



THE STATE
of **ALASKA**
GOVERNOR SEAN PARNELL

**Department of Transportation and
Public Facilities**

CENTRAL REGION – DIVISION OF DESIGN & CONSTRUCTION
CONTRACTS SECTION

4111 AVIATION AVENUE
P.O. BOX 196900
ANCHORAGE, AK 99519-6900
Main: 907.269.0400
Fax: 907.269.0425
TTY: 907.269.0473

Date: April 28, 2014

Project: Kodiak Airport RSA Extension &
Kodiak Airport Devils Creek Culvert
Repair

Project No.: AIP 3-02-0158-017-2014/53587 &
AIP 3-02-0158-01X-201X/57474

Addendum No. TWO

TO ALL PLANHOLDERS:

The enclosed addendum amends the bidding documents for the above referenced Project.

Acknowledgment of this addendum is required on the Bid Proposal. Failure to do so may subject the bidder to disqualification.

Sincerely,

A handwritten signature in black ink, appearing to read "Sharon L. Smith".

Sharon L. Smith, P.E.
Chief of Contracts

ADDENDUM TO THE CONTRACT DOCUMENTS	Page Number 1	No. of Pages 2
Addendum No. Two	Date Addendum Issued: April 28, 2014	
Issuing Office Joel G. St. Aubin, P.E., Director, Design & Construction Central Region PO Box 196900, Anchorage, AK 99519-6900 Phone: 269-0400 Fax: 269-0425	Previous Addenda Issued One, dated April 21, 2014	
Project: Kodiak Airport RSA Extension & Kodiak Airport Devils Creek Culvert Repair Project No.: AIP 3-02-0158-017-2014/53587 & AIP 3-02-0158-01X-201X/57474	Date and Hour of Bid Opening: May 2, 2014 at 2:00 p.m., prevailing Anchorage time.	

NOTICE TO BIDDERS:

Bidders must acknowledge receipt of this addendum prior to the hour and date set for bid opening by one of the following methods:

- (a) By acknowledging receipt of this addendum on the bid submitted.
- (b) By telegram or telefacsimile which includes a reference to the project and addendum number.

The bid documents require acknowledgment individually of all addenda to the drawings and/or specifications. This is a mandatory requirement and any bid received without acknowledgment of receipt of addenda may be classified as not being a responsive bid. If, by virtue of this addendum it is desired to modify a bid already submitted, such modification may be made by telegram or telefacsimile provided such a telegram or telefacsimile makes reference to this addendum and is received prior to the opening hour and date specified above.

The Contract Documents for the above project are amended as follows (All other terms and conditions remain unchanged):

NOTICE TO BIDDERS

- 1) Bidders are hereby notified that additional information to assist in preparing bids is now available for reviewing on the ADOT&PF advertising web site as follows:
 - a) Hydrology and Hydraulics Review, Devils Creek Culvert Kodiak Airport, by ADOT&PF Statewide Design and Engineering Services Division, dated July 2, 2010.
 - b) Devils Creek at Kodiak Airport Hydrology and Hydraulic Study, prepared by HDR Alaska, Inc., dated March 2014.
 - c) Devils Creek Culvert Concrete Strength Evaluation, Kodiak Alaska, by Shannon & Wilson, Inc., dated September 20, 2012.

PLANS

Kodiak Airport RSA Extension

- 2) **Sheets D1, E1, E2, E7, E14, E15, E16, E17, E18 and E19.** Remove and replace with **Attachment No. 1.**

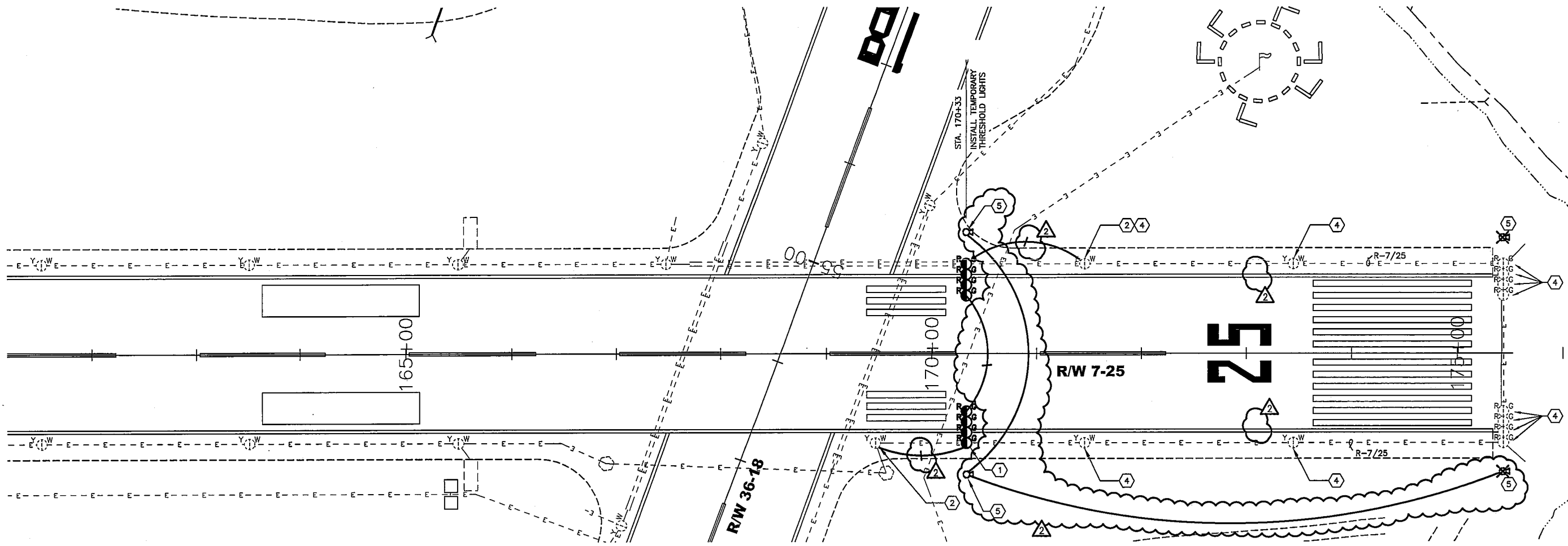
PART 4 - CONTRACT PROVISIONS AND SPECIFICATIONS

- 3) **Item P-181 Concrete Armor Units.** Remove and replace with **Attachment No. 2.**
- 4) **Item P-209 Crushed Aggregate Base Course.** Remove pages 1 and 2 and replace with **Attachment No. 3.**

- 5) **Item P-511 Microsilica Modified Concrete.** Remove pages 1 and 2 and replace with **Attachment No. 4.**
- 6) **Appendix N Core-Loc Specification and Model Sublicensing Agreement.** Insert **Attachment No. 5** (Patent Sublicense Core-Loc Project Specific) into Appendix N.

END OF ADDENDUM

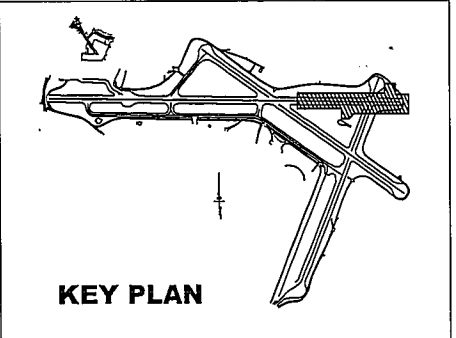
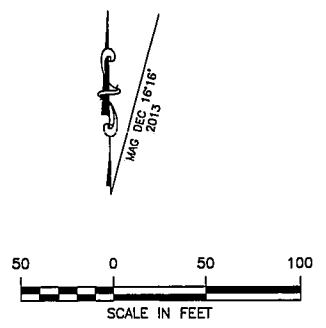
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 Designed By: DH
 Drawn By: MK
 Checked By: MK



1 R/W 25 TEMPORARY LIGHTING PLAN
D1

TEMPORARY LIGHTING LEGEND:

- R/W - RUNWAY
- XFMR - TRANSFORMER
- T/W - TAXIWAY
- LFMC - LIQUIDTIGHT FLEXIBLE METAL CONDUIT
- SDCB - STORM DRAIN CATCH BASIN
- TEMPORARY RUNWAY THRESHOLD LIGHT - HIGH INTENSITY
- EXISTING TAXIWAY LIGHT (TO REMAIN)
- EXISTING RUNWAY EDGE LIGHT (TO REMAIN)
- EXISTING RUNWAY THRESHOLD LIGHT (TO REMAIN)
- EXISTING ELECTRIC MANHOLE (TO REMAIN)
- EXISTING HANDHOLE (TO REMAIN)
- EXISTING CONCRETE ENCASE DUCT BANK (TO REMAIN)
- EXISTING AIRPORT SIGN (TO REMAIN)
- EXISTING UNDERGROUND CONDUIT (TO REMAIN)
- EXISTING UNDERGROUND ELECTRIC (TO REMAIN)
- EXISTING UNDERGROUND COMMUNICATION (TO REMAIN)
- EXISTING UNDERGROUND ELECTRIC UTILITY (TO REMAIN)
- EXISTING UNDERGROUND TELEPHONE UTILITY (TO REMAIN)



KEY PLAN

TEMPORARY LIGHTING NOTES:

- (X) INDICATES REFERENCE NOTE
- 1 CONSTRUCT TEMPORARY THRESHOLD PER DETAIL 1, SHEET E6. INSTALL AND MAINTAIN JUMPERS AND THRESHOLD AT THE LOCATIONS SHOWN ON THE PLANS IN ACCORDANCE WITH THE PHASING PLAN. EXTEND CAUTION ZONE WEST OF TEMPORARY THRESHOLD, RE-USE EXISTING LENSES AS PRACTICAL, PROVIDE NEW LENSES AS REQUIRED. UPON REMOVAL AND DISPOSAL OF TEMPORARY THRESHOLD THE CONTRACTOR SHALL RESTORE CIRCUITS AND CAUTION ZONE LIGHTING. THIS WORK SHALL BE SUBSIDIARY TO L-100r AND NO SEPARATE PAYMENT WILL BE MADE.
- 2 CONNECT TEMPORARY THRESHOLD LIGHTS TO EXISTING CIRCUIT IN NEAREST EDGE LIGHT BASE.
- 3 NOT USED.
- 4 EDGE LIGHTS BEYOND TEMPORARY THRESHOLD SHALL BE INOPERABLE WHEN TEMPORARY THRESHOLD IS IN SERVICE.
- 5 EXISTING REIL LIGHTS TO BE RELOCATED TO TEMPORARY THRESHOLD. REMOVE EXISTING FOUNDATIONS AND PROVIDE NEW TEMPORARY CONCRETE FOUNDATIONS, SEE 3/E7 AND SHEETS E8-E9. CONCRETE SHALL MEET THE SPECIFICATION P-810. EXTEND EXISTING CONDUIT AND WIRING FROM EXISTING REIL LOCATION TO TEMPORARY REIL LOCATION, SPLICES SHALL BE CAST RESIN TYPE, SCOTCH 82A OR APPROVED EQUAL. EXISTING REIL HOME RUN CONDUCTORS TO BE MAINTAINED AND REUSED. RUN TEMPORARY CIRCUIT ABOVE GRADE IN HDPE CONDUIT. SAND BAG CONDUIT 5" O.C., 50 LB MINIMUM PER SAND BAG. EXISTING REIL LIGHTS SHALL BE SALVAGED AND OFFERED TO THE FAA WHEN THE TEMPORARY THRESHOLD IS DECOMMISSIONED. TEMPORARY FOUNDATIONS TO BE REMOVED AND DISPOSED OF BY THE CONTRACTOR. SEE SHEET E2 FOR ADDITIONAL WORK. THIS WORK SHALL BE SUBSIDIARY TO L-135k AND NO SEPARATE PAYMENT WILL BE MADE.

**ADDENDUM NO. 2
ATTACHMENT NO. 1**



PREPARED BY: MBA Consulting Engineers, Inc.

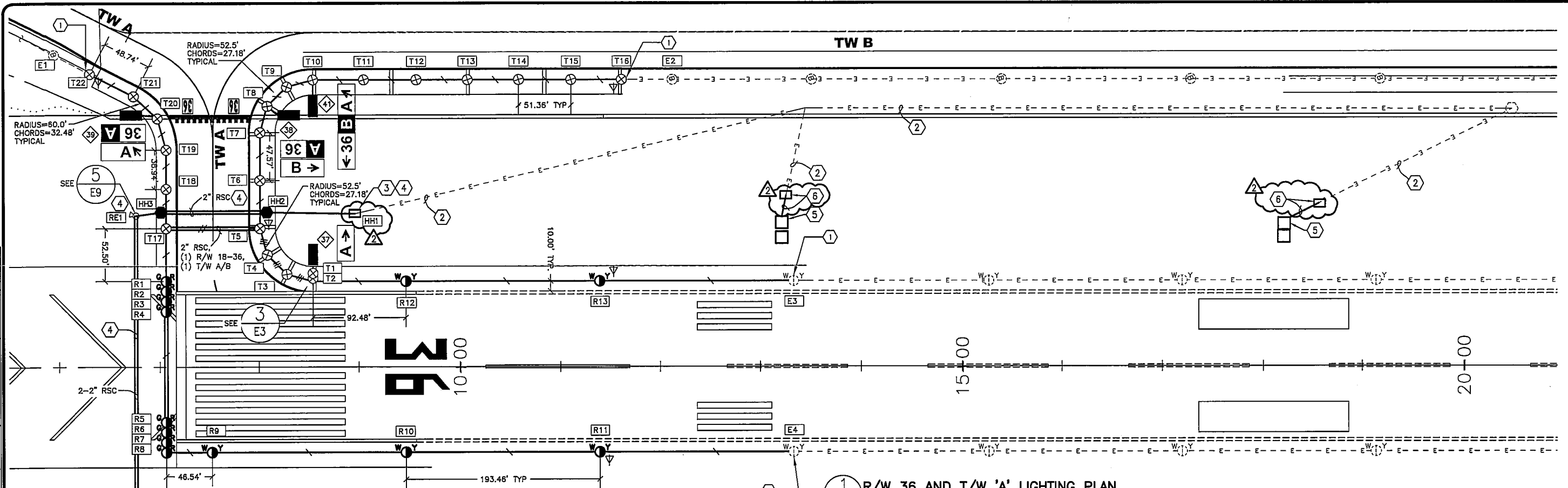
BY	DATE	REVISION
MBA	4/18/14	ADDENDUM NO.2

STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 AND PUBLIC FACILITIES
 CENTRAL REGION

KODIAK AIRPORT
 KODIAK, ALASKA
 RUNWAY SAFETY AREA EXTENSION
 PROJECT No. 53587
 AIP No. 3-02-0158-01X-201
 RUNWAY 25 TEMPORARY LIGHTING PLAN

DATE: 4/15/2014
 SHEET: D1R of D3
 AS-BUILT SHEET:

Date Reviewed: 4/18/2014, 12:19 PM
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 File Path and Name: Z:\13204608 - Kodiak Airport Runway 1835 and RSA/E-Workings\Drawings - RSA\13004-E1.dwg
 Designed By: DJ
 Drawn By: MK
 Checked By: ML



1 R/W 36 AND T/W 'A' LIGHTING PLAN

LEGEND:

- R/W - RUNWAY
- XFMR - TRANSFORMER
- T/W - TAXIWAY
- LFMC - LIQUIDTIGHT FLEXIBLE METAL CONDUIT
- SDCB - STORM DRAIN CATCH BASIN
- - - - EXISTING UNDERGROUND COMMUNICATION
- - - - EXISTING UNDERGROUND ELECTRIC
- EXISTING CONCRETE ENCASE DUCT BANK
- == NEW 2" RIGID STEEL CONDUIT
- NEW 2" HDPE CONDUIT. HASH MARKS INDICATE NUMBER OF #8 AWG. 5KV AIRPORT CABLES TYPE "C" PLUS ONE #6 BARE COPPER GROUND CONDUCTOR.
- EXISTING HANDHOLE
- EXISTING ELECTRIC MANHOLE
- EXISTING RUNWAY EDGE LIGHT
- EXISTING TAXIWAY EDGE LIGHT
- NEW RUNWAY THRESHOLD LIGHT - HIGH INTENSITY
- NEW RUNWAY EDGE LIGHT - HIGH INTENSITY
- NEW TAXIWAY EDGE LIGHT
- RELOCATED REIL LIGHT (BY OTHERS)
- NEW 3/4" X 10' GROUND ROD
- SIGN NUMBER - SEE SCHEDULE ON SHEET E6
- EXISTING AIRPORT SIGN (TO REMAIN)
- NEW SIGN, SEE SHEET E4
- NEW HANDHOLE, L-867B
- RELOCATED WIND CONE

ELECTRICAL NOTES:

- (X) INDICATES REFERENCE NOTE
- 1 CONNECT NEW CONDUIT TO EXISTING LIGHT BASE, HANDHOLE OR CONDUIT. CONNECT NEW CONDUCTORS TO EXISTING FOR CONTINUATION OF CIRCUIT.
 - 2 EXISTING TO BE MAINTAINED AND WORKED AROUND.
 - 3 PROVIDE NEW JUNCTION BOX, SEE SHEET E11 FOR DETAILS. PROVIDE NEW CONDUIT AND CONDUCTORS FROM NEW JUNCTION BOX TO NEW REIL FOUNDATIONS. INTERCEPT EXISTING DIRECT BURIED CABLE AND CONNECT NEW CONDUCTORS TO EXISTING IN NEW JUNCTION BOX USING CAST RESIN SPLICES, SCOTCH B2A OR APPROVED EQUAL. THIS WORK SHALL BE SUBSIDIARY TO L-135K AND NO SEPARATE PAYMENT WILL BE MADE.
 - 4 EXTEND REIL CONDUIT TO NEW LOCATION SHOWN. SEE DETAIL 2/E7 FOR LOCATION. CONSTRUCT NEW CONCRETE FOUNDATIONS AND PROVIDE CONDUIT, WIRING, AND J-BOX PER SHEETS E8 AND E9. CONCRETE AND SURFACE SEALER SHALL MEET THE SPECIFICATION P-610. REIL INSTALLATION BY OTHERS. THIS WORK SHALL BE SUBSIDIARY TO L-135K AND NO SEPARATE PAYMENT WILL BE MADE.
 - 5 PROVIDE NEW VASI FOUNDATIONS PER SHEETS E10, E11, E12, AND E13 IN EXISTING LOCATION. CONCRETE AND SURFACE SEALER SHALL MEET THE SPECIFICATION P-610. THIS WORK SHALL BE SUBSIDIARY TO L-135K AND NO SEPARATE PAYMENT WILL BE MADE.
 - 6 PROVIDE NEW JUNCTION BOX, SEE SHEET E11 FOR DETAILS. PROVIDE NEW CONDUIT AND CONDUCTORS FROM NEW JUNCTION BOX TO NEW VASI FOUNDATIONS. INTERCEPT EXISTING DIRECT BURIED CABLE AND CONNECT NEW CONDUCTORS TO EXISTING IN NEW JUNCTION BOX USING CAST RESIN SPLICES, SCOTCH B2A OR APPROVED EQUAL. THIS WORK SHALL BE SUBSIDIARY TO L-135K AND NO SEPARATE PAYMENT WILL BE MADE.
 - 7 CONSTRUCT NEW CONCRETE REIL FOUNDATIONS AND PROVIDE CONDUIT, WIRING, AND J-BOX PER SHEETS E14, E15, E16, E17, E18 AND E19. SEE DETAIL 4/E7 FOR LOCATION. CONCRETE AND SURFACE SEALER SHALL MEET THE SPECIFICATION P-610. REIL INSTALLATION BY OTHERS. THIS WORK SHALL BE SUBSIDIARY TO L-135K AND NO SEPARATE PAYMENT WILL BE MADE.

