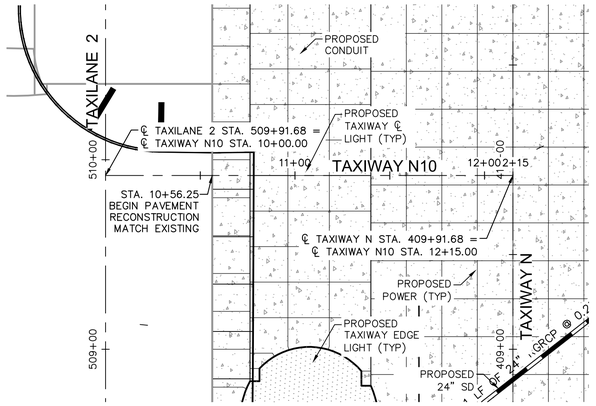
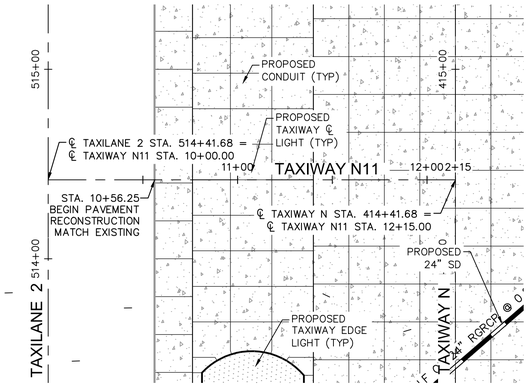


TAXIWAY N10



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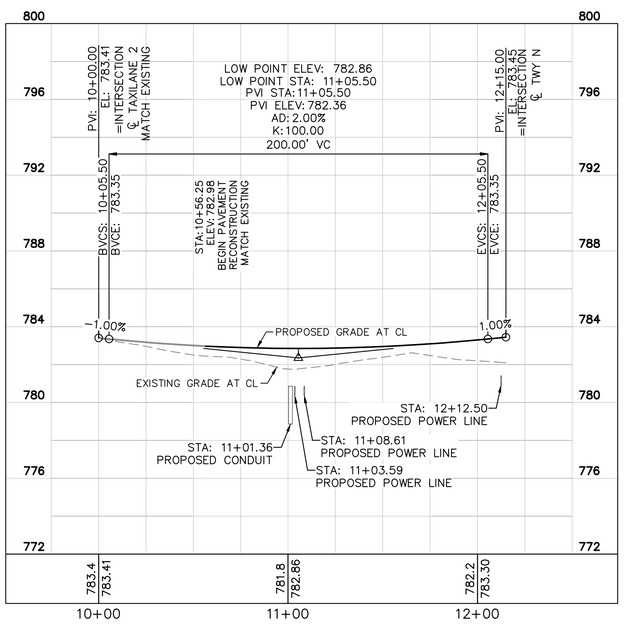

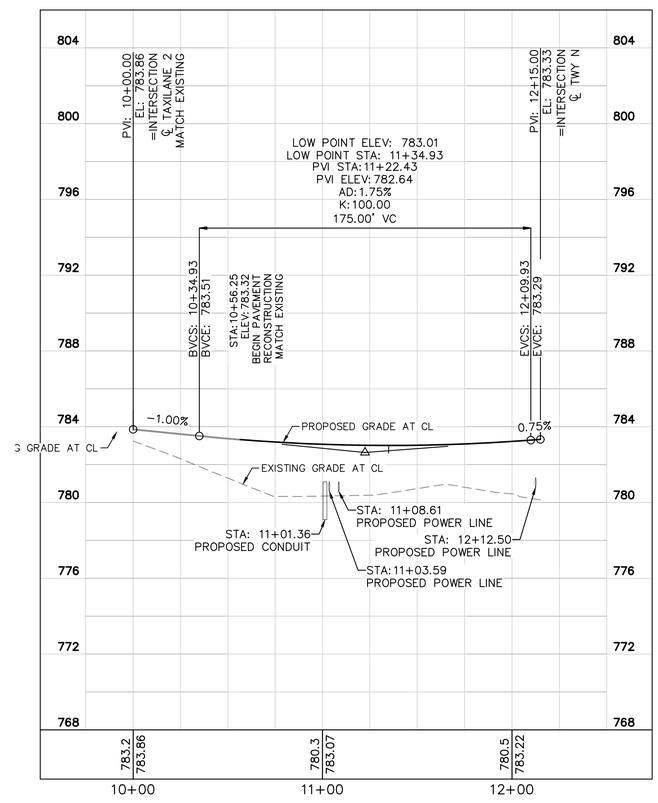

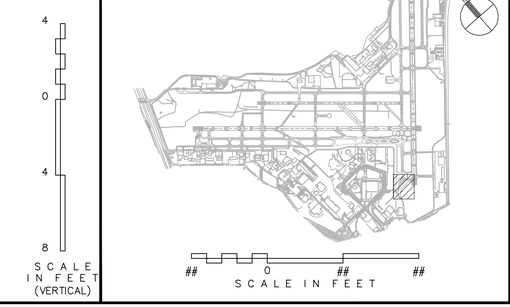

LEGEND

- PORTLAND CEMENT CONCRETE PAVEMENT
- PORTLAND CEMENT CONCRETE TRANSITION
- ASPHALT CONCRETE SHOULDER PAVEMENT
- ASPHALT CONCRETE TRANSITION
- ASPHALT CONCRETE MILL AND REPLACE (VARIABLE DEPTH)
- EXISTING RGRCP
- PROPOSED RGRCP
- DIRECTION OF FLOW
- 780 EXISTING CONTOUR
- 780 PROPOSED CONTOUR

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.

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

TERMINAL AREA TAXIWAY IMPROVEMENTS - (PACKAGE 3)

MICHAEL A. NORBY
87178
REGISTERED PROFESSIONAL ENGINEER
05/18/15

MARK	DATE	DESCRIPTION
ISSUE:		

PROJECT NO:	33-00193
FILE NAME:	_33-00193-R1CP-102-C01
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SHEET TITLE:

PLAN AND PROFILE - TAXIWAY N10 TAXIWAY N11 - ALTERNATE 1

C6.8

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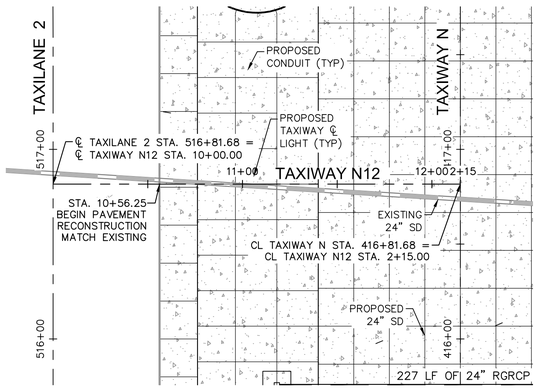

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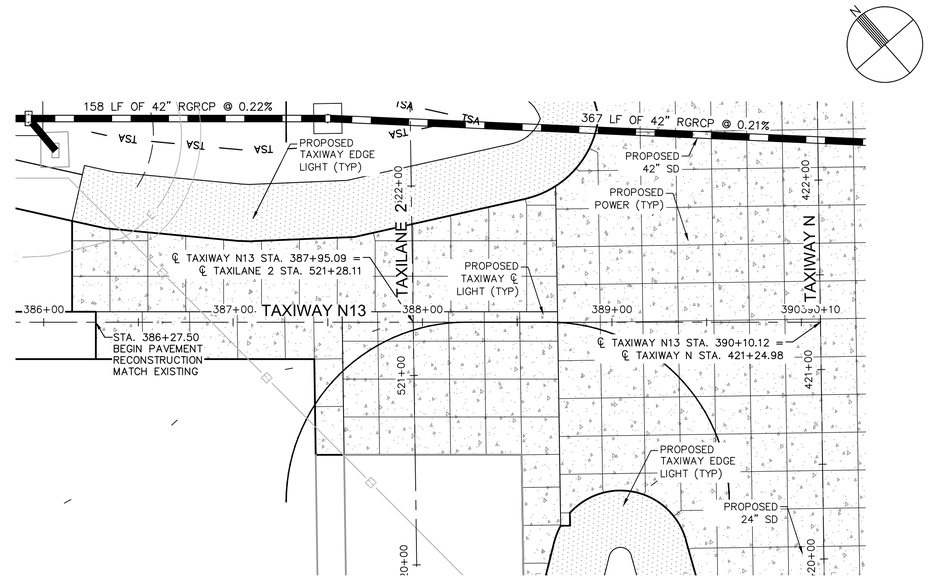
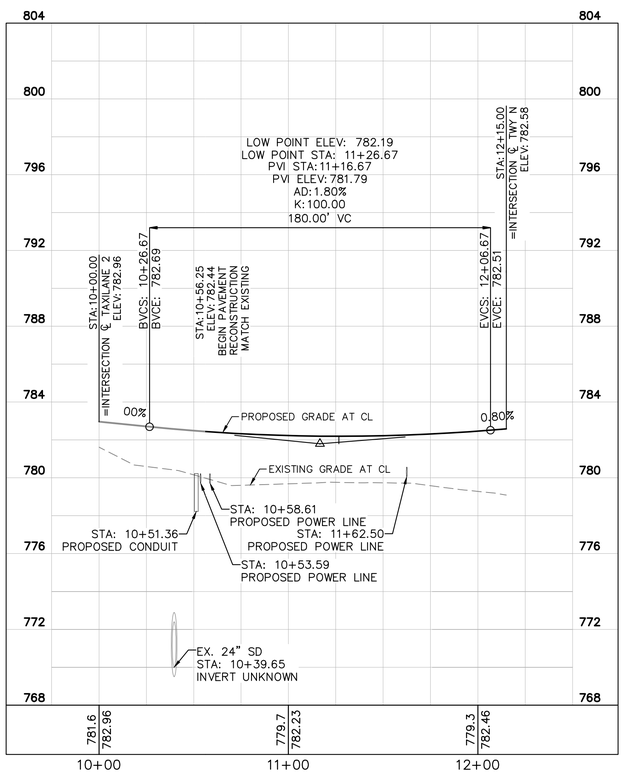
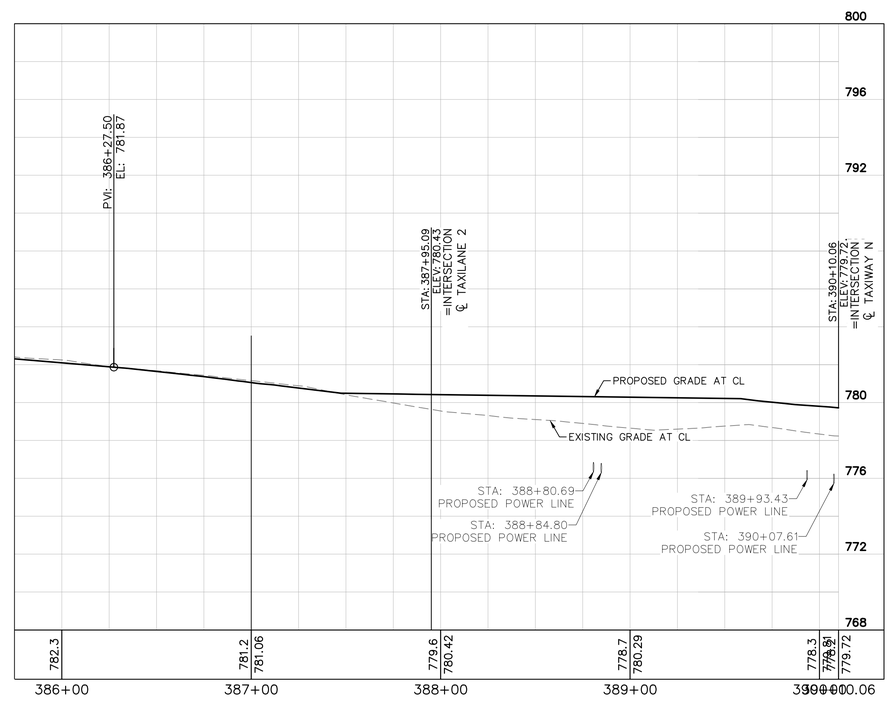
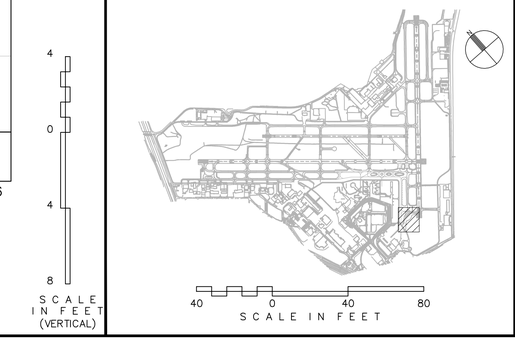


TAXIWAY N13







LEGEND

- PORTLAND CEMENT CONCRETE PAVEMENT
- PORTLAND CEMENT CONCRETE TRANSITION
- ASPHALT CONCRETE SHOULDER PAVEMENT
- ASPHALT CONCRETE TRANSITION
- ASPHALT CONCRETE MILL AND REPLACE (VARIABLE DEPTH)
- EXISTING RGRCP
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- 780 EXISTING CONTOUR
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GENERAL NOTES

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REGISTERED PROFESSIONAL ENGINEER
05/18/15

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PLAN AND PROFILE - TAXIWAY N12 TAXIWAY N13 - ALTERNATE 1

C6.9

SHEET NO. 95 OF 140

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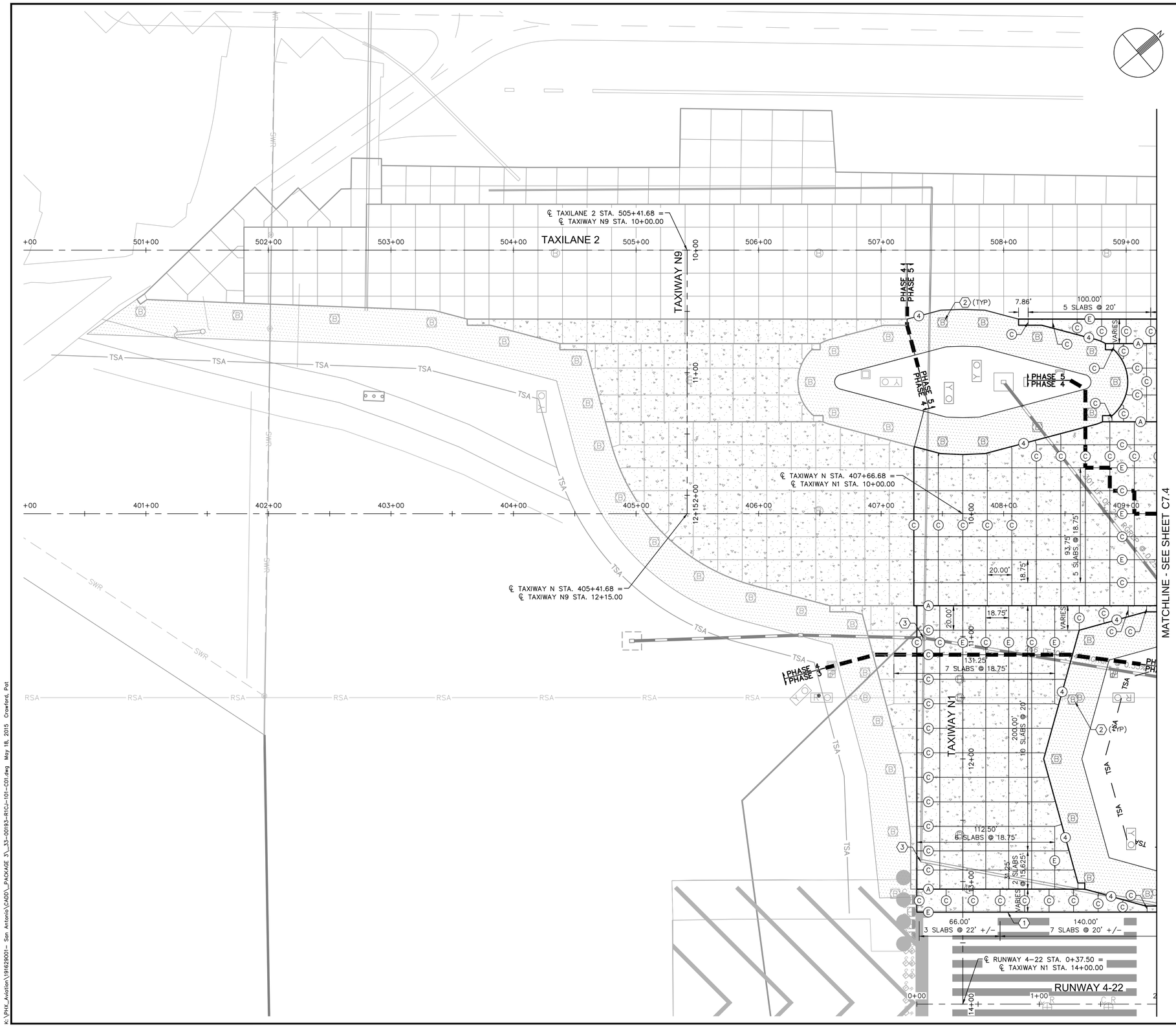


