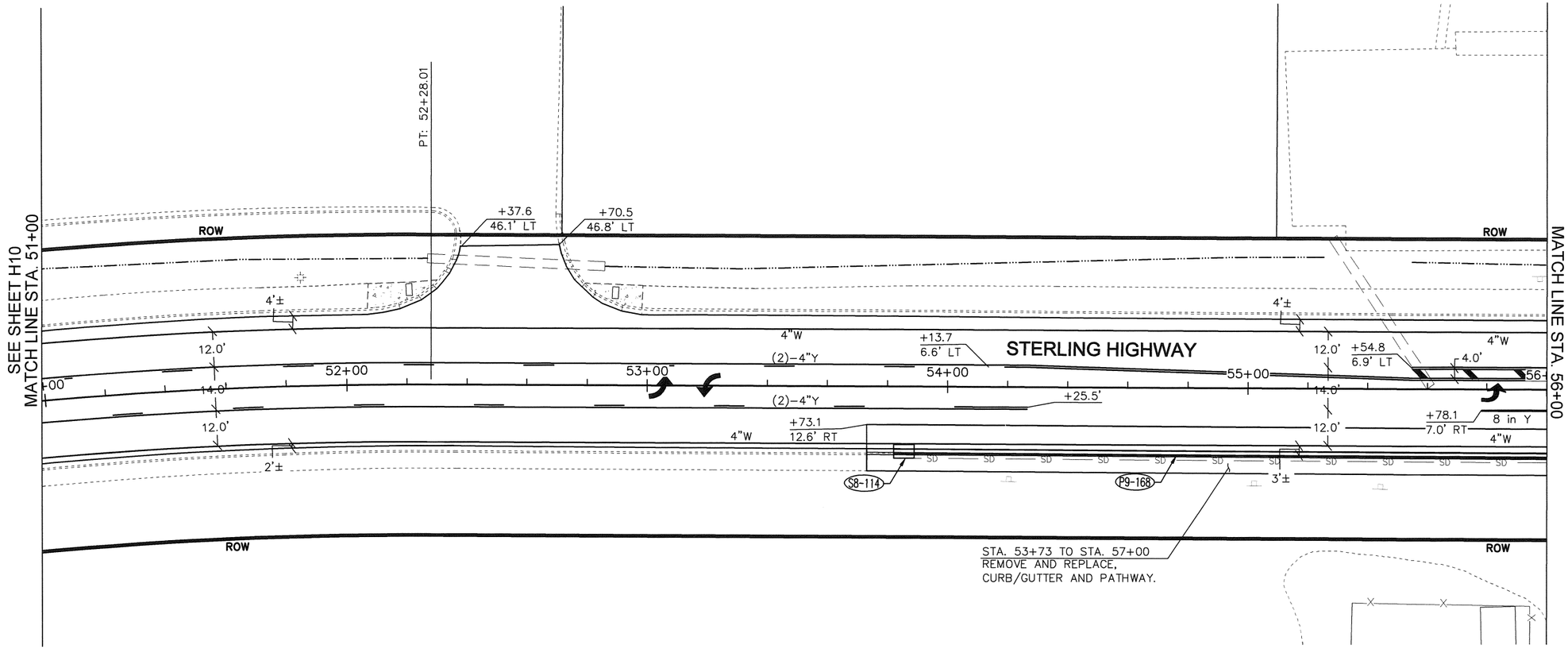
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LAYOUT
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3/27/2014 1:03 PM

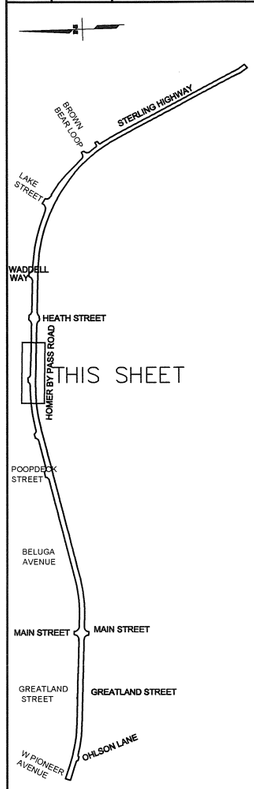
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604(5)	INLET, TYPE A									
STRUCTURE				CASTING		INVERT ELEVATION				REMARKS
ID	TYPE	STATION	OFFSET	TOP	TYPE	N	E	S	W	
S8-114	A	53+94	22.0 RT	ME	CI	--	42.94	--	--	WITH CURB INLET FRAME AND GRATE

STRUCTURE LOCATIONS ARE APPROXIMATE. FIELD VERIFY PIPES AND STRUCTURES.
FINAL LOCATIONS, ELEVATIONS, AND SLOPES SHALL BE APPROVED BY THE ENGINEER.





STATE OF ALASKA
40TH
Kelly L. Kilpatrick
ER-11257
4/3/14
REGISTERED PROFESSIONAL ENGINEER

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

STERLING HIGHWAY
MP 173 TO MP 174
PAVEMENT PRESERVATION

SIGNING AND STRIPING SHEETS
STA. 51+00 TO STA. 56+00

SHEET NO.	TOTAL SHEETS
H11	H19
STATE	YEAR
ALASKA	2014

PROJECT DESIGNATION
211(061)/56176

ADDENDUM NO.

ATTACHMENT NO.

REVISIONS

NO.	DATE	DESCRIPTION

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XREFS

SCALE

LAYOUT H11

DATE TIME 3/27/2014 1:03 PM

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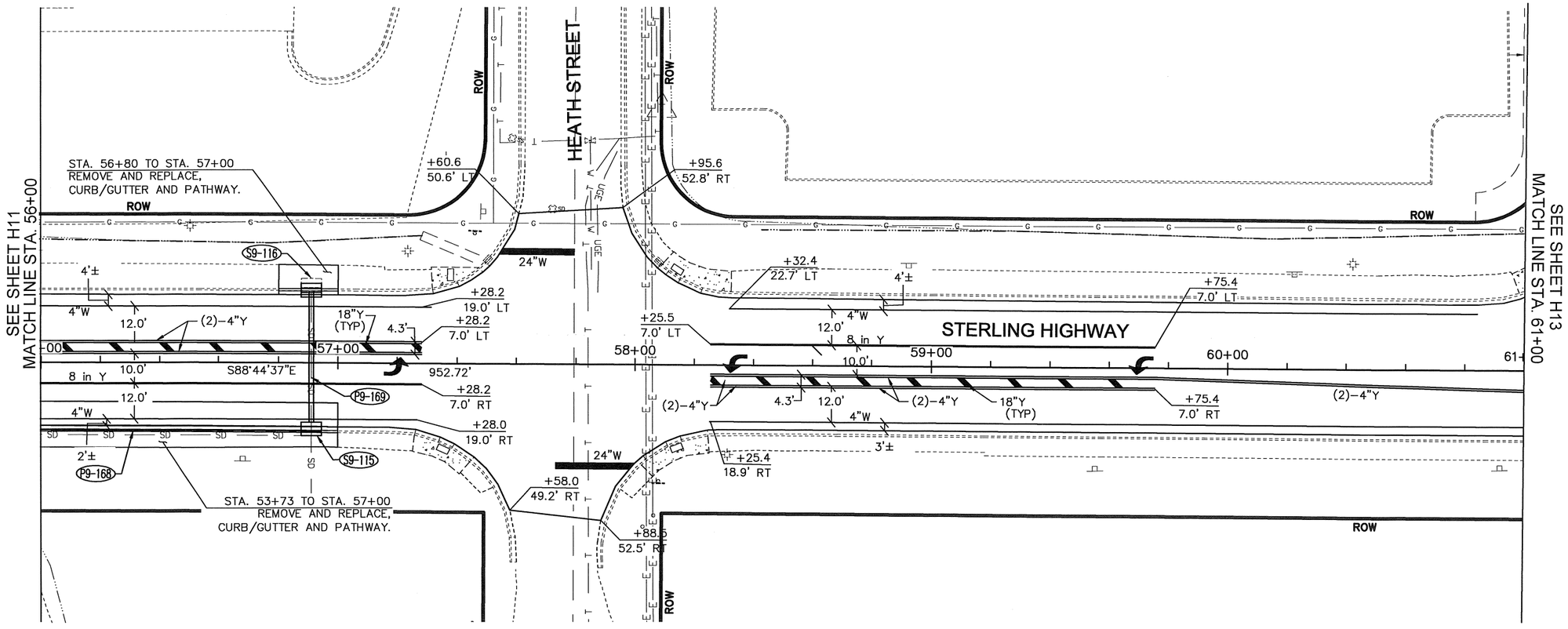
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LAYOUT H12

DATE TIME 3/31/2014 1:36 PM

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SHEET NO.	TOTAL SHEETS
H12	H19
STATE	YEAR
ALASKA	2014

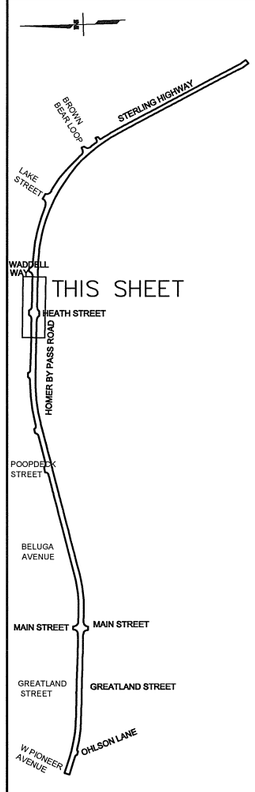
PROJECT DESIGNATION
211(061)/56176

ADDENDUM NO.

ATTACHMENT NO.

REVISIONS

NO.	DATE	DESCRIPTION



603(17), 603(20)	PIPE SUMMARY					
PIPE ID	SIZE	PIPE LENGTH	DIRECTION			REMARKS
	(INCHES)	(FEET)	GRADE	FROM	TO	
P9-168	18	306		S8-114	S9-115	
P9-169	18	48		S9-116	S9-115	MAINTAIN MINIMUM 0.3% SLOPE.

STRUCTURE LOCATIONS ARE APPROXIMATE. FIELD VERIFY PIPES AND STRUCTURES.
FINAL LOCATIONS, ELEVATIONS, AND SLOPES SHALL BE APPROVED BY THE ENGINEER.

604(5)	INLET, TYPE A									
STRUCTURE				CASTING		INVERT ELEVATION				REMARKS
ID	TYPE	STATION	OFFSET	TOP	TYPE	N	E	S	W	
S9-115	A	57+02	22.0 RT	ME	CI	26.27	--	28.4	28.6	WITH CURB INLET FRAME AND GRATE
S9-116	A	57+02	22.0 LT	ME	CI	--	--	30.54	--	WITH CURB INLET FRAME AND GRATE

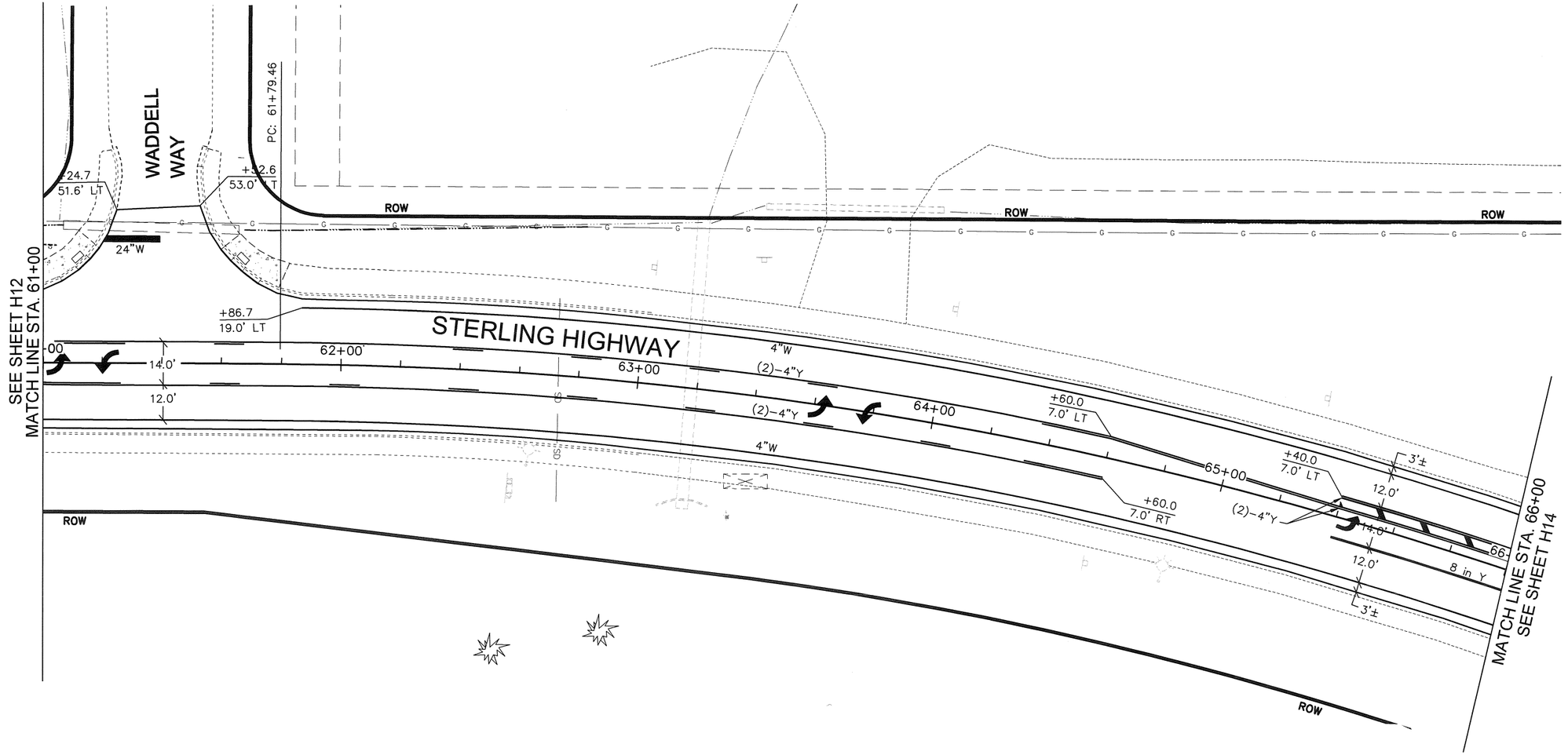
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FINAL LOCATIONS, ELEVATIONS, AND SLOPES SHALL BE APPROVED BY THE ENGINEER.

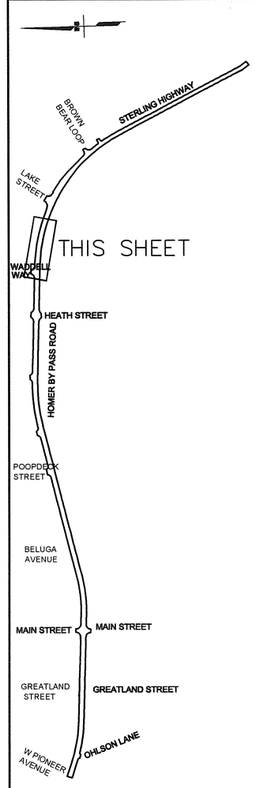
STATE OF ALASKA
49TH
Kelly L. Kilpatrick
Cert. 11237
4/4/14
REGISTERED PROFESSIONAL ENGINEER

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

STERLING HIGHWAY
MP 173 TO MP 174
PAVEMENT PRESERVATION

SIGNING AND STRIPING SHEETS
STA. 56+00 TO STA. 61+00





SHEET NO.	TOTAL SHEETS
H13	H19
STATE	YEAR
ALASKA	2014

PROJECT DESIGNATION
211(061)/56176

ADDENDUM NO.

ATTACHMENT NO.

REVISIONS

NO.	DATE	DESCRIPTION



STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

STERLING HIGHWAY
MP 173 TO MP 174
PAVEMENT PRESERVATION

SIGNING AND STRIPING SHEETS
STA. 61+00 TO STA. 66+00

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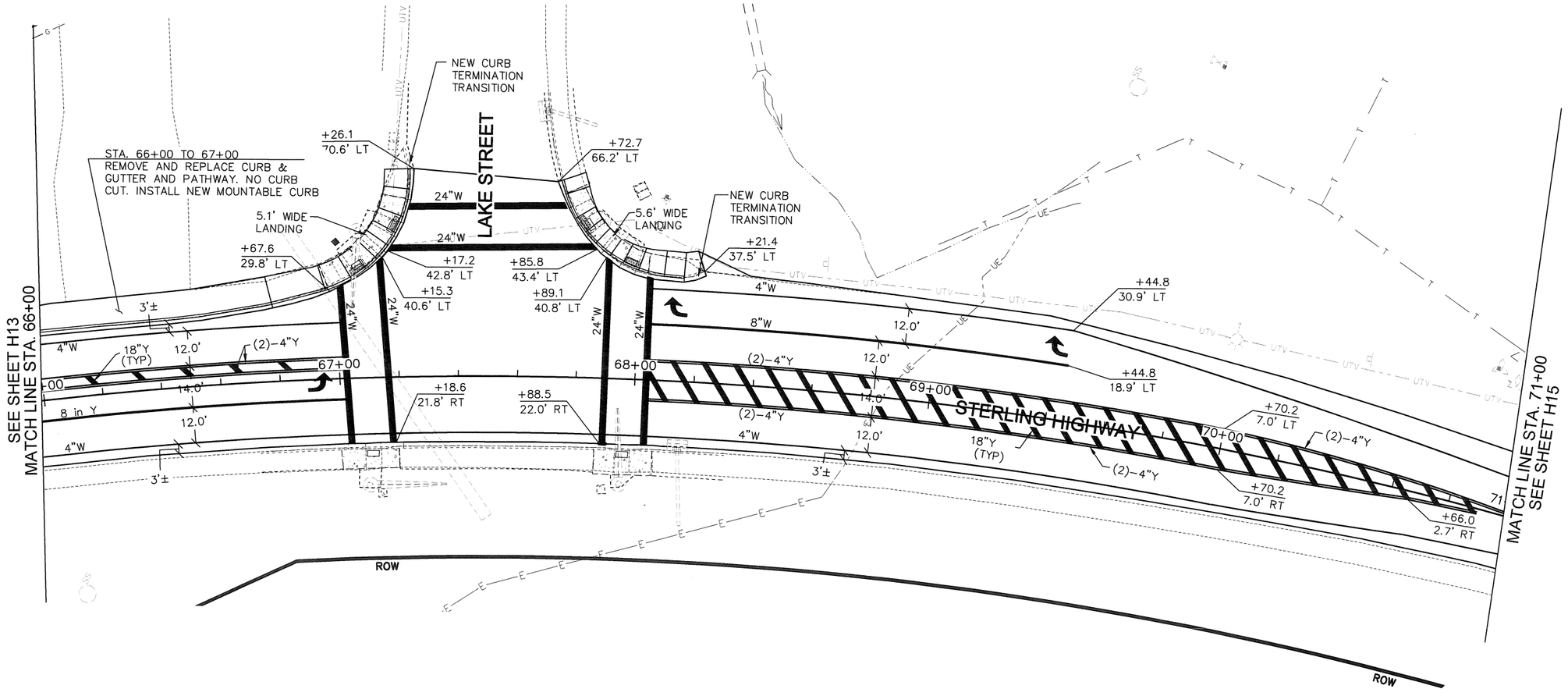
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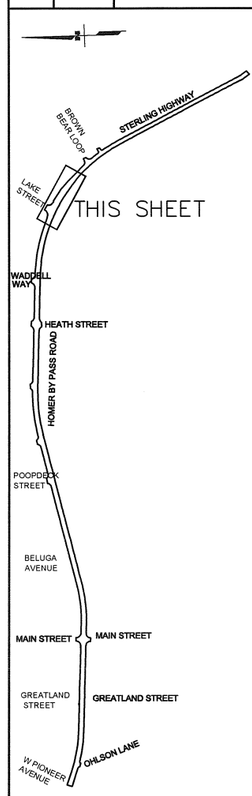
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SHEET NO.	TOTAL SHEETS
H14	H19
STATE	YEAR
ALASKA	2014

PROJECT DESIGNATION
211(061)/56176

ADDENDUM NO.

ATTACHMENT NO.

REVISIONS

NO.	DATE	DESCRIPTION



STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

STERLING HIGHWAY
MP 173 TO MP 174
PAVEMENT PRESERVATION

SIGNING AND STRIPING SHEETS
STA. 66+00 TO STA. 71+00

DESIGNED BY KLK
CHECKED BY KLK
DRAFTED BY CJS

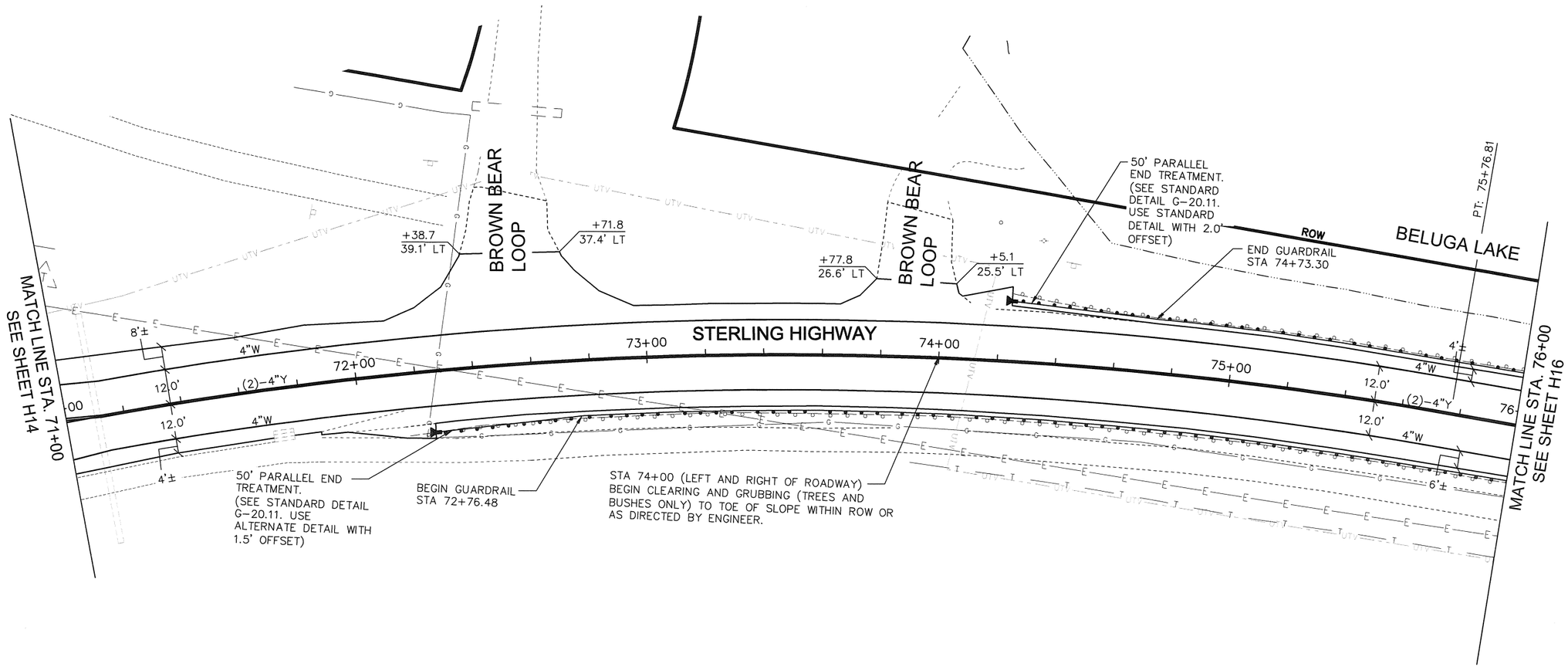
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SHEET NO.	TOTAL SHEETS
H15	H19
STATE	YEAR
ALASKA	2014

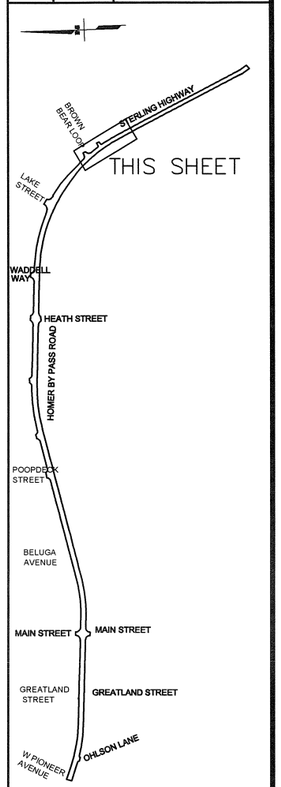
PROJECT DESIGNATION
211(061)/56176

ADDENDUM NO.

ATTACHMENT NO.

REVISIONS

NO.	DATE	DESCRIPTION



STATE OF ALASKA
40TH
Kelly L. Kilpatrick
CE-11457
REGISTERED PROFESSIONAL ENGINEER
3/31/14

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

STERLING HIGHWAY
MP 173 TO MP 174
PAVEMENT PRESERVATION

SIGNING AND STRIPING SHEETS
STA. 71+00 TO STA. 76+00

DESIGNED BY KLK
CHECKED BY KLK
DRAFTED BY CJS

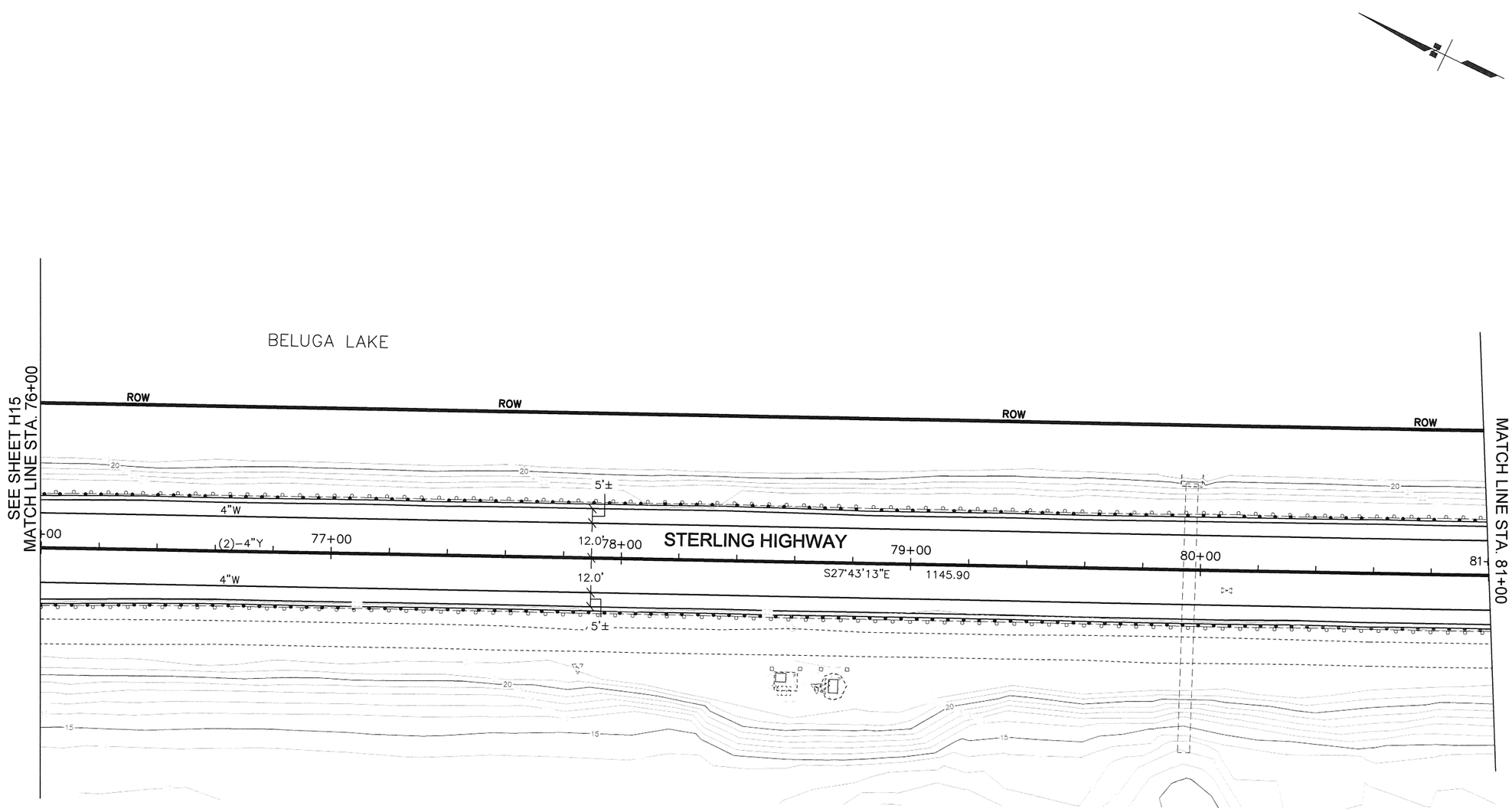
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DATE TIME 3/27/2014 1:03 PM

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SHEET NO.	TOTAL SHEETS
H16	H19
STATE	YEAR
ALASKA	2014

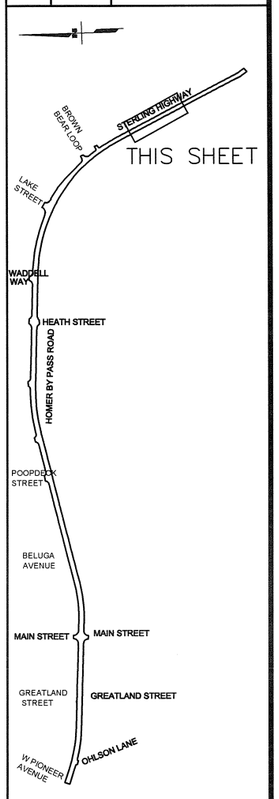
PROJECT DESIGNATION
211(061)/56176

ADDENDUM NO.

ATTACHMENT NO.

REVISIONS

NO.	DATE	DESCRIPTION





STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

STERLING HIGHWAY
MP 173 TO MP 174
PAVEMENT PRESERVATION

SIGNING AND STRIPING SHEETS
STA. 76+00 TO STA. 81+00

DESIGNED BY KLK
CHECKED BY KLK
DRAFTED BY CJS

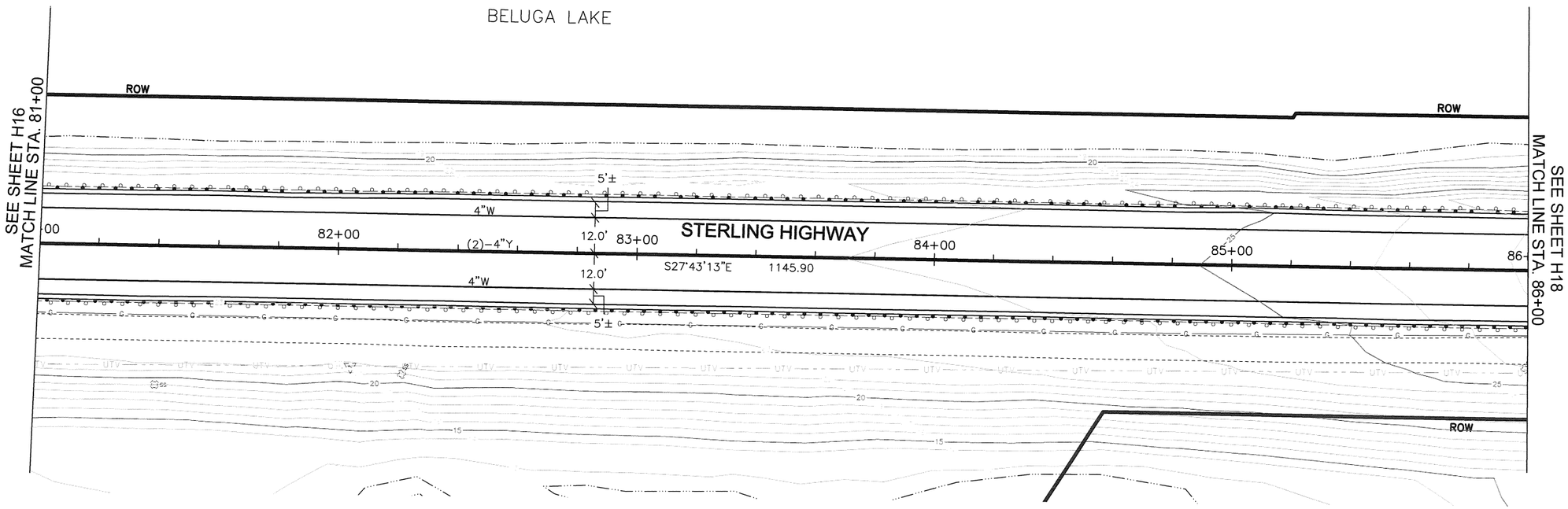
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LAYOUT
H16

DATE TIME
3/27/2014 1:03 PM

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SHEET NO.	TOTAL SHEETS
H17	H19
STATE	YEAR
ALASKA	2014

PROJECT DESIGNATION

211(061)/56176

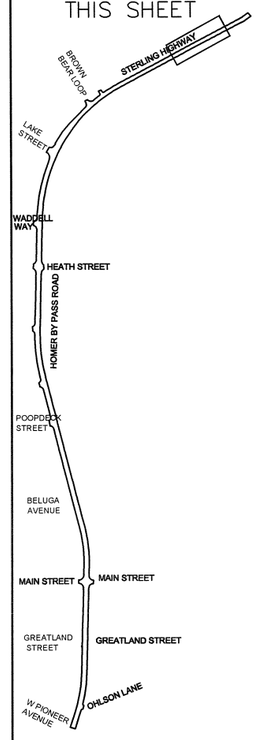
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ATTACHMENT NO.

REVISIONS

NO.	DATE	DESCRIPTION

THIS SHEET





STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

STERLING HIGHWAY
MP 173 TO MP 174
PAVEMENT PRESERVATION

SIGNING AND STRIPING SHEETS
STA. 81+00 TO STA. 86+00

DESIGNED BY KLK
CHECKED BY KLK
DRAFTED BY CJS

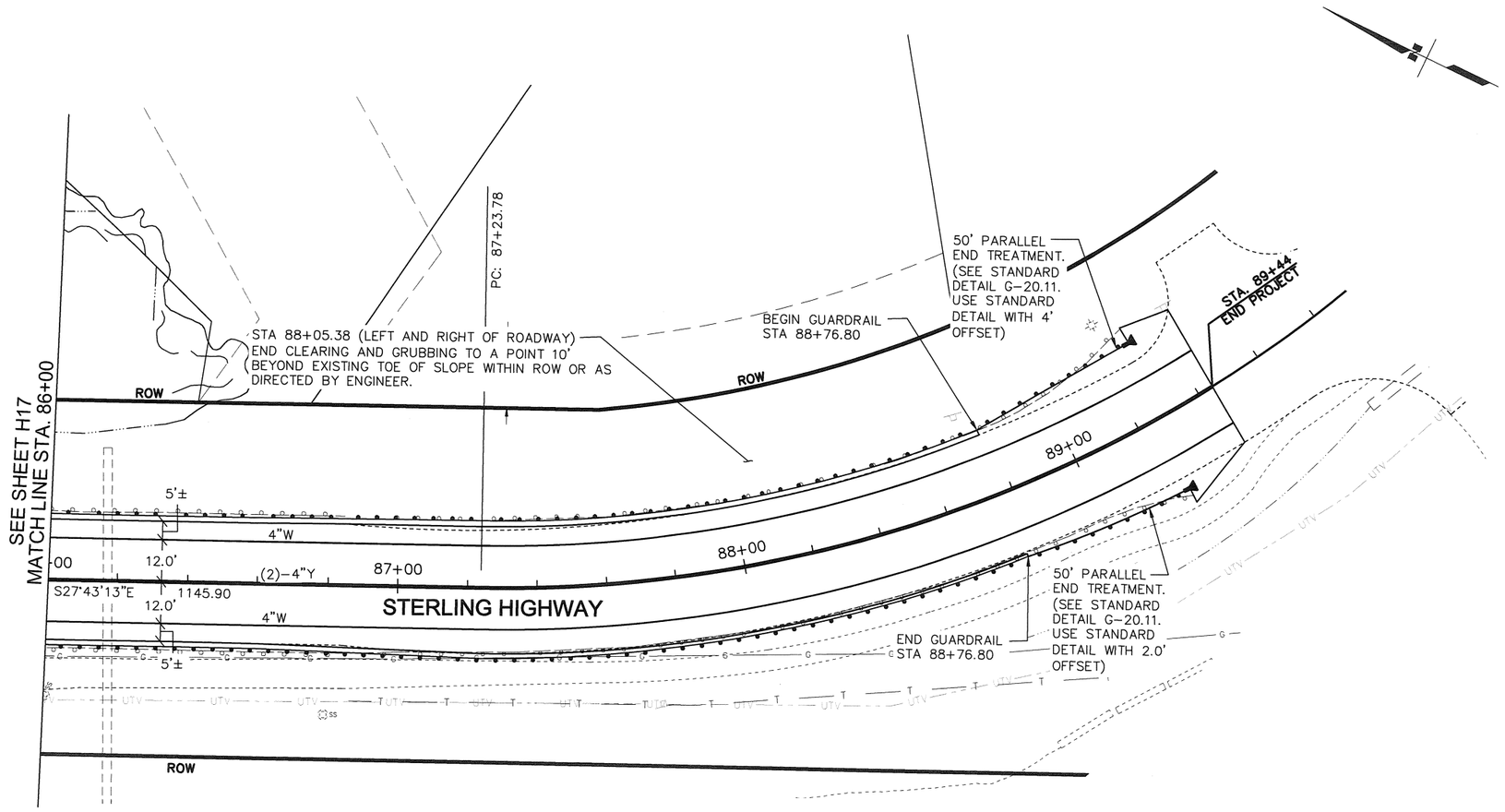
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LAYOUT H17

DATE TIME 3/27/2014 1:03 PM

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SHEET NO.	TOTAL SHEETS
H18	H19
STATE	YEAR
ALASKA	2014

PROJECT DESIGNATION

211(061)/56176

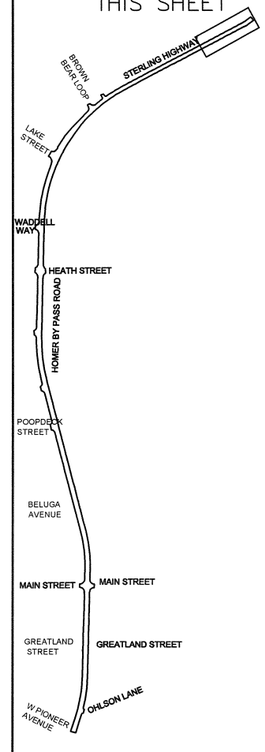
ADDENDUM NO.

ATTACHMENT NO.

REVISIONS

NO.	DATE	DESCRIPTION

THIS SHEET



STATE OF ALASKA
10TH
Kelly L. Kilpatrick
CE 11657
REGISTERED PROFESSIONAL ENGINEER
4/7/14

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

STERLING HIGHWAY
MP 173 TO MP 174
PAVEMENT PRESERVATION

SIGNING AND STRIPING SHEETS
STA. 86+00 TO EOP

DESIGNED BY KLK
CHECKED BY KLK
DRAFTED BY CJS

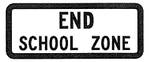
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LAYOUT
H18

DATE TIME
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SHEET	POST NO.	STATION	CL OFFSET	CL REF	TYPE	LEGEND	SIZE (FT) WIDTH	SIZE (FT) HEIGHT	AREA (FT2)	SIGN FACES	POSTS NO., SIZE, & TYPE	THICKNESS (in) FRAMED YES	THICKNESS (in) FRAMED NO	REMARKS
H4	1	18+19		RT	S6–1		2.5	1.0	2.5	W	1–2.5" X 2.5" PT		0.125	MOUNT ON EXISTING LIGHT POLE
H5	2	22+90		RT	M6–1		1.75	1.25	2.2	W	1–2.5" X 2.5" PT		0.125	MOUNT ON EXISTING LIGHT POLE
H7	4	31+00		RT	R1–1		2.5	2.5	6.25	W	1–2.5" X 2.5" PT		0.125	MOUNT ON EXISTING LIGHT POLE
H7	5	32+50		RT	D9–2		2.0	2.0	4.0	E	1–2.5" X 2.5" PT	0.125		
					D9–13aP		2.0	1.0	2.0	E		0.125		
					M6–1		1.75	1.25	2.2	E		0.125		
H9	6	41+70		RT	R1–1		2.5	2.5	6.25	E	1–2.5" X 2.5" PT		0.125	
H9	7	43+60		LT	R3–9B		2.0	3.0	6.0	S			0.125	MOUNT ON EXISTING LIGHT POLE

REVISIONS NO.	DATE	DESCRIPTION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0211(061)/56176	2014	H19	H19

DESIGNED BY KLK
CHECKED BY SKN
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SCALE

LAYOUT H19

DATE TIME 4/4/2014 12:39 PM

DRAWING LOCATION
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STATE OF ALASKA 49TH
Kelly L. Kilpatrick
CE/11237
4/4/14
REGISTERED PROFESSIONAL ENGINEER

PLANS DEVELOPED BY:
DOWL HKM

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

STERLING HWY MP 173 TO 174
PAVEMENT PRESERVATION

SIGN SUMMARY

REVISIONS		
NO.	DATE	DESCRIPTION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0211(061)/56176	2014	K1	K13

LABELS

ALL CABLES SHALL BE LABELED AT BOTH ENDS AND AT EVERY JUNCTION BOX THROUGH WHICH THE CABLES PASS, PER SPECIFICATION SECTION 660-3.05.13.

