

SEE SHEETS E02 & E05
FOR WORK IN THIS AREA

SEE SHEETS E03 & E06
FOR WORK IN THIS AREA

SEE SHEETS E04 & E07
FOR WORK IN THIS AREA

(NOTE 1)

ELECTRICAL VAULT
(SEE SHEET E12)

TERMINAL BUILDING
(NOTE 1)

ATCT

TERMINAL APRON

- NOTES:
1. PROVIDE, INSTALL, AND TEST A COMPLETE WIRELESS WIFI BRIDGE NETWORK AT THE TERMINAL BUILDING AND ELECTRICAL VAULT. REFER TO SHEET E12 FOR MORE DETAILS.
 2. REFER TO CIVIL DRAWINGS FOR CONSTRUCTION PHASING PLANS.

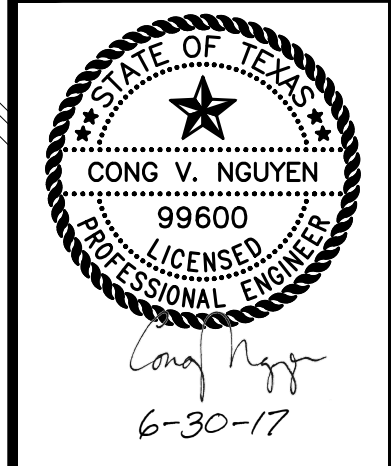
LEGEND	
	WORK AREA LIMITS OF PLANS
	EXISTING TAXIWAY REMOVAL
	PROPOSED TAXIWAY PAVEMENT CONSTRUCTION

MARK	REVISION	DATE

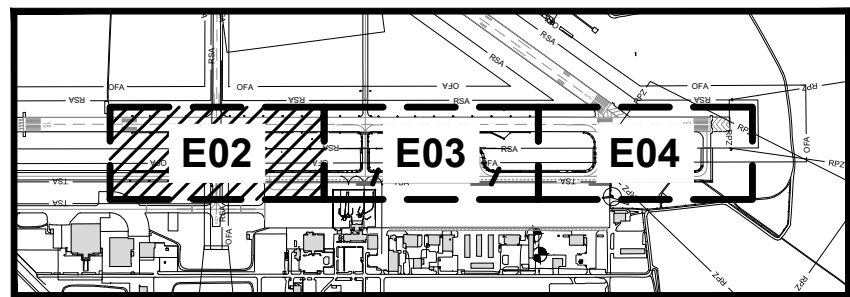
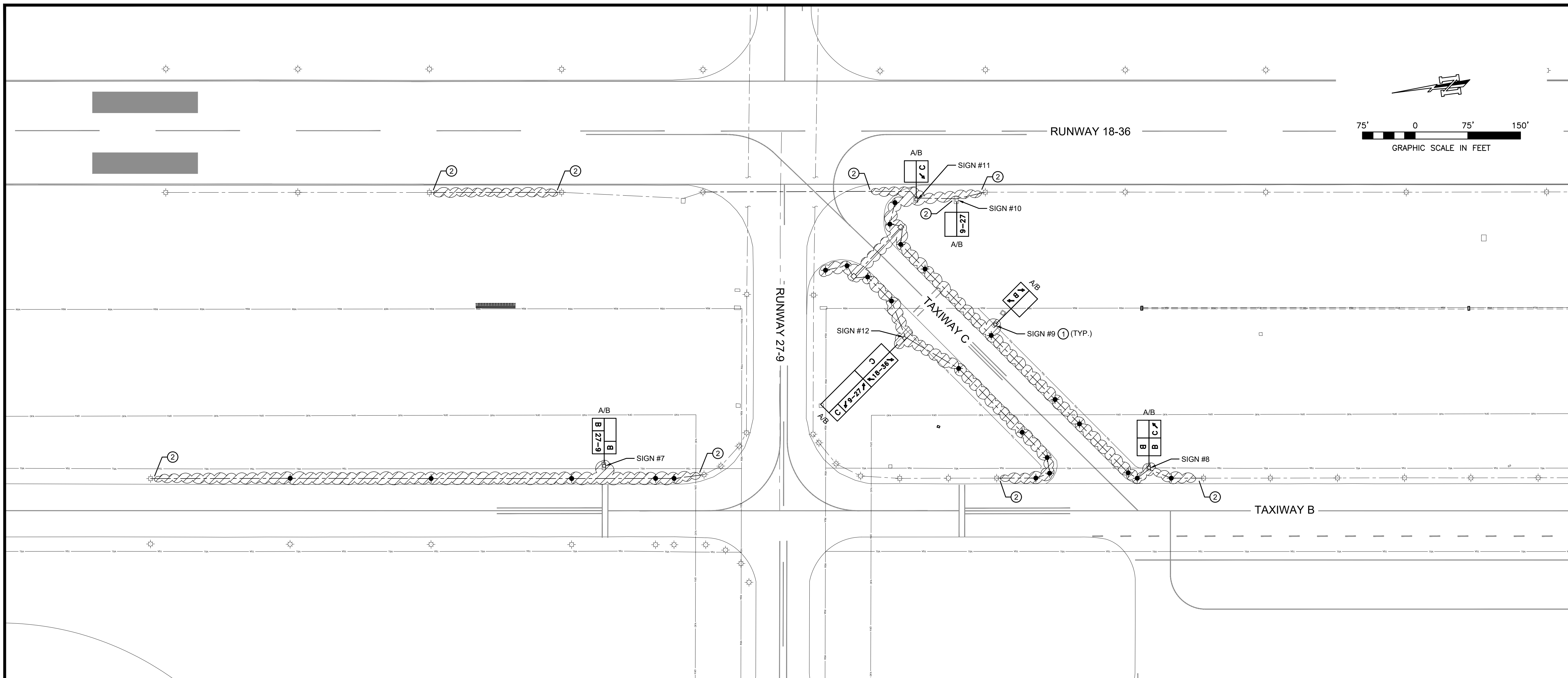
ELECTRICAL KEY PLAN

**SAN ANGELO REGIONAL
AIRPORT TAXIWAY
RECONFIGURATION PROJECT
SAN ANGELO, TEXAS**

DRAWN BY: MB
DESIGNED BY: CYN
LATEST REVISION: 6/29/2017
KSA JOB NO.: SAN1069
PROJECT NAME: SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT



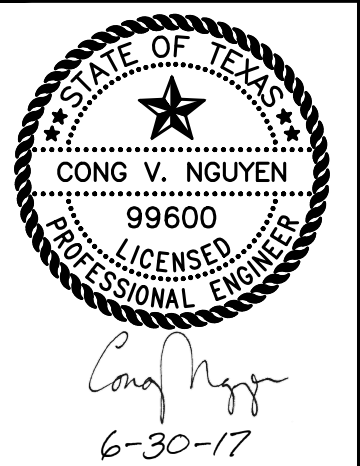
SEAL:
SHEET NO. **E01**



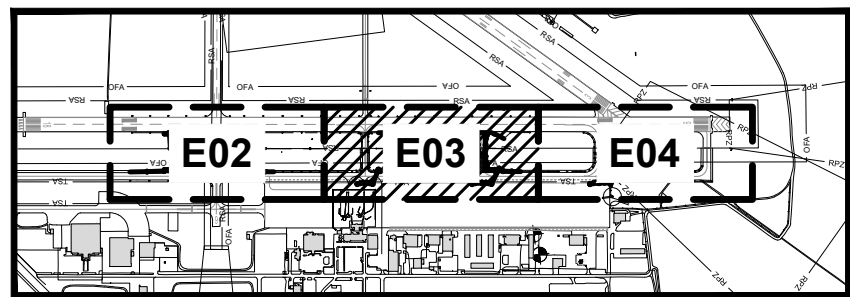
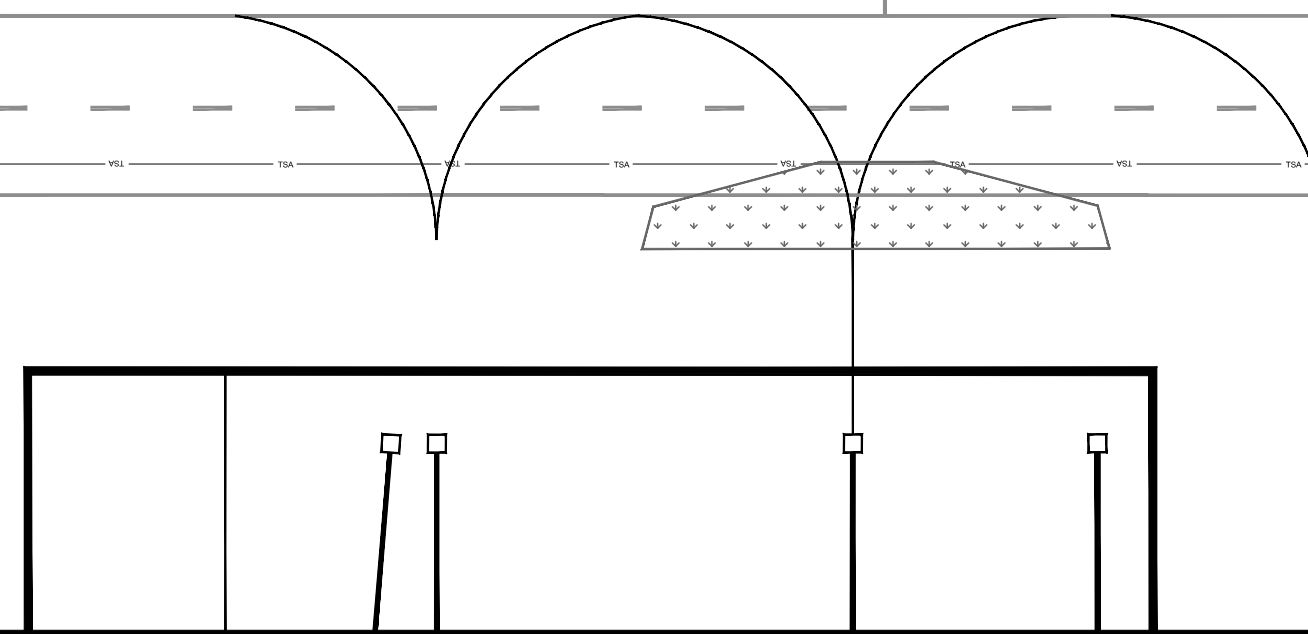
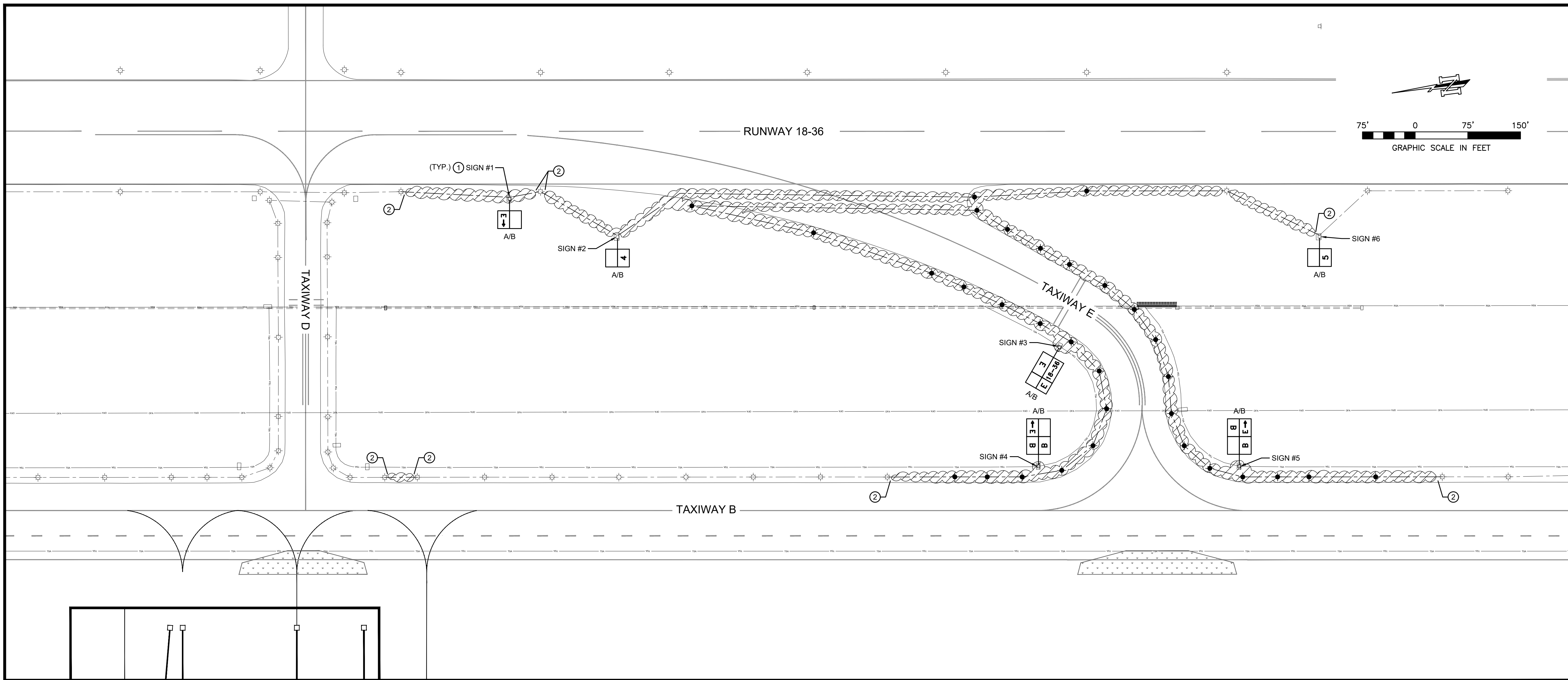
- KEYED NOTES:**
- ① REFER TO SIGN SCHEDULE FOR SIGN MODIFICATION REQUIREMENTS.
 - ② REMOVE EXISTING CONDUIT AND RETAIN CONDUIT STUB OUT FROM BASE CAN FOR RECONNECTION. REMOVE CABLE BETWEEN EDGE LIGHTS.

LEGEND	
	WORK LIMITS OF PHASE
	TAXIWAY SAFETY AREA
	RUNWAY SAFETY AREA
	CENTER-LINE OF PROPOSED ELECTRICAL DUCT BANK
	CENTER-LINE OF EXISTING ELECTRICAL DUCT BANK
	CENTER-LINE OF PROPOSED BORED CONDUIT
	EXISTING AIRFIELD LIGHTS TO BE REMOVED
	EXISTING SIGN AND CONCRETE PAD TO BE REMOVED
	EXISTING ELECTRICAL DUCT BANK TO BE REMOVED
	PROPOSED HANDHOLE (L-867E)
	PROPOSED MRL, MITL, BASE CAN, TRANSFORMER, AND CONCRETE PAD
	EXISTING EDGE LIGHT TO REMAIN
	PROPOSED SIGN AND CONCRETE PAD
	EXISTING SIGN TO REMAIN OR RELOCATED EXISTING SIGN
	CENTERLINE OF COUNTERPOISE

DRAWN BY: MB	DESIGNED BY: CVN	LATEST REVISION: 6/29/2017	KSA JOB NO.: SAN1069	PROJECT NAME: SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT SAN ANGELO, TEXAS	SHEET NO.: E02
				ELECTRICAL PLAN - WORK AREA 1 DEMOLITION	MARK
				REVISION	DATE
KSA 100% SERVICE PROJECTS PROJECTS/SAN ANGELO, TX ELECTRICAL/07 CAD/02 PROJECT/30 SHEET/301 SHEET SETS/SAN 069-ELEC-SITE/DWG/ELECTRICAL PLAN - WORK AREA 1/069-17-01/01/17					



SEAL:
SHEET NO. E02



- KEYED NOTES:**
- ① REFER TO SIGN SCHEDULE FOR SIGN MODIFICATION REQUIREMENTS.
 - ② REMOVE EXISTING CONDUIT AND RETAIN CONDUIT STUB OUT FROM BASE CAN FOR RECONNECTION. REMOVE CABLE BETWEEN EDGE LIGHTS.

LEGEND	
	WORK LIMITS OF PHASE
	TAXIWAY SAFETY AREA
	RUNWAY SAFETY AREA
	CENTER-LINE OF PROPOSED ELECTRICAL DUCT BANK
	CENTER-LINE OF EXISTING ELECTRICAL DUCT BANK
	CENTER-LINE OF PROPOSED BORED CONDUIT
	EXISTING AIRFIELD LIGHTS TO BE REMOVED
	EXISTING SIGN AND CONCRETE PAD TO BE REMOVED
	EXISTING ELECTRICAL DUCT BANK TO BE REMOVED
	PROPOSED HANDHOLE (L-867E)
	PROPOSED MIRL, MITL, BASE CAN, TRANSFORMER, AND CONCRETE PAD
	EXISTING EDGE LIGHT TO REMAIN
	PROPOSED SIGN AND CONCRETE PAD
	EXISTING SIGN TO REMAIN OR RELOCATED EXISTING SIGN
	CENTERLINE OF COUNTERPOISE

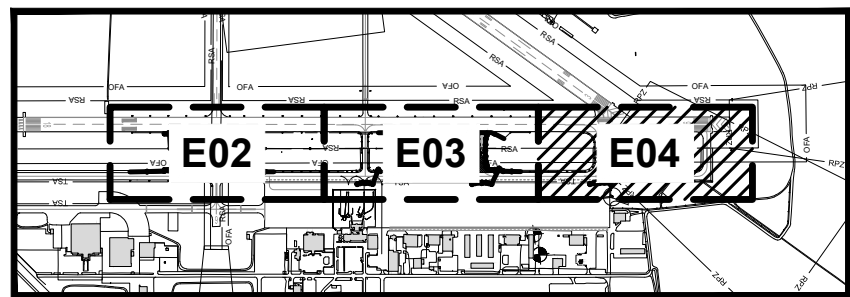
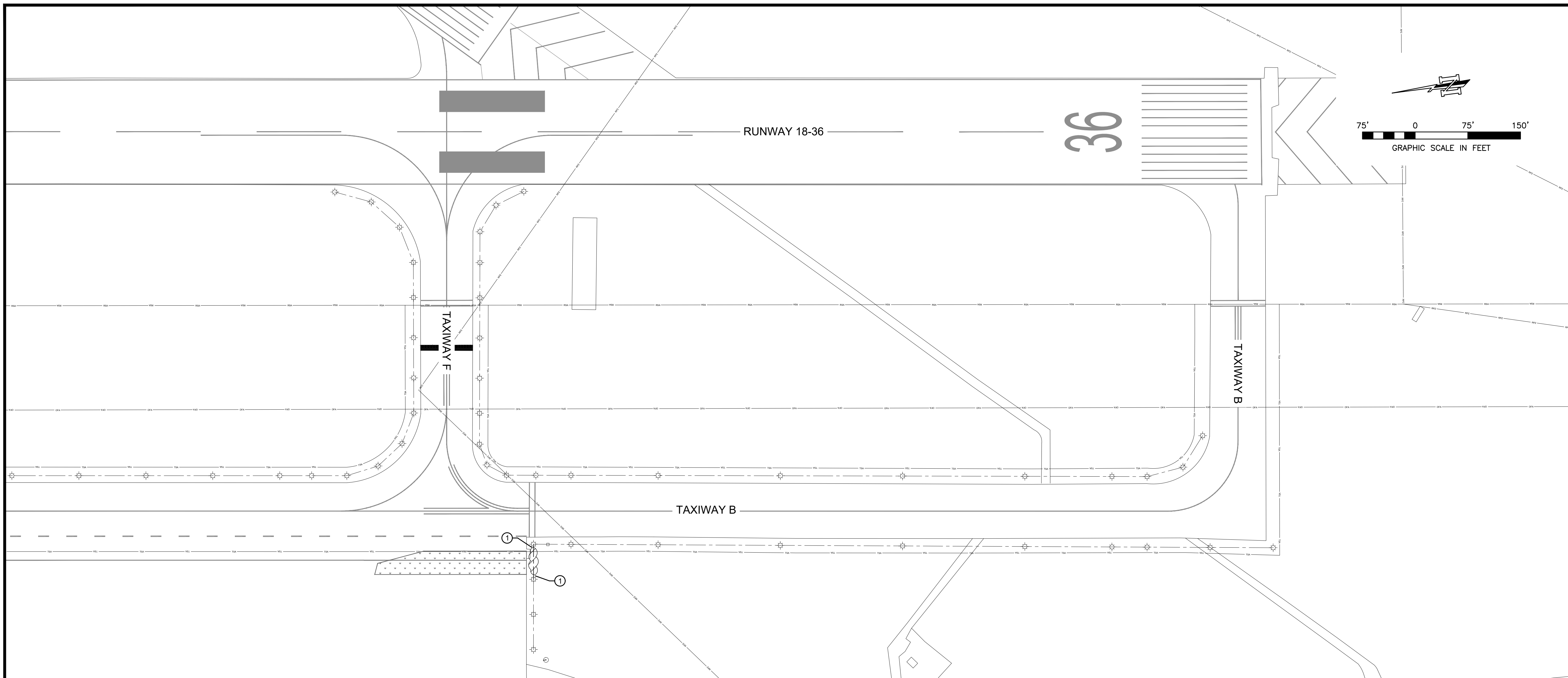
MARK	REVISION	DATE

**ELECTRICAL PLAN -
WORK AREA 2
DEMOLITION**

**SAN ANGELO REGIONAL
AIRPORT TAXIWAY
RECONFIGURATION PROJECT
SAN ANGELO, TEXAS**

DRAWN BY:	MB
DESIGNED BY:	CVN
LATEST REVISION:	6/29/2017
KSA-JOB NO.:	SAN1059
PROJECT NAME:	SAN1059

SEAL:
SHEET NO. **E03**



KEYED NOTES:
 ① REMOVE EXISTING CONDUIT AND RETAIN CONDUIT STUB OUT FROM BASE CAN FOR RECONNECTION. REMOVE CABLE BETWEEN EDGE LIGHTS.

LEGEND	
	WORK LIMITS OF PHASE
	TAXIWAY SAFETY AREA
	RUNWAY SAFETY AREA
	CENTER-LINE OF PROPOSED ELECTRICAL DUCT BANK
	CENTER-LINE OF EXISTING ELECTRICAL DUCT BANK
	CENTER-LINE OF PROPOSED BORED CONDUIT
	EXISTING AIRFIELD LIGHTS TO BE REMOVED
	EXISTING SIGN AND CONCRETE PAD TO BE REMOVED
	EXISTING ELECTRICAL DUCT BANK TO BE REMOVED
	PROPOSED HANDHOLE (L-867E)
	PROPOSED MIRL, MITL, BASE CAN, TRANSFORMER, AND CONCRETE PAD
	EXISTING EDGE LIGHT TO REMAIN
	PROPOSED SIGN AND CONCRETE PAD
	EXISTING SIGN TO REMAIN OR RELOCATED EXISTING SIGN
	CENTERLINE OF COUNTERPOISE

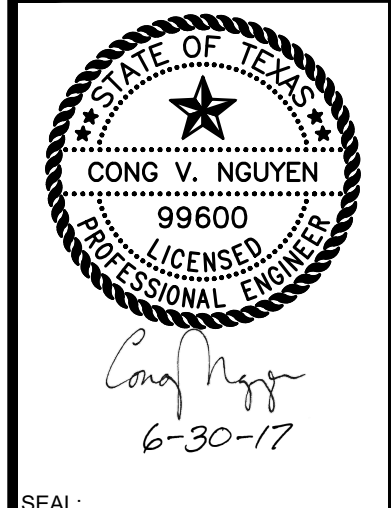
MARK	REVISION	DATE

**ELECTRICAL PLAN -
 WORK AREA 3
 DEMOLITION**

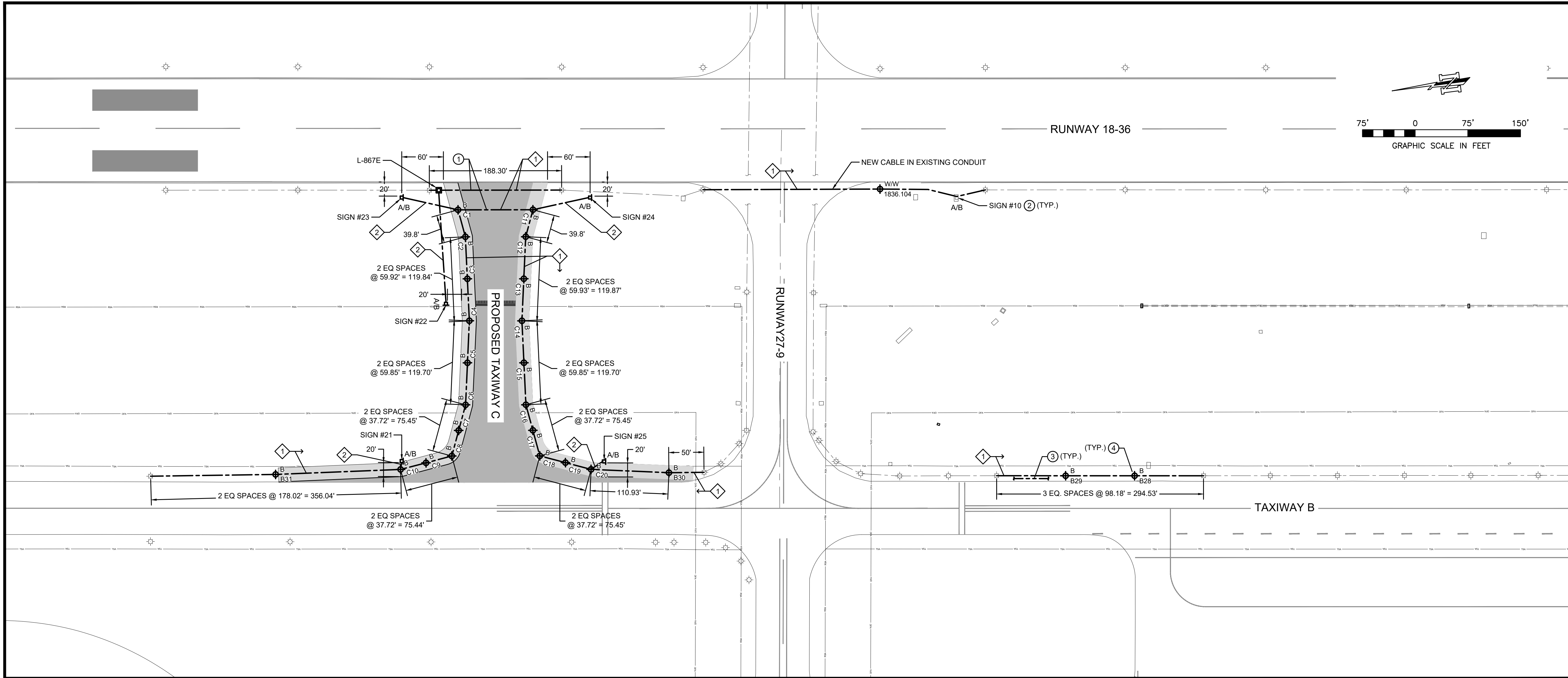
**SAN ANGELO REGIONAL
 AIRPORT TAXIWAY
 RECONFIGURATION PROJECT
 SAN ANGELO, TEXAS**