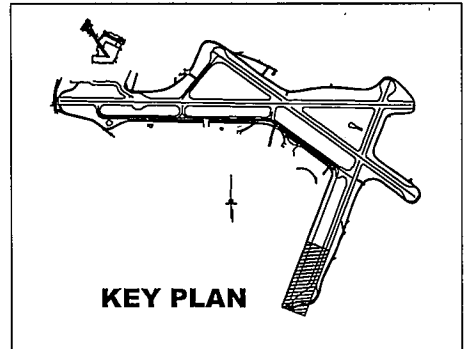
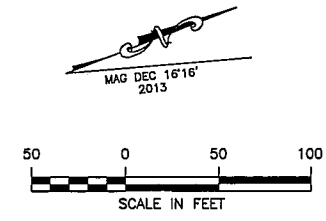
LIGHT SCHEDULE

NUMBER	SYMBOLS	LOCATION	LIGHT DETAILS				REMARKS
			LIGHT COLOR	LAMP WATTAGE	F.A.A. NUMBER	TRANSFORMER WATTAGE	
5	Y W	R/W 18-36 EDGE LIGHT	YELLOW/WHITE	120	L862	100	SHEET E1
16	R G	R/W 18-36 THRESHOLD LIGHT	RED/GREEN	200	L862E	200	SHEET E1 AND E2
22	⊗	T/W EDGE LIGHT	BLUE	12	L861T	10/15	SHEET E1
1	NOT SHOWN	R/W 18-36 EDGE LIGHT	YELLOW/WHITE	EXISTING	L862	EXISTING	LENS ONLY; SHEET E1, NOTE 13
2	NOT SHOWN	R/W 18-36 EDGE LIGHT	WHITE/WHITE	EXISTING	L862	EXISTING	LENS ONLY; SHEET E1, NOTE 13

ALL TRANSFORMERS 8.6A/8.6A

ELECTRICAL NOTES - CONTINUED:

8. INSTALL NEW CONDUIT BEFORE RUNWAY, TAXIWAY OR SHOULDER IS PAVED.
9. WHEN INSTALLED IN THE SAME STRUCTURE, DUCT BANK OR CONDUIT CONDUCTORS OF SEPARATE CIRCUITS SHALL BE IDENTIFIED BY COLORABLE INSULATION. THE COLORS GREEN AND WHITE SHALL NOT BE USED TO IDENTIFY CIRCUITS.
10. SERIES CIRCUITS. VERIFY AND MATCH EXISTING COLOR, R/W 18-36: RED, T/W A/B: BLUE.
11. PROVIDE L867 LIGHT BASES AND HANDHOLES WITH ADDITIONAL THREADED HUBS TO ACCOMMODATE CONDUIT RUNS AND DRAINS SHOWN.
12. CONNECT NEW HDPE CONDUIT TO EXISTING DISSIMILAR CONDUIT USING ELECTROFUSION COUPLING OR POLYCAM ADAPTER.
13. CONTRACTOR SHALL RESTORE LIGHTING CONTROL AND POWER CIRCUITS, TO THE SATISFACTION OF THE AIRPORT MANAGER.
14. CIRCUITS PULLED THROUGH LIGHT BASES WITHOUT TRANSFORMER TERMINATIONS SHALL BE CONTINUOUS WITH NO SPLICES OR SLACK LOOPS. CIRCUITS CONNECTING TO TRANSFORMER SHALL HAVE SLACK LOOPS PER SPECIFICATION.
15. ADJUST CAUTION ZONE ON R/W 18-36 SOUTH 240 FEET. PROVIDE NEW LENSES FOR MODIFIED FIXTURES.



PREPARED BY: MBA Consulting Engineers, Inc.

BY	DATE	REVISION
MBA	4/18/14	ADDENDUM NO.2

STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 AND PUBLIC FACILITIES
 CENTRAL REGION

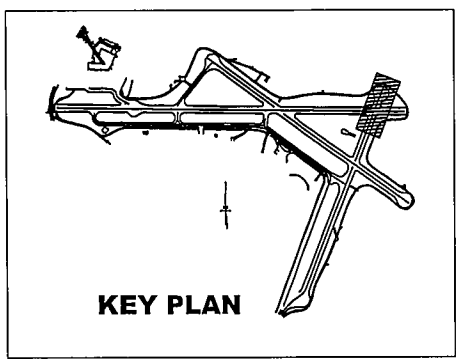
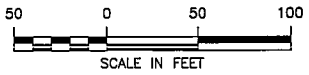
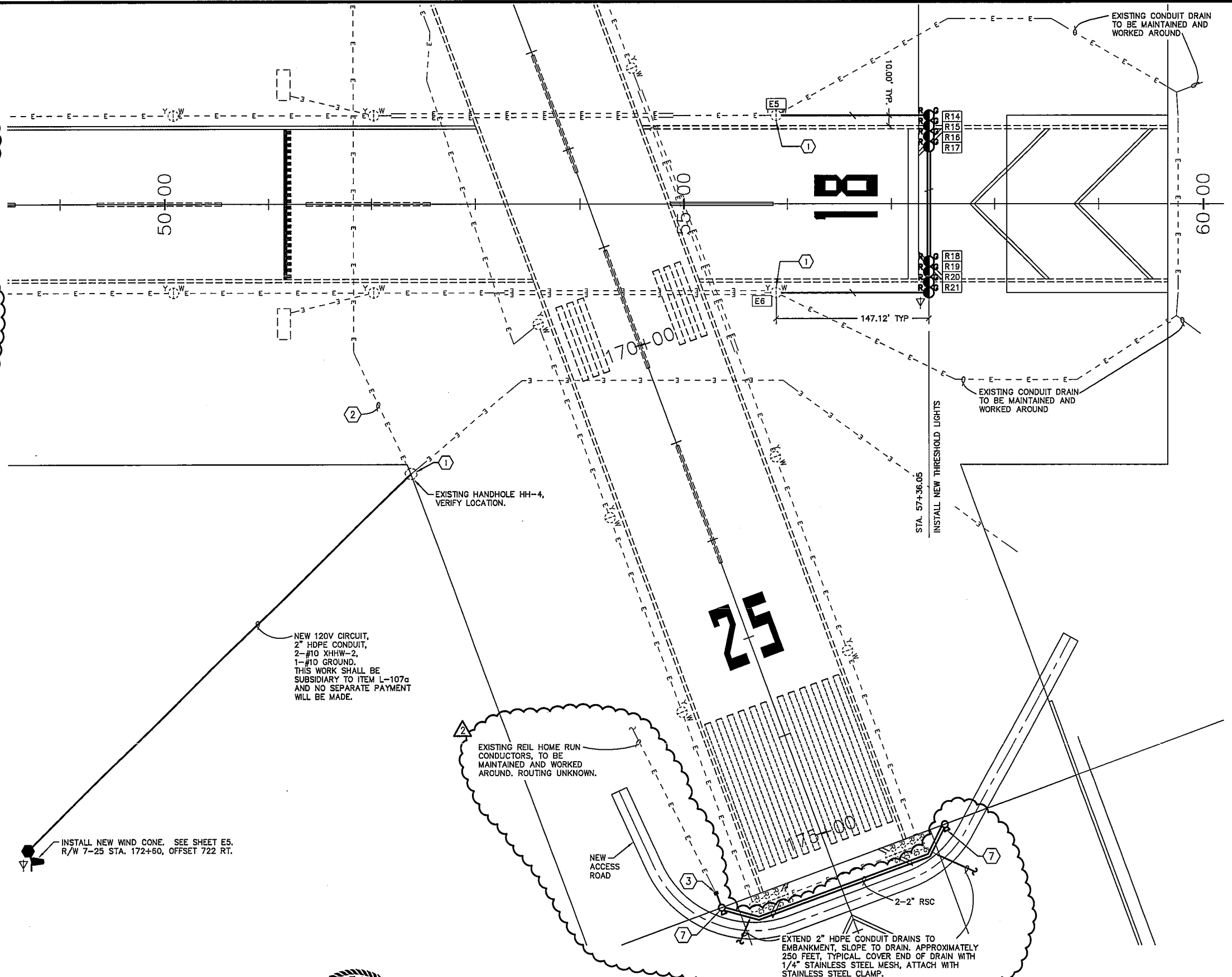
KODIAK AIRPORT
 KODIAK, ALASKA
 RUNWAY SAFETY AREA EXTENSION
 PROJECT No. 53587
 AIP No. 3-02-0158-01X-201-
 RUNWAY 36
 LIGHTING PLAN

DATE: 4/15/2014
 SHEET: E1R of E19
 AS-BUILT SHEET:

ELECTRICAL NOTES:

(X) INDICATES REFERENCE NOTE

- 1 CONNECT NEW CONDUIT TO EXISTING LIGHT BASE, HANDHOLE OR CONDUIT. CONNECT NEW CONDUCTORS TO EXISTING FOR CONTINUATION OF CIRCUIT.
- 2 EXISTING TO BE MAINTAINED AND WORKED AROUND.
- 3 PROVIDE NEW JUNCTION BOX, SEE SHEET E11 FOR DETAILS. PROVIDE NEW CONDUIT AND CONDUCTORS FROM NEW JUNCTION BOX TO NEW REIL FOUNDATIONS. INTERCEPT EXISTING DIRECT BURIED CABLE AND CONNECT NEW CONDUCTORS TO EXISTING IN NEW JUNCTION BOX USING CAST RESIN SPLICES, SCOTCH 82A OR APPROVED EQUAL. THIS WORK SHALL BE SUBSIDIARY TO L-135k AND NO SEPARATE PAYMENT WILL BE MADE.
- 4 EXTEND REIL CONDUIT TO NEW LOCATION SHOWN, SEE DETAIL 2/E7 FOR LOCATION. CONSTRUCT NEW CONCRETE FOUNDATIONS AND PROVIDE CONDUIT, WIRING, AND J-BOX PER SHEETS E8 AND E9. CONCRETE AND SURFACE SEALER SHALL MEET THE SPECIFICATION P-610. REIL INSTALLATION BY OTHERS. THIS WORK SHALL BE SUBSIDIARY TO L-135k AND NO SEPARATE PAYMENT WILL BE MADE.
- 5 PROVIDE NEW VASI FOUNDATIONS PER SHEETS E10, E11, E12, AND E13 IN EXISTING LOCATION. CONCRETE AND SURFACE SEALER SHALL MEET THE SPECIFICATION P-610. THIS WORK SHALL BE SUBSIDIARY TO L-135k AND NO SEPARATE PAYMENT WILL BE MADE.
- 6 PROVIDE NEW JUNCTION BOX, SEE SHEET E11 FOR DETAILS. PROVIDE NEW CONDUIT AND CONDUCTORS FROM NEW JUNCTION BOX TO NEW VASI FOUNDATIONS. INTERCEPT EXISTING DIRECT BURIED CABLE AND CONNECT NEW CONDUCTORS TO EXISTING IN NEW JUNCTION BOX USING CAST RESIN SPLICES, SCOTCH 82A OR APPROVED EQUAL. THIS WORK SHALL BE SUBSIDIARY TO L-135k AND NO SEPARATE PAYMENT WILL BE MADE.
- 7 CONSTRUCT NEW CONCRETE REIL FOUNDATIONS AND PROVIDE CONDUIT, WIRING, AND J-BOX PER SHEETS E14, E15, E16, E17, E18 AND E19. SEE DETAIL 4/E7 FOR LOCATION. CONCRETE AND SURFACE SEALER SHALL MEET THE SPECIFICATION P-610. REIL INSTALLATION BY OTHERS. THIS WORK SHALL BE SUBSIDIARY TO L-135k AND NO SEPARATE PAYMENT WILL BE MADE.
- 8 INSTALL NEW CONDUIT BEFORE RUNWAY, TAXIWAY OR SHOULDER IS PAVED.
- 9 WHEN INSTALLED IN THE SAME STRUCTURE, DUCT BANK OR CONDUIT CONDUCTORS OF SEPARATE CIRCUITS SHALL BE IDENTIFIED BY COLORABLE INSULATION. THE COLORS GREEN AND WHITE SHALL NOT BE USED TO IDENTIFY CIRCUITS.
- 10 SERIES CIRCUITS. VERIFY AND MATCH EXISTING COLOR, R/W 18-36: RED, T/W A/B: BLUE.
- 11 PROVIDE L867 LIGHT BASES AND HANDHOLES WITH ADDITIONAL THREADED HUBS TO ACCOMMODATE CONDUIT RUNS AND DRAINS SHOWN.
- 12 CONNECT NEW HDPE CONDUIT TO EXISTING DISSIMILAR CONDUIT USING ELECTROFUSION COUPLING OR POLYCAM ADAPTER.
- 13 CONTRACTOR SHALL RESTORE LIGHTING CONTROL AND POWER CIRCUITS, TO THE SATISFACTION OF THE AIRPORT MANAGER.
- 14 CIRCUITS PULLED THROUGH LIGHT BASES WITHOUT TRANSFORMER TERMINATIONS SHALL BE CONTINUOUS WITH NO SPLICES OR SLACK LOOPS. CIRCUITS CONNECTING TO TRANSFORMER SHALL HAVE SLACK LOOPS PER SPECIFICATION.
- 15 ADJUST CAUTION ZONE ON R/W 18-36 SOUTH 240 FEET. PROVIDE NEW LENSES FOR MODIFIED FIXTURES.



1 R/W 18 LIGHTING PLAN
E2



PREPARED BY: MBA Consulting Engineers, Inc.

