

PLANS DEVELOPED BY: KINNEY ENGINEERING, LLC 3909 Arctic Blvd, Suite 400 Anchorage, Alaska 99503 (907) 346-2373 CERT. OF AUTH. NO. 1102
 Z:\PROJECTS\060606 NR & COF Signal Upgrades\DWG\C\Sheets\606_A3_ABBRV AND NOTES.dwg

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	A3	A6

ABBREVIATIONS

ABBREVIATIONS APPLY TO H SHEETS ONLY

AAWF	ACTIVE ADVANCE WARNING FLASHER
ADT	AVERAGE DAILY TRAFFIC
AH	AHEAD
ARRC	ALASKA RAILROAD CORPORATION
ASDS	ALASKA SIGN DESIGN SPECIFICATIONS
ATM	ALASKA TRAFFIC MANUAL
AVC	AUTOMATED VEHICLE COUNTER
BMP	BEST MANAGEMENT PRACTICE
C/A	CONTROLLED ACCESS
CF	CUBIC FOOT
C&G	CURB AND GUTTER
CGP	CONSTRUCTION GENERAL PERMIT
CKT	ELECTRICAL CIRCUIT
CRT	CONTROLLED RELEASE TERMINAL
DIA	DIAMETER
DIR	DIRECTION
DOT&PF	DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
EA	EACH
EB	EASTBOUND
EGC	EQUIPMENT GROUND CONDUCTOR
H	HORIZONTAL
HDG	HOT DIPPED GALVANIZING
HGT	HEIGHT
GVEA	GOLDEN VALLEY ELECTRIC ASSOCIATION
I/C	INTERCONNECT
IN OR "	INCH
JBOX, J-BOX	JUNCTION BOX
LBS	POUNDS
LFMC	LIQUIDTIGHT FLEXIBLE METAL CONDUIT
LF	LINEAR FOOT
L.O.C.	LIP OF CURB
MMA	METHYL METHACRYLATE
MUTCD	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
MTG	MOUNTING
NB	NORTHBOUND
NE	NORTHEAST
NO.	NUMBER
N.I.C.	NOT IN CONTRACT
NTS	NOT TO SCALE
NW	NORTHWEST
O/S	OFFSET
PED	PEDESTRIAN
PTZ	PAN, TILT, ZOOM
PHB	PEDESTRIAN HYBRID BEACON
PST	PERFORATED STEEL TUBING
RP	REFERENCE POINT
SB	SOUTHBOUND
SDB	SPEED DISPLAY BOARD
SE	SOUTHEAST
SQ	SQUARE
SF	SQUARE FOOT
SMFO	SINGLE MODE FIBER OPTIC
STA	STATION
STD	STANDARD
SW	SOUTHWEST
SWPPP	STORM WATER POLLUTION PREVENTION PLAN
SY	SQUARE YARD
TS	SQUARE STRUCTURAL STEEL TUBING
TYP	TYPICAL
USACE	UNITED STATES ARMY CORPS OF ENGINEERS
V	VERTICAL
WB	WESTBOUND
W/	WITH
W/O	WITHOUT
Y	YELLOW

ABBREVIATIONS AND NOTES

REVIEW PS&E
6/23/2023

6/23/2023

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFWHY00531 0002(495)/NFWHY00592	2023	A5	A6

NOTE:
SITE 15 NOT USED.

SITE 1
FARMERS LOOP RD &
BALLAINE RD
SEE SHEET G1 & H9

SITE 2
FARMERS LOOP RD &
N TANANA DR
SEE SHEET G2 & H13

SITE 25
PARKS HWY, GEIST RD
& CHENA PUMP RD
SEE SHEET G25 & H105

SITE 23
PARKS HWY &
CABIN RD
SEE SHEET G23 & H97

SITE 24
PARKS HWY &
DENALI DR
SEE SHEET G24 & H101

SITE 3-4
PEGER RD &
JOHANSEN EXPWY
SEE SHEET G3-G4
& H17-H18

SITE 8
ILLINOIS ST &
MINNIE ST
SEE SHEET G8 & H37

SITE 9
ILLINOIS ST &
PHILLIPS FIELD RD
SEE SHEET G9 & H41

SITE 10
ILLINOIS ST &
TERMINAL ST
SEE SHEET G10 & H45

SITE 16
LATHROP ST &
DAVIS RD
SEE SHEET G16 & H69

SITE 17
LATHROP ST &
VAN HORN RD
SEE SHEET G17 & H73

SITE 7
BENTLEY TRUST RD &
OLD STEESE HWY
SEE SHEET G7 & H33

SITE 11
LACEY ST & 1ST AVE
SEE SHEET G11 & H49

SITE 12
LACEY ST & 2ND AVE
SEE SHEET G12 & H53

SITE 13
LACEY ST & 3RD AVE
SEE SHEET G13 & H57

SITE 14
LACEY ST & 10TH AVE
SEE SHEET G14 & H61

SITE 18
S CUSHMAN ST & 15TH AVE
SEE SHEET G18 & H77

SITE 19
S CUSHMAN ST & 17TH AVE
SEE SHEET G19 & H81

SITE 20
S CUSHMAN ST & 23RD AVE
SEE SHEET G20 & H85

SITE 21
CUSHMAN ST & 30TH AVE
SEE SHEET G21 & H89

SITE 22
CUSHMAN ST & VAN HORN RD
SEE SHEET G22 & H93

O-SIGNAL BACKPLATE REPLACEMENT LOCATION:
SEE SHEET H108

PROJECT LAYOUT

REVIEW PS&E
6/23/2023

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			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	A6	H145

SIGNAL HEAD BACKPLATE REPLACEMENT SCHEDULE						
SITE	DESCRIPTION	ITEM	4-SECTION SIGNAL HEADS, MAST-MOUNT	3-SECTION SIGNAL HEADS, MAST-MOUNT	4-SECTION SIGNAL HEADS, SIDE-MOUNT	3-SECTION SIGNAL HEADS, SIDE-MOUNT
B01	CUSHMAN - 1ST		1	4	1	3
B02	CUSHMAN - 2ND		0	4	0	3
B03	CUSHMAN - 3RD		0	3	0	2
B04	CUSHMAN - 4TH		0	3	0	2
B05	CUSHMAN - 5TH		0	4	0	2
B06	CUSHMAN - 10TH		0	5	0	4
B07	CUSHMAN - GAFFNEY		2	6	2	4
B08	NOBLE - 1ST		0	5	0	5
B09	NOBLE - 2ND		0	6	0	6
B10	NOBLE - 3RD		0	5	0	5
B11	NOBLE - 10TH		4	4	4	4

BACKPLATE SCHEDULES

REVIEW PS&E
6/23/2023
6/23/2023

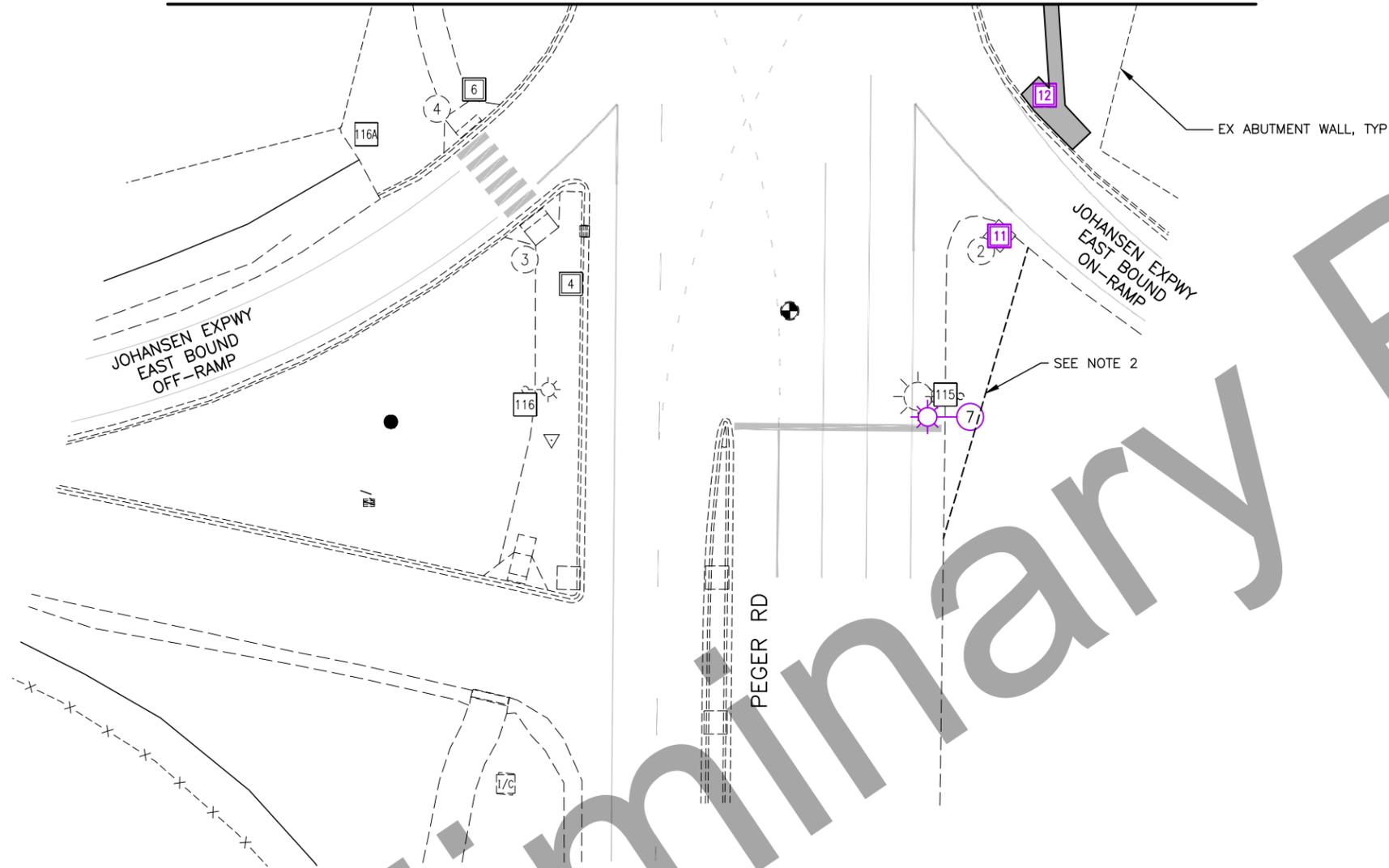
Preliminary Plans

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	G4	G25

NOTE:

- JOHANSEN EXPRESSWAY OVERPASS AND SIGNAL EQUIPMENT NOT SHOWN FOR CLARITY.
- LIMITS OF DISTURBANCE FOR CONSTRUCTION OF PROPOSED IMPROVEMENTS INCLUDING, BUT NOT LIMITED TO, TRENCHING, BORING, AND REMOVAL OF EXISTING SIGNAL SYSTEM AS SCHEDULED.

MATCH LINE SEE SHEET H17



GRADING POINT TABLE

PT#	NORTHING	EASTING	ELEV	DESC

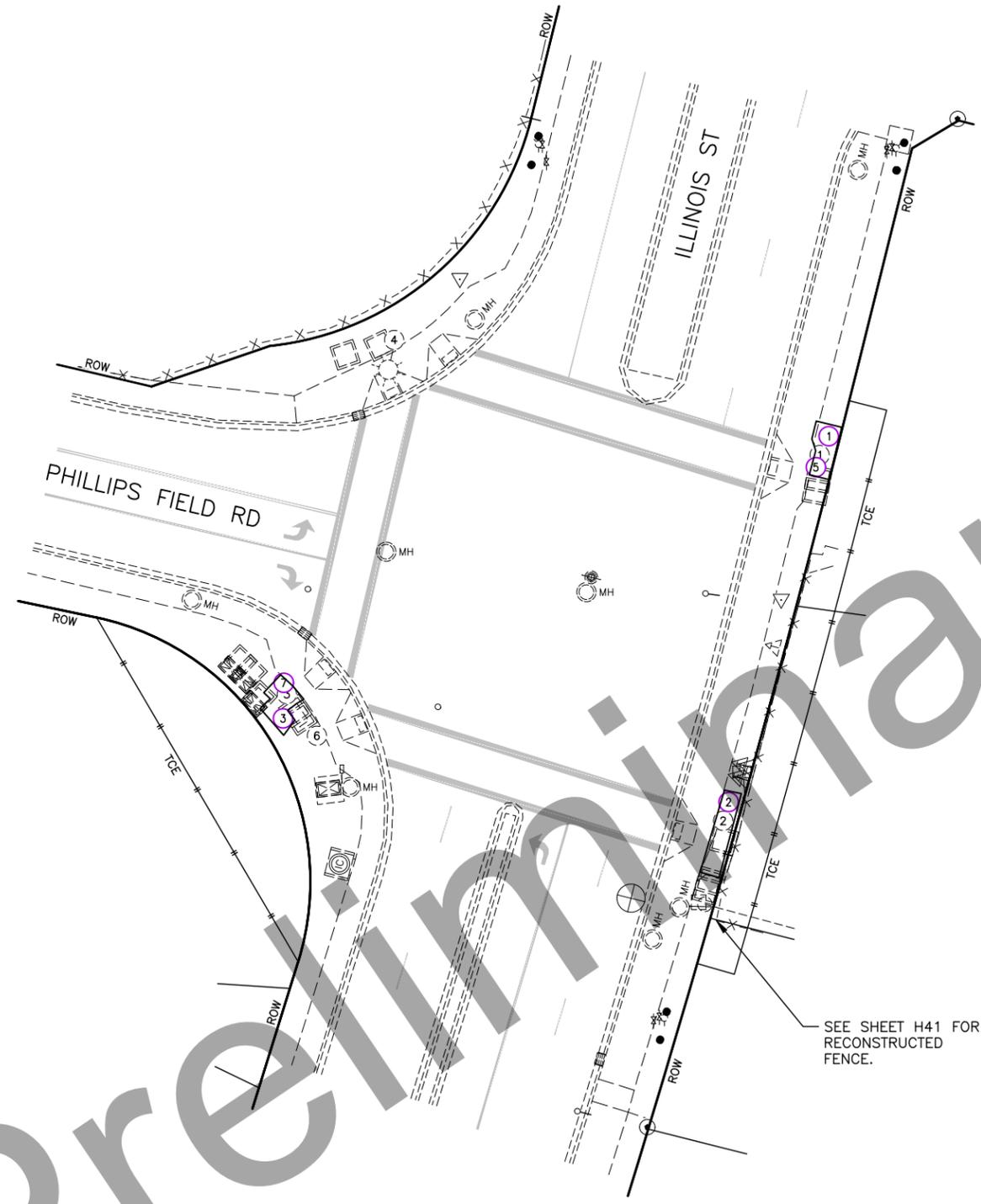
Preliminary Plans

GRADING PLAN -
 S PEGER RD &
 JOHANSEN EXPY

REVIEW PS&E
 6/23/2023

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	G9	G25

- NOTES:**
- SIGNAL EQUIPMENT NOT SHOWN FOR CLARITY.
 - AT INTERFACE W/ NEW SIDEWALK CONSTRUCT AN EXPANSION JOINT W/ FEATURES TO REMAIN SUCH AS POLES, HYDRANTS, STEAM EXHAUST, ETC.



PT#	NORTHING	EASTING	ELEV	DESC

GRADING PLAN -
 ILLINOIS ST & PHILLIPS
 FIELD RD

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 6/23/2023
 6/23/2023

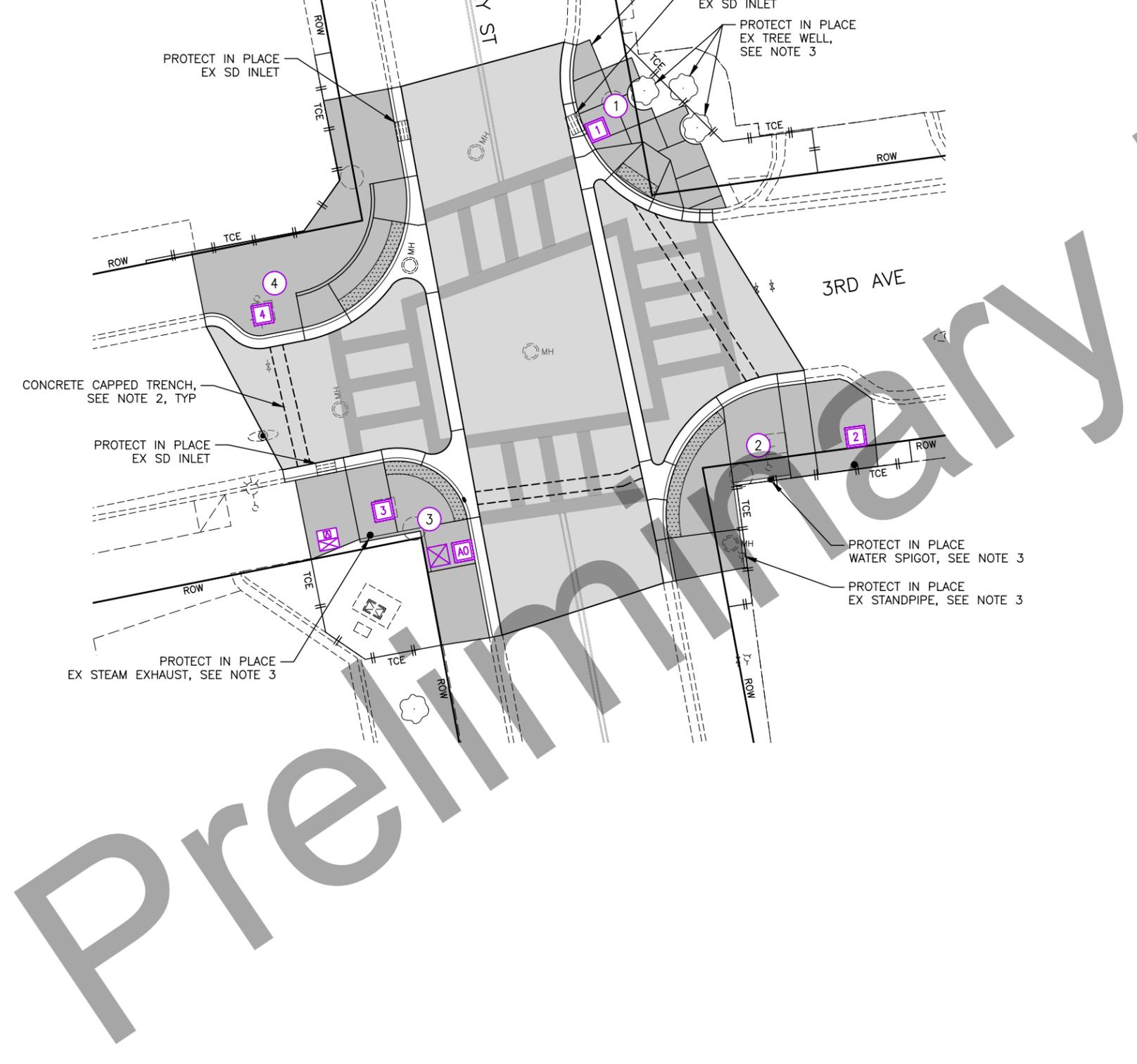
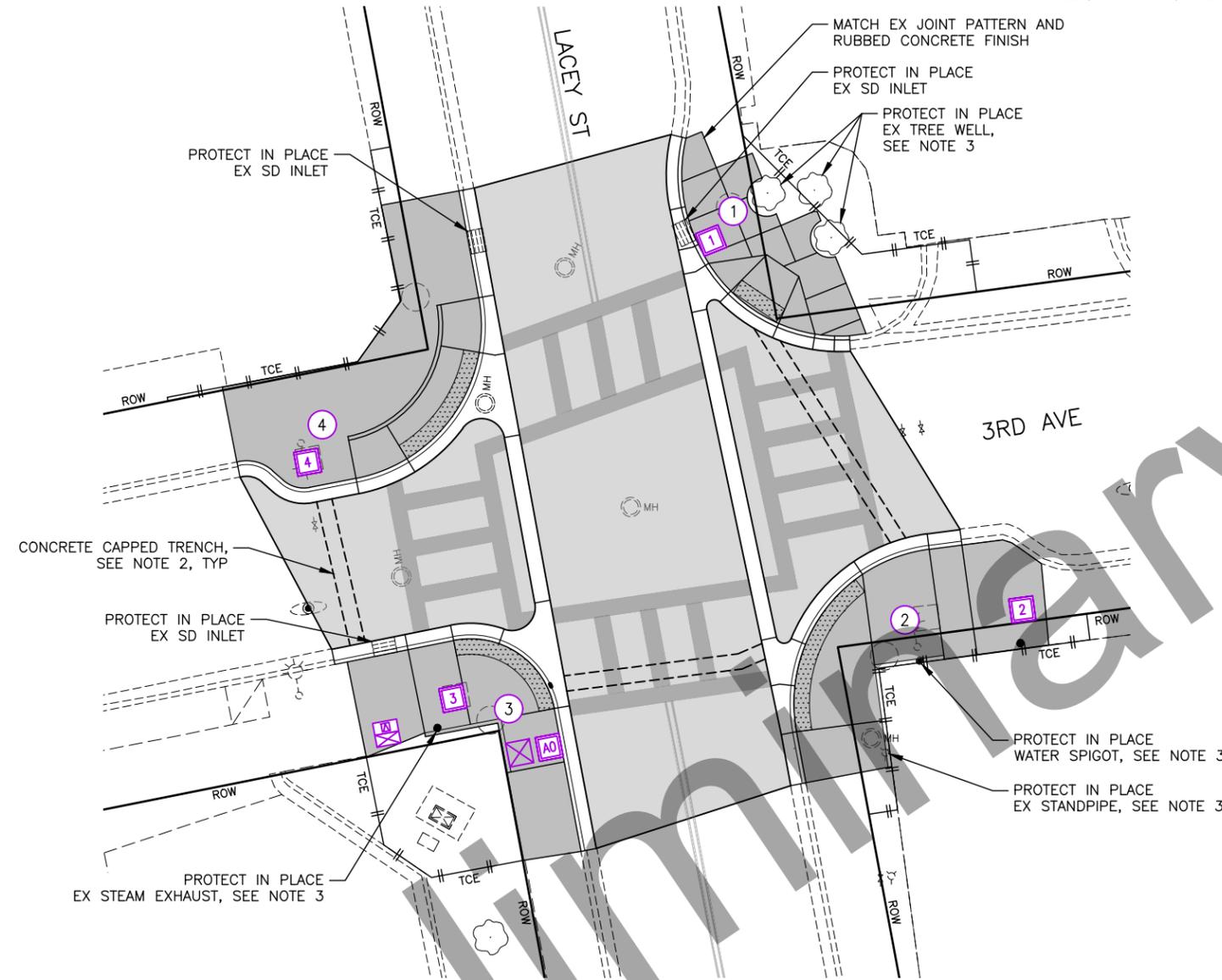
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	G13	G25

NOTES:

- SIGNAL EQUIPMENT NOT SHOWN FOR CLARITY.
- LIMITS OF DISTURBANCE FOR CONSTRUCTION OF PROPOSED IMPROVEMENTS INCLUDING, BUT NOT LIMITED TO, TRENCHING, BORING, AND REMOVAL OF EXISTING SIGNAL SYSTEM AS SCHEDULED
- AT INTERFACE W/ NEW SIDEWALK CONSTRUCT AN EXPANSION JOINT W/ FEATURES TO REMAIN SUCH AS POLES, HYDRANTS, STEAM VENT, ETC.

GRADING POINT TABLE

PT#	NORTHING	EASTING	ELEV	DESC



GRADING PLAN -
LACEY ST & 3RD AVE

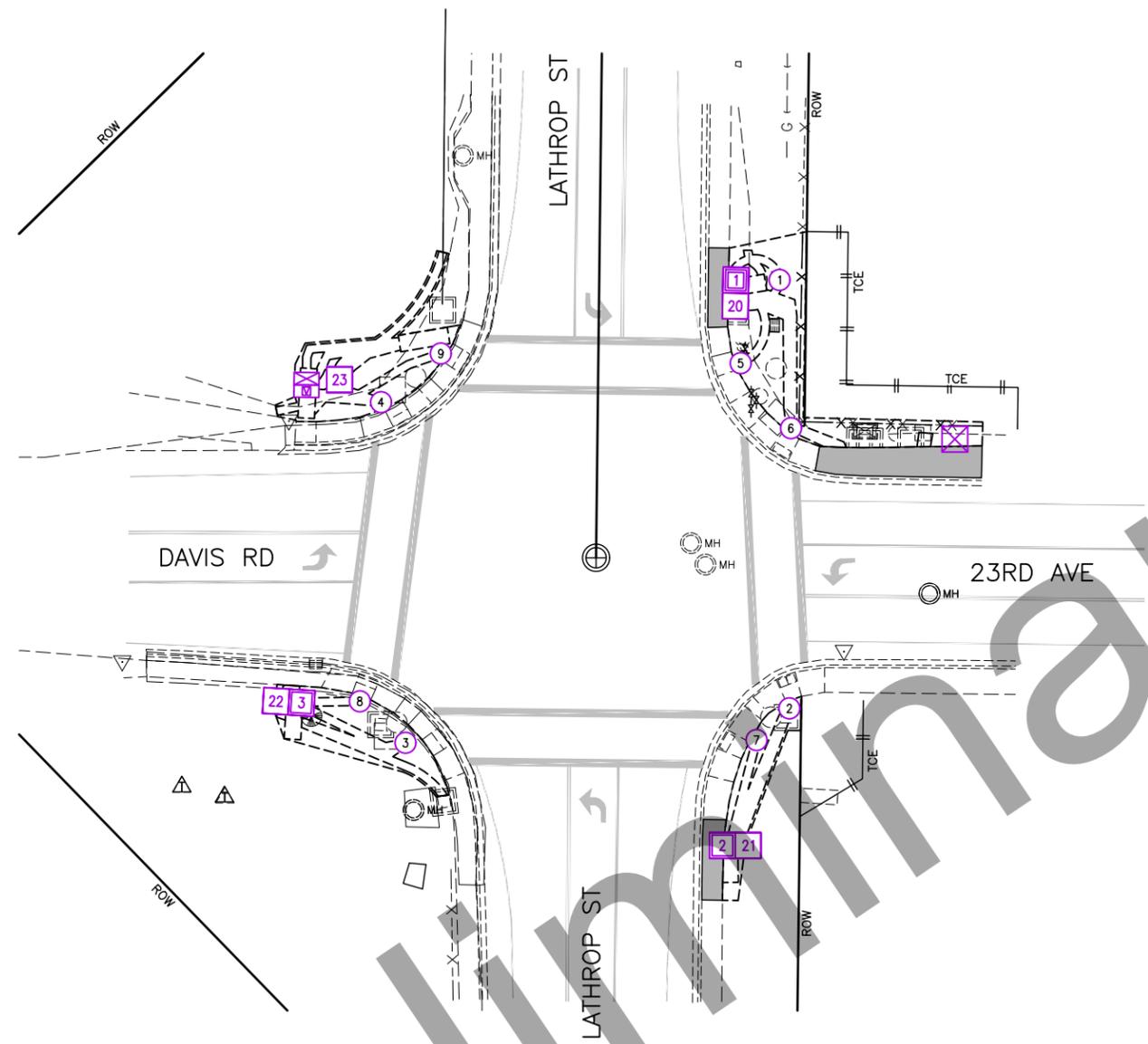
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	G16	G25

NOTES:

1. SIGNAL EQUIPMENT NOT SHOWN FOR CLARITY.
2. AT INTERFACE W/ NEW SIDEWALK CONSTRUCT AN EXPANSION JOINT W/ FEATURES TO REMAIN SUCH AS POLES, HYDRANTS, STEAM EXHAUST, ETC.



GRADING POINT TABLE				
PT#	NORTHING	EASTING	ELEV	DESC

Preliminary Plans

GRADING PLAN –
 LATHROP ST & DAVIS RD

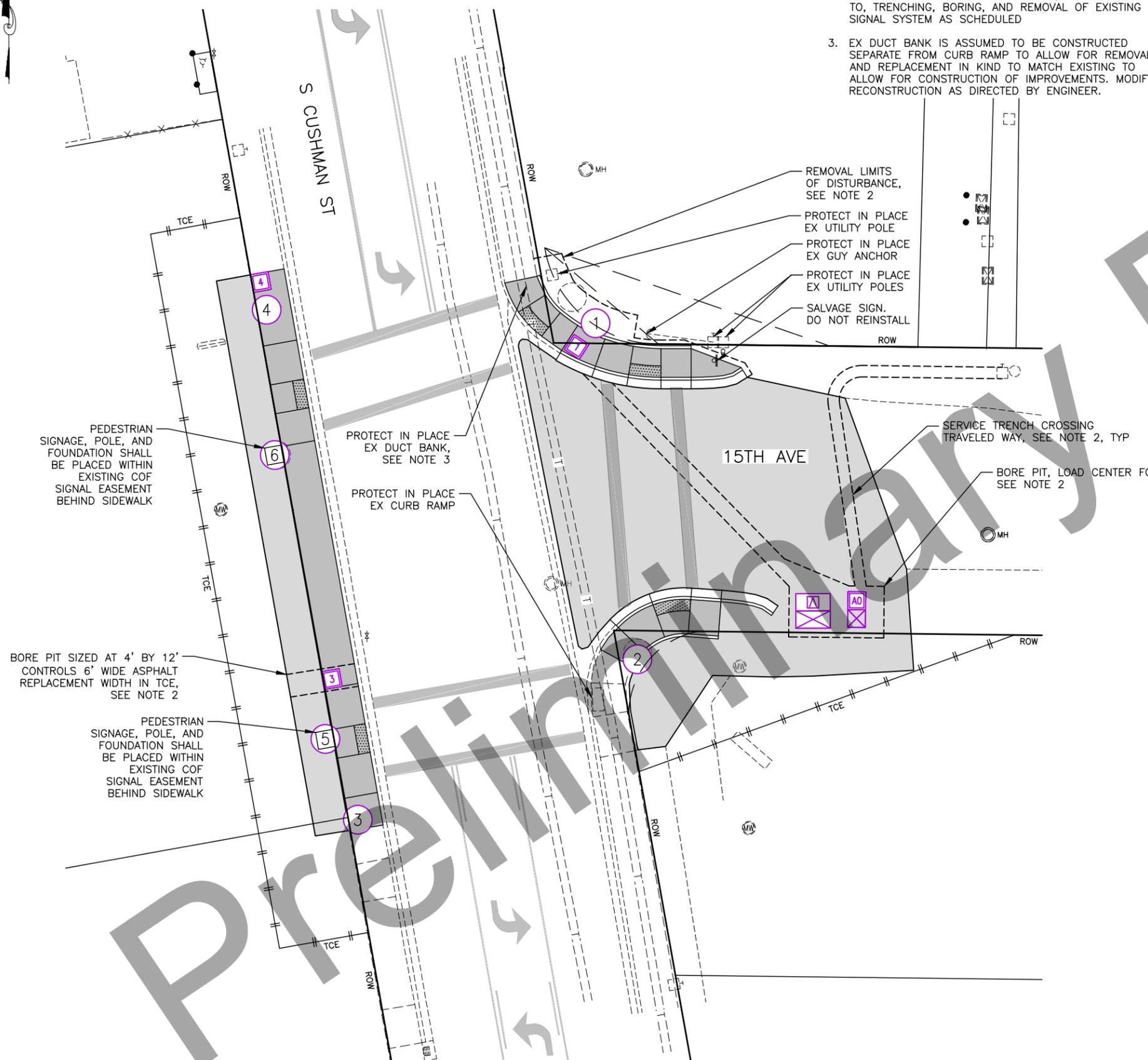
REVIEW PS&E
 6/23/2023
 6/23/2023

NOTES:

- SIGNAL EQUIPMENT NOT SHOWN FOR CLARITY.
- LIMITS OF DISTURBANCE FOR CONSTRUCTION OF PROPOSED IMPROVEMENTS INCLUDING, BUT NOT LIMITED TO, TRENCHING, BORING, AND REMOVAL OF EXISTING SIGNAL SYSTEM AS SCHEDULED
- EX DUCT BANK IS ASSUMED TO BE CONSTRUCTED SEPARATE FROM CURB RAMP TO ALLOW FOR REMOVAL AND REPLACEMENT IN KIND TO MATCH EXISTING TO ALLOW FOR CONSTRUCTION OF IMPROVEMENTS. MODIFY RECONSTRUCTION AS DIRECTED BY ENGINEER.

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	G18	G25

GRADING POINT TABLE				
PT#	NORTHING	EASTING	ELEV	DESC

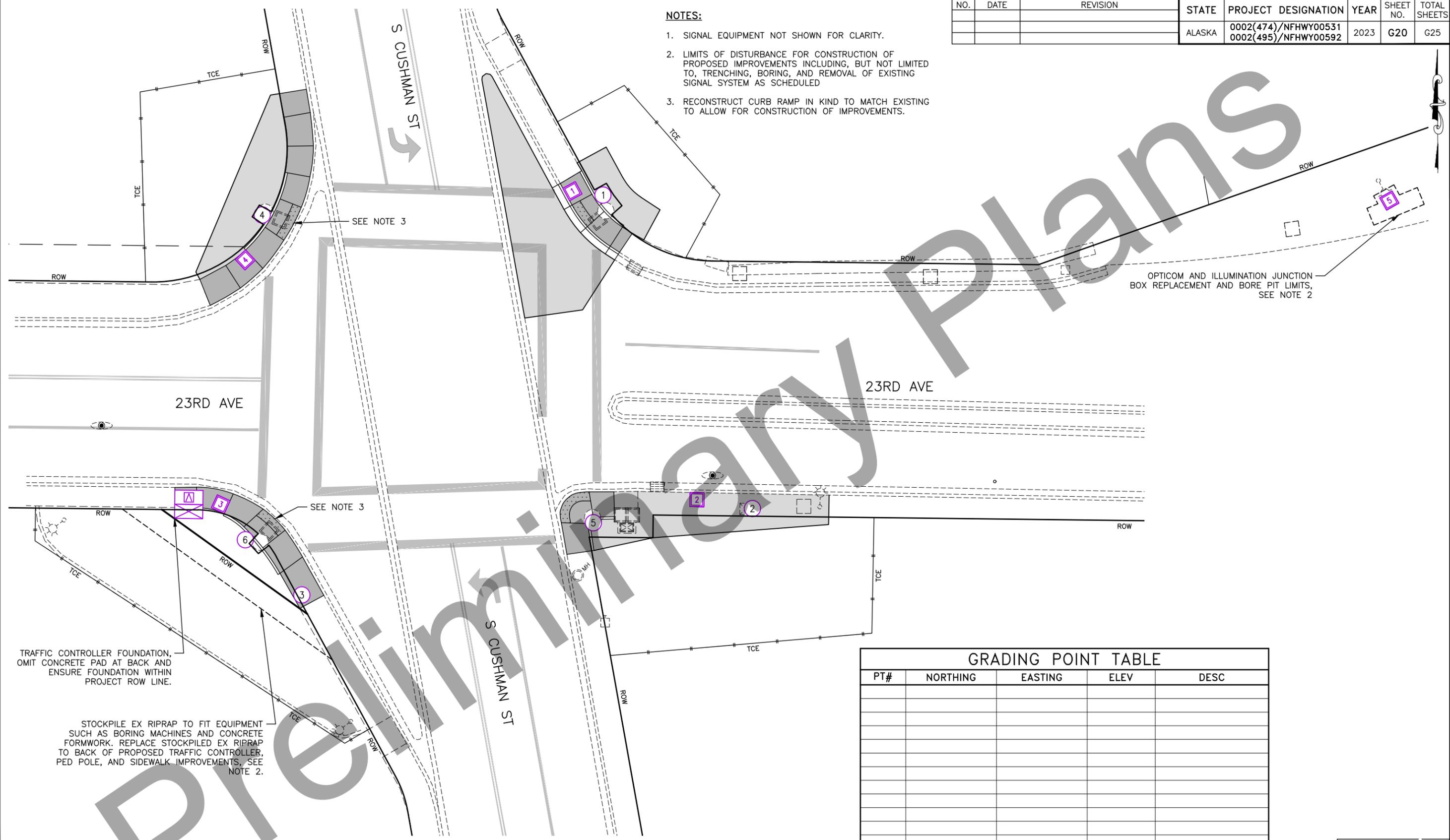


GRADING PLAN – S
 CUSHMAN ST & 15TH AVE

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 6/23/2023
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	G20	G25

- NOTES:**
- 1. SIGNAL EQUIPMENT NOT SHOWN FOR CLARITY.
 - 2. LIMITS OF DISTURBANCE FOR CONSTRUCTION OF PROPOSED IMPROVEMENTS INCLUDING, BUT NOT LIMITED TO, TRENCHING, BORING, AND REMOVAL OF EXISTING SIGNAL SYSTEM AS SCHEDULED
 - 3. RECONSTRUCT CURB RAMP IN KIND TO MATCH EXISTING TO ALLOW FOR CONSTRUCTION OF IMPROVEMENTS.



OPTICOM AND ILLUMINATION JUNCTION BOX REPLACEMENT AND BORE PIT LIMITS, SEE NOTE 2

TRAFFIC CONTROLLER FOUNDATION. OMIT CONCRETE PAD AT BACK AND ENSURE FOUNDATION WITHIN PROJECT ROW LINE.

STOCKPILE EX RIPRAP TO FIT EQUIPMENT SUCH AS BORING MACHINES AND CONCRETE FORMWORK. REPLACE STOCKPILED EX RIPRAP TO BACK OF PROPOSED TRAFFIC CONTROLLER, PED POLE, AND SIDEWALK IMPROVEMENTS, SEE NOTE 2.

GRADING POINT TABLE

PT#	NORTHING	EASTING	ELEV	DESC

**GRADING PLAN – S
CUSHMAN ST & 23RD AVE**

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			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H17	H145

NOTES:

1. EXISTING SIGNAL LINE WORK IS FROM A COMBINATION OF DESIGN TOPOGRAPHIC SURVEY, AS-BUILTS AND SITE VISITS. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS BEFORE MAKING MODIFICATIONS. NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
2. SALVAGE EXISTING SIGNAL EQUIPMENT PER THE SPECIFICATIONS.
3. SEE SHEET G3 FOR LIMITS OF DISTURBANCE.

E: 668150.00 E: 668200.00 E: 668250.00 E: 668300.00 E: 668350.00 E: 668400.00 E: 668450.00 E: 668500.00

N: 200850.00
N: 200850.00
E: 668150.00

N: 200800.00

N: 200750.00

N: 200700.00

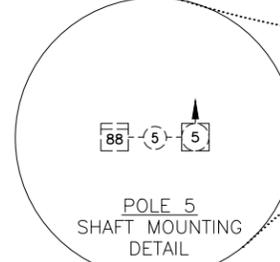
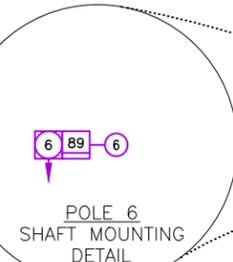
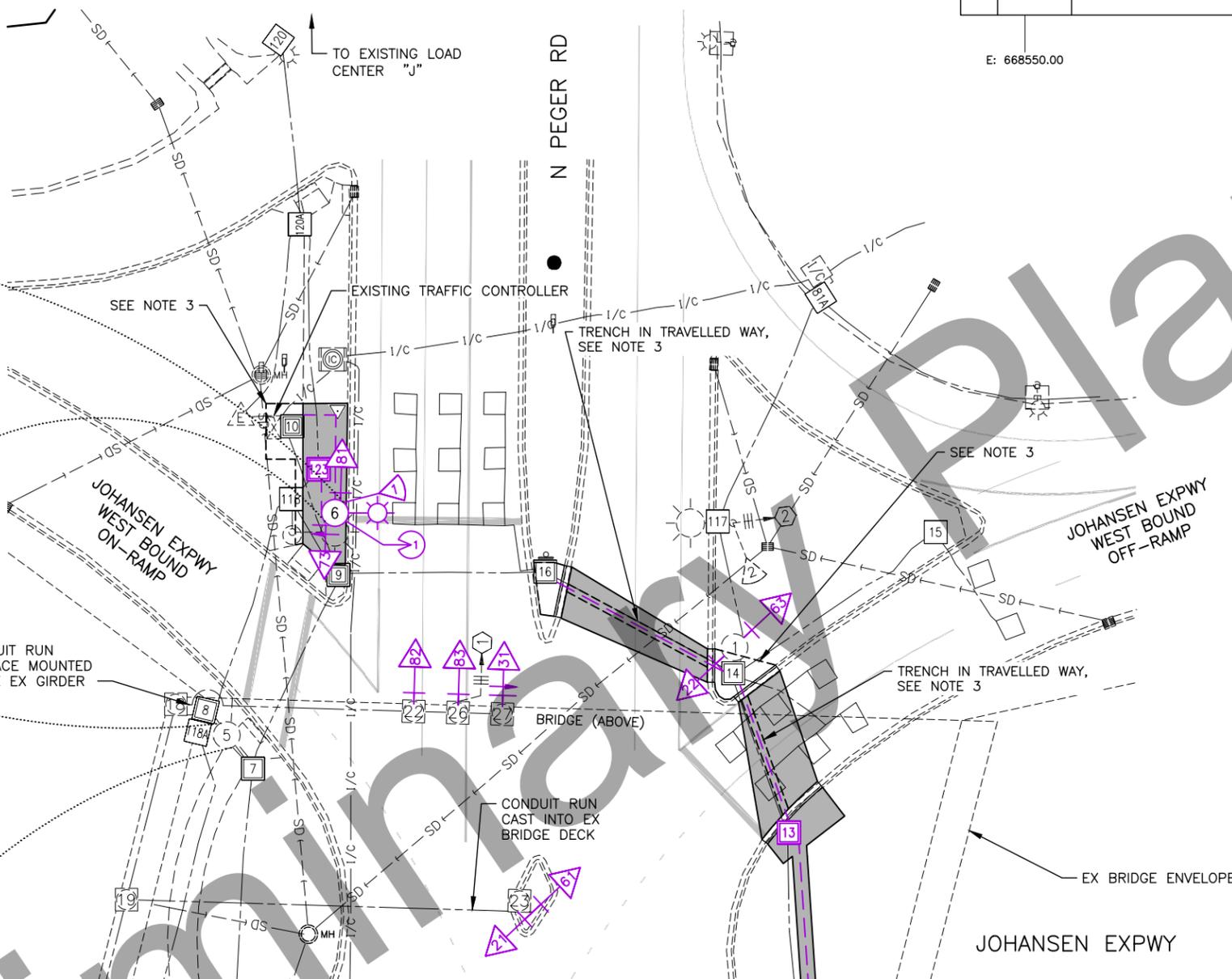
N: 200650.00

N: 200650.00
E: 668150.00

N: 200650.00
E: 668150.00

E: 668550.00

N PEGER RD



SEE NOTE 3

TO EXISTING LOAD CENTER "J"

TRENCH IN TRAVELLED WAY, SEE NOTE 3

SEE NOTE 3

CONDUIT RUN SURFACE MOUNTED INSIDE EX GIRDER

CONDUIT RUN CAST INTO EX BRIDGE DECK

TRENCH IN TRAVELLED WAY, SEE NOTE 3

EX BRIDGE ENVELOPE

JOHANSEN EXPWY

MATCH LINE SEE SHEET H18

PHASE SEQUENCE

PHASING	
1	5
2	6
3	7
4	8

- PHASE DIAGRAM NORTH ARROW
- PED MOVEMENT
- VEH. MOVEMENT (PROTECTED)
- LEFT TURN MOVEMENT (PROTECTED)
- NOT USED

SIGNAL PLAN –
N PEGER RD &
JOHANSEN EXPY

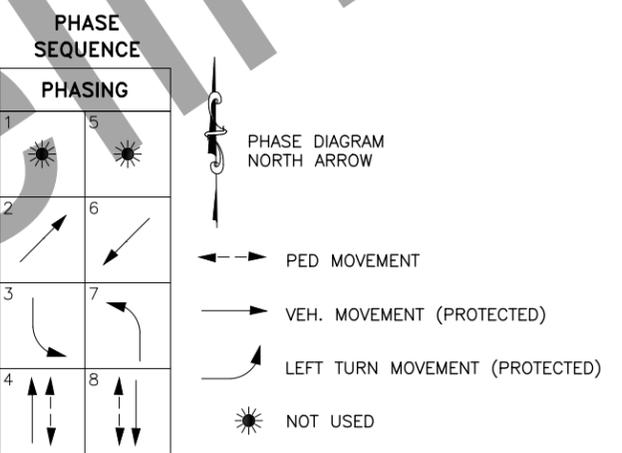
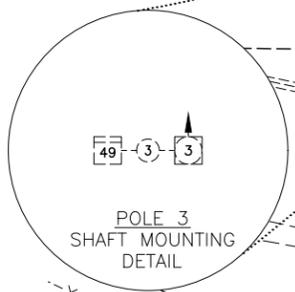
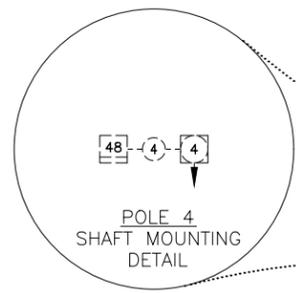
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			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H18	H145

MATCH LINE SEE SHEET H17

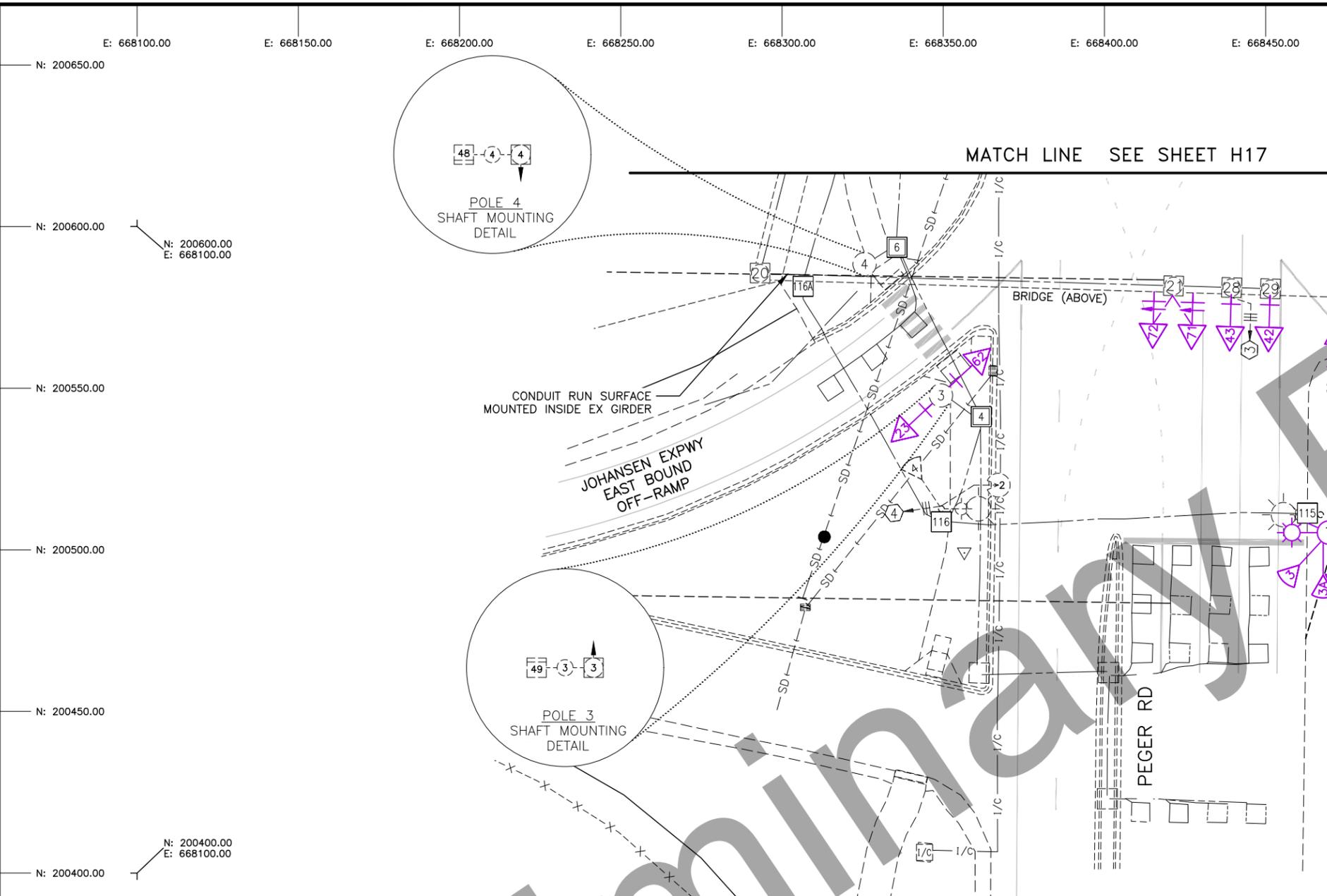
SEE SHEET H17 FOR NOTES



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SIGNAL PLAN —
S PEGER RD &
JOHANSEN EXPY

REVIEW PS&E
6/23/2023
6/23/2023



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H79	H145

BASE & JUNCTION BOX SCHEDULE												
LOCATION		DESCRIPTION			BASE TYPE*			JUNCTION BOX TYPE				REMARKS
NORTHING	EASTING	POLE NO.	JUNCTION BOX NO.	CONTROLLER	CIDH	P	A	IA	II	III	IV	
194944.84	677981.09	1			X							30-INCH Ø
194886.26	677988.42	2					X					SEE NOTE 2
194858.29	677939.54	3			X							42-INCH Ø, SEE NOTE 1
194947.19	677923.61	4			X							42-INCH Ø, SEE NOTE 1
194872.37	677933.88	5					X					SEE NOTE 2
194921.86	677925.02	6					X					SEE NOTE 2
194940.71	677977.81		1						X			
194882.82	677935.01		3						X			
194952.01	677922.59		4						X			
194894.70	678019.11			X								

BASE & JUNCTION BOX NOTES:

- TOP OF FOUNDATION FLUSH W/ TOP OF SIDEWALK PER DETAIL ON HXX.
- USE ALTERNATE "PELCO" POST BASE, SEE STD. DWG, T-31.01.

*P = PRECAST BASE (FOUNDATION)
 A = TYPE "A" SIGNAL BASE POST FOUNDATION. SEE STD. DWG, T-31.00
 CIDH = CAST IN DRILLED HOLE

PEDESTRIAN DETECTION SCHEDULE			
POLE	PUSH BUTTON	PHASE	REMARKS
1	1	4	SEE NOTE 2
1	2	6	SEE NOTE 1
2	3	4	SEE NOTE 1
2	4	2	SEE NOTE 2
5	5	2	SEE NOTE 3
6	6	6	SEE NOTE 2
4	7	6	SEE NOTE 1

PEDESTRIAN DETECTION NOTES:

- INSTALL AN R10-3eL SIGN ABOVE PEDESTRIAN PUSH BUTTON. SIGN SHALL NOT BE MEASURED FOR PAYMENT AND IS SUBSIDIARY TO PPB PAY ITEM.
- INSTALL AN R10-3eR SIGN ABOVE PEDESTRIAN PUSH BUTTON. SIGN SHALL NOT BE MEASURED FOR PAYMENT AND IS SUBSIDIARY TO PPB ITEM.
- INSTALL 1 EA (2 TOTAL) R10-3eL AND R10-3eR SIGN ON EACH SIDE OF POLE ABOVE PEDESTRIAN PUSH BUTTON. SIGNS SHALL NOT BE MEASURED FOR PAYMENT AND ARE SUBSIDIARY TO PPB PAY ITEM.

RADAR DETECTION EQUIPMENT	
QTY	DESCRIPTION
3	SMARTSENSOR MATRIX (WX-SS-225)
3	PELCO MOUNT (WX-SS-611)
3	SMARTSENSOR 6-CONDUCTOR CABLE (WX-SS-704-XXX)
0	SMARTSENSOR ADVANCED EXTENDED RANGE (WX-SS-200E)

NEMA CLOSURE EQUIPMENT	
QTY	DESCRIPTION
0	CLICK 710, SMARTSENSOR 6-CONDUCTOR CABLE JUNCTION BOX (WX-SS-710)

CABINET EQUIPMENT	
QTY	DESCRIPTION
0	CLICK! 112 RACK CARDS (WX-CLK-112)
0	CLICK! 114 RACK CARDS (WX-CLK-114)
0	INTERSECTION PREASSEMBLED BACKPLATE -AC, FOUR SENSOR, (WX-SS-B01-0005)
0	1 CLICK! 204 4 AMP POWER SUPPLY
0	5 CLICK! 210-02 2 AMP CIRCUIT BREAKERS (WX-CLK-210)
0	2 CLICK! 222, SMARTSENSOR SURGE PROTECTOR (WX-CLK-222)
0	1 CLICK! 230, AC SURGE PROTECTOR (WX-CLK-230)
0	1 T-BUS 5-SCREW TERMINAL BLOCKS (LEFT END)
0	5 T-BUS CONNECTORS (POWER AND COMMUNICATION)
0	1 T-BUS CONNECTOR (POWER ONLY)
0	5 END BRACKETS WITH LABELS
0	1 END BRACKET WITHOUT LABEL
0	4 TERMINAL BLOCKS FOR AC LINE INPUT: SPRING CAGE TO PLUG SPRING
0	CAGE 10 AWG (2 GROUNDED)
0	28 TERMINAL BLOCKS FOR CABLE TERMINATION: INSULATION DISPLACEMENT
0	TO PLUG INSULATION DISPLACEMENT (4 GROUNDED)
0	MOUNTING PLATFORM: TRAFFIC CABINET BACKPLATE
0	1 8-FT POWER CORD
0	1 8-FT 14 AWG GROUND CABLE
0	1 5-FT BLACK RJ-11 PATCH CABLE
0	4 5-FT WHITE RJ-11 PATCH CABLES
1	CLICK! 650, CABINET INTERFACE (WX-CLK-650)

SALVAGE & REMOVE SCHEDULE		
LOCATION		REMARKS
NORTHING	EASTING	
194949.38	677977.01	EX SIG POLE, NE QUADRANT, ABANDON FOUNDATION BELOW GRADE
194945.70	677979.85	EX TYPE 3 J-BOX, NE QUADRANT
194887.29	677988.46	EX PED SIGNAL POLE, SE QUADRANT, REMOVE FOUNDATION COMPLETELY
194889.49	677985.57	EX TYPE 2 J-BOX, SE QUADRANT
194872.31	677933.93	EX SIG POLE, SW QUADRANT, REMOVE FOUNDATION COMPLETELY
194872.82	677937.56	EX TYPE 2 J-BOX, SW QUADRANT
194921.85	677925.30	EX SIG POLE, NW QUADRANT, REMOVE FOUNDATION COMPLETELY
194922.51	677929.20	EX TYPE 2 J-BOX, NW QUADRANT
194941.94	677985.95	EX TC FOUNDATION

SALVAGE AND REMOVAL NOTES:

- SALVAGE POLES AND EQUIPMENT PER THE SPECIFICATIONS.

OPTICOM DETECTOR SCHEDULE					
LOCATION	DET. NO.	PHASE CALL	FACING DIR.	PREEMPTOR PRIORITY	REMARKS
ON TOP OF SIGNAL HEAD 42	1	4	SOUTH		
ON TOP OF SIGNAL HEAD 82	2	3, 8	NORTH		
ON TOP OF SIGNAL HEAD 62	3	6	EAST		

—# OPTICOM DETECTOR NUMBER

FLASH PROGRAM COLOR								
PHASE	1	2	3	4	5	6	7	8
COLOR	N/A	R	R	R	N/A	R	N/A	R

ADDITIONAL EQUIPMENT	
QTY	DESCRIPTION
1	SMARTSENSOR MANAGER ADVANCE SOFTWARE (WX-550-0001)
1	SMARTSENSOR MANAGER MATRIX SOFTWARE (WX-550-0004)

RADAR DETECTION SCHEDULE						
DET. NO.	PHASE CALL	TYPE	FACING DIR.	POLE NO.	LOCATION	RADAR TYPE
1	6	STOP BAR	SOUTHEAST	1	SIGNAL SHAFT	SMARTSENSOR MATRIX
2	4	STOP BAR	WEST	3	SIGNAL SHAFT	SMARTSENSOR MATRIX
3	3, 8	STOP BAR	NORTHEAST	4	SIGNAL MAST ARM	SMARTSENSOR MATRIX

—# RADAR DETECTOR NUMBER

SCHEDULES - S
 CUSHMAN ST & 15TH
 AVE

REVIEW PS&E
 6/23/2023
 6/23/2023

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H80	H145

POLE-POST DESIGN LOADING SCHEDULE								
POLE NO.	CORNER	ILLUMINATION # ARM L. (FT)	SIGNAL ARM L (FT)	A	B	C	REMARKS	
1	NE	N/A		N/A			20' POLE, NO SIMPLEX	
2	SE	N/A		N/A			10' POLE	
3	S-SW	6'-4"	30'	SIG. OR SIGN	SIGNAL	SIGNAL	SIGN	LUMINAIRE ARM @ 0' MOUNTING HEIGHT @ 30'
				LOC. OFFSET	23.5	12.3	7.4	
				LxW OR S.F.	14.10	11.50	13.00	
4	N-NW	6'-4"	1-35'	SIG. OR SIGN	SIGNAL	RADAR	SIGN	SIG MAST ARM 2 @ 270' LUMINAIRE ARM @ 270' MOUNTING HEIGHT @ 30'
				LOC. OFFSET	30.3	24.6	8.4	
				LxW OR S.F.	11.50	1.00	20.00	
			2-45'	SIG. OR SIGN	SIGNAL	SIGNAL		
				LOC. OFFSET	40.5	33.5		
				LxW OR S.F.	13.00	11.50		
5	W-SW	N/A		N/A			10' POLE	
6	W-NW	N/A		N/A			10' POLE	

SIGNAL SIGN SCHEDULE									
SIGN NO.	LOCATION		ASDS CODE	LEGEND	SIZE HxV (INCHES)	AREA (SQ FT)	BRACING/FRAMING		REMARKS
	POLE NO.	OFFSET					BRACED	FRAMED	
1	3	7.4	D3-1B	15TH AVE	78x24	13.0		X	SEE NOTE 2
2	4	8.4	D3-1B	S CUSHMAN ST	120x24	20.0		X	SEE NOTE 2
3	4	40.5	D3-1B	15TH AVE	78x24	13.0		X	SEE NOTE 2
SUBTOTAL SIGNAL SIGNS						46.0			

SIGNAL SIGN SCHEDULE NOTES:

1. LOCATION OFFSETS ARE FROM CENTER OF SIGN TO C OF SIGNAL POLE.
2. FOR SIGN STREET NAMES, USE 12" INITIAL UPPERCASE LETTERING AND A MINIMUM OF 9" LOWERCASE LETTERING. FOR STREET TYPES, USE 8" INITIAL UPPERCASE LETTERING AND A MINIMUM OF 5" LOWERCASE LETTERING.

POLE-POST DESIGN LOADING SCHEDULE NOTES:

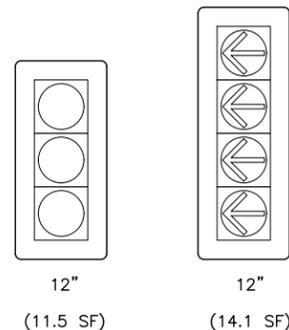
1. ORIENT SIGNAL MAST ARM(S) 90° TO THE C OF THE ROADWAY UNLESS NOTED OTHERWISE.
2. LUMINAIRE MAST ARM MOUNTING HEIGHT IS FROM ROADWAY FINISHED GRADE TO BOTTOM OF FIXTURE.
3. SEE SIGNAL PLAN ON SHEET ___ FOR LUMINAIRE TYPE AND ADJUSTABLE OUTPUT SETTINGS.