ALL WIRE PAIRS SHALL BE LABELED AT THE TERMINAL BLOCK AND AT ANY LOOSE ENDS.

THE FOLLOWING CONVENTIONS SHALL APPLY TO DESIGNATING AND LABELING CABLES AND WIRE PAIRS:

LANES: TRAFFIC LANES AND THEIR RESPECTIVE LOOPS AND SENSORS SHALL BE LABELED FROM THE OUTSIDE EDGE OF THE ROAD TOWARD THE CENTER AS FOLLOWS:

A	B	C	D		D	C	B	A

TERMINAL BLOCKS: WIRES FROM SENSORS PLACED IN LANES WHICH ARE CLOSEST TO THE CONTROL BOX SHALL BE PLACED AT THE LEFT OR AT THE TOP OF THE TERMINAL BLOCK, DEPENDING ON ORIENTATION.

WIRES FOR INDUCTIVE LOOPS, SENSORS AND RESERVES ARE LABELED AS FOLLOWS:

PnDLc

WHERE:

P IS THE PREFIX:
- V TRAFFIC VOLUME LOOP
- H VEHICLE CLASSIFICATION / SPEED LOOP
- GL AUTOMATIC VEHICLE CLASSIFICATION (AVC) LOOP
- Ga AUTOMATIC VEHICLE CLASSIFICATION PIEZO

n NUMBER SUFFIX FOR MULTIPLE LOOPS IN THE SAME LANE

D DIRECTION (N,S,E,W, NE,SE,SW,NW)

L IS THE PREFIX FOR ROAD DESIGNATION
- L – LANE*
- R – RAMP**
- SR – SPUR RAMP**
- LP – LOOP**
- LR – LOOP RAMP**
- * ROADS AND HIGHWAYS
- ** – INTERCHANGES

c IS THE SUFFIX FOR LANE DESIGNATION (A, B, C, D)

(X) CONDUIT REFERENCE NUMBER

[X] NOTE REFERENCE NUMBER

RMC RIGID METAL CONDUIT, GALVANIZED

IMC INTERMEDIATE METAL CONDUIT

(# / K#) – DETAIL NO. / – DRAWN ON SHEET #

(TG) GROUND TEMPERATURE PROBE

(TA) AMBIENT TEMPERATURE PROBE

CABINET TYPE CBA2

LOAD CENTER, TYPE II

GENERAL NOTES

1. INSTALLATION OF EQUIPMENT AND MATERIALS SHALL CONFORM TO APPLICABLE REQUIREMENTS OF THE CURRENT NATIONAL ELECTRICAL CODE, ALASKA DOT&PF STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND LOCAL AMENDMENTS.
2. PVC FROM JUNCTION BOXES TO TRAFFIC LOOPS IS NOT ALLOWED. USE ONLY RMC OR IMC.

REFERENCE SPECIFICATIONS:

CONSTRUCT WIRING ACCORDING TO SPECIFICATION SECTION 660 SIGNALS AND LIGHTING, EXCEPT WHERE NOTED ON THE PLANS OR IN THE SPECIAL PROVISIONS. CONFORM TO SPECIFICATION SUBSECTIONS 660-3.03 CONDUIT, 660-3.04 JUNCTION BOXES, 660-3.05 WIRING, 660-3.06 BONDING AND GROUNDING, AND 660-3.01.7 FIELD TESTS. EXCEPT AS MODIFIED BY SECTION 669 AUTOMATED TRAFFIC RECORDERS.

PAVEMENT NOTE:

FOR SECTIONS THAT REQUIRE REMOVAL AND REPLACEMENT OF PAVEMENT, AFTER PLANING, SAWCUT EXISTING PAVEMENT AND APPLY TACK COAT TO PAVEMENT EDGES. IF NECESSARY, PREPARE THE AREA WITH AGGREGATE BASE COURSE BEFORE LAYING HOT MIX ASPHALT. USE TWO 2" THICK LIFTS OF HOT MIX ASPHALT, TYPE II; CLASS A, WITH TACK COAT APPLIED BETWEEN LIFTS.

INSTALLATION NOTES

1. ALL PVC CONDUIT AND FITTINGS SHALL BE 1 INCH SCHEDULE 80.
2. INSTALL 1/2 INCH PREFORMED BITUMINOUS JOINT MATERIAL BETWEEN JBOX AND PAVEMENT WHEN JBOXES ARE LOCATED IMMEDIATELY ADJACENT TO A SIDEWALK OR ROAD SURFACE.
3. PROVIDE GROUNDING BUSHINGS ON ALL CONDUITS. GROUND WITH A MINIMUM #6 BARE CU.
4. INSTALL ALL LOOP DETECTORS PRIOR TO OVERLAYING PAVEMENT.
5. LOOPS TO BE CENTERED IN LANE.
6. MINIMUM SPACING BETWEEN TAIL AND LOOP OR PIEZO IS 1 FOOT. SENSOR TAILS SHALL NOT CROSS EACH OTHER.
7. SPLICE LOOP WIRING IN JBOX TO MULTI-PAIR CABLE USING NONREENTERABLE, WET LOCATION SPLICE. SEE DETAIL (1 / K13)
8. LOCATE SHOULDERED LANE PIEZO SENSORS WITH ONE END EXTENDED 1 FOOT BEYOND FOG LINE. LOCATE PIEZO SENSORS IN LANES WITHOUT SHOULDERS IN THE CENTER OF THE TRAVELED LANE.
9. COAX CABLE FOR PIEZO SENSORS TO BE RUN WITHOUT SPLICES TO JBOX WITH ENOUGH SLACK TO REACH CABINET PLUS AN ADDITIONAL 8 FEET OF CABLE.

DRAWING SHEET INDEX

SHEET NO.	DESCRIPTION
K1	LEGEND, NOTES & SHEET INDEX
K2	ATR SITE MAP H1 & H2
K3	ATR SITE PLANS & SCHEDULES
K4	ATR SITE H1 LAYOUT & WIRING DIAGRAM
K5	ATR SITE H2 LAYOUT & WIRING DIAGRAM
K6	OVERLAID PRESENCE LOOP DETAILS
K7	PIEZOELECTRIC SENSOR DETAILS
K8	ATR SITE H1 CBA1 CABINET DETAILS
K9	CBA2 CABINET PANEL WIRING, NOTES, & ELEVATIONS
K10	CBA2 CABINET PANEL DETAILS, BACK PANEL VIEW
K11	CBA2 CABINET SIDE & TOP PANEL VIEWS
K12	JUNCTION BOX DETAILS
K13	LEAD-IN SPLICE AND TEMPERATURE SENSOR DETAILS

INDUCTIVE LOOPS

1. ALL INDUCTIVE LOOPS SHALL BE WOUND IN THE SAME DIRECTION WITH THE STARTING LEAD MARKED "S" PER SECTION 660-3.05.13.
2. LEAD-IN WIRES FOR EACH LOOP SHALL BE IN SEPARATE CONDUITS TO THE FIRST JUNCTION BOX. THESE CONDUITS SHALL BE SEPARATED FROM OTHER LOOPS BY A MINIMUM OF 12 INCHES.
3. INDUCTIVE LOOPS SHALL BE INSTALLED IMMEDIATELY PRIOR TO PAVING THIS SECTION OF ROADWAY. FINAL LIFT ASPHALT PAVEMENT SHALL BE SMOOTH OVER ALL INDUCTIVE LOOPS AND WITHOUT TRANSVERSE SEAMS, JOINTS, OR ROUGHNESS WITHIN 50 FEET. OF THE LOOPS.

STATE OF ALASKA 19TH ANNUAL Kelly L. Kilpatrick CE-11267 REGISTERED PROFESSIONAL ENGINEER 4/9/14

PLANS DEVELOPED BY: DOWL HKM

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

STERLING HWY MP 173 TO 174
PAVEMENT PRESERVATION

ATR LEGEND, NOTES AND SHEET INDEX

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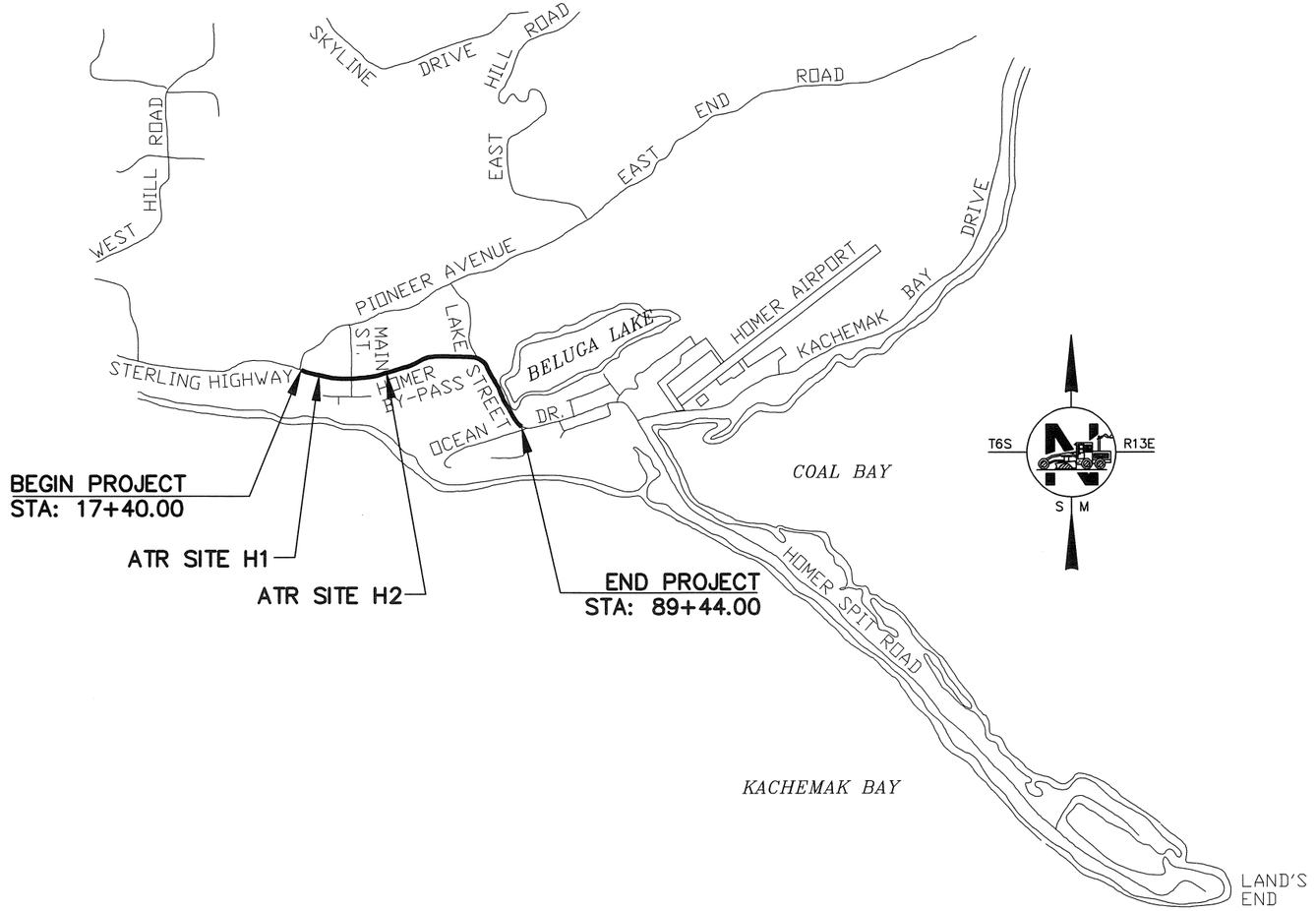
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REVISIONS		
NO.	DATE	DESCRIPTION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0211(061)/56176	2014	K2	K13



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K2

DATE TIME
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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

STERLING HWY MP 173 TO 174 PAVEMENT PRESERVATION

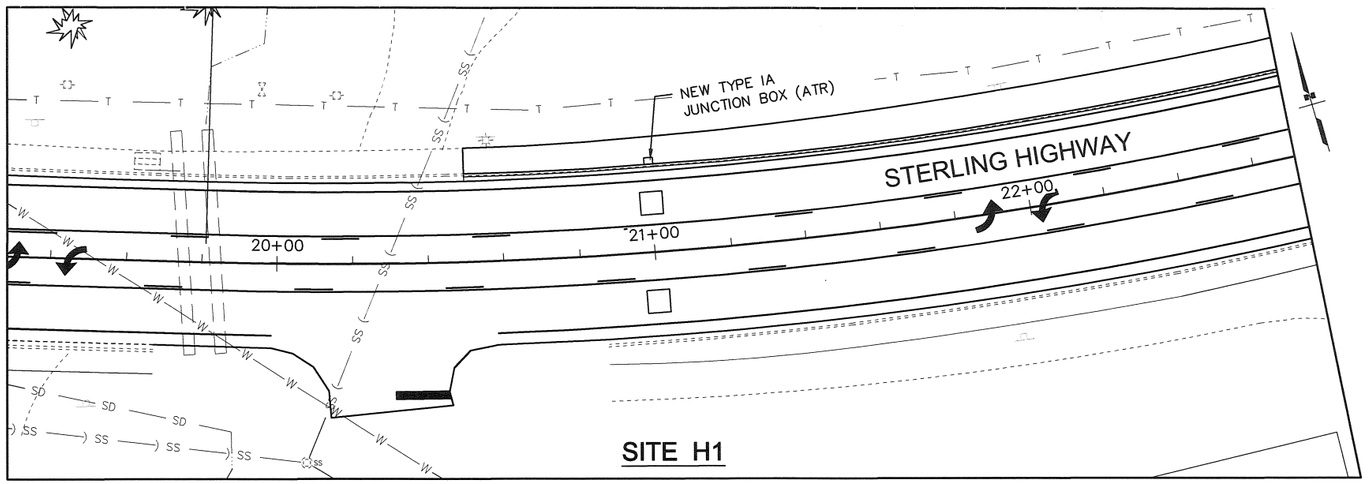
ATR SITE MAP H1 & H2

PLANS DEVELOPED BY:
DOWL HKM

STATE OF ALASKA
49TH
Kelly L. Kilpatrick
CE 11237
4/9/14
REGISTERED PROFESSIONAL ENGINEER

REVISIONS		
NO.	DATE	DESCRIPTION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0211(061)/56176	2014	K3	K13



SITE H1

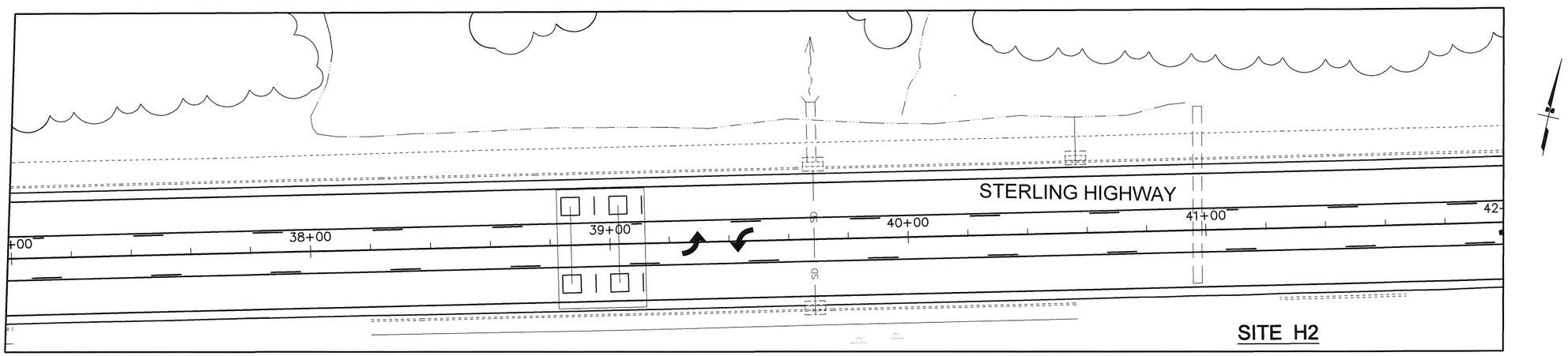
SITE H1

ATR LOOP SCHEDULE		
RECORDER NUMBER	LOOP STATION	LOOP OFFSET
V1ELA	21+00	
V1WLA	21+00	

STATION AND OFFSET OF LOOPS ARE TO THE CENTER OF THE LOOP.

SITE H1

ATR J-BOX SCHEDULE			
J-BOX No	STATION	OFFSET	REMARKS
1	21+00	PLACE AT BACK OF CURB	



SITE H2

SITE H2

ATR LOOP SCHEDULE		
RECORDER NUMBER	LOOP STATION	LOOP OFFSET
H1WLA	39+02.93	13.0' LT
H2WLA	38+86.93	13.0' LT
H1ELA	38+86.93	13.0' RT
H2ELA	39+02.93	13.0' RT

STATION AND OFFSET OF LOOPS ARE TO THE CENTER OF THE LOOP.

SITE H2

ATR J-BOX SCHEDULE			
J-BOX No	STATION	OFFSET	REMARKS
1	38+81.92	EXISTING	
2	39+00.00	EXISTING	
3	38+81.92	EXISTING	

SITE H2

ATR LOAD CENTER SCHEDULE			
LOAD No	STATION	OFFSET	REMARKS
LC	39+00	88.00 LT	EX TYPE II

ATR ASSEMBLIES SCHEDULE											
RECORDER NUMBER	TYPE IA J-BOX	TYPE II J-BOX	INDUCTIVE LOOPS (QTY)	COUNT SITE NUMBER	CABINET STATION	CABINET OFFSET	ATR TYPE	CABINET ASSEMBLY STYLE	PIEZO SENSORS	TEMPERATURE SENSORS MRE PROBE	LOAD CENTER AND TELEPHONE SERVICE
H1	1	NA	2	51017000	21+00	35' LT	ATR	CBA1	NA	NA	NA
H2	NA	3	4	51015037	39+00	EXISTING LT	AVC	CBA2	4 PIEZO, TYPE 1	1-16 SENSOR 6' VERTICAL 1- PAVEMENT 1-AMBIENT	ELECTRIC SERVICE BY: HOMER ELECTRIC ASSOCIATION. EXISTING TELEPHONE SERVICE.

STATE OF ALASKA
49TH
Kelly L. Klipatrick
REGISTERED PROFESSIONAL ENGINEER

PLANS DEVELOPED BY:
DOWL HKM

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

STERLING HWY MP 173 TO 174 PAVEMENT PRESERVATION

ATR SITE PLANS & SCHEDULES

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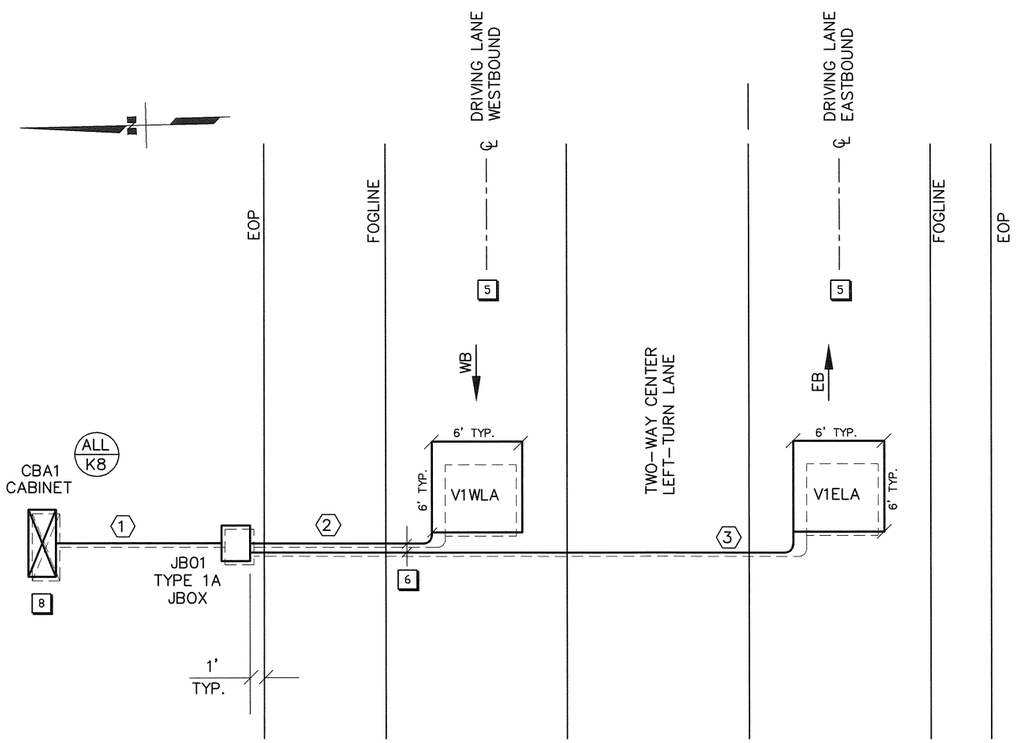
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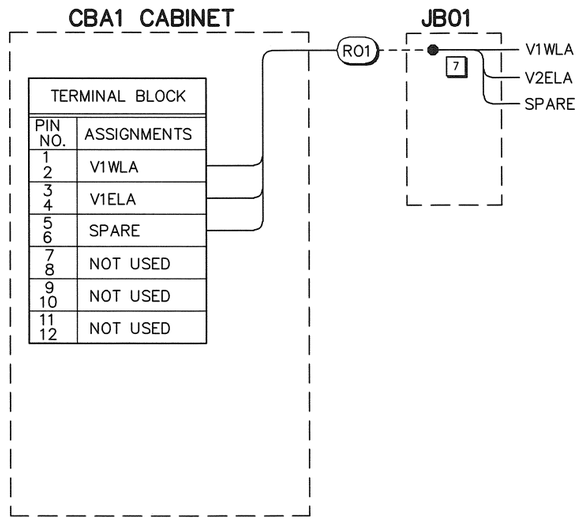
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NO.	DATE	DESCRIPTION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0211(061)/56176	2014	K4	K13



1/K4 SENSOR, J-BOX AND CABINET LAYOUT H1

NOT TO SCALE



2/K4 WIRING DIAGRAM

CONDUIT AND CONDUCTOR SCHEDULE (3/K4)

CONDUIT NO.	SIZE (INCHES)	FROM	TO	CABLE		
				QTY.	TYPE	NUMBER
1	2	CBA1	JB01	1	3 PR. #18	RO1
2	1	JB01	V1WLA	1	1 PR. #14	
3	1	JB01	V1ELA	1	1 PR. #14	

LAYOUT NOTES

1. ALL PVC CONDUIT AND FITTINGS SHALL BE 1 INCH SCHEDULE 80.
2. INSTALL 1/2 INCH PREFORMED BITUMINOUS JOINT MATERIAL BETWEEN J-BOX AND PAVEMENT WHEN J-BOXES ARE LOCATED IMMEDIATELY ADJACENT TO A SIDEWALK OR ROAD SURFACE.
3. PROVIDE GROUNDING BUSHINGS ON ALL CONDUITS. GROUND WITH A MINIMUM #6 BARE CU.
4. INSTALL ALL LOOP DETECTORS PRIOR TO OVERLAYING PAVEMENT.

[5] LOOPS TO BE CENTERED IN LANE.

[6] MINIMUM SPACING BETWEEN TAIL AND LOOP OR PIEZO IS 1 FOOT. SENSOR TAILS SHALL NOT CROSS EACH OTHER.

[7] SPLICE LOOP WIRING TO MULTI-PAIR CABLE USING NONREENTERABLE, WET LOCATION SPLICE. SEE DETAIL 1/K13

[8] CABINET DOOR TO OPEN AWAY FROM ROADWAY.



PLANS DEVELOPED BY:
DOWL HKM

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

STERLING HWY MP 173 TO 174 PAVEMENT PRESERVATION

ATR - SITE H1
LAYOUT & WIRING DIAGRAM

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SCALE

LAYOUT K4

DATE TIME 4/9/2014 8:47 AM

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REVISIONS		
NO.	DATE	DESCRIPTION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0211(061)/56176	2014	K5	K13

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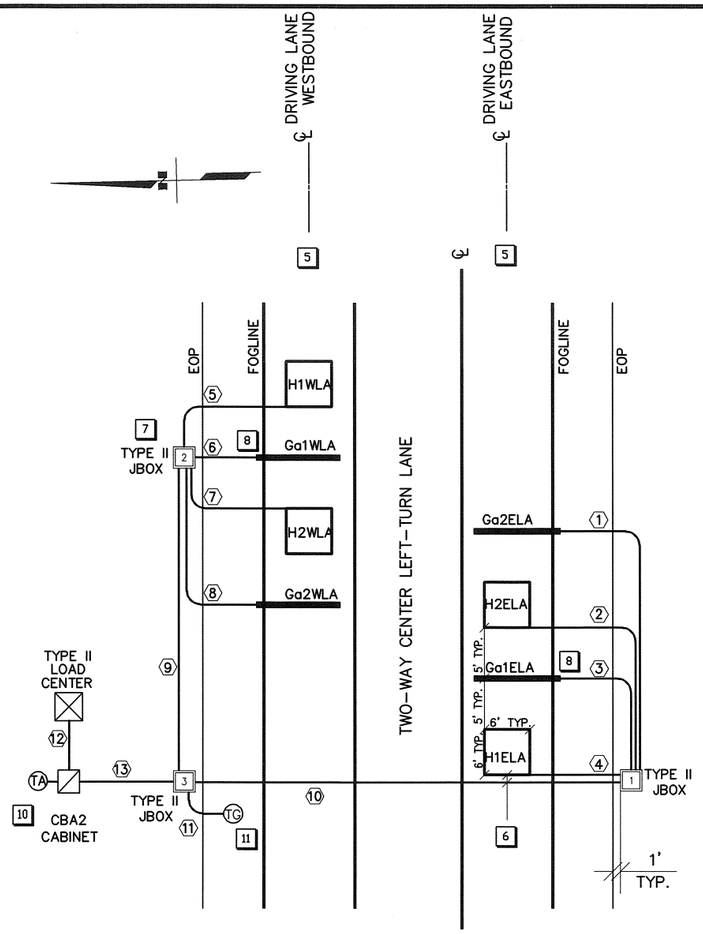
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LAYOUT K5

DATE TIME 4/9/2014 8:47 AM

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SENSOR, J-BOX AND CABINET LAYOUT H2

1:10

LAYOUT NOTES

1. REMOVE EXISTING LOOPS SENSORS, AND CONDUIT. EXISTING J-BOXES, AND CBA-2 CABINET WILL REMAIN.
2. REVISE EXISTING FOUNDATION AS DIRECTED BY ENGINEER.
3. PROVIDE GROUNDING BUSHINGS ON ALL CONDUITS. GROUND WITH A MINIMUM #6 BARE CU.
4. INSTALL ALL LOOP DETECTORS PRIOR TO OVERLAYING PAVEMENT.

[5] LOOPS TO BE CENTERED IN LANE.

[6] MINIMUM SPACING BETWEEN TAIL AND LOOP OR PIEZO IS 1 FOOT. SENSOR TAILS SHALL NOT CROSS EACH OTHER.

[7] SPLICE LOOP WIRING TO MULTI-PAIR CABLE USING NONREENTERABLE, WET LOCATION SPLICE. SEE DETAIL 1/K13

[8] LOCATE SHOULDERED LANE PIEZO SENSORS WITH ONE END EXTENDED 1 FOOT BEYOND FOG LINE. LOCATE PIEZO SENSORS IN LANES WITHOUT SHOULDERS IN THE CENTER OF THE TRAVELED LANE.

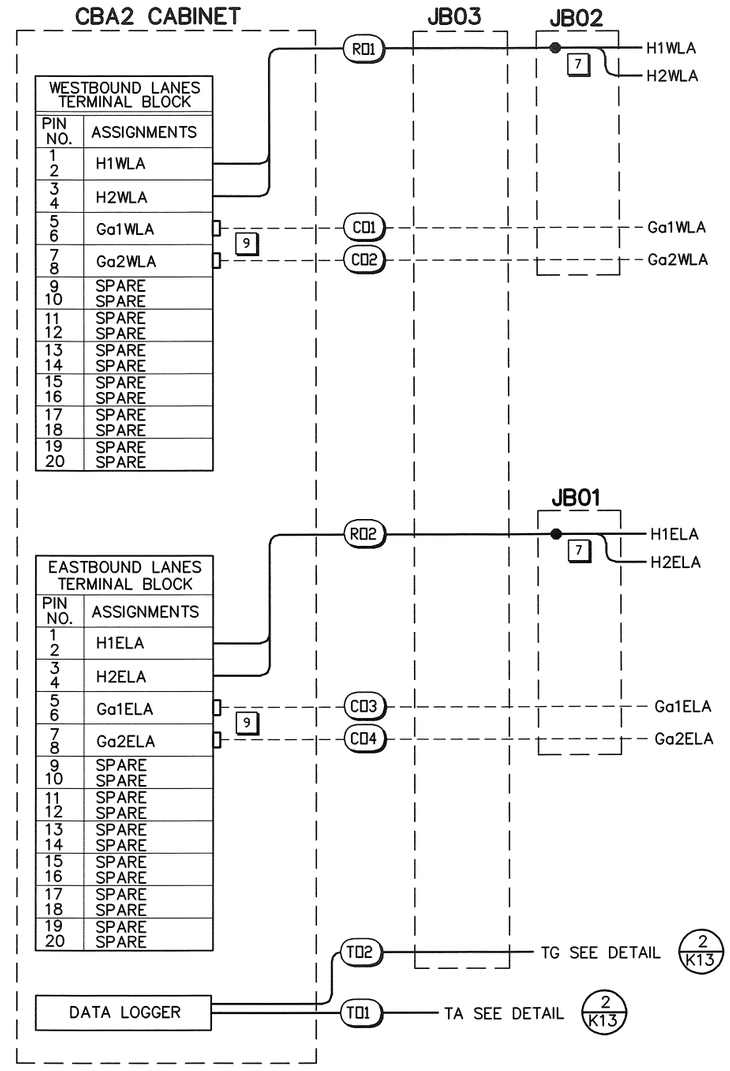
[9] COAX CABLE FOR PIEZO SENSORS TO BE RUN WITHOUT SPLICES TO "F" CONNECTOR AT TERMINAL BLOCK IN CABINET.

[10] CABINET DOOR TO OPEN AWAY FROM ROADWAY.

[11] CENTER TEMPERATURE PROBE IN SHOULDER PAVEMENT SEE DETAIL 2/K13

CONDUIT AND CONDUCTOR SCHEDULE

(#) CONDUIT NO.	SIZE (INCHES)	FROM	TO	CABLE		
				QTY.	TYPE	NUMBER
1	1	JB01	Ga2ELA	1	RG58 COAX	C04
2	1	JB01	H2ELA	1	1 PR. #14	
3	1	JB01	Ga1ELA	1	RG58 COAX	C03
4	1	JB01	H1ELA	1	1 PR. #14	
5	1	JB02	H1WLA	1	1 PR. #14	
6	1	JB02	Ga1WLA	1	RG58 COAX	C01
7	1	JB02	H2WLA	1	1 PR. #14	
8	1	JB02	Ga2WLA	1	RG58 COAX	C02
9	2	JB03	JB02	1	3 PR. #18	R02
				2	RG58 COAX	C01, C02
10	2	JB03	JB01	1	3 PR. #18	R01
				2	RG58 COAX	C03, C04
11	1	JB03	TG	1	1 PR. #18	T02
12	2	CBA2	LC	1	1-3c #8	
13	2	CBA2	JB03	2	3 PR. #18	R01, R02
				4	RG58 COAX	C01, C02, C03, C04
				1	1 PR. #18	T02





PLANS DEVELOPED BY:
DOWL HKM

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

STERLING HWY MP 173 TO 174 PAVEMENT PRESERVATION

ATR - SITE H2
LAYOUT &
WIRING DIAGRAM

REVISIONS		
NO.	DATE	DESCRIPTION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0211(061)/56176	2014	K6	K13

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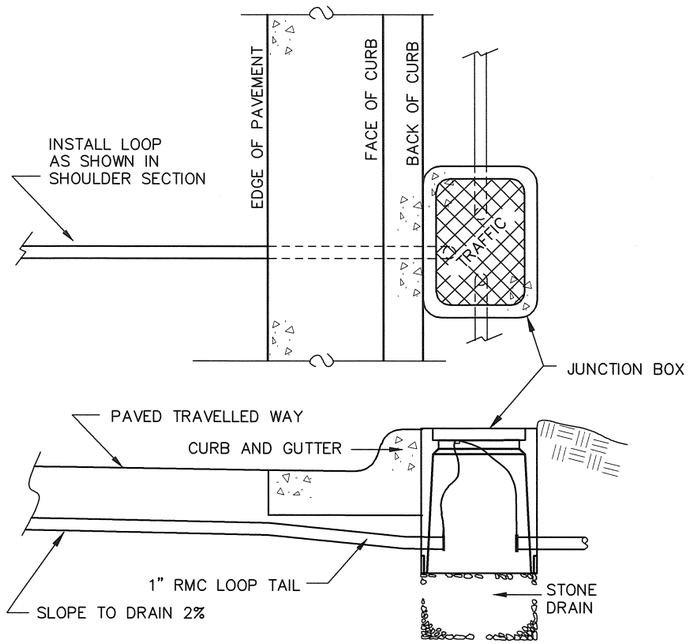
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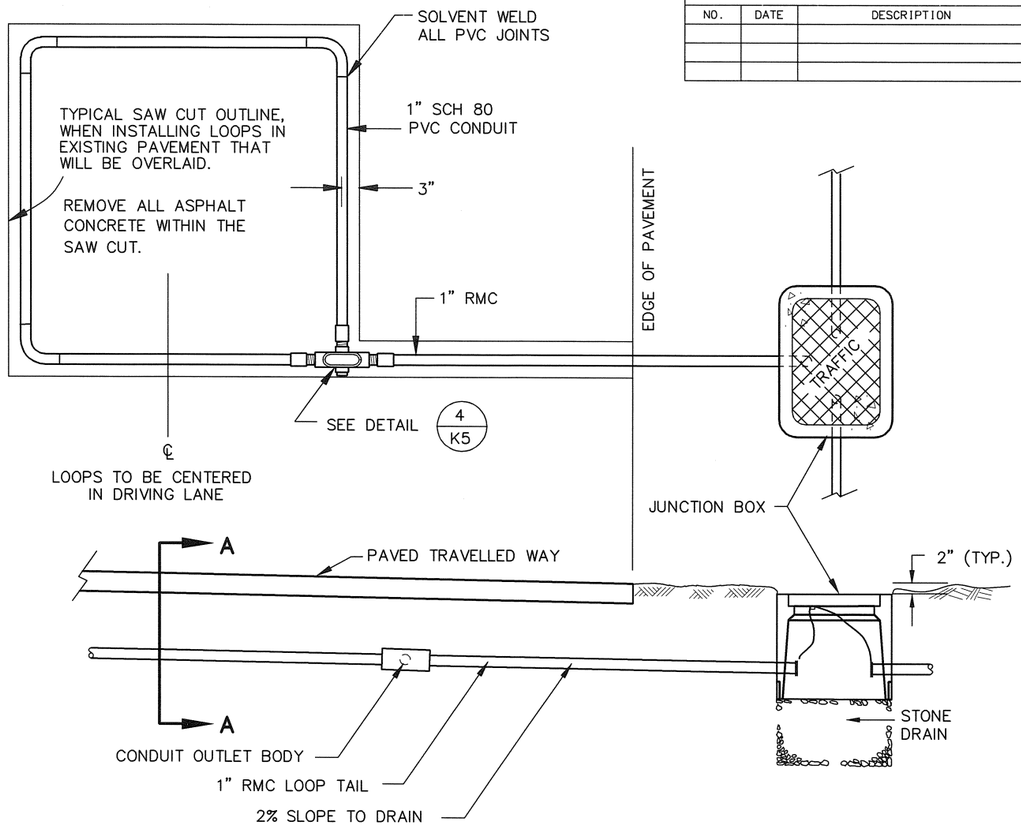
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DATE TIME 4/9/2014 8:47 AM

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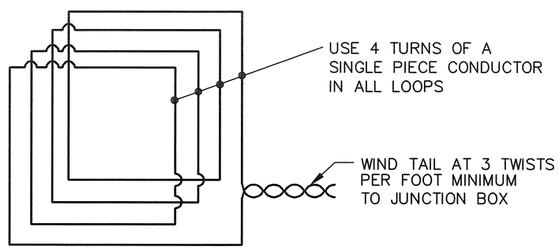
1/K6 **CURB SECTION**



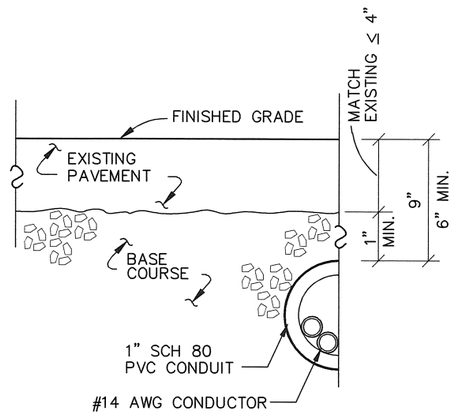
3A/K6 **SHOULDER SECTION**

NOTE

1. TEST LOOP DETECTOR FOR CONTINUITY AND INSULATION INTEGRITY BEFORE SEALING THE LOOPS UNDER THE FINAL LIFT OF ASPHALT. PROVIDE THE ENGINEER A WRITTEN RECORD OF FIELD TESTING INCLUDING CONTINUITY, INSULATION, RESISTANCE, AND INDUCTANCE TEST AS REQUIRED IN SECTION 660-3.01(7) OF THE STANDARD SPECIFICATION FOR HIGHWAY CONSTRUCTION.

