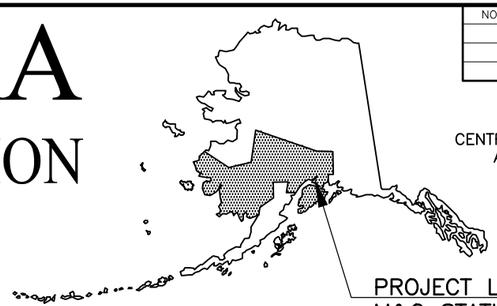
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	A1	A5

STATE OF ALASKA

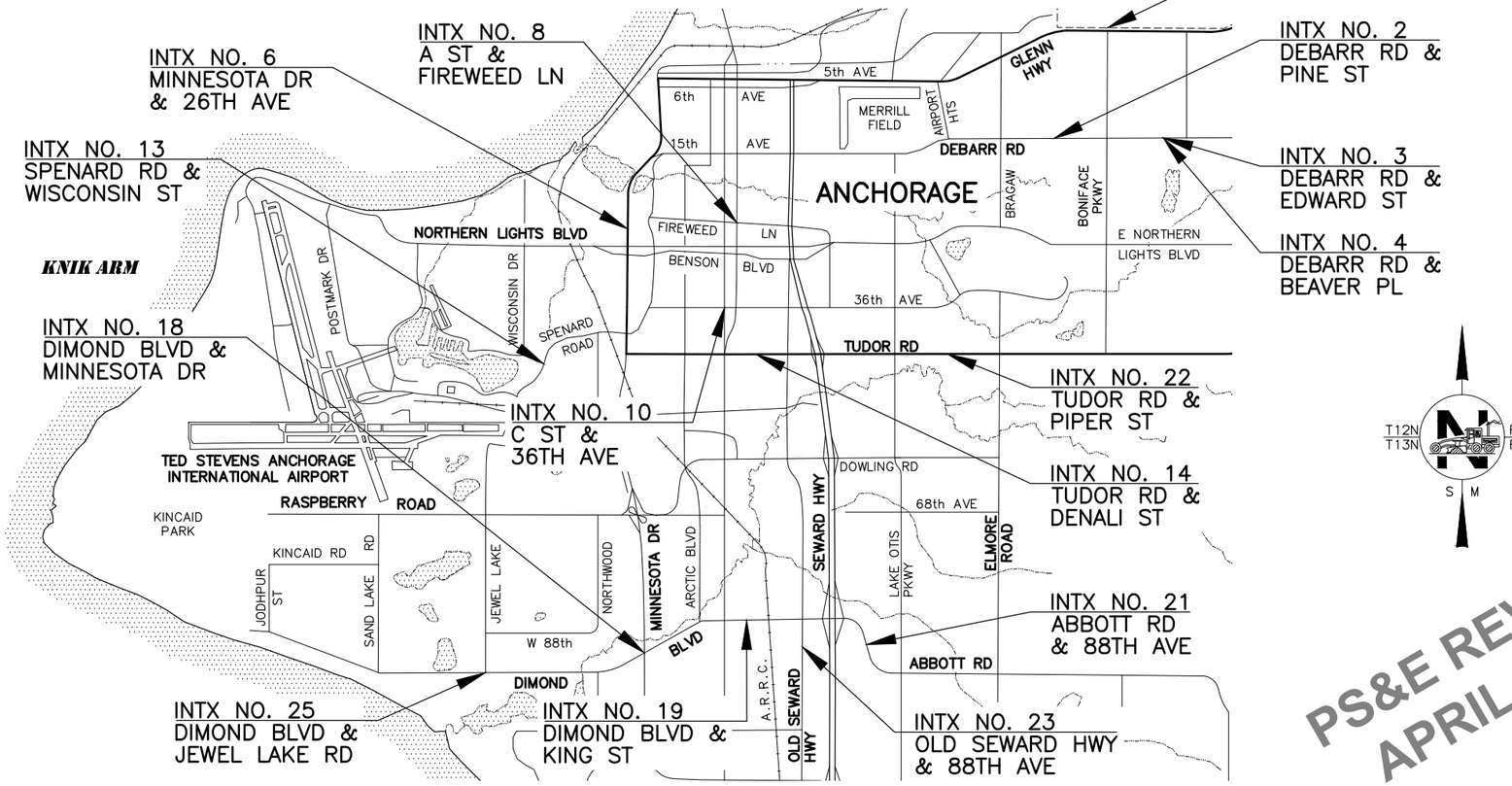
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

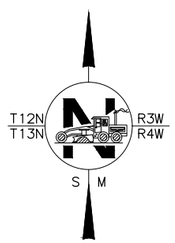


PROPOSED HIGHWAY PROJECT

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS PROJECT NO. 0001750/CFHWY01334 - STAGE 1

GRADING, PAVING, PATHWAYS, ILLUMINATION, SIGNALIZATION, AND STRIPING





PS&E REVIEW
APRIL 2025

INTX 2	DEBARR RD & PINE ST		ROUTE ID	2281273X000/2281267X000
	LATITUDE	61.209697	LONGITUDE	-149.793422
INTX 3	DEBARR RD & EDWARD ST		ROUTE ID	2281273X000/2281087X000
	LATITUDE	61.209731	LONGITUDE	-149.763819
INTX 4	DEBARR RD & BEAVER PL		ROUTE ID	2281273X000/2281076X000
	LATITUDE	61.209703	LONGITUDE	-149.762514
INTX 6	MINNESOTA DR & 26TH AVE		ROUTE ID	2281216I000/2284948X000
	LATITUDE	61.197444	LONGITUDE	-149.913083
INTX 8	A ST & FIREWEED LN		ROUTE ID	2281101X000/2281041X000
	LATITUDE	61.198217	LONGITUDE	-149.883028
INTX 10	C ST & 36TH AVE		ROUTE ID	2281321X000/ 2281060X000
	LATITUDE	61.188067	LONGITUDE	-149.886617
INTX 13	SPENARD RD & WISCONSIN ST		ROUTE ID	2281044X000/2281258X000
	LATITUDE	61.179228	LONGITUDE	-149.938906
INTX 14	TUDOR RD & DENALI ST		ROUTE ID	2281107X000/2281155X000
	LATITUDE	61.180797	LONGITUDE	-149.875597
INTX 18	DIMOND BLVD & MINNESOTA DR		ROUTE ID	2281232X000/2281216F031
	LATITUDE	61.139908	LONGITUDE	-149.909228
INTX 19	DIMOND BLVD & KING ST		ROUTE ID	2281232X000/2281037X000
	LATITUDE	61.144694	LONGITUDE	-149.878886
INTX 21	ABBOTT RD & 88TH AVE		ROUTE ID	2281038X000/2281097X000
	LATITUDE	61.141125	LONGITUDE	-149.847492
INTX 22	TUDOR RD & PIPER ST		ROUTE ID	2281107X000/2281294X000
	LATITUDE	61.180833	LONGITUDE	-149.823297
INTX 23	OLD SEWARD HWY & 88TH AVE		ROUTE ID	2281251X000/2285380X000
	LATITUDE	61.141111	LONGITUDE	-149.864147
INTX 24	BONIFACE PKWY & MOUNTAIN VIEW DR		ROUTE ID	2281189X000/2281143X000
	LATITUDE	61.226242	LONGITUDE	-149.778500
INTX 25	DIMOND BLVD & JEWEL LAKE RD		ROUTE ID	2281232X000/2281234X000
	LATITUDE	61.137461	LONGITUDE	-149.951889

PLANS DEVELOPED BY: DOWL

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

DESIGNED BY ---
CHECKED BY ---
DRAFTED BY ---

SCALE N/A

DATE 4/21/2025 TIME 1:22 PM

DRAWING LOCATION
C:\DOWL_PW\D0408854\00944-A01NA02-TTL.DWG

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	A2	A5

DESIGNED BY
CHECKED BY
DRAFTED BY

SCALE

DATE TIME
4/24/2025 10:15 AM

DRAWING LOCATION
C:\DOWL_PW\D0408854\00944-A01NA02-TTL.DWG

ABBREVIATIONS

ALGN	ALIGNMENT
APPROX	APPROXIMATELY
ASP	ALASKA STANDARD PLAN
AVE	AVENUE
BOP	BEGINNING OF PROJECT
℄	CENTERLINE
CMP	CORRUGATED METAL PIPE
CS	CONTINGENT SUM
CY	CUBIC YARD
DIA	DIAMETER
DOT&PF	DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
DR	DRIVE
DWT	DETECTABLE WARNING TILE
E	EAST, EASTING
EA	EACH
ELEV	ELEVATION
EOP	END OF PROJECT
FT	FOOT, FEET
H	HORIZONTAL
HMA	HOT MIX ASPHALT
HWY	HIGHWAY
INTX	INTERSECTION
LB	POUND
LF	LINEAR FOOT
LS	LUMP SUM
LT	LEFT OF ALIGNMENT
MAX	MAXIMUM
MEA	MATANUSKA ELECTRIC ASSOCIATION
MTE	MATCH EXISTING
MGAL	MILLION GALLONS
MIN	MINIMUM
N	NORTH, NORTHING
NTS	NOT TO SCALE
NO.	NUMBER
RD	ROAD
ROW	RIGHT-OF-WAY
RT	RIGHT OF ALIGNMENT
S	SOUTH, SLOPE
SHLD	SHOULDER
SEC	SECOND
ST	STEEL TUBE
STA/STA.	STATION
STE	SPECIAL TACK EMULSION
SY	SQUARE YARD
TCE	TEMPORARY CONSTRUCTION EASEMENT
W	WEST
W/	WITH

ALIGNMENT DESIGNATIONS

PREFIX	INTERSECTION
"A"	A ST & FIREWEED LN
"AB"	ABBOTT RD & 88TH AVE
"BN"	BONIFACE PKWY & MOUNTAIN VIEW DR
"C"	C ST & 36TH AVE
"DBR-2"	DEBARR RD & PINE ST
"DBR-3"	DEBARR RD & EDWARD ST
"DBR-4"	DEBARR RD & BEAVER PL
"DIM-2"	DIMOND BLVD & MINNESOTA DR
"JL"	DIMOND BLVD & JEWEL LAKE RD
"KG"	DIMOND BLVD & KING ST
"OSH"	OLD SEWARD HWY & 88TH AVE
"MN"	MINNESOTA DR & 26TH AVE
"TD"	TUDOR RD & DENALI ST
"TD-2"	TUDOR RD & PIPER ST
"SP"	SPENARD RD & WISCONSIN ST

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 RIGHT-OF-WAY LINES SHOWN WERE CREATED FOR THIS PROJECT BY ALASKA DOT&PF ROW ENGINEERING AND ARE BASED ON RECORDED DOCUMENTS AND/OR PLATTED SUBDIVISIONS, AND SURVEYED MONUMENTS. THE RIGHT-OF-WAY 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 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.

   IF ANY PAVEMENT PENETRATION REQUIRES GRADE ADJUSTMENT AFTER FINAL LIFT PAVING, AS DETERMINED BY THE ENGINEER, SAW CUT A NEAT LINE ALONG THE PAVEMENT TO BE REMOVED. USE AN INFRARED HEATER TO HEAT THE EXISTING PAVEMENT; EQUIPMENT AND MAXIMUM TEMPERATURE SHALL BE APPROVED BY THE ENGINEER. REPLACE THE REMOVED ASPHALT WITH NEW HOT MIX ASPHALT AND THOROUGHLY COMPACT. SEAL JOINTS, AT LEAST 12 INCHES WIDE CENTERED ON JOINT, USING ASPHALT SYSTEMS GSB-88, OR APPROVED EQUAL, WHILE THE HOT MIX ASPHALT IS CLEAN, FREE OF MOISTURE AND PRIOR TO STRIPING.

   THERE SHALL BE NO PAYMENT FOR ADDITIONAL WORK CAUSED BY FAILURE TO ADJUST PAVEMENT PENETRATIONS TO FINAL GRADE.

7. CONSTRUCT RAMP RUNS, LANDINGS, FLARES, AND SIDEWALK EXTENSIONS SHOWN IN THE PLANS USING 4" OF CONCRETE REGARDLESS OF WHETHER THE EXISTING SIDEWALK/PATHWAY IS ASPHALT OR CONCRETE, UNLESS NOTED OTHERWISE ON THE PLANS.

8. CONSTRUCT CURB RAMPS TO AVOID IMPACTING SIGNAL POLE FOUNDATIONS. DO NOT COVER SIGNAL POLE FOUNDATION BOLTS AND BASE PLATES WITH TOPSOIL.

9. ALL TYPE "A" INLET BOXES SHALL HAVE MINIMUM 18" SUMPS.

10. PLACE CURB AND GUTTER PRIOR TO FINAL LIFT OF ASPHALT.

INDEX

THE FOLLOWING ALASKA STANDARD PLANS APPLY TO THIS PROJECT:

C-03.30, C-04.12, C-05.20,
D-23.01, D-24.00, D-26.04,
I-21.12, I-22.11,
L-24.10, L-26.10, L-30.12,
S-23.00,
T-20.04, T-21.04, T-30.12, T-52.23, T-53.02, T-54.11, T-55.11,
T-56.12, T-57.12

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 FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

INDEX, ALIGNMENT DESIGNATIONS, AND GENERAL NOTES

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	A3	A5

DESIGNED BY
CHECKED BY
DRAFTED BY

SCALE 1" = 1'

DATE 4/21/2025 TIME 1:25 PM

DRAWING LOCATION
C:\DOWL_PW\D0408854\00944-A3-LGND.DWG

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		
CONCRETE SIDEWALK		
ASPHALT PATHWAY		
CURB RAMP		
BRIDGE		
TUNNEL		
GUARDRAIL		
END & PARALLEL END SECTIONS		
ROADWAY OBLITERATION		
FENCE	X X 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		

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 G	
OIL OR GASOLINE PIPELINE	OIL	
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)	W S	
ELECTRIC PEDESTAL, TRANSFORMER	E	E
ELECTRIC MANHOLE, METER	E	
ELECTRIC OUTLET, LANDSCAPE LIGHT		
TELEPHONE	OT (OVERHEAD) UT (UNDERGROUND) UT|UTV (UNDERGROUND)	
TELEPHONE MANHOLE, PEDESTAL	T	T
FIBER OPTIC	OFO (OVERHEAD) FO (UNDERGROUND)	
FIBER OPTIC MANHOLE	FO	
CABLE TV	OTV (OVERHEAD) UTV (UNDERGROUND)	
CABLE TV PEDESTAL, SATELLITE DISH		
UNDERGROUND DUCT, UTILIDOR (ELECTRIC, TELEPHONE, FIBER OPTIC)		
VENT		

TOPOGRAPHY

	EXISTING	EXISTING	PROPOSED
LAKE OR POND, WETLANDS	LAKE/POND	CONTOUR, MAJOR OR MINOR	520 520
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 & SIGNAL		
VEHICULAR SIGNAL		
VEHICULAR SIGNAL LEFT & RIGHT		
OPTICAL, CAMERA, RADAR, AND GPS DETECTOR		CAM RAD GPS
LOOP DETECTOR		###
COMMUNICATION ANTENNA		
MASTARM BEACON		
RURAL & SCHOOL ZONE BEACON		
LOOP DETECTOR CONDUIT		
SIGNAL CONDUIT	TR	TR
LIGHTING CONDUIT	LTG	LTG
SIGNAL & LIGHTING CONDUIT	T/L	T/L
CONDUIT BORING		
CONDUIT SIZE IN INCHES	2"-3C4	2" 1-3C4 CKT BA12 CKT BA13
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 FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

LEGEND

STATE OF ALASKA
REGISTERED
PROFESSIONAL ENGINEER
PROJECT ENGINEER
PSE REVIEW

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	A4	A5

DESIGNED BY
CHECKED BY
DRAFTED BY

SCALE

DATE 4/21/2025 TIME 1:25 PM

DRAWING LOCATION
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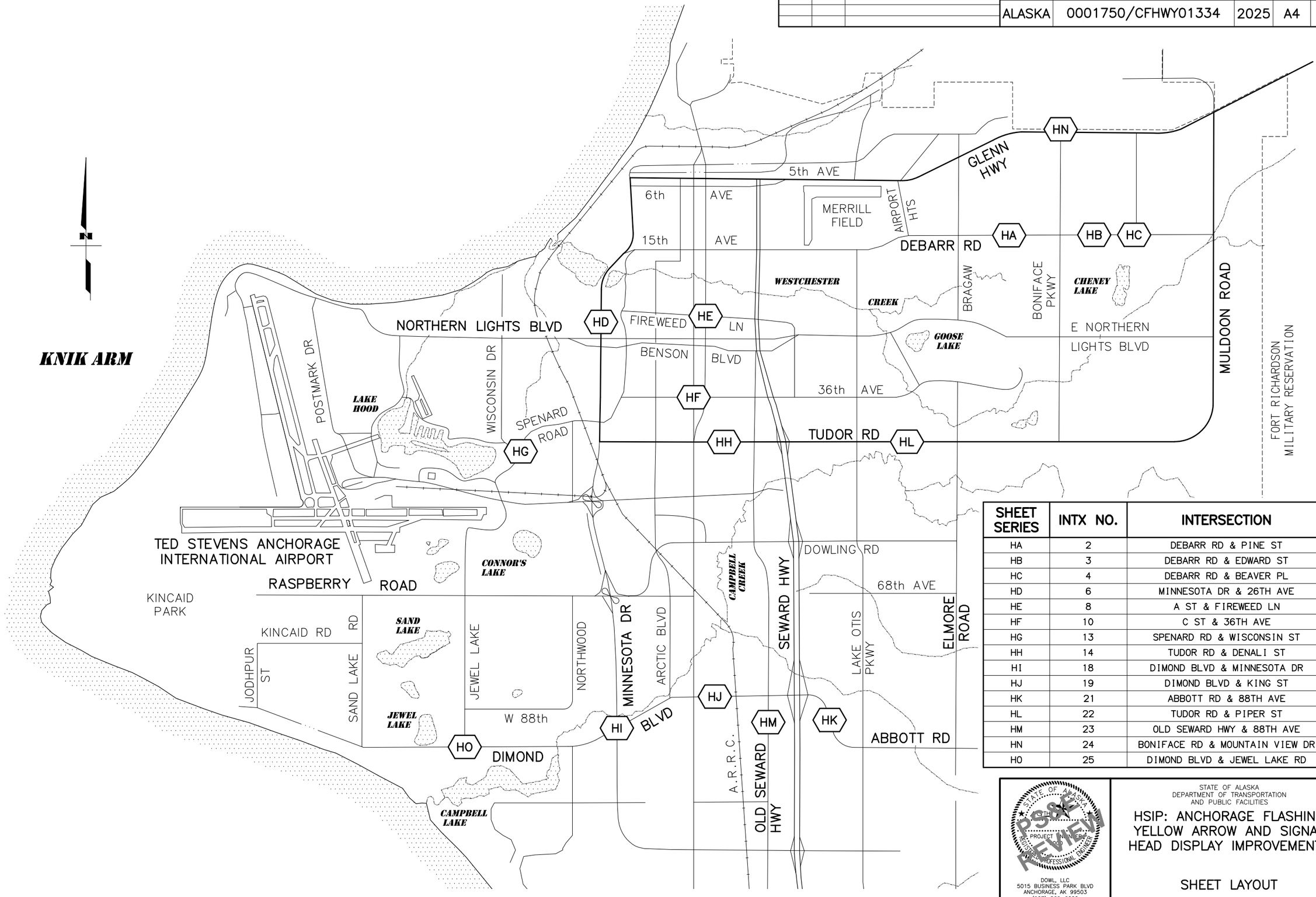

SHEET SERIES	INTX NO.	INTERSECTION
HA	2	DEBARR RD & PINE ST
HB	3	DEBARR RD & EDWARD ST
HC	4	DEBARR RD & BEAVER PL
HD	6	MINNESOTA DR & 26TH AVE
HE	8	A ST & FIREWEED LN
HF	10	C ST & 36TH AVE
HG	13	SPENARD RD & WISCONSIN ST
HH	14	TUDOR RD & DENALI ST
HI	18	DIMOND BLVD & MINNESOTA DR
HJ	19	DIMOND BLVD & KING ST
HK	21	ABBOTT RD & 88TH AVE
HL	22	TUDOR RD & PIPER ST
HM	23	OLD SEWARD HWY & 88TH AVE
HN	24	BONIFACE RD & MOUNTAIN VIEW DR
HO	25	DIMOND BLVD & JEWEL LAKE RD

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

SHEET LAYOUT

PS&E REVIEW

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	A5	A5

DESIGNED BY
CHECKED BY
DRAFTED BY

SCALE

DATE 4/21/2025 TIME 1:25 PM

DRAWING LOCATION
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SURVEY CONTROL SHEETS AT PS&E SUBMITTAL

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

SURVEY CONTROL SHEETS

STATE OF ALASKA
PROJECT ENGINEER
PROFESSIONAL ENGINEER
PS&E REVIEW

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	C1	C1

DESIGNED BY
CHECKED BY
DRAFTED BY

SCALE N/A

DATE TIME 4/21/2025 1:25 PM

DRAWING LOCATION C:\DOWL_PW\D0408854\00944-C-EST.DWG

ESTIMATE OF QUANTITIES

ITEM NO.	ITEM DESCRIPTION	PAY UNIT	TOTAL QUANTITY
202.0002.0000	REMOVAL OF PAVEMENT	SY	477
202.0003.0000	REMOVAL OF SIDEWALK	SY	300
202.0009.0000	REMOVAL OF CURB AND GUTTER	LF	580
301.0001.00D1	AGGREGATE BASE COURSE, GRADING D-1	TON	118
401.0001.002A	HMA, TYPE II; CLASS A	TON	81
401.0004.5240	ASPHALT BINDER, GRADE PG 52-40 V	TON	4.3
604.0016.0000	ADJUST INLET FRAME AND GRATE	EACH	1
608.0001.0004	CONCRETE SIDEWALK, 4 INCHES THICK	SY	288
608.0006.0000	CURB RAMP	EACH	14
608.2002.0000	ASPHALT PATHWAY	TON	9.9
609.0002.0001	CURB AND GUTTER, TYPE 1	LF	464
627.0010.0000	ADJUSTMENT OF VALVE BOX	EACH	3
640.0001.0000	MOBILIZATION AND DEMOBILIZATION	LS	ALL REQ'D
641.0001.0000	EROSION, SEDIMENT AND POLLUTION CONTROL ADMINISTRATION	LS	ALL REQ'D
641.0005.0000	TEMPORARY EROSION, SEDIMENT AND POLLUTION CONTROL BY DIRECTIVE	CS	ALL REQ'D
641.0006.0000	WITHHOLDING	CS	ALL REQ'D
641.0007.0000	SWPPP MANAGER	LS	ALL REQ'D
641.0008.0000	SWPPPTRACK	CS	ALL REQ'D
642.0001.0000	CONSTRUCTION SURVEYING	LS	ALL REQ'D
642.0003.0000	THREE PERSON SURVEY PARTY	HR	45
643.0002.0000	TRAFFIC MAINTENANCE	LS	ALL REQ'D
643.0003.0000	PERMANENT CONSTRUCTION SIGNS	LS	ALL REQ'D
643.0023.0000	TRAFFIC PRICE ADJUSTMENT	CS	ALL REQ'D
643.0025.0000	TRAFFIC CONTROL	CS	ALL REQ'D
643.0032.0000	FLAGGING	CS	ALL REQ'D
644.2004.0000	ENGINEERING COMMUNICATIONS	CS	ALL REQ'D
645.0001.0000	TRAINING PROGRAM, 1 TRAINEE / APPRENTICE	LH	500
646.0001.0000	CPM SCHEDULING	LS	ALL REQ'D
646.2000.0000	SCHEDULE PRICE ADJUSTMENT	CS	ALL REQ'D
647.2002.0000	BACKHOE, 4WD, 1CY BUCKET, 75-HP MINIMUM, 15 FT DEPTH	CS	ALL REQ'D
660.2003.0000	TRAFFIC SIGNAL SYSTEM MODIFICATIONS - A ST & FIREWEED LANE	LS	ALL REQ'D
660.2003.0000	TRAFFIC SIGNAL SYSTEM MODIFICATIONS - ABBOTT RD & 88TH AVE	LS	ALL REQ'D
660.2003.0000	TRAFFIC SIGNAL SYSTEM MODIFICATIONS - BONIFACE PKWY & MOUNTAIN VIEW DR	LS	ALL REQ'D
660.2003.0000	TRAFFIC SIGNAL SYSTEM MODIFICATIONS - C ST & 36TH AVE	LS	ALL REQ'D
660.2003.0000	TRAFFIC SIGNAL SYSTEM MODIFICATIONS - DEBARR RD & BEAVER PL	LS	ALL REQ'D
660.2003.0000	TRAFFIC SIGNAL SYSTEM MODIFICATIONS - DEBARR RD & EDWARD ST	LS	ALL REQ'D
660.2003.0000	TRAFFIC SIGNAL SYSTEM MODIFICATIONS - DEBARR RD & PINE ST	LS	ALL REQ'D
660.2003.0000	TRAFFIC SIGNAL SYSTEM MODIFICATIONS - DIMOND BLVD & JEWEL LAKE RD	LS	ALL REQ'D
660.2003.0000	TRAFFIC SIGNAL SYSTEM MODIFICATIONS - DIMOND BLVD & KING ST	LS	ALL REQ'D

ESTIMATE OF QUANTITIES

ITEM NO.	ITEM DESCRIPTION	PAY UNIT	TOTAL QUANTITY
660.2003.0000	TRAFFIC SIGNAL SYSTEM MODIFICATIONS - DIMOND BLVD & MINNESOTA DR	LS	ALL REQ'D
660.2003.0000	TRAFFIC SIGNAL SYSTEM MODIFICATIONS - MINNESOTA DR & 26TH AVE	LS	ALL REQ'D
660.2003.0000	TRAFFIC SIGNAL SYSTEM MODIFICATIONS - OLD SEWARD HWY & 88TH AVE	LS	ALL REQ'D
660.2003.0000	TRAFFIC SIGNAL SYSTEM MODIFICATIONS - TUDOR RD & DENALI ST	LS	ALL REQ'D
660.2003.0000	TRAFFIC SIGNAL SYSTEM MODIFICATIONS - TUDOR RD & PIPER ST	LS	ALL REQ'D
660.2003.0000	TRAFFIC SIGNAL SYSTEM MODIFICATIONS - SPENARD RD & WISCONSIN ST	LS	ALL REQ'D
661.0002.0000	LOAD CENTER, TYPE 1A	EACH	10
661.0005.0000	MODIFY LOAD CENTER	EACH	9
670.2000.0000	MMA PAVEMENT MARKINGS	LS	ALL REQ'D
682.2000.0000	VAC-TRUCK POTHOLE	CS	ALL REQ'D

TABLE OF ESTIMATING FACTORS

ITEM NO.	ITEM DESCRIPTION	ESTIMATING FACTOR
301.0001.00D1	AGGREGATE BASE COURSE, GRADING D-1	144 LB/FT3
401.0001.002A	HMA, TYPE II; CLASS A	151 LB/FT3
401.0004.5240	ASPHALT BINDER, GRADE PG 52-40 V	5.3% WEIGHT OF 401.0001.002A
608.2002.0000	ASPHALT PATHWAY	151 LB/FT3

STATE OF ALASKA
PROFESSIONAL ENGINEER
PROJECT MANAGER
PSEM
REVIEW

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

ESTIMATE OF QUANTITIES

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	D1	D3

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202.0002.0000 – REMOVAL OF PAVEMENT

SHEET	STATION FROM	OFFSET	STATION TO	OFFSET	AREA (SY)	REMARKS
HD1	"MN" 10+56	39.6' LT	"MN" 11+05	73.6' LT	43.2	ROADWAY
HD1	"MN" 11+75	44.4' RT	"MN" 11+83	44.4' RT	2.7	ROADWAY
HE1	"A" 11+32	55.1' RT	"A" 11+94	21.9' RT	67.9	ROADWAY
HE1	"A" 11+38	73.2' LT	"A" 11+75	26.0' LT	42.2	ROADWAY
HF1	"C" 10+36	29.8' RT	"C" 10+40	29.8' RT	3.2	PATHWAY
HF1	"C" 10+36	22.0' RT	"C" 10+77	64.5' RT	42.0	ROADWAY
HF1	"C" 10+68	56.3' RT	"C" 10+69	64.4' RT	7.9	PATHWAY
HH1	"TD" 11+50	74.6' LT	"TD" 12+13	37.9' LT	110.7	ROADWAY & PATHWAY
HJ1	"KG" 10+46	21.2' LT	"KG" 10+97	69.4' LT	48.5	ROADWAY
HJ1	"KG" 11+81	70.2' RT	"KG" 12+27	25.2' RT	45.7	ROADWAY
HJ1	"KG" 11+89	70.2' RT	"KG" 11+89	65.4' RT	5.1	PATHWAY
HK1	"AB" 11+83	38.9' RT	"AB" 12+12	38.6' RT	38.4	PATHWAY
HK1	"AB" 11+83	31.0' RT	"AB" 12+12	30.6' RT	18.9	ROADWAY
				TOTAL:	476.4	SY
				PAY ITEM QUANTITY:	477	SY

202.0003.0000 – REMOVAL OF SIDEWALK

SHEET	STATION FROM	OFFSET	STATION TO	OFFSET	AREA (SY)	REMARKS
HD1	"MN" 10+56	47.5' LT	"MN" 10+97	74.7' LT	40.1	
HD1	"MN" 11+71	58.0' RT	"MN" 11+83	49.3' RT	14.9	
HE1	"A" 11+40	55.8' RT	"A" 11+73	29.5' RT	26.9	
HE1	"A" 11+45	72.9' LT	"A" 11+75	33.9' LT	41.5	
HF1	"C" 10+40	29.8' RT	"C" 10+68	56.3' RT	44.8	
HH1	"TD" 11+58	76.7' LT	"TD" 11+71	59.4' LT	11.1	
HJ1	"KG" 10+46	29.1' LT	"KG" 10+89	69.5' LT	59.6	
HJ1	"KG" 11+89	65.4' RT	"KG" 12+23	33.1' RT	52.8	
HK1	"AB" 11+88	38.6' RT	"AB" 12+05	38.7' RT	7.4	
				TOTAL:	299.1	SY
				PAY ITEM QUANTITY:	300	SY

202.0009.0000 – REMOVAL OF CURB AND GUTTER

SHEET	STATION FROM	OFFSET	STATION TO	OFFSET	LENGTH (LF)	REMARKS
HD1	"MN" 10+56	46.8' LT	"MN" 10+98	74.6' LT	57.4	
HD1	"MN" 10+72	55.7' LT	"MN" 10+72	58.0' LT	2.6	
HD1	"MN" 10+75	54.6' LT	"MN" 10+92	75.9' LT	29.0	
HD1	"MN" 11+75	48.7' RT	"MN" 11+83	48.6' RT	8.7	
HE1	"A" 11+39	51.6' RT	"A" 11+93	29.1' RT	66.5	
HE1	"A" 11+45	50.3' RT	"A" 11+66	32.5' RT	36.1	
HE1	"A" 11+45	72.9' LT	"A" 11+75	33.9' LT	57.0	
HE1	"A" 11+53	61.9' LT	"A" 11+68	43.7' LT	24.8	
HF1	"C" 10+36	29.2' RT	"C" 10+70	64.4' RT	56.3	
HH1	"TD" 11+57	76.5' LT	"TD" 11+64	59.9' LT	18.3	
HJ1	"KG" 10+46	28.4' LT	"KG" 10+90	69.5' LT	67.7	
HJ1	"KG" 10+54	35.1' LT	"KG" 10+66	45.7' LT	15.7	
HJ1	"KG" 10+68	46.5' LT	"KG" 10+79	64.1' LT	23.1	
HJ1	"KG" 11+88	70.2' RT	"KG" 12+27	32.5' RT	60.7	
HJ1	"KG" 12+00	57.3' RT	"KG" 12+20	43.8' RT	25.5	
HK1	"AB" 11+83	38.2' RT	"AB" 12+12	37.9' RT	28.9	
				TOTAL:	578.3	LF
				PAY ITEM QUANTITY:	580	LF

604.0016.0000 – ADJUST INLET FRAME AND GRATE

SHEET	STATION	OFFSET	QUANTITY (EACH)	REMARKS
HD1	"MN" 11+80	48.0' RT	1	ON GRADE
		TOTAL:	1	EACH
		PAY ITEM QUANTITY:	1	EACH

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STATE OF ALASKA
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HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

SUMMARY TABLES

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	D2	D3

DESIGNED BY
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SCALE N/A

DATE TIME
4/21/2025 1:26 PM

DRAWING LOCATION
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608.0001.0004 – CONCRETE SIDEWALK, 4 INCHES THICK

SHEET	FROM STATION	OFFSET	TO STATION	OFFSET	AREA (SY)	REMARKS
HD1	"MN" 10+56	47.6' LT	"MN" 10+97	74.7' LT	34.0	
HD1	"MN" 11+71	58.0' RT	"MN" 11+83	49.4' RT	14.8	
HE1	"A" 11+40	55.8' RT	"A" 11+53	29.2' RT	24.2	
HE1	"A" 11+46	72.9' LT	"A" 11+75	34.0' LT	41.2	
HF1	"C" 10+42	30.0' RT	"C" 10+68	52.9' RT	22.5	
HH1	"TD" 11+58	76.7' LT	"TD" 11+81	54.4' LT	21.2	
HJ1	"KG" 10+46	29.1' LT	"KG" 10+89	69.5' LT	59.4	
HJ1	"KG" 11+89	70.2' RT	"KG" 12+27	33.2' RT	57.5	
HK1	"AB" 11+88	38.7' RT	"AB" 12+04	38.7' RT	12.6	
				TOTAL:	287.4	SY
				PAY ITEM QUANTITY:	288	SY

608.0006.0000 – CURB RAMP

SHEET	STATION	OFFSET	TYPE	LAYOUT TYPE	ASP	W1/W2 X DEPTH (SEE NOTE 1) (FT)	RADIUS (FT) DIM "A"	MAX HEIGHT (FT) DIM "B"	CHORD LENGTH (FT) DIM "C"	ARC LENGTH (FT) DIM "D"	QUANTITY (EACH)	REMARKS
HD1	"MN" 10+74	48.0' LT	PARALLEL	RADIAL	X	--	26.25	0.20	6.48	6.50	1	
HD1	"MN" 10+93	60.7' LT	PARALLEL	RADIAL	X	--	26.25	0.20	6.48	6.50	1	
HE1	"A" 11+41	37.1' RT	PERPENDICULAR	RECTANGULAR	X	5.00 x 2.00	--	--	--	--	1	
HE1	"A" 11+49	49.7' LT	COMBINATION	DIAGONAL		5.00/5.25 x 2.00	--	--	--	--	1	
HE1	"A" 11+50	29.2' RT	PERPENDICULAR	RECTANGULAR	X	5.00 x 2.00	--	--	--	--	1	
HE1	"A" 11+58	39.8' LT	PERPENDICULAR	DIAGONAL	X	5.00/5.25 x 2.00	--	--	--	--	1	
HF1	"C" 10+52	32.3' RT	PERPENDICULAR	RADIAL	X	--	27.25	0.19	6.41	6.43	1	
HF1	"C" 10+65	45.0' RT	PERPENDICULAR	RADIAL	X	--	27.25	0.21	6.73	6.75	1	
HH1	"TD" 11+67	57.8' LT	DIRECTIONAL	DIAGONAL		10.21/8.62 x 2.00	--	--	--	--	1	
HK1	"KG" 10+67	33.0' LT	COMBINATION	RECTANGULAR		5.25 x 2.00	--	--	--	--	1	
HK1	"KG" 10+82	46.4' LT	COMBINATION	RECTANGULAR		5.25 x 2.00	--	--	--	--	1	
HK1	"KG" 11+96	46.9' RT	PERPENDICULAR	DIAGONAL	X	5.25/5.50 x 2.00	--	--	--	--	1	
HK1	"KG" 12+08	37.1' RT	COMBINATION	DIAGONAL		5.25/5.50 x 2.00	--	--	--	--	1	
HL1	"AB" 11+97	38.7' RT	PERPENDICULAR	RECTANGULAR	X	5.00 x 2.00	--	--	--	--	1	
										TOTAL:	14	EACH
										PAY ITEM QUANTITY:	14	EACH

NOTES:

1. CURB RAMPS WITH A DETAIL MUST STILL COMPLY WITH THE APPLICABLE ASP.
2. FOR RECTANGULAR DETECTABLE WARNING TILES, ONLY W1 IS LISTED. SEE SHEET E1 FOR DETECTABLE WARNING TILE KEY DIMENSIONS.

STATE OF ALASKA
REGISTERED PROFESSIONAL ENGINEER
PROJECT ENGINEER
PS&E REVIEW

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STATE OF ALASKA
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AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

SUMMARY TABLES

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	D3	D3

DESIGNED BY
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SCALE N/A

DATE TIME
4/21/2025 1:26 PM

DRAWING LOCATION
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608.2002.0000 – ASPHALT PATHWAY

SHEET	FROM STATION	OFFSET	TO STATION	OFFSET	WEIGHT (TON)	REMARKS
HF1	"C" 10+36	30.0' RT	"C" 10+69	64.4' RT	3.7	
HH1	"TD" 11+81	54.4' LT	"TD" 12+11	52.9' LT	2.6	
HK1	"AB" 11+83	39.0' RT	"AB" 12+12	38.6' RT	3.6	
				TOTAL:	9.9	TON
				PAY ITEM QUANTITY:	9.9	TON

609.0002.0001 – CURB AND GUTTER, TYPE 1

SHEET	FROM STATION	OFFSET	TO STATION	OFFSET	LENGTH (LF)	REMARKS
HD1	"MN" 10+56	47.1' LT	"MN" 10+97	74.6' LT	57.1	
HD1	"MN" 11+75	48.9' RT	"MN" 11+93	29.4' RT	8.7	
HE1	"A" 11+40	51.6' RT	"A" 11+73	29.1' RT	66.1	
HE1	"A" 11+45	72.9' LT	"A" 11+75	33.5' LT	56.5	
HF1	"C" 10+36	29.5' RT	"C" 10+69	64.4' RT	55.8	
HH1	"TD" 11+57	76.6' LT	"TD" 12+03	47.3' LT	63.1	
HJ1	"KG" 10+46	28.7' LT	"KG" 10+90	69.5' LT	67.1	
HJ1	"KG" 11+88	70.2' RT	"KG" 12+27	32.7' RT	60.5	
HK1	"AB" 11+83	38.5' RT	"AB" 12+12	38.1' RT	28.9	
				TOTAL:	463.8	LF
				PAY ITEM QUANTITY:	464	LF

627.0010.0000 – ADJUSTMENT OF VALVE BOX

SHEET	STATION	OFFSET	QUANTITY (EACH)	REMARKS
HD1	"MN" 11+01	65.8' LT	1	
HF1	"C" 10+54	37.1' RT	1	
HF1	"C" 10+56	29.1' RT	1	
		TOTAL:	3	EACH
		PAY ITEM QUANTITY:	3	EACH

661.0002.0000 – LOAD CENTER, TYPE 1A

SHEET	STATION	OFFSET	QUANTITY (EACH)	REMARKS
HC1	"DB" 10+46	47.1' RT	1	DEBARR RD & BEAVER PL
HC1	"DB" 10+38	47.1' RT	1	DEBARR RD & BEAVER PL
HE1	"A" 11+90	33.4' RT	1	A STREET & FIREWEED LN
HF1	"C" 11+50	72.0' RT	1	C STREET & 36TH AVE
HF1	"C" 11+40	74.3' RT	1	C STREET & 36TH AVE
HI1	"MN" 10+82	81.0' RT	1	DIMOND BLVD & MINNESOTA DR
HJ1	"KG" 11+98	119.3' RT	1	DIMOND BLVD & KING ST
HJ1	"KG" 11+98	129.6' RT	1	DIMOND BLVD & KING ST
HO1	"JL" 12+09	99.3' RT	1	DIMOND BLVD & JEWEL LAKE RD
HO1	"JL" 12+09	92.1' RT	1	DIMOND BLVD & JEWEL LAKE RD
		TOTAL:	10	EACH
		PAY ITEM QUANTITY:	10	EACH

661.0005.0000 – MODIFY LOAD CENTER

SHEET	STATION	OFFSET	TYPE	QUANTITY (EACH)	REMARKS
HA1	"DBR-2" 11+98	72.6' LT	1A	1	DEBARR RD & PINE ST
HB1	"DBR-3" 10+64	61.5' LT	1A	1	DEBARR RD & EDWARD ST
HD1	"MN" 11+53.9	75.1' LT	1A	1	MINNESOTA DR & 26TH AVE
HG1	"SP" 10+54.7	88.4' LT	1	1	SPENARD RD & WISCONSIN ST
HH1	"TD" 11+85.9	70.9' LT	1	1	TUDOR RD & DENALI ST
HK1	"AB" 10+71.20	55.1' LT	1A	1	ABBOTT RD & 88TH
HL1	"TD-2" 11+58.3	93.2' LT	1A	1	TUDOR RD & PIPER ST
HM1	"OSH" 14+28.8	69.4' LT	1A	1	OLD SEWARD HWY & 88TH AVE
HN1	N/A	N/A	1	1	BONIFACE PKWY & MOUNTAIN VIEW DR
			TOTAL:	9	EACH
			PAY ITEM QUANTITY:	9	EACH

STATE OF ALASKA
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AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

SUMMARY TABLES

STATE OF ALASKA
PROFESSIONAL ENGINEER
PROJECT NUMBER
0000
PRELIMINARY
NOT FOR CONSTRUCTION

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	E1	E10

DESIGNED BY
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SCALE 1"=4'

DATE TIME 4/9/2025 10:10 AM

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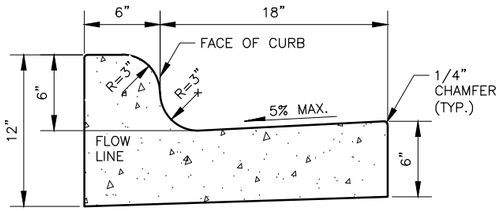
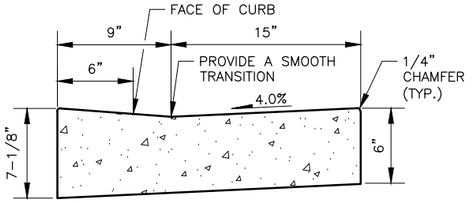


6" MOUNTABLE CURB & GUTTER



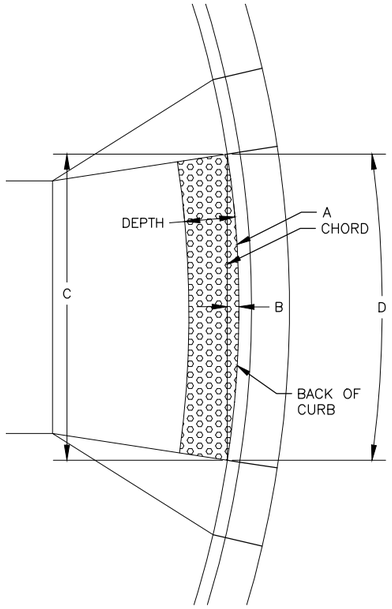
ADA CURB & GUTTER

CURB NOTES:

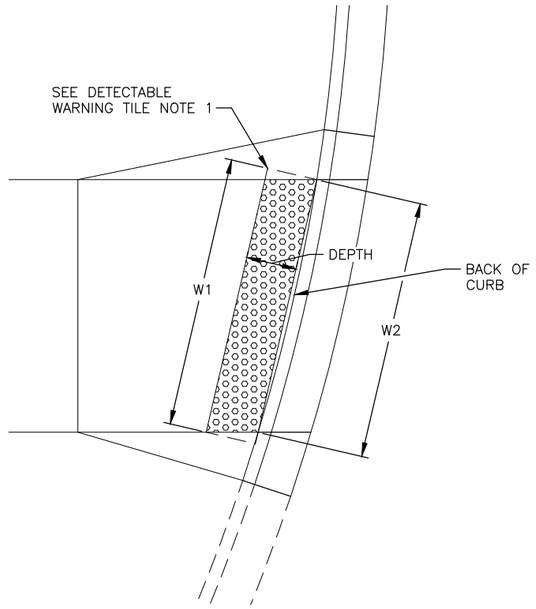
1. USE THE ADA CURB & GUTTER FOR ALL CURB RAMPS.

CURBS

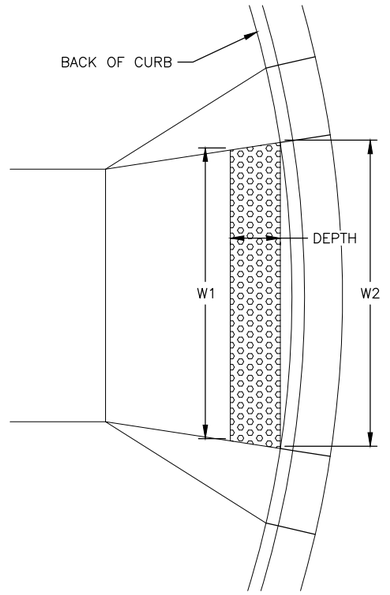
NTS



RADIAL LAYOUT



DIAGONAL LAYOUT
(RAMP NON-PERPENDICULAR TO CURB FACE)



DIAGONAL LAYOUT
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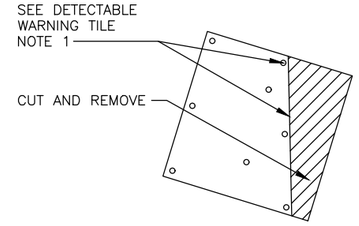
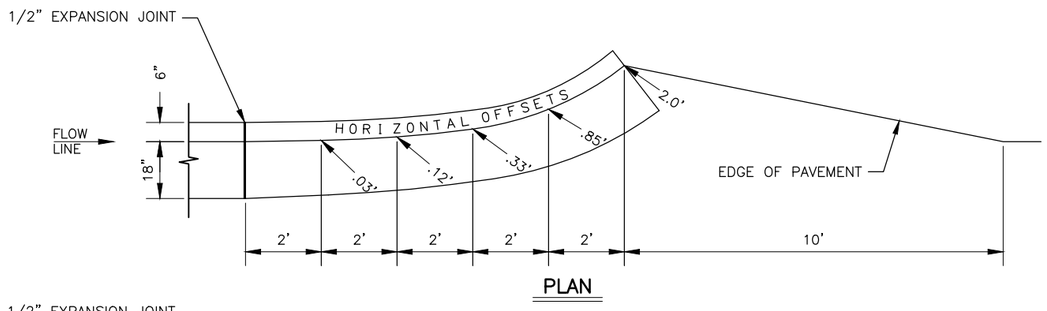


FIELD CUTTING DETECTABLE WARNING TILE DETAIL

NTS

DETECTABLE WARNING TILE LAYOUT AND KEY DIMENSIONS

NTS



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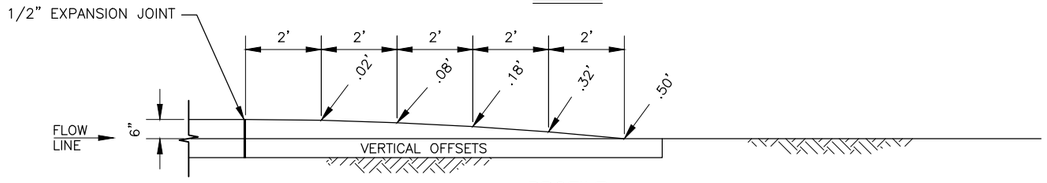
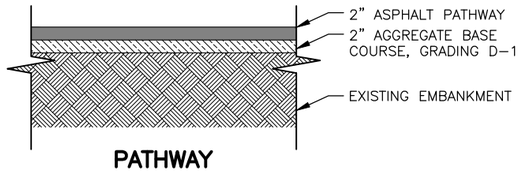


PROFILE

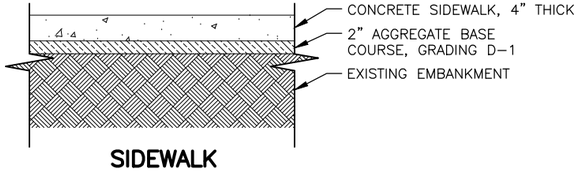
CURB & GUTTER TERMINATION TRANSITIONS

NTS



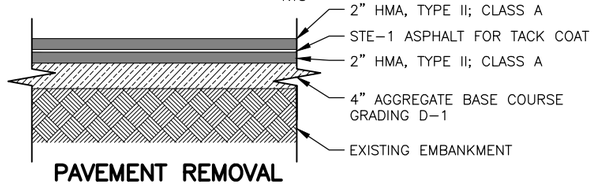
PATHWAY STRUCTURAL SECTION

NTS



SIDEWALK STRUCTURAL SECTION

NTS



PAVEMENT REMOVAL STRUCTURAL SECTION

NTS

DETECTABLE WARNING TILE NOTES:

1. DETECTABLE WARNING TILE SHALL EXTEND THE FULL WIDTH OF THE CURB RAMP. WHEN THE END TILE IS CUT ON-SITE, NEW ANCHOR HOLES ARE TO BE DRILLED AND COUNTERSUNK ALONG THE CUT LINE. FOLLOW THE MANUFACTURER RECOMMENDATIONS FOR ON-SITE CUTTING PROCEDURES, HOLE SET-BACK AND SPACING DISTANCES, TOOLS FOR CUTTING, SETTING NEW ANCHOR HOLES SYSTEM, AND RECOATING OF SAWCUT LINES. SEE SUBSECTION 608-5.01 FOR METHOD OF PAYMENT.

2. DETECTABLE WARNING TILE DIMENSIONS PROVIDED ARE PER DESIGN, AND NEED TO BE VERIFIED PRIOR TO INSTALLATION TO ENSURE THE DETECTABLE WARNING TILE WILL BE INSTALLED ACROSS THE FULL WIDTH OF THE RAMP RUN OR LOWER LANDING, WHICHEVER IS APPLICABLE. DETECTABLE WARNING TILE MUST BE A MAXIMUM OF 2.0 INCHES FROM THE BACK OF CURB AND/OR THE RAMP RUN OR LOWER LANDING EDGE AT THE BACK OF CURB. NOT MEETING THESE REQUIREMENTS IS GROUNDS FOR REJECTING THE CURB RAMP. CONTRACTOR TO PROVIDE DETECTABLE WARNING TILE LAYOUT SHOP DRAWINGS PER LOCATION FOR APPROVAL BY THE ENGINEER. SEE SUBSECTION 608-5.01 FOR METHOD OF PAYMENT.

3. DETECTABLE WARNING TILE KEY DIMENSIONS, REFER TO D-SHEETS FOR CURB RAMP SUMMARY TABLE:
   - "A" = RADIUS AT BACK OF CURB.
   - "B" = MAXIMUM DISTANCE FROM THE RADIUS CHORD TO BACK OF CURB.
   - "C" = CHORD LENGTH.
   - "D" = ARC LENGTH AT BACK OF CURB.
   - DEPTH = 24 INCHES MINIMUM.

PSSE REVIEW

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HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

STRUCTURAL SECTIONS, CURB AND GUTTER AND DETECTABLE WARNING TILE DETAILS

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	E2	E10

DESIGNED BY
CHECKED BY
DRAFTED BY

SCALE 1"=4'

DATE TIME 4/9/2025 4:03 PM

DRAWING LOCATION
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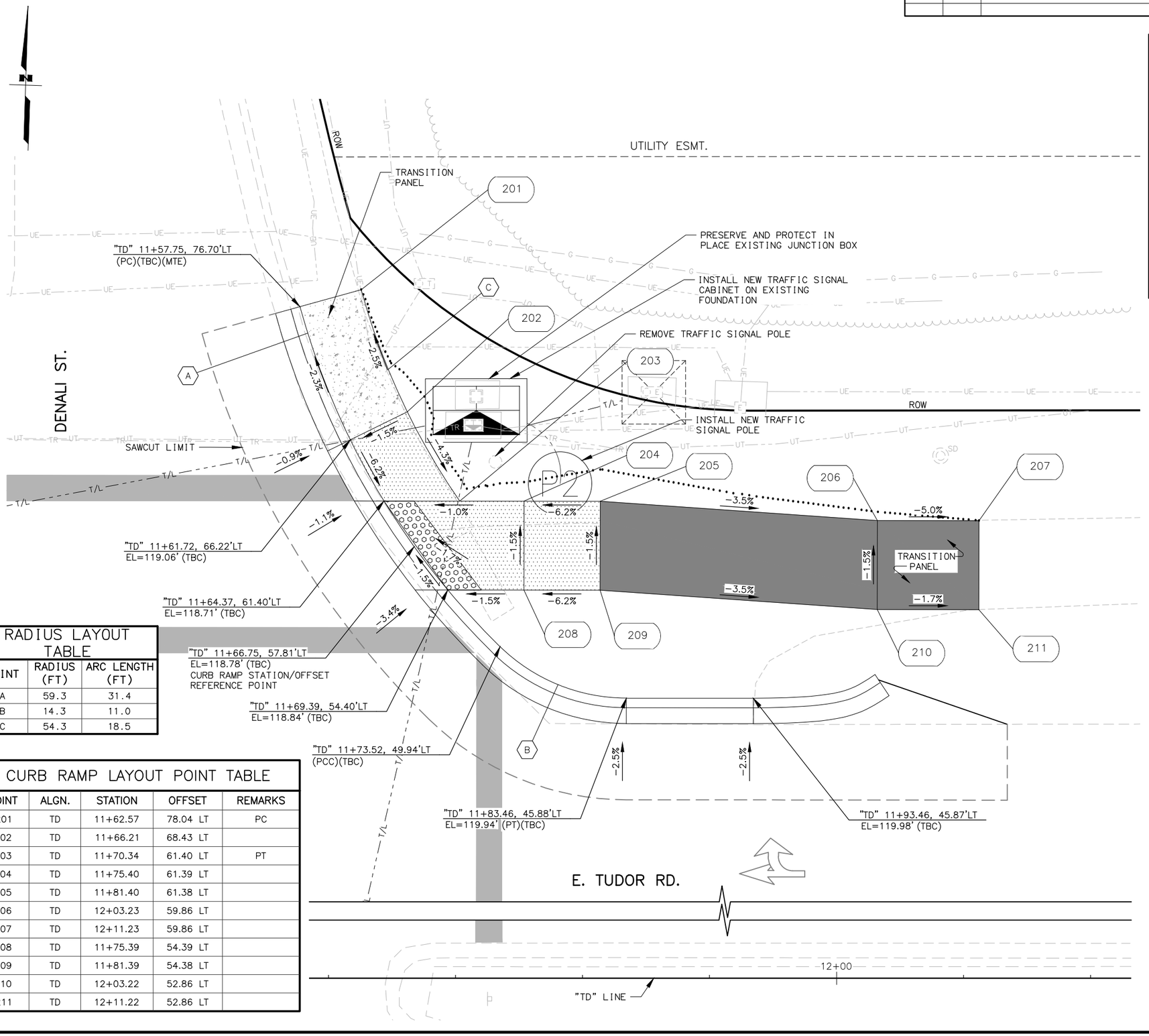

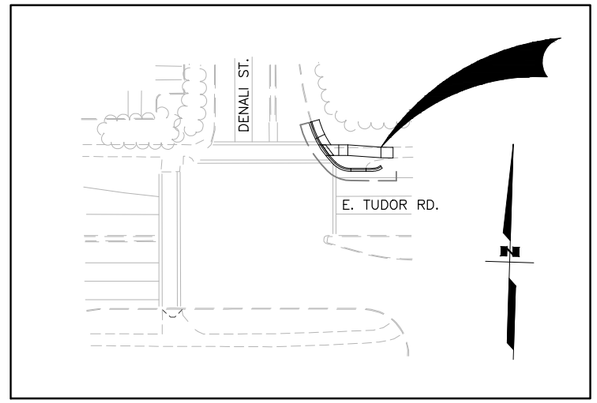

RADIUS LAYOUT TABLE

POINT	RADIUS (FT)	ARC LENGTH (FT)
A	59.3	31.4
B	14.3	11.0
C	54.3	18.5

CURB RAMP LAYOUT POINT TABLE

POINT	ALGN.	STATION	OFFSET	REMARKS
201	TD	11+62.57	78.04 LT	PC
202	TD	11+66.21	68.43 LT	
203	TD	11+70.34	61.40 LT	PT
204	TD	11+75.40	61.39 LT	
205	TD	11+81.40	61.38 LT	
206	TD	12+03.23	59.86 LT	
207	TD	12+11.23	59.86 LT	
208	TD	11+75.39	54.39 LT	
209	TD	11+81.39	54.38 LT	
210	TD	12+03.22	52.86 LT	
211	TD	12+11.22	52.86 LT	

NOTES:

1. FINISHED GRADES OF PAVEMENT, FLOW LINES, CURB RAMPS, SIDEWALK SHALL MAINTAIN POSITIVE DRAINAGE AND PROHIBIT PONDING.
2. UNLESS OTHERWISE NOTED ON THE PLANS, SAWCUT MATCH LINES SHOULD BE SET 6.0' FROM THE PROPOSED LIP OF GUTTER.
3. CONTRACTOR SHALL FIELD VERIFY ALL MATCH-EXISTING LOCATIONS PRIOR TO CONSTRUCTION AND REPORT TO THE ENGINEER. CONSTRUCTION JOINTS AT MATCH LOCATIONS SHALL BE ADJUSTED TO THE NEAREST EXISTING CONSTRUCTION JOINT. THE MINIMUM EXISTING PANEL LENGTH THAT CAN REMAIN IS 4.0'.
4. EXCEPT WHERE NOTED AND AT CURB RAMPS, FLARES, AND LOCATIONS WHERE SIDEWALK IS PRESENT, TRANSITION FINISHED TOP BACK OF CURB ELEVATION TO MATCH EXISTING AT NO MORE THAN 4.0% RUNNING SLOPE.
5. CONSTRUCT AGGREGATE BASE COURSE, GRADING D-1, 2" UNDER CURB AND GUTTER AND 4" UNDER CURB RAMP.
6. WHERE CURB RAMP/CURB AND GUTTER EXTEND OUTSIDE EXISTING CURB RAMP/CURB AND GUTTER LIMITS, EXCAVATE AND CONSTRUCT 4" OF AGGREGATE BASE COURSE, GRADING D-1 OVER A 24" MIN. OF SELECTED MATERIAL, TYPE A MATERIAL, REFER TO SUBSECTION 608-3.01 CONSTRUCTION REQUIREMENTS.
7. ALL PAVEMENT WITHIN SAWCUT LIMITS SHALL USE PAVEMENT REMOVAL STRUCTURAL SECTION DETAIL SHOWN ON SHT. E1.
8. WHERE THERE IS EXISTING STRIPING, REMOVE PAVEMENT MARKINGS WITHIN THE EXTENTS OF THE SAWCUT LIMITS AS SHOWN IN THE PLANS. RESTRIPE AND MATCH EXSITING STRIPING CONDITIONS.

STATE OF ALASKA
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AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

CURB RAMP TUDOR & DENALI NE CORNER LAYOUT

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	E3	E10

DESIGNED BY
CHECKED BY
DRAFTED BY

SCALE 1"=4'

DATE 4/9/2025 TIME 10:57 AM

DRAWING LOCATION
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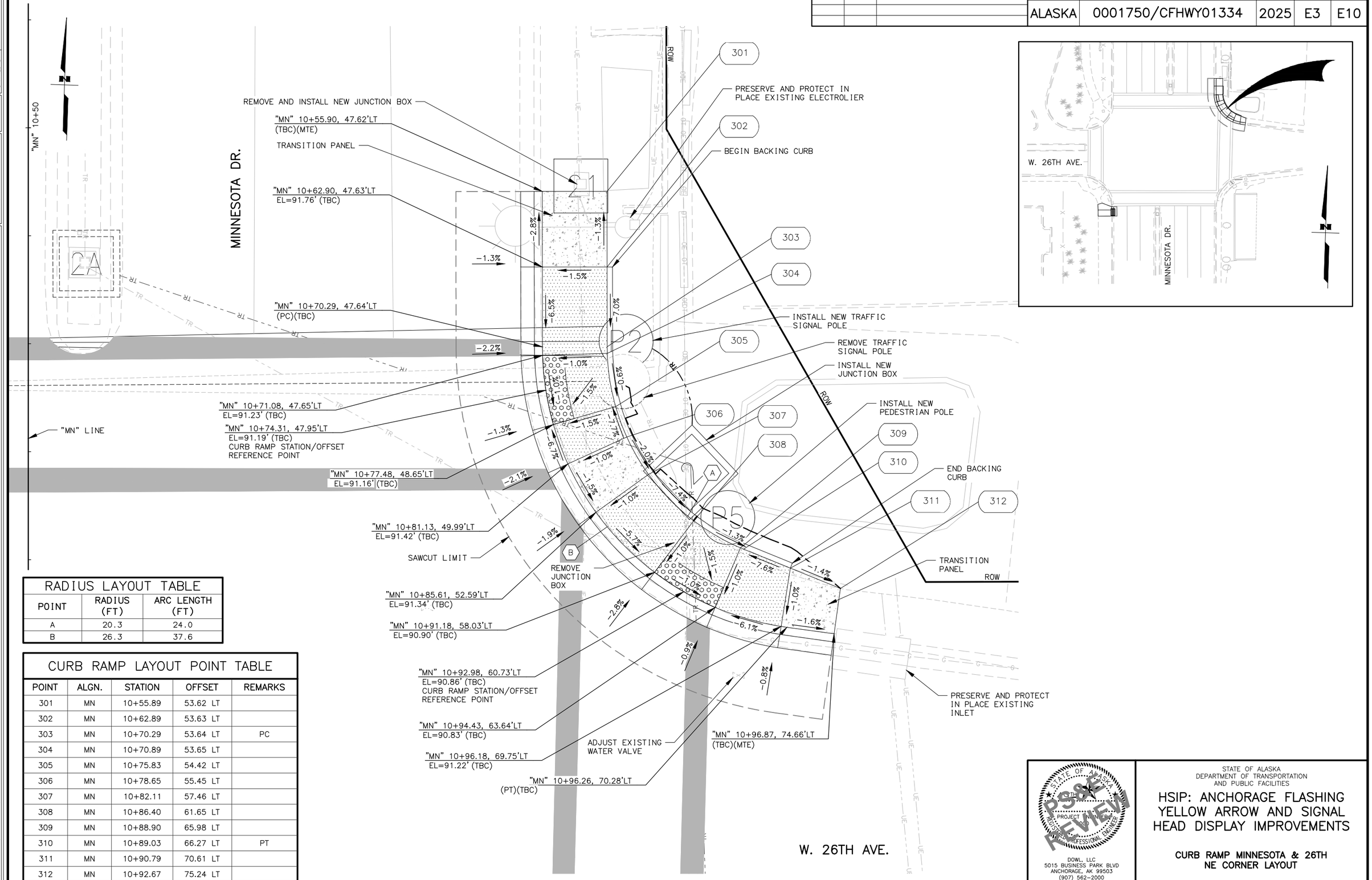

RADIUS LAYOUT TABLE

POINT	RADIUS (FT)	ARC LENGTH (FT)
A	20.3	24.0
B	26.3	37.6

CURB RAMP LAYOUT POINT TABLE

POINT	ALGN.	STATION	OFFSET	REMARKS
301	MN	10+55.89	53.62 LT	
302	MN	10+62.89	53.63 LT	
303	MN	10+70.29	53.64 LT	PC
304	MN	10+70.89	53.65 LT	
305	MN	10+75.83	54.42 LT	
306	MN	10+78.65	55.45 LT	
307	MN	10+82.11	57.46 LT	
308	MN	10+86.40	61.65 LT	
309	MN	10+88.90	65.98 LT	
310	MN	10+89.03	66.27 LT	PT
311	MN	10+90.79	70.61 LT	
312	MN	10+92.67	75.24 LT	

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

CURB RAMP MINNESOTA & 26TH NE CORNER LAYOUT

STATE OF ALASKA
PSBF REVIEW
PROJECT ENGINEER
REGISTERED PROFESSIONAL ENGINEER

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AECL848

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	E4	E10

DESIGNED BY
CHECKED BY
DRAFTED BY

SCALE 1"=4'

DATE TIME
4/9/2025 11:02 AM

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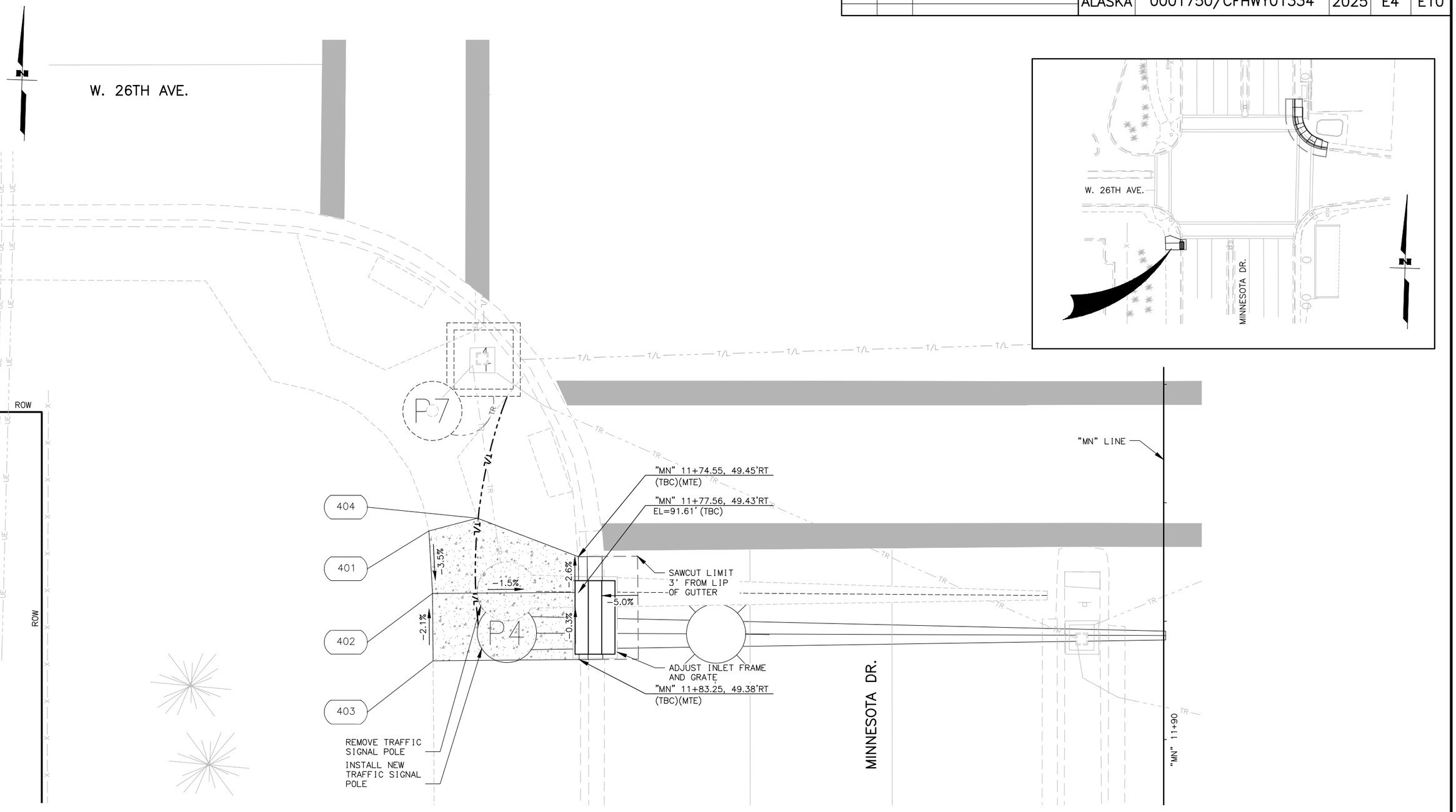

CURB RAMP LAYOUT POINT TABLE

POINT	ALGN.	STATION	OFFSET	REMARKS
401	MN	11+72.38	62.07 RT	
402	MN	11+77.66	61.77 RT	
403	MN	11+83.35	61.72 RT	
404	MN	11+71.30	57.99 RT	

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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

CURB RAMP MINNESOTA & 26TH SW CORNER LAYOUT

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	E5	E10

DESIGNED BY
CHECKED BY
DRAFTED BY

SCALE 1"=4'

DATE TIME 4/9/2025 10:33 AM

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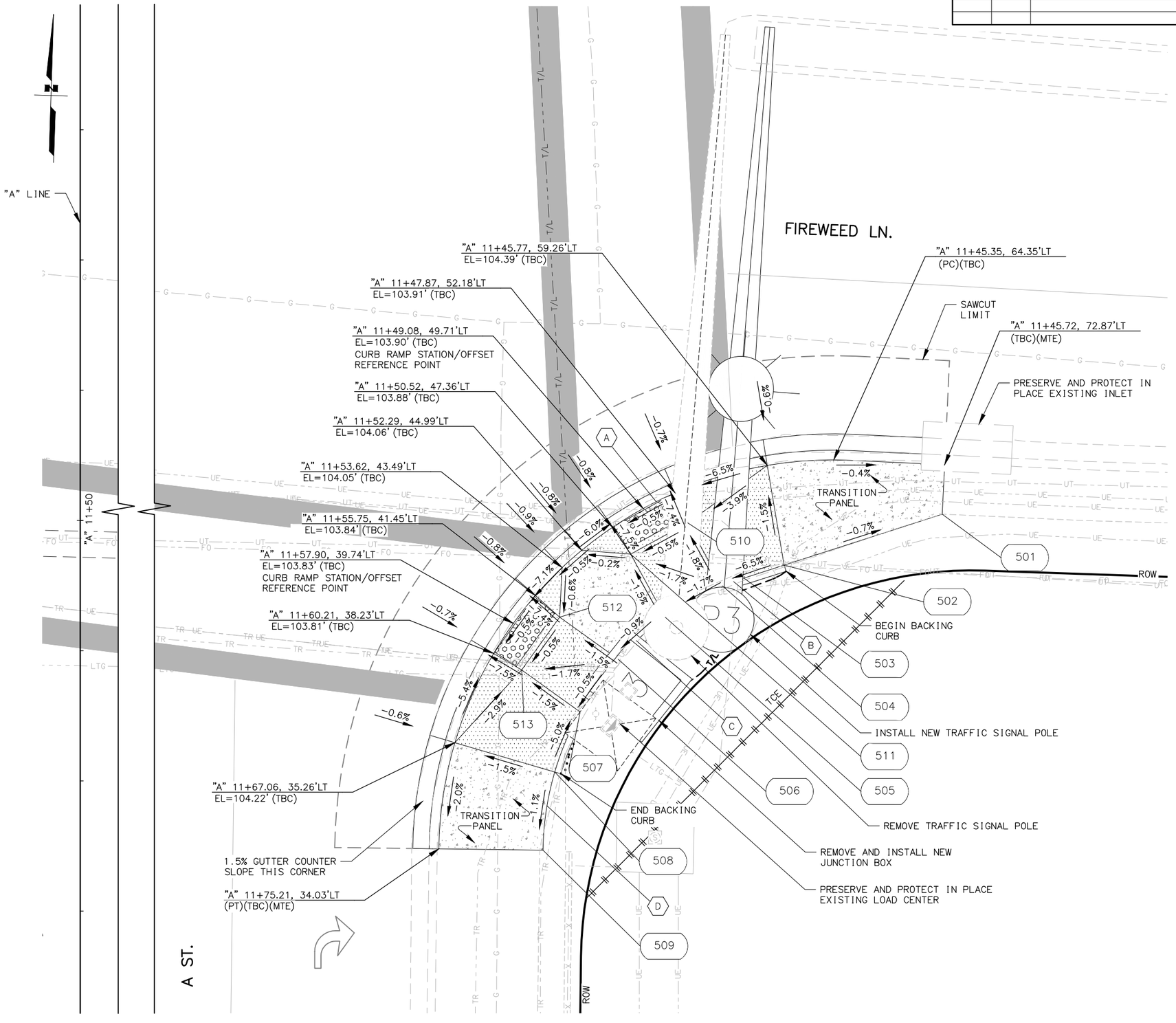

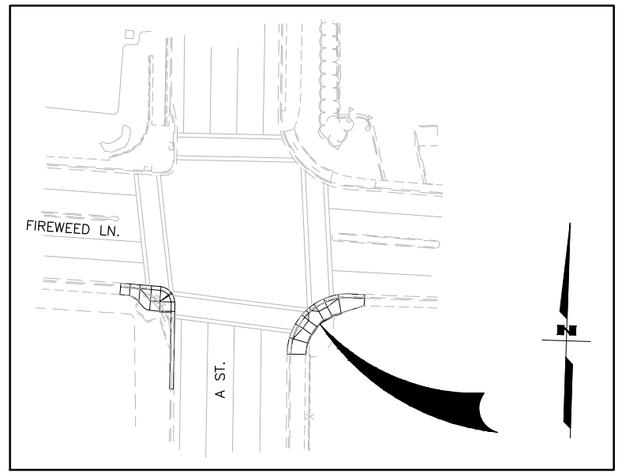

RADIUS LAYOUT TABLE		
POINT	RADIUS (FT)	ARC LENGTH (FT)
A	30.3	48.6
B	22.3	1.8
C	22.3	4.9
D	22.3	11.1

CURB RAMP LAYOUT POINT TABLE

POINT	ALGN.	STATION	OFFSET	REMARKS
501	A	11+49.51	72.70 LT	
502	A	11+53.42	60.55 LT	
503	A	11+54.42	57.46 LT	PC
504	A	11+55.02	55.81 LT	PT
505	A	11+57.43	51.43 LT	PC
506	A	11+60.65	47.79 LT	PT
507	A	11+64.71	44.87 LT	PC
508	A	11+69.32	42.93 LT	
509	A	11+75.31	42.03 LT	PT
510	A	11+50.18	53.14 LT	
511	A	11+52.59	48.76 LT	
512	A	11+57.42	43.31 LT	
513	A	11+61.48	40.39 LT	

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

CURB RAMP A & FIREWEED SE CORNER LAYOUT

STATE OF ALASKA
PROJECT ENGINEER
PSSE REVIEW
REGISTERED PROFESSIONAL ENGINEER

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	E6	E10

DESIGNED BY
CHECKED BY
DRAFTED BY

SCALE 1"=4'

DATE TIME 4/9/2025 11:04 AM

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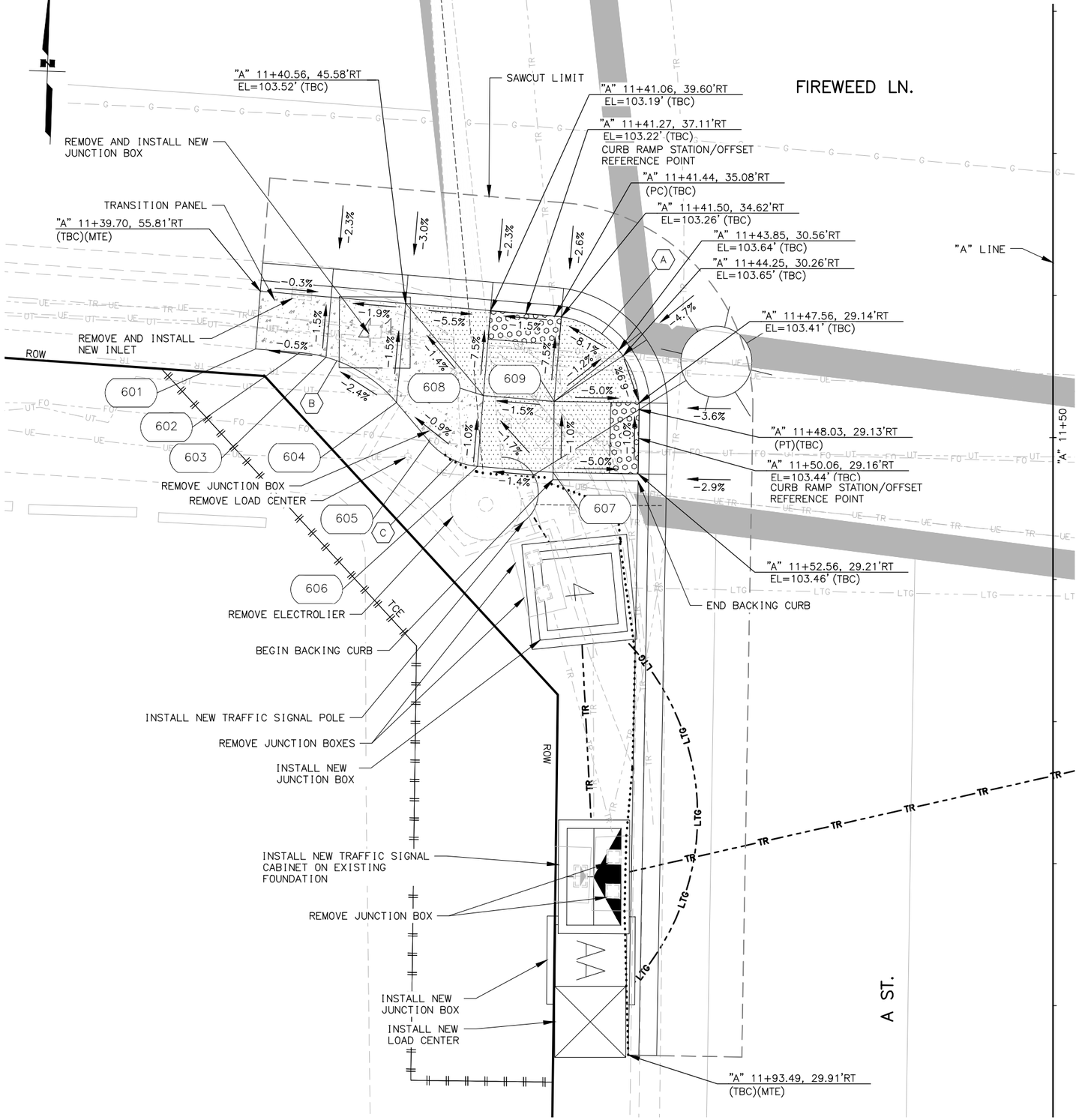

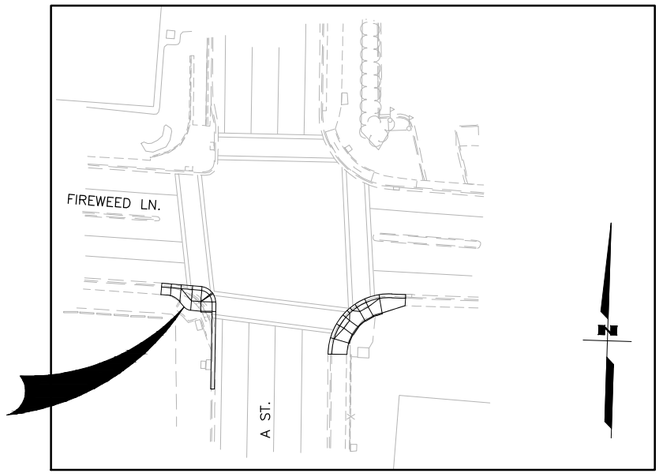

RADIUS LAYOUT TABLE

POINT	RADIUS (FT)	ARC LENGTH (FT)
A	6.5	9.8
B	10.0	7.9
C	5.0	3.9

CURB RAMP LAYOUT POINT TABLE

POINT	ALGN.	STATION	OFFSET	REMARKS
601	A	11+43.76	56.15 RT	
602	A	11+44.02	53.03 RT	PC
603	A	11+44.36	51.18 RT	
604	A	11+47.53	46.23 RT	PT
605	A	11+50.27	43.92 RT	PC
606	A	11+52.03	40.52 RT	PT
607	A	11+52.46	35.21 RT	
608	A	11+47.04	40.10 RT	
609	A	11+47.46	35.12 RT	

STATE OF ALASKA
REGISTERED PROFESSIONAL ENGINEER
PROJECT ENGINEER
PSE REVIEW

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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

CURB RAMP A & FIREWEED SW CORNER LAYOUT

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	E7	E10

DESIGNED BY
CHECKED BY
DRAFTED BY

SCALE 1"=4'

DATE TIME
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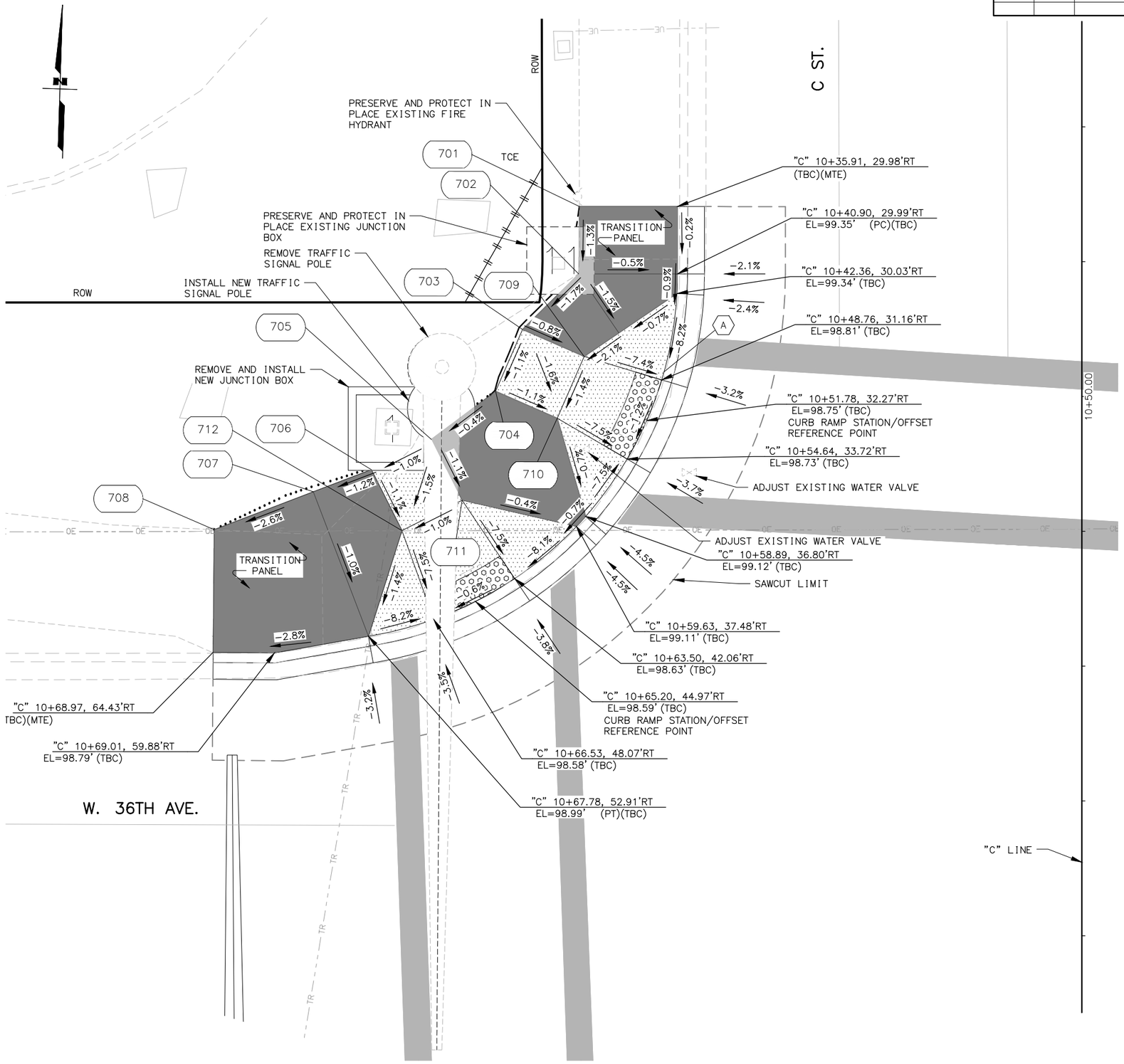

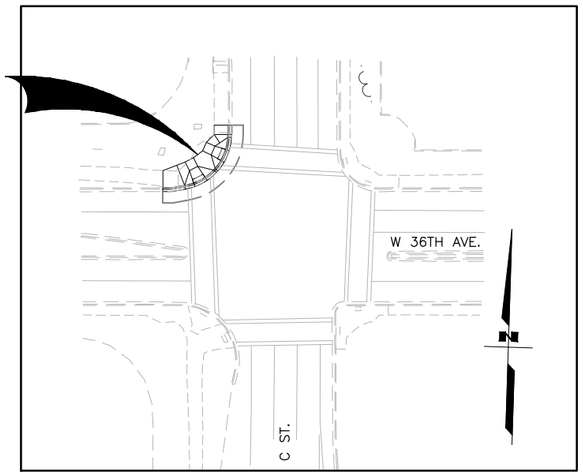

RADIUS LAYOUT TABLE

POINT	RADIUS (FT)	ARC LENGTH (FT)
A	27.3	38.0

CURB RAMP LAYOUT POINT TABLE

POINT	ALGN.	STATION	OFFSET	REMARKS
701	C	10+35.90	37.26 RT	
702	C	10+40.90	37.32 RT	
703	C	10+45.02	41.48 RT	
704	C	10+49.60	43.48 RT	
705	C	10+53.18	48.23 RT	
706	C	10+55.43	52.70 RT	
707	C	10+57.07	57.00 RT	
708	C	10+59.88	64.35 RT	
709	C	10+47.04	36.91 RT	
710	C	10+51.61	38.90 RT	
711	C	10+57.69	45.96 RT	
712	C	10+59.94	50.42 RT	

PSSE REVIEW

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ANCHORAGE, AK 99503
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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

CURB RAMP C & 36TH NW CORNER LAYOUT

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	E8	E10

DESIGNED BY
CHECKED BY
DRAFTED BY

SCALE 1"=4'

DATE 4/9/2025 TIME 10:40 AM

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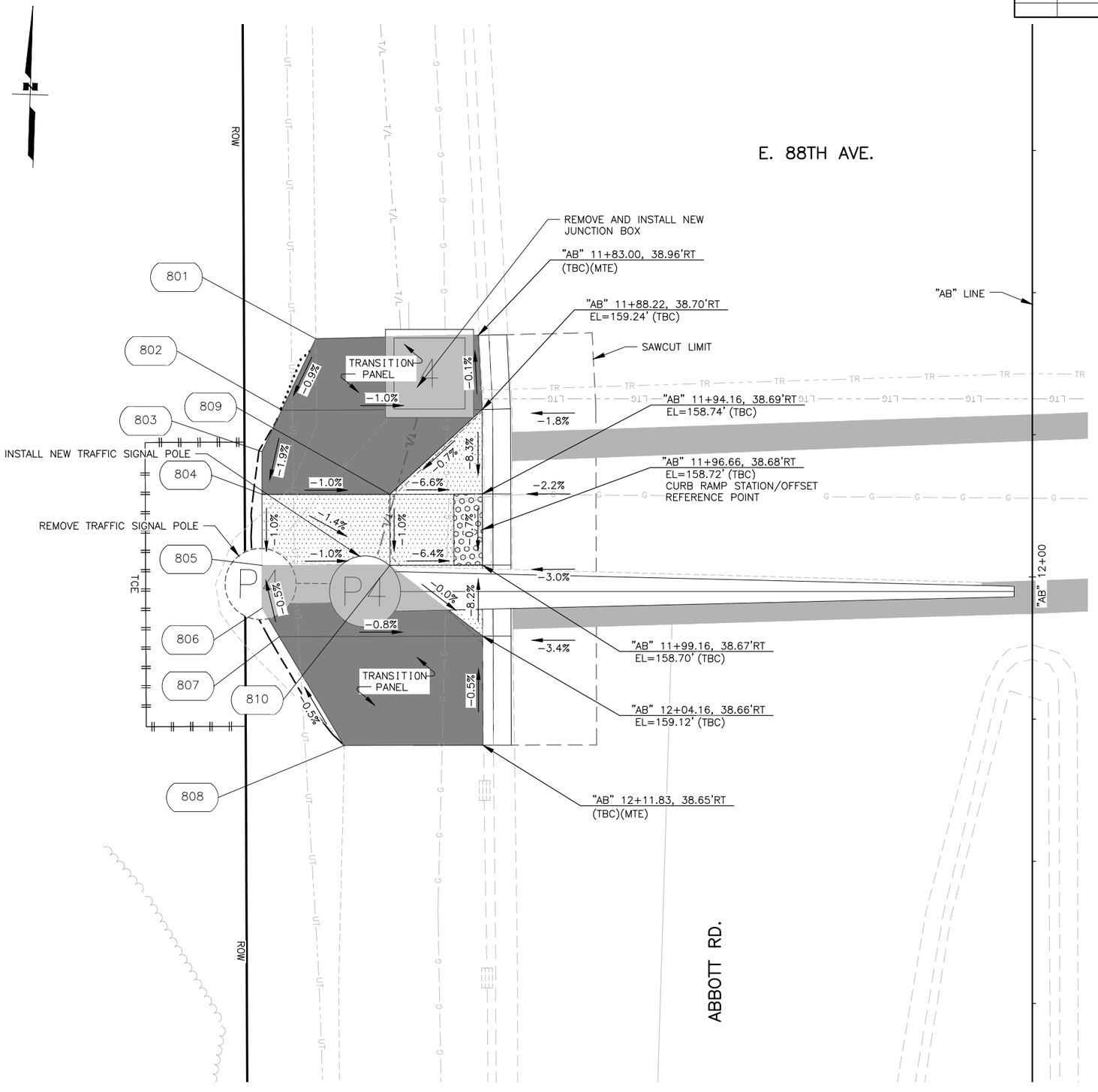

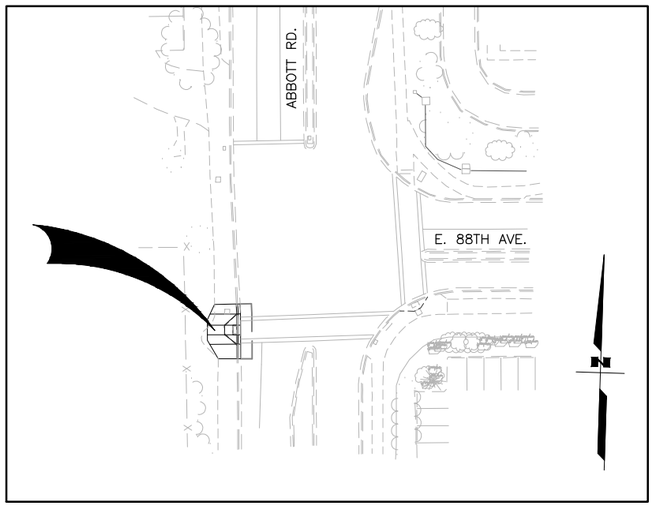

CURB RAMP LAYOUT POINT TABLE

POINT	ALGN.	STATION	OFFSET	REMARKS
801	AB	11+83.25	50.39 RT	
802	AB	11+88.26	52.79 RT	
803	AB	11+91.19	54.19 RT	
804	AB	11+94.19	54.18 RT	
805	AB	11+99.19	54.17 RT	
806	AB	12+02.19	54.17 RT	
807	AB	12+04.20	52.97 RT	
808	AB	12+11.85	48.40 RT	
809	AB	11+94.18	45.19 RT	
810	AB	11+99.18	45.17 RT	

STATE OF ALASKA
PROJECT ENGINEER
REGISTERED PROFESSIONAL ENGINEER
PS&E REVIEW

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AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

CURB RAMP ABBOTT & 88TH SW CORNER LAYOUT

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	E9	E10

DESIGNED BY
CHECKED BY
DRAFTED BY

SCALE 1"=4'

DATE 4/9/2025 TIME 11:07 AM

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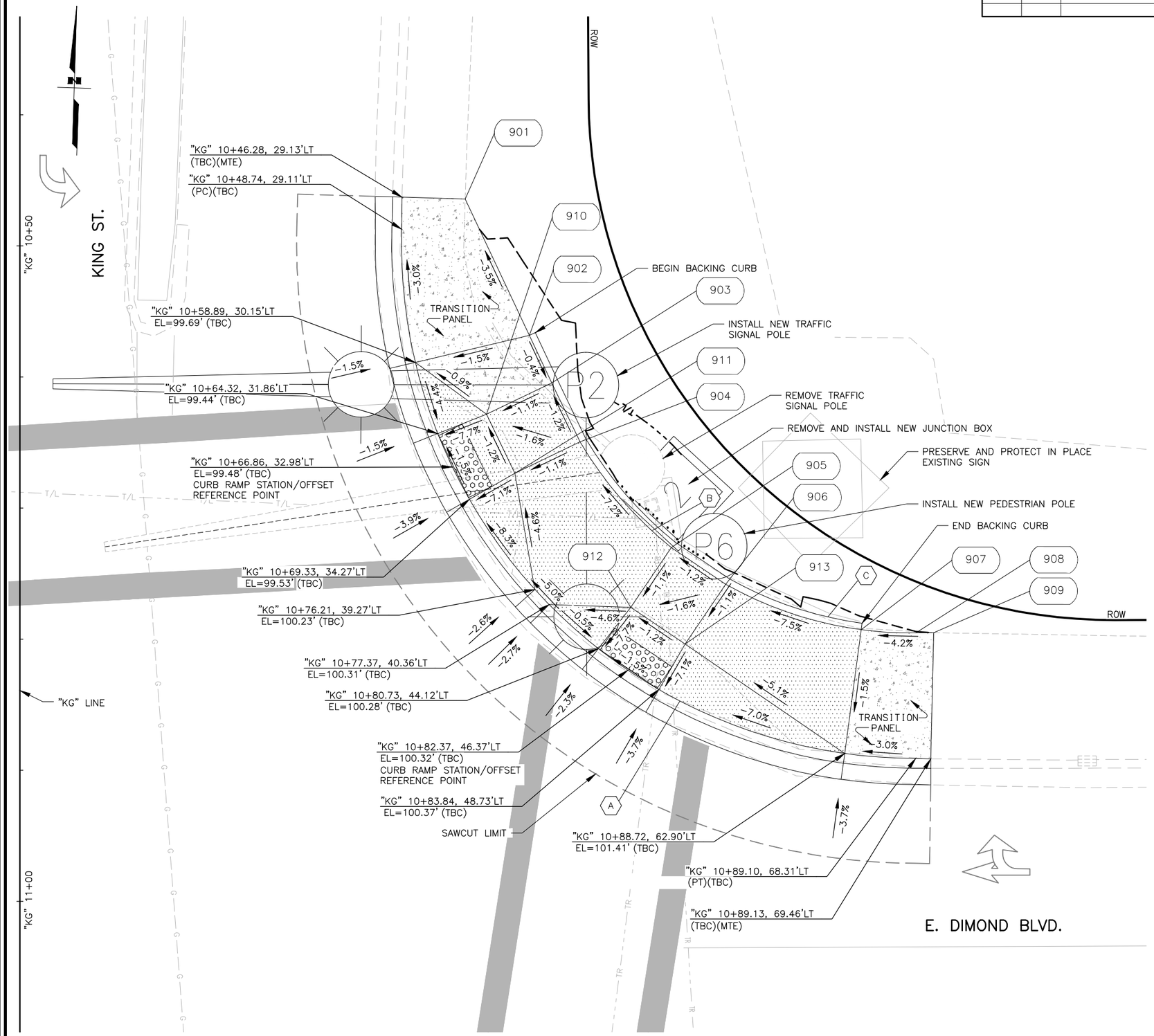

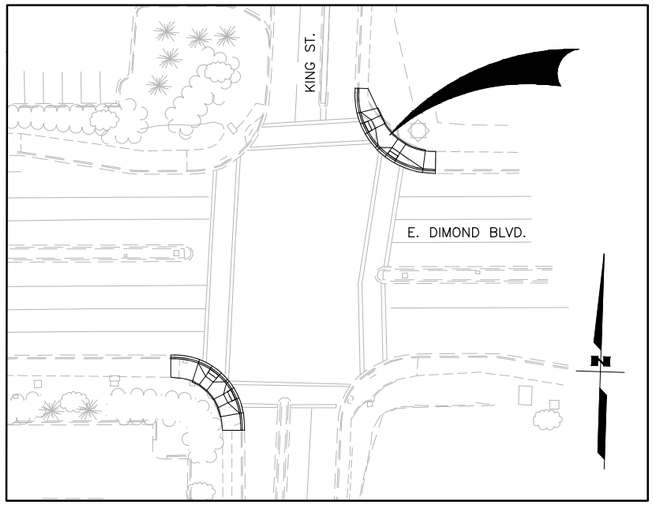

RADIUS LAYOUT TABLE

POINT	RADIUS (FT)	ARC LENGTH (FT)
A	39.3	62.7
B	29.3	10.7
C	28.7	15.2

CURB RAMP LAYOUT POINT TABLE

POINT	ALGN.	STATION	OFFSET	REMARKS
901	KG	10+46.43	33.96 LT	
902	KG	10+56.83	38.85 LT	
903	KG	10+60.45	40.55 LT	
904	KG	10+64.95	42.72 LT	PC
905	KG	10+73.01	49.68 LT	PT
906	KG	10+75.81	53.82 LT	PC
907	KG	10+79.28	64.15 LT	
908	KG	10+79.52	68.33 LT	PT
909	KG	10+79.51	69.68 LT	
910	KG	10+62.84	35.58 LT	
911	KG	10+67.34	37.75 LT	
912	KG	10+77.58	46.59 LT	
913	KG	10+80.38	50.73 LT	

STATE OF ALASKA
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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

CURB RAMP DIMOND & KING NE CORNER LAYOUT

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	E10	E10

DESIGNED BY
CHECKED BY
DRAFTED BY

SCALE 1"=4'

DATE TIME 4/9/2025 10:45 AM

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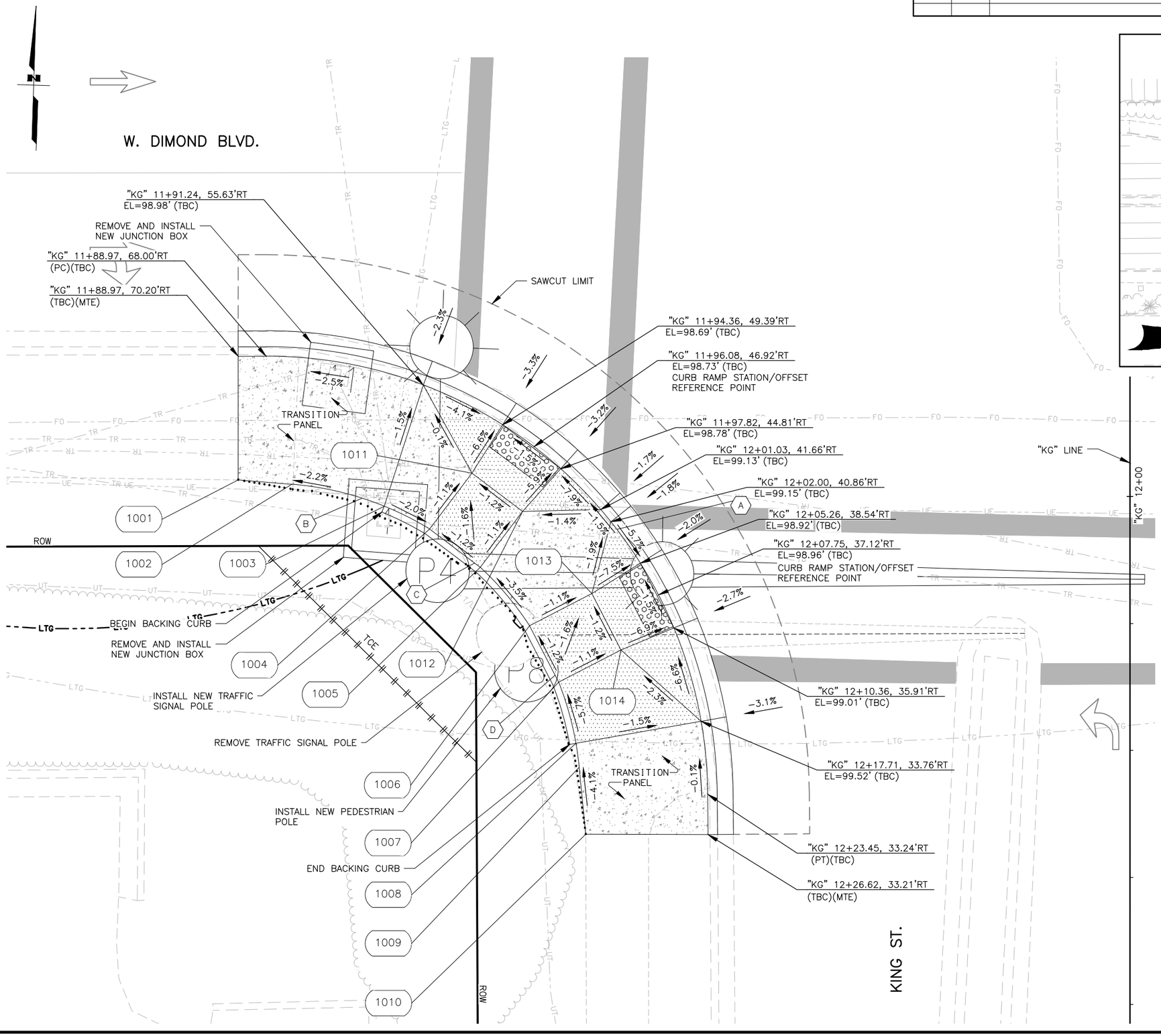

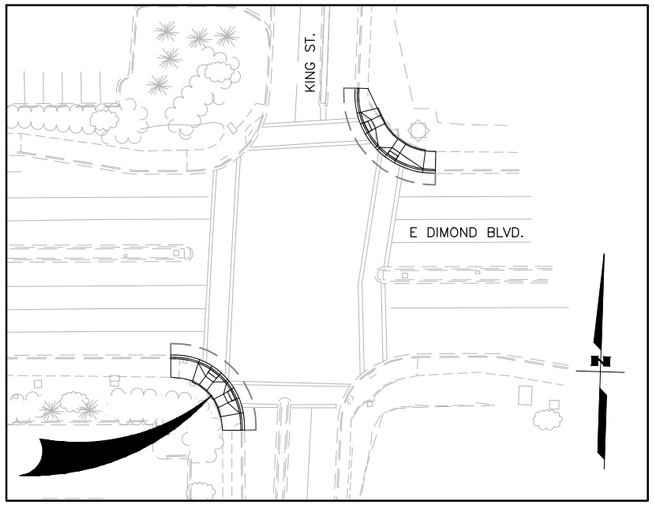

RADIUS LAYOUT TABLE

POINT	RADIUS (FT)	ARC LENGTH (FT)
A	34.8	54.3
B	24.8	11.5
C	24.8	6.0
D	24.8	6.9

CURB RAMP LAYOUT POINT TABLE

POINT	ALGN.	STATION	OFFSET	REMARKS
1001	KG	11+98.71	70.19 RT	
1002	KG	11+99.05	65.99 RT	PC
1003	KG	12+00.77	58.70 RT	
1004	KG	12+02.57	55.13 RT	PT
1005	KG	12+05.58	51.14 RT	PC
1006	KG	12+10.19	47.26 RT	PT
1007	KG	12+14.62	44.97 RT	PC
1008	KG	12+19.44	43.61 RT	
1009	KG	12+21.32	43.35 RT	PT
1010	KG	12+26.60	42.84 RT	
1011	KG	11+98.16	51.80 RT	
1012	KG	12+01.18	47.81 RT	
1013	KG	12+07.65	42.36 RT	
1014	KG	12+12.09	40.06 RT	

STATE OF ALASKA
REGISTERED
PROFESSIONAL ENGINEER
PROJECT MANAGER
PSE REVIEW

DOWL, LLC
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ANCHORAGE, AK 99503
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AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

CURB RAMP DIMOND & KING
SW CORNER LAYOUT

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	H1	H16

DESIGNED BY
CHECKED BY
DRAFTED BY

SCALE

DATE TIME
4/21/2025 8:56 AM

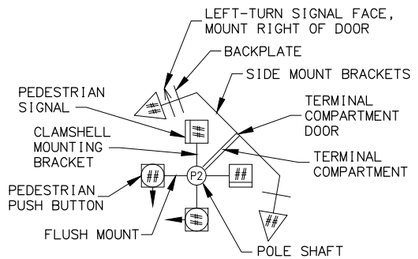
DRAWING LOCATION
C:\DOWL_PW\D0408854\00944-H-DETAILS-2.DWG

SIGNING & STRIPING NOTES:

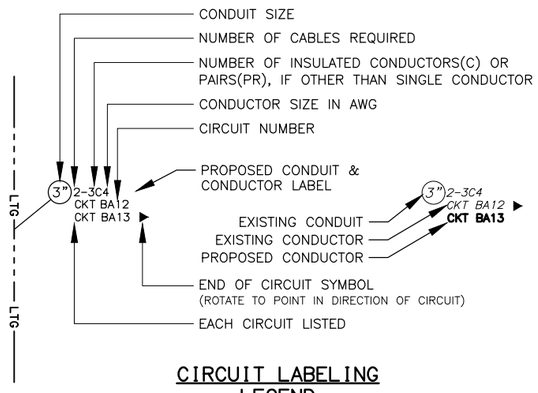
1. FABRICATE ALL SIGNS FROM 0.125" THICK ALUMINUM SHEETING, UNLESS STATED ELSEWHERE.
2. FOR SIGNS SUPPORTED BY MULTIPLE POSTS, FABRICATE THE POSTS WITH THEIR TOPS LEVEL WITH ONE ANOTHER.
3. FABRICATE GUIDE SIGNS ACCORDING TO THE SHOP DRAWINGS INCLUDED IN THE APPENDICES OF PART 4, CONTRACT PROVISIONS AND SPECIAL PROVISIONS. TRIM THE CORNERS OF ALL SIGNS TO THE RADIUS SHOWN ON EACH SHOP DRAWING.
4. 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.
5. 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.
6. FOR ALL FINAL PAVEMENT MARKINGS USE METHYLMETHACRYLATE MATERIALS.
7. IF THE NEW AND EXISTING PAVEMENT MARKINGS ARE NOT ALIGNED AT MATCH LINE, TRANSITION BETWEEN THE TWO USING A 100:1 TAPER ON THE NEW PAVEMENT.