BY	DATE	REVISION
MBA	4/18/14	ADDENDUM NO.2

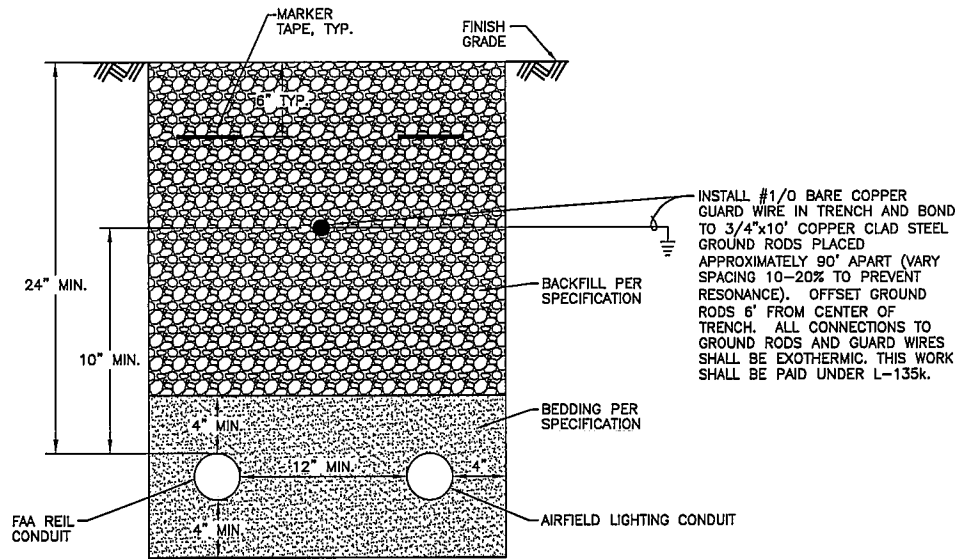
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
CENTRAL REGION

KODIAK AIRPORT
KODIAK, ALASKA
RUNWAY SAFETY AREA EXTENSION
PROJECT No. 53587
AIP No. 3-02-0158-01X-201-
RUNWAY 18 LIGHTING PLAN
AND WIND CONE PLAN

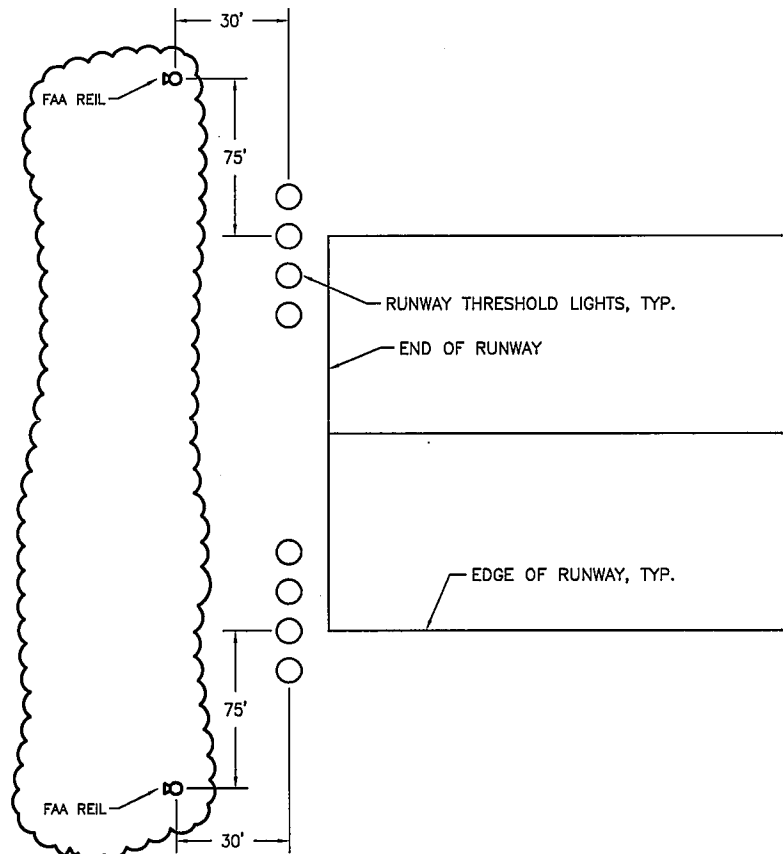
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AS-BUILT SHEET:

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 Drawn By: MKC
 Checked By: ML

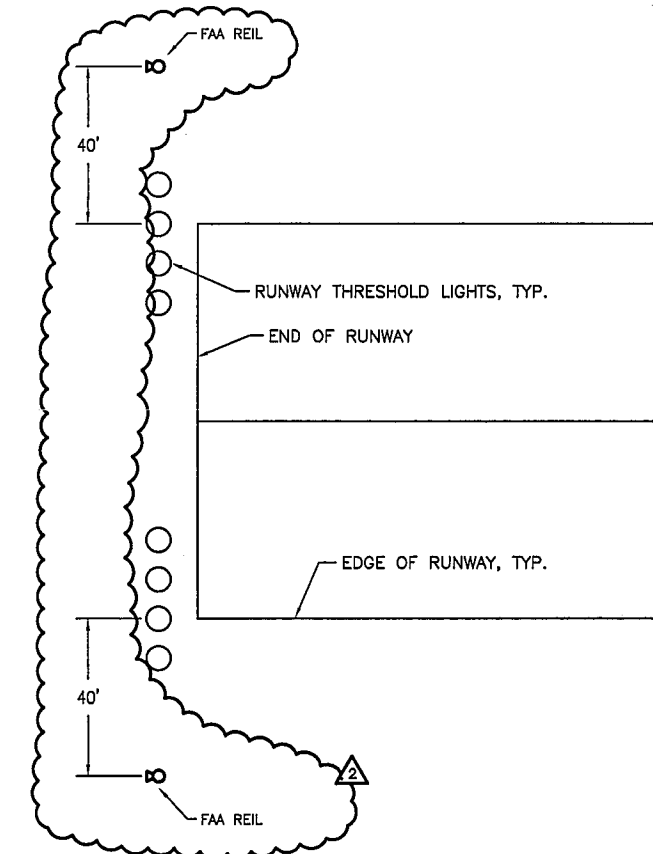
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 Checked By: ML



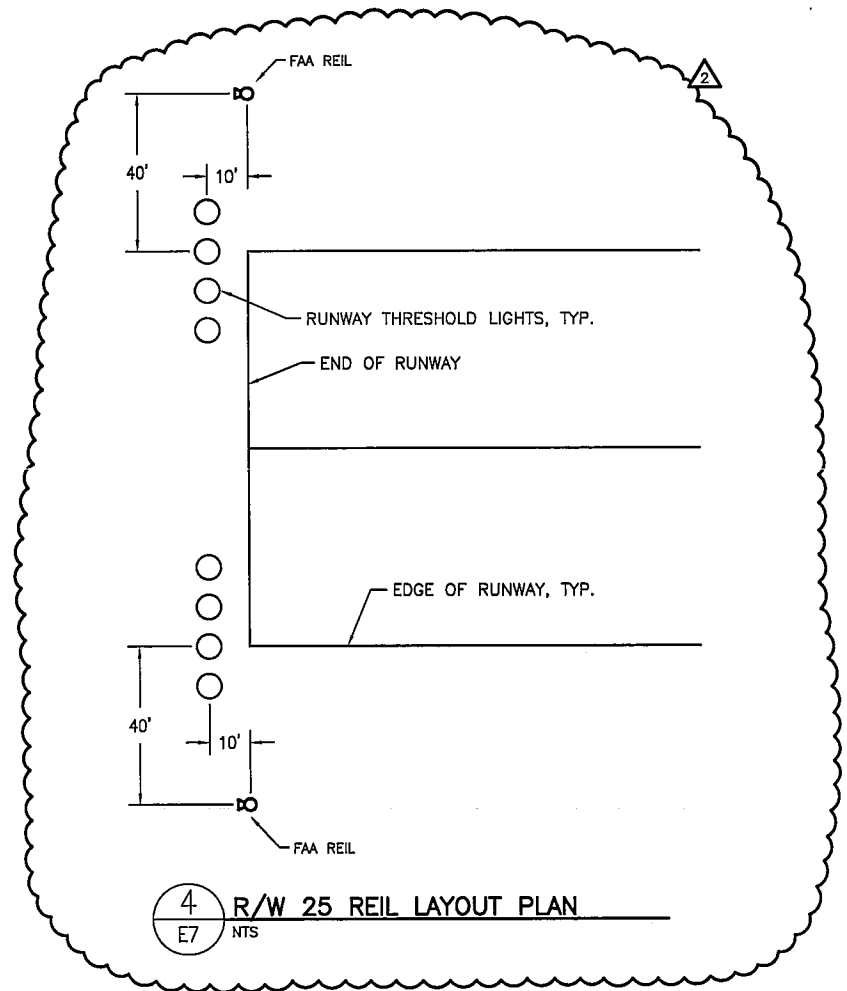
1 FAA CONDUIT TRENCH DETAIL
E7 NTS



2 R/W 36 REIL LAYOUT PLAN
E7 NTS



3 R/W 25 TEMPORARY REIL LAYOUT PLAN
E7 NTS



4 R/W 25 REIL LAYOUT PLAN
E7 NTS



PREPARED BY: MBA Consulting Engineers, Inc.

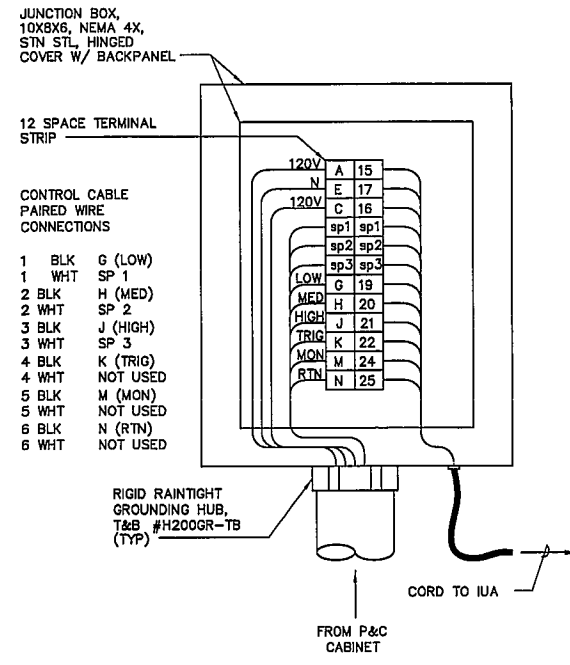
BY	DATE	REVISION
MBA	4/18/14	ADDENDUM NO.2

STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 AND PUBLIC FACILITIES
 CENTRAL REGION

KODIAK AIRPORT
 KODIAK, ALASKA
 RUNWAY SAFETY AREA EXTENSION
 PROJECT No. 53587
 AIP No. 3-0-0158-01X-201
 REIL DETAILS

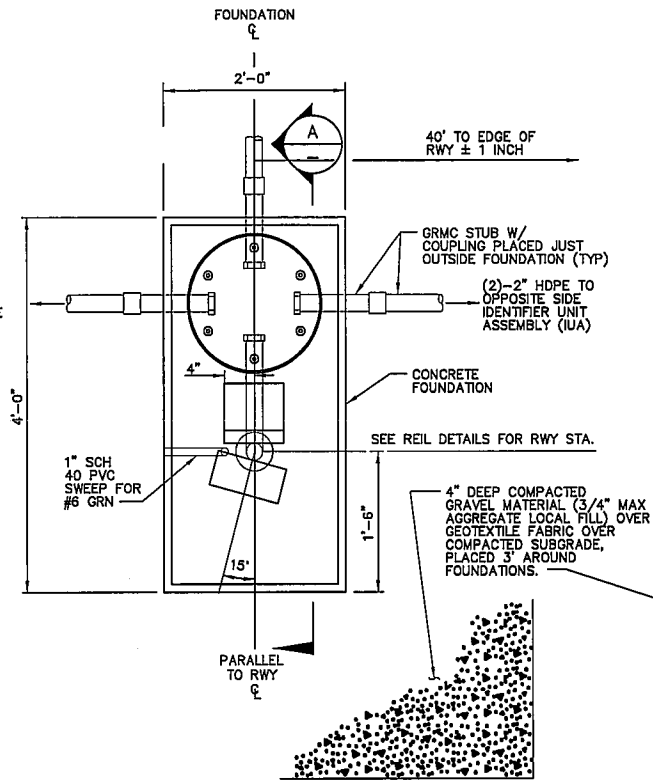
DATE: 4/15/2014
 SHEET: E7R of E19
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Date Revised: 4/18/2014, 12:21 PM
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 Designed By: E14
 Checked By:

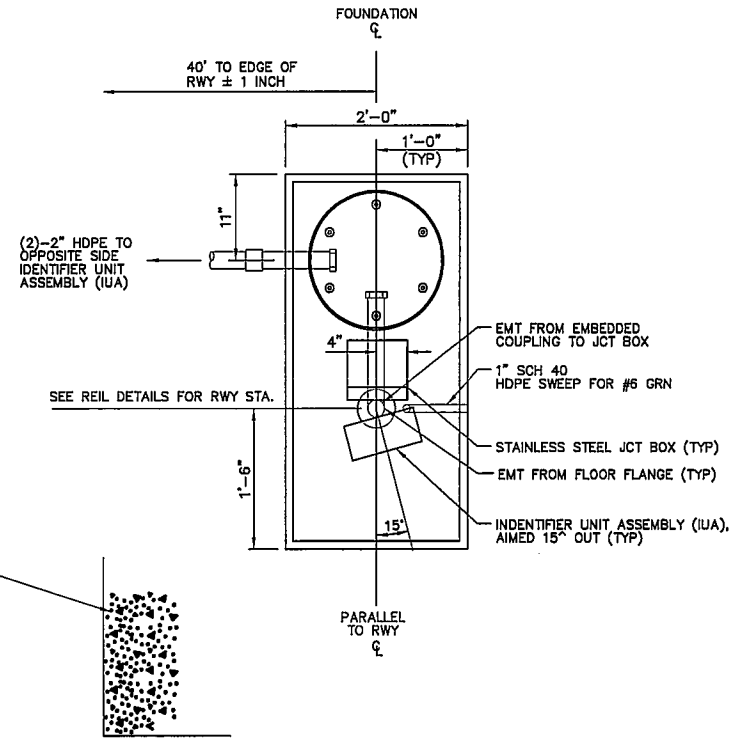


JUNCTION BOX DETAIL
NOT TO SCALE

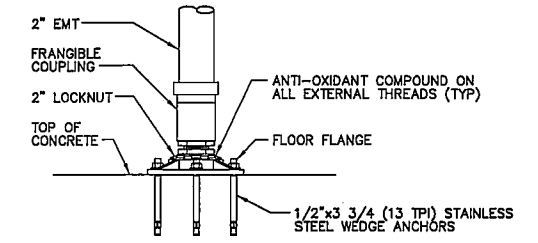
(2)-2" RGSC FROM REIL POWER/CONTROL RACK VIA NEW HANDHOLE (CCA)



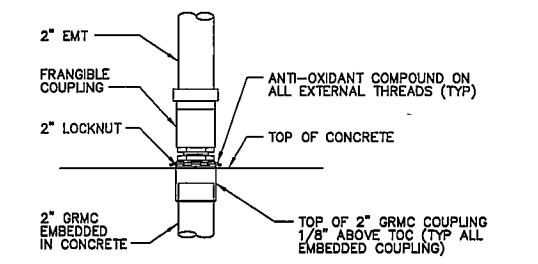
PLAN VIEW - LEFT SIDE
SCALE: N.T.S.



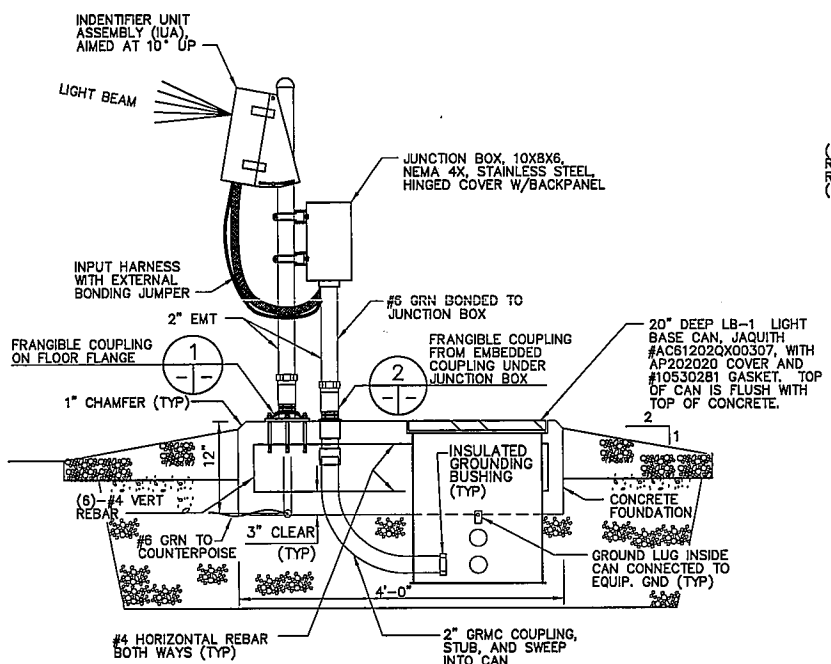
PLAN VIEW - RIGHT SIDE
SCALE: N.T.S.



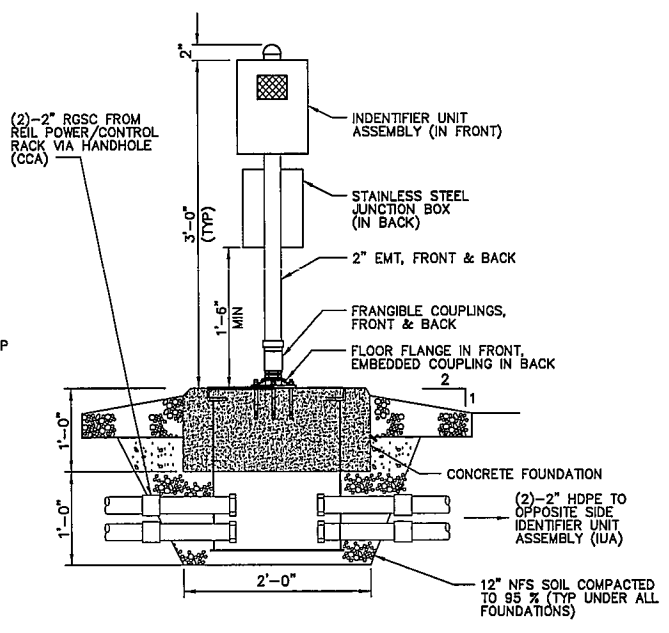
EMT LEG MOUNTED TO FLOOR FLANGE DETAIL
SCALE: N.T.S.



