HOUSTON AIRPORT SYSTEM

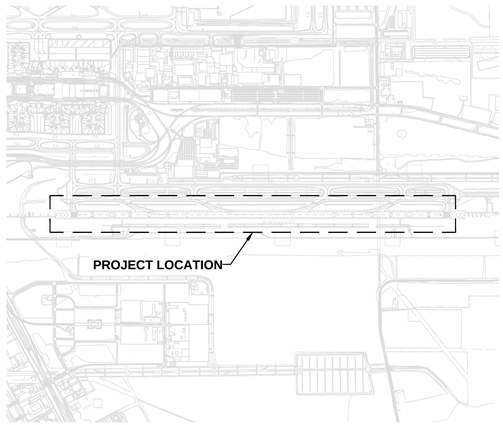
PLANS FOR CONSTRUCTION

OF

RUNWAY 9-27 GRIND & GROOVE

AT

GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON

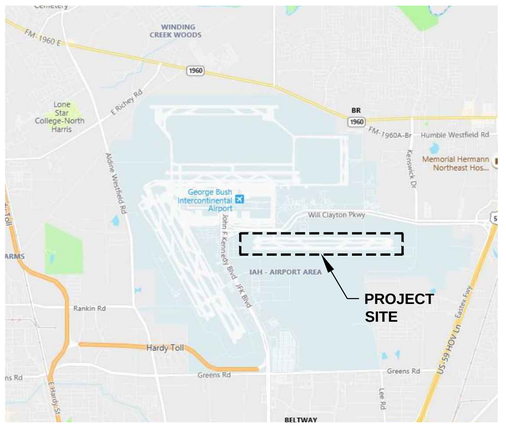


LOCATION MAP
N.T.S.

PREPARED BY

AtkinsRéalis

APRIL 3, 2025
100% SUBMITTAL



VICINITY MAP
N.T.S.

HOUSTON AIRPORT SYSTEM
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON, TX

AtkinsRéalis
LOCAL OFFICE:
920 MEMORIAL CITY WAY
STE. 400
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REVISIONS

NO.	DESCRIPTION	DATE	BY

GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)
RUNWAY 9-27 GRIND & GROOVE
COVER SHEET

PROJECT MGR:	JLV
DESIGNER:	EM
DRAWN BY:	GM
CHECK BY:	TO
SCALE:	
DATE:	4/3/2025

STATE OF TEXAS
JOHN L. VERBURG, JR.
125465
LICENSED
PROFESSIONAL ENGINEER
4-3-25

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

PROJECT NO.
100116454

A.I.P. NO.

C.I.P. NO.

H.A.S. NO.

SHEET NO.
G-001

NO.	SHEET NO	SHEET TITLE
1	G - 001	COVER SHEET
2	G - 002	INDEX OF DRAWINGS AND SUMMARY OF QUANTITIES
3	G - 003	GENERAL SAFETY SECURITY AND UTILITY NOTES
4	GC - 100	CONSTRUCTION SAFETY & PHASING NOTES AND DETAILS
5	GC - 201	CONSTRUCTION SAFETY PHASING PLAN
NO.	SHEET NO	CIVIL
1	CP - 101	PROPOSED GRIND AND GROOVING PLAN SHEET 01 OF 05
2	CP - 102	PROPOSED GRIND AND GROOVING PLAN SHEET 02 OF 05
3	CP - 103	PROPOSED GRIND AND GROOVING PLAN SHEET 03 OF 05
4	CP - 104	PROPOSED GRIND AND GROOVING PLAN SHEET 04 OF 05
5	CP - 105	PROPOSED GRIND AND GROOVING PLAN SHEET 05 OF 05
6	CR - 501	PAVEMENT DETAILS SHEET 01 OF 04
7	CR - 502	PAVEMENT DETAILS SHEET 02 OF 04
8	CR - 503	PAVEMENT DETAILS SHEET 03 OF 04
9	CR - 504	PAVEMENT DETAILS SHEET 04 OF 04
10	CM - 101	MARKING PLAN SHEET 01 OF 05
11	CM - 102	MARKING PLAN SHEET 02 OF 05
12	CM - 103	MARKING PLAN SHEET 03 OF 05
13	CM - 104	MARKING PLAN SHEET 04 OF 05
14	CM - 105	MARKING PLAN SHEET 05 OF 05
15	CM - 501	MARKING DETAILS SHEET 01 OF 02
16	CM - 502	MARKING DETAILS SHEET 02 OF 02
NO.	SHEET NO	ELECTRICAL
1	E - 101	AIRFIELD LIGHTING PLANS 01 OF 09
2	E - 102	AIRFIELD LIGHTING PLANS 02 OF 09
3	E - 103	AIRFIELD LIGHTING PLANS 03 OF 09
4	E - 104	AIRFIELD LIGHTING PLANS 04 OF 09
5	E - 105	AIRFIELD LIGHTING PLANS 05 OF 09
6	E - 106	AIRFIELD LIGHTING PLANS 06 OF 09
7	E - 107	AIRFIELD LIGHTING PLANS 07 OF 09
8	E - 108	AIRFIELD LIGHTING PLANS 08 OF 09
9	E - 109	AIRFIELD LIGHTING PLANS 09 OF 09
10	E - 501	AIRFIELD ELECTRICAL DETAILS
11	E-502	AIRFIELD ELECTRICAL DETAILS