POLE/POST NO.	FACE NO.	SIGNAL HEAD SCHEDULE														REMARKS		
		INDICATIONS						MOUNTING										
		12" BALL			12" ARROW			8" BALL			MAST ARM		SIDE MTNG. TYPE	TOP OF POST				
R	Y	G	R	Y	FYA	G	R	Y	G	LOC. OFFSET	ELEV. PLUMB							
1	41	X	X	X													D	
2	32				L	L	L	L										X
3	81	X	X	X													D	INSTALL ON LEFT FACING SIDE OF POLE SHAFT TO AID SIGHT DISTANCE
	82	X	X	X							12.3	X						
	31				L	L	L	L				23.5	X					
4	61	X	X	X													D	
	62	X	X	X							30.3	X						
	42	X	X	X							33.5	X						

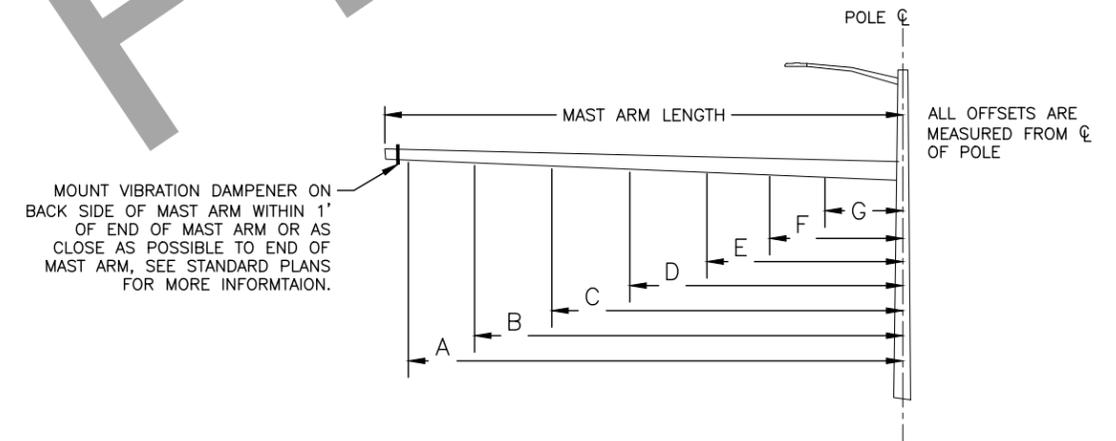
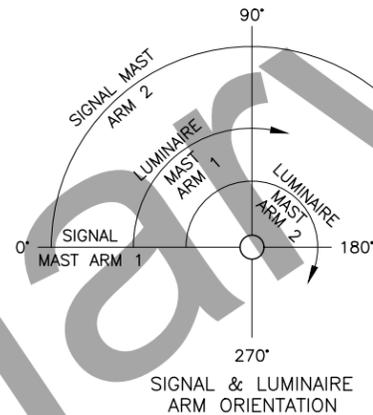
SIGNAL HEAD SCHEDULE NOTES:

1. LOCATION OFFSETS ARE FROM CENTER OF SIGNAL HEAD TO C OF SIGNAL POLE.
2. FYA = FLASHING YELLOW ARROW.

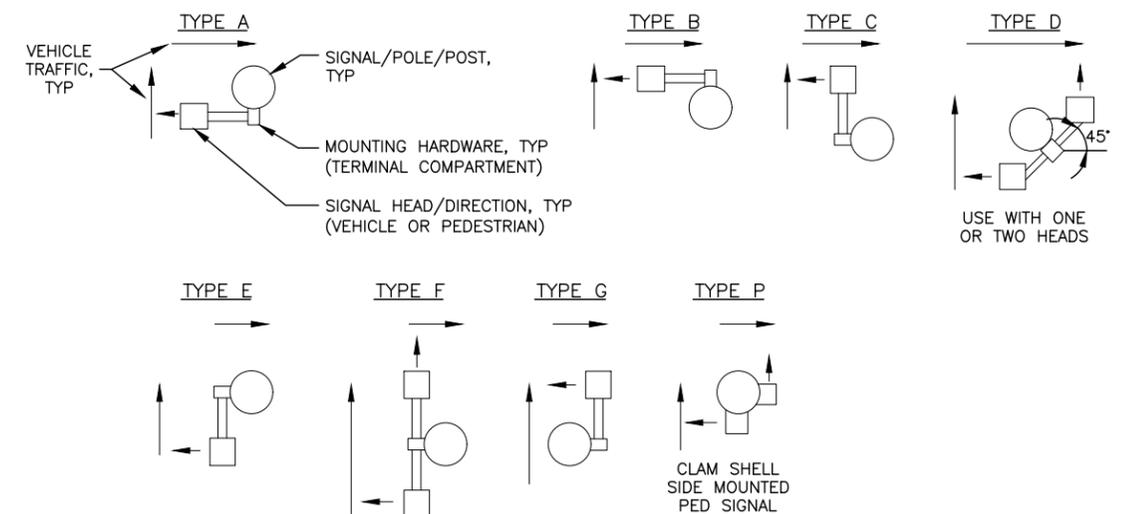
POLE/POST NO.	FACE NO.	PED SIGNAL HEAD SCHEDULE	
		MOUNTING TYPE	REMARKS
1	69	P	
1	48	P	
2	49	P	
2	28	P	
5	29	P	
6	68	P	



SIGNAL HEAD CONFIGURATIONS
(AREAS ARE FOR WIND LOAD CALCULATIONS)
(ARROWS AND BALL INDICATIONS ARE INTERCHANGEABLE)



POLE/POST SIGNAL HEAD SIDE MOUNTING TYPES
NTS



SCHEDULES - S
CUSHMAN ST & 15TH AVE

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6/23/2023

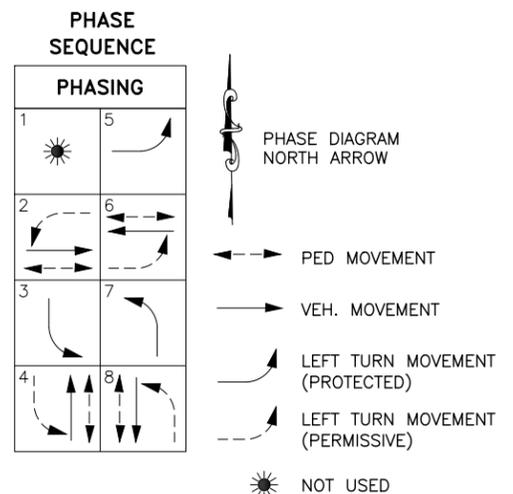
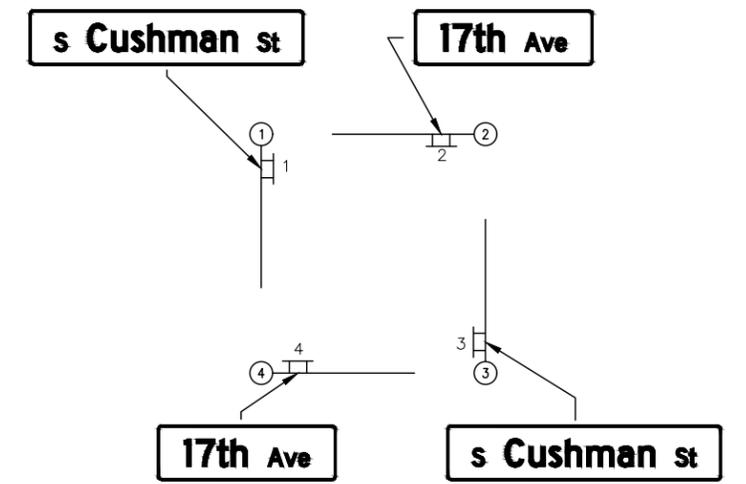
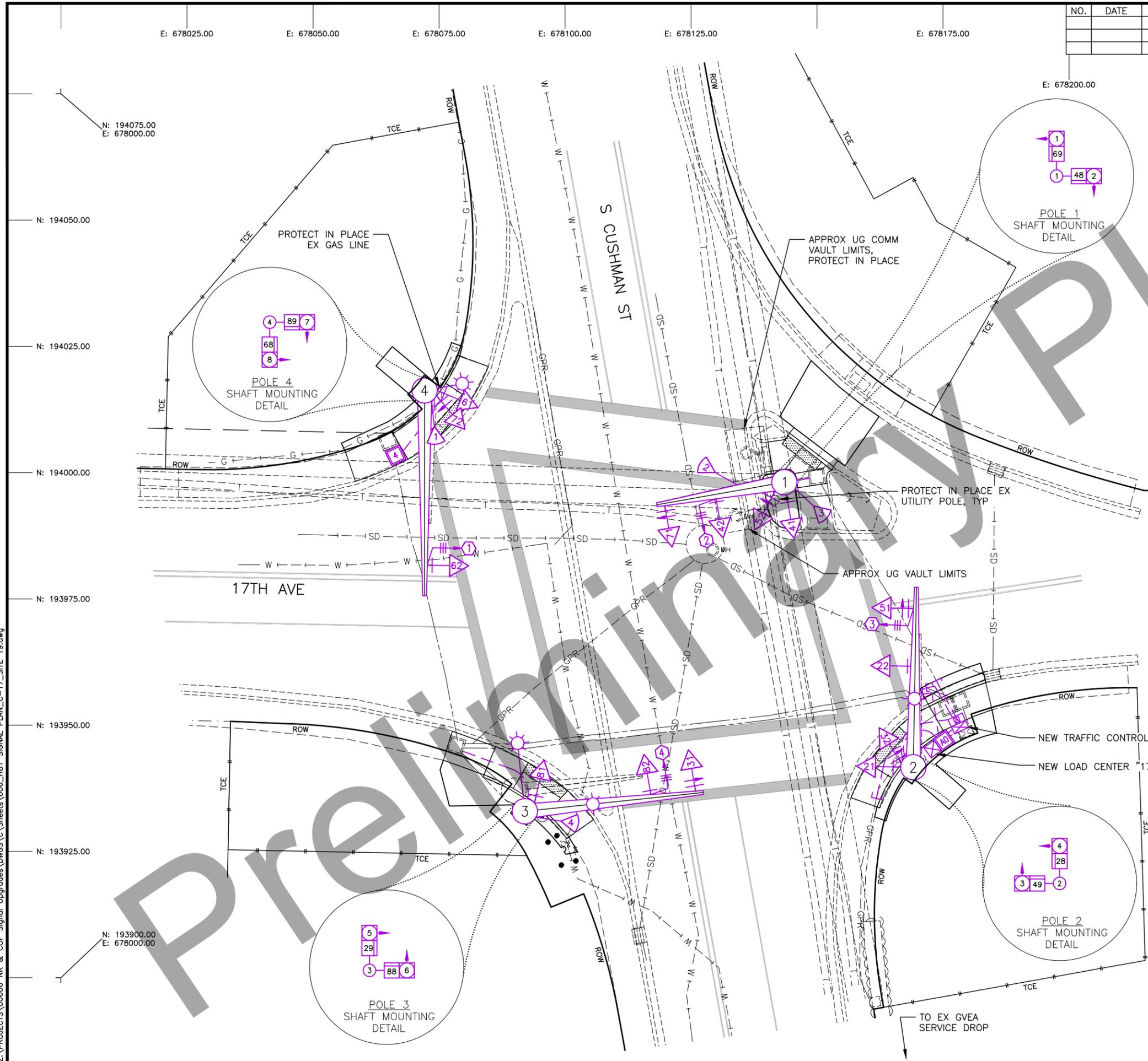
6/23/2023

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H81	H145

NOTES:

- EXISTING SIGNAL LINE WORK IS FROM A COMBINATION OF DESIGN TOPOGRAPHIC SURVEY, AS-BUILTS AND SITE VISITS. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS BEFORE MAKING MODIFICATIONS. NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
- SALVAGE EXISTING SIGNAL EQUIPMENT PER THE SPECIFICATIONS.
- INSTALLATION OF NEW SIGNS ON TRAFFIC SIGNAL STRUCTURES WILL BE PAID FOR UNDER PAY ITEM 615.0001.0000.
- SEE TEMPORARY SIGNAL PLAN FOR MAINTAINING SIGNAL OPERATIONS DURING CONSTRUCTION.
- SEE SHEET G19 FOR GRADING DETAILS.

PLANS DEVELOPED BY: KINNEY ENGINEERING, LLC 3909 Arctic Blvd, Suite 400 Anchorage, Alaska 99503 (907) 346-2373 CERT. OF AUTH. NO. 1102
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SIGNAL PLAN - S CUSHMAN ST & 17TH AVE

REVIEW PS&E
6/23/2023

6/23/2023

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H81A	H145

E: 678025.00 E: 678050.00 E: 678075.00 E: 678100.00 E: 678125.00 E: 678150.00 E: 678175.00

E: 678200.00

N: 194075.00
E: 678000.00

N: 194050.00

N: 194025.00

N: 194000.00

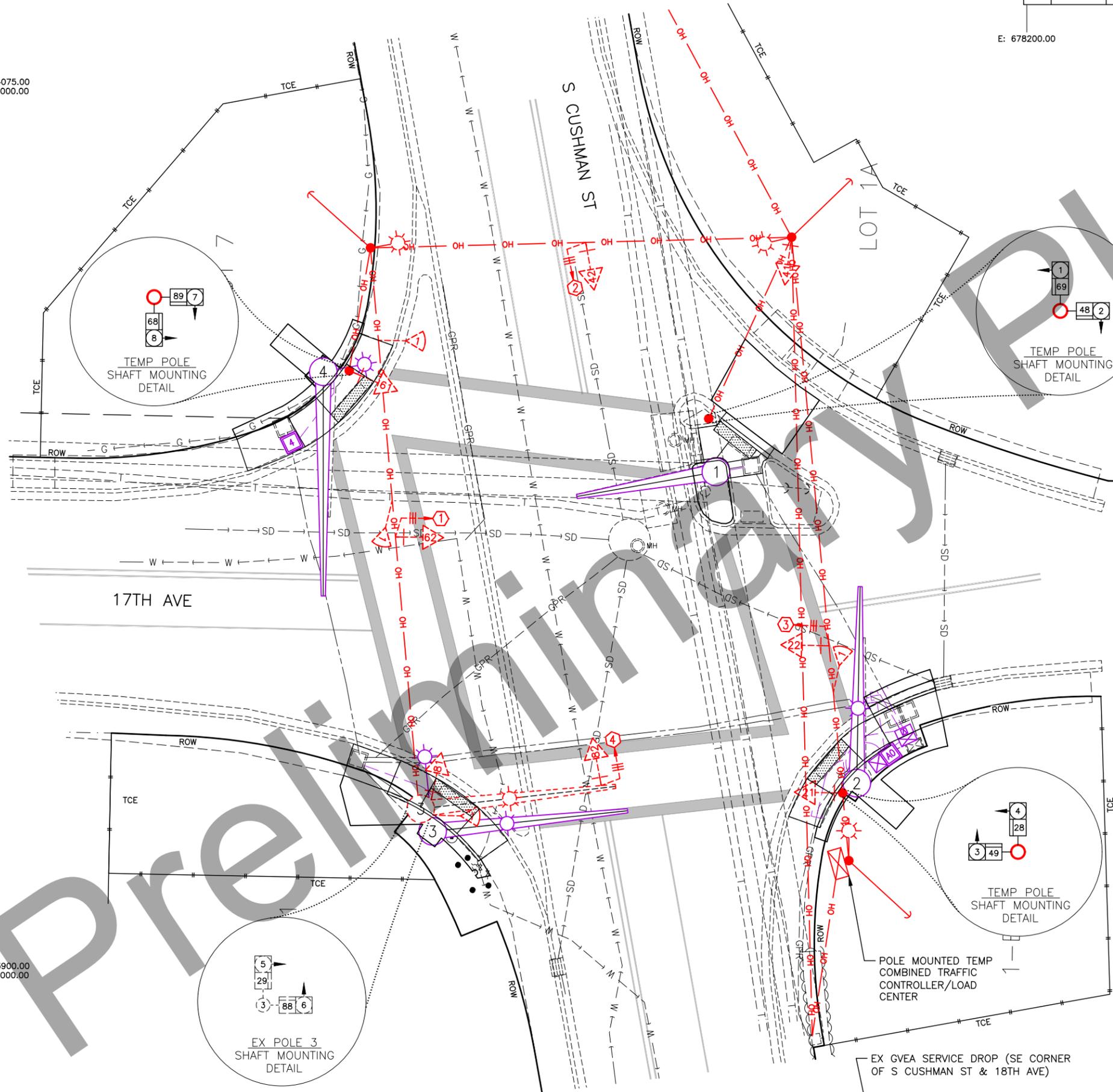
N: 193975.00

N: 193950.00

N: 193925.00

N: 193900.00
E: 678000.00

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TEMP POLE
SHAFT MOUNTING
DETAIL

TEMP POLE
SHAFT MOUNTING
DETAIL

TEMP POLE
SHAFT MOUNTING
DETAIL

EX POLE 3
SHAFT MOUNTING
DETAIL

POLE MOUNTED TEMP
COMBINED TRAFFIC
CONTROLLER/LOAD
CENTER

EX GVEA SERVICE DROP (SE CORNER
OF S CUSHMAN ST & 18TH AVE)

NOTES:

- EXISTING SIGNAL LINE WORK IS FROM A COMBINATION OF DESIGN TOPOGRAPHIC SURVEY, AS-BUILTS AND SITE VISITS. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS BEFORE MAKING MODIFICATIONS. NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
- TEMPORARY SIGNAL CONFIGURATION DURING CONSTRUCTION IS SHOWN.

PHASE SEQUENCE

PHASING	
1	5
2	6
3	7
4	8

- PHASE DIAGRAM NORTH ARROW
- PED MOVEMENT
- VEH. MOVEMENT
- LEFT TURN MOVEMENT (PROTECTED)
- LEFT TURN MOVEMENT (PERMISSIVE)
- NOT USED

**TEMPORARY SIGNAL PLAN
- S CUSHMAN ST &
17TH AVE**

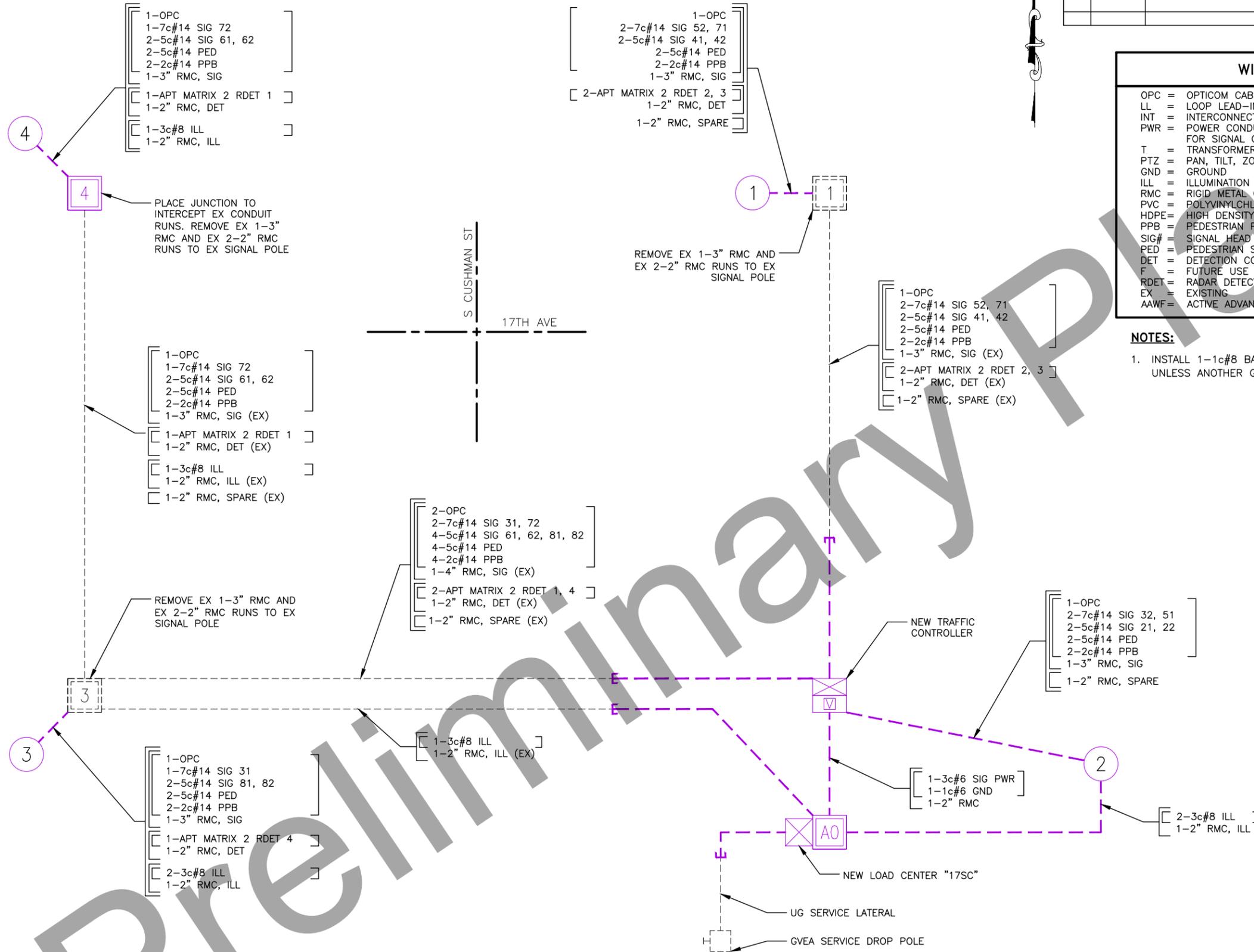
REVIEW PS&E
6/23/2023
6/23/2023

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H82	H145

WIRING DIAGRAM CODING LEGEND		
OPC = OPTICOM CABLE	5c#14	TRAFFIC SIGNALS
LL = LOOP LEAD-IN	7c#14	PROTECTED-PERMITTED SIGNALS
INT = INTERCONNECT CABLE	5c#14	PEDESTRIAN SIGNALS
PWR = POWER CONDUCTORS FOR SIGNAL CONTROLLER	2c#14	PEDESTRIAN PUSH-BUTTON
T = TRANSFORMER	3pr#18	LOOP LEAD-IN CABLE & VDET
PTZ = PAN, TILT, ZOOM CAMERA	6pr#18	
GND = GROUND	9pr#18	
ILL = ILLUMINATION	15pr#18	
RMC = RIGID METAL CONDUIT	3c#8	ILLUMINATION
PVC = POLYVINYLCHLORIDE CONDUIT	3c#6	SIGNAL POWER
HDPE = HIGH DENSITY POLYETHALENE	1c#8	BARE COPPER GROUND
PPB = PEDESTRIAN PUSH-BUTTON	18pr#19	PE-39 INTERCONNECT CABLE
SIG# = SIGNAL HEAD NUMBER		
PED = PEDESTRIAN SIGNAL	1c#6	BARE COPPER GROUND
DET = DETECTION CONDUIT	APT MATRIX 2	RDET HOME RUN CABLE
F = FUTURE USE	CAT-6a	PTZ DATA
RDET = RADAR DETECTION	SMFO	SINGLE MODE FIBER OPTIC
EX = EXISTING		
AAWF = ACTIVE ADVANCED WARNING FLASHER		

NOTES:

- INSTALL 1-1c#8 BARE COPPER GROUND CONDUCTOR IN ALL CONDUITS UNLESS ANOTHER GROUND CONDUCTOR IS SPECIFIED.



WIRING LEGEND:

- I/C INDICATES NEW INTERCONNECT CONDUIT RUN
- I/C INDICATES EXISTING INTERCONNECT CONDUIT RUN
- - - - - INDICATES EXISTING CONDUIT RUN
- - - - - INDICATES NEW RIGID METAL CONDUIT RUN(S)
- - - - - F - - - - - INDICATES THE CONNECTION BETWEEN EXISTING AND NEW CONDUIT

**WIRING DIAGRAM - S
CUSHMAN ST & 17TH AVE**

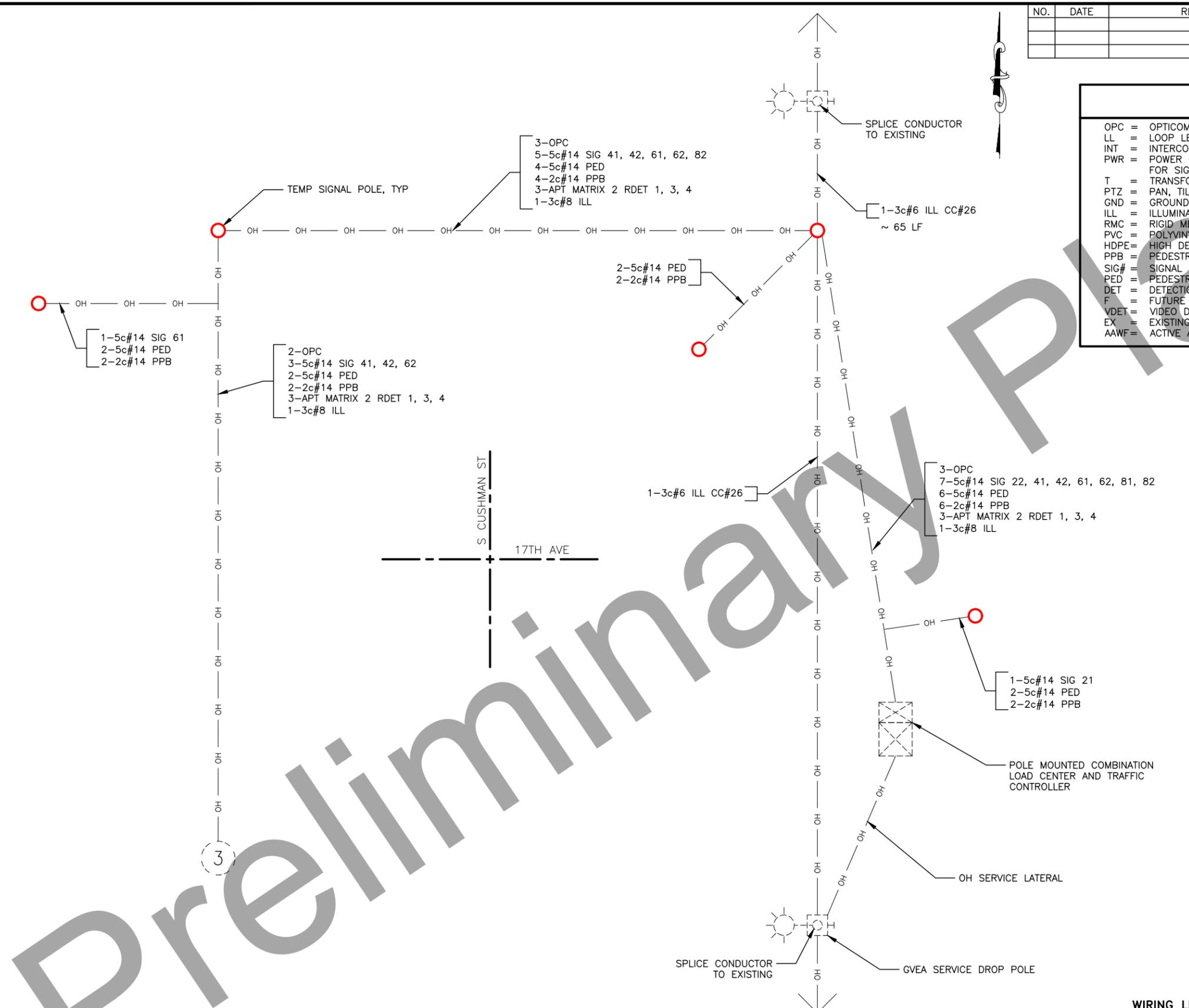
REVIEW PS&E
6/23/2023
6/23/2023

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H82A	H145

WIRING DIAGRAM CODING LEGEND		
OPC = OPTICOM CABLE	5c#14	TRAFFIC SIGNALS
LL = LOOP LEAD-IN	7c#14	PROTECTED-PERMITTED SIGNALS
INT = INTERCONNECT CABLE	5c#14	PEDESTRIAN SIGNALS
PWR = POWER CONDUCTORS FOR SIGNAL CONTROLLER	2c#14	PEDESTRIAN PUSH-BUTTON
T = TRANSFORMER	3pr#18	LOOP LEAD-IN CABLE & VD ET
PTZ = PAN, TILT, ZOOM CAMERA	6pr#18	
GND = GROUND	9pr#18	
ILL = ILLUMINATION	15pr#18	
RMC = RIGID METAL CONDUIT	3c#8	ILLUMINATION
PVC = POLYVINYLCHLORIDE CONDUIT	3c#6	SIGNAL POWER
HDPE = HIGH DENSITY POLYETHALENE	1c#8	BARE COPPER GROUND
PPB = PEDESTRIAN PUSH-BUTTON	18pr#19	PE-39 INTERCONNECT CABLE
SIG# = SIGNAL HEAD NUMBER	1c#6	BARE COPPER GROUND
PED = PEDESTRIAN SIGNAL	APT MATRIX 2	RDET HOME RUN CABLE
DET = DETECTION CONDUIT	CAT-6a	PTZ DATA
F = FUTURE USE	SMFO	SINGLE MODE FIBER OPTIC
VD ET = VIDEO DETECTION		
EX = EXISTING		
AAWF = ACTIVE ADVANCED WARNING FLASHER		

NOTES:

1. INSTALL 1-1c#8 BARE COPPER GROUND CONDUCTOR IN ALL CONDUITS UNLESS ANOTHER GROUND CONDUCTOR IS SPECIFIED.
2. TEMP SIGNAL CONFIGURATION TO MAINTAIN OPERATIONS DURING CONSTRUCTION SHOWN.



WIRING LEGEND:

— OH — INDICATES AERIAL RUN

TEMPORARY WIRING
DIAGRAM — S CUSHMAN ST
& 17TH AVE

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6/23/2023
6/23/2023

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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H83	H145

BASE & JUNCTION BOX SCHEDULE												
LOCATION		DESCRIPTION			BASE TYPE*			JUNCTION BOX TYPE				REMARKS
NORTHING	EASTING	POLE NO.	JUNCTION BOX NO.	CONTROLLER	CIDH	P	A	IA	II	III	IV	
193998.09	678143.50	1			NEW							36-INCH Ø
193941.66	678169.09	2			NEW							36-INCH Ø
193932.94	678092.02	3			NEW							36-INCH Ø
194016.26	678072.15	4			NEW							36-INCH Ø
193998.86	678150.26		1						EX			ADJUST TO FG
193946.00	678078.38		3						EX			ADJUST TO FG
194003.42	678066.39		4						NEW			
193950.33	678178.04				NEW							

BASE & JUNCTION BOX NOTES:

- UNLESS OTHERWISE NOTED PROTECT IN PLACE ALL EXISTING FOUNDATIONS AND J-BOXES.

*P = PRECAST BASE (FOUNDATION)
 A = TYPE "A" SIGNAL BASE POST FOUNDATION. SEE STD. DWG, T-31.00
 CIDH = CAST IN DRILLED HOLE
 EX = EXISTING SIGNAL BASE OR JUNCTION
 NEW = F&I SIGNAL BASE OR JUNCTION

PEDESTRIAN DETECTION SCHEDULE			
POLE	PUSH BUTTON	PHASE	REMARKS
1	1	6	SEE NOTE 1
1	2	4	SEE NOTE 2
2	3	4	SEE NOTE 1
2	4	2	SEE NOTE 2
3	5	2	SEE NOTE 1
3	6	8	SEE NOTE 2
4	7	8	SEE NOTE 1
4	8	6	SEE NOTE 2

PEDESTRIAN DETECTION NOTES:

- INSTALL AN R10-3eL SIGN ABOVE PEDESTRIAN PUSH BUTTON. SIGN SHALL NOT BE MEASURED FOR PAYMENT AND IS SUBSIDIARY TO TRAFFIC SIGNAL PAY ITEMS.
- INSTALL AN R10-3eR SIGN ABOVE PEDESTRIAN PUSH BUTTON. SIGN SHALL NOT BE MEASURED FOR PAYMENT AND IS SUBSIDIARY TO TRAFFIC SIGNAL PAY ITEMS.

RADAR DETECTION EQUIPMENT	
QTY	DESCRIPTION
4	SMARTSENSOR MATRIX (WX-SS-225)
4	FELCO MOUNT (WX-SS-611)
4	SMARTSENSOR 6-CONDUCTOR CABLE (WX-SS-704-XXX)
0	SMARTSENSOR ADVANCED EXTENDED RANGE (WX-SS-200E)

NEMA CLOSURE EQUIPMENT	
QTY	DESCRIPTION
0	CLICK 710, SMARTSENSOR 6-CONDUCTOR CABLE JUNCTION BOX (WX-SS-710)

CABINET EQUIPMENT	
QTY	DESCRIPTION
0	CLICK! 112 RACK CARDS (WX-CLK-112)
0	CLICK! 114 RACK CARDS (WX-CLK-114)
0	INTERSECTION PREASSEMBLED BACKPLATE -AC, FOUR SENSOR, (WX-SS-B01-0005)
0	1 CLICK! 204 4 AMP POWER SUPPLY
0	5 CLICK! 210-02 2 AMP CIRCUIT BREAKERS (WX-CLK-210)
0	2 CLICK! 222, SMARTSENSOR SURGE PROTECTOR (WX-CLK-222)
0	1 CLICK! 230, AC SURGE PROTECTOR (WX-CLK-230)
0	1 T-BUS 5-SCREW TERMINAL BLOCKS (LEFT END)
0	5 T-BUS CONNECTORS (POWER AND COMMUNICATION)
0	1 T-BUS CONNECTOR (POWER ONLY)
0	5 END BRACKETS WITH LABELS
0	1 END BRACKET WITHOUT LABEL
0	4 TERMINAL BLOCKS FOR AC LINE INPUT: SPRING CAGE TO PLUG SPRING
0	CAGE 10 AWG (2 GROUNDED)
0	28 TERMINAL BLOCKS FOR CABLE TERMINATION: INSULATION DISPLACEMENT
0	TO PLUG INSULATION DISPLACEMENT (4 GROUNDED)
0	MOUNTING PLATFORM: TRAFFIC CABINET BACKPLATE
0	1 8-FT POWER CORD
0	1 8-FT 14 AWG GROUND CABLE
0	1 5-FT BLACK RJ-11 PATCH CABLE
0	4 5-FT WHITE RJ-11 PATCH CABLES
1	CLICK! 650, CABINET INTERFACE (WX-CLK-650)

SALVAGE & REMOVE SCHEDULE		
LOCATION		REMARKS
NORTHING	EASTING	
193998.22	678143.43	EX SIG POLE, NE QUADRANT, COMPLETELY REMOVE FOUNDATION
193942.41	678169.30	EX SIG POLE, SE QUADRANT, COMPLETELY REMOVE FOUNDATION
193954.27	678177.22	EX TYPE 3 J-BOX, SE QUADRANT
193937.03	678089.85	EX SIG POLE, SW QUADRANT, ABANDON FOUNDATION BELOW GRADE
194015.58	678073.06	EX SIG POLE, NW QUADRANT, COMPLETELY REMOVE FOUNDATION
194006.32	678064.92	EX TYPE 2 J-BOX, NW QUADRANT
193948.54	678179.58	EX TC FOUNDATION

SALVAGE AND REMOVAL NOTES:

- SALVAGE POLES AND EQUIPMENT PER THE SPECIFICATIONS.

FLASH PROGRAM COLOR								
PHASE	1	2	3	4	5	6	7	8
COLOR	N/A	R	R	R	R	R	R	R

OPTICOM DETECTOR SCHEDULE					
LOCATION	DET. NO.	PHASE CALL	FACING DIR.	PREEMPTOR PRIORITY	REMARKS
ON TOP OF SIGNAL HEAD 62	1	6	EAST		
ON TOP OF SIGNAL HEAD 42	2	4, 7	SOUTH		
ON TOP OF SIGNAL HEAD 51	3	2, 5	WEST		
ON TOP OF SIGNAL HEAD 82	4	3, 8	NORTH		

—# OPTICOM DETECTOR NUMBER

RADAR DETECTION SCHEDULE						
DET. NO.	PHASE CALL	TYPE	FACING DIR.	POLE NO.	LOCATION	RADAR TYPE
1	2, 5	STOP BAR	SOUTH	4	SIGNAL SHAFT	SMARTSENSOR MATRIX
2	3, 8	STOP BAR	NORTHWEST	1	SIGNAL MASTARM	SMARTSENSOR MATRIX
3	6	STOP BAR	SOUTHEAST	1	SIGNAL SHAFT	SMARTSENSOR MATRIX
4	4, 7	STOP BAR	EAST	3	SIGNAL SHAFT	SMARTSENSOR MATRIX

—# RADAR DETECTOR NUMBER

ADDITIONAL EQUIPMENT	
QTY	DESCRIPTION
1	SMARTSENSOR MANAGER ADVANCE SOFTWARE (WX-550-0001)
1	SMARTSENSOR MANAGER MATRIX SOFTWARE (WX-550-0004)

SCHEDULES - S
 CUSHMAN ST & 17TH
 AVE

REVIEW PS&E
 6/23/2023
 6/23/2023

PLANS DEVELOPED BY: KINNEY ENGINEERING, LLC 3909 Arctic Blvd, Suite 400 Anchorage, Alaska 99503 (907) 346-2373 CERT. OF AUTH. NO. 1102
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H84	H145

POLE NO.	CORNER	ILLUMINATION # ARM L. (FT)	SIGNAL ARM L (FT)	A	B	C	D	REMARKS	
1	NE	N/A	25'	SIG. OR SIGN	SIGNAL	SIGNAL	RADAR	SIGN	
				LOC. OFFSET	24.2	13.9	9.4	7.5	
				LxW OR S.F.	14.10	11.50	1.00	13.00	
2	SE	12'-4"	35'	SIG. OR SIGN	SIGNAL	SIGNAL	SIGN		LUMINAIRE ARM @ 0° MOUNTING HEIGHT @ 30'
				LOC. OFFSET	31.4	20.0	12.3		
				LxW OR S.F.	14.10	11.50	20.00		
3	SW	LUMINAIRE 1 - 12'-4" LUMINAIRE 2 - 12'-4"	35'	SIG. OR SIGN	SIGNAL	SIGNAL	SIGN		LUMINAIRE ARM 1 @ 0° MOUNTING HEIGHT @ 30° LUMINAIRE ARM 2 @ 270° MOUNTING HEIGHT @ 30°
				LOC. OFFSET	34.2	25.3	11.4		
				LxW OR S.F.	14.10	11.50	13.00		
4	NW	6'-4"	40'	SIG. OR SIGN	SIGNAL	SIGN			LUMINAIRE ARM @ 270° MOUNTING HEIGHT @ 30°
				LOC. OFFSET	34.6	13.8			
				LxW OR S.F.	11.50	20.00			

SIGN NO.	LOCATION		ASDS CODE	LEGEND	SIZE HxV (INCHES)	AREA (SQ FT)	BRACING/FRAMING		REMARKS
	POLE NO.	OFFSET					BRACED	FRAMED	
1	1	7.5	D3-1B	17TH AVE	78x24	13.0		X	SEE NOTE 2
2	2	12.3	D3-1B	S CUSHMAN ST	120x24	20.0		X	SEE NOTE 2
3	3	11.4	D3-1B	17TH AVE	78x24	13.0		X	SEE NOTE 2
4	4	13.8	D3-1B	S CUSHMAN ST	120x24	20.0		X	SEE NOTE 2
SUBTOTAL SIGNAL SIGNS						66.0			

POLE-POST DESIGN LOADING SCHEDULE NOTES:

- ORIENT SIGNAL MAST ARM(S) 90° TO THE C OF THE ROADWAY UNLESS NOTED OTHERWISE.
- LUMINAIRE MAST ARM MOUNTING HEIGHT IS FROM ROADWAY FINISHED GRADE TO BOTTOM OF FIXTURE.
- SEE SIGNAL PLAN ON SHEET ___ FOR LUMINAIRE TYPE AND ADJUSTABLE OUTPUT SETTINGS.

SIGNAL SIGN SCHEDULE NOTES:

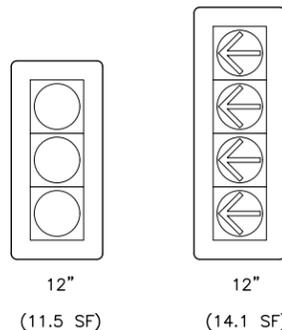
- LOCATION OFFSETS ARE FROM CENTER OF SIGN TO C OF SIGNAL POLE.
- FOR SIGN STREET NAMES, USE 12" INITIAL UPPERCASE LETTERING AND A MINIMUM OF 9" LOWERCASE LETTERING. FOR STREET TYPES, USE 8" INITIAL UPPERCASE LETTERING AND A MINIMUM OF 5" LOWERCASE LETTERING.

POLE/POST NO.	FACE NO.	INDICATIONS												MOUNTING				REMARKS
		12" BALL			12" ARROW				8" BALL			MAST ARM		SIDE MTNG. TYPE	TOP OF POST			
		R	Y	G	R	Y	FYA	G	R	Y	G	LOC. OFFSET	ELEV. PLUMB					
1	41	X	X	X													D	
	52				L	L	L	L									D	
	42	X	X	X									13.9	X				
	71				L	L	L	L					24.2	X				
2	21	X	X	X													D	
	32				L	L	L	L									D	
	22	X	X	X									20.0	X				
	51				L	L	L	L					31.4	X				
3	81	X	X	X													D	
	82	X	X	X									25.3	X				
	31				L	L	L	L					34.2	X				
4	61	X	X	X													D	
	72				L	L	L	L									D	
	62	X	X	X									34.6	X				

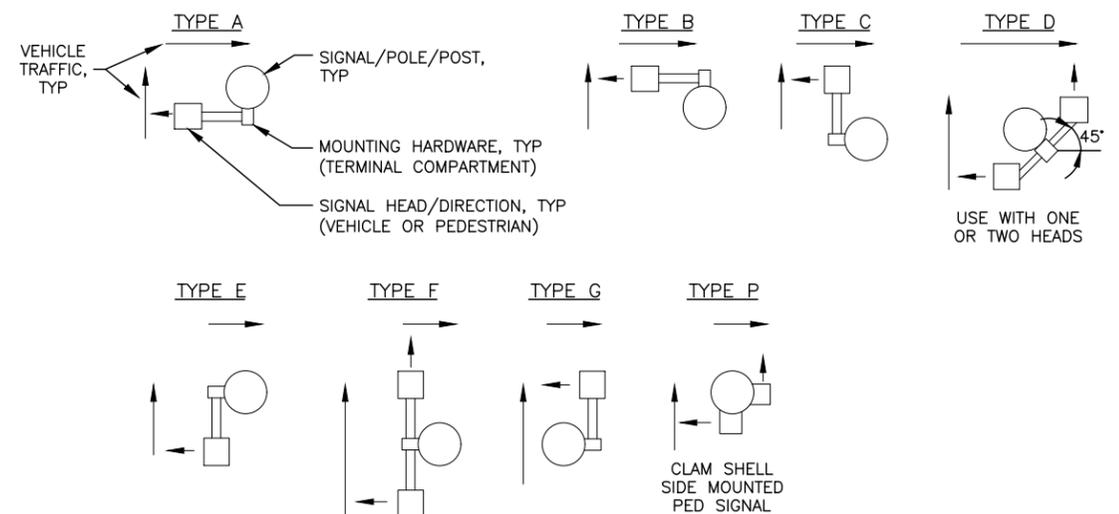
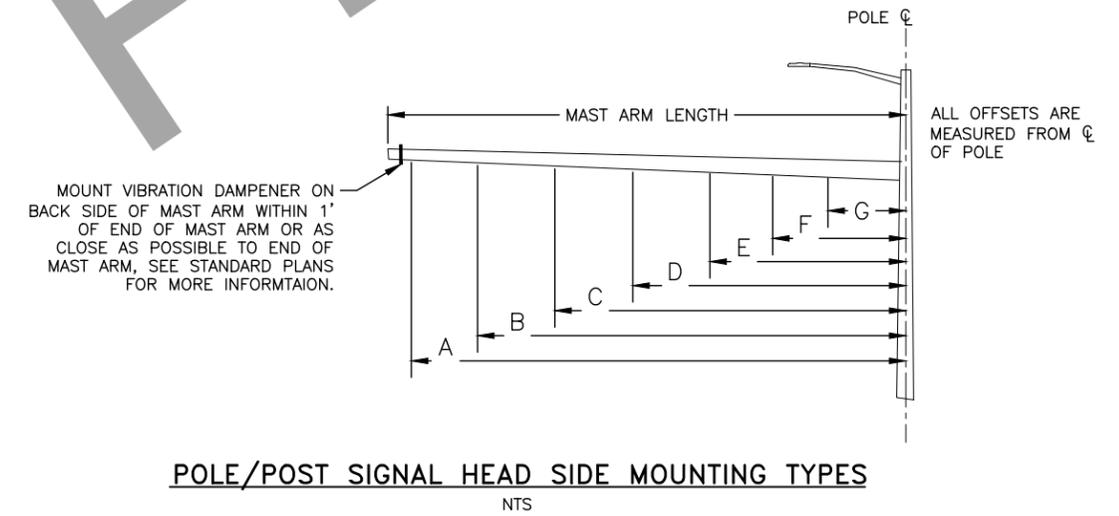
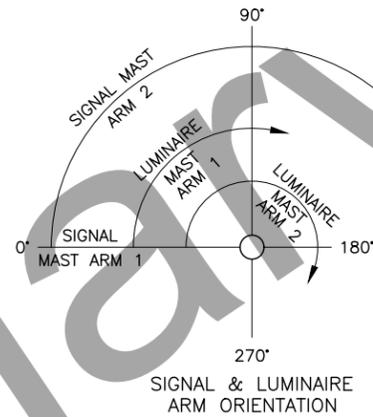
SIGNAL HEAD SCHEDULE NOTES:

- LOCATION OFFSETS ARE FROM CENTER OF SIGNAL HEAD TO C OF SIGNAL POLE.
- FYA = FLASHING YELLOW ARROW.

POLE/POST NO.	FACE NO.	MOUNTING TYPE	REMARKS
1	48	P	
1	69	P	
2	28	P	
2	49	P	
3	29	P	
3	88	P	
4	68	P	
4	89	P	



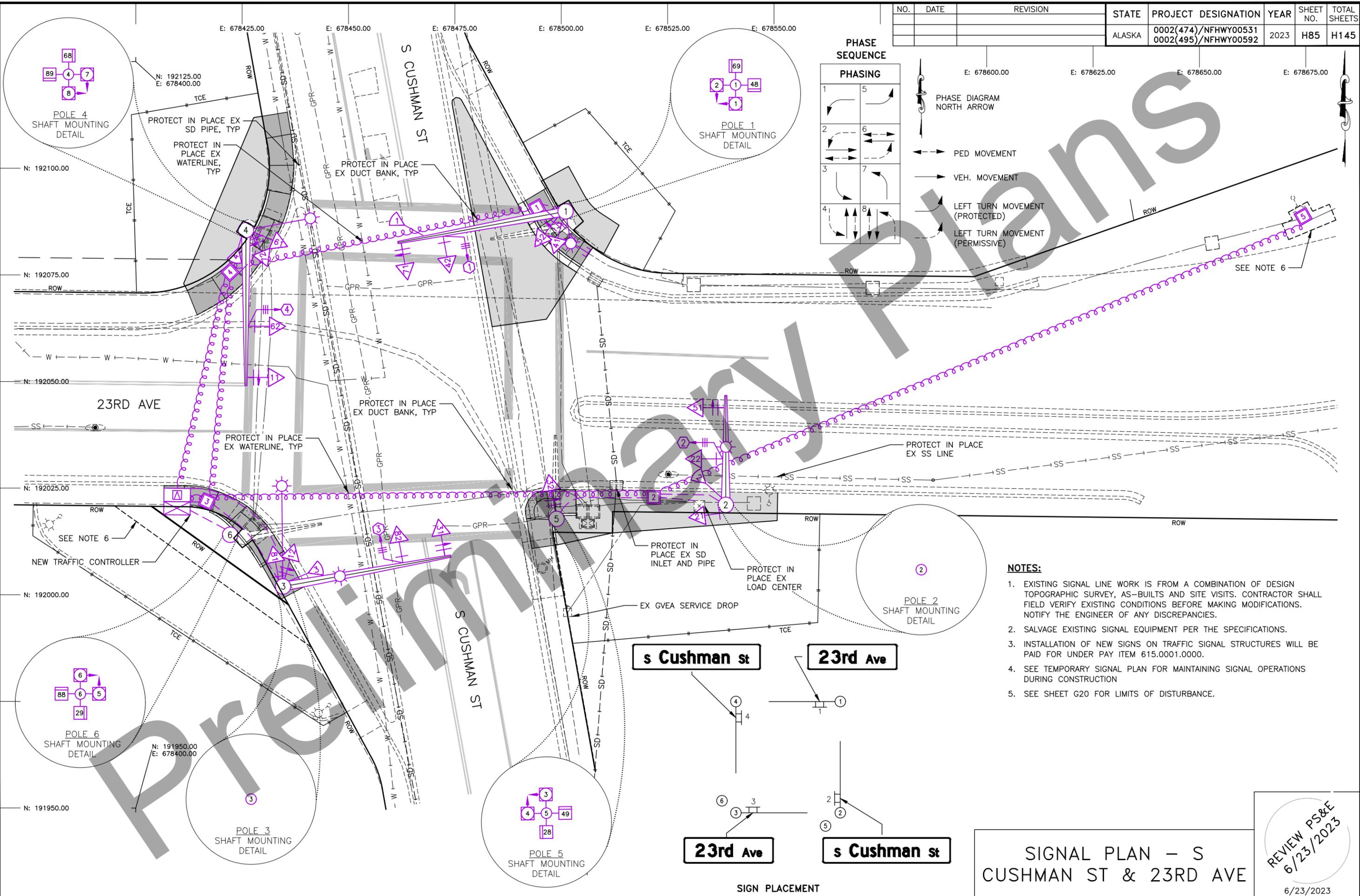
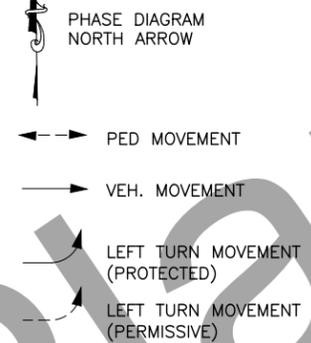
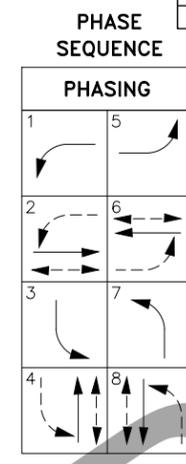
SIGNAL HEAD CONFIGURATIONS
(AREAS ARE FOR WIND LOAD CALCULATIONS)
(ARROWS AND BALL INDICATIONS ARE INTERCHANGEABLE)



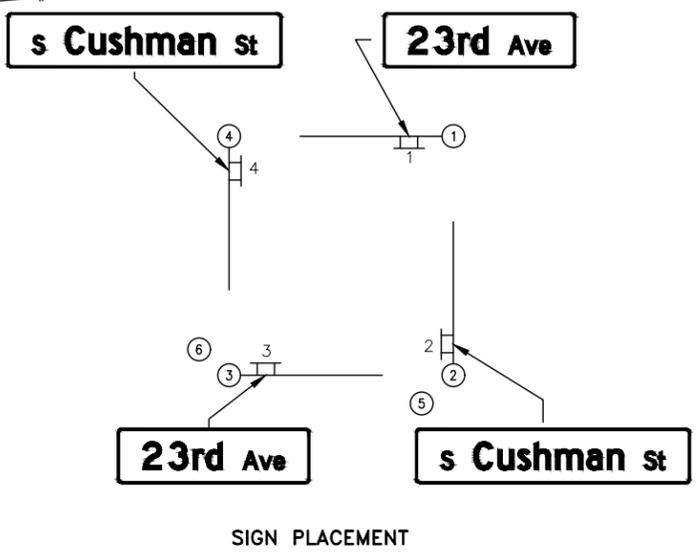
SCHEDULES - S
CUSHMAN ST & 17TH
AVE

REVIEW PS&E
6/23/2023
6/23/2023

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H85	H145



- NOTES:**
- EXISTING SIGNAL LINE WORK IS FROM A COMBINATION OF DESIGN TOPOGRAPHIC SURVEY, AS-BUILTS AND SITE VISITS. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS BEFORE MAKING MODIFICATIONS. NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
 - SALVAGE EXISTING SIGNAL EQUIPMENT PER THE SPECIFICATIONS.
 - INSTALLATION OF NEW SIGNS ON TRAFFIC SIGNAL STRUCTURES WILL BE PAID FOR UNDER PAY ITEM 615.0001.0000.
 - SEE TEMPORARY SIGNAL PLAN FOR MAINTAINING SIGNAL OPERATIONS DURING CONSTRUCTION
 - SEE SHEET G20 FOR LIMITS OF DISTURBANCE.



SIGNAL PLAN - S CUSHMAN ST & 23RD AVE

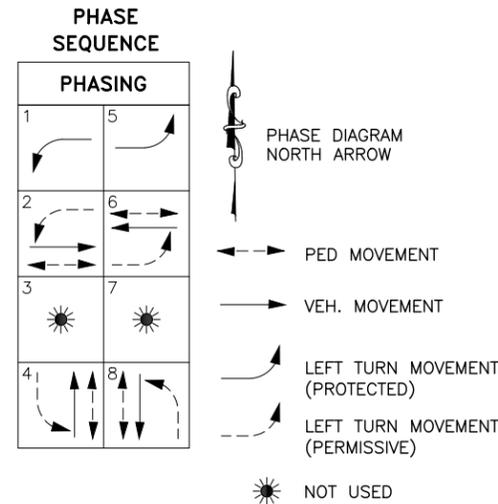
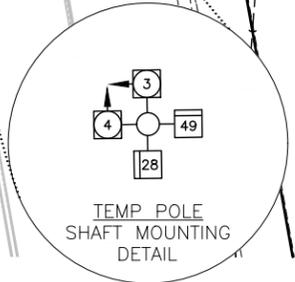
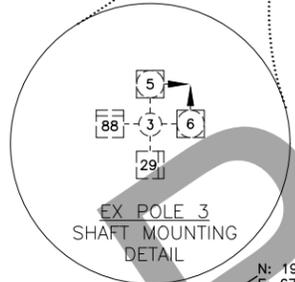
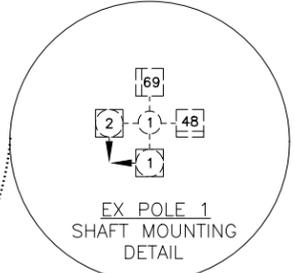
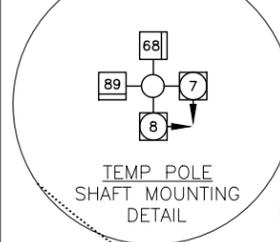
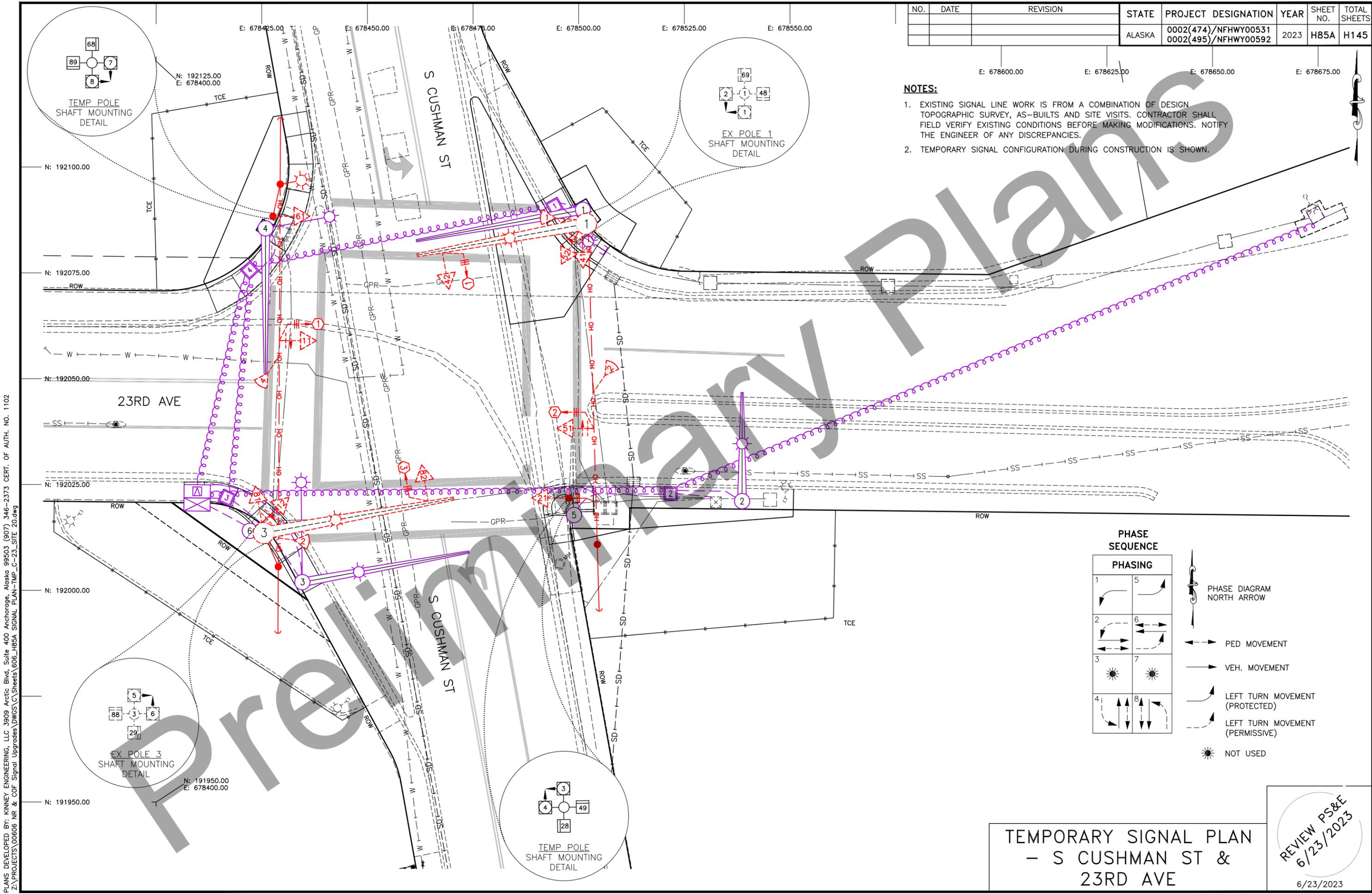
REVIEW PS&E
6/23/2023
6/23/2023

PLANS DEVELOPED BY: KINNEY ENGINEERING, LLC 3909 Arctic Blvd, Suite 400 Anchorage, Alaska 99503 (907) 346-2373 CERT. OF AUTH. NO. 1102
Z:\PROJECTS\0606 NR & COF Signal Upgrades\DWGS\C_Sheets\606_H85_SIGNAL_PLAN_C-23_SITE_20.dwg

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H85A	H145

NOTES:

- EXISTING SIGNAL LINE WORK IS FROM A COMBINATION OF DESIGN TOPOGRAPHIC SURVEY, AS-BUILTS AND SITE VISITS. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS BEFORE MAKING MODIFICATIONS. NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
- TEMPORARY SIGNAL CONFIGURATION DURING CONSTRUCTION IS SHOWN.



TEMPORARY SIGNAL PLAN
- S CUSHMAN ST &
23RD AVE

REVIEW PS&E
6/23/2023
6/23/2023

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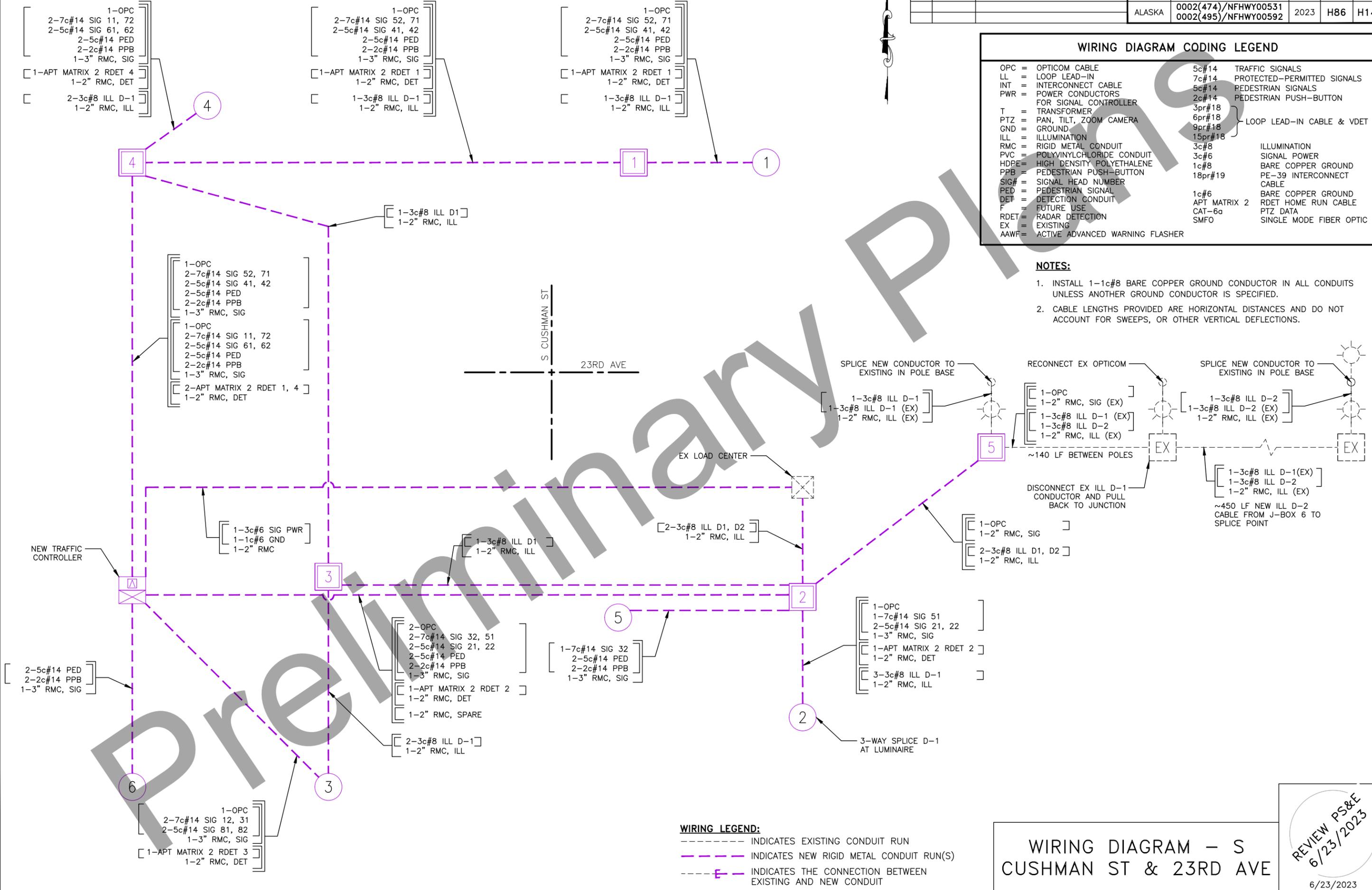
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFWHY00531 0002(495)/NFWHY00592	2023	H86	H145

WIRING DIAGRAM CODING LEGEND

OPC = OPTICOM CABLE	5c#14 TRAFFIC SIGNALS
LL = LOOP LEAD-IN	7c#14 PROTECTED-PERMITTED SIGNALS
INT = INTERCONNECT CABLE	5c#14 PEDESTRIAN SIGNALS
PWR = POWER CONDUCTORS	2c#14 PEDESTRIAN PUSH-BUTTON
T = TRANSFORMER	3pr#18 LOOP LEAD-IN CABLE & VD ET
PTZ = PAN, TILT, ZOOM CAMERA	6pr#18
GND = GROUND	9pr#18
ILL = ILLUMINATION	15pr#18
RMC = RIGID METAL CONDUIT	3c#8 ILLUMINATION
PVC = POLYVINYLCHLORIDE CONDUIT	3c#6 SIGNAL POWER
HDPE = HIGH DENSITY POLYETHALENE	3c#8 BARE COPPER GROUND
PPB = PEDESTRIAN PUSH-BUTTON	1c#8 PE-39 INTERCONNECT CABLE
SIG# = SIGNAL HEAD NUMBER	18pr#19
PED = PEDESTRIAN SIGNAL	1c#6 BARE COPPER GROUND
DET = DETECTION CONDUIT	APT MATRIX 2 RDET HOME RUN CABLE
F = FUTURE USE	CAT-6a PTZ DATA
RDET = RADAR DETECTION	SMFO SINGLE MODE FIBER OPTIC
EX = EXISTING	
AAWF = ACTIVE ADVANCED WARNING FLASHER	

NOTES:

- INSTALL 1-1c#8 BARE COPPER GROUND CONDUCTOR IN ALL CONDUITS UNLESS ANOTHER GROUND CONDUCTOR IS SPECIFIED.
- CABLE LENGTHS PROVIDED ARE HORIZONTAL DISTANCES AND DO NOT ACCOUNT FOR SWEEPS, OR OTHER VERTICAL DEFLECTIONS.



WIRING LEGEND:

-----	INDICATES EXISTING CONDUIT RUN
-----	INDICATES NEW RIGID METAL CONDUIT RUN(S)
-----	INDICATES THE CONNECTION BETWEEN EXISTING AND NEW CONDUIT

WIRING DIAGRAM - S
CUSHMAN ST & 23RD AVE

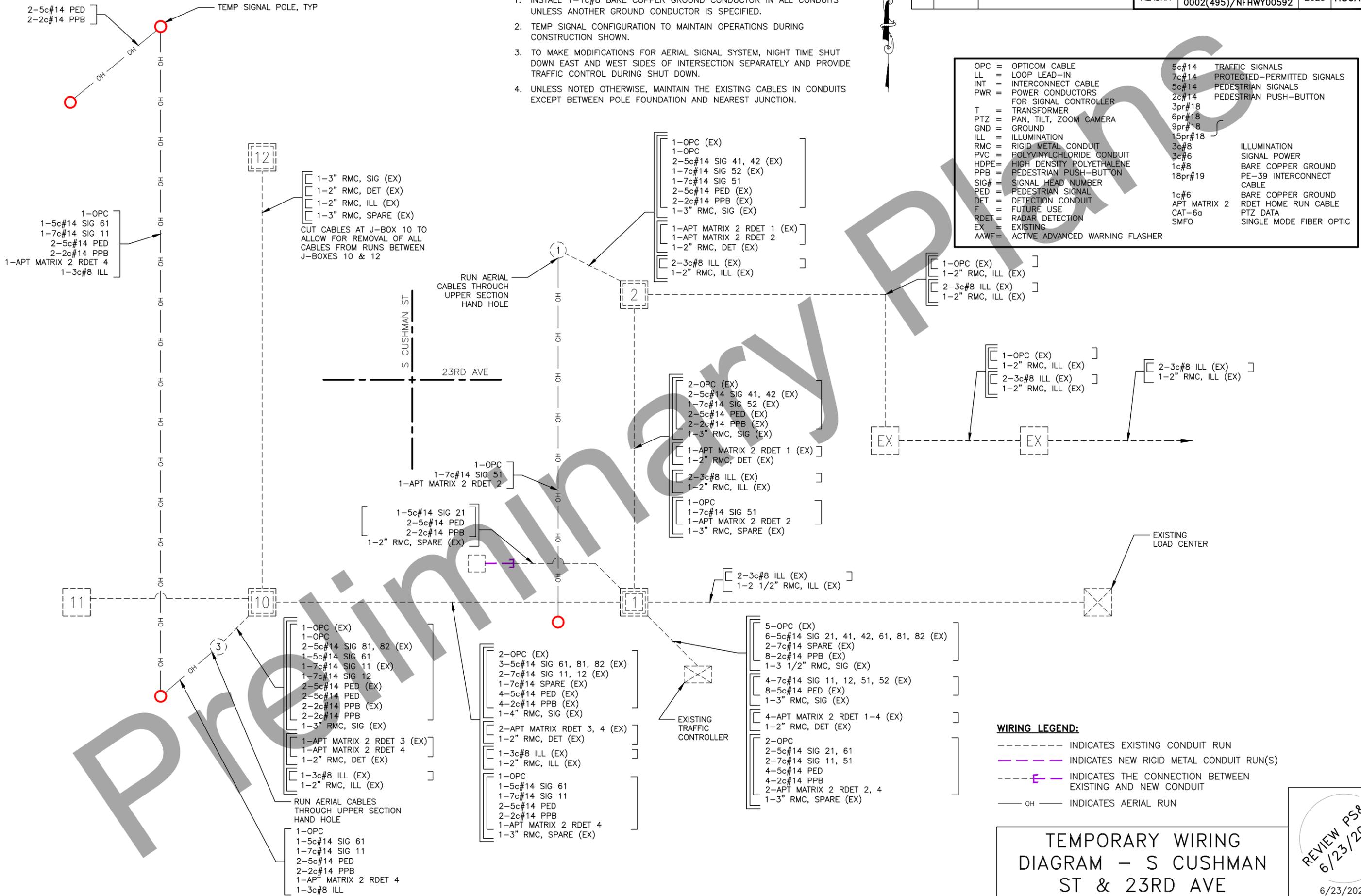
REVIEW PS&E
6/23/2023
6/23/2023

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H86A	H145

NOTES:

- INSTALL 1-1c#8 BARE COPPER GROUND CONDUCTOR IN ALL CONDUITS UNLESS ANOTHER GROUND CONDUCTOR IS SPECIFIED.
- TEMP SIGNAL CONFIGURATION TO MAINTAIN OPERATIONS DURING CONSTRUCTION SHOWN.
- TO MAKE MODIFICATIONS FOR AERIAL SIGNAL SYSTEM, NIGHT TIME SHUT DOWN EAST AND WEST SIDES OF INTERSECTION SEPARATELY AND PROVIDE TRAFFIC CONTROL DURING SHUT DOWN.
- UNLESS NOTED OTHERWISE, MAINTAIN THE EXISTING CABLES IN CONDUITS EXCEPT BETWEEN POLE FOUNDATION AND NEAREST JUNCTION.