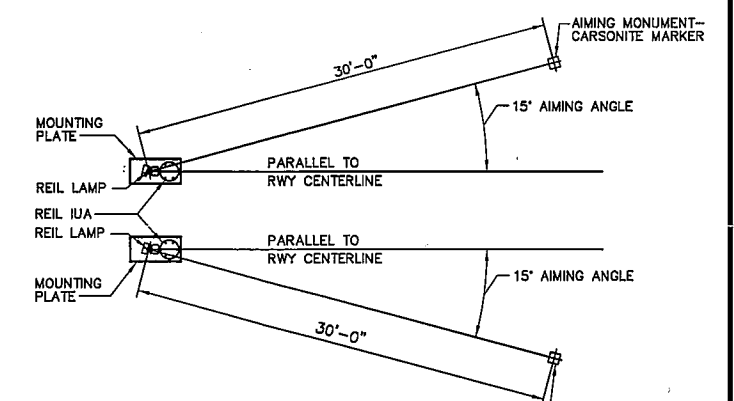
EMT LEG MOUNTED TO RGSC COUPLING DETAIL
SCALE: N.T.S.



IDENTIFIER UNIT ASSY #1
ELEVATION VIEW
LEFT ON APPROACH
SCALE: N.T.S.



IDENTIFIER UNIT ASSY #2
ELEVATION VIEW
RIGHT ON APPROACH
SCALE: N.T.S.



REIL AIMING DETAIL
SCALE: N.T.S.

NOTES:
1. AIMING MONUMENTS ARE 3 FOOT LENGTHS OF 5/8" DIAMETER REBAR WITH AN ALCAP STAMPED "REIL REFERENCE MONUMENT". ALCAPS FLUSH TO GRADE. CARSONITE CABLE MARKER MARKING MONUMENT LOCATION.

CAUTION: DRAWING NOT TO SCALE

THIS DRAWING IS FOR REFERENCE ONLY

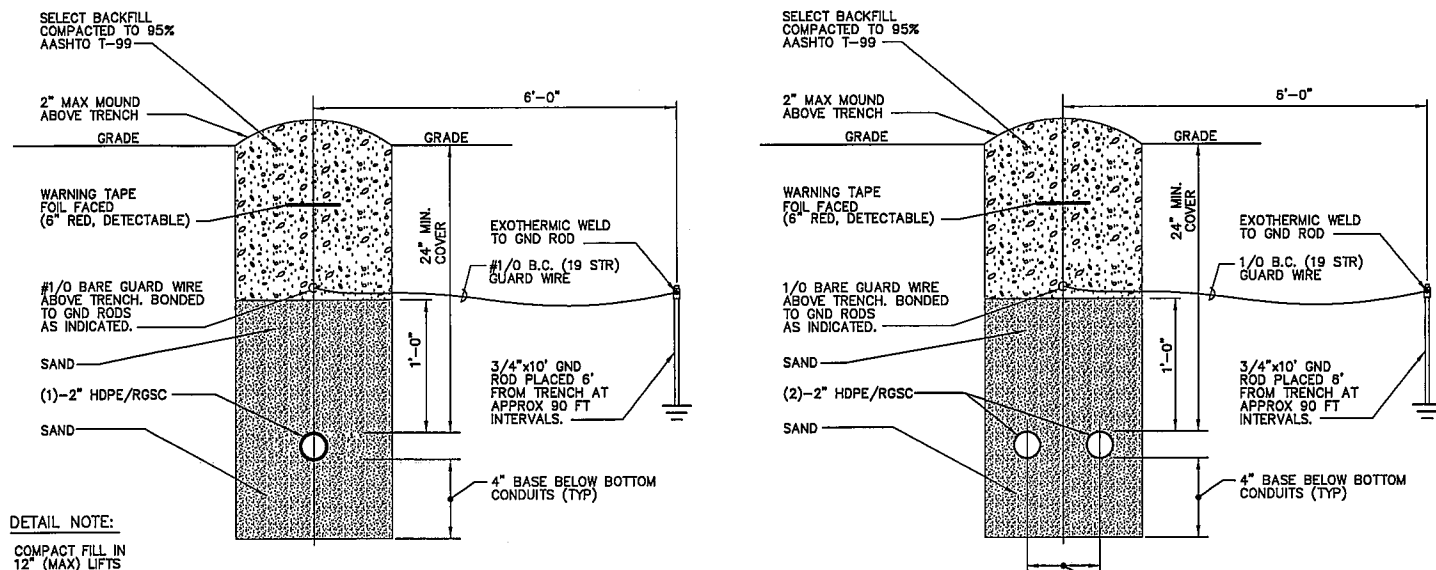
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KODIAK, ALASKA
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PROJECT No. 53587
AIP No. 3-02-0158-01X-201
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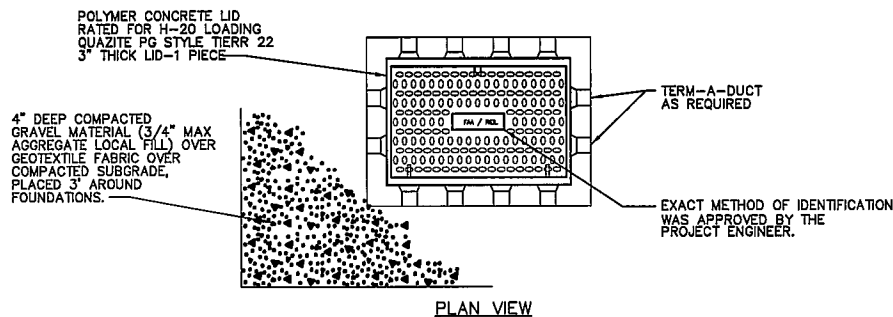
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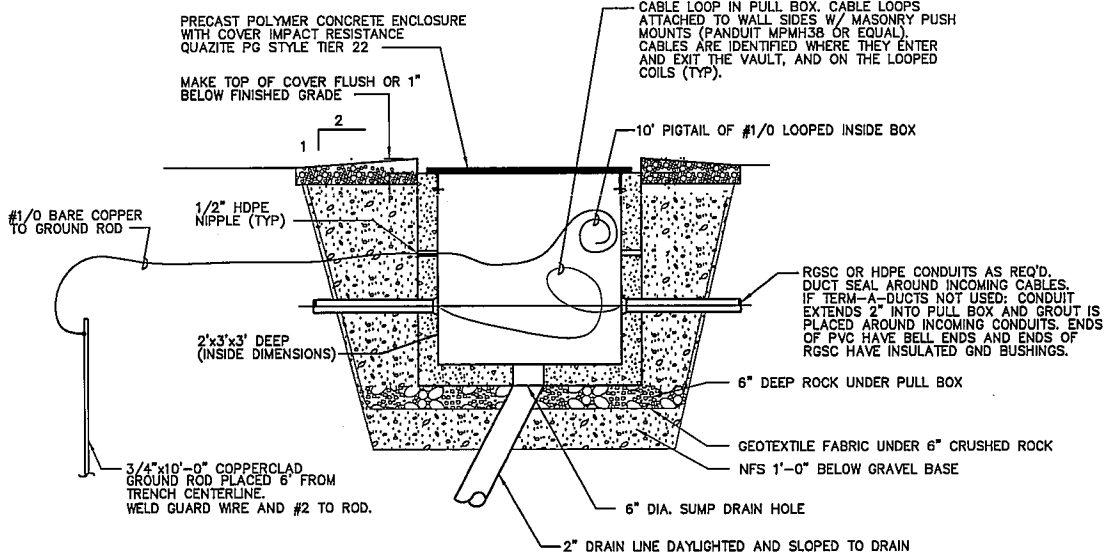


SINGLE CONDUIT TRENCH SECTION
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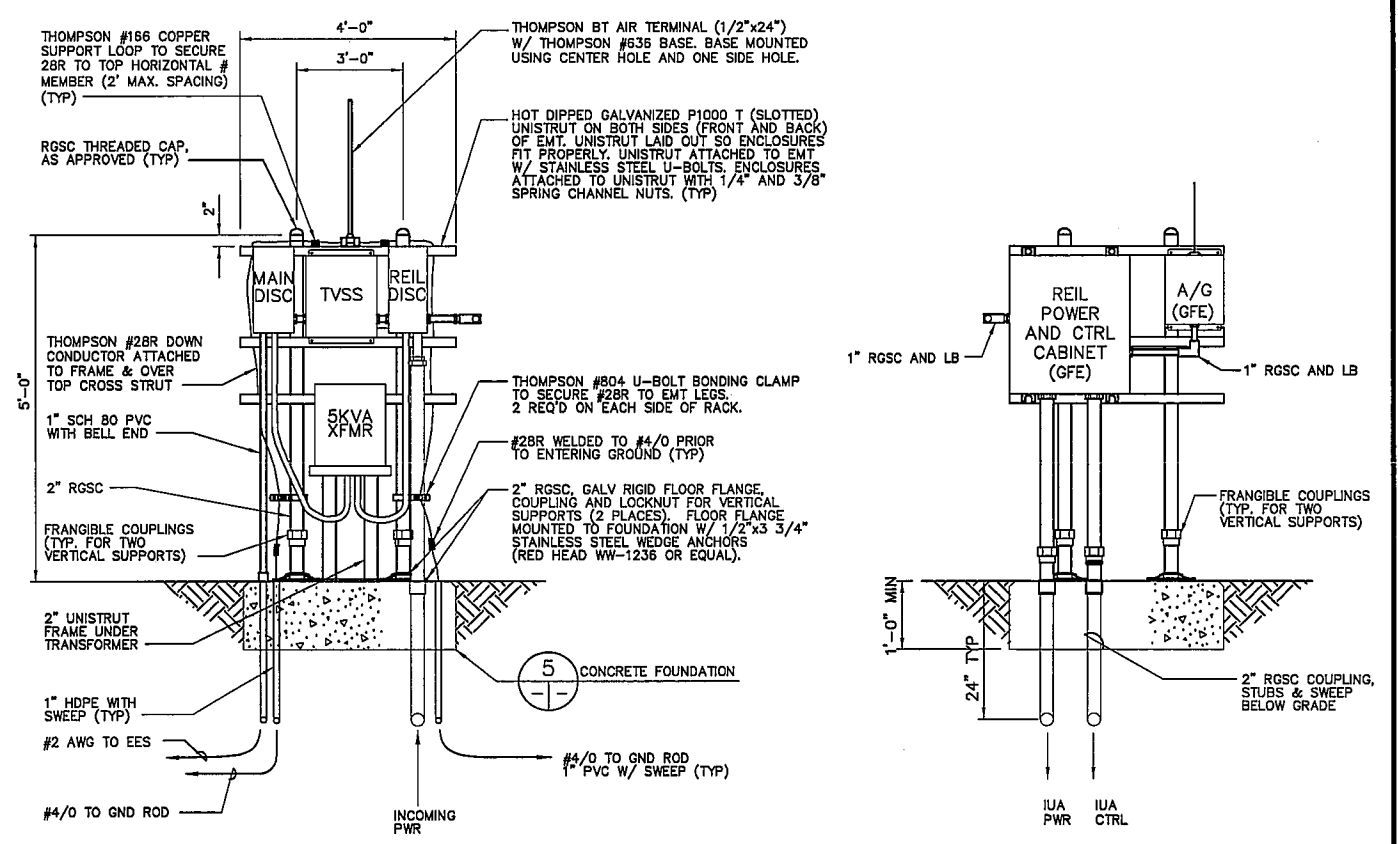
MULTIPLE CONDUIT TRENCH SECTION
SCALE: N.T.S.



PLAN VIEW

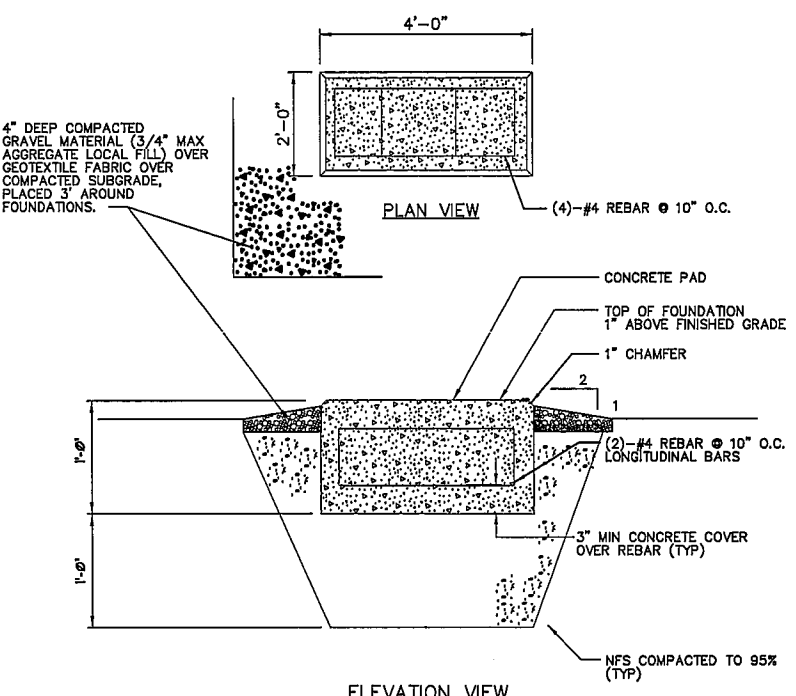


DESIGN LOAD 22,500 LBS ELECTRICAL VAULT FOR LOCATIONS OUTSIDE RUNWAY SAFETY AREAS
SCALE: N.T.S.



POWER & CONTROL STATION REAR VIEW
SCALE: N.T.S.

POWER & CONTROL STATION FRONT VIEW
SCALE: N.T.S.



POWER & CONTROL STATION FOUNDATION DETAILS
SCALE: N.T.S.

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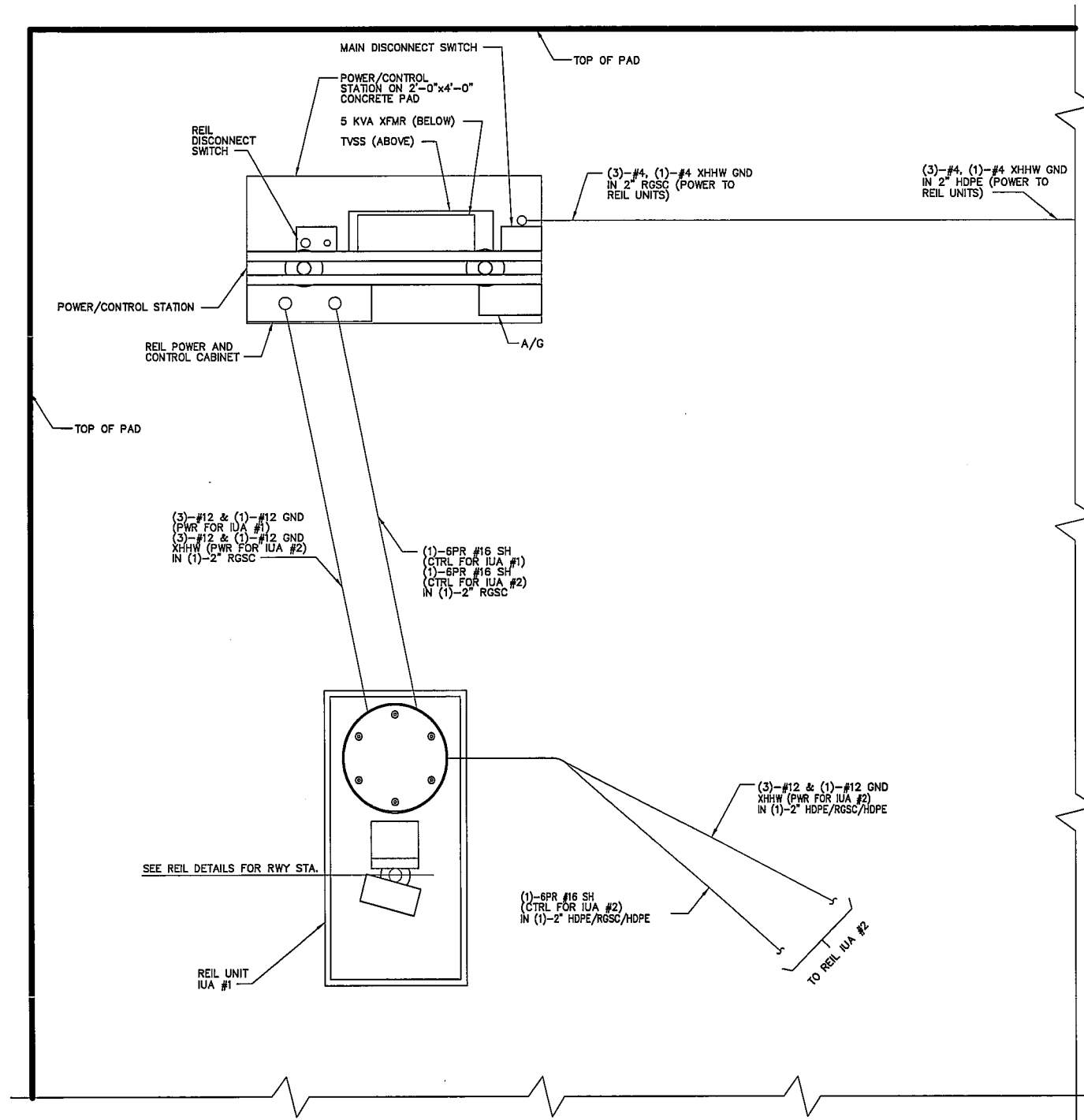
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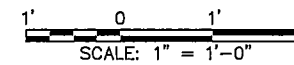
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REIL IUA #1 AND POWER/CONTROL STATION SITE DETAIL
 SCALE: 1" = 1'-0"



