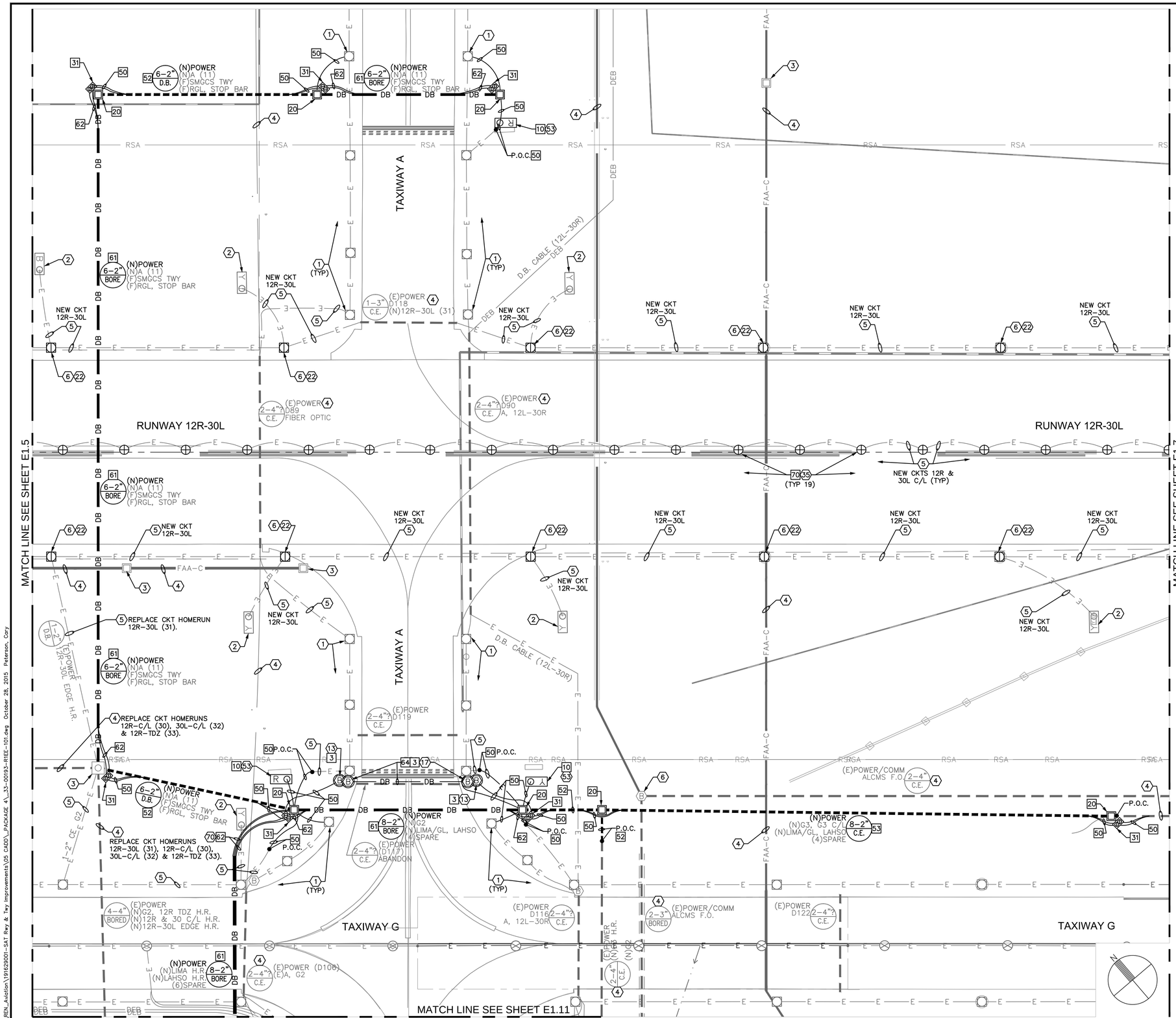


FIXTURE, SIGN & CIRCUIT CONSTRUCTION NOTES

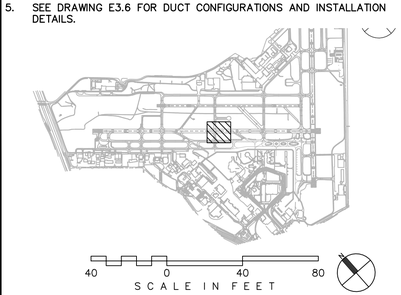
1. EXISTING LIGHT, PROTECT IN PLACE.
2. EXISTING SIGN, PROTECT IN PLACE.
3. EXISTING MANHOLE, HANDHOLE OR PULLBOX, PROTECT IN PLACE.
4. EXISTING DUCT, PROTECT IN PLACE. IF NOTED INSTALL NEW CONDUCTOR(S) AS INDICATED. SEE E4 SERIES CIRCUIT MAPS.
5. EXISTING CONDUIT, PROTECT IN PLACE. IF NOTED INSTALL NEW CONDUCTOR(S) AS INDICATED. SEE E4 SERIES CIRCUIT MAPS.
6. EXISTING BASE CAN, PROTECT IN PLACE.
13. FURNISH AND INSTALL BLANK COVER: FUTURE L-804 RUNWAY GUARD LIGHT.
17. FURNISH AND INSTALL BLANK COVER: FUTURE L-862S RUNWAY STOP BAR LIGHT.
22. REINSTALL SALVAGED L-862 RUNWAY EDGE LIGHT WITH NEW L-830.
35. NEW L-850A RUNWAY CENTERLINE LIGHT WITH (2) NEW 100 W, 20A L-830S.
53. SALVAGE & REINSTALL SIZE 3 SIGN WITH NEW L-830 ON NEW CONCRETE FOUNDATION.
70. INSTALL NEW CONCRETE DUCT MARKER AT DUCT CHANGE OF DIRECTION PER SPECIFICATIONS.

BASE CAN, FOUNDATION & CONDUIT NOTES

3. NEW L-867 BASE CAN IN UN-PAVED SHOULDER.
10. NEW CONCRETE SIGN FOUNDATION. SEE DATA TABLES IN E2 SERIES DRAWINGS FOR LOCATION & DETAIL DATA.
20. NEW PRECAST CONCRETE HANDHOLE. SEE DATA TABLES IN E2 SERIES DRAWINGS FOR LOCATION & DETAIL DATA.
31. NEW 2-CAN JUNCTION CAN PLAZA, SEE DETAILS ON DRAWING E3.8.
50. NEW 1-2"PVC, D.B. (ITEM L-110). NEW CONDUCTORS (ITEM L-108).
52. NEW DUCT, D.B. (ITEM L-110). NEW CONDUCTORS (ITEM L-108).
53. NEW DUCT, C.E. (ITEM L-110). NEW CONDUCTORS (ITEM L-108).
61. DIRECTIONAL BORE HDPE DUCT UNDER EXISTING PAVEMENT: MINIMUM 36-INCHES BELOW PAVEMENT SURFACE.
62. NEW 1-2"HDPE (OR PVC WITH HDPE TRANSITION), D.B. (ITEM L-110). NEW CONDUCTORS (ITEM L-108).
64. DIRECTIONAL BORE 1-2"HDPE UNDER EXISTING PAVEMENT: APPROXIMATELY 36-INCHES BELOW PAVEMENT SURFACE. LONGITUDINAL LOCATION SHALL BE DIRECTLY BETWEEN THE BASE CANS INSTALLED AT EACH END.
70. MODIFY OR REPLACE EXISTING L-868B BASE CAN FOR IN-PAVEMENT RUNWAY CENTERLINE LIGHT, SEE DETAILS ON DRAWING E3.2. APPLIES TO ALL RUNWAY CENTERLINE BASES WEST OF TAXIWAY B AND OTHERS AS DIRECTED BY THE OWNER.

GENERAL NOTES

1. SEE DRAWING E2.2 AND DATA TABLES FOR NEW FIXTURE, HANDHOLE, JUNCTION CAN, BASE CAN, AND SIGN FOUNDATION LOCATIONS.
2. SEE E0 SERIES DRAWINGS FOR TEMPORARY CIRCUITS AND FIXTURES.
3. SEE CIRCUIT MAPS E4 SERIES DRAWINGS FOR NEW OR MODIFIED CIRCUITS.
4. SEE E6 SERIES DRAWINGS FOR ELECTRICAL DEMOLITION PLANS.
5. SEE DRAWING E3.6 FOR DUCT CONFIGURATIONS AND INSTALLATION DETAILS.



CITY OF SAN ANTONIO AVIATION DEPARTMENT

SAN ANTONIO AIRPORT SYSTEM

Kimley»Horn

KIMLEY-HORN AND ASSOCIATES, INC.
601 NW LOOP 410, SUITE 350
SAN ANTONIO, TEXAS 78216
PHONE: (210) 541-9166

TEXAS REGISTERED FIRM, NO. 928

RUNWAY 12R-30L ELECTRICAL IMPROVEMENTS AND TERMINAL AREA TAXIWAY IMPROVEMENTS (PACKAGE 4)

STATE OF TEXAS
ERIC G. LOVEJOY
84081
LICENSED
PROFESSIONAL ENGINEER
6/17/16

MARK	DATE	DESCRIPTION

ISSUE:	---
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ELECTRICAL LAYOUT PLAN - BASE BID

E1.6

SHEET NO. 43 OF 157

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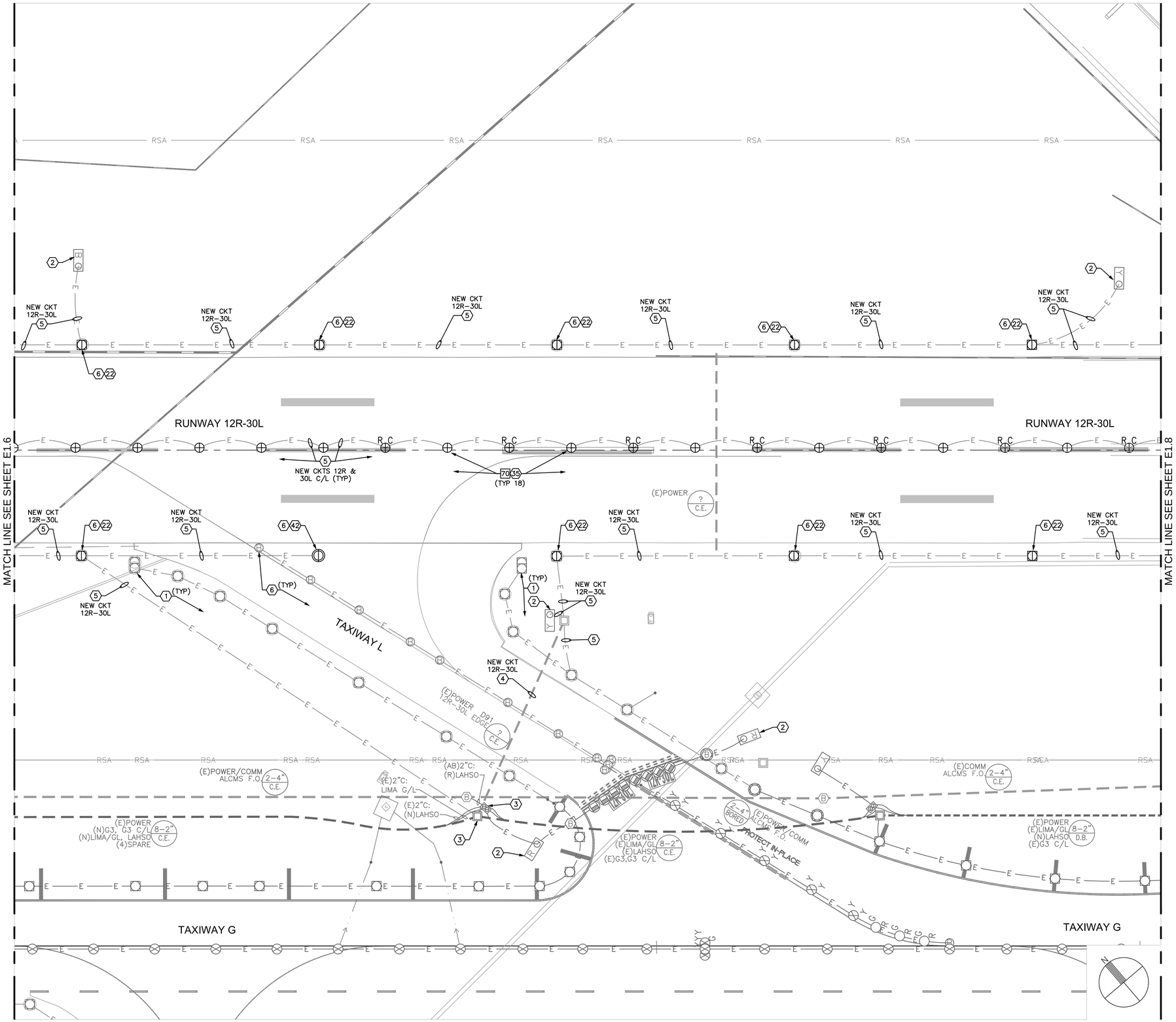


FIXTURE, SIGN & CIRCUIT CONSTRUCTION NOTES

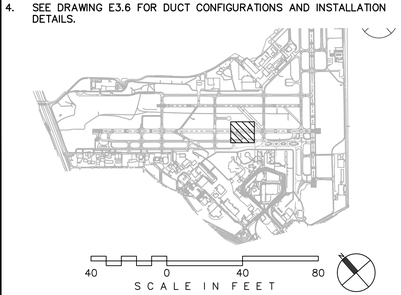
1. EXISTING LIGHT, PROTECT IN PLACE.
2. EXISTING SIGN, PROTECT IN PLACE.
3. EXISTING MANHOLE, HANDHOLE OR PULLBOX, PROTECT IN PLACE.
4. EXISTING DUCT, PROTECT IN PLACE. IF NOTED INSTALL NEW CONDUCTOR(S) AS INDICATED. SEE E4 SERIES CIRCUIT MAPS.
5. EXISTING CONDUIT, PROTECT IN PLACE. IF NOTED INSTALL NEW CONDUCTOR(S) AS INDICATED. SEE E4 SERIES CIRCUIT MAPS.
6. EXISTING BASE CAN, PROTECT IN PLACE.
22. REINSTALL SALVAGED L-862 RUNWAY EDGE LIGHT WITH NEW L-830.
35. NEW L-850A RUNWAY CENTERLINE LIGHT WITH (2) NEW 100 W, 20A L-830S.
42. REINSTALL SALVAGED EXISTING L-850C RUNWAY EDGE LIGHT WITH NEW 100 W, 20A L-830.

BASE CAN, FOUNDATION & CONDUIT NOTES

70. MODIFY OR REPLACE EXISTING L-868B BASE CAN FOR IN-PAVEMENT RUNWAY CENTERLINE LIGHT. SEE DETAILS ON DRAWING E3.2. APPLIES TO ALL RUNWAY CENTERLINE BASES WEST OF TAXIWAY B AND OTHERS AS DIRECTED BY THE OWNER.

GENERAL NOTES

1. SEE E0 SERIES DRAWINGS FOR TEMPORARY CIRCUITS AND FIXTURES.
2. SEE CIRCUIT MAPS E4 SERIES DRAWINGS FOR NEW OR MODIFIED CIRCUITS.
3. SEE E6 SERIES DRAWINGS FOR ELECTRICAL DEMOLITION PLANS.
4. SEE DRAWING E3.6 FOR DUCT CONFIGURATIONS AND INSTALLATION DETAILS.