LEGEND

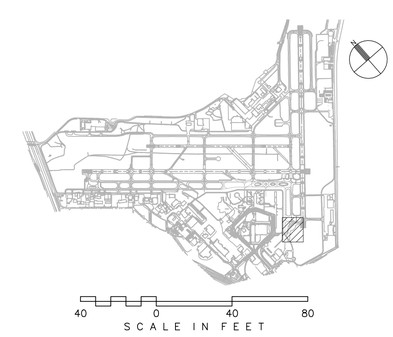
- PORTLAND CEMENT CONCRETE PAVEMENT
- PORTLAND CEMENT CONCRETE TRANSITION
- ASPHALT CONCRETE SHOULDER PAVEMENT
- ASPHALT CONCRETE TRANSITION
- ASPHALT CONCRETE MILL AND REPLACE (VARIABLE DEPTH)
- (A) JOINT TYPE A, REFER TO SHEET C7.2 FOR PAVEMENT JOINT DETAILS
- (A1) JOINT TYPE A1, REFER TO SHEET C7.2 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
- A C4.2 / A C4.2 — SECTION VIEW, REFER TO SHEET C4.2 FOR TEMPORARY ASPHALT TRANSITION (CONDITION 1) TYPICAL SECTION FOR DETAILS
- B C4.2 / B C4.2 — SECTION VIEW, REFER TO SHEET C4.2 FOR TEMPORARY ASPHALT TRANSITION (CONDITION 2) TYPICAL SECTION FOR DETAILS

GENERAL NOTES

1. REFER TO SHEET C1.9 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)
3. REINFORCED PANEL FOR IN PAVEMENT MANHOLE/INLET. SEE DETAIL SHEET C9.4



CITY OF SAN ANTONIO AVIATION DEPARTMENT

SAN ANTONIO AIRPORT SYSTEM

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601 NW LOOP 410, SUITE 350
SAN ANTONIO, TEXAS 78216
PHONE: (210) 541-9166

TEXAS REGISTERED FIRM, NO. 928

TERMINAL AREA TAXIWAY IMPROVEMENTS - (PACKAGE 3)

MICHAEL A. NORBY
87178
REGISTERED PROFESSIONAL ENGINEER
05/18/15

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ISSUE:		

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SHEET TITLE:

PAVEMENT JOINT LAYOUT PLAN - ALTERNATE 1

C7.3

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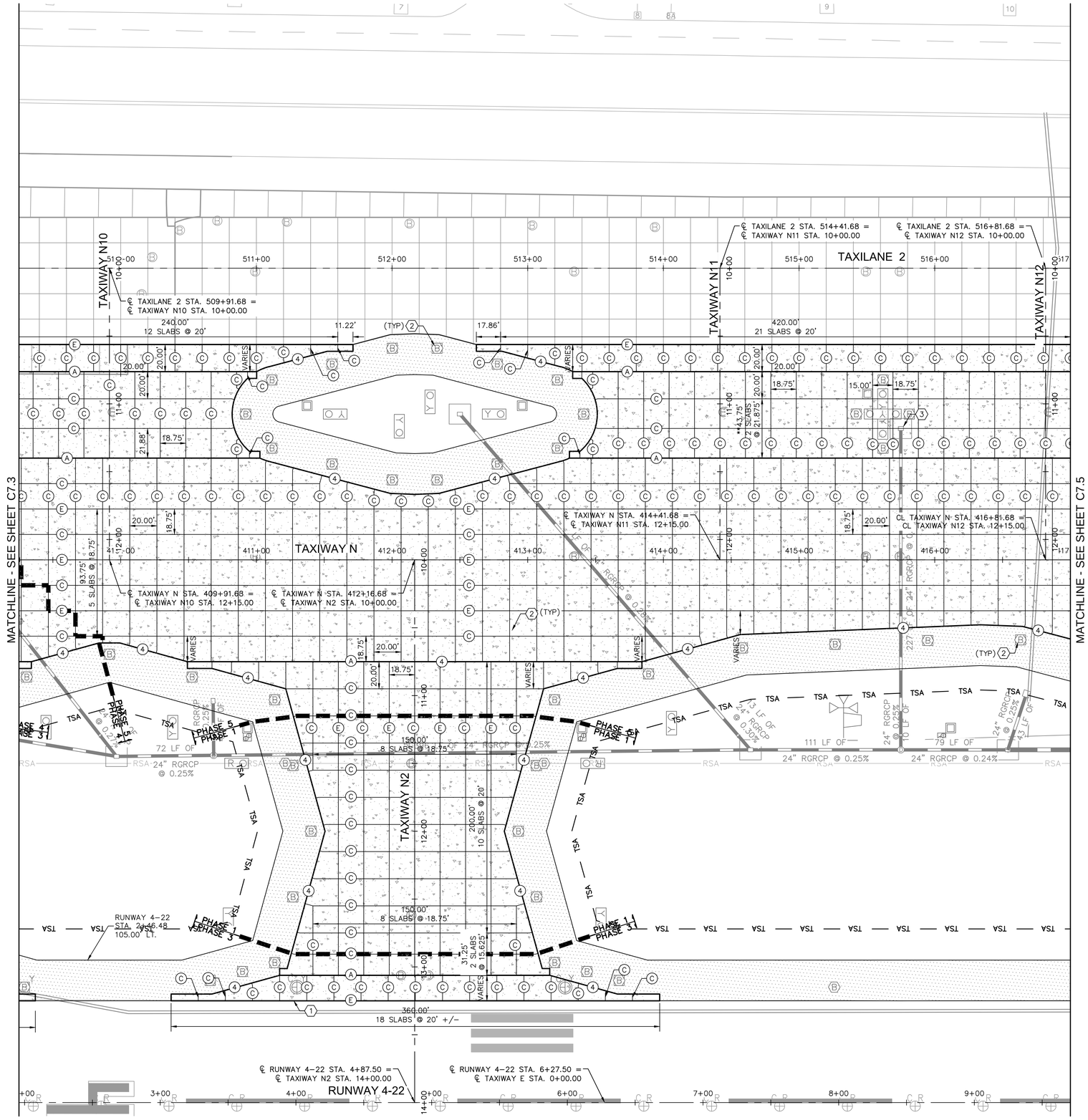


LEGEND

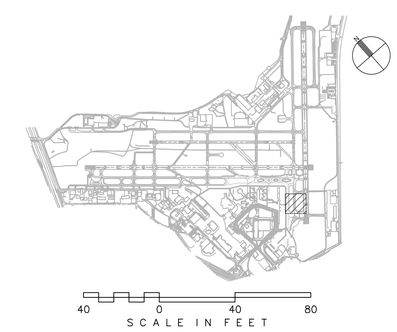
- PORTLAND CEMENT CONCRETE PAVEMENT
- PORTLAND CEMENT CONCRETE TRANSITION
- ASPHALT CONCRETE SHOULDER PAVEMENT
- ASPHALT CONCRETE TRANSITION
- ASPHALT CONCRETE MILL AND REPLACE (VARIABLE DEPTH)
- (A) JOINT TYPE A, REFER TO SHEET C7.2 FOR PAVEMENT JOINT DETAILS
- (A1) JOINT TYPE A1, REFER TO SHEET C7.2 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
- A C4.2 / A C4.2 — SECTION VIEW, REFER TO SHEET C4.2 FOR TEMPORARY ASPHALT TRANSITION (CONDITION 1) TYPICAL SECTION FOR DETAILS
- B C4.2 / B C4.2 — SECTION VIEW, REFER TO SHEET C4.2 FOR TEMPORARY ASPHALT TRANSITION (CONDITION 2) TYPICAL SECTION FOR DETAILS

GENERAL NOTES

1. REFER TO SHEET C1.9 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)
3. REINFORCED PANEL FOR IN PAVEMENT MANHOLE/INLET. SEE DETAIL SHEET C9.4



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

TERMINAL AREA TAXIWAY IMPROVEMENTS - (PACKAGE 3)

MICHAEL A. NORBY 87178 REGISTERED PROFESSIONAL ENGINEER
05/18/15

MARK	DATE	DESCRIPTION
ISSUE:		

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SHEET TITLE:

PAVEMENT JOINT LAYOUT PLAN - ALTERNATE 1

C7.4

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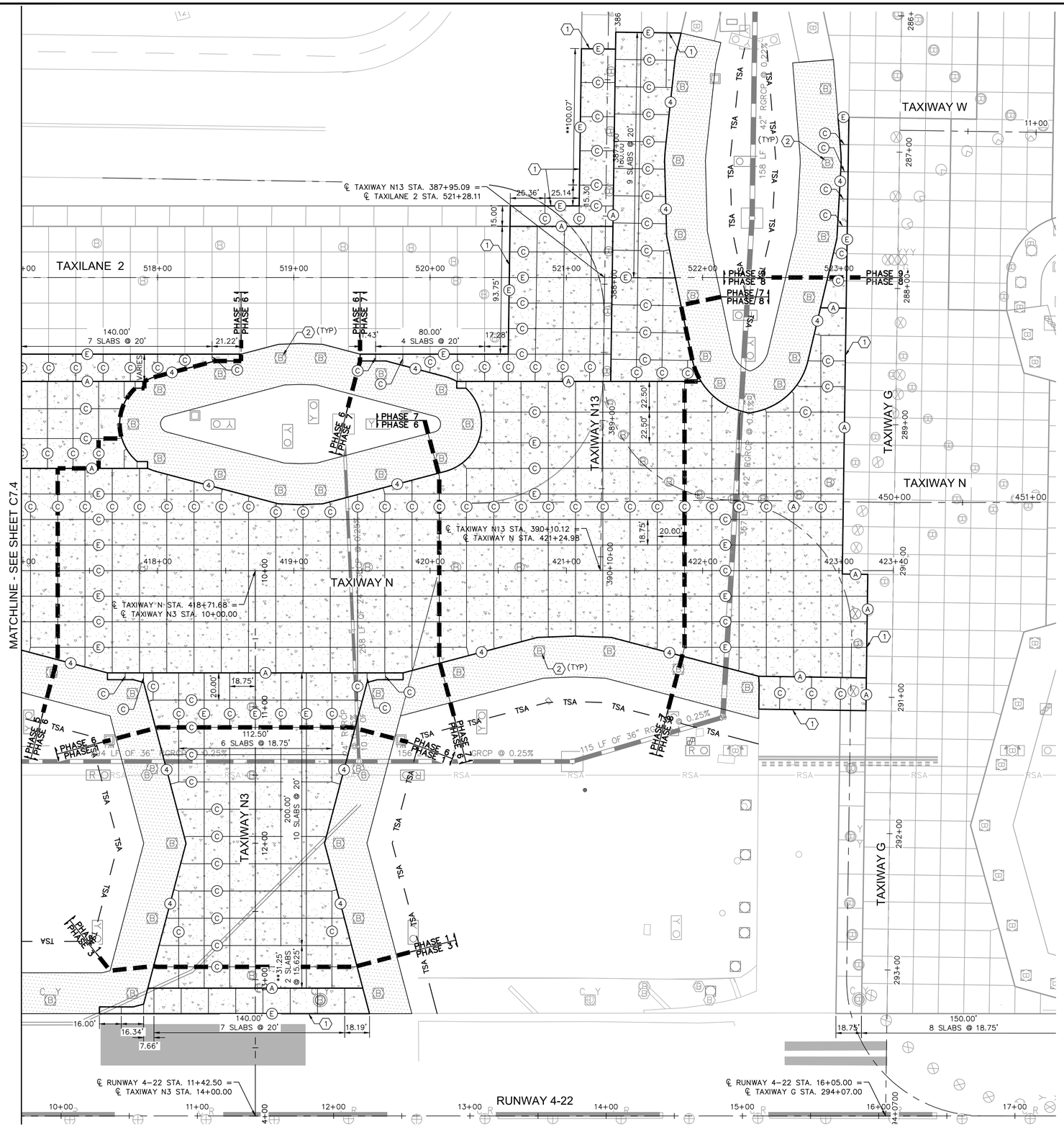

LEGEND

- PORTLAND CEMENT CONCRETE PAVEMENT
- PORTLAND CEMENT CONCRETE TRANSITION
- ASPHALT CONCRETE SHOULDER PAVEMENT
- ASPHALT CONCRETE TRANSITION
- ASPHALT CONCRETE MILL AND REPLACE (VARIABLE DEPTH)
- (A) JOINT TYPE A, REFER TO SHEET C7.2 FOR PAVEMENT JOINT DETAILS
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- (C) JOINT TYPE C, REFER TO SHEET C7.2 FOR PAVEMENT JOINT DETAILS
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- A C4.2 / A C4.2 — SECTION VIEW, REFER TO SHEET C4.2 FOR TEMPORARY ASPHALT TRANSITION (CONDITION 1) TYPICAL SECTION FOR DETAILS
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GENERAL NOTES

1. REFER TO SHEET C1.9 FOR HORIZONTAL AND VERTICAL CONTROL.
2. TYPE C AND TYPE E JOINTS MAY BE INTERCHANGED WITH APPROVAL FROM THE ENGINEER.
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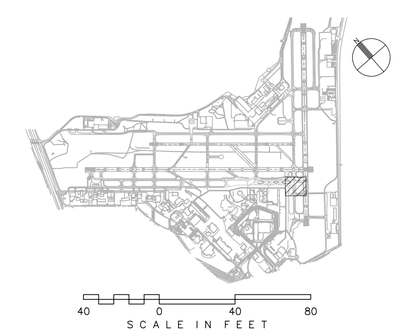
7. ALL PCCP PANELS ARE REINFORCED PER DETAIL 6, SHEET C7.2

CONSTRUCTION NOTES

1. SAWCUT AND MATCH EXISTING JOINT SPACING AND ELEVATION
2. REFER TO ELECTRICAL PLANS (SERIES E)
3. REINFORCED PANEL FOR IN PAVEMENT MANHOLE/INLET. SEE DETAIL SHEET C9.4



CITY OF SAN ANTONIO AVIATION DEPARTMENT

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TEXAS REGISTERED FIRM, NO. 928

TERMINAL AREA TAXIWAY IMPROVEMENTS - (PACKAGE 3)

MICHAEL A. NORBY 87178 REGISTERED PROFESSIONAL ENGINEER
05/18/15

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PAVEMENT JOINT LAYOUT PLAN - ALTERNATE 1

C7.5

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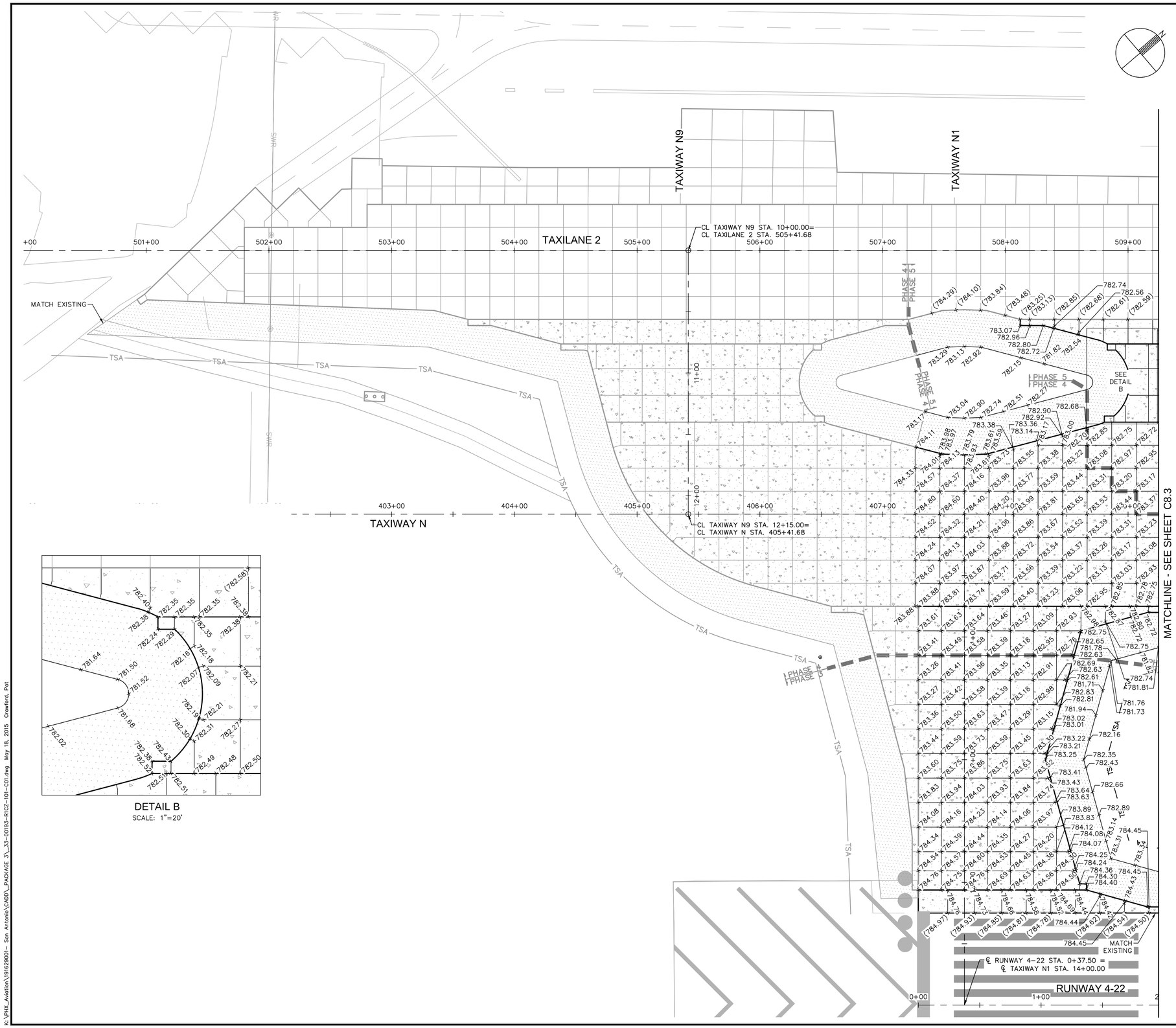


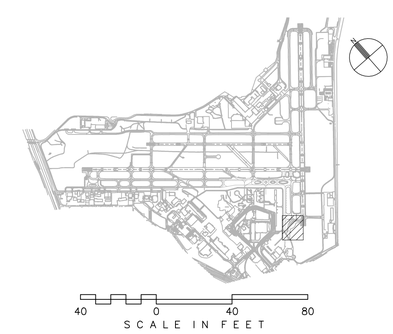
DETAIL B
SCALE: 1"=20'

LEGEND

- PORTLAND CEMENT CONCRETE PAVEMENT
- PORTLAND CEMENT CONCRETE TRANSITION
- ASPHALT CONCRETE SHOULDER PAVEMENT
- ASPHALT CONCRETE TRANSITION
- ASPHALT CONCRETE MILL AND REPLACE (VARIABLE DEPTH)
- Y O — PROPOSED SIGN
- DIRECTION OF FLOW
- 780 — EXISTING CONTOUR
- 780 — PROPOSED CONTOUR
- GRADING LIMITS
- +XXX.XX — PROPOSED SPOT ELEVATION
- +(XXX.XX) — EXISTING SPOT ELEVATION

GENERAL NOTES

1. EXISTING UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL VERIFY EXACT LOCATIONS OF ALL UNDERGROUND UTILITIES PRIOR TO COMMENCING WORK IN ANY AREA.
2. ALL STATIONS AND OFFSETS REFER TO THE APPROPRIATE RUNWAY AND TAXIWAY STATIONING.
3. DESIGN CONTOURS REPRESENT FINISHED GRADE (PAVEMENT AND GRADING). CONTOURS AND PERCENT OF SLOPE ARE APPROXIMATE AND ARE SHOWN AS SUPPLEMENTAL INFORMATION ONLY.
4. REFER TO ELECTRICAL PLANS (SERIES E) FOR AIRFIELD SIGNING, LIGHTING, AND ELECTRICAL FEATURES.