OPC = OPTICOM CABLE	5c#14	TRAFFIC SIGNALS
LL = LOOP LEAD-IN	7c#14	PROTECTED-PERMITTED SIGNALS
INT = INTERCONNECT CABLE	5c#14	PEDESTRIAN SIGNALS
PWR = POWER CONDUCTORS FOR SIGNAL CONTROLLER	2c#14	PEDESTRIAN PUSH-BUTTON
T = TRANSFORMER	3pr#18	
PTZ = PAN, TILT, ZOOM CAMERA	6pr#18	
GND = GROUND	9pr#18	
ILL = ILLUMINATION	15pr#18	
RMC = RIGID METAL CONDUIT	3c#8	ILLUMINATION
PVC = POLYVINYLCHLORIDE CONDUIT	3c#6	SIGNAL POWER
HDPE = HIGH DENSITY POLYETHYLENE	1c#8	BARE COPPER GROUND
PPB = PEDESTRIAN PUSH-BUTTON	18pr#19	PE-39 INTERCONNECT CABLE
SIG# = SIGNAL HEAD NUMBER		
PED = PEDESTRIAN SIGNAL	1c#6	BARE COPPER GROUND
DET = DETECTION CONDUIT	2 RDET MATRIX 2	RDET HOME RUN CABLE
F = FUTURE USE	CAT-6a	PTZ DATA
RDET = RADAR DETECTION	SMFO	SINGLE MODE FIBER OPTIC
EX = EXISTING		
AAWF = ACTIVE ADVANCED WARNING FLASHER		



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H87	H145

BASE & JUNCTION BOX SCHEDULE												
LOCATION		DESCRIPTION			BASE TYPE*			JUNCTION BOX TYPE				REMARKS
NORTHING	EASTING	POLE NO.	JUNCTION BOX NO.	CONTROLLER	CIDH	P	A	IA	II	III	IV	
192089.87	678501.01	1			X							36-INCH Ø
192020.91	678533.96	2			X							36-INCH Ø
192001.92	678434.61	3			X							36-INCH Ø, SEE NOTE 1
192085.49	678425.89	4			X							36-INCH Ø
192017.80	678498.90	5					X					SEE NOTE 2
192014.05	678422.17	6					X					SEE NOTE 2
192090.74	678494.28		1						X			
192022.51	678541.61		2						X			
192021.88	678416.76		3						X			
192075.61	678422.16		4						X			
192022.45	678544.71		5					X				
192086.50	678673.86		6						X			REPLACE EX TYPE 1A
192021.60	678409.61			X								

BASE & JUNCTION BOX NOTES:

- TOP OF FOUNDATION FLUSH W/ TOP OF SIDEWALK PER DETAIL ON SHEET HXX.
- USE ALTERNATE "PELCO" POST BASE, SEE STD. DWG, T-31.01.

*P = PRECAST BASE (FOUNDATION)
 A = TYPE "A" SIGNAL BASE POST FOUNDATION. SEE STD. DWG, T-31.00
 CIDH = CAST IN DRILLED HOLE

SALVAGE & REMOVE SCHEDULE		
LOCATION		REMARKS
NORTHING	EASTING	
192086.42	678501.65	EX SIG POLE, NE QUADRANT, ABANDON FOUNDATION BELOW GRADE
192084.27	678499.85	EX TYPE 2 J-BOX, NE QUADRANT
192018.93	678498.73	EX SIG POLE, SE QUADRANT, COMPLETELY REMOVE FOUNDATION
192019.51	678506.26	EX TYPE 3 J-BOX, SE QUADRANT
192013.53	678425.47	EX SIG POLE, SW QUADRANT, ABANDON FOUNDATION BELOW GRADE
192016.09	678427.46	EX TYPE 2 J-BOX, SW QUADRANT
192086.12	678426.53	EX SIG POLE, NW QUADRANT, COMPLETELY REMOVE FOUNDATION
192084.44	678430.03	EX TYPE 2 J-BOX, NW QUADRANT
192021.30	678548.82	EX LIGHT POLE
192021.41	678545.30	EX TYPE 1A J-BOX
192020.98	678517.62	EX LOAD CENTER
192016.77	678506.28	EX TC FOUNDATION

SALVAGE AND REMOVAL NOTES:

- SALVAGE POLES AND EQUIPMENT PER THE SPECIFICATIONS.

OPTICOM DETECTOR SCHEDULE					
LOCATION	DET. NO.	PHASE CALL	FACING DIR.	PREEMPTOR PRIORITY	REMARKS
ON TOP OF SIGNAL HEAD 42	1	4, 7	SOUTH		
ON TOP OF SIGNAL HEAD 22	2	2, 5	WEST		
ON TOP OF SIGNAL HEAD 82	3	3, 8	NORTH		
ON TOP OF SIGNAL HEAD 62	4	1, 6	EAST		
ON EX LIGHT POLE	5	1, 6	NORTHEAST		EXISTING TO REMAIN

—|||—(A) OPTICOM DETECTOR NUMBER

RADAR DETECTION SCHEDULE						
DET. NO.	PHASE CALL	TYPE	FACING DIR.	POLE NO.	LOCATION	RADAR TYPE
1	3, 8	STOP BAR	NORTHWEST	1	SIGNAL MAST ARM	SMARTSENSOR MATRIX
2	1, 6	STOP BAR	NORTHWEST	2	SIGNAL SHAFT	SMARTSENSOR MATRIX
3	4, 7	STOP BAR	EAST	3	SIGNAL MAST ARM	SMARTSENSOR MATRIX
4	2, 5	STOP BAR	SOUTHWEST	4	SIGNAL SHAFT	SMARTSENSOR MATRIX

—(A)— RADAR DETECTOR NUMBER

PEDESTRIAN DETECTION SCHEDULE			
POLE	PUSH BUTTON	PHASE	REMARKS
1	1	6	SEE NOTE 1
1	2	4	SEE NOTE 2
5	3	4	SEE NOTE 2
5	4	2	SEE NOTE 1
6	5	2	SEE NOTE 2
6	6	8	SEE NOTE 1
4	7	8	SEE NOTE 2
4	8	6	SEE NOTE 1

PEDESTRIAN DETECTION NOTES:

- INSTALL AN R10-3eL SIGN ABOVE PEDESTRIAN PUSH BUTTON. SIGN SHALL NOT BE MEASURED FOR PAYMENT AND IS SUBSIDIARY TO TRAFFIC SIGNAL PAY ITEMS.
- INSTALL AN R10-3eR SIGN ABOVE PEDESTRIAN PUSH BUTTON. SIGN SHALL NOT BE MEASURED FOR PAYMENT AND IS SUBSIDIARY TO TRAFFIC SIGNAL PAY ITEMS.

FLASH PROGRAM COLOR								
PHASE	1	2	3	4	5	6	7	8
COLOR	R	R	R	R	R	R	R	R

RADAR DETECTION EQUIPMENT	
QTY	DESCRIPTION
4	SMARTSENSOR MATRIX (WX-SS-225)
4	PELCO MOUNT (WX-SS-611)
4	SMARTSENSOR 6-CONDUCTOR CABLE (WX-SS-704-XXX)
0	SMARTSENSOR ADVANCED EXTENDED RANGE (WX-SS-200E)

NEMA CLOSURE EQUIPMENT	
QTY	DESCRIPTION
0	CLICK 710, SMARTSENSOR 6-CONDUCTOR CABLE JUNCTION BOX (WX-SS-710)

CABINET EQUIPMENT	
QTY	DESCRIPTION
0	CLICK! 112 RACK CARDS (WX-CLK-112)
0	CLICK! 114 RACK CARDS (WX-CLK-114)

0	INTERSECTION PREASSEMBLED BACKPLATE -AC, FOUR SENSOR, (WX-SS-B01-0005)
	1 CLICK! 204 4 AMP POWER SUPPLY
	5 CLICK! 210-02 2 AMP CIRCUIT BREAKERS (WX-CLK-210)
	2 CLICK! 222, SMARTSENSOR SURGE PROTECTOR (WX-CLK-222)
	1 CLICK! 230, AC SURGE PROTECTOR (WX-CLK-230)
	1 T-BUS 5-SCREW TERMINAL BLOCKS (LEFT END)
	5 T-BUS CONNECTORS (POWER AND COMMUNICATION)
	1 T-BUS CONNECTOR (POWER ONLY)
	5 END BRACKETS WITH LABELS
	1 END BRACKET WITHOUT LABEL
	4 TERMINAL BLOCKS FOR AC LINE INPUT: SPRING CAGE TO PLUG SPRING
	CAGE 10 AWG (2 GROUNDED)
	28 TERMINAL BLOCKS FOR CABLE TERMINATION: INSULATION DISPLACEMENT
	TO PLUG INSULATION DISPLACEMENT (4 GROUNDED)
	MOUNTING PLATFORM: TRAFFIC CABINET BACKPLATE
	1 8-FT POWER CORD
	1 8-FT 14 AWG GROUND CABLE
	1 5-FT BLACK RJ-11 PATCH CABLE
	4 5-FT WHITE RJ-11 PATCH CABLES
1	CLICK! 650, CABINET INTERFACE (WX-CLK-650)

ADDITIONAL EQUIPMENT	
QTY	DESCRIPTION
1	SMARTSENSOR MANAGER ADVANCE SOFTWARE (WX-550-0001)
1	SMARTSENSOR MANAGER MATRIX SOFTWARE (WX-550-0004)

SCHEDULES - S
 CUSHMAN ST & 23RD
 AVE

REVIEW PS&E
 6/23/2023
 6/23/2023

PLANS DEVELOPED BY: KINNEY ENGINEERING, LLC 3909 Arctic Blvd, Suite 400 Anchorage, Alaska 99503 (907) 346-2373 CERT. OF AUTH. NO. 1102
Z:\PROJECTS\0606 NR & COF Signal Upgrades\DWGS\C\Sheets\606_H87-H88_SCHED_C-23_SITE_20.dwg

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H88	H145

POLE NO.	CORNER	ILLUMINATION # ARM L. (FT)	SIGNAL ARM L (FT)		A	B	C	D	REMARKS
1	NE	6'-4"	55'	SIG. OR SIGN	SIGNAL	RADAR	SIGNAL	SIGN	LUMINAIRE ARM @ 270° MOUNTING HEIGHT @ 30'
				LOC. OFFSET	39.3	33.9	29.3	9.4	
				LxW OR S.F.	14.10	1.00	11.50	13.00	
2	E-SE	12'-4"	35'	SIG. OR SIGN	SIGNAL	SIGNAL	SIGN		LUMINAIRE ARM 1 @ 0° MOUNTING HEIGHT @ 30'
				LOC. OFFSET	23.0	11.0	8.0		
				LxW OR S.F.	14.10	11.50	20.00		
3	S-SW	LUMINAIRE 1 - 12'-4" LUMINAIRE 2 - 22'-4"	55'	SIG. OR SIGN	SIGNAL	SIGNAL	SIGN		LUMINAIRE ARM 1 @ 0° MOUNTING HEIGHT @ 30° LUMINAIRE ARM 2 @ 270° MOUNTING HEIGHT @ 30°
				LOC. OFFSET	38.7	28.7	6.8		
				LxW OR S.F.	14.10	11.50	13.00		
4	NW	15'-4"	50'	SIG. OR SIGN	SIGNAL	SIGNAL	SIGN		LUMINAIRE ARM @ 270° MOUNTING HEIGHT @ 30°
				LOC. OFFSET	34.5	22.5	14.5		
				LxW OR S.F.	14.10	11.50	20.00		
5	S-SE	N/A			N/A				10' POLE
6	W-SW	N/A			N/A				10' POLE

POLE-POST DESIGN LOADING SCHEDULE NOTES:

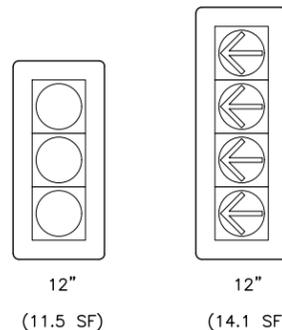
- ORIENT SIGNAL MAST ARM(S) 90° TO THE C OF THE ROADWAY UNLESS NOTED OTHERWISE.
- LUMINAIRE MAST ARM MOUNTING HEIGHT IS FROM ROADWAY FINISHED GRADE TO BOTTOM OF FIXTURE.
- SEE SIGNAL PLAN ON SHEET ___ FOR LUMINAIRE TYPE AND ADJUSTABLE OUTPUT SETTINGS.

POLE/POST NO.	FACE NO.	INDICATIONS												MOUNTING				REMARKS
		12" BALL			12" ARROW				8" BALL			MAST ARM		SIDE MTNG. TYPE	TOP OF POST			
		R	Y	G	R	Y	FYA	G	R	Y	G	LOC. OFFSET	ELEV. PLUMB					
1	41	X	X	X													D	
	52				L	L	L	L									D	
	42	X	X	X									33.9	X				
	71				L	L	L	L					39.3	X				
2	21	X	X	X													D	
	22	X	X	X									11.0	X				
	51				L	L	L	L					23.0	X				
3	81	X	X	X													D	
	12				L	L	L	L									D	
	82	X	X	X									28.7	X				
	31				L	L	L	L					38.7	X				
4	61	X	X	X													D	
	72				L	L	L	L									D	
	62	X	X	X									22.5	X				
	11				L	L	L	L					34.5	X				
5	32				L	L	L	L								X		

SIGNAL HEAD SCHEDULE NOTES:

- LOCATION OFFSETS ARE FROM CENTER OF SIGNAL HEAD TO C OF SIGNAL POLE.
- FYA = FLASHING YELLOW ARROW.

POLE/POST NO.	FACE NO.	MOUNTING TYPE	REMARKS
1	48	P	
1	69	P	
4	68	P	
4	89	P	
5	28	P	
5	49	P	
6	29	P	
6	88	P	

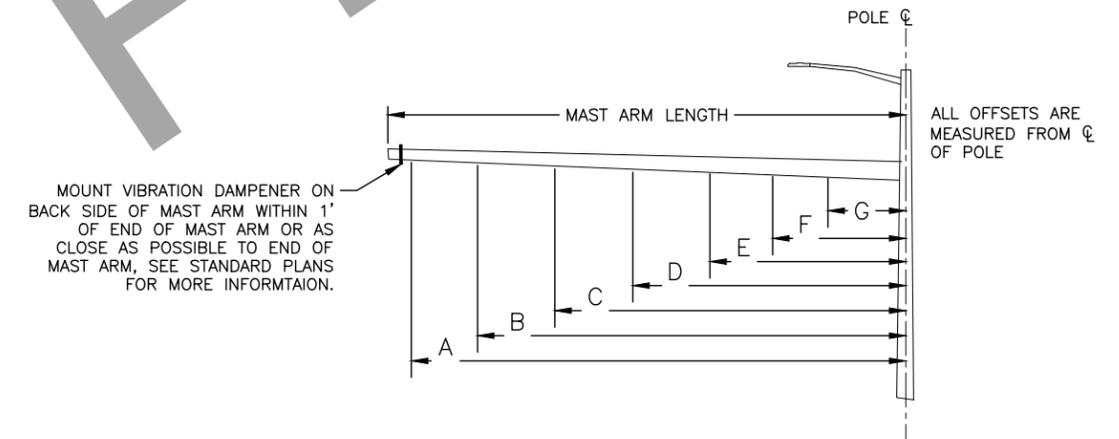
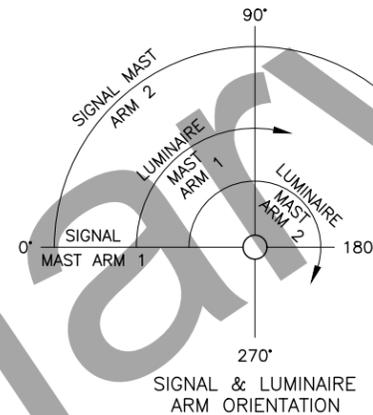


SIGNAL HEAD CONFIGURATIONS
(AREAS ARE FOR WIND LOAD CALCULATIONS)
(ARROWS AND BALL INDICATIONS ARE INTERCHANGEABLE)

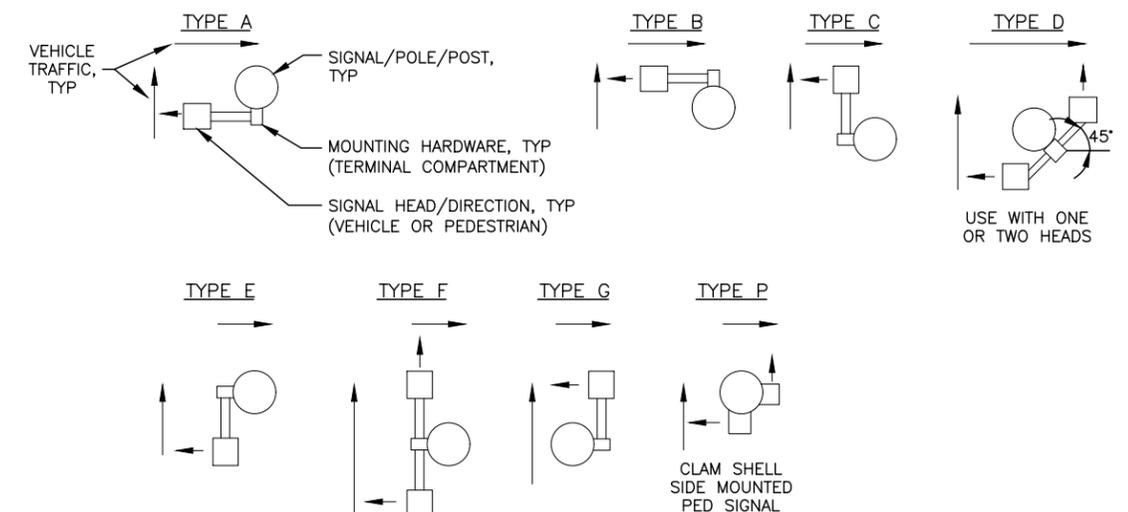
SIGN NO.	LOCATION		ASDS CODE	LEGEND	SIZE HxV (INCHES)	AREA (SQ FT)	BRACING/FRAMING		REMARKS
	POLE NO.	OFFSET					BRACED	FRAMED	
1	1	9.4	D3-1B	23RD AVE	78x24	13.0		X	SEE NOTE 2
2	2	8.0	D3-1B	S CUSHMAN ST	120x24	20.0		X	SEE NOTE 2
3	3	6.8	D3-1B	23RD AVE	78x24	13.0		X	SEE NOTE 2
4	4	14.5	D3-1B	S CUSHMAN ST	120x24	20.0		X	SEE NOTE 2
SUBTOTAL SIGNAL SIGNS						66.0			

SIGNAL SIGN SCHEDULE NOTES:

- LOCATION OFFSETS ARE FROM CENTER OF SIGN TO C OF SIGNAL POLE.
- FOR SIGN STREET NAMES, USE 12" INITIAL UPPERCASE LETTERING AND A MINIMUM OF 9" LOWERCASE LETTERING. FOR STREET TYPES, USE 8" INITIAL UPPERCASE LETTERING AND A MINIMUM OF 5" LOWERCASE LETTERING.



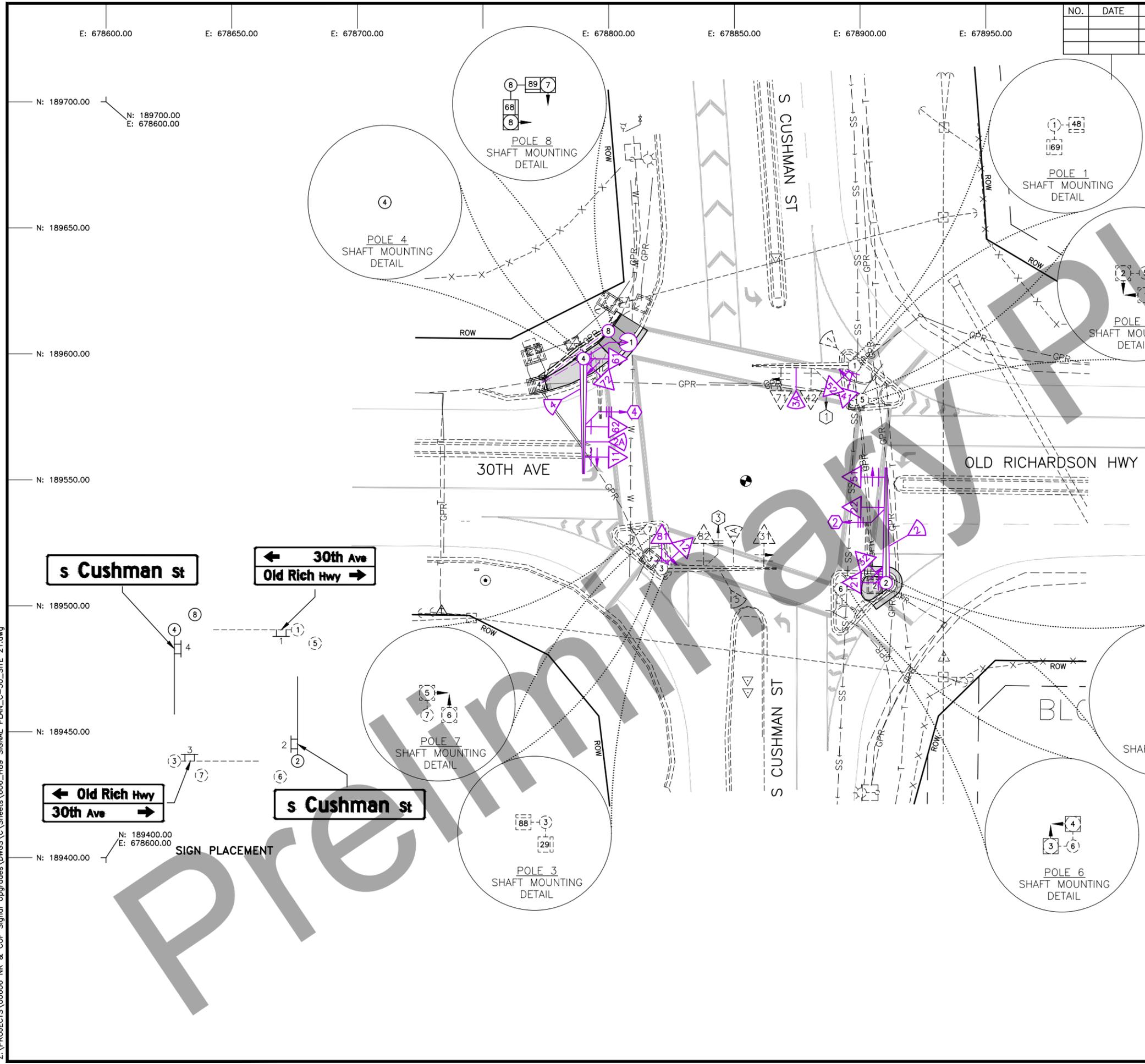
POLE/POST SIGNAL HEAD SIDE MOUNTING TYPES
NTS



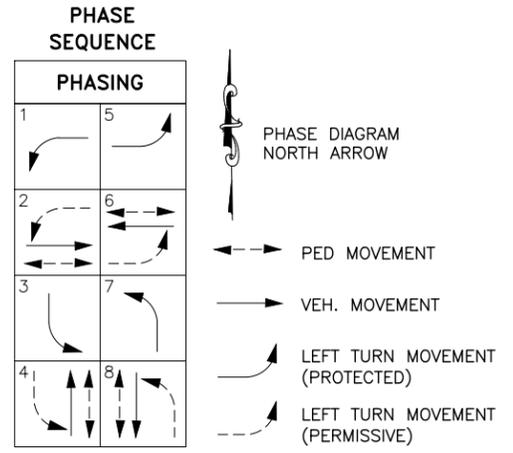
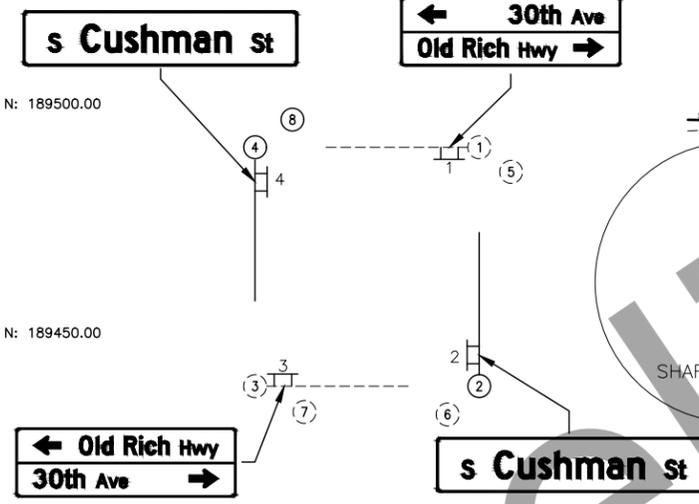
SCHEDULES - S
CUSHMAN ST & 23RD
AVE

REVIEW PS&E
6/23/2023
6/23/2023

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H89	H145



- NOTES:**
- EXISTING SIGNAL LINE WORK IS FROM A COMBINATION OF DESIGN TOPOGRAPHIC SURVEY, AS-BUILTS AND SITE VISITS. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS BEFORE MAKING MODIFICATIONS. NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
 - SALVAGE EXISTING SIGNAL EQUIPMENT PER THE SPECIFICATIONS. THIS WORK SHALL BE PAID FOR UNDER 660.2003.0000 TRAFFIC SIGNAL SYSTEM MODIFICATIONS, S CUSHMAN AND 30TH AVE/OLD RICH HWY.
 - INSTALLATION OF NEW SIGNS ON TRAFFIC SIGNAL STRUCTURES WILL BE PAID FOR UNDER PAY ITEM 615.0001.0000.
 - EXISTING SIGNAL POLES WILL BE USED FOR TEMPORARY SIGNALIZATION. USE OH FEEDS FOR EXISTING SIGNALS FROM EXISTING TRAFFIC CONTROLLER AS NEEDED.
 - TEMPORARY POWER MAY BE REQUIRED DURING CONSTRUCTION AND/OR SWITCH OVER.
 - REPLACE EXISTING SIGNAL POLE 1 AND 3 LIGHTING CONDUCTORS.



SIGNAL PLAN - S
CUSHMAN ST & 30TH AVE

REVIEW PS&E
6/23/2023
6/23/2023

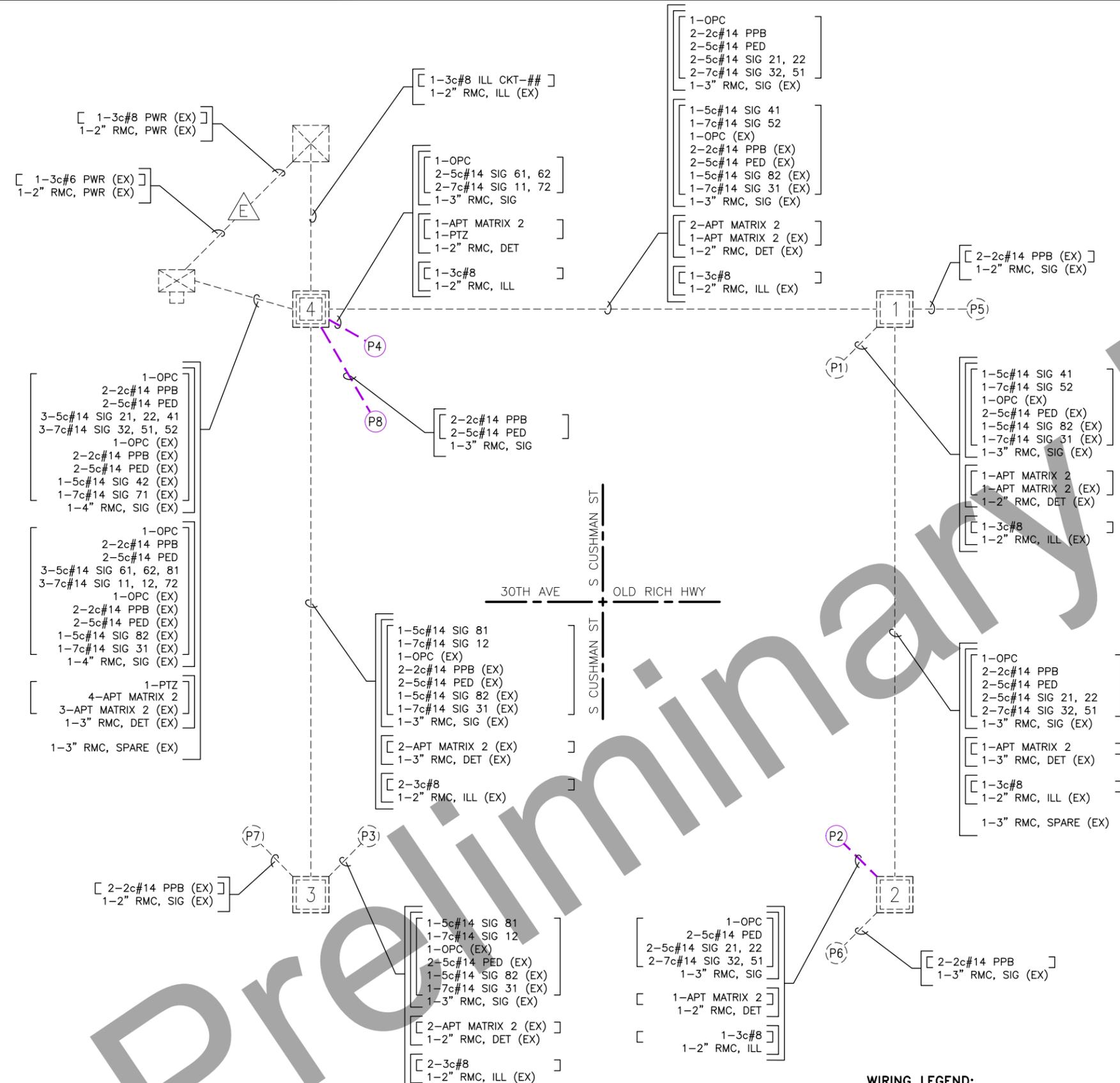
PLANS DEVELOPED BY: KINNEY ENGINEERING, LLC 3909 Arctic Blvd, Suite 400 Anchorage, Alaska 99503 (907) 346-2373 CERT. OF AUTH. NO. 1102
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H90	H145

WIRING DIAGRAM CODING LEGEND		
OPC = OPTICOM CABLE	5c#14	TRAFFIC SIGNALS
LL = LOOP LEAD-IN	7c#14	PROTECTED-PERMITTED SIGNALS
INT = INTERCONNECT CABLE	5c#14	PEDESTRIAN SIGNALS
PWR = POWER CONDUCTORS	2c#14	PEDESTRIAN PUSH-BUTTON
	3pr#18	LOOP LEAD-IN CABLE & VDET
T = TRANSFORMER	6pr#18	
PTZ = PAN, TILT, ZOOM CAMERA	9pr#18	
GND = GROUND	15pr#18	
ILL = ILLUMINATION	3c#8	ILLUMINATION
RMC = RIGID METAL CONDUIT	3c#6	SIGNAL POWER
PVC = POLYVINYLCHLORIDE CONDUIT	1c#8	BARE COPPER GROUND
HDPE = HIGH DENSITY POLYETHYLENE	18pr#19	PE-39 INTERCONNECT CABLE
PPB = PEDESTRIAN PUSH-BUTTON		
SIG# = SIGNAL HEAD NUMBER		
PED = PEDESTRIAN SIGNAL	1c#6	BARE COPPER GROUND
DET = DETECTION CONDUIT	APT MATRIX 2	RDET HOME RUN CABLE
F = FUTURE USE	CAT-6a	PTZ DATA
VDET = VIDEO DETECTION	SMFO	SINGLE MODE FIBER OPTIC
EX = EXISTING		
AAWF = ACTIVE ADVANCED WARNING FLASHER		

NOTES:

- INSTALL 1-1c#8 BARE COPPER GROUND CONDUCTOR IN ALL CONDUITS UNLESS ANOTHER GROUND CONDUCTOR IS SPECIFIED.
- SIGNAL POWER AND INTERSECTION CONDUIT AND WIRING TO SITE 21 SHALL BE PAID FOR UNDER 660.2003.0000 TRAFFIC SIGNAL SYSTEM MODIFICATIONS, S CUSHMAN AND 30TH AVE/OLD RICH HWY.



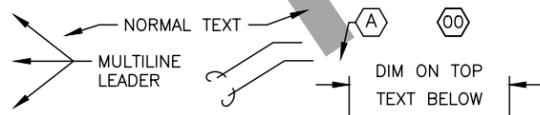
WIRING LEGEND:

- 1/c — INDICATES NEW INTERCONNECT CONDUIT RUN
- 1/c — INDICATES EXISTING INTERCONNECT CONDUIT RUN
- INDICATES EXISTING CONDUIT RUN
- INDICATES NEW RIGID METAL CONDUIT RUN(S)
- E ----- INDICATES THE CONNECTION BETWEEN EXISTING AND NEW CONDUIT

WIRING DIAGRAM - S
CUSHMAN ST & 30TH AVE

REVIEW PS&E
6/23/2023

6/23/2023



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H91	H145

BASE & JUNCTION BOX SCHEDULE												
LOCATION		DESCRIPTION			BASE TYPE*			JUNCTION BOX TYPE				REMARKS
STATION	OFFSET	POLE NO.	JUNCTION BOX NO.	CONTROLLER	CIDH	P	A	IA	II	III	IV	
189595.273	678897.757	1			X							EXISTING
189509.060	678910.338	2			X							45' MASTARM
189514.776	678820.993	3			X							EXISTING
189598.097	678789.974	4			X							45' MASTARM
189581.797	678900.909	5					X					EXISTING
189498.209	678892.462	6					X					PROPOSED
189530.250	678816.431	7					X					EXISTING
189609.082	678799.853	8					X					PROPOSED
189581.115	678898.406		1					X				EXISTING
189507.929	678905.854		2					X				EXISTING
189518.541	678816.453		3					X				EXISTING
189587.757	678772.306		4						X			EXISTING

BASE & JUNCTION BOX NOTES:

1. INSTALL ON PUSH BUTTON POST BASE TYPE B, SEE STD. DWG, T-31.00.
2. USE ALTERNATE "PELCO" POST BASE, SEE STD. DWG, T-31.01.
3. INSTALL JUNCTION BOX/FOUNDATION AT BACK OF SIDEWALK.

- *P = PRECAST BASE (FOUNDATION)
 A = TYPE "A" SIGNAL BASE POST FOUNDATION. SEE STD. DWG, T-31.00
 CIDH = CAST IN DRILLED HOLE

PEDESTRIAN DETECTION SCHEDULE			
POLE	PUSH BUTTON	PHASE	REMARKS
1	1	6	SEE NOTE 1
5	2	4	SEE NOTE 2
2	3	4	SEE NOTE 1
6	4	2	SEE NOTE 2
7	5	2	SEE NOTE 1
3	6	8	SEE NOTE 2
4	7	8	SEE NOTE 1
8	8	6	SEE NOTE 2

PEDESTRIAN DETECTION NOTES:

1. INSTALL AN R10-3eL SIGN ABOVE PEDESTRIAN PUSH BUTTON. SIGN SHALL NOT BE MEASURED FOR PAYMENT AND IS SUBSIDIARY TO TRAFFIC SIGNAL PAY ITEMS.
2. INSTALL AN R10-3eR SIGN ABOVE PEDESTRIAN PUSH BUTTON. SIGN SHALL NOT BE MEASURED FOR PAYMENT AND IS SUBSIDIARY TO TRAFFIC SIGNAL PAY ITEMS.

RADAR DETECTION EQUIPMENT	
QTY	DESCRIPTION
0	SMARTSENSOR MATRIX (WX-SS-225)
0	PELCO MOUNT (WX-SS-611)
0	SMARTSENSOR 6-CONDUCTOR CABLE (WX-SS-704-XXX)
0	SMARTSENSOR ADVANCED EXTENDED RANGE (WX-SS-200E)

NEMA CLOSURE EQUIPMENT	
QTY	DESCRIPTION
0	CLICK 710, SMARTSENSOR 6-CONDUCTOR CABLE JUNCTION BOX (WX-SS-710)

CABINET EQUIPMENT	
QTY	DESCRIPTION
0	CLICK! 112 RACK CARDS (WX-CLK-112)
0	CLICK! 114 RACK CARDS (WX-CLK-114)
0	INTERSECTION PREASSEMBLED BACKPLATE -AC, FOUR SENSOR, (WX-SS-B01-0005)
0	1 CLICK! 204 4 AMP POWER SUPPLY
0	5 CLICK! 210-02 2 AMP CIRCUIT BREAKERS (WX-CLK-210)
0	2 CLICK! 222, SMARTSENSOR SURGE PROTECTOR (WX-CLK-222)
0	1 CLICK! 230, AC SURGE PROTECTOR (WX-CLK-230)
0	1 T-BUS 5-SCREW TERMINAL BLOCKS (LEFT END)
0	5 T-BUS CONNECTORS (POWER AND COMMUNICATION)
0	1 T-BUS CONNECTOR (POWER ONLY)
0	5 END BRACKETS WITH LABELS
0	1 END BRACKET WITHOUT LABEL
0	4 TERMINAL BLOCKS FOR AC LINE INPUT: SPRING CAGE TO PLUG SPRING
0	CAGE 10 AWG (2 GROUNDED)
0	28 TERMINAL BLOCKS FOR CABLE TERMINATION: INSULATION DISPLACEMENT
0	TO PLUG INSULATION DISPLACEMENT (4 GROUNDED)
0	MOUNTING PLATFORM: TRAFFIC CABINET BACKPLATE
0	1 8-FT POWER CORD
0	1 8-FT 14 AWG GROUND CABLE
0	1 5-FT BLACK RJ-11 PATCH CABLE
0	4 5-FT WHITE RJ-11 PATCH CABLES
0	CLICK! 650, CABINET INTERFACE (WX-CLK-650)

OPTICOM DETECTOR SCHEDULE					
LOCATION	DET. NO.	PHASE CALL	FACING DIR.	PREEMPTOR PRIORITY	REMARKS
ON TOP OF SIGNAL HEAD 42	1	4, 7	SOUTH		EXISTING
ON TOP OF SIGNAL HEAD 22	2	2, 5	WEST		PROPOSED
ON TOP OF SIGNAL HEAD 82	3	3, 8	NORTH		EXISTING
ON TOP OF SIGNAL HEAD 62	4	1, 5	EAST		PROPOSED

—#— OPTICOM DETECTOR NUMBER

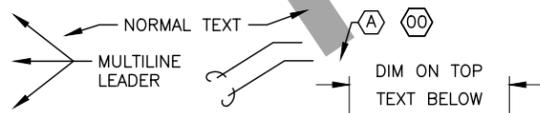
COMMUNICATION EQUIPMENT	
QTY	DESCRIPTION
0	RUGGEDCOM RSG920R ETHERNET SWITCH OR APPROVED EQUAL
0	12-FIBER ITS DROP CABLE
0	LC SMF PATCH CABLE
0	CAT-6A CABLE (6')

RADAR DETECTION SCHEDULE						
DET. NO.	PHASE CALL	TYPE	FACING DIR.	POLE NO.	LOCATION	RADAR TYPE
1	3, 8	STOP BAR	NORTHWEST	1	SIGNAL SHAFT	SMARTSENSOR MATRIX
2	1, 6	STOP BAR	NORTHEAST	2	SIGNAL MASTARM	SMARTSENSOR MATRIX
3	4, 7	STOP BAR	SOUTHEAST	3	SIGNAL MASTARM	SMARTSENSOR MATRIX
4	2, 5	STOP BAR	SOUTHWEST	4	SIGNAL MASTARM	SMARTSENSOR MATRIX
1A	3, 8	ADVANCE	NORTH	3	SIGNAL MASTARM	SMARTSENSOR ADVANCE
2A	1, 6	ADVANCE	EAST	4	SIGNAL MASTARM	SMARTSENSOR ADVANCE
3A	4, 7	ADVANCE	SOUTH	1	SIGNAL MASTARM	SMARTSENSOR ADVANCE

—#— RADAR DETECTOR NUMBER

FLASH PROGRAM COLOR								
PHASE	1	2	3	4	5	6	7	8
COLOR	R	R	R	R	R	R	R	R

ADDITIONAL EQUIPMENT	
QTY	DESCRIPTION
0	SMARTSENSOR MANAGER ADVANCE SOFTWARE (WX-550-0001)
0	SMARTSENSOR MANAGER MATRIX SOFTWARE (WX-550-0004)



SCHEDULES - S
 CUSHMAN ST & 30TH
 AVE

REVIEW PS&E
 6/23/2023
 6/23/2023

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H92	H145

POLE-POST DESIGN LOADING SCHEDULE												
POLE NO.	CORNER	ILLUMINATION # ARM L. (FT)	SIGNAL ARM L (FT)		A	B	C	D	E	F	G	REMARKS
1	NE	0'	40'	SIG. OR SIGN	SIGNAL	RADAR	SIGNAL	SIGN	SIGNAL	SIGNAL		LUMINAIRE ARM @ -' MOUNTING HEIGHT @ -'
				LOC. OFFSET	29.2	23.2	17.2	9.0	0.0	0.0		
				LxW OR S.F.	14.10	1.00	11.50	20.00	14.10	11.50		
2	SE	LUMINAIRE 1 - 0' LUMINAIRE 2 - 0'	45'	SIG. OR SIGN	SIGNAL	SIGNAL	RADAR	SIGN	SIGNAL	SIGNAL		LUMINAIRE ARM 1 @ -' MOUNTING HEIGHT @ -' LUMINAIRE ARM 2 @ -' MOUNTING HEIGHT @ -'
				LOC. OFFSET	41.9	29.9	13.9	8.8	0.0	0.0		
				LxW OR S.F.	14.10	11.50	1.00	20.00	14.10	11.50		
3	SW	0'	45'	SIG. OR SIGN	SIGNAL	RADAR	RADAR	SIGNAL	SIGN	SIGNAL	SIGNAL	LUMINAIRE ARM @ -' MOUNTING HEIGHT @ -'
				LOC. OFFSET	40.7	28.7	22.7	16.7	9.0	0.0		
				LxW OR S.F.	14.10	1.00	1.00	11.50	20.00	14.10	11.50	
4	NW	0'	45'	SIG. OR SIGN	SIGNAL	RADAR	SIGNAL	RADAR	SIGN	SIGNAL	SIGNAL	LUMINAIRE ARM @ -', MOUNTING HEIGHT @ -'
				LOC. OFFSET	39.0	33.0	27.0	11.3	9.8	0.0		
				LxW OR S.F.	14.10	1.00	11.50	1.00	20.00	14.10	11.50	

SIGNAL SIGN SCHEDULE									
SIGN NO.	LOCATION		ASDS CODE	LEGEND	SIZE HxV (INCHES)	AREA (SQ FT)	BRACING/FRAMING		REMARKS
	POLE NO.	OFFSET					BRACED	FRAMED	
1	1	9.0	D3-102	30TH AVE/OLD RICH HWY	96x30	20.0		X	SEE NOTE 2
2	2	9.0	D3-1B	S CUSHMAN ST	120x24	20.0		X	SEE NOTE 2
3	3	9.0	D3-102	30TH AVE/OLD RICH HWY	96x30	20.0		X	SEE NOTE 2
4	4	9.8	D3-1B	S CUSHMAN ST	120x24	20.0		X	SEE NOTE 2
SUBTOTAL SIGNAL SIGNS						80.0			

POLE-POST DESIGN LOADING SCHEDULE NOTES:

- ORIENT SIGNAL MAST ARM(S) 90° TO THE C OF THE ROADWAY UNLESS NOTED OTHERWISE.
- LUMINAIRE MAST ARM MOUNTING HEIGHT IS FROM ROADWAY FINISHED GRADE TO BOTTOM OF FIXTURE.
- SEE SIGNAL PLAN ON SHEET ___ FOR LUMINAIRE TYPE AND ADJUSTABLE OUTPUT SETTINGS.

SIGNAL SIGN SCHEDULE NOTES:

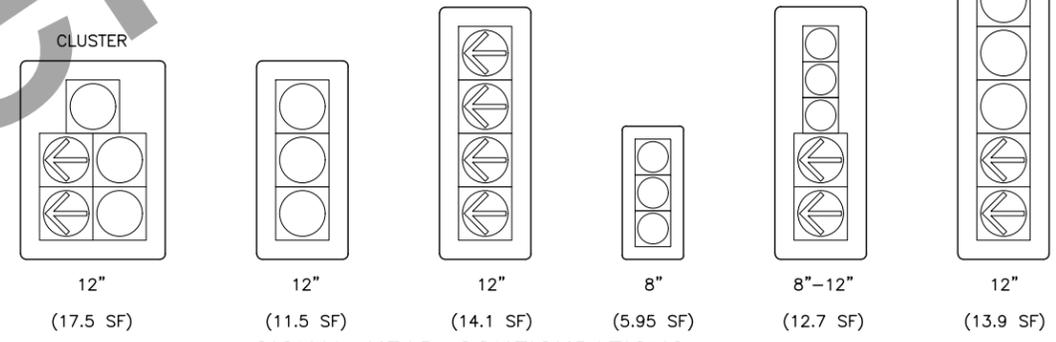
- LOCATION OFFSETS ARE FROM CENTER OF SIGN TO C OF SIGNAL POLE.
- FOR SIGN STREET NAMES, USE 12" INITIAL UPPERCASE LETTERING AND A MINIMUM OF 9" LOWERCASE LETTERING. FOR STREET TYPES, USE 8" INITIAL UPPERCASE LETTERING AND A MINIMUM OF 5" LOWERCASE LETTERING.

SIGNAL HEAD SCHEDULE														
POLE/POST NO.	FACE NO.	INDICATIONS						MOUNTING				REMARKS		
		12" BALL			12" ARROW			MAST ARM		SIDE MTNG. TYPE	TOP OF POST			
		R	Y	G	R	Y	FYA	G	R				Y	G
1	41	X	X	X									D	
	52				L	L	L	L					D	
	42	X	X	X							17.2	X		EXISTING SIGNAL
	71				L	L	L	L			29.2	X		EXISTING SIGNAL
2	21	X	X	X									D	
	32				L	L	L	L					D	
	22	X	X	X							29.9	X		
	51				L	L	L	L			41.9	X		
3	81	X	X	X									D	
	12				L	L	L	L					D	
	82	X	X	X							16.7	X		EXISTING SIGNAL
	31				L	L	L	L			40.7	X		EXISTING SIGNAL
4	61	X	X	X									D	
	72				L	L	L	L					D	
	62	X	X	X							27.0	X		
	11				L	L	L	L			39.0	X		

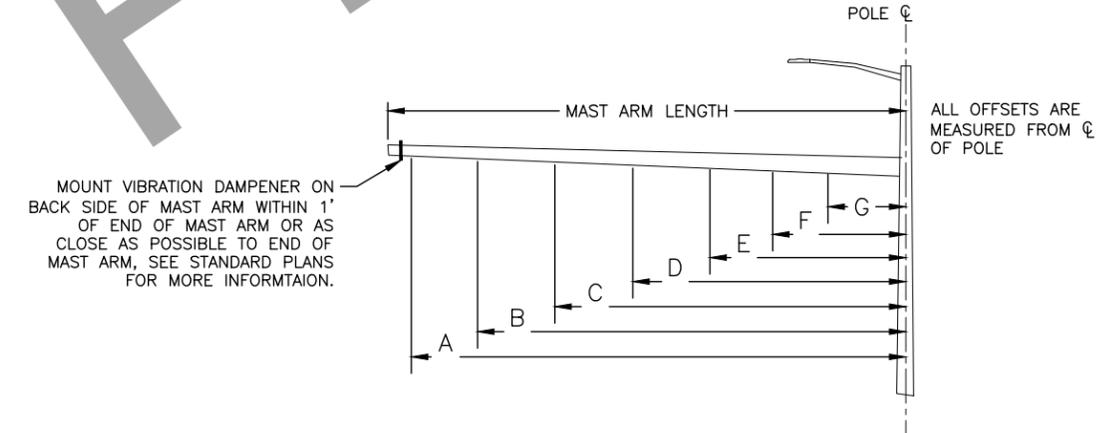
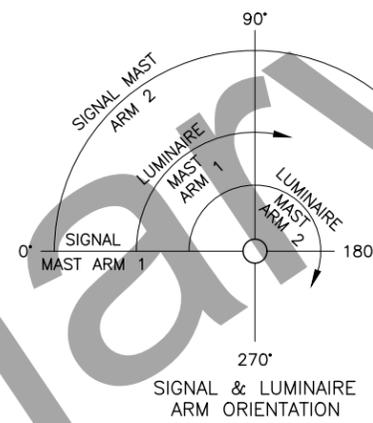
SIGNAL HEAD SCHEDULE NOTES:

- LOCATION OFFSETS ARE FROM CENTER OF SIGNAL HEAD TO C OF SIGNAL POLE.
- FYA = FLASHING YELLOW ARROW.

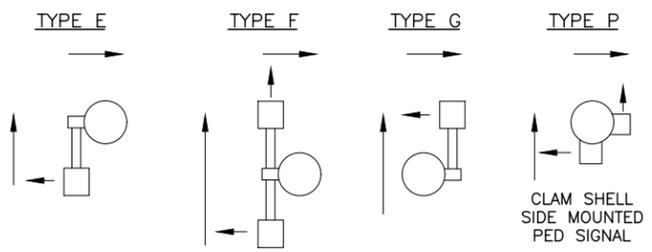
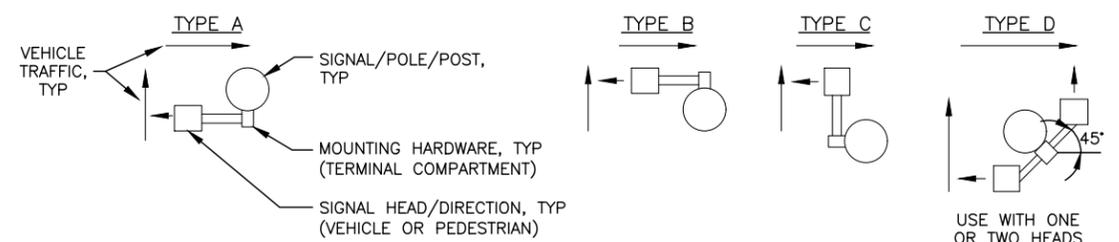
PED SIGNAL HEAD SCHEDULE			
POLE/POST NO.	FACE NO.	MOUNTING TYPE	REMARKS
1	48	P	EXISTING
1	69	P	EXISTING
2	28	P	
2	49	P	
3	29	P	EXISTING
3	88	P	EXISTING
8	68	P	
8	89	P	



SIGNAL HEAD CONFIGURATIONS
(AREAS ARE FOR WIND LOAD CALCULATIONS)
(ARROWS AND BALL INDICATIONS ARE INTERCHANGEABLE)



POLE/POST SIGNAL HEAD SIDE MOUNTING TYPES



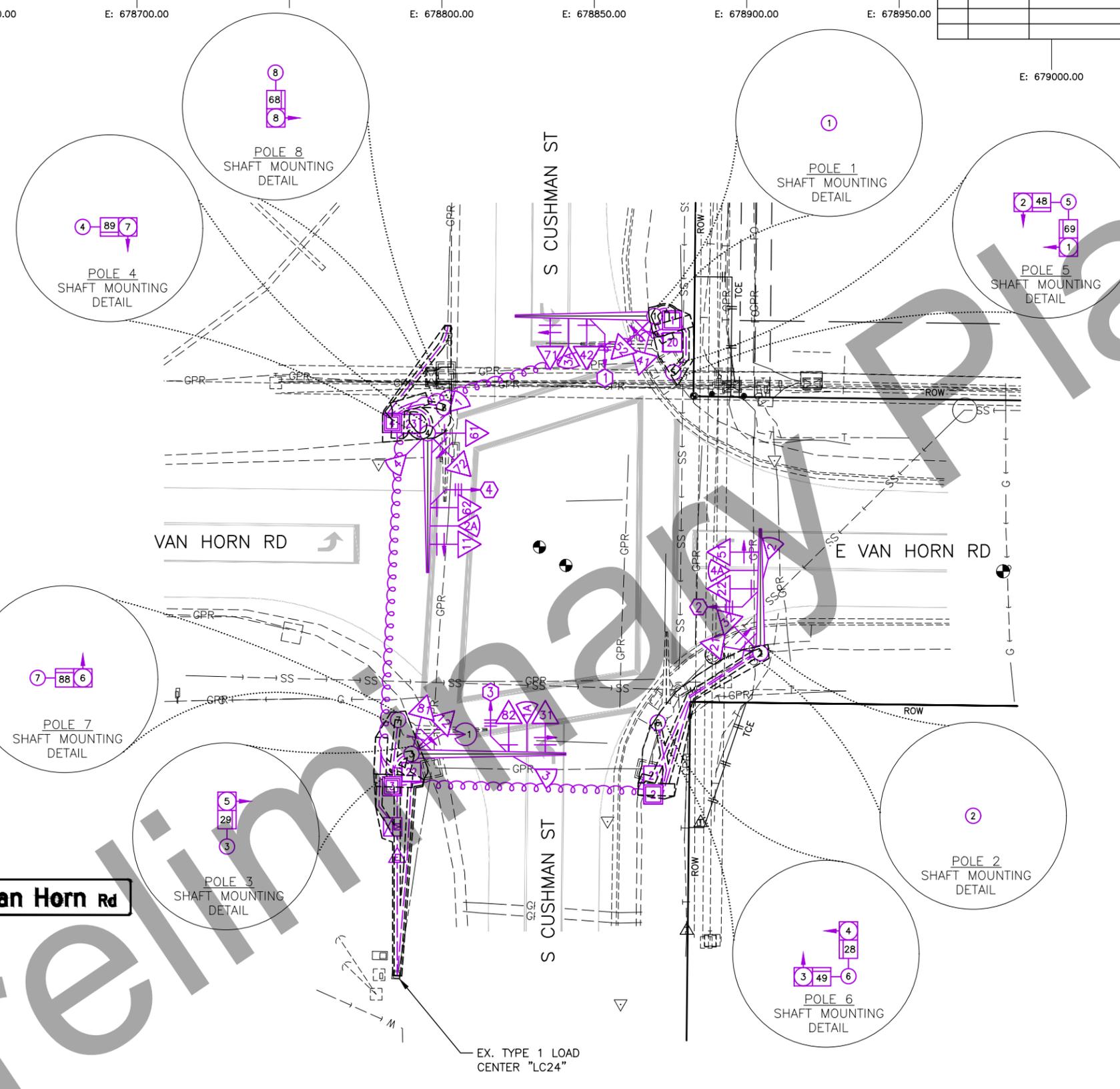
SCHEDULES - S
CUSHMAN ST & 30TH AVE

REVIEW PS&E
6/23/2023
6/23/2023

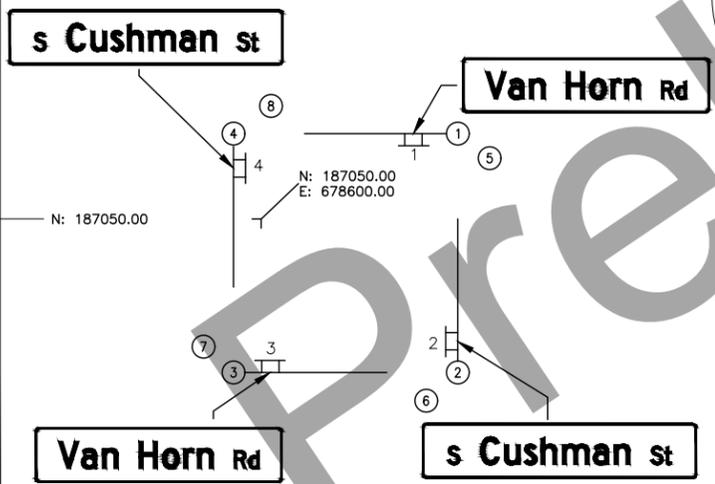
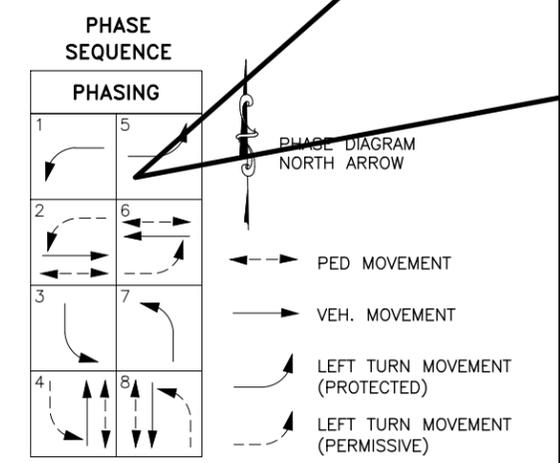
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H93	H145

E: 678600.00 E: 678650.00 E: 678700.00 E: 678800.00 E: 678850.00 E: 678900.00 E: 678950.00 E: 679000.00 E: 679050.00

N: 187350.00 N: 187300.00 N: 187250.00 N: 187200.00 N: 187150.00 N: 187100.00 N: 187050.00



- NOTES:**
- EXISTING SIGNAL LINE WORK IS FROM A COMBINATION OF DESIGN TOPOGRAPHIC SURVEY, AS-BUILTS AND SITE VISITS. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS BEFORE MAKING MODIFICATIONS. NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
 - SALVAGE EXISTING SIGNAL EQUIPMENT PER THE SPECIFICATIONS. THIS WORK SHALL BE PAID FOR UNDER 660.0001.0000 TRAFFIC SIGNAL SYSTEM COMPLETE, S CUSHMAN ST AND VAN HORN RD.
 - INSTALLATION OF NEW SIGNS ON TRAFFIC SIGNAL STRUCTURES WILL BE PAID FOR UNDER PAY ITEM 615.0001.0000.
 - INSTALL NEW TRANSFORMER PER DETAIL ON SHEET H124. PAYMENT SHALL BE MADE UNDER 661.0006.0000 TRANSFORMERS, 5KVA.
 - EXISTING SIGNAL POLES WILL BE USED FOR TEMPORARY SIGNALIZATION. USE OH FEEDS FOR EXISTING SIGNALS FROM EXISTING TRAFFIC CONTROLLER AS NEEDED.
 - TEMPORARY POWER MAY BE REQUIRED DURING CONSTRUCTION AND/OR SWITCH OVER.



SIGNAL PLAN – S CUSHMAN ST & VAN HORN RD

REVIEW PS&E
6/23/2023
6/23/2023

PLANS DEVELOPED BY: KINNEY ENGINEERING, LLC 3909 Arctic Blvd, Suite 400 Anchorage, Alaska 99503 (907) 346-2373 CERT. OF AUTH. NO. 1102
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H94	H145

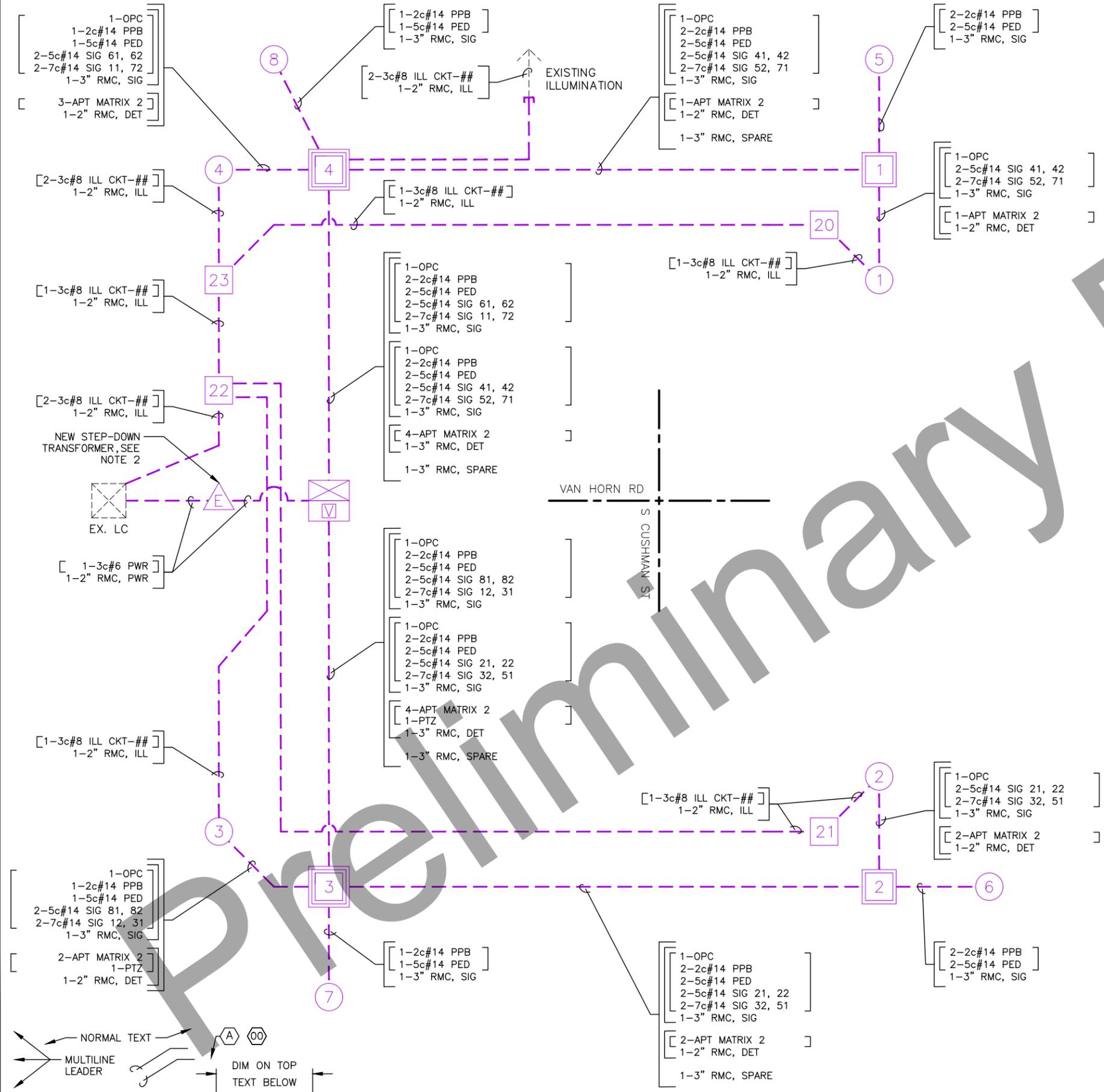
WIRING DIAGRAM CODING LEGEND		
OPC = OPTICOM CABLE	5c#14	TRAFFIC SIGNALS
LL = LOOP LEAD-IN	7c#14	PROTECTED-PERMITTED SIGNALS
INT = INTERCONNECT CABLE	5c#14	PEDESTRIAN SIGNALS
PWR = POWER CONDUCTORS FOR SIGNAL CONTROLLER	2c#14	PEDESTRIAN PUSH-BUTTON
T = TRANSFORMER	3pr#18	LOOP LEAD-IN CABLE & VDET
PTZ = PAN, TILT, ZOOM CAMERA	6pr#18	
GND = GROUND	9pr#18	
ILL = ILLUMINATION	15pr#18	
RMC = RIGID METAL CONDUIT	3c#8	ILLUMINATION
PVC = POLYVINYLCHLORIDE CONDUIT	3c#6	SIGNAL POWER
HDPE = HIGH DENSITY POLYETHYLENE	1c#8	BARE COPPER GROUND
PPB = PEDESTRIAN PUSH-BUTTON	18pr#19	PE-39 INTERCONNECT CABLE
SIG# = SIGNAL HEAD NUMBER		
PED = PEDESTRIAN SIGNAL	1c#6	BARE COPPER GROUND
DET = DETECTION CONDUIT	APT MATRIX 2	RDET HOME RUN CABLE
F = FUTURE USE	CAT-6a	PTZ DATA
VDET = VIDEO DETECTION	SMFO	SINGLE MODE FIBER OPTIC
EX = EXISTING		
AAWF = ACTIVE ADVANCED WARNING FLASHER		

NOTES:

- INSTALL 1-1c#8 BARE COPPER GROUND CONDUCTOR IN ALL CONDUITS UNLESS ANOTHER GROUND CONDUCTOR IS SPECIFIED.
- POST MOUNTED 480/120V STEP-DOWN TRANSFORMER WITH PRIMARY AND SECONDARY DISCONNECTS. SEE SHEET H124 FOR SIGNAL CONTROLLER XFMR AND DISCONNECT DETAIL.
- SIGNAL POWER AND INTERSECTION CONDUIT AND WIRING TO SITE 22 SHALL BE PAID FOR UNDER 660.0001.0000 TRAFFIC SIGNAL SYSTEM COMPLETE, S CUSHMAN ST AND VAN HORN RD.