DRAWN BY:	MB
DESIGNED BY:	CVN
LATEST REVISION:	6/29/2017
KSA JOB NO.:	SAN1069

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SEAL:
 SHEET NO. **E04**



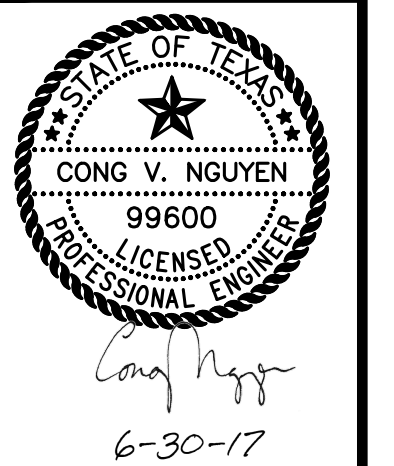
MARK	REVISION	DATE

**ELECTRICAL PLAN -
WORK AREA 1
MODIFICATION**

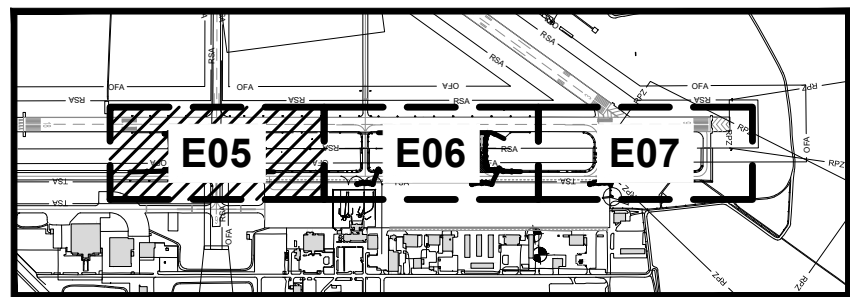
**SAN ANGELO REGIONAL
AIRPORT TAXIWAY
RECONFIGURATION PROJECT
SAN ANGELO, TEXAS**

DRAWN BY:	MB
DESIGNED BY:	CVN
LATEST REVISION:	6/29/2017
KSA-JOB NO.:	SAN_059
SHEET NO.:	E05

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SEAL:
SHEET NO.
E05

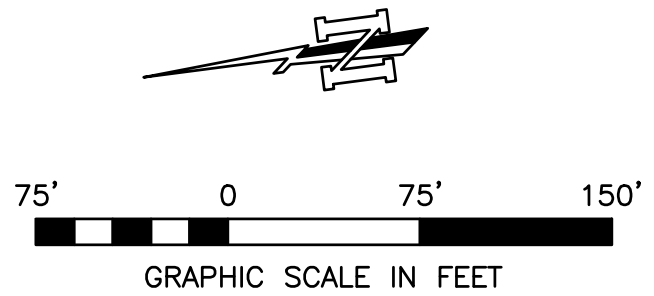
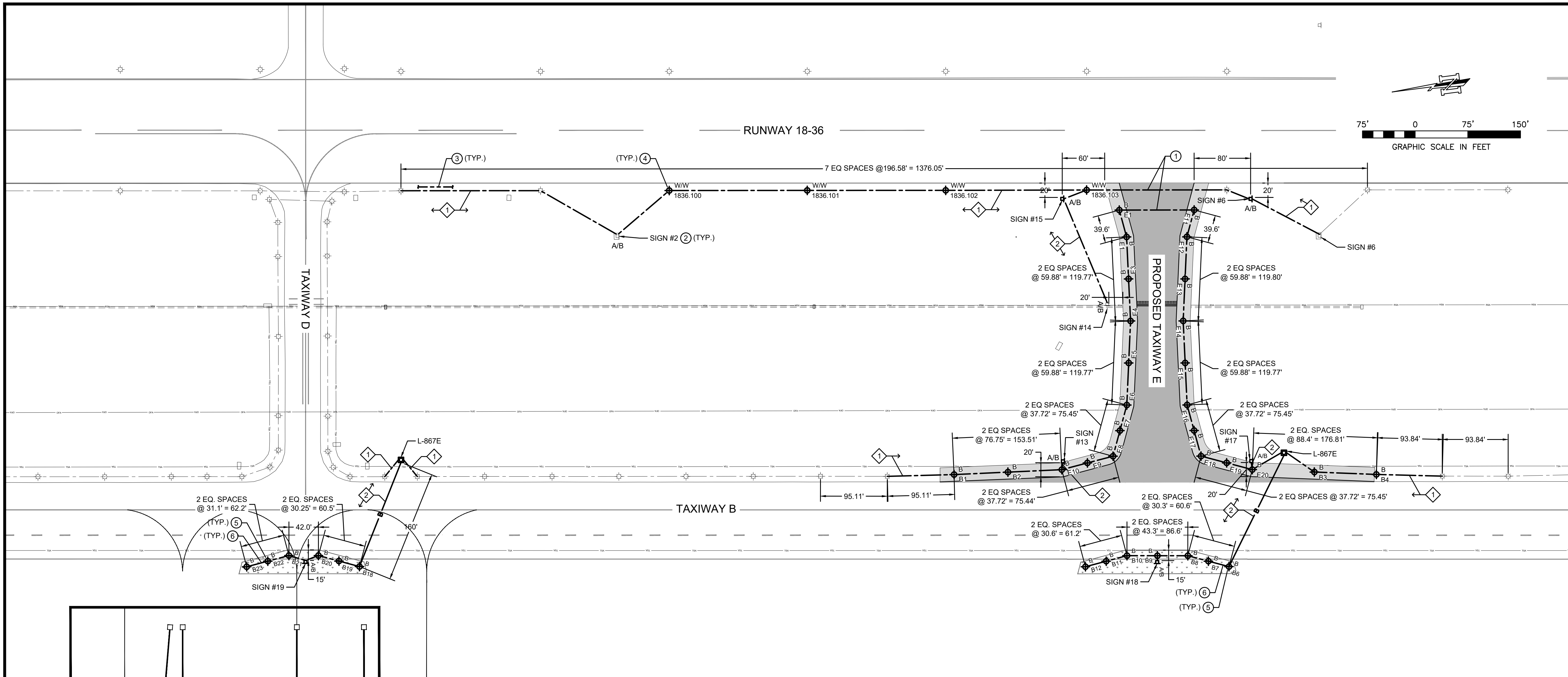


KEYED NOTES:

- ① INSTALL CONCRETE ENCASED DUCT BANK UNDER NEW PAVEMENT.
- ② REFER TO SIGN SCHEDULE FOR SIGN MODIFICATION REQUIREMENTS.
- ③ NOT SHOWN ON PLANS FOR CLARITY, INSTALL COUNTERPOISE WIRE FOR ALL NEW DUCTBANK MIDWAY BETWEEN THE PAVEMENT EDGE AND EDGE LIGHTS. EXOTHERMIC WELD NEW COUNTERPOISE WIRE TO EXISTING COUNTERPOISE WIRE FOR CONTINUITY.
- ④ NOT SHOWN ON PLANS FOR CLARITY, INSTALL MAINTENANCE PAD FOR ALL NEW EDGE LIGHT INSTALLATION ON NON-PAVED AREA.

CONDUIT SCHEDULE	
①	1#8 AWG (5KV), 2"C
②	2#8 AWG (5KV), 2"C

LEGEND	
	WORK LIMITS OF PHASE
	TAXIWAY SAFETY AREA
	RUNWAY SAFETY AREA
	CENTER-LINE OF PROPOSED ELECTRICAL DUCT BANK
	CENTER-LINE OF EXISTING ELECTRICAL DUCT BANK
	CENTER-LINE OF PROPOSED BORED CONDUIT
	EXISTING AIRFIELD LIGHTS TO BE REMOVED
	EXISTING SIGN AND CONCRETE PAD TO BE REMOVED
	EXISTING ELECTRICAL DUCT BANK TO BE REMOVED
	PROPOSED HANDHOLE (L-867E)
	PROPOSED MIRL, MITL, BASE CAN, TRANSFORMER, AND CONCRETE PAD
	EXISTING EDGE LIGHT TO REMAIN
	PROPOSED SIGN AND CONCRETE PAD
	EXISTING SIGN TO REMAIN OR RELOCATED EXISTING SIGN
	CENTERLINE OF COUNTERPOISE



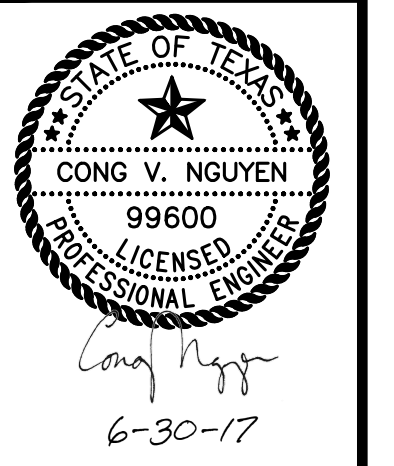
MARK	REVISION	DATE

**ELECTRICAL PLAN -
WORK AREA 2
MODIFICATION**

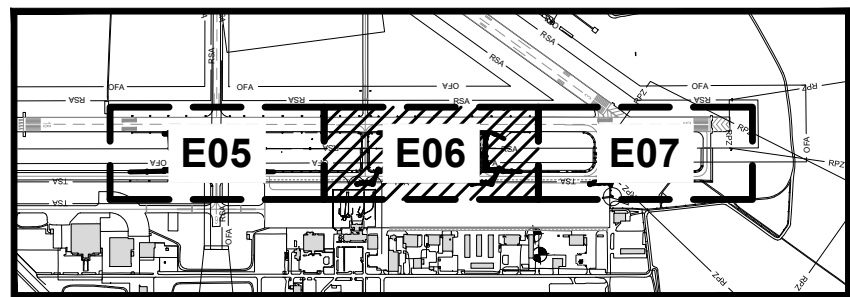
**SAN ANGELO REGIONAL
AIRPORT TAXIWAY
RECONFIGURATION PROJECT
SAN ANGELO, TEXAS**

DRAWN BY:	MB
DESIGNED BY:	CVN
LATEST REVISION:	6/29/2017
KSA JOB NO.:	SAN1059
PROJECT NAME:	

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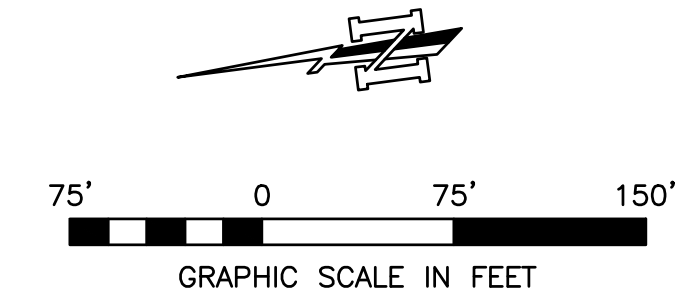
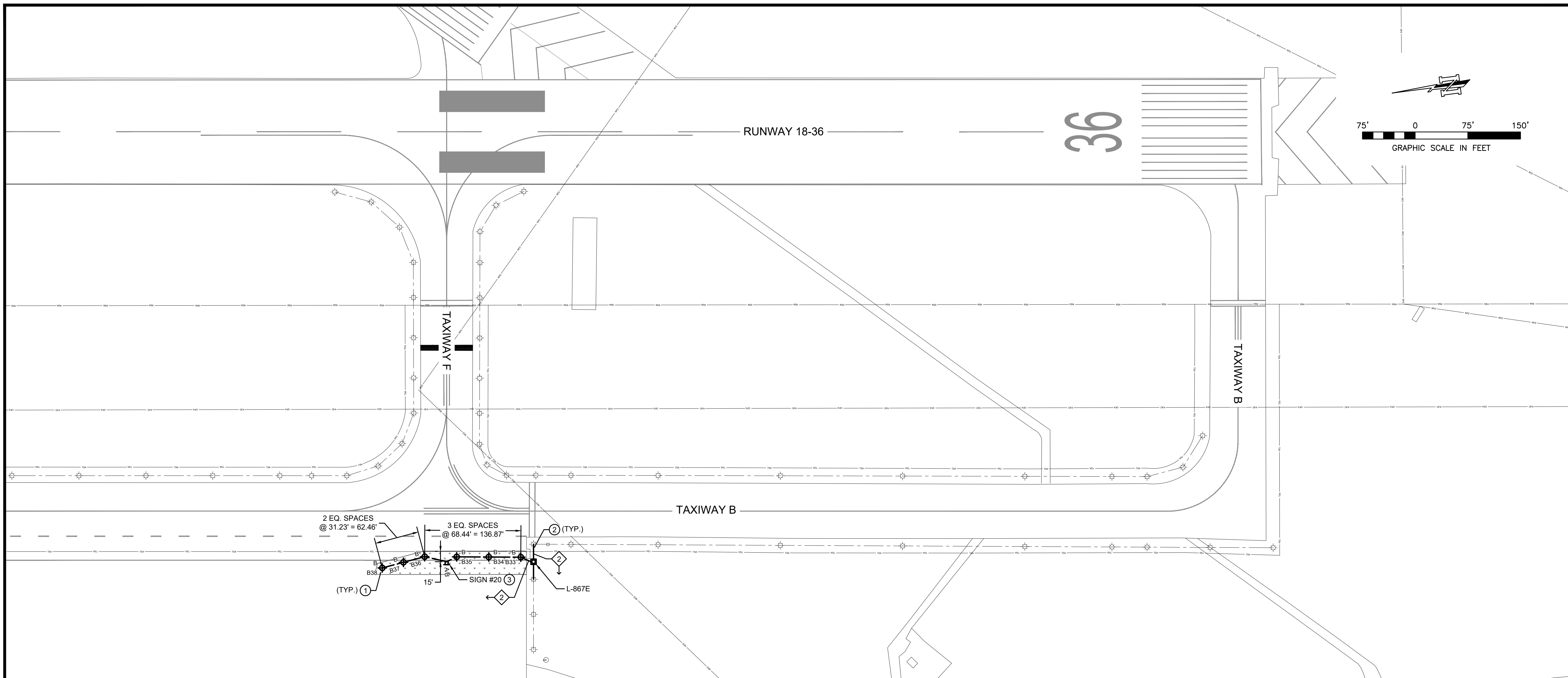
SEAL:
SHEET NO.
E06



- KEYED NOTES:**
- INSTALL CONCRETE ENCASED DUCT BANK UNDER NEW PAVEMENT.
 - REFER TO SIGN SCHEDULE FOR SIGN MODIFICATION REQUIREMENTS.
 - NOT SHOWN ON PLANS FOR CLARITY, INSTALL COUNTERPOISE WIRE FOR ALL NEW DUCTBANK MIDWAY BETWEEN THE PAVEMENT EDGE AND EDGE LIGHTS. EXOTHERMIC WELD NEW COUNTERPOISE WIRE TO EXISTING COUNTERPOISE WIRE FOR CONTINUITY.
 - NOT SHOWN ON PLANS FOR CLARITY, INSTALL MAINTENANCE PAD FOR ALL NEW EDGE LIGHT INSTALLATION ON NON-PAVED AREA.
 - REFER TO INSTALLATION DETAILS ON SHEET E09 FOR CORE DRILL NEW BASE CAN IN EXISTING PCC PAVEMENT AND BORE CONDUIT UNDER PAVEMENT.
 - BORE 2" CONDUIT UNDER EXISTING PAVEMENT. SEE SHEET E09 FOR INSTALLATION DETAILS AT IN-PAVEMENT BASE CAN.

CONDUIT SCHEDULE	
①	1#8 AWG (5KV), 2"C
②	2#8 AWG (5KV), 2"C

LEGEND	
	WORK LIMITS OF PHASE
	TAXIWAY SAFETY AREA
	RUNWAY SAFETY AREA
	CENTER-LINE OF PROPOSED ELECTRICAL DUCT BANK
	CENTER-LINE OF EXISTING ELECTRICAL DUCT BANK
	CENTER-LINE OF PROPOSED BORED CONDUIT
	EXISTING AIRFIELD LIGHTS TO BE REMOVED
	EXISTING SIGN AND CONCRETE PAD TO BE REMOVED
	EXISTING ELECTRICAL DUCT BANK TO BE REMOVED
	PROPOSED HANDHOLE (L-867E)
	PROPOSED MIRL, MITL, BASE CAN, TRANSFORMER, AND CONCRETE PAD
	EXISTING EDGE LIGHT TO REMAIN
	PROPOSED SIGN AND CONCRETE PAD
	EXISTING SIGN TO REMAIN OR RELOCATED EXISTING SIGN
	CENTERLINE OF COUNTERPOISE



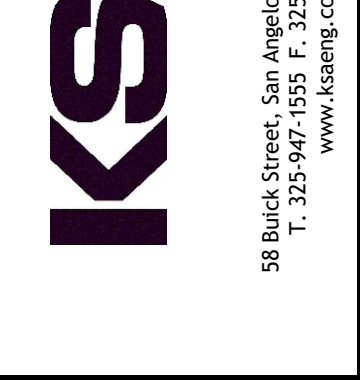
MARK	REVISION	DATE

**ELECTRICAL PLAN -
WORK AREA 3
MODIFICATION**

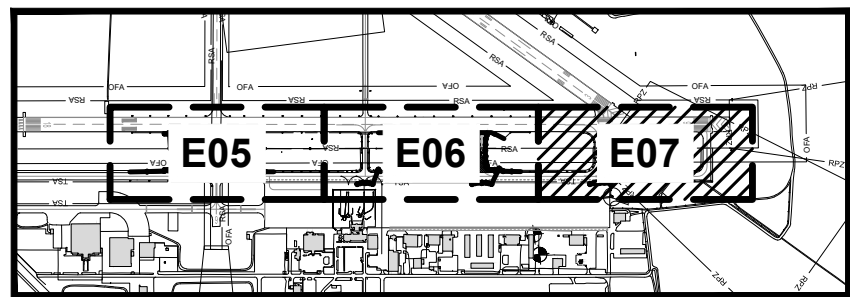
**SAN ANGELO REGIONAL
AIRPORT TAXIWAY
RECONFIGURATION PROJECT
SAN ANGELO, TEXAS**

DRAWN BY:	MB
DESIGNED BY:	CVN
LATEST REVISION:	6/29/2017
KSA JOB NO.:	SAN1059

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SEAL:
SHEET NO.
E07



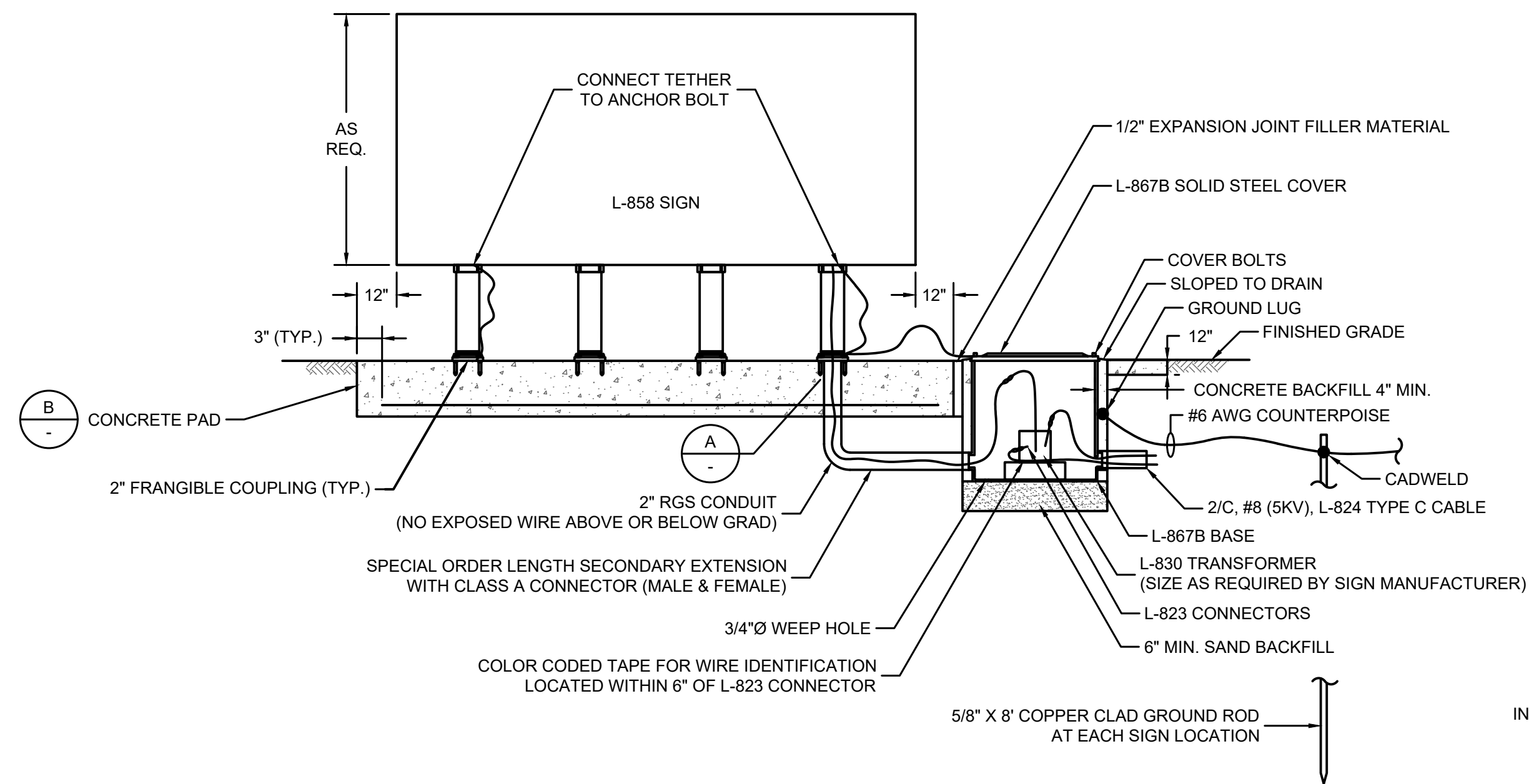
- KEYED NOTES:**
- ① REFER TO INSTALLATION DETAILS ON SHEET E09 FOR CORE DRILL NEW BASE CAN IN EXISTING PCC PAVEMENT AND BORE CONDUIT UNDER PAVEMENT.
 - ② BORE 2" CONDUIT UNDER EXISTING PAVEMENT. SEE SHEET E09 FOR INSTALLATION DETAILS AT IN-PAVEMENT BASE CAN.
 - ③ REFER TO SIGN SCHEDULE FOR SIGN MODIFICATION REQUIREMENTS.

CONDUIT SCHEDULE	
①	1#8 AWG (5KV), 2"C
②	2#8 AWG (5KV), 2"C

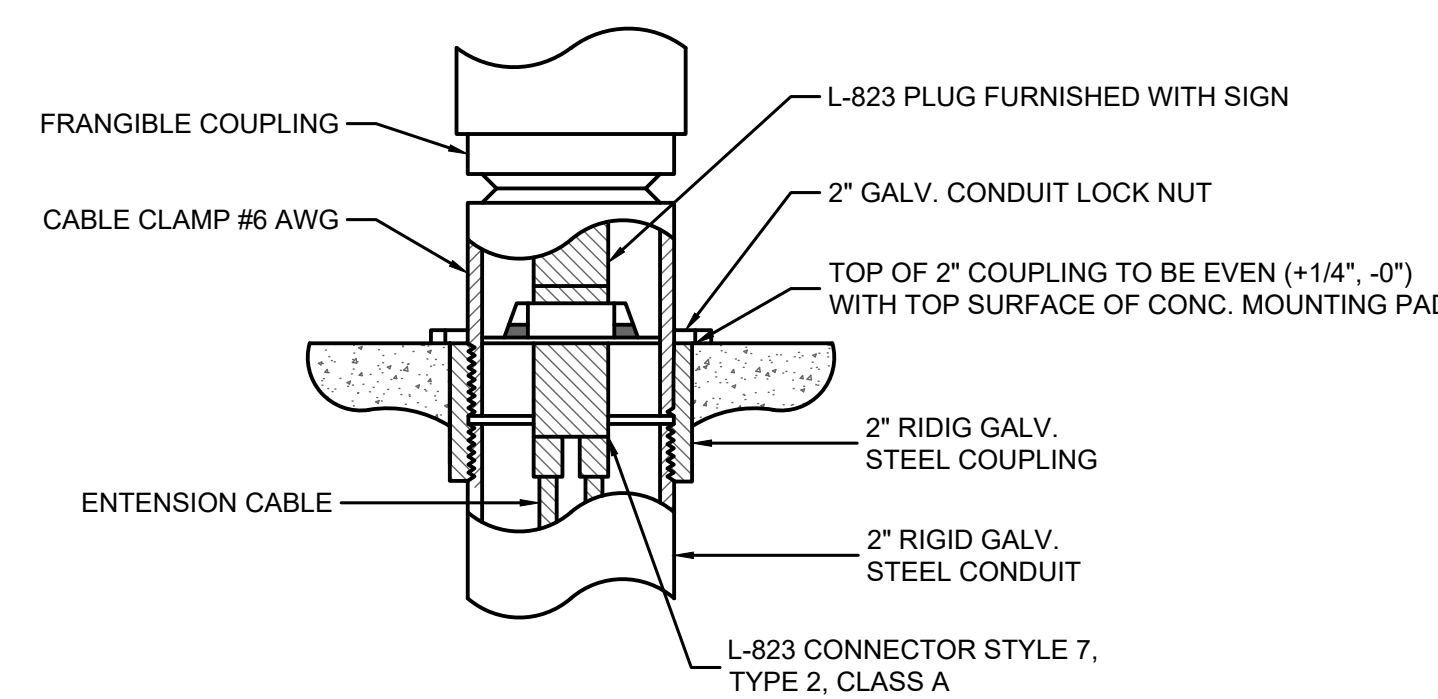
LEGEND	
	WORK LIMITS OF PHASE
	TAXIWAY SAFETY AREA
	RUNWAY SAFETY AREA
	CENTER-LINE OF PROPOSED ELECTRICAL DUCT BANK
	CENTER-LINE OF EXISTING ELECTRICAL DUCT BANK
	CENTER-LINE OF PROPOSED BORED CONDUIT
	EXISTING AIRFIELD LIGHTS TO BE REMOVED
	EXISTING SIGN AND CONCRETE PAD TO BE REMOVED
	EXISTING ELECTRICAL DUCT BANK TO BE REMOVED
	PROPOSED HANDHOLE (L-867E)
	PROPOSED MIRL, MITL, BASE CAN, TRANSFORMER, AND CONCRETE PAD
	EXISTING EDGE LIGHT TO REMAIN
	PROPOSED SIGN AND CONCRETE PAD
	EXISTING SIGN TO REMAIN OR RELOCATED EXISTING SIGN
	CENTERLINE OF COUNTERPOISE