CITY OF SAN ANTONIO AVIATION DEPARTMENT

SAN ANTONIO AIRPORT SYSTEM

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601 NW LOOP 410, SUITE 350
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PHONE: (210) 541-9166

TEXAS REGISTERED FIRM, NO. 928

RUNWAY 12R-30L ELECTRICAL IMPROVEMENTS AND TERMINAL AREA TAXIWAY IMPROVEMENTS (PACKAGE 4)

STATE OF TEXAS
ERIC C. LOVEJOY
84081
LICENSED
PROFESSIONAL ENGINEER
5/5/16

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ELECTRICAL LAYOUT PLAN - BASE BID

E1.7

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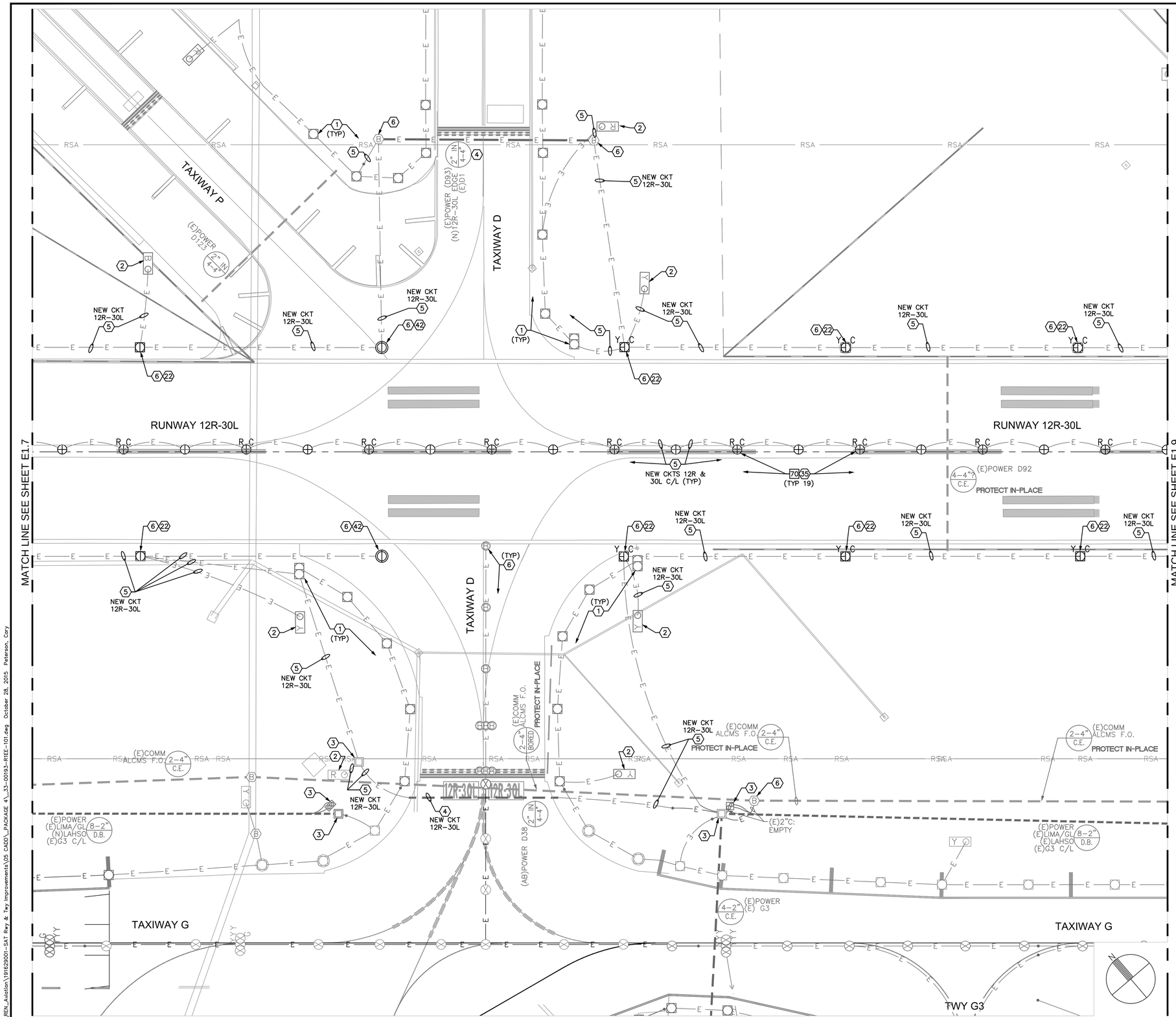


FIXTURE, SIGN & CIRCUIT CONSTRUCTION NOTES

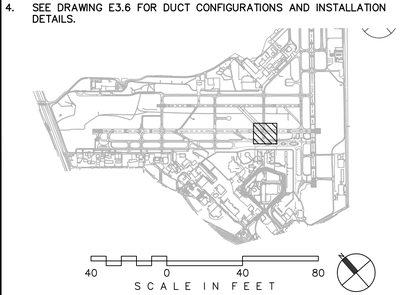
1. EXISTING LIGHT, PROTECT IN PLACE.
2. EXISTING SIGN, PROTECT IN PLACE.
3. EXISTING MANHOLE, HANDHOLE OR PULLBOX, PROTECT IN PLACE.
4. EXISTING DUCT, PROTECT IN PLACE. IF NOTED INSTALL NEW CONDUCTOR(S) AS INDICATED. SEE E4 SERIES CIRCUIT MAPS.
5. EXISTING CONDUIT, PROTECT IN PLACE. IF NOTED INSTALL NEW CONDUCTOR(S) AS INDICATED. SEE E4 SERIES CIRCUIT MAPS.
6. EXISTING BASE CAN, PROTECT IN PLACE.
22. REINSTALL SALVAGED L-862 RUNWAY EDGE LIGHT WITH NEW L-830.
35. NEW L-850A RUNWAY CENTERLINE LIGHT WITH (2) NEW 100 W, 20A L-830S.
42. REINSTALL SALVAGED EXISTING L-850C RUNWAY EDGE LIGHT WITH NEW 100 W, 20A L-830.

BASE CAN, FOUNDATION & CONDUIT NOTES

70. MODIFY OR REPLACE EXISTING L-868B BASE CAN FOR IN-PAVEMENT RUNWAY CENTERLINE LIGHT. SEE DETAILS ON DRAWING E3.2. APPLIES TO ALL RUNWAY CENTERLINE BASES WEST OF TAXIWAY B AND OTHERS AS DIRECTED BY THE OWNER.

GENERAL NOTES

1. SEE E0 SERIES DRAWINGS FOR TEMPORARY CIRCUITS AND FIXTURES.
2. SEE CIRCUIT MAPS E4 SERIES DRAWINGS FOR NEW OR MODIFIED CIRCUITS.
3. SEE E6 SERIES DRAWINGS FOR ELECTRICAL DEMOLITION PLANS.
4. SEE DRAWING E3.6 FOR DUCT CONFIGURATIONS AND INSTALLATION DETAILS.



CITY OF SAN ANTONIO AVIATION DEPARTMENT

SAN ANTONIO AIRPORT SYSTEM

Kimley»Horn

KIMLEY-HORN AND ASSOCIATES, INC.
601 NW LOOP 410, SUITE 350
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TEXAS REGISTERED FIRM, NO. 928

RUNWAY 12R-30L ELECTRICAL IMPROVEMENTS AND TERMINAL AREA TAXIWAY IMPROVEMENTS (PACKAGE 4)

STATE OF TEXAS
ERIC C. LOVEJOY
84081
LICENSED
PROFESSIONAL ENGINEER
5/6/16

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ELECTRICAL LAYOUT PLAN - BASE BID

E1.8

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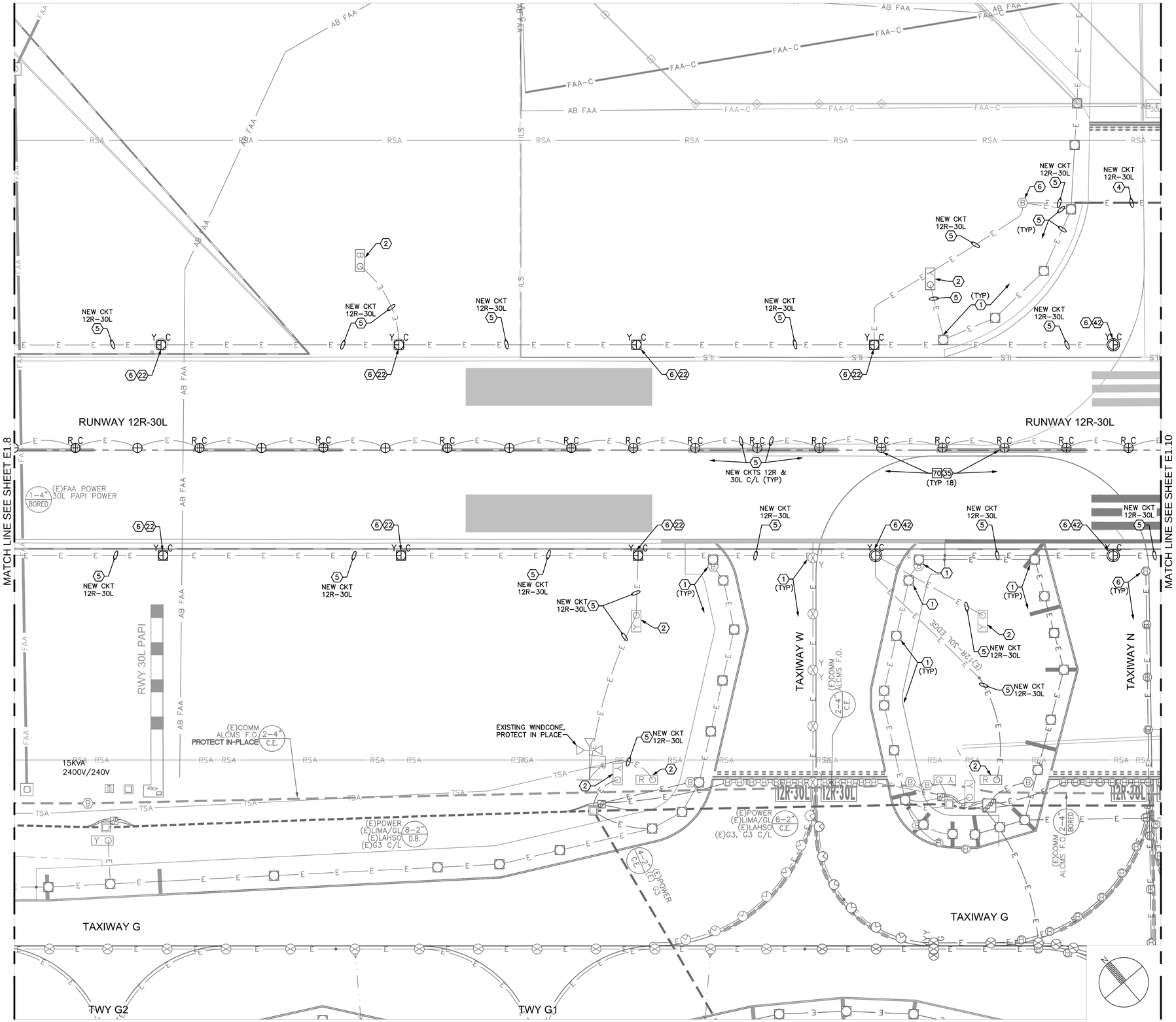


FIXTURE, SIGN & CIRCUIT CONSTRUCTION NOTES

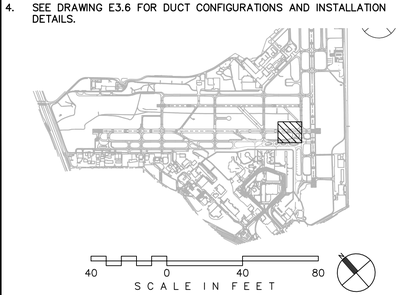
1. EXISTING LIGHT, PROTECT IN PLACE.
2. EXISTING SIGN, PROTECT IN PLACE.
4. EXISTING DUCT, PROTECT IN PLACE. IF NOTED INSTALL NEW CONDUCTOR(S) AS INDICATED. SEE E4 SERIES CIRCUIT MAPS.
5. EXISTING CONDUIT, PROTECT IN PLACE. IF NOTED INSTALL NEW CONDUCTOR(S) AS INDICATED. SEE E4 SERIES CIRCUIT MAPS.
6. EXISTING BASE CAN, PROTECT IN PLACE.
22. REINSTALL SALVAGED L-862 RUNWAY EDGE LIGHT WITH NEW L-830.
35. NEW L-850A RUNWAY CENTERLINE LIGHT WITH (2) NEW 100 W, 20A L-830S.
42. REINSTALL SALVAGED EXISTING L-850C RUNWAY EDGE LIGHT WITH NEW 100 W, 20A L-830.

BASE CAN, FOUNDATION & CONDUIT NOTES

70. MODIFY OR REPLACE EXISTING L-868B BASE CAN FOR IN-PAVEMENT RUNWAY CENTERLINE LIGHT. SEE DETAILS ON DRAWING E3.2. APPLIES TO ALL RUNWAY CENTERLINE BASES WEST OF TAXIWAY B AND OTHERS AS DIRECTED BY THE OWNER.

GENERAL NOTES

1. SEE E0 SERIES DRAWINGS FOR TEMPORARY CIRCUITS AND FIXTURES.
2. SEE CIRCUIT MAPS E4 SERIES DRAWINGS FOR NEW OR MODIFIED CIRCUITS.
3. SEE E6 SERIES DRAWINGS FOR ELECTRICAL DEMOLITION PLANS.
4. SEE DRAWING E3.6 FOR DUCT CONFIGURATIONS AND INSTALLATION DETAILS.



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KIMLEY-HORN AND ASSOCIATES, INC.
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TEXAS REGISTERED FIRM, NO. 928

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STATE OF TEXAS
ERIC C. LOVEJOY
84081
LICENSED
PROFESSIONAL ENGINEER
6/17/16

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ELECTRICAL LAYOUT PLAN - BASE BID

E1.9

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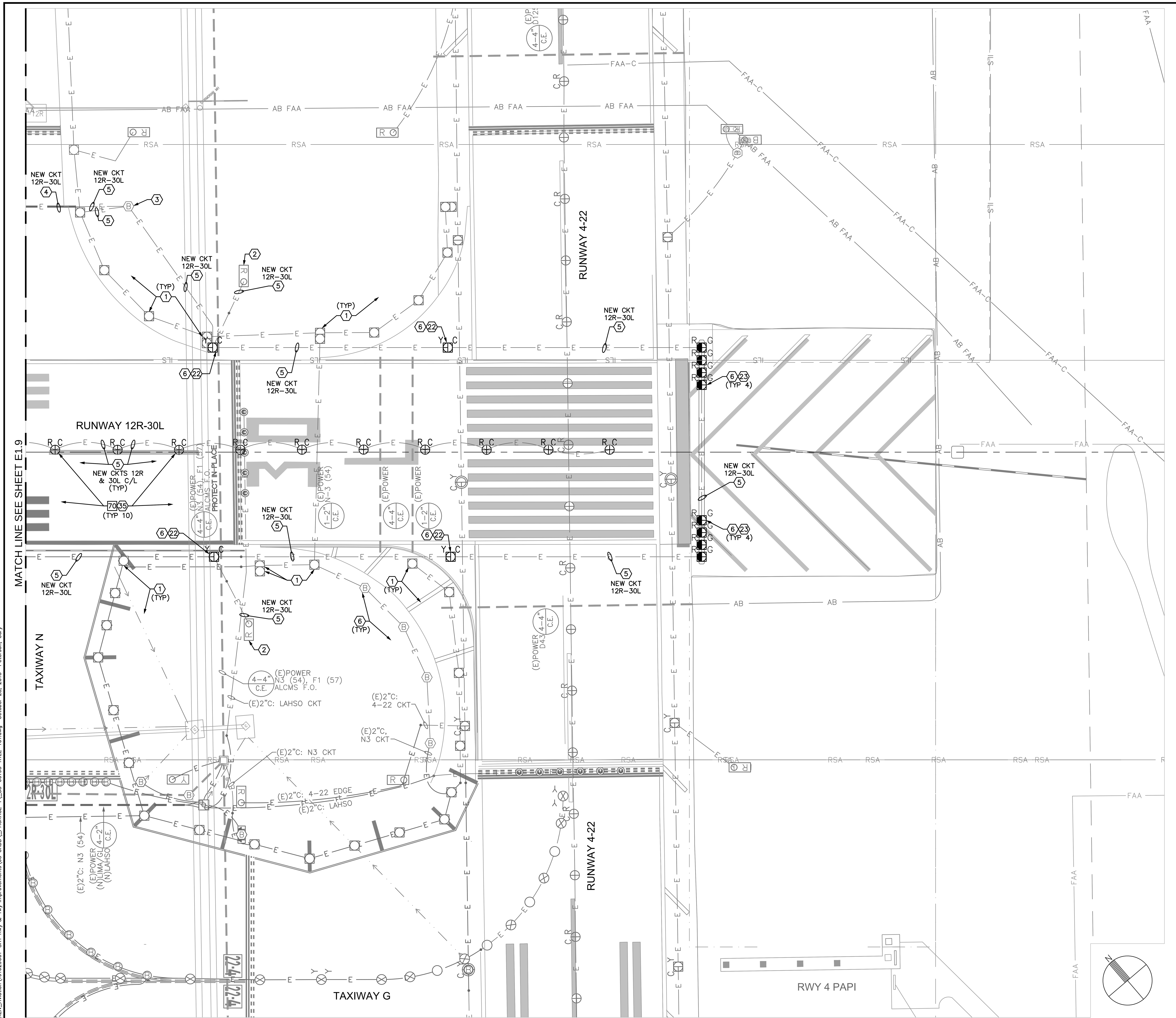

FIXTURE, SIGN & CIRCUIT CONSTRUCTION NOTES

1. EXISTING LIGHT, PROTECT IN PLACE.
2. EXISTING SIGN, PROTECT IN PLACE.
3. EXISTING MANHOLE, HANDHOLE OR PULLBOX, PROTECT IN PLACE.
4. EXISTING DUCT, PROTECT IN PLACE. IF NOTED INSTALL NEW CONDUCTOR(S) AS INDICATED. SEE E4 SERIES CIRCUIT MAPS.
5. EXISTING CONDUIT, PROTECT IN PLACE. IF NOTED INSTALL NEW CONDUCTOR(S) AS INDICATED. SEE E4 SERIES CIRCUIT MAPS.
6. EXISTING BASE CAN, PROTECT IN PLACE.
22. REINSTALL SALVAGED L-862 RUNWAY EDGE LIGHT WITH NEW L-830.
23. REINSTALL SALVAGED L-862E RUNWAY THRESHOLD/END LIGHT WITH NEW L-830.
35. NEW L-850A RUNWAY CENTERLINE LIGHT WITH (2) NEW 100 W, 20A L-830S.

