DESIGNED BY	ZJH
CHECKED BY	LAS
DRAFTED BY	MF

SCALE
N/A

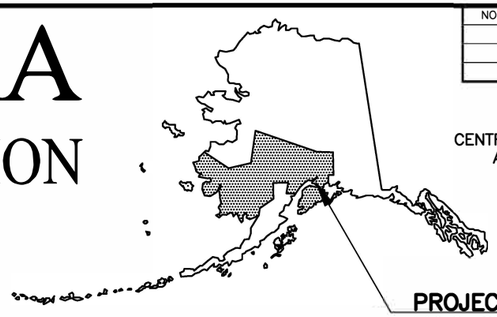
DATE	TIME
6/24/2020	10:18 AM

DRAWING LOCATION
C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CIV3D19\PLANSET\A_SHEETS\00366_A01NA02_TTL_V19.DWG

STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

NO.	DATE	REVISION



CENTRAL REGION
ALASKA

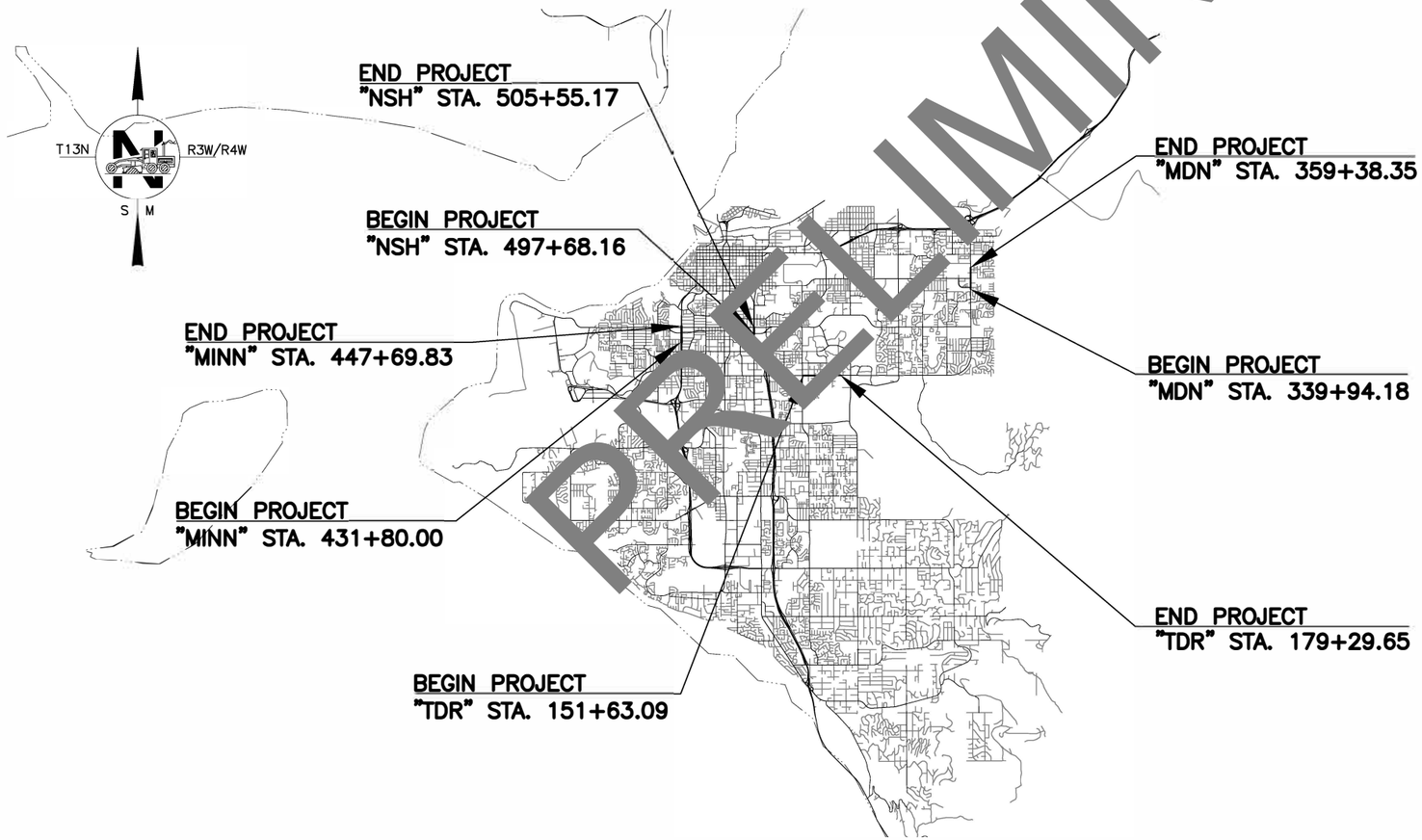
PROJECT LOCATION
M&O STATION: ANCHORAGE

STATE	PROJECT DESIGNATION		YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366		2020	A1	A4
ROUTE ID	22812161000	MILEPOINT	6.148-6.366		
LATITUDE	61.193606	LONGITUDE	-149.913114		
ROUTE ID	1020000X000	MILEPOINT	124.499-124.628		
LATITUDE	61.194302	LONGITUDE	-149.868019		
ROUTE ID	2281107X000	MILEPOINT	2.706-3.203		
LATITUDE	61.180770	LONGITUDE	-149.830758		
ROUTE ID	2281205X000	MILEPOINT	2.087-2.400		
LATITUDE	61.211767	LONGITUDE	-149.733517		

PROPOSED HIGHWAY PROJECT

HSIP: ANCHORAGE PEDESTRIAN LIGHTING
PROJECT NO. 0001607/CFHWY00366

PAVING, DRAINAGE, ADA FACILITIES, ILLUMINATION
SIGNALIZATION, SIGNING, AND STRIPING



PROJECT SUMMARY		
ROADWAY	WIDTH	LENGTH
MINNESOTA DRIVE	93 FT	0.3 MILES
SEWARD HIGHWAY	101 FT	0.2 MILES
TUDOR ROAD	66 FT	0.5 MILES
MULDOON ROAD	66 FT	0.4 MILES

DESIGN DESIGNATIONS		
ROADWAY	AADT (2017)	DESIGN SPEED
MINNESOTA DRIVE	40,653	45 MPH
SEWARD HIGHWAY	45,712	45 MPH
TUDOR ROAD	31,361	45 MPH
MULDOON ROAD	31,774	40 MPH

PS&E REVIEW SET

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

APPROVED:

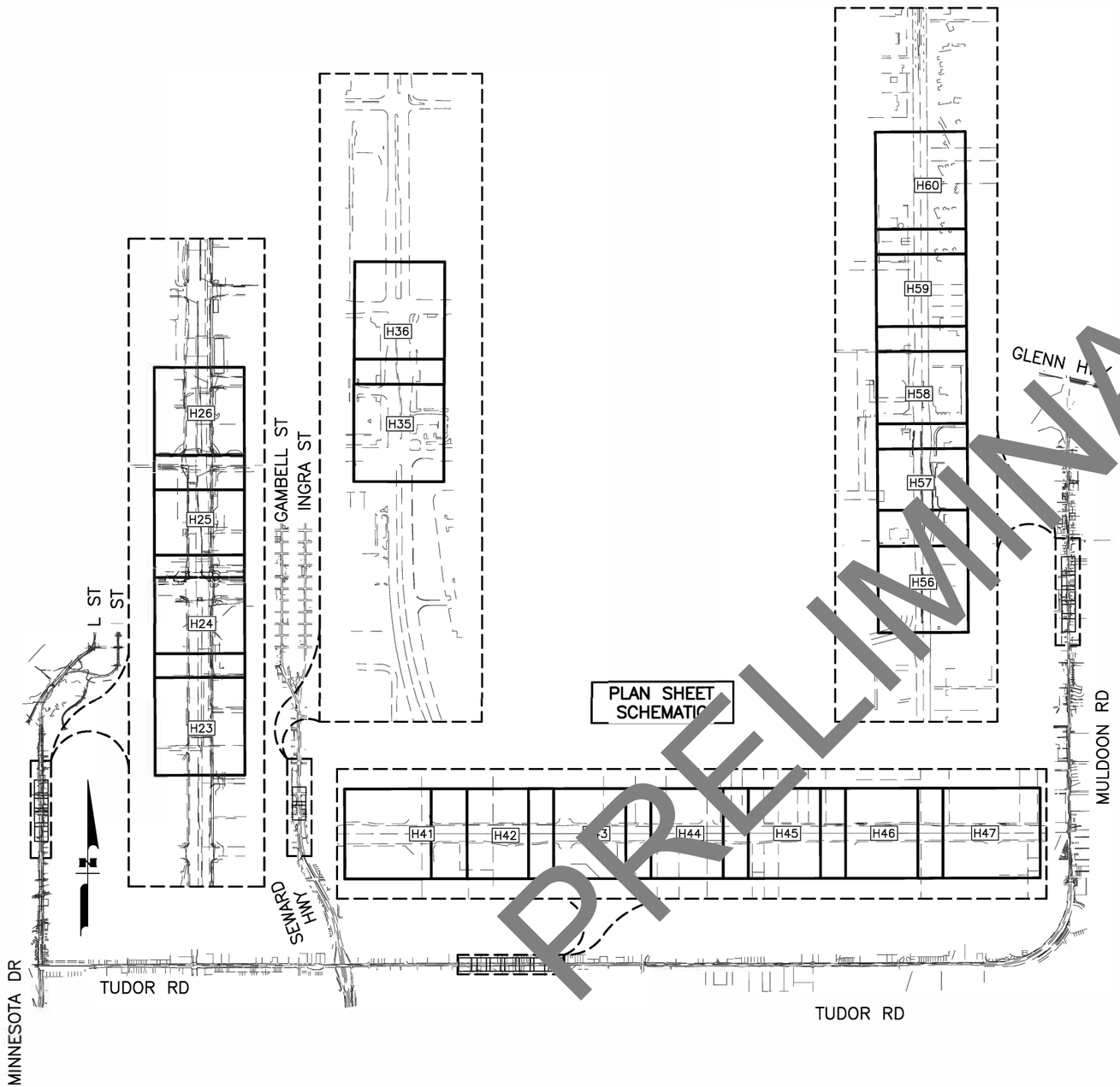
REGIONAL PRECONSTRUCTION ENGINEER DATE

CONCUR:

REGIONAL CONSTRUCTION ENGINEER DATE

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	A2	A4



GENERAL NOTES:

1. ALL CONSTRUCTION SHALL BE CONTAINED WITHIN THE RIGHT–OF–WAY. NO EXCESS MATERIAL SHALL BE DISPOSED OF WITHIN THE RIGHT–OF–WAY, UNLESS SPECIFICALLY CALLED FOR IN THE PLANS OR DIRECTED BY THE ENGINEER.
2. THE ROW LINES SHOWN WERE DRAWN ON THE PLANS USING INFORMATION FROM DOT&PF, PLATTED SUBDIVISIONS, AND SURVEYED MONUMENTS ON THE GROUND. THE ROW LINES WERE INSERTED USING A COMMON COORDINATE SYSTEM.
3. ALL PAVEMENT CUTS SHALL BE MADE WITH A SAW OR ALTERNATE METHOD APPROVED BY THE ENGINEER.
4. PLACE 4" TOPSOIL AND SEED ON ANY AREAS DISTURBED BY CONSTRUCTION AND AS DIRECTED BY THE ENGINEER.
5. THE EXISTING INFORMATION SHOWN IN THE PLANS IS FROM AS–BUILTS AND HAS BEEN PARTIALLY FIELD VERIFIED. FIELD CONDITIONS MAY NOT BE ACCURATELY REPRESENTED AND/OR MAY HAVE CHANGED. ADJUST INSTALLATIONS AS DIRECTED BY THE ENGINEER.
6. ADJUST ALL PAVEMENT PENETRATIONS TO FINAL GRADE PRIOR TO TOP LIFT OF PAVING.
7. CONSTRUCT CURB RAMPS TO AVOID IMPACTING SIGNAL POLE FOUNDATIONS. DO NOT COVER SIGNAL POLE FOUNDATION BOLTS AND BASE PLATES WITH TOPSOIL.
8. ALL TYPE "A" INLET BOXES SHALL HAVE MINIMUM 18" SUMPS.

INDEX

THE FOLLOWING ALASKA STANDARD PLANS APPLY TO THIS PROJECT:

D-20.05, D-23.01, D-26.04
I-21.11, I-22.11
S-00.11, S-23.00
T-23.00, T-52.21, T-54.10

ABBREVIATIONS:

"ASP" – ALASKA STANDARD PLAN
"S/O" – STATION/OFFSET
"MINN" – MINNESOTA ROAD
"NSH" – NEW SEWARD HIGHWAY
"TDR" – TUDOR ROAD
"MDN" – MULDOON ROAD

SPECIFICATION:

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

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

SHEET LAYOUT, INDEX, AND GENERAL NOTES

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
(907) 269–0590

STATE OF ALASKA
49TH
JOSHUA SWEENEY
12351
REGISTERED PROFESSIONAL ENGINEER
P.S.&E. REVIEW
JUNE 2020

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF

SCALE N/A

DATE 6/24/2020 TIME 10:18 AM

DRAWING LOCATION
C:\USERS\ZJHARTMAN\ONEDRIVE – STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CIV3D19\PLANSET\A_SHEETS\00366_A01NA02_TTL_V19.DWG

DESIGNED BY	CHECKED BY	DRAFTED BY
ZJH	LAS	MF

SCALE	DATE	TIME
N/A	6/23/2020	4:27 PM

DRAWING LOCATION
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NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	A3	A4

ROADWAY

	EXISTING	PROPOSED
EDGE OF PAVEMENT		
LIMIT OF CUT SLOPE & FILL SLOPE		CUT / FILL
GRAVEL EDGE		
SIDEWALK AND PATH/TRAIL		
CONCRETE CURB & GUTTER		
CONCRETE CURB CUT		
PARALLEL CURB RAMP PERPENDICULAR CURB RAMP		
UNIDIRECTIONAL CURB RAMP & MID-BLOCK CURB RAMP		
DETECTABLE WARNING TILE		
BRIDGE		
TUNNEL		
GUARDRAIL		
END & PARALLEL END SECTIONS		
ROADWAY OBLITERATION		
FENCE	— x — x —	— x — x —
STONE FENCE		
NOISE BARRIER	====x====x	====x====x
RETAINING WALL		
HEADWALL & WINGWALL		
BOTTOM OF DITCH		
SPECIAL DITCH		
FLAT BOTTOM DITCH		
BERM		
RIPRAP		
BOULDER OR BOULDERS		
PRIVATE SIGN, MAILBOX	MB	MB
POST, BOLLARD		
WORK BY OTHER PROJECTS		

UTILITIES

	EXISTING	PROPOSED
STORM DRAIN	SD	
STORM DRAIN MANHOLE, CLEANOUT	SD, CO	SD, CO
CURB INLET CATCH BASIN FIELD INLET CATCH BASIN	FI	FI
PIPE CULVERT WITH END SECTION		
SANITARY SEWER	SS	SS
SANITARY SEWER MANHOLE, CLEANOUT	SS, CO	SS, CO
SEPTIC VENT, SEWER SERVICE CONNECTION	S	
WATER	W	W
FIRE HYDRANT, VALVE OR RISER		
WELL, WATER SERVICE CONNECTION	W	
NATURAL GAS	G	
OIL OR GASOLINE PIPELINE	O	
TANKS (ABOVE GROUND, UNDERGROUND)	U	
ELECTRIC	OE (OVERHEAD) UE (UNDERGROUND) OE&OT (OVERHEAD)	
UTILITY POLE, POLE WITH LUMINAIRE		
GUY POLE, GUY WIRE ANCHOR	GP	
TRANSMISSION TOWER (WOOD, STEEL)		
ELECTRIC PEDESTAL, TRANSFORMER	E	E
ELECTRIC MANHOLE, METER	E	
ELECTRIC OUTLET, LANDSCAPE LIGHT		
TELEPHONE	OT (OVERHEAD) UT (UNDERGROUND) UT&TV (UNDERGROUND)	
TELEPHONE MANHOLE, PEDESTAL	T	
FIBER OPTIC	FO	
FIBER OPTIC MANHOLE		
CABLE TV	OTV (OVERHEAD) UTV (UNDERGROUND)	
CABLE TV PEDESTAL, SATELLITE		
UNDERGROUND CONDUCT, (ELECTRIC, TELEPHONE, FIBER OPTIC)		
VENT		

TOPOGRAPHY

	EXISTING	EXISTING	PROPOSED
LAKE OR POND, WETLANDS	LAKE/POND	CONTOUR, MAJOR OR MINOR	520
TREE (CONIFER/DECIDUOUS) TREELINE (EDGE OF VEGETATION)		DRAINAGE FLOW	
PLANTER	P	CREEK (CENTERLINE)	
BUILDING OR FOUNDATION		RIVER (EDGE OF WATER)	

TRAFFIC

	EXISTING	PROPOSED
LOAD CENTER		
STATE TRAFFIC, MOA TRAFFIC, & BEACON CONTROLLER ARROW INDICATES DOOR LOCATION		
TYPE 1A, II, III, IV JUNCTION BOX		##
FIBER OPTIC VAULT	F/O	F/O ##
ELECTROLIER		
HIGHTOWER		HT#
SIGNAL POLE WITH MASTARM		14
PEDESTRIAN PUSH BUTTON & SIGN		
VEHICULAR SIGNAL		
VEHICULAR SIGNAL LEFT & RIGHT		
OPTICAL, CAMERA, RADAR, AND GPS DETECTOR	CAM, RAD, GPS	CAM, RAD, GPS
LOOP DETECTOR	###	###
COMMUNICATION ANTENNA		
MASTARM BEACON		
SCHOOL & SCHOOL ZONE BEACON		
LOOP DETECTOR CONDUIT		
SIGNAL CONDUIT	TR	TR
LIGHTING CONDUIT	LTG	LTG
SIGNAL & LIGHTING CONDUIT	T/L	T/L
CONDUIT BORING		
INTERCONNECT	I/C	I/C
SIGN POST		##

PAVEMENT MARKINGS

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

RIGHT-OF-WAY

	RECOVERED	SET THIS PROJECT
FEDERAL GOV'T SURVEY MONUMENT		
GOV'T CONTROL STATION		
PRIMARY MONUMENT (BRASS/AL CAP)		
MISC SECONDARY CORNER		
PRIMARY CENTERLINE MONUMENT		
SECONDARY CENTERLINE MONUMENT		
RANDOM CONTROL MONUMENT	RCM	
PRIMARY GPS CONTROL POINT	GPS	
HORIZONTAL CONTROL POINT	CP	
SECONDARY CONTROL POINT	SCP	
VERTICAL BENCHMARK	BM	
TEMPORARY BENCHMARK	TBM	
TOWNSHIP AND RANGE LINES	T13N / T12N, R2W / R3W	
SECTION LINE		
1/4 SECTION LINE		
1/16 SECTION LINE		
CORPORATE or CITY LIMITS		
EXISTING RIGHT-OF-WAY		
RIGHT-OF-WAY OR EASEMENT REQUIRED		
PROJECT RIGHT-OF-WAY LINE		
EXISTING RIGHT-OF-WAY EASEMENT		
EXISTING PROPERTY LINE		
CONTROLLED ACCESS LINE		
EXISTING UTILITY EASEMENT		
PROPOSED UTILITY EASEMENT		
EXISTING CENTERLINE		
RAILROAD CENTERLINE		
TEMPORARY CONSTRUCTION EASEMENT		
TEMPORARY CONSTRUCTION PERMIT		

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

LEGEND SHEET

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
(907) 269-0590

STATE OF ALASKA · 49TH · JOSHUA SWEENEY 21351 · REGISTERED PROFESSIONAL ENGINEER
P.S.&E. REVIEW JUNE 2020

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	A4	A4

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF

SCALE N/A

DATE TIME
6/23/2020 4:27 PM

DRAWING LOCATION
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STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
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(907) 269-0590

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

SURVEY CONTROL SPACED HOLDER SHEET

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0001607/CFHWY00366	2020	B1	B1

DESIGNED BY ZJH
CHECKED BY LAS
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SCALE N/A

DATE 6/23/2020 TIME 4:27 PM

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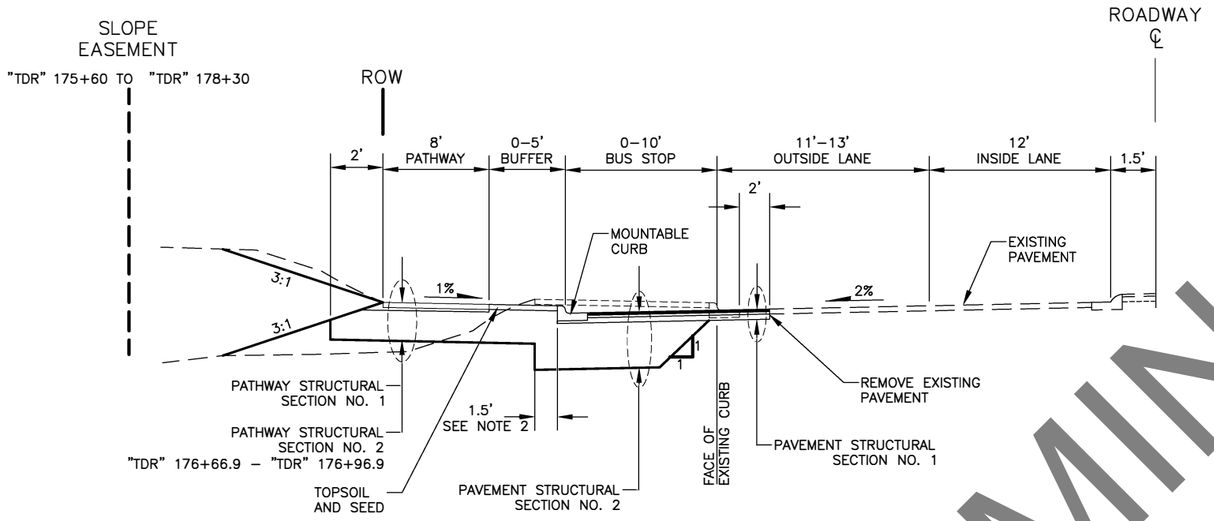
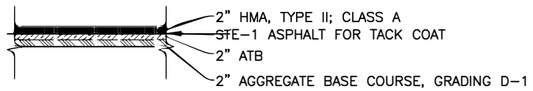
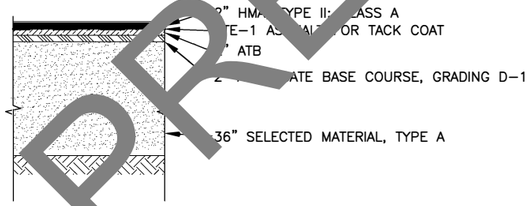


TUDOR ROAD

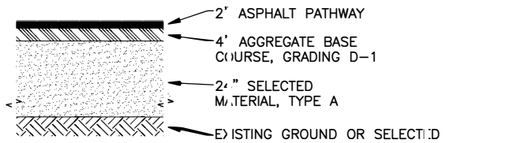
"TDR" STA. 173+71.4 TO "TDR" STA. 178+09.9



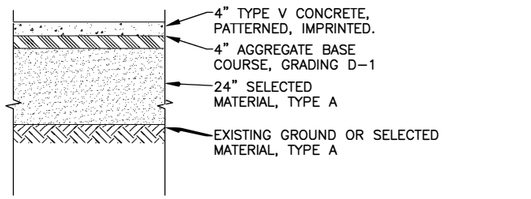
PAVEMENT STRUCTURAL SECTION NO. 1



PAVEMENT STRUCTURAL SECTION NO. 2



PATHWAY STRUCTURAL SECTION NO. 1



PATHWAY STRUCTURAL SECTION NO. 2

NOTE:

1. FINISHED PAVEMENT GRADE SHALL BE A 1/4" ABOVE THE GUTTER PAN.
2. STRUCTURAL SECTION 2 TO EXTEND 1.5' OFFSET FROM CURB BACK, REGARDLESS OF PRESENCE OF BUFFER SPACE.

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
(907) 269–0590

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

TYPICAL SECTIONS – TUDOR ROAD BUS STOP

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	C1	C1

ESTIMATE OF QUANTITIES

ITEM NO.	ITEM DESCRIPTION	PAY UNIT	TOTAL QUANTITY
202.0002.0000	REMOVAL OF PAVEMENT	S.Y.	2,300.0
202.0003.0000	REMOVAL OF SIDEWALK	S.Y.	60.0
202.0009.0000	REMOVAL OF CURB AND GUTTER	L.F.	1,900.0
203.0003.0000	UNCLASSIFIED EXCAVATION	C.Y.	1,450.0
301.0001.00D1	AGGREGATE BASE COURSE, GRADING D-1	TON	550.0
306.0001.0000	ATB	TON	200.0
306.0002.5228	ASPHALT BINDER, GRADE PG 52-28	TON	4.0
306.0002.6440	ASPHALT BINDER, GRADE PG 64-40	TON	5.0
401.0001.002A	HMA, TYPE II; CLASS A	TON	60.0
401.0004.5228	ASPHALT BINDER, GRADE PG 52-28	TON	50.0
408.2001.00VH	HMA, TYPE VH	TON	40.0
408.2004.6440	ASPHALT BINDER, GRADE PG 64-40	TON	50.0
603.0001.0018	CSP 18 INCH	L.F.	10.0
604.0004.0000	ADJUST EXISTING MANHOLE	EACH	1
604.0005.000A	INLET, TYPE A	EACH	2
606.2005.0000	ESSENTIAL REPLACEMENT PARTS	L.S.	ALL REQ'D
606.2006.0000	ESSENTIAL REPLACEMENT PARTS - INSTALLATION	C.S.	ALL REQ'D
606.2007.000B	CRASH CUSHION, PERMANENT REUSABLE	EACH	2
608.0001.0004	CONCRETE SIDEWALK, 4 INCHES THICK (MINNESOTA DR.)	S.Y.	60.0
608.0006.0000	CURB RAMP	EACH	[illegible]
608.2002.0000	ASPHALT PATHWAY	TON	170[illegible]
608.2013.E004	CONCRETE, TYPE V, 4 INCHES THICK, COLORED AND PATTERN IMPRINTED, (BUS STOP)	S.Y.	30.0
609.0002.0001	CURB AND GUTTER, TYPE I	L[illegible].	1,050
614.0001.0000	CONCRETE BARRIER	L.F.	[illegible]
615.0001.0000	STANDARD SIGN	[illegible].	37.0
618.0002.0000	SEEDING	LB.	10.0
618.0003.0000	WATER FOR SEEDING	M GAL.	4.0
620.0001.0000	TOPSOIL	S.Y.	450.0
627.0010.0000	ADJUSTMENT OF VALVE BOX	EACH	3
640.0001.0000	MOBILIZATION AND DEMOBILIZATION	L.S.	ALL REQ'D
641.0001.0000	EROSION, SEDIMENT AND POLLUTION CONTROL ADMINISTRATION BY [illegible]IRECTIVE	L.S.	ALL REQ'D
641.0005.0000	TEMPORARY EROSION, SEDIMENT AND POLLUTION CONTROL BY DIRECTIVE	C.S.	ALL REQ'D
641.0006.0000	WITHHOLDING	C.S.	ALL REQ'D
641.0007.0000	SWPPP MANAGER	L.S.	ALL REQ'D
642.0001.0000	CONSTRUCTION SURVEYING	L.S.	ALL REQ'D
642.0003.0000	THREE PERSON SURVEY PARTY	HR.	40

ESTIMATE OF QUANTITIES

ITEM NO.	ITEM DESCRIPTION	PAY UNIT	TOTAL QUANTITY
643.0002.0000	TRAFFIC MAINTENANCE	L.S.	ALL REQ'D
643.0003.0000	PERMANENT CONSTRUCTION SIGNS	L.S.	ALL REQ'D
643.0023.0000	TRAFFIC PRICE ADJUSTMENT	C.S.	ALL REQ'D
643.0025.0000	TRAFFIC CONTROL	C.S.	ALL REQ'D
643.0032.0000	FLAGGING	C.S.	ALL REQ'D
644.0001.0000	FIELD OFFICE	L.S.	ALL REQ'D
644.2004.0000	ENGINEERING COMMUNICA[illegible]ONS	C.S.	ALL REQ'D
645.0001.0000	TRAINING PROGRAM, 1 TRA[illegible]EES/APPRENTICES	LH	500
646.0001.0000	CPM [illegible]CHEDULI[illegible]	L.S.	ALL REQ'D
647.2002.0000	BAC[illegible], [illegible]D, 1 C[illegible] [illegible]CKET, 75 HP MIN, 15 FT DEPTH	C.S.	ALL REQ'D
660.0003.[illegible]	HIGHWAY L[illegible]HTING SYSTEM COMPLETE	L.S.	ALL REQ'D
660.2003.00[illegible]	TR[illegible] SIGNAL SYSTEM MODIFICATION, NEW SEWARD HWY & BENSON BLVD	L.S.	ALL REQ'D
66[illegible]2005.000[illegible]	[illegible]NCTION BOX, TYPE 2	EACH	1
660.2[illegible]5.001A	JUNCTION BOX, TYPE 1A	EACH	3
[illegible].0001.[illegible]	[illegible]OAD CENTER, TYPE 1	EACH	3
661.0002.[illegible]	LOAD CENTER, TYPE 1A	EACH	1
[illegible].0005.0000	MODIFY LOAD CENTER	EACH	2
670.0[illegible]10.0000	METHYL METHACRYLATE PAVEMENT MARKINGS	L.S.	ALL REQ'D
682.2000.0000	VAC-TRUCK POTHOLE	C.S.	ALL REQ'D

PRELIMINARY

TABLE OF ESTIMATING FACTORS

ITEM NO.	ITEM DESCRIPTION	UNIT
301.0001.00D1	AGGREGATE BASE COURSE, GRADING D-1	144 LB./C.F.
306.0001.0000	ATB	151 LB./C.F.
306.0002.5228	ASPHALT BINDER, GRADE PG 52-28	5.3% OF TOTAL WEIGHT OF 306.0001
306.0002.6440	ASPHALT BINDER, GRADE PG 64-40	5.3% OF TOTAL WEIGHT OF 306.0001
401.0001.002A	HMA, TYPE II; CLASS A	151 LB./C.F.
401.0004.5228	ASPHALT BINDER, GRADE PG 52-28	5.3% OF TOTAL WEIGHT OF 401.0001.002A
408.2001.00VH	HMA, TYPE VH	151 LB./C.F.
408.2004.6440	ASPHALT BINDER, GRADE PG 64-40	5.3% OF TOTAL WEIGHT OF 408.2001.00VH
608.2002.0000	ASPHALT PATHWAY	151 LB./C.F.
618.0003.0000	WATER FOR SEEDING	1.0 GAL./S.F.

STATE OF ALASKA 49TH SWEENEY 21351 REGISTERED PROFESSIONAL ENGINEER
P.S.&E. REVIEW JUNE 2020

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
(907) 269-0590

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

ESTIMATE OF QUANTITIES

DRAWING LOCATION C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CIV3D19\PLANSET\C_SHEETS\00366_C01_EST-AWP.DWG

DATE	TIME	SCALE	DESIGNED BY	CHECKED BY	DRAFTED BY
6/24/2020	5:16 PM	N/A	ZJH	LAS	MF

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	D1	D2

202.0002.0000 - REMOVAL OF PAVEMENT

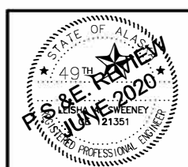
SHEET	STATION FROM	STATION TO	202.0002.0000 REMOVAL OF PAVEMENT (SY)	REMARKS
H23-H24	"MINN" 431+80	"MINN" 436+20	752	
H24	"MINN" 436+41	"MINN" 436+87	94	
H24-H25	"MINN" 439+17	"MINN" 443+76	183	
H36	"NSH" 504+22	"NSH" 504+62	71	
H43-H44	"TDR" 160+17	"TDR" 163+38	386	
H46-H47	"TDR" 172+66	"TDR" 178+07	755	
H53	"MDN" 343+93	"MDN" 345+85	7	
		TOTAL:	2,248	
		PAY ITEM QUANTITY:	2,300	

202.0003.0000, 608.2002.0000, 608.0001.0004 - REMOVAL AND INSTALL OF SIDEWALK

SHEET	STATION FROM	STATION TO	202.0003.0000 REMOVAL OF SIDEWALK (SY)	608.2002.0000 ASPHALT PATHWAY (TON)	608.0001.0004 CONCRETE, SIDEWALK, 4 INCHES THICK	REMARKS
H23-H24	"MINN" 431+80	"MINN" 436+20		85		
H24	"MINN" 436+41	"MINN" 436+87		11		
H24-H25	"MINN" 439+17	"MINN" 443+76		1		
H26	"MINN" 445+11	"MINN" 445+23	6		6	
H36	"NSH" 504+22	"NSH" 504+62		4		
H43-H44	"TDR" 160+17	"TDR" 163+38		12		
H46-H47	"TDR" 172+66	"TDR" 178+07		52		
H53	"MDN" 343+93	"MDN" 345+85	49		4	
		TOTAL:	55	165	5	
		PAY ITEM QUANTITY:	60	170	60	

604.0004.0000, 604.0005.000A - MANHOLE & INLET SUMMARY

SHEET	STATION	OFFSET	604.0004.0000 ADJUST EXISTING MANHOLE (EA)	604.0005.000A INLET, TYPE A (EA)	REMARKS
H44	162+59.1	36.0 LT	1		
H46	174+64.9	33.2 LT		1	S1-1
H47	176+80.4	42.0 LT		1	S1-2
		PAY ITEM QUANTITY:	1	2	



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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

SUMMARY TABLES

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF

SCALE N/A

DATE 6/24/2020 TIME 5:16 PM

DRAWING LOCATION
C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CIVD19\PLANSET\D_SHEETS\0366_D01_SUM-AWP.DWG

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	D2	D2

202.0009.0000, 609.0002.0001 - REMOVAL AND INSTALL OF CURB AND GUTTER

SHEET	STATION		202.0009.0000	609.0002.0001	REMARKS
	FROM	TO	REMOVAL OF CURB AND GUTTER (LF)	CURB AND GUTTER, TYPE I (LF)	
H23-H24	"MINN" 431+80	"MINN" 436+20			
H24	"MINN" 436+41	"MINN" 436+87			
H24-H25	"MINN" 439+17	"MINN" 443+76	925	72	
H26	"MINN" 445+11	"MINN" 445+23	24	24	
H36	"NSH" 504+22	"NSH" 504+62	16	16	
H43-H44	"TDR" 160+17	"TDR" 163+38	359	359	
H46-H47	"TDR" 172+66	"TDR" 178+07	542	542	
H53	"MDN" 343+93	"MDN" 345+85	30	30	
		TOTAL:	1896	1043	
		PAY ITEM QUANTITY:	1900	1050	

627.0010.0000 - ADJUSTMENT OF VALVE BOX

SHEET	STATION	OFFSET	REMARKS
H24	"TDR" 161+95.2	44.0' LT	
H24	"TDR" 162+32.4	46.8' LT	
H25	"TDR" 163+20.3	44.3' LT	
	TOTAL:	3	
	PAY ITEM QUANTITY:	3	

PIPE SUMMARY - 603.0001.0018

SHEET	INLET			OUTLET			SIZE (IN)	LENGTH (LF)	SLOPE (%)	REMARKS
	STATION	OFFSET	INVERT ELEV.	STATION	OFFSET	ELEV.				
H47	176+80.4	42.0 LT	154.85	EXISTING PIPE		155.08	18	9.3	2.5	P.I. TIE INTO EXISTING PIPE
						PAY ITEM QUANTITY:		10		

608.0006.0000 - CURB RAMP

SHEET	STATION	OFFSET	TYPE	ASP	DETAIL	REMARKS
H24	"TDR" 162+45	45' LT	DIRECTIONAL		X	
H25	"TDR" 162+70	42' LT	PERPENDICULAR	X		
		PAY ITEM QUANTITY:	2			

614.0001.0000 - CONCRETE BARRIER

	FROM	TO	LENGTH (LF)	
H24-H25	"MINN" 439+39	"MINN" 445+60	622	
		TOTAL:	4	
		PAY ITEM QUANTITY:	430	

618.0002.0000 - SEEDING

SHEET	STATION		OFFSET	WEIGHT (LB)	REMARKS
	FROM	TO			
H43-H44	"TDR" 160+17	"TDR" 163+38	LT	0.9	
H46-H47	"TDR" 172+66	"TDR" 178+07	LT	4.3	
			TOTAL:	5.2	
			PAY ITEM QUANTITY:	10	

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SUMMARY TABLES

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SCALE N/A

DATE 6/24/2020 TIME 5:16 PM

DRAWING LOCATION
C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CIV3D19\PLANSET\D_SHEETS\00366_D01_SUM-ANP.DWG

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0001607/CFHWY00366	2020	E1	E4

DESIGNED BY ZJH
CHECKED BY LAS
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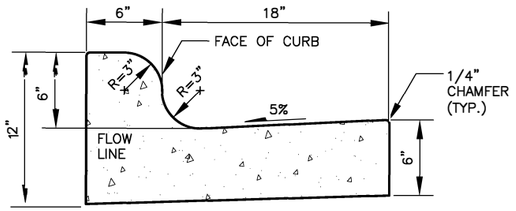
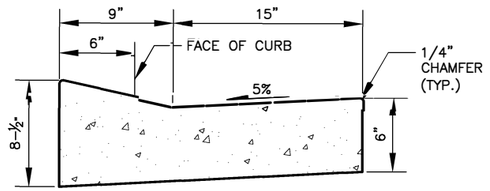
SCALE N/A

DATE TIME
6/8/20 10:36 AM

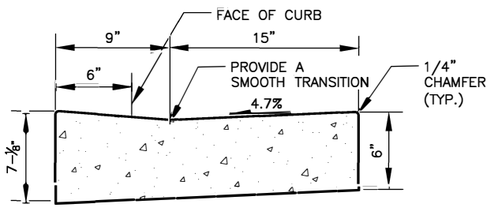
DRAWING LOCATION
C:\USERS\ZJHARTMAN\ON EDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CIV3D19\PLANSET\E_SHEETS\E1_CURB&GUTTER.DWG



6" MOUNTABLE CURB & GUTTER



DEPRESSED CURB & GUTTER (CURB CUT)

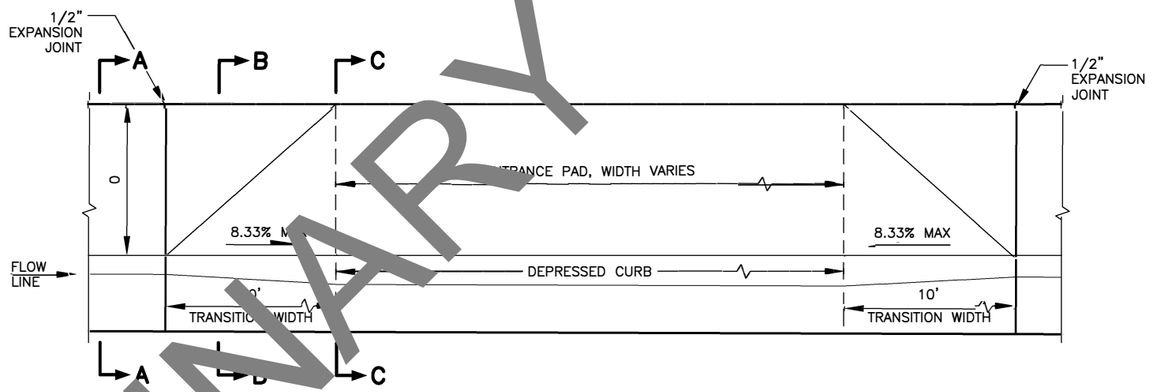


ADA CURB & GUTTER

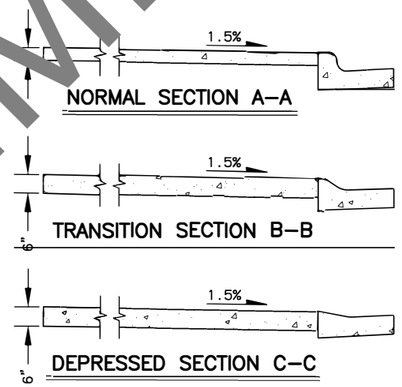
CURB NOTES:

1. MOUNTABLE AND DEPRESSED PANS SHALL MATCH THE ROADWAY CROSS SLOPE IN THE HIGH SIDE OF SUPER ELEVATED AREAS.
2. USE THE ADA CURB & GUTTER FOR ALL CURB RAMPS.

CURBS



DEPRESSED CURB WITH ENTRANCE PAN



CURB CUT NOTES:

1. TRANSITION WIDTH IS SHOWN FOR 6 INCH HIGH CURB & GUTTER.
2. WHERE THE 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.
3. CONSTRUCT RAMP RUNS AND LANDINGS OF CONCRETE WHEN CONCRETE SIDEWALK IS PRESENT.
4. PROVIDE A BROOMED FINISH ON CONCRETE RAMP RUNS PERPENDICULAR TO THE RAMP SLOPE.

VEHICULAR CURB CUT

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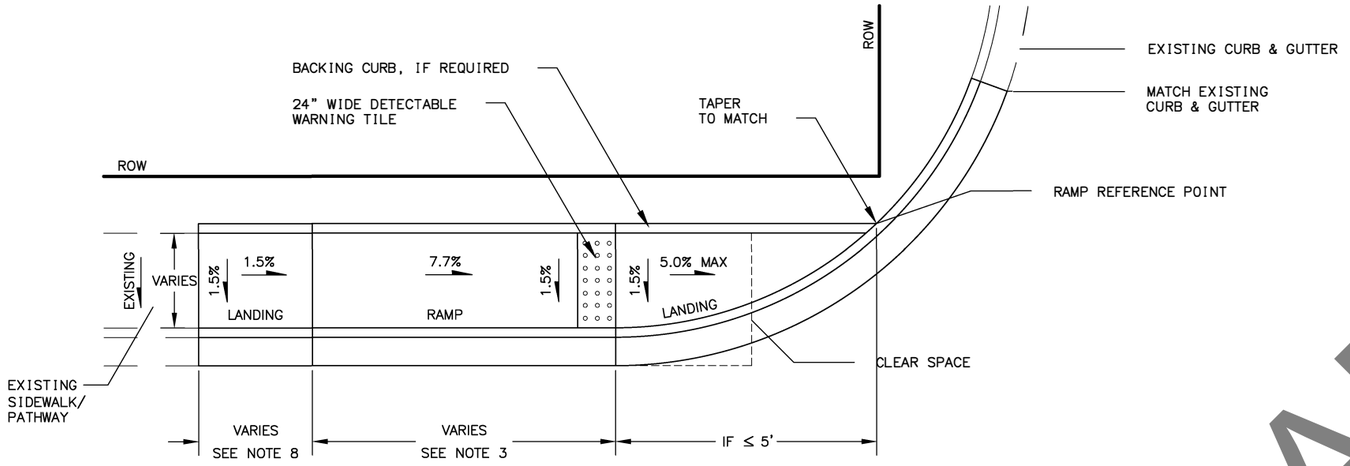
CURB & GUTTER DETAIL

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0001607/CFHWY00366	2020	E2	E4



NARROW SIDEWALK DIRECTIONAL RAMP

CONSTRUCTION NOTES:

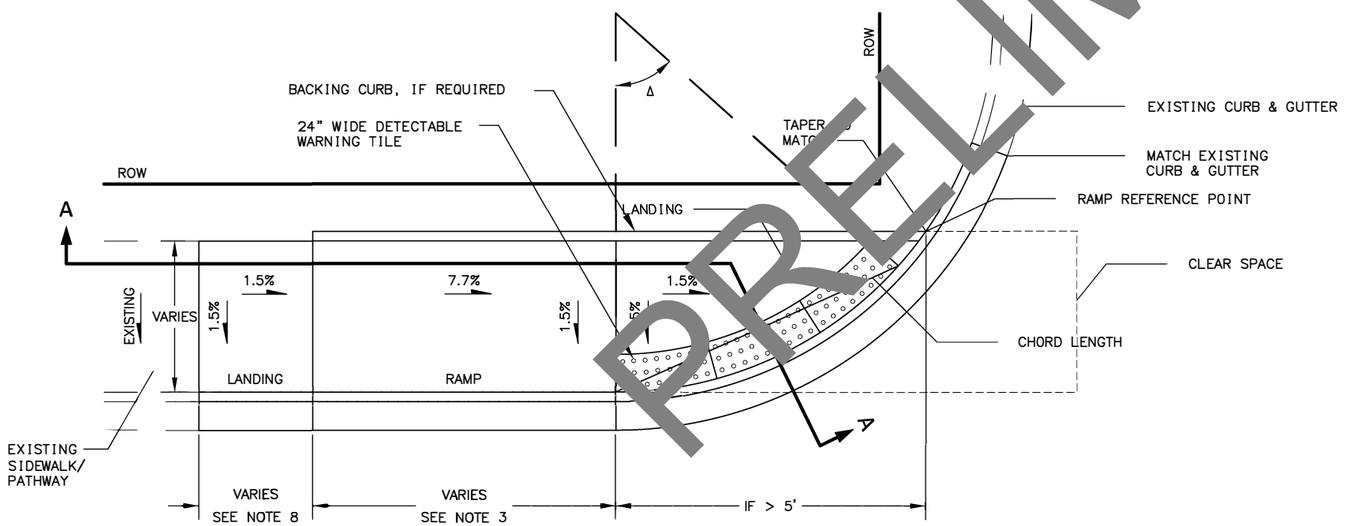
1. SEE PLANS FOR RAMP TYPE AT SPECIFIC LOCATION. SEE STRIPING PLANS FOR CROSSWALK LAYOUT.
2. CONSTRUCT RAMP RUNS AND LANDINGS OF 4" THICK (MIN.) CONCRETE, REGARDLESS OF WHETHER THE SIDEWALK IS ASPHALT OR CONCRETE.
3. CONSTRUCT RAMP SLOPES AT 7.7% (5.0% MIN. AND 8.3% MAX.). IF SITE CONDITIONS WARRANT IT, RAMP LENGTH SHOULD BE INCREASED TO KEEP GRADES UNDER THE 8.3% MAXIMUM, BUT ARE NOT REQUIRED TO EXCEED 15'. THE RESULTING RAMP GRADE AT A 15' RAMP LENGTH IS ACCEPTABLE EVEN IF IT EXCEEDS 8.3%.
4. CONSTRUCT SIDEWALK CROSS-SLOPES AT 1.5% (1.0% MIN. AND 2.0% MAX.).
5. CONSTRUCT GRADE BREAKS PERPENDICULAR TO RAMP RUNS.

PROVIDE A COARSE BROOM FINISH RUNNING PERPENDICULAR TO THE CURB ON RAMP RUNS AND UPPER LANDINGS AND PARALLEL TO THE CURB ON LOWER LANDINGS.

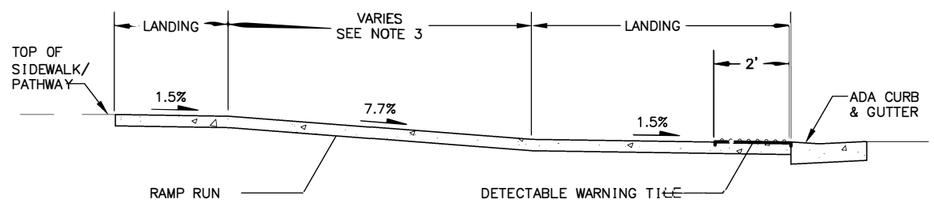
7. 24" DETECTABLE WARNING TILES MEETING SECTION 705.1 OF THE 2006 ADA STANDARDS FOR TRANSPORTATION FACILITIES FOR THE FULL WIDTH OF THE RAMP. ALIGN TRUNCATED DOME PATTERN IN THE PREDOMINANT DIRECTION OF WHEELCHAIR TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN DOMES.
8. LENGTH OF LANDING:
   a. IF A CONSTRAINT EXISTS AT BACK OF SIDEWALK THAT INHIBITS TURNING, LENGTH OF LANDING IS 60".
   b. IF NO CONSTRAINT EXISTS, LENGTH OF LANDING IS 48".

DESIGN NOTES:

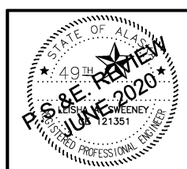
1. DIRECTIONAL CURB RAMPS ARE TYPICALLY USED WHEN THE SIDEWALK IS AT LEAST 4' WIDE AND ONLY ONE DIRECTION OF TRAVEL IS REQUIRED.
2. AVOID DRAINAGE GRATES WITHIN MARKED CROSSWALKS OR, IF CROSSWALKS ARE NOT MARKED, WITHIN THE AREA A STANDARD MARKED CROSSWALK WOULD ENCLOSE. IF A DRAINAGE GRATE IS LOCATED DIRECTLY IN THE PEDESTRIAN ACCESS ROUTE (e.g. A WHEELCHAIR MUST PASS OVER IT), INSTALL A GRATE MEETING THE REQUIREMENTS OF SECTION 302.3 OF THE 2006 ADA STANDARDS.
3. BEYOND THE BOTTOM GRADE BREAK, PROVIDE A 4'x4' CLEAR SPACE WITHIN THE WIDTH OF THE PEDESTRIAN STREET CROSSING AND WHOLLY OUTSIDE THE PARALLEL VEHICLE TRAVEL LANE.



WIDE SIDEWALK DIRECTIONAL RAMP



SECTION A-A



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STATE OF ALASKA
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HSIP: ANCHORAGE PEDESTRIAN LIGHTING

UNIDIRECTIONAL CURB RAMP DETAIL

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF

SCALE N/A

DATE TIME 6/9/2020 10:23 AM

DRAWING LOCATION
C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CIV3D19\PLANSET\E_SHEETS\E2_TUDORSPECIALCURB.DWG

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	E3	E4

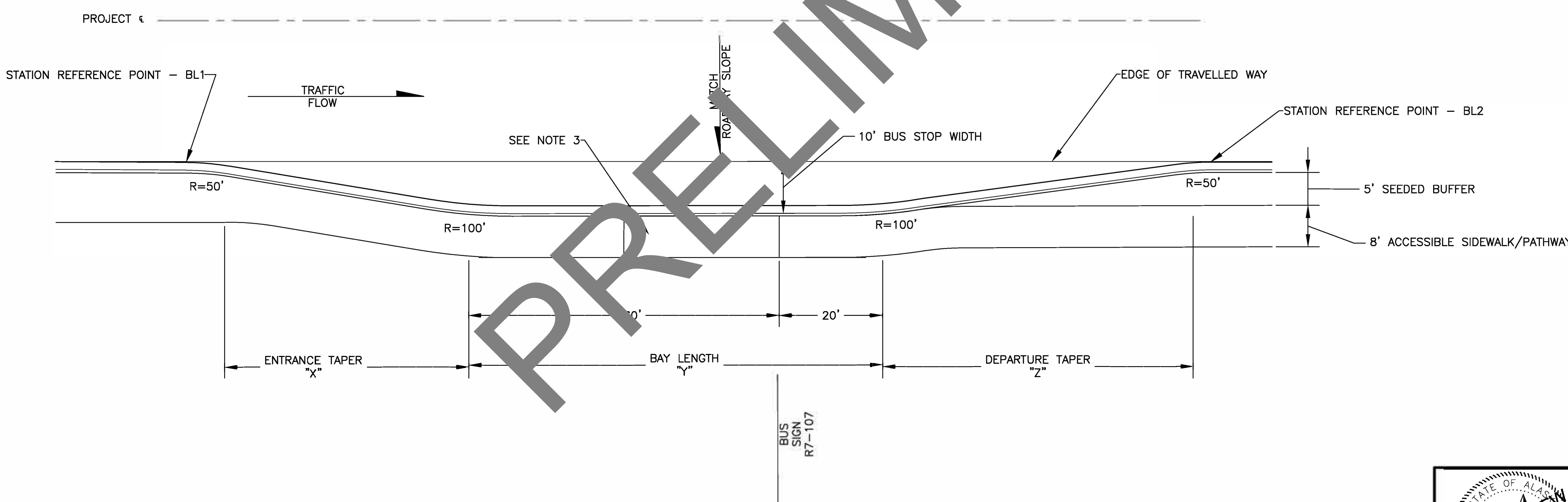
PRELIMINARY

BUS TURNOUT DIMENSION

PULLOUT TYPE	ENTRANCE TAPER "X"	RATE	BAY LENGTH "Y"	DEPARTURE TAPER "Z"	RATE	DESCRIPTION
A	60'	6:1	80'	60'	6:1	URBAN ROAD

BUS TURNOUT NOTES:

1. CONSTRUCT CURB ANGLES TO THE RADII SHOWN.
2. PAVE APPROACH BETWEEN BUS STOP AND ACCESS WHEN USED.
3. ALL BUS STOPS SHALL HAVE, AS A MINIMUM, AN 8' WIDE BY 30' LONG PAVED LOADING AREA FOR WHEELCHAIR LIFT OPERATION AND DISABLED USER ACCESS.
4. BEGIN BUS TURNOUT STATION BASED ON DIRECTION OF PROJECT STATIONING. STATION REFERENCE POINT IS REFERENCED TO WHERE EDGE OF GUTTER PAN DEVIATES FROM EDGE OF TRAVELLED WAY.
5. ALL BUS STOPS SHALL COMPLY WITH THE DESIGN REQUIREMENTS OUTLINED IN MUNICIPALITY OF ANCHORAGE (MOA) DESIGN CRITERIA MANUAL (DCM) CHAPTER 7.
6. SEE H SHEETS FOR BUS STOP SIGNAGE & STRIPING.



TYPICAL BUS TURNOUT

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P.S.&E. REVIEW JUNE 2020

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
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HSIP: ANCHORAGE PEDESTRIAN LIGHTING

BUS STOP DETAIL

DESIGNED BY	CHECKED BY	DRAFTED BY
ZJH	LAS	MF

SCALE N/A

DATE 2/3/2020 TIME 3:16 PM

DRAWING LOCATION
C:\USERS\ZJHARTMAN\ONEDRIVE – STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CIV3D19\PLANSET\E_SHEETS\E3_BUSSTOPDETAIL.DWG

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0001607/CFHWY00366	2020	E4	E4

DESIGNED BY ZJH
CHECKED BY LAS
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SCALE N/A

DATE 2/3/2020 TIME 4:30 PM

DRAWING LOCATION
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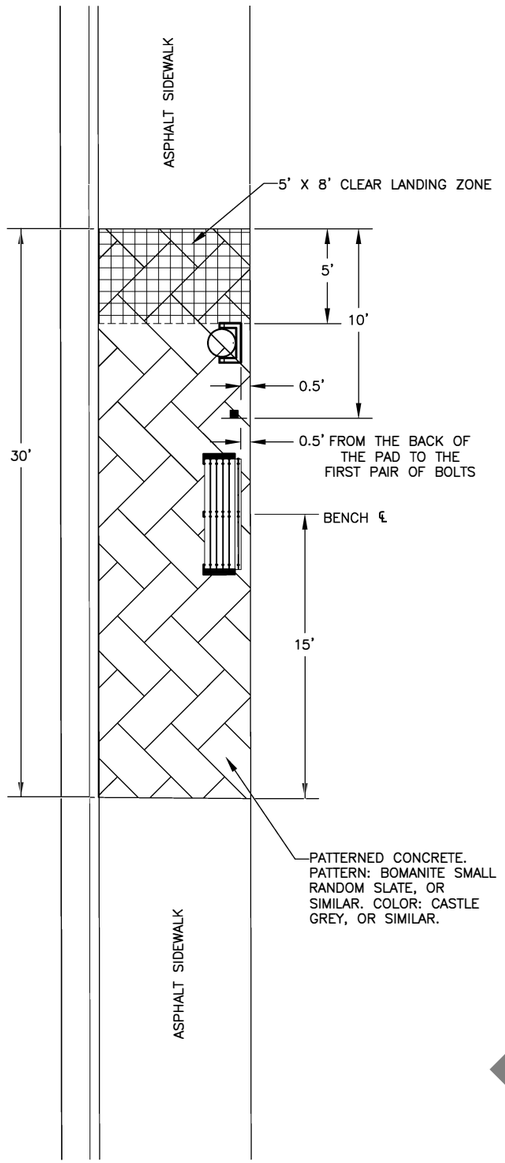
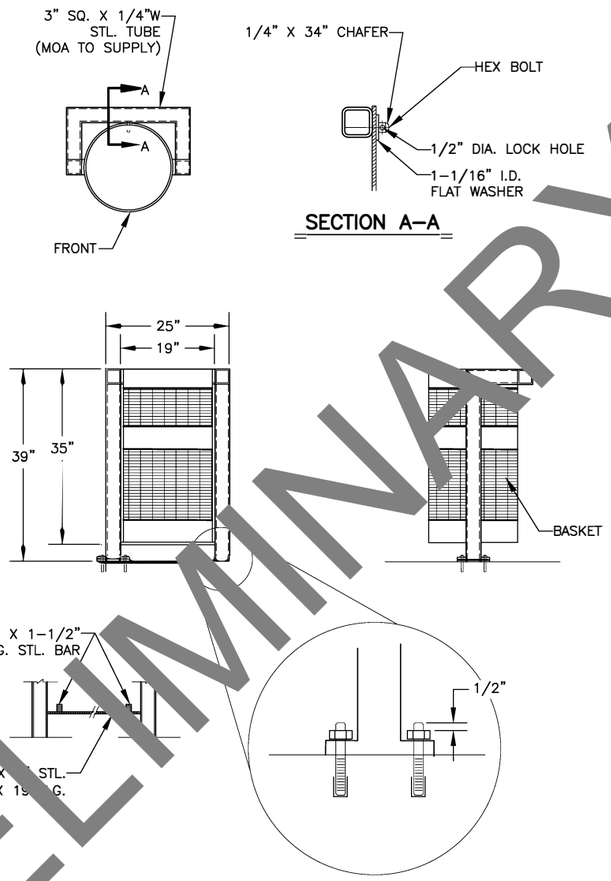


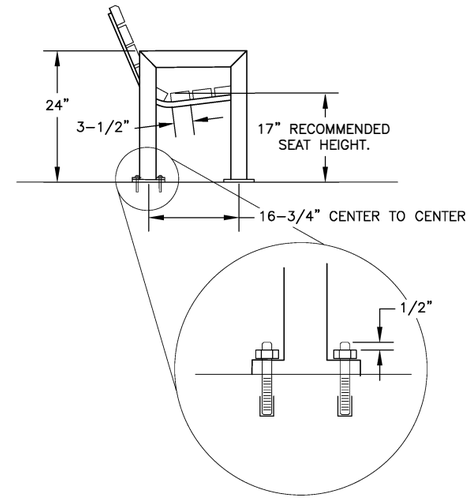
BUS PAD LAYOUT

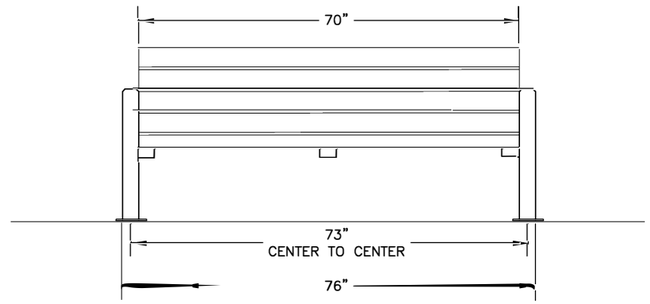


TRASH RECEPTACLE

BUS PAD NOTES:

1. MOA TO SUPPLY:
   1.1. DUMOR, INC. SERIES 48 TRASH RECEPTACLE
   1.2. VICTOR STANLEY, INC. PARSONS SERIES, MODEL P-8, SURFACE MOUNTED BENCH.
2. CONTRACTOR TO PROVIDE INSTALLATION LABOR AND MATERIALS INCLUDING, BUT NOT LIMITED TO, NUTS, BOLTS, WASHERS, ANCHORS, CONDUIT, AND ELECTRICAL EQUIPMENT.
3. ALL BUS STOPS WILL COMPLY WITH THE DESIGN REQUIREMENTS OUTLINED IN MUNICIPALITY OF ANCHORAGE (MOA) DESIGN CRITERIA MANUAL (DCM) CHAPTER 7.





BENCH

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BUS PAD DETAIL

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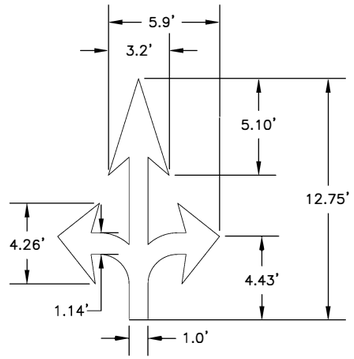
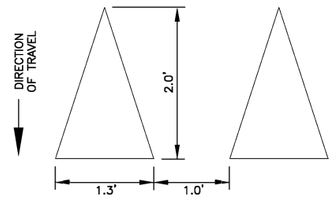
NO.	DATE	REVISION

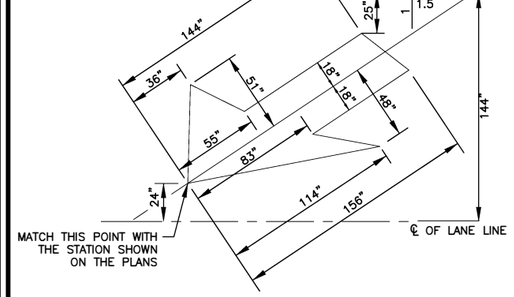
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	H1	H64



LEFT/THRU/RIGHT ARROW DETAIL



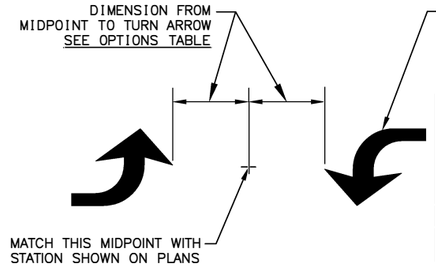
YIELD PAVEMENT MARKINGS DETAIL



LANE DROP ARROW DETAIL

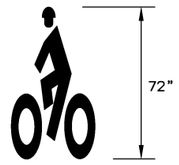
SIGNING & STRIPING NOTES:

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 ALASKA STANDARD PLAN S-23.
3. FABRICATE ALL SIGNS FROM 0.125" THICK ALUMINUM SHEETING, UNLESS STATED ELSEWHERE.
4. FOR SIGNS SUPPORTED BY MULTIPLE POSTS, FABRICATE THE POSTS WITH THEIR TOPS LEVEL WITH ONE ANOTHER.
5. FOR PERFORATED STEEL TUBE SIGNPOSTS, INSTALL THE CONCRETE FOUNDATION OPTION SHOWN ON STANDARD PLAN S-30. TRIM EACH PT POST TO LIMIT THE LENGTH INSERTED INTO THE FOUNDATION TO 12 INCHES.
6. 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.
7. 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.
8. 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.
9. SELECTIVE AND HAND CLEARING SHALL BE PERFORMED AT THE DISCRETION OF THE ENGINEER, IN ACCORDANCE WITH SECTION 201, UPSTREAM OF ALL SIGN INSTALLATION LOCATIONS TO ACHIEVE MINIMUM SIGN VISIBILITY REQUIREMENTS. IF NOT INCLUDED AS A SEPARATE ITEM, THIS WORK SHALL BE SUBSIDIARY TO THE SIGN INSTALLATION ITEMS AND WORK.
10. FOR ALL FINAL PAVEMENT MARKINGS USE METHYLMETHACRYLATE MATERIALS. LONGITUDINAL, TRANSVERSE AND SYMBOL MARKINGS SHALL BE [illegible] AND GORE STRIPES SHALL BE SURFACE APPLIED AS SPECIFIED IN SECTION [illegible] OF THE SPECIFICATIONS.
11. DIMENSIONS REFER TO THE CENTER OF STRIPE AND THE EDGE OF PAVEMENT OR FACE OF CURB WHEN PRESENT.
12. IF THE NEW AND EXISTING PAVEMENT MARKINGS ARE NOT ALIGNED AT MATCH LINE, TRANSITION BETWEEN THE TWO USING A 100:1 TAPER IN THE NEW PAVEMENT.
13. WHERE NEW STRIPING IS TO EXTEND BEYOND PAVING LIMITS, REMOVE EXISTING STRIPING IN ACCORDANCE WITH SUBSECTION [illegible].04 TO THE EXTENT OF STRIPING LIMITS.



OPTIONS	
POSTED SPEED	DIMENSION
35 MPH AND LESS	8 FEET
40 MPH-45 MPH	12 FEET
50 MPH AND GREATER	16 FEET

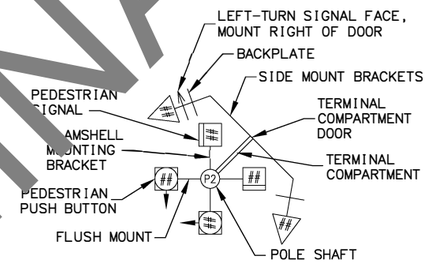
TWO WAY LEFT TURN ARROW DETAIL



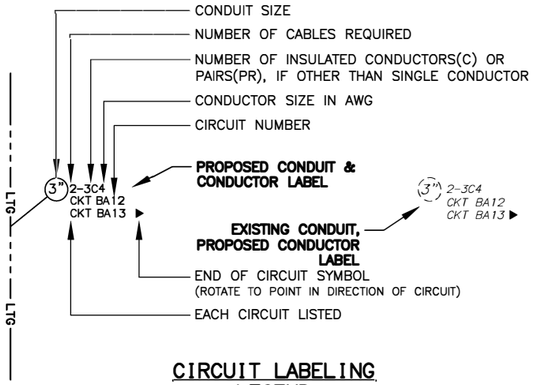
HELMETED MUTCD BIKE SYMBOL
(EXCLUDE ARROW UNLESS SHOWN IN PLANS)

ABBREVIATIONS

AWG	AMERICAN WIRE GAUGE	NB	NORTH BOUND
CAM	CAMERA	OMNI	OMNI DIRECTIONAL ANTENNA
EB	EAST BOUND	P#	TRAFFIC SIGNAL POLE #
GND	GROUND	PE	PHOTOELECTRIC CELL
HDPE	HIGH DENSITY POLYETHYLENE CONDUIT	PED B ##	PEDESTRIAN PUSH BUTTON #
HEAD	VEHICULAR SIGNAL HEAD	PEDI	PEDESTRIAN SIGNAL HEA[illegible]
SIG	SIGNAL	PRE #	PRI[illegible]MPTION #
I/C	INTERCONNECT	PRE CON #	PRE[illegible]MPTION CON[illegible]RMATION LIGHT #
INTX	INTERSECTION	[illegible]	[illegible]ADA
INTX L	INTERSECTION LIGHTING	RMC	RIGID [illegible]ETAL CONDUIT
LC	LOAD CENTER	[illegible]	SOUTH BO[illegible]ND
LFNC	LIQUIDTIGHT FLEXIBLE NONMETALLIC CONDUIT	[illegible]	TRAFFIC CONTROLLER
LTG	LIGHTING	[illegible]	[illegible]T BOUND
MUTCD	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES	YAGI	DIRECTIONAL ANTENNA



POLE SHAFT LEGEND



CIRCUIT LABELING LEGEND

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

FOUNDATIONS NOTES:

1. STATION & C.L. REFERENCE ARE TO THE CENTER OF THE STRUCTURE, EXCEPT ON LOOPS WHICH ARE TO THE CENTER OF THE TRAILING EDGE OF THE LOOP (EDGE NEAREST INTERSECTION).
2. JUNCTION BOX LOCATIONS APPROXIMATE. LOCATE J-BOXES SO THAT THEY ARE LOCATED OUT OF THE PATHWAY, SIDEWALK, CURB RAMPS, AND DRAINAGE COLLECTION AREAS.
3. INSTALL LOAD CENTER AND TRAFFIC CONTROLLER FOUNDATIONS WITHIN 1-DEGREE OF PLUMB.
4. INSTALL ANCHOR BOLTS IN CAST FOUNDATIONS TO BE WITHIN 1:48 OF PLUMB.
5. TOPSOIL AND SEED ANY DISTURBED AREAS.