MULTIPLE PEDESTAL SIGN DETAIL

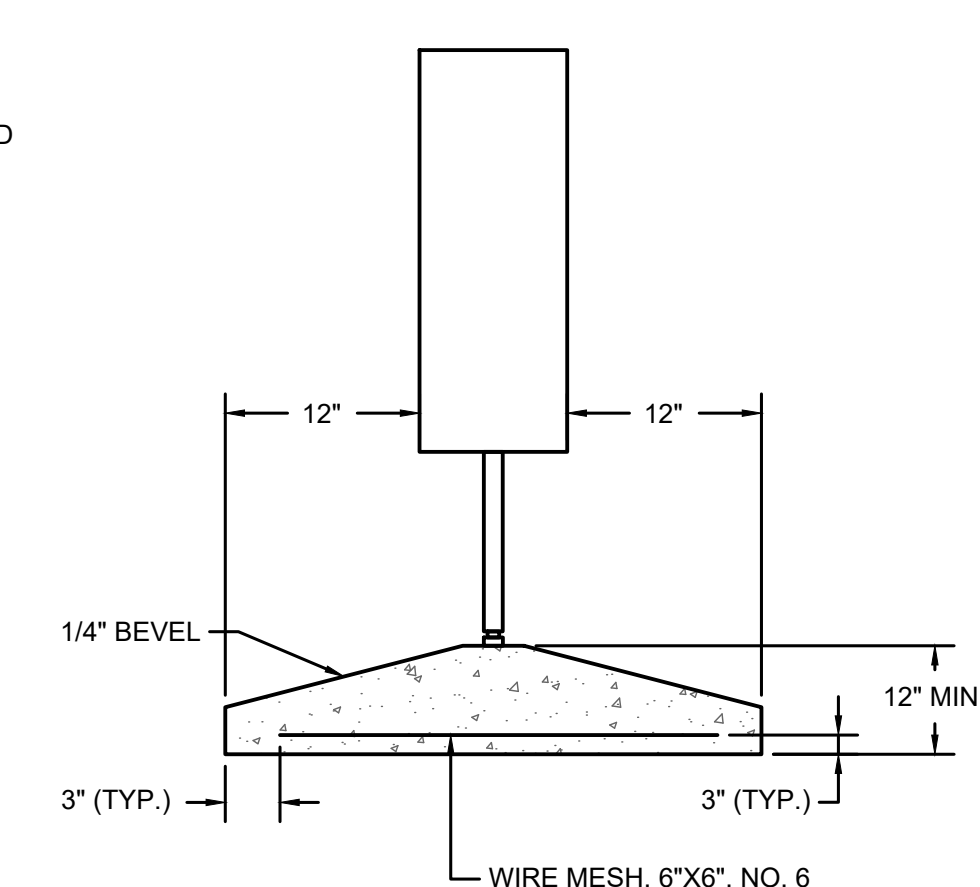
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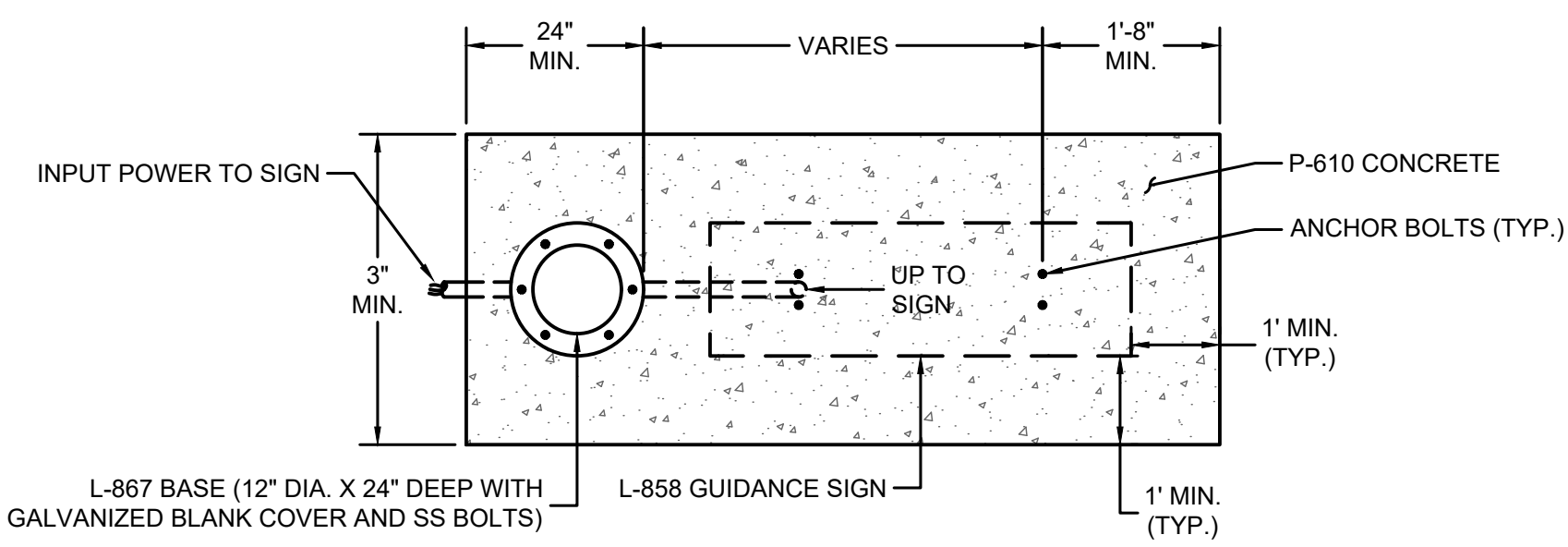
ELECTRICAL CONNECTION



SIGN ELEVATION



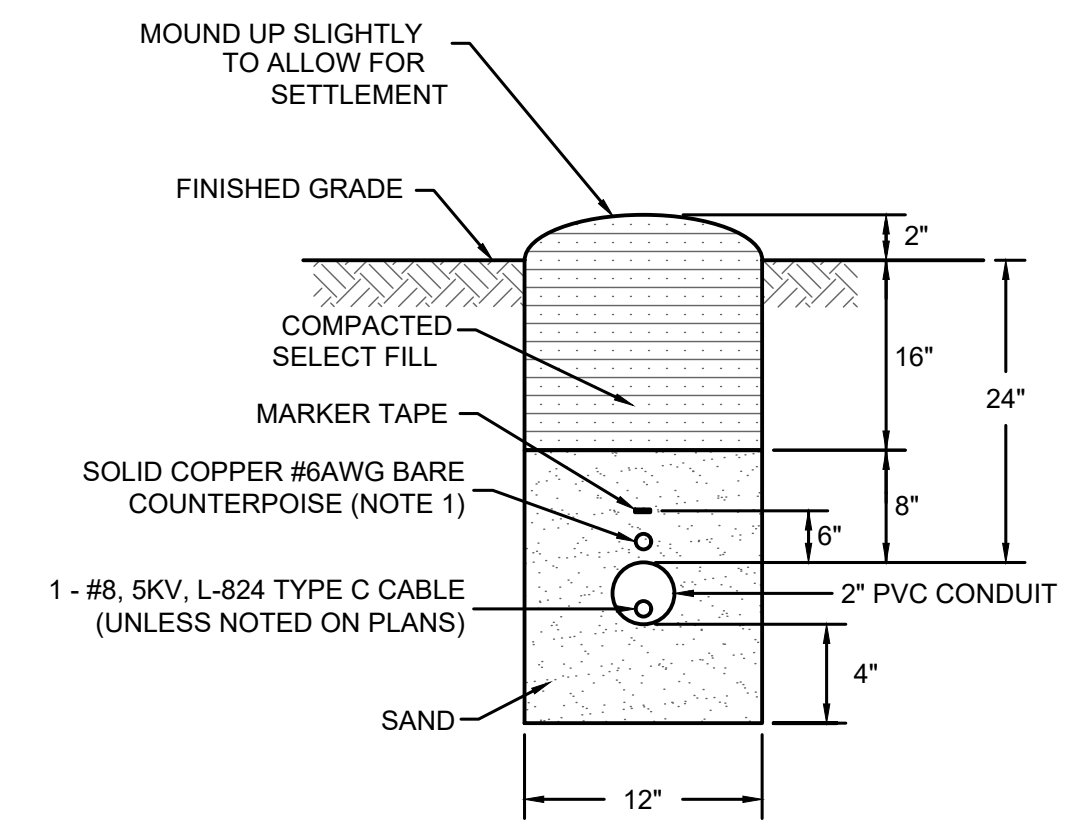
SIGN PLAN VIEW



- NOTES:**
- SEE SIGN SCHEDULE FOR SIGN LEGEND, LOCATION, TYPE, SIZE AND CLASS.
 - NUMBER AN SPACING OF LEGS AS PER MANUFACTURER'S REQUIREMENTS.
 - PROVIDE 3' MIN. SLACK IN EACH PRIMARY CABLE AND SECONDARY EXTENSION.

ONE 2-INCH ELECTRICAL CONDUIT DUCT BANK

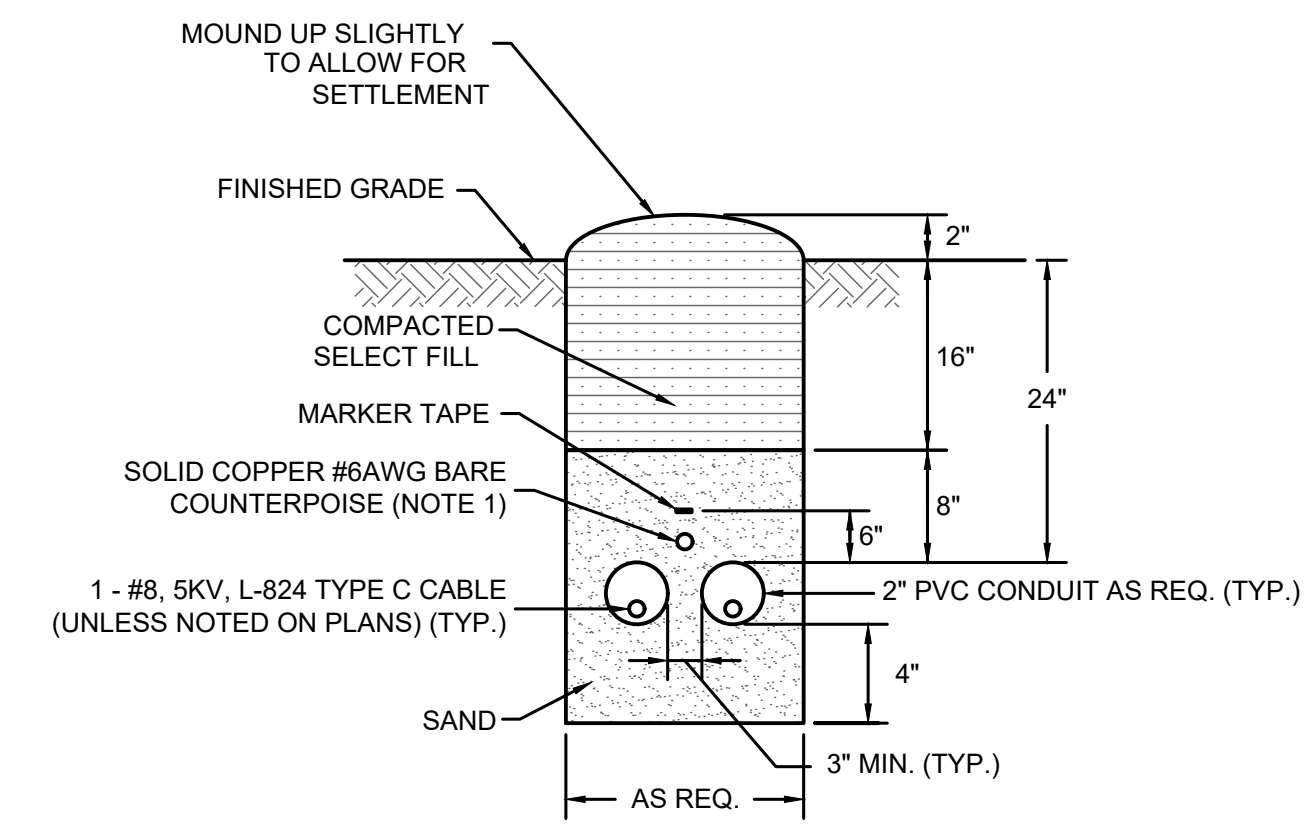
N.T.S.



- NOTES:**
- INSTALL COUNTERPOISE ABOVE CONDUIT 20" MIN. BELOW GRADE FOR HOMERUN CONDUIT.

MULTIPLE 2-INCH ELECTRICAL CONDUIT DUCT BANK

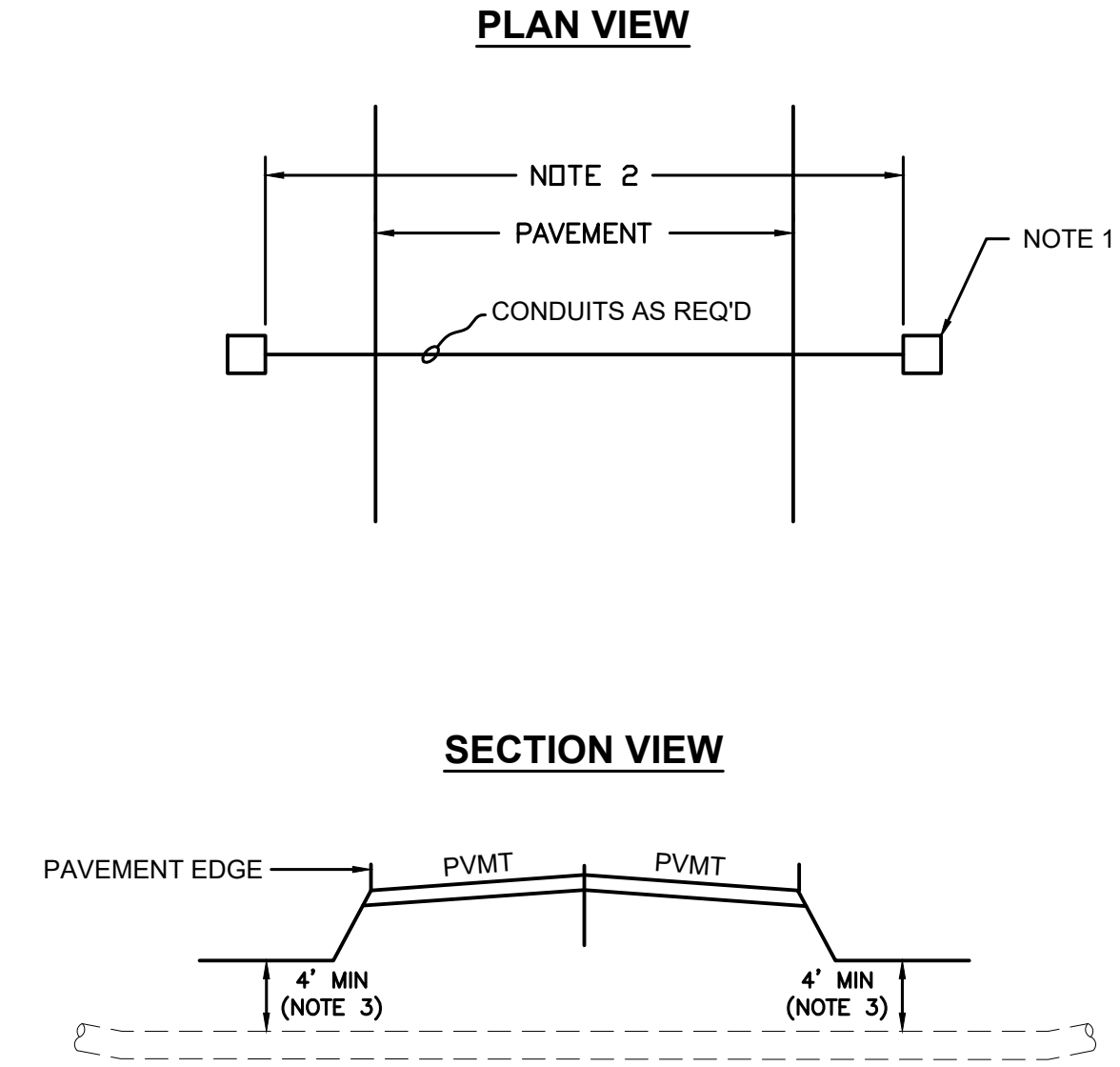
N.T.S.



- NOTES:**
- INSTALL COUNTERPOISE ABOVE CONDUIT 20" MIN. BELOW GRADE FOR HOMERUN CONDUIT.

UNDER PAVEMENT BORED CONDUIT DETAIL

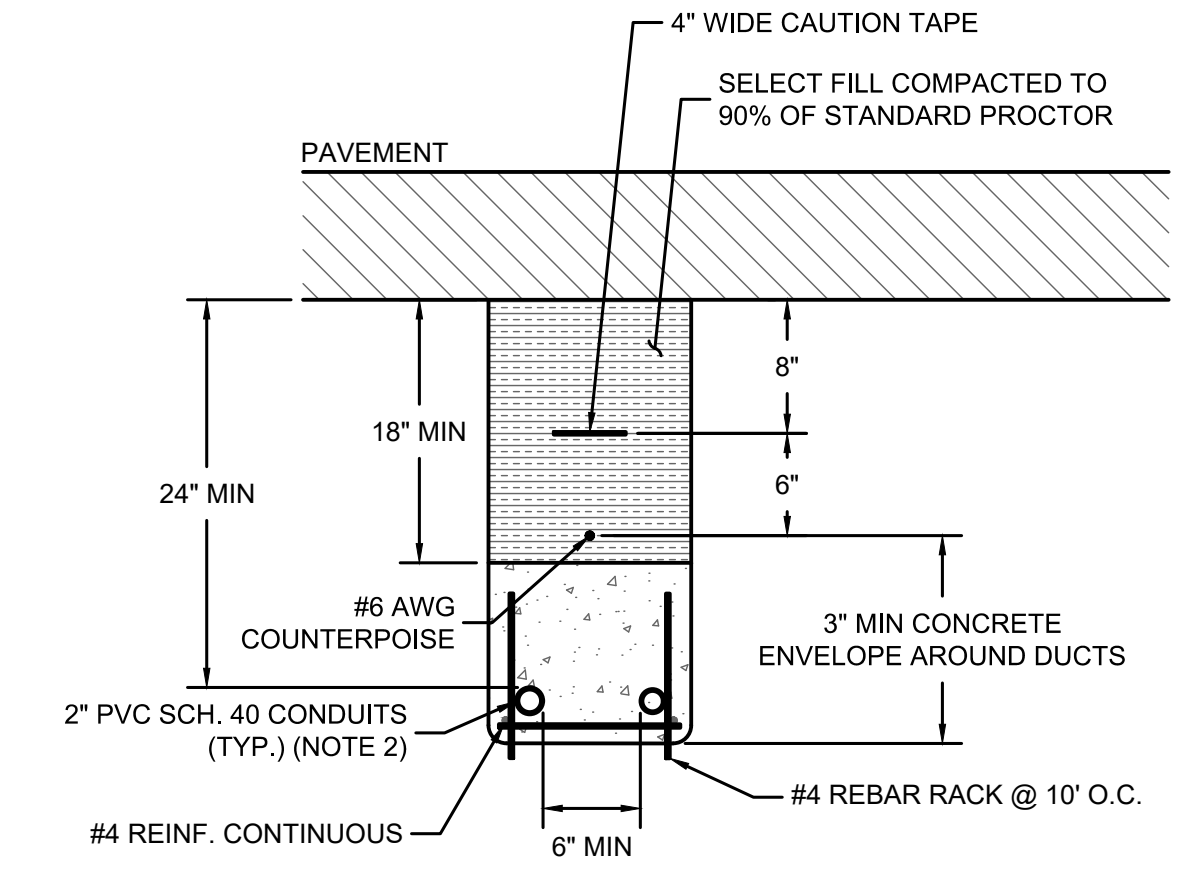
N.T.S.



- NOTES:**
- HANDHOLE. REFER TO PLAN SHEETS FOR HANDHOLE LOCATIONS.
 - AS CALLED FOR IN PLAN SET.
 - UNLESS NOTED OTHERWISE AS SHOWN ON PLAN.

CONCRETE ENCASED DUCT BANK SECTION (AIRFIELD)

N.T.S.

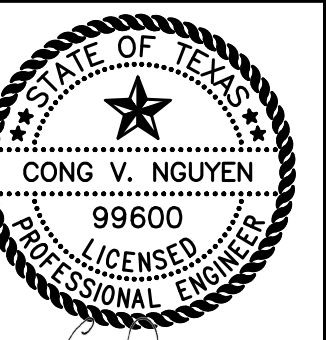


- NOTES:**
- CONCRETE ENCASED DUCT BANK SHALL BE INSTALLED UNDER ALL PROPOSED RUNWAY, TAXIWAY, AND APRON PAVEMENT.
 - SEE PLANS FOR QUANTITY.

ELECTRICAL DETAILS I

SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT
SAN ANGELO, TEXAS

DRAWN BY:	MB
DESIGNED BY:	CYN
LATEST REVISION:	6/29/2017
KSA JOB NO.:	SAN 089
PROJECT NAME:	SAN 089

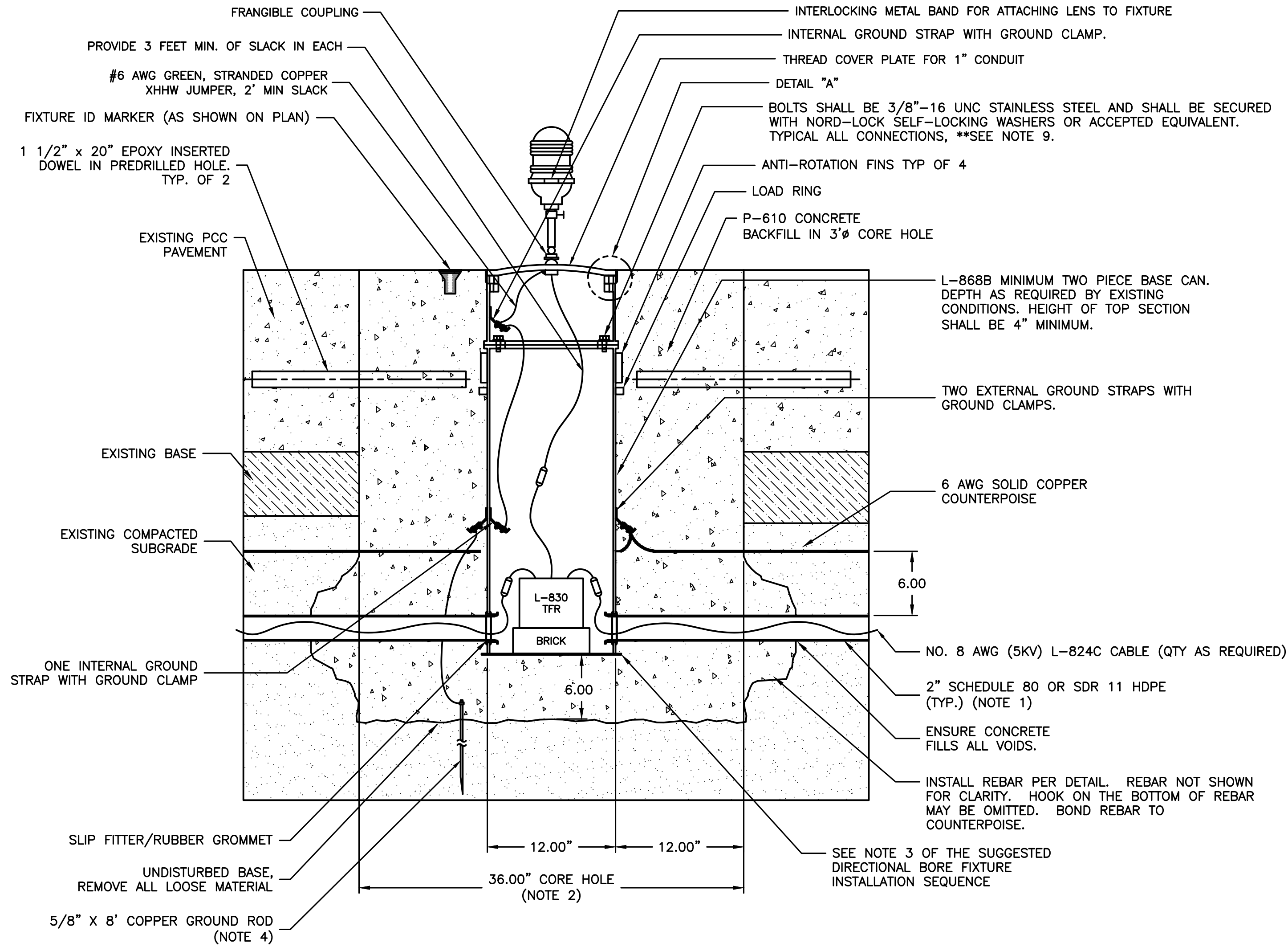


SEAL:
SHEET NO.
E08

DATE
REVISION
MARK
KSA: SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT SHEET E08 ELECTRICAL DETAILS I
SET(S) SAN 089-ELEC-DTL(S).DWG | LAYOUT | PLOT DATE - TIME
PROJECT NAME

**DIRECTIONAL BORE CONDUIT AND BASE CAN DETAIL
NEW IN-PAVEMENT BASE CAN IN EXISTING PCC PAVEMENT**

N.T.S.