BASE CAN, FOUNDATION & CONDUIT NOTES

70. MODIFY OR REPLACE EXISTING L-868B BASE CAN FOR IN-PAVEMENT RUNWAY CENTERLINE LIGHT, SEE DETAILS ON DRAWING E3.2. APPLIES TO ALL RUNWAY CENTERLINE BASES WEST OF TAXIWAY B AND OTHERS AS DIRECTED BY THE OWNER.

GENERAL NOTES

1. SEE E0 SERIES DRAWINGS FOR TEMPORARY CIRCUITS AND FIXTURES.
2. SEE CIRCUIT MAPS E4 SERIES DRAWINGS FOR NEW OR MODIFIED CIRCUITS.
3. SEE E6 SERIES DRAWINGS FOR ELECTRICAL DEMOLITION PLANS.
4. SEE DRAWING E3.6 FOR DUCT CONFIGURATIONS AND INSTALLATION DETAILS.

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SAN ANTONIO AIRPORT SYSTEM

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STATE OF TEXAS
ERIC C. LOVEJOY
84081
LICENSED
PROFESSIONAL ENGINEER

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ELECTRICAL LAYOUT PLAN - BASE BID

E1.10

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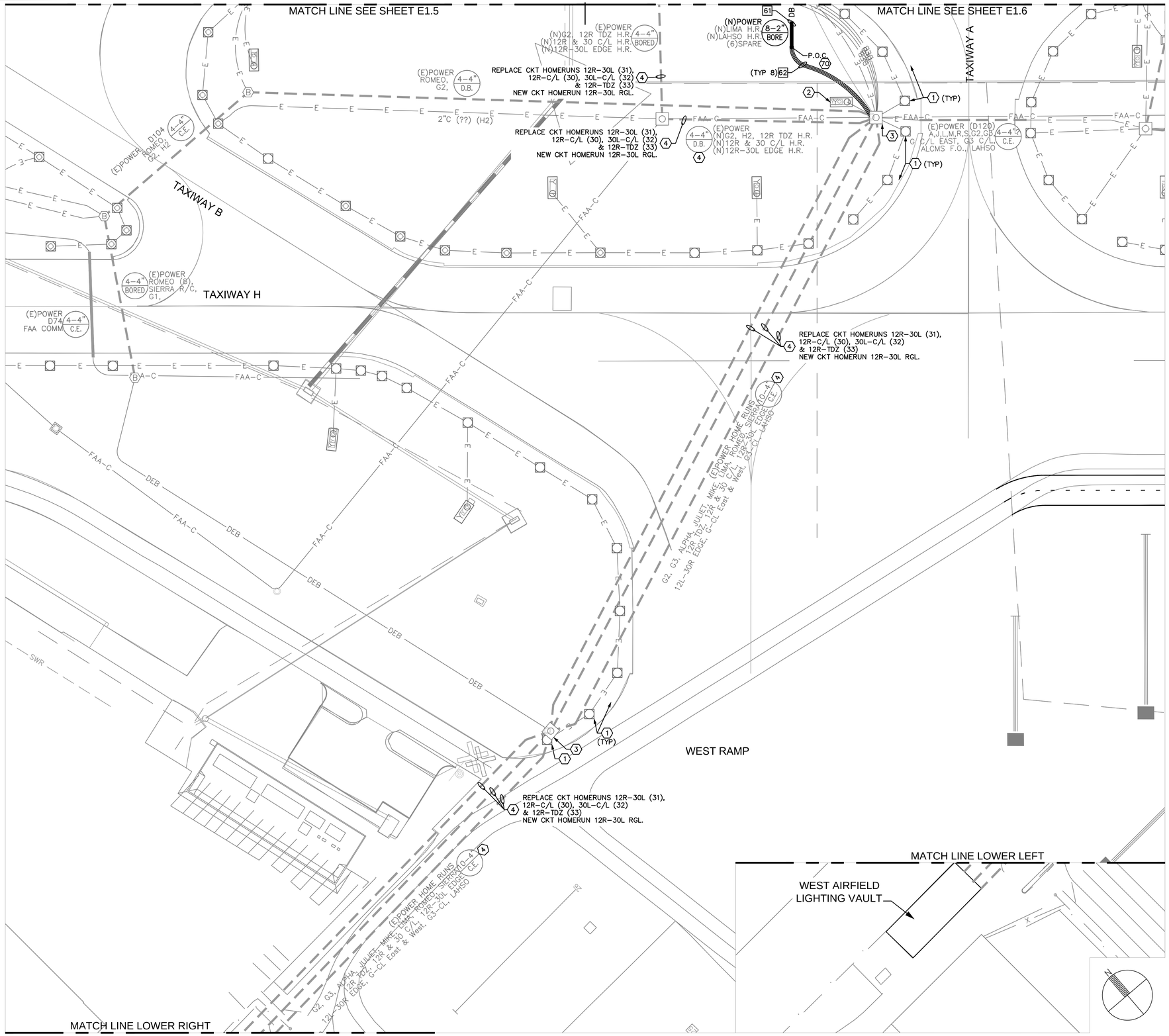


FIXTURE, SIGN & CIRCUIT CONSTRUCTION NOTES

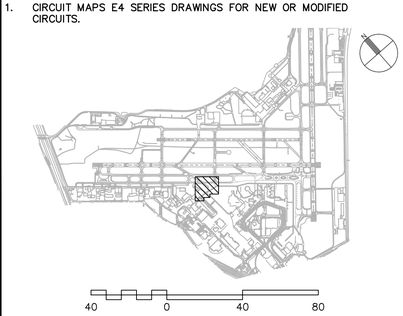
1. EXISTING LIGHT, PROTECT IN PLACE.
2. EXISTING SIGN, PROTECT IN PLACE.
3. EXISTING MANHOLE, HANDHOLE OR PULLBOX, PROTECT IN PLACE.
4. EXISTING DUCT, PROTECT IN PLACE. IF NOTED INSTALL NEW CONDUCTOR(S) AS INDICATED. SEE E4 SERIES CIRCUIT MAPS.
70. INSTALL NEW CONCRETE DUCT MARKER AT DUCT CHANGE OF DIRECTION PER SPECIFICATIONS.

BASE CAN, FOUNDATION & CONDUIT NOTES

61. DIRECTIONAL BORE HDPE DUCT UNDER EXISTING PAVEMENT: MINIMUM 36-INCHES BELOW PAVEMENT SURFACE.
62. NEW 1-2"HDPE (OR PVC WITH HDPE TRANSITION), D.B. (ITEM L-110). NEW CONDUCTORS (ITEM L-108).

GENERAL NOTES

1. CIRCUIT MAPS E4 SERIES DRAWINGS FOR NEW OR MODIFIED CIRCUITS.



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6/16/2016

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E1.11

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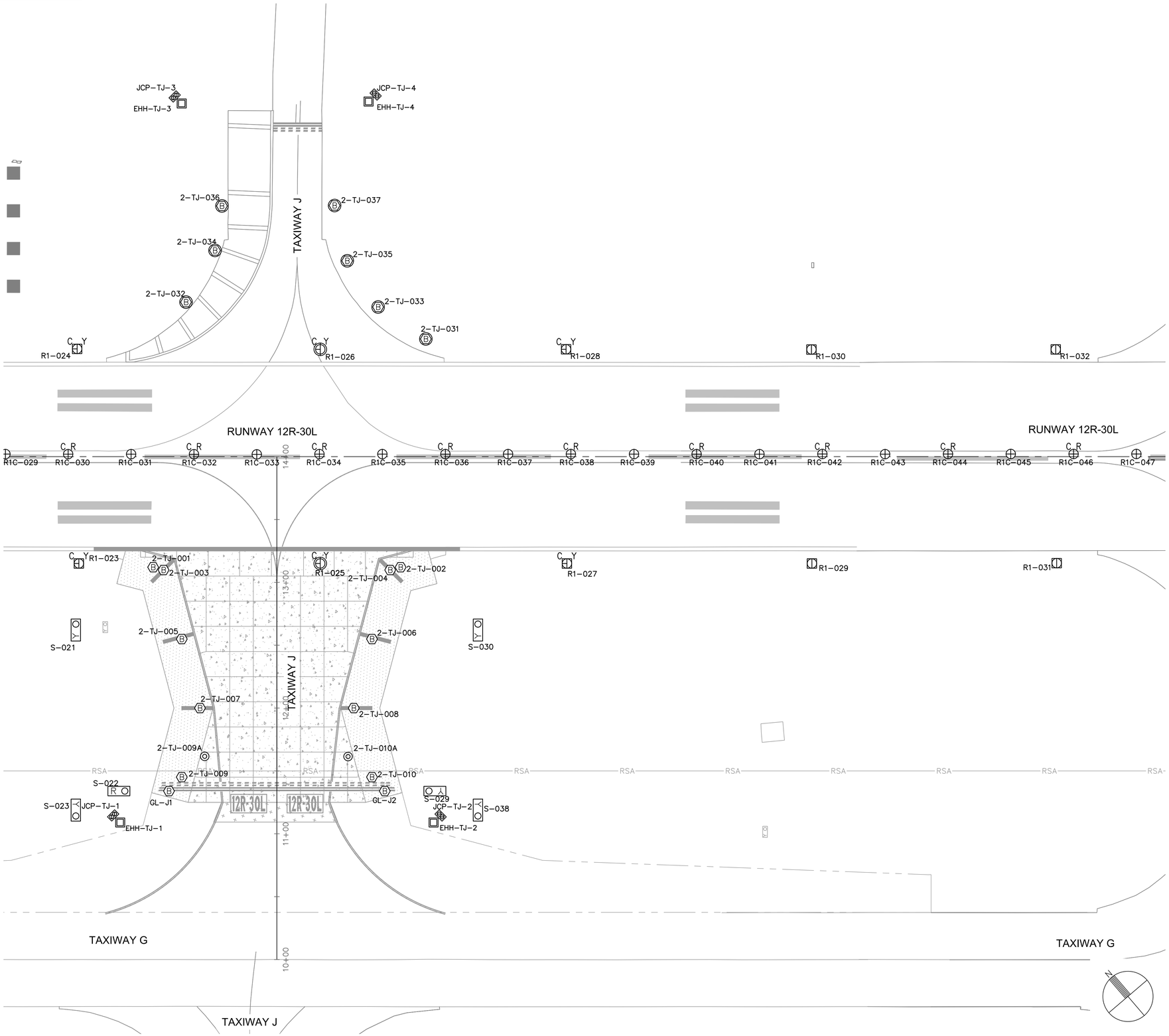
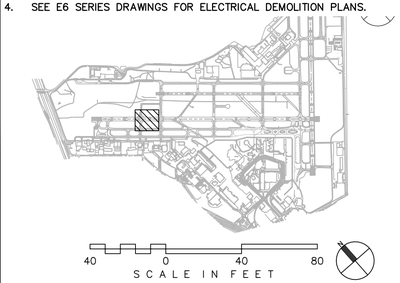


GENERAL NOTES

1. SEE DATA TABLES ON FOLLOWING DRAWING (E2._A) FOR NEW FIXTURE, HANDHOLE, JUNCTION CAN, BASE CAN, AND SIGN FOUNDATION LOCATIONS.
2. SEE E1 SERIES DRAWINGS FOR NEW ELECTRICAL SYSTEM LAYOUT PLANS.
3. SEE E5 SERIES DRAWINGS FOR AIRFIELD SIGN LEGENDS.
4. SEE E6 SERIES DRAWINGS FOR ELECTRICAL DEMOLITION PLANS.



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STATE OF TEXAS
ERIC C. LOVEJOY
84081
LICENSED
PROFESSIONAL ENGINEER
5/27/16

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ELECTRICAL FIXTURE LAYOUT PLAN - BASE BID

E2.1

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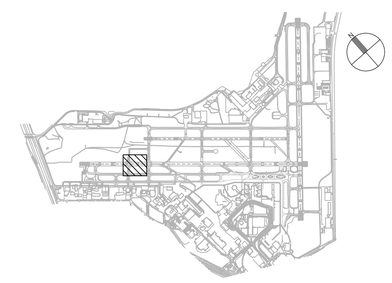
E2.1 L–867 DATA TABLE				
FIXT–NUM	STA	OFF	DETAIL	FAA–TYPE
2–TJ–001	'Taxiway J' 13+12.00	98.45' LT.	E3.3 FOR L–861T(L)	L–867B
2–TJ–002	'Taxiway J' 13+12.00	98.45' RT.	E3.3 FOR L–861T(L)	L–867B
2–TJ–003	'Taxiway J' 13+09.82	90.18' LT.	E3.3 FOR L–861T(L)	L–867B
2–TJ–004	'Taxiway J' 13+09.82	90.18' RT.	E3.3 FOR L–861T(L)	L–867B
2–TJ–005	'Taxiway J' 12+54.91	75.69' LT.	E3.3 FOR L–861T(L)	L–867B
2–TJ–006	'Taxiway J' 12+54.91	75.69' RT.	E3.3 FOR L–861T(L)	L–867B
2–TJ–007	'Taxiway J' 12+00.00	61.19' LT.	E3.3 FOR L–861T(L)	L–867B
2–TJ–008	'Taxiway J' 12+00.00	61.19' RT.	E3.3 FOR L–861T(L)	L–867B
2–TJ–009	'Taxiway J' 11+45.09	75.69' LT.	E3.3 FOR L–861T(L)	L–867B
2–TJ–010	'Taxiway J' 11+45.09	75.69' RT.	E3.3 FOR L–861T(L)	L–867B
2–TJ–031	EXISTING	EXISTING	E3.3 NON–PAVED SHOULDER	L–867B
2–TJ–032	FIELD VERIFY	FIELD VERIFY	E3.3 NON–PAVED SHOULDER	L–867B w/ COVER & L–830
2–TJ–033	EXISTING	EXISTING	E3.3 NON–PAVED SHOULDER	L–867B
2–TJ–034	FIELD VERIFY	FIELD VERIFY	E3.3 NON–PAVED SHOULDER	L–867B w/ COVER & L–830
2–TJ–035	EXISTING	EXISTING	E3.3 NON–PAVED SHOULDER	L–867B
2–TJ–036	FIELD VERIFY	FIELD VERIFY	E3.3 NON–PAVED SHOULDER	L–867B w/ COVER & L–830
2–TJ–037	EXISTING	EXISTING	E3.3 NON–PAVED SHOULDER	L–867B
GL–J1	'Taxiway J' 11+34.00	85.85' LT.	E3.3	L–867B FOR L–804
GL–J2	'Taxiway J' 11+34.00	85.85' RT.	E3.3	L–867B FOR L–804

E2.1 SIGN DATA TABLE						
SIGN–NUM	STA	OFF	DETAIL	CIRCUIT	MODULES	SIZE
S–021	'Taxiway J' 12+66.76	160.00' LT.	E3.1	R1 (31)	RT858Y1M	MODE 2
S–022	'Taxiway J' 11+34.00	121.02' LT.	E3.1	R1 (31)	RT858R4M	MODE 2
S–023	'Taxiway J' 11+14.16	160.00' LT.	E3.1 FOUNDATION ONLY	JULIET (9)	RT858Y3M	MODE 2
S–029	'Taxiway J' 11+34.00	121.02' RT.	E3.1	JULIET (9)	RT858Y3M	MODE 2
S–030	'Taxiway J' 12+66.76	160.00' RT.	E3.1	R1 (31)	RT858Y1M	MODE 2
S–038	'Taxiway J' 11+14.16	160.00' RT.	E3.1 FOUNDATION ONLY	JULIET (9)	RT858Y2M	MODE 2

E2.1 L–868 DATA TABLE				
FIXT–NUM	STA	OFF	DETAIL	FAA–TYPE
R1–025	'Taxiway J' 13+15.00	34.50' RT.	E3.4 FOR L–850C	L–868

E2.1 STUB–UP DATA TABLE				
FIXT–NUM	STA	OFF	DETAIL	2"_STUB–UP
2–TJ–009A	'Taxiway J' 11+61.61	57.45' LT.	E3.4	2"_STUB–UP
2–TJ–010A	'Taxiway J' 11+61.45	56.61' RT.	E3.4	2"_STUB–UP

E2.1 HANDHOLE DATA TABLE			
HH–NUM	STA	OFF	DETAIL
EHH–TJ–1	'Taxiway J' 11+09.00	124.68' LT.	E3.7
EHH–TJ–2	'Taxiway J' 11+09.00	124.68' RT.	E3.7
EHH–TJ–3	'Taxiway W' 11+13.49	98.45' RT.	E3.7
EHH–TJ–4	'Rwy 12R–30L' 156+42.70	291.00' LT.	E3.7



CITY OF
SAN ANTONIO
AVIATION
DEPARTMENT

SAN ANTONIO AIRPORT SYSTEM

Kimley»Horn

KIMLEY–HORN AND ASSOCIATES, INC.
601 NW LOOP 410, SUITE 350
SAN ANTONIO, TEXAS 78216
PHONE: (210) 541–9166

TEXAS REGISTERED FIRM,
NO. 928

RUNWAY 12R-30L
ELECTRICAL IMPROVEMENTS
AND TERMINAL AREA
TAXIWAY IMPROVEMENTS
(PACKAGE 4)

