



ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES

P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

DENALI DEPOT TRANSIT SECURITY UPGRADES
REQUEST FOR QUOTE SET
AUGUST 2018

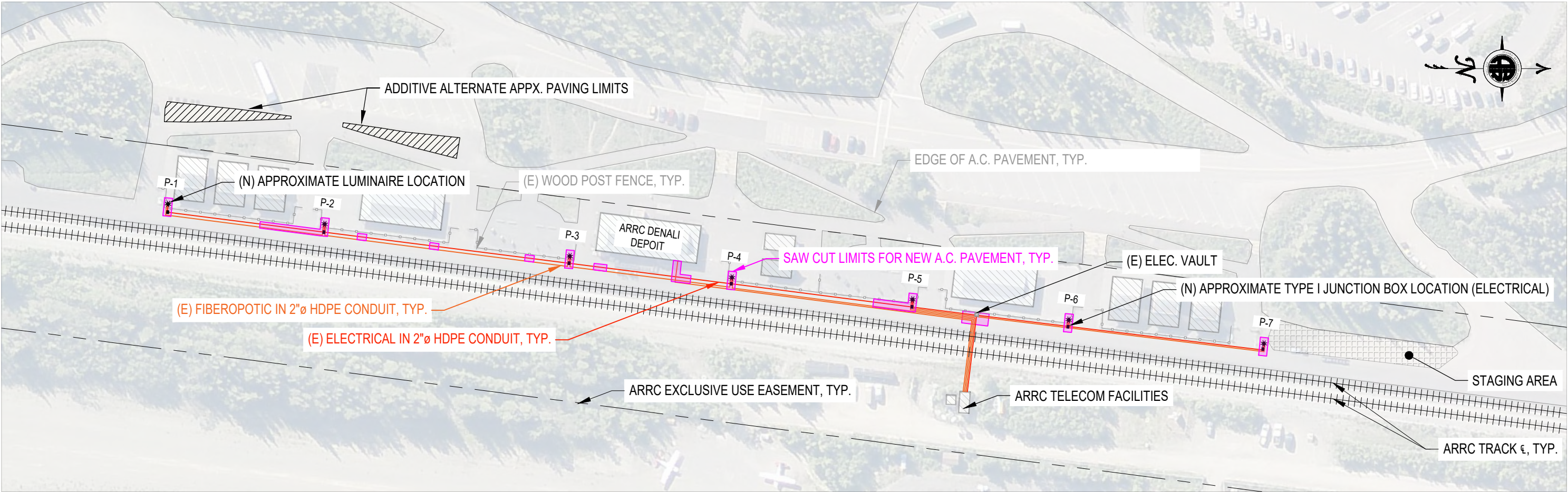


ALASKA MAP
NOT TO SCALE

INDEX OF DRAWINGS

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2	G1.1	PLAN VIEW - OVERALL SITE
3	C1.0	PLAN VIEW - P-1 AND P-2
4	C1.2	PLAN VIEW - P-3
5	C1.3	PLAN VIEW - P-4 AND P-5
6	C1.3	PLAN VIEW - P-6 AND P-7
7	C1.4	PLAN VIEW - P-7 AND STAGING AREA
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9	D1.1	LUMINAIRE POLE - CABLE / FIXTURE RUN DETAIL
10	A1.0	PLAN VIEW - ADDITIVE ALTERNATE

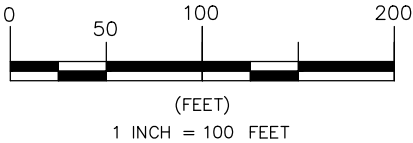
		
ALASKA RAILROAD CORPORATION ENGINEERING SERVICES P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500		
PROJECT : ARRC Tranist Security Upgrades Denali Depot Fiber & Camera Install		
TITLE: Cover Sheet		
DESIGNED BY: BAO	SCALE : AS NOTED	AFE NO.:
DRAWN BY: BAO		ACAD FILE:
CHECKED BY: GKT	DATE : 8/23/2018	DWG NO. 1 OF 10
APPROVED BY: BJA		



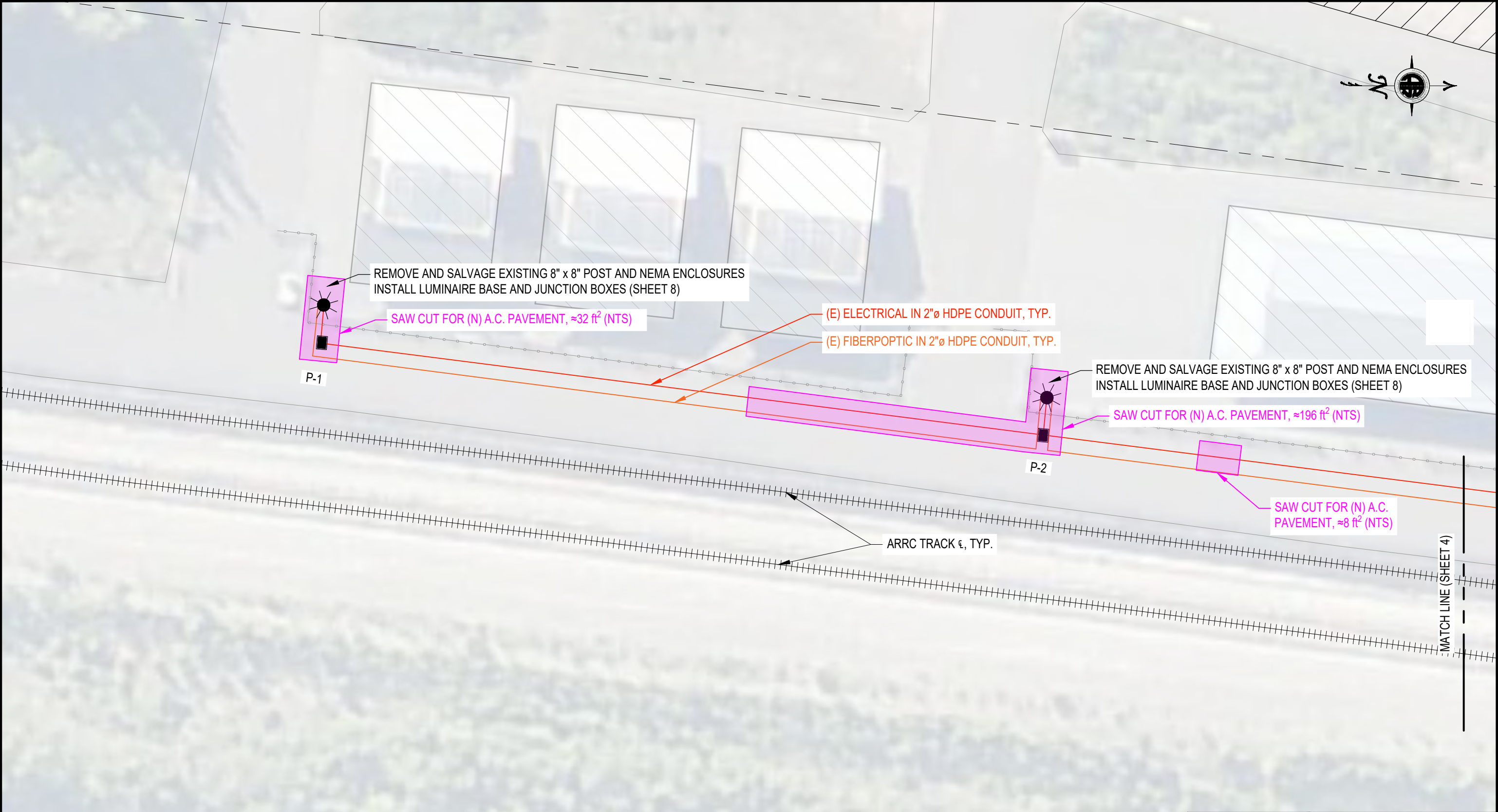
PLAN VIEW - OVERALL SITE
SCALE 1" = 100'

GENERAL NOTES:

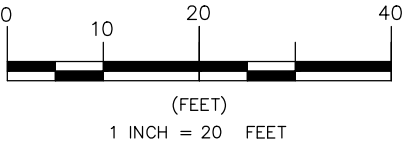
1. COMPLY WITH, AT A MINIMUM, NFPA 70E STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE; ANSI NECA 1 STANDARD FOR GOOD WORKMANSHIP IN ELECTRICAL CONSTRUCTION, IEEE NESC, AND ALL RELEVANT FAA CIRCULARS.
2. DRAWINGS DEPICTED THE GENERAL LOCATIONS OF NEW ELECTRICAL FEATURES AND A.C. PAVEMENT REPAIRS. COORDINATE EXACT LOCATIONS THROUGH ARRC'S ON-SITE REPRESENTATIVE. ADJUSTMENTS TO THE LOCATIONS OF THE WORK LIMITS SHALL BE COORDINATED THROUGH ARRC'S ON-SITE REPRESENTATIVE.
3. REQUEST LOCATES THROUGH THE 811 ALASKA DIGLINE SERVICE A MINIMUM OF 10 DAYS PRIOR TO THE START OF EXCAVATION ACTIVITIES.
4. NO EXCAVATION IS TO REMAIN OPEN IN EXCESS OF THREE (3) DAYS. OPEN EXCAVATIONS SHALL BE MARKED AND DELINEATED THROUGHOUT THE DURATION OF THE EXCAVATION.
5. EROSION AND SEDIMENTS CONTROLS SHALL BE IMPLEMENTED IN ACCORDANCE WITH THE LATEST ALASKA GENERAL CONSTRUCTION PERMIT. BEST MANAGEMENT PRACTICE (BMP)'S SHALL BE IMPLEMENTED TO ENSURE THAT SEDIMENT IS NOT TRANSPORTED OUTSIDE THE WORK LIMITS AND/OR TRACKED ONTO IMPROVED SURFACES (i.e. A.C. PAVEMENT OR CONCRETE).
6. EXCAVATIONS SHALL BE BEDDED AND BACKFILLED (USING NATIVE MATERIAL) IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND SECTION 204 OF THE ALASKA DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2017 EDITION.
7. CONTRACTOR IS PROVIDED A STAGING AREA AT THE NORTHERN LIMITS OF THE PROJECT. UNCLASSIFIED EXCAVATION MAY BE TEMPORARILY STAGED WITHIN THIS AREA UNTIL WHICH TIME IT IS TRANSPORTED OFF PROPERTY FOR DISPOSAL OFF-SITE.
8. ALL CONSTRUCTION ACTIVITIES EITHER OCCUR WITHIN, OR HAVE THE POTENTIAL TO ENTER WITHIN, 20.0' OF THE NEAREST TRACK FROM THE LOCATION OF THE WORK WILL REQUIRE ARRC FLAGGER PROTECTION.
9. WORK PERFORMED DURING PASSENGER OPERATIONS WILL HAVE TO OCCUR AFTER 1800 DAILY.
10. DETAILS ON ITEMS TO BE REMOVED AND SALVAGED ARE PROVIDED IN THE AS-BUILT DRAWINGS PROVIDED IN THE CONTRACT DOCUMENTS.
11. (E) DESCRIPTORS DESIGNATE 'EXISTING' ITEMS WHEREAS (N) DESCRIPTORS DESIGNATE 'NEW' ITEMS.



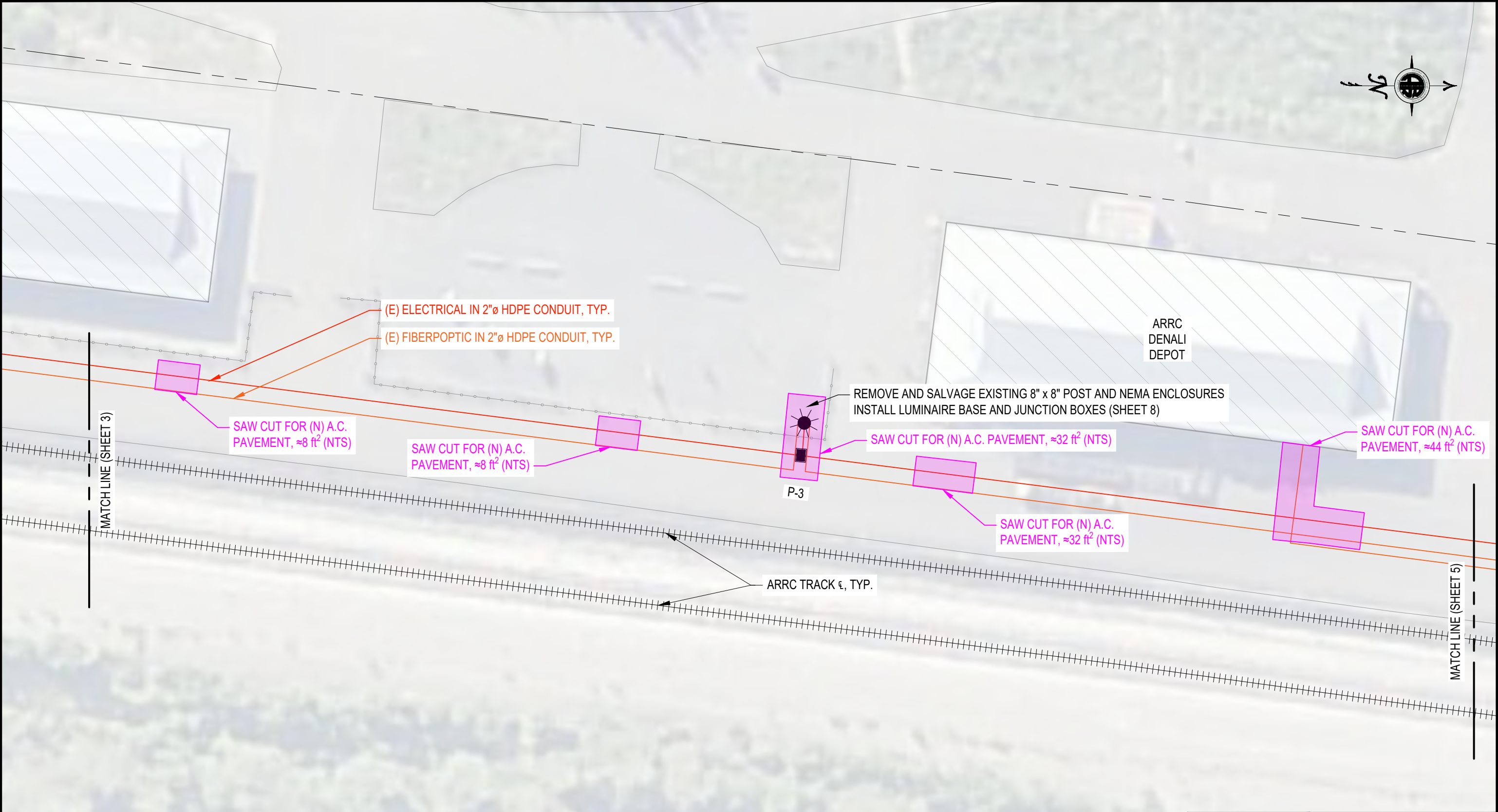
 ALASKA RAILROAD CORPORATION ENGINEERING SERVICES P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500		
PROJECT : ARRC Transit Security Upgrades Denali Depot Fiber & Camera Installation		
TITLE: Plan View Overall Site		
DESIGNED BY: BAO	SCALE : AS NOTED	AFE NO.:
DRAWN BY: BAO	DATE : 8/23/2018	ACAD FILE:
CHECKED BY: GKT		DWG NO. 2 OF 10
APPROVED BY: BJA		



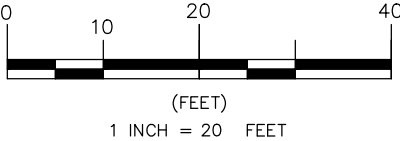
PLAN VIEW - P-1 AND P-2
SCALE 1" = 20'