WIRING LEGEND:

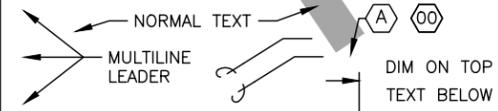
- 1/c INDICATES NEW INTERCONNECT CONDUIT RUN
- 1/c INDICATES EXISTING INTERCONNECT CONDUIT RUN
- INDICATES EXISTING CONDUIT RUN
- INDICATES NEW RIGID METAL CONDUIT RUN(S)
- INDICATES THE CONNECTION BETWEEN EXISTING AND NEW CONDUIT



WIRING DIAGRAM - S
CUSHMAN ST & VAN HORN
RD

REVIEW PS&E
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PLANS DEVELOPED BY: KINNEY ENGINEERING, LLC 3909 Arctic Blvd, Suite 400 Anchorage, Alaska 99503 (907) 346-2373 CERT. OF AUTH. NO. 1102
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H95	H145

BASE & JUNCTION BOX SCHEDULE												
LOCATION		DESCRIPTION			BASE TYPE*			JUNCTION BOX TYPE				REMARKS
NORTHING	EASTING	POLE NO.	JUNCTION BOX NO.	CONTROLLER	CIDH	P	A	I	II	III	IV	
187269.348	678869.711	1			X							PROPOSED
187159.062	678904.480	2			X							PROPOSED
187126.032	678790.021	3			X							PROPOSED
187231.025	678795.360	4			X							PROPOSED
187250.890	678875.895	5					X					PROPOSED
187133.446	678869.349	6					X					PROPOSED
187137.151	678785.659	7					X					PROPOSED
187239.353	678800.731	8					X					PROPOSED
187266.266	678875.639		1						X			PROPOSED
187114.472	678869.337		2						X			PROPOSED
187116.040	678785.360		3							X		PROPOSED
187234.367	678784.115		4							X		PROPOSED
187263.111	678875.639		20					X				PROPOSED
187117.627	678869.337		21					X				PROPOSED
187119.735	678788.515		22					X				PROPOSED
187234.087	678788.515		23					X				PROPOSED
187102.185	678783.860			X								PROPOSED

BASE & JUNCTION BOX NOTES:

- INSTALL ON PUSH BUTTON POST BASE TYPE B, SEE STD. DWG, T-31.00.
- USE ALTERNATE "PELCO" POST BASE, SEE STD. DWG, T-31.01.
- INSTALL JUNCTION BOX/FOUNDATION AT BACK OF SIDEWALK.

*P = PRECAST BASE (FOUNDATION)
 A = TYPE "A" SIGNAL BASE POST FOUNDATION. SEE STD. DWG, T-31.00
 CIDH = CAST IN DRILLED HOLE

PEDESTRIAN DETECTION SCHEDULE			
POLE	PUSH BUTTON	PHASE	REMARKS
1	1	6	SEE NOTE 1
5	2	4	SEE NOTE 2
2	3	4	SEE NOTE 1
6	4	2	SEE NOTE 2
7	5	2	SEE NOTE 1
3	6	8	SEE NOTE 2
4	7	8	SEE NOTE 1
8	8	6	SEE NOTE 2

PEDESTRIAN DETECTION NOTES:

- INSTALL AN R10-3eL SIGN ABOVE PEDESTRIAN PUSH BUTTON. SIGN SHALL NOT BE MEASURED FOR PAYMENT AND IS SUBSIDIARY TO TRAFFIC SIGNAL PAY ITEMS.
- INSTALL AN R10-3eR SIGN ABOVE PEDESTRIAN PUSH BUTTON. SIGN SHALL NOT BE MEASURED FOR PAYMENT AND IS SUBSIDIARY TO TRAFFIC SIGNAL PAY ITEMS.

RADAR DETECTION EQUIPMENT	
QTY	DESCRIPTION
0	SMARTSENSOR MATRIX (WX-SS-225)
0	PELCO MOUNT (WX-SS-611)
0	SMARTSENSOR 6-CONDUCTOR CABLE (WX-SS-704-XXX)
0	SMARTSENSOR ADVANCED EXTENDED RANGE (WX-SS-200E)

NEMA CLOSURE EQUIPMENT	
QTY	DESCRIPTION
0	CLICK 710, SMARTSENSOR 6-CONDUCTOR CABLE JUNCTION BOX (WX-SS-710)

CABINET EQUIPMENT	
QTY	DESCRIPTION
0	CLICK! 112 RACK CARDS (WX-CLK-112)
0	CLICK! 114 RACK CARDS (WX-CLK-114)

QTY	DESCRIPTION
0	INTERSECTION PREASSEMBLED BACKPLATE -AC, FOUR SENSOR, (WX-SS-B01-0005)
0	1 CLICK! 204 4 AMP POWER SUPPLY
0	5 CLICK! 210-02 2 AMP CIRCUIT BREAKERS (WX-CLK-210)
0	2 CLICK! 222, SMARTSENSOR SURGE PROTECTOR (WX-CLK-222)
0	1 CLICK! 230, AC SURGE PROTECTOR (WX-CLK-230)
0	1 T-BUS 5-SCREW TERMINAL BLOCKS (LEFT END)
0	5 T-BUS CONNECTORS (POWER AND COMMUNICATION)
0	1 T-BUS CONNECTOR (POWER ONLY)
0	5 END BRACKETS WITH LABELS
0	1 END BRACKET WITHOUT LABEL
0	4 TERMINAL BLOCKS FOR AC LINE INPUT: SPRING CAGE TO PLUG SPRING
0	CAGE 10 AWG (2 GROUNDED)
0	28 TERMINAL BLOCKS FOR CABLE TERMINATION: INSULATION DISPLACEMENT
0	TO PLUG INSULATION DISPLACEMENT (4 GROUNDED)
0	MOUNTING PLATFORM: TRAFFIC CABINET BACKPLATE
0	1 8-FT POWER CORD
0	1 8-FT 14 AWG GROUND CABLE
0	1 5-FT BLACK RJ-11 PATCH CABLE
0	4 5-FT WHITE RJ-11 PATCH CABLES
0	CLICK! 650, CABINET INTERFACE (WX-CLK-650)

OPTICOM DETECTOR SCHEDULE					
LOCATION	DET. NO.	PHASE CALL	FACING DIR.	PREEMPTOR PRIORITY	REMARKS
ON TOP OF SIGNAL HEAD 42	1	4, 7	SOUTH		
ON TOP OF SIGNAL HEAD 22	2	2, 5	WEST		
ON TOP OF SIGNAL HEAD 82	3	3, 8	NORTH		
ON TOP OF SIGNAL HEAD 62	4	1, 5	EAST		

—(A)—(B) OPTICOM DETECTOR NUMBER

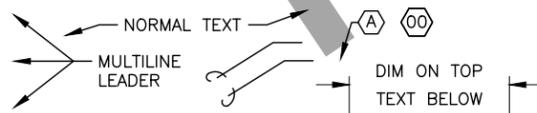
COMMUNICATION EQUIPMENT	
QTY	DESCRIPTION
0	RUGGEDCOM RSG920P ETHERNET SWITCH OR APPROVED EQUAL
0	12-FIBER ITS DROP CABLE
0	LC SMF PATCH CABLE
0	CAT-6A CABLE (6')

RADAR DETECTION SCHEDULE						
DET. NO.	PHASE CALL	TYPE	FACING DIR.	POLE NO.	LOCATION	RADAR TYPE
1	3, 8	STOP BAR	NORTHEAST	4	SIGNAL SHAFT	SMARTSENSOR MATRIX
2	1, 6	STOP BAR	NORTH	2	SIGNAL MASTARM	SMARTSENSOR MATRIX
3	4, 7	STOP BAR	SOUTHEAST	3	SIGNAL MASTARM	SMARTSENSOR MATRIX
4	2, 5	STOP BAR	SOUTHWEST	4	SIGNAL SHAFT	SMARTSENSOR MATRIX
1A	3, 8	ADVANCE	NORTH	3	SIGNAL MASTARM	SMARTSENSOR ADVANCE
2A	1, 6	ADVANCE	EAST	4	SIGNAL MASTARM	SMARTSENSOR ADVANCE
3A	4, 7	ADVANCE	SOUTH	1	SIGNAL MASTARM	SMARTSENSOR ADVANCE
4A	2, 5	ADVANCE	WEST	2	SIGNAL MASTARM	SMARTSENSOR ADVANCE

—(A)—(B) RADAR DETECTOR NUMBER

FLASH PROGRAM COLOR								
PHASE	1	2	3	4	5	6	7	8
COLOR	R	R	R	R	R	R	R	R

ADDITIONAL EQUIPMENT	
QTY	DESCRIPTION
0	SMARTSENSOR MANAGER ADVANCE SOFTWARE (WX-550-0001)
0	SMARTSENSOR MANAGER MATRIX SOFTWARE (WX-550-0004)



SCHEDULES - S
 CUSHMAN ST & VAN
 HORN RD

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 6/23/2023
 6/23/2023

PLANS DEVELOPED BY: KINNEY ENGINEERING, LLC 3909 Arctic Blvd, Suite 400 Anchorage, Alaska 99503 (907) 346-2373 CERT. OF AUTH. NO. 1102
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POLE-POST DESIGN LOADING SCHEDULE

POLE NO.	CORNER	ILLUMINATION # ARM L. (FT)	SIGNAL ARM L. (FT)		A	B	C	D	E	F	G	H	REMARKS
1	NE	0'	45'	SIG. OR SIGN	SIGNAL	RADAR	SIGNAL	SIGN	SIGNAL	SIGNAL			LUMINAIRE ARM @ -' MOUNTING HEIGHT @ -'
				LOC. OFFSET	34.2	28.2	22.2	7.9	0.0	0.0			
				LxW OR S.F.	14.10	1.00	11.50	18.00	14.10	11.50			
2	SE	LUMINAIRE 1 - 0' LUMINAIRE 2 - 0'	40'	SIG. OR SIGN	SIGNAL	RADAR	RADAR	SIGNAL	SIGN	SIGNAL	SIGNAL		LUMINAIRE ARM 1 @ -' MOUNTING HEIGHT @ -' LUMINAIRE ARM 2 @ -' MOUNTING HEIGHT @ -'
				LOC. OFFSET	33.0	27.0	21.0	21.0	10.5	0.0	0.0		
				LxW OR S.F.	14.10	1.00	1.00	11.50	20.00	14.10	11.50		
3	SW	0'	50'	SIG. OR SIGN	SIGNAL	RADAR	RADAR	SIGNAL	SIGN	SIGNAL	SIGNAL		LUMINAIRE ARM @ -' MOUNTING HEIGHT @ -'
				LOC. OFFSET	43.9	37.9	31.9	31.9	10.0	0.0	0.0		
				LxW OR S.F.	14.10	1.00	1.00	11.50	18.00	14.10	11.50		
4	NW	0'	45'	SIG. OR SIGN	SIGNAL	RADAR	SIGNAL	SIGN	RADAR	SIGNAL	SIGNAL	RADAR	LUMINAIRE ARM @ -' MOUNTING HEIGHT @ -'
				LOC. OFFSET	36.4	30.7	24.7	8.0	0.0	0.0	0.0	0.0	
				LxW OR S.F.	14.10	1.00	11.50	20.00	1.00	14.10	11.50	1.00	

POLE-POST DESIGN LOADING SCHEDULE NOTES:

- ORIENT SIGNAL MAST ARM(S) 90° TO THE C OF THE ROADWAY UNLESS NOTED OTHERWISE.
- LUMINAIRE MAST ARM MOUNTING HEIGHT IS FROM ROADWAY FINISHED GRADE TO BOTTOM OF FIXTURE.
- SEE SIGNAL PLAN ON SHEET ___ FOR LUMINAIRE TYPE AND ADJUSTABLE OUTPUT SETTINGS.

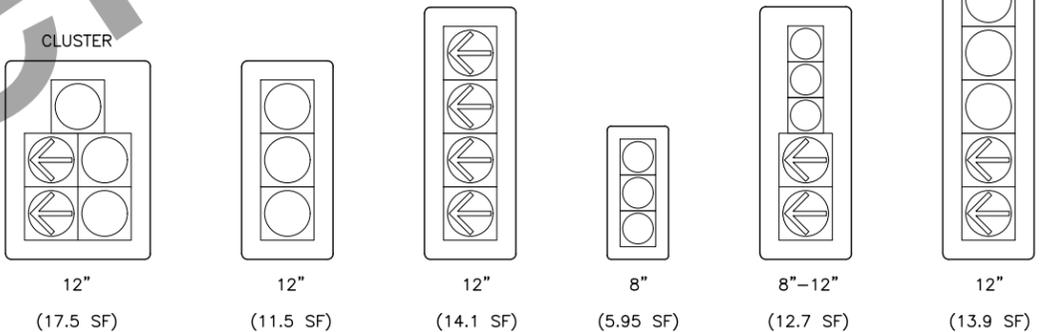
SIGNAL HEAD SCHEDULE

POLE/POST NO.	FACE NO.	INDICATIONS												MOUNTING				REMARKS	
		12" BALL			12" ARROW				8" BALL					MAST ARM		SIDE MTNG. TYPE	TOP OF POST		
		R	Y	G	R	Y	FYA	G	R	Y	G	LOC. OFFSET	ELEV. PLUMB						
1	41	X	X	X														D	
	52				L	L	L	L										D	
	42	X	X	X											22.2	X			
	71				L	L	L	L							34.2	X			
2	21	X	X	X														D	
	32				L	L	L	L										D	
	22	X	X	X											21.0	X			
	51				L	L	L	L							33.0	X			
3	81	X	X	X														D	
	12				L	L	L	L										D	
	82	X	X	X											31.9	X			
	31				L	L	L	L							43.9	X			
4	61	X	X	X														D	
	72				L	L	L	L										D	
	62	X	X	X											24.4	X			
	11				L	L	L	L							36.4	X			

SIGNAL HEAD SCHEDULE NOTES:

- LOCATION OFFSETS ARE FROM CENTER OF SIGNAL HEAD TO C OF SIGNAL POLE.
- FYA = FLASHING YELLOW ARROW.

POLE/POST NO.	FACE NO.	PED SIGNAL HEAD SCHEDULE	
		MOUNTING TYPE	REMARKS
3	29	P	
4	89	P	
5	48	P	
5	69	P	
6	28	P	
6	49	P	
7	88	P	
8	68	P	



SIGNAL HEAD CONFIGURATIONS
(AREAS ARE FOR WIND LOAD CALCULATIONS)
(ARROWS AND BALL INDICATIONS ARE INTERCHANGEABLE)

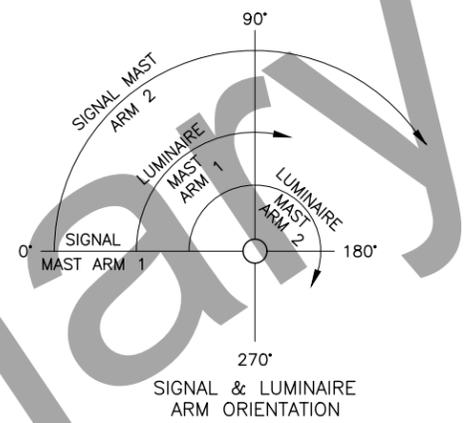
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H96	H145

SIGNAL SIGN SCHEDULE

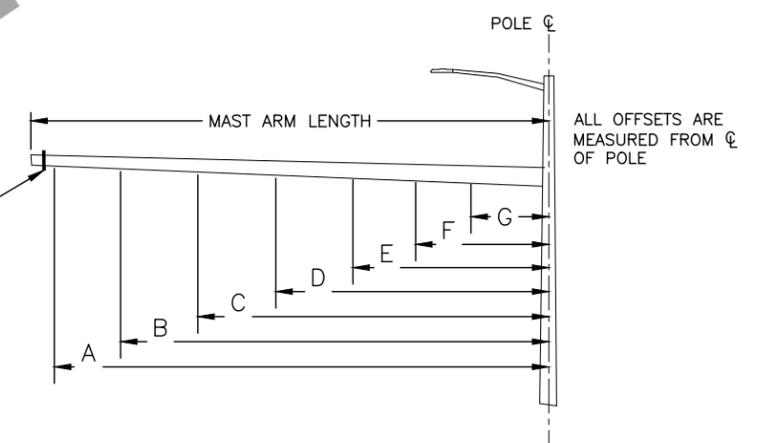
SIGN NO.	LOCATION		ASDS CODE	LEGEND	SIZE HxV (INCHES)	AREA (SQ FT)	BRACING/FRAMING		REMARKS
	POLE NO.	OFFSET					BRACED	FRAMED	
1	1	7.9	D3-1B	VAN HORN RD	108x24	18.0		X	SEE NOTE 2
2	2	10.5	D3-1B	S CUSHMAN ST	120x24	20.0		X	SEE NOTE 2
3	3	10.0	D3-1B	VAN HORN RD	108x24	18.0		X	SEE NOTE 2
4	4	8.0	D3-1B	S CUSHMAN ST	120x24	20.0		X	SEE NOTE 2
SUBTOTAL SIGNAL SIGNS						76.0			

SIGNAL SIGN SCHEDULE NOTES:

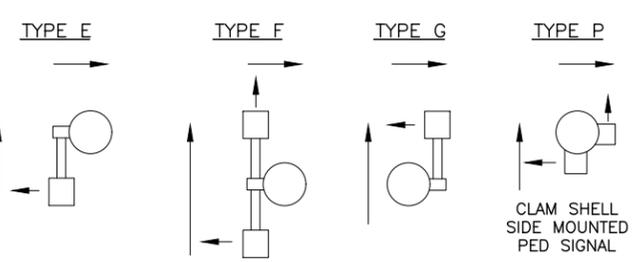
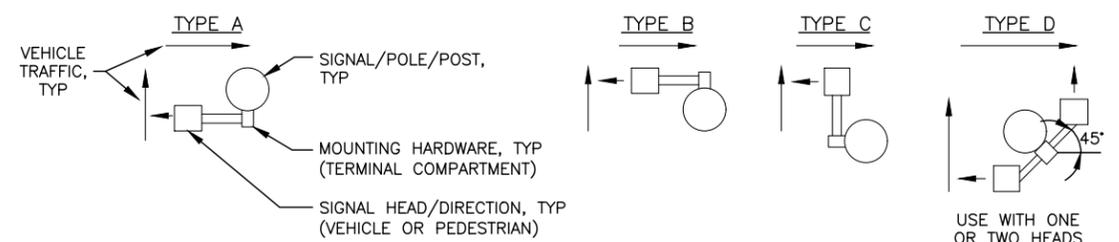
- LOCATION OFFSETS ARE FROM CENTER OF SIGN TO C OF SIGNAL POLE.
- FOR SIGN STREET NAMES, USE 12" INITIAL UPPERCASE LETTERING AND A MINIMUM OF 9" LOWERCASE LETTERING. FOR STREET TYPES, USE 8" INITIAL UPPERCASE LETTERING AND A MINIMUM OF 5" LOWERCASE LETTERING.



MOUNT VIBRATION DAMPENER ON BACK SIDE OF MAST ARM WITHIN 1' OF END OF MAST ARM OR AS CLOSE AS POSSIBLE TO END OF MAST ARM, SEE STANDARD PLANS FOR MORE INFORMATION.



POLE/POST SIGNAL HEAD SIDE MOUNTING TYPES

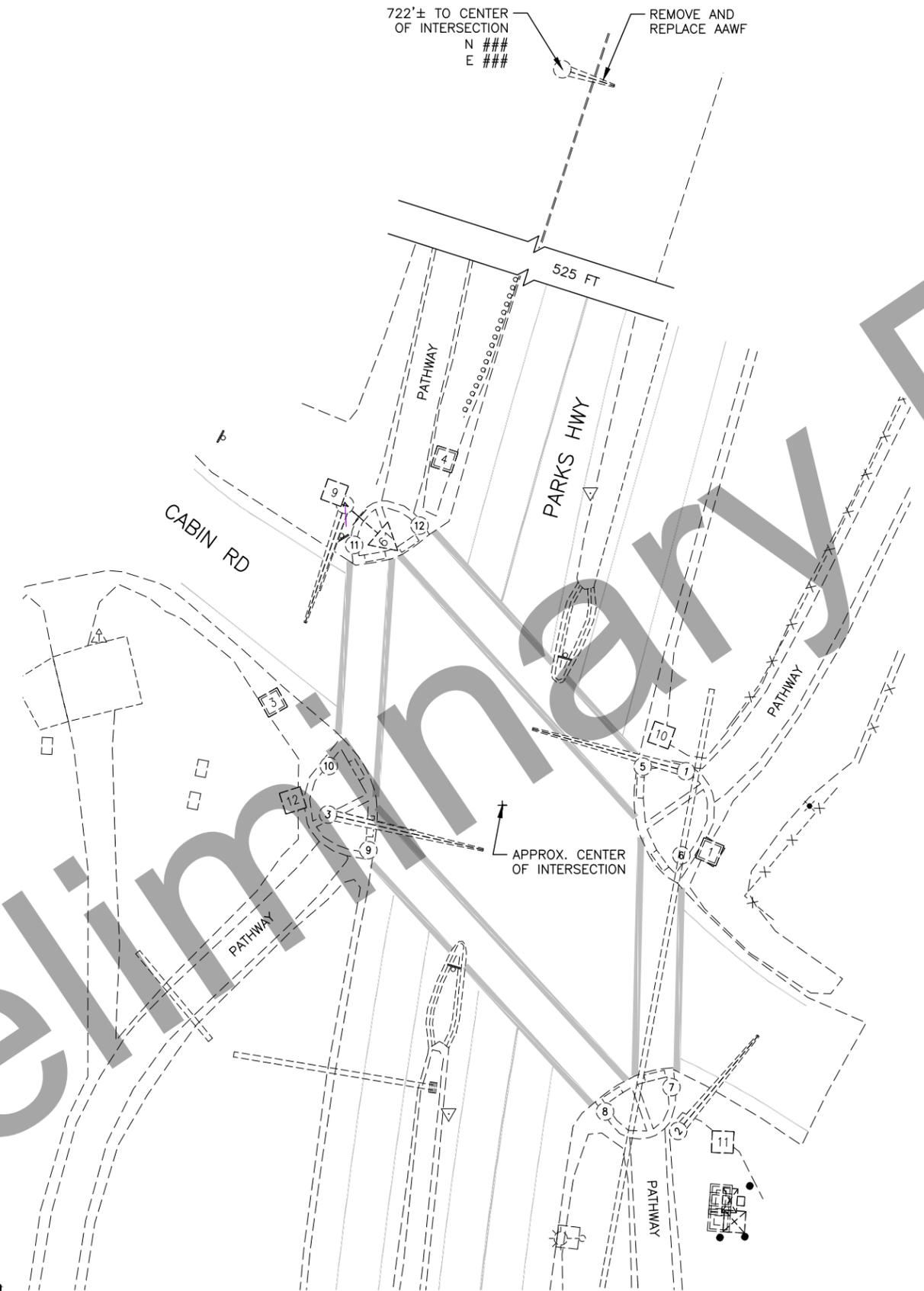
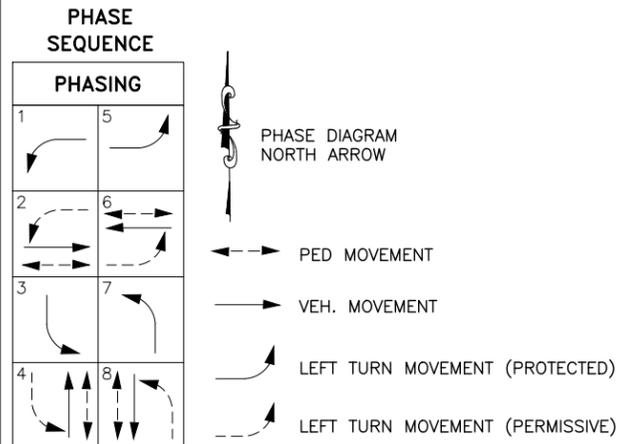


SCHEDULES - S
CUSHMAN ST & VAN
HORN RD

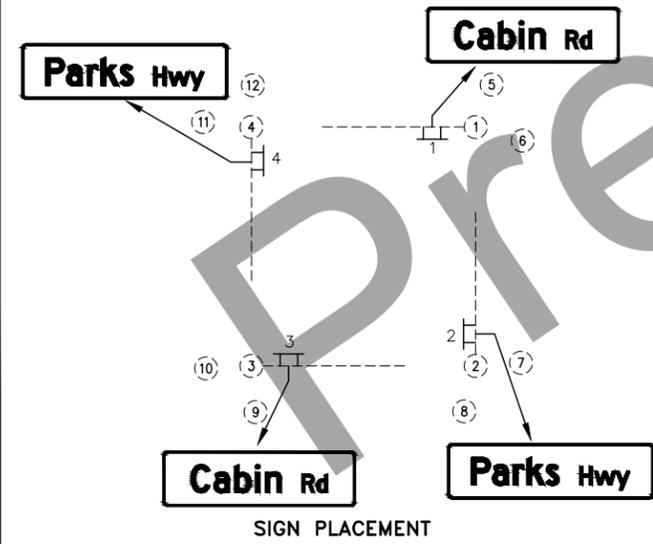
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6/23/2023
6/23/2023

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H97	H145

PLANS DEVELOPED BY: KINNEY ENGINEERING, LLC 3909 Arctic Blvd, Suite 400 Anchorage, Alaska 99503 (907) 346-2373 CERT. OF AUTH. NO. 1102
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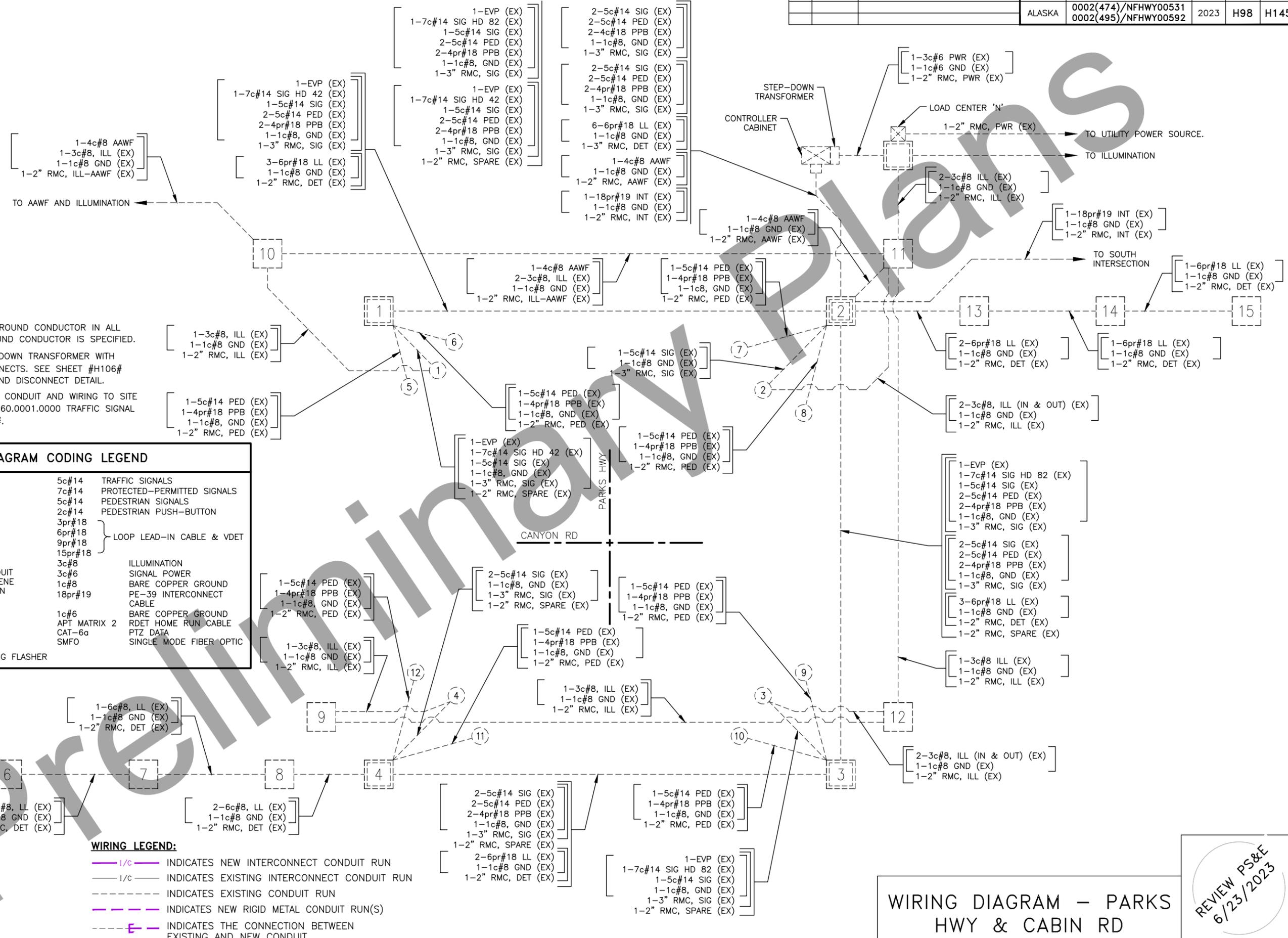
- NOTES:**
- EXISTING SIGNAL LINE WORK IS FROM A COMBINATION OF DESIGN TOPOGRAPHIC SURVEY, AS-BUILTS AND SITE VISITS. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS BEFORE MAKING MODIFICATIONS. NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
 - SALVAGE EXISTING SIGNAL EQUIPMENT PER THE SPECIFICATIONS. THIS WORK SHALL BE PAID FOR UNDER 660.0001.0000 TRAFFIC SIGNAL SYSTEM COMPLETE, #####/#####.
 - INSTALLATION OF NEW SIGNS ON TRAFFIC SIGNAL STRUCTURES WILL BE PAID FOR UNDER PAY ITEM 615.0001.0000.
 - INSTALL NEW SIGNAL CONTROLLER TRANSFORMER AND DISCONNECT AS INDICATED IN TRANSFORMER SUMMARY TABLE SHEET #___#. PAYMENT SHALL BE MADE UNDER PAY ITEM 661.0006.0000 TRANSFORMERS, 5KVA. SEE INSTALLATION DETAIL ON SHEET ___.
 - SIGNAL POLE LUMINAIRES SHALL BE PER LUMINAIRE SCHEDULE ON SHEET ___, SEE BELOW FOR TYPE. SEE SHEET ___ FOR REQUIRED MAST ARMS AND MOUNTING HEIGHTS. ADJUST LUMINAIRES FOR OUTPUT AS FOLLOWS:
 - POLE 1: TYPE # SET TO ###%
 - POLE 2 LUMINAIRE 1: TYPE # SET TO ###%
 - POLE 2 LUMINAIRE 2: TYPE # SET TO ###%
 - POLE 3: TYPE E SET TO ###%
 - POLE 4: TYPE D SET TO ###%
 - ROW TO BE DETERMINED



SIGNAL PLAN – PARKS HWY & CABIN RD

REVIEW PS&E
6/23/2023
6/23/2023

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H98	H145



- NOTES:**
- INSTALL 1-1c#8 BARE COPPER GROUND CONDUCTOR IN ALL CONDUITS UNLESS ANOTHER GROUND CONDUCTOR IS SPECIFIED.
 - POST MOUNTED 480/120V STEP-DOWN TRANSFORMER WITH PRIMARY AND SECONDARY DISCONNECTS. SEE SHEET #H106# FOR SIGNAL CONTROLLER XFMR AND DISCONNECT DETAIL.
 - SIGNAL POWER AND INTERSECTION CONDUIT AND WIRING TO SITE ## SHALL BE PAID FOR UNDER 660.0001.0000 TRAFFIC SIGNAL SYSTEM COMPLETE, #####/#####.

WIRING DIAGRAM CODING LEGEND		
OPC = OPTICOM CABLE	5c#14	TRAFFIC SIGNALS
LL = LOOP LEAD-IN	7c#14	PROTECTED-PERMITTED SIGNALS
INT = INTERCONNECT CABLE	5c#14	PEDESTRIAN SIGNALS
PWR = POWER CONDUCTORS	2c#14	PEDESTRIAN PUSH-BUTTON
T = TRANSFORMER	3pr#18	LOOP LEAD-IN CABLE & VDET
PTZ = PAN, TILT, ZOOM CAMERA	6pr#18	
GND = GROUND	9pr#18	
ILL = ILLUMINATION	15pr#18	
RMC = RIGID METAL CONDUIT	3c#8	ILLUMINATION
PVC = POLYVINYLCHLORIDE CONDUIT	3c#6	SIGNAL POWER
HDPE = HIGH DENSITY POLYETHYLENE	1c#8	BARE COPPER GROUND
PPB = PEDESTRIAN PUSH-BUTTON	18pr#19	PE-39 INTERCONNECT CABLE
SIG# = SIGNAL HEAD NUMBER	1c#6	BARE COPPER GROUND
PED = PEDESTRIAN SIGNAL	APT MATRIX 2	RDET HOME RUN CABLE
DET = DETECTION CONDUIT	CAT-6a	PTZ DATA
F = FUTURE USE	SMFO	SINGLE MODE FIBER OPTIC
VDET = VIDEO DETECTION		
EX = EXISTING		
AAWF = ACTIVE ADVANCED WARNING FLASHER		

- WIRING LEGEND:**
- 1/c — INDICATES NEW INTERCONNECT CONDUIT RUN
 - - - 1/c - - - INDICATES EXISTING INTERCONNECT CONDUIT RUN
 - - - - - INDICATES EXISTING CONDUIT RUN
 - - - - - INDICATES NEW RIGID METAL CONDUIT RUN(S)
 - - - - - F - - - - - INDICATES THE CONNECTION BETWEEN EXISTING AND NEW CONDUIT

WIRING DIAGRAM – PARKS HWY & CABIN RD

REVIEW PS&E
6/23/2023
6/23/2023

PLANS DEVELOPED BY: KINNEY ENGINEERING, LLC 3909 Arctic Blvd, Suite 400 Anchorage, Alaska 99503 (907) 346-2373 CERT. OF AUTH. NO. 1102
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H99	H145

BASE & JUNCTION BOX SCHEDULE												
LOCATION		DESCRIPTION			BASE TYPE*			JUNCTION BOX TYPE				REMARKS
STATION	OFFSET	POLE NO.	JUNCTION BOX NO.	CONTROLLER	CIDH	P	A	IA	II	III	IV	
		1			X							
		2			X							SEE NOTE 3
		3			X							
		4			X							
		5					X					SEE NOTE 2
		6					X					SEE NOTES 2 & 3
		7					X					SEE NOTE 2
		8					X					SEE NOTE 2
			1								X	
			2						X			
			3						X			
			4							X		
				X								

BASE & JUNCTION BOX NOTES:

1. INSTALL ON PUSH BUTTON POST BASE TYPE B, SEE STD. DWG, T-31.00.
2. USE ALTERNATE "PELCO" POST BASE, SEE STD. DWG, T-31.01.
3. INSTALL JUNCTION BOX/FOUNDATION AT BACK OF SIDEWALK.

*P = PRECAST BASE (FOUNDATION)
 A = TYPE "A" SIGNAL BASE POST FOUNDATION.
 SEE STD. DWG, T-31.00
 CIDH = CAST IN DRILLED HOLE

PEDESTRIAN DETECTION SCHEDULE			
POLE	PUSH BUTTON	PHASE	REMARKS
1	1	6	SEE NOTE 1
5	2	4	SEE NOTE 2
2	3	4	SEE NOTE 1
6	4	2	SEE NOTE 2
7	5	2	SEE NOTE 1
3	6	8	SEE NOTE 2
4	7	8	SEE NOTE 1
8	8	6	SEE NOTE 2

PEDESTRIAN DETECTION NOTES:

1. INSTALL AN R10-3eL SIGN ABOVE PEDESTRIAN PUSH BUTTON. SIGN SHALL NOT BE MEASURED FOR PAYMENT AND IS SUBSIDIARY TO TRAFFIC SIGNAL PAY ITEMS.
2. INSTALL AN R10-3eR SIGN ABOVE PEDESTRIAN PUSH BUTTON. SIGN SHALL NOT BE MEASURED FOR PAYMENT AND IS SUBSIDIARY TO TRAFFIC SIGNAL PAY ITEMS.

RADAR DETECTION EQUIPMENT	
QTY	DESCRIPTION
0	SMARTSENSOR MATRIX (WX-SS-225)
0	PELCO MOUNT (WX-SS-611)
0	SMARTSENSOR 6-CONDUCTOR CABLE (WX-SS-704-XXX)
0	SMARTSENSOR ADVANCED EXTENDED RANGE (WX-SS-200E)

NEMA CLOSURE EQUIPMENT	
QTY	DESCRIPTION
0	CLICK! 710, SMARTSENSOR 6-CONDUCTOR CABLE JUNCTION BOX (WX-SS-710)

CABINET EQUIPMENT	
QTY	DESCRIPTION
0	CLICK! 112 RACK CARDS (WX-CLK-112)
0	CLICK! 114 RACK CARDS (WX-CLK-114)

CABINET EQUIPMENT	
QTY	DESCRIPTION
0	INTERSECTION PREASSEMBLED BACKPLATE -AC, FOUR SENSOR, (WX-SS-B01-0005)
0	1 CLICK! 204 4 AMP POWER SUPPLY
0	5 CLICK! 210-02 2 AMP CIRCUIT BREAKERS (WX-CLK-210)
0	2 CLICK! 222, SMARTSENSOR SURGE PROTECTOR (WX-CLK-222)
0	1 CLICK! 230, AC SURGE PROTECTOR (WX-CLK-230)
0	1 T-BUS 5-SCREW TERMINAL BLOCKS (LEFT END)
0	5 T-BUS CONNECTORS (POWER AND COMMUNICATION)
0	1 T-BUS CONNECTOR (POWER ONLY)
0	5 END BRACKETS WITH LABELS
0	1 END BRACKET WITHOUT LABEL
0	4 TERMINAL BLOCKS FOR AC LINE INPUT: SPRING CAGE TO PLUG SPRING
0	CAGE 10 AWG (2 GROUNDED)
0	28 TERMINAL BLOCKS FOR CABLE TERMINATION: INSULATION DISPLACEMENT
0	TO PLUG INSULATION DISPLACEMENT (4 GROUNDED)
0	MOUNTING PLATFORM: TRAFFIC CABINET BACKPLATE
0	1 8-FT POWER CORD
0	1 8-FT 14 AWG GROUND CABLE
0	1 5-FT BLACK RJ-11 PATCH CABLE
0	4 5-FT WHITE RJ-11 PATCH CABLES
0	CLICK! 650, CABINET INTERFACE (WX-CLK-650)

OPTICOM DETECTOR SCHEDULE					
LOCATION	DET. NO.	PHASE CALL	FACING DIR.	PREEMPTOR PRIORITY	REMARKS
ON TOP OF SIGNAL HEAD ---	1	4, 7	SOUTH		
ON TOP OF SIGNAL HEAD ---	2	2, 5	WEST		
ON TOP OF SIGNAL HEAD ---	3	3, 8	NORTH		
ON TOP OF SIGNAL HEAD ---	4	1, 6	EAST		

—||—(A) OPTICOM DETECTOR NUMBER

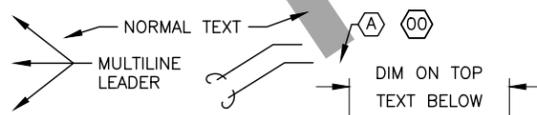
COMMUNICATION EQUIPMENT	
QTY	DESCRIPTION
0	RUGGEDCOM RSG920P ETHERNET SWITCH OR APPROVED EQUAL
0	12-FIBER ITS DROP CABLE
0	LC SMF PATCH CABLE
0	CAT-6A CABLE (6')

RADAR DETECTION SCHEDULE						
DET. NO.	PHASE CALL	TYPE	FACING DIR.	POLE NO.	LOCATION	RADAR TYPE
1	3&8	STOP BAR	NORTH	1	SIGNAL MAST ARM	SMARTSENSOR MATRIX
2	1&6	STOP BAR	SOUTHEAST	1	SIGNAL SHAFT	SMARTSENSOR MATRIX
3	4&7	STOP BAR	SOUTHEAST	3	SIGNAL MAST ARM	SMARTSENSOR MATRIX
4	2&5	STOP BAR	WEST	3	SIGNAL SHAFT	SMARTSENSOR MATRIX
1A	8	ADVANCE	NORTH	3	SIGNAL MAST ARM	SMARTSENSOR ADVANCE
2A	6	ADVANCE	EAST	4	SIGNAL MAST ARM	SMARTSENSOR ADVANCE
3A	4	ADVANCE	SOUTH	1	SIGNAL MAST ARM	SMARTSENSOR ADVANCE
4A	5	ADVANCE	WEST	2	SIGNAL MAST ARM	SMARTSENSOR ADVANCE

(A) RADAR DETECTOR NUMBER

FLASH PROGRAM COLOR								
PHASE	1	2	3	4	5	6	7	8
COLOR	R	R	R	R	R	R	R	R

ADDITIONAL EQUIPMENT	
QTY	DESCRIPTION
0	SMARTSENSOR MANAGER ADVANCE SOFTWARE (WX-550-0001)
0	SMARTSENSOR MANAGER MATRIX SOFTWARE (WX-550-0004)



SCHEDULES - PARKS
 HWY & CABIN RD

REVIEW PS&E
 6/23/2023
 6/23/2023

PLANS DEVELOPED BY: KINNEY ENGINEERING, LLC 3909 Arctic Blvd, Suite 400 Anchorage, Alaska 99503 (907) 346-2373 CERT. OF AUTH. NO. 1102
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POLE-POST DESIGN LOADING SCHEDULE

POLE NO.	CORNER	ILLUMINATION # ARM L. (FT)	SIGNAL ARM L. (FT)									REMARKS
				A	B	C	D	E	F	G		
1	NE	0'	0'	SIG. OR SIGN	SIGNAL	SIGNAL	RADAR	RADAR	SIGNAL	SIGN	SIGN	LUMINAIRE ARM @ -' MOUNTING HEIGHT @ -'
				LOC. OFFSET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
				LxW OR S.F.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	SE	LUMINAIRE 1 - 0' LUMINAIRE 2 - 0'	0'	SIG. OR SIGN	SIGNAL	SIGNAL	RADAR	SIGNAL	SIGN	SIGN	LUMINAIRE ARM 1 @ -' MOUNTING HEIGHT @ -' LUMINAIRE ARM 2 @ -' MOUNTING HEIGHT @ -'	
				LOC. OFFSET	0.0	0.0	0.0	0.0	0.0	0.0		0.0
				LxW OR S.F.	0.00	0.00	0.00	0.00	0.00	0.00		0.00
3	SW	0'	0'	SIG. OR SIGN	SIGNAL	SIGNAL	RADAR	RADAR	SIGNAL	SIGN	LUMINAIRE ARM @ -' MOUNTING HEIGHT @ -'	
				LOC. OFFSET	0.0	0.0	0.0	0.0	0.0	0.0		0.0
				LxW OR S.F.	0.00	0.00	0.00	0.00	0.00	0.00		0.00
4	NW	0'	0'	SIG. OR SIGN	SIGNAL	SIGNAL	RADAR	SIGNAL	SIGN		LUMINAIRE ARM @ -' MOUNTING HEIGHT @ -'	
				LOC. OFFSET	0.0	0.0	0.0	0.0	0.0	0.0		
				LxW OR S.F.	0.00	0.00	0.00	0.00	0.00	0.00		

POLE-POST DESIGN LOADING SCHEDULE NOTES:

- ORIENT SIGNAL MAST ARM(S) 90° TO THE C OF THE ROADWAY UNLESS NOTED OTHERWISE.
- LUMINAIRE MAST ARM MOUNTING HEIGHT IS FROM ROADWAY FINISHED GRADE TO BOTTOM OF FIXTURE.
- SEE SIGNAL PLAN ON SHEET ___ FOR LUMINAIRE TYPE AND ADJUSTABLE OUTPUT SETTINGS.

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H100	H145

SIGNAL SIGN SCHEDULE

SIGN NO.	LOCATION		ASDS CODE	LEGEND	SIZE HxV (INCHES)	AREA (SQ FT)	BRACING/FRAMING		REMARKS
	POLE NO.	OFFSET					BRACED	FRAMED	
1	1	14.1	D3-1B	PARKS HWY	90x24	15.0		X	SEE NOTE 2
2	2	15.4	D3-1B	CABIN RD	84x24	14.0		X	SEE NOTE 2
3	3	14.3	D3-1B	PARKS HWY	90x24	15.0		X	SEE NOTE 2
4	4	13.3	D3-1B	CABIN RD	84x24	14.0		X	SEE NOTE 2
SUBTOTAL SIGNAL SIGNS						58.0			

SIGNAL SIGN SCHEDULE NOTES:

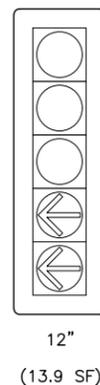
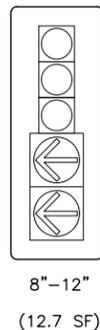
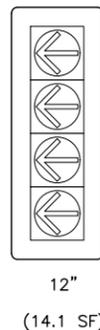
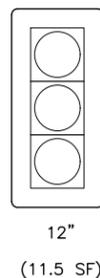
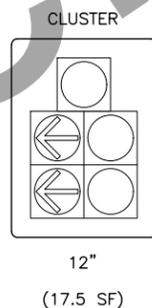
- LOCATION OFFSETS ARE FROM CENTER OF SIGN TO C OF SIGNAL POLE.
- FOR SIGN STREET NAMES, USE 12" INITIAL UPPERCASE LETTERING AND A MINIMUM OF 9" LOWERCASE LETTERING. FOR STREET TYPES, USE 8" INITIAL UPPERCASE LETTERING AND A MINIMUM OF 5" LOWERCASE LETTERING.

POLE/POST NO.	FACE NO.	SIGNAL HEAD SCHEDULE												REMARKS	
		INDICATIONS						MOUNTING							
		12" BALL		12" ARROW		8" BALL		MAST ARM		SIDE MTNG. TYPE	TOP OF POST				
R	Y	G	R	Y	FYA	G	R	Y	G			LOC. OFFSET	ELEV. PLUMB		
1	41	X	X	X										D	
	52				L	L	L	L						D	
	42	X	X	X							0.0	X			
	43	X	X	X							0.0	X			
2	21	X	X	X										D	
	32				L	L	L	L						D	
	22	X	X	X							0.0	X			
	23	X	X	X							0.0	X			
3	51				L	L	L	L			0.0	X			
	81	X	X	X										D	
	12				L	L	L	L						D	
	82	X	X	X							0.0	X			
4	31	X	X	X							0.0	X			
	61	X	X	X										D	
	72				L	L	L	L						D	
	62	X	X	X							0.0	X			
	63	X	X	X							0.0	X			
	11				L	L	L	L			0.0	X			

SIGNAL HEAD SCHEDULE NOTES:

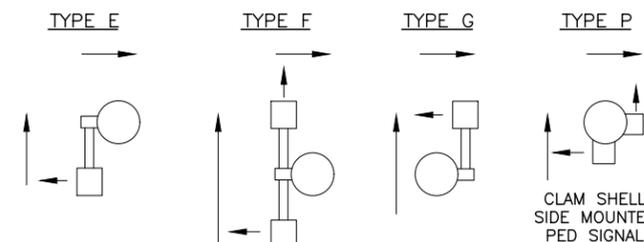
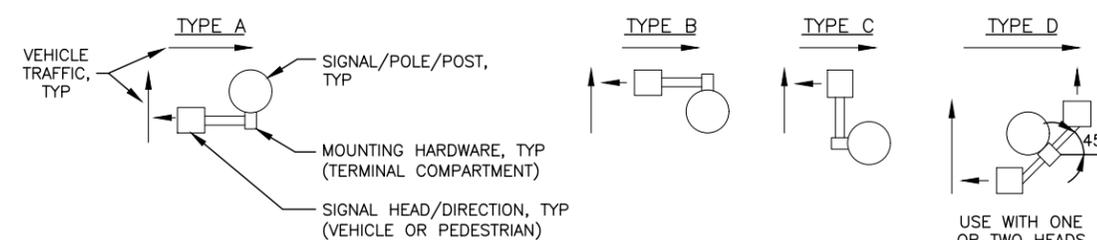
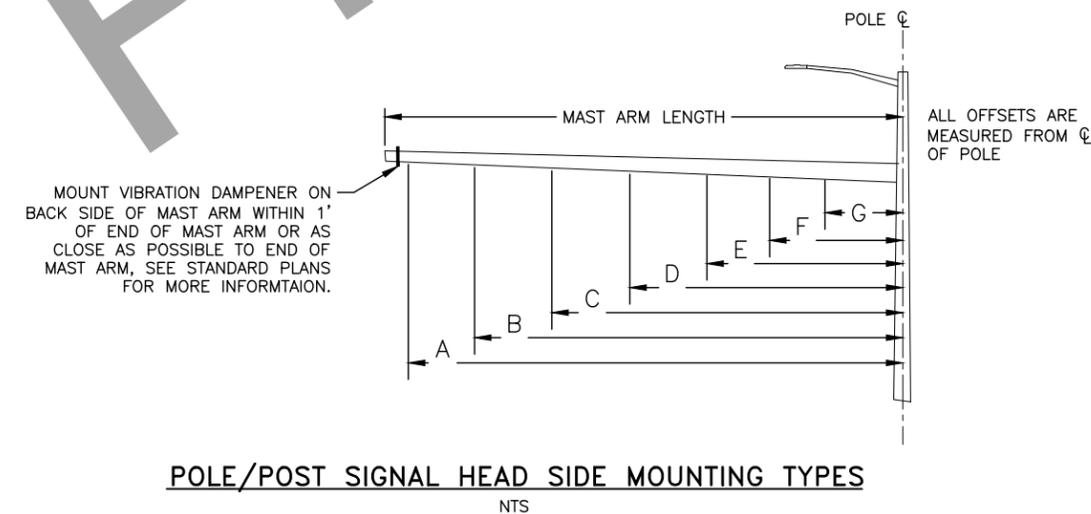
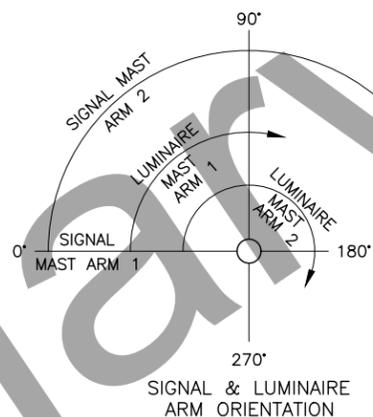
- LOCATION OFFSETS ARE FROM CENTER OF SIGNAL HEAD TO C OF SIGNAL POLE.
- FYA = FLASHING YELLOW ARROW.

POLE/POST NO.	FACE NO.	PED SIGNAL HEAD SCHEDULE	
		MOUNTING TYPE	REMARKS
1	69	P	
2	49	P	
3	88	P	
4	89	P	
5	48	P	
6	28	P	
7	29	P	
8	68	P	



SIGNAL HEAD CONFIGURATIONS

(AREAS ARE FOR WIND LOAD CALCULATIONS)
(ARROWS AND BALL INDICATIONS ARE INTERCHANGEABLE)

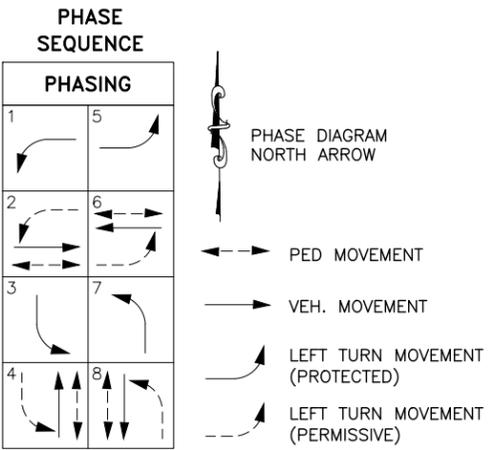
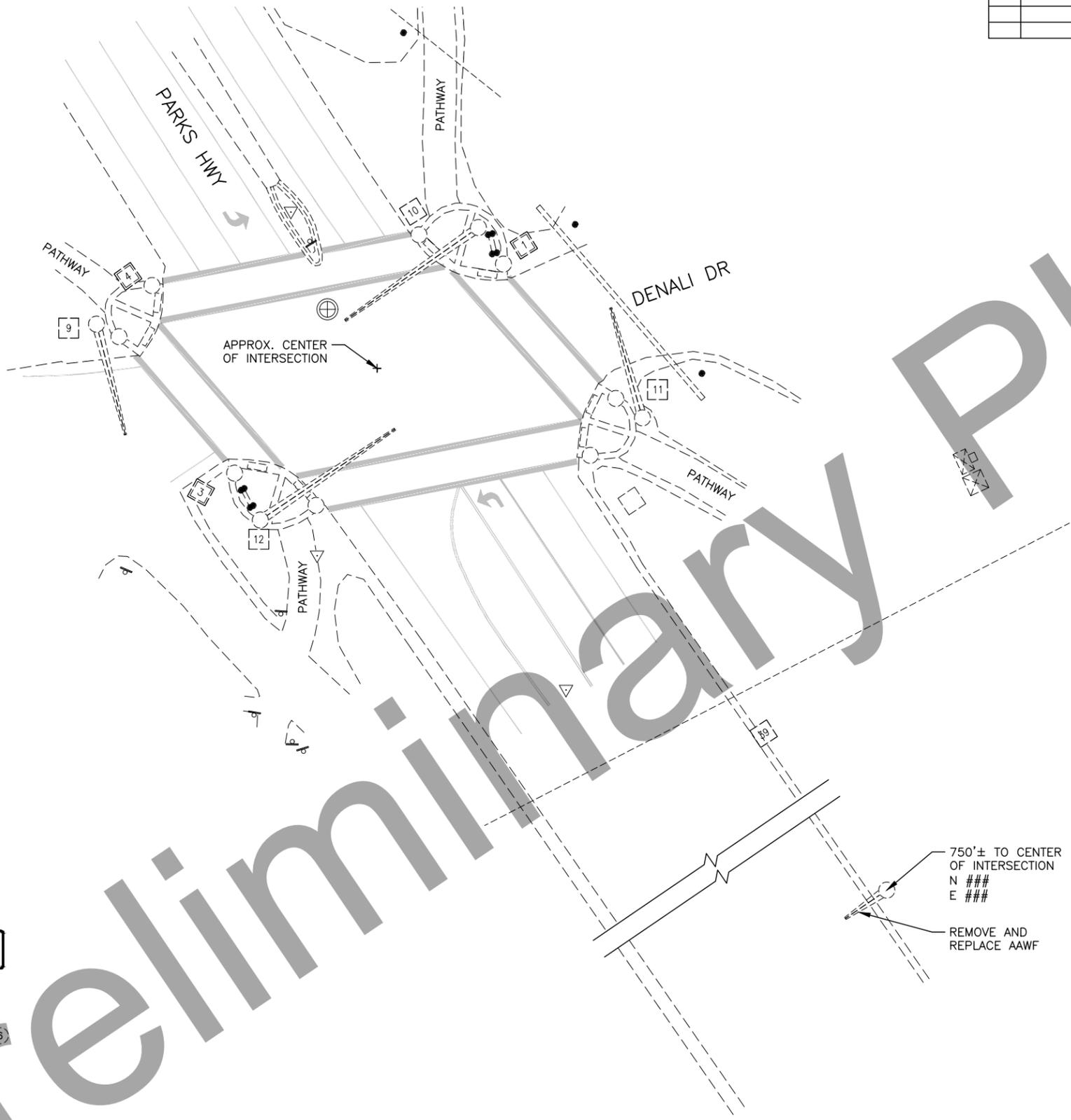


SCHEDULES - PARKS
HWY & CABIN RD

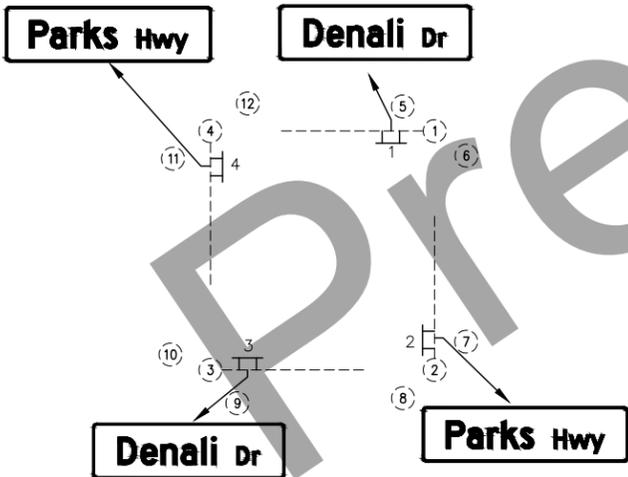
REVIEW PS&E
6/23/2023

6/23/2023

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H101	H145



- NOTES:**
- EXISTING SIGNAL LINE WORK IS FROM A COMBINATION OF DESIGN TOPOGRAPHIC SURVEY, AS-BUILTS AND SITE VISITS. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS BEFORE MAKING MODIFICATIONS. NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
 - SALVAGE EXISTING SIGNAL EQUIPMENT PER THE SPECIFICATIONS. THIS WORK SHALL BE PAID FOR UNDER 660.0001.0000 TRAFFIC SIGNAL SYSTEM COMPLETE, #####/#####.
 - INSTALLATION OF NEW SIGNS ON TRAFFIC SIGNAL STRUCTURES WILL BE PAID FOR UNDER PAY ITEM 615.0001.0000.
 - INSTALL NEW SIGNAL CONTROLLER TRANSFORMER AND DISCONNECT AS INDICATED IN TRANSFORMER SUMMARY TABLE SHEET #_#_. PAYMENT SHALL BE MADE UNDER PAY ITEM 661.0006.0000 TRANSFORMERS, 5KVA. SEE INSTALLATION DETAIL ON SHEET _#_.
 - SIGNAL POLE LUMINAIRES SHALL BE PER LUMINAIRE SCHEDULE ON SHEET _#_, SEE BELOW FOR TYPE. SEE SHEET _#_ FOR REQUIRED MAST ARMS AND MOUNTING HEIGHTS. ADJUST LUMINAIRES FOR OUTPUT AS FOLLOWS:
 - POLE 1: TYPE # SET TO ###%
 - POLE 2 LUMINAIRE 1: TYPE # SET TO ###%
 - POLE 2 LUMINAIRE 2: TYPE # SET TO ###%
 - POLE 3: TYPE E SET TO ###%
 - POLE 4: TYPE D SET TO ###%
 - ROW TO BE DETERMINED



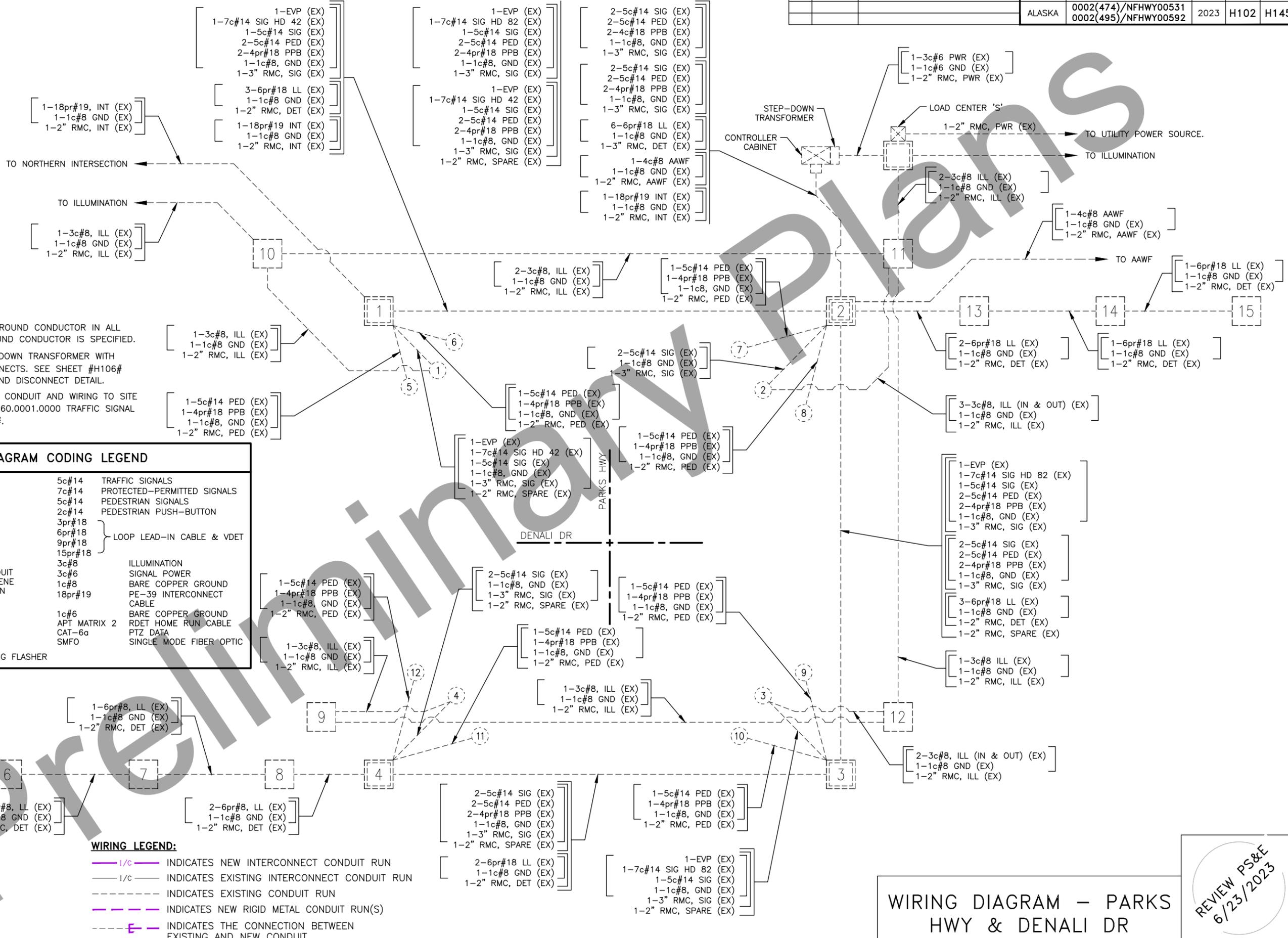
SIGN PLACEMENT ROW

SIGNAL PLAN – PARKS HWY & DENALI DR

REVIEW PS&E
6/23/2023
6/23/2023

PLANS DEVELOPED BY: KINNEY ENGINEERING, LLC 3909 Arctic Blvd, Suite 400 Anchorage, Alaska 99503 (907) 346-2373 CERT. OF AUTH. NO. 1102
Z:\PROJECTS\0606 NR & COF Signal Upgrades\DWGS\C\Sheets\606_H101_SIGNAL_PLAN_P-D_SITE_24.dwg

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H102	H145



- NOTES:**
- INSTALL 1-1c#8 BARE COPPER GROUND CONDUCTOR IN ALL CONDUITS UNLESS ANOTHER GROUND CONDUCTOR IS SPECIFIED.
 - POST MOUNTED 480/120V STEP-DOWN TRANSFORMER WITH PRIMARY AND SECONDARY DISCONNECTS. SEE SHEET #H106# FOR SIGNAL CONTROLLER XFMR AND DISCONNECT DETAIL.
 - SIGNAL POWER AND INTERSECTION CONDUIT AND WIRING TO SITE ## SHALL BE PAID FOR UNDER 660.0001.0000 TRAFFIC SIGNAL SYSTEM COMPLETE, #####/#####.