STATE OF TEXAS
ERIC C. LOVEJOY
84081
LICENSED
PROFESSIONAL ENGINEER
2016

MARK	DATE	DESCRIPTION

ISSUE: ----

PROJECT NO:	33-0019X
FILE NAME:	_33-00193-R1EE-102
DRAWN BY:	CMP
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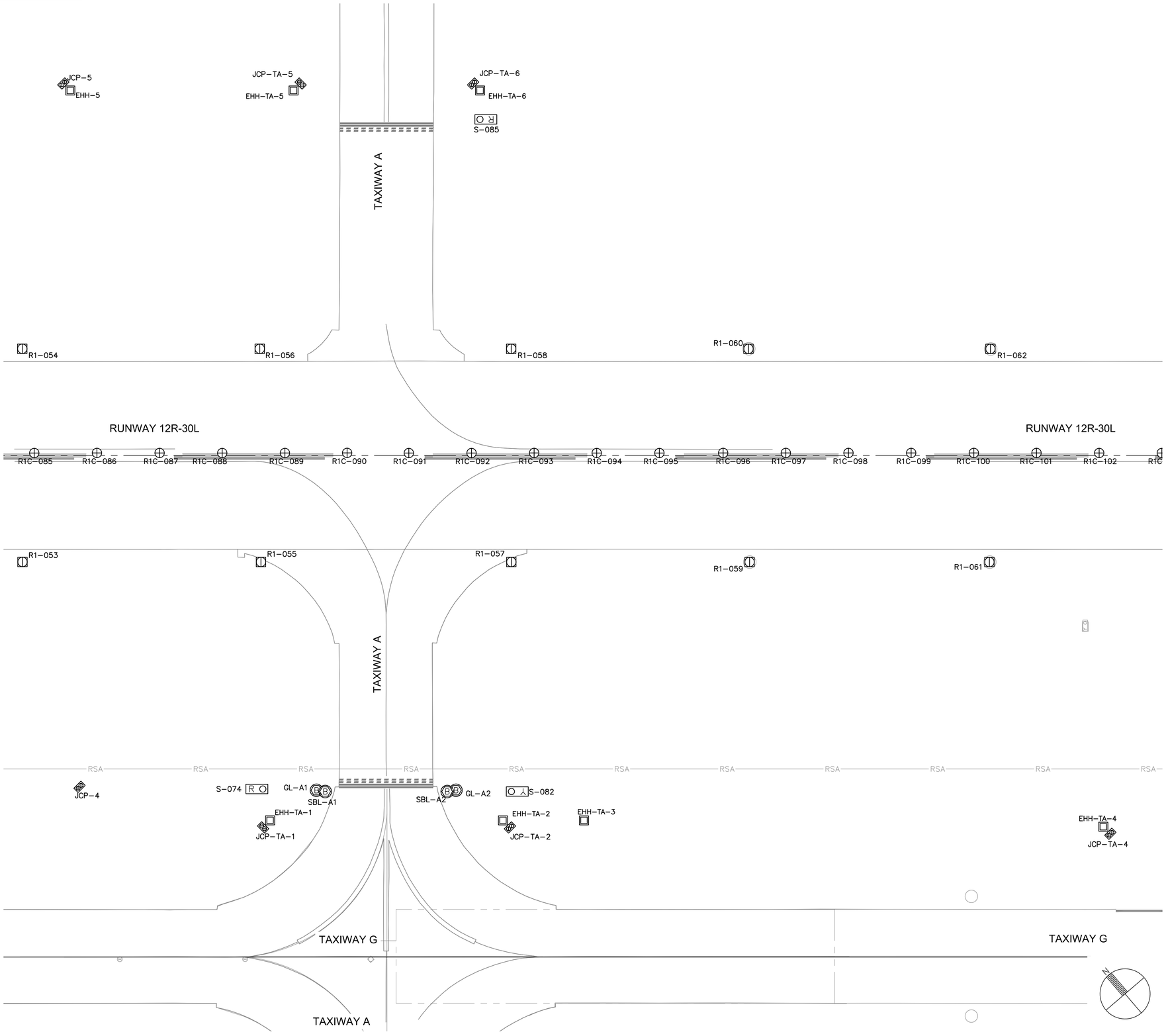
SHEET TITLE:

ELECTRICAL
FIXTURE DATA
TABLES - BASE
BID

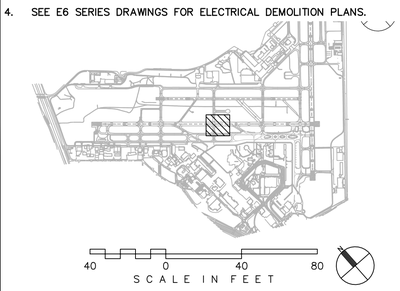
E2.1A

K:\REN_Aviation\191629001–SAT Rwy & Twy Improvements\05 CADD_PACKAGE 4_33–00193–R1EE–102.dwg October 28, 2015 Peterson, Cary



GENERAL NOTES

1. SEE DATA TABLES ON FOLLOWING DRAWING (E2._A) FOR NEW FIXTURE, HANDHOLE, JUNCTION CAN, BASE CAN, AND SIGN FOUNDATION LOCATIONS.
2. SEE E1 SERIES DRAWINGS FOR NEW ELECTRICAL SYSTEM LAYOUT PLANS.
3. SEE E5 SERIES DRAWINGS FOR AIRFIELD SIGN LEGENDS.
4. SEE E6 SERIES DRAWINGS FOR ELECTRICAL DEMOLITION PLANS.



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TEXAS REGISTERED FIRM,
NO. 928

RUNWAY 12R-30L ELECTRICAL IMPROVEMENTS AND TERMINAL AREA TAXIWAY IMPROVEMENTS (PACKAGE 4)

STATE OF TEXAS
ERIC C. LOVEJOY
84081
LICENSED
PROFESSIONAL ENGINEER
5/11/16

MARK	DATE	DESCRIPTION

ISSUE:	----
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FILE NAME:	_33-00193-R1EE-102
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SHEET TITLE:

ELECTRICAL FIXTURE LAYOUT PLAN - BASE BID

E2.2

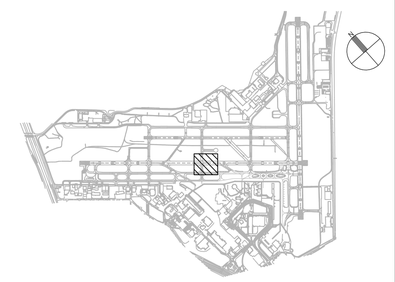
SHEET NO. 51 OF 157

K:\REN_Aviation\191629001-SAT Rwy & Twy Improvements\05 CADD_PACKAGE 4_33-00193-R1EE-102.dwg October 28, 2015 Peterson, Cary

E2.2 L–867 DATA TABLE				
FIXT–NUM	STA	OFF	DETAIL	FAA–TYPE
GL–A1	'Taxiway G' 255+12.12	133.00' LT.	E3.3 NON–PAVED SHOULDER	L–867B FOR L–804
GL–A2	'Taxiway G' 256+23.41	133.00' LT.	E3.3 NON–PAVED SHOULDER	L–867B FOR L–804
SBL–A1	'Taxiway G' 255+19.09	132.00' LT.	E3.3 NON–PAVED SHOULDER	L–867B W/ COVER
SBL–A2	'Taxiway G' 256+16.41	132.01' LT.	E3.3 NON–PAVED SHOULDER	L–867B W/ COVER

E2.2 SIGN DATA TABLE						
SIGN–NUM	STA	OFF	DETAIL	CIRCUIT	MODULES	SIZE
S–074	'Taxiway G' 254+69.31	134.00' LT.	E3.1	A (11)	RT858R4M	MODE 2
S–082	'Taxiway G' 256+67.66	132.00' LT.	E3.1	A (11)	RT858Y3M	MODE 2
S–085	'Rwy 12R–30L' 156+42.58	268.00' LT.	E3.1	A (11)	RT858R4M	MODE 2

E2.2 HANDHOLE DATA TABLE			
HH–NUM	STA	OFF	DETAIL
EHH–5	'Rwy 12R–30L' 153+15.77	291.00' LT.	E3.7
EHH–TA–1	'Taxiway G' 254+75.19	109.03' LT.	E3.7
EHH–TA–2	'Taxiway G' 256+60.94	109.00' LT.	E3.7
EHH–TA–3	'Taxiway G' 257+25.59	109.00' LT.	E3.7
EHH–TA–4	'Taxiway G' 261+39.94	103.93' LT.	E3.7
EHH–TA–5	'Rwy 12R–30L' 154+93.90	291.00' LT.	E3.7
EHH–TA–6	'Rwy 12R–30L' 156+42.70	291.00' LT.	E3.7



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AND TERMINAL AREA
TAXIWAY IMPROVEMENTS
(PACKAGE 4)

STATE OF TEXAS
ERIC C. LOVEJOY
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LICENSED
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2016

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ELECTRICAL
FIXTURE DATA
TABLES - BASE
BID

E2.2A

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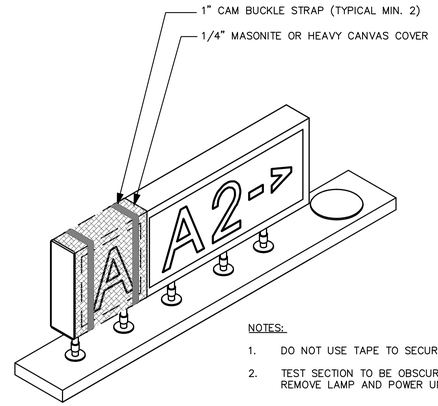
SIGN AND BASE DIMENSION SCHEDULE										
NOTE: REFER TO SIGN DRAWINGS (E5 SERIES) FOR INDIVIDUAL SIGNS										
SIGN SIZE	ONE MODULE		TWO MODULES		THREE MODULES		FOUR MODULES		3+2 MODULES	
	SIGN LENGTH	BASE LENGTH	SIGN LENGTH	BASE LENGTH	SIGN LENGTH	BASE LENGTH	SIGN LENGTH	BASE LENGTH	SIGN LENGTH	BASE LENGTH
3	42"	90"	84"	132"	126"	174"	168"	216"	210"	261"



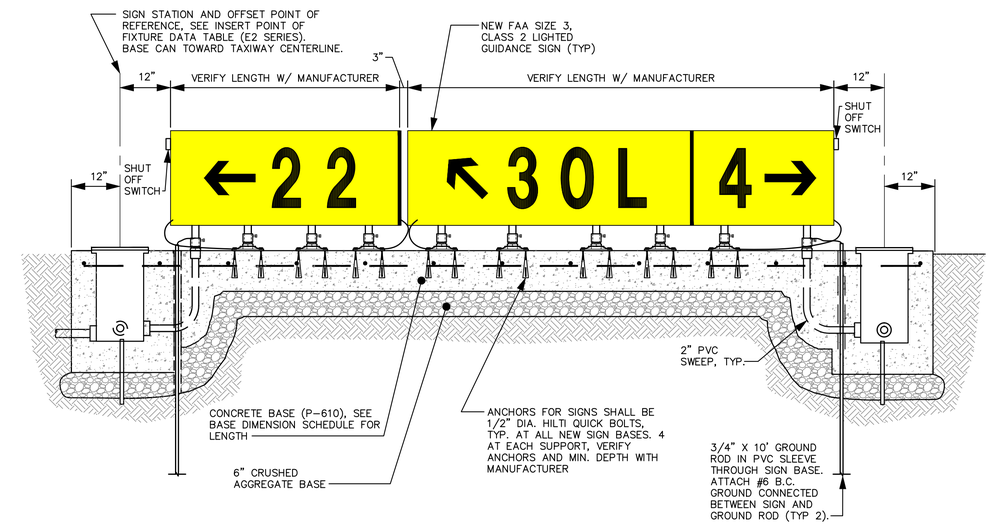
NOTES:

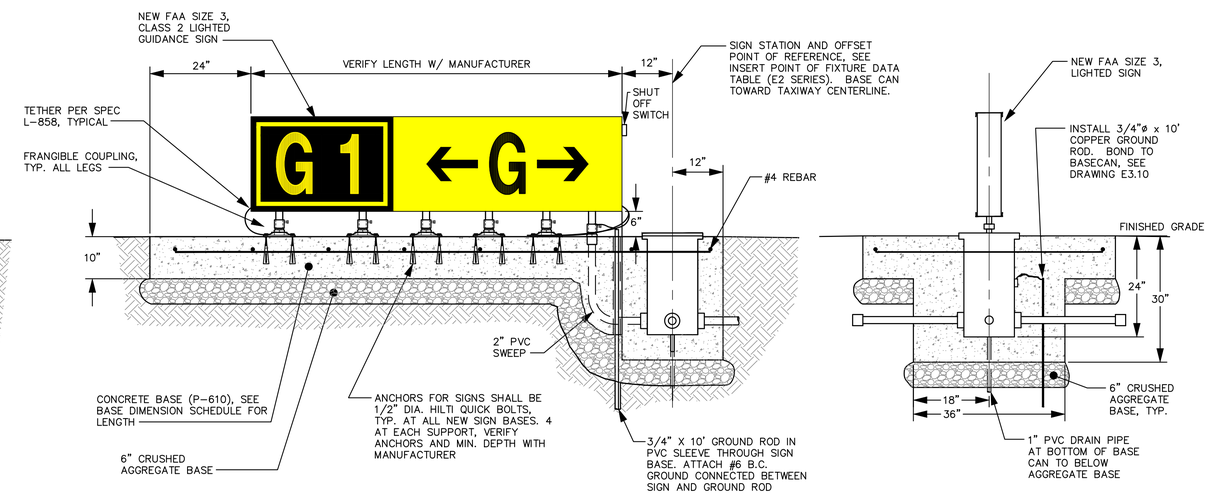
1. DO NOT USE TAPE TO SECURE COVER TO SIGN.
2. TEST SECTION TO BE OBSCURED FOR PROPER OPERATION AND THEN REMOVE LAMP AND POWER UNTIL RE-COMMISSIONING SIGN.

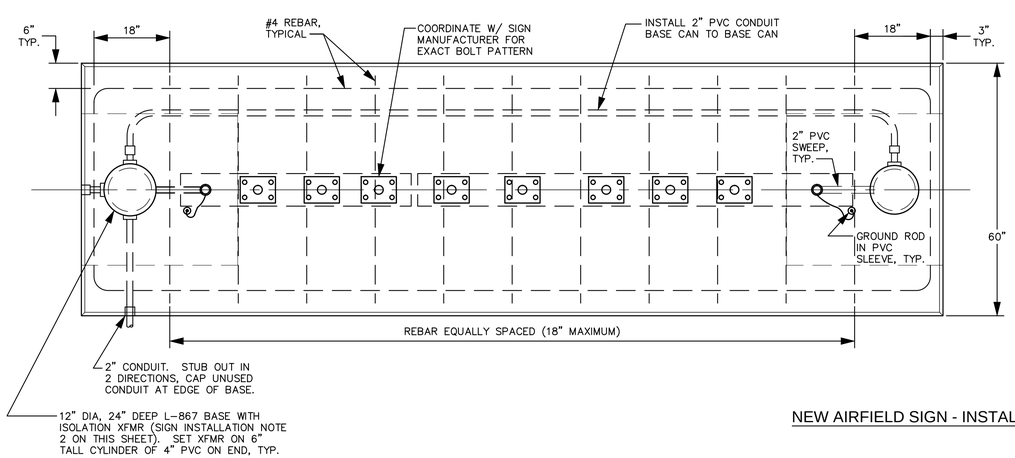
TEMPORARY SIGN COVER
N.T.S.