CAUTION: DRAWING SCALE IS REDUCED

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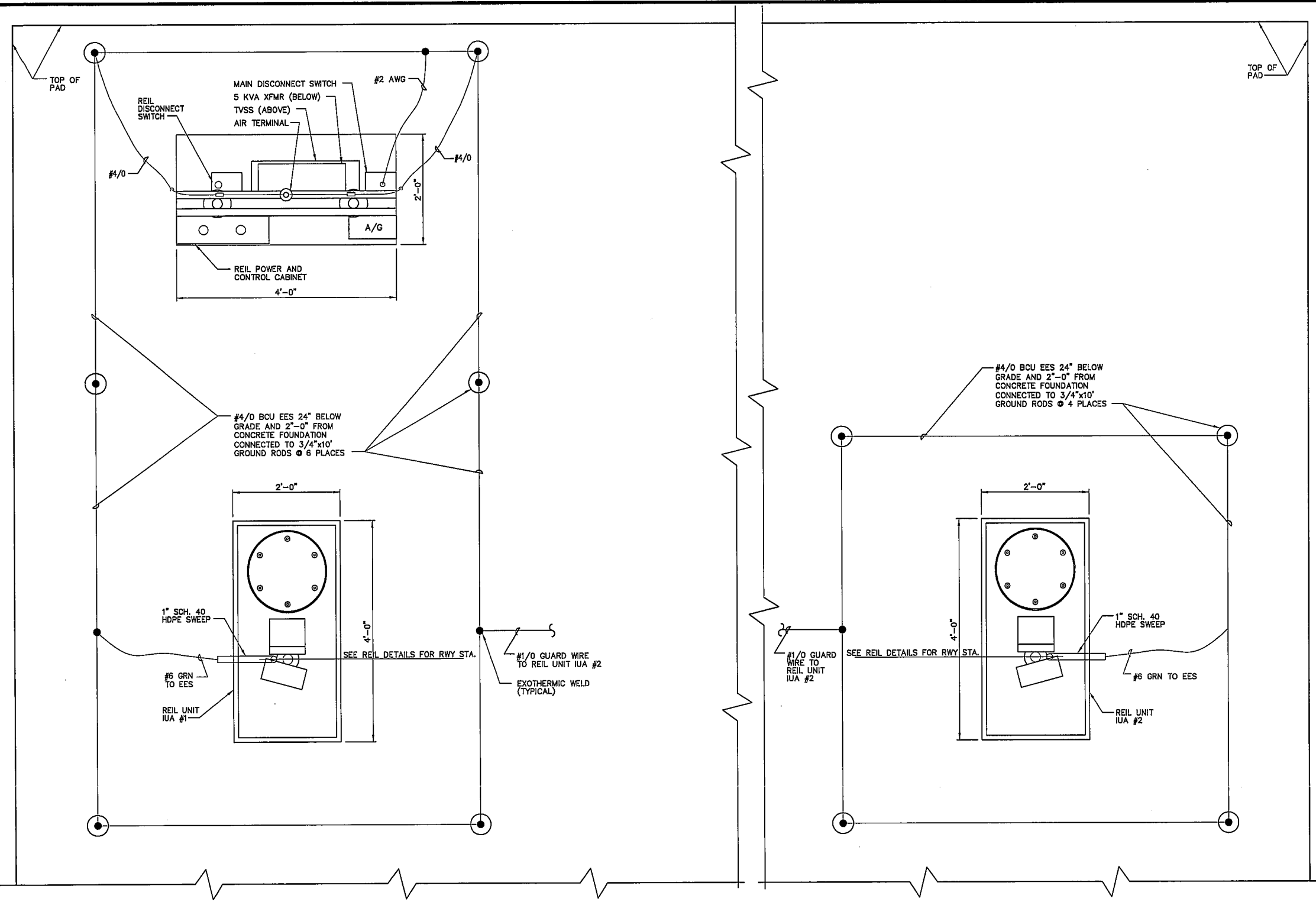
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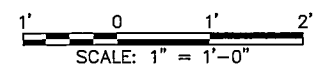
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REIL UNIT IUA #1 AND POWER/CONTROL STATION GROUNDING PLAN
SCALE: 1" = 1'-0"

REIL UNIT IUA #2 GROUNDING PLAN
SCALE: 1" = 1'-0"



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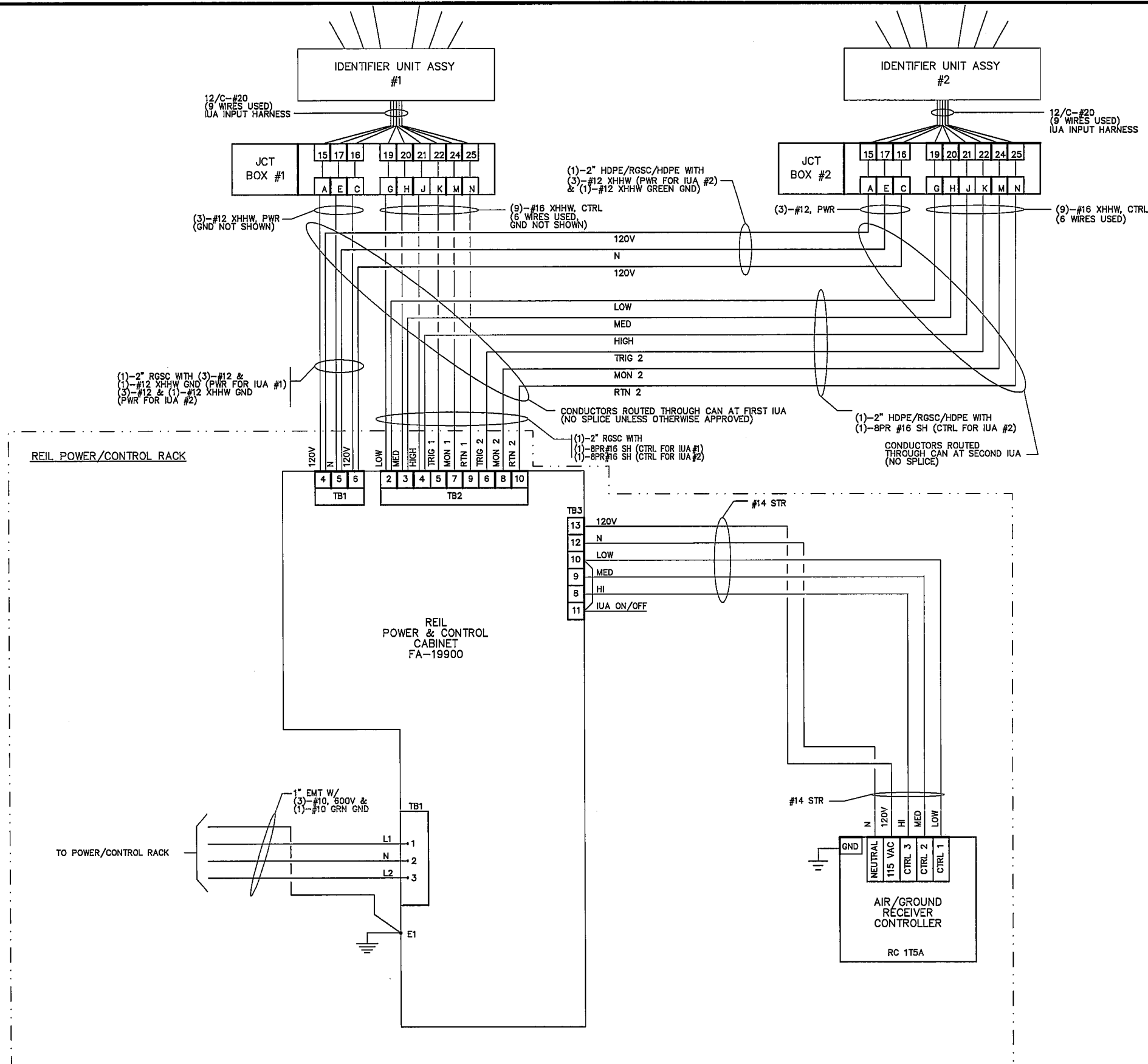
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DATE: 4/15/2014
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NOTES:

- ALL ELECTRICAL WORK IS IN COMPLIANCE WITH FAA-STD-019e, FAA-C-1217f, AND THE NEC.
- UNLESS OTHERWISE INDICATED, ALL POWER CONDUCTORS ARE BELOW GRADE IN A CONDUIT ARE XHHW, 600V. CONDUCTORS NO. 10 AWG AND SMALLER ARE SOLID, CONDUCTORS NO. 8 AWG AND LARGER ARE STRANDED (UNLESS INDICATED OTHERWISE). COLOR CODING OF THE CONDUCTOR'S INSULATION IS CONTINUOUS, EXCEPT THAT FOR CONDUCTORS NO. 4 AWG AND LARGER MAY BE COLOR CODED WITH TAPE, HALF LAPPED FOR A MINIMUM LENGTH OF 3 INCHES, EVERY 3 FEET WHERE ACCESSIBLE. CONDUCTORS ARE NOT TAPED OR TIED TOGETHER EXCEPT WHERE ACCESSIBLE (PULL BOX'S, CABINETS, ETC.).
- ALL POWER, SIGNAL AND CONTROL LINES, CONDUCTORS AND CABLES ENTER THE FACILITY THROUGH A MINIMUM OF 10 FEET OF RGSC. ALL RGSC INSTALLED BELOW GRADE ARE COATED PER 1217f.
- ALL PVC IS SCHEDULE 40 AND ALL BENDS ARE LONG SWEEP (24" MIN RADIUS FOR 2" PVC).
- UNDERGROUND CONDUITS ARE INSTALLED SO THAT NO WATER CAN BE TRAPPED IN THE RACEWAY (WATER MUST BE ABLE TO DRAIN OUT OF ONE END).
- ALL METALLIC NON-CURRENT CARRYING PARTS OF ELECTRICAL EQUIPMENT ARE GROUNDED WITH AN EQUIPMENT GROUNDING CONDUCTOR WHETHER OR NOT SHOWN ON THIS DRAWING.
- AN EQUIPMENT GROUNDING CONDUCTOR (GREEN INSULATED) ACCOMPANIES THE WIRES IN EACH CONDUIT WHETHER OR NOT SHOWN ON THESE DRAWINGS. EQUIPMENT GROUNDING CONDUCTORS ARE SIZED AS SHOWN OR PER NEC TABLE 250.122(2002 NEC), WHICHEVER IS LARGER.
- AN INSULATED GROUNDING BUSHING INSTALLED AT THE ENDS OF RGSC. A BONDING JUMPER WAS ATTACHED FROM THE BUSHING TO THE EQUIPMENT GROUND PER FAA-STD-019e.
- #1/0 BARE COPPER GUARD WIRE ABOVE THE CABLE TRENCH AND BOND TO 3/4"x10' COPPER CLAD GROUND RODS PLACED APPROXIMATELY 90' APART (VARY SPACING 10-20% TO PREVENT RESONANCE). ALL CONNECTIONS TO GROUND RODS ARE EXOTHERMIC.
- CABLE TAGGING IN PULLBOXES PER FAA-C-1391b, 3.5.1 OR AS APPROVED. ELSEWHERE, CONDUCTOR IDENTIFICATION IS PROVIDED WITHIN EACH ENCLOSURE WHERE A TAP, SPLICE, OR TERMINATION IS MADE. APPROVED WEATHER PROOF SHRINK EMBOSSED LABELS TO IDENTIFY CONDUCTORS AT TERMINATION POINTS WERE USED. AT A MINIMUM, IDENTIFIED EACH CONDUCTOR WITH THE NUMBER OF THE PIN OR LUG ON WHICH IT TERMINATES.
- ABSOLUTELY NO SPLICES EXCEPT WHERE APPROVED. ALL SPLICES ARE INSULATED TO A LEVEL EQUAL TO THAT OF THE FACTORY INSULATED CONDUCTORS. COMPRESSION CONNECTORS ARE USED TO SPLICE CONDUCTORS NO. 8 AWG AND LARGER. BELOW GRADE SPLICES WERE MADE ONLY IN PULL BOX'S AND CANS AS APPROVED. UNLESS OTHERWISE INDICATED, SPLICES WERE COVERED WITH RUBBER SPLICING TAPE/HEAVY-WALL, SELF-SEALING, HEAT-SHRINKABLE TUBING AND SKOTCHKOTE ELECTRICAL COATING. SPLICES WERE MADE TOTALLY WATERPROOF.
- CONTROL CABLE IS BPR #16; 600V, OVERALL AND INDIVIDUALLY SHIELDED. SUITABLE FOR DIRECT BURIAL - SUCH AS BELDON #1040A UNUSED EXTRA CONTROL WIRES ARE TIED TOGETHER AND CONNECTED TO GROUND AT THE EACH END. CABLE SHIELDS WERE CONNECTED TO GROUND AS APPROVED.

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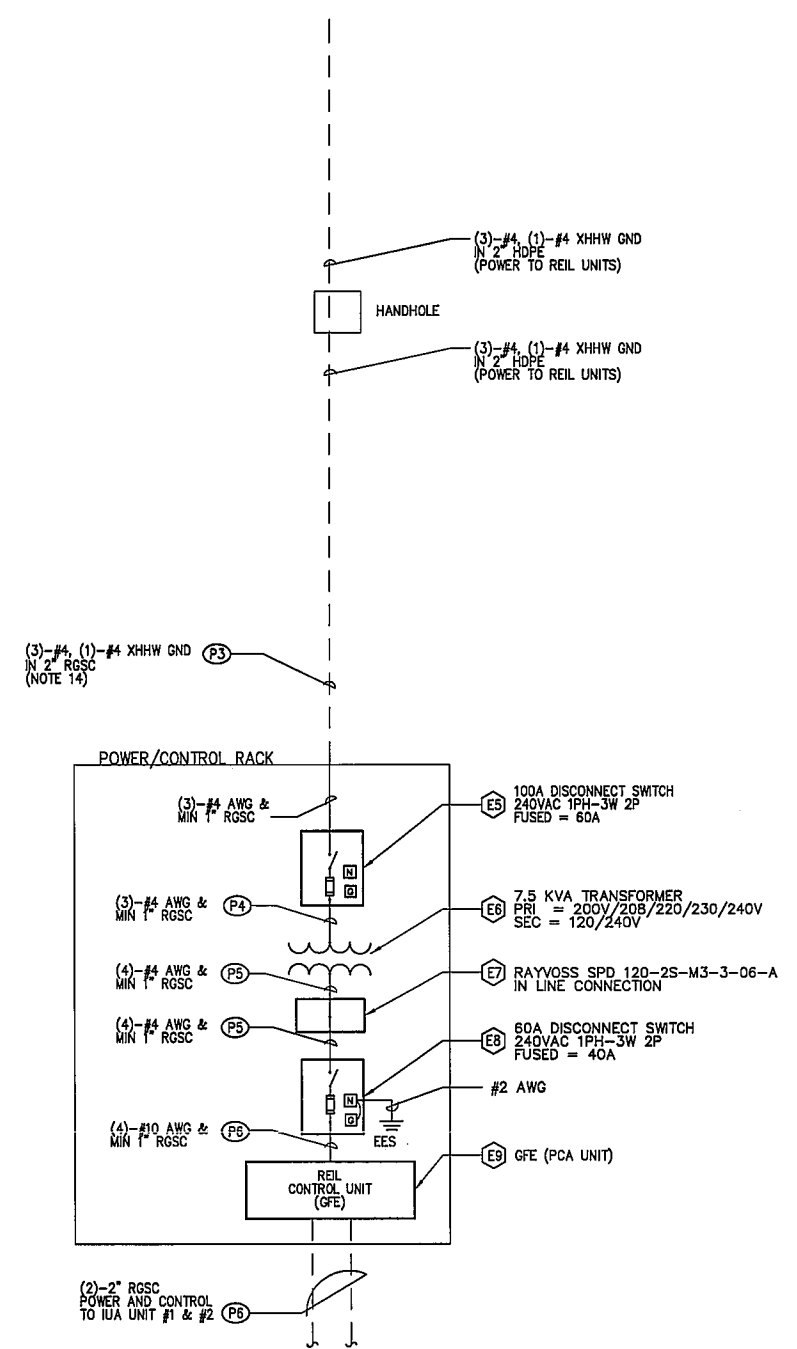
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MBA	4/18/14	ADDENDUM NO. 2

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KODIAK AIRPORT
 KODIAK, ALASKA
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 PROJECT No. 53587
 AIP No. 3-02-0158-01X-201_
 FAA REFERENCE DRAWING
 REIL DETAILS

DATE: 4/15/2014
 SHEET: 2
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ELECTRICAL ONE-LINE DIAGRAM
SCALE: N.T.S.