WIRING DIAGRAM CODING LEGEND		
OPC = OPTICOM CABLE	5c#14	TRAFFIC SIGNALS
LL = LOOP LEAD-IN	7c#14	PROTECTED-PERMITTED SIGNALS
INT = INTERCONNECT CABLE	5c#14	PEDESTRIAN SIGNALS
PWR = POWER CONDUCTORS	2c#14	PEDESTRIAN PUSH-BUTTON
T = TRANSFORMER	3pr#18	LOOP LEAD-IN CABLE & VDET
PTZ = PAN, TILT, ZOOM CAMERA	6pr#18	
GND = GROUND	9pr#18	
ILL = ILLUMINATION	15pr#18	
RMC = RIGID METAL CONDUIT	3c#8	
PVC = POLYVINYLCHLORIDE CONDUIT	3c#6	SIGNAL POWER
HDPE = HIGH DENSITY POLYETHYLENE	1c#8	BARE COPPER GROUND
PPB = PEDESTRIAN PUSH-BUTTON	18pr#19	PE-39 INTERCONNECT CABLE
SIG# = SIGNAL HEAD NUMBER	1c#6	BARE COPPER GROUND
PED = PEDESTRIAN SIGNAL	APT MATRIX 2	RDET HOME RUN CABLE
DET = DETECTION CONDUIT	CAT-6a	PTZ DATA
F = FUTURE USE	SMFO	SINGLE MODE FIBER OPTIC
VDET = VIDEO DETECTION		
EX = EXISTING		
AAWF = ACTIVE ADVANCED WARNING FLASHER		

- WIRING LEGEND:**
- 1/c — INDICATES NEW INTERCONNECT CONDUIT RUN
 - - - 1/c - - - INDICATES EXISTING INTERCONNECT CONDUIT RUN
 - - - - - INDICATES EXISTING CONDUIT RUN
 - - - - - INDICATES NEW RIGID METAL CONDUIT RUN(S)
 - - - - - F - - - - - INDICATES THE CONNECTION BETWEEN EXISTING AND NEW CONDUIT

WIRING DIAGRAM – PARKS HWY & DENALI DR

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6/23/2023
6/23/2023

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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H103	H145

BASE & JUNCTION BOX SCHEDULE												
LOCATION		DESCRIPTION			BASE TYPE*			JUNCTION BOX TYPE				REMARKS
STATION	OFFSET	POLE NO.	JUNCTION BOX NO.	CONTROLLER	CIDH	P	A	IA	II	III	IV	
		1			X							
		2			X							SEE NOTE 3
		3			X							
		4			X							
		5					X					SEE NOTE 2
		6					X					SEE NOTES 2 & 3
		7					X					SEE NOTE 2
		8					X					SEE NOTE 2
			1								X	
			2						X			
			3						X			
			4							X		
				X								

BASE & JUNCTION BOX NOTES:

1. INSTALL ON PUSH BUTTON POST BASE TYPE B, SEE STD. DWG, T-31.00.
2. USE ALTERNATE "PELCO" POST BASE, SEE STD. DWG, T-31.01.
3. INSTALL JUNCTION BOX/FOUNDATION AT BACK OF SIDEWALK.

*P = PRECAST BASE (FOUNDATION)
 A = TYPE "A" SIGNAL BASE POST FOUNDATION.
 SEE STD. DWG, T-31.00
 CIDH = CAST IN DRILLED HOLE

PEDESTRIAN DETECTION SCHEDULE			
POLE	PUSH BUTTON	PHASE	REMARKS
1	1	6	SEE NOTE 1
5	2	4	SEE NOTE 2
2	3	4	SEE NOTE 1
6	4	2	SEE NOTE 2
7	5	2	SEE NOTE 1
3	6	8	SEE NOTE 2
4	7	8	SEE NOTE 1
8	8	6	SEE NOTE 2

PEDESTRIAN DETECTION NOTES:

1. INSTALL AN R10-3eL SIGN ABOVE PEDESTRIAN PUSH BUTTON. SIGN SHALL NOT BE MEASURED FOR PAYMENT AND IS SUBSIDIARY TO TRAFFIC SIGNAL PAY ITEMS.
2. INSTALL AN R10-3eR SIGN ABOVE PEDESTRIAN PUSH BUTTON. SIGN SHALL NOT BE MEASURED FOR PAYMENT AND IS SUBSIDIARY TO TRAFFIC SIGNAL PAY ITEMS.

RADAR DETECTION EQUIPMENT	
QTY	DESCRIPTION
0	SMARTSENSOR MATRIX (WX-SS-225)
0	PELCO MOUNT (WX-SS-611)
0	SMARTSENSOR 6-CONDUCTOR CABLE (WX-SS-704-XXX)
0	SMARTSENSOR ADVANCED EXTENDED RANGE (WX-SS-200E)

NEMA CLOSURE EQUIPMENT	
QTY	DESCRIPTION
0	CLICK! 710, SMARTSENSOR 6-CONDUCTOR CABLE JUNCTION BOX (WX-SS-710)

CABINET EQUIPMENT	
QTY	DESCRIPTION
0	CLICK! 112 RACK CARDS (WX-CLK-112)
0	CLICK! 114 RACK CARDS (WX-CLK-114)

CABINET EQUIPMENT	
QTY	DESCRIPTION
0	INTERSECTION PREASSEMBLED BACKPLATE -AC, FOUR SENSOR, (WX-SS-B01-0005)
0	1 CLICK! 204 4 AMP POWER SUPPLY
0	5 CLICK! 210-02 2 AMP CIRCUIT BREAKERS (WX-CLK-210)
0	2 CLICK! 222, SMARTSENSOR SURGE PROTECTOR (WX-CLK-222)
0	1 CLICK! 230, AC SURGE PROTECTOR (WX-CLK-230)
0	1 T-BUS 5-SCREW TERMINAL BLOCKS (LEFT END)
0	5 T-BUS CONNECTORS (POWER AND COMMUNICATION)
0	1 T-BUS CONNECTOR (POWER ONLY)
0	5 END BRACKETS WITH LABELS
0	1 END BRACKET WITHOUT LABEL
0	4 TERMINAL BLOCKS FOR AC LINE INPUT: SPRING CAGE TO PLUG SPRING
0	CAGE 10 AWG (2 GROUNDED)
0	28 TERMINAL BLOCKS FOR CABLE TERMINATION: INSULATION DISPLACEMENT
0	TO PLUG INSULATION DISPLACEMENT (4 GROUNDED)
0	MOUNTING PLATFORM: TRAFFIC CABINET BACKPLATE
0	1 8-FT POWER CORD
0	1 8-FT 14 AWG GROUND CABLE
0	1 5-FT BLACK RJ-11 PATCH CABLE
0	4 5-FT WHITE RJ-11 PATCH CABLES
0	CLICK! 650, CABINET INTERFACE (WX-CLK-650)

OPTICOM DETECTOR SCHEDULE					
LOCATION	DET. NO.	PHASE CALL	FACING DIR.	PREEMPTOR PRIORITY	REMARKS
ON TOP OF SIGNAL HEAD ---	1	4, 7	SOUTH		
ON TOP OF SIGNAL HEAD ---	2	2, 5	WEST		
ON TOP OF SIGNAL HEAD ---	3	3, 8	NORTH		
ON TOP OF SIGNAL HEAD ---	4	1, 6	EAST		

—||—(A) OPTICOM DETECTOR NUMBER

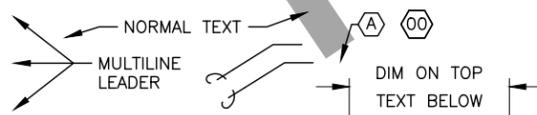
COMMUNICATION EQUIPMENT	
QTY	DESCRIPTION
0	RUGGEDCOM RSG920P ETHERNET SWITCH OR APPROVED EQUAL
0	12-FIBER ITS DROP CABLE
0	LC SMF PATCH CABLE
0	CAT-6A CABLE (6')

RADAR DETECTION SCHEDULE						
DET. NO.	PHASE CALL	TYPE	FACING DIR.	POLE NO.	LOCATION	RADAR TYPE
1	3&8	STOP BAR	NORTH	1	SIGNAL MAST ARM	SMARTSENSOR MATRIX
2	1&6	STOP BAR	SOUTHEAST	1	SIGNAL SHAFT	SMARTSENSOR MATRIX
3	4&7	STOP BAR	SOUTHEAST	3	SIGNAL MAST ARM	SMARTSENSOR MATRIX
4	2&5	STOP BAR	WEST	3	SIGNAL SHAFT	SMARTSENSOR MATRIX
1A	8	ADVANCE	NORTH	3	SIGNAL MAST ARM	SMARTSENSOR ADVANCE
2A	6	ADVANCE	EAST	4	SIGNAL MAST ARM	SMARTSENSOR ADVANCE
3A	4	ADVANCE	SOUTH	1	SIGNAL MAST ARM	SMARTSENSOR ADVANCE
4A	5	ADVANCE	WEST	2	SIGNAL MAST ARM	SMARTSENSOR ADVANCE

(A) RADAR DETECTOR NUMBER

FLASH PROGRAM COLOR								
PHASE	1	2	3	4	5	6	7	8
COLOR	R	R	R	R	R	R	R	R

ADDITIONAL EQUIPMENT	
QTY	DESCRIPTION
0	SMARTSENSOR MANAGER ADVANCE SOFTWARE (WX-550-0001)
0	SMARTSENSOR MANAGER MATRIX SOFTWARE (WX-550-0004)



SCHEDULES - PARKS HWY & DENALI DR

REVIEW PS&E
6/23/2023
6/23/2023

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POLE-POST DESIGN LOADING SCHEDULE

POLE NO.	CORNER	ILLUMINATION # ARM L. (FT)	SIGNAL ARM L. (FT)								REMARKS	
				A	B	C	D	E	F	G		
1	NE	0'	0'	SIG. OR SIGN	SIGNAL	SIGNAL	RADAR	RADAR	SIGNAL	SIGN	SIGN	LUMINAIRE ARM @ -' MOUNTING HEIGHT @ -'
				LOC. OFFSET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
				LxW OR S.F.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	SE	LUMINAIRE 1 - 0' LUMINAIRE 2 - 0'	0'	SIG. OR SIGN	SIGNAL	SIGNAL	RADAR	SIGNAL	SIGN	SIGN	LUMINAIRE ARM 1 @ -' MOUNTING HEIGHT @ -' LUMINAIRE ARM 2 @ -' MOUNTING HEIGHT @ -'	
				LOC. OFFSET	0.0	0.0	0.0	0.0	0.0	0.0		0.0
				LxW OR S.F.	0.00	0.00	0.00	0.00	0.00	0.00		0.00
3	SW	0'	0'	SIG. OR SIGN	SIGNAL	SIGNAL	RADAR	RADAR	SIGNAL	SIGN	LUMINAIRE ARM @ -' MOUNTING HEIGHT @ -'	
				LOC. OFFSET	0.0	0.0	0.0	0.0	0.0	0.0		0.0
				LxW OR S.F.	0.00	0.00	0.00	0.00	0.00	0.00		0.00
4	NW	0'	0'	SIG. OR SIGN	SIGNAL	SIGNAL	RADAR	SIGNAL	SIGN		LUMINAIRE ARM @ -' MOUNTING HEIGHT @ -'	
				LOC. OFFSET	0.0	0.0	0.0	0.0	0.0	0.0		
				LxW OR S.F.	0.00	0.00	0.00	0.00	0.00	0.00		

POLE-POST DESIGN LOADING SCHEDULE NOTES:

- ORIENT SIGNAL MAST ARM(S) 90° TO THE C OF THE ROADWAY UNLESS NOTED OTHERWISE.
- LUMINAIRE MAST ARM MOUNTING HEIGHT IS FROM ROADWAY FINISHED GRADE TO BOTTOM OF FIXTURE.
- SEE SIGNAL PLAN ON SHEET ___ FOR LUMINAIRE TYPE AND ADJUSTABLE OUTPUT SETTINGS.

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H104	H145

SIGNAL SIGN SCHEDULE

SIGN NO.	LOCATION		ASDS CODE	LEGEND	SIZE HxV (INCHES)	AREA (SQ FT)	BRACING/FRAMING		REMARKS
	POLE NO.	OFFSET					BRACED	FRAMED	
1	1	17.3	D3-1B	DENALI DR	84x24	13.0		X	SEE NOTE 2
2	2	17.2	D3-1B	PARKS HWY	78x24	14.0		X	SEE NOTE 2
3	3	18.0	D3-1B	PARKS HWY	78x24	13.0		X	SEE NOTE 2
4	4	11.3	D3-1B	DENALI DR	84x24	14.0		X	SEE NOTE 2
SUBTOTAL SIGNAL SIGNS						54.0			

SIGNAL SIGN SCHEDULE NOTES:

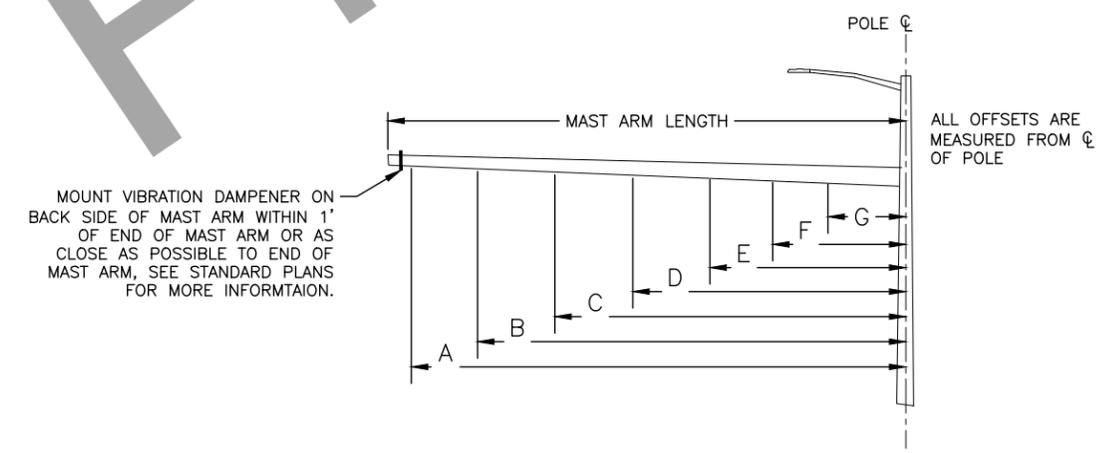
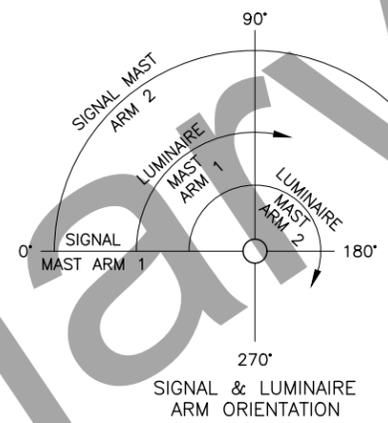
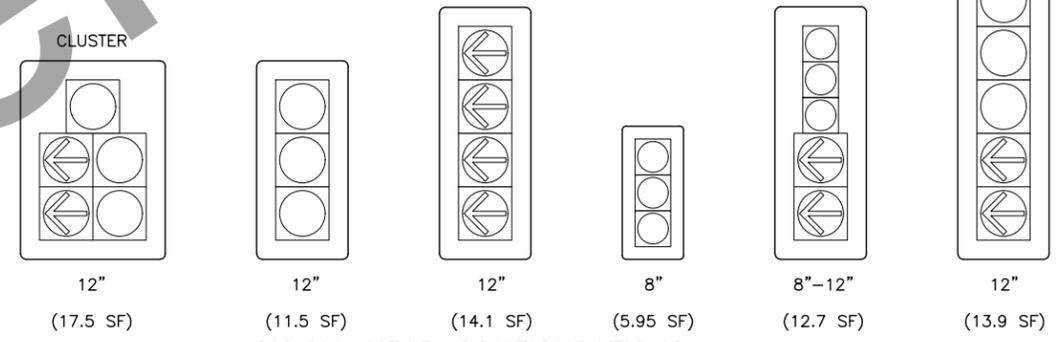
- LOCATION OFFSETS ARE FROM CENTER OF SIGN TO C OF SIGNAL POLE.
- FOR SIGN STREET NAMES, USE 12" INITIAL UPPERCASE LETTERING AND A MINIMUM OF 9" LOWERCASE LETTERING. FOR STREET TYPES, USE 8" INITIAL UPPERCASE LETTERING AND A MINIMUM OF 5" LOWERCASE LETTERING.

POLE/POST NO.	FACE NO.	SIGNAL HEAD SCHEDULE												REMARKS		
		INDICATIONS						MOUNTING								
		12" BALL			12" ARROW			8" BALL			MAST ARM		SIDE MTNG. TYPE		TOP OF POST	
R	Y	G	R	Y	FYA	G	R	Y	G	LOC. OFFSET	ELEV. PLUMB					
1	41	X	X	X												D
	52				L	L	L	L								D
	42	X	X	X							0.0	X				
	43	X	X	X							0.0	X				
2	71				L	L	L	L			0.0	X				
	21	X	X	X												D
	32				L	L	L	L								D
	22	X	X	X							0.0	X				
3	23	X	X	X							0.0	X				
	51				L	L	L	L			0.0	X				
	81	X	X	X												D
	12				L	L	L	L								D
	82	X	X	X							0.0	X				
4	83	X	X	X							0.0	X				
	31				L	L	L	L			0.0	X				
	61	X	X	X												D
	72				L	L	L	L								D
	62	X	X	X							0.0	X				
11	63	X	X	X							0.0	X				
					L	L	L	L								
											0.0	X				

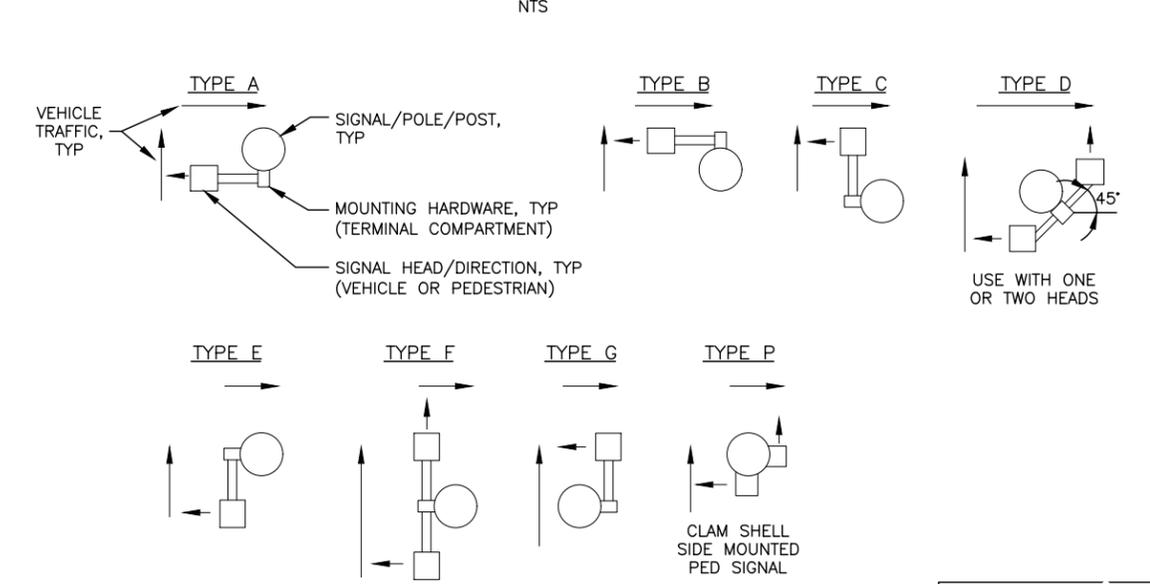
SIGNAL HEAD SCHEDULE NOTES:

- LOCATION OFFSETS ARE FROM CENTER OF SIGNAL HEAD TO C OF SIGNAL POLE.
- FYA = FLASHING YELLOW ARROW.

POLE/POST NO.	FACE NO.	PED SIGNAL HEAD SCHEDULE	
		MOUNTING TYPE	REMARKS
1	69	P	
2	49	P	
3	88	P	
4	89	P	
5	48	P	
6	28	P	
7	29	P	
8	68	P	



POLE/POST SIGNAL HEAD SIDE MOUNTING TYPES



SCHEDULES - PARKS HWY & DENALI DR

REVIEW PS&E
6/23/2023
6/23/2023

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H105	H145

E: 654750.00 E: 654800.00 E: 654850.00 E: 654900.00 E: 654950.00 E: 655000.00 E: 655050.00

E: 655150.00 E: 655200.00

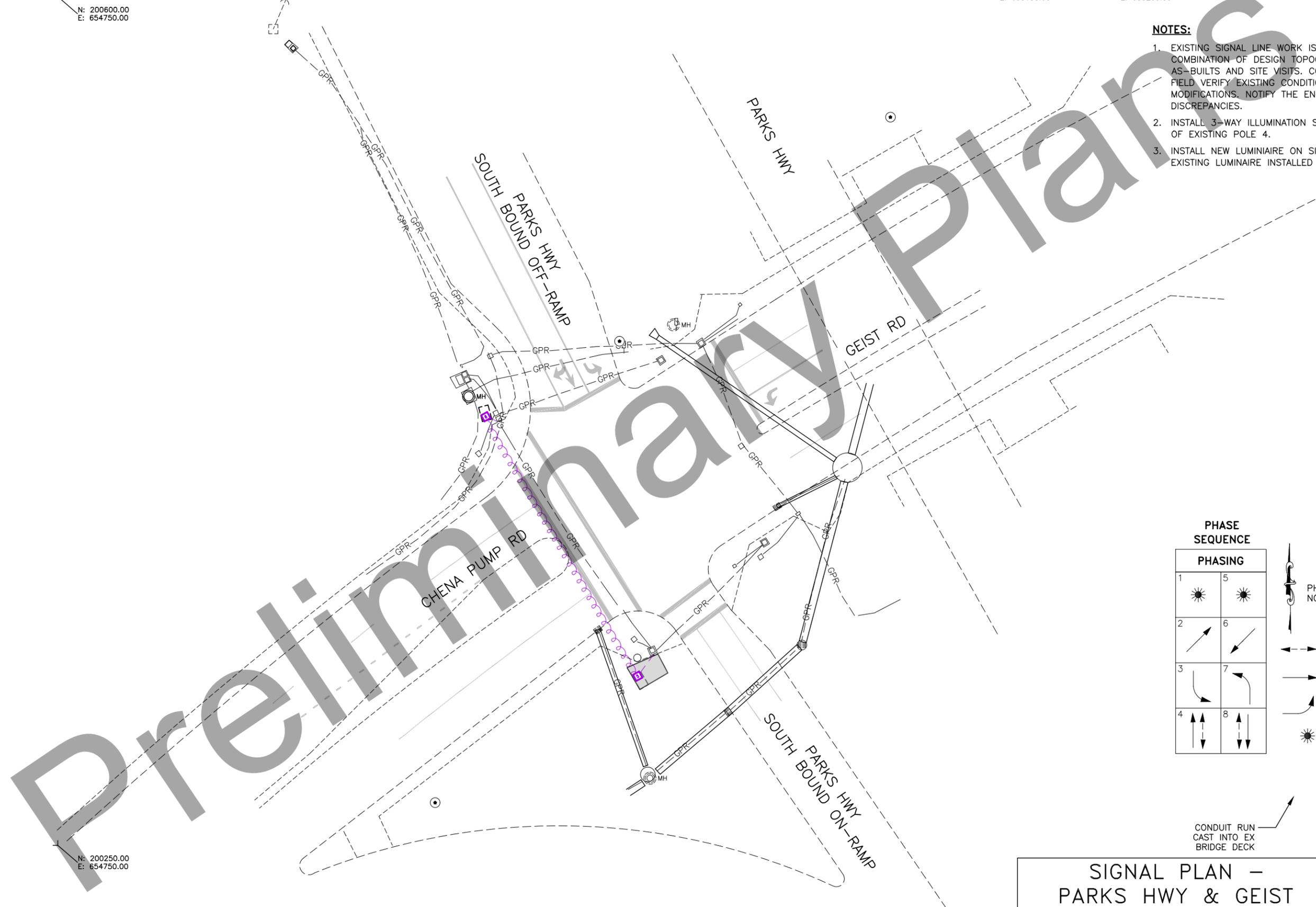
N: 200600.00
N: 200550.00
N: 200500.00
N: 200450.00
N: 200400.00
N: 200350.00
N: 200300.00
N: 200250.00

N: 200600.00
E: 654750.00

N: 200250.00
E: 654750.00

NOTES:

- EXISTING SIGNAL LINE WORK IS FROM A COMBINATION OF DESIGN TOPOGRAPHIC SURVEY, AS-BUILTS AND SITE VISITS. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS BEFORE MAKING MODIFICATIONS. NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
- INSTALL 3-WAY ILLUMINATION SPLICE IN HANDHOLE OF EXISTING POLE 4.
- INSTALL NEW LUMINAIRE ON SIGNAL POLE 2, MATCH EXISTING LUMINAIRE INSTALLED ON SIGNAL POLE 4.



PHASE SEQUENCE

PHASING	
1	5
2	6
3	7
4	8

- PHASE DIAGRAM NORTH ARROW
- PED MOVEMENT
- LEFT TURN MOVEMENT (PROTECTED)
- LEFT TURN MOVEMENT (PERMISSIVE)
- NOT USED

CONDUIT RUN CAST INTO EX BRIDGE DECK

**SIGNAL PLAN –
PARKS HWY & GEIST
RD, CHENA PUMP RD**

REVIEW PS&E
6/23/2023
6/23/2023

PLANS DEVELOPED BY: KINNEY ENGINEERING, LLC 3909 Arctic Blvd, Suite 400 Anchorage, Alaska 99503 (907) 346-2373 CERT. OF AUTH. NO. 1102
Z:\PROJECTS\0606 NR & COF Signal Upgrades\DWGS\C\Sheets\606_H105_SIGNAL_PLAN_PGC_SITE 25.dwg

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H106	H145

WIRING LEGEND:

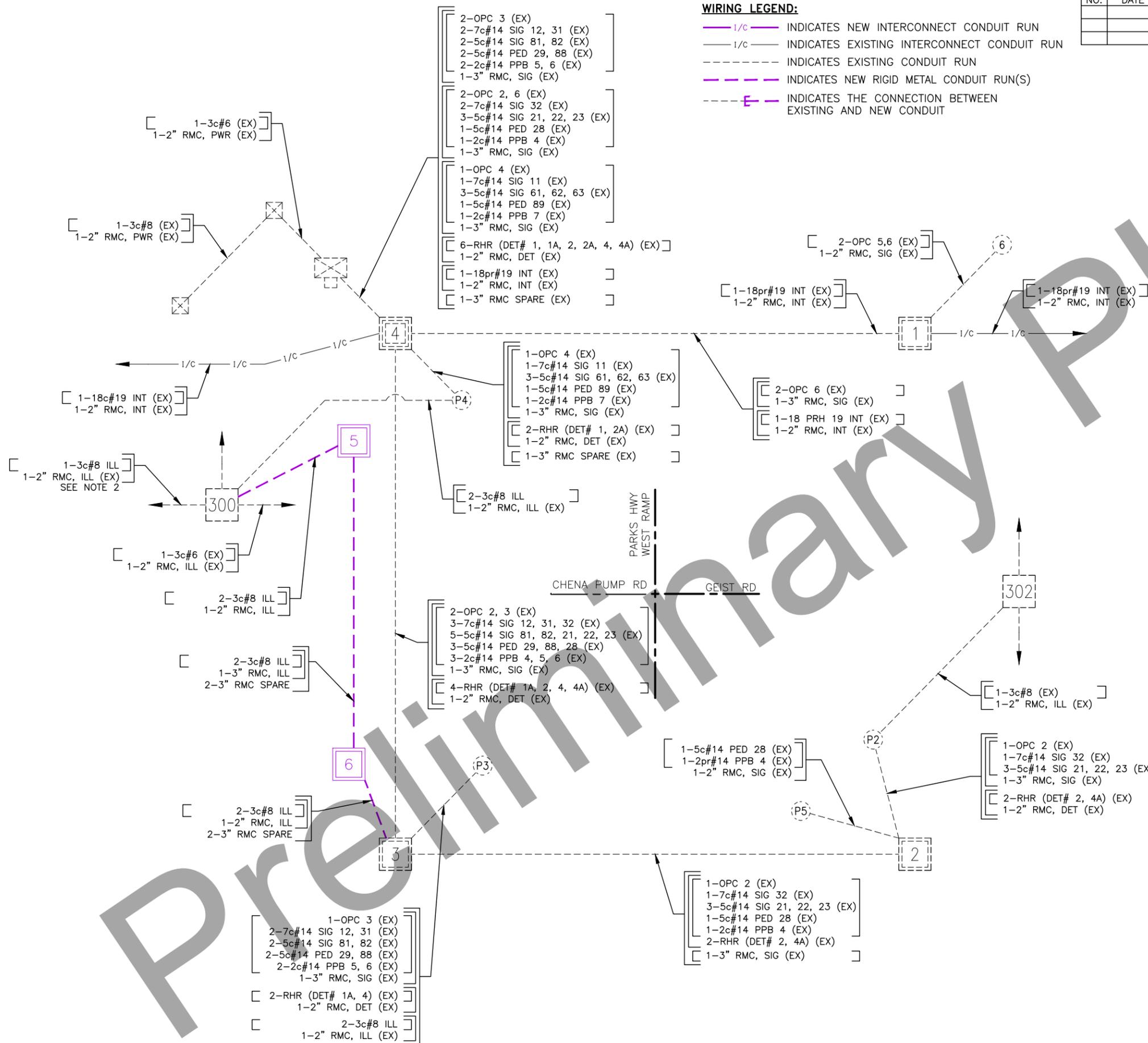
- 1/c — INDICATES NEW INTERCONNECT CONDUIT RUN
- 1/c — INDICATES EXISTING INTERCONNECT CONDUIT RUN
- - - - - INDICATES EXISTING CONDUIT RUN
- - - - - INDICATES NEW RIGID METAL CONDUIT RUN(S)
- - - - - E INDICATES THE CONNECTION BETWEEN EXISTING AND NEW CONDUIT

NOTES:

1. INSTALL 1-1c#8 BARE COPPER GROUND CONDUCTOR IN ALL CONDUITS UNLESS ANOTHER GROUND CONDUCTOR IS SPECIFIED.
2. INSTALL NEW 3c#8 TO EXISTING LIGHT POLE APPROXIMATELY 250 FEET WEST OF INTERSECTION
3. SPLICE NEW 3c#8 TO EXISTING LIGHTING CIRCUIT IN POLE 4 BASE.

WIRING DIAGRAM CODING LEGEND

OPC = OPTICOM CABLE	5c#14 TRAFFIC SIGNALS
LL = LOOP LEAD-IN	7c#14 PROTECTED-PERMITTED SIGNALS
INT = INTERCONNECT CABLE	5c#14 PEDESTRIAN SIGNALS
PWR = POWER CONDUCTORS FOR SIGNAL CONTROLLER	2c#14 PEDESTRIAN PUSH-BUTTON
T = TRANSFORMER	3pr#18 } LOOP LEAD-IN CABLE & VDET
PTZ = PAN, TILT, ZOOM CAMERA	6pr#18 }
GND = GROUND	9pr#18 }
ILL = ILLUMINATION	15pr#18 }
RMC = RIGID METAL CONDUIT	3c#8 ILLUMINATION
PVC = POLYVINYLCHLORIDE CONDUIT	3c#6 SIGNAL POWER
HDPE = HIGH DENSITY POLYETHYLENE	1c#8 BARE COPPER GROUND
PPB = PEDESTRIAN PUSH-BUTTON	18pr#19 PE-39 INTERCONNECT CABLE
SIG# = SIGNAL HEAD NUMBER	1c#6 BARE COPPER GROUND
PED = PEDESTRIAN SIGNAL	APT MATRIX 2 RDET HOME RUN CABLE
DET = DETECTION CONDUIT	CAT-6a PTZ DATA
F = FUTURE USE	SMFO SINGLE MODE FIBER OPTIC
VDET = VIDEO DETECTION	
EX = EXISTING	
AAWF = ACTIVE ADVANCED WARNING FLASHER	



WIRING DIAGRAM -
 PARKS HWY & GEIST RD,
 CHENA PUMP RD

REVIEW PS&E
 6/23/2023
 6/23/2023

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H107	H145

BASE & JUNCTION BOX SCHEDULE												
LOCATION		DESCRIPTION			BASE TYPE*			JUNCTION BOX TYPE				REMARKS
STATION	OFFSET	POLE NO.	JUNCTION BOX NO.	CONTROLLER	CIDH	P	A	IA	II	III	IV	
		1			X							
		2			X							SEE NOTE 3
		3			X							
		4			X							
		5					X					SEE NOTE 2
		6					X					SEE NOTES 2 & 3
		7					X					SEE NOTE 2
		8					X					SEE NOTE 2
			1								X	
			2						X			
			3						X			
			4							X		
				X								

BASE & JUNCTION BOX NOTES:

1. INSTALL ON PUSH BUTTON POST BASE TYPE B, SEE STD. DWG, T-31.00.
2. USE ALTERNATE "PELCO" POST BASE, SEE STD. DWG, T-31.01.
3. INSTALL JUNCTION BOX/FOUNDATION AT BACK OF SIDEWALK.

*P = PRECAST BASE (FOUNDATION)
 A = TYPE "A" SIGNAL BASE POST FOUNDATION.
 SEE STD. DWG, T-31.00
 CIDH = CAST IN DRILLED HOLE

PEDESTRIAN DETECTION SCHEDULE			
POLE	PUSH BUTTON	PHASE	REMARKS
1	1	6	SEE NOTE 1
5	2	4	SEE NOTE 2
2	3	4	SEE NOTE 1
6	4	2	SEE NOTE 2
7	5	2	SEE NOTE 1
3	6	8	SEE NOTE 2
4	7	8	SEE NOTE 1
8	8	6	SEE NOTE 2

PEDESTRIAN DETECTION NOTES:

1. INSTALL AN R10-3eL SIGN ABOVE PEDESTRIAN PUSH BUTTON. SIGN SHALL NOT BE MEASURED FOR PAYMENT AND IS SUBSIDIARY TO TRAFFIC SIGNAL PAY ITEMS.
2. INSTALL AN R10-3eR SIGN ABOVE PEDESTRIAN PUSH BUTTON. SIGN SHALL NOT BE MEASURED FOR PAYMENT AND IS SUBSIDIARY TO TRAFFIC SIGNAL PAY ITEMS.

RADAR DETECTION EQUIPMENT	
QTY	DESCRIPTION
0	SMARTSENSOR MATRIX (WX-SS-225)
0	PELCO MOUNT (WX-SS-611)
0	SMARTSENSOR 6-CONDUCTOR CABLE (WX-SS-704-XXX)
0	SMARTSENSOR ADVANCED EXTENDED RANGE (WX-SS-200E)

NEMA CLOSURE EQUIPMENT	
QTY	DESCRIPTION
0	CLICK! 710, SMARTSENSOR 6-CONDUCTOR CABLE JUNCTION BOX (WX-SS-710)

CABINET EQUIPMENT	
QTY	DESCRIPTION
0	CLICK! 112 RACK CARDS (WX-CLK-112)
0	CLICK! 114 RACK CARDS (WX-CLK-114)

CABINET EQUIPMENT	
QTY	DESCRIPTION
0	INTERSECTION PREASSEMBLED BACKPLATE -AC, FOUR SENSOR, (WX-SS-B01-0005)
0	1 CLICK! 204 4 AMP POWER SUPPLY
0	5 CLICK! 210-02 2 AMP CIRCUIT BREAKERS (WX-CLK-210)
0	2 CLICK! 222, SMARTSENSOR SURGE PROTECTOR (WX-CLK-222)
0	1 CLICK! 230, AC SURGE PROTECTOR (WX-CLK-230)
0	1 T-BUS 5-SCREW TERMINAL BLOCKS (LEFT END)
0	5 T-BUS CONNECTORS (POWER AND COMMUNICATION)
0	1 T-BUS CONNECTOR (POWER ONLY)
0	5 END BRACKETS WITH LABELS
0	1 END BRACKET WITHOUT LABEL
0	4 TERMINAL BLOCKS FOR AC LINE INPUT: SPRING CAGE TO PLUG SPRING
0	CAGE 10 AWG (2 GROUNDED)
0	28 TERMINAL BLOCKS FOR CABLE TERMINATION: INSULATION DISPLACEMENT
0	TO PLUG INSULATION DISPLACEMENT (4 GROUNDED)
0	MOUNTING PLATFORM: TRAFFIC CABINET BACKPLATE
0	1 8-FT POWER CORD
0	1 8-FT 14 AWG GROUND CABLE
0	1 5-FT BLACK RJ-11 PATCH CABLE
0	4 5-FT WHITE RJ-11 PATCH CABLES
0	CLICK! 650, CABINET INTERFACE (WX-CLK-650)

ADDITIONAL EQUIPMENT	
QTY	DESCRIPTION
0	SMARTSENSOR MANAGER ADVANCE SOFTWARE (WX-550-0001)
0	SMARTSENSOR MANAGER MATRIX SOFTWARE (WX-550-0004)

OPTICOM DETECTOR SCHEDULE					
LOCATION	DET. NO.	PHASE CALL	FACING DIR.	PREEMPTOR PRIORITY	REMARKS
ON TOP OF SIGNAL HEAD ---	1	4, 7	SOUTH		
ON TOP OF SIGNAL HEAD ---	2	2, 5	WEST		
ON TOP OF SIGNAL HEAD ---	3	3, 8	NORTH		
ON TOP OF SIGNAL HEAD ---	4	1, 6	EAST		

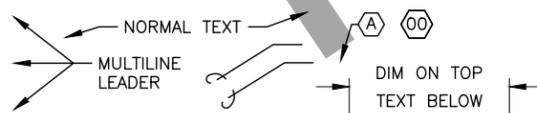
---(A) OPTICOM DETECTOR NUMBER

COMMUNICATION EQUIPMENT	
QTY	DESCRIPTION
0	RUGGEDCOM RSG920P ETHERNET SWITCH OR APPROVED EQUAL
0	12-FIBER ITS DROP CABLE
0	LC SMF PATCH CABLE
0	CAT-6A CABLE (6')

FLASH PROGRAM COLOR								
PHASE	1	2	3	4	5	6	7	8
COLOR	R	R	R	R	R	R	R	R

RADAR DETECTION SCHEDULE						
DET. NO.	PHASE CALL	TYPE	FACING DIR.	POLE NO.	LOCATION	RADAR TYPE
1	3&8	STOP BAR	NORTH	1	SIGNAL MAST ARM	SMARTSENSOR MATRIX
2	1&6	STOP BAR	SOUTHEAST	1	SIGNAL SHAFT	SMARTSENSOR MATRIX
3	4&7	STOP BAR	SOUTHEAST	3	SIGNAL MAST ARM	SMARTSENSOR MATRIX
4	2&5	STOP BAR	WEST	3	SIGNAL SHAFT	SMARTSENSOR MATRIX
1A	8	ADVANCE	NORTH	3	SIGNAL MAST ARM	SMARTSENSOR ADVANCE
2A	6	ADVANCE	EAST	4	SIGNAL MAST ARM	SMARTSENSOR ADVANCE
3A	4	ADVANCE	SOUTH	1	SIGNAL MAST ARM	SMARTSENSOR ADVANCE
4A	5	ADVANCE	WEST	2	SIGNAL MAST ARM	SMARTSENSOR ADVANCE

(A) RADAR DETECTOR NUMBER



SCHEDULES -
 PARKS HWY & GEIST
 RD, CHENA PUMP RD

REVIEW PS&E
 6/23/2023
 6/23/2023

POLE-POST DESIGN LOADING SCHEDULE

POLE NO.	CORNER	ILLUMINATION # ARM L. (FT)	SIGNAL ARM L. (FT)									REMARKS
				A	B	C	D	E	F	G		
1	NE	0'	0'	SIG. OR SIGN	SIGNAL	SIGNAL	RADAR	RADAR	SIGNAL	SIGN	SIGN	LUMINAIRE ARM @ -' MOUNTING HEIGHT @ -'
				LOC. OFFSET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
				LxW OR S.F.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	SE	LUMINAIRE 1 - 0' LUMINAIRE 2 - 0'	0'	SIG. OR SIGN	SIGNAL	SIGNAL	RADAR	SIGNAL	SIGN	SIGN	LUMINAIRE ARM 1 @ -' MOUNTING HEIGHT @ -' LUMINAIRE ARM 2 @ -' MOUNTING HEIGHT @ -'	
				LOC. OFFSET	0.0	0.0	0.0	0.0	0.0	0.0		0.0
				LxW OR S.F.	0.00	0.00	0.00	0.00	0.00	0.00		0.00
3	SW	0'	0'	SIG. OR SIGN	SIGNAL	SIGNAL	RADAR	RADAR	SIGNAL	SIGN	LUMINAIRE ARM @ -' MOUNTING HEIGHT @ -'	
				LOC. OFFSET	0.0	0.0	0.0	0.0	0.0	0.0		0.0
				LxW OR S.F.	0.00	0.00	0.00	0.00	0.00	0.00		0.00
4	NW	0'	0'	SIG. OR SIGN	SIGNAL	SIGNAL	RADAR	SIGNAL	SIGN		LUMINAIRE ARM @ -' MOUNTING HEIGHT @ -'	
				LOC. OFFSET	0.0	0.0	0.0	0.0	0.0	0.0		
				LxW OR S.F.	0.00	0.00	0.00	0.00	0.00	0.00		

POLE-POST DESIGN LOADING SCHEDULE NOTES:

- ORIENT SIGNAL MAST ARM(S) 90° TO THE C OF THE ROADWAY UNLESS NOTED OTHERWISE.
- LUMINAIRE MAST ARM MOUNTING HEIGHT IS FROM ROADWAY FINISHED GRADE TO BOTTOM OF FIXTURE.
- SEE SIGNAL PLAN ON SHEET ___ FOR LUMINAIRE TYPE AND ADJUSTABLE OUTPUT SETTINGS.

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H108	H145

SIGNAL SIGN SCHEDULE

SIGN NO.	LOCATION		ASDS CODE	LEGEND	SIZE HxV (INCHES)	AREA (SQ FT)	BRACING/FRAMING		REMARKS
	POLE NO.	OFFSET					BRACED	FRAMED	
1	1		D3-1B	NOBLE ST	78x24	13.0		X	SEE NOTE 2
2	2		D3-1B	10TH AVE	84x24	14.0		X	SEE NOTE 2
3	3		D3-1B	NOBLE ST	78x24	13.0		X	SEE NOTE 2
4	4		D3-1B	10TH AVE	84x24	14.0		X	SEE NOTE 2
SUBTOTAL SIGNAL SIGNS						54.0			

SIGNAL SIGN SCHEDULE NOTES:

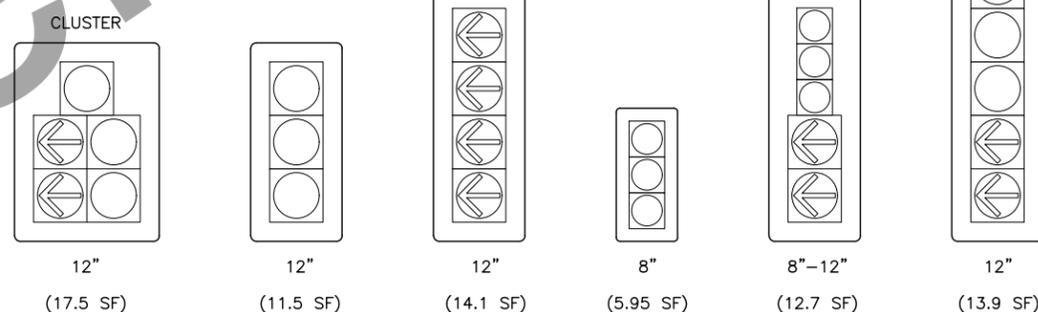
- LOCATION OFFSETS ARE FROM CENTER OF SIGN TO C OF SIGNAL POLE.
- FOR SIGN STREET NAMES, USE 12" INITIAL UPPERCASE LETTERING AND A MINIMUM OF 9" LOWERCASE LETTERING. FOR STREET TYPES, USE 8" INITIAL UPPERCASE LETTERING AND A MINIMUM OF 5" LOWERCASE LETTERING.

POLE/POST NO.	FACE NO.	INDICATIONS												MOUNTING			REMARKS	
		12" BALL			12" ARROW			8" BALL			MAST ARM		SIDE MTNG. TYPE	TOP OF POST				
		R	Y	G	R	Y	FYA	G	R	Y	G	LOC. OFFSET			ELEV. PLUMB			
1	41	X	X	X													D	
	52				L	L	L	L									D	
	42	X	X	X							0.0	X						
	43	X	X	X							0.0	X						
2	71				L	L	L	L			0.0	X					D	
	21	X	X	X													D	
	32				L	L	L	L									D	
	22	X	X	X							0.0	X						
3	23	X	X	X							0.0	X						
	51				L	L	L	L			0.0	X					D	
	81	X	X	X													D	
	12				L	L	L	L									D	
4	82	X	X	X							0.0	X						
	83	X	X	X							0.0	X						
	31				L	L	L	L			0.0	X					D	
	61	X	X	X													D	
11	72				L	L	L	L									D	
	62	X	X	X							0.0	X						
	63	X	X	X							0.0	X						
	11				L	L	L	L			0.0	X						

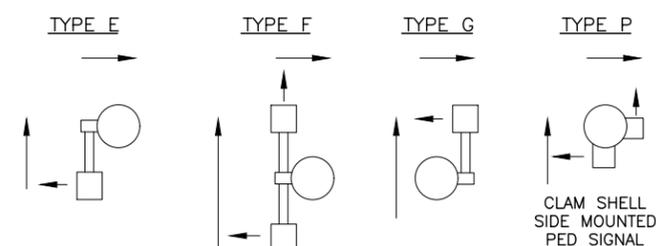
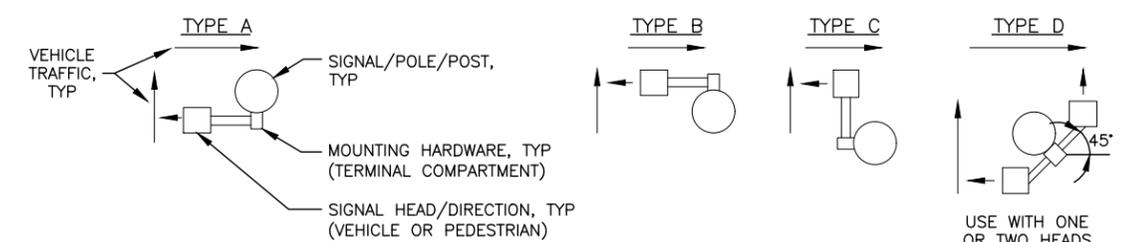
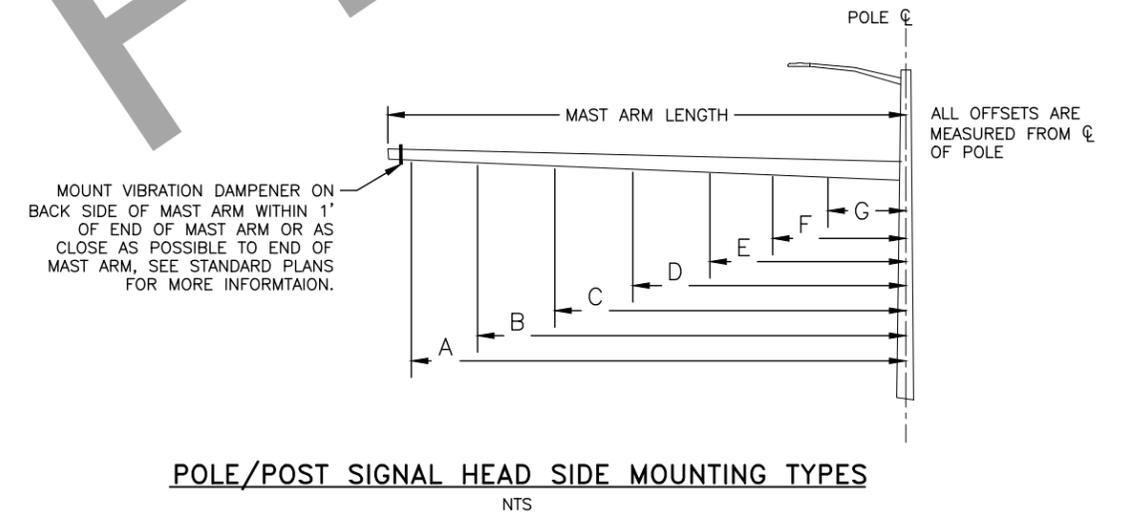
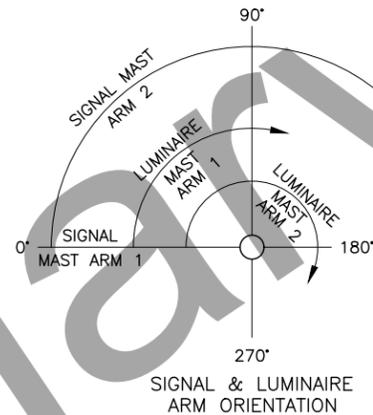
SIGNAL HEAD SCHEDULE NOTES:

- LOCATION OFFSETS ARE FROM CENTER OF SIGNAL HEAD TO C OF SIGNAL POLE.
- FYA = FLASHING YELLOW ARROW.

POLE/POST NO.	FACE NO.	PED SIGNAL HEAD SCHEDULE	
		MOUNTING TYPE	REMARKS
1	69	P	
2	49	P	
3	88	P	
4	89	P	
5	48	P	
6	28	P	
7	29	P	
8	68	P	



SIGNAL HEAD CONFIGURATIONS
(AREAS ARE FOR WIND LOAD CALCULATIONS)
(ARROWS AND BALL INDICATIONS ARE INTERCHANGEABLE)



**SCHEDULES -
PARKS HWY & GEIST
RD, CHENA PUMP RD**

REVIEW PS&E
6/23/2023

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H116	H145

Preliminary Plans

PLANS DEVELOPED BY: KINNEY ENGINEERING, LLC 3909 Arctic Blvd, Suite 400 Anchorage, Alaska 99503 (907) 346-2373 CERT. OF AUTH. NO. 1102
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ILLUMINATION
 PERFORMANCE CRITERIA

REVIEW PS&E
 6/23/2023
 6/23/2023

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H117	H145

SIGNING SUMMARY

SITE NO.	NORTHING	EASTING	ASDS CODE	LEGEND	SIZE (INCHES)		BRACING/FRAMING		AREA (SQ.FT.)	MTG. HGT. (FT.)	DIR.	POST			REMARKS
					H	X	V	BRACED				FRAMED	TYPE	SIZE (INCHES)	
3	200733.29	668420.43	R4-7 OM1-1	KEEP RIGHT YELLOW OBJ MARKER	30	X	24				S	PST	2	1	SEE NOTE 22
SUBTOTAL =										0.00					
SIGNAL SIGN SUBTOTAL =										1147.50					
TOTAL SIGN AREA =										1147.50					

SIGNING NOTES:

- REMOVE AND DISPOSE OF ALL EXISTING SIGNS AND SIGN POST FOUNDATIONS WITHIN THE PROJECT LIMITS, EXCEPT SIGNS DESIGNATED FOR REINSTALLATION, SALVAGE, OR OTHERWISE NOTED.
- OFFSET DISTANCES FOR STOP SIGN ASSEMBLIES, SIGNS MOUNTED ON LIGHT POLES, AND POSTS IN THE MEDIAN ARE FROM DESIGN CENTERLINE TO CENTER OF POST. ALL OTHER OFFSET DISTANCES ARE FROM DESIGN CENTERLINE TO NEAR EDGE OF SIGN.
- MOUNT SIGNS PER STANDARD PLAN S-05.02. SIGNS THAT PROJECT OVER OR WITHIN 2 FEET OF THE SIDEWALK AND PATHWAYS SHALL BE MOUNTED TO A HEIGHT OF 8 FEET.
- DETERMINE POST LENGTHS IN THE FIELD. DO NOT EXTEND POSTS ABOVE TOP OF SIGN.
- INSTALL POSTS WITH SLEEVE TYPE CONCRETE FOUNDATIONS PER STANDARD PLAN S-30.05. ATTACH THE SIGN POST USING GALVANIZED 3/8" DIA. BOLT, NUT, SPLIT LOCK WASHER AND TWO FLAT WASHERS. INSTALL SIGN POSTS 12", 13" MAX IN PST CONCRETE HUBS, THIS MODIFIES THE STANDARD DRAWING.
- PROVIDE "TUBE POST BRACING" AS SHOWN ON STANDARD PLAN S-01.02 FOR ALL SIGNS MOUNTED ON A SINGLE POST AND HAVING A HORIZONTAL DIMENSION OF 30 INCHES OR GREATER, EXCEPT D3-100 SERIES SIGNS. INSTEAD OF 5/8" DIA. GALVANIZED BOLTS AND NYLON LOCKING NUTS SHOWN ON STANDARD PLAN S-01.02, USE GALVANIZED 3/8" DIA. BOLTS, SPLIT LOCK WASHERS AND NUTS. 1/4" T X 1-1/2" W ALUMINUM ALLOY 6061-T6 BAR MAY ALSO BE USED TO FABRICATE SIGN BRACES.
- ATTACH ALL SIGNS TO THEIR SUPPORTS WITH 3/8" DIA. BOLTS, EXCEPT ATTACH UNFRAMED SIGNS TO POSTS WITH ALUMINUM DRIVE RIVETS. WIND WASHERS ARE NOT REQUIRED WITH DRIVE RIVETS. INCLUDE SPLIT LOCK WASHERS WHEN BOLTS ARE USED.
- ALL FASTENER HARDWARE SHALL MEET THE REQUIREMENTS OF THE "FASTENER SPECIFICATION TABLE" ON SHEET ___.
- SIGNS INSTALLED ON LIGHT POLES MAY REQUIRE TEMPORARY INSTALLATION ON 2-1/2" PST POST UNTIL LIGHT POLES ARE IN PLACE. THIS WORK IS SUBSIDIARY TO PAY ITEM 615.0001.0000.
- SEE TRAFFIC SIGNAL SHEETS H119-H121 FOR ADDITIONAL TRAFFIC SIGNS, MOUNTING LOCATIONS, AND MOUNTING DETAILS.
- STOP (R1-1) AND YIELD (R1-2) SIGN LOCATIONS, ESPECIALLY THOSE LOCATED AT LARGE RADIUS INTERSECTIONS, MAY NEED ADJUSTMENT IN THE FIELD. THE ENGINEER WILL APPROVE FINAL LOCATIONS.
- WHERE TWO DIFFERENT D3-100 SERIES SIGNS ARE TO BE LOCATED ON THE SAME POST, INSTALL THE CROSS-STREET PANEL IN THE LOWER POSITION. SEE SHEET ___ FOR DETAIL.
- D3-100(2) INDICATES TWO SEPARATE SINGLE SIDED SIGN PANELS; AND D3-100 INDICATES ONE SINGLE SIDED SIGN PANEL. PROVIDE SIGN BRACING AS INDICATED ON SHEET ___ AND STANDARD PLAN S-01.02.
- MAINTAIN EXISTING SIGNS UNTIL NEW SIGNS ARE INSTALLED. DO NOT LEAVE DUPLICATE OR CONFLICTING SIGNING UP AT ANY TIME.
- ALL SIGNS NOTED FOR REMOVAL AND REINSTALLATION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE IF THEY ARE DAMAGED DURING THE RELOCATION EFFORT.
- USE SERIES C LETTERS FOR D3-100 SERIES SIGNS UNLESS OTHERWISE NOTED. USE 4.5-INCH FOR DIMENSION "E" FOR 12-INCH VERTICAL (V) D3-100 SIGNS. THE LETTERING INDICATING THE TYPE OF STREET (SUCH AS St, Ave, OR Rd) SHALL BE UPPER CASE AND LOWER CASE. THIS MODIFIES THE ASDS.
- LOCATE AND PROTECT ALL NEW AND EXISTING UNDERGROUND UTILITIES PRIOR TO INSTALLING SIGN POSTS. UTILITIES MAY NOT BE SHOWN ON THE SIGNING AND STRIPING PLANS. SEE OTHER PROJECT PLAN SHEETS AND AS-BUILT DRAWINGS FOR UTILITY INFORMATION.
- CLEARING OR TRIMMING OF VEGETATION AS DIRECTED BY THE ENGINEER MAY BE REQUIRED TO ENSURE ADEQUATE VISIBILITY OF SIGNS. THIS WORK IS SUBSIDIARY TO PAY ITEM 615.0001.0000.
- PROVIDE WEATHER TIGHT CAPS ON ALL TUBE POSTS, EXCEPT PERFORATED STEEL TUBES.
- PROVIDE FRANGIBLE COUPLING SYSTEMS IN ACCORDANCE WITH STANDARD PLAN S-31.02.
- HINGED JOINTS WITH FRANGIBLE FUSE PLATE ARE REQUIRED ON ALL MULTIPLE POST SIGNS WITH FRANGIBLE COUPLING SYSTEMS. THE HINGE LOCATION ON ALL POSTS SHALL BE THE SAME DISTANCE BELOW THE SIGNS, INSTEAD OF THE 6 INCH MINIMUM SHOWN ON STANDARD PLAN S-31.02. SEE MANUFACTURER'S SPECIFICATION FOR HINGE LOCATION BELOW SIGN.
- UNLESS OTHERWISE NOTED, RELOCATE EXISTING (SALVAGED) SIGNS TO LOCATIONS IDENTIFIED IN THE SIGNING SUMMARY USING NEW POSTS. FOUNDATIONS, BRACING/FRAMING, MOUNTING BRACKETS, AND FASTENERS. THIS WORK SHALL BE SUBSIDIARY TO PAY ITEM 615.0001.0000 STANDARD SIGN.

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Preliminary

SIGN SUMMARY

REVIEW PS&E
6/23/2023

6/23/2023

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H118	H145

SIGN SALVAGE SUMMARY					
SITE NO.	NORTHING	EASTING	ASDS CODE	LEGEND	REMARKS
3	200733.29	668420.43	R4-7	KEEP RIGHT	STORE SIGNS UNTIL THEY CAN BE INSTALLED IN NEW LOCATION
			OM1-1	YELLOW OBJ MARKER	
15	194938.33	678001.79	D3-100 (2)	15TH AVE	DO NOT REINSTALL SIGN ASSEMBLY
			D3-100 (2)	S CUSHMAN ST	

SIGN SALVAGE AND DISPOSAL NOTES:

1. DELIVER SALVAGED SIGN PANELS, NOT IDENTIFIED FOR REUSE IN THE SIGNING SUMMARY, TO THE DOT&PF FAIRBANKS MAINTENANCE YARD LOCATED AT 2301 PEGER ROAD. CONTACT DANIEL SCHACHER (907) 451-5276 TO ARRANGE FOR DELIVERY.
2. SALVAGED SIGNS WILL BE PAID PER EACH SIGN PANEL DELIVERED IN ACCEPTABLE CONDITION.

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Preliminary Plans

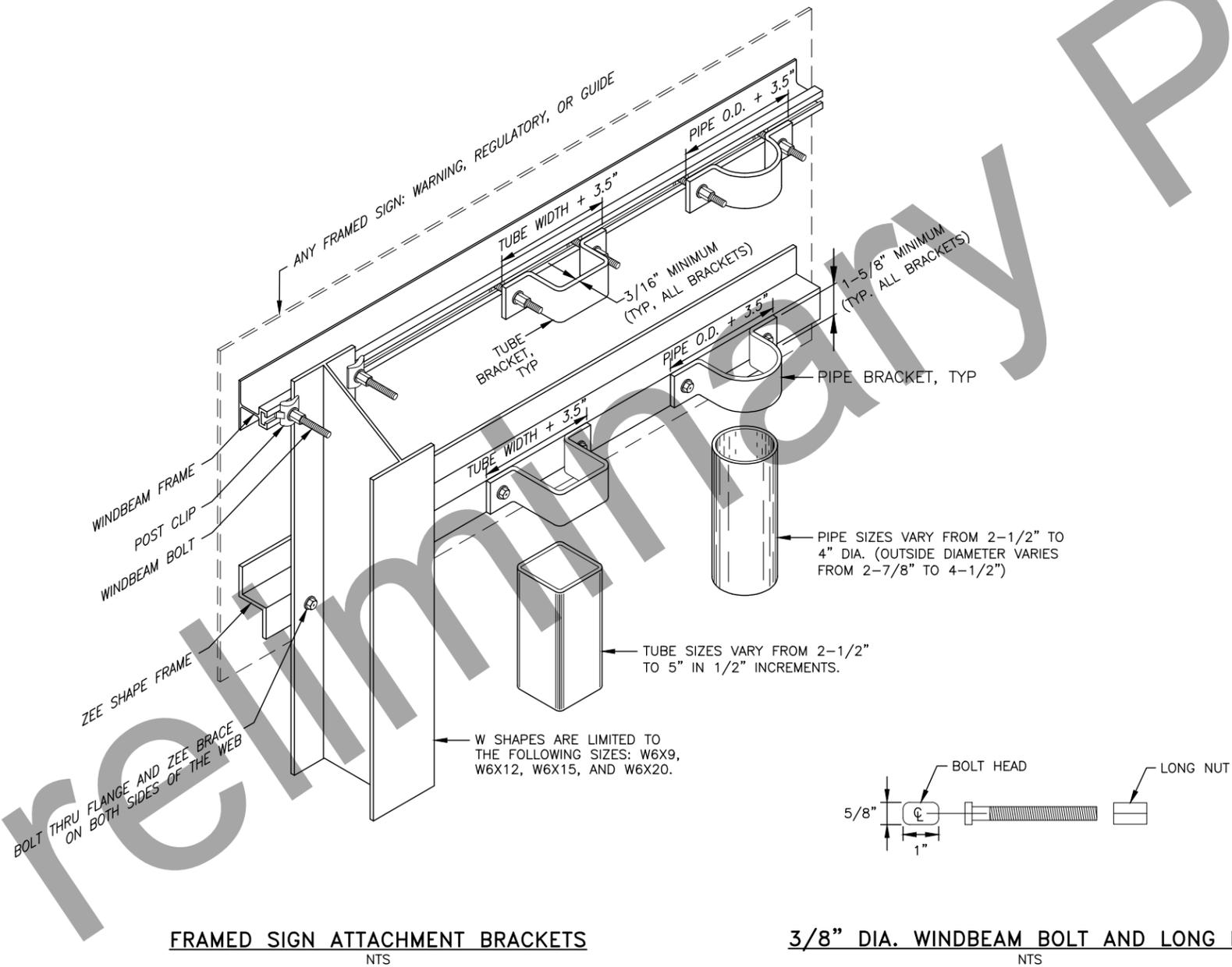
SIGN SALVAGE

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6/23/2023
6/23/2023

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H119	H145

FRAMED SIGN & BRACKET DETAIL NOTES:

1. 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 OR A BRACKET WITH SQUARE CORNERS ON TUBES.
2. THE TUBE BRACKETS USED ON EVEN INCH SIZE TUBES MAY ALSO BE USED ON TUBES 1/2" SMALLER IN SIZE.
3. THE BRACKET DETAILS SHOWN INDICATE GENERAL DESIGNS ONLY. DESIGNS MAY VARY BY MANUFACTURER.
4. ALUMINUM ALLOY 6061-T6 SHALL BE USED FOR ZEE SHAPE FRAMING AND RIVETS.