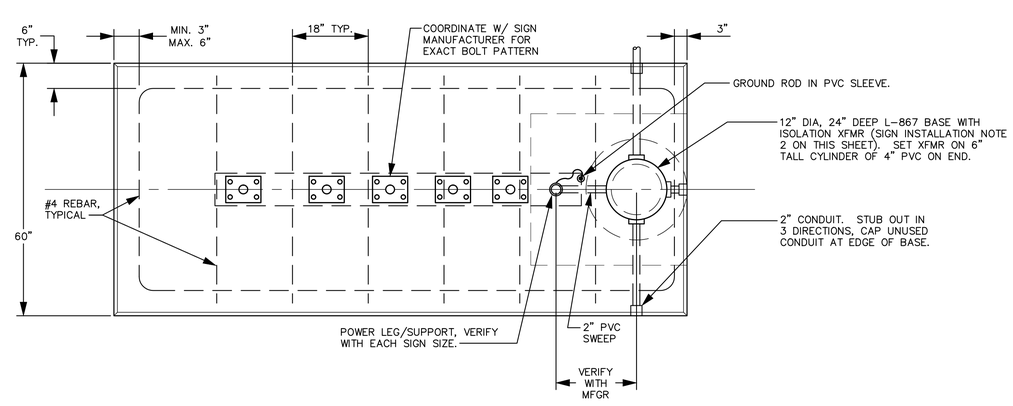
SIGN INSTALLATION NOTES:

1. VERIFY ALL DIMENSIONS OF SIGN FACES, SIGN PEDESTALS, AND SIGN FACE SPACING WITH MANUFACTURER BEFORE INSTALLATION.
2. PROVIDE NEW TRANSFORMERS WITH NEW SIGNS, SIZE PER MANUFACTURER'S RECOMMENDATIONS. SET XFMR ON 6" TALL CYLINDER OF 4" PVC ON END.
3. SEE E2 SERIES DRAWINGS FOR SIGN LOCATIONS AND E5 SERIES DRAWINGS FOR MESSAGE CONTENTS.
4. PROVIDE #6 B.C. BOND TO GROUND LUG ON SIGN TO GROUND ROD.
5. "FOUNDATION ONLY" INCLUDES CONCRETE BASE, AGGREGATE SUBBASE, L-867 BASE CAN AND BLANK COVER, U.G. CONDUIT AND DRAIN, AND SIGN AND BASE CAN GROUND RODS. ALL OTHER ITEMS SHOWN ON THE DETAILS SHALL BE INSTALLED WITH THE SIGN ITSELF. THE SIGN GROUND ROD SHALL BE INSTALLED HIGH ENOUGH ABOVE THE CONCRETE BASE TO EXOTHERMICALLY WELD (BOND) ON THE GROUND CONDUCTOR. PROTRUSION OF THE SIGN GROUND ROD SHALL BE PROTECTED FROM DAMAGE AND TRIPPING.









NEW AIRFIELD SIGN - INSTALLATION IN UNPAVED AREAS DETAILS
N.T.S.

CITY OF SAN ANTONIO AVIATION DEPARTMENT

SAN ANTONIO AIRPORT SYSTEM

Kimley»Horn

KIMLEY-HORN AND ASSOCIATES, INC.
601 NW LOOP 410, SUITE 350
SAN ANTONIO, TEXAS 78216
PHONE: (210) 541-9166

TEXAS REGISTERED FIRM, NO. 928

RUNWAY 12R-30L ELECTRICAL IMPROVEMENTS AND TERMINAL AREA TAXIWAY IMPROVEMENTS (PACKAGE 4)

STATE OF TEXAS
ERIC C. LOVEJOY
84081
LICENSED
PROFESSIONAL ENGINEER
5/26/16

MARK	DATE	DESCRIPTION

ISSUE:	---
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FILE NAME:	_33-00193-R1ED-501
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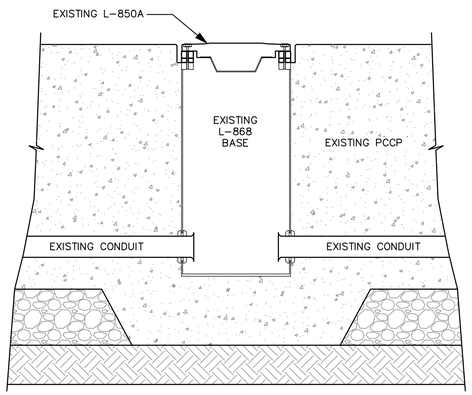
SHEET TITLE:

SIGN DETAILS FOR INSTALLATION IN UNPAVED AREAS

E3.1

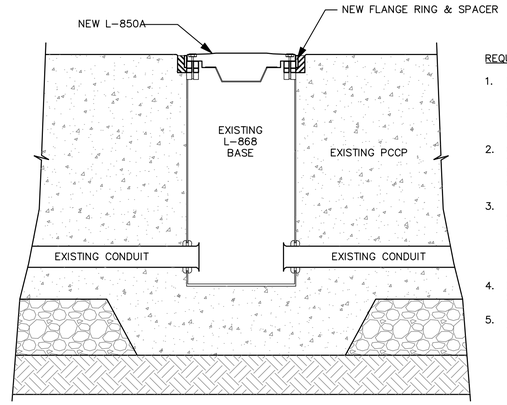
K:\REN_Aviation\191629001-SAT Rwy & Twy Improvements\05 CADD_PACKAGE 4_33-00193-R1ED-501.dwg October 28, 2015 Peterson, Cory



EXISTING CONDITION

EXISTING CONDITION NOTES:

1. NO FLANGE RING & NO SEALANT.
2. SPACER OR SPACERS BETWEEN IN-PAVEMENT FIXTURE AND TOP OF L-868 BASE.
3. TOP OF EXISTING L-868 BASE FLANGE BETWEEN 1.5-INCHES AND 5.5-INCHES BELOW EXISTING PCCP SURFACE (MEASURED FROM THE "UPHILL" SIDE).



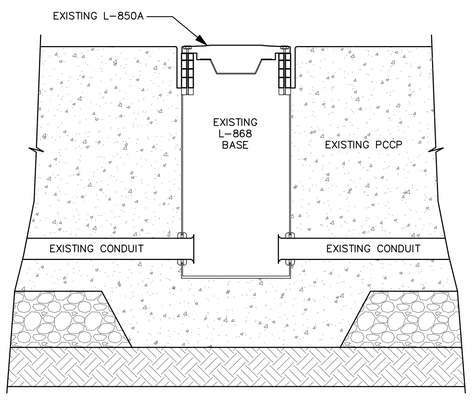
REQUIRED MODIFICATIONS

REQUIRED MODIFICATION NOTES:

1. REMOVE & SALVAGE FIXTURE AND REMOVE & DISPOSE OF SPACER(S). CLEAN TOP OF EXISTING L-868 AND CHASE & CLEAN THREADS IN TOP FLANGE.
2. CORE DRILL PCCP TO ALLOW MIN. 1/4-INCH ANNULAR SPACE BETWEEN EXISTING PCCP AND NEW FLANGE RING OUTER DIAMETER ALL AROUND.
3. INSTALL NEW FLANGE RING AND NEW SINGLE SPACER ON EXISTING L-868 BASE. VERIFY SPACER THICKNESS. FLANGE RING AND SPACER SHALL BE TWELVE-HOLE PER DETAIL ON THIS DRAWING.
4. BACKFILL ANNULAR SPACE WITH P-605 SEALANT.
5. INSTALL NEW FIXTURE & ISOLATION TRANSFORMER.

IN-PAVEMENT RUNWAY CENTERLINE LIGHT BASE DETAIL - TOP OF EXISTING L-868 BETWEEN 1.5-INCHES AND 5.5-INCHES BELOW EXISTING GRADE

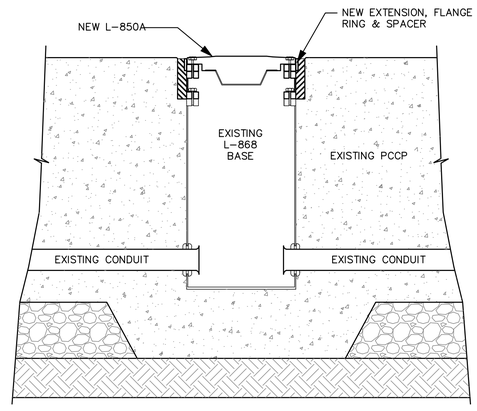
N.T.S.



EXISTING CONDITION

EXISTING CONDITION NOTES:

1. NO FLANGE RING & NO SEALANT.
2. SPACER OR SPACERS BETWEEN IN-PAVEMENT FIXTURE AND TOP OF L-868 BASE.
3. TOP OF EXISTING L-868 BASE FLANGE GREATER THAN 5.5-INCHES BELOW EXISTING PCCP SURFACE (MEASURED FROM THE "UPHILL" SIDE).



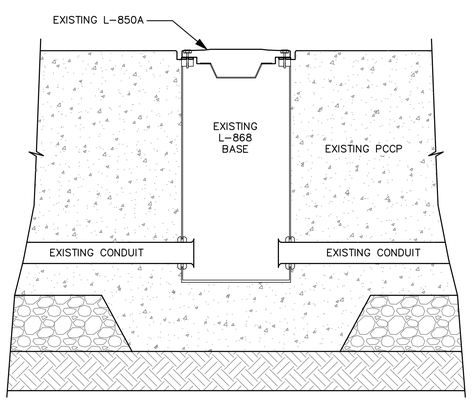
REQUIRED MODIFICATIONS

REQUIRED MODIFICATION NOTES:

1. REMOVE & SALVAGE FIXTURE AND REMOVE & DISPOSE OF SPACER(S). CLEAN TOP OF EXISTING L-868 AND CHASE & CLEAN THREADS IN TOP FLANGE.
2. CORE DRILL PCCP TO ALLOW MIN. 1/4-INCH ANNULAR SPACE BETWEEN EXISTING PCCP AND NEW FLANGE RING OUTER DIAMETER.
3. INSTALL NEW EXTENSION, NEW FLANGE RING AND NEW SINGLE SPACER (AS NEEDED) ON EXISTING L-868 BASE. FLANGE RING AND SPACER SHALL BE TWELVE-HOLE PER DETAIL ON THIS DRAWING.
4. BACKFILL ANNULAR SPACE WITH P-605 SEALANT.
5. INSTALL NEW FIXTURE & ISOLATION TRANSFORMER.

IN-PAVEMENT RUNWAY CENTERLINE LIGHT BASE DETAIL - TOP OF EXISTING L-868 GREATER THAN 5.5-INCHES BELOW EXISTING GRADE

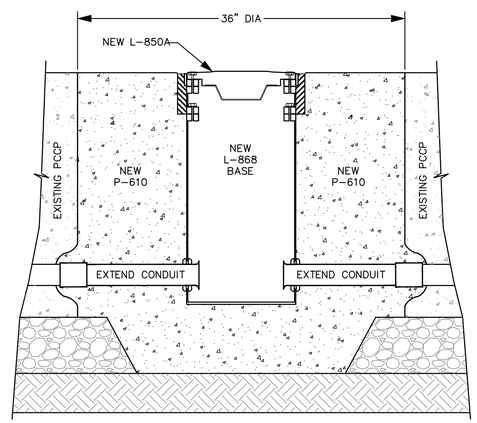
N.T.S.



EXISTING CONDITION

EXISTING CONDITION NOTES:

1. NO FLANGE RING & NO SEALANT.
2. SPACER OR NO SPACER BETWEEN IN-PAVEMENT FIXTURE AND TOP OF L-868 BASE.
3. TOP OF EXISTING L-868 BASE FLANGE LESS THAN 1.5-INCHES BELOW EXISTING PCCP SURFACE (MEASURED FROM THE "UPHILL" SIDE).



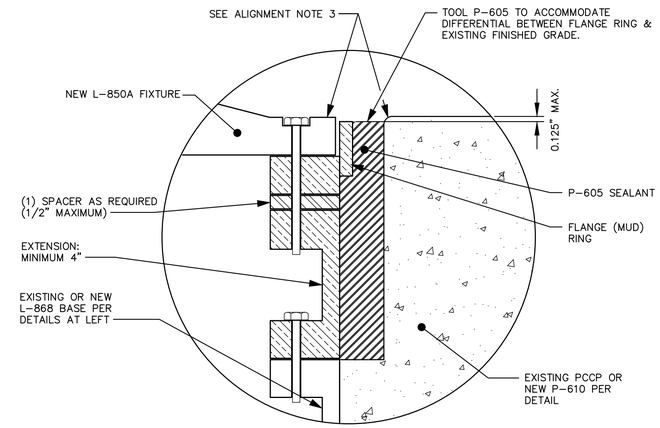
REQUIRED MODIFICATIONS

REQUIRED MODIFICATION NOTES:

1. REMOVE & SALVAGE FIXTURE AND REMOVE SPACER(S).
2. CORE DRILL 36-INCH DIA THRU PCCP AND REMOVE EXISTING L-868.
3. INSTALL NEW L-868 SIMILAR TO IN-PAVEMENT DETAIL ON DRAWING E3.4 AND CENTERED CORE ON E3.5, INCLUDING REBAR CAGE AND MAT WITH DOWEL BARS DRILLED INTO EXISTING PCCP.
4. EXTEND CONDUIT INTO NEW L-868 BASE. BACK FILL WITH P-610 (4000 PSI) CONCRETE. FORM OR CORE NEW P-610 FOR INSTALLATION OF EXTENSION AND FLANGE RING.
5. INSTALL EXTENSION, NEW FLANGE RING AND SINGLE SPACER (AS NEEDED) ON NEW L-868 BASE. FLANGE RING AND SPACER SHALL BE TWELVE-HOLE PER DETAIL ON THIS DRAWING.
6. BACKFILL ANNULAR SPACE WITH P-605 SEALANT.
7. INSTALL NEW FIXTURE & ISOLATION TRANSFORMER.

IN-PAVEMENT RUNWAY CENTERLINE LIGHT BASE DETAIL - TOP OF EXISTING L-868 LESS THAN 1.5-INCHES BELOW EXISTING GRADE

N.T.S.



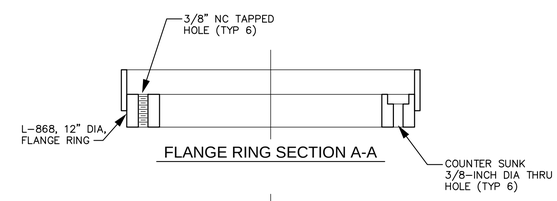
BASE/FIXTURE ALIGNMENT NOTES:

BASE SHALL BE INSTALLED TO ASSURE:

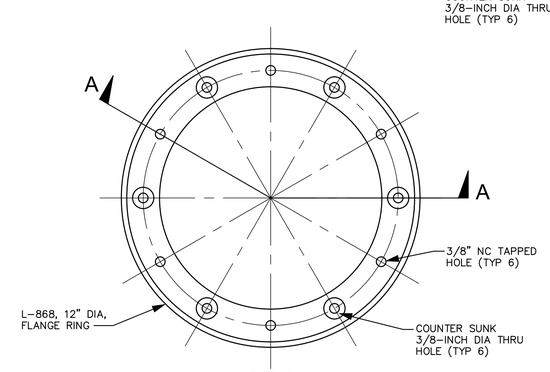
1. FIXTURE IS LEVEL IN BOTH AXES.
2. FIXTURE ALIGNMENT IS PARALLEL TO THE R/W CENTERLINE.
3. THE "UPHILL" SIDE, TOP OF FIXTURE FLANGE IS FLUSH W/ PAVEMENT.

IN-PAVEMENT FLANGE RING INSTALLATION DETAIL

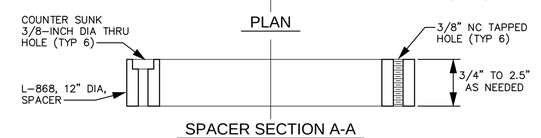
N.T.S.



FLANGE RING SECTION A-A



PLAN



SPACER SECTION A-A

FLANGE RING AND SPACER BOLT PATTERN DETAIL

N.T.S.

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SAN ANTONIO AIRPORT SYSTEM

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PHONE: (210) 541-9166

TEXAS REGISTERED FIRM, NO. 928

RUNWAY 12R-30L ELECTRICAL IMPROVEMENTS AND TERMINAL AREA TAXIWAY IMPROVEMENTS (PACKAGE 4)

STATE OF TEXAS
ERIC C. LOVEJOY
84061
LICENSED
PROFESSIONAL ENGINEER
5/27/16

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EXISTING L-868 BASE MODIFICATION DETAILS

E3.2

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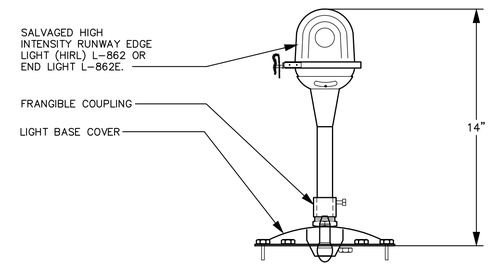
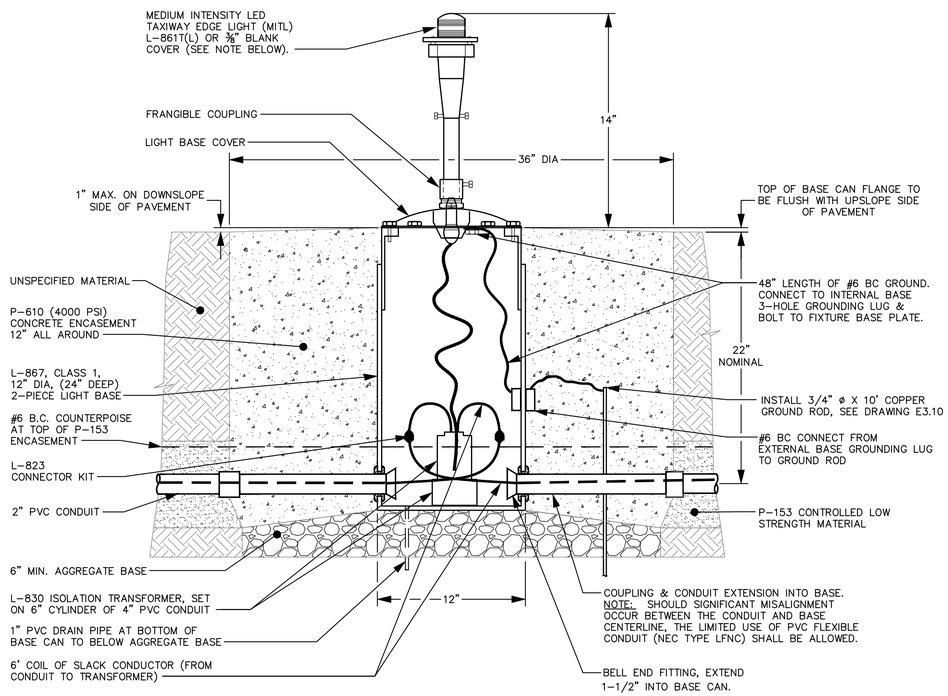


SALVAGED ELEVATED RUNWAY EDGE LIGHT DETAIL - ON NEW BASE

N.T.S.