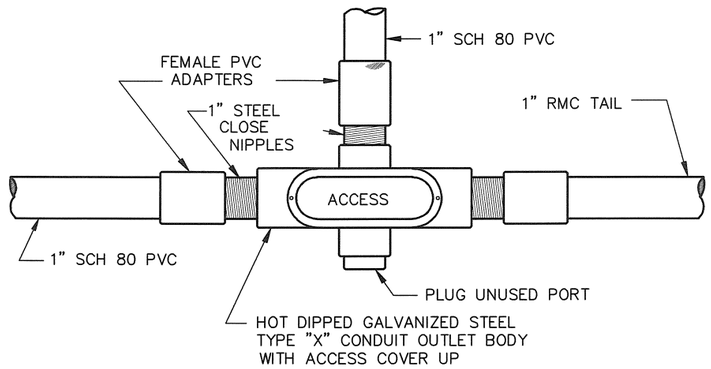


2/K6 **LOOP WIRING DETAIL**



3B/K6 **SECTION A-A**

3/K6 **TYPICAL PVC CONDUIT ENCASED LOOP DETECTOR INSTALLATION**



4/K6 **"X" BODY DETAIL**

STATE OF ALASKA
49TH
Kelly L. Kilpatrick
PE 11237
REGISTERED PROFESSIONAL ENGINEER

PLANS DEVELOPED BY:
DOWL HKM

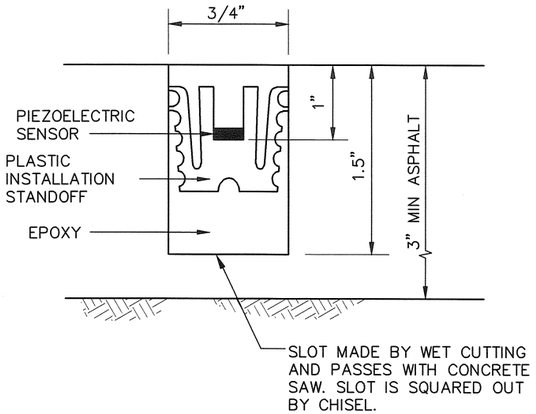
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

STERLING HWY MP 173 TO 174
PAVEMENT PRESERVATION

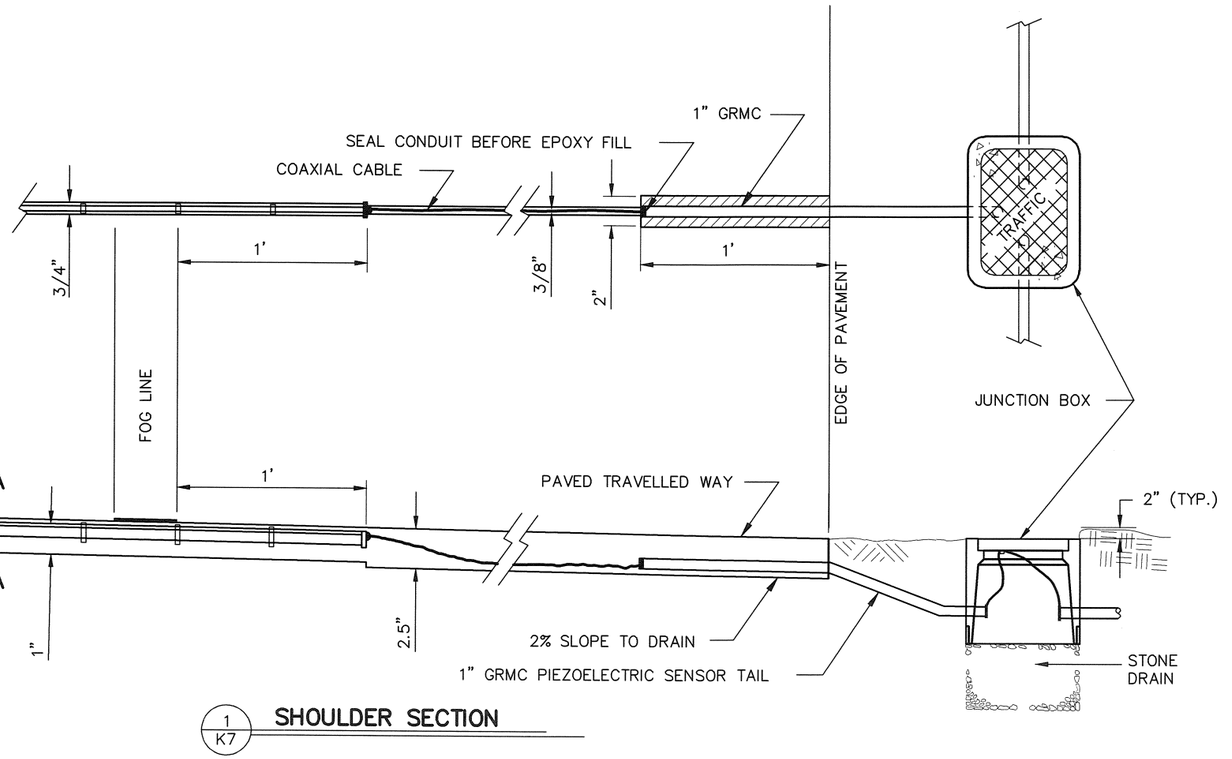
OVERLAID PRESENCE LOOP DETAILS

REVISIONS		
NO.	DATE	DESCRIPTION

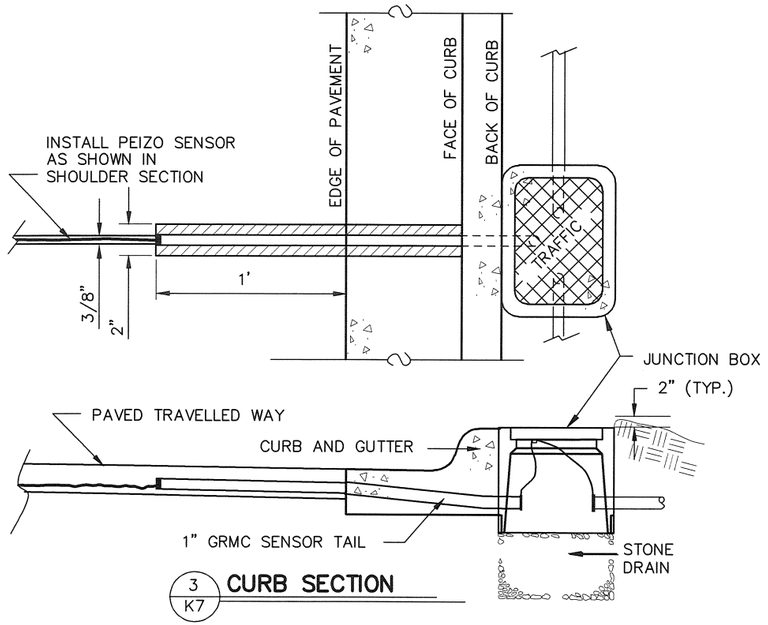
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0211(061)/56176	2014	K7	K13



2 / K7 **SECTION A-A**



1 / K7 **SHOULDER SECTION**



3 / K7 **CURB SECTION**

TYPICAL PIEZOELECTRIC SENSOR INSTALLATION

NOTE

1. TEST PIEZOELECTRIC SENSORS BEFORE AND AFTER INSTALLATION PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE THE FIELD ENGINEER A WRITTEN RECORD OF TESTING REQUIREMENTS AND RESULTS.

STATE OF ALASKA 49TH
Kelly L. Kilpatrick
GE 11287
REGISTERED PROFESSIONAL ENGINEER
4/9/14

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PAVEMENT PRESERVATION

PIEZOELECTRIC SENSOR DETAILS

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DRAFTED BY MAC

XREFS

SCALE

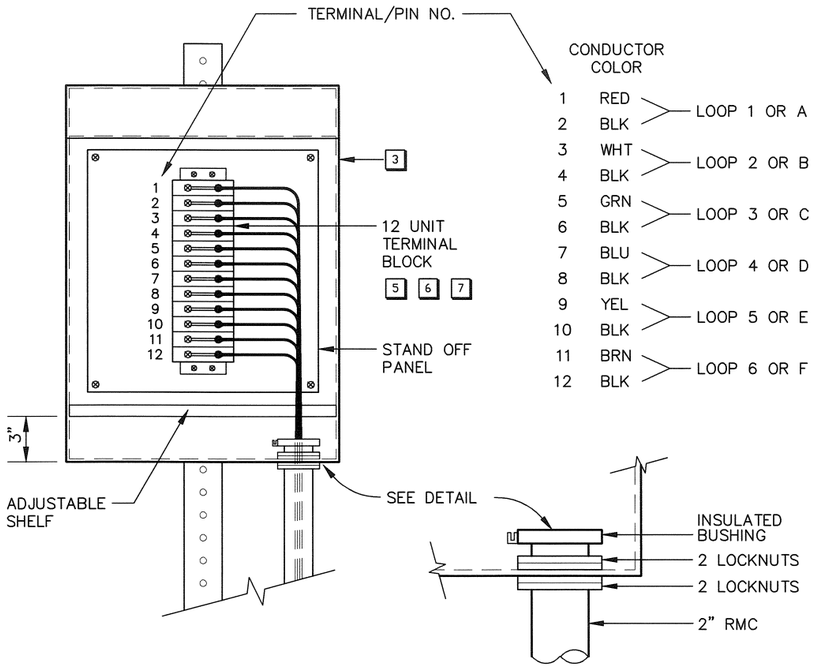
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DATE TIME 4/9/2014 8:47 AM

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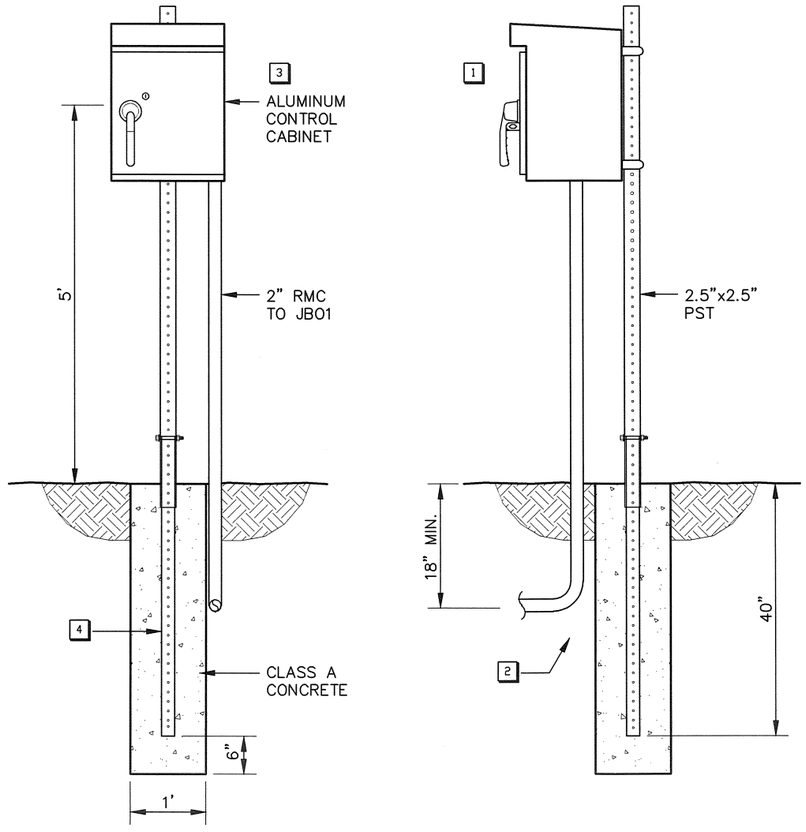
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NO.	DATE	DESCRIPTION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0211(061)/56176	2014	K8	K13



1/K8 **CABINET TYPE CBA1**

FRONT VIEW, DOOR OPEN



FRONT ELEVATION

SIDE ELEVATION

2/K8 **CABINET TYPE CBA1 DETAIL**

NOTES:

1. CONTROLLER CABINET DOOR TO OPEN AWAY FROM THE ROADWAY.
2. INSTALL FOUNDATION IN SELECT MATERIAL, TYPE A. THE CONTRACTOR SHALL EXCAVATE AND BACKFILL WITH GRAVEL 2 FEET BELOW AND SURROUNDING THE FOUNDATION.
3. CABINET TO BE EQUAL TO OR BETTER THAN HOFFMAN SINGLE DOOR ALUMINUM ENCLOSURE: CATALOG NUMBER 131JF (20 IN x 17 IN x 16 IN) WITH NEMA 3R RATING, CORBIN LOCK, EQUIPMENT MOUNTING PANEL AND ADJUSTING SHELF.
4. SLEEVE TYPE CONCRETE FOUNDATION. SEE STANDARD DRAWING S-30.03, PERFORATED STEEL TUBE (PST) POST.
5. TERMINATE ALL CONDUCTORS TO TERMINAL BLOCK. TERMINATE ALL CONDUCTORS WITH CRIMPED AND SOLDERED SPADE TYPE TERMINALS.
6. TY-RAPS TO PROVIDE STRAIN RELIEF FOR INCOMING CONDUCTORS.
7. LABEL SENSOR LEADS:
   USE THE INDUCTIVE LOOP DESIGNATION FOR IDENTIFICATION, SUCH AS "VISLA"



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PAVEMENT PRESERVATION

ATR - SITE H1
CBA1 CABINET DETAILS

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XREFS

SCALE

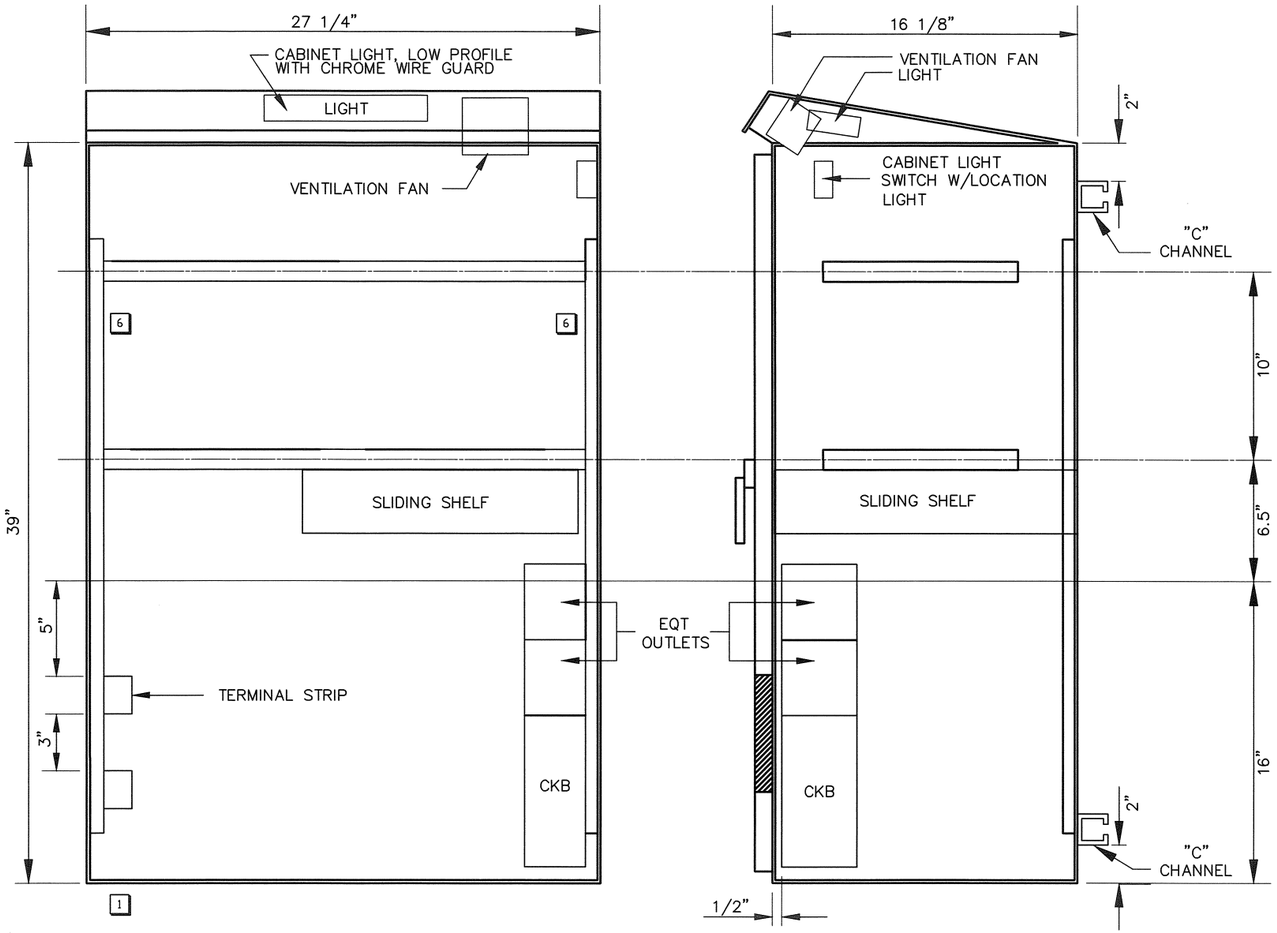
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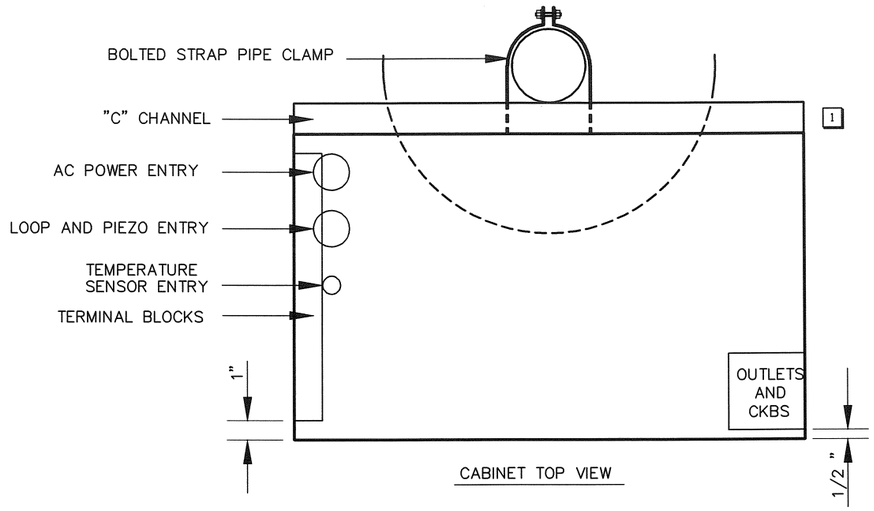
REVISIONS		
NO.	DATE	DESCRIPTION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0211(061)/56176	2014	K9	K13

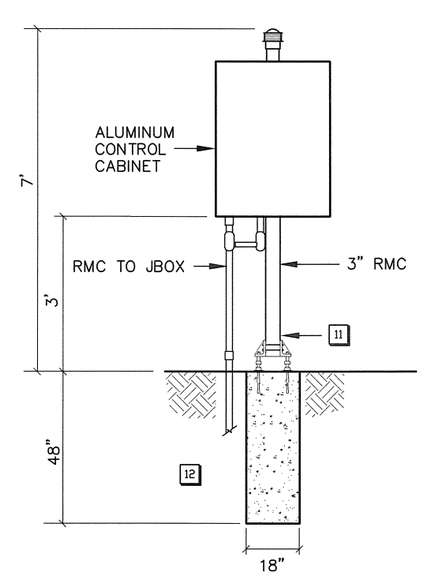


1 K9

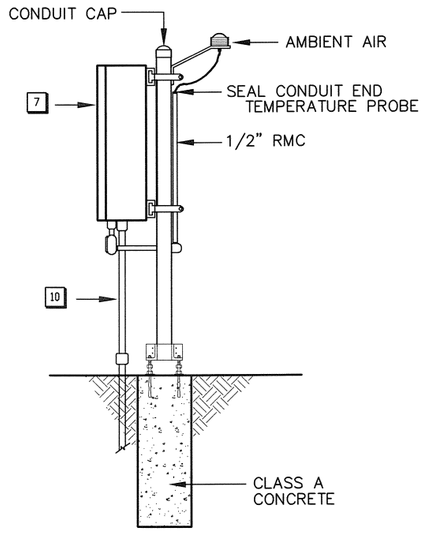
CBA2 CABINET DETAILS



CABINET TOP VIEW



FRONT ELEVATION



SIDE ELEVATION

2 K9

CABINET TYPE CBA2

NOTES:

1. USE CONDUIT HUBS IN BOTTOM OF CABINET. USE TYPE CHT WITH NEOPRENE SEAL AND INSULATED THROAT FOR NON-POWER CONDUITS WITH DETECTOR LEAD-IN CABLES AND TELEPHONE SERVICE. USE TYPE CHN FOR SERVICE ENTRANCE CONDUIT AND CONNECT FLEXIBLE METAL CONDUIT TO CB PANEL INSIDE CABINET.
2. PROVIDE VOLTAGE SURGE PROTECTION IN CB PANEL.
3. ALL 120V WIRING, INCLUDING THAT FOR PANELBOARD, LIGHT, FAN, AND THERMOSTATS TO BE IN FLEXIBLE METAL CONDUIT WITH EXCEPTION OF CORD CONNECTED ELECTRONIC EQUIPMENT.
4. CABINET TO BE CERTIFIED BY NATIONALLY RECOGNIZED INDEPENDENT THIRD PARTY TESTING AGENCY (UL, CSA, FM, ETC.).
5. ALL EQUIPMENT INSIDE CABINET TO BE FASTENED TO RAILS WITH NO SCREW PENETRATIONS OF THE CABINET SURFACE.
6. SIDE RAILS TO BE INSTALLED TO PERMIT HORIZONTAL ADJUSTMENT OF VERTICAL RAILS.
7. CONTROLIER CABINET DOORS TO OPEN AWAY FROM ROADWAY.
8. USE FACTORY 90° ELBOWS TO/FROM J-BOXES ON ALL CONDUITS LARGER THAN 1 INCH.
9. ALL CONDUIT SHALL BE RMC UNLESS NOTED OTHERWISE. SEE SCHEDULE FOR SIZE.
10. NOT ALL CONDUITS SHOWN IN DETAIL. ADD OTHERS AS REQUIRED.
11. PROVIDE FLANGE, FRANGIBLE COUPLING AND FOUNDATION PER DOT STANDARD DETAIL S-31.00.
12. INSTALL FOUNDATION IN SELECT MATERIAL, TYPE A. THE CONTRACTOR SHALL EXCAVATE AND BACKFILL WITH GRAVEL 2 FEET BELOW AND SURROUNDING THE FOUNDATION.

STATE OF ALASKA
49TH
Kelly K. Kratzer
CES 11237
4/9/14
REGISTERED PROFESSIONAL ENGINEER

PLANS DEVELOPED BY:
DOWL HKM

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DEPARTMENT OF TRANSPORTATION
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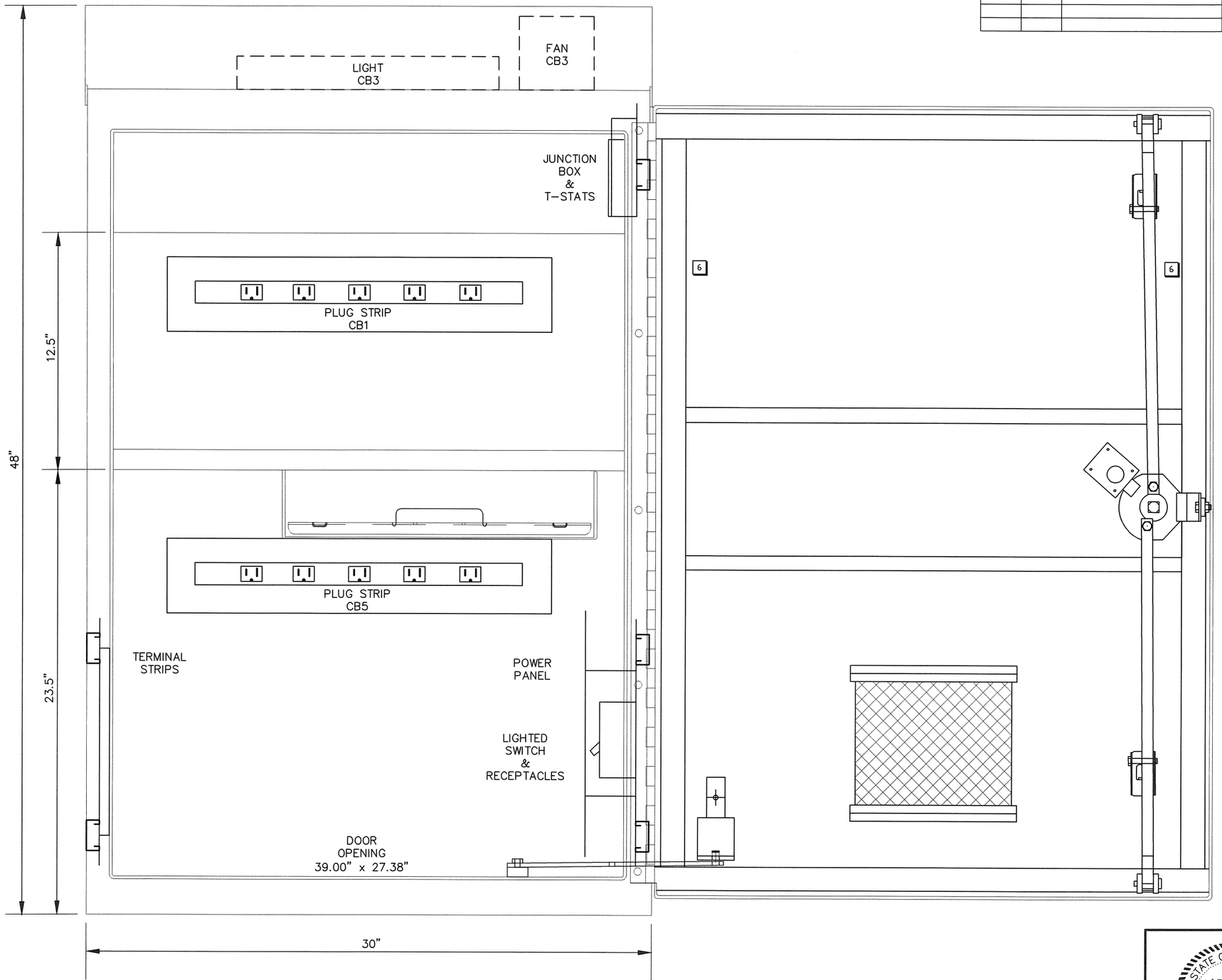
STERLING HWY MP 173 TO 174
PAVEMENT PRESERVATION

CABA2 CABINET PANEL WIRING, NOTES & ELEVATIONS

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XREFS
SCALE
LAYOUT K9
DATE TIME 4/9/2014 8:47 AM
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STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0211(061)/56176	2014	K10	K13



1 K10 **BACK PANEL VIEW**

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XREFS

SCALE

LAYOUT
K10

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STATE OF ALASKA
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PAVEMENT PRESERVATION

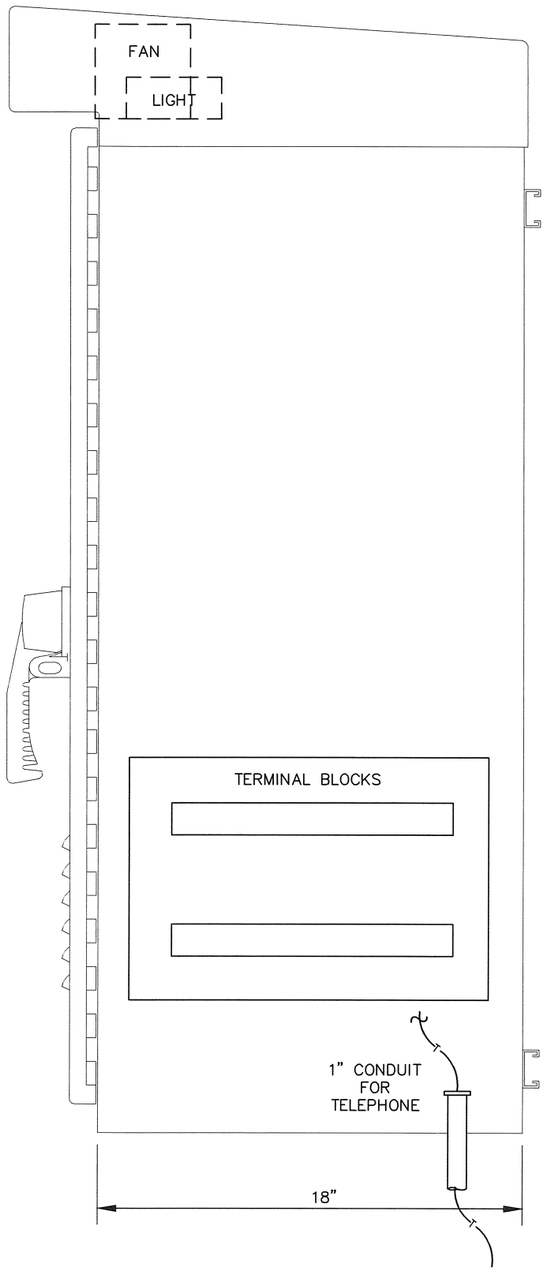
CABA2 CABINET PANEL DETAILS
BACK PANEL VIEW

STATE OF ALASKA
48TH
Kelly L. Kilpatrick
GE 11237
REGISTERED PROFESSIONAL ENGINEER
4/9/14

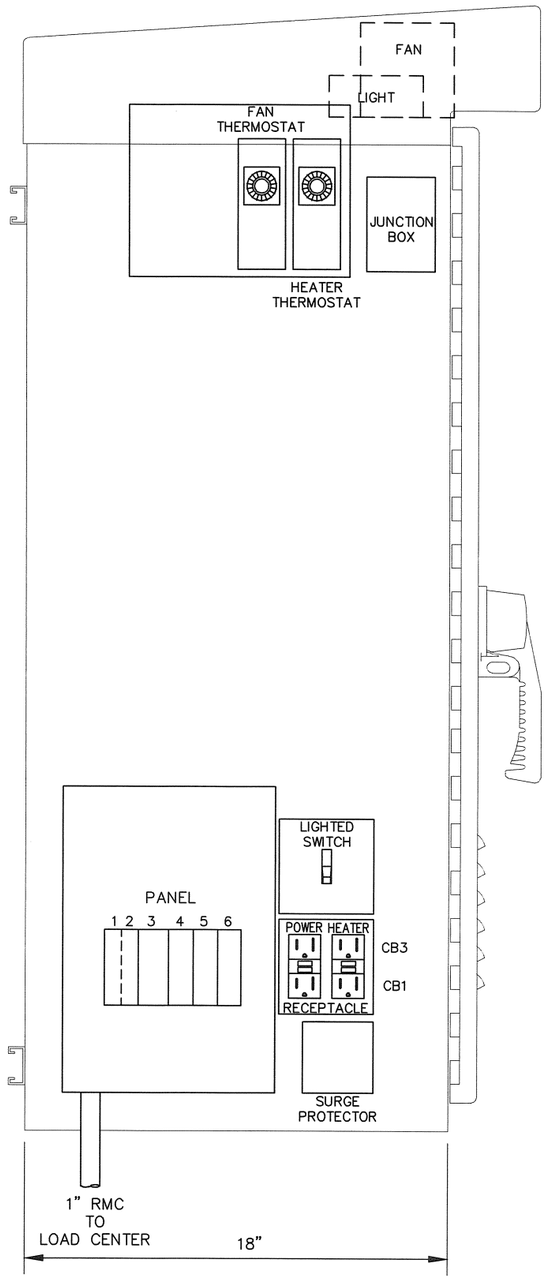
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STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0211(061)/56176	2014	K11	K13



1 K11 **LEFT SIDE VIEW**



2 K11 **RIGHT SIDE VIEW**

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XREFS

SCALE

LAYOUT K11

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STERLING HWY MP 173 TO 174
PAVEMENT PRESERVATION

CABA2 CABINET
SIDE & TOP PANEL VIEWS

STATE OF ALASKA
49TH
Kelly J. Kilpatrick
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4/9/14

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DOWL HKM

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ALASKA	0211(061)/56176	2014	K12	K13

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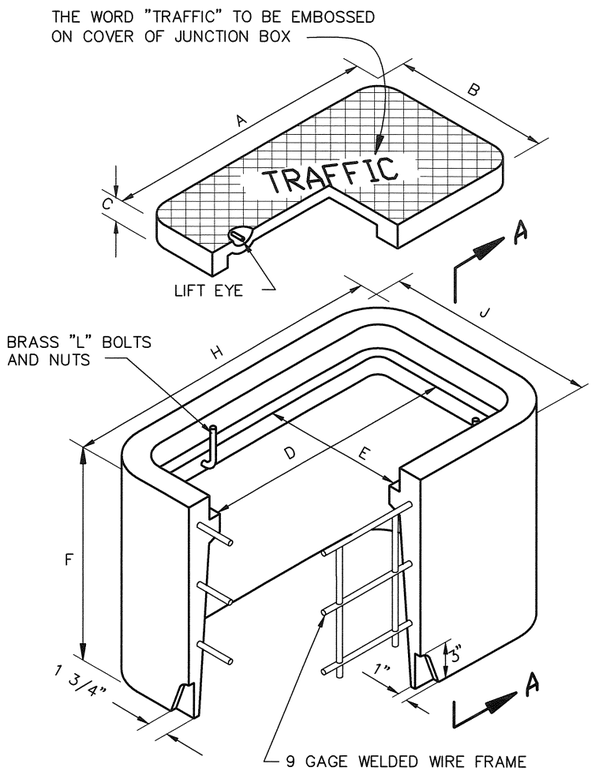
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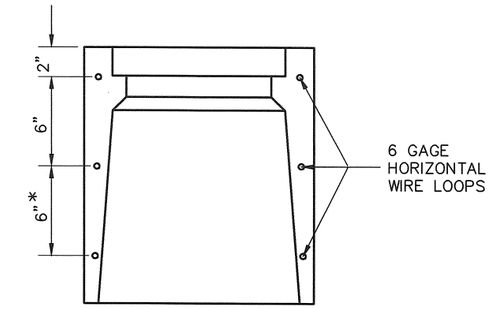
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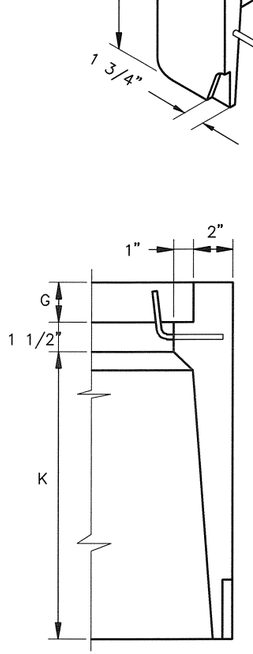




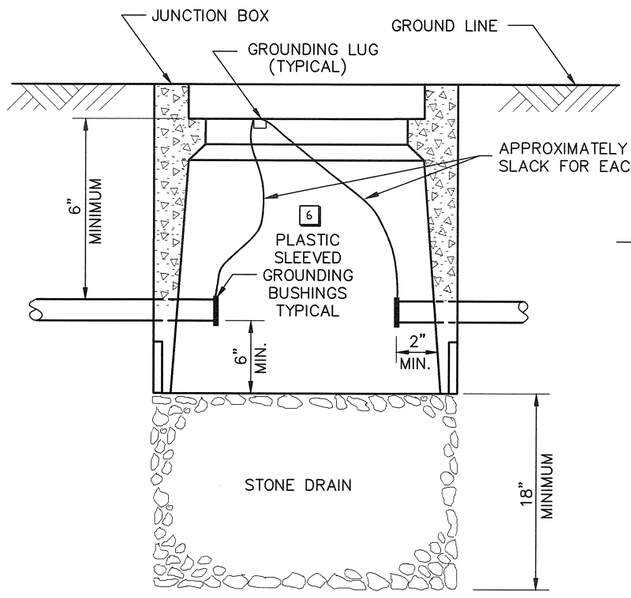
ALTERNATE REINFORCING

TYPE I–A

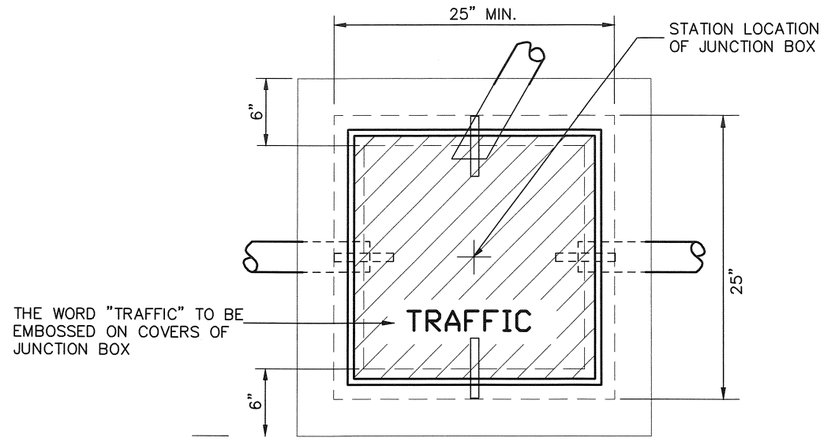
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B	13 1/4
C	2
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H	27 1/4
J	17 3/4
K	14 1/2



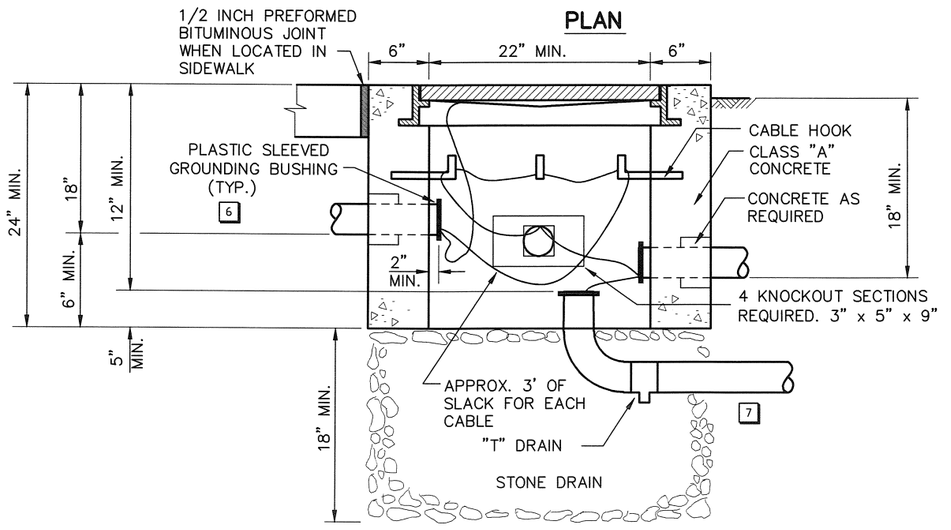
SECTION A–A



1 / K12 **TYPE I–A JUNCTION BOX DETAIL**



PLAN



ELEVATION

2 / K12 **TYPE II JUNCTION BOX DETAIL**

NOTES:

1. EACH FRAME AND COVER FOR TYPE II JUNCTION BOXES SHALL BE OF CAST IRON FOR LIGHT DUTY USE WITH A MINIMUM WEIGHT OF 43.3 POUNDS. COVERS FOR TYPE IA JUNCTION BOXES SHALL BE EITHER ALUMINUM OR CAST IRON.
2. JUNCTION BOXES LOCATED IN A SIDEWALK SHALL BE INSTALLED WITH A 1/2 INCH PREFORMED BITUMINOUS JOINT MATERIAL AROUND ITS PERIMETER.
3. ALL CONDUITS SHALL BE BONDED TO FORM A CONTINUOUS ELECTRICALLY SECURE SYSTEM WITH A GROUND AT THE LOAD CENTER JUNCTION BOX.
4. ALL JUNCTION BOX COVERS SHALL BE BONDED TO GROUND WITH #8 AWG COPPER BRAID. BRAID LENGTH FOR TYPE IA SHALL BE 3 FEET. BRAID LENGTH FOR TYPE II SHALL BE 6 FEET.
5. JUNCTION BOXES SHALL BE SET FLUSH WITH THE SURROUNDING SURFACE EXCEPT IN AN UNPAVED SHOULDER, WHERE THEY SHALL BE LOCATED 2 INCHES BELOW GRADE.

[6] PLASTIC SLEEVED GROUNDING BUSHINGS WILL BE IN PLACE BEFORE ANY WIRES ARE PULLED.

[7] BOTTOM ENTRY BY EXCEPTION ONLY. ONLY CONDUITS WITH MAIN RUN BURIED AT A DEPTH OF 24 INCHES OR GREATER ARE ALLOWED BOTTOM ENTRY.



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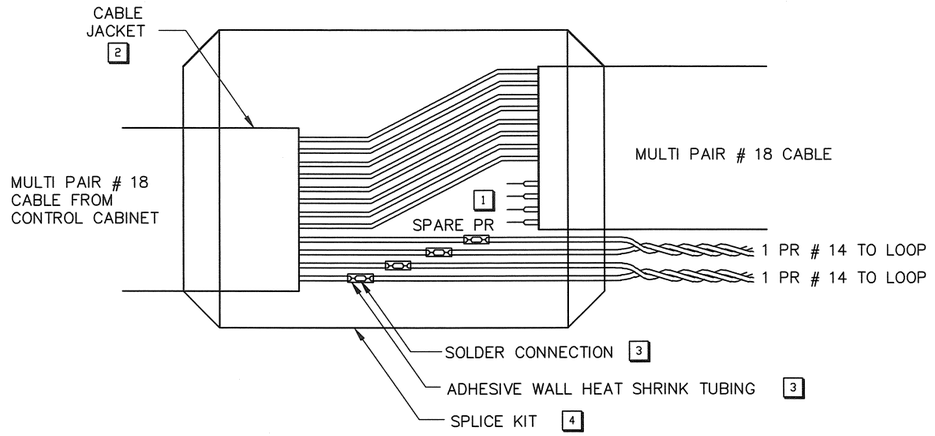
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STERLING HWY MP 173 TO 174
PAVEMENT PRESERVATION

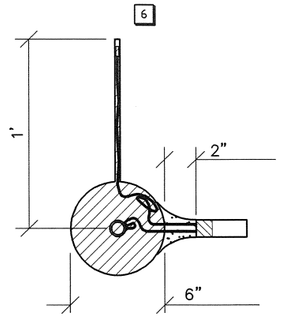
JUNCTION BOX DETAILS

REVISIONS		
NO.	DATE	DESCRIPTION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0211(061)/56176	2014	K13	K13



1 K13 TYPICAL SPLICE DETAIL



NOTES:

1. TERMINATE ALL SPARES WITHIN THE SPLICE BODY.
2. SPLICE BODY TO ENCLOSE ALL CABLE JACKETS. STAGGER SPLICE POINTS.
3. USE NON INSULATED COMPRESSION BUTT CONNECTORS. SOLDER CONNECTIONS. ENCLOSE EXPOSED CONDUCTORS IN ADHESIVE WALL HEAT SHRINK TUBING.
4. USE A NONREENTERABLE, WET LOCATION, COMMERCIAL SPLICE KIT 3M TYPE 82-A1 OR 82-A2 OR EQUIVALENT AS APPROVED BY THE ENGINEER.
5. SEAL END OF CONDUIT WITH 3M TYPE LOOP SEALANT OR EQUIVALENT AS APPROVED BY THE ENGINEER.
6. SLOT FOR IN-PAVEMENT SENSORS PARALLEL TO TRAVELLED ROADWAY.