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MICHAEL A. NORBY
57178
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05/18/15

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PAVEMENT
ELEVATIONS PLAN -
ALTERNATE 1

C8.2

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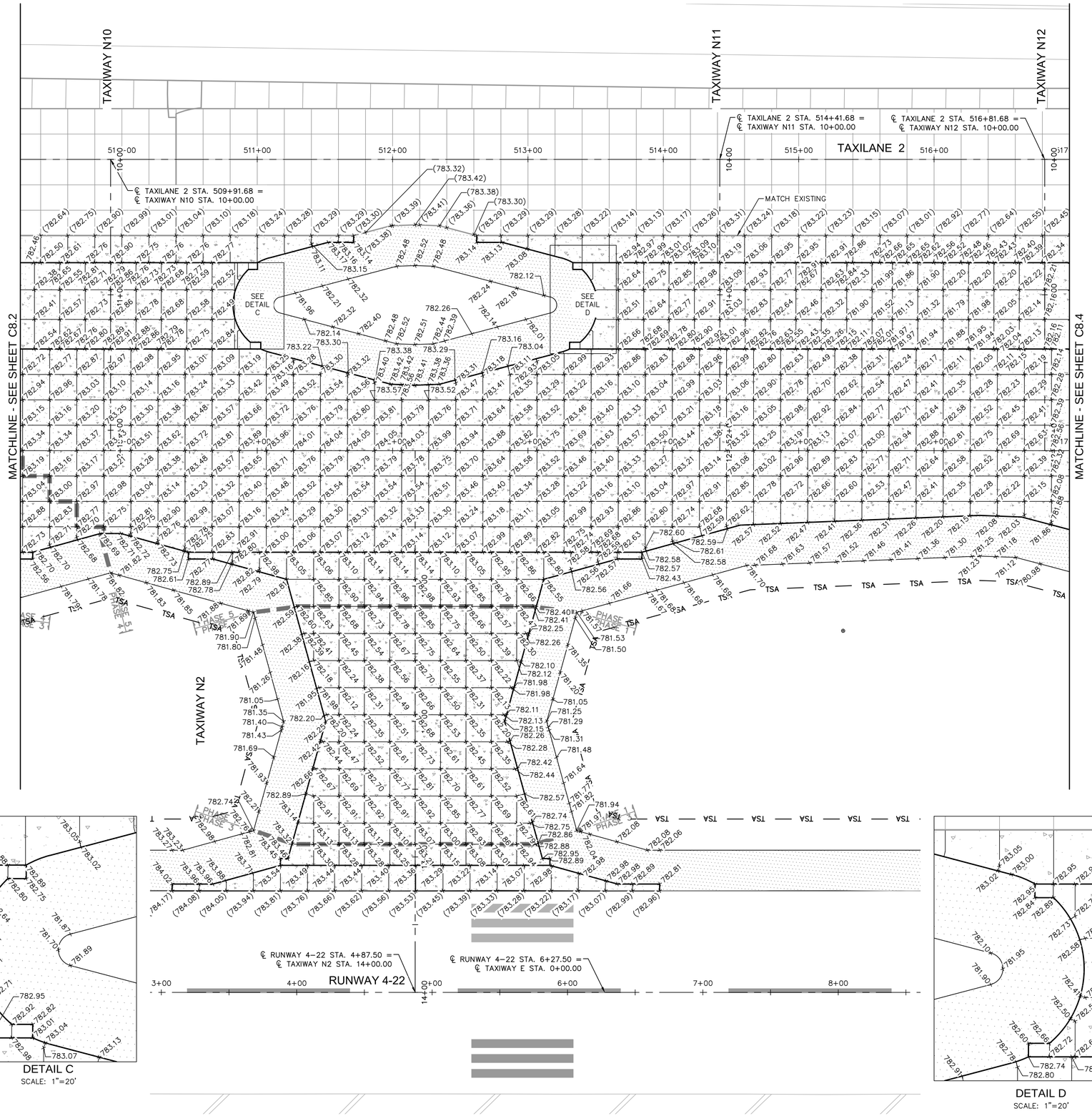

LEGEND

- PORTLAND CEMENT CONCRETE PAVEMENT
- PORTLAND CEMENT CONCRETE TRANSITION
- ASPHALT CONCRETE SHOULDER PAVEMENT
- ASPHALT CONCRETE TRANSITION
- ASPHALT CONCRETE MILL AND REPLACE (VARIABLE DEPTH)
- Y O — PROPOSED SIGN
- DIRECTION OF FLOW
- 780 — EXISTING CONTOUR
- 780 — PROPOSED CONTOUR
- GRADING LIMITS
- +XXX.XX — PROPOSED SPOT ELEVATION
- +(XXX.XX) — EXISTING SPOT ELEVATION

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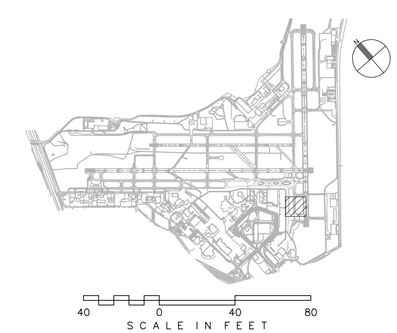

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SAN ANTONIO AIRPORT SYSTEM

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

TERMINAL AREA TAXIWAY IMPROVEMENTS - (PACKAGE 3)

MICHAEL A. NORBY 87178 REGISTERED PROFESSIONAL ENGINEER
05/18/15

MARK	DATE	DESCRIPTION
ISSUE:		

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PAVEMENT ELEVATIONS PLAN - ALTERNATE 1

C8.3

SHEET NO. 100 OF 140

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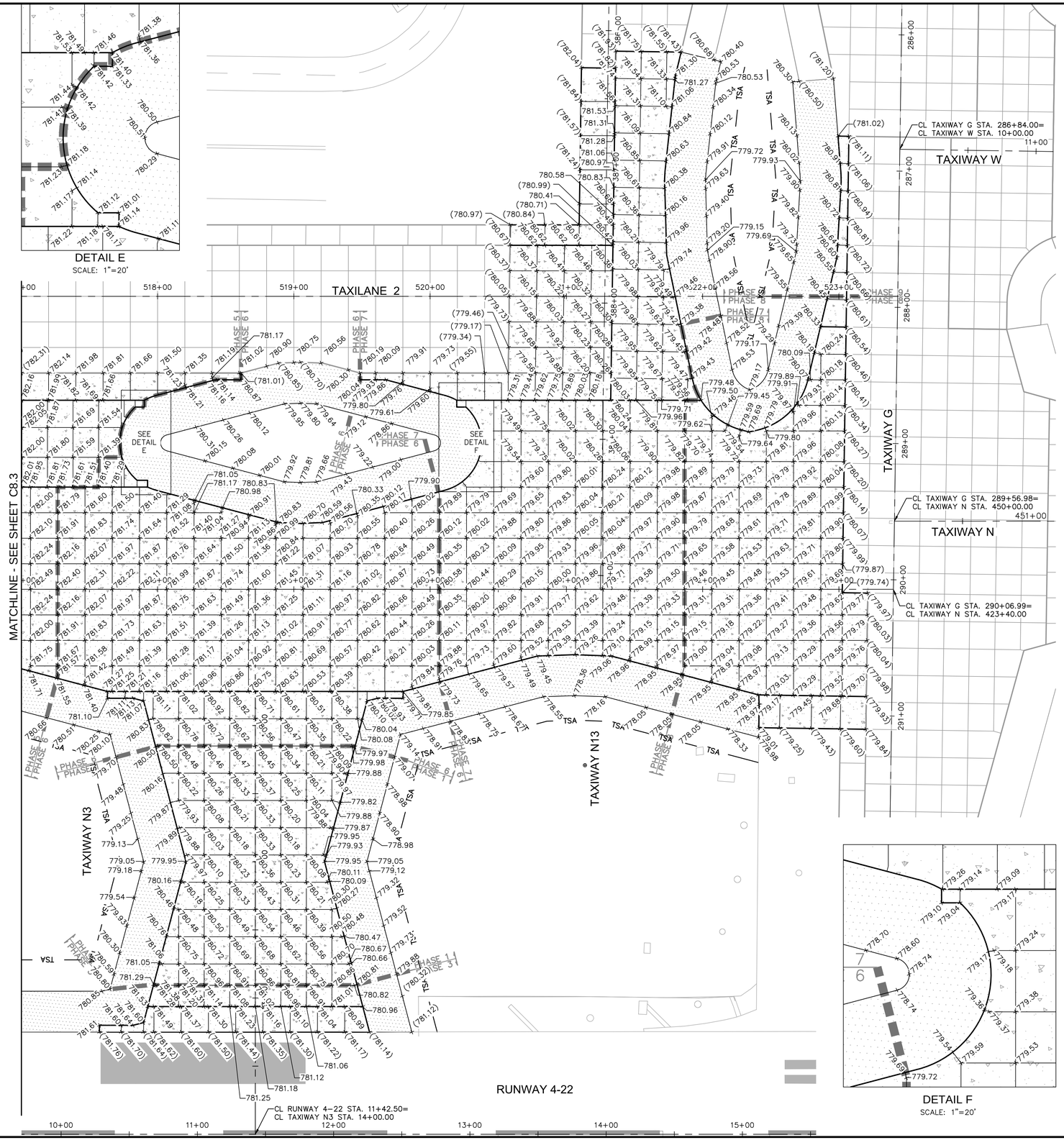

LEGEND

- PORTLAND CEMENT CONCRETE PAVEMENT
- PORTLAND CEMENT CONCRETE TRANSITION
- ASPHALT CONCRETE SHOULDER PAVEMENT
- ASPHALT CONCRETE TRANSITION
- ASPHALT CONCRETE MILL AND REPLACE (VARIABLE DEPTH)
- Y O — PROPOSED SIGN
- DIRECTION OF FLOW
- 780 — EXISTING CONTOUR
- —780— PROPOSED CONTOUR
- GRADING LIMITS
- +XXX.XX — PROPOSED SPOT ELEVATION
- +(XXX.XX) — EXISTING SPOT ELEVATION

GENERAL NOTES

1. EXISTING UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL VERIFY EXACT LOCATIONS OF ALL UNDERGROUND UTILITIES PRIOR TO COMMENCING WORK IN ANY AREA.
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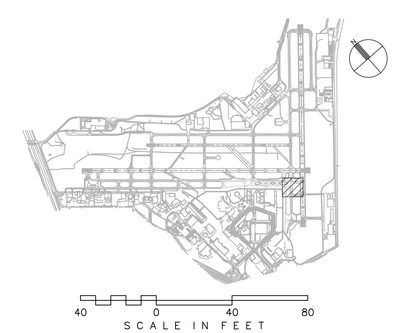

CITY OF SAN ANTONIO AVIATION DEPARTMENT

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PAVEMENT ELEVATIONS PLAN - ALTERNATE 1

C8.4

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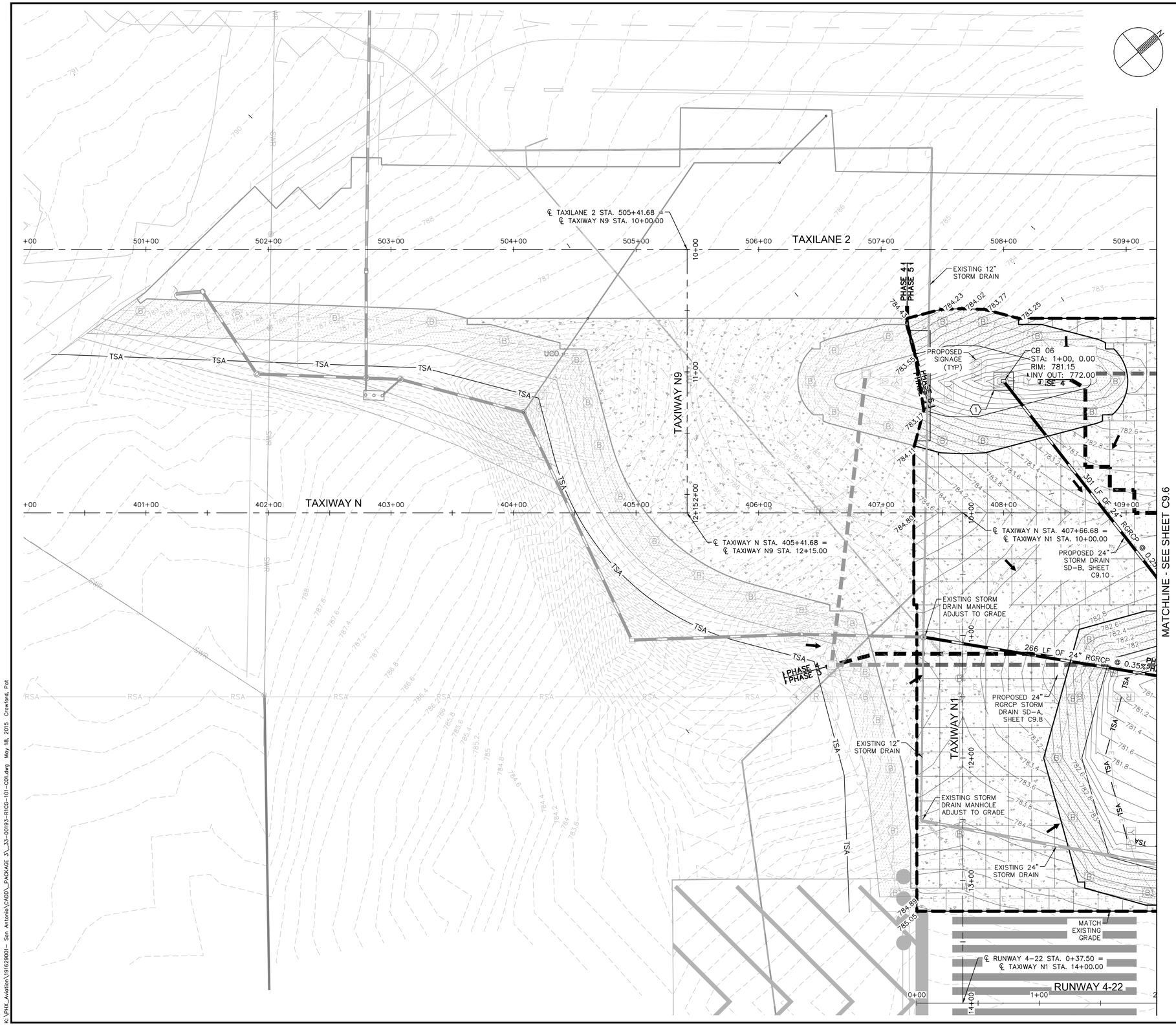

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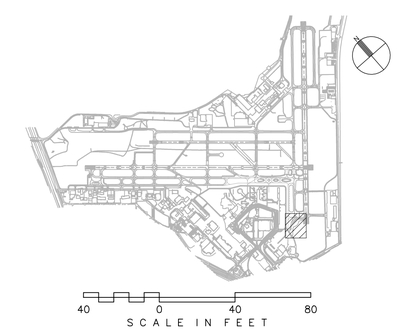
4. INSTALL MANHOLE, SEE DETAIL SHEET C9.14
5. INSTALL UNDERDRAIN CONNECTION, SEE DETAIL SHEET C9.4
6. INSTALL UNDERDRAIN CLEANOUT, SEE DETAIL SHEET C9.3



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REGISTERED PROFESSIONAL ENGINEER
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GRADING AND DRAINAGE PLAN - ALTERNATE 1