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 HEAD
SIG	SIGNAL	PRE #	PREEMPTION #
I/C	INTERCONNECT	PRE CON #	PREEMPTION CONFIRMATION LIGHT #
INTX	INTERSECTION	RAD	RADAR
INTX L	INTERSECTION LIGHTING	RMC	RIGID METAL CONDUIT
LC	LOAD CENTER	SB	SOUTH BOUND
LFNC	LIQUIDTIGHT FLEXIBLE NONMETALLIC CONDUIT	TC	TRAFFIC CONTROLLER
LTG	LIGHTING	WB	WEST 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. 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.

SIGNAL SYSTEM 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. EXISTING CIRCUITS LISTED ON THE LOAD CENTER SUMMARY AND PLAN SHEETS WERE OBTAINED FROM AS-BUILT INFORMATION AND MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO WORK INVOLVING THOSE CIRCUITS.
11. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL, INCLUDING ARROW BOARD DEVICE(S), FOR OVERHEAD INSPECTION AND LOCATE WORK PERFORMED BY MOA SIGNAL ELECTRONICS. CONTRACTOR SHALL BE ON-SITE AT COMPLETION OF LOCATES TO REVIEW LAYOUT AND MAKE STATIONING MEASUREMENTS FOR CONDUIT LOCATIONS.

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

TRAFFIC LEGEND AND NOTES

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	H2	H16

DESIGNED BY
CHECKED BY
DRAFTED BY

SCALE

DATE TIME
4/21/2025 8:56 AM

DRAWING LOCATION
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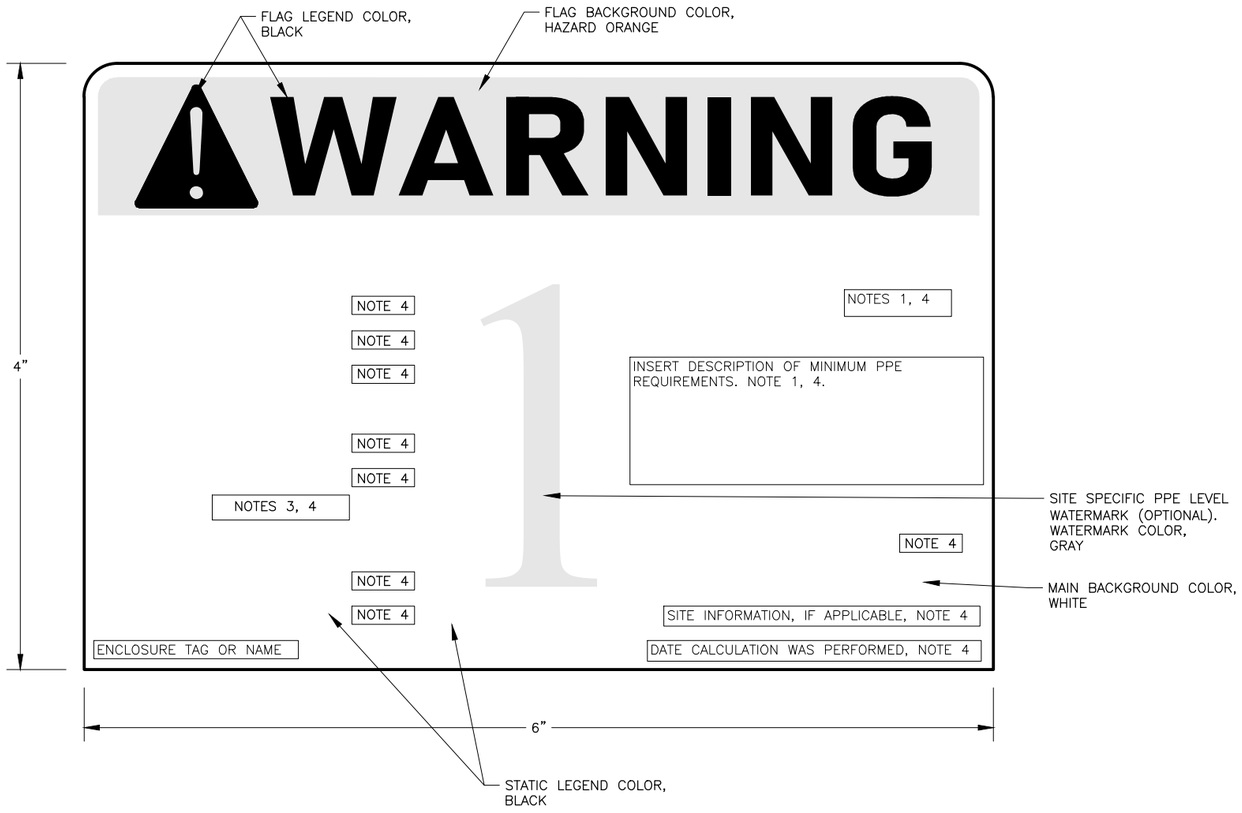
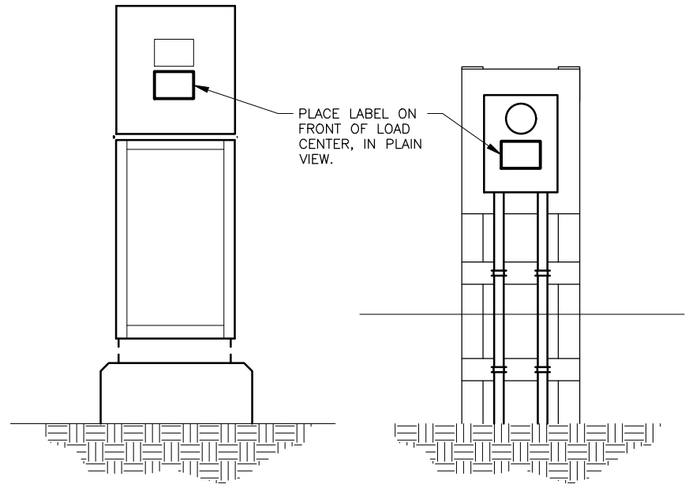


NOTES:

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.
3. PROVIDE DESCRIPTION OF EQUIPMENT CONFIGURATIONS IN WHICH A HAZARD EXISTS. FOR EXAMPLE "WHEN COVER REMOVED."
4. INSERT INFORMATION FROM PLAN SHEETS. REFER TO LOAD CENTER SUMMARY, ARC FLASH AND SHOCK HAZARD RESULTS, AND SHORT CIRCUIT CALCULATION TABLES PRESENTED IN THE PLANS FOR EACH LOAD CENTER.
5. FOR LOAD CENTERS INSTALLED WITHIN THE MUNICIPALITY OF ANCHORAGE, INSTALL A UTILITY INFORMATION LABEL ON THE EXTERIOR OF THE LOAD CENTER PER THE REQUIREMENTS OF THE MUNICIPALITY OF ANCHORAGE STANDARD SPECIFICATIONS (MASS) AND THE CEA ELECTRIC SERVICE REQUIREMENTS (ESR). LABEL MATERIALS SHALL BE 3M SCOTCHCAL 220 OR OTHER APPROVED EQUAL. LABEL SHALL BE IN PLACE PRIOR TO GREEN TAG INSPECTION. THE UTILITY INFORMATION LABEL SHALL INCLUDE THE FOLLOWING:
   - 5.1. LOAD CENTER OWNER: "MOA" OR "SOA"
   - 5.2. LOAD CENTER USAGE: "TS" FOR SIGNALIZATION, "LU" FOR LIGHTING AND OTHER USES
   - 5.3. LOAD CENTER VOLTAGE: "120/240" OR "240/480"



LABEL LOCATION

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PS&E REVIEW

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

ARC SHOCK AND HAZARD LABELING DETAILS

NO.	DATE	REVISION

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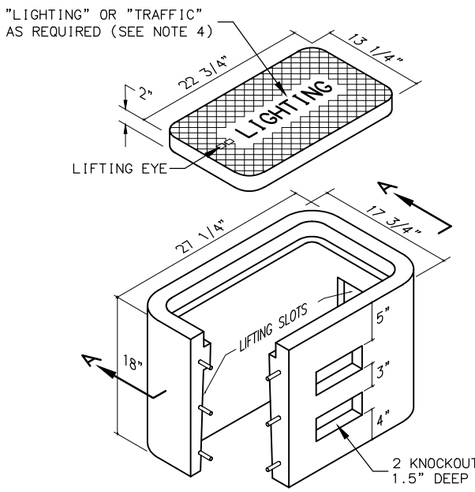
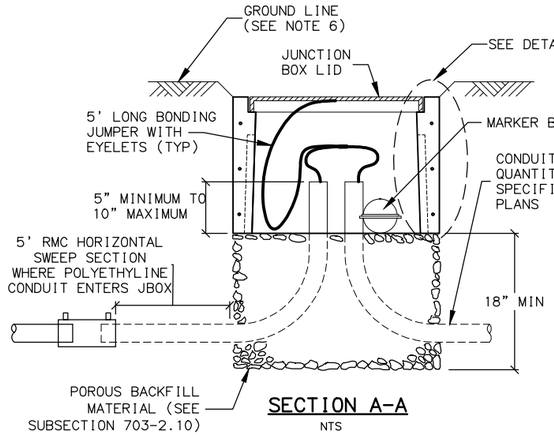
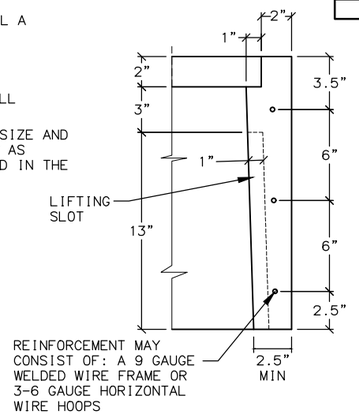
ALASKA	0001750/CFHWY01334	2025	H3	H16



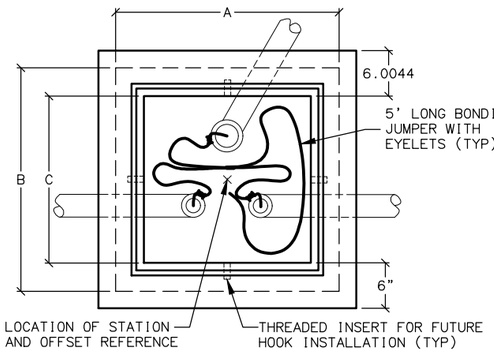


SECTION A-A
NTS

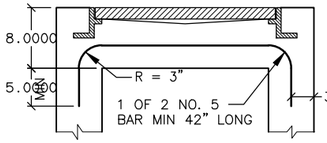


DETAIL A

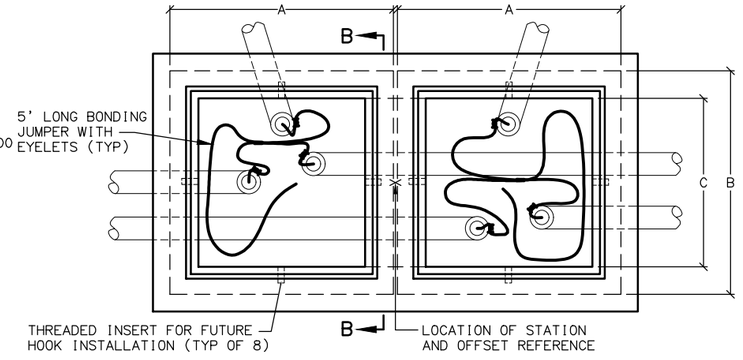
TYPE IA JUNCTION BOX



PLAN



SECTION B-B



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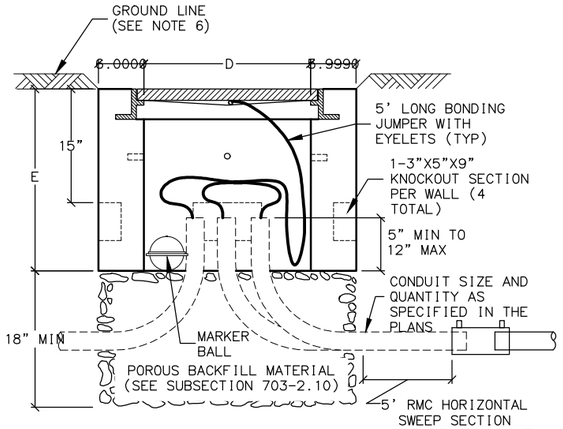
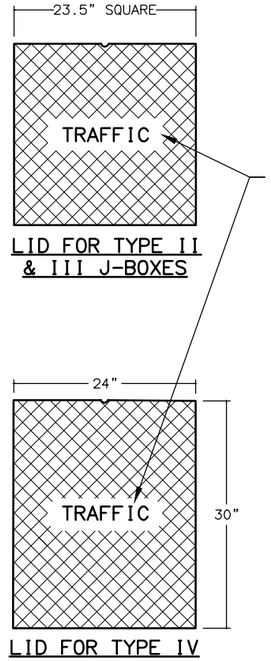
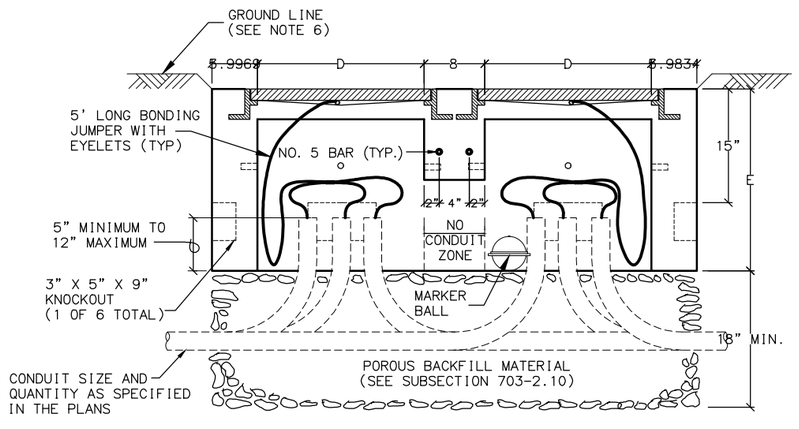


TYPE II JUNCTION BOX
ELEVATION
NTS



LID FOR TYPE II & III J-BOXES

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 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 8" BELOW TOP OF JUNCTION BOX.

J-BOX DIMENSIONS

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"

STATE OF ALASKA
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JUNCTION BOX DETAILS

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SCALE
DATE TIME 4/21/2025 8:56 AM
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ALASKA	0001750/CFHWY01334	2025	H4	H16

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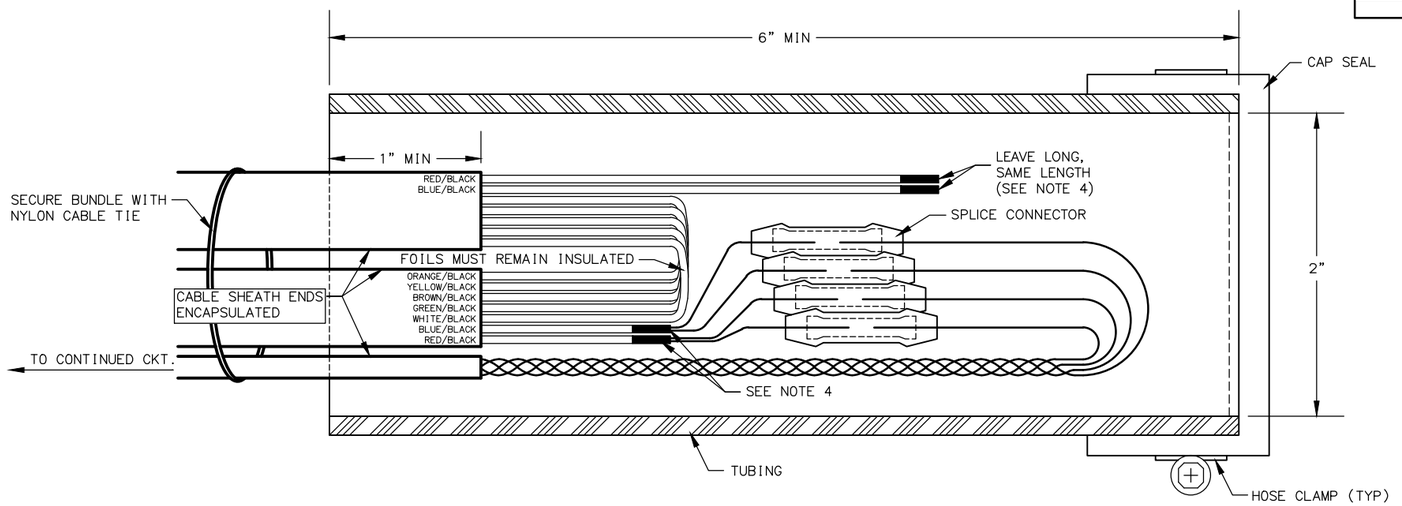
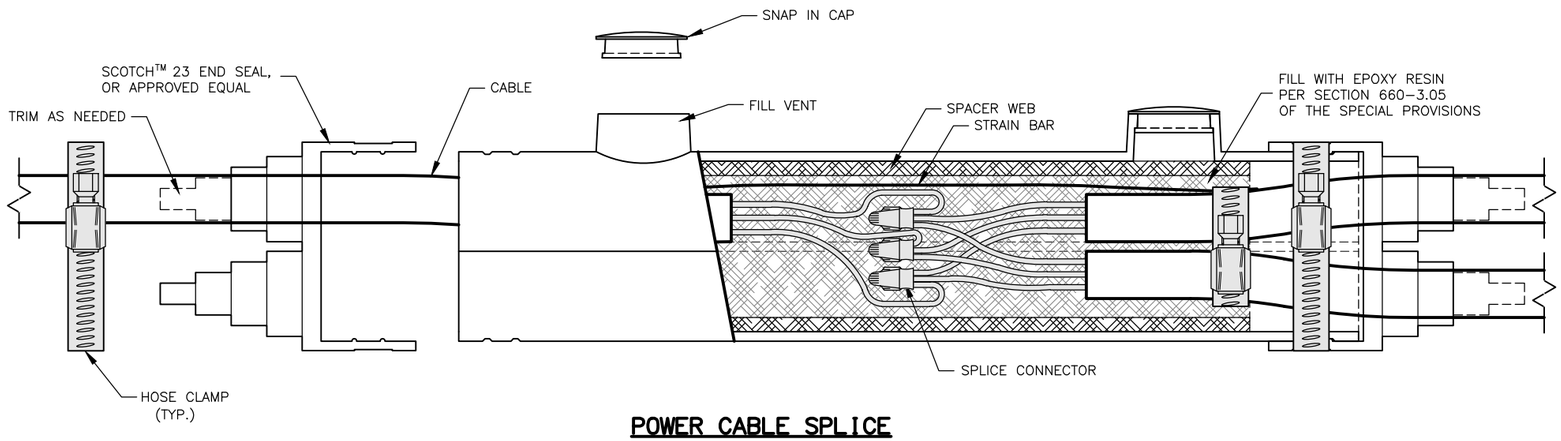
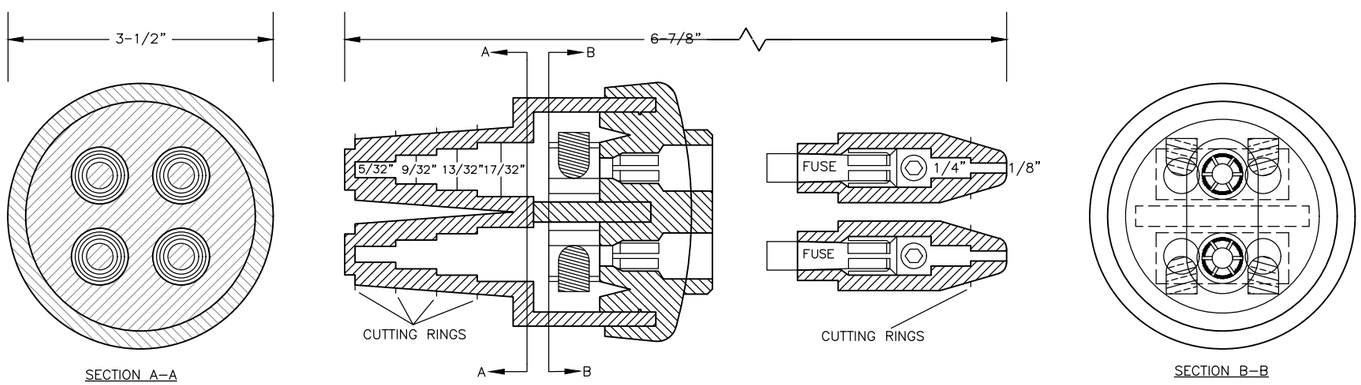


LOOP LEAD-IN SPLICE



POWER CABLE SPLICE



DOUBLE FUSED CONNECTOR

NOTES:

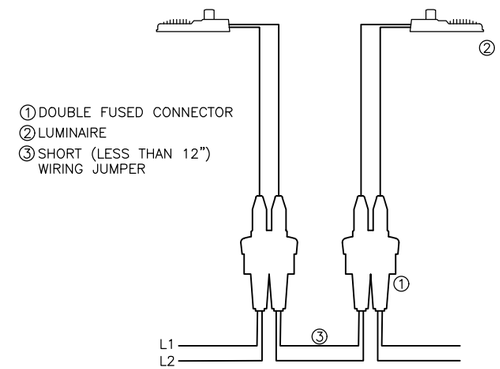
LOOP LEAD-IN SPLICE

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 5-AMP TIME DELAY TYPE FOR LED FIXTURE OR 10-AMP FAST ACTING FOR ALL OTHER FIXTURES



DUAL LUMINAIRE WIRING DIAGRAM

PSSE REVIEW
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

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SPLICE DETAILS

NO.	DATE	REVISION

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ALASKA	0001750/CFHWY01334	2025	H5	H16

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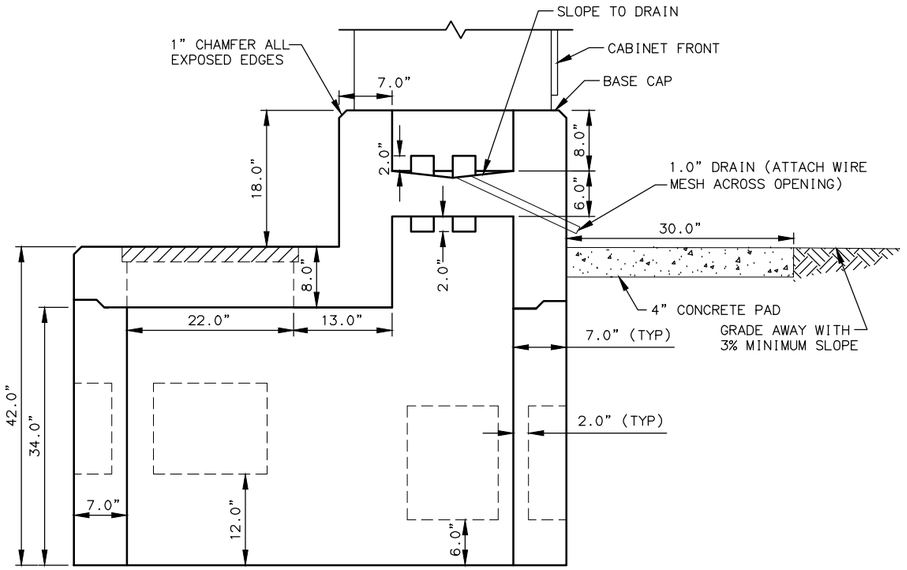
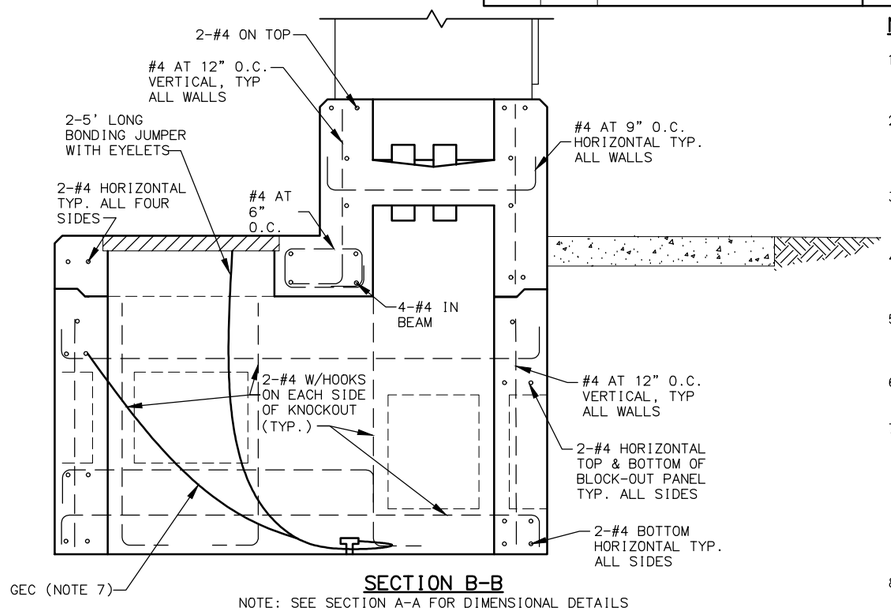


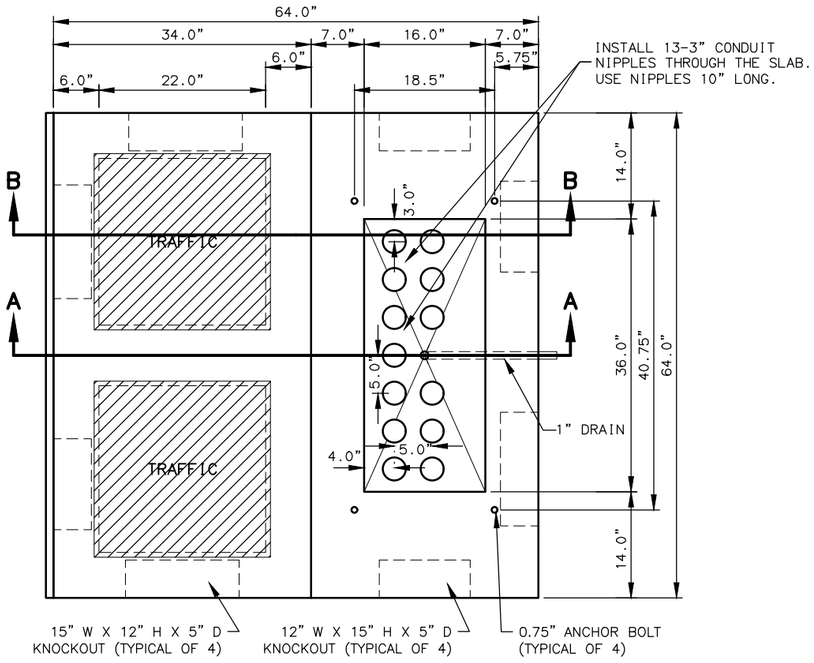
SECTION A-A

NOTE: SEE SECTION B-B FOR REBAR DETAILS



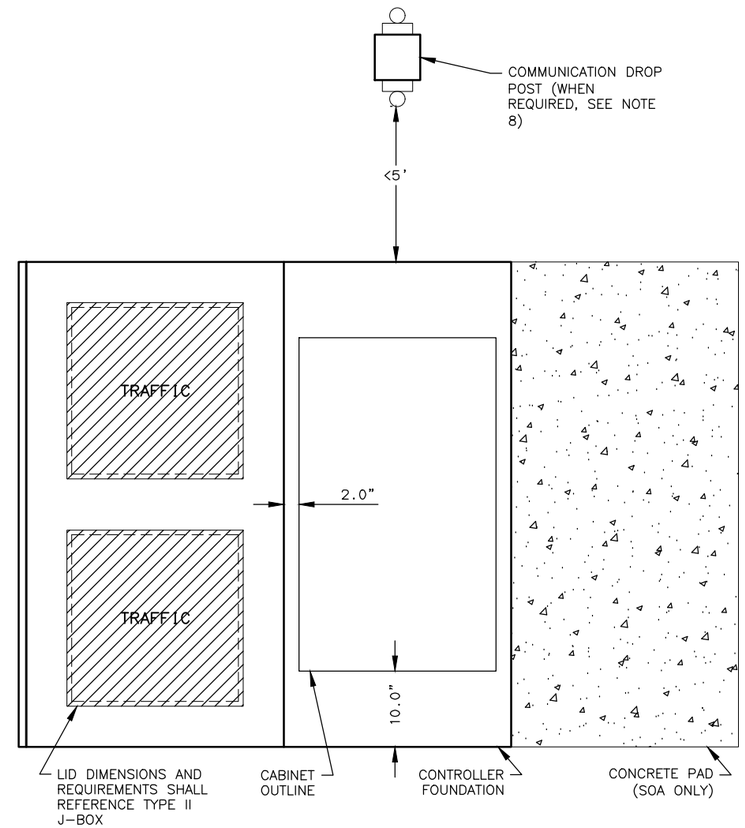
SECTION B-B

NOTE: SEE SECTION A-A FOR DIMENSIONAL DETAILS



SIZE 6 OR 7 CONTROLLER CABINET FOUNDATION

NOTE: BOLT SPACING DIMENSIONS SHOWN FOR TS2 CONTROLLER CABINETS.

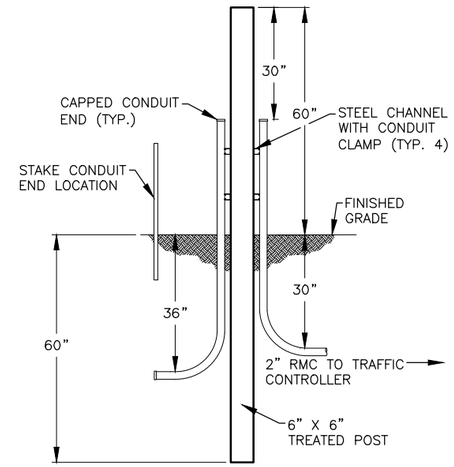


PLAN VIEW

NOTES:

1. ANCHOR BOLTS SHALL NOT PROTRUDE MORE THAN 1.5" ABOVE THE TOP OF THE FOUNDATION. ANCHOR BOLT DIMENSIONS SHALL BE AS SPECIFIED BY THE CABINET MANUFACTURER.
2. SEAL UNUSED CONDUIT STUBS WITH WATERTIGHT CAPS. SEAL STUBS CARRYING CONDUCTORS WITH WATERTIGHT SEALING BUSHINGS DESIGNED TO SEAL AROUND CONDUCTORS AND AGAINST THE CONDUIT WALLS.
3. ROUTE THE FIVE FOOT COPPER BONDING JUMPER THROUGH THE 2" PIPE NIPPLE AND ATTACH IT TO THE GROUNDING BUSHING ON THE FEEDER CONDUIT.
4. STOP HORIZONTAL & VERTICAL STEEL AT THE BLOCK-OUT PANELS & THE JOINT USING 90 DEGREE HOOKS. USE 2 EXTRA #4 HORIZONTAL & VERTICAL BARS. ALL SIDES AS SHOWN.
5. INSTALL TRAFFIC CONTROLLER CABINET FOUNDATION WITHIN 1-DEGREE OF PLUMB AND ORIENTED AS SHOWN IN PLANS SUCH THAT CABINET DOOR OPENS AWAY FROM INTERSECTION/TRAFFIC.
6. INSTALL #4 AWG COPPER GROUNDING ELECTRODE CONDUCTOR (GEC), OR SIZE PER NEC TABLE 250.66, WHICHEVER IS LARGER.
7. 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 #4 AWG, BETWEEN THE COMPRESSION CONNECTOR AND THE CONTROLLER CABINET GROUND BUS.
8. WHEN COMMUNICATION DROP POST IS CALLED FOR IN THE PLANS INSTALL A COMMERCIALLY TREATED 6" X 6" WOOD POST WITHIN 5' OF THE TRAFFIC CONTROLLER AND INSTALL CONDUIT AS SHOWN. STAKE THE LOCATION OF THE BURIED CONDUIT END TO BE USED BY THE UTILITY.

MATERIAL PROPERTIES		
CONCRETE	CLASS A	F'c = 4000 psi
REINFORCING STEEL	AASHTO M31 GRADE 60	Fy = 60 ksi
CONDUIT	RMC	
BONDING JUMPERS	3M 25T-BBE6 OR EQUAL	



COMMUNICATION DROP POST

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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

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TS2 CONTROLLER CABINET FOUNDATION DETAILS

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ALASKA	0001750/CFHWY01334	2025	H6	H16

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DRAWING LOCATION
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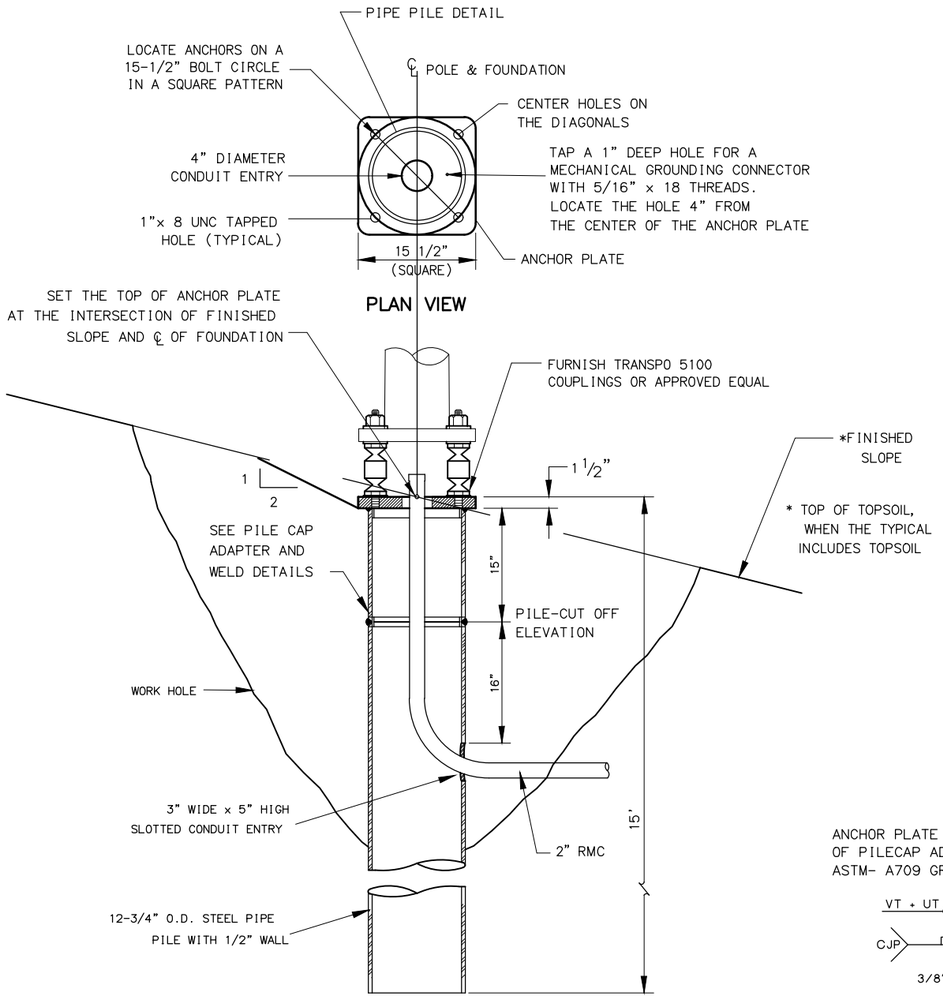
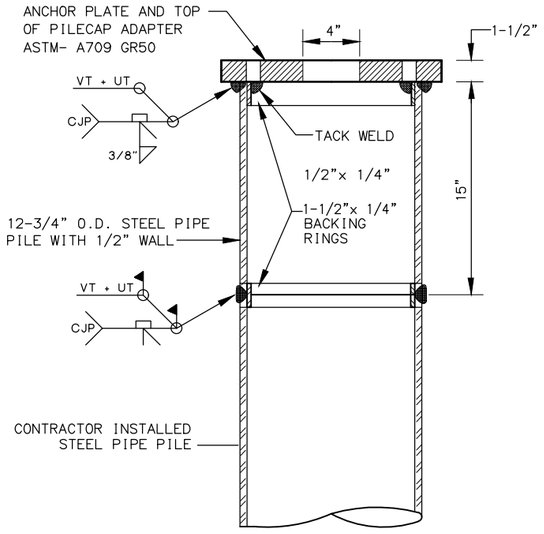


PIPE PILE FOUNDATION

(SHOWN WITH FRANGIBLE COUPLINGS)



PILECAP ADAPTER AND WELD DETAILS

NOT TO SCALE

DESIGN NOTES:

1. DESIGN STANDARD: 2013 STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRE AND TRAFFIC SIGNALS WITH 20019 AND 2020 INTERIM.(SSSS)
2. DESIGN LOADS: WIND = 100 MPH (SSSS FIGURE 3.8.3-1) AT TOP OF PILE:

   1)WIND LOAD: 1.5 KIPS AXIAL, 1.5 KIPS SHEAR, 35 KIP-FT MOMENT
   2)BREAKAWAY: 1.5 KIPS AXIAL, 22 KIPS SHEAR, 44 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. DRIVE ALL PILES OPEN ENDED WITH FLUSH MOUNTED, HARDENED DRIVING SHOES. COMPLETE PILE DRIVING WORK IN ACCORDANCE WITH SECTIONS 505, 660 AND 715 OF THE STANDARD SPECIFICATIONS. INSTALLED PILE TO BE WITHIN 1/4" PER FOOT OF PLUMB. PILES OUT OF PLUMB MUST BE REMOVED AND REINSTALLED. CUT THE TOP OF THE PILE TO ACHIEVE PROPER ELEVATION. THE RESULTING BUTT JOINT ALIGNMENT SHALL MEET THE REQUIREMENTS OF AWS D1.1.
2. PILE MANUFACTURER TO PROVIDE THE REQUIRED PILE CAP ADAPTER. HOT DIP GALVANIZE THE ADAPTER TO WITHIN 3 INCHES OF THE TOE. DELIVER THE ADAPTER WITH ALL FASTENERS AND HARDWARE.
3. MACHINE OR PLASMA CUT ANY PENETRATION IN THE ADAPTER OR PILE. OXY-FUEL CUTTING IS PROHIBITED.
4. ALL WELDS TO BE SIZED BY THE MANUFACTURER. BOTH SHOP AND FIELD CJP WELDS TO BE 100% VISUALLY (VT) AND ULTRASONICALLY (UT) TESTED. SUBMIT WRITTEN RECORDS OF TESTS TO THE PROJECT ENGINEER.
5. MANUFACTURE THE ADAPTER TOP PLATE AND COMPONENTS FROM STEEL MEETING THE REQUIREMENTS OF ASTM A6. THE PERMISSIBLE BOW AND SWEEP OF THE ADAPTER TOP PLATE IS LIMITED TO 1/32". PLATE SHALL BE FLATTENED IN THE SHOP PRIOR TO FIT-UP AND WELDING IN THE SHOP. PRIOR TO HOT DIP GALVANIZING, BURRS AND IMPERFECTIONS SHALL BE REMOVED BY MILLING FOR ANY SURFACE NOT MEETING THIS SPECIFICATION. THE FLATNESS TOLERANCE LISTED HEREIN FOR THE ADAPTER TOP PLATE APPLIES TO THE FINAL FABRICATED PILE CAP ADAPTER. A MACHINING ALLOWANCE OF 1/4" HAS BEEN INCORPORATED INTO THE PILE CAP ADAPTER TOP PLATE FOR THE PURPOSE OF MEETING THIS REQUIREMENT.
6. HOT DIP GALVANIZE THE PILE TO WITHIN 3 INCHES OF THE TOP OF THE PILE PER AASHTO M111.
7. CONNECT THE GROUND WIRE TO THE PILE CAP ADAPTER TOP PLATE USING A BOLTED COMPRESSION FITTING WHICH IN TURN IS BOLTED TO THE TAPPED HOLE SHOWN ON THE DETAIL. GROUND WIRE SHALL BE BARE SOLID, STRANDED OR BRAIDED COPPER.
8. INSTALL THE PILE CAP ADAPTER TO WITHIN 0.1 DEGREES OF PLUMB.
9. PROVIDE ANCHOR ROD MATERIAL MEETING THE REQUIREMENTS SHOWN ON THE DETAIL AND AS LISTED IN THE MATERIAL PROPERTIES TABLE. THE ANCHOR RODS ARE SUBJECT TO CHARPY V-NOTCH IMPACT TESTING. THE CONTRACTOR SHALL SUBMIT MILL CERTIFICATIONS FOR ANCHOR RODS, NUTS AND WASHERS. ANCHOR RODS ARE TO BE GALVANIZED THEIR FULL LENGTH. PROVIDE PERMANENT MANUFACTURER'S IDENTIFICATION AND PERMANENT GRADE SPECIFICATION ON EACH OF THE ANCHOR ROD BY MEANS OF A STEEL DIE STAMP. ANCHOR RODS TO BE SNUG-TIGHT TO THE POLE BASE PLATE AND PILE CAP ADAPTER TOP PLATE.
10. AFTER THE FIELD WELDING, ELECTRICAL CONDUIT, AND ELECTRICAL CONDUCTOR WORK IS COMPLETE, BACKFILL AND COMPACT SOIL AROUND THE INSTALLED PILE IN ACCORDANCE WITH SECTION 205, SUBSECTIONS 203-3.04, 660-3.01 AND 660-3.02 OF THE SPECIFICATIONS. USE SELECT TYPE A MATERIAL ONLY AS BACKFILL.
11. WAIT AT LEAST 3 DAYS AFTER BACKFILLING THE WORK HOLE BEFORE ERECTING THE LUMINAIRE POLE.

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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

ELECTROLIER PIPE PILE FOUNDATION AND BREAKAWAY SUPPORT DETAILS

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	H7	H16

DESIGNED BY
CHECKED BY
DRAFTED BY

SCALE

DATE TIME
4/21/2025 9:39 AM

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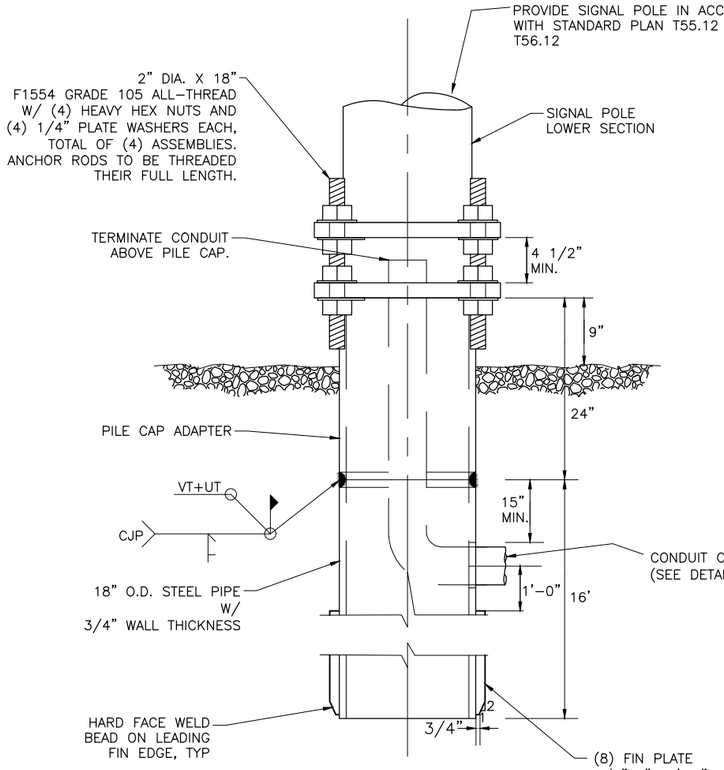
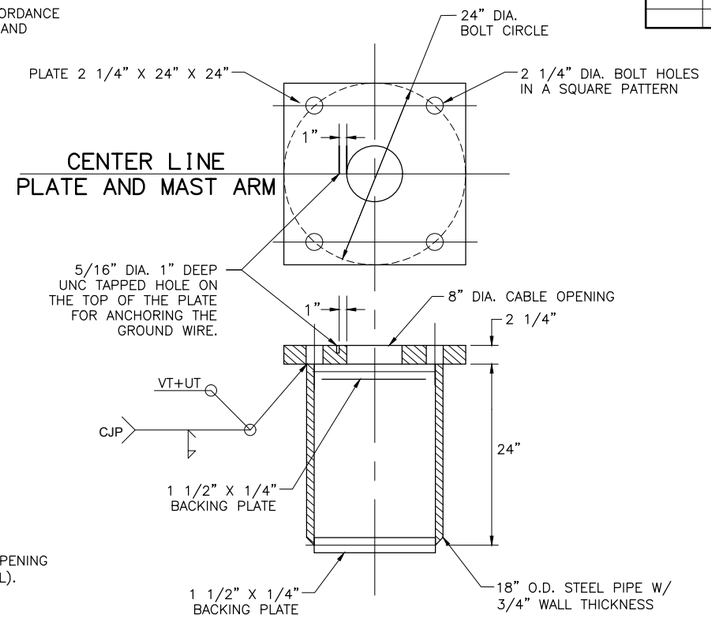


FOUNDATION DETAIL

N.T.S.

LOCATION	DEPTH	AMOUNT
TUDOR/DENALI	17 FT	1
DIMOND/KING	16 FT	2
ABBOTT/88TH	17 FT	1

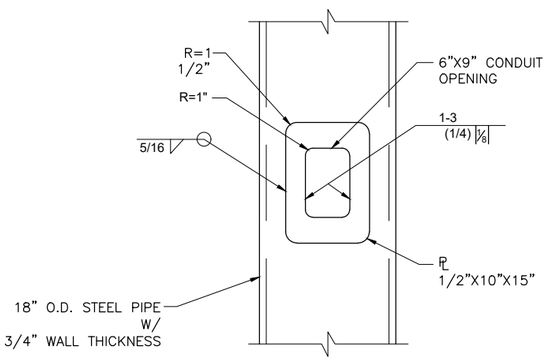
NOTE: SEE STANDARD DRAWING T-56.00 FOR SIGNAL POLE ORIENTATION AND BASE PLATE DETAILS



PILE CAP ADAPTER DETAIL

N.T.S.

NOTE: TACK WELD BACKING PLATE TO PIPE PILE SECTION



CONDUIT OPENING DETAIL

N.T.S.

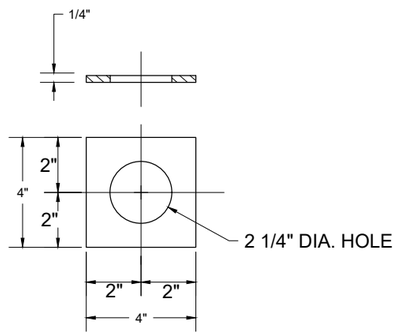
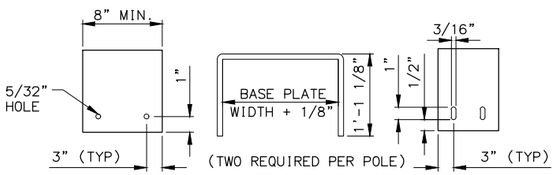


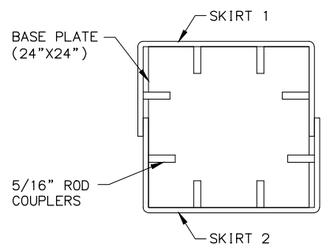
PLATE WASHER DETAIL

N.T.S.



PILE FOUNDATION SKIRT DETAIL

N.T.S.



TOP VIEW

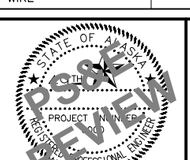
DESIGN NOTES

1. DESIGN STANDARD: 2013 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS WITH SEPTEMBER 2013 ERRATA AND 2015, 2019, AND 2020 INTERIM REVISIONS.(SSSS)
2. DESIGN LOADS: WIND= 100MPH (SSSS FIG. 3.8.3.-1) AT TOP OF PILE
   55 FT MASTARM: 6,200 LBS SHEAR, 169 KIP-FT MOMENT AND 8,100 LBS AXIAL
   50 FT MASTARM: 5,300 LBS SHEAR, 132 KIP-FT MOMENT AND 7,000 LBS AXIAL
   40 50 45 FT MASTARM: 5,200 LBS SHEAR, 124 KIP-FT MOMENT AND 6,300 LBS AXIAL
3. CONSTRUCTION STANDARD: THE ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES 2015 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND THE PROJECT SPECIAL PROVISIONS AS OF THE ADVERTISEMENT DATE OF THIS PROJECT.

NOTES

1. DRIVE ALL PILES OPEN ENDED WITH FLUSH MOUNTED, HARDENED DRIVING SHOES. COMPLETE PILE DRIVING WORK IN ACCORDANCE WITH SECTIONS 505, 660 AND 715 OF THE STANDARD SPECIFICATIONS. INSTALLED PILE TO BE WITHIN 1/4" PER FOOT OF PLUMB. PILES OUT OF PLUMB MUST BE REMOVED AND REINSTALLED. CUT THE TOP OF THE PILE TO ACHIEVE PROPER ELEVATION. THE RESULTING BUTT JOINT ALIGNMENT SHALL MEET THE REQUIREMENTS OF AWS D1.1.
2. PILE MANUFACTURER TO PROVIDE THE REQUIRED PILE CAP ADAPTER. HOT DIP GALVANIZE THE ADAPTER TO WITHIN 3 INCHES OF THE TOE. DELIVER THE ADAPTER WITH ALL FASTENERS AND HARDWARE.
3. MACHINE OR PLASMA CUT ANY PENETRATION IN THE ADAPTER OR PILE. OXY-FUEL CUTTING IS PROHIBITED.
4. ALL WELDS TO BE SIZED BY THE MANUFACTURER. BOTH SHOP AND FIELD CJP WELDS TO BE 100% VISUALLY (VT) AND ULTRASONICALLY (UT) TESTED. SUBMIT WRITTEN RECORDS OF TESTS TO THE PROJECT ENGINEER.
5. MANUFACTURE THE ADAPTER TOP PLATE AND COMPONENTS FROM STEEL MEETING THE REQUIREMENTS OF ASTM A6. THE PERMISSIBLE BOW AND SWEEP OF THE ADAPTER TOP PLATE IS LIMITED TO 1/32". PLATE SHALL BE FLATTENED IN THE SHOP PRIOR TO FIT-UP AND WELDING IN THE SHOP. PRIOR TO HOT DIP GALVANIZING, BURRS AND IMPERFECTIONS SHALL BE REMOVED BY MILLING FOR ANY SURFACE NOT MEETING THIS SPECIFICATION. THE FLATNESS TOLERANCE LISTED HEREIN FOR THE ADAPTER TOP PLATE APPLIES TO THE FINAL FABRICATED PILE CAP ADAPTER. A MACHINING ALLOWANCE OF 1/4" HAS BEEN INCORPORATED INTO THE PILE CAP ADAPTER TOP PLATE FOR THE PURPOSE OF MEETING THIS REQUIREMENT.
6. HOT DIP GALVANIZE THE PILE TO WITHIN 3 INCHES OF THE TOP OF THE PILE PER AASHTO M111.
7. CONNECT THE GROUND WIRE TO THE PILE CAP ADAPTER TOP PLATE USING A BOLTED COMPRESSION FITTING WHICH IN TURN IS BOLTED TO THE TAPPED HOLE SHOWN ON THE DETAIL. GROUND WIRE SHALL BE BARE SOLID, STRANDED OR BRAIDED COPPER.
8. INSTALL THE PILE CAP ADAPTER TO WITHIN 0.1 DEGREES OF PLUMB.
9. PROVIDE ANCHOR ROD MATERIAL MEETING THE REQUIREMENTS SHOWN ON THE DETAIL AND AS LISTED IN THE MATERIAL PROPERTIES TABLE. THE ANCHOR RODS ARE SUBJECT TO CHARPY V-NOTCH IMPACT TESTING. THE CONTRACTOR SHALL SUBMIT MILL CERTIFICATIONS FOR ANCHOR RODS, NUTS AND WASHERS. ANCHOR RODS ARE TO BE GALVANIZED THEIR FULL LENGTH. PROVIDE PERMANENT MANUFACTURER'S IDENTIFICATION AND PERMANENT GRADE SPECIFICATION ON EACH OF THE ANCHOR ROD BY MEANS OF A STEEL DIE STAMP. ANCHOR RODS TO BE SNUG-TIGHT TO THE POLE BASE PLATE AND PILE CAP ADAPTER TOP PLATE.
10. AFTER THE FIELD WELDING, ELECTRICAL CONDUIT, AND ELECTRICAL CONDUCTOR WORK IS COMPLETE, BACKFILL AND COMPACT SOIL AROUND THE INSTALLED PILE IN ACCORDANCE WITH SECTION 205, SUBSECTIONS 203-3.04, 660-3.01 AND 660-3.02 OF THE SPECIFICATIONS. USE SELECT TYPE A MATERIAL ONLY AS BACKFILL.
11. INSTALL A 10 GAUGE SHEET STEEL SKIRT AROUND THE SIGNAL POLE BASE AND PILE CAP FASTENED WITH STAINLESS SHEET METAL SCREWS. SIZE SKIRT TO COVER GAP BETWEEN SIGNAL POLE BASE PLATE AND PILE CAP WITH APPROXIMATELY 1" OVERLAP ON EACH PLATE. CONTRACTOR SHALL DRILL HOLES FOR MOUNTING 5/16" STAINLESS STEEL BOLTS WITH 5/16" ROD COUPLERS. TWO ROD COUPLERS SHALL BE INSTALLED DIRECTLY ON TOP OF THE PILING PLATE. TWO ROD COUPLERS SHALL BE INSTALLED DIRECTLY BELOW POLE PLATE AND PERPENDICULAR TO THE FIRST SET OF ROD COUPLERS.

MATERIAL PROPERTIES		
FASTENERS, WASHERS	AASHTO M270	GRADE 36
FASTENERS, NUTS	AASHTO M292	
ANCHOR ROD AND HARDWARE FINISH	AASHTO M232	
ANCHOR PLATE	AASHTO M270 F3	GRADE 50
PIPE PILE	API 5L	GRADE 52
PIPE PILE AND ADAPTER FINISH	AASHTO M111	
CONDUIT	SCH 40	RMC
GROUND WIRE		#4 AWG



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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

TRAFFIC SIGNAL PILE FOUNDATION DETAILS

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	H8	H16

DESIGNED BY
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DATE TIME
4/21/2025 9:39 AM

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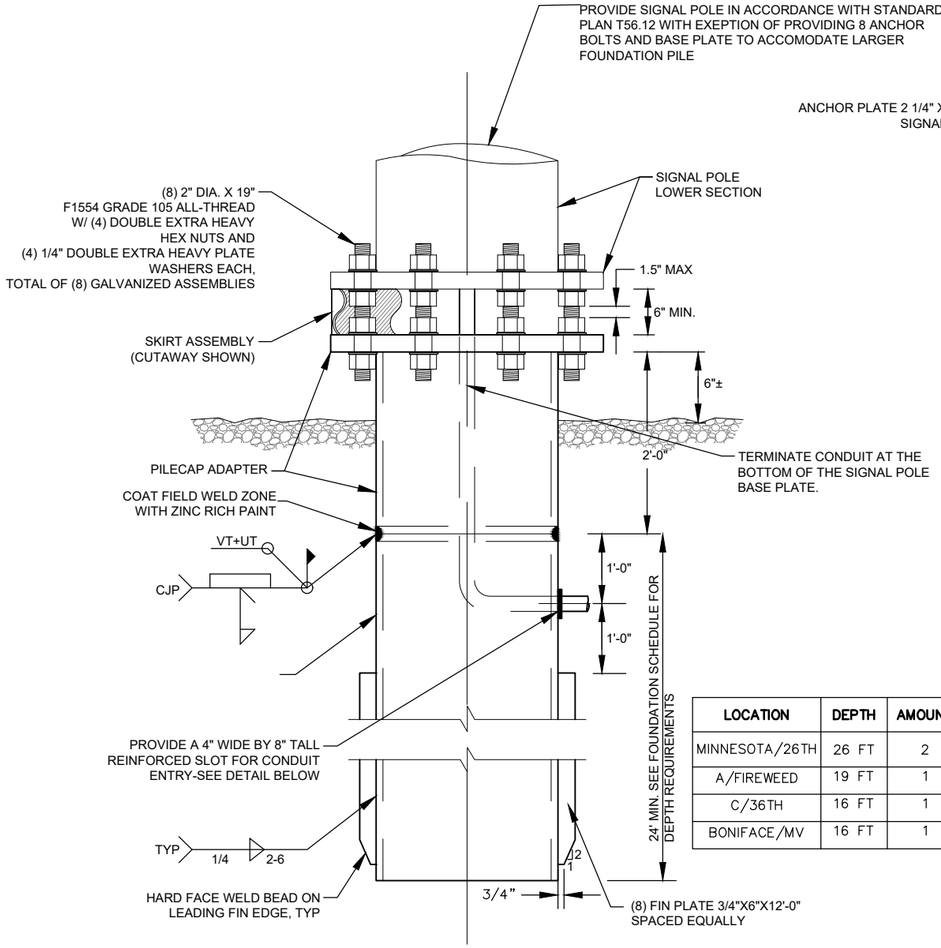
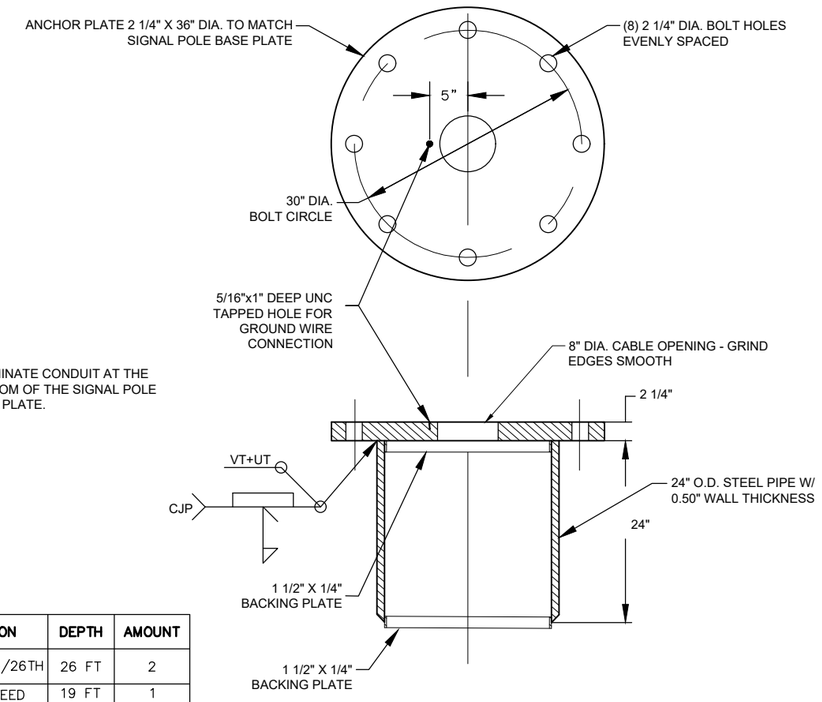


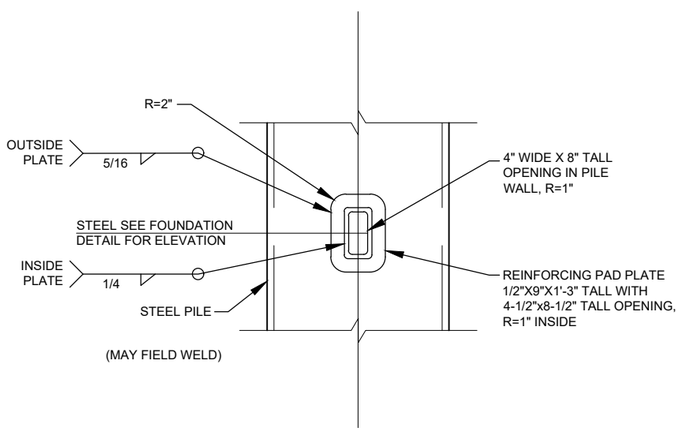
LOCATION	DEPTH	AMOUNT
MINNESOTA/26TH	26 FT	2
A/FIREWEED	19 FT	1
C/36TH	16 FT	1
BONIFACE/MV	16 FT	1

FOUNDATION DETAIL
N.T.S.

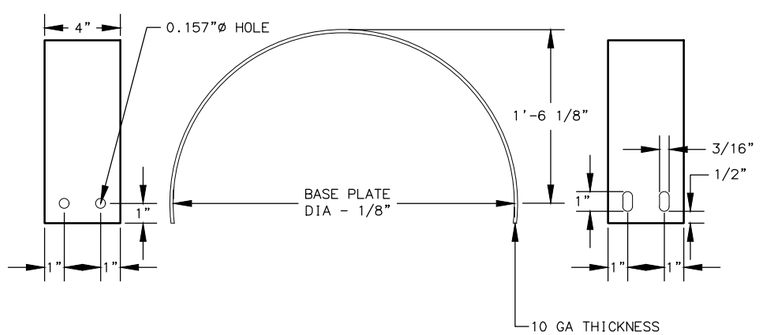


PILE CAP ADAPTER DETAIL
N.T.S.

NOTE: TACK WELD BACKING PLATE TO PIPE PILE SECTION



CONDUIT OPENING DETAIL
N.T.S.



SKIRT DETAIL
N.T.S.

(TWO REQUIRED PER POLE)

DESIGN NOTES

1. DESIGN STANDARD: 2013 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS WITH SEPTEMBER 2013 ERRATA AND 2015, 2019, AND 2020 INTERIM REVISIONS.(SSSS)
2. DESIGN LOADS: WIND= 100MPH (SSSS FIG. 3.8.3.-1)

   55 FT MASTARM: 6,200 LBS SHEAR, 169 KIP-FT MOMENT AND 8,100 LBS AXIAL

   45 FT MASTARM: 5,200 LBS SHEAR, 124 KIP-FT MOMENT AND 6,300 LBS AXIAL
3. CHARPY V-NOTCH TEST FOR SIGNAL POLE PILE FOUNDATIONS ARE NOT REQUIRED.

NOTES

1. DRIVE ALL PILES OPEN ENDED WITH FLUSH MOUNTED, HARDENED DRIVING SHOES. COMPLETE PILE DRIVING WORK IN ACCORDANCE WITH SECTIONS 505, 660 AND 715 OF THE STANDARD SPECIFICATIONS. INSTALLED PILE TO BE WITHIN 1:48 OF PLUMB. PILES OUT OF PLUMB MUST BE REMOVED AND REINSTALLED. CUT OF PILE TO ACHIEVE PROPER ELEVATION. THE RESULTING BUT JOINT ALIGNMENT SHALL MEET THE REQUIREMENTS OF AWS D1.1.
2. PILE MANUFACTURER TO PROVIDE THE REQUIRED PILE CAP ADAPTER, ADAPTER IS TO BE SHOP FABRICATED. HOT DIP GALVANIZE THE ADAPTER TO WITHIN 3 INCHES OF THE TOE. DELIVER THE ADAPTER WITH ALL FASTENERS AND HARDWARE.
3. MACHINE OR PLASMA CUT ANY PENETRATION IN THE ADAPTER OR PILE. ALL PENETRATIONS OF THE PILE AND/OR ADAPTER SHALL BE SMOOTH.
4. ALL WELDS TO BE SIZED BY THE MANUFACTURER UNLESS INDICATED. BOTH SHOP AND FIELD CJP WELDS TO BE 100% VISUALLY (VT) AND ULTRASONICALLY (UT) TESTED. SUBMIT WRITTEN RECORDS OF TESTS TO THE PROJECT ENGINEER.
5. MANUFACTURE THE ADAPTER TOP PLATE AND COMPONENTS FROM STEEL MEETING THE REQUIREMENTS OF ASTM A6. THE PERMISSIBLE BOW AND SWEEP OF THE ADAPTER TOP PLATE IS LIMITED TO 1/32". PLATE SHALL BE FLATTENED IN THE SHOP PRIOR TO FIT-UP AND WELDING IN THE SHOP. PRIOR TO HOT DIP GALVANIZING, BURRS AND IMPERFECTIONS SHALL BE REMOVED BY GRINDING OR MACHINING FOR ANY MATERIALS AND OR ASSEMBLIES NOT MEETING THESE REQUIREMENTS.
6. HOT DIP GALVANIZE THE PILE TO WITHIN 3 INCHES OF THE TOP OF THE PILE PER AASHTO M111.
7. CONNECT THE GROUND WIRE TO THE PIPE PILE ON THE INSIDE. GROUND WIRE SHALL BE BARE SOLID, STRANDED OR BRAIDED COPPER.
8. INSTALL THE PILE CAP ADAPTER TO WITHIN 1:48 OF PLUMB.
9. PROVIDE ROD MATERIAL MEETING THE REQUIREMENTS SHOWN ON THE DETAIL AND AS LISTED IN THE MATERIAL PROPERTIES TABLE. ALL RODS TO BE FULL TENSIONED.
10. AFTER THE FIELD WELDING, ELECTRICAL CONDUIT AND ELECTRICAL CONDUCTOR WORK IS COMPLETE, BACKFILL AND COMPACT SOIL AROUND THE INSTALLED PILE IN ACCORDANCE WITH SECTION 205, SUBSECTIONS 203-3.04, 660-3.01 AND 660-3.02 OF THE SPECIFICATIONS. USE SELECT TYPE A MATERIAL ONLY AS BACKFILL.
11. SEE ALASKA STANDARD PLANS FOR ADDITIONAL SIGNAL POLE DETAILS NOT SHOWN HERE.

MATERIAL PROPERTIES

ITEM	STANDARD	RATING
ANCHOR RODS, 2" X 19"	ASTM F1554	GRADE 105
FASTENERS, WASHERS	AASHTO M270	GRADE 36
FASTENERS, NUTS	AASHTO M292	
ANCHOR PLATE & BASE PLATE	AASTHO M270 F3	GRADE 50
PIPE PILE	ASTM A709 T3	GRADE 50
FINISH, PIPE PILE AND ADAPTER	AASHTO M111	
FINISH, ANCHOR ROD AND FASTENERS	AASHTO M232	
GROUND WIRE		#4 AWG

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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

SIGNAL POLE PIPE PILE FOUNDATION DETAILS

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	H9	H16

DESIGNED BY
CHECKED BY
DRAFTED BY

SCALE

DATE TIME
4/21/2025 8:57 AM

DRAWING LOCATION
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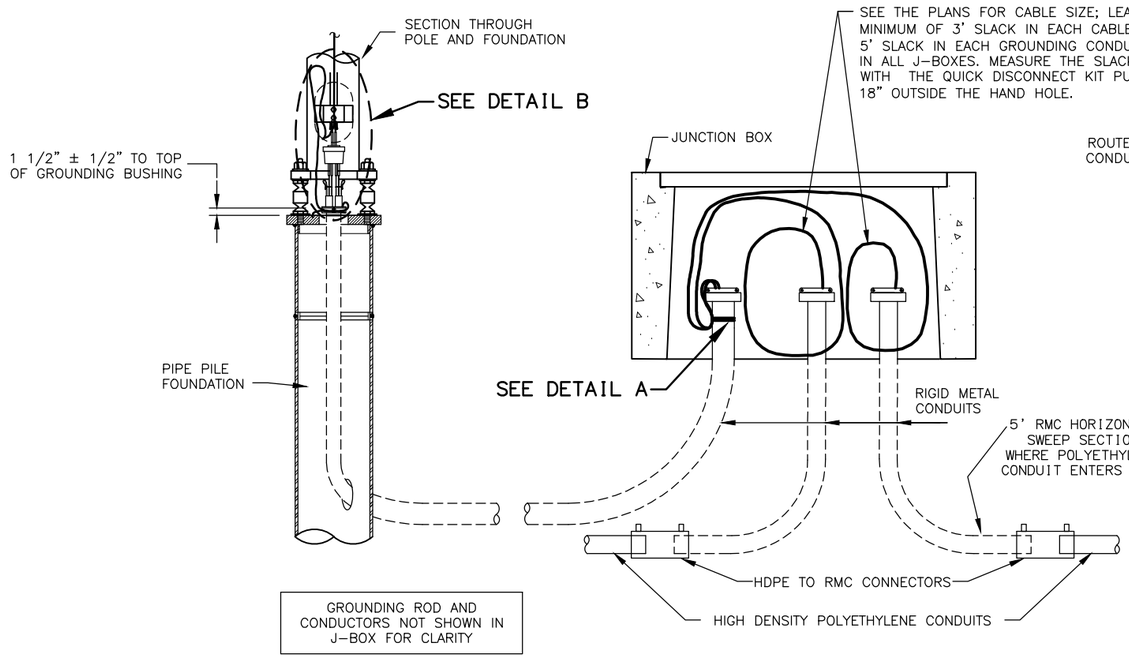
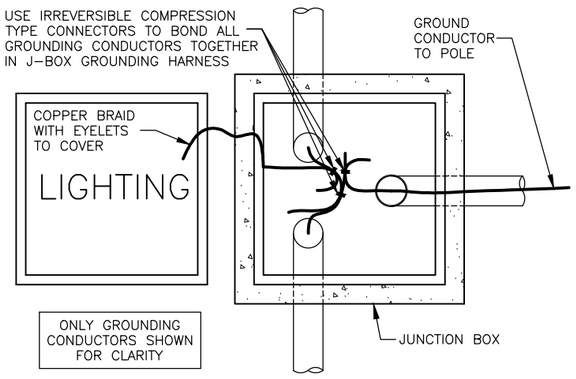
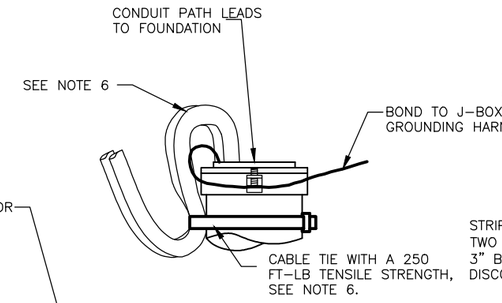


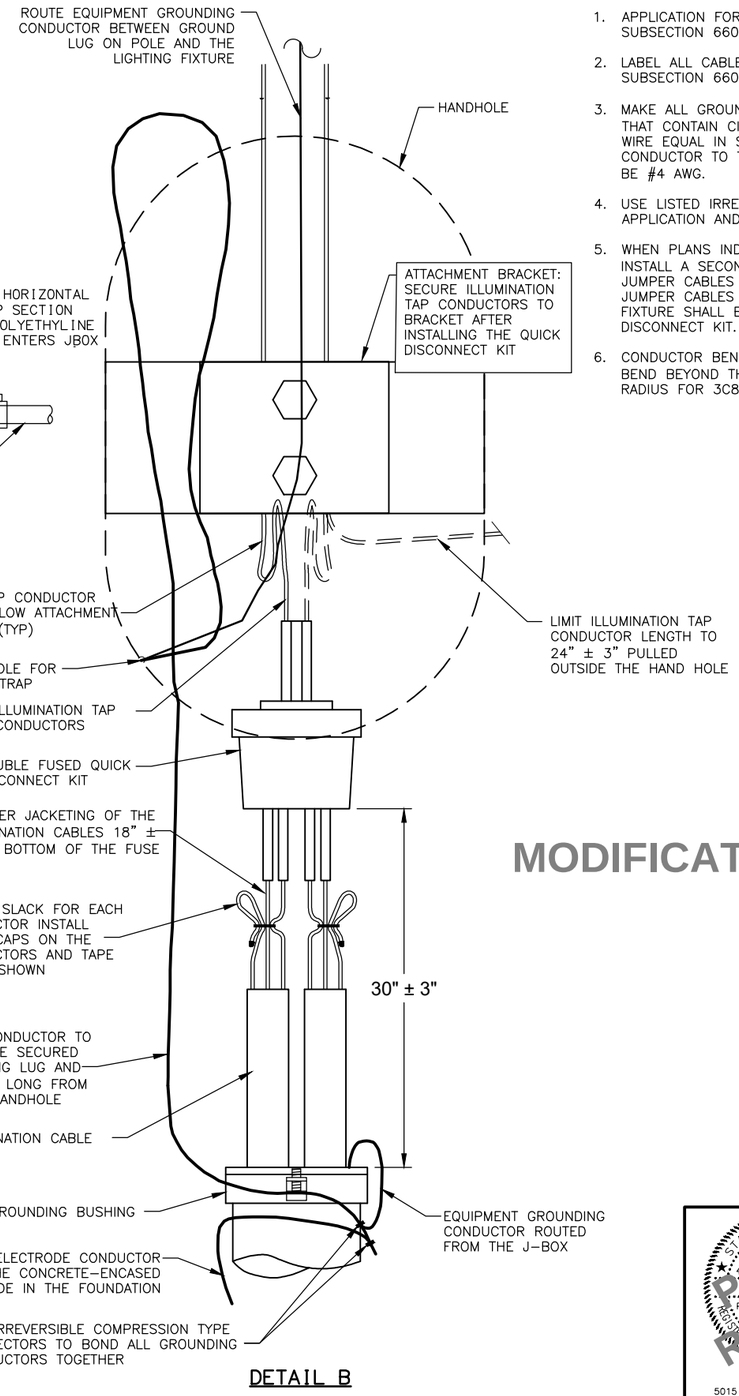
LIGHTING SYSTEM POLE AND J-BOX WIRING DETAILS



GROUNDING CONDUCTOR BONDING CONNECTIONS



DETAIL A



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. WHEN PLANS INDICATE TWO FIXTURES ARE TO BE INSTALLED ON A SINGLE POLE, INSTALL A SECOND DOUBLE FUSED QUICK DISCONNECT KIT. USE TWO 12" (MAX.) JUMPER CABLES INSTALLED ON THE LINE SIDE OF THE FUSES AND SIZE THE JUMPER CABLES TO MATCH THE CABLES ENTERING THE FOUNDATION. EACH FIXTURE SHALL BE POWERED THROUGH A DEDICATED DOUBLE FUSED QUICK DISCONNECT KIT.
6. CONDUCTOR BENDS MUST BE MADE SO AS NOT TO DAMAGE THE CABLE. DO NOT BEND BEYOND THE CABLE'S MINIMUM BEND RADIUS. USE 3.5" MINIMUM BEND RADIUS FOR 3C8 & 3C6 TYPE TC NON-SHEATHED CABLES.

MODIFICATIONS IN PROGRESS

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

PIPE PILE FOUNDATION POLE WIRING AND GROUNDING DETAILS

DOWL, LLC
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ANCHORAGE, AK 99503
(907) 562-2000
AECL848

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	H10	H16

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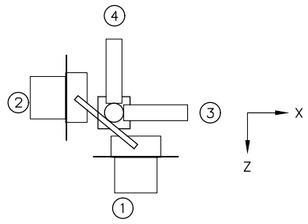
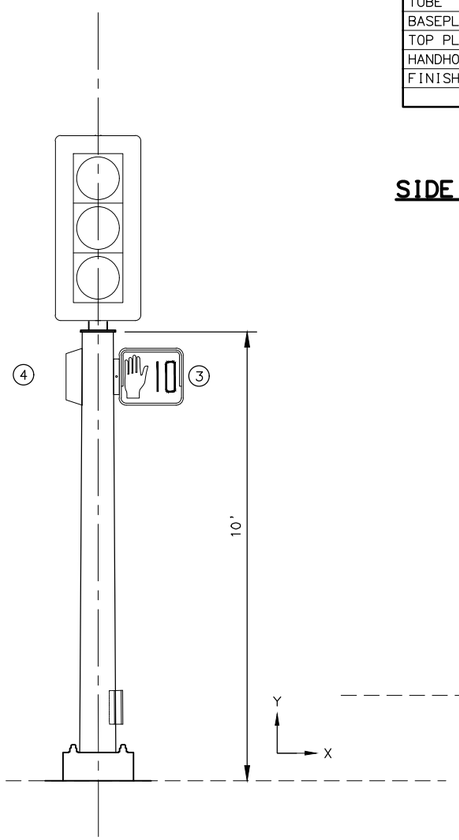


PLAN VIEW



ELEVATION VIEW
NTS

FIXED DESIGN ELEMENTS

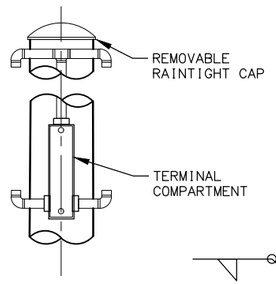
ALL ASSEMBLIES	
LENGTH	10'(TYP, MAY VARY IN PLANS)
FIXED END DIAMETER O.D.	10.0"
TAPER	0.14" /FT
TUBE THICKNESS	7 GA.
HAND-HOLE O.D.	5.63" X 7.31"
BASE PLATE	15.5" X 15.5" X 1.375"
BOLT CIRCLE	15.5"

MATERIAL PROPERTIES	
TUBE	ASTM A572 GR. 55
BASEPLATE	AASHTO M270 F3, GR 50
TOP PLATE	ASTM A36
HANDHOLE REINFORCEMENT	ASTM A53, GR. B
FINISH	AASHTO M111 & M232

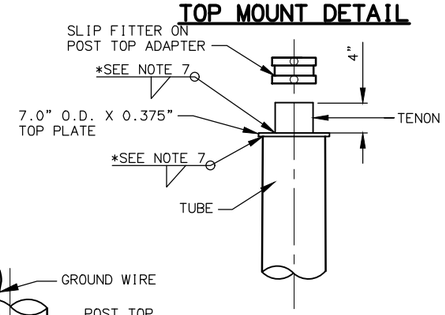
POLE DESIGN LOADING

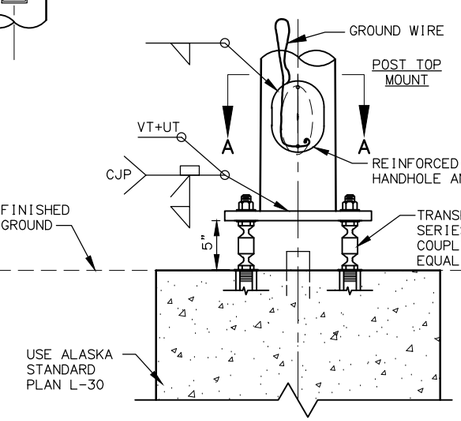
LOAD COMPONENT	EFFECTIVE AREA SQ. FT.	WEIGHT LBS.
1 = SIGNAL	7	60
2 = SIGNAL	11	100
3 = PED HEAD	2.5	25
4 = PED HEAD	2.5	25

SIDE MOUNT DETAIL

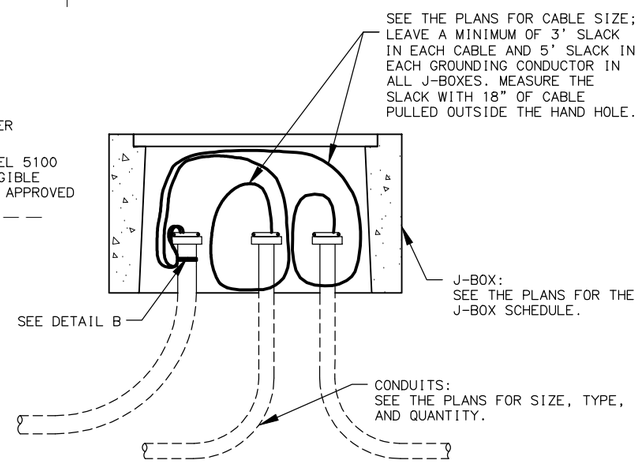


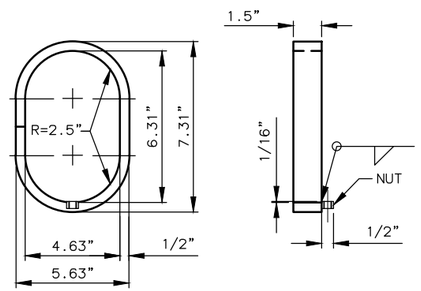
TOP MOUNT DETAIL



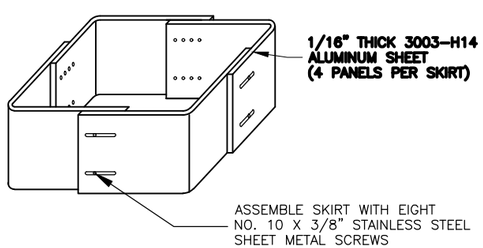


SIGNAL POST AND BASE
NTS

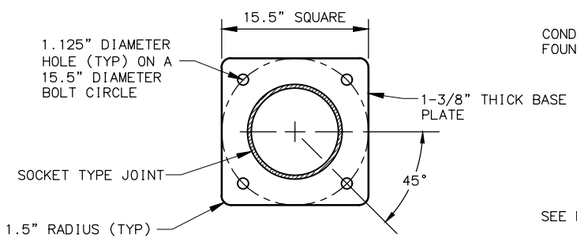




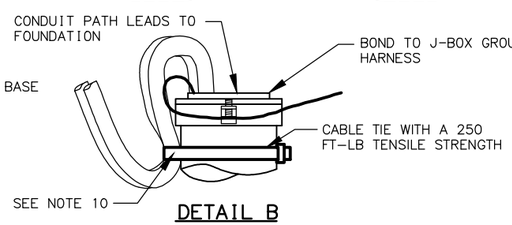
HANDHOLE DETAIL
NTS



SKIRT DETAIL
NTS



VIEW A-A
PLAN VIEW OF BASE PLATE
NTS



DETAIL B

NOTES:

1. DESIGN POLE ASSEMBLIES TO THE 2001 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRE AND TRAFFIC SIGNALS, THE ALASKA STANDARD SPECIFICATIONS, STANDARD MODIFICATIONS, SPECIAL PROVISIONS AND THESE PLANS. DESIGN FOR A BASIC WIND SPEED OF 100 MPH, FATIGUE CATEGORY II.
2. POLES SHALL BE DESIGNED AND FABRICATED TO INCORPORATE ALL FIXED DESIGN ELEMENTS.
3. DESIGN AND FABRICATE TUBES FROM ONE PIECE OF TAPERED STEEL.
4. STEEL GREATER THAN 1/2" THICK SHALL CONFORM TO AASHTO M270 AND SHALL MEET THE FRACTURE CRITICAL CHARPY V-NOTCH IMPACT TEST REQUIREMENTS FOR ZONE 3.
5. INSTALL A 0.625" THICK 3003-H14 ALUMINUM SHEET SKIRT AROUND THE FRANGIBLE COUPLINGS FASTENED WITH STAINLESS SHEET METAL SCREWS.
6. THE DEPARTMENT WILL REJECT DAMAGED OR DEFECTIVE POLES FOR ANY OF THE FOLLOWING, INCLUDING BUT NOT LIMITED TO;
   A. VARIANCES FROM APPROVED SHOP DRAWINGS.
   B. VARIANCES FROM FIXED DESIGN ELEMENTS.
   C. OUT OF ROUND. SECTIONS ARE OUT OF ROUND WHEN THE DIAMETERS OF ROUND MEMBERS EXCEED 2 PERCENT OF THE DIMENSION SPECIFIED ON THE SHOP DRAWINGS.
   D. BOWED WITH SWEEPS EXCEEDING 0.75" INCH THROUGHOUT THE LENGTH OF THE POLE, MASTARM, OR SEGMENT.
   E. DAMAGED OR DENTED FINISHES.
7. WELD SIZE TO BE DETERMINED BY MANUFACTURER.
8. PROVIDE PERMANENT TAGS PER SECTION 740 TABLE 740-1 OF THE SPECIFICATIONS.
9. THIS DRAWING IS INTENDED FOR POLE DESIGN PURPOSES ONLY. ASSEMBLY CONFIGURATIONS ARE FOR LOADING PURPOSES AND MAY DIFFER FROM THOSE SHOWN IN PLANS. POLES HAVE NOT BEEN EVALUATED FOR LOADING CONDITIONS MORE SEVERE THAN THOSE SHOWN AND WILL REQUIRE INDIVIDUAL ANALYSIS WHEN ENCOUNTERED.

DOWL, LLC
5015 BUSINESS PARK BLVD
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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

BREAKAWAY TRAFFIC SIGNAL POLE DETAIL

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	H11	H16

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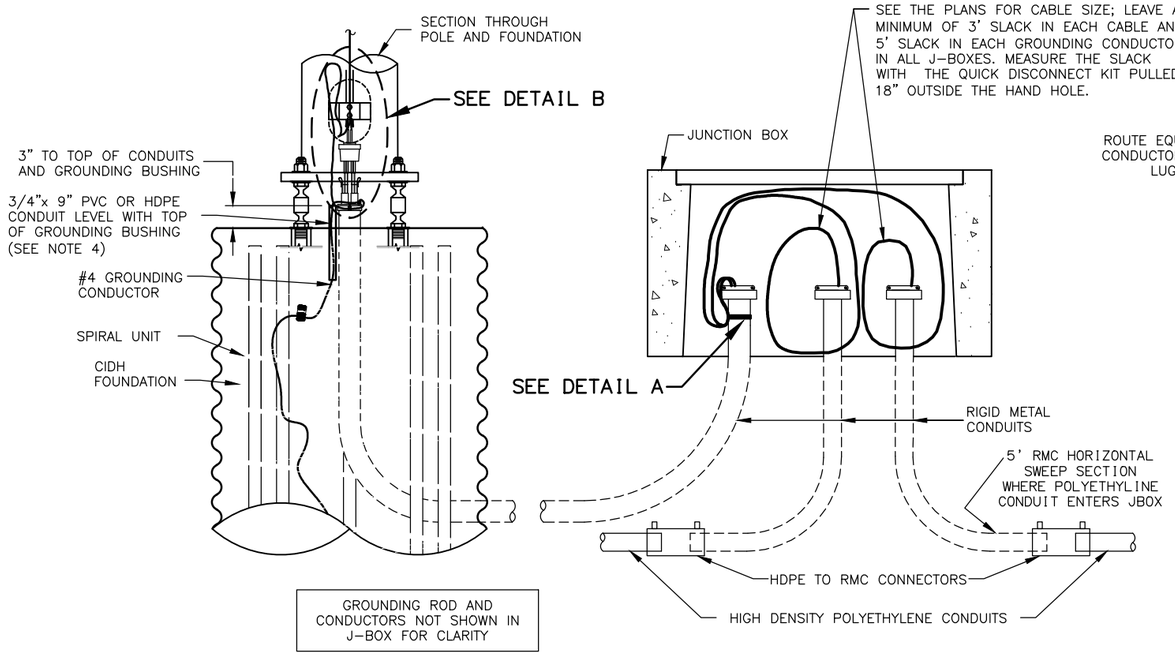
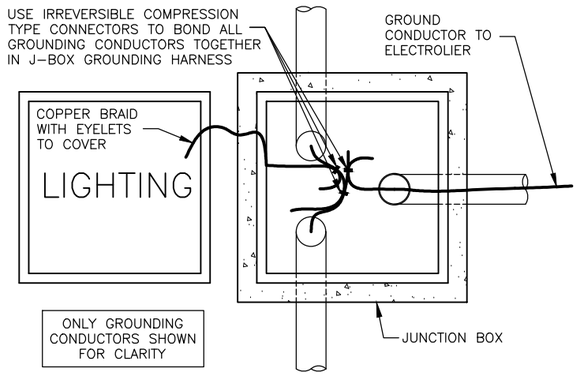
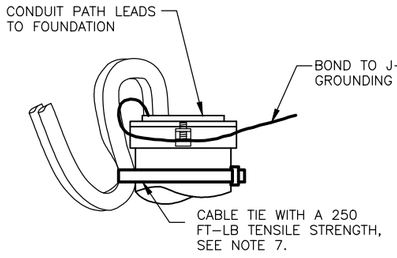


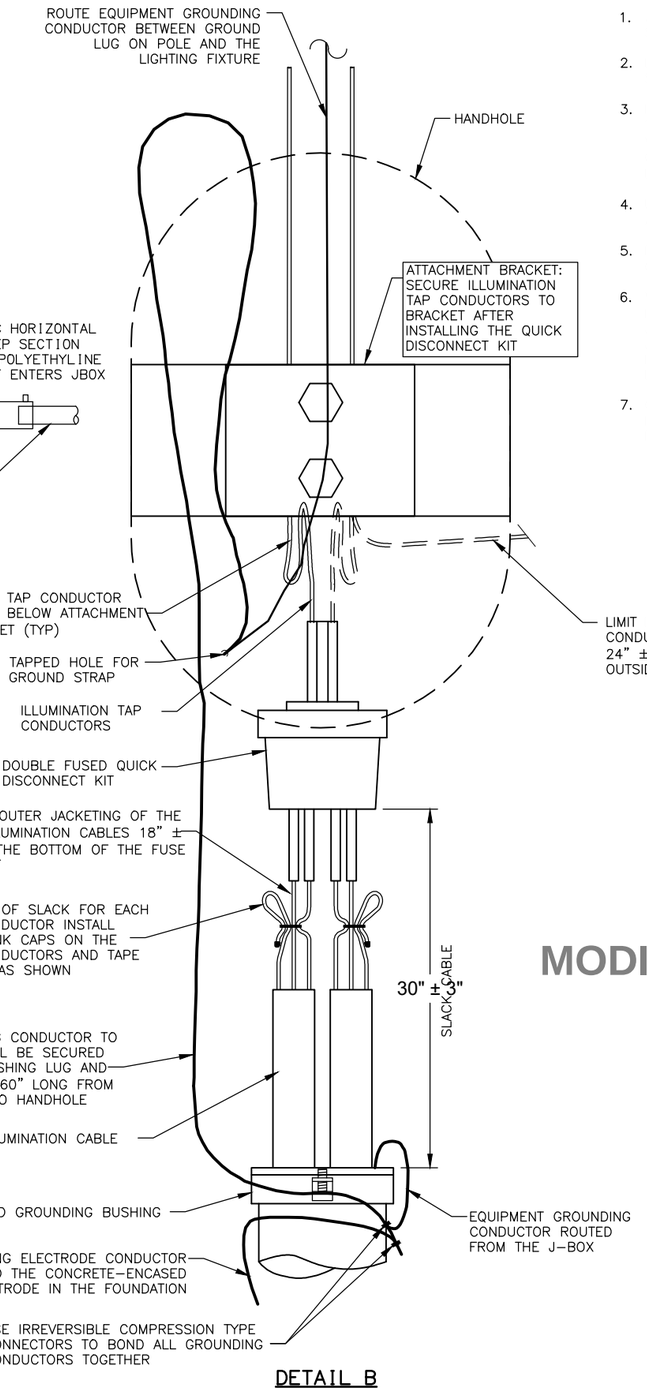
LIGHTING SYSTEM POLE AND J-BOX WIRING DETAILS



GROUNDING CONDUCTOR BONDING CONNECTIONS



DETAIL A



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.
6. WHEN PLANS INDICATE TWO FIXTURES ARE TO BE INSTALLED ON A SINGLE POLE, INSTALL A SECOND DOUBLE FUSED QUICK DISCONNECT KIT. USE TWO 12" (MAX.) JUMPER CABLES INSTALLED ON THE LINE SIDE OF THE FUSES AND SIZE THE JUMPER CABLES TO MATCH THE CABLES ENTERING THE FOUNDATION. EACH FIXTURE SHALL BE POWERED THROUGH A DEDICATED DOUBLE FUSED QUICK DISCONNECT KIT.
7. CONDUCTOR BENDS MUST BE MADE SO AS NOT TO DAMAGE THE CABLE. DO NOT BEND BEYOND THE CABLE'S MINIMUM BEND RADIUS. USE 3.5" MINIMUM BEND RADIUS FOR 3C8 & 3C6 TYPE TC NON-SHEATHED CABLES.

MODIFICATIONS IN PROGRESS

PSSE REVIEW
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
PROJECT ENGINEER
REGISTERED PROFESSIONAL ENGINEER

DOWL, LLC
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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

CIDH FOUNDATION POLE WIRING AND GROUNDING DETAILS

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	H12	H16

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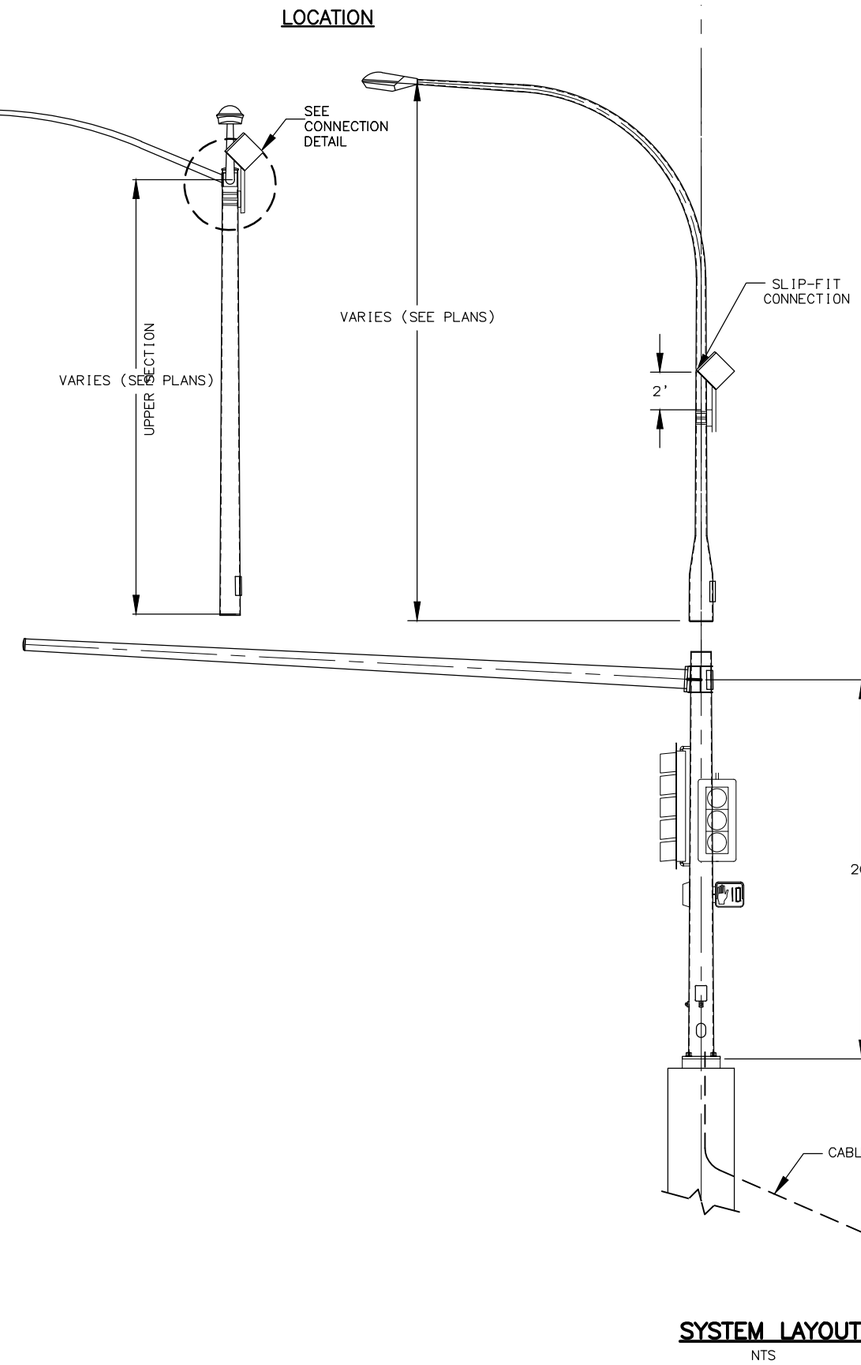
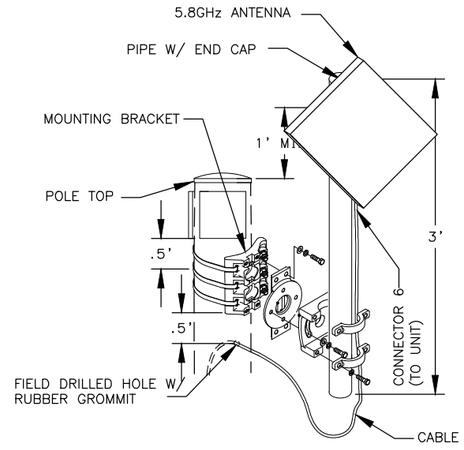


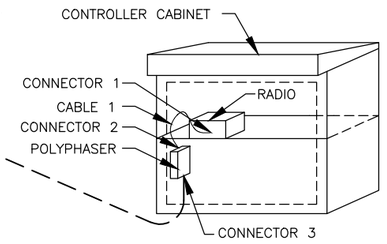
SYSTEM LAYOUT
NTS

MATERIAL REQUIREMENTS	
ALL ASSEMBLIES	
MOUNTING BRACKET	PER MANUFACTURER
STEEL PIPE	2" NOM. GALVANIZED RMC
POLYPHASER	PER MANUFACTURER
CABLE 1	PER MANUFACTURER
CABLE 2	PER MANUFACTURER
CABLE 3	PER MANUFACTURER
CONNECTOR 1, 2	PER MANUFACTURER
CONNECTOR 3	PER MANUFACTURER
CONNECTOR 4	PER MANUFACTURER
CONNECTOR 5, 6	PER MANUFACTURER
HEAT SHRINK	PER MANUFACTURER
STRAIN RELIEF	REMKE 2201-013 OR APPROVED EQUAL
5.8 GHz ANTENNA	
ANTENNA	INTUICOM 5.8GHz INTEGRATED OR APPROVED EQUAL



5.8 GHz ANTENNA
(LUMINAIRE ARMS NOT SHOWN FOR CLARITY)

CONNECTION DETAIL
NTS



NOTES:

1. PROTECT CABLE ENDS FROM MOISTURE AT ALL TIMES.
2. PULL CABLE IN ACCORDANCE WITH SECTION 660 OF THE SPECIAL PROVISIONS. PULL CABLE SO THAT THERE IS SUFFICIENT LENGTH TO REACH THE TOP OF THE CONTROLLER CABINET. CABLES ARE TO BE PULLED WITHOUT CONNECTORS ATTACHED. WHEN CABLE HAS BEEN PULLED TO FINAL LOCATIONS INSTALL AND MAKE FINAL CONNECTIONS.
3. CABLE RUNS ARE TO BE MADE CONTINUOUS WITHOUT SPLICES EXCEPT FOR LOCATIONS APPROVED BY THE ENGINEER.
4. CABLE WITH DAMAGED INSULATION, OR THAT HAS BEEN CRIMPED OR BENT BEYOND THE MINIMUM BEND RADIUS MUST BE REPLACED AT NO ADDITIONAL COST.
5. THE CABLE BEND RADIUS SHALL NOT EXCEED MANUFACTURERS RECOMMENDATIONS.
6. ENSURE ADEQUATE LENGTH OF EACH CABLE TO ALLOW WORK ON THE ENDS OF THE CABLE IN THE CONTROLLER CABINET, AT THE MASTARM HANDHOLE AND ANTENNA MOUNTING LOCATION.
7. MOUNT ANTENNA AT REQUIRED HEIGHT. HEIGHT MAY BE ADJUSTED BY THE ENGINEER TO AVOID THE SLIP FIT CONNECTION OR OTHER HAZARDS.
8. INSTALL WATERTIGHT RUBBER GROMMITS WHERE CABLE PASSES THROUGH THE POLE.

