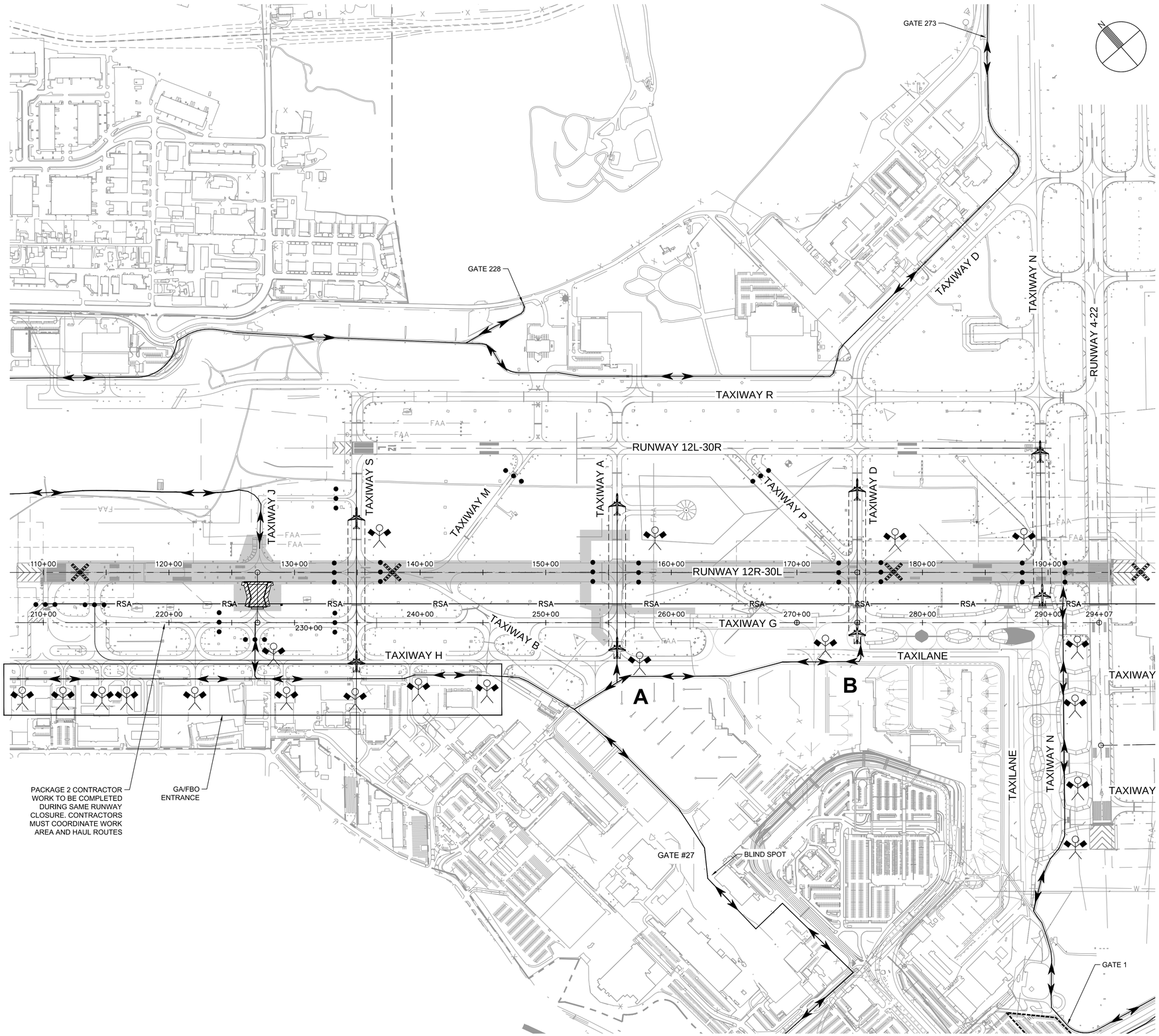


LEGEND

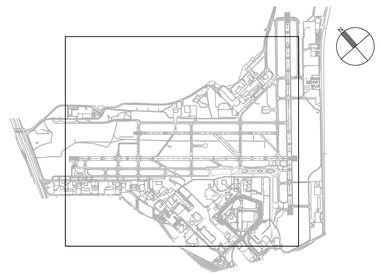
- INSTALL LOW LEVEL BARRICADES PER DETAILS ON SHEET C2.3
- INSTALL LINKED LOW LEVEL BARRICADES PER DETAILS ON SHEET C2.3
- AIRCRAFT WINGTIP
- TSA — TAXIWAY SAFETY AREA
- TOFA — TAXIWAY OBJECT FREE AREA
- INSTALL ORANGE SAFETY FENCE PER DETAILS ON SHEET C2.3
- HAUL ROUTE
- TAXIING AIRCRAFT
- FLAGGER (TO BE SUPPLIED BY CONTRACTOR)
- PORTABLE LIGHTED RUNWAY CLOSURE MARKER PROVIDED BY THE CONTRACTOR PER DETAILS ON SHEET C2.3
- A-B — INNER TAXILANE CROSSINGS

PHASING LEGEND

- PACKAGE 4 – BASE BID (CIVIL)
- PACKAGE 4 – BASE BID (ELECTRICAL)
- TOTAL DURATION = 90 DAYS

GENERAL PHASE NOTES:

1. A SEPARATE NTP WILL BE ISSUED FOR EACH PHASE.
2. ACCESS TO THE WORK AREA IS SHOWN ON THE OVERALL PHASING PLAN.
3. EXISTING AIRFIELD LIGHTING CIRCUITS MUST REMAIN IN SERVICE FOR ALL AREAS OPEN TO AIRCRAFT DURING ALL HOURS OF DARKNESS AND DURING INSTRUMENT METEOROLOGICAL CONDITIONS (BELOW 1000' CEILING OR LESS THAN 3 MILES OF VISIBILITY) UNLESS PRIOR APPROVAL HAS BEEN OBTAINED FROM THE AIRPORT. NO DIRECT PAY FOR JUMPERS. CURRENT WEATHER CONDITIONS FOR THE AIRPORT MAY BE OBTAINED BY CALLING (210) 805–5583.
4. THE CONTRACTOR SHALL COVER INDICATED AIRFIELD GUIDANCE SIGNS OR PORTIONS OF SIGNS FOR RUNWAYS AND TAXIWAYS THAT ARE CLOSED DURING EACH PHASE. WORK WILL BE UNDER THE VARIOUS L–105 TEMPORARY ELECTRICAL ITEMS.
5. THE CONTRACTOR SHALL COVER INDICATED AIRFIELD LIGHTS FOR TAXIWAYS THAT ARE CLOSED DURING EACH PHASE. WORK SHALL BE UNDER THE VARIOUS L–105 TEMPORARY ELECTRICAL ITEMS.
6. THE CONTRACTOR SHALL REMOVE ALL TAXIWAY CENTERLINES LEADING INTO THE CONSTRUCTION AREA PRIOR TO THE COMMENCEMENT OF EACH PHASE AS SHOWN ON THE TEMPORARY MARKING PLAN FOR EACH PHASE (PAVEMENT MARKING REMOVAL) (NPI).
7. THE CONTRACTOR SHALL PROVIDE A VACUUM SWEEPER FOR EVERY 2 RUNWAY CROSSINGS PLUS A WORKING BACKUP. (NPI)
8. CONTRACTOR SHALL PROVIDE A VACUUM SWEEPER FOR EVERY 3 GA/FBO ENTRANCES PLUS A WORKING BACKUP. (NPI)
9. CONTRACTOR SHALL PROVIDE A VACUUM SWEEPER PLUS A WORKING BACKUP AT ANY LOCATION WHERE THEY ARE CROSSING THE INNER TAXILANE (A & B ETC.) OR ACTIVE TAXIWAYS. (NPI)
10. CONTRACTOR SHALL MAINTAIN EXISTING RUNWAY PAVEMENT MARKINGS IN THEIR CURRENT CONDITION. ANY DAMAGE OR DIRTYING OF THE STRIPING WILL REQUIRE THE CONTRACTOR TO REMARK THOSE AREAS AT NO ADDITIONAL COST TO THE OWNER.



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)

MICHAEL A. NORBY 87178 REGISTERED PROFESSIONAL ENGINEER
05/03/16

MARK	DATE	DESCRIPTION
ISSUE:		-
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FILE NAME:		33-00193-R1CO-400-D01
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SHEET TITLE:

OPERATIONS AND PHASING PLAN - BASE BID

C2.2
SHEET NO. 13 OF 157

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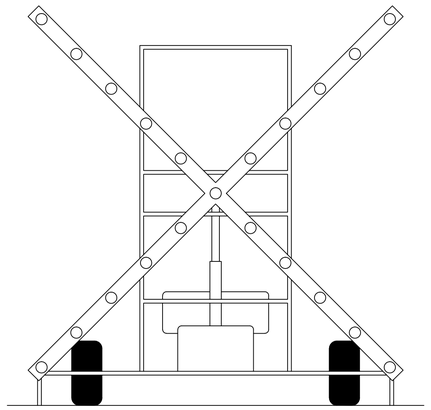


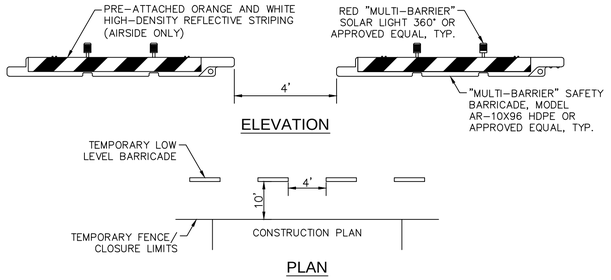
PORTABLE LIGHTED RUNWAY CLOSURE MARKER

FOUR LOCATIONS AS SHOWN ON PLANS

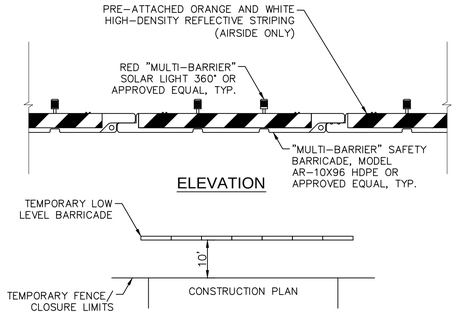
LIGHTED X NOTES

PORTABLE LIGHTED RUNWAY CLOSURE MARKERS (LIGHTED "X") SHALL MEET ALL OF THE FOLLOWING CONDITIONS:

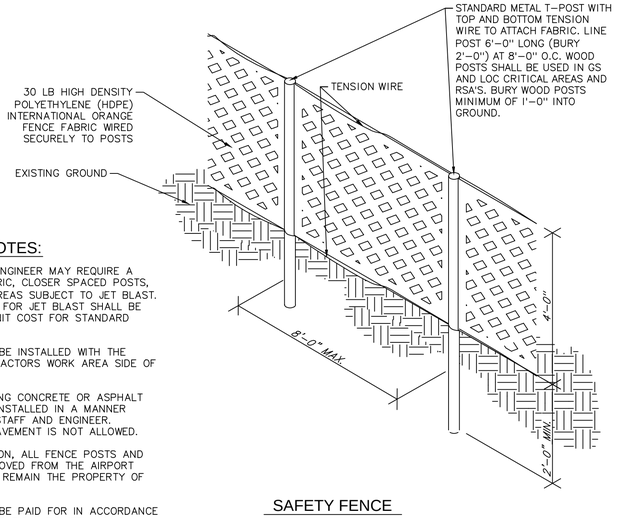
1. WILL BE PROVIDED AND MAINTAINED BY THE CONTRACTOR THROUGHOUT THE DURATION OF THE PROJECT. CONTRACTOR SHALL BE NOTIFIED IMMEDIATELY IF ANY DISRUPTION TO THE LIGHTED RUNWAY CLOSURE MARKERS IS NOTICED.
2. BE A PORTABLE, TOWABLE UNIT THAT CAN BE QUICKLY REMOVED FROM THE RUNWAY.
3. CONSIST OF CLEAR INCANDESCENT LAMPS OR TRANSMIT A WHITE COLOR, ARRANGED IN THE SHAPE OF A LETTER "X" WITH ARMS CROSSED AT AN APPROPRIATE ANGLE TO MAKE THE "X" DISCERNIBLE. THE ARMS SHALL BE PAINTED YELLOW ON ALL SIDES SO THAT THE UNIT WILL BE CLEARLY VISIBLE WHEN IT IS IN POSITION.
4. BE ENERGIZED BY A PORTABLE POWER SUPPLY.
5. BE CONTROLLED SO THAT THE LIGHTED SIGNAL WILL FLASH AT AN APPROXIMATE RATE OF TWO AND A HALF TO THREE (2.5–3) SECONDS "ON" AND ONE TO TWO AND A HALF (1–2.5) SECONDS "OFF".
6. PROVIDE THE FOLLOWING DAYTIME AND NIGHTTIME VISUAL REFERENCE DURING VISUAL FLIGHT RULE (VFR) CONDITIONS WHEN PLACED ON CENTERLINE PER THE DIMENSIONS SHOWN ON THE PLANS:
   (A) VISIBLE TO THE PILOT AT A RANGE OF AT LEAST FIVE NAUTICAL MILES.
   (B) RECOGNIZABLE AS A LETTER "X" FROM A RANGE OF AT LEAST ONE NAUTICAL MILE.
7. PROVIDE LAMP DIMMING CAPABILITY FOR NIGHTTIME OPERATIONS.
8. PRODUCE A SIGNAL THAT PROVIDES A HORIZONTAL COVERAGE TO AT LEAST FIFTEEN DEGREES (15°) ON EACH SIDE OF THE RUNWAY CENTERLINE AND A VERTICAL COVERAGE FROM ZERO DEGREES (0°) TO TEN DEGREES (10°) ABOVE HORIZONTAL, BOTH DAY AND NIGHT, AT A RANGE OF ONE NAUTICAL MILE.
9. ADJUSTABLE AIMING AND LEVELING TO ALLOW TILTING TO AN OPTIMUM ANGLE OF THREE DEGREES (3°) FROM VERTICAL.
10. WITHSTAND A MINIMUM WIND SPEED OF AT LEAST FORTY MILES PER HOUR (40 MPH) WITHOUT AFFECTING AIMING OR OPERATION.
11. INCLUDE AN ILLUMINATED FAILURE INDICATOR THAT IS VISIBLE FROM THE BACK (RUNWAY SIDE) OF THE UNIT.
12. INCLUDE AN OPERATIONS PLACARD IN A CONSPICUOUS LOCATION THAT INSTRUCTS OPERATORS TO VISUALLY CHECK THE OPERATION OF THE DEVICE EVERY TWO HOURS.
13. ONE PERSON SET UP IN LESS THAN FIVE MINUTES.
14. DIESEL PORTABLE POWER WITH ADAPTER TO RUN DIRECTLY FROM ELECTRICAL OUTLETS.
15. TRAILER HITCH OPTIONS INCLUDING TANDEM TOWING FOR ON–AIRPORT OPERATIONS.
16. ABILITY TO PROVIDE UP TO ONE HUNDRED AND TWENTY (120) HOURS OF CONTINUOUS OPERATION.
17. FAIL SAFE PROTECTION TO ENSURE THAT THE UNIT STAYS ON AS CONTINUOUS LIGHT IF THE FLASHER UNIT SHOULD FAIL.
18. DIMENSIONING AND LIGHTING ARRANGEMENT SHALL FOLLOW THE DESIGN RECOMMENDATION PER FAA AC 150/5345–55A.