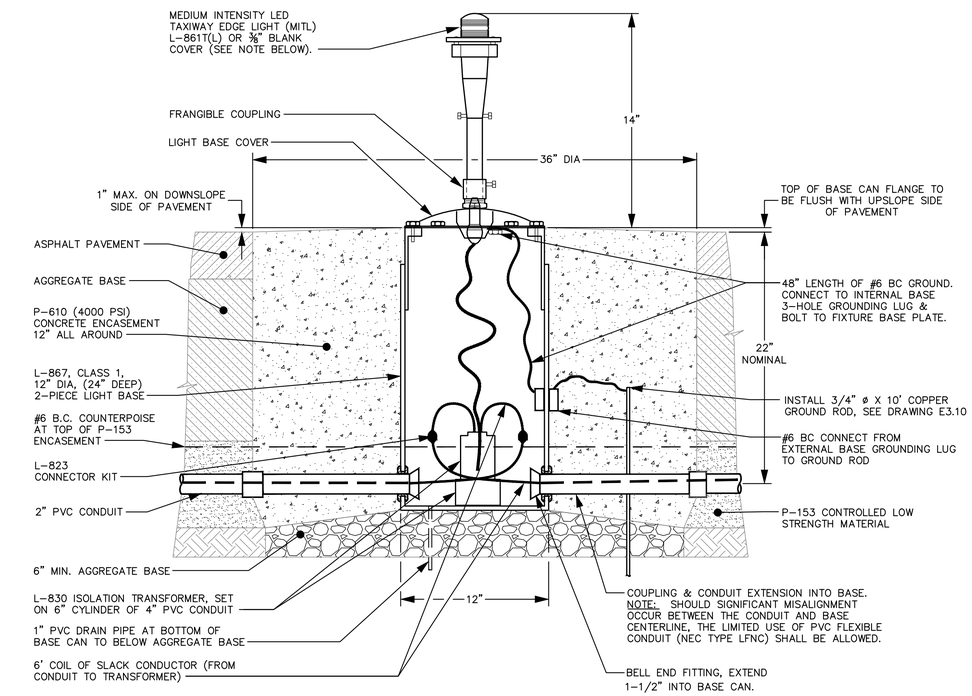


NOTE:
WHERE BLANK COVER IS INSTALLED PER E1 SERIES AND E2 SERIES DRAWING TABLES AND CIRCUITS ARE INSTALLED PER E4 SERIES DRAWINGS: INSTALL CABLES AND L-823 CONNECTOR KITS AS REQUIRED FOR CIRCUIT INSTALLATION. DO NOT INSTALL ISOLATION TRANSFORMER, UNLESS OTHERWISE NOTED.

ELEVATED TAXIWAY EDGE LIGHT DETAIL - IN UNPAVED SHOULDERS

N.T.S.

GENERAL NOTE:
ALL HARDWARE (BOLTS, NUTS & WASHERS) SHALL BE STAINLESS STEEL PER SPECIFICATIONS.



NOTE:
WHERE BLANK COVER IS INSTALLED PER E1 SERIES AND E2 SERIES DRAWING TABLES AND CIRCUITS ARE INSTALLED PER E4 SERIES DRAWINGS: INSTALL CABLES AND L-823 CONNECTOR KITS AS REQUIRED FOR CIRCUIT INSTALLATION. DO NOT INSTALL ISOLATION TRANSFORMER, UNLESS OTHERWISE NOTED.

ELEVATED TAXIWAY EDGE LIGHT DETAIL - IN NEW ASPHALT

N.T.S. (SIMILAR FOR ELEVATED RUNWAY EDGE LIGHTS)

CITY OF SAN ANTONIO AVIATION DEPARTMENT

SAN ANTONIO AIRPORT SYSTEM

Kimley»Horn

KIMLEY-HORN AND ASSOCIATES, INC.
601 NW LOOP 410, SUITE 350
SAN ANTONIO, TEXAS 78216
PHONE: (210) 541-9166

TEXAS REGISTERED FIRM, NO. 928

RUNWAY 12R-30L ELECTRICAL IMPROVEMENTS AND TERMINAL AREA TAXIWAY IMPROVEMENTS (PACKAGE 4)

STATE OF TEXAS
ERIC C. LOVEJOY
84081
LICENSED
PROFESSIONAL ENGINEER
2016

MARK	DATE	DESCRIPTION

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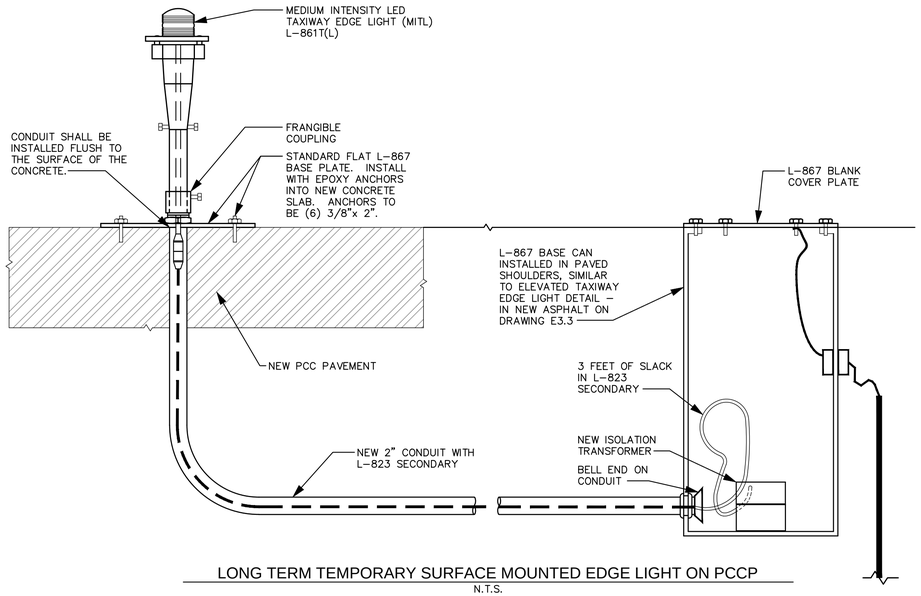
SHEET TITLE:

ELEVATED TAXIWAY EDGE LIGHT DETAILS

E3.3

SHEET NO. 55 OF 157

K:\REN_Aviation\191629001-SAT Rwy & Twy Improvements\05 CADD_PACKAGE 4_33-00193-R1ED-501.dwg October 28, 2015 Peterson, Cary



LONG TERM TEMPORARY SURFACE MOUNTED EDGE LIGHT ON PCCP

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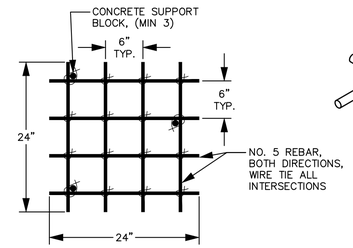
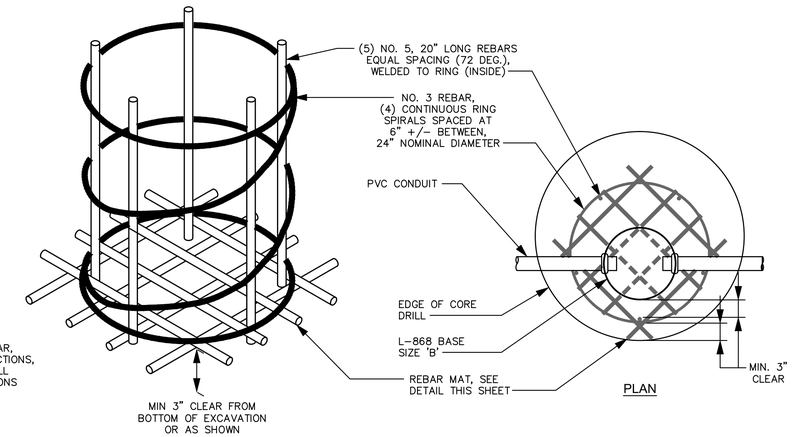


REBAR MAT

N.T.S.

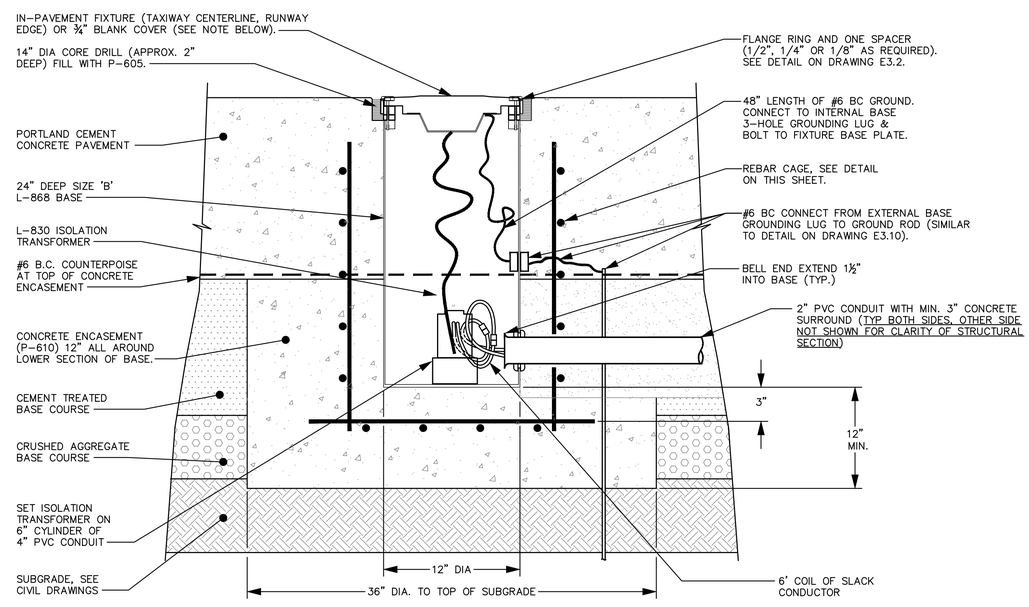


REINFORCING STEEL FOR IN-PAVEMENT LIGHTS (REBAR CAGE)

N.T.S.

BASE/FIXTURE ALIGNMENT NOTES:

BASE SHALL BE INSTALLED TO ASSURE:
1. FIXTURE IS LEVEL IN BOTH AXES.
2. FIXTURE ALIGNMENT IS PARALLEL TO THE R/W CENTERLINE.
3. THE "UPHILL" SIDE, TOP OF FIXTURE FLANGE IS FLUSH W/ PAVEMENT.



NOTE:
WHERE BLANK COVER IS INSTALLED: INSTALL CABLES AND L-823 CONNECTOR KITS AS REQUIRED FOR CIRCUIT INSTALLATION. DO NOT INSTALL ISOLATION TRANSFORMER.

GENERAL NOTE:
ALL HARDWARE (BOLTS, NUTS & WASHERS) SHALL BE STAINLESS STEEL PER SPECIFICATIONS.

NEW IN-PAVEMENT FIXTURE IN NEW PCC PAVEMENT

N.T.S. (SIMILAR FOR IN-PAVEMENT RUNWAY LIGHTS)

CITY OF SAN ANTONIO AVIATION DEPARTMENT

SAN ANTONIO AIRPORT SYSTEM

Kimley»Horn

KIMLEY-HORN AND ASSOCIATES, INC.
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STATE OF TEXAS
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SHEET TITLE:

IN-PAVEMENT LIGHT DETAILS - NEW PCCP & TEMPORARY LIGHT DETAIL

E3.4

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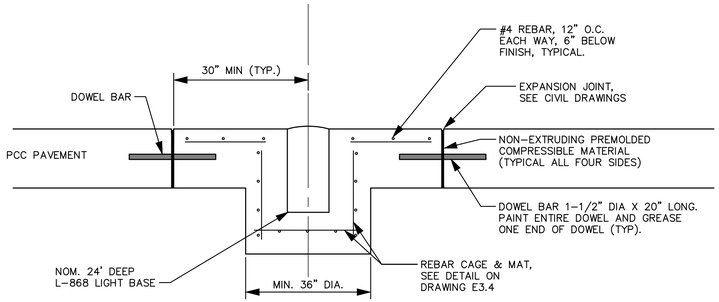

SECTION A-A
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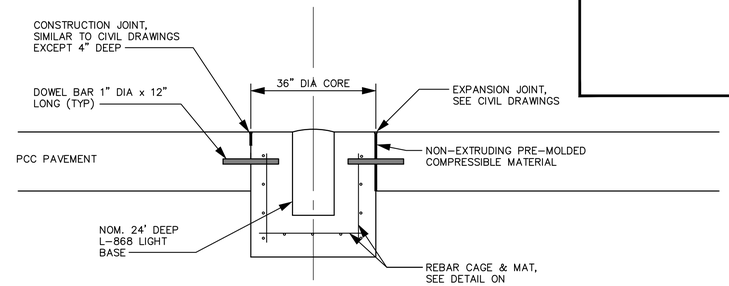

SECTION B-B
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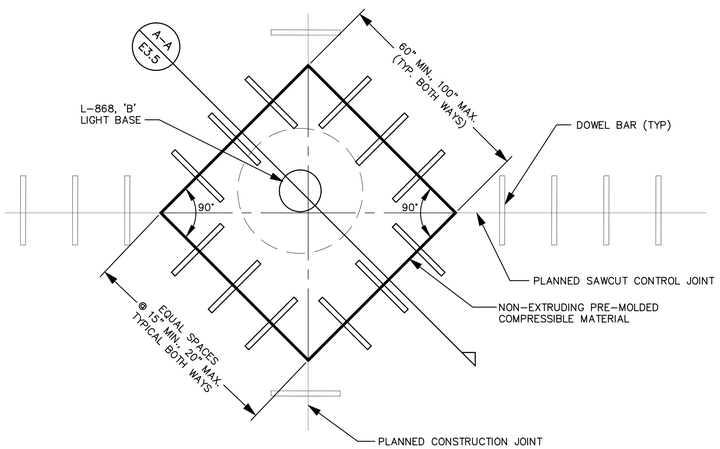
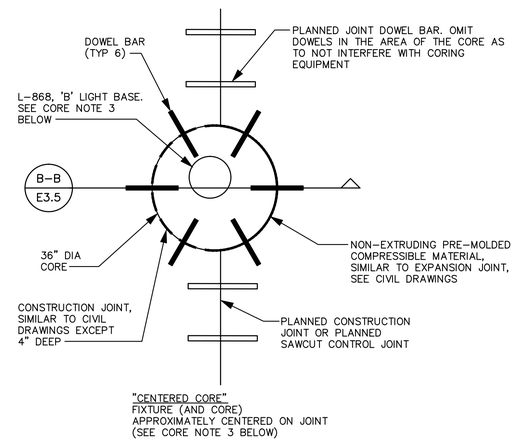
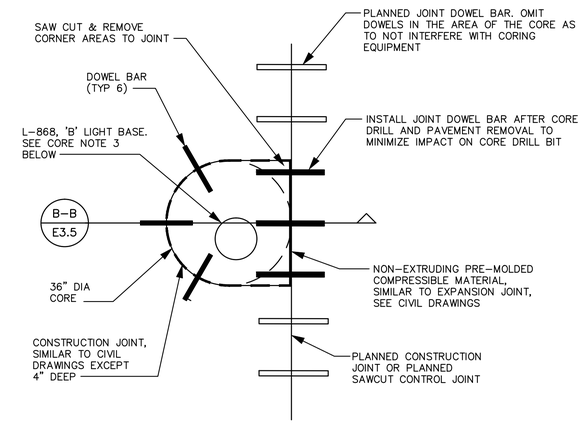


METHOD 2 - DIAMOND JOINT LEAVE OUT
(FOR USE IF REQUIRED)



"CENTERED CORE"
FIXTURE (AND CORE) APPROXIMATELY CENTERED ON JOINT (SEE CORE NOTE 3 BELOW)



"TANGENT CORE"
FIXTURE NOT CENTERED ON JOINT AND CORE NOT NECESSARILY CONCENTRIC WITH BASE.