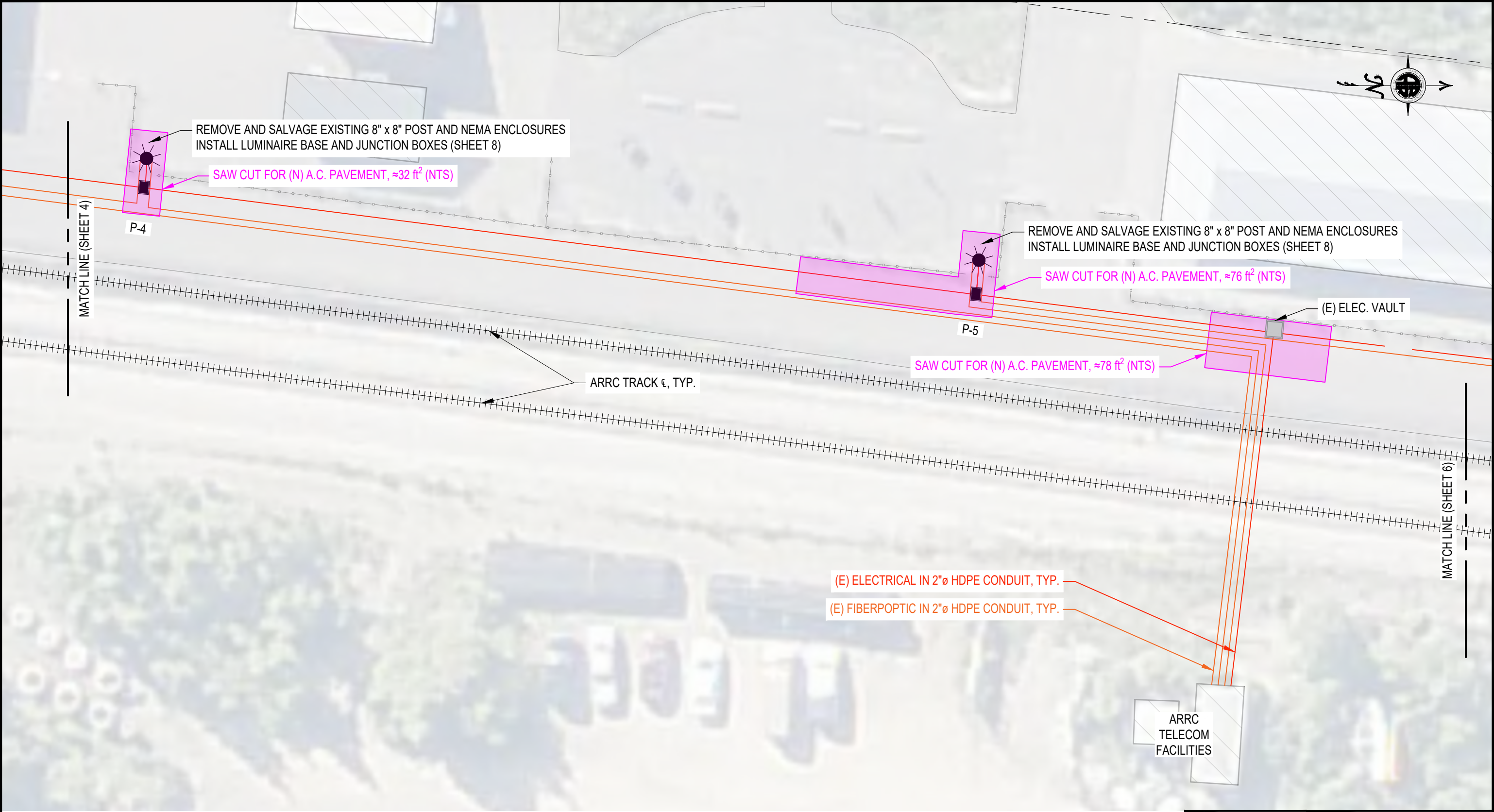
 ALASKA RAILROAD CORPORATION ENGINEERING SERVICES P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500			
PROJECT : ARRC Transit Security Upgrades Denali Depot Fiber & Camera Installation			
TITLE: Plan View P-1 and P-2			
DESIGNED BY: BAO	SCALE : AS NOTED	AFE NO.:	
DRAWN BY: BAO	DATE : 8/23/2018	ACAD FILE:	
CHECKED BY: GKT		DWG NO.	
APPROVED BY: BJA		3 OF 10	



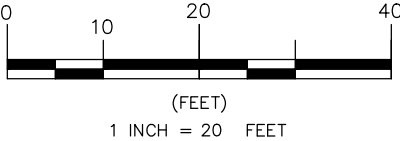
PLAN VIEW - P-3
SCALE 1" = 20'



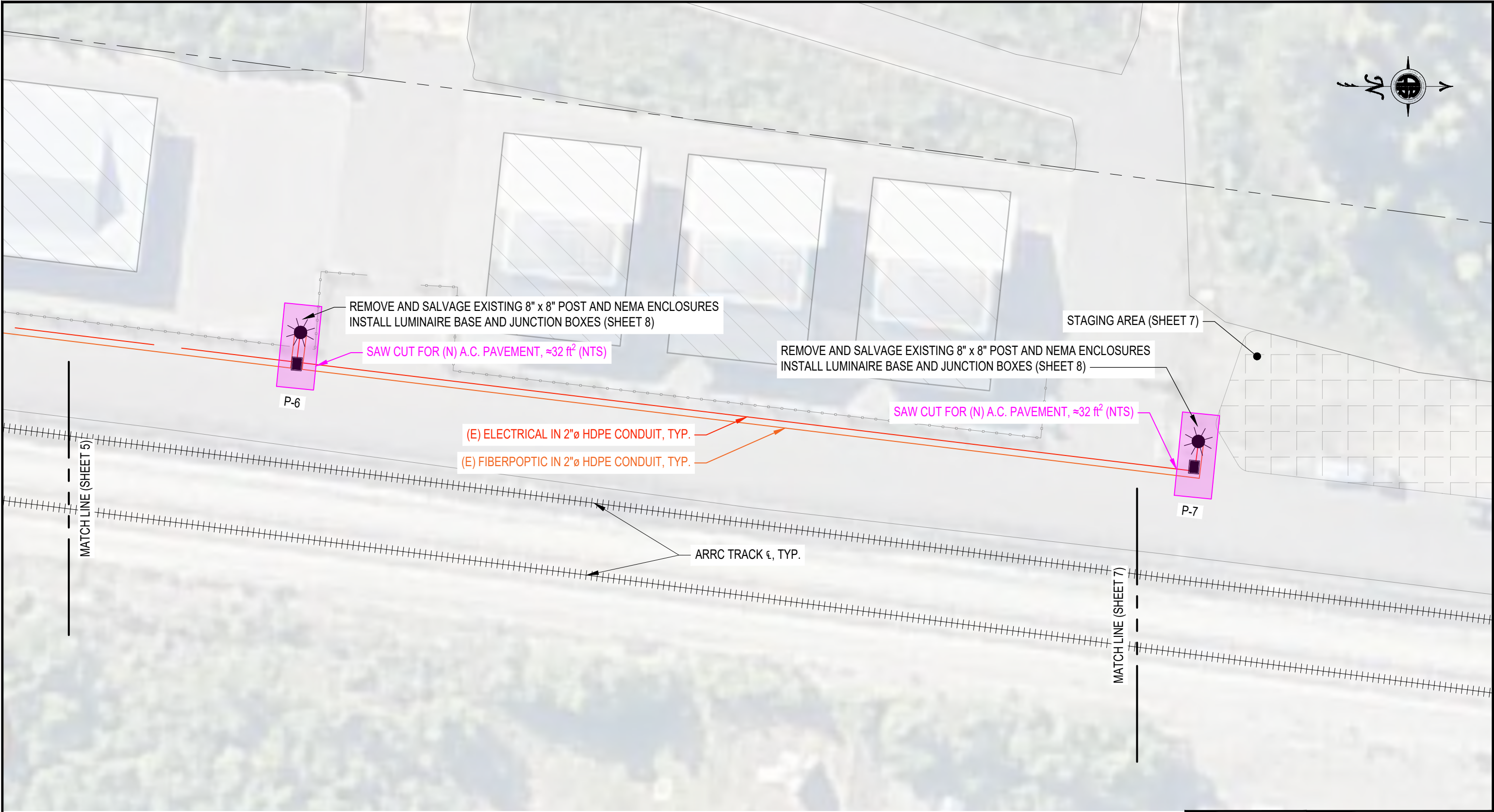
 ALASKA RAILROAD CORPORATION ENGINEERING SERVICES P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500		
PROJECT : ARRc Transit Security Upgrades Denali Depot Fiber & Camera Installation		
TITLE: Plan View P-3		
DESIGNED BY: BAO	SCALE : AS NOTED	AFE NO.:
DRAWN BY: BAO		ACAD FILE:
CHECKED BY: GKT	DATE : 8/23/2018	DWG NO. 4 OF 10
APPROVED BY: BJA		



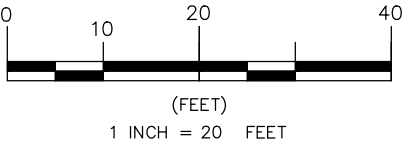
PLAN VIEW - P-4 AND P-5
SCALE 1" = 20'