LOW LEVEL BARRICADE



LINKED LOW LEVEL BARRICADE



SAFETY FENCE

SAFETY FENCE NOTES:

1. THE SAT STAFF AND ENGINEER MAY REQUIRE A STRONGER FENCE FABRIC, CLOSER SPACED POSTS, AND/OR BRACES IN AREAS SUBJECT TO JET BLAST. AREAS STRENGTHENED FOR JET BLAST SHALL BE PAID AT TWICE THE UNIT COST FOR STANDARD SAFETY FENCE.
2. SAFETY FENCE SHALL BE INSTALLED WITH THE FABRIC ON THE CONTRACTORS WORK AREA SIDE OF THE POST.
3. SAFETY FENCE CROSSING CONCRETE OR ASPHALT PAVEMENT SHALL BE INSTALLED IN A MANNER ACCEPTABLE TO SAT STAFF AND ENGINEER, ANCHORING TO THE PAVEMENT IS NOT ALLOWED.
4. AT PROJECT COMPLETION, ALL FENCE POSTS AND FABRIC SHALL BE REMOVED FROM THE AIRPORT PROPERTY AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR.
5. SAFETY FENCE SHALL BE PAID FOR IN ACCORDANCE WITH ITEM 100 "MOBILIZATION" BID ITEM 100.3, "AIRSIDE SAFETY, SECURITY, AND TRAFFIC CONTROL."

NOTES

1. CONTRACTOR TO PROVIDE BARRICADES AND LIGHTS FOR THE DURATION OF THE PROJECT, TO BE REMOVED UPON COMPLETION OF THE PROJECT.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING PROPER POSITIONING OF ALL BARRICADES AND FILLING WITH WATER. ANY BARRICADES DAMAGED DURING CONSTRUCTION WILL BE IMMEDIATELY REPLACED. (NPI)
3. LOW LEVEL BARRICADES SHALL BE PARALLEL TO THE CONSTRUCTION PERIMETER.
4. AROUND OPEN TRENCHES AND LARGE DROP OFFS, GREATER THAN ONE FOOT, THE CONTRACTORS SHALL HOOK THE BARRICADES TOGETHER. SEE PLANS FOR DIMENSIONS.
5. BARRICADES AND LIGHTED X'S SHALL BE PAID FOR IN ACCORDANCE WITH ITEM 100.3 MOBILIZATION BID ITEM #100.3, "AIRSIDE SAFETY, SECURITY, AND TRAFFIC CONTROL."

CITY OF SAN ANTONIO AVIATION DEPARTMENT

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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)

MICHAEL A. NORBY 57178 REGISTERED PROFESSIONAL ENGINEER
05/03/16

MARK	DATE	DESCRIPTION
ISSUE:		

PROJECT NO:	33-0019X
FILE NAME:	_33-00193-R1CP-201-D00
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PHASING DETAILS

C2.3

SHEET NO. 14 OF 157

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RUNWAY 12R-30L

S48° 38' 59.06"E

123+00 124+00 125+00 126+00 127+00 128+00 129+00 130+00 131+00

CL TAXIWAY J STA. 14+00.00 =
CL RUNWAY 12R-30L STA. 127+05.00

STA. 123+74.52
4.59' RT.

STA. 130+26.61
4.62' RT.

TAXIWAY J
N41° 21' 00.94"E

14+00

13+00

12+00

11+00

STA. 125+68.41
74.82' RT.

STA. 128+39.54
74.90' RT.

STA. 125+68.53
78.15' RT.

STA. 128+39.32
78.17' RT.

STA. 124+68.00
90.00' RT.

STA. 129+25.00
90.00' RT.

STA. 126+25.11
108.45' RT.

STA. 126+25.14
110.35' RT.

TYP (5)

STA. 126+63.59
172.97' RT.

STA. 126+66.75
172.92' RT.

STA. 127+44.75
172.43' RT.

STA. 127+41.63
172.57' RT.

EXISTING DROP
INLET TO REMAIN

EXISTING DROP INLET
TO BE REMOVED

EXISTING 36"
STORM DRAIN
TO REMAIN

EXISTING 30"
STORM DRAIN
TO REMAIN

STA. 126+63.64
265.03' RT.

STA. 127+44.74
264.67' RT.

STA. 126+54.67
290.69' RT.

STA. 126+99.86
299.29' RT.

STA. 127+06.06
299.29' RT.

STA. 127+53.52
290.69' RT.

STA. 124+68.31
347.50' RT.

STA. 129+25.00
347.56' RT.

223+00 224+00 225+00 226+00 227+00 228+00 229+00 230+00 231+00

S48° 38' 59.06"E

TAXIWAY G

10+00

CL TAXIWAY J STA. 10+00.00 =
CL TAXIWAY G STA. 227+05.00

LEGEND

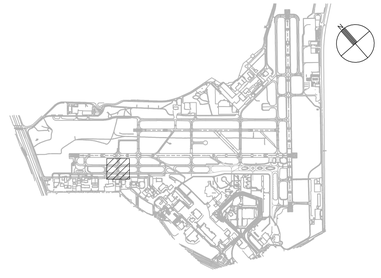
- PORTLAND CEMENT CONCRETE PAVEMENT REMOVAL
- CLEAR AND GRUB (P-101)
- FULL DEPTH AC PAVEMENT REMOVAL BY MILLING
- 2" AC PAVEMENT REMOVAL BY MILLING
- STORM DRAIN REMOVAL
- x x x PAVEMENT MARKING OBLITERATION

GENERAL NOTES

1. EXISTING UTILITY INFORMATION SHOWN ON THE PLANS CONCERNING THE TYPE, SIZE, AND LOCATION WERE COMPILED BASED ON THE UTILITY RECORDS AVAILABLE TO THE ENGINEER. THE CONTRACTOR SHALL PROVIDE A UTILITY LOCATOR AND VERIFY THE ACTUAL LOCATION OF UTILITIES PRIOR TO CONSTRUCTION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT ALL EXISTING UTILITIES IN PLACE UNLESS NOTED OR SPECIFIED OTHERWISE. ANY DAMAGE TO EXISTING UTILITIES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. UTILITIES INTERFERING WITH CONSTRUCTION SHALL BE RESET OR RELOCATED BY THE UTILITY COMPANY CONCERNED UNLESS NOTED OTHERWISE.
2. REFER TO SHEET C1.11 FOR HORIZONTAL AND VERTICAL CONTROL.
3. REFER TO ELECTRICAL PLANS (SERIES E) FOR ELECTRICAL DEMOLITION.
4. DOUBLE SAWCUT IS REQUIRED ALONG PCC REMOVAL LIMITS TO PROTECT EXISTING PCC PAVEMENT TO REMAIN (NPI).
5. STATIONING IS BASED ON RUNWAY 12R-30L CENTERLINE STATIONING.

CONSTRUCTION NOTES

1. SAWCUT EXISTING PCC PAVEMENT – FULL DEPTH
2. REMOVE AND DISPOSE OF EXISTING PCC PAVEMENT OFFSITE
3. REMOVE AND DISPOSE OF EXISTING STORM DRAIN PIPE, LIMITS OF REMOVAL PER PLAN
4. REMOVE AND DISPOSE OF EXISTING DRAINAGE STRUCTURE
5. REFER TO ELECTRICAL PLANS (SERIES E)
6. REMOVE AND DISPOSE OF EXISTING AC PAVEMENT OFFSITE
7. PAVEMENT MARKING TO BE OBLITERATED
8. FULL DEPTH AC PAVEMENT REMOVAL BY MILLING
9. 2" AC PAVEMENT REMOVAL BY MILLING
10. CLEAR AND GRUB
11. SAWCUT EXISTING AC PAVEMENT
12. PROTECT IN PLACE
13. INSTALL PIPE CAP



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SCALE IN FEET

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

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MICHAEL A. NORBY
87178
REGISTERED
PROFESSIONAL ENGINEER
05/03/16

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ISSUE:		

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SHEET TITLE:

DEMOLITION PLAN - TAXIWAY J - BASE BID

C3.1

SHEET NO. 15 OF 157

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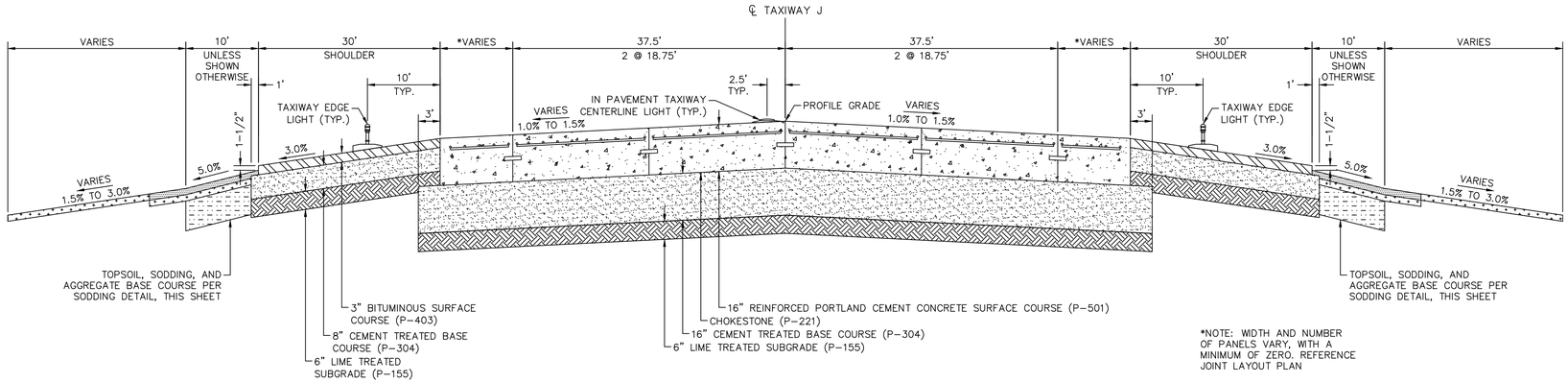
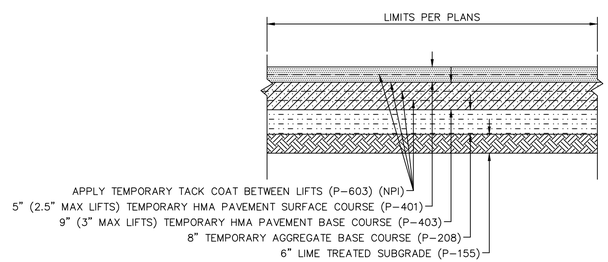


*NOTE: WIDTH AND NUMBER OF PANELS VARY, WITH A MINIMUM OF ZERO. REFERENCE JOINT LAYOUT PLAN

A / C4.1 TAXIWAY J (STA. 11+25.00 TO 13+25.00) TYPICAL SECTION

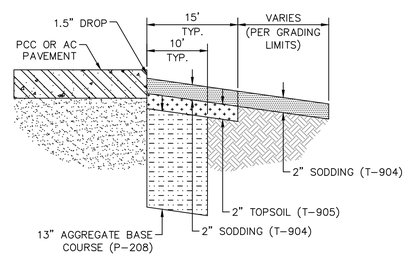
N.T.S



TEMPORARY ASPHALT (FULL DEPTH) TYPICAL SECTION (STA 11+09.31 TO STA 11+25)

B / C4.1

N.T.S



SODDING DETAIL

N.T.S

GENERAL NOTES

1. THE SUBGRADE IN CUT AREAS SHALL HAVE NATURAL DENSITIES SHOWN, OR
   A. SHALL BE COMPACTED FROM THE SURFACE TO ACHIEVE THE REQUIRED DENSITIES.
   B. SHALL BE REMOVED AND REPLACED IN WHICH CASE THE MINIMUM DENSITIES FOR FILLS APPLY. SEE SPECIFICATION P-152 FOR OVER-EXCAVATION REQUIREMENTS.
2. NON-COHESIVE SOILS, FOR THE PURPOSE OF DETERMINING COMPACTION, ARE THOSE WITH A P.I. < 6.

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TYPICAL SECTIONS

C4.1

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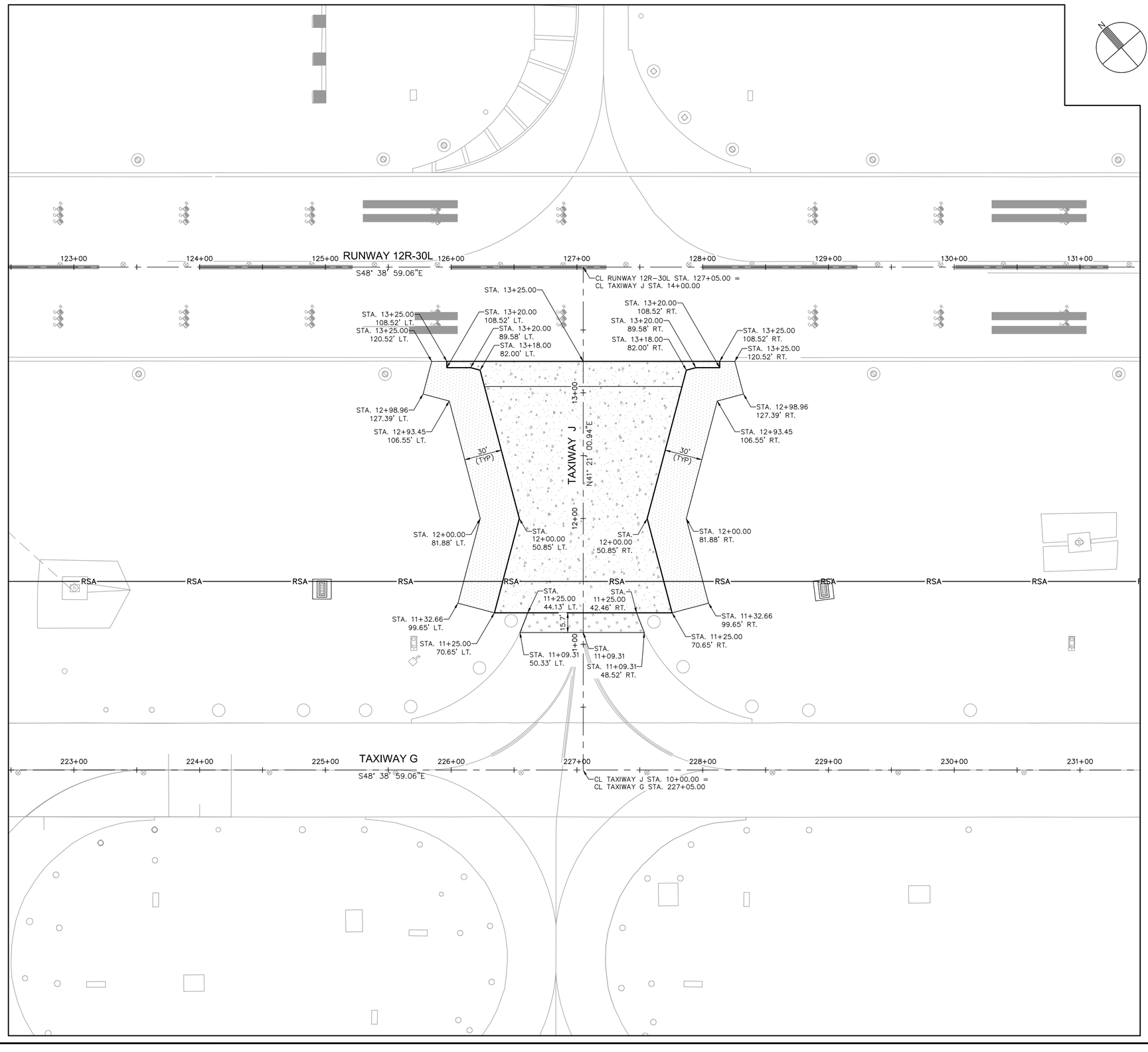
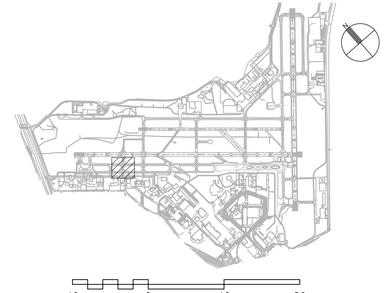


LEGEND

- PORTLAND CEMENT CONCRETE PAVEMENT
- PORTLAND CEMENT CONCRETE TRANSITION
- ASPHALT CONCRETE SHOULDER PAVEMENT
- ASPHALT CONCRETE TRANSITION

GENERAL NOTES

1. REFER TO SHEET C1.11 FOR HORIZONTAL AND VERTICAL CONTROL.
2. REFER TO ELECTRICAL PLANS (SERIES E) FOR AIRFIELD LIGHTING, SIGNING, AND ELECTRICAL FEATURES.
3. REFER TO SHEETS C4.1 – C4.5 FOR TYPICAL SECTIONS.