SUGGESTED DIRECTIONAL BORE FIXTURE INSTALLATION SEQUENCE:

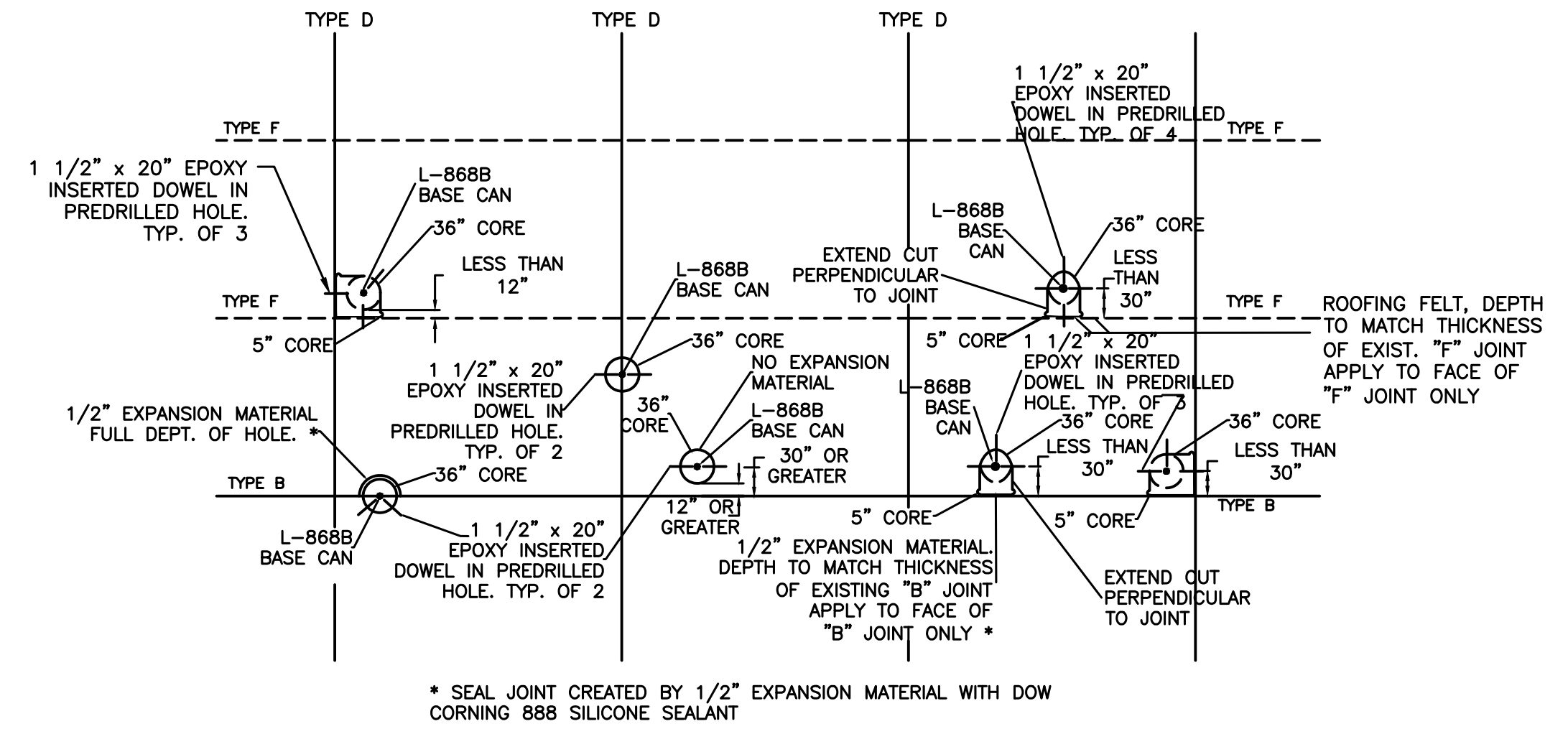
1. DIRECTIONAL DRILL 2" SCHEDULE 80 HDPE LISTED ELECTRICAL CONDUIT UNDER THE PAVEMENT TAKING CARE NOT TO DAMAGE EXISTING ITEMS. INSTALL/PULL #2 AWG SOLID COPPER COUNTERPOISE WITH DUCT AND EXTERNAL TO THE DUCT.
2. CORE 36" DIAMETER HOLES THROUGH THE PAVEMENT DIRECTLY OVER THE CONDUIT AT THE PRECISE FIXTURE LOCATIONS. REMOVE PAVEMENT CORE CAREFULLY SO AS NOT TO DAMAGE/SPALL REMAINING PAVEMENT EDGE.
3. SUPPORT L-868 TWO PIECE BASE CAN AT CENTER OF HOLE, IN LOCATION SPECIFIED, WITH AN APPROPRIATE JIG. EXTEND THE SEVERED ENDS OF SCHEDULE 80, 2" CONDUIT INTO THE NEOPRENE GROMMETTED OPENINGS. INSTALL REBAR.
4. WHERE SPECIFIED ON THE PLANS, INSTALL THE GROUND RODS IN THE CORE HOLE AND CONNECT TO THE EXTERNAL GROUND CLAMP WITH 6 AWG SOLID COPPER COUNTERPOISE. CONNECT COUNTERPOISE INSTALLED WITH DUCT TO BASE CAN EXTERNAL GROUND LUG.
5. IN SUPPORT OF AREAS OPENING TO AIRCRAFT, PLACE HIGH EARLY STRENGTH P-610, CONCRETE LEVEL WITH THE ADJACENT SURFACE COVERING THE LIGHT CAN AND CONDUIT ASSEMBLY. CONCRETE SHALL OBTAIN 4,000 PSI STRENGTH PRIOR TO OPENING PAVEMENT TO AIRCRAFT, COMPLETELY AND MECHANICALLY CONSOLIDATE CONCRETE, FILL ALL VOIDS.
6. INSTALL ISOLATION TRANSFORMER AND FIXTURE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

GENERAL NOTES:

1. OPEN CUTTING/TRENCHING OF EXISTING PAVEMENT NOT BEING OVERLAYED IS NOT PERMITTED. COST OF CORING, DIRECTIONAL BORE CONDUIT, DIRECTIONAL DRILLING AND ALL OTHER ITEMS ARE INCIDENTAL TO THE RESPECTIVE PAY ITEMS PROVIDED.
2. THE SUGGESTED LIGHT BASE INSTALLATION SEQUENCE IS NOT INTENDED TO PROVIDE ALL ENCOMPASSING INSTRUCTIONS FOR THE CONTRACTOR USE, BUT TO PROVIDE A BRIEF DESCRIPTION OF THE REQUIRED WORK. THE CONTRACTOR IS RESPONSIBLE FOR THE CONTRACTORS SELECTED MEANS AND METHODS OF CONSTRUCTION.

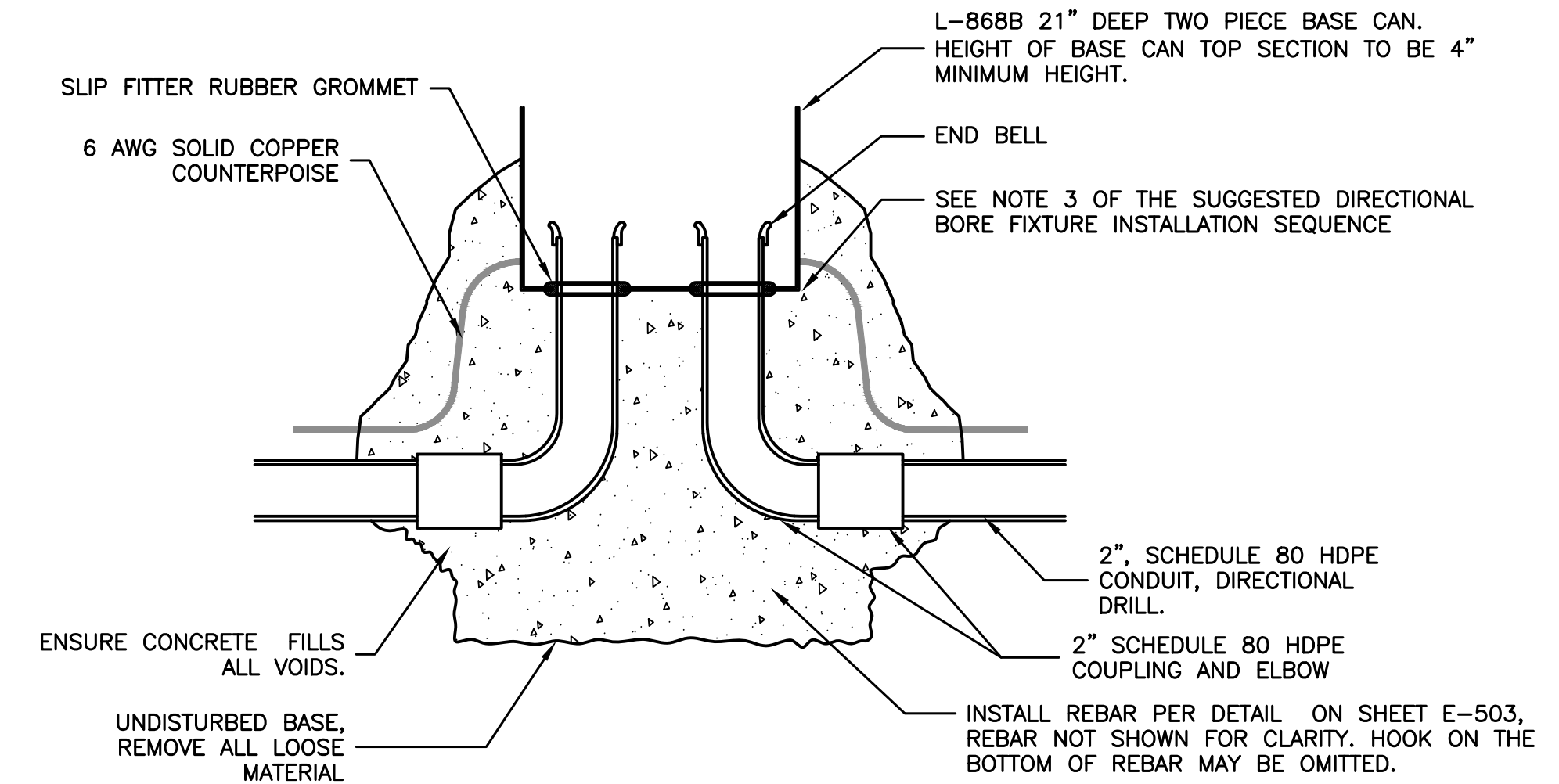
TYPICAL CORED IN-PAVEMENT LIGHT INSTALLATION AT OR NEAR PAVEMENT JOINTS

N.T.S.



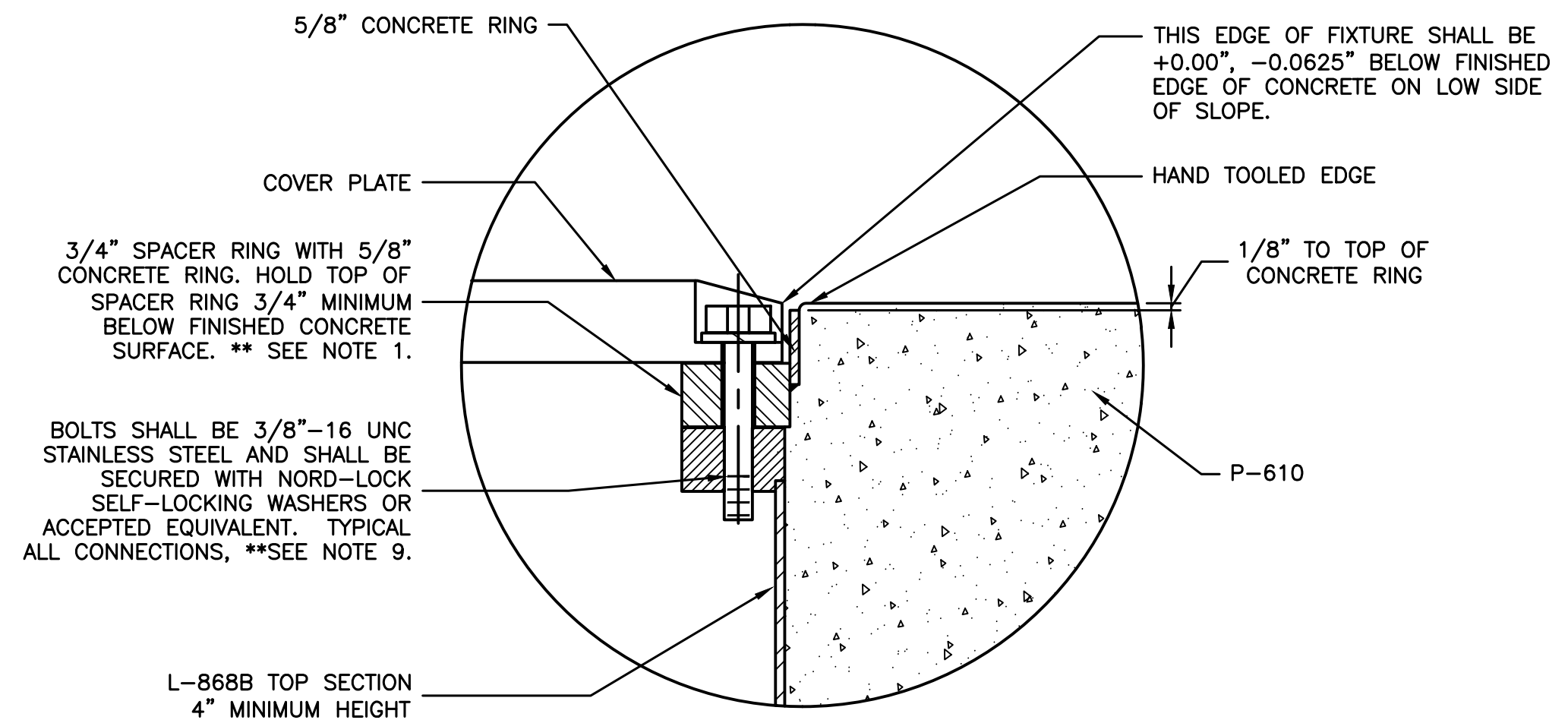
ALTERNATE CONDUIT ENTRY FOR DIRECTIONAL BORE CONDUIT

N.T.S.



DETAIL "A" FOR BASE CAN INSTALLATION IN PCC

N.T.S.



DATE	REVISION	MARK

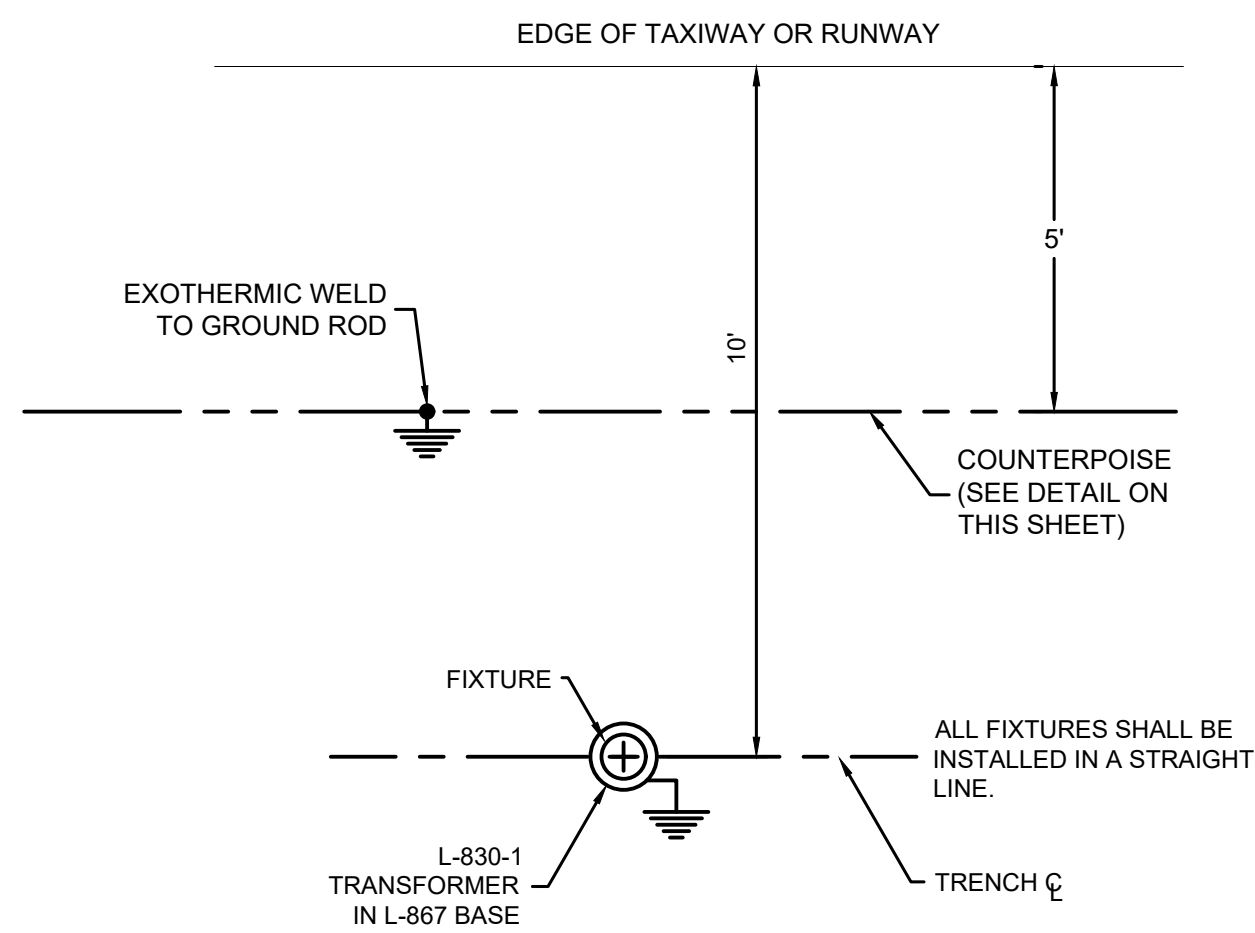
ELECTRICAL DETAILS II
 PROJECT NAME: SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT
 PROJECT NO.: SAN 059
 DRAWN BY: MB
 DESIGNED BY: CYN
 LATEST REVISION: 6/29/2017
 KSA JOB NO.:
 SHEET NO.: E09

KSA
 58 Bullock Street, San Angelo, Texas 76901
 T. 325-947-1955 F. 325-947-1959
 www.ksaeng.com
 CONG V. NGUYEN
 99600
 LICENSED PROFESSIONAL ENGINEER
 6-30-17

SEAL:
 SHEET NO.: E09

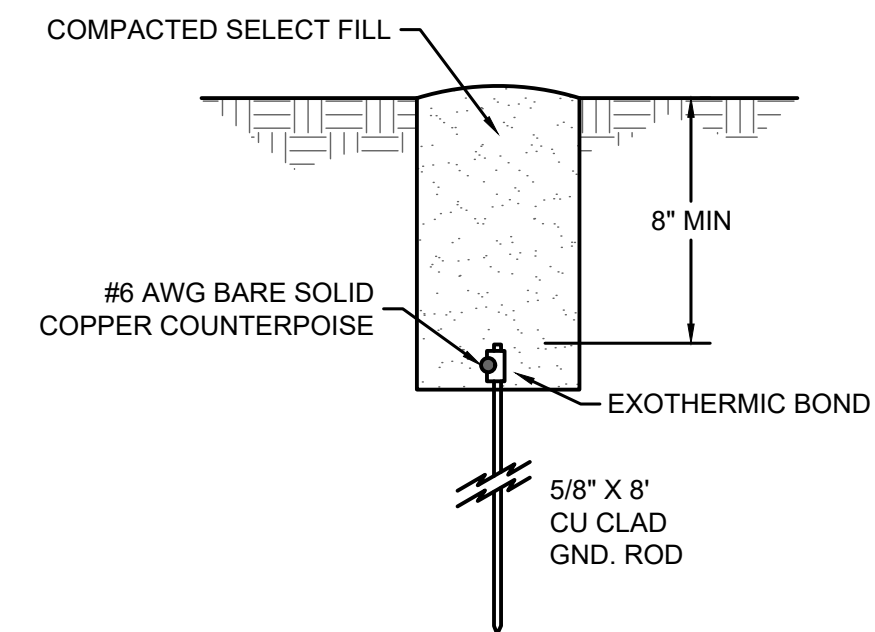
FIXTURE LOCATION AND COUNTERPOISE DETAIL

N.T.S.



COUNTERPOISE TRENCH SECTION

N.T.S.

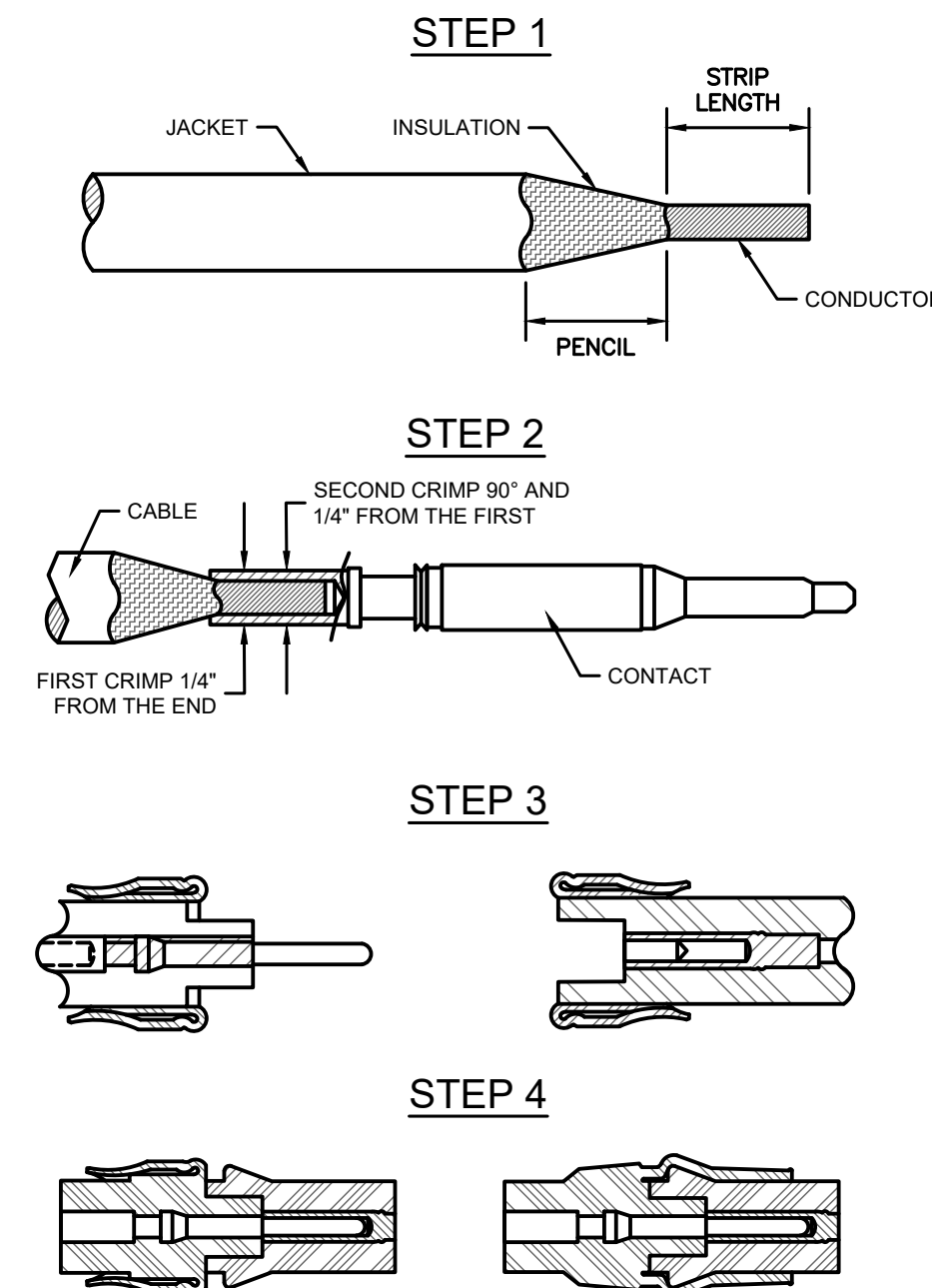


NOTES:

1. THE COUNTERPOISED CONDUCTOR SHALL BE BONDED TO GROUND ROD AT INTERVAL NOT EXCEEDING 500' AND BONDED TO GROUND ROD LOCATED ON EACH SIDE OF A RACEWAY CROSSING UNDER THE AIRFIELD PAVEMENT.

FAA L823 CLASS B TYPE 1 STYLE 3 AND STYLE 10 CONNECTIONS

N.T.S.

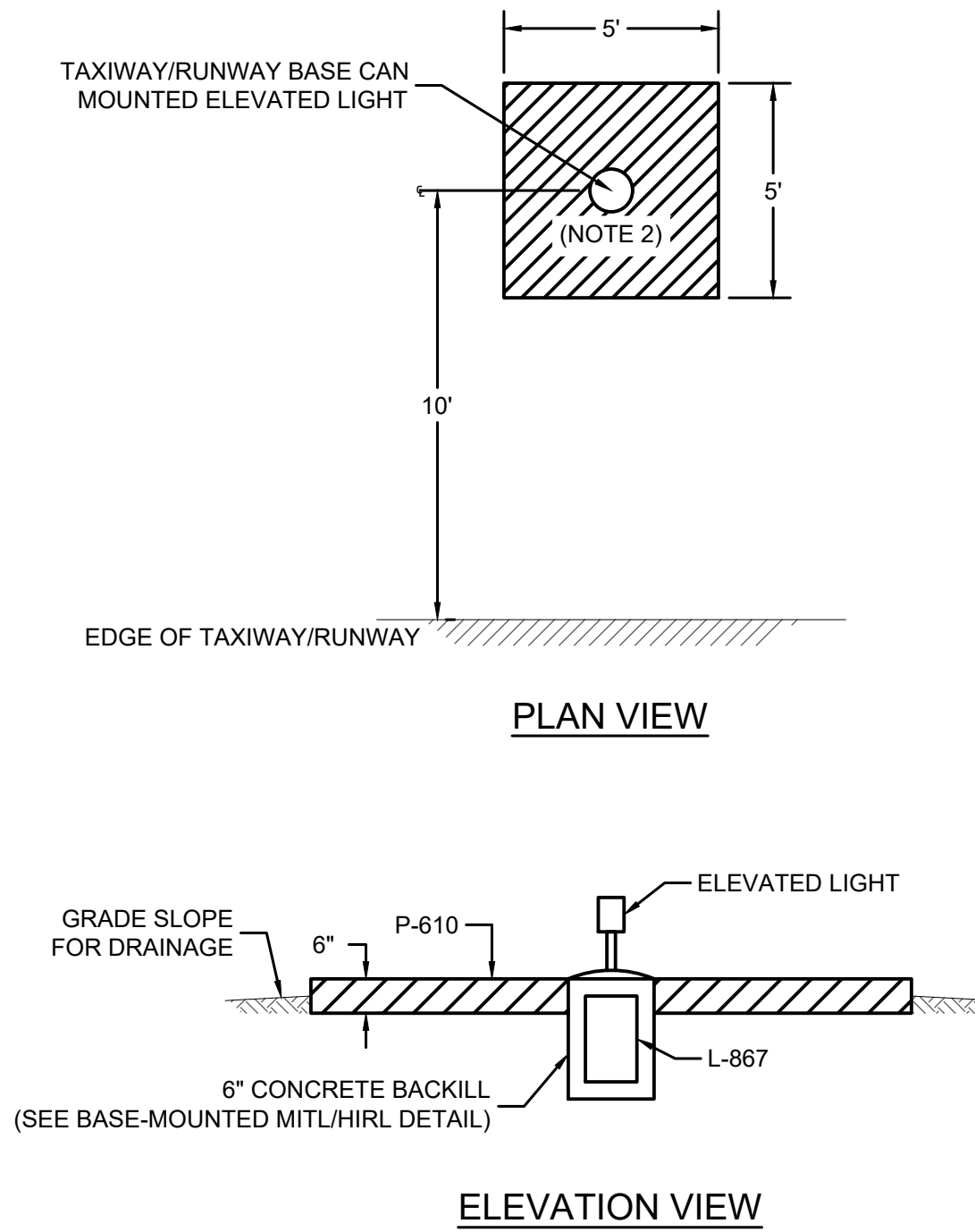


NOTES:

1. QUALIFIED PERSONNEL SHALL TERMINATE/ SPLICE PRIMARY CABLE IN FULL ACCORDANCE WITH APPROVED KIT INSTRUCTIONS.
2. THE USE OF TAPE OR HEAT SHRINK TUBING IS PROHIBITED.
3. INSTALLER SHALL SIGN AND DATE EACH SPLICE/TERMINATION.
4. CONNECTORS SHALL BE "54 SUPER KIT" MFR BY AMERACE OR APPROVED EQUAL.

EDGE LIGHT MAINTENANCE PAD

N.T.S.



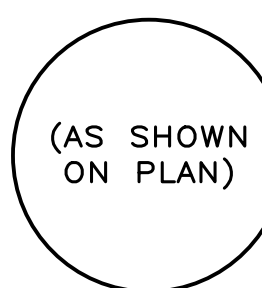
NOTES:

1. PAYMENT SHALL BE CONSIDERED SUBSIDIARY TO THE MITL/HIRL PAY ITEM.
2. INSTALL 6x6 WIRE MESH FOR REINFORCEMENT.

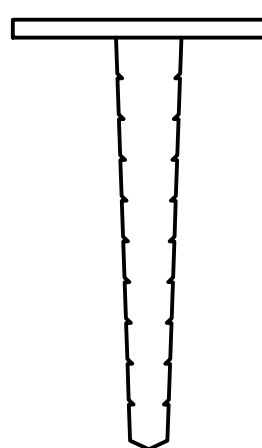
FIXTURE IDENTIFICATION MARKER

N.T.S.