ITEM NO.	ITEM DESCRIPTION	UNIT	BASE BID QTY
C - 100 - 1	CONTRACTOR QUALITY CONTROL PROGRAM (CQCP)	LS	1
C - 102 - 1	TEMPORARY AIR AND WATER POLLUTION, SOIL EROSION, AND SILTATION CONTROL	LS	1
C - 105 - 1	MOBILIZATION / DEMOBILIZATION	LS	1
C - 105 - 2	GATE GUARD ESCORT	LS	1
P - 101 - 1	PAVEMENT REMOVAL	SY	125
P - 101 - 2	CONCRETE SPALL REPAIR	SF	125
P - 101 - 3	PCC DIAMOND GRINDING	SY	167,090
P - 101 - 4	ASPHALT DIAMOND GRINDING	SY	74,650
P - 501 - 1	CONCRETE PAVEMENT	SY	125
P - 605 - 1	JOINT SEALING FILLER	LF	237,100
P - 620 - 5.1	SURFACE PREPARATION	LS	1
P - 620 - 5.2a	TAXIWAY MARKING WITH REFLECTIVE BEADS (YELLOW)	SF	4,750
P - 620 - 5.2c	TAXIWAY MARKING WITHOUT REFLECTIVE BEADS (BLACK)	SF	4,750
P - 620 - 5.2d	RUNWAY MARKING WITH REFLECTIVE BEADS (WHITE)	SF	271,560
P - 620 - 5.2e	RUNWAY MARKING WITHOUT REFLECTIVE BEADS (BLACK)	SF	43,410
P - 620 - 5.4	TEMPORARY TAXIWAY MARKING (INSTALL AND REMOVAL)	SF	3,540
P - 621 - 1	GROOVING	SY	167,090
P - 629 - 1	ASPHALT SEAL COAT	SY	80,300
L - 125 - 1	REMOVE AND SALVAGE EXISTING IN - PAVEMENT LIGHT FIXTURE, REMOVE TOP SECTION OF BASE CAN.	EA	645
L - 125 - 2	INSTALL SALVAGED IN - PAVEMENT LIGHT FIXTURE OR OWNER PROVIDED LED FIXTURE ON EXISTING BASE CAN	EA	645
L - 125 - 3	INSTALL NEW L - 868B BASE CAN TOP SECTION ON EXISTING L - 868B BASE CAN BOTTOM SECTION	EA	645
L - 125 - 4	INSTALL SALVAGED IN - PAVEMENT LIGHT FIXTURE OR OWNER PROVIDED LED FIXTURE ON NEW L - 868B BASE CAN IN MODIFIED PAVEMENT AREA	EA	2
L - 125 - 5	LIGHT FIXTURE BLOCKOUT	EA	2
L - 125 - 6	REPAIR BROKEN BOLTS AND THREADS AT EXISTING BASE CAN	EA	775
L - 125 - 7	TEMPORARY ELECTRICAL PROVISIONS	LS	1