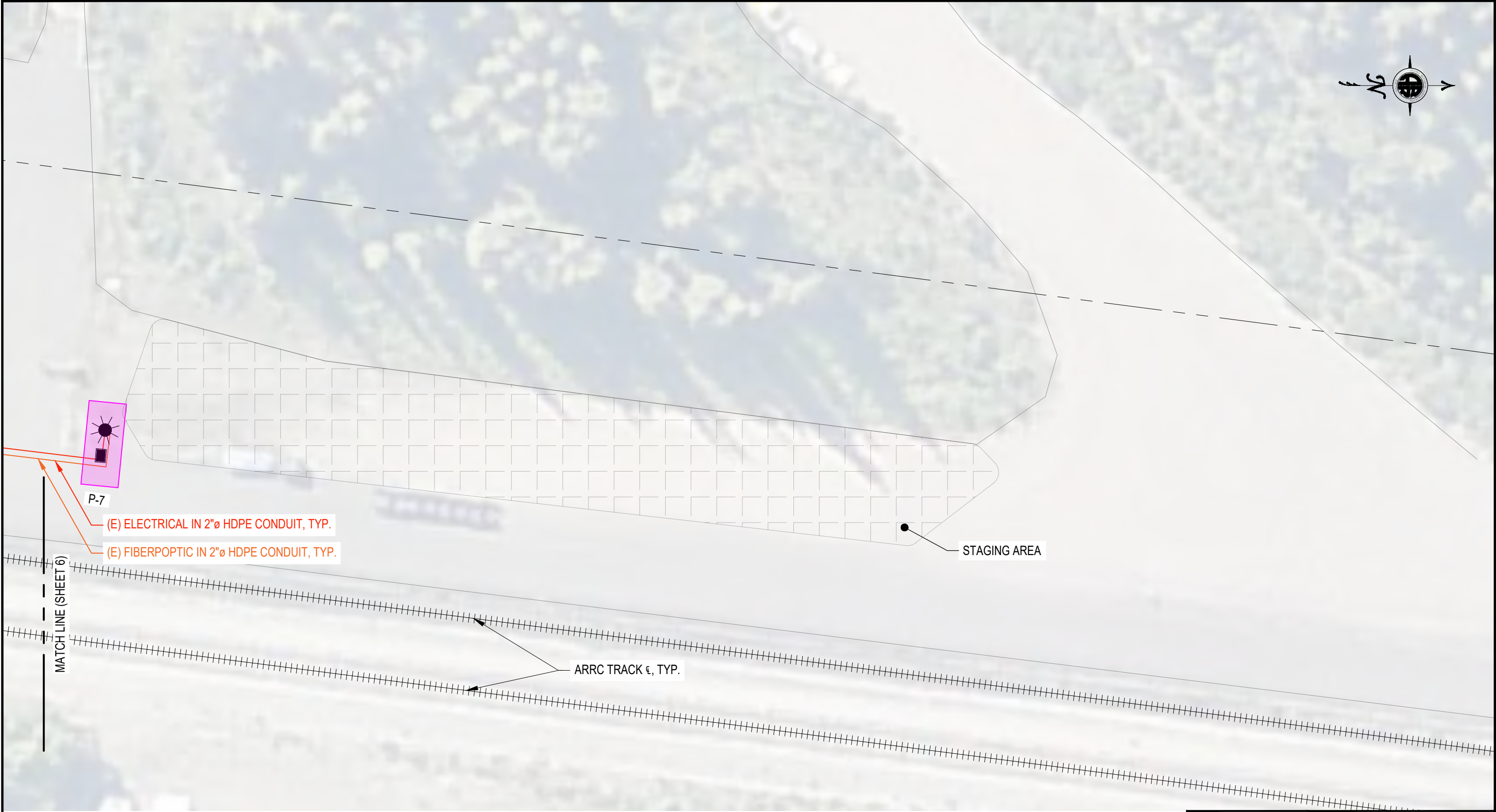
 ALASKA RAILROAD CORPORATION ENGINEERING SERVICES P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500			
PROJECT : ARRC Transit Security Upgrades Denali Depot Fiber & Camera Installation			
TITLE: Plan View P-4 and P-5			
DESIGNED BY: BAO	SCALE : AS NOTED	AFE NO.:	
DRAWN BY: BAO	DATE : 8/23/2018	ACAD FILE:	
CHECKED BY: GKT		DWG NO. 5 OF 10	
APPROVED BY: BJA			



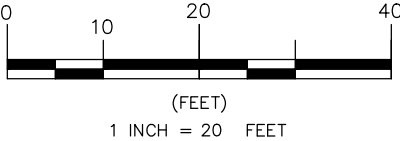
PLAN VIEW - P-6 AND P-7
SCALE 1" = 20'