PLAN VIEW



SECTION VIEW

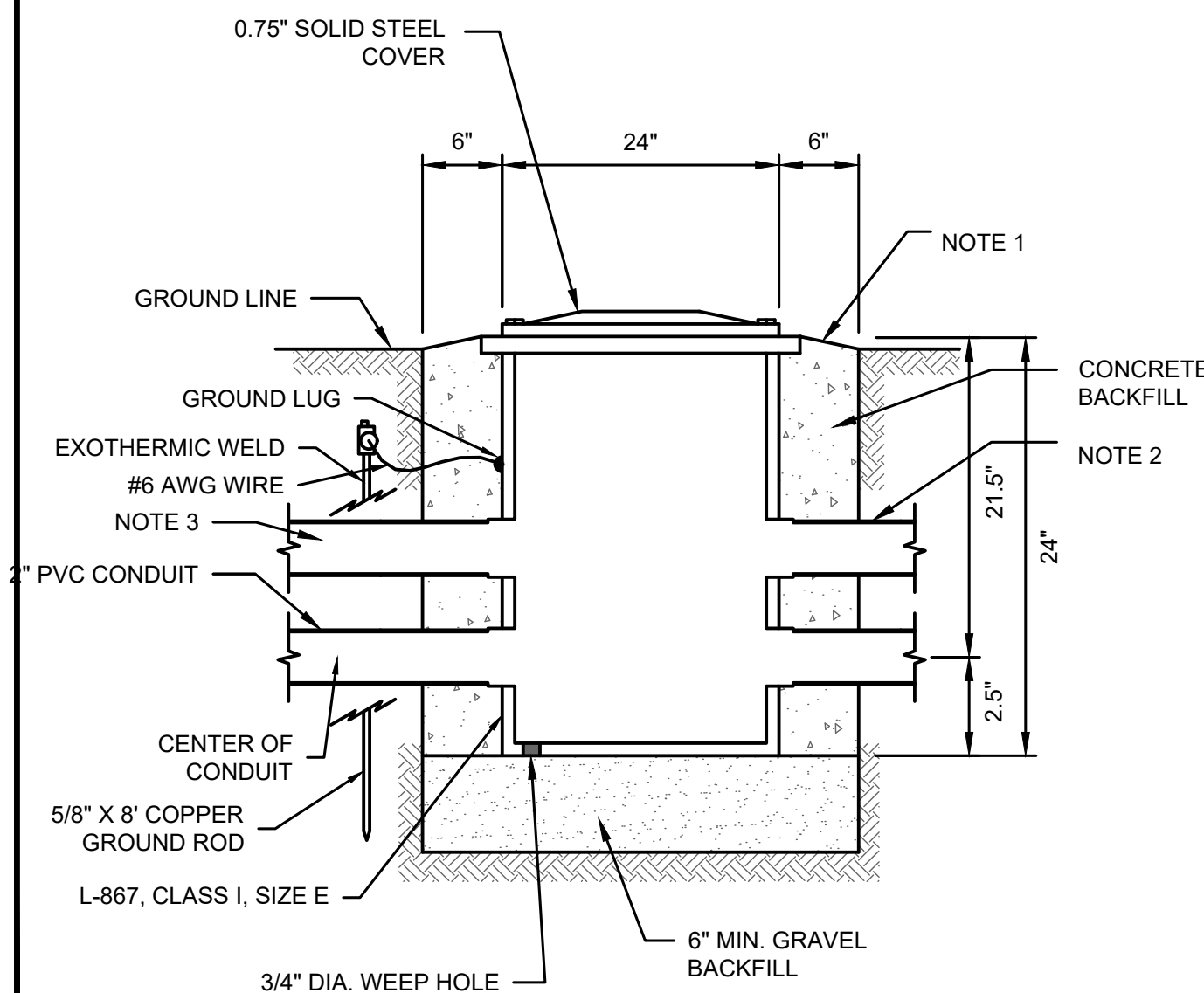


NOTES:

1. PROVIDE AND INSTALL BRASS TAG AT EACH RUNWAY FIXTURE TO ID FUNCTION AND/OR CIRCUIT. SURV-KAP OR EQUAL, 2" MONUMENT MARKER (M-M-B2), 2 LINES 3/8" TEXT, 4 CHARACTERS PER LINE (STAMPED), INSTALLED IN FOUNDATION. FIXTURE ID AS SHOWN ON PLANS.

L-867E HANDHOLE DETAIL

N.T.S.

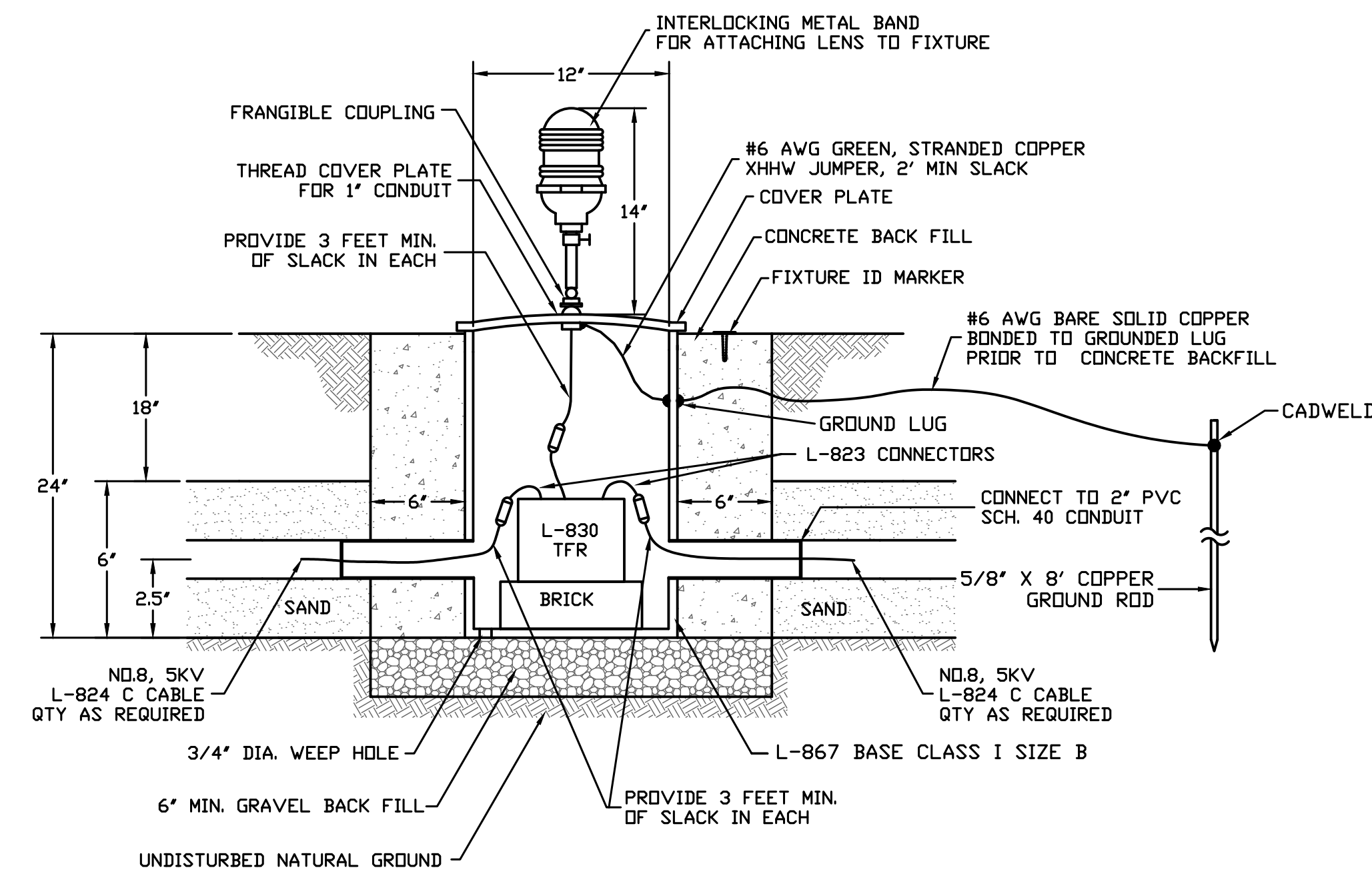


NOTES:

1. SLOPE TO DRAIN AWAY FROM COVER.
2. SPARE CONDUIT EXTENDED TO OTHER HANDHOLE, AS REQUIRED PER PLANS.
3. EXTEND SPARE CONDUIT 12" FROM CONCRETE AND CAP CONDUIT.

BASE CAN MOUNTED MITL/HIRL

N.T.S.



MARK	REVISION	DATE

ELECTRICAL DETAILS III

SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT
SAN ANGELO, TEXAS

DRAWN BY:	MB
DESIGNED BY:	CYN
LATEST REVISION:	6/29/2017
KSA JOB NO.:	SAN 069
SHEET NO.:	E10

SIGN SCHEDULE

SIGN NO.	SIGN CONFIGURATION		BACKGROUND COLOR		CHARACTER COLOR		PROPOSED SIGN MODIFICATION
	SIDE A	SIDE B	SIDE A	SIDE B	SIDE A	SIDE B	
	1	E →	BLANK	YEL	BLANK	BLK	
2	BLANK	4	N/A	BLK	N/A	WHT	EXISTING SIGN TO REMAIN. INSTALL NEW CABLE AND CONDUIT TO RUNWAY 18-36 CIRCUIT.
3	E	E 18-36	BLK/BLANK	BLK/RED/RED	YEL/BLANK	WHT/WHT/WHT	EXISTING SIGN, CONCRETE PAD AND APPURTENANCES TO BE REMOVED. REMOVE EXISTING CONCRETE PAD.
4	← E B	B	BLK/YEL	BLK/BLANK	YEL/BLK	YEL/BLANK	EXISTING SIGN, CONCRETE PAD AND APPURTENANCES TO BE REMOVED. REMOVE EXISTING CONCRETE PAD.
5	B	B E →	BLK/BLANK	BLK/YEL	YEL/BLANK	YEL/BLK	EXISTING SIGN, CONCRETE PAD AND APPURTENANCES TO BE REMOVED. REMOVE EXISTING CONCRETE PAD.
6	BLANK	5	BLANK	BLK	BLANK	WHT	EXISTING SIGN TO REMAIN. INSTALL NEW CABLE AND CONDUIT TO RUNWAY 18-36 CIRCUIT.
7	B 27-9	B	BLK/RED/RED	BLK/YEL/BLANK	YEL/WHT/WHT	YEL/BLK/BLANK	EXISTING SIGN, CONCRETE PAD AND APPURTENANCES TO BE REMOVED. REMOVE EXISTING CONCRETE PAD.
8	B	B C ↗	BLANK/BLK	BLK/YEL	BLANK/YEL	YEL/BLK	EXISTING SIGN, CONCRETE PAD AND APPURTENANCES TO BE REMOVED. REMOVE EXISTING CONCRETE PAD.
9	↖ B ↘	BLANK	YEL/YEL	BLANK	BLK/BLK	BLANK	EXISTING SIGN, CONCRETE PAD AND APPURTENANCES TO BE REMOVED. REMOVE EXISTING CONCRETE PAD.
10	BLANK	9-27	BLANK/BLANK	RED/RED	BLANK/BLANK	WHT/WHT/WHT	EXISTING SIGN TO REMAIN. INSTALL NEW CABLE AND CONDUIT TO RUNWAY 18-36 CIRCUIT.
11	BLANK	↙ C	BLANK	YEL	BLANK	BLK	EXISTING SIGN, CONCRETE PAD AND APPURTENANCES TO BE REMOVED. REMOVE EXISTING CONCRETE PAD.
12	C		BLK/BLANK	BLK/RED/RED/RED/RED/RED/RED	YEL/BLANK	YEL/WHT/WHT/WHT/WHT/WHT/WHT	EXISTING SIGN, CONCRETE PAD AND APPURTENANCES TO BE REMOVED. REMOVE EXISTING CONCRETE PAD.
13	← E B	BLANK	YEL/BLK	BLANK	BLK/YEL	BLANK	INSTALL A NEW SIGN, SIZE 2, STYLE 2, 2 MODULE, QUARTZ LAMP. PROVIDE NEW CONCRETE PAD, BASE CAN, TRANSFORMER, AND APPURTENANCES AS SHOWN ON DETAIL SHEETS.
14	E	E 18-36	BLK/BLANK	BLK/RED/RED	YEL/BLANK	YEL/WHT/WHT	INSTALL A NEW SIGN, SIZE 2, STYLE 2, 3 MODULE, QUARTZ LAMP. PROVIDE NEW CONCRETE PAD, BASE CAN, TRANSFORMER, AND APPURTENANCES AS SHOWN ON DETAIL SHEETS.
15	E →	BLANK	YEL	BLANK	BLK	BLANK	INSTALL A NEW SIGN, SIZE 2, STYLE 2, 1 MODULE, QUARTZ LAMP. PROVIDE NEW CONCRETE PAD, BASE CAN, TRANSFORMER, AND APPURTENANCES AS SHOWN ON DETAIL SHEETS.
16	BLANK	← E	BLANK	YEL	BLANK	BLK	INSTALL A NEW SIGN, SIZE 2, STYLE 2, 1 MODULE, QUARTZ LAMP. PROVIDE NEW CONCRETE PAD, BASE CAN, TRANSFORMER, AND APPURTENANCES AS SHOWN ON DETAIL SHEETS.
17	BLANK	B E →	BLANK	BLK/YEL	BLANK	YEL/BLK	INSTALL A NEW SIGN, SIZE 2, STYLE 2, 2 MODULE, QUARTZ LAMP. PROVIDE NEW CONCRETE PAD, BASE CAN, TRANSFORMER, AND APPURTENANCES AS SHOWN ON DETAIL SHEETS.
18	E ← B →	BLANK	BLK/YEL/YEL	BLANK	YEL/BLK/BLK	BLANK	INSTALL A NEW SIGN, SIZE 2, STYLE 2, 3 MODULE, QUARTZ LAMP. INSTALL SIGN ON EXISTING PCC PAVEMENT. CORE DRILL 36" DIAMETER HOLE FOR INPAVEMENT BASE CAN AND CORE DRILL 12" HOLE FOR CONDUIT EXTENDED TO SIGN FROM INPAVEMENT BASE CAN. PROVIDE TRANSFORMER AND APPURTENANCES AS SHOWN ON TYPICAL SIGN DETAILS. INSTALL INPAVEMENT BASE CAN AS SHOWN ON INPAVEMENT BASE CAN DETAILS. BACK FILL DRILLED HOLES WITH P-610 CONCRETE.
19	D ← B →	BLANK	BLK/YEL/YEL	BLANK	YEL/BLK/BLK	BLANK	INSTALL A NEW SIGN, SIZE 2, STYLE 2, 3 MODULE, QUARTZ LAMP. INSTALL SIGN ON EXISTING PCC PAVEMENT. CORE DRILL 36" DIAMETER HOLE FOR INPAVEMENT BASE CAN AND CORE DRILL 12" HOLE FOR CONDUIT EXTENDED TO SIGN FROM INPAVEMENT BASE CAN. PROVIDE TRANSFORMER AND APPURTENANCES AS SHOWN ON TYPICAL SIGN DETAILS. INSTALL INPAVEMENT BASE CAN AS SHOWN ON INPAVEMENT BASE CAN DETAILS. BACK FILL DRILLED HOLES WITH P-610 CONCRETE.
20	F ← B →	BLANK	BLK/YEL/YEL	BLANK	YEL/BLK/BLK	BLANK	INSTALL A NEW SIGN, SIZE 2, STYLE 2, 3 MODULE, QUARTZ LAMP. INSTALL SIGN ON EXISTING PCC PAVEMENT. CORE DRILL 36" DIAMETER HOLE FOR INPAVEMENT BASE CAN AND CORE DRILL 12" HOLE FOR CONDUIT EXTENDED TO SIGN FROM INPAVEMENT BASE CAN. PROVIDE TRANSFORMER AND APPURTENANCES AS SHOWN ON TYPICAL SIGN DETAILS. INSTALL INPAVEMENT BASE CAN AS SHOWN ON INPAVEMENT BASE CAN DETAILS. BACK FILL DRILLED HOLES WITH P-610 CONCRETE.
21	← C B	BLANK	YEL/BLK	BLANK	BLK/YEL	BLANK	INSTALL A NEW SIGN, SIZE 2, STYLE 2, 2 MODULE, QUARTZ LAMP. PROVIDE NEW CONCRETE PAD, BASE CAN, TRANSFORMER, AND APPURTENANCES AS SHOWN ON DETAIL SHEETS.
22	C	E 18-36	BLK/BLANK	BLK/RED/RED	YEL/BLANK	YEL/WHT/WHT	INSTALL A NEW SIGN, SIZE 2, STYLE 2, 3 MODULE, QUARTZ LAMP. PROVIDE NEW CONCRETE PAD, BASE CAN, TRANSFORMER, AND APPURTENANCES AS SHOWN ON DETAIL SHEETS.
23	C →	BLANK	YEL	BLANK	BLK	BLANK	INSTALL A NEW SIGN, SIZE 2, STYLE 2, 1 MODULE, QUARTZ LAMP. PROVIDE NEW CONCRETE PAD, BASE CAN, TRANSFORMER, AND APPURTENANCES AS SHOWN ON DETAIL SHEETS.
24	BLANK	← C	BLANK	YEL	BLANK	BLK	INSTALL A NEW SIGN, SIZE 2, STYLE 2, 1 MODULE, QUARTZ LAMP. PROVIDE NEW CONCRETE PAD, BASE CAN, TRANSFORMER, AND APPURTENANCES AS SHOWN ON DETAIL SHEETS.
25	B 27-9	B C →	BLK/RED/RED	BLANK/BLK/YEL	YEL/WHT/WHT	BLANK/YEL/BLK	INSTALL A NEW SIGN, SIZE 2, STYLE 2, 3 MODULE, QUARTZ LAMP. PROVIDE NEW CONCRETE PAD, BASE CAN, TRANSFORMER, AND APPURTENANCES AS SHOWN ON DETAIL SHEETS.

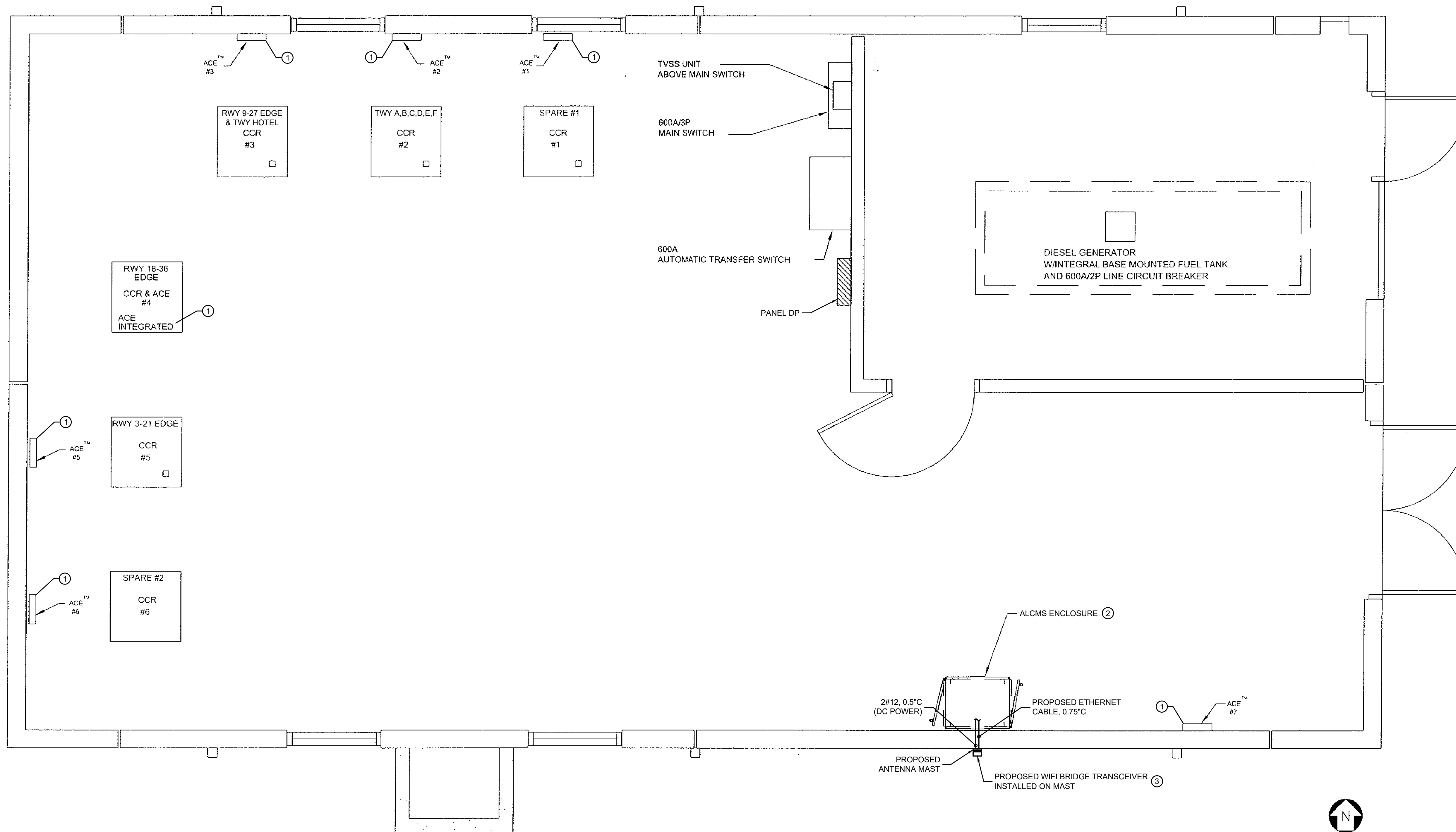
C ↙ 9-27 ↗ ↖ 18-36 ↘

MARK	REVISION	DATE					
<p>ELECTRICAL SIGN SCHEDULE</p>							
<p>SAN ANGELO REGIONAL AIRPORT TAXWAY RECONFIGURATION PROJECT SAN ANGELO, TEXAS</p>							
DRAWN BY:	DESIGNED BY:	LATEST REVISION:	KSA JOB NO.:	SAN 059			
MB	CVN	6/29/2017	SAN 059				
<p>58 Buick Street, San Angelo, Texas 76901 T. 325-947-1555 F. 325-947-1559 www.ksaeng.com</p>							
<p>6-30-17</p>							
<p>SEAL: SHEET NO. E11</p>							

PROJECT NAME: SAN ANGELO REGIONAL AIRPORT TAXWAY RECONFIGURATION PROJECT
SHEET NAME: ELECTRICAL SIGN SCHEDULE
DATE: 6/29/2017
REVISION: 1
MARK: MB

ELECTRICAL VAULT PLAN

N.T.S.



GENERAL NOTES:

1. REFER TO SHEETS E14 AND E15 FOR THE "ACE" UNITS WIRING DIAGRAMS.
2. REGULATORS ARE FED FROM PANEL DP.
3. FOR CLARITY NOT ALL EXISTING EQUIPMENT ARE SHOWN ON THE PLANS.

KEYED NOTES:

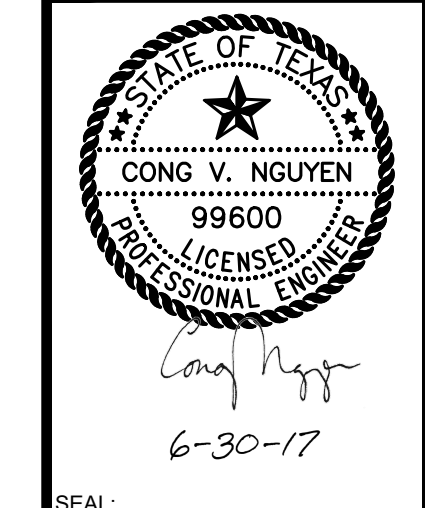
- ① EXISTING "ACE" UNIT TO BE REMOVED AND REPLACED WITH NEW LATEST UNIT.
- ② EXISTING ALCMS ENCLOSURE TO REMAIN AND REUSE. ALL COMPONENTS LOCATED INSIDE ENCLOSURE SHALL BE REPLACED.
- ③ INSTALL A COMPLETE SECURED WIFI BRIDGE NETWORK TO SEND WIFI SIGNAL FROM/TO THE TERMINAL BUILDING AND THE ELECTRICAL VAULT. COORDINATE WITH THE OWNER FOR ACTUAL LOCATION OF COMPUTER AND WIFI ROUTER AT THE TERMINAL. INSTALL ALL COMPONENTS, SOFTWARE, PROGRAMMING, AND ACCESSOIRES FOR A FUNCTIONAL SYSTEM. ALL WORK ASSOCIATED TO WIRELESS BRIDGE SHALL BE INCIDENTAL TO THE PAY ITEM PROVIDED AS LUMP SUM. CONTRACTOR IS RESPONSIBLE FOR THE RADIO SIGNAL STUDY TO DETERMINE THE HEIGHT OF THE ANTENNA MAST AND COORDINATE WITH OWNER/CONSTRUCTION MANAGER FOR SUITABLE INSTALLED LOCATION.