2 K13 TEMPERATURE SENSOR DETAILS

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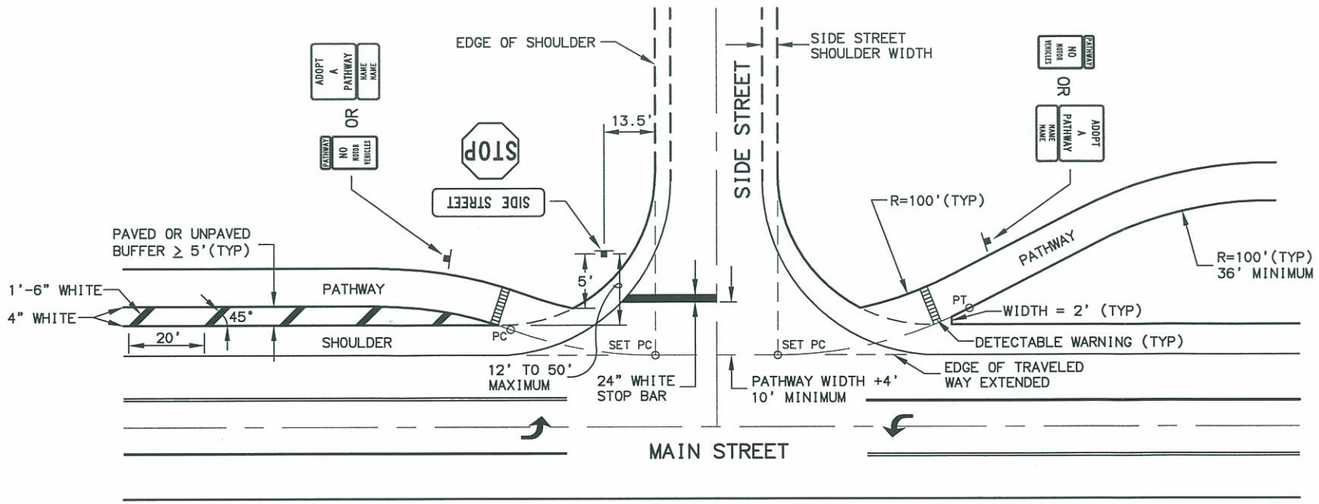
STERLING HWY MP 173 TO 174
PAVEMENT PRESERVATION

LEAD-IN SPLICE AND TEMPERATURE SENSOR DETAILS

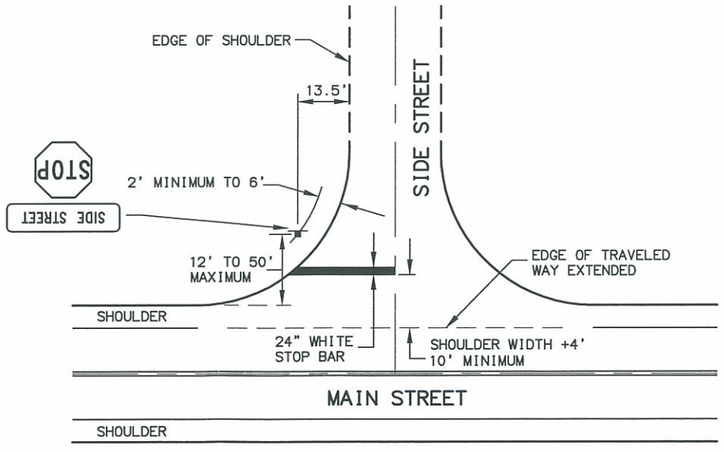
PLANS DEVELOPED BY:
DOWL HKM

STATE OF ALASKA
49TH
Kelly Killgatrick
CE 11257
4/9/14
REGISTERED PROFESSIONAL ENGINEER

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TYPICAL UNCURBED RETURN WITH PATHWAY



TYPICAL UNCURBED RETURN WITHOUT PATHWAY

UNCURBED INTERSECTION NOTES:

1. LOCATE STOP SIGNS SO THEY ARE:
   A) VISIBLE TO APPROACHING TRAFFIC
   B) AS NEAR TO THE STOP BAR AS PRACTICABLE.
   C) REDUCE THE STOP SIGN OFFSET TO FIT THE SIGN WITHIN THE RIGHT OF WAY.
2. AVOID JUNCTIONS BOXES, STORM DRAIN INLETS, AND MANHOLE FRAMES WITHIN THE RAMPS AND LANDINGS. ADJUST JUNCTION BOXES LOCATED WITHIN RAMPS AND LANDINGS FLUSH WITH FINISHED SURROUNDING SLOPE.
3. SEE PLANS FOR WHEN PATHWAY SIGNING IS REQUIRED AT SIDE STREETS.
4. BREAK CENTERLINE STRIPING FOR DEDICATED LEFT TURN BAYS. CONTINUE CENTERLINE STRIPING FOR CENTER TWO-WAY LEFT TURN LANES AND WHEN THERE ARE NO LEFT TURN LANES.
5. "NO MOTOR VEHICLES" SIGNS ARE NOT REQUIRED WITHIN THE MUNICIPALITY OF ANCHORAGE.
6. STOP BARS ARE NOT REQUIRED WHEN NO PATHWAY OR SIDEWALK IS PRESENT, UNLESS SHOWN IN PLANS.

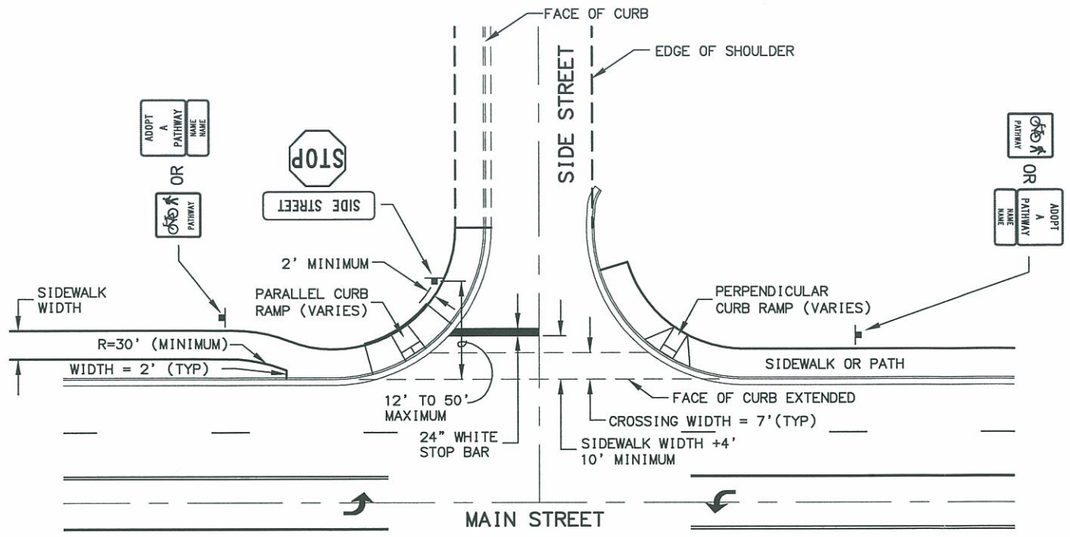
REVISIONS		
Date	Description	By
01/17/13	SHEET NUMBER & DRAWING	SET
09/16/13	NOTE 6 ADDED	SET

SHEET 1 OF 2

State of Alaska
Department of Transportation
& Public Facilities

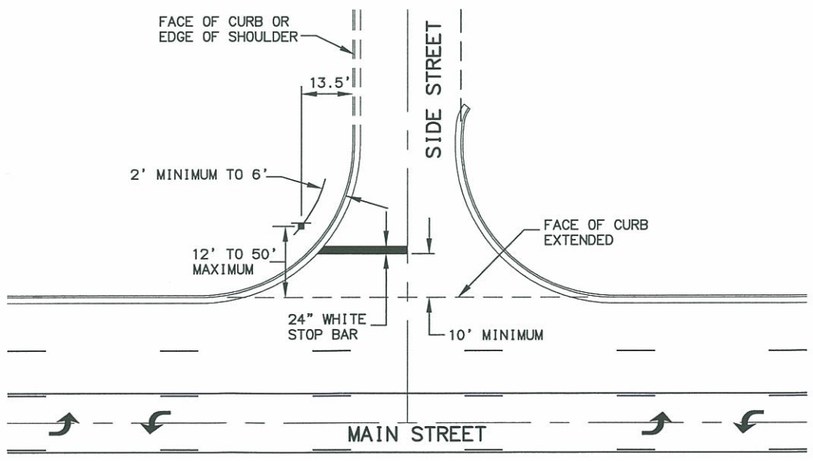
UNSIGNALIZED INTERSECTION
STOP AND CROSSING

APPROVED
STATE OF ALASKA 49TH
SCOTT E. THOMAS CE 8602
REGISTERED PROFESSIONAL ENGINEER
Date 09/16/13



TYPICAL CURBED RETURN WITH SIDEWALK

(CURB RADIUS > 20 FEET)



TYPICAL CURBED RETURN WITHOUT SIDEWALK

CURBED INTERSECTION NOTES:

1. LOCATE STOP SIGNS SO THEY ARE:
   A) VISIBLE TO APPROACHING TRAFFIC
   B) AS NEAR TO THE STOP BAR AS PRACTICABLE.
   C) REDUCE THE STOP SIGN OFFSET TO FIT THE SIGN WITHIN THE RIGHT OF WAY.
2. AVOID JUNCTION BOXES, STORM, DRAIN INLETS, AND MANHOLE FRAMES WITHIN THE RAMPS AND LANDINGS. ADJUST JUNCTION BOXES LOCATED WITHIN RAMPS AND LANDINGS FLUSH WITH THE FINISHED SURROUNDING SLOPE.
3. SEE PLANS FOR WHEN PATHWAY SIGNING IS REQUIRED AT SIDE STREETS.
4. BREAK CENTERLINE STRIPING FOR DEDICATED LEFT TURN BAYS. CONTINUE CENTERLINE STRIPING FOR CENTER TWO-WAY LEFT TURN LANES AND WHEN THERE ARE NO LEFT TURN LANES.
5. "NO MOTOR VEHICLES" SIGNS ARE NOT REQUIRED BEHIND CURB & GUTTER, UNLESS SHOWN IN PLANS.
6. STOP BARS ARE NOT REQUIRED WHEN NO PATHWAY OR SIDEWALK IS PRESENT, UNLESS SHOWN IN PLANS.

REVISIONS		
Date	Description	By
01/17/13	SHEET NUMBER AND DRAWING	SET
09/16/13	NOTES 5 & 6 ADDED	SET

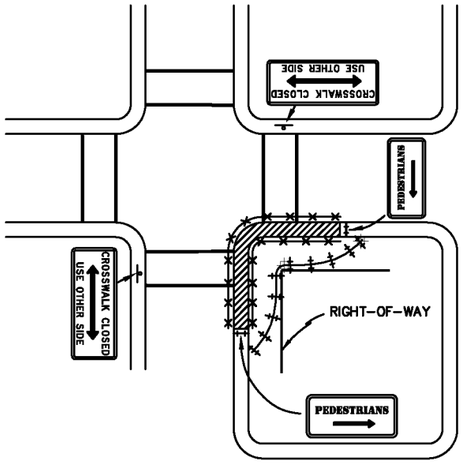
SHEET 2 OF 2

State of Alaska
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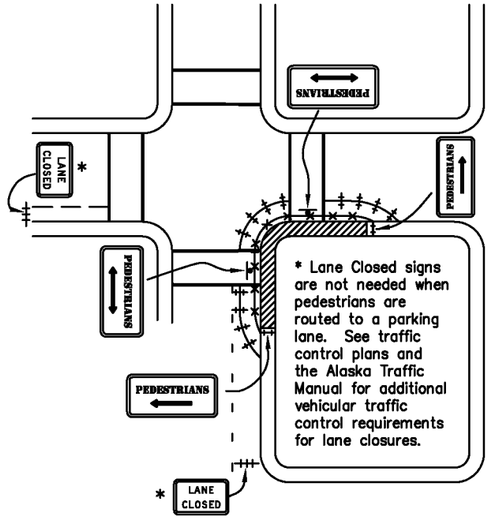
UNSIGNALIZED INTERSECTION
STOP AND CROSSING

APPROVED
STATE OF ALASKA 49TH
SCOTT E. THOMAS
CE 8602
REGISTERED PROFESSIONAL ENGINEER

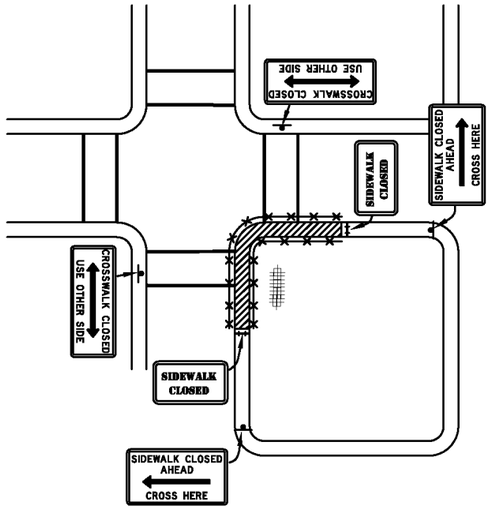
Date 09/16/13



A. Detour Away From Road



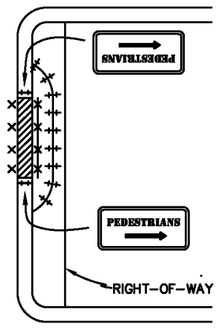
B. Detour to Closed Parking or Travel Lane



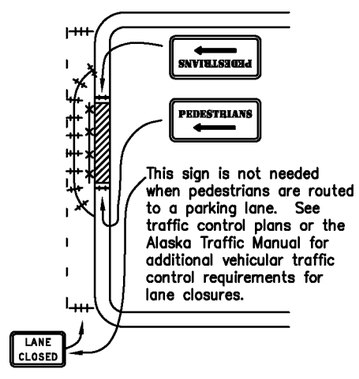
C. Detour to Other Side

INTERSECTION SIDEWALK PATHWAY OR SHOULDER CLOSURE

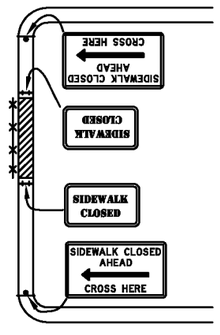
A to C In Order of Preference



D. Detour Away From Road



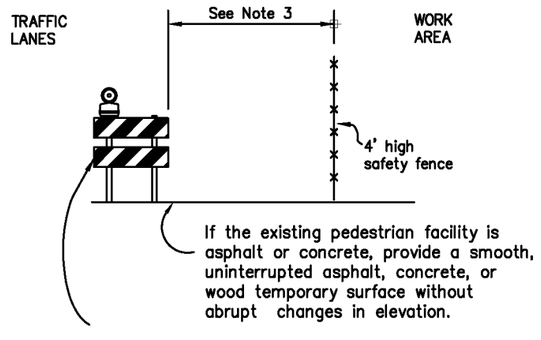
E. Detour to Closed Parking or Travel Lane



F. Detour to Other Side

MID-BLOCK SIDEWALK PATHWAY OR SHOULDER CLOSURE

D to F In Order of Preference



Type II barricades or tubular markers with flagger tape strung between them. A 4' high safety fence may be used instead of tape when greater control of pedestrian routing is desirable.

PEDESTRIAN DETOUR TYPICAL SECTION

NOTES.

1. Provide pedestrian traffic control devices when sidewalks or pathways are closed to pedestrians and where required by the Plans or Specifications.

2. Avoid routing pedestrians across roads unnecessarily. Use detail C or F only when it is not practical to use detail A, B, D, or E.

3. Maintain a minimum pedestrian facility width of 5 feet or the width of the facility that existed before construction, whichever is less.

4. Where the posted speed limit exceeds 45 MPH, separate pedestrians from roadway edge of pavement or face of curb by at least 5'. Where that is not feasible, install portable concrete barrier between pedestrians and the road.

5. When pedestrian traffic control devices required by the current traffic control plan are not in place or are temporarily removed, provide a worker to direct pedestrians through the work area.

6. Cover pedestrian traffic signal displays controlling closed crosswalks.

7. This sheet focuses on traffic control devices for pedestrians. Look elsewhere for vehicular traffic control requirements.

8. When using details C and F, route pedestrians to the best crossing point near the work area.

LEGEND:

- Type II Barricade or Tubular Marker
- Type III Barricade
- Safety Fence
- Sign
- Work Area

REVISIONS		
Date	Description	By

Sheet 1 of 1

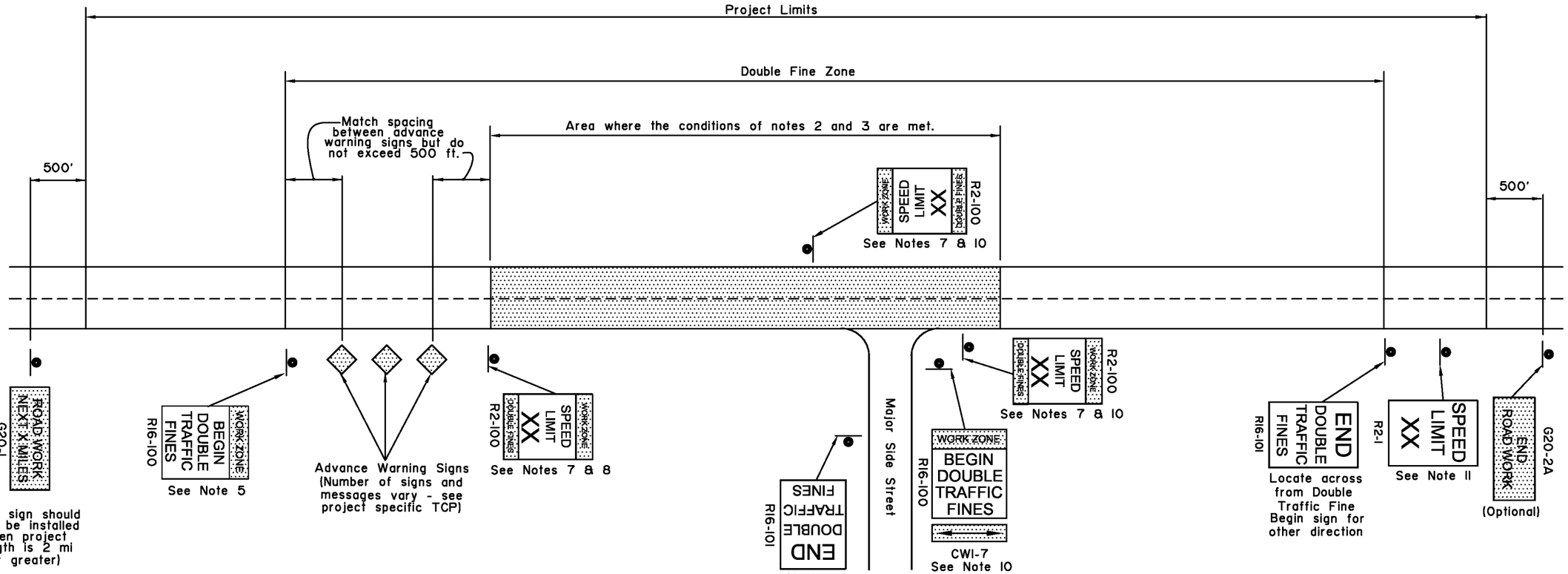
State of Alaska
Department of Transportation
& Public Facilities

PEDESTRIAN TRAFFIC CONTROL

APPROVED



Date 5/15/01



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

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

				Max. Cover (Ft)	
Span x Rise (in. x in.)	Corner Radius (in)	Minimum Gage (in)	Min. Cover (in)	2 Tons Corner Bearing Pressure	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

				Max. Cover (Ft)	
Span x Rise (in. x in.)	Corner Radius (in)	Minimum Gage (in)	Min. Cover (in)	2 Tons Corner Bearing Pressure	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	LRG

Sheet 1 of 4

State of Alaska
Department of Transportation & Public Facilities

PIPE AND ARCH TABLES

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

				Max. Cover (Ft)	
Span x Rise (in. x in.)	Corner Radius (in)	Minimum Gage (in)	Min. Cover (in)	2 Tons Corner Bearing Pressure	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

				Max. Cover (Ft)	
Span x Rise (in. x in.)	Corner Radius (in)	Minimum Gage (in)	Min. Cover (in)	2 Tons Corner Bearing Pressure	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

				Max. Cover (Ft)	
Span x Rise (in. x in.)	Corner Radius (in)	Minimum Gage (in)	Min. Cover (in)	2 Tons Corner Bearing Pressure	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**

			2 Tons Corner Bearing Pressure		3 Tons Corner Bearing Pressure	
Span x Rise (Ft-in x Ft-in)	Corner Radius (in)	Minimum Gage (in)	Min. Cover (in)	Max. Cover (Ft)	Min. Cover (in)	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

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

METAL THICKNESSES & GAGES

STEEL		
ZINC COATED	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

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

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

Sheet 2 of 4

State of Alaska
Department of Transportation & Public Facilities

PIPE AND ARCH TABLES

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

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

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

Date 10/31/03

Minimum & Maximum Cover For Aluminum Spiral Rib Circular Pipe*

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

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

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

		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 11½ in. Corrugations

ALUMINUM SPIRAL RIB PIPE

STEEL SPIRAL RIB PIPE

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

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

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

**¾ x ¾ x 7½ in. Corrugations Only.

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

		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 11½ in. Corrugations

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

State of Alaska
Department of Transportation
& Public Facilities

PIPE AND ARCH TABLES

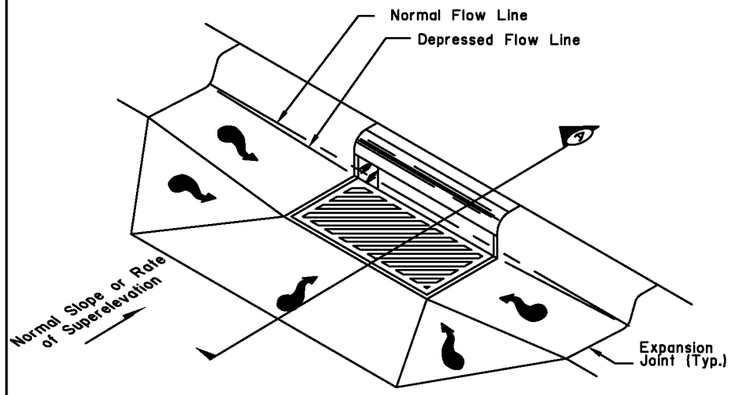
APPROVED

STATE OF ALASKA
49TH
Lars R. Gregovich
CE-8065

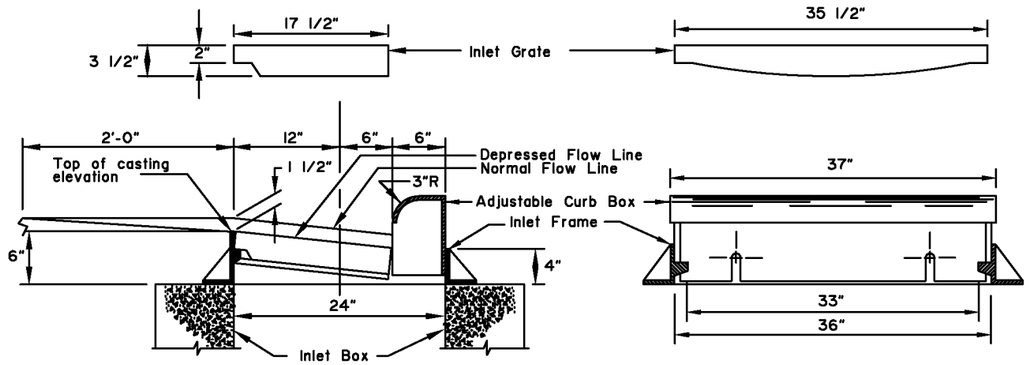
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D-23.01



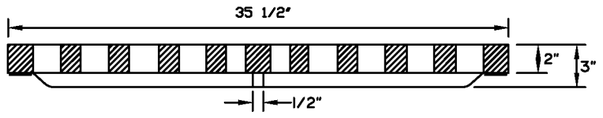
STANDARD CURB INLET INSTALLATION



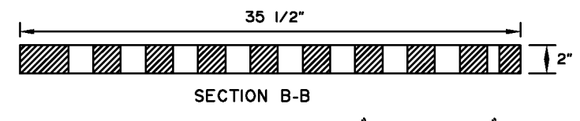
SECTION A

GENERAL NOTES:

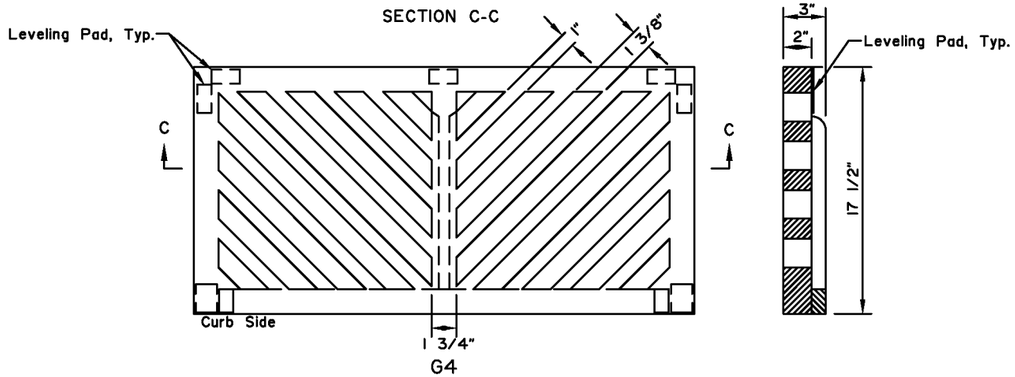
1. Details shown are to indicate general design only. Dimensions and design may vary among the manufacturers.
2. Minimum casting weight shall be 330 lbs for Curb Inlet Frame with Curb Box and 200 lbs. for Inlet Grate.
3. The outside dimensions of Inlet Grate shall be 35 1/2" x 17 1/2" and all grates 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.



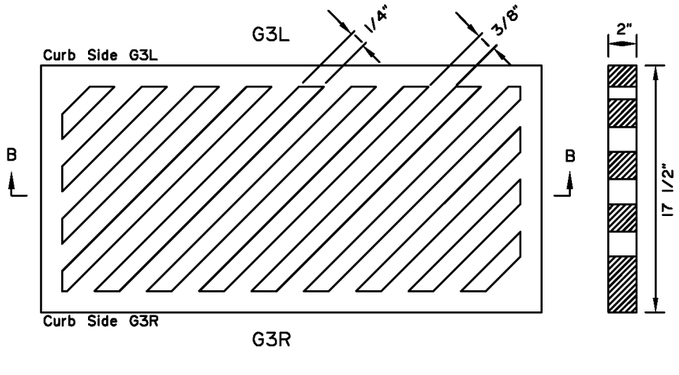
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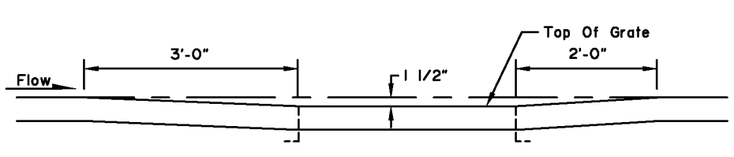
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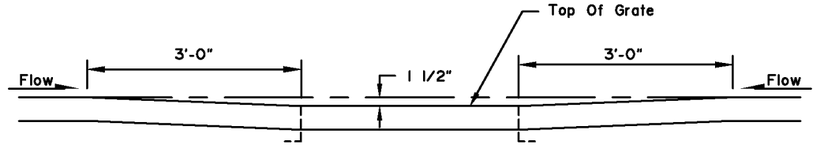
G4



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

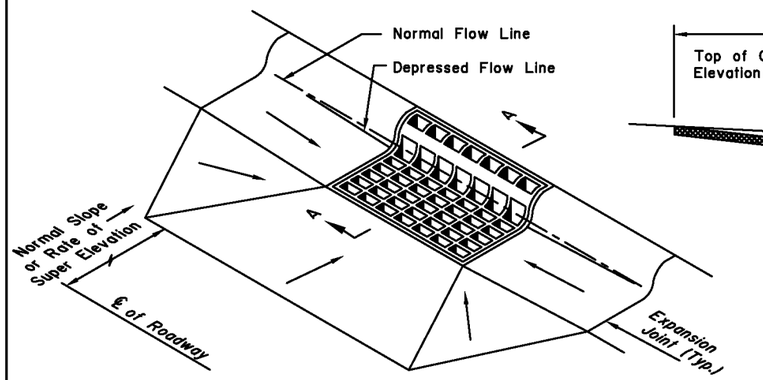
CURB INLET BOX FRAME & GRATE

APPROVED
49TH
Lars R. Gregovich
CE-8065
Date 10/31/03

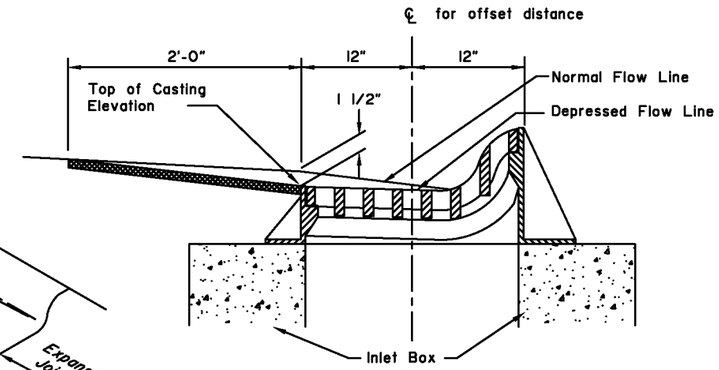
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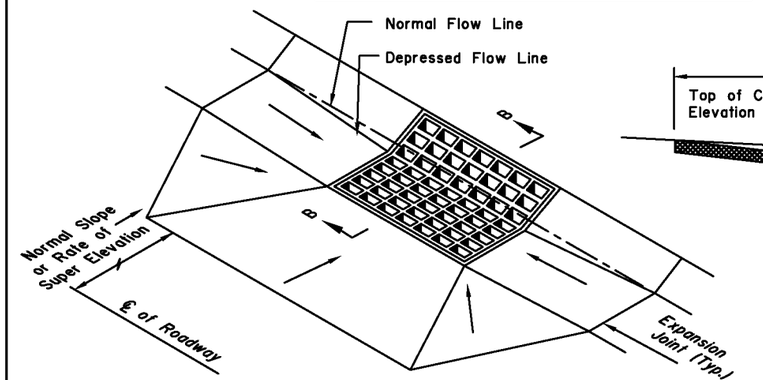
SHEET 1 of 1



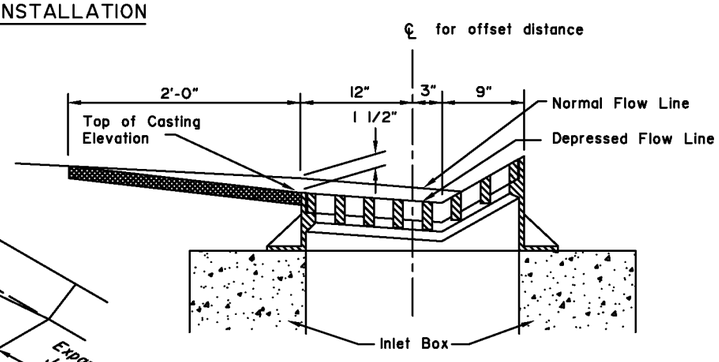
MOUNTABLE CURB INLET INSTALLATION



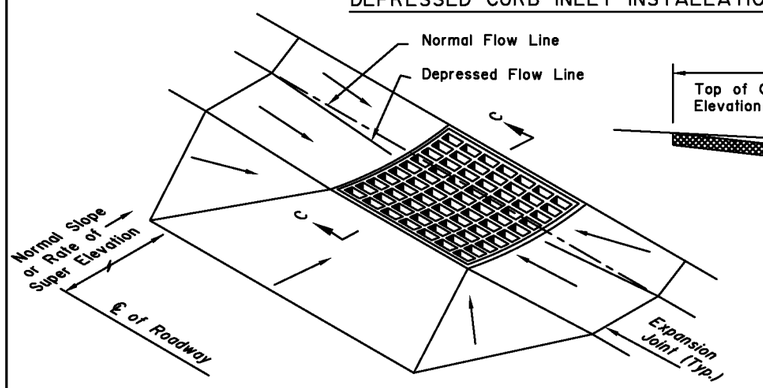
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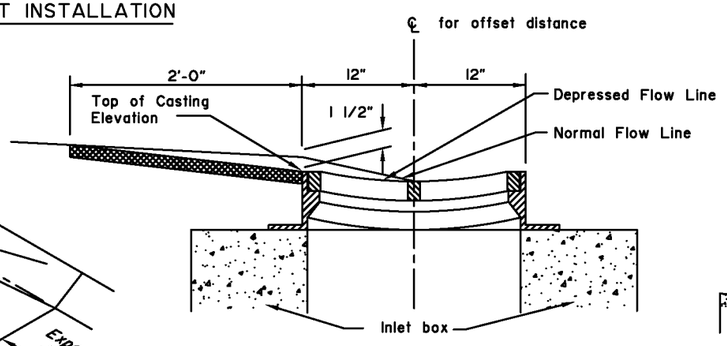
DEPRESSED CURB INLET INSTALLATION



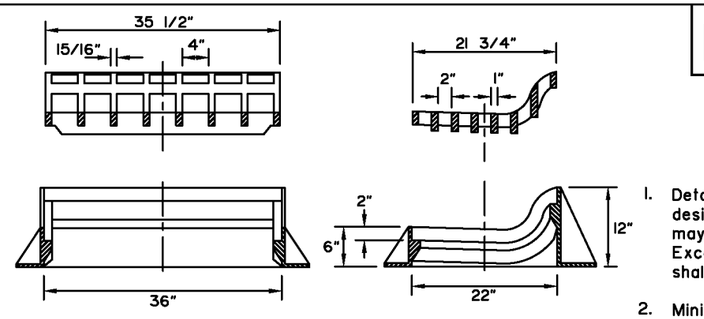
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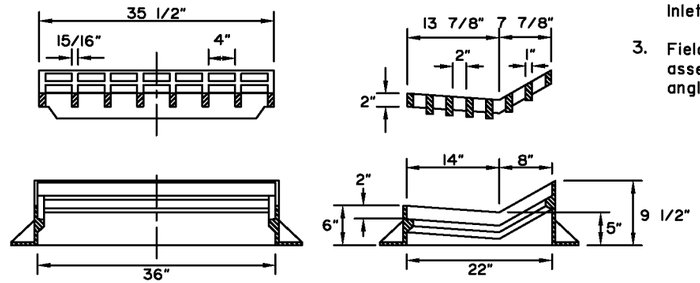
GUTTER INLET INSTALLATION



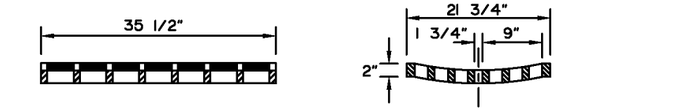
SECTION C-C



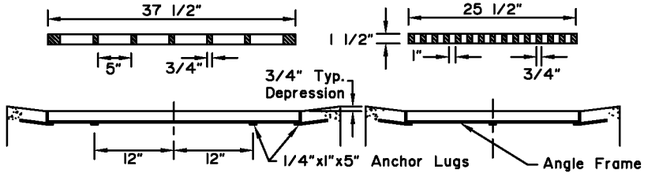
MOUNTABLE CURB INLET FRAME AND GRATE



DEPRESSED CURB INLET FRAME AND GRATE

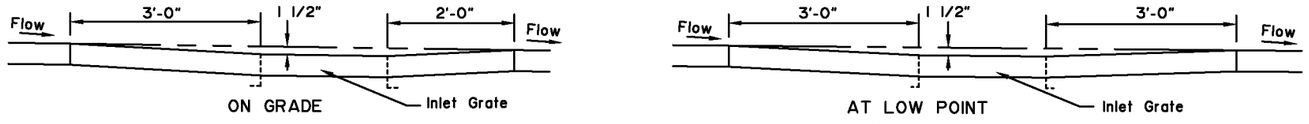


GUTTER INLET FRAME AND GRATE



NOTE: All Angle Frame shall have Anchor Lugs

FIELD INLET FRAME AND GRATE



DEPRESSION IN FLOW LINE AT INLET CONSTRUCTION DETAILS

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"xl 3/4"xl/4" angle equivalent to ASTM A-36 steel.

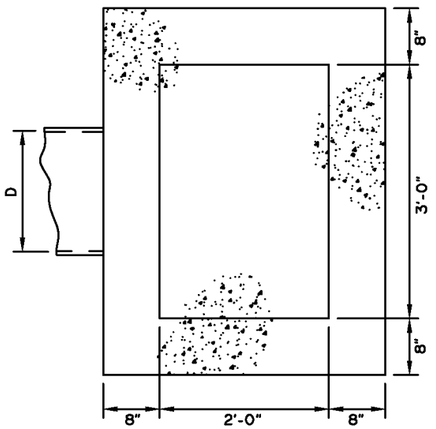
REVISIONS		
Date	Description	By

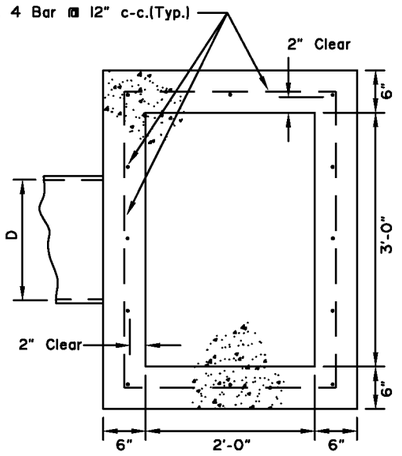
State of Alaska
Department of Transportation & Public Facilities

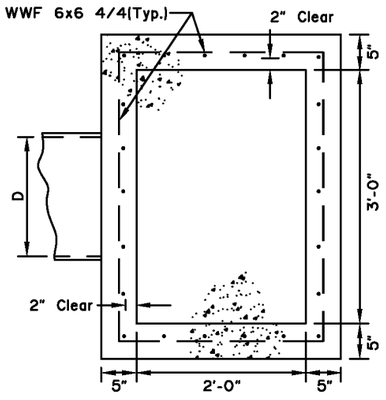
INLET FRAMES AND GRATES

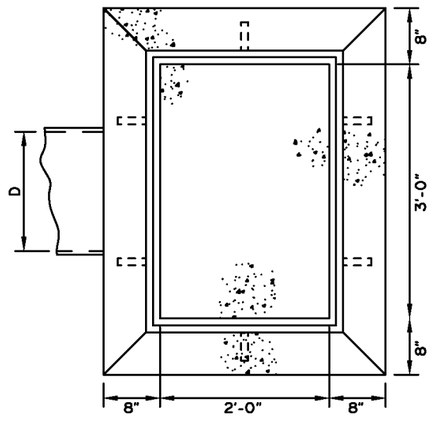
APPROVED
Date 7/15/82

D-24.00



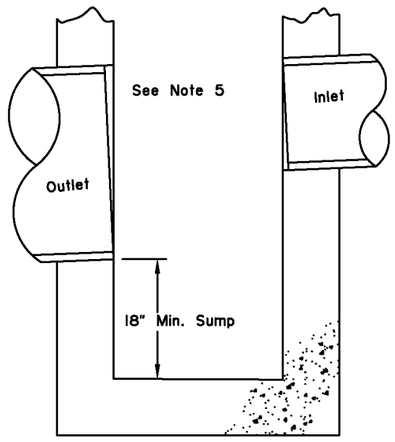


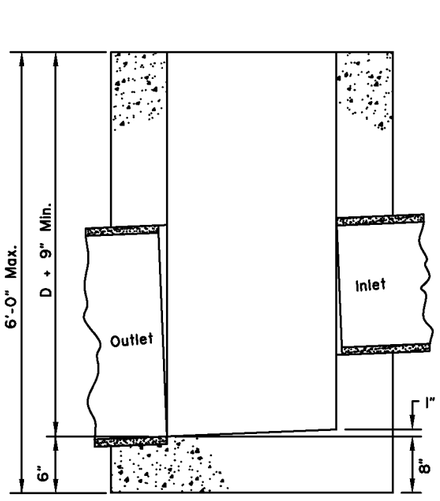




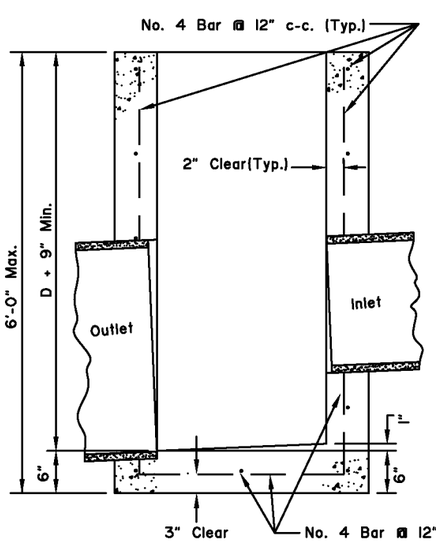
GENERAL NOTES:

1. Cast in Place Concrete Inlet Box shall be Class "W" Concrete.
2. Concrete Inlet Box depth and location shall be shown on the plans, or as directed by the Engineer.
3. Shape floors to drain.
4. Concrete Inlet Box shall be parallel to roadway centerline unless directed otherwise by the Engineer.
5. Shall be specified on plans when inlets require a sump.