SIGNAL SYSTEM AND ILLUMINATION NOTES:

1. FURNISH THE SIGNAL AND LUMINAIRE MASTARM LENGTHS AND DIMENSIONS SPECIFIED ON THE POLE ELEVATIONS.
2. INSTALL DEVICES SUCH THAT THE DIMENSIONS SHOWN TO THE BOTTOM OF THE DEVICES ON THE POLE ELEVATIONS ARE MINIMUMS. VERTICAL DIMENSIONS TO SIGNAL HEADS ARE TO BOTTOM OF THE BACK PLATE.
3. INSTALL MAST ARMS PERPENDICULAR TO THE ROADWAY CENTERLINE. ACCEPTABLE VARIANCE IS +/- 1-DEGREE.
4. SALVAGE SIGNAL POLE ASSEMBLIES, SIGNS, SIGNAL FACES, AND LUMINAIRES AND DELIVER TO MAINTENANCE AND OPERATIONS WITHIN 48-HOURS OF DECOMMISSIONING. COMPONENTS DAMAGED WHILE IN THE CONTRACTOR'S CUSTODY MUST BE REPLACED AT THE CONTRACTOR'S EXPENSE. REMOVE AND DISPOSE OF FOUNDATIONS.
5. SALVAGE EXISTING CONTROLLER CABINET AFTER NEW CONTROLLER CABINET IS IN SERVICE AND DELIVER TO MAINTENANCE AND OPERATIONS WITHIN 48-HOURS OF DECOMMISSIONING.
6. REMOVE ABANDONED OR UNUSED TRAFFIC JUNCTION BOXES UNLESS OTHERWISE NOTED.
7. NEW SIGNAL HEADS THAT ARE MOUNTED BUT NOT IN OPERATION SHALL BE COVERED WITH A COMMERCIALLY AVAILABLE SIGNAL-SHIRT. EACH SIGNAL SHIRT SHALL FEATURE ELASTICIZED OPENINGS THAT FIT OVER THE VISORS AND AT LEAST TWO STRAPS TO SECURE IT TO THE SIGNAL. PROVIDE SHIRTS WITH A LEGEND THAT READS "OUT OF SERVICE" AND A CENTER SECTION THAT ALLOWS AN OPERATOR TO SEE THE INDICATIONS DURING SYSTEM TESTS.
8. SIGNAL HEADS ARE TO BE LOCATED PER FIGURE 4D-100, TYPICAL SIGNAL HEAD LOCATIONS, PER THE ALASKA TRAFFIC MANUAL. ACCEPTABLE VARIANCE IS +/- 1-FOOT.
9. AIM SIGNALS PER TABLE 660-2, THROUGH-SIGNAL AIMING POINT, OF THE SPECIAL PROVISIONS. SIGNALS SHALL ALSO BE AIMED SO AS NOT TO BE VISIBLE FROM SIDE STREET TRAFFIC. ACCEPTABLE VARIANCE IS +/- 5 DEGREES.
10. STREETLIGHT MAINTENANCE RESPONSIBILITY IS AS SHOWN ON FEBRUARY, 2009 MOA STREETLIGHT INVENTORY.
11. SALVAGED POLES' DELIVERY LOCATION IS BASED ON THEIR MAINTAINING AGENCY AS SHOWN IN LIGHTING SCHEDULES. DOT&PF POLES SHALL BE DELIVERED TO DOT&PF ANCHORAGE MAINTENANCE AND OPERATIONS YARD OR TO A LOCATION SPECIFIED BY THE ENGINEER. MOA POLES SHALL BE DELIVERED TO THE MOA POLE YARD AT 3RD & ORCA ST.
12. WHERE EXISTING JUNCTION BOXES ARE SHOWN TO BE USED WITH NEW ELECTROLIERS, ROUTE NEW RMC CONDUIT FROM THE JUNCTION BOX TO THE ELECTROLIER FOUNDATION.
13. WHERE EXISTING ELECTROLIERS ARE POWERED VIA OVERHEAD ELECTRIC LINES, REMOVE & SALVAGE OVERHEAD ELECTRIC LINES AFTER NEW ELECTROLIERS ARE CONNECTED TO POWER AS SHOWN IN PLANS. FINISHED INSTALLATIONS SHALL NOT BE POWERED VIA OVERHEAD ELECTRIC.
14. WHERE CONDUIT IS CALLED OUT USING AN EXISTING LABEL LEAVE EXISTING CONDUIT IN PLACE AND PULL NEW CONDUCTORS. MODIFIED LIGHTING CIRCUITS SHALL HAVE NEW CONDUCTORS PULLED FROM LIGHTING FIXTURE BACK TO LOAD CENTER.
15. ALL WORK INVOLVED FOR REMOVAL AND INSTALLATION OF ELECTROLIERS SHALL REMAIN WITHIN DOT&PF RIGHT-OF-WAY.

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

TRAFFIC LEGEND AND NOTES

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
(907) 269-0590

STATE OF ALASKA · 49TH · REVIEWED P.S.&E. JUNE 2020 · REGISTERED PROFESSIONAL ENGINEER · LEIGH A. SWEENEY · 21351

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF
SCALE N/A
DATE TIME 6/24/2020 10:18 AM
DRAWING LOCATION C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CIV3D19\PLANSET\H_SHEETS\01-TRAFFIC_LEGEND_AND_NOTES.DWG

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	H2	H64

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF

SCALE N/A

DATE 11/26/2019 TIME 5:33 PM

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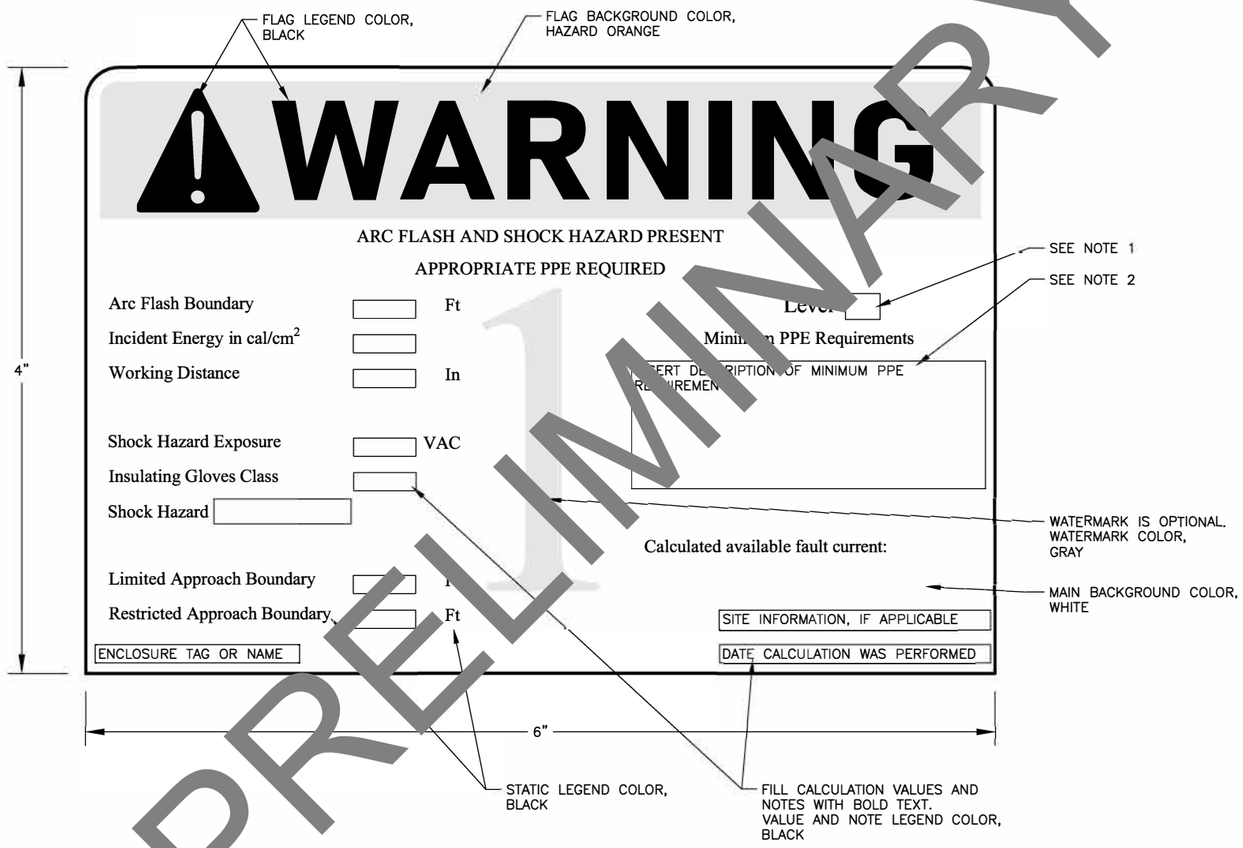
NOTES:

1. APPLICABLE STATE OF ALASKA DOT&PF ELECTRICAL EQUIPMENT MUST BE LABELED WITH DOT&PF-DEFINED SITE-SPECIFIC PPE LEVELS, AS DEFINED IN NFPA 70E 130.5(H)(3)(c). THE LEVELS ARE: LEVEL 1 (0 TO 4 CAL/CM^2), 2 (4.1 TO 8.0 CAL/CM^2), 3 (8.1 TO 25.0 CAL/CM^2), 4 (25.1 TO 39.9 CAL/CM^2), OR WP (WORK PROHIBITED, FOR EQUIPMENT IN WHICH THE CALCULATED ARC FLASH INCIDENT ENERGY IS ≥ 40 CAL/CM^2).
2. MINIMUM PPE REQUIREMENTS FOR EACH PPE LEVEL DESCRIBED IN NOTE 1 ARE THE SAME REQUIREMENTS AS DESCRIBED IN NFPA 70E TABLE 130.7(C)(15)(c). THESE PPE REQUIREMENTS ARE TO BE USED AS THE SITE-SPECIFIC PPE LEVELS.



STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
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(907) 269-0590

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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

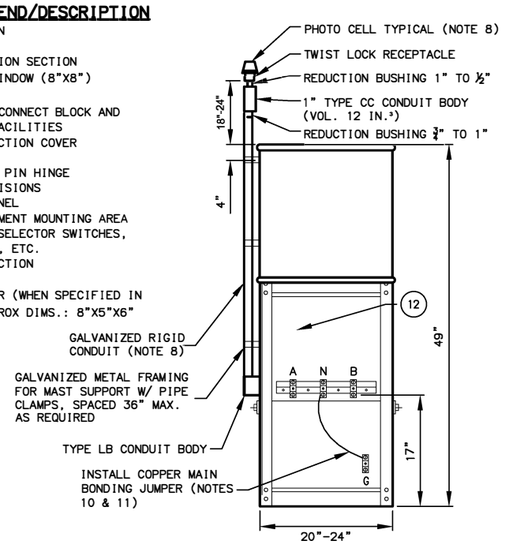
HSIP: ANCHORAGE PEDESTRIAN LIGHTING

ARC FLASH AND SHOCK HAZARD LABELING DETAILS

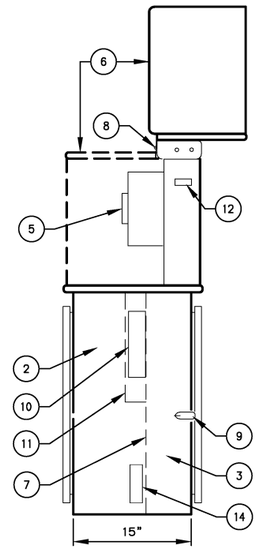
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0001607/CFHWY00366	2020	H3	H64

EQUIPMENT LEGEND/DESCRIPTION

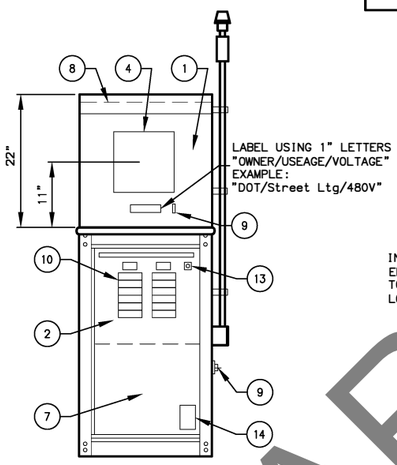
1. METERING SECTION
2. LOAD SECTION
3. UTILITY CONNECTION SECTION
4. METER READING WINDOW (8"X8")
5. METER SOCKET W/ TEST-BYPASS/DISCONNECT BLOCK AND SAFETY SOCKET FACILITIES
6. HINGED METER SECTION COVER
7. DEADFRONT
8. STAINLESS STEEL PIN HINGE
9. PADLOCKING PROVISIONS
10. DISTRIBUTION PANEL
11. ACCESSORY EQUIPMENT MOUNTING AREA FOR CONTACTOR, SELECTOR SWITCHES, TERMINAL STRIPS, ETC.
12. SERVICE PULL SECTION
13. SELECTOR SWITCH
14. ENCLOSURE HEATER (WHEN SPECIFIED IN THE PLANS). APPROX DIMS.: 8"X5"X6"



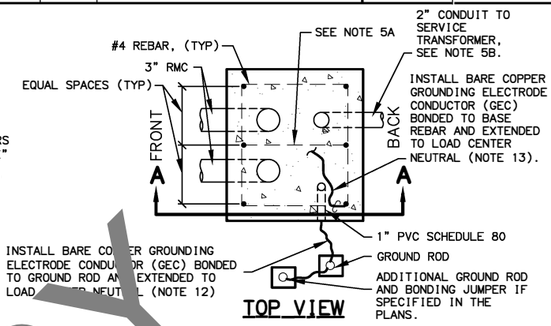
REAR VIEW
(W/ DOOR REMOVED)



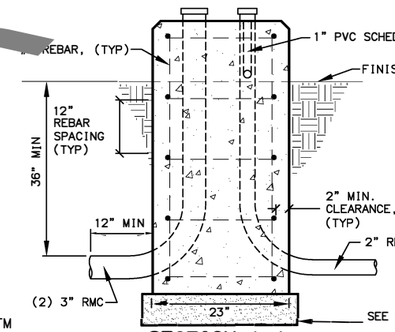
RIGHT SIDE VIEW
(W/ METER SECTION OPEN)



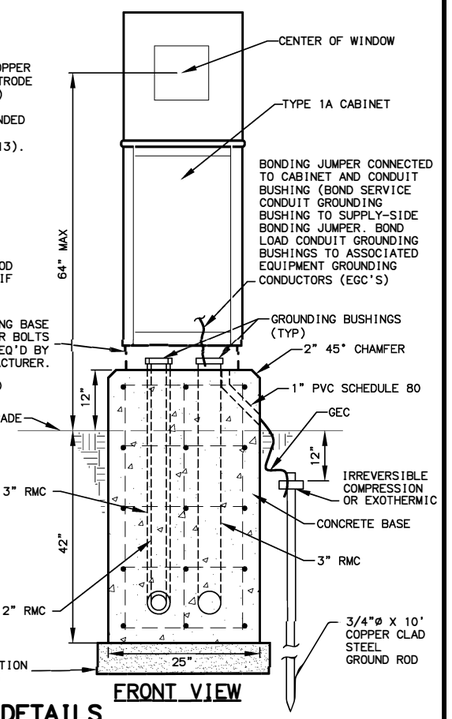
FRONT VIEW
(W/ DOOR REMOVED)



TOP VIEW



SECTION A-A



FRONT VIEW

FOUNDATION DETAILS

TYPE 1A CABINET DETAILS

FOUNDATION NOTES:

1. GRADE AWAY FROM THE BASE WITH A MINIMUM SLOPE OF [illegible]. USE [illegible] PRE-MOULDED BITUMINOUS JOINT BETWEEN THE BASE AND CONCRETE SIDEWALK OR PAVING, [illegible] ADJACENT TO A SIDEWALK OR PATHWAY.
2. PROVIDE ANCHOR BOLTS OR EXPANSION ANCHORS [illegible] BASE [illegible] MOUNTING THE CABINET PER THE MANUFACTURER'S SHOP DRAWINGS. ANCHOR BOLTS, [illegible] AND WASHERS SHALL CONFORM TO EITHER ASTM A307 OR A449 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153. PROVIDE "J" ANCHOR BOLTS IF REQUIRED TO MOUNT LOAD CENTER CABINET IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ENSURE 2" MIN. CLEARANCE IS MAINTAINED BETWEEN [illegible] BOLT HOLE AND BEGINNING OF CHAMFERED EDGE.
3. USE GRADE 60 REINFORCING STEEL [illegible] CONFORMING TO ASTM A615 AND CLASS "B" CONCRETE CONFORMING TO SECTION 550 OF THE SPECIFICATIONS WHEN CASTING THE BASE.
4. IF THE BASE IS PRECAST, INSTALL TWO 3/4" FERRULE LOOP INSERTS IN TWO SIDES OPPOSITE ONE ANOTHER FOR LIFTING.
5. WHEN INSTALLING THE BASE, EXCAVATE AND INSTALL A DRAIN CONSISTING OF 12" MIN. OF COARSE CONCRETE AGGREGATE OR OTHER APPROVED NON-FROST SUSCEPTIBLE COMPACTED BACKFILL.

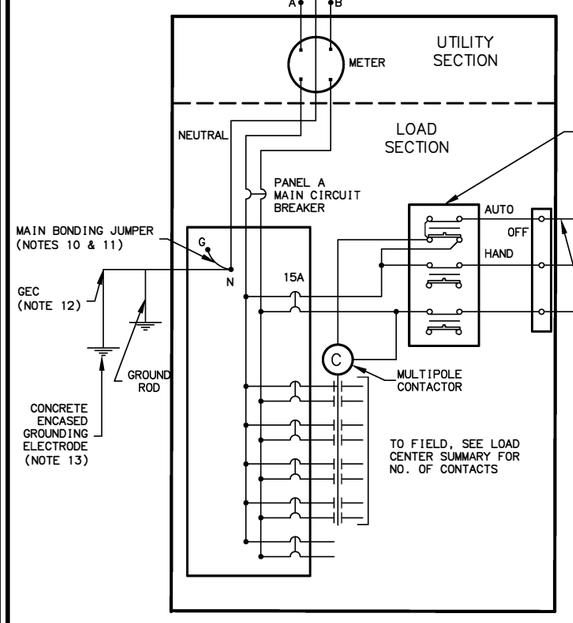
WIRING NOTES:

1. FURNISH ALL EQUIPMENT NOTED ON THE LOAD CENTER SUMMARY, PLUS TWO 20-AMP 2-POLE SPARE CIRCUIT BREAKERS AND SPACE FOR A MINIMUM OF TWO ADDITIONAL 2-POLE CIRCUIT BREAKERS IN EACH LOAD PANEL. SEE THE LOAD CENTER SUMMARIES FOR LOAD PANEL VOLTAGES, CURRENT RATINGS, SHORT CIRCUIT INTERRUPTING RATINGS, AND THE NOTES OF THE SERVING UTILITY.
2. INSTALL GROUNDING HUBS THIRD PARTY CERTIFIED FOR WET LOCATIONS, WHEN ATTACHING CONDUITS TO THE LOAD CENTER ENCLOSURE.

   LABEL ALL CIRCUIT BREAKERS AS TO FUNCTION AND POSITION. LABEL THE SELECTOR SWITCH "LIGHTING" AND ITS POSITIONS "ON-OFF-AUTO".
4. METER BASES SHALL NOT BE MOUNTED ON MOVABLE PANELS OR DOORS.
5. THE LENGTH AND TYPE OF SERVICE ENTRANCE CONDUIT REQUIRED TO BE INSTALLED BY THE CONTRACTOR VARIES BY ELECTRIC UTILITY. REGARDLESS OF ITS LENGTH, INSTALL A PULL ROPE IN THE SERVICE CONDUIT AND A CAP ON THE BURIED END: MARK THE BURIED END WITH A 2"X 6" WOOD STAKE. SEE THE LOAD CENTER SUMMARY(IES) IN THE PLANS FOR THE FOLLOWING INFORMATION.
   A. STATION AND OFFSET OF THE LOAD CENTER AND POWER SOURCE.
   B. WHERE THE SERVICE ENTRANCE CONDUIT IS TO BE TERMINATED BY THE CONTRACTOR.
   C. THE TYPE OF SERVICE ENTRANCE CONDUIT (SUCH AS RIGID METAL CONDUIT OR LIQUID-TIGHT FLEXIBLE METAL CONDUIT).
6. STORE A SCHEMATIC DIAGRAM, A CIRCUIT DIRECTORY, AND A MATERIALS LIST THAT INCLUDES THE MANUFACTURER'S NAME AND PART/CATALOG NUMBERS, ALL LAMINATED IN PLASTIC, IN A METAL POCKET ATTACHED TO THE INSIDE OF THE LOAD CENTER. INSTALL THE POCKET ON THE LOAD CENTER DOOR, PROVIDING DRAIN HOLES TO PREVENT WATER ACCUMULATION.
7. SIZE THE DISTRIBUTION PANEL TO ACCOMMODATE THE CIRCUITS SHOWN ON THE LOAD CENTER SUMMARIES AND SPARE CIRCUITS AS DEFINED IN WIRING NOTE 1.
8. INSTALL THE PHOTOELECTRIC CONTROL UNIT ON A 3/4" OR LARGER CONDUIT. LOCATE THE UNIT 18"-24" ABOVE THE TOP OF THE LOAD CENTER. ORIENT THE CONTROL WINDOW FACING NORTH AND/OR AWAY FROM ARTIFICIAL LIGHT SOURCES THAT MAY INTERFERE WITH AMBIENT LIGHT CONTROL. INSTALL A 3C#14 CABLE FROM THE LOAD CENTER TO THE CONDUIT BODY WHERE THE SPLICE TO THE PHOTOCELL RECEPTACLE CABLE SHALL BE MADE. IF PLANS CALL TO MOUNT PHOTOCELL AWAY FROM LOAD CENTER USE A 5C#14 CABLE FROM LOAD CENTER TO RECEPTACLE. PHOTOCELL MUST BE ENCLOSED IN A METALLIC ENCLOSURE.

WIRING NOTES CONTINUED:

9. SEPARATE THE MAIN CIRCUIT BREAKER FROM THE DISTRIBUTION PANEL
10. INSTALL #6 AWG COPPER MAIN BONDING JUMPER, OR SIZE PER NEC TABLE 250.102 (C) (1), WHICHEVER IS LARGER.
11. INSTALLATION MUST COMPLY WITH NEC 250.24 (C) AND 250.24 (C) EXCEPTION WHEN MORE THAN ONE PANELBOARD IS PRESENT.
12. INSTALL #6 AWG COPPER GROUNDING ELECTRODE CONDUCTOR (GEC), OR SIZE PER NEC TABLE 250.66, WHICHEVER IS LARGER.
13. THE REINFORCING BARS WITHIN THE CONCRETE FOUNDATION MUST BE CONNECTED TOGETHER BY EFFECTIVE MEANS AND WILL BECOME PART OF THE GROUNDING ELECTRODE SYSTEM PER NEC 250.50 AND 250.52(A)(3). INSTALL AN IRREVERSIBLE COMPRESSION GROUNDING CONNECTOR, NRTL-LISTED FOR DIRECT BURIAL IN EARTH AND CONCRETE, TO CONNECT THE REINFORCING BARS TO THE GEC. INSTALL A COPPER GEC, SIZED PER NEC 250.66 BUT NOT SMALLER THAN #6 AWG, BETWEEN THE COMPRESSION CONNECTOR AND THE LOAD CENTER NEUTRAL.
14. INSTALL LABEL(S) ON ENCLOSURE EXTERIOR PER ARC FLASH AND SHOCK HAZARD LABELING DETAIL:
    A. TO WARN OF THE POTENTIAL ARC FLASH HAZARD [PER NEC 110.16 AND NFPA 70E], AND
    B. TO IDENTIFY THE AVAILABLE FAULT CURRENT [PER NEC 110.24(A)]
15. MAXIMUM METER HEIGHT SHALL NOT EXCEED 64" FROM FINISHED GRADE TO CENTER OF THE METER SOCKET COVER.
16. WHEN SHOWN ON THE PLANS, INSTALL ENCLOSURE HEATER WITH INTEGRAL THERMOSTAT, SET TO ENERGIZE THE HEATER AT TEMPERATURES AT OR BELOW 32-DEG F. SCHNEIDER ELECTRIC CAT. NO. NSYCRP1W230VTVC, NVENT-HOFFMAN CAT. NO. DAH4002B, OR APPROVED EQUAL.



LOAD CENTER ONE LINE DIAGRAM AND SELECTOR SWITCH WIRING

* GROUNDED NEUTRAL, IF SERVICE IS 240/480 VOLT SINGLE PHASE OR 277/480 VOLT THREE-PHASE; AND UNGROUNDED LINE, IF SERVICE IS 120/240 VOLT SINGLE PHASE.

STATE OF ALASKA
49TH
PROFESSIONAL ENGINEER
P.S.&E. REVIEW
JUNE 2020
JEFFREY S. CARLETON
3218
STATE OF ALASKA DOT&PF
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STATE OF ALASKA
49TH
PROFESSIONAL ENGINEER
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JUNE 2020
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(907) 269-0590

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

TYPE 1A LOAD CENTER DETAILS

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF
SCALE N/A
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0001607/CFHWY00366	2020	H4	H64

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF
SCALE N/A
DATE 6/19/2020 TIME 10:15 AM
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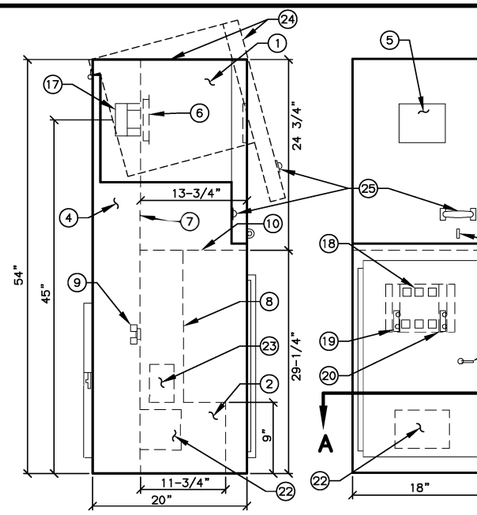
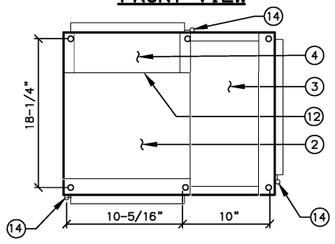


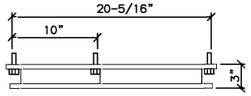
LEFT VIEW | FRONT VIEW | RIGHT VIEW | REAR VIEW

EQUIPMENT LEGEND

1. METER SECTION
2. LOAD SECTION (MAIN)
3. LOAD SECTION (DISTRIBUTION)
4. SERVICE PULL SECTION
5. METER READING WINDOW
6. METER SOCKET COVER
7. TEST SECTION COVER
8. DEAD FRONT
9. UTILITY LANDING LUGS
10. METER SECTION BARRIER
11. PANEL BOARD DEADFRONT
12. EQUIPMENT CHASSIS
13. MOUNTING PAN
14. STAINLESS STEEL PIN HINGE
15. COIN LATCH
16. HASP FOR PADLOCK
17. METER SOCKET KIT ASSEMBLY
18. MAIN BREAKER(S)
19. NEUTRAL BAR
20. GROUND BAR
21. PANEL BOARD INTERIOR
22. ALTERNATE CONTACTOR LOCATION
23. CABLE OPENING
24. HINGED HOOD
25. HOOD HANDLE
26. SEALABLE PADLOCK HASP

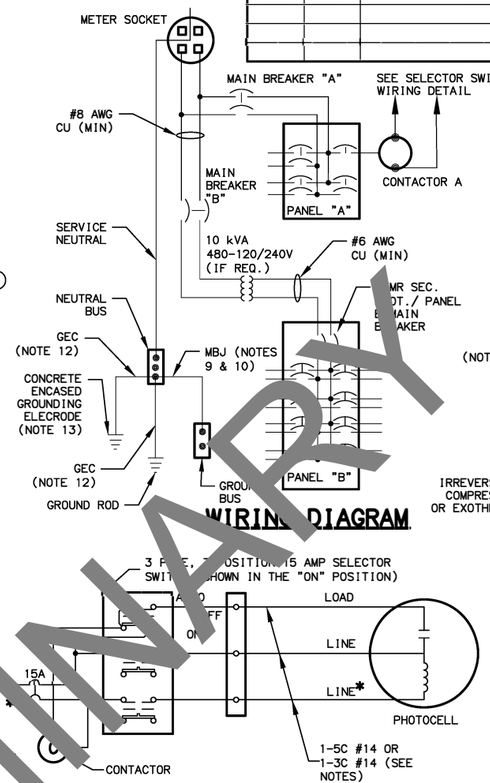


SECTION A-A

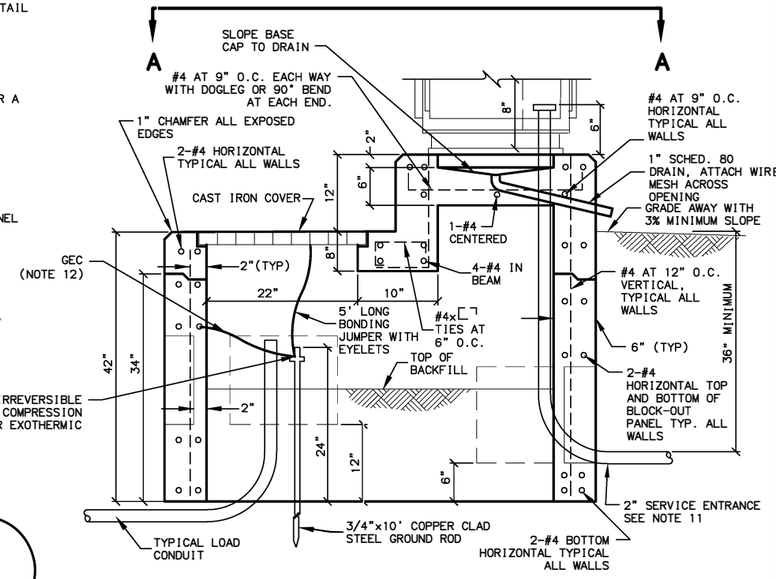


MOUNTING BASE

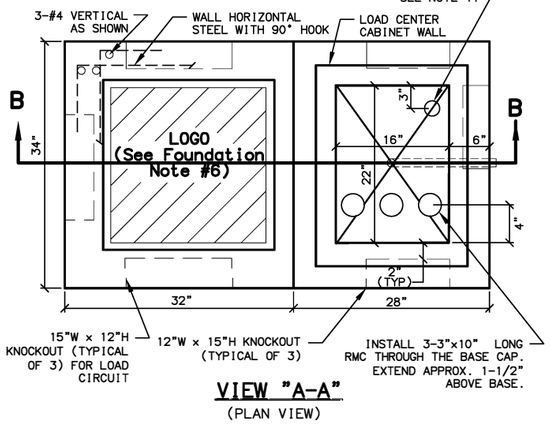
NOTE: DIMS. ARE APPROXIMATE AND MAY VARY. ENSURE 2" MIN CLEARANCE BETWEEN EDGE OF ANCHOR BOLTS AND CHAMFER EDGES.



WIRING DIAGRAM



SECTION B-B



VIEW "A-A"
(PLAN VIEW)

TYPE 1 LOAD CENTER CABINET SECTION / ELEVATION

FOUNDATION NOTES:

1. INSTALL THE SURFACE WITH CAST IRON COVER FLUSH WITH THE PAVEMENT, SIDEWALK, OR FINISHED GRADE. GRADE AWAY FROM THE BASE WITH A MINIMUM SLOPE OF 3%. USE A PRE-MOULDED BITUMINOUS JOINT BETWEEN THE BASE AND CONCRETE SIDEWALK OR PAVING.
2. WHEN INSTALLING THE BASE, EXCAVATE TO 60" BELOW FINISHED GRADE AND INSTALL A DRAIN CONSISTING OF 18" OF COARSE CONCRETE AGGREGATE APPROVED BY THE ENGINEER. BACKFILL AROUND THE BASE IN 6" LIFTS WITH SELECTED MATERIAL TYPE "A".
3. BACKFILL INSIDE THE FOUNDATION TO WITHIN 24" OF THE LID AFTER ALL CONDUITS ARE INSTALLED, USING COARSE AGGREGATE. TERMINATE THE ENDS OF ALL LOAD CONDUITS A MINIMUM OF 6" ABOVE THE COARSE CONCRETE AGGREGATE BACKFILL AND A MINIMUM OF 12" BELOW THE LID.
4. PROVIDE ANCHOR BOLTS OR EXPANSION ANCHORS IN THE BASE FOR MOUNTING THE CABINET PER THE MANUFACTURER'S SHOP DRAWINGS. ANCHOR BOLTS, NUTS, AND WASHERS SHALL CONFORM TO EITHER ASTM A307 OR A449 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153.
5. USE GRADE 60 REINFORCING STEEL CONFORMING TO ASTM 615 AND CLASS "A" CONCRETE CONFORMING TO SECTION 501 OF THE SPECIFICATIONS WHEN CASTING THE BASE.
6. FINISH THE BASE ACCESS OPENING WITH A 24" SQUARE IRON FRAME AND COVER WITH PICK HOLE FOR REMOVAL, WEIGHING APPROXIMATELY 280 LBS. PROVIDE COVERS INSCRIBED WITH THE LEGEND "LIGHTING" FOR THOSE LOAD CENTERS WITH STREET LIGHTING CIRCUITS ONLY, AND "TRAFFIC" FOR THOSE LOAD CENTERS WITH A TRAFFIC SIGNAL CIRCUIT.
7. IF THE BASE IS PRECAST, INSTALL TWO 3/4" FERRULE LOOP INSERTS IN TWO SIDES OPPOSITE ONE ANOTHER FOR LIFTING.

NOTES:

1. FURNISH ALL EQUIPMENT NOTED IN THE LOAD CENTER SUMMARY(IES) IN THE PLANS, PLUS TWO 20-AMP 2-POLE SPARE CIRCUIT BREAKERS, AND SPACE FOR A MINIMUM OF TWO ADDITIONAL 2-POLE CIRCUIT BREAKERS IN EACH LOAD PANEL. SEE THE LOAD CENTER SUMMARIES FOR LOAD PANEL VOLTAGES, CURRENT RATINGS, SHORT CIRCUIT INTERRUPTING RATINGS, AND THE NAME OF THE SERVING UTILITY.
2. INSTALL GROUNDING HUBS THIRD PARTY CERTIFIED FOR WET LOCATIONS WHEN ATTACHING CONDUITS TO THE LOAD CENTER ENCLOSURE.
3. LABEL ALL CIRCUIT BREAKERS AS TO FUNCTION AND LOCATION. LABEL THE SELECTOR SWITCH "LIGHTING" AND ITS POSITIONS "ON-OFF-AUTO".
4. INSTALL THE PHOTOELECTRIC CONTROL UNIT ON 3/4", GALVANIZED, CONDUIT. LOCATE THE UNIT 18"-24" ABOVE THE TOP OF THE LOAD CENTER. ORIENT THE CONTROL WINDOW FACING AND/OR AWAY FROM ARTIFICIAL LIGHT SOURCES THAT MAY INTERFERE WITH AMBIENT LIGHT CONTROL. INSTALL A 30" CABLE FROM THE LOAD CENTER TO THE CONDUIT BODY WHERE THE CONNECTION TO THE PHOTOCELL RECEPTACLE CABLE SHALL BE MADE. IF PLANS CALL TO MOUNT PHOTOCELL AWAY FROM LOAD CENTER, USE A 5C#14 CABLE FROM LOAD CENTER TO RECEPTACLE. PHOTOCELL MUST BE ENCLOSED IN A METALLIC ENCLOSURE.
5. METER BASES SHALL NOT BE MOUNTED ON MOVABLE PANELS OR DOORS.
6. LOCATE THE LOAD CENTER AS SHOWN ON THE PLANS.
7. STORE A SCHEMATIC DIAGRAM, A CIRCUIT DIRECTORY, AND A MATERIALS LIST THAT INCLUDES THE MANUFACTURER'S NAME AND PART/CATALOG NUMBERS, ALL LAMINATED IN PLASTIC, IN A METAL POCKET ATTACHED TO THE INSIDE OF THE LOAD CENTER. INSTALL THE POCKET ON THE LOAD CENTER DOOR, PROVIDING DRAIN HOLES TO PREVENT WATER ACCUMULATION.
8. MAXIMUM METER HEIGHT SHALL NOT EXCEED 64" FROM CAST IRON COVER TO CENTER OF THE METER SOCKET COVER.
9. INSTALL #6 AWG COPPER MAIN BONDING JUMPER, OR SIZE PER NEC TABLE 250.102 (C)(1), WHICHEVER IS LARGER.
10. INSTALLATION MUST COMPLY WITH THE NEC 250.24 (C) AND 250.24 (C) EXCEPTION WHEN MORE THAN ONE PANELBOARD IS PRESENT.

SELECTOR SWITCH WIRING DETAIL

GROUNDED NEUTRAL, IF SERVICE IS 240/480 VOLT SINGLE PHASE OR 277/480 VOLT THREE-PHASE; AND UNGROUNDED LINE, IF SERVICE IS 120/240 VOLT SINGLE PHASE.

NOTES (CONTINUED):

11. THE LENGTH AND TYPE OF SERVICE ENTRANCE CONDUIT INSTALLED BY THE CONTRACTOR VARIES BY UTILITY. REGARDLESS OF ITS LENGTH, INSTALL A PULL ROPE IN THE SERVICE CONDUIT AND A CAP ON THE BURIED END: MARK THE BURIED END WITH A 2"X 6" WOOD STAKE. SEE THE LOAD CENTER SUMMARIES FOR THE FOLLOWING INFORMATION.
    A. STATION AND OFFSET OF THE LOAD CENTER AND POWER SOURCE.
    B. WHERE THE CONTRACTOR TERMINATES THE SERVICE ENTRANCE CONDUIT.
    C. THE TYPE OF SERVICE ENTRANCE CONDUIT (SUCH AS RIGID METAL CONDUIT OR LIQUID-TIGHT FLEXIBLE METAL CONDUIT).
12. INSTALL #6 AWG COPPER GROUNDING ELECTRODE CONDUCTOR (GEC), OR SIZE PER NEC TABLE 250.66, WHICHEVER IS LARGER.
13. THE REINFORCING BARS WITHIN THE CONCRETE PAD MUST BE CONNECTED TOGETHER BY EFFECTIVE MEANS AND WILL BECOME PART OF THE GROUNDING ELECTRODE SYSTEM PER NEC 250.50 AND 250.52(A)(3). INSTALL AN IRREVERSIBLE COMPRESSION GROUNDING CONNECTOR, NRTL-LISTED FOR DIRECT BURIAL IN EARTH AND CONCRETE, TO CONNECT THE REINFORCING BARS TO THE GEC. INSTALL A BARE COPPER GEC, SIZED PER NEC 250.66 BUT NOT SMALLER THAN #6 AWG, BETWEEN THE COMPRESSION CONNECTOR AND THE LOAD CENTER NEUTRAL.
14. INSTALL LABEL(S) ON ENCLOSURE EXTERIOR PER ARC FLASH AND SHOCK HAZARD LABELING DETAIL:
    A. TO WARN OF THE POTENTIAL ARC FLASH HAZARD [PER NEC 110.16 AND NFPA 70E], AND
    B. TO IDENTIFY THE AVAILABLE FAULT CURRENT [PER NEC 110.24(A)].
15. WHEN SHOWN IN THE PLANS, INSTALL ENCLOSURE HEATER WITH INTEGRAL THERMOSTAT, SET TO ENERGIZE THE HEATER AT TEMPERATURES AT OR BELOW 32-DEG F. SCHNEIDER ELECTRIC CAT. NO. NSYCRP1W230VTVC, NVENT-HOFFMAN CAT. NO. DAH4002B, OR APPROVED EQUAL.
16. BOND SERVICE CONDUIT GROUNDING BUSHING TO SUPPLY-SIDE BONDING JUMPER. BOND LOAD CONDUIT GROUNDING BUSHINGS TO ASSOCIATED EQUIPMENT GROUNDING CONDUCTORS (EGC'S).

TYPE 1 LOAD CENTER BASE

NOTE: STOP HORIZONTAL AND VERTICAL STEEL AT BLOCK-OUT PANELS & OPTIONAL JOINT USING 90° BEND. INSTALL 2 EXTRA #4 HORIZONTAL AND VERTICAL BARS ON ALL SIDES OF EACH KNOCKOUT.

STATE OF ALASKA
49TH
REGISTERED PROFESSIONAL ENGINEER
ZACHARY J. CARLETON
13218
P,S&E REVIEW JUNE 2020

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STATE OF ALASKA
49TH
REGISTERED PROFESSIONAL ENGINEER
LUCAS J. SWEENEY
21351
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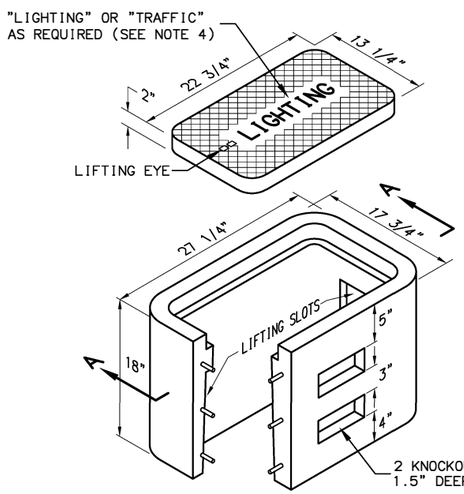
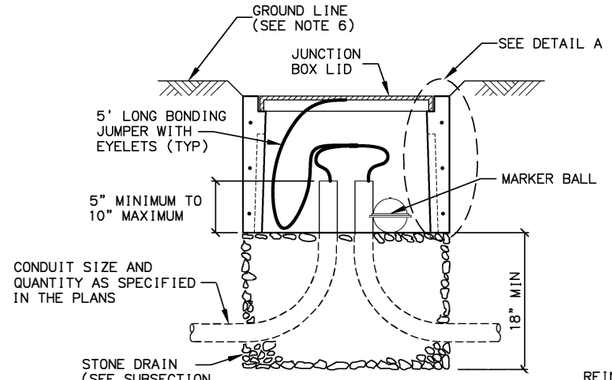
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

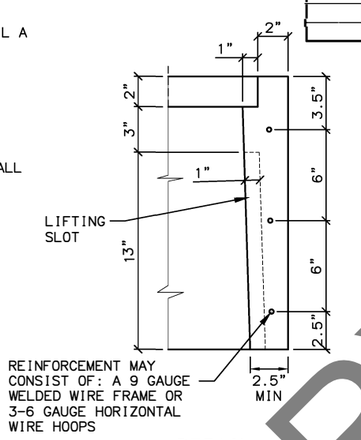
HINGED HOOD TYPE 1 LOAD CENTER DETAILS

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0001607/CFHWY00366	2020	H5	H64



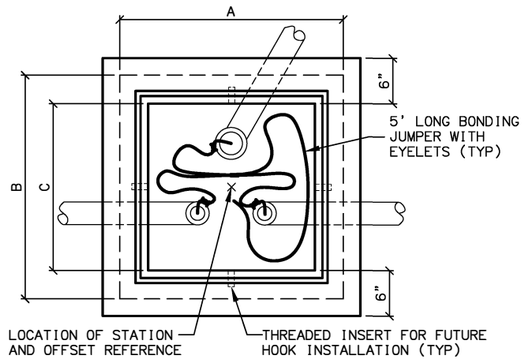


SECTION A-A



DETAIL A

TYPE IA JUNCTION BOX



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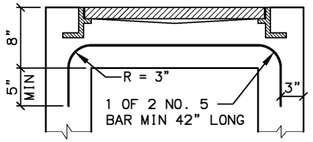

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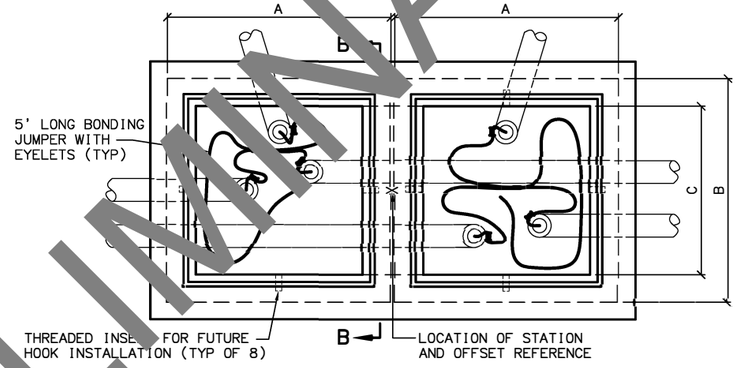

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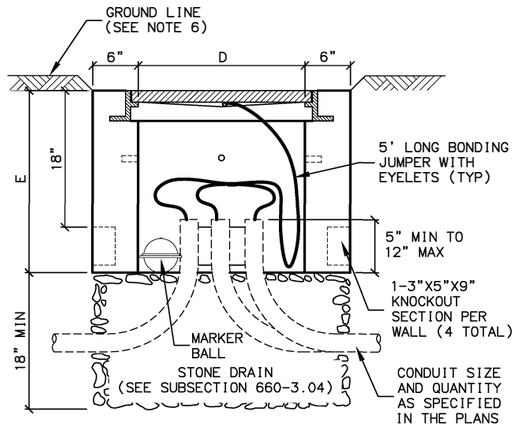
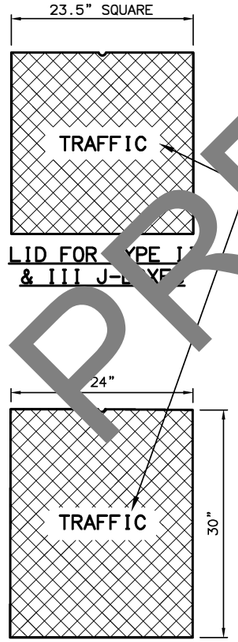
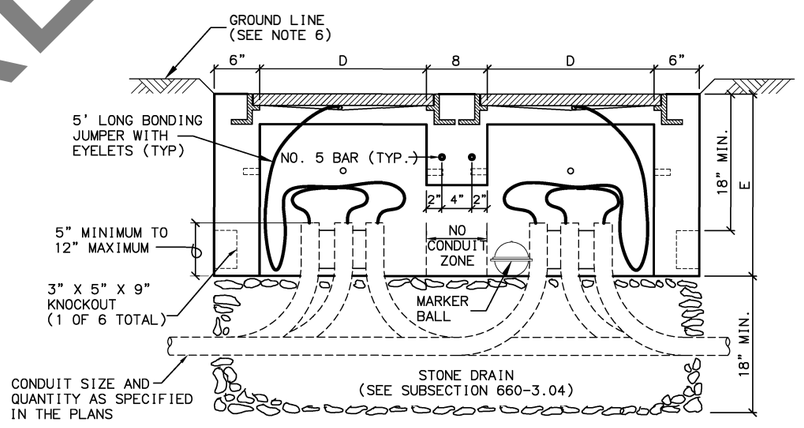


TYPE II JUNCTION BOX
ELEVATION



LID FOR TYPE IV J-BOXES



TYPE III/IV JUNCTION BOX
ELEVATION (TYPE III LAYOUT DEPICTED)

NOTES:

1. AVOID INSTALLING TYPE IA JUNCTION BOXES IN DRIVEWAYS OR IN LOCATIONS SUBJECT TO USE BY HEAVY TRUCKS. INSTALL JUNCTION BOXES ONLY AT THE LATERAL LOCATIONS ALLOWED IN SUBSECTION 660-3.04.
2. FURNISH TYPE II, III AND IV JUNCTION BOXES WITH CAST IRON FRAMES AND LIDS THAT WEIGH A MINIMUM OF 210 POUNDS AND ARE RATED FOR HEAVY TRAFFIC LOADS IN COMPLIANCE WITH AASHTO M306. FURNISH TYPE IA JUNCTION BOXES WITH CAST IRON LIDS THAT WEIGH A MINIMUM OF 50 POUNDS.
3. CONSTRUCT JUNCTION BOXES ACCORDING TO SECTION 501 USING CLASS A CONCRETE. REINFORCE TYPE IA JUNCTION BOXES AS SHOWN. SYNTHETIC STRUCTURAL FIBER-REINFORCED CONCRETE THAT MEETS ASTM C 1116 AND CONTAINS FIBER IN PROPORTIONS AS RECOMMENDED BY THE FIBER MANUFACTURER MAY BE ADDED FOR STRENGTH.
4. FOR JUNCTION BOXES THAT CONTAIN ILLUMINATION CONDUCTORS EXCLUSIVELY, FURNISH LIDS WITH THE WORD "LIGHTING" INSCRIBED INTO THEM. FOR OTHER JUNCTION BOXES, FURNISH LIDS WITH THE WORD "TRAFFIC" INSCRIBED INTO THEM.
5. UNDER JUNCTION BOXES, INSTALL STONE DRAINS THAT CONSIST OF POROUS BACKFILL MATERIAL CONFORMING TO SUBSECTION 703-2.10.
6. SET THE TOPS OF JUNCTION BOXES WITH THE FOLLOWING DIMENSIONS BELOW THE FINISHED SURROUNDING SURFACE:
   - 1" IN PAVED MEDIANS AND ADJACENT TO PEDESTRIAN FACILITIES
   - 1/4" IN PEDESTRIAN FACILITIES
   - 2" IN ALL OTHER AREAS
7. BOND JUNCTION BOX LIDS TO THE SYSTEM OF EQUIPMENT GROUNDING CONDUCTORS ACCORDING TO SUBSECTION 660-3.06. ATTACH BONDING JUMPERS TO THE JUNCTION BOX LIDS WITH BRASS OR STAINLESS STEEL HARDWARE.
8. INSTALL LOOP DETECTOR TAILS THROUGH ONE OF THE KNOCKOUTS OF TYPE 1A JUNCTION BOXES. AFTER SETTING THE BOXES TO GRADE, INSTALL GROUT IN THE GAPS THAT REMAIN IN THE KNOCKOUT.
9. INSTALL A 1/2" THICK PREFORMED BITUMINOUS JOINT MATERIAL AROUND JUNCTION BOXES INSTALLED IN PORTLAND CEMENT CONCRETE WALKWAYS.
10. INSTALL AN ELECTRONIC MARKER BALL IN ALL JUNCTION BOXES PER SUBSECTION 660-3.04.
11. PRIOR TO INSTALLATION MARK ALL JUNCTION BOX LOCATIONS WITH A WIRE STAFF VINYL FLAG. THE FLAG SHALL BE RED IN COLOR AND MINIMUM 4-INCHES TALL BY 5-INCHES WIDE. THE WIRE STAFF SHALL BE 21-INCHES IN LENGTH AND CONSTRUCTED OF MINIMUM 15.5 GAUGE STEEL.
12. WHERE MODIFIED TYPE II JUNCTION BOXES ARE REQUIRED FOR DETECTOR LOOP TAIL INSTALLATIONS, ADD ONE(1) ADDITIONAL 5" DEEP X 3" HIGH X 18" WIDE KNOCKOUT 12" BELOW TOP OF JUNCTION BOX.

J-BOX TYPE	DIMENSIONS				
	A (MAX.)	B (MAX.)	C (MIN.)	D (MIN.)	E (MIN.)
II	29 1/2"	29 1/2"	22"	22"	24"
III	29 1/2"	29 1/2"	22"	22"	24"
IV	30"	36"	30"	24"	30"

J-BOX DIMENSIONS

STATE OF ALASKA DOT&PF
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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

JUNCTION BOX DETAILS

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF
SCALE N/A
DATE 6/10/2020 TIME 2:25 PM
DRAWING LOCATION C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CIV3D19\PLANSET\H_SHEETS\08-JUNCTION_BOX.DWG

NO.	DATE	REVISION
#	XX/XX/XXXX	TEXT
#	XX/XX/XXXX	TEXT
#	XX/XX/XXXX	TEXT

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	H6	H64

DESIGNED BY	CHECKED BY	DRAFTED BY
ZJH	LAS	MF

SCALE	DATE	TIME
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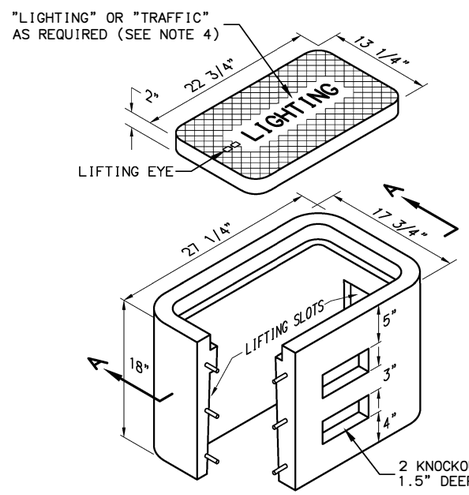
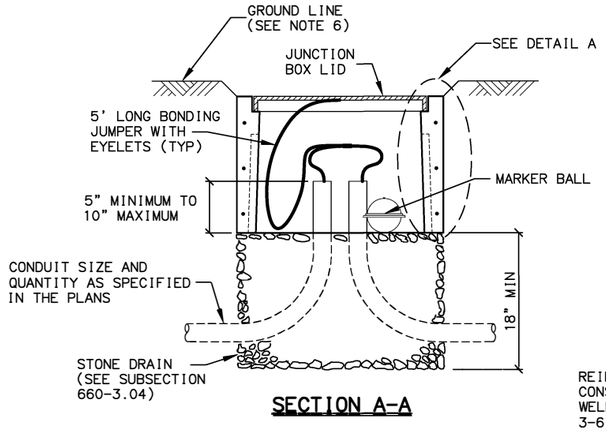
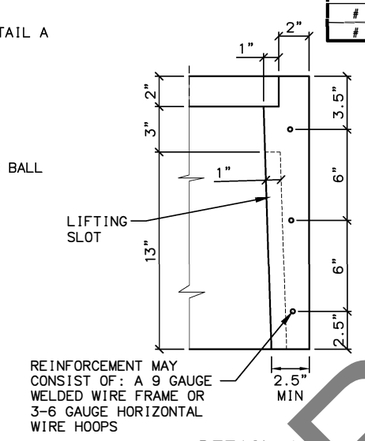


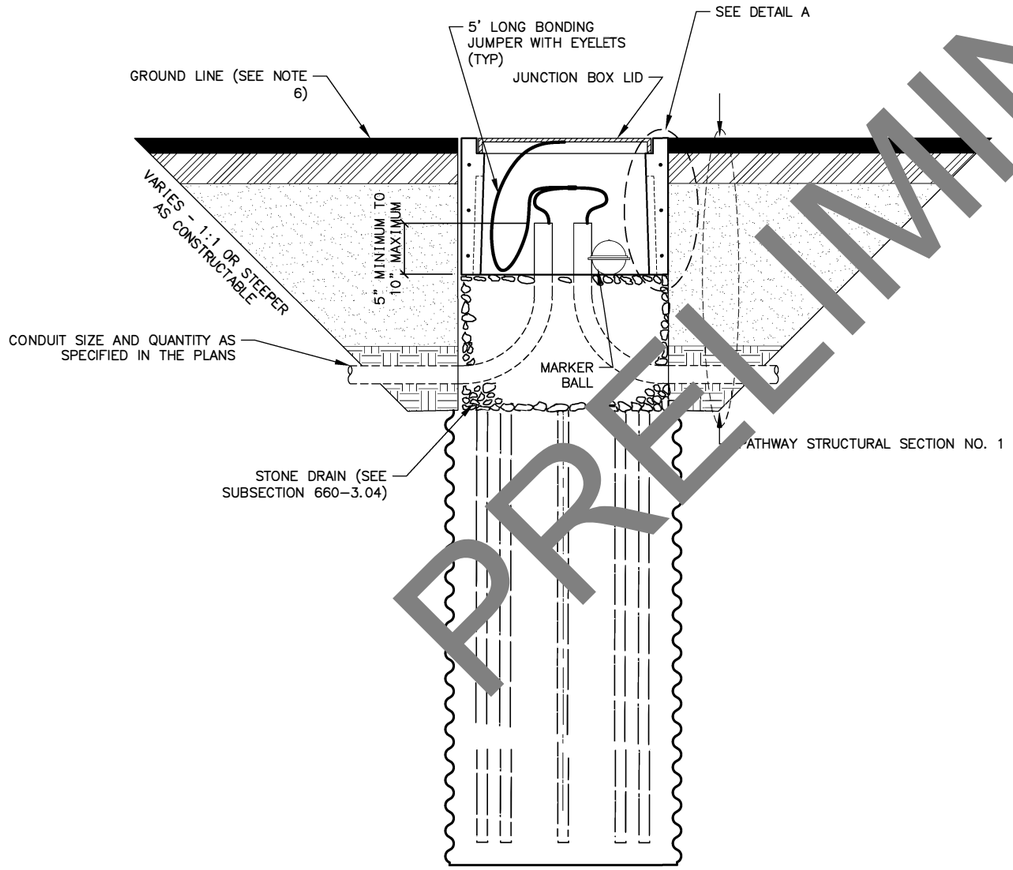


SECTION A-A



DETAIL A

TYPE IA JUNCTION BOX



ELECTROLIER DEMOLITION - TYPE 1A JUNCTION BOX REPLACEMENT

NOTES:

1. AVOID INSTALLING TYPE IA JUNCTION BOXES IN DRIVEWAYS OR IN LOCATIONS SUBJECT TO USE BY HEAVY TRUCKS. INSTALL JUNCTION BOXES ONLY AT THE LATERAL LOCATIONS ALLOWED IN SUBSECTION 660-3.04.
2. CONSTRUCT JUNCTION BOXES ACCORDING TO SECTION 501 USING CLASS A CONCRETE. REINFORCE TYPE IA JUNCTION BOXES AS SHOWN. SYNTHETIC STRUCTURAL FIBER-REINFORCED CONCRETE THAT MEETS ASTM C 1116 AND CONTAINS FIBER IN PROPORTIONS AS RECOMMENDED BY THE FIBER MANUFACTURER MAY BE ADDED FOR STRENGTH.
3. FOR JUNCTION BOXES THAT CONTAIN ILLUMINATION CONDUCTORS EXCLUSIVELY, FURNISH LIDS WITH THE WORD "LIGHTING" INSCRIBED INTO THEM. FOR OTHER JUNCTION BOXES, FURNISH LIDS WITH THE WORD "TRAFFIC" INSCRIBED INTO THEM.
4. DEMOLISH EXISTING ELECTROLIER FOUNDATION TO A DEPTH ALLOWING A MINIMUM OF 18" OF STONE DRAIN.
5. UNDER JUNCTION BOXES, INSTALL STONE DRAINS THAT CONSIST OF POROUS BACKFILL MATERIAL CONFORMING TO SUBSECTION 703-2.10.
6. SET THE TOPS OF JUNCTION BOXES WITH THE FOLLOWING DIMENSIONS BELOW THE FINISHED SURROUNDING SURFACE:
   - 1" IN PAVED MEDIANS AND ADJACENT TO PEDESTRIAN FACILITIES
   - 1/4" IN PEDESTRIAN FACILITIES
   - 2" IN ALL OTHER AREAS
7. BOND JUNCTION BOX LIDS TO THE SYSTEM OF EQUIPMENT GROUNDING CONDUCTORS ACCORDING TO SUBSECTION 660-3.06. ATTACH BONDING JUMPERS TO THE JUNCTION BOX LIDS WITH BRASS OR STAINLESS STEEL HARDWARE.
8. INSTALL LOOP DETECTOR TAILS THROUGH ONE OF THE KNOCKOUTS OF TYPE 1A JUNCTION BOXES. AFTER SETTING THE BOXES TO GRADE, INSTALL GROUT IN THE GAPS THAT REMAIN IN THE KNOCKOUT.
9. INSTALL A 1/2" THICK PREFORMED BITUMINOUS JOINT MATERIAL AROUND JUNCTION BOXES INSTALLED IN PORTLAND CEMENT CONCRETE WALKWAYS.
10. INSTALL AN ELECTRONIC MARKER BALL IN ALL JUNCTION BOXES PER SUBSECTION 660-3.04.
11. PRIOR TO INSTALLATION MARK ALL JUNCTION BOX LOCATIONS WITH A WIRE STAFF VINYL FLAG. THE FLAG SHALL BE RED IN COLOR AND MINIMUM 4-INCHES TALL BY 5-INCHES WIDE. THE WIRE STAFF SHALL BE 21-INCHES IN LENGTH AND CONSTRUCTED OF MINIMUM 15.5 GAUGE STEEL.

COMPANY NAME
ADDRESS LINE1
ADDRESS LINE 2
PHONE NUMBER
XXXXXXX

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
(907) 269-0590

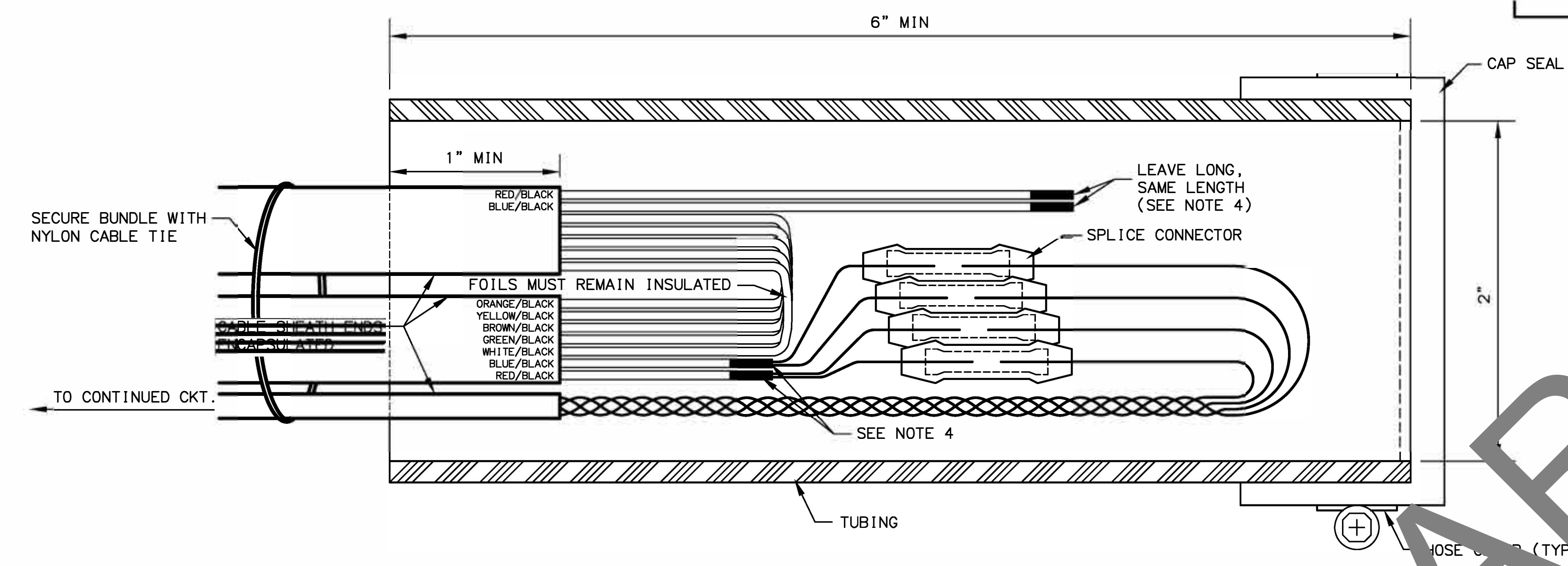
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

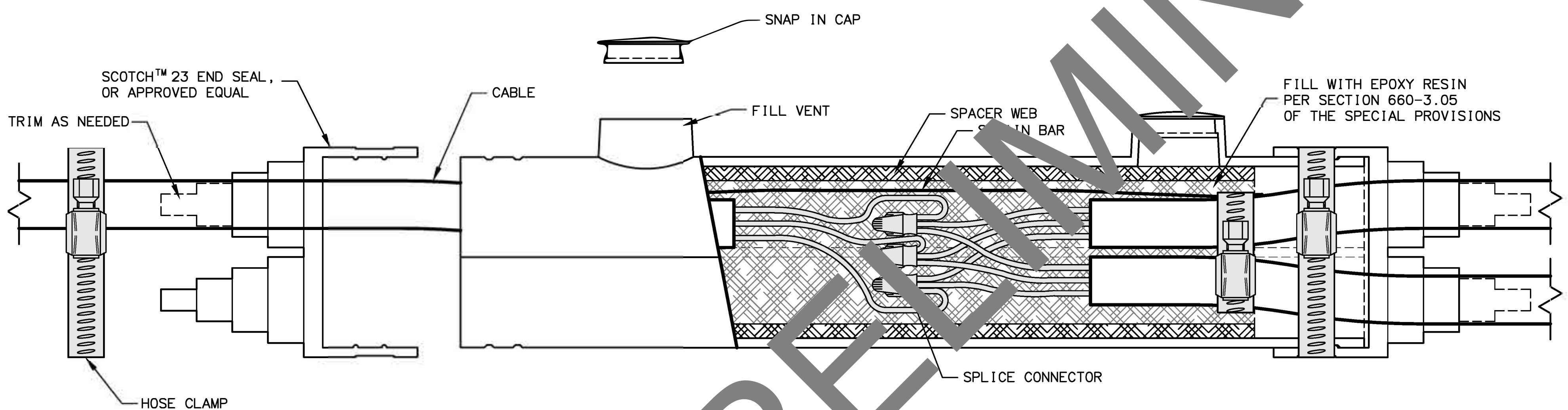
ELECTROLIER DEMO – JBOX

NO.	DATE	REVISION

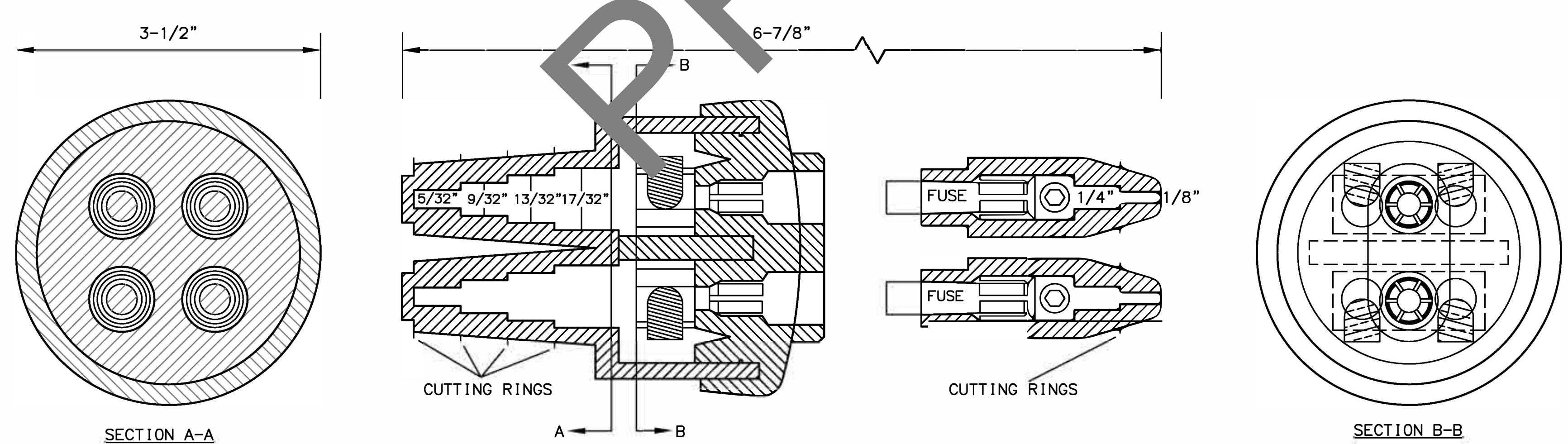
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	H7	H64



LOOP LEAD-IN SPLICE



POWER CABLE SPLICE



DOUBLE FUSED CONNECTOR

NOTES:

LOOP LEAD-IN SPLICE

1. FABRICATE LOOP LEAD-IN SPLICE IN THE FIELD AS SHOWN.
2. CAP SEAL ONE END AND COMPLETELY FILL OPEN END WITH RE-ENTERABLE ENCAPSULATION COMPOUND TO EDGE OF TUBING.
3. LEAVE A MINIMUM OF 1/2" CLEARANCE BETWEEN THE ENCLOSURE AND THE SPLICE AT BOTH ENDS OF THE TUBING.
4. EXPOSE FOIL AND DRAIN WIRES, SEAL WITH HEAT SHRINK TUBING (TYP).
5. INSTALL SPLICE CONNECTORS ACCORDING TO MANUFACTURER'S SPECIFICATIONS.