MARK	REVISION	DATE

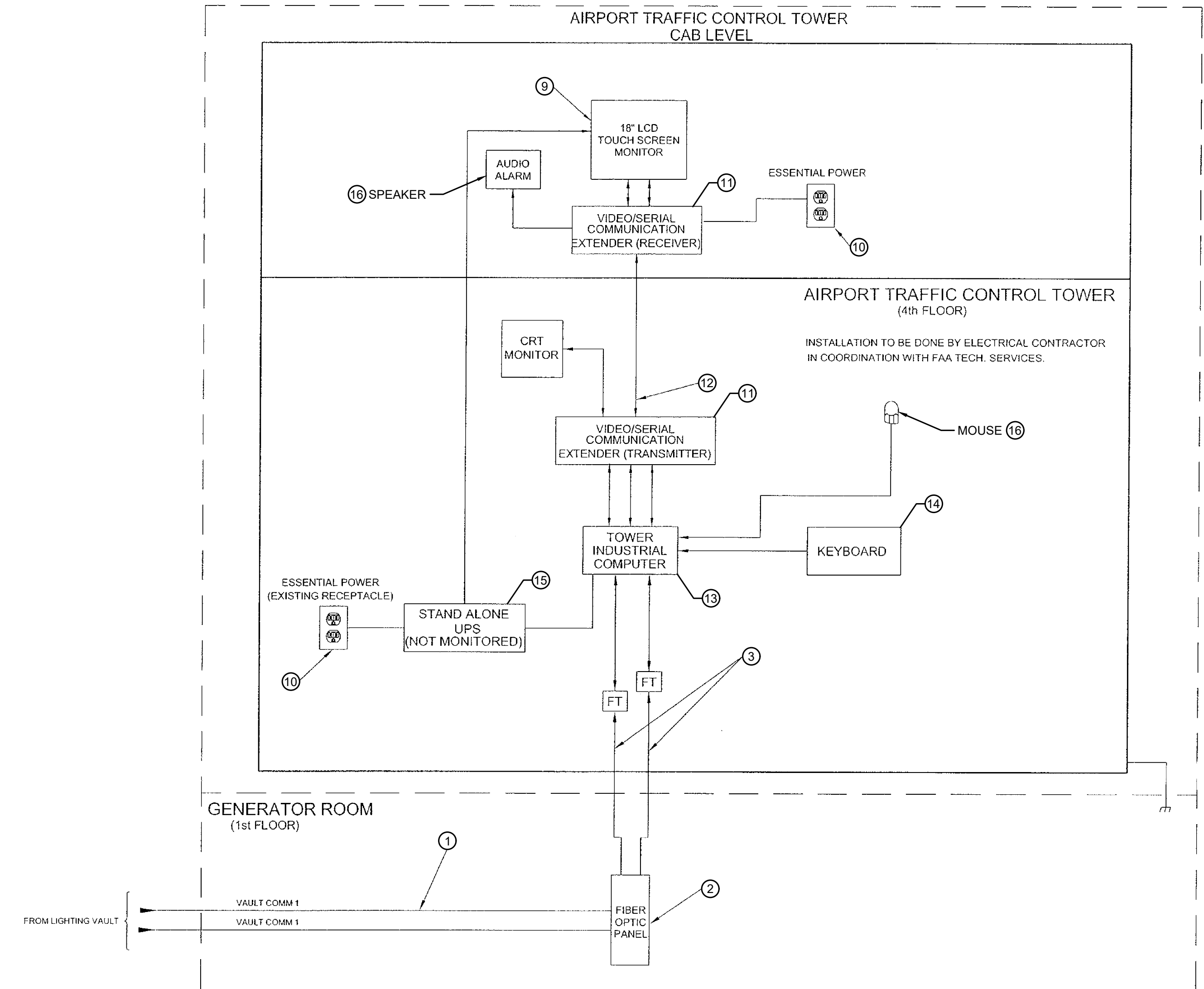
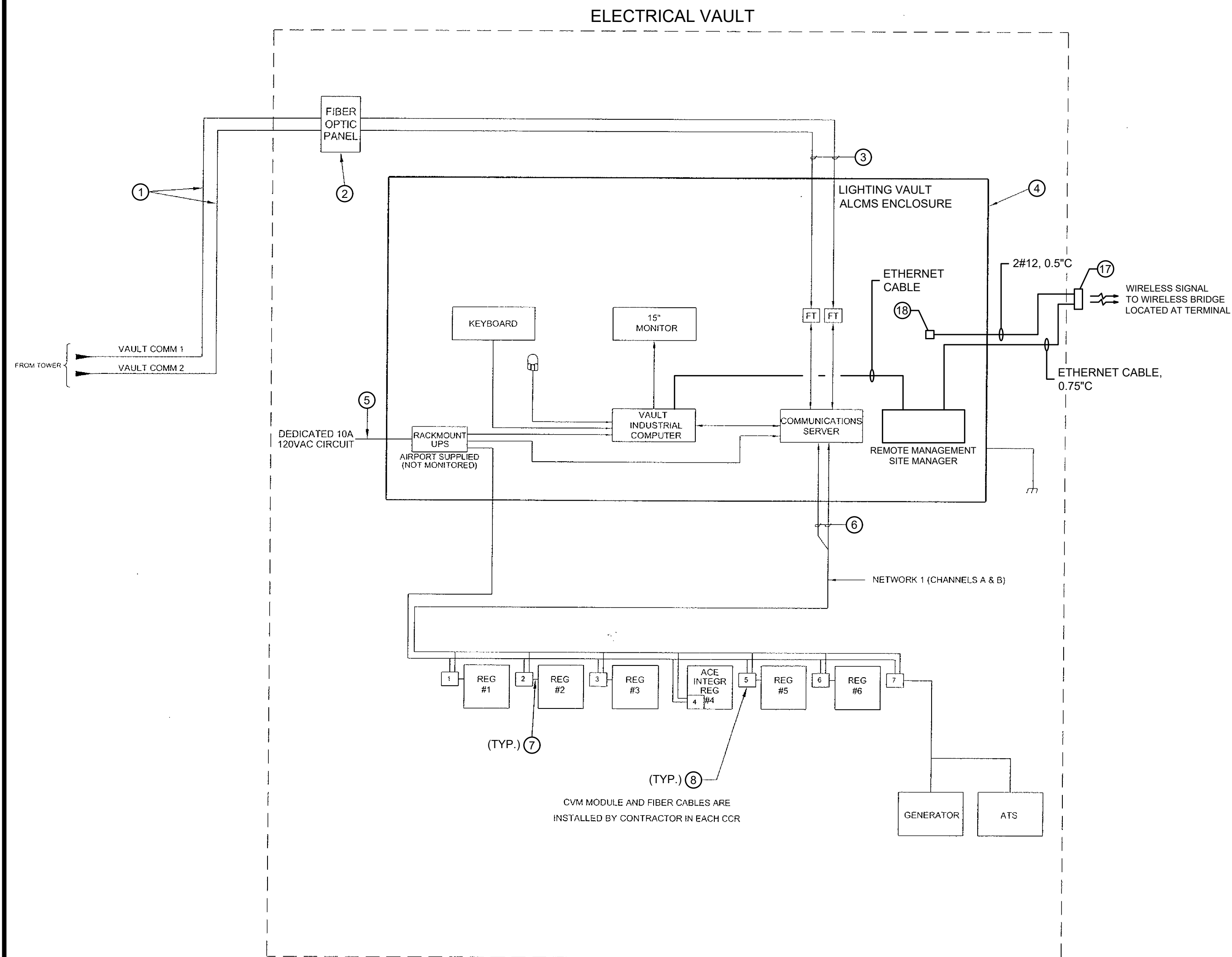
ALCMS SYSTEM MODIFICATIONS - SHEET 1 OF 10

SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT
SAN ANGELO, TEXAS

DRAWN BY:	MB
DESIGNED BY:	CVN
LATEST REVISION:	6/29/2017
KSA JOB NO.:	SAN1059
PROJECT NAME:	SAN1059



SEAL: SHEET NO. **E12**



KEYED NOTES:

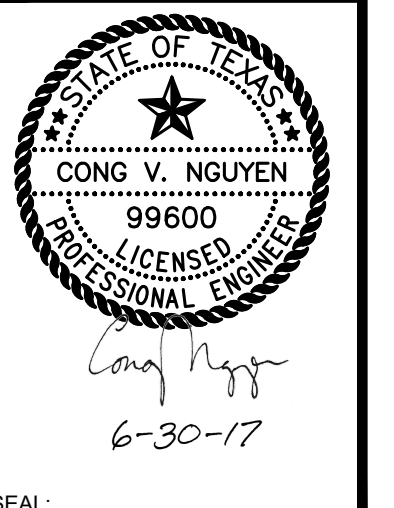
- ① EXISTING FIBER CABLE TO REMAIN AND REUSE.
- ② EXISTING FIBER OPTIC PANEL TO REMAIN AND REUSE.
- ③ EXISTING FIBER PATCH CABLE TO REMAIN AND REUSE.
- ④ VAULT COMPUTER ASSEMBLY COMPONENTS TO REMOVE AND REPLACE.
- ⑤ EXISTING DEDICATED CIRCUIT TO REMAIN AND REUSE.
- ⑥ EXISTING WIRE, 24 AWG, SHIELDED, TWO TWISTED PAIR, 600V TO REMAIN AND REUSE.
- ⑦ EXISTING WIRE, 18 AWG, 18 CONDUCTOR, 600V TO REMAIN AND REUSE.
- ⑧ EXISTING ADVANCE CONTROL EQUIPMENT (ACE), CURRENT/VOLTAGE MODULE (CVM), INSULATION RESISTANCE MONITORING MODULE (IRMM), AND CVM FIBER INTERFACE CABLE TO BE REMOVED AND REPLACED.
- ⑨ EXISTING TOUCH SCREEN CONTROL ASSEMBLY TO BE REMOVED AND REPLACED.
- ⑩ EXISTING DUPLEX RECEPTACLE BOX TO REMAIN AND REUSE.
- ⑪ EXISTING VIDEO/SERIAL COMMUNICATION EXTENDER TO BE REMOVED AND REPLACED.
- ⑫ EXISTING 24 AWG SOLID BARE COPPER, CAT 5, NON-PLENUM, UNSHIELDED WIRE TO REMAIN AND REUSE.
- ⑬ EXISTING TOWER INDUSTRIAL COMPUTER TO BE REMOVED AND REPLACED.
- ⑭ EXISTING KEYBOARD TO BE REMOVED AND REPLACED.
- ⑮ EXISTING STAND-ALONE UPS TO BE REMOVED AND REPLACED WITH NEW STAND-ALONE UPS (WITH MATCHING VA RATING OF EXISTING UPS) WITH INTEGRAL SURGE PROTECTIVE DEVICE.
- ⑯ EXISTING SPEAKER AND MOUSE TO BE REMOVED AND REPLACED.
- ⑰ PROPOSED WIRELESS BRIDGE TRANSCEIVER AND ANTENNA MAST INSTALLED AT VAULT BUILDING EXTERIOR.
- ⑱ POWER SUPPLY, 120VAC-DC POWER AS REQUIRED BY EQUIPMENT MANUFACTURER.

DATE	REVISION	MARK

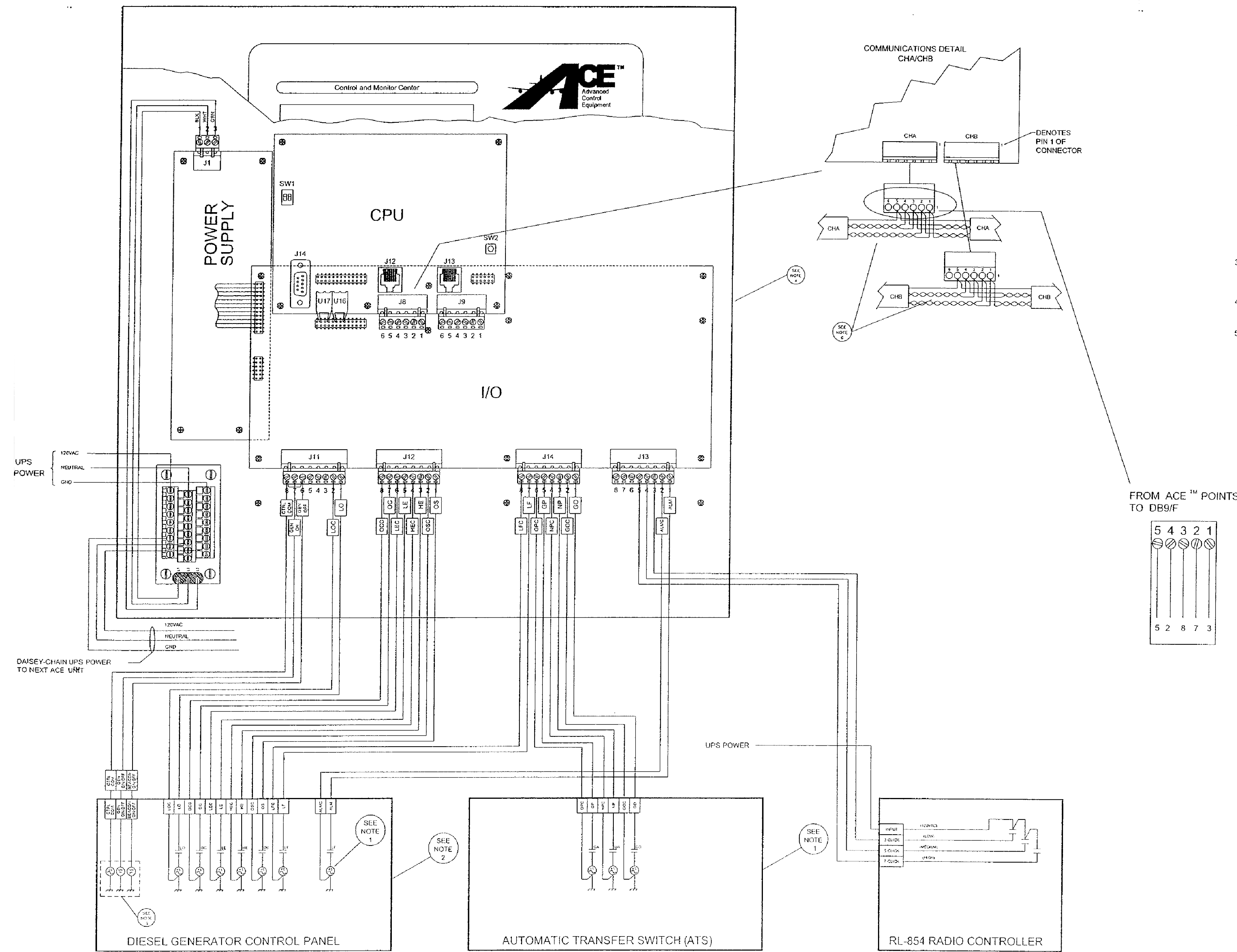
ALCMS SYSTEM MODIFICATIONS - SHEET 2 OF 10

SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT SAN ANGELO, TEXAS

DRAWN BY:	MB
DESIGNED BY:	CVN
LATEST REVISION:	6/29/2017
KSA-JOB NO.:	SAN1069
PROJECT NAME:	



SEAL:
SHEET NO.
E13

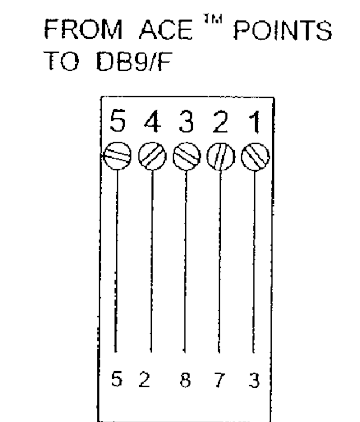


NOTES:

1. (FS) FEEDBACK SOURCE (FS) MUST BE SOURCED WITHIN THE ATS AND SHOULD BE 120VAC OR 24-48VDC. ALL DRY-CONTACTS INDICATED BELOW MUST BE DETERMINED BY AIRPORT/OWNER AND CONTRACTOR IN COORDINATION WITH ATS MANUFACTURER.

NP - NORMAL POWER
GP - GENERATOR POWER
GO - GENERATOR ON/OFF
2. (FS) FEEDBACK SOURCE (FS) MUST BE SOURCED WITHIN THE GENERATOR AND SHOULD BE 120VAC OR 24-48VDC. ALL DRY-CONTACTS INDICATED BELOW MUST BE DETERMINED BY AIRPORT/OWNER AND CONTRACTOR IN COORDINATION WITH GENERATOR MANUFACTURER.

LO - LOW OIL PRESSURE
OC - OVERCRANK
LE - LOW ENGINE JACKET WATER TEMPERATURE
HE - HIGH ENGINE JACKET WATER TEMPERATURE
OS - OVERSPEED
LF - LOW FUEL TANK LEVEL
3. (CS) CONTROL SOURCE (CS) MUST BE SOURCED WITHIN THE GENERATOR EQUIPMENT AND SHOULD BE 120VAC OR 24-48VDC.
4. ACE UNIT TO BE LOCALLY INSTALLED AT THE CCR BY THE CONTRACTOR.
5. ACE UNITS ACCEPT DRY-CONTACTS. ALL DRY-CONTACTS MUST BE AVAILABLE AND LOCATED BY THE AIRPORT/OWNER AND CONTRACTOR.

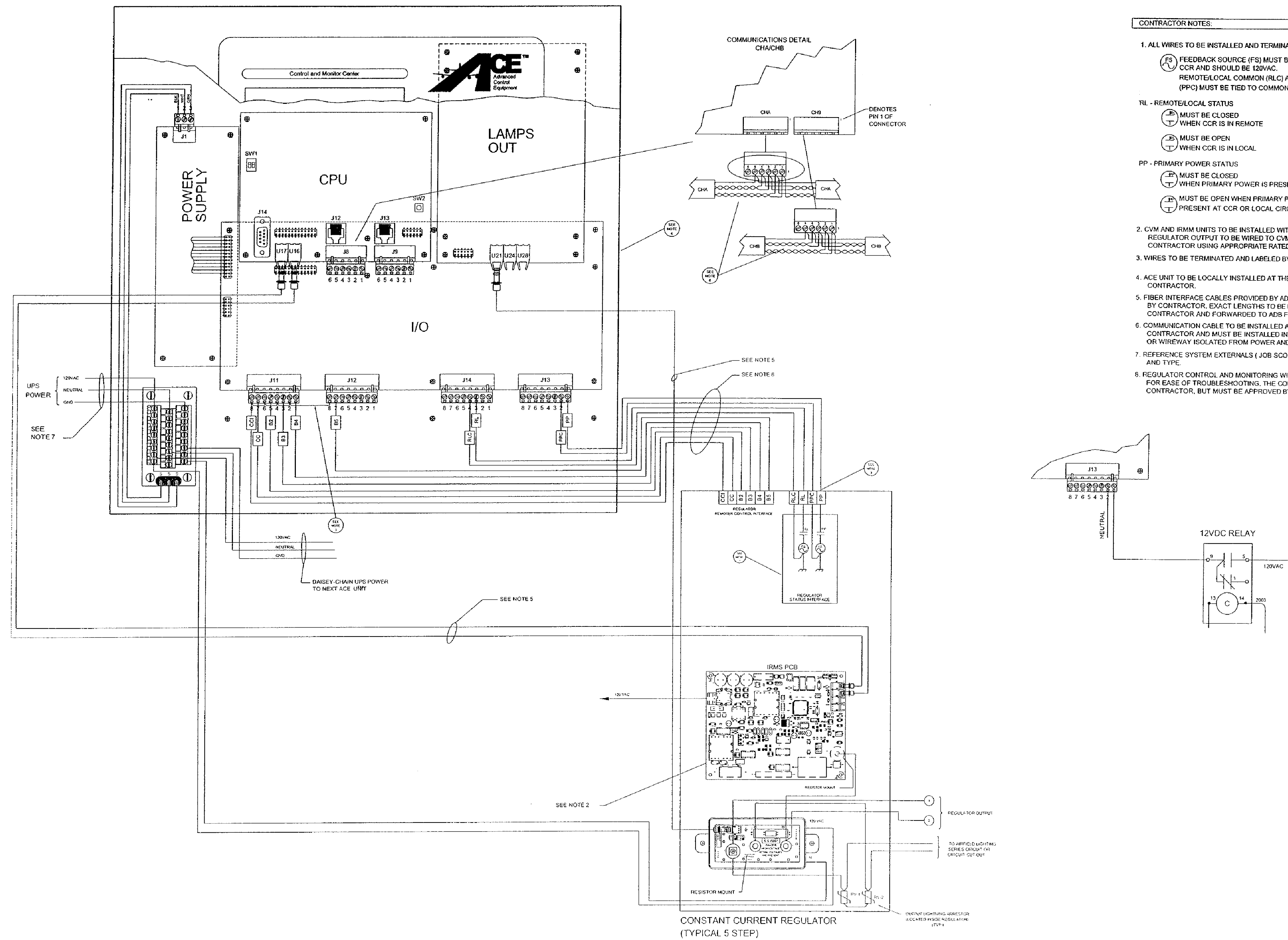


MARK	REVISION	DATE

ALCMS SYSTEM MODIFICATIONS - SHEET 3 OF 10

SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT
SAN ANGELO, TEXAS

DRAWN BY:	MB
DESIGNED BY:	CVN
LATEST REVISION:	6/29/2017
KSA JOB NO.:	SAN 059
PROJECT NAME:	SAN 059



CONTRACTOR NOTES:

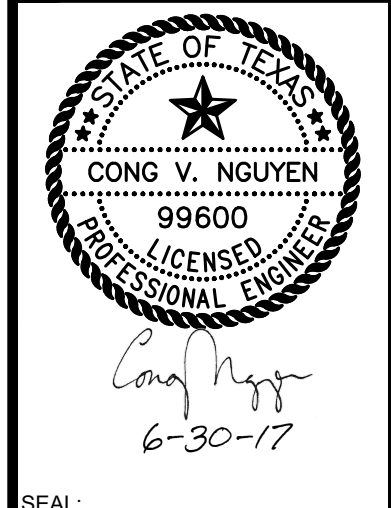
- ALL WIRES TO BE INSTALLED AND TERMINATED BY CONTRACTOR.
 - FEEDBACK SOURCE (FS) MUST BE SOURCED WITHIN THE CCR AND SHOULD BE 120VAC. REMOTE/LOCAL COMMON (RLC) AND PRIMARY POWER COMMON (PPC) MUST BE TIED TO COMMON OF FEEDBACK SOURCE.
- REMOTEL/LOCAL STATUS
 - MUST BE CLOSED WHEN CCR IS IN REMOTE
 - MUST BE OPEN WHEN CCR IS IN LOCAL
- PRIMARY POWER STATUS
 - MUST BE CLOSED WHEN PRIMARY POWER IS PRESENT AT CCR
 - MUST BE OPEN WHEN PRIMARY POWER IS NOT PRESENT AT CCR OR LOCAL CIRCUIT BREAKER IS OFF.
- CVM AND IRMM UNITS TO BE INSTALLED WITHIN CCR BY CONTRACTOR. REGULATOR OUTPUT TO BE WIRED TO CVM AND IRMM BY CONTRACTOR USING APPROPRIATE RATED CABLE.
- WIRES TO BE TERMINATED AND LABELED BY THE CONTRACTOR.
- ACE UNIT TO BE LOCALLY INSTALLED AT THE CCR BY THE CONTRACTOR.
- FIBER INTERFACE CABLES PROVIDED BY ADB AND INSTALLED BY CONTRACTOR. EXACT LENGTHS TO BE DETERMINED BY CONTRACTOR AND FORWARDED TO ADB FOR MANUFACTURING.
- COMMUNICATION CABLE TO BE INSTALLED AND TERMINATED BY CONTRACTOR AND MUST BE INSTALLED IN SEPARATE CONDUIT OR WIREWAY ISOLATED FROM POWER AND CIRCUIT CABLES.
- REFERENCE SYSTEM EXTERNALS (JOB SCOPE) FOR AWG SIZE AND TYPE.
- REGULATOR CONTROL AND MONITORING WIRES MUST BE COLOR CODED FOR EASE OF TROUBLESHOOTING. THE COLOR SCHEME IS LEFT TO THE CONTRACTOR, BUT MUST BE APPROVED BY ADB BEFORE INSTALLATION.

MARK	REVISION	DATE

ALCMS SYSTEM MODIFICATIONS - SHEET 4 OF 10

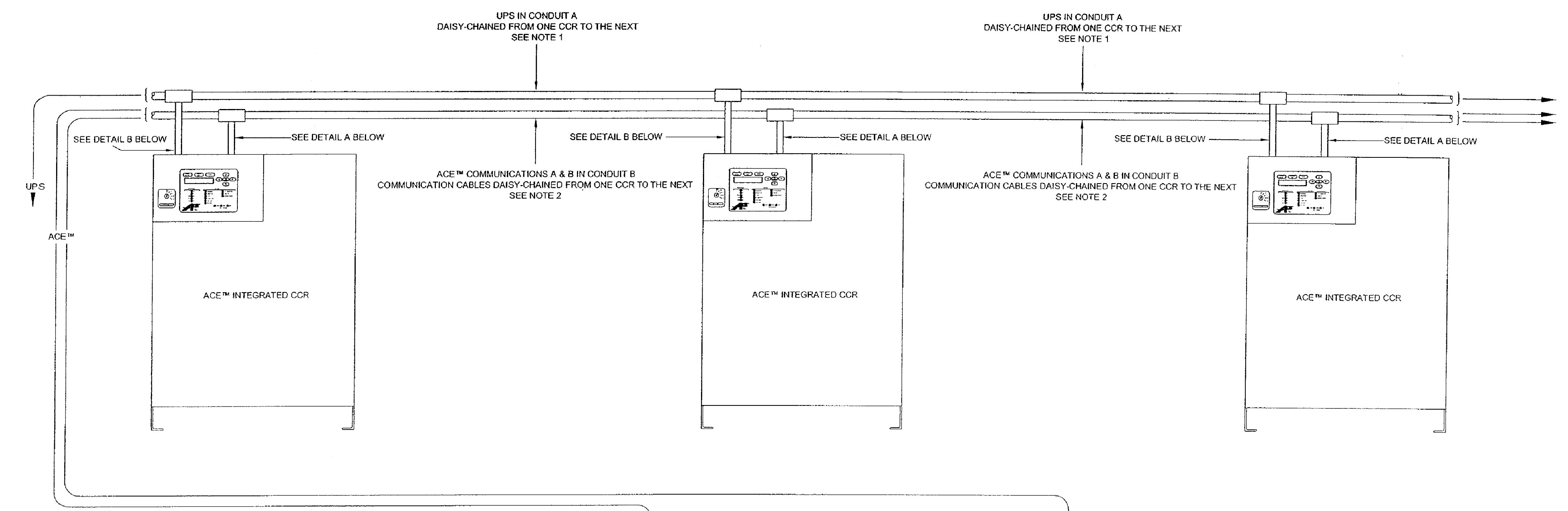
SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT
SAN ANGELO, TEXAS

DRAWN BY:	MB
DESIGNED BY:	CVN
LATEST REVISION:	6/29/2017
KSA JOB NO.:	SAN1059
PROJECT NAME:	SAN1059



SEAL: SHEET NO. E15

KSA AND SENIORS ELECTRICAL PROJECTS (SAN ANGELO, TX)
 ELECTRICAL 00107 CAD/00 PROJECT/030 SHEETS/01 SHEET
 SETS/ SAN 059-ELEC-DTL-SHEET/ALCMS SYSTEM
 DRAWING FOR SHEET LABEL/DATE 9-18-16