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SHEET TITLE:

GEOMETRIC LAYOUT PLAN - TAXIWAY J - BASE BID

C5.1

SHEET NO. 17 OF 157

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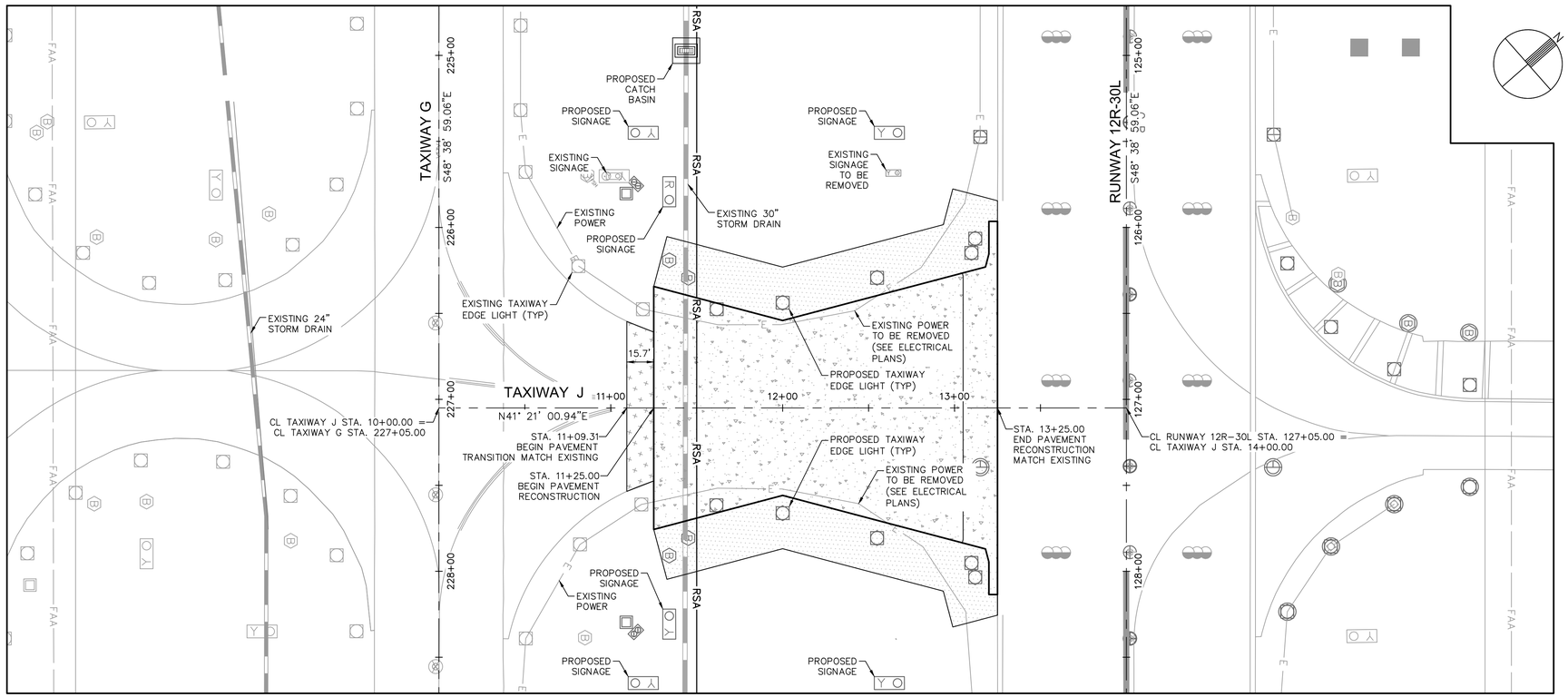
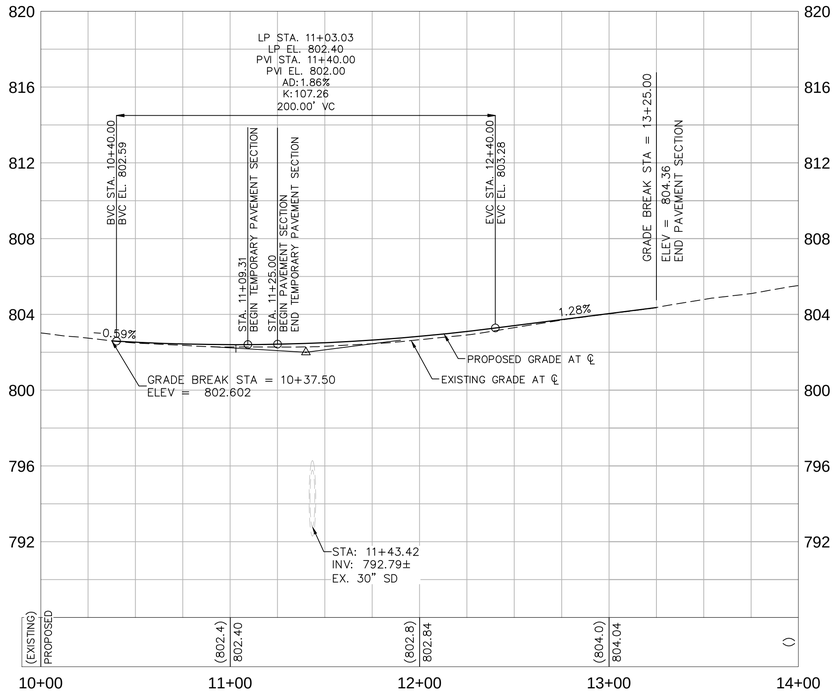


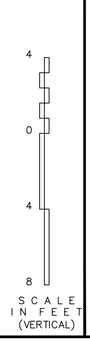


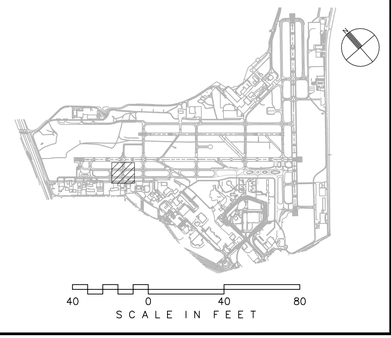
LEGEND

- PORTLAND CEMENT CONCRETE PAVEMENT
- PORTLAND CEMENT CONCRETE TRANSITION
- ASPHALT CONCRETE SHOULDER PAVEMENT
- ASPHALT CONCRETE TRANSITION
- EXISTING STORM DRAIN (RGRCP)
- PROPOSED STORM DRAIN (RGRCP)

GENERAL NOTES

1. ALL STATIONS AND OFFSETS REFER TO THE APPROPRIATE RUNWAY OR TAXIWAY STATIONING.
2. REFER TO ELECTRICAL PLANS (SERIES E) FOR AIRFIELD LIGHTING, SIGNING, AND ELECTRICAL FEATURES.
3. REFER TO GRADING AND DRAINAGE PLANS FOR DRAINAGE INFORMATION.





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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)

MICHAEL A. NORBY
87178
REGISTERED PROFESSIONAL ENGINEER
05/03/16

MARK	DATE	DESCRIPTION
ISSUE:		

PROJECT NO:	33-0019X
FILE NAME:	33-00193-R1CP-101-D00
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SHEET TITLE:

PLAN AND PROFILE - TAXIWAY J - BASE BID

C6.1

SHEET NO. 18 OF 157

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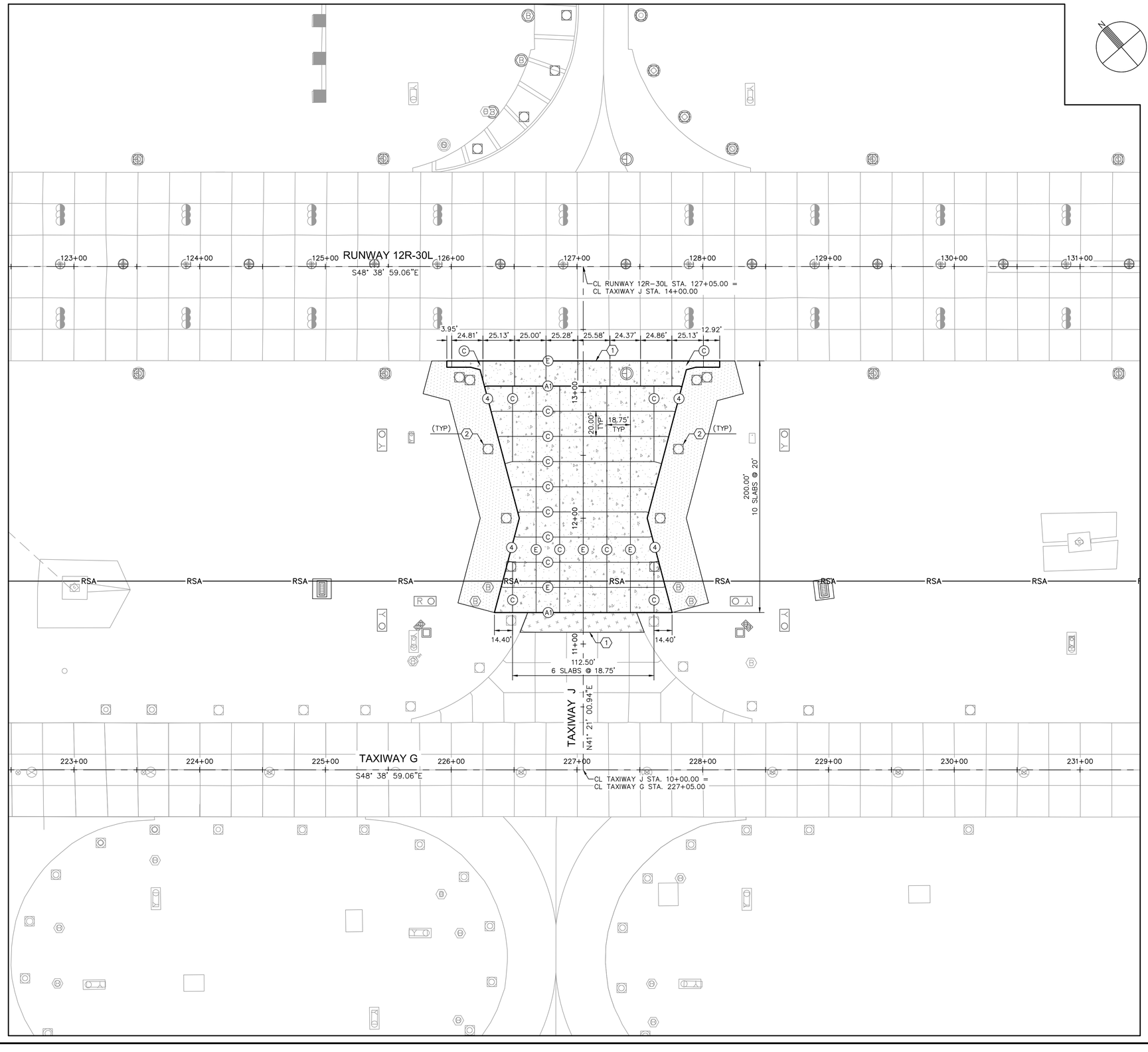


LEGEND

- PORTLAND CEMENT CONCRETE PAVEMENT
- PORTLAND CEMENT CONCRETE TRANSITION
- ASPHALT CONCRETE SHOULDER PAVEMENT
- ASPHALT CONCRETE TRANSITION
- (A) JOINT TYPE A, REFER TO SHEET C7.2 FOR PAVEMENT JOINT DETAILS
- (A1) JOINT TYPE A1, REFER TO SHEET C7.2 FOR PAVEMENT JOINT DETAILS
- (C) JOINT TYPE C, REFER TO SHEET C7.2 FOR PAVEMENT JOINT DETAILS
- (E) JOINT TYPE E, REFER TO SHEET C7.2 FOR PAVEMENT JOINT DETAILS
- (4) EDGE SEAL TYPE 4, REFER TO SHEET C7.2 FOR PAVEMENT JOINT DETAILS

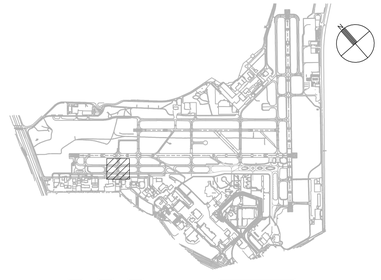
GENERAL NOTES

1. REFER TO SHEET C1.11 FOR HORIZONTAL AND VERTICAL CONTROL.
2. TYPE C AND TYPE E JOINTS MAY BE INTERCHANGED WITH APPROVAL FROM THE ENGINEER.
3. PORTLAND CEMENT CONCRETE PAVEMENT (P-501) JOINTS SHALL NOT VARY MORE THAN 1/2-INCH FROM THEIR DESIGNATED HORIZONTAL POSITION AND SHALL BE TRUE TO LINE WITH NOT MORE THAN 1/4-INCH VARIATION IN 10-FEET. ANY JOINT(S) THAT ARE NOT PARALLEL OR PERPENDICULAR, OTHER THAN IRREGULAR SLABS, SHALL BE REMOVED AND REPLACED BY THE CONTRACTOR WITH NO ADDITIONAL COST TO THE AIRPORT.
4. ALL SAWCUT DEBRIS FROM THE WIDENING OF THE JOINTS SHALL BE REMOVED FROM THE CONCRETE SURFACE IMMEDIATELY AFTER SAWCUTTING BY VACUUMING THE SLURRY.
5. DOWEL BARS SHALL NOT VARY IN ALIGNMENT BY MORE THAN TWO-PERCENT (2%) OR 0.40" IN EACH PLANE. MISALIGNED DOWEL BARS BY MORE THAN THE SPECIFIED TOLERANCE SHALL REQUIRE THE PCCP TO BE REMOVED ON EACH SIDE OF THE DOWEL BARS AT NO ADDITIONAL COST TO THE AIRPORT.
6. CONTRACTOR TO COORDINATE WITH THE ENGINEER FOR JOINTING AROUND ELEC./COMM. MANHOLES THAT ARE TO REMAIN IN PLACE.
7. ALL PCCP PANELS ARE REINFORCED PER DETAIL 6, SHEET C7.2

CONSTRUCTION NOTES

(1) SAWCUT AND MATCH EXISTING JOINT SPACING AND ELEVATION

(2) REFER TO ELECTRICAL PLANS (SERIES E)



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SCALE IN FEET

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

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MICHAEL A. NORBY
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05/03/16

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SHEET TITLE:

JOINT LAYOUT PLAN - TAXIWAY J - BASE BID

C7.1

SHEET NO. 19 OF 157

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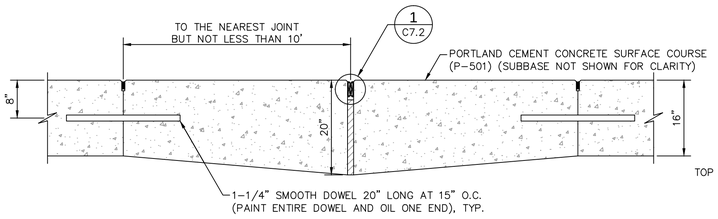
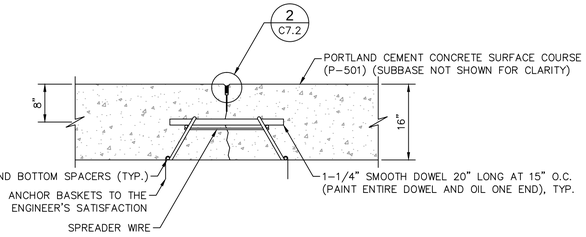
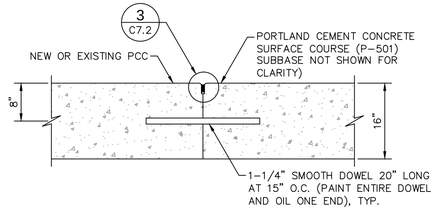


A C7.2 TYPE A - THICKENED EDGE ISOLATION JOINT
N.T.S.