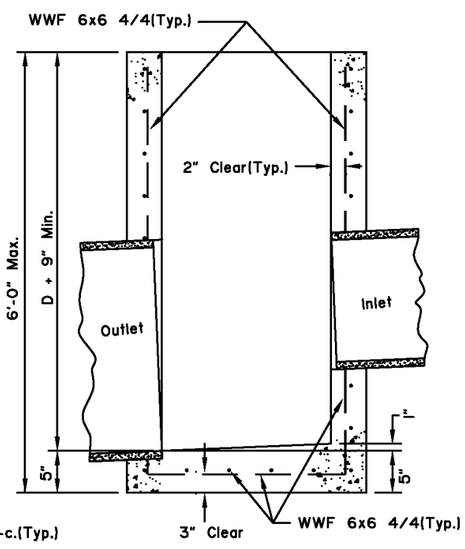




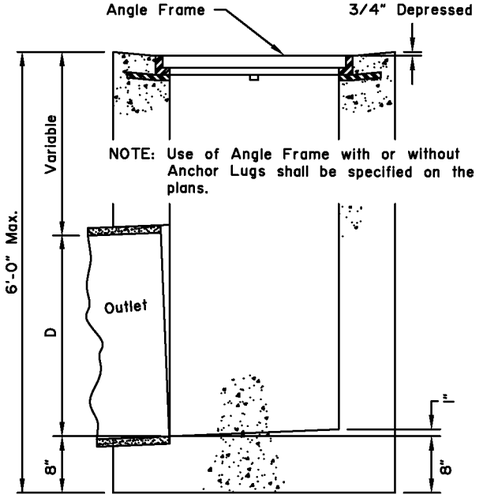
CAST IN PLACE



REINFORCED
CAST IN PLACE



PRECAST



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. Note Revision	WJF/HK
1/1/96	Add 6'-0" Box Ht.	Gdo

State of Alaska
Department of Transportation
& Public Facilities

TYPE "A" INLET BOXES

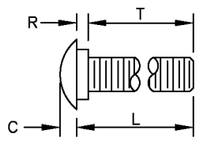
APPROVED
Date 7/15/82

D-26.02

G-00.02

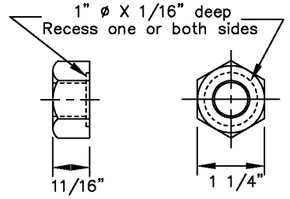
GENERAL NOTES:

1. All covered hardware shall comply with the AASHTO/AGC/ARTBA "A Guide to Standardized Highway Barrier Hardware", latest edition.

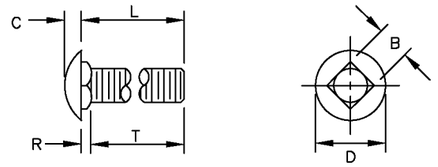


B	C	D	L (Length)	R	T (Thread Length)
15/16"	5/16"	1 5/16" or 1 7/16"	As Required	7/32"	As Required

5/8" BUTTONHEAD BOLT

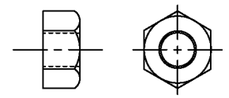


5/8" Dia. RECESSED HEX NUT

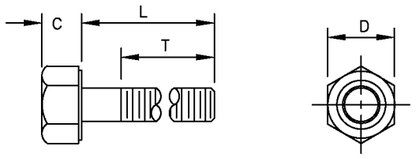


B	C	D	L (Length)	R	T (Thread Length)
5/8"	5/16"	1 5/16"	As Required	3/16"	As Required

5/8" Dia. CARRIAGE BOLT

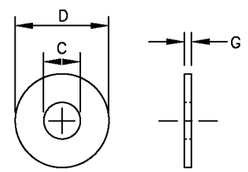


STANDARD HEX NUT



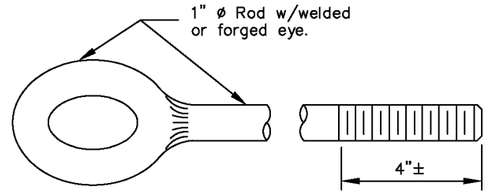
Bolt Size	C	D	L (Length)	T (Thread Length)
5/16"	——	——	1 1/2"	7/8"
5/16"	——	——	1"	1"
3/8"	——	——	7 1/2"	1 1/2"
1/2"	——	——	1 1/2"	1 1/2"
1/2"	——	——	1 1/4"	1 1/4"
5/8" H.S.	5/16"	7/8"	8"	1 1/2"
5/8"–11	——	——	1 1/2"	1 1/2"
3/4"	——	——	1 1/2"	1 1/2"
3/4"	——	——	As Required	2"
3/4" H.S.	15/32"	1 1/4"	2"	1 1/2"

STANDARD HEX BOLTS

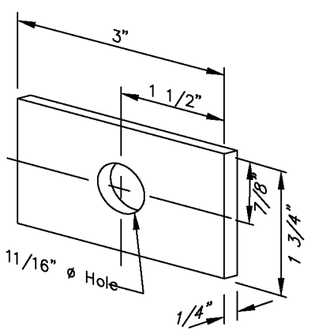


For Bolt ø	C	D	G
3/8"	7/16"	1"	5/64"
1/2"	17/32"	1 1/16"	3/32"
1/2" H.S.	17/32"	1 1/16"	3/32"
5/8"	11/16"	1 3/4"	9/64"
3/4"	13/16"	1 15/32"	9/64"
3/4" H.S.	13/16"	2"	5/32"
1"	1 1/16"	2"	9/64"

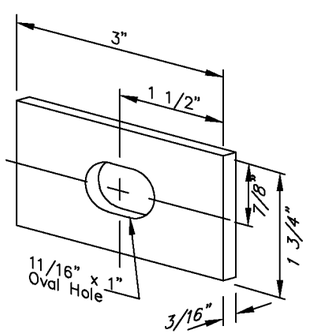
STANDARD STEEL WASHERS



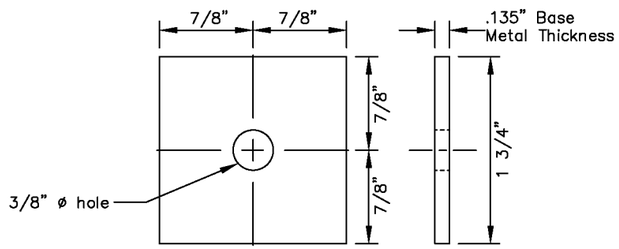
EYE BOLT



FLAT PLATE WASHER



RECTANGULAR POST BOLT WASHER



SQUARE STEEL WASHER

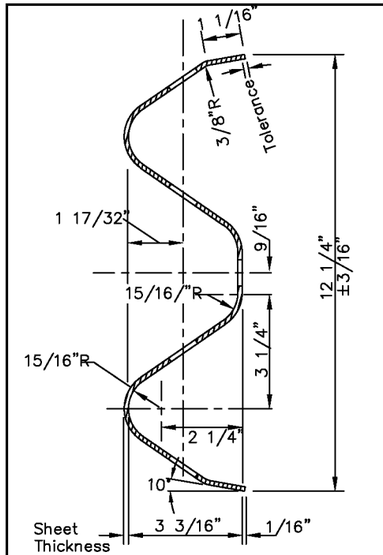
REVISIONS		
Date	Description	By
3/15/99	Delete BCT Hardware	KJS

State of Alaska
Department of Transportation
& Public Facilities

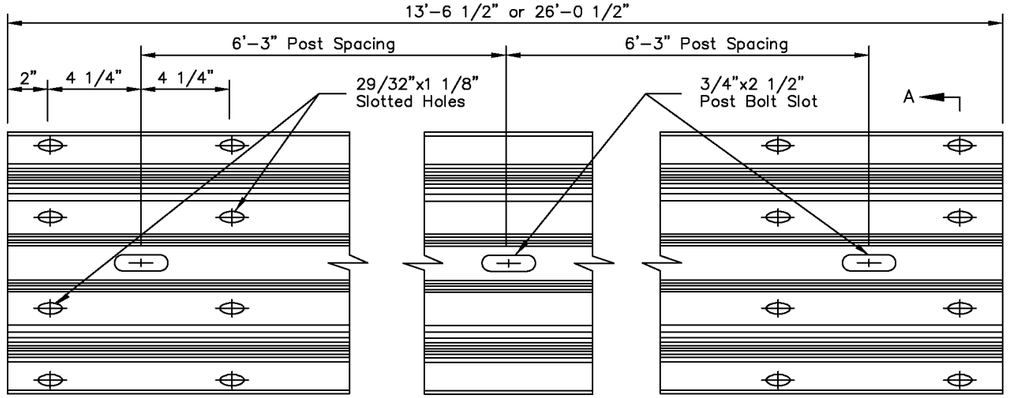
STANDARD GUARDRAIL HARDWARE
(NUTS, BOLTS, WASHERS)

APPROVED
Date 5/31/12

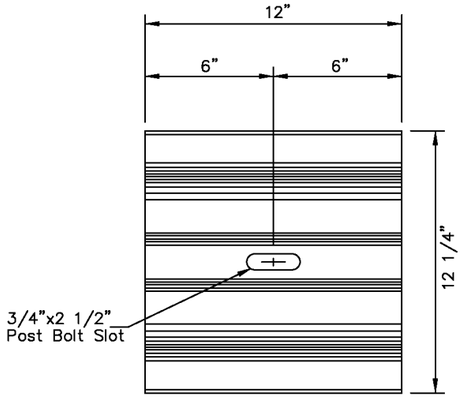
G-00.02



SECTION A–A



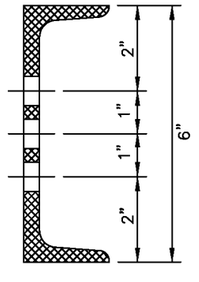
STANDARD W–BEAM PANEL



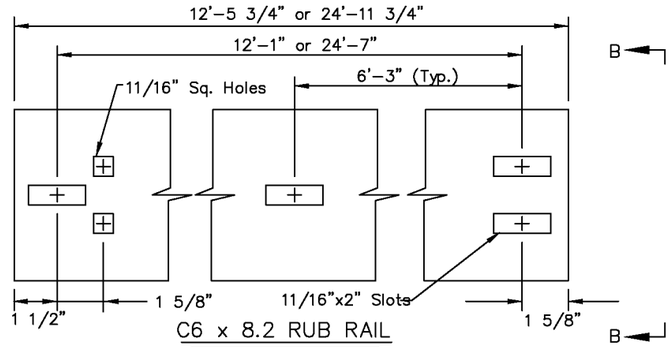
W–BEAM BACKUP PLATE

GENERAL NOTES:

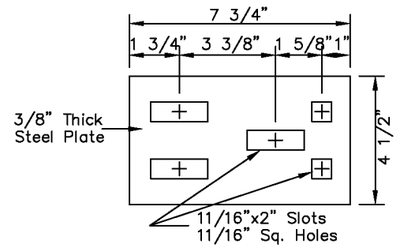
1. Provide hardware compliant with the AASHTO/AGC/ARTBA "A Guide to Standardized Highway Barrier Hardware, latest edition.
2. Install back–up plates between blockouts and w–beam or thrie–beam rail at intermediate (non–splice) posts when steel blockouts are used but not with wood, rubber, plastic, or other approved blockouts.
3. Provide Thrie beam and W–beam compliant with AASHTO M180A. Use 12 gauge (0.105") thick steel for both.



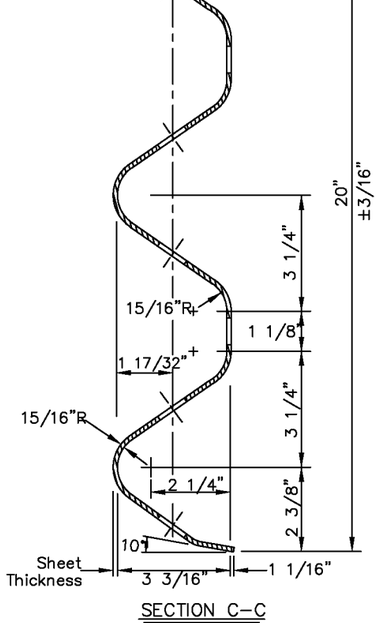
SECTION B–B



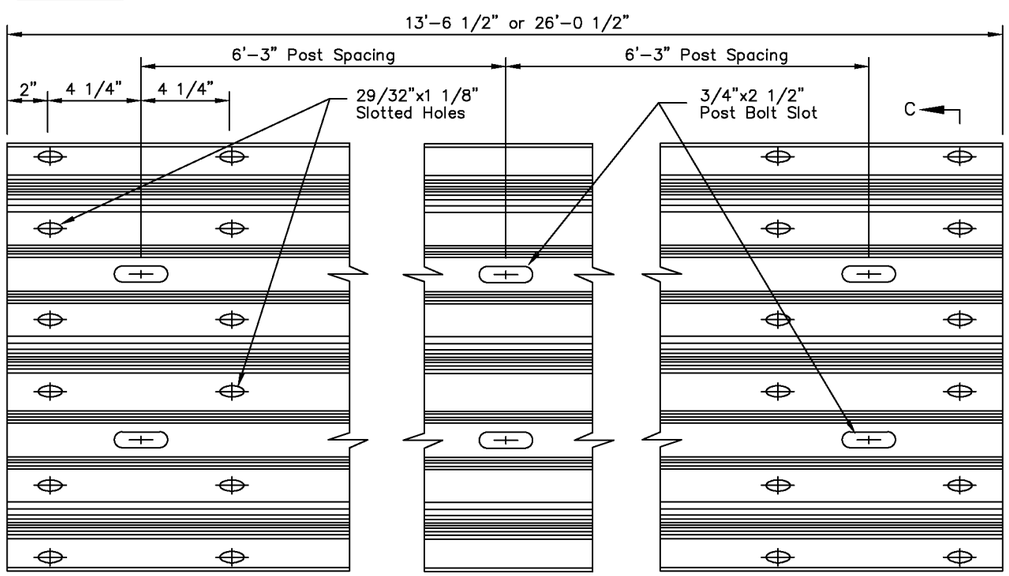
C6 x 8.2 RUB RAIL
ASTM A36 STEEL



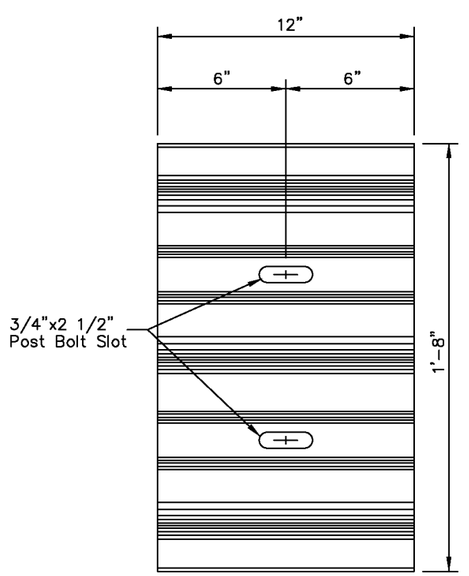
SPLICE PLATE
ASTM A36 STEEL



SECTION C–C



STANDARD THRIE BEAM PANEL



THRIE BEAM BACKUP PLATE

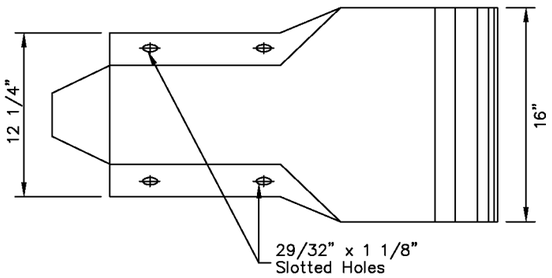
REVISIONS		
Date	Description	By
4/28/10	Revise General Notes	KJS

State of Alaska
Department of Transportation
& Public Facilities

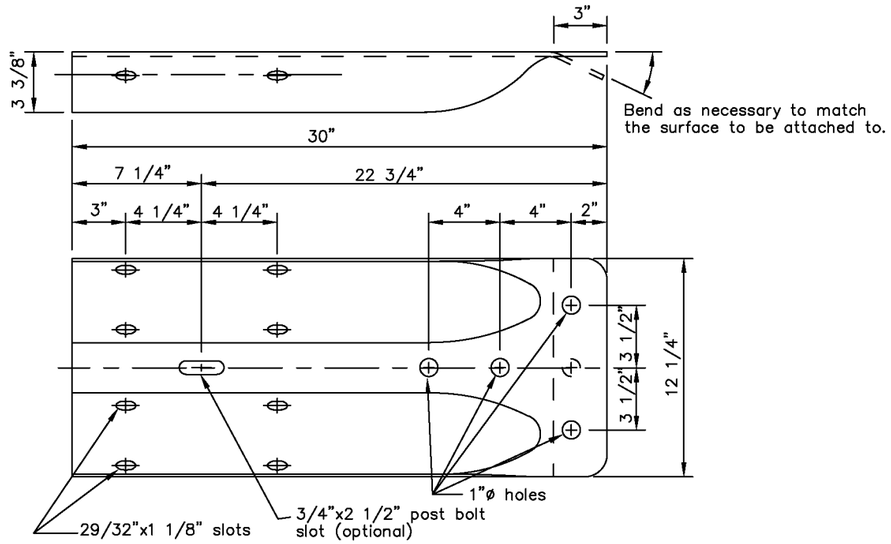
STANDARD GUARDRAIL HARDWARE (RAILS AND SPLICES)

APPROVED
49TH STATE OF ALASKA
Kurtis J. Smith
CE–7347
4/28/10
Date 5/31/12

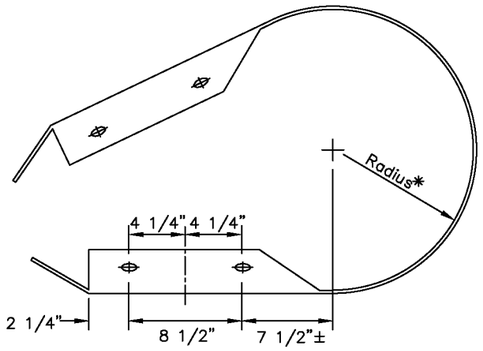
G–00.02



PROFILE



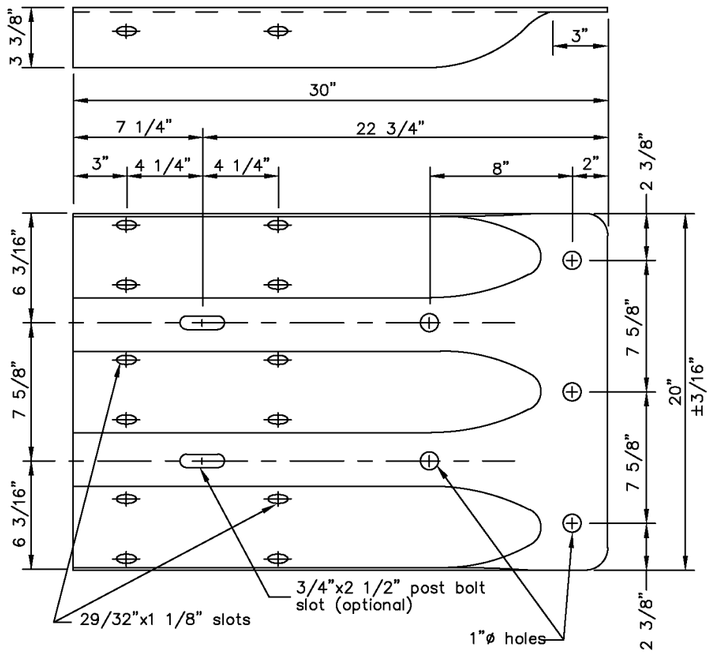
STANDARD W-BEAM TERMINAL CONNECTOR



W-BEAM PLAN VIEW

*Radius to be specified on the plans

STANDARD W-BEAM END SECTION



STANDARD THRIE BEAM TERMINAL CONNECTOR

GENERAL NOTES:

1. W-Beam and Thrie Beam Terminal Connectors shall conform to AASHTO M180, Class B, Type 2.
2. W-Beam end sections shall conform to AASHTO M180, Class A, Type 2.
3. All covered hardware shall comply with the AASHTO/AGC/ARTBA "A Guide to Standardized Highway Barrier Hardware", latest edition.

REVISIONS		
Date	Description	By
3/15/99	Delete Thrie End Sect.	KJS

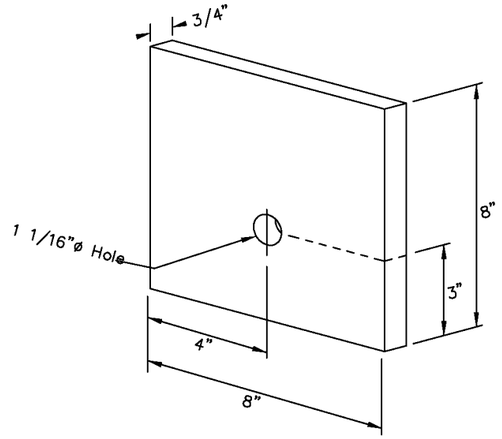
State of Alaska
Department of Transportation
& Public Facilities

STANDARD GUARDRAIL HARDWARE (TERMINAL CONNECTORS)

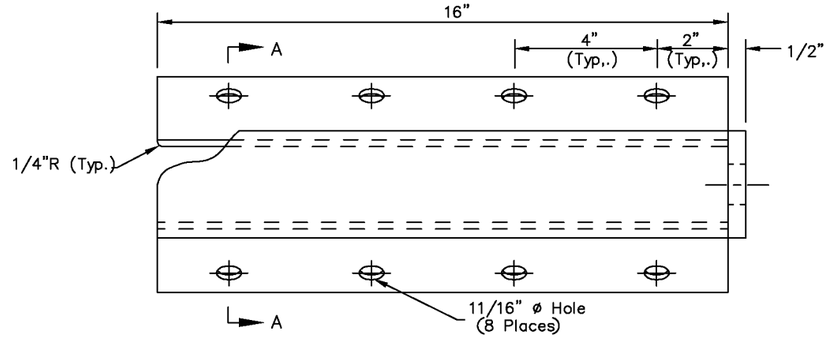
APPROVED
Date 5/31/12

4/28/10

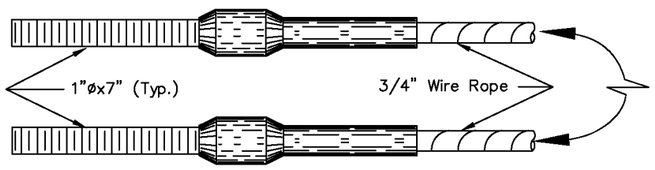
G-00.02



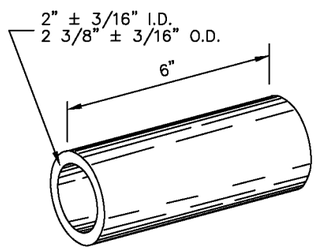
BEARING PLATE for CRT TERMINAL ANCHOR



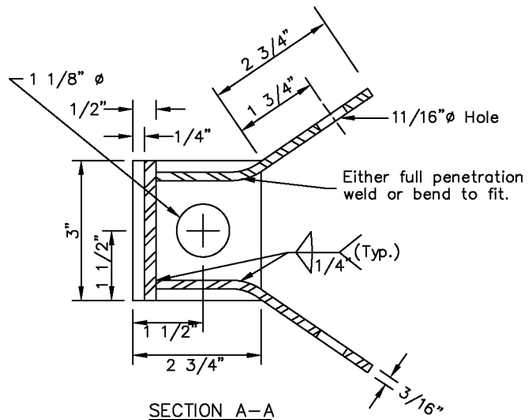
CABLE ANCHOR PLATE



SWAGED FITTING DETAIL



SLEEVE DETAIL

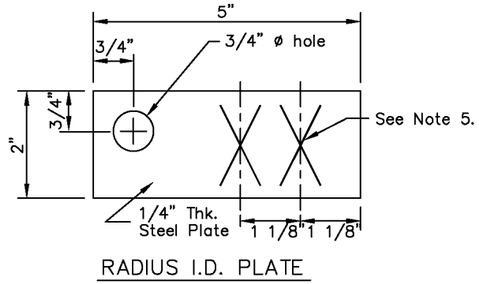


SECTION A–A

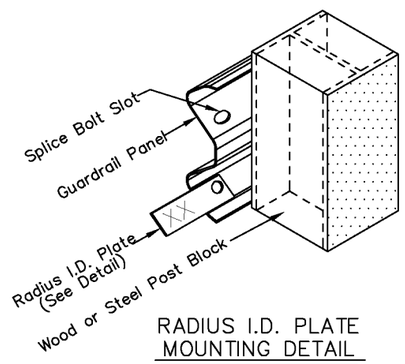
CONTROLLED RELEASE TERMINAL HARDWARE DETAILS

GENERAL NOTES:

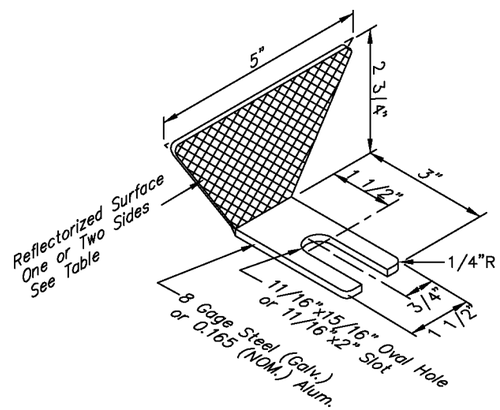
1. Cable Anchor Plate may be formed in single unit or welded fabrication.
2. Anchor Cable Assembly shall conform to AASHTO M–30 with Type II Wire Rope.
3. Sleeve for Wood Posts shall conform to the requirements of ASTM A120 and shall be of 2–inch galvanized standard pipe. Sleeve shall be a tight, pressed fit in post.
4. Bolts, nuts and washers shall conform to ASTM A–325 and galvanized in accordance with ASTM A–153.
5. Radius ID plates shall be attached to all shop–bent guardrail sections. They shall be bolted to the back side of the guardrail panel with the lower splice bolt nearest the P.C. of the radius.
6. Rail bend radius in feet shall be shown as "XX" on the radius ID plate. Digits shall be etched or stamped and have a min. height of 1 1/2" and a max. width of 3/4". The plate shall be galvanized after digits are marked.
7. All covered hardware shall comply with the AASHTO/AGC/ARTBA "A Guide to Standardized Highway Barrier Hardware", latest edition.



RADIUS I.D. PLATE



RADIUS I.D. PLATE MOUNTING DETAIL



GUARDRAIL REFLECTOR

Guardrail Reflectors

Type	Color	Reflectorized
A	White	Front & Rear
B	White	Front
C	Yellow	Front
D	Yellow	Front & Rear

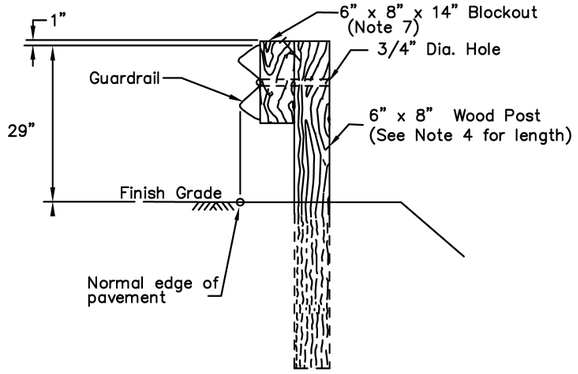
REVISIONS		
Date	Description	By
3/15/99	Delete BCT Hardware	KJS

State of Alaska
Department of Transportation & Public Facilities

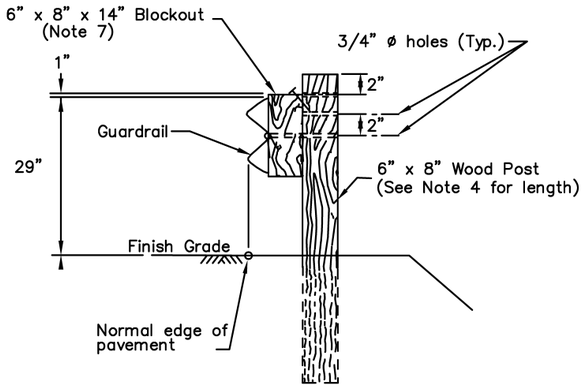
STANDARD GUARDRAIL HARDWARE (MISCELLANEOUS)

APPROVED
Date 5/31/12

G–00.02

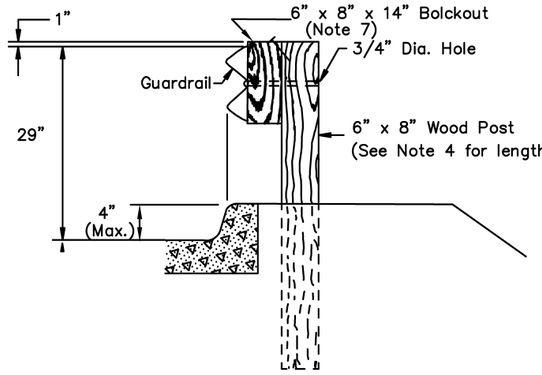


TYPE I POST INSTALLATION



TYPE II POST INSTALLATION

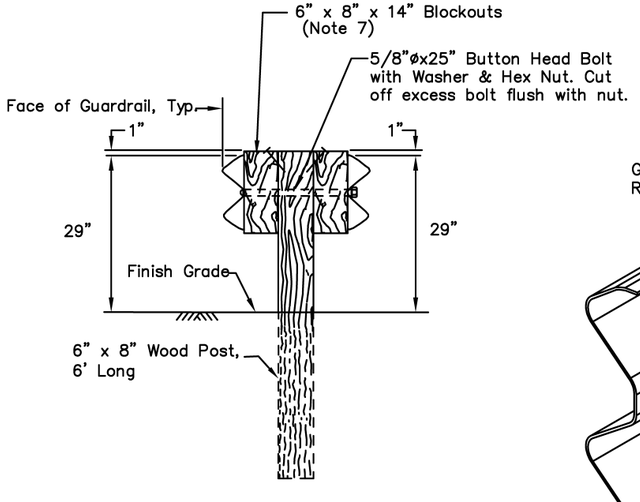
(Facilitates raising rail for future overlays.)



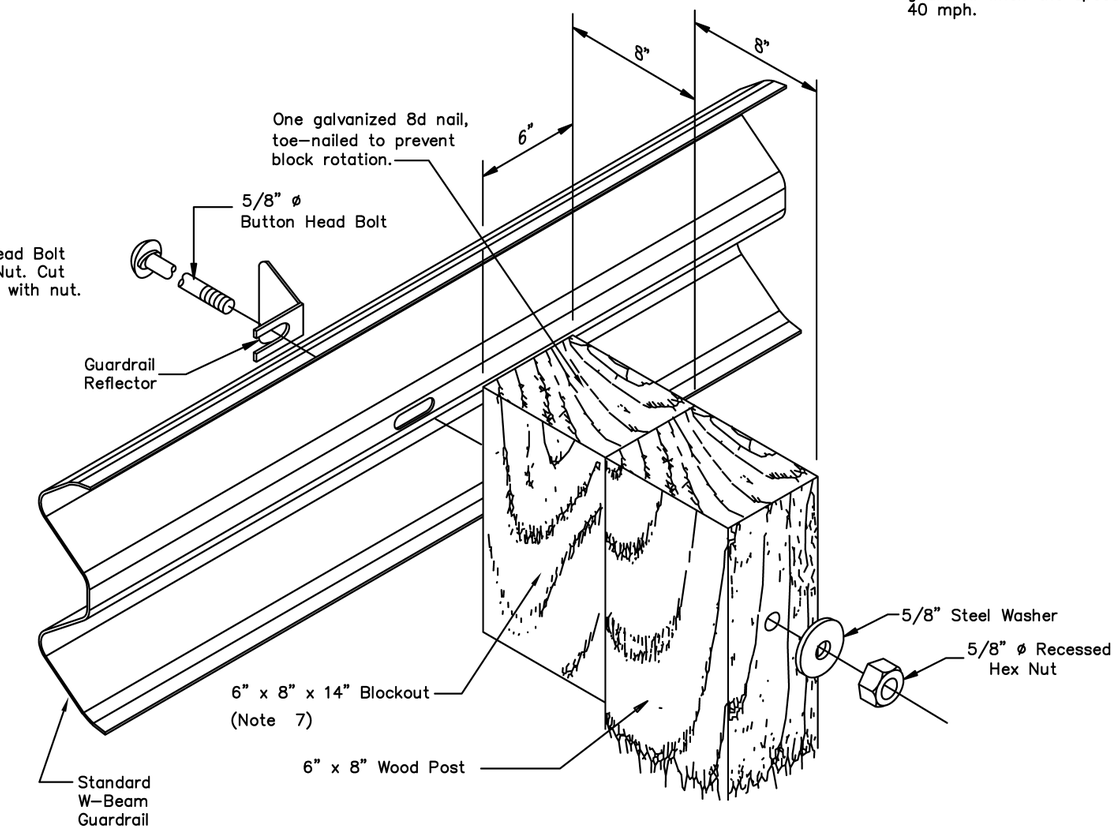
CURB DETAIL

TYPE III POST INSTALLATION

NOTE: Curb should not be installed with guardrail when the speed limit exceeds 40 mph.



TYPE IV DOUBLE SIDED INSTALLATION



ASSEMBLY DETAIL

(Type I post shown)

GENERAL NOTES:

1. Attach guardrail reflectors at 50' centers beginning with the first post. Use Type A reflectors unless specified otherwise.
2. Provide hardware compliant with the AASHTO/AGC/ARTBA "A Guide to Standardized Highway Barrier Hardware," latest edition.
3. See Standard Drawing G-00 for hardware details.
4. See Standard Drawing G-10 for post lengths corresponding to different combinations of slope and behind-post embankment width.
5. Typical post spacing is 6'-3" center to center.
6. This barrier is acceptable under NCHRP 350, TL-3.
7. Use wood, rubber, plastic, or other NCHRP 350 or MASH approved blockouts designed to be used with wood posts.
8. Use 25 linear foot transition to match height of existing or new rail elements and end treatments.

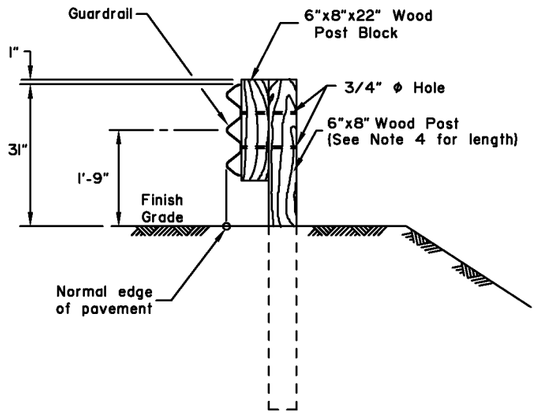
REVISIONS		
Date	Description	By
12/1/87	2'-0" behind post	Gdo
5/15/89	Ref S4S to rough sawn	Gdo
4/1/93	Hinge point note	Gdo
1/1/96	Del. hardware/ add type II	Gdo
3/15/99	Post length and misc	Gdo
4/1/13	Double-sided detail and increase g.r. height	JCJ

State of Alaska
Department of Transportation
& Public Facilities

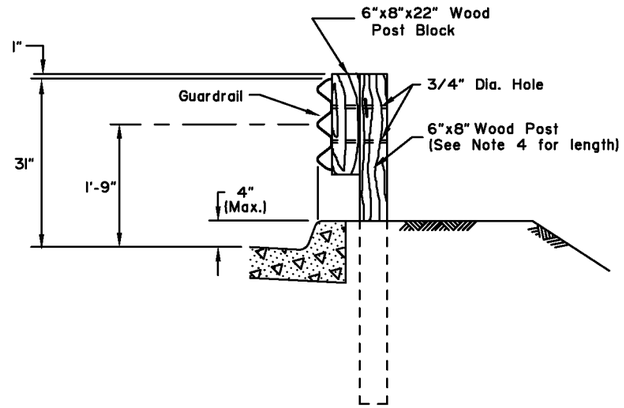
WOOD POST W-BEAM GUARDRAIL

APPROVED
Jefferson C. Jeffers
CE 12295
4/1/13
Date 05/15/13

G-04.10W



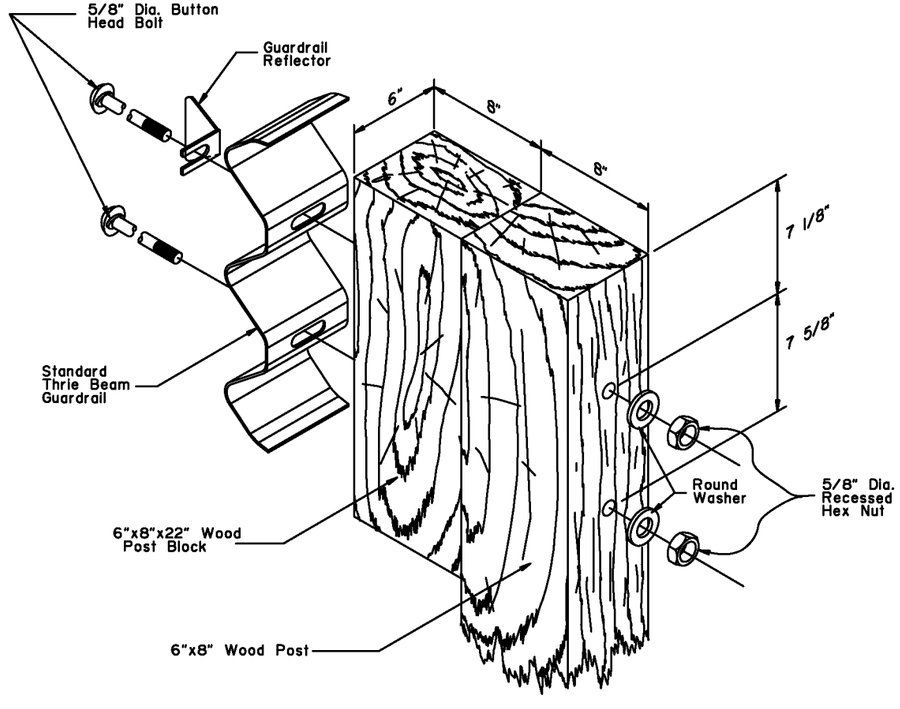
TYPE I POST INSTALLATION



CURB DETAIL

TYPE III POST INSTALLATION

NOTE: Curb should not be installed with guardrail when the speed limit exceeds 40 mph.



ASSEMBLY DETAIL

GENERAL NOTES:

1. Guardrail Reflectors shall be mounted at 50' centers and placed in the upper indentation of the rail panel beginning with the first guardrail post. Type A Reflectors shall be used unless specified otherwise on the plans.
2. All covered hardware shall comply with the AASHTO/AGC/ARTBA "A Guide to Standardized Highway Barrier Hardware", latest edition.
3. See standard drawings G-00, "Standard Guardrail Hardware" for hardware details.
4. See standard drawing G-10, "Beam Guardrail Post Installation" for post lengths corresponding to different combinations of slope and behind-post embankment width.
5. Typical post spacing is 6'-3" center to center.
6. This barrier is acceptable under NCHRP 350, TL3.

REVISIONS		
Date	Description	By
5/15/89	Post length--6'-6"	Gdo
4/1/93	Redraft	Gdo
1/1/96	Delete Hardware Details	Gdo
3/15/99	Mod. post length & misc.	KJS

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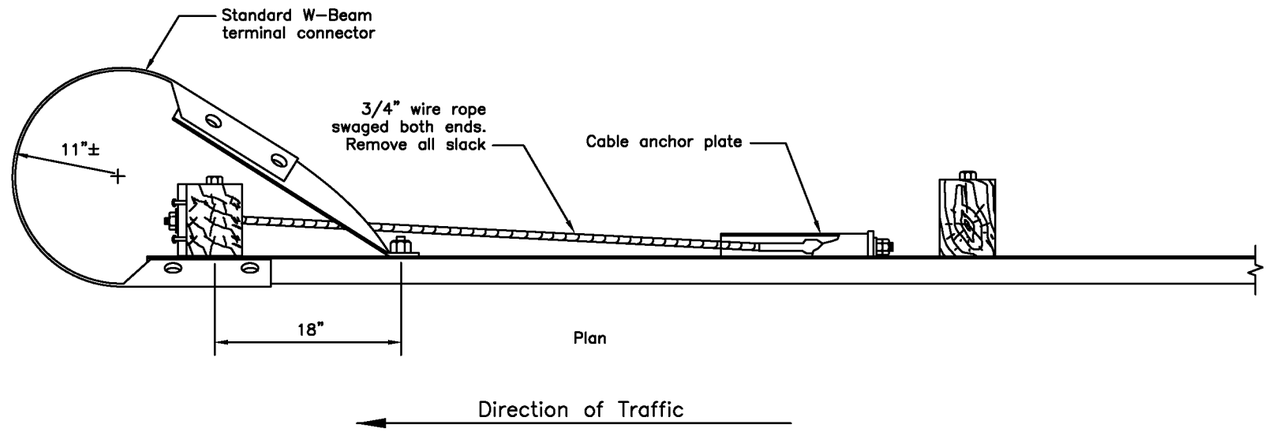
WOOD POST THRIE BEAM GUARDRAIL

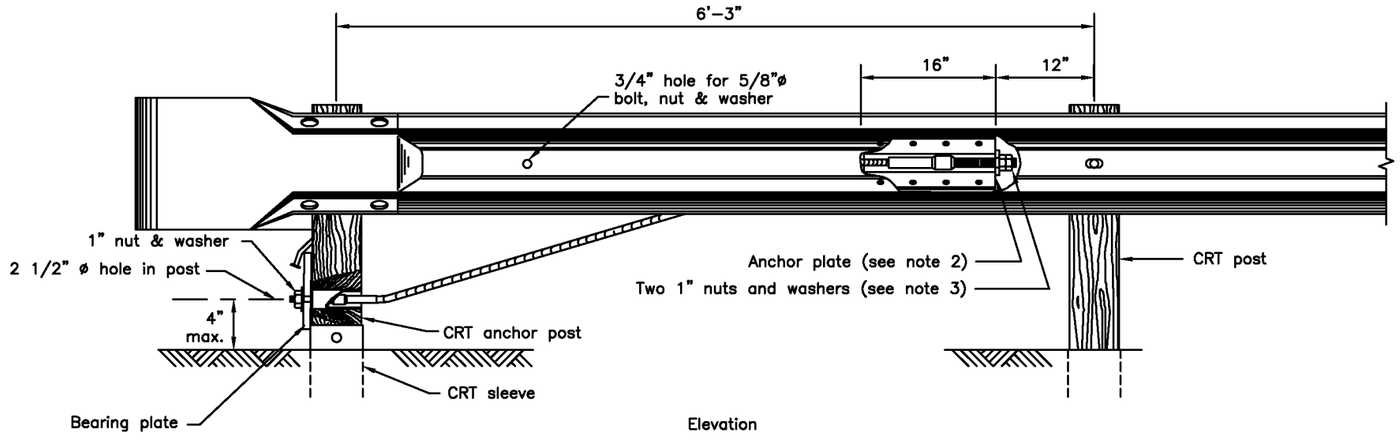
APPROVED

Date 12/1/87

G-09.04W

G-13.00





TERMINAL ANCHOR

GENERAL NOTES:

1. Hardware details not shown here shall conform to drawings G–00, G–04W, G–25W
2. Fasten anchor plate to rail with eight 5/8" x 1 1/2" machine bolts with hex nut and washer. Place washer on face side of rail.
3. Torque outside nut against inside nut a minimum of 100 ft–lbs.
4. Toenail bearing plate with two 10d galvanized nails at corners to prevent turning.
5. All covered hardware shall comply with the AASHTO/AGC/ARTBA "A Guide to Standardized Highway Barrier Hardware", latest edition.
6. This assembly will typically be used on the downstream ends of guardrail runs on one–way streets.
7. This assembly is generally not intended for divided highway applications due to possible 2–way construction detours. Designer should consider future detouring needs when deciding whether to use this terminal.
8. This design does not meet NCHRP 350 TL 3 standards. It is not intended as a crash worthy barrier end treatment for approach end impacts.