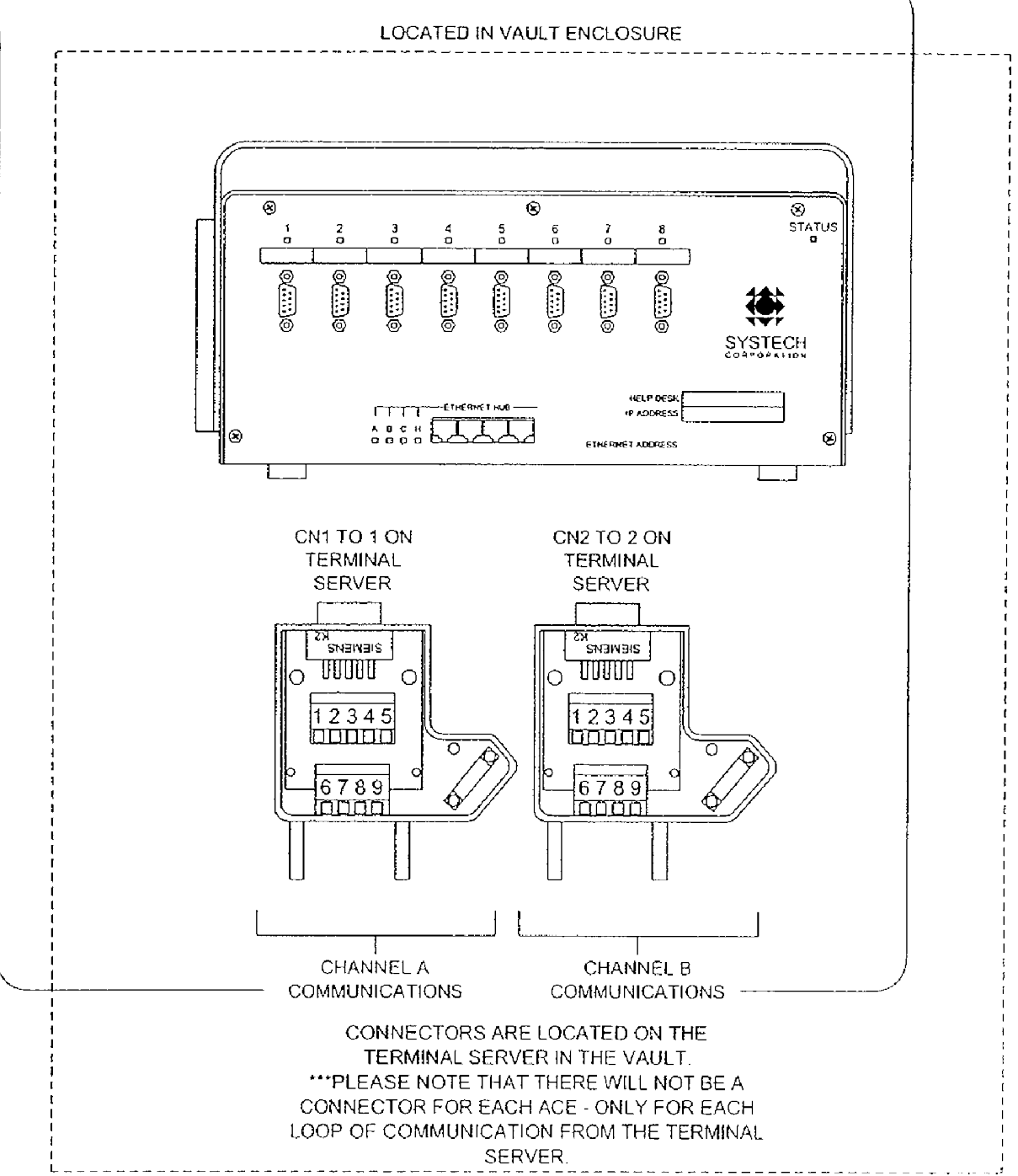
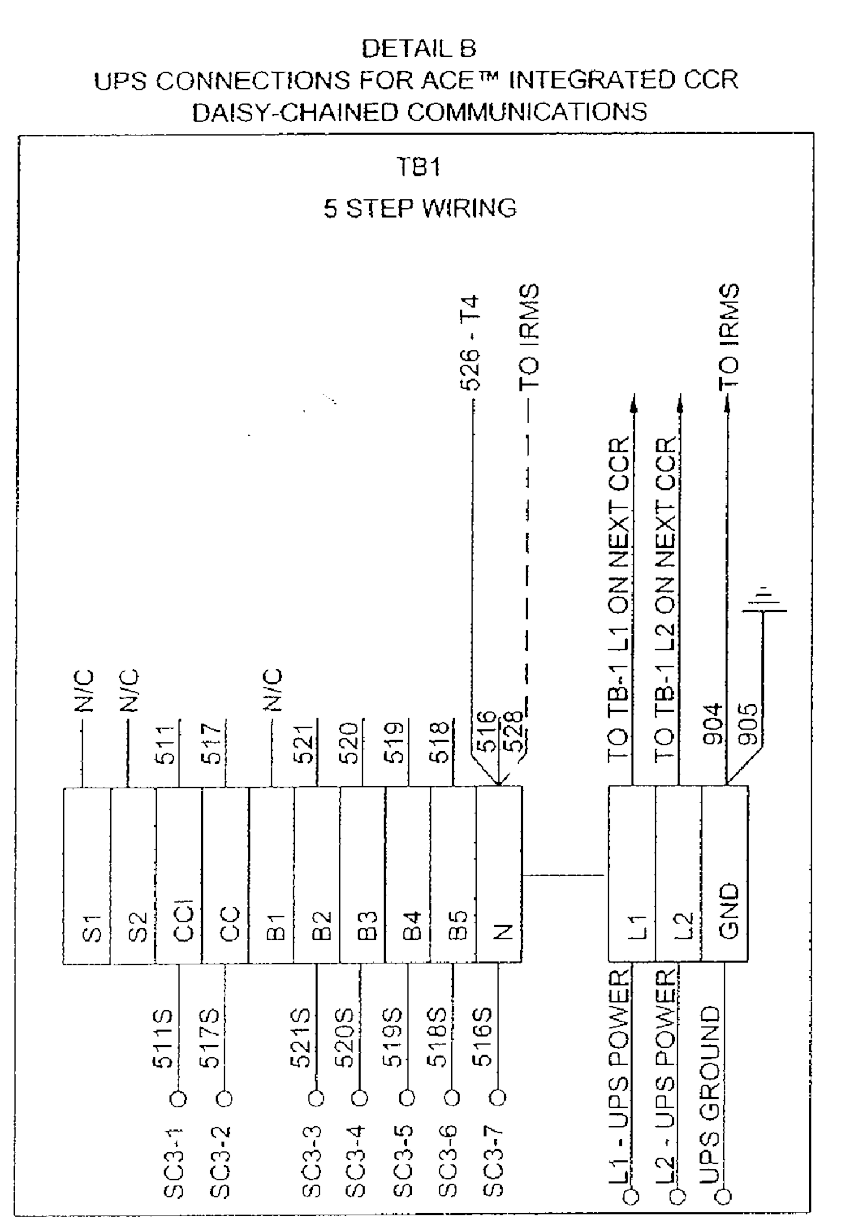


DETAIL A
CPU BOARD INSIDE ACE™ INTEGRATED CCR
DAISY-CHAINED COMMUNICATIONS

TO J8-2 ON NEXT ACE™	SHIELD	1
TO 5 ON CN1**	SHIELD	2
TO J8-3 ON NEXT ACE™	WHITE/ORANGE	3
TO 2 ON CN1**	WHITE/ORANGE	4
TO J8-4 ON NEXT ACE™	ORANGE/WHITE	5
TO 8 ON CN1**	ORANGE/WHITE	6
TO J8-5 ON NEXT ACE™	WHITE/BLUE	7
TO 7 ON CN1**	WHITE/BLUE	8
TO J8-6 ON NEXT ACE™	BLUE/WHITE	9
TO 3 ON CN1**	BLUE/WHITE	10

TO J9-8 ON NEXT ACE™	SHIELD	11
TO 5 ON CN2**	SHIELD	12
TO J9-9 ON NEXT ACE™	WHITE/ORANGE	13
TO 2 ON CN2**	WHITE/ORANGE	14
TO J9-10 ON NEXT ACE™	ORANGE/WHITE	15
TO 8 ON CN2**	ORANGE/WHITE	16
TO J9-11 ON NEXT ACE™	WHITE/BLUE	17
TO 7 ON CN2**	WHITE/BLUE	18
TO J9-12 ON NEXT ACE™	BLUE/WHITE	19
TO 3 ON CN2**	BLUE/WHITE	20

** THESE CONNECTIONS APPLY ONLY TO 1ST ACE™/ACE™ COMBO BOX IN THE DAISY-CHAIN LINE-UP. CN1 & CN2 ARE LOCATED AT THE TERMINAL SERVER.

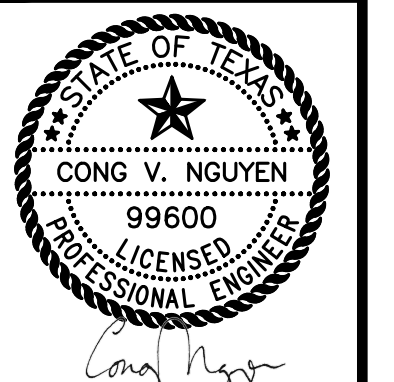


- CONTRACTOR INSTALLATION NOTES:**
- ENCLOSED IN CONDUIT B (ACE™ COMMUNICATIONS DAISY-CHAINED TO EACH ACE™) SEE DETAIL A.
 - ENCLOSED IN CONDUIT A (UPS POWER DAISY-CHAINED TO EACH ACE™ & CCR) SEE DETAIL B.

ALCMS SYSTEM
MODIFICATIONS -
SHEET 5 OF 10

SAN ANGELO REGIONAL
AIRPORT TAXIWAY
RECONFIGURATION PROJECT
SAN ANGELO, TEXAS

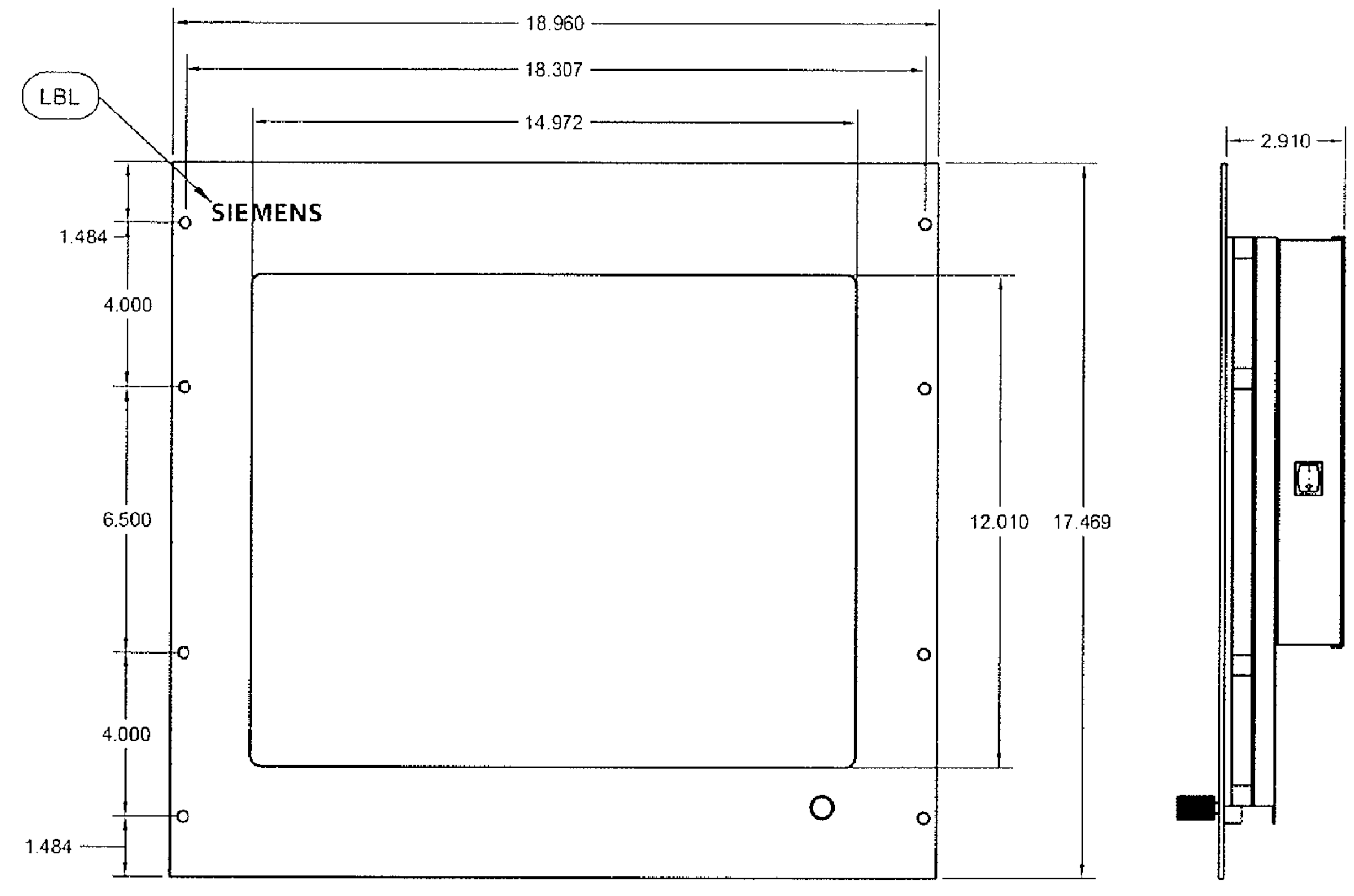
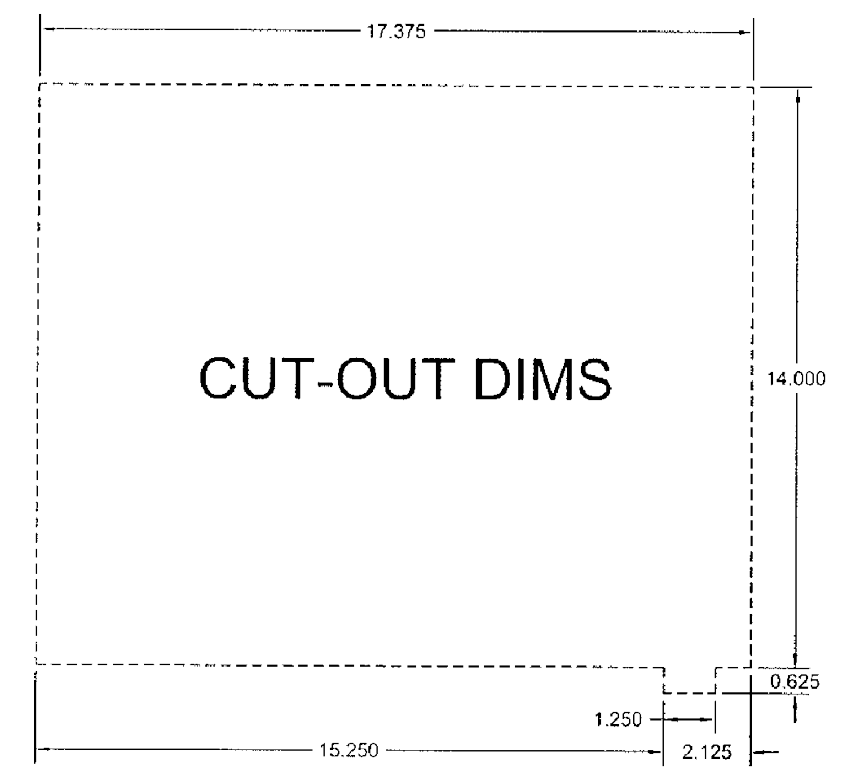
DRAWN BY: MB
DESIGNED BY: CYN
LATEST REVISION: 6/29/2017
KSA JOB NO.: SAN_059



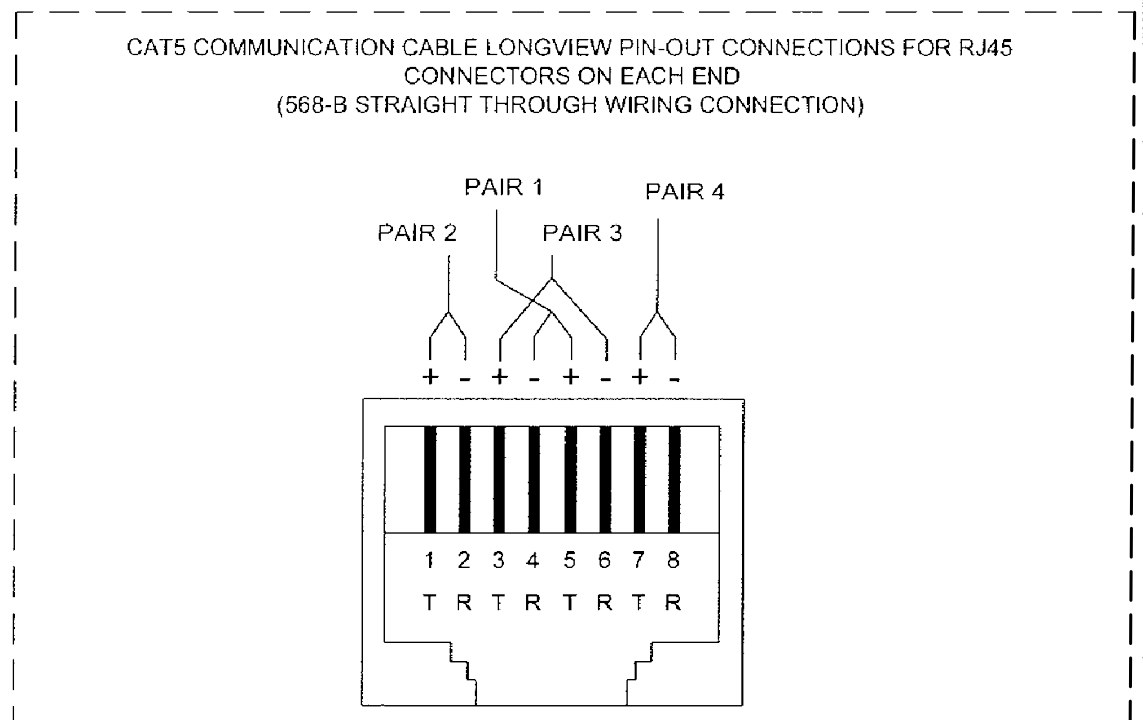
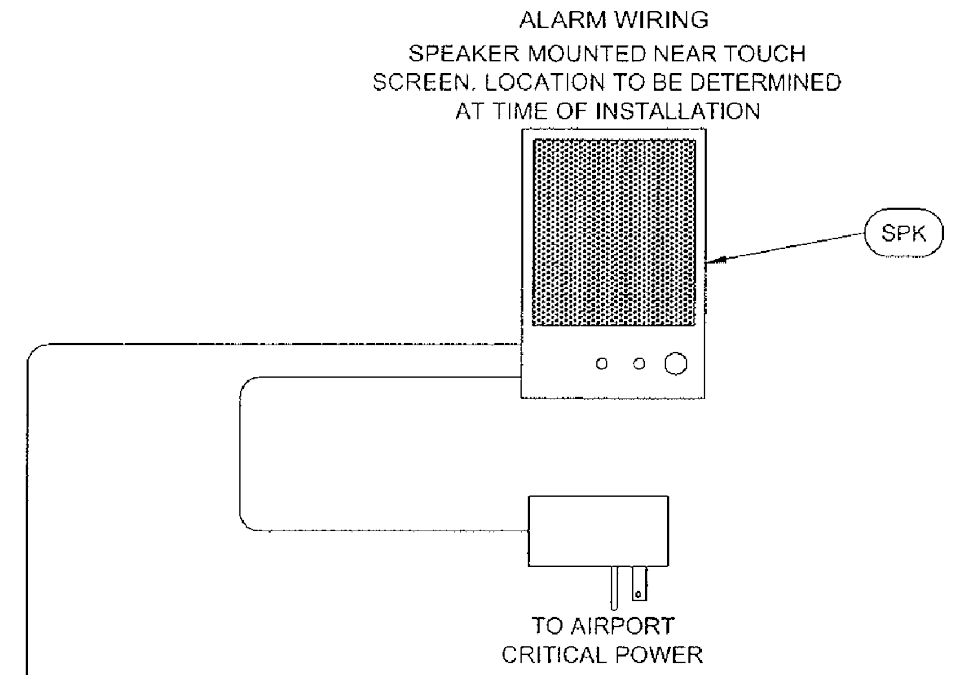
SEAL:
SHEET NO. E16

MARK	REVISION	DATE

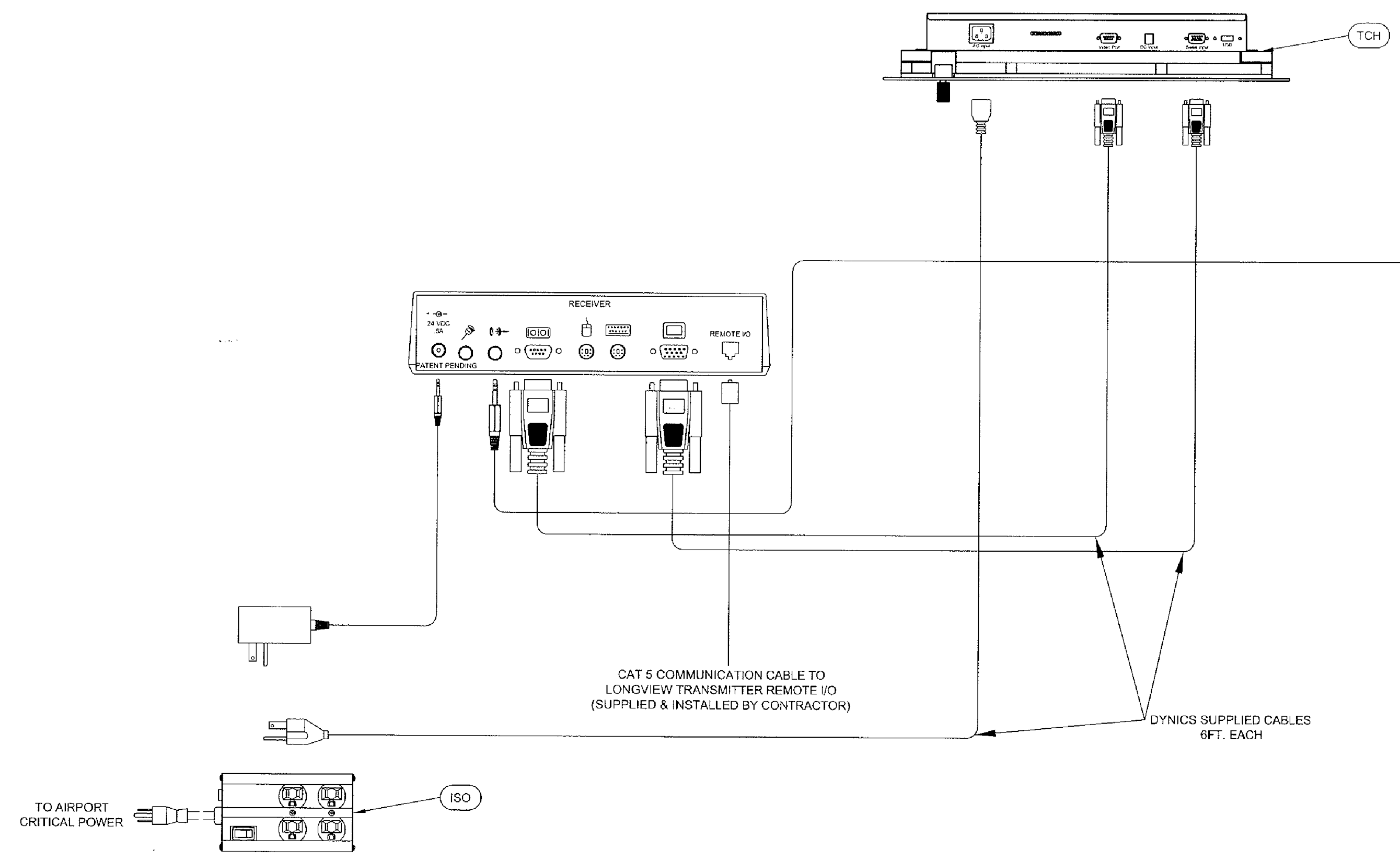
KSA: KSA SERVICES INC. PROJECTS DEPARTMENT
ELECTRICAL 00107 CAD/DP PROJECTS SHEETS 001 SHEET
SETS: SAN_059-ELEC-DTL'S.DWG | ALCMS SYSTEM
DRAWING FROM SHEET LAYOUT ALLOCATED DATE: 9/18/17



GENERAL BILL OF MATERIAL			
Item #	Description	U/M	QTY
ISO	ISOBAR SURGE PROTECTOR 4OUTLET	EA	1
SPK	SPEAKER PAIR AMP W/AC ADAPTER	EA	1
TCH	19" DYNICS RACK/PANEL RESISTIVE TCHSCRN	EA	1
LBL	SIEMENS SELF ADHESIVE LABEL 2.75 X .5	EA	1



STANDARD 4 PAIR WIRING COLOR CODES		
PAIR 1	T	WHITE/BLUE
	R	BLUE/WHITE
PAIR 2	T	WHITE/ORANGE
	R	ORANGE/WHITE
PAIR 3	T	WHITE/GREEN
	R	GREEN/WHITE
PAIR 4	T	WHITE/BROWN
	R	BROWN/WHITE