C C7.2 TYPE C - DOWELED CONTRACTION JOINT
DOWEL BARS SHALL NOT BE PLACED MECHANICALLY
N.T.S.



E C7.2 TYPE E - DOWELED CONSTRUCTION JOINT
DOWEL BARS SHALL NOT BE PLACED MECHANICALLY
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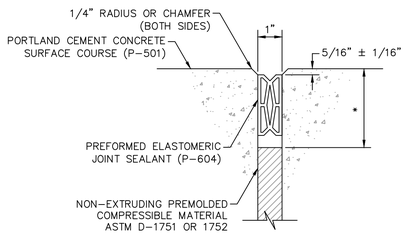
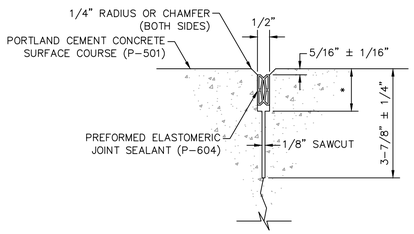


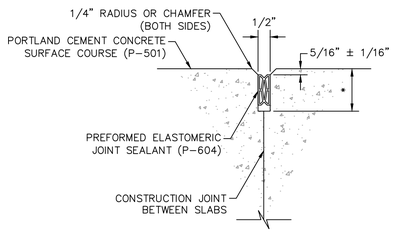
* DEPTH AS RECOMMENDED BY MANUFACTURER OF JOINT SEALANT

1 C7.2 ISOLATION JOINT
N.T.S.



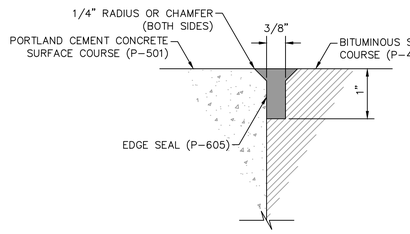
* DEPTH AS RECOMMENDED BY MANUFACTURER OF JOINT SEALANT

2 C7.2 CONTRACTION JOINT
N.T.S.



* DEPTH AS RECOMMENDED BY MANUFACTURER OF JOINT SEALANT

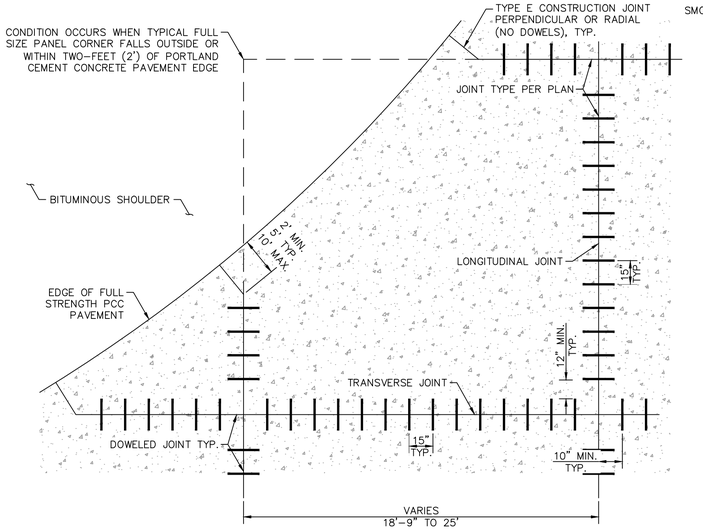
3 C7.2 CONSTRUCTION JOINT
N.T.S.



4 C7.2 EDGE SEAL TYPE 4
N.T.S.

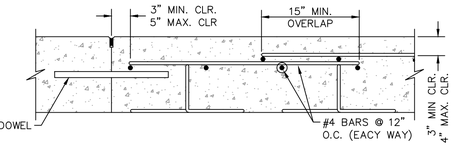
GENERAL NOTES

1. ALL JOINT CONSTRUCTION, MATERIALS AND JOINT SEALER SHALL BE IN ACCORDANCE WITH FAA SPECS P-501, P-604 AND P-605 UNLESS NOTED OTHERWISE.
2. ALL MATERIALS AND WORK REQUIRED FOR NEW JOINTS ARE INCIDENTAL TO ITEM P-501.
3. THE MATERIALS AND METHODS SHOWN HERE ARE THE MINIMUM REQUIREMENTS.
4. DOWELS SHALL BE SHOP PAINTED WITH ONE COAT OF PAINT PER SPECIFICATIONS P-501 AND THE DOWEL SHALL BE OILED IN THE FIELD AS NOTED ON DETAILS.
5. DOWEL BAR INSTALLATION DEVICE (DOWEL BASKET ASSEMBLY) AND METHOD OF ANCHORING INTO POSITION SHALL BE APPROVED BY ENGINEER.
6. EDGES OF THE SLAB SHALL BE SPRAYED WITH AN APPROVED CURING MATERIAL BEFORE MAKING AN ADJACENT POUR. A TRANSVERSE CONSTRUCTION JOINT, AT A PLANNED LOCATION, SHALL BE INSTALLED WHEN PAVING OPERATIONS ARE INTERRUPTED FOR MORE THAN THIRTY (30) MINUTES.
7. THE CONTRACTOR SHALL MAKE SPECIAL PROVISIONS TO KEEP THE FINISHED CONCRETE SURFACE FREE OF FOREIGN MATERIAL (AGGREGATES, OILS, ETC.) THROUGHOUT THE PROJECT. SWEEPERS AND VACUUM TRUCKS SHALL BE UTILIZED AS NECESSARY BY THE CONTRACTOR AND/OR AS DIRECTED BY THE ENGINEER TO MAINTAIN THIS PROVISION.
8. THE PAVEMENT SURFACE AND JOINTS SHALL BE CLEANED OF SAWCUT RESIDUE IMMEDIATELY AFTER EACH JOINT SAWING OPERATION. THE CONTRACTOR SHALL EMPLOY VACUUMING PROCEDURES TO CLEAN THE PAVEMENT SURFACE OF ALL RESIDUE. ADDITIONAL JOINT CLEANING PRIOR TO THE APPLICATION OF JOINT SEALANT SHALL BE ACCOMPLISHED BY MEANS AND METHODS WHICH DO NOT CREATE FUGITIVE DUST.
9. ALL CONSTRUCTION JOINTS THAT ARE NOT OPEN AND FREE OF FOREIGN MATERIAL SHALL BE CLEANED BY SAWING ONE-HALF INCH (1/2") WIDE AND FIVE-INCHES (5") DEEP.
10. DOWEL BARS SHALL NOT BE PLACED MECHANICALLY.
11. THE CONTRACTOR SHALL BE ATTENTIVE TO THE TIMING OF SAWCUTTING TO AVOID CRACKING, SEE DETAIL 2, THIS SHEET, FOR DEPTH OF SAWCUT.
12. ALL JOINT SEALANT TYPES SHOWN ON THIS SHEET SHALL BE VERIFIED BY THE JOINT SEALANT MANUFACTURER PRIOR TO CONSTRUCTION. A MANUFACTURER'S REPRESENTATIVE MUST BE PRESENT DURING THE FIRST TWO DAYS OF PLACEMENT OF SEALANT.
13. THE PREFORMED JOINT SEAL IN TRANSVERSE CONTRACTION JOINTS SHALL BE INSTALLED IN ONE CONTINUOUS PIECE ACROSS THE RUNWAY OR TAXIWAY. THE LONGITUDINAL CONSTRUCTION JOINT SEAL SHALL BE INTERRUPTED AT EACH TRANSVERSE JOINT.
14. SEE ELECTRICAL PLANS FOR LOCATION OF TEMPORARY ELECTRICAL WIRES THAT MAY BE PLACED IN JOINTS.
15. A GANG DRILL OF NOT LESS THAN 3 DRILLS SHALL BE USED FOR DOWELED CONSTRUCTION JOINTS. HAND DRILLING WILL NOT BE ALLOWED.



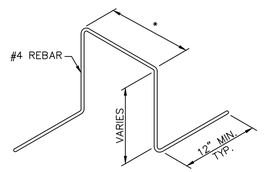
NOTE:
DOWEL SPACING AND CLEARANCES FOR IRREGULAR PANELS SHALL CONFORM TO DIMENSIONS SHOWN HEREON AND SHALL BE REINFORCED PER DETAIL 6, THIS SHEET.

5 C7.2 REINFORCED PCC PANELS
N.T.S.



NOTES:
1. ALL PCC PANELS SHALL BE REINFORCED.
2. REINFORCEMENT MAT SHALL NOT EXTEND ACROSS JOINTS.
3. REINFORCEMENT MATS SHALL CONFORM TO SECTION P-501-2.6 OF THE SPECIFICATIONS.
4. END AND SIDE LAPS SHALL OVERLAP A MINIMUM OF FIFTEEN-INCHES (15")
5. END AND SIDE LAPS SHALL BE WIRE TIED AT EACH END AND AT QUARTER (1/4) POINTS ALONG EACH EDGE.
6. SUBBASE NOT SHOWN FOR CLARITY

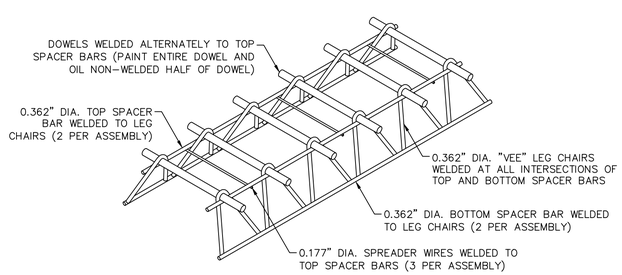
6 C7.2 PCC PANEL REINFORCEMENT MAT
N.T.S.



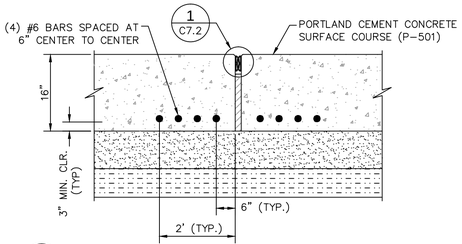
NOTES:
1. CHAIR SHALL BE FIRMLY ANCHORED TO GRADE
2. THE NUMBER OF CHAIRS USED SHALL BE SUFFICIENT TO FULLY SUPPORT REINFORCEMENT MAT AT THE PROPER HEIGHT DURING PLACEMENT OF CONCRETE

* LENGTH REQUIRED TO FULLY SUPPORT REINFORCEMENT MAT

7 C7.2 REINFORCEMENT MAT SUPPORT CHAIR
N.T.S.



8 C7.2 DOWEL BASKET ASSEMBLY
DOWEL BARS SHALL NOT BE PLACED MECHANICALLY
N.T.S.



A1 C7.2 TYPE "A1" REINFORCED EXPANSION JOINT
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
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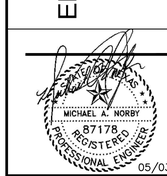
TEXAS REGISTERED FIRM,
NO. 928

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



05/03/16

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JOINT LAYOUT DETAILS

C7.2
SHEET NO. 20 OF 157

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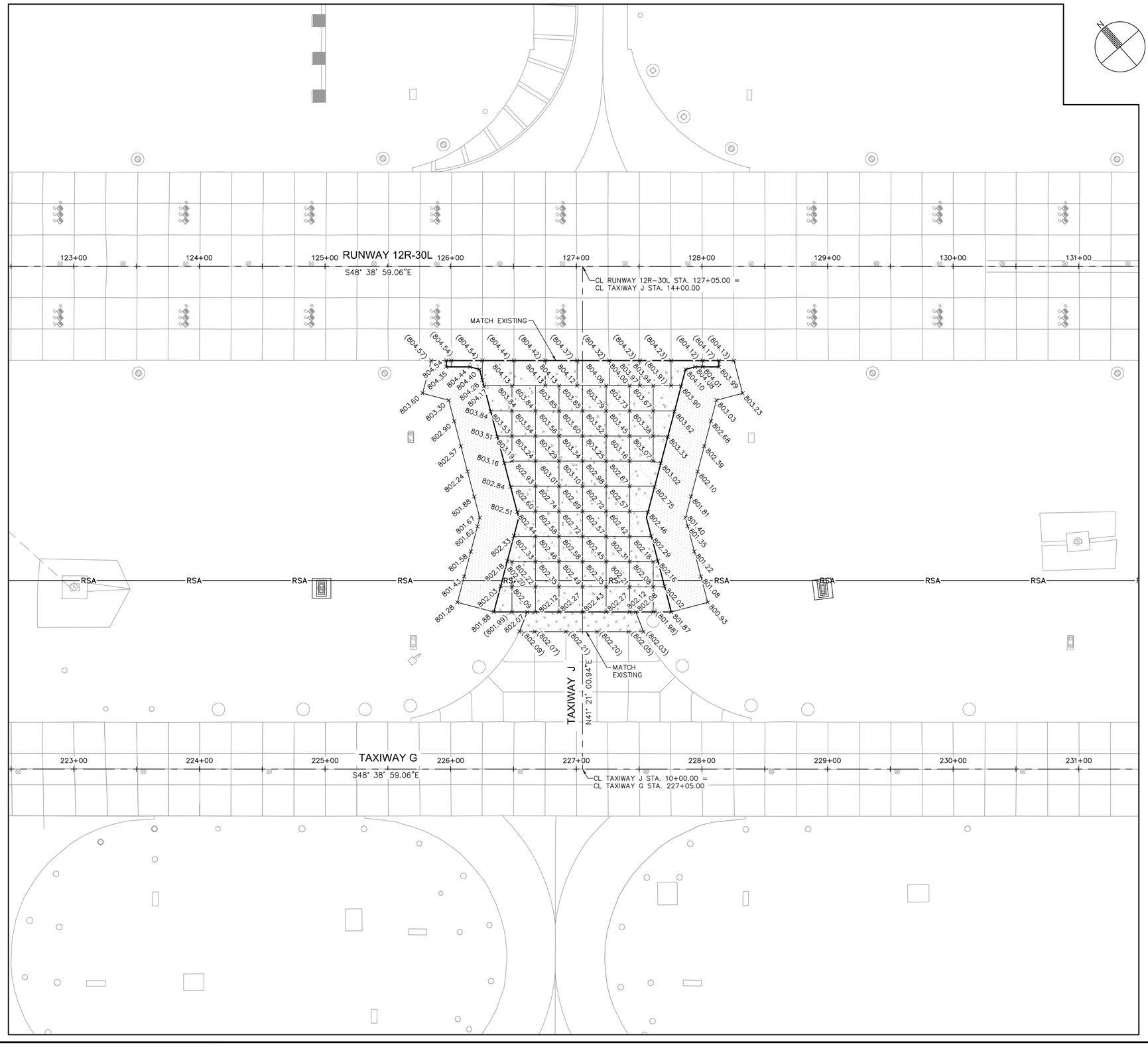
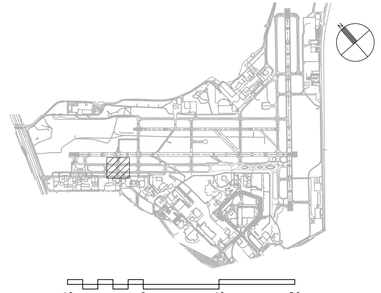


LEGEND

- PORTLAND CEMENT CONCRETE PAVEMENT
- PORTLAND CEMENT CONCRETE TRANSITION
- ASPHALT CONCRETE SHOULDER PAVEMENT
- ASPHALT CONCRETE TRANSITION
- +XXX.XX — PROPOSED SPOT ELEVATION
- +(XXX.XX) — EXISTING SPOT ELEVATION

GENERAL NOTES

1. REFER TO SHEET C1.11 FOR HORIZONTAL AND VERTICAL CONTROL.
2. PAVEMENT ELEVATIONS SHOWN ARE BASED ON JOINT LAYOUT, REFER TO PAVEMENT JOINT LAYOUT PLANS (SERIES C7).
3. REFER TO GRADING AND DRAINAGE PLAN (SERIES C9) FOR ADDITIONAL GRADING INFORMATION.
4. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AS SHOWN ON PLAN. IF EXISTING ELEVATIONS DIFFER FROM THOSE SHOWN, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY.
5. REFER TO ELECTRICAL PLANS (SERIES E) FOR AIRFIELD LIGHTING, SIGNING, AND ELECTRICAL FEATURES.