C9.5

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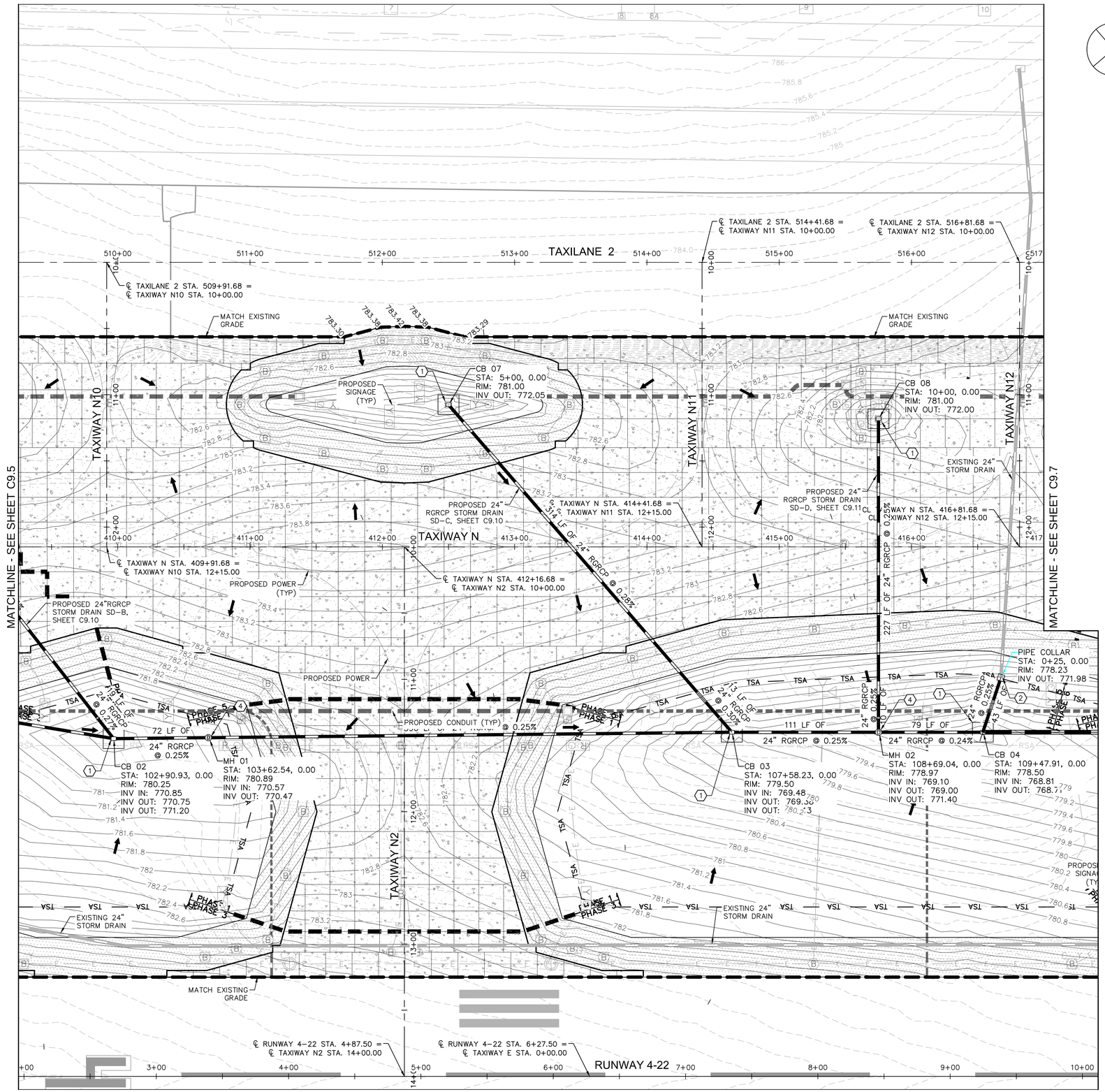

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- PORTLAND CEMENT CONCRETE TRANSITION
- ASPHALT CONCRETE SHOULDER PAVEMENT
- ASPHALT CONCRETE TRANSITION
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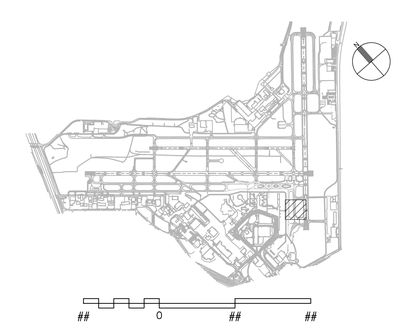

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TERMINAL AREA TAXIWAY IMPROVEMENTS - (PACKAGE 3)

MICHAEL A. NORBY 87178 REGISTERED PROFESSIONAL ENGINEER

05/18/15

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GRADING AND DRAINAGE PLAN - ALTERNATE 1

C9.6

SHEET NO. 103 OF 140

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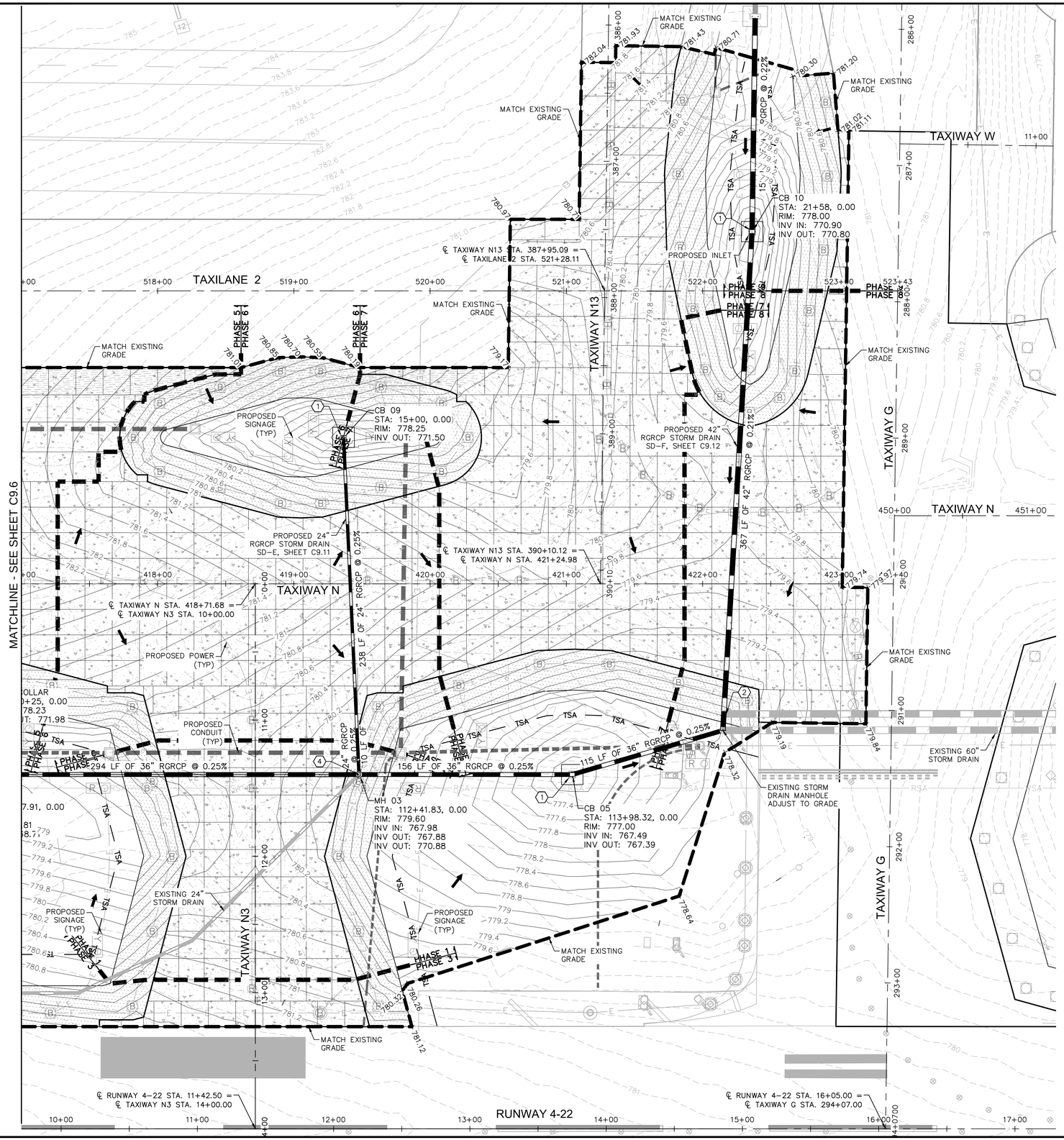

LEGEND

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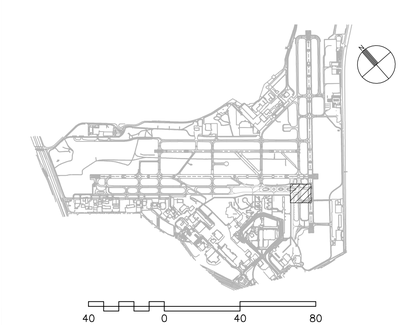

CITY OF SAN ANTONIO AVIATION DEPARTMENT

SAN ANTONIO AIRPORT SYSTEM

Kimley»Horn

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601 NW LOOP 410, SUITE 350
SAN ANTONIO, TEXAS 78216
PHONE: (210) 541-9166

TEXAS REGISTERED FIRM, NO. 928

TERMINAL AREA TAXIWAY IMPROVEMENTS - (PACKAGE 3)

STATE OF TEXAS
MICHAEL A. NORBY
87178
REGISTERED PROFESSIONAL ENGINEER
05/18/15

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GRADING AND DRAINAGE PLAN - ALTERNATE 1

C9.7

SHEET NO. 104 OF 140

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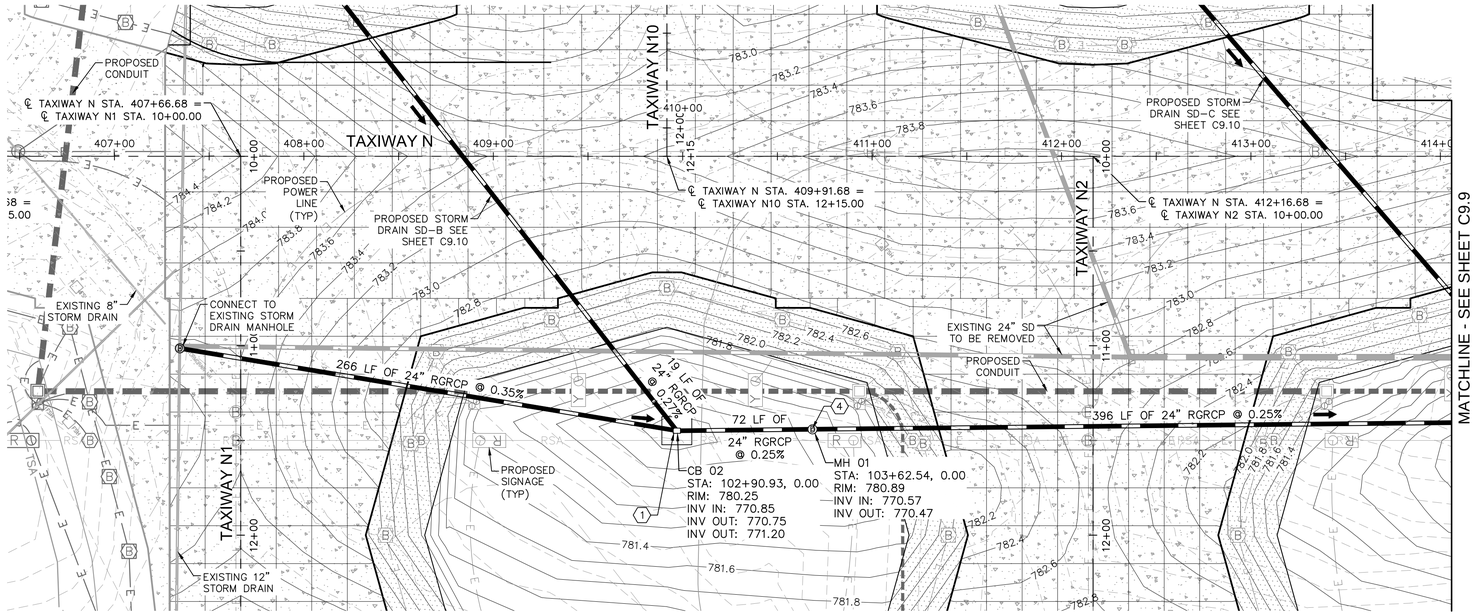
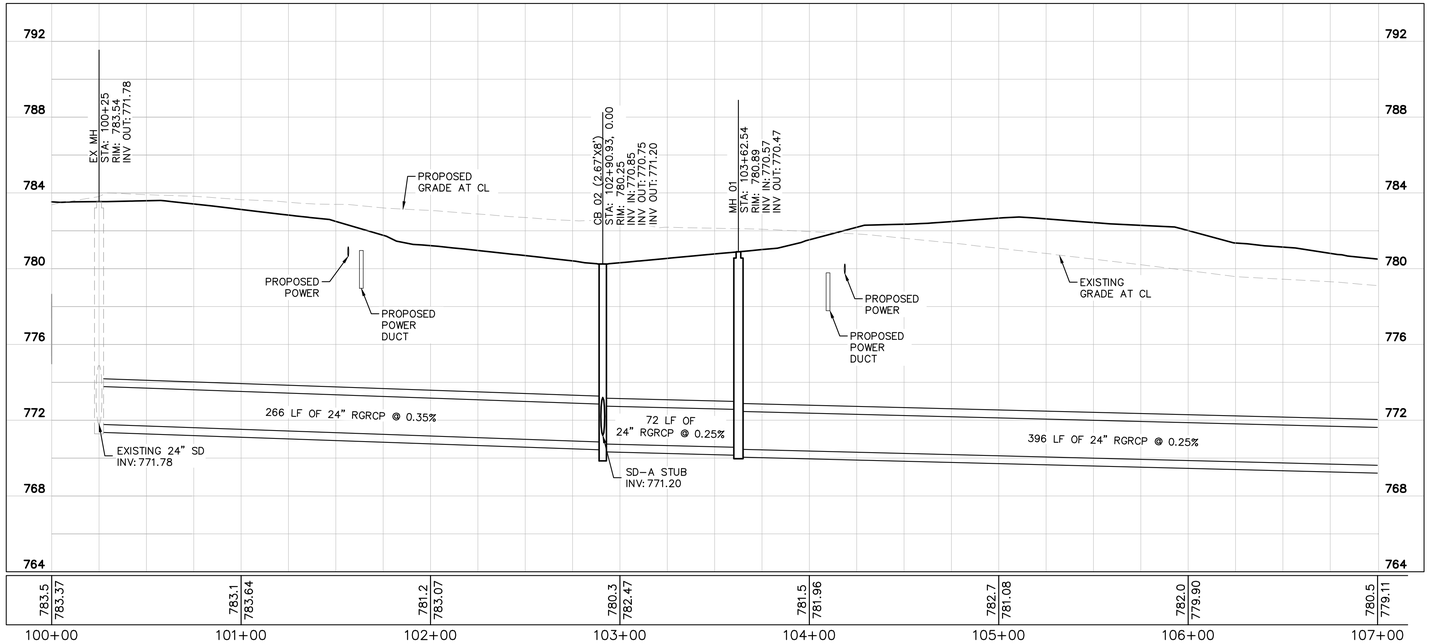


SD-A PLAN VIEW



SD-A PROFILE VIEW

LEGEND

- EXISTING STORM DRAIN
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN INLET
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN CATCH BASIN
- STORM DRAIN TO BE REMOVED
- 750 — EXISTING CONTOURS
- 750 — PROPOSED CONTOURS
- 750.0 — EXISTING PROFILE ELEVATIONS
- 750.00 — PROPOSED PROFILE ELEVATIONS

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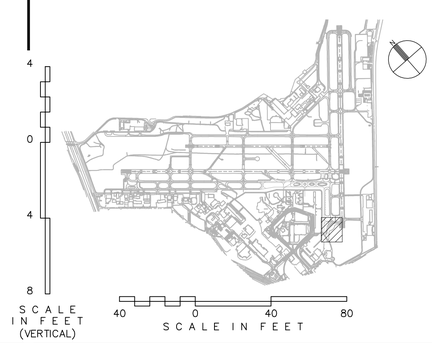