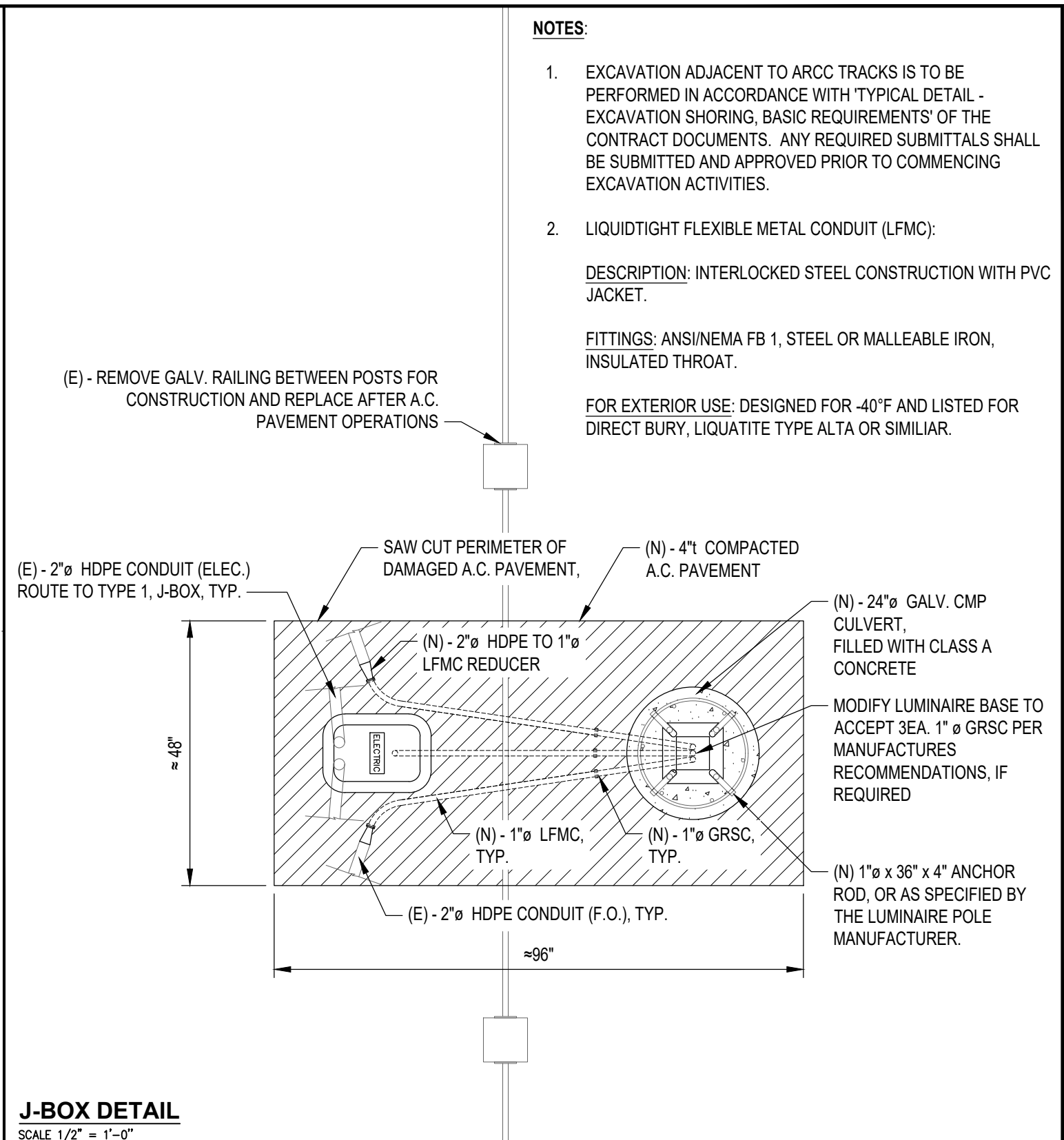
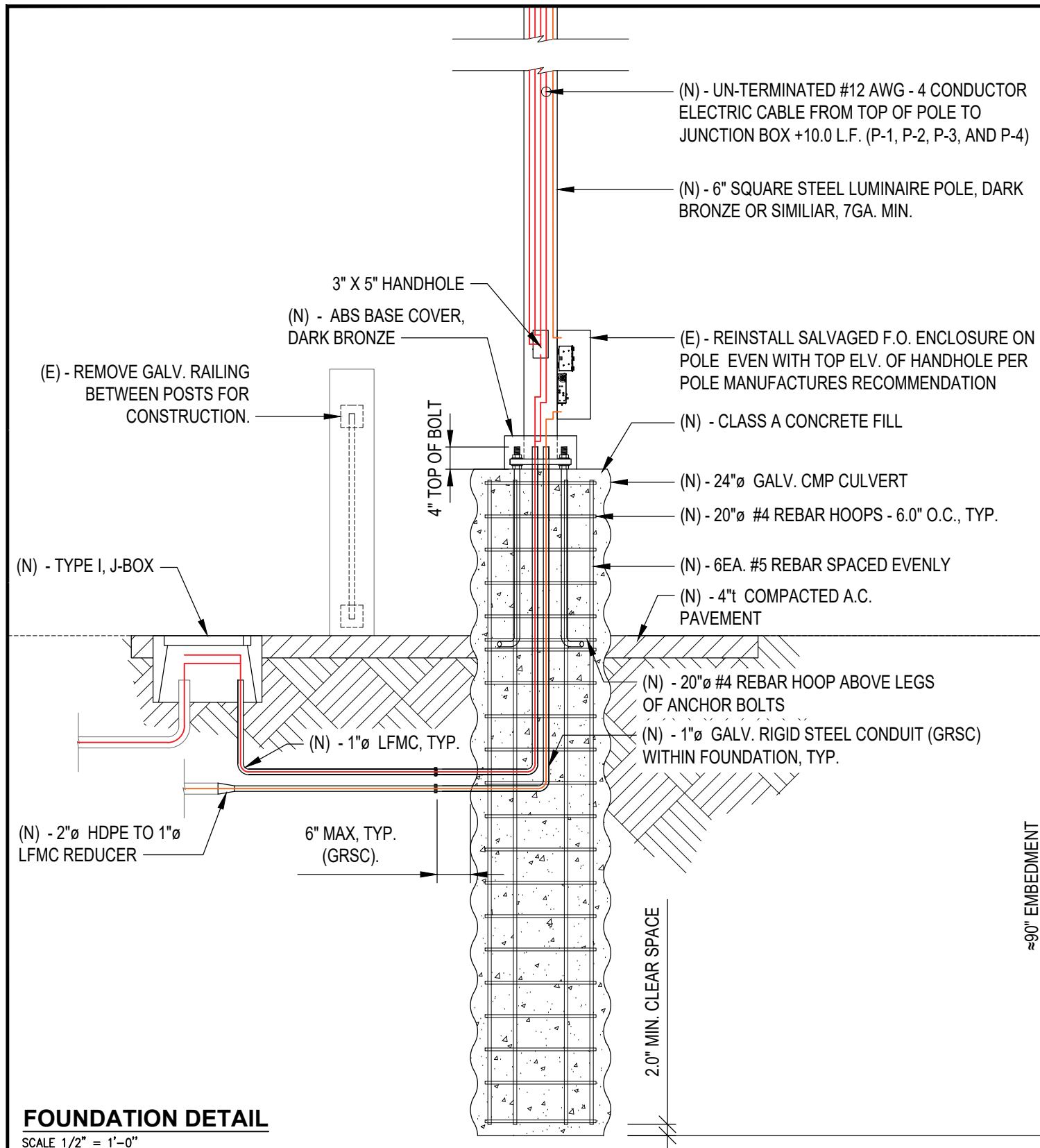
 ALASKA RAILROAD CORPORATION ENGINEERING SERVICES P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500		
PROJECT : ARRC Transit Security Upgrades Denali Depot Fiber & Camera Installation		
TITLE: Plan View P-6 and P-7		
DESIGNED BY: BAO	SCALE : AS NOTED	AFE NO.:
DRAWN BY: BAO	DATE : 8/23/2018	ACAD FILE:
CHECKED BY: GKT		DWG NO. 6 OF 10
APPROVED BY: BJA		



PLAN VIEW - P-7 AND STAGING AREA
SCALE 1" = 20'



 ALASKA RAILROAD CORPORATION ENGINEERING SERVICES P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500		
PROJECT : ARRC Transit Security Upgrades Denali Depot Fiber & Camera Installation		
TITLE: Plan View P-7 and Staging Area		
DESIGNED BY: BAO	SCALE : AS NOTED	AFE NO.:
DRAWN BY: BAO		ACAD FILE:
CHECKED BY: GKT	DATE : 8/23/2018	DWG NO. 7 OF 10
APPROVED BY: BJA		



NOTES:

1. EXCAVATION ADJACENT TO ARCC TRACKS IS TO BE PERFORMED IN ACCORDANCE WITH 'TYPICAL DETAIL - EXCAVATION SHORING, BASIC REQUIREMENTS' OF THE CONTRACT DOCUMENTS. ANY REQUIRED SUBMITTALS SHALL BE SUBMITTED AND APPROVED PRIOR TO COMMENCING EXCAVATION ACTIVITIES.

2. LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC):

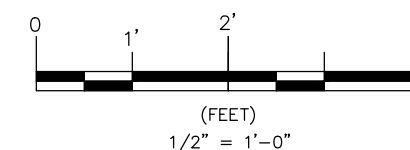
DESCRIPTION: INTERLOCKED STEEL CONSTRUCTION WITH PVC JACKET.

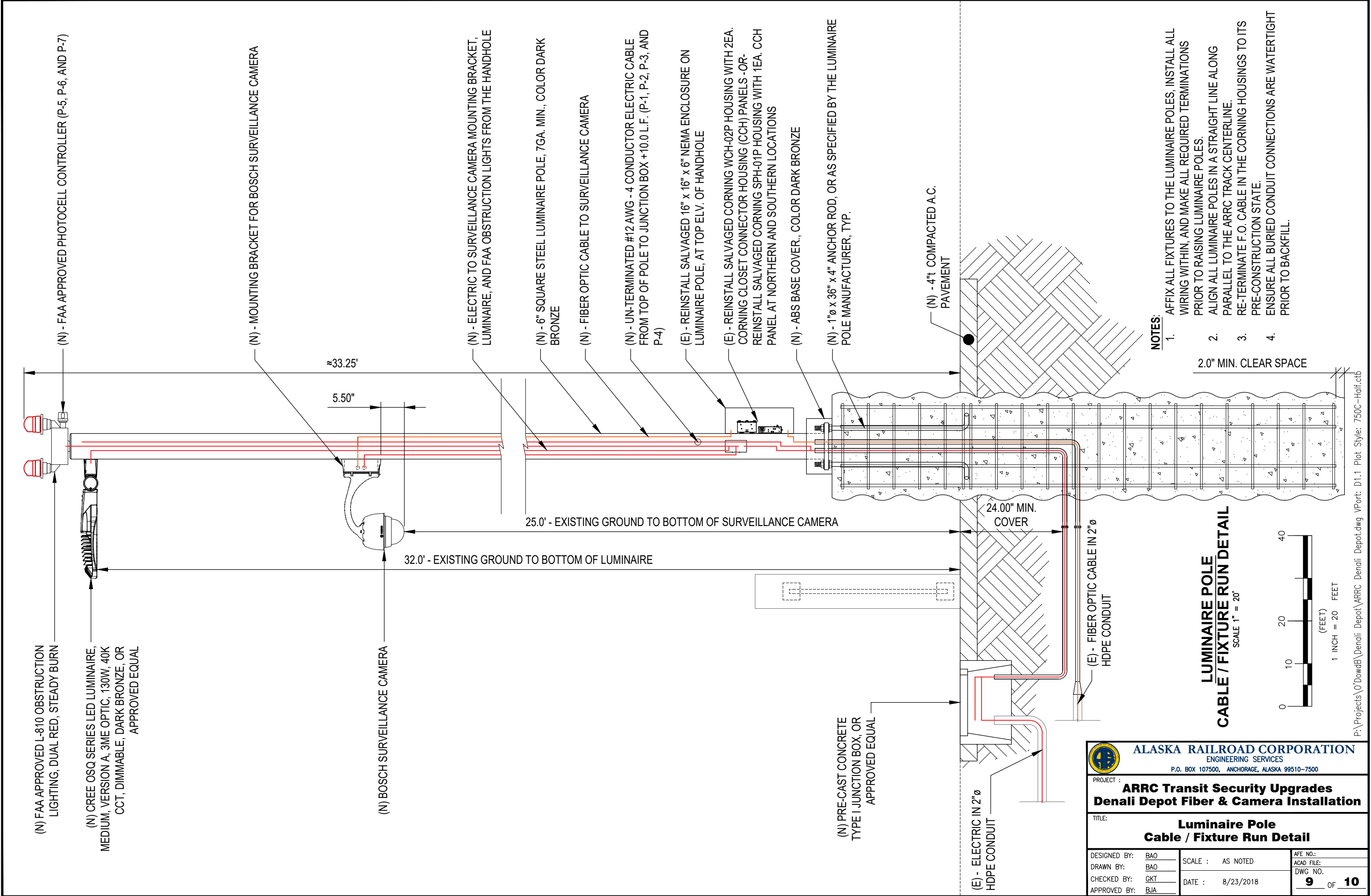
FITTINGS: ANSI/NEMA FB 1, STEEL OR MALLEABLE IRON,
INSULATED THROAT.