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SCALE IN FEET

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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PHONE: (210) 541-9166
TEXAS REGISTERED FIRM, NO. 928

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

TEXAS BOARD OF PROFESSIONAL ENGINEERS
MICHAEL A. NORBY
87178
REGISTERED
PROFESSIONAL ENGINEER
05/03/16

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PAVEMENT ELEVATION PLAN- TAXIWAY J - BASE BID

C8.1
SHEET NO. 21 OF 157

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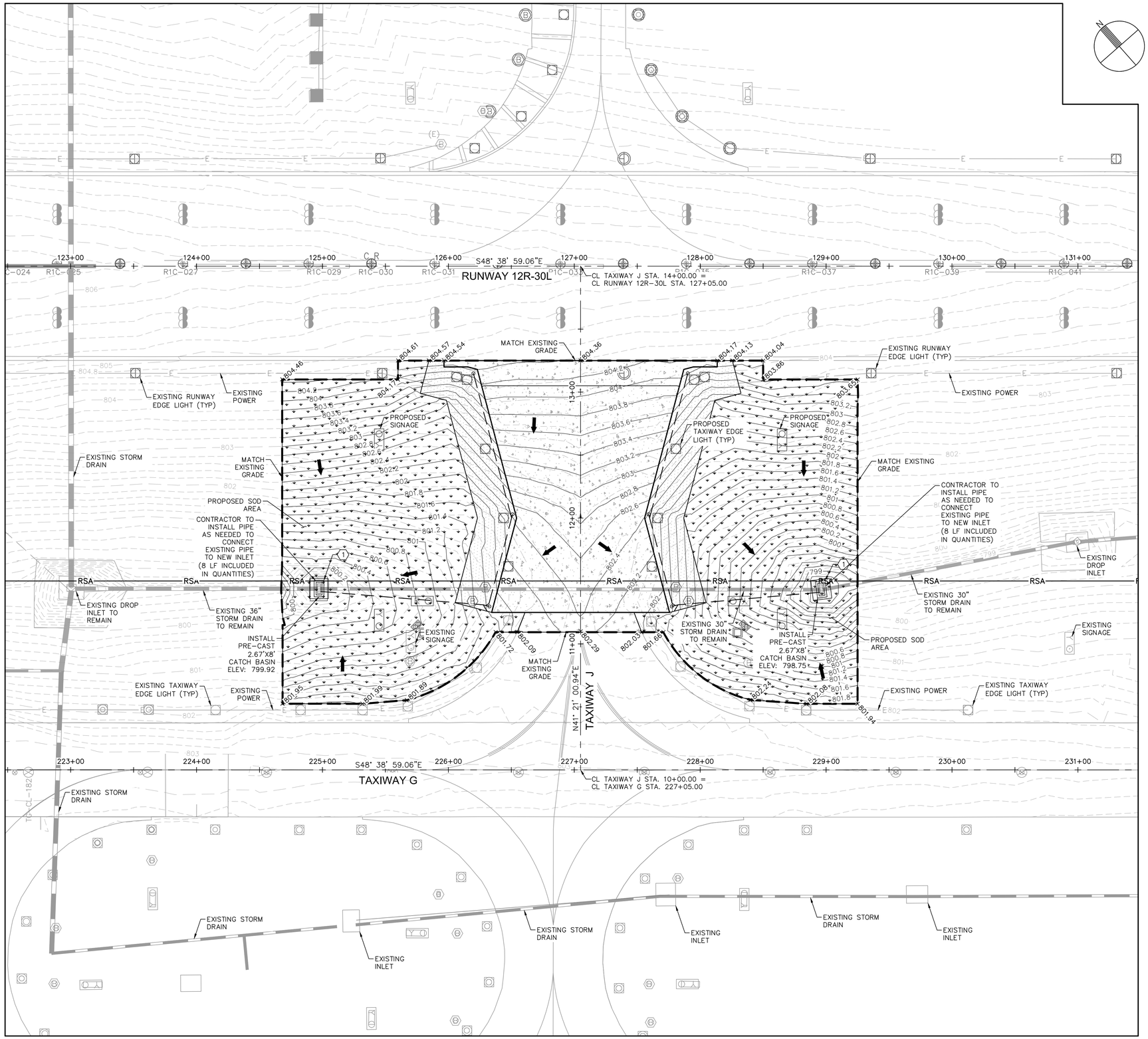


LEGEND

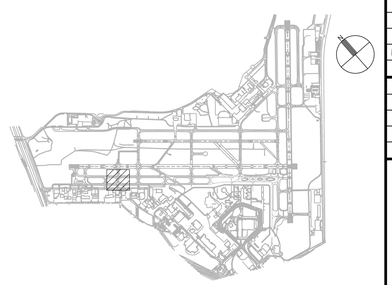
- PORTLAND CEMENT CONCRETE PAVEMENT
- PORTLAND CEMENT CONCRETE TRANSITION
- ASPHALT CONCRETE SHOULDER PAVEMENT
- ASPHALT CONCRETE TRANSITION
- PROPOSED SOD AREA
- PROPOSED SIGN
- DIRECTION OF FLOW
- 780 EXISTING CONTOUR
- 780 PROPOSED CONTOUR
- GRADING LIMITS
- +XXX.XX PROPOSED SPOT ELEVATION
- +(XXX.XX) EXISTING SPOT ELEVATION
- PROPOSED MANHOLE
- PROPOSED CATCH BASIN
- EXISTING INLET
- UCO PROPOSED UNDERDRAIN CLEANOUT
- PROPOSED UNDERDRAIN
- PROPOSED STORM DRAIN PIPE
- EXISTING STORM DRAIN PIPE

GENERAL NOTES

1. REFER TO SHEET C1.11 FOR HORIZONTAL AND VERTICAL CONTROL.
2. PAVEMENT ELEVATIONS SHOWN ARE BASED ON JOINT LAYOUT, REFER TO PAVEMENT JOINT LAYOUT PLANS (SERIES C7).
3. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AS SHOWN ON PLAN. IF EXISTING ELEVATIONS DIFFER FROM THOSE SHOWN, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY.
4. REFER TO ELECTRICAL PLANS (SERIES E) FOR AIRFIELD LIGHTING, SIGNING, AND ELECTRICAL FEATURES.
5. EXISTING UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL VERIFY EXACT LOCATIONS OF ALL UNDERGROUND UTILITIES PRIOR TO COMMENCING WORK IN ANY AREA.
6. ALL STATIONS AND OFFSETS REFER TO THE APPROPRIATE RUNWAY OR TAXIWAY STATIONING.
7. DESIGN CONTOURS REPRESENT FINISHED GRADE (PAVEMENT AND GRADING). CONTOURS AND PERCENT OF SLOPE ARE APPROXIMATE AND ARE SHOWN AS SUPPLEMENTAL INFORMATION ONLY.

CONSTRUCTION NOTES

(1) INSTALL SINGLE CATCH BASIN, SEE SHEET C9.2 FOR DETAILS



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05/03/16

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GRADING AND DRAINAGE PLAN - TAXIWAY J - BASE BID

C9.1
SHEET NO. 22 OF 157

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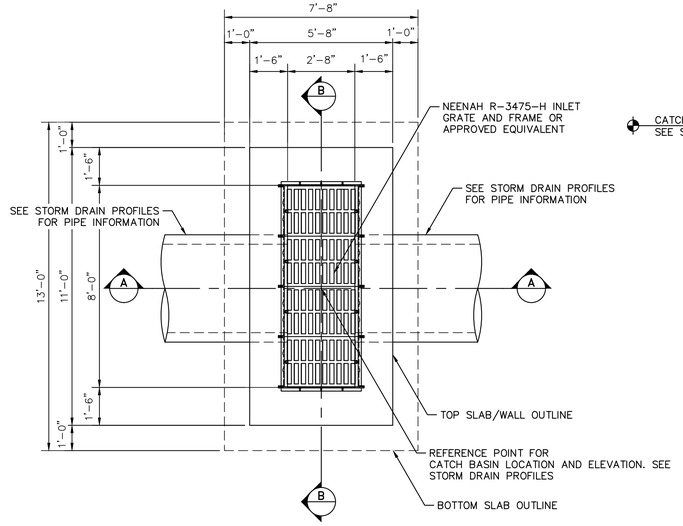

1 C9.9

2.67' x 8' CATCH BASIN PLAN

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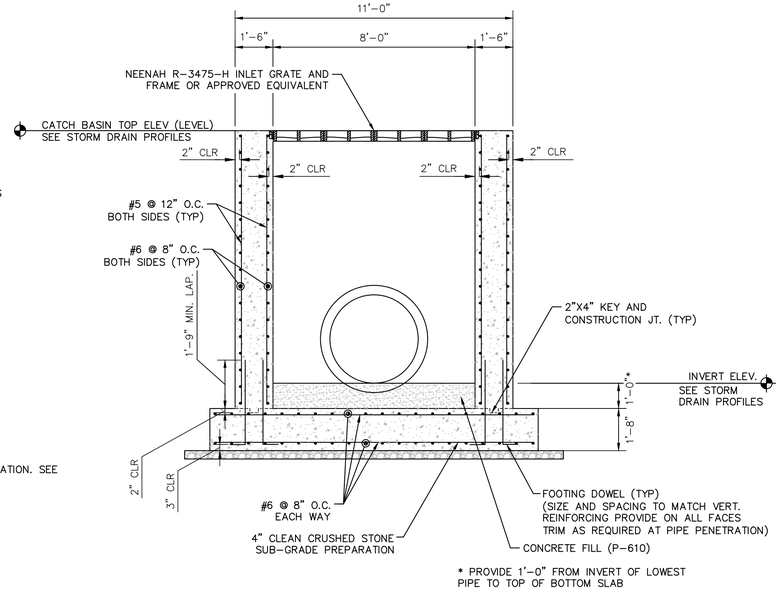
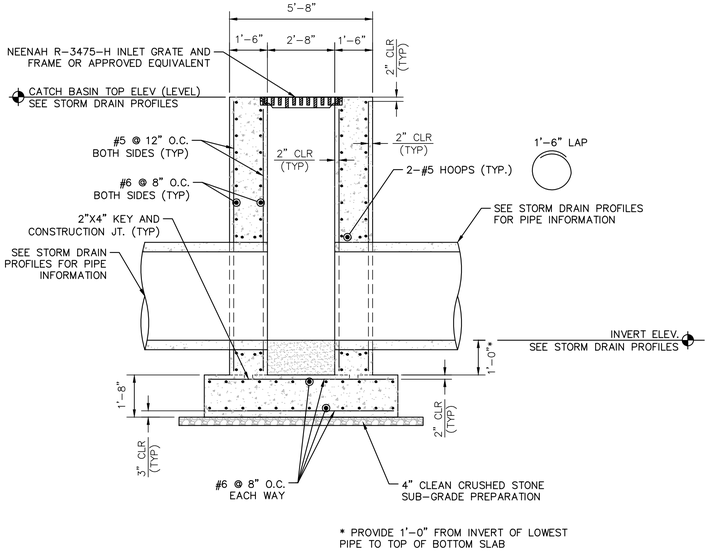


SECTION B-B

N.T.S.

GENERAL NOTES

1. CONCRETE f'c = 4,000 P.S.I @ 28 DAYS
2. REINFORCING STEEL SHALL BE ASTM A615, GRADE 60
3. PROVIDE 2" CLEAR COVER FOR REINFORCING STEEL UNLESS NOTED OTHERWISE
4. SEE STORM DRAIN PROFILES FOR CATCH BASIN TOP ELEVATIONS AND INLET INVERT ELEVATIONS
5. PREPARE SUB-GRADE IN ACCORDANCE WITH PROJECT GEOTECHNICAL ENGINEERS RECOMMENDATIONS
6. CONTRACTOR SHALL VERIFY 2'-8" X 8'-0"CATCH BASIN INTERIOR DIMENSIONS WITH SELECTED INLET GRATE MANUFACTURER PRIOR TO CONSTRUCTION OF CATCH BASIN
7. INLET MAY BE ROTATED TO BETTER MATCH INTO PIPE ALIGNMENTS



SECTION A-A

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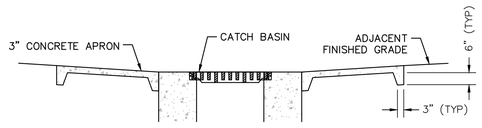

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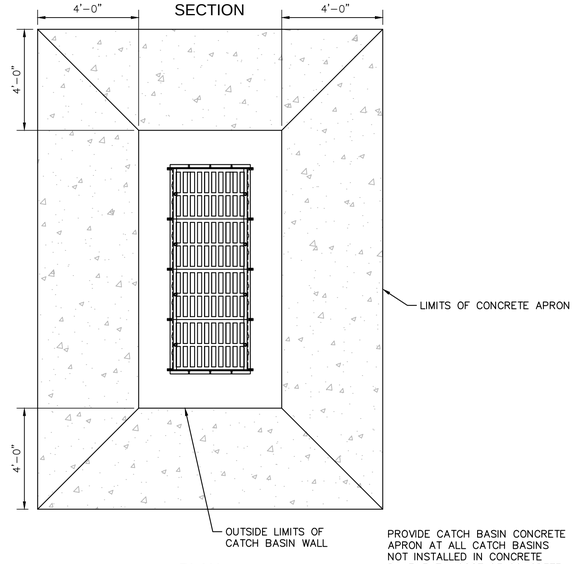

PLAN

PROVIDE CATCH BASIN CONCRETE APRON AT ALL CATCH BASINS NOT INSTALLED IN CONCRETE PAVEMENT. COST OF CONCRETE APRON SHALL BE INCLUDED IN COST OF CATCH BASIN.