METHOD 1 - CORE DETAIL
(FOR USE AS REQUIRED)

DIAMOND JOINT LEAVE OUT NOTES:

1. ALL IN-PAVEMENT LIGHTS WHOSE PLANNED CENTER IS LOCATED WITHIN 2.5-FT OF TWO JOINT LOCATIONS AND CANNOT BE MOVED TO SATISFY THIS CLEARANCE PER THE CRITERIA IN THE TABLE AT RIGHT, SHALL BE ISOLATED WITH A DIAMOND SHAPED JOINT DETAIL ("DIAMOND JOINT LEAVE OUT").
2. FORM THE DIAMOND PRIOR TO INSTALLING PAVING.
3. THE BASE DOES NOT HAVE TO BE CENTERED IN THE LEAVE OUT.
4. ALL NON-EXTRUDED PRE-MOLDED COMPRESSION MATERIAL SHALL HAVE JOINT SEALER.
5. THE DIAMOND LEAVE OUT INSTALLATION METHOD SHALL BE USED FOR BASE CAN INSTALLATIONS FOR LOCATIONS IN NEW PCCP AS INDICATED IN THE DATA TABLES IN THE E2-SERIES DRAWINGS

CRITERIA FOR OFFSETTING INPAVEMENT LIGHT FIXTURES IN COORDINATION WITH PAVEMENT JOINTS DURING CONSTRUCTION

1. THE CONTRACTOR MAY MOVE A FIXTURE ALONG CURVE OR TANGENT ±10% ON CENTER (O.C.) SPACING (I.E. IF O.C. SPACING IS 25', THE FIXTURE CAN MOVE MAXIMUM OF 2.5-FT IN EITHER DIRECTION) IN ORDER TO AVOID PAVEMENT JOINT. IN NO CASE SHALL THE LONGITUDINAL DISTANCE BETWEEN THE CENTERLINE OF THE LIGHT FIXTURES BE ALLOWED TO EXCEED THE MAXIMUM VALUES SHOWN ON FAA AC/150/5340-30H, TABLE 4-1.
2. THE CONTRACTOR MAY MOVE A FIXTURE LATERALLY (IN CONJUNCTION WITH 1. ABOVE, IF NEEDED) NO MORE THAN 6" TOWARD TAXIWAY CENTERLINE.
3. THE CONTRACTOR SHALL VERIFY AND MAINTAIN 2.5-FT MINIMUM FROM THE CENTER OF A FIXTURE TO THE NEAREST CONSTRUCTION OR SAWCUT JOINT DURING CONSTRUCTION VIA SURVEY DATA.
4. IF A LIGHT CANNOT BE MOVED TO CLEAR THE ADJACENT JOINT AND STILL REMAIN WITHIN SPECIFIED LOCATION TOLERANCES, THEN ONE OF THE FOLLOWING DETAILS IS TO BE USED WHEN COORDINATION CRITERIA 1 & 2 HAVE BEEN EXHAUSTED AND FOUND INSUFFICIENT:

   A. METHOD 1 – CORE:
   THIS REFERS TO INSTALLATIONS ACROSS SAWCUT CONTROL JOINTS OR CONSTRUCTION JOINTS AND REFERS TO THE DETAIL ON THIS SHEET.

   B. METHOD 2 – DIAMOND JOINT:
   THIS REFERS TO INSTALLATIONS AT INTERSECTIONS OF SAWCUT CONTROL JOINTS AND CONSTRUCTION JOINTS AND REFERS TO THE DETAIL ON THIS SHEET.

CORE NOTES:

1. ALL IN-PAVEMENT LIGHTS WHOSE PLANNED CENTER IS LOCATED WITHIN 2.5-FT OF A JOINT LOCATION AND CANNOT BE MOVED TO SATISFY THE CLEARANCE PER THE CRITERIA IN THE TABLE AT LEFT, SHALL BE ISOLATED WITH A CORE JOINT DETAIL ("CORE JOINT").
2. INSTALL THE DOWEL BARS INTO THE SLAB WHICH HAS THE GREATER PORTION OF THE CORED AREA.
3. FIELD ADJUSTMENT OF BASE/CORE/JOINT LOCATIONS: THE BASE LOCATION AS SCHEDULED ON THE FIXTURE LAYOUT DRAWINGS (E2 SERIES) IS THE CENTER OF THE BASE. IF THIS LOCATION DOES NOT LIE DIRECTLY ON A JOINT, THE BASE DOES NOT HAVE TO BE CENTERED IN THE CORE. THE CORE MUST BE WITHIN 2-INCHES OF BEING CENTERED ON THE JOINT. THE EDGE OF THE BASE MUST BE NO CLOSER THAN 7-INCHES TO THE EDGE OF THE CORE.
4. ALL NON-EXTRUDED PRE-MOLDED COMPRESSION MATERIAL SHALL HAVE JOINT SEALER.
5. CORE DETAILS (CENTER AND TANGENT) MAY BE CONSTRUCTED AS A LEAVE-OUT IF DESIRED. LEAVE-OUT MUST BE CONSTRUCTED IN SUCH A WAY AS TO NOT BE MOVED, CRUSHED OR AFFECTED IN ANY WAY BY THE PAVING EQUIPMENT.
6. THE CORE INSTALLATION METHOD SHALL BE USED FOR BASE CAN INSTALLATIONS IN EXISTING PCCP AND FOR LOCATIONS IN NEW PCCP AS INDICATED IN THE DATA TABLES IN THE E2-SERIES DRAWINGS.

CITY OF SAN ANTONIO AVIATION DEPARTMENT

SAN ANTONIO AIRPORT SYSTEM

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TEXAS REGISTERED FIRM, NO. 928

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STATE OF TEXAS
ERIC C. LOVEJOY
84061
LICENSED
PROFESSIONAL ENGINEER
5/6/16

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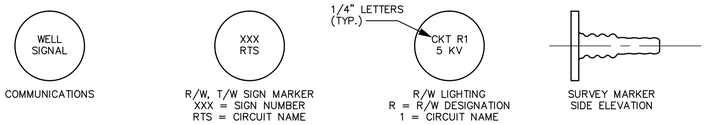
SHEET TITLE:

LIGHT FIXTURE/JOINT COORDINATION DETAILS

E3.5

K:\REN_Aviation\191629001-SAT Rwy & Twy Improvements\05 CADD_PACKAGE 4_33-00193-R1ED-501.dwg October 28, 2015 Peterson, Cary

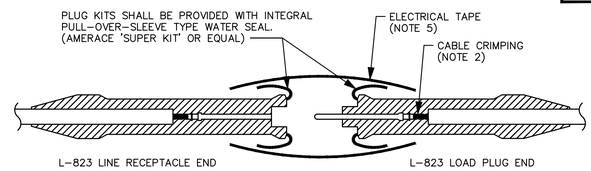


NOTES:

1. BLANK SERVCO BRONZE MARKERS OR EQUIVALENT TO BE EMBEDDED IN FRESH CONCRETE AT TIME OF POUR. LOCATE ON SIDE OF BASE TOWARD R/W OR T/W OR AS DIRECTED BY OWNER. AFTER CONCRETE IS CURED, STAMP WITH FIXTURE AND CIRCUIT IDENTIFICATION AS SHOWN ON PLANS.
2. IDENTIFICATION NUMBERS FOR R/W AND T/W FIXTURES (SIGNS & LIGHTS) HAVE BEEN PROVIDED IN THE FIXTURE LAYOUT DRAWINGS (E2 SERIES) AND SIGNAGE LAYOUT DRAWINGS (E5 SERIES).
3. ALL LIGHTING SYSTEM (SIGNS AND LIGHTS) CABLES ENTERING OR LEAVING OR PASSING THROUGH A MANHOLE, HANDHOLE, PULLBOX, OR LIGHTING FIXTURE BASE SHALL BE IDENTIFIED ON EACH SIDE OF EACH L-823 CONNECTOR KIT WITH AN INDIVIDUAL IDENTIFICATION TAG INDICATING THE LIGHTING CIRCUIT. CABLES PASSING THROUGH A STRUCTURE WITHOUT THE INSTALLATION OF A CONNECTOR KIT REQUIRE ONLY ONE IDENTIFICATION TAG.
4. NO LIGHTING SYSTEM CABLE SHALL BE PULLED "STRAIGHT THROUGH" A HANDHOLE, MANHOLE, JUNCTION BOX OR LIGHT BASE. EACH CABLE SHALL PROVIDED WITH THE SPECIFIED LOOP OF SLACK CABLE AND, UNLESS OTHERWISE NOTED, SHALL BE SPLICED IN EACH MANHOLE, HANDHOLE, JUNCTION BOX AND LIGHT BASE WITH L-823 CONNECTOR KITS AND COLOR CODING.
5. "HOMERUNS" SHALL BE RUN AS CONTINUOUSLY AS POSSIBLE WITHOUT SPLICES IN MANHOLES OR HANDHOLES. A "HOMERUN" IS THE CIRCUIT PORTION FROM THE AIRFIELD LIGHTING VAULT TO THE LAST HANDHOLE/MANHOLE CONTAINING BRANCHES OF THE CIRCUIT FROM VARIOUS LOCATIONS OF THE FIELD.
6. TAGS SHALL BE NON-FERROUS METAL OF TYPE AND SIZE AS SPECIFIED UNDER ITEM L-108, CONNECT TO CABLE WITH PLASTIC CABLE TIE.
7. ALL NOMINAL 600V POWER CABLES OR MULTI-PAIR SIGNAL CABLES SHALL BE IDENTIFIED WITH INDIVIDUAL IDENTIFICATION TAGS ONE TIME AS THEY PASS THRU EACH HANDHOLE OR MANHOLE AND ON BOTH SIDES OF ANY SPLICES.

R/W, T/W, MISC. POWER AND COMMUNICATION CABLE TAGS AND FIXTURE MARKERS

N.T.S.



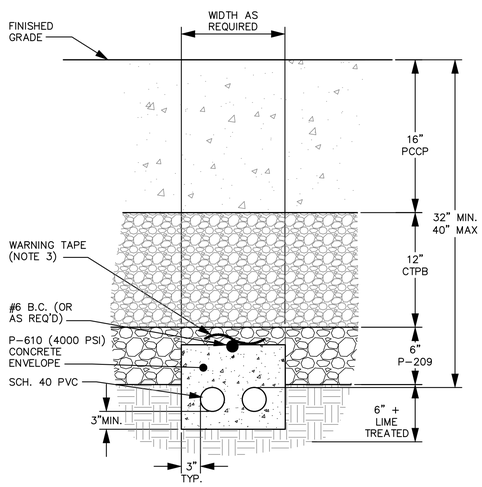
FOR SPLICES INSIDE CAN, JUNCTION BOXES AND HANDHOLES

NOTES:

1. PROVIDE MALE AND FEMALE L-823 CONNECTORS AS REQUIRED ON EACH CONDUCTOR IN EACH BASE, HANDHOLE OR MANHOLE IN THE FIELD CIRCUIT. SPLICES SHALL NEVER BE INSTALLED IN CONDUITS.
2. PLUG AND RECEPTACLE END FITTINGS SHALL BE CRIMPED ONTO THE CONDUCTOR BY USE OF AN AIRPORT PERSONNEL ACCEPTED HANDHELD RATCHETING TYPE CRIMPING TOOL. EACH CABLE TERMINATION SHALL BE SECURED BY TWO CRIMPS.
3. ALL L-824 CABLE CONNECTIONS SHALL BE MADE WITH L-823 CONNECTOR KITS.
4. AT THE POINT OF CONNECTION WITH THE EXISTING FIELD CIRCUITS, INSTALL NEW L-823 PLUGS ON BOTH THE NEW AND EXISTING CABLES. VERIFY INSULATION TYPES OF BOTH NEW AND EXISTING CABLES AND COORDINATE WITH TERMINATION KITS TO ASSURE PROPER AND WATER TIGHT FIT.
5. SECURE THE PULL-OVER FLAP WITH A LAYER OF SCOTCH 33 (OR EQUIVALENT) ELECTRICAL TAPE EXTENDING 2-INCHES BOTH SIDES OF THE OPEN END OF THE FLAP.

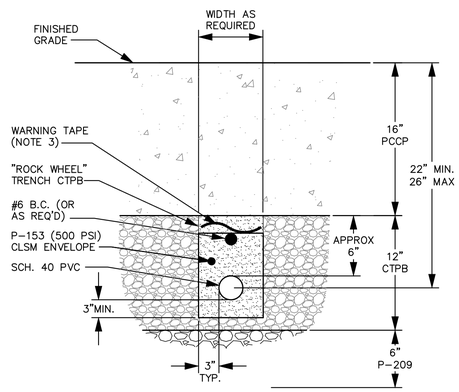
"SUPER KIT" TYPICAL 5kV CABLE SPLICE

N.T.S.



TYPICAL DUCT SECTION - P-610 ENCASED

N.T.S. (SEE NOTES AT RIGHT)



SINGLE CONDUIT, ENCASED UNDER PCCP - SECTION

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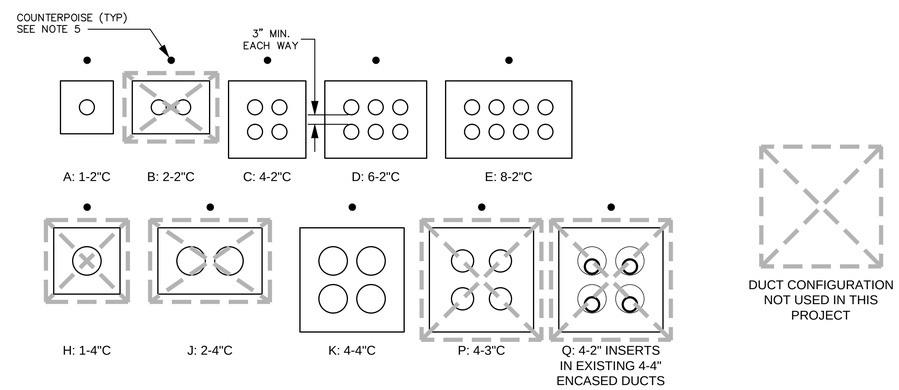
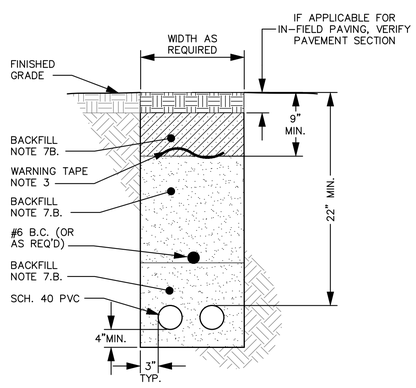


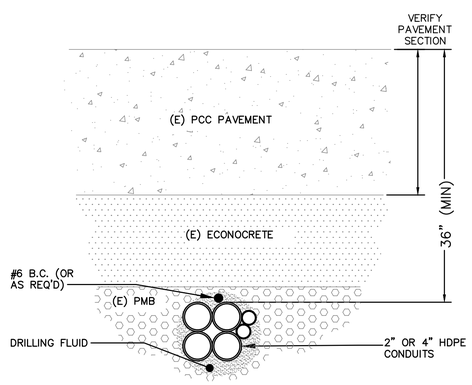
DUCT CONFIGURATIONS

N.T.S. (SEE NOTES BELOW)



TYPICAL TRENCH SECTION - DIRECT BURY

N.T.S. (SEE NOTES AT RIGHT)



TYPICAL DUCT SECTION - DIRECTIONAL BORE

N.T.S. (SEE NOTES AT RIGHT)

CONDUIT/DUCT & CABLE INSTALLATION NOTES:

1. SEE PLANS FOR REQUIRED DUCT SECTIONS. ALL OF THE SECTIONS SHOWN ON THIS DRAWING MAY NOT BE USED ON THIS PROJECT.
2. PROVIDE PULL WIRES IN ALL (NEW) UNUSED CONDUITS. PLUG UNUSED CONDUIT ENDS IN HANDHOLES OR MANHOLES.
3. WARNING TAPE IS REQUIRED IN ALL AREAS OF THE AIRPORT.
4. 4000 PSI CONCRETE ENCASE UNDER FULL STRENGTH PAVEMENT PER NOTE 7A BELOW AND AS OTHERWISE INDICATED ON THE PLANS. DIRECT BURY BACKFILL PER NOTE 7B BELOW IN AREAS UNDER SHOULDER PAVEMENT OR IN UNPAVED AREAS, U.O.N.
5. UNLESS OTHERWISE NOTED, INSTALL A BARE COPPER (BC) COUNTERPOISE CONDUCTOR (#6 FOR AIRFIELD POWER, #1/0 FOR FAA POWER AND COMM) WITH EACH DUCT ASSEMBLY AND EACH SINGLE CONDUIT. EXOTHERMICALLY WELD TO GROUND RODS PER SPECIFICATIONS L-108 AND L-110. CONNECT TO FIXTURE BASES OR GROUNDING SYSTEM PER DETAILS ON DRAWINGS E3.3 AND E3.4.
6. UNLESS OTHERWISE NOTED, INSTALL LIGHTING SERIES CIRCUITS AS FOLLOWS:
   A. ONE CIRCUIT (1 OR 2 CONDUCTORS) PER 2"C. LIMIT 4"C TO NO MORE THAN 8 CONDUCTORS.
   B. START INSTALLATION IN BOTTOM CONDUITS OF DUCT ARRAY, LEAVING THE UPPER CONDUITS EMPTY.
7. BACKFILL NOTES:
   A. CONCRETE ENCASED (C.E.) APPLICATIONS: ABOVE THE 4000 PSI P-610, FILL TO THE WARNING TAPE WITH P-152 OR CLSM (CONTROLLED LOW-STRENGTH MATERIAL, AKA "FLOWABLE FILL", SEE SPECIFICATIONS L-110 AND P-153). IF NOT BENEATH PAVEMENT, FILL ABOVE THE WARNING TAPE TO THE FINISHED GRADE WITH P-152. IF BENEATH PAVEMENT, FILL TO BOTTOM OF RUNWAY OR TAXIWAY PAVEMENT WITH P-209 OR OTHER AGGREGATE BASE MATERIAL PER CIVIL PAVEMENT SECTIONS.
   B. DIRECT BURY (D.B.) APPLICATIONS: IN MULTIPLE POURS OF CLSM, FILL TO COUNTERPOISE AND THEN, IF THERE IS SUFFICIENT DEPTH, TO THE WARNING TAPE. IF DEPTH IS INSUFFICIENT, THE WARNING TAPE CAN BE PLACED ON TOP OF THE COUNTERPOISE. FILL TO THE FINISHED GRADE WITH P-152 OR TO BOTTOM OF INFIELD PAVEMENT WITH P-209 OR OTHER AGGREGATE BASE MATERIAL PER CIVIL PAVEMENT SECTIONS.
8. REFER TO SPECIFICATION ITEM L-110 FOR CONDUIT/DUCT SPACER SYSTEM.