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STORM DRAIN PROFILE - STORM DRAIN A - ALTERNATE 1

C9.8

SHEET NO. 105 OF 140

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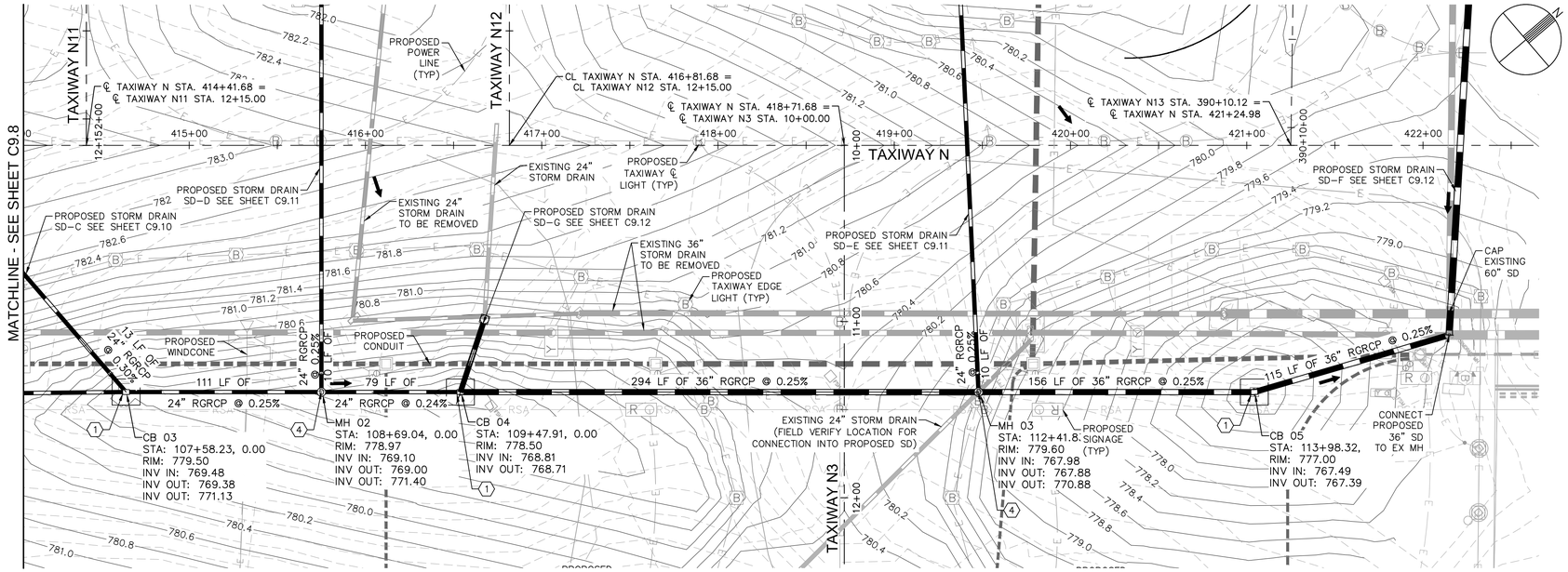
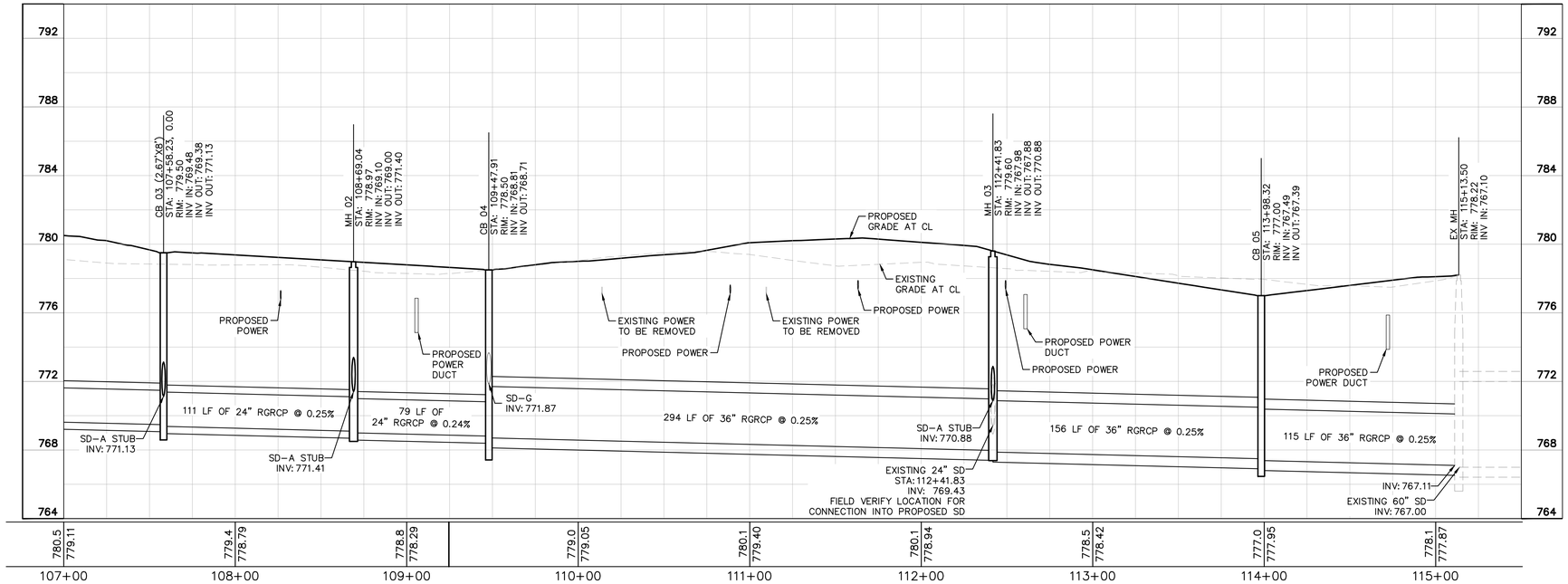


SD-A PLAN VIEW



SD-A PROFILE VIEW

LEGEND

- EXISTING STORM DRAIN
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN INLET
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN CATCH BASIN
- STORM DRAIN TO BE REMOVED
- 750 — EXISTING CONTOURS
- 750 — PROPOSED CONTOURS
- EXISTING PROFILE ELEVATIONS
- 750.0 / 750.00 — PROPOSED PROFILE ELEVATIONS

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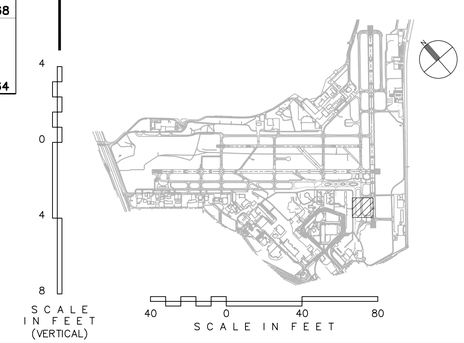

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STORM DRAIN PROFILE - STORM DRAIN A - ALTERNATE 1

C9.9

SHEET NO. 106 OF 140

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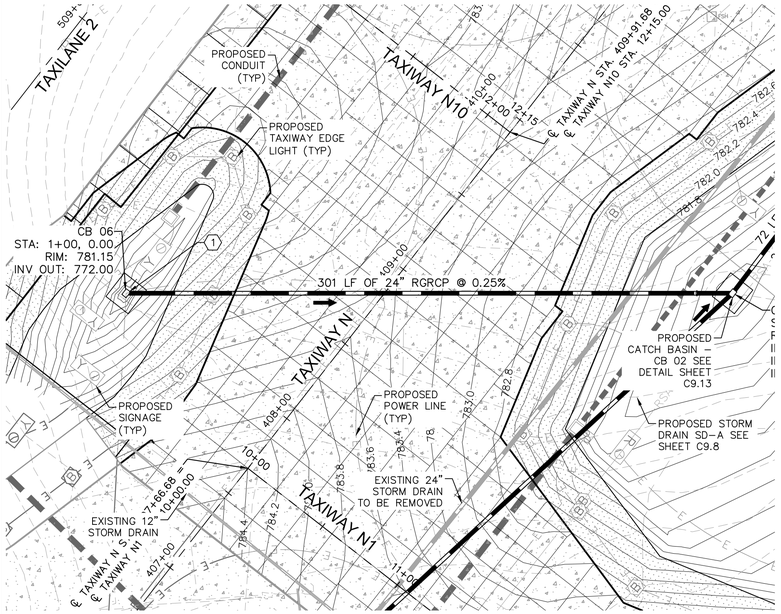
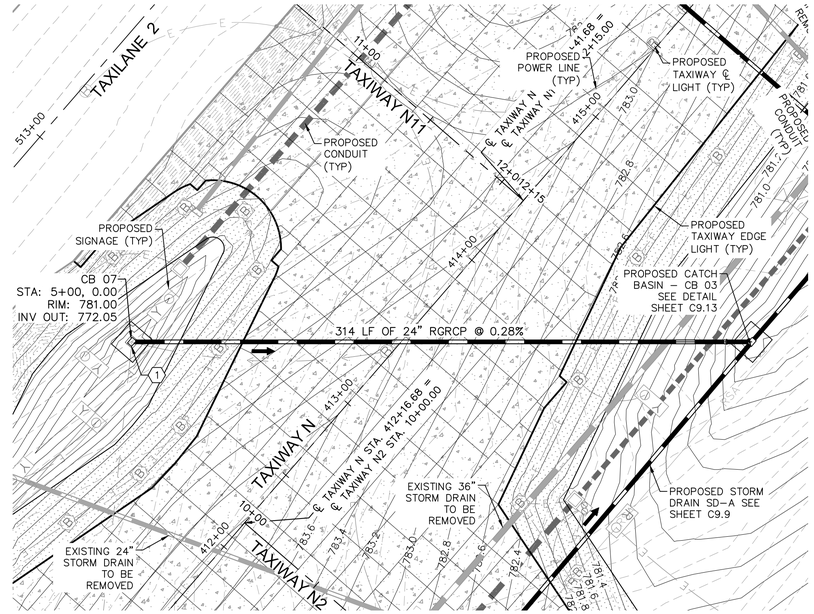


SD-B PLAN VIEW



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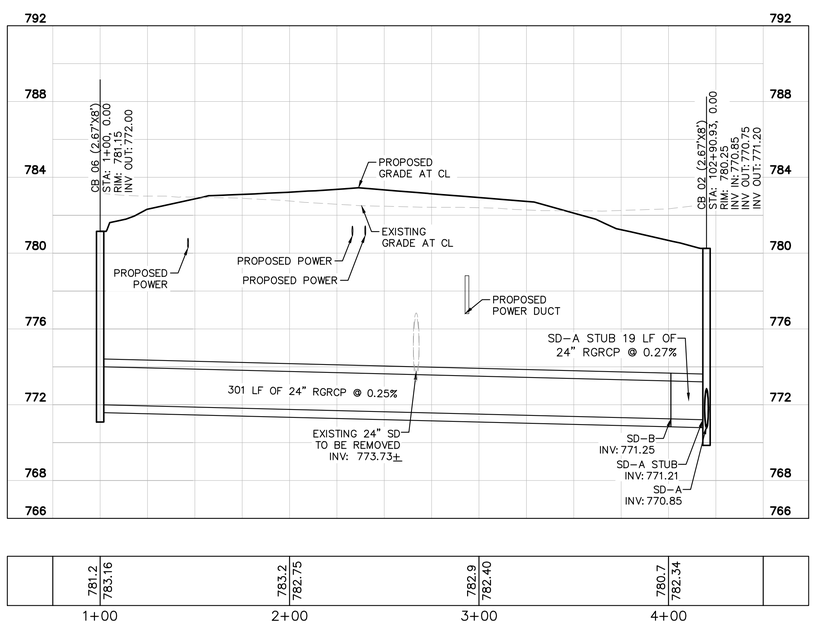
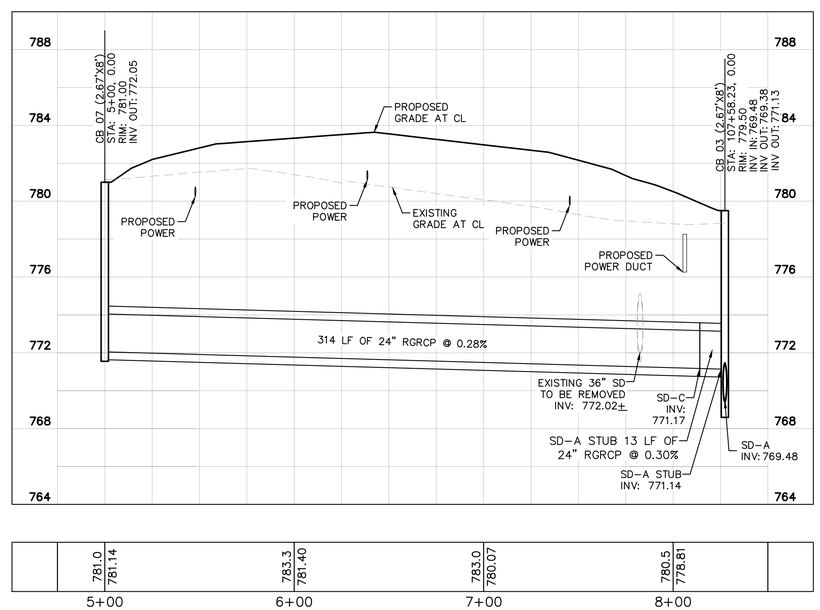


SD-B PROFILE VIEW



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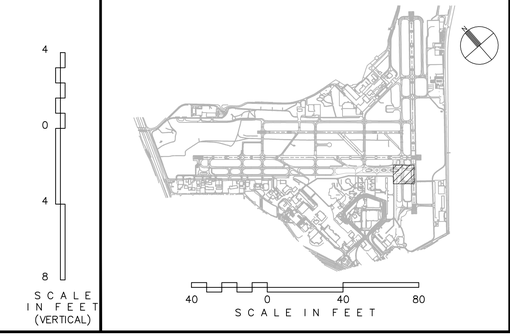

SCALE IN FEET (VERTICAL)

LEGEND

- EXISTING STORM DRAIN
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN INLET
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN CATCH BASIN
- STORM DRAIN TO BE REMOVED
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4. INSTALL MANHOLE, SEE DETAIL SHEET C9.14

CITY OF SAN ANTONIO AVIATION DEPARTMENT

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MICHAEL A. NORBY
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REGISTERED PROFESSIONAL ENGINEER
05/18/15

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STORM DRAIN PROFILE - STORM DRAIN B & STORM DRAIN C - ALTERNATE 1

C9.10

SHEET NO. 107 OF 140

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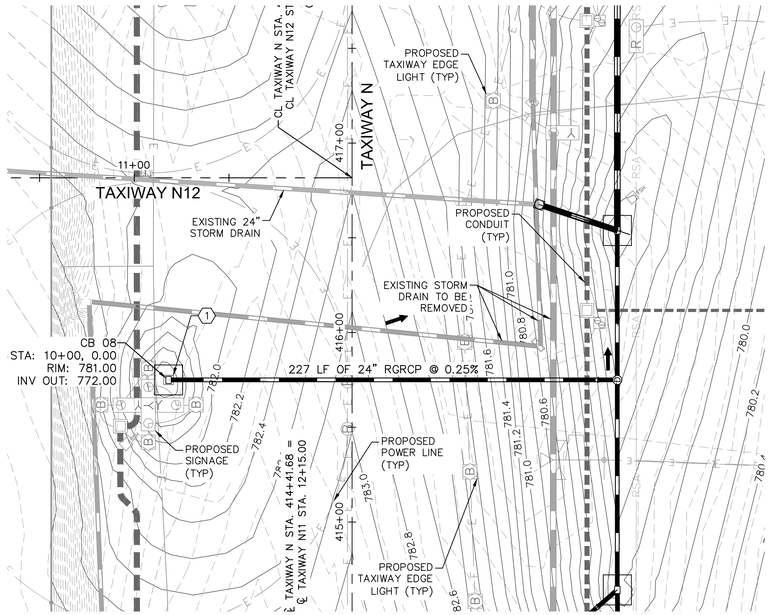
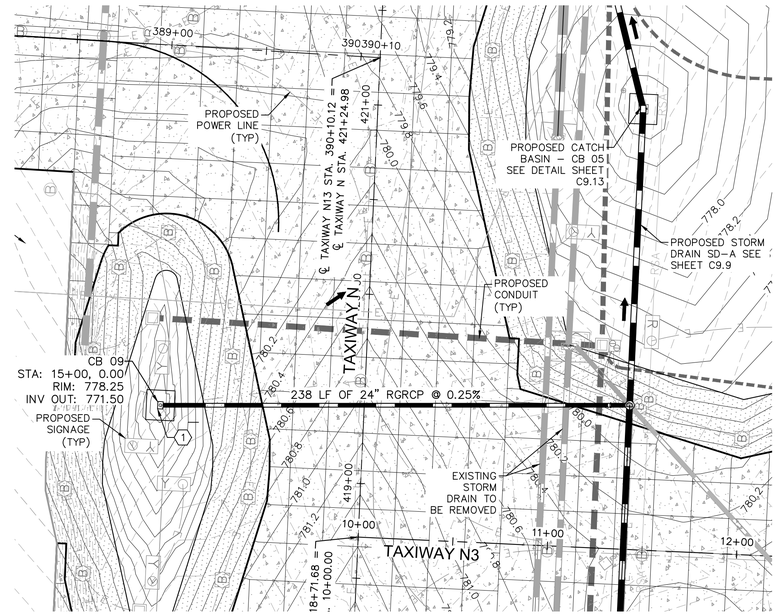


SD-D PLAN VIEW



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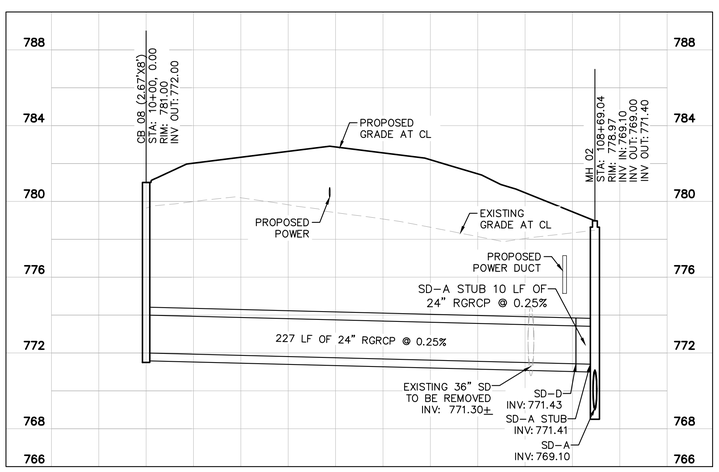
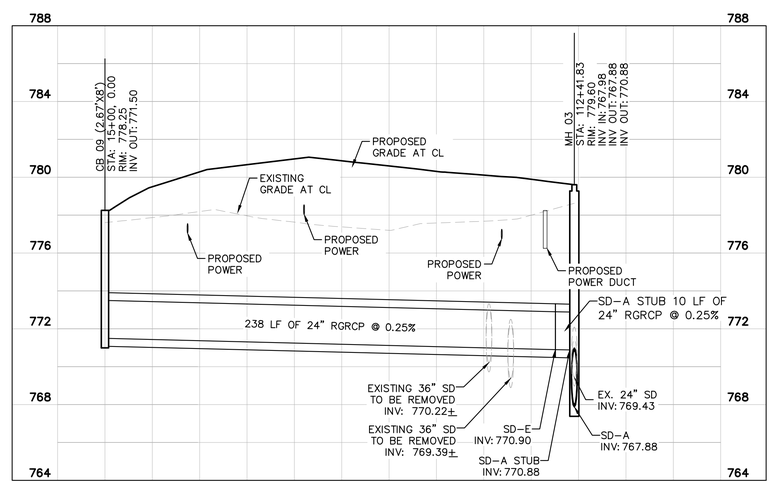


SD-D PROFILE VIEW



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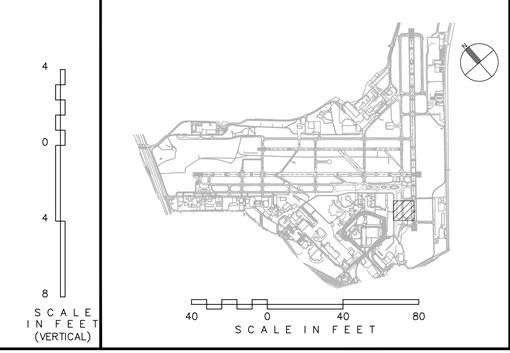

LEGEND

- EXISTING STORM DRAIN
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN INLET
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN CATCH BASIN
- STORM DRAIN TO BE REMOVED
- 750 — EXISTING CONTOURS
- 750 — PROPOSED CONTOURS
- 750.0 — EXISTING PROFILE ELEVATIONS
- 750.00 — PROPOSED PROFILE ELEVATIONS

GENERAL NOTES

1. EXISTING UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL VERIFY EXACT LOCATIONS OF ALL UNDERGROUND UTILITIES PRIOR TO COMMENCING WORK IN ANY AREA.
2. DESIGN CONTOURS REPRESENT FINISHED GRADE (PAVEMENT AND GRADING). CONTOURS AND PERCENT OF SLOPE ARE APPROXIMATE AND ARE SHOWN AS SUPPLEMENTAL INFORMATION ONLY.
3. REFER TO ELECTRICAL PLANS (SERIES E) FOR AIRFIELD LIGHTING, SIGNING, AND ELECTRICAL FEATURES.