2 C9.9

CATCH BASIN CONCRETE APRON

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)

05/03/16

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ISSUE:		

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FILE NAME:	_33-00193-R1CS-501-D01
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SHEET TITLE:

SINGLE CATCH BASIN DETAILS

C9.2

SHEET NO. 23 OF 157

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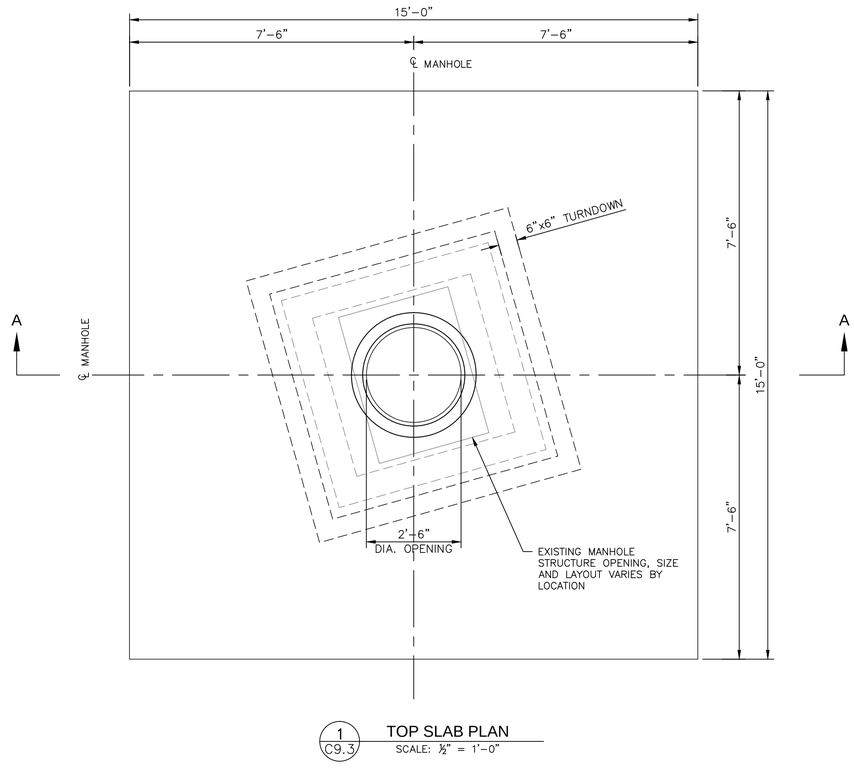
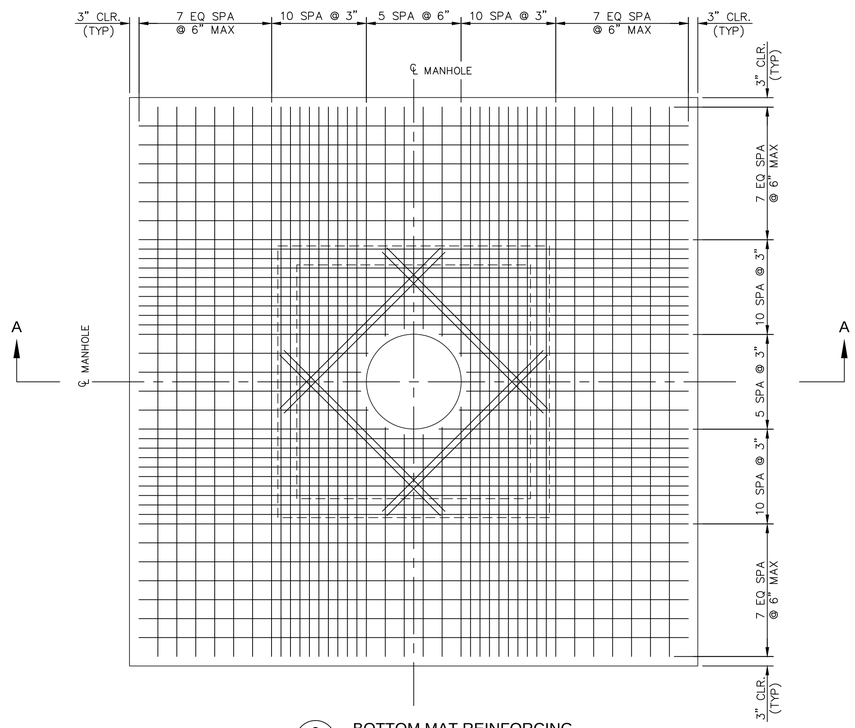
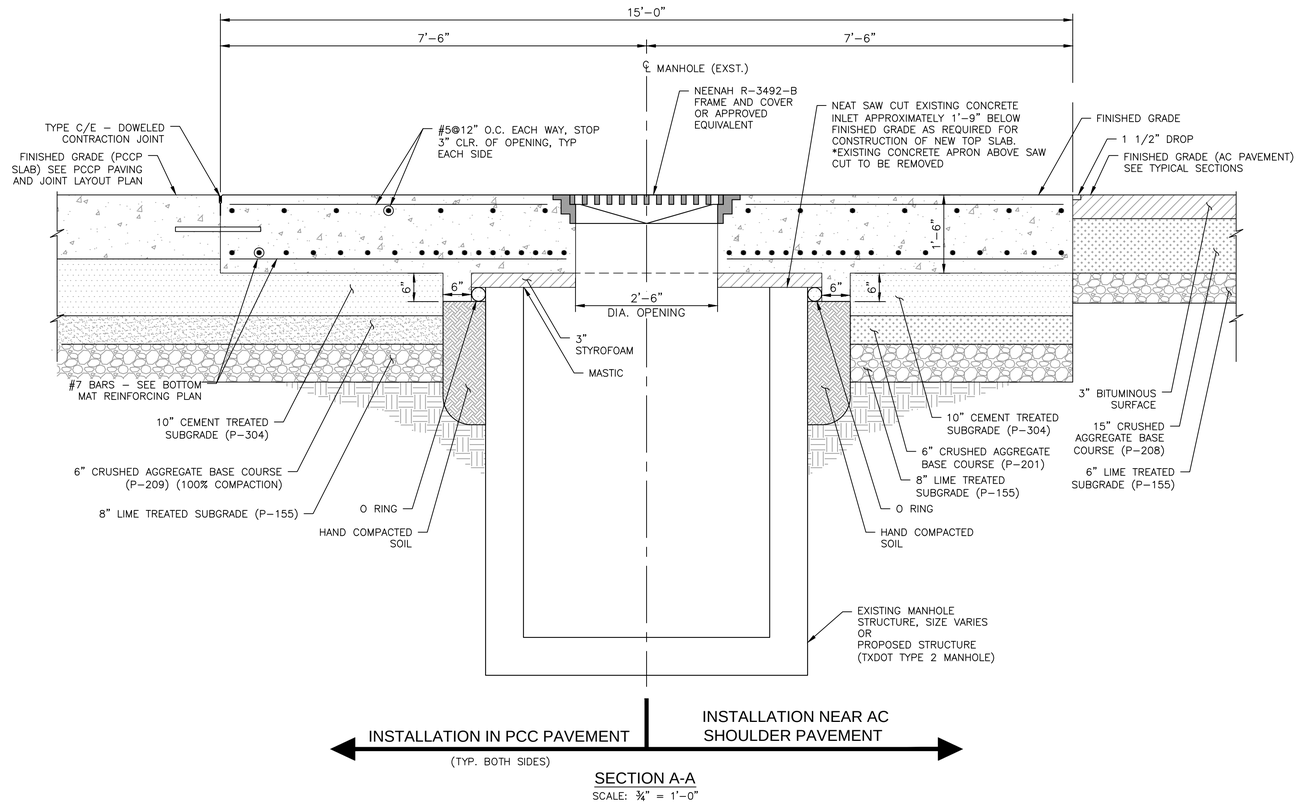


1 C9.3 TOP SLAB PLAN
SCALE: ½" = 1'-0"



2 C9.3 BOTTOM MAT REINFORCING
SCALE: ½" = 1'-0"



SECTION A-A
SCALE: ¾" = 1'-0"

3 C9.3 ADJUST EXISTING DRAINAGE STRUCTURE

GENERAL NOTES:

1. CONTRACTOR IS TO VERIFY DIMENSIONS OF EXISTING MANHOLES. IF EXISTING CONDITIONS ARE DIFFERENT THAN THOSE SHOWN IN THESE DETAILS, CONTRACTOR SHALL NOTIFY ENGINEER PRIOR TO INSTALLATION OF SLAB REVISION.
2. TOP SLAB SHALL BE CENTERED OVER EXISTING MANHOLE OPENING. EXISTING MANHOLE OPENING SHALL NOT EXCEED 48"x48". SAW CUTTING OF THE EXISTING MANHOLE MAY BE REQUIRED FOR SETTING THE TOP SLAB AT PROPER GRADE.
3. REINFORCING BARS SHALL BE DEFORMED BARS CONFORMING TO THE REQUIREMENTS OF ASTM A615 GRADE 60. SUPPORTS AND ACCESSORIES SHALL BE FURNISHED AS SHOWN OR REQUIRED. CHAIRS PLACED AGAINST EXPOSED SURFACES SHALL BE GALVANIZED OR PROVIDED WITH PLASTIC FEET.
4. MINIMUM COVERAGE FOR REINFORCING SHALL BE THE CLEAR DISTANCE TO THE FACE OF BARS AS FOLLOWS: 2" UNLESS NOTED OTHERWISE.
5. ALL REINFORCING STEEL SHALL BE ACCURATELY POSITIONED AND ADEQUATELY TIED USING PROPER CHAIRS OR BOLSTERS AND SHALL BE INSPECTED PRIOR TO POURING CONCRETE.
6. CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH, F'c = 4000 PSI.
7. ALL CONCRETE EDGES, CORNERS, AND INTERSECTIONS SHALL BE TOOLED OR CHAMFERED NO LESS THAN ½" WHETHER SHOWN OR NOT ON THE DRAWINGS.

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TEXAS REGISTERED FIRM,
NO. 928

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

MICHAEL A. NORBY
87178
REGISTERED
PROFESSIONAL ENGINEER
05/03/16

MARK	DATE	DESCRIPTION
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SHEET TITLE:

STORM DRAIN
GRADE
ADJUSTMENT
DETAIL

C9.3

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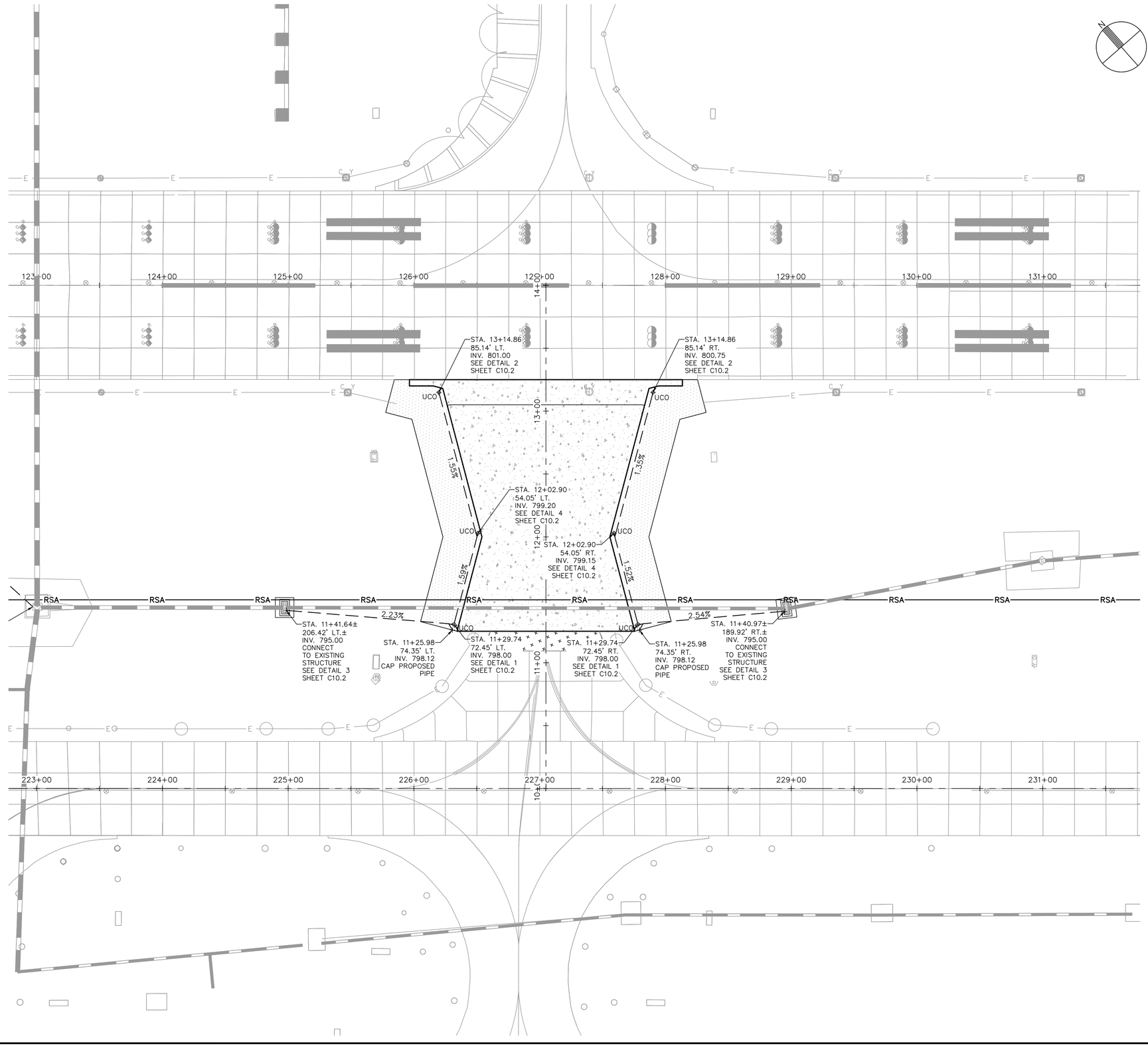
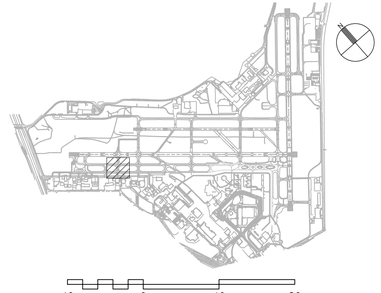


LEGEND

- PORTLAND CEMENT CONCRETE PAVEMENT
- ASPHALT CONCRETE SHOULDER PAVEMENT
- ASPHALT CONCRETE TRANSITION
- PROPOSED CATCH BASIN
- EXISTING INLET
- UCO — PROPOSED UNDERDRAIN CLEANOUT
- PROPOSED UNDERDRAIN
- PROPOSED STORM DRAIN PIPE
- EXISTING STORM DRAIN PIPE
- X.XX% — PERCENT SLOPE OF PIPE BETWEEN LOCATIONS

GENERAL NOTES

1. REFER TO SHEET C1.11 FOR HORIZONTAL AND VERTICAL CONTROL.
2. PAVEMENT ELEVATIONS SHOWN ARE BASED ON JOINT LAYOUT, REFER TO PAVEMENT JOINT LAYOUT PLANS (SERIES C7).
3. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AS SHOWN ON PLAN. IF EXISTING ELEVATIONS DIFFER FROM THOSE SHOWN, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY.
4. REFER TO ELECTRICAL PLANS (SERIES E) FOR AIRFIELD LIGHTING, SIGNING, AND ELECTRICAL FEATURES.
5. EXISTING UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL VERIFY EXACT LOCATIONS OF ALL UNDERGROUND UTILITIES PRIOR TO COMMENCING WORK IN ANY AREA.
6. ALL STATIONS AND OFFSETS REFER TO THE APPROPRIATE RUNWAY OR TAXIWAY STATIONING.



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TEXAS REGISTERED FIRM,
NO. 928

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

MICHAEL A. NORBY
57178
REGISTERED
PROFESSIONAL ENGINEER
05/03/16

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SHEET TITLE:

UNDERDRAIN
PLAN
BASE BID

C10.1

SHEET NO. 25 OF 157

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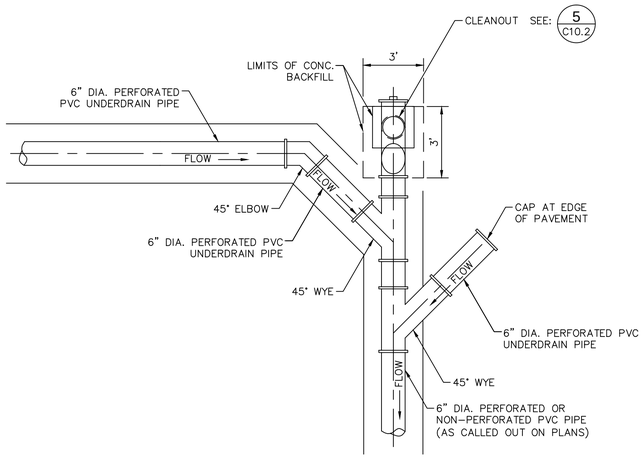
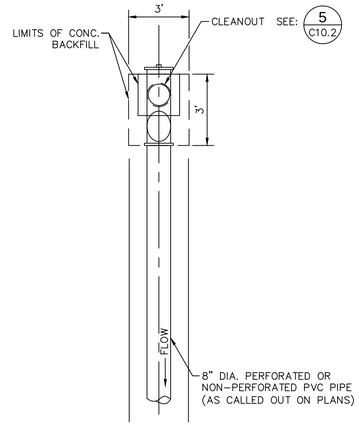


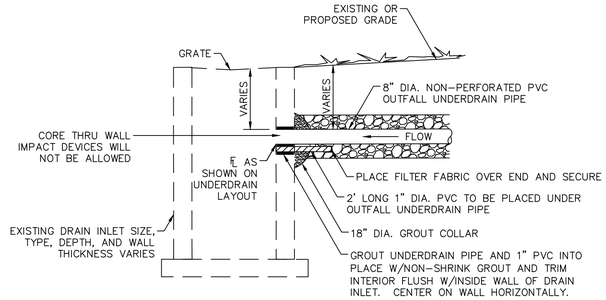
1 C10.2 UNDERDRAIN CLEANOUT AT OUTFALL - PLAN VIEW

N.T.S.