POWER CABLE SPLICE

6. SECURE CABLE/CONNECTOR BUNDLE WITH HOSE CLAMPS AS SHOWN.

MATERIAL PROPERTIES	
LOOP LEAD-IN SPLICE	
TUBING	PER SECTION 660-3.05
CAP SEAL	FERNCO QWIK CAP #QC-102, OR APPROVED EQUAL
HOSE CLAMP	STAINLESS STEEL
SPLICE CONNECTOR	ML56-16, OR APPROVED EQUAL
COMPOUND	RE-ENTERABLE ENCAPSULATION
POWER CABLE SPLICE	
SPLICE KIT	3M MODEL 78R, OR APPROVED EQUAL
SPLICE CONNECTOR	SCOTCHLOCK G, R, OR Y SPRING CONNECTOR, OR APPROVED EQUAL
HOSE CLAMP	(4)- STAINLESS STEEL
EPOXY RESIN	PER SECTION 660-3.05
DOUBLE FUSED CONNECTOR	
DOUBLE FUSED CONNECTOR	SEC-1791-DF-1, OR APPROVED EQUAL
FUSES	(2) - COMPATIBLE 10-AMP

STATE OF ALASKA 49TH ... SWEENEY 121351 REGISTERED PROFESSIONAL ENGINEER
P.S.&E. REVIEW JUNE 2020

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
(907) 269-0590

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

SPLICE DETAILS

DRAWING LOCATION: C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CIV3D19\PLANSET\H_SHEETS\10-SPLICE.DWG
DATE: 6/10/2020 TIME: 2:25 PM
SCALE: N/A
DESIGNED BY: ZJH
CHECKED BY: LAS
DRAFTED BY: MF

NO.	DATE	REVISION
#	xx/xx/xxxx	TEXT
#	xx/x x/ xxx	TEXT
#	xx/xx/xxxx	TEXT

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	H8	H64

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF

SCALE N/A

DATE TIME 6/10/2020 2:25 PM

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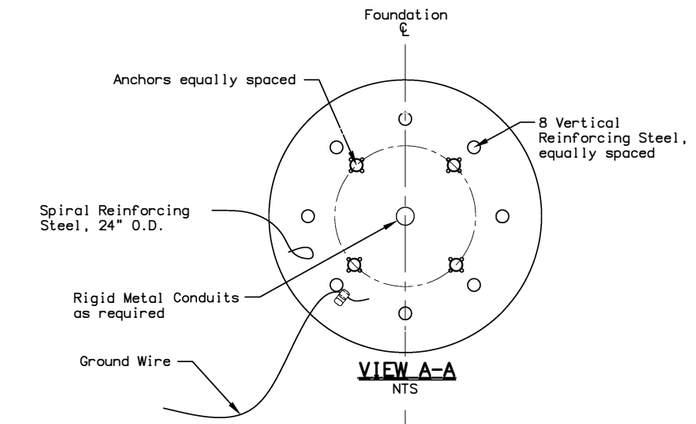
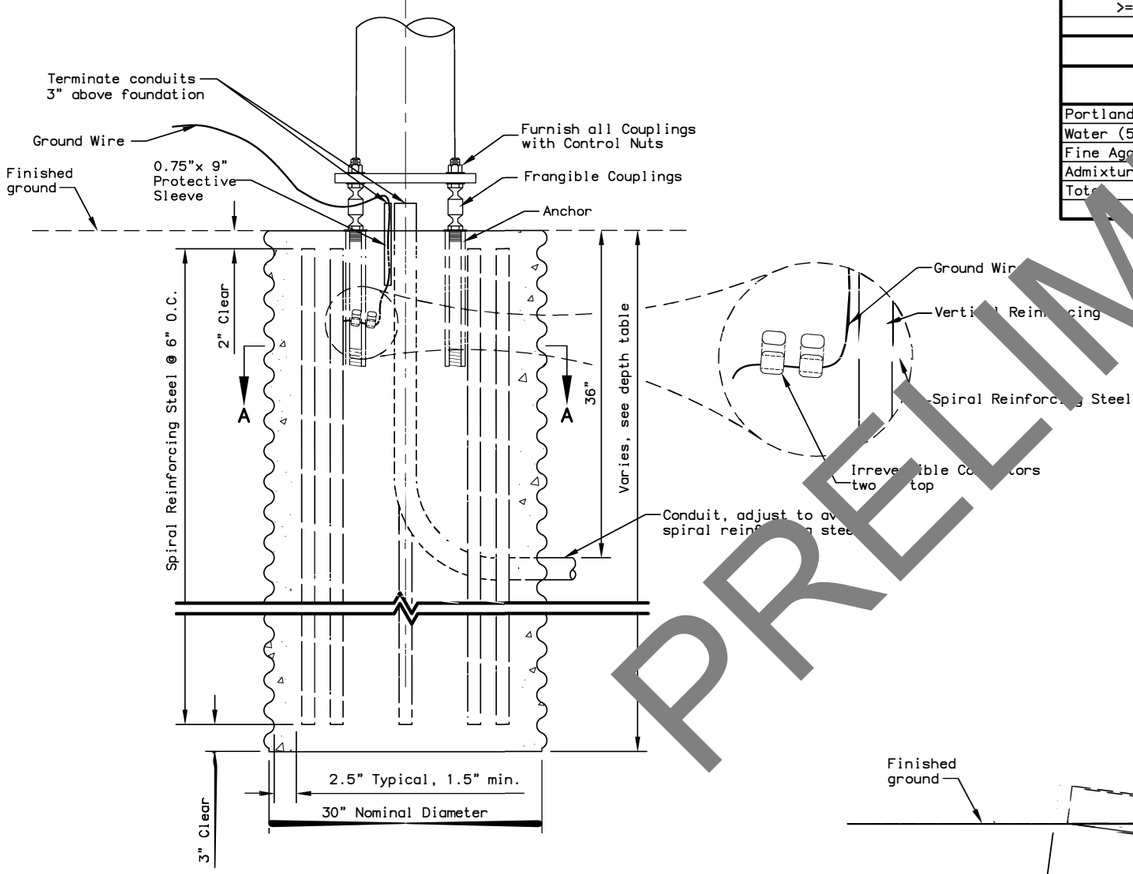


VIEW A-A
NTS



FOUNDATION DETAILS
NTS
(Skirt omitted for clarity)

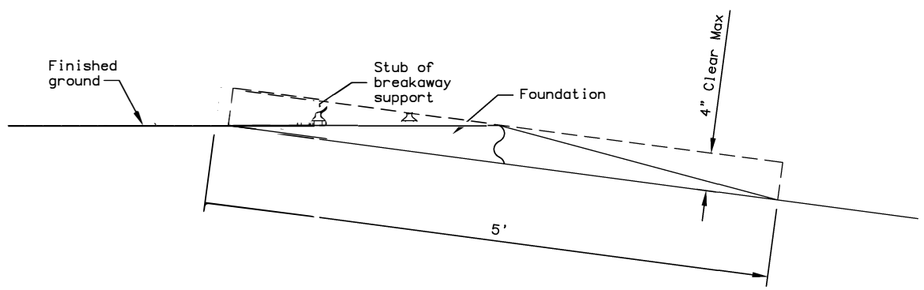
MATERIAL REQUIREMENTS		
Concrete	Class A	f'c = 4000 psi
CMP	AASHTO M218	14 ga.
Vertical Reinforcing Steel	AASHTO M31 #11	GR 60
Spiral Reinforcing Steel	AASHTO M31 #5	GR 60
Ground Wire		#4 awg
Frangible Coupling	NCHRP 350 TL3 Frangible Coupling	Vu = 5.5 kips Tu = 43.2 kips
Anchor	NCHRP 350 TL3 Frangible Coupling Anchor	
Conduit	Sch 40	RMC
Protective Sleeve	Sch 40	PVC

DEPTH TABLE		
GRADE	FOUNDATION DEPTH BY APPLICATION (ft.)	
	ELECTROLIER * SEE NOTE	BREAKAWAY TRAFFIC SIGNAL
Flat to 6:1	8	6
>=6:1 to 3:1	9	7
>=3:1 to 1.5:1	10	8

SAND SLURRY MIX DESIGN		
ITEM	BATCHING QUANTITIES PER CY D BATCH (lbs.)	APPLICABLE SPECS.
Portland Cement Concrete	188	701-2.01
Water (52.1 g	435	712-2.01
Fine Aggregate SSD	3041	703-2.01
Admixture Microd	2.0 oz.	711-2.02
Tot	3664	

BOLT CIRCLE	
REGION	DIAMETER
Northern Region Projects	14.5"
Central Region Projects	15.5"
Southeast Region Projects	15.5"

NOTE TO REVIEWER: THIS SHEET AS PLACEHOLDER. CIDH FOUNDATION TO BE IMPLEMENTED AS EITHER ASP L-30 OR AS DETAIL DEPENDING ON ASP DEVELOPMENT STATUS AT TIME OF ADVERTISEMENT.



CLEARANCE DETAIL
NTS

DESIGN NOTES:

Design Standard: 2001 Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals with 2006 interim.

Design Load: 1,000 lbs axial, 2,000 lbs shear, 50,000 ft-lbs moment.

Construction Standard: Latest edition of the State Of Alaska Standard Specifications for Highway Construction with Special Provisions.

NOTES:

1. This foundation is approved for electrolier and breakaway traffic signal applications in cohesionless soils with an N1-60 value of 10 or greater per AASHTO T-206, "Standard Penetration Test" (SPT). This foundation shall not be used if any of the following are encountered; water table above the bottom of foundation, very loose soils, organic soils, cohesive soils (clay), or soils susceptible to frost jacking. If any of these conditions are encountered, stop foundation work and contact the Engineer.
2. Place foundation in drilled or excavated hole with centerline of foundation located at the station, offset, and elevation specified in plans. Set foundation to satisfy the conditions depicted in clearance detail.
3. Form the foundation in corrugated metal pipe conforming to Subsection 707-2.01 of the Specifications.
4. Provide 1.5 extra turns at each end of the spiral reinforcing steel. Reinforcing steel shall not be spliced. Tie vertical reinforcing steel to each intersection of the spiral reinforcing steel.
5. Connect ground wire near the top of spiral reinforcing steel with two irreversible connectors as shown. Fasten connectors according to the manufacturers' recommendations including the use of manufacturer specified tools. The ground wire may be bare solid, stranded, or braided copper. Protect ground wire with protective sleeve as shown and fill with silicon sealant.
6. Complete all concrete work in conformance with Sections 501, 503, and 660 of the Specifications. Use a tube with a hopper head or other approved device when dropping concrete more than 5 feet per Subsection 501-3.08. Vibrate concrete during placement by mechanical vibration per Subsection 501-3.08. Ensure anchor threads are protected from contact with concrete during pour.
7. Backfill and compact according to Section 205, and Subsections 203-3.04 and 660-3.01 of the Specifications. Use select material, Type A or sand slurry as backfill material. Ensure area below foundation meets compaction requirements and is free of loose material and debris prior to concrete work.
8. Install all anchors according to the manufacturer's written installation instructions. Anchors shall be installed plumb. Anchors greater than 1:40 out-of-plumb will result in foundation rejection.
9. When used for electrolier reduce the foundation depth 1 foot when there is no luminaire arm or the luminaire arm is less than or equal to 12 feet.
10. Grade in depth table refers to fill slopes. If foundation is in a cut slope assume flat grade in table. To determine grade in fill slopes, use the most severe grade found within an 8 foot radius of the center of the foundation. Slopes steeper than 1.5:1 require engineered depth calculation.

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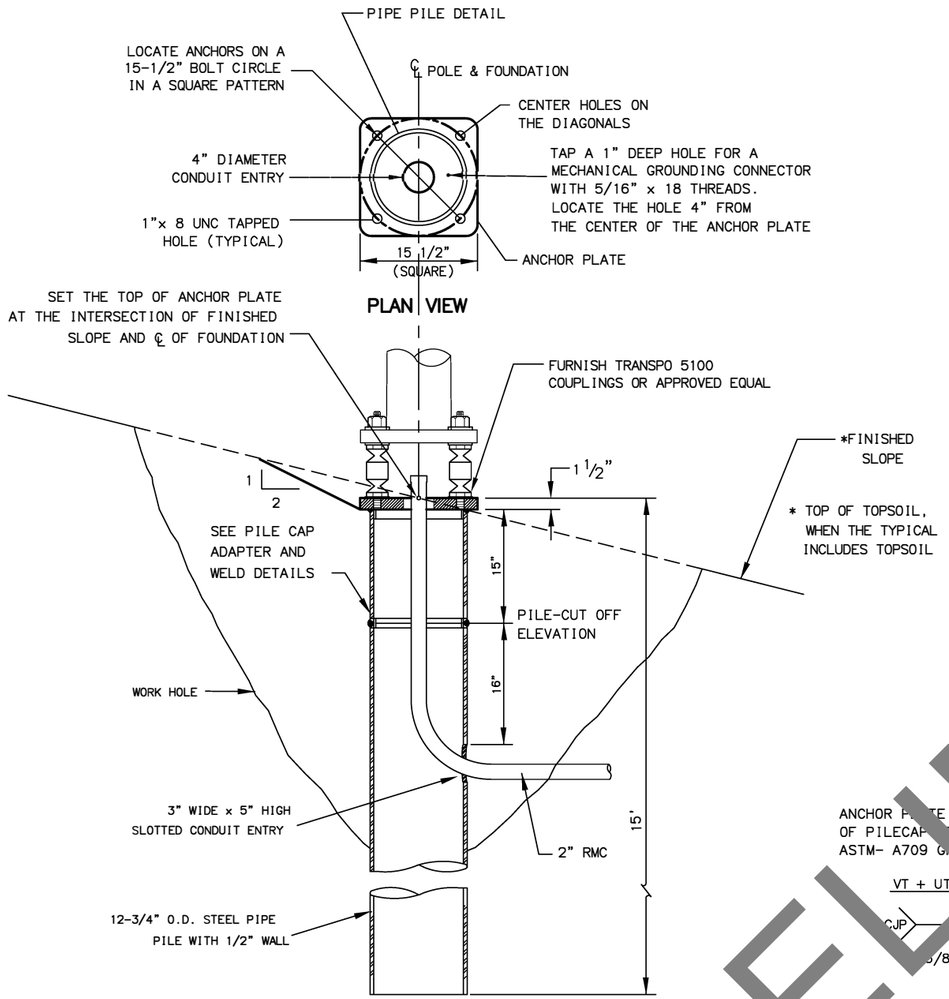
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

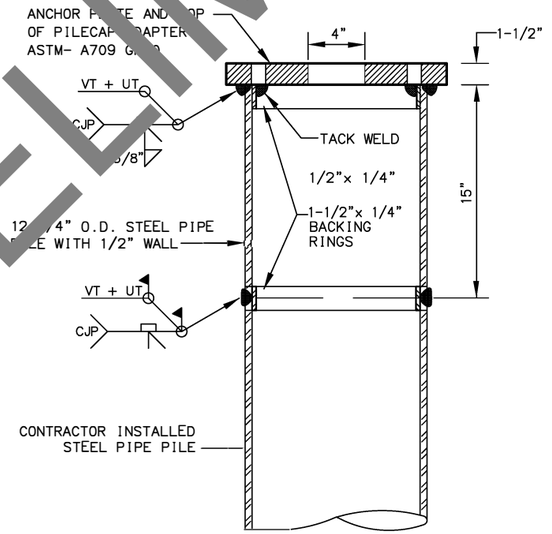
CIDH FOUNDATION

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0001607/CFHWY00366	2020	H9	H64



PIPE PILE FOUNDATION

(SHOWN WITH FRANGIBLE COUPLINGS)



PILECAP ADAPTER AND WELD DETAILS

NOT TO SCALE

DESIGN NOTES:

1. DESIGN STANDARD: 2001 STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRE AND TRAFFIC SIGNALS WITH 2006 INTERIM.
2. DESIGN LOADS: 5-KIPS AXIAL, 7.5-KIPS SHEAR, 40-KIP-FT MOMENT.
3. GALVANIZATION OF PILE IS NOT REQUIRED. UNLESS THE GROUND WATER TABLE IS FOUND TO BE, ABOVE 5 FEET, THEN GALVANIZE PILE ACCORDING TO SECTION 505.
4. CHARPY TEST FOR ELECTROLIER POLE PILE FOUNDATIONS ARE NOT REQUIRED.

MATERIAL REQUIREMENTS		
STRUCTURAL STEEL PLATE	ASTM A709 GRADE 50	Fy = 50 ksi
STEEL PIPE PILE	ASTM A709, GRADE 50 T3	Fy = 50 ksi
	API 5L GRADE X 42	Fy = 42 ksi

NOTES:

1. FURNISH STEEL PIPE PILES THAT CONFORM TO THE MATERIAL REQUIREMENTS AND SECTION 660, 715 AND 740 OF THE SPECIFICATIONS. NO SPLICES ARE ALLOWED BELOW THE PILECAP ADAPTER.
2. DRIVE PILES OPEN ENDED. COMPLETE PILE WORK ACCORDING TO SECTIONS 505, 660 AND 715 OF THE SPECIFICATIONS. REMOVE AND REINSTALL PILES OUT OF PLUMB MORE THAN 1:40.
3. FRESH HEAD THE TOP OF PILES IN A LEVEL PLANE AND CUT THE CONDUIT ENTRANCE HOLE AFTER DRIVING THE PILE. NOTE; ONLY MECHANICAL OR PLASMA CUTTER MEANS ARE PERMITTED. OXY-FUEL CUTTING IS PROHIBITED.
4. FURNISH ONLY SHOP FABRICATED PILECAP ADAPTERS. INCLUDE STAMPED ENGINEERING CALCULATIONS, DRAWINGS, MILL CERTIFICATIONS AND WELDING PLANS FOR PILECAP ADAPTERS AND THE PILECAP ADAPTER TO PILE WELD. WELDING SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST EDITION OF THE AWS D1.1, STRUCTURAL WELDING CODE-STEEL AND THE SPECIFICATIONS.
5. WAIT AT LEAST 3 DAYS AFTER BACKFILLING THE WORK HOLE BEFORE ERECTING THE LUMINAIRE POLE.
6. TERMINATE CONDUIT(S) 3" ABOVE THE TOP OF THE ANCHOR PLATE. INSTALL A GROUNDING BUSHING ON THE END OF THE RIGID METAL CONDUIT AND ESTABLISH A BOND WITH THE ANCHOR PLATE.

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AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

ELECTROLIER PIPE PILE FOUNDATION AND BREAKAWAY SUPPORT DETAILS

P.S.&E. REVIEW JUNE 2020

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF
SCALE N/A
DATE TIME 6/10/2020 2:25 PM
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0001607/CFHWY00366	2020	H10	H64

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF
SCALE N/A
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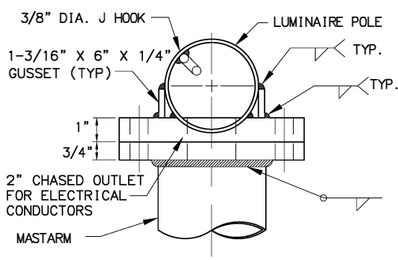
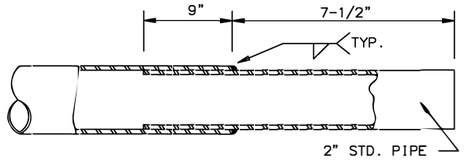
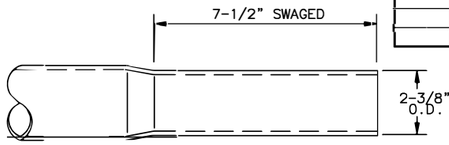


TOP VIEW



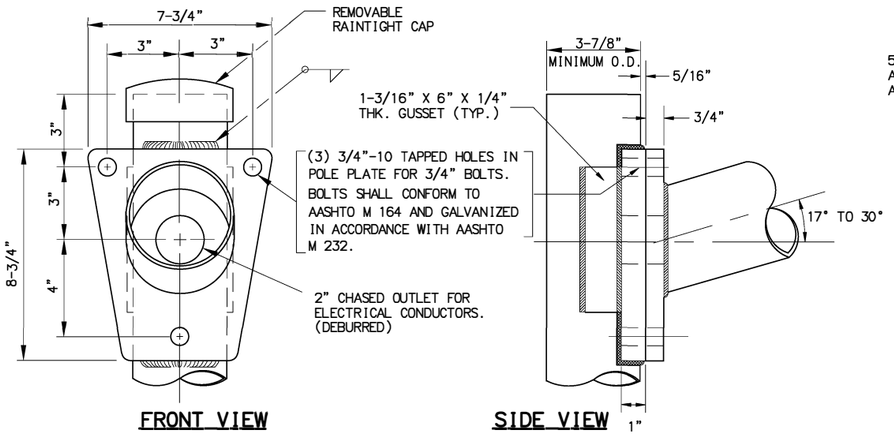
TENON



OPTIONAL SWAGED TENON

END OF MASTARM DETAIL

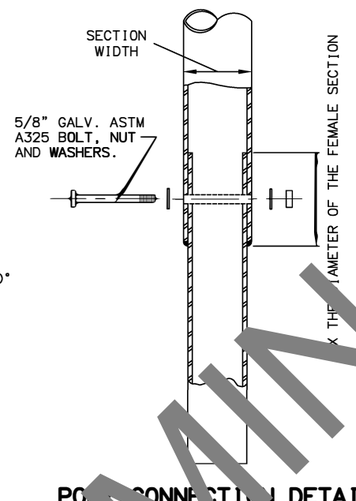
NTS



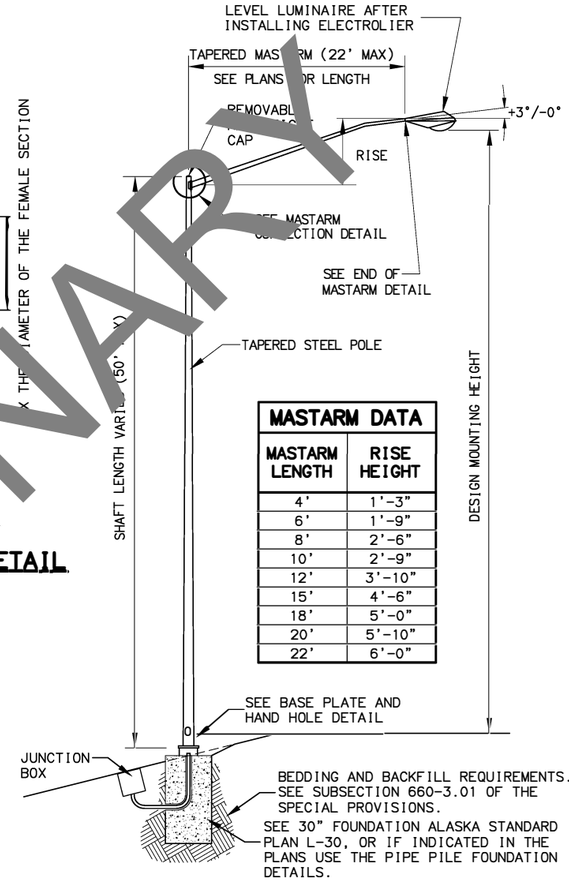
FRONT VIEW

SIDE VIEW

MASTARM CONNECTION DETAIL



POLE CONNECTION DETAIL

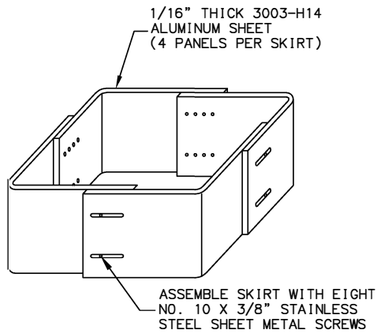


MASTARM DATA	
MASTARM LENGTH	RISE HEIGHT
4'	1'-3"
6'	1'-9"
8'	2'-6"
10'	2'-9"
12'	3'-10"
15'	4'-6"
18'	5'-0"
20'	5'-10"
22'	6'-0"

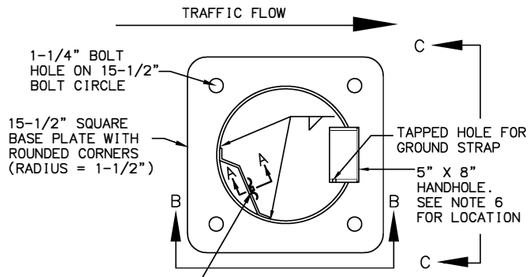
ELECTROLIER ELEVATION

NOTES:

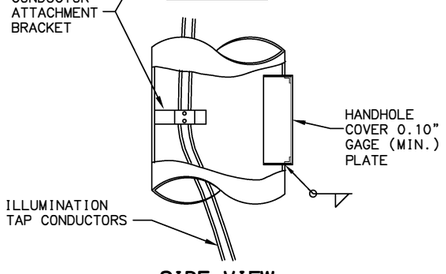
1. DESIGN AND FABRICATE ALL SHAFTS TO SUPPORT A MASTARM 22 FEET LONG WITH LUMINAIRE. ASSUME EACH LUMINAIRE WEIGHS 55 POUNDS AND HAS AN EFFECTIVE PROJECTED AREA OF 1.2 SQUARE FEET. WITH THIS DEAD LOAD, LIMIT THE ANGULAR ROTATION TO THE POLE TOP 1°40'0" MAXIMUM.
2. WELD SIZE TO BE DETERMINED BY THE MANUFACTURER.
3. MOUNTING HEIGHT, IF SPECIFIED IN THE PLANS, REFERS TO THE HEIGHT OF LUMINAIRE ABOVE THE ROADWAY. ADJUST EACH POLE'S SHAFT LENGTH TO MAINTAIN THIS DIFFERENCE IN ELEVATION WHENEVER SLOPE AND/OR OFFSET VARIES.
4. MINIMUM OUTSIDE DIAMETER AT THE TOP OF POLE EQUALS 3-7/8". POLE DIAMETER SHALL TAPER UNIFORMLY FROM THE TOP OF THE POLE TO THE BASE PLATE, WITH A MAXIMUM TAPER RATE OF 0.14" PER FOOT.
5. APPLY AN ANTI-SEIZING COMPOUND TO ALL THREADED SURFACES, INCLUDING THOSE IN THE ANCHOR PLATE AND ON THE COUPLINGS.
6. MASTARM RISE MAY VARY ±6" FROM THE VALUES LISTED IN THE TABLE.
7. LOCATE THE HANDHOLD AT 90 DEGREES TO THE MASTARM ON THE SIDE OF POLE DOWNSTREAM FROM TRAFFIC FLOW.
8. FURNISH ALL POLES WITH A J-HOOK TO SUPPORT THE ILLUMINATION TAP CONDUCTORS. FURNISH ALL MASTARM POLES WITH A REMOVABLE RAIN TIGHT CAP.
9. MOUNT LIGHTING STANDARDS UPON TRANSPO MODEL NO. 5100 FRANGIBLE COUPLINGS AND TRANSPO TYPE B FEMALE ANCHORS, OR APPROVED EQUAL.
10. INSTALL ALL COMPONENTS OF THE BREAKAWAY SUPPORT SYSTEM IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
11. FABRICATE THE SKIRT FROM FOUR PIECES OF 1/16" THICK 3003 H-14 ALUMINUM SHEET. BEND EACH PLATE TO PROVIDE CORNERS WITH A 3/4" RADIUS. ASSEMBLE THE SKIRT WITH #10 X 3/8" SELF TAPPING STAINLESS SCREWS OR POP RIVETS. THE ASSEMBLED SKIRT MEASURES ABOUT 12-3/4" SQUARE.
12. A JUNCTION BOX IS REQUIRED AT EACH NEW ELECTROLIER. INSTALL THE JUNCTION BOX IMMEDIATELY BEHIND THE FOUNDATION APPROXIMATELY 7' FROM POLE UNLESS OTHERWISE SPECIFIED IN THE PLANS.



SKIRT DETAIL

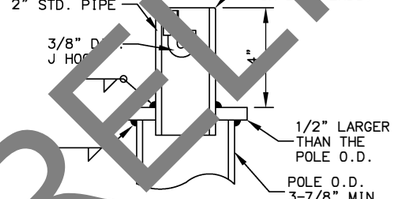


TOP VIEW



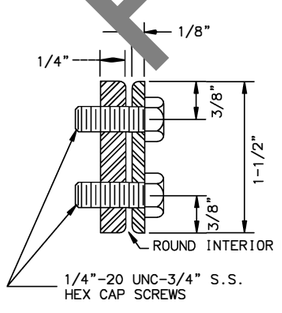
SIDE VIEW

BASE PLATE AND HAND HOLE DETAIL

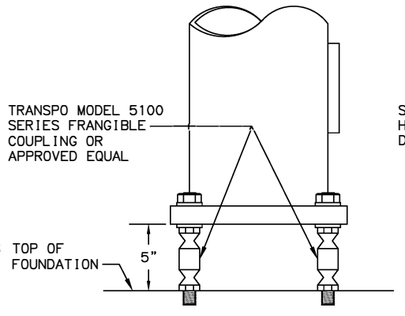


OFFSET LIGHTING STANDARD POLE TOP DETAIL

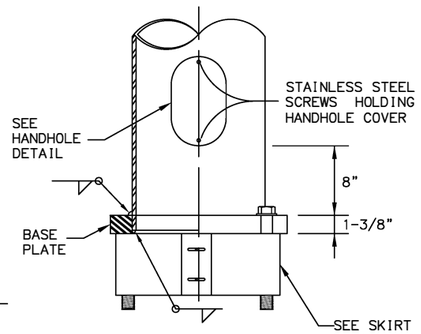
(CUTAWAY FOR CLARITY)



SECTION A-A



VIEW B-B



VIEW C-C

STATE OF ALASKA P.E. 49TH REVIEW JUNE 2020 ALISHA SWEENEY 12135 REGISTERED PROFESSIONAL ENGINEER

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
(907) 269-0590

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
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HSIP: ANCHORAGE PEDESTRIAN LIGHTING

LIGHTING STANDARD – ELECTROLIER

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0001607/CFHWY00366	2020	H11	H64

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF
SCALE N/A
DATE 6/10/2020 TIME 2:25 PM
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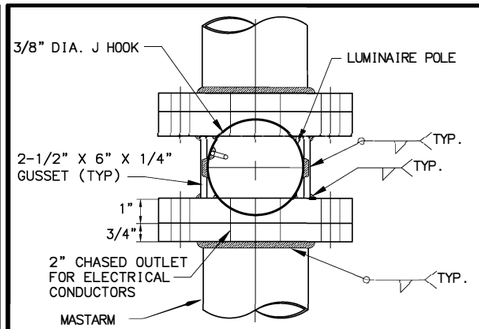
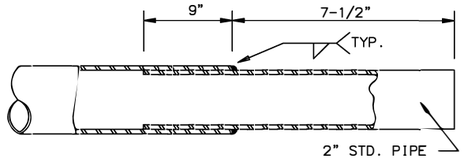


TOP VIEW



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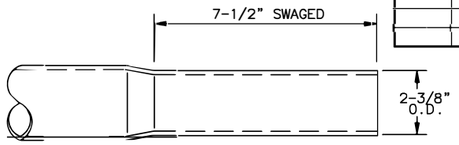
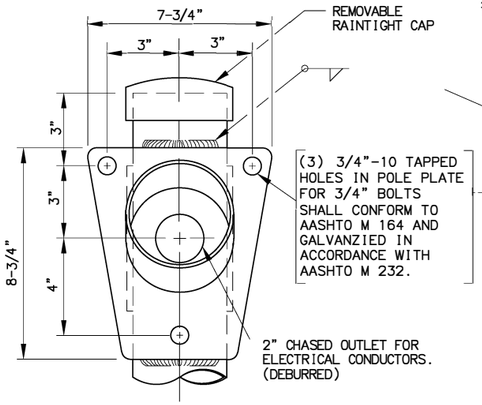


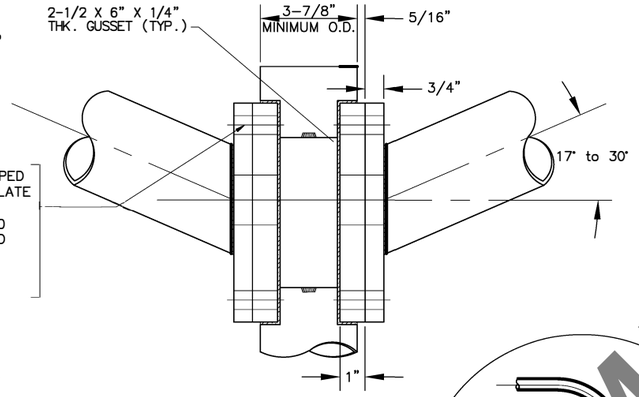
OPTIONAL SWAGED TENON

END OF MASTARM DETAIL

NTS

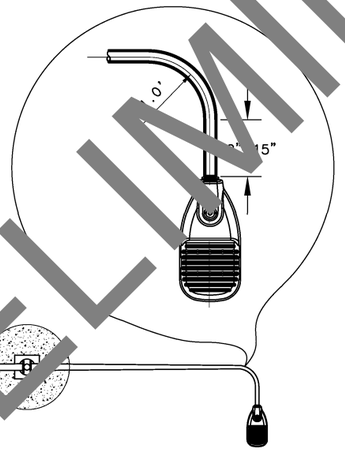


FRONT VIEW

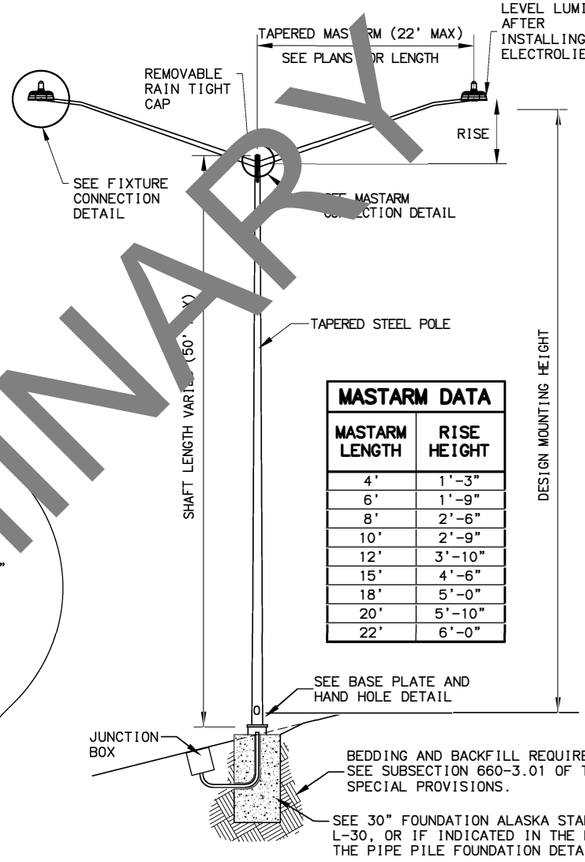


SIDE VIEW

MASTARM CONNECTION DETAIL



ELECTROLIER ELEVATION
TOP VIEW



ELECTROLIER ELEVATION

MASTARM DATA	
MASTARM LENGTH	RISE HEIGHT
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NOTES:

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6. MASTARM RISE MAY VARY ±6" FROM THE VALUES LISTED IN THE TABLE.
7. LOCATE THE HANDHOLD AT 90 DEGREES TO THE MASTARM ON THE SIDE OF POLE DOWNSTREAM FROM TRAFFIC FLOW.
8. FURNISH ALL POLES WITH A J-HOOK TO SUPPORT THE ILLUMINATION TAP CONDUCTORS. FURNISH ALL MASTARM POLES WITH A REMOVABLE RAIN TIGHT CAP.
9. MOUNT LIGHTING STANDARDS UPON TRANSPO MODEL NO. 5100 FRANGIBLE COUPLINGS AND TRANSPO TYPE B FEMALE ANCHORS, OR APPROVED EQUAL.
10. INSTALL ALL COMPONENTS OF THE BREAKAWAY SUPPORT SYSTEM IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
11. FABRICATE THE SKIRT FROM FOUR PIECES OF 1/16" THICK 3003 H-14 ALUMINUM SHEET. BEND EACH PLATE TO PROVIDE CORNERS WITH A 3/4" RADIUS. ASSEMBLE THE SKIRT WITH #10 X 3/8" SELF TAPPING STAINLESS SCREWS OR POP RIVETS. THE ASSEMBLED SKIRT MEASURES ABOUT 12-3/4" SQUARE.
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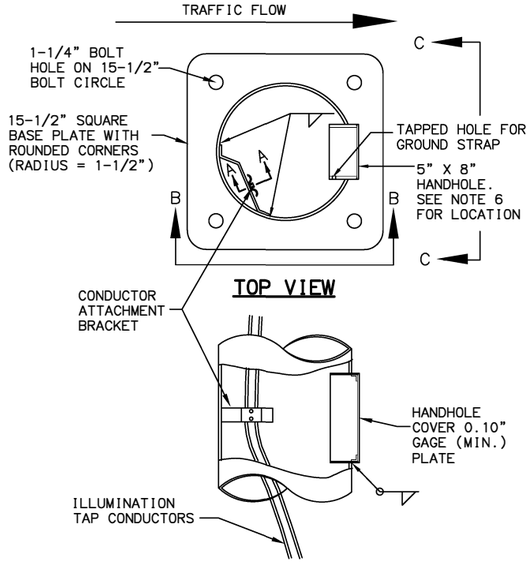
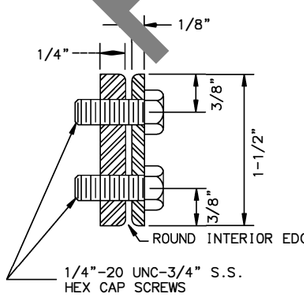


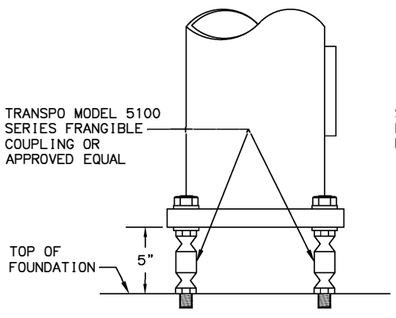
TOP VIEW

SIDE VIEW

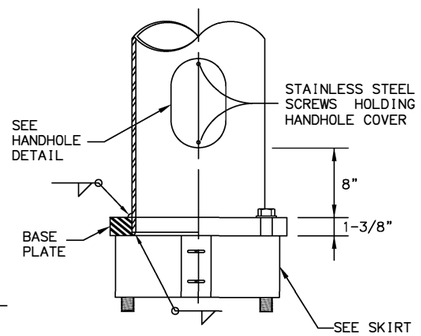
BASE PLATE AND HAND HOLE DETAIL



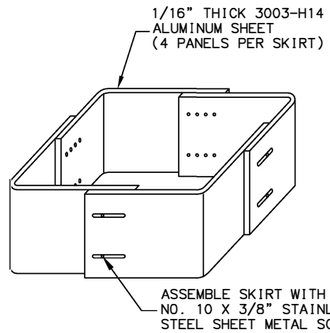
SECTION A-A



VIEW B-B



VIEW C-C



SKIRT DETAIL

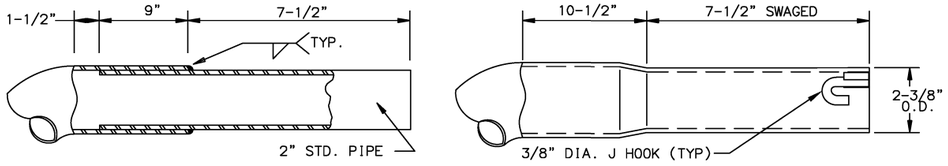
STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
(907) 269-0590

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

LIGHTING STANDARD – LONGHORN ELECTROLIER

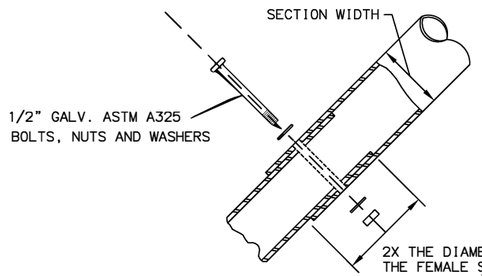
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0001607/CFHWY00366	2020	H12	H64



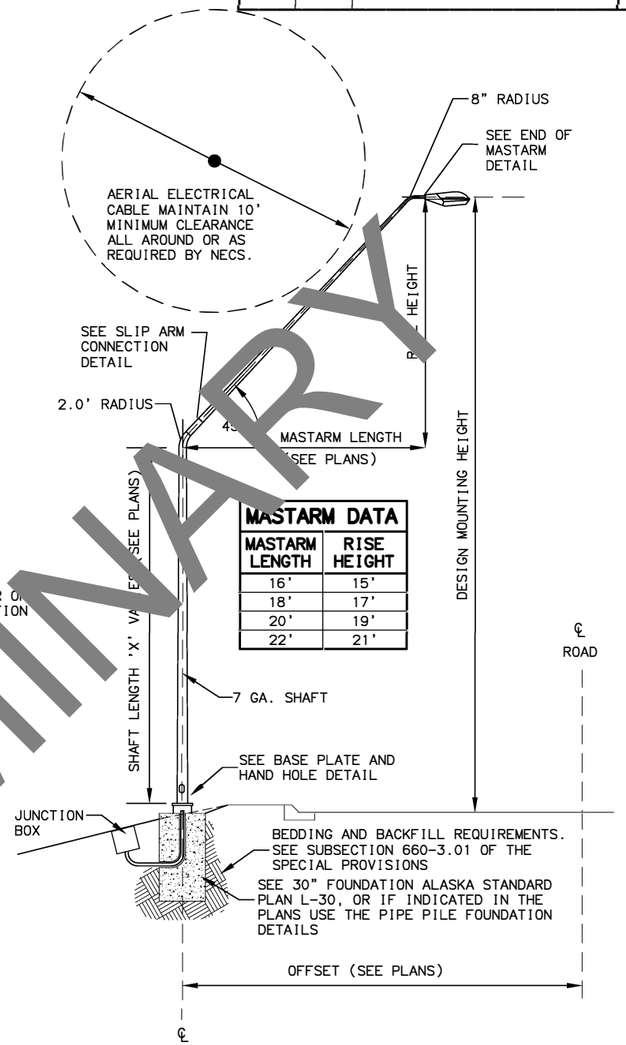
TENON OPTIONAL SWAGED TENON

END OF MASTARM DETAIL

NTS



SLIP CONNECTION DETAIL

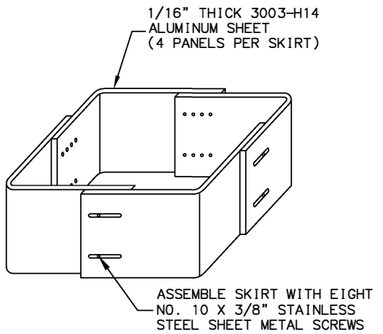


MASTARM DATA	
MASTARM LENGTH	RISE HEIGHT
16'	15'
18'	17'
20'	19'
22'	21'

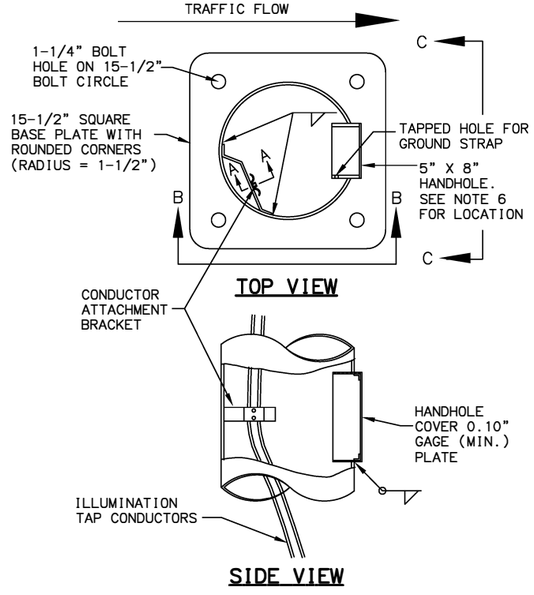
45° ELECTROLIER ELEVATION

NOTES:

1. DESIGN AND FABRICATE ALL SHAFTS TO SUPPORT A MASTARM 22 FEET LONG WITH LUMINAIRE. ASSUME EACH LUMINAIRE WEIGHS 55 POUNDS AND HAS AN EFFECTIVE PROJECTED AREA OF 1.2 SQUARE FEET. WITH THIS DEAD LOAD, LIMIT THE ANGULAR ROTATION TO THE POLE TOP 1°40'0" MAXIMUM.
2. WELD SIZE TO BE DETERMINED BY THE MANUFACTURER.
3. MOUNTING HEIGHT, IF SPECIFIED IN THE PLANS, REFERS TO THE HEIGHT OF LUMINAIRE ABOVE THE ROADWAY. ADJUST EACH POLE'S SHAFT LENGTH TO MAINTAIN THIS DIFFERENCE IN ELEVATION WHENEVER SLOPE AND/OR OFFSET VARIES.
4. MINIMUM OUTSIDE DIAMETER AT THE TOP OF POLE EQUALS 2-3/8". POLE DIAMETER SHALL TAPER UNIFORMLY FROM THE TOP OF THE POLE TO THE BASE PLATE, WITH A MAXIMUM TAPER RATE OF 0.14" PER FOOT.
5. APPLY AN ANTI-SEIZING COMPOUND TO ALL THREADED SURFACES, INCLUDING THOSE IN THE ANCHOR PLATE AND ON THE COUPLINGS.
6. MASTARM RISE MAY VARY ±6" FROM THE VALUES LISTED IN THE TABLE.
7. LOCATE THE HANDHOLD AT 90 DEGREES TO THE MASTARM ON THE SIDE OF POLE DOWNSTREAM FROM TRAFFIC FLOW.
8. FURNISH ALL POLES WITH A J-HOOK TO SUPPORT THE ILLUMINATION TAP CONDUCTORS. FURNISH ALL MASTARM POLES WITH A REMOVABLE RAIN TIGHT CAP.
9. MOUNT LIGHTING STANDARDS UPON TRANSPO MODEL NO. 5100 FRANGIBLE COUPLINGS AND TRANSPO TYPE B FEMALE ANCHORS, OR APPROVED EQUAL.
10. INSTALL ALL COMPONENTS OF THE BREAKAWAY SUPPORT SYSTEM IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
11. FABRICATE THE SKIRT FROM FOUR PIECES OF 1/16" THICK 3003 H-14 ALUMINUM SHEET. BEND EACH PLATE TO PROVIDE CORNERS WITH A 3/4" RADIUS. ASSEMBLE THE SKIRT WITH #10 X 3/8" SELF TAPPING STAINLESS SCREWS OR POP RIVETS. THE ASSEMBLED SKIRT MEASURES ABOUT 12-3/4" SQUARE.
12. A JUNCTION BOX IS REQUIRED AT EACH NEW ELECTROLIER. INSTALL THE JUNCTION BOX IMMEDIATELY BEHIND THE FOUNDATION APPROXIMATELY 7' FROM POLE UNLESS OTHERWISE SPECIFIED IN THE PLANS.

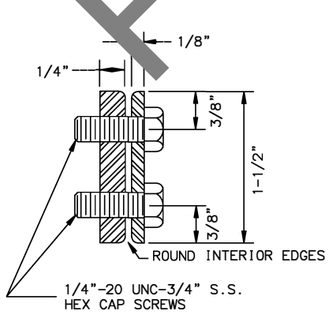


SKIRT DETAIL

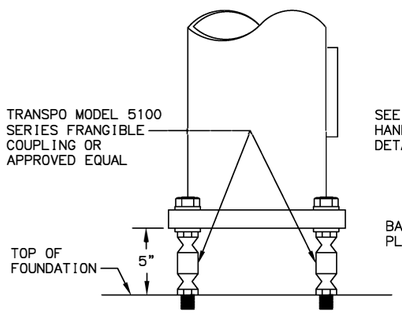


TOP VIEW SIDE VIEW

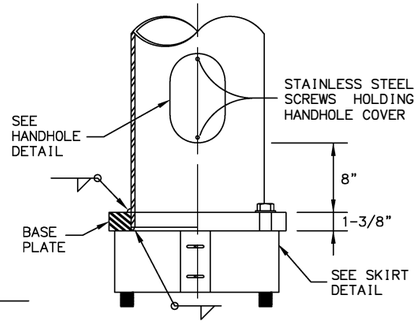
BASE PLATE AND HAND HOLE DETAIL



SECTION A-A



VIEW B-B



VIEW C-C

STATE OF ALASKA DOT&PF REVIEW JUNE 2020 JOSHUA SWEENEY 21351 REGISTERED PROFESSIONAL ENGINEER

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(907) 269-0590

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

LIGHTING STANDARD – 45 DEGREE DAVIT ELECTROLIER

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF
SCALE N/A
DATE 6/10/2020 TIME 2:25 PM
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0001607/CFHWY00366	2020	H13	H64

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF

SCALE N/A

DATE 6/10/2020 TIME 2:25 PM

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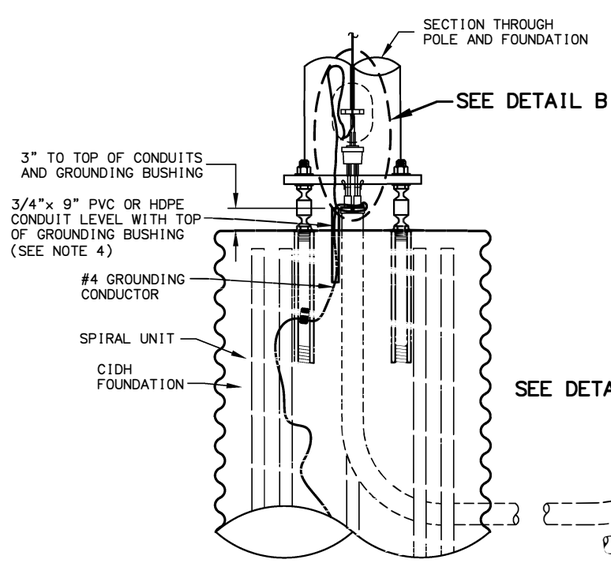
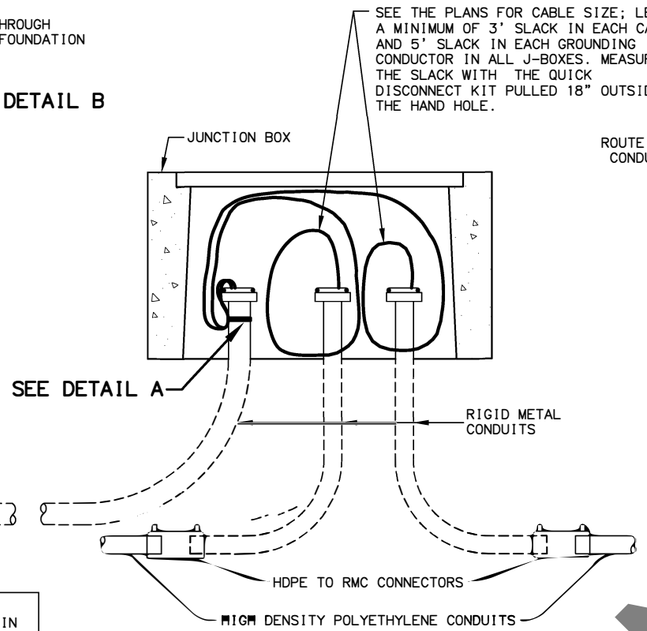
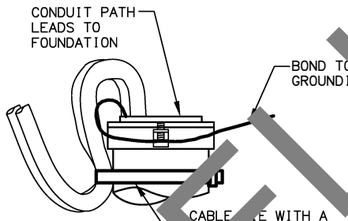


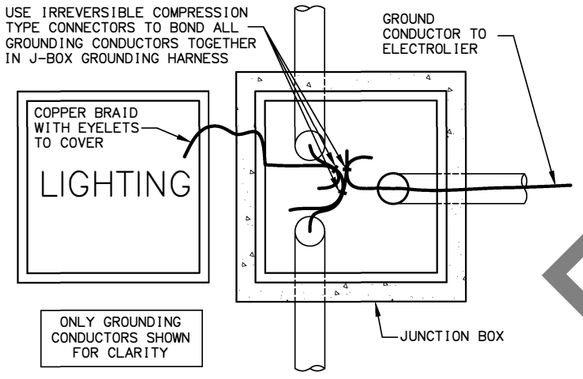
GROUNDING ROD AND CONDUCTORS NOT SHOWN IN J-BOX FOR CLARITY



LIGHTING SYSTEM POLE AND J-BOX WIRING DETAILS

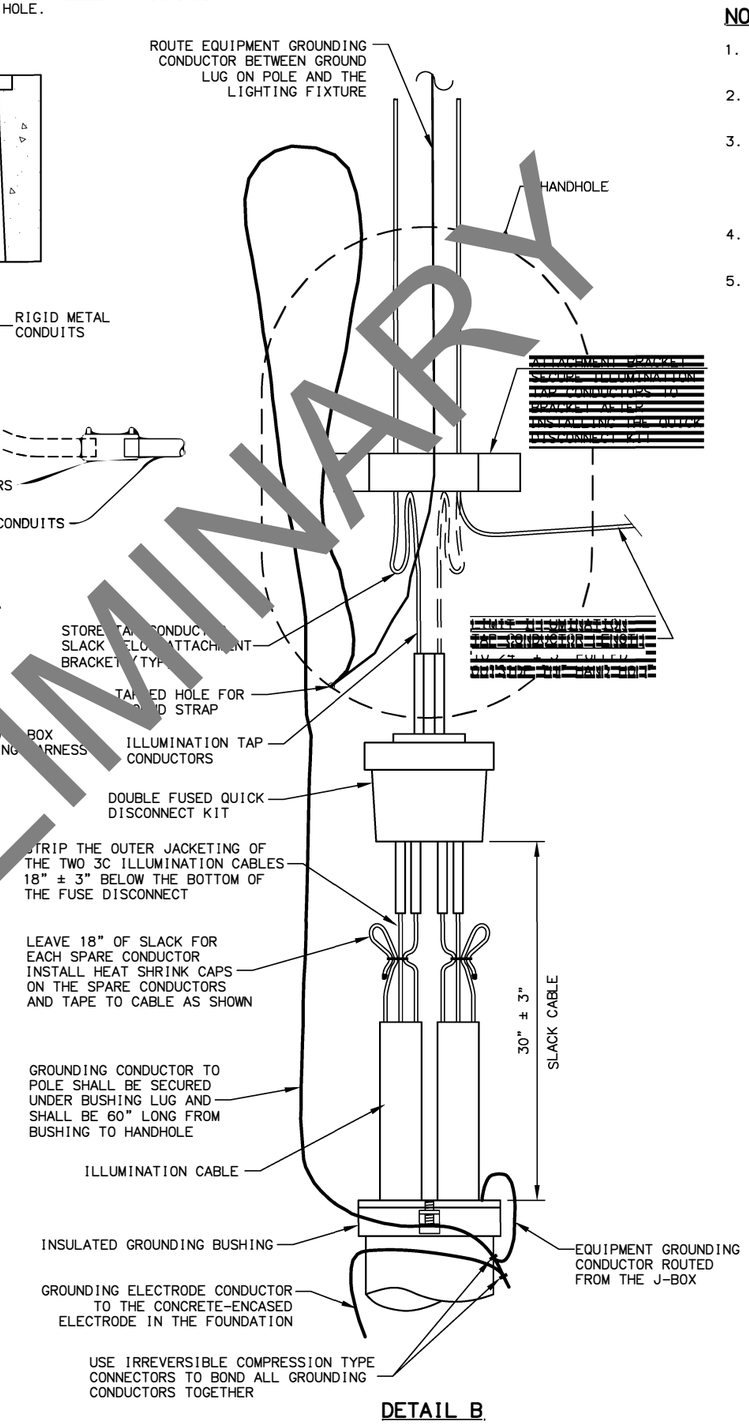


DETAIL A



ONLY GROUNDING CONDUCTORS SHOWN FOR CLARITY

GROUNDING CONDUCTOR BONDING CONNECTIONS



DETAIL B

NOTES:

1. APPLICATION FOR SLIP BASE IS THE SAME EXCEPT FOR BONDING. SEE SUBSECTION 660-3.06 FOR BONDING.
2. LABEL ALL CABLES AND CONDUCTORS IN POLE BASE AND J-BOX. SEE SUBSECTION 660-3.05.
3. MAKE ALL GROUNDING AND BONDING WIRE #8 AWG, EXCEPT IN THOSE CONDUITS THAT CONTAIN CIRCUIT CONDUCTORS LARGER THAN #8 AWG. IN THIS CASE USE WIRE EQUAL IN SIZE TO THE LARGEST CONDUCTOR. THE GROUNDING ELECTRODE CONDUCTOR TO THE CONCRETE-ENCASED ELECTRODE IN THE FOUNDATION SHALL BE #4 AWG.
4. USE LISTED IRREVERSIBLE COMPRESSION TYPE CONNECTORS SIZED FOR EACH APPLICATION AND INSTALLED PER MANUFACTURERS SPECIFICATIONS.
5. PROTECT GROUND WIRE WITH 3/4" PVC OR HDPE CONDUIT TO 6" BELOW TOP OF FOUNDATION FILLED WITH SILICONE SEALANT.

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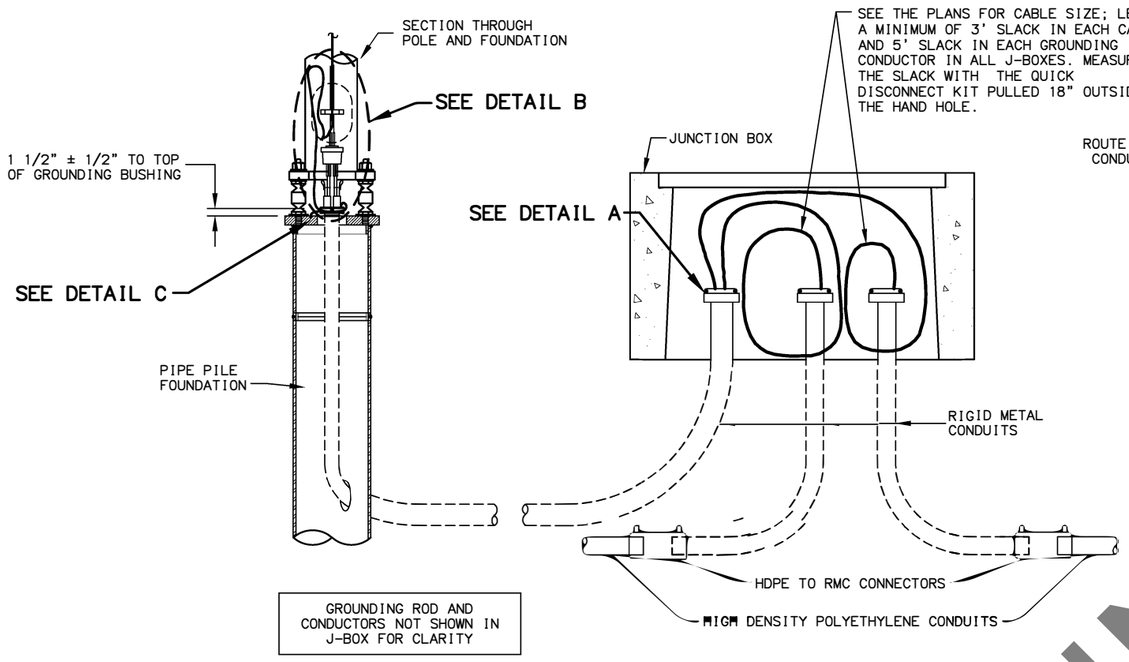
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

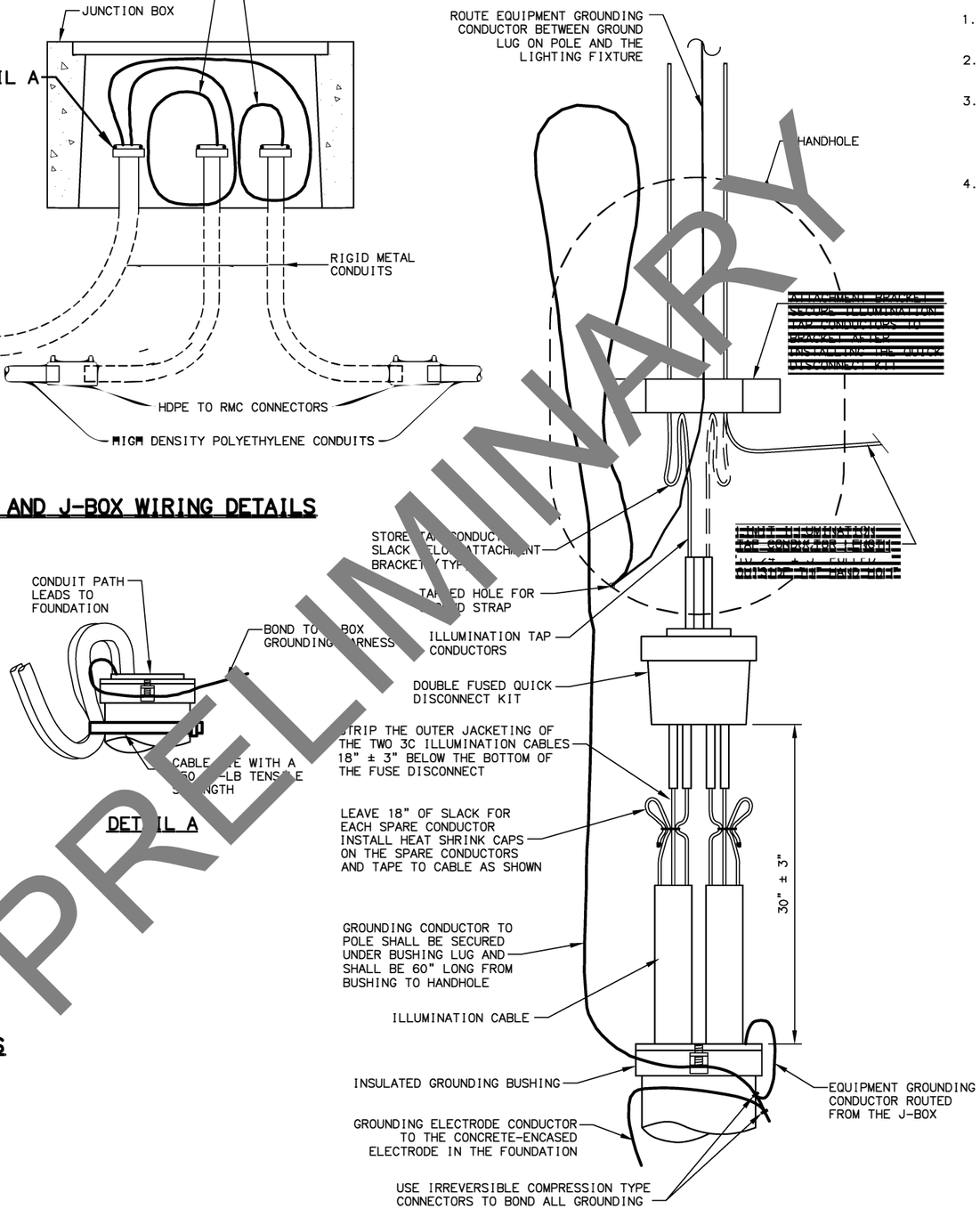
CIDH FOUNDATION POLE WIRING AND GROUNDING DETAILS

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	H14	H64

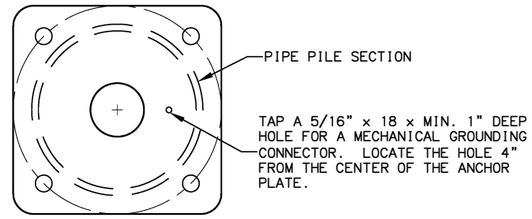


LIGHTING SYSTEM POLE AND J-BOX WIRING DETAILS

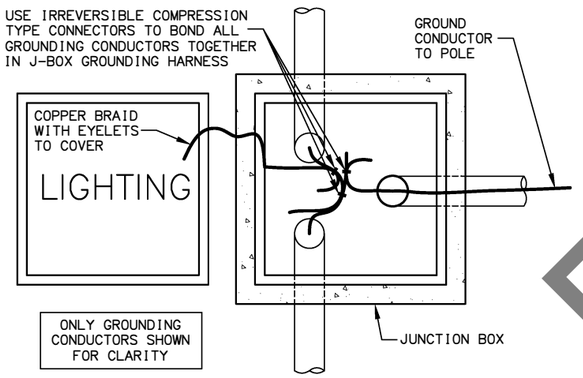


DETAIL B

DETAIL A



DETAIL C



GROUNDING CONDUCTOR BONDING CONNECTIONS

NOTES:

1. APPLICATION FOR SLIP BASE IS THE SAME EXCEPT FOR BONDING. SEE SUBSECTION 660-3.06 FOR BONDING.
2. LABEL ALL CABLES AND CONDUCTORS IN POLE BASE AND J-BOX. SEE SUBSECTION 660-3.05.
3. MAKE ALL GROUNDING AND BONDING WIRE #8 AWG, EXCEPT IN THOSE CONDUITS THAT CONTAIN CIRCUIT CONDUCTORS LARGER THAN #8 AWG. IN THIS CASE USE WIRE EQUAL IN SIZE TO THE LARGEST CONDUCTOR. THE GROUNDING ELECTRODE CONDUCTOR TO THE CONCRETE-ENCASED ELECTRODE IN THE FOUNDATION SHALL BE #4 AWG.
4. USE LISTED IRREVERSIBLE COMPRESSION TYPE CONNECTORS SIZED FOR EACH APPLICATION AND INSTALLED PER MANUFACTURERS SPECIFICATIONS.