FOR EXTERIOR USE: DESIGNED FOR -40°F AND LISTED FOR
DIRECT BURY, LIQUATITE TYPE ALTA OR SIMILIAR.

LUMINAIRE POLE - FOUNDATION AND J-BOX DETAILS

SCALE 1/2" = 1'-0"





ADDITIVE ALTERNATE: CLEAR, GRUB, AND
SAW CUT FOR (N) A.C. PAVEMENT, ≈1,495 ft²

ADDITIVE ALTERNATE: CLEAR, GRUB, AND
SAW CUT FOR (N) A.C. PAVEMENT, ≈1,320 ft²



(E) ELECTRICAL IN 2"Ø HDPE CONDUIT, TYP.

(E) FIBEROPTIC IN 2"Ø HDPE CONDUIT, TYP.

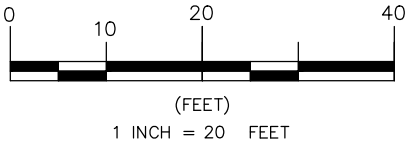
P-1

P-2

ARRC TRACK ϵ , TYP.

PLAN VIEW - ADDITIVE ALTERNATE

SCALE 1" = 20'



ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

PROJECT :
**ARRC Transit Security Upgrades
Denali Depot Fiber & Camera Installation**

TITLE:
**Plan View
Additive Alternate**

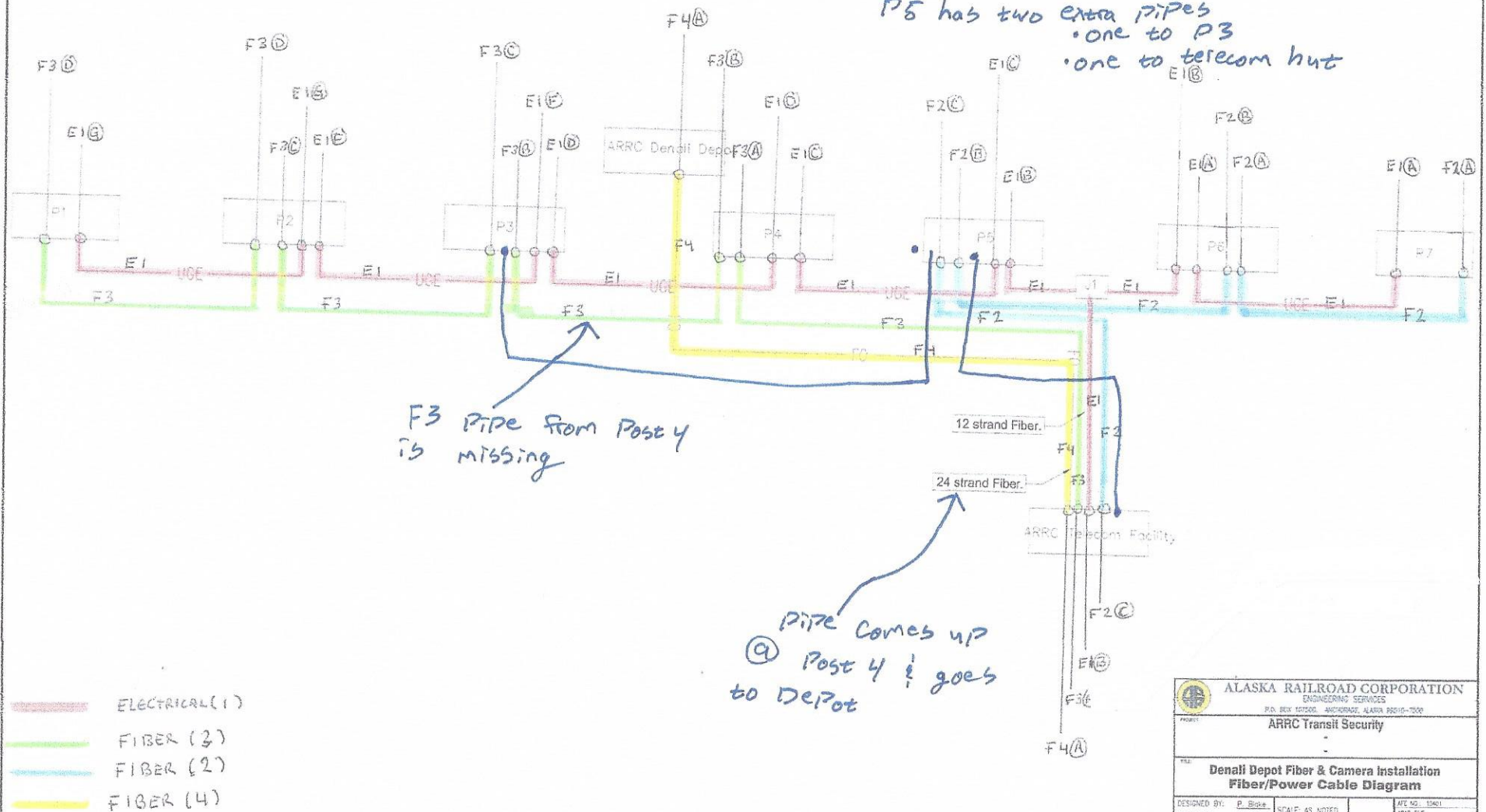
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DRAWN BY: BAO
CHECKED BY: GKT
APPROVED BY: BJA

SCALE : 1:20
DATE : 8/23/2018

AFE NO.:
ACAD FILE:
DWG NO.
10 OF **10**

Fiber/Power Cable Diagram

P5 has two extra pipes
 • one to P3
 • one to telecom hut



ALASKA RAILROAD CORPORATION ENGINEERING SERVICES P.O. BOX 101200, ANCHORAGE, ALASKA 99510-1200			
ARRC Transit Security			
Denali Depot Fiber & Camera Installation Fiber/Power Cable Diagram			
DESIGNED BY: P. Blake	SCALE: AS NOTED	DATE: May, 2017	REV NO. 1001
DRAWN BY: P. Blake			ASAC FILE
CHECKED BY:			DWG NO.
APPROVED BY:			8 OF 9

DTMF Lights / Crossing Parts list

Mean Well NDR-75-12 (Power Supply)

Mfr. Part#: 709-75-12

<http://www.mouser.com/ProductDetail/Mean-Well/NDR-75-12/?qs=sGAEpiMZZMsZudspt76%2fSp5QY6ABLyxRp2srZU3pasrN2gla2E9J0w%3d%3d>

Magnecraft / Schneider Electric 70-465-1 (Relay base)

Mfr. Part#: 70-465-1

http://www.mouser.com/ProductDetail/Schneider-Electric/70-465-1/?qs=plB1iWz%252bJMwyYFgcdZsMKw%3D%3D&kpid=2291918&gclid=CjwKEAiAt4mlBRDXwt_m9ICU4DcSJAAS_X0WctekHJFwrgydszDs6xRDX8EAFqZyt26-cchC3XEnnRoCgsXw_wcB

TE Connectivity / P&B CNT-35-26 (Timer Realy)

Mfr. Part#: 655-CNT-35-26

<http://www.mouser.com/ProductDetail/TE-Connectivity/CNT-35-26/?qs=%2fha2pyFaduj0OMaKjdijbLO51KFXIYx49iduaLxaHLw%3d>