- NOTES:
- ALL EXTERIOR ENCLOSURES ARE NEMA 3R (MINIMUM).
 - FEEDER SURGE PROTECTIVE DEVICE (SPD: RAYVOSS TYPE, CAT 120-2S-M3-3-06-A
 - DISCONNECT SWITCHES ARE HEAVY DUTY AND PER FAA-STD-1217F.
 - GROUNDING BUSHING FOR ALL CONDUITS AT EACH ENCLOSURE.
 - NAME PLATE FOR TRANSFORMERS, PANELBOARDS, DISCONNECT SWITCHES, SPDs, J-BOX. THE NAME PLATES ARE BLACK PHENOLIC WITH LETTERING ENGRAVED WITH 3/4 INCHES MINIMUM HEIGHT LETTERING. THE NAME PLATES ARE SECURED TO THE ENCLOSURES WITH MINIMUM OF TWO STAINLESS STEEL TYPE 316 MACHINE SCREWS.
 - LABELING CIRCUITS, AND COLOR CODED PER NEC AND FAA-STD-1217F.
 - LOCKOUT/TAGOUT PROCEDURES WERE STRICTLY ENFORCED THROUGHOUT THE PROJECT.
 - USED #2 THHN TO CONNECT SPD TO THE SYSTEM PER FAA ORDER 19E OR VENDOR RECOMMENDATION.
 - ALL ELECTRICAL POWER WIRING IS THHN/XHHW-2 UNLESS STATED OTHERWISE.
 - ALL CB ARE: AIC = 10 KA.
 - TAP OF PRIMARY TRANSFORMER WAS SET IN FULL LOAD IN ORDER TO HAVE SEC = 120V/240V.
 - PROVIDED DOUBLE LUGS FOR WIRING CONNECTIONS AS REQUIRED.
 - EACH OVER CURRENT DEVICE HAS ITS OWN NEUTRAL CONDUCTOR AND EQUIPMENT GROUNDING CONDUCTOR PER FAA-1217F SECTION 4.4.3 AND 4.6.2.
 - RGSC WAS USED AT FACILITY ENTRANCES 10 FT. BEYOND FACILITIES OR 5 FT. BEYOND EES, WHICHEVER IS GREATER.

EQUIPMENT SCHEDULES			
	EQUIPMENT	LOCATION	CATALOG NUMBER (OR APPROVED EQUAL)
E1			
E2			
E3			
E4			
E5	SAFETY SWITCH: 100A 2P	REIL RACK	SQUARE D: H223NRB NEMA 3R 240V HD, 100A, FUSED ⌀ 60A
E6	TRANSFORMER: 7.5 KVA 1PH, NEMA 3R	REIL RACK	PRI = 240V (W/TAPS = 200,208,220,230V) SEC = 120V/240V POWERTRAN: ISOLATION TRANSFORMER
E7	SPD FOR REIL SYSTEM	REIL RACK	RAYVOSS 120-2S-M3-3-06-A
E8	SAFETY SWITCH: 60A, 2P	REIL RACK	SQUARE D: H222NRB NEMA 3R 240V HD, 60A, FUSED ⌀ 40A
E9	REIL CONTROL (GFE)	REIL RACK	INSTALLED PER CONSTRUCTION PACKAGE

ELECTRICAL RACEWAY & DUCT SCHEDULES				
	RACEWAY	LOCATION	FROM	TO
P1				
P2				
P3	REIL 25, 240V SYSTEM	U/G LINE		REIL RACK (LINE SIDE SPD)
P4	240V CIRCUIT: REIL 25	REIL RACK	LOAD SIDE 100A DISC SWITCH	PRIMARY SIDE 7.5 KVA TRANSFORMER
P5	240V CIRCUIT: REIL 25	REIL RACK	SECONDARY SIDE 7.5 KVA XMER	LINE SIDE 60A DISC SWITCH
P6	INCOMING POWER FOR REIL CONTROL UNIT	REIL RACK	LOAD SIDE 60A DISC SWITCH	REIL CONTROL UNIT

- NOTES:
- MATERIALS ON RACKS WERE PROVIDED BY A CONTRACTOR. (EXCEPT FOR CONTROL & A/G)
 - MINIMUM CONDUITS AT RACKS ARE A MINIMUM 1" RSC.

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MBA	4/18/14	ADDENDUM NO.2

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KODIAK AIRPORT
KODIAK, ALASKA
RUNWAY SAFETY AREA EXTENSION
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REIL DETAILS

DATE: 4/15/2014
SHEET: E19 OF E19
AS-BUILT SHEET:

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ITEM P-181 CONCRETE ARMOR UNITS

DESCRIPTION

181-1.1 This work shall consist of furnishing all plant, labor, equipment, and materials and performing all operations in connection with the casting, transporting, handling, and placing of concrete armor units. The Contractor shall notify the Engineer 30 days prior to start of concrete casting, and provide the company name, location, and concrete testing laboratory. Contractor shall execute the sublicense agreement in Appendix N with the licensor or obtain the units from a vendor authorized by the patent holder. The Contractor shall be responsible for all licensing fees. New concrete armor shall consist of Core-Loc units , or approved equal, of the sizes specified in the plans.

The following is contact information for the current licensee for Core-Loc in North America:

Gordon Prestedge P. E.
Prestedge Retief Dresner Wijnberg USA LLC
Consulting Port and Coastal Engineers
Licensee for Core-loc for USA, Canada and Mexico
11130 NE 33rd Place, Suite 102
Bellevue, Washington, WA 98004
United States of America
Phone: + 1 425-256-3739
E-mail – info@prdw.com

Cape Town: Tel: + 27 21 418 3830 | Fax: +27 21 418 3834 | Cell: +27 82 558 5828 |
P O Box 50023, Waterfront 8002 | 5th Floor, Safmarine Quay, Clock Tower Precinct,
Victoria and Alfred Waterfront, Cape Town, South Africa

Web site: www.prdw.com
gprestedge@prdw.co.za

The Contractor may propose a different type of concrete unit for the shore protection. Should the Contractor propose a different unit, he shall follow the requirements of Section 181-4.1 below.

MATERIALS

181-2.1. All materials for concrete armor units (Core-Loc units) shall meet the requirements specified in appendix N.

CONSTRUCTION METHODS

181-3.1 GENERAL. Construction methods shall meet the requirements specified in appendix N.

CONTRACTOR PROPOSAL FOR ALTERNATE CONCRETE ARMOR UNITS

181-4.1 GENERAL. Should the Contractor choose to submit an alternative concrete armor unit he shall use the following procedure:

- a. **Department Furnished Information.** The department will furnish, to the Contractor, the following information:

(1) Coastal Engineering Report

Kodiak Airport RSA Extension
Project 53587/AIP 3-02-0158-017-2014

P-181-1R

Kodiak Devils Creek Culvert Repair
Project 57474/AIP 3-02-0158-01x-201x
(HDR rev. 3/17/14)

(2) AutoCAD base and design drawings for the Contractor's use

b. Submitting Proposals. All proposals must be in writing. The Contractor shall submit the following with each proposal:

- (1) A description of the difference between the existing Contract requirements and the proposed change, stating the comparative advantages and disadvantages of each, including effects on service life, economy of operations, ease of maintenance, desired appearance, and safety;
- (2) Provide design calculations sealed by a Professional Engineer showing equivalent or better design performance than the owner-supplied method;
- (3) Drawings or specifications that show the proposed revisions relative to the original Contract requirements. The Contractor may submit schematics for conceptual approval of the proposal;
- (4) A date by which the Department must make a decision on the alternate design proposal. The date identified must allow a reasonable time for the Department to conduct an adequate review and evaluation of the Proposal and process a Change Order without affecting the Contractor's schedule;
- (5) The Department's approval of the Proposal shall not change the Contract completion date unless a change to the completion date is specifically provided for in the Change Order authorizing the Proposal; and
- (6) A description of any previous use or testing of the proposed change and the conditions and results. If the proposal was previously submitted on another Department project, indicate the date, project name and number, and the action taken by the Department.

c. Conditions. Proposals will be considered only when all of the following conditions are met:

- (1) The Proposal shall not affect the bid prices or completion date.
- (2) The Proposal, regardless of their approval status, becomes the property of the Department. The Contractor shall submit Proposals without use or disclosure restrictions. The Department shall have the right to use, duplicate or disclose the Proposal and any data necessary to use the Proposal on the Project, on any other project, and on any other Contracts. The Contractor shall identify any trade secret information, patented materials or proprietary processes that restrict use of the Proposal.
- (3) The Department is the sole judge as to whether a Proposal qualifies for consideration and evaluation. It may reject any Proposal that does not allow a reasonable time for adequate review and evaluation by the Department or that requires excessive time or costs for review, evaluations, or investigations, or which is not consistent with the Department's design standards and policies, safety considerations, land use restrictions, permit stipulations, right-of way limitations, or other essential criteria for the project. The Department may reject a Proposal without obligation to the Contractor if it contains proposals that are already under consideration by the Department or that have already been authorized for the Contract.
- (4) If additional information is needed to evaluate a Proposal, the Contractor shall provide it in a timely manner. Failure to do so may result in rejection of the Proposal.
- (5) If the Contractor hires a design professional to prepare the proposal, that professional must seal the documents and provide evidence of Professional Liability Insurance with limits acceptable to the Department.

- (6) The Contractor shall not implement proposed changes before the Department accepts the Proposal.
- (7) The Engineer shall reject all unsatisfactory work resulting from an accepted Proposal. The Contractor shall remove all rejected work or materials, and shall reconstruct the work in accordance with the Proposal or the original design.
- (8) Reimbursement for modifications to the Proposal to adjust field or other conditions is limited to the total amount of the original Contract bid prices.
- (9) The Department shall not be held liable for costs or delays due to the rejection of a Proposal, including but not limited to the Contractor's development costs, loss of anticipated profits and increased material, labor or overhead costs.

d. Processing.

- (1) The Engineer shall accept or reject the Proposal, in writing, by the date the Contractor specifies, unless extended by mutual consent. If rejected, the Engineer will explain the reasons for rejection. A Proposal may be rejected if the Contractor allows the Department insufficient time to adequately review and evaluate it.
- (2) The Contractor may withdraw or modify a Proposal at any time before it is accepted.
- (3) If the Proposal is approved in concept (without final drawings and specifications), the Department may either undertake the re-design itself or issue the Contractor a limited notice to proceed, subject to mutual agreement, authorizing the final design. The notice to proceed will include reference to any pertinent design criteria, Department policies, and other limitations on the design or construction methods. Approval in concept does not constitute acceptance of the Proposal and will not obligate the Department to accept or pay for the final design.
- (4) If the final Proposal is accepted, the Engineer will issue a Change Order under Subsection 40-02 incorporating the Proposal into the Contract.

METHOD OF MEASUREMENT

181-5.1 Concrete Armor Units will be measured per each concrete armor unit of the size specified, accepted in-place.

BASIS OF PAYMENT

181-6.1 Payment will be made at the contract unit price for each completed and accepted concrete armor unit furnished and installed. This price shall be full compensation for furnishing all material, equipment, labor, and tools to manufacture, transport, handle, remove, store, and place. Royalty payments to patent holder are a subsidiary obligation.

Payment will be made under:

Item P-181a Concrete Armor Unit (2.65 ton) – per each

ITEM P-209 CRUSHED AGGREGATE BASE COURSE

DESCRIPTION

209-1.1 This item consists of a base course composed of crushed aggregates constructed on a prepared course according to these Specifications and to the dimensions and typical cross section shown on the Plans.

MATERIALS

209-2.1 AGGREGATE. Aggregates shall consist of clean, sound, durable particles of crushed stone or crushed gravel and shall be free from vegetable matter, excess coatings of clay, silt, and other objectionable materials and shall contain no clay balls.

Fine aggregate passing the No. 4 sieve shall consist of fines from the operation of crushing the coarse aggregate. If necessary, fine aggregate may be added to produce the correct gradation. The fine aggregate shall be produced by crushing stone and gravel that meet the requirements for wear and soundness specified for coarse aggregate.

The crushed aggregate portion which is retained on the No. 4 sieve shall have at least 75% by weight with 2 fractured faces as determined by WAQTC FOP for AASHTO-TP-64, T 335.

The percentage of wear shall not be greater than 45% when tested according to AASHTO T 96. The sodium sulfate soundness loss shall not exceed 12%, after 5 cycles, when tested according to AASHTO T 104. Aggregates shall have a minimum degradation value of 45-20 when tested according to ATM 313.

The fraction passing the No. 40 sieve shall have a liquid limit no greater than 25 and a plasticity index of not more than 4 when tested according to WAQTC FOP for AASHTO T 89 and T 90. The fine aggregate shall have a minimum sand equivalent value of 35 when tested according to WAQTC FOP for AASHTO T 176.

- a. **Sampling and Testing.** The Engineer will sample aggregates for quality testing before the start of production. The Engineer, at no expense to the Contractor, will make all tests necessary to determine whether aggregate quality is in compliance with the specifications.

The Engineer will sample aggregates for acceptance according to WAQTC FOP for AASHTO T 2, and test aggregates for acceptance according to WAQTC FOP for AASHTO T 27/T 11.

- b. **Gradation Requirements.** The gradation of the final mixture shall fall within the range indicated in Table 1, when tested according to WAQTC FOP for AASHTO T 27/T 11. The final gradation shall be continuously well graded from coarse to fine and shall not vary from the low limit on one sieve to the high limit on an adjacent sieve or vice versa.

TABLE 1. REQUIREMENTS FOR GRADATION OF AGGREGATE

Sieve Designation (Square Openings)	Percentage by weight passing sieves	
	C-1	D-1
1-1/2 in	100	--
1.00 in	70-100	100
3/4 in	60-90	70-100
3/8 in	45-75	50-80
No.4	30-60	35-65
No. 8	22-52	20-50
No. 50	8-30	8-30
No. 200	0-6	0-6

Note: Unless otherwise specified, Gradation D-1 shall be used.

CONSTRUCTION METHODS

209-3.1 PREPARING UNDERLYING COURSE. Placing and spreading operations shall not commence until the underlying course has been accepted, in writing, by the Engineer. Any ruts or soft areas shall be corrected and compacted to the required density before placing the base course. Crushed aggregate base course shall not be placed on frozen material.

209-3.2 MIXING. The aggregate shall be uniformly blended during crushing operations or mixed in a plant. The plant shall blend and mix the materials to meet the Specifications.

209-3.3 PLACING. The crushed aggregate base material shall be placed on the approved subgrade in uniform, equal-depth layers, each not exceeding 6 inches of compacted depth.

The previously constructed layer shall be cleaned of loose and foreign material prior to placing the next layer. The surface of the compacted material shall be kept moist until covered with the next layer.

209-3.4 COMPACTION. Immediately upon completion of the spreading operations, the aggregate shall be thoroughly compacted to the required density. The moisture content of the material shall be approximately that required to obtain maximum density.

Base course used as a non-erodible surface of unpaved safety areas and with a nominal depth of 2" shall be compacted with a minimum of two passes with steel vibratory roller.

209-3.5 ACCEPTANCE SAMPLING AND TESTING FOR DENSITY. Base course will be accepted for density when the field density is not less than 100% of the maximum density, as determined according to WAQTC FOP for AASHTO T 99/T 180 or ATM 212. The in-place field density and moisture content will be determined according to WAQTC FOP for AASHTO T 310. If the specified density is not attained, the material shall be reworked and/or recompacted until the specified density is reached.

Base course used as a non-erodible surface of unpaved areas will not be tested for density.

209-3.6 FINISHING. The surface of the aggregate base course shall be finished by blading or with automated equipment specifically designed for this purpose.

In no case shall thin layers of material be added to the top of base course to meet grade. If the compacted elevation of the top layer is 0.05 foot or more below grade, it shall be scarified to a depth of at least 3 inches, new material added, and the layer shall be blended and compacted to bring it to grade. If the finished surface is above plan grade, it shall be cut back to grade and recompacted.

ITEM P-511 MICROSILICA MODIFIED CONCRETE

DESCRIPTION

511-1.01 DESCRIPTION. Furnish and install microsilica modified concrete (MMC) overlay, as specified, at the location(s) shown in the Plans. This item shall also include repair of deteriorated concrete surfaces using epoxy-bonded epoxy grout. Where mention of deck is shown, it shall be understood to mean any surface to receive MMC or grout.

The specification is written to be applicable to most construction conditions. Due to the confined location of the work, methods and equipment may be substituted or modified with the approval of the Engineer provided the resulting product will meet the requirements of this specification.

This item shall also include all work required to divert Devils Creek and construct access ramps, if needed. Restoration of the access ramps will be accomplished under P-157, Erosion, Sediment and Pollution Control.