STATE OF ALASKA, DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

PIPE PILE FOUNDATION POLE WIRING AND GROUNDING DETAILS

STATE OF ALASKA DOT&PF
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ANCHORAGE, AK 99502
(907) 269-0590

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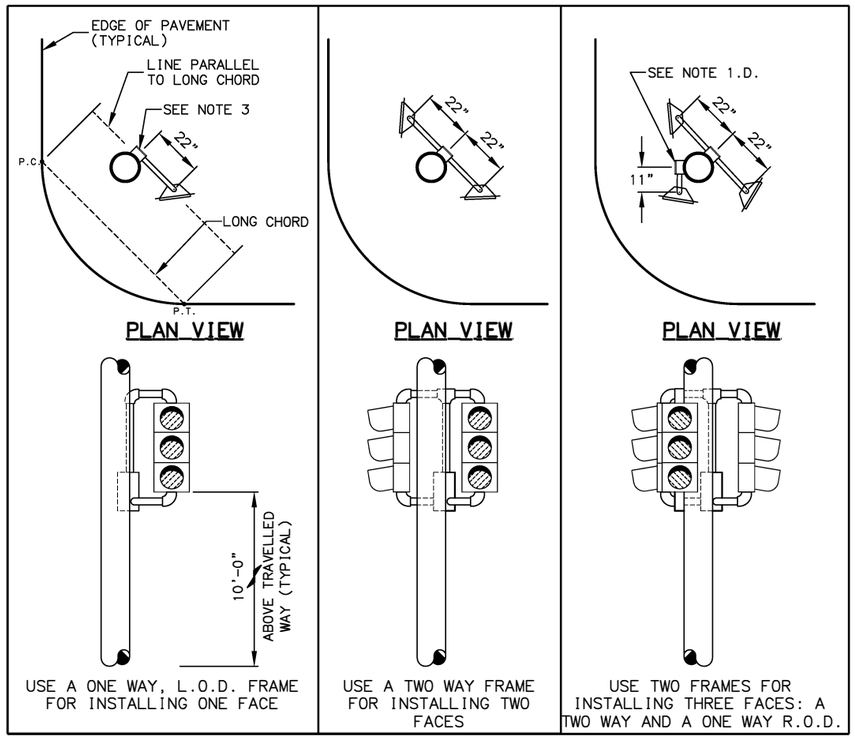
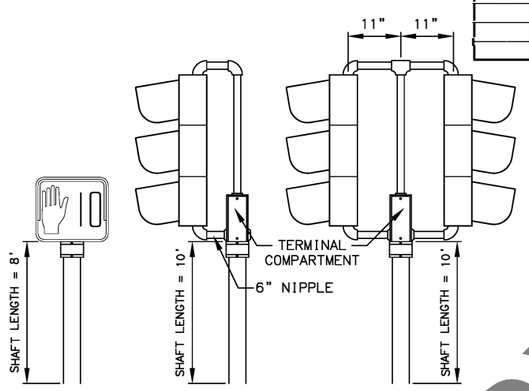
DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF
SCALE N/A
DATE 6/10/2020 TIME 2:25 PM
DRAWING LOCATION C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CIV3D19\PLANSET\H_SHEETS\28-PIPE_PILE_POLE_WIRING_AND_GROUNDING.DWG

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0001607/CFHWY00366	2020	H15	H64



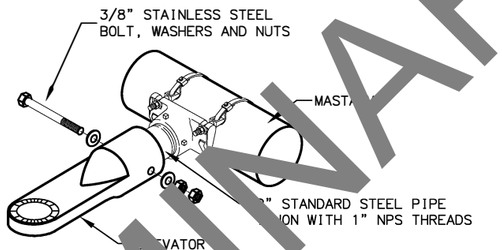
SIDE MOUNTED SIGNAL FRAMES WITH VEHICULAR SIGNALS

(SHOWN WITHOUT BACKPLATES)



POST MOUNTED SIGNALS

(SHOWN WITHOUT BACKPLATE)

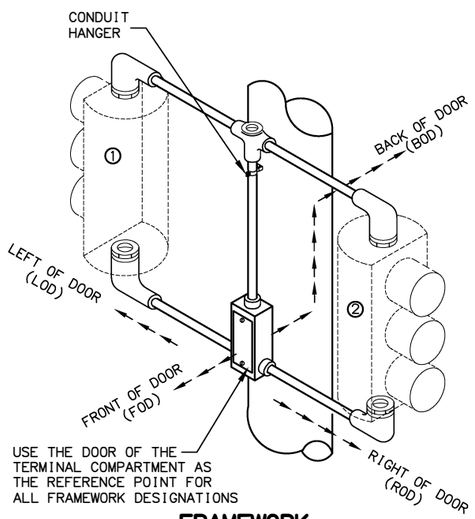


ELEVATOR PLUMBIZER

(SEE NOTE 1.A.)

NOTES:

1. INSTALL THE SIGNAL FACES SHOWN IN THE PLANS AS DETAILED ON THIS SHEET AND PER ALASKA TRAFFIC MANUAL.
   A. USE ELEVATOR PLUMBIZERS TO INSTALL FACES ON MASTARMS AND WHENEVER TWO INCH PIPE TENONS ARE SPECIFIED. INSTALL THE PLUMBIZER BETWEEN THE RED AND YELLOW SIGNAL INDICATIONS FOR A THREE SECTION HEAD AND BETWEEN THE TWO YELLOW SIGNAL INDICATIONS FOR A FOUR SECTION HEAD. USE STAINLESS STEEL BAND MOUNT HARDWARE, AB-3007-L AS MANUFACTURED BY PELCO PRODUCTS, INC., OR APPROVED EQUAL TO INSTALL PLUMBIZER TO MASTARMS. PELCO MOUNT SHALL HAVE STAINLESS STEEL OPTION.
   B. USE SLIP FITTERS TO INSTALL PEDESTRIAN SIGNALS ON THE TOP OF POSTS.
   C. USE SIGNAL FRAMES TO INSTALL SIGNAL FACES ON THE SIDES OF POLES AND ON THE TOPS OF POSTS.
   D. USE A SECOND SIGNAL FRAME TO INSTALL THE THIRD FACE WHEN THREE SIDE MOUNTED SIGNAL FACES ARE SHOWN.
   E. USE CLAMSHELL BRACKETS TO INSTALL ALL PEDESTRIAN SIGNALS, EXCEPT THOSE THAT ARE POST TOP MOUNTED.
   F. FURNISH ALL SIGNAL FRAMES WITH TERMINAL COMPARTMENTS.
2. INSTALL ONE TERMINAL COMPARTMENT ON THE SIDE OF THE POLE OPPOSITE THE MIDPOINT OF THE RADIUS RETURN. POSITION THE TERMINAL COMPARTMENT AT THE LOCATION WHERE A LINE PARALLEL TO THE LONG CHORD (P.C. TO P.T.) OF THE RADIUS RETURN IS TANGENT TO THE POLE.
3. INSTALL PEDESTRIAN INDICATION TO FACE THE CENTER OF THE FAR SIDE CROSSWALK. ACCEPTABLE VARIANCE IS +/- 1 DEGREE.
4. FIELD DRILL THE HOLES NEEDED FOR ATTACHING ALL SIGNAL HARDWARE. USE HOLE SAWS WHEN DRILL BITS ARE NOT AVAILABLE. TREAT THE BARE STEEL SURFACES IN ACCORDANCE WITH SECTION 660-3.01.8, REPAIRING DAMAGED FINISHES, OF THE STANDARD SPECIFICATIONS.
5. PROVIDE SOLID BACKPLATES SIZED FOR THE NUMBER OF SIGNAL SECTIONS AND MOUNTING TYPE, SO THAT NO LIGHT IS VISIBLE BETWEEN THE BACKPLATE AND THE SIGNAL FACE. FURNISH BACKPLATES FOR DOGHOUSE STYLE SIGNALS THAT FEATURE NOTCHED UPPER CORNERS.
6. ATTACH ALL BACK PLATES USING PLATED STEEL RIVETS WITH LARGE FLANGE BUTTON HEADS. INSTALL 0.187" DIAMETER BY 0.575" LONG RIVETS THAT PROVIDE AT LEAST 530 LBS. AND 670 LBS. SHEAR AND TENSILE STRENGTHS, RESPECTIVELY. BORE OUT THE MOUNTING HOLES IN THE BACK PLATES AND SIGNAL HEADS TO THE DIAMETER RECOMMENDED BY THE RIVET MANUFACTURER.
7. BEFORE INSTALLING THE MACHINE SCREWS THAT SECURE THE VISORS, COAT THE THREADS WITH AN ANTI-SEIZING COMPOUND.



FRAMEWORK DESCRIPTION

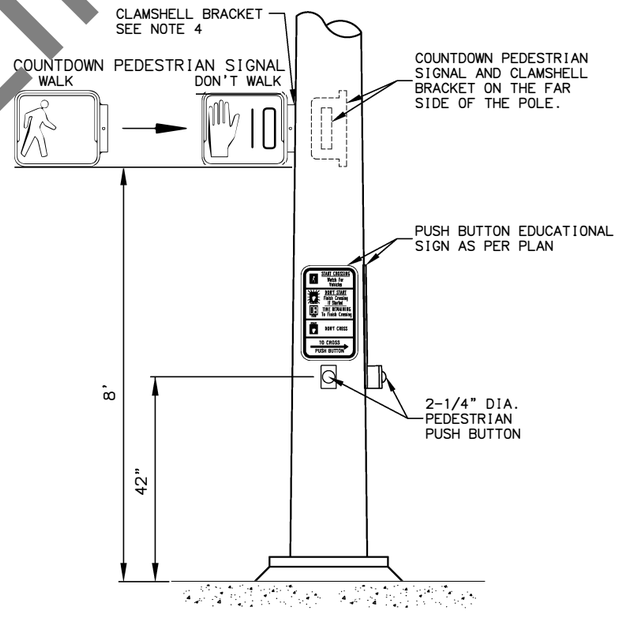
HEAD NO. ① OFFSET L.O.D.
HEAD NO. ② OFFSET R.O.D.

TERMINAL COMPARTMENT WITH SLIP FITTER

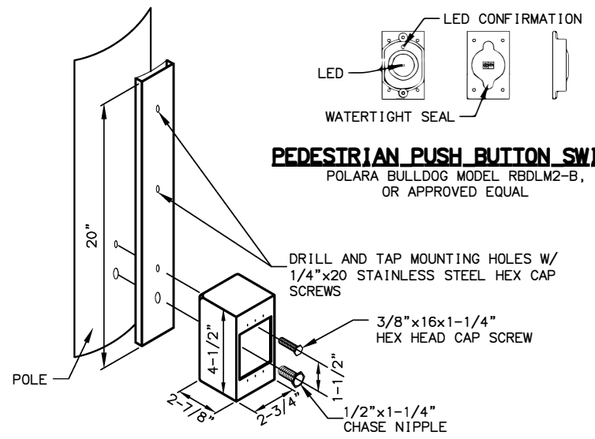
(SEE NOTES 1.C. AND 2)

SLIP FITTER

(SEE NOTE 1.B.)



PEDESTRIAN HARDWARE



PEDESTRIAN PUSH BUTTON SWITCH

POLARA BULLDOG MODEL RBDLM2-B, OR APPROVED EQUAL

PEDESTRIAN PUSH BUTTON HOUSING

(STYLE A)

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

SIGNAL HARDWARE DETAILS

STATE OF ALASKA DOT&PF
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STATE OF ALASKA 49TH
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REGISTERED PROFESSIONAL ENGINEER

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CHECKED BY LAS
DRAFTED BY MF
SCALE N/A
DATE TIME 6/10/2020 2:25 PM
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0001607/CFHWY00366	2020	H16	H64

DESIGNED BY ZJH
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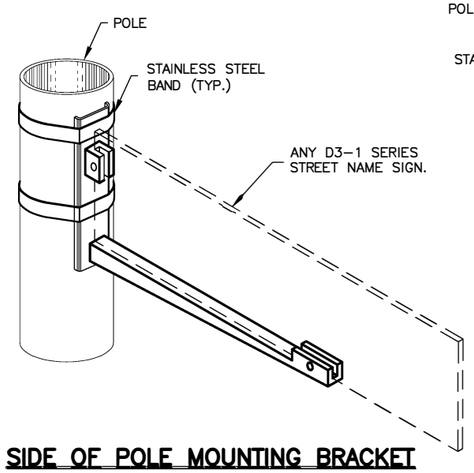
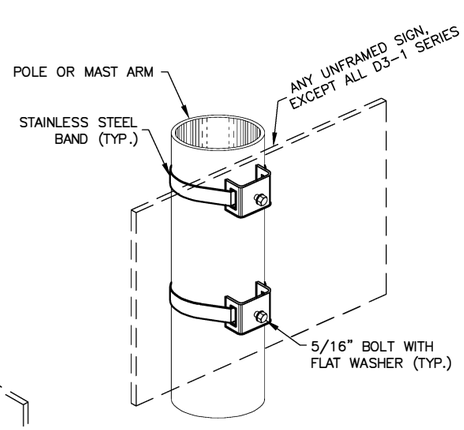
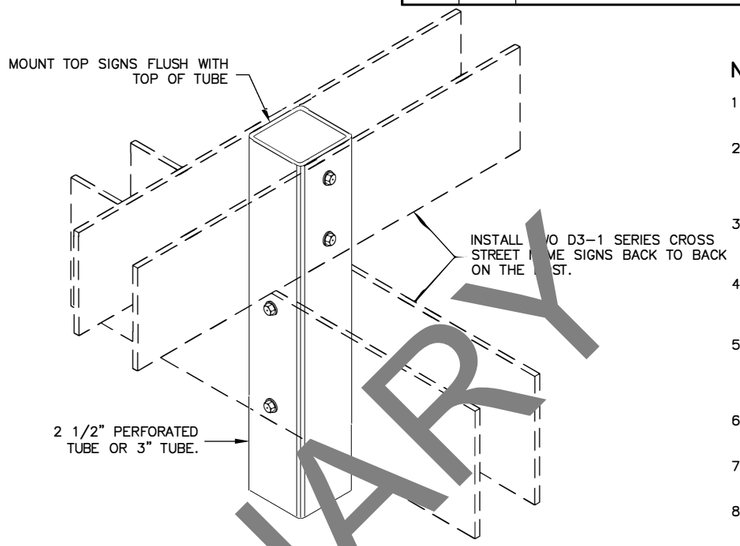


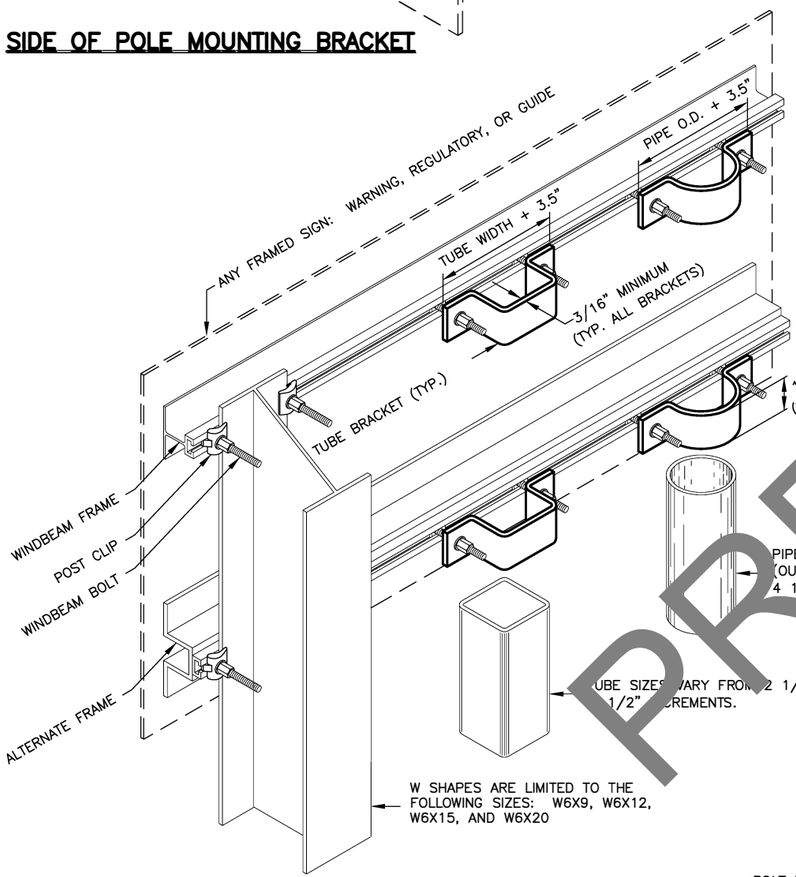
SIDE OF POLE MOUNTING BRACKET



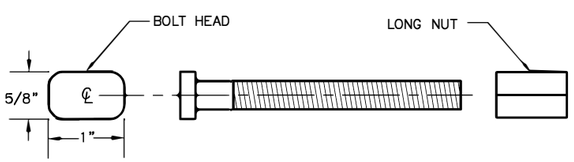
SADDLE BRACKETS



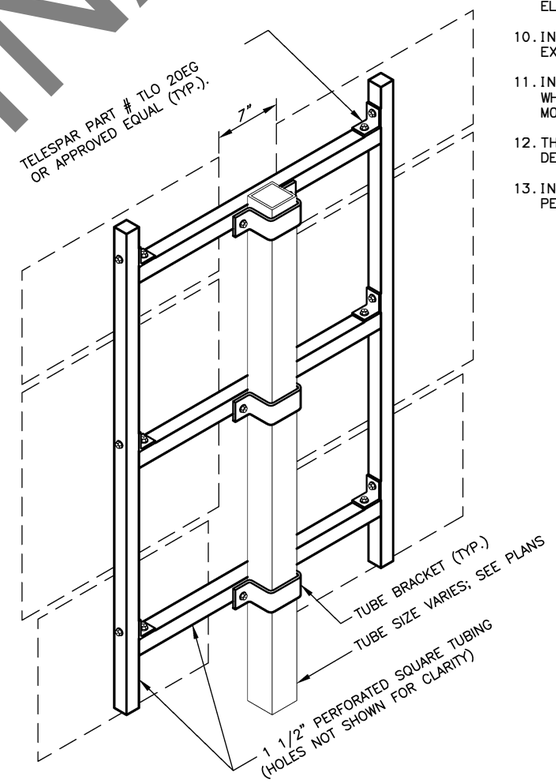
STREET NAME SIGN INSTALLATION



FRAMED SIGN ATTACHMENT BRACKETS



3/8" WINDBEAM BOLT AND LONG NUT



ROUTE MARKER TREE

NOTES:

1. EXCEPT FOR POLES AND MASTARMS, ONLY USE TUBES TO SUPPORT SIGNS MOUNTED ON ONE POST.
2. ATTACH SIGNS, FRAMED AND UNFRAMED TO THEIR SUPPORTS WITH ZINC PLATED 3/8" BOLTS, EXCEPT ATTACH UNFRAMED SIGNS TO PERFORATED TUBES WITH ACCESSORY DRIVE RIVETS AND TO SADDLES WITH 5/16" BOLTS.
3. BOLT UNFRAMED SIGNS DIRECTLY TO TUBES IN TWO LOCATIONS, NEAR TOP AND NEAR BOTTOM OF MATING SURFACE. ATTACH THEM TO POLES AND MASTARMS WITH TWO SADDLES.
4. ATTACH BRACKETS TO POLES AND MASTARMS 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 MASTARMS USING POLE PLATES INSTALLED ACCORDING TO ALASKA STANDARD PLAN S-23.
9. FOR ROUTE MARKER TREES, CUT PERFORATED TUBES TO ENSURE TIGHT FITTING JOINTS. ASSEMBLE THE PIECES WITH ACCESSORY ELL-SHAPED ANGLE BRACKETS.
10. INSTALL THE TOP EDGE OF SIGNS 1" ABOVE THE TOPS OF POSTS, EXCEPT FOR THE D3-1 STREET NAME SIGNS.
11. INSTALL THE TOP EDGE OF SIGNS 3" BELOW THE TOP OF POST, WHENEVER THEY ARE MOUNTED BELOW SIGNS SECURED BY POST TOP MOUNTING BRACKETS.
12. THE BRACKET DETAILS SHOWN INDICATE GENERAL DESIGNS ONLY. DESIGNS MAY VARY BY MANUFACTURER.
13. INSTALL WEATHER TIGHT CAPS ON ALL PIPE AND TUBE POSTS, EXCEPT PERFORATED TUBING.

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

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

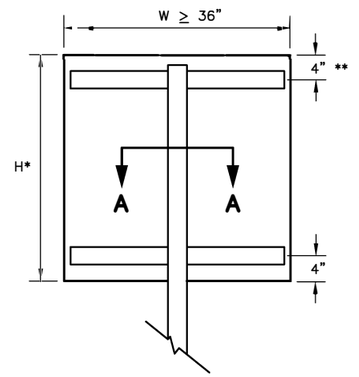
HSIP: ANCHORAGE PEDESTRIAN LIGHTING

SIGN ATTACHMENT DETAILS

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
(907) 269-0590

P.S.&E. REVIEW JUNE 2020
JOSHUA J. SWEENEY 12135
REGISTERED PROFESSIONAL ENGINEER

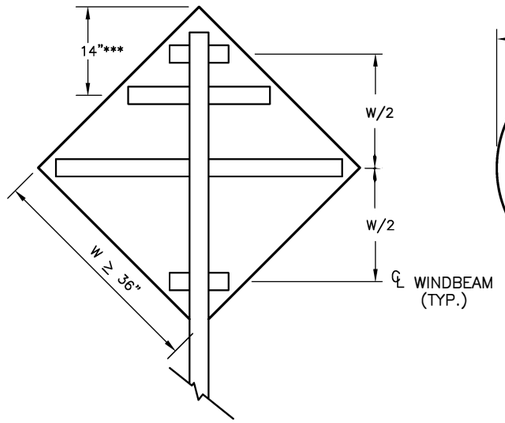
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0001607/CFHWY00366	2020	H17	H64



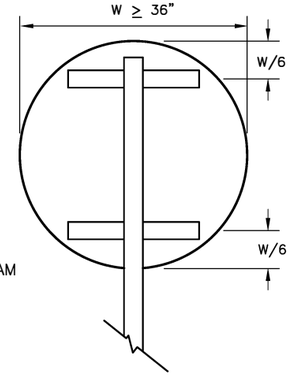
RECTANGLES AND TRAPEZOIDS

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

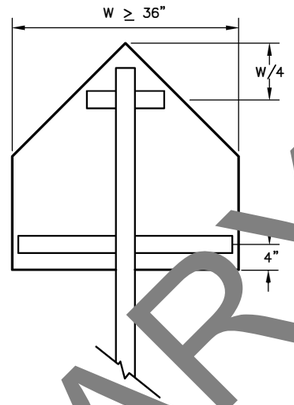
** FOR S5-1 SIGNS MOUNTED ON FLASHING BEACON POSTS, USE A 10" OFFSET. OTHERWISE, USE 4".

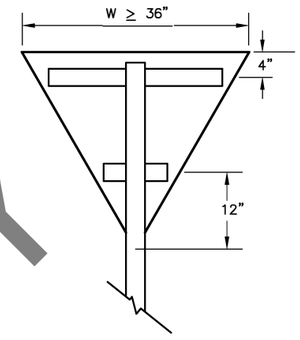


*** FOR WARNING SIGNS MOUNTED ON FLASHING BEACON POSTS, USE THE 14" OFFSET. OTHERWISE, USE W/2.



ROUNDS AND OCTAGONS



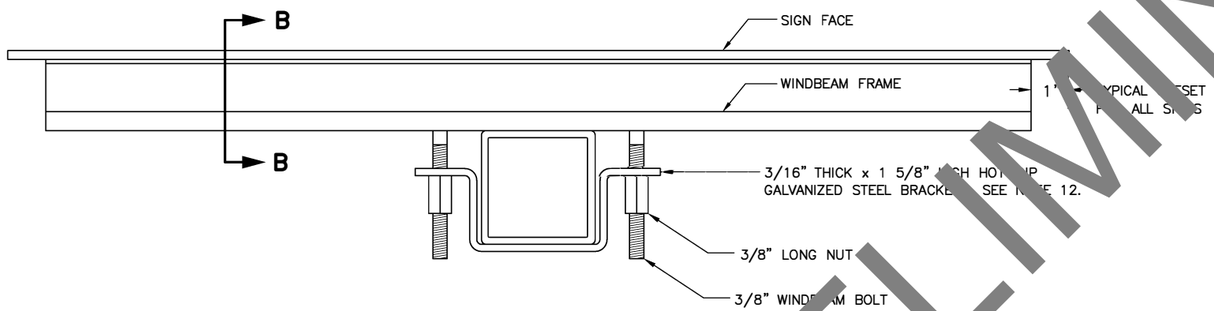


NOTES:

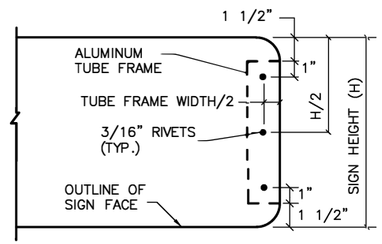
1. EXCEPT FOR POLES AND MAST ARMS, ONLY USE SQUARE STEEL TUBES TO SUPPORT SIGNS MOUNTED ON SINGLE POSTS.
2. INSTALL WINDBEAM OR ZEE SHAPED FRAMING MEMBERS ON DIAMOND SHAPED SIGNS 36 INCHES AND LONGER ON A SIDE AND ON OTHER SIGNS 36 INCHES WIDE AND WIDER.
3. IN HIGH WIND AREAS, THE PLANS MAY REQUIRE SIGNS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

WINDBEAM LOCATIONS FOR EACH SIGN SHAPE

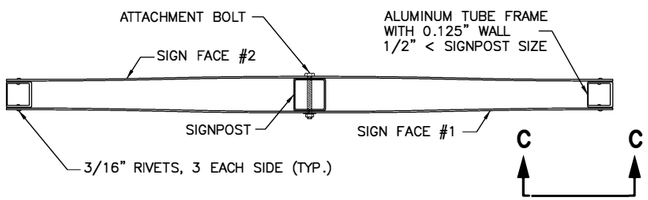
ELEVATION VIEW



SECTION A - A TYPICAL SIGN ATTACHMENT DETAILS AT EACH WINDBEAM

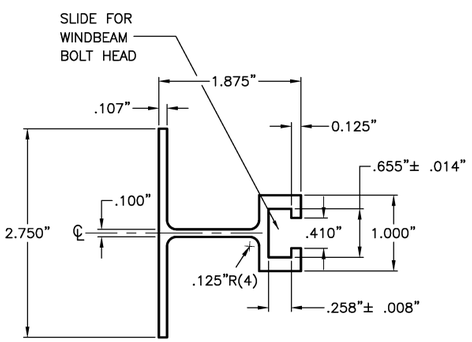


VIEW C - C

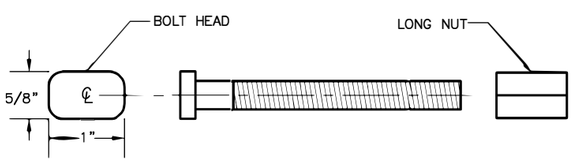


D3-1 STREET NAME SIGN FRAMING DETAIL

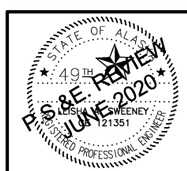
PLAN VIEW



SECTION B - B WINDBEAM CROSS SECTION



3/8" WINDBEAM BOLT AND LONG NUT



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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

LIGHT SIGN FRAMING AND ATTACHMENT DETAILS

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF
SCALE N/A
DATE 6/10/2020 TIME 2:25 PM
DRAWING LOCATION C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CIV3D19\PLANSET\H_SHEETS\35-LIGHT_SIGN_FRAMING.DWG

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0001607/CFHWY00366	2020	H18	H64

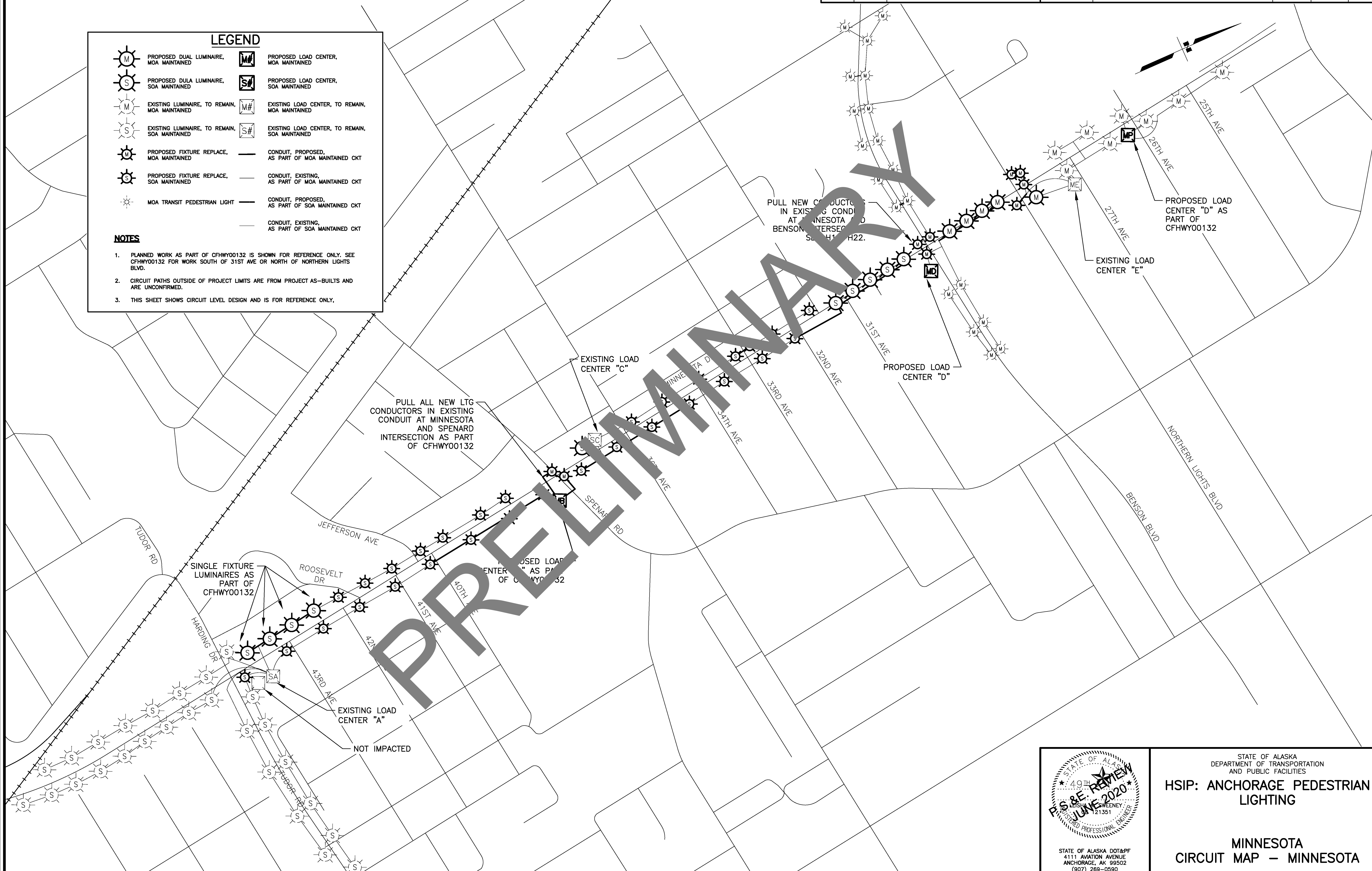
DESIGNED BY	ZJH
CHECKED BY	LAS
DRAFTED BY	MF
SCALE	N/A
DATE	6/24/2020
TIME	8:46 PM
DRAWING LOCATION	C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CIV3D19\TRAFFIC\00366 CIRCUIT MAP.DWG

LEGEND

Symbol	Description	Symbol	Description
(M)	PROPOSED DUAL LUMINAIRE, MOA MAINTAINED	M#	PROPOSED LOAD CENTER, MOA MAINTAINED
(S)	PROPOSED DULA LUMINAIRE, SOA MAINTAINED	S#	PROPOSED LOAD CENTER, SOA MAINTAINED
(M)	EXISTING LUMINAIRE, TO REMAIN, MOA MAINTAINED	M#	EXISTING LOAD CENTER, TO REMAIN, MOA MAINTAINED
(S)	EXISTING LUMINAIRE, TO REMAIN, SOA MAINTAINED	S#	EXISTING LOAD CENTER, TO REMAIN, SOA MAINTAINED
(M)	PROPOSED FIXTURE REPLACE, MOA MAINTAINED	—	CONDUIT, PROPOSED, AS PART OF MOA MAINTAINED CKT
(S)	PROPOSED FIXTURE REPLACE, SOA MAINTAINED	—	CONDUIT, EXISTING, AS PART OF MOA MAINTAINED CKT
☼	MOA TRANSIT PEDESTRIAN LIGHT	—	CONDUIT, PROPOSED, AS PART OF SOA MAINTAINED CKT
		—	CONDUIT, EXISTING, AS PART OF SOA MAINTAINED CKT

NOTES

1. PLANNED WORK AS PART OF CFHWY00132 IS SHOWN FOR REFERENCE ONLY. SEE CFHWY00132 FOR WORK SOUTH OF 31ST AVE OR NORTH OF NORTHERN LIGHTS BLVD.
2. CIRCUIT PATHS OUTSIDE OF PROJECT LIMITS ARE FROM PROJECT AS-BUILTS AND ARE UNCONFIRMED.
3. THIS SHEET SHOWS CIRCUIT LEVEL DESIGN AND IS FOR REFERENCE ONLY,



STATE OF ALASKA
P.S.&E. REVIEW
JUNE 2020

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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

MINNESOTA
CIRCUIT MAP – MINNESOTA

NO.	DATE	REVISION

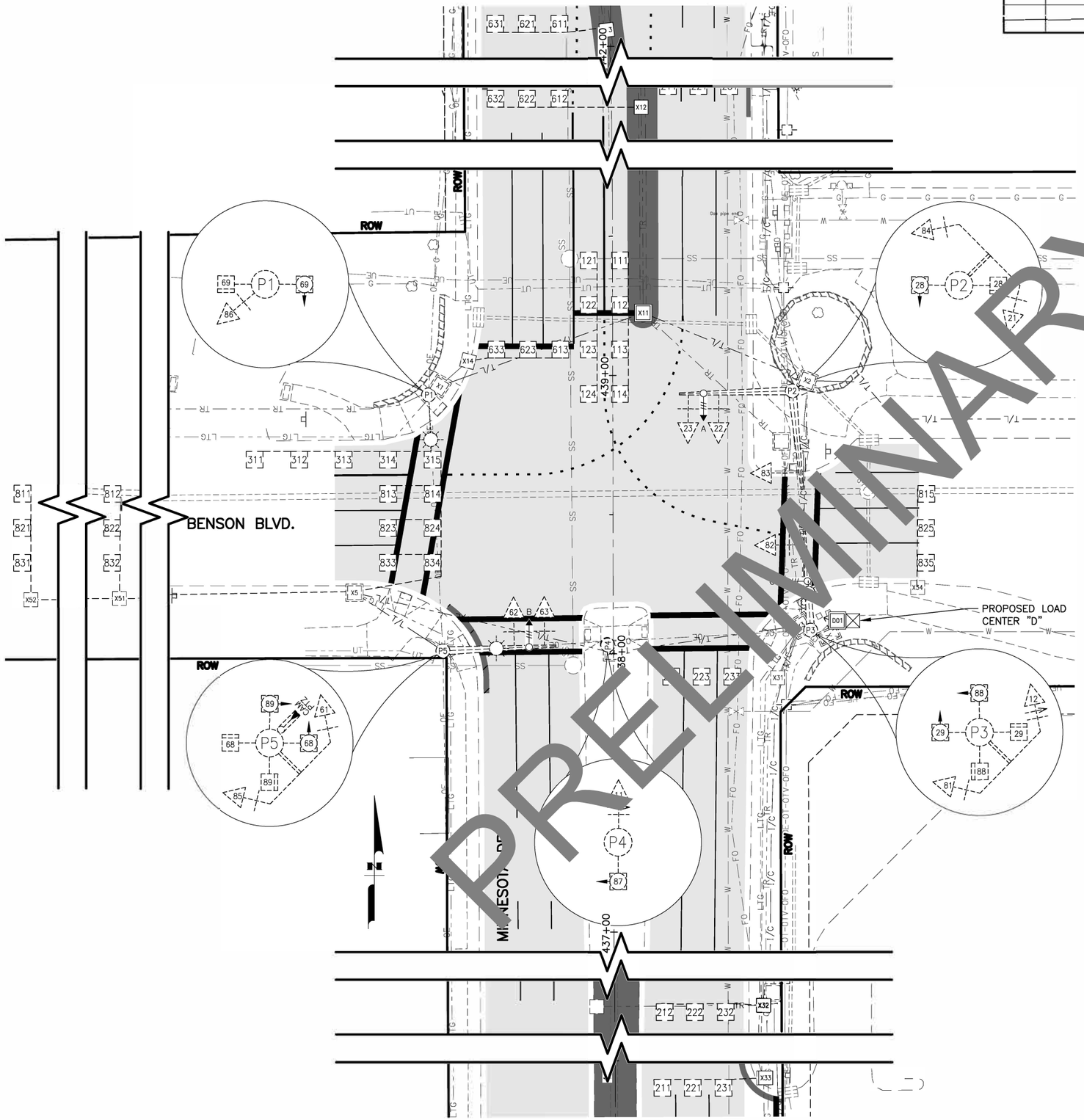
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	H19	H64

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF

SCALE N/A

DATE 6/24/2020 TIME 8:46 PM

DRAWING LOCATION
C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CW3019\TRAFFIC\00132_SIGNAL_BENSON.DWG



JUNCTION BOX SCHEDULE (660.2005.00##)

J-BOX	STATION ALIGNMENT	OFFSET	TYPE
X33	"MINN" 434+93.7	53.3' RT	IA
X11	"MINN" 439+22.6	11.1' RT	II
X12	"MINN" 440+84.72	10.7' RT	IA
X13	"MINN" 442+05.9	1.4' LT	IA

NOTES:

1. ALL SIGNAL POLES AND SIGNAL HEADS TO REMAIN IN PLACE
2. SEE H21 FOR BENSON INTERSECTION CABLE WORK
3. SEE H22 FOR LOAD CENTER WORK.

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HSIP: ANCHORAGE PEDESTRIAN LIGHTING

MINNESOTA DR & BENSON BLVD SIGNAL SYSTEM PLAN

NO.	DATE	REVISION

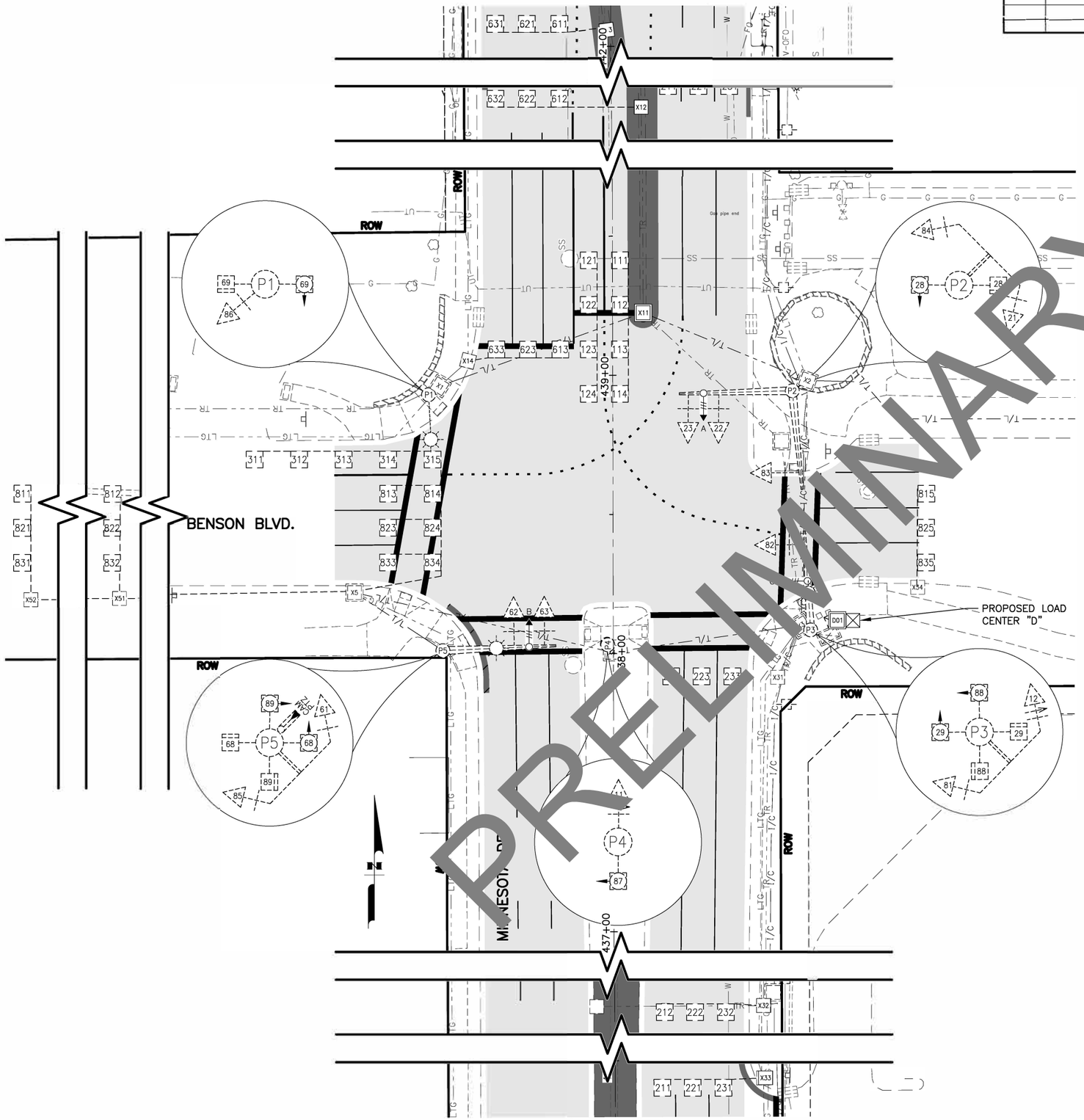
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	H20	H64

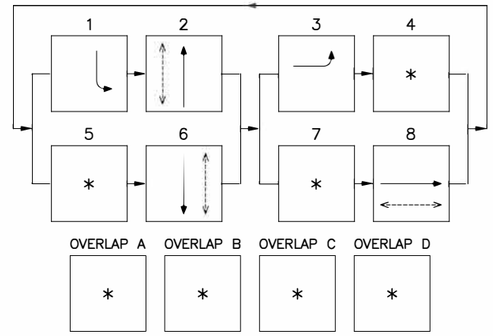
DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF

SCALE N/A

DATE 6/24/2020 TIME 8:46 PM

DRAWING LOCATION
C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CIV3019\TRAFFIC\00132_SIGNAL_BENSON.DWG

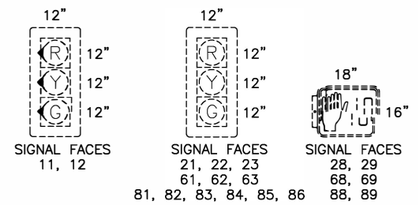




EXISTING PHASE DIAGRAM

LEGEND

- PEDESTRIAN MOVEMENT
- PROTECTED VEHICLE MOVEMENT
- UNPROTECTED VEHICLE MOVEMENT
- * FUTURE USE/NOT USED



EXISTING SIGNAL HEAD CONFIGURATIONS
ALL TO REMAIN

STATE OF ALASKA DOT&PF
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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

MINNESOTA DR & BENSON BLVD SIGNAL OPERATIONS PLAN

NO.	DATE	REVISION

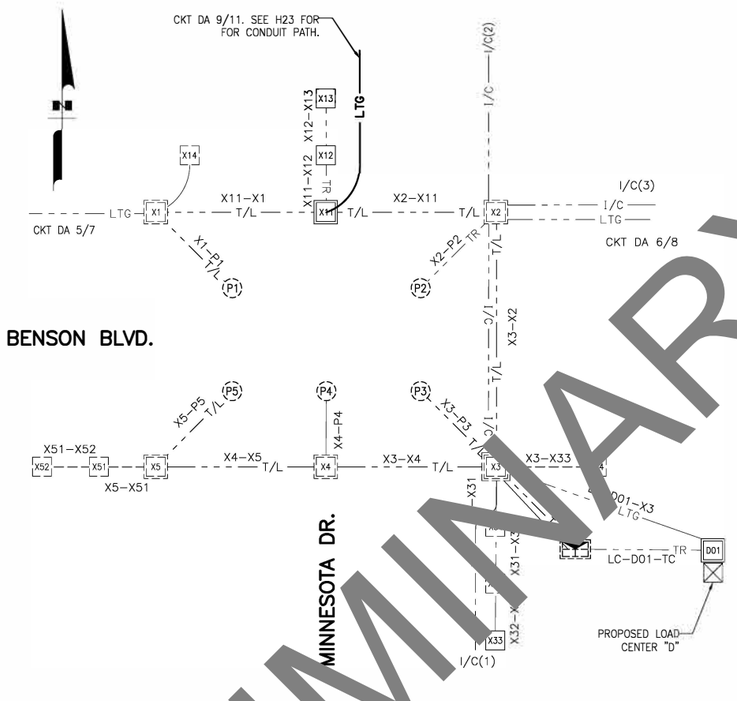
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	H21	H64

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF
SCALE N/A
DATE TIME 6/24/2020 8:46 PM
DRAWING LOCATION C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CIV3D19\TRAFFIC\00132_SIGNAL_BENSON.DWG

CABLE SCHEDULE

CABLE	CONDUCTOR	J-BOX PATH	LOAD
I/C(1)	*25PR19*	*SOUTH TO SPENARD'*	
I/C(2)	*12PR19*	*NORTH TO NORTHERN LIGHTS'*	
I/C(3)	*12PR19*	*NORTHEAST TO SPENARD'*	
0	*3C6*	*LC-B01-TC*	*SIG CKT DA-4*
00	*CAT5E*	*TC-X3-X4-X5-P5*	*PTZ CAMERA*
1	**3C8**	**LC-B01-X3-X4-X5-P5-X5-X4-X3-P3 -X3-X2-X11-X1-P1**	**INXTL CKT DA-1/3**
2	**3C8**	**LC-B01-X3-X2-X11-LTG**	**LTG CKT DA-9/11** ④
3	**3C8**	**LC-B01-X3-X2-LTG**	**LTG CKT DA-6/8**
4	**3C8**	**LC-B01-X3-X2-X11-X1-LTG**	**LTG CKT DA-5/7**
5	*3C20*	*TC-X3-X2-P2*	*PRE 2 (A)*
6	*3C14*	*TC-X3-X2-P2*	*PRECON 2 (A)*
7	*3C20*	*TC-X3-P3*	*PRE 3 (C)*
8	*3C14*	*TC-X3-P3*	*PRECON 3 (C)*
9	*3C20*	*TC-X3-X4-X5-P5*	*PRE 5 (B)*
10	*3C14*	*TC-X3-X4-X5-P5*	*PRECON 5 (B)*
11	*7C14*	*TC-X3-X4-P4*	*HEAD 11*
12	*7C14*	*TC-X3-P3*	*HEAD 12*
21	*7C14*	*TC-X3-X2-P2*	*HEAD 21*
22	*7C14*	*TC-X3-X2-P2*	*HEAD 22*
23	*7C14*	*TC-X3-X2-P2*	*HEAD 23*
26	*3C14*	*TC-X3-X2-P2*	*PEDB 28*
27	*3C14*	*TC-X3-P3*	*PEDB 29*
28	*5C14*	*TC-X3-X2-P2*	*PEDI 28*
29	*5C14*	*TC-X3-P3*	*PEDI 29*
61	*7C14*	*TC-X3-X4-X5-P5*	*HEAD 61*
62	*7C14*	*TC-X3-X4-X5-P5*	*HEAD 62*
63	*7C14*	*TC-X3-X4-X5-P5*	*HEAD 63*
66	*3C14*	*TC-X3-X4-X5-P5*	*PEDB 68*
67	*3C14*	*TC-X3-X2-X11-X1-P1*	*PEDB 69*
68	*5C14*	*TC-X3-X4-X5-P5*	*PEDI 68*
69	*5C14*	*TC-X3-X2-X11-X1-P1*	*PEDI 69*
81	*7C14*	*TC-X3-P3*	*HEAD 81*
82	*7C14*	*TC-X3-P3*	*HEAD 82*
83	*7C14*	*TC-X3-X2-P2*	*HEAD 83*
84	*7C14*	*TC-X3-X2-P2*	*HEAD 84*
85	*7C14*	*TC-X3-X4-X5-P5*	*HEAD 85*
86	*7C14*	*TC-X3-X2-X11-X1-P1*	*HEAD 86*
87	*3C14*	*TC-X3-X4-P4*	*PEDB 87*
88	*3C14*	*TC-X3-P3*	*PEDB 88*
89	*3C14*	*TC-X3-X4-X5-P5*	*PEDB 89*
90	*5C14*	*TC-X3-P3*	*PEDI 88*
91	*5C14*	*TC-X3-X4-X5-P5*	*PEDI 89*
111	*7PR18*	*TC-X3-X2-X11*	*LOOPS 111, 112, 121, 122*
113	*7PR18*	*TC-X3-X2-X11*	*LOOPS 113, 114, 123, 124*
211	*7PR18*	*TC-X3-X31-X32-X33*	*LOOPS 211, 221, 231*
212	*7PR18*	*TC-X3-X31-X32*	*LOOPS 212, 222, 232*
213	*7PR18*	*TC-X3-X31*	*LOOPS 213, 223, 233*
311	*7PR18*	*TC-X3-X4-X5*	*LOOPS 311-315*
611	*7PR18*	*TC-X3-X2-X11-X12-X13*	*LOOPS 611, 621, 63*
612	*7PR18*	*TC-X3-X2-X11-X12*	*LOOPS 612, 622, 63*
613	*7PR18*	*TC-X3-X2-X11-X1-X14*	*LOOPS 613, 623, 633*
811	*7PR18*	*TC-X3-X4-X5-X51-X52*	*LOOP 811, 821, 831*
812	*7PR18*	*TC-X3-X4-X5-X51*	*LOOPS 812, 822, 832*
813	*9PR18*	*TC-X3-X4-X5*	*LOOPS 813, 814, 823, 824, 833, 834*
815	*7PR18*	*TC-X3-X34*	*LOOPS 815, 825, 835*

ITALIC = EXISTING CONDUCTOR TO REMAIN
BOLD = NEW CONDUCTOR



CONDUIT SCHEDULE

RUN #	CONDUIT	CONDUIT TYPE	CABLES	DESTINATION	FILL %
LC-TC	*2"*	*RMC*	0	TC POWER	15% ③
LC-B01-X3	***2"***	***RMC***	**1, 2, 3, 4**	LTG	46%
C-X3	*2"*	*RMC*	I/C(1), I/C(2), I/C(3)	JBOX X3	55%
	3"	*RMC*	6, 8, 10, 11, 12, 21, 22, 23, 61, 62, 63, 81, 82, 83, 84, 85, 86		39%
	3 1/2"	*RMC*	00, 26, 27, 66, 67, 87, 88, 89, 111, 113, 211, 212, 213, 311, 611, 612, 613, 811, 812, 813, 815		47%
	2"	*RMC*	5, 7, 9, 28, 29, 68, 69, 90, 91		36%
X-P3	*2"*	*RMC*	7, 8, 12, 27, 29, 81, 82, 88, 90	POLE 3	39%
	2"	***RMC***	**1 (IN/OUT)**		23%
X3-X4	*3"*	*RMC*	00, 9, 10, 11, 61, 62, 63, 66, 68, 85, 87, 89, 91, 311, 811, 812, 813	JBOX X4	44%
	2"	***RMC***	**1 (IN/OUT)**		23%
X3-X2	*3"*	*RMC*	5, 6, 21, 22, 23, 26, 28, 67, 69, 83, 84, 86, 111, 113, 611, 612, 613	JBOX X2	45%
	2"	*RMC*	I/C(2), I/C(3)		29%
	3"	***RMC***	**1, 2, 3, 4**		20%
X3-X34	*2"*	*RMC*	815	EB DET.	1%
X3-X31	*2"*	*RMC*	211, 212	NB DET.	19%
X31-X32	*2"*	*RMC*	211	NB DET.	10%
X4-P4	*1 1/2"*	*RMC*	11, 87	POLE 4	18%
X4-X5	*3"*	*RMC*	00, 9, 10, 61, 62, 63, 66, 68, 85, 89, 91, 311, 811, 812, 813	JBOX X5	40%
	2"	***RMC***	**1 (IN/OUT)**		23%
X5-P5	*2"*	*RMC*	00, 9, 10, 66, 68, 85, 89, 91	POLE 5	42%
	2"	***RMC***	**1 (IN/OUT), 61, 62, 63**		39%
X5-X51	*2"*	*RMC*	811, 812	EB DET.	22%
X51-X52	*2"*	*RMC*	811	EB DET.	13%
X2-P2	*2"*	*RMC*	5, 6, 21, 22, 23, 26, 28, 83, 84	POLE 2	42%
X2-X11	*3"*	*RMC*	67, 69 86, 111, 113, 611, 612, 613	JBOX X11	27%
	2"	***RMC***	**1, 2, 4**		34%
X11-X1	*3"*	*RMC*	67, 69 86, 613	JBOX X1	11%
	2"	***RMC***	**1, 4**		23%
X11-X12	*2"*	*RMC*	611, 612	SB DET.	19%
X12-X13	*2"*	*RMC*	611	SB DET.	10%
X1-P1	*2"*	*RMC*	67, 69, 86	POLE 1	15%
	2"	***RMC***	**1**		12%

BOLD = EXISTING CONDUIT CONTAINS NEW CONDUCTOR

NOTES:

1. ALL CONDUIT SHOWN IN WIRING DIAGRAM AND CONDUIT SCHEDULE IS EXISTING AND IS TO REMAIN IN PLACE.
2. REMOVE AND DISPOSE OF PHOTOCELL FROM TOP OF SIGNAL POLE 3.
3. UNLESS OTHERWISE NOTED, INSTALL BARE 1#8 GROUND IN ALL CONDUITS EXCEPT THOSE CONDUITS THAT CONTAIN LARGER CIRCUIT CONDUCTORS. IN THIS CASE, INSTALL WIRE EQUAL IN SIZE TO THE LARGEST CONDUCTOR.
4. SEE H24 FOR DETAIL ON STREET LIGHTING CIRCUIT DA-9/11 NORTH OF THE INTERSECTION.

STATE OF ALASKA 49TH LESLIE SWEENEY 21351 REGISTERED PROFESSIONAL ENGINEER
P.S.&E. REVIEW JUNE 2020

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
(907) 269-0590

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

MINNESOTA DR & BENSON BLVD WIRING DIAGRAM

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	H22	H64

DESIGNED BY	CHECKED BY	DRAFTED BY
ZJH	LAS	MF

SCALE: N/A

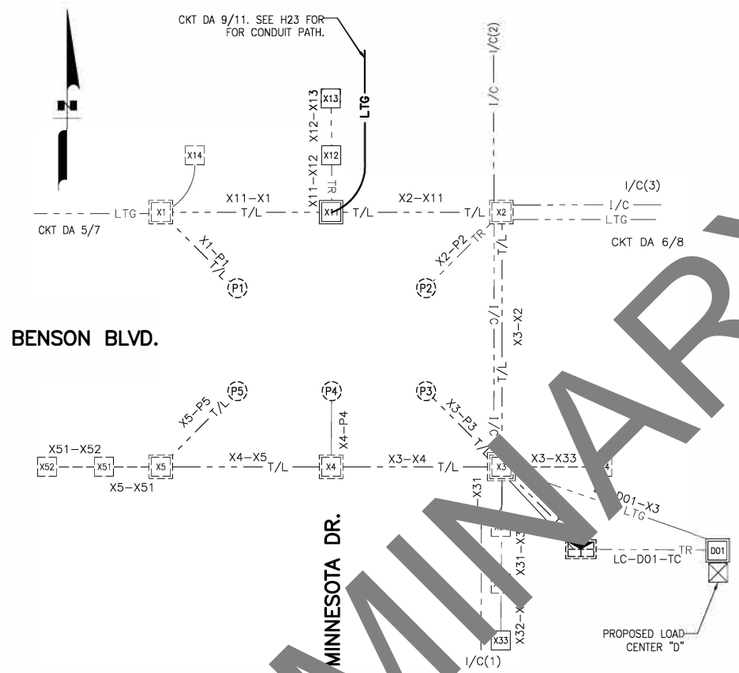
DATE / TIME: 6/24/2020 8:46 PM

DRAWING LOCATION: C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CIV3019\TRAFFIC\00132_SIGNAL_BENSON.DWG

SHORT CIRCUIT CALCULATION - LC "D"

480V, POWER FACTOR = 0.90, SERVICE LATERAL CONSISTS OF ONE ALUMINUM CONDUCTOR PER PHASE IN RMC & PVC

TRANSFORMER RATING	25 kVA
VOLTAGE	240/480 VAC SECONDARY
TRANSFORMER IMPEDANCE	1.2% MINIMUM
TRANSFORMER LET-THRU SHORT CIRCUIT CURRENT (INFINITE BUS)	4,340 A
LENGTH TO FAULT	25 FT
SERVICE CONDUCTOR SIZE	1/0 AWG (AL)
SERVICE CONDUIT	RMC & PVC
LINE-LINE FAULT	4.28 kA
DATE CALCULATED	2/3/2020



SUMMARY OF NEW LOAD CENTER "D" (661.0002.0000)

LOAD CENTER TYPE:	TYPE 1
MAINTAINED BY:	MUNICIPALITY OF ANCHORAGE (MOA)
SERVING UTILITY:	CHUGACH ELECTRIC ASSOCIATION (CEA)
SERVICE CONDUIT TYPE:	RMC & PVC
LOCATION DATA (61.193553°, -149.912633°)	
LOAD CENTER:	MINNESOTA DR & BENSON BLVD WSW
POWER SOURCE:	"MINN" 437+81.4 62' RT
PHOTOELECTRIC CONTROL:	AT LOAD CENTER
SERVICE VOLTAGE:	240/480V, 1-PHASE, 3-WIRE WITH GROUNDED NEUTRAL
PROVIDE METER SOCKET	YES
PANEL A MAIN SERVICE DISCONNECT	480V, 60A
SUB-PANEL B XFMR MAIN SERVICE DISCONNECT	480V, 30A
CONTACTOR, PANEL A:	600V, 60A, 16-POLE
CONTACTOR, PANEL B:	NONE
AIC RATING, PANEL A:	10 kAIC @ 480V
AIC RATING, PANEL B:	10 kAIC @ 240V

PANEL A - 240/480 VAC

POLE	AMP TRIP	DESCRIPTION	POLE KVA	Aφ	Bφ	POLE KVA	DESCRIPTION	AMP TRIP	POLE
1	20/2	INTXL*	0.42	.42		0	SPACE	-	2
3			0.42		.52	0.1	CONTROL	15/1	4
5	20/2	BENSON STREET LIGHTING* (NOTES 2 & 3)	1.1	2.2		.7	BENSON STREET LIGHTING* (NOTES 2 & 4)	20/2	6
7			1.1		2.2	.7			8
9	15/2	MINNESOTA MEDIAN LIGHTING* (NOTE 5)	1.1	1.1		0	SPARE*	15/2	10
11			1.1		1.1	0			12
13	20/2	SPARE*	0	0		0	SPARE*	20/2	14
15			0		0	0			16
17	-	SPACE	-			-	SPACE	-	18
* CIRCUIT THROUGH CONTACTOR				3.72	3.82		PANEL A TOTAL kVA		7.54
							PANEL A AMPS AT 480V		15.7

PANEL B - 120/240 VAC
(SUPPLIED BY INTERNAL STEP-DOWN TRANSFORMER INTEGRAL TO LOAD CENTER)

1	-	SPACE	0	0		0	SUB-PANEL B SERVICE DISCONNECT	50/2	2
3	-	SPACE	0		0	0			4
5	40/1	TRAFFIC SIGNAL CABINET	1.8	1.8	0	0	SPARE	20/2	6
7	20/1	SPARE	0			0			8
9	20/1	SPARE	0	0		-	SPACE	-	10
11	-	SPARE	-		-	-	SPACE	-	12
				1.8	0.0		PANEL B TOTAL kVA		1.8
							PANEL B AMPS AT 240V		7.5
							TOTAL kVA		9.3
							TOTAL AMPS AT 480V		19.5

ARC FLASH AND SHOCK HAZARD RESULTS - LC "D" MAIN BREAKER & PANEL A ENCLOSURE

ARC FLASH BOUNDARY	8.2 ft
INCIDENT ENERGY IN CAL/CM^2	19.2
WORKING DISTANCE	18 INCHES
SHOCK HAZARD EXPOSURE	480 VAC
INSULATING GLOVES CLASS	00
SHOCK HAZARD	WHEN COVER REMOVED
LIMITED APPROACH BOUNDARY	3.5 FT
RESTRICTED APPROACH BOUNDARY	1.0 FT
CALCULATED DATE	2/3/2020

ARC FLASH AND SHOCK HAZARD RESULTS - LC "D" TRANSFORMER & PANEL B ENCLOSURE

ARC FLASH BOUNDARY	8.2 ft
INCIDENT ENERGY IN CAL/CM^2	19.2
WORKING DISTANCE	18 INCHES
SHOCK HAZARD EXPOSURE	480 VAC
INSULATING GLOVES CLASS	00
SHOCK HAZARD	WHEN COVER REMOVED
LIMITED APPROACH BOUNDARY	3.5 FT
RESTRICTED APPROACH BOUNDARY	1.0 FT
CALCULATED DATE	2/3/2020

LOAD CENTER "D" NOTES

1. CONTRACTOR SHALL VERIFY CHARACTERISTICS OF ALL EXISTING COMPONENTS THAT ARE TO REMAIN IN SERVICE PRIOR TO BEGINNING ANY WORK AT THE LOAD CENTER. CONTRACTOR SHALL PROVIDE AS-BUILT REDLINES OF THIS PANEL TO THE PROJECT ENGINEER.
2. DURING DESIGN, THE LOAD ON THIS CIRCUIT WAS UNABLE TO BE DETERMINED. CONTRACTOR SHALL PERFORM FIELD INVESTIGATION DURING THE LOAD CENTER REPLACEMENT TO IDENTIFY THIS LOAD AND ENSURE IT IS RE-POWERED FROM THE NEW LOAD CENTER.
3. CIRCUIT DA-5,7 IS LIKELY POWERING BENSON STREET LIGHTING WEST OF THE LOAD CENTER, BUT WAS NOT VERIFIED.
4. CIRCUIT DA-6,8 IS LIKELY POWERING BENSON STREET LIGHTING EAST OF THE LOAD CENTER, BUT WAS NOT VERIFIED.
5. TWO EXISTING LUMINAIRES PRESENTLY POWERED BY LC "C" WILL BE RE-POWERED FROM LC "D" CKT 9,11, AS WELL AS TWO ADDITIONAL LUMINAIRES TO THE NORTH.
6. INTERNAL STEP-DOWN TRANSFORMER IS TO BE SUPPLIED BY LOAD CENTER MANUFACTURER AND IS TO BE INTEGRAL TO THE LOAD CENTER. TRANSFORMER SHALL BE SINGLE-PHASE, DRY-TYPE, 10 kVA, CLASS 180 INSULATION, 115 DEG C RISE. COMPLETE LOAD CENTER SHALL BE NRTL LISTED AS AN ASSEMBLY.