CITY OF SAN ANTONIO AVIATION DEPARTMENT

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STATE OF TEXAS ERIC C. LOVEJOY 84081 LICENSED PROFESSIONAL ENGINEER 5/5/16

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DUCT DETAILS

E3.6

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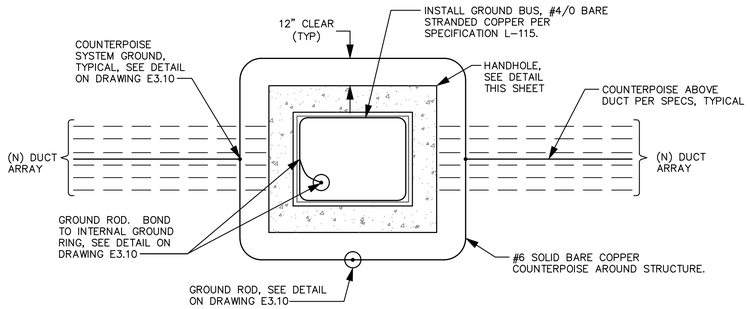


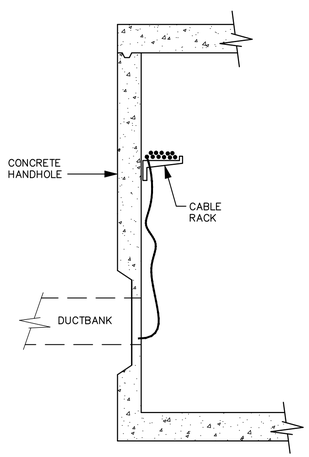
NOTE:
ALL COUNTERPOISE WIRES FOR DUCT BANKS AND CONDUITS TO BE EXOTHERMIC WELDED TO COUNTERPOISE LOOP AROUND STRUCTURE.

HANDHOLE COUNTERPOISE DETAIL

N.T.S.

HANDHOLE NOTES:

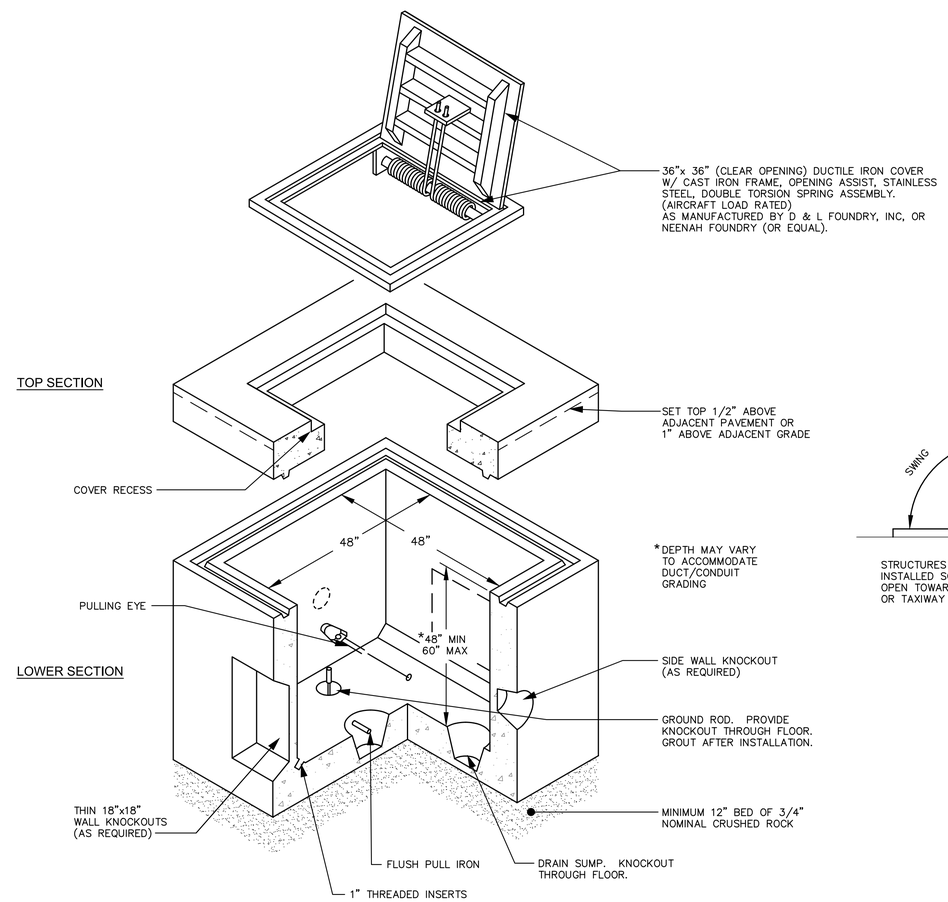
1. ALL STEEL, OTHER THAN REBAR, TO BE HOT DIPPED GALVANIZED AFTER FABRICATION.
2. PROVIDE ALL HANDHOLES WITH CABLE RACKS AND PULLING EYES PER SPECIFICATIONS.
3. INSTALL HANDHOLES PARALLEL TO ADJACENT RUNWAY OR TAXIWAY CENTERLINE.
4. PROVIDE GROUND ROD FOR EACH HANDHOLE PER SPECIFICATIONS.
5. GROUT ALL CONDUIT PENETRATIONS.
6. PROVIDE MANUFACTURER'S DRAWINGS AND STRUCTURAL CALCULATIONS FOR ALL CONCRETE ELEMENTS OF HANDHOLES AND FABRICATED TRAFFIC LIDS.
7. NOTE: DO NOT CONNECT COUNTERPOISE TO GROUNDING SYSTEM. ROUTE COUNTERPOISE AROUND HANDHOLES. SEE DETAIL ON THIS SHEET.



1. PROVIDE GALVANIZED STEEL RACK ARMS, BOLTED TO CHANNELS INSET IN HANDHOLE WALLS. PROVIDE MINIMUM (2) ARMS FOR EVERY WALL.
2. CABLE RACKING SHALL BE LIMITED TO THE UPPER HALF OF THE HANDHOLE.
3. PROVIDE CIRCUIT TAGS FOR EVERY L-823 CABLE SPLICE.
4. PROVIDE A MINIMUM OF EIGHT FEET OF CABLE BETWEEN ENTRY POINT AND L-823 SPLICE.
5. RACK CABLES ON SIDE(S) OF ENTRY/EXIT CONDUITS.
6. #2 AWG BARE COPPER PIGTAIL SHALL BOND THE GROUNDING BUS TO METALLIC CABLE RACK PER SPEC L-115.
7. DUCT/CONDUIT ARRAY SHALL ENTER HANDHOLE IN LOWER HALF OF THE HANDHOLE.
8. PROVIDE BELL END FOR EVERY CONDUIT IN THE ARRAY.
9. GROUT AROUND/BETWEEN CONDUITS & CONCRETE WALL.

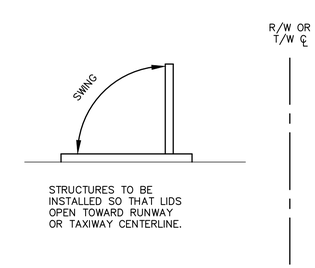
CABLE RACKING DETAIL

N.T.S.



HANDHOLE - TYPE I

N.T.S.



STRUCTURES TO BE INSTALLED SO THAT LIDS OPEN TOWARD RUNWAY OR TAXIWAY CENTERLINE.

CITY OF SAN ANTONIO AVIATION DEPARTMENT

SAN ANTONIO AIRPORT SYSTEM

Kimley»Horn

KIMLEY-HORN AND ASSOCIATES, INC.
601 NW LOOP 410, SUITE 350
SAN ANTONIO, TEXAS 78216
PHONE: (210) 541-9166

TEXAS REGISTERED FIRM, NO. 928

RUNWAY 12R-30L ELECTRICAL IMPROVEMENTS AND TERMINAL AREA TAXIWAY IMPROVEMENTS (PACKAGE 4)

STATE OF TEXAS ERIC C. LOVEJOY 84081 LICENSED PROFESSIONAL ENGINEER 5/16/16

MARK	DATE	DESCRIPTION

ISSUE:	---
PROJECT NO:	33-0019X
FILE NAME:	_33-00193-R1ED-501
DRAWN BY:	CMP
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SHEET TITLE:

HANDHOLE DETAILS

E3.7

SHEET NO. 59 OF 157

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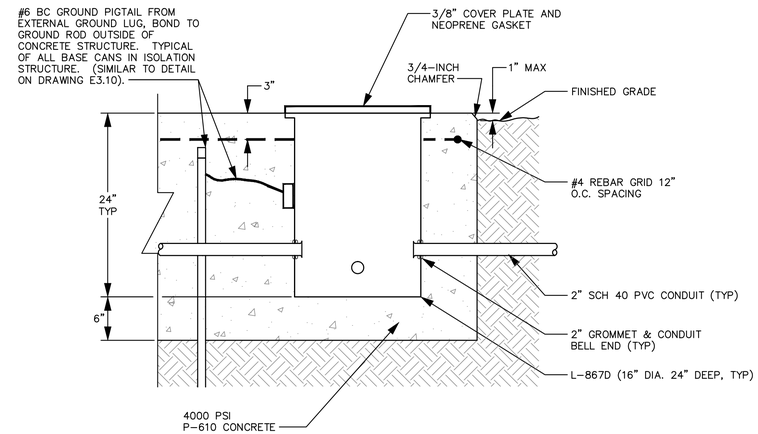

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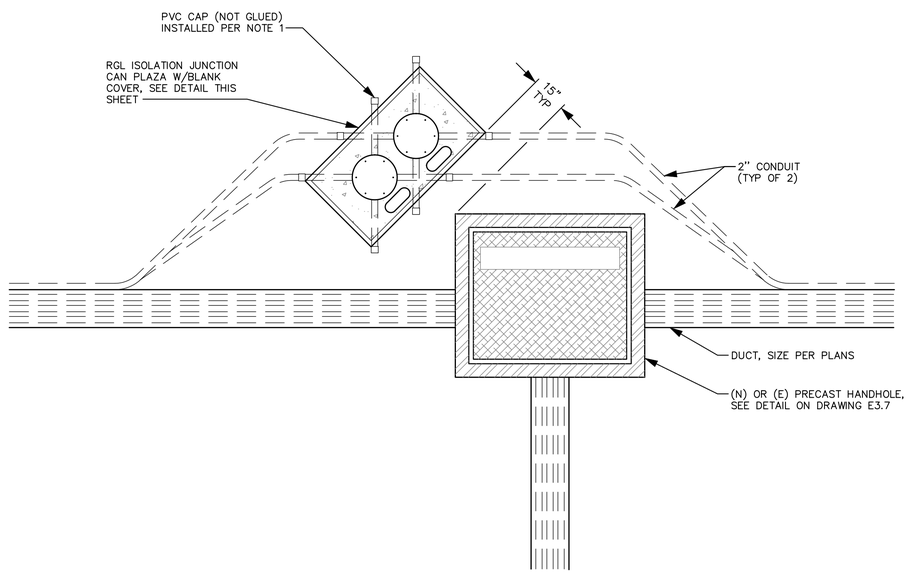
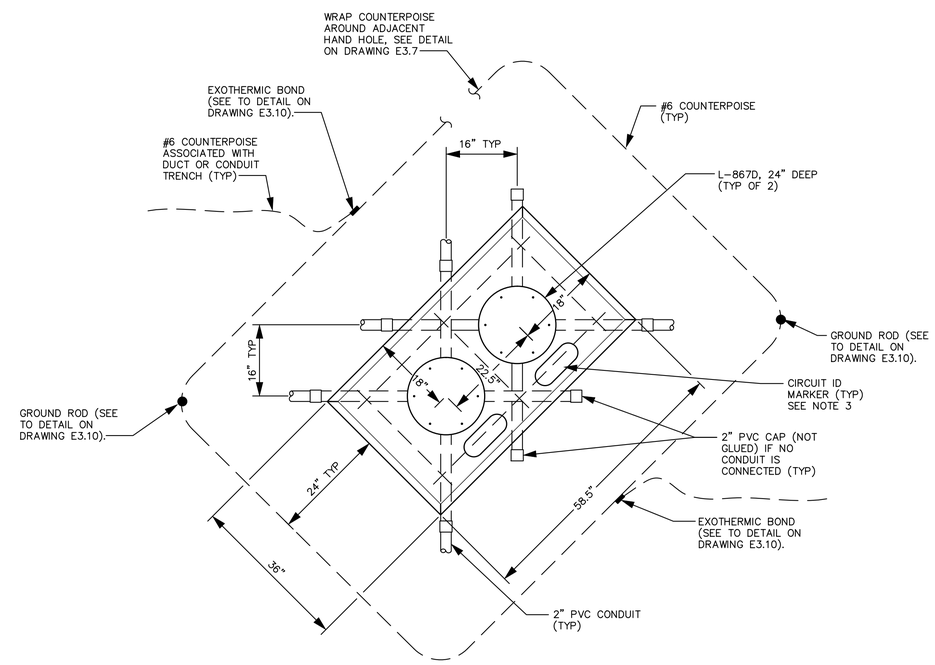


GUARD LIGHT AND SMGCS CIRCUIT ISOLATION DETAIL

N.T.S.



PLAN

EACH JUNCTION CAN SHALL HAVE 4 HUBS. HUBS SHALL BE PLACED IN 2 LAYERS AND THE HUBS IN ONE LAYER SHALL BE 90° APART FROM THE HUBS IN THE OTHER LAYER. EACH PAIR OF HUBS SHALL BE 180° APART.

2-CAN JCP - RGL AND SMGCS CIRCUIT ISOLATION JUNCTION CAN PLAZA

N.T.S.

JUNCTION CAN PLAZA (JCP) – RGL, SMGCS & OTHER CIRCUIT ISOLATION NOTES:

1. EACH JUNCTION CAN SHALL BE FURNISHED WITH FOUR 2" CONDUIT STUB-OUTS. CONDUIT STUB-OUTS FROM EACH JUNCTION CAN WHICH ARE NOT USED IN THE PROJECT SHALL BE CAPPED 6" OUTSIDE OF CONCRETE.
2. ORIENT JUNCTION CANS AS SHOWN ON LAYOUT PLAN SHEETS.
3. CONTRACTOR SHALL PROVIDE A METALLIC (ALUMINUM, BRASS OR BRONZE) MARKER PLATE AT EACH JUNCTION CAN INSTALLATION AS SHOWN. MARKER SHALL BE STAMPED WITH CIRCUIT IDENTIFICATIONS AS SHOWN ON LAYOUT PLAN SHEETS.
4. LETTERS AND NUMBERS SHALL BE 1" IN HEIGHT, PROPORTIONAL IN WIDTH, AND HAVE A STROKE WIDTH OF APPROXIMATELY 1/4".
5. INSTALL GROUND RODS AND GROUND LOOP AT ALL JUNCTION CAN PLAZA INSTALLATIONS AS SHOWN. TWO GROUND RODS PER INSTALLATION LOCATED AT OPPOSITE CORNERS SHALL BE PROVIDED. COUNTERPOISE SHALL BE LOCATED NOMINALLY 12" BELOW EXISTING GRADE.
6. SEE E2 SERIES PLAN SHEETS FOR IDENTIFICATION NUMBERS.

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RUNWAY 12R-30L ELECTRICAL IMPROVEMENTS AND TERMINAL AREA TAXIWAY IMPROVEMENTS (PACKAGE 4)

STATE OF TEXAS
ERIC C. LOVEJOY
84081
LICENSED
PROFESSIONAL ENGINEER
5/6/16

MARK	DATE	DESCRIPTION
ISSUE:		----
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JUNCTION CAN PLAZA (JCP) AND HANDHOLE DETAILS

E3.8

SHEET NO. 60 OF 157

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