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
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HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

ANTENNA MOUNTING DETAILS

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
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PROJECT ENGINEER
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5015 BUSINESS PARK BLVD
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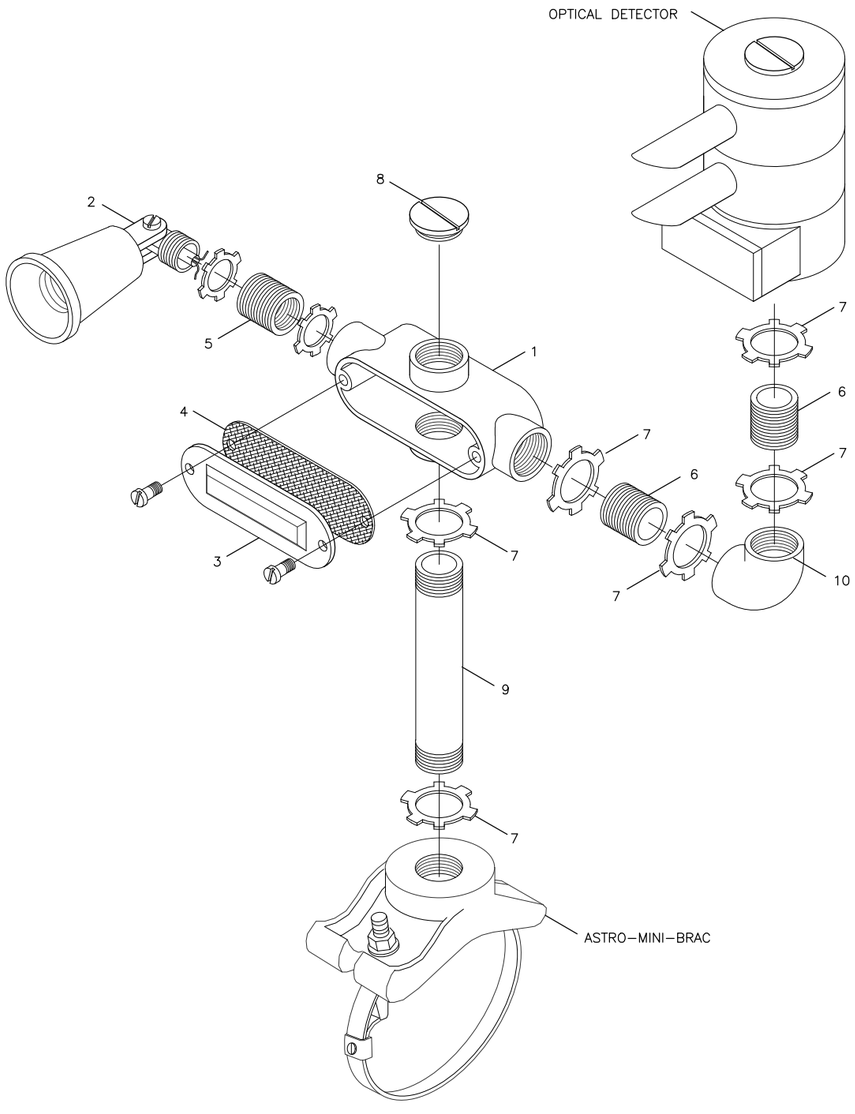
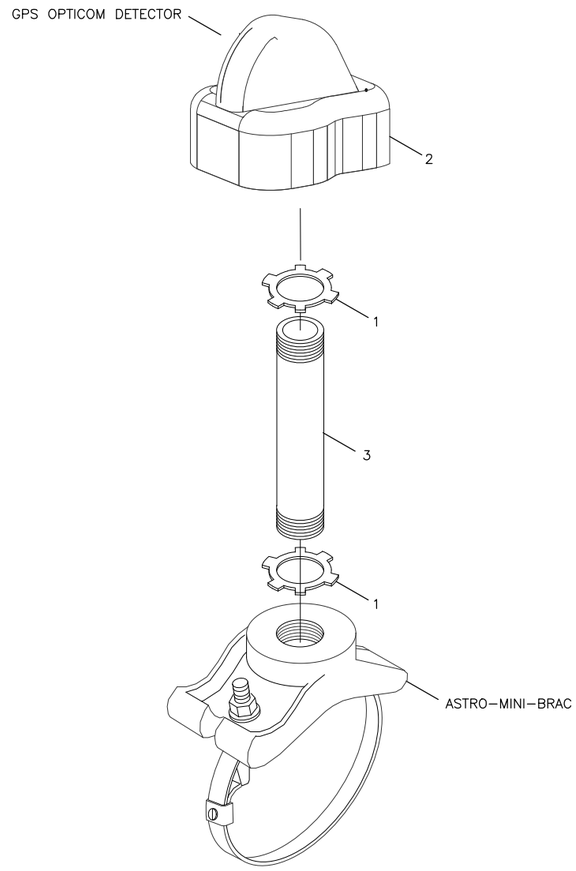


PARTS LIST FOR EACH GTT OPTICOM DETECTOR INSTALLED

GTT OPTICOM MODEL 575 CONFIRMATION LIGHT KIT
CONFIGURE AS SHOWN FROM PARTS BELOW

PART NO.	PART TYPE	LIGHT KIT QUANTITY
1	"X" CONDUIT BODY	1
2	PAR 38 LAMP HOLDER	2
3	CONDUIT COVER	1
4	COVER GASKET	1
5	REDUCING BUSHING	2
6	3/4" X 2" NIPPLE	ADD 2 TO KIT
7	3/4" LOCKNUT	6
8	3/4" HOLE PLUG	2
9	3/4" X 6" NIPPLE	ADD 1 TO KIT
10	3/4" X 90° ELBOW	ADD 1 TO KIT



PARTS LIST FOR EACH GPS OPTICOM DETECTOR INSTALLED

GTT OPTICOM MODEL 3100 RADIO/GPS UNIT AS SHOWN FROM PARTS BELOW

PART NO.	PART TYPE	LIGHT KIT QUANTITY
1	3/4" LOCKNUT	2
2	GPS OPTICOM UNIT	1
3	3/4" X 6" NIPPLE	1

NOTES:

1. SEE THE SIGNAL PLANS FOR THE SIGNAL POLE MAST ARMS SCHEDULED FOR EVP INSTALLATION.
2. FOR EACH EVP INSTALLATION, FURNISH:
   A. A GTT MODEL 711, 721, 722 OPTICOM DETECTOR AS CALLED FOR IN PLANS.
   B. AN ASTRO-MINI-BRAC, MODEL AB-0155-L, AS MANUFACTURED BY PELCO PRODUCTS OR AN APPROVED EQUAL.
   C. A GTT MODEL 575 CONFIRMATION LIGHT KIT WITH THE ADDITIONAL PARTS SHOWN IN THE PARTS LIST, OR STEEL PARTS, WITH A HOT DIP GALVANIZED FINISH, AS SHOWN IN THE PARTS LIST.
   D. WITH EACH OPTICOM DETECTOR INSTALLED, FURNISH A PAR38 20 WATT LED FLOOD LAMP RATED FOR 120 VOLT OPERATION, 1250 INITIAL LUMENS, AND A 25000 HOUR LAMP LIFE.
3. MOUNT EVP DETECTORS TO HAVE DIRECT, UNOBSTRUCTED LINE-OF-SIGHT OF APPROACHING VEHICLES. DRILL A 1 INCH HOLE IN THE TOP DEAD CENTER OF THE MAST ARM AT THE LOCATION PRE-APPROVED BY THE ENGINEER. ASSEMBLE AND TIGHTEN THE PARTS AND LOCKNUTS AS SHOWN ON THIS SHEET.
4. BEFORE ATTACHING THE MODEL 138 DETECTOR CABLE TO THE OPTICOM DETECTOR, STRIP THE INSULATION FROM THE THREE INSULATED CONDUCTORS AT THE CONTROLLER CABINET AND ATTACH ALL FOUR CONDUCTORS TO GROUND.
5. PREEMPTION EMITTERS SHALL BE ASSIGNED ID NUMBERS BY JURISDICTION AS SHOWN IN VEHICLE EMITTER TABLE.

GPS NOTES:

1. SEE THE SIGNAL PLANS FOR THE SIGNAL POLE MAST ARM SCHEDULED FOR GPS OPTICOM SYSTEM INSTALLATION.
2. FOR EACH GPS OPTICOM SYSTEM INSTALLATION, FURNISH:
   A. A GTT MODEL 3100 GPS DETECTOR AS CALLED FOR IN PLANS.
   B. AN ASTRO-MINI-BRAC, MODEL AB-0155-L, AS MANUFACTURED BY PELCO PRODUCTS OR AN APPROVED EQUAL.
3. MOUNT DETECTORS PER MANUFACTURER RECOMMENDATIONS. DRILL A 1 INCH HOLE IN THE TOP DEAD CENTER OF THE MAST ARM AT THE LOCATION PRE-APPROVED BY THE ENGINEER. ASSEMBLE AND TIGHTEN THE PARTS AND LOCKNUTS AS SHOWN ON THIS SHEET.
4. INSTALL OPTICOM MODEL 1070 GPS INSTALLATION CABLE BETWEEN THE SIGNAL CABINET AND THE GPS UNIT PER MANUFACTURER RECOMMENDATIONS. LEAVE APPROXIMATELY 10 FEET OF THE MODEL 1070 CABLE SPOOLED IN THE TRAFFIC CONTROLLER CABINET.
5. PREEMPTION EMITTERS SHALL BE ASSIGNED ID NUMBERS BY JURISDICTION AS SHOWN IN VEHICLE EMITTER TABLE.

VEHICLE EMITTER TABLE

CLASS	VEHICLE I.D. NO.	JURISDICTION	VEHICLE TYPE
0	NOT USED	MUNICIPALITY OF ANCHORAGE	FIRE & EMS
1	NOT USED	MUNICIPALITY OF ANCHORAGE	OTHER
2	NOT USED	FAIRBANKS	FIRE & EMS
3	NOT USED	FAIRBANKS	OTHER
4	1-30	MATANUSKA/SUSITNA	FIRE & EMS
5	NOT USED	MATANUSKA/SUSITNA	OTHER
6	NOT USED	KENAI PENINSULA	FIRE & EMS
7	NOT USED	KENAI PENINSULA	OTHER
8	NOT USED	ELMENDORF/FT. RICHARDSON	FIRE & EMS
9	NOT USED	ELMENDORF/FT. RICHARDSON	OTHER

STATE OF ALASKA
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AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

EVP INSTALLATION DETAILS

STATE OF ALASKA
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AND PUBLIC FACILITIES
PSSE REVIEW
PROJECT ENGINEER
DOWL
REGISTERED PROFESSIONAL ENGINEER

DOWL, LLC
5015 BUSINESS PARK BLVD
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			ALASKA	0001750/CFHWY01334	2025	H14	H16

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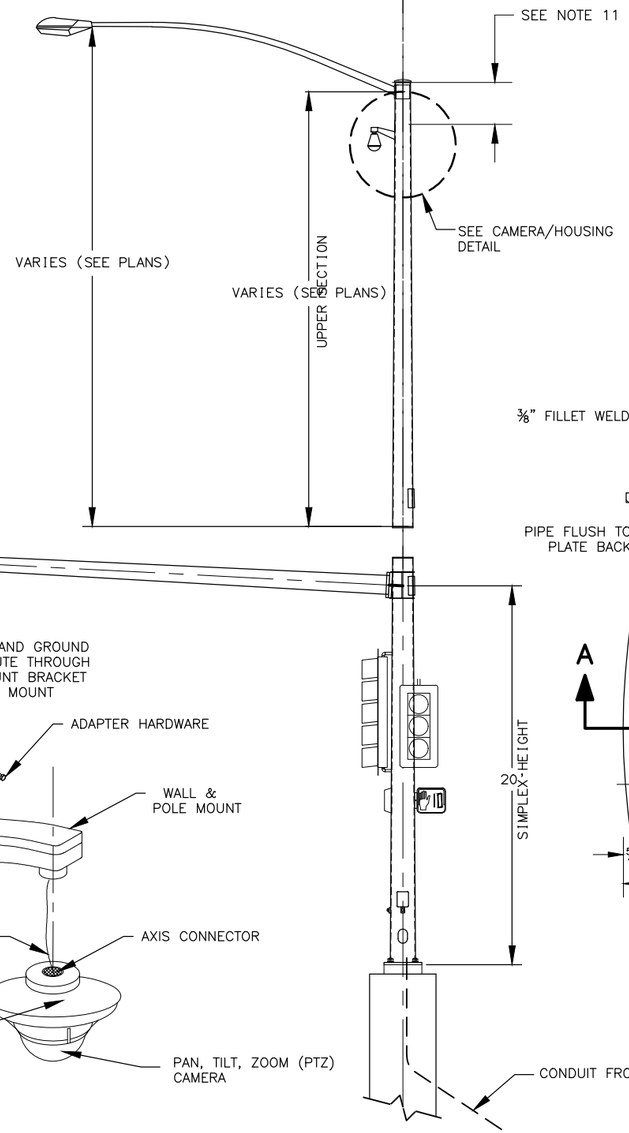
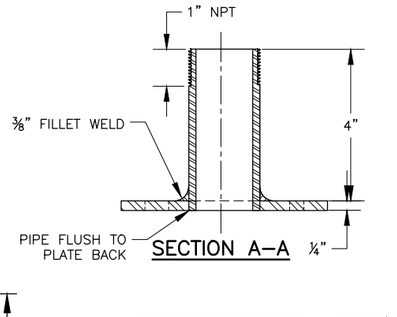
LOCATION



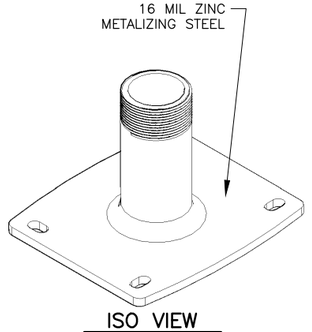
MATERIAL REQUIREMENTS	
ALL ASSEMBLIES	
MOUNTING BRACKET	ASTRO-BRAC AB-0160-45-SS-PNC
WALL ADAPTOR	STEEL FABRICATORS OR APPROVED EQUAL
WALL MOUNT	AXIS TQ5001-E OR APPROVED EQUAL
CABLE 1 (SIGNAL)	CAT-5E, SHIELDED, DIRECT BURIAL
CONNECTOR	ENVIRONMENTALLY HARDENED RJ-45
STRAIN RELIEF	REMKE 2201-013 OR APPROVED EQUAL
ADAPTER HARDWARE, EACH	(1) 5/16" 18X1" HEX BOLT, STAINLESS (2) 5/16" FLAT WASHER, STAINLESS (1) 5/16" NY-LOCK NUT, STAINLESS
CAMERA	
CAMERA	SEE SPECIFICATIONS

NOTES:

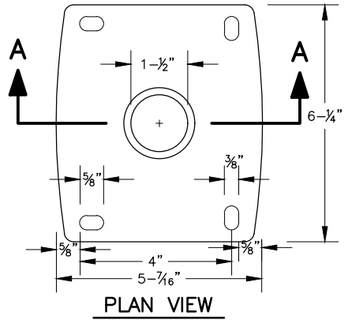
1. PROTECT CABLE ENDS FROM MOISTURE AT ALL TIMES.
2. PULL CABLE IN ACCORDANCE WITH SECTION 660 OF THE SPECIAL PROVISIONS. PULL CABLE SO THAT THERE IS SUFFICIENT LENGTH TO REACH THE TOP OF THE CONTROLLER CABINET. CABLES ARE TO BE PULLED WITHOUT CONNECTORS ATTACHED. WHEN CABLE HAS BEEN PULLED TO FINAL LOCATIONS, SEAL ENDS OF CABLE.
3. CABLE RUNS ARE TO BE MADE CONTINUOUS WITHOUT SPLICES EXCEPT FOR IN LOCATION SHOWN IN SPLICE DETAIL WITH SPECIFIED CONNECTOR.
4. CABLE WITH DAMAGED INSULATION, OR THAT HAS BEEN CRIMPED OR BENT BEYOND THE MINIMUM BEND RADIUS MUST BE REPLACED AT NO ADDITIONAL COST.
5. THE MINIMUM BEND RADIUS SHALL NOT EXCEED THE MANUFACTURERS RECOMMENDATIONS.
6. ENSURE ADEQUATE LENGTH OF EACH CABLE TO ALLOW WORK ON THE ENDS OF THE CABLE IN THE CONTROLLER CABINET AND THE CAMERA MOUNTING LOCATION.
7. MOUNT THE PENDENT DOME HOUSING AT A 45° ANGLE AT THE REQUIRED HEIGHT. ANGLE AND HEIGHT MAY BE ADJUSTED BY THE ENGINEER TO AVOID WELDS, APPENDICES AND TO APPROVE SIGHT DISTANCE.
8. ADJUST CAMERA INSIDE THE PENDENT DOME HOUSING AS SHOWN. ENSURE THAT THE CAMERA IS MOUNTED AT A 0° TILT ANGLE.
9. INSTALL WATERTIGHT THREADED RIGID COMPRESSION CONNECTOR WHERE CABLE PASSES THROUGH THE POLE.
10. AT SPLICE LOCATION PROVIDE A SECURE CONNECTION USING CONNECTOR PARTS SPECIFIED. AFTER CONNECTION IS MADE COVER SPLICE WITH HEAT SHRINK. PROVIDE A STRAIN RELIEF CABLE AS NECESSARY.
11. CAMERA/HOUSING MOUNTING HEIGHT TO BE DETERMINED IN THE FIELD BY THE ENGINEER AND MOA SIGNAL ELECTRONICS.



SECTION A-A

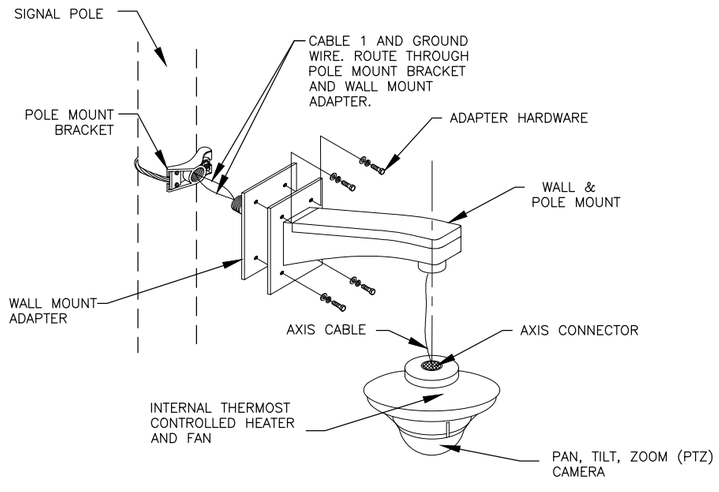


ISO VIEW



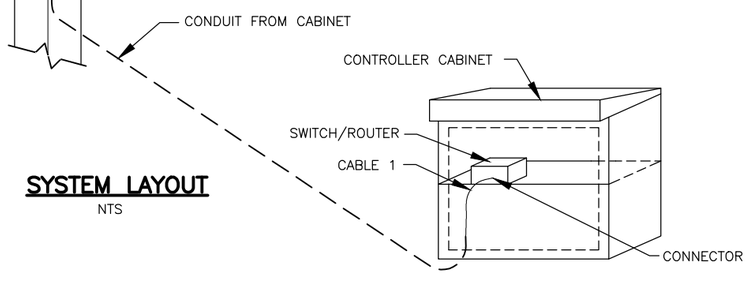
PLAN VIEW

WALL MOUNT ADAPTER DETAIL



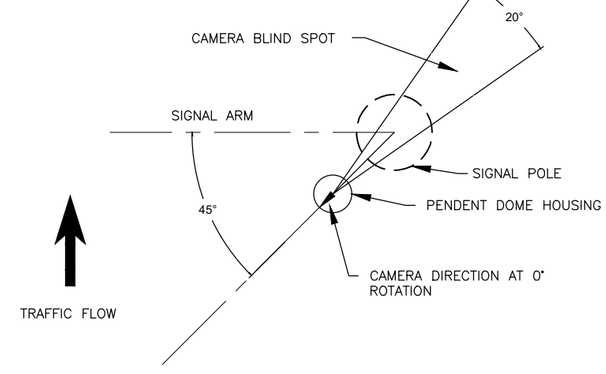
CAMERA/HOUSING DETAIL

NTS



SYSTEM LAYOUT

NTS



CAMERA/PENDENT DOME ORIENTATION

NTS

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

PAN, TILT, ZOOM, CAMERA MOUNTING DETAILS

STATE OF ALASKA
REGISTERED PROFESSIONAL ENGINEER
PROJECT ENGINEER
PSSE REVIEW

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	H15	H16

DESIGNED BY
CHECKED BY
DRAFTED BY

SCALE

DATE TIME
4/21/2025 8:58 AM

DRAWING LOCATION
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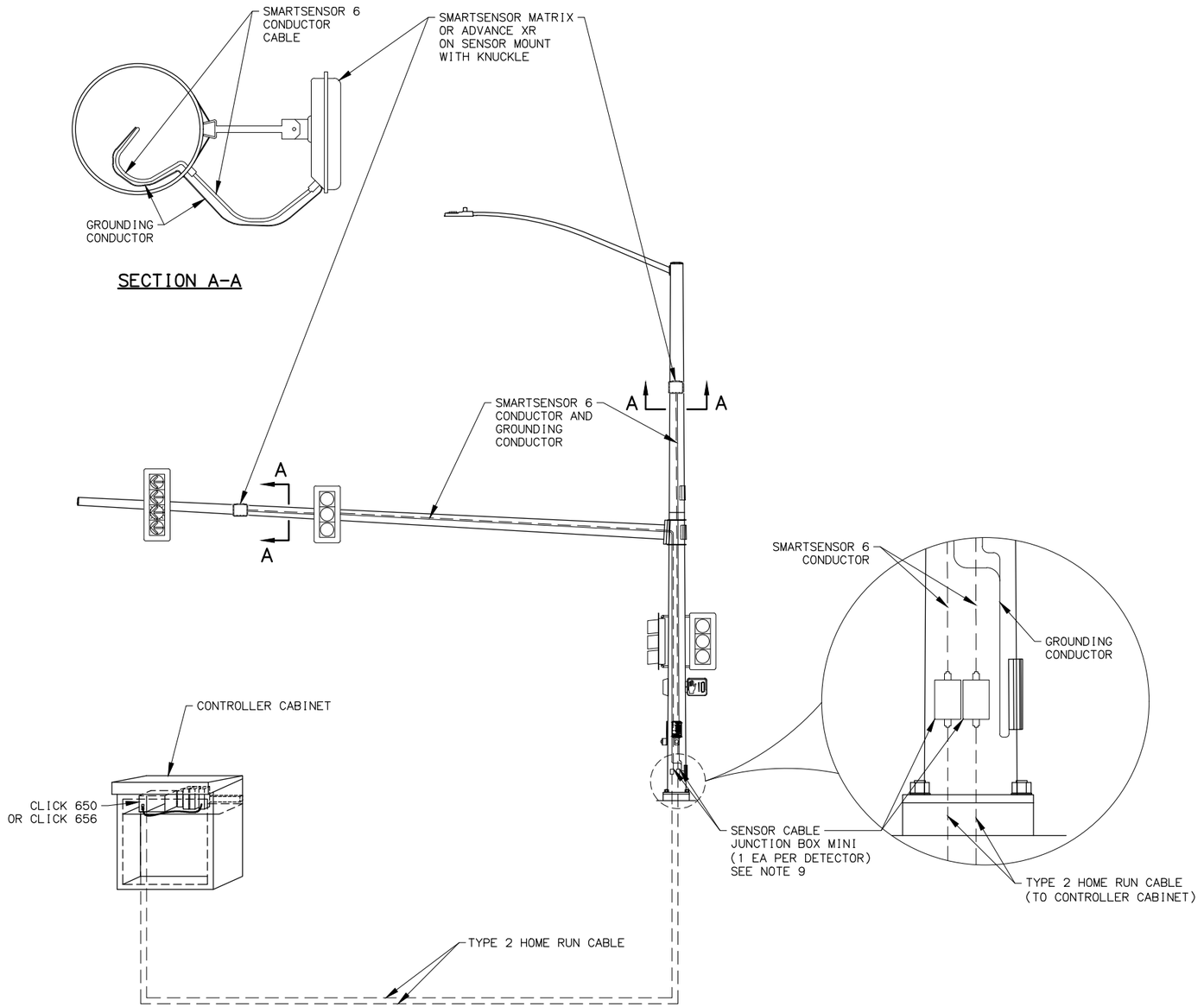

RADAR DETECTION DETAIL

(NTS)

NOTES:

1. PROTECT CABLE ENDS FROM MOISTURE AT ALL TIMES.
2. CABLE WITH DAMAGED INSULATION, OR THAT HAS BEEN CRIMPED OR BENT BEYOND THE MINIMUM BEND RADIUS MUST BE REPLACED AT CONTRACTORS EXPENSE.
3. THE MINIMUM BEND RADIUS SHALL NOT EXCEED MANUFACTURERS RECOMMENDATIONS.
4. MOUNT THE RADAR AT THE LOCATION STATED IN THE PLANS. PLACEMENT MAY BE ADJUSTED BY THE ENGINEER TO ALLOW FOR BETTER AIMING OF THE RADAR OR TO AVOID OTHER HAZARDS.
5. INSTALL WATERTIGHT THREADED RIGID COMPRESSION CONNECTOR WHERE CABLE PASSES THROUGH THE POLE.
6. FURNISH ONLY NEW EQUIPMENT OF THE BRAND AND TYPE LISTED. PROVIDE AT NO ADDITIONAL COST ALL NECESSARY DEVICES, WIRES, BRACKETS/HARDWARE ETC. TO PROVIDE A FULLY FUNCTIONING RADAR DETECTION SYSTEM.
7. INSTALL #10 AWG GROUNDING CONDUCTOR WITH GREEN COLORED INSULATION BETWEEN THE EXTERNAL GROUNDING LUG ON THE SMARTSENOR UNIT AND THE HAND HOLE AT THE POLE BASE. CONNECT THE GROUNDING CONDUCTOR TO A POLE GROUNDING CONDUCTOR USING AN IRREVERSIBLE COMPRESSION CONNECTOR. IDENTIFY THE CONDUCTOR WITH A TAG AS "RADAR GND".
8. CABLE RUNS ARE TO BE MADE CONTINUOUS WITHOUT SPLICES EXCEPT WHERE NOTED IN THE JUNCTION BOX MINI.
9. MUNICIPALITY OF ANCHORAGE WILL PERFORM SPLICING OF RADAR CABLE IN CONTRACTOR SUPPLIED JUNCTION BOX MINI.

STOP BAR DETECTOR EQUIPMENT
SMARTSENSOR MATRIX (SS-225)
MINI 710- SENSOR CABLE J-BOX MINI WITH TERMINAL BLOCKS (102-0453)
HOME RUN CABLE (MTX2 HMRN)
SMARTSENSOR 6 CONDUCTOR CABLE (SS-704-080) WITH SINGLE END CONNECTOR (SS-709) FACTORY INSTALLED
SENSOR MOUNT - 6" 3 AXIS ALUM. BRACKET. (SS-611)
ADD ON KNUCKLE (360-0129)

ADVANCE EXTENDED RANGE (XR) DETECTOR EQUIPMENT
SMARTSENSOR ADVANCE EXTENDED RANGE (SS-200E)
MINI 710- SENSOR CABLE J-BOX MINI WITH TERMINAL BLOCKS (102-0453)
HOME RUN CABLE (MTX2 HMRN)
SMARTSENSOR 6 CONDUCTOR CABLE (SS-704-XXX) WITH SINGLE END CONNECTOR (SS-709) FACTORY INSTALLED
SENSOR MOUNT - 6" 3 AXIS ALUM. BRACKET. (SS-611)
ADD ON KNUCKLE (360-0129)

STATE OF ALASKA
PROJECT ENGINEER
REGISTERED PROFESSIONAL ENGINEER
PRELIMINARY

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

RADAR DETECTION DETAILS

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	H16	H16

DESIGNED BY
CHECKED BY
DRAFTED BY

SCALE

DATE TIME
4/21/2025 8:58 AM

DRAWING LOCATION
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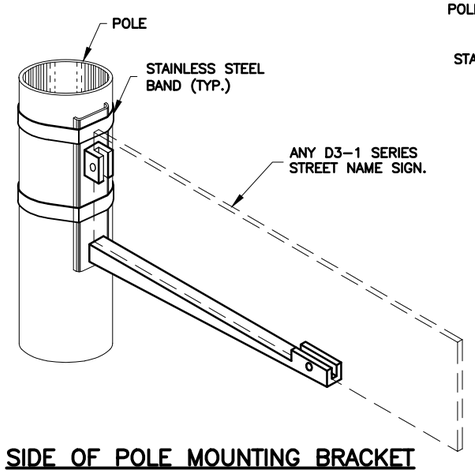
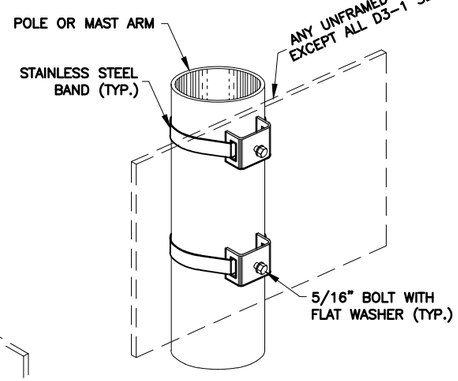
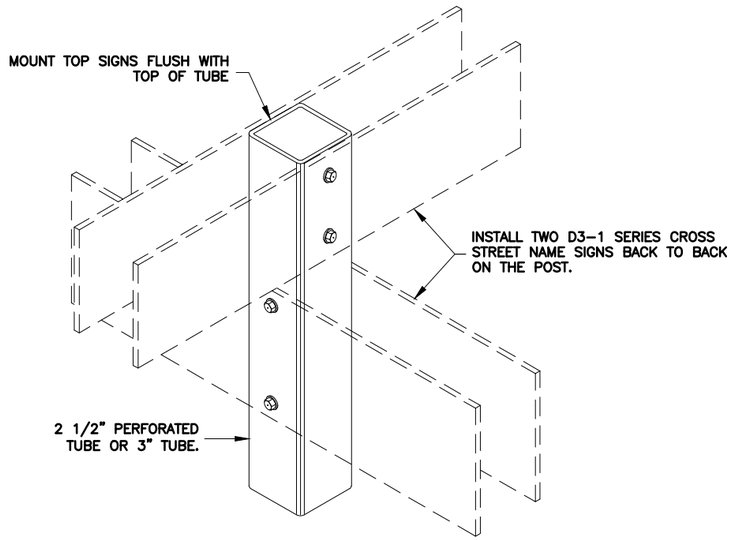


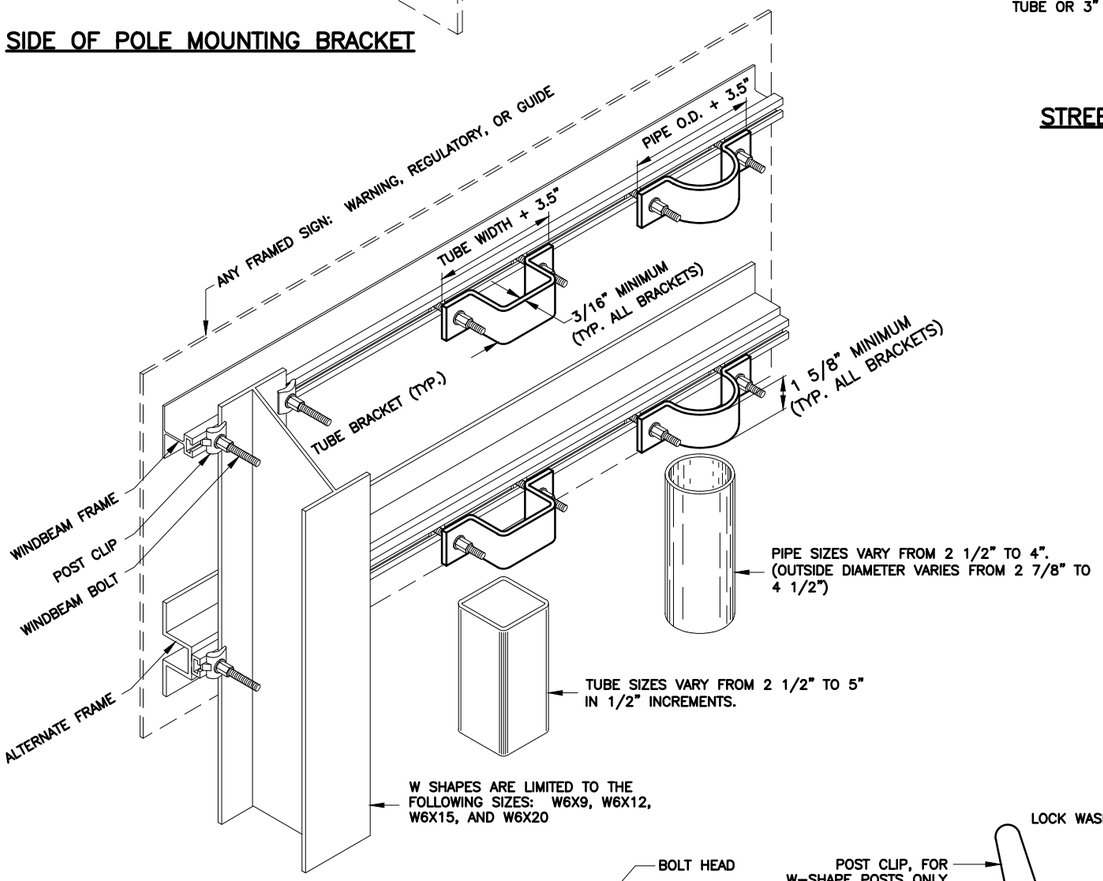
SIDE OF POLE MOUNTING BRACKET



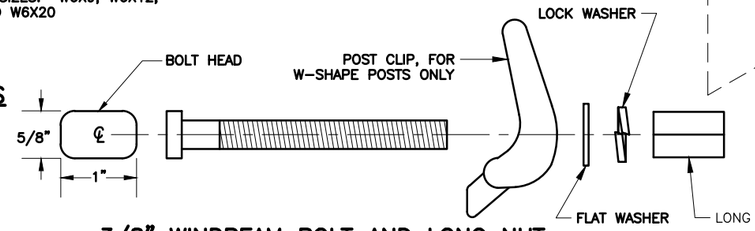
SADDLE BRACKETS



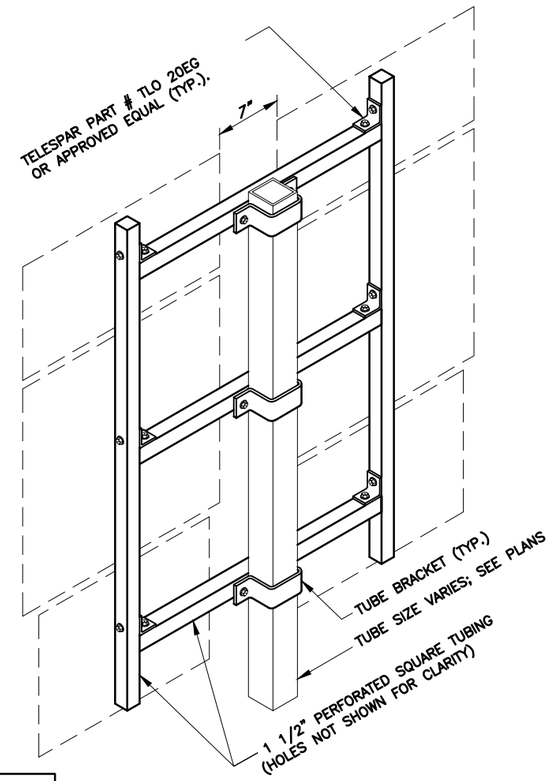
STREET NAME SIGN INSTALLATION



FRAMED SIGN ATTACHMENT BRACKETS



3/8" WINDBEAM BOLT AND LONG NUT



ROUTE MARKER TREE

NOTES:

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

FASTENER SPECIFICATION TABLE

FASTENERS	ALUMINUM	STEEL	STAINLESS STEEL
BOLTS	ASTM F468 2024-T4	ASTM A307	ASTM F593
NUTS	ASTM F467 2024-T4	ASTM A563	ASTM F594
WASHERS	ANSI B18.22.1	ASTM F844	ANSI B18.22.1
POST CLIPS	ASTM B179 356-T6	N/A	N/A

PSE REVIEW
STATE OF ALASKA
PROJECT ENGINEER
PROFESSIONAL ENGINEER

DOWL, LLC
5015 BUSINESS PARK BLVD
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(907) 562-2000
AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

SIGN ATTACHMENT DETAILS

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HA1	HA6

DESIGNED BY
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DRAFTED BY

SCALE 1" = 20'

DATE TIME 4/21/2025 9:00 AM

DRAWING LOCATION
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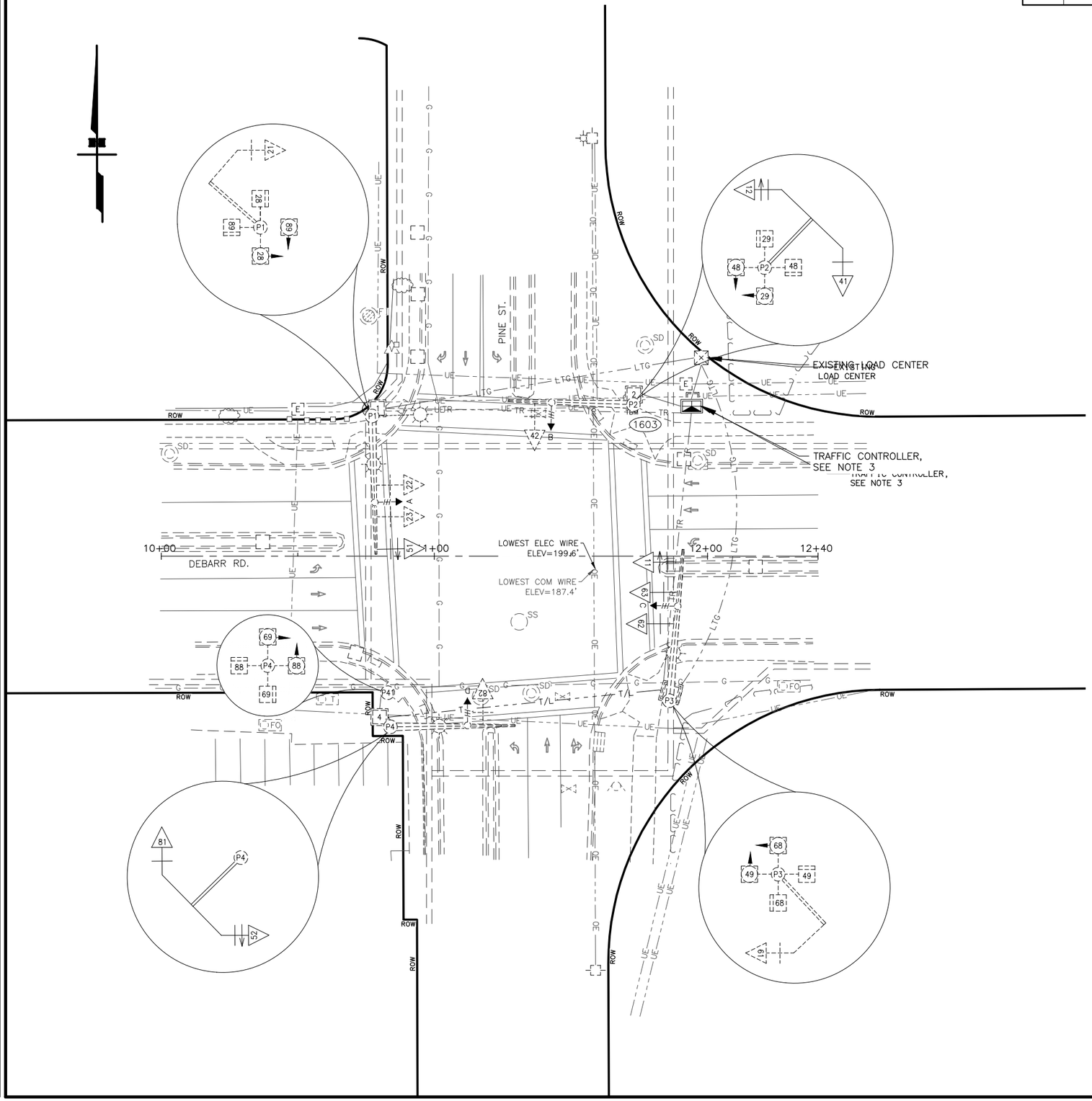

FOUNDATION SCHEDULE

ITEM	STATION ALIGNMENT	OFFSET	STRUCTURE	REMARKS
LC	-	-	LOAD CENTER	EXISTING
TC	-	-	NEW TRAFFIC CONTROLLER	EXISTING
P1	-	-	SIGNAL POLE	EXISTING
P2	-	-	SIGNAL POLE	EXISTING
P3	-	-	SIGNAL POLE	EXISTING
P4	-	-	SIGNAL POLE	EXISTING
P41	-	-	PEDESTRIAN SIGNAL POLE	EXISTING

JUNCTION BOX SCHEDULE

J-BOX	STATION ALIGNMENT	OFFSET	TYPE	REMARKS
1	-	-	2	EXISTING
2	-	-	2	EXISTING
3	-	-	3	EXISTING
4	-	-	2	EXISTING

OPTICOM DETECTOR SCHEDULE

DETECTOR ID	LOCATION	PHASE CALL	FACING DIRECTION	MODEL	REMARKS
A	POLE 1 MASTARM	2, 5	E	711	EXISTING
B	POLE 2 MASTARM	4	S	711	EXISTING
C	POLE 3 MASTARM	6, 1	W	711	EXISTING
D	POLE 4 MASTARM	8	N	711	EXISTING

NOTES:

1. CONTRACTOR SHALL MAINTAIN AND PROTECT ALL SIGNAL COMPONENTS SHOWN WITH NO ANTICIPATED IMPACT. IN ADDITION, UNLESS OTHERWISE DIRECTED BY THE ENGINEER:
   A. CONDUIT RUNS MAY BE INTERCEPTED (AS APPROVED BY THE ENGINEER).
   B. SIGNAL AND INTERCONNECT CONDUCTORS SHALL NOT BE INTERCEPTED. IMPACTED SIGNAL CONDUCTORS SHALL BE REPLACED CONTINUOUSLY FROM THE CONTROLLER CABINET.
   C. STREET LIGHT CONDUCTORS SHALL NOT BE INTERCEPTED.
2. CONTRACTOR SHALL MAINTAIN AND PROTECT ALL JUNCTION BOXES SHOWN WITH NO ANTICIPATED IMPACT. IMPACTED JUNCTION BOXES SHALL BE REPLACED WITH THE SAME OR EQUIVALENT TYPE OF EQUIPMENT.
3. REMOVE EXISTING TRAFFIC CONTROLLER ASSEMBLY. INSTALL NEW TRAFFIC CONTROLLER ASSEMBLY ON EXISTING FOUNDATION. EXISTING CONDUIT RUNS AND CABLES TO REMAIN IN PLACE UNLESS OTHERWISE DIRECTED BY ENGINEER.

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
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AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

DEBARR RD & PINE ST: SIGNAL SYSTEM PLAN

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HA2	HA6

DESIGNED BY
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SCALE
1" = 20'

DATE TIME
4/21/2025 2:59 PM

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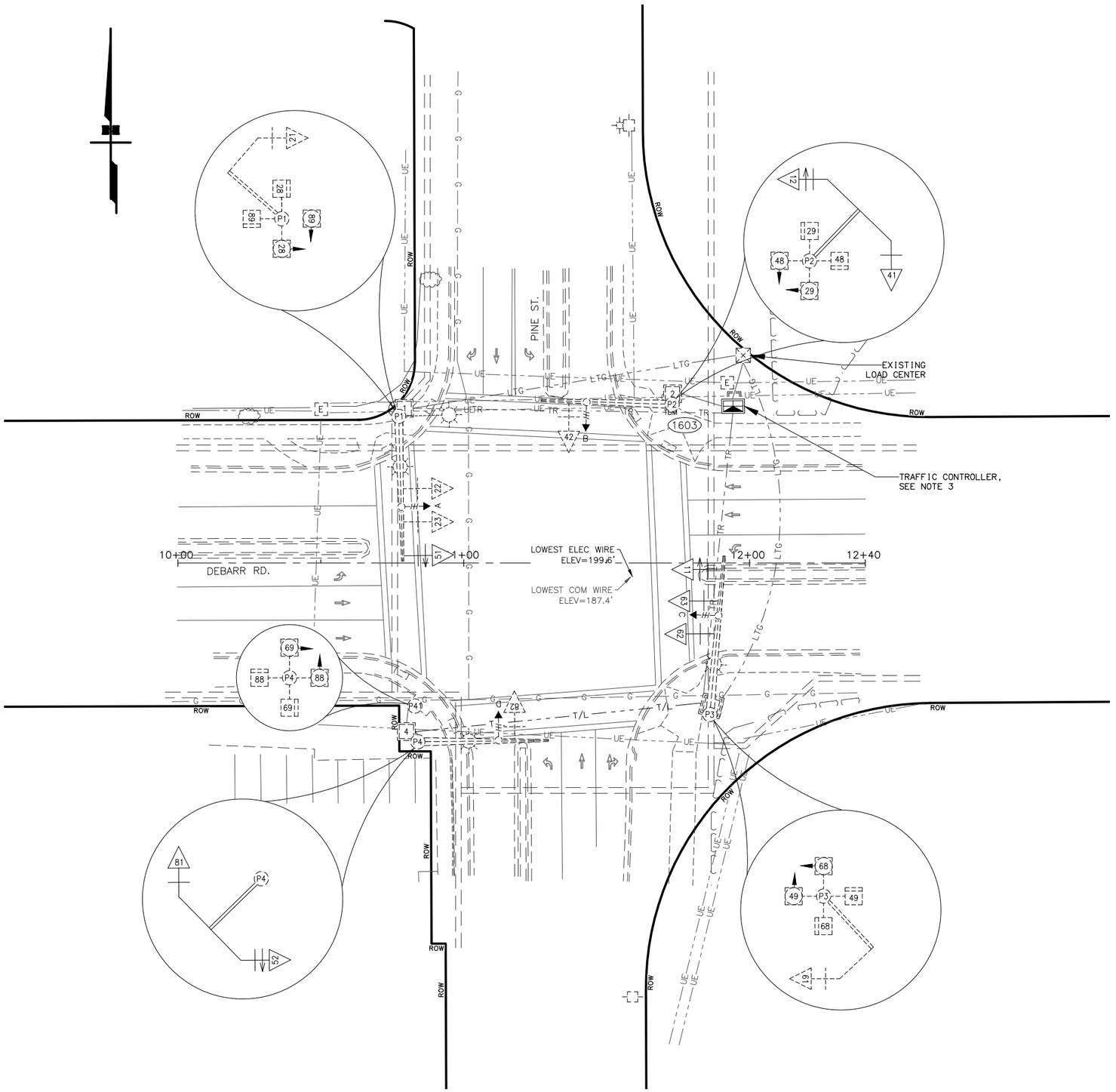
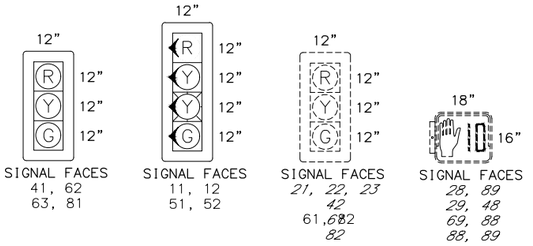
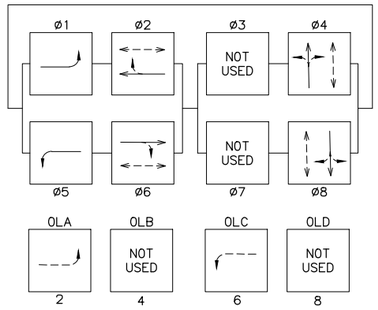




SIGNAL HEAD CONFIGURATIONS



PREEMPTION DWELL PHASE AND VEHICLE MOVEMENTS

CHANNEL A: PHASES 2 + 5
CHANNEL B: PHASES 4
CHANNEL C: PHASES 6, 1
CHANNEL D: PHASES 8

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

DEBARR RD & PINE ST: SIGNAL OPERATION PLAN

STATE OF ALASKA
PROJECT ENGINEER
REGISTERED PROFESSIONAL ENGINEER
PS&E REVIEW

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HA3	HA6

DESIGNED BY
CHECKED BY
DRAFTED BY

SCALE

DATE TIME
4/21/2025 9:00 AM

DRAWING LOCATION
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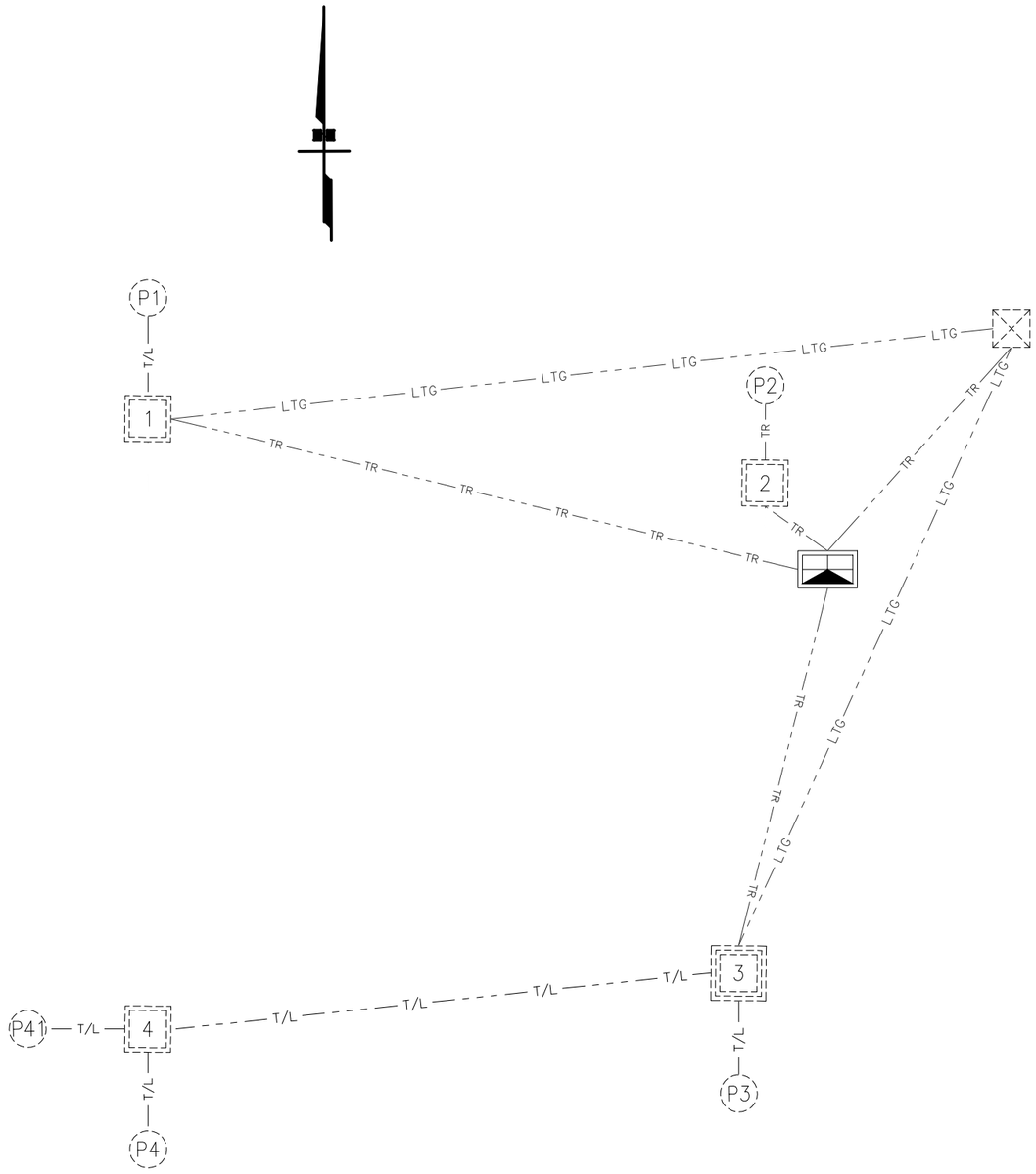

CONDUIT SCHEDULE

RUN #	CONDUIT		CABLES	NOTES	CONDUIT FILL
LC-TC	EX-2	RMC	EX(1-3C6, 1-1C6)	POWER	15%
LC-1	EX-2	RMC	EX(1-3C8)	INTXL	10%
LC-3	EX-2	RMC	EX(1-3C8)	INTXL	10%
TC-1	EX-3	RMC	EX(3-3C14, 2-5C14, 3-7C14, 1-3C20) **NEW(1-7C14)**	SIGNAL	20%
	EX-2	RMC	EX(3-7PR18)	I/C "PINE"	11%
	EX-3	RMC	SPARE		0%
TC-2	EX-3	RMC	EX(3-3C14, 2-5C14, 3-7C14, 1-3C20)	SIGNAL	17%
	EX-2	RMC	SPARE		0%
TC-3	EX-3	RMC	EX(2-2C14, 2-5C14, 2-7C14, 1-3C20, 1-3C14, 2-7PR18)	SIGNAL	17%
	EX-3	RMC	EX(2-2C14, 2-5C14, 3-7C14, 1-3C20, 1-3C14, 2-7PR18) **NEW(1-7C14)**	SIGNAL	21%
	EX-2	RMC	EX(2-7PR18)	I/C "PINE"	7%
	EX-3	RMC	SPARE	I/C "DEBARR"	0%
1-P1	EX-3	RMC	EX(2-2C14, 2-5C14, 3-7C14, 1-3C20, 1-3C14) **NEW(1-7C14)**	SIGNAL	18%
	EX-2	RMC	EX(1-3C8)	INTXL	10%
	EX-2	RMC	SPARE		0%
2-P2	EX-3	RMC	EX(3-3C14, 2-5C14, 3-7C14, 1-3C20)	SIGNAL	17%
	EX-2	RMC	SPARE		0%
	EX-2	RMC	SPARE		0%
3-P3	EX-3	RMC	EX(3-3C14, 2-5C14, 3-7C14, 1-3C20, 1-3C8) **NEW(1-7C14)**	SIGNAL	24%
	EX-2	RMC	EX(1-3C8)	INTXL	10%
	EX-2	RMC	SPARE		0%
3-4	EX-3	RMC	EX(3-3C14, 2-5C14, 3-7C14, 1-3C20)	SIGNAL	17%
	EX-2	RMC	EX(2-7PR18)	I/C "DEBARR"	7%
	EX-2	RMC	EX(1-3C8)	INTXL	10%
	EX-3	RMC	SPARE		0%
4-P4	EX-3	RMC	EX(2-7C14, 1-3C20, 1-3C14)	SIGNAL	7%
	EX-2	RMC	EX(1-3C8)	INTXL	10%
	EX-2	RMC	SPARE		0%
4-P41	EX-2	RMC	EX(2-2C14, 2-5C14)	SIGNAL	13%

EX- EXISTING EQUIPMENT
INTXL- INTERSECTION LIGHTING
I/C- INTERCONNECT

NOTES:

1. UNLESS OTHERWISE NOTED, INSTALL BARE 1#8 GROUND IN ALL CONDUITS. EXCEPT THOSE CONDUITS THAT CONTAIN LARGER CIRCUITS CONDUCTORS. IN THIS CASE, INSTALL WIRE EQUAL IN SIZE TO THE LARGEST CIRCUIT CONDUCTOR.

2. DETECTOR LOOPS NOT SHOWN FOR CLARITY.

STATE OF ALASKA
PROFESSIONAL ENGINEER
PROJECT NUMBER
0000
REGISTERED PROFESSIONAL ENGINEER
PSE REVIEW

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

DEBARR RD & PINE ST: WIRING DIAGRAM

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HA4	HA6

DESIGNED BY
CHECKED BY
DRAFTED BY

SCALE 1" = 20'

DATE 4/24/2025 TIME 10:48 AM

DRAWING LOCATION C:\DOWL_PW\D0414549\00944_HA1-HA6.DWG

GENERAL LC NOTES:

1. ALL CIRCUIT BREAKERS SHALL BE RATED FOR OPERATION AT −20°F.
2. LOAD CENTER OUTAGES SHALL BE SCHEDULED DURING DAYLIGHT HOURS AND BE COMPLETE PRIOR TO DUSK THE SAME DAY.

SUMMARY OF EXISTING LOAD CENTER 'A'	
LOAD CENTER TYPE:	TYPE 1A
MAINTAINED BY:	MUNICIPALITY OF ANCHORAGE
SERVING UTILITY:	CHUGACH ELECTRIC ASSOCIATION
SERVICE CONDUIT TYPE:	RIGID METAL CONDUIT
LOCATION DATA	
LOAD CENTER:	DEBARR ROAD AND PINE STREET
POWER SOURCE:	EXISTING
PHOTOELECTRIC CONTROL:	AT LOAD CENTER
SERVICE VOLTAGE:	120/240V, 1-PHASE, 3-WIRE WITH GROUNDED NEUTRAL
PROVIDE METER SOCKET:	EXISTING
MAIN BREAKER A:	240, 100A, 2-POLE
CONTACTOR 1:	600V, 12-POLE, 30A
AIC RATING:	10,000A

PANEL A

CKT	AMP TRIP	DESCRIPTION	CKT KVA	AØ	BØ	CKT KVA	DESCRIPTION	AMP TRIP	CKT
1	50/1	TC	3.8	3.9		0.1	PHOTOCELL	15/2	2
3			0.0		0.1	0.1			4
5	20/2	SPARE	0.0	1.0		1.0	INTX LTG*	20/2	6
7			0.0		1.0	1.0			8
9	20/2	SPARE	0.0	0.0		0.0	SPARE	20/2	10
11			0.0		0.0	0.0			12
13	20/2	SPARE	0.0	0.0		0.0	SPARE	20/2	14
15			0.0		0.0	0.0			16
17			0.0	0.0		0.0			18
* = THROUGH CONTACTOR				4.9	1.1	TOTAL KVA			6.0
						AMPS			25.0

SHORT CIRCUIT CALCULATION - LC 'A'	
TRANSFORMER RATING	25KVA
VOLTAGE	120/240V
TRANSFORMER IMPEDANCE	1.2%
AVAILABLE SHORT CIRCUIT CURRENT AT TRANSFORMER SECONDARY	8,680A
FEEDER CONDUCTOR LENGTH	125'
FEEDER CONDUCTOR SIZE	2 AWG ALUM
CONDUIT	PVC
MAXIMUM FAULT CURRENT	2,271A
DATE CALCULATED	1/29/2025

ARC FLASH CALCULATION - LC 'A'	
INCIDENT ENERGY	4.73 cal/cm²
ARC-FLASH BOUNDARY	42"
WORKING DISTANCE	18"
INSULATING GLOVES CLASS	00
NOMINAL SYSTEM VOLTAGE	240V
LIMITED APPROACH BOUNDARY	42"
RESTRICTED APPROACH BOUNDARY	12"
CALCULATION DATE	1/29/2025

STATE OF ALASKA
49TH
PRE-PS&E
ROY N. PACE
EE-12053
REGISTERED PROFESSIONAL ENGINEER

EDC, INC.
1500 WEST 33RD AVE
ANCHORAGE, AK 99503
(907) 257-0801
CERT. OF AUTH. NO. AECC705

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

DEBARR RD & PINE ST: LOAD CENTER SUMMARY

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HA5	HA6

DESIGNED BY
CHECKED BY
DRAFTED BY

SCALE 1" = 10'

DATE 4/24/2025 TIME 11:08 AM

DRAWING LOCATION
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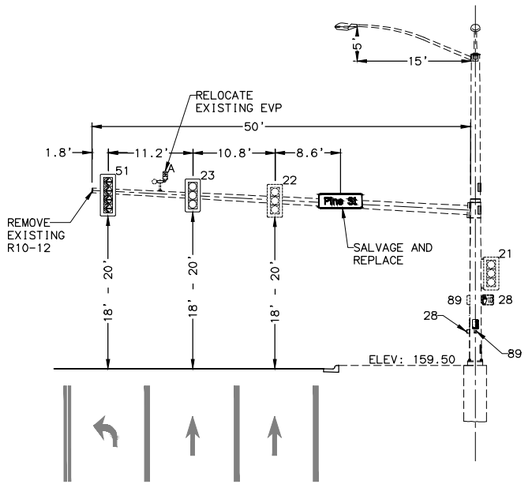
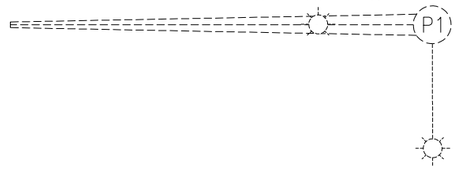
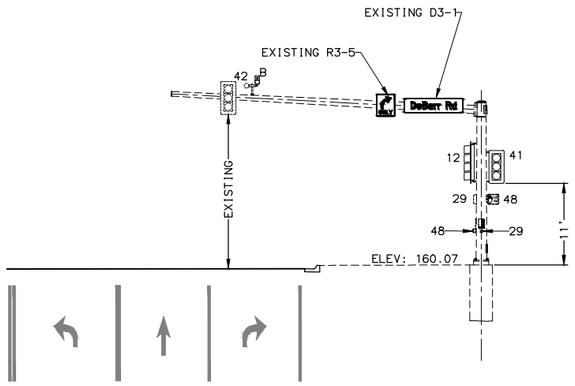


SIGNAL POLE 1
LOOKING WEST

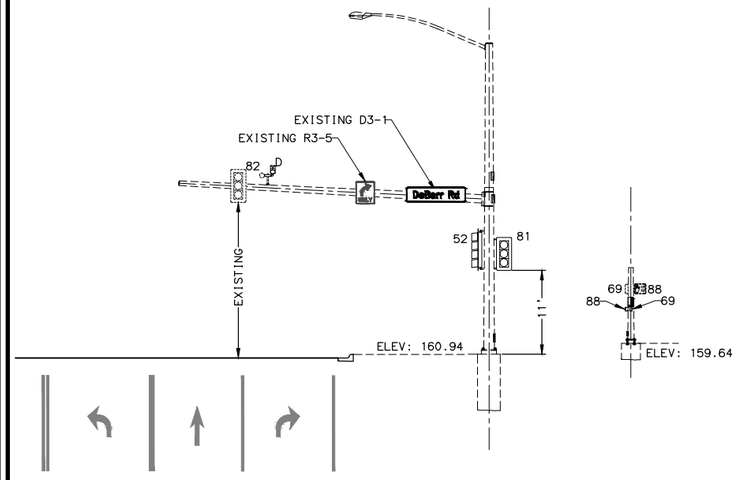




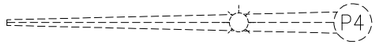
SIGNAL POLE 2
LOOKING NORTH

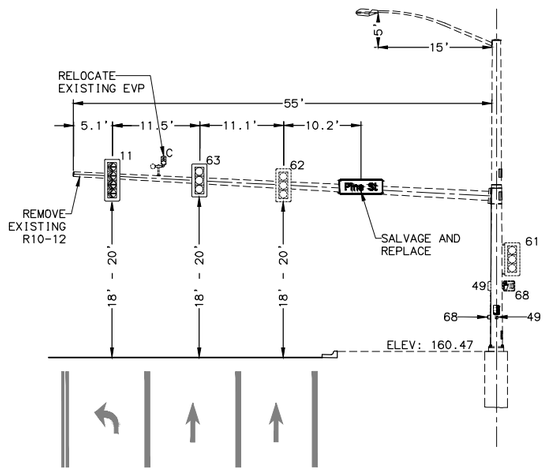
NOTES:

1. ELEVATIONS ARE TO THE TOP OF THE FOUNDATION AND ARE APPROXIMATE.
2. LANE MARKINGS ARE SHOWN FOR REFERENCE ONLY.
3. SIGNAL HEAD LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL VERIFY SIGNAL HEAD PLACEMENT WITH RECEIVING AND APPROACH LANE OFFSETS.
4. ALL PEDESTRIAN HEADS AND PUSH BUTTONS ARE EXISTING.

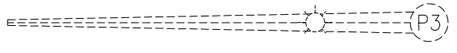


SIGNAL POLE 4 & 41
LOOKING SOUTH





SIGNAL POLE 3
LOOKING EAST



DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

DEBARR RD & PINE ST: POLE ELEVATIONS

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HA6	HA6

DESIGNED BY
CHECKED BY
DRAFTED BY

SCALE

DATE TIME
4/21/2025 9:00 AM

DRAWING LOCATION
C:\DOWL_PW\00414549\00944_HA1-HA6.DWG

CONTROLLER CABINET FEATURES

GENERAL OPTIONS	
TYPE	TS2-1
SIZE	NEMA SIZE 6
MATERIALS	0.125" NATURAL ALUMINUM
MODEL	WESTERN SYSTEMS NEMA TS2-1P
EXTENDER BASE	NONE
MOUNTING HARDWARE	INCLUDED
PAINT	YES-SEE SPECIAL PROVISIONS
SPECIAL OPTIONS	
LIFTING TABS	INCLUDED
EQUIPMENT SHELF	(2) FULL WIDTH, (1) LAPTOP DRAWER
AIR FILTER	FIBER MESH
MAIN DOOR LOCK	BEST
REAR DOOR	NONE
LED LIGHT FIXTURES	SEE SPECIAL PROVISIONS FOR OTHER REQUIREMENT
MAIN PANEL	
MAIN PANEL POSITION	16-POSITION HORIZONTAL
FLASH TRANSFER RELAYS SOCKETS	(8) INCLUDED
FLASHER SOCKET	(1) INCLUDED
R1 RELAY SOCKET	INCLUDED
POWER PANEL	
SURGE SUPPRESSION	SHP300-10
LINE FILTER (RADIO INTERFERENCE)	50A
SOLID STATE CONTACTOR	NORMALLY OPEN, 50A
MAIN CIRCUIT BREAKER	40A
AUXILIARY CIRCUIT BREAKER	20A
3 POSITION TERMINAL BLOCK FOR INCOMING POWER, #2-#8 U.S.G.	INCLUDED
16 POSITION NEUTRAL BUS BAR	INCLUDED
16 POSITION CHASSIS GROUND BUS BAR	INCLUDED
POLICE PANEL	
POLICE PANEL SWITCHES	SIGNALS ON/OFF, AUTO/FLASH
POLICE PANEL PUSHBUTTON ALARM	NONE
POLICE DOOR LOCK	CONVENTIONAL (SKELETON KEY)
POLICE PANEL MANUAL CORD	NONE
AUXILIARY PANEL	
AUXILIARY PANEL SWITCHES	AUTO/FLASH, STOP TIME, CONTROLLER POWER, COORD, CABINET LIGHT, HEATER BYPASS
DETECTOR TEST SWITCHES	TACTILE PUSHBUTTON
FORCE OFF SWITCHES	TACTILE PUSHBUTTON
RACK DETECTION	
DETECTOR RACKS	FOUR (4) 16-CHANNEL DETECTOR RACKS. TWO THE THE RACKS SHALL BE CONFIGURED WITH 2 SLOTS EACH FOR OPTICOM.
DETECTOR RACK POWER SUPPLY	BIU FOR EACH RACK
EVP REQUIREMENTS	WIRING FOR GREEN SENSE MONITORING
ADDITIONAL OPTIONS	
RAILROAD PREEMPTION	INCLUDED
RAILROAD PREEMPTION/STAND ALONE PANEL	NO
RED JUMPERS FOR ALL UNUSED PHASES	INCLUDED
LOAD RESISTORS	(8) INCLUDED - LEFT SIDE OF CABINET
HEATER RECEPTACLE (SINGLE)	INCLUDED - RIGHT SIDE OF CABINET
DUPLEX GFI OUTLET (NON-FILTERED)	INCLUDED - RIGHT SIDE OF CABINET
QUAD CONVENIENCE OUTLET - FILTERED	INCLUDED - LEFT SIDE OF CABINET
ADDITIONAL NEUTRAL BUS BARS	(1) 32 POSITION BUS BAR LEFT SIDE OF CABINET
ADDITIONAL CHASSIS GROUND BUS BARS	(1) 32 POSITION BUS BAR LEFT SIDE OF CABINET
STANDARD WIRING DIAGRAM (AUTOCAD FORMAT)	PROVIDE: (3) PAPER SETS FOR CABINET, SIGNAL TECH AND TRAFFIC, (1) ACAD ON DISC, (1) PDF.
GTT OPTICOM 757 HARNESS	INCLUDED - WIRED INTO CABINET
GTT OPTICOM 768 AUXILIARY INTERFACE PANEL	INCLUDED - WIRED INTO CABINET
GENERATOR BYPASS COMPARTMENT	INCLUDED - MOUNT COMPARTMENT FLUSH AND ON INSIDE OF CONTROLLER CABINET DOOR. SEE SPECIAL PROVISIONS FOR OTHER REQUIREMENTS.

CONTROLLER ASSEMBLY EQUIPMENT

SUPPLY ALL LABOR, EQUIPMENT AND MATERIALS TO PROVIDE A FULLY FUNCTIONING TRAFFIC SIGNAL CONTROLLER ASSEMBLY COMPLIANT WITH THE NEMA STANDARD PUBLICATION NO. TS2-2003 V02.06 AND SPECIAL "SPECIALS" PROVISIONS OF THIS CONTRACT INCLUDING BUT NOT LIMITED TO;

QTY	CONTROLLER/MMU EQUIPMENT
1	ECON COBALT ATC TOUCH 2100 CONTROLLER (TS2 TYP 2
1	CONTROLLER TELEMETRY MODULE TCM-FSK-9 OR APPROVED EQUAL
1	CONTROLLER ETHERNET PORT
1	CONTROLLER DATA KEY
1	EDI MMU2-16LEIP
1	MMU2 CARD
QTY	**CABINET EQUIPMENT**
16	PDC SSS-87-I/O LOAD SWITCHES OR APPROVED EQUAL
16	EDI ORACLE4E DETECTOR AMPLIFIERS OR APPROVED EQUAL
8	DETROL CONTROLS 295 FLASH TRANSFER RELAYS OR APPROVED EQUAL
2	EDI BIU700 TERMINAL AND FACILITIES BIU'S OR APPROVED EQUAL
4	EDI BIU700 DETECTION BIU'S OR APPROVED EQUAL
1	EDI PS250 TS2 CABINET POWER SUPPLY OR APPROVED EQUAL
1	PDC SSF-87 FLASHER OR APPROVED EQUAL
1	R1 RELAY
1	600/900/1500W SELECTABLE THERMOSTATICALLY CONTROLLED CABINET HEATER, MOUNT ON DOOR
1	RE-SEALABLE PRINT POUCH OF SUFFICIENT SIZE TO ACCOMMODATE CABINET PRINTS
1	COMPLETE SET OF MANUALS FOR CONTROLLER, MMU2, AND VEHICLE DETECTOR AMPLIFIERS

COMMUNICATION EQUIPMENT SCHEDULE

QTY	COPPER INTERCONNECT SYSTEM
1	ACTELIS ML698E WITH FOUR 10/100X PORTS AND ONE OPTIONAL 1000BASE SFP PORT OR APPROVED EQUAL
1	AC POWER ADAPTER 506R00006 OR APPROVED EQUAL
4	3 FOOT CAT6 PATCH CABLE
1	SFP OPTICS 100BASE FX SM 1310NM 15KM LC MODULE 506R00032 OR APPROVED EQUAL
1	CARRIER-CLASS ELEMENT MANAGMENT SYSTEM
2	QUAD DSL CABLES 504R20110 OR APPROVED EQUAL
1	WALL MOUNTING KIT 510R21080 OR APPROVED EQUAL
QTY	**FIBER INTERCONNECT EQUIPMENT**
0	ACTELIS NETWORKS MODEL ML530 WITH TWO 100/1000 BASE FX SFP PORTS AND FOUR PORTS OF 10/100 BASE-T OR APPROVED EQUAL
0	AC POWER ADAPTER 506R00006 OR APPROVED EQUAL
0	3 FOOT CAT6 PATCH CABLE
0	SFP OPTICS 100BASE FX SM 1310NM 15KM LC MODULE 506R00032 OR APPROVED EQUAL
0	CARRIER-CLASS ELEMENT MANAGEMENT SYSTEM
0	LC DUPLEX SM FIBER OPTIC CABLE ASSEMBLY 3 METERS OR APPROVED EQUAL
0	WALL MOUNTING KIT 510R21080 OR APPROVED EQUAL
QTY	**OTHER EQUIPMENT**
0	RSL910 ETHERNET SWITCH (COPPER AND FIBER) OR APPROVED EQUAL
QTY	**EVP EQUIPMENT**
1	OPTICOM MODEL 764 PHASE SELECTOR
QTY	**RADAR EQUIPMENT**
0	CLICK! 650 (102-0416)
0	CLICK! 656 (102-0451)
0	INSTALLER KIT
0	7' SDLC CABLE - 15 PIN SCREW TO 15 PIN SPRING CLIP (SDLC-TS2-7)
0	3' SDLC CABLE - 15 PIN SCREW TO 15 PIN SPRING CLIP (SDLC-TS2-3)
0	SDLC 6 PORT INTERFACE PANEL (SDLC-IP6)

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

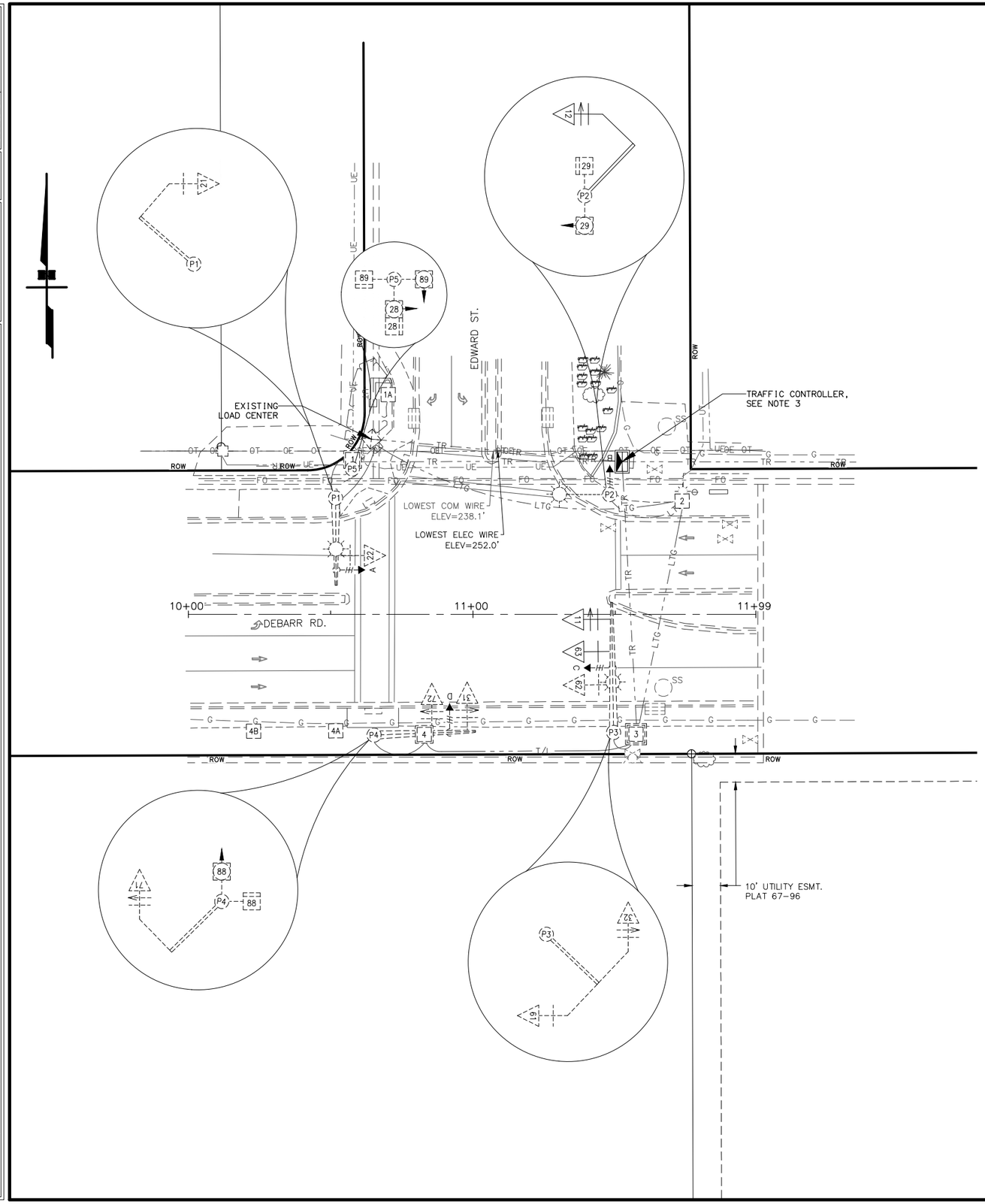
DEBARR RD & PINE ST: CABINET EQUIPMENT

STATE OF ALASKA
KEITH
PROJECT ENGINEER
REGISTERED PROFESSIONAL ENGINEER
PSSE REVIEW

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HB1	HB6



FOUNDATION SCHEDULE

ITEM	STATION ALIGNMENT	OFFSET	STRUCTURE	REMARKS
LC	-	-	TYPE 1A LOAD CENTER	EXISTING
TC	-	-	NEW TRAFFIC CONTROLLER	EXISTING
P1	-	-	SIGNAL POLE 1	EXISTING
P2	-	-	SIGNAL POLE 2	EXISTING
P3	-	-	SIGNAL POLE 3	EXISTING
P4	-	-	SIGNAL POLE 4	EXISTING
P5	-	-	PEDESTRIAN SIGNAL POLE	EXISTING

JUNCTION BOX SCHEDULE

J-BOX	STATION ALIGNMENT	OFFSET	TYPE	REMARKS
1	-	-	2	EXISTING
2	-	-	1A	EXISTING
3	-	-	3	EXISTING
4	-	-	2	EXISTING

OPTICOM DETECTOR SCHEDULE

DETECTOR ID	LOCATION	PHASE CALL	FACING DIRECTION	MODEL	REMARKS
A	P1 MAST ARM	2	E	721	EXISTING
B	P2	3,7	N	711	EXISTING, CHANNEL D
C	P3 MAST ARM	1,6	W	721	EXISTING
D	P4 MAST ARM	3,7	N	721	RELOCATE EXISTING
D	P2	6	N	721	EXISTING CHANNEL C, DEBARR/BEAVER

NOTES:

1. CONTRACTOR SHALL MAINTAIN AND PROTECT ALL SIGNAL COMPONENTS SHOWN WITH NO ANTICIPATED IMPACT. IN ADDITION, UNLESS OTHERWISE DIRECTED BY THE ENGINEER:
   A. CONDUIT RUNS MAY BE INTERCEPTED (AS APPROVED BY THE ENGINEER).
   B. SIGNAL AND INTERCONNECT CONDUCTORS SHALL NOT BE INTERCEPTED.IMPACTED SIGNAL CONDUCTORS SHALL BE REPLACED CONTINUOUSLY FROM THE CONTROLLER CABINET.
   C. STREET LIGHT CONDUCTORS SHALL NOT BE INTERCEPTED.
2. CONTRACTOR SHALL MAINTAIN AND PROTECT ALL JUNCTION BOXES SHOWN WITH NO ANTICIPATED IMPACT.
3. REMOVE EXISTING TRAFFIC CONTROLLER ASSEMBLY. INSTALL NEW TRAFFIC CONTROLLER ASSEMBLY ON EXISTING FOUNDATION. EXISTING CONDUIT RUN AND CABLES TO REMAIN IN PLACE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

PS&E REVIEW

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

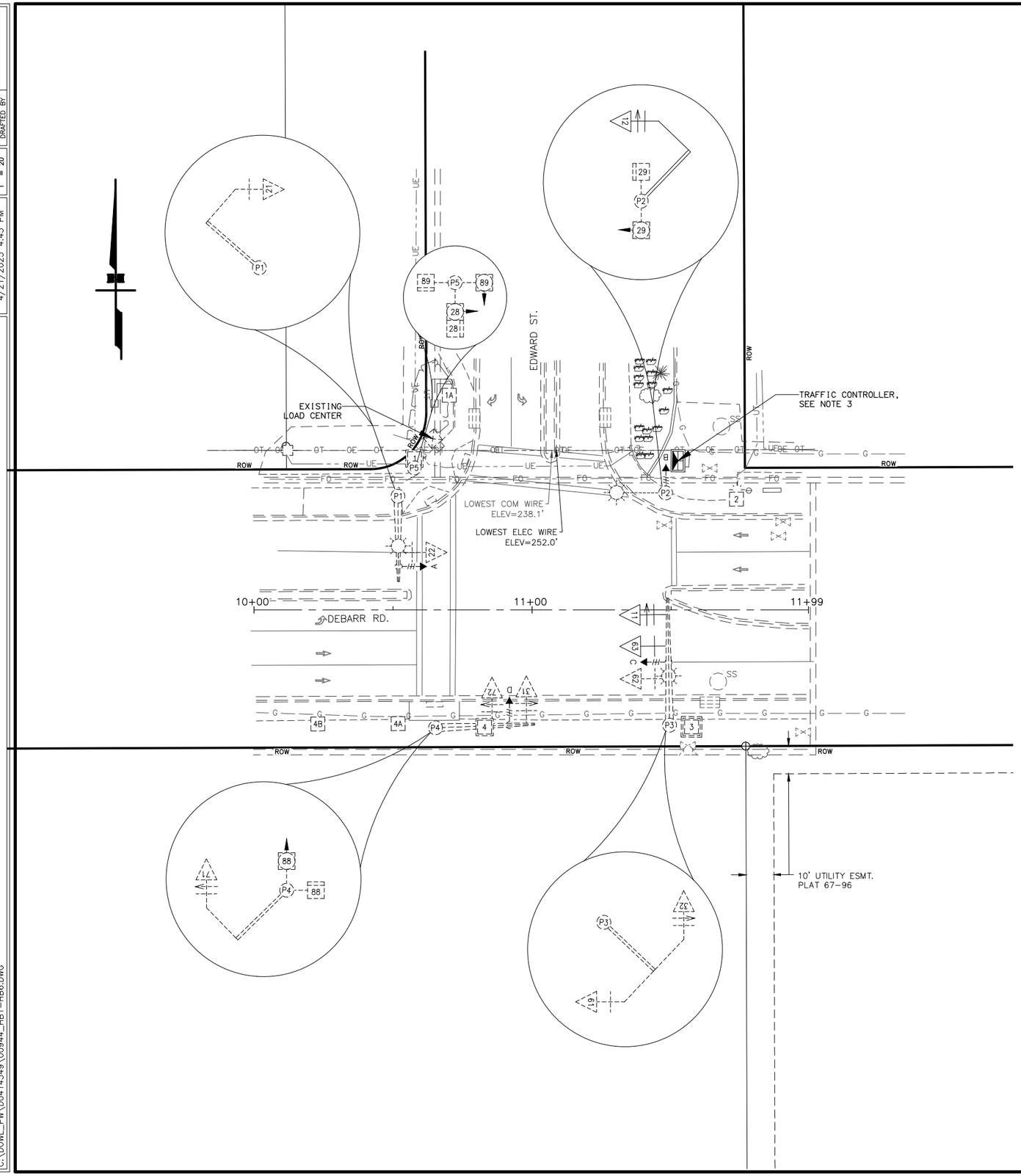
HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

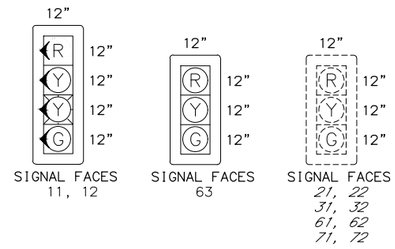
DEBARR RD & EDWARD ST: SIGNAL SYSTEM PLAN

DESIGNED BY MTB
CHECKED BY
DRAFTED BY
SCALE 1" = 20'
DATE 4/21/2025 TIME 9:01 AM
DRAWING LOCATION C:\DOWL_PW\D0414549\00944_HB1-HB6.DWG

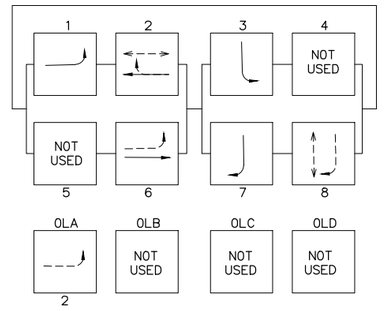
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HB2	HB6





SIGNAL HEAD CONFIGURATIONS



PREEMPTION DWELL PHASE AND VEHICLE MOVEMENTS

CHANNEL A: PHASES 2
CHANNEL C: PHASES 6 + 1
CHANNEL D: PHASES 7 + 3

PHASE DIAGRAM

PROTECTED VEHICLE MOVEMENT
PERMISSIVE VEHICLE MOVEMENT
PEDESTRIAN MOVEMENT

STATE OF ALASKA
PROJECT ENGINEER
PRELIMINARY
NOT FOR CONSTRUCTION

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

DEBARR RD & EDWARD ST: SIGNAL OPERATION PLAN

DESIGNED BY MTB
CHECKED BY
DRAFTED BY
SCALE 1" = 20'
DATE TIME 4/21/2025 4:45 PM
DRAWING LOCATION C:\DOWL_PW\D0414549\00944_HB1-HB6.DWG

NO.	DATE	REVISION

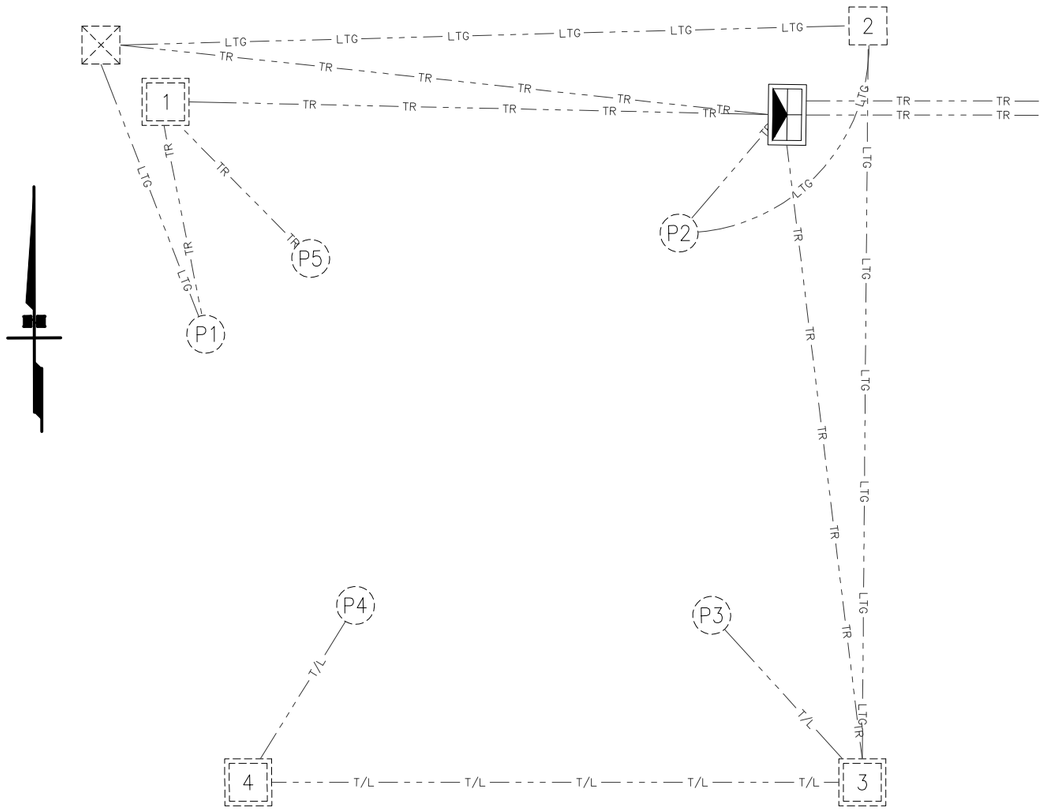
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HB3	HB6

DESIGNED BY MTB
CHECKED BY
DRAFTED BY
SCALE
DATE 4/21/2025 TIME 9:01 AM
DRAWING LOCATION C:\DOWL_PW\0041549\00944_HB1-HB6.DWG

CABLE & CONDUIT SCHEDULE

RUN	CONDUIT		CABLES	NOTES	CONDUIT FILL
LC–TC	EX–2	RMC	EX(1–3C6, 1–1C6(GND))	POWER	15%
LC–P1	EX–2	RMC	EX(2–3C8)	INTXL	26%
LC–2	EX–2	RMC	EX(2–3C8)	INTXL, BUS STOP	26%
TC–1	EX–3	RMC	EX(2–7C14, 2–5C14, 3–3C14, 1–3C20, 2–7PR18)	SIGNAL	22%
	EX–2	RMC	EX(1–25PR19)	I/C "BONFACE PKWY"	24%
	EX–2	RMC	SPARE		
TC–P2	EX–2	RMC	EX(1–7C14, 1–5C14,1–3C14, 2–3C20, 1–CAT5)	SIGNAL	18%
TC–3	EX–3	RMC	EX(3–7C14, 1–5C14, 2–3C14, 1–3C20, 3–7PR18)	SIGNAL, DETECTION	24%
	EX–3	RMC	EX(4–7C14, 1–3C14, 1–3C20) **NEW(1–7C14)**	SIGNAL	14%
	EX–3	RMC	SPARE		
1–P1	EX–3	RMC	EX(2–7C14, 1–3C14, 1–3C20, 1–CAT5)	SIGNAL	8%
	EX–2	RMC	SPARE		
1–P5	EX–3	RMC	EX(2–5C14, 2–3C14)		7%
2–P2	EX–2	RMC	EX(2–3C8)	INTXL	26%
2–3	EX–2	RMC	EX(1–3C8)	INTXL	13%
3–P3	EX–3	RMC	EX(4–7C14, 1–3C14, 1–3C20) **NEW(1–7C14)**	SIGNAL	14%
	EX–2	RMC	EX(2–3C8)	INTXL	26%
	EX–2	RMC	SPARE		
3–4	EX–3	RMC	EX(3–7C14, 1–5C14, 2–3C14, 1–3C20, 3–7PR18)	SIGNAL	9%
	EX–2	RMC	EX(1–3C8)	INTXL	13%
	EX–2	RMC	SPARE		
4–P4	EX–3	RMC	EX(3–7C14, 1–5C14, 2–3C14, 1–3C20)	SIGNAL	24%
	EX–2	RMC	EX(1–3C8)	INTXL	13%
	EX–2	RMC	SPARE		
1–NORTH	EX–2	RMC	EX(2–7PR18)	DETECTION	17%
1–WEST	EX–2	RMC	EX(1–25PR19)	I/C "BONFACE PKWY"	24%
TC–EAST	EX–3	RMC	EX(2–3C20)	OPTICOM TO BEAVER PL	2%
	EX–2	RMC	EX(1–25PR19)	I/C "BEAVER PL"	24%
4–WEST	EX–3	RMC	EX(3–7PR18)	DETECTION	26%

EX– EXISTING EQUIPMENT
INTXL– INTERSECTION LIGHTING
I/C– INTERCONNECT



NOTES:

1. 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 CIRCUIT CONDUCTOR.
2. DETECTOR LOOPS NOT SHOWN FOR CLARITY.

STATE OF ALASKA
PROJECT ENGINEER
REGISTERED PROFESSIONAL ENGINEER
PSSE REVIEW

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562–2000
AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

DEBARR RD & EDWARD ST: WIRING DIAGRAM

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HB4	HB6

DESIGNED BY
CHECKED BY
DRAFTED BY

SCALE

DATE TIME
4/24/2025 10:54 AM

DRAWING LOCATION
C:\DOWL_PW\D0414549\00944_HB1-HB6.DWG

GENERAL LC NOTES:

1. ALL CIRCUIT BREAKERS SHALL BE RATED FOR OPERATION AT −20°F.
2. LOAD CENTER OUTAGES SHALL BE SCHEDULED DURING DAYLIGHT HOURS AND BE COMPLETE PRIOR TO DUSK THE SAME DAY.

SUMMARY OF EXISTING LOAD CENTER 'A'

LOAD CENTER TYPE:	TYPE 1A
MAINTAINED BY:	MUNICIPALITY OF ANCHORAGE
SERVING UTILITY:	CHUGACH ELECTRIC ASSOCIATION
SERVICE CONDUIT TYPE:	RIGID METAL CONDUIT
LOCATION DATA	
LOAD CENTER:	DEBARR ROAD AND EDWARD STREET
POWER SOURCE:	EXISTING
PHOTOELECTRIC CONTROL:	AT LOAD CENTER
SERVICE VOLTAGE:	120/240V, 1-PHASE, 3-WIRE WITH GROUNDED NEUTRAL
PROVIDE METER SOCKET:	EXISTING
MAIN BREAKER A:	240, 100A, 2-POLE
CONTACTOR 1:	600V, 12-POLE, 30A
AIC RATING:	10,000A

PANEL A

CKT	AMP TRIP	DESCRIPTION	CKT KVA	AØ	BØ	CKT KVA	DESCRIPTION	AMP TRIP	CKT
1		BLANK	0.0	0.0		0.0	DISCONNECT	100/2	2
3			0.0		0.0	0.0			4
5	50/1	TC	3.8	3.9		0.1	PHOTOCELL	15/2	6
7	20/2	INTX LTG*	1.0		1.1	0.1			8
9			1.0	1.1		0.1	BUS STOP	20/2	10
11	20/2	SPARE	0.0		0.1	0.1			12
13			0.0	0.0		0.0			14
15	20/2	SPARE	0.0		0.0	0.0			16
17			0.0	0.0		0.0			18
* = THROUGH CONTACTOR				5.0	1.2	TOTAL KVA			6.2
						AMPS			25.8

SHORT CIRCUIT CALCULATION – LC 'A'

TRANSFORMER RATING	25KVA
VOLTAGE	120/240V
TRANSFORMER IMPEDANCE	1.2%
AVAILABLE SHORT CIRCUIT CURRENT AT TRANSFORMER SECONDARY	8,680A
FEEDER CONDUCTOR LENGTH	55'
FEEDER CONDUCTOR SIZE	2 AWG ALUM
CONDUIT	PVC
MAXIMUM FAULT CURRENT	4,403A
DATE CALCULATED	1/29/2025

ARC FLASH CALCULATION – LC 'A'

INCIDENT ENERGY	9.15 cal/cm²
ARC-FLASH BOUNDARY	64"
WORKING DISTANCE	18"
INSULATING GLOVES CLASS	00
NOMINAL SYSTEM VOLTAGE	240V
LIMITED APPROACH BOUNDARY	42"
RESTRICTED APPROACH BOUNDARY	12"
CALCULATION DATE	1/29/2025

STATE OF ALASKA
49TH
PRE-PS&E
ROY N. PACE
EE-12053
REGISTERED PROFESSIONAL ENGINEER

EDC, INC.
1500 WEST 33RD AVE.
ANCHORAGE, AK 99503
(907) 257-0601
CERT. OF AUTH. NO. AECC705

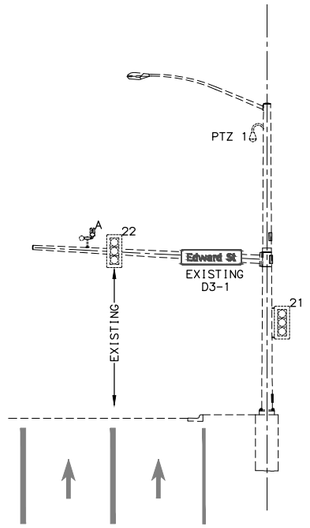
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

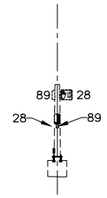
DEBARR RD & EDWARD ST: LOAD CENTER SCHEDULE

NO.	DATE	REVISION

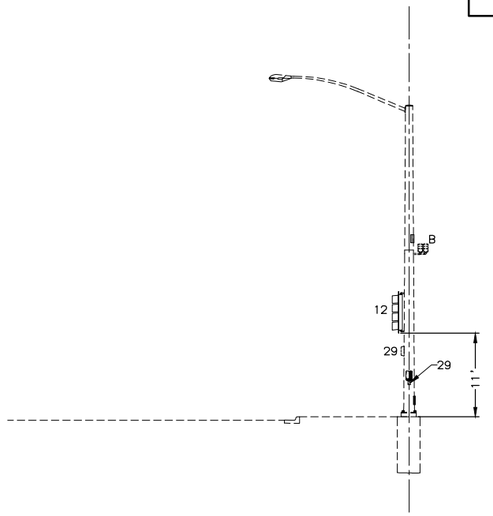
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HB5	HB6



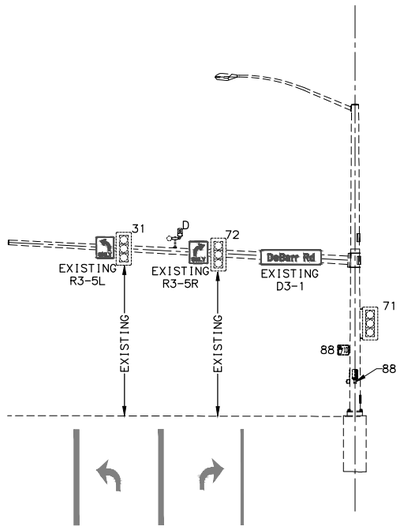
SIGNAL POLE 1
LOOKING WEST



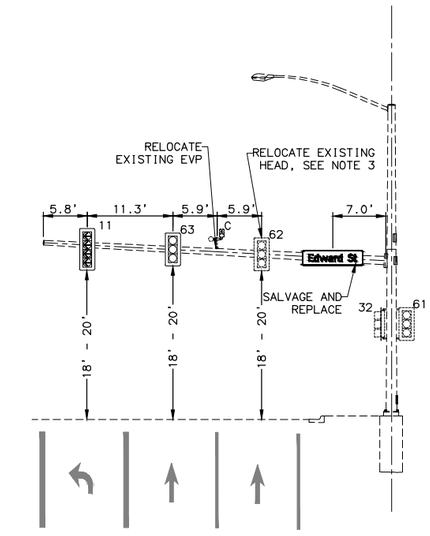
SIGNAL POLE 5
LOOKING WEST



SIGNAL POLE 2
LOOKING NORTH



SIGNAL POLE 4
LOOKING SOUTH



SIGNAL POLE 3
LOOKING EAST

NOTES:

1. ELEVATIONS ARE TO THE TOP OF THE FOUNDATION AND ARE APPROXIMATE.
2. LANE MARKINGS ARE SHOWN FOR REFERENCE ONLY.
3. SIGNAL HEAD LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL VERIFY SIGNAL HEAD PLACEMENT WITH RECEIVING AND APPROACH LANE OFFSETS.
4. ALL PEDESTRIAN HEADS AND PUSH BUTTONS ARE EXISTING

PS&E REVIEW

DOWL, LLC
5015 BUSINESS PARK BLVD
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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

DEBARR RD & EDWARD ST: POLE ELEVATIONS

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STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HB6	HB6

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CONTROLLER CABINET FEATURES

GENERAL OPTIONS	
TYPE	TS2-1
SIZE	NEMA SIZE 6
MATERIALS	0.125" NATURAL ALUMINUM
MODEL	WESTERN SYSTEMS NEMA TS2-1P
EXTENDER BASE	NONE
MOUNTING HARDWARE	INCLUDED
PAINT	YES-SEE SPECIAL PROVISIONS
SPECIAL OPTIONS	
LIFTING TABS	INCLUDED
EQUIPMENT SHELF	(2) FULL WIDTH, (1) LAPTOP DRAWER
AIR FILTER	FIBER MESH
MAIN DOOR LOCK	BEST
REAR DOOR	NONE
LED LIGHT FIXTURES	SEE SPECIAL PROVISIONS FOR OTHER REQUIREMENT
MAIN PANEL	
MAIN PANEL POSITION	16-POSITION HORIZONTAL
FLASH TRANSFER RELAYS SOCKETS	(8) INCLUDED
FLASHER SOCKET	(1) INCLUDED
R1 RELAY SOCKET	INCLUDED
POWER PANEL	
SURGE SUPPRESSION	SHP300-10
LINE FILTER (RADIO INTERFERENCE)	50A
SOLID STATE CONTACTOR	NORMALLY OPEN, 50A
MAIN CIRCUIT BREAKER	40A
AUXILIARY CIRCUIT BREAKER	20A
3 POSITION TERMINAL BLOCK FOR INCOMING POWER, #2-#8 U.S.G.	INCLUDED
16 POSITION NEUTRAL BUS BAR	INCLUDED
16 POSITION CHASSIS GROUND BUS BAR	INCLUDED
POLICE PANEL	
POLICE PANEL SWITCHES	SIGNALS ON/OFF, AUTO/FLASH
POLICE PANEL PUSHBUTTON ALARM	NONE
POLICE DOOR LOCK	CONVENTIONAL (SKELETON KEY)
POLICE PANEL MANUAL CORD	NONE
AUXILIARY PANEL	
AUXILIARY PANEL SWITCHES	AUTO/FLASH, STOP TIME, CONTROLLER POWER, COORD, CABINET LIGHT, HEATER BYPASS
DETECTOR TEST SWITCHES	TACTILE PUSHBUTTON
FORCE OFF SWITCHES	TACTILE PUSHBUTTON
RACK DETECTION	
DETECTOR RACKS	FOUR (4) 16-CHANNEL DETECTOR RACKS. TWO THE THE RACKS SHALL BE CONFIGURED WITH 2 SLOTS EACH FOR OPTICOM.
DETECTOR RACK POWER SUPPLY	BIU FOR EACH RACK
EVP REQUIREMENTS	WIRING FOR GREEN SENSE MONITORING
ADDITIONAL OPTIONS	
RAILROAD PREEMPTION	INCLUDED
RAILROAD PREEMPTION/STAND ALONE PANEL	NO
RED JUMPERS FOR ALL UNUSED PHASES	INCLUDED
LOAD RESISTORS	(8) INCLUDED - LEFT SIDE OF CABINET
HEATER RECEPTACLE (SINGLE)	INCLUDED - RIGHT SIDE OF CABINET
DUPLEX GFI OUTLET (NON-FILTERED)	INCLUDED - RIGHT SIDE OF CABINET
QUAD CONVENIENCE OUTLET - FILTERED	INCLUDED - LEFT SIDE OF CABINET
ADDITIONAL NEUTRAL BUS BARS	(1) 32 POSITION BUS BAR LEFT SIDE OF CABINET
ADDITIONAL CHASSIS GROUND BUS BARS	(1) 32 POSITION BUS BAR LEFT SIDE OF CABINET
STANDARD WIRING DIAGRAM (AUTOCAD FORMAT)	PROVIDE: (3) PAPER SETS FOR CABINET, SIGNAL TECH AND TRAFFIC, (1) ACAD ON DISC, (1) PDF.
GTT OPTICOM 757 HARNESS	INCLUDED - WIRED INTO CABINET
GTT OPTICOM 768 AUXILIARY INTERFACE PANEL	INCLUDED - WIRED INTO CABINET
GENERATOR BYPASS COMPARTMENT	INCLUDED - MOUNT COMPARTMENT FLUSH AND ON INSIDE OF CONTROLLER CABINET DOOR. SEE SPECIAL PROVISIONS FOR OTHER REQUIREMENTS.