SALVAGE LOAD CENTER SCHEDULE

ITEM	STATION ALIGNMENT	OFFSET	STRUCTURE	REMARKS
LC	438+11.8	78.0' RT	EXISTING LC	

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

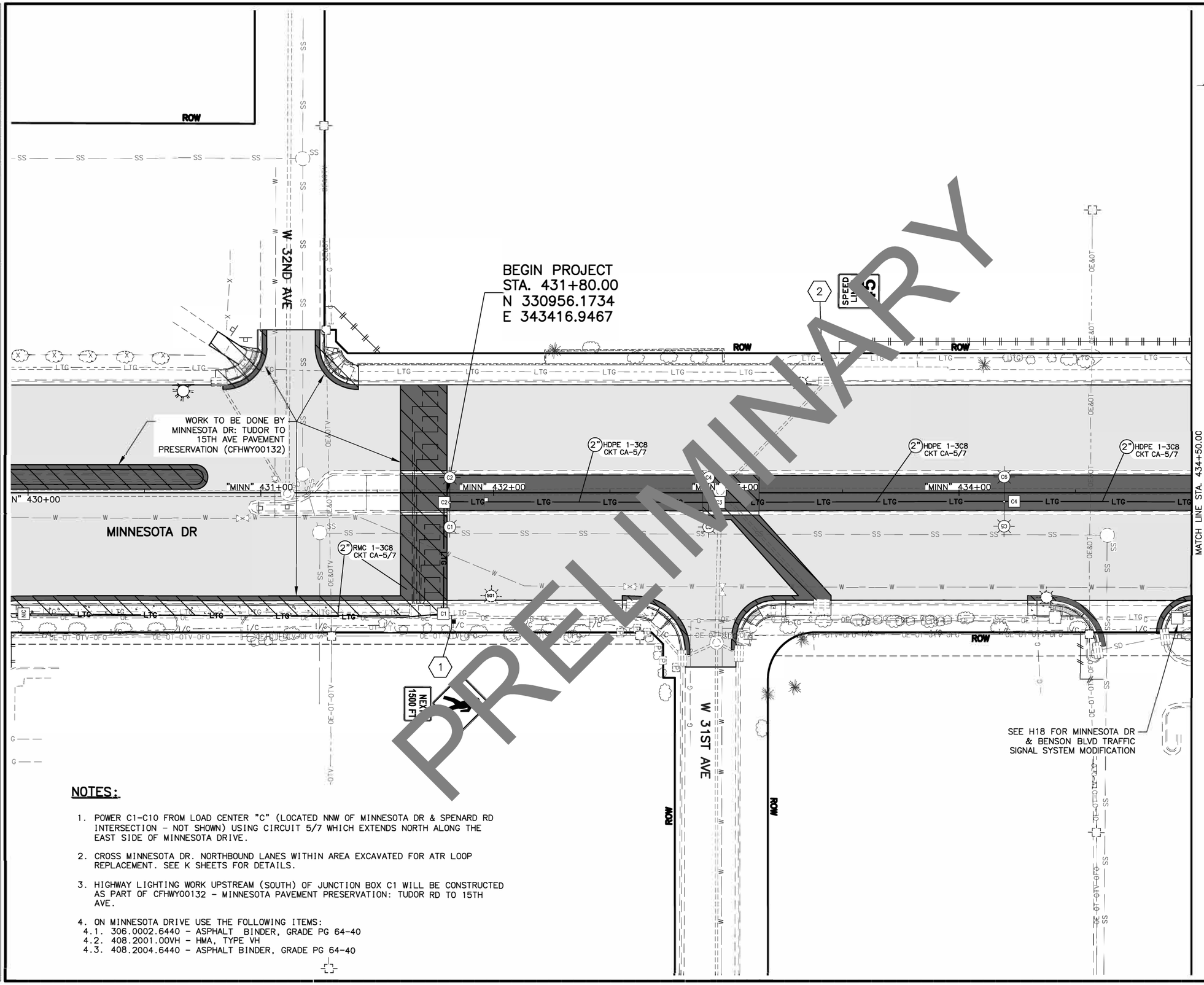
HSIP: ANCHORAGE PEDESTRIAN LIGHTING

MINNESOTA DR & BENSON BLVD LOAD CENTER

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
(907) 269-0590

STATE OF ALASKA
49TH
P.S.&E. REVIEW
JUNE 2020
JOSHUA E. SWEENEY
21351
REGISTERED PROFESSIONAL ENGINEER

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF
SCALE ####
DATE 6/24/2020 TIME 8:46 PM
DRAWING LOCATION C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CIV3D19\PLANSET\H_SHEETS\H-PLANVIEWS.DWG



NOTES:

1. POWER C1-C10 FROM LOAD CENTER "C" (LOCATED NNW OF MINNESOTA DR & SPENARD RD INTERSECTION - NOT SHOWN) USING CIRCUIT 5/7 WHICH EXTENDS NORTH ALONG THE EAST SIDE OF MINNESOTA DRIVE.
2. CROSS MINNESOTA DR. NORTHBOUND LANES WITHIN AREA EXCAVATED FOR ATR LOOP REPLACEMENT. SEE K SHEETS FOR DETAILS.
3. HIGHWAY LIGHTING WORK UPSTREAM (SOUTH) OF JUNCTION BOX C1 WILL BE CONSTRUCTED AS PART OF CFHWY00132 - MINNESOTA PAVEMENT PRESERVATION: TUDOR RD TO 15TH AVE.
4. ON MINNESOTA DRIVE USE THE FOLLOWING ITEMS:
   4.1. 306.0002.6440 - ASPHALT BINDER, GRADE PG 64-40
   4.2. 408.2001.00VH - HMA, TYPE VH
   4.3. 408.2004.6440 - ASPHALT BINDER, GRADE PG 64-40

SHEET NO.	TOTAL SHEETS
H23	H64
STATE	YEAR
ALASKA	2020

PROJECT DESIGNATION
0001607/
CFHWY00366

NO.	REVISION
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XX/XX/XXXX	
NO.	REVISION
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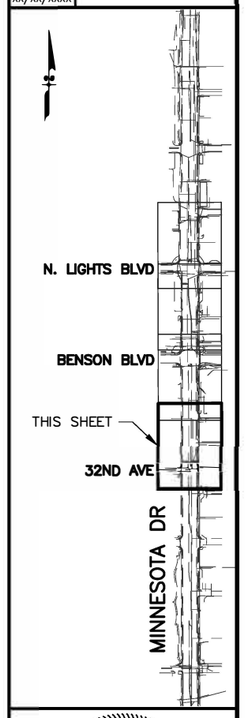

STATE OF ALASKA
49TH
P,S&E REVIEW
JUNE 2020
ALASKA DEPARTMENT OF TRANSPORTATION
REGISTERED PROFESSIONAL ENGINEER

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
(907) 269-0590

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE
PEDESTRIAN LIGHTING

SIGNING, STRIPING,
ILLUMINATION:
B.O.P. TO
"MINN" STA 435+00

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF

SCALE ####

DATE 6/24/2020 TIME 8:46 PM

DRAWING LOCATION
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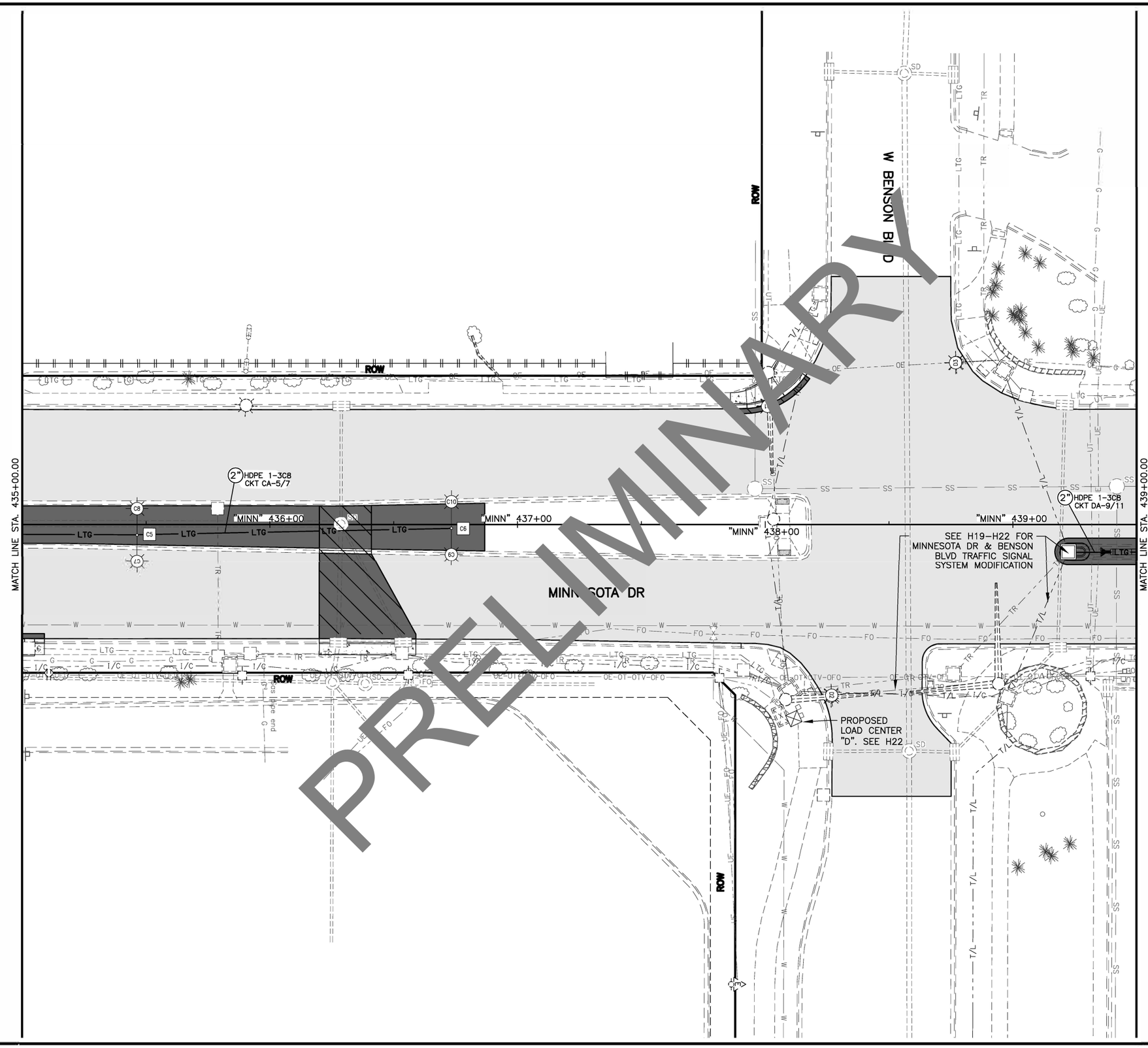

SHEET NO.	TOTAL SHEETS
H24	H64
STATE	YEAR
ALASKA	2020

PROJECT DESIGNATION

0001607/
CFHWY00366

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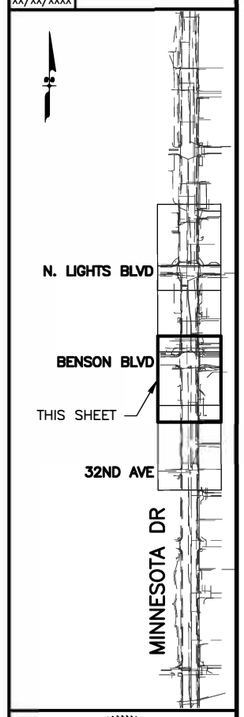


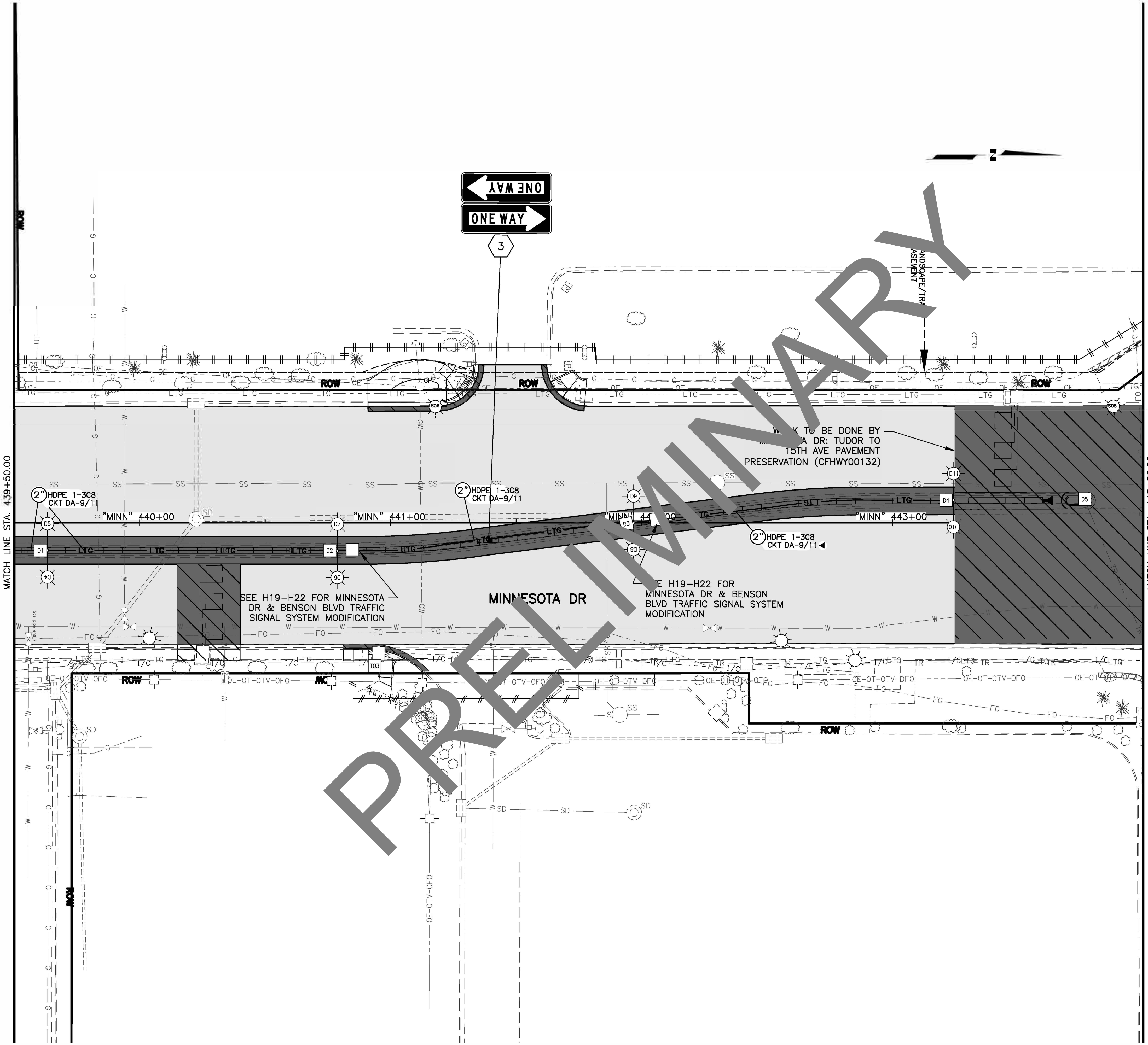
STATE OF ALASKA
49TH
P.S.&E. REVIEW
JUNE 2020
REGISTERED PROFESSIONAL ENGINEER

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
(907) 269-0590

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE
PEDESTRIAN LIGHTING

SIGNING, STRIPING,
ILLUMINATION:
"MINN" STA 435+00 TO
"MINN" STA 439+50



SHEET NO.	TOTAL SHEETS
H25	H64
STATE	YEAR
ALASKA	2020

PROJECT DESIGNATION

0001607/ CFHWY00366

NO.	REVISION
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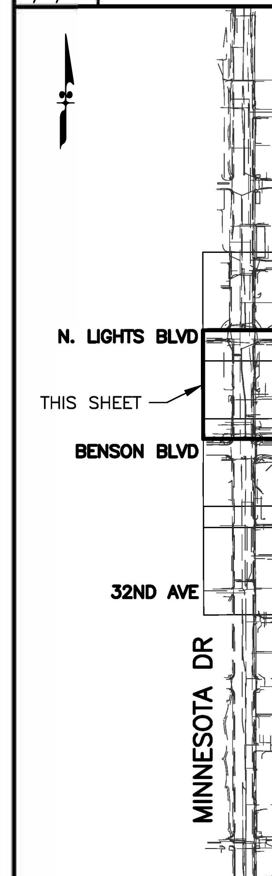

P.S.&E. REVIEW JUNE 2020

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
(907) 269-0590

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

SIGNING, STRIPING, ILLUMINATION: "MINN" STA 439+50 TO "MINN" STA 444+00

DATE	TIME	SCALE	DESIGNED BY	ZJH
6/24/2020	8:46 PM	####	CHECKED BY	LAS
			DRAFTED BY	MF

DRAWING LOCATION
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DESIGNED BY	ZJH
CHECKED BY	LAS
DRAFTED BY	MF

SCALE
####

DATE	TIME
6/24/2020	8:46 PM

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SHEET NO.	TOTAL SHEETS
H26	H64
STATE	YEAR
ALASKA	2020

PROJECT DESIGNATION

0001607/
CFHWY00366

NO.	REVISION
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DATE	
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NO.	REVISION
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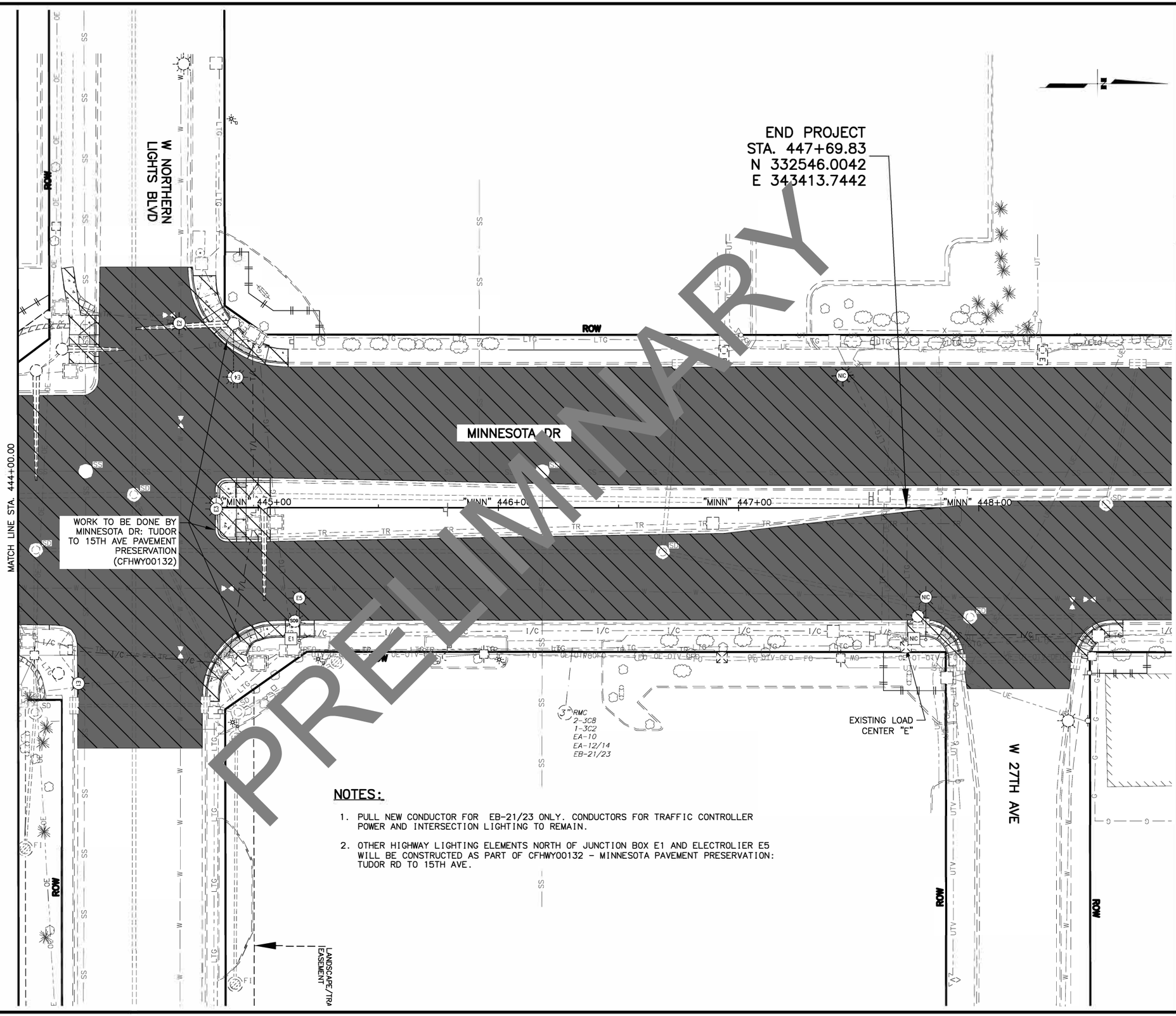
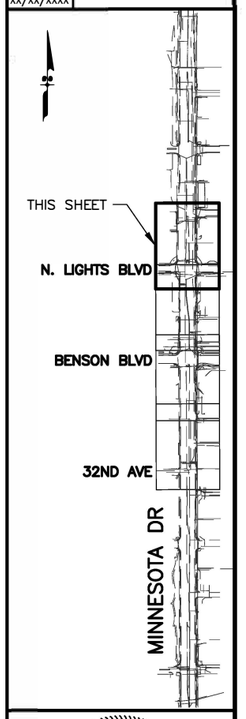
DATE	
XX/XX/XXXX	
NO.	REVISION
#	TEXT HERE
DATE	
XX/XX/XXXX	



PRELIMINARY

NOTES:

1. PULL NEW CONDUCTOR FOR EB-21/23 ONLY. CONDUCTORS FOR TRAFFIC CONTROLLER POWER AND INTERSECTION LIGHTING TO REMAIN.
2. OTHER HIGHWAY LIGHTING ELEMENTS NORTH OF JUNCTION BOX E1 AND ELECTROLIER E5 WILL BE CONSTRUCTED AS PART OF CFHWY00132 - MINNESOTA PAVEMENT PRESERVATION: TUDOR RD TO 15TH AVE.



STATE OF ALASKA
49TH
P,S&E REVIEW
JUNE 2020
LICENSED PROFESSIONAL ENGINEER

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
(907) 269-0590

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

SIGNING, STRIPING, ILLUMINATION:
"MINN" STA 444+00 TO E.O.P.

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	H27	H64

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF
SCALE N/A
DATE 6/24/2020 TIME 8:46 PM

DRAWING LOCATION
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ELECTROLIER SCHEDULE (660.0003.0000)

POLE NO.	STATION ALIGNMENT	OFFSET	LUMINAIRE	MOUNTING HEIGHT (FT)	SHAFT LENGTH (FT)	MASTARM LENGTH (FT)	REMARKS	FOUNDATIONS	MAINTAINING AGENCY
C-1,2	"MINN" 431+81.2	4.2' RT	ROADWAY	50	45	15	LONGHORN POLE - SEE H11	CIDH	DOT&PF
C-3,4	"MINN" 432+96.9	4.1' RT	ROADWAY	50	45	15	LONGHORN POLE - SEE H11	CIDH	DOT&PF
C-5,6	"MINN" 434+23.7	3.8' RT	ROADWAY	50	45	15	LONGHORN POLE - SEE H11	CIDH	DOT&PF
C-7,8	"MINN" 435+51.3	4.0' RT	ROADWAY	50	45	15	LONGHORN POLE - SEE H11	CIDH	DOT&PF
C-9,10	"MINN" 436+78.1	1.6' RT	ROADWAY	50	45	15	LONGHORN POLE - SEE H11	CIDH	DOT&PF
D-4,5	"MINN" 439+63.2	11.0' RT	ROADWAY	50	45	15	LONGHORN POLE - SEE H11	CIDH	DOT&PF
D-6,7	"MINN" 440+78.8	11.1' RT	ROADWAY	50	45	15	LONGHORN POLE - SEE H11	CIDH	DOT&PF
D-8,9	"MINN" 441+96.7	0.2' LT	ROADWAY	50	45	15	LONGHORN POLE - SEE H11	CIDH	DOT&PF
D-10,11	"MINN" 443+24.3	9.0' LT	ROADWAY	50	45	15	LONGHORN POLE - SEE H11	CIDH	MOA
E5	"MINN" 445+17.2	55.3' RT	ROADWAY	40	24	16	45° DAVIT POLE - SEE H12	PILE	MOA

SALVAGE ELECTROLIER SCHEDULE (660.0003.0000)

POLE NO.	STATION ALIGNMENT	OFFSET	POLE TYPE	BASE TYPE	SHAFT LENGTH (FT)	MASTARM LENGTH (FT)	REMARKS	MAINTAINING AGENCY
S1	"MINN" 431+98.5	54.1' RT	MASTARM	FRANGIBLE	40	15	ABANDON FOUNDATION.	DOT&PF
S2	"MINN" 433+33.0	57.8' LT	MASTARM	FRANGIBLE	40	15	ABANDON FOUNDATION.	DOT&PF
S3	"MINN" 434+37.8	55.3' RT	MASTARM	TRANSFORMER	40	15	ABANDON FOUNDATION.	DOT&PF
S4	"MINN" 435+91.3	58.5' LT	MASTARM	TRANSFORMER	40	15	ABANDON FOUNDATION.	DOT&PF
S5	"MINN" 440+02.1	54.5' RT	MASTARM	TRANSFORMER	40	15	REMOVE FOUNDATION COMPLETELY. [illegible] BY 3" [illegible] GAS	MOA
S6	"MINN" 441+17.9	53.5' LT	MASTARM	TRANSFORMER	40	15	REMOVE FOUNDATION COMPLETELY. [illegible] 2" PL [illegible]	MOA
S7	"MINN" 442+57.0	54.5' RT	MASTARM	TRANSFORMER	40	15	REMOVE FOUNDATION COMPLETELY	MOA
S8	"MINN" 443+86.9	53.8' LT	MASTARM	TRANSFORMER	40	15	REMOVE FOUNDATION COMPLETELY	MOA
S9	"MINN" 445+13.8	54.6' RT	MASTARM	TRANSFORMER	40	15	DEMO FOUNDATION [illegible] DETAIL [illegible]	MOA

JUNCTION BOX SCHEDULE (660.0003.0000)

J-BOX	STATION ALIGNMENT	OFFSET	SALVAGE	NEW	TYPE
C1	"MINN" 431+78.5	52.1' RT			IA
C2	"MINN" 431+78.9	4.1' RT		X	IA
C3	"MINN" 432+96.9	4.1' RT		X	IA
C4	"MINN" 434+23.7	3.8' RT			IA
C5	"MINN" 435+51.3	4.0' RT		X	IA
C6	"MINN" 436+78.1	1.6' RT		X	IA
D1	"MINN" 439+60.3	11.1' RT			IA
D2	"MINN" 440+75.7	11.1' RT		X	IA
D3	"MINN" 441+93.9	0.5' RT		X	IA
D4	"MINN" 443+21.4	9.0' LT		X	IA
D5	"MINN" 443+76.5	9.4' LT		X	IA
E1	"MINN" 445+13.8	54.5' RT		X	IA
EXISTING	"MINN" 444+17.9	83.1' LT	X		II

LUMINAIRE STANDARDS

MANUFACTURER	GE OR APPROVED EQUAL
MODEL	ERL2 - OR APPROVED EQUAL
WATTAGE	278
LIGHT SOURCE	LED
VOLTAGE	480
PE CONTROL	ANSI C136.41 7 PIN W/ SHORTING CAP
PE SENSOR	YES
MOUNTING	HORIZONTAL
HOUSING ENTRY TYPE	TOOLLESS
FIXTURE COLOR	GRAY
IES DISTRIBUTION TYPE (ROADWAY)	TYPE III ASYMMETRICAL (SHORT)
IES DISTRIBUTION TYPE (INTERSECTION)	TYPE IV ASYMMETRICAL (FORWARD)
POWER FACTOR	>0.90
UL LISTED	YES
DRIVE CURRENT	0.58A
CCI	3000K
CRI	MINIMUM 70
INITIAL LUMENS	28800

REPLACE LUMINAIRE FIXTURE ON EXISTING POLE (660.0003.0000)

CROSSROAD	FIXTURE	STATION ALIGNMENT	OFFSET	NUMBER OF FIXTURES	LUMINAIRE	LOAD CENTER
BENSON	D1	"MINN" 438+00.9	61.3' LT	1	INTERSECTION	D
	D2	"MINN" 438+08.0	70.8' RT	1	INTERSECTION	D
	D3	"MINN" 438+92.9	66.33' LT	1	INTERSECTION	D
NORTHERN LIGHTS	E1	"MINN" 444+16.0	72.6' RT	1	INTERSECTION	E
	E2 & E4	"MINN" 444+89.7	76.7' LT	2	INTERSECTION	E
	E3	"MINN" 445+02.3	1.8' LT	1	INTERSECTION	E

LUMINAIRE PERFORMANCE CRITERIA

INTERSECTION	
CHARACTERISTICS	
PAVEMENT TYPE	R3
ROADWAY LIGHTING STANDARD	IESNA RP-8-2014
FUNCTIONAL CLASSIFICATION	MAJOR/MAJOR
PEDESTRIAN AREA CLASSIFICATION	HIGH
IES FILE FOR ROADWAY LIGHTING	ERL2_30D330_____.IES
LUMINAIRE	
LAMP DESCRIPTION	GE ERL2 ROADWAY LIGHT
LIGHT LOSS FACTOR	0.85
LIGHT DISTRIBUTION	TYPE IV
ILLUMINANCE CRITERIA	
AVERAGE MAINTAINED ILLUMINATION (fc)	3.60
AVERAGE UNIFORMITY RATIO (AVG/MIN)	2.9
ROADWAY	
CHARACTERISTICS	
ROADWAY	4 LANE DIVIDED
LANE WIDTH (FT)	12 TO 14
MEDIAN WIDTH (FT)	4 TO 15
NUMBER OF LANES	2 TO 3
PAVEMENT TYPE	R3
ROADWAY LIGHTING STANDARD	IESNA RP-8-2014
FUNCTIONAL CLASSIFICATION	MAJOR
PEDESTRIAN AREA CLASSIFICATION	HIGH
IES FILE FOR ROADWAY LIGHTING	ERL2_30C330_____.IES
LUMINAIRE	
LAMP DESCRIPTION	GE ERL2 ROADWAY LIGHT
LIGHT LOSS FACTOR	0.85
LIGHT DISTRIBUTION	TYPE III
ILLUMINANCE CRITERIA	
AVERAGE LUMINANCE (cd/m^2)	1.84
MINIMUM ROADWAY LUMINANCE (cd/m^2)	0.81
AVERAGE UNIFORMITY RATIO (AVG/MIN)	2.28
MAX UNIFORMITY RATIO (MAX/MIN)	4.66
MAX VEILING LUMINANCE RATIO (LV-MAX/AVG)	0.20
SIDEWALK	
CHARACTERISTICS	
ROADWAY LIGHTING STANDARD	IESNA RP-8-2014
SIDEWALK WIDTH (FT)	8
CONFLICT CLASSIFICATION	HIGH
LUMINAIRE	
LAMP DESCRIPTION	GE ERL2 ROADWAY LIGHT
LIGHT LOSS FACTOR	0.85
ILLUMINANCE CRITERIA	
AVERAGE MAINTAINED ILLUMINATION (fc)	1.57
MINIMUM ILLUMINATION (fc)	0.84

STATE OF ALASKA
49TH
LUSHA SWEENEY 21351
REGISTERED PROFESSIONAL ENGINEER
P,S&E REVIEW
JUNE 2020

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
(907) 269-0590

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

LIGHTING SCHEDULE – MINNESOTA

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0001607/CFHWY00366	2020	H28	H64

SUMMARY OF EXISTING LOAD CENTER "C"

LOAD CENTER TYPE:	TYPE 1A (STATE OF ALASKA OWNED)
MAINTAINED BY:	STATE OF ALASKA
SERVING UTILITY:	CHUGACH ELECTRIC ASSOCIATION (CEA)
SERVICE CONDUIT TYPE:	RMC & PVC
LOCATION DATA (61.18752,-149.91342)	
LOAD CENTER:	MINNESOTA DR & SPENARD RD NNW
POWER SOURCE:	EXISTING 50 KVA POLE - TOP TRANSFORMER
PHOTOELECTRIC CONTROL:	AT LOAD CENTER
SERVICE VOLTAGE:	240/480VAC, 1 PHASE, 3 WIRE WITH GROUNDED NEUTRAL
PROVIDE METER SOCKET	EXISTING
MAIN BREAKER A	480 VOLT, 2 POLE, 100A (NOTE 2)
CONTACTOR:	480 VOLT, 8 POLE, 30 AMP
AIC RATING:	10 kAIC @ 480V

PANEL A - 240/480 VAC

POLE	AMP TRIP	DESCRIPTION	POLE KVA	Aϕ	Bϕ	POLE KVA	DESCRIPTION	AMP TRIP	POLE
1	30/2	SPARE* (NOTES 3 & 4)	0	0.76		0.76	*MINN DR LIGHTING, W SIDE - SPENARD TO 31ST**	30/2	2
3			0		0.76	0.76			4
5	30/2	*MINN DR LIGHTING, E SIDE - SPENARD TO 31ST**	1.9	1.9		0	*SPARE*	15/2	6
7			1.9		1.9	0			8
9	30/2	*SPARE*	0	0.1		0.1	*PHOTOCELL*	15	10
11			0		0	0	*SPARE*	30/2	12
13	-	*SPACE*		-		0			14
15	-	*SPACE*			-		*SPACE*	-	16
17	-	*SPACE*		-			*SPACE*	-	18

* CIRCUIT THROUGH CONTACTOR
ITALIC = EXISTING

PANEL A TOTAL KVA	5.4
PANEL A AMPS AT 480V	11.3

MODIFCATIONS TO LOAD CENTER "C" AS PART OF THIS CONTRACT ARE LIMITED TO CHANGE IN LOAD FOR EXISTING CIRCUITS CA-5/7 AND CA-2/4. SEE CFHWY00132 PLAN DRAWINGS FOR FURTHER MODIFICATIONS.

SHORT CIRCUIT CALCULATION - LC "C"

480V, POWER FACTOR = 0.90, SERVICE LATERAL CONSISTS OF ONE ALUMINUM CONDUCTOR PER PHASE IN RMC & PVC

TRANSFORMER RATING	50 kVA
VOLTAGE	240/480 VAC SECONDARY
TRANSFORMER IMPEDANCE	1.6% (TYP; ACTUAL NOT PROVIDED BY CEA)
TRANSFORMER LET-THRU SHORT CIRCUIT CURRENT (INFINITE BUS)	8,681 a
LENGTH TO FAULT	250 FT
SERVICE CONDUCTOR SIZE	1/0 AWG (AL)
SERVICE CONDUIT	RMC & PVC
MAX. AVAILABLE FAULT CURRENT AT SERVICE POINT & MAIN BREAKER	5.41 kA
CALCULATED DATE	2/3/2020

ARC FLASH AND SHOCK HAZARD RESULTS - LC "C" PANEL A ENCLOSURE

ARC FLASH BOUNDARY	9.3 FT
INCIDENT ENERGY IN CAL/CM^2	23.9
WORKING DISTANCE	18 IN
SHOCK HAZARD EXPOSURE	0 VAC
INSULATING GLOVES CLASS	00
SHOCK HAZARD	EN COVER REMOVED
LIMITED APPROACH BOUNDARY	3.5 FT
RESTRICTED APPROACH BOUNDARY	1.0 FT
CALCULATED DATE	2/3/2020

LOAD CENTER "C" NOTES

1. CONTRACTOR SHALL VERIFY EACH CIRCUIT PRIOR TO BEGINNING ANY WORK AT THE LOAD CENTER. CONTRACTOR SHALL PROVIDE AS-BUILT REDLINES OF THIS PANEL TO THE PROJECT ENGINEER. THIS PANEL SCHEDULE IS BASED UPON VISUAL OBSERVATION OF THE LOAD CENTER EXTERIOR ONLY.
2. CONTRACTOR SHALL VERIFY THE EXISTING BREAKER IS 100A, AND SHALL REPLACE WITH 100A IF EXISTING BREAKER IS ANY OTHER TRIP RATING.LOAD CENTER LC "C" CKT 1/3 PRESENTLY POWERS THE INTXL. THIS LOAD SHALL BE REMOVED FROM THIS LOAD CENTER. NEW LOAD CENTER LC "B" WILL POWER THE INTXL. REFER TO LC "B" SUMMARY TABLE.
3. THE STREET LIGHTING LUMINAIRE NEAREST LOAD CENTER LC "C" IS PRESENTLY POWERED BY CKT 1/3. AS PART OF CFHWY00132 THIS LOAD SHALL BE REMOVED FROM THIS CIRCUIT AND RE-CIRCUITED WITH NEW CABLE FROM CKT 2/4. THE LEGACY LOAD CENTER MOUNTED ON THE LUMINAIRE POLE SHALL BE DISCONNECTED AND REMOVED FROM SERVICE. REPLACE THE POLE. REFERENCE THE CFHWY00132 PLAN DRAWINGS.
4. ALL EXISTING OVERHEAD CONDUCTORS PRESENTLY POWERING INTXL AND STREET LIGHTING LUMINAIRES AFFECTED BY THIS PROJECT SHALL BE DISCONNECTED AND REMOVED FROM SERVICE. ALL NEW CIRCUITING SHALL BE INSTALLED UNDERGROUND IN CONDUIT. REFERENCE THE PLAN DRAWINGS.

SEE H22 FOR LOAD CENTER "D"

STATE OF ALASKA 49TH JEFFREY CARLETON 13218 REGISTERED PROFESSIONAL ENGINEER
P.S.&E. REVIEW JUNE 2020

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STATE OF ALASKA 49TH LESLIE SWEENEY 21351 REGISTERED PROFESSIONAL ENGINEER
P.S.&E. REVIEW JUNE 2020

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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

LOAD CENTER - MINNESOTA

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF
SCALE N/A
DATE 6/24/2020 TIME 8:46 PM
DRAWING LOCATION
C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\DWG\PLANSET\H-SHEETS\H-LIGHTINGSCHEDULES.DWG

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	H28	H64

DESIGNED BY	CHECKED BY	DRAFTED BY
ZJH	LAS	MF

SCALE
N/A

DATE	TIME
6/24/2020	8:46 PM

DRAWING LOCATION
C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CW3D19\PLANSET\H_SHEETS\H-LIGHTINGSCHEDULES.DWG

SUMMARY OF EXISTING LOAD CENTER "E"

LOAD CENTER TYPE:	TYPE 1
MAINTAINED BY:	MUNICIPALITY OF ANCHORAGE (MOA)
SERVING UTILITY:	MUNICIPAL LIGHT AND POWER (ML&P)
SERVICE CONDUIT TYPE:	RMC & PVC
LOCATION DATA (61,196166°,-149.912778°)	
LOAD CENTER:	MINNESOTA DR & 27TH AVE SE
POWER SOURCE:	EXISTING ML&P SERVICE TRANSFORMER (15kVA)
PHOTOELECTRIC CONTROL:	AT LOAD CENTER
SERVICE VOLTAGE:	240/480V, 1-PHASE, 3-WIRE WITH GROUNDED NEUTRAL
PROVIDE METER SOCKET	EXISTING AT LOAD CENTER
SUB-PANEL A XFMR MAIN SERVICE DISCONNECT	480V, 40A
PANEL B MAIN SERVICE DISCONNECT	480V, 100A
CONTACTOR, PANEL A:	THREE EACH: 480V, 30A, 6-POLE CONTACTORS
CONTACTOR, PANEL B:	NONE
AIC RATING, PANEL A:	14 kAIC @ 480V
AIC RATING, PANEL B:	10 kAIC @ 240V

PANEL A - 120/240 VAC
(SUPPLIED BY INTERNAL STEP-DOWN TRANSFORMER INTEGRAL TO LOAD CENTER; SEE NOTE 2)

POLE	AMP TRIP	DESCRIPTION	POLE KVA	Aφ	Bφ	POLE KVA	DESCRIPTION	AMP TRIP	POLE
1	80/2	*SUB-PANEL A SERVICE DISCONNECT*	-	0.1		0.1	*CONTROL*	15/2	2
3			-		0.1	0.1			4
5	-	*SPACE*	-	0		0	*SPARE**	20/2	6
7	-	*SPACE*	-		0	0			8
9	-	*SPACE*	-	1.2		1.2	*MINN & NLB TC*	70/1	10
11	-	*SPACE*	-		0.4	0.4	*MINN & NLB INXL**	20/2	12
13	-	*SPACE*	-	0.4		0.4			14
15	-	*SPACE*	-		-	-	*SPACE*	-	16
17	-	*SPACE*	-	-		-	*SPACE*	-	18
		* CIRCUIT THROUGH CONTACTOR ITALIC = EXISTING		1.7	0.5		PANEL A TOTAL kVA		2.2
							PANEL A AMPS AT 240V		9.2

PANEL B - 240/480 VAC (225A BUS)

	AMP TRIP	DESCRIPTION	POLE KVA	Aφ	Bφ	POLE KVA	DESCRIPTION	AMP TRIP	POLE
1	-	*SPACE*	-	-		-	*SPACE*	-	2
3	-	*SPACE*	-		-	-	*SPACE*	-	4
5	20/2	*LUMINAIRES EAST**	0.8	0.8		0	*SPARE*	20/2	6
7			0.8		0.8	0			8
9	-	*SPACE*	-	-		-	*SPACE*	-	10
11	20/2	*LUMINAIRES WEST**	0.7		0.7	0	*SPARE*	20/2	12
13			0.7	0.7		0			14
15	-	*SPACE*	-		-	-	*SPACE*	-	16
17	-	*SPACE*	-	-		-	*SPACE*	-	18
19	-	*SPACE*	-		-	-	*SPACE*	-	20
21	20/2	*NE LUMINAIRE - MINNESOTA & NOR. LIGHTS*	0.2	0.2		-	*SPACE*	-	22
23			0.2		0.2	-	*SPACE*	-	
25	-	*SPACE*	-	-		-	*SPACE*	-	26
27	20/2	*SPARE*	0		-	-	*SPACE*	-	28
29			0	-		-	*SPACE*	-	30
		* CIRCUIT THROUGH CONTACTOR i ITALIC = EXISTING		1.7	1.7		PANEL B TOTAL kVA		3.4
							NEL B AMPS AT 480V		7.1
							TOTAL kVA		5.6
							TOTAL AMPS AT 480V		11.7

MODIFCATIONS TO LOAD CENTER "E" AS PART OF THIS CONTRACT ARE LIMITED TO CHANGE IN LOAD FOR EXISTING CIRCUITS EA-12/14 AND EB-21/23. SEE CFHWY00132 PLAN DRAWINGS FOR FURTHER MODIFICATIONS.

ARC FLASH AND SHOCK HAZARD RESULTS - LC "E" PANEL A ENCLOSURE

ARC FLASH BOUNDARY	6.1 FT
INCIDENT ENERGY IN CAL/CM^2	12.1
WORKING DISTANCE	18 INCHES
SHOCK HAZARD EXPOSURE	480 AC
INSULATING GLOVES CLASS	00
SHOCK HAZARD	WHEN COVER REMOVE
LIMITED APPROACH BOUNDARY	3.5 FT
RESTRICTED APPROACH BOUNDARY	0 FT
CALCULATED DATE	2/3/2020

ARC FLASH AND SHOCK HAZARD RESULTS - LC "E" PANEL B ENCLOSURE

ARC FLASH BOUNDARY	6.1 FT
INCIDENT ENERGY IN CAL/CM^2	12.1
WORKING DISTANCE	18 INCHES
SHOCK HAZARD EXPOSURE	480 AC
INSULATING GLOVES CLASS	00
SHOCK HAZARD	WHEN COVER REMOVED
LIMITED APPROACH BOUNDARY	3.5 FT
RESTRICTED APPROACH BOUNDARY	1.0 FT
CALCULATED DATE	2/3/2020

SHORT CIRCUIT CALCULATION - LC "E"

480V POWER FACTOR = 0.90, SERVICE LATERAL CONSISTS OF ONE ALUMINUM CONDUCTOR PER PHASE IN RMC & PVC.

TRANSFORMER RATING	15 kVA
VOLTAGE	240/480 VAC SECONDARY
TRANSFORMER IMPEDANCE	1.2% MINIMUM
TRANSFORMER LET-THRU SHORT CIRCUIT CURRENT (INFINITE BUS)	2,604 A
LENGTH TO FAULT	25 FT
SERVICE CONDUCTOR SIZE	1/0 AWG (AL)
SERVICE CONDUIT	RMC & PVC
LINE-LINE FAULT	2.58 kA
DATE CALCULATED	2/3/2020

LOAD CENTER "E" NOTES

1. CONTRACTOR SHALL VERIFY CHARACTERISTICS OF ALL EXISTING COMPONENTS THAT ARE TO REMAIN IN SERVICE PRIOR TO BEGINNING ANY WORKAT THE LOAD CENTER. CONTRACTOR SHALL PROVIDE AS-BUILT REDLINES OF THIS PANEL TO THE PROJECT ENGINEER.
2. INTERNAL STEP-DOWN TRANSFORMER INTEGRAL TO LOAD CENTER IS AN EATON CUTLER-HAMMER DRY-TYPE 15 kVA CAT. NO. S20N11S15NWITH 1.9% IMPEDANCE.

STATE OF ALASKA - 49TH - P,S&E REVIEW - JUNE 2020 - REGISTERED PROFESSIONAL ENGINEER - JEFFREY CARLETON 13218
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STATE OF ALASKA - 49TH - P,S&E REVIEW - JUNE 2020 - REGISTERED PROFESSIONAL ENGINEER - LISHA SWEENEY 21351
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ANCHORAGE, AK 99502
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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

LOAD CENTER - MINNESOTA

NO.	DATE	REVISION

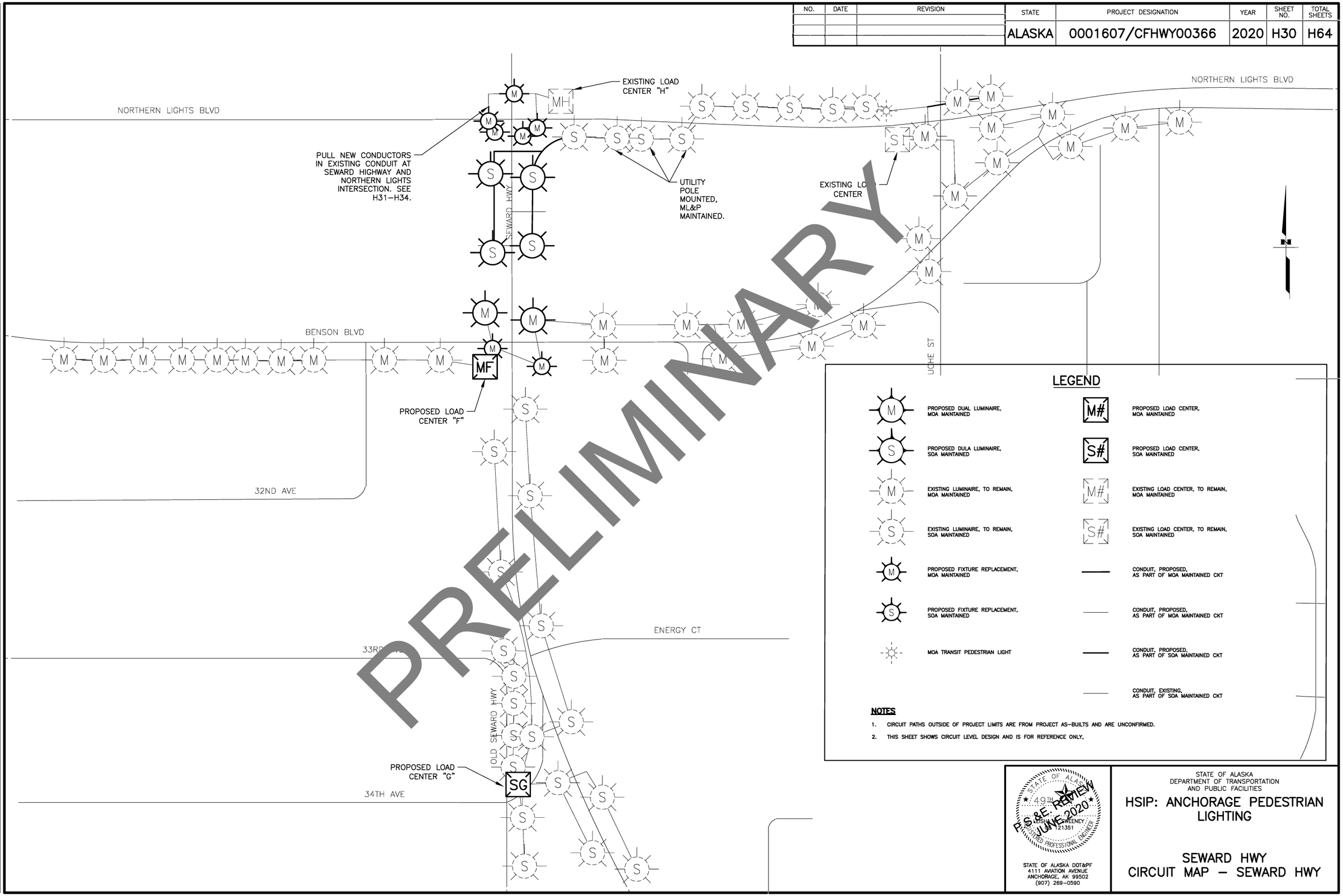
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	H30	H64

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF

SCALE N/A

DATE TIME 6/24/2020 8:46 PM

DRAWING LOCATION
C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CIV3D19\TRAFFIC\00366 CIRCUIT MAP.DWG



LEGEND

PROPOSED DUAL LUMINAIRE, MOA MAINTAINED	PROPOSED LOAD CENTER, MOA MAINTAINED
PROPOSED DULA LUMINAIRE, SOA MAINTAINED	PROPOSED LOAD CENTER, SOA MAINTAINED
EXISTING LUMINAIRE, TO REMAIN, MOA MAINTAINED	EXISTING LOAD CENTER, TO REMAIN, MOA MAINTAINED
EXISTING LUMINAIRE, TO REMAIN, SOA MAINTAINED	EXISTING LOAD CENTER, TO REMAIN, SOA MAINTAINED
PROPOSED FIXTURE REPLACEMENT, MOA MAINTAINED	CONDUIT, PROPOSED, AS PART OF MOA MAINTAINED CKT
PROPOSED FIXTURE REPLACEMENT, SOA MAINTAINED	CONDUIT, PROPOSED, AS PART OF MOA MAINTAINED CKT
MOA TRANSIT PEDESTRIAN LIGHT	CONDUIT, PROPOSED, AS PART OF SOA MAINTAINED CKT
	CONDUIT, EXISTING, AS PART OF SOA MAINTAINED CKT

NOTES

1. CIRCUIT PATHS OUTSIDE OF PROJECT LIMITS ARE FROM PROJECT AS–BUILTS AND ARE UNCONFIRMED.
2. THIS SHEET SHOWS CIRCUIT LEVEL DESIGN AND IS FOR REFERENCE ONLY.

STATE OF ALASKA
49TH
ZACHARY J. SWEENEY
21351
REGISTERED PROFESSIONAL ENGINEER
P.S.&E. REVIEW
JUNE 2020

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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

SEWARD HWY
CIRCUIT MAP – SEWARD HWY

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	H31	H64

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF

SCALE N/A

DATE 6/24/2020 TIME 8:25 PM

DRAWING LOCATION
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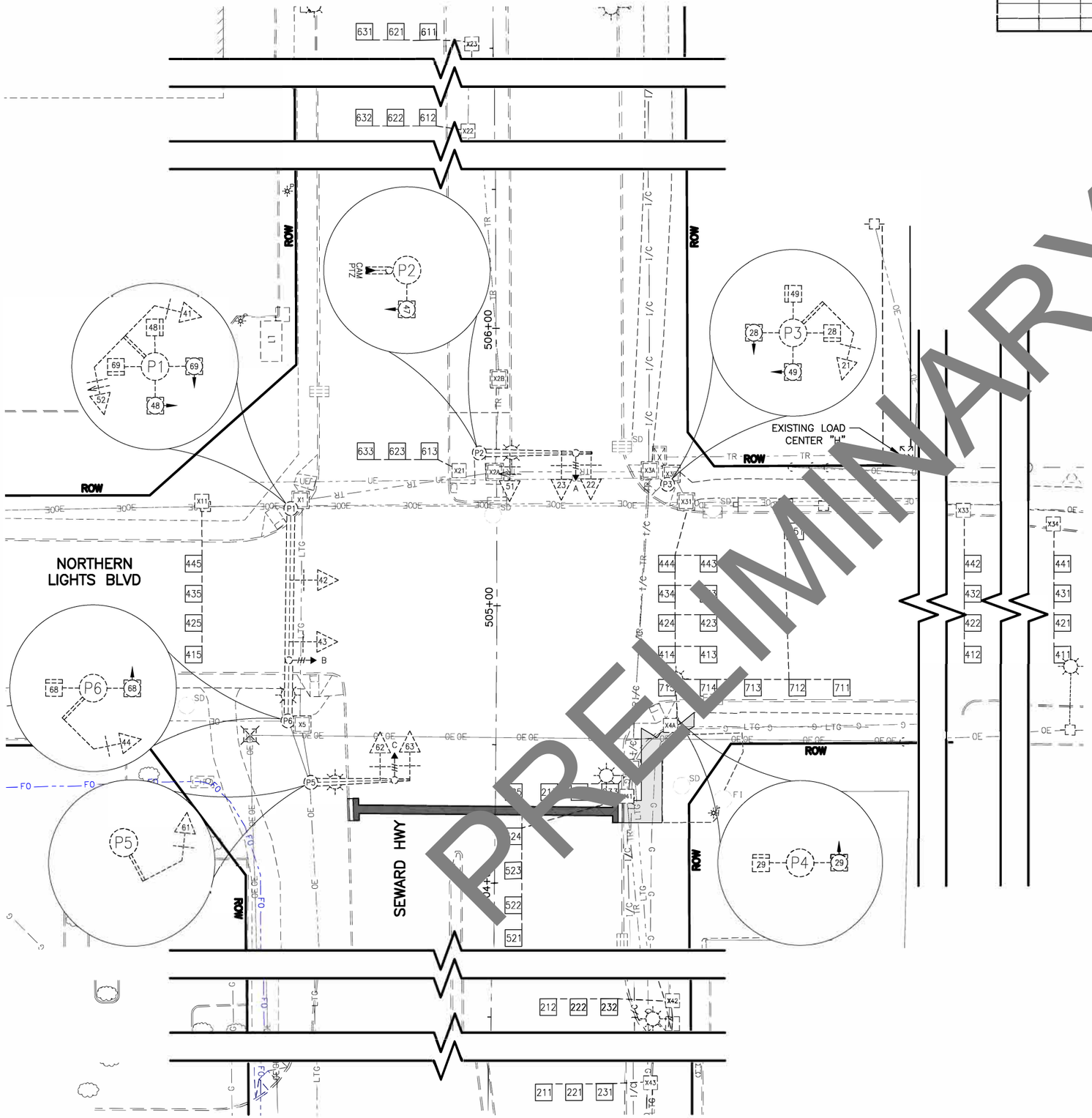

NOTES:

1. LOAD CENTER, TRAFFIC CONTROL CABINET, SIGNAL POLES, SIGNAL EQUIPMENT, AND CONDUIT ALL TO REMAIN IN PLACE.
2. EXISTING CONDITIONS SHOW FOR REFERENCE ONLY

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

SEWARD HWY & NORTHERN LIGHTS SIGNAL SYSTEM PLAN

STATE OF ALASKA
LESLIE SWEENEY
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REGISTERED PROFESSIONAL ENGINEER
P.S.&E. REVIEW
JUNE 2020

STATE OF ALASKA DOT&PF
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NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	H32	H64

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF

SCALE N/A

DATE 6/24/2020 TIME 8:25 PM

DRAWING LOCATION
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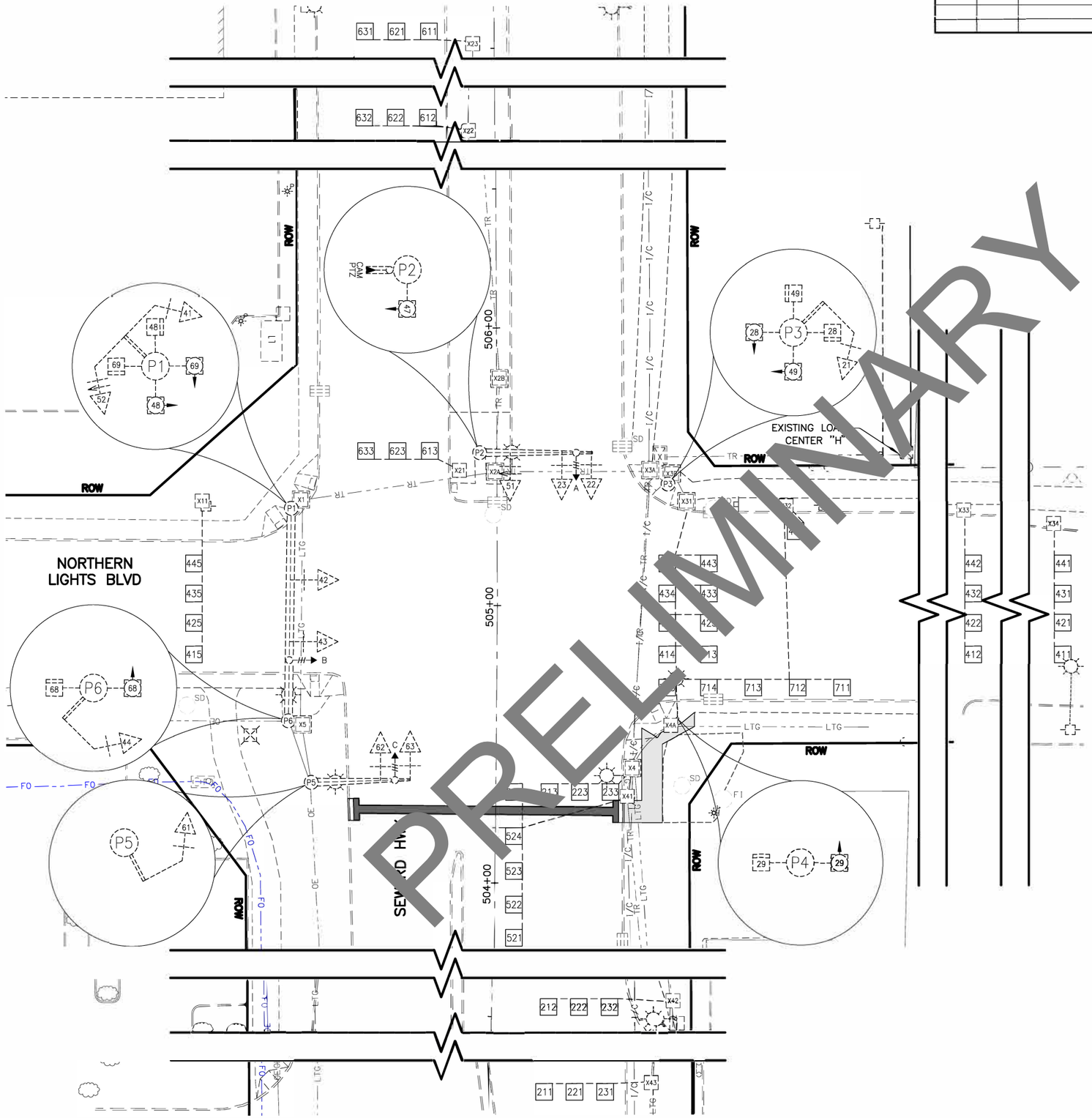
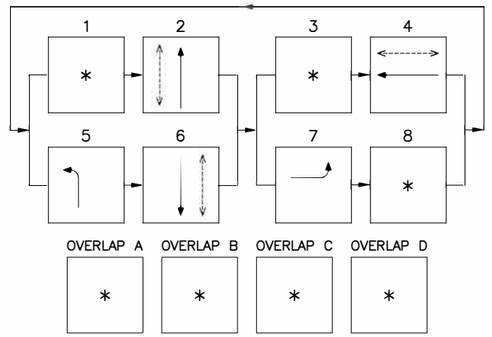
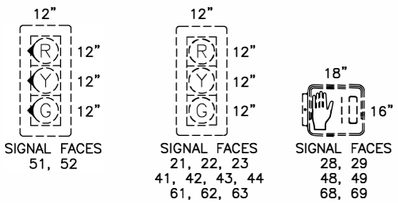




EXISTING PHASE DIAGRAM

LEGEND

- PEDESTRIAN MOVEMENT
- PROTECTED VEHICLE MOVEMENT
- UNPROTECTED VEHICLE MOVEMENT
- * FUTURE USE/NOT USED



EXISTING SIGNAL HEAD CONFIGURATIONS
ALL TO REMAIN

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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

SEWARD HWY & NORTHERN LIGHTS
SIGNAL OPERATIONS PLAN

NO.	DATE	REVISION

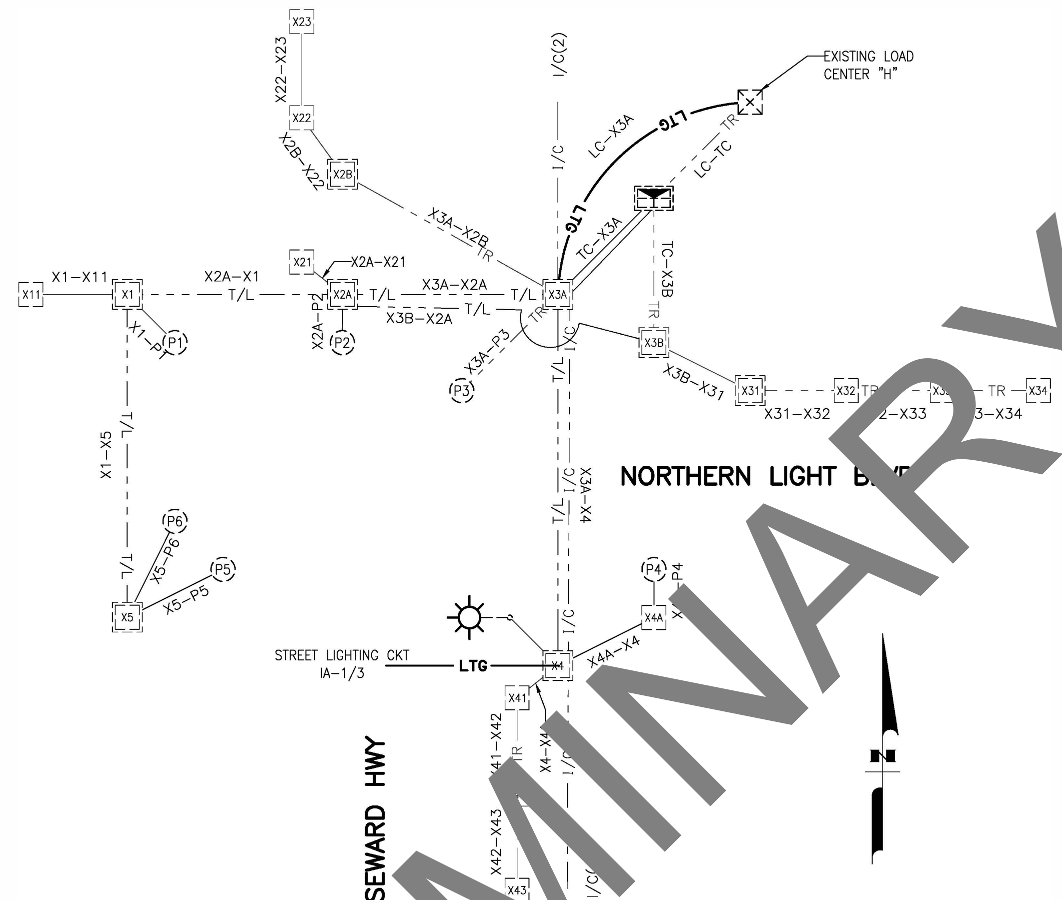
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	H33	H64

CABLE SCHEDULE

CABLE	CONDUCTOR	J-BOX PATH	LOAD
I/C(1)	*25PR19*	*TC-X3A-X4-BENSON SIGNAL*	*I/C TO BENSON TC*
I/C(2)	*25PR19*	*TC-X3A-FIREWEED SIGNAL*	*I/C TO FIREWEED TC*
0	*3C6*	*LC-TC*	*TC POWER CKT HA-3*
1	**3C8**	**LC-X3A-X4-X4A-P4-X4A-X4-X3A-X2A-P2-X2A-X1-X5-P6-X5-P5**	**INTXL CKT HA-5/7**
2	*3C20*	*TC-X3A-X2A-P2*	*PRE 2 (A)*
3	*3C14*	*TC-X3A-X2A-P2*	*PRECON 2 (A)*
4	*3C20*	*TC-X3A-X2A-X1-X5-P6*	*PRE 4 (B)*
5	*3C14*	*TC-X3A-X2A-X1-X5-P6*	*PRECON 4 (B)*
6	*3C20*	*TC-X3A-X2A-X1-X5-P5*	*PRE 6 (C)*
7	*3C14*	*TC-X3A-X2A-X1-X5-P5*	*PRECON 6 (C)*
8	*CAT5E*	*TC-X3A-X2A-P2*	*PTZ*
21	*7C14*	*TC-X3A-P3*	*HEAD 21*
22	*7C14*	*TC-X3A-X2A-P2*	*HEAD 22*
23	*7C14*	*TC-X3A-X2A-P2*	*HEAD 23*
26	*3C14*	*TC-X3A-P3*	*PEDB28*
27	*3C14*	*TC-X3A-X4-X4A-P4*	*PEDB29*
28	*5C14*	*TC-X3A-P3*	*PEDI28*
29	*5C14*	*TC-X3A-X4-X4A-P4*	*PEDI29*
41	*7C14*	*TC-X3A-X2A-X1-P1*	*HEAD 41*
42	*7C14*	*TC-X3A-X2A-X1-P1*	*HEAD 42*
43	*7C14*	*TC-X3A-X2A-X1-X5-P6*	*HEAD 43*
44	*7C14*	*TC-X3A-X2A-X1-X5-P6*	*HEAD 44*
45	*3C14*	*TC-X3A-X2A-P2*	*PEDB47*
46	*3C14*	*TC-X3A-X2A-X1-P1*	*PEDB48*
47	*3C14*	*TC-X3A-P3*	*PEDB49*
48	*5C14*	*TC-X3A-X2A-X1-P1*	*PEDI48*
49	*5C14*	*TC-X3A-P3*	*PEDI49*
51	*7C14*	*TC-X3A-X2A-P2*	*HEAD51*
52	*7C14*	*TC-X3A-X2A-X1-P1*	*HEAD52*
61	*7C14*	*TC-X3A-X2A-X1-X5-P5*	*HEAD61*
62	*7C14*	*TC-X3A-X2A-X1-X5-P5*	*HEAD62*
63	*7C14*	*TC-X3A-X2A-X1-X5-P5*	*HEAD63*
66	*3C14*	*TC-X3A-X2A-X1-X5-P6*	*PEDB68*
67	*3C14*	*TC-X3A-X2A-X1-P1*	*PEDB69*
68	*5C14*	*TC-X3A-X2A-X1-X5-P6*	*PEDI68*
69	*5C14*	*TC-X3A-X2A-X1-P1*	*PEDI69*
211	*7PR18*	*TC-X3A-X4-X41-X42-X43*	*LOOPS 211, 221, 231*
212	*7PR18*	*TC-X3A-X4-X41-X42*	*LOOPS 212, 222, 232*
213	*7PR18*	*TC-X3A-X4*	*LOOPS 213, 223, 233*
411	*7PR18*	*TC-X3B-X31-X32-X33-X34*	*LOOPS 411, 421, 431, 441*
412	*7PR18*	*TC-X3B-X31-X32-X33*	*LOOPS 412, 422, 432, 442*
413	*9PR18*	*TC-X3B-X31*	*LOOPS 413-414, 423-424, 433-434, 443-444*
415	*7PR18*	*TC-X3A-X2A-X1-X11*	*LOOPS 415, 425, 435, 445*
511	*7PR18*	*TC-X3A-X4-X41*	*LOOPS 511-515*
521	*7PR18*	*TC-X3A-X4-X41*	*LOOPS 521-525*
611	*7PR18*	*TC-X3A-X2B-X22-X23*	*LOOPS 611, 621, 631*
612	*7PR18*	*TC-X3A-X2B-X22*	*LOOPS 612, 622, 632*
613	*7PR18*	*TC-X3B-X2A-X21*	*LOOPS 613, 623, 633*
711	*7PR18*	*TC-X3B-X31-X32*	*LOOPS 451, 711-715*

ITALIC = EXISTING CONDUCTOR TO REMAIN

BOLD = NEW CONDUCTOR



NOTES:

1. EXCEPT WHERE NOTED, ALL CONDUIT SHOWN IN WIRING DIAGRAM AND CONDUIT SCHEDULE IS EXISTING AND IS TO REMAIN IN PLACE.

PRELIMINARY

CONDUIT SCHEDULE

RUN #	CONDUIT	CONDUIT TYPE	CABLES	DESTINATION	FILL %
LC-TC	*2"*	*RMC*	*0*	*TC POWER*	*15%*
LC-X3A	**2"**	**RMC**	**1**	**INXTL**	**12%** ①
TC-X3B	*3"*	*RMC*	*411, 412, 413, 613, 711*	*WB, & SB DETECTION*	*23%*
TC-X3A	*3"*	*RMC*	*I/C(1), I/C(2)*	*I/C*	*24%*
	3"	*RMC*	*21, 26, 27, 28, 29, 47, 49, 211, 212, 213, 415, 511, 521, 611, 612*	*P4, NB, & SB DETECTION*	*47%*
	3"	*RMC*	*2, 3, 4, 5, 6, 7, 8, 22, 23, 41, 42, 43, 44, 45, 46, 48, 51, 52, 61, 62, 63, 66, 67, 68, 69*	*P1, P2, P5, P6*	*49%*
X3B-X2A	*3"*	*RMC*	*613*	*SB DETECTION*	*5%*
X3B-X31	*3"*	*RMC*	*411, 412, 413, 711*	*WB DETECTION*	*19%*
X31-X32	*2"*	*RMC*	*411, 412, 711*	*WB DETECTION*	*29%*
X32-X33	*2"*	*RMC*	*411, 412,*	*WB DETECTION*	*19%*
X33-X34	*2"*	*RMC*	*411*	*WB DETECTION*	*10%*
X3A-P3	*2"*	*RMC*	*21, 26, 28, 47, 49*	*P3*	*23%*
X3A-X2B	*2"*	*RMC*	*611, 612*	*SB DETECTION*	*19%*
X3A-X2A	**3"**	**RMC**	**1, 4, 5, 6, 7, 41, 42, 43, 44, 46, 48, 52, 61, 62, 63, 66, 67, 68, 69**	*P1, P5, P6*	*41%*
	2"	*RMC*	*2, 3, 8, 22, 23, 45, 51, 415, 613*	*P2, SB DETECTION*	*48%*
X3A-X4	*2"*	*RMC*	*27, 29*	*P4*	*9%*
	2"	*RMC*	*I/C(1)*	*I/C*	*27%*
	2"	**RMC**	**1 (IN/OUT)**	*INTXL*	*23%*
	2"	*RMC*	*211, 212, 213, 511, 521*	*NB DETECTION*	*47%*
X4-X4A	**2"**	**RMC**	**1 (IN/OUT), 27, 29**	*P4*	*32%*
X4A-P4	**2"**	**RMC**	**1 (IN/OUT)**	*INTXL*	*23%*
	1 1/2"	*RMC*	*27, 29*	*P4*	*16%*
X4-X41	*2"*	*RMC*	*211, 212, 511, 521*	*NB DETECTION*	*38%*
X41-X42	*2"*	*RMC*	*211, 212*	*NB DETECTION*	*19%*
X42-X43	*2"*	*RMC*	*211*	*NB DETECTION*	*10%*
X2A-P2	**1 1/2"**	**RMC**	**1 (IN/OUT)**	*P2*	*41%*
	2"	*RMC*	*2, 3, 8, 22, 23, 45, 51*	*P2*	*30%*
X2A-X21	*2"*	*RMC*	*613*	*SB DETECTION*	*10%*
X2A-X1	**3"**	**RMC**	**1, 4, 5, 6, 7, 41, 42, 43, 44, 46, 48, 52, 61, 62, 63, 66, 67, 68, 69, 415**	*P1, P5, P6*	*45%*
X2B-X22	*2"*	*RMC*	*611, 612*	*SB DETECTION*	*19%*
X22-X23	*2"*	*RMC*	*611*	*SB DETECTION*	*10%*
X1-X11	*2"*	*RMC*	*415*	*WB DETECTION*	*10%*
X1-P1	*2"*	*RMC*	*41, 42, 46, 48, 52, 67, 69*	*P1*	*34%*
	2"	*RMC*	*SPARE*	*P1*	*–*
	2"	*RMC*	*SPARE*	*P1*	*–*
X1-X5	**3"**	**RMC**	**1**	*INTXL*	*5%*
	3"	*RMC*	*4, 5, 6, 7, 43, 44, 61, 62, 63, 66, 68*	*P5, P6*	*21%*
	2"	*RMC*	*SPARE*	*X5*	*–*
X5-P6	**2"**	**RMC**	**1 (IN/OUT)**	*INTXL*	*23%*
	2"	*RMC*	*4, 5, 43, 44, 66, 68*	*P6*	*26%*
	2"	*RMC*	*SPARE*	*P6*	*–*
X5-P5	**2"**	**RMC**	**1, 6, 7, 61, 62, 63**	*P5*	*34%*

BOLD = EXISTING CONDUIT CONTAINS NEW CONDUCTOR

STATE OF ALASKA 49TH ... SWEENEY ... 121351 ... REGISTERED PROFESSIONAL ENGINEER
P.S.&E. REVIEW JUNE 2020

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
(907) 269-0590

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

SEWARD HWY & NORTHERN LIGHTS
WIRING DIAGRAM

DESIGNED BY	ZJH
CHECKED BY	LAS
DRAFTED BY	MF
SCALE	N/A
DATE	6/24/2020
TIME	8:25 PM

DRAWING LOCATION
C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CIV3D19\TRAFFIC\00132_SIGNAL_SEWARDNL.DWG

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	H34	H64

DESIGNED BY	CHECKED BY	DRAFTED BY
ZJH	LAS	MF

SCALE: N/A

DATE TIME: 6/24/2020 8:25 PM

DRAWING LOCATION
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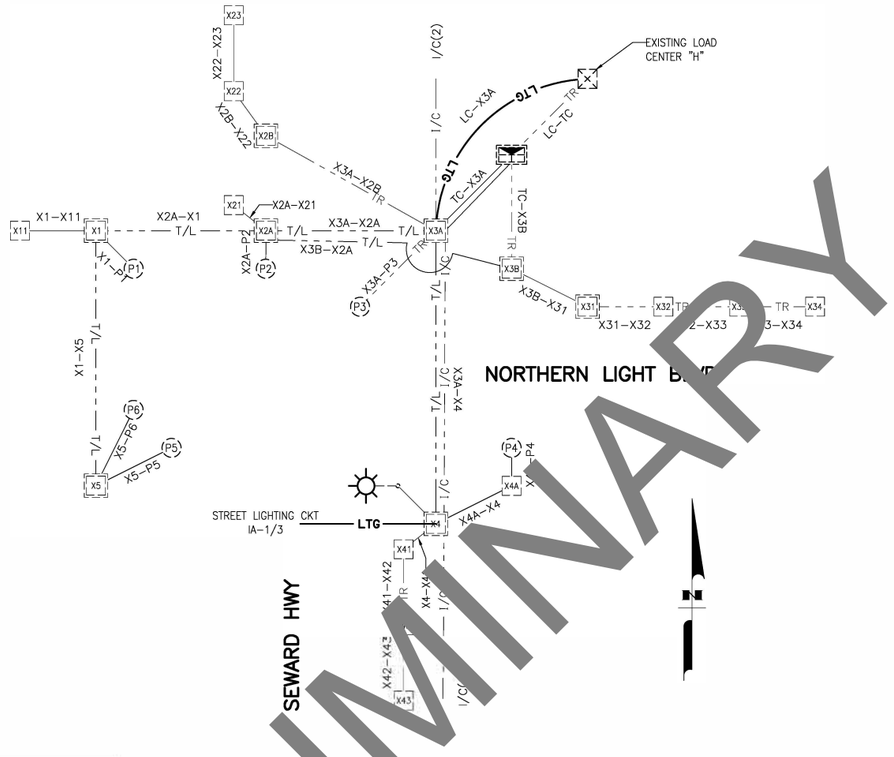
ARC FLASH AND SHOCK HAZARD RESULTS
LC "H" - PANEL A ENCLOSURE

ARC FLASH BOUNDARY	5.2 FT
INCIDENT ENERGY IN CAL/CM^2	9.1
WORKING DISTANCE	18 INCHES
SHOCK HAZARD EXPOSURE	240 VAC
INSULATING GLOVES CLASS	00
SHOCK HAZARD	WHEN COVER REMOVED
LIMITED APPROACH BOUNDARY	3.5 FT
RESTRICTED APPROACH BOUNDARY	1.0 FT
CALCULATED DATE	2/3/2020



SUMMARY OF EXISTING LOAD CENTER "H"

LOAD CENTER TYPE:	TYPE 1
MAINTAINED BY:	MUNICIPALITY OF ANCHORAGE (MOA)
SERVING UTILITY:	MUNICIPAL LIGHT & POWER (ML&P)
SERVICE CONDUIT TYPE:	RMC & PVC
LOCATION DATA (61.195429°, -149.867184°)	
LOAD CENTER:	SEWARD HWY & NORTHERN LIGHTS BLVD, ENE
POWER SOURCE:	EXISTING ML&P SERVICE TRANSFORMER (50 kVA)
PHOTOELECTRIC CONTROL:	EXISTING AT LOAD CENTER
SERVICE VOLTAGE:	120/240V 1-PHASE, 3-WIRE WITH GROUNDED NEUTRA
PROVIDE METER SOCKET	EXISTING
PANEL A MAIN SERVICE DISCONNECT	240V, 100A
CONTACTOR:	EXISTING 8-POLE
AIC RATING:	10 kAIC @ 240V

PANEL A - 120/240 VAC

POLE	AMP TRIP	DESCRIPTION	POLE KVA	Aφ	Bφ	POLE KVA	DESCRIPTION	AMP TRIP	POLE
1	-	*SPACE*	-	-		-	*PANEL A MAIN SERVICE DISCONNECT*	*100/2*	2
3	*60/1*	*TRAFFIC SIGNAL CABINET*	2.4		2.4	-			4
5	**20/2**	**INTXL* (NOTE 2)**	1.4	1.5		0.1	*CONTROL*	*15/2*	6
7			1.4		1.5	0.1			8
9	*20/2*	*SPARE**	0	0		0	*SPARE**	*20/2*	10
11			0		0	0			12
13	-	*SPACE*	-	-		-	*SPACE*	-	14
15	-	*SPACE*	-		-	-	*SPACE*	-	16
17	-	*SPACE*	-	-		-	*SPACE*	-	18
		* CIRCUIT THROUGH CONTACTOR		1.5	3.9		PANEL A TOTAL kVA		5.4
		ITALIC = EXISTING					PANEL A AMPS AT 240V		22.5

ONLY MODIFCATION TO LOAD CENTER "H" IS ADDING A NEW LOAD TO EXISTING BREAKER IN HA-5/7.

LOAD CENTER "H" NOTES

1. CONTRACTOR SHALL VERIFY CHARACTERISTICS OF ALL EXISTING COMPONENTS THAT ARE TO REMAIN IN SERVICE PRIOR TO BEGINNING ANY WORK AT THE LOAD CENTER. CONTRACTOR SHALL PROVIDE AS-BUILT REDLINES OF THIS PANEL TO THE PROJECT ENGINEER.

2. USE EXISTING 20A, 2P, SPARE BREAKER TO POWER INTXL.

SHORT CIRCUIT CALCULATION - LC "H"

240V, POWER FACTOR = 0.90, SERVICE LATERAL CONSISTS OF ONE ALUMINUM CONDUCTOR PER PHASE IN RMC & PVC

TRANSFORMER RATING	50 kVA
VOLTAGE	120/240 VAC SECONDARY
TRANSFORMER IMPEDANCE	1.2% MINIMUM
TRANSFORMER LET-THRU SHORT CIRCUIT CURRENT (INFINITE BUS)	16,026 A
LENGTH TO FAULT	850 FT TOTAL
SERVICE CONDUCTOR SIZE	4/0 AWG (AL) 750-FT #2 AWG (AL) 100-FT
SERVICE CONDUIT	RMC & PVC
LINE-LINE FAULT	2.31 kA
DATE CALCULATED	2/3/2020

STATE OF ALASKA
49TH
JEFFREY CARLETON
13218
REGISTERED PROFESSIONAL ENGINEER
P.S.&E. REVIEW
JUNE 2020

STATE OF ALASKA DOT&PF
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STATE OF ALASKA
49TH
LUSHA SWEENEY
121351
REGISTERED PROFESSIONAL ENGINEER
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JUNE 2020

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4111 AVIATION AVENUE
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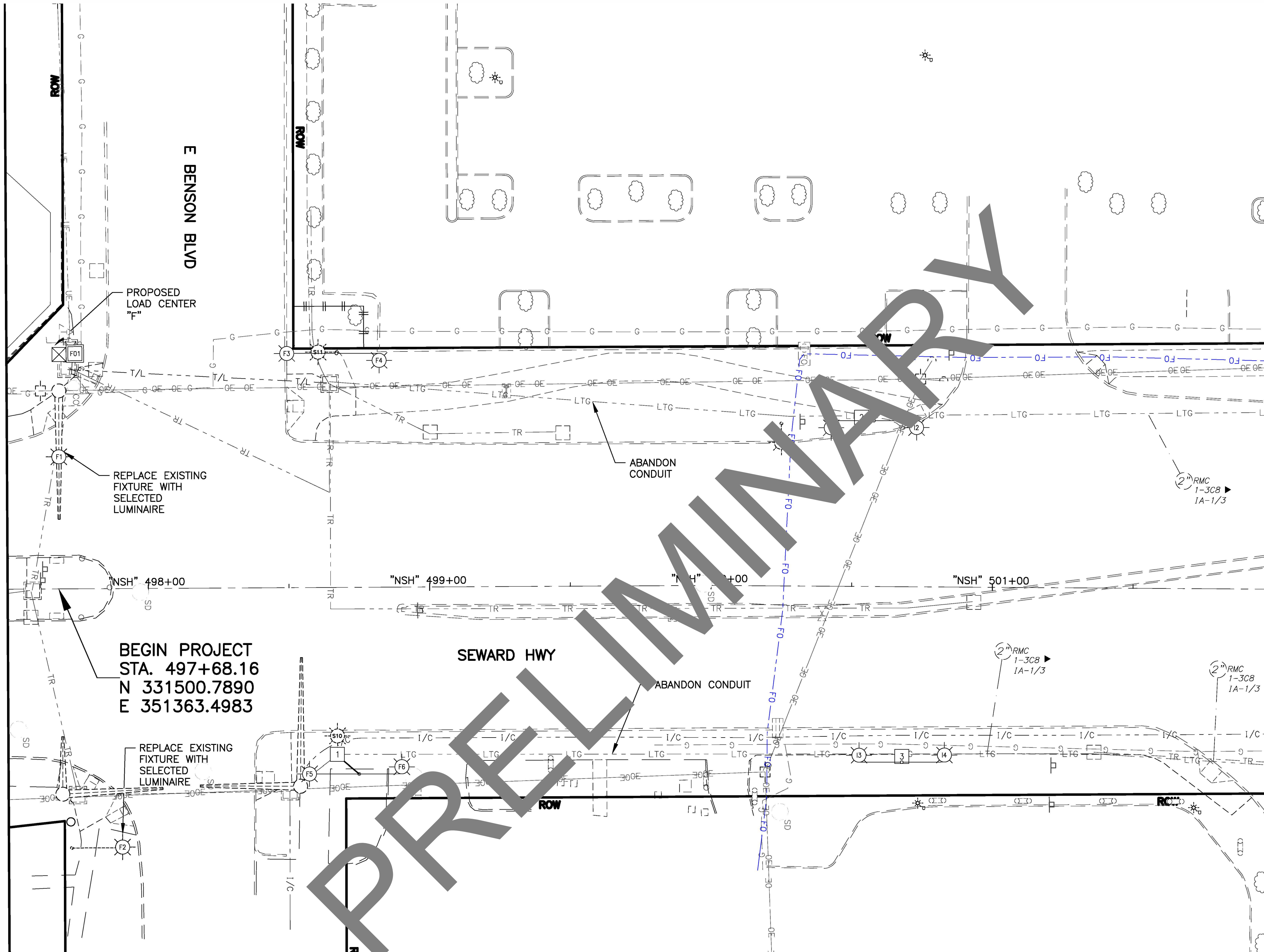
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

SEWARD HWY & NORTHERN LIGHTS LOAD CENTER



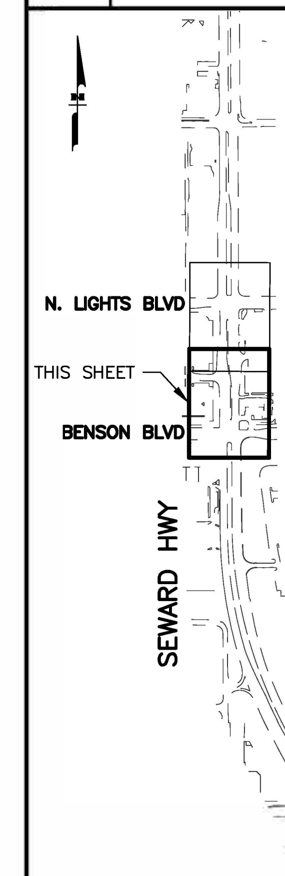
NOTES:

1. I-1 THROUGH I-8 ARE CURRENTLY POWERED BY LOAD CENTER "G". CONNECT I-1 THROUGH I-8 TO CIRCUIT IA-1/3 AS SHOWN.
2. IF I-1,2 OBSTRUCTS DRIVER VIEW OF BENSON BLVD ADVANCE INTERSECTION SIGN, RELOCATE FURTHER SOUTH PER PROJECT ENGINEER.
3. ON SEWARD HWY USE THE FOLLOWING ITEMS:
   - 3.1. 306.0002.5228 - ASPHALT BINDER, GRADE PG 52-28
   - 3.2. 401.0001.002A - HMA, TYPE 2; CLASS A
   - 3.3. 408.0004.5228 - ASPHALT BINDER, GRADE PG 52-28

SHEET NO.	TOTAL SHEETS
H35	H64
STATE	YEAR
ALASKA	2020

PROJECT DESIGNATION
0001607/ CFHWY00366

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



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ANCHORAGE, AK 99502
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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

SIGNING, STRIPING, AND ILLUMINATION: B.O.P. TO "NSH" STA 502+00

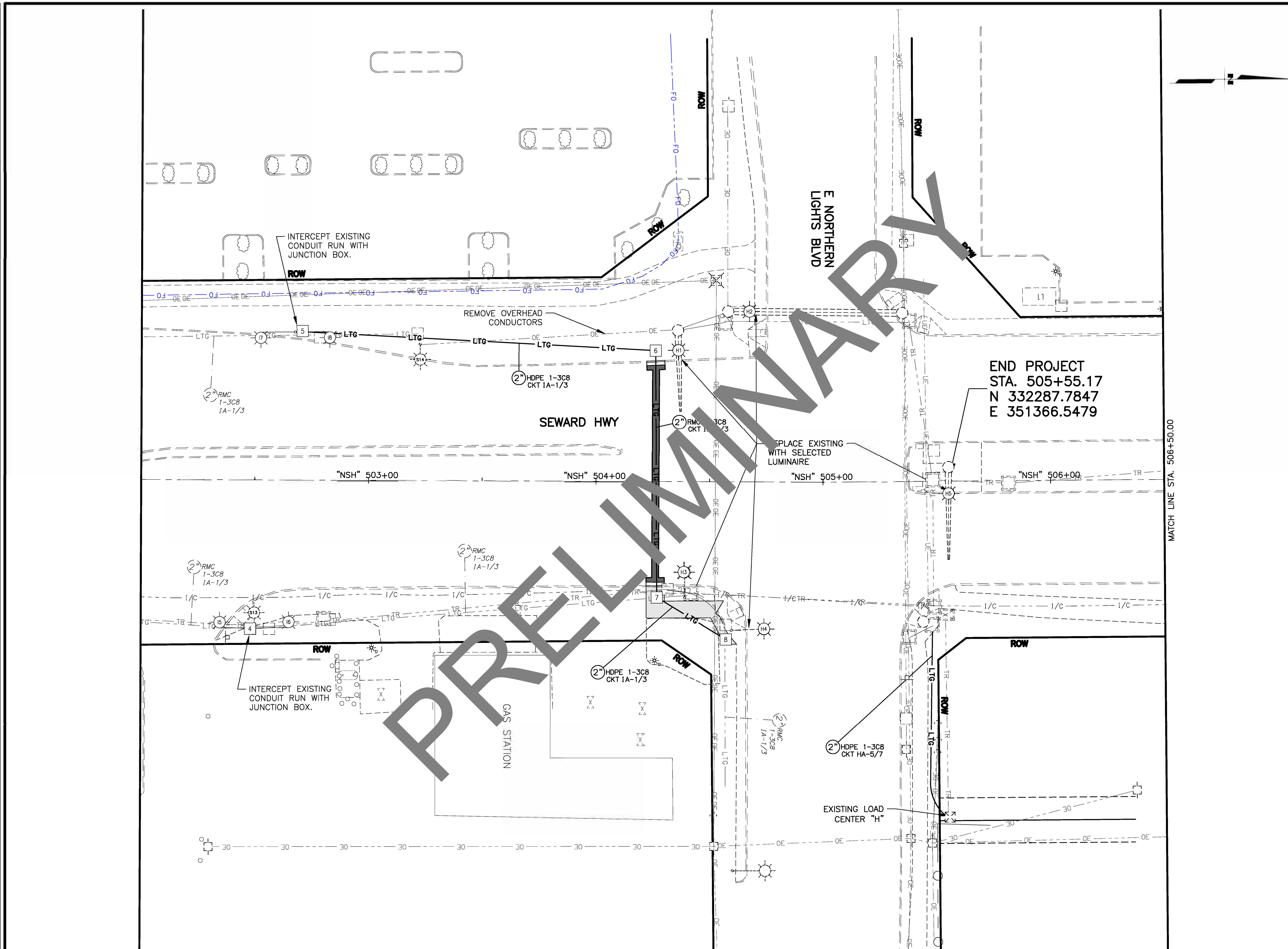
DRAWING LOCATION	DATE	TIME	SCALE	DESIGNED BY	CHECKED BY	DRAFTED BY
C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CIV3D19\PLANSET\H_SHEETS\H-PLANVIEWS.DWG	6/24/2020	8:46 PM	1:20	ZJH	LAS	MF

DESIGNED BY	CHECKED BY	DRAFTED BY
ZJH	JAS	MF

SCALE 1:20

DATE 6/24/2020 TIME 8:46 PM

DRAWING LOCATION C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CIV3D19\PLANSET\H_SHEETS\H-PLANVIEWS.DWG

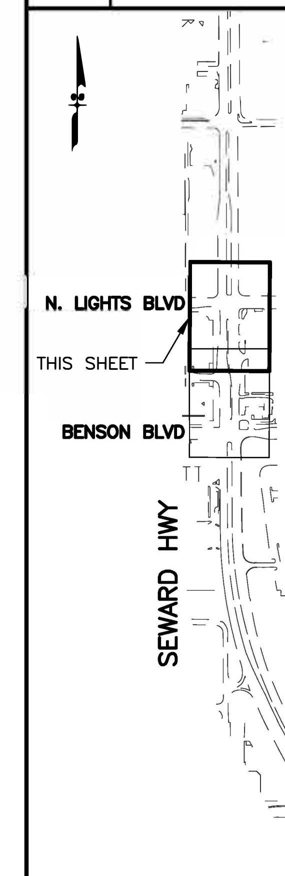


SHEET NO.	TOTAL SHEETS
H36	H64
STATE	YEAR
ALASKA	2020

PROJECT DESIGNATION

0001607/ CFHWY00366

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



P.S.&E. REVIEW JUNE 2020

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
(907) 269-0590

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

SIGNING, STRIPING, AND ILLUMINATION: "NSH" STA 502+00 TO E.O.P.

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	H37	H64

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF
SCALE N/A
DATE 6/24/2020 TIME 8:46 PM
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ELECTROLIER SCHEDULE (660.0003.0000)

POLE NO.	STATION ALIGNMENT	OFFSET	LUMINAIRE	MOUNTING HEIGHT (FT)	SHAFT LENGTH (FT)	MASTARM LENGTH (FT)	REMARKS	FOUNDATION	MAINTAINING AGENCY
F-3,4	"NSH" 498+67.4	83.2' LT	SEE ELEVATION VIEW	50'	46	15'	DUAL LUM. SIGNAL POLE - SEE ELEVATION VIEW.	SIZED FOR 65' SIGNAL MASTARM. 48" CIDH	MOA
F-5,6	"NSH" 498+74.6	66.3' RT	SEE ELEVATION VIEW	50'	46	15'	LONGHORN POLE - SEE H11, ELEVATION VIEW	CIDH	MOA
I-1,2	"NSH" 500+57.5	59.0' LT	ROADWAY	50'	46	15'	LONGHORN POLE - SEE H11	CIDH	DOT&PF
I-3,4	"NSH" 500+68.2	62.4' RT	ROADWAY	50'	45	15'	LONGHORN POLE - SEE H11	CIDH	DOT&PF
I-5,6	"NSH" 502+49.9	65.1' RT	ROADWAY	50'	45	15'	LONGHORN POLE - SEE H11	CIDH	DOT&PF
I-7,8	"NSH" 502+67.5	65.2' LT	ROADWAY	50'	47	15'	LONGHORN POLE - SEE H11	CIDH	DOT&PF

SALVAGE ELECTROLIER SCHEDULE (660.0003.0000)

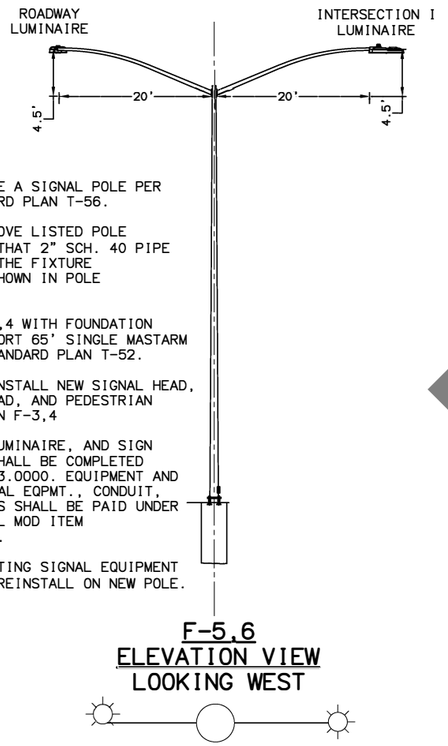
POLE NO.	STATION ALIGNMENT	OFFSET	POLE TYPE	BASE TYPE	SHAFT LENGTH (FT)	MASTARM LENGTH (FT)	REMARKS	MAINTAINING AGENCY
S10	"NSH" 498+67.0	59.4' RT	ELECTROLIER	N/A	N/A	N/A	DEMO FOUNDATION PER DETAIL H6	MOA
S11	"NSH" 498+67.4	83.2' LT	ELECTROLIER	SLIP	35'	15'	REMOVE FOUNDATION	MOA
S12	"NSH" 500+24.6	57.8' LT	ELECTROLIER	FRANGIBLE	37'	10'	REMOVE FOUNDATION	DOT&PF
S13	"NSH" 502+49.9	65.1' RT	ELECTROLIER	FRANGIBLE	37'	10'	REMOVE FOUNDATION	DOT&PF
S14	"NSH" 503+22.5	60.1' LT	ELECTROLIER	SLIP	37'	10'	REMOVE FOUNDATION	DOT&PF

REPLACE LUMINAIRE FIXTURE ON EXISTING POLE (660.0003.0000)

CROSSROAD	FIXTURE	STATION ALIGNMENT	OFFSET	NUMBER OF FIXTURES	LUMINAIRE	LOAD CENTER
BENSON	F1	"NSH" 497+68.[illegible]	70.5' LT	1	INTERSECTION I	F
	F2	"NSH" 497+72.4	92.1' RT	1	INTERSECTION I	F
NORTHERN LIGHTS	H1	"NSH" [illegible]79.3	[illegible].9' RT	1	INTERSECTION II	H
	H2	"NSH" 50[illegible]	66.6' LT	1	INTERSECTION II	I
	H3	"NSH" [illegible]04+57.7	75.0' LT	1	INTERSECTION II	H
	H4	"NSH" 504+59.9	65.2' RT	1	INTERSECTION II	I
	H5	"NSH" [illegible]05+55.2	6.4' LT	1	INTERSECTION II	H

JUNCTION BOX SCHEDULE (660.0003.0000)

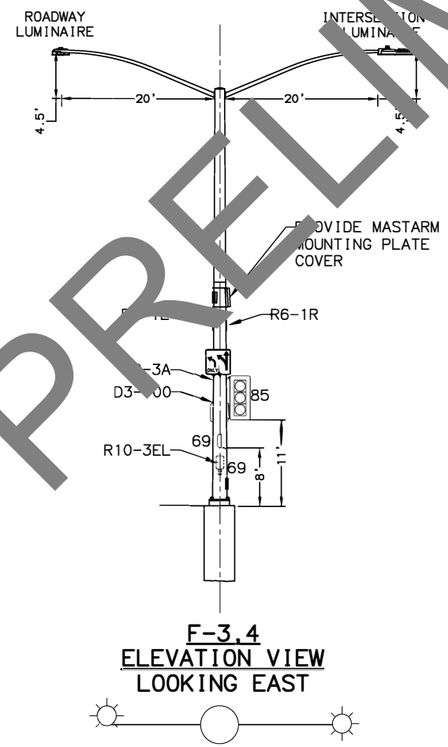
J-BOX	STATION ALIGNMENT	OFFSET	SALVAGE	NEW	TYPE
1	"NSH" 498+66.9	59.4' RT		X	1A
2	"NSH" 500+53.18	60.1' LT		X	1A
3	"NSH" 500+68.2	60.3' RT		X	1A
4	"NSH" 502+48.1	65.3' RT	X	X	1A
5	"NSH" 502+70.7	65.7' LT		X	1A
EXISTING	"NSH" 503+21.3	64.6' LT	X		1A
6	"NSH" 504+26.1	57.8' LT		X	1A
7	"NSH" 504+27.0	50.9' RT		X	1A
8	"NSH" 504+57.4	69.1' RT		X	1A



NOTES:

1. F-3,4 SHALL BE A SIGNAL POLE PER ALASKA STANDARD PLAN T-56.
2. MODIFY THE ABOVE LISTED POLE DESIGNS SUCH THAT 2" SCH. 40 PIPE ENDS PROVIDE THE FIXTURE ORIENTATION SHOWN IN POLE ELEVATIONS.
3. CONSTRUCT F-3,4 WITH FOUNDATION DEPTH TO SUPPORT 65' SINGLE MASTARM PER ALASKA STANDARD PLAN T-52.
4. FURNISH AND INSTALL NEW SIGNAL HEAD, PEDESTRIAN HEAD, AND PEDESTRIAN PUSH BUTTON ON F-3,4
5. F-3,4 POLE, LUMINAIRE, AND SIGN REPLACEMENT SHALL BE COMPLETED UNDER 660.0003.0000. EQUIPMENT AND WORK FOR SIGNAL EQPMT., CONDUIT, AND CONDUCTORS SHALL BE PAID UNDER TRAFFIC SIGNAL MOD ITEM 660.2003.0000.
6. PRESERVE EXISTING SIGNAL EQUIPMENT ON F-3/4 AND REINSTALL ON NEW POLE.

F-5,6
ELEVATION VIEW
LOOKING WEST



F-3,4
ELEVATION VIEW
LOOKING EAST

LUMINAIRE STANDARDS

MANUFACTURER	GE OR APPROVED EQUAL
MODEL	ERL2 - OR APPROVED EQUAL
WATTAGE	278
LIGHT SOURCE	LED
VOLTAGE - ROADWAY AND INTERSECTION I	480
VOLTAGE - INTERSECTION II	240
PE CONTROL	ANSI C136.41 7 PIN W/ SHORTING CAP
PE SENSOR	YES
MOUNTING	HORIZONTAL
HOUSING ENTRY TYPE	TOOLLESS
FIXTURE COLOR	GRAY
IES DISTRIBUTION TYPE (ROADWAY)	TYPE III ASYMMETRICAL (SHORT)
IES DISTRIBUTION TYPE (INTERSECTION I AND II)	TYPE IV ASYMMETRICAL (FORWARD)
POWER FACTOR	>0.90
UL LISTED	YES
DRIVE CURRENT - ROADWAY AND INTERSECTION I	0.58A
DRIVE CURRENT - INTERSECTION II	1.16A
CCI	3000K
CRI	MINIMUM 70
INITIAL LUMENS	28800

LUMINAIRE PERFORMANCE CRITERIA

INTERSECTION	
CHARACTERISTICS	
PAVEMENT TYPE	R3
ROADWAY LIGHTING STANDARD	IESNA RP-8-2014
FUNCTIONAL CLASSIFICATION	MAJOR/MAJOR
PEDESTRIAN AREA CLASSIFICATION	HIGH
IES FILE FOR ROADWAY LIGHTING	ERL2_30D330_____.IES
LUMINAIRE (INTERSECTION I AND II)	
LAMP DESCRIPTION	GE ERL2 ROADWAY LIGHT
LIGHT LOSS FACTOR	0.85
LIGHT DISTRIBUTION	TYPE IV
ILLUMINANCE CRITERIA	
AVERAGE MAINTAINED ILLUMINATION (fc)	3.39
AVERAGE UNIFORMITY RATIO (AVG/MIN)	3.91
ROADWAY	
CHARACTERISTICS	
ROADWAY	4 LANE DIVIDED
LANE WIDTH (FT)	12 TO 14
MEDIAN WIDTH (FT)	4 TO 15
NUMBER OF LANES	2 TO 3
PAVEMENT TYPE	R3
ROADWAY LIGHTING STANDARD	IESNA RP-8-2014
FUNCTIONAL CLASSIFICATION	MAJOR
PEDESTRIAN AREA CLASSIFICATION	HIGH
IES FILE FOR ROADWAY LIGHTING	ERL2_30C330_____.IES
LUMINAIRE	
LAMP DESCRIPTION	GE ERL2 ROADWAY LIGHT
LIGHT LOSS FACTOR	0.85
LIGHT DISTRIBUTION	TYPE III
ILLUMINANCE CRITERIA	
AVERAGE LUMINANCE (cd/m²)	1.65
MINIMUM ROADWAY LUMINANCE (cd/m²)	1.16
AVERAGE UNIFORMITY RATIO (AVG/MIN)	1.41
MAX UNIFORMITY RATIO (MAX/MIN)	2.2
MAX VEILING LUMINANCE RATIO (LV-MAX/AVG)	0.29
SIDEWALK	
CHARACTERISTICS	
ROADWAY LIGHTING STANDARD	IESNA RP-8-2014
SIDEWALK WIDTH (FT)	8
CONFLICT CLASSIFICATION	HIGH
LUMINAIRE	
LAMP DESCRIPTION	GE ERL2 ROADWAY LIGHT
LIGHT LOSS FACTOR	0.85
ILLUMINANCE CRITERIA	
AVERAGE MAINTAINED ILLUMINATION (fc)	2.15
MINIMUM ILLUMINATION (fc)	0.42

STATE OF ALASKA
49TH
P.S.&E. REVIEW
JUNE 2020
JOSHUA SWEENEY 21351
REGISTERED PROFESSIONAL ENGINEER

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
(907) 269-0590

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

LIGHTING SCHEDULE – SEWARD HWY

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	H38	H64

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF
SCALE N/A
DATE 6/24/2020 TIME 8:46 PM
DRAWING LOCATION C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\DV3D19\PLANSET\H_SHEETS\H-LIGHTINGSCHEDULES.DWG

SUMMARY OF NEW LOAD CENTER "F"

LOAD CENTER TYPE:	TYPE 1
MAINTAINED BY:	MUNICIPALITY OF ANCHORAGE (MOA)
SERVING UTILITY:	MUNICIPAL LIGHT AND POWER (ML&P)
SERVICE CONDUIT TYPE:	RMC & PVC
LOCATION DATA (61.193269°, -149.868526°)	
LOAD CENTER:	SEWARD HWY & BENSON BLVD SW
POWER SOURCE:	EXISTING ML&P SERVICE TRANSFORMER (15kVA)
PHOTOELECTRIC CONTROL:	AT LOAD CENTER
SERVICE VOLTAGE:	240/480V, 1-PHASE, 3-WIRE WITH GROUNDED NEUTRAL
PROVIDE METER SOCKET	YES
SUB-PANEL A XFMR MAIN SERVICE DISCONNECT	480V, 100A
PANEL B MAIN SERVICE DISCONNECT	480V, 30A
CONTACTOR, PANEL A:	600A, 60A, 10-POLE
CONTACTOR, PANEL B:	600V, 60A, 10-POLE
AIC RATING, PANEL A:	14 kAIC @ 480V
AIC RATING, PANEL B:	10 kAIC @ 240V

PANEL A - 240/480 VAC

POLE	AMP TRIP	DESCRIPTION	POLE KVA	Aφ	Bφ	POLE KVA	DESCRIPTION	AMP TRIP	POLE
1	15/2	EAST LTG. CIRCUIT TOWARDS LATOUCHE ST*	1.32	1.32		0	SPACE	-	2
3			1.32		1.42	0.1	CONTROL	15/1	4
5	15/2	WEST LTG. CIRCUIT TOWARDS DENALI ST*	1.66	1.66		0	SPARE	15/2	6
7			0.67		1.66	0			8
9	15/2	INTERSECTION LIGHTING*	0.67	0.67		-	SPACE	-	10
11					0.67	-	SPACE	-	12
* CIRCUIT THROUGH CONTACTOR A				3.65	3.75		PANEL A TOTAL kVA		7.4
							PANEL A AMPS AT 480V		15.4

PANEL B - 120/240 VAC
(SUPPLIED BY INTERNAL STEP-DOWN TRANSFORMER INTEGRAL TO LOAD CENTER; SEE NOTE 2)

	AMP TRIP	DESCRIPTION	POLE KVA	Aφ	Bφ	POLE KVA	DESCRIPTION	AMP TRIP	POLE
1	50/2	SUB-PANEL B SERVICE DISCONNECT	-	0.8		0.8	UNKNOWN LOAD (NOTE 3)	15/2	2
3			-		0.8	0.8			4
5	-	SPACE	0	0		0	SPARE	15/2	6
7	20/1	SPARE	0		0	0			8
9	20/1	SPARE	0	0		-	SPACE	-	10
11	-	SPACE	-		-	-	SPACE	-	12
* CIRCUIT THROUGH CONTACTOR B				0.8	0.8		PANEL B TOTAL kVA		1.6
							PANEL B AMPS AT 240V		6.7
							TOTAL kVA		9.0
							TOTAL AMPS AT 480V		18.8

ARC FLASH AND SHOCK HAZARD RESULTS - LC "F" MAIN BREAKER ENCLOSURE

ARC FLASH BOUNDARY	6.0 FT
INCIDENT ENERGY IN CAL/CM^2	11.5
WORKING DISTANCE	18 INCHES
SHOCK HAZARD EXPOSURE	480 VAC
INSULATING GLOVES CLASS	00
SHOCK HAZARD	WHEN COVER REMOVED
LIMITED APPROACH BOUNDARY	3.5 FT
RESTRICTED APPROACH BOUNDARY	1.0 FT
CALCULATED DATE	2/3/2020

ARC FLASH AND SHOCK HAZARD RESULTS - LC "F" PANEL A & B ENCLOSURE

ARC FLASH BOUNDARY	6.0 FT
INCIDENT ENERGY IN CAL/CM^2	11.5
WORKING DISTANCE	18 INCHES
SHOCK HAZARD EXPOSURE	480 VAC
INSULATING GLOVES CLASS	00
SHOCK HAZARD	WHEN COVER REMOVED
LIMITED APPROACH BOUNDARY	3.5 FT
RESTRICTED APPROACH BOUNDARY	1.0 FT
CALCULATED DATE	2/3/2020

SHORT CIRCUIT CALCULATION - LC "F"

480V, POWER FACTOR = 0.90, SERVICE LATERAL CONSISTS OF ONE ALUMINUM CONDUCTOR PER PHASE IN RMC & PVC

TRANSFORMER RATING	15 kVA
VOLTAGE	240/480 VAC SECONDARY
TRANSFORMER IMPEDANCE	1.2% MINIMUM
TRANSFORMER LET-THRU SHORT CIRCUIT CURRENT (INFINITE BUS)	2,604 A
LENGTH TO FAULT	25 FT
SERVICE CONDUCTOR SIZE	1/0 AWG (AL)
SERVICE CONDUIT	RMC & PVC
LINE-LINE FAULT	2.46 kA
DATE CALCULATED	2/3/2020

ARC FLASH AND SHOCK HAZARD RESULTS LC "G" - MAIN BREAKER ENCLOSURE

ARC FLASH BOUNDARY	2 FT
INCIDENT ENERGY IN CAL/CM^2	1
WORKING DISTANCE	1 INCHES
SHOCK HAZARD EXPOSURE	80 VAC
INSULATING GLOV	00
SHOCK HAZARD	COVER REMOVED
LIMITED APPROA BOUND	3.5 FT
RESTRICTED A PROACH BOUNDAR	1.0 FT
AL ATED	2/3/2020

ARC FLASH AND SHOCK HAZARD RESULTS LC "G" - PANEL A ENCLOSURE

ARC FLASH BOUNDARY	8.2 FT
INCIDENT ENERGY IN CAL/CM^2	19.2
WORKING DISTANCE	18 INCHES
SHOCK HAZARD EXPOSURE	480 VAC
INSULATING GLOVES CLASS	00
SHOCK HAZARD	WHEN COVER REMOVED
LIMITED APPROACH BOUNDARY	3.5 FT
RESTRICTED APPROACH BOUNDARY	1.0 FT
CALCULATED DATE	2/3/2020

SHORT CIRCUIT CALCULATION - LC "G"

480V, POWER FACTOR = 0.90, SERVICE LATERAL CONSISTS OF ONE ALUMINUM CONDUCTOR PER PHASE IN RMC & PVC

TRANSFORMER RATING	25 kVA
VOLTAGE	240/480 VAC SECONDARY
TRANSFORMER IMPEDANCE	1.2% MINIMUM
TRANSFORMER LET-THRU SHORT CIRCUIT CURRENT (INFINITE BUS)	4,340 A
LENGTH TO FAULT	25 FT
SERVICE CONDUCTOR SIZE	1/0 AWG (AL)
SERVICE CONDUIT	RMC & PVC
LINE-LINE FAULT	4.28 kA
DATE CALCULATED	2/3/2020

SUMMARY OF NEW LOAD CENTER "G"

LOAD CENTER TYPE:	TYPE 1A
MAINTAINED BY:	STATE OF ALASKA (DOT&PF)
SERVING UTILITY:	MUNICIPAL LIGHT & POWER (ML&P)
SERVICE CONDUIT TYPE:	RMC & PVC
LOCATION DATA (61.193284°, -149.868553°)	
LOAD CENTER:	OLD SEWARD HWY & 34TH AVE, NE
POWER SOURCE:	EXISTING ML&P SERVICE TRANSFORMER (25 kVA)
PHOTOELECTRIC CONTROL:	AT LOAD CENTER
SERVICE VOLTAGE:	240/480V 1-PHASE, 3-WIRE WITH GROUNDED NEUTRAL
PROVIDE METER SOCKET	YES
PANEL A MAIN SERVICE DISCONNECT	480V, 100A
CONTACTOR:	600V, 60A, 12-POLE
AIC RATING:	10 kAIC @ 480V

PANEL A - 240/480 VAC, 100A MAIN BUS

POLE	AMP TRIP	DESCRIPTION	POLE KVA	Aφ	Bφ	POLE KVA	DESCRIPTION	AMP TRIP	POLE
1	20/2	SEWARD HWY NE*	0.54	0.54		0	SPACE	-	2
3			0.54		0.64	0.1	CONTROL	15/1	4
5	20/2	SEWARD HWY NW*	0.36	0.56		0.2	ATR #1	20/2	6
7			0.36		0.56	0.2			8
9	20/2	SEWARD HWY SE*	1.32	2.67		1.35	SEWARD HWY SW*	20/2	10
11			1.32		2.67	1.35			12
13	20/2	SPARE*	0	1.07		1.07	OLD SEWARD HWY*	20/2	14
15			0		1.07	1.07			16
17	-	SPACE	-	-		-	SPACE	-	18
* CIRCUIT THROUGH CONTACTOR				4.84	4.94		PANEL A TOTAL kVA		9.78
							PANEL A AMPS AT 480V		20.4

LOAD CENTER "F" NOTES

CONTRACTOR SHALL VERIFY CHARACTERISTICS OF ALL EXISTING COMPONENTS THAT ARE TO REMAIN IN SERVICE PRIOR TO BEGINNING ANY WORK AT THE LOAD CENTER. CONTRACTOR SHALL PROVIDE AS-BUILT REDLINES OF THIS PANEL TO THE PROJECT ENGINEER.

1. INTERNAL STEP-DOWN TRANSFORMER IS TO BE SUPPLIED BY LOAD CENTER MANUFACTURER AND IS TO BE INTEGRAL TO THE LOAD CENTER.TRANSFORMER SHALL BE SINGLE-PHASE, DRY-TYPE, 10 kVA, CLASS 180 INSULATION, 115 DEG C RISE. COMPLETE LOAD CENTER SHALL BE NRTL LISTED AS AN ASSEMBLY.

2. THERE ARE EXISTING ORANGE-INSULATED CONDUCTORS TERMINATED ON A 2-POLE, 15A, 240V CIRCUIT BREAKER IN EXISTING LC "F". DURING DESIGN, THE LOAD ON THIS CIRCUIT WAS UNABLE TO BE DETERMINED. CONTRACTOR SHALL PERFORM FIELD INVESTIGATION DURING THE LOAD CENTER REPLACEMENT TO IDENTIFY THIS LOAD AND ENSURE IT IS RE-POWERED FROM THE NEW LOAD CENTER IF REQUIRED.

LOAD CENTER "G" NOTES

1. CONTRACTOR SHALL VERIFY CHARACTERISTICS OF ALL EXISTING COMPONENTS THAT ARE TO REMAIN IN SERVICE PRIOR TO BEGINNING ANY WORK AT THE LOAD CENTER. CONTRACTOR SHALL PROVIDE AS-BUILT REDLINES OF THIS PANEL TO THE PROJECT ENGINEER.

STATE OF ALASKA P.E. 49TH JEFFREY CARLETON 13218 REGISTERED PROFESSIONAL ENGINEER S.&E. REVIEW JUNE 2020

STATE OF ALASKA DOT&PF
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STATE OF ALASKA P.E. 49TH LESLIE SWEENEY 21351 REGISTERED PROFESSIONAL ENGINEER S.&E. REVIEW JUNE 2020

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
(907) 269-0590

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

LOAD CENTER - SEWARD HWY

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	H39	H64

DESIGNED BY	CHECKED BY	DRAFTED BY
ZJH	LAS	MF

SCALE	DATE	TIME
N/A	6/24/2020	8:46 PM

DRAWING LOCATION
C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CW3D19\PLANSET\H_SHEETS\H-LIGHTINGSCHEDULES.DWG

SHORT CIRCUIT CALCULATION - LC "I"

480V, POWER FACTOR = 0.90, SERVICE LATERAL CONSISTS OF ONE ALUMINUM CONDUCTOR PER PHASE IN RMC & PVC

TRANSFORMER RATING	25 kVA
VOLTAGE	240/480 VAC SECONDARY
TRANSFORMER IMPEDANCE	1.2% MINIMUM
TRANSFORMER LET-THRU SHORT CIRCUIT CURRENT (INFINITE BUS)	4,340 A
LENGTH TO FAULT	25 FT TOTAL
SERVICE CONDUCTOR SIZE	1/0 AWG (AL)
SERVICE CONDUIT	RMC & PVC
LINE-LINE FAULT	4.28 kA
DATE CALCULATED	2/3/2020

ARC FLASH AND SHOCK HAZARD RESULTS LC "I" - PANEL A ENCLOSURE

ARC FLASH BOUNDARY	8.2 FT
INCIDENT ENERGY IN CAL/CM^2	19.2
WORKING DISTANCE	18 INCHES
SHOCK HAZARD EXPOSURE	480 VAC
INSULATING GLOVES CLASS	00
SHOCK HAZARD	WHEN COVER REMOVED
LIMITED APPROACH BOUNDARY	3.5 FT
RESTRICTED APPROACH BOUNDARY	1.0 FT
CALCULATED DATE	2/3/2020

SUMMARY OF EXISTING LOAD CENTER "I"

LOAD CENTER TYPE:	TYPE 2
MAINTAINED BY:	STATE OF ALASKA (SOA)
SERVING UTILITY:	MUNICIPAL LIGHT & POWER (ML&P)
SERVICE CONDUIT TYPE:	RMC & PVC
LOCATION DATA (61.195149°, -149.860885°)	
LOAD CENTER:	LATOUCHE ST & NORTHERN LIGHTS BLVD SW
POWER SOURCE:	EXISTING ML&P SERVICE TRANSFORMER (25 kVA)
PHOTOELECTRIC CONTROL:	EXISTING AT LOAD CENTER
SERVICE VOLTAGE:	240/480V 1-PHASE, 3-WIRE WITH G[illegible]ED NEUTRAL
PROVIDE METER SOCKET	EXISTING
PANEL A MAIN SERVICE DISCONNECT	480V, 1[illegible]
CONTACTOR:	EXISTING 480V 8-P[illegible]
AIC RATING:	10 k[illegible] @ 480V

PANEL A - 240/480 VAC

POLE	AMP TRIP	DESCRIPTION	POLE KVA	Aφ	Bφ	POLE KVA	DESCRIPTION	AMP TRIP	POLE
-	-	-	-		1		CONTROL	15/1	N/A
1	15/2	NORTHERN LIGHTS - WEST AND SEWARD HWY*	2.93	2.93			PANEL A MAIN SERVICE DISCONNECT	100/2	2
3			2.93		2.9	-			4
5	30/2	SPARE*	0	2.[illegible]		2.82	BENSON BLVD AND NOR. LIGHTS - SOUTH*	20/2	6
7			0		82	82			8
9	15/2	SPARE	[illegible]			0.1	NORTHERN LIGHTS - EAST*	20/2	10
11					0.1	0.1			12
13	-	SPACE	-	0		0	SPARE	30/2	14
15	-	SPA[illegible]	-		0	0			16
17	-	SPAC[illegible]	-			-	SPACE	-	18
		* CIRCUIT THRU[illegible]NTACTO[illegible]		5.85	5.95		PANEL A TOTAL kVA		11.81
		ITALI[illegible] = E[illegible]STING					PANEL A AMPS AT 480V		24.6

ONLY MODIFCATION TO [illegible] CENTER "I" ARE A CHANGE IN LOAD FOR EXISTING CIRCUITS IA-1/3

LOAD CENTER "I" NOTES

1. CONTRACTOR SHALL VERIFY CHARACTERISTICS OF ALL EXISTING COMPONENTS THAT ARE TO REMAIN IN SERVICE PRIOR TO BEGINNING ANY WORK AT THE LOAD CENTER. CONTRACTOR SHALL PROVIDE AS-BUILT REDLINES OF THIS PANEL TO THE PROJECT ENGINEER.

2. THE SINGLE-POLE 15A-TRIP CIRCUIT BREAKER FOR THE CONTROL CIRCUIT IS POWERED FROM THE SERVICE (ON PHASE B) PRIOR TO THE 100A PANEL A MAIN SERVICE DISCONNECT.

STATE OF ALASKA - 49TH - JEFFREY C. CARLETON 13218 - REGISTERED PROFESSIONAL ENGINEER
P.S.&E. REVIEW JUNE 2020

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
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STATE OF ALASKA - 49TH - LEIGH A. SWEENEY 21351 - REGISTERED PROFESSIONAL ENGINEER
P.S.&E. REVIEW JUNE 2020

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
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(907) 269-0590

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

LOAD CENTER - SEWARD HWY

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	H40	H64

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF

SCALE N/A

DATE 6/24/2020 TIME 8:46 PM

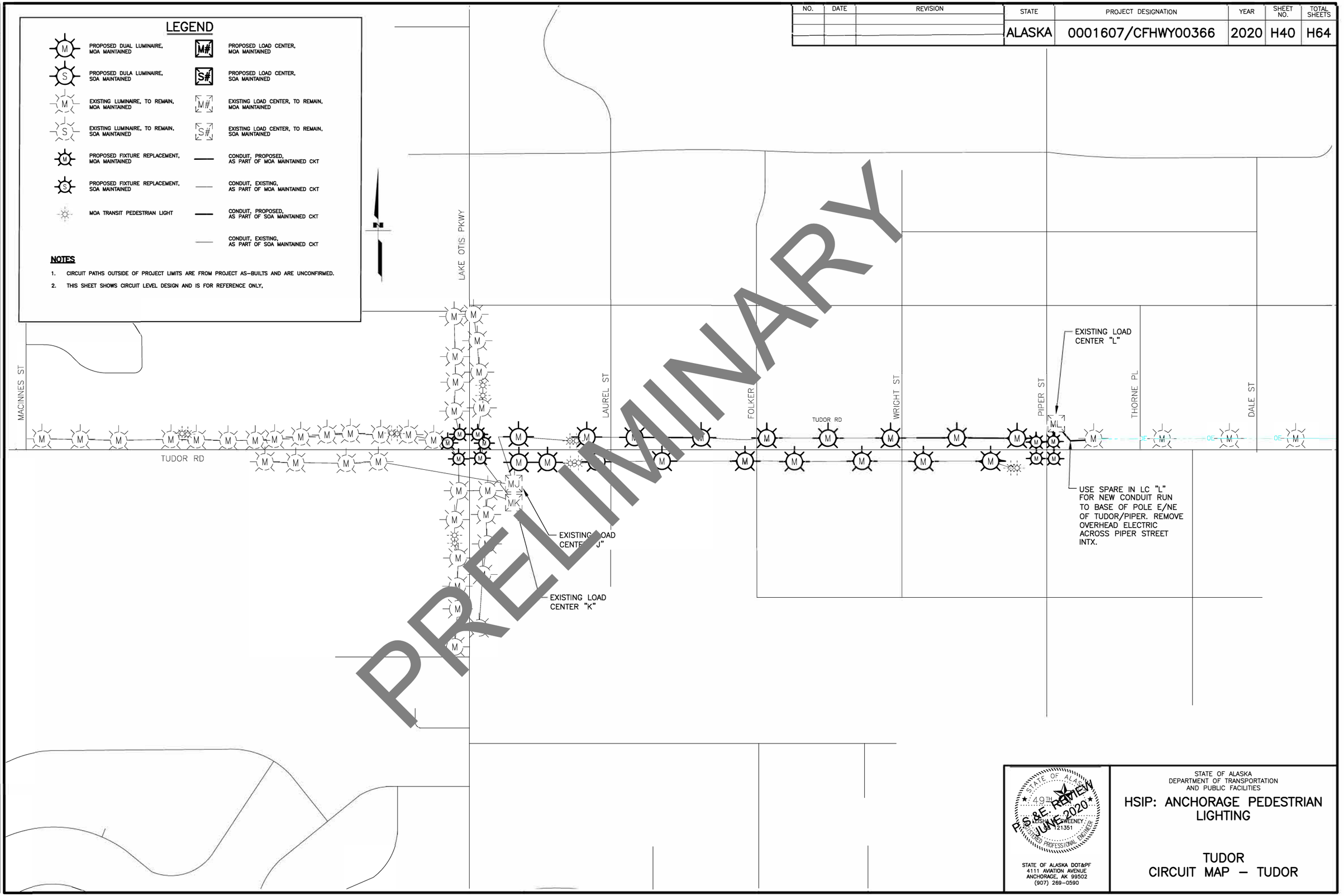
DRAWING LOCATION
C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CIV3D19\TRAFFIC\00366 CIRCUIT MAP.DWG

LEGEND

PROPOSED DUAL LUMINAIRE, MOA MAINTAINED	PROPOSED LOAD CENTER, MOA MAINTAINED
PROPOSED DULA LUMINAIRE, SOA MAINTAINED	PROPOSED LOAD CENTER, SOA MAINTAINED
EXISTING LUMINAIRE, TO REMAIN, MOA MAINTAINED	EXISTING LOAD CENTER, TO REMAIN, MOA MAINTAINED
EXISTING LUMINAIRE, TO REMAIN, SOA MAINTAINED	EXISTING LOAD CENTER, TO REMAIN, SOA MAINTAINED
PROPOSED FIXTURE REPLACEMENT, MOA MAINTAINED	CONDUIT, PROPOSED, AS PART OF MOA MAINTAINED CKT
PROPOSED FIXTURE REPLACEMENT, SOA MAINTAINED	CONDUIT, EXISTING, AS PART OF MOA MAINTAINED CKT
MOA TRANSIT PEDESTRIAN LIGHT	CONDUIT, PROPOSED, AS PART OF SOA MAINTAINED CKT
	CONDUIT, EXISTING, AS PART OF SOA MAINTAINED CKT

NOTES

1. CIRCUIT PATHS OUTSIDE OF PROJECT LIMITS ARE FROM PROJECT AS-BUILTS AND ARE UNCONFIRMED.
2. THIS SHEET SHOWS CIRCUIT LEVEL DESIGN AND IS FOR REFERENCE ONLY.



STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
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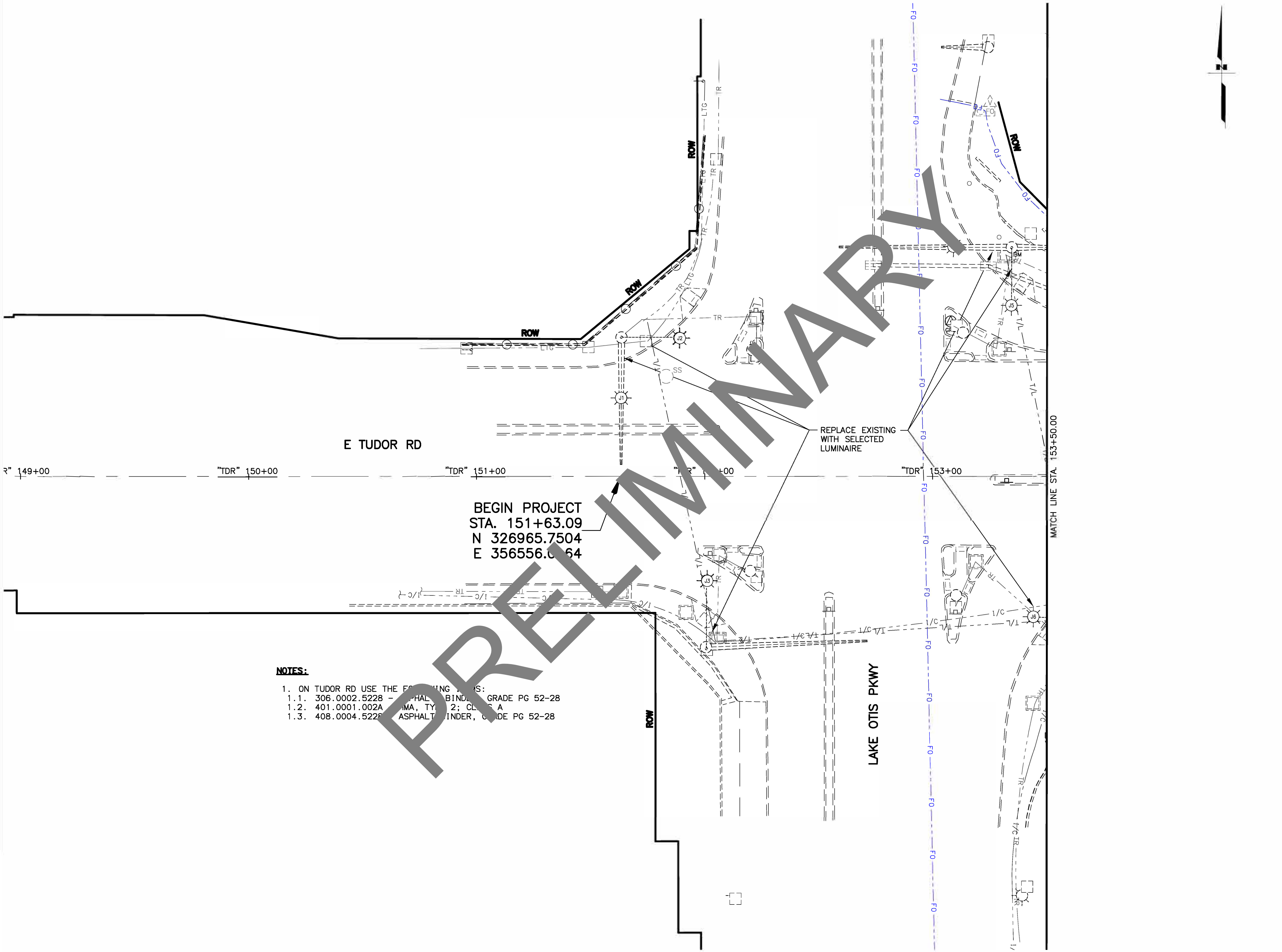
(907) 269-0590

P,S&E REVIEW JUNE 2020

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

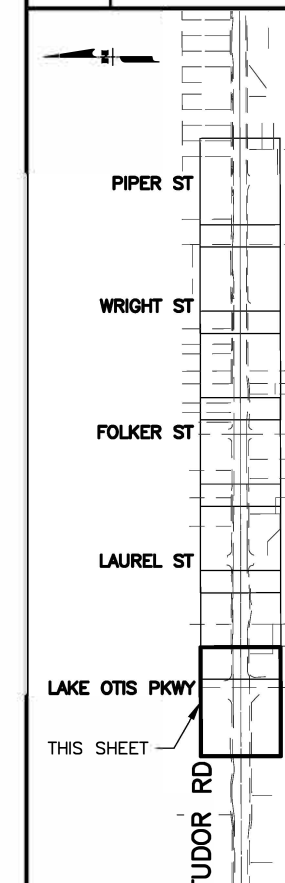
HSIP: ANCHORAGE PEDESTRIAN LIGHTING

TUDOR
CIRCUIT MAP – TUDOR



NOTES:

1. ON TUDOR RD USE THE F[illegible]ING [illegible]S:
   1.1. 306.0002.5228 - [illegible]HAL[illegible] BINDE[illegible] GRADE PG 52-28
   1.2. 401.0001.002A [illegible]MA, TY[illegible] 2; CL[illegible] A
   1.3. 408.0004.522[illegible] ASPHALT [illegible]INDER, [illegible]DE PG 52-28



SHEET NO.	TOTAL SHEETS
H41	H64
STATE	YEAR
ALASKA	2020

PROJECT DESIGNATION

0001607/
CFHWY00366

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

P.S.&E. REVIEW JUNE 2020

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
(907) 269-0590

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE
PEDESTRIAN LIGHTING

SIGNING, STRIPING, AND
ILLUMINATION:
B.O.P. TO
"TDR" STA 153+50

DRAWING LOCATION
C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CIV3D19\PLANSET\H_SHEETS\H-PLANVIEWS.DWG

DATE	TIME	SCALE	DESIGNED BY	CHECKED BY	DRAFTED BY
6/24/2020	8:46 PM	1:20	ZJH	LAS	MF

DRAWING LOCATION
C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CIV3D19\PLANSET\H_SHEETS\H-PLANVIEWS.DWG

DESIGNED BY	CHECKED BY	DRAFTED BY
ZJH	LAS	MF

SCALE	DATE	TIME
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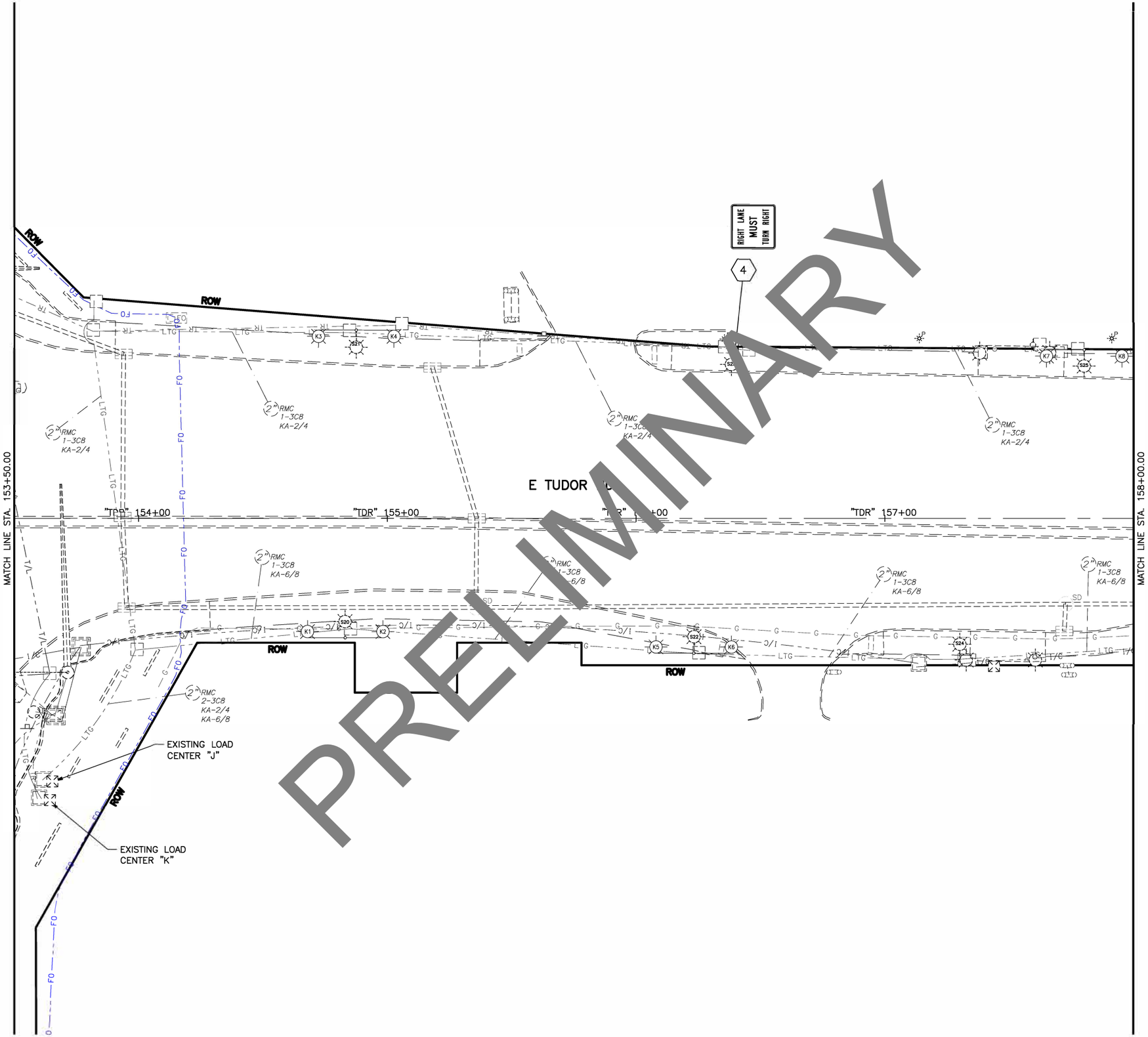
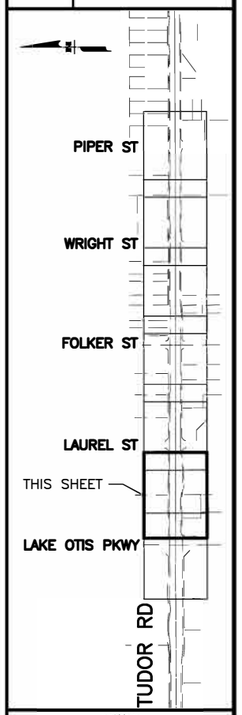