511-2.01 MATERIALS. Use materials that conform to the following:

- Portland Cement Item P-610 (Type I or Type IA)
- Fine Aggregate Item P-610, Subsection 610-2.3
- Coarse Aggregate Quality: Item P-610, Subsection 610-2.2
 Gradation: AASHTO M 43 (Gradation No. 7)
- Sand For Abrasive Finish Crushed sand, oven dried, and stored in moisture-proof bags. Meet the following gradation requirements when tested according to WAQTC FOP for AASHTO T 27/T 11:

Sieve	Percent Passing
No. 8	100
No. 30	97-100
No. 200	0-5

- High Molecular Weight Methacrylate (HMWM) Resin Viscosity, min.: 25 cps (Brookfield RVT w/UL adapter, 50 rpm at 75 °F (CA Test 434)
 Density: 8.5 to 8.75 lb/gal at 75 °F (ASTM D 1475)
 Flash Point, min.: 200 °F PMCC (Pinsky-Martens CC)
 Vapor Pressure, max.: 0.04 in. Hg at 75 °F (ASTM D 323)
 Tg (DSC), min.: 135 °F (ASTM D 3418)
 Gel Time, min.: 60 minutes

Use a promoter/initiator system for the NMWM resin consisting of a metal dryer and peroxide.

- Microsilica Admixture Meet AASHTO M 307, as modified below:

Table 1 Chemical Requirements

Loss on Ignition, max., %	4.0
<u>Add the following:</u>	
Other compounds, total*, max., %	7.0
* Includes aluminum, ferric, magnesium, and calcium oxides	

<u>Table 3 Physical Requirements</u>	
<u>Add the following:</u>	
Specific Surface Area, min. (ASTM C 1069)	15 m ² /g

Epoxy Resin	Two-component, 100-percent solids type meeting the requirements of specification ASTM C-881 for type III, grade 2, class B
Epoxy Resin Mortar	AASHTO M 235, Type I, Grade 3

CONSTRUCTION REQUIREMENTS

511-3.01 QUALITY CONTROL AND TESTING.

1. Technical Representative. The Engineer may modify any of the following requirements to meet field conditions. Use a test slab to evaluate finishing and placement properties of the mix. Have a technical representative from the microsilica admixture manufacturer present during initial proportioning, mixing, placing and finishing operations. The technical representative must:
 - a. Remain on site for at least the first 2 days of placement.
 - b. Be able to perform, demonstrate, inspect and test all of the functions required for placing the MMC as specified and approved by the Engineer.
 - c. Aid in properly installing the MMC.

Adhere to recommendations made by the technical representative as approved by the Engineer.

2. Test Slab. Make a trial batch of the MMC which meets the Specifications at least 4 days before placing the first section of the overlay. Make the trial batch the same size to be batched per truck. Place a test slab at a location approved by the Engineer. Cast the slab 12 feet wide, the same thickness of the overlay, and long enough to place the trial batch. Furnish individual batch weights to the Engineer. Finish and cure the test slab according to all the requirements of these Specifications. One or more trial batch(es) and test slab(s) may be required to meet the requirements of this Specification.

Notify the Engineer 7 days before preparing the test batch. The Engineer will sample for slump, air entrainment and unit weight and conduct all the required tests to determine if the MMC meets specifications before field placement.

The test slab remains the Contractor's property. Remove and dispose of the test slab after testing is complete.

3. Production Testing. The Engineer will perform the following tests:
 - a. Provide a WAQTC technician to test every load before it is discharged. Loads not meeting specifications shall be rejected.
 - b. The Engineer will perform acceptance tests randomly at a frequency of 1 set per 20 cubic yards.

**ADDENDUM NO. 2
ATTACHMENT NO. 5**

PRESTEDGE RETIEF DRESNER WIJNBERG USA LLC CORE-LOC NORTH AMERICA

**PATENT SUBLICENSE CORE-LOC
PROJECT SPECIFIC**

Concrete Armor Unit to Protect Coastal and Hydraulic Structures and Shorelines

SUBLICENSEE:.....

PROJECT NAME AND LOCATION.....

DATE:.....

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CORE-LOC NORTH AMERICA

PATENT SUBLICENSE CORE-LOC® PROJECT SPECIFIC

Concrete Armor Unit to Protect Coastal and Hydraulic Structures and Shorelines

This SUBLICENSE is entered into between PRESTEDGE RETIEF DRESNER WIJNBERG USA LLC trading as CORE-LOC NORTH AMERICA, a Washington corporation, with principal offices at 1123 Port of Tacoma Road, P.O. Box 2259, Tacoma, WA 98401 ("CLNA"), and ("SUBLICENSEE").

BACKGROUND

The United States of America, represented by the Secretary of the Army, is the owner ("OWNER") of the entire, right, title, and interest in the United States Patent No. 5,441,362, entitled "Concrete Armor Unit for Protecting Coastal and Hydraulic Structures and Shorelines", issued August 15, 1995, and in the United Mexican States Patent No. 187994, issued February 6, 1998, entitled "Unidad Blindada de Hormigón para Proteger Estructuras Hidráulicas y Costeras y Litorales," issued February 6, 1998.

Public Law 99-502 and Title 35 of the United States Code, Section 207 authorize federal agencies to license their patents, and, the Director, U.S. Army Corps of Engineers, Engineering Research and Development Center, Coastal and Hydraulics Laboratory ("CHL"), acting pursuant to a delegation of signatory authority from the Assistant Secretary of the Army for Research, Development and Acquisition, granted an exclusive Core-Loc Patent License Agreement to CLNA, including the right to grant sublicenses ("LICENSE").

By granting both project specific sublicenses and territorial sublicenses, CLNA seeks to promote the use and practical application of the invention and PRODUCTS covered by the LICENSE in consideration of royalties to be paid to CLNA by sublicensees. CLNA has been presented by SUBLICENSEE with a satisfactory proposal for manufacture and sale of PRODUCTS in connection with the PROJECT and SUBLICENSEE has expressed its capability and intention to effect this application upon the granting of this SUBLICENSE;

NOW THEREFORE, in accordance with the foregoing authorities, and in consideration of the covenants and obligations set forth in this contract, the royalties to be paid, and other good and valuable consideration, the parties agree as follows:

Article 1. Definitions

In addition to the defined terms in the BACKGROUND statement and elsewhere in the text of this SUBLICENSE, the following terms shall have the following meanings, equally applicable to both the singular and plural forms of the terms defined.

1.1 PATENT means the invention which is within the scope of any claim in United States Patent No. 5,441,362, entitled 'Concrete Armor Unit for Protecting Coastal and Hydraulic Structures and Shorelines,' issued August 15, 1995, and Mexican Patent No. 187994, entitled "Unidad Blindada de Hormigón para Proteger Estructuras Hidraulicas y Costeras y Litorales," issued February 6, 1998, including any and all renewals, reissues, reexaminations, divisions, continuations or extensions and any and all foreign patents (pending), and including any and all improvements relating to the invention for which a patent is granted.

1.2 PRODUCTS means any and all apparatus, articles of manufacture, compositions of matter, methods, uses, or processes, falling in whole or in part within the scope of one or more claims of the PATENT, and, without limiting the generality of the foregoing, means unreinforced concrete armor units used to protect coastal and hydraulic structures and shorelines against wave and current action, together with the fabrication and forming processes for building such units.

1.3 PROJECT means the

1.4 EFFECTIVE DATE means the date of the OWNER'S approval of this SUBLICENSE after execution by CLNA and SUBLICENSEE, as specified in Article 7.

1.5 TERM means the period commencing with the EFFECTIVE DATE and ending, or the completion of the PROJECT, whichever first occurs.

1.6 TRADEMARKS means all trademarks, trade names and service marks related to the PRODUCTS and PATENT, including but not limited to the term "Core-Loc".

1.7 KNOW-HOW means any and all general, technical and practical information concerning the design, fabrication and installation of PRODUCTS supplied by CLNA to SUBLICENSEE. Some KNOW-HOW may be INDUSTRIAL SECRETS within the meaning of Article 8.

Article 2. Grant of Sublicense; Specific Project

2.1 Sublicense Grant. Contingent upon approval of this SUBLICENSE by the OWNER and subject to all the terms of the LICENSE, CLNA grants to SUBLICENSEE under the terms, covenants, conditions and limitations set forth in this SUBLICENSE, the exclusive right to utilize the TRADEMARKS and the claimed inventions of the PATENT for all fields of use, in the manufacture, use, and sale of PRODUCTS in connection with the PROJECT and for no other purpose. This SUBLICENSE is nonassignable, and may not be further sublicensed by SUBLICENSEE in whole or in part by any method for any purpose whatsoever.

2.2 CHL Guidelines. SUBLICENSEE shall be responsible for assuring that all PRODUCTS developed or used under this SUBLICENSE, whether or not sold, leased or transferred to another party, satisfy the Technical Guidelines developed by CHL annexed to this agreement as Exhibit A, and that all PRODUCTS sold, manufactured and used under this SUBLICENSE are used exclusively at the defined PROJECT and for no other purpose.

2.3 Restricted Use. Except as part of the PROJECT, SUBLICENSEE shall not make any direct or indirect use or disposition to or for the benefit of any third party of any PATENT, TRADEMARKS, PRODUCTS or KNOW-HOW related to the LICENSE or this SUBLICENSE in any manner

whatsoever, whether by way of transshipment, export, diversion, disclosure, assistance or otherwise, except upon the prior written consent of CLNA which consent may be withheld in the absolute and unfettered discretion of CLNA and, if such consent be given it may be conditioned upon the payment of royalties and upon other terms satisfactory to CLNA. In no event shall CLNA consent to any transaction having the effect of violating the terms of any other License under the PATENT granted by the OWNER.

Article 3. License Fees; Royalties

- 3.1 License Fees. In consideration of this SUBLICENSE and of the costs incurred and services rendered by CLNA, within thirty (30) days of the EFFECTIVE DATE, SUBLICENSEE shall pay to CLNA an initial license issue fee of US\$ 2 500.00.
- 3.2 Royalties. As additional consideration for this SUBLICENSE, SUBLICENSEE shall pay to CLNA, in the manner designated below, an earned royalty equal to US\$ 10-00 (ten US Dollars) for each metric tonne of concrete contained in the PRODUCTS manufactured under the PATENT in connection with the PROJECT.
 - 3.2.1 All license fees and royalty payments to CLNA shall be payable in currency of the United States of America. If payments are overdue, late charges shall be applied at the highest permissible rate. All checks shall be drawn on United States banks, made payable to CORE-LOC NORTH AMERICA and addressed to CLNA as provided in Article 16.
 - 3.2.2 Before any PRODUCTS are manufactured for the PROJECT, SUBLICENSEE shall provide CLNA with (1) a written description of the scope of the PROJECT in such detail as CLNA may reasonably request, accompanied by an initial deposit of thirty percent (30%) of the total estimated earned royalty to become due to CLNA on the entire PROJECT, which deposit shall be applied to the final royalty due to CLNA, and with (2) at CLNA's request, an irrevocable letter of credit issued by a bank acceptable to CLNA in an amount equal to the balance of the total estimated royalty to become due to CLNA on the PROJECT.
 - 3.2.3 During the course of manufacturing PRODUCTS, SUBLICENSEE shall pay the earned royalty each month during the life of the PROJECT based on the quantities of PRODUCTS produced for the PROJECT during each preceding month, payable within 30 days of the previous month end. No royalty shall be due on rejected or returned PRODUCTS, subject to verification by CLNA at any time of any claimed rejections or returns. Final payment on the PROJECT, less the initial deposit under Section 3.1.2(1), above, together with the final report under Section 3.3, below, shall be due 30 days after the end of the month in which the last Products are manufactured for the PROJECT.
 - 3.2.4 SUBLICENSEE shall pay all taxes, duties, imposts and charges, if any, due or levied on or relating to this SUBLICENSE and any PRODUCTS, except the income tax of CLNA due in the United States of America.
 - 3.2.5 The parties shall separately negotiate and set forth in writing the terms under which CLNA may perform additional services or provide additional products beyond the contemplation of this SUBLICENSE.
- 3.3 Reports. Concurrent with each monthly payment of the earned royalty, SUBLICENSEE shall submit a written report setting forth the following:

- (a) the amount expressed in cubic meters and metric tonnes of concrete of LICENSED PRODUCTS made, used, sold, or otherwise disposed of by SUBLICENSEE for the current month and cumulatively for the PROJECT; and,
- (b) the amount of royalties due CLNA from the sale of PRODUCTS for the PROJECT both for the current month and cumulatively.

3.4 Termination Payment. SUBLICENSEE shall pay within thirty (30) calendar days from any termination of this Agreement royalties accrued or accruable for payment at the time of any such termination.

Article 4. Records, Books, and Examinations

- 4.1 Records. SUBLICENSEE agrees to make and keep full, accurate, and complete books and records as necessary to establish its compliance with all provisions of this SUBLICENSE.
- 4.2 Inspections. SUBLICENSEE agrees that CLNA at its expense and from time to time may have a duly authorized agent or representative on CLNA's behalf inspect, audit, or verify such books and records that are relevant to establishing SUBLICENSEE's compliance with this SUBLICENSE, either at SUBLICENSEE's place of business or at the site of the PROJECT where PRODUCTS are used.

Article 5. Term of the License

5.0 Effective Date; Term; Absolute Termination. This SUBLICENSE shall enter into force on the EFFECTIVE DATE as specified in Articles 1.3 and 7 for the TERM. Notwithstanding the foregoing sentence, this SUBLICENSE shall immediately terminate upon a material breach by SUBLICENSEE of any provision of this SUBLICENSE, upon termination of the LICENSE for any cause or for no cause at any time, and, if the LICENSE and this SUBLICENSE is then in effect, this SUBLICENSE shall terminate absolutely on the later of (1) the expiration of Mexico Patent No. 187994, its renewals, reissues, reexaminations, divisions, continuations, or extensions, or (2) the expiration of any patent issued with respect to an improvement to the invention which is the subject matter of this SUBLICENSE, its renewals, reissues, reexaminations, divisions, continuations, or extensions.

Article 6. Performance and Technical Assistance

- 6.1 Basic Performance. SUBLICENSEE shall expend its best efforts to manufacture high quality PRODUCTS for practical use and application in connection with the PROJECT. Recognizing its distance from the PROJECT, CLNA shall expend reasonable efforts to assist SUBLICENSEE with KNOW-HOW and other assistance in the manufacture of the PRODUCTS to the extent set forth in this Article 6.
- 6.2 Limitations to Technical Assistance. Qualified personnel from CLNA will be made available on-site at mutually convenient times on not more than 2 (two) occasions during the TERM for not more than 4 (four) days on each occasion. At all times all KNOW-HOW and any other assistance provided by CLNA shall be only advisory; SUBLICENSEE at all times shall have the sole authority and exclusive responsibility for all decisions affecting all aspects of the sale, manufacture, materials, methods, quality, and performance of the PRODUCTS.

- 6.3 Authority; Technical Information. SUBLICENSEE understands CLNA KNOW-HOW is restricted to advisory information as stated above and does not include any authority to approve, direct or supervise work or activities relating to PRODUCTS. SUBLICENSEE is solely responsible for determining its customers, number and size of PRODUCTS, all manufacturing and delivery methods and schedule for the PROJECT. Upon request, SUBLICENSEE promptly shall provide CLNA with copies of all test results, logs of concrete mix designs, curing methods, production rates, handling procedures, placement methods, and related technical information.
- 6.4 Concrete Molds. The molds used to manufacture PRODUCTS shall be fabricated by SUBLICENSEE at the expense of SUBLICENSEE. Each shell of all molds used to manufacture PRODUCTS shall bear an identification plate approved by CLNA which shall be affixed at the point of manufacture and maintained in good condition. SUBLICENSEE shall provide CLNA with an inventory of all molds and equipment related to PRODUCTS at the conclusion of the PROJECT. No molds, equipment or unused PRODUCTS shall be in any manner sold, assigned or transferred by SUBLICENSEE to any third party. To protect the interests of the OWNER and CLNA, directly after completion of the PROJECT by SUBLICENSEE the molds shall be returned to CLNA or CLNA's designated Mexican representative and SUBLICENSEE shall be required to ship all molds used to manufacture PRODUCTS to CLNA's Tacoma, Washington facility at SUBLICENSEE's expense or to another location of CLNA's choosing in Mexico. Alternatively, CLNA may require SUBLICENSEE to destroy, without charge, any molds and equipment used to manufacture PRODUCTS, together with any unused PRODUCTS.
- 6.5 Marking of Units. Each PRODUCT cast under the SUBLICENSE shall be marked on one exterior surface with the TRADEMARK term CORE-LOC, by either an imprint from the casting mold or paint stencil applied to the PRODUCT after casting.

Article 7. CLNA Authority; Paramount Provisions: Independent Parties

- 7.1 Authority to Sublicense. CLNA represents and warrants its authority to grant this SUBLICENSE subject to approval by the OWNER. The LICENSE provides that the OWNER shall not unreasonably withhold approval of this SUBLICENSE. Except as expressly set forth in this SUBLICENSE, SUBLICENSEE shall have no other, further, or different power, right, or privilege, and shall have no power or right whatsoever to grant any other or further licenses, sublicenses, powers, rights, privileges, or immunities or to disclose any information, to third parties.
- 7.2 Paramount provisions of License and Sublicense. All commitments, contracts and obligations by SUBLICENSEE arising out of or relating to the PATENT, PRODUCTS, TRADEMARKS, and KNOW-HOW, shall expressly identify and be subordinate to and comply with the paramount terms of this SUBLICENSE and any relevant provisions of the LICENSE; any termination of the LICENSE shall automatically terminate this SUBLICENSE. Any termination of this SUBLICENSE shall automatically and without additional notice terminate all SUBLICENSEE commitments, contracts and obligations related to the PRODUCTS, except to the extent anyone or more of such commitments, contracts or obligations are expressly assumed by CLNA in writing on terms satisfactory to CLNA.
- 7.3 Independent Parties. The parties mutually represent and warrant that they are independent of one another in all respects and that neither party directly or indirectly controls, is controlled by, or is under common control with, the other party, that there is no employment or labor relationship between them such that their respective employees shall not have any cause of action under labor law against the other party, and that the provisions of this SUBLICENSE, including the royalty provisions, in all respects were negotiated at arms length.