CONTROLLER ASSEMBLY EQUIPMENT

SUPPLY ALL LABOR, EQUIPMENT AND MATERIALS TO PROVIDE A FULLY FUNCTIONING TRAFFIC SIGNAL CONTROLLER ASSEMBLY COMPLIANT WITH THE NEMA STANDARD PUBLICATION NO. TS2-2003 V02.06 AND SPECIAL "SPECIALS" PROVISIONS OF THIS CONTRACT INCLUDING BUT NOT LIMITED TO;

QTY	CONTROLLER/MMU EQUIPMENT
1	ECON COBALT ATC TOUCH 2100 CONTROLLER (TS2 TYP 2
1	CONTROLLER TELEMETRY MODULE TCM-FSK-9 OR APPROVED EQUAL
1	CONTROLLER ETHERNET PORT
1	CONTROLLER DATA KEY
1	EDI MMU2-16LEIP
1	MMU2 CARD
QTY	**CABINET EQUIPMENT**
16	PDC SSS-87-I/O LOAD SWITCHES OR APPROVED EQUAL
16	EDI ORACLE4E DETECTOR AMPLIFIERS OR APPROVED EQUAL
8	DETROL CONTROLS 295 FLASH TRANSFER RELAYS OR APPROVED EQUAL
2	EDI BIU700 TERMINAL AND FACILITIES BIU'S OR APPROVED EQUAL
4	EDI BIU700 DETECTION BIU'S OR APPROVED EQUAL
1	EDI PS250 TS2 CABINET POWER SUPPLY OR APPROVED EQUAL
1	PDC SSF-87 FLASHER OR APPROVED EQUAL
1	R1 RELAY
1	600/900/1500W SELECTABLE THERMOSTATICALLY CONTROLLED CABINET HEATER, MOUNT ON DOOR
1	RE-SEALABLE PRINT POUCH OF SUFFICIENT SIZE TO ACCOMMODATE CABINET PRINTS
1	COMPLETE SET OF MANUALS FOR CONTROLLER, MMU2, AND VEHICLE DETECTOR AMPLIFIERS

COMMUNICATION EQUIPMENT SCHEDULE

QTY	COPPER INTERCONNECT SYSTEM
1	ACTELIS ML698E WITH FOUR 10/100X PORTS AND ONE OPTIONAL 1000BASE SFP PORT OR APPROVED EQUAL
1	AC POWER ADAPTER 506R00006 OR APPROVED EQUAL
4	3 FOOT CAT6 PATCH CABLE
1	SFP OPTICS 100BASE FX SM 1310NM 15KM LC MODULE 506R00032 OR APPROVED EQUAL
1	CARRIER-CLASS ELEMENT MANAGMENT SYSTEM
2	QUAD DSL CABLES 504R20110 OR APPROVED EQUAL
1	WALL MOUNTING KIT 510R21080 OR APPROVED EQUAL
QTY	**FIBER INTERCONNECT EQUIPMENT**
0	ACTELIS NETWORKS MODEL ML530 WITH TWO 100/1000 BASE FX SFP PORTS AND FOUR PORTS OF 10/100 BASE-T OR APPROVED EQUAL
0	AC POWER ADAPTER 506R00006 OR APPROVED EQUAL
0	3 FOOT CAT6 PATCH CABLE
0	SFP OPTICS 100BASE FX SM 1310NM 15KM LC MODULE 506R00032 OR APPROVED EQUAL
0	CARRIER-CLASS ELEMENT MANAGEMENT SYSTEM
0	LC DUPLEX SM FIBER OPTIC CABLE ASSEMBLY 3 METERS OR APPROVED EQUAL
0	WALL MOUNTING KIT 510R21080 OR APPROVED EQUAL
QTY	**OTHER EQUIPMENT**
0	RSL910 ETHERNET SWITCH (COPPER AND FIBER) OR APPROVED EQUAL
QTY	**EVP EQUIPMENT**
1	OPTICOM MODEL 764 PHASE SELECTOR
QTY	**RADAR EQUIPMENT**
0	CLICK! 650 (102-0416)
0	CLICK! 656 (102-0451)
0	INSTALLER KIT
0	7' SDLC CABLE - 15 PIN SCREW TO 15 PIN SPRING CLIP (SDLC-TS2-7)
0	3' SDLC CABLE - 15 PIN SCREW TO 15 PIN SPRING CLIP (SDLC-TS2-3)
0	SDLC 6 PORT INTERFACE PANEL (SDLC-IP6)

STATE OF ALASKA PE PROJECT ENGINEER 2025 PROFESSIONAL ENGINEER
PS&E REVIEW

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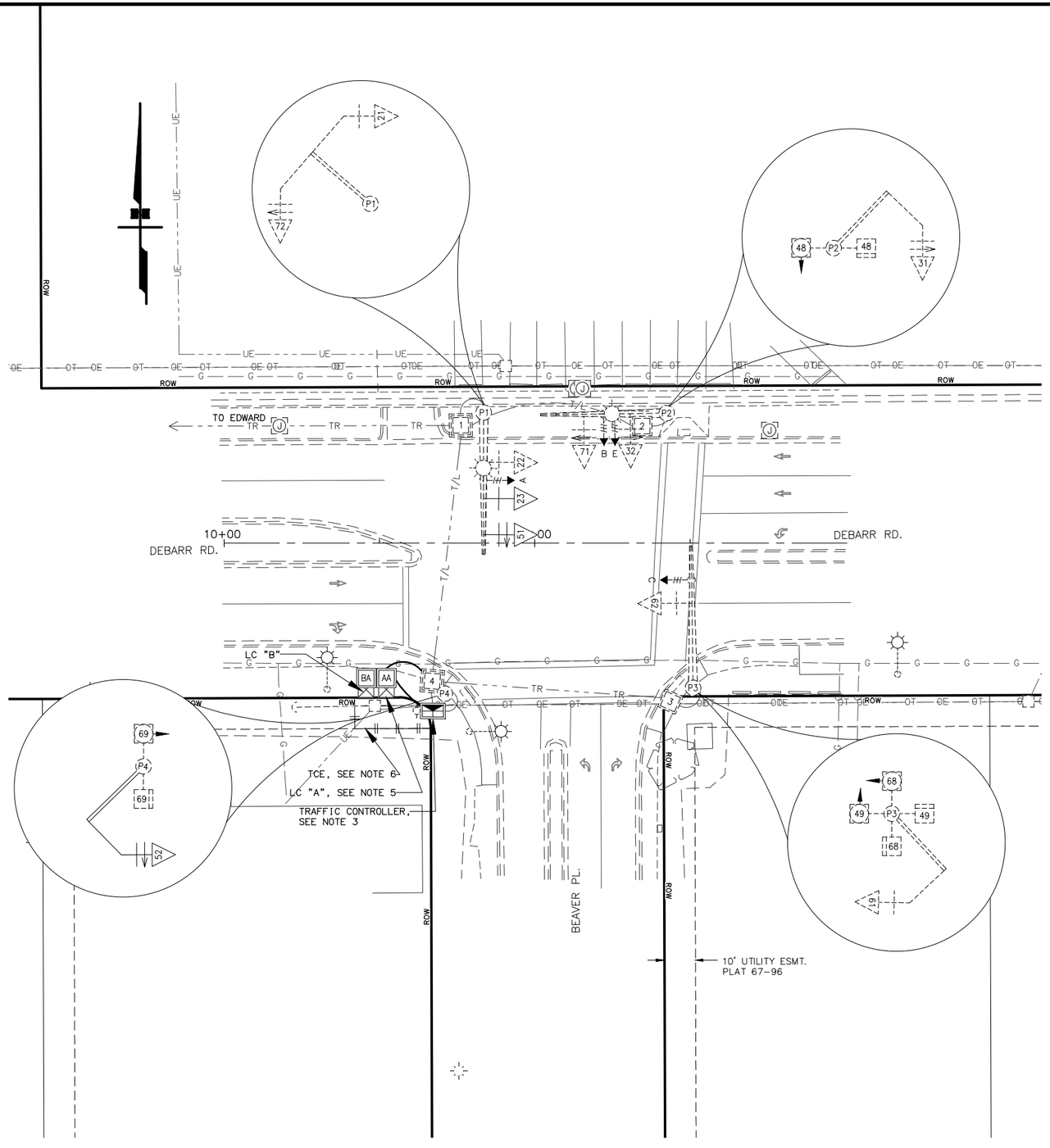
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

DEBARR RD & EDWARD ST: CABINET EQUIPMENT

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HC1	HC6



FOUNDATION SCHEDULE

ITEM	STATION ALIGNMENT	OFFSET	STRUCTURE	REMARKS
LC "A"	10+46.3	47.1 RT	TYPE 1A LOAD CENTER	NEW
LC "B"	10+38.4	47.1 RT	TYPE 1A LOAD CENTER	NEW
TC	-	-	NEW TRAFFIC CONTROLLER	EXISTING
P1	-	-	SIGNAL POLE 1	EXISTING
P2	-	-	SIGNAL POLE 2	EXISTING
P3	-	-	SIGNAL POLE 3	EXISTING
P4	-	-	SIGNAL POLE 4	EXISTING

JUNCTION BOX SCHEDULE

J-BOX	STATION ALIGNMENT	OFFSET	TYPE	REMARKS
1	-	-	3	EXISTING
2	-	-	2	EXISTING
3	-	-	2	EXISTING
4	-	-	3	EXISTING
AA	10+46.3	43.5 RT	2	NEW
BA	10+52.4	43.5 RT	2	NEW

OPTICOM DETECTOR SCHEDULE

DETECTOR ID	LOCATION	PHASE CALL	FACING DIRECTION	MODEL	REMARKS
A	P1 MAST ARM	2, 5	E	721	RELOCATE EXISTING
B	P2 MAST ARM	3, 7	S	721	EXISTING
E	P2 MAST ARM	2	S	721	EXISTING CHANNEL A, DEBARR/EDWARD
C	P3 MAST ARM	6	W	711	EXISTING

NOTES:

1. CONTRACTOR SHALL MAINTAIN AND PROTECT ALL SIGNAL COMPONENTS SHOWN WITH NO ANTICIPATED IMPACT. IN ADDITION, UNLESS OTHERWISE DIRECTED BY THE ENGINEER:
   A. CONDUIT RUNS MAY BE INTERCEPTED (AS APPROVED BY THE ENGINEER).
   B. SIGNAL AND INTERCONNECT CONDUCTORS SHALL NOT BE INTERCEPTED.IMPACTED SIGNAL CONDUCTORS SHALL BE REPLACED CONTINUOUSLY FROM THE CONTROLLER CABINET.
   C. STREET LIGHT CONDUCTORS SHALL NOT BE INTERCEPTED.
2. CONTRACTOR SHALL MAINTAIN AND PROTECT ALL JUNCTION BOXES SHOWN WITH NO ANTICIPATED IMPACT.
3. REMOVE EXISTING TRAFFIC CONTROLLER ASSEMBLY. INSTALL NEW TRAFFIC CONTROLLER ASSEMBLY ON EXISTING FOUNDATION. EXISTING CONDUIT RUN AND CABLES TO REMAIN IN PLACE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
4. REMOVE EXISTING LOAD CENTER ASSEMBLY AND FOUNDATION. BACKFILL AND GRADE TO MATCH EXISTING GROUND. COORDINATE POWER SHUT-OFF AND TURN ON WITH CEA.
5. SWEEP NEW CONDUIT FROM LOAD CENTER TO EXISTING TRAFFIC CONTROLLER FOUNDATION. REMOVE ABANDONED CONDUIT.
6. A TEMPORARY CONSTRUCTION EASEMENT OF 5' x 20' WILL BE REQUIRED FOR THE INSTALLATION OF THE TWO NEW LOAD CENTERS.

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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

DEBARR RD & BEAVER PL: SIGNAL SYSTEM PLAN

STATE OF ALASKA — PROJECT ENGINEER — REGISTERED PROFESSIONAL ENGINEER — PSSE REVIEW

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
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NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
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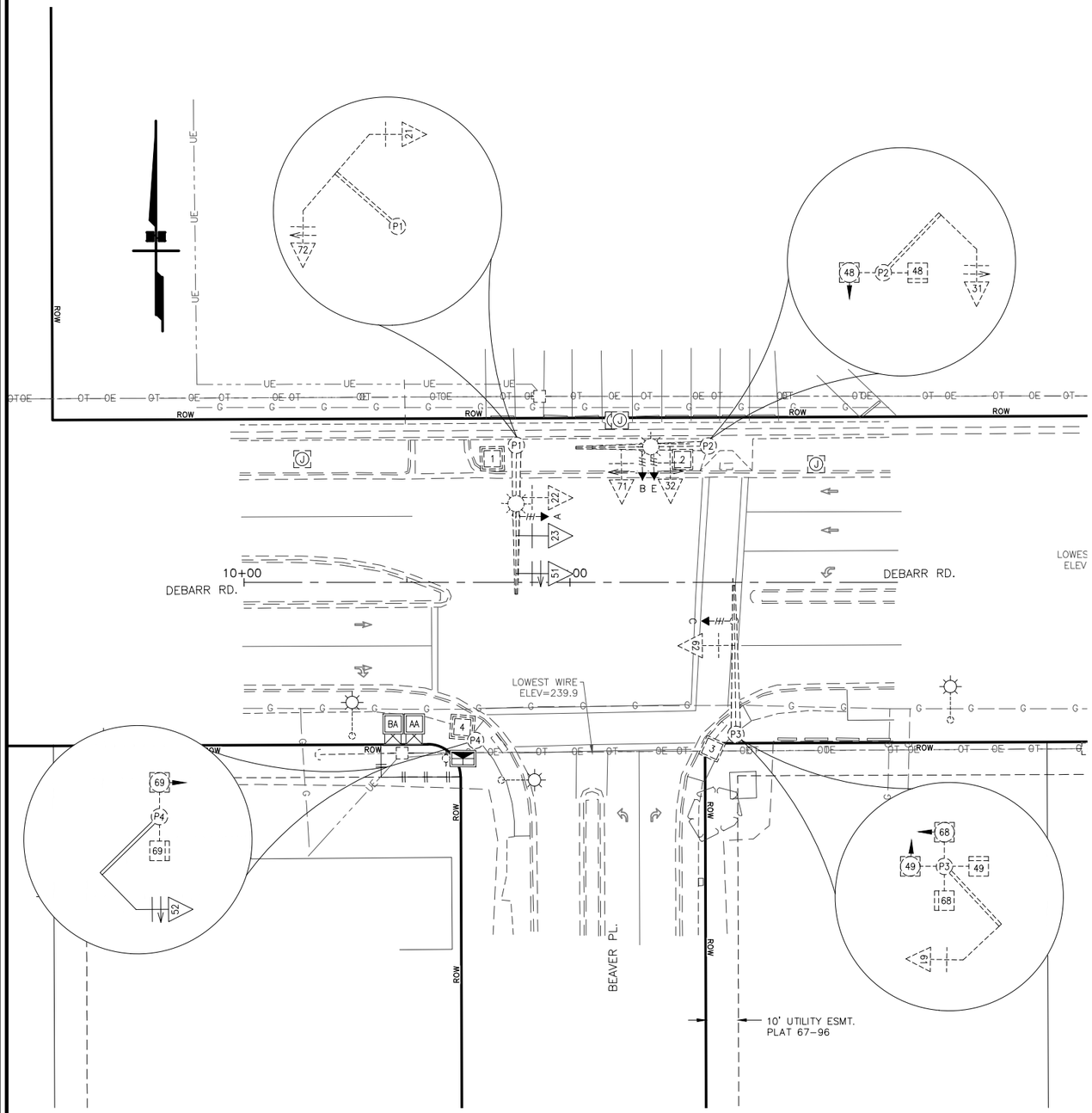
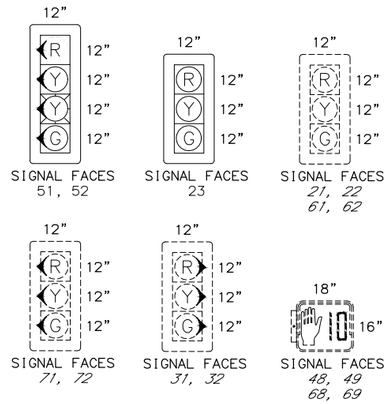
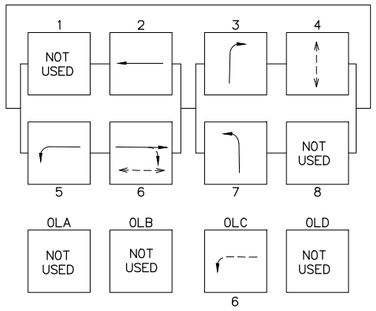




SIGNAL HEAD CONFIGURATIONS



PREEMPTION DWELL PHASE AND VEHICLE MOVEMENTS

CHANNEL A: PHASES 2 + 5
CHANNEL B: PHASES 4 + 7
CHANNEL C: PHASES 6
CHANNEL D: NOT USED

PHASE DIAGRAM

PROTECTED VEHICLE MOVEMENT
PERMISSIVE VEHICLE MOVEMENT
PEDESTRIAN MOVEMENT

PS&E REVIEW

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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
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HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

DEBARR RD & BEAVER PL: SIGNAL OPERATION PLAN

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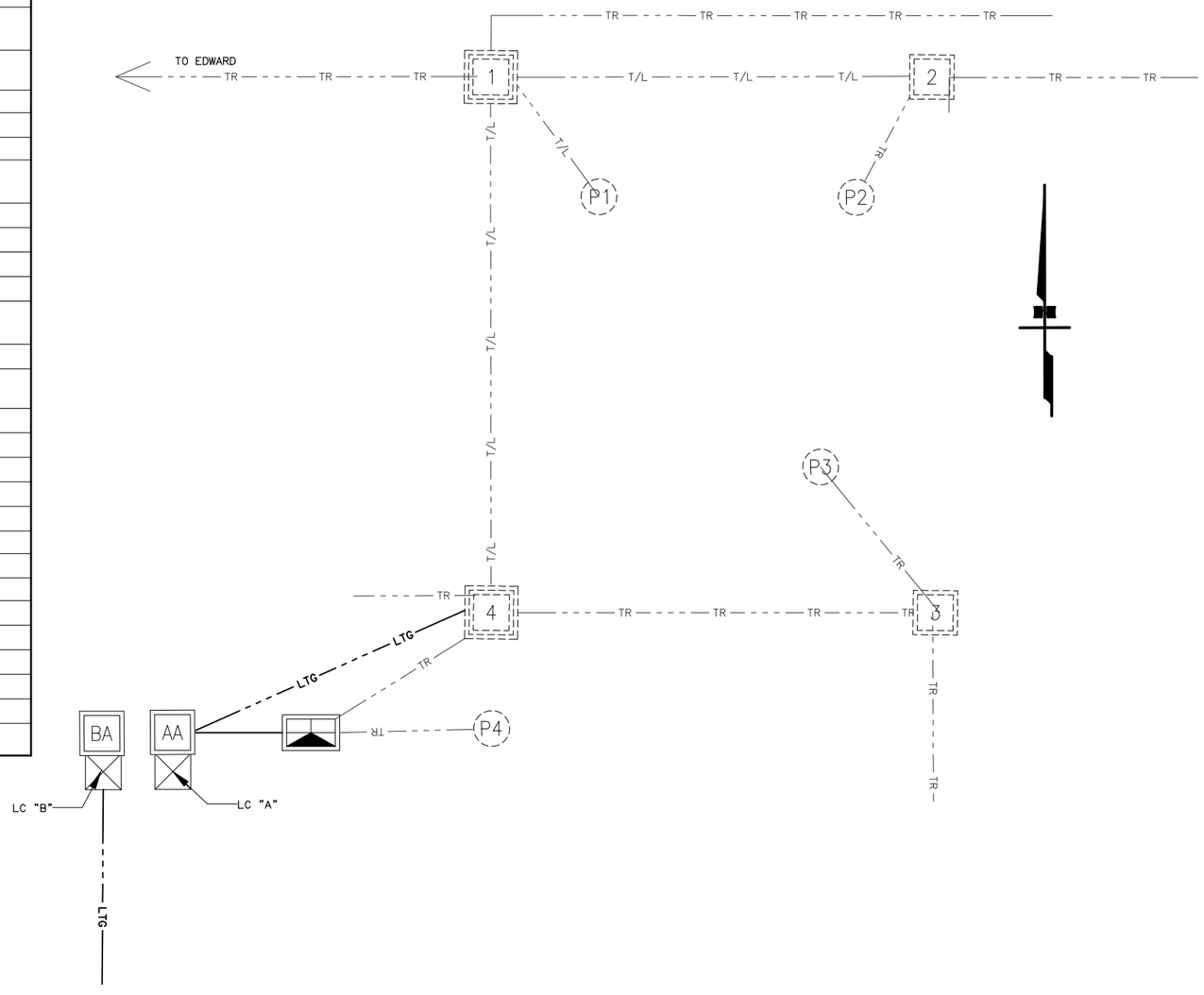
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HC3	HC6

CABLE & CONDUIT SCHEDULE

RUN	CONDUIT		CABLES	NOTES	CONDUIT FILL
LCA–TC	**NEW–2**	RMC	**NEW(1–3C6)**	SIG CKT A1	15%
LCA–4	**NEW–2**	RMC	EX(1–3C8, 1–5C12)	INTXL	17%
TC–4	EX–3	RMC	EX(3–7C14, 1–3C14, 2–3C20, 1–5C14, 3–7PR18)	SIGNAL	24%
	EX–3	RMC	EX(2–7C14, 2–5C14, 3–3C14, 1–3C20, 2–7PR18)	SIGNAL	22%
	EX–3	RMC	EX(4–7C14, 1–3C14, 2–3C20) **NEW(1–7C14)**	SIGNAL	15%
	EX–3	RMC	EX(2–25PR19)	I/C "TURPIN", I/C "EDWARD"	22%
	EX–3	RMC	SPARE		
TC–P4	EX–3	RMC	EX(1–7C14, 1–5C14, 1–3C14)	SIGNAL	6%
	EX–2	RMC	SPARE		
1–P1	EX–3	RMC	EX(4–7C14, 1–3C14, 1–3C20) **NEW(1–7C14)**	SIGNAL	14%
	EX–2	RMC	EX(2–3C8, 1–5C12)	INTXL	17%
1–2	EX–3	RMC	EX(3–7C14, 1–5C14, 2–3C14, 1–3C20, 3–7PR18)	SIGNAL	24%
	EX–2	RMC	EX(1–3C20)	SIGNAL	2%
	EX–2	RMC	EX(1–3C8)	INTXL	13%
1–4	EX–3	RMC	EX(4–7C14, 1–3C14, 2–3C20) **NEW(1–7C14)**	SIGNAL	15%
	EX–2	RMC	EX(1–3C8, 1–5C12)	INTXL	17%
	EX–3	RMC	EX(2–25PR19)	I/C "TURPIN", I/C "EDWARD"	22%
	EX–3	RMC	EX(3–7C14, 1–5C14, 2–3C14, 1–3C20, 3–7PR18)	SIGNAL, DETECTION	24%
2–P2	EX–2	RMC	EX(1–3C20)	SIGNAL	2%
	EX–2	RMC	EX(1–3C8)	INTXL	13%
	EX–3	RMC	EX(3–7C14, 1–5C14, 2–3C14, 1–3C20)	SIGNAL	13%
3–P3	EX–3	RMC	EX(2–7C14, 2–5C14, 3–3C14, 1–3C20)	SIGNAL	14%
	EX–2	RMC	SPARE		
3–4	EX–3	RMC	EX(2–7C14, 2–5C14, 3–3C14, 1–3C20, 2–7PR18)	SIGNAL	22%
	EX–3	RMC	SPARE		
1–EAST	EX–3	RMC	EX(1–25PR19)	I/C "TURPIN"	11%
1–WEST	EX–2	RMC	EX(1–25PR19)	I/C "EDWARD"	24%
1–WEST	EX–3	RMC	EX(2–3C20)	PREEMPTION "EDWARD"	2%
2–EAST	EX–2	RMC	EX(3–7PR18)	DETECTION	26%
3–SOUTH	EX–2	RMC	EX(2–7PR18)	DETECTION	17%
LCB–SOUTH	EX–2*	RMC	EX(1–3C8)	HWY LIGHTING	13%

I/C– INTERCONNECT
EX– EXISTING CABLES
INTXL– INTERSECTION LIGHTING
*SPLICE INTO EXISTING CONDUIT RUN



NOTES:

1. 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 CIRCUIT CONDUCTOR.
2. DETECTOR LOOPS NOT SHOWN FOR CLARITY.

PS&E REVIEW

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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
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HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

DEBARR RD & BEAVER PL: WIRING DIAGRAM

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STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HC4	HC6

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GENERAL LC NOTES:

1. ALL CIRCUIT BREAKERS SHALL BE RATED FOR OPERATION AT −20°F.
2. LOAD CENTER OUTAGES SHALL BE SCHEDULED DURING DAYLIGHT HOURS AND BE COMPLETE PRIOR TO DUSK THE SAME DAY.
3. DEMOLISH EXISTING TYPE 2 LOAD CENTER.

SUMMARY OF NEW LOAD CENTER 'A'

LOAD CENTER TYPE:	TYPE 1A
MAINTAINED BY:	MUNICIPALITY OF ANCHORAGE
SERVING UTILITY:	CHUGACH ELECTRIC ASSOCIATION
SERVICE CONDUIT TYPE:	RIGID METAL CONDUIT
LOCATION DATA	
LOAD CENTER:	DEBARR ROAD AND BEAVER PLACE
POWER SOURCE:	NEW LINE EXTENSION
PHOTOELECTRIC CONTROL:	AT LOAD CENTER
SERVICE VOLTAGE:	120/240V, 1-PHASE, 3-WIRE
PROVIDE METER SOCKET:	NEW
MAIN BREAKER A:	240, 100A, 2-POLE
CONTACTOR 1:	600V, 12-POLE, 30A
AIC RATING:	10,000A

PANEL A

CKT	AMP TRIP	DESCRIPTION	CKT KVA	AØ	BØ	CKT KVA	DESCRIPTION	AMP TRIP	CKT
1	50/1	TC	3.8	3.9		0.1	PHOTOCELL	15/2	2
3			0.0		0.1	0.1			4
5			0.0	1.0		1.0	INTX LTG*	20/2	6
7			0.0		1.0	1.0			8
9			0.0	0.0		0.0	SPARE	20/2	10
11			0.0		0.0	0.0			12
13			0.0	0.0		0.0			14
15			0.0		0.0	0.0			16
17			0.0	0.0		0.0			18
* = THROUGH CONTACTOR				4.9	1.1	TOTAL KVA			6.0
						AMPS			25.0

SUMMARY OF NEW LOAD CENTER 'B'

LOAD CENTER TYPE:	TYPE 1A
MAINTAINED BY:	MUNICIPALITY OF ANCHORAGE
SERVING UTILITY:	CHUGACH ELECTRIC ASSOCIATION
SERVICE CONDUIT TYPE:	RIGID METAL CONDUIT
LOCATION DATA	
LOAD CENTER:	DEBARR ROAD AND BEAVER PLACE
POWER SOURCE:	NEW LINE EXTENSION
PHOTOELECTRIC CONTROL:	AT LOAD CENTER
SERVICE VOLTAGE:	120/240V, 1-PHASE, 3-WIRE
PROVIDE METER SOCKET:	NEW
MAIN BREAKER A:	240, 100A, 2-POLE
CONTACTOR 1:	600V, 12-POLE, 30A
AIC RATING:	10,000A

PANEL A

CKT	AMP TRIP	DESCRIPTION	CKT KVA	AØ	BØ	CKT KVA	DESCRIPTION	AMP TRIP	CKT
1			0.0	0.1		0.1	PHOTOCELL	15/2	2
3			0.0		0.1	0.1			4
5			0.0	1.4		1.4	LTG*	20/2	6
7			0.0		1.4	1.4			8
9			0.0	0.0		0.0	SPARE	20/2	10
11			0.0		0.0	0.0			12
13			0.0	0.0		0.0			14
15			0.0		0.0	0.0			16
17			0.0	0.0		0.0			18
* = THROUGH CONTACTOR				1.5	1.5	TOTAL KVA			3.0
						AMPS			12.5

SHORT CIRCUIT CALCULATION - LC 'A'

TRANSFORMER RATING	25KVA
VOLTAGE	120/240V
TRANSFORMER IMPEDANCE	1.2%
AVAILABLE SHORT CIRCUIT CURRENT AT TRANSFORMER SECONDARY	8,680A
FEEDER CONDUCTOR LENGTH	14'
FEEDER CONDUCTOR SIZE	2 AWG ALUM
CONDUIT	PVC
MAXIMUM FAULT CURRENT	7,281A
DATE CALCULATED	1/29/2025

ARC FLASH CALCULATION - LC 'A'

INCIDENT ENERGY	16.3 cal/cm²
ARC-FLASH BOUNDARY	92"
WORKING DISTANCE	18"
INSULATING GLOVES CLASS	00
NOMINAL SYSTEM VOLTAGE	240V
LIMITED APPROACH BOUNDARY	42"
RESTRICTED APPROACH BOUNDARY	12"
CALCULATION DATE	1/29/2025

SHORT CIRCUIT CALCULATION - LC 'B'

TRANSFORMER RATING	25KVA
VOLTAGE	120/240V
TRANSFORMER IMPEDANCE	1.2%
AVAILABLE SHORT CIRCUIT CURRENT AT TRANSFORMER SECONDARY	8,680A
FEEDER CONDUCTOR LENGTH	14'
FEEDER CONDUCTOR SIZE	2 AWG ALUM
CONDUIT	PVC
MAXIMUM FAULT CURRENT	7,281A
DATE CALCULATED	1/29/2025

ARC FLASH CALCULATION - LC 'B'

INCIDENT ENERGY	16.3 cal/cm²
ARC-FLASH BOUNDARY	92"
WORKING DISTANCE	18"
INSULATING GLOVES CLASS	00
NOMINAL SYSTEM VOLTAGE	240V
LIMITED APPROACH BOUNDARY	42"
RESTRICTED APPROACH BOUNDARY	12"
CALCULATION DATE	1/29/2025

VOLTAGE DROP CALCULATION - LC 'B'

1-PH, 2W CONFIGURATION, 1 COPPER CONDUCTOR PER PHASE IN RMC.

CKT #	CONDUCTOR SIZE (AWG)	LENGTH	VOLTAGE	POWER FACTOR	LOAD (KVA)	TOTAL (AMPS)	%VD
AA-6,8	6	1460'	240	0.90	2.8	11.3	4.2

STATE OF ALASKA
49TH
PRE-PS&E
ROY N. PACE
EE-12053
REGISTERED PROFESSIONAL ENGINEER

EDC, INC.
1500 WEST 33RD AVE
ANCHORAGE, AK 99503
(907) 257-0601
CERT. OF AUTH. NO. AECC705

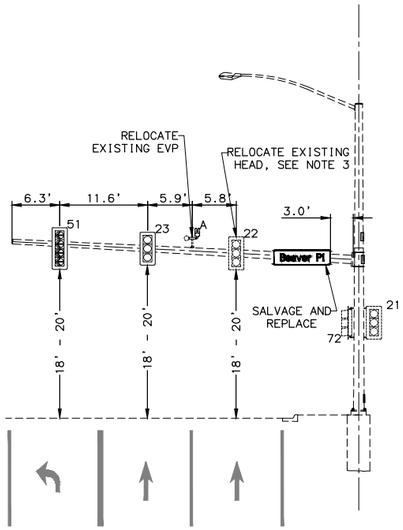
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

DEBARR RD & BEAVER PL: LOAD CENTER SUMMARY

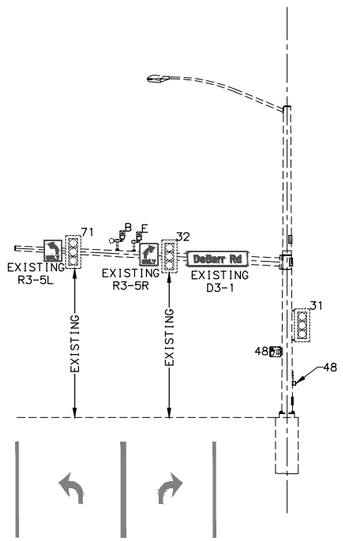
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HC5	HC6



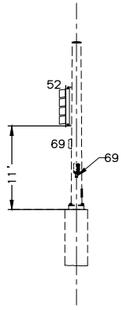
SIGNAL POLE 1
LOOKING WEST

P1



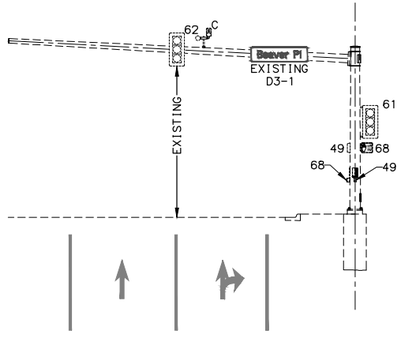
SIGNAL POLE 2
LOOKING NORTH

P2



SIGNAL POLE 4
LOOKING SOUTH

P4



SIGNAL POLE 3
LOOKING EAST

P3

NOTES:

1. ELEVATIONS ARE TO THE TOP OF THE FOUNDATION AND ARE APPROXIMATE.
2. LANE MARKINGS ARE SHOWN FOR REFERENCE ONLY.
3. SIGNAL HEAD LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL VERIFY SIGNAL HEAD PLACEMENT WITH RECEIVING AND APPROACH LANE OFFSETS.
4. ALL PEDESTRIAN HEADS AND PUSH BUTTONS ARE EXISTING

PS&E REVIEW

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STATE OF ALASKA
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HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

DEBARR RD & BEAVER PL: POLE ELEVATIONS

MTB
DESIGNED BY
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SCALE 1" = 10'
DATE TIME 4/8/2025 4:47 PM
DRAWING LOCATION
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NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HC6	HC6

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DRAFTED BY
SCALE
DATE TIME 4/8/2025 4:48 PM
DRAWING LOCATION C:\DOWL_PW\D0414549\00944_HC1-HC6.DWG

CONTROLLER CABINET FEATURES

GENERAL OPTIONS	
TYPE	TS2-1
SIZE	NEMA SIZE 6
MATERIALS	0.125" NATURAL ALUMINUM
MODEL	WESTERN SYSTEMS NEMA TS2-1P
EXTENDER BASE	NONE
MOUNTING HARDWARE	INCLUDED
PAINT	YES-SEE SPECIAL PROVISIONS
SPECIAL OPTIONS	
LIFTING TABS	INCLUDED
EQUIPMENT SHELF	(2) FULL WIDTH, (1) LAPTOP DRAWER
AIR FILTER	FIBER MESH
MAIN DOOR LOCK	BEST
REAR DOOR	NONE
LED LIGHT FIXTURES	SEE SPECIAL PROVISIONS FOR OTHER REQUIREMENT
MAIN PANEL	
MAIN PANEL POSITION	16-POSITION HORIZONTAL
FLASH TRANSFER RELAYS SOCKETS	(8) INCLUDED
FLASHER SOCKET	(1) INCLUDED
R1 RELAY SOCKET	INCLUDED
POWER PANEL	
SURGE SUPPRESSION	SHP300-10
LINE FILTER (RADIO INTERFERENCE)	50A
SOLID STATE CONTACTOR	NORMALLY OPEN, 50A
MAIN CIRCUIT BREAKER	40A
AUXILIARY CIRCUIT BREAKER	20A
3 POSITION TERMINAL BLOCK FOR INCOMING POWER, #2-#8 U.S.G.	INCLUDED
16 POSITION NEUTRAL BUS BAR	INCLUDED
16 POSITION CHASSIS GROUND BUS BAR	INCLUDED
POLICE PANEL	
POLICE PANEL SWITCHES	SIGNALS ON/OFF, AUTO/FLASH
POLICE PANEL PUSHBUTTON ALARM	NONE
POLICE DOOR LOCK	CONVENTIONAL (SKELETON KEY)
POLICE PANEL MANUAL CORD	NONE
AUXILIARY PANEL	
AUXILIARY PANEL SWITCHES	AUTO/FLASH, STOP TIME, CONTROLLER POWER, COORD, CABINET LIGHT, HEATER BYPASS
DETECTOR TEST SWITCHES	TACTILE PUSHBUTTON
FORCE OFF SWITCHES	TACTILE PUSHBUTTON
RACK DETECTION	
DETECTOR RACKS	FOUR (4) 16-CHANNEL DETECTOR RACKS. TWO THE THE RACKS SHALL BE CONFIGURED WITH 2 SLOTS EACH FOR OPTICOM.
DETECTOR RACK POWER SUPPLY	BIU FOR EACH RACK
EVP REQUIREMENTS	WIRING FOR GREEN SENSE MONITORING
ADDITIONAL OPTIONS	
RAILROAD PREEMPTION	INCLUDED
RAILROAD PREEMPTION/STAND ALONE PANEL	NO
RED JUMPERS FOR ALL UNUSED PHASES	INCLUDED
LOAD RESISTORS	(8) INCLUDED - LEFT SIDE OF CABINET
HEATER RECEPTACLE (SINGLE)	INCLUDED - RIGHT SIDE OF CABINET
DUPLEX GFI OUTLET (NON-FILTERED)	INCLUDED - RIGHT SIDE OF CABINET
QUAD CONVENIENCE OUTLET - FILTERED	INCLUDED - LEFT SIDE OF CABINET
ADDITIONAL NEUTRAL BUS BARS	(1) 32 POSITION BUS BAR LEFT SIDE OF CABINET
ADDITIONAL CHASSIS GROUND BUS BARS	(1) 32 POSITION BUS BAR LEFT SIDE OF CABINET
STANDARD WIRING DIAGRAM (AUTOCAD FORMAT)	PROVIDE: (3) PAPER SETS FOR CABINET, SIGNAL TECH AND TRAFFIC, (1) ACAD ON DISC, (1) PDF.
GTT OPTICOM 757 HARNESS	INCLUDED - WIRED INTO CABINET
GTT OPTICOM 768 AUXILIARY INTERFACE PANEL	INCLUDED - WIRED INTO CABINET
GENERATOR BYPASS COMPARTMENT	INCLUDED - MOUNT COMPARTMENT FLUSH AND ON INSIDE OF CONTROLLER CABINET DOOR. SEE SPECIAL PROVISIONS FOR OTHER REQUIREMENTS.

CONTROLLER ASSEMBLY EQUIPMENT

SUPPLY ALL LABOR, EQUIPMENT AND MATERIALS TO PROVIDE A FULLY FUNCTIONING TRAFFIC SIGNAL CONTROLLER ASSEMBLY COMPLIANT WITH THE NEMA STANDARD PUBLICATION NO. TS2-2003 V02.06 AND SPECIAL "SPECIALS" PROVISIONS OF THIS CONTRACT INCLUDING BUT NOT LIMITED TO;

QTY	CONTROLLER/MMU EQUIPMENT
1	ECON COBALT ATC TOUCH 2100 CONTROLLER (TS2 TYP 2
1	CONTROLLER TELEMETRY MODULE TCM-FSK-9 OR APPROVED EQUAL
1	CONTROLLER ETHERNET PORT
1	CONTROLLER DATA KEY
1	EDI MMU2-16LEIP
1	MMU2 CARD
QTY	**CABINET EQUIPMENT**
16	PDC SSS-87-I/O LOAD SWITCHES OR APPROVED EQUAL
16	EDI ORACLE4E DETECTOR AMPLIFIERS OR APPROVED EQUAL
8	DETROL CONTROLS 295 FLASH TRANSFER RELAYS OR APPROVED EQUAL
2	EDI BIU700 TERMINAL AND FACILITIES BIU'S OR APPROVED EQUAL
4	EDI BIU700 DETECTION BIU'S OR APPROVED EQUAL
1	EDI PS250 TS2 CABINET POWER SUPPLY OR APPROVED EQUAL
1	PDC SSF-87 FLASHER OR APPROVED EQUAL
1	R1 RELAY
1	600/900/1500W SELECTABLE THERMOSTATICALLY CONTROLLED CABINET HEATER, MOUNT ON DOOR
1	RE-SEALABLE PRINT POUCH OF SUFFICIENT SIZE TO ACCOMMODATE CABINET PRINTS
1	COMPLETE SET OF MANUALS FOR CONTROLLER, MMU2, AND VEHICLE DETECTOR AMPLIFIERS

COMMUNICATION EQUIPMENT SCHEDULE

QTY	COPPER INTERCONNECT SYSTEM
1	ACTELIS ML698E WITH FOUR 10/100X PORTS AND ONE OPTIONAL 1000BASE SFP PORT OR APPROVED EQUAL
1	AC POWER ADAPTER 506R00006 OR APPROVED EQUAL
4	3 FOOT CAT6 PATCH CABLE
1	SFP OPTICS 100BASE FX SM 1310NM 15KM LC MODULE 506R00032 OR APPROVED EQUAL
1	CARRIER-CLASS ELEMENT MANAGMENT SYSTEM
2	QUAD DSL CABLES 504R20110 OR APPROVED EQUAL
1	WALL MOUNTING KIT 510R21080 OR APPROVED EQUAL
QTY	**FIBER INTERCONNECT EQUIPMENT**
0	ACTELIS NETWORKS MODEL ML530 WITH TWO 100/1000 BASE FX SFP PORTS AND FOUR PORTS OF 10/100 BASE-T OR APPROVED EQUAL
0	AC POWER ADAPTER 506R00006 OR APPROVED EQUAL
0	3 FOOT CAT6 PATCH CABLE
0	SFP OPTICS 100BASE FX SM 1310NM 15KM LC MODULE 506R00032 OR APPROVED EQUAL
0	CARRIER-CLASS ELEMENT MANAGEMENT SYSTEM
0	LC DUPLEX SM FIBER OPTIC CABLE ASSEMBLY 3 METERS OR APPROVED EQUAL
0	WALL MOUNTING KIT 510R21080 OR APPROVED EQUAL
QTY	**OTHER EQUIPMENT**
0	RSL910 ETHERNET SWITCH (COPPER AND FIBER) OR APPROVED EQUAL
QTY	**EVP EQUIPMENT**
1	OPTICOM MODEL 764 PHASE SELECTOR
QTY	**RADAR EQUIPMENT**
0	CLICK! 650 (102-0416)
0	CLICK! 656 (102-0451)
0	INSTALLER KIT
0	7' SDLC CABLE - 15 PIN SCREW TO 15 PIN SPRING CLIP (SDLC-TS2-7)
0	3' SDLC CABLE - 15 PIN SCREW TO 15 PIN SPRING CLIP (SDLC-TS2-3)
0	SDLC 6 PORT INTERFACE PANEL (SDLC-IP6)

STATE OF ALASKA
REGISTERED
PROFESSIONAL ENGINEER
PROJECT ENGINEER
AS-BUILT
REVIEW

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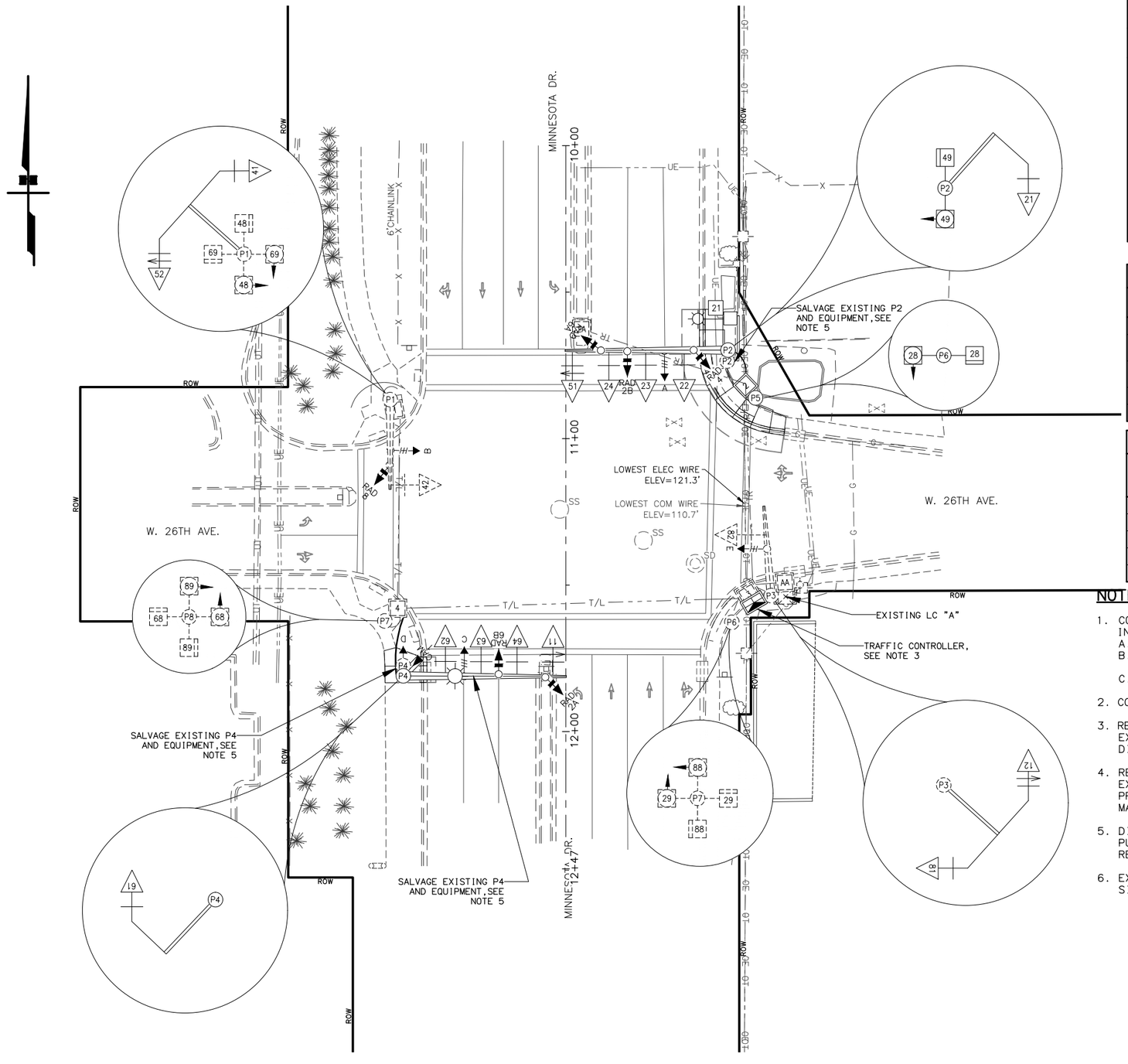
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

DEBARR RD & BEAVER PL: CONTROLLER EQUIPMENT

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HD1	HD6



FOUNDATION SCHEDULE

ITEM	STATION ALIGNMENT	OFFSET	STRUCTURE	REMARKS
LC	-	-	LOAD CENTER	EXISTING
TCA	-	-	NEW TRAFFIC CONTROLLER	EXISTING
P1	-	-	SIGNAL POLE	EXISTING
P2	10+69.8	55.4 LT	SIGNAL POLE	NEW STEEL PILE FOUNDATION
P3	-	-	SIGNAL POLE	EXISTING
P4	11+81.0	55.6 RT	SIGNAL POLE	NEW STEEL PILE FOUNDATION
P5	10+86.1	64.8 LT	PEDESTRIAN SIGNAL POLE	NEW
P6	-	-	PEDESTRIAN SIGNAL POLE	EXISTING
P7	-	-	PEDESTRIAN SIGNAL POLE	EXISTING

JUNCTION BOX SCHEDULE

J-BOX	STATION ALIGNMENT	OFFSET	TYPE	REMARKS
1	-	-	2	EXISTING
2	10+81.3	61.4 LT	2	NEW, SEE NOTE 4
21	10+55.4	51.5 LT	1A	NEW, SEE NOTE 4
3	-	-	3	EXISTING
4	-	-	2	EXISTING

OPTICOM DETECTOR SCHEDULE

DETECTOR ID	LOCATION	PHASE CALL	FACING DIRECTION	MODEL	REMARKS
A	P2 MASTARM	2, 5	SOUTH	721	NEW
B	P1 MASTARM	4	EAST	711	EXISTING
C	P4 MASTARM	6, 1	NORTH	721	NEW
D	P4	6, 1	NORTH	721	NEW
E	P3 MASTARM	8	WEST	711	EXISTING

NOTES:

1. CONTRACTOR SHALL MAINTAIN AND PROTECT ALL SIGNAL COMPONENTS SHOWN WITH NO ANTICIPATED IMPACT. IN ADDITION, UNLESS OTHERWISE DIRECTED BY THE ENGINEER:
   A. CONDUIT RUNS MAY BE INTERCEPTED (AS APPROVED BY THE ENGINEER).
   B. SIGNAL AND INTERCONNECT CONDUCTORS SHALL NOT BE INTERCEPTED. IMPACTED SIGNAL CONDUCTORS SHALL BE REPLACED CONTINUOUSLY FROM THE CONTROLLER CABINET.
   C. STREET LIGHT CONDUCTORS SHALL NOT BE INTERCEPTED.
2. CONTRACTOR SHALL MAINTAIN AND PROTECT ALL JUNCTION BOXES SHOWN WITH NO ANTICIPATED IMPACT.
3. REMOVE EXISTING TRAFFIC CONTROLLER ASSEMBLY. INSTALL NEW TRAFFIC CONTROLLER ASSEMBLY ON EXISTING FOUNDATION. EXISTING CONDUIT RUN AND CABLES TO REMAIN IN PLACE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
4. REPLACE J-BOXES 2 AND 21, THIS MAY REQUIRE ADDING CONDUIT EXTENSIONS. IN THE EVENT CONDUIT EXTENSIONS ARE NEEDED, CONTRACTOR SHALL PULL CONDUCTORS FROM CONDUITS AND PROTECT AND PRESERVE IN PLACE BEFORE ADJUSTING CONDUITS, THEN RE-PULL CONDUCTORS THROUGH. THIS WORK AND MATERIALS SHALL BE INCIDENTAL TO THE CONTRACT.
5. DISCONNECT AND REMOVE EXISTING CABLES CONNECTED TO EXISTING SIGNAL AND LIGHTING EQUIPMENT. PULL BACK EXISTING RADAR CABLES TO NEAREST J-BOX AND PROTECT AND PRESERVE IN PLACE BEFORE REMOVING SIGNAL POLES. THEN RE-PULL THESE CONDUCTORS THROUGH.
6. EXISTING RADAR EQUIPMENT IS TO BE REMOVED FROM THE EXISTING POLES AND RE-INSTALLED ON NEW SIGNAL POLES,

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STATE OF ALASKA
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HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

MINNESOTA DR & 26TH AVE: SIGNAL SYSTEM PLAN

DESIGNED BY MTB
CHECKED BY
DRAFTED BY
SCALE 1" = 20'
DATE TIME 4/8/2025 5:09 PM
DRAWING LOCATION C:\DOWL_PW\D0414549\00944_HD1-HD6.DWG

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HD2	HD6

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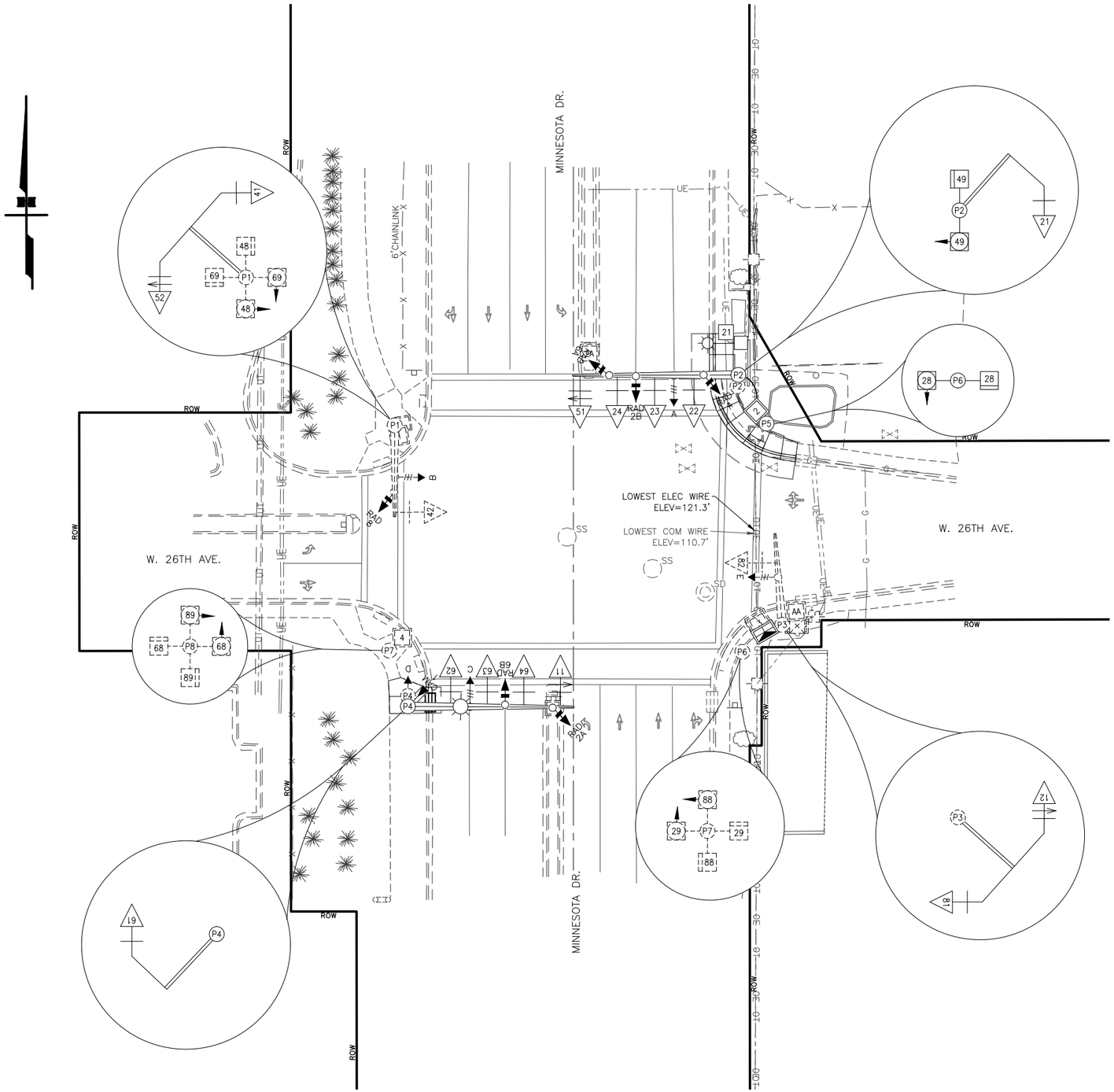
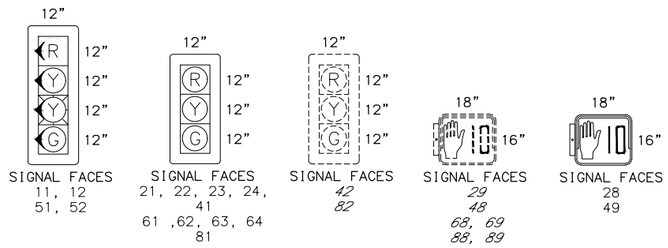
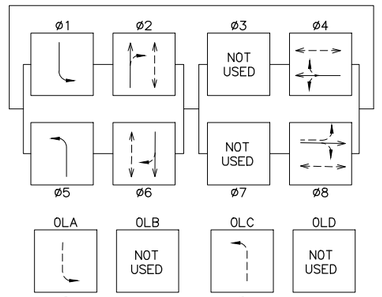




SIGNAL HEAD CONFIGURATIONS



PREEMPTION DWELL PHASE AND VEHICLE MOVEMENTS

CHANNEL A: 2 + 5
CHANNEL B: 4
CHANNEL C + D: 6 + 1
CHANNEL E: 8

PHASE DIAGRAM

PROTECTED VEHICLE MOVEMENT
PERMISSIVE VEHICLE MOVEMENT
PEDESTRIAN MOVEMENT

PSSE REVIEW

DOWL, LLC
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STATE OF ALASKA
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MINNESOTA DR & 26TH AVE: SIGNAL OPERATION PLAN

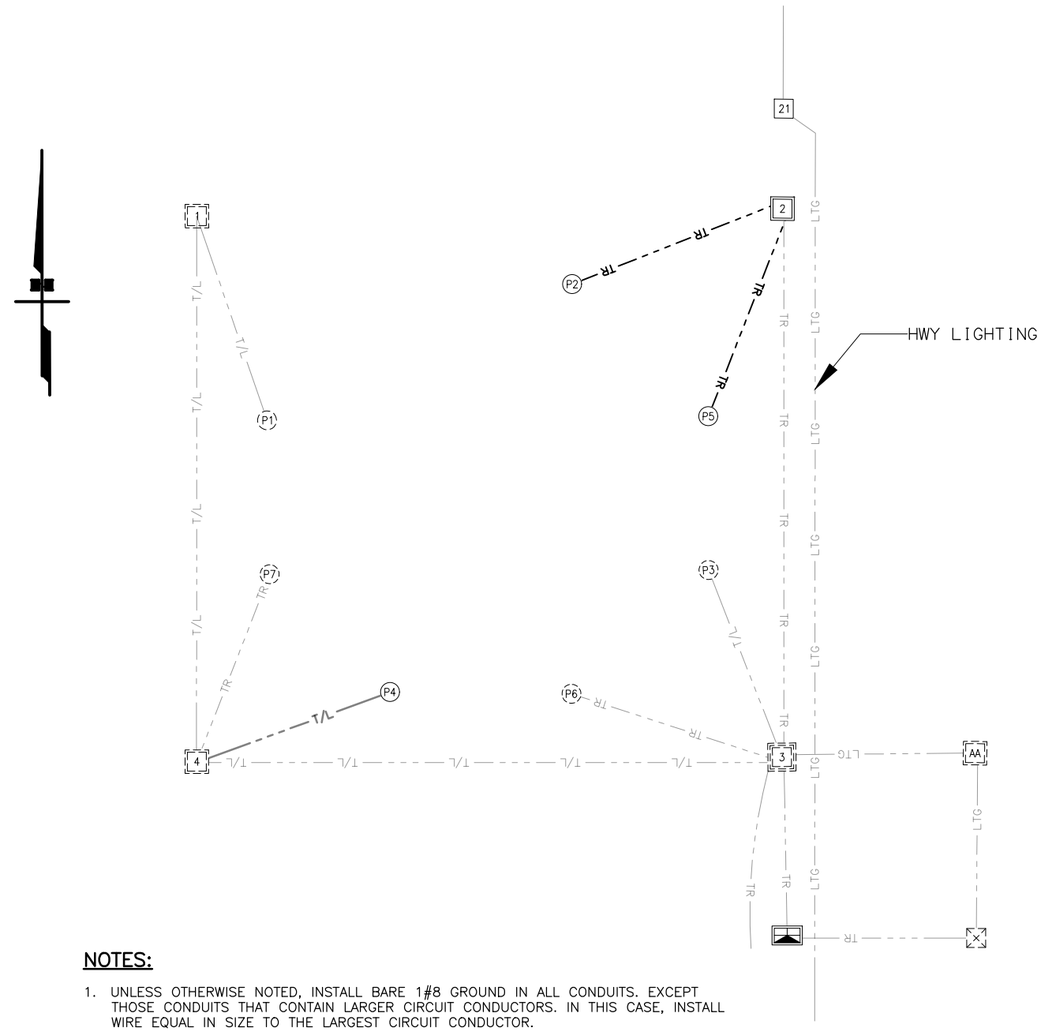
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HD3	HD6

CABLE SCHEDULE

RUN	CONDUIT		CABLES	NOTES	FILL
LCA–TC	EX–2	RMC	EX(1–3C6)	TC POWER	15%
LCA–AA	EX–2	RMC	EX(1–3C8)	INTXL	13%
AA–3	EX–2	RMC	EX(1–3C8)	INTXL	13%
TC–3	EX–4	RMC	EX(2–7C14, 2–5C14, 3–3C14, 1–3C20) **NEW(6–7C14, 2–5C14, 3–3C14, 1–3C20, 1–3C10)**	SIGNAL	21%
	EX–4	RMC	EX(3–7C14, 4–5C14, 5–3C14, 1–3C20, 1–MTX2) **NEW(5–7C14, 1–3C14, 2–3C20, 1–CAT5, 5–MTX2)**	SIGNAL, DETECTION	28%
	EX–2	RMC	EX(1–25PR19)	I/C "NORTHERN LIGHTS"	24%
1–4	EX–2.5	RMC	EX(3–7C14, 2–5C14, 3–3C14, 1–3C20, 1–MTX2)	SIGNAL, DETECTION	28%
	EX–2	RMC	EX(1–3C8)	INTXL	13%
	EX–2	RMC	EX(SPARE)		
1–P1	EX–3	RMC	EX(3–7C14, 2–5C14, 3–3C14, 1–3C20, 1–MTX2)	SIGNAL	18%
	EX–2	RMC	EX(1–3C8)	INTXL	13%
	EX–2	RMC	EX(SPARE)		
2–P2	**NEW–3**	RMC	**NEW(5–7C14, 1–5C14, 2–3C14, 1–3C20, 3–MTX2)**	SIGNAL, DETECTION	23%
	NEW–2	RMC	NEW(SPARE)		
2–P5	**NEW–2**	RMC	**NEW(1–5C14, 1–3C14)**	SIGNAL	8%
2–3	EX–3.5	RMC	**NEW(5–7C14, 2–5C14, 3–3C14, 1–3C20, 3–MTX2, 1–3C10)**	SIGNAL, DETECTION	20%
3–P3	EX–1.5	RMC	EX(2–7C14, 1–3C14, 1–3C20) **NEW(1–7C14)**	SIGNAL	34%
3–P6	EX–1.5	RMC	EX(2–5C14, 2–3C14)	SIGNAL	25%
3–4	EX–2	RMC	EX(1–3C8)	INTXL	13%
	EX–3	RMC	EX(3–7C14, 4–5C14, 5–3C14, 1–3C20, 1–MTX2) **NEW(1–CAT5, 2–MTX2)**	SIGNAL, DETECTION	29%
	EX–3	RMC	**NEW(5–7C14, 1–3C14, 2–3C20)**	SIGNAL	15%
	EX–3	RMC	EX(SPARE)		
4–P4	EX–3	RMC	**NEW(5–7C14, 1–3C14, 2–3C20, 1–CAT5, 2–MTX2)**	SIGNAL, DETECTION	19%
4–P7	EX–2	RMC	EX(2–5C14, 2–3C14)	SIGNAL	15%
	EX–2	RMC	EX(SPARE)		
3–SOUTH	EX–2	RMC	EX(1–25PR19)	I/C "NORTHERN LIGHTS"	24%
2–2A	EX–2	RMC	**NEW(1–3C10)**	SCHOOL FLASHER	12%
SOUTH–21–NORTH	*	*	SEE NOTE 2	HWY LIGHTING	*

EX– EXISTING CABLES
INTXL– INTERSECTION LIGHTING



NOTES:

1. 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 CIRCUIT CONDUCTOR.
2. CONDUITS UNKNOWN IN THIS RUN, PRESERVE AND PROTECT EXISTING CABLES DURING JBOX 21 REPLACEMENT

DOWL, LLC
5015 BUSINESS PARK BLVD
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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
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HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

MINNESOTA DR & 26TH AVE: WIRING DIAGRAM

DESIGNED BY MTB
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DRAFTED BY
SCALE
DATE TIME 4/8/2025 4:48 PM
DRAWING LOCATION C:\DOWL_PW\D0414549\00944_HD1–HD6.DWG

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HD4	HD6

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DATE TIME
4/24/2025 10:55 AM

DRAWING LOCATION
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GENERAL LC NOTES:

1. ALL CIRCUIT BREAKERS SHALL BE RATED FOR OPERATION AT −20°F.
2. LOAD CENTER OUTAGES SHALL BE SCHEDULED DURING DAYLIGHT HOURS AND BE COMPLETE PRIOR TO DUSK THE SAME DAY.
3. LOAD CENTER HAS BEEN PREVIOUSLY FURNISHED WITH AN ARC FLASH STICKER, A NEW STICKER IS NOT REQUIRED.

SUMMARY OF EXISTING LOAD CENTER 'A'

LOAD CENTER TYPE:	TYPE 1A
MAINTAINED BY:	MUNICIPALITY OF ANCHORAGE
SERVING UTILITY:	CHUGACH ELECTRIC ASSOCIATION
SERVICE CONDUIT TYPE:	RIGID METAL CONDUIT
LOCATION DATA	
LOAD CENTER:	MINNESOTA DRIVE AND 26TH AVENUE
POWER SOURCE:	EXISTING
PHOTOELECTRIC CONTROL:	AT LOAD CENTER
SERVICE VOLTAGE:	120/240V, 1-PHASE, 3-WIRE WITH GROUNDED NEUTRAL
PROVIDE METER SOCKET:	EXISTING
MAIN BREAKER A:	240, 100A, 2-POLE
CONTACTOR 1:	600V, 12-POLE, 30A
AIC RATING:	10,000A

PANEL A

CKT	AMP TRIP	DESCRIPTION	CKT KVA	AØ	BØ	CKT KVA	DESCRIPTION	AMP TRIP	CKT
1	20/2	INTX LUM *	1.0	1.0		0.0	SPARE	20/2	2
3			1.0		1.0	0.0			4
5	50/1	TC	3.8	3.9		0.1	PHOTOCELL	15/2	6
7	20/1	SPARE	0.0		0.1	0.1			8
9	20/1	SPARE	0.0	0.0		0.0	SPARE	15/2	10
11	20/1	SPARE	0.0		0.0	0.0			12
13		SPACE	0.0	0.0		0.0	SPACE		14
15		SPACE	0.0		0.0	0.0	SPACE		16
17		SPACE	0.0	0.0		0.0	SPACE		18
* = THROUGH CONTACTOR				4.9	1.1	TOTAL KVA			6.0
						AMPS			25.0

EDC, INC.
1500 WEST 33RD AVE
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CERT. OF AUTH. NO. AECC705

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

MINNESOTA DR & 26TH AVE: LOAD CENTER SUMMARY

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HD5	HD6

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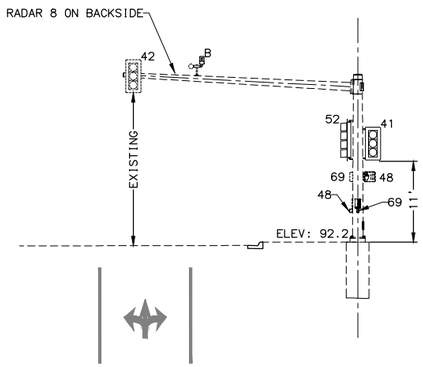
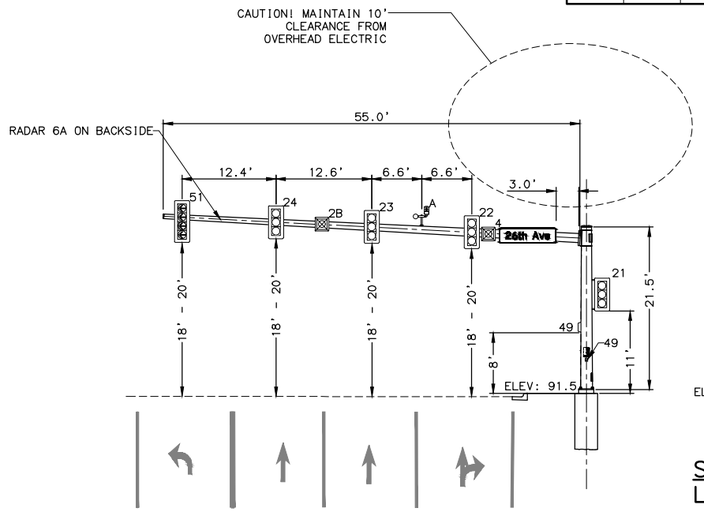
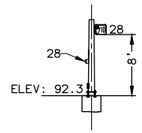


SIGNAL POLE 1
LOOKING WEST



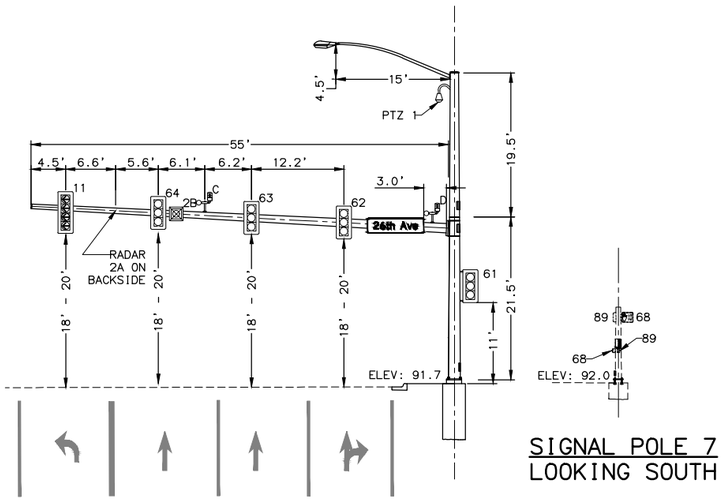
SIGNAL POLE 2
LOOKING NORTH



SIGNAL POLE 5
LOOKING NORTH

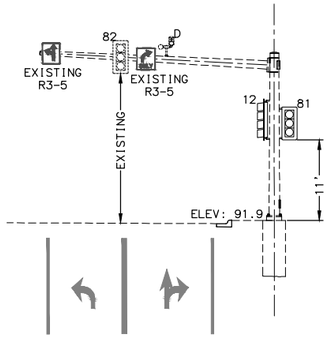
NOTES:

1. ELEVATIONS ARE TO THE TOP OF THE FOUNDATION AND ARE APPROXIMATE.
2. LANE MARKINGS ARE SHOWN FOR REFERENCE ONLY.
3. SIGNAL HEAD LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL VERIFY SIGNAL HEAD PLACEMENT WITH RECEIVING AND APPROACH LANE OFFSETS.

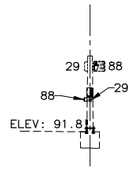


SIGNAL POLE 4
LOOKING SOUTH

SIGNAL POLE 7
LOOKING SOUTH



SIGNAL POLE 3
LOOKING EAST



SIGNAL POLE 6
LOOKING EAST

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HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

MINNESOTA DR & 26TH AVE: POLE ELEVATIONS

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HD6	HD6

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CONTROLLER CABINET FEATURES

GENERAL OPTIONS	
TYPE	TS2-1
SIZE	NEMA SIZE 6
MATERIALS	0.125" NATURAL ALUMINUM
MODEL	WESTERN SYSTEMS NEMA TS2-1P
EXTENDER BASE	NONE
MOUNTING HARDWARE	INCLUDED
PAINT	YES-SEE SPECIAL PROVISIONS
SPECIAL OPTIONS	
LIFTING TABS	INCLUDED
EQUIPMENT SHELF	(2) FULL WIDTH, (1) LAPTOP DRAWER
AIR FILTER	FIBER MESH
MAIN DOOR LOCK	BEST
REAR DOOR	NONE
LED LIGHT FIXTURES	SEE SPECIAL PROVISIONS FOR OTHER REQUIREMENT
MAIN PANEL	
MAIN PANEL POSITION	16-POSITION HORIZONTAL
FLASH TRANSFER RELAYS SOCKETS	(8) INCLUDED
FLASHER SOCKET	(1) INCLUDED
R1 RELAY SOCKET	INCLUDED
POWER PANEL	
SURGE SUPPRESSION	SHP300-10
LINE FILTER (RADIO INTERFERENCE)	50A
SOLID STATE CONTACTOR	NORMALLY OPEN, 50A
MAIN CIRCUIT BREAKER	40A
AUXILIARY CIRCUIT BREAKER	20A
3 POSITION TERMINAL BLOCK FOR INCOMING POWER, #2-#8 U.S.G.	INCLUDED
16 POSITION NEUTRAL BUS BAR	INCLUDED
16 POSITION CHASSIS GROUND BUS BAR	INCLUDED
POLICE PANEL	
POLICE PANEL SWITCHES	SIGNALS ON/OFF, AUTO/FLASH
POLICE PANEL PUSHBUTTON ALARM	NONE
POLICE DOOR LOCK	CONVENTIONAL (SKELETON KEY)
POLICE PANEL MANUAL CORD	NONE
AUXILIARY PANEL	
AUXILIARY PANEL SWITCHES	AUTO/FLASH, STOP TIME, CONTROLLER POWER, COORD, CABINET LIGHT, HEATER BYPASS
DETECTOR TEST SWITCHES	TACTILE PUSHBUTTON
FORCE OFF SWITCHES	TACTILE PUSHBUTTON
RACK DETECTION	
DETECTOR RACKS	FOUR (4) 16-CHANNEL DETECTOR RACKS. TWO THE THE RACKS SHALL BE CONFIGURED WITH 2 SLOTS EACH FOR OPTICOM.
DETECTOR RACK POWER SUPPLY	BIU FOR EACH RACK
EVP REQUIREMENTS	WIRING FOR GREEN SENSE MONITORING
ADDITIONAL OPTIONS	
RAILROAD PREEMPTION	INCLUDED
RAILROAD PREEMPTION/STAND ALONE PANEL	NO
RED JUMPERS FOR ALL UNUSED PHASES	INCLUDED
LOAD RESISTORS	(8) INCLUDED - LEFT SIDE OF CABINET
HEATER RECEPTACLE (SINGLE)	INCLUDED - RIGHT SIDE OF CABINET
DUPLEX GFI OUTLET (NON-FILTERED)	INCLUDED - RIGHT SIDE OF CABINET
QUAD CONVENIENCE OUTLET - FILTERED	INCLUDED - LEFT SIDE OF CABINET
ADDITIONAL NEUTRAL BUS BARS	(1) 32 POSITION BUS BAR LEFT SIDE OF CABINET
ADDITIONAL CHASSIS GROUND BUS BARS	(1) 32 POSITION BUS BAR LEFT SIDE OF CABINET
STANDARD WIRING DIAGRAM (AUTOCAD FORMAT)	PROVIDE: (3) PAPER SETS FOR CABINET, SIGNAL TECH AND TRAFFIC, (1) ACAD ON DISC, (1) PDF.
GTT OPTICOM 757 HARNESS	INCLUDED - WIRED INTO CABINET
GTT OPTICOM 768 AUXILIARY INTERFACE PANEL	INCLUDED - WIRED INTO CABINET
GENERATOR BYPASS COMPARTMENT	INCLUDED - MOUNT COMPARTMENT FLUSH AND ON INSIDE OF CONTROLLER CABINET DOOR. SEE SPECIAL PROVISIONS FOR OTHER REQUIREMENTS.

CONTROLLER ASSEMBLY EQUIPMENT

SUPPLY ALL LABOR, EQUIPMENT AND MATERIALS TO PROVIDE A FULLY FUNCTIONING TRAFFIC SIGNAL CONTROLLER ASSEMBLY COMPLIANT WITH THE NEMA STANDARD PUBLICATION NO. TS2-2003 V02.06 AND SPECIAL "SPECIALS" PROVISIONS OF THIS CONTRACT INCLUDING BUT NOT LIMITED TO;

QTY	CONTROLLER/MMU EQUIPMENT
1	ECON COBALT ATC TOUCH 2100 CONTROLLER (TS2 TYP 2
1	CONTROLLER TELEMETRY MODULE TCM-FSK-9 OR APPROVED EQUAL
1	CONTROLLER ETHERNET PORT
1	CONTROLLER DATA KEY
1	EDI MMU2-16LE1P
1	MMU2 CARD
QTY	**CABINET EQUIPMENT**
16	PDC SSS-87-I/O LOAD SWITCHES OR APPROVED EQUAL
0	EDI ORACLE4E DETECTOR AMPLIFIERS OR APPROVED EQUAL
8	DETROL CONTROLS 295 FLASH TRANSFER RELAYS OR APPROVED EQUAL
2	EDI BIU700 TERMINAL AND FACILITIES BIU'S OR APPROVED EQUAL
0	EDI BIU700 DETECTION BIU'S OR APPROVED EQUAL
1	EDI PS250 TS2 CABINET POWER SUPPLY OR APPROVED EQUAL
1	PDC SSF-87 FLASHER OR APPROVED EQUAL
1	R1 RELAY
1	600/900/1500W SELECTABLE THERMOSTATICALLY CONTROLLED CABINET HEATER, MOUNT ON DOOR
1	RE-SEALABLE PRINT POUCH OF SUFFICIENT SIZE TO ACCOMMODATE CABINET PRINTS
1	COMPLETE SET OF MANUALS FOR CONTROLLER, MMU2, AND VEHICLE DETECTOR AMPLIFIERS

COMMUNICATION EQUIPMENT SCHEDULE

QTY	COPPER INTERCONNECT SYSTEM
1	ACTELIS ML698E WITH FOUR 10/100X PORTS AND ONE OPTIONAL 1000BASE SFP PORT OR APPROVED EQUAL
1	AC POWER ADAPTER 506R00006 OR APPROVED EQUAL
4	3 FOOT CAT6 PATCH CABLE
1	SFP OPTICS 100BASE FX SM 1310NM 15KM LC MODULE 506R00032 OR APPROVED EQUAL
1	CARRIER-CLASS ELEMENT MANAGMENT SYSTEM
2	QUAD DSL CABLES 504R20110 OR APPROVED EQUAL
1	WALL MOUNTING KIT 510R21080 OR APPROVED EQUAL
QTY	**FIBER INTERCONNECT EQUIPMENT**
0	ACTELIS NETWORKS MODEL ML530 WITH TWO 100/1000 BASE FX SFP PORTS AND FOUR PORTS OF 10/100 BASE-T OR APPROVED EQUAL
0	AC POWER ADAPTER 506R00006 OR APPROVED EQUAL
0	3 FOOT CAT6 PATCH CABLE
0	SFP OPTICS 100BASE FX SM 1310NM 15KM LC MODULE 506R00032 OR APPROVED EQUAL
0	CARRIER-CLASS ELEMENT MANAGEMENT SYSTEM
0	LC DUPLEX SM FIBER OPTIC CABLE ASSEMBLY 3 METERS OR APPROVED EQUAL
0	WALL MOUNTING KIT 510R21080 OR APPROVED EQUAL
QTY	**OTHER EQUIPMENT**
0	RSL910 ETHERNET SWITCH (COPPER AND FIBER) OR APPROVED EQUAL
QTY	**EVP EQUIPMENT**
1	OPTICOM MODEL 764 PHASE SELECTOR
QTY	**RADAR EQUIPMENT**
0	CLICK! 650 (102-0416)
1	CLICK! 656 (102-0451)
1	INSTALLER KIT
1	7' SDLC CABLE - 15 PIN SCREW TO 15 PIN SPRING CLIP (SDLC-TS2-7)
0	3' SDLC CABLE - 15 PIN SCREW TO 15 PIN SPRING CLIP (SDLC-TS2-3)
1	SDLC 6 PORT INTERFACE PANEL (SDLC-IP6)

STATE OF ALASKA
PROJECT ENGINEER
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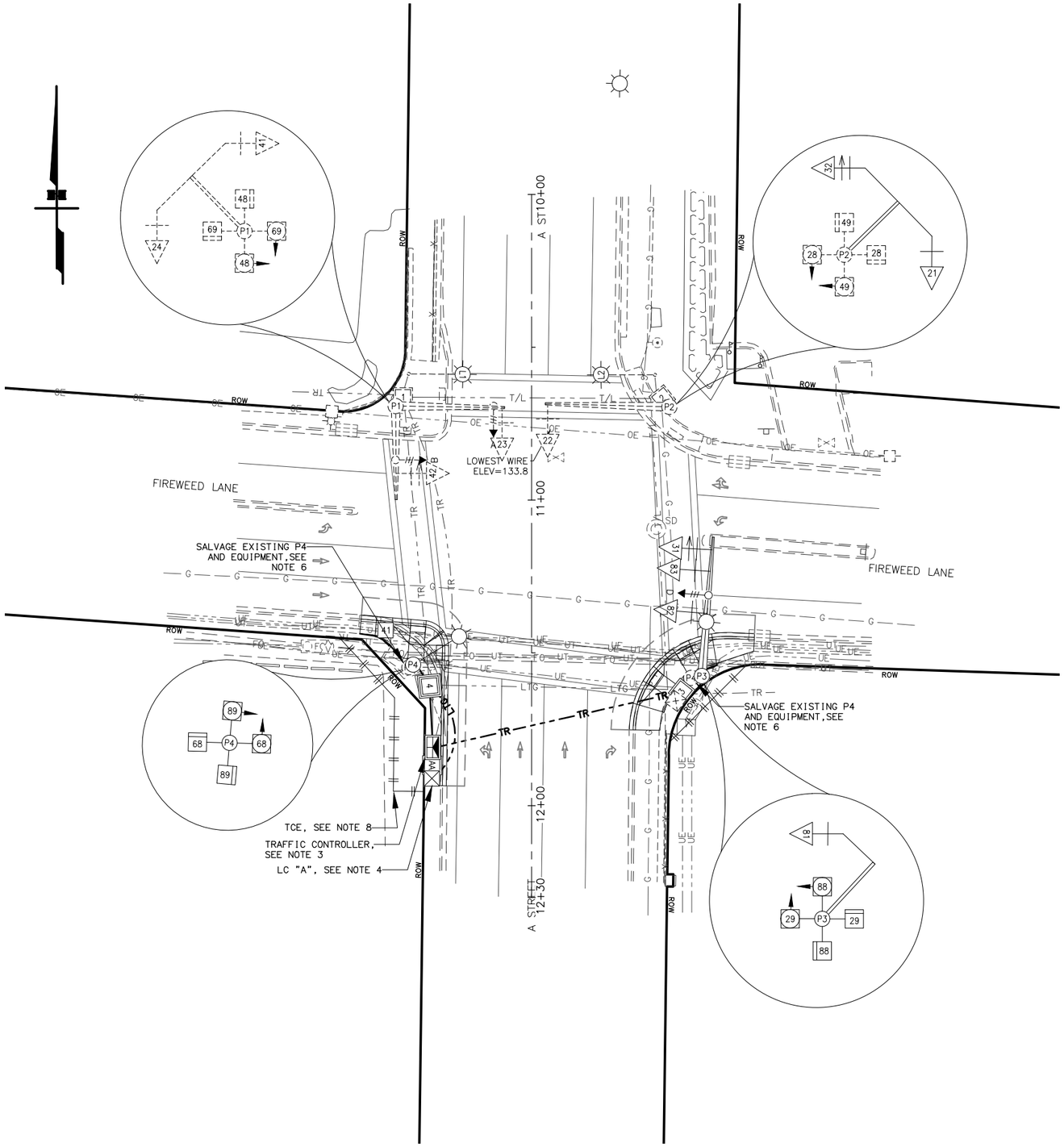
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

MINNESOTA DR & 26TH AVE: CABINET EQUIPMENT

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HE1	HE6



FOUNDATION SCHEDULE

ITEM	STATION ALIGNMENT	OFFSET	STRUCTURE	REMARKS
LC	11+90.0	39.4 RT	LOAD CENTER TYPE 1A	NEW
TC	11+80.9	33.3 RT	NEW TRAFFIC CONTROLLER	NEW
P1	-	-	SIGNAL POLE	EXISTING
P2	-	-	SIGNAL POLE	EXISTING
P3	11+57.6	55.8 LT	SIGNAL POLE	NEW STEEL PILE FOUNDATION
P4	11+53.90	38.7 RT	SIGNAL POLE	NEW STEEL PILE FOUNDATION

JUNCTION BOX SCHEDULE

J-BOX	STATION ALIGNMENT	OFFSET	TYPE	REMARKS
AA	11+86.8	32.5 RT	2	NEW
1	-	-	2	EXISTING
2	-	-	2	EXISTING
3	11+63.8	47.0 LT	2	NEW
41	11+42.5	47.6 RT	1A	NEW
4	11+60.9	33.4 RT	3	NEW

OPTICOM DETECTOR SCHEDULE

DETECTOR ID	LOCATION	PHASE CALL	FACING DIRECTION	MODEL	REMARKS
A	POLE 2 MASTARM	2	S	721	EXISTING
B	POLE 1 MASTARM	4	E	721	EXISTING
D	POLE 3 MASTARM	8, 3	W	721	NEW

NOTES:

1. CONTRACTOR SHALL MAINTAIN AND PROTECT ALL SIGNAL COMPONENTS SHOWN WITH NO ANTICIPATED IMPACT. IN ADDITION, UNLESS OTHERWISE DIRECTED BY THE ENGINEER:
   A. CONDUIT RUNS MAY BE INTERCEPTED (AS APPROVED BY THE ENGINEER).
   B. SIGNAL AND INTERCONNECT CONDUCTORS SHALL NOT BE INTERCEPTED. IMPACTED SIGNAL CONDUCTORS SHALL BE REPLACED CONTINUOUSLY FROM THE CONTROLLER CABINET.
   C. STREET LIGHT CONDUCTORS SHALL NOT BE INTERCEPTED.
2. CONTRACTOR SHALL MAINTAIN AND PROTECT ALL JUNCTION BOXES SHOWN WITH NO ANTICIPATED IMPACT.
3. REMOVE EXISTING TRAFFIC CONTROLLER ASSEMBLY. INSTALL NEW TRAFFIC CONTROLLER ASSEMBLY ON NEW VAULT FOUNDATION. EXISTING CONDUIT RUN AND CABLES TO REMAIN IN PLACE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
4. REMOVE EXISTING LOAD CENTER ASSEMBLY AND FOUNDATION. INSTALL NEW LOAD CENTER ON NEW FOUNDATION AT EXISTING STATION AND OFFSET. COORDINATE POWER SHUT-OFF AND TURN-ON CEA.
5. REPLACE J-BOXES 3, 4, AND 41, THIS MAY REQUIRE ADDING CONDUIT EXTENSIONS. IN THE EVENT CONDUIT EXTENSIONS ARE NEEDED, CONTRACTOR SHALL PULL CONDUCTORS FROM CONDUITS AND PROTECT AND PRESERVE IN PLACE BEFORE ADJUSTING CONDUITS, THEN RE-PULL CONDUCTORS THROUGH. THIS WORK AND MATERIALS SHALL BE INCIDENTAL TO THE CONTRACT.
6. DISCONNECT AND REMOVE EXISTING CABLES CONNECTED TO EXISTING SIGNAL. PULL EXISTING LIGHTING CABLES FROM POLE 3 TO NEAREST J-BOX AND RE-INSTALL TO NEW POLE THROUGH NEW CONDUIT. INSTALL NEW LIGHTING CABLE FROM LC"A" TO NEW POLE 4 THROUGH THE NEW CONDUIT RUN.
7. REMOVE EXISTING LOAD CENTER ASSEMBLY AND FOUNDATION. BACKFILL AND GRADE TO MATCH EXISTING GROUND. COORDINATE POWER SHUT-OFF AND TURN ON WITH CEA.
8. TCE OF 20' X 10' REQUIRED FOR THE INSTALLATION OF CONTROLLER FOUNDATION, LOAD CENTER, AND BORING NEW CONDUIT FROM THE TRAFFIC CONTROLLER TO J-BOX 3.
9. HPS LUMINAIRES ON POLES L1, L2, 3 & 4 ARE TO BE REPLACED WITH A GE ERL2-25-D5-30 OR EQUIVALENT.

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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

A ST & FIREWEED LN: SIGNAL SYSTEM PLAN

DESIGNED BY MTB
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SCALE 1" = 20'
DATE 4/24/2025 TIME 2:12 PM
DRAWING LOCATION C:\DOWL_PW\D0414549\00944_HE1-HE6.DWG

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HE2	HE6

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DATE 4/21/2025 TIME 4:30 PM
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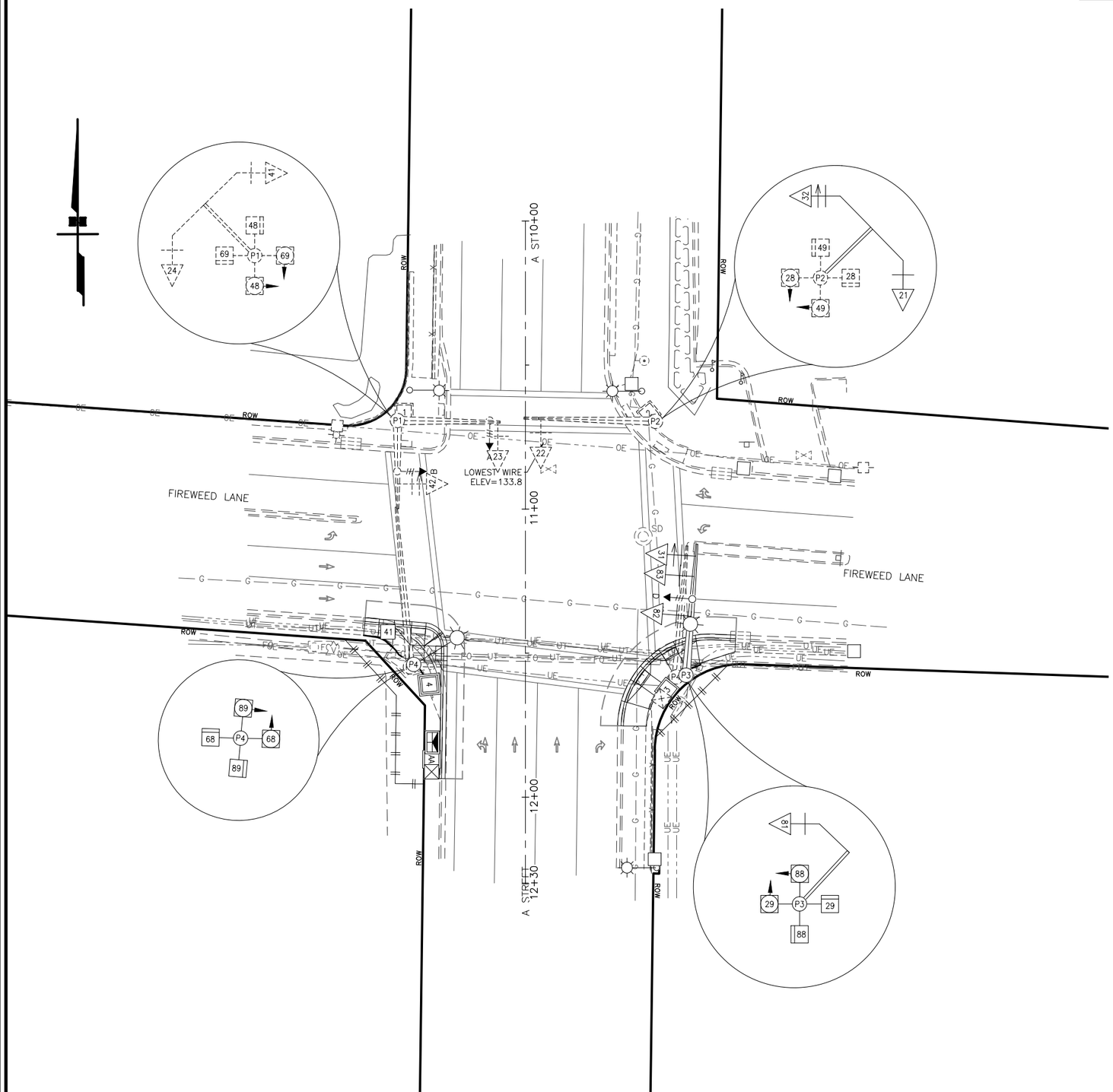
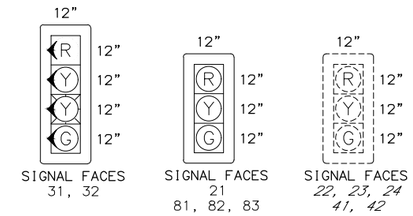
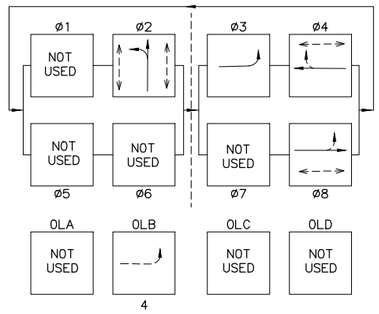




SIGNAL HEAD CONFIGURATIONS



PHASING SEQUENCE DIAGRAM

PREEMPTION DWELL PHASE
VEHICLE MOVEMENTS

CHANNEL A: PHASES 2
CHANNEL B: PHASES 4
CHANNEL D: Phases 8 + 3

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A ST & FIREWEED LN: SIGNAL OPERATION PLAN

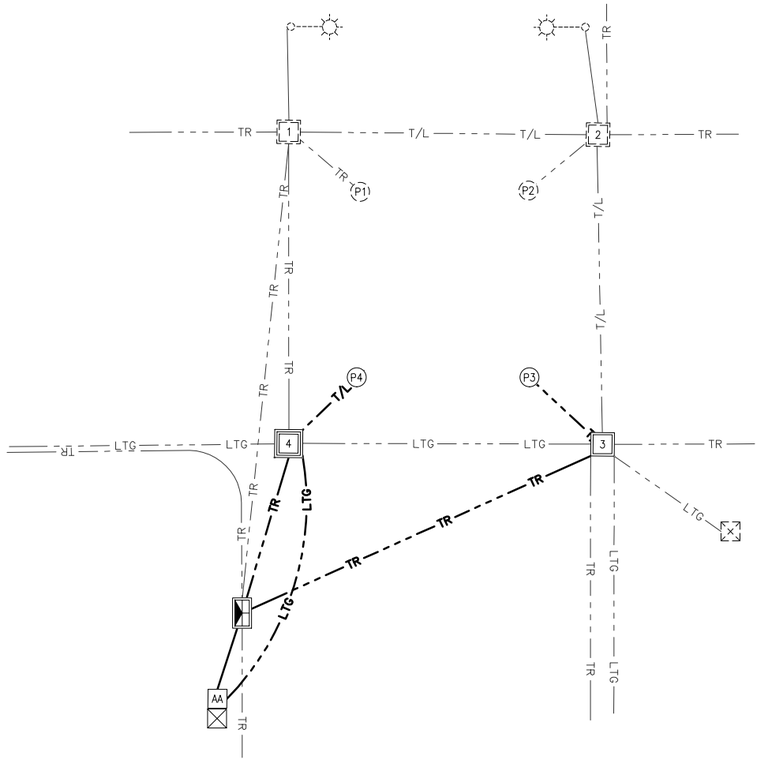
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HE3	HE6

CABLE & CONDUIT SCHEDULE

RUN	CONDUIT		CABLES	NOTES	CONDUIT FILL
LC–4	**NEW–2**	RMC	**NEW(1–3C8)**	INTXL	13%
	NEW–2	RMC	SPARE		
LC–TC	**NEW–2**	RMC	**NEW(1–3C6)**	POWER	15%
TC–1	EX–3	RMC	EX(7–7C14, 4–5C14, 4–3C14, 1–15PR18, 3–2C12)	SIGNAL, DETECTION	40%
TC–3	EX–3	RMC	EX(2–25PR19, 2–2C12)	SIGNAL, I/C "16TH"	26%
	NEW–3	RMC	**NEW(4–7C14, 2–5C14, 3–3C14, 1–3C20)**	SIGNAL	18%
TC–4	**NEW–3**	RMC	**NEW(2–5C14, 2–3C14, 1–CAT5E)**	SIGNAL	17%
	NEW–2	RMC	SPARE		
1–P1	EX–3	RMC	EX(4–7C14, 2–5C14, 2–3C14)	SIGNAL	32%
	EX–2	RMC	EX(2–3C14, 2–3C20)	SIGNAL	11%
1–2	EX–3	RMC	EX(3–7C14, 2–5C14, 2–3C14, 1–15PR18, 2–2C12)	SIGNAL, DETECTION	24%
	EX–2	RMC	EX(1–3C8)	HWY LIGHTING	13%
	EX–3	RMC	SPARE		
1–4	EX–3	RMC	EX(2–3C14, 2–3C20)	SIGNAL	5%
2–P2	EX–2	RMC	EX(3–7C14, 2–5C14, 2–3C14)	SIGNAL	28%
	EX–2	RMC	SPARE		
2–3	EX–2	RMC	EX(1–25PR19)	I/C "16TH"	24%
	EX–2	RMC	EX(1–3C8)	HWY LIGHTING	13%
	EX–3	RMC	SPARE		
3–P3	**NEW–3**	RMC	**NEW(4–7C14, 2–5C14, 3–3C14, 1–3C20)**	SIGNAL	34%
	NEW–2	RMC	**NEW(1–3C8)**	INTXL	13%
	NEW–2	RMC	SPARE		
3–4	EX–2	RMC	EX(1–3C8) **NEW(1–3C8)**	INTXL, HWY LIGHITNG	26%
	EX–3	RMC	SPARE	SIGNAL	
4–P4	**NEW–3**	RMC	**NEW(2–5C14, 2–3C14, 1–CAT5E)**	SIGNAL	17%
	NEW–2	RMC	**NEW(1–3C8)**	INTXL	13%
	NEW–2	RMC	SPARE		
1–WEST	EX–2	RMC	EX(1–2C12)	DETECTION	4%
2–NORTH	EX–2	RMC	EX(1–3C8)	HWY LIGHTING	13%
	EX–2	RMC	EX(2–2C12, 1–25PR19)	DETECTION, I/C "16TH"	31%
3–EAST	EX–2	RMC	EX(1–2C12)	DETECTION	4%
3–SOUTH	EX–2	RMC	EX(1–3C8)	HWY LIGHTING	13%
	EX–2	RMC	EX(1–25PR19)	I/C "NORTHERN LIGHTS"	24%
4–WEST	EX–2	RMC	EX(1–3C8)	HWY LIGHTING	13%
2–EAST	EX–2	RMC	EX(1–15PR18)	DETECTION	16%

EX– EXISTING CABLES
INTXL– INTERSECTION LIGHTING



NOTES:

1. 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 CIRCUIT CONDUCTOR.
2. DETECTOR LOOPS NOT SHOWN FOR CLARITY.

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

A ST & FIREWEED LN: WIRING DIAGRAM

PS&E REVIEW

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562–2000
AECL848

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DATE TIME 4/8/2025 4:49 PM
DRAWING LOCATION C:\DOWL_PW\D0414549\00944_HE1–HE6.DWG

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HE4	HE6

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GENERAL LC NOTES:

1. ALL CIRCUIT BREAKERS SHALL BE RATED FOR OPERATION AT −20°F.
2. LOAD CENTER OUTAGES SHALL BE SCHEDULED DURING DAYLIGHT HOURS AND BE COMPLETE PRIOR TO DUSK THE SAME DAY.
3. SALVAGE EXISTING SKYLINE−STYLE LOAD CENTER.

SUMMARY OF NEW LOAD CENTER 'A'

LOAD CENTER TYPE:	TYPE 1A
MAINTAINED BY:	MUNICIPALITY OF ANCHORAGE
SERVING UTILITY:	CHUGACH ELECTRIC ASSOCIATION
SERVICE CONDUIT TYPE:	RIGID METAL CONDUIT
LOCATION DATA	
LOAD CENTER:	A STREET AND FIREWEED LANE
POWER SOURCE:	NEW LINE EXTENSION
PHOTOELECTRIC CONTROL:	AT LOAD CENTER
SERVICE VOLTAGE:	120/240V, 1−PHASE, 3−WIRE WITH GROUNDED NEUTRAL
PROVIDE METER SOCKET:	NEW
MAIN BREAKER A:	240V, 100A, 2−POLE
CONTACTOR 1:	600V, 12−POLE, 30A
AIC RATING:	10,000A

PANEL A

CKT	AMP TRIP	DESCRIPTION	CKT KVA	AØ	BØ	CKT KVA	DESCRIPTION	AMP TRIP	CKT
1	40/1	TC	3.8	3.9		0.1	PHOTOCELL	15/2	2
3			0.0		0.1	0.1			4
5	20/2	INTX LUM*	1.0	1.0		0.0	SPARE	20/2	6
7			1.0		1.0	0.0			8
9			0.0	0.0		0.0			10
11			0.0		0.0	0.0			12
13			0.0	0.0		0.0			14
15			0.0		0.0	0.0			16
17			0.0	0.0		0.0			18
* = THROUGH CONTACTOR				4.9	1.1	TOTAL KVA			6.0
						AMPS			25.0

SHORT CIRCUIT CALCULATION − LC 'A'

TRANSFORMER RATING	25KVA
VOLTAGE	120/240V
TRANSFORMER IMPEDANCE	1.2%
AVAILABLE SHORT CIRCUIT CURRENT AT TRANSFORMER SECONDARY	8,680A
FEEDER CONDUCTOR LENGTH	150'
FEEDER CONDUCTOR SIZE	2 AWG ALUM
CONDUIT	PVC
MAXIMUM FAULT CURRENT	2,126A
DATE CALCULATED	1/29/2025

ARC FLASH CALCULATION − LC 'A'

INCIDENT ENERGY	3.99 cal/cm²
ARC−FLASH BOUNDARY	38"
WORKING DISTANCE	18"
INSULATING GLOVES CLASS	00
NOMINAL SYSTEM VOLTAGE	240V
LIMITED APPROACH BOUNDARY	42"
RESTRICTED APPROACH BOUNDARY	12"
CALCULATION DATE	1/29/2025

STATE OF ALASKA
49TH
PRE-PS&E
ROY N. PACE
EE−12053
REGISTERED PROFESSIONAL ENGINEER

EDC, INC.
1500 WEST 33RD AVE
ANCHORAGE, AK 99503
(907) 257−0601
CERT. OF AUTH. NO. AECC705

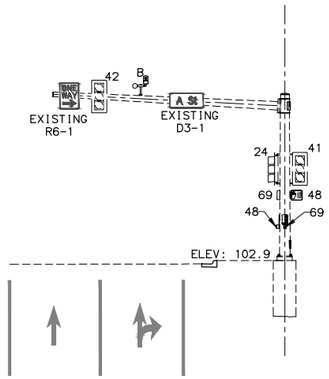
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

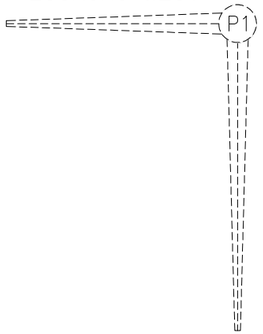
A ST & FIREWEED LN: LOAD CENTER SCHEDULE

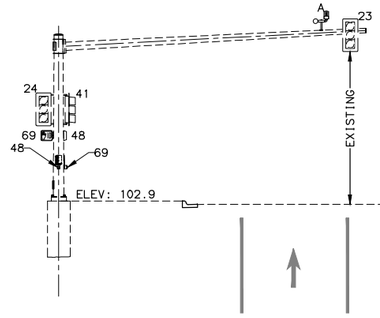
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HE5	HE6

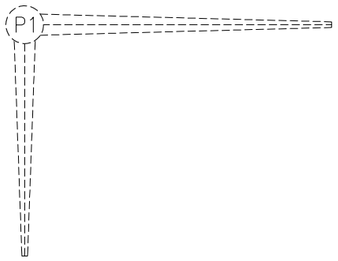


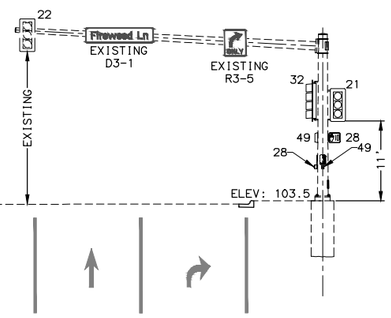
SIGNAL POLE 1
LOOKING WEST





SIGNAL POLE 1
LOOKING NORTH

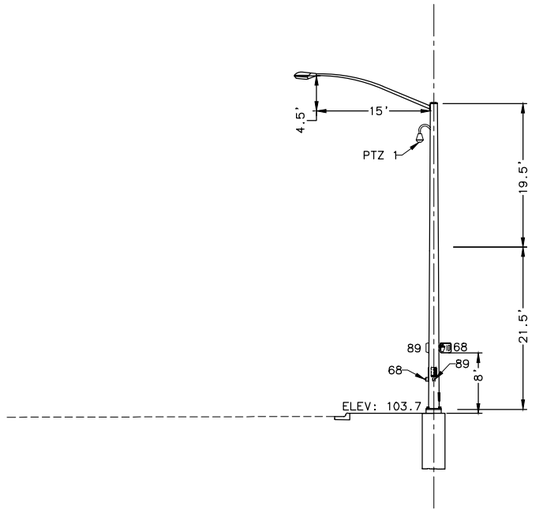




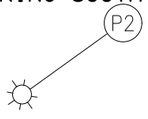
SIGNAL POLE 2
LOOKING NORTH

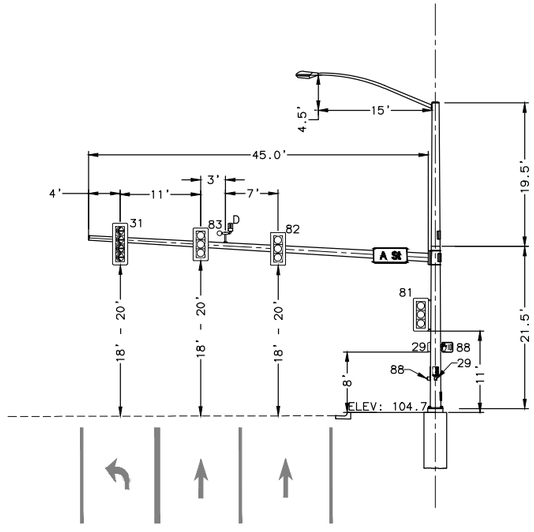
NOTES:

1. ELEVATIONS ARE TO THE TOP OF THE FOUNDATION AND ARE APPROXIMATE.
2. LANE MARKINGS ARE SHOWN FOR REFERENCE ONLY.
3. SIGNAL HEAD LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL VERIFY SIGNAL HEAD PLACEMENT WITH RECEIVING AND APPROACH LANE OFFSETS.