CONSTRUCTION NOTES

1. INSTALL CATCH BASIN, PER DETAIL 1 AND 2, SHEET C9.13.
2. INSTALL PIPE COLLAR, PER DETAIL 1, SHEET C9.15.
3. INSTALL PIPE CONNECTION, PER DETAIL 3, SHEET C9.15.
4. INSTALL MANHOLE, SEE DETAIL SHEET C9.14

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

TERMINAL AREA TAXIWAY IMPROVEMENTS - (PACKAGE 3)

MICHAEL A. NORBY 87178 REGISTERED PROFESSIONAL ENGINEER
05/18/15

MARK	DATE	DESCRIPTION
ISSUE:		

PROJECT NO:	33-00193
FILE NAME:	_33-00193-R1CG-102-C01
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SHEET TITLE:

STORM DRAIN PROFILE - STORM DRAIN D & STORM DRAIN E - ALTERNATE 1

C9.11

SHEET NO. 108 OF 140

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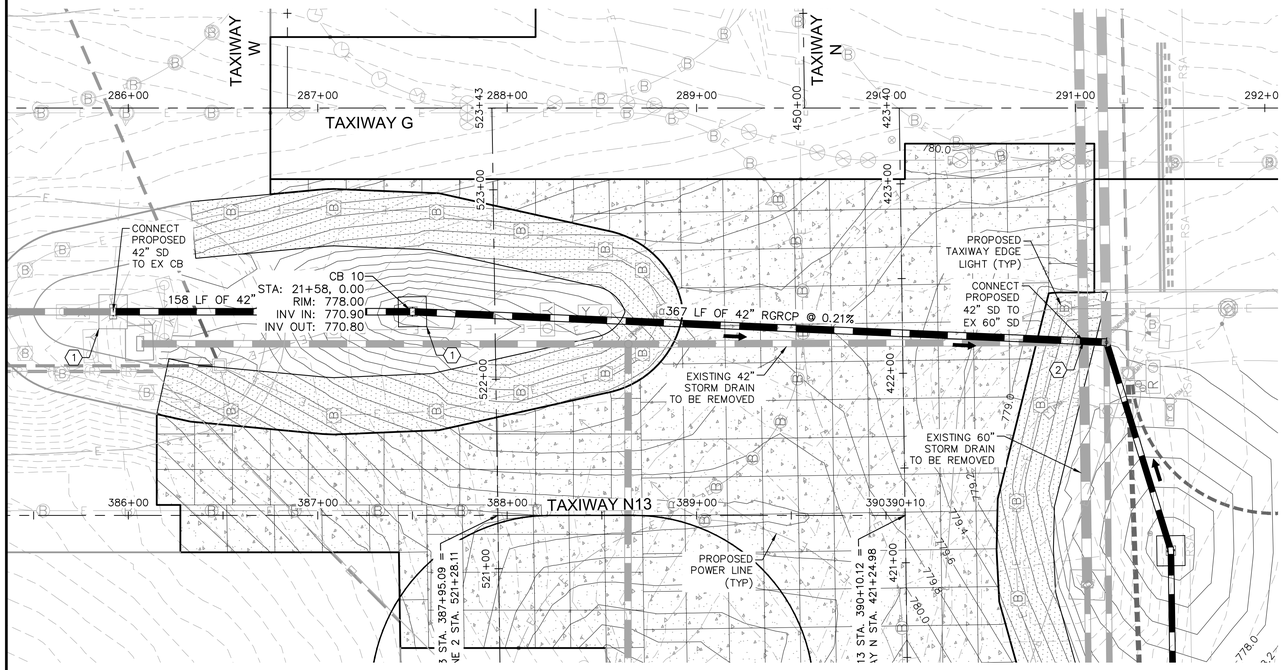

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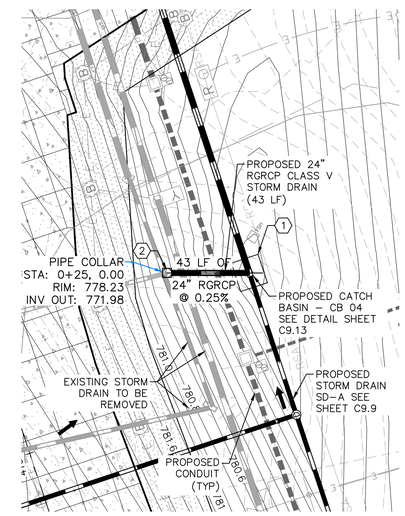
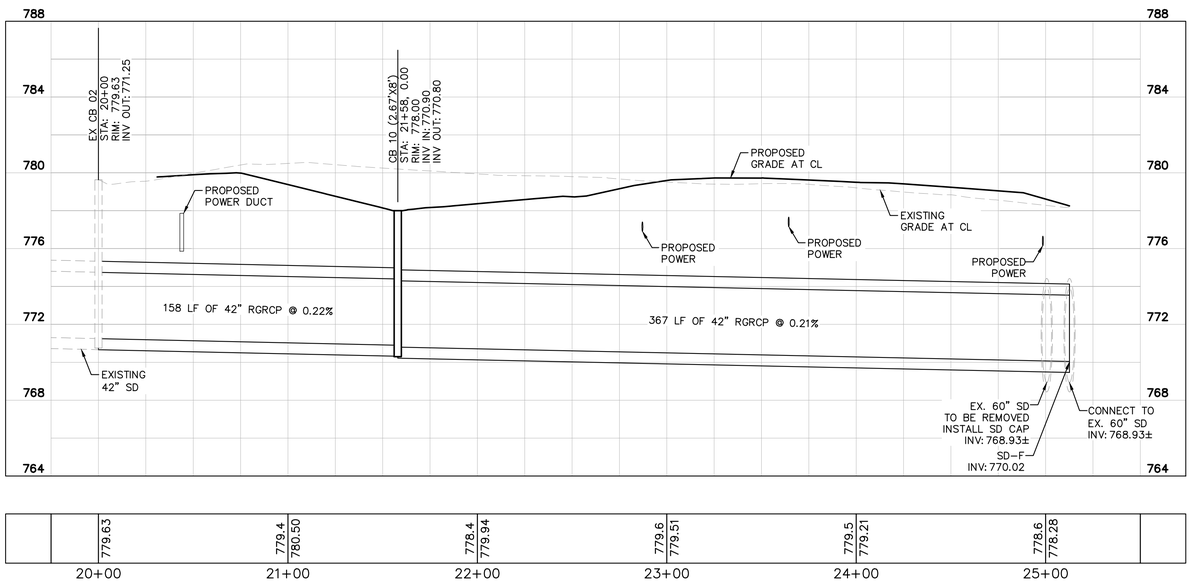
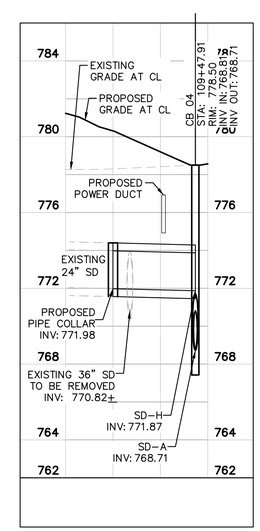


SD-G PLAN VIEW



SD-F PROFILE VIEW



SD-G PROFILE VIEW

LEGEND

- EXISTING STORM DRAIN
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN INLET
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN CATCH BASIN
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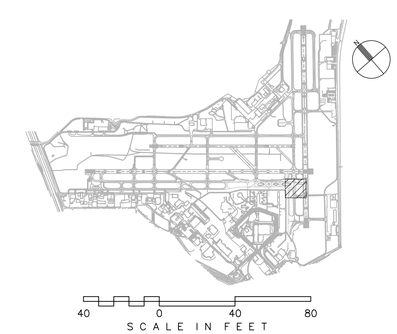
3. INSTALL PIPE CONNECTION, PER DETAIL 3, SHEET C9.15.
4. INSTALL MANHOLE, SEE DETAIL SHEET C9.14

SCALE IN FEET (VERTICAL): 4, 0, 4, 8



SCALE IN FEET: 40, 0, 40, 80

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

TERMINAL AREA TAXIWAY IMPROVEMENTS - (PACKAGE 3)

MICHAEL A. NORBY 87178 REGISTERED PROFESSIONAL ENGINEER 05/18/15

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STORM DRAIN PROFILE - STORM DRAIN F - ALTERNATE 1

C9.12

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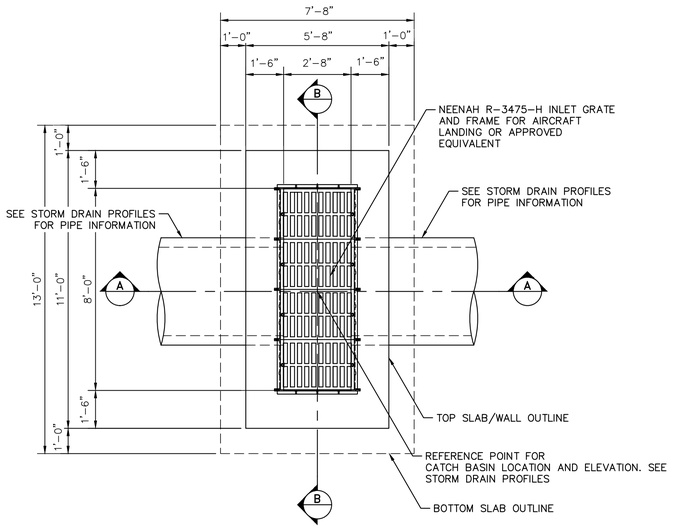
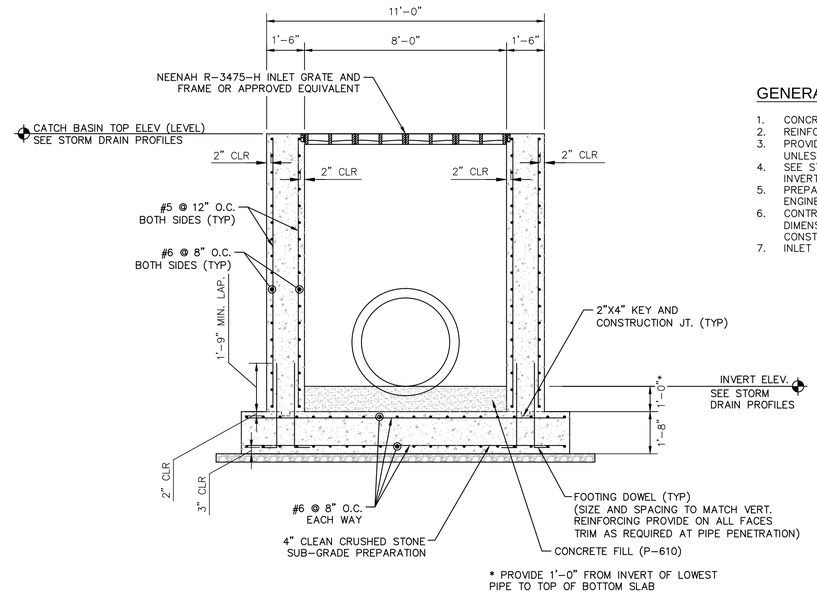


1 C9.13

2.67' x 8' CATCH BASIN PLAN

N.T.S.

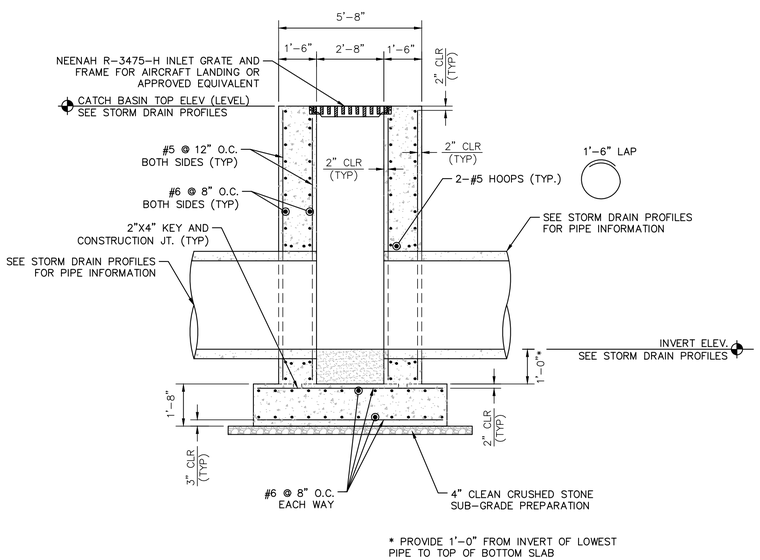


SECTION B-B

N.T.S.

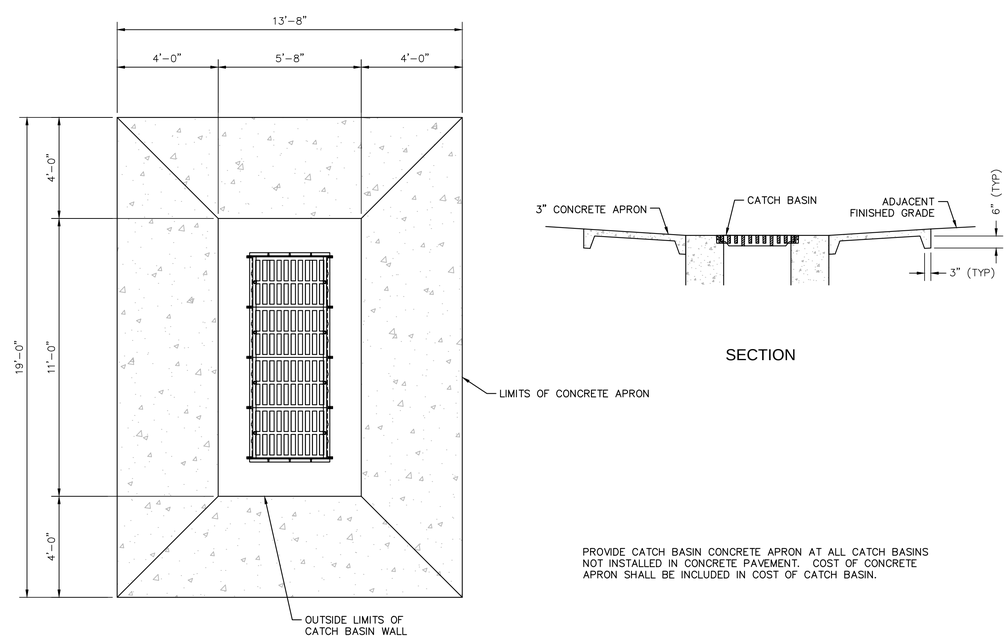
GENERAL NOTES

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

N.T.S.



PLAN

SECTION

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 C9.13

CATCH BASIN CONCRETE APRON

N.T.S.