REVISIONS		
Date	Description	By

Sheet 1 of 1

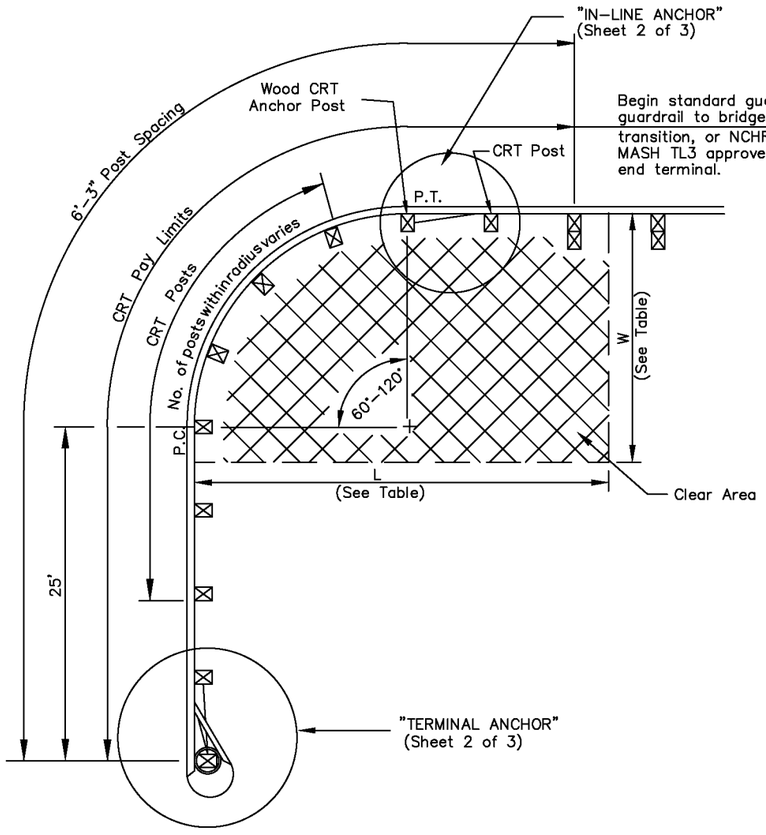
State of Alaska
Department of Transportation
& Public Facilities

W BEAM GUARDRAIL
DOWNSTREAM END
ANCHOR

APPROVED

Date 2/28/03

G–13.00



CONTROLLED RELEASE TERMINAL PLAN

CONTROLLED RELEASE TERMINAL (CRT) POST

GENERAL NOTES:

CRT RADIUS TABLE *					
Curve Radius, Ft. (Rounded)	Curve Length	Number of Rail Sections	Clear Area Length (L)	Clear Area Width (W)	** Number of Posts
8'	12.50'	1.0	25	15	5
12'	18.75'	1.5	25	15	6
16'	25.00'	2.0	30	15	7
20'	31.25'	2.5	33	15	8
24'	37.50'	3.0	37	20	9
28'	43.75'	3.5	40	20	10
32'	50.00'	4.0	45	20	11
36'	56.25'	4.5	50	20	12

* The table applies only to 90° approaches or driveways.

**Number of CRT posts includes one for the In-Line Anchor.

1. Do not bolt rail to central post on 8' radius CRT.
2. CRTs on 60° to 120° approaches are allowed provided they are constructed with posts at the P.C. and P.T. and the posts are placed on uniform 6'-3" centers.
3. CRT connections are not limited to what is shown. Terminal Anchors, NCHRP 350 or MASH TL3 compliant guardrail end terminals, guardrail to bridge-rail transitions, or standard guardrail may be attached to either end, or both ends of the apparatus.
4. The Terminal Anchor shall only be placed on approaches where motorists are required to stop or yield.
5. The Clear Area shall be free of fixed object hazards. Any signs or other highway appurtenances in the clear area must be mounted on NCHRP 350 or MASH compliant breakaway supports.

REVISIONS		
Date	Description	By
4/28/10	*Reorient in-line anchor*	*KJS*

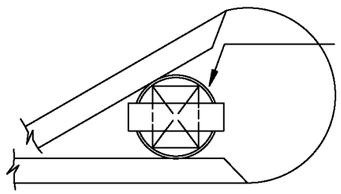
State of Alaska
Department of Transportation
& Public Facilities

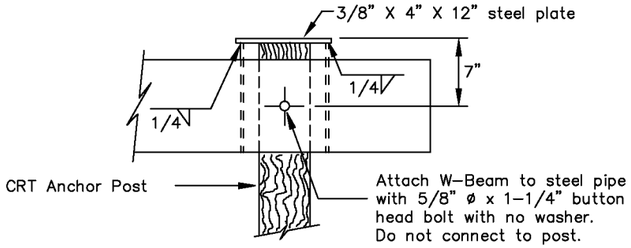
WOOD POST CONTROLLED RELEASE TERMINAL (CRT)

APPROVED

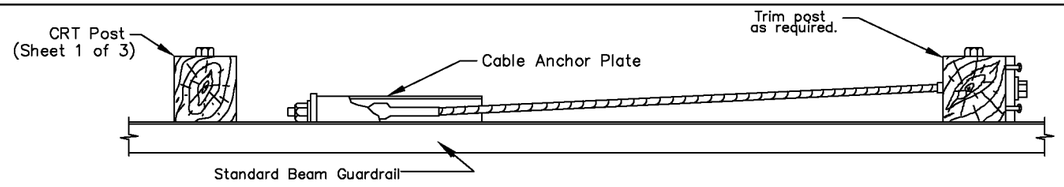
Date *5/31/12*

G-25.21W

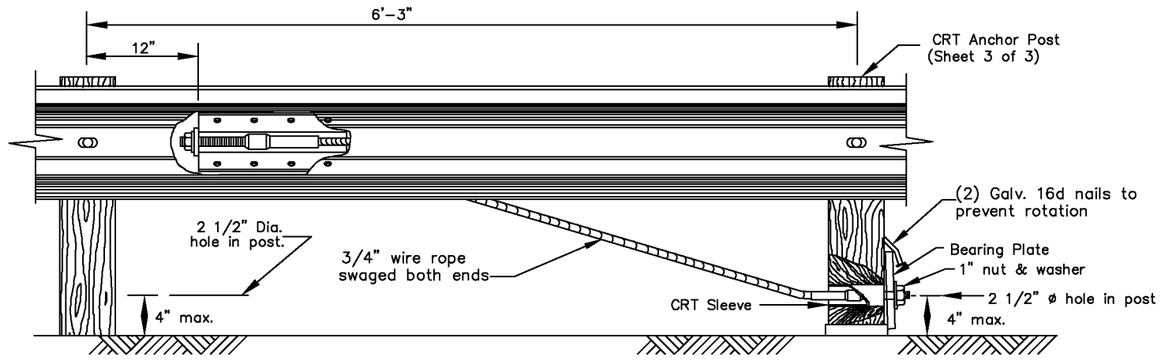




ROTATING POST CAP

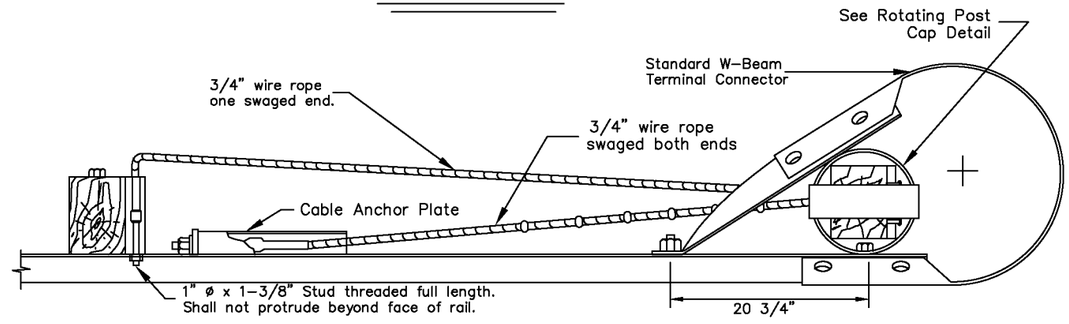


PLAN

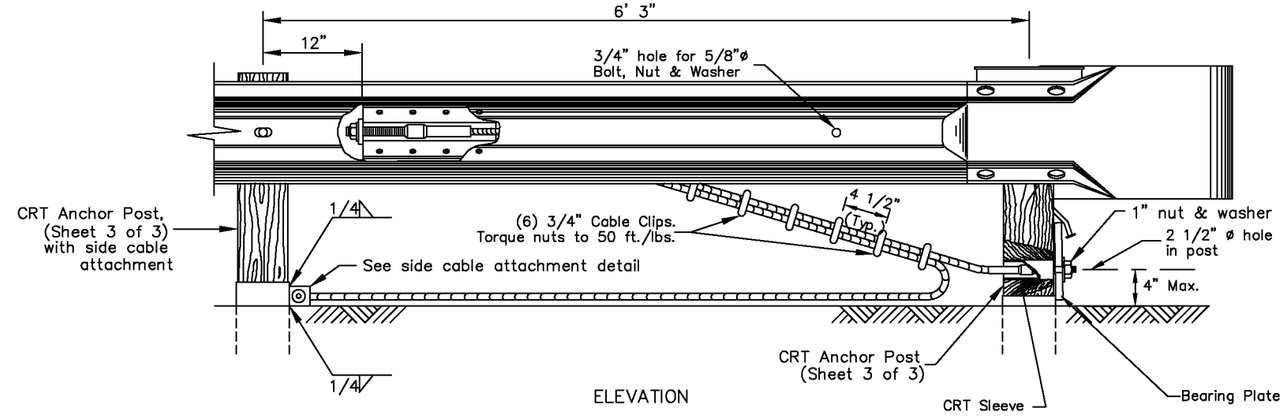


ELEVATION

IN–LINE ANCHOR

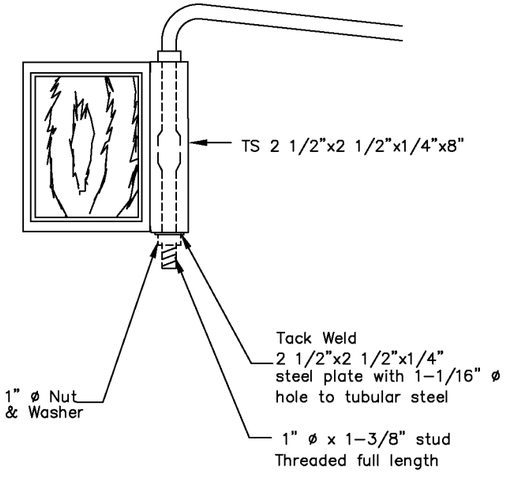


PLAN



ELEVATION

TERMINAL ANCHOR



SIDE CABLE ATTACHMENT

GENERAL NOTES:

1. Hardware details not shown here shall conform to drawings G–04 & G–00.
2. All covered hardware shall comply with the AASHTO/AGC/ARTBA "A Guide to Standardized Highway Barrier Hardware", latest edition.

REVISIONS		
Date	Description	By

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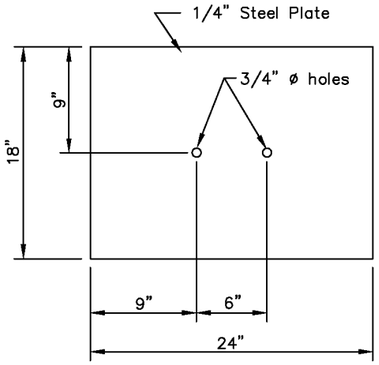
WOOD POST CONTROLLED RELEASE TERMINAL ANCHORS

APPROVED
Date 5/31/12

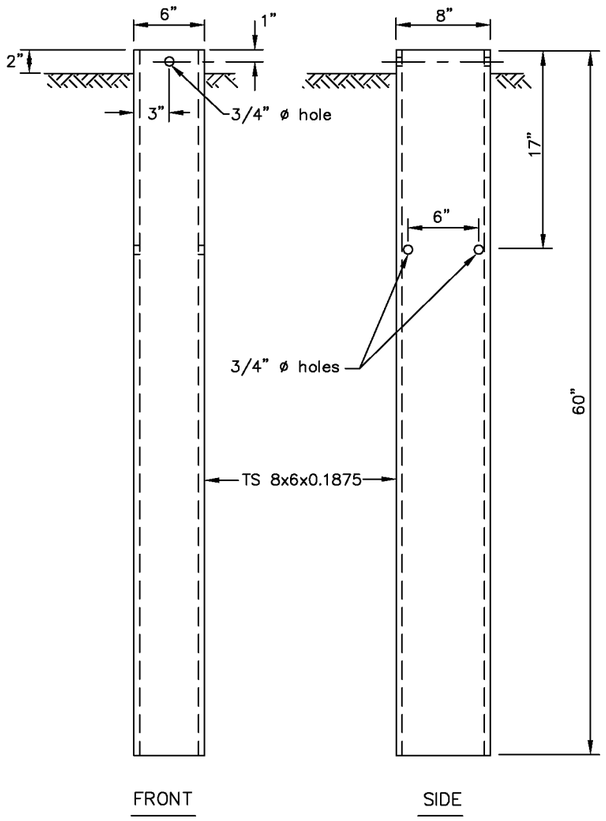
G–25.21W

GENERAL NOTES:

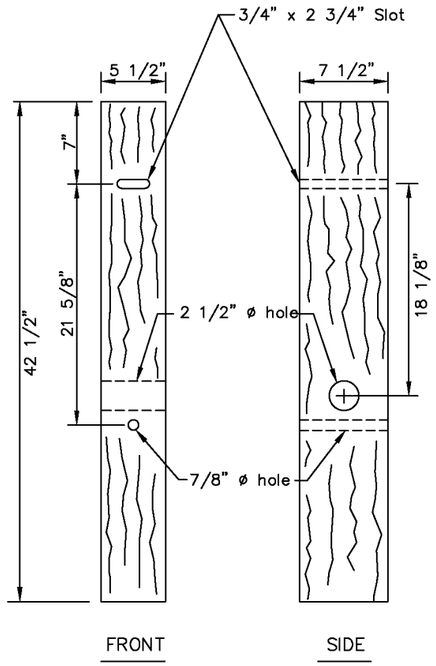
1. Hardware details not shown here shall conform to drawings G–04 & G–00.
2. All covered hardware shall comply with the AASHTO/AGC.ARTBA "A Guide to Standardized Highway Barrier Hardware", latest edition.
3. Each CRT Anchor Post with a cable attached shall conform to these details except the 2nd post in the Terminal Anchor, which shall conform except for the method of cable attachment (See sheet 2 of 3).



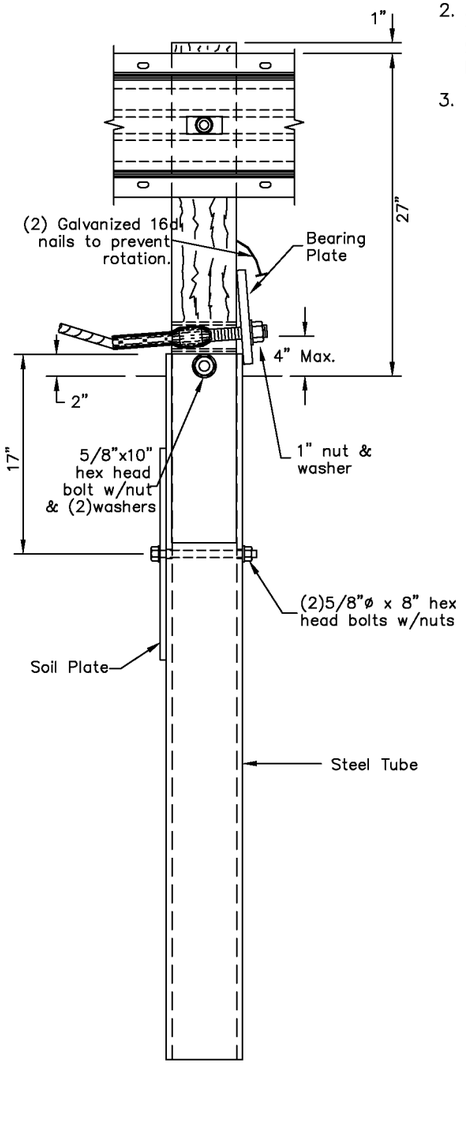
STEEL SOIL PLATE



STEEL TUBE



WOOD POST



ASSEMBLY

REVISIONS		
Date	Description	By

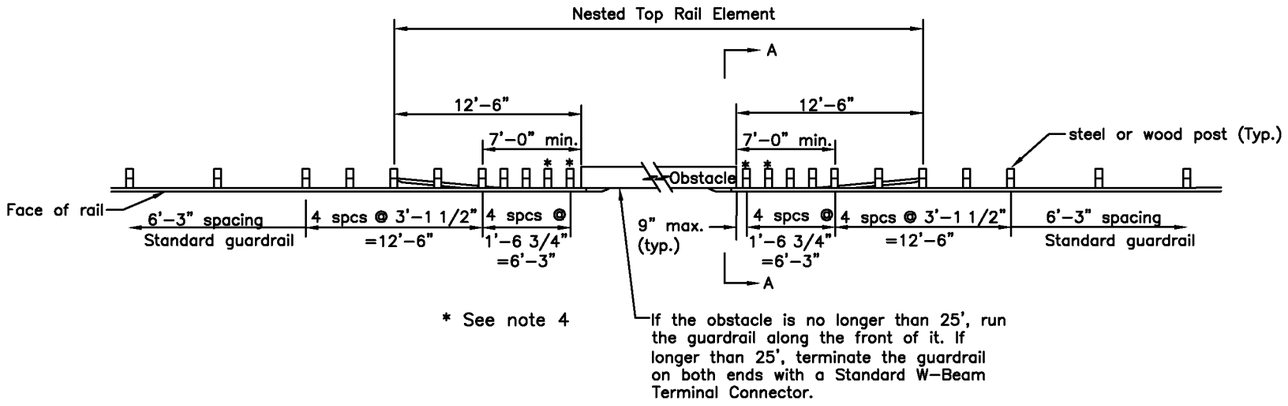
State of Alaska
Department of Transportation
& Public Facilities

WOOD POST CONTROLLED RELEASE TERMINAL ANCHOR POSTS

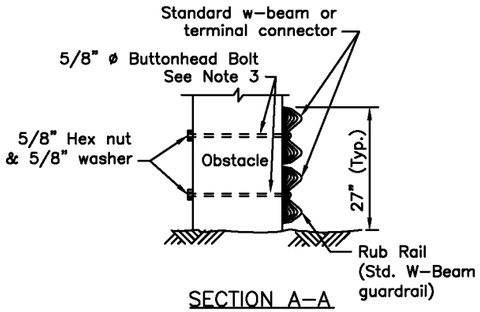
APPROVED
49TH STATE
Kurtis J. Smith
4/28/10
Date 5/31/12

G–25.21W

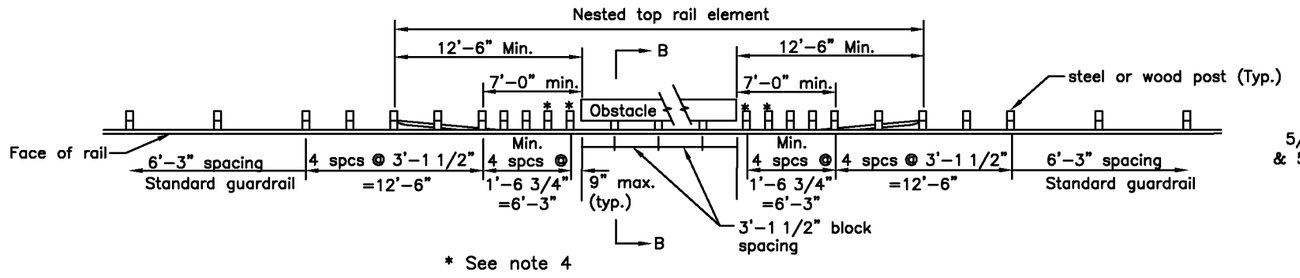
G-27.11



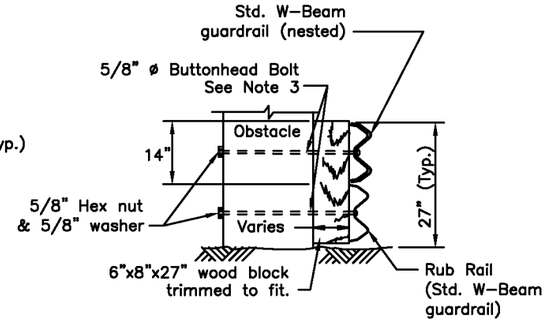
CASE A – OBSTACLE AT BACK OF W-BEAM



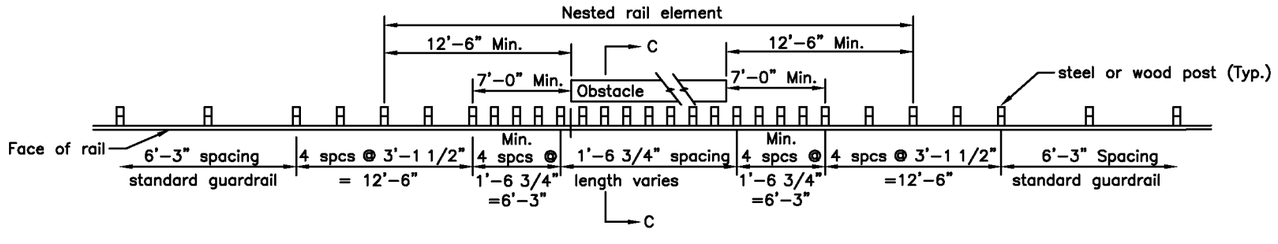
SECTION A–A



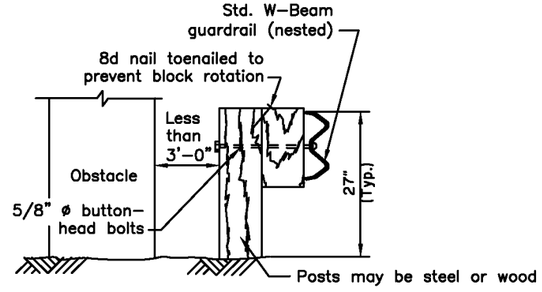
CASE B – OBSTACLE AT BACK OF BLOCK-OUT



SECTION B–B



CASE C – LESS THAN THREE FEET OF CLEARANCE TO BACK OF POST



Use Std. W–Beam rail, post, wood block and hardware (See G–04S and G–04W).

SECTION C–C

NOT TO SCALE

GENERAL NOTES:

1. Hardware details not shown here shall conform to drawings G–04, G–00, & G–10.
2. No stiffening is required if the clearance between the back of post and the obstacle is 3 feet or greater,
3. Guardrail that is connected to an obstacle shall be through–bolted or shall have an alternate connection that develops the full tensile strength of the bolt. Alternate connections must be approved by the Engineer.
4. Posts marked with * shall be 8' long W8x13 steel or 8"x8" wood with blockouts as shown on G–04 (without notches).
5. Install nested rail inside standard rail elements. Ensure that exposed ends of lapped rail elements face away from approaching traffic.
6. These barriers are NCHRP 350, TL 3 approved.

REVISIONS		
Date	Description	By
10/31/03	*Added Sheet 2 For Rubrail Transition*	*LRG*

Sheet 1 of 2

State of Alaska
Department of Transportation & Public Facilities

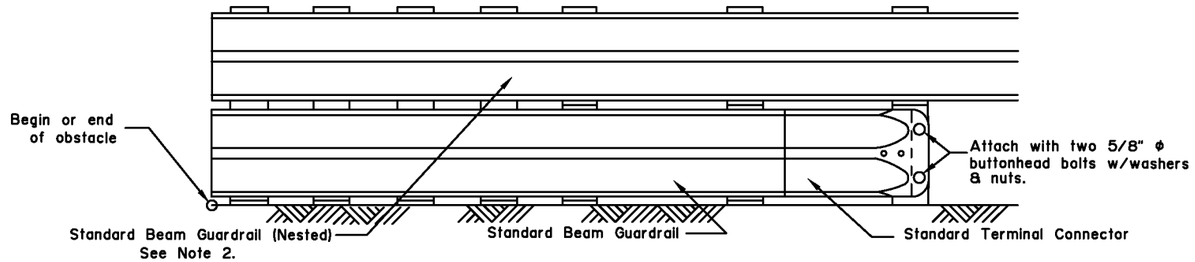
GUARDRAIL STIFFENING AT OBSTACLES

APPROVED

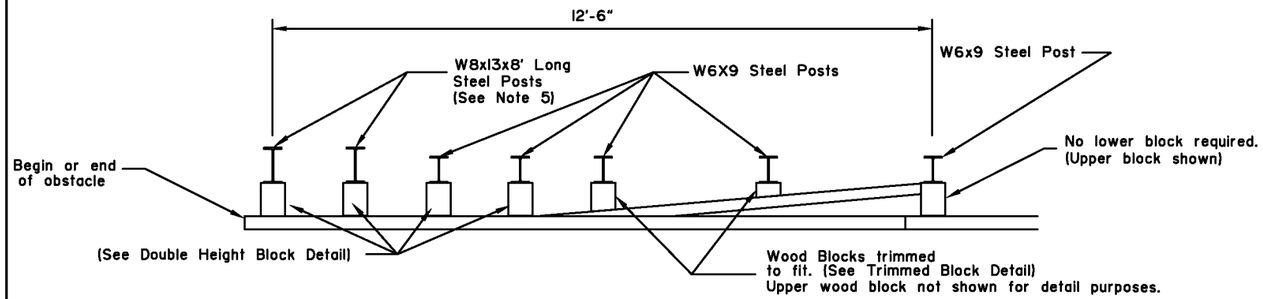
Date 10/31/03

G-27.11

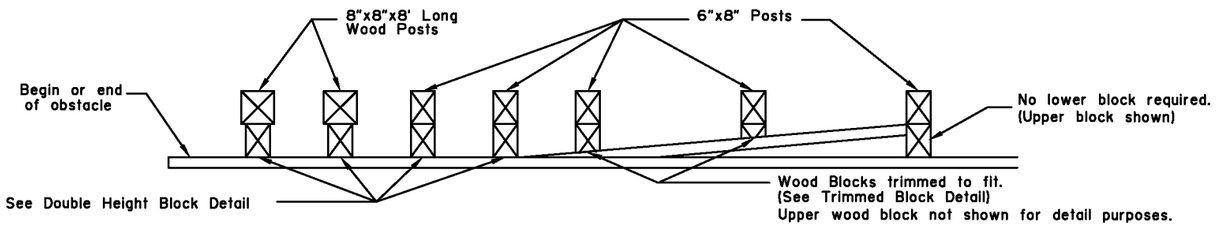
G-27.11



RUBRAIL TRANSITION ELEVATION (STEEL & WOOD POST)

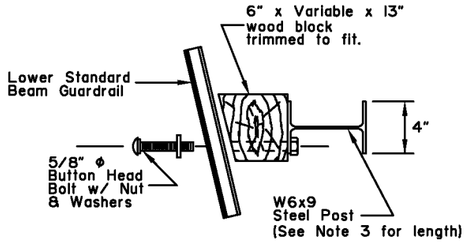


RUBRAIL TRANSITION PLAN (STEEL POST)



RUBRAIL TRANSITION PLAN (WOOD POST)

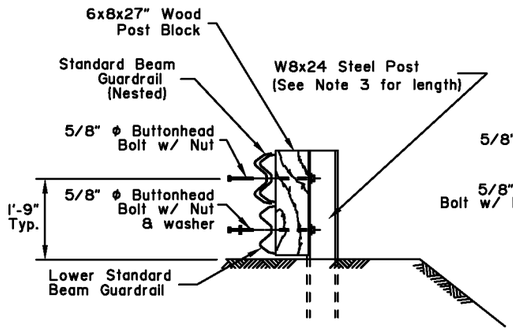
STEEL POST DETAILS



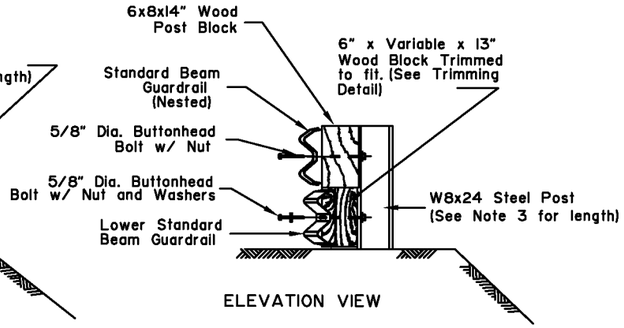
PLAN VIEW
TRIMMED BLOCK

GENERAL NOTES:

1. Post spacings shall be per sheet 1 of 2.
2. The 12'-6" section of guardrail immediately adjacent to the obstacle rail shall be nested.
3. See standard drawing G-10, "Beam Guardrail Post Installation" for post lengths corresponding to different combinations of slope and behind-post embankment widths.
4. Hardware details not shown here shall conform to drawings G-04 & G-00.
5. Blockouts shall conform to Standard Drawing G-04, except that no notch is required on W8x13 steel posts.

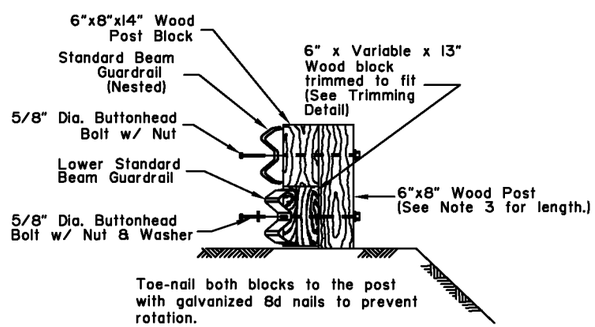


DOUBLE HEIGHT BLOCK

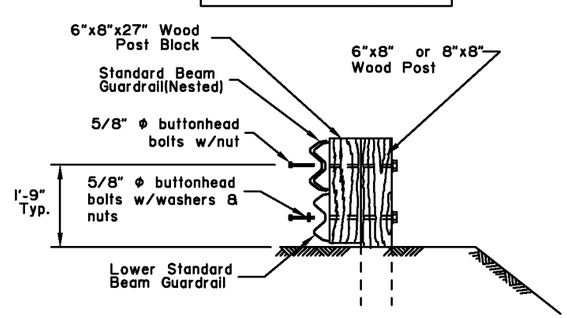


ELEVATION VIEW
TRIMMED BLOCK

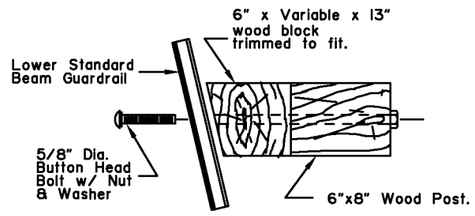
WOOD POST DETAILS



ELEVATION VIEW
TRIMMED BLOCK



DOUBLE HEIGHT BLOCK



PLAN VIEW
TRIMMED BLOCK

NOT TO SCALE

REVISIONS		
Date	Description	By
10/31/03	Added Sheet 2 For	LRG
	Rubrail transition	

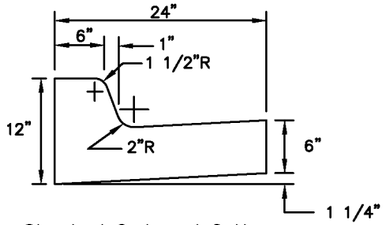
Sheet 2 of 2

State of Alaska
Department of Transportation & Public Facilities

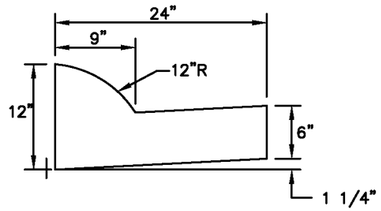
GUARDRAIL STIFFENING AT OBSTACLES

APPROVED
Lars H. Gregovich
CE-8065
Date 10/31/03

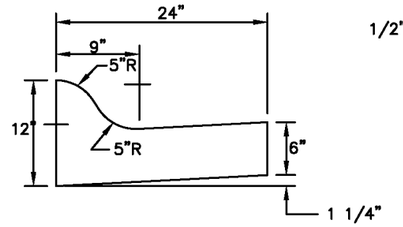
G-27.11



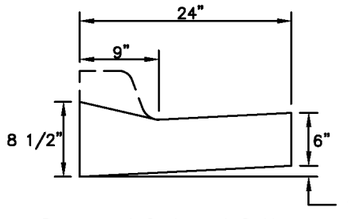
Standard Curb and Gutter



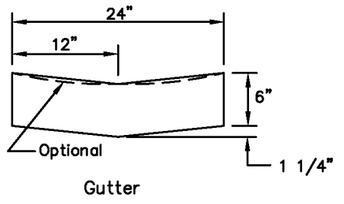
Expressway Curb and Gutter



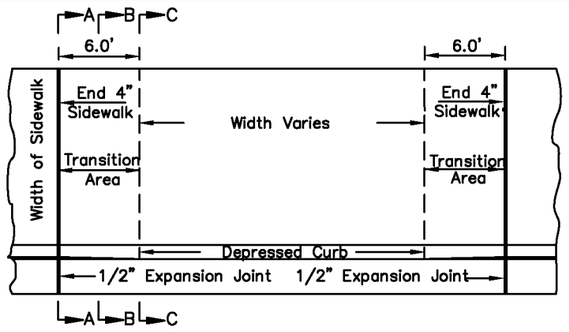
Mountable Curb and Gutter

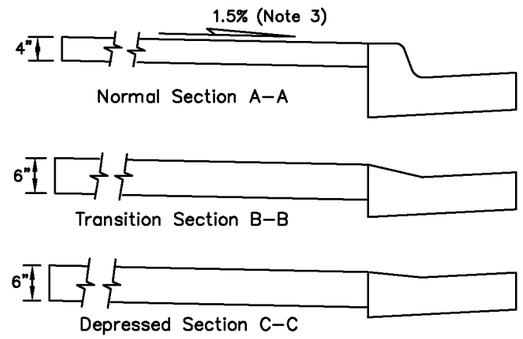


Depressed Curb and Gutter

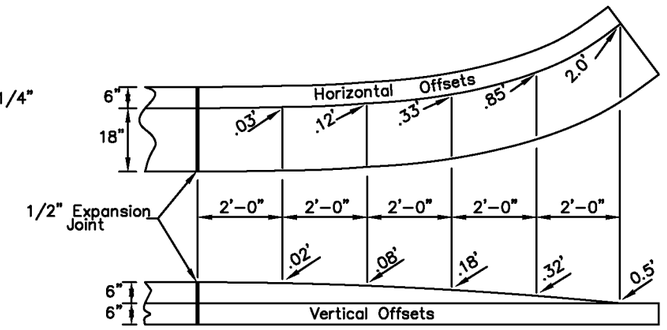


CURB and GUTTER DETAILS

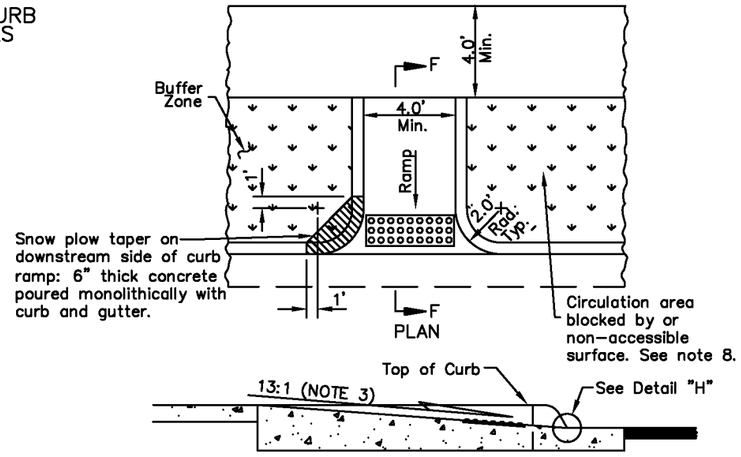




VEHICULAR CURB CUT DETAILS

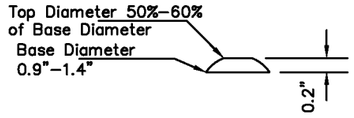


CURB and GUTTER TERMINATION TRANSITIONS

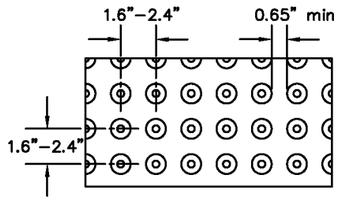


SECTION F–F

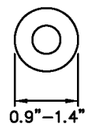
RETURNED CURB RAMP for PEDESTRIANS



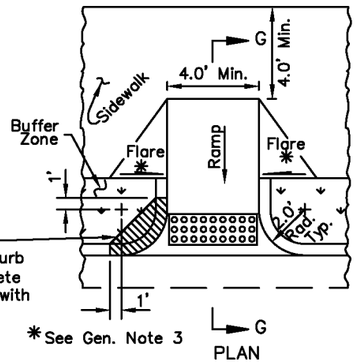
TRUNCATED DOME DETAIL

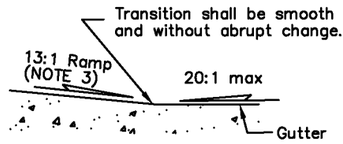


TEXTURE PATTERN DETAIL

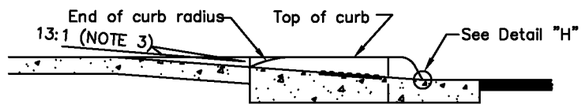


Truncated dome surface see note 9





DETAIL "H"



SECTION G–G

RETURNED CURB RAMP with SIDEWALK for PEDESTRIANS

GENERAL NOTES:

1. Use the type of curb and/or gutter specified on the plans.
2. Use Mountable or Expressway curbs on medians and traffic islands.
3. Construct ramp runs and landings of concrete, regardless of whether the sidewalk is asphalt or concrete.
4. Construct ramp slopes 13:1 or flatter, flare slopes 12:1 or flatter, and sidewalk cross slopes 1.5% or flatter. If conditions require, the Engineer may increase ramp slopes to 12:1 maximum. Construct grade breaks perpendicular to ramp runs.
5. Do not construct flare slopes steeper than 10:1 measured parallel to the curb line, ramp slopes steeper than 12:1, or sidewalk cross slopes steeper than 2% (50:1), except as provided under Note 6. These are the steepest slopes allowed by law.
6. Where sidewalk slope makes it necessary to lengthen a ramp run to avoid exceeding the allowable ramp slope, do not exceed a ramp length of 15 feet. The slope resulting from that run length is acceptable, even if it exceeds the maximum slope shown.
7. Provide a coarse broomed finish on ramp runs perpendicular to the ramp slope.
8. 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 details.
9. Install 24" detectable warning tiles for the full width of the ramp. Domes shall be in a square pattern. Align truncated dome pattern in the predominant direction of wheelchair travel to permit wheels to roll between domes.
10. 10. Construct curb ramps and detectible warning tiles in accordance with requirements for the American with Disabilities Act (ADA).