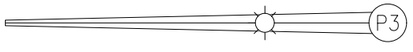


SIGNAL POLE 4
LOOKING SOUTH





SIGNAL POLE 3
LOOKING EAST



DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

A ST & FIREWEED LN: POLE ELEVATIONS

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ALASKA	0001750/CFHWY01334	2025	HE6	HE6

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CONTROLLER CABINET FEATURES

GENERAL OPTIONS	
TYPE	TS2-1
SIZE	NEMA SIZE 6
MATERIALS	0.125" NATURAL ALUMINUM
MODEL	WESTERN SYSTEMS NEMA TS2-1P
EXTENDER BASE	NONE
MOUNTING HARDWARE	INCLUDED
PAINT	YES-SEE SPECIAL PROVISIONS
SPECIAL OPTIONS	
LIFTING TABS	INCLUDED
EQUIPMENT SHELF	(2) FULL WIDTH, (1) LAPTOP DRAWER
AIR FILTER	FIBER MESH
MAIN DOOR LOCK	BEST
REAR DOOR	NONE
LED LIGHT FIXTURES	SEE SPECIAL PROVISIONS FOR OTHER REQUIREMENT
MAIN PANEL	
MAIN PANEL POSITION	16-POSITION HORIZONTAL
FLASH TRANSFER RELAYS SOCKETS	(8) INCLUDED
FLASHER SOCKET	(1) INCLUDED
R1 RELAY SOCKET	INCLUDED
POWER PANEL	
SURGE SUPPRESSION	SHP300-10
LINE FILTER (RADIO INTERFERENCE)	50A
SOLID STATE CONTACTOR	NORMALLY OPEN, 50A
MAIN CIRCUIT BREAKER	40A
AUXILIARY CIRCUIT BREAKER	20A
3 POSITION TERMINAL BLOCK FOR INCOMING POWER, #2-#8 U.S.G.	INCLUDED
16 POSITION NEUTRAL BUS BAR	INCLUDED
16 POSITION CHASSIS GROUND BUS BAR	INCLUDED
POLICE PANEL	
POLICE PANEL SWITCHES	SIGNALS ON/OFF, AUTO/FLASH
POLICE PANEL PUSHBUTTON ALARM	NONE
POLICE DOOR LOCK	CONVENTIONAL (SKELETON KEY)
POLICE PANEL MANUAL CORD	NONE
AUXILIARY PANEL	
AUXILIARY PANEL SWITCHES	AUTO/FLASH, STOP TIME, CONTROLLER POWER, COORD, CABINET LIGHT, HEATER BYPASS
DETECTOR TEST SWITCHES	TACTILE PUSHBUTTON
FORCE OFF SWITCHES	TACTILE PUSHBUTTON
RACK DETECTION	
DETECTOR RACKS	FOUR (4) 16-CHANNEL DETECTOR RACKS. TWO THE THE RACKS SHALL BE CONFIGURED WITH 2 SLOTS EACH FOR OPTICOM.
DETECTOR RACK POWER SUPPLY	BIU FOR EACH RACK
EVP REQUIREMENTS	WIRING FOR GREEN SENSE MONITORING
ADDITIONAL OPTIONS	
RAILROAD PREEMPTION	INCLUDED
RAILROAD PREEMPTION/STAND ALONE PANEL	NO
RED JUMPERS FOR ALL UNUSED PHASES	INCLUDED
LOAD RESISTORS	(8) INCLUDED - LEFT SIDE OF CABINET
HEATER RECEPTACLE (SINGLE)	INCLUDED - RIGHT SIDE OF CABINET
DUPLEX GFI OUTLET (NON-FILTERED)	INCLUDED - RIGHT SIDE OF CABINET
QUAD CONVENIENCE OUTLET - FILTERED	INCLUDED - LEFT SIDE OF CABINET
ADDITIONAL NEUTRAL BUS BARS	(1) 32 POSITION BUS BAR LEFT SIDE OF CABINET
ADDITIONAL CHASSIS GROUND BUS BARS	(1) 32 POSITION BUS BAR LEFT SIDE OF CABINET
STANDARD WIRING DIAGRAM (AUTOCAD FORMAT)	PROVIDE: (3) PAPER SETS FOR CABINET, SIGNAL TECH AND TRAFFIC, (1) ACAD ON DISC, (1) PDF.
GTT OPTICOM 757 HARNESS	INCLUDED - WIRED INTO CABINET
GTT OPTICOM 768 AUXILIARY INTERFACE PANEL	INCLUDED - WIRED INTO CABINET
GENERATOR BYPASS COMPARTMENT	INCLUDED - MOUNT COMPARTMENT FLUSH AND ON INSIDE OF CONTROLLER CABINET DOOR. SEE SPECIAL PROVISIONS FOR OTHER REQUIREMENTS.

CONTROLLER ASSEMBLY EQUIPMENT

SUPPLY ALL LABOR, EQUIPMENT AND MATERIALS TO PROVIDE A FULLY FUNCTIONING TRAFFIC SIGNAL CONTROLLER ASSEMBLY COMPLIANT WITH THE NEMA STANDARD PUBLICATION NO. TS2-2003 V02.06 AND SPECIAL "SPECIALS" PROVISIONS OF THIS CONTRACT INCLUDING BUT NOT LIMITED TO;

QTY	CONTROLLER/MMU EQUIPMENT
1	ECON COBALT ATC TOUCH 2100 CONTROLLER (TS2 TYP 2
1	CONTROLLER TELEMETRY MODULE TCM-FSK-9 OR APPROVED EQUAL
1	CONTROLLER ETHERNET PORT
1	CONTROLLER DATA KEY
1	EDI MMU2-16LEIP
1	MMU2 CARD
QTY	**CABINET EQUIPMENT**
16	PDC SSS-87-I/O LOAD SWITCHES OR APPROVED EQUAL
16	EDI ORACLE4E DETECTOR AMPLIFIERS OR APPROVED EQUAL
8	DETROL CONTROLS 295 FLASH TRANSFER RELAYS OR APPROVED EQUAL
2	EDI BIU700 TERMINAL AND FACILITIES BIU'S OR APPROVED EQUAL
4	EDI BIU700 DETECTION BIU'S OR APPROVED EQUAL
1	EDI PS250 TS2 CABINET POWER SUPPLY OR APPROVED EQUAL
1	PDC SSF-87 FLASHER OR APPROVED EQUAL
1	R1 RELAY
1	600/900/1500W SELECTABLE THERMOSTATICALLY CONTROLLED CABINET HEATER, MOUNT ON DOOR
1	RE-SEALABLE PRINT POUCH OF SUFFICIENT SIZE TO ACCOMMODATE CABINET PRINTS
1	COMPLETE SET OF MANUALS FOR CONTROLLER, MMU2, AND VEHICLE DETECTOR AMPLIFIERS

COMMUNICATION EQUIPMENT SCHEDULE

QTY	COPPER INTERCONNECT SYSTEM
1	ACTELIS ML698E WITH FOUR 10/100X PORTS AND ONE OPTIONAL 1000BASE SFP PORT OR APPROVED EQUAL
1	AC POWER ADAPTER 506R00006 OR APPROVED EQUAL
4	3 FOOT CAT6 PATCH CABLE
1	SFP OPTICS 100BASE FX SM 1310NM 15KM LC MODULE 506R00032 OR APPROVED EQUAL
1	CARRIER-CLASS ELEMENT MANAGMENT SYSTEM
2	QUAD DSL CABLES 504R20110 OR APPROVED EQUAL
1	WALL MOUNTING KIT 510R21080 OR APPROVED EQUAL
QTY	**FIBER INTERCONNECT EQUIPMENT**
0	ACTELIS NETWORKS MODEL ML530 WITH TWO 100/1000 BASE FX SFP PORTS AND FOUR PORTS OF 10/100 BASE-T OR APPROVED EQUAL
0	AC POWER ADAPTER 506R00006 OR APPROVED EQUAL
0	3 FOOT CAT6 PATCH CABLE
0	SFP OPTICS 100BASE FX SM 1310NM 15KM LC MODULE 506R00032 OR APPROVED EQUAL
0	CARRIER-CLASS ELEMENT MANAGEMENT SYSTEM
0	LC DUPLEX SM FIBER OPTIC CABLE ASSEMBLY 3 METERS OR APPROVED EQUAL
0	WALL MOUNTING KIT 510R21080 OR APPROVED EQUAL
QTY	**OTHER EQUIPMENT**
0	RSL910 ETHERNET SWITCH (COPPER AND FIBER) OR APPROVED EQUAL
QTY	**EVP EQUIPMENT**
1	OPTICOM MODEL 764 PHASE SELECTOR
QTY	**RADAR EQUIPMENT**
0	CLICK! 650 (102-0416)
0	CLICK! 656 (102-0451)
0	INSTALLER KIT
0	7' SDLC CABLE - 15 PIN SCREW TO 15 PIN SPRING CLIP (SDLC-TS2-7)
0	3' SDLC CABLE - 15 PIN SCREW TO 15 PIN SPRING CLIP (SDLC-TS2-3)
0	SDLC 6 PORT INTERFACE PANEL (SDLC-IP6)

STATE OF ALASKA
PROFESSIONAL ENGINEER
PROJECT ENGINEER
PSSE REVIEW

DOWL, LLC
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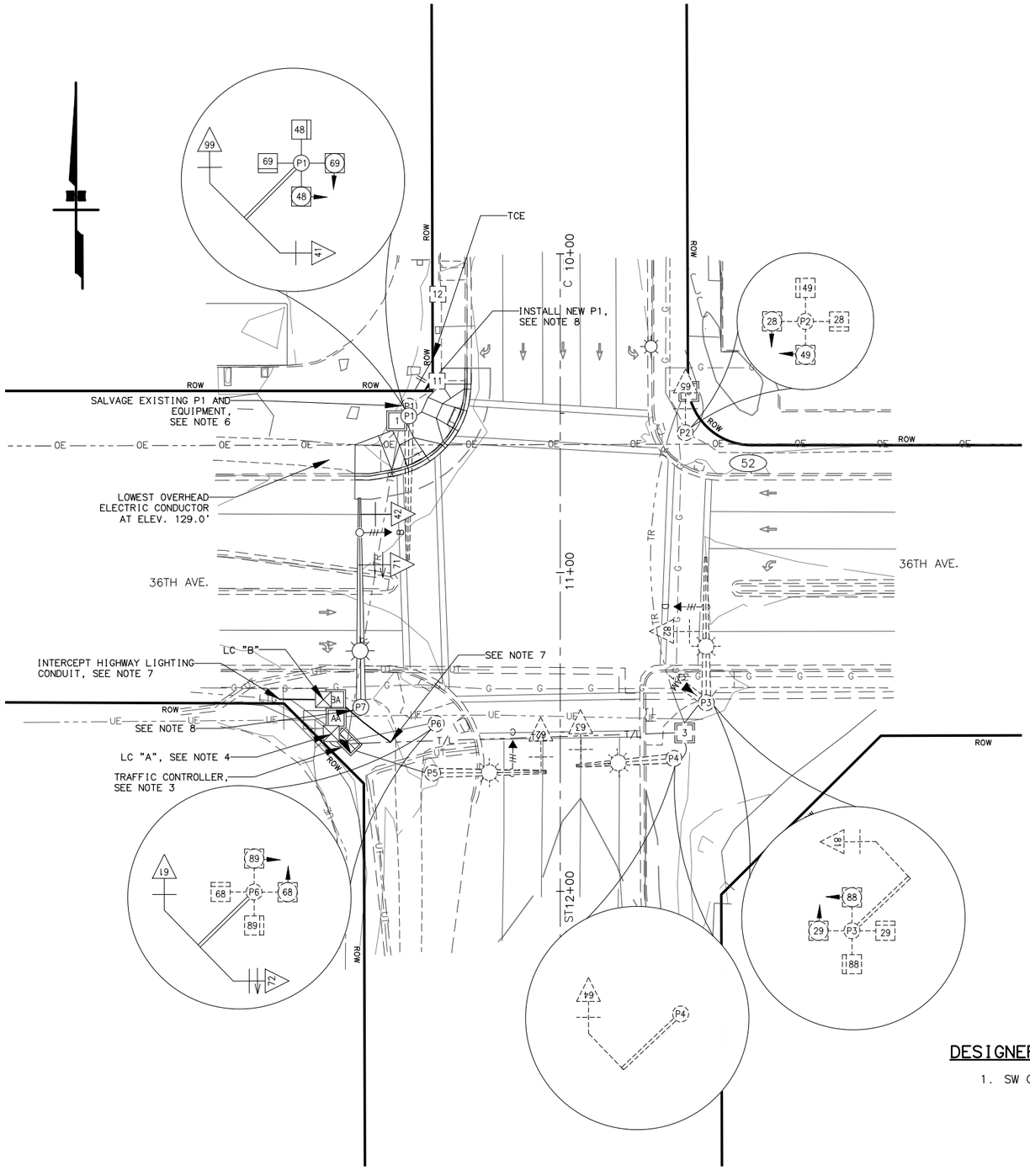
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

A ST & FIREWEED LN: CABINET EQUIPMENT

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HF1	HF6



FOUNDATION SCHEDULE

ITEM	STATION ALIGNMENT	OFFSET	STRUCTURE	REMARKS
LC "A"	11+50.4	72.0 RT	TYPE 1A LOAD CENTER	NEW
LC "B"	11+39.9	74.3 RT	TYPE 1A LOAD CENTER	NEW
TC	-	-	NEW TRAFFIC CONTROLLER	EXISTING
P1	10+50.5	47.5 RT	SIGNAL POLE 1	NEW CONCRETE FOUNDATION ASP-L30.12
P2	-	-	PEDESTRIAN SIGNAL POLE	EXISTING
P3	-	-	SIGNAL POLE 3	EXISTING
P4	-	-	SIGNAL POLE 4	EXISTING
P5	-	-	SIGNAL POLE 5	EXISTING
P6	-	-	SIGNAL POLE 6	EXISTING
P7	11+42.2	63.5 RT	SIGNAL POLE 7	NEW STEEL PILE FOUNDATION

JUNCTION BOX SCHEDULE

J-BOX	STATION ALIGNMENT	OFFSET	TYPE	REMARKS
1	-	-	2	NEW
2	-	-	2	EXISTING
3	-	-	2	EXISTING
AA	11+45.7	70.3 RT	2	NEW
BA	11+39.9	70.3 RT	2	NEW

OPTICOM DETECTOR SCHEDULE

DETECTOR ID	LOCATION	PHASE CALL	FACING DIRECTION	MODEL	REMARKS
B	P1 MAST ARM	4,7	E	711	NEW
C	P5 MAST ARM	6	N	721	EXISTING
D	P3 MAST ARM	8	W	711	EXISTING

NOTES:

1. CONTRACTOR SHALL MAINTAIN AND PROTECT ALL SIGNAL COMPONENTS SHOWN WITH NO ANTICIPATED IMPACT. IN ADDITION, UNLESS OTHERWISE DIRECTED BY THE ENGINEER:
   A. CONDUIT RUNS MAY BE INTERCEPTED (AS APPROVED BY THE ENGINEER).
   B. SIGNAL AND INTERCONNECT CONDUCTORS SHALL NOT BE INTERCEPTED.IMPACTED SIGNAL CONDUCTORS SHALL BE REPLACED CONTINUOUSLY FROM THE CONTROLLER CABINET.
   C. STREET LIGHT CONDUCTORS SHALL NOT BE INTERCEPTED.
2. CONTRACTOR SHALL MAINTAIN AND PROTECT ALL JUNCTION BOXES SHOWN WITH NO ANTICIPATED IMPACT.
3. REMOVE EXISTING TRAFFIC CONTROLLER ASSEMBLY. INSTALL NEW TRAFFIC CONTROLLER ASSEMBLY ON EXISTING FOUNDATION. EXISTING CONDUIT RUN AND CABLES TO REMAIN IN PLACE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
4. REMOVE EXISTING LOAD CENTER ASSEMBLY AND FOUNDATION.INSTALL NEW LOAD CENTER ON FOUNDATION AT EXISTING STATION AND OFFSET. COORDINATE POWER SHUT-OFF AND TURN-ON WITH CEA.
5. REPLACE J-BOX 1. THIS MAY REQUIRE ADDING CONDUIT EXTENSIONS. IN THE EVENT CONDUIT EXTENSIONS ARE NEEDED, CONTRACTOR SHALL PULL CONDUCTORS FROM CONDUITS AND PROTECT AND PRESERVE IN PLACE BEFORE ADJUSTING CONDUITS, THEN RE-PULL CONDUCTORS THROUGH. THIS WORK AND MATERIALS SHALL BE INCIDENTAL TO THE CONTRACT.
6. DISCONNECT AND REMOVE EXISTING CABLES CONNECTED TO EXISTING SIGNAL AND LIGHTING EQUIPMENT.
7. HIGHWAY LIGHITNG CABLES SHALL BE REMOVED FROM THE TRAFFIC CONTROLLER VAULT AND ROUTED DIRECTLY TO LC"B", THIS WILL REQUIRE INTERCEPTING HIGHWAY LIGHTING CONDUIT RUNS TC-3 AND TC-WEST. CONTRACTOR SHALL PULL CONDUCTORS FROM CONDUITS AND PROTECT AND PRESERVE IN PLACE BEFORE ADJUSTING CONDUITS, THEN RE-PULL CONDUCTORS THROUGH. THIS WORK AND MATERIALS SHALL BE INCIDENTAL TO THE CONTRACT.
8, SIGNAL POLE 7 SHALL BE INSTALLED ON THE SOUTH WEST CORNER TO AVOID CONFLICT WITH OVERHEAD ELECTRIC ON THE NORTH WEST CORNER. ADD NEW LUMINAIRE, A GE ERL2-25-D5-30 OR EQUIVALENT.

DESIGNER NOTES:

1. SW CORNER POLE CONFIGURATION TO BE UPDATED IN FINAL DESIGN

DOWL, LLC
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PS&E REVIEW

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

C ST & 36TH AVE: SIGNAL SYSTEM PLAN

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DATE TIME 4/24/2025 2:14 PM
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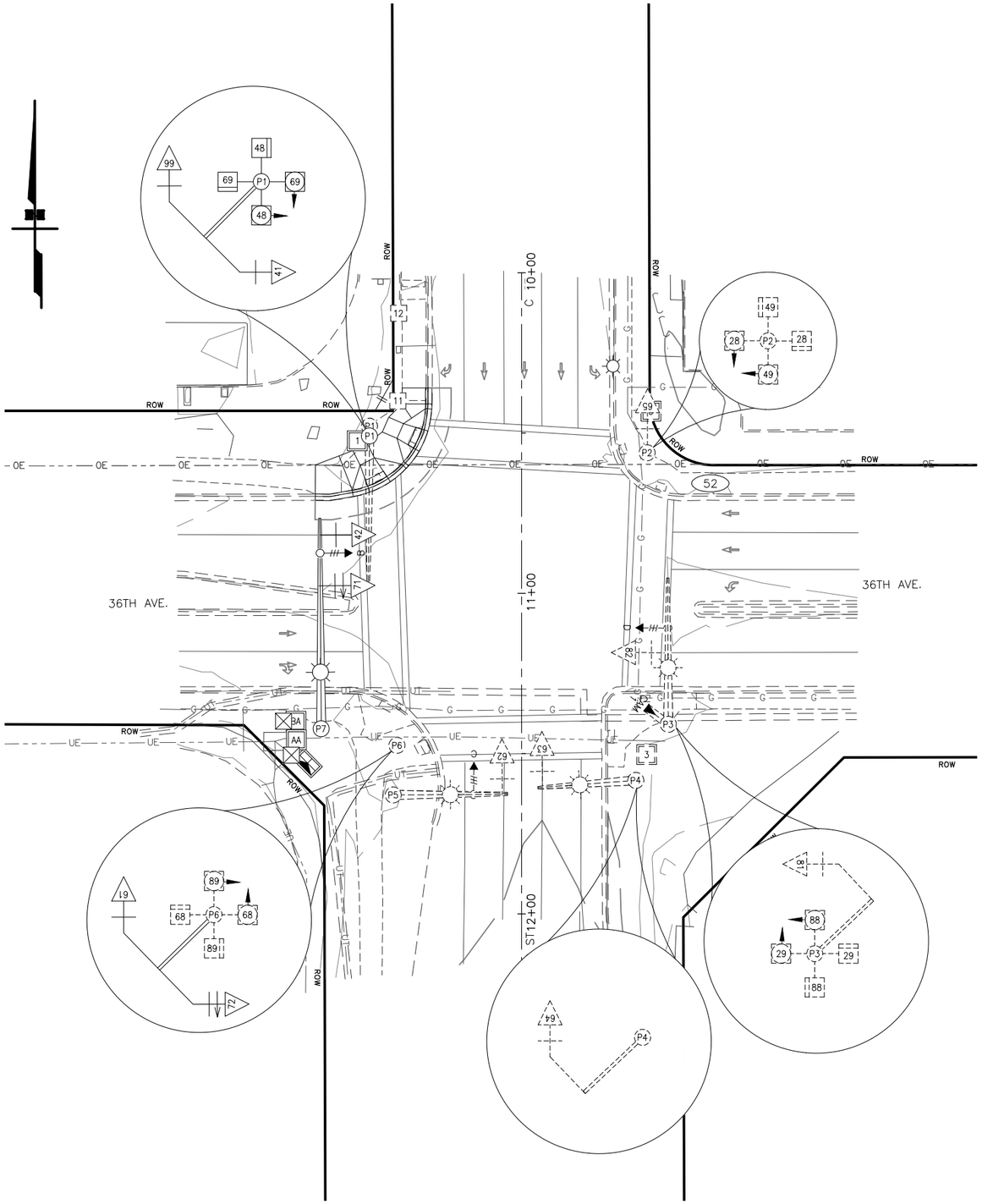
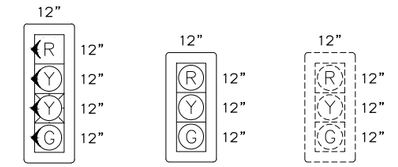
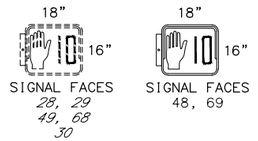
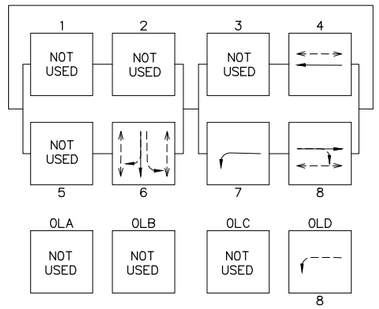
ALASKA	0001750/CFHWY01334	2025	HF2	HF6







SIGNAL HEAD CONFIGURATIONS



PREEMPTION DWELL PHASE AND VEHICLE MOVEMENTS

CHANNEL A: NOT USED
CHANNEL B: PHASE 7 + 4
CHANNEL C: PHASE 6
CHANNEL D: PHASE 8

PHASE DIAGRAM

PROTECTED VEHICLE MOVEMENT

PERMISSIVE VEHICLE MOVEMENT

PEDESTRIAN MOVEMENT

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C ST & 36TH AVE: SIGNAL OPERATION PLAN

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SCALE 1" = 20'
DATE 4/21/2025 TIME 4:32 PM
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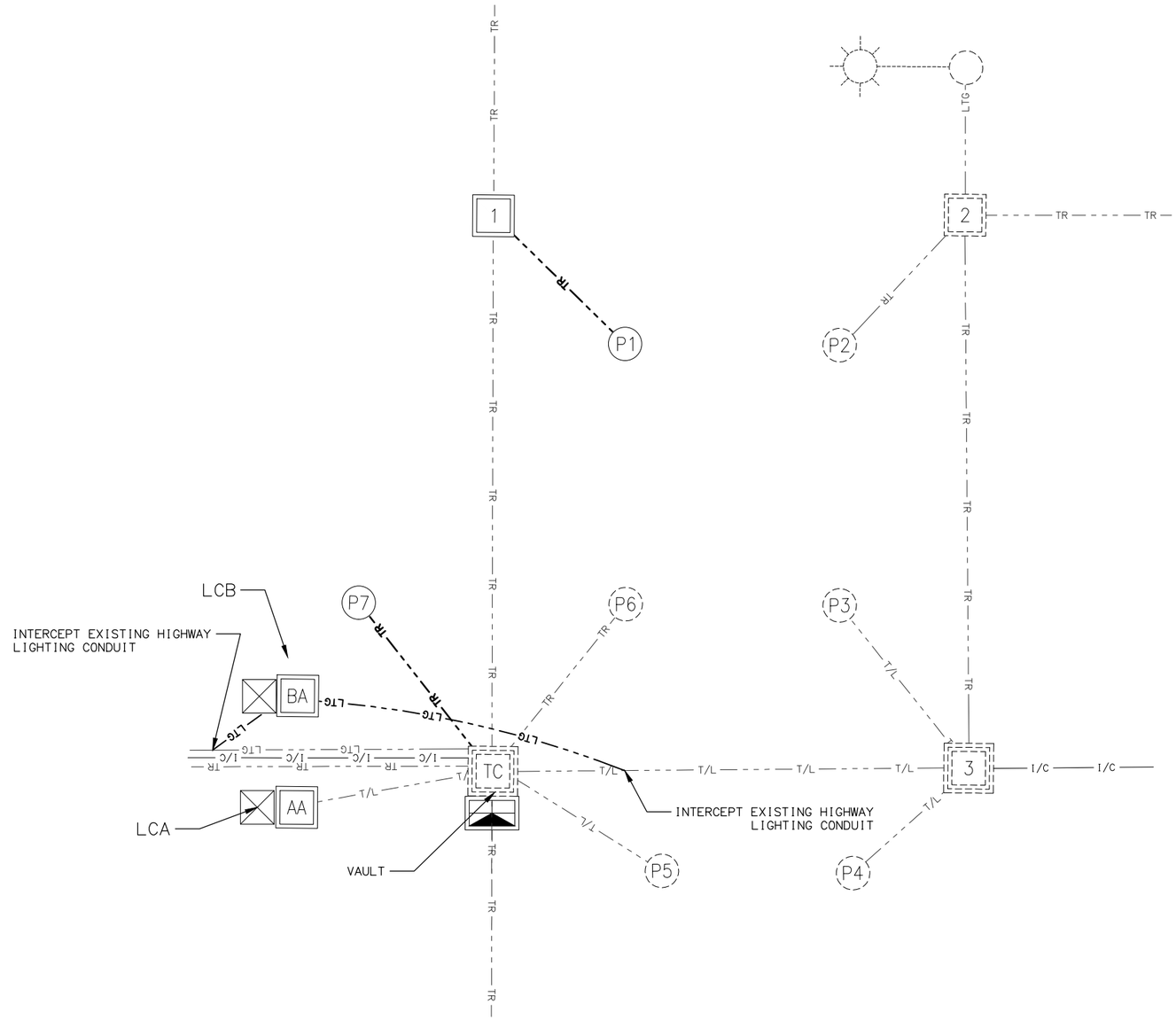
CABLE & CONDUIT SCHEDULE

RUN	CONDUIT		CABLES	NOTES	CONDUIT FILL
LCB–3	EX–2	RMC	EX(3–1C6)	HWY LIGHTING	7%
LCB–WEST	EX–2	RMC	EX(3–1C6)	HWY LIGHTING	7%
LCA–TC	EX–2	RMC	**NEW(1–3C6)**	SIG CKT, INTXL	15%
	EX–2	RMC	EX(1–3C8)	INTXL	13%
TC–1	EX–3	RMC	**NEW (2–7C14, 2–5C14, 2–3C14)**	SIGNAL	25%
	EX–2	RMC	(4–7PR18)	DETECTION	34%
TC–3	EX–2.5	RMC	EX(4–7C14, 2–5C14, 3–3C14, 1–3C20, 1–CAT5)	SIGNAL	28%
	EX–2.5	RMC	EX(1–7C14, 2–5C14, 2–3C14, 3–7PR18)	SIGNAL, DETECTION	32%
	EX–2	RMC	EX(3–1C6, 1–3C8)	INTXL, HWY LIGHTING	20%
	EX–2	RMC	EX(1–25PR19)	I/C "A ST"	24%
TC–P5	EX–2	RMC	EX(1–7C14, 1–3C14, 1–3C20)	SIGNAL	11%
	EX–2	RMC	**NEW(1–3C8)**	INTXL	13%
TC–P6	EX–2	RMC	EX(2–7C14, 2–5C14, 2–3C14)	SIGNAL	24%
TC–P7	**NEW–2**	RMC	**NEW(3–7C14, 1–3C14, 1–3C20)**	SIGNAL	21%
1–P1	**NEW–3**	RMC	**NEW (2–7C14, 2–5C14, 2–3C14)**	SIGNAL	25%
2–3	EX–3	RMC	EX(1–7C14, 2–5C14, 2–3C14, 3–7PR18)	SIGNAL	26%
	EX–2	RMC	EX(1–3C8)	INTXL	13%
	EX–2	RMC	SPARE		
2–P2	EX–2	RMC	EX(1–7C14, 2–5C14, 2–3C14)	SIGNAL	20%
3–P3	EX–2.5	RMC	EX(2–7C14, 2–5C14, 3–3C14, 1–3C20, 1–CAT5)	SIGNAL	29%
	EX–2	RMC	EX(1–3C8)	INTXL	13%
3–P4	EX–2	RMC	EX(2–7C14)	SIGNAL	11%
	EX–2	RMC	EX(1–3C8)	INTXL	13%
TC–WEST	EX–2	RMC	EX(1–25PR19)	I/C "EUREKA ST"	24%
	EX–2	RMC	EX(1–6PR18)	DETECTION	8%
TC–SOUTH	EX–2	RMC	EX(2–2C12)	DETECTION	7%
	EX–2	RMC	EX(4–7PR18)	DETECTION	16%
2–EAST	EX–2	RMC	EX(3–7PR18)	DETECTION	26%
3–EAST	EX–2	RMC	EX(1–25PR19)	I/C "A ST"	24%
	EX–2	RMC	EX(3–1C6)	HWY LIGHTING	7%

INTXL– INTERSECTION LIGHTING
I/C INTERCONNECT



NOTES:

1. UNLESS OTHERWISE NOTIFIED, 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 CIRCUIT CONDUCTOR.
2. DETECTOR LOOPS NOT SHOWN FOR CLARITY.

PSE REVIEW

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562–2000
AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

C ST & 36TH AVE: WIRING DIAGRAM

DESIGNED BY MTB
CHECKED BY
DRAFTED BY
SCALE
DATE TIME 4/21/2025 9:03 AM
DRAWING LOCATION C:\DOWL_PW\D0414549\00944_HF1–HF6.DWG

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HF4	HF6

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DRAFTED BY

SCALE

DATE TIME
4/24/2025 10:55 AM

DRAWING LOCATION
C:\DOWL_PW\D0414549\00944_HF1-HF6.DWG

GENERAL LC NOTES:

1. ALL CIRCUIT BREAKERS SHALL BE RATED FOR OPERATION AT −20°F.
2. LOAD CENTER OUTAGES SHALL BE SCHEDULED DURING DAYLIGHT HOURS AND BE COMPLETE PRIOR TO DUSK THE SAME DAY.
3. DEMOLISH EXISTING LOAD CENTER.

SUMMARY OF NEW LOAD CENTER 'A'

LOAD CENTER TYPE:	TYPE 1A
MAINTAINED BY:	MUNICIPALITY OF ANCHORAGE
SERVING UTILITY:	CHUGACH ELECTRIC ASSOCIATION
SERVICE CONDUIT TYPE:	RIGID METAL CONDUIT

LOCATION DATA

LOAD CENTER:	C STREET AND 36TH AVENUE
POWER SOURCE:	NEW LINE EXTENSION
PHOTOELECTRIC CONTROL:	AT LOAD CENTER
SERVICE VOLTAGE:	240/480V, 1-PHASE, 3-WIRE
PROVIDE METER SOCKET:	NEW
MAIN BREAKER A:	240, 50A, 2-POLE (TRANSFORMER PRIMARY)
MAIN BREAKER B:	240, 100A, 2-POLE
CONTACTOR 1:	600V, 12-POLE, 30A
AIC RATING:	10,000A

PANEL A (240V, THROUGH TRANSFORMER)

CKT	AMP TRIP	DESCRIPTION	CKT KVA	AØ	BØ	CKT KVA	DESCRIPTION	AMP TRIP	CKT
1	40/1	TC	3.8	3.9		0.1	PHOTOCELL	15/2	2
3			0.0		0.0	0.1			4
5	20/2	INTX LTG*	1.0	1.0		0.0	SPARE	20/2	6
7			1.0		1.0	0.0			8
9			0.0	0.0		0.0			10
11			0.0		0.0	0.0			12
13			0.0	0.0		0.0			14
15			0.0		0.0	0.0			16
17			0.0	0.0		0.0			18
* = THROUGH CONTACTOR				4.9	1.1	TOTAL KVA			6.0
				AMPS					25.0

SHORT CIRCUIT CALCULATION – LC 'A'

TRANSFORMER RATING	25KVA
VOLTAGE	240/480V
TRANSFORMER IMPEDANCE	1.2%
AVAILABLE SHORT CIRCUIT CURRENT AT TRANSFORMER SECONDARY	4,340A
FEEDER CONDUCTOR LENGTH	200'
FEEDER CONDUCTOR SIZE	2 AWG ALUM
CONDUIT	PVC
MAXIMUM FAULT CURRENT	2,271A
DATE CALCULATED	1/29/2025

ARC FLASH CALCULATION – LC 'A'

INCIDENT ENERGY	6.65 cal/cm²
ARC-FLASH BOUNDARY	53"
WORKING DISTANCE	18"
INSULATING GLOVES CLASS	00
NOMINAL SYSTEM VOLTAGE	480V
LIMITED APPROACH BOUNDARY	42"
RESTRICTED APPROACH BOUNDARY	12"
CALCULATION DATE	1/29/2025

SUMMARY OF NEW LOAD CENTER 'B'

LOAD CENTER TYPE:	TYPE 1A
MAINTAINED BY:	STATE OF ALASKA
SERVING UTILITY:	CHUGACH ELECTRIC ASSOCIATION
SERVICE CONDUIT TYPE:	RIGID METAL CONDUIT

LOCATION DATA

LOAD CENTER:	C STREET AND 36TH AVENUE
POWER SOURCE:	NEW LINE EXTENSION
PHOTOELECTRIC CONTROL:	AT LOAD CENTER
SERVICE VOLTAGE:	240/480V, 1-PHASE, 3-WIRE
PROVIDE METER SOCKET:	NEW
MAIN BREAKER A:	240, 100A, 2-POLE
CONTACTOR 1:	600V, 12-POLE, 30A
AIC RATING:	10,000A

PANEL A

CKT	AMP TRIP	DESCRIPTION	CKT KVA	AØ	BØ	CKT KVA	DESCRIPTION	AMP TRIP	CKT
1	20/2	EAST LTG*	0.5	0.6		0.1	PHOTOCELL	15/2	2
3			0.5		0.6	0.1			4
5	20/2	WEST LTG*	0.8	0.8		0.0	SPARE	20/2	6
7			0.8		0.8	0.0			8
9			0.0	0.0		0.0			10
11			0.0		0.0	0.0			12
13			0.0	0.0		0.0			14
15			0.0		0.0	0.0			16
17			0.0	0.0		0.0			18
* = THROUGH CONTACTOR				1.4	1.4	TOTAL KVA			2.8
				AMPS					11.7

SHORT CIRCUIT CALCULATION – LC 'B'

TRANSFORMER RATING	25KVA
VOLTAGE	240/480V
TRANSFORMER IMPEDANCE	1.2%
AVAILABLE SHORT CIRCUIT CURRENT AT TRANSFORMER SECONDARY	4,340A
FEEDER CONDUCTOR LENGTH	200'
FEEDER CONDUCTOR SIZE	2 AWG ALUM
CONDUIT	PVC
MAXIMUM FAULT CURRENT	2,271A
DATE CALCULATED	1/29/2025

ARC FLASH CALCULATION – LC 'B'

INCIDENT ENERGY	6.65 cal/cm²
ARC-FLASH BOUNDARY	53"
WORKING DISTANCE	18"
INSULATING GLOVES CLASS	00
NOMINAL SYSTEM VOLTAGE	480V
LIMITED APPROACH BOUNDARY	42"
RESTRICTED APPROACH BOUNDARY	12"
CALCULATION DATE	1/29/2025

VOLTAGE DROP CALCULATION – LC 'B'

1-PH, 2W CONFIGURATION, 1 COPPER CONDUCTOR PER PHASE IN RMC.

CKT #	CONDUCTOR SIZE (AWG)	LENGTH	VOLTAGE	POWER FACTOR	LOAD (KVA)	TOTAL (AMPS)	%VD
AA-1,3	8	460'	480	0.90	1.0	2.1	0.21
AA-5,7	8	500'	480	0.90	1.4	2.9	0.29

STATE OF ALASKA
49TH
PRE-PS&E
ROY N. PACE
EE-12053
REGISTERED PROFESSIONAL ENGINEER

EDC, INC.
1500 WEST 33RD AVE
ANCHORAGE, AK 99503
(907) 257-0801
CERT. OF AUTH. NO. AECC705

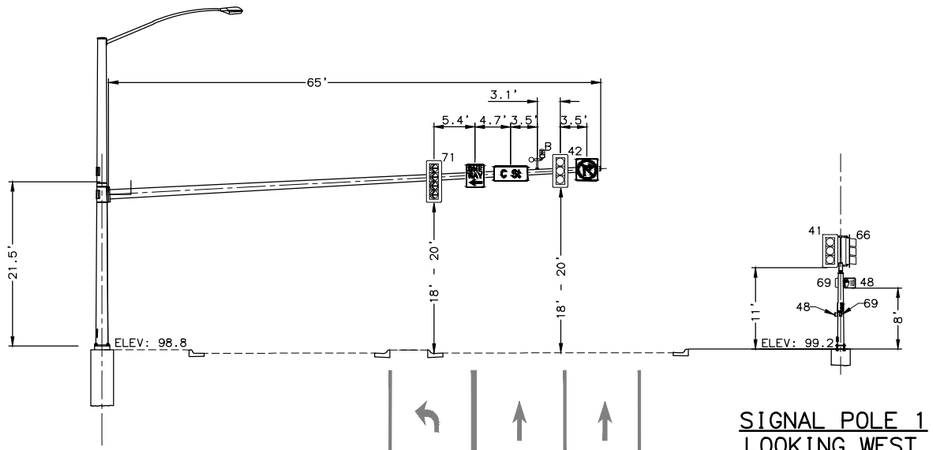
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

C ST & 36TH AVE: LOAD CENTER SCHEDULE

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HF5	HF6

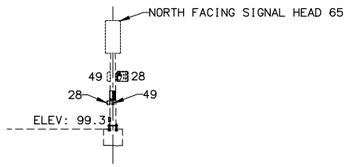


SIGNAL POLE 7
LOOKING WEST

P7

SIGNAL POLE 1
LOOKING WEST

P1

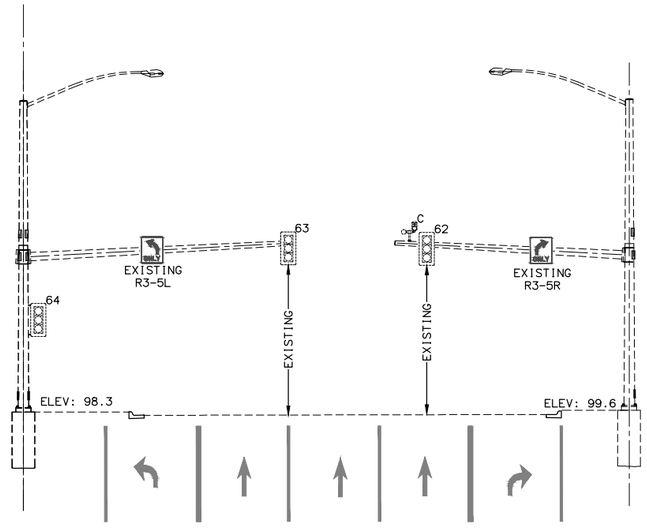


SIGNAL POLE 2
LOOKING NORTH

P2

NOTES:

1. ELEVATIONS ARE TO THE TOP OF THE FOUNDATION AND ARE APPROXIMATE.
2. LANE MARKINGS ARE SHOWN FOR REFERENCE ONLY.
3. SIGNAL HEAD LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL VERIFY SIGNAL HEAD PLACEMENT WITH RECEIVING AND APPROACH LANE OFFSETS.

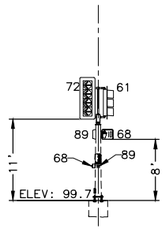


SIGNAL POLE 4
LOOKING SOUTH

P4

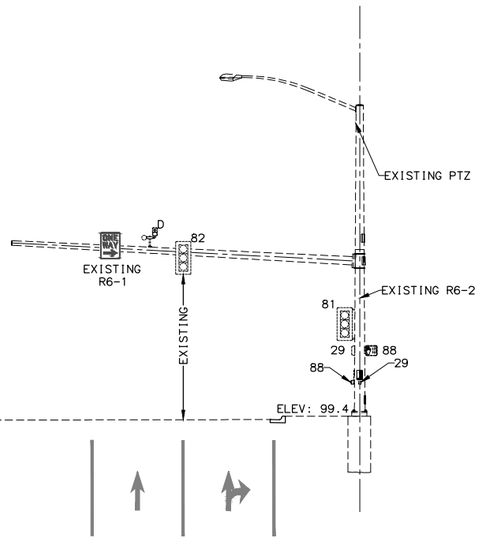
SIGNAL POLE 5
LOOKING SOUTH

P5



SIGNAL POLE 6
LOOKING SOUTH

P6



SIGNAL POLE 3
LOOKING EAST

P3

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

C ST & 36TH AVE: POLE ELEVATIONS

DESIGNED BY MTB
CHECKED BY
DRAFTED BY
SCALE 1" = 10'
DATE TIME 4/24/2025 2:14 PM
DRAWING LOCATION C:\DOWL_PW\D0414549\00944_HF1-HF6.DWG

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HF6	HF6

DESIGNED BY MTB
CHECKED BY
DRAFTED BY
SCALE
DATE TIME 4/21/2025 9:03 AM
DRAWING LOCATION C:\DOWL_PW\D0414549\00944_HF1-HF6.DWG

CONTROLLER CABINET FEATURES

GENERAL OPTIONS	
TYPE	TS2-1
SIZE	NEMA SIZE 6
MATERIALS	0.125" NATURAL ALUMINUM
MODEL	WESTERN SYSTEMS NEMA TS2-1P
EXTENDER BASE	NONE
MOUNTING HARDWARE	INCLUDED
PAINT	YES-SEE SPECIAL PROVISIONS
SPECIAL OPTIONS	
LIFTING TABS	INCLUDED
EQUIPMENT SHELF	(2) FULL WIDTH, (1) LAPTOP DRAWER
AIR FILTER	FIBER MESH
MAIN DOOR LOCK	BEST
REAR DOOR	NONE
LED LIGHT FIXTURES	SEE SPECIAL PROVISIONS FOR OTHER REQUIREMENT
MAIN PANEL	
MAIN PANEL POSITION	16-POSITION HORIZONTAL
FLASH TRANSFER RELAYS SOCKETS	(8) INCLUDED
FLASHER SOCKET	(1) INCLUDED
R1 RELAY SOCKET	INCLUDED
POWER PANEL	
SURGE SUPPRESSION	SHP300-10
LINE FILTER (RADIO INTERFERENCE)	50A
SOLID STATE CONTACTOR	NORMALLY OPEN, 50A
MAIN CIRCUIT BREAKER	40A
AUXILIARY CIRCUIT BREAKER	20A
3 POSITION TERMINAL BLOCK FOR INCOMING POWER, #2-#8 U.S.G.	INCLUDED
16 POSITION NEUTRAL BUS BAR	INCLUDED
16 POSITION CHASSIS GROUND BUS BAR	INCLUDED
POLICE PANEL	
POLICE PANEL SWITCHES	SIGNALS ON/OFF, AUTO/FLASH
POLICE PANEL PUSHBUTTON ALARM	NONE
POLICE DOOR LOCK	CONVENTIONAL (SKELETON KEY)
POLICE PANEL MANUAL CORD	NONE
AUXILIARY PANEL	
AUXILIARY PANEL SWITCHES	AUTO/FLASH, STOP TIME, CONTROLLER POWER, COORD, CABINET LIGHT, HEATER BYPASS
DETECTOR TEST SWITCHES	TACTILE PUSHBUTTON
FORCE OFF SWITCHES	TACTILE PUSHBUTTON
RACK DETECTION	
DETECTOR RACKS	FOUR (4) 16-CHANNEL DETECTOR RACKS. TWO THE THE RACKS SHALL BE CONFIGURED WITH 2 SLOTS EACH FOR OPTICOM.
DETECTOR RACK POWER SUPPLY	BIU FOR EACH RACK
EVP REQUIREMENTS	WIRING FOR GREEN SENSE MONITORING
ADDITIONAL OPTIONS	
RAILROAD PREEMPTION	INCLUDED
RAILROAD PREEMPTION/STAND ALONE PANEL	NO
RED JUMPERS FOR ALL UNUSED PHASES	INCLUDED
LOAD RESISTORS	(8) INCLUDED - LEFT SIDE OF CABINET
HEATER RECEPTACLE (SINGLE)	INCLUDED - RIGHT SIDE OF CABINET
DUPLEX GFI OUTLET (NON-FILTERED)	INCLUDED - RIGHT SIDE OF CABINET
QUAD CONVENIENCE OUTLET - FILTERED	INCLUDED - LEFT SIDE OF CABINET
ADDITIONAL NEUTRAL BUS BARS	(1) 32 POSITION BUS BAR LEFT SIDE OF CABINET
ADDITIONAL CHASSIS GROUND BUS BARS	(1) 32 POSITION BUS BAR LEFT SIDE OF CABINET
STANDARD WIRING DIAGRAM (AUTOCAD FORMAT)	PROVIDE: (3) PAPER SETS FOR CABINET, SIGNAL TECH AND TRAFFIC, (1) ACAD ON DISC, (1) PDF.
GTT OPTICOM 757 HARNESS	INCLUDED - WIRED INTO CABINET
GTT OPTICOM 768 AUXILIARY INTERFACE PANEL	INCLUDED - WIRED INTO CABINET
GENERATOR BYPASS COMPARTMENT	INCLUDED - MOUNT COMPARTMENT FLUSH AND ON INSIDE OF CONTROLLER CABINET DOOR. SEE SPECIAL PROVISIONS FOR OTHER REQUIREMENTS.

CONTROLLER ASSEMBLY EQUIPMENT

SUPPLY ALL LABOR, EQUIPMENT AND MATERIALS TO PROVIDE A FULLY FUNCTIONING TRAFFIC SIGNAL CONTROLLER ASSEMBLY COMPLIANT WITH THE NEMA STANDARD PUBLICATION NO. TS2-2003 V02.06 AND SPECIAL "SPECIALS" PROVISIONS OF THIS CONTRACT INCLUDING BUT NOT LIMITED TO;

QTY	CONTROLLER/MMU EQUIPMENT
1	ECON COBALT ATC TOUCH 2100 CONTROLLER (TS2 TYP 2
1	CONTROLLER TELEMETRY MODULE TCM-FSK-9 OR APPROVED EQUAL
1	CONTROLLER ETHERNET PORT
1	CONTROLLER DATA KEY
1	EDI MMU2-16LEIP
1	MMU2 CARD
QTY	**CABINET EQUIPMENT**
16	PDC SSS-87-I/O LOAD SWITCHES OR APPROVED EQUAL
16	EDI ORACLE4E DETECTOR AMPLIFIERS OR APPROVED EQUAL
8	DETROL CONTROLS 295 FLASH TRANSFER RELAYS OR APPROVED EQUAL
2	EDI BIU700 TERMINAL AND FACILITIES BIU'S OR APPROVED EQUAL
4	EDI BIU700 DETECTION BIU'S OR APPROVED EQUAL
1	EDI PS250 TS2 CABINET POWER SUPPLY OR APPROVED EQUAL
1	PDC SSF-87 FLASHER OR APPROVED EQUAL
1	R1 RELAY
1	600/900/1500W SELECTABLE THERMOSTATICALLY CONTROLLED CABINET HEATER, MOUNT ON DOOR
1	RE-SEALABLE PRINT POUCH OF SUFFICIENT SIZE TO ACCOMMODATE CABINET PRINTS
1	COMPLETE SET OF MANUALS FOR CONTROLLER, MMU2, AND VEHICLE DETECTOR AMPLIFIERS

COMMUNICATION EQUIPMENT SCHEDULE

QTY	COPPER INTERCONNECT SYSTEM
1	ACTELIS ML698E WITH FOUR 10/100X PORTS AND ONE OPTIONAL 1000BASE SFP PORT OR APPROVED EQUAL
1	AC POWER ADAPTER 506R00006 OR APPROVED EQUAL
4	3 FOOT CAT6 PATCH CABLE
1	SFP OPTICS 100BASE FX SM 1310NM 15KM LC MODULE 506R00032 OR APPROVED EQUAL
1	CARRIER-CLASS ELEMENT MANAGMENT SYSTEM
2	QUAD DSL CABLES 504R20110 OR APPROVED EQUAL
1	WALL MOUNTING KIT 510R21080 OR APPROVED EQUAL
QTY	**FIBER INTERCONNECT EQUIPMENT**
0	ACTELIS NETWORKS MODEL ML530 WITH TWO 100/1000 BASE FX SFP PORTS AND FOUR PORTS OF 10/100 BASE-T OR APPROVED EQUAL
0	AC POWER ADAPTER 506R00006 OR APPROVED EQUAL
0	3 FOOT CAT6 PATCH CABLE
0	SFP OPTICS 100BASE FX SM 1310NM 15KM LC MODULE 506R00032 OR APPROVED EQUAL
0	CARRIER-CLASS ELEMENT MANAGEMENT SYSTEM
0	LC DUPLEX SM FIBER OPTIC CABLE ASSEMBLY 3 METERS OR APPROVED EQUAL
0	WALL MOUNTING KIT 510R21080 OR APPROVED EQUAL
QTY	**OTHER EQUIPMENT**
0	RSL910 ETHERNET SWITCH (COPPER AND FIBER) OR APPROVED EQUAL
QTY	**EVP EQUIPMENT**
1	OPTICOM MODEL 764 PHASE SELECTOR
QTY	**RADAR EQUIPMENT**
0	CLICK! 650 (102-0416)
0	CLICK! 656 (102-0451)
0	INSTALLER KIT
0	7' SDLC CABLE - 15 PIN SCREW TO 15 PIN SPRING CLIP (SDLC-TS2-7)
0	3' SDLC CABLE - 15 PIN SCREW TO 15 PIN SPRING CLIP (SDLC-TS2-3)
0	SDLC 6 PORT INTERFACE PANEL (SDLC-IP6)

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

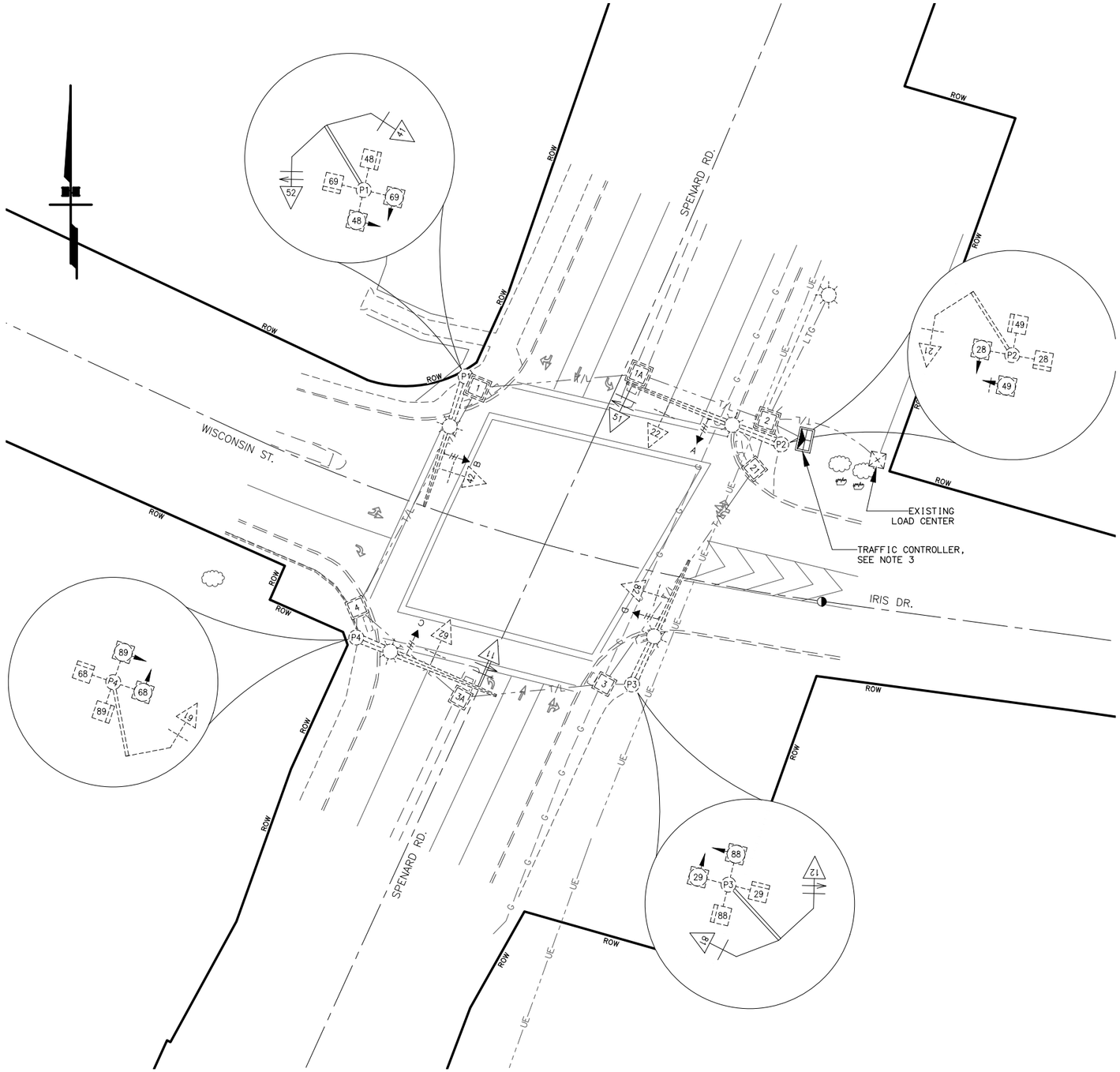
C ST & 36TH AVE: CABINET EQUIPMENT

STATE OF ALASKA
REGISTERED
PROFESSIONAL ENGINEER
PROJECT MANAGER
2025
PSL REVIEW

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HG1	HG6



FOUNDATION SCHEDULE

ITEM	STATION ALIGNMENT	OFFSET	STRUCTURE	REMARKS
LC "A"	-	-	TYPE 2 LOAD CENTER	EXISTING
TC	-	-	NEW TRAFFIC CONTROLLER	EXISTING
P1	-	-	SIGNAL POLE	EXISTING
P2	-	-	SIGNAL POLE	EXISTING
P3	-	-	SIGNAL POLE	EXISTING
P4	-	-	SIGNAL POLE	EXISTING

JUNCTION BOX SCHEDULE

J-BOX	STATION ALIGNMENT	OFFSET	TYPE	REMARKS
1	-	-	3	EXISTING
1A	-	-	3	EXISTING
2	-	-	3	EXISTING
21	-	-	2	EXISTING
3	-	-	2	EXISTING
3A	-	-	2	EXISTING
4	-	-	2	EXISTING

OPTICOM DETECTOR SCHEDULE

LOCATION	DETECTOR ID	PHASE CALL	FACING DIRECTION	MODEL	REMARKS
P1 MAST ARM	B	4	E	711	EXISTING
P2 MAST ARM	A	2, 5	S	721	EXISTING
P3 MAST ARM	D	8	W	711	EXISTING
P4 MAST ARM	C	1, 6	N	721	EXISTING

NOTES:

1. CONTRACTOR SHALL MAINTAIN AND PROTECT ALL SIGNAL COMPONENTS SHOWN WITH NO ANTICIPATED IMPACT. IN ADDITION, UNLESS OTHERWISE DIRECTED BY THE ENGINEER:
   A. CONDUIT RUNS MAY BE INTERCEPTED (AS APPROVED BY THE ENGINEER).
   B. SIGNAL AND INTERCONNECT CONDUCTORS SHALL NOT BE INTERCEPTED.IMPACTED SIGNAL CONDUCTORS SHALL BE REPLACED CONTINUOUSLY FROM THE CONTROLLER CABINET.
   C. STREET LIGHT CONDUCTORS SHALL NOT BE INTERCEPTED.
2. CONTRACTOR SHALL MAINTAIN AND PROTECT ALL JUNCTION BOXES SHOWN WITH NO ANTICIPATED IMPACT.
3. REMOVE EXISTING TRAFFIC CONTROLLER ASSEMBLY. INSTALL NEW TRAFFIC CONTROLLER ASSEMBLY ON EXISTING FOUNDATION. EXISTING CONDUIT RUN AND CABLES TO REMAIN IN PLACE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

SPENARD RD & WISCONSIN ST: SIGNAL SYSTEM PLAN

DESIGNED BY JAW
CHECKED BY ANM
DRAFTED BY DESIGNED BY

SCALE

DATE TIME
4/21/2025 8:58 AM

DRAWING LOCATION
C:\DOWL_PW\D0414549\00944_HG1-HG6.DWG

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HG2	HG6

DESIGNED BY
CHECKED BY
DRAFTED BY

SCALE

DATE TIME
4/21/2025 4:32 PM

DRAWING LOCATION
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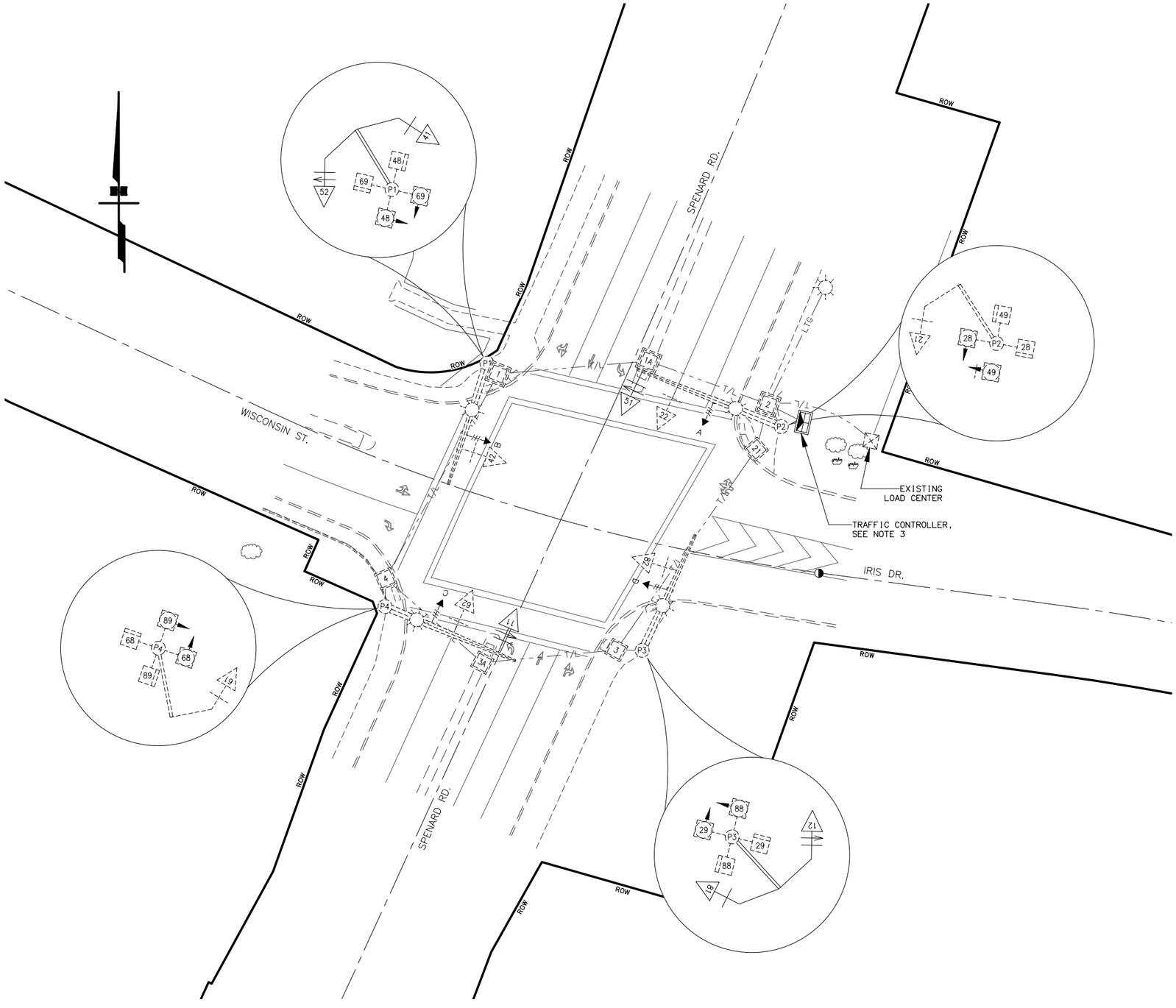


12"
R 12"
Y 12"
Y 12"
G 12"

SIGNAL FACES
11, 12
51, 52

12"
R 12"
Y 12"
G 12"

SIGNAL FACES
41, 81

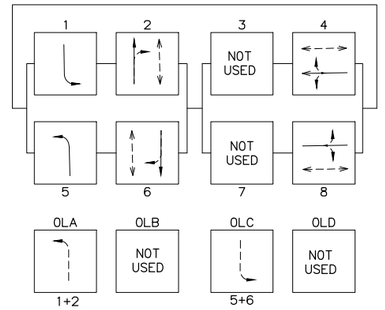
12"
R 12"
Y 12"
G 12"

SIGNAL FACES
21, 22
42
61, 62
82

18"
10 16"

SIGNAL FACES
28, 29
48, 49
68, 69
88, 89

SIGNAL HEAD CONFIGURATIONS



PHASE DIAGRAM

PROTECTED VEHICLE MOVEMENT

PERMISSIVE VEHICLE MOVEMENT

PEDESTRIAN MOVEMENT

PREEMPTION DWELL PHASE AND VEHICLE MOVEMENTS

CHANNEL A: PHASES 2 + 5
CHANNEL B: PHASES 4
CHANNEL C: PHASES 1 + 6
CHANNEL D: PHASES 8

STATE OF ALASKA
PSSC REVIEW
PROJECT ENGINEER
PROFESSIONAL ENGINEER

DOWL, LLC
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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

SPENARD RD & WISCONSIN ST: SIGNAL OPERATION PLAN

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HG3	HG6

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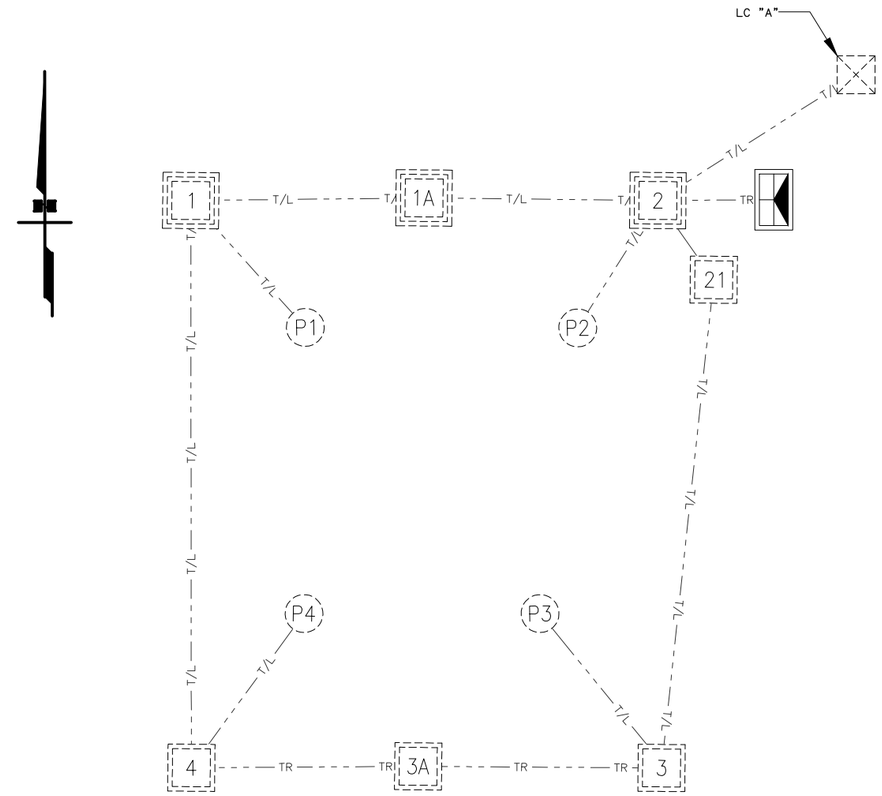
CONDUIT SCHEDULE

RUN #	CONDUIT		CABLES	NOTES	CONDUIT FILL
LC-2	EX-4	RMC	EX(4-3C8, 3-1C6)	INTXL, SIG CKT B 1	17%
TCA-2	EX-4	RMC	EX(3-6PR18, 5-7C14, 8-5C14, 4-3C14) **NEW(1-7C14)**	SIGNAL, DETECTION	24%
	EX-4	RMC	EX(3-6PR18, 5-7C14, 4-3C14) **NEW(1-7C14)**	SIGNAL, DETECTION	17%
	EX-3	RMC	EX(1-25PR19)	I/C	11%
	EX-3	RMC	EX(4-3C20, 1-3C20 (SPARE), 4-3C14)	OPTICOM	11%
	EX-2	RMC	EX(1-25PR19)	I/C	24%
1-P1	EX-2	RMC	EX(2-3C8)	INTXL	25%
	EX-2	RMC	EX(1-3C20, 1-3C14, 1-3C8)	OPTICOM, INTXL	18%
	EX-2	RMC	EX(3-7C14, 2-5C14, 2-3C14)	SIGNAL	30%
1-1A	EX-3	RMC	EX(3-7C14, 2-5C14,2-3C14, 1-6PR18)	SIGNAL, DETECTION	17%
	EX-3	RMC	EX(3-7C14, 2-5C14, 2-3C14)	SIGNAL	13%
	EX-2	RMC	EX(3-3C8, 1-3C4)	INTXL	38%
	EX-2	RMC	EX(2-3C20, 1-3C20 (SPARE), 2-3C14)	OPTICOM	13%
	EX-2	RMC	EX(1-25PR19)	I/C "IOWA"	24%
1-4	EX-3	RMC	EX(3-7C14, 2-5C14, 2-3C14)	SIGNAL	13%
	EX-2	RMC	EX(2-3C8)	INTXL	25%
	EX-2	RMC	EX(1-3C20, 1-3C14)	OPTICOM	5%
1-NORTH	EX-2	RMC	EX(1-3C4, 1-3C8)	STREET LIGHTING	25%
	EX-2	RMC	EX(1-25PR19, 1-6PR18)	I/C "IOWA", DETECTION	31%
1A-NORTH	EX-2	RMC	EX(1-6PR18)	DETECTION	7%
2-P2	EX-3	RMC	EX(2-7C14, 2-5C14, 2-3C14) **NEW(1-7C14)**	SIGNAL	13%
	EX-2	RMC	EX(2-3C8)	INTXL	25%
	EX-2	RMC	EX(1-3C20, 1-3C14)	OPTICOM	5%
2-1A	EX-3	RMC	EX(4-3C8, 3-1C6)	INTXL	29%
	EX-3	RMC	EX(2-7C14, 2-5C14, 2-3C14) **NEW(1-7C14)**	SIGNAL	13%
	EX-3	RMC	EX(2-6PR18, 3-7C14, 2-5C14, 2-3C14)	SIGNAL, DETECTION	20%
	EX-2	RMC	EX(1-25PR19)	I/C "IOWA"	24%
	EX-2	RMC	EX(2-3C20, 1-3C20 (SPARE), 2-3C14)	OPTICOM	13%
2-21	EX-3	RMC	EX(4-6PR18, 2-7C14, 2-5C14, 1-3C14) **NEW(1-7C14)**	SIGNAL, DETECTION	25%
	EX-2	RMC	EX(1-3C20,1-3C14)	OPTICOM	5%
	EX-2	RMC	EX(3-3C8)	INTXL	38%
	EX-2	RMC	EX(1-25PR19)	I/C "INTERNATIONAL AIRPORT"	24%
	EX-3	RMC	EX(4-3C8)	INTXL	23%
21-EAST	EX-2	RMC	EX(1-3C8, 1-6PR18)	STREET LIGHTING, DETECTION	20%
3-P3	EX-2	RMC	EX(2-3C8)	INTXL	25%
	EX-2	RMC	EX(2-7C14, 2-5C14, 2-3C14) **NEW(1-7C14)**	SIGNAL	30%
	EX-2	RMC	EX(1-3C20, 1-3C14)	OPTICOM	5%
3-21	EX-3	RMC	EX(3-6PR18, 2-7C14, 2-5C14, 2-3C14) **NEW(1-7C14)**	DETECTION, SIGNAL	23%
	EX-2	RMC	EX(1-25PR19)	I/C "INTERNATIONAL AIRPORT"	24%
	EX-2	RMC	EX(1-3C20, 1-3C14)	OPTICOM	5%
3-3A	EX-2	RMC	EX(1-6PR18)	DETECTION	7%
	EX-2	RMC	EX(1-6PR18)	DETECTION	7%
3-SOUTH	EX-2	RMC	EX(1-25PR19)	I/C "INTERNATIONAL AIRPORT"	24%
	EX-2	RMC	EX(2-3C8)	STREET LIGHTING	25%
	EX-2	RMC	EX(1-6PR18)	DETECTION	7%
4-P4	EX-2	RMC	EX(1-3C20, 1-3C14)	OPTICOM	5%
	EX-2	RMC	EX(2-3C8)	INTXL	25%
	EX-2	RMC	EX(2-7C14, 2-5C14, 2-3C14) **NEW(1-7C14)**	SIGNAL	30%
4-3A	EX-2	RMC	EX(1-6PR18)	DETECTION	17%
4-SOUTH	EX-2	RMC	EX(2-3C8)	STREET LIGHTING	25%
4-WEST	EX-2	RMC	EX(1-6PR18)	DETECTION	7%
4A-SOUTH	EX-2	RMC	EX(1-6PR18)	DETECTION	7%



NOTES:

1. 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 CIRCUIT CONDUCTOR.
2. DETECTOR LOOPS NOT SHOWN FOR CLARITY.
3. CABLE COUNTS ARE THE FINAL CONFIGURATION. IF ADDITIONAL, UNUSED CABLES ARE PRESENT, THEY ARE TO BE REMOVED BY THE CONTRACTOR.

PS&E REVIEW
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TRAFFIC & PROJECT ENGINEER
REGISTERED PROFESSIONAL ENGINEER

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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

SPENARD RD & WISCONSIN ST: WIRING DIAGRAM

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HG4	HG6

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GENERAL LC NOTES:

1. ALL CIRCUIT BREAKERS SHALL BE RATED FOR OPERATION AT −20°F.
2. LOAD CENTER OUTAGES SHALL BE SCHEDULED DURING DAYLIGHT HOURS AND BE COMPLETE PRIOR TO DUSK THE SAME DAY.

SUMMARY OF EXISTING LOAD CENTER "A"

LOAD CENTER TYPE:	TYPE 1
MAINTAINED BY:	MUNICIPALITY OF ANCHORAGE
SERVING UTILITY:	CHUGACH ELECTRIC ASSOCIATION
SERVICE CONDUIT TYPE:	RIGID METAL CONDUIT
LOCATION DATA	
LOAD CENTER:	SPENARD ROAD AND WISCONSIN STREET
POWER SOURCE:	EXISTING
PHOTOELECTRIC CONTROL:	AT LOAD CENTER
SERVICE VOLTAGE:	120/240V, 1-PHASE, 3-WIRE
PROVIDE METER SOCKET:	EXISTING
MAIN BREAKER A:	240V, 60A, 2-POLE
MAIN BREAKER B:	240V, 50A, 2-POLE
CONTACTOR:	600V, 60A, 12-POLE
AIC RATING:	10,000A

PANEL A

CKT	AMP TRIP	DESCRIPTION	CKT KVA	AØ	BØ	CKT KVA	DESCRIPTION	AMP TRIP	CKT
1	20/2	CKT 1 LTG	2.4		3.8	1.4	CKT 3 LTG	20/2	2
3			2.4	3.8		1.4			4
5	20/2	CKT 2 LTG	0.5		0.5	0.0	SPARE	15/1	6
7			0.5	0.5		0.0			8
9	20/2	PED NORTH LTG*	0.3		0.8	0.5	LTG	20/2	10
11			0.3	0.8		0.5			12
13					0.0				14
15				0.0					16
* = THROUGH CONTACTOR 1				5.1	5.1	PANEL A TOTAL KVA			10.2
						PANEL A AMPS			21.3

PANEL B

1	50/1	TC	3.8	3.8		0.0			2
3	20/2	PHOTOCELL	0.1		0.1	0.0			4
5			0.1	0.1		0.0			6
7			0.0		0.0	0.0			8
9			0.0	0.0		0.0			10
11			0.0		0.0	0.0			12
13			0.0	0.0		0.0			14
15			0.0	0.0	0.0	0.0			16
17			0.0		0.0	0.0			18
				3.9	0.1	PANEL B TOTAL KVA			4.0
						PANEL B AMPS			8.3
						TOTAL KVA			14.2
						AMPS			29.6

SHORT CIRCUIT CALCULATION - LC 'A'

TRANSFORMER RATING	25KVA
VOLTAGE	120/240V
TRANSFORMER IMPEDANCE	1.2%
AVAILABLE SHORT CIRCUIT CURRENT AT TRANSFORMER SECONDARY	8,680A
FEEDER CONDUCTOR LENGTH	22'
FEEDER CONDUCTOR SIZE	2 AWG ALUM
CONDUIT	PVC
MAXIMUM FAULT CURRENT	6,547A
DATE CALCULATED	1/29/2025

ARC FLASH CALCULATION - LC 'A'

INCIDENT ENERGY	14.41 cal/cm²
ARC-FLASH BOUNDARY	85"
WORKING DISTANCE	18"
INSULATING GLOVES CLASS	00
NOMINAL SYSTEM VOLTAGE	240V
LIMITED APPROACH BOUNDARY	42"
RESTRICTED APPROACH BOUNDARY	12"
CALCULATION DATE	1/29/2025

STATE OF ALASKA
49TH
PRE-PS&E
ROY N. PACE
EE-12053
REGISTERED PROFESSIONAL ENGINEER

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CERT. OF AUTH. NO. AECC705

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

SPENARD RD & WISCONSIN ST: LOAD CENTER SCHEDULE

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HG5	HG6

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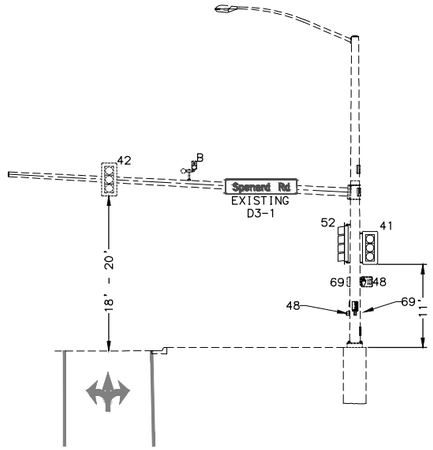
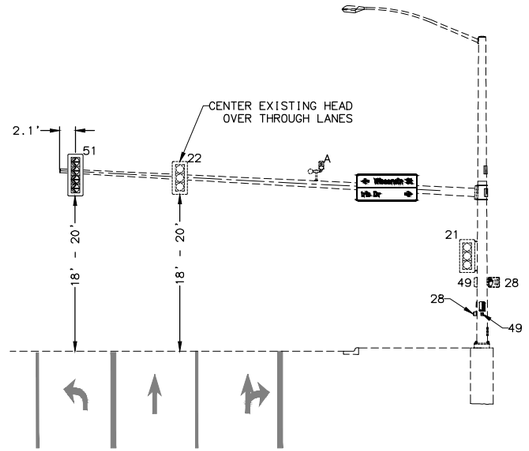
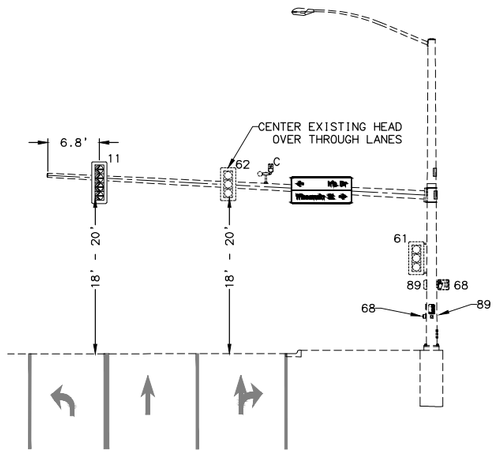


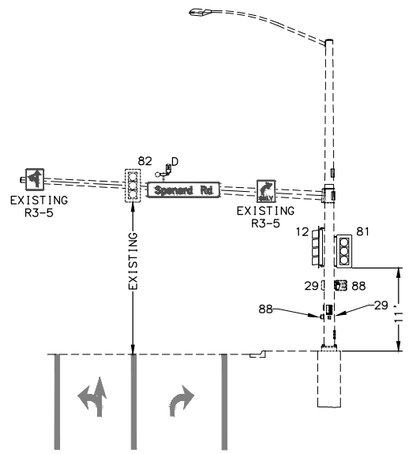
SIGNAL POLE 1
LOOKING WEST



SIGNAL POLE 2
LOOKING NORTH



SIGNAL POLE 4
LOOKING SOUTH



SIGNAL POLE 3
LOOKING EAST

NOTES:

1. ELEVATIONS ARE TO THE TOP OF THE FOUNDATION AND ARE APPROXIMATE.
2. LANE MARKINGS ARE SHOWN FOR REFERENCE ONLY.
3. SIGNAL HEAD LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL VERIFY SIGNAL HEAD PLACEMENT WITH RECEIVING AND APPROACH LANE OFFSETS.
4. ALL PEDESTRIAN HEADS AND PUSH BUTTONS ARE EXISTING

DOWL, LLC
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SPENARD RD & WISCONSIN ST: POLE ELEVATIONS

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HG6	HG6

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CONTROLLER CABINET FEATURES

GENERAL OPTIONS	
TYPE	TS2-1
SIZE	NEMA SIZE 6
MATERIALS	0.125" NATURAL ALUMINUM
MODEL	WESTERN SYSTEMS NEMA TS2-1P
EXTENDER BASE	NONE
MOUNTING HARDWARE	INCLUDED
PAINT	YES-SEE SPECIAL PROVISIONS
SPECIAL OPTIONS	
LIFTING TABS	INCLUDED
EQUIPMENT SHELF	(2) FULL WIDTH, (1) LAPTOP DRAWER
AIR FILTER	FIBER MESH
MAIN DOOR LOCK	BEST
REAR DOOR	NONE
LED LIGHT FIXTURES	SEE SPECIAL PROVISIONS FOR OTHER REQUIREMENT
MAIN PANEL	
MAIN PANEL POSITION	16-POSITION HORIZONTAL
FLASH TRANSFER RELAYS SOCKETS	(8) INCLUDED
FLASHER SOCKET	(1) INCLUDED
R1 RELAY SOCKET	INCLUDED
POWER PANEL	
SURGE SUPPRESSION	SHP300-10
LINE FILTER (RADIO INTERFERENCE)	50A
SOLID STATE CONTACTOR	NORMALLY OPEN, 50A
MAIN CIRCUIT BREAKER	40A
AUXILIARY CIRCUIT BREAKER	20A
3 POSITION TERMINAL BLOCK FOR INCOMING POWER, #2-#8 U.S.G.	INCLUDED
16 POSITION NEUTRAL BUS BAR	INCLUDED
16 POSITION CHASSIS GROUND BUS BAR	INCLUDED
POLICE PANEL	
POLICE PANEL SWITCHES	SIGNALS ON/OFF, AUTO/FLASH
POLICE PANEL PUSHBUTTON ALARM	NONE
POLICE DOOR LOCK	CONVENTIONAL (SKELETON KEY)
POLICE PANEL MANUAL CORD	NONE
AUXILIARY PANEL	
AUXILIARY PANEL SWITCHES	AUTO/FLASH, STOP TIME, CONTROLLER POWER, COORD, CABINET LIGHT, HEATER BYPASS
DETECTOR TEST SWITCHES	TACTILE PUSHBUTTON
FORCE OFF SWITCHES	TACTILE PUSHBUTTON
RACK DETECTION	
DETECTOR RACKS	FOUR (4) 16-CHANNEL DETECTOR RACKS. TWO THE THE RACKS SHALL BE CONFIGURED WITH 2 SLOTS EACH FOR OPTICOM.
DETECTOR RACK POWER SUPPLY	BIU FOR EACH RACK
EVP REQUIREMENTS	WIRING FOR GREEN SENSE MONITORING
ADDITIONAL OPTIONS	
RAILROAD PREEMPTION	INCLUDED
RAILROAD PREEMPTION/STAND ALONE PANEL	NO
RED JUMPERS FOR ALL UNUSED PHASES	INCLUDED
LOAD RESISTORS	(8) INCLUDED - LEFT SIDE OF CABINET
HEATER RECEPTACLE (SINGLE)	INCLUDED - RIGHT SIDE OF CABINET
DUPLEX GFI OUTLET (NON-FILTERED)	INCLUDED - RIGHT SIDE OF CABINET
QUAD CONVENIENCE OUTLET - FILTERED	INCLUDED - LEFT SIDE OF CABINET
ADDITIONAL NEUTRAL BUS BARS	(1) 32 POSITION BUS BAR LEFT SIDE OF CABINET
ADDITIONAL CHASSIS GROUND BUS BARS	(1) 32 POSITION BUS BAR LEFT SIDE OF CABINET
STANDARD WIRING DIAGRAM (AUTOCAD FORMAT)	PROVIDE: (3) PAPER SETS FOR CABINET, SIGNAL TECH AND TRAFFIC, (1) ACAD ON DISC, (1) PDF.
GTT OPTICOM 757 HARNESS	INCLUDED - WIRED INTO CABINET
GTT OPTICOM 768 AUXILIARY INTERFACE PANEL	INCLUDED - WIRED INTO CABINET
GENERATOR BYPASS COMPARTMENT	INCLUDED - MOUNT COMPARTMENT FLUSH AND ON INSIDE OF CONTROLLER CABINET DOOR. SEE SPECIAL PROVISIONS FOR OTHER REQUIREMENTS.

CONTROLLER ASSEMBLY EQUIPMENT

SUPPLY ALL LABOR, EQUIPMENT AND MATERIALS TO PROVIDE A FULLY FUNCTIONING TRAFFIC SIGNAL CONTROLLER ASSEMBLY COMPLIANT WITH THE NEMA STANDARD PUBLICATION NO. TS2-2003 V02.06 AND SPECIAL "SPECIALS" PROVISIONS OF THIS CONTRACT INCLUDING BUT NOT LIMITED TO;

QTY	CONTROLLER/MMU EQUIPMENT
1	ECON COBALT ATC TOUCH 2100 CONTROLLER (TS2 TYP 2
1	CONTROLLER TELEMETRY MODULE TCM-FSK-9 OR APPROVED EQUAL
1	CONTROLLER ETHERNET PORT
1	CONTROLLER DATA KEY
1	EDI MMU2-16LEIP
1	MMU2 CARD
QTY	**CABINET EQUIPMENT**
16	PDC SSS-87-I/O LOAD SWITCHES OR APPROVED EQUAL
16	EDI ORACLE4E DETECTOR AMPLIFIERS OR APPROVED EQUAL
8	DETROL CONTROLS 295 FLASH TRANSFER RELAYS OR APPROVED EQUAL
2	EDI BIU700 TERMINAL AND FACILITIES BIU'S OR APPROVED EQUAL
4	EDI BIU700 DETECTION BIU'S OR APPROVED EQUAL
1	EDI PS250 TS2 CABINET POWER SUPPLY OR APPROVED EQUAL
1	PDC SSF-87 FLASHER OR APPROVED EQUAL
1	R1 RELAY
1	600/900/1500W SELECTABLE THERMOSTATICALLY CONTROLLED CABINET HEATER, MOUNT ON DOOR
1	RE-SEALABLE PRINT POUCH OF SUFFICIENT SIZE TO ACCOMMODATE CABINET PRINTS
1	COMPLETE SET OF MANUALS FOR CONTROLLER, MMU2, AND VEHICLE DETECTOR AMPLIFIERS

COMMUNICATION EQUIPMENT SCHEDULE

QTY	COPPER INTERCONNECT SYSTEM
1	ACTELIS ML698E WITH FOUR 10/100X PORTS AND ONE OPTIONAL 1000BASE SFP PORT OR APPROVED EQUAL
1	AC POWER ADAPTER 506R00006 OR APPROVED EQUAL
4	3 FOOT CAT6 PATCH CABLE
1	SFP OPTICS 100BASE FX SM 1310NM 15KM LC MODULE 506R00032 OR APPROVED EQUAL
1	CARRIER-CLASS ELEMENT MANAGMENT SYSTEM
2	QUAD DSL CABLES 504R20110 OR APPROVED EQUAL
1	WALL MOUNTING KIT 510R21080 OR APPROVED EQUAL
QTY	**FIBER INTERCONNECT EQUIPMENT**
0	ACTELIS NETWORKS MODEL ML530 WITH TWO 100/1000 BASE FX SFP PORTS AND FOUR PORTS OF 10/100 BASE-T OR APPROVED EQUAL
0	AC POWER ADAPTER 506R00006 OR APPROVED EQUAL
0	3 FOOT CAT6 PATCH CABLE
0	SFP OPTICS 100BASE FX SM 1310NM 15KM LC MODULE 506R00032 OR APPROVED EQUAL
0	CARRIER-CLASS ELEMENT MANAGEMENT SYSTEM
0	LC DUPLEX SM FIBER OPTIC CABLE ASSEMBLY 3 METERS OR APPROVED EQUAL
0	WALL MOUNTING KIT 510R21080 OR APPROVED EQUAL
QTY	**OTHER EQUIPMENT**
0	RSL910 ETHERNET SWITCH (COPPER AND FIBER) OR APPROVED EQUAL
QTY	**EVP EQUIPMENT**
1	OPTICOM MODEL 764 PHASE SELECTOR
QTY	**RADAR EQUIPMENT**
0	CLICK! 650 (102-0416)
0	CLICK! 656 (102-0451)
0	INSTALLER KIT
0	7' SDLC CABLE - 15 PIN SCREW TO 15 PIN SPRING CLIP (SDLC-TS2-7)
0	3' SDLC CABLE - 15 PIN SCREW TO 15 PIN SPRING CLIP (SDLC-TS2-3)
0	SDLC 6 PORT INTERFACE PANEL (SDLC-IP6)

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PSE REVIEW

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SPENARD RD & WISCONSIN ST: CABINET EQUIPMENT

NO.	DATE	REVISION

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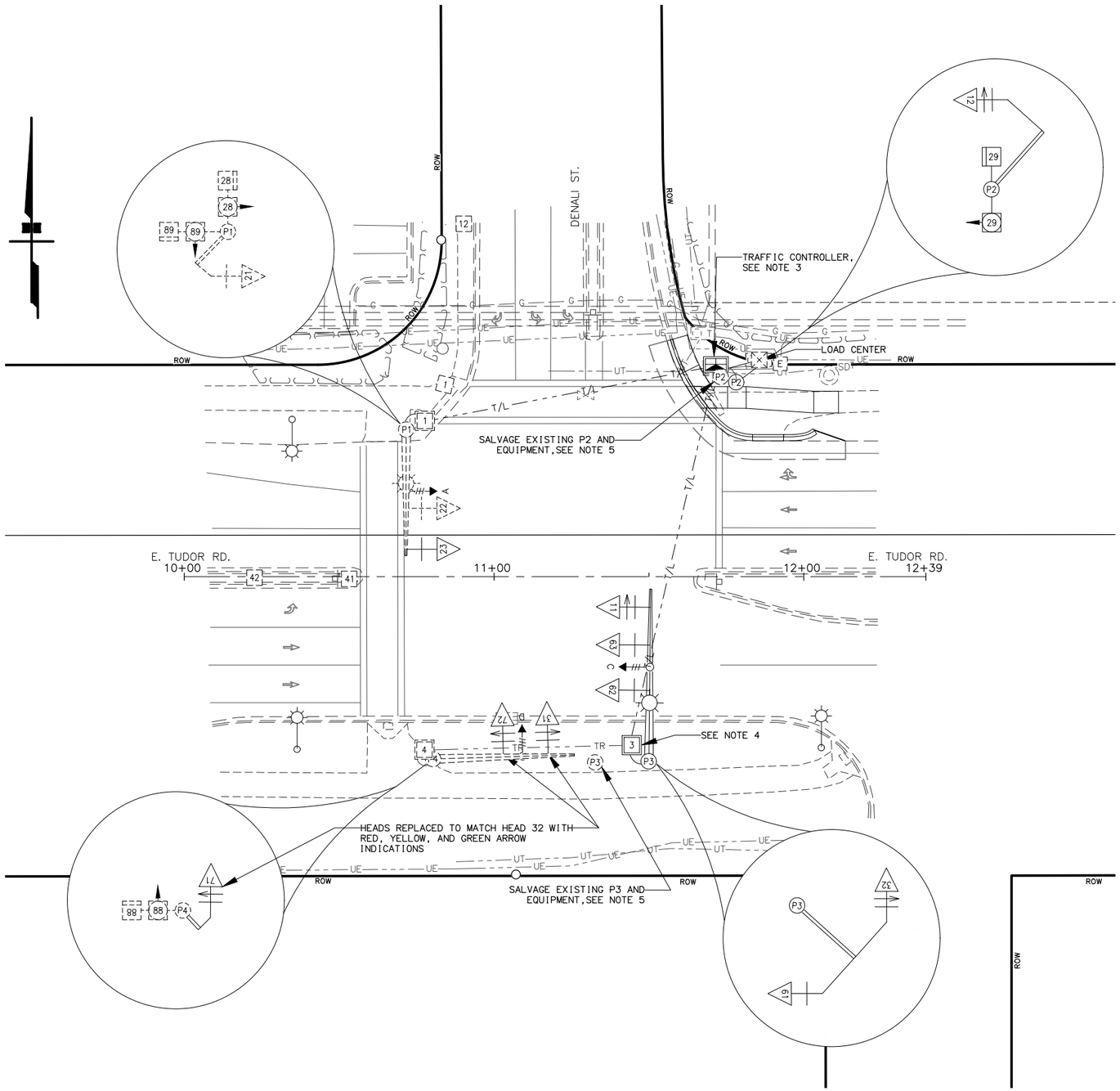
ALASKA	0001750/CFHWY01334	2025	HH1	HH6



FOUNDATION SCHEDULE

ITEM	STATION ALIGNMENT	OFFSET	STRUCTURE	REMARKS
LC	–	–	LOAD CENTER	EXISTING
TC	–	–	NEW TRAFFIC CONTROLLER	EXISTING
P1	–	–	SIGNAL POLE 1	EXISTING
P2	11+78.3	62.8 LT	SIGNAL POLE 2	NEW STEEL PILE FOUNDATION
P3	11+49.9	59.5 RT	SIGNAL POLE 3	NEW STEEL PILE FOUNDATION
P4	–	–	SIGNAL POLE 4	EXISTING

JUNCTION BOX SCHEDULE

J-BOX	STATION ALIGNMENT	OFFSET	TYPE	NOTES
1	–	–	2	EXISTING
3	11+44.5	54.3 RT	2	NEW
4	–	–	2	EXISTING

OPTICOM DETECTOR SCHEDULE

DETECTOR ID	LOCATION	PHASE CALL	FACING DIRECTION	MODEL	REMARKS
A	P1 MAST ARM	2	E	711	EXISTING
C	P3 MAST ARM	6,1	W	721	NEW
D	P4 MAST ARM	3,7	N	711	EXISTING

NOTES:

1. CONTRACTOR SHALL MAINTAIN AND PROTECT ALL SIGNAL COMPONENTS SHOWN WITH NO ANTICIPATED IMPACT. IN ADDITION, UNLESS OTHERWISE DIRECTED BY THE ENGINEER:
   A. CONDUIT RUNS MAY BE INTERCEPTED (AS APPROVED BY THE ENGINEER).
   B. SIGNAL AND INTERCONNECT CONDUCTORS SHALL NOT BE INTERCEPTED. IMPACTED SIGNAL CONDUCTORS SHALL BE REPLACED CONTINUOUSLY FROM THE CONTROLLER CABINET.
   C. STREET LIGHT CONDUCTORS SHALL NOT BE INTERCEPTED.
2. CONTRACTOR SHALL MAINTAIN AND PROTECT ALL JUNCTION BOXES SHOWN WITH NO ANTICIPATED IMPACT.
3. REMOVE EXISTING TRAFFIC CONTROLLER ASSEMBLY. INSTALL NEW TRAFFIC CONTROLLER ASSEMBLY ON EXISTING FOUNDATION. EXISTING CONDUIT RUN AND CABLES TO REMAIN IN PLACE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
4. REPLACE J-BOX 3. THIS MAY REQUIRE ADDING CONDUIT EXTENSIONS. IN THE EVENT CONDUIT EXTENSIONS ARE NEEDED, CONTRACTOR SHALL PULL CONDUCTORS FROM CONDUITS AND PROTECT AND PRESERVE IN PLACE BEFORE ADJUSTING CONDUITS, THEN RE-PULL CONDUCTORS THROUGH. THIS WORK AND MATERIALS SHALL BE INCIDENTAL TO THE CONTRACT.
5. DISCONNECT AND REMOVE EXISTING CABLES CONNECTED TO EXISTING SIGNAL AND LIGHTING EQUIPMENT.
6. A TEMPORARY SIGNAL MAY BE AVOIDED BY INSTALLING THE NEW P3 WHILE THE EXISTING P3 IS IN USE. THIS IS TO BE CONFIRMED BY THE CONTRACTOR

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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

TUDOR RD & DENALI ST: SIGNAL SYSTEM PLAN

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

PS&E REVIEW

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HH2	HH6

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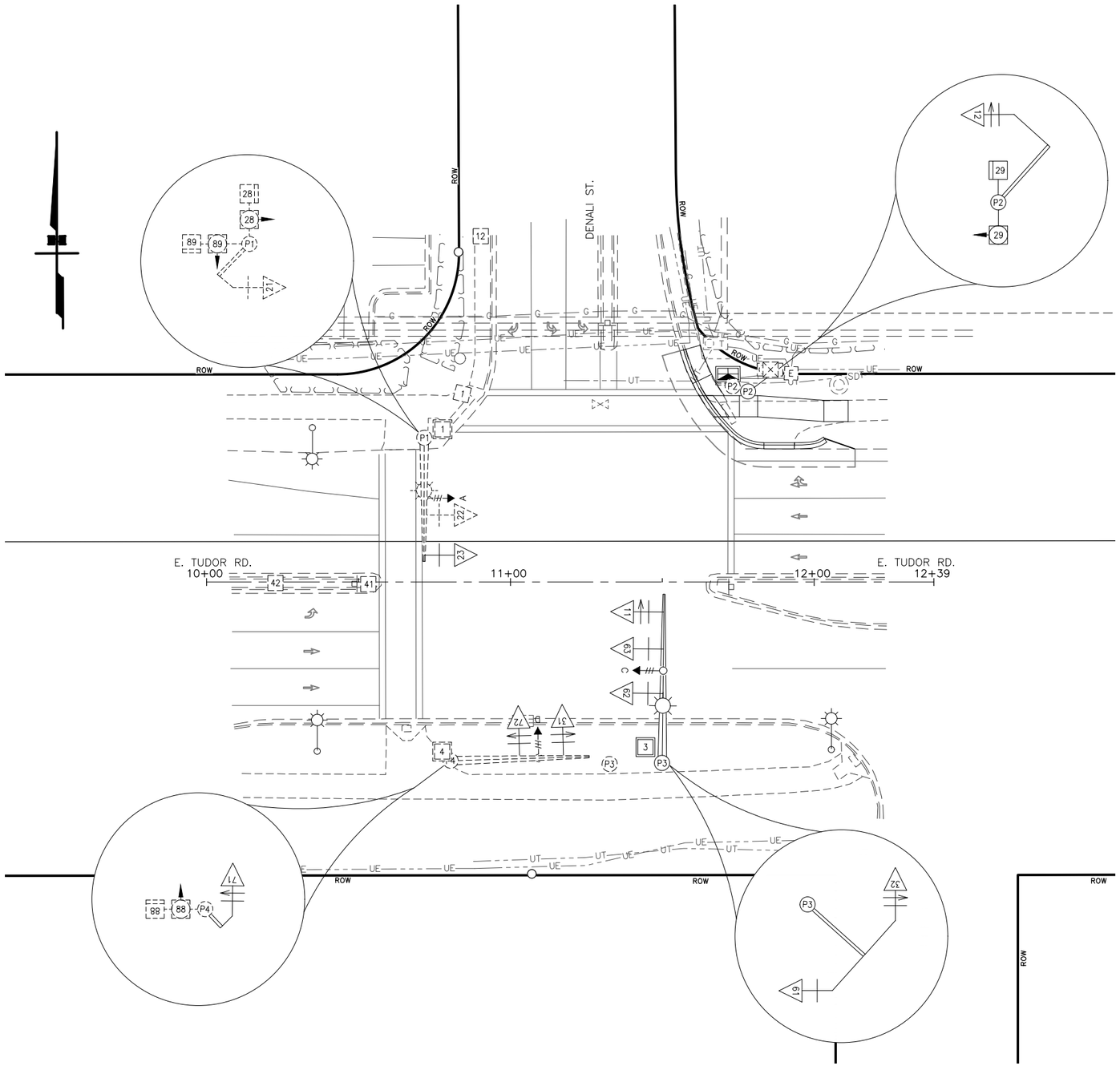
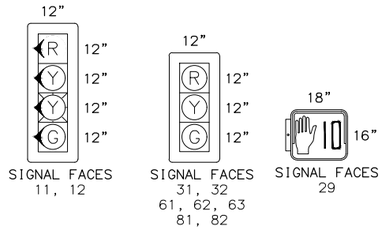
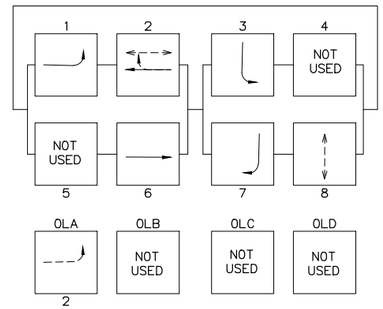




SIGNAL HEAD CONFIGURATIONS



PREEMPTION DWELL PHASE AND VEHICLE MOVEMENTS

CHANNEL A: PHASE 2
CHANNEL B: NOT USED
CHANNEL C: PHASE 6 + 1
CHANNEL D: PHASE 7 + 3

PHASE DIAGRAM

PROTECTED VEHICLE MOVEMENT
PERMISSIVE VEHICLE MOVEMENT
PEDESTRIAN MOVEMENT

PSSE REVIEW

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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

TUDOR RD & DENALI ST: SIGNAL OPERATION PLAN

NO.	DATE	REVISION

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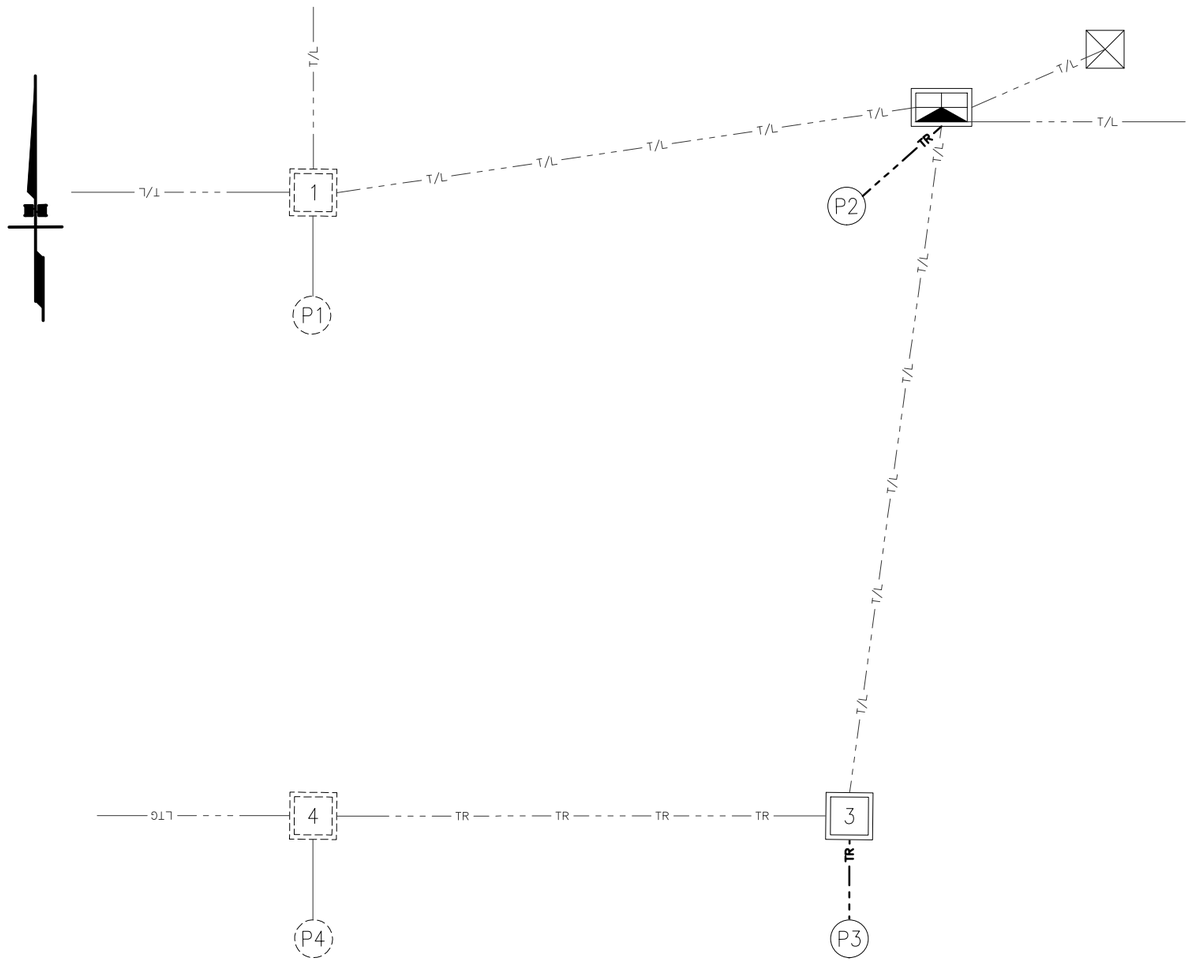
ALASKA	0001750/CFHWY01334	2025	HH3	HH6

CABLE & CONDUIT SCHEDULE

RUN	CONDUIT		CABLES	NOTES	CONDUIT FILL
LC–TC	EX–2	RMC	EX(1–3C4)		20%
	EX–2	RMC	EX(3–3C8)	LIGHTING	38%
TC–1	EX–3	RMC	EX(2–7C14, 2–5C14, 3–3C14, 1–3C20)	SIGNAL	14%
	EX–2	RMC	EX(3–3C8)	LIGHTING	38%
	EX–3	RMC	EX(2–25PR19)	I/C "C ST"	22%
	EX–2	RMC	EX(2–6PR18)	DETECTION	15%
	EX–2	RMC	SPARE		
TC–3	EX–2	RMC	EX(2–6PR18)		15%
	EX–2	RMC	EX(1–3C8)	INTXL	13%
	EX–3	RMC	EX(3–7C14, 1–5C14, 2–3C14, 1–3C20) **NEW(5–7C14, 1–3C20, 1–3C14)**	SIGNAL	26%
	EX–2	RMC	SPARE		
TC–P2	**NEW–3**	RMC	**NEW(1–7C14, 1–5C14, 1–3C14)**	SIGNAL	6%
	EX–2	RMC	SPARE		
1–P1	EX–3	RMC	EX(2–7C14, 2–5C14, 3–3C14, 1–3C20)	SIGNAL	14%
	EX–2	RMC	EX(1–3C8)	INTXL	13%
	EX–2	RMC	SPARE		
3–P3	**NEW–3**	RMC	**NEW(5–7C14, 1–3C20, 1–3C14)**	SIGNAL	31%
	NEW–2	RMC	EX(1–3C8)	INTXL	13%
	NEW–2	RMC	SPARE	INTXL	13%
3–4	EX–2	RMC	EX(3–7C14, 1–5C14, 2–3C14, 1–3C20)	SIGNAL	28%
	EX–2	RMC	EX(2–6PR18)	DETECTION	15%
	EX–2	RMC	SPARE		
4–P4	EX–3	RMC	EX(3–7C14, 1–5C14, 2–3C14, 1–3C20)	SIGNAL	13%
	EX–2	RMC	SPARE		
1–NORTH	EX–2	RMC	EX(2–6PR18)	DETECTION	15%
	EX–2	RMC	EX(1–3C8)	HWY LIGHTING	13%
1–WEST	EX–2	RMC	EX(1–3C8)	HWY LIGHTING	13%
	EX–2	RMC	EX(2–25PR19)	I/C "C ST"	22%
TC–EAST	EX–2	RMC	EX(1–3C8)	HWY LIGHTING	26%
	EX–3	RMC	EX(2–25PR19)	I/C "OLD SEWARD HWY"	22%
	EX–2	RMC	EX (1–15PR18)	DETECTION	16%
4–WEST	EX–2	RMC	EX(2–6PR18)	DETECTION	15%

INTXL– INTERSECTION LIGHTING
I/C INTERCONNECT



NOTES:

1. 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 CIRCUIT CONDUCTOR.
2. DETECTOR LOOPS NOT SHOWN FOR CLARITY.