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RUNWAY 9-27 GRIND & GROOVE

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G-002

GENERAL NOTES

1. THE EXISTING CONDITIONS ILLUSTRATED WITHIN THESE PROJECT PLANS ARE DEVELOPED FROM AS-BUILT INFORMATION SUPPLEMENTED BY A PROJECT SITE VISIT. THE DESIGNER DOES NOT WARRANT THIS EXISTING CONDITIONS INFORMATION AS ALL-INCLUSIVE OR EXACT BUT RATHER AS THE BEST AVAILABLE KNOWLEDGE TRANSFER AT THE TIME OF PROJECT DEVELOPMENT.
2. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO COMMENCING WORK. SHOULD THE CONTRACTOR DISCOVER ANY CONDITIONS NOT REFLECTED WITHIN THE PROJECT DOCUMENTS, CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD IMMEDIATELY.
3. THE PROJECT PAY ITEMS PROVIDED SHALL BE INCLUSIVE OF ALL WORK TO BE PERFORMED AS SHOWN IN THESE PROJECT PLANS. WORK NOT IDENTIFIED WITH A SPECIFIC PAY ITEMS SHALL BE INCLUDED IN THE COST OF THE PROJECT PAY ITEMS OF WHICH IT IS A COMPONENT.
4. THE LOCATION FOR THE CONTRACTOR'S STAGING AREA IS INDICATED ON DRAWING GC-201. THE CONTRACTOR IS RESPONSIBLE FOR SECURING ALL UTILITY CONNECTIONS AND SERVICES TO AND WITHIN THE STAGING AREA AS MAY BE NECESSARY. THE CONTRACTOR SHALL PROVIDE SECURITY FENCING AROUND THE STAGING AREA(S). THE CONTRACTOR SHALL RESTORE THE STAGING AREA TO EXISTING CONDITIONS OR BETTER UPON PROJECT COMPLETION, INCLUDING REPAIR OF EXISTING FACILITIES, REMOVAL OF INSTALLED UTILITIES, REGRADING, TOP SOILING AND RESEEDING, COMPLETE AND TO THE SATISFACTION OF THE ENGINEER AND AIRPORT MANAGER. THE WORK ASSOCIATED WITH ESTABLISHING, MAINTAINING, DEMOBILIZING AND RESTORING THE CONTRACTOR'S STAGING AREA IS NOT MEASURED FOR SEPARATE PAYMENT.
5. ACCESS TO THE PROJECT SITE TO/FROM THE STAGING AREA SHALL BE AS SHOWN ON DRAWING GC-201.
6. THE CONTRACTOR SHALL SECURE MATERIALS STOCKPILED WITHIN THE CONSTRUCTION AND STAGING AREA TO PREVENT THEIR MOVEMENT OR EROSION RESULTING FROM WIND CONDITION AND/OR RAINFALL. THE CONTRACTOR IS RESPONSIBLE FOR THE IMMEDIATE CLEANUP OF ANY DEBRIS ON THE PAVEMENT WITHIN THE PROJECT WORK AREA. THE CONTRACTOR SHALL SWEEP AND/OR VACUUM ALL ACTIVE PAVEMENT AREA AFFECTED BY THE WORK ON A DAILY BASIS. IN ADDITION, THE CONTRACTOR SHALL SWEEP/CLEAN PAVED ROADWAYS ALONG THE PROJECT HAUL ROUTES AND IMMEDIATELY CLEAN UP MUD FALLING ON ANY PAVEMENTS OUTSIDE OF THE LIMITS OF CONSTRUCTION OR RESULTING FROM HIS HAULING ACTIVITIES. MECHANICAL SWEEPER AND VACUUM TRUCK SHALL BE ON-SITE AT ALL TIMES TO CLEAN ANY DEBRIS OFF THE ROADWAY PAVEMENTS FOR THE DURATION OF ALL CONSTRUCTION ACTIVITIES.
7. THE CONTRACTOR SHALL COMPLY WITH ALL LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS THAT ARE PERTINENT TO THIS WORK. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN, MAINTAIN, AND PAY ALL COSTS ASSOCIATED WITH ANY PERMITS AND LICENSES REQUIRED TO ACCOMPLISH THE WORK. THESE COSTS ARE INCIDENTAL TO THE WORK AND WILL NOT BE PAID FOR SEPARATELY. CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS FOR THE CONSTRUCTION OF THE PROJECT.
8. MATERIALS PRODUCED AS A RESULT OF THE CONTRACTOR'S OPERATIONS THAT ARE NOT OTHERWISE USEABLE BY THE AIRPORT SHALL BE DISPOSED OF OFF AIRPORT PROPERTY IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS. THERE WILL BE NO SEPARATE PAY ITEM FOR WASTE MATERIAL DISPOSAL.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ACTIVITIES WITH THE APPROPRIATE ENTITY, INCLUDING BUT NOT LIMITED TO HAS, CITY OF HOUSTON, AND CENTERPOINT.