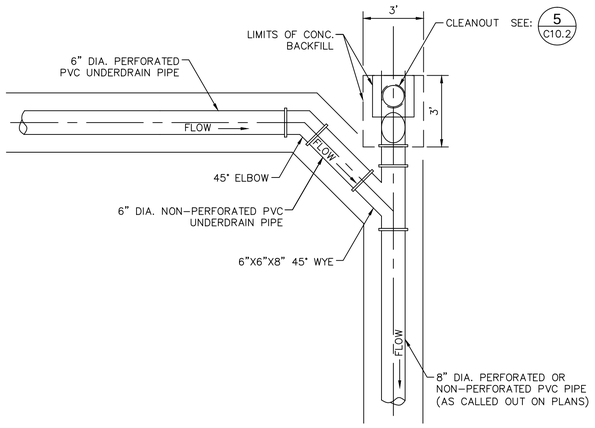
2 C10.2 UNDERDRAIN CLEANOUT AT END - PLAN VIEW

N.T.S.



3 C10.2 UNDERDRAIN OUTFALL CONNECTION TO STORM DRAIN INLET

N.T.S.



4 C10.2 INTERMEDIATE UNDERDRAIN CLEANOUT - PLAN VIEW

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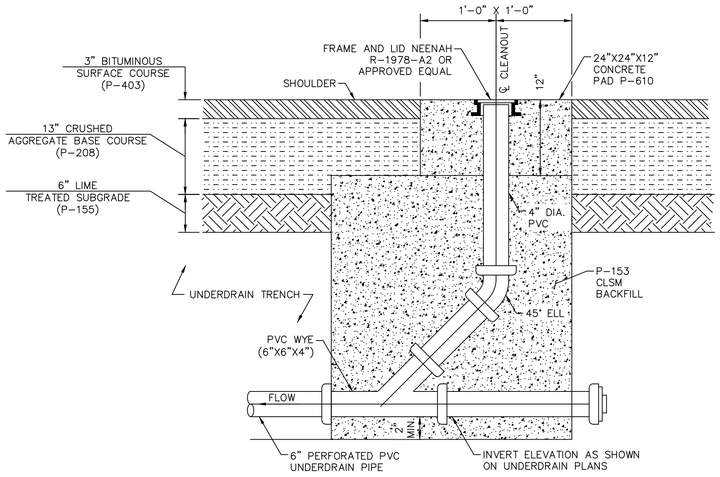

5 C10.2 END UNDERDRAIN CLEANOUT

N.T.S.

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

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UNDERDRAIN DETAILS

C10.2

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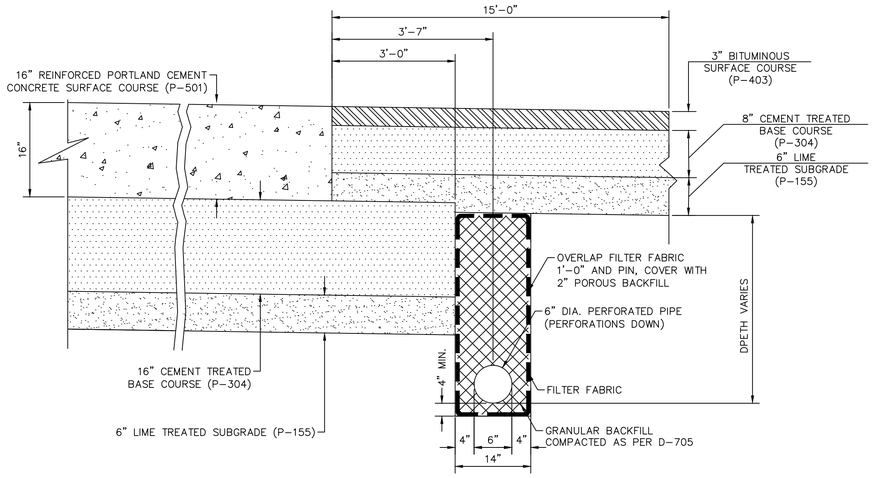
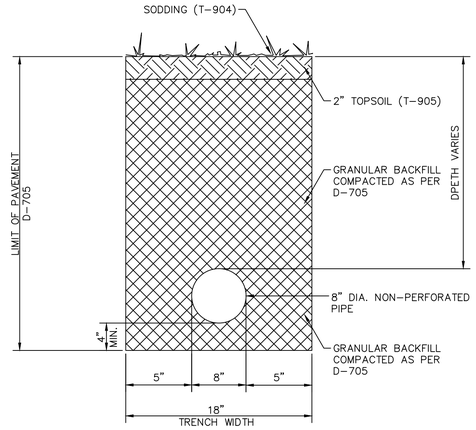


NOTE:

AT LOCATIONS WHERE THE UNDERDRAIN CROSSES UNDER FULL STRENGTH PAVEMENT, FILTER FABRIC FOR UNDERDRAIN TRENCH SHALL BE WRAPPED 2 INCHES BELOW THE TOP OF CTB AND COVERED WITH 2 INCH DEPTH OF POROUS BACKFILL PRIOR TO INSTALLATION OF PCCP.

1 / C10.3 LONGITUDINAL COLLECTOR UNDERDRAIN

N.T.S.



2 / C10.3 OUTFALL UNDERDRAIN (UNDER TURFED AREAS)

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

MICHAEL A. NORBY 87178 REGISTERED PROFESSIONAL ENGINEER

05/03/16

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UNDERDRAIN DETAILS

C10.3

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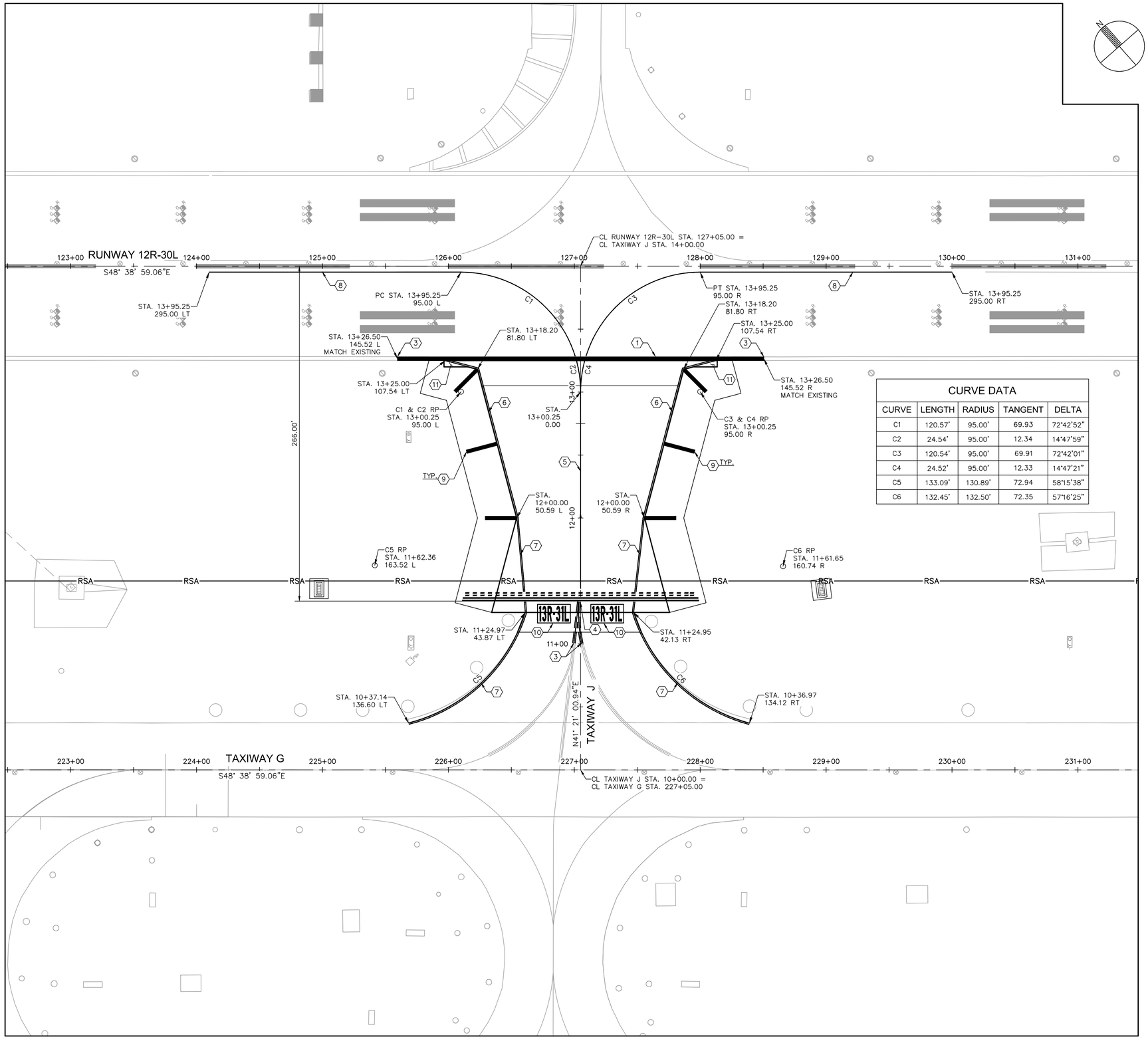


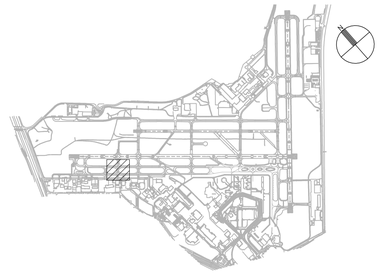
CURVE DATA				
CURVE	LENGTH	RADIUS	TANGENT	DELTA
C1	120.57'	95.00'	69.93	72°42'52"
C2	24.54'	95.00'	12.34	14°47'59"
C3	120.54'	95.00'	69.91	72°42'01"
C4	24.52'	95.00'	12.33	14°47'21"
C5	133.09'	130.89'	72.94	58°15'38"
C6	132.45'	132.50'	72.35	57°16'25"

GENERAL NOTES

1. PAVEMENT MARKING DETAILS SHALL CONFORM TO THE LATEST EDITION OF THE FEDERAL AVIATION ADMINISTRATION'S ADVISORY CIRCULAR AC-150/5340-1. IF A CONFLICT OCCURS BETWEEN THESE PLANS AND THE ADVISORY CIRCULAR, THE ADVISORY CIRCULAR SHALL TAKE PRECEDENCE.
2. THE CONTRACTOR SHALL REMOVE CURING MATERIALS FROM THE PCCP PRIOR TO THE APPLICATION OF MARKINGS.
3. CONTRACTOR TO SURVEY EXISTING PAVEMENT MARKINGS SHOWN OUTSIDE OF PAVING LIMITS AND TO REINSTALL AT THOSE LOCATIONS UNLESS SPECIFIED OTHERWISE.
4. PROVIDE DOUBLE APPLICATION OF ALL NEW PAVEMENT MARKINGS (2 COATS INCLUDED IN PER S.F. PRICE)
5. ALL PERMANENT MARKINGS. LOCATED ON PCC, SHALL HAVE A SIX-INCH (6") WIDE BLACK BORDER. (NO DIRECT PAY)
6. EVERY EFFORT HAS BEEN MADE TO ACCURATELY DEPICT ALL MARKINGS THAT WILL BE RE-STRIPED ON THIS PROJECT, HOWEVER ADDITIONAL MARKINGS MAY BE REQUIRED AT THE DIRECTION OF THE ENGINEER.
7. SURFACES THAT ARE OBSTRUCTED DUE TO DEBRIS OR FLAKING PAINT SHALL BE THOROUGHLY CLEANED AND SWEPT BEFORE APPLYING NEW MARKINGS.
8. ENGINEER TO REVIEW AND APPROVE PAVEMENT MARKING LAYOUT BEFORE MARKING IS PERFORMED.
9. REFER TO SHEET C1.11 FOR HORIZONTAL AND VERTICAL CONTROL.

CONSTRUCTION NOTES

1. APPLY THIRTY-SIX INCH (36") WIDE SOLID WHITE RUNWAY EDGE LINE PAVEMENT MARKING PER DETAIL 1, SHEET C11.2
2. APPLY SOLID YELLOW CLOSED TAXIWAY PAVEMENT MARKING PER DETAIL 6, SHEET C11.2
3. MATCH EXISTING MARKING
4. APPLY ENHANCED RUNWAY HOLDING POSITION PAVEMENT MARKING PER DETAIL 4, SHEET C11.2
5. APPLY SIX INCH (6") WIDE SOLID YELLOW TAXIWAY CENTERLINE PAVEMENT MARKING PER DETAIL 2, SHEET C11.2
6. APPLY DOUBLE SIX INCH (6") WIDE SOLID YELLOW TAXIWAY EDGE PAVEMENT MARKING PER DETAIL 3, C11.2
7. APPLY TEMPORARY DOUBLE SIX INCH (6") WIDE SOLID YELLOW TAXIWAY EDGE PAVEMENT MARKING PER DETAIL 3, C11.2
8. REFER TO DETAIL 5, SHEET C11.2 FOR RUNWAY/TAXIWAY INTERSECTION INFORMATION
9. APPLY THIRTY-SIX INCH (36") WIDE SOLID YELLOW TAXIWAY SHOULDER PAVEMENT MARKING PER DETAIL 1, SHEET C11.3
10. APPLY SURFACE PAINTED HOLD POSITION SIGN PER DETAIL 2, SHEET C11.3
11. APPLY BLACK PAINT TO PCC PAVEMENT THAT LIES OUTSIDE OF TAXIWAY EDGE MARKINGS (NPI)



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

MICHAEL A. NORBY
87178
REGISTERED
PROFESSIONAL ENGINEER
05/03/16

MARK	DATE	DESCRIPTION
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PAVEMENT MARKING PLAN - TAXIWAY J - BASE BID

C11.1

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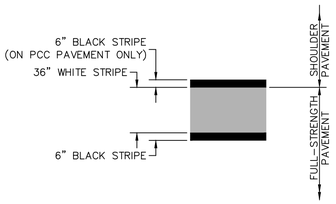
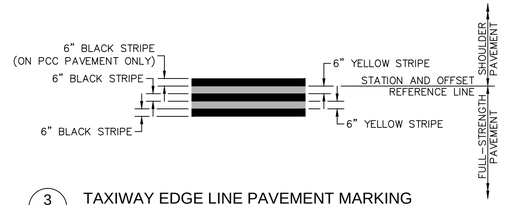