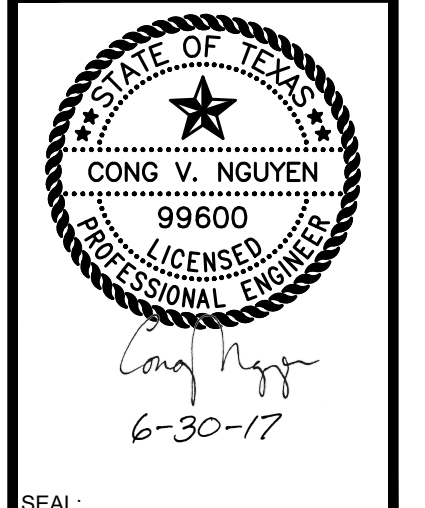


MARK	REVISION	DATE

ALCMS SYSTEM MODIFICATIONS - SHEET 6 OF 10

SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT
SAN ANGELO, TEXAS

DRAWN BY: MB
DESIGNED BY: CYN
LATEST REVISION: 6/29/2017
KSA JOB NO.: SAN1059

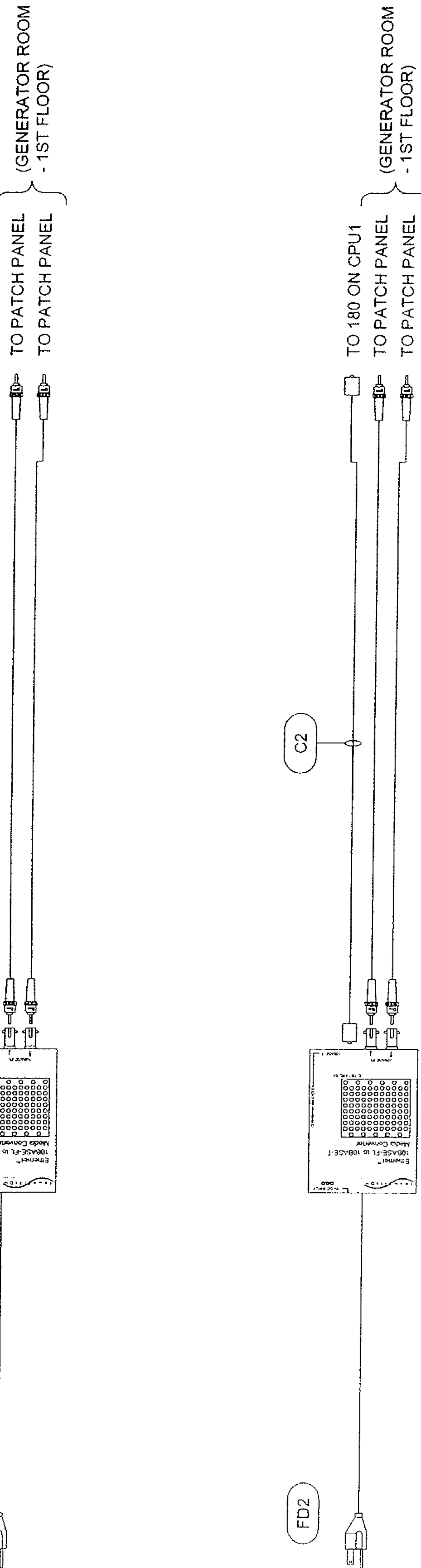
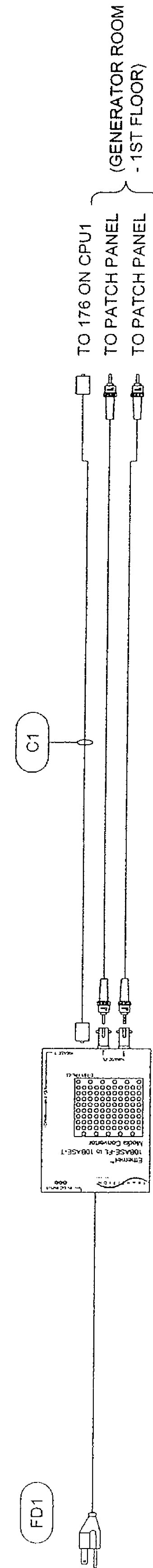
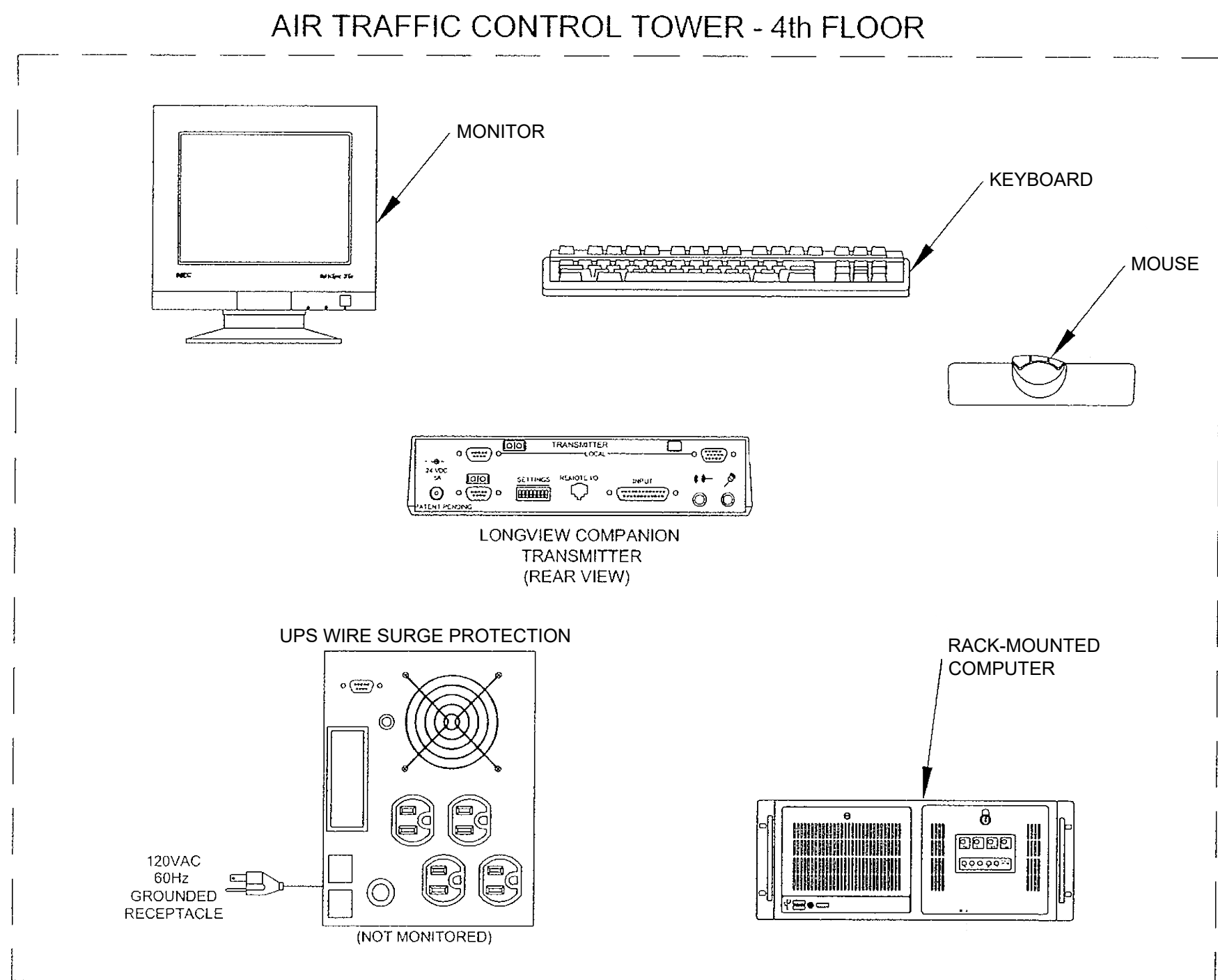
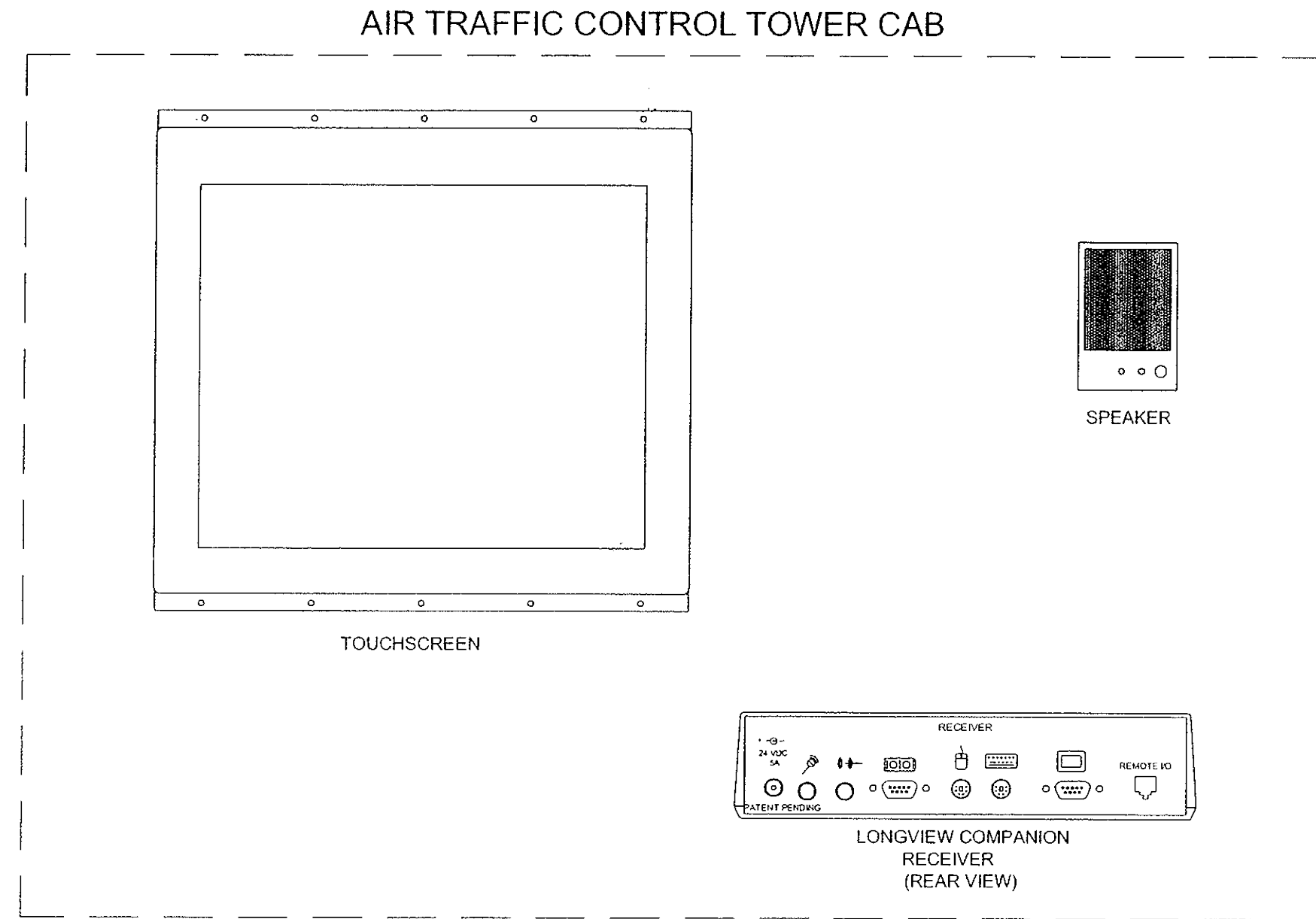


SEAL: SHEET NO. E17

PROJECT NAME: SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT
 PROJECT NO.: SAN1059
 KSA: 58 Bluff Street, San Angelo, Texas 76901
 T: 325-947-1555 F: 325-947-1559
 www.ksaeng.com
 KSA: 059-ELEC-DTL-DWG | ALCMS SYSTEM SETS | SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT | SHEET 6 OF 10
 DATE: 6/30/17

AIR TRAFFIC CONTROL TOWER ALCS EQUIPMENT

N.T.S.



(GENERATOR ROOM - 1ST FLOOR)

(GENERATOR ROOM - 1ST FLOOR)

MARK	REVISION	DATE

ALCMS SYSTEM MODIFICATIONS - SHEET 7 OF 10

SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT
SAN ANGELO, TEXAS

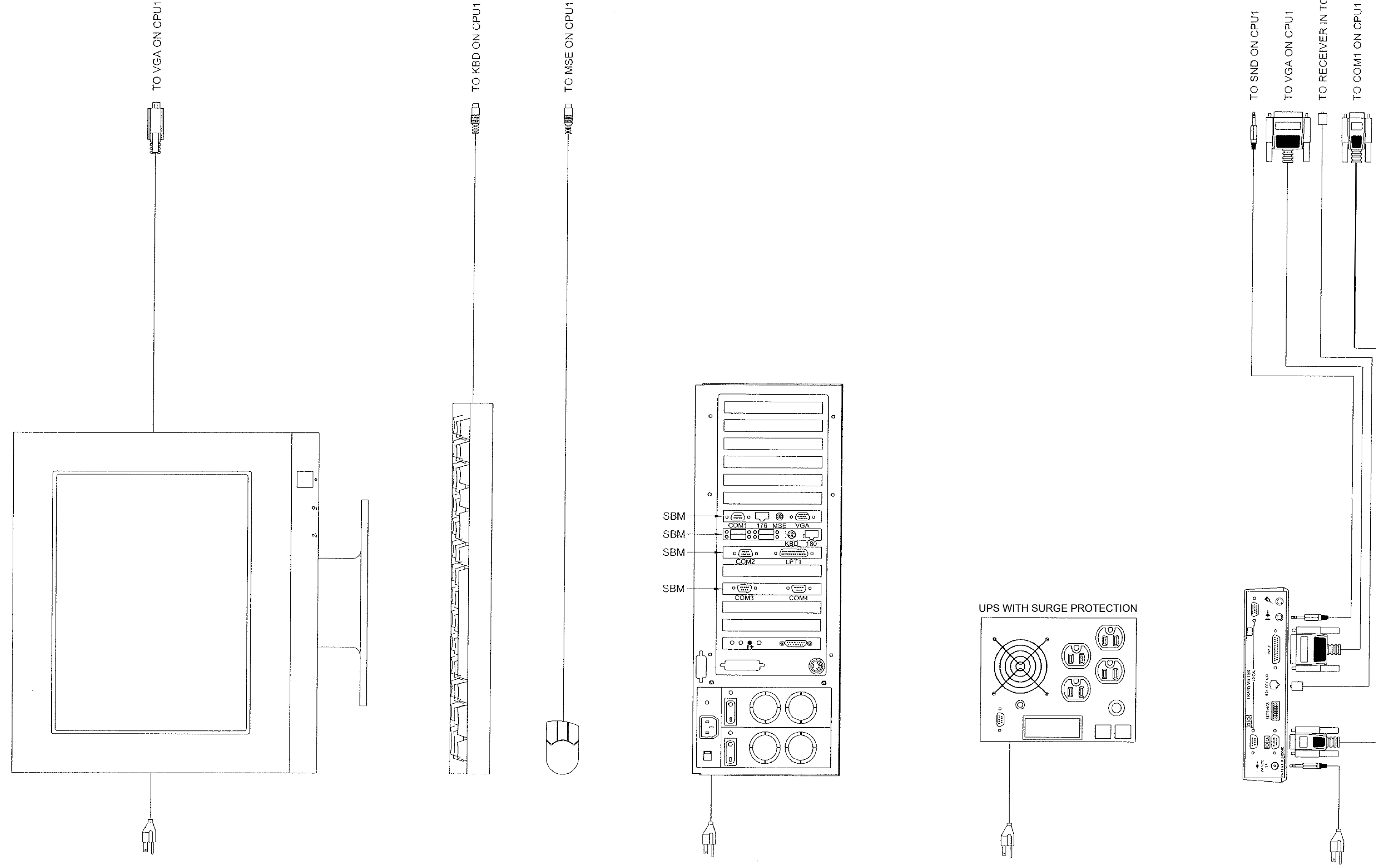
DRAWN BY: MB
DESIGNED BY: CVN
LATEST REVISION: 6/29/2017
KSA JOB NO.: SAN_059
PROJECT NAME: SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT

KSA
58 Buick Street, San Angelo, Texas 76901
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www.ksaeng.com

STATE OF TEXAS
CONG V. NGUYEN
99600
LICENSED PROFESSIONAL ENGINEER
6-30-17

SEAL: SHEET NO. **E18**

AIR TRAFFIC CONTROL TOWER - FOURTH FLOOR

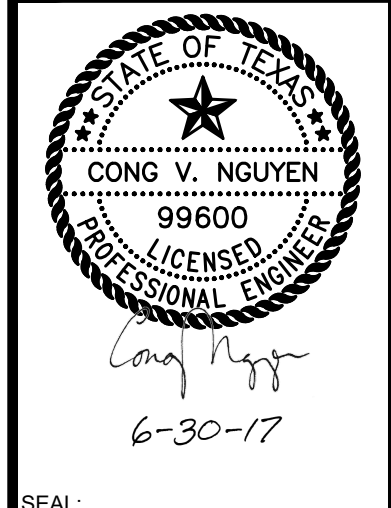


MARK	REVISION	DATE

ALCMS SYSTEM
MODIFICATIONS -
SHEET 8 OF 10

SAN ANGELO REGIONAL
AIRPORT TAXIWAY
RECONFIGURATION PROJECT
SAN ANGELO, TEXAS

DRAWN BY: MB
DESIGNED BY: CVN
LATEST REVISION: 6/29/2017
KSA JOB NO.: SAN1059

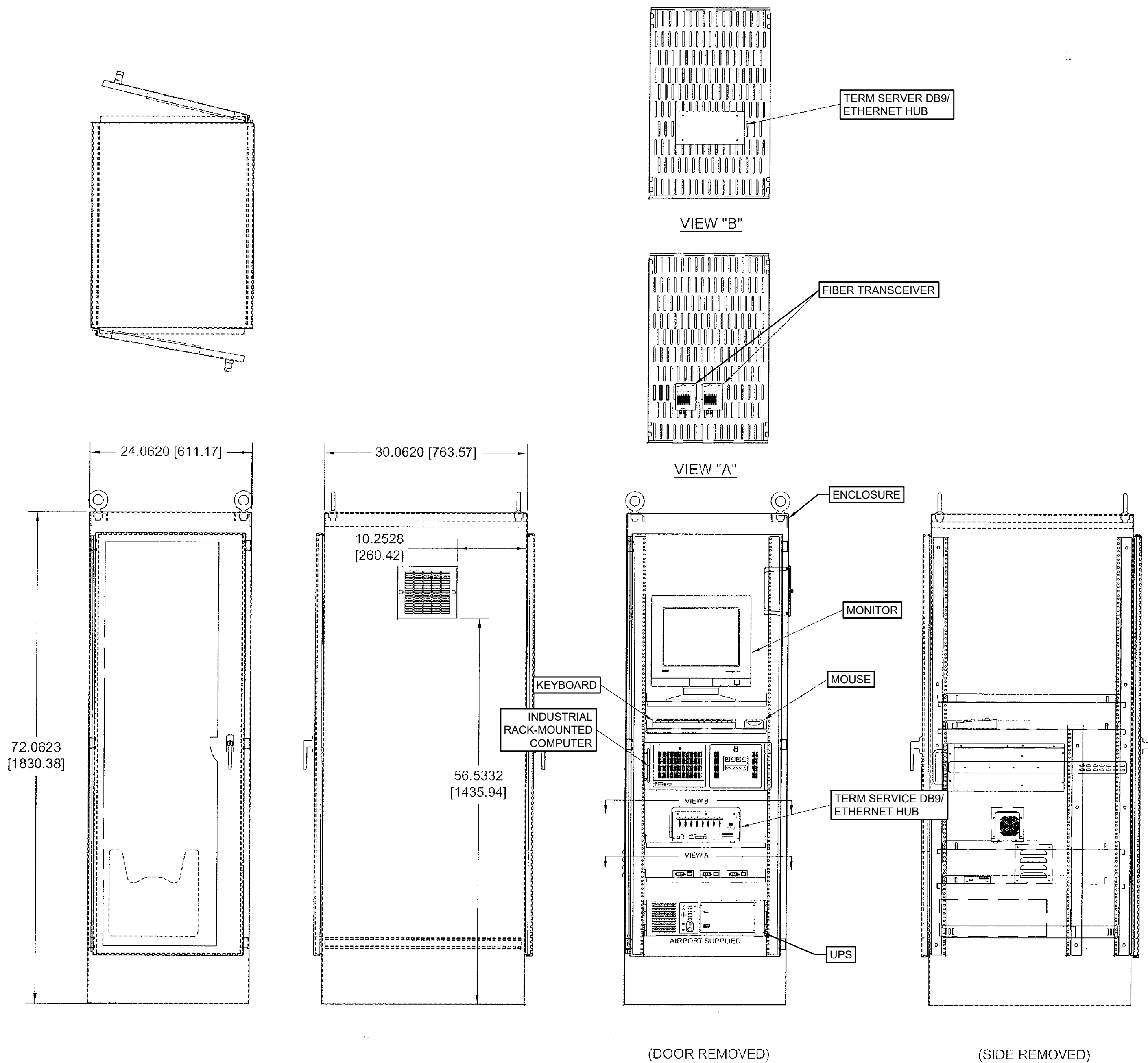


SEAL:
SHEET NO. **E19**

KSA AND SERVICES PROJECTS SAN ANGELO, TEXAS
 ELECTRICAL/007 CAD/00 PROJECT/30 SHEETS/01 SHEET
 SETS/ SAN 059-ELEC-DTL/01 SHEET/ALCMS SYSTEM
 DRAWING DATE: 6/29/2017

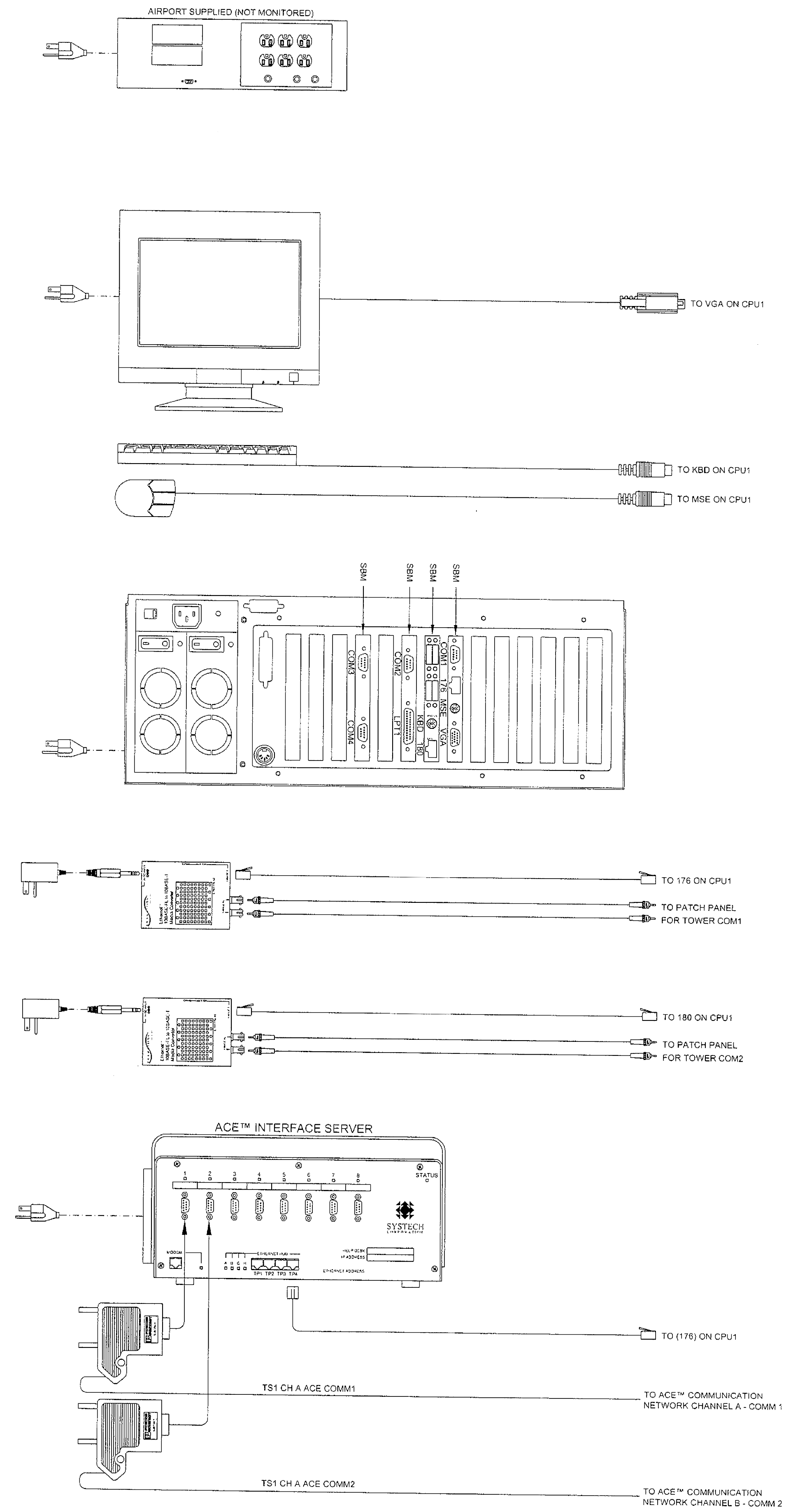
VAULT ALMCS ENCLOSURE

N.T.S.



POWER CONNECTIONS

DATA CONNECTIONS



MARK	REVISION	DATE

ALMCS SYSTEM MODIFICATIONS - SHEET 9 OF 10

SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT
SAN ANGELO, TEXAS

DRAWN BY: MB
DESIGNED BY: CVN
LATEST REVISION: 6/29/2017
KSA JOB NO.: SAN_059
PROJECT NAME: SAN_059

KSA
58 Bullock Street, San Angelo, Texas 76901
T. 325-947-1555 F. 325-947-1559
www.ksaeng.com

SEAL: CONG V. NGUYEN 99600 LICENSED PROFESSIONAL ENGINEER
6-30-17
SHEET NO. **E20**

Electrical Vault Constant Current Regulator Index															
CCR#	Name	Function	Input		Output			CCR Information				ACE Information			
			Voltage	Rating (6.6/20A)	Size (kW)	Steps (11/15)	Control Power	FAA Type (L-828/L-829)	Manufacturer	Manufacturer Model / Part #	CCR (New/Existing)	Network Channel A #	Network Channel B #	Interposing Relay Assembly	
1	SPARE 1	Circuit No. 4 (Green)	240V	6.6A	7.5kW	3	120V Internal	L-828	ADB		Existing	1001	2001	1	
2	TWY A,B,C,D,E,F	Circuit No. 6 (Blue)	240V	6.6A	20kW	3	120V Internal	L-828	ADB		Existing	1002	2002	1	
3	RWY 9-27 EDGE & HOTEL	Circuit No. 3 (Yellow)	240V	6.6A	7.5kW	3	120V Internal	L-828	ADB		Existing	1003	2003	1	
4	RWY 18-36 EDGE	Circuit No. 2 (Brown)	480V	6.6A	20kW	3	120V Internal	L-829	SAS		Existing	1004	2004		
5	RWY 3-21 EDGE	Circuit No. 1 (Red)	240V	6.6A	30kW	5	120V Internal	L-828	ADB		Existing	1005	2005		
6	SPARE 2	Circuit No. 5 (White)	240V	6.6A	7.5kW	3	120V Internal	L-828	ADB		Existing	1006	2006	1	
N/A	GEN CONTROL	125KW Generator (120/240V)	See Miscellaneous Control & Monitoring Index									Existing	1007	2007	

Miscellaneous Control and Monitoring Index			
Description	Controllable item(s)	Monitored item(s)	ADB provided control/monitoring description
Automatic Transfer Switch (ATS)		Normal Power	1 opto-isolated, digital input, 24-120VAC/VDC
Generator		Generator On/Off	1 dry contact closure, 250 VAC/VDC, 1A max.

IMPORTANT NOTE: ALL CONTROL POWER AND MONITORING FEEDBACK SOURCE POWER MUST BE SUPPLIED BY/FROM THE GENERATOR EQUIPMENT. IF SOURCE POWER IS NOT PRESENT, THE AIRPORT/OWNER OR ELECTRICAL CONTRACTOR MUST INSTALL A POWER SUPPLY WHICH SHOULD BE CO-RELOCATED AT THE GENERATOR EQUIPMENT.

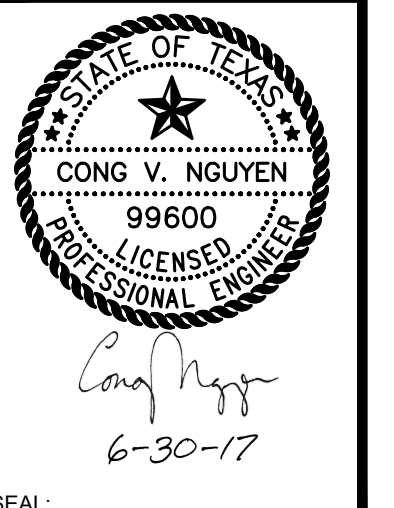
MARK	REVISION	DATE

ALCMS SYSTEM MODIFICATIONS - SHEET 10 OF 10

**SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT
SAN ANGELO, TEXAS**

DRAWN BY:	MB
DESIGNED BY:	CYN
LATEST REVISION:	6/29/2017
KSA JOB NO.:	SAN1059

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SEAL:
SHEET NO. **E21**

PROJECT NAME: SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT SAN ANGELO, TEXAS
SHEET NAME: ALCMS SYSTEM MODIFICATIONS - SHEET 10 OF 10
DATE: 6/30/17
DRAWING FOR: SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT SAN ANGELO, TEXAS
ELECTRICAL 00107 CAD/00 PROJECT/030 SHEETS/01 SHEET
SETS/ SAN 059-ELEC-DTL/DWG/ALCMS SYSTEM
DRAWING FOR: SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT SAN ANGELO, TEXAS