PS&E REVIEW

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
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AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

TUDOR RD & DENALI ST: WIRING DIAGRAM

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STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HH4	HH6

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GENERAL LC NOTES:

1. ALL CIRCUIT BREAKERS SHALL BE RATED FOR OPERATION AT −20°F.
2. LOAD CENTER OUTAGES SHALL BE SCHEDULED DURING DAYLIGHT HOURS AND BE COMPLETE PRIOR TO DUSK THE SAME DAY.

SUMMARY OF EXISTING LOAD CENTER 'A'

LOAD CENTER TYPE:	TYPE 1
MAINTAINED BY:	MUNICIPALITY OF ANCHORAGE
SERVING UTILITY:	CHUGACH ELECTRIC ASSOCIATION
SERVICE CONDUIT TYPE:	RIGID METAL CONDUIT
LOCATION DATA	
LOAD CENTER:	TUDOR ROAD AND DENALI STREET
POWER SOURCE:	EXISTING
PHOTOELECTRIC CONTROL:	AT LOAD CENTER
SERVICE VOLTAGE:	240/480V, 1-PHASE, 3-WIRE
PROVIDE METER SOCKET:	EXISTING
MAIN BREAKER A:	480V, 50A, 2-POLE (TRANSFORMER PRIMARY)
MAIN BREAKER B:	480V, 60A, 2-POLE
CONTACTOR 1:	600V, 12-POLE
CONTACTOR 2:	600V, 12-POLE
AIC RATING:	10,000A

PANEL B − 480V

CKT	AMP TRIP	DESCRIPTION	CKT KVA	AØ	BØ	CKT KVA	DESCRIPTION	AMP TRIP	CKT
1	20/2	TUDOR WEST LTG*	1.2		3.5	2.3	TUDOR SOUTH LTG*	20/2	2
3			1.2	3.5		2.3			4
5	20/2	TUDOR EAST LTG*	2.3		3.3	1.0	INTX LTG*	20/2	6
7			2.3	3.3		1.0			8
9	20/2	DENALI 9,10,11,12 LTG*	1.0		2.0	1.0	DENALI 5,6,7,8 LTG*	20/2	10
11			1.0	2.0		1.0			12
13					0.0				14
15				0.0					16
* = THROUGH CONTACTOR 1				8.8	8.8		PANEL A TOTAL KVA		17.6
							PANEL A AMPS		36.7

PANEL A − 240V (THROUGH TRANSFORMER)

1	100/2	PANEL DISC	0.0		4.8	4.8	TC	70/1	2
3			0.0	0.0		0.0			4
5	20/2	PHOTOCELL*	0.1		0.1	0.0			6
7			0.1	0.1		0.0			8
9	20/2	SPARE	0.0		0.0	0.0			10
11			0.0	0.0		0.0			12
13	20/2	SPARE	0.0		0.0	0.0			14
15			0.0	0.0		0.0			16
17			0.0		0.0	0.0			18
** = THROUGH CONTACTOR 2				0.1	4.9		PANEL B TOTAL KVA		5.0
							PANEL B AMPS		20.8
NOTE: SEE ## FOR TRANSFORMER DETAILS							TOTAL KVA		22.6
							AMPS		47.1

SHORT CIRCUIT CALCULATION − LC 'A'

TRANSFORMER RATING	25KVA
VOLTAGE	240/480V
TRANSFORMER IMPEDANCE	1.2%
AVAILABLE SHORT CIRCUIT CURRENT AT TRANSFORMER SECONDARY	4,340A
FEEDER CONDUCTOR LENGTH	10'
FEEDER CONDUCTOR SIZE	2 AWG ALUM
CONDUIT	PVC
MAXIMUM FAULT CURRENT	4,211A
DATE CALCULATED	1/29/2025

ARC FLASH CALCULATION − LC 'A'

INCIDENT ENERGY	13.18 cal/cm²
ARC-FLASH BOUNDARY	81"
WORKING DISTANCE	18"
INSULATING GLOVES CLASS	00
NOMINAL SYSTEM VOLTAGE	480V
LIMITED APPROACH BOUNDARY	42"
RESTRICTED APPROACH BOUNDARY	12"
CALCULATION DATE	1/29/2025

STATE OF ALASKA
49TH
PRE-PS&E
ROY N. PACE
EE-12053
REGISTERED PROFESSIONAL ENGINEER

EDC, INC.
1500 WEST 33RD AVE
ANCHORAGE, AK 99503
(907) 257-0601
CERT. OF AUTH. NO. AECC705

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

TUDOR RD & DENALI ST: LOAD CENTER SCHEDULE

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HH5	HH6

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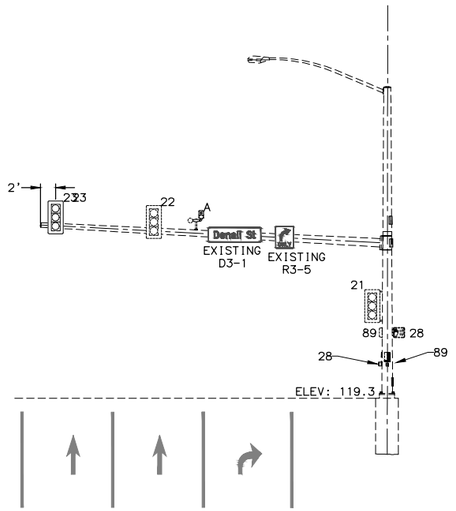
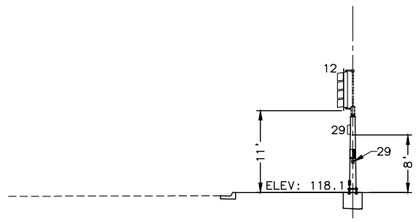


SIGNAL POLE 1
LOOKING WEST

P1

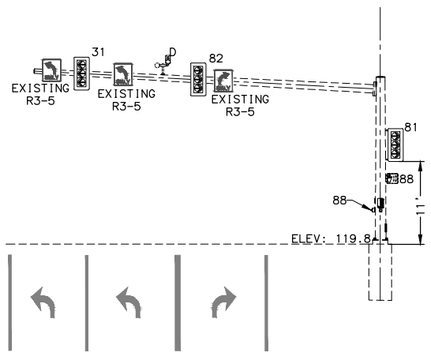


SIGNAL POLE 2
LOOKING NORTH

P2

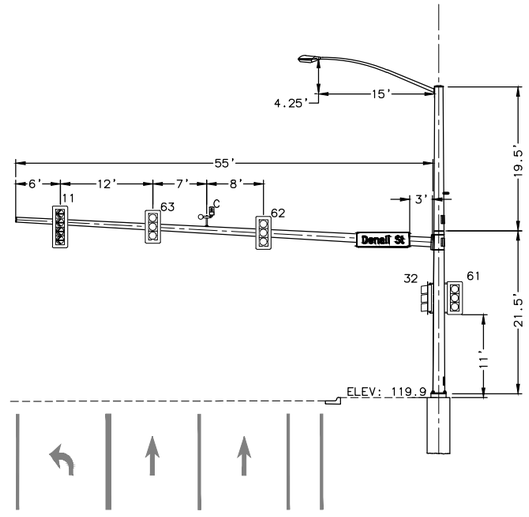
NOTES:

1. ELEVATIONS ARE TO THE TOP OF THE FOUNDATION AND ARE APPROXIMATE.
2. LANE MARKINGS ARE SHOWN FOR REFERENCE ONLY.
3. SIGNAL HEAD LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL VERIFY SIGNAL HEAD PLACEMENT WITH RECEIVING AND APPROACH LANE OFFSETS.



SIGNAL POLE 4
LOOKING SOUTH

P4



SIGNAL POLE 3
LOOKING EAST

P3

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HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

TUDOR RD & DENALI ST: POLE ELEVATIONS

NO.	DATE	REVISION

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ALASKA	0001750/CFHWY01334	2025	HH6	HH6

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CONTROLLER CABINET FEATURES

GENERAL OPTIONS	
TYPE	TS2-1
SIZE	NEMA SIZE 6
MATERIALS	0.125" NATURAL ALUMINUM
MODEL	WESTERN SYSTEMS NEMA TS2-1P
EXTENDER BASE	NONE
MOUNTING HARDWARE	INCLUDED
PAINT	YES-SEE SPECIAL PROVISIONS
SPECIAL OPTIONS	
LIFTING TABS	INCLUDED
EQUIPMENT SHELF	(2) FULL WIDTH, (1) LAPTOP DRAWER
AIR FILTER	FIBER MESH
MAIN DOOR LOCK	BEST
REAR DOOR	NONE
LED LIGHT FIXTURES	SEE SPECIAL PROVISIONS FOR OTHER REQUIREMENT
MAIN PANEL	
MAIN PANEL POSITION	16-POSITION HORIZONTAL
FLASH TRANSFER RELAYS SOCKETS	(8) INCLUDED
FLASHER SOCKET	(1) INCLUDED
R1 RELAY SOCKET	INCLUDED
POWER PANEL	
SURGE SUPPRESSION	SHP300-10
LINE FILTER (RADIO INTERFERENCE)	50A
SOLID STATE CONTACTOR	NORMALLY OPEN, 50A
MAIN CIRCUIT BREAKER	40A
AUXILIARY CIRCUIT BREAKER	20A
3 POSITION TERMINAL BLOCK FOR INCOMING POWER, #2-#8 U.S.G.	INCLUDED
16 POSITION NEUTRAL BUS BAR	INCLUDED
16 POSITION CHASSIS GROUND BUS BAR	INCLUDED
POLICE PANEL	
POLICE PANEL SWITCHES	SIGNALS ON/OFF, AUTO/FLASH
POLICE PANEL PUSHBUTTON ALARM	NONE
POLICE DOOR LOCK	CONVENTIONAL (SKELETON KEY)
POLICE PANEL MANUAL CORD	NONE
AUXILIARY PANEL	
AUXILIARY PANEL SWITCHES	AUTO/FLASH, STOP TIME, CONTROLLER POWER, COORD, CABINET LIGHT, HEATER BYPASS
DETECTOR TEST SWITCHES	TACTILE PUSHBUTTON
FORCE OFF SWITCHES	TACTILE PUSHBUTTON
RACK DETECTION	
DETECTOR RACKS	FOUR (4) 16-CHANNEL DETECTOR RACKS. TWO THE THE RACKS SHALL BE CONFIGURED WITH 2 SLOTS EACH FOR OPTICOM.
DETECTOR RACK POWER SUPPLY	BIU FOR EACH RACK
EVP REQUIREMENTS	WIRING FOR GREEN SENSE MONITORING
ADDITIONAL OPTIONS	
RAILROAD PREEMPTION	INCLUDED
RAILROAD PREEMPTION/STAND ALONE PANEL	NO
RED JUMPERS FOR ALL UNUSED PHASES	INCLUDED
LOAD RESISTORS	(8) INCLUDED - LEFT SIDE OF CABINET
HEATER RECEPTACLE (SINGLE)	INCLUDED - RIGHT SIDE OF CABINET
DUPLEX GFI OUTLET (NON-FILTERED)	INCLUDED - RIGHT SIDE OF CABINET
QUAD CONVENIENCE OUTLET - FILTERED	INCLUDED - LEFT SIDE OF CABINET
ADDITIONAL NEUTRAL BUS BARS	(1) 32 POSITION BUS BAR LEFT SIDE OF CABINET
ADDITIONAL CHASSIS GROUND BUS BARS	(1) 32 POSITION BUS BAR LEFT SIDE OF CABINET
STANDARD WIRING DIAGRAM (AUTOCAD FORMAT)	PROVIDE: (3) PAPER SETS FOR CABINET, SIGNAL TECH AND TRAFFIC, (1) ACAD ON DISC, (1) PDF.
GTT OPTICOM 757 HARNESS	INCLUDED - WIRED INTO CABINET
GTT OPTICOM 768 AUXILIARY INTERFACE PANEL	INCLUDED - WIRED INTO CABINET
GENERATOR BYPASS COMPARTMENT	INCLUDED - MOUNT COMPARTMENT FLUSH AND ON INSIDE OF CONTROLLER CABINET DOOR. SEE SPECIAL PROVISIONS FOR OTHER REQUIREMENTS.

CONTROLLER ASSEMBLY EQUIPMENT

SUPPLY ALL LABOR, EQUIPMENT AND MATERIALS TO PROVIDE A FULLY FUNCTIONING TRAFFIC SIGNAL CONTROLLER ASSEMBLY COMPLIANT WITH THE NEMA STANDARD PUBLICATION NO. TS2-2003 V02.06 AND SPECIAL "SPECIALS" PROVISIONS OF THIS CONTRACT INCLUDING BUT NOT LIMITED TO;

QTY	CONTROLLER/MMU EQUIPMENT
1	ECON COBALT ATC TOUCH 2100 CONTROLLER (TS2 TYP 2
1	CONTROLLER TELEMETRY MODULE TCM-FSK-9 OR APPROVED EQUAL
1	CONTROLLER ETHERNET PORT
1	CONTROLLER DATA KEY
1	EDI MMU2-16LEIP
1	MMU2 CARD
QTY	**CABINET EQUIPMENT**
16	PDC SSS-87-I/O LOAD SWITCHES OR APPROVED EQUAL
16	EDI ORACLE4E DETECTOR AMPLIFIERS OR APPROVED EQUAL
8	DETROL CONTROLS 295 FLASH TRANSFER RELAYS OR APPROVED EQUAL
2	EDI BIU700 TERMINAL AND FACILITIES BIU'S OR APPROVED EQUAL
4	EDI BIU700 DETECTION BIU'S OR APPROVED EQUAL
1	EDI PS250 TS2 CABINET POWER SUPPLY OR APPROVED EQUAL
1	PDC SSF-87 FLASHER OR APPROVED EQUAL
1	R1 RELAY
1	600/900/1500W SELECTABLE THERMOSTATICALLY CONTROLLED CABINET HEATER, MOUNT ON DOOR
1	RE-SEALABLE PRINT POUCH OF SUFFICIENT SIZE TO ACCOMMODATE CABINET PRINTS
1	COMPLETE SET OF MANUALS FOR CONTROLLER, MMU2, AND VEHICLE DETECTOR AMPLIFIERS

COMMUNICATION EQUIPMENT SCHEDULE

QTY	COPPER INTERCONNECT SYSTEM
1	ACTELIS ML698E WITH FOUR 10/100X PORTS AND ONE OPTIONAL 1000BASE SFP PORT OR APPROVED EQUAL
1	AC POWER ADAPTER 506R00006 OR APPROVED EQUAL
4	3 FOOT CAT6 PATCH CABLE
1	SFP OPTICS 100BASE FX SM 1310NM 15KM LC MODULE 506R00032 OR APPROVED EQUAL
1	CARRIER-CLASS ELEMENT MANAGMENT SYSTEM
2	QUAD DSL CABLES 504R20110 OR APPROVED EQUAL
1	WALL MOUNTING KIT 510R21080 OR APPROVED EQUAL
QTY	**FIBER INTERCONNECT EQUIPMENT**
0	ACTELIS NETWORKS MODEL ML530 WITH TWO 100/1000 BASE FX SFP PORTS AND FOUR PORTS OF 10/100 BASE-T OR APPROVED EQUAL
0	AC POWER ADAPTER 506R00006 OR APPROVED EQUAL
0	3 FOOT CAT6 PATCH CABLE
0	SFP OPTICS 100BASE FX SM 1310NM 15KM LC MODULE 506R00032 OR APPROVED EQUAL
0	CARRIER-CLASS ELEMENT MANAGEMENT SYSTEM
0	LC DUPLEX SM FIBER OPTIC CABLE ASSEMBLY 3 METERS OR APPROVED EQUAL
0	WALL MOUNTING KIT 510R21080 OR APPROVED EQUAL
QTY	**OTHER EQUIPMENT**
0	RSL910 ETHERNET SWITCH (COPPER AND FIBER) OR APPROVED EQUAL
QTY	**EVP EQUIPMENT**
1	OPTICOM MODEL 764 PHASE SELECTOR
QTY	**RADAR EQUIPMENT**
0	CLICK! 650 (102-0416)
0	CLICK! 656 (102-0451)
0	INSTALLER KIT
0	7' SDLC CABLE - 15 PIN SCREW TO 15 PIN SPRING CLIP (SDLC-TS2-7)
0	3' SDLC CABLE - 15 PIN SCREW TO 15 PIN SPRING CLIP (SDLC-TS2-3)
0	SDLC 6 PORT INTERFACE PANEL (SDLC-IP6)

STATE OF ALASKA PSSE REVIEW PROJECT ENGINEER

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
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TUDOR RD & DENALI ST: CABINET EQUIPMENT

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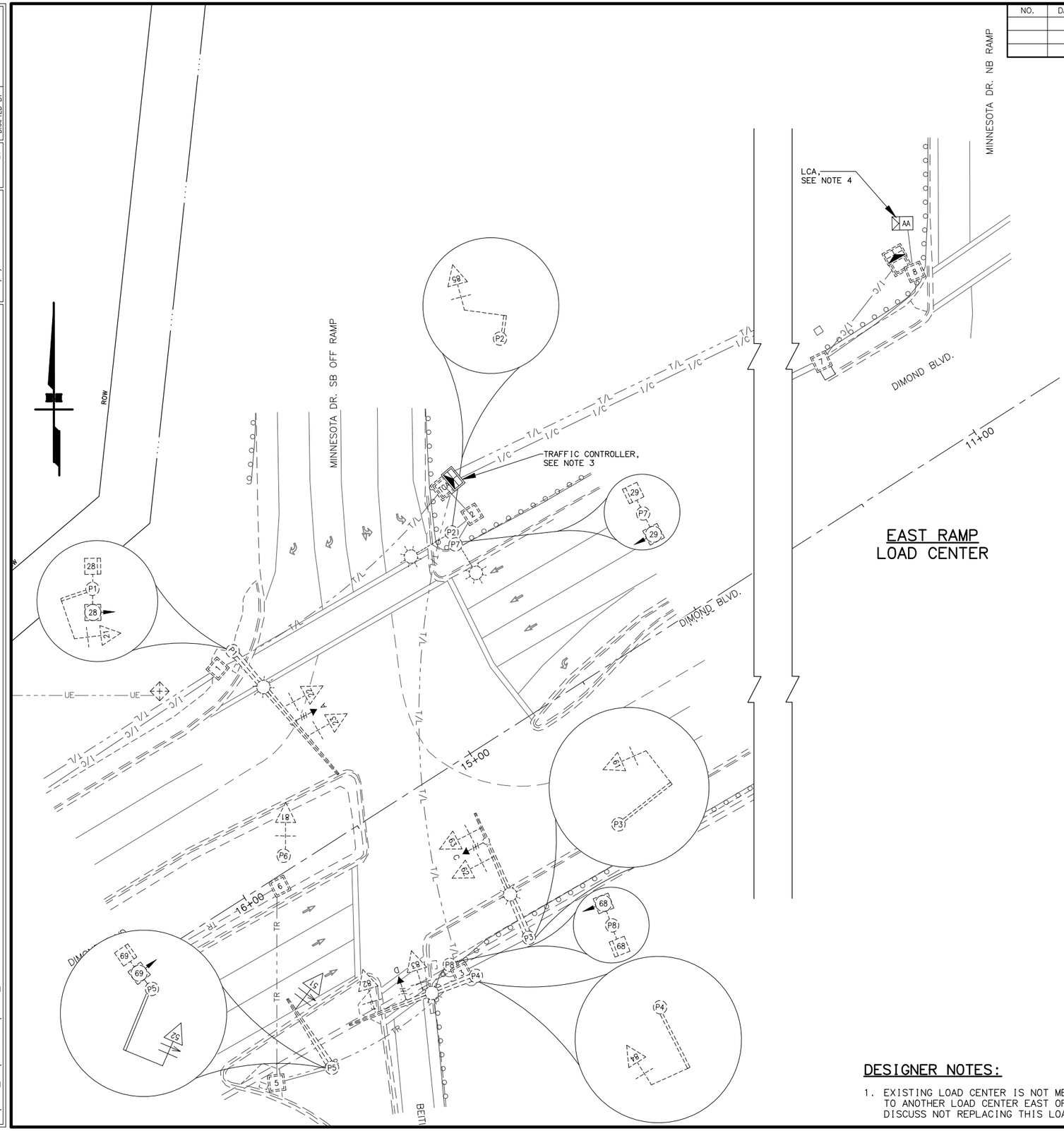
ALASKA	0001750/CFHWY01334	2025	HI1	HI6



FOUNDATION SCHEDULE

ITEM	STATION ALIGNMENT	OFFSET	STRUCTURE	REMARKS
TC	–	–	NEW TRAFFIC CONTROLLER	EXISTING
LCA	10+81.9	81.0 RT	LOAD CENTER	NEW
P1	–	–	SIGNAL POLE 1	EXISTING
P2	–	–	SIGNAL POLE 2	EXISTING
P3	–	–	SIGNAL POLE 3	EXISTING
P4	–	–	SIGNAL POLE 4	EXISTING
P5	–	–	SIGNAL POLE 5	EXISTING
P6	–	–	SIGNAL POLE 6	EXISTING
P7	–	–	SIGNAL POLE 7	EXISTING
P8	–	–	SIGNAL POLE 8	EXISTING

JUNCTION BOX SCHEDULE

J-BOX	STATION ALIGNMENT	OFFSET	TYPE	REMARKS
AA	10+79.6	79.3 RT	1A	NEW
TCA	–	–	3	EXISTING
1	–	–	2	EXISTING
2	–	–	2	EXISTING
3	–	–	2	EXISTING
5	–	–	2	EXISTING
6	–	–	2	EXISTING
7	–	–	2	EXISTING
8	–	–	2	EXISTING

OPTICOM DETECTOR SCHEDULE

DETECTOR ID	LOCATION	PHASE CALL	FACING DIRECTION	MODEL	REMARKS
A	POLE 1 MASTARM	2, 5	E	721	EXISTING
C	POLE 3 MASTARM	6	W	721	EXISTING
D	POLE 4 MASTARM	8	N	721	EXISTING

NOTES:

1. CONTRACTOR SHALL MAINTAIN AND PROTECT ALL SIGNAL COMPONENTS SHOWN WITH NO ANTICIPATED IMPACT. IN ADDITION, UNLESS OTHERWISE DIRECTED BY THE ENGINEER:
   A. CONDUIT RUNS MAY BE INTERCEPTED (AS APPROVED BY THE ENGINEER).
   B. SIGNAL AND INTERCONNECT CONDUCTORS SHALL NOT BE INTERCEPTED. IMPACTED SIGNAL CONDUCTORS SHALL BE REPLACED CONTINUOUSLY FROM THE CONTROLLER CABINET.
   C. STREET LIGHT CONDUCTORS SHALL NOT BE INTERCEPTED.
2. CONTRACTOR SHALL MAINTAIN AND PROTECT ALL JUNCTION BOXES SHOWN WITH NO ANTICIPATED IMPACT.
3. REMOVE EXISTING TRAFFIC CONTROLLER ASSEMBLY. INSTALL NEW TRAFFIC CONTROLLER ASSEMBLY ON EXISTING FOUNDATION. EXISTING CONDUIT RUN AND CABLES TO REMAIN IN PLACE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
4. REMOVE EXISTING LOAD CENTER ASSEMBLY AND FOUNDATION. INSTALL NEW LOAD CENTER AND FOUNDATION AT EXISTING STATION AND OFFSET. COORDINATE POWER SHUT-OFF AND TURN-ON WITH CEA. EXISTING CONDUIT RUN AND CABLES TO REMAIN IN PLACE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

DESIGNER NOTES:

1. EXISTING LOAD CENTER IS NOT METERED AND IS SUBSIDIARY TO ANOTHER LOAD CENTER EAST OF THIS INTERSECTION. DISCUSS NOT REPLACING THIS LOAD CENTER.

PS&E REVIEW

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

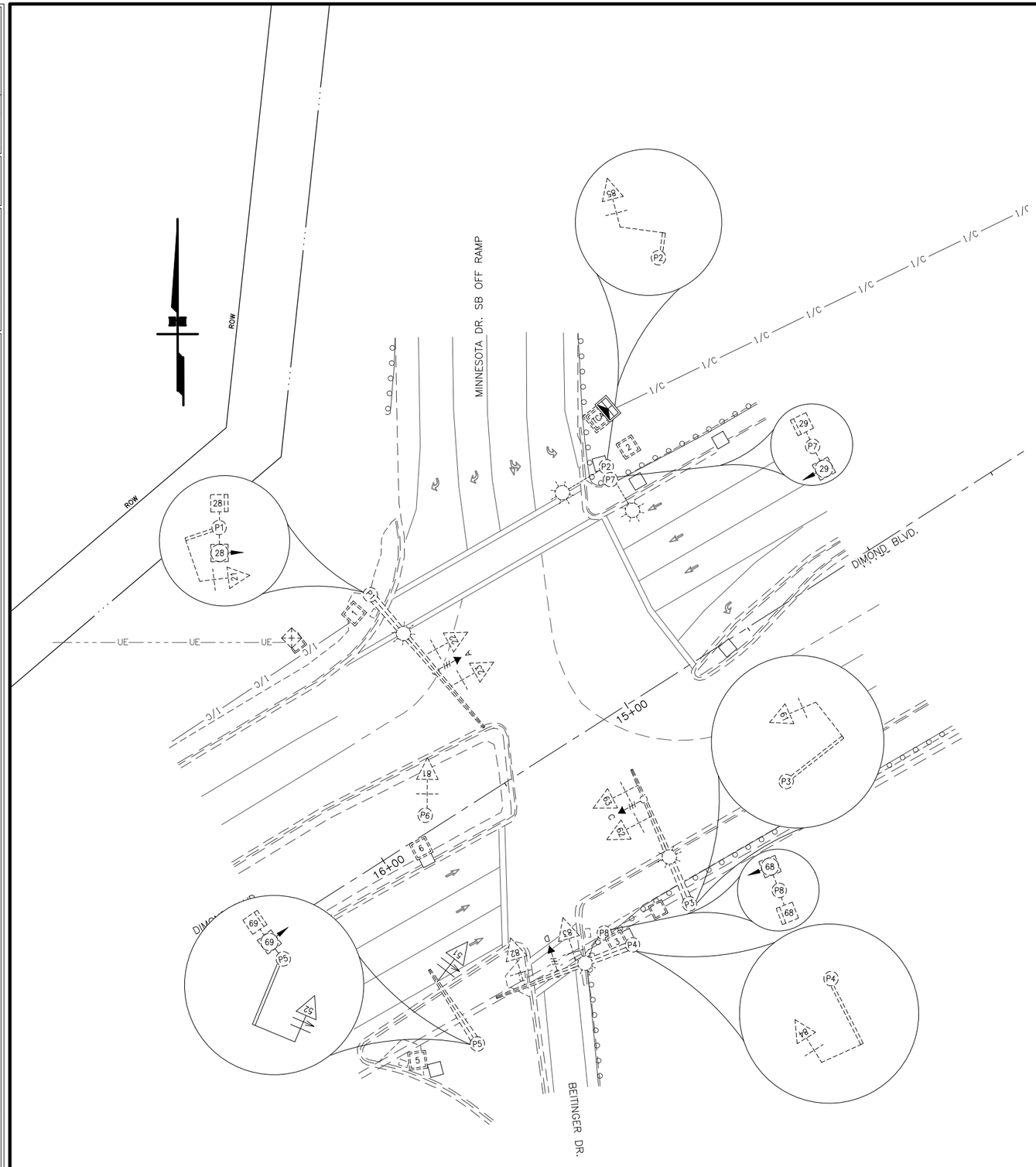
HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

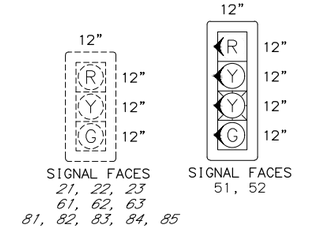
DIMOND BLVD & MINNESOTA DR: SIGNAL SYSTEM PLAN

DESIGNED BY MTB
CHECKED BY
DRAFTED BY
SCALE 1" = 20'
DATE 4/8/2025 TIME 4:54 PM
DRAWING LOCATION
C:\DOWL_PW\D0414549\00944_HI1-HI6.DWG

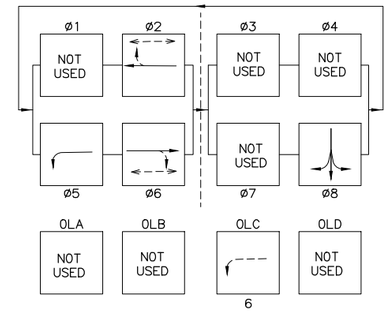
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HI2	HI6





SIGNAL HEAD CONFIGURATIONS



PROTECTED VEHICLE MOVEMENT
PERMISSIVE VEHICLE MOVEMENT
PEDESTRIAN MOVEMENT

PREEMPTION DWELL PHASE VEHICLE MOVEMENTS

CHANNEL A: PHASES 2 + 5
CHANNEL B: NOT USED
CHANNEL C: PHASE 6
CHANNEL D: PHASE 8

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DIMOND BLVD & MINNESOTA DR: SIGNAL OPERATION PLAN

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DATE 4/21/2025 TIME 4:34 PM
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NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HI3	HI6

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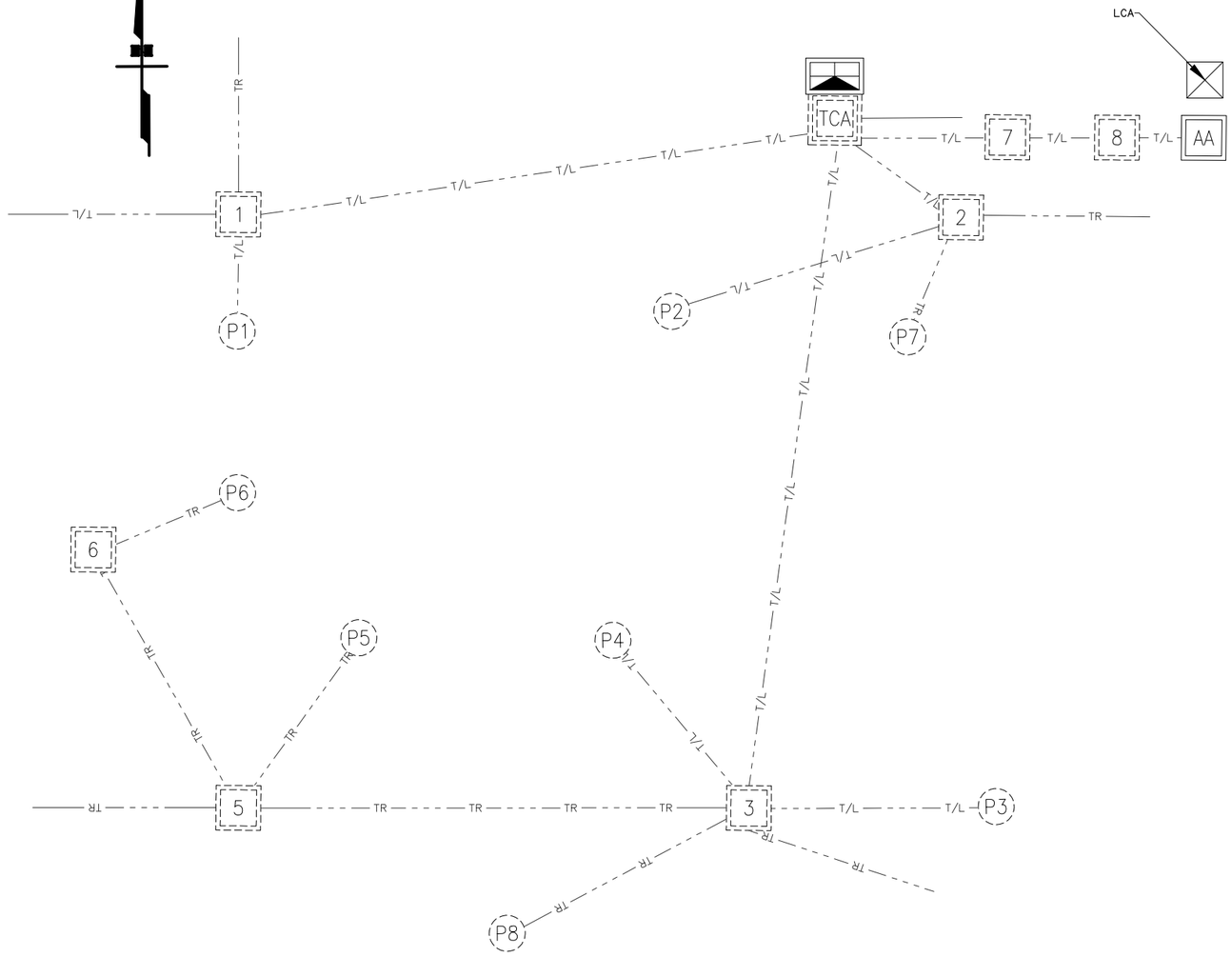
CABLE & CONDUIT SCHEDULE

RUN	CONDUIT		CABLES	NOTES	CONDUIT FILL
LCA–8	EX–2	RMC	EX(1–3C8)	INTXL	13%
	EX–3	RMC	EX(1–3C2)	TC POWER	10%
7–8	EX–2	RMC	EX(1–3C8)	INTXL	13%
	EX–3	RMC	EX(1–3C2)	TC POWER	10%
TCA–7	EX–2	RMC	EX(1–3C8)	INTXL	13%
	EX–3	RMC	EX(1–3C2)	TC POWER	10%
TCA–1	EX–2	RMC	SPARE		
	EX–2	RMC	SPARE		
	EX–3	RMC	EX(3–7C14, 1–5C14, 2–3C14, 1–3C20, 1–6PR18)	SIGNAL, DETECTION	16%
	EX–2	RMC	EX(1–3C8)		13%
	EX–3	RMC	EX(1–25PR19, 1–15PR18)	I/C "ARCTIC", DETECTION	18%
TCA–2	EX–3	RMC	EX(1–7C14, 1–5C14, 1–3C14, 2–15PR18)	SIGNAL, DETECTION	20%
	EX–3	RMC	EX(1–3C8)	INTXL	6%
TCA–3	EX–3	RMC	EX(2–7C14, 1–5C14, 3–3C14, 2–3C20, 1–6PR18)	SIGNAL, DETECTION	16%
	EX–3	RMC	EX(6–7C14, 1–5C14, 1–3C14, 1–15PR18)	SIGNAL, DETECTION	24%
	EX–3	RMC	SPARE		
2–P2	EX–2	RMC	EX(1–3C8)	INTXL	13%
	EX–3	RMC	EX(1–7C14)	SIGNAL	2%
2–P7	EX–2	RMC	EX(1–5C14, 1–3C14)	SIGNAL	8%
3–P3	EX–2	RMC	EX(1–3C8)	INTXL	13%
	EX–3	RMC	EX(3–7C14, 1–3C14, 1–3C20)	SIGNAL	9%
3–P4	EX–2	RMC	EX(1–3C8)	INTXL	13%
	EX–3	RMC	EX(3–7C14, 1–3C14, 1–3C20)	SIGNAL	9%
3–P8	EX–3	RMC	EX(1–5C14, 1–3C14)	SIGNAL	4%
3–5	EX–3	RMC	EX(3–7C14, 1–5C14, 1–3C14, 1–15PR18)	SIGNAL, DETECTION	17%
	EX–3	RMC	SPARE		
	EX–3	RMC	SPARE		
	EX–3	RMC	SPARE		
5–P5	EX–3	RMC	EX(2–7C14, 1–5C14, 1–3C14)	SIGNAL	8%
	EX–2	RMC	EX(SPARE)		
5–6	EX–3	RMC	EX(1–7C14, 1–15PR18)	SIGNAL, DETECTION	10%
	EX–3	RMC	SPARE		
6–P6	EX–3	RMC	EX(1–7C14)	SIGNAL	2%
	EX–3	RMC	SPARE		
1–WEST	EX–3	RMC	EX(1–25PR19, 1–15PR18)	I/C "ARCTIC", DETECTION	18%
	EX–2	RMC	EX(1–3C8)	HWY LIGHTING	13%
1–NORTH	EX–2	RMC	EX(1–6PR18)	DETECTION	8%
TCA–EAST	EX–2	RMC	EX(1–25PR19)	I/C "EAST RAMP"	24%
2–EAST	EX–2	RMC	EX(1–15PR18)	DETECTION	16%
	EX–2	RMC	EX(1–15PR18)	DETECTION	16%
3–EAST	EX–2	RMC	EX(1–6PR18)	DETECTION	8%
4–WEST	EX–2	RMC	EX(1–15PR18)	DETECTION	16%

INTXL– INTERSECTION LIGHTING
I/C INTERCONNECT



NOTES:

1. 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 CIRCUIT CONDUCTOR.
2. DETECTOR LOOPS NOT SHOWN FOR CLARITY.

STATE OF ALASKA
PROJECT ENGINEER
REGISTERED PROFESSIONAL ENGINEER
PSSE REVIEW

DOWL, LLC
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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

DIMOND BLVD & MINNESOTA DR: SIGNAL OPERATION PLAN

NO.	DATE	REVISION

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ALASKA	0001750/CFHWY01334	2025	HI4	HI6

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DATE TIME
4/24/2025 10:57 AM

DRAWING LOCATION
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GENERAL LC NOTES:

1. ALL CIRCUIT BREAKERS SHALL BE RATED FOR OPERATION AT −20°F.
2. LOAD CENTER OUTAGES SHALL BE SCHEDULED DURING DAYLIGHT HOURS AND BE COMPLETE PRIOR TO DUSK THE SAME DAY.
3. NEW LOAD CENTER IS POWERED FROM THE EXISTING LOAD CENTER LOCATED AT APPROXIMATELY 61.140532, −149.906116

SUMMARY OF NEW LOAD CENTER 'A'

LOAD CENTER TYPE:	NEW TYPE 1A
MAINTAINED BY:	MUNICIPALITY OF ANCHORAGE
SERVING UTILITY:	CHUGACH ELECTRIC ASSOCIATION
SERVICE CONDUIT TYPE:	RIGID METAL CONDUIT
LOCATION DATA	
LOAD CENTER:	DIMOND BLVD AND MINNESOTA DR
POWER SOURCE:	NEW FEEDER FROM EXISTING LOAD CENTER
PHOTOELECTRIC CONTROL:	AT LOAD CENTER
SERVICE VOLTAGE:	120/240V, 1-PHASE, 3-WIRE
PROVIDE METER SOCKET:	NEW
MAIN BREAKER A:	240, 100A, 2-POLE
CONTACTOR 1:	600V, 12-POLE, 30A
AIC RATING:	10,000A

PANEL A

CKT	AMP TRIP	DESCRIPTION	CKT KVA	AØ	BØ	CKT KVA	DESCRIPTION	AMP TRIP	CKT
1	70/1	EAST TC	4.8	4.8		0.0	SPARE	20/2	2
3	70/1	WEST TC	4.8		4.8	0.0			4
5	20/1	THAW WIRE	0.0	0.0		0.0	SPARE	20/2	6
7			0.0		0.0	0.0			8
9			0.0	2.3		2.3	INTX LTG*	20/2	10
11			0.0		2.3	2.3			12
13			0.0	0.0		0.0			14
15			0.0		0.0	0.0			16
17			0.0	0.0		0.0			18
* = THROUGH CONTACTOR				7.1	7.1	TOTAL KVA			14.2
						AMPS			59.2

SHORT CIRCUIT CALCULATION − LC 'A'

TRANSFORMER RATING	25KVA
VOLTAGE	120/240V
TRANSFORMER IMPEDANCE	1.2%
AVAILABLE SHORT CIRCUIT CURRENT AT TRANSFORMER SECONDARY	8,680A
FEEDER CONDUCTOR LENGTH	350'
FEEDER CONDUCTOR SIZE	2 AWG ALUM
CONDUIT	PVC
MAXIMUM FAULT CURRENT	960A
DATE CALCULATED	3/27/2025

ARC FLASH CALCULATION − LC 'A'

INCIDENT ENERGY	1.92 cal/cm²
ARC−FLASH BOUNDARY	22"
WORKING DISTANCE	18"
INSULATING GLOVES CLASS	00
NOMINAL SYSTEM VOLTAGE	240V
LIMITED APPROACH BOUNDARY	42"
RESTRICTED APPROACH BOUNDARY	12"
CALCULATION DATE	3/27/2025

STATE OF ALASKA
49TH
PRE-PS&E
ROY N. PACE
EE−12053
REGISTERED PROFESSIONAL ENGINEER

EDC, INC.
1500 WEST 33RD AVE
ANCHORAGE, AK 99503
(907) 257−0601
CERT. OF AUTH. NO. AECC705

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

DIMOND BLVD & MINNESOTA DR: LOAD CENTER SCHEDULE

NO.	DATE	REVISION

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ALASKA	0001750/CFHWY01334	2025	HI5	HI6

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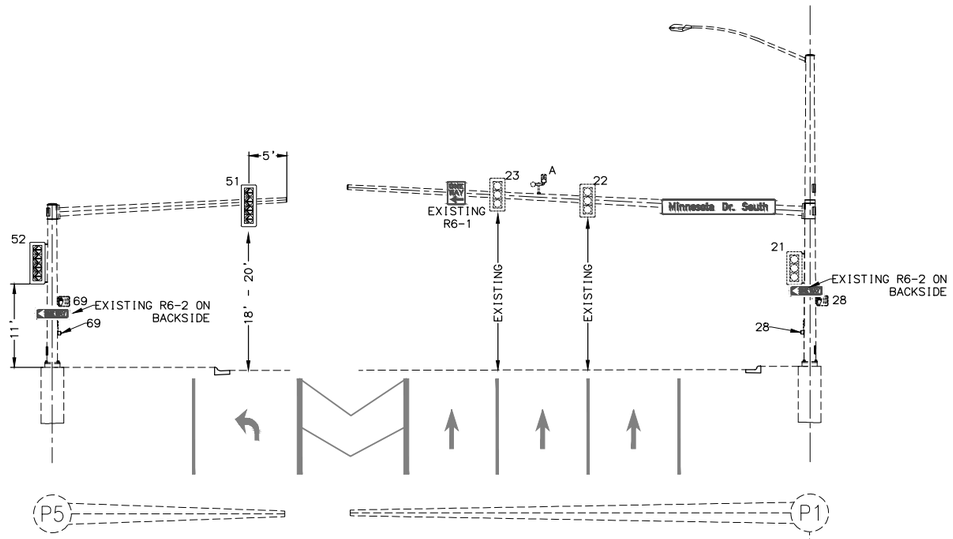
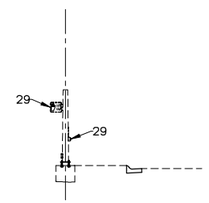
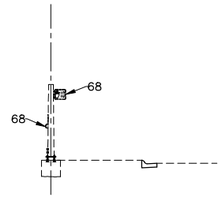


SIGNAL POLE 5
LOOKING SOUTHWEST

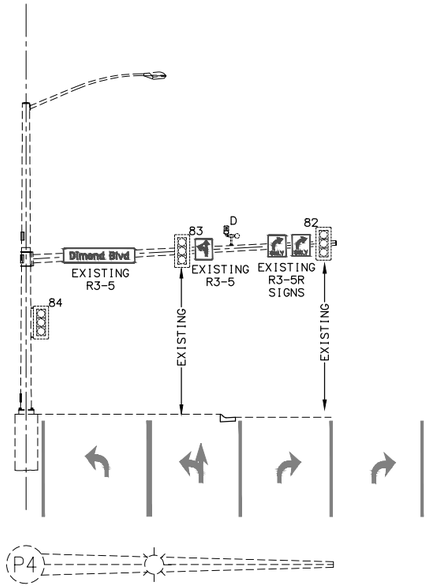
SIGNAL POLE 1
LOOKING WEST



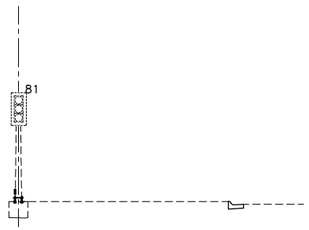
POLE 7
LOOKING EAST



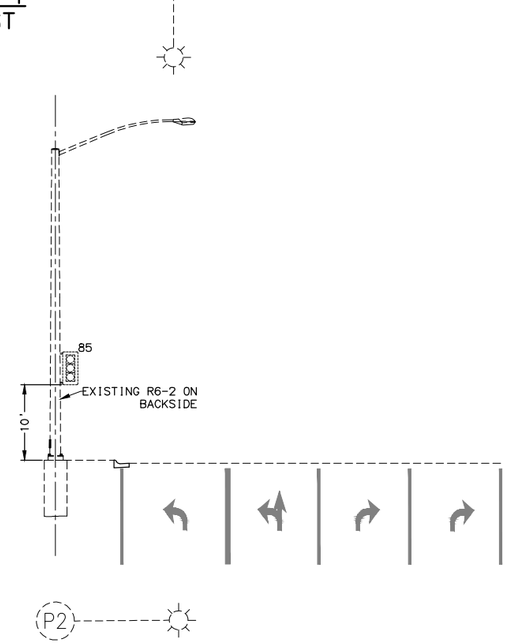
SIGNAL POLE 8
LOOKING EAST



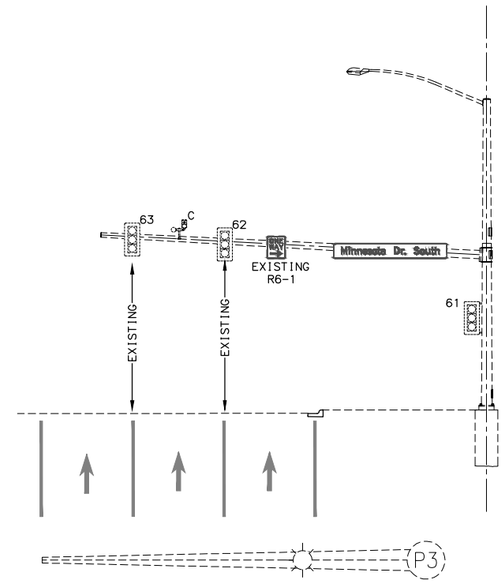
SIGNAL POLE 4
LOOKING SOUTH



SIGNAL POLE 6
LOOKING SOUTH



SIGNAL POLE 2
LOOKING SOUTH



SIGNAL POLE 3
LOOKING EAST

NOTES:

1. ELEVATIONS ARE TO THE TOP OF THE FOUNDATION AND ARE APPROXIMATE.
2. LANE MARKINGS ARE SHOWN FOR REFERENCE ONLY.
3. SIGNAL HEAD LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL VERIFY SIGNAL HEAD PLACEMENT WITH RECEIVING AND APPROACH LANE OFFSETS.
4. ALL PEDESTRIAN HEADS AND PUSH BUTTONS ARE EXISTING

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DIMOND BLVD & MINNESOTA DR: POLE ELEVATIONS

NO.	DATE	REVISION

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ALASKA	0001750/CFHWY01334	2025	HI6	HI6

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CONTROLLER CABINET FEATURES

GENERAL OPTIONS	
TYPE	TS2-1
SIZE	NEMA SIZE 6
MATERIALS	0.125" NATURAL ALUMINUM
MODEL	WESTERN SYSTEMS NEMA TS2-1P
EXTENDER BASE	NONE
MOUNTING HARDWARE	INCLUDED
PAINT	YES-SEE SPECIAL PROVISIONS
SPECIAL OPTIONS	
LIFTING TABS	INCLUDED
EQUIPMENT SHELF	(2) FULL WIDTH, (1) LAPTOP DRAWER
AIR FILTER	FIBER MESH
MAIN DOOR LOCK	BEST
REAR DOOR	NONE
LED LIGHT FIXTURES	SEE SPECIAL PROVISIONS FOR OTHER REQUIREMENT
MAIN PANEL	
MAIN PANEL POSITION	16-POSITION HORIZONTAL
FLASH TRANSFER RELAYS SOCKETS	(8) INCLUDED
FLASHER SOCKET	(1) INCLUDED
R1 RELAY SOCKET	INCLUDED
POWER PANEL	
SURGE SUPPRESSION	SHP300-10
LINE FILTER (RADIO INTERFERENCE)	50A
SOLID STATE CONTACTOR	NORMALLY OPEN, 50A
MAIN CIRCUIT BREAKER	40A
AUXILIARY CIRCUIT BREAKER	20A
3 POSITION TERMINAL BLOCK FOR INCOMING POWER, #2-#8 U.S.G.	INCLUDED
16 POSITION NEUTRAL BUS BAR	INCLUDED
16 POSITION CHASSIS GROUND BUS BAR	INCLUDED
POLICE PANEL	
POLICE PANEL SWITCHES	SIGNALS ON/OFF, AUTO/FLASH
POLICE PANEL PUSHBUTTON ALARM	NONE
POLICE DOOR LOCK	CONVENTIONAL (SKELETON KEY)
POLICE PANEL MANUAL CORD	NONE
AUXILIARY PANEL	
AUXILIARY PANEL SWITCHES	AUTO/FLASH, STOP TIME, CONTROLLER POWER, COORD, CABINET LIGHT, HEATER BYPASS
DETECTOR TEST SWITCHES	TACTILE PUSHBUTTON
FORCE OFF SWITCHES	TACTILE PUSHBUTTON
RACK DETECTION	
DETECTOR RACKS	FOUR (4) 16-CHANNEL DETECTOR RACKS. TWO THE THE RACKS SHALL BE CONFIGURED WITH 2 SLOTS EACH FOR OPTICOM.
DETECTOR RACK POWER SUPPLY	BIU FOR EACH RACK
EVP REQUIREMENTS	WIRING FOR GREEN SENSE MONITORING
ADDITIONAL OPTIONS	
RAILROAD PREEMPTION	INCLUDED
RAILROAD PREEMPTION/STAND ALONE PANEL	NO
RED JUMPERS FOR ALL UNUSED PHASES	INCLUDED
LOAD RESISTORS	(8) INCLUDED - LEFT SIDE OF CABINET
HEATER RECEPTACLE (SINGLE)	INCLUDED - RIGHT SIDE OF CABINET
DUPLEX GFI OUTLET (NON-FILTERED)	INCLUDED - RIGHT SIDE OF CABINET
QUAD CONVENIENCE OUTLET - FILTERED	INCLUDED - LEFT SIDE OF CABINET
ADDITIONAL NEUTRAL BUS BARS	(1) 32 POSITION BUS BAR LEFT SIDE OF CABINET
ADDITIONAL CHASSIS GROUND BUS BARS	(1) 32 POSITION BUS BAR LEFT SIDE OF CABINET
STANDARD WIRING DIAGRAM (AUTOCAD FORMAT)	PROVIDE: (3) PAPER SETS FOR CABINET, SIGNAL TECH AND TRAFFIC, (1) ACAD ON DISC, (1) PDF.
GTT OPTICOM 757 HARNESS	INCLUDED - WIRED INTO CABINET
GTT OPTICOM 768 AUXILIARY INTERFACE PANEL	INCLUDED - WIRED INTO CABINET
GENERATOR BYPASS COMPARTMENT	INCLUDED - MOUNT COMPARTMENT FLUSH AND ON INSIDE OF CONTROLLER CABINET DOOR. SEE SPECIAL PROVISIONS FOR OTHER REQUIREMENTS.

CONTROLLER ASSEMBLY EQUIPMENT

SUPPLY ALL LABOR, EQUIPMENT AND MATERIALS TO PROVIDE A FULLY FUNCTIONING TRAFFIC SIGNAL CONTROLLER ASSEMBLY COMPLIANT WITH THE NEMA STANDARD PUBLICATION NO. TS2-2003 V02.06 AND SPECIAL "SPECIALS" PROVISIONS OF THIS CONTRACT INCLUDING BUT NOT LIMITED TO;

QTY	CONTROLLER/MMU EQUIPMENT
1	ECON COBALT ATC TOUCH 2100 CONTROLLER (TS2 TYP 2
1	CONTROLLER TELEMETRY MODULE TCM-FSK-9 OR APPROVED EQUAL
1	CONTROLLER ETHERNET PORT
1	CONTROLLER DATA KEY
1	EDI MMU2-16LEIP
1	MMU2 CARD
QTY	**CABINET EQUIPMENT**
16	PDC SSS-87-I/O LOAD SWITCHES OR APPROVED EQUAL
16	EDI ORACLE4E DETECTOR AMPLIFIERS OR APPROVED EQUAL
8	DETROL CONTROLS 295 FLASH TRANSFER RELAYS OR APPROVED EQUAL
2	EDI BIU700 TERMINAL AND FACILITIES BIU'S OR APPROVED EQUAL
4	EDI BIU700 DETECTION BIU'S OR APPROVED EQUAL
1	EDI PS250 TS2 CABINET POWER SUPPLY OR APPROVED EQUAL
1	PDC SSF-87 FLASHER OR APPROVED EQUAL
1	R1 RELAY
1	600/900/1500W SELECTABLE THERMOSTATICALLY CONTROLLED CABINET HEATER, MOUNT ON DOOR
1	RE-SEALABLE PRINT POUCH OF SUFFICIENT SIZE TO ACCOMMODATE CABINET PRINTS
1	COMPLETE SET OF MANUALS FOR CONTROLLER, MMU2, AND VEHICLE DETECTOR AMPLIFIERS

COMMUNICATION EQUIPMENT SCHEDULE

QTY	COPPER INTERCONNECT SYSTEM
1	ACTELIS ML698E WITH FOUR 10/100X PORTS AND ONE OPTIONAL 1000BASE SFP PORT OR APPROVED EQUAL
1	AC POWER ADAPTER 506R00006 OR APPROVED EQUAL
4	3 FOOT CAT6 PATCH CABLE
1	SFP OPTICS 100BASE FX SM 1310NM 15KM LC MODULE 506R00032 OR APPROVED EQUAL
1	CARRIER-CLASS ELEMENT MANAGMENT SYSTEM
2	QUAD DSL CABLES 504R20110 OR APPROVED EQUAL
1	WALL MOUNTING KIT 510R21080 OR APPROVED EQUAL
QTY	**FIBER INTERCONNECT EQUIPMENT**
0	ACTELIS NETWORKS MODEL ML530 WITH TWO 100/1000 BASE FX SFP PORTS AND FOUR PORTS OF 10/100 BASE-T OR APPROVED EQUAL
0	AC POWER ADAPTER 506R00006 OR APPROVED EQUAL
0	3 FOOT CAT6 PATCH CABLE
0	SFP OPTICS 100BASE FX SM 1310NM 15KM LC MODULE 506R00032 OR APPROVED EQUAL
0	CARRIER-CLASS ELEMENT MANAGEMENT SYSTEM
0	LC DUPLEX SM FIBER OPTIC CABLE ASSEMBLY 3 METERS OR APPROVED EQUAL
0	WALL MOUNTING KIT 510R21080 OR APPROVED EQUAL
QTY	**OTHER EQUIPMENT**
0	RSL910 ETHERNET SWITCH (COPPER AND FIBER) OR APPROVED EQUAL
QTY	**EVP EQUIPMENT**
1	OPTICOM MODEL 764 PHASE SELECTOR
QTY	**RADAR EQUIPMENT**
0	CLICK! 650 (102-0416)
0	CLICK! 656 (102-0451)
0	INSTALLER KIT
0	7' SDLC CABLE - 15 PIN SCREW TO 15 PIN SPRING CLIP (SDLC-TS2-7)
0	3' SDLC CABLE - 15 PIN SCREW TO 15 PIN SPRING CLIP (SDLC-TS2-3)
0	SDLC 6 PORT INTERFACE PANEL (SDLC-IP6)

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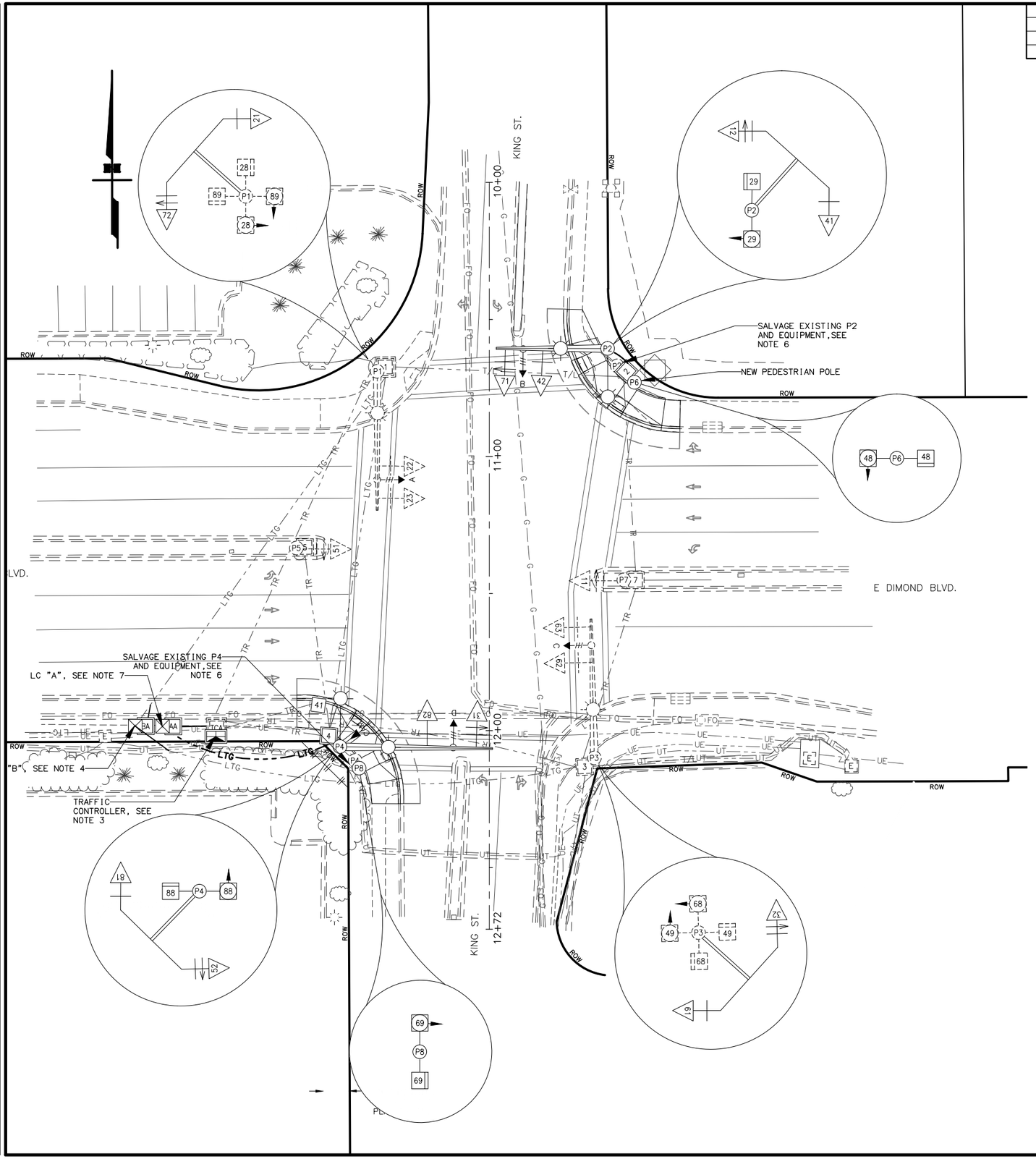
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HJ1	HJ6



FOUNDATION SCHEDULE

ITEM	STATION ALIGNMENT	OFFSET	STRUCTURE	REMARKS
LCB	11+98.6	119.3 RT	LOAD CENTER TYPE 1A	NEW
LCA	11+98.2	129.6 RT	LOAD CENTER TYPE 1A	NEW
TCA	-	-	NEW TRAFFIC CONTROLLER	EXISTING
P1	-	-	SIGNAL POLE	EXISTING
P2	10+60.6	43.2 LT	SIGNAL POLE	NEW STEEL PILE FOUNDATION
P3	-	-	SIGNAL POLE	EXISTING
P4	12+05.9	54.5 RT	SIGNAL POLE	NEW STEEL PILE FOUNDATION
P5	-	-	SIGNAL POLE	EXISTING
P6	10+72.9	53.0 LT	PEDESTRIAN POLE	NEW STEEL PILE FOUNDATION
P7	-	-	SIGNAL POLE	EXISTING
P8	12+13.7	47.5 RT	PEDESTRIAN POLE	NEW STEEL PILE FOUNDATION

JUNCTION BOX SCHEDULE

J-BOX	STATION ALIGNMENT	OFFSET	TYPE	REMARKS
TCA			3	EXISTING
AA	11+98.8	115.8 RT	2	NEW
BA	11+98.8	125.3 RT	2	NEW
1	-	-	3	EXISTING
2	10+69.7	48.4 LT	2	NEW
3	-	-	2	EXISTING
4	12+01.7	58.6 RT	2	NEW
41	11+90.6	62.3 RT	1A	NEW
5	-	-	2	EXISTING
7	-	-	2	EXISTING

OPTICOM DETECTOR SCHEDULE

DETECTOR ID	LOCATION	PHASE CALL	FACING DIRECTION	MODEL	REMARKS
A	POLE 1 MASTARM	2, 5	E	721	EXISTING
B	POLE 2 MASTARM	4, 7	S	721	NEW
C	POLE 3 MASTARM	6, 1	W	721	EXISTING
D	POLE 4 MASTARM	8, 3	N	721	NEW

NOTES:

1. CONTRACTOR SHALL MAINTAIN AND PROTECT ALL SIGNAL COMPONENTS SHOWN WITH NO ANTICIPATED IMPACT. IN ADDITION, UNLESS OTHERWISE DIRECTED BY THE ENGINEER:
   A. CONDUIT RUNS MAY BE INTERCEPTED (AS APPROVED BY THE ENGINEER).
   B. SIGNAL AND INTERCONNECT CONDUCTORS SHALL NOT BE INTERCEPTED.IMPACTED SIGNAL CONDUCTORS SHALL BE REPLACED CONTINUOUSLY FROM THE CONTROLLER CABINET.
   C. STREET LIGHT CONDUCTORS SHALL NOT BE INTERCEPTED.
2. CONTRACTOR SHALL MAINTAIN AND PROTECT ALL JUNCTION BOXES SHOWN WITH NO ANTICIPATED IMPACT.
3. REMOVE EXISTING TRAFFIC CONTROLLER ASSEMBLY. INSTALL NEW TRAFFIC CONTROLLER ASSEMBLY ON EXISTING FOUNDATION. EXISTING CONDUIT RUN AND CABLES TO REMAIN IN PLACE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
4. REMOVE EXISTING LOAD CENTER ASSEMBLY AND FOUNDATION.INSTALL NEW LOAD CENTER ON NEW FOUNDATION AT EXISTING STATION AND OFFSET. COORDINATE POWER SHUT-OFF AND TURN-ON WITH CEA.
5. REPLACE J-BOXES 2, 4, AND 41, THIS MAY REQUIRE ADDING CONDUIT EXTENSIONS. IN THE EVENT CONDUIT EXTENSIONS ARE NEEDED, CONTRACTOR SHALL PULL CONDUCTORS FROM CONDUITS AND PROTECT AND PRESERVE IN PLACE BEFORE ADJUSTING CONDUITS, THEN RE-PULL CONDUCTORS THROUGH. THIS WORK AND MATERIALS SHALL BE INCIDENTAL TO THE CONTRACT.
6. DISCONNECT AND REMOVE EXISTING CABLES CONNECTED TO EXISTING SIGNAL POLES 2 & 4. EXISTING LUMINAIRES ARE TO BE REUSED ON NEW POLES.
7. INSTALL NEW LC"A", INTERCEPT EXISTING INTXL AND TRAFFIC CONTROLLER POWER CONDUITS.
8. A TEMPORARY SIGNAL IS ANTICIPATED TO BE REQUIRED.

STATE OF ALASKA PSSE REVIEW PROJECT ENGINEER

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

DIMOND BLVD & KING ST: SIGNAL SYSTEM PLAN

MTB
DESIGNED BY
CHECKED BY
DRAFTED BY
SCALE 1" = 20'
DATE TIME 4/21/2025 9:06 AM
DRAWING LOCATION C:\DOWL_PW\D0414549\00944_HJ1-HJ6.DWG

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HJ2	HJ6

DESIGNED BY MTB
CHECKED BY
DRAFTED BY
SCALE 1" = 20'
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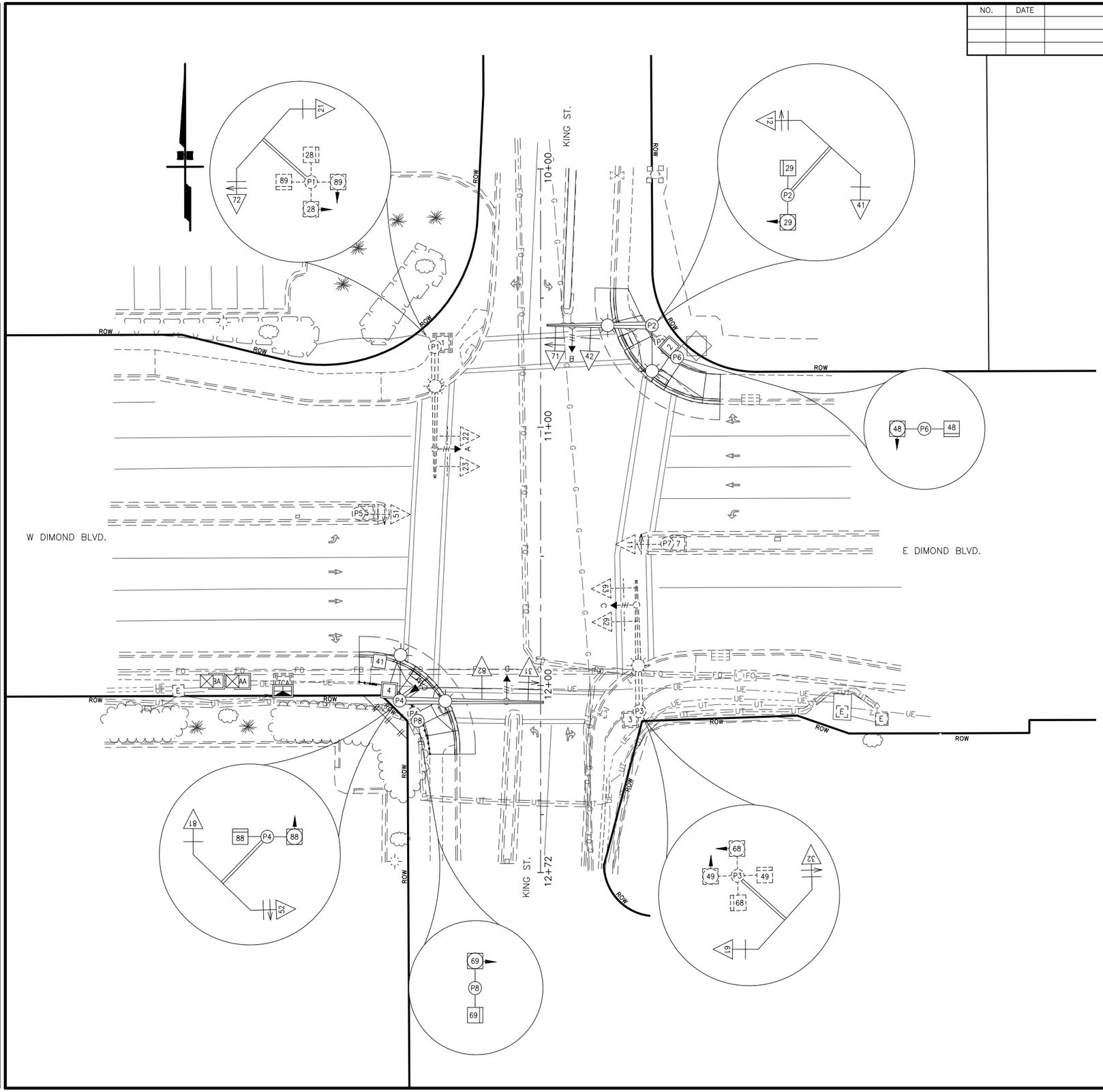
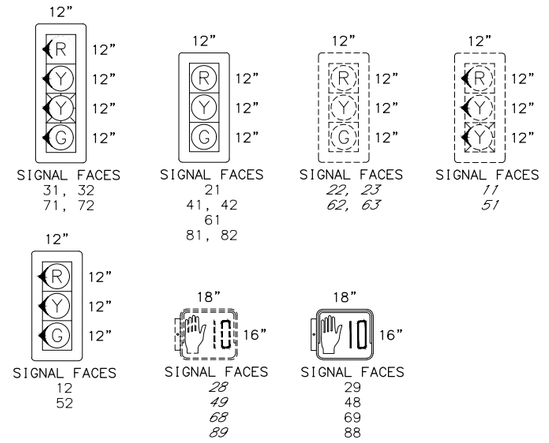
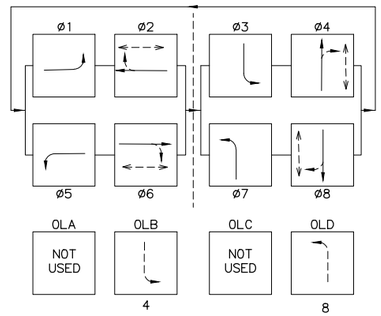




SIGNAL HEAD CONFIGURATIONS



PROTECTED VEHICLE MOVEMENT
PERMISSIVE VEHICLE MOVEMENT
PEDESTRIAN MOVEMENT

PHASING SEQUENCE DIAGRAM

PREEMPTION DWELL PHASE
VEHICLE MOVEMENTS

CHANNEL A: PHASES 2 + 5
CHANNEL B: PHASES 4 + 7
CHANNEL C: PHASES 6 + 1
CHANNEL D: Phases 8 + 3

PS&E REVIEW

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

DIMOND BLVD & KING ST: SIGNAL OPERATION PLAN

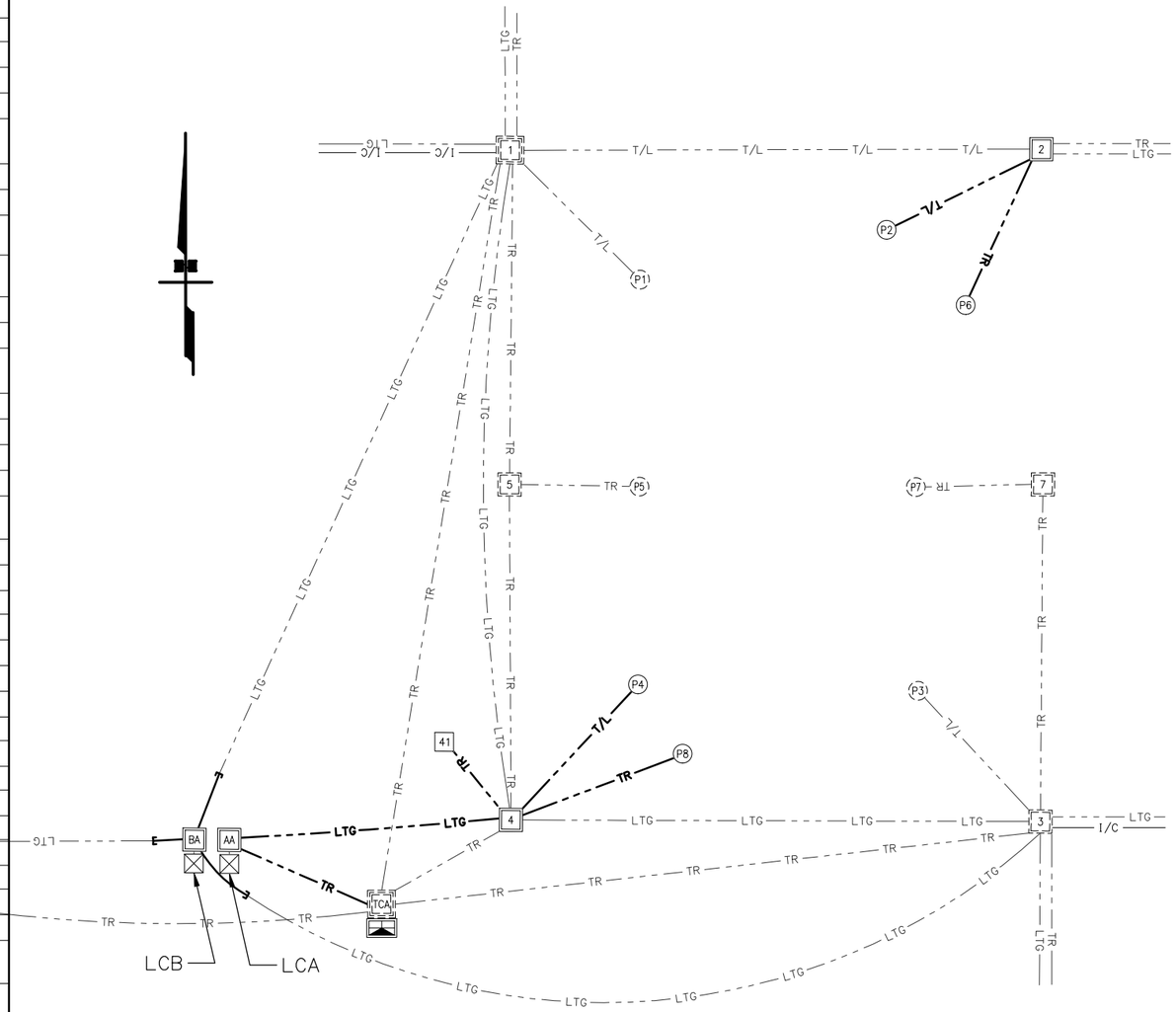
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HJ3	HJ6

CABLE & CONDUIT SCHEDULE

RUN	CONDUIT		CABLES	NOTES	CONDUIT FILL
LCB–TCA	**NEW–2"**	RMC	**NEW(1–3C6)**	TCA POWER	16%
LCA–4	**NEW–2"**	RMC	**NEW(1–3C8)**	INTXL	13%
	EX–2"	RMC	SPARE		
LCB–1	***EX–2"**	RMC	EX(1–3C8)	HWY LIGHTING	26%
LCB–3	***EX–2"**	RMC	EX(2–3C8)	HWY LIGHTING	26%
TCA–1	EX–3"	RMC	EX(4–7C14, 2–5C14, 3–3C14, 1–3C20)	SIGNAL	16%
	EX–3"	RMC	EX(1–15PR18) **NEW(4–7C14, 2–5C14, 3–3C14)**	SIGNAL, DETECTION	25%
TCA–3	EX–3"	RMC	EX(5–7C14, 2–5C14, 4–3C14, 1–3C20)	SIGNAL, DETECTION	22%
	EX–3"	RMC	EX(1–25PR19, 2–6PR18)	I/C "DIMOND CTR"	18%
TCA–4	EX–3"	RMC	EX(1–7C14, 1– 3C14, 1–6PR18, 1–15PR18) **NEW(4–7C14, 2–5C14, 3–3C14, 1–3C20, 1–CAT5)**	SIGNAL, DETECTION	32%
	EX–3"	RMC	EX(3–6PR18, 1–25PR19, 2–3C14, 2–3C20)	I/C "C ST", DETECTION, SIGNAL	33%
1–P1	EX–3"	RMC	EX(4–7C14, 2–5C14, 3–3C14, 1–3C20)	SIGNAL	18%
	EX–2"	RMC	EX(1–3C8)	INTXL	13%
1–2	EX–3"	RMC	EX(1–15PR18) **NEW(4–7C14, 2–5C14, 3–3C14, 1–3C20)**	SIGNAL, DETECTION	28%
	EX–2"	RMC	**NEW(1–3C8)**	INTXL	13%
	EX–2"	RMC	EX(1–3C8)	HWY LIGHTING	13%
	EX–3"	RMC	EX(1–6PR18)	DETECTION	13%
1–4	EX–2"	RMC	**NEW(1–3C8)**	INTXL	13%
1–5	EX–3"	RMC	EX(3–6PR18, 2–3C14, 2–3C20, 1–25PR19)	DETECTION, SIGNAL I/C "C ST"	26%
2–P2	**NEW–3"**	RMC	**NEW(4–7C14, 1–5C14, 2–3C14, 1–3C20)**	SIGNAL	22%
	NEW–2"	RMC	EX(1–3C8)	INTXL	13%
	NEW–2"	RMC	SPARE		
2–P6	**NEW–2"**	RMC	**NEW(1–5C14, 1–3C14)**	SIGNAL	
3–P3	EX–3"	RMC	EX(4–7C14, 2–5C14, 3–3C14, 1–3C20)	SIGNAL	18%
	EX–2"	RMC	EX(1–3C8)	INTXL	13%
3–4	EX–2"	RMC	**NEW(1–3C8)**	INTXL	
3–7	EX–2"	RMC	EX(1–7C14, 1–3C14, 1–6PR18)	SIGNAL, LOOPS	16%
	EX–3"	RMC	SPARE		
7–P7	EX–2"	RMC	EX(1–7C14)	SIGNAL	5%
	EX–2"	RMC	SPARE		
4–41	**NEW–2"**	RMC	EX(1–15PR18)	DETECTION	9%
4–P4	**NEW–3"**	RMC	**NEW(4–7C14, 1–5C14, 2–3C14, 1–3C20, 1–CAT5)**	SIGNAL	23%
	NEW–2"	RMC	**NEW(2–3C8)**	INTXL, PHOTOCELL	26%
	NEW–2"	RMC	SPARE		
4–P8	**NEW–2"**	RMC	**NEW(1–5C14, 1–3C14)**	SIGNAL	8%
4–5	EX–2"	RMC	EX(1–7C14, 1–3C14, 1–6PR18)	SIGNAL, LOOPS	16%
	EX–3"	RMC	EX(3–6PR18, 2–3C14, 2–3C20, 1–25PR19)	DETECTION, SIGNAL I/C "C ST"	26%
5–P5	EX–2"	RMC	EX(1–7C14)	SIGNAL	5%
	EX–2"	RMC	SPARE		
1–WEST	EX–2"	RMC	EX(1–3C8)	HWY LIGHTING	13%
	EX–3"	RMC	EX(1–25PR19)	I/C "C ST"	11%
1–NORTH	EX–2"	RMC	EX(1–3C8)	HWY LIGHTING	13%
1–NORTH	EX–2"	RMC	EX(2–6PR18)	DETECTION	32%
2–EAST	EX–2"	RMC	EX(1–3C8)	HWY LIGHTING	13%
	EX–2"	RMC	EX(1–6PR18, 1–15PR18)	DETECTION	8%
3–EAST	EX–2"	RMC	EX(1–3C8)	HWY LIGHTING	13%
	EX–3"	RMC	EX(1–25PR19)	I/C "DIMOND CTR"	11%
3–SOUTH	EX–2"	RMC	EX(1–3C8)	HWY LIGHTING	13%
	EX–2"	RMC	EX(1–6PR18)	DETECTION	16%
LCB–WEST	*EX–2"	RMC	EX(1–3C8)	HWY LIGHTING	13%

EX– EXISTING CABLES
INTXL– INTERSECTION LIGHTING
*SPLICE INTO EXISTING CONDUIT RUN



NOTES:

1. 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 CIRCUIT CONDUCTOR.
2. DETECTOR LOOPS NOT SHOWN FOR CLARITY.

PSSE REVIEW
STATE OF ALASKA
PROJECT ENGINEER
REGISTERED PROFESSIONAL ENGINEER

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562–2000
AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

DIMOND BLVD & KING ST: WIRING DIAGRAM

DESIGNED BY MTB
CHECKED BY
DRAFTED BY
SCALE
DATE TIME 4/21/2025 9:06 AM
DRAWING LOCATION C:\DOWL_PW\D0414549\00944_HJ1–HJ6.DWG

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HJ4	HJ6

DESIGNED BY
CHECKED BY
DRAFTED BY

SCALE

DATE TIME
4/24/2025 10:57 AM

DRAWING LOCATION
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GENERAL LC NOTES:

1. ALL CIRCUIT BREAKERS SHALL BE RATED FOR OPERATION AT −20°F.
2. LOAD CENTER OUTAGES SHALL BE SCHEDULED DURING DAYLIGHT HOURS AND BE COMPLETE PRIOR TO DUSK THE SAME DAY.
3. SALVAGE EXISTING SKYLINE-STYLE LOAD CENTER.

SUMMARY OF NEW LOAD CENTER 'A'

LOAD CENTER TYPE:	TYPE 1A
MAINTAINED BY:	MUNICIPALITY OF ANCHORAGE
SERVING UTILITY:	CHUGACH ELECTRIC ASSOCIATION
SERVICE CONDUIT TYPE:	RIGID METAL CONDUIT
LOCATION DATA	
LOAD CENTER:	DIMOND BOULEVARD AND KING STREET
POWER SOURCE:	NEW LINE EXTENSION
PHOTOELECTRIC CONTROL:	AT LOAD CENTER
SERVICE VOLTAGE:	240/480V, 1-PHASE, 3-WIRE
PROVIDE METER SOCKET:	NEW
MAIN BREAKER A:	480, 50A, 2-POLE (TRANSFORMER PRIMARY)
MAIN BREAKER B:	480, 100A, 2-POLE
CONTACTOR 1:	600V, 12-POLE, 30A
AIC RATING:	10,000A

PANEL A (240V, THROUGH TRANSFORMER)

CKT	AMP TRIP	DESCRIPTION	CKT KVA	AØ	BØ	CKT KVA	DESCRIPTION	AMP TRIP	CKT
1	40/1	TC	3.8	3.9		0.1	PHOTOCELL	15/2	2
3			0.0		0.1	0.1			4
5	20/2	INTX LTG*	1.0	1.0		0.0	SPARE	20/2	6
7			1.0		1.0	0.0			8
9			0.0	0.0		0.0			10
11			0.0		0.0	0.0			12
13			0.0	0.0		0.0			14
15			0.0		0.0	0.0			16
17			0.0	0.0		0.0			18
* = THROUGH CONTACTOR			4.9	1.1		TOTAL KVA			6.0
						AMPS			25.0

SHORT CIRCUIT CALCULATION - LC 'A'

TRANSFORMER RATING	25KVA
VOLTAGE	240/480V
TRANSFORMER IMPEDANCE	1.2%
AVAILABLE SHORT CIRCUIT CURRENT AT TRANSFORMER SECONDARY	4,340A
FEEDER CONDUCTOR LENGTH	13'
FEEDER CONDUCTOR SIZE	2 AWG ALUM
CONDUIT	PVC
MAXIMUM FAULT CURRENT	4,172A
DATE CALCULATED	1/29/2025

ARC FLASH CALCULATION - LC 'A'

INCIDENT ENERGY	13.05 cal/cm²
ARC-FLASH BOUNDARY	80"
WORKING DISTANCE	18"
INSULATING GLOVES CLASS	00
NOMINAL SYSTEM VOLTAGE	480V
LIMITED APPROACH BOUNDARY	42"
RESTRICTED APPROACH BOUNDARY	12"
CALCULATION DATE	1/29/2025

SUMMARY OF NEW LOAD CENTER 'B'

LOAD CENTER TYPE:	TYPE 1A
MAINTAINED BY:	STATE OF ALASKA
SERVING UTILITY:	CHUGACH ELECTRIC ASSOCIATION
SERVICE CONDUIT TYPE:	RIGID METAL CONDUIT
LOCATION DATA	
LOAD CENTER:	DIMOND BOULEVARD AND KING STREET
POWER SOURCE:	NEW LINE EXTENSION
PHOTOELECTRIC CONTROL:	AT LOAD CENTER
SERVICE VOLTAGE:	240/480V, 1-PHASE, 3-WIRE WITH GROUNDED NEUTRAL
PROVIDE METER SOCKET:	NEW
MAIN BREAKER A:	480V, 100A, 2-POLE
CONTACTOR 1:	600V, 12-POLE, 30A
AIC RATING:	10,000A

PANEL A

CKT	AMP TRIP	DESCRIPTION	CKT KVA	AØ	BØ	CKT KVA	DESCRIPTION	AMP TRIP	CKT
1	40/1	HEAT TRACE**	2.0	2.1		0.1	PHOTOCELL	15/1	2
3	25/1	HEAT TRACE**	1.4		1.4	0.0			4
5	15/2	CKT 1 LTG*	1.4	2.8		1.4	CKT 2 LTG*	15/2	6
7			1.4		2.8	1.4			8
9	15/2	CKT 3 LTG*	1.0	2.0		1.0	CKT 4 LTG*	15/2	10
11			1.0		2.0	1.0			12
13			0.0	0.0		0.0			14
15			0.0		0.0	0.0			16
17			0.0	0.0		0.0			18
* = THROUGH CONTACTOR ** = 30MA GFCI			6.9	6.2		TOTAL KVA			13.1
						AMPS			27.3

SHORT CIRCUIT CALCULATION - LC 'B'

TRANSFORMER RATING	25KVA
VOLTAGE	240/480V
TRANSFORMER IMPEDANCE	1.2%
AVAILABLE SHORT CIRCUIT CURRENT AT TRANSFORMER SECONDARY	4,340A
FEEDER CONDUCTOR LENGTH	13'
FEEDER CONDUCTOR SIZE	2 AWG ALUM
CONDUIT	PVC
MAXIMUM FAULT CURRENT	4,172A
DATE CALCULATED	1/29/2025

ARC FLASH CALCULATION - LC 'B'

INCIDENT ENERGY	13.05 cal/cm²
ARC-FLASH BOUNDARY	80"
WORKING DISTANCE	18"
INSULATING GLOVES CLASS	00
NOMINAL SYSTEM VOLTAGE	480V
LIMITED APPROACH BOUNDARY	42"
RESTRICTED APPROACH BOUNDARY	12"
CALCULATION DATE	1/29/2025

VOLTAGE DROP CALCULATION - LC 'B'

1-PH, 2W CONFIGURATION, 1 COPPER CONDUCTOR PER PHASE IN RMC.

CKT #	CONDUCTOR SIZE (AWG)	LENGTH	VOLTAGE	POWER FACTOR	LOAD (KVA)	TOTAL (AMPS)	%VD
AA-5,7	8	900'	480	0.90	1.4	2.9	0.57
AA-9,11	8	570'	480	0.90	1.4	2.9	0.29
AA-6,8	8	530'	480	0.90	1.0	2.1	0.30
AA-10,12	8	430'	480	0.90	1.0	2.1	0.19

STATE OF ALASKA
49TH
PRE-PS&E
ROY N. PACE
EE-12053
REGISTERED PROFESSIONAL ENGINEER

EDC, INC.
1500 WEST 33RD AVE.
ANCHORAGE, AK 99503
(907) 257-0601
CERT. OF AUTH. NO. AECC705

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

DIMOND BLVD & KING ST: LOAD CENTER SCHEDULE

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HJ5	HJ6

DESIGNED BY MTB
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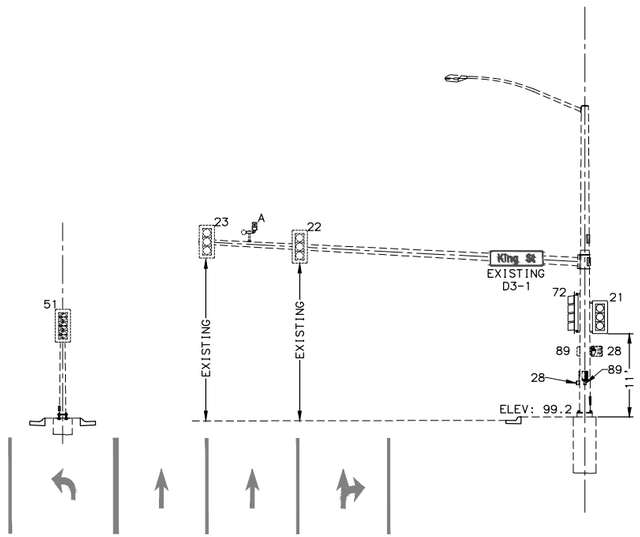
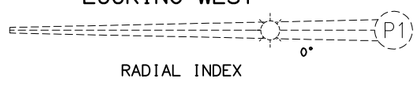
SCALE 1" = 10'
DATE TIME 4/21/2025 9:07 AM
DRAWING LOCATION C:\DOWL_PW\D0414549\00944_HJ1-HJ6.DWG

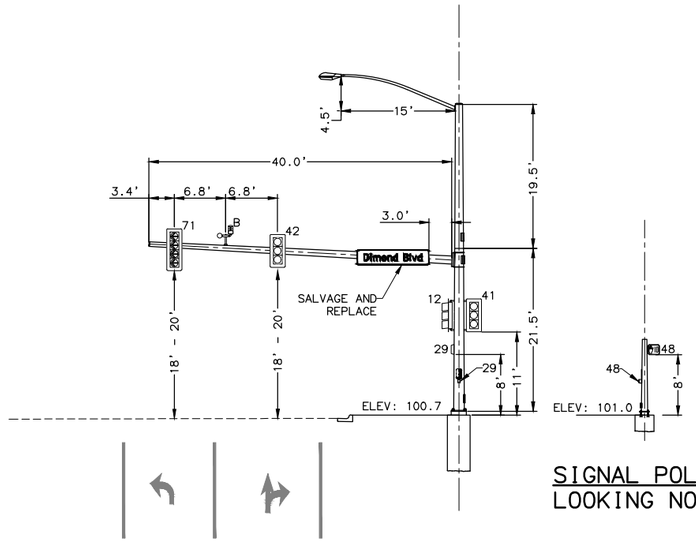


SIGNAL POLE 5
LOOKING WEST

SIGNAL POLE 1
LOOKING WEST

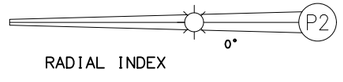


RADIAL INDEX



SIGNAL POLE 6
LOOKING NORTH

SIGNAL POLE 2
LOOKING NORTH



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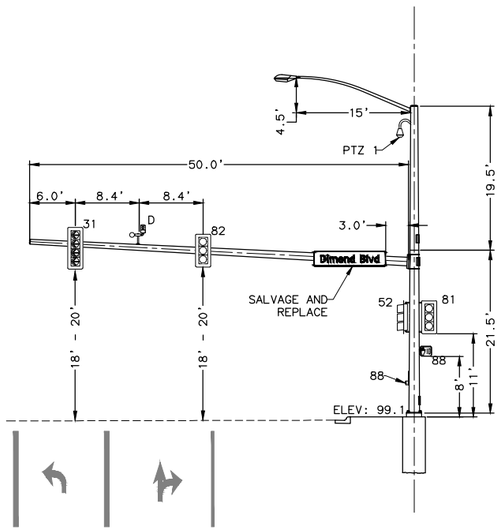
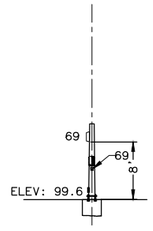
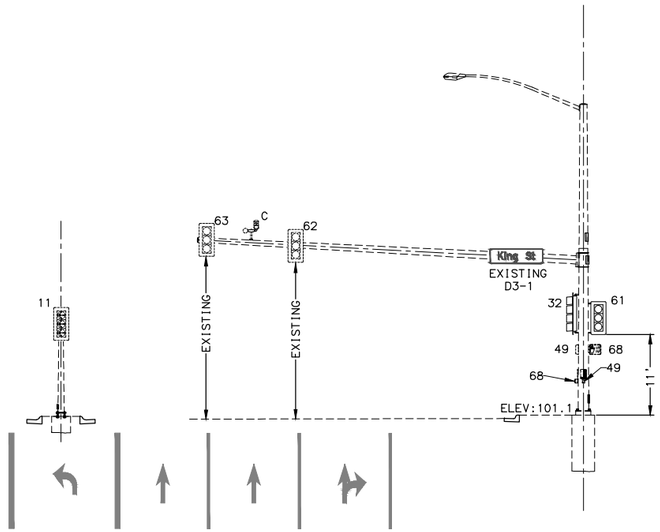


SIGNAL POLE 4
LOOKING SOUTH

RADIAL INDEX

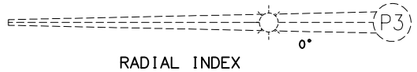


SIGNAL POLE 8
LOOKING SOUTH



SIGNAL POLE 7
LOOKING EAST

SIGNAL POLE 3
LOOKING EAST



RADIAL INDEX

NOTES:

1. ELEVATIONS ARE TO THE TOP OF THE FOUNDATION AND ARE APPROXIMATE.
2. LANE MARKINGS ARE SHOWN FOR REFERENCE ONLY.
3. SIGNAL HEAD LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL VERIFY SIGNAL HEAD PLACEMENT WITH RECEIVING AND APPROACH LANE OFFSETS.

STATE OF ALASKA
PSSE REVIEW
PROJECT ENGINEER
PROFESSIONAL ENGINEER

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

DIMOND BLVD & KING ST: POLE ELEVATIONS

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HJ6	HJ6

DESIGNED BY MTB
CHECKED BY
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SCALE
DATE TIME 4/21/2025 9:07 AM
DRAWING LOCATION C:\DOWL_PW\D0414549\D0944_HJ1-HJ6.DWG

CONTROLLER CABINET FEATURES

GENERAL OPTIONS	
TYPE	TS2-1
SIZE	NEMA SIZE 6
MATERIALS	0.125" NATURAL ALUMINUM
MODEL	WESTERN SYSTEMS NEMA TS2-1P
EXTENDER BASE	NONE
MOUNTING HARDWARE	INCLUDED
PAINT	YES-SEE SPECIAL PROVISIONS
SPECIAL OPTIONS	
LIFTING TABS	INCLUDED
EQUIPMENT SHELF	(2) FULL WIDTH, (1) LAPTOP DRAWER
AIR FILTER	FIBER MESH
MAIN DOOR LOCK	BEST
REAR DOOR	NONE
LED LIGHT FIXTURES	SEE SPECIAL PROVISIONS FOR OTHER REQUIREMENT
MAIN PANEL	
MAIN PANEL POSITION	16-POSITION HORIZONTAL
FLASH TRANSFER RELAYS SOCKETS	(8) INCLUDED
FLASHER SOCKET	(1) INCLUDED
R1 RELAY SOCKET	INCLUDED
POWER PANEL	
SURGE SUPPRESSION	SHP300-10
LINE FILTER (RADIO INTERFERENCE)	50A
SOLID STATE CONTACTOR	NORMALLY OPEN, 50A
MAIN CIRCUIT BREAKER	40A
AUXILIARY CIRCUIT BREAKER	20A
3 POSITION TERMINAL BLOCK FOR INCOMING POWER, #2-#8 U.S.G.	INCLUDED
16 POSITION NEUTRAL BUS BAR	INCLUDED
16 POSITION CHASSIS GROUND BUS BAR	INCLUDED
POLICE PANEL	
POLICE PANEL SWITCHES	SIGNALS ON/OFF, AUTO/FLASH
POLICE PANEL PUSHBUTTON ALARM	NONE
POLICE DOOR LOCK	CONVENTIONAL (SKELETON KEY)
POLICE PANEL MANUAL CORD	NONE
AUXILIARY PANEL	
AUXILIARY PANEL SWITCHES	AUTO/FLASH, STOP TIME, CONTROLLER POWER, COORD, CABINET LIGHT, HEATER BYPASS
DETECTOR TEST SWITCHES	TACTILE PUSHBUTTON
FORCE OFF SWITCHES	TACTILE PUSHBUTTON
RACK DETECTION	
DETECTOR RACKS	FOUR (4) 16-CHANNEL DETECTOR RACKS. TWO THE THE RACKS SHALL BE CONFIGURED WITH 2 SLOTS EACH FOR OPTICOM.
DETECTOR RACK POWER SUPPLY	BIU FOR EACH RACK
EVP REQUIREMENTS	WIRING FOR GREEN SENSE MONITORING
ADDITIONAL OPTIONS	
RAILROAD PREEMPTION	INCLUDED
RAILROAD PREEMPTION/STAND ALONE PANEL	NO
RED JUMPERS FOR ALL UNUSED PHASES	INCLUDED
LOAD RESISTORS	(8) INCLUDED - LEFT SIDE OF CABINET
HEATER RECEPTACLE (SINGLE)	INCLUDED - RIGHT SIDE OF CABINET
DUPLEX GFI OUTLET (NON-FILTERED)	INCLUDED - RIGHT SIDE OF CABINET
QUAD CONVENIENCE OUTLET - FILTERED	INCLUDED - LEFT SIDE OF CABINET
ADDITIONAL NEUTRAL BUS BARS	(1) 32 POSITION BUS BAR LEFT SIDE OF CABINET
ADDITIONAL CHASSIS GROUND BUS BARS	(1) 32 POSITION BUS BAR LEFT SIDE OF CABINET
STANDARD WIRING DIAGRAM (AUTOCAD FORMAT)	PROVIDE: (3) PAPER SETS FOR CABINET, SIGNAL TECH AND TRAFFIC, (1) ACAD ON DISC, (1) PDF.
GTT OPTICOM 757 HARNESS	INCLUDED - WIRED INTO CABINET
GTT OPTICOM 768 AUXILIARY INTERFACE PANEL	INCLUDED - WIRED INTO CABINET
GENERATOR BYPASS COMPARTMENT	INCLUDED - MOUNT COMPARTMENT FLUSH AND ON INSIDE OF CONTROLLER CABINET DOOR. SEE SPECIAL PROVISIONS FOR OTHER REQUIREMENTS.