1 C11.2 RUNWAY EDGE LINE PAVEMENT MARKING
N.T.S.

2 C11.2 TAXIWAY CENTERLINE PAVEMENT MARKING
N.T.S.



3 C11.2 TAXIWAY EDGE LINE PAVEMENT MARKING
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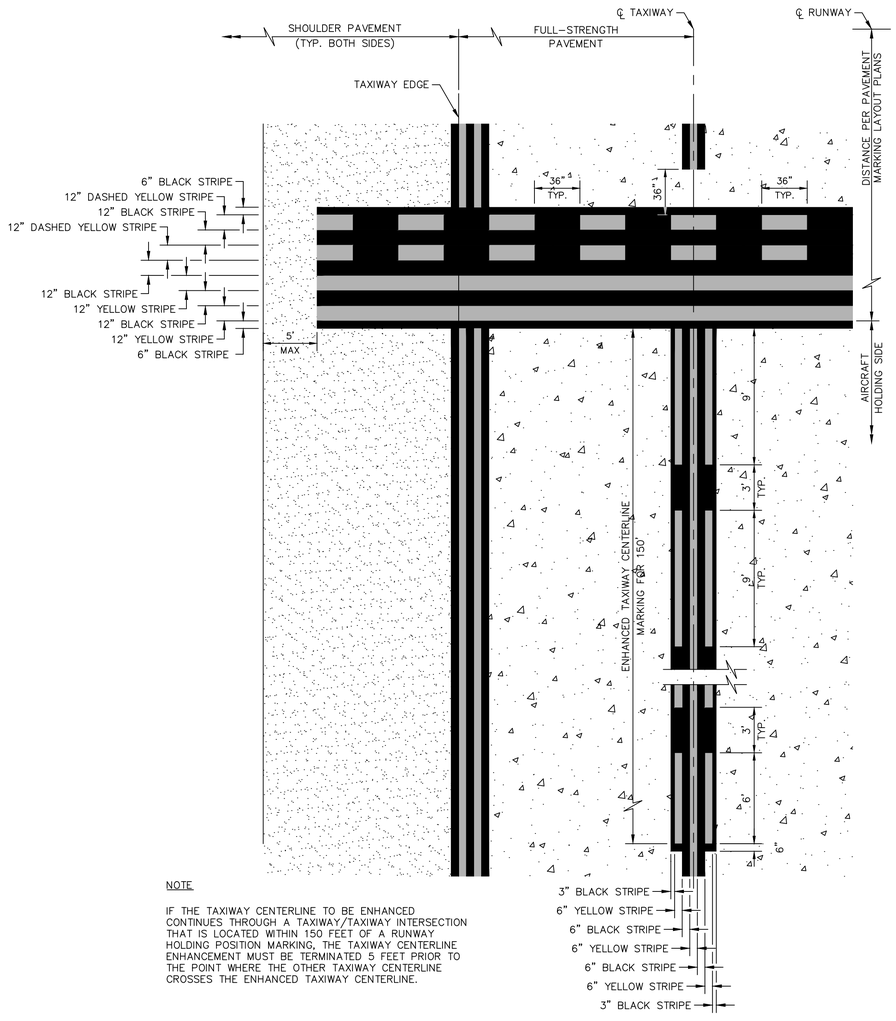
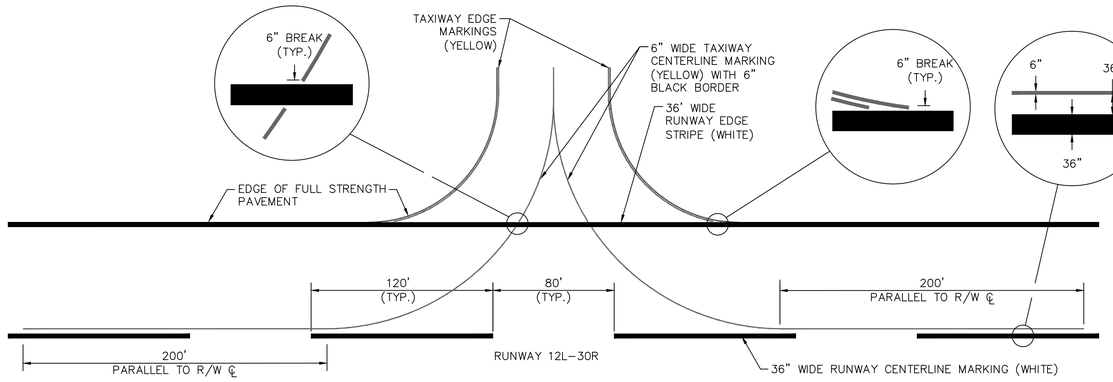


NOTE

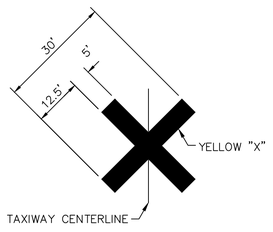
IF THE TAXIWAY CENTERLINE TO BE ENHANCED CONTINUES THROUGH A TAXIWAY/TAXIWAY INTERSECTION THAT IS LOCATED WITHIN 150 FEET OF A RUNWAY HOLDING POSITION MARKING, THE TAXIWAY CENTERLINE ENHANCEMENT MUST BE TERMINATED 5 FEET PRIOR TO THE POINT WHERE THE OTHER TAXIWAY CENTERLINE CROSSES THE ENHANCED TAXIWAY CENTERLINE.

4 C11.2 ENHANCED RUNWAY HOLDING POSITION PAVEMENT MARKING DETAIL
N.T.S.

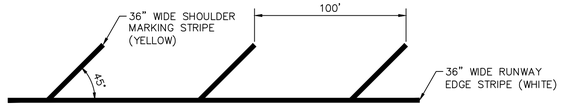


NOTE:
RUNWAY CENTERLINE DIMENSIONS ARE TYPICAL UNLESS NOTED OTHERWISE ON THE PLANS

5 C11.2 RUNWAY/TAXIWAY INTERSECTION DETAIL
N.T.S.



6 C11.2 CLOSED TAXIWAY PAVEMENT MARKING
N.T.S.



7 C11.2 RUNWAY SHOULDER MARKING
N.T.S.

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MICHAEL A. NORBY 87178 REGISTERED PROFESSIONAL ENGINEER
05/03/16

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PAVEMENT MARKING DETAILS

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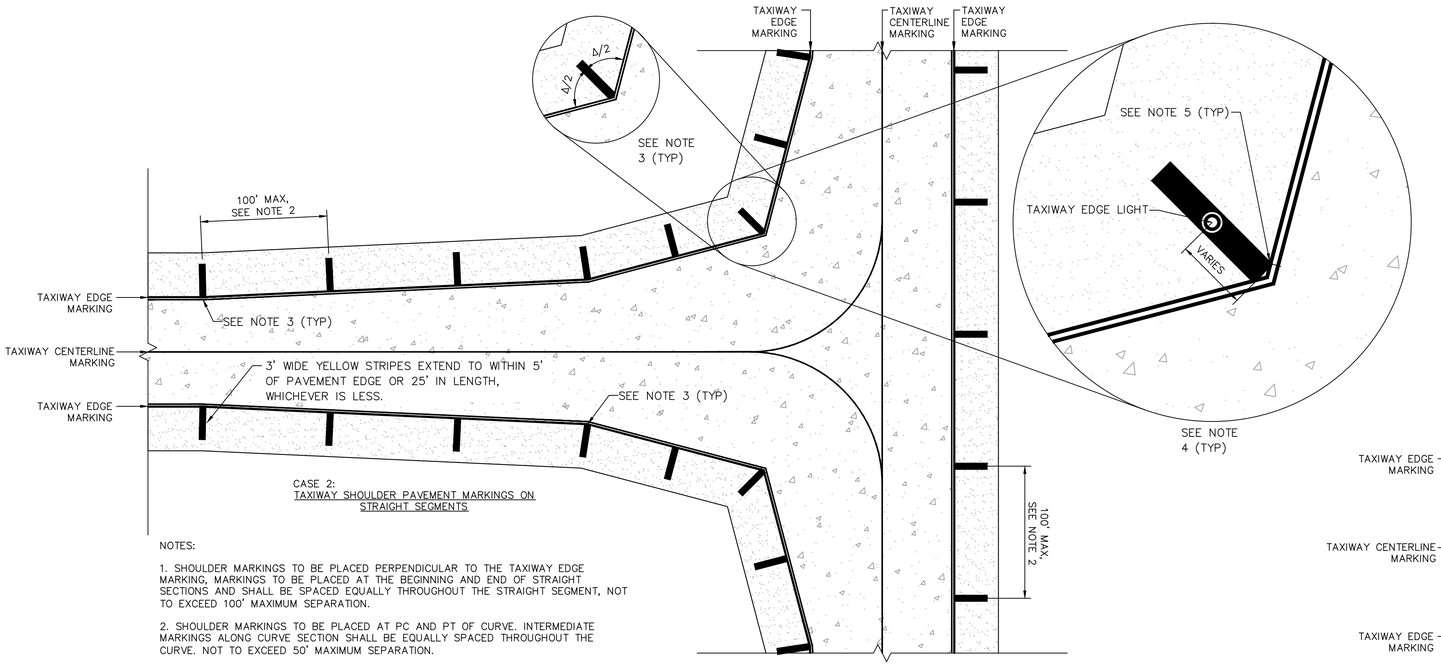
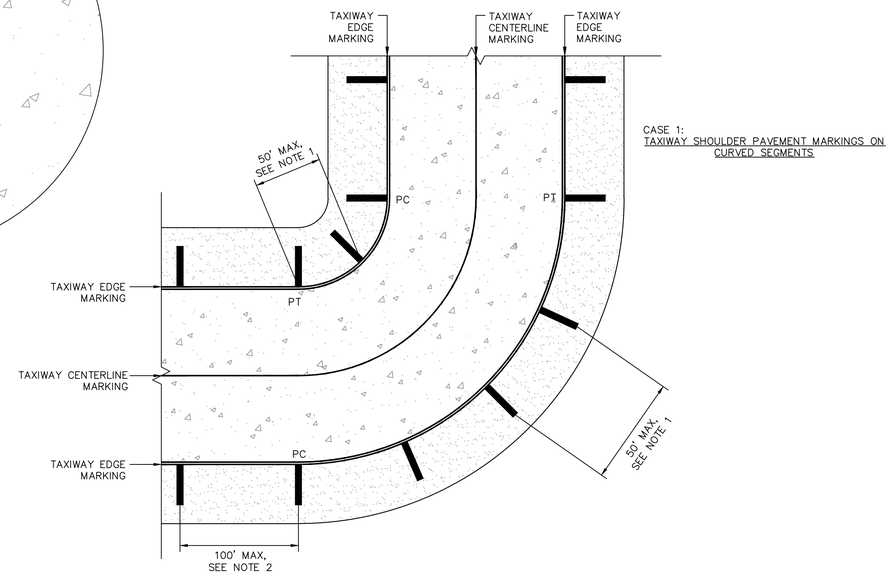


CASE 2:
TAXIWAY SHOULDER PAVEMENT MARKINGS ON STRAIGHT SEGMENTS



CASE 1:
TAXIWAY SHOULDER PAVEMENT MARKINGS ON CURVED SEGMENTS

NOTES:

1. SHOULDER MARKINGS TO BE PLACED PERPENDICULAR TO THE TAXIWAY EDGE MARKING, MARKINGS TO BE PLACED AT THE BEGINNING AND END OF STRAIGHT SECTIONS AND SHALL BE SPACED EQUALLY THROUGHOUT THE STRAIGHT SEGMENT, NOT TO EXCEED 100' MAXIMUM SEPARATION.

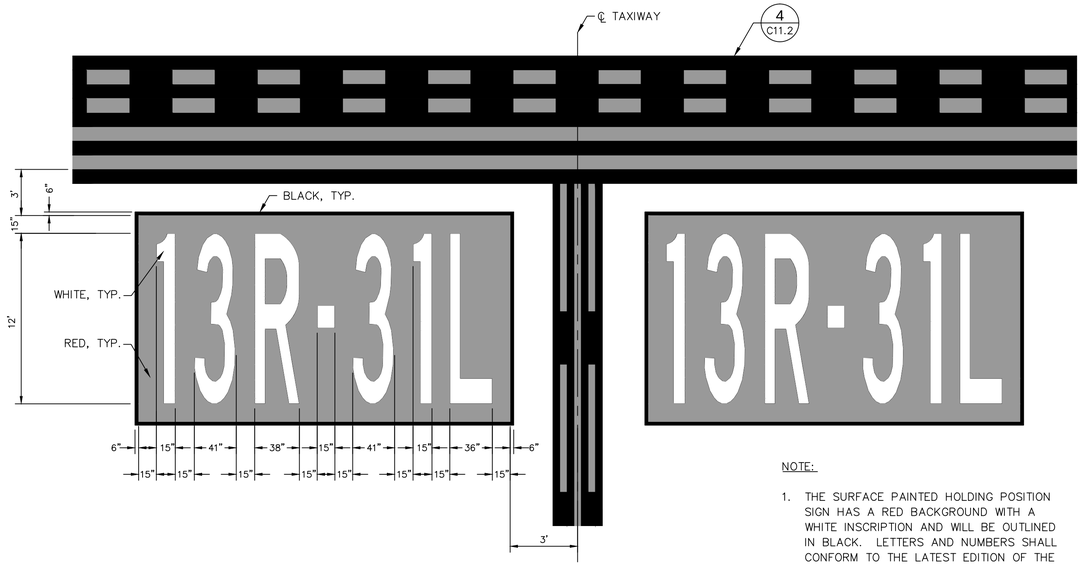
2. SHOULDER MARKINGS TO BE PLACED AT PC AND PT OF CURVE. INTERMEDIATE MARKINGS ALONG CURVE SECTION SHALL BE EQUALLY SPACED THROUGHOUT THE CURVE. NOT TO EXCEED 50' MAXIMUM SEPARATION.

3. SHOULDER MARKINGS AT ANGLE POINTS SHOULD BE INSTALLED SO THAT THE ADJACENT ANGLE ON EITHER SIDE OF THE SHOULDER MARKING ARE EQUAL (Δ/2). WHERE Δ EQUALS THE OVERALL INTERNAL ANGLE BETWEEN STRAIGHT SEGMENTS.

4. IN THE EVENT THAT A PROPOSED SHOULDER MARKING IS IN THE SAME LOCATION AS AN EDGE LIGHT, THE EDGE LIGHT IS TO BE REMOVED AND THE LIGHT CAN COVERED PRIOR TO PAINTING THE SHOULDER MARKING SHALL CONTINUE THROUGH THE EDGE LIGHT AS SHOWN IN THE DETAIL ABOVE AND THE EDGE LIGHT IS TO BE REPLACED AFTER THE FINAL COAT OF PAINT IS APPLIED.

5. SHOULDER MARKINGS SHOULD BEGIN AT (AND TOUCH) THE OUTER EDGE OF THE OUTSIDE YELLOW TAXIWAY EDGE MARKING SHOULDER MARKINGS SHALL BE INSTALLED OVER BLACK PAINT IF PRESENT.

1 / C11.3 TAXIWAY SHOULDER PAVEMENT MARKING LAYOUT
N.T.S.



NOTE:

1. THE SURFACE PAINTED HOLDING POSITION SIGN HAS A RED BACKGROUND WITH A WHITE INSCRIPTION AND WILL BE OUTLINED IN BLACK. LETTERS AND NUMBERS SHALL CONFORM TO THE LATEST EDITION OF THE FEDERAL AVIATION ADMINISTRATION'S ADVISORY CIRCULAR 150/5340.

2 / C11.3 SURFACE PAINTED HOLDING POSITION SIGN DETAIL
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)

MICHAEL A. NORBY 87178 REGISTERED PROFESSIONAL ENGINEER
05/03/16

MARK	DATE	DESCRIPTION

ISSUE:

PROJECT NO:	33-0019X
FILE NAME:	33-00193-R1CM-501-D00
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CHECKED BY:	MAN
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SHEET TITLE:

PAVEMENT MARKING DETAILS

C11.3

SHEET NO. 30 OF 157

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