CITY OF SAN ANTONIO AVIATION DEPARTMENT

SAN ANTONIO AIRPORT SYSTEM

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SAN ANTONIO, TEXAS 78216
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TERMINAL AREA TAXIWAY IMPROVEMENTS - (PACKAGE 3)

MICHAEL A. NORBY 57178 REGISTERED PROFESSIONAL ENGINEER 05/18/15

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STORM DRAIN STRUCTURE DETAILS

C9.13

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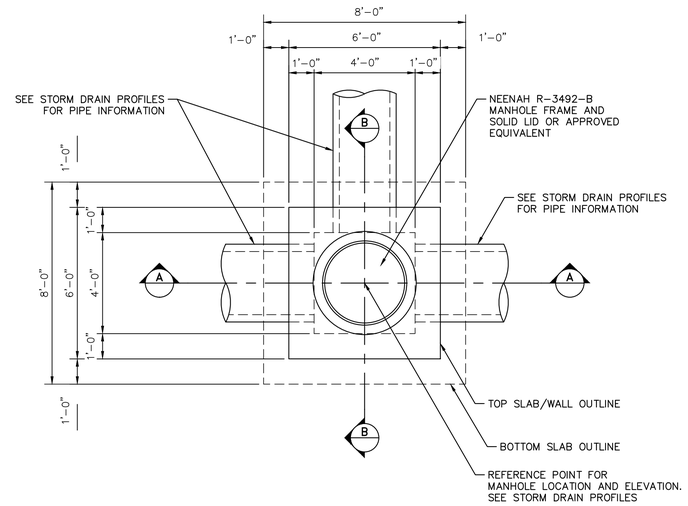
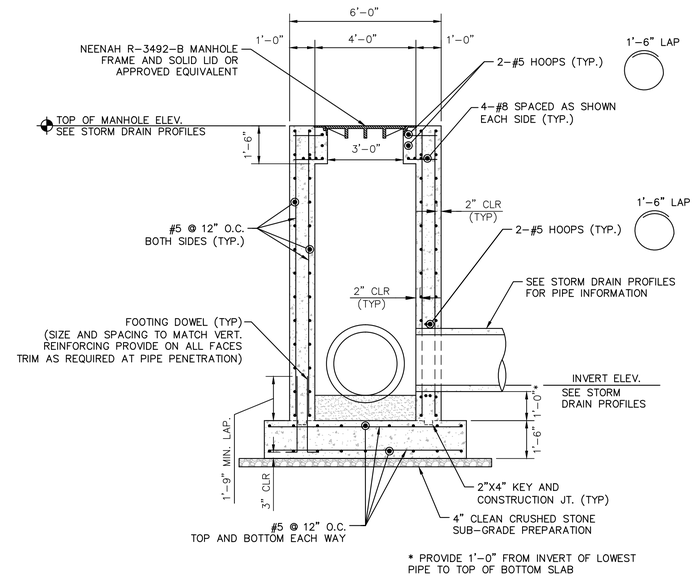


1 / C9.14

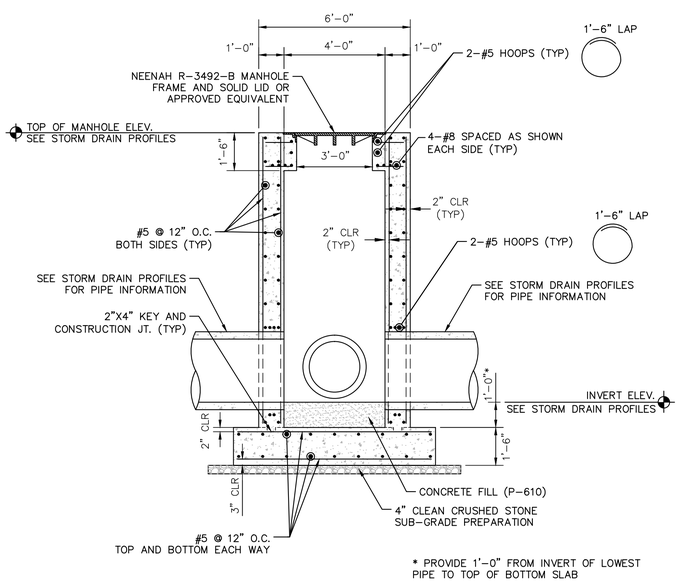
4' MANHOLE PLAN

N.T.S.



SECTION B-B

N.T.S.



SECTION A-A

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 ADDITIONAL STORM DRAIN INFORMATION AND DETAILS
5. PREPARE SUB-GRADE IN ACCORDANCE WITH PROJECT GEOTECHNICAL ENGINEERS RECOMMENDATIONS
6. MANHOLE MAY BE ROTATED TO BETTER MATCH INTO PROPOSED PIPE ALIGNMENTS

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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TERMINAL AREA TAXIWAY IMPROVEMENTS - (PACKAGE 3)

MICHAEL A. NORBY 87178 REGISTERED PROFESSIONAL ENGINEER
05/18/15

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STORM DRAIN MANHOLE DETAILS

C9.14

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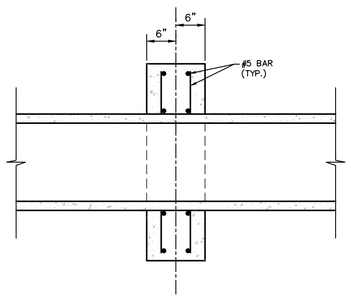
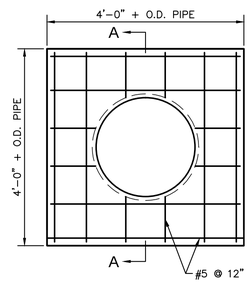


SECTION A-A

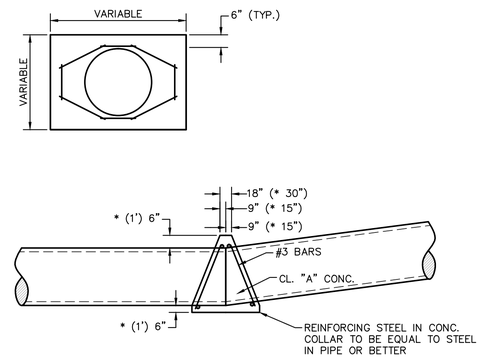


FRONT ELEVATION

1 C9.15 CONCRETE PIPE COLLAR

N.T.S.

Texas Department of Transportation



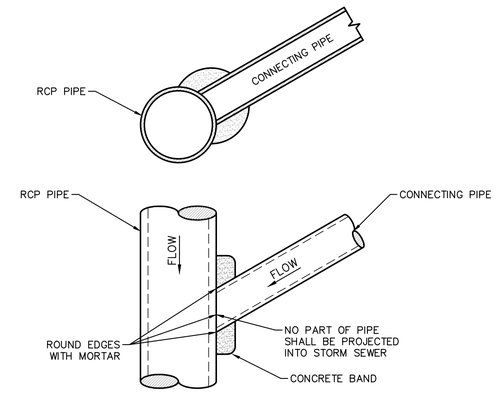
DETAIL FOR CONC. COLLARS DRAINAGE STRUCTURES AND PIPE SIPHONS (HORZ. & VERT. BENDS)

2 C9.15

N.T.S.

Texas Department of Transportation

* FOR 42" DIAMETER AND LARGER PIPE

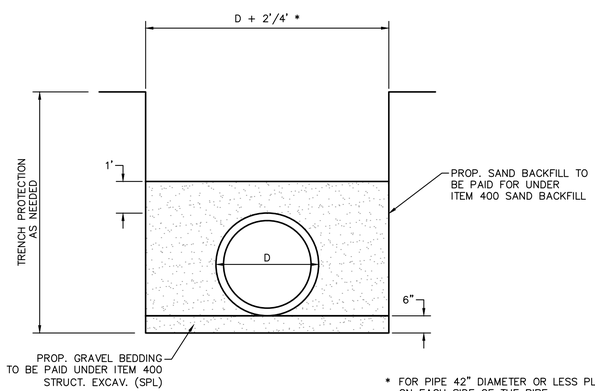


TYPICAL REINFORCED CONC. PIPE CONNECTION WITHOUT MANHOLE

3 C9.15

N.T.S.

Texas Department of Transportation



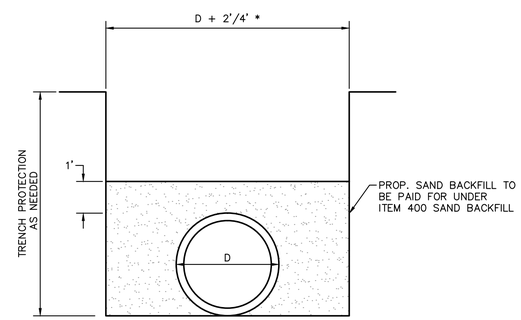
* FOR PIPE 42" DIAMETER OR LESS PLACE 1' OF FILL ON EACH SIDE OF THE PIPE.
FOR PIPE LARGER THAN 42" DIAMETER PLACE 2' OF FILL ON EACH SIDE OF THE PIPE.

SPIRAL RIB CMP
TYPICAL BACKFILL DETAIL
GRAVEL & SAND

4 C9.15

N.T.S.

Texas Department of Transportation



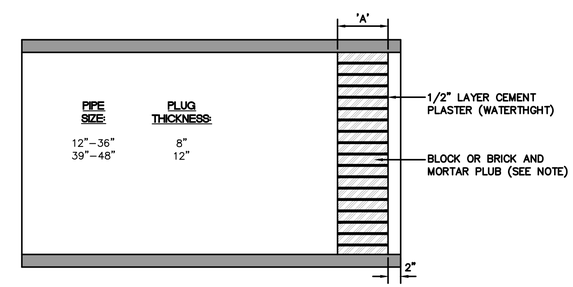
* FOR PIPE 42" DIAMETER OR LESS PLACE 1' OF FILL ON EACH SIDE OF THE PIPE.
FOR PIPE LARGER THAN 42" DIAMETER PLACE 2' OF FILL ON EACH SIDE OF THE PIPE.

REINFORCED CONCRETE PIPE
TYPICAL BACKFILL DETAIL - SAND

5 C9.15

N.T.S.

Texas Department of Transportation



PIPE SIZE:	PLUG THICKNESS:
12"–36"	8"
39"–48"	12"

NOTES:

1. COMPACT SOIL AT END OF PIPE TO 95% OF MAXIMUM DENSITY.
2. IF DEPTH OF COVER IS LESS THAN 5' OR GREATER THAN 10', INCREASE PLUG THICKNESS A MINIMUM OF 4".

REINFORCED CONCRETE PIPE
TYPICAL BACKFILL DETAIL - SAND

6 C9.15

N.T.S.

CITY OF
SAN ANTONIO
AVIATION
DEPARTMENT

SAN ANTONIO AIRPORT SYSTEM

Kimley»Horn

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

TEXAS REGISTERED FIRM,
NO. 928

TERMINAL AREA TAXIWAY
IMPROVEMENTS -
(PACKAGE 3)

MICHAEL A. NORBY
87178
REGISTERED
PROFESSIONAL ENGINEER
05/18/15

MARK	DATE	DESCRIPTION
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MISCELLANEOUS
PIPE DETAILS

C9.15

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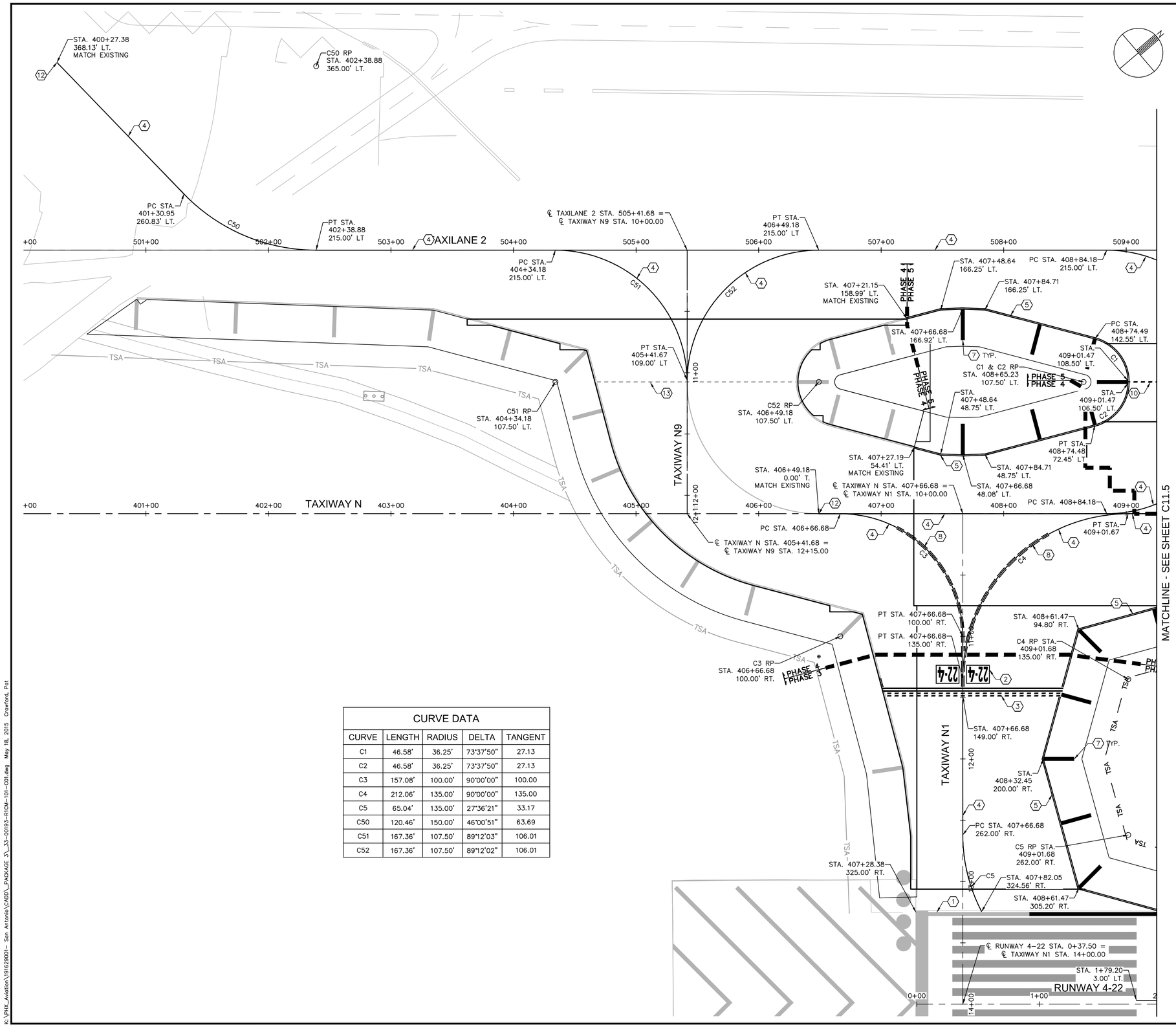


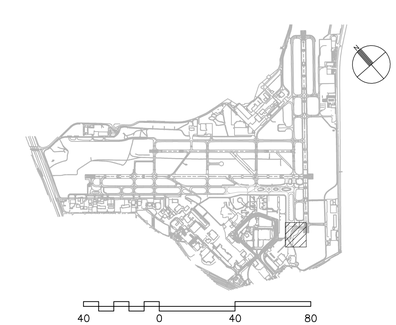
CURVE DATA				
CURVE	LENGTH	RADIUS	DELTA	TANGENT
C1	46.58'	36.25'	73°37'50"	27.13
C2	46.58'	36.25'	73°37'50"	27.13
C3	157.08'	100.00'	90°00'00"	100.00
C4	212.06'	135.00'	90°00'00"	135.00
C5	65.04'	135.00'	27°36'21"	33.17
C50	120.46'	150.00'	46°00'51"	63.69
C51	167.36'	107.50'	89°12'03"	106.01
C52	167.36'	107.50'	89°12'02"	106.01

GENERAL NOTES

1. PAVEMENT MARKING DETAILS SHALL CONFORM TO THE LATEST EDITION OF THE FEDERAL AVIATION ADMINISTRATION'S ADVISORY CIRCULAR AC–150/5340. 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 C1.9 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 SURFACE PAINTED HOLD POSITION SIGN PER DETAIL 3, SHEET C11.3
3. APPLY ENHANCED RUNWAY HOLDING POSITION PAVEMENT MARKING PER DETAIL 5, SHEET C11.3
4. APPLY SIX INCH (6") WIDE SOLID YELLOW TAXIWAY CENTERLINE PAVEMENT MARKING PER DETAIL 2, SHEET C11.2
5. APPLY DOUBLE SIX INCH (6") WIDE SOLID YELLOW TAXIWAY EDGE PAVEMENT MARKING PER DETAIL 3, C11.2
6. REFER TO DETAIL 1, SHEET C11.3 FOR RUNWAY/TAXIWAY INTERSECTION INFORMATION
7. APPLY THIRTY–SIX INCH (36") WIDE SOLID YELLOW TAXIWAY SHOULDER PAVEMENT MARKING PER DETAIL 4, SHEET C11.2
8. APPLY ENHANCED CENTERLINE PAVEMENT MARKING PER DETAIL 6, SHEET C11.2
9. APPLY BLACK PAINT TO PCC PAVEMENT THAT LIES OUTSIDE OF TAXIWAY EDGE MARKINGS (NPI)
10. APPLY DASHED YELLOW INTERMEDIATE HOLDING POSITION MARKING PER DETAIL 2, SHEET C11.3
11. APPLY SOLID GREEN INFIELD PAVEMENT MARKING
12. MATCH EXISTING MARKING



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STATE OF TEXAS
MICHAEL A. NORBY
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REGISTERED PROFESSIONAL ENGINEER
05/18/15

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PAVEMENT MARKING PLAN - ALTERNATE 1