SHEET NO.	TOTAL SHEETS
H42	H64
STATE	YEAR
ALASKA	2020

PROJECT DESIGNATION

0001607/
CFHWY00366

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



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(907) 269-0590

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

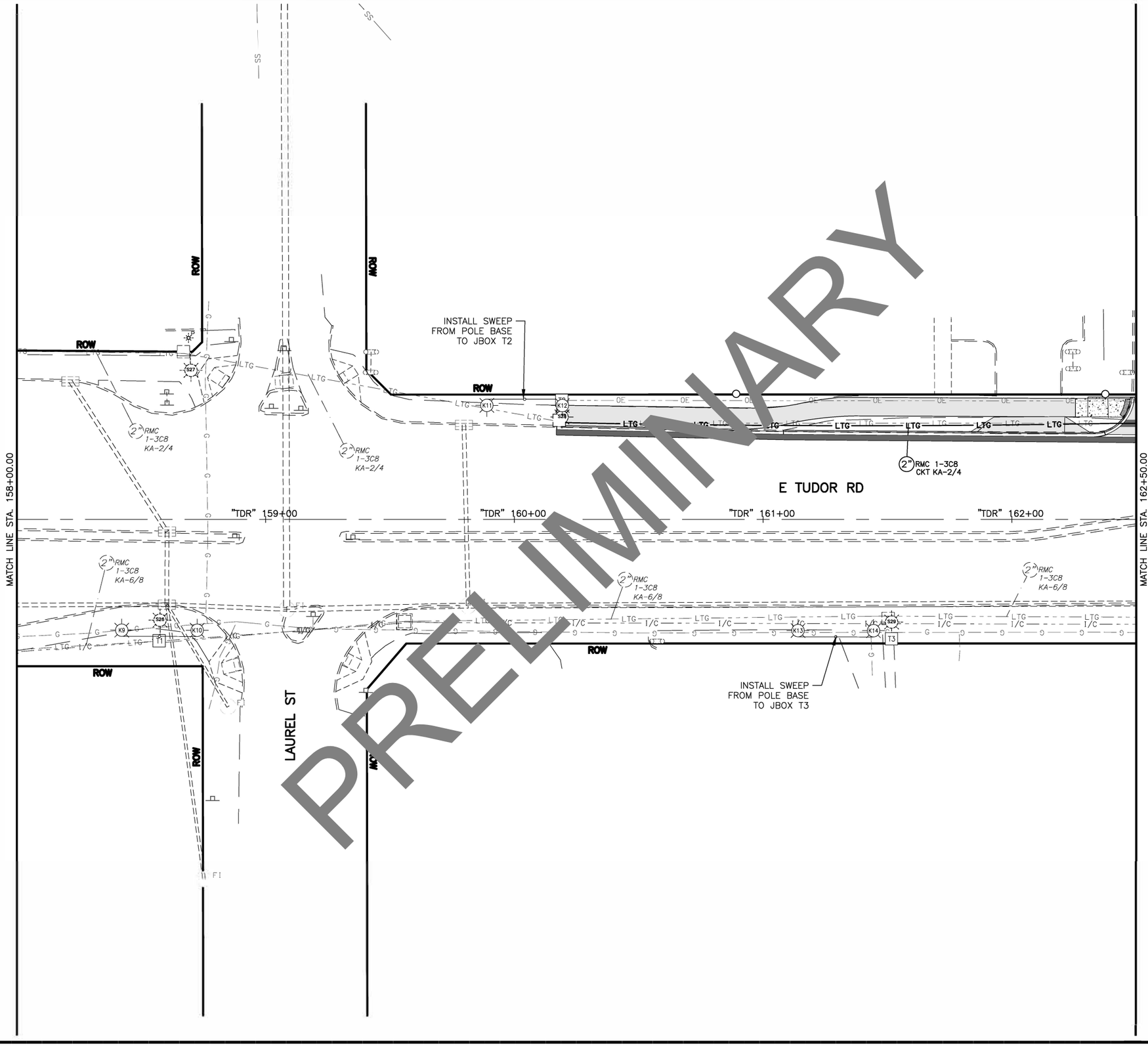
SIGNING, STRIPING, AND ILLUMINATION:
"TDR" STA 153+50 TO
"TDR" STA 158+00

DRAWING LOCATION
C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CIV3D19\PLANSET\H_SHEETS\H-PLANVIEWS.DWG

DESIGNED BY	ZJH
CHECKED BY	LAS
DRAFTED BY	MF

SCALE: ####

DATE: 6/24/2020 TIME: 8:46 PM

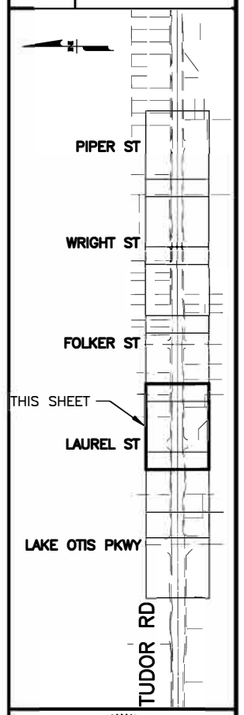


PRELIMINARY

SHEET NO.	TOTAL SHEETS
H43	H64
STATE	YEAR
ALASKA	2020

PROJECT DESIGNATION
0001607/
CFHWY00366

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



STATE OF ALASKA
49TH
P.E. REVIEW
JUNE 2020
REGISTERED PROFESSIONAL ENGINEER

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
(907) 269-0590

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

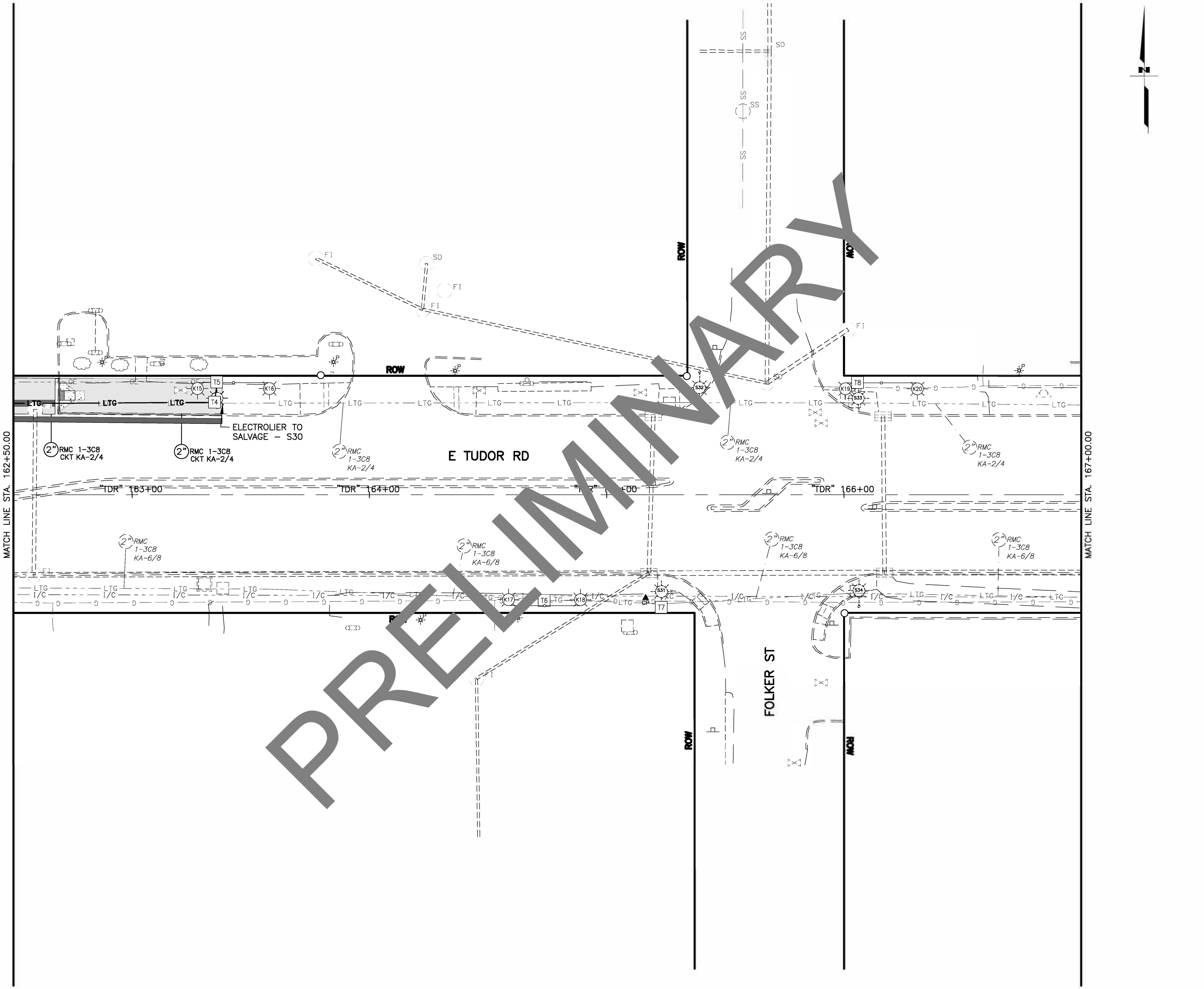
SIGNING, STRIPING, AND ILLUMINATION:
"TDR" STA 158+00 TO
"TDR" STA 162+50

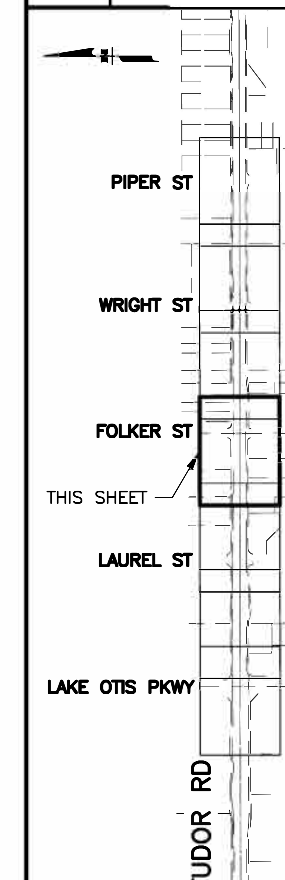
SHEET NO.	TOTAL SHEETS
H44	H64
STATE	YEAR
ALASKA	2020

PROJECT DESIGNATION

0001607/
CFHWY00366

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





P.S.&E. REVIEW JUNE 2020

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
(907) 269-0590

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE
PEDESTRIAN LIGHTING

SIGNING, STRIPING, AND
ILLUMINATION:
"TDR" STA 162+50 TO
"TDR" STA 167+00

DATE	TIME	SCALE	DESIGNED BY	ZJH
6/24/2020	8:46 PM	1:20	CHECKED BY	LAS
			DRAFTED BY	MF

DRAWING LOCATION
C:\USERS\ZJHARTMAN\ONEDRIVE – STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CIV3D19\PLANSET\H_SHEETS\H-PLANVIEWS.DWG

DESIGNED BY: ZJH
CHECKED BY: LAS
DRAFTED BY: MF

SCALE: 1:20

DATE: 6/24/2020
TIME: 8:46 PM

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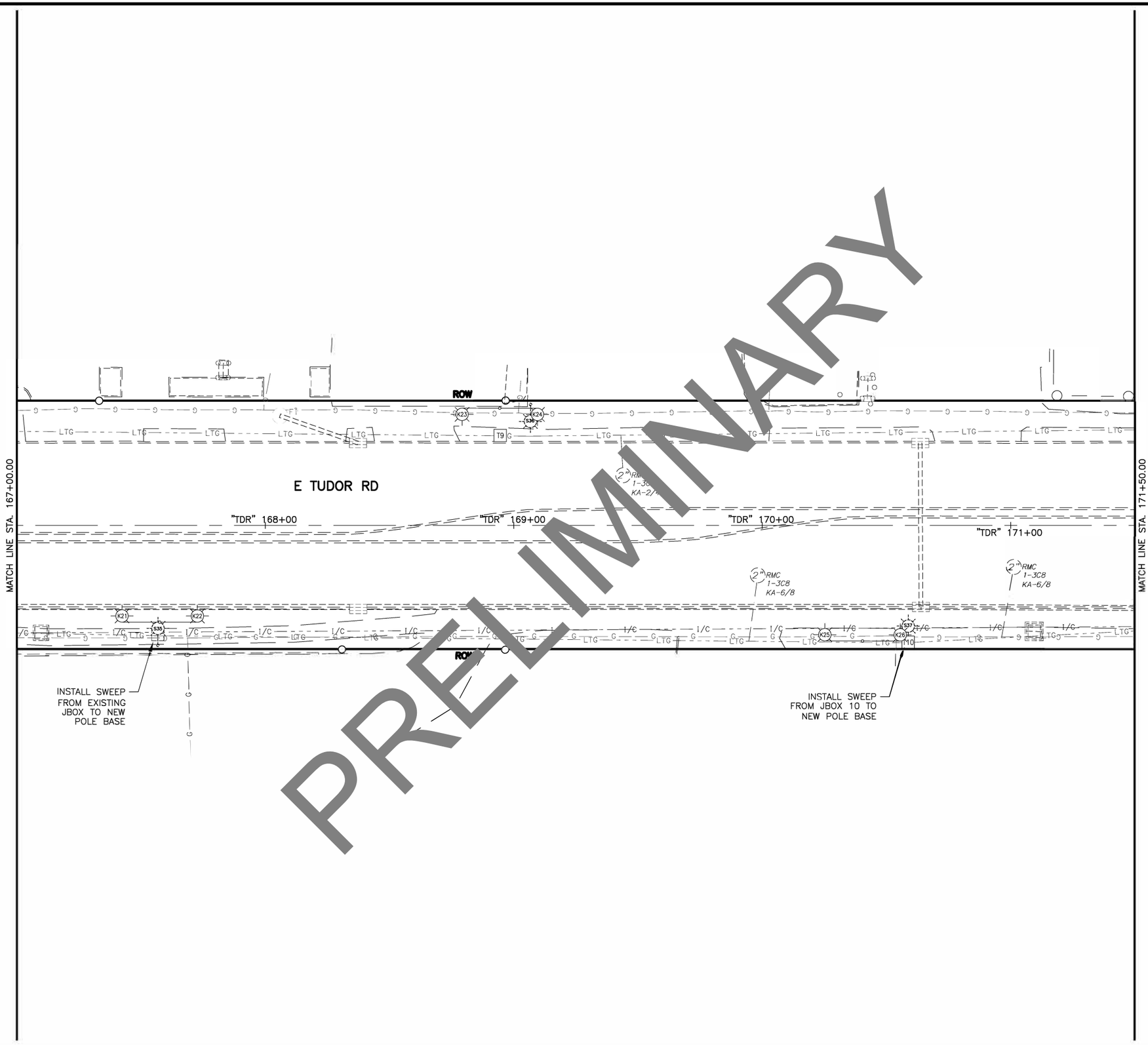
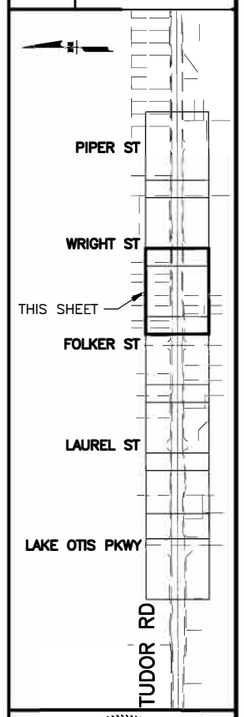
C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CIV3D19\PLANSET\H_SHEETS\H-PLANVIEWS.DWG



SHEET NO.	TOTAL SHEETS
H45	H64
STATE	YEAR
ALASKA	2020

PROJECT DESIGNATION
0001607/
CFHWY00366

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



STATE OF ALASKA
49TH
P.S.&E. REVIEW
JUNE 2020
REGISTERED PROFESSIONAL ENGINEER

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
(907) 269-0590

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

SIGNING, STRIPING, AND ILLUMINATION:
"TDR" STA 167+00 TO
"TDR" STA 171+50

DESIGNED BY: ZJH
CHECKED BY: LAS
DRAFTED BY: MF

SCALE: 1:20

DATE: 6/24/2020
TIME: 8:46 PM

DRAWING LOCATION
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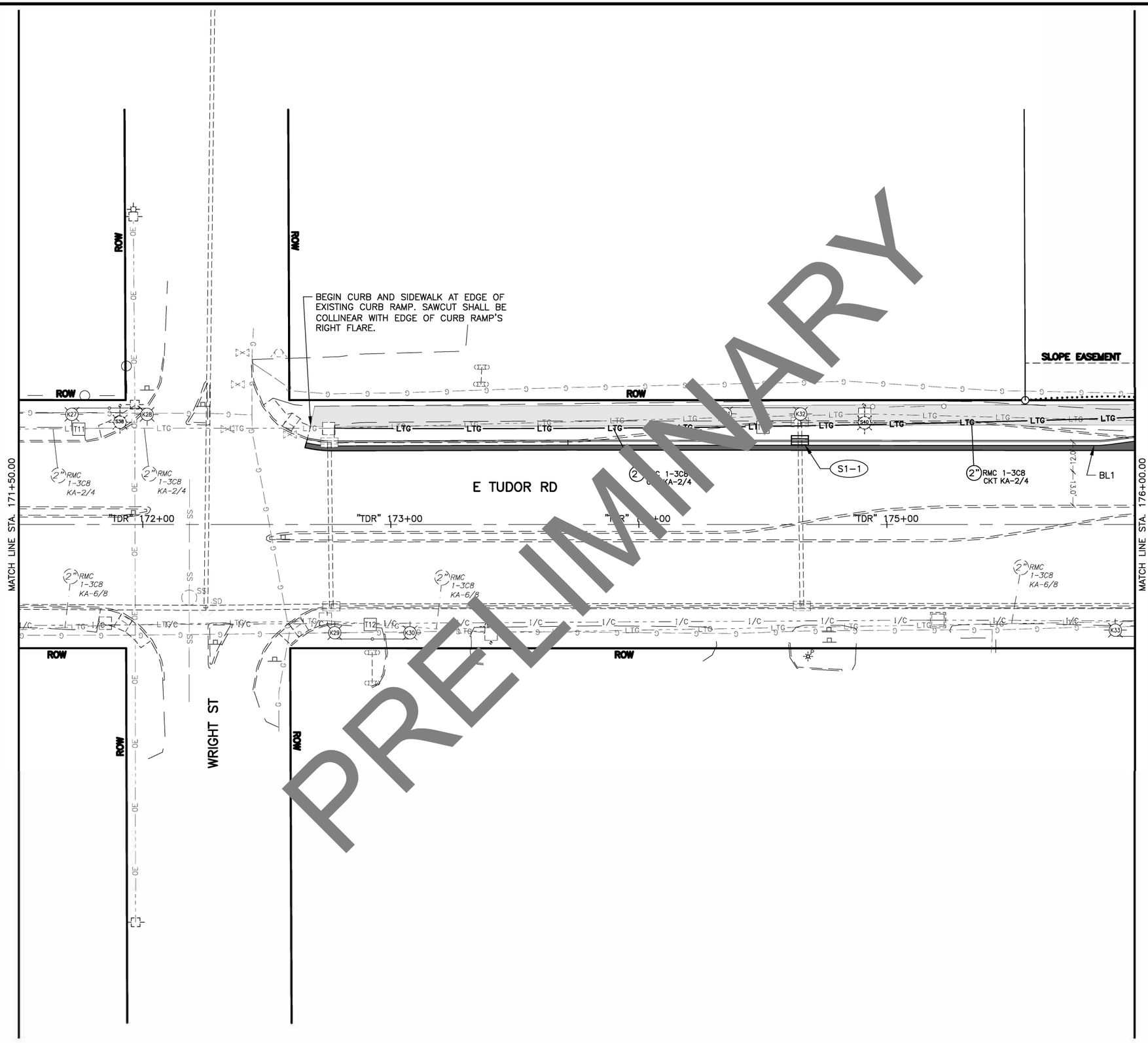

SHEET NO.	TOTAL SHEETS
H46	H64
STATE	YEAR
ALASKA	2020

PROJECT DESIGNATION
0001607/
CFHWY00366

NO.	REVISION
DATE	
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DATE	
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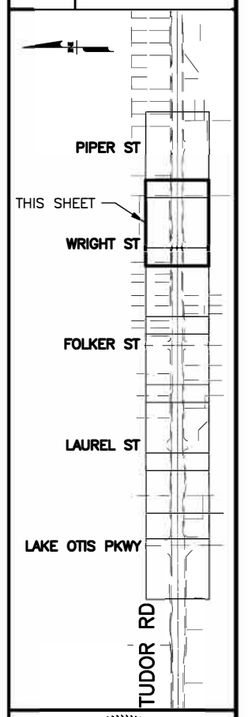
DATE	



STATE OF ALASKA DOT&PF
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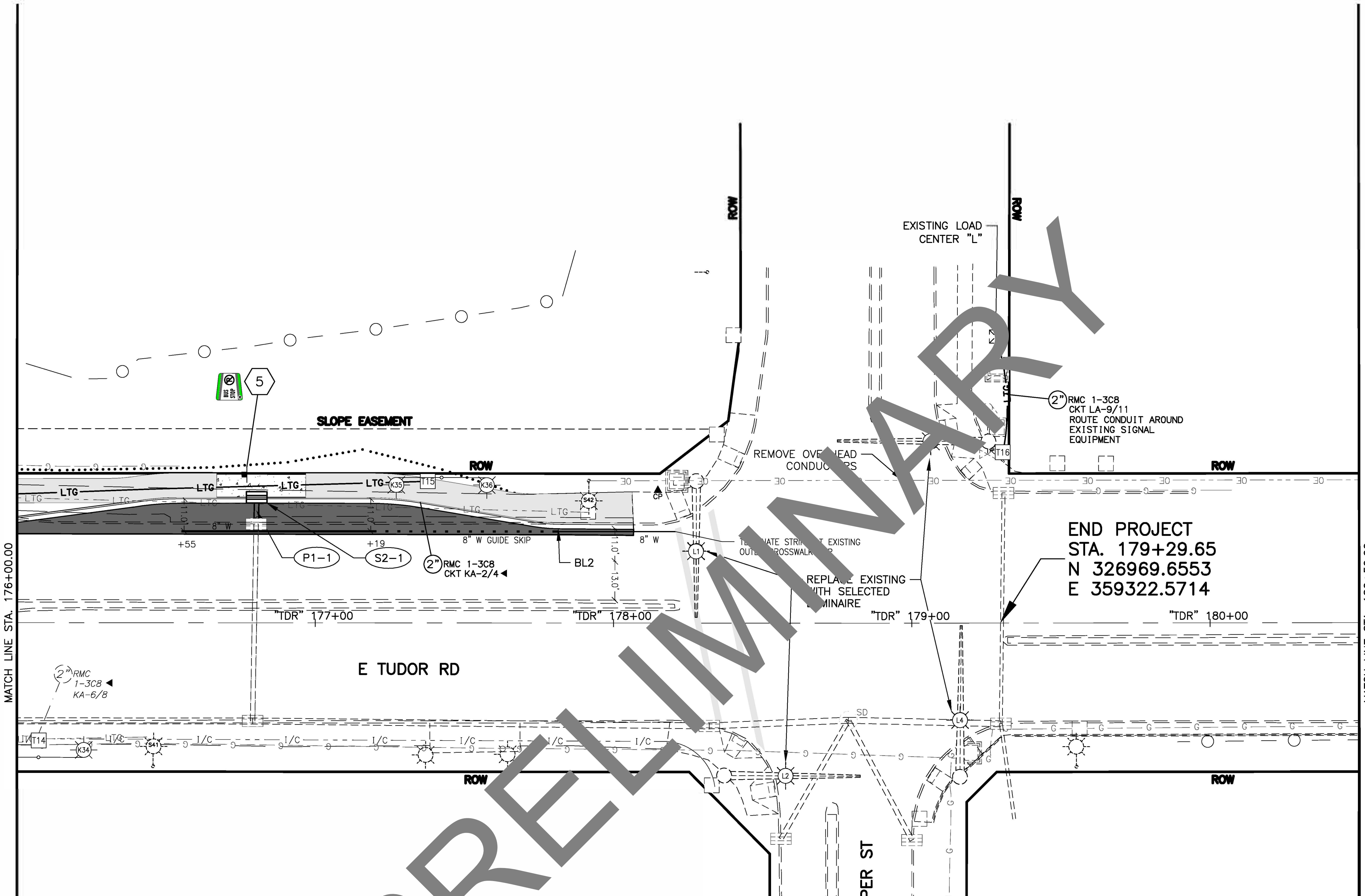
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

SIGNING, STRIPING, AND ILLUMINATION:
"TDR" STA 171+50 TO "TDR" STA 176+00



BUS LAYOUT REFERENCE TABLE			
POINT	STATION	OFFSET (FT)	REMARKS
BL1	TDR 175+83.5	31.8 LT	
BL2	TDR 177+81.5	31.6 LT	

PRELIMINARY

NOTES:

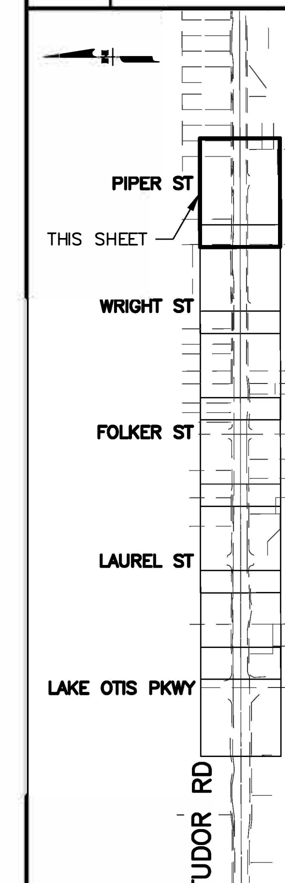
1. COORDINATE WITH MOA STREET LIGHT MAINTENANCE THROUGH THE PROJECT ENGINEER TO CONNECT STREET LIGHTING ON THE NORTH SIDE OF TUDOR RD AND EAST OF PIPER ST TO THE INSTALLED BREAKER IN LC "L". SEE EXISTING LOAD CENTER "L" SUMMARY.

SHEET NO.	TOTAL SHEETS
H47	H64
STATE	YEAR
ALASKA	2020

PROJECT DESIGNATION

0001607/
CFHWY00366

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



STATE OF ALASKA · 49TH · REGISTERED PROFESSIONAL ENGINEER
P.S.&E. REVIEW JUNE 2020

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
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PEDESTRIAN LIGHTING

SIGNING, STRIPING, AND
ILLUMINATION:
"TDR" STA 176+00 TO
E.O.P.

DATE	TIME	SCALE	DESIGNED BY	ZJH
6/24/2020	8:46 PM	####	CHECKED BY	LAS
			DRAFTED BY	MF

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NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	H48	H64

ELECTROLIER SCHEDULE (660.0003.0000)

POLE NO.	STATION ALIGNMENT	OFFSET	LUMINAIRE	MOUNTING HEIGHT (FT)	SHAFT LENGTH (FT)	MASTARM LENGTH (FT)	REMARKS	MAINTAINING AGENCY
K-1,2	"TDR" 154+83.0	48.0' RT	ROADWAY	50'	46	15'	LONGHORN POLE, H11. USE EXISTING FOUNDATION WITH NEW ANCHOR RODS	MOA
K-3,4	"TDR" 154+87.5	75.6' LT	ROADWAY	50'	45	15'	LONGHORN POLE, H11. USE EXISTING FOUNDATION WITH NEW ANCHOR RODS	MOA
K-5,6	"TDR" 156+23.2	54.1' RT	ROADWAY	50'	46	15'	LONGHORN POLE, H11. USE EXISTING FOUNDATION WITH NEW ANCHOR RODS	MOA
K-7,8	"TDR" 157+80.1	67.7' LT	ROADWAY	50'	45	15'	LONGHORN POLE, H11. USE EXISTING FOUNDATION WITH NEW ANCHOR RODS	MOA
K-9,10	"TDR" 158+57.2	47.0' RT	ROADWAY	50'	45	15'	LONGHORN POLE, H11. USE EXISTING FOUNDATION WITH NEW ANCHOR RODS	MOA
K-11,12	"TDR" 160+04.0	48.3' LT	ROADWAY	50'	45	15'	LONGHORN POLE - SEE H11	MOA
K-13,14	"TDR" 161+29.2	47.2' RT	ROADWAY	50'	47	15'	LONGHORN POLE - SEE H11	MOA
K-15,16	"TDR" 163+427	47.3' LT	ROADWAY	50'	45	15'	LONGHORN POLE - SEE H11	MOA
K-17,18	"TDR" 164+73.6	46.8' RT	ROADWAY	50'	45	15'	LONGHORN POLE - SEE H11	MOA
K-19,20	"TDR" 166+15.8	47.2' LT	ROADWAY	50'	45	15'	LONGHORN POLE - SEE H11	MOA
K-21,22	"TDR" 167+57.5	38.9' RT	ROADWAY	50'	46	15'	LONGHORN POLE - SEE H11	MOA
K-23,24	"TDR" 168+94.4	47.2' LT	ROADWAY	50'	45	15'	LONGHORN POLE - SEE H11	MOA
K-25,26	"TDR" 170+40.4	46.5' RT	ROADWAY	50'	45	15'	LONGHORN POLE - SEE H11	MOA
K-27,28	"TDR" 171+86.6	46.9' LT	ROADWAY	50'	45	15'	LONGHORN POLE - SEE H11	MOA
K-29,30	"TDR" 172+92.6	46.2' RT	ROADWAY	50'	46	15'	LONGHORN POLE - SEE H11	MOA
K-31,32	"TDR" 174+50.0	47.1' LT	ROADWAY	50'	46	15'	LONGHORN POLE - SEE H11	MOA
K-33,34	"TDR" 176+07.3	45.1' RT	ROADWAY	50'	46	15'	LONGHORN POLE - SEE H11	MOA
K-35,36	"TDR" 177+42.3	48.6' LT	ROADWAY	50'	45	15'	LONGHORN POLE - SEE H11	MOA

REPLACE LUMINAIRE FIXTURE ON EXISTING POLE (660.0003.0000)

CROSSROAD	FIXTURE	STATION ALIGNMENT	OFFSET	NUMBER OF FIXTURES	LUMINAIRE	LOAD CENTER
LAKE OTIS	J1 & J2	"TDR" 151+63.5	60.9' LT	2	INTERSECTION	J
	J3	"TDR" 152+00.1	74.8' RT	1	INTERSECTION	J
	J4 & J5	"TDR" 153+34.4	100.3' LT	2	INTERSECTION	J
	J6	"TDR" 153+71.6	61.8' RT	1	INTERSECTION	J
PIPER	L1	"TDR" 178+27.6	47.5' LT	1	INTERSECTION	L
	L2	"TDR" 178+37.2	51.1' RT	1	INTERSECTION	L
	L3	"TDR" 179+16.0	51.6' RT	1	INTERSECTION	L
	L4	"TDR" 179+25.7	60.9' LT	1	INTERSECTION	L

SALVAGE ELECTROLIER SCHEDULE (660.0003.0000)

POLE NO.	STATION ALIGNMENT	OFFSET	POLE TYPE	BASE TYPE	SHAFT LENGTH (FT)	MASTARM LENGTH (FT)	REMARKS	MAINTAINING AGENCY
S20	"TDR" 154+83.1	47.9' RT	ELECTORLIER	FRANGIBLE	40	22	RE-USE FOUNDATION	MOA
S21	"TDR" 154+87.5	75.6' LT	ELECTORLIER	FRANGIBLE	40	22	RE-USE FOUNDATION	MOA
S22	"TDR" 156+23.2	54.1' RT	ELECTORLIER	FRANGIBLE	40	22	RE-USE FOUNDATION	MOA
S23	"TDR" 156+38.3	68.5' LT	ELECTORLIER	FRANGIBLE	40	22	ABANDON FOUNDATION	MOA
S24	"TDR" 157+30.1	57.3' RT	ELECTORLIER	FRANGIBLE	40	22	ABANDON FOUNDATION	MOA
S25	"TDR" 157+80.1	67.7' LT	ELECTORLIER	FRANGIBLE	40	22	RE-USE FOUNDATION	MOA
S26	"TDR" 158+57.6	47.2'RT	ELECTORLIER	FRANGIBLE	40	22	RE-USE FOUNDATION	MOA
S27	"TDR" 158+69.7	66.7' LT	ELECTORLIER	FRANGIBLE	40	22	ABANDON FOUNDATION	MOA
S28	"TDR" 160+19.1	47.8' LT	ELECTORLIER	SLIP BASE	35	15	DEMO FOUNDATION PER DETAIL H6	MOA
S29	"TDR" 161+51.6	48.0' RT	ELECTORLIER	SLIP BASE	35	15	DEMO FOUNDATION PER DETAIL H6	MOA
S30	"TDR" 163+35.7	47.44' LT	ELECTORLIER	SLIP BASE	35	15	DEMO FOUNDATION PER DETAIL H6	MOA
S31	"TDR" 165+23.6	43.7' RT	ELECTORLIER	SLIP BASE	35	15	DEMO FOUNDATION PER DETAIL H6	MOA
S32	"TDR" 165+39.1	51.8' LT	ELECTORLIER	SLIP BASE	35	15	ABANDON FOUNDATION	MOA
S33	"TDR" 166+06.0	47.2' LT	ELECTORLIER	SLIP BASE	35	15	DEMO FOUNDATION PER DETAIL H6	MOA
S34	"TDR" 166+06.3	47.1' RT	ELECTORLIER	SLIP BASE	35	15	ABANDON FOUNDATION	MOA
S35	"TDR" 167+56.7	48.2' RT	ELECTORLIER	SLIP BASE	35	15	ABANDON FOUNDATION	MOA
S36	"TDR" 169+06.7	48.6' LT	ELECTORLIER	SLIP BASE	35	15	ABANDON FOUNDATION	MOA
S37	"TDR" 170+58.7	46.9' RT	ELECTORLIER	SLIP BASE	35	15	DEMO FOUNDATION PER DETAIL H6	MOA
S38	"TDR" 171+90.80	47.9' LT	ELECTORLIER	SLIP BASE	35	15	ABANDON FOUNDATION	MOA
S39	"TDR" 173+40.3	47.7' RT	ELECTORLIER	SLIP BASE	35	15	ABANDON FOUNDATION	MOA
S40	"TDR" 174+91.0	47.5' LT	ELECTORLIER	SLIP BASE	35	15	REMOVE FOUNDATION	MOA
S41	"TDR" 176+45.6	48.1' RT	ELECTORLIER	SLIP BASE	35	15	ABANDON FOUNDATION	MOA
S42	"TDR" 177+91.7	47.7' LT	ELECTORLIER	SLIP BASE	35	15	REMOVE FOUNDATION	MOA

LUMINAIRE STANDARDS

MANUFACTURER	GE OR APPROVED EQUAL
MODEL	ERL2 - OR APPROVED EQUAL
WATTAGE	278
LIGHT SOURCE	LED
VOLTAGE - ROADWAY	480
VOLTAGE - INTERSECTION	240
PE CONTROL	ANSI C136.41 7 PIN W/ SHORTING CAP
PE SENSOR	YES
MOUN[illegible]	HORIZONTAL
HOUSIN[illegible]ENTRY [illegible]PE	TOOLLESS
F[illegible]URE COL[illegible]	GRAY
IES DIS[illegible]BU[illegible]ON TYPE RO[illegible]Y	TYPE III ASYMMETRICAL (SHORT)
[illegible]ES DISTRIBU[illegible]ON TYPE INTERSECT[illegible]	TYPE IV ASYMMETRICAL (FORWARD)
PO[illegible]FACTOR	>0.90
[illegible]OL LIS[illegible]D	YES
DR[illegible] CURRENT - ROADWAY	0.58A
[illegible]RIVE [illegible]RRENT INTERSECTION II	1.16A
CCI	3000K
CRI	MINIMUM 70
INITIAL LUMENS	28800

JUNCTION BOX SCHEDULE (660.0003.0000)

J-BOX	STATION ALIGNMENT	OFFSET	SALVAGE	NEW	TYPE
T1	"TDR" 158+57.3	48.8' RT		X	IA
T2	"TDR" 160+19.1	47.81' LT		X	IA
T3	"TDR" 161+51.6	48.0' RT		X	IA
T4	"TDR" 163+34.7	39.0' LT	X	X	IA
T5	"TDR" 163+35.7	47.5' LT		X	IA
T6	"TDR" 164+73.6	44.6' RT		X	1A
T7	"TDR" 165+23.0	47.5' RT		X	IA
T8	"TDR" 166+05.8	47.3' LT		X	IA
T9	"TDR" 168+94.6	36.1' LT		X	IA
T10	"TDR" 170+58.7	46.9' RT		X	IA
T11	"TDR" 171+74.3	38.4' LT		X	IA
T12	"TDR" 172+91.8	40.4' RT		X	IA
T13	"TDR" 174+50.0	39.3' LT		X	IA
T14	"TDR" 176+07.4	39.4' RT		X	IA
EXISTING	"TDR" 176+45.5	48.6' RT	X		IA
T15	"TDR" 177+37.8	47.5' LT		X	IA
EXISTING	"TDR" 177+91.7	47.7' LT	X		IA
T16	"TDR" 179+30.6	57.2' LT		X	1A

LUMINAIRE PERFORMANCE CRITERIA

INTERSECTION	
CHARACTERISTICS	
PAVEMENT TYPE	R3
ROADWAY LIGHTING STANDARD	IESNA RP-8-2014
FUNCTIONAL CLASSIFICATION	MAJOR/MAJOR
PEDESTRIAN AREA CLASSIFICATION	HIGH
IES FILE FOR ROADWAY LIGHTING	ERL2_30D330_____.IES
LUMINAIRE	
LAMP DESCRIPTION	GE ERL2 ROADWAY LIGHT
LIGHT LOSS FACTOR	0.85
LIGHT DISTRIBUTION	TYPE IV
ILLUMINANCE CRITERIA	
AVERAGE MAINTAINED ILLUMINATION (fc)	3.39
AVERAGE UNIFORMITY RATIO (AVG/MIN)	2.87
ROADWAY	
CHARACTERISTICS	
ROADWAY	4 LANE DIVIDED
LANE WIDTH (FT)	12 TO 14
MEDIAN WIDTH (FT)	4 TO 15
NUMBER OF LANES	2 TO 3
PAVEMENT TYPE	R3
ROADWAY LIGHTING STANDARD	IESNA RP-8-2014
FUNCTIONAL CLASSIFICATION	MAJOR
PEDESTRIAN AREA CLASSIFICATION	HIGH
IES FILE FOR ROADWAY LIGHTING	ERL2_30C330_____.IES
LUMINAIRE	
LAMP DESCRIPTION	GE ERL2 ROADWAY LIGHT
LIGHT LOSS FACTOR	0.85
LIGHT DISTRIBUTION	TYPE III
ILLUMINANCE CRITERIA	
AVERAGE LUMINANCE (cd/m^2)	1.88
MINIMUM ROADWAY LUMINANCE (cd/m^2)	1.29
AVERAGE UNIFORMITY RATIO (AVG/MIN)	1.46
MAX UNIFORMITY RATIO (MAX/MIN)	3.08
MAX VEILING LUMINANCE RATIO (LV-MAX/AVG)	0.32
SIDEWALK	
CHARACTERISTICS	
ROADWAY LIGHTING STANDARD	IESNA RP-8-2014
SIDEWALK WIDTH (FT)	8
CONFLICT CLASSIFICATION	HIGH
LUMINAIRE	
LAMP DESCRIPTION	GE ERL2 ROADWAY LIGHT
LIGHT LOSS FACTOR	0.85
ILLUMINANCE CRITERIA	
AVERAGE MAINTAINED ILLUMINATION (fc)	2.98
MINIMUM ILLUMINATION (fc)	0.62

STATE OF ALASKA DOT&PF
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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

LIGHTING SCHEDULE – TUDOR

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF
SCALE N/A
DATE 6/24/2020 TIME 8:46 PM
DRAWING LOCATION
C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSP ANCH PED LIGHTING\CIV2019\PLANSET\H_SHEETS\H-LIGHTINGSCHEDULESDWG

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	H49	H64

DESIGNED BY ZJH
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SCALE N/A
DATE 6/24/2020 TIME 8:46 PM
DRAWING LOCATION C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\DV3D19\PLANSET\H_SHEETS\H-LIGHTINGSCHEDULES.DWG

SUMMARY OF EXISTING LOAD CENTER "J"

LOAD CENTER TYPE:	TYPE 1A
MAINTAINED BY:	MUNICIPALITY OF ANCHORAGE (MOA)
SERVING UTILITY:	CHUGACH ELECTRIC ASSOCIATION (CEA)
SERVICE CONDUIT TYPE:	RMC & PVC
LOCATION DATA (61.180534°, -149.837540°)	
LOAD CENTER:	TUDOR RD & LAKE OTIS PARKWAY, SE
POWER SOURCE:	EXISTING CEA SERVICE TRANSFORMER (25 kVA)
PHOTOELECTRIC CONTROL:	EXISTING AT LOAD CENTER
SERVICE VOLTAGE:	120/240V 1-PHASE, 3-WIRE WITH GROUNDED NEUTRAL
PROVIDE METER SOCKET	EXISTING
PANEL A MAIN SERVICE DISCONNECT	240V, 100A
CONTACTOR:	EXISTING 8-POLE
AIC RATING:	10 kAIC @ 240V

PANEL A - 120/240 VAC

POLE	AMP TRIP	DESCRIPTION	POLE KVA	Aφ	Bφ	POLE KVA	DESCRIPTION	AMP TRIP	POLE
1	20/2	*INTXL**	0.84	0.94		0.1	*CONTROL*	15/2	2
3			0.84		0.94	0.1			4
5	60/1	*TRAFFIC SIG. CABINET*	3.6	4.25		0.65	*LAKE OTIS LTG - SE**	30/2	6
7	30/2	*LAKE OTIS LTG - SW**	0.78	1	1.43	0.65			8
9			0.78	.41		0.63	*LAKE OTIS LTG - NE**	30/2	10
11	30/2	*LAKE OTIS LTG - NW**	0.88	0	1.51	0.63			12
13			0.88	.88		0	*SPARE*	20/2	14
15	20/2	*SPARE*	0		0	0			16
17			0	0		-	*SPACE*	-	18
		* CIRCUIT THROUGH CONTACTOR ITALIC = EXISTING		7.48	3.88		PANEL A TOTAL kVA		11.36
							PANEL A AMPS AT 480V		47.3

ONLY MODIFCATIONS TO LOAD CENTER "J" ARE A CHANGE IN LOAD FOR EXISTING CIRCUIT JA-1/3.

SUMMARY OF EXISTING LOAD CENTER "K"

LOAD CENTER TYPE:	TYPE 1A
MAINTAINED BY:	MUNICIPALITY OF ANCHORAGE (MOA)
SERVING UTILITY:	CHUGACH ELECTRIC ASSOCIATION (CEA)
SERVICE CONDUIT TYPE:	RMC & PVC
LOCATION DATA (61.180555°, -149.837529°)	
LOAD CENTER:	TUDOR RD & LAKE OTIS PKWY SE
POWER SOURCE:	EXISTING CEA SERVICE TRANSFORMER (25 kVA)
PHOTOELECTRIC CONTROL:	EXISTING AT LOAD CENTER
SERVICE VOLTAGE:	240/480V 1-PHASE, 3-WIRE W[illegible] GROUNDED NEUTRAL
PROVIDE METER SOCKET	EXISTING
PANEL A MAIN SERVICE DISCONNECT	48[illegible]A
CONTACTOR:	EXISTING 8-POLE
AIC RATING:	[illegible]kAIC

PANEL A - 240/480 VAC

POLE	AMP TRIP	DESCRIPTION	POLE KVA	Aφ	Bφ	POLE KVA	DESCRIPTION	AMP TRIP	POLE
1	30/2	*TUDOR LTG - NW**	3.8	6.[illegible]		2.51	*TUDOR LTG - NE**	30/2	2
3			3.8		6.[illegible]	2.[illegible]			4
5	30/2	*TUDOR LTG - SW**		3.23		2.23	*TUDOR LTG - SE**	30/2	6
7			1		23	2.23			8
9	30/2	*SPARE*	0	[illegible]		0	*SPARE*	30/2	10
11					0	0			12
13	30/2	*SPARE*	0	0.1		0.1	*CONTROL*	15/1	14
15			0		0	0	*SPACE*	-	16
17	-	*SPACE*		-		-	*SPACE*	-	18
		* CIRCUIT THROUGH CONTACTOR		9.64	9.54		PANEL A TOTAL kVA		19.18
							PANEL A AMPS AT 480V		40.0

ONLY MODIFICATIONS TO LOAD CENTER "K" ARE CHANGES IN LOAD FOR CIRCUITS KA-2/4 AND KA-6/8

LOAD CENTER "J" & "K" NOTES

1. CONTRACTOR SHALL VERIFY CHARACTERISTICS OF ALL EXISTING COMPONENTS THAT ARE TO REMAIN IN SERVICE PRIOR TO BEGINNING ANY WORK AT THE LOAD CENTER. CONTRACTOR SHALL PROVIDE AS-BUILT REDLINES OF THIS PANEL TO THE PROJECT ENGINEER.

SHORT CIRCUIT CALCULATION - LC "J"

240V, POWER FACTOR = 0.90, SERVICE LATERAL CONSISTS OF ONE ALUMINUM CONDUCTOR PER PHASE IN RMC & PVC

TRANSFORMER RATING	25kVA
VOLTAGE	120/240 VAC SECONDARY
TRANSFORMER IMPEDANCE	1.2% MINIMUM
TRANSFORMER LET-THRU SHORT CIRCUIT CURRENT (INFINITE BUS)	8,681 A
LENGTH TO FAULT	25 FT TOTAL
SERVICE CONDUCTOR SIZE	1/0 AWG (AL)
SERVICE CONDUIT	RMC & PVC
LINE-LINE FAULT	6.88 [illegible]
DATE CALCULATED	2/3/202[illegible]

SHORT CIRCUIT CALCULATION - LC "K"

480V, POWER [illegible]CTOR = 0.90, SERVICE LATERAL CONSISTS OF ONE ALUMINUM CONDUCTOR PER PHASE IN RMC & PVC

TRANSFORMER RATING	25 kVA
VOLTAGE	240/480 VAC SECONDARY
TRANSFORMER IMPEDANCE	1.2% MINIMUM
TRANSFORMER LET-THRU SHORT CIRCUIT CURRENT (INFINITE BUS)	4,340 A
LENGTH TO FAULT	25 FT TOTAL
SERVICE CONDUCTOR SIZE	1/0 AWG (AL)
SERVICE CONDUIT	RMC & PVC
LINE-LINE FAULT	4.15 kA
DATE CALCULATED	2/3/2020

ARC FLASH AND SHOCK HAZARD RESULTS LC "J" - PANEL A ENCLOSURE

ARC FLASH BOUNDARY	8.7 FT
INCIDENT ENERGY IN CAL/CM^2	21.3
WORKING DISTANCE	18 INCHES
SHOCK HAZARD EXPOSURE	240 VAC
INSULATING GLOVES CLASS	00
SHOCK HAZARD	WHEN COVER REMOVED
LIMITED APPROACH BOUNDARY	3.5 FT
RESTRICTED APPROACH BOUNDARY	1.0 FT
CALCULATED DATE	2/3/2020

ARC FLASH AND SHOCK HAZARD RESULTS LC "K" - PANEL A ENCLOSURE

ARC FLASH BOUNDARY	8.0 FT
INCIDENT ENERGY IN CAL/CM^2	18.7
WORKING DISTANCE	18 INCHES
SHOCK HAZARD EXPOSURE	480 VAC
INSULATING GLOVES CLASS	00
SHOCK HAZARD	WHEN COVER REMOVED
LIMITED APPROACH BOUNDARY	3.5 FT
RESTRICTED APPROACH BOUNDARY	1.0 FT
CALCULATED DATE	2/3/2020

STATE OF ALASKA - 49TH - P.S.&E. REVIEW - JUNE 2020 - JEFFREY C. CARLETON - 13218 - REGISTERED PROFESSIONAL ENGINEER

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ANCHORAGE, AK 99502
(907) 269-0590

STATE OF ALASKA - 49TH - P.S.&E. REVIEW - JUNE 2020 - LISA M. SWEENEY - 21351 - REGISTERED PROFESSIONAL ENGINEER

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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

LOAD CENTER - TUDOR

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0001607/CFHWY00366	2020	H50	H64

SUMMARY OF EXISTING LOAD CENTER "L"

LOAD CENTER TYPE:	TYPE 1A
MAINTAINED BY:	MUNICIPALITY OF ANCHORAGE (MOA)
SERVING UTILITY:	MUNICIPAL LIGHT & POWER (ML&P)
SERVICE CONDUIT TYPE:	RMC & PVC
LOCATION DATA (61.181040°, -149.823026°)	
LOAD CENTER:	TUDOR RD & PIPER ST, NE
POWER SOURCE:	EXISTING ML&P SERVICE TRANSFORMER (50 kVA)
PHOTOELECTRIC CONTROL:	EXISTING AT LOAD CENTER
SERVICE VOLTAGE:	120/240V 1-PHASE, 3-WIRE WITH GROUNDED NEUTRAL
PROVIDE METER SOCKET	EXISTING
PANEL A MAIN SERVICE DISCONNECT	240V, 100A
CONTACTOR:	EXISTING 6-POLE
AIC RATING:	10 kAIC @ 240V

PANEL A - 120/240 VAC

POLE	AMP TRIP	DESCRIPTION	POLE KVA	Aϕ	Bϕ	POLE KVA	DESCRIPTION	AMP TRIP	POLE
1	-	*SPACE*	-	0.1		0.1	*CONTROL*	*15/1*	2
3			-		0	0	*SPARE*	*20/2*	4
5	*20/2*	*INTXL**	0.85	0.85		0			6
7			0.85		2.55	1.7	*TRAFFIC CONTROLLER*	*50/1*	8
9	**20/2**	**TUDOR, N SIDE, E OF PIPER* (FOUR EXISTING HPS; NOTE 2)**	1.0	1.0		-	*SPACE*	-	10
11			1.0		1.0	-	*SPACE*	-	12
		* CIRCUIT THROUGH CONTACTOR ITALIC = EXISTING		1.95	3.55		PANEL A TOTAL kVA		5.5
							PANEL A AMPS AT 480V		22.9

MODIFCATIONS TO LOAD CENTER "L" INCLUDE:
-NEW LOAD TO EXISTING BREAKER IN LA-9/11.
-CHANGE IN LOAD FOR EXISTING CIRCUIT LA-5/7

SHORT CIRCUIT CALCULATION - LC "L"

240V, POWER FACTOR = 0.90, SERVICE LATERAL CONSISTS OF ONE ALUMINUM CONDUCTOR PER PHASE IN RMC & PVC

TRANSFORMER RATING	50kVA
VOLTAGE	120/240 VAC SECONDARY
TRANSFORMER IMPEDANCE	1.2% MINIMUM
TRANSFORMER LET-THRU SHORT CIRCUIT CURRENT (INFINITE BUS)	14,881 A
LENGTH TO FAULT	45 FT TOTAL
SERVICE CONDUCTOR SIZE	1/0 AWG (AL) 325-FT; (AL) 125-FT
SERVICE CONDUIT	RMC PVC
LINE-LINE FAULT	2.38 kA
DATE CALCULATED	2/3/2020

ARC FLASH AND SHOCK HAZARD RESULTS LC "L" - PANEL A ENCLOSURE

ARC FLASH BOUNDARY	5.2 FT
INCIDENT ENERGY IN CAL/CM²	9.3
WORKING DISTANCE	18 INCHES
SHOCK HAZARD EXPOSURE	240 VAC
INSULATING GLOVES CLASS	00
SHOCK HAZARD	WHEN COVER REMOVED
LIMITED APPROACH BOUNDARY	3.5 FT
RESTRICTED APPROACH BOUNDARY	1.0 FT
CALCULATED DATE	2/3/2020

LOAD CENTER "L" NOTES

1. CONTRACTOR SHALL VERIFY CHARACTERISTICS OF ALL EXISTING COMPONENTS THAT ARE TO REMAIN IN SERVICE PRIOR TO BEGINNING ANY WORK AT THE LOAD CENTER. CONTRACTOR SHALL PROVIDE AS-BUILT REDLINES OF THIS PANEL TO THE PROJECT ENGINEER.

2. USE EXISTING 20A, 2P, SPARE BREAKER TO POWER THE FOUR EXISTING HPS LUMINAIRES.

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(907) 269-0590

STATE OF ALASKA - P.S.&E. REVIEW - JUNE 2020 - REGISTERED PROFESSIONAL ENGINEER - LISHA SWEENEY 21351
STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
(907) 269-0590

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

LOAD CENTER - TUDOR

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF
SCALE N/A
DATE 6/24/2020 TIME 8:46 PM
DRAWING LOCATION
C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CW3D19\PLANSET\H_SHEETS\H-LIGHTINGSCHEDULES.DWG

NO.	DATE	REVISION

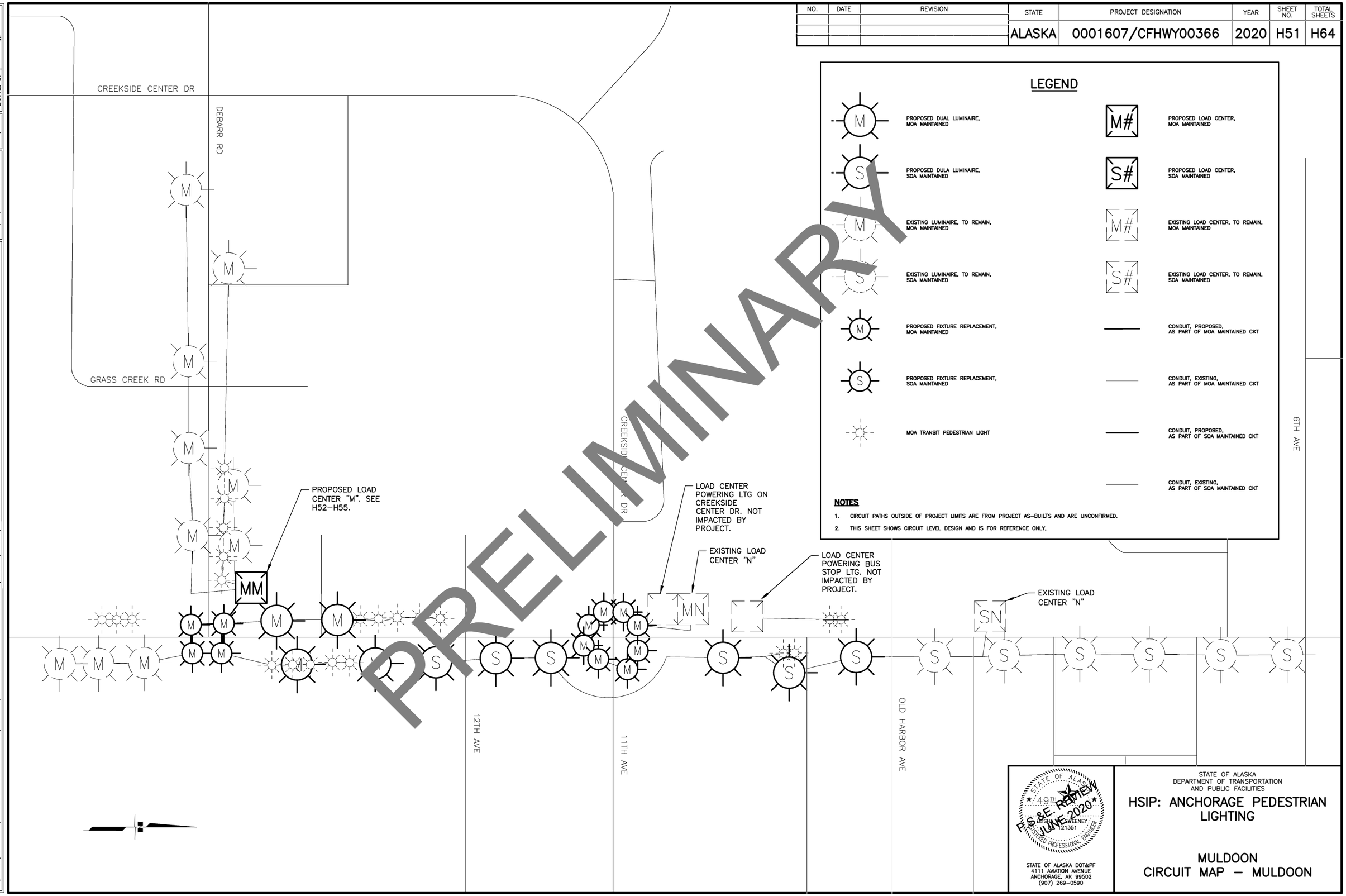
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	H51	H64

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF

SCALE N/A

DATE 6/24/2020 TIME 8:46 PM

DRAWING LOCATION
C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CIV3019\TRAFFIC\00366 CIRCUIT MAP.DWG



PRELIMINARY

LEGEND

- PROPOSED DUAL LUMINAIRE, MOA MAINTAINED
- PROPOSED DULA LUMINAIRE, SOA MAINTAINED
- EXISTING LUMINAIRE, TO REMAIN, MOA MAINTAINED
- EXISTING LUMINAIRE, TO REMAIN, SOA MAINTAINED
- PROPOSED FIXTURE REPLACEMENT, MOA MAINTAINED
- PROPOSED FIXTURE REPLACEMENT, SOA MAINTAINED
- MOA TRANSIT PEDESTRIAN LIGHT
- PROPOSED LOAD CENTER, MOA MAINTAINED
- PROPOSED LOAD CENTER, SOA MAINTAINED
- EXISTING LOAD CENTER, TO REMAIN, MOA MAINTAINED
- EXISTING LOAD CENTER, TO REMAIN, SOA MAINTAINED
- CONDUIT, PROPOSED, AS PART OF MOA MAINTAINED CKT
- CONDUIT, EXISTING, AS PART OF MOA MAINTAINED CKT
- CONDUIT, PROPOSED, AS PART OF SOA MAINTAINED CKT
- CONDUIT, EXISTING, AS PART OF SOA MAINTAINED CKT

NOTES

1. CIRCUIT PATHS OUTSIDE OF PROJECT LIMITS ARE FROM PROJECT AS–BUILTS AND ARE UNCONFIRMED.
2. THIS SHEET SHOWS CIRCUIT LEVEL DESIGN AND IS FOR REFERENCE ONLY.