SECURITY REQUIREMENTS

1. GENERAL INTENT: IT IS INTENDED THAT THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF THE AIRPORT SECURITY PLAN AND WITH THE SECURITY REQUIREMENTS SPECIFIED HEREIN BY HOUSTON AIRPORT SYSTEM (HAS) OPERATIONS. THE CONTRACTOR SHALL DESIGNATE TO THE ENGINEER AND AIRPORT OPERATIONS, IN WRITING, THE NAME OF HIS "CONTRACTOR SECURITY AND SAFETY OFFICER (CSSO)." THE CSSO SHALL REPRESENT THE CONTRACTOR ON THE SECURITY REQUIREMENTS FOR THE CONTRACT.
2. CONTRACTOR PERSONNEL SECURITY ORIENTATION: THE CSSO SHALL BE RESPONSIBLE FOR BRIEFING ALL CONTRACTOR PERSONNEL ON SECURITY REQUIREMENTS. ALL CONTRACTOR EMPLOYEES SHALL BE BRIEFED ON SECURITY REQUIREMENTS PRIOR TO WORKING IN THE CONSTRUCTION AREA.
3. ACCESS TO THE SITE: CONTRACTOR'S ACCESS TO THE SITE SHALL BE AS SHOWN ON THE PLANS. NO OTHER ACCESS POINTS SHALL BE ALLOWED UNLESS APPROVED BY AIRPORT OPERATIONS. ALL CONTRACTOR TRAFFIC AUTHORIZED TO ENTER THE SITE SHALL BE EXPERIENCED IN THE ROUTE OR GUIDED BY CONTRACTOR PERSONNEL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TRAFFIC CONTROL TO AND FROM THE CONSTRUCTION AREA. THE CONTRACTOR SHALL NOT PERMIT ANY UNAUTHORIZED CONSTRUCTION PERSONNEL OR TRAFFIC ON THE SITE. THE CONTRACTOR IS RESPONSIBLE FOR THE IMMEDIATE CLEANUP OF ANY DEBRIS DEPOSITED ALONG THE ACCESS ROUTE AS A RESULT OF THE CONSTRUCTION TRAFFIC.
4. MATERIALS DELIVERY TO THE SITE: ALL CONTRACTOR'S MATERIAL ORDERS FOR DELIVERY TO THE WORK SITE WILL USE A DELIVERY ADDRESS, THE STREET NAME ASSIGNED TO THE ACCESS POINT AT THE CONTRACTOR'S STAGING SITE. THE NAME "GEORGE BUSH INTERCONTINENTAL AIRPORT" SHALL NOT BE USED IN THE DELIVERY ADDRESS AT ANY TIME. HAS WILL NOT BE RESPONSIBLE FOR ACCEPTING OR DIRECTING CONTRACTOR MATERIAL DELIVERIES. CONSTRUCTION ACCESS SHALL BE ONLY VIA DESIGNATED ROUTING AND LOCATIONS.
5. CONSTRUCTION AREA LIMITS: FOR THE LIMITS OF CONSTRUCTION, THE CONTRACTOR SHALL ERECT AND MAINTAIN AROUND THE PERIMETER OF THESE AREAS, SUITABLE FENCING, MARKING AND/OR WARNING DEVICES VISIBLE FOR DAY/NIGHT USE. TEMPORARY BARRICADES, FLAGGING AND FLASHING WARNING LIGHTS, WILL BE REQUIRED AT CRITICAL ACCESS POINTS. TYPE OF MARKING AND WARNING DEVICES SHALL BE APPROVED BY AIRPORT OPERATIONS.
6. CONTRACTOR SHALL PROVIDE GATE GUARD WITH HAS SECURITY TRAINING AT THE ACCESS GATE AT ALL TIMES THE GATE IS ACCESSED FOR THE PROJECT. THIS GUARD MUST INSPECT EVERY INBOUND VEHICLE AND LOG ALL PERSONNEL TRAVERSING THROUGH THE GATE. THIS LOG MUST BE PROVIDED TO HAS SECURITY DAILY OR AT ANY SUCH TIME AS REQUESTED BY HAS STAFF.
7. CONTRACTOR SHALL CLEARLY MARK HAUL ROUTE WITH SIGNAGE INDICATING DIRECTION OF TRAVEL AND ALL TURNS NECESSARY TO ACCESS THE WORKSITE FROM/TO GATE SV-1. PROPOSED SIGNS TO BE SUBMITTED TO HAS AIRSIDE OPERATIONS FOR APPROVAL PRIOR TO INSTALLATION.