FRAMED SIGN ATTACHMENT BRACKETS
NTS

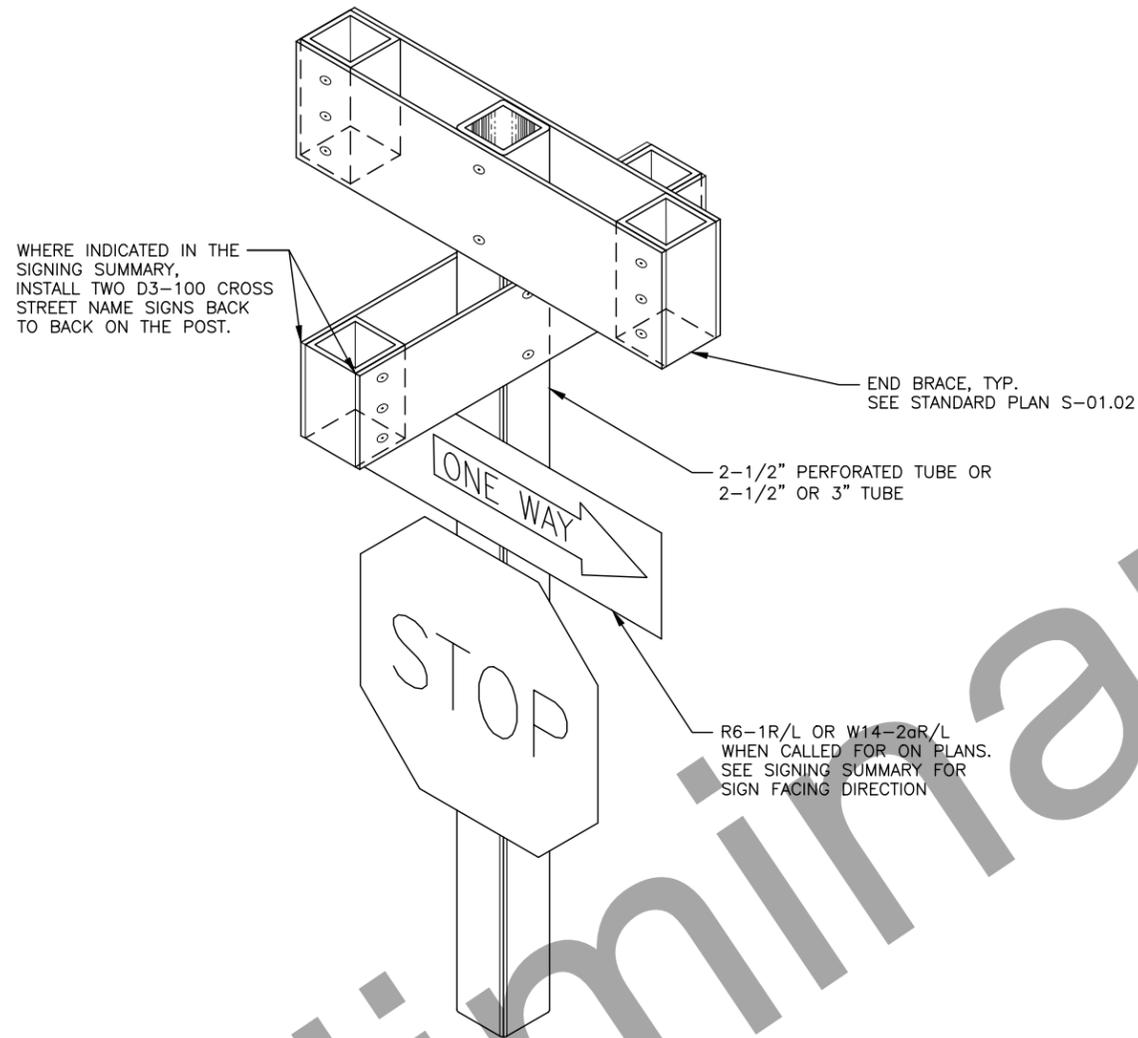
3/8" DIA. WINDBEAM BOLT AND LONG NUT
NTS

SIGN DETAILS
1 OF 3

REVIEW PS&E
6/23/2023

6/23/2023

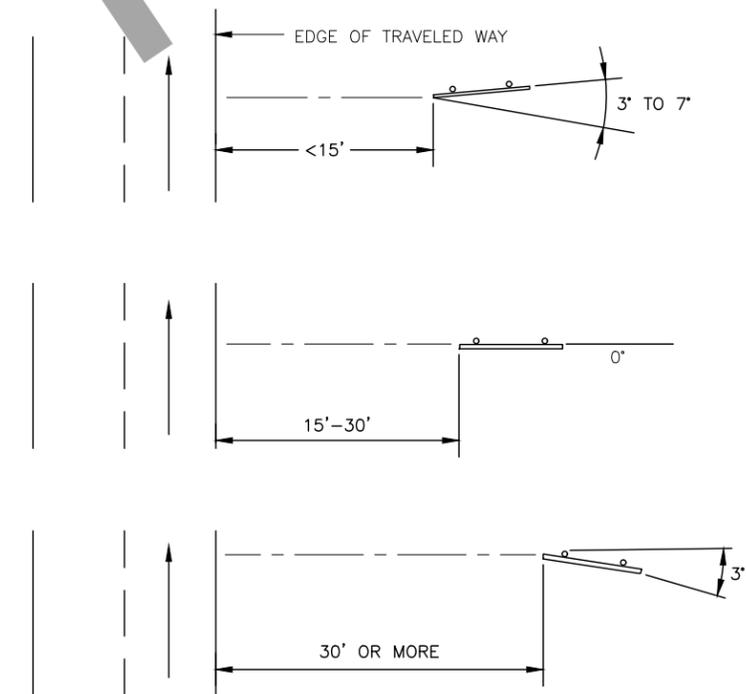
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H120	H145



STREET NAME SIGN NOTES:

1. VERTICALLY SEPARATE MULTIPLE SIGNS MOUNTED ON THE SAME POST BY 2 1/2 INCHES.
2. WHERE CALLED FOR INSTALL W14-2aL AND W14-2aR SIGN BACK TO BACK USING END BRACING PER STANDARD PLAN S-01.02. MOUNT BELOW THE CROSS STREET NAME SIGNS.
3. WHERE A SINGLE SIGN THAT IS NOT MOUNTED BACK TO BACK IS CALLED FOR IN THE SIGNING SUMMARY, INSTALL USING FLAT GALVANIZED STEEL BRACE(S) IN ACCORDANCE WITH STANDARD PLAN S-01.02.

STREET NAME SIGN
NTS

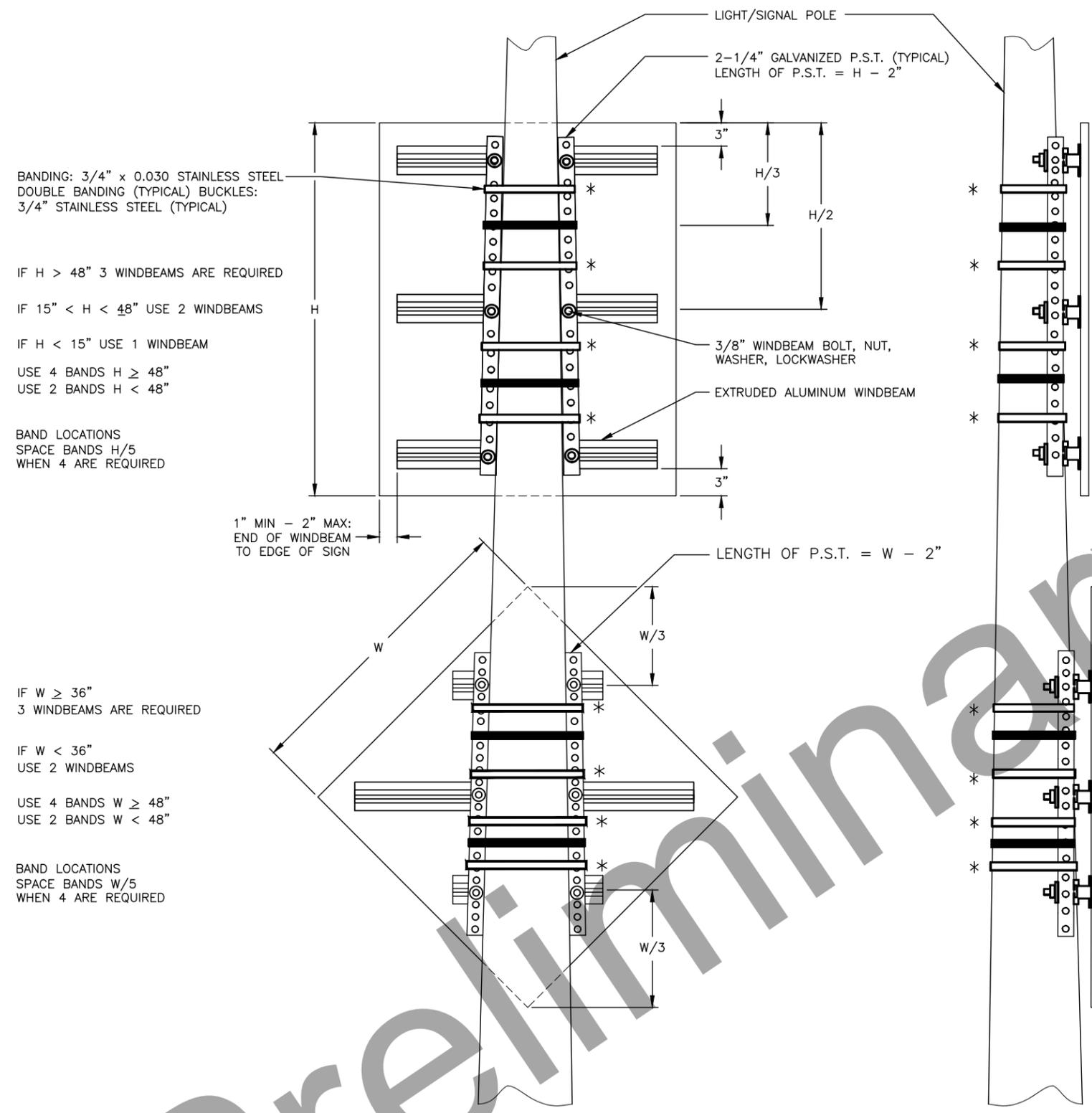


SIGN INSTALLATION ANGLES
NTS

SIGN DETAILS
2 OF 3

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6/23/2023
6/23/2023

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H121	H145



BANDING: 3/4" x 0.030 STAINLESS STEEL
DOUBLE BANDING (TYPICAL) BUCKLES:
3/4" STAINLESS STEEL (TYPICAL)

IF H > 48" 3 WINDBEAMS ARE REQUIRED

IF 15" < H < 48" USE 2 WINDBEAMS

IF H < 15" USE 1 WINDBEAM

USE 4 BANDS H ≥ 48"
USE 2 BANDS H < 48"

BAND LOCATIONS
SPACE BANDS H/5
WHEN 4 ARE REQUIRED

1" MIN - 2" MAX:
END OF WINDBEAM
TO EDGE OF SIGN

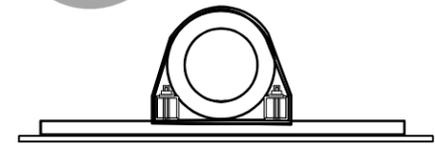
IF W ≥ 36"
3 WINDBEAMS ARE REQUIRED

IF W < 36"
USE 2 WINDBEAMS

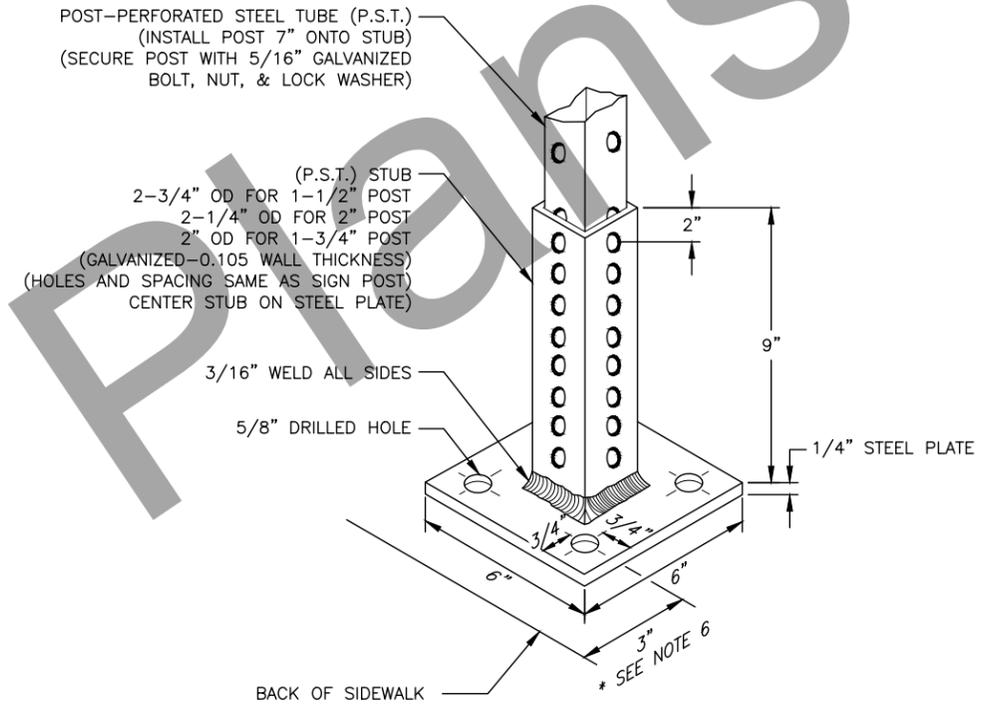
USE 4 BANDS W ≥ 48"
USE 2 BANDS W < 48"

BAND LOCATIONS
SPACE BANDS W/5
WHEN 4 ARE REQUIRED

NOTE:
ATTACH SIGN TO WINDBEAMS WITH 3/16" RIVETS
AT 4" STAGGERED SPACING.



LIGHT/SIGNAL POLE SIGN FRAMING & MOUNTING DETAILS
NTS



POST-PERFORATED STEEL TUBE (P.S.T.)
(INSTALL POST 7" ONTO STUB)
(SECURE POST WITH 5/16" GALVANIZED
BOLT, NUT, & LOCK WASHER)

(P.S.T.) STUB
2-3/4" OD FOR 1-1/2" POST
2-1/4" OD FOR 2" POST
2" OD FOR 1-3/4" POST
(GALVANIZED-0.105 WALL THICKNESS)
(HOLES AND SPACING SAME AS SIGN POST)
CENTER STUB ON STEEL PLATE

3/16" WELD ALL SIDES

5/8" DRILLED HOLE

1/4" STEEL PLATE

BACK OF SIDEWALK

NOTES:

1. DRILL FOUR (4) 1/2" HOLES IN SIDEWALK USING PLATE AS TEMPLATE. (DEPTH AS REQUIRED)
2. INSTALL STUB AND PLATE WITH FOUR (4) HILT EXPANSION ANCHORS CAT. NO. HDI 3/8" OR APPROVED EQUAL. USE FOUR (4) 3/8" GALVANIZED BOLTS AND FLAT WASHERS.
3. DO NOT SHIM VASE, PLUMB STUB BY HEATING AT PLATE.
4. PAINT STUB AND BASE WITH APPROVED MATERIAL AFTER INSTALLATION.
5. INSTALL STUBS FOR NO PARKING SIGNS AT 45° FACING TRAFFIC.
6. WHEN INSTALLED IN A MEDIAN CENTER THE POST IN THE MEDIAN. CONFIRM INSTALLATION LOCATION WITH THE ENGINEER PRIOR TO DRILLING HOLES.

SIDEWALK MOUNTING STUB FOR SIGN POST
NTS

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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H122	H145

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LOAD CENTER SUMMARY

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6/23/2023
6/23/2023

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H123	H145

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TYPE 1 LOAD CENTER
 DETAILS

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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H124	H145

Preliminary Plans

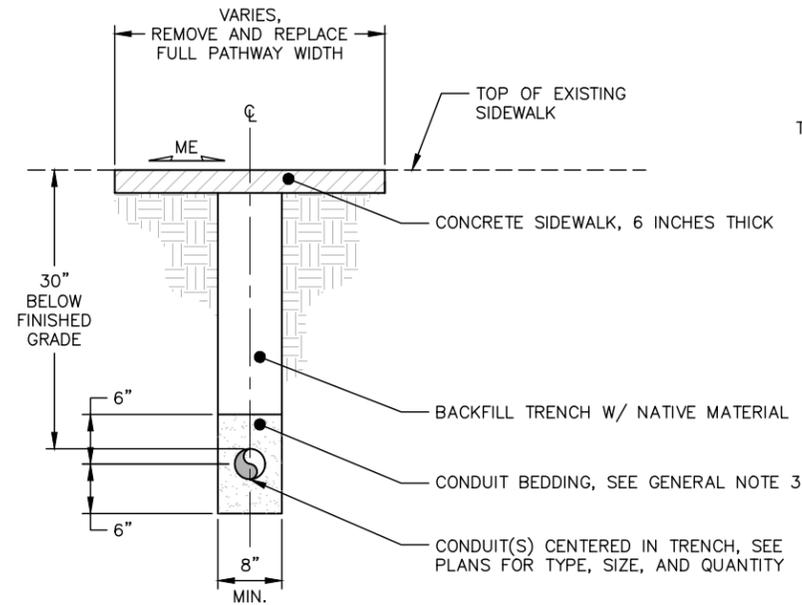
POST-MOUNTED
TRANSFORMER AND
DISCONNECTS

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6/23/2023
6/23/2023

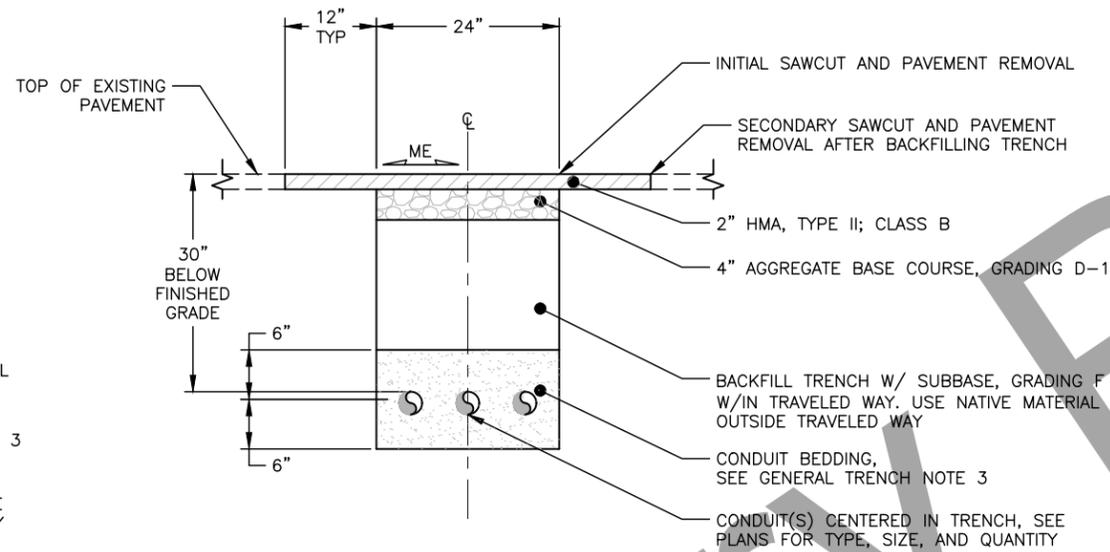
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H125	H145

GENERAL TRENCH NOTES:

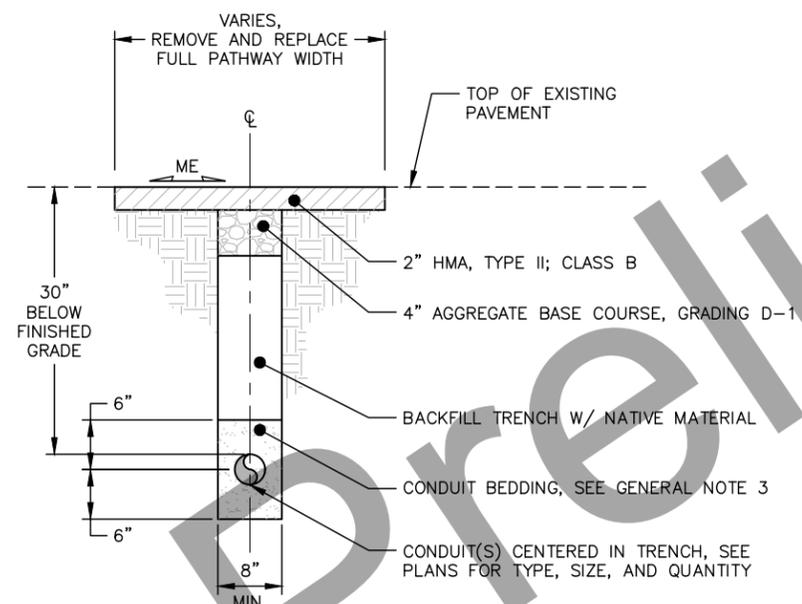
1. ALL ASPHALT PAVEMENT, CURB & GUTTER, OR CONCRETE SIDEWALK SHALL BE SAWCUT PRIOR TO REMOVAL. CONCRETE SIDEWALK SHALL BE SAWCUT AND REMOVED AT AN EXISTING CONSTRUCTION JOINT.
2. ALL CONDUIT TRENCH AND EXCAVATION BENEATH ASPHALT OR CONCRETE PAVED SURFACES SHALL BE COMPLETED BEFORE FINAL PAVING.
3. IMPORTED CONDUIT BEDDING SHALL MEET THE REQUIREMENTS FOR SELECTED MATERIAL, TYPE A, 1" MINUS.



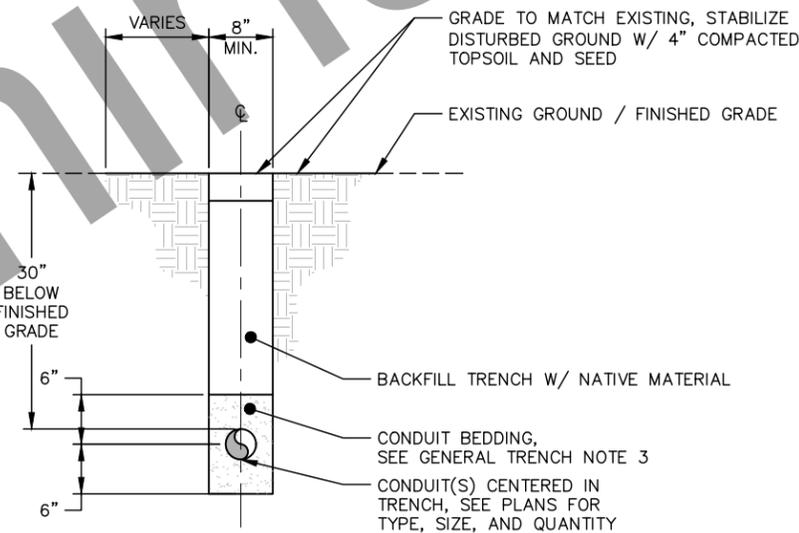
CONDUIT TRENCH UNDER CONCRETE SIDEWALK
NTS



CONDUIT TRENCH DETAIL UNDER PAVED TRAVELED WAY AND OUTSIDE TRAVELED WAY
NTS



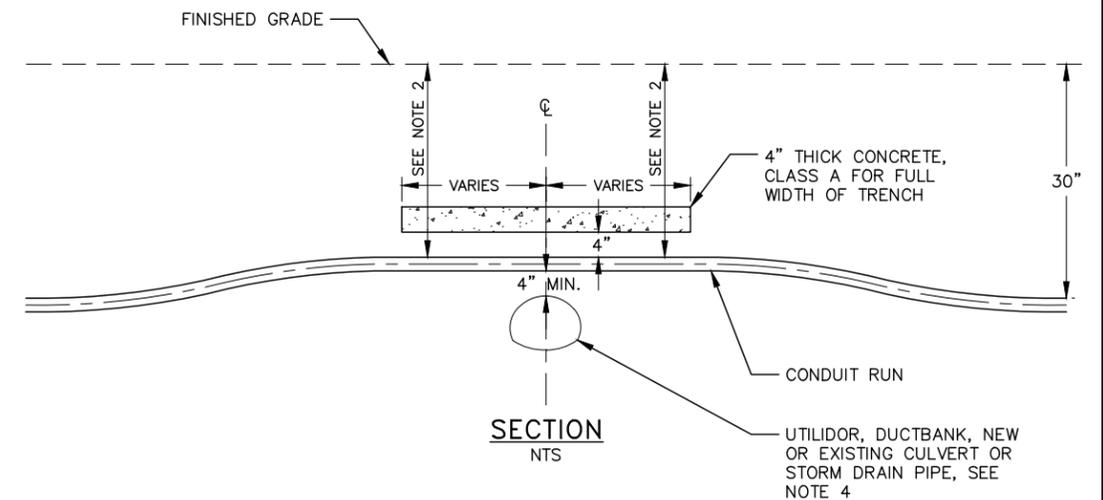
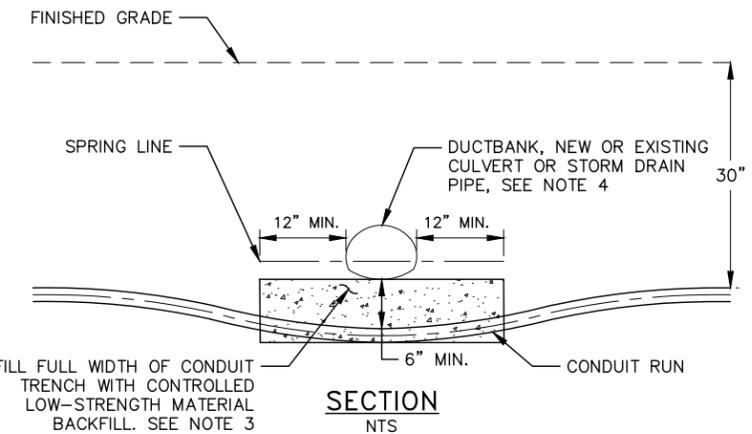
CONDUIT TRENCH UNDER ASPHALT PATHWAY
NTS



CONDUIT TRENCH DETAIL ADJACENT TO ROADWAYS, SIDEWALKS AND PATHWAYS
NTS

CONDUIT-CULVERT CROSSING NOTES:

1. UNLESS DIRECTED OTHERWISE BY THE ENGINEER, USE THIS DETAIL WHENEVER CONDUIT BURIAL DEPTH IS LESS THAN 30".
2. MINIMUM CONDUIT COVER REQUIREMENTS:
 - 24" UNDER ROADWAYS, DRIVEWAYS, PARKING LOTS, AND PATHWAYS.
 - 18" UNDER ALL OTHER AREAS.
- ENSURE THAT THE CONDUIT IS PROPERLY POSITIONED AND ANCHORED BEFORE BACKFILLING WITH CONTROLLED LOW-STRENGTH MATERIAL.
- UNLESS OTHERWISE NOTED, OR AS DIRECTED BY THE ENGINEER, USE THIS DETAIL WHEN UNDER GROUND UTILITY CROSSINGS ARE ENCOUNTERED. DO NOT ENCASE UTILITY IN CONTROLLED LOW-STRENGTH MATERIAL OR CONCRETE UNLESS OTHERWISE DIRECTED. POTHOLES ARE REQUIRED WHEN CROSSING BENEATH DUCTBANKS.
- CONCRETE AND FLOWABLE FILL MATERIALS AND WORK ARE SUBSIDIARY TO THE FIBER OPTIC INTERCONNECT PAY ITEM. CONTROLLED LOW-STRENGTH MATERIAL SHALL MEET THE REQUIREMENTS OF SECTIONS 205 AND 721.



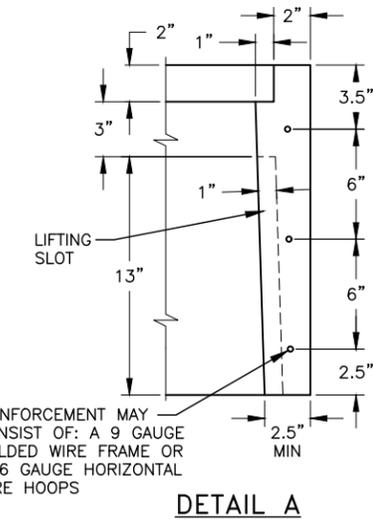
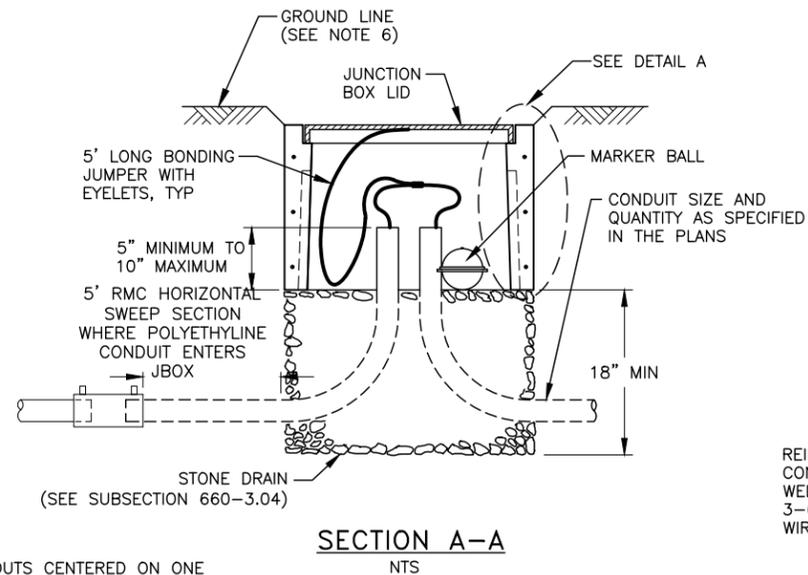
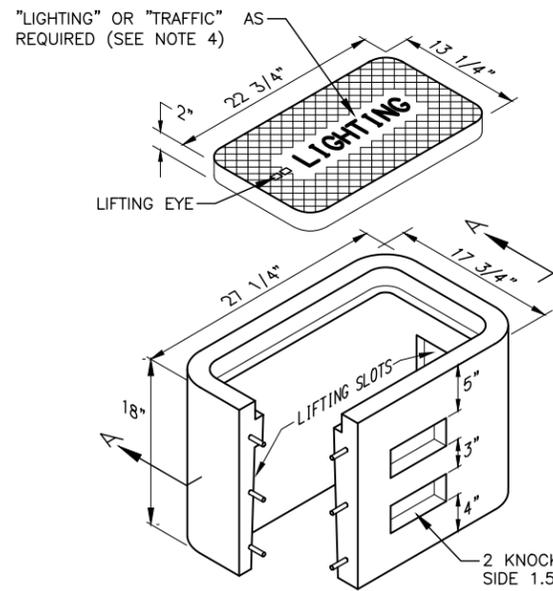
CONDUIT-CULVERT CROSSING DETAIL

TRENCH DETAILS

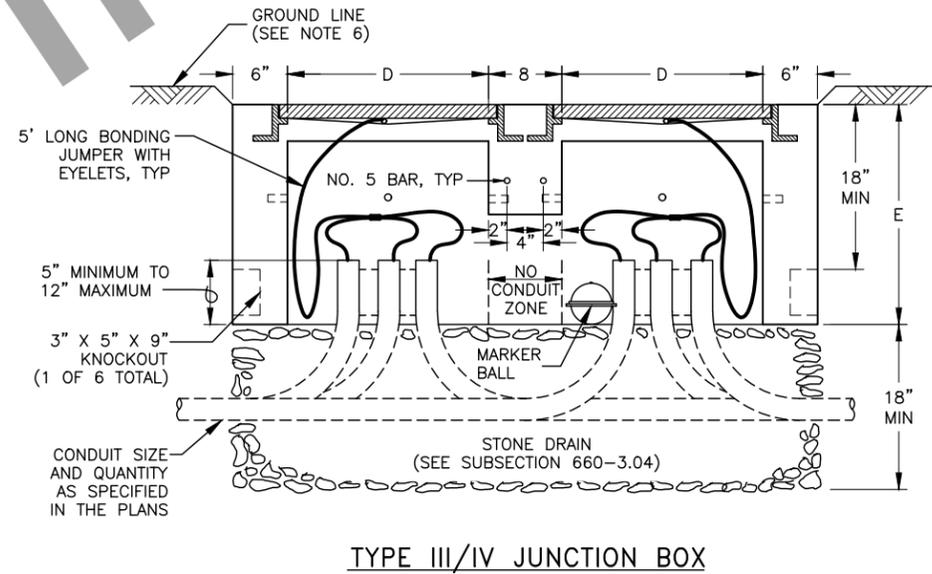
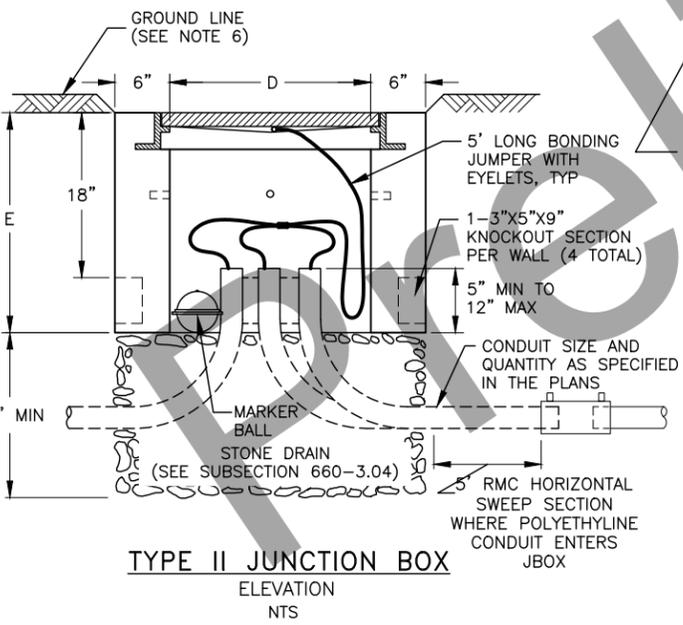
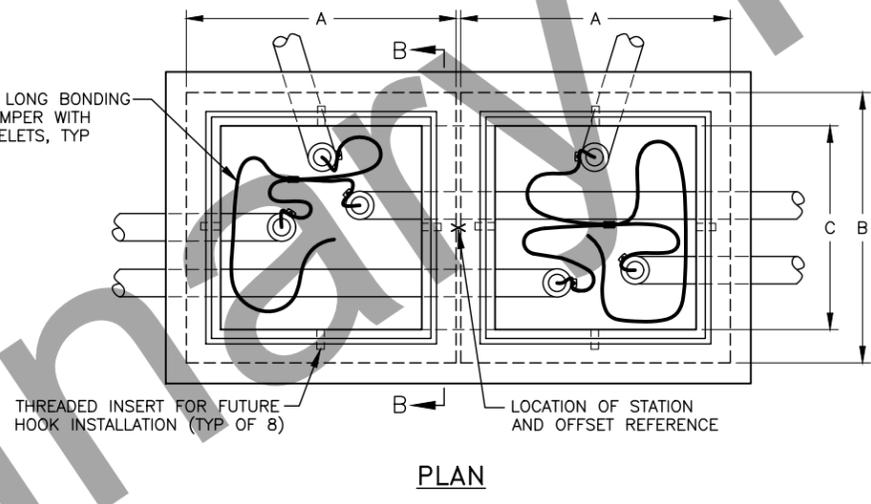
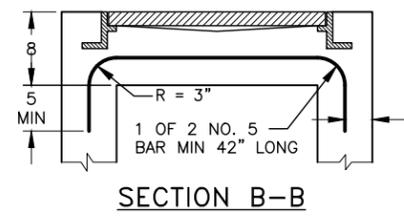
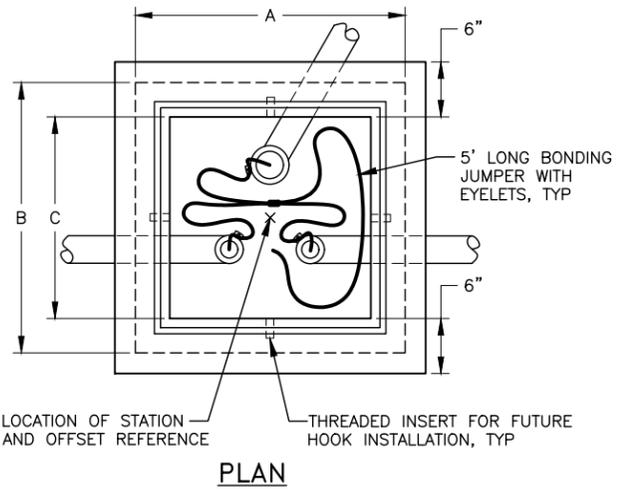
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			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H126	H145



TYPE IA JUNCTION BOX



- NOTES:
- 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.
 - 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.
 - 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.
 - 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.
 - UNDER JUNCTION BOXES, INSTALL POROUS BACKFILL MATERIAL CONFORMING TO SUBSECTION 703-2.10, GRADATION A.
 - 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
 - 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.
 - INSTALL LOOP DETECTOR TAILS THROUGH ONE OF THE KNOCKOUTS OF TYPE IA JUNCTION BOXES. AFTER SETTING THE BOXES TO GRADE, INSTALL GROUT IN THE GAPS THAT REMAIN IN THE KNOCKOUT.
 - INSTALL A 1/2" THICK PREFORMED BITUMINOUS JOINT MATERIAL AROUND JUNCTION BOXES INSTALLED IN PORTLAND CEMENT CONCRETE WALKWAYS.
 - INSTALL AN ELECTRONIC MARKER BALL IN ALL JUNCTION BOXES PER SUBSECTION 660-3.04.
 - 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.
 - WHERE MODIFIED TYPE II JUNCTION BOXES ARE REQUIRED FOR DETECTOR LOOP TAIL INSTALLATIONS, ADD ONE(1) ADDITIONAL 5" DEEP X 3" HIGH X 18" WIDE KNOCKOUT 12" BELOW TOP OF JUNCTION BOX.

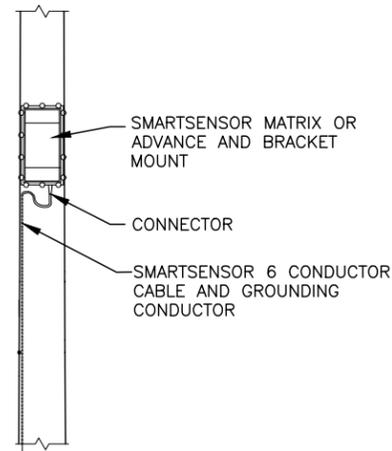
J-BOX TYPE	DIMENSIONS				
	A (MAX.)	B (MAX.)	C (MIN.)	D (MIN.)	E (MIN.)
II	29 1/2"	29 1/2"	22"	22"	24"
III	29 1/2"	29 1/2"	22"	22"	24"
IV	30"	36"	30"	24"	30"

JUNCTION BOX DETAILS

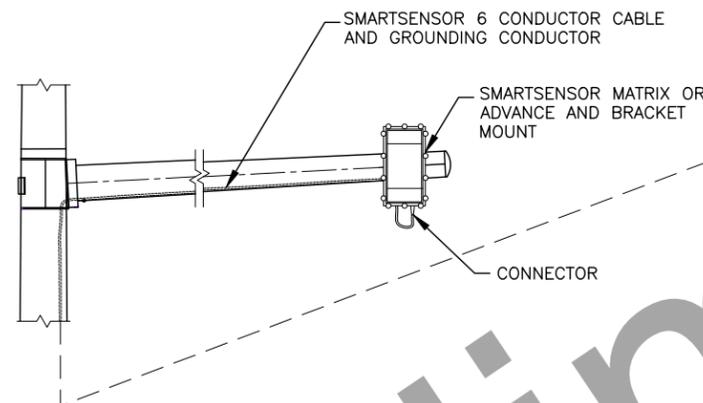
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6/23/2023

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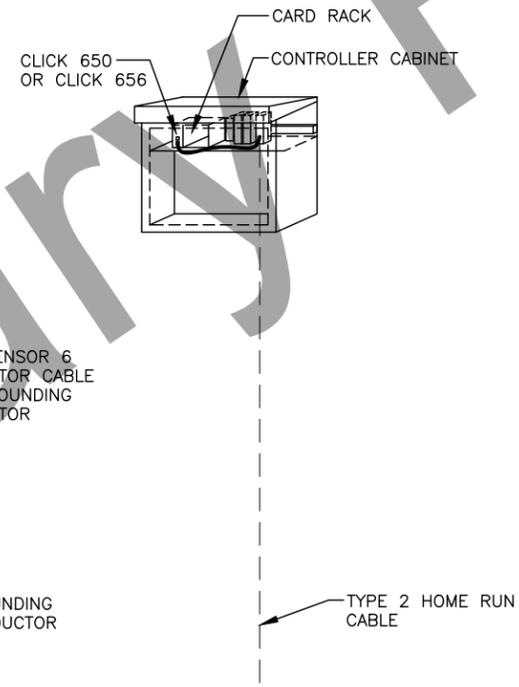
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H127	H145



SIDE POLE
OPTION 1



MASTARM
OPTION 2



RADAR DETECTION 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. WHEN CABLE HAS BEEN PULLED TO FINAL LOCATIONS INSTALL AND MAKE FINAL CONNECTIONS.
3. CABLE RUNS ARE TO BE MADE CONTINUOUS WITHOUT SPLICES.
4. CABLE WITH DAMAGED INSULATION, OR THAT HAS BEEN CRIMPED OR BENT BEYOND THE MINIMUM BEND RADIUS MUST BE REPLACED AT CONTRACTORS EXPENSE.
5. THE MINIMUM 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 POLE MOUNT ENCLOSURE AND RADAR MOUNTING LOCATION.
7. 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.
9. INSTALL WATERTIGHT THREADED RIGID COMPRESSION CONNECTOR WHERE CABLE PASSES THROUGH THE POLE.
10. FURNISH ONLY NEW EQUIPMENT OF THE BRAND AND TYPE LISTED OR ITS APPROVED EQUAL. PROVIDE AT NO ADDITIONAL COST ALL NECESSARY DEVICES, WIRES, BRACKETS/HARDWARE ETC. TO PROVIDE A FULLY FUNCTIONING RADAR DETECTION SYSTEM.
11. INSTALL #10 AWG GROUNDING CONDUCTOR WITH GREEN COLORED INSULATION BETWEEN THE EXTERNAL GROUNDING LUG ON THE SMARTSENSOR 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 TAG AS "RADAR GND".

MATRIX RADAR DETECTION EQUIPMENT
ITEMS TO BE PROVIDED FOR INSTALLATION
SENSOR MOUNT - 6" 3 AXIS ALUM. BRACKET. (SS-611)
MINI 710- SENSOR CABLE J-BOX WITH TERMINAL BLOCKS (102-0453)
MATRIX TYPE 2 HOME RUN CABLE (MTX2 HMRN)
SMARTSENSOR 6 CONDUCTOR CABLE (SS-704-040) WITH SINGLE END CONNECTOR (SS-709) FACTORY INSTALLED
SMARTSENSOR MATRIX (SS-225)
KNUCKLE BRACKET (360-0129), WHEN IDENTIFIED IN PLANSET

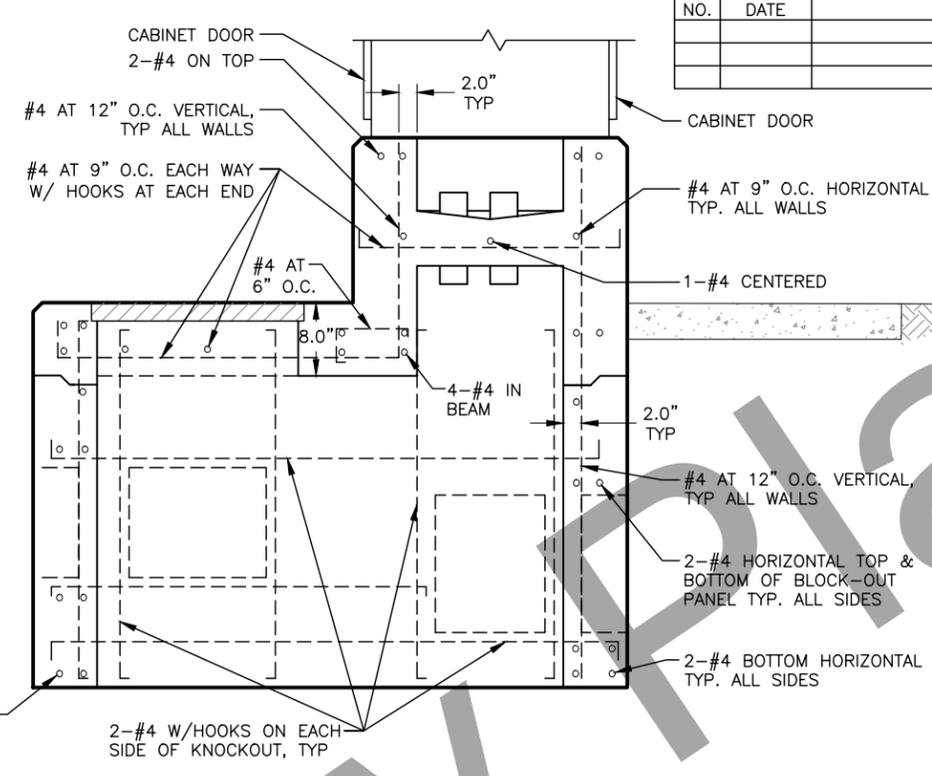
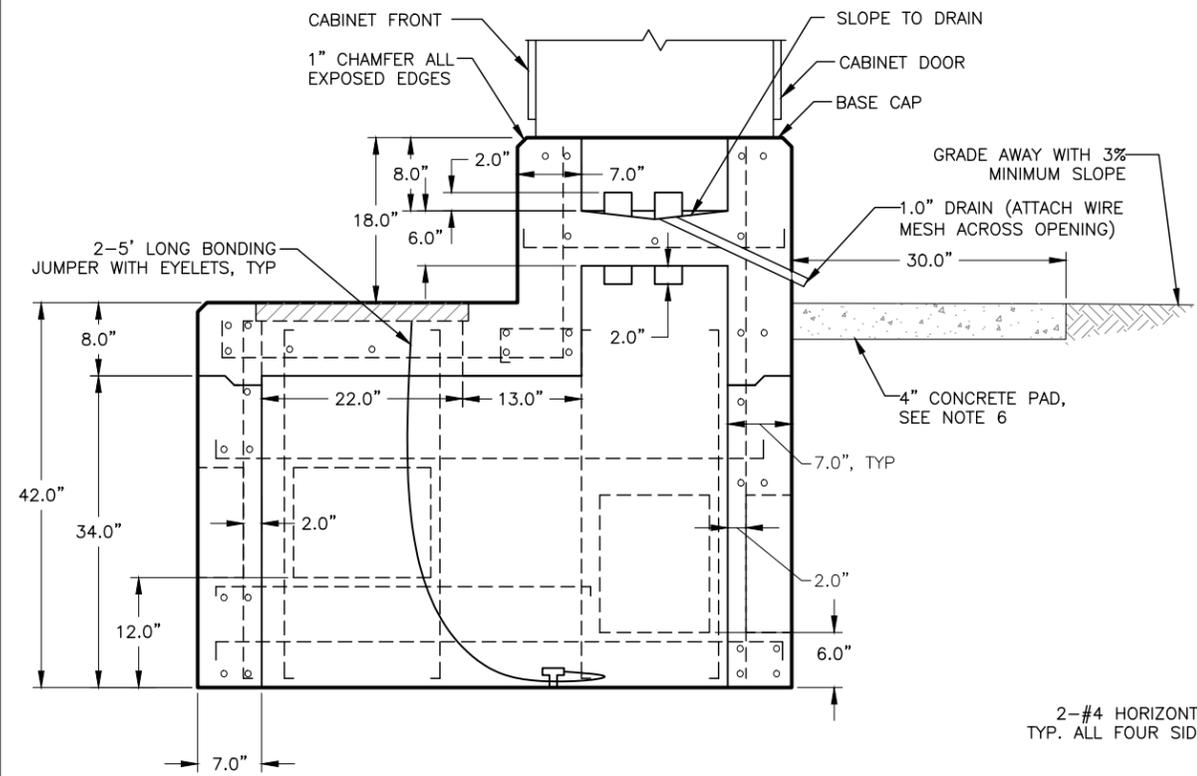
ADVANCE RADAR DETECTION EQUIPMENT
ITEMS TO BE PROVIDED FOR INSTALLATION
SENSOR MOUNT - 6" 3 AXIS ALUM. BRACKET. (SS-611)
MINI 710- SENSOR CABLE J-BOX WITH TERMINAL BLOCKS (102-0453)
MATRIX TYPE 2 HOME RUN CABLE (MTX2 HMRN)
SMARTSENSOR 6 CONDUCTOR CABLE (SS-704-040) WITH SINGLE END CONNECTOR (SS-709) FACTORY INSTALLED
SMARTSENSOR ADVANCE EXTENDED RANGE (SS-200E)
SMARTSENSOR ADVANCE VIEW FINDER (360-0283)
KNUCKLE BRACKET (360-0129), WHEN IDENTIFIED IN PLANS

RADAR DETAILS

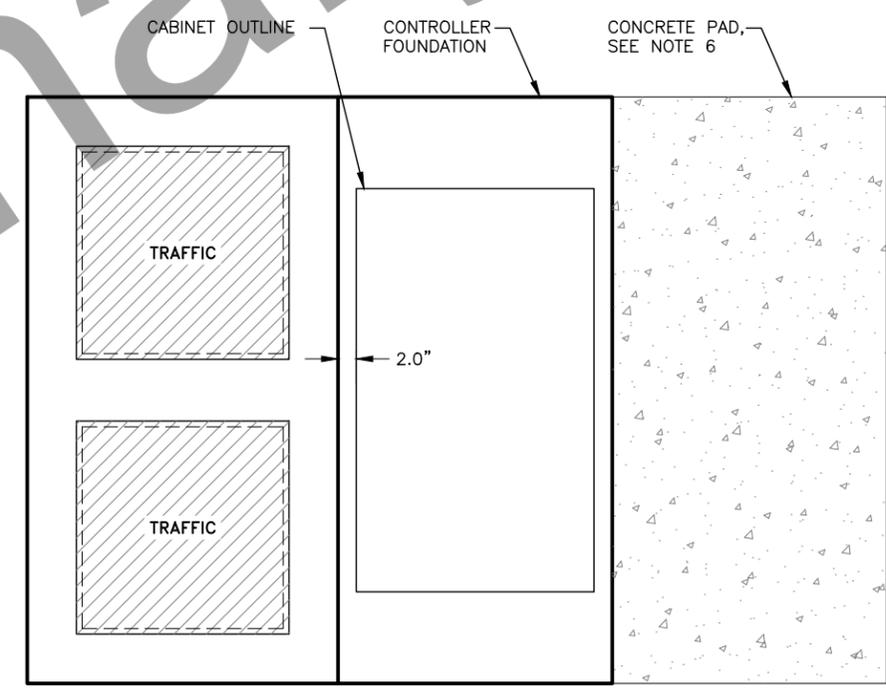
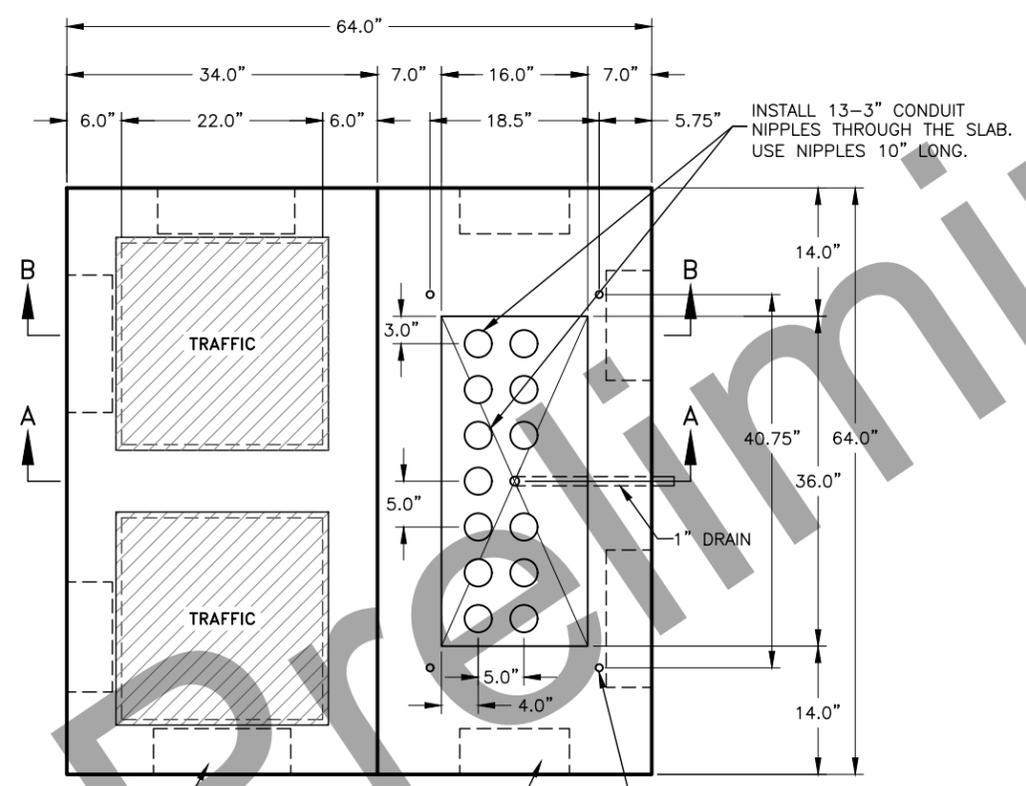
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6/23/2023

6/23/2023

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H128	H145



- NOTE:**
- 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.
 - 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.
 - ROUTE THE FIVE FOOT COPPER GROUNDING JUMPER THROUGH THE 2" PIPE NIPPLE AND ATTACH IT TO THE GROUNDING BUSHING ON THE FEEDER CONDUIT.
 - 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.
 - INSTALL TRAFFIC CONTROLLER WITHIN 1-DEGREE OF PLUMB.
 - INSTALL CONCRETE PAD WHERE NOTED ON THE PLANS. CONCRETE PAD SHALL BE SUBSIDIARY TO THE SIGNAL PAY ITEM.



15" W x 12" H x 5" D KNOCKOUT (TYPICAL OF 4)
 12" W x 15" H x 5" D KNOCKOUT (TYPICAL OF 4)
 0.75" ANCHOR BOLT (TYPICAL OF 4)

SIZE 6 OR 7 CONTROLLER CABINET FOUNDATION
 NOTE: BOLT SPACING DIMENSIONS SHOWN FOR TS2 CONTROLLER CABINETS.

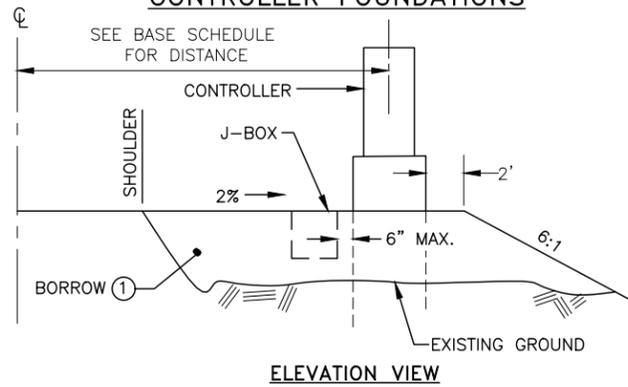
CONTROLLER CABINET FOUNDATION DETAIL

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 6/23/2023
 6/23/2023

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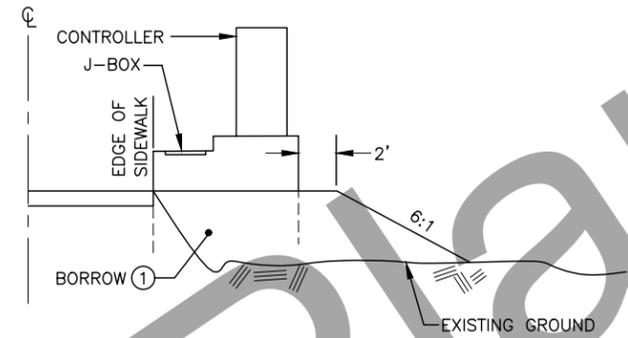
GRADING DETAILS FOR SIGNAL POLE & CONTROLLER FOUNDATIONS

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H130	H145

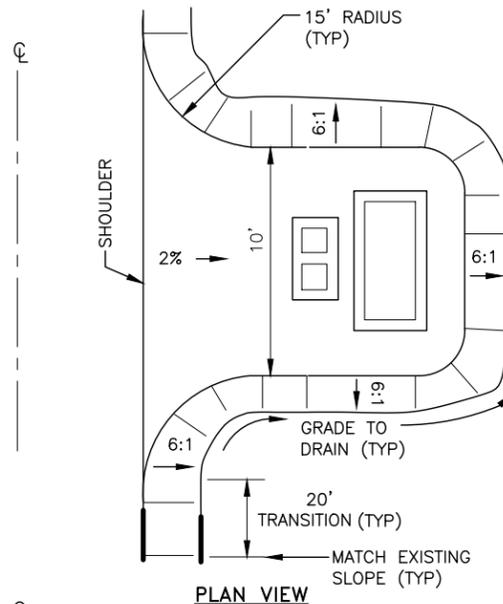


ELEVATION VIEW

GRADING DETAILS FOR SIGNAL POLE & CONTROLLER FOUNDATIONS

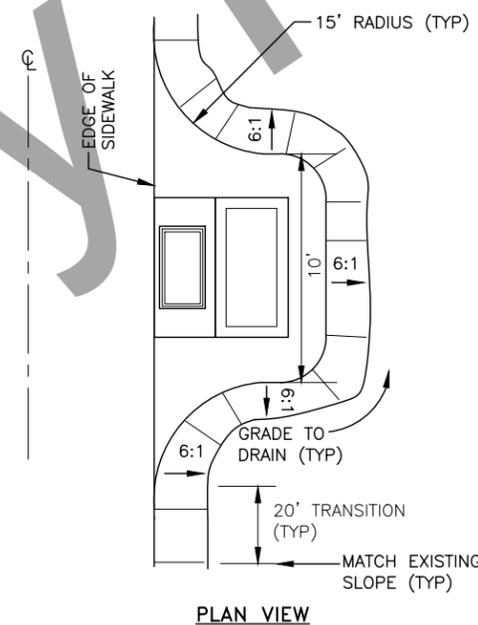


ELEVATION VIEW

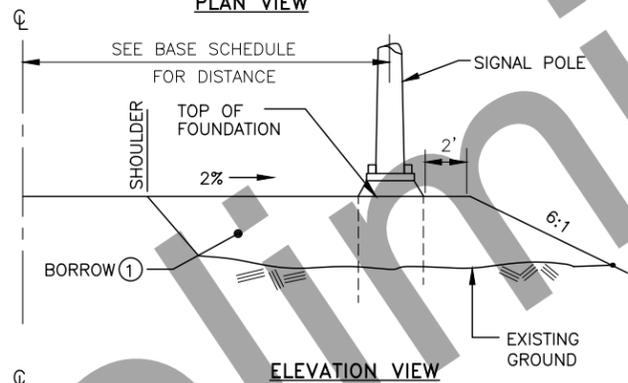


PLAN VIEW

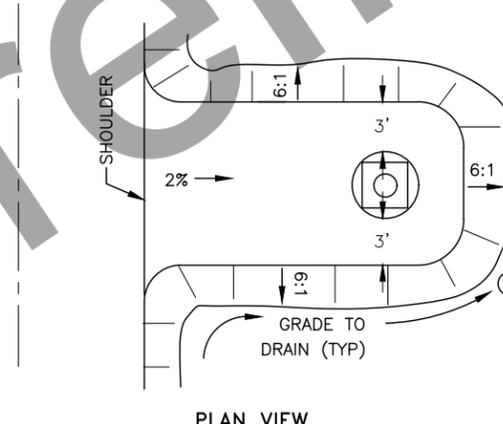
① ALL BORROW AND COMPACTION SHALL MEET THE REQUIREMENTS OF SECTION 203 OF THE SPECIFICATIONS



PLAN VIEW



ELEVATION VIEW



PLAN VIEW

② ALL BORROW, COMPACTION AND GRADING SHOWN ON THESE DETAILS SHALL NOT BE MEASURED FOR PAYMENT BUT BE CONSIDERED INCIDENTAL TO EXISTING CONTRACT PAY ITEMS.

NOTES:

- ① ALL BORROW AND COMPACTION SHALL MEET THE REQUIREMENTS OF SECTION 203 OF THE SPECIFICATIONS.
- ② ALL BORROW, COMPACTION AND GRADING SHOWN ON THESE DETAILS SHALL NOT BE MEASURED FOR PAYMENT BUT BE CONSIDERED INCIDENTAL TO EXISTING CONTRACT PAY ITEMS.

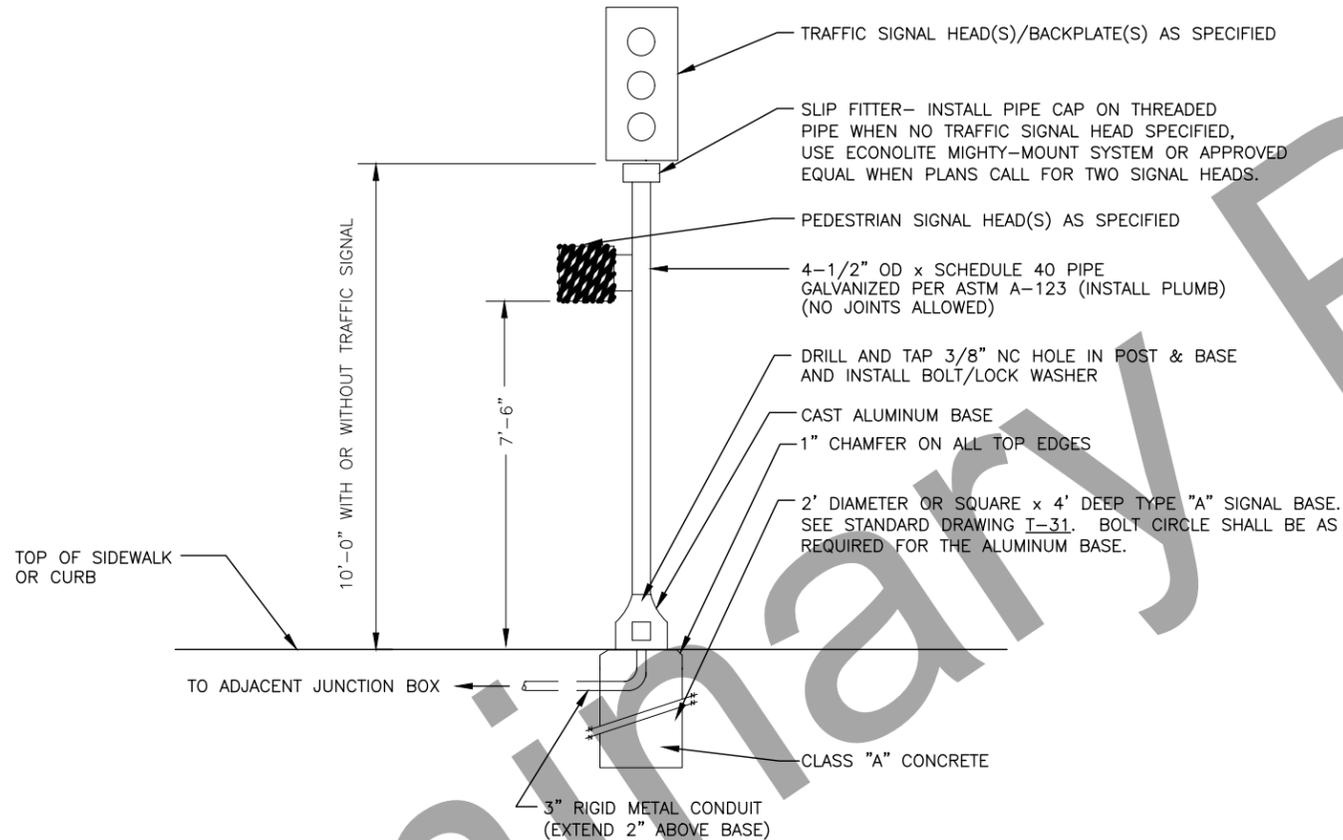
SIGNAL POLE & CONTROLLER FOUNDATION GRADING DETAILS

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6/23/2023

6/23/2023

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H131	H145

SIGNAL POST DETAIL

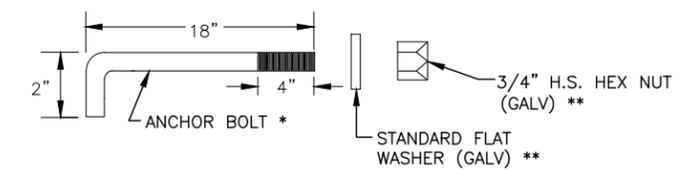


REVISION	BY	DATE
CLEANUP DXF CONVERSION	CMA	11-21-90
REVISE STD DWG REFERENCE	CMD	10-12-00
REMOVE DRAIN CALLOUTS	CMA	07-20-10
UPDATE PED HEAD MNT HEIGHT	EEG	02-01-18

MATERIAL LIST *
1 TWO FOOT DIAMETER OR SQUARE x 4' BASE & 4 ANCHOR BOLTS, AND ONE 3" CONDUIT
1- POST TOP SLIP FITTER. (SEE STANDARD DRAWING T-30)
1- POST & BREAKAWAY CAST ALUMINUM BASE; VE PED CATALOG #0-SE-5030 OR APPROVED EQUAL.