Article 8. Proprietary Information

- 8.1 Protection of Industrial Secrets. CLNA and SUBLICENSEE recognize that in the course of performance of their obligations under this SUBLICENSE, either party may disclose to the other certain INDUSTRIAL SECRETS. In the event of such a disclosure, the party receiving the disclosure agrees to maintain the INDUSTRIAL SECRETS in confidence, according to the terms and conditions set out in this Article. The parties intend that the term "Industrial Secrets" shall have the broadest possible definition and shall include proprietary information of any kind whatsoever.
- 8.2 Identification. All INDUSTRIAL SECRETS exchanged between the PARTIES (e.g., documents, descriptions, drawings, photographs, tapes, or other tangible things), will be clearly identified and marked with an appropriate notice, such as "*Industrial Secrets of (Sublicensee Name) or of CLNA*" with each confidential page or item marked or stamped with the appropriate notice.
- 8.3 Oral Information. Information imparted orally shall not be protected under this paragraph, unless such information is subsequently reduced to tangible form within fifteen (15) days of disclosure and a copy furnished to the party receiving the INDUSTRIAL SECRETS.
- 8.4 Excluded Information. Not included within the protection of this Article is any information which:
- 8.4.1 is known to the public;
 - 8.4.2 becomes known to the public through no fault of the party receiving the information;
 - 8.4.3 is already known to the party receiving it at the time the information is given to that party;
 - 8.4.4 becomes part of the public domain without breach of this by the recipient;
 - 8.4.5 was independently developed by the receiving party.
- 8.5 Reasonable Care; No Disclosure. A party that receives INDUSTRIAL SECRETS shall exercise the same degree of care in protecting its confidentiality as a reasonable and prudent person would take to preserve and safeguard proprietary information. Neither CLNA nor SUBLICENSEE shall make, cause or allow to be made, any reproduction, disclosure, or use of INDUSTRIAL SECRETS except:
- 8.5.1 in connection with transmission of such INDUSTRIAL SECRETS by CLNA or SUBLICENSEE to their own officers and employees having a need to know and who in writing agree to be bound by the terms of this Article 8;
 - 8.5.2 in connection with sales or testing of CORE-LOC® armor blocks, where disclosure of such information is indispensable to such sales or testing; or
 - 8.5.3 in accordance with written authorization received from the party to whom the INDUSTRIAL SECRETS belong.
- 8.6 Disclosure Requirements. In the case of any disclosure of INDUSTRIAL SECRETS to any third party under Article 8.5, the party disclosing the information shall ensure that the third party receiving the information has executed a non-disclosure agreement in a form that imposes limitations on further disclosure of the INDUSTRIAL SECRETS no less strict than the limitations under this Article 8. This requirement may be waived, in writing, on a case-by-case basis, by the owner of the INDUSTRIAL SECRETS.
- 8.7 Survival of Protection. The foregoing provisions for protection of INDUSTRIAL SECRETS shall survive for a period of five (5) years after the date of final termination of this SUBLICENSE.

Article 9. No Endorsement; Permitted Statements

9.0 SUBLICENSEE agrees not to create any appearance that the OWNER or CLNA endorses SUBLICENSEE's business or products as the result of this SUBLICENSE or otherwise. SUBLICENSEE may use the following statements in connection with PRODUCTS:

"Invented by the U.S. Army Corps of Engineers."

"Developed at the Engineering Research and Development Center, Coastal and Hydraulics Laboratory of the U.S. Army Corps of Engineers."

"Core-Loc® Concrete Armor Unit patent held by the U.S. Army Corps of Engineers."

"Core-Loc Armor Unit" manufactured under exclusive license from CORE-LOC NORTH AMERICA, Tacoma, Washington, USA."

Article 10. Reservation of Rights

10.0 Under Title 37 of the Code of Federal Regulations of the United States, Section 404.7, the LICENSE and this SUBLICENSE are subject to the irrevocable, worldwide, royalty-free right of the Government of the United States of America to practice and have practiced by third parties for government purposes the products and methods described and claimed in the PATENT.

Article 11. Disclaimers

- 11.1 No Warranty of Patent Validity; Warranties Disclaimed. CLNA makes no representation or warranty as to the validity of U.S. Patent No. 5,441,362 or Mexican Patent No. 187994 or foreign patents pending, or that the exercise of this license will not result in the infringement of other patents. Neither CLNA nor its employees assume any liability whatsoever resulting from the exercise of this SUBLICENSE. Except as set forth in section 7.0, CLNA makes no representation or warranty whatsoever as to the PATENT, PRODUCTS, TRADEMARKS, KNOW-HOW or other assistance, or as to PROPRIETARY INFORMATION, and CLNA hereby disclaims any express or implied warranties, including implied warranties of fitness for a particular purpose and of merchantability.
- 11.2 No Immunity. Nothing relating to this SUBLICENSE, nor the sublicense grant itself shall be construed to confer upon SUBLICENSEE any immunity from or defenses under the antitrust laws or from a charge of patent misuse, and the acquisition and use of the rights pursuant to this license shall not be immunized from the operation of state or Federal law of the United Mexican States with regard to Industrial Property.
- 11.3 No Other Invention. Nothing contained in this SUBLICENSE shall be interpreted to grant to SUBLICENSEE any rights with respect to any invention other than the inventions claimed in the PATENT.
- 11.4 Indemnity. SUBLICENSEE agrees to defend, indemnify, and hold CLNA harmless from and against all liability, demands, damages, expenses for losses and death, personal injury, illness or property damage and economic losses of every kind and description, including reasonable attorneys' fees, arising out of the conduct of SUBLICENSEE or any third party under this SUBLICENSE or out of the sale, manufacture, use or other disposition by SUBLICENSEE or its customers or any other transferee of any PRODUCTS.

Article 12. Modification or Termination

- 12.1 Grounds. CLNA may terminate or modify this LICENSE in whole or in part if:

- (a) CLNA determines that the SUBLICENSEE is not making reasonable progress in the royalty bearing manufacture and sale of PRODUCTS and SUBLICENSEE cannot otherwise promptly and reasonably demonstrate to the satisfaction of CLNA that SUBLICENSEE has taken or can be expected to take within a reasonable time effective steps to achieve royalty bearing practical application of the licensed invention; or
- (b) CLNA is notified by the OWNER of the OWNER'S determination that such action is necessary to meet the requirements for public use specified by Federal Regulations issued after the date of this SUBLICENSE and such requirements are not reasonably satisfied by this SUBLICENSE; or
- (c) SUBLICENSEE has willfully made a false material statement or willfully omitted a material fact in connection with obtaining this SUBLICENSE or in any report required by this SUBLICENSE; or
- (d) SUBLICENSEE fails to timely pay any license fee or royalty required by this SUBLICENSE or commits a substantial breach of any covenant or agreement contained in this SUBLICENSE; or
- (e) SUBLICENSEE is adjudged as bankrupt or has all or a substantial portion of its assets, relating to or utilized in performing licensed operations, placed in the hands of a temporary or permanent receiver or makes any assignment or other accommodation for the benefit of creditors, unless SUBLICENSEE enters bankruptcy proceedings solely for the purpose of reorganizing and continues to do business during and after the bankruptcy on terms satisfactory at all times to CLNA.

12.2 Advance Notice: Exceptions. Before modifying or terminating in whole or in part this SUBLICENSE under any of the specified terms and conditions permitting modification or termination, other than by mutual agreement, CLNA shall furnish SUBLICENSEE a written notice of intention to modify or terminate in whole or in part this SUBLICENSE, and SUBLICENSEE shall be allowed thirty (30) days after such notice to remedy any breach of any covenant or agreement set forth in this LICENSE or to otherwise satisfy CLNA that this SUBLICENSE should not be modified or terminated in whole or in part. Notwithstanding the foregoing provisions of this section 12, no advance notice shall be necessary if termination of this SUBLICENSE is based on reasonable grounds to believe one or more events specified in section 12.0 (c) or 12.0 (d) has occurred.

12.3 Survival. The following rights and obligations shall survive any termination of this SUBLICENSE to the extent necessary to permit their complete fulfillment or discharge:

- (a) SUBLICENSEE's obligation to supply a final report as specified in Article 3;
- (b) SUBLICENSEE's obligation to maintain records and CLNA's right to conduct a final audit as provided in Article 4;
- (c) Any cause of action or claim of CLNA accrued, or to accrue, because of any breach or default by SUBLICENSEE.

12.4 Existing Contracts. In the event of a termination of this SUBLICENSE for a reason other than an event specified in section 12.0 (c) or 12.0 (d), SUBLICENSEE may sell his remaining inventory of PRODUCTS after such termination and SUBLICENSEE may fulfill currently effective contractual obligations to supply PRODUCTS under contracts entered into before the date of termination, provided such obligations can be fulfilled within one calendar year of the date of termination.

SUBLICENSEE shall pay license fees and royalties as set forth in Article 3 on all PRODUCTS sold after termination.

Article 13. Infringement and Litigation

13.1 Should CLNA or SUBLICENSEE become aware of any infringement or potential infringement of U.S. Patent No. 5,441,362 or Mexican Patent No. 187994 or foreign patents (whether granted or pending), they agree to give the other party prompt written notice detailing as many facts as possible concerning such infringement or potential infringement.

13.2 If CLNA fails to bring an infringement action or provide SUBLICENSEE with its written intent to bring an infringement action within three (3) months after receipt of a bona fide notification of infringement of Mexican Patent No. 187994, SUBLICENSEE is authorized:

- (a) To bring suit in any court of competent jurisdiction in its own name or, if required by law, jointly with CLNA, at SUBLICENSEE's expense and on SUBLICENSEE's behalf, for infringement of Mexican Patent No. 187994, or any patent issued with respect to an improvement of the invention covered by this SUBLICENSE, and any renewals, reissues, reexaminations, divisions, continuations, or extensions thereof;
- (b) In any such suit, to enjoin infringement and to collect for its own benefit, any damages, profits, and awards of whatever nature recoverable for such infringement; and
- (c) To settle any claim or suit for infringement of Mexican Patent No. 187994, or any patent issued with respect to an improvement of the invention covered by this SUBLICENSE, and any renewals, reissues, reexaminations, divisions, continuations, or extensions of any such patents. However, in no instance shall SUBLICENSEE be able to settle any such claim or suit by granting a sublicense without the approval of CLNA at its sole discretion.

13.3 SUBLICENSEE's obligation to pay license fees and royalties to CLNA shall continue unaffected during any infringement or infringement litigation, and during any dispute or litigation between the parties or other negotiations.

Article 14. Prosecution Of Applications; Invalidity of Patent

14.1 CLNA in cooperation with the OWNER shall have full and complete control of the prosecution of all patent applications related to the PRODUCTS, and of any reissue or disclaimer proceedings in connection therewith. CLNA shall keep SUBLICENSEE informed of such prosecutions and proceedings and shall give SUBLICENSEE reasonable opportunity to make suggestions with respect to the same, provided, however, CLNA shall be under no obligation to accept any suggestions or to continue such proceedings beyond the point considered desirable by CLNA.

14.2 If any claim of any patent under which the LICENSE or this SUBLICENSE is granted shall be declared invalid by a final decision of a court of competent jurisdiction, or if, as a result of a final decision, any such claim shall be awarded to another, SUBLICENSEE shall be relieved of all obligations under this SUBLICENSE. If any claim of any patent application covered by this the LICENSE or this SUBLICENSE shall be finally rejected, such claim shall thereafter be treated as if it did not exist, unless and until such final rejection shall be withdrawn or reversed and such claim allowed.

Article 15. Miscellaneous

15.1 Disputes. Before SUBLICENSEE or CLNA may bring suit in any court concerning an issue relating to this SUBLICENSE, such party must first seek in good faith resolution of the issues through

negotiation or other forms of nonbinding alternative dispute resolution mutually acceptable to the parties. The requirements of this section 15.0 do not apply to an event specified in section 12.0 (c) or 12.0 (d).

- 15.2 Export Control Laws. SUBLICENSEE is hereby placed on legal notice that by Federal Law of the United States of America an export license from the Department of Commerce may be required before exporting data or commodities to a foreign country or to a foreign person within the United States. The controlling laws are the Export Administration Act (50 U.S.C. 2401 et seq.), and the Arms Control Act (22 U.S.C. 2751 et seq.).
- 15.3 Restricted Sales. Due to a ruling from the U.S. Department of Commerce, Core-Loc can be sold anywhere in the world with the exception of Libya, Cuba, and North Korea. It may not be sold nor used on projects in these countries. Additionally, PRODUCTS produced under the provisions of this SUBLICENSE shall not be made, sold or used except in connection with the defined PROJECT and for no other purpose whatsoever.
- 15.4 Patent Maintenance Fees. CLNA or OWNER shall pay all maintenance fees to maintain the life of Mexican Patent No. 187994. However, in the event that CLNA or OWNER fails to make said payments, SUBLICENSEE may pay any maintenance fee when due and receive credit against any royalty otherwise due to CLNA.
- 15.5 Governing Law; Attorneys' Fees. This SUBLICENSE has been delivered to CLNA and accepted by CLNA and OWNER in the United States of America. If there is a lawsuit concerning this contract, SUBLICENSEE agrees with CLNA to submit to the jurisdiction of the courts of Pierce County, the State of Washington, USA. This Agreement shall be governed by and construed in accordance with the laws of the State of Washington, USA; provided, however, that if any action or proceeding in connection with this SUBLICENSE is brought in any court in the United Mexican States, this SUBLICENSE shall be deemed to be governed under the laws of the United Mexican States, and SUBLICENSEE agrees upon Lenders request to submit to the jurisdiction of any federal court sitting in the City of Mexico, Federal District, United Mexican States. The prevailing party in any dispute shall be entitled to recover its taxable costs, all reasonable litigation expenses and reasonable attorneys' fees.
- 15.6 Force Majeure. Neither party shall be liable for any unforeseeable event beyond its reasonable control not caused by the fault or negligence of such party, as the result of which a party is rendered unable to perform its obligations under this SUBLICENSE and which disability cannot be overcome by the exercise of reasonable diligence, including, but not limited to, flood, drought, earthquake, storm, fire, pestilence, lightning and other natural catastrophes, epidemic, war, riot, civic disturbance or disobedience, strikes, labor dispute, sabotage, or any order or injunction made by a court or public agency. In the event of the occurrence of such a force majeure event, the party unable to perform shall promptly notify the other party, describe the event and the nature of the disability in detail, and continuously expend its best efforts to resume performance as quickly as possible and shall suspend performance only for the least period of time necessary as a result of the force majeure event.
- 15.7 No Assignment. This SUBLICENSE may not be assigned or transferred by SUBLICENSEE without the prior written consent of CLNA. Such consent may be withheld by CLNA in its absolute discretion, with or without cause.
- 15.8 Entire Agreement. This SUBLICENSE constitutes the entire agreement and understanding between CLNA and SUBLICENSEE with respect to the subject matter, and any modification of this SUBLICENSE must be in writing and signed by a duly authorized representative of both CLNA and

SUBLICENSEE. There are no understandings, representations, or warranties between CLNA and SUBLICENSEE except as expressly set forth in this SUBLICENSE.

15.9 Officials Not to Benefit. No member of, or delegate to the United States Congress, or resident commissioner, shall be admitted to any share or part of this SUBLICENSE or the LICENSE, nor to any benefit that may arise there from.

15.10 Headings. Titles and headings of the Sections and Subsections of this SUBLICENSE are for the convenience only and do not form a part of this SUBLICENSE and shall in no way affect the interpretation of this SUBLICENSE. The BACKGROUND is not merely a recital but a substantive part of this SUBLICENSE.

15.11 Severability. The illegality or invalidity of any provisions of this SUBLICENSE shall not impair, affect or invalidate the other provisions of this SUBLICENSE.

15.12 Exhibits. All Exhibits mentioned in this Sublicense are incorporated herein as though set forth in full.

Article 16. Notices

16.0 All notices pertaining to or required by this SUBLICENSE shall be in writing and shall be signed by an authorized representative and shall be delivered by hand or sent by certified mail, return receipt requested, with postage prepaid, addressed as follows:

For CLNA: Gordon K. Prestedge
PRESTEDGE RETIEF DRESNER WIJNBERG USA LLC CORE-LOC NORTH AMERICA
1123 Port of Tacoma Road Tacoma, WA 98421
USA

For SUBLICENSEE:

or such mailing address as the parties may specify in writing.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed by their duly authorized representatives.

SUBLICENSEE:

.....
.....

LICENSEE:

CORE-LOC NORTH AMERICA,
a Washington corporation

BY _____

BY _____ Gordon K. Prestedge

Date _____

Date _____

OWNER APPROVAL

THE UNITED STATES OF AMERICA,
as represented by the U.S. Army
Engineering Research and Development
Center

By _____

Name printed _____

Date _____