AIRPORT SAFETY REQUIREMENTS

1. THE CONTRACTOR SHALL CONDUCT THE CONSTRUCTION ACTIVITIES TO CONFORM TO ALL ROUTINE EMERGENCY REQUIREMENTS AND GUIDELINES ON SAFETY.
2. STOCKPILE EROSION AND DUST CONTROL – STOCKPILED MATERIAL AND OPEN EXCAVATIONS SHALL BE TREATED IN SUCH A MANNER AS TO PREVENT MOVEMENT RESULTING FROM WIND CONDITIONS IN EXCESS OF 10 KNOTS.
3. PRIOR TO OPENING FOR PUBLIC TRANSIT USE, THE OWNER'S AUTHORIZED REPRESENTATIVE WILL ARRANGE FOR INSPECTION BY HAS OPERATIONS OF ANY PAVEMENT THAT HAS BEEN CLOSED FOR WORK, OR THAT HAS BEEN USED FOR A CROSSING POINT OR HAUL ROUTE BY THE CONTRACTOR. THIS AREA MUST COMPLY WITH THE SAFETY REQUIREMENTS, AND BE APPROVED BY THE DESIGNATED OPERATION'S INSPECTOR, BEFORE PERMISSION FOR THE CONTRACTOR'S WORK CREWS TO DEPART WILL BE GRANTED.
4. THE CONTRACTOR SHALL SUBMIT A DESTRUCTIVE/INCLEMENT WEATHER PLAN TO SET FORTH GENERAL GUIDANCE AND INFORMATION FOR THE CONTRACTOR TO COORDINATE PREPAREDNESS PLANS WHEN DESTRUCTIVE WEATHER THREATENS THE IAH AIRPORT ENVIRONMENT.
5. MATERIALS STORED OR STOCKPILED AT THE STAGING AREA SHALL BE SO PLACED, AND THE WORK SHALL, AT ALL TIMES, BE SO CONDUCTED AS TO CAUSE NO GREATER OBSTRUCTION TO THE TRAFFIC THAN IS CONSIDERED NECESSARY BY THE OWNER'S REPRESENTATIVE.NO STOCKPILES WILL BE PERMITTED WITHIN THE AOA.
6. THE CONTRACTOR SHALL CONFINE HIS/HER PERSONNEL, EQUIPMENT, OPERATIONS AND TRAVEL, TO THE AREA WITHIN THE DEFINED WORK LIMITS SHOWN ON THE PLANS.
7. THE CONTRACTOR SHALL INFORM ALL CONSTRUCTION PERSONNEL AS TO THE PROPER ROUTES, SPEEDS, AND PROCEDURES, FOR TRANSPORTING EQUIPMENT AND MATERIALS TO THE CONSTRUCTION SITE. DELIVERIES SHALL BE AS SHOWN IN THE PLANS.
8. MEASURES SHALL BE ADOPTED TO PREVENT POTENTIAL POLLUTANTS FROM ENTERING ANY DRAINAGE SYSTEM OR WATERWAY. MATERIALS AND DEBRIS SHALL NOT BE STORED IN THE WORK AREA IN A MANNER THAT WOULD ALLOW THEM TO ENTER THE DRAINAGE SYSTEM AS A RESULT OF SPILLAGE, NATURAL RUNOFF OR FLOODING. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO IMMEDIATELY NOTIFY THE SPONSOR SHOULD THERE BE A SPILLAGE OF MATERIAL WHICH MIGHT CONTAMINATE THE DRAINAGE SYSTEM. IT SHALL ALSO BE THE CONTRACTOR'S RESPONSIBILITY TO REMOVE AND CLEAR UP SUCH SPILLAGE IN A MANNER ACCEPTABLE TO THE SPONSOR. MATERIAL SHALL BE SECURED SO THAT IT WILL NOT BE BLOWN BY THE WIND ONTO THE ADJACENT ROADWAYS.
9. SPECIAL ATTENTION TO DUST CONTROL WILL BE REQUIRED WHEN GRINDING,GROOVING, EARTHWORK OR HAULING OPERATIONS ARE IN PROGRESS OR WHEN WIND AND WEATHER CONDITIONS CAUSE EXCESSIVE BLOWING OF DUST. IN THIS REGARD, THE CONTRACTOR SHALL APPLY WATER TO THE AFFECTED SITES AS DIRECTED.
10. THE CONTRACTOR SHALL SUBMIT A SAFETY AND SECURITY PLAN TO THE HAS PROJECT MANAGER FOR REVIEW AND APPROVAL BY THE AIRPORT PRIOR TO CONSTRUCTION COMMENCING.
11. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SEE THAT ALL SHEETING, SHORING AND BRACING IS DONE IN ACCORDANCE WITH CURRENT O.S.H.A REGULATIONS AND REQUIREMENTS. SHEETING, SHORING AND BRACING (EXCEPT TRENCH SAFETY), IS CONSIDERED TO BE AS AN INCIDENTAL PART OF THE WORK AND NO SEPARATE PAYMENT WILL BE ALLOWED.