CONTROLLER ASSEMBLY EQUIPMENT

SUPPLY ALL LABOR, EQUIPMENT AND MATERIALS TO PROVIDE A FULLY FUNCTIONING TRAFFIC SIGNAL CONTROLLER ASSEMBLY COMPLIANT WITH THE NEMA STANDARD PUBLICATION NO. TS2-2003 V02.06 AND SPECIAL "SPECIALS" PROVISIONS OF THIS CONTRACT INCLUDING BUT NOT LIMITED TO;

QTY	CONTROLLER/MMU EQUIPMENT
1	ECON COBALT ATC TOUCH 2100 CONTROLLER (TS2 TYP 2
1	CONTROLLER TELEMETRY MODULE TCM-FSK-9 OR APPROVED EQUAL
1	CONTROLLER ETHERNET PORT
1	CONTROLLER DATA KEY
1	EDI MMU2-16LEIP
1	MMU2 CARD
QTY	**CABINET EQUIPMENT**
16	PDC SSS-87-I/O LOAD SWITCHES OR APPROVED EQUAL
16	EDI ORACLE4E DETECTOR AMPLIFIERS OR APPROVED EQUAL
8	DETROL CONTROLS 295 FLASH TRANSFER RELAYS OR APPROVED EQUAL
2	EDI BIU700 TERMINAL AND FACILITIES BIU'S OR APPROVED EQUAL
4	EDI BIU700 DETECTION BIU'S OR APPROVED EQUAL
1	EDI PS250 TS2 CABINET POWER SUPPLY OR APPROVED EQUAL
1	PDC SSF-87 FLASHER OR APPROVED EQUAL
1	R1 RELAY
1	600/900/1500W SELECTABLE THERMOSTATICALLY CONTROLLED CABINET HEATER, MOUNT ON DOOR
1	RE-SEALABLE PRINT POUCH OF SUFFICIENT SIZE TO ACCOMMODATE CABINET PRINTS
1	COMPLETE SET OF MANUALS FOR CONTROLLER, MMU2, AND VEHICLE DETECTOR AMPLIFIERS

COMMUNICATION EQUIPMENT SCHEDULE

QTY	COPPER INTERCONNECT SYSTEM
1	ACTELIS ML698E WITH FOUR 10/100X PORTS AND ONE OPTIONAL 1000BASE SFP PORT OR APPROVED EQUAL
1	AC POWER ADAPTER 506R00006 OR APPROVED EQUAL
4	3 FOOT CAT6 PATCH CABLE
1	SFP OPTICS 100BASE FX SM 1310NM 15KM LC MODULE 506R00032 OR APPROVED EQUAL
1	CARRIER-CLASS ELEMENT MANAGMENT SYSTEM
2	QUAD DSL CABLES 504R20110 OR APPROVED EQUAL
1	WALL MOUNTING KIT 510R21080 OR APPROVED EQUAL
QTY	**FIBER INTERCONNECT EQUIPMENT**
0	ACTELIS NETWORKS MODEL ML530 WITH TWO 100/1000 BASE FX SFP PORTS AND FOUR PORTS OF 10/100 BASE-T OR APPROVED EQUAL
0	AC POWER ADAPTER 506R00006 OR APPROVED EQUAL
0	3 FOOT CAT6 PATCH CABLE
0	SFP OPTICS 100BASE FX SM 1310NM 15KM LC MODULE 506R00032 OR APPROVED EQUAL
0	CARRIER-CLASS ELEMENT MANAGEMENT SYSTEM
0	LC DUPLEX SM FIBER OPTIC CABLE ASSEMBLY 3 METERS OR APPROVED EQUAL
0	WALL MOUNTING KIT 510R21080 OR APPROVED EQUAL
QTY	**OTHER EQUIPMENT**
0	RSL910 ETHERNET SWITCH (COPPER AND FIBER) OR APPROVED EQUAL
QTY	**EVP EQUIPMENT**
1	OPTICOM MODEL 764 PHASE SELECTOR
QTY	**RADAR EQUIPMENT**
0	CLICK! 650 (102-0416)
0	CLICK! 656 (102-0451)
0	INSTALLER KIT
0	7' SDLC CABLE - 15 PIN SCREW TO 15 PIN SPRING CLIP (SDLC-TS2-7)
0	3' SDLC CABLE - 15 PIN SCREW TO 15 PIN SPRING CLIP (SDLC-TS2-3)
0	SDLC 6 PORT INTERFACE PANEL (SDLC-IP6)

STATE OF ALASKA
REGISTERED
PROFESSIONAL
ENGINEER
PROJECT ENGINEER
AS BUILT
PRELIMINARY

DOWL, LLC
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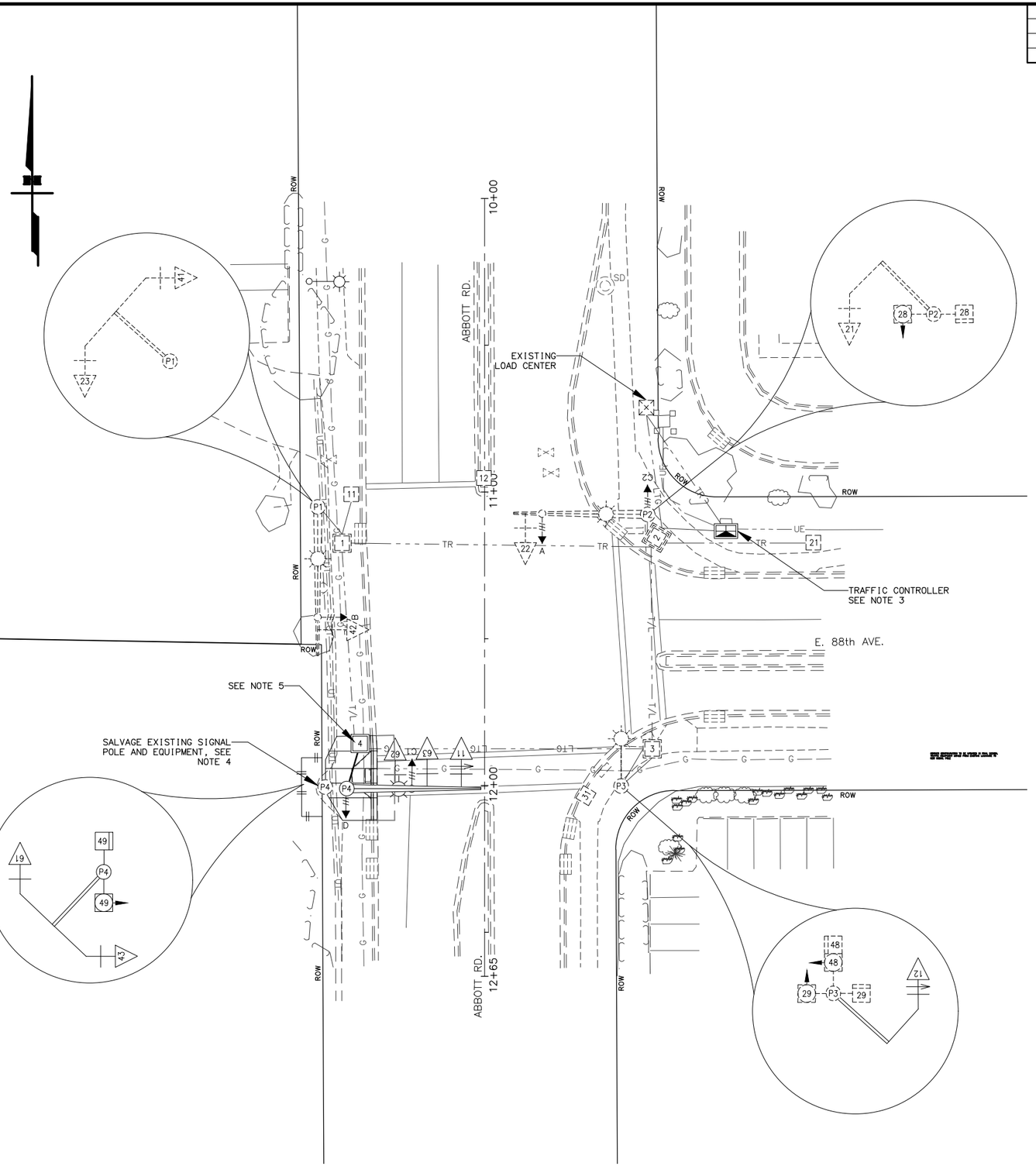
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

DIMOND BLVD & KING ST: CABINET EQUIPMENT

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HK1	HK6



FOUNDATION SCHEDULE

ITEM	STATION ALIGNMENT	OFFSET	STRUCTURE	REMARKS
LC	-	-	LOAD CENTER	EXISTING
TC	-	-	NEW TRAFFIC CONTROLLER	EXISTING
P1	-	-	SIGNAL POLE	EXISTING
P2	-	-	SIGNAL POLE	EXISTING
P3	-	-	SIGNAL POLE	EXISTING
P4	12+01.0	46.9 RT	SIGNAL POLE	NEW STEEL PILE FOUNDATION

JUNCTION BOX SCHEDULE

J-BOX	STATION ALIGNMENT	OFFSET	TYPE	REMARKS
TC	-	-	VAULT	EXISTING
1	-	-	2	EXISTING
2	-	-	3	EXISTING
3	-	-	2	EXISTING
4	11+85.4	43.6 RT	2	NEW

OPTICOM DETECTOR SCHEDULE

DETECTOR ID	LOCATION	PHASE CALL	FACING DIRECTION	MODEL	REMARKS
A	POLE 2 MASTARM	2	S	721	EXISTING
B	POLE 1 MASTARM	4	E	711	EXISTING
C1	POLE 4 MASTARM	6, 1	N	721	NEW
C2	SIDE OF POLE 2	6, 1	N	721	EXISTING
D	SIDE OF POLE 4	2	SE	721	NEW

NOTES:

1. CONTRACTOR SHALL MAINTAIN AND PROTECT ALL SIGNAL COMPONENTS SHOWN WITH NO ANTICIPATED IMPACT. IN ADDITION, UNLESS OTHERWISE DIRECTED BY THE ENGINEER:
   A. CONDUIT RUNS MAY BE INTERCEPTED (AS APPROVED BY THE ENGINEER).
   B. SIGNAL AND INTERCONNECT CONDUCTORS SHALL NOT BE INTERCEPTED.IMPACTED SIGNAL CONDUCTORS SHALL BE REPLACED CONTINUOUSLY FROM THE CONTROLLER CABINET.
   C. STREET LIGHT CONDUCTORS SHALL NOT BE INTERCEPTED.
2. CONTRACTOR SHALL MAINTAIN AND PROTECT ALL JUNCTION BOXES SHOWN WITH NO ANTICIPATED IMPACT.
3. REMOVE EXISTING TRAFFIC CONTROLLER ASSEMBLY. INSTALL NEW TRAFFIC CONTROLLER ASSEMBLY ON EXISTING FOUNDATION. EXISTING CONDUIT RUNS AND CABLES TO REMAIN IN PLACE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
4. DISCONNECT AND REMOVE EXISTING CABLES CONNECTED TO EXISTING SIGNAL AND LIGHTING EQUIPMENT.
5. REPLACE J-BOX, THIS MAY REQUIRE ADDING CONDUIT EXTENSIONS. IN THE EVENT CONDUIT EXTENSIONS ARE NEEDED, CONTRACTOR SHALL PULL CONDUCTORS FROM CONDUIT(S) AND PROTECT AND PRESERVE IN PLACE BEFORE ADJUSTING CONDUITS, THEN RE-PULL CONDUCTORS THROUGH. THIS WORK AND MATERIALS SHALL BE INCIDENTAL TO THE CONTRACT.

DESIGNER NOTES:

1. SE CORNER POLE CONFIGURATION TO BE UPDATED IN FINAL DESIGN

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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

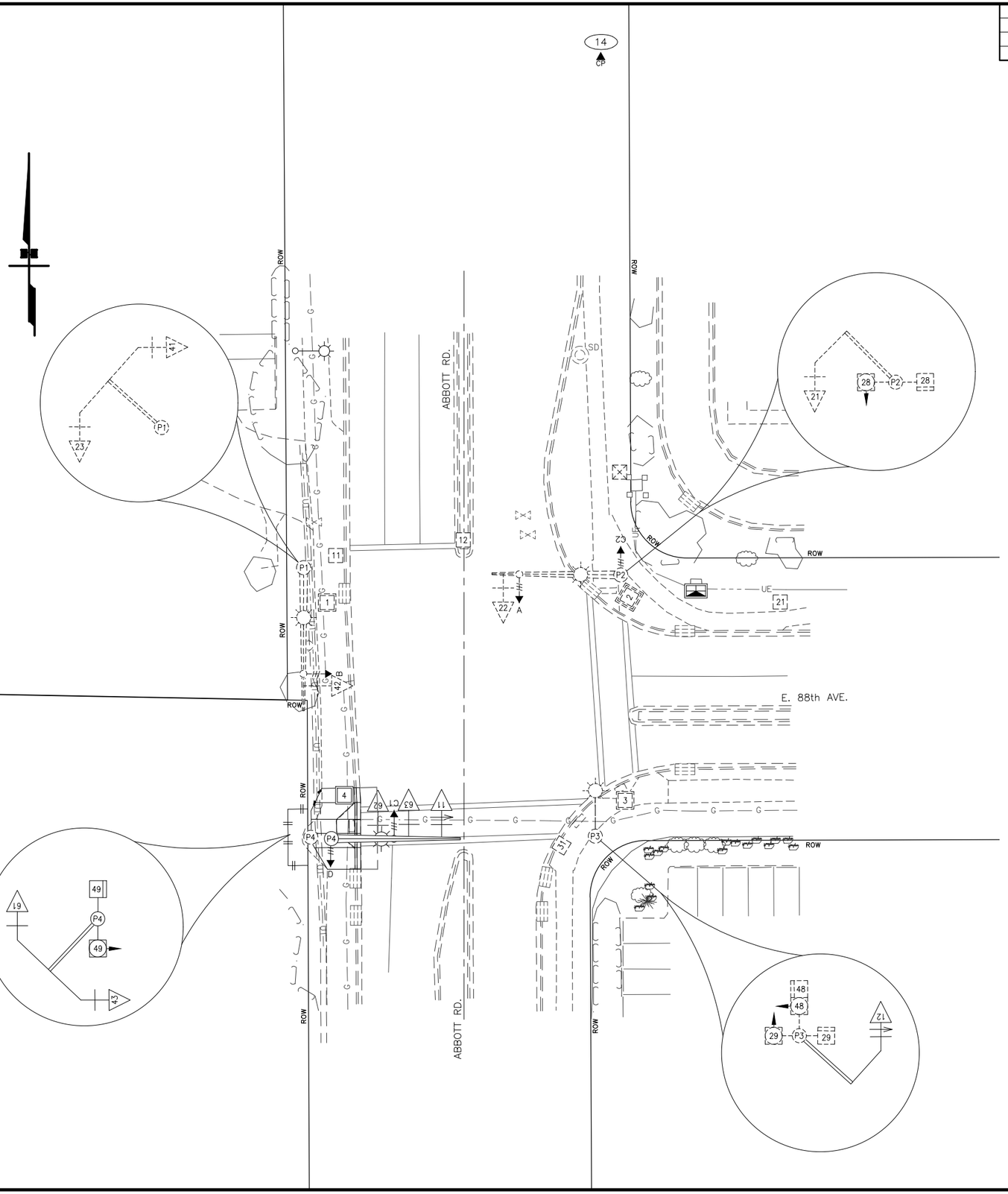
HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

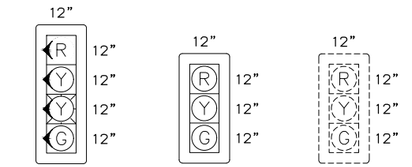
ABBOTT RD & 88TH AVE: SIGNAL SYSTEM PLAN

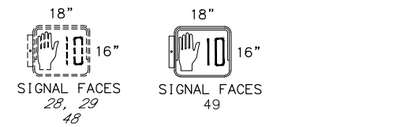
DESIGNED BY MTB
CHECKED BY
DRAFTED BY
SCALE 1" = 20'
DATE TIME 4/22/2025 11:15 AM
DRAWING LOCATION C:\DOWL_PW\D0414549\D0944_HK1-HK6.DWG

NO.	DATE	REVISION

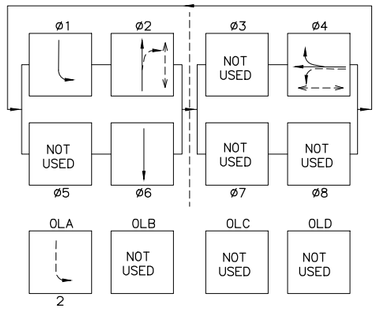
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HK2	HK6







SIGNAL HEAD CONFIGURATIONS



PROTECTED VEHICLE MOVEMENT
PERMISSIVE VEHICLE MOVEMENT
PEDESTRIAN MOVEMENT

PHASING SEQUENCE DIAGRAM

PREEMPTION DWELL PHASE
VEHICLE MOVEMENTS

CHANNEL A: PHASE 2
CHANNEL B: PHASE 4
CHANNEL C: PHASES 6 + 1
CHANNEL D: PHASE 2

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ANCHORAGE, AK 99503
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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

ABBOTT RD & 88TH AVE: SIGNAL OPERATION PLAN

DESIGNED BY MTB
CHECKED BY
DRAFTED BY

SCALE 1" = 20'

DATE 4/21/2025 TIME 4:35 PM

DRAWING LOCATION
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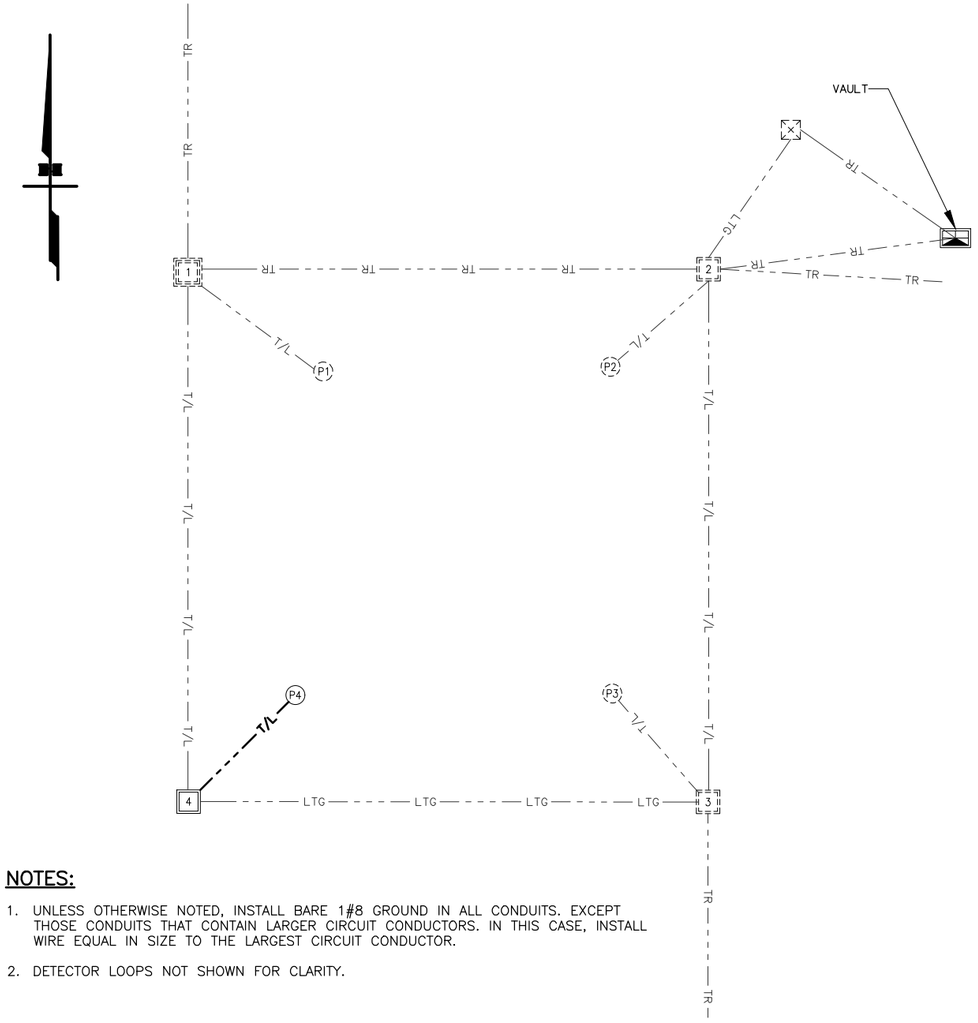
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HK3	HK6

CABLE & CONDUIT SCHEDULE

RUN	CONDUIT		CABLES	NOTES	CONDUIT FILL
LC–TC	EX–2	RMC	1–3C4	TC POWER	18%
LC–2	EX–2	RMC	1–3C8	INTXL	13%
	EX–2	RMC	SPARE		
TC–2	EX–3	RMC	EX(1–CAT5)	SIGNAL	1%
	EX–3	RMC	EX(3–7C14, 2–3C14, 3–3C20) **NEW(5–7C14, 1–5C14, 2–3C14, 2–3C20)**	DETECTION	31%
	EX–3	RMC	EX(3–7C14, 3–5C14, 3–3C14)	SIGNAL	17%
	EX–2	RMC	EX(2–25PR19)	I/C "INDEPENDENCE", I/C "BRAYTON"	22%
	EX–3	RMC	EX(7–6PR18	DETECTION	27%
	EX–2	RMC	EX(SPARE)		
2–P2	EX–3	RMC	EX(2–7C14, 1–5C14, 2–3C14, 1–3C20)	SIGNAL	10%
	EX–2	RMC	EX(2–3C8)	INTERSECTION LIGHTING	26%
2–1	EX–3	RMC	EX(2–7C14, 1–3C14, 1–3C20, 3–6PR18)	SIGNAL, LOOPS	23%
	EX–3	RMC	**NEW(5–7C14, 1–5C14, 2–3C14, 2–3C20)**	SIGNAL	15%
	EX–2	RMC	EX(1–25PR19)	I/C "BRAYTON"	11%
	EX–2	RMC	EX(1–7C14)	SIGNAL	2%
	EX–2	RMC	SPARE		
1–P1	EX–3	RMC	EX(3–7C14, 1–3C14, 1–3C20)	SIGNAL	9%
	EX–2	RMC	EX(2–3C8)	INTXL	26%
1–4	EX–3	RMC	**NEW(5–7C14, 1–5C14, 2–3C14, 2–3C20)**	SIGNAL	15%
	EX–2	RMC	EX(1–3C8)	INTXL	13%
	EX–2	RMC	SPARE		
	EX–2	RMC	SPARE		
4–P4	**NEW–3**	RMC	**NEW(5–7C14, 1–5C14, 2–3C14, 2–3C20)**	SIGNAL	38%
	NEW–2	RMC	EX(2–3C8)	INTXL	26%
2–3	EX–3	RMC	EX(1–7C14, 2–5C14, 2–3C14, 2–6PR18)	SIGNAL, DETECTION	17%
	EX–2	RMC	EX(1–3C8)	INTXL	13%
	EX–3	RMC	EX(1–25PR19)	I/C "INDEPENDENCE"	11%
3–P3	EX–3	RMC	EX(1–7C14, 2–5C14, 2–3C14, 2–3C8)	SIGNAL , INTXL	21%
3–4	EX–2	RMC	EX(1–3C8)	INTXL	13%
	EX–3	RMC	SPARE		
	EX–3	RMC	SPARE		
1–NORTH	EX–2	RMC	EX(3–6PR18)	LOOPS	22%
1–NORTH	EX–2	RMC	EX(1–25PR19)	I/C "BRAYTON"	24%
2–EAST	EX–2	RMC	EX(2–6PR18)	LOOPS	15%
3–SOUTH	EX–2	RMC	EX(2–6PR18)	LOOPS	15%
3–SOUTH	EX–2	RMC	EX(1–25PR19)	I/C "INDEPENDENCE"	24%

* EX– EXISTING CONDUITS, CABLES
INTXL– INTERSECTION LIGHTING
I/C– INTERCONNECT



NOTES:

1. 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 CIRCUIT CONDUCTOR.
2. DETECTOR LOOPS NOT SHOWN FOR CLARITY.

PS&E REVIEW

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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

ABBOTT RD & 88TH AVE: WIRING DIAGRAM

MTB
DESIGNED BY
CHECKED BY
DRAFTED BY
SCALE
DATE TIME 4/21/2025 9:04 AM
DRAWING LOCATION
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NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HK4	HK6

DESIGNED BY
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DRAFTED BY

SCALE

DATE TIME
4/24/2025 10:57 AM

DRAWING LOCATION
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GENERAL LC NOTES:

1. ALL CIRCUIT BREAKERS SHALL BE RATED FOR OPERATION AT −20°F.
2. LOAD CENTER OUTAGES SHALL BE SCHEDULED DURING DAYLIGHT HOURS AND BE COMPLETE PRIOR TO DUSK THE SAME DAY.

SUMMARY OF EXISTING LOAD CENTER 'A'

LOAD CENTER TYPE:	TYPE 1A
MAINTAINED BY:	MUNICIPALITY OF ANCHORAGE
SERVING UTILITY:	CHUGACH ELECTRIC ASSOCIATION
SERVICE CONDUIT TYPE:	RIGID METAL CONDUIT
LOCATION DATA	
LOAD CENTER:	ABBOTT ROAD AND 88TH AVENUE
POWER SOURCE:	EXISTING
PHOTOELECTRIC CONTROL:	AT LOAD CENTER
SERVICE VOLTAGE:	120/240V, 1-PHASE, 3-WIRE WITH GROUNDED NEUTRAL
PROVIDE METER SOCKET:	EXISTING
MAIN BREAKER A:	240, 100A, 2-POLE
CONTACTOR 1:	600V, 12-POLE, 30A
AIC RATING:	10,000A

PANEL A

CKT	AMP TRIP	DESCRIPTION	CKT KVA	AØ	BØ	CKT KVA	DESCRIPTION	AMP TRIP	CKT
1		BLANK	0.0	0.0		0.0	DISCONNECT	100/2	2
3			0.0		0.0	0.0			4
5	60/1	TC	3.8	3.9		0.1	PHOTOCELL	15/1	6
7	20/2	INTX LTG*	1.0		1.0	0.0	SPARE	20/2	8
9			1.0	1.0		0.0			10
11			0.0		0.0	0.0			12
13			0.0	0.0		0.0			14
15			0.0		0.0	0.0			16
17			0.0	0.0		0.0			18
* = THROUGH CONTACTOR				4.8	1.1	TOTAL KVA			5.9
				AMPS					24.6

SHORT CIRCUIT CALCULATION - LC 'A'

TRANSFORMER RATING	25KVA
VOLTAGE	120/240V
TRANSFORMER IMPEDANCE	1.2%
AVAILABLE SHORT CIRCUIT CURRENT AT TRANSFORMER SECONDARY	8,680A
FEEDER CONDUCTOR LENGTH	10'
FEEDER CONDUCTOR SIZE	2 AWG ALUM
CONDUIT	PVC
MAXIMUM FAULT CURRENT	7,676A
DATE CALCULATED	1/29/2025

ARC FLASH CALCULATION - LC 'A'

INCIDENT ENERGY	17.27 cal/cm²
ARC-FLASH BOUNDARY	96"
WORKING DISTANCE	18"
INSULATING GLOVES CLASS	00
NOMINAL SYSTEM VOLTAGE	240V
LIMITED APPROACH BOUNDARY	42"
RESTRICTED APPROACH BOUNDARY	12"
CALCULATION DATE	1/29/2025

STATE OF ALASKA
49TH
PRE-PS&E
ROY N. PACE
EE-12053
REGISTERED PROFESSIONAL ENGINEER

EDC, INC.
1500 WEST 33RD AVE.
ANCHORAGE, AK 99503
(907) 257-0601
CERT. OF AUTH. NO. AECC705

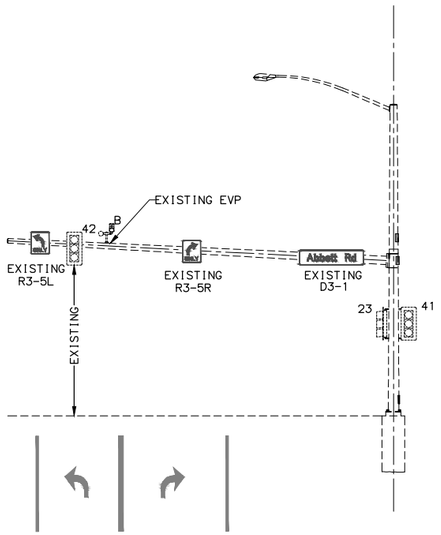
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

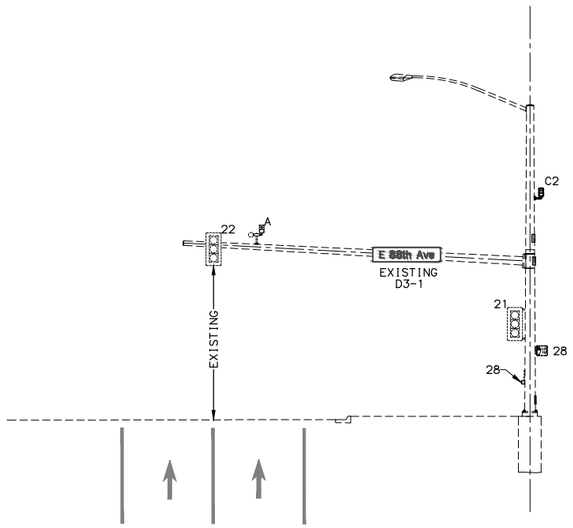
ABBOTT RD & 88TH AVE: LOAD CENTER SUMMARY

NO.	DATE	REVISION

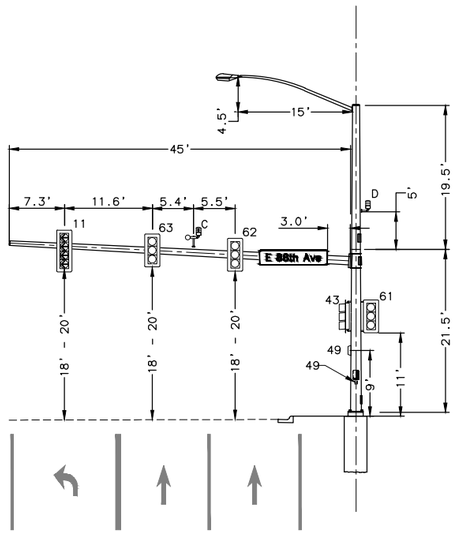
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HK5	HK6



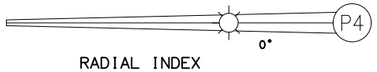
SIGNAL POLE 1
LOOKING WEST



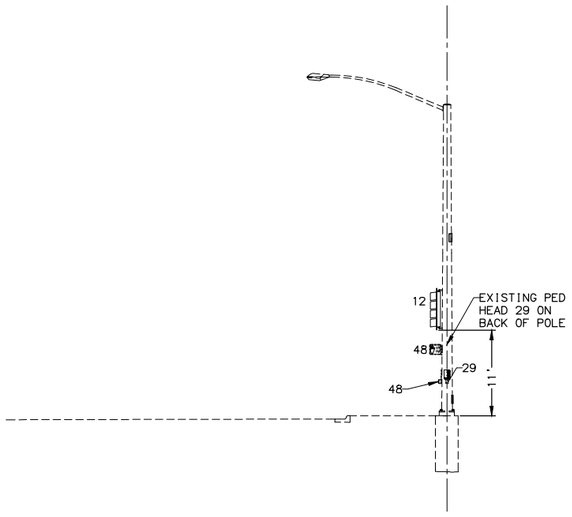
SIGNAL POLE 2
LOOKING NORTH



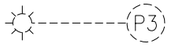
SIGNAL POLE 4
LOOKING SOUTH



RADIAL INDEX



SIGNAL POLE 3
LOOKING EAST



NOTES:

1. ELEVATIONS ARE TO THE TOP OF THE FOUNDATION AND ARE APPROXIMATE.
2. LANE MARKINGS ARE SHOWN FOR REFERENCE ONLY.
3. SIGNAL HEAD LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL VERIFY SIGNAL HEAD PLACEMENT WITH RECEIVING AND APPROACH LANE OFFSETS.

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

ABBOTT RD & 88TH AVE: POLE ELEVATIONS

DESIGNED BY MTB
CHECKED BY
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SCALE 1" = 10'
DATE TIME 4/21/2025 9:04 AM
DRAWING LOCATION C:\DOWL_PW\D0414549\00944_HK1-HK6.DWG

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HK6	HK6

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SCALE
DATE TIME 4/21/2025 9:05 AM
DRAWING LOCATION C:\DOWL_PW\00414549\00944_HK1-HK6.DWG

CONTROLLER CABINET FEATURES

GENERAL OPTIONS	
TYPE	TS2-1
SIZE	NEMA SIZE 6
MATERIALS	0.125" NATURAL ALUMINUM
MODEL	WESTERN SYSTEMS NEMA TS2-1P
EXTENDER BASE	NONE
MOUNTING HARDWARE	INCLUDED
PAINT	YES-SEE SPECIAL PROVISIONS
SPECIAL OPTIONS	
LIFTING TABS	INCLUDED
EQUIPMENT SHELF	(2) FULL WIDTH, (1) LAPTOP DRAWER
AIR FILTER	FIBER MESH
MAIN DOOR LOCK	BEST
REAR DOOR	NONE
LED LIGHT FIXTURES	SEE SPECIAL PROVISIONS FOR OTHER REQUIREMENT
MAIN PANEL	
MAIN PANEL POSITION	16-POSITION HORIZONTAL
FLASH TRANSFER RELAYS SOCKETS	(8) INCLUDED
FLASHER SOCKET	(1) INCLUDED
R1 RELAY SOCKET	INCLUDED
POWER PANEL	
SURGE SUPPRESSION	SHP300-10
LINE FILTER (RADIO INTERFERENCE)	50A
SOLID STATE CONTACTOR	NORMALLY OPEN, 50A
MAIN CIRCUIT BREAKER	40A
AUXILIARY CIRCUIT BREAKER	20A
3 POSITION TERMINAL BLOCK FOR INCOMING POWER, #2-#8 U.S.G.	INCLUDED
16 POSITION NEUTRAL BUS BAR	INCLUDED
16 POSITION CHASSIS GROUND BUS BAR	INCLUDED
POLICE PANEL	
POLICE PANEL SWITCHES	SIGNALS ON/OFF, AUTO/FLASH
POLICE PANEL PUSHBUTTON ALARM	NONE
POLICE DOOR LOCK	CONVENTIONAL (SKELETON KEY)
POLICE PANEL MANUAL CORD	NONE
AUXILIARY PANEL	
AUXILIARY PANEL SWITCHES	AUTO/FLASH, STOP TIME, CONTROLLER POWER, COORD, CABINET LIGHT, HEATER BYPASS
DETECTOR TEST SWITCHES	TACTILE PUSHBUTTON
FORCE OFF SWITCHES	TACTILE PUSHBUTTON
RACK DETECTION	
DETECTOR RACKS	FOUR (4) 16-CHANNEL DETECTOR RACKS. TWO THE THE RACKS SHALL BE CONFIGURED WITH 2 SLOTS EACH FOR OPTICOM.
DETECTOR RACK POWER SUPPLY	BIU FOR EACH RACK
EVP REQUIREMENTS	WIRING FOR GREEN SENSE MONITORING
ADDITIONAL OPTIONS	
RAILROAD PREEMPTION	INCLUDED
RAILROAD PREEMPTION/STAND ALONE PANEL	NO
RED JUMPERS FOR ALL UNUSED PHASES	INCLUDED
LOAD RESISTORS	(8) INCLUDED - LEFT SIDE OF CABINET
HEATER RECEPTACLE (SINGLE)	INCLUDED - RIGHT SIDE OF CABINET
DUPLEX GFI OUTLET (NON-FILTERED)	INCLUDED - RIGHT SIDE OF CABINET
QUAD CONVENIENCE OUTLET - FILTERED	INCLUDED - LEFT SIDE OF CABINET
ADDITIONAL NEUTRAL BUS BARS	(1) 32 POSITION BUS BAR LEFT SIDE OF CABINET
ADDITIONAL CHASSIS GROUND BUS BARS	(1) 32 POSITION BUS BAR LEFT SIDE OF CABINET
STANDARD WIRING DIAGRAM (AUTOCAD FORMAT)	PROVIDE: (3) PAPER SETS FOR CABINET, SIGNAL TECH AND TRAFFIC, (1) ACAD ON DISC, (1) PDF.
GTT OPTICOM 757 HARNESS	INCLUDED - WIRED INTO CABINET
GTT OPTICOM 768 AUXILIARY INTERFACE PANEL	INCLUDED - WIRED INTO CABINET
GENERATOR BYPASS COMPARTMENT	INCLUDED - MOUNT COMPARTMENT FLUSH AND ON INSIDE OF CONTROLLER CABINET DOOR. SEE SPECIAL PROVISIONS FOR OTHER REQUIREMENTS.

CONTROLLER ASSEMBLY EQUIPMENT

SUPPLY ALL LABOR, EQUIPMENT AND MATERIALS TO PROVIDE A FULLY FUNCTIONING TRAFFIC SIGNAL CONTROLLER ASSEMBLY COMPLIANT WITH THE NEMA STANDARD PUBLICATION NO. TS2-2003 V02.06 AND SPECIAL "SPECIALS" PROVISIONS OF THIS CONTRACT INCLUDING BUT NOT LIMITED TO;

QTY	CONTROLLER/MMU EQUIPMENT
1	ECON COBALT ATC TOUCH 2100 CONTROLLER (TS2 TYP 2
1	CONTROLLER TELEMETRY MODULE TCM-FSK-9 OR APPROVED EQUAL
1	CONTROLLER ETHERNET PORT
1	CONTROLLER DATA KEY
1	EDI MMU2-16LEIP
1	MMU2 CARD
QTY	**CABINET EQUIPMENT**
16	PDC SSS-87-I/O LOAD SWITCHES OR APPROVED EQUAL
16	EDI ORACLE4E DETECTOR AMPLIFIERS OR APPROVED EQUAL
8	DETROL CONTROLS 295 FLASH TRANSFER RELAYS OR APPROVED EQUAL
2	EDI BIU700 TERMINAL AND FACILITIES BIU'S OR APPROVED EQUAL
4	EDI BIU700 DETECTION BIU'S OR APPROVED EQUAL
1	EDI PS250 TS2 CABINET POWER SUPPLY OR APPROVED EQUAL
1	PDC SSF-87 FLASHER OR APPROVED EQUAL
1	R1 RELAY
1	600/900/1500W SELECTABLE THERMOSTATICALLY CONTROLLED CABINET HEATER, MOUNT ON DOOR
1	RE-SEALABLE PRINT POUCH OF SUFFICIENT SIZE TO ACCOMMODATE CABINET PRINTS
1	COMPLETE SET OF MANUALS FOR CONTROLLER, MMU2, AND VEHICLE DETECTOR AMPLIFIERS

COMMUNICATION EQUIPMENT SCHEDULE

QTY	COPPER INTERCONNECT SYSTEM
1	ACTELIS ML698E WITH FOUR 10/100X PORTS AND ONE OPTIONAL 1000BASE SFP PORT OR APPROVED EQUAL
1	AC POWER ADAPTER 506R00006 OR APPROVED EQUAL
4	3 FOOT CAT6 PATCH CABLE
1	SFP OPTICS 100BASE FX SM 1310NM 15KM LC MODULE 506R00032 OR APPROVED EQUAL
1	CARRIER-CLASS ELEMENT MANAGMENT SYSTEM
2	QUAD DSL CABLES 504R20110 OR APPROVED EQUAL
1	WALL MOUNTING KIT 510R21080 OR APPROVED EQUAL
QTY	**FIBER INTERCONNECT EQUIPMENT**
0	ACTELIS NETWORKS MODEL ML530 WITH TWO 100/1000 BASE FX SFP PORTS AND FOUR PORTS OF 10/100 BASE-T OR APPROVED EQUAL
0	AC POWER ADAPTER 506R00006 OR APPROVED EQUAL
0	3 FOOT CAT6 PATCH CABLE
0	SFP OPTICS 100BASE FX SM 1310NM 15KM LC MODULE 506R00032 OR APPROVED EQUAL
0	CARRIER-CLASS ELEMENT MANAGEMENT SYSTEM
0	LC DUPLEX SM FIBER OPTIC CABLE ASSEMBLY 3 METERS OR APPROVED EQUAL
0	WALL MOUNTING KIT 510R21080 OR APPROVED EQUAL
QTY	**OTHER EQUIPMENT**
0	RSL910 ETHERNET SWITCH (COPPER AND FIBER) OR APPROVED EQUAL
QTY	**EVP EQUIPMENT**
1	OPTICOM MODEL 764 PHASE SELECTOR
QTY	**RADAR EQUIPMENT**
0	CLICK! 650 (102-0416)
0	CLICK! 656 (102-0451)
0	INSTALLER KIT
0	7' SDLC CABLE - 15 PIN SCREW TO 15 PIN SPRING CLIP (SDLC-TS2-7)
0	3' SDLC CABLE - 15 PIN SCREW TO 15 PIN SPRING CLIP (SDLC-TS2-3)
0	SDLC 6 PORT INTERFACE PANEL (SDLC-IP6)

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

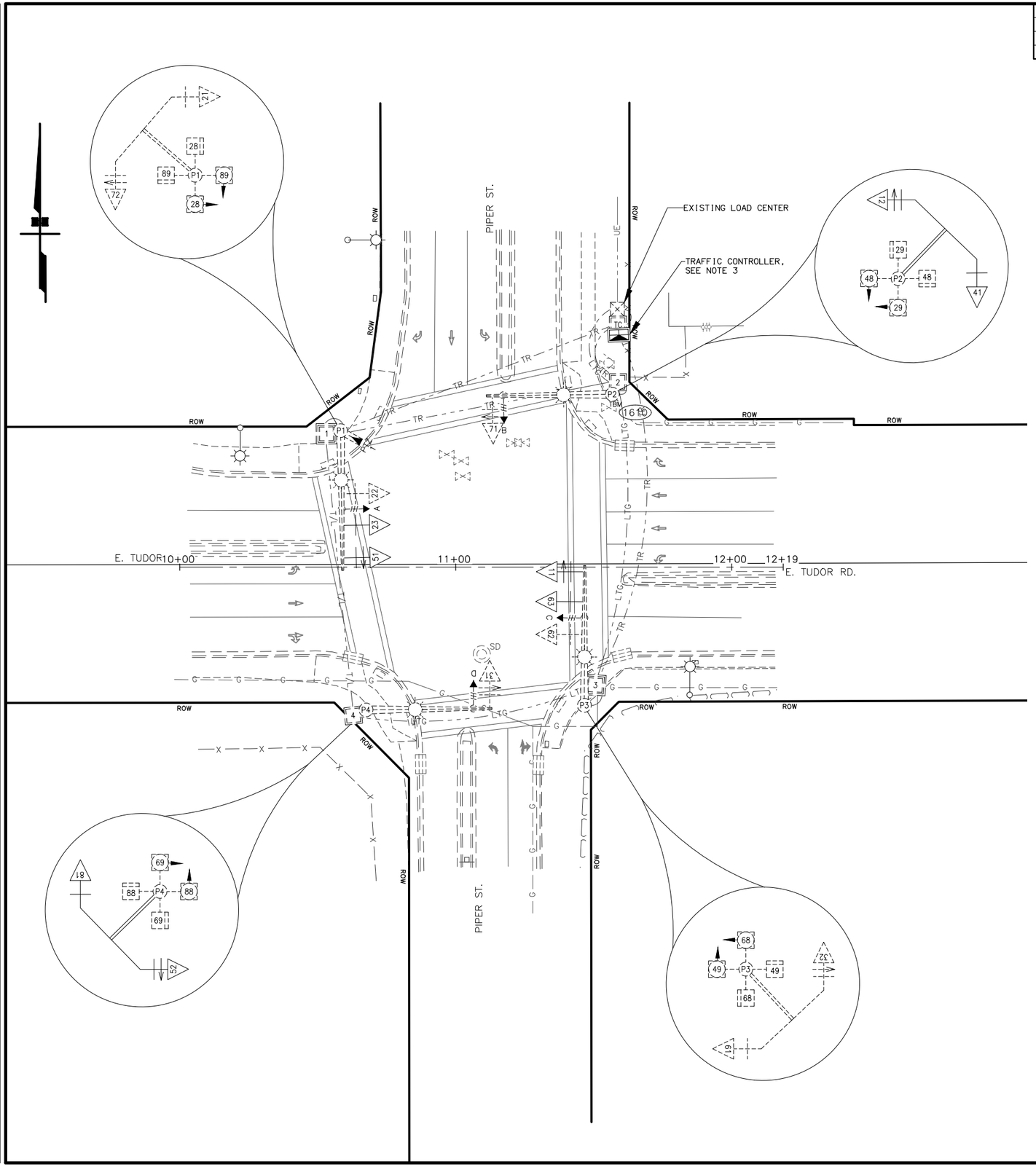
ABBOTT RD & 88TH AVE: CABINET EQUIPMENT

STATE OF ALASKA
PSSE REVIEW
PROJECT ENGINEER
REGISTERED PROFESSIONAL ENGINEER

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HL1	HL6



FOUNDATION SCHEDULE

ITEM	STATION ALIGNMENT	OFFSET	STRUCTURE	REMARKS
LC	-	-	LOAD CENTER	EXISTING
TC	-	-	NEW TRAFFIC CONTROLLER	EXISTING
P1	-	-	SIGNAL POLE 1	EXISTING
P2	-	-	SIGNAL POLE 2	EXISTING
P3	-	-	SIGNAL POLE 3	EXISTING
P4	-	-	SIGNAL POLE 4	EXISTING

JUNCTION BOX SCHEDULE

J-BOX	STATION ALIGNMENT	OFFSET	TYPE	REMARKS
TC	-	-	VAULT	EXISTING
1	-	-	3	EXISTING
2	-	-	2	EXISTING
3	-	-	3	EXISTING
4	-	-	2	EXISTING

OPTICOM DETECTOR SCHEDULE

DETECTOR ID	LOCATION	PHASE CALL	FACING DIRECTION	MODEL	REMARKS
A	POLE 1 MASTARM	2, 5	E	711	RELOCATE EXISTING
B	POLE 2 MASTARM	4, 7	S	721	EXISTING
C	POLE 3 MASTARM	6, 1	W	711	RELOCATE EXISTING
D	POLE 4 MASTARM	8, 3	N	711	EXISTING

NOTES:

1. CONTRACTOR SHALL MAINTAIN AND PROTECT ALL SIGNAL COMPONENTS SHOWN WITH NO ANTICIPATED IMPACT. IN ADDITION, UNLESS OTHERWISE DIRECTED BY THE ENGINEER:
   A. CONDUIT RUNS MAY BE INTERCEPTED (AS APPROVED BY THE ENGINEER).
   B. SIGNAL AND INTERCONNECT CONDUCTORS SHALL NOT BE INTERCEPTED.IMPACTED SIGNAL CONDUCTORS SHALL BE REPLACED CONTINUOUSLY FROM THE CONTROLLER CABINET.
   C. STREET LIGHT CONDUCTORS SHALL NOT BE INTERCEPTED.
2. CONTRACTOR SHALL MAINTAIN AND PROTECT ALL JUNCTION BOXES SHOWN WITH NO ANTICIPATED IMPACT.
3. REMOVE EXISTING TRAFFIC CONTROLLER ASSEMBLY. INSTALL NEW TRAFFIC CONTROLLER ASSEMBLY ON EXISTING FOUNDATION. EXISTING CONDUIT RUNS AND CABLES ARE TO REMAIN IN PLACE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

STATE OF ALASKA
PROFESSIONAL ENGINEER
PROJECT ENGINEER
AS BUILT

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

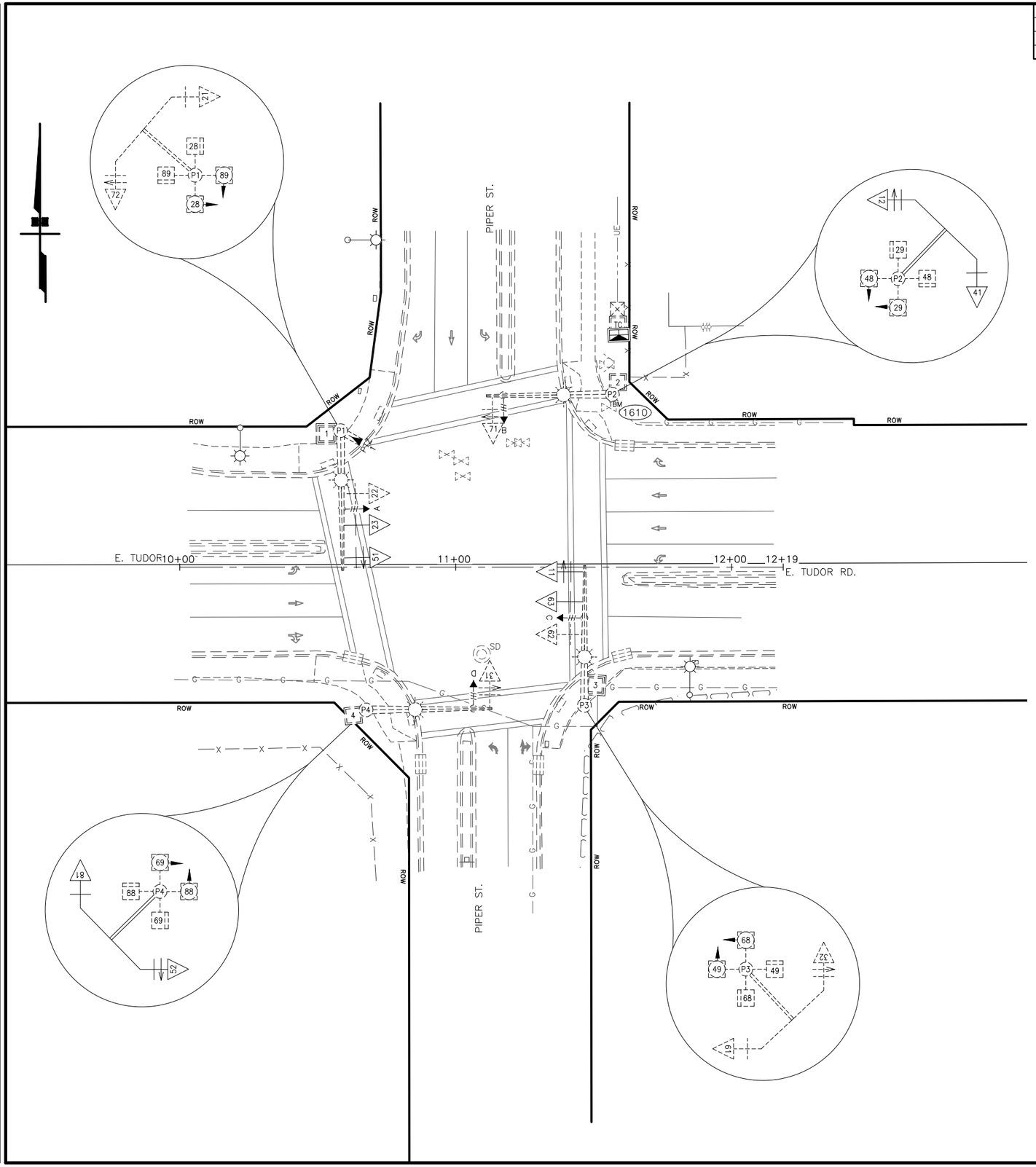
HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

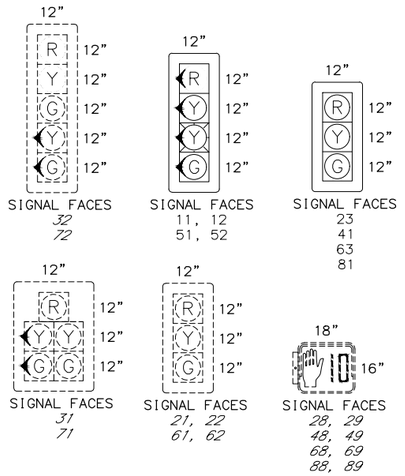
TUDOR RD & PIPER ST: SIGNAL SYSTEM PLAN

DESIGNED BY MTB
CHECKED BY
DRAFTED BY
SCALE 1" = 20'
DATE TIME 4/8/2025 4:58 PM
DRAWING LOCATION C:\DOWL_PW\D0414549\D0944_HL1-HL6.DWG

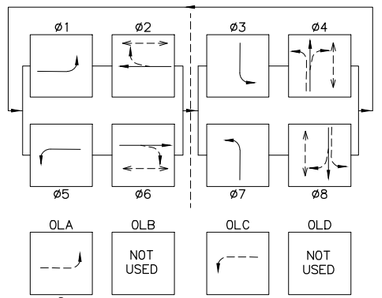
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HL2	HL6





SIGNAL HEAD CONFIGURATIONS



PHASING SEQUENCE DIAGRAM

PREEMPTION DWELL PHASE VEHICLE MOVEMENTS

CHANNEL A: PHASES 2 + 5
CHANNEL B: PHASES 4 + 7
CHANNEL C: PHASES 6 + 1
CHANNEL D: Phases 8 + 3

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
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STATE OF ALASKA
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HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

TUDOR RD & PIPER ST: SIGNAL OPERATION PLAN

DESIGNED BY MTB
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SCALE 1" = 20'
DATE 4/21/2025 TIME 4:37 PM
DRAWING LOCATION C:\DOWL_PW\D0414549\D0944_HL1-HL6.DWG

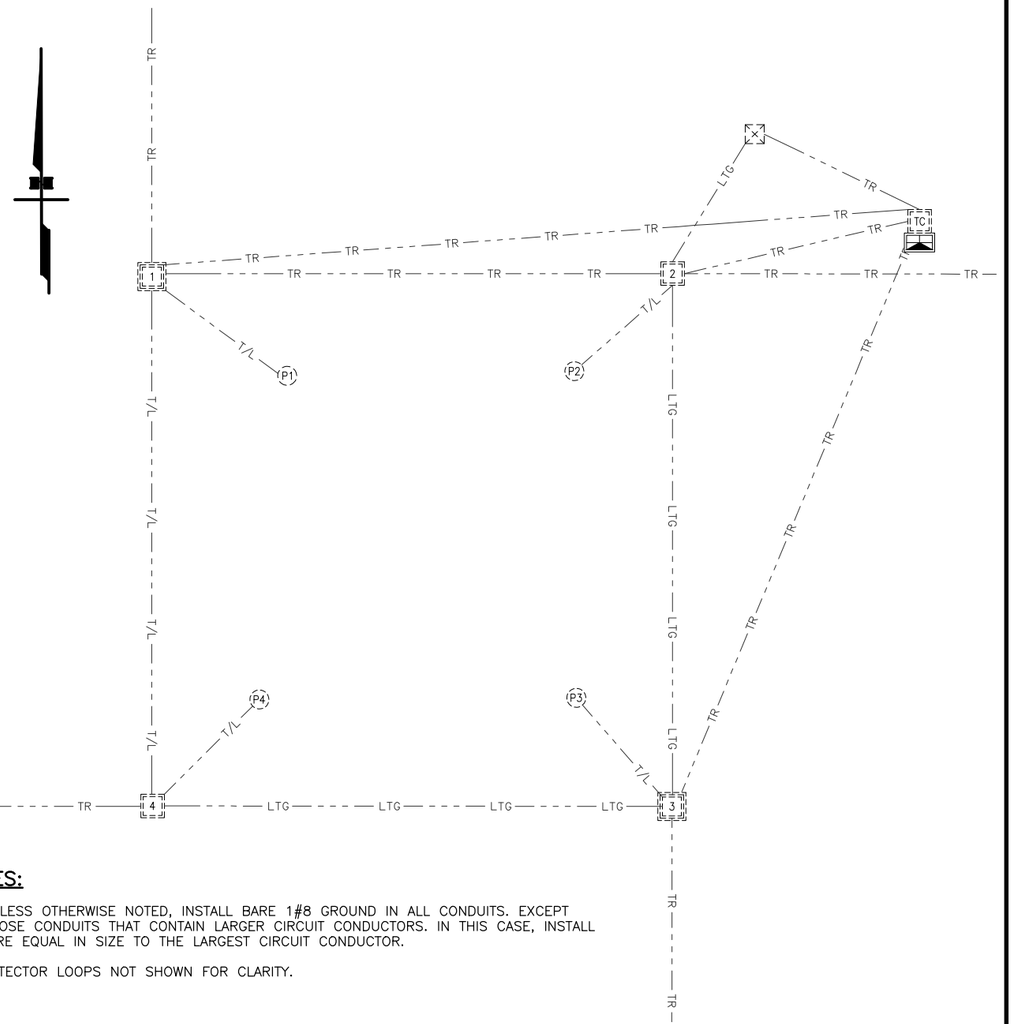
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HL3	HL6

CABLE & CONDUIT SCHEDULE

RUN	CONDUIT		CABLES	NOTES	CONDUIT FILL
LC–TC	EX–2	RMC	EX(1–3C6)	TC POWER	18%
LC–2	EX–2	RMC	EX(1–3C8)	INTXL	13%
TC–1	EX–3	RMC	EX(3–7PR18, 4–7C14, 2–5C14, 3–3C14, 1–3C20) **NEW(1–7C14)**	SIGNAL, DETECTION	32%
	EX–3	RMC	EX(3–7PR18, 3–7C14, 2–5C14, 3–3C14, 1–3C20)	SIGNAL, DETECTION	28%
TC–2	EX–3	RMC	EX(3–7PR18, 3–7C14, 2–5C14, 3–3C14, 1–3C20)	SIGNAL, DETECTION	28%
	EX–3	RMC	EX(1–CAT5)	SIGNAL	1%
TC–3	EX–3	RMC	EX(2–7PR18, 4–7C14, 2–5C14, 3–3C14, 1–3C20) **NEW(1–7C14)**	SIGNAL, DETECTION	28%
	EX–3	RMC	EX(2–25PR19)	I/C "ELMORE RD"	22%
	EX–2	RMC	SPARE		
1–P1	EX–3	RMC	EX(4–7C14, 2–5C14, 3–3C14, 1–3C20) **NEW(1–7C14)**	SIGNAL	21%
	EX–2	RMC	EX(1–3C8)	INTXL	13%
	EX–2	RMC	EX(1–CAT5)	SIGNAL	2%
1–2	EX–3	RMC	EX(1–CAT5)	SIGNAL	1%
1–4	EX–3	RMC	EX(3–7PR18, 3–7C14, 2–5C14, 3–3C14, 1–3C20)	SIGNAL, DETECTION	28%
	EX–2	RMC	EX(1–3C8)	INTXL	13%
	EX–3	RMC	SPARE		
	EX–2	RMC	SPARE		
2–P2	EX–3	RMC	EX(3–7C14, 2–5C14, 3–3C14, 1–3C20, 1–CAT5)	SIGNAL	16%
	EX–2	RMC	EX(2–3C8)	INTXL	26%
	EX–2	RMC	SPARE		
2–3	EX–2	RMC	EX(1–3C8)	INTXL	13%
3–P3	EX–3	RMC	EX(4–7C14, 2–5C14, 3–3C14, 1–3C20) **NEW(1–7C14)**	SIGNAL	21%
	EX–2	RMC	EX(2–3C8)	INTXL	26%
	EX–2	RMC	SPARE		
4–P4	EX–3	RMC	EX(3–7C14, 2–5C14, 3–3C14, 1–3C20)	SIGNAL	16%
	EX–2	RMC	EX(2–3C8)	INTXL	26%
	EX–2	RMC	SPARE		
1–NORTH	EX–2	RMC	EX(3–7PR18)	DETECTION	26%
2–EAST	EX–2	RMC	EX(3–7PR18)	DETECTION	26%
3–EAST	EX–3	RMC	EX(2–25PR19)	I/C "ELMORE RD"	22%
3–SOUTH	EX–2	RMC	EX(2–7PR18)	DETECTION	17%
4–WEST	EX–2	RMC	EX(3–7PR18)	DETECTION	26%

EX – EXISTING EQUIPMENT
INTXL – INTERSECTION LIGHTING
I/C – INTERCONNECT



NOTES:

1. 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 CIRCUIT CONDUCTOR.
2. DETECTOR LOOPS NOT SHOWN FOR CLARITY.

STATE OF ALASKA
PSSE REVIEW
PROJECT ENGINEER

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562–2000
AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

TUDOR RD & PIPER ST: WIRING DIAGRAM

DESIGNED BY MTB
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SCALE
DATE TIME 4/8/2025 4:58 PM
DRAWING LOCATION C:\DOWL_PW\D0414549\00944_HL1–HL6.DWG

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HL4	HL6

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SCALE

DATE TIME
4/24/2025 10:58 AM

DRAWING LOCATION
C:\DOWL_PW\D0414549\00944_HL1-HL6.DWG

GENERAL LC NOTES:

1. ALL CIRCUIT BREAKERS SHALL BE RATED FOR OPERATION AT −20°F.
2. LOAD CENTER OUTAGES SHALL BE SCHEDULED DURING DAYLIGHT HOURS AND BE COMPLETE PRIOR TO DUSK THE SAME DAY.

SUMMARY OF EXISTING LOAD CENTER 'A'	
LOAD CENTER TYPE:	TYPE 1A
MAINTAINED BY:	MUNICIPALITY OF ANCHORAGE
SERVING UTILITY:	CHUGACH ELECTRIC ASSOCIATION
SERVICE CONDUIT TYPE:	RIGID METAL CONDUIT
LOCATION DATA	
LOAD CENTER:	TUDOR ROAD AND PIPER STREET
POWER SOURCE:	EXISTING
PHOTOELECTRIC CONTROL:	AT LOAD CENTER
SERVICE VOLTAGE:	120/240V, 1-PHASE, 3-WIRE WITH GROUNDED NEUTRAL
PROVIDE METER SOCKET:	EXISTING
MAIN BREAKER A:	240, 100A, 2-POLE
CONTACTOR 1:	600V, 12-POLE, 30A
AIC RATING:	10,000A

PANEL A

CKT	AMP TRIP	DESCRIPTION	CKT KVA	AØ	BØ	CKT KVA	DESCRIPTION	AMP TRIP	CKT
1		BLANK	0.0	0.0		0.0	DISCONNECT	100/2	2
3			0.0		0.0	0.0			4
5			0.0	0.1		0.1	PHOTOCELL	15/1	6
7			0.0		0.0	0.0	SPARE	20/2	8
9	20/2	INTX LTG*	1.0	1.0		0.0			10
11			1.0		4.8	3.8	TC	50/1	12
13	20/2	SPARE	0.0	0.0		0.0			14
15			0.0		0.0	0.0			16
17			0.0	0.0		0.0			18
* = THROUGH CONTACTOR				1.1	4.8	TOTAL KVA			5.9
				AMPS					24.6

SHORT CIRCUIT CALCULATION – LC 'A'	
TRANSFORMER RATING	50KVA
VOLTAGE	120/240V
TRANSFORMER IMPEDANCE	1.2%
AVAILABLE SHORT CIRCUIT CURRENT AT TRANSFORMER SECONDARY	11,574A
FEEDER CONDUCTOR LENGTH	420'
FEEDER CONDUCTOR SIZE	2 AWG ALUM
CONDUIT	PVC
MAXIMUM FAULT CURRENT	853A
DATE CALCULATED	

ARC FLASH CALCULATION – LC 'A'	
INCIDENT ENERGY	1.42 cal/cm²
ARC-FLASH BOUNDARY	20"
WORKING DISTANCE	18"
INSULATING GLOVES CLASS	00
NOMINAL SYSTEM VOLTAGE	240V
LIMITED APPROACH BOUNDARY	42"
RESTRICTED APPROACH BOUNDARY	12"
CALCULATION DATE	1/29/2025

STATE OF ALASKA
PRE-PS&E
ROY N. PACE
EE-12053
REGISTERED PROFESSIONAL ENGINEER
49TH

EDC, INC.
1500 WEST 33RD AVE
ANCHORAGE, AK 99503
(907) 257-0601
CERT. OF AUTH. NO. AECC705

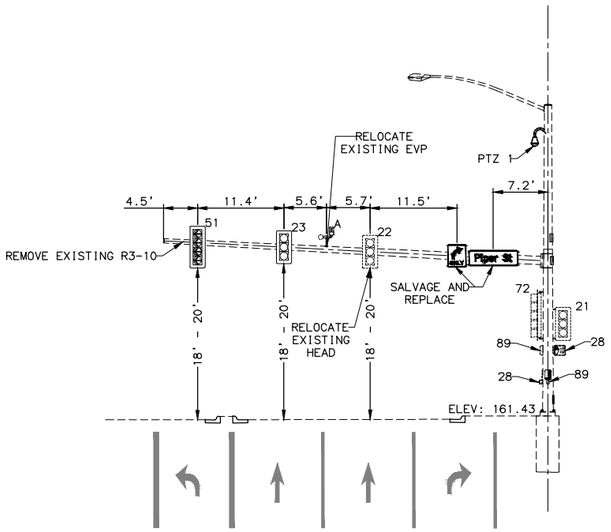
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

TUDOR RD & PIPER ST: LOAD CENTER SCHEDULE

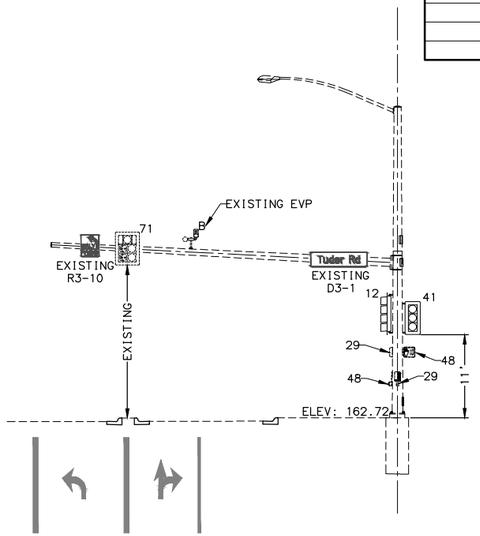
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HL5	HL6



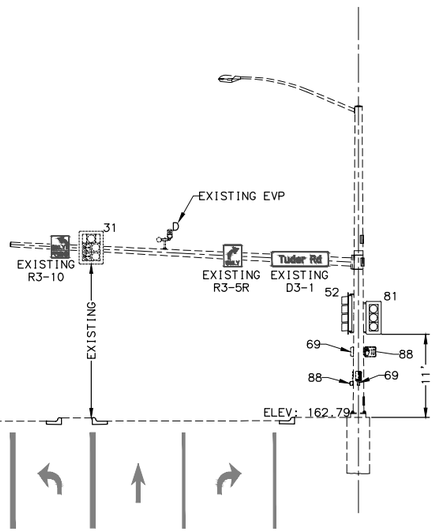
SIGNAL POLE 1
LOOKING WEST

P1



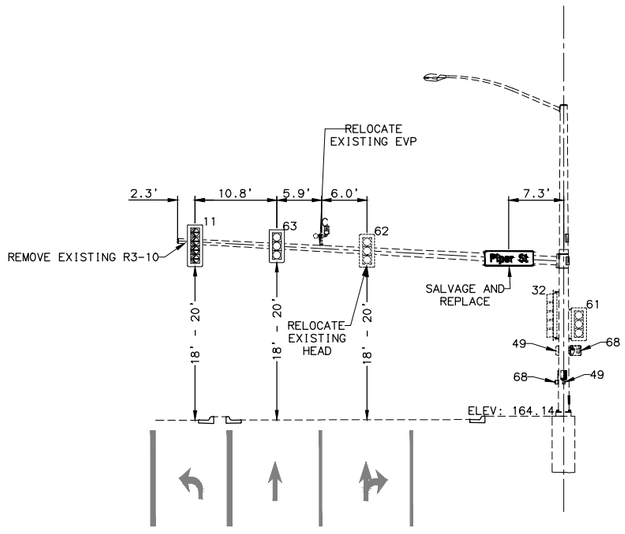
SIGNAL POLE 2
LOOKING NORTH

P2



SIGNAL POLE 4
LOOKING SOUTH

P4



SIGNAL POLE 3
LOOKING EAST

P3

NOTES:

1. ELEVATIONS ARE TO THE TOP OF THE FOUNDATION AND ARE APPROXIMATE.
2. LANE MARKINGS ARE SHOWN FOR REFERENCE ONLY.
3. SIGNAL HEAD LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL VERIFY SIGNAL HEAD PLACEMENT WITH RECEIVING AND APPROACH LANE OFFSETS.
4. ALL PEDESTRIAN HEADS AND PUSH BUTTONS ARE EXISTING

PS&E REVIEW

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

TUDOR RD & PIPER ST: POLE ELEVATIONS

DESIGNED BY MTB
CHECKED BY
DRAFTED BY
SCALE 1" = 10'
DATE TIME 4/8/2025 4:58 PM
DRAWING LOCATION C:\DOWL_PW\D0414549\00944_HL1-HL6.DWG

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HL6	HL6

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CHECKED BY
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SCALE
DATE TIME 4/8/2025 4:58 PM
DRAWING LOCATION C:\DOWL_PW\D0414549\00944_HL1-HL6.DWG

CONTROLLER CABINET FEATURES

GENERAL OPTIONS	
TYPE	TS2-1
SIZE	NEMA SIZE 6
MATERIALS	0.125" NATURAL ALUMINUM
MODEL	WESTERN SYSTEMS NEMA TS2-1P
EXTENDER BASE	NONE
MOUNTING HARDWARE	INCLUDED
PAINT	YES-SEE SPECIAL PROVISIONS
SPECIAL OPTIONS	
LIFTING TABS	INCLUDED
EQUIPMENT SHELF	(2) FULL WIDTH, (1) LAPTOP DRAWER
AIR FILTER	FIBER MESH
MAIN DOOR LOCK	BEST
REAR DOOR	NONE
LED LIGHT FIXTURES	SEE SPECIAL PROVISIONS FOR OTHER REQUIREMENT
MAIN PANEL	
MAIN PANEL POSITION	16-POSITION HORIZONTAL
FLASH TRANSFER RELAYS SOCKETS	(8) INCLUDED
FLASHER SOCKET	(1) INCLUDED
R1 RELAY SOCKET	INCLUDED
POWER PANEL	
SURGE SUPPRESSION	SHP300-10
LINE FILTER (RADIO INTERFERENCE)	50A
SOLID STATE CONTACTOR	NORMALLY OPEN, 50A
MAIN CIRCUIT BREAKER	40A
AUXILIARY CIRCUIT BREAKER	20A
3 POSITION TERMINAL BLOCK FOR INCOMING POWER, #2-#8 U.S.G.	INCLUDED
16 POSITION NEUTRAL BUS BAR	INCLUDED
16 POSITION CHASSIS GROUND BUS BAR	INCLUDED
POLICE PANEL	
POLICE PANEL SWITCHES	SIGNALS ON/OFF, AUTO/FLASH
POLICE PANEL PUSHBUTTON ALARM	NONE
POLICE DOOR LOCK	CONVENTIONAL (SKELETON KEY)
POLICE PANEL MANUAL CORD	NONE
AUXILIARY PANEL	
AUXILIARY PANEL SWITCHES	AUTO/FLASH, STOP TIME, CONTROLLER POWER, COORD, CABINET LIGHT, HEATER BYPASS
DETECTOR TEST SWITCHES	TACTILE PUSHBUTTON
FORCE OFF SWITCHES	TACTILE PUSHBUTTON
RACK DETECTION	
DETECTOR RACKS	FOUR (4) 16-CHANNEL DETECTOR RACKS. TWO THE THE RACKS SHALL BE CONFIGURED WITH 2 SLOTS EACH FOR OPTICOM.
DETECTOR RACK POWER SUPPLY	BIU FOR EACH RACK
EVP REQUIREMENTS	WIRING FOR GREEN SENSE MONITORING
ADDITIONAL OPTIONS	
RAILROAD PREEMPTION	INCLUDED
RAILROAD PREEMPTION/STAND ALONE PANEL	NO
RED JUMPERS FOR ALL UNUSED PHASES	INCLUDED
LOAD RESISTORS	(8) INCLUDED - LEFT SIDE OF CABINET
HEATER RECEPTACLE (SINGLE)	INCLUDED - RIGHT SIDE OF CABINET
DUPLEX GFI OUTLET (NON-FILTERED)	INCLUDED - RIGHT SIDE OF CABINET
QUAD CONVENIENCE OUTLET - FILTERED	INCLUDED - LEFT SIDE OF CABINET
ADDITIONAL NEUTRAL BUS BARS	(1) 32 POSITION BUS BAR LEFT SIDE OF CABINET
ADDITIONAL CHASSIS GROUND BUS BARS	(1) 32 POSITION BUS BAR LEFT SIDE OF CABINET
STANDARD WIRING DIAGRAM (AUTOCAD FORMAT)	PROVIDE: (3) PAPER SETS FOR CABINET, SIGNAL TECH AND TRAFFIC, (1) ACAD ON DISC, (1) PDF.
GTT OPTICOM 757 HARNESS	INCLUDED - WIRED INTO CABINET
GTT OPTICOM 768 AUXILIARY INTERFACE PANEL	INCLUDED - WIRED INTO CABINET
GENERATOR BYPASS COMPARTMENT	INCLUDED - MOUNT COMPARTMENT FLUSH AND ON INSIDE OF CONTROLLER CABINET DOOR. SEE SPECIAL PROVISIONS FOR OTHER REQUIREMENTS.

CONTROLLER ASSEMBLY EQUIPMENT

SUPPLY ALL LABOR, EQUIPMENT AND MATERIALS TO PROVIDE A FULLY FUNCTIONING TRAFFIC SIGNAL CONTROLLER ASSEMBLY COMPLIANT WITH THE NEMA STANDARD PUBLICATION NO. TS2-2003 V02.06 AND SPECIAL "SPECIALS" PROVISIONS OF THIS CONTRACT INCLUDING BUT NOT LIMITED TO;

QTY	CONTROLLER/MMU EQUIPMENT
1	ECON COBALT ATC TOUCH 2100 CONTROLLER (TS2 TYP 2
1	CONTROLLER TELEMETRY MODULE TCM-FSK-9 OR APPROVED EQUAL
1	CONTROLLER ETHERNET PORT
1	CONTROLLER DATA KEY
1	EDI MMU2-16LEIP
1	MMU2 CARD
QTY	**CABINET EQUIPMENT**
16	PDC SSS-87-I/O LOAD SWITCHES OR APPROVED EQUAL
16	EDI ORACLE4E DETECTOR AMPLIFIERS OR APPROVED EQUAL
8	DETROL CONTROLS 295 FLASH TRANSFER RELAYS OR APPROVED EQUAL
2	EDI BIU700 TERMINAL AND FACILITIES BIU'S OR APPROVED EQUAL
4	EDI BIU700 DETECTION BIU'S OR APPROVED EQUAL
1	EDI PS250 TS2 CABINET POWER SUPPLY OR APPROVED EQUAL
1	PDC SSF-87 FLASHER OR APPROVED EQUAL
1	R1 RELAY
1	600/900/1500W SELECTABLE THERMOSTATICALLY CONTROLLED CABINET HEATER, MOUNT ON DOOR
1	RE-SEALABLE PRINT POUCH OF SUFFICIENT SIZE TO ACCOMMODATE CABINET PRINTS
1	COMPLETE SET OF MANUALS FOR CONTROLLER, MMU2, AND VEHICLE DETECTOR AMPLIFIERS

COMMUNICATION EQUIPMENT SCHEDULE

QTY	COPPER INTERCONNECT SYSTEM
1	ACTELIS ML698E WITH FOUR 10/100X PORTS AND ONE OPTIONAL 1000BASE SFP PORT OR APPROVED EQUAL
1	AC POWER ADAPTER 506R00006 OR APPROVED EQUAL
4	3 FOOT CAT6 PATCH CABLE
1	SFP OPTICS 100BASE FX SM 1310NM 15KM LC MODULE 506R00032 OR APPROVED EQUAL
1	CARRIER-CLASS ELEMENT MANAGMENT SYSTEM
2	QUAD DSL CABLES 504R20110 OR APPROVED EQUAL
1	WALL MOUNTING KIT 510R21080 OR APPROVED EQUAL
QTY	**FIBER INTERCONNECT EQUIPMENT**
0	ACTELIS NETWORKS MODEL ML530 WITH TWO 100/1000 BASE FX SFP PORTS AND FOUR PORTS OF 10/100 BASE-T OR APPROVED EQUAL
0	AC POWER ADAPTER 506R00006 OR APPROVED EQUAL
0	3 FOOT CAT6 PATCH CABLE
0	SFP OPTICS 100BASE FX SM 1310NM 15KM LC MODULE 506R00032 OR APPROVED EQUAL
0	CARRIER-CLASS ELEMENT MANAGEMENT SYSTEM
0	LC DUPLEX SM FIBER OPTIC CABLE ASSEMBLY 3 METERS OR APPROVED EQUAL
0	WALL MOUNTING KIT 510R21080 OR APPROVED EQUAL
QTY	**OTHER EQUIPMENT**
0	RSL910 ETHERNET SWITCH (COPPER AND FIBER) OR APPROVED EQUAL
QTY	**EVP EQUIPMENT**
1	OPTICOM MODEL 764 PHASE SELECTOR
QTY	**RADAR EQUIPMENT**
0	CLICK! 650 (102-0416)
0	CLICK! 656 (102-0451)
0	INSTALLER KIT
0	7' SDLC CABLE - 15 PIN SCREW TO 15 PIN SPRING CLIP (SDLC-TS2-7)
0	3' SDLC CABLE - 15 PIN SCREW TO 15 PIN SPRING CLIP (SDLC-TS2-3)
0	SDLC 6 PORT INTERFACE PANEL (SDLC-IP6)

STATE OF ALASKA
PSSE REVIEW
PROJECT ENGINEER
REGISTERED PROFESSIONAL ENGINEER

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

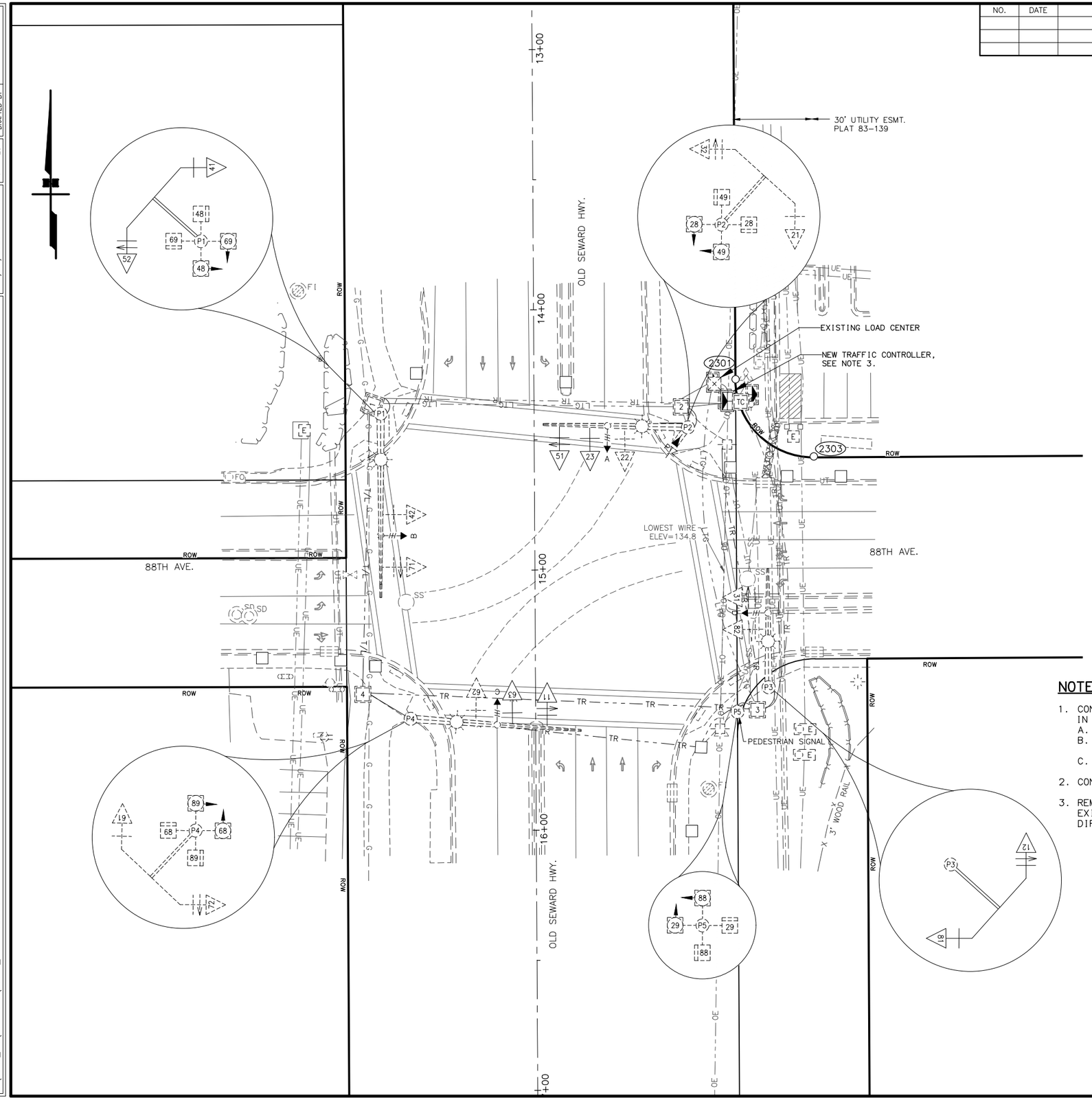
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

TUDOR RD & PIPER ST: TRAFFIC CONTROLLER EQUIPMENT

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HM1	HM6



FOUNDATION SCHEDULE

ITEM	STATION ALIGNMENT	OFFSET	STRUCTURE	REMARKS
LC	-	-	LOAD CENTER	EXISTING
TC	-	-	NEW TRAFFIC CONTROLLER	EXISTING
P1	-	-	SIGNAL POLE	EXISTING
P2	-	-	SIGNAL POLE	EXISTING
P3	-	-	SIGNAL POLE	EXISTING
P4	-	-	SIGNAL POLE	EXISTING
P5	-	-	PED POLE	EXISTING

JUNCTION BOX SCHEDULE

J-BOX	STATION ALIGNMENT	OFFSET	TYPE	REMARKS
1	-	-	3	EXISTING
2	-	-	2	EXISTING
3	-	-	2	EXISTING
4	-	-	2	EXISTING

OPTICOM DETECTOR SCHEDULE

DETECTOR ID	LOCATION	PHASE CALL	FACING DIRECTION	MODEL	REMARKS
A	POLE 2 MASTARM	2, 5	S	721	RELOCATE EXISTING
B	POLE 1 MASTARM	4, 7	E	721	EXISTING
C	POLE 4 MASTARM	6, 1	N	721	RELOCATE EXISTING
D	POLE 3 MASTARM	8, 3	W	721	EXISTING

NOTES:

1. CONTRACTOR SHALL MAINTAIN AND PROTECT ALL SIGNAL COMPONENTS SHOWN WITH NO ANTICIPATED IMPACT. IN ADDITION, UNLESS OTHERWISE DIRECTED BY THE ENGINEER:
   A. CONDUIT RUNS MAY BE INTERCEPTED (AS APPROVED BY THE ENGINEER).
   B. SIGNAL AND INTERCONNECT CONDUCTORS SHALL NOT BE INTERCEPTED.IMPACTED SIGNAL CONDUCTORS SHALL BE REPLACED CONTINUOUSLY FROM THE CONTROLLER CABINET.
   C. STREET LIGHT CONDUCTORS SHALL NOT BE INTERCEPTED.
2. CONTRACTOR SHALL MAINTAIN AND PROTECT ALL JUNCTION BOXES SHOWN WITH NO ANTICIPATED IMPACT.
3. REMOVE EXISTING TRAFFIC CONTROLLER ASSEMBLY. INSTALL NEW TRAFFIC CONTROLLER ASSEMBLY ON EXISTING FOUNDATION. EXISTING CONDUIT RUN AND CABLES TO REMAIN IN PLACE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

DATE	####
####	----

PS&E REVIEW

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

OLD SEWARD HWY & 88TH AVE: SIGNAL SYSTEM PLAN

DESIGNED BY MTB
CHECKED BY
DRAFTED BY
SCALE 1" = 20'
DATE TIME 4/21/2025 9:09 AM
DRAWING LOCATION C:\DOWL_PW\D04114549\00944_HM1-HM6.DWG

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HM2	HM6

DESIGNED BY MTB
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SCALE 1" = 20'
DATE 4/21/2025 TIME 4:39 PM
DRAWING LOCATION
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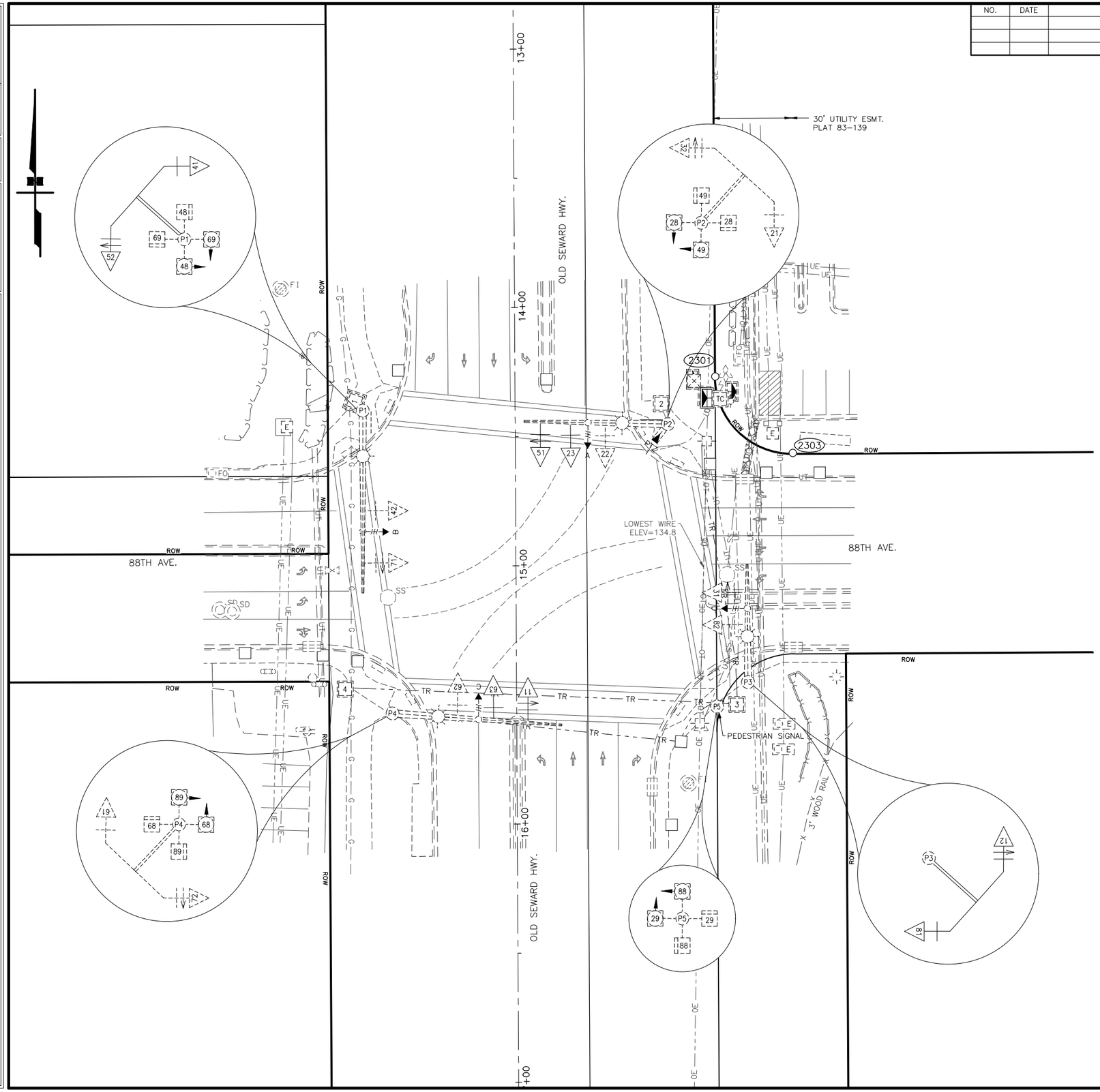


12"
SIGNAL FACES
11, 12
51, 52

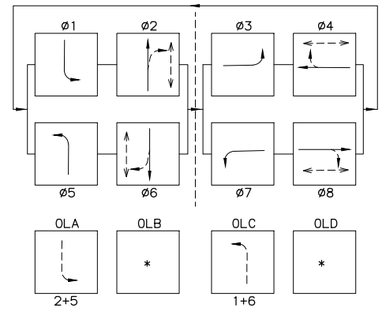
12"
SIGNAL FACES
23
41
63
81

12"
SIGNAL FACES
21, 22
42
61, 62
82

12"
SIGNAL FACES
31, 32
71, 72

18" 16"
SIGNAL FACES
28, 29
48, 49
68, 69
88, 89

SIGNAL HEAD CONFIGURATIONS



PROTECTED VEHICLE MOVEMENT
PERMISSIVE VEHICLE MOVEMENT
PEDESTRIAN MOVEMENT
* FUTURE USE/NOT USED

PHASING SEQUENCE DIAGRAM

PREEMPTION DWELL PHASE
VEHICLE MOVEMENTS

CHANNEL A: PHASES 2 + 5
CHANNEL B: PHASES 4 + 7
CHANNEL C: PHASES 6 + 1
CHANNEL D: PHASES 8 + 3

DATE	####
####	----

PS&E REVIEW

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

OLD SEWARD HWY & 88TH AVE: SIGNAL OPERATION PLAN

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HM3	HM6

DESIGNED BY	MTB
CHECKED BY	
DRAFTED BY	
SCALE	1" = 20'
DATE	4/8/2025
TIME	4:59 PM

DRAWING LOCATION
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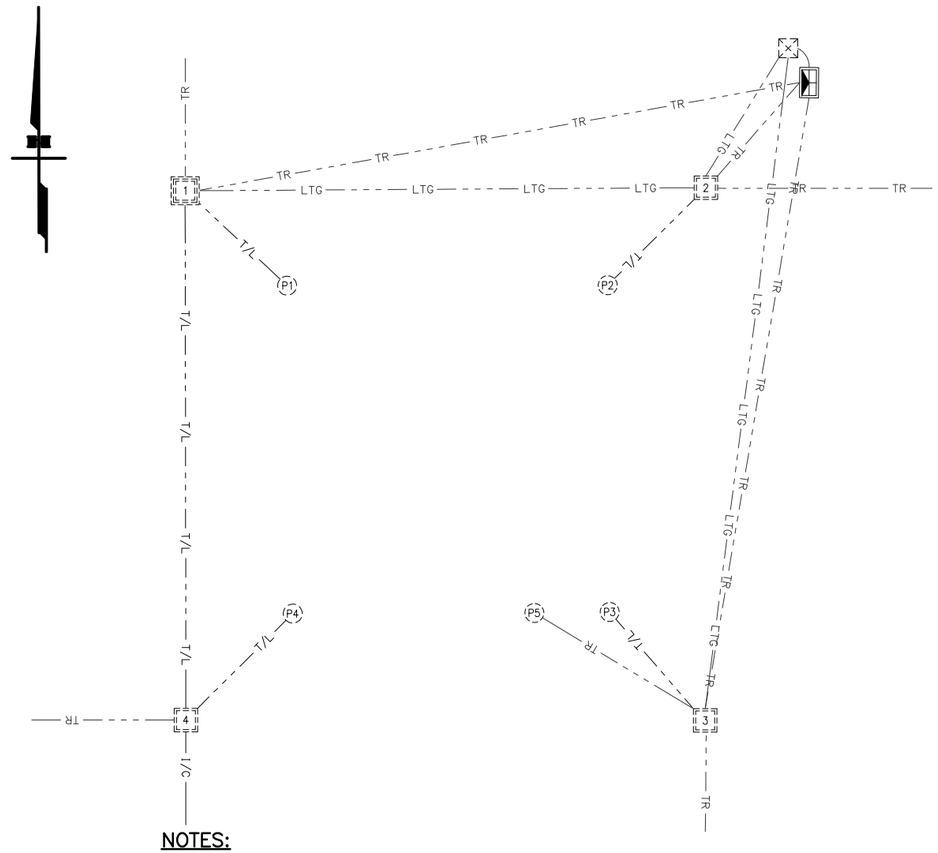
CABLE & CONDUIT SCHEDULE

RUN	CONDUIT		CABLES	NOTES	CONDUIT FILL
LC-TC	EX-2	RMC	EX(3-1C6, 1-1C6(GND)	SIGNAL	21%
LC-2	EX-2	RMC	EX(1-3C8)	INTXL	13%
LC-3	EX-2	RMC	EX(1-3C8)	INTXL	13%
TC-1	EX-3	RMC	EX(4-7C14, 2-5C14, 3-3C14, 1-3C20, 3-7PR18)	SIGNAL, DETECTION	30%
	EX-3	RMC	EX(4-7C14, 2-5C14, 3-3C14, 1-3C20, 3-7PR18) **NEW(1-7C14)**	SIGNAL, DETECTION	32%
	EX-3	RMC	EX(2-25PR19)	I/C "DIMOND BLVD" I/C "100TH AVE"	22%
	EX-3	RMC	SPARE		
TC-2	EX-3	RMC	EX(4-7C14, 2-5C14, 3-3C14, 1-3C20, 1-CAT5) **NEW(1-7C14)**	SIGNAL	21%
	EX-3	RMC	SPARE		
TC-3	EX-3	RMC	EX(4-7C14, 2-5C14, 3-3C14, 1-3C20, 3-7PR18)	SIGNAL, DETECTION	30%
	EX-2	RMC	SPARE		
1-P1	EX-3	RMC	EX(4-7C14, 2-5C14, 3-3C14, 1-3C20)	SIGNAL	18%
	EX-2	RMC	EX(2-3C8)	INTXL	26%
	EX-2	RMC	SPARE		
1-2	EX-2	RMC	EX(1-3C8)	INTXL	13%
1-4	EX-3	RMC	EX(4-7C14, 2-5C14, 3-3C14, 1-3C20, 3-7PR18) **NEW(1-7C14)**	SIGNAL, DETECTION	32%
	EX-2	RMC	EX(1-25PR19)	I/C "100TH AVE"	24%
	EX-2	RMC	EX(1-3C8)	INTXL	13%
	EX-2	RMC	SPARE		
2-P2	EX-3	RMC	EX(4-7C14, 2-5C14, 3-3C14, 1-3C20, 1-CAT5) **NEW(1-7C14)**	SIGNAL	21%
	EX-2	RMC	EX(2-3C8)	INTXL	26%
	EX-2	RMC	SPARE		
3-P3	EX-3	RMC	EX(4-7C14, 1-3C14, 1-3C20)	SIGNAL	12%
	EX-2	RMC	EX(1-3C8)	INTXL	13%
	EX-2	RMC	SPARE		
3-P5	EX-2	RMC	EX(2-5C14, 2-3C14)	PED SIGNAL	15%
4-P4	EX-3	RMC	EX(4-7C14, 2-5C14, 3-3C14, 1-3C20) **NEW(1-7C14)**	SIGNAL	21%
	EX-2	RMC	EX(1-3C8)	INTXL	13%
	EX-2	RMC	SPARE		
1-NORTH	EX-2	RMC	EX(1-25PR19)	I/C "DIMOND BLVD"	26%
1-NORTH	EX-2	RMC	EX(3-7PR18)	DETECTION	26%
2-EAST	EX-2	RMC	EX(3-7PR18)	DETECTION	26%
3-SOUTH	EX-2	RMC	EX(3-7PR18)	DETECTION	26%
4-WEST	EX-2	RMC	EX(3-7PR18)	DETECTION	26%
4-SOUTH	EX-2	RMC	EX(1-25PR19)	I/C "100TH AVE"	24%

EX- EXISTING EQUIPMENT
INTXL- INTERSECTION LIGHTING
I/C- INTERCONNECT



NOTES:

1. 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 CIRCUIT CONDUCTOR.
2. DETECTOR LOOPS NOT SHOWN FOR CLARITY.

DATE	####
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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

OLD SEWARD HWY & 88TH AVE: WIRING DIAGRAM

STATE OF ALASKA
PS&E REVIEW
PROJECT ENGINEER
REGISTERED PROFESSIONAL ENGINEER

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HM4	HM6

DESIGNED BY
CHECKED BY
DRAFTED BY

SCALE

DATE TIME
4/24/2025 10:58 AM

DRAWING LOCATION
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GENERAL LC NOTES:

1. ALL CIRCUIT BREAKERS SHALL BE RATED FOR OPERATION AT −20°F.
2. LOAD CENTER OUTAGES SHALL BE SCHEDULED DURING DAYLIGHT HOURS AND BE COMPLETE PRIOR TO DUSK THE SAME DAY.