C11.4

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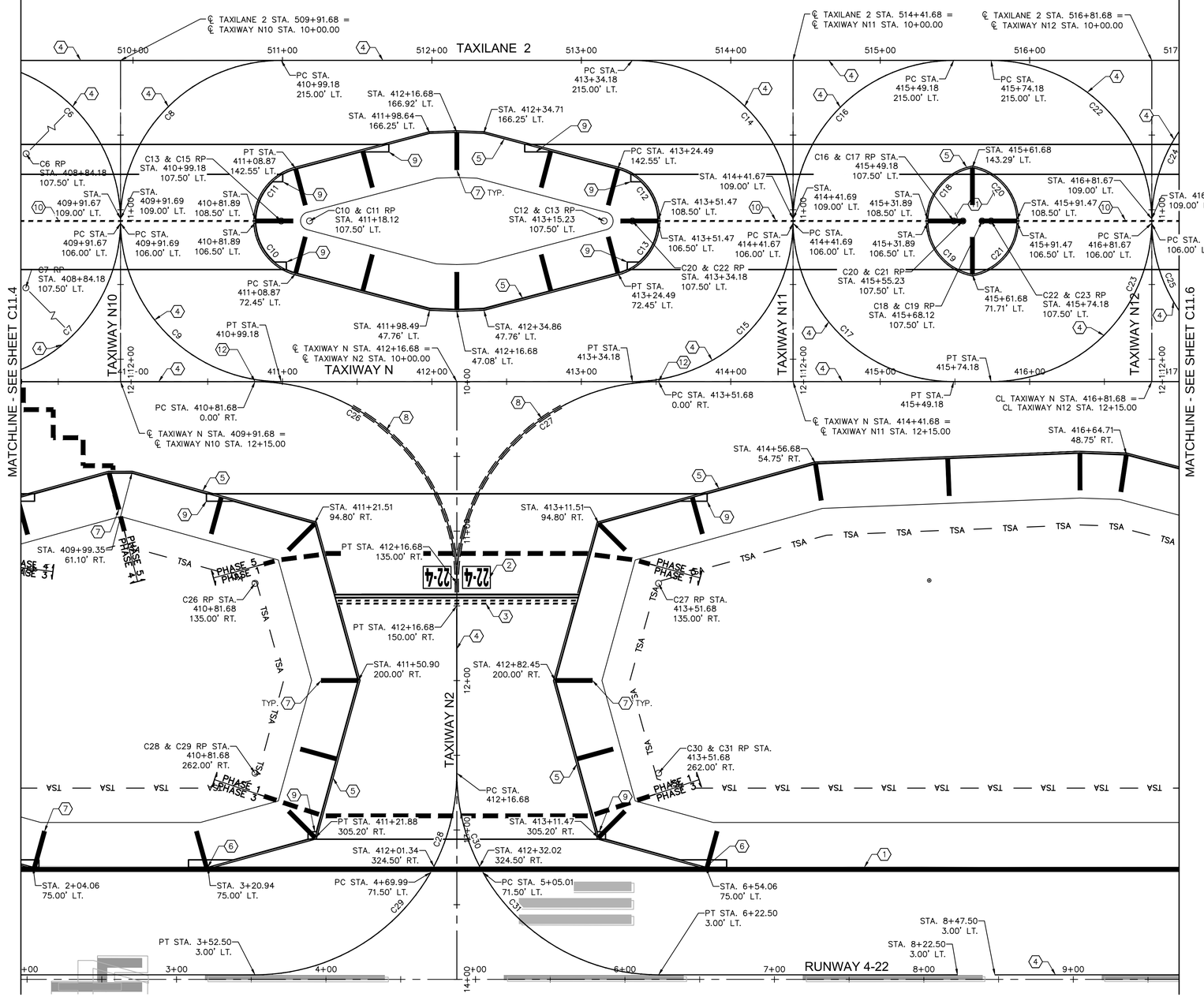
CURVE DATA				
CURVE	LENGTH	RADIUS	DELTA	TANGENT
C6	167.36'	107.50'	89°12'10"	106.01
C7	167.36'	107.50'	89°12'03"	106.01
C8	167.36'	107.50'	89°12'02"	106.01
C9	167.36'	107.50'	89°12'02"	106.01
C10	46.58'	36.25'	73°37'50"	27.13
C11	46.58'	36.25'	73°37'50"	27.13
C12	46.58'	36.25'	73°37'50"	27.13
C13	46.58'	36.25'	73°37'50"	27.13
C14	167.36'	107.50'	89°12'02"	106.01
C15	167.36'	107.50'	89°12'02"	106.01

CURVE DATA				
CURVE	LENGTH	RADIUS	DELTA	TANGENT
C16	167.36'	107.50'	89°12'03"	106.01
C17	167.36'	107.50'	89°12'02"	106.01
C18	46.58'	36.25'	73°37'50"	27.13
C19	46.58'	36.25'	73°37'50"	27.13
C20	46.58'	36.25'	73°37'50"	27.13
C21	46.58'	36.25'	73°37'50"	27.13
C22	167.33'	107.57'	89°07'32"	105.94
C23	167.36'	107.50'	89°12'02"	106.01
C24	167.36'	107.50'	89°12'02"	106.01
C25	167.36'	107.50'	89°12'03"	106.01

CURVE DATA				
CURVE	LENGTH	RADIUS	DELTA	TANGENT
C26	212.06'	135.00'	90°00'00"	135.00
C27	212.06'	135.00'	90°00'00"	135.00
C28	64.98'	135.00'	27°34'42"	33.13
C29	142.52'	135.00'	60°29'20"	78.71
C30	64.98'	135.00'	27°34'42"	33.13
C31	142.52'	135.00'	60°29'20"	78.71

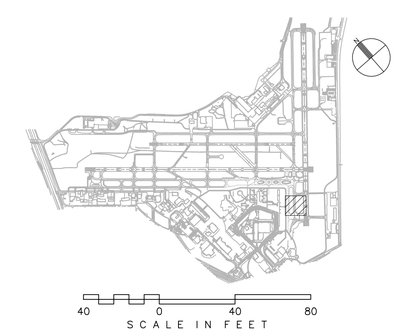


GENERAL NOTES

1. PAVEMENT MARKING DETAILS SHALL CONFORM TO THE LATEST EDITION OF THE FEDERAL AVIATION ADMINISTRATION'S ADVISORY CIRCULAR AC-150/5340. 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 C1.9 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 SURFACE PAINTED HOLD POSITION SIGN PER DETAIL 3, SHEET C11.3
3. APPLY ENHANCED RUNWAY HOLDING POSITION PAVEMENT MARKING PER DETAIL 5, SHEET C11.3
4. APPLY SIX INCH (6") WIDE SOLID YELLOW TAXIWAY CENTERLINE PAVEMENT MARKING PER DETAIL 2, SHEET C11.2
5. APPLY DOUBLE SIX INCH (6") WIDE SOLID YELLOW TAXIWAY EDGE PAVEMENT MARKING PER DETAIL 3, C11.2
6. REFER TO DETAIL 1, SHEET C11.3 FOR RUNWAY/TAXIWAY INTERSECTION INFORMATION
7. APPLY THIRTY-SIX INCH (36") WIDE SOLID YELLOW TAXIWAY SHOULDER PAVEMENT MARKING PER DETAIL 4, SHEET C11.2
8. APPLY ENHANCED CENTERLINE PAVEMENT MARKING PER DETAIL 6, SHEET C11.2
9. APPLY BLACK PAINT TO PCC PAVEMENT THAT LIES OUTSIDE OF TAXIWAY EDGE MARKINGS (NPI)
10. APPLY DASHED YELLOW INTERMEDIATE HOLDING POSITION MARKING PER DETAIL 2, SHEET C11.3
11. APPLY SOLID GREEN INFIELD PAVEMENT MARKING
12. MATCH EXISTING MARKING



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

TERMINAL AREA TAXIWAY IMPROVEMENTS - (PACKAGE 3)

MICHAEL A. NORBY 87178 REGISTERED PROFESSIONAL ENGINEER
05/18/15

MARK	DATE	DESCRIPTION

ISSUE:

PROJECT NO:	33-00193
FILE NAME:	_33-00193-R1CM-101-C01
DRAWN BY:	CAD
CHECKED BY:	MAN
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SHEET TITLE:

PAVEMENT MARKING PLAN - ALTERNATE 1

C11.5

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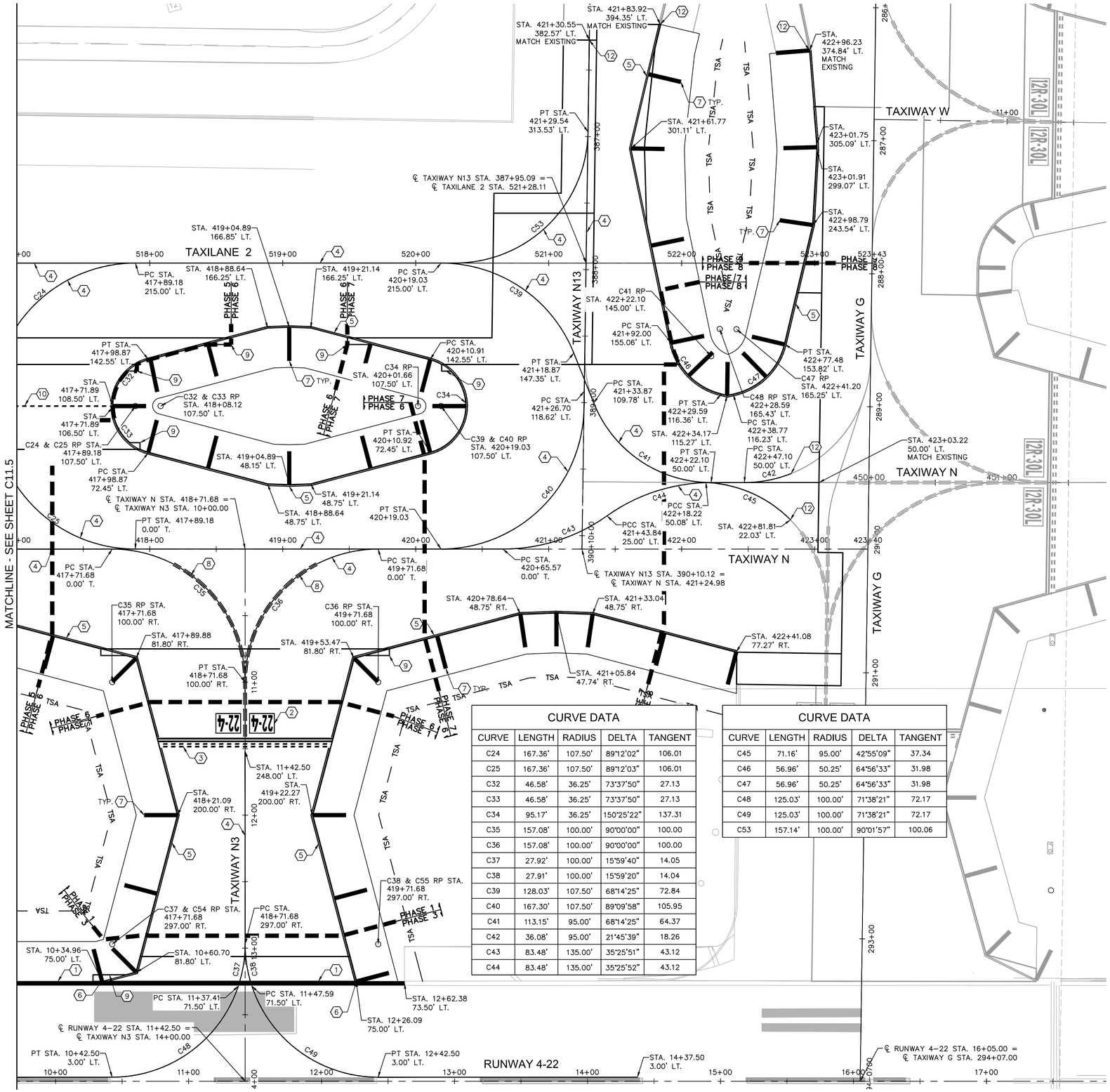

CURVE DATA

CURVE	LENGTH	RADIUS	DELTA	TANGENT
C24	167.36'	107.50'	89°12'02"	106.01
C25	167.36'	107.50'	89°12'03"	106.01
C32	46.58'	36.25'	73°37'50"	27.13
C33	46.58'	36.25'	73°37'50"	27.13
C34	95.17'	36.25'	150°25'22"	137.31
C35	157.08'	100.00'	90°00'00"	100.00
C36	157.08'	100.00'	90°00'00"	100.00
C37	27.92'	100.00'	15°59'40"	14.05
C38	27.91'	100.00'	15°59'20"	14.04
C39	128.03'	107.50'	68°14'25"	72.84
C40	167.30'	107.50'	89°09'58"	105.95
C41	113.15'	95.00'	68°14'25"	64.37
C42	36.08'	95.00'	21°45'39"	18.26
C43	83.48'	135.00'	35°25'51"	43.12
C44	83.48'	135.00'	35°25'52"	43.12

CURVE DATA

CURVE	LENGTH	RADIUS	DELTA	TANGENT
C45	71.16'	95.00'	42°55'09"	37.34
C46	56.96'	50.25'	64°56'33"	31.98
C47	56.96'	50.25'	64°56'33"	31.98
C48	125.03'	100.00'	71°38'21"	72.17
C49	125.03'	100.00'	71°38'21"	72.17
C53	157.14'	100.00'	90°01'57"	100.06

GENERAL NOTES

1. PAVEMENT MARKING DETAILS SHALL CONFORM TO THE LATEST EDITION OF THE FEDERAL AVIATION ADMINISTRATION'S ADVISORY CIRCULAR AC-150/5340. 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 C1.9 FOR HORIZONTAL AND VERTICAL CONTROL.

CONSTRUCTION NOTES

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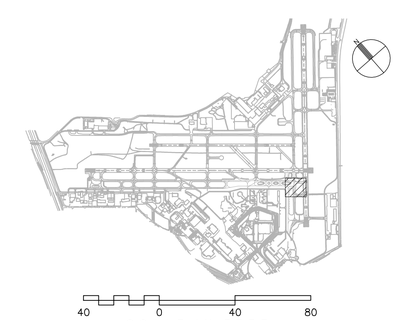

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PAVEMENT MARKING PLAN - ALTERNATE 1

C11.6

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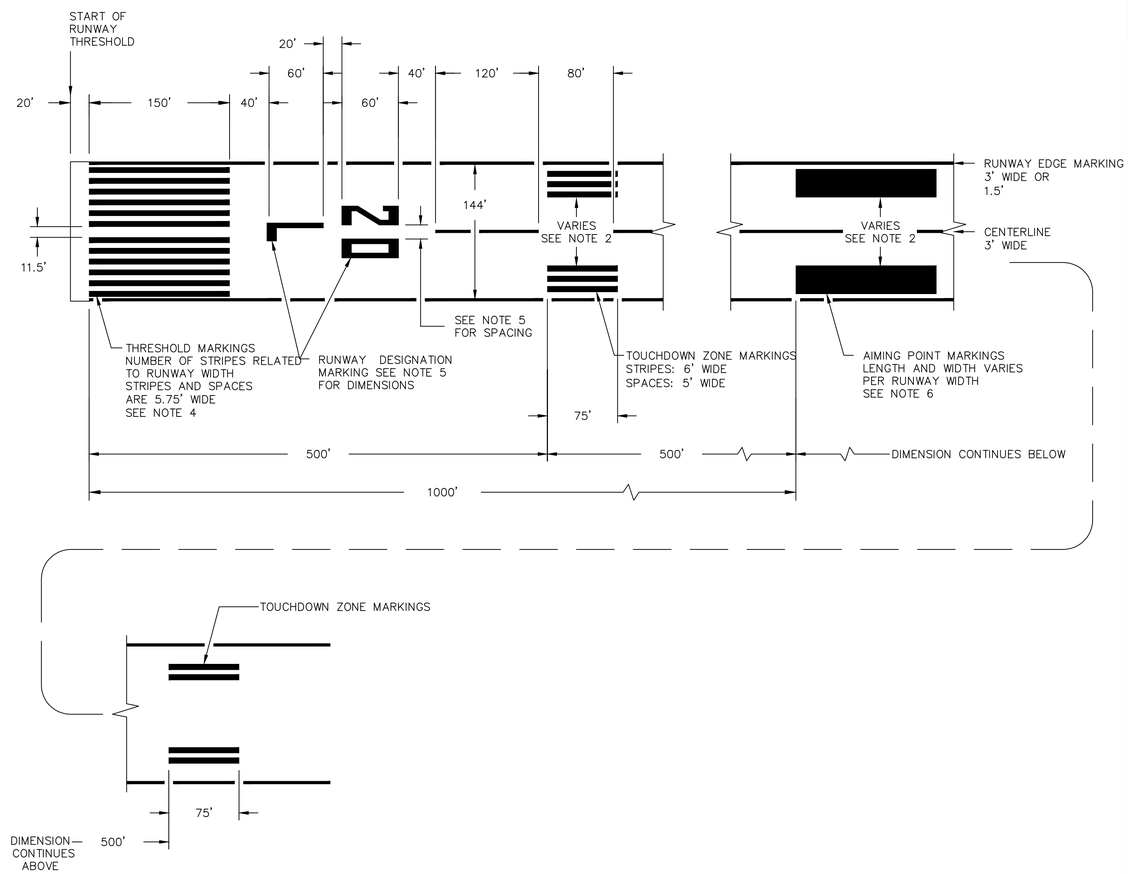

4 / C11.7 RUNWAY MARKINGS

N.T.S.

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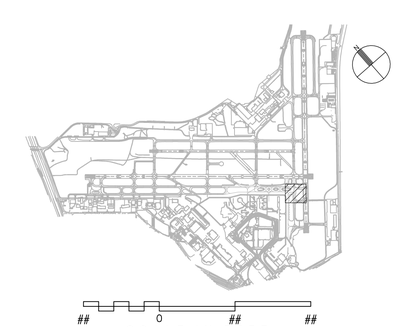

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SHEET TITLE:

RUNWAY MARKING DETAIL

C11.7

SHEET NO. 112 OF 140

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