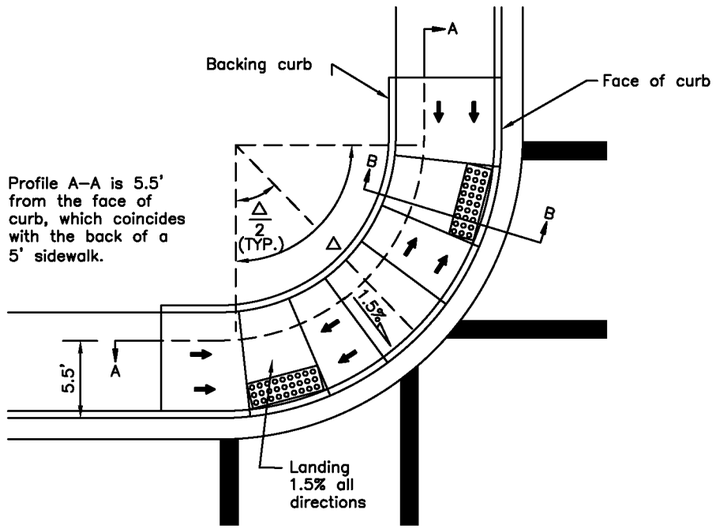
REVISIONS		
Date	Description	By
5/15/89	Added Curb Ramps	Gdo
4/1/93	Revised Detail "H"	Gdo
1/1/96	Gen. Note 3	Gdo
12/1/99	Delete Flared Ramp	KJS
5/31/12	ADA Updates	JCJ

State of Alaska
Department of Transportation & Public Facilities

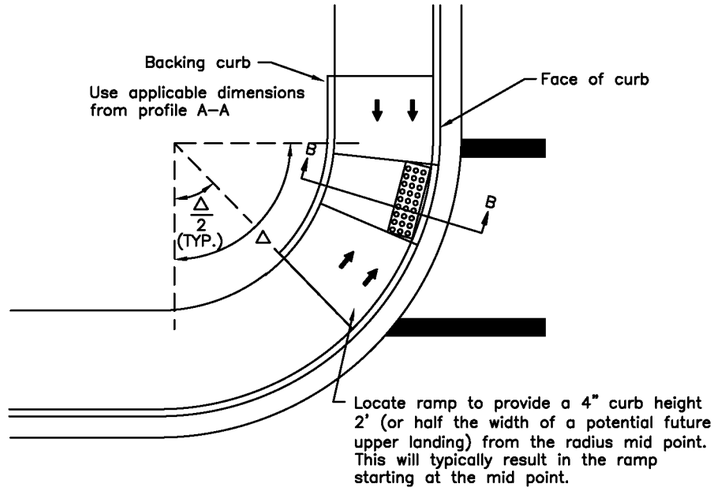
CURB CUT, CURB & GUTTER AND CURB RAMP DETAILS

APPROVED
Date 5/31/12

I-20.14

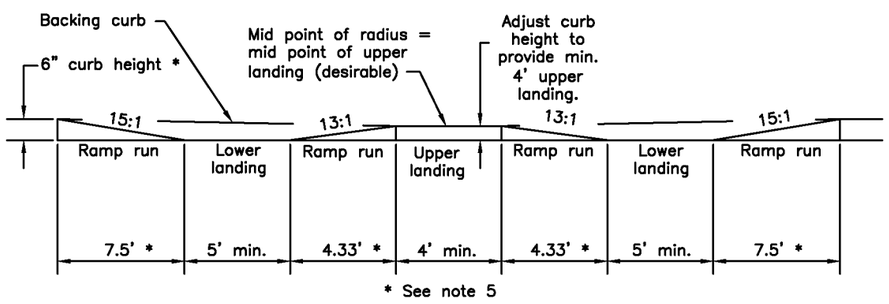


TWO CROSSING DIRECTIONS
At corner

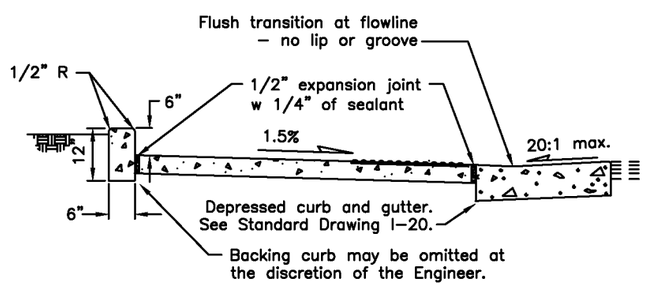


ONE CROSSING DIRECTION
At corner

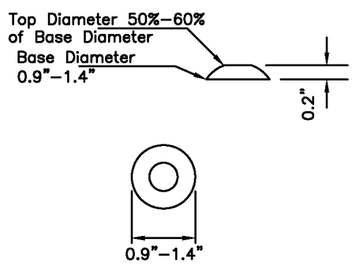
Truncated dome surface see note 12



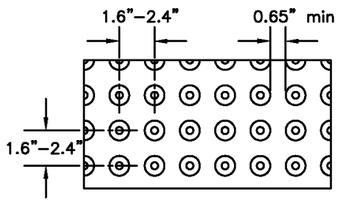
PROFILE A–A



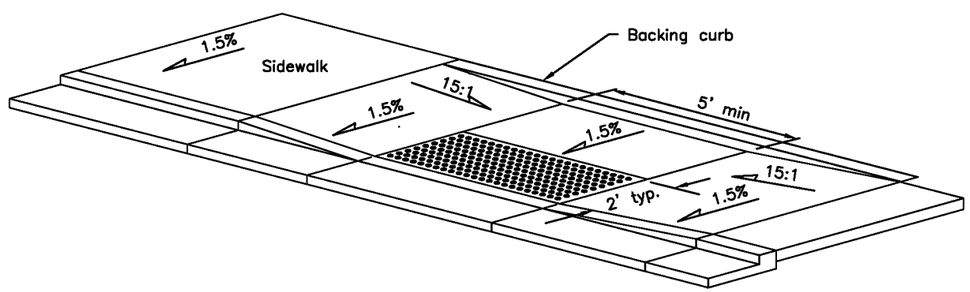
SECTION B–B



TRUNCATED DOME DETAIL



TEXTURE PATTERN DETAIL



MID–BLOCK

GENERAL NOTES

1. Parallel curb ramps are typically used when the sidewalk is at least 4' wide but not 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 Mid–Block detail.
3. See plans for ramp type at particular locations.
4. Construct ramp runs and landings of concrete, regardless of whether the sidewalk is asphalt or concrete.
5. Ramp run lengths are shown for 6" curb heights and no longitudinal sidewalk slope. For other heights and slopes, increase or decrease run and flare lengths to maintain the slopes shown.
6. Construct ramp slopes 13:1 or flatter, and sidewalk cross slopes 1.5% or flatter. If conditions require, the Engineer may increase slopes in accordance with Note 7. Construct grade breaks perpendicular to ramp runs.
7. Do not construct ramp slopes steeper than 12:1 or sidewalk cross slopes steeper than 2% (50:1), except as provided under Note 8. These are the steepest slopes allowed by law.
8. Where sidewalk slope makes it necessary to lengthen a ramp run to avoid exceeding the allowable ramp slope, do not exceed a ramp length of 15 feet. The slope resulting from that run length is acceptable, even if it exceeds the maximum slope shown.
9. Provide a coarse broomed finish running perpendicular to the curb on ramp runs and upper landings and parallel to the curb on lower landings.
10. 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.
11. Drainage inlets should not be located within marked crosswalks or, if crosswalks aren't marked, within the area a standard marked crosswalk would enclose. If that is unavoidable, install accessible grates, with openings no greater than 1/2" in any direction.
12. Install 24" detectable warning tiles for the full width of the ramp. Domes shall be in a square pattern. Align truncated dome pattern in the predominant direction of wheelchair travel to permit wheels to roll between the domes.
13. Construct curb ramps and detectible warning tiles in accordance with requirements for the American with Disabilities Act (ADA).

REVISIONS		
Date	Description	By
2/28/03	Added det. warnings	TGM
5/31/12	ADA Updates	JCJ

Sheet 1 of 1

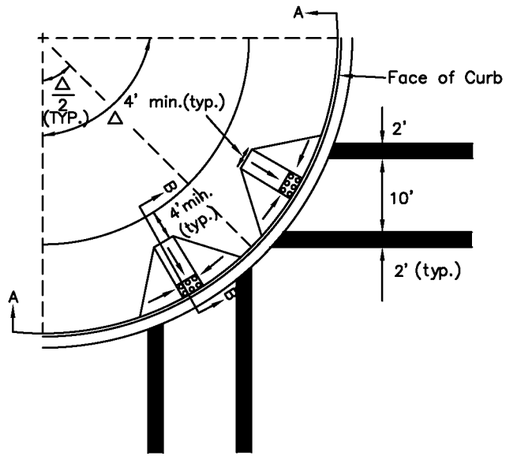
State of Alaska
Department of Transportation & Public Facilities

PARALLEL CURB RAMP

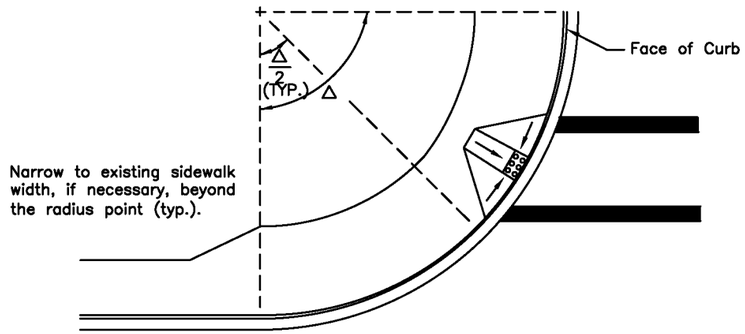
APPROVED
Jefferson C. Jeffers
CE 12295
REGISTERED PROFESSIONAL ENGINEER
Date 5/31/12

I-21.02

I-22.02

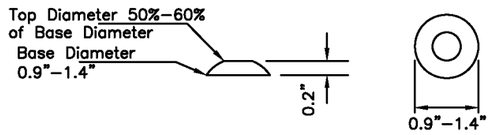


TWO CROSSING DIRECTIONS
At corner

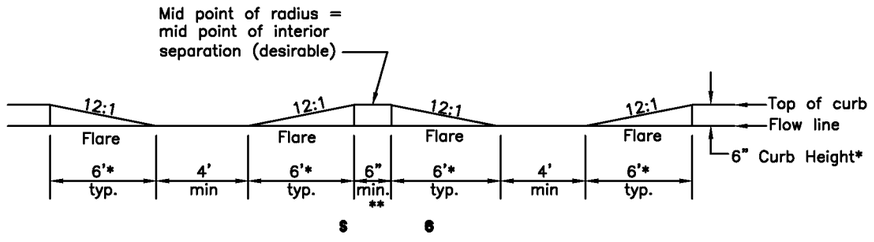


ONE CROSSING DIRECTION
At corner

TRUNCATED DOME SURFACE
SEE NOTE 14

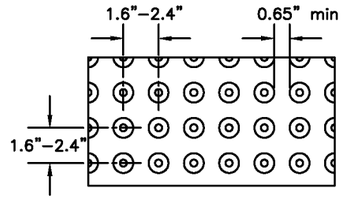


TRUNCATED DOME DETAIL

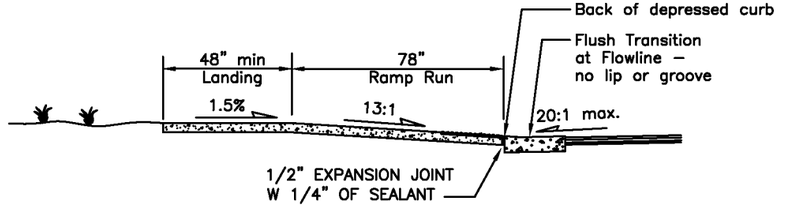


PROFILE A–A

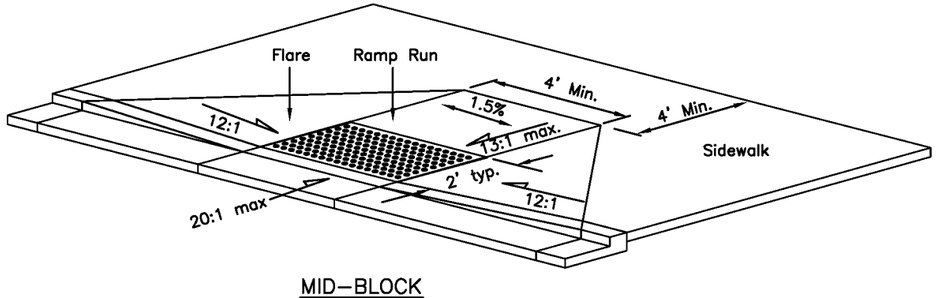
** Adjust width of inner separation to keep ramp runs within the inner edges of marked crosswalks or, if crosswalks are not marked, within the area a standard marked crosswalk would enclose.



TEXTURE PATTERN DETAIL



SECTION B–B



MID–BLOCK

GENERAL NOTES

1. Perpendicular curb ramps require approximately 12' of sidewalk width. Use parallel or combination parallel/perpendicular curb ramps for narrower widths.
2. When one curb ramp is installed in a curb radius to serve both directions of pedestrian traffic, construct it in accordance with the Mid–Block detail.
3. See plans for ramp type at particular locations.
4. Ramp runs shall be perpendicular to the face of curb.
5. Construct ramp runs, flares, and upper turning space of concrete, regardless of whether the sidewalk is asphalt or concrete.
6. Ramp run and flare lengths are shown for 6" curb heights shown and no longitudinal sidewalk slope. For other heights and slopes, increase or decrease run and flare lengths to maintain the slopes shown.
7. Construct ramp slopes 13:1 or flatter, flare slopes 12:1 or flatter, and sidewalk cross slopes 1.5% or flatter. If conditions require, the Engineer may increase slopes in accordance with Note 8. Construct grade breaks perpendicular to ramp runs.
8. Do not construct ramp slopes steeper than 12:1, flare slopes steeper than 10:1 measured parallel to the curb line, or sidewalk cross slopes steeper than 2% (50:1), except as provided under Note 9. These are the steepest slopes allowed by law.
9. Where sidewalk slope makes it necessary to lengthen a ramp run to avoid exceeding the allowable ramp slope, ramp shall not exceed 15 feet. The slope resulting from that run length is acceptable, even if it exceeds the maximum slope shown
10. Provide a coarse broomed finish running parallel to the curb on ramp runs and flares.
11. Provide turning space (4'x4' min.) at the top of curb ramps. Provide clear area (4'x4' min) beyond the bottom grade break 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.
12. Drainage inlets should not be located within marked crosswalks or, if crosswalks are not marked, within the area a standard marked crosswalk would enclose. If that is unavoidable, install accessible grates, with openings no greater than 1/2" in any direction.
13. When approved by the Engineer, flares may be replaced with a curb at locations where access to the side of a ramp run is blocked by poles, utility boxes, other obstructions, or by a non–accessible surface such as a dirt planter strip. See Standard Drawing I–20 for details.
14. Install 24" detectable warning tiles for the full width of the ramp. Arrange domes in a square pattern. Align truncated dome pattern in the predominant direction of wheelchair travel to permit wheels to roll between the domes.
15. 15. Construct curb ramps and detectible warning tiles in accordance with requirements for the American with Disabilities Act (ADA).

REVISIONS		
Date	Description	By
2/28/03	Added det. warnings	TGM
5/31/12	ADA Updates	JCJ

Sheet 1 of 1

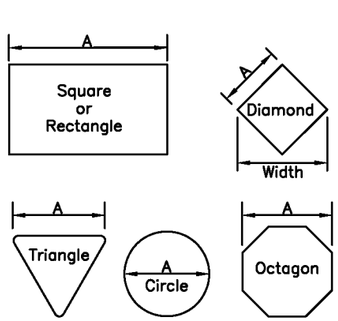
State of Alaska
Department of Transportation
& Public Facilities

PERPENDICULAR CURB RAMP

APPROVED
STATE OF ALASKA
Jefferson C. Jeffers
CE 12295
REGISTERED PROFESSIONAL ENGINEER
Date 5/31/12

I-22.02

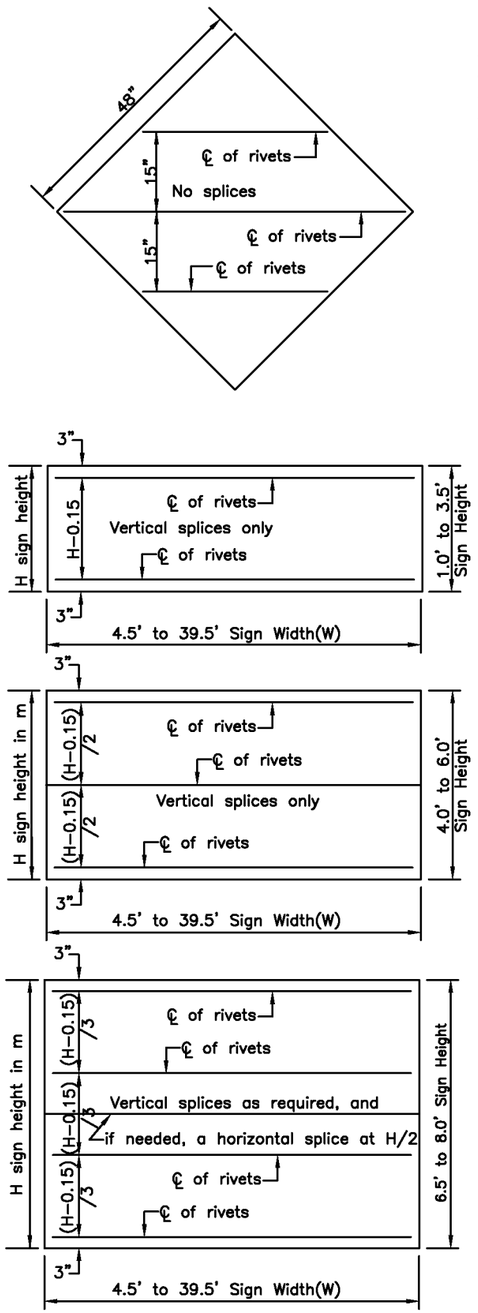
S-00.11



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

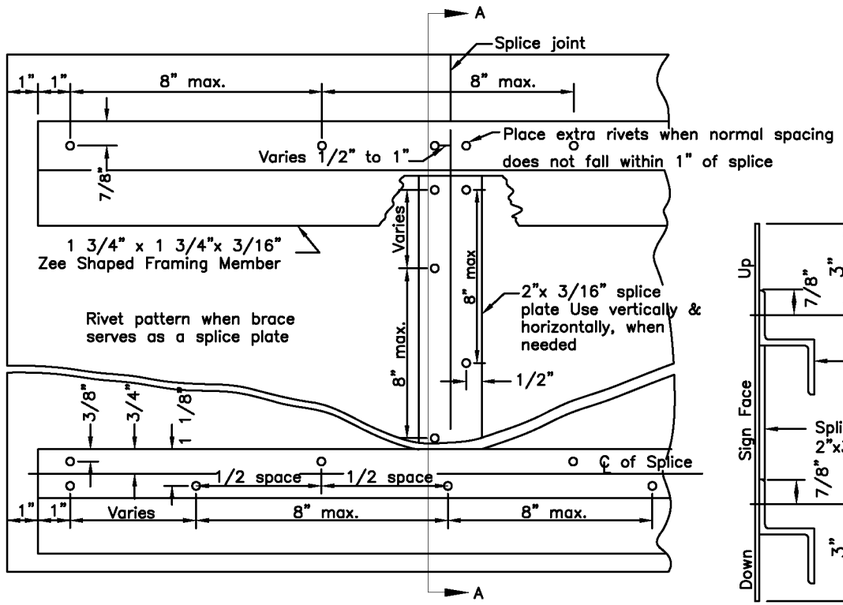


WIND FRAMING LOCATIONS

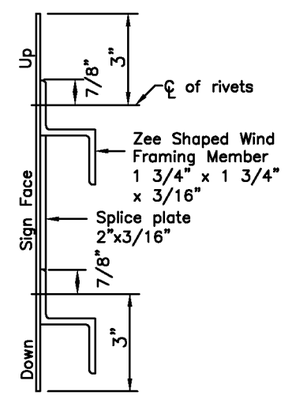
TUBE SIGN POST SPACING								
Sign Width (feet)	No. of Posts	Distance Between Posts	Sign Overhang	Post Type				Notes
				P.S.T.	Wood	Steel Tube	W–Shape	
0.5 to 4.0	1	–	0.5W	X	X	X		See Note 2.
4.5 to 10.0	2	0.6W	0.2W	X	X	X		See Note 3.
10.5 to 11.0	2	6	Varies	X	X	X		See Note 3.
11.5 to 13.0	2	8	Varies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

SIGN POST SPACING NOTES:

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



RIVET DETAIL FOR ZEE SHAPED WIND FRAMING & SPLICE PLATE



SECTION A–A

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.

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

Sheet 1 of 1

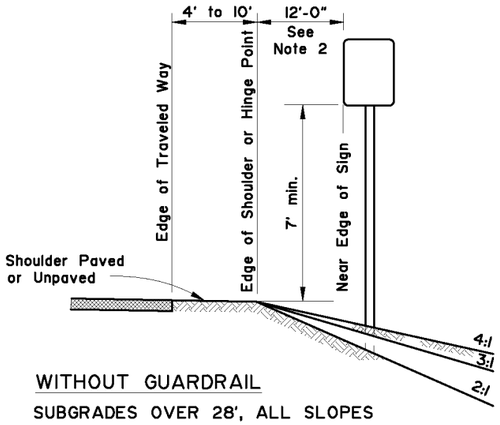
State of Alaska
Department of Transportation & Public Facilities

SIGN FRAMING AND POST SPACING

APPROVED
Date 5/31/12

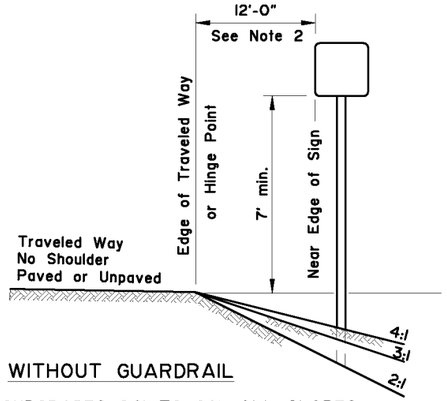
S–00.11

S-05.01



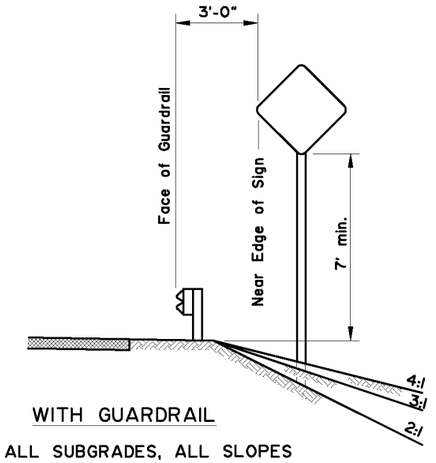
WITHOUT GUARDRAIL

SUBGRADES OVER 28', ALL SLOPES



WITHOUT GUARDRAIL

SUBGRADES 24' TO 28', ALL SLOPES

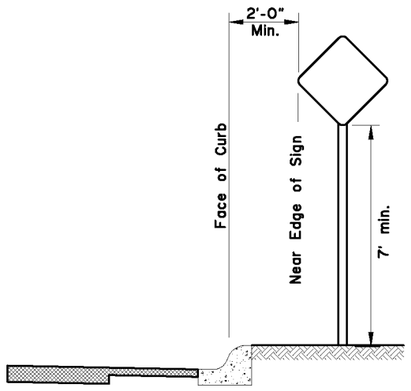


WITH GUARDRAIL

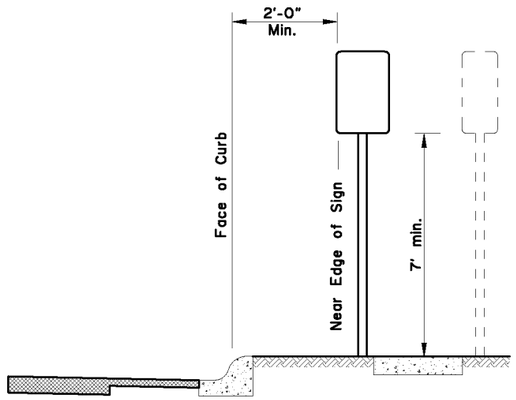
ALL SUBGRADES, ALL SLOPES

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.

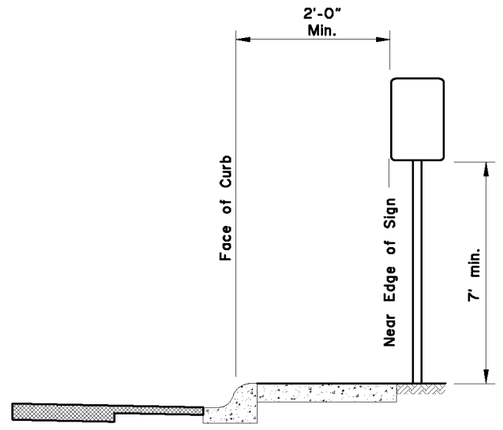


CURB WITHOUT SIDEWALK

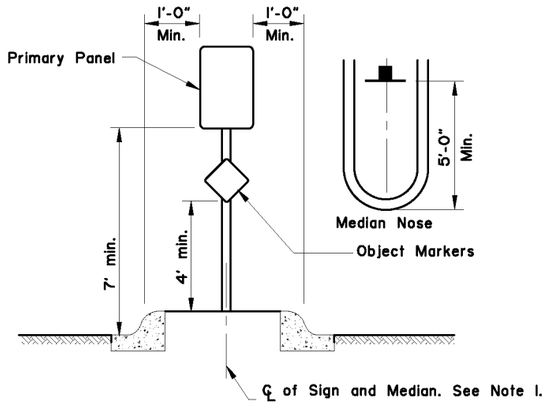


CURB WITH PARKWAY AND SIDEWALK

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

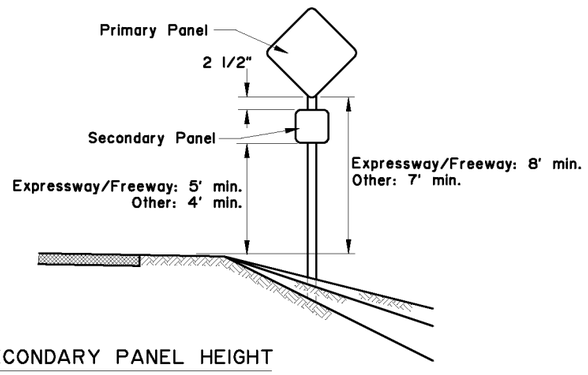


CURB WITH SIDEWALK WITHOUT PARKWAY



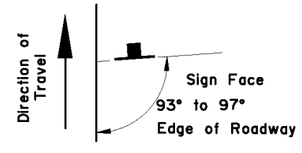
RAISED MEDIANS

Minimum 4' Width for Signing



SECONDARY PANEL HEIGHT

ALL TWO PANEL MOUNTING



SIGN POSITIONING

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

Sheet 1 of 1

State of Alaska
Department of Transportation
& Public Facilities

POST MOUNTED SIGN OFFSET AND HEIGHT

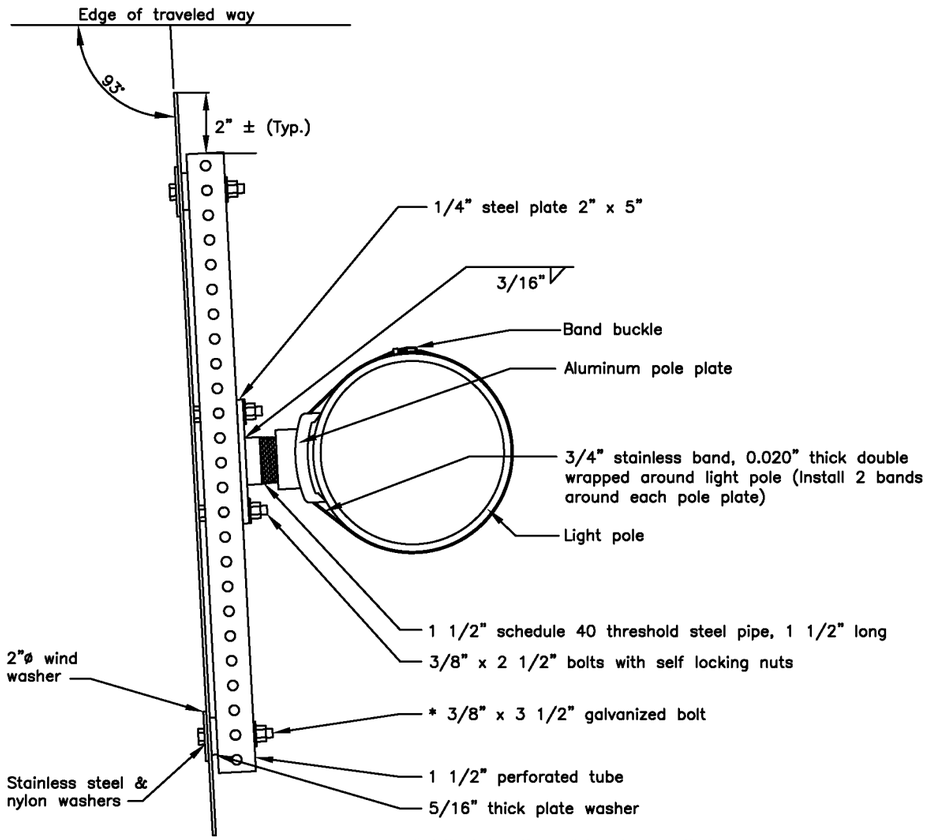
APPROVED

Curtis J. Smith
CC-7337

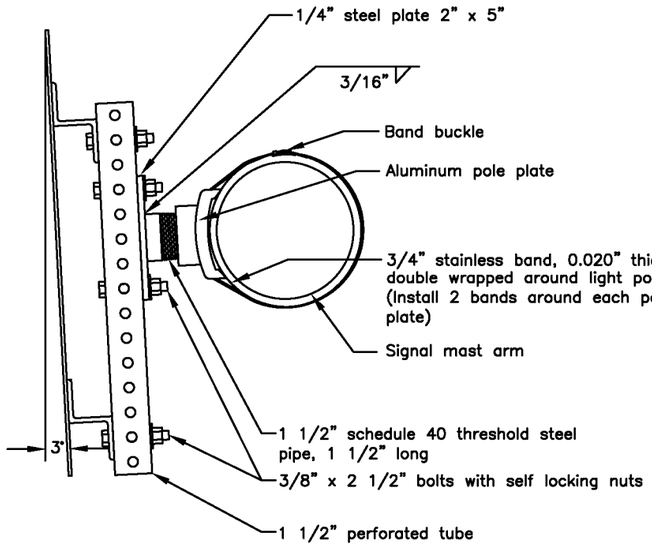
Date 7/15/82

S-05.01

S-23.00



ELECTROLIER SIGN MOUNTING
(PLAN VIEW)



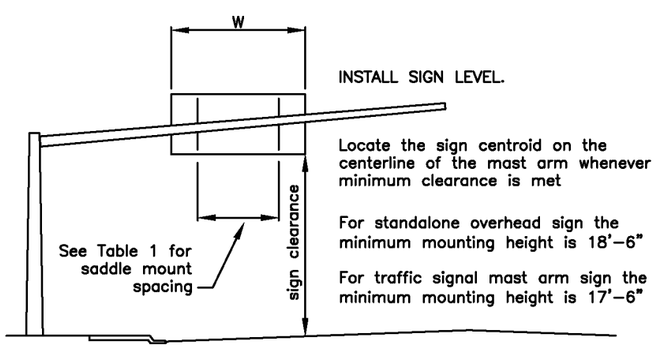
SIGNAL POLE MAST ARM SIGN MOUNTING
(ELEVATION VIEW)

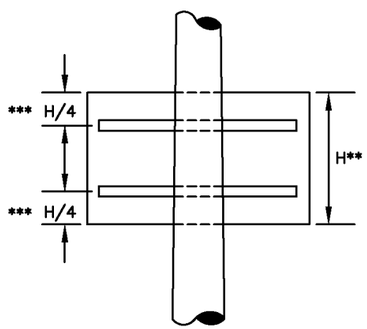
GENERAL NOTES

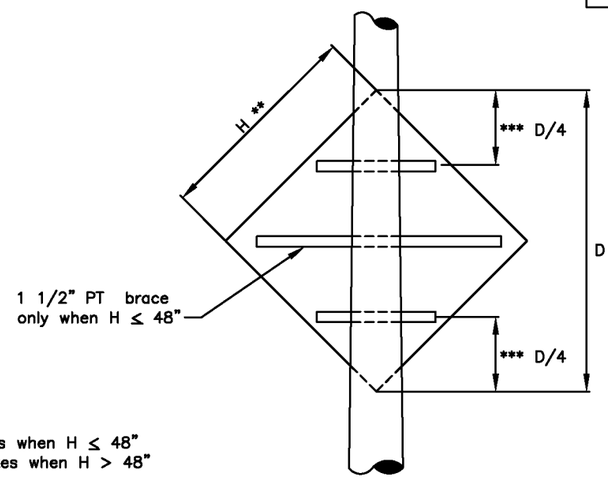
1. Use pole plate assemblies shown here to install signs on tapered mast arms and light poles. Install one pole plate per 10 square feet of sign panel. Use at least two plates for each installation.
2. Fabricate each pole plate-to-perforated tube adapter (steel plate welded to pipe) using steel plate conforming to ASTM A36 and steel pipe conforming to ASTM A53. Paint these adapters in conformance with section 504 of the Standard Specifications for Highway Construction, latest edition.
3. Paint the assemblies in accordance with AASHTO standard specification M69.
4. Attach each pole plate with two bands of 3/4" wide by 0.020" thick stainless steel banding material. Double wrap each band and tighten it until the band stops moving through the buckle.
5. Install bolts, nuts and washers conforming to ASTM A325.

TABLE 1
POLE PLATE SPACING

NO. OF POLE PLATES	OVERHANG	BETWEEN POLE PLATES	OVERHANG
2	0.2W	1 SPACE AT 0.6W	2 0.2W
3	0.15W	SPACES AT 0.35W	3 0.15W
4	0.125W	SPACES AT 0.25W	1 0.125W
5	0.2W	SPACE AT 0.6W	0.2W







** Use two pole plates when H ≤ 48" use three pole plates when H > 48"

*** When sign panels features predrilled mountings holes, use them to attach the perforated tubes

REVISIONS		
Date	Description	By

Sheet 1 of 1

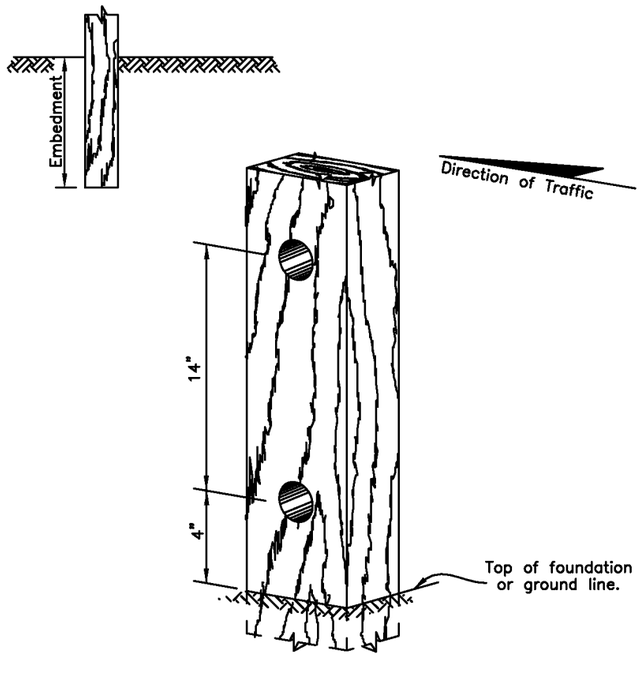
State of Alaska
Department of Transportation
& Public Facilities

POLE AND MASTARM SIGN MOUNTING

APPROVED
Date 2/28/03

S-23.00

S-30.03

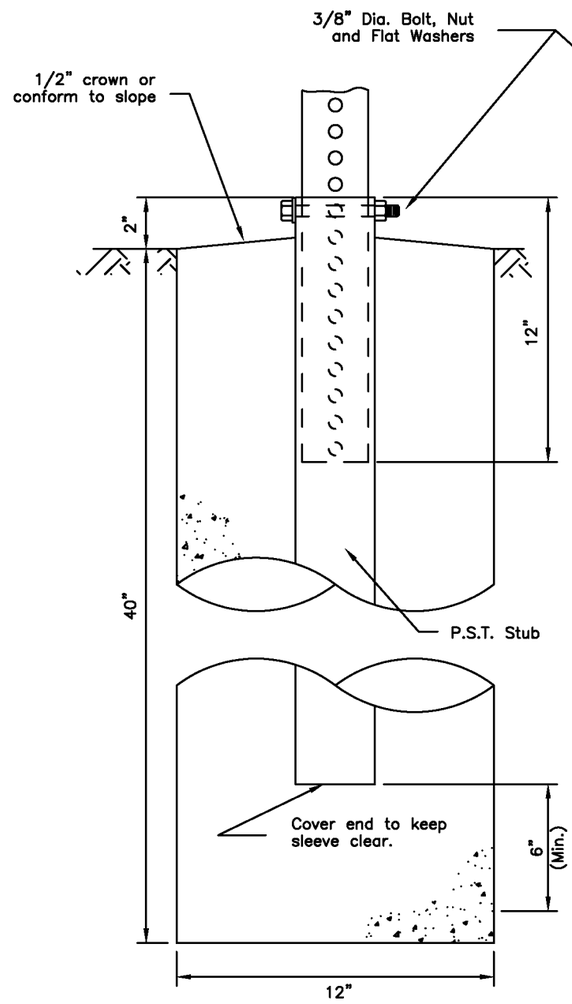


Note: If holes are field drilled after post has been treated, the holes shall be thoroughly swabbed with a 5% solution of pentachlorophenol and mineral spirits.

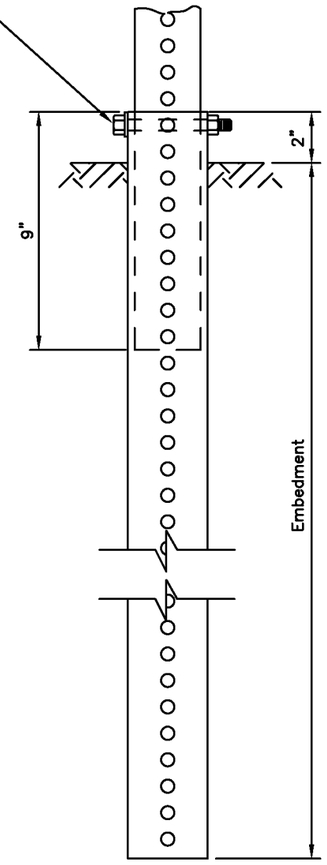
WOOD POSTS			
SIZE	HOLE DIA.	EMBEDMENT*	NUMBER OF POSTS WITHIN 7 Ft. PATH
4"x4"	NONE	36"	2
4"x6"	1 1/2"	36"	2
6"x6"	1 1/2"	40"	1
6"x8"	3"	48"	1

* Embedment depth applies in both strong and weak soil.

WOOD POSTS



SLEEVE TYPE
–CONCRETE FOUNDATION–



SLEEVE TYPE *
–SOIL EMBEDMENT–

PERFORATED STEEL TUBES (P.S.T.) (12 ga. – .105" Wall Thickness)		
POST SIZE (inch)	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 Standard Drawing "Sheet Aluminum Sign and Framing" for light sign 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. Use larger posts than shown on this sheet, with hinges, for multiple support signs where the supports are separated by more than 7 feet.