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

MULDOON
CIRCUIT MAP – MULDOON

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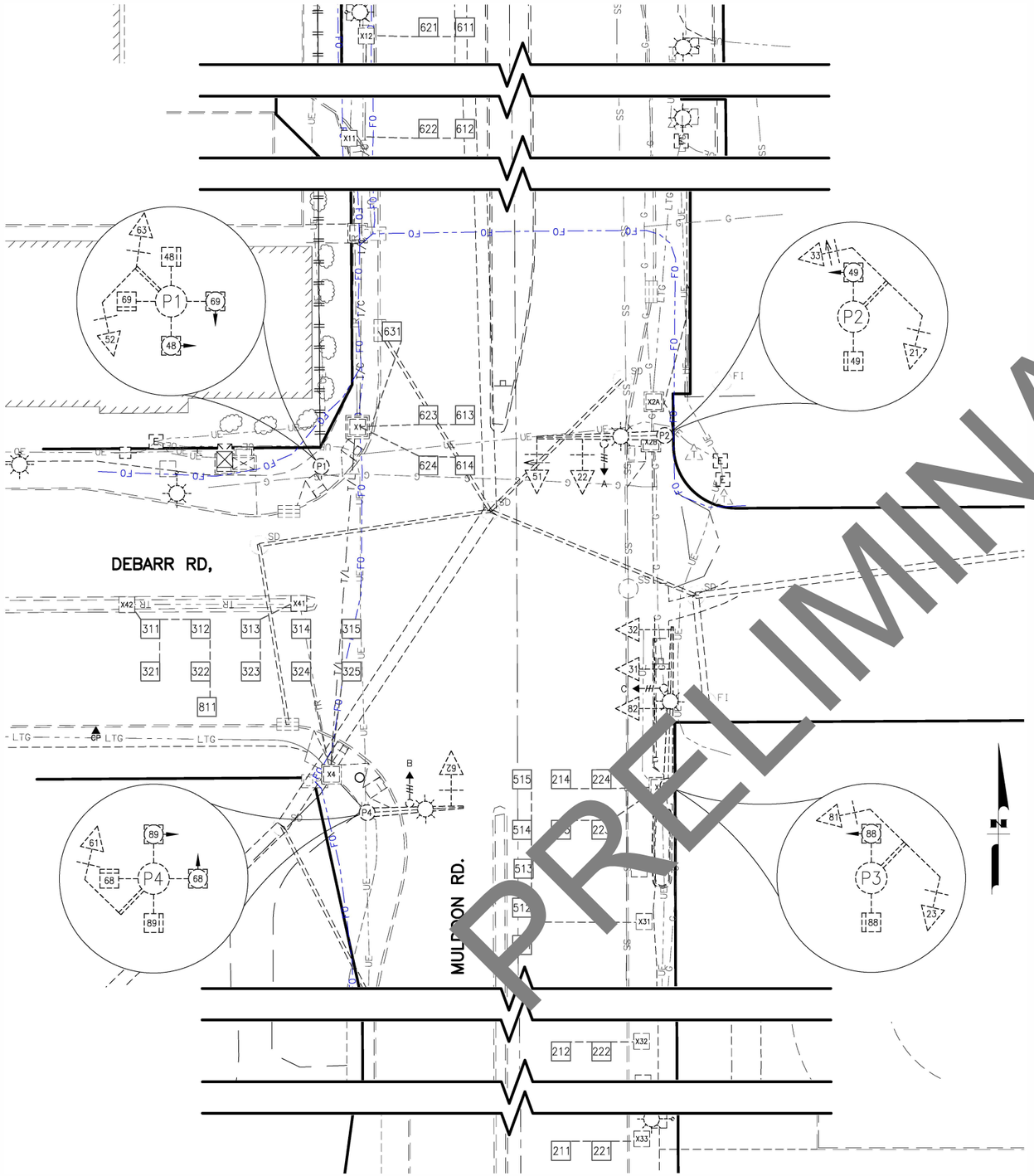
STATE OF ALASKA · 49TH · JOSHUA SWEENEY · 12135 · REGISTERED PROFESSIONAL ENGINEER
P.S.&E. REVIEW JUNE 2020

NO.	DATE	REVISION
#	xx/xx/xxxx	TEXT
#	xx/xx/xxxx	TEXT
#	xx/xx/xxxx	TEXT

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	H52	H64



SALVAGE SIGNAL EQUIPMENT SCHEDULE

ITEM	STATION ALIGNMENT	OFFSET	STRUCTURE	REMARKS
LC	"MDN" 341+10.0	92.6' LT	EXISTING LC	

JUNCTION BOX SCHEDULE

J-BOX	STATION ALIGNMENT	OFFSET	SALVAGE	NEW	TYPE
M01	"MDN" 341+07.8	93.9' LT	X	X	2

NOTES:

1. ALL SIGNAL POLES AND SIGNAL HEADS TO REMAIN IN PLACE
2. SEE H54 FOR INTERSECTION CABLE WORK

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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

MULDOON RD & DEBARR RD SIGNAL SYSTEM PLAN

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF

SCALE N/A

DATE 6/24/2020 TIME 8:25 PM

DRAWING LOCATION
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NO.	DATE	REVISION
#	xx/xx/xxxx	TEXT
#	xx/xx/xxxx	TEXT
#	xx/xx/xxxx	TEXT

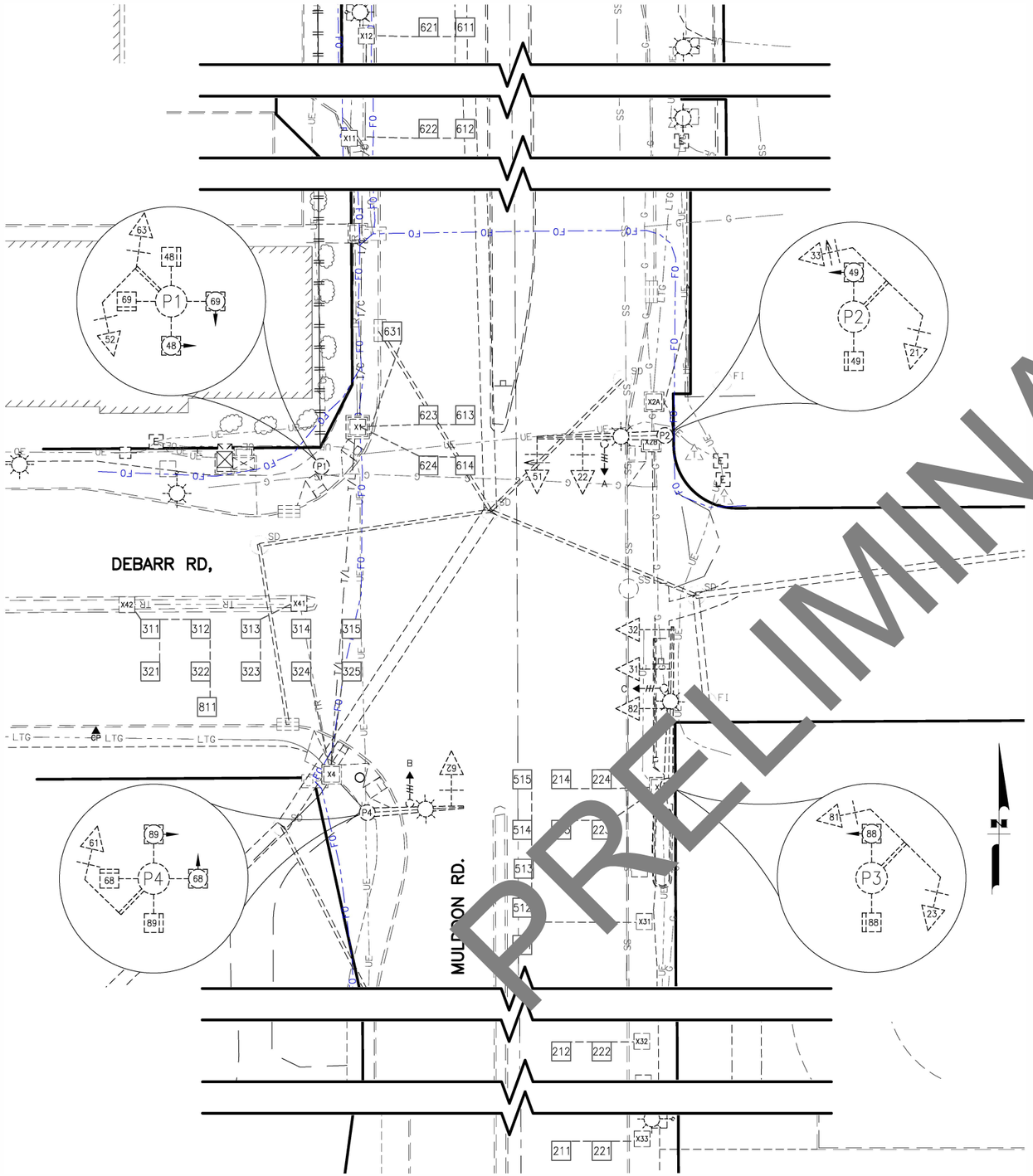
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	H53	H64

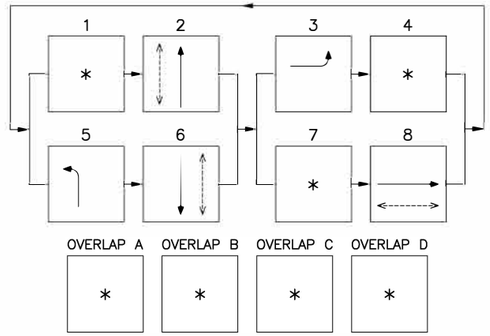
DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF

SCALE N/A

DATE 6/24/2020 TIME 8:25 PM

DRAWING LOCATION
C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\DW3019\TRAFFIC\00132_SIGNAL_DEBARR.DWG

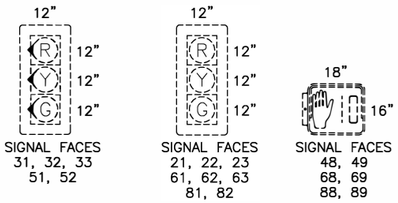




EXISTING PHASE DIAGRAM

LEGEND

- PEDESTRIAN MOVEMENT
- PROTECTED VEHICLE MOVEMENT
- UNPROTECTED VEHICLE MOVEMENT
- * FUTURE USE/NOT USED



EXISTING SIGNAL HEAD CONFIGURATIONS

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

MULDOON RD & DEBARR RD SIGNAL OPERATIONS PLAN

STATE OF ALASKA DOT&PF
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NO.	DATE	REVISION
#	xx/xx/xxxx	TEXT
#	xx/xx/ xxx	TEXT
#	xx/xx/xxxx	TEXT

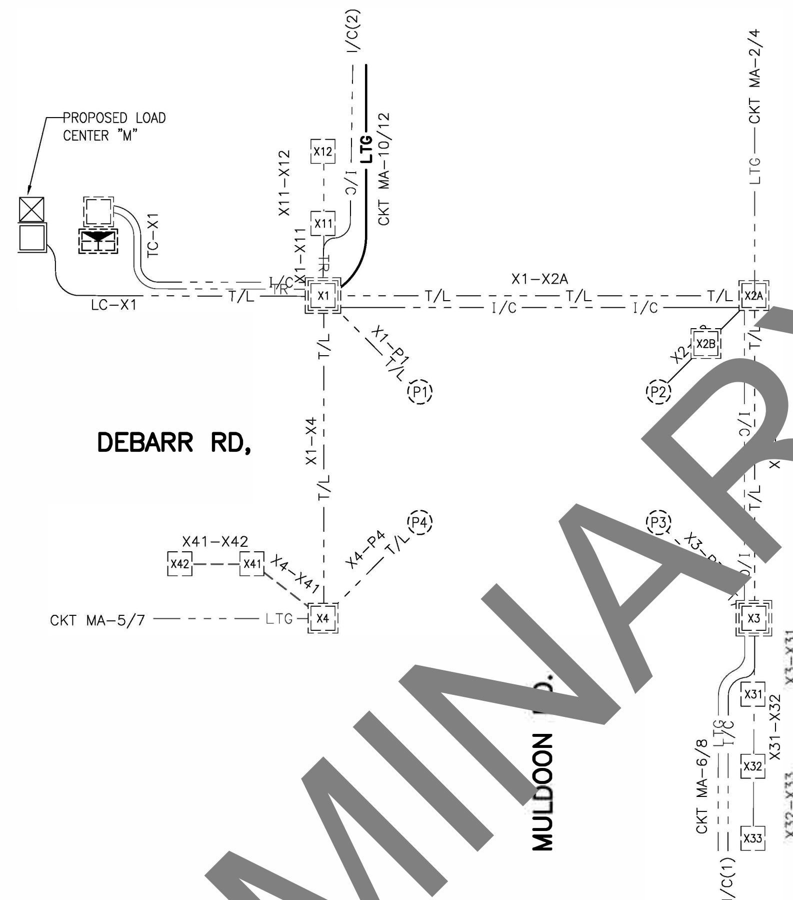
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	H54	H64

CABLE SCHEDULE

CABLE	CONDUCTOR	J-BOX PATH	LOAD
I/C(1)	25PR19	TC–X1–X2A–X3	I/C SOUTH
I/C(2)	25PR19	TC–X1	I/C NORTH
0	3C6	LC–X1–TC	TC POWER
1	CAT5E	TC–X1–P1	PTZ
5	3C20	TC–X1–X2A–X2B–P2	PRE 2 (A)
6	3C14	TC–X1–X2A–X2B–P2	PRECON 2 (A)
7	3C20	TC–X1–X4–P4	PRE 6 (B)
8	3C14	TC–X1–X4–P4	PRECON 6 (B)
9	3C20	TC–X1–X21–X3–P3	PRE 8 (C)
10	3C14	TC–X1–X21–X3–P3	PRECON 8 (C)
21	7C14	TC–X1–X2A–X2B–P2	HEAD 21
22	7C14	TC–X1–X2A–X2B–P2	HEAD 22
23	7C14	TC–X1–X21–X3–P3	HEAD 23
31	7C14	TC–X1–X21–X3–P3	HEAD 31
32	7C14	TC–X1–X21–X3–P3	HEAD 32
33	7C14	TC–X1–X2A–X2B–P2	HEAD 33
46	3C14	TC–X1–P1	PEDB 48
47	3C14	TC–X1–X2A–X2B–P2	PEDB 49
48	5C14	TC–X1–P1	PEDI 48
49	5C14	TC–X1–X2A–X2B–P2	PEDI 49
51	7C14	TC–X1–X2A–X2B–P2	HEAD 51
52	7C14	TC–X1–P1	HEAD 52
61	7C14	TC–X1–X4–P4	HEAD 61
62	7C14	TC–X1–X4–P4	HEAD 62
63	7C14	TC–X1–P1	HEAD 63
66	3C14	TC–X1–X4–P4	PEDB 68
67	3C14	TC–X1–P1	PEDB 69
68	5C14	TC–X1–X4–P4	PEDI 68
69	5C14	TC–X1–P1	PEDI 69
81	7C14	TC–X1–X21–X3–P3	HEAD 81
82	7C14	TC–X1–X21–X3–P3	HEAD 82
86	3C14	TC–X1–X21–X3–P3	PEDB 88
87	3C14	TC–X1–X4–P4	PEDB 89
88	5C14	TC–X1–X21–X3–P3	PEDI 88
89	5C14	TC–X1–X4–P4	PEDI 89
100	3C8	LC–X1–X4–X1–X2A–X2B–P2–X 2B–X2A–X3–P3	INTXL
101	**3C8**	**LC–X1–X4**	**DEBARR LTG – SOUTH**
102	**3C8**	**LC–WEST**	**DEBARR LTG – NORTH**
103	**3C8**	**LC–X1–X2A–X3**	**MULDOON LTG – S[illegible]E**
104	**3C8**	**LC–X1–X2A**	**MULDOON LTG – [illegible]NE**
105	**3C8**	**LC–X1**	**MULDOON LTGE – N/[illegible]**
106	**3C10**	**LC–WEST**	**DEBARR [illegible] SIGN**
107	3C10	LC–X1–X2A–X3	MULDO[illegible] TRANSI[illegible] SIGN
211	6PR18	TC–X1–X2A–X3–X31–X32–X33	LOOPS [illegible]1–212, [illegible]1–222
213	6PR18	TC–X1–X2A–X3	LOOPS 21[illegible] 21[illegible] 223–224
311	6PR18	TC–X1–X4–X41–X42	LOOPS 311–31[illegible] 321–322, 811
313	6PR18	TC–X1–X4–X41	LOOPS 313–315[illegible]23–325
511	6PR18	TC–X1–X2A–X3–X31	LOOPS 511–5[illegible]5
611	15PR18	TC–X1–X1–X11–X12	LOOPS 611–624

ITALIC = EXISTING CONDUCTOR TO REMAIN

BOLD = NEW CONDUCTOR



CONDUIT SCHEDULE

RUN #	CONDUIT	CONDUIT TYPE	CABLES	DESTINATION	FILL %
LC–X1	**3"**	**RMC**	**100, 101, 103, 104, 105**	PE, LTG	25%
	3"	RMC	0, 107	TC POWER, SIGN	10%
TC–X1	2"	RMC	0	TC POWER, SIGN	15%
	3"	RMC	1, 7, 8, 46, 48, 52, 61, 62, 63, 66, 67, 68, 69, 87, 89	P1, P4 SIGNAL	29%
	3"	RMC	5, 6, 9, 10, 21, 22, 23, 31, 32, 33, 47, 49, 51, 81, 82, 86, 88	P2, P3 SIGNAL	35%
	3"	RMC	I/C(1), I/C(2), 211, 213, 311, 313, 511, 611	LOOPS, I/C	49%
[illegible]X4	**3"**	**RMC**	**7, 8, 61, 62, 66, 68, 87, 89, 100 (IN/OUT), 101**	P4 SIGNAL, LTG	30%
	3"	RMC	311, 313	LOOPS	7%
X1–P1	**2"**	**RMC**	**100 (IN/OUT)**	LTG	23%
	3"	RMC	1, 46, 48, 52, 63, 67, 69	P1 SIGNAL, PE	14%
X1–X11	2"	RMC	611	LOOPS	18%
X11–X12	2"	RMC	611	LOOPS	18%
X4–P4	**2"**	**RMC**	**100 (IN/OUT)**	LTG	23%
	3"	RMC	7, 8, 61, 62, 66, 68, 87, 89	P4 SIGNAL	15%
X4–X41	2"	RMC	311, 313	LOOPS	17%
X41–X42	2"	RMC	311	LOOPS	9%
X1–X2A	3"	RMC	5, 6, 9, 10, 21, 22, 23, 31, 32, 33, 47, 49, 51, 81, 82, 86, 88,	P2, P3 SIGNAL	35%
	3"	RMC	I/C(1), 211, 213, 511	LOOPS, I/C	23%
	2"	**RMC**	**100, 103, 104, 107**	LTG, SIGN	42%
X2A–X2B	**2"**	**RMC**	**100 (IN/OUT)**	LTG	23%
	3"	RMC	5, 6, 21, 22, 33, 47, 49, 51,	P2 SIGNAL	16%
X2B–P2	**2"**	**RMC**	**100 (IN/OUT)**	LTG	23%
	3"	RMC	5, 6, 21, 22, 33, 47, 49, 51,	P2 SIGNAL	16%
X2A–X3	**2"**	**RMC**	**100, 103**	LTG	23%
	3"	RMC	I/C(1), 23, 31, 32, 81, 82, 86, 88, 211, 213, 511	LOOPS, P3 SIGNAL, I/C	38%
X3–P3	**2"**	**RMC**	**100**	LTG	12%
	3"	RMC	9, 10, 23, 31, 32, 81, 82, 86, 88	P3 SIGNAL	19%
X3–X31	2"	RMC	211, 511	LOOPS	17%
X31–X32	2"	RMC	211	LOOPS	9%
X32–X33	2"	RMC	211	LOOPS	9%

BOLD = EXISTING CONDUIT CONTAINS NEW CONDUCTOR

NOTES:

1. ALL CONDUIT SHOWN IN WIRING DIAGRAM AND CONDUIT SCHEDULE IS EXISTING AND IS TO REMAIN IN PLACE.
2. REMOVE PHOTOCELL FROM TOP OF SIGNAL POLE 1.

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ANCHORAGE, AK 99502
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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

MULDOON RD & DEBARR RD WIRING DIAGRAM

DESIGNED BY	ZJH
CHECKED BY	LAS
DRAFTED BY	MF
SCALE	N/A
DATE	6/24/2020
TIME	8:25 PM

DRAWING LOCATION
C:\USERS\ZJHARTMAN\ONEDRIVE – STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CIV3D19\TRAFFIC\00132_SIGNAL_DEBARR.DWG

NO.	DATE	REVISION
#	xx/xx/xxxx	TEXT
#	xx/xx/ xxx	TEXT
#	xx/xx/xxxx	TEXT

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	H55	H64

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF
SCALE N/A
DATE 6/24/2020 TIME 8:25 PM
DRAWING LOCATION C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CW3019\TRAFFIC\00132_SIGNAL_DEBARR_FINAL_DEBARR.DWG

SUMMARY OF NEW LOAD CENTER "M"

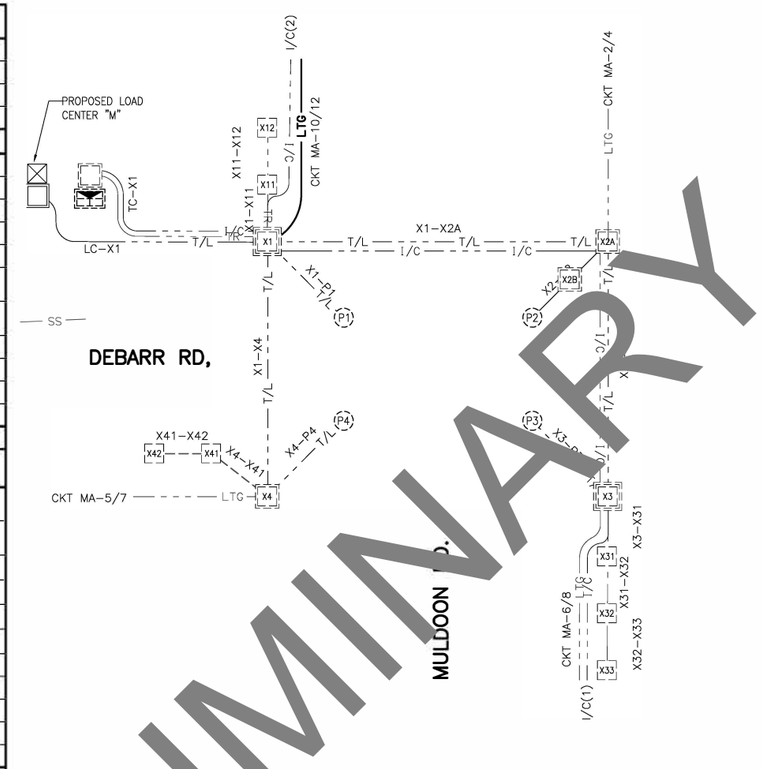
LOAD CENTER TYPE:	TYPE 1
MAINTAINED BY:	MUNICIPALITY OF ANCHORAGE (MOA)
SERVING UTILITY:	CHUGACH ELECTRIC ASSOCIATION (CEA)
SERVICE CONDUIT TYPE:	RMC & PVC
LOCATION DATA (61..209867°, -149.733987°)	
LOAD CENTER:	MULDOON RD & DEBARR RD, WNW
POWER SOURCE:	EXISTING CEA SERVICE TRANSFORMER (25kVA)
PHOTOELECTRIC CONTROL:	AT LOAD CENTER
SERVICE VOLTAGE:	240/480V, 1-PHASE, 3-WIRE WITH GROUNDED NEUTRAL
PROVIDE METER SOCKET	YES
SUB-PANEL A XFMR MAIN SERVICE DISCONNECT	480V, 100A
PANEL B MAIN SERVICE DISCONNECT	480V, 30A
CONTACTOR, PANEL A:	600A, 60A, 12-POLE
CONTACTOR, PANEL B:	600V, 60A, 12-POLE
AIC RATING, PANEL A:	14 kAIC @ 480V
AIC RATING, PANEL B:	10 kAIC @ 240V

PANEL A - 240/480 VAC, 100A MAIN BUS

POLE	AMP TRIP	DESCRIPTION	POLE KVA	Aφ	Bφ	POLE KVA	DESCRIPTION	AMP TRIP	POLE
1	30/2	DEBARR LIGHTING, NORTH SIDE (BUS & STREET)*	3.28	3.92		0.64	MULDOON LIGHTING, EAST SIDE, NORTH OF DEBARR *	20/2	2
3			3.28		3.92	0.64			4
5	20/2	DEBARR LIGHTING, SOUTH SIDE (STREET)*	1.99	2.53		0.54	MULDOON LIGHTING, EAST SIDE, SOUTH OF DEBARR *	20/2	6
7			1.99		2.53	0.54			8
9	20/2	INTXL *	0.50	1.00		0.50	MULDOON LIGHTING, EAST SIDE, NORTH OF DEBARR *	20/2	10
11			0.50		1.00	0.50			12
13	20/2	SPARE*	0	0		0	SPARE*	20/2	14
15			0		0	0			16
17	-	SPACE	-	-		-	SPACE	-	18
* CIRCUIT THROUGH CONTACTOR A				7.45	7.45		PANEL A TOTAL kVA		14.89
							PANEL A AMPS AT 480V		31.0

PANEL B - 120/240 VAC
(SUPPLIED BY INTERNAL STEP-DOWN TRANSFORMER INTEGRAL TO LOAD CENTER; SEE NOTE 2)

	AMP TRIP	DESCRIPTION	POLE KVA	Aφ	Bφ	POLE KVA	DESCRIPTION	AMP TRIP	POLE
1	50/2	SUB-PANEL B SERVICE DISCONNECT	-	-		-	SPACE	-	2
3			-		-	-	SPACE	-	4
5	50/2	CONTROL	0.1	0.1		0	SPARE*	20/2	6
7			0.1		0.1	0			8
9	70/1	TRAFFIC SIGNAL CABINET	3.6	3.6		0	SPARE	15/1	10
11	20/2	MULDOON SIGN TRANSIT EAST	0.1		0.2	0.1	DEBARR TRANSIT SIGN	0/2	12
13			0.1	0.2		0.1			14
15	20/2	SPARE*	0		0	0	SPARE*	20/2	16
17			0	0		0			18
* CIRCUIT THROUGH CONTACTOR B				3.9	0.3		PANEL B TOTAL kVA		4.2
							PANEL B AMPS AT 480V		7.5
							TOTAL kVA		21.2
							TOTAL AMPS AT 480V		39.8



LOAD CENTER "M" NOTES

1. CONTRACTOR SHALL VERIFY CHARACTERISTICS OF ALL EXISTING COMPONENTS THAT ARE TO REMAIN IN SERVICE PRIOR TO BEGINNING ANY WORK AT THE LOAD CENTER. CONTRACTOR SHALL PROVIDE AS-BUILT REDLINES OF THIS PANEL TO THE PROJECT ENGINEER.
2. INTERNAL STEP-DOWN TRANSFORMER IS TO BE SUPPLIED BY LOAD CENTER MANUFACTURER AND IS TO BE INTEGRAL TO THE LOAD CENTER.TRANSFORMER SHALL BE SINGLE-PHASE, DRY-TYPE, 10 kVA, CLASS 180 INSULATION, 115 DEG C RISE. LOAD CENTER AS INSTALLED SHALL BE NRTL LISTED AS AN ASSEMBLY.

ARC FLASH AND SHOCK HAZARD RESULTS - LC "M" PANEL A & B ENCLOSURE

ARC FLASH BOUNDARY	7.8 FT
INCIDENT ENERGY IN CAL/CM^2	17.7
WORKING DISTANCE	18 INCHES
SHOCK HAZARD EXPOSURE	480 VAC
INSULATING GLOVES CLASS	00
SHOCK HAZARD	WHEN COVER REMOVED
LIMITED APPROACH BOUNDARY	3.5 FT
RESTRICTED APPROACH BOUNDARY	1.0 FT
CALCULATED DATE	2/3/2020

ARC FLASH AND SHOCK HAZARD RESULTS - LC "M" MAIN BREAKER ENCLOSURE

ARC FLASH BOUNDARY	7.8 FT
INCIDENT ENERGY IN CAL/CM^2	17.7
WORKING DISTANCE	18 INCHES
SHOCK HAZARD EXPOSURE	480 VAC
INSULATING GLOVES CLASS	00
SHOCK HAZARD	WHEN COVER REMOVED
LIMITED APPROACH BOUNDARY	3.5 FT
RESTRICTED APPROACH BOUNDARY	1.0 FT
CALCULATED DATE	2/3/2020

SHORT CIRCUIT CALCULATION - LC "M"

480V, POWER FACTOR = 0.90, SERVICE LATERAL CONSISTS OF ONE ALUMINUM CONDUCTOR PER PHASE IN RMC & PVC

TRANSFORMER RATING	25 kVA
VOLTAGE	240/480 VAC SECONDARY
TRANSFORMER IMPEDANCE	1.2% MINIMUM
TRANSFORMER LET-THRU SHORT CIRCUIT CURRENT (INFINITE BUS)	4,340 A
LENGTH TO FAULT	160 FT
SERVICE CONDUCTOR SIZE	1/0 AWG (AL)
SERVICE CONDUIT	RMC & PVC
LINE-LINE FAULT	3.92 kA
DATE CALCULATED	2/3/2020

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

MULDOON RD & DEBARR RD LOAD CENTER

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
(907) 269-0590

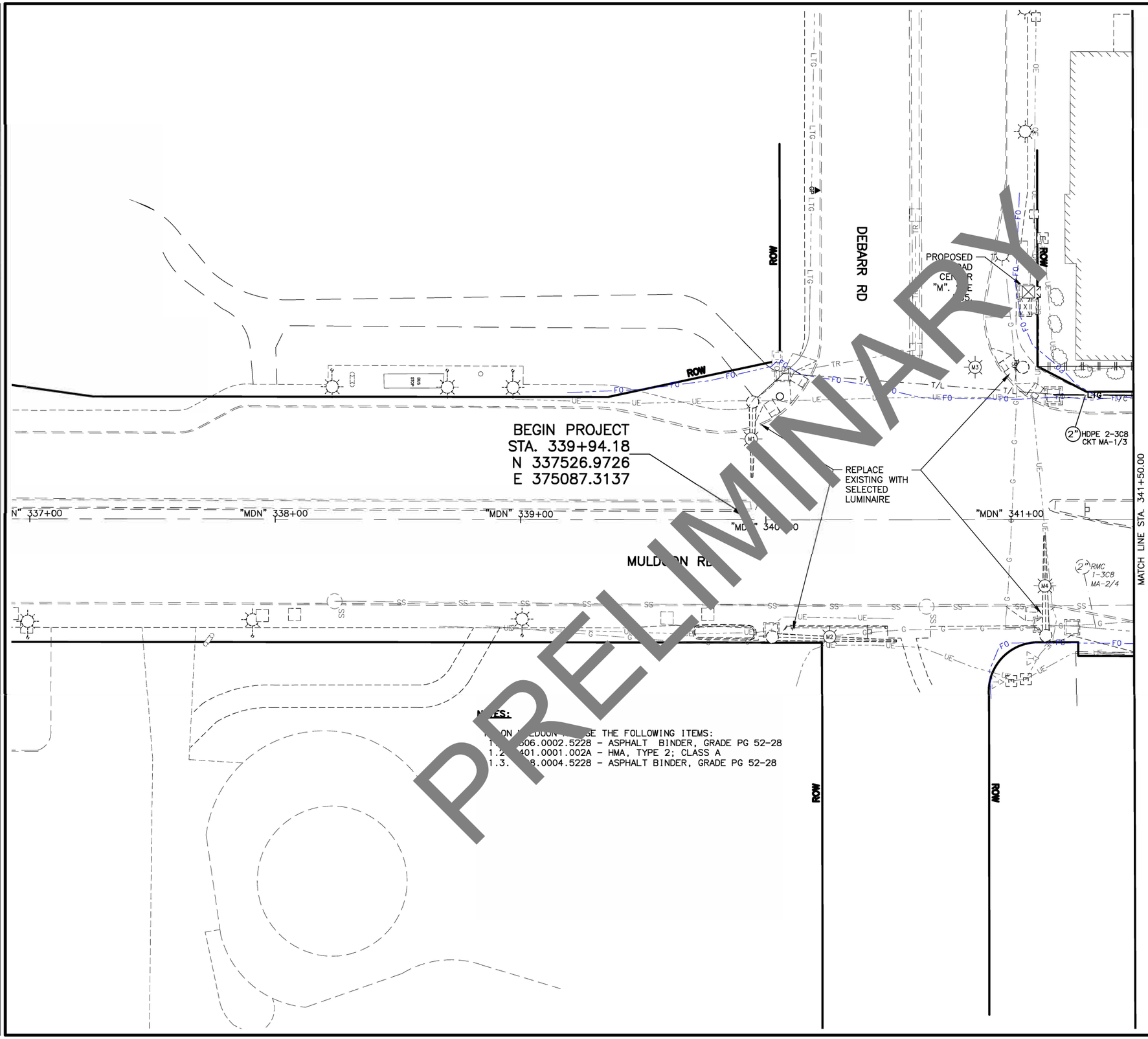
STATE OF ALASKA · 49TH · REGISTERED PROFESSIONAL ENGINEER · 2020
P.S.&E. REVIEW JUN

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF

SCALE 1:20

DATE 6/24/2020 TIME 8:46 PM

DRAWING LOCATION
C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CIV3D19\PLANSET\H_SHEETS\H-PLANVIEWS.DWG



PRELIMINARY

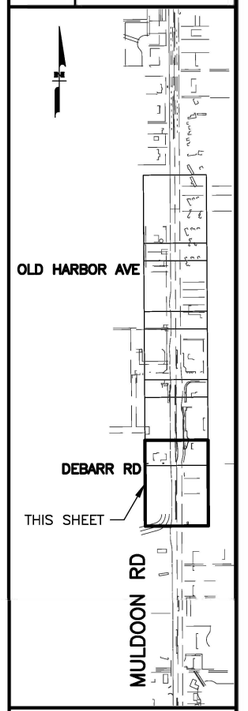
NOTES:

1. ON MULDOON ROAD USE THE FOLLOWING ITEMS:
   1.1. 406.0002.5228 - ASPHALT BINDER, GRADE PG 52-28
   1.2. 401.0001.002A - HMA, TYPE 2; CLASS A
   1.3. 8.0004.5228 - ASPHALT BINDER, GRADE PG 52-28

SHEET NO.	TOTAL SHEETS
H56	H64
STATE	YEAR
ALASKA	2020

PROJECT DESIGNATION
0001607/
CFHWY00366

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



STATE OF ALASKA
49TH
P.S.&E. REVIEW
JUNE 2020
LICENSED PROFESSIONAL ENGINEER

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
(907) 269-0590

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE
PEDESTRIAN LIGHTING

SIGNING, STRIPING, AND
ILLUMINATION:
B.O.P. TO
"MDN" STA 341+50

DESIGNED BY ZJH
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DRAFTED BY MF

SCALE 1:17.43

DATE 6/24/2020 TIME 8:46 PM

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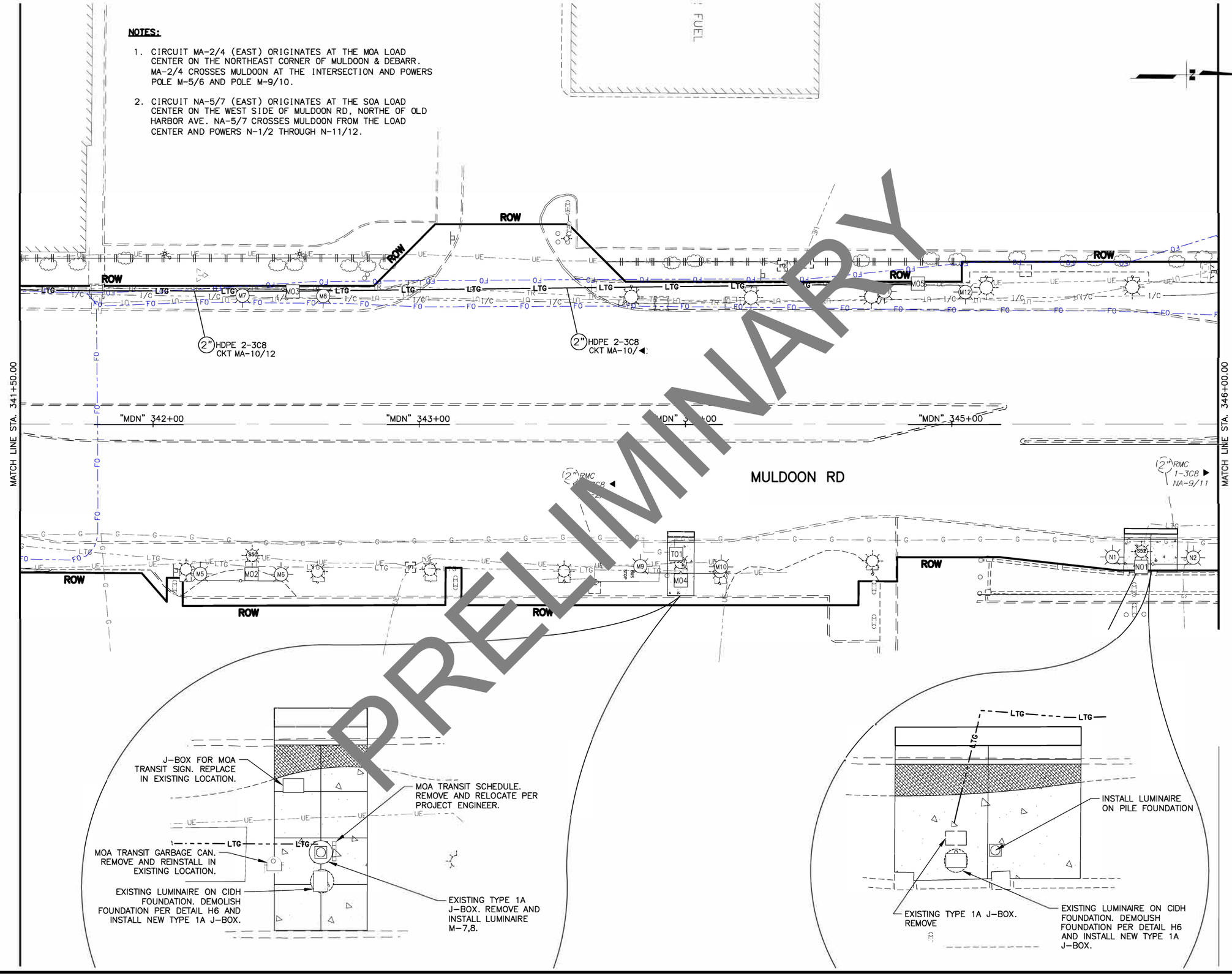
NOTES:

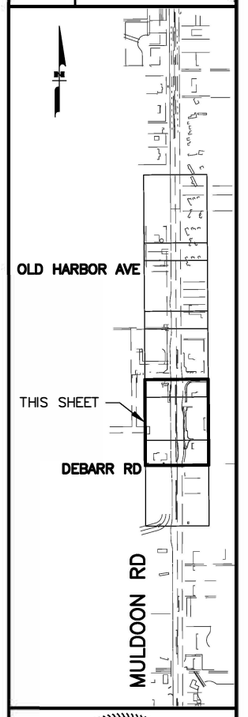
1. CIRCUIT MA-2/4 (EAST) ORIGINATES AT THE MOA LOAD CENTER ON THE NORTHEAST CORNER OF MULDOON & DEBARR. MA-2/4 CROSSES MULDOON AT THE INTERSECTION AND POWERS POLE M-5/6 AND POLE M-9/10.
2. CIRCUIT NA-5/7 (EAST) ORIGINATES AT THE SOA LOAD CENTER ON THE WEST SIDE OF MULDOON RD, NORTHE OF OLD HARBOR AVE. NA-5/7 CROSSES MULDOON FROM THE LOAD CENTER AND POWERS N-1/2 THROUGH N-11/12.



SHEET NO.	TOTAL SHEETS
H57	H64
STATE	YEAR
ALASKA	2020

PROJECT DESIGNATION
0001607/
CFHWY00366

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



STATE OF ALASKA
49TH
P.S.&E. REVIEW
JUNE 2020
ADMINISTRATIVE AGENCY
LICENSED PROFESSIONAL ENGINEER

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
(907) 269-0590

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

SIGNING, STRIPING, AND ILLUMINATION: "MDN" STA 341+50 TO "MDN" STA 346+00

DRAWING LOCATION
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CHECKED BY	LAS
DRAFTED BY	MF

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DATE 6/24/2020 TIME 8:46 PM

MATCH LINE STA. 346+00.00

MATCH LINE STA. 350+50.00

"MDN" 347+00 "MDN" 348+00 "MDN" 349+00 "MDN" 350+00

REPLACE EXISTING WITH SELECTED LUMINAIRE

CREEKSIDE CENTER DR

MULDOON RD

E 12TH CT

E 11TH CT

ROW

2" RMC 1-3C8 NA-9/11

LTG

TACO BELL

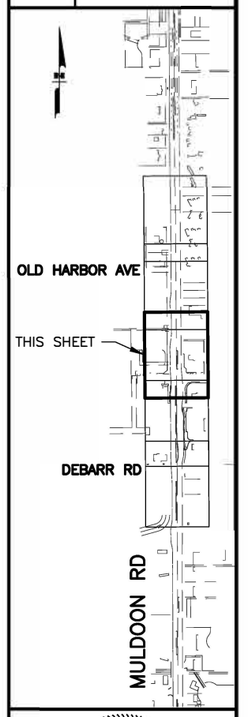
ARBY'S

SHEET NO.	TOTAL SHEETS
H58	H64
STATE	YEAR
ALASKA	2020

PROJECT DESIGNATION

0001607/
CFHWY00366

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



STATE OF ALASKA
49TH
ALISSA M. SWEENEY
P.S.&E. REVIEW
JUNE 2020
REGISTERED PROFESSIONAL ENGINEER

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
(907) 269-0590

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE
PEDESTRIAN LIGHTING

SIGNING, STRIPING, AND
ILLUMINATION:
"MDN" STA 346+00 TO
"MDN" STA 350+50

DESIGNED BY	CHECKED BY	DRAFTED BY
ZJH	LAS	MF

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DATE 6/24/2020 TIME 8:46 PM

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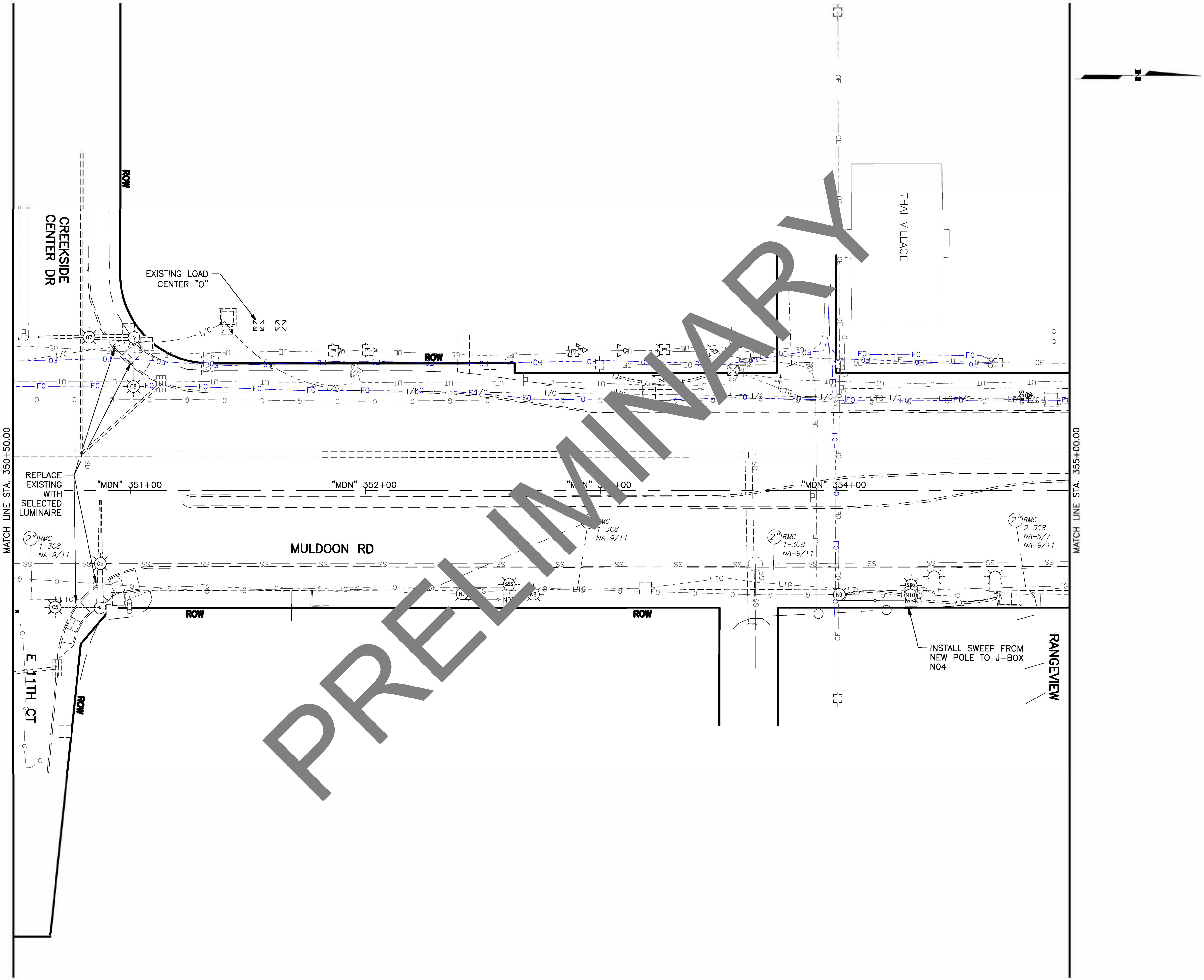
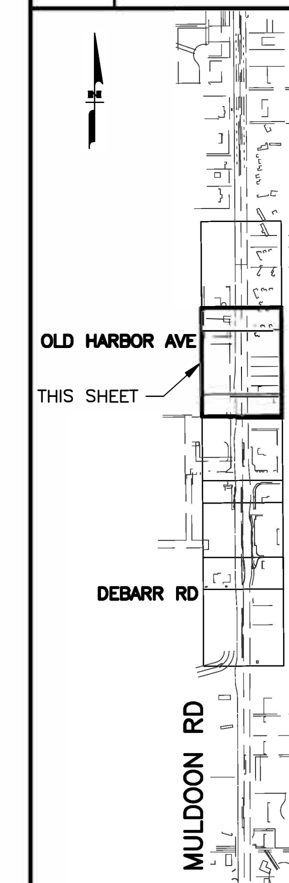


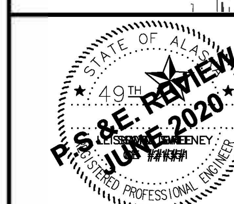
SHEET NO.	TOTAL SHEETS
H59	H64
STATE	**YEAR**
ALASKA	2020

PROJECT DESIGNATION

0001607/ CFHWY00366

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



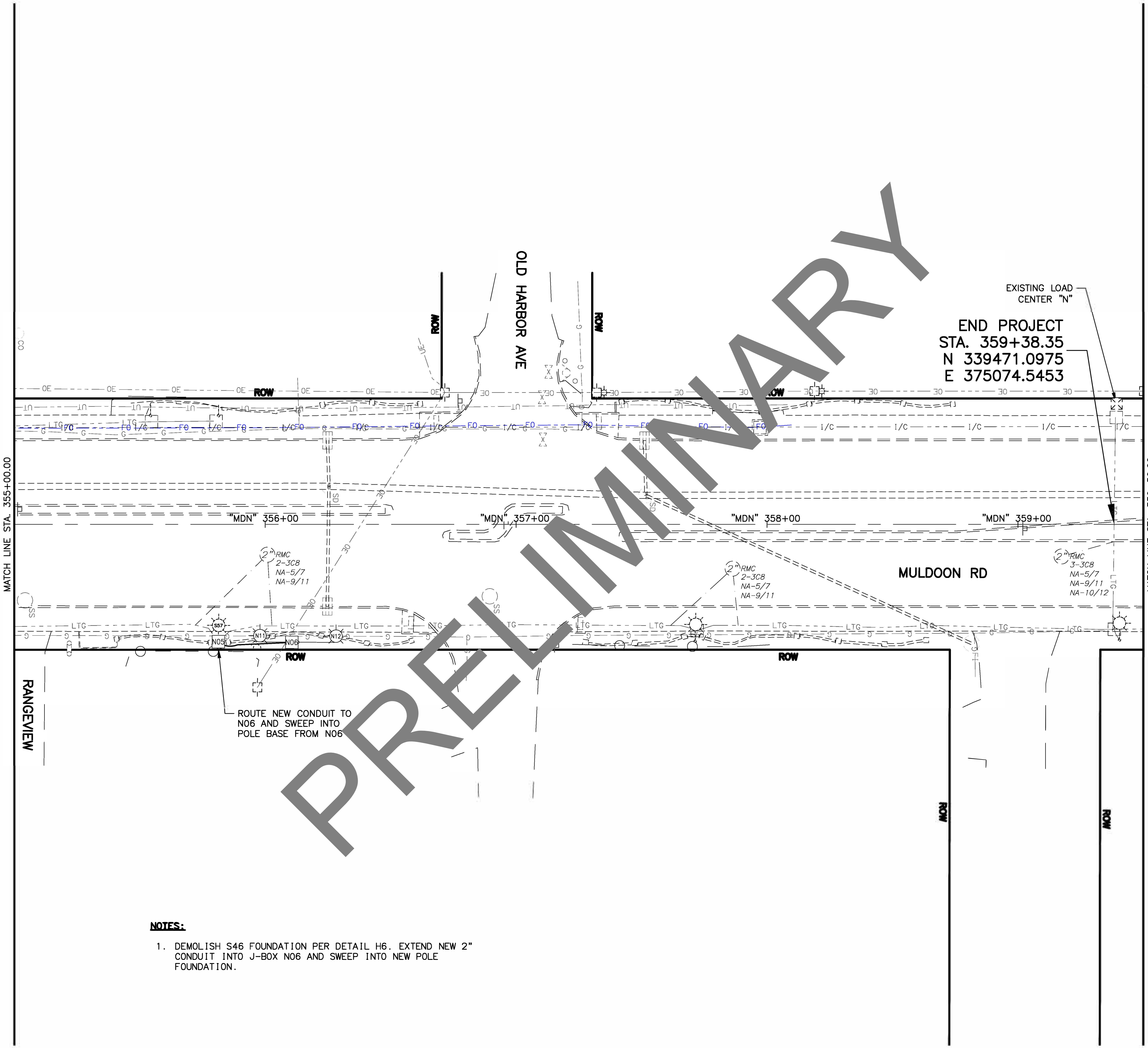


STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
(907) 269-0590

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

SIGNING, STRIPING, AND ILLUMINATION: "MDN" STA 350+50 TO "MDN" STA 355+00



NOTES:

1. DEMOLISH S46 FOUNDATION PER DETAIL H6. EXTEND NEW 2" CONDUIT INTO J-BOX N06 AND SWEEP INTO NEW POLE FOUNDATION.

SHEET NO.	TOTAL SHEETS
H60	H64
STATE	YEAR
ALASKA	2020

PROJECT DESIGNATION

0001607/ CFHWY00366

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

THIS SHEET
OLD HARBOR AVE
DEBARR RD
MULDOON RD

P.S.&E. REVIEW JUNE 2020

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
(907) 269-0590

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

SIGNING, STRIPING, AND ILLUMINATION: "MDN" STA 355+00 TO E.O.P.

DATE	TIME	SCALE	DESIGNED BY	ZJH
6/24/2020	8:46 PM	1:20	CHECKED BY	LAS
			DRAFTED BY	MF

DRAWING LOCATION
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NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	H61	H64

ELECTROLIER SCHEDULE (660.0003.0000)

POLE NO.	STATION ALIGNMENT	OFFSET	LUMINAIRE	MOUNTING HEIGHT (FT)	SHAFT LENGTH (FT)	MASTARM LENGTH (FT)	REMARKS	MAINTAINING AGENCY
M-5,6	"MDN" 342+32.8	58.9 RT	ROADWAY	50'	45	15'	LONGHORN LUMINAIRE - SEE H11	MOA
M-7,8	"MDN" 342+48.8	50.8' LT	ROADWAY	50'	45	15'	LONGHORN LUMINAIRE - SEE H11	MOA
M-9,10	"MDN" 343+98.1	56.0' RT	ROADWAY	50'	45	15'	LONGHORN LUMINAIRE - SEE H11	MOA
M-11,12	"MDN" 344+90.0	52.2' LT	ROADWAY	50'	45	15'	LONGHORN LUMINAIRE - SEE H11	MOA
N-1,2	"MDN" 345+75.1	52.6' RT	ROADWAY	50'	45	15'	LONGHORN LUMINAIRE - SEE H11	DOT&PF
N-3,4	"MDN" 347+38.4	46.7' RT	ROADWAY	50'	46	15'	LONGHORN LUMINAIRE - SEE H11	DOT&PF
N-5,6	"MDN" 348+84.3	47.6' RT	ROADWAY	50'	45	15'	LONGHORN LUMINAIRE - SEE H11	DOT&PF
N-7,8	"MDN" 352+56.4	46.6' RT	ROADWAY	50'	46	15'	LONGHORN LUMINAIRE - SEE H11	DOT&PF
N-9,10	"MDN" 354+16.8	46.9' RT	ROADWAY	50'	45	15'	LONGHORN LUMINAIRE - SEE H11	DOT&PF
N-11,12	"MDN" 356+13.1	46.9' RT	ROADWAY	50'	45	15'	LONGHORN LUMINAIRE - SEE H11	DOT&PF

SALVAGE ELECTROLIER SCHEDULE (660.0003.0000)

POLE NO.	STATION ALIGNMENT	OFFSET	POLE TYPE	BASE TYPE	SHAFT LENGTH (FT)	MASTARM LENGTH (FT)	REMARKS	MAINTAINING AGENCY
S50	"MDN" 342+37.0	56.4' RT	ELECTROLIER	SLIP BASE	40	15	DEMO FOUNDATION PER DETAIL H6	MOA
S51	"MDN" 343+98.1	58.4' RT	ELECTROLIER	SLIP BASE	40	15	DEMO FOUNDATION PER DETAIL H6	MOA
S52	"MDN" 345+71.0	54.3' RT	ELECTROLIER	SLIP BASE	40	15	DEMO FOUNDATION PER DETAIL H6	DOT&PF
S53	"MDN" 347+31.0	52.7' RT	ELECTROLIER	SLIP BASE	40	15	REMOVE FOUNDATION	D
S54	"MDN" 349+20.0	47.5' RT	ELECTROLIER	SLIP BASE	40	15	REMOVE FOUNDATION	DOT
S55	"MDN" 352+61.2	46.6' RT	ELECTROLIER	SLIP BASE	40	15	ABANDON FOUNDATION	DOT&PF
S56	"MDN" 354+32.4	47.0' RT	ELECTROLIER	SLIP BASE	40	15	DEMO FOUNDATION PER DETAIL H6	&PF
S57	"MDN" 355+81.4	46.8' RT	ELECTROLIER	SLIP BASE	40	15	DEMO FOUNDATION PER DETAIL H6	DOT

JUNCTION BOX SCHEDULE (660.0003.0000)

J-BOX	STATION ALIGNMENT	OFFSET	SALVAGE	NEW	TYPE
M02	"MDN" 342+37.0	56.4' RT	X	X	1A
M03	"MDN" 342+52.5	50.0' LT		X	1A
T01	"MDN" 343+96.4	49.0' RT	X	X	1A
M04	"MDN" 343+98.1	58.9' RT		X	1A
M05	"MDN" 344+87.1	52.7' LT		X	1A
N01	"MDN" 345+71.0	54.3' RT	X	X	1
N02	"MDN" 348+88.3	47.6' RT		X	1A
N03	"MDN" 352+61.1	46.6' RT		X	A
N04	"MDN" 354+32.4	47.0' RT	X	X	1
N05	"MDN" 355+81.4	46.9' RT		X	1A
N06	"MDN" 356+10.6	46.9' RT		X	1A

REPLACE LUMINAIRE FIXTURE ON EXISTING POLE (660.0003.0000)

CROSSROAD	LUMINAIRE	STATION ALIGNMENT	OFFSET	LUMINAIRE	NUMBER OF FIXTURES
DEBARR RD	M1	"MDN" 339+94.7	47.9' LT	INTERSECTION I	1
	M2	"MDN" 340+02.6	47.8' RT	INTERSECTION I	1
	M3	"MDN" 341+05.0	62.0' LT	INTERSECTION I	1
	M4	"MDN" 341+14.1	47.4' RT	INTERSECTION I	1
CREEKSIDE CENTER DRIVE	03 & 04	"MDN" 350+01.4	51.2' RT	INTERSECTION II	2
	01 & 02	"MDN" 350+03.6	53.5' LT	INTERSECTION II	2
	05 & 06	"MDN" 350+86.9	49.8' RT	INTERSECTION II	2
	07 & 08	"MDN" 351+01.5	65.1' LT	INTERSECTION II	2

LUMINAIRE STANDARDS ROADWAY, INTERSECTION I, AND INTERSECTION II

MANUFACTURER	GE OR APPROVED EQUAL
MODEL	ERL2 - OR APPROVED EQUAL
WATTAGE - ROADWAY AND INTERSECTION I	278
WATTAGE - INTERSECTION II	149
LIGHT SOURCE	LED
VOLTAGE - ROADWAY AND INTERSECTION I	480
VOLTAGE - INTERSECTION II	240
PE CONTROL	ANSI C136.41 7 PIN W/ SHORTING CAP
PE SENSOR	YES
MOUNTING	HORIZONTAL
HOUSING ENTRY TYPE	TOOLLESS
FIXTURE COLOR	GRAY
IES DISTRIBUTION TYPE (ROADWAY)	TYPE III ASYMMETRICAL (SHORT)
IES DISTRIBUTION TYPE (INTERSECTION I AND II)	TYPE IV ASYMMETRICAL (FORWARD)
POWER FACTOR	>0.90
UL LISTED	YES
DRIVE CURRENT - ROADWAY AND INTERSECTION I	0.58A
DRIVE CURRENT - INTERSECTION II	0.62A
CCI	3000K
CRI	MINIMUM 70
INITIAL LUMENS	28800

LUMINAIRE PERFORMANCE CRITERIA

INTERSECTION	
CHARACTERISTICS	
PAVEMENT TYPE	R3
ROADWAY LIGHTING STANDARD	IESNA RP-8-2014
FUNCTIONAL CLASSIFICATION	MAJOR/MAJOR
PEDESTRIAN AREA CLASSIFICATION	HIGH
IES FILE FOR ROADWAY LIGHTING	ERL2_19D330_____.IES
LUMINAIRE (INTERSECTION I AND II)	
LAMP DESCRIPTION	GE ERL2 ROADWAY LIGHT
LIGHT LOSS FACTOR	0.85
LIGHT DISTRIBUTION	TYPE IV
ILLUMINANCE CRITERIA	
AVERAGE MAINTAINED ILLUMINATION (fc)	4.09
AVERAGE UNIFORMITY RATIO (AVG/MIN)	2.48
ROADWAY	
CHARACTERISTICS	
ROADWAY	4 LANE DIVIDED
LANE WIDTH (FT)	12 TO 14
MEDIAN WIDTH (FT)	4 TO 15
NUMBER OF LANES	2 TO 3
PAVEMENT TYPE	R3
ROADWAY LIGHTING STANDARD	IESNA RP-8-2014
FUNCTIONAL CLASSIFICATION	MAJOR
PEDESTRIAN AREA CLASSIFICATION	HIGH
IES FILE FOR ROADWAY LIGHTING	ERL2_30C330_____.IES
LUMINAIRE	
LAMP DESCRIPTION	GE ERL2 ROADWAY LIGHT
LIGHT LOSS FACTOR	0.85
LIGHT DISTRIBUTION	TYPE III
ILLUMINANCE CRITERIA	
AVERAGE LUMINANCE (cd/m^2)	1.84
MINIMUM ROADWAY LUMINANCE (cd/m^2)	1.06
AVERAGE UNIFORMITY RATIO (AVG/MIN)	1.74
MAX UNIFORMITY RATIO (MAX/MIN)	3.26
MAX VEILING LUMINANCE RATIO (LV-MAX/AVG)	0.32
SIDEWALK	
CHARACTERISTICS	
ROADWAY LIGHTING STANDARD	IESNA RP-8-2014
SIDEWALK WIDTH (FT)	8
CONFLICT CLASSIFICATION	HIGH
LUMINAIRE	
LAMP DESCRIPTION	GE ERL2 ROADWAY LIGHT
LIGHT LOSS FACTOR	0.85
ILLUMINANCE CRITERIA	
AVERAGE MAINTAINED ILLUMINATION (fc)	4.20
MINIMUM ILLUMINATION (fc)	0.60

STATE OF ALASKA 49TH
JOSHUA SWEENEY 21351
REGISTERED PROFESSIONAL ENGINEER
P.S.&E. REVIEW JUNE 2020

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
(907) 269-0590

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

LIGHTING SCHEDULE – MULDOON

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF

SCALE N/A

DATE 6/24/2020 TIME 8:46 PM

DRAWING LOCATION
C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CW3019\PLANSET\H_SHEETS\H-LIGHTINGSCHEDULES.DWG

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0001607/CFHWY00366	2020	H62	H64

SUMMARY OF EXISTING LOAD CENTER "N"

LOAD CENTER TYPE:	TYPE 1A
MAINTAINED BY:	STATE OF ALASKA (SOA)
SERVING UTILITY:	CHUGACH ELECTRIC ASSOCIATION (CEA)
SERVICE CONDUIT TYPE:	RMC & PVC
LOCATION DATA (61.214917°, -149.733772°)	
LOAD CENTER:	MULDOON RD (WEST SIDE), APPROX. 250-FT NORTH OF OLD HARBOR AVE.
POWER SOURCE:	EXISTING CEA SERVICE TRANSFORMER (15 kVA)
PHOTOELECTRIC CONTROL:	EXISTING AT LOAD CENTER
SERVICE VOLTAGE:	240/480V 1-PHASE, 3-WIRE WITH GROUNDED NEUTRAL
PROVIDE METER SOCKET	EXISTING
PANEL A MAIN SERVICE DISCONNECT	480V, 100A
CONTACTOR:	EXISTING 6-POLE
AIC RATING:	10 kAIC @ 480V

PANEL A - 240/480 VAC

POLE	AMP TRIP	DESCRIPTION	POLE KVA	Aφ	Bφ	POLE KVA	DESCRIPTION	AMP TRIP	POLE
1	-	*SPACE*	-	-		-	*PANEL A SERVICE DISCONNECT MAIN CIRCUIT BREAKER*	*100/2*	2
3	-	*SPACE*	-		-	-			4
5	*20/2*	*LIGHTING N1-N12 **	1.86	1.96		0.1	*CONTROL*	*15/1*	6
7			1.86		1.86	-	*SPACE*	-	8
9	*15/2*	*TRANSIT LTG BETWEEN OLD HARBOR AVE & CREEKSIDE CENTER DR **	0.2	3.45		3.25	*LTG NORTH OF 6TH AVE SIGNAL **	*20/2*	10
11			0.2		3.45	3.25			12
13	-	*SPACE*	-	-		-	*SPACE*	-	14
15	-	*SPACE*	-		-	-	*SPACE*	-	16
17	-	*SPACE*	-	-		-	*SPACE*	-	18
		* CIRCUIT THROUGH CONTACTOR ITALIC = EXISTING		5.41	5.31		PANEL A TOTAL kVA		10.72
							PANEL A AMPS AT 480V		22.3

ONLY MODIFCATIONS TO LOAD CENTER "N" ARE A CHANGE IN LOAD FOR EXISTING CIRCUITS NA-5/7

SHORT CIRCUIT CALCULATION - LC "N"

480V, POWER FACTOR = 0.90, SERVICE LATERAL CONSISTS OF ONE ALUMINUM CONDUCTOR PER PHASE IN RMC & PVC

TRANSFORMER RATING	15 kVA
VOLTAGE	240/480 VAC SECONDARY
TRANSFORMER IMPEDANCE	1.2% MINIMUM
TRANSFORMER LET-THRU SHORT CIRCUIT CURRENT (INFINITE BUS)	2,604 A
LENGTH TO FAULT	25 FT TOTAL
SERVICE CONDUCTOR SIZE	1/0 AWG (AL)
SERVICE CONDUIT	RMC & PVC
LINE-LINE FAULT	2.58
DATE CALCULATED	2/ 2020

ARC FLASH AND SHOCK HAZARD RESULTS LC "N" - PANEL A ENCLOSURE

ARC FLASH BOUNDARY	6.
INCIDENT ENERGY IN CAL/CM^2	2.1
WORKING DISTANCE	INCHES
SHOCK HAZARD EX	480 VAC
INSULATING GLOVES C S	00
SHO HAZA	WHEN COVER REMOVED
LIMITED AP OACH BOUNDARY	3.5 FT
RESTRICTED AP CH BOUNDARY	1.0 FT
CALCULA DATE	2/3/2020

LOAD CENTER "N" NOTES

1. CONTRACTOR SHALL VERIFY CHARACTERISTICS OF ALL EXISTING COMPONENTS THAT ARE TO REMAIN IN SERVICE PRIOR TO BEGINNING ANY WORK AT THE LOAD CENTER. CONTRACTOR SHALL PROVIDE AS-BUILT REDLINES OF THIS PANEL TO THE PROJECT ENGINEER.

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

LOAD CENTER - MULDOON

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF

SCALE N/A

DATE 6/24/2020 TIME 8:46 PM

DRAWING LOCATION
C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CW3D19\PLANSET\H_SHEETS\H-LIGHTINGSCHEDULES.DWG

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0001607/CFHWY00366	2020	H63	H64

DESIGNED BY	CHECKED BY	DRAFTED BY
ZJH	LAS	MF

SCALE
N/A

DATE	TIME
6/24/2020	8:46 PM

DRAWING LOCATION
C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\CW3D19\PLANSET\H_SHEETS\H-LIGHTINGSCHEDULES.DWG

SUMMARY OF EXISTING LOAD CENTER "O"

LOAD CENTER TYPE:	TYPE 1A
MAINTAINED BY:	MUNICIPALITY OF ANCHORAGE (MOA)
SERVING UTILITY:	CHUGACH ELECTRIC ASSOCIATION (CEA)
SERVICE CONDUIT TYPE:	RMC & PVC
LOCATION DATA (61.212759°, -149.733874°)	
LOAD CENTER:	MULDOON RD & CREEKSIDE CENTER DR, NN2
POWER SOURCE:	EXISTING CEA SERVICE TRANSFORMER (25 kVA)
PHOTOELECTRIC CONTROL:	EXISTING AT LOAD CENTER
SERVICE VOLTAGE:	120/240V 1-PHASE, 3-WIRE WITH GROUNDED NEUTRAL
PROVIDE METER SOCKET	EXISTING
PANEL A MAIN SERVICE DISCONNECT	240V, 100A
CONTACTOR:	EXISTING 6-POLE
AIC RATING:	10 kAIC @ 240V

PANEL A - 120/240 VAC, 100A BUS

POLE	AMP TRIP	DESCRIPTION	POLE KVA	Aϕ	Bϕ	POLE KVA	DESCRIPTION	AMP TRIP	POLE
1	*100/2*	*PANEL A SERVICE DISCONNECT MAIN CIRCUIT BREAKER*	-	0.6		0.6	*INTERSECTION LTG**	*20/2*	2
3			-		0.6	0.6			4
5	*50/1*	*TRAFFIC SIGNAL CABINET*	1.8	1.9		0.1	*PE CONTROL*	*15/2*	6
7	-	*SPACE*	-		0.1	0.1			8
9	-	*SPACE*	-	-		-	*SPACE*	-	10
11	-	*SPACE*	-		-	-	*SPACE*	-	12
13	-	*SPACE*	-	-		-	*SPACE*	-	14
15	-	*SPACE*	-		-	-	*SPACE*	-	16
17	-	*SPACE*	-	-		-	*SPACE*	-	18
		* CIRCUIT THROUGH CONTACTOR ITALIC = EXISTING		2.5	1.7		PANEL A TOTAL kVA		3.2
							PANEL A AMPS AT 480V		13.3

ONLY MODIFCATIONS TO LOAD CENTER "O" ARE A CHANGE IN LOAD FOR EXISTING CIRCUITS 0A-2/4

SHORT CIRCUIT CALCULATION - LC "O"

240V, POWER FACTOR = 0.90, SERVICE LATERAL CONSISTS OF ONE ALUMINUM CONDUCTOR PER PHASE IN RMC & PVC

TRANSFORMER RATING	25kVA
VOLTAGE	120/240 VAC SECONDARY
TRANSFORMER IMPEDANCE	1.2% MINIMUM
TRANSFORMER LET-THRU SHORT CIRCUIT CURRENT (INFINITE BUS)	8,681 A
LENGTH TO FAULT	505 FT TOTAL
SERVICE CONDUCTOR SIZE	1/0 AWG (AL)
SERVICE CONDUIT	RMC & PVC
LINE-LINE FAULT	7.50
DATE CALCULATED	2/3/202

ARC FLASH AND SHOCK HAZARD RESULTS LC "O" - PANEL A ENCLOSURE

ARC FLASH BOUNDARY	9.0 FT
INCIDENT ENERGY IN CAL/CM^2	23.0
WORKING DISTANCE	18 INCHES
SHOCK HAZARD EXPOSURE	240 VAC
INSULATING GLOVES CLASS	00
SHOCK HAZARD	WHEN COVER REMOVED
LIMITED APPROACH BOUNDARY	3.5 FT
RESTRICTED APPROACH BOUNDARY	1.0 FT
CALCULATED DATE	2/3/2020

LOAD CENTER "O" NOTES

1. CONTRACTOR SHALL VERIFY CHARACTERISTICS OF ALL EXISTING COMPONENTS THAT ARE TO REMAIN IN SERVICE PRIOR TO BEGINNING ANY WORK AT THE LOAD CENTER. CONTRACTOR SHALL PROVIDE AS-BUILT REDLINES OF THIS PANEL TO THE PROJECT ENGINEER.

STATE OF ALASKA 49TH P.S.&E. REVIEW JUNE 2020 REGISTERED PROFESSIONAL ENGINEER
JEFFREY CARLETON 13218

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
(907) 269-0590

STATE OF ALASKA 49TH P.S.&E. REVIEW JUNE 2020 REGISTERED PROFESSIONAL ENGINEER
LISHA SWEENEY 21351

STATE OF ALASKA DOT&PF
4111 AVIATION AVENUE
ANCHORAGE, AK 99502
(907) 269-0590

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE PEDESTRIAN LIGHTING

LOAD CENTER - MULDOON

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001607/CFHWY00366	2020	H64	H64

DESIGNED BY ZJH
CHECKED BY LAS
DRAFTED BY MF
SCALE N/A
DATE TIME 6/24/2020 7:43 PM
DRAWING LOCATION C:\USERS\ZJHARTMAN\ONEDRIVE - STATE OF ALASKA\COVID 19\CFHWY00366 HSIP ANCH PED LIGHTING\DW3D19\PLANSET\H_SHEETS\H-SIGN SUMMARY.DWG

SIGN SUMMARY

SHEET NO.	SIGN NO.	STATION ALIGNMENT	CL REF	TYPE	LEGEND	SIZE (IN) WIDTH	SIZE (IN) HEIGHT	AREA (SQ FT)	SIGN FACES	POST NO., SIZE, & TYPE	FRAMED? YES	FRAMED? NO	REMARKS
H23	1	"MINN" 431+83.5	RT	W11-2		36	36	9.0	S	1-3"T	X		
				W16-4P	NEXT 1500 FT	30	24	5.0	S			X	
	2	"MINN" 433+32.9	LT	R2-1	SPEED LIMIT 45	30	36	7.50	N	1-3"T		X	
H25	3	"MINN" 441+39.8	RT	R6-1R	ONE WAY	36	12	3.0	E	1-3"T	X		
				R6-1L	ONE WAY	36	12	3.0	W	1-3"T	X		
H42	4	"TDR" 156+40	LT	R3-7R	RIGHT LANE MUST TURN RIGHT	36	36	9.0	E	1-2.5"PT	X		
H47	5	"TDR" 176+76.2	LT	MOA BUS STOP SIGN	BUS STOP	N/A	N/A	N/A	E	1-2.5"PT		X	FR[illegible] SALVAGE EXIST[illegible] SIGN ELECTROLIER [illegible]0 ONTO NEW PT.

SIGN SALVAGE SUMMARY

STATION ALIGNMENT	CL REF	TYPE	LEGEND	REMARKS
"MINN" 431+96.3	RT	W11-2		
		W16-4P	NEXT 1500 FT	
"MINN" 433+32.9	LT	R2-1	SPEED LIMIT 45	45 MPH. ELECTROLIER MOUNTED
"MINN" 441+39.8	RT	R6-1R	ONE WAY	
		R6-1L	ONE WAY	

REMOVE & RELOCATE SIGN (FROM EXISTING TO PROPOSED ELECTROLIER)

EXISTING ELECTROLIER NAME	EXISTING ELECTROLIER LOCATION	PROPOSED ELECTROLIER LOCATION	TYPE	LEGEND	REMARKS
S1	"MINN" 431+98.3 54.2' RT	"MINN" 431+81.2 4.2' RT	W11-2		SUBSIDIARY TO 660.0003.000A.
			W16-4P	NEXT 1500 FT	SUBSIDIARY TO 660.0003.000A.
S11	"NSH" 498+67.4 83.2' LT		R10-3EL		SUBSIDIARY TO 660.0003.000B.
			R9-3A		SUBSIDIARY TO 660.0003.000B.
			D3-100	E Benson Blvd	ONE SIGN, DOUBLE SIDED. MOUNTED TO EAST SIDE OF POLE. SUBSIDIARY TO 660.0003.000B.
			R3-8L/SL	ONLY	MOUNT ABOVE SIGNAL HEADS. SUBSIDIARY TO 660.0003.000B.
			R6-1R	ONE WAY	MOUNT ABOVE R3-8L/SL. SUBSIDIARY TO 660.0003.000B.
			R6-1L	ONE WAY	
S14	"NSH" 503+22.4 59.9' LT	"NSH" 502+67.5 65.2' LT	I-161	PLEASE DRIVE SAFELY	SUBSIDIARY TO 660.0003.000B.
			I-162	IN MEMORY OF WALTER YAZZIE	SUBSIDIARY TO 660.0003.000B.
S20	"TDR" 154+83.0 48.0' RT		W11-2		SUBSIDIARY TO 660.0003.000C.
S21	"TDR" 154+87.5 75.6' LT		R3-5R	ONLY	SUBSIDIARY TO 660.0003.000C.
S26	"TDR" 158+57.2 47.0' RT		R2-1	SPEED LIMIT 45	SUBSIDIARY TO 660.0003.000C.
S28	"TDR" 160+19.0 47.8' LT	"TDR" 160+04.0 48.3' LT	I-160	PLEASE DON'T DRINK AND DRIVE	SUBSIDIARY TO 660.0003.000C.
			I-162	IN MEMORY OF LLOYD RAYMOND	SUBSIDIARY TO 660.0003.000C.
S55	"MDN" 352+61.2 46.6' RT	"MDN" 352+56.4 46.6' RT	W11-2		SUBSIDIARY TO 660.0003.000D.

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SIGN SUMMARY