* MATERIAL LISTED ARE FOR ONE INSTALLATION AND DOES NOT INCLUDE SIGNAL HEADS AND MOUNTING HARDWARE.

ANCHOR BOLTS



* MEETS ASTM A-572 GALVANIZED PER ASTM A-153

** MEETS ASTM A-325 GALVANIZED PER ASTM A-153

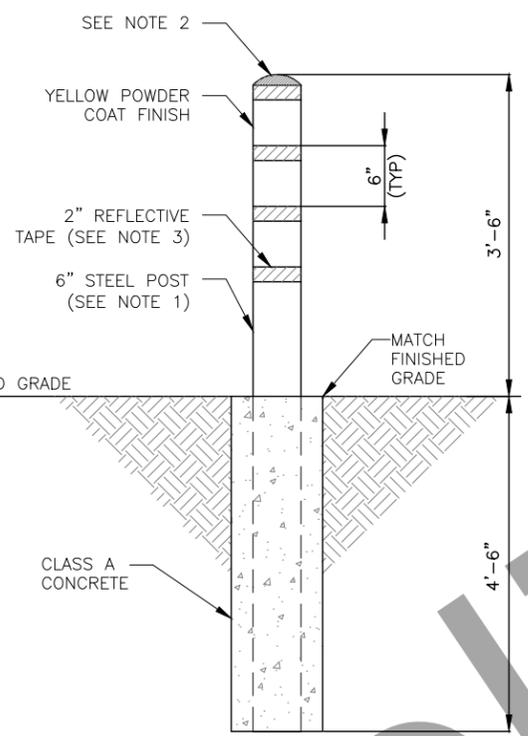
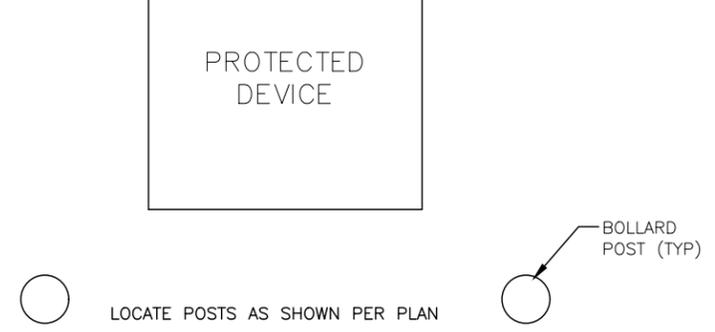
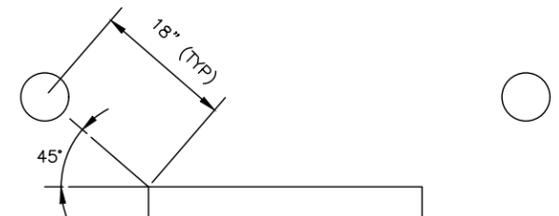
DESIGNER'S NOTE: CHECK STANDARD DRAWING NUMBER FOR CORRECT REVISION NUMBER

SIGNAL POST DETAIL

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6/23/2023
6/23/2023

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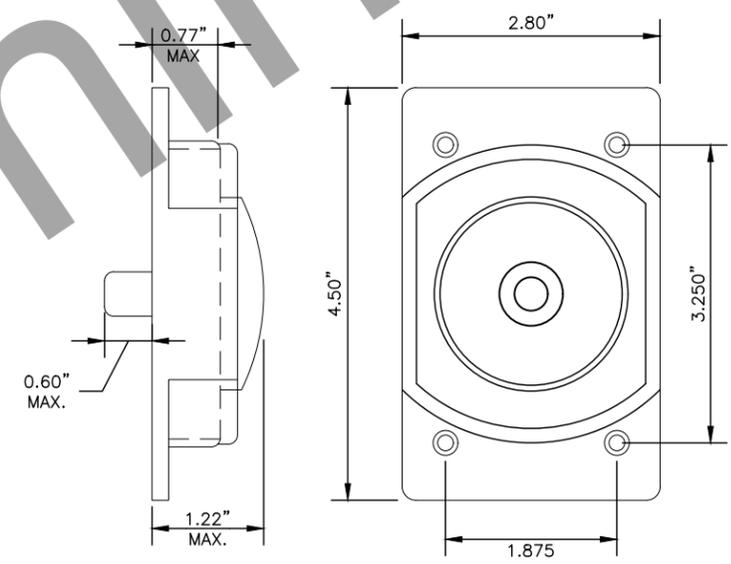
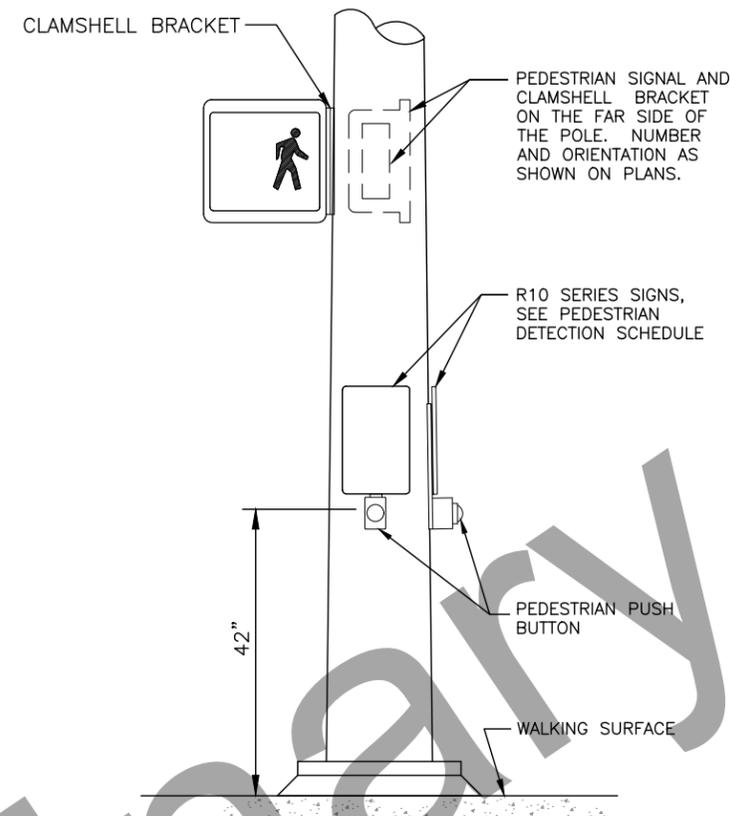
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H132	H145



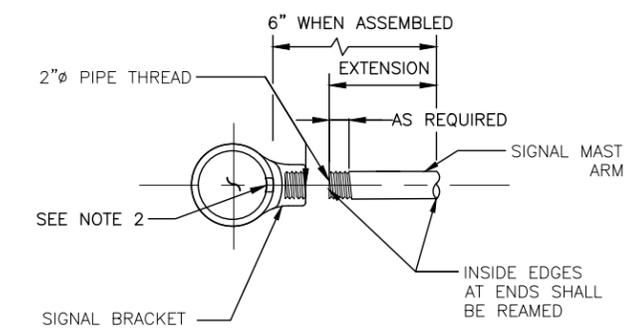
BOLLARD AND PLACEMENT DETAIL
NTS

BOLLARD NOTES:

1. PROVIDE 6" DIA. GALVANIZED STEEL, SCHEDULE #40 PIPE, FILLED WITH CONCRETE.
2. ROUND CONCRETE AT TOP OF POST SMOOTH AND PAINT YELLOW. USE EXTERIOR ACRYLIC-EPOXY CONCRETE PAINT.
3. INSTALL 4-2" BANDS OF YELLOW REFLECTIVE TAPE AS SHOWN.
4. LOCATION AND QUANTITY OF POSTS AS INDICATED ON DRAWINGS.



PEDESTRIAN PUSH BUTTON DETAIL
NTS



PLUMBIZER SIGNAL MOUNTING DETAIL
(REQUIRED FOR ALL NEW OR RELOCATED PLUMBIZER [MAST ARM] MOUNTED SIGNALS)

NOTES

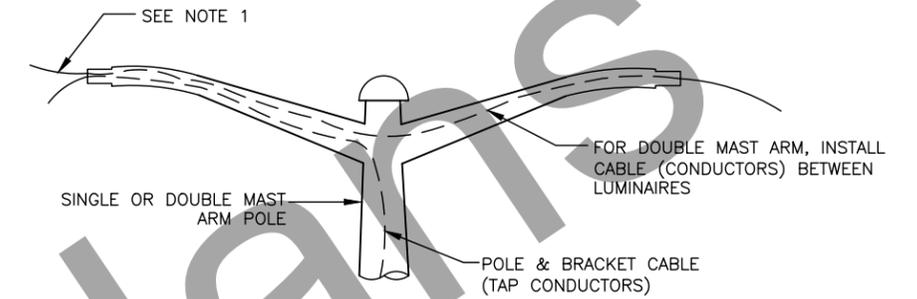
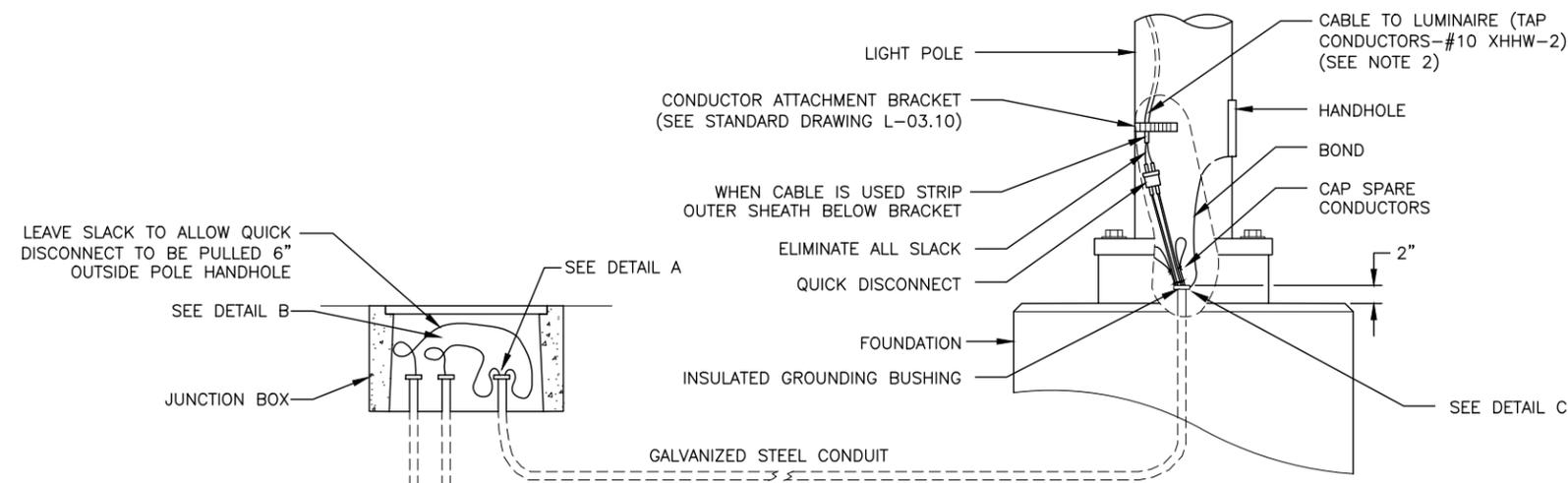
1. THESE DETAILS MODIFY STANDARD DRAWING T-30.11.
2. FIELD DRILL WIRING ACCESS HOLE AS REQUIRED. REAM INSIDE & OUTSIDE AND PAINT WITH COLD ZINC GALVANIZING COMPOUND CONFORMING TO DOD-P-21035A, MIL-P-26915A, OR TT-P-460.
3. ONE 2" GALVANIZED SCHEDULE 40 RIGID METAL CONDUIT EXTENSION SHALL BE FURNISHED WITH EACH SIGNAL BRACKET.
4. SIGNAL BRACKETS SHALL BE ASTRO-BRAC AB-300BAK OR APPROVED EQUAL AND SHALL BE INSTALLED AS RECOMMENDED BY THE MANUFACTURER. THE ACTUAL LOCATION OF BRACKETS ON EACH ARM SHALL BE DETERMINED BY THE ENGINEER AFTER THE POLES AND ARMS HAVE BEEN INSTALLED.

PED PUSH BUTTON POST AND SIGNAL MOUNTING BRACKET DETAIL

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6/23/2023
6/23/2023

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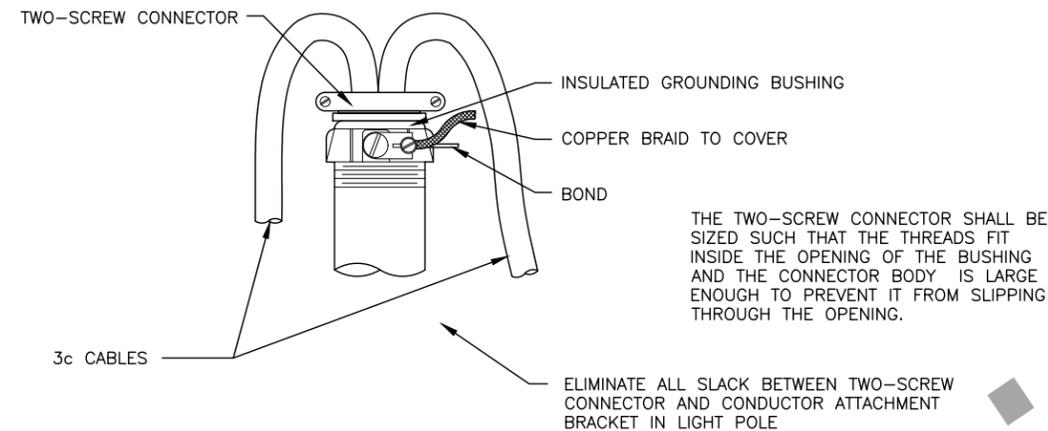
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H133	H145



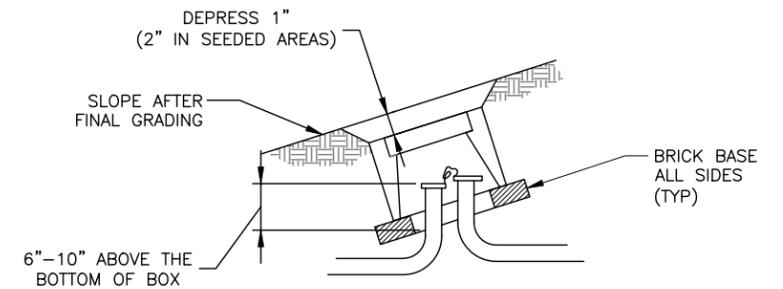
NOTE:

1. INSTALL 2"x1" REDUCING WASHER AND 1" CONNECTOR TO SECURE CONDUCTORS AT THE END OF THE MAST ARM

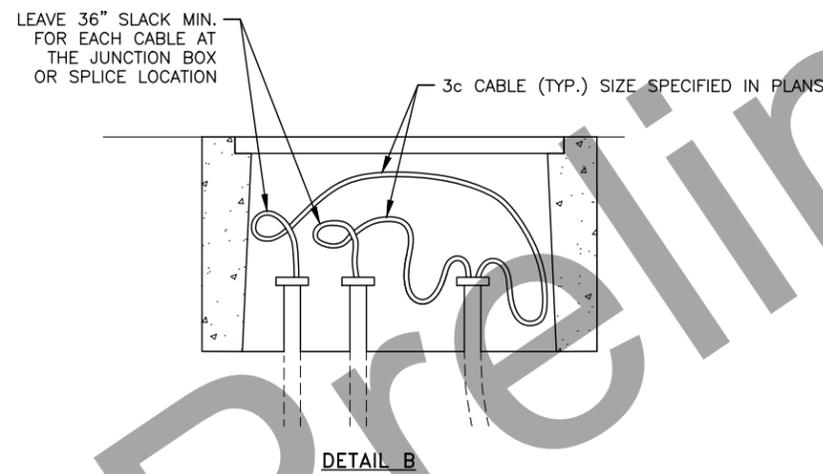
LIGHT STANDARD MAST ARM WIRING DETAIL
NTS



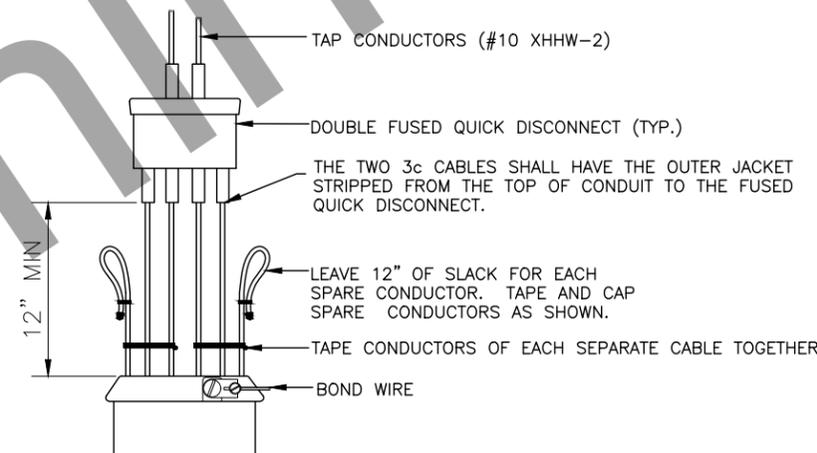
DETAIL A



TYPE IA J-BOX INSTALLATION ON SLOPE
NTS



DETAIL B



DETAIL C

NOTES:

1. LABEL ALL CABLES AND CONDUCTORS IN POLE BASE AND J-BOX.
2. LEAVE ENOUGH SLACK ABOVE THE CONDUCTOR ATTACHMENT BRACKET TO ALLOW THE QUICK DISCONNECT TO BE PULLED 6" OUTSIDE OF HANDHOLE.
3. NOT ALL GROUNDING CONDUCTORS, AS REQUIRED BY SECTION 660-3.06, ARE SHOWN IN THESE DETAILS.

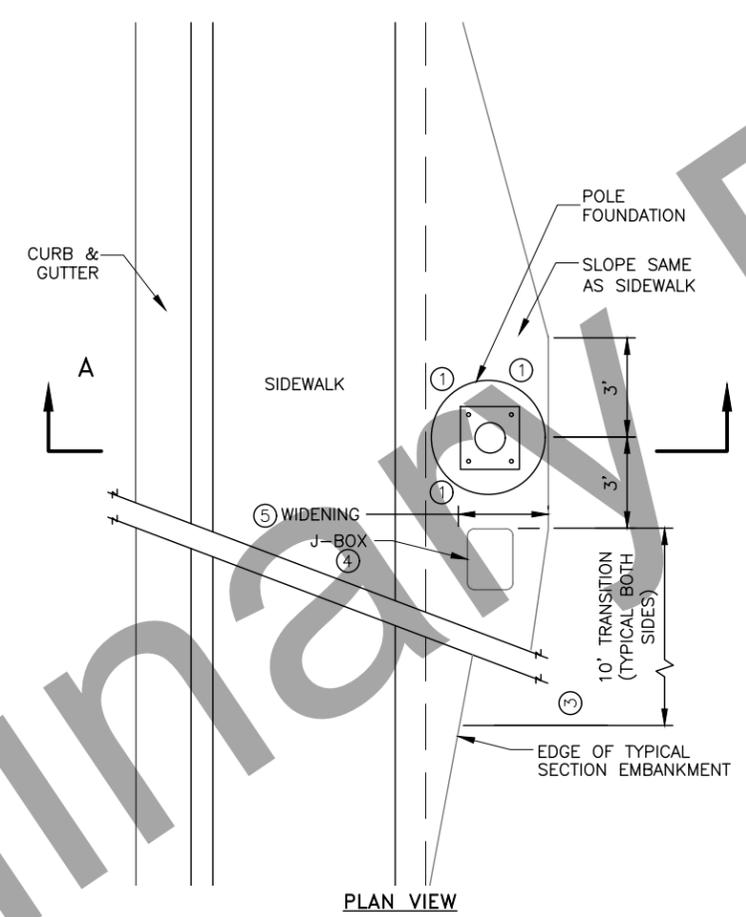
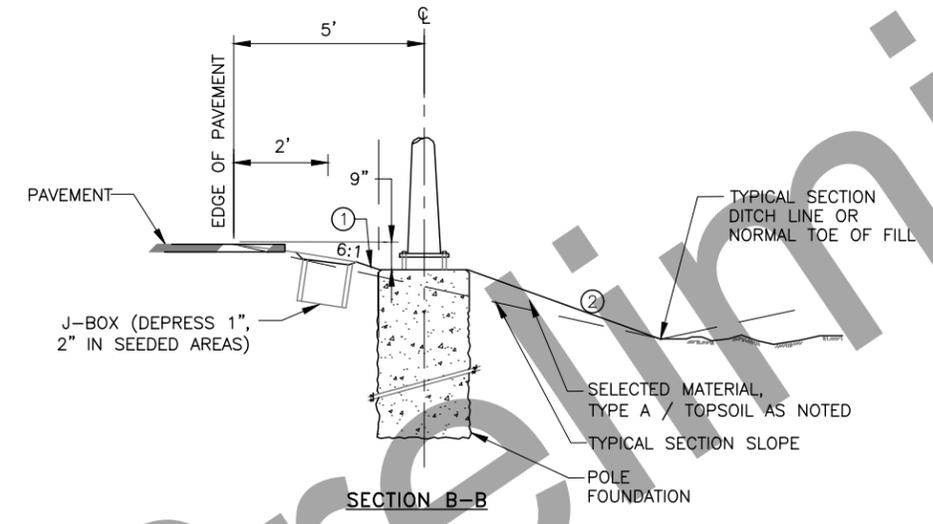
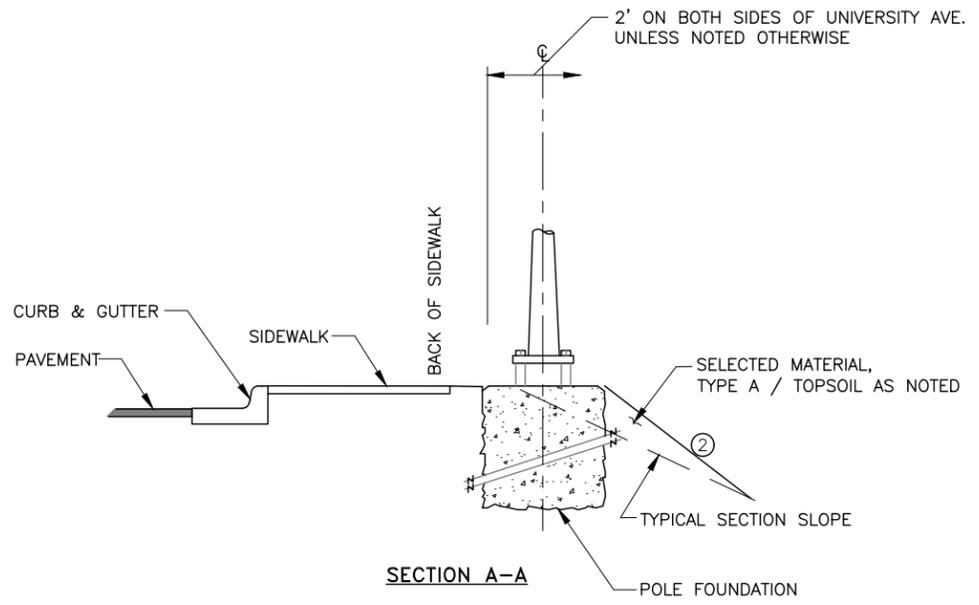
LIGHTING SYSTEM POLE AND J-BOX WIRING DETAILS
NTS

LIGHTING POLE AND
J-BOX WIRING DETAILS

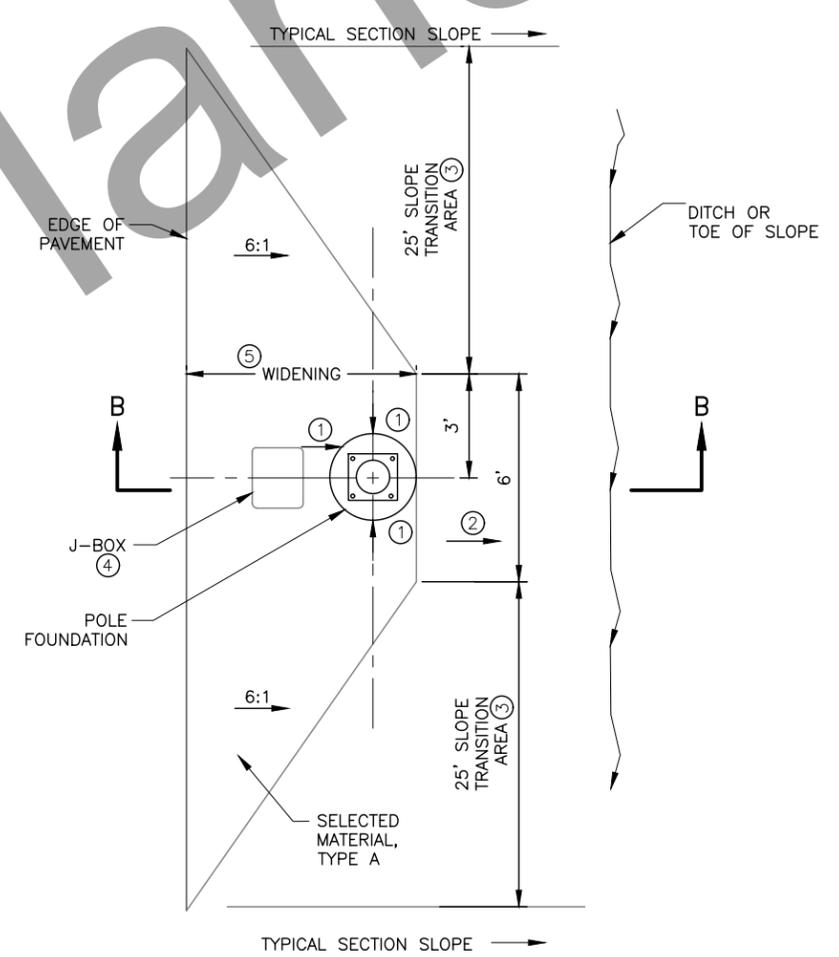
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6/23/2023

6/23/2023

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H134	H145



LIGHT POLE WIDENING DETAIL "A"
(USE WHEN POLE IS LOCATED OFF BACK OF SIDEWALK)



LIGHT POLE WIDENING DETAIL "C"
(USE WHEN POLE IS LOCATED OFF SHOULDER)

LIGHT POLE WIDENING NOTES:

- ① WARP SLOPE TO TOP CIRCUMFERENCE OF POLE FOUNDATION.
- ② SLOPE FROM TOP EDGE OF POLE FOUNDATION TO TYPICAL SECTION DITCHLINE OR NORMAL TOE OF FILL. NO STEEPER THAN 2:1.
- ③ WHEN THE TYPICAL SECTION SLOPE IS STEEPER THAN 2:1 USE 35' FOR THE SLOPE TRANSITION AREA.
- ④ DEPRESS JUNCTION BOX 1" BELOW SURFACE. DEPRESS 2" IN SEEDED AREAS.
- ⑤ WIDENING SHALL BE CONSTRUCTED PRIOR TO POURING FOUNDATION.

**LIGHTING POLE AND
J-BOX WIDENING DETAILS**

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6/23/2023
6/23/2023

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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H135	H145

MATERIAL REQUIREMENTS

CONCRETE	CLASS A	F'C = 4000 PSI
CMP	AASHTO M218	14 GA.
VERTICAL REINFORCING STEEL	AASHTO M31 #11	GR 60
SPIRAL REINFORCING STEEL	AASHTO M31 #5	GR 60
GROUND WIRE		#4 awg
FRANGIBLE COUPLING	NCHRP 350 TL3 FRANGIBLE COUPLING	VU = 5.5 KIPS TU = 43.2 KIPS
ANCHOR	NCHRP 350 TL3 FRANGIBLE COUPLING ANCHOR	
CONDUIT	SCH 40	RMC
PROTECTIVE SLEEVE	SCH 40	PVC

DEPTH TABLE

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

SAND SLURRY MIX DESIGN

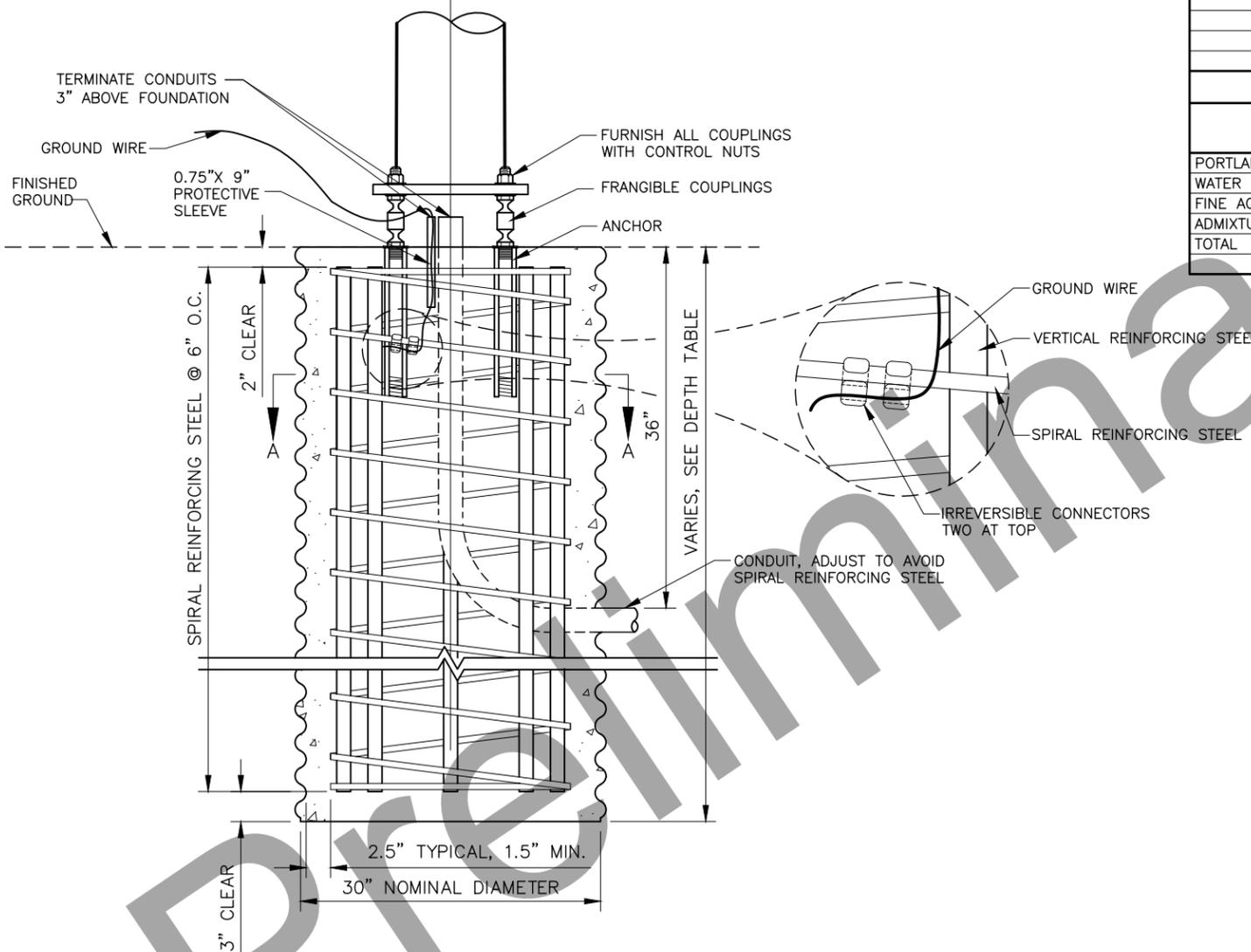
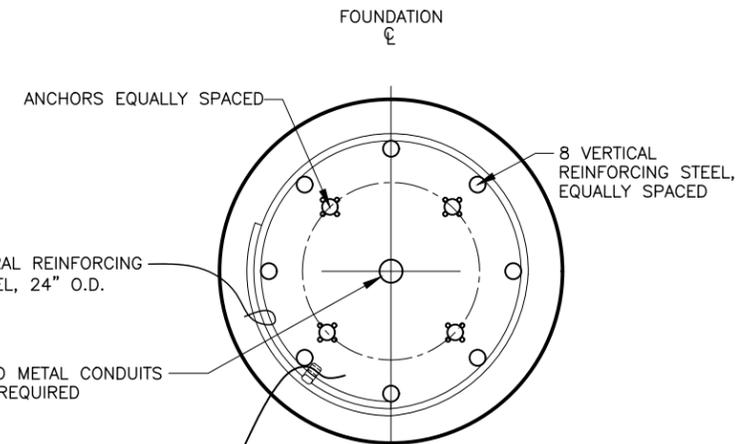
ITEM	BATCHING QUANTITIES PER CYD BATCH (lbs.)	APPLICABLE SPECS.
PORTLAND CEMENT CONCRETE	188	701-2.01
WATER (52.1 GAL.)	435	712-2.01
FINE AGGREGATE SSD	3041	703-2.01
ADMIXTURE: MICROAIR	2.0 OZ.	711-2.02
TOTAL	3664	

BOLT CIRCLE

NORTHERN REGION PROJECTS	14.5"
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DESIGN NOTES:

- DESIGN STANDARD: SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, LFRD 1ST EDITION, AASHTO, 2015, WITH 2017 AND 2018 INTERIM REVISIONS.
- DESIGN LOAD: 1,000 LBS AXIAL, 2,000 LBS SHEAR, 50,000 FT-LBS MOMENT.
- CONSTRUCTION STANDARD: LATEST EDITION OF THE STATE OF ALASKA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION WITH SPECIAL PROVISIONS.
- NOTES:
- THIS FOUNDATION IS APPROVED FOR ELECTROLIER AND BREAKAWAY TRAFFIC SIGNAL APPLICATIONS IN COHESIONLESS SOILS WITH AN N1-60 VALUE OF 10 OR GREATER PER AASHTO T-206, "STANDARD PENETRATION TEST" (SPT). THIS FOUNDATION SHALL NOT BE USED IF ANY OF THE FOLLOWING ARE ENCOUNTERED; WATER TABLE ABOVE THE BOTTOM OF FOUNDATION, VERY LOOSE SOILS, ORGANIC SOILS, COHESIVE SOILS (CLAY), OR SOILS SUSCEPTIBLE TO FROST JACKING. IF ANY OF THESE CONDITIONS ARE ENCOUNTERED, STOP FOUNDATION WORK AND CONTACT THE ENGINEER.
 - PLACE FOUNDATION IN DRILLED OR EXCAVATED HOLE WITH CENTERLINE OF FOUNDATION LOCATED AT THE STATION, OFFSET, AND ELEVATION SPECIFIED IN PLANS. SET FOUNDATION TO SATISFY THE CONDITIONS DEPICTED IN CLEARANCE DETAIL.
 - FORM THE FOUNDATION IN CORRUGATED METAL PIPE CONFORMING TO SUBSECTION 707-2.01 OF THE SPECIFICATIONS.
 - PROVIDE 1.5 EXTRA TURNS AT EACH END OF THE SPIRAL REINFORCING STEEL. REINFORCING STEEL SHALL NOT BE SPLICED. TIE VERTICAL REINFORCING STEEL TO EACH INTERSECTION OF THE SPIRAL REINFORCING STEEL.
 - CONNECT GROUND WIRE NEAR THE TOP OF SPIRAL REINFORCING STEEL WITH TWO IRREVERSIBLE CONNECTORS AS SHOWN. FASTEN CONNECTORS ACCORDING TO THE MANUFACTURERS' RECOMMENDATIONS INCLUDING THE USE OF MANUFACTURER SPECIFIED TOOLS. THE GROUND WIRE MAY BE BARE SOLID, STRANDED, OR BRAIDED COPPER. PROTECT GROUND WIRE WITH PROTECTIVE SLEEVE AS SHOWN AND FILL WITH SILICON SEALANT.
 - COMPLETE ALL CONCRETE WORK IN CONFORMANCE WITH SECTIONS 501, 503, AND 660 OF THE SPECIFICATIONS. USE A TUBE WITH A HOPPER HEAD OR OTHER APPROVED DEVICE WHEN DROPPING CONCRETE MORE THAN 5 FEET PER SUBSECTION 501-3.08. VIBRATE CONCRETE DURING PLACEMENT BY MECHANICAL VIBRATION PER SUBSECTION 501-3.08. ENSURE ANCHOR THREADS ARE PROTECTED FROM CONTACT WITH CONCRETE DURING POUR.
 - BACKFILL AND COMPACT ACCORDING TO SECTION 205, AND SUBSECTIONS 203-3.04 AND 660-3.01 OF THE SPECIFICATIONS. USE SELECT MATERIAL, TYPE A OR SAND SLURRY AS BACKFILL MATERIAL. ENSURE AREA BELOW FOUNDATION MEETS COMPACTION REQUIREMENTS AND IS FREE OF LOOSE MATERIAL AND DEBRIS PRIOR TO CONCRETE WORK.
 - INSTALL ALL ANCHORS ACCORDING TO THE MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS. ANCHORS SHALL BE INSTALLED PLUMB. ANCHORS GREATER THAN 1:40 OUT-OF-PLUMB WILL RESULT IN FOUNDATION REJECTION.
 - WHEN USED FOR ELECTROLIER REDUCE THE FOUNDATION DEPTH 1 FOOT WHEN THERE IS NO LUMINAIRE ARM OR THE LUMINAIRE ARM IS LESS THAN OR EQUAL TO 12 FEET.
 - GRADE IN DEPTH TABLE REFERS TO FILL SLOPES. IF FOUNDATION IS IN A CUT SLOPE ASSUME FLAT GRADE IN TABLE. TO DETERMINE GRADE IN FILL SLOPES, USE THE MOST SEVERE GRADE FOUND WITHIN AN 8 FOOT RADIUS OF THE CENTER OF THE FOUNDATION. SLOPES STEEPER THAN 1.5:1 REQUIRE ENGINEERED DEPTH CALCULATION.

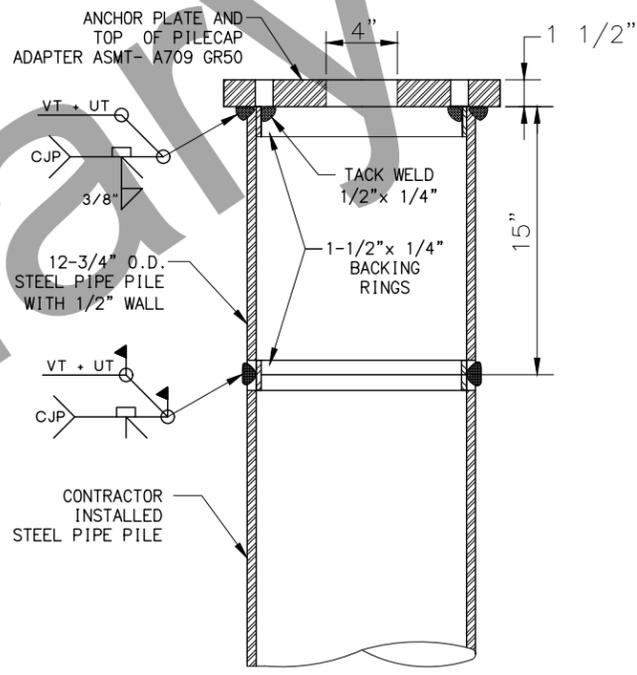
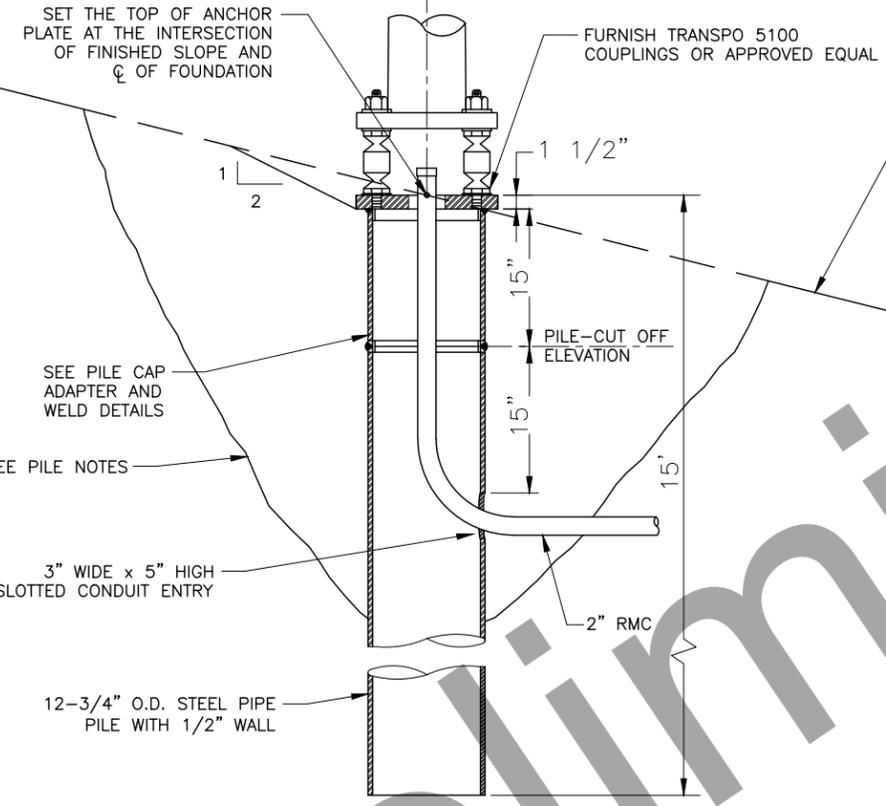
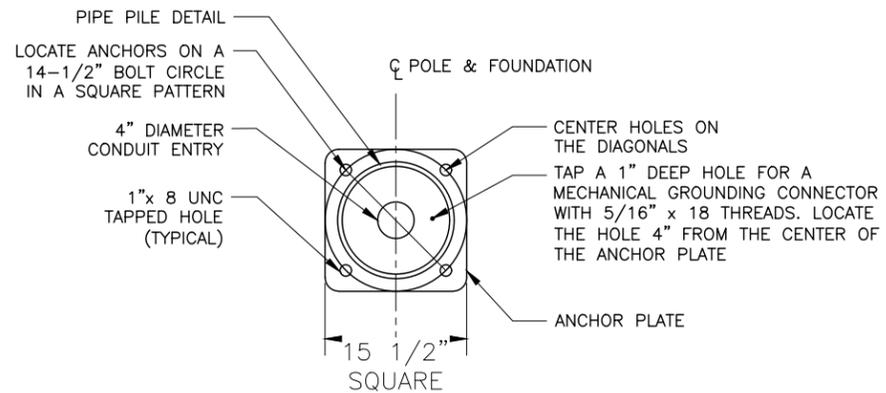


FOUNDATION DETAILS
NTS
(SKIRT OMITTED FOR CLARITY)

LIGHTING CIDH
FOUNDATION DETAILS

REVIEW PS&E
6/23/2023

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H136	H145



DESIGN NOTES:

DESIGN STANDARD: 2001 STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS WITH 2006 INTERIM.
DESIGN LOADS: 5-KIPS AXIAL, 7.5-KIPS SHEAR, 40-KIP-FT MOMENT.
CONSTRUCTION STANDARD: STATE OF ALASKA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2004 ENGLISH EDITION WITH SPECIAL PROVISIONS.

MATERIAL REQUIREMENTS

STRUCTURAL STEEL PLATE	ASTM A709, GRADE 50	F _y = 50 KSI
STEEL PIPE PILE	ASTM A709, GRADE 50 TE	F _y = 50 KSI
	API 5L GRADE X 42	F _y = 42 KSI

NOTES:

- IN LIEU OF CONCRETE STREET LIGHT FOUNDATIONS SHOWN IN STANDARD DRAWING L-30.10, THE CONTRACTOR MAY PROVIDE STEEL PIPE PILE LIGHT POLE FOUNDATIONS IN ACCORDANCE WITH THIS DRAWING AND PROJECT SPECIFICATIONS AT NO ADDITIONAL COST TO THE STATE OF ALASKA.
- FURNISH STEEL PIPE PILES THAT CONFORM TO THE MATERIAL REQUIREMENTS AND SECTION 660, 715 AND 740 OF THE SPECIFICATIONS. NO SPLICES ARE ALLOWED BELOW THE PILECAP ADAPTER.
- DRIVE PILES OPEN ENDED. COMPLETE PILE WORK ACCORDING TO SECTIONS 505, 660 AND 715 OF THE SPECIFICATIONS. REMOVE AND REINSTALL PILES OUT OF PLUMB MORE THAN 1:40.
- FRESH HEAD THE TOP OF PILES IN A LEVEL PLANE AND CUT THE CONDUIT ENTRANCE HOLE AFTER DRIVING THE PILE. NOTE; ONLY MECHANICAL OR PLASMA CUTTER MEANS ARE PERMITTED. OXY-FUEL CUTTING IS PROHIBITED.
- FURNISH ONLY SHOP FABRICATED PILECAP ADAPTERS. INCLUDE STAMPED ENGINEERING CALCULATIONS, DRAWINGS, MILL CERTIFICATIONS AND WELDING PLANS FOR PILECAP ADAPTERS AND THE PILECAP ADAPTER TO PILE WELD. WELDING SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST EDITION OF THE AWS D1.1, STRUCTURAL WELDING CODE-STEEL AND THE SPECIFICATIONS.
- AT EACH FOUNDATION, EXCAVATE A CONE SHAPED WORK HOLE 6.5' DIAMETER AT THE SURFACE DOWN TO 1 FOOT BELOW THE CONDUIT HOLE SUBJECT TO THE REQUIREMENTS AND RESTRICTIONS OF OSHA 1926.652. AFTER CUTTING THE CONDUIT ENTRANCE HOLE AND WELDING ON THE PILECAP ADAPTER, BACKFILL AND COMPACT THE WORK HOLE IN 8" LIFTS WITH A SOIL-CEMENT MIXTURE, CONSISTING OF 2 SACKS OF PORTLAND CEMENT PER CUBIC YARD OF SOIL. SUFFICIENT COMPACTIVE EFFORT WILL BE DETERMINED BY THE ENGINEER.
- WAIT AT LEAST 3 DAYS AFTER BACKFILLING THE WORK HOLE BEFORE ERECTING THE LUMINAIRE POLE.
- TERMINATE CONDUIT(S) 3" ABOVE THE TOP OF THE ANCHOR PLATE. INSTALL A GROUNDING BUSHING ON THE END OF THE RIGID METAL CONDUIT AND ESTABLISH A BOND WITH THE ANCHOR PLATE.

PLANS DEVELOPED BY: KINNEY ENGINEERING, LLC 3909 Arctic Blvd, Suite 400 Anchorage, Alaska 99503 (907) 346-2373 CERT. OF AUTH. NO. 1102
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LIGHTING PILE FOUNDATION DETAILS

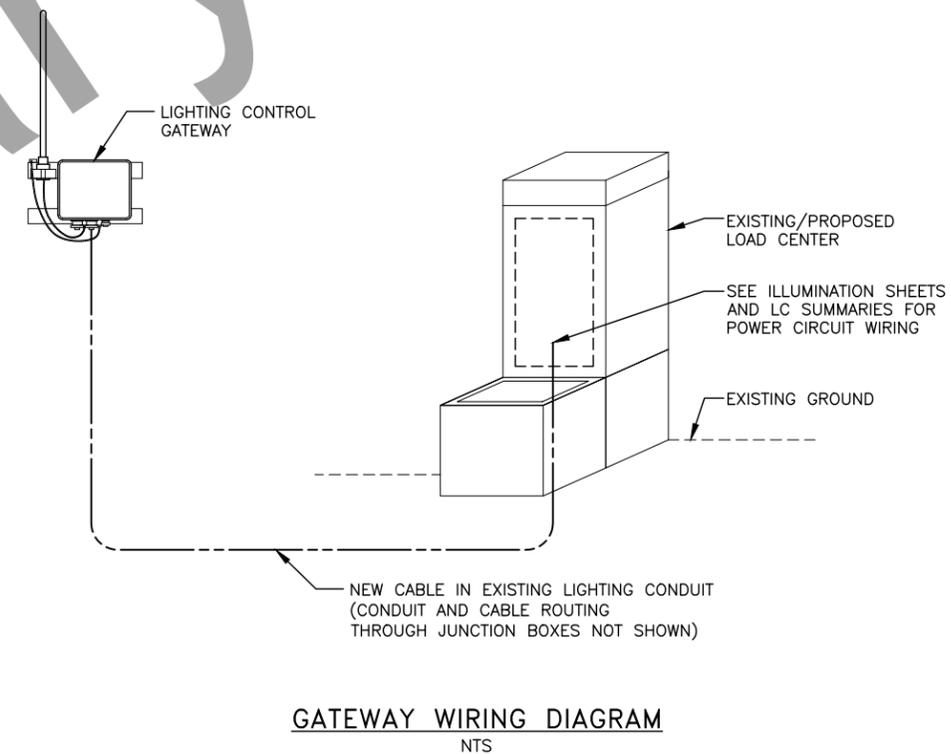
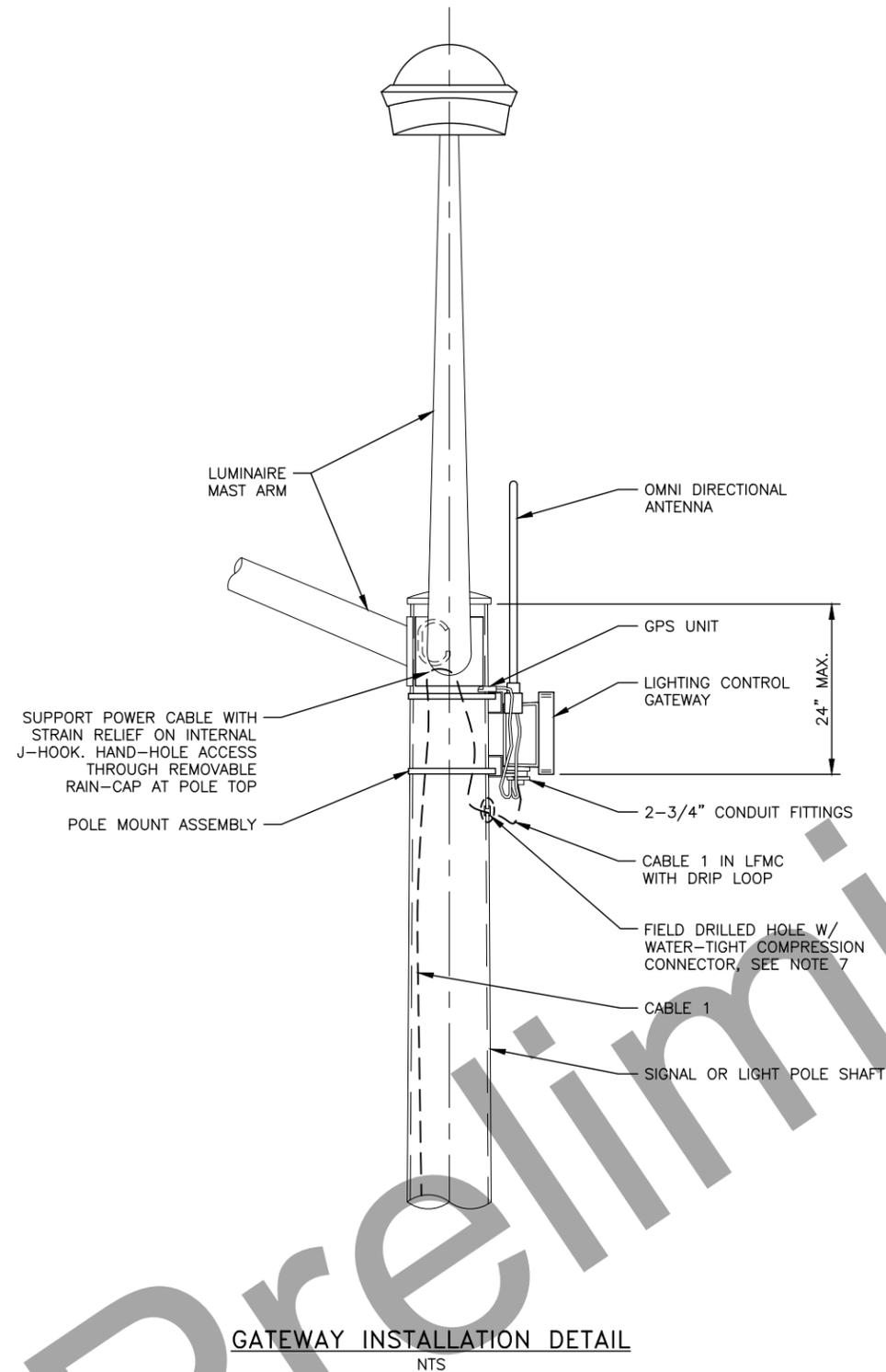
REVIEW PS&E
6/23/2023
6/23/2023

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H137	H145

MATERIAL REQUIREMENTS	
ALL ASSEMBLIES	
CABLE 1	3c#8
CONDUIT DRIP LOOP AT POLE	3/4" LFMC, ARCTIC GRADE
CONNECTOR	ENVIRONMENTALLY HARDENED RJ-45
STRAIN RELIEF	REMKE 2201-013 OR EQUIVALENT PRODUCT BY HUBBELL KELLUM OR APPROVED EQUAL
LIGHTING CONTROL GATEWAY ASSEMBLY	
LIGHTING CONTROL GATEWAY AND ENCLOSURE AND POLE MOUNT ASSEMBLY	GE LIGHTGRID GATEWAY OUTDOOR WIRELESS CONTROL SYSTEM.
OMNI DIRECTION ANTENNA	STANDARD 18 IN.
GPS UNIT	3M ACCURACY

LIGHTING CONTROL GATEWAY INSTALLATION 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 LOAD CENTER. 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.
4. CABLE WITH DAMAGED INSULATION, OR THAT HAS BEEN CRIMPED OR BENT BEYOND THE MINIMUM BEND RADIUS MUST BE REPLACED AT CONTRACTORS EXPENSE.
5. THE MINIMUM BEND RADIUS SHALL NOT EXCEED MANUFACTURERS RECOMMENDATIONS.
6. ENSURE ADEQUATE LENGTH OF THE CABLE TO ALLOW WORK ON THE ENDS OF THE CABLE IN THE LOAD CENTER AND AT THE POLE MOUNT ENCLOSURE.
7. INSTALL WATERTIGHT RUBBER GROMMETS WHERE CABLE PASSES THROUGH THE LIGHT POLE SHAFT.
8. FURNISH ONLY NEW EQUIPMENT OF THE BRAND AND TYPE LISTED OR ITS APPROVED EQUAL. PROVIDE AT NO ADDITIONAL COST ALL NECESSARY DEVICES, WIRES, BRACKETS/HARDWARE ETC. TO PROVIDE A FULLY FUNCTIONING LIGHTING CONTROL GATEWAY SYSTEM WITH CELLULAR MODEM.

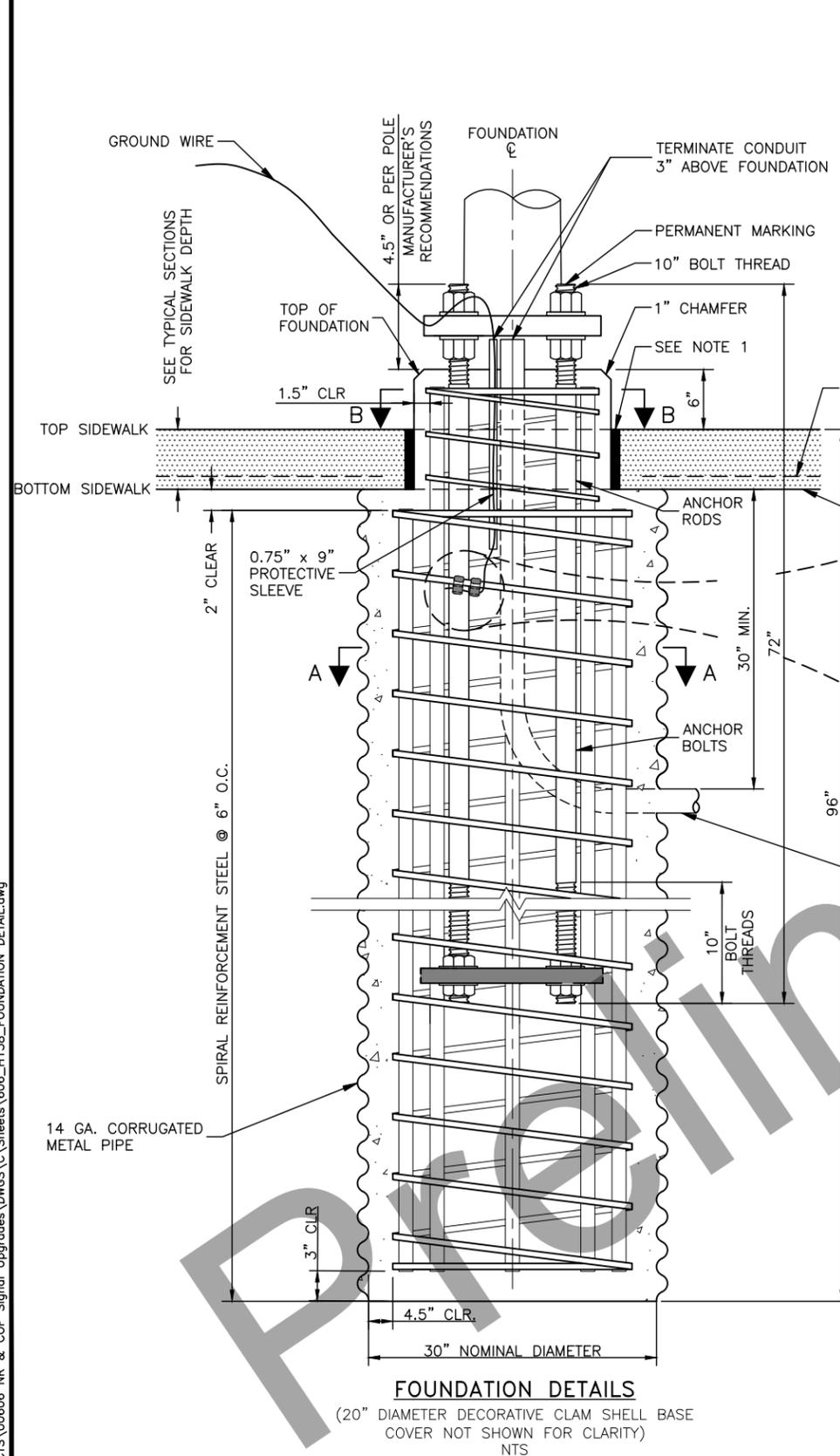


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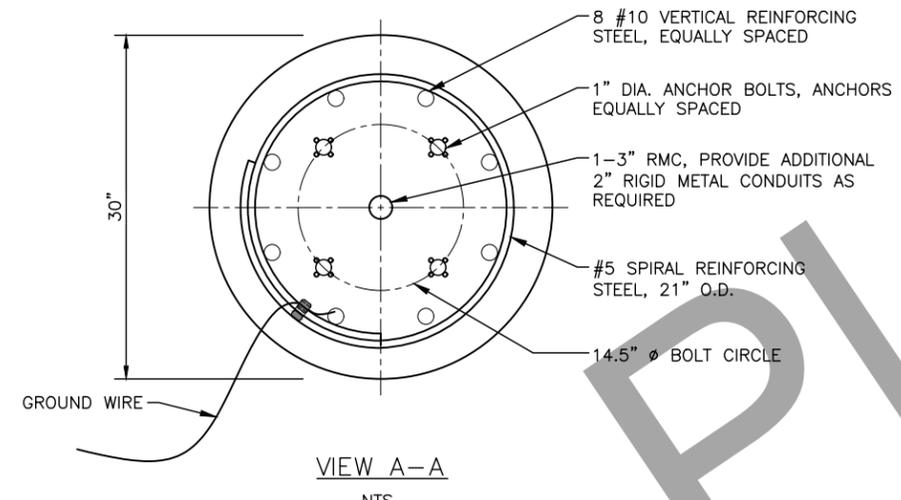
**LIGHTING CONTROL
GATEWAY DETAIL**

REVIEW PS&E
6/23/2023
6/23/2023

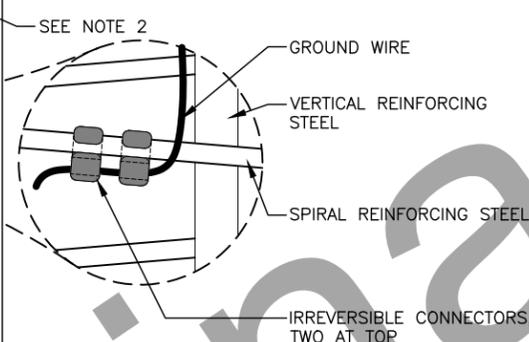
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H138	H145



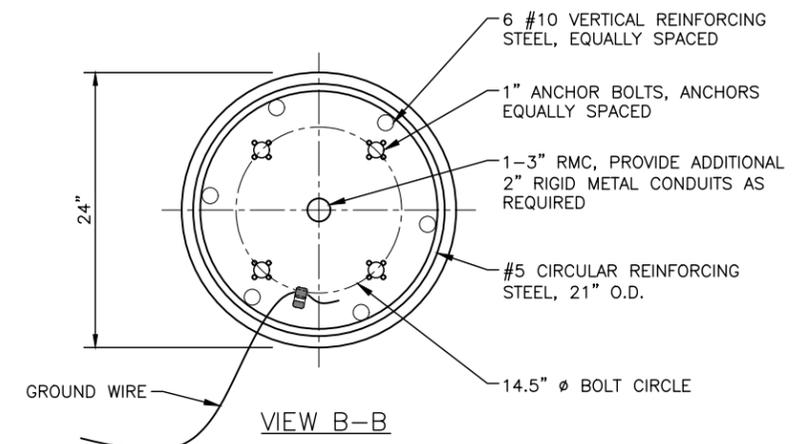
FOUNDATION DETAILS
(20" DIAMETER DECORATIVE CLAM SHELL BASE COVER NOT SHOWN FOR CLARITY)
NTS



VIEW A-A
NTS



RING PLATE DETAILS
NTS



VIEW B-B
NTS

MATERIAL REQUIREMENTS		
ANCHOR RODS 1" X 72"	ASTM F1554 S2, S3, & S5	GR 105
FASTENERS, WASHERS	AASHTO M293	
FASTENERS, NUTS	AASHTO M292	
FINISH, ANCHOR RODS & FASTENERS	AASHTO M232	
RING PLATE	AASHTO M270	GR 36

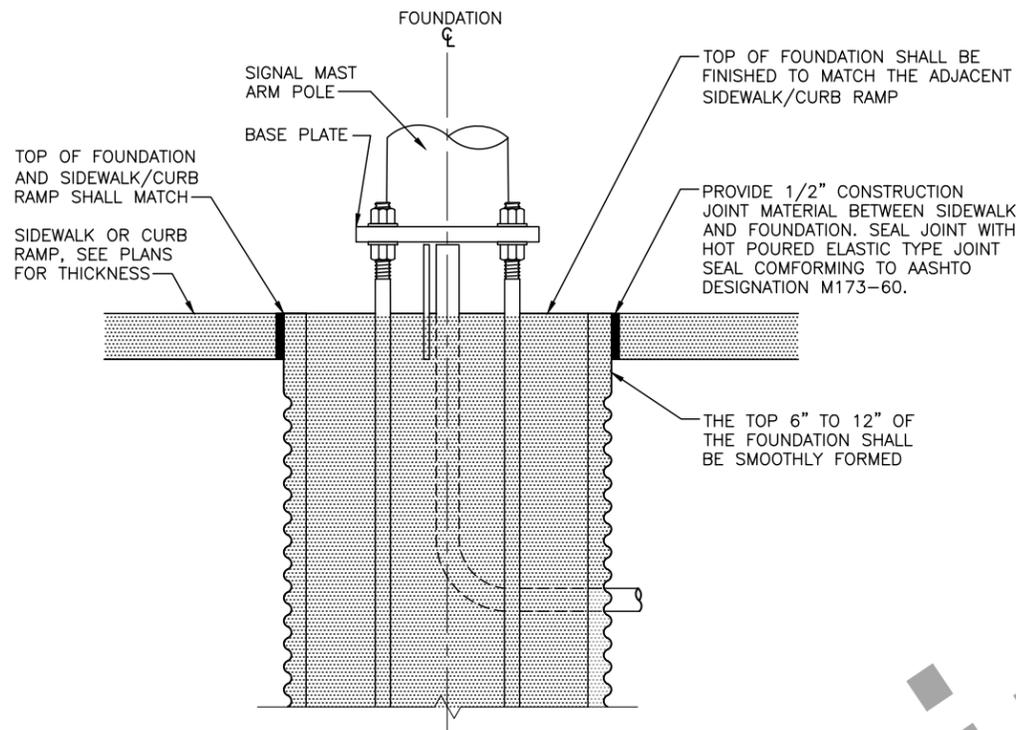
NOTES:

- INSTALL 1/2 INCH CONSTRUCTION JOINT MATERIAL BETWEEN NEW CONCRETE SIDEWALK AND POLE FOUNDATION. SEAL JOINT WITH HOT POURED ELASTIC TYPE JOINT SEAL CONFORMING TO AASHTO DESIGNATION M173-60.
- FOR ANY PORTION OF A PCC SIDEWALK PANEL LOCATED OVER THE POLE FOUNDATION, INSTALL WWM STEEL REINFORCEMENT FOR THE WHOLE PANEL. WWM STEEL REINFORCEMENT SHALL BE 4"x4" - W2.9 X W2.9. STEEL SHALL BE SET ON SPACERS AND PULLED UP AS REQUIRED TO POSITION STEEL 1/3 X (SIDEWALK THICKNESS IN INCHES) UP FROM BOTTOM OF SIDEWALK.
- PROVIDE PLASTIC SHEETING BOND BREAKER MATERIAL BETWEEN THE BOTTOM OF THE REINFORCED SIDEWALK PANEL, AND THE TOP OF THE 30 INCH POLE FOUNDATION AND BASE MATERIAL.
- THE RING PLATE MAY BE "BUILT UP" OF MULTIPLE STEEL PLATES. THE MINIMUM THICKNESS FOR ANY ONE PLATE IS 0.5 INCH. FASTEN THE RING PLATE TO ANCHOR RODS WITH NUTS AND WASHERS ON BOTH SIDES OF RING PLATE AS SHOWN. TORQUE RING PLATE NUTS TO 600 FT-LBS.
- ANCHOR RODS ARE SUBJECT TO CHARPY V-NOTCH IMPACT TESTING. SUBMIT MILL CERTIFICATIONS FOR ANCHOR RODS, NUTS AND WASHERS. GALVANIZE ANCHOR RODS FULL LENGTH. PROVIDE PERMANENT MANUFACTURER'S IDENTIFICATION AND PERMANENT GRADE IDENTIFICATION ON EACH END OF ANCHOR ROD BY STEEL DIE STAMP. SECURE EXPOSED ANCHOR RODS WITH A "RING PLATE" WHEN NOT IN SERVICE. INSTALL ANCHOR RODS PLUMB. ANCHOR RODS GREATER THAN 1:40 OUT-OF-PLUMB WILL RESULT IN FOUNDATION REJECTION.
- PROVIDE 1.5 EXTRA TURNS AT EACH END OF THE SPIRAL REINFORCING STEEL. REINFORCING STEEL SHALL NOT BE SPLICED. TIE THE VERTICAL REINFORCING STEEL TO EACH INTERSECTION OF THE SPIRAL REINFORCING STEEL.
- CONNECT GROUND WIRE NEAR THE TOP SPIRAL REINFORCING STEEL WITH TWO IRREVERSIBLE CONNECTORS AS SHOWN. FASTEN CONNECTORS ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS INCLUDING THE USE OF MANUFACTURER SPECIFIED TOOLS. THE GROUND WIRE MAY BE BARE SOLID, STRANDED, OR BRAIDED COPPER. PROTECT GROUND WIRE WITH PROTECTIVE SLEEVE AS SHOWN AND FILL WITH SILICON SEALANT.
- COMPLETE ALL CONCRETE WORK IN CONFORMANCE WITH THE PROJECT SPECIFICATIONS. USE A TUBE WITH A HOPPER HEAD OR OTHER APPROVED DEVICE WHEN DROPPING CONCRETE MORE THAN 5 FEET. VIBRATE CONCRETE DURING PLACEMENT BY MECHANICAL VIBRATION. ENSURE UPPER ANCHOR ROD THREADS ARE PROTECTED FROM CONTACT WITH CONCRETE DURING POUR.
- THE UPPER FOUNDATION SECTION SHALL BE FORMED.
- EXPOSED CONCRETE SURFACES SHALL RECEIVE A SACK RUBBED FINISH.