REVISIONS		
Date	Description	By
1/1/85	Redraft–Delete Post	Gdo
4/2/01	Revised PST table	Kjs
	Added note 3	
2/12/02	Revised Wood Posts	Kjs

Sheet 1 of 1

State of Alaska
Department of Transportation
& Public Facilities

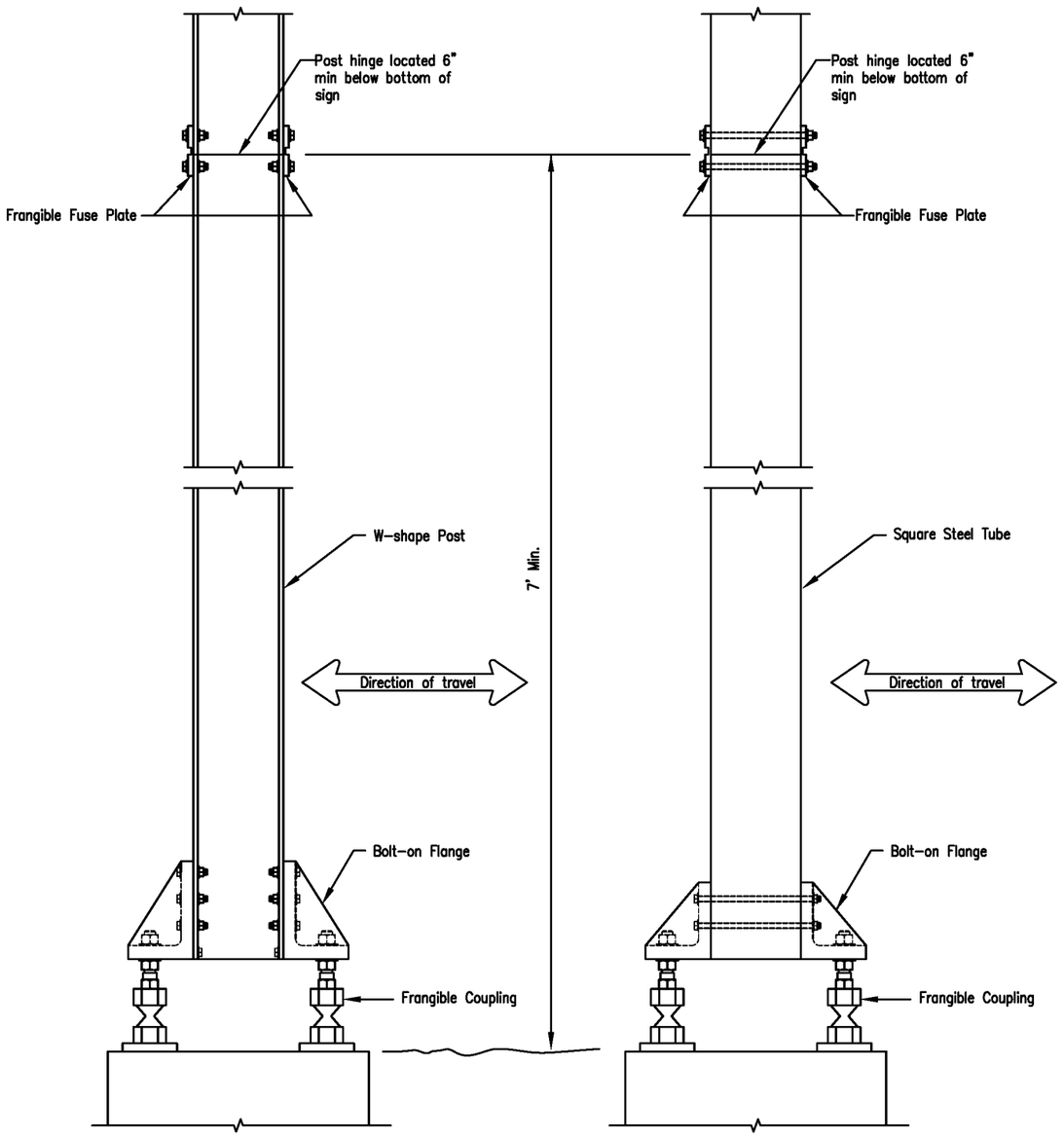
LIGHT SIGN
STRUCTURE POST
EMBEDMENT

APPROVED
Kurtis J. Smith
CE-7347
REGISTERED PROFESSIONAL ENGINEER
Date 7/15/82

S-30.03

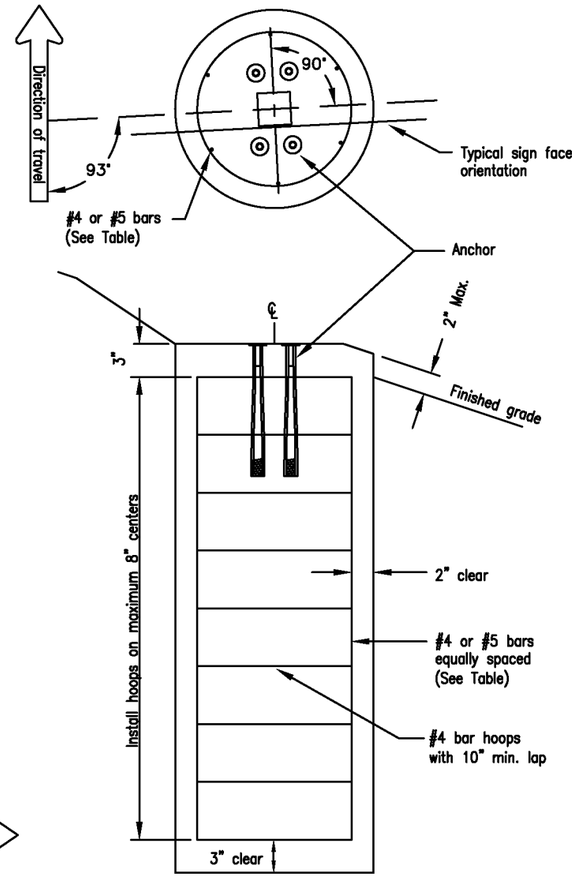
S-31.01

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.	VERTICAL BARS SIZE	VERTICAL BARS LGTH.	HOOPS QTY.	HOOPS SIZE	HOOPS 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

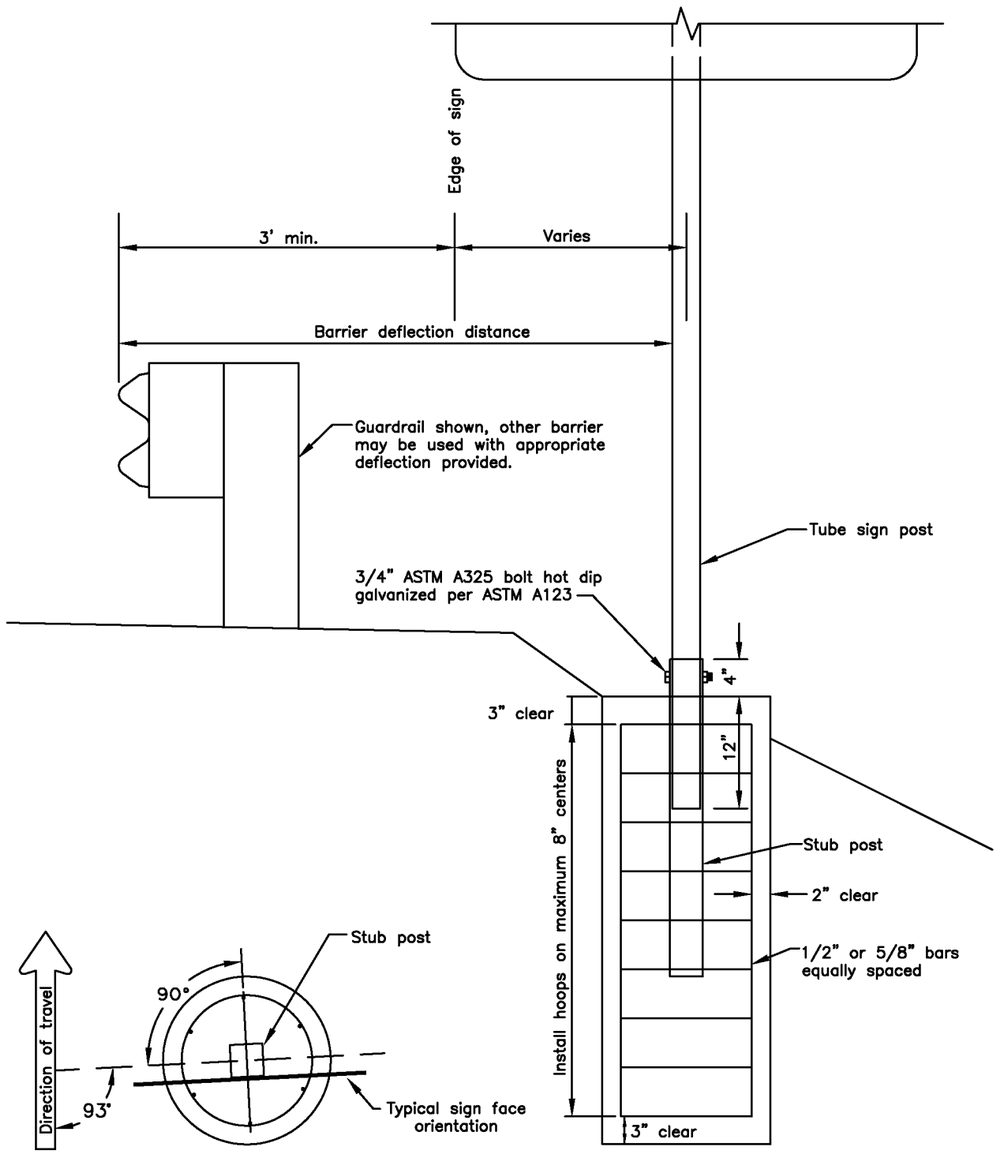
State of Alaska
Department of Transportation & Public Facilities

SIGN POST BASE AND FOUNDATION

APPROVED
Date 5/31/12

S-31.01

S-32.00



SIGN POST FOUNDATION
(Plan view)

SIGN POST FOUNDATION
See table for depth and diameter

GENERAL NOTES

1. This is a non-crashworthy sign support. It may only be used at locations shielded by a guardrail, barrier, or wall. It may not be used if the sign post is within 20' of the rail and is closer than 75' from the guardrail end post (measured along the rail). For this case use a breakaway sign support. See Standard Drawing G-20.
2. Furnish steel tube sign post and stub post that conform to ASTM A500, grade B, and meet ASTM A123 for hot dip galvanizing.
3. Install tubes and stub post with a 0.1875" wall thickness.
4. For Perforated Tubes use Standard Drawing S-30.
5. Spiral reinforcing steel may be substited for hoops in concrete foundation. Spiral option shall consist of No. 3 plain spiral with 6" pitch with three flat turns at the top and one flat turn at the bottom.

POST SIZE & TYPE	FOUNDATION *			REINFORCEMENT					STUB POST	
	DIA.	MIN. DEPTH	C.Y. CONC.	VERTICAL BARS QTY.	SIZE	LGTH.	HOOPS SIZE	DIA.	SLEEVE SIZE	LGTH.
2 1/2" TUBE	1'-0"	4'-6"	0.13	6	1/2"	4'-0"	1/2"	8"	3"	3'
3" TUBE	1'-6"	4'-0"	0.25	6	1/2"	3'-6"	1/2"	1'-2"	3 1/2"	3'
3 1/2" TUBE	1'-6"	4'-6"	0.27	6	1/2"	4'-0"	1/2"	1'-2"	4"	3'
4" TUBE	2'-6"	4'-0"	0.69	7	5/8"	3'-6"	1/2"	2'-2"	4 1/2"	3'
4 1/2" TUBE	2'-6"	4'-6"	0.78	7	5/8"	4'-0"	1/2"	2'-2"	5"	3'

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

REVISIONS		
Date	Description	By

Sheet 1 of 1

State of Alaska
Department of Transportation
& Public Facilities

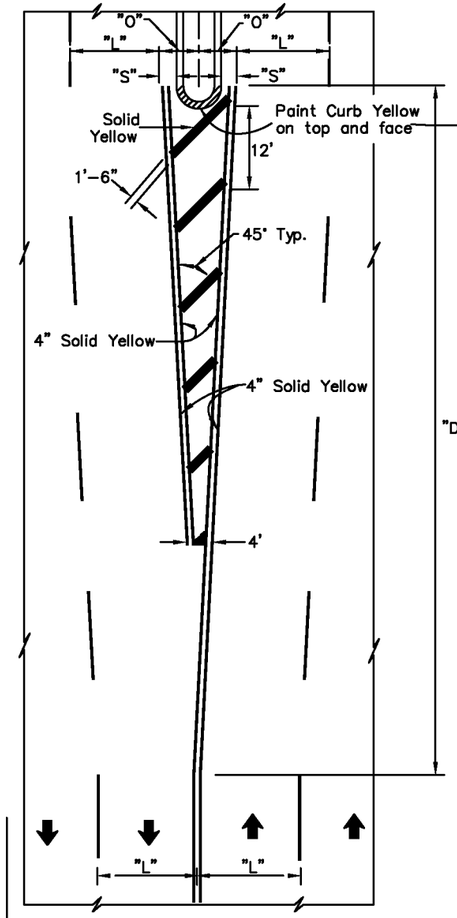
SIGN POST BASE AND FOUNDATION BEHIND BARRIER

APPROVED

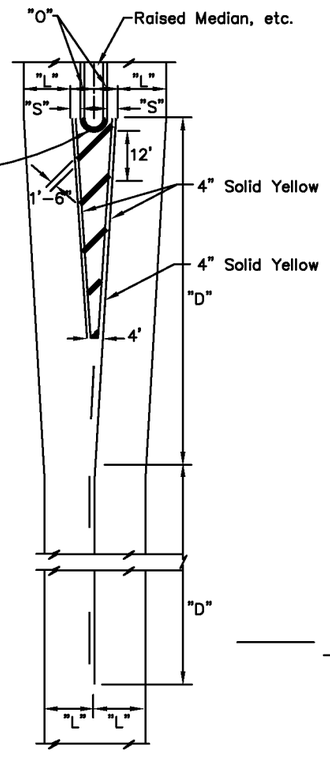
Date 2/28/03

S-32.00

T-20.03



FOUR OR MORE LANES
DRIVE TO RIGHT



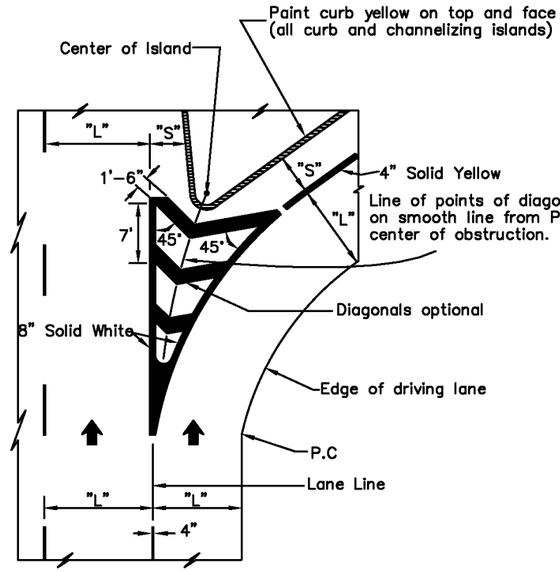
TWO LANES
DRIVE TO RIGHT

White longitudinal and diagonal markers identical to Four Lane Arrangement.

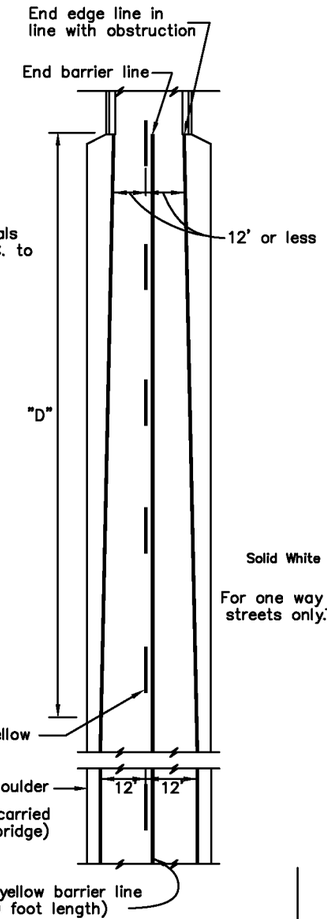
NOTES:

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

APPROACH TO OBSTRUCTIONS

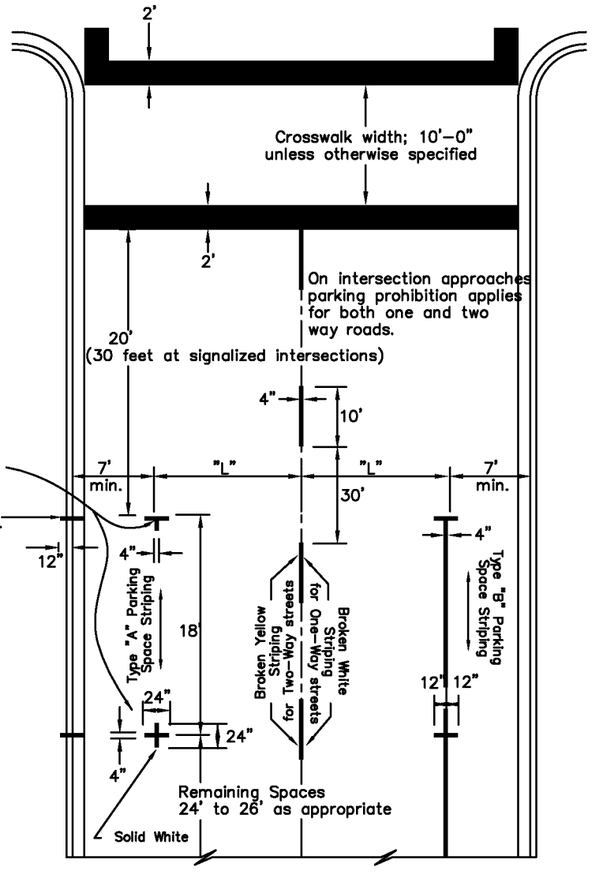


CHANNELIZING ISLAND



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

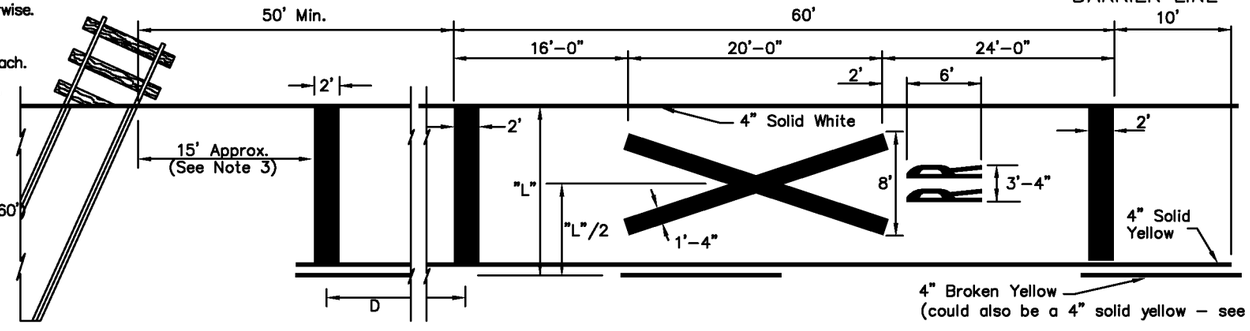


CENTERLINES FOR TWO LANE TWO WAY URBAN ROADS–PARKING LIMIT LINES

NOTES:

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

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



APPROACH TO RAILROAD CROSSING ON 2 LANE 2 WAY HIGHWAY

GENERAL NOTES:

1. "S"–offset distance as 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.

NOT TO SCALE

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

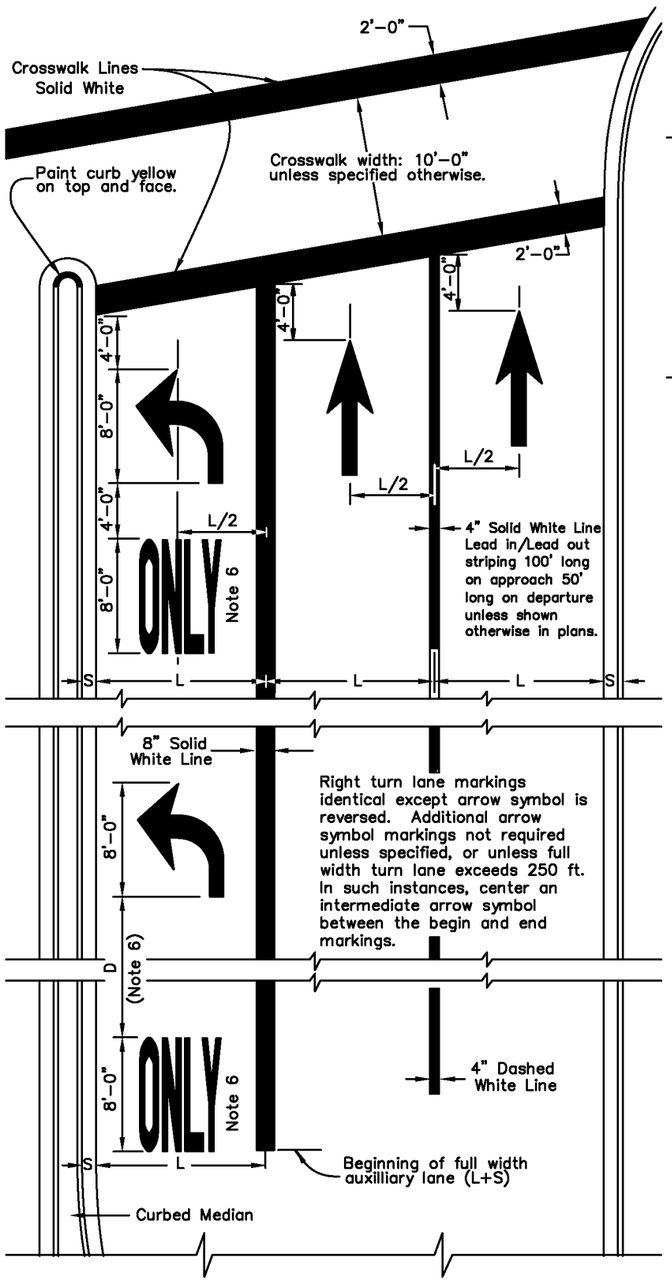
Sheet 1 of 1

State of Alaska
Department of Transportation & Public Facilities

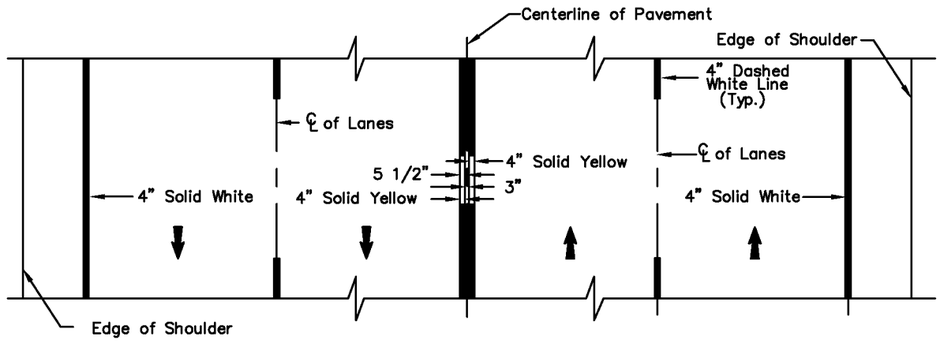
PAVEMENT MARKING APPLICATIONS

APPROVED
Date 5/31/12

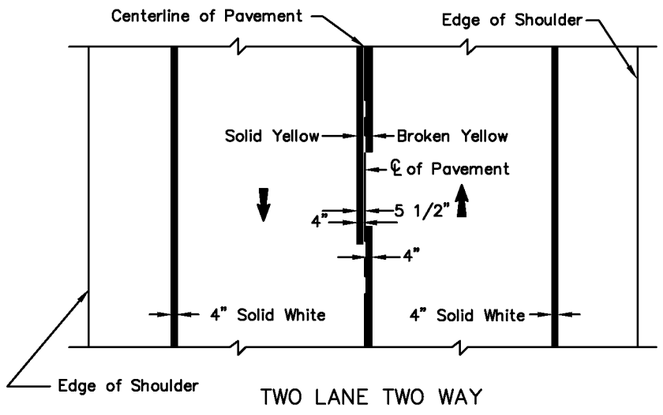
T-20.03



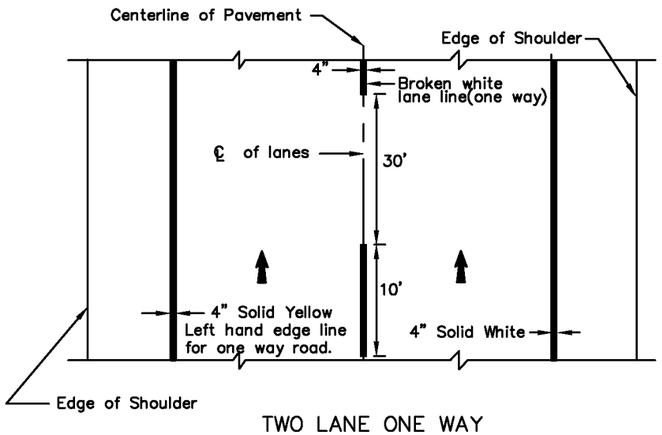
APPROACH TO INTERSECTION



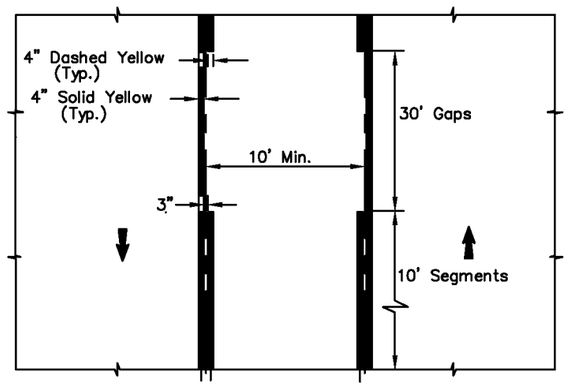
FOUR LANE TWO WAY



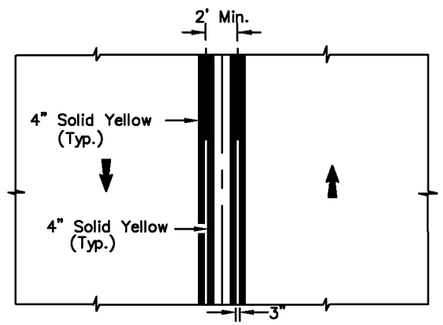
TWO LANE TWO WAY



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'

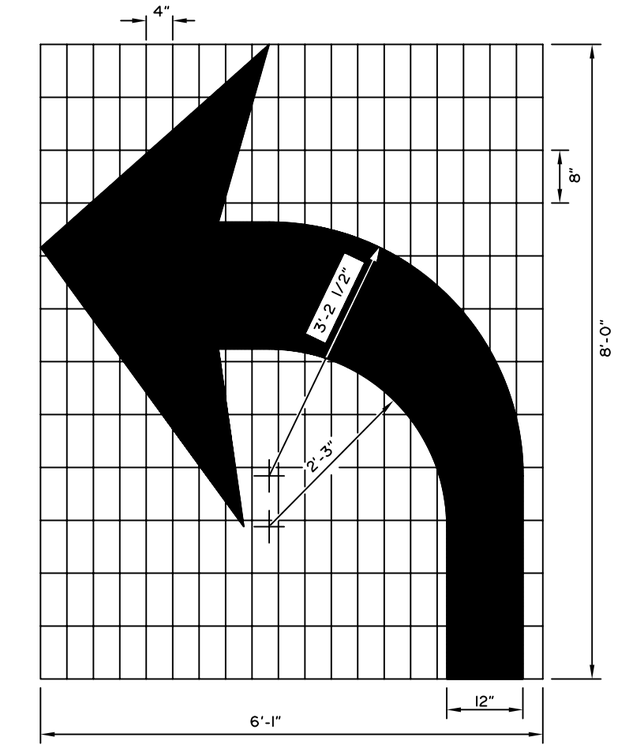
REVISIONS		
Date	Description	By
1/1/86	Arrow Dimension	Cdo
1/1/96	Intersect. Note	Cdo
4/28/10	Details, labels, notes	KJS

State of Alaska
Department of Transportation
& Public Facilities

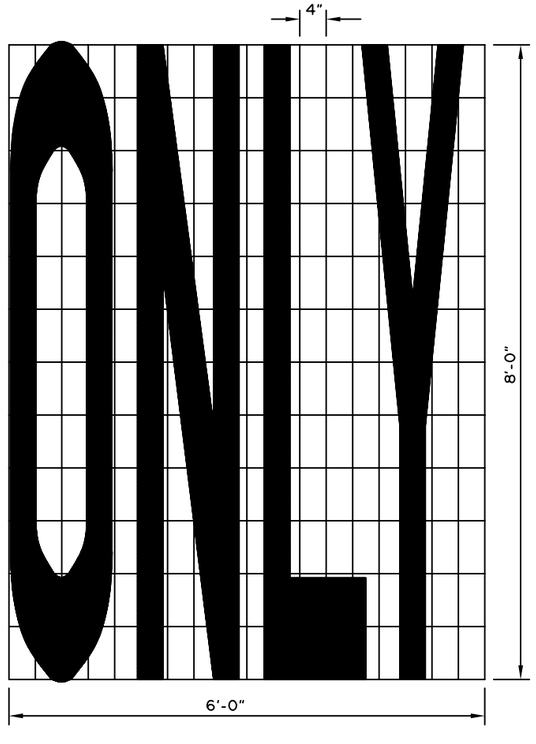
PAVEMENT MARKING APPLICATIONS

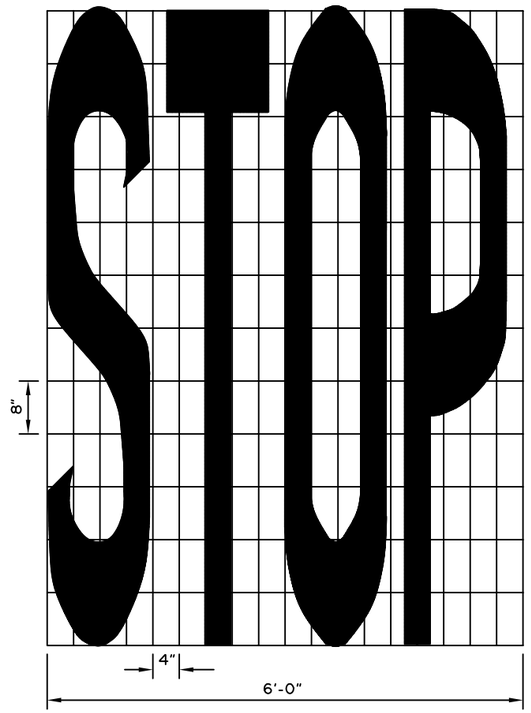
APPROVED
Date 5/31/12

T-21.03



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

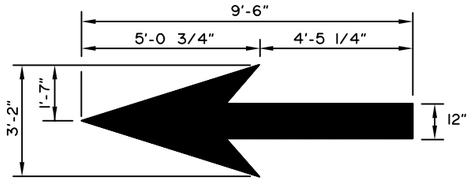




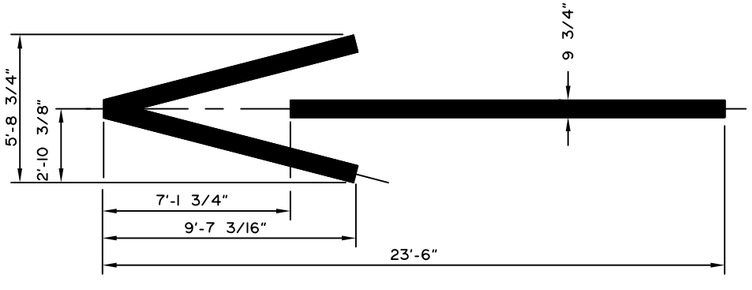
LAYOUT TEMPLATES FOR STENCILS

GENERAL NOTES:

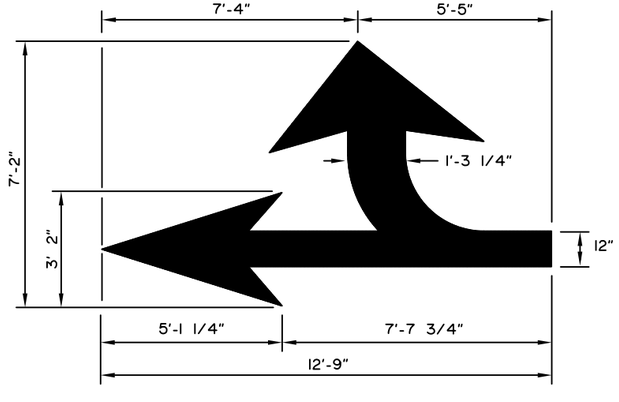
1. All symbols shown shall be white and reflectorized in accordance with the Special Provisions.
2. See "Standard Alphabets for Highway Signs and Pavement Marking" for letter layout.



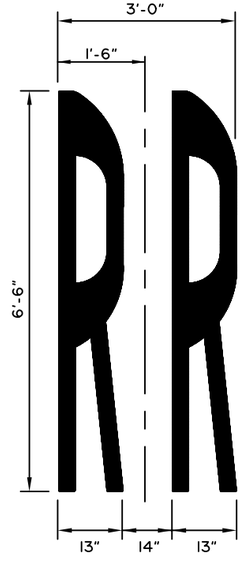
STRAIGHT AHEAD ARROW



WRONG WAY ARROW



COMBINATION ARROW



RAILROAD SYMBOL

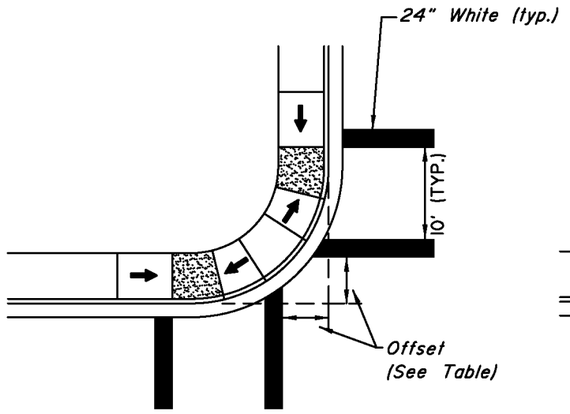
REVISIONS		
Date	Description	By
1/1/86	Redraft Arrow Dim.	Gdo
4/1/93	Revise Arrow Markings	Gdo
2/15/00	Revise RR Symbol	KJS

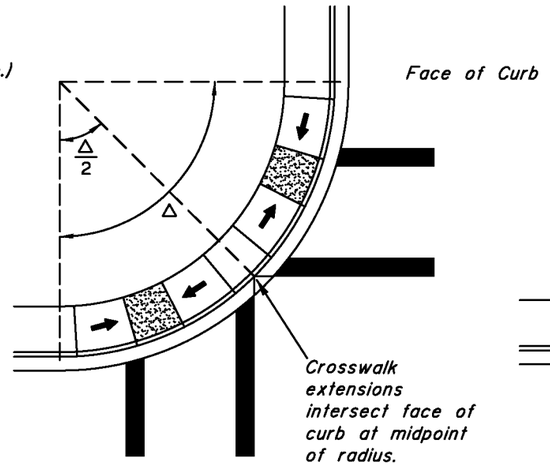
State of Alaska
Department of Transportation
& Public Facilities

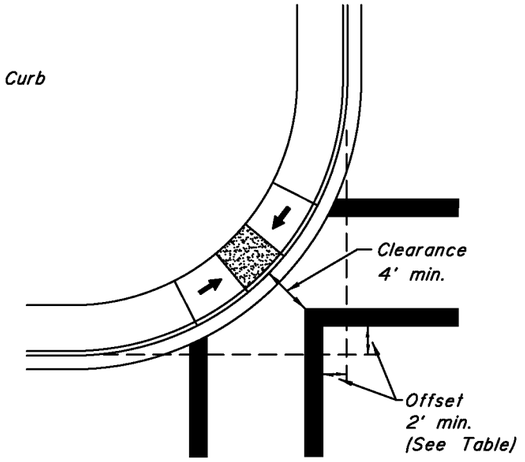
PAVEMENT MARKING SYMBOL DIMENSIONS

APPROVED
Date 1/1/86

T-22.03







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

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.

REVISIONS		
Date	Description	By

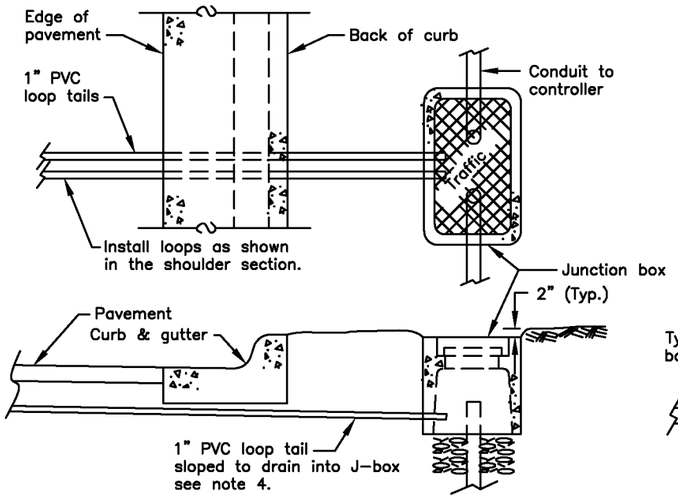
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CROSSWALK LOCATION AT INTERSECTIONS

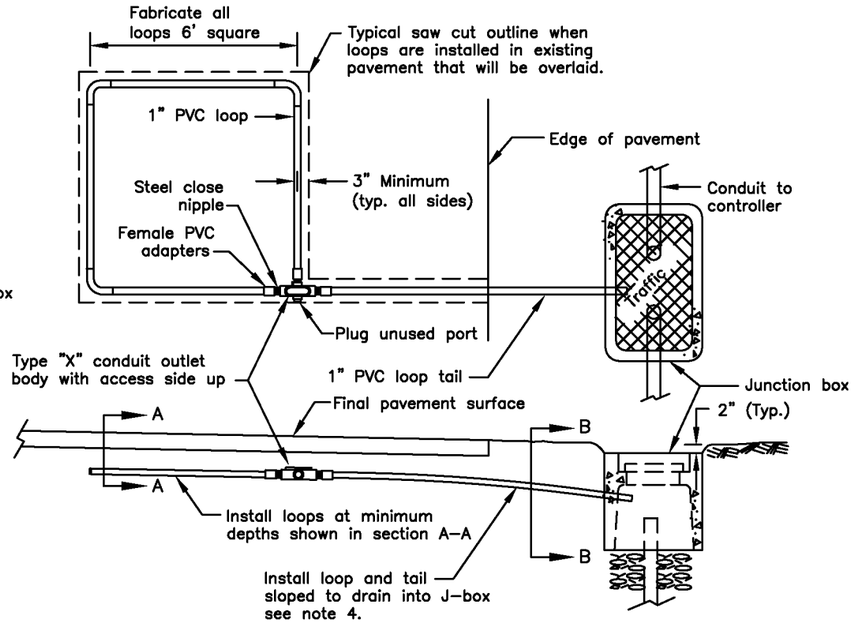
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Date 2/15/00

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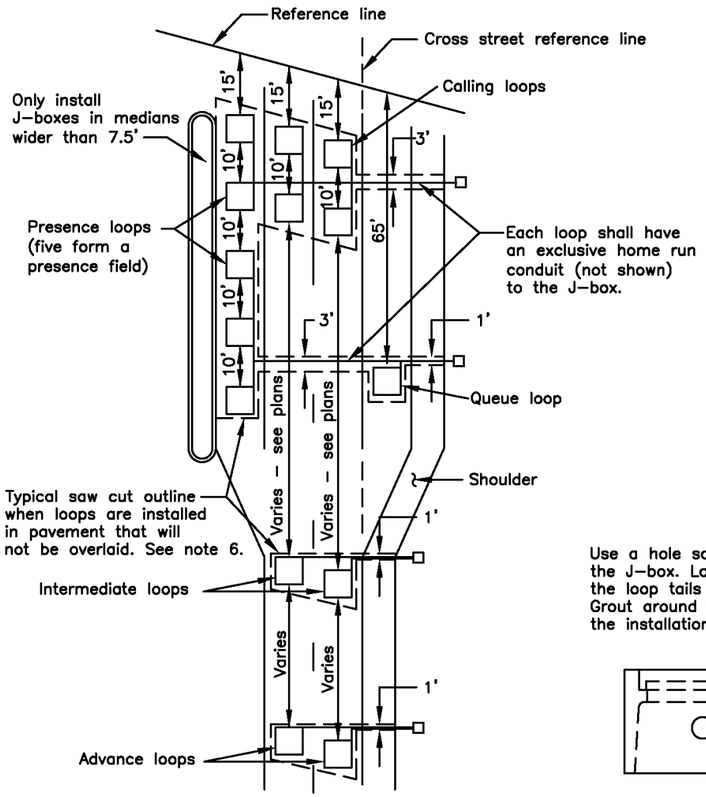
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CURB SECTION



SHOULDER SECTION

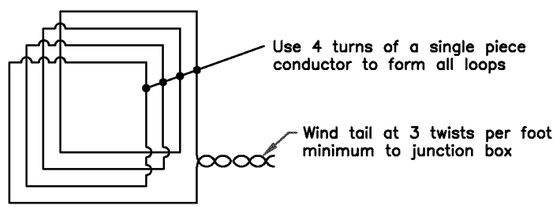


TYPICAL LOOP SETBACKS

Measure the setbacks from the reference line along the center of each lane.

SECTION A–A

VIEW B–B



LOOP WIRING DETAIL

TYPICAL PVC CONDUIT ENCASED LOOP DETECTOR INSTALLATION

GENERAL NOTES

1. Solvent weld all PVC to PVC joints. Use hot dip galvanized steel type X outlet bodies to join the loops and tails.
2. Use tube loop wire per IMSA specification 51–5 with the optional polyethylene tubing.
3. Install and test all loop detectors before overlaying the existing pavement or paving the new roadway.
4. Drill five 1/4" weep holes on 12" centers in the underside of the conduit at the low spot when the loop and tail cannot be installed to drain into the J–box. If the Engineer allows 90 degree elbows to be used, drill a 1/4" hole in the low point.
5. When installing loop detectors in existing pavement, cut the asphalt with a saw and remove all asphalt within the saw cut.
6. Where existing pavement will not be overlaid, cut the pavement with a saw as follows:
   - A. Remove all pavement from the length of the five loop presence fields.
   - B. Enclose all loops that enter a common junction box within one saw cut area.
   - C. Cut to within 12" of lane and edge lines to preserve them.
   - D. Remove asphalt to gutter where there are no edge lines.
   - E. Cut across lane lines when loops are side by side.
   - F. Cut trenches crossing a lane a minimum of 3' wide.
   - G. Cut trenches crossing a shoulder a minimum 12" wide.
7. Heat and tack coat the edges of existing pavement before paving cutouts. Compact the asphalt mixture with a self–propelled steel wheeled roller. Furnish asphalt mix that conforms to section 401 of the Specifications, and is approved by the Engineer. Maintain the replacement asphalt temperature at the mixing temperature specified in the approved mix design until compaction has begun.
8. To establish the reference lines, extend the right edges of the outermost through lanes across the intersection.

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Sheet 1 of 1

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LOOP DETECTOR INSTALLATION

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Date 2/28/03

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