NC400 D.T.M.F. Multi-Function Decoder with Relay Outputs

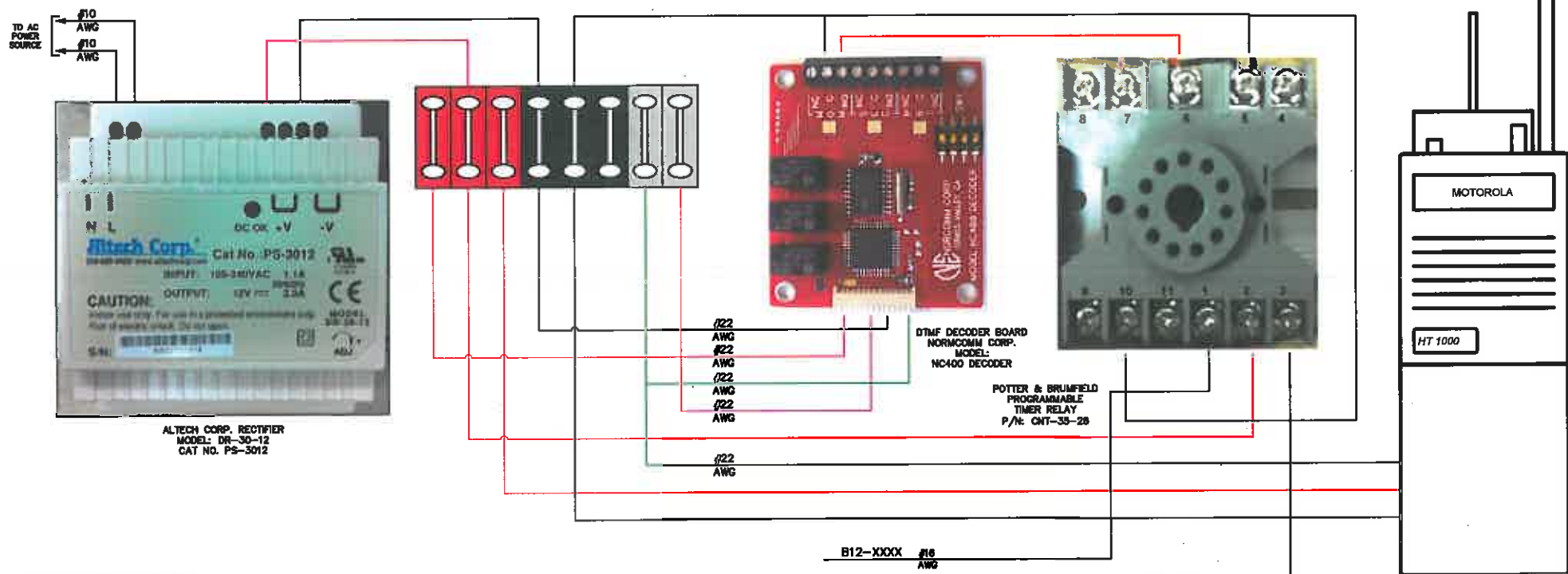
<http://www.norcommcorp.com/DTMF.html>

SUNDELY Car Radio Battery Eliminator + Adaptor for Motorola Radio GP900 HT1000 MT2000 MTX8000 PTX1200 NTN7143 NTN7143A NTN7143B NTN7143C NTN7143CR

<http://www.amazon.com/SUNDELY-Eliminator-Motorola-NTN7143A-NTN7143CR/dp/B00LYQZ0KY#productDetails>

NC400 D.T.M.F. Multi-Function Decoder with Relay Outputs

<http://www.norcommcorp.com/DTMF.html>



REMOTE CONTROL OPERATION

THE DTMF DECODER BOARD HAS TWO SWITCHES LOCATED AT SW1 THAT NEED TO BE LEFT IN THE ON POSITION. SWITCH 1 IS FOR PROGRAMMING THE DECODER (OFF POSITION) AND FOR DECODER OPERATION (ON POSITION). SWITCH 2 IS FOR AUDIO INPUT LEVEL POSITION AND SHOULD BE LEFT IN THE ON POSITION TO MATCH THE RADIO OUTPUT 10 MVRMS TO 350 MVRMS.

THE OFF POSITION IS FOR AUDIO LEVELS FROM 350 MVRMS TO 850 MVRMS. THE RADIO NEEDS TO BE TURNED ON AND THE VOLUME POTENTIOMETER CAN BE SET TO ANY POSITION (RADIO STRAPPED FOR MINIMUM RECEIVE LEVEL AT ALL POSITIONS).

THE POWER SUPPLY HAS A GREEN LED THAT LIGHTS WHEN POWER IS APPLIED, THE DECODER

BOARD HAS THREE LEDS TO INDICATE CONDITION CHANGES WHEN DTMF TONES ARE CORRECTLY DECODED. THE FIRST LED ON THE LEFT LABELED MOM WILL LIGHT FOR ONE SECOND AFTER THE CORRECT CODE HAS BEEN RECEIVED.

WHEN THE MOM LED LIGHTS FOR THE TURN ON COMMAND, A RELAY ON THE DECODER BOARD CLOSSES FOR ONE SECOND, DURING THIS TIME A GROUND COMPLETES THE PATH THROUGH THE RELAY CONTACTS AND IS WIRED OVER TO THE 'CONTROL' INPUT ON THE PROGRAMMABLE RELAY. WITH THE PROGRAMMABLE RELAY SET TO FUNCTION G ON ITS THUMB WHEEL AND TIME FRAME SET, THE PROGRAMMABLE RELAY WILL ENERGIZE BOTH OF ITS BUILT IN RELAYS AND HOLD THESE RELAYS ENERGIZED UNTIL THE TIME RUNS OUT.

PROGRAM DECODER

ATTACH AMERITEC LEADS TO THE BLACK WIRES AT TOP OF GRAY DIN RAIL CONNECTORS. AUDIO INPUT LEAD AND GROUND TO AMERITEC TRANSMIT LEADS, TONE ALERT LEAD AND GROUND TO AMERITEC RECEIVE LEADS.

NOTES

1. ALL WIRING TO BE #20 AWG UNLESS OTHERWISE NOTED.

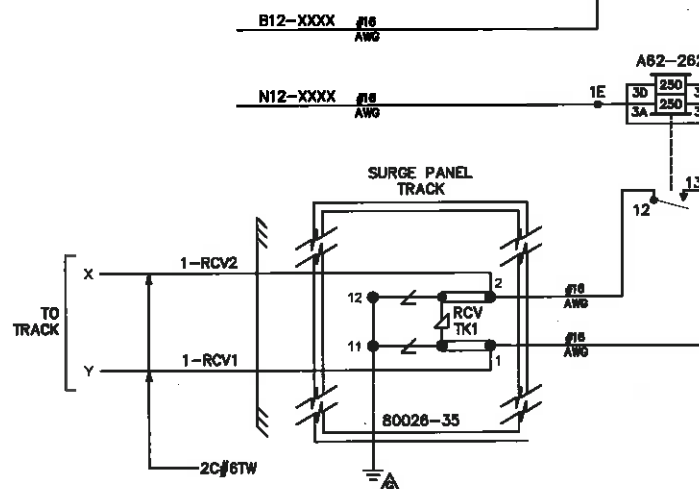
PROGRAM THE FOLLOWING:

PRIMARY ADDRESS:

*1# _ _

PRIMARY LATCHED OUTPUT MODE:

*B#10 _ _ _ _ _



WAGO TERMINAL ASSIGNMENTS		
TERM #	T/B	CIRCUIT NAME
1	T	B12 - SPARE
1	B	B12 - DTMF BOARD
2	T	B12 - LOAD
2	B	B12 - TIMER RELAY
3	T	B12 - SPARE
3	B	B12 - RADIO
4	T	N12 - LOAD
4	B	N12 - DTMF BOARD
5	T	N12 - DTMF BOARD/TIMER RELAY
5	B	N12 - RADIO
6	T	N12-SPARE
6	B	N12-SPARE
7	T	SPARE
7	B	PROGRAMMING AUDIO INPUT
8	T	SPARE
8	B	TONE ALERT AUDIO OUTPUT

The ALASKA RAILROAD CORPORATION
 SIGNAL ENGINEERING P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500
 LOCATION TBD
 M.P. 000.00
 DTMF