**ILLUMINATION FOUNDATION
DETAILS**

REVIEW PS&E
6/23/2023
6/23/2023

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H139	H145

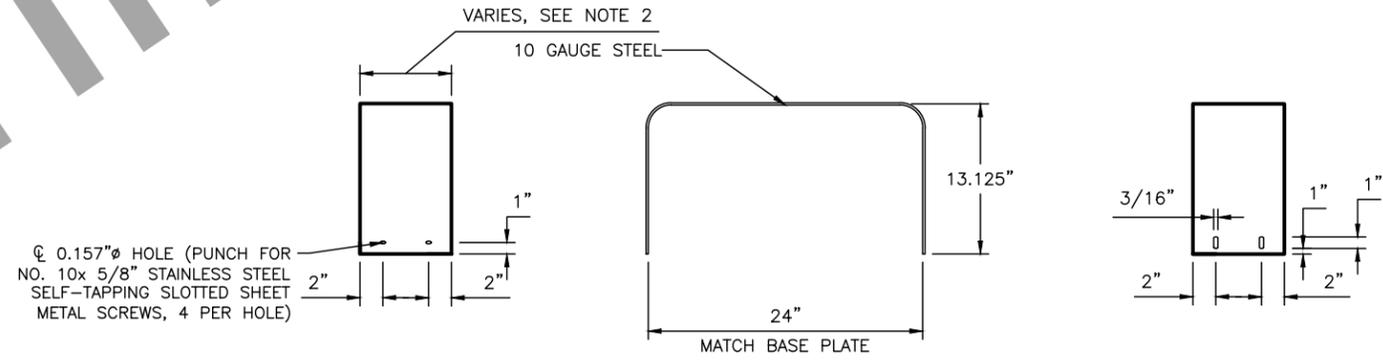


SIGNAL MAST ARM POLE FOUNDATION DETAIL

(THIS DETAIL AUGMENTS STD. DWG. T-52.20. SEE STD. DWG. FOR ADDITIONAL REQUIREMENTS. SKIRT OMITTED FOR CLARITY)
NTS

NOTES:

1. THIS SHEET MODIFIES STANDARD DRAWINGS T-52.15 AND T-52.20.
2. PROVIDE SKIRTS WITH EACH SIGNAL POLE INSTALLATION. TOP OF SKIRT SHALL NOT EXTEND ABOVE THE BASE PLATE OR BE BELOW THE BOTTOM OF THE BASE PLATE. MAXIMUM GAP BETWEEN THE BOTTOM OF SKIRT AND TOP OF SIGNAL POLE FOUNDATION IS 1/16". GALVANIZE SKIRT IN ACCORDANCE WITH ASTM A653.
3. THE GALVANIZED SKIRT, EXPOSED NUTS, AND WASHERS SHALL RECEIVE A BAKED-ON SEMI-GLOSS POLYESTER POWDER COAT FINISH. COLOR: RAL 8016. ENSURE THAT THE NUT THREADS ARE FREE OF POWDER COATING.
4. AFTER THE SKIRTS, ANCHOR BOLT NUTS AND WASHERS ARE INSTALLED, ENSURE THAT THE NUTS ARE TIGHTENED TO THE REQUIRED SPECIFICATIONS, AND CLEAN THE EXPOSED ANCHOR BOLTS TO THE PAINT MANUFACTURER'S REQUIREMENTS. APPLY POLYURETHANE PAINT THAT IS DESIGNED FOR APPLICATION OVER GALVANIZED STEEL COATINGS TO: A) EXPOSED ANCHOR BOLTS; B) SCUFFED UP NUTS, WASHERS, AND SKIRT; AND C) SKIRT FASTENERS. COLOR: RAL 8016.
5. UPON PROJECT COMPLETION, PROVIDE AT LEAST 1-GALLON OF POLYURETHANE PAINT, COLOR RAL 8016, TO THE OWNER AT NO ADDITIONAL COST.



SKIRT DETAILS

(TWO REQUIRED PER POLE)
NTS

**SIGNAL MAST ARM POLE
FOUNDATION DETAIL**

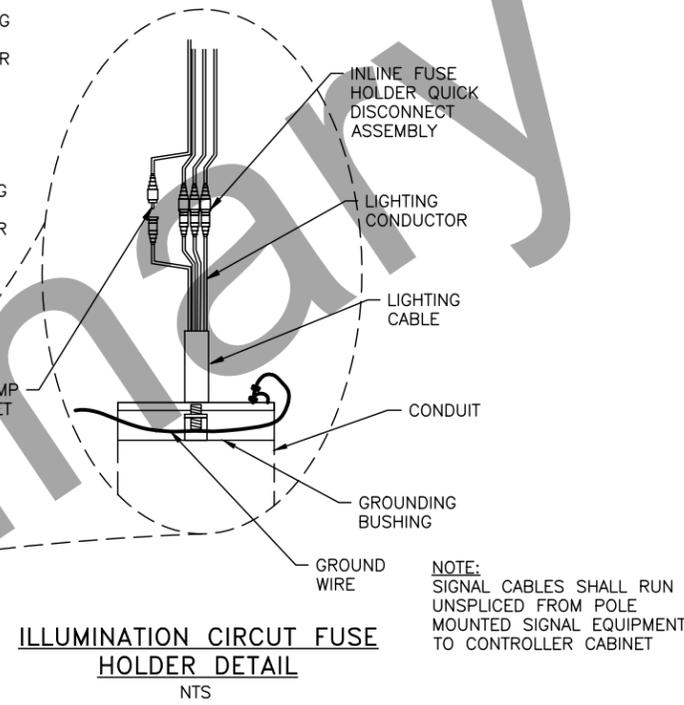
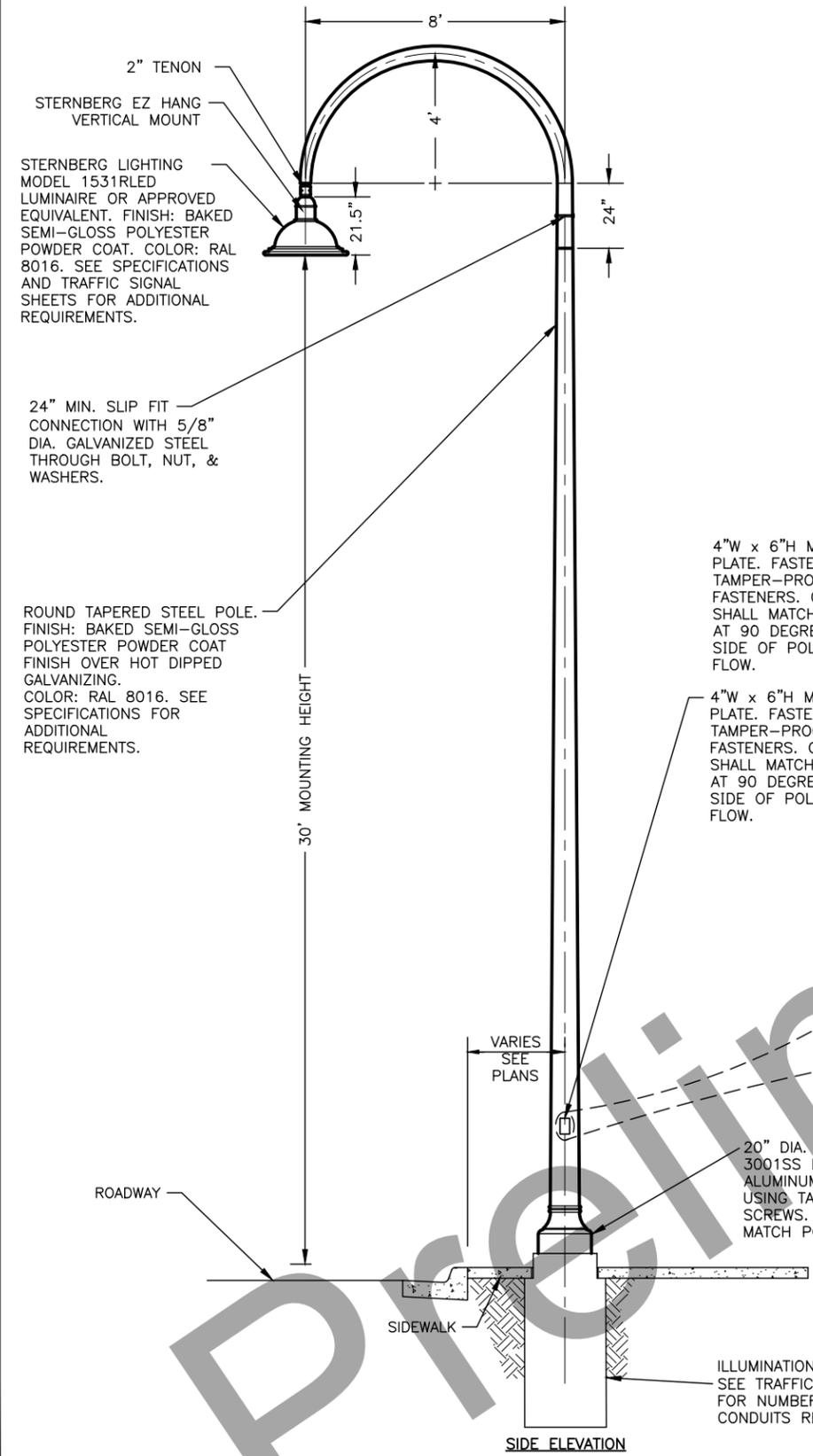
REVIEW PS&E
6/23/2023
6/23/2023

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H140	H145

FOUNDATION MATERIAL PROPERTIES		
CONCRETE	CLASS A	f'c = 4000 PSI
VERTICAL REINFORCING STEEL	AASHTO M31 #11	GR 60
SPIRAL REINFORCING STEEL	AASHTO M31 #5	GR 60
GROUND WIRE		#4 AWG.
ANCHOR RODS 1" X 60"	ASTM F1554 S2, S3, & S5	GR 55
FASTENERS, WASHERS	AASHTO M293	
FASTENERS, NUTS	AASHTO M292	
HOT-DIPPED GALVANIZED STEEL FINISH, ANCHOR RODS & FASTENERS	AASHTO M232	
ANCHOR RODS	AASHTO M270	
CONDUIT	SCH 40	RMC
PROTECTIVE SLEEVE	SCH 40	PVC
RING PLATE	AASHTO M270	GR 36

SAND SLURRY MIX DESIGN		
ITEM	BATCH QUANTITIES (CUBIC YARD)	
	BY WEIGHT (LBS.)	BY VOLUME (C.F.)
PORTLAND CEMENT CONCRETE	188	.96
WATER (52.1 GAL.)	435	6.97
FINE AGGREGATE SSD	3041	18.00
ADMIXTURE: MICROAIR	2.0 OZ.	1.08
TOTAL	3664	27.00

- NOTES:**
- POLE WELD SIZE TO BE DETERMINED BY MANUFACTURER.
 - MOUNTING HEIGHT, REFERS TO THE HEIGHT OF LUMINAIRE ABOVE THE ROADWAY. ADJUST EACH POLE'S SHAFT LENGTH TO MAINTAIN THIS DIFFERENCE IN ELEVATION WHENEVER THE FOUNDATION VARIES.
 - MINIMUM OUTSIDE DIAMETER AT THE TOP OF POLE EQUALS 3-7/8". POLE DIAMETER SHALL TAPER UNIFORMLY FROM THE TOP OF POLE TO THE BASE PLATE, WITH A MAXIMUM TAPER RATE OF 0.15" PER FOOT.
 - PLACE FOUNDATION IN DRILLED OR EXCAVATED HOLE WITH CENTERLINE OF FOUNDATION LOCATED AT THE STATION, OFFSET AND ELEVATION SPECIFIED IN THE PLANS. GRADE TO DRAIN AWAY FROM FOUNDATION WITHOUT EXPOSING MORE THAN 4" OF THE FOUNDATION FROM THE SURROUNDING GROUND SURFACE.
 - FORM THE FOUNDATION USING ROUND LAMINATED FIBER CONCRETE FORMS. EXPOSED CONCRETE SURFACES SHALL RECEIVE A SACK RUBBED FINISH.
 - FORM THE SPIRAL REINFORCING STEEL OF #5 REBAR. PROVIDE 1.5 EXTRA TURNS AT EACH END OF THE SPIRAL UNIT. REINFORCING STEEL SHALL NOT BE SPLICED. TIE VERTICAL BARS TO EACH INTERSECTION OF THE SPIRAL UNIT.
 - CONNECT GROUND WIRE TO ONE OF THE TOP SPIRALS WITH TWO IRREVERSIBLE, HYDRAULICALLY SWAGED CONNECTOR AS SHOWN. GROUND WIRE SHALL BE BARE SOLID, STRANDED, OF BRAIDED COPPER. PROTECT GROUND WIRE WITH CONDUIT AS SHOWN AND FILL CONDUIT WITH SILICON SEALANT.
 - SECURE RING PLATE TO ANCHOR RODS WITH NUTS AND WASHERS ON BOTH SIDES OF THE RING PLATE AS SHOWN.
 - COMPLETE ALL CONCRETE WORK IN CONFORMANCE WITH SECTIONS 501, 503, AND 660 OF THE SSHC. USE A TUBE WITH A HOPPER HEAD OR OTHER APPROVED DEVICE WHEN DROPPING CONCRETE MORE THAN 5 FEET PER SUBSECTION 501-3.08. VIBRATE CONCRETE DURING PLACEMENT BY MECHANICAL VARIATION PER SUBSECTION 501-3.08. ENSURE ANCHOR ROD THREADS ARE PROTECTED FROM CONTACT WITH CONCRETE DURING CONCRETE WORK.
 - GALVANIZE ANCHOR RODS FULL LENGTH. PROVIDE PERMANENT MANUFACTURERS IDENTIFICATION AND PERMANENT GRADE IDENTIFICATION, ON EACH END OF ANCHOR ROD STEEL DIE STAMP. EACH ANCHOR ROD END SHALL HAVE 10" OF THREAD LENGTH. SECURE EXPOSED ANCHOR RODS WITH A "RING PLATE" WHEN NOT IN SERVICE.
 - EACH LOAD CARRYING CONDUCTOR IN THE CABLES ENTERING THIS POLE SHALL USE A DISCONNECT LOCATED IN THE POLE BASE. THE ELECTRICAL DISCONNECT SHALL BE UL LISTED, 600 VOLT RATED, AND APPROVED FOR WET LOCATIONS.



4"W x 6"H MIN. HANDHOLE WITH COVER PLATE. FASTEN COVER PLATE TO POLE USING TAMPER-PROOF CAPTIVE STAINLESS STEEL FASTENERS. COVER PLATE FINISH AND COLOR SHALL MATCH POLE. LOCATE THE HANDHOLE AT 90 DEGREES TO THE MAST ARM ON THE SIDE OF POLE DOWNSTREAM FROM TRAFFIC FLOW.

4"W x 6"H MIN. HANDHOLE WITH COVER PLATE. FASTEN COVER PLATE TO POLE USING TAMPER-PROOF CAPTIVE STAINLESS STEEL FASTENERS. COVER PLATE FINISH AND COLOR SHALL MATCH POLE. LOCATE THE HANDHOLE AT 90 DEGREES TO THE MAST ARM ON THE SIDE OF POLE DOWNSTREAM FROM TRAFFIC FLOW.

20" DIA. x 16"H STERNBERG CLAYTON 3001SS DECORATIVE CLAM SHELL CAST ALUMINUM POLE BASE COVER. ATTACH USING TAMPER-PROOF STAINLESS STEEL SCREWS. FINISH AND COLOR SHALL MATCH POLE.

ILLUMINATION FOUNDATION DETAIL 'A', SEE TRAFFIC SIGNAL WIRING DIAGRAM FOR NUMBER AND SIZE OF CONDUITS REQUIRED

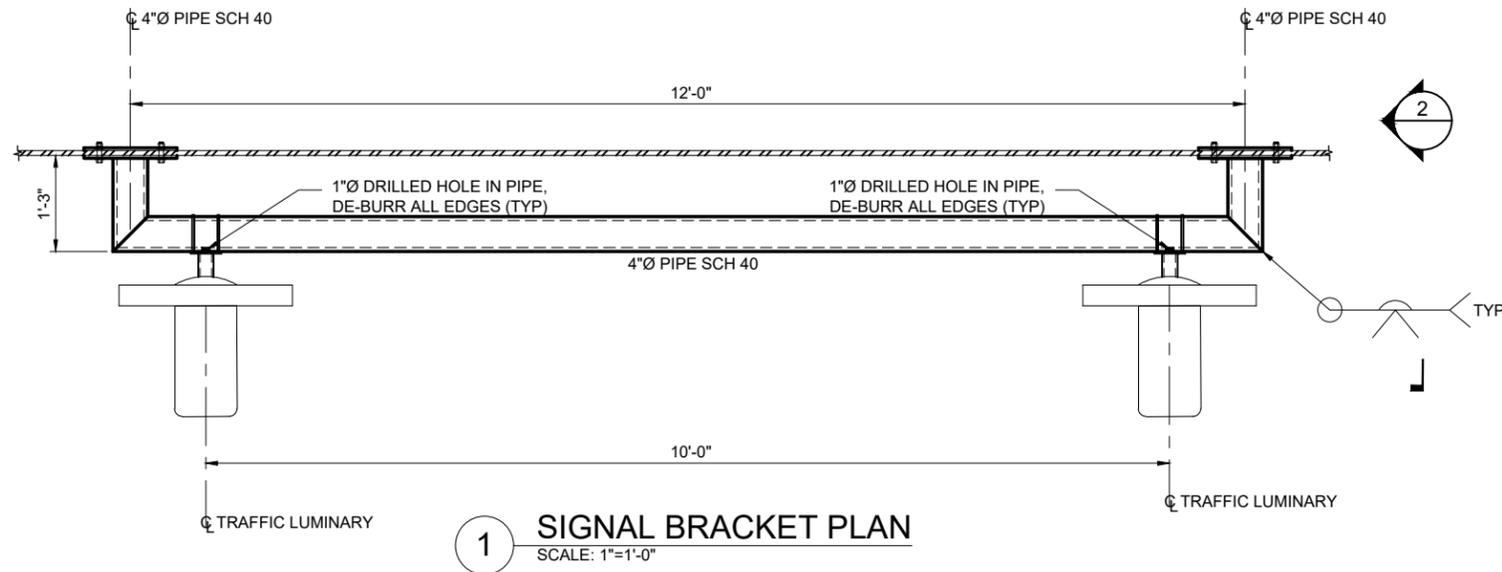
A STREET LIGHT SIGNAL POLE DETAIL
(SEE PLANS FOR SIGNAL EQUIPMENT REQUIREMENTS)
NOT TO SCALE

STREET LIGHT SIGNAL POLE DETAIL

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6/23/2023
6/23/2023

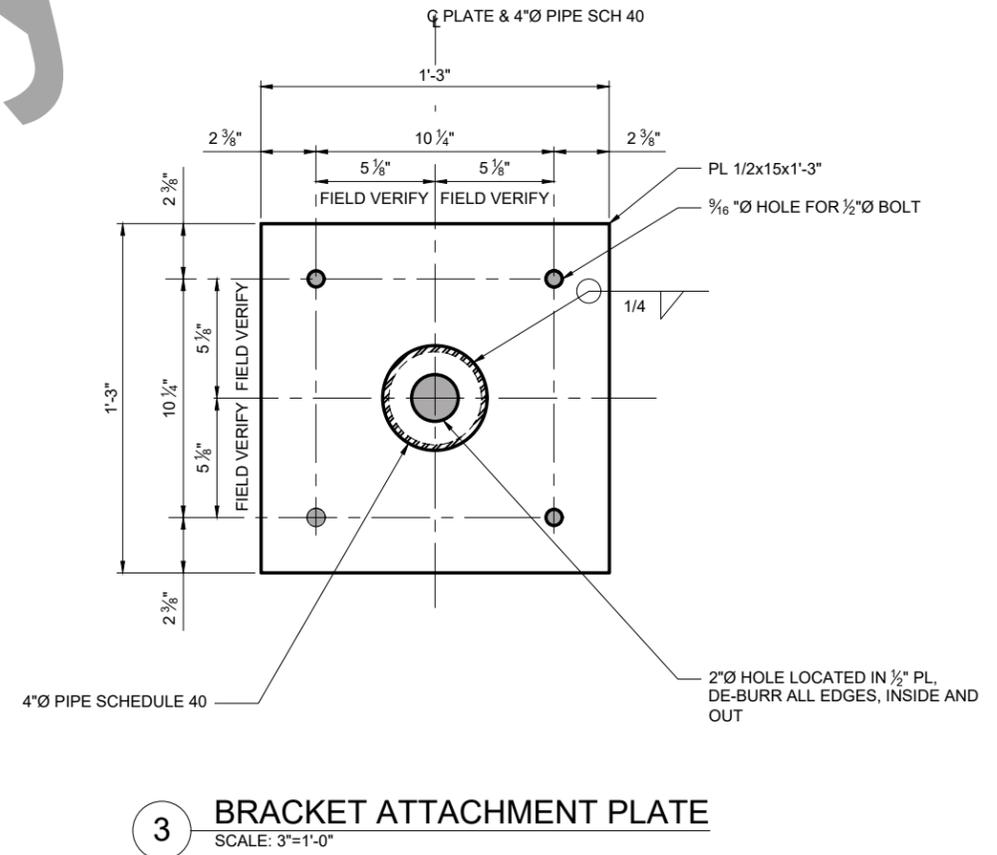
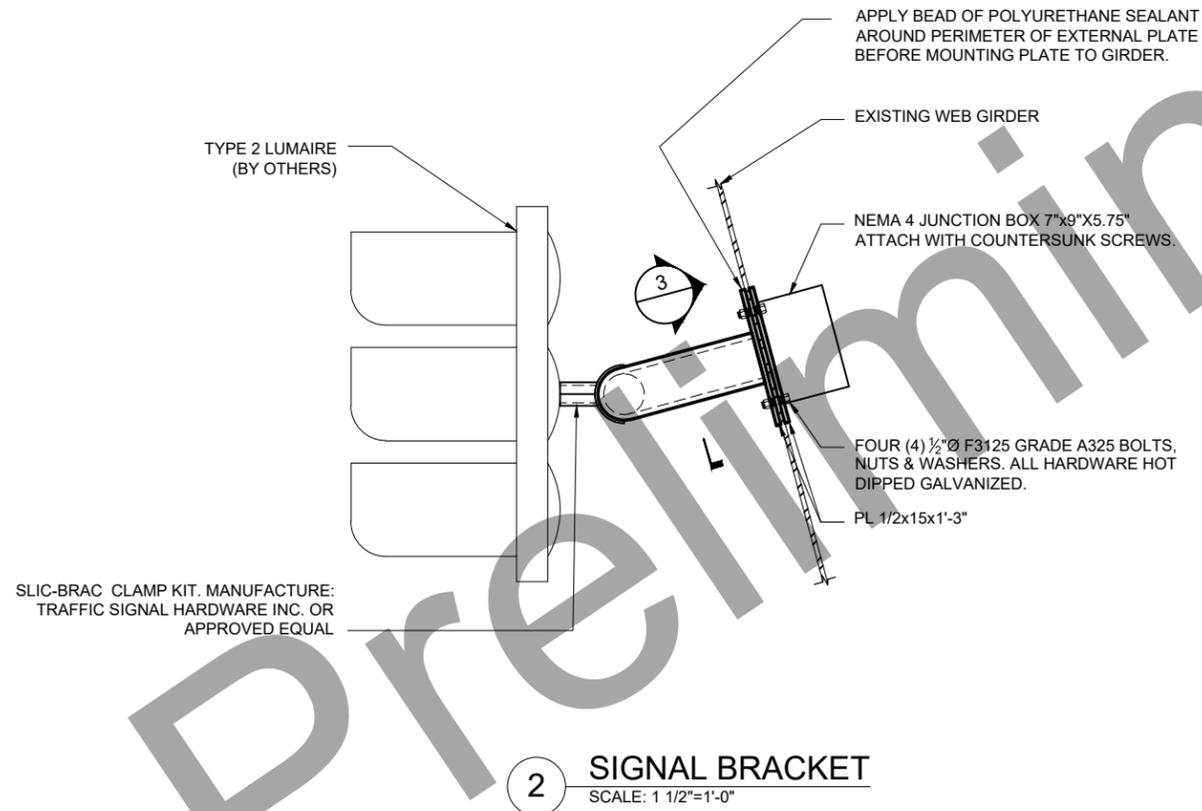
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H141	H145



NOTE:

1.) REFERENCE SHEET E1 AND INSTALL SIGNAL BRACKET AT PREVIOUSLY DEMOLISHED LEFT HAND TURN SIGNS. USE EXISTING BOLT HOLES AND FIELD MATCH BRACKET ATTACHMENT PLATE.



GENERAL NOTES:

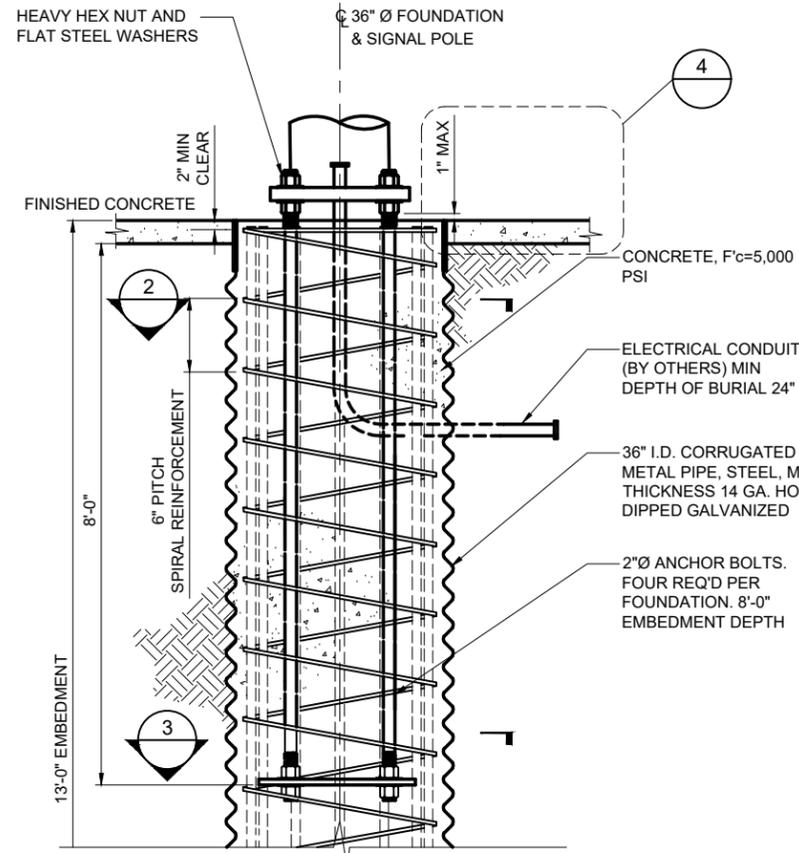
- 1.) STRUCTURAL PLATE AND PIPE MATERIAL TO BE ASTM A588 GRADE 50.
- 2.) BOLTS SHALL BE ASTM F3125 A325 AND SHALL BE PROVIDED WITH HEAVY HEX HEAD NUTS CONFORMING TO ASTM A563 AND CIRCULAR STEEL WASHERS CONFORMING TO ASTM F536.
- 3.) FIELD VERIFY AND FIELD MATCH AND DRILL BRACKET PLATE BOLT HOLES.
- 4.) WELDING PER AWS 1.1 WITH E70 ELECTRODES.
- 5.) STRUCTURAL PLATE AND PIPE MATERIAL TO REMAIN UNCOATED.

BRACKET DETAIL

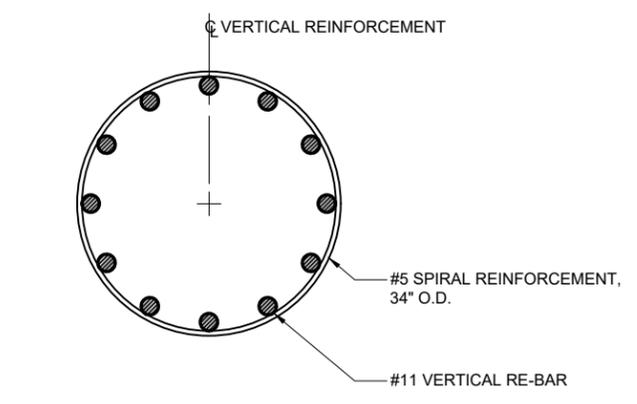
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6/22/2023

6/22/2023

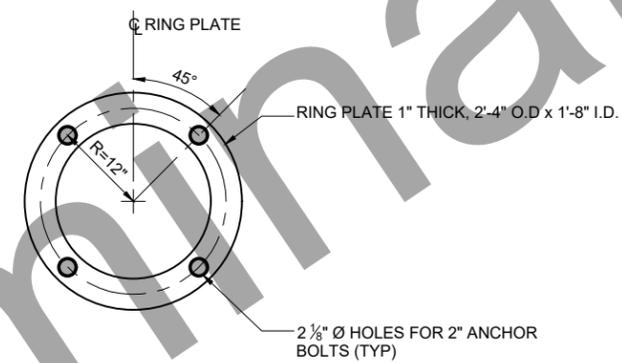
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			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H142	H145



1 FOUNDATION SECTION
SCALE: 3/4"=1'-0"



2 VERTICAL REINFORCEMENT
SCALE: 3/4"=1'-0"



3 RING PLATE SECTION
SCALE: 1"=1'-0"

NOTES:
1.) VERTICAL REBAR AND SPIRAL TIE NOT SHOWN FOR CLARITY.

4 CONCRETE FINISHING AROUND FOUNDATION
SCALE: TBD

- NOTES:**
- REFERENCE ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES STANDARD SPECIFICATION FOR HIGHWAY CONSTRUCTION 2020 EDITION
 - 1. SIGNAL POLE FOUNDATIONS SHALL BE COMPLETED IN ACCORDANCE WITH ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (SSH, 2020) SECTION 660.
 - 2. INSTALLATION CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING STABILITY OF THE EXCAVATED HOLES AND FOR PROPER BACKFILLING AND COMPACTION AROUND THE FORMS.
 - 3. SPECIAL CONSIDERATION TO BE GIVEN IF GROUNDWATER IS PRESENT WITHIN FOUNDATION EXCAVATION. WHERE GROUNDWATER IS ENCOUNTERED, THE DRILL HOLE SHALL BE ADVANCED WITH THE USE OF OVER-SIZED DRILL CASING OR OTHERWISE STABILIZE THE HOLE BY OTHER MEANS AS APPROVED BY THE ENGINEER AND PROVIDE A MEANS TO CONTROL INFLOW OF WATER DURING INSTALLATION OF CONCRETE. WHERE DRILLING IS DEEMED NOT FEASIBLE, CONTACT ENGINEER OF RECORD TO PROVIDE ALTERNATIVE FOUNDATION DESIGN.
 - 4. ANCHOR ROD SHALL BE ASTM A320 GRADE L7, HOT DIPPED GALVANIZED. SET ALL ANCHOR BOLTS BY TEMPLATE OF LIGHT POLE BASE BOLT PATTERN. RING PLATE TO BE ASTM A572 GRADE 50.
 - 5. ALL ANCHOR ROD HARDWARE SHALL BE HOT DIPPED GALVANIZED. WASHERS SHALL CONFORM TO ASTM F436, HEAVY HEX HEAD NUTS SHALL CONFORM TO ASTM A563 SPECIFICATION.
 - 6. ANCHOR ROD, FASTENING HARDWARE AND RING PLATE SHALL BE CHARPY V-NOTCH IMPACT TESTED. ANCHOR BOLTS TO BE TESTED @ -150F FOR 20 FT-LBS (AVERAGE-MINIMUM).
 - 7. REINFORCING STEEL SHALL MEET ASTM A706 GRADE 60. REINFORCING STEEL SHALL BE UNCOATED.
 - 8. REFER TO SECTION 608 FOR FINISHING CONCRETE SURFACE AROUND NEWLY INSTALLED SIGNAL FOUNDATIONS.

CONCRETE MIX DESIGN CLASS A-A (PER SECTION 501 "CONCRETE FOR STRUCTURES")
 F'c=5,000 PSI
 MAX W/C=0.4
 AIR CONTENT=6.0%
 MAX SLUMP=6"

TBD

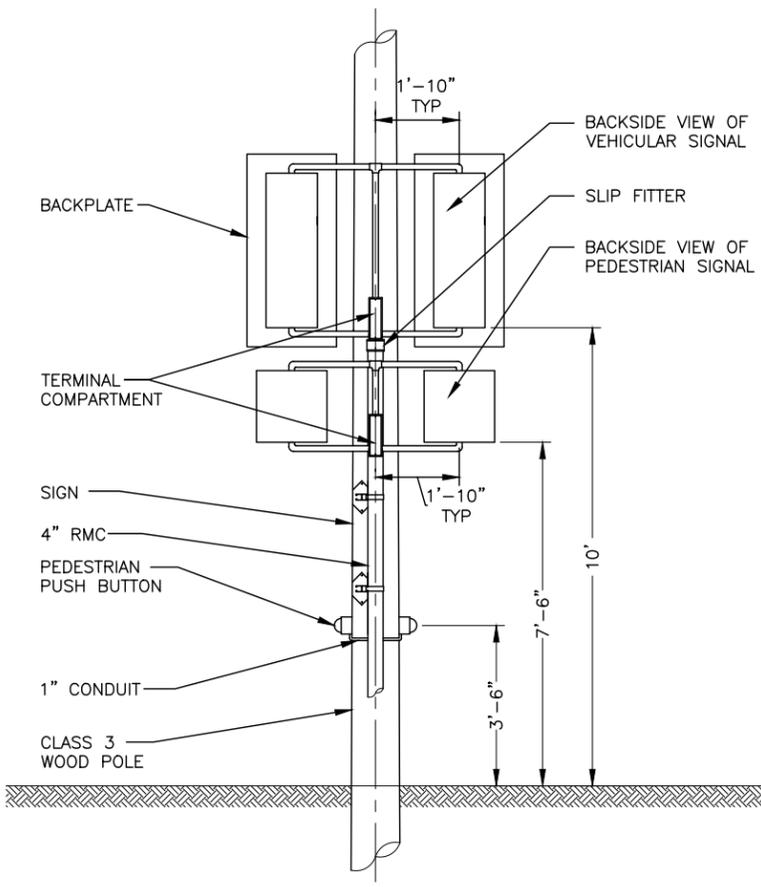
PLANS DEVELOPED BY: R&M CONSULTANTS, INC., CERT. OF AUTHORIZATION NO.: AEC0111, 9101 VANGUARD DRIVE, ANCHORAGE, AK, 99507, (907) 522-1707
 Z:\project\2967.01 KE NR COF Signal Upgrades\Civil\ACAD\Traffic Light Pole Foundation-H143 Thu, Jun/22/23 12:57pm

FOUNDATION DETAILS

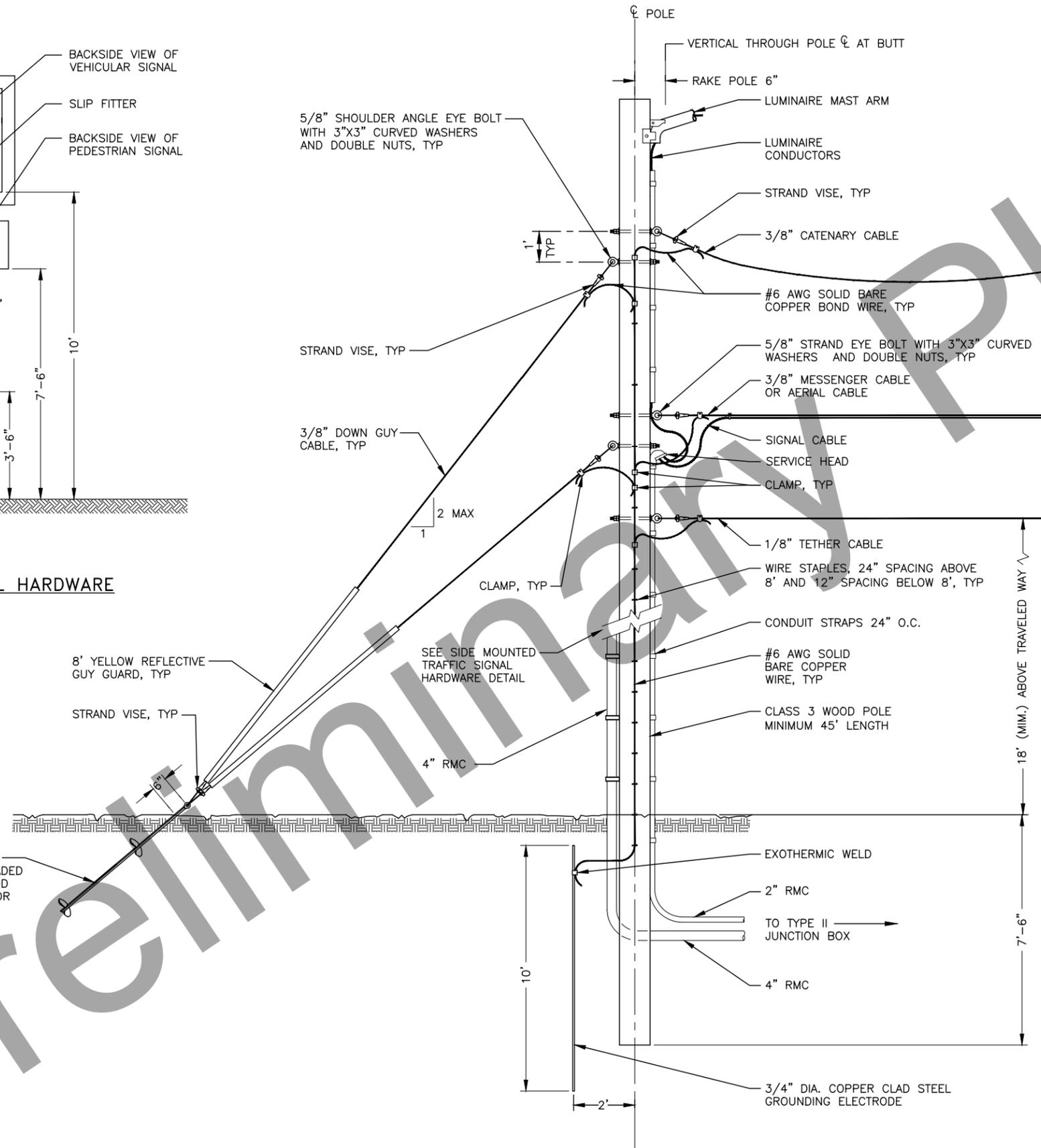
REVIEW PS&E
6/22/2023

6/22/2023

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H143	H145



SIDE MOUNTED TRAFFIC SIGNAL HARDWARE
NTS



WOOD TRAFFIC POLE DETAIL
NTS
(SINGLE SPAN ATTACHMENT SHOWN)

GENERAL NOTES:

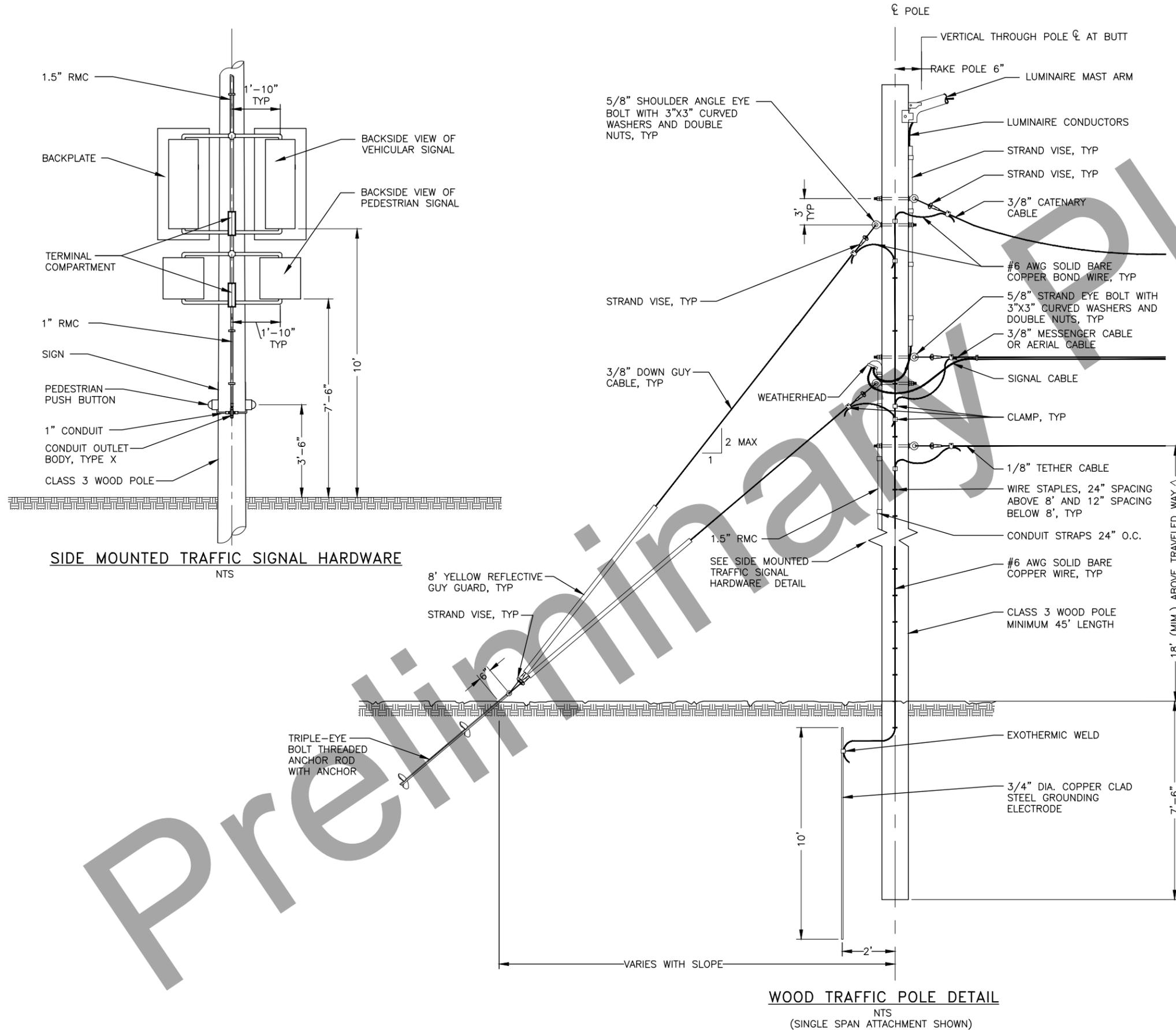
1. ATTACH A 4 INCH RIGID METAL CONDUIT TO THE WOOD POLE, USING UNISTRUT P9014 WITH P4101 CHANNEL, AND P1121 PIPE CLAMPS, OR APPROVED EQUAL.
2. INSTALL THE 4 INCH CONDUIT ON THE SIDE OF THE POLE AT A LOCATION WHERE A LINE PARALLEL TO THE LONG CORD (P.C. TO P.T.) OF THE RADIUS IS TANGENT TO THE POLE, AS SHOWN IN STANDARD DRAWING T-30.11 OR THE SIGNAL HARDWARE DETAIL SHEET IN PLANS FOR TERMINAL COMPARTMENT LOCATIONS.
3. USE POST TOP SIGNAL FRAMES WITH TERMINAL COMPARTMENTS TO INSTALL THE VEHICULAR SIGNAL HEADS ON TOP OF THE 4 INCH CONDUIT.
4. USE SIDE MOUNTED SIGNAL FRAMES WITH TERMINAL COMPARTMENTS TO INSTALL THE PEDESTRIAN SIGNAL HEADS ON THE 4 INCH CONDUIT.
5. THE VERTICAL CLEARANCES SHOWN ARE FROM THE WALKING SURFACE FOR THE PEDESTRIAN GEAR AND THE TRAVELED WAY FOR THE VEHICULAR SIGNALS.
6. TERMINATE POLES WITH NO LUMINAIRE A MINIMUM OF 2 FEET ABOVE THE CATENARY CABLE CONNECTION.
7. SEE STANDARD DRAWING T-30.11 OR THE SIGNAL HARDWARE DETAIL SHEET IN PLANS FOR ADDITIONAL TRAFFIC SIGNAL HARDWARE DETAILS.
8. ALL 3/8 INCH SPAN AND GUY CABLE SHALL BE HEAVY DUTY (HD) STEEL WITH MINIMUM 9,700 LB BREAKING STRENGTH. ALL OTHER CABLES SHALL ALSO BE HD RATED.
9. GUY ANCHOR SHALL BE INSTALLED PER MANUFACTURER RECOMMENDATIONS. SOIL CLASSIFICATION SHALL BE USED TO DETERMINE ANCHOR SIZE, FOLLOW MANUFACTURE GUIDELINES AND CONFIRM SOIL CLASSIFICATION WITH ENGINEER PRIOR TO ANCHOR SELECTION.

PLANS DEVELOPED BY: KINNEY ENGINEERING, LLC 3909 Arctic Blvd, Suite 400 Anchorage, Alaska 99503 (907) 346-2373 CERT. OF AUTH. NO. 1102
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**UNDERGROUND SERVICE
TEMPORARY WOOD DETAILS**

REVIEW PS&E
 6/23/2023
 6/23/2023

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H144	H145



GENERAL NOTES:

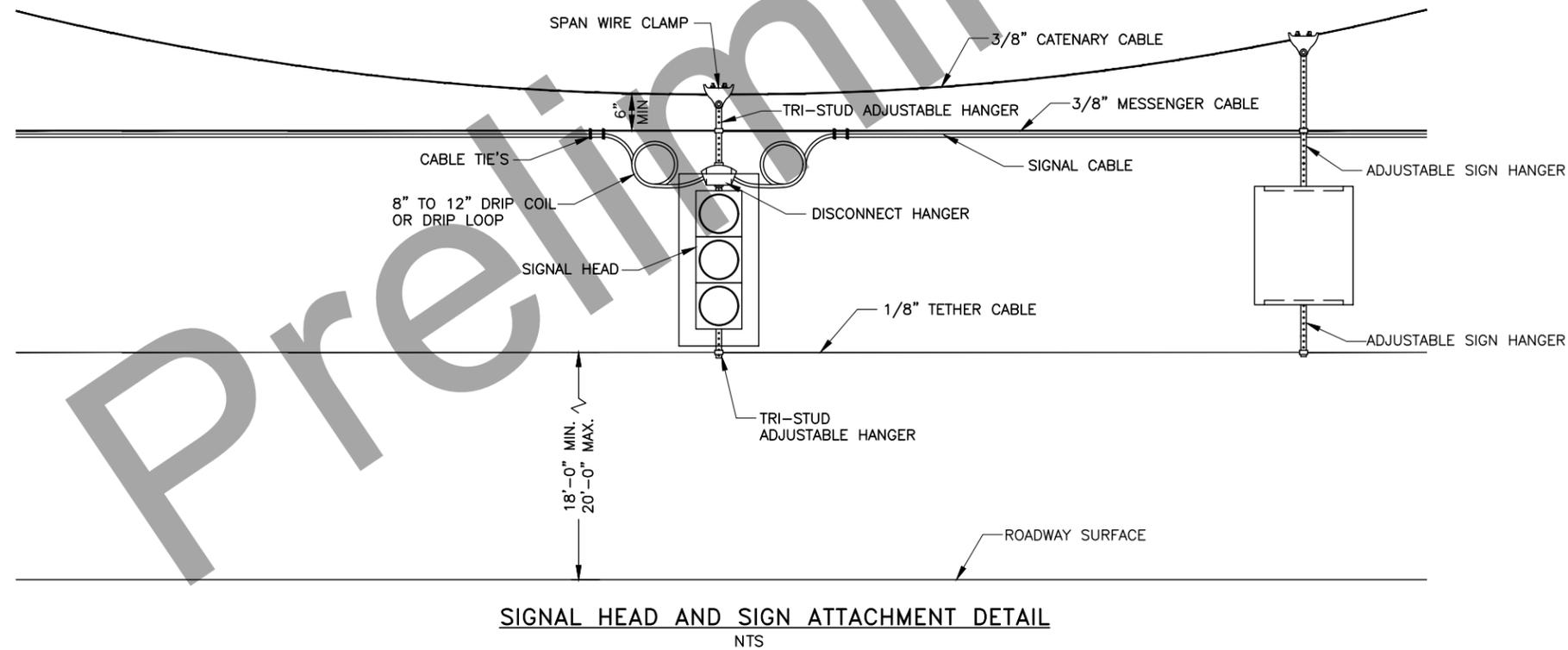
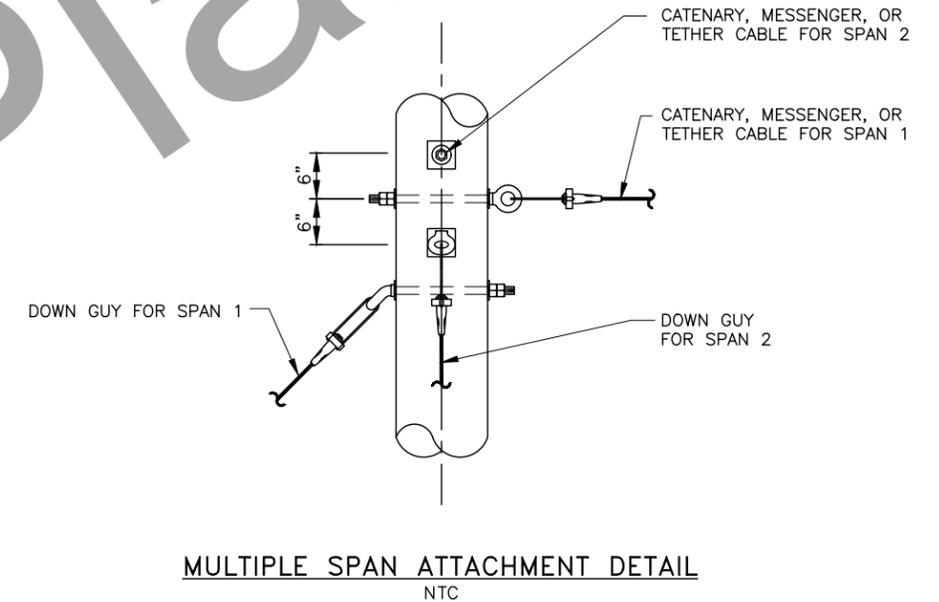
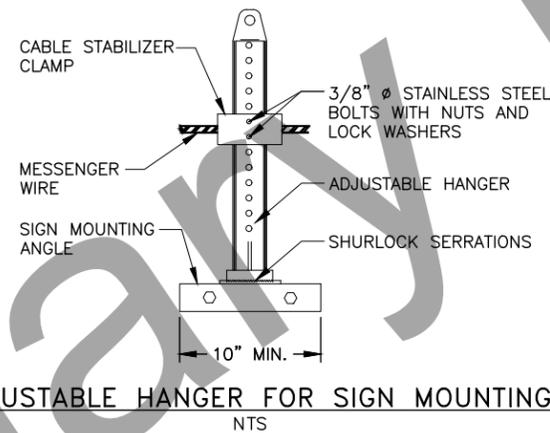
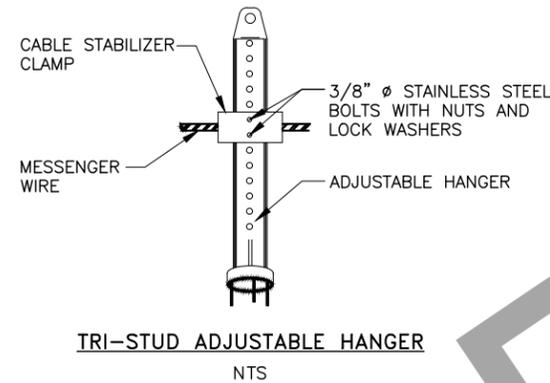
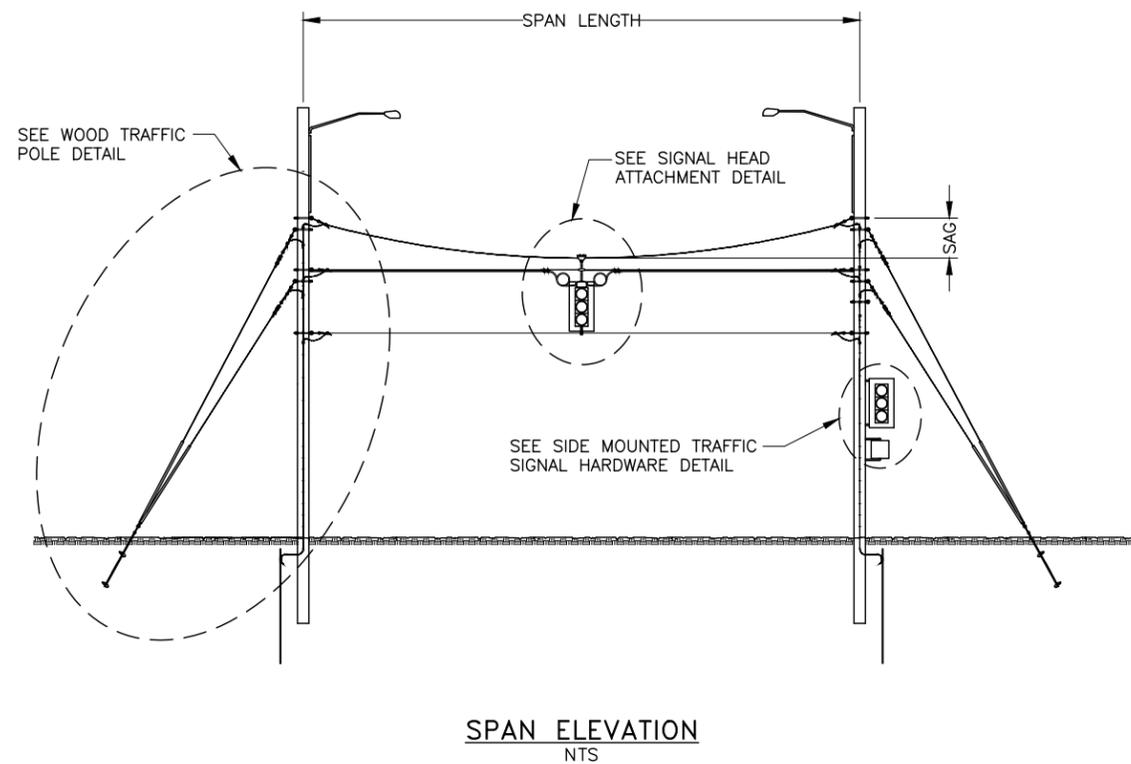
1. ATTACH A 4 INCH RIGID METAL CONDUIT TO THE WOOD POLE, USING UNISTRUT P9014 WITH P4101 CHANNEL, AND P1121 PIPE CLAMPS, OR APPROVED EQUAL.
2. INSTALL THE 4 INCH CONDUIT ON THE SIDE OF THE POLE AT A LOCATION WHERE A LINE PARALLEL TO THE LONG CORD (P.C. TO P.T.) OF THE RADIUS IS TANGENT TO THE POLE, AS SHOWN IN STANDARD DRAWING T-30.11 OR THE SIGNAL HARDWARE DETAIL SHEET IN PLANS FOR TERMINAL COMPARTMENT LOCATIONS.
3. USE POST TOP SIGNAL FRAMES WITH TERMINAL COMPARTMENTS TO INSTALL THE VEHICULAR SIGNAL HEADS ON TOP OF THE 4 INCH CONDUIT.
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9. GUY ANCHOR SHALL BE INSTALLED PER MANUFACTURER RECOMMENDATIONS. SOIL CLASSIFICATION SHALL BE USED TO DETERMINE ANCHOR SIZE, FOLLOW MANUFACTURE GUIDELINES AND CONFIRM SOIL CLASSIFICATION WITH ENGINEER PRIOR TO ANCHOR SELECTION.

PLANS DEVELOPED BY: KINNEY ENGINEERING, LLC 3909 Arctic Blvd, Suite 400 Anchorage, Alaska 99503 (907) 346-2373 CERT. OF AUTH. NO. 1102
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**OVERHEAD SERVICE
TEMPORARY WOOD DETAILS**

REVIEW PS&E
6/23/2023
6/23/2023

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002(474)/NFHWY00531 0002(495)/NFHWY00592	2023	H145	H145



GENERAL NOTES:

1. ATTACH ADJUSTABLE HANGERS TO THE MESSENGER AND TETHER CABLES WITH CABLE STABILIZER CLAMPS.
2. ATTACH SIGNAL CABLES TO MESSENGER CABLE EVERY 1' USING 3M HEAVY DUTY BLACK CABLE TIES OR APPROVED EQUAL. CABLE TIES SHALL BE WEATHER RESISTANT BLACK NYLON GREATER THAN 0.065" THICK, HAVE A TENSILE STRENGTH GREATER THAN 110LBS, AND HAVE A TEMPERATURE RANGE BETTER THAN -35°F TO 180°F. USE TWO TIES BEFORE/AFTER DRIP LOOPS. CABLE TIES SHALL BE ATTACHED "SNUG TIGHT", DO NOT OVER TIGHTEN.
3. INSTALL SIGNS SO THAT THE BOTTOM EDGES ARE AT APPROXIMATELY THE SAME ELEVATION.
4. SAG=4% TO 5% OF SPAN LENGTH.

**TEMPORARY TRAFFIC
SIGNAL DETAILS**

REVIEW PS&E
6/23/2023

6/23/2023