SUMMARY OF EXISTING LOAD CENTER 'A'

LOAD CENTER TYPE:	TYPE 1A
MAINTAINED BY:	MUNICIPALITY OF ANCHORAGE
SERVING UTILITY:	CHUGACH ELECTRIC ASSOCIATION
SERVICE CONDUIT TYPE:	RIGID METAL CONDUIT
LOCATION DATA	
LOAD CENTER:	OLD SEWARD HWY AND 88TH AVENUE
POWER SOURCE:	EXISTING
PHOTOELECTRIC CONTROL:	AT LOAD CENTER
SERVICE VOLTAGE:	120/240V, 1-PHASE, 3-WIRE WITH GROUNDED NEUTRAL
PROVIDE METER SOCKET:	EXISTING
MAIN BREAKER A:	240, 100A, 2-POLE
CONTACTOR 1:	600V, 12-POLE, 30A
AIC RATING:	10,000A

PANEL A

CKT	AMP TRIP	DESCRIPTION	CKT KVA	AØ	BØ	CKT KVA	DESCRIPTION	AMP TRIP	CKT
1		BLANK	0.0	0.0		0.0	DISCONNECT	100/2	2
3			0.0		0.0	0.0			4
5			0.0	0.1		0.1	PHOTOCELL	15/1	6
7	50/1	TC	3.8		3.9	0.1			8
9	20/2	INTX LTG*	1.0	1.0		0.0	SPARE	20/2	10
11			1.0		1.0	0.0			12
13	20/2	SPARE	0.0	0.0		0.0	SPARE	20/2	14
15			0.0		0.0	0.0			16
17			0.0	0.0		0.0			18
* = THROUGH CONTACTOR				1.1	4.9	TOTAL KVA			6.0
						AMPS			25.0

SHORT CIRCUIT CALCULATION - LC 'A'

TRANSFORMER RATING	25KVA
VOLTAGE	120/240V
TRANSFORMER IMPEDANCE	1.2%
AVAILABLE SHORT CIRCUIT CURRENT AT TRANSFORMER SECONDARY	8,680A
FEEDER CONDUCTOR LENGTH	40'
FEEDER CONDUCTOR SIZE	2 AWG ALUM
CONDUIT	PVC
MAXIMUM FAULT CURRENT	5,214A
DATE CALCULATED	1/29/2025

ARC FLASH CALCULATION - LC 'A'

INCIDENT ENERGY	11.1 cal/cm²
ARC-FLASH BOUNDARY	73"
WORKING DISTANCE	18"
INSULATING GLOVES CLASS	00
NOMINAL SYSTEM VOLTAGE	240V
LIMITED APPROACH BOUNDARY	42"
RESTRICTED APPROACH BOUNDARY	12"
CALCULATION DATE	1/29/2025

STATE OF ALASKA
49TH
PRE-PS&E
ROY N. PACE
EE-12053
REGISTERED PROFESSIONAL ENGINEER

EDC, INC.
1500 WEST 33RD AVE
ANCHORAGE, AK 99503
(907) 257-0601
CERT. OF AUTH. NO. AECC705

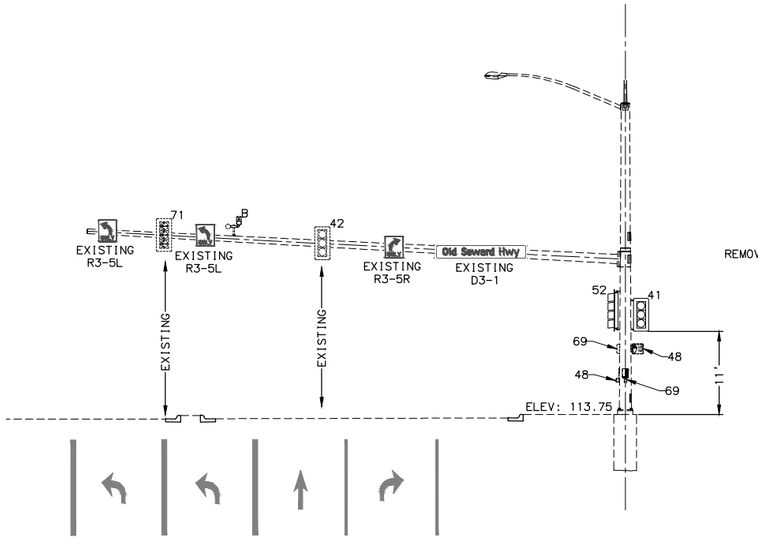
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

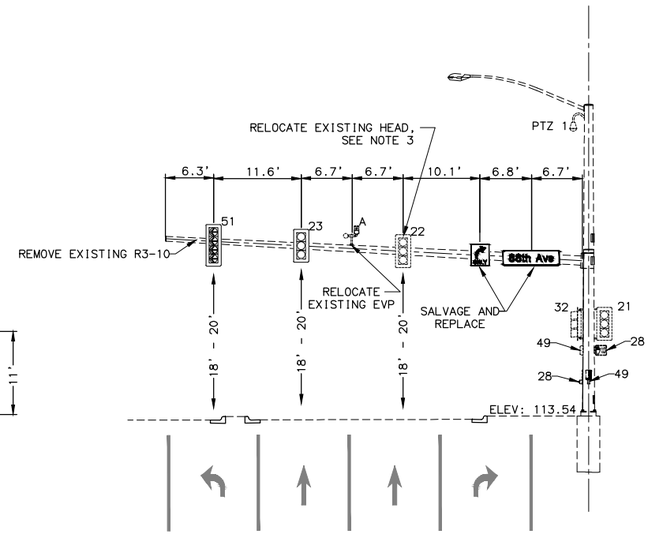
OLD SEWARD HWY & 88TH AVE: LOAD CENTER SCHEDULE

NO.	DATE	REVISION

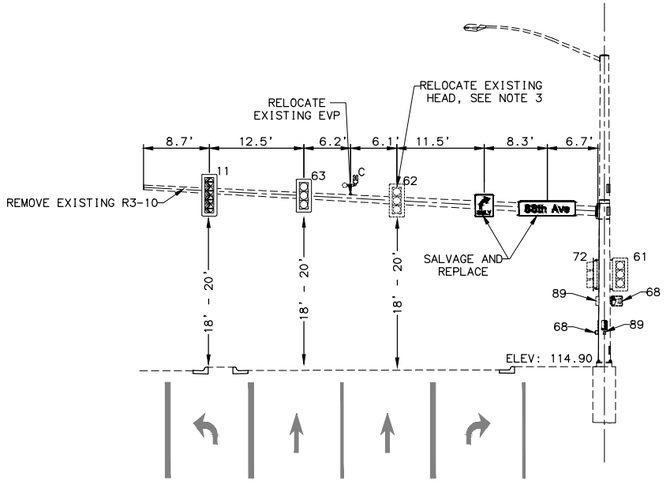
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HM5	HM6



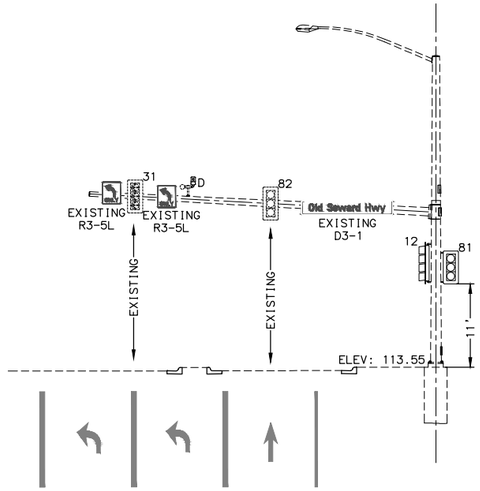
SIGNAL POLE 1
LOOKING WEST



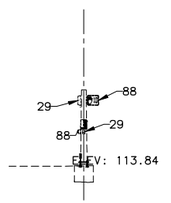
SIGNAL POLE 2
LOOKING NORTH



SIGNAL POLE 4
LOOKING SOUTH



SIGNAL POLE 3
LOOKING EAST



SIGNAL POLE 5
LOOKING EAST

NOTES:

1. ELEVATIONS ARE TO THE TOP OF THE FOUNDATION AND ARE APPROXIMATE.
2. LANE MARKINGS ARE SHOWN FOR REFERENCE ONLY.
3. SIGNAL HEAD LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL VERIFY SIGNAL HEAD PLACEMENT WITH RECEIVING AND APPROACH LANE OFFSETS.
4. ALL PEDESTRIAN HEADS AND PUSH BUTTONS ARE EXISTING

DATE	####
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DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

OLD SEWARD HWY & 88TH AVE: POLE ELEVATIONS

DESIGNED BY MTB
CHECKED BY
DRAFTED BY
SCALE 1" = 10'
DATE TIME 4/8/2025 4:59 PM
DRAWING LOCATION C:\DOWL_PW\D0414549\00944_HM1-HM6.DWG

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HM6	HM6

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SCALE

DATE TIME
4/8/2025 5:00 PM

DRAWING LOCATION
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CONTROLLER CABINET FEATURES

GENERAL OPTIONS	
TYPE	TS2-1
SIZE	NEMA SIZE 6
MATERIALS	0.125" NATURAL ALUMINUM
MODEL	WESTERN SYSTEMS NEMA TS2-1P
EXTENDER BASE	NONE
MOUNTING HARDWARE	INCLUDED
PAINT	YES-SEE SPECIAL PROVISIONS
SPECIAL OPTIONS	
LIFTING TABS	INCLUDED
EQUIPMENT SHELF	(2) FULL WIDTH, (1) LAPTOP DRAWER
AIR FILTER	FIBER MESH
MAIN DOOR LOCK	BEST
REAR DOOR	NONE
LED LIGHT FIXTURES	SEE SPECIAL PROVISIONS FOR OTHER REQUIREMENT
MAIN PANEL	
MAIN PANEL POSITION	16-POSITION HORIZONTAL
FLASH TRANSFER RELAYS SOCKETS	(8) INCLUDED
FLASHER SOCKET	(1) INCLUDED
R1 RELAY SOCKET	INCLUDED
POWER PANEL	
SURGE SUPPRESSION	SHP300-10
LINE FILTER (RADIO INTERFERENCE)	50A
SOLID STATE CONTACTOR	NORMALLY OPEN, 50A
MAIN CIRCUIT BREAKER	40A
AUXILIARY CIRCUIT BREAKER	20A
3 POSITION TERMINAL BLOCK FOR INCOMING POWER, #2-#8 U.S.G.	INCLUDED
16 POSITION NEUTRAL BUS BAR	INCLUDED
16 POSITION CHASSIS GROUND BUS BAR	INCLUDED
POLICE PANEL	
POLICE PANEL SWITCHES	SIGNALS ON/OFF, AUTO/FLASH
POLICE PANEL PUSHBUTTON ALARM	NONE
POLICE DOOR LOCK	CONVENTIONAL (SKELETON KEY)
POLICE PANEL MANUAL CORD	NONE
AUXILIARY PANEL	
AUXILIARY PANEL SWITCHES	AUTO/FLASH, STOP TIME, CONTROLLER POWER, COORD, CABINET LIGHT, HEATER BYPASS
DETECTOR TEST SWITCHES	TACTILE PUSHBUTTON
FORCE OFF SWITCHES	TACTILE PUSHBUTTON
RACK DETECTION	
DETECTOR RACKS	FOUR (4) 16-CHANNEL DETECTOR RACKS. TWO THE THE RACKS SHALL BE CONFIGURED WITH 2 SLOTS EACH FOR OPTICOM.
DETECTOR RACK POWER SUPPLY	BIU FOR EACH RACK
EVP REQUIREMENTS	WIRING FOR GREEN SENSE MONITORING
ADDITIONAL OPTIONS	
RAILROAD PREEMPTION	INCLUDED
RAILROAD PREEMPTION/STAND ALONE PANEL	NO
RED JUMPERS FOR ALL UNUSED PHASES	INCLUDED
LOAD RESISTORS	(8) INCLUDED - LEFT SIDE OF CABINET
HEATER RECEPTACLE (SINGLE)	INCLUDED - RIGHT SIDE OF CABINET
DUPLEX GFI OUTLET (NON-FILTERED)	INCLUDED - RIGHT SIDE OF CABINET
QUAD CONVENIENCE OUTLET - FILTERED	INCLUDED - LEFT SIDE OF CABINET
ADDITIONAL NEUTRAL BUS BARS	(1) 32 POSITION BUS BAR LEFT SIDE OF CABINET
ADDITIONAL CHASSIS GROUND BUS BARS	(1) 32 POSITION BUS BAR LEFT SIDE OF CABINET
STANDARD WIRING DIAGRAM (AUTOCAD FORMAT)	PROVIDE: (3) PAPER SETS FOR CABINET, SIGNAL TECH AND TRAFFIC, (1) ACAD ON DISC, (1) PDF.
GTT OPTICOM 757 HARNESS	INCLUDED - WIRED INTO CABINET
GTT OPTICOM 768 AUXILIARY INTERFACE PANEL	INCLUDED - WIRED INTO CABINET
GENERATOR BYPASS COMPARTMENT	INCLUDED - MOUNT COMPARTMENT FLUSH AND ON INSIDE OF CONTROLLER CABINET DOOR. SEE SPECIAL PROVISIONS FOR OTHER REQUIREMENTS.

CONTROLLER ASSEMBLY EQUIPMENT

SUPPLY ALL LABOR, EQUIPMENT AND MATERIALS TO PROVIDE A FULLY FUNCTIONING TRAFFIC SIGNAL CONTROLLER ASSEMBLY COMPLIANT WITH THE NEMA STANDARD PUBLICATION NO. TS2-2003 V02.06 AND SPECIAL "SPECIALS" PROVISIONS OF THIS CONTRACT INCLUDING BUT NOT LIMITED TO;

QTY	CONTROLLER/MMU EQUIPMENT
1	ECON COBALT ATC TOUCH 2100 CONTROLLER (TS2 TYP 2
1	CONTROLLER TELEMETRY MODULE TCM-FSK-9 OR APPROVED EQUAL
1	CONTROLLER ETHERNET PORT
1	CONTROLLER DATA KEY
1	EDI MMU2-16LEIP
1	MMU2 CARD
QTY	**CABINET EQUIPMENT**
16	PDC SSS-87-I/O LOAD SWITCHES OR APPROVED EQUAL
16	EDI ORACLE4E DETECTOR AMPLIFIERS OR APPROVED EQUAL
8	DETROL CONTROLS 295 FLASH TRANSFER RELAYS OR APPROVED EQUAL
2	EDI BIU700 TERMINAL AND FACILITIES BIU'S OR APPROVED EQUAL
4	EDI BIU700 DETECTION BIU'S OR APPROVED EQUAL
1	EDI PS250 TS2 CABINET POWER SUPPLY OR APPROVED EQUAL
1	PDC SSF-87 FLASHER OR APPROVED EQUAL
1	R1 RELAY
1	600/900/1500W SELECTABLE THERMOSTATICALLY CONTROLLED CABINET HEATER, MOUNT ON DOOR
1	RE-SEALABLE PRINT POUCH OF SUFFICIENT SIZE TO ACCOMMODATE CABINET PRINTS
1	COMPLETE SET OF MANUALS FOR CONTROLLER, MMU2, AND VEHICLE DETECTOR AMPLIFIERS

COMMUNICATION EQUIPMENT SCHEDULE

QTY	COPPER INTERCONNECT SYSTEM
1	ACTELIS ML698E WITH FOUR 10/100X PORTS AND ONE OPTIONAL 1000BASE SFP PORT OR APPROVED EQUAL
1	AC POWER ADAPTER 506R00006 OR APPROVED EQUAL
4	3 FOOT CAT6 PATCH CABLE
1	SFP OPTICS 100BASE FX SM 1310NM 15KM LC MODULE 506R00032 OR APPROVED EQUAL
1	CARRIER-CLASS ELEMENT MANAGMENT SYSTEM
2	QUAD DSL CABLES 504R20110 OR APPROVED EQUAL
1	WALL MOUNTING KIT 510R21080 OR APPROVED EQUAL
QTY	**FIBER INTERCONNECT EQUIPMENT**
0	ACTELIS NETWORKS MODEL ML530 WITH TWO 100/1000 BASE FX SFP PORTS AND FOUR PORTS OF 10/100 BASE-T OR APPROVED EQUAL
0	AC POWER ADAPTER 506R00006 OR APPROVED EQUAL
0	3 FOOT CAT6 PATCH CABLE
0	SFP OPTICS 100BASE FX SM 1310NM 15KM LC MODULE 506R00032 OR APPROVED EQUAL
0	CARRIER-CLASS ELEMENT MANAGEMENT SYSTEM
0	LC DUPLEX SM FIBER OPTIC CABLE ASSEMBLY 3 METERS OR APPROVED EQUAL
0	WALL MOUNTING KIT 510R21080 OR APPROVED EQUAL
QTY	**OTHER EQUIPMENT**
0	RSL910 ETHERNET SWITCH (COPPER AND FIBER) OR APPROVED EQUAL
QTY	**EVP EQUIPMENT**
1	OPTICOM MODEL 764 PHASE SELECTOR
QTY	**RADAR EQUIPMENT**
0	CLICK! 650 (102-0416)
0	CLICK! 656 (102-0451)
0	INSTALLER KIT
0	7' SDLC CABLE - 15 PIN SCREW TO 15 PIN SPRING CLIP (SDLC-TS2-7)
0	3' SDLC CABLE - 15 PIN SCREW TO 15 PIN SPRING CLIP (SDLC-TS2-3)
0	SDLC 6 PORT INTERFACE PANEL (SDLC-IP6)

DATE	####
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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

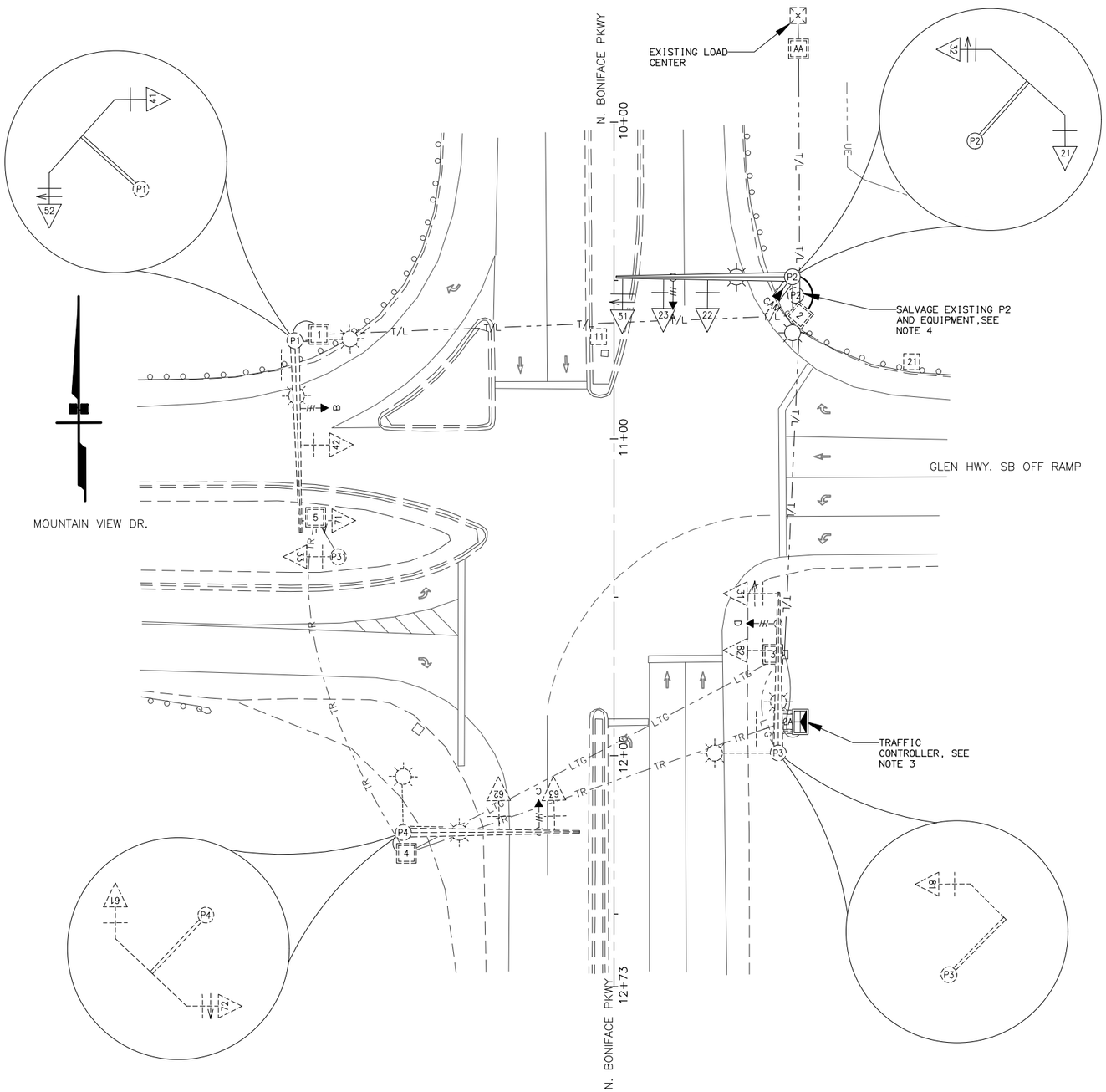
OLD SEWARD HWY & 88TH AVE: CABINET EQUIPMENT

STATE OF ALASKA
REGISTERED
PROFESSIONAL ENGINEER
PROJECT ENGINEER

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HN1	HN6



FOUNDATION SCHEDULE

ITEM	STATION ALIGNMENT	OFFSET	STRUCTURE	REMARKS
LC	–	–	TYPE 1A LOAD CENTER	EXISTING
TC	–	–	NEW TRAFFIC CONTROLLER	EXISTING
P1	–	–	SIGNAL POLE 1	EXISTING
P2	10+48.9	56.3 LT	SIGNAL POLE 2	NEW STEEL PILE FOUNDATION
P3	–	–	SIGNAL POLE 3	EXISTING
P4	–	–	SIGNAL POLE 4	EXISTING
P31	–	–	SIGNAL POLE 31	EXISTING

JUNCTION BOX SCHEDULE

J-BOX	STATION ALIGNMENT	OFFSET	TYPE	REMARKS
1	–	–	2	EXISTING
2	–	–	2	EXISTING
2A	–	–	2	EXISTING
3A	–	–	2	EXISTING
3	–	–	3	EXISTING
4	–	–	2	EXISTING
5	–	–	2	EXISTING

OPTICOM DETECTOR SCHEDULE

DETECTOR ID	LOCATION	PHASE CALL	FACING DIRECTION	MODEL	REMARKS
A	P2 MAST ARM	2, 5	S	721	NEW
B	P1 MAST ARM	4, 7	E	711	EXISTING
C	P4 MAST ARM	6	N	711	EXISTING
D	P3 MAST ARM	3, 8	W	711	EXISTING

NOTES:

1. CONTRACTOR SHALL MAINTAIN AND PROTECT ALL SIGNAL COMPONENTS SHOWN WITH NO ANTICIPATED IMPACT. IN ADDITION, UNLESS OTHERWISE DIRECTED BY THE ENGINEER:
   A. CONDUIT RUNS MAY BE INTERCEPTED (AS APPROVED BY THE ENGINEER).
   B. SIGNAL AND INTERCONNECT CONDUCTORS SHALL NOT BE INTERCEPTED. IMPACTED SIGNAL CONDUCTORS SHALL BE REPLACED CONTINUOUSLY FROM THE CONTROLLER CABINET.
   C. ALL SIGNAL AND PREEMPTION CABLES SERVING POLE 2 SHALL BE REPLACED BACK TO THE CONTROLLER CABINET. LIGHTING CABLES BETWEEN THE DOUBLE FUSED CONNECTOR AND THE LUMINAIRE SHALL BE REPLACED IN POLE 2.
   D. STREET LIGHT CONDUCTORS SHALL NOT BE INTERCEPTED.
   E. EXISTING INTERSECTION LIGHTING ON SALVAGED POLE 2 SHALL BE RE-INSTALLED ON PROPOSED POLE 4
2. CONTRACTOR SHALL MAINTAIN AND PROTECT ALL JUNCTION BOXES SHOWN WITH NO ANTICIPATED IMPACT.
3. REMOVE EXISTING TRAFFIC CONTROLLER ASSEMBLY. INSTALL NEW TRAFFIC CONTROLLER ASSEMBLY ON EXISTING FOUNDATION. EXISTING CONDUIT RUN AND CABLES TO REMAIN IN PLACE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
4. EXISTING POLE 2 SHALL BE REMOVED AND A NEW POLE 2 SHALL BE INSTALLED IN A NEW LOCATION ON A 42 INCH CONCRETE FOUNDATION.

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(907) 562-2000
AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

BONIFACE PKWY & MOUNTAIN VIEW DR: SIGNAL SYSTEM PLAN

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HN2	HN6

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4/21/2025 4:39 PM

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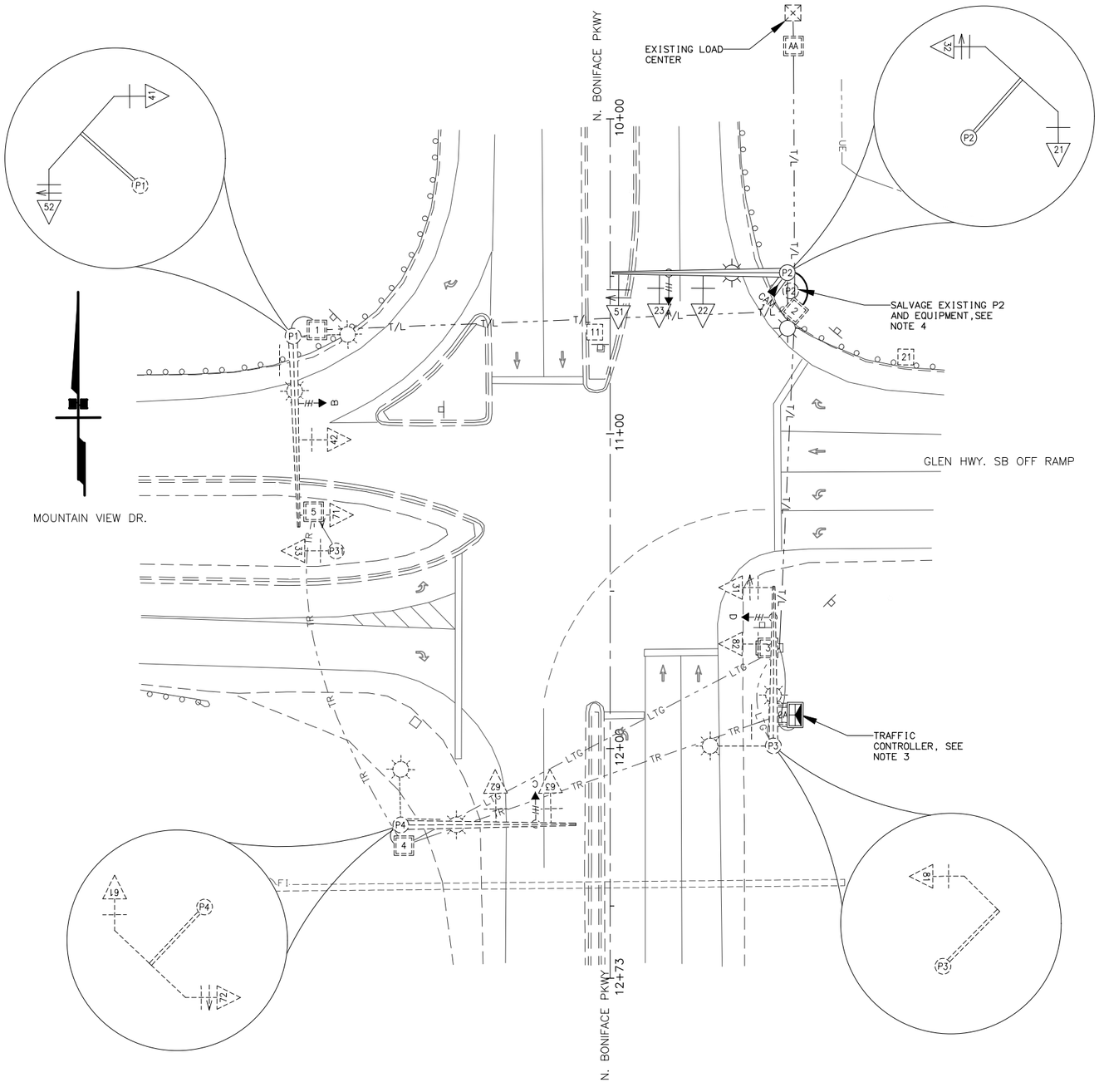
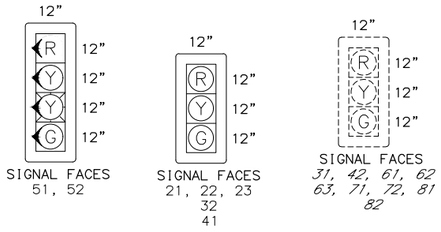
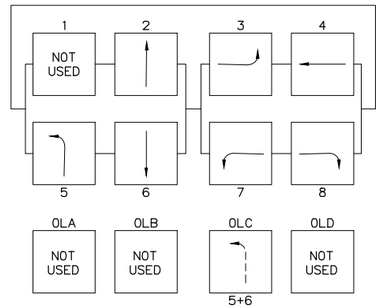




SIGNAL HEAD CONFIGURATIONS



PHASE DIAGRAM

PROTECTED VEHICLE MOVEMENT

PERMISSIVE VEHICLE MOVEMENT

PREEMPTION DWELL PHASE AND VEHICLE MOVEMENTS

CHANNEL A: PHASE 2 + 5
CHANNEL B: PHASE 4 + 7
CHANNEL C: PHASE 6
CHANNEL D: PHASE 8 + 3

STATE OF ALASKA
REGISTERED PROFESSIONAL ENGINEER
PROJECT ENGINEER
DATE

PS&E REVIEW

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

BONIFACE PKWY & MOUNTAIN VIEW DR: SIGNAL OPERATION PLAN

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HN3	HN6

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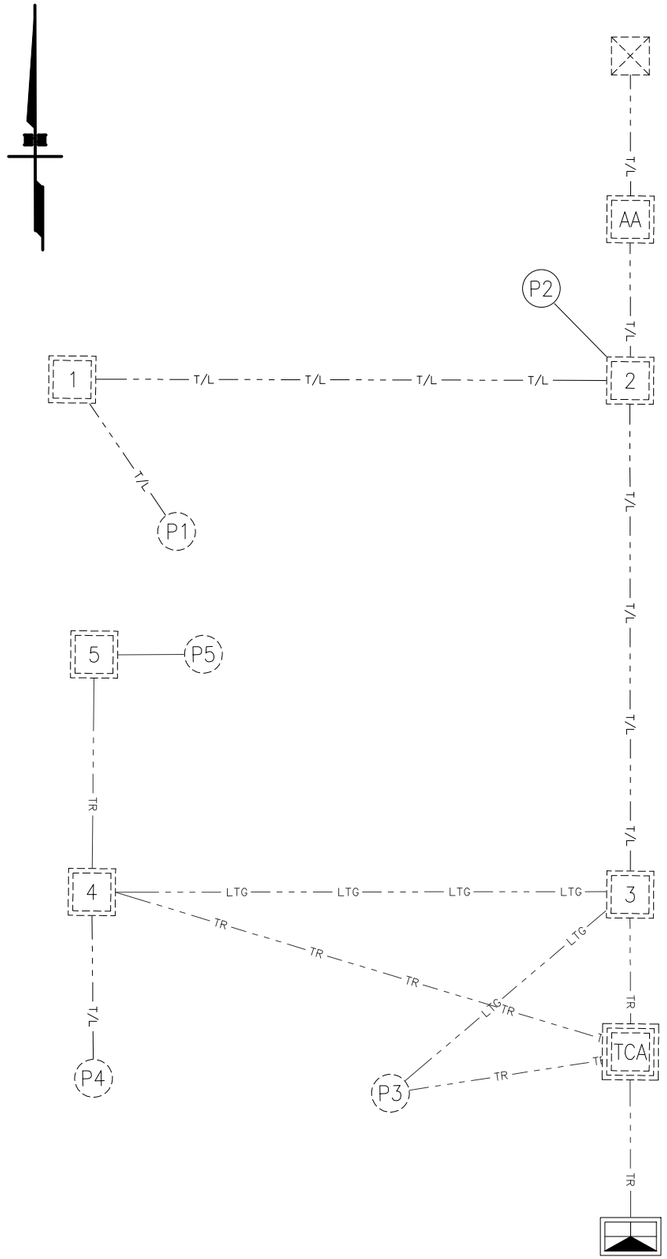

CABLE & CONDUIT SCHEDULE

RUN	CONDUIT		CABLES	NOTES	CONDUIT FILL
LC-AA	EX-3	RMC	EX(1-3C4, 1-5C14, 1-3C8)	TC POWER, INTXL, PHOTOCELL	14%
	EX-2	RMC	EX(3-3C8)	TC POWER, INTXL	38%
AA-2	EX-3	RMC	EX(1-3C4, 1-3C8)	TC POWER, INTXL	11%
TC-TCA	EX-3	RMC	EX(2-6PR18)	DETECTION	7%
	EX-2	RMC	EX(1-3C4)	TC POWER	18%
	EX-3	RMC	EX(1-12PR19)	I/C	8%
	EX-3	RMC	EX(4-7C14, 1-3C20, 1-3C14, 2-6PR18)	SIGNAL	17%
	EX-3	RMC	EX(1-7C14, 1-6PR18, 1-3C18) **NEW(5-7C14, 1-3C20, 1-3C14, 1-CAT5)**	SIGNAL	20%
	EX-3	RMC	EX4-7C14, 1-3C20, 1-3C14, 2-6PR18)	SIGNAL	18%
	EX-2	RMC	EX(4-3C18)	NOT IN USE	13%
	EX-3	RMC	EX(3-7C14, 1-3C20, 1-3C14)	SIGNAL	9%
TCA-3	EX-2	RMC	SPARE	-	-
	EX-2	RMC	EX(1-3C4)	TC POWER	8%
	EX-3	RMC	EX(1-12PR19)	I/C	19%
	EX-3	RMC	EX(4-7C14, 1-3C20, 1-3C14, 2-6PR18, 1-3C18)	SIGNAL	21%
	EX-3	RMC	EX(1-7C14, 1-6PR18, 1-3C18) **NEW(5-7C14, 1-3C20, 1-3C14, 1-CAT5E)**	SIGNAL	25%
TCA-4	EX-3	RMC	EX(2-7PR18, 1-3C20, 1-3C14, 1-4C14)	SIGNAL	12%
	EX-2	RMC	EX(1-5C14, 3-7C14)	SIGNAL	19%
	EX-2	RMC	EX(1-12PR19)	I/C	18%
TCA-P3	EX-3	RMC	EX(4-7C14, 1-3C20, 1-3C14, 1-3C18)	SIGNAL	11%
	EX-2	RMC	SPARE	-	-
1-2	EX-3	RMC	EX(4-7C14, 1-3C20, 1-3C14, 1-3C18)	SIGNAL	12%
	EX-2	RMC	EX(1-3C8)	INTXL	13%
	EX-2	RMC	EX(1-12PR19)	I/C	18%
1-P1	EX-3	RMC	EX(4-7C14, 1-3C20, 1-3C14, 1-3C18)	SIGNAL	12%
	EX-2	RMC	EX(1-3C8)	INTXL	13%
2-3	EX-2	RMC	EX(1-3C4, 1-3C8)	TC POWER, INTXL	19%
	EX-3	RMC	EX(4-7C14, 1-3C20, 1-3C14, 1-3C18, 2-6PR18, 1-12PR19)	SIGNAL	21%
	EX-3	RMC	EX(1-7C14, 1-6PR18, 1-3C18) **NEW(5-7C14, 1-3C20, 1-3C14, 1-CAT5)**	SIGNAL	18%
2-P2	**NEW-3**	RMC	**NEW(5-7C14, 1-3C20, 1-3C14, 1-CAT5)**	SIGNAL	18%
	NEW-2	RMC	**NEW(2-3C8)**	INTXL	25%
	NEW-2	RMC	SPARE	-	-
3-4	EX-2	RMC	EX(1-3C8)	INTXL	13%
3-P3	EX-2	RMC	EX(2-3C8)	INTXL	25%
4-5	EX-2	RMC	EX(1-7C14)	SIGNAL	5%
4-P4	EX-2	RMC	EX(1-3C8)	INTXL	13%
	EX-3	RMC	EX(3-7C14, 1-3C14, 1-3C20, 1-3C18)	SIGNAL	10%
5-P5	EX-2	RMC	EX(1-7C14)	SIGNAL	5%

NOTES:

1. 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 CIRCUIT CONDUCTOR.
2. DETECTOR LOOPS NOT SHOWN FOR CLARITY.

PS&E REVIEW

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
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AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

BONIFACE PKWY & MOUNTAIN VIEW DR: WIRING DIAGRAM

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HN4	HN6

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SCALE

DATE TIME
4/24/2025 10:58 AM

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GENERAL LC NOTES:

1. ALL CIRCUIT BREAKERS SHALL BE RATED FOR OPERATION AT −20°F.
2. LOAD CENTER OUTAGES SHALL BE SCHEDULED DURING DAYLIGHT HOURS AND BE COMPLETE PRIOR TO DUSK THE SAME DAY.

SUMMARY OF EXISTING LOAD CENTER 'A'	
LOAD CENTER TYPE:	TYPE 1
MAINTAINED BY:	MUNICIPALITY OF ANCHORAGE
SERVING UTILITY:	CHUGACH ELECTRIC ASSOCIATION
SERVICE CONDUIT TYPE:	RIGID METAL CONDUIT
LOCATION DATA	
LOAD CENTER:	BONIFACE PKWY AND MOUNTAIN VIEW DR
POWER SOURCE:	EXISTING
PHOTOELECTRIC CONTROL:	AT LOAD CENTER
SERVICE VOLTAGE:	240/480V, 1-PHASE, 3-WIRE
PROVIDE METER SOCKET:	EXISTING
MAIN BREAKER A:	480V, 70A, 2-POLE
MAIN BREAKER B:	480V, 30A, 2-POLE (TRANSFORMER PRIMARY)
CONTACTOR:	600V, 2-POLE
AIC RATING:	10,000A

PANEL B - 480V

CKT	AMP TRIP	DESCRIPTION	CKT KVA	AØ	BØ	CKT KVA	DESCRIPTION	AMP TRIP	CKT
1	15/1	PHOTOCELL	0.1	3.9		3.8	TC TRANSFORMER	20/2	2
3	20/2	SPARE	0.0		0.0	0.0			4
5			0.0	0.0		0.0	SPARE	20/2	6
7			0.0		0.0	0.0			8
9			0.0	0.0		0.0			10
11			0.0		0.0	0.0			12
13				0.0					14
15					0.0				16
* = THROUGH CONTACTOR				3.9	0.0		PANEL A TOTAL KVA		3.9
							PANEL A AMPS		8.1

PANEL A - 240V (THROUGH TRANSFORMER)

1		BLANK	0.0	0.0		0.0	SPARE	20/2	2
3			0.0		0.0	0.0			4
5	15/1	INTX LTG*	1.0	1.0		0.0	SPARE	20/2	6
7	20/2	SPARE	0.0		0.0	0.0			8
9			0.0	0.0		0.0			10
11			0.0		0.0	0.0			12
13			0.0	0.0		0.0			14
15			0.0		0.0	0.0			16
17			0.0	0.0		0.0			18
				1.0	0.0		PANEL B TOTAL KVA		1.0
							PANEL B AMPS		4.2
							TOTAL KVA		4.9
							AMPS		10.2

SHORT CIRCUIT CALCULATION - LC 'A'	
TRANSFORMER RATING	25KVA
VOLTAGE	240/480V
TRANSFORMER IMPEDANCE	1.2%
AVAILABLE SHORT CIRCUIT CURRENT AT TRANSFORMER SECONDARY	4,340A
FEEDER CONDUCTOR LENGTH	20'
FEEDER CONDUCTOR SIZE	2 AWG ALUM
CONDUIT	PVC
MAXIMUM FAULT CURRENT	4,080A
DATE CALCULATED	1/29/2025

ARC FLASH CALCULATION - LC 'A'	
INCIDENT ENERGY	12.73 cal/cm²
ARC-FLASH BOUNDARY	79"
WORKING DISTANCE	18"
INSULATING GLOVES CLASS	00
NOMINAL SYSTEM VOLTAGE	480V
LIMITED APPROACH BOUNDARY	42"
RESTRICTED APPROACH BOUNDARY	12"
CALCULATION DATE	1/29/2025

STATE OF ALASKA
49TH
PRE-PS&E
ROY N. PACE
EE-12053
REGISTERED PROFESSIONAL ENGINEER

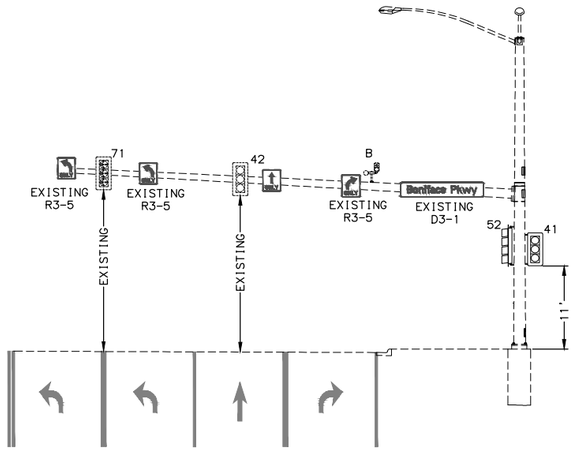
EDC, INC.
1500 WEST 33RD AVE.
ANCHORAGE, AK 99503
(907) 257-0601
CERT. OF AUTH. NO. AECC705

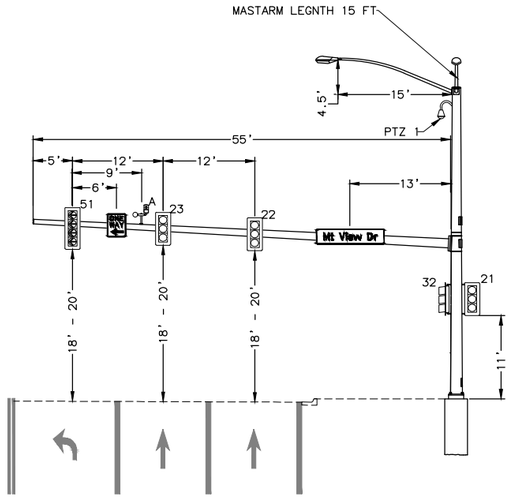
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

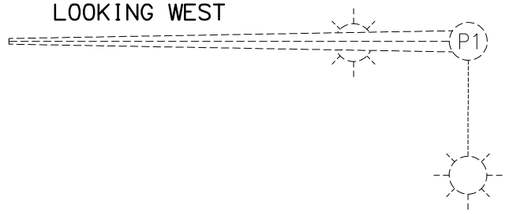
BONIFACE PKWY & MOUNTAIN VIEW DR:
LOAD CENTER SCHEDULE

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0001750/CFHWY01334	2025	HN5	HN6





SIGNAL POLE 1
LOOKING WEST



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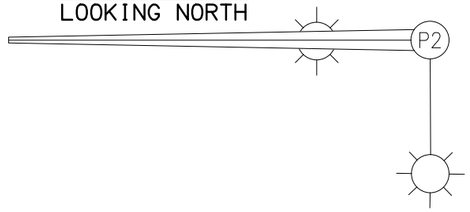
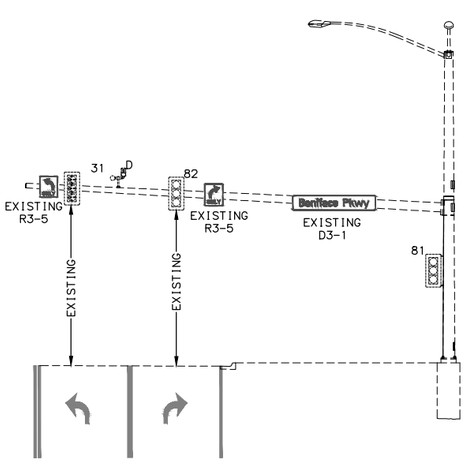
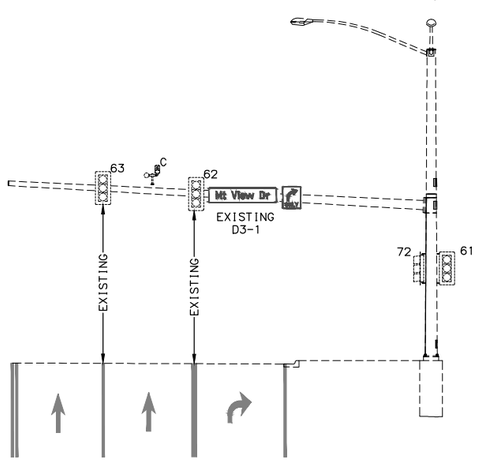
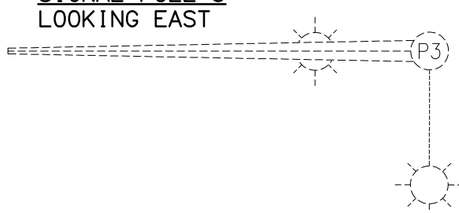
LOOKING NORTH



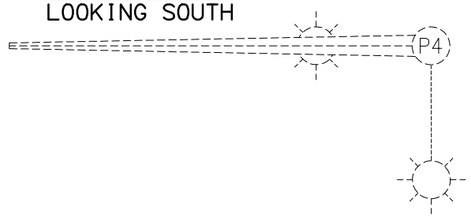


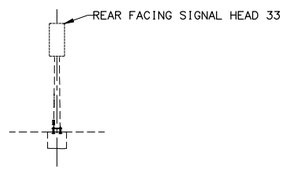


SIGNAL POLE 3
LOOKING EAST



SIGNAL POLE 4
LOOKING SOUTH





SIGNAL POLE 31
LOOKING WEST

NOTES:

1. ELEVATIONS ARE TO THE TOP OF THE FOUNDATION AND ARE APPROXIMATE.
2. LANE MARKINGS ARE SHOWN FOR REFERENCE ONLY.
3. SIGNAL HEAD LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL VERIFY SIGNAL HEAD PLACEMENT WITH RECEIVING AND APPROACH LANE OFFSETS.
4. SIGNAL POLE 2 IN ACCORDANCE WITH STANDARD PLAN T-55.11

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CHECKED BY
DRAFTED BY

SCALE

DATE TIME
4/8/2025 5:01 PM

DRAWING LOCATION
C:_DOWL_PW_D0414549\00944_HN1-HN6.DWG

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

PS&E REVIEW

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

BONIFACE PKWY & MOUNTAIN VIEW DR:
POLE ELEVATIONS

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HN6	HN6

DESIGNED BY
CHECKED BY
DRAFTED BY

SCALE

DATE TIME
4/8/2025 5:01 PM

DRAWING LOCATION
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CONTROLLER CABINET FEATURES

GENERAL OPTIONS	
TYPE	TS2-1
SIZE	NEMA SIZE 6
MATERIALS	0.125" NATURAL ALUMINUM
MODEL	WESTERN SYSTEMS NEMA TS2-1P
EXTENDER BASE	NONE
MOUNTING HARDWARE	INCLUDED
PAINT	YES-SEE SPECIAL PROVISIONS
SPECIAL OPTIONS	
LIFTING TABS	INCLUDED
EQUIPMENT SHELF	(2) FULL WIDTH, (1) LAPTOP DRAWER
AIR FILTER	FIBER MESH
MAIN DOOR LOCK	BEST
REAR DOOR	NONE
LED LIGHT FIXTURES	SEE SPECIAL PROVISIONS FOR OTHER REQUIREMENT
MAIN PANEL	
MAIN PANEL POSITION	16-POSITION HORIZONTAL
FLASH TRANSFER RELAYS SOCKETS	(8) INCLUDED
FLASHER SOCKET	(1) INCLUDED
R1 RELAY SOCKET	INCLUDED
POWER PANEL	
SURGE SUPPRESSION	SHP300-10
LINE FILTER (RADIO INTERFERENCE)	50A
SOLID STATE CONTACTOR	NORMALLY OPEN, 50A
MAIN CIRCUIT BREAKER	40A
AUXILIARY CIRCUIT BREAKER	20A
3 POSITION TERMINAL BLOCK FOR INCOMING POWER, #2-#8 U.S.G.	INCLUDED
16 POSITION NEUTRAL BUS BAR	INCLUDED
16 POSITION CHASSIS GROUND BUS BAR	INCLUDED
POLICE PANEL	
POLICE PANEL SWITCHES	SIGNALS ON/OFF, AUTO/FLASH
POLICE PANEL PUSHBUTTON ALARM	NONE
POLICE DOOR LOCK	CONVENTIONAL (SKELETON KEY)
POLICE PANEL MANUAL CORD	NONE
AUXILIARY PANEL	
AUXILIARY PANEL SWITCHES	AUTO/FLASH, STOP TIME, CONTROLLER POWER, COORD, CABINET LIGHT, HEATER BYPASS
DETECTOR TEST SWITCHES	TACTILE PUSHBUTTON
FORCE OFF SWITCHES	TACTILE PUSHBUTTON
RACK DETECTION	
DETECTOR RACKS	FOUR (4) 16-CHANNEL DETECTOR RACKS. TWO THE THE RACKS SHALL BE CONFIGURED WITH 2 SLOTS EACH FOR OPTICOM.
DETECTOR RACK POWER SUPPLY	BIU FOR EACH RACK
EVP REQUIREMENTS	WIRING FOR GREEN SENSE MONITORING
ADDITIONAL OPTIONS	
RAILROAD PREEMPTION	INCLUDED
RAILROAD PREEMPTION/STAND ALONE PANEL	NO
RED JUMPERS FOR ALL UNUSED PHASES	INCLUDED
LOAD RESISTORS	(8) INCLUDED - LEFT SIDE OF CABINET
HEATER RECEPTACLE (SINGLE)	INCLUDED - RIGHT SIDE OF CABINET
DUPLEX GFI OUTLET (NON-FILTERED)	INCLUDED - RIGHT SIDE OF CABINET
QUAD CONVENIENCE OUTLET - FILTERED	INCLUDED - LEFT SIDE OF CABINET
ADDITIONAL NEUTRAL BUS BARS	(1) 32 POSITION BUS BAR LEFT SIDE OF CABINET
ADDITIONAL CHASSIS GROUND BUS BARS	(1) 32 POSITION BUS BAR LEFT SIDE OF CABINET
STANDARD WIRING DIAGRAM (AUTOCAD FORMAT)	PROVIDE: (3) PAPER SETS FOR CABINET, SIGNAL TECH AND TRAFFIC, (1) ACAD ON DISC, (1) PDF.
GTT OPTICOM 757 HARNESS	INCLUDED - WIRED INTO CABINET
GTT OPTICOM 768 AUXILIARY INTERFACE PANEL	INCLUDED - WIRED INTO CABINET
GENERATOR BYPASS COMPARTMENT	INCLUDED - MOUNT COMPARTMENT FLUSH AND ON INSIDE OF CONTROLLER CABINET DOOR. SEE SPECIAL PROVISIONS FOR OTHER REQUIREMENTS.

CONTROLLER ASSEMBLY EQUIPMENT

SUPPLY ALL LABOR, EQUIPMENT AND MATERIALS TO PROVIDE A FULLY FUNCTIONING TRAFFIC SIGNAL CONTROLLER ASSEMBLY COMPLIANT WITH THE NEMA STANDARD PUBLICATION NO. TS2-2003 V02.06 AND SPECIAL "SPECIALS" PROVISIONS OF THIS CONTRACT INCLUDING BUT NOT LIMITED TO;

QTY	CONTROLLER/MMU EQUIPMENT
1	ECON COBALT ATC TOUCH 2100 CONTROLLER (TS2 TYP 2
1	CONTROLLER TELEMETRY MODULE TCM-FSK-9 OR APPROVED EQUAL
1	CONTROLLER ETHERNET PORT
1	CONTROLLER DATA KEY
1	EDI MMU2-16LEIP
1	MMU2 CARD
QTY	**CABINET EQUIPMENT**
16	PDC SSS-87-I/O LOAD SWITCHES OR APPROVED EQUAL
16	EDI ORACLE4E DETECTOR AMPLIFIERS OR APPROVED EQUAL
8	DETROL CONTROLS 295 FLASH TRANSFER RELAYS OR APPROVED EQUAL
2	EDI BIU700 TERMINAL AND FACILITIES BIU'S OR APPROVED EQUAL
4	EDI BIU700 DETECTION BIU'S OR APPROVED EQUAL
1	EDI PS250 TS2 CABINET POWER SUPPLY OR APPROVED EQUAL
1	PDC SSF-87 FLASHER OR APPROVED EQUAL
1	R1 RELAY
1	600/900/1500W SELECTABLE THERMOSTATICALLY CONTROLLED CABINET HEATER, MOUNT ON DOOR
1	RE-SEALABLE PRINT POUCH OF SUFFICIENT SIZE TO ACCOMMODATE CABINET PRINTS
1	COMPLETE SET OF MANUALS FOR CONTROLLER, MMU2, AND VEHICLE DETECTOR AMPLIFIERS

COMMUNICATION EQUIPMENT SCHEDULE

QTY	COPPER INTERCONNECT SYSTEM
1	ACTELIS ML698E WITH FOUR 10/100X PORTS AND ONE OPTIONAL 1000BASE SFP PORT OR APPROVED EQUAL
1	AC POWER ADAPTER 506R00006 OR APPROVED EQUAL
4	3 FOOT CAT6 PATCH CABLE
1	SFP OPTICS 100BASE FX SM 1310NM 15KM LC MODULE 506R00032 OR APPROVED EQUAL
1	CARRIER-CLASS ELEMENT MANAGMENT SYSTEM
2	QUAD DSL CABLES 504R20110 OR APPROVED EQUAL
1	WALL MOUNTING KIT 510R21080 OR APPROVED EQUAL
QTY	**FIBER INTERCONNECT EQUIPMENT**
1	ACTELIS NETWORKS MODEL ML530 WITH TWO 100/1000 BASE FX SFP PORTS AND FOUR PORTS OF 10/100 BASE-T OR APPROVED EQUAL
1	AC POWER ADAPTER 506R00006 OR APPROVED EQUAL
4	3 FOOT CAT6 PATCH CABLE
2	SFP OPTICS 100BASE FX SM 1310NM 15KM LC MODULE 506R00032 OR APPROVED EQUAL
1	CARRIER-CLASS ELEMENT MANAGEMENT SYSTEM
2	LC DUPLEX SM FIBER OPTIC CABLE ASSEMBLY 3 METERS OR APPROVED EQUAL
1	WALL MOUNTING KIT 510R21080 OR APPROVED EQUAL
QTY	**OTHER EQUIPMENT**
0	RSL910 ETHERNET SWITCH (COPPER AND FIBER) OR APPROVED EQUAL
QTY	**EVP EQUIPMENT**
1	OPTICOM MODEL 764 PHASE SELECTOR
QTY	**RADAR EQUIPMENT**
1	CLICK! 650 (102-0416)
0	CLICK! 656 (102-0451)
1	INSTALLER KIT
1	7' SDLC CABLE - 15 PIN SCREW TO 15 PIN SPRING CLIP (SDLC-TS2-7)
1	3' SDLC CABLE - 15 PIN SCREW TO 15 PIN SPRING CLIP (SDLC-TS2-3)
1	SDLC 6 PORT INTERFACE PANEL (SDLC-IP6)

STATE OF ALASKA
PROFESSIONAL ENGINEER
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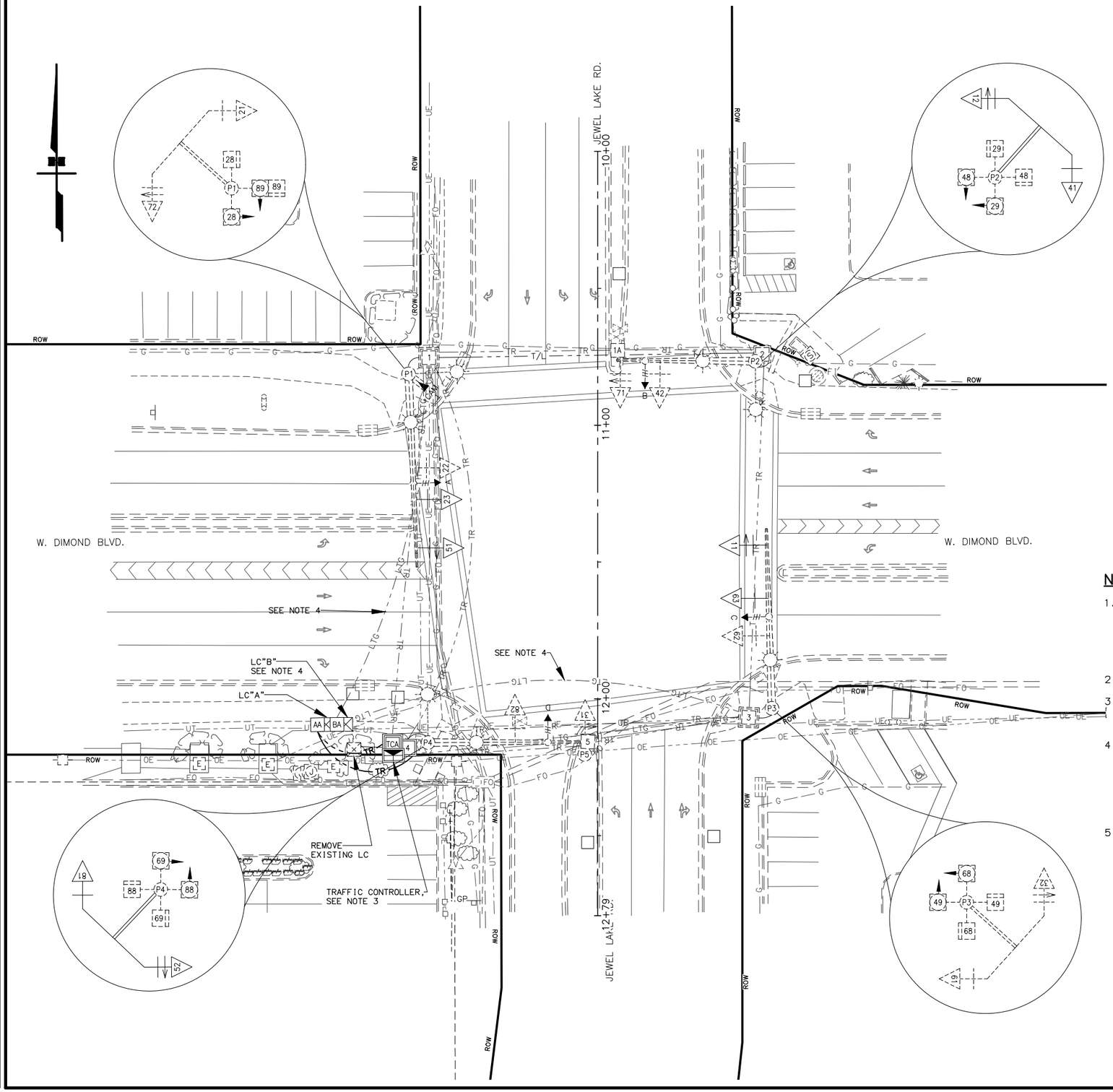
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

BONIFACE PKWY & MOUNTAIN VIEW DR:
CABINET EQUIPMENT

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	H01	H06



FOUNDATION SCHEDULE

ITEM	STATION ALIGNMENT	OFFSET	STRUCTURE	REMARKS
TC	-	-	NEW TRAFFIC CONTROLLER	EXISTING
LC"A"	12+09.4	99.3 RT	LOAD CENTER A	NEW
LC"B"	12+09.4	92.1 RT	LOAD CENTER B	NEW
P1	-	-	SIGNAL POLE 1	EXISTING
P2	-	-	SIGNAL POLE 2	EXISTING
P3	-	-	SIGNAL POLE 3	EXISTING
P4	-	-	SIGNAL POLE 4	EXISTING
P5	-	-	SIGNAL POLE 5	EXISTING

JUNCTION BOX SCHEDULE

J-BOX	STATION ALIGNMENT	OFFSET	TYPE	REMARKS
1	-	-	3	EXISTING
1A	-	-	1A	EXISTING
2	-	-	2	EXISTING
3	-	-	2	EXISTING
4	EXISTING	EXISTING	2	NEW
5	-	-	1A	EXISTING
AA	12+09.7	102.6 RT	1A	NEW
BA	12+09.5	95.4 RT	1A	NEW

OPTICOM DETECTOR SCHEDULE

DETECTOR ID	LOCATION	PHASE CALL	FACING DIRECTION	MODEL	REMARKS
A	POLE 1 MASTARM	2, 5	E	721	RELOCATE EXISTING
B	POLE 2 MASTARM	4, 7	S	721	EXISTING
C	POLE 3 MASTARM	6, 1	W	721	RELOCATE EXISTING
D	POLE 4 MASTARM	8, 3	N	721	EXISTING

NOTES:

1. CONTRACTOR SHALL MAINTAIN AND PROTECT ALL SIGNAL COMPONENTS SHOWN WITH NO ANTICIPATED IMPACT. IN ADDITION, UNLESS OTHERWISE DIRECTED BY THE ENGINEER:
   A. CONDUIT RUNS MAY BE INTERCEPTED (AS APPROVED BY THE ENGINEER).
   B. SIGNAL AND INTERCONNECT CONDUCTORS SHALL NOT BE INTERCEPTED.IMPACTED SIGNAL CONDUCTORS SHALL BE REPLACED CONTINUOUSLY FROM THE CONTROLLER CABINET.
   C. STREET LIGHT CONDUCTORS SHALL NOT BE INTERCEPTED.
2. CONTRACTOR SHALL MAINTAIN AND PROTECT ALL JUNCTION BOXES SHOWN WITH NO ANTICIPATED IMPACT.
3. REMOVE EXISTING TRAFFIC CONTROLLER ASSEMBLY. INSTALL NEW TRAFFIC CONTROLLER ASSEMBLY ON EXISTING FOUNDATION. EXISTING CONDUIT RUNS AND CABLES ARE TO REMAIN IN PLACE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
4. REMOVE EXISTING LOAD CENTER ASSEMBLY AND FOUNDATION. INSTALL TWO NEW LOAD CENTERS AND FOUNDATIONS AT NEW LOCATIONS. COORDINATE POWER SHUT-OFF AND TURN-ON WITH CEA. CONDUIT EXTENSIONS WILL BE REQUIRED TO CONNECT THE EXISTING LC - 3 LIGHTING CONDUIT TO LC "B". THE EXISTING LC - 1 CONDUIT RUN WILL BE INTERCEPTED AND SPLICED TO LC "B". CONTRACTOR SHALL PULL CONDUCTORS FROM CONDUITS AND PROTECT AND PRESERVE IN PLACE BEFORE ADJUSTING CONDUITS, THEN RE-PULL CONDUCTORS THROUGH. THIS WORK AND MATERIALS SHALL BE INCIDENTAL TO THE CONTRACT.
5. REPLACE J-BOXES 4 AND TCA, THIS MAY REQUIRE ADDING CONDUIT EXTENSIONS. IN THE EVENT CONDUIT EXTENSIONS ARE NEEDED, CONTRACTOR SHALL PULL CONDUCTORS FROM CONDUITS AND PROTECT AND PRESERVE IN PLACE BEFORE ADJUSTING CONDUITS, THEN RE-PULL CONDUCTORS THROUGH. THIS WORK AND MATERIALS SHALL BE INCIDENTAL TO THE CONTRACT.

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5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
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PS&E REVIEW

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

DIMOND BLVD & JEWEL LAKE RD: SIGNAL SYSYTEM PLAN

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	H02	H06

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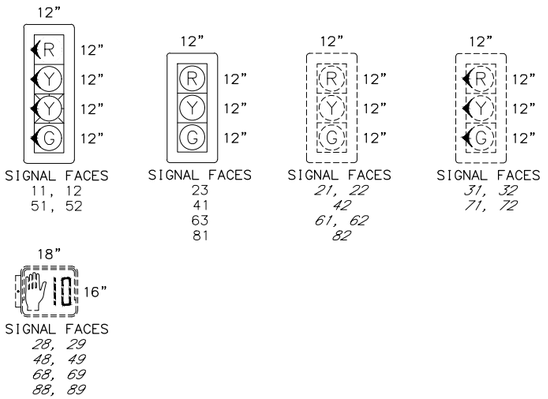
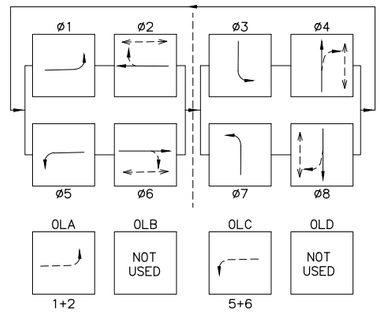


SIGNAL HEAD CONFIGURATIONS



PROTECTED VEHICLE MOVEMENT
PERMISSIVE VEHICLE MOVEMENT
PEDESTRIAN MOVEMENT

PREEMPTION DWELL PHASE VEHICLE MOVEMENTS

CHANNEL A: PHASES 2 + 5
CHANNEL B: PHASES 4 + 7
CHANNEL C: PHASES 6 + 1
CHANNEL D: Phases 8 + 3

PS&E REVIEW
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
PROJECT ENGINEER
REGISTERED PROFESSIONAL ENGINEER

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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
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HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

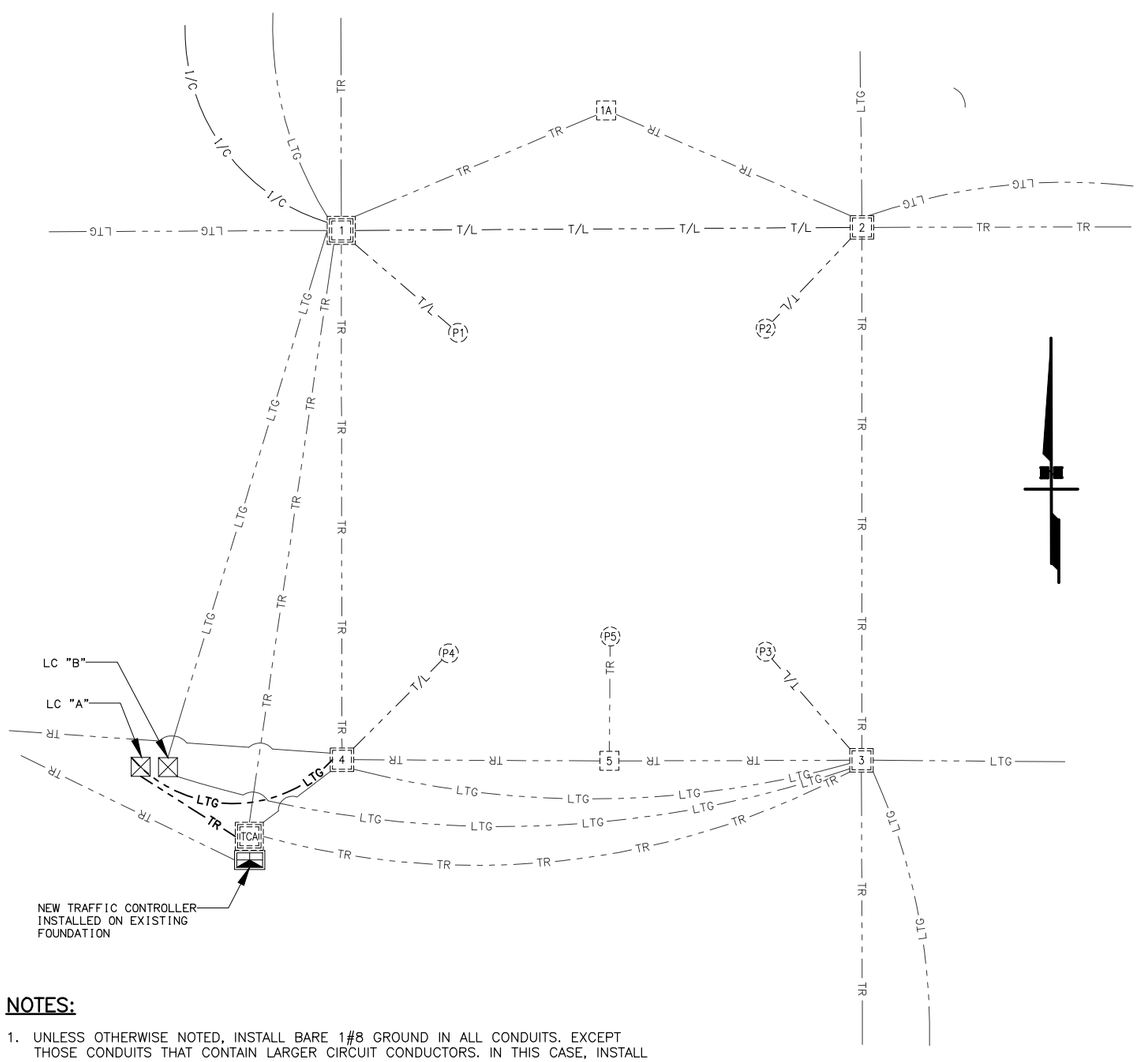
DIMOND BLVD & JEWEL LAKE RD: SIGNAL OPERATION PLAN

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	H03	H06

CABLE & CONDUIT SCHEDULE

RUN	CONDUIT		CABLES	NOTES	CONDUIT FILL
A–TCA	**NEW–2**	RMC	**NEW(1–3C6)**	SIG CKT B1	13%
A–4	**NEW–2**	RMC	**NEW(1–3C8, 1–5C14)**	INTXL, PHOTOCELL	17%
	NEW–3	RMC	SPARE		
B–3	EX–2	RMC	EX(2–3C8)	HWY LIGHTING	26%
B–1	EX–3	RMC	EX(2–3C8)	HWY LIGHTING	12%
TCA–1	EX–3	RMC	EX(3–7C14, 3–5C14, 3–3C14, 1–3C20, 1–7PR18)	SIGNAL, DETECTION	30%
	EX–3	RMC	EX(1–25PR19, 1–6PR18)	IC "W 88TH AVE"	14%
TCA–3	EX–3	RMC	EX(4–7C14, 2–5C14, 3–3C14, 1–3C20) **NEW(1–7C14)**	SIGNAL, DETECTION	21%
	EX–3	RMC	EX(1–15PR18)		7%
TCA–4	EX–3	RMC	EX(4–7C14, 2–5C14, 2–3C14, 1–7PR18, 1–15PR18, 1–CAT5) **NEW(1–7C14)**	SIGNAL, DETECTION	23%
	EX–3	RMC	EX(4–7C14, 2–5C14, 4–3C14, 2–3C20, 1–25PR, 1–6PR18, 1–15PR18)	SIGNAL, DETECTION, I/C "ARLENE"	42%
	EX–3	RMC	EX(1–7PR18)	DETECTION	5%
1–P1	EX–3	RMC	EX(4–7C14, 2–5C14, 3–3C14, 1–3C20, CAT5) **NEW(1–7C14)**	SIGNAL	21%
	EX–2	RMC	EX(2–3C8)	INTXL	26%
	EX–2	RMC	SPARE		
1–2	EX–3	RMC	EX(3–7C14, 3–5C14, 2–3C14, 1–25PR19)	SIGNAL, INTERCONNECT	26%
	EX–2	RMC	EX(2–3C8)	HWY LIGHTING	26%
	EX–2	RMC	EX(1–3C8)	INTXL	13%
	EX–3	RMC	EX(1–3C20, 1–3C14)	SIGNAL	3%
	EX–2	RMC	EX(1–7PR18)	DETECTION	26%
1–4	EX–3	RMC	EX(4–7C14, 2–5C14, 2–3C14, 1–15PR18, 1–7PR18, 1–CAT5) **NEW(1–7C14)**	SIGNAL, DETECTION	30%
	EX–3	RMC	EX(1–25PR19, 1–3C20, 1–3C14)		14%
2–P2	EX–3	RMC	EX(3–7C14, 3–5C14, 3–3C14, 1–3C20)	SIGNAL	18%
	EX–2	RMC	EX(1–3C8)	INTXL	13%
2–3	EX–3	RMC	SPARE		
3–P3	EX–3	RMC	EX(4–7C14, 2–5C14, 3–3C14, 1–3C20) **NEW(1–7C14)**	SIGNAL	21%
	EX–2	RMC	EX(1–3C8)	INTXL	13%
	EX–2	RMC	SPARE		
3–4	EX–2	RMC	EX(1–3C8)	INTXL	13%
3–5	EX–3	RMC	SPARE		
4–P4	EX–3	RMC	EX(3–7C14, 2–5C14, 3–3C14, 1–3C20)	SIGNAL	16%
	EX–2	RMC	**NEW(1–3C8, 1–5C14)** EX(1–3C8)	INTXL, PHOTOCELL	30%
4–5	EX–3	RMC	EX(1–7C14)	SIGNAL	2%
	EX–2	RMC	EX(1–6PR18)	DETECTION	8%
5–P5	EX–3	RMC	EX(1–7C14)	SIGNAL	2%
1–NORTH	EX–2	RMC	EX(1–25PR19)	IC "W 88TH AVE"	24%
	EX–2	RMC	EX(1–3C8)	HWY LIGHTING	13%
	EX–2	RMC	EX(1–6PR18)	DETECTION	8%
1–WEST	EX–2	RMC	EX(1–3C8)	HWY LIGHTING	13%
1–1A	EX–3	RMC	SPARE		
	EX–2	RMC	EX(1–15PR18)	DETECTION	16%
2–1A	EX–3	RMC	SPARE		
2–NORTH	EX–2	RMC	EX(1–3C8)	HWY LIGHTING	13%
2–EAST	EX–2	RMC	EX(2–7PR18)	DETECTION	9%
	EX–2	RMC	EX(1–25PR19)	I/C "ARLENE ST"	24%
	EX–2	RMC	EX(1–3C8)	HWY LIGHTING	13%
3–EAST	EX–2	RMC	EX(1–3C8)	HWY LIGHTING	13%
3–SOUTH	EX–2	RMC	EX(1–3C8)	HWY LIGHTING	13%
	EX–2	RMC	EX(1–15PR18)	DETECTION	16%
5–SOUTH	EX–2	RMC	EX(1–6PR18)	DETECTION	8%
4–WEST	EX–2	RMC	EX(1–15PR18, 1–7PR18)	DETECTION	9%
TCA–WEST	EX–2	RMC	EX(1–7PR18)	DETECTION	9%



NOTES:

1. 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 CIRCUIT CONDUCTOR.
2. DETECTOR LOOPS NOT SHOWN FOR CLARITY.

STATE OF ALASKA
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STATE OF ALASKA
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HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

DIMOND BLVD & JEWEL LAKE RD: WIRING DIAGRAM

MTB
DESIGNED BY
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DATE TIME 4/8/2025 5:02 PM
DRAWING LOCATION
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NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	H04	H06

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GENERAL LC NOTES:

1. ALL CIRCUIT BREAKERS SHALL BE RATED FOR OPERATION AT −20°F.
2. LOAD CENTER OUTAGES SHALL BE SCHEDULED DURING DAYLIGHT HOURS AND BE COMPLETE PRIOR TO DUSK THE SAME DAY.
3. SALVAGE EXISTING SKYLINE-STYLE LOAD CENTER.

SUMMARY OF NEW LOAD CENTER 'A'

LOAD CENTER TYPE:	TYPE 1A
MAINTAINED BY:	MUNICIPALITY OF ANCHORAGE
SERVING UTILITY:	CHUGACH ELECTRIC ASSOCIATION
SERVICE CONDUIT TYPE:	RIGID METAL CONDUIT
LOCATION DATA	
LOAD CENTER:	DIMOND BLVD AND JEWEL LAKE RD
POWER SOURCE:	NEW LINE EXTENSION
PHOTOELECTRIC CONTROL:	AT LOAD CENTER
SERVICE VOLTAGE:	240/480V, 1-PHASE, 3-WIRE
PROVIDE METER SOCKET:	NEW
MAIN BREAKER A:	480, 50A, 2-POLE (TRANSFORMER PRIMARY)
MAIN BREAKER B:	480, 100A, 2-POLE
CONTACTOR 1:	600V, 12-POLE, 30A
AIC RATING:	10,000A

PANEL A (240V, THROUGH TRANSFORMER)

CKT	AMP TRIP	DESCRIPTION	CKT KVA	AØ	BØ	CKT KVA	DESCRIPTION	AMP TRIP	CKT
1	40/1	TC	3.8	3.9		0.1	PHOTOCELL	15/2	2
3			0.0		0.1	0.1			4
5	20/2	INTX LTG*	0.9	0.9		0.0	SPARE	20/2	6
7			0.9		0.9	0.0			8
9			0.0	0.0		0.0			10
11			0.0		0.0	0.0			12
13			0.0	0.0		0.0			14
15			0.0		0.0	0.0			16
17			0.0	0.0		0.0			18
* = THROUGH CONTACTOR				4.8	1.0	TOTAL KVA			5.8
						AMPS			12.1

SUMMARY OF NEW LOAD CENTER 'B'

LOAD CENTER TYPE:	TYPE 1A
MAINTAINED BY:	STATE OF ALASKA
SERVING UTILITY:	CHUGACH ELECTRIC ASSOCIATION
SERVICE CONDUIT TYPE:	RIGID METAL CONDUIT
LOCATION DATA	
LOAD CENTER:	DIMOND BLVD AND JEWEL LAKE RD
POWER SOURCE:	NEW LINE EXTENSION
PHOTOELECTRIC CONTROL:	AT LOAD CENTER
SERVICE VOLTAGE:	240/480V, 1-PHASE, 3-WIRE WITH GROUNDED NEUTRAL
PROVIDE METER SOCKET:	NEW
MAIN BREAKER A:	480, 100A, 2-POLE
CONTACTOR 1:	600V, 12-POLE, 30A
AIC RATING:	10,000A

PANEL A

CKT	AMP TRIP	DESCRIPTION	CKT KVA	AØ	BØ	CKT KVA	DESCRIPTION	AMP TRIP	CKT
1	20/1	WT1 HEAT TRACE**	1.4	1.9		0.5	WL1 DIMOND NORTH LTG*	20/2	2
3	20/1	WT2 HEAT TRACE**	1.4		1.9	0.5			4
5	20/2	WL2 DIMOND SOUTH LTG*	1.1	2.0		0.9	WL3 JEWEL LAKE SOUTH SIDE LTG*	20/2	6
7			1.1		2.0	0.9			8
9	20/2	WL4 JEWEL LAKE NORTH LTG*	1.1	1.2		0.1	PHOTOCELL	15/1	10
11			1.1		1.1	0.0			12
13			0.0	0.0		0.0			14
15			0.0		0.0	0.0			16
17			0.0	0.0		0.0			18
* = THROUGH CONTACTOR ** = 30MA GFCI				5.1	5.0	TOTAL KVA			12.1
						AMPS			21.0

SHORT CIRCUIT CALCULATION - LC 'A'

TRANSFORMER RATING	25KVA
VOLTAGE	240/480V
TRANSFORMER IMPEDANCE	1.2%
AVAILABLE SHORT CIRCUIT CURRENT AT TRANSFORMER SECONDARY	4,340A
FEEDER CONDUCTOR LENGTH	10'
FEEDER CONDUCTOR SIZE	2 AWG ALUM
CONDUIT	PVC
MAXIMUM FAULT CURRENT	4,080A
DATE CALCULATED	1/29/2025

ARC FLASH CALCULATION - LC 'A'

INCIDENT ENERGY	12.73 cal/cm²
ARC-FLASH BOUNDARY	79"
WORKING DISTANCE	18"
INSULATING GLOVES CLASS	00
NOMINAL SYSTEM VOLTAGE	480V
LIMITED APPROACH BOUNDARY	42"
RESTRICTED APPROACH BOUNDARY	12"
CALCULATION DATE	1/29/2025

SHORT CIRCUIT CALCULATION - LC 'B'

TRANSFORMER RATING	25KVA
VOLTAGE	240/480V
TRANSFORMER IMPEDANCE	1.2%
AVAILABLE SHORT CIRCUIT CURRENT AT TRANSFORMER SECONDARY	4,340A
FEEDER CONDUCTOR LENGTH	10'
FEEDER CONDUCTOR SIZE	2 AWG ALUM
CONDUIT	PVC
MAXIMUM FAULT CURRENT	4,080A
DATE CALCULATED	1/29/2025

ARC FLASH CALCULATION - LC 'B'

INCIDENT ENERGY	12.73 cal/cm²
ARC-FLASH BOUNDARY	79"
WORKING DISTANCE	18"
INSULATING GLOVES CLASS	00
NOMINAL SYSTEM VOLTAGE	480V
LIMITED APPROACH BOUNDARY	42"
RESTRICTED APPROACH BOUNDARY	12"
CALCULATION DATE	1/29/2025

VOLTAGE DROP CALCULATION - LC 'B'

1-PH, 2W CONFIGURATION, 1 COPPER CONDUCTOR PER PHASE IN RMC.

CKT #	CONDUCTOR SIZE (AWG)	LENGTH	VOLTAGE	POWER FACTOR	LOAD (KVA)	TOTAL (AMPS)	%VD
AA-5,7	8	1100'	480	0.90	2.2	4.6	0.82
AA-9,11	8	1200'	480	0.90	2.2	4.6	0.89
AA-2,4	8	800'	480	0.90	1.0	2.1	0.24
AA-6,8	8	800'	480	0.90	1.8	3.8	0.49

STATE OF ALASKA
49TH
PRE-PS&E
ROY N. PACE
EE-12053
REGISTERED PROFESSIONAL ENGINEER

EDC, INC.
1500 WEST 33RD AVE.
ANCHORAGE, AK 99503
(907) 257-0601
CERT. OF AUTH. NO. AECC705

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

DIMOND BLVD & JEWEL LAKE RD: LOAD CENTER SUMMARY

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	H05	H06

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SCALE 1" = 10'
DATE 4/8/2025 TIME 5:02 PM
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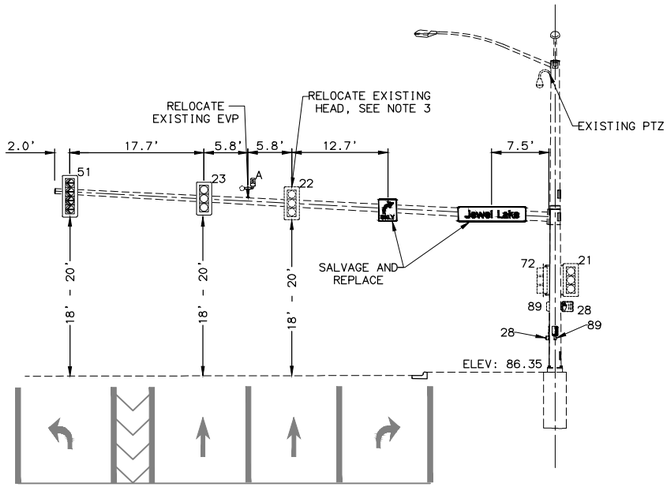
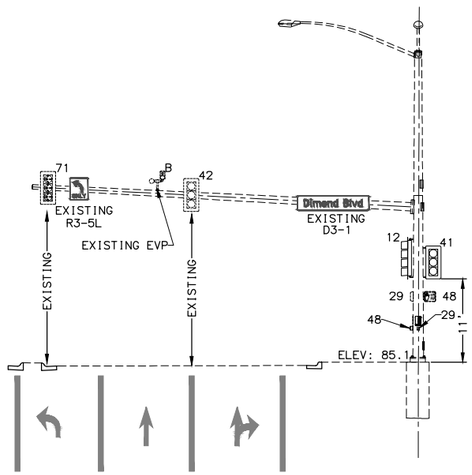
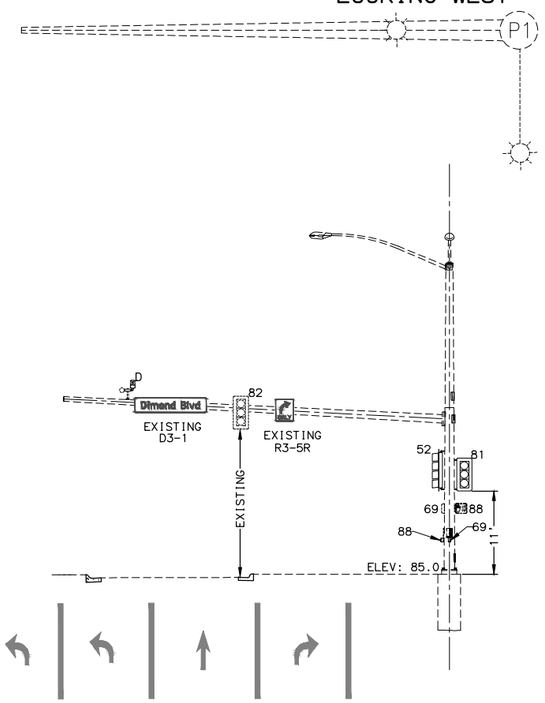
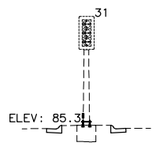


EXISTING POLE 1
LOOKING WEST



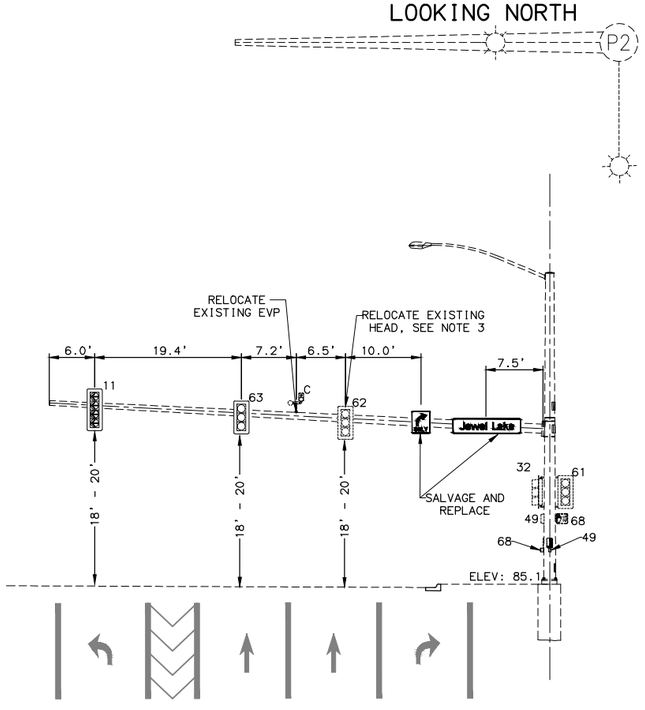
EXISTING POLE 2
LOOKING NORTH



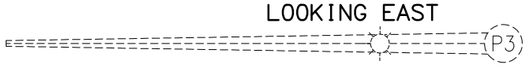


EXISTING POLE 5
LOOKING WEST

EXISTING POLE 4
LOOKING SOUTH



EXISTING POLE 3
LOOKING EAST



NOTES:

1. ELEVATIONS ARE TO THE TOP OF THE FOUNDATION AND ARE APPROXIMATE.
2. LANE MARKINGS ARE SHOWN FOR REFERENCE ONLY.
3. SIGNAL HEAD LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL VERIFY SIGNAL HEAD PLACEMENT WITH RECEIVING AND APPROACH LANE OFFSETS.
4. ALL PEDESTRIAN HEADS AND PUSH BUTTONS ARE EXISTING

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

DIMOND BLVD & JEWEL LAKE RD: POLE ELEVATIONS

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	H06	H06

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CONTROLLER CABINET FEATURES

GENERAL OPTIONS	
TYPE	TS2-1
SIZE	NEMA SIZE 6
MATERIALS	0.125" NATURAL ALUMINUM
MODEL	WESTERN SYSTEMS NEMA TS2-1P
EXTENDER BASE	NONE
MOUNTING HARDWARE	INCLUDED
PAINT	YES-SEE SPECIAL PROVISIONS
SPECIAL OPTIONS	
LIFTING TABS	INCLUDED
EQUIPMENT SHELF	(2) FULL WIDTH, (1) LAPTOP DRAWER
AIR FILTER	FIBER MESH
MAIN DOOR LOCK	BEST
REAR DOOR	NONE
LED LIGHT FIXTURES	SEE SPECIAL PROVISIONS FOR OTHER REQUIREMENT
MAIN PANEL	
MAIN PANEL POSITION	16-POSITION HORIZONTAL
FLASH TRANSFER RELAYS SOCKETS	(8) INCLUDED
FLASHER SOCKET	(1) INCLUDED
R1 RELAY SOCKET	INCLUDED
POWER PANEL	
SURGE SUPPRESSION	SHP300-10
LINE FILTER (RADIO INTERFERENCE)	50A
SOLID STATE CONTACTOR	NORMALLY OPEN, 50A
MAIN CIRCUIT BREAKER	40A
AUXILIARY CIRCUIT BREAKER	20A
3 POSITION TERMINAL BLOCK FOR INCOMING POWER, #2-#8 U.S.G.	INCLUDED
16 POSITION NEUTRAL BUS BAR	INCLUDED
16 POSITION CHASSIS GROUND BUS BAR	INCLUDED
POLICE PANEL	
POLICE PANEL SWITCHES	SIGNALS ON/OFF, AUTO/FLASH
POLICE PANEL PUSHBUTTON ALARM	NONE
POLICE DOOR LOCK	CONVENTIONAL (SKELETON KEY)
POLICE PANEL MANUAL CORD	NONE
AUXILIARY PANEL	
AUXILIARY PANEL SWITCHES	AUTO/FLASH, STOP TIME, CONTROLLER POWER, COORD, CABINET LIGHT, HEATER BYPASS
DETECTOR TEST SWITCHES	TACTILE PUSHBUTTON
FORCE OFF SWITCHES	TACTILE PUSHBUTTON
RACK DETECTION	
DETECTOR RACKS	FOUR (4) 16-CHANNEL DETECTOR RACKS. TWO THE THE RACKS SHALL BE CONFIGURED WITH 2 SLOTS EACH FOR OPTICOM.
DETECTOR RACK POWER SUPPLY	BIU FOR EACH RACK
EVP REQUIREMENTS	WIRING FOR GREEN SENSE MONITORING
ADDITIONAL OPTIONS	
RAILROAD PREEMPTION	INCLUDED
RAILROAD PREEMPTION/STAND ALONE PANEL	NO
RED JUMPERS FOR ALL UNUSED PHASES	INCLUDED
LOAD RESISTORS	(8) INCLUDED - LEFT SIDE OF CABINET
HEATER RECEPTACLE (SINGLE)	INCLUDED - RIGHT SIDE OF CABINET
DUPLEX GFI OUTLET (NON-FILTERED)	INCLUDED - RIGHT SIDE OF CABINET
QUAD CONVENIENCE OUTLET - FILTERED	INCLUDED - LEFT SIDE OF CABINET
ADDITIONAL NEUTRAL BUS BARS	(1) 32 POSITION BUS BAR LEFT SIDE OF CABINET
ADDITIONAL CHASSIS GROUND BUS BARS	(1) 32 POSITION BUS BAR LEFT SIDE OF CABINET
STANDARD WIRING DIAGRAM (AUTOCAD FORMAT)	PROVIDE: (3) PAPER SETS FOR CABINET, SIGNAL TECH AND TRAFFIC, (1) ACAD ON DISC, (1) PDF.
GTT OPTICOM 757 HARNESS	INCLUDED - WIRED INTO CABINET
GTT OPTICOM 768 AUXILIARY INTERFACE PANEL	INCLUDED - WIRED INTO CABINET
GENERATOR BYPASS COMPARTMENT	INCLUDED - MOUNT COMPARTMENT FLUSH AND ON INSIDE OF CONTROLLER CABINET DOOR. SEE SPECIAL PROVISIONS FOR OTHER REQUIREMENTS.

CONTROLLER ASSEMBLY EQUIPMENT

SUPPLY ALL LABOR, EQUIPMENT AND MATERIALS TO PROVIDE A FULLY FUNCTIONING TRAFFIC SIGNAL CONTROLLER ASSEMBLY COMPLIANT WITH THE NEMA STANDARD PUBLICATION NO. TS2-2003 V02.06 AND SPECIAL "SPECIALS" PROVISIONS OF THIS CONTRACT INCLUDING BUT NOT LIMITED TO;

QTY	CONTROLLER/MMU EQUIPMENT
	ECON COBALT ATC TOUCH 2100 CONTROLLER (TS2 TYP 2
	CONTROLLER TELEMETRY MODULE TCM-FSK-9 OR APPROVED EQUAL
	CONTROLLER ETHERNET PORT
	CONTROLLER DATA KEY
	EDI MMU2-16LEIP
	MMU2 CARD
QTY	**CABINET EQUIPMENT**
	PDC SSS-87-I/O LOAD SWITCHES OR APPROVED EQUAL
	EDI ORACLE4E DETECTOR AMPLIFIERS OR APPROVED EQUAL
	DETROL CONTROLS 295 FLASH TRANSFER RELAYS OR APPROVED EQUAL
	EDI BIU700 TERMINAL AND FACILITIES BIU'S OR APPROVED EQUAL
	EDI BIU700 DETECTION BIU'S OR APPROVED EQUAL
	EDI PS250 TS2 CABINET POWER SUPPLY OR APPROVED EQUAL
	PDC SSF-87 FLASHER OR APPROVED EQUAL
	R1 RELAY
	600/900/1500W SELECTABLE THERMOSTATICALLY CONTROLLED CABINET HEATER, MOUNT ON DOOR
	RE-SEALABLE PRINT POUCH OF SUFFICIENT SIZE TO ACCOMMODATE CABINET PRINTS
	COMPLETE SET OF MANUALS FOR CONTROLLER, MMU2, AND VEHICLE DETECTOR AMPLIFIERS

COMMUNICATION EQUIPMENT SCHEDULE

QTY	COPPER INTERCONNECT SYSTEM
	ACTELIS ML698E WITH FOUR 10/100X PORTS AND ONE OPTIONAL 1000BASE SFP PORT OR APPROVED EQUAL
	AC POWER ADAPTER 506R00006 OR APPROVED EQUAL
	3 FOOT CAT6 PATCH CABLE
	SFP OPTICS 100BASE FX SM 1310NM 15KM LC MODULE 506R00032 OR APPROVED EQUAL
	CARRIER-CLASS ELEMENT MANAGMENT SYSTEM
	QUAD DSL CABLES 504R20110 OR APPROVED EQUAL
	WALL MOUNTING KIT 510R21080 OR APPROVED EQUAL
QTY	**FIBER INTERCONNECT EQUIPMENT**
	ACTELIS NETWORKS MODEL ML530 WITH TWO 100/1000 BASE FX SFP PORTS AND FOUR PORTS OF 10/100 BASE-T OR APPROVED EQUAL
	AC POWER ADAPTER 506R00006 OR APPROVED EQUAL
	3 FOOT CAT6 PATCH CABLE
	SFP OPTICS 100BASE FX SM 1310NM 15KM LC MODULE 506R00032 OR APPROVED EQUAL
	CARRIER-CLASS ELEMENT MANAGEMENT SYSTEM
	LC DUPLEX SM FIBER OPTIC CABLE ASSEMBLY 3 METERS OR APPROVED EQUAL
	WALL MOUNTING KIT 510R21080 OR APPROVED EQUAL
QTY	**OTHER EQUIPMENT**
	RSL910 ETHERNET SWITCH (COPPER AND FIBER) OR APPROVED EQUAL
QTY	**EVP EQUIPMENT**
	OPTICOM MODEL 764 PHASE SELECTOR
QTY	**RADAR EQUIPMENT**
	CLICK! 650 (102-0416)
	CLICK! 656 (102-0451)
	INSTALLER KIT
	7' SDLC CABLE - 15 PIN SCREW TO 15 PIN SPRING CLIP (SDLC-TS2-7)
	3' SDLC CABLE - 15 PIN SCREW TO 15 PIN SPRING CLIP (SDLC-TS2-3)
	SDLC 6 PORT INTERFACE PANEL (SDLC-IP6)

STATE OF ALASKA
PROFESSIONAL ENGINEER
PROJECT ENGINEER
REVIEW

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

DIMOND BLVD & JEWEL LAKE RD: CABINET EQUIPMENT

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HS1	HS5

SIGN SUMMARY

SHEET NO.	INTERSECTION	POLE	TYPE	LEGEND	SIZE (IN)		AREA (SQ FT)	SIGN FACES	FRAMED?		REMARKS
					WIDTH	HEIGHT			YES	NO	
HA5	PINE/DEBARR	1	D3-100	Pine St	72	24	12	E	X		MASTARM MOUNTED
HA5	PINE/DEBARR	2	D3-100	DeBarr Rd	96	24	16	S	X		MASTARM MOUNTED
			R3-5	ONLY	30	36	7.5	S		X	MASTARM MOUNTED
HA5	PINE/DEBARR	3	D3-100	Pine St	72	24	12	W	X		MASTARM MOUNTED
HA5	PINE/DEBARR	4	D3-100	DeBarr Rd	96	24	16	N	X		MASTARM MOUNTED
			R3-5	ONLY	30	36	7.5	N		X	MASTARM MOUNTED
HB5	EDWARD/DEBARR	3	D3-1	Edward St	96	24	16	W	X		MASTARM MOUNTED
HC5	BEAVER/DEBARR	1	D3-1	Beaver Pl	90	24	15	E	X		MASTARM MOUNTED
HD5	MINNESOTA/26TH	2	D3-1	26th Ave	90	24	15	S	X		MASTARM MOUNTED
			R10-3L		9	15	1	S		X	PEDESTRIAN BUTTON
HD5	MINNESOTA/26TH	4	D3-1	26th Ave	90	24	15	N	X		MASTARM MOUNTED
HE5	A/FIREWEED	3	D3-1	A St	54	24	9	W	X		MASTARM MOUNTED
			R3-10L		9	15	1	W		X	PEDESTRIAN BUTTON
			R3-10R		9	15	1	N		X	PEDESTRIAN BUTTON
HE5	A/FIREWEED	4	R3-10L		9	15	1	N		X	PEDESTRIAN BUTTON
			R3-10R		9	15	1	E		X	PEDESTRIAN BUTTON

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PS&E REVIEW

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ANCHORAGE, AK 99503
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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
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HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

SIGN SUMMARY

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HS2	HS5

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4/21/2025 5:19 PM

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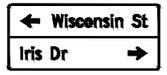
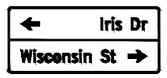
SIGN SUMMARY

SHEET NO.	INTERSECTION	POLE	TYPE	LEGEND	SIZE (IN)		AREA (SQ FT)	SIGN FACES	FRAMED?		REMARKS
					WIDTH	HEIGHT			YES	NO	
HF5	C/36TH	1	R10-3L		9	15	1	E		X	PEDESTRIAN BUTTON
			R10-3R		9	15	1	S		X	PEDESTRIAN BUTTON
HF5	C36TH	7	D3-1		54	24	9	E	X		MASTARM MOUNTED
			R3-1R		24	24	4	E		X	MASTARM MOUNTED
			R6-2L		24	30	5	E		X	MASTARM MOUNTED
HG5	SPENARD/ WISCONSIN	2	D3-1		96	42	28	S	X		MASTARM MOUNTED
			R10-3L		9	15	1	S		X	PEDESTRIAN BUTTON
			R10-3R		9	15	1	W		X	PEDESTRIAN BUTTON
HG5	SPENARD/ WISCONSIN	4	D3-1		96	42	28	N	X		MASTARM MOUNTED
			R10-3L		9	15	1	N		X	PEDESTRIAN BUTTON
			R10-3R		9	15	1	E		X	PEDESTRIAN BUTTON
HH5	TUDOR/DENALI	2	R10-3L		9	15	1	S		X	PEDESTRIAN BUTTON
HH5	TUDOR/DENALI	3	D3-1		84	24	14	W	X		MASTARM MOUNTED
HJ5	DIMOND/KING	2	D3-1		114	24	19	S	X		MASTARM MOUNTED
			R10-3L		9	15	1	S		X	PEDESTRIAN BUTTON

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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

SIGN SUMMARY

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HS3	HS5

SIGN SUMMARY

SHEET NO.	INTERSECTION	POLE	TYPE	LEGEND	SIZE (IN)		AREA (SQ FT)	SIGN FACES	FRAMED?		REMARKS
					WIDTH	HEIGHT			YES	NO	
HJ5	DIMOND/KING	4	D3-1	Dimond Blvd	114	24	19	N	X		MASTARM MOUNTED
			R10-3R		9	15	1	E		X	PEDESTRIAN BUTTON
HK5	ABBOTT/88TH	4	D3-1	E 88th Ave	108	24	18	N	X		MASTARM MOUNTED
			R10-3L		9	15	1	N		X	PEDESTRIAN BUTTON
HL5	TUDOR/PIPER	1	D3-1	Piper St	78	24	13	E	X		MASTARM MOUNTED
			R3-5		24	24	4	E		X	MASTARM MOUNTED
			R10-3L		9	15	1	E		X	PEDESTRIAN BUTTON
			R10-3R		9	15	1	S		X	PEDESTRIAN BUTTON
HL5	TUDOR/PIPER	3	D3-1	Piper St	78	24	13	W	X		MASTARM MOUNTED
			R10-3L		9	15	1	W		X	PEDESTRIAN BUTTON
			R10-3R		9	15	1	N		X	PEDESTRIAN BUTTON
HM5	OLD SEWARD/88TH	2	D3-1	88th Ave	90	24	15	S	X		MASTARM MOUNTED
			R3-5		30	36	7.5	S		X	PEDESTRIAN BUTTON
HM5	OLD SEWARD/88TH	4	D3-1	88th Ave	90	24	15	N	X		MASTARM MOUNTED
			R3-5		30	36	7.5	N		X	PEDESTRIAN BUTTON

DESIGNED BY
CHECKED BY
DRAFTED BY

SCALE

DATE 4/21/2025 TIME 5:19 PM

DRAWING LOCATION
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DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

PS&E REVIEW

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

HSIP: ANCHORAGE FLASHING YELLOW ARROW AND SIGNAL HEAD DISPLAY IMPROVEMENTS

SIGN SUMMARY

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HS4	HS5

SIGN SUMMARY

SHEET NO.	INTERSECTION	POLE	TYPE	LEGEND	SIZE (IN)		AREA (SQ FT)	SIGN FACES	FRAMED?		REMARKS
					WIDTH	HEIGHT			YES	NO	
HN5	BONIFACE/MT.VIEW	2	D3-1	Mt View Dr	108	24	18	S	X		MASTARM MOUNTED
			R6-2L	ONE WAY ←	24	30	5	S		X	MASTARM MOUNTED
H05	DIMOND/JEWEL LAKE	1	D3-1	Dimond Blvd	114	24	19	E	X		MASTARM MOUNTED
			R3-5	ONLY	30	36	7.5	E		X	MASTARM MOUNTED
H05	DIMOND/JEWEL LAKE	3	D3-1	Dimond Blvd	114	24	19	W	X		MASTARM MOUNTED
			R3-5	ONLY	30	36	7.5	W		X	MASTARM MOUNTED

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SIGN SUMMARY

PS&E REVIEW

STATE OF ALASKA
PROJECT ENGINEER
REGISTERED PROFESSIONAL ENGINEER

DOWL, LLC
5015 BUSINESS PARK BLVD
ANCHORAGE, AK 99503
(907) 562-2000
AECL848

NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0001750/CFHWY01334	2025	HS5	HS5

DESIGNED BY
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SCALE

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4/21/2025 5:19 PM

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SIGN SALVAGE SUMMARY

INTERSECTION	POLE	TYPE	REMARKS
PINE/DEBARR	1	D3-100	MASTARM MOUNTED
PINE/DEBARR	2	D3-100	MASTARM MOUNTED
		R3-5	MASTARM MOUNTED
PINE/DEBARR	3	D3-100	MASTARM MOUNTED
PINE/DEBARR	4	D3-100	MASTARM MOUNTED
		R3-5	MASTARM MOUNTED
EDWARD/DEBARR	3	D3-1	MASTARM MOUNTED
BEAVER/DEBARR	1	D3-1	MASTARM MOUNTED
MINNESOTA/26TH	2	R3-10	MASTARM MOUNTED
A/FIREWEED	3	D3-1	MASTARM MOUNTED
		R6-2L	MASTARM MOUNTED
		R3-10	MASTARM MOUNTED
		R10-3L	PEDESTRIAN BUTTON
		R10-3R	PEDESTRIAN BUTTON
A/FIREWEED	4	R10-3L	PEDESTRIAN BUTTON
		R10-3R	PEDESTRIAN BUTTON

SIGN SALVAGE SUMMARY

INTERSECTION	POLE	TYPE	REMARKS
C/36TH	1	D3-1	MASTARM MOUNTED
		R6-2L	MASTARM MOUNTED
C/36TH	1	R3-1R	MASTARM MOUNTED
		R3-10	MASTARM MOUNTED
		R10-3L	PEDESTRIAN BUTTON
		R10-3R	PEDESTRIAN BUTTON
SPENARD/WISCONSIN	2	D3-1	MASTARM MOUNTED
		R3-10	MASTARM MOUNTED
SPENARD/WISCONSIN	2	D3-1	MASTARM MOUNTED
		R3-10	
TUDOR/DENALI	2	R10-3L	PEDESTRIAN BUTTON
TUDOR/DENALI	3	D3-1	MASTARM MOUNTED
		R3-10	
DIMOND/MINNESOTA	5	R3-10	

SIGN SALVAGE SUMMARY

INTERSECTION	POLE	TYPE	REMARKS
DIMOND/KING	2	D3-1	MASTARM MOUNTED
		R3-10	MASTARM MOUNTED
		R10-3L	PEDESTRIAN BUTTON
DIMOND/KING	2	R10-3R	PEDESTRIAN BUTTON
DIMOND/KING	4	D3-1	MASTARM MOUNTED
		R3-10	MASTARM MOUNTED
		R10-3L	PEDESTRIAN BUTTON
		R10-3R	PEDESTRIAN BUTTON
ABBOTT/88TH	4	D3-1	MASTARM MOUNTED
		R3-10	MASTARM MOUNTED
		R10-3R	PEDESTRIAN BUTTON
TUDOR/PIPER	1	D3-1	MASTARM MOUNTED
		R3-5	MASTARM MOUNTED
TUDOR/PIPER	3	D3-1	MASTARM MOUNTED

SIGN SALVAGE SUMMARY

INTERSECTION	POLE	TYPE	REMARKS
MT. VIEW/BONIFACE	2	D3-1	MASTARM MOUNTED
		R6-2L	MASTARM MOUNTED
		R3-10	MASTARM MOUNTED
OLD SEWARD/88TH	4	D3-1	MASTARM MOUNTED
		R3-5	MASTARM MOUNTED
OLD SEWARD/88TH	4	D3-1	MASTARM MOUNTED
		R3-5	MASTARM MOUNTED
DIMOND/JEWEL LAKE	1	D3-1	MASTARM MOUNTED
		R3-5	MASTARM MOUNTED
DIMOND/JEWEL LAKE	3	D3-1	MASTARM MOUNTED
		R3-5	MASTARM MOUNTED

STATE OF ALASKA
PROFESSIONAL ENGINEER
PROJECT ENGINEER
PSSE REVIEW

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SIGN SALVAGE SUMMARY