REVISIONS

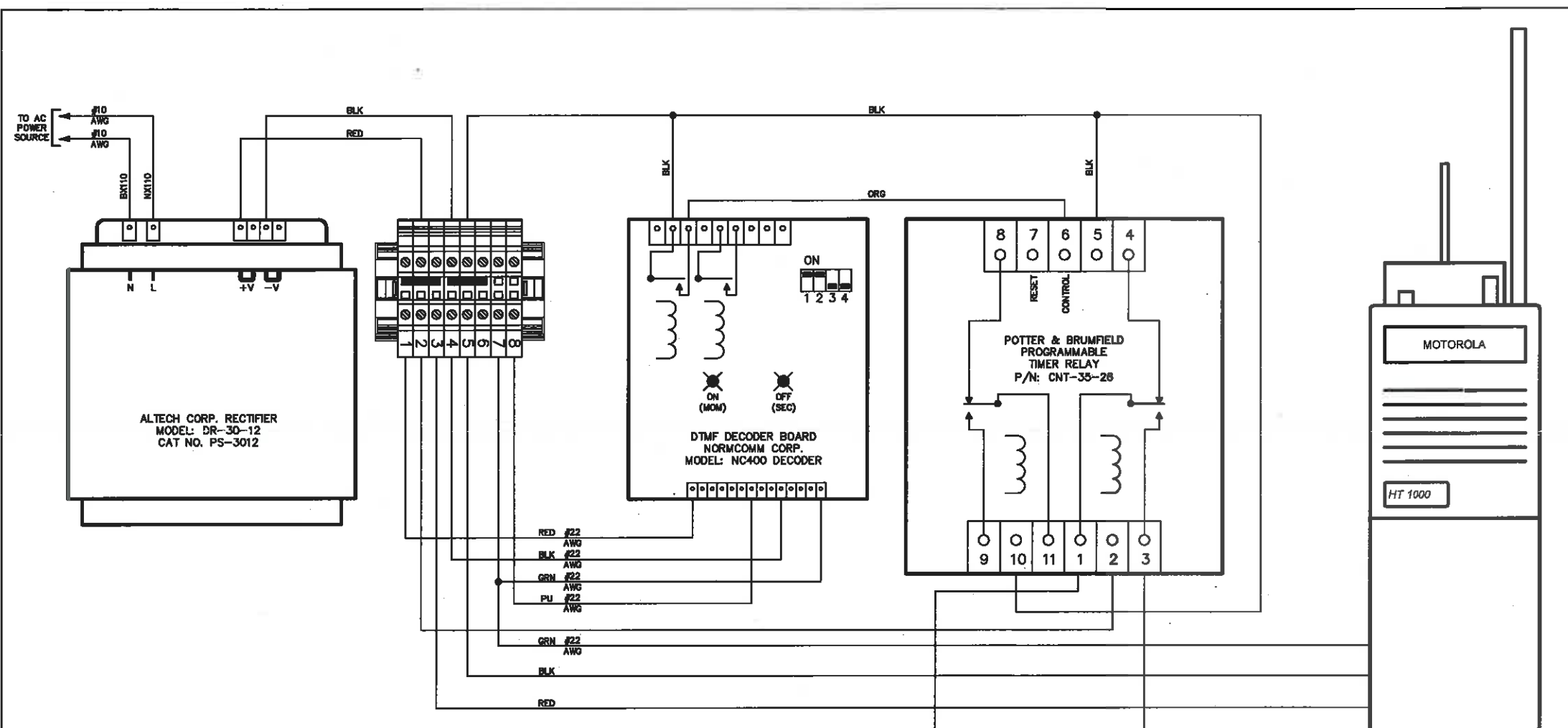
DESIGNED 05-25-12
 ORIGINAL DESIGN
 DES: GV/KA CHK: HN

DRAWN: ARRC
 DATE: 05-16-12

DWG NO.

000000

1 SHEET OF 1



REMOTE CONTROL OPERATION

THE DTMF DECODER BOARD HAS TWO SWITCHES LOCATED AT SW1 THAT NEED TO BE LEFT IN THE ON POSITION. SWITCH 1 IS FOR PROGRAMMING THE DECODER (OFF POSITION) AND FOR DECODER OPERATION (ON POSITION). SWITCH 2 IS FOR AUDIO INPUT LEVEL POSITION AND SHOULD BE LEFT IN THE ON POSITION TO MATCH THE RADIO OUTPUT 10 MVRMS TO 350 MVRMS.

THE OFF POSITION IS FOR AUDIO LEVELS FROM 350 MVRMS TO 650 MVRMS. THE RADIO NEEDS TO BE TURNED ON AND THE VOLUME POTENTIOMETER CAN BE SET TO ANY POSITION (RADIO STRAPPED FOR MINIMUM RECEIVE LEVEL AT ALL POSITIONS).

THE POWER SUPPLY HAS A GREEN LED THAT LIGHTS WHEN POWER IS APPLIED, THE DECODER

BOARD HAS THREE LEDS TO INDICATE CONDITION CHANGES WHEN DTMF TONES ARE CORRECTLY DECODED. THE FIRST LED ON THE LEFT LABELED MOM WILL LIGHT FOR ONE SECOND AFTER THE CORRECT CODE HAS BEEN RECEIVED.

WHEN THE MOM LED LIGHTS FOR THE TURN ON COMMAND, A RELAY ON THE DECODER BOARD CLOSSES FOR ONE SECOND. DURING THIS TIME A GROUND COMPLETES THE PATH THROUGH THE RELAY CONTACTS AND IS WIRED OVER TO THE 'CONTROL' INPUT ON THE PROGRAMMABLE RELAY. WITH THE PROGRAMMABLE RELAY SET TO FUNCTION G ON ITS THUMB WHEEL AND TIME FRAME SET, THE PROGRAMMABLE RELAY WILL ENERGIZE BOTH OF ITS BUILT IN RELAYS AND HOLD THESE RELAYS ENERGIZED UNTIL THE TIME RUNS OUT.

PROGRAM DECODER

ATTACH AMERITEC LEADS TO THE BLACK WIRES AT TOP OF GRAY DIN RAIL CONNECTORS: AUDIO INPUT LEAD AND GROUND TO AMERITEC TRANSMIT LEADS, TONE ALERT LEAD AND GROUND TO AMERITEC RECEIVE LEADS.

PROGRAM THE FOLLOWING:

PRIMARY ADDRESS:

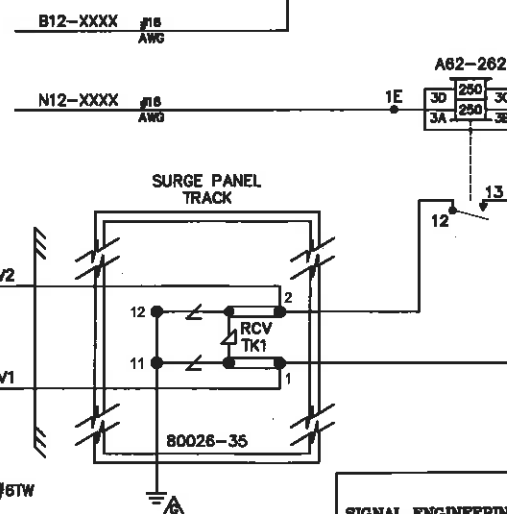
*1# - -

PRIMARY LATCHED OUTPUT MODE:

*8#10 - - - - -

NOTES

1. ALL WIRING TO BE #20 AWG UNLESS OTHERWISE NOTED.



WAGO TERMINAL ASSIGNMENTS		
TERM #	T/B	CIRCUIT NAME
1	T	B12 - SPARE
1	B	B12 - DTMF BOARD
2	T	B12 - LOAD
2	B	B12 - TIMER RELAY
3	T	B12 - SPARE
3	B	B12 - RADIO
4	T	N12 - LOAD
4	B	N12 - DTMF BOARD
5	T	N12 - DTMF BOARD/TIMER RELAY
5	B	N12 - RADIO
6	T	N12-SPARE
6	B	N12-SPARE
7	T	SPARE
7	B	PROGRAMMING AUDIO INPUT
8	T	SPARE
8	B	TONE ALERT AUDIO OUTPUT

The ALASKA RAILROAD CORPORATION
 SIGNAL ENGINEERING P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500
 LOCATION TBD
 M.P. 000.00
 DTMF

REVISIONS

DESIGNED 05-30-12
 ORIGINAL DESIGN
 DES: GV/KA CHK: HN

DRAWN: ARRC
 DATE: 05-30-12

DWG NO.

000000

1 SHEET OF 1