UTILITY NOTES

1. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES INVOLVED, A MINIMUM OF 72 HOURS IN ADVANCE OF ANY EXCAVATION OR BORINGS, TO HAVE THEIR UTILITIES LOCATED AND MARKED IN THE FIELD.

   A. THE CONTRACTOR SHALL CONTACT TEXAS ONE CALL (811) AND THE FOLLOWING LOCAL UTILITY OWNERS (LIST NOT INCLUSIVE OF ALL POTENTIAL UTILITY OWNERS) TO VERIFY ALL UNDERGROUND UTILITY LOCATIONS IN THE VICINITY OF THE PROPOSED WORK:

CABLE OWNER	CONTACT PERSON	PHONE NUMBER
HOUSTON AIRPORT SYSTEM	OPERATIONS	281-233-1131
CENTERPOINT ENERGY SYSTEM	UTILITY COORDINATION	713-207-1111

   B. ALL UNDERGROUND UTILITIES SHALL THEN BE LOCATED BY THE CONTRACTOR TO VERIFY LOCATION AND ELEVATION PRIOR TO COMMENCING CONSTRUCTION OPERATIONS.

   C. THE CONTRACTOR SHALL COORDINATE WITH THE RESPECTIVE UTILITY OWNER IF A UTILITY INSPECTOR MUST BE ON SITE WHEN LOCATING OR EXCAVATING NEAR UTILITIES.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SETTING UP HIS/HER OWN WATER SOURCES WITH THE CITY. ALL CONSTRUCTION WATER WILL BE METERED BY THE CITY-OWNED METERS AND ONLY THOSE METERS. THE CONTRACTOR WILL BE RESPONSIBLE FOR PAYING ALL RELATED FEES TO THE CITY.
3. THE CONTRACTOR SHALL TAKE ALL STEPS TO PROTECT ALL COMMERCIAL AND AIRPORT UTILITIES DURING CONSTRUCTION IN ORDER TO ENSURE CONTINUOUS OPERATION WHEN NEEDED. THE CONTRACTOR SHALL, AT HIS/HER OWN EXPENSE, MAINTAIN IN PROPER WORKING ORDER AND WITHOUT INTERRUPTION OF SERVICE ALL EXISTING UTILITIES AND SERVICES WHICH MAY BE ENCOUNTERED IN THE WORK. WITH THE CONSENT OF THE OWNER'S REPRESENTATIVE, ENGINEER, AND/OR UTILITY OWNER, AS APPROPRIATE, SUCH SERVICE CONNECTIONS MAY BE TEMPORARILY INTERRUPTED TO PERMIT THE CONTRACTOR TO REMOVE DESIGNATED LINES OR TO MAKE TEMPORARY CHANGES IN THE LOCATIONS OF SERVICES. THE COST OF MAKING CHANGES SHALL BE AT THE CONTRACTOR'S EXPENSE, UNLESS OTHERWISE NOTED IN THE PLANS OR SPECIFICATIONS.
4. ALL DAMAGED UTILITIES SHALL BE REPAIRED EXPEDITIOUSLY AT NO ADDITIONAL EXPENSE TO THE OWNER.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING INSPECTIONS, AS NECESSARY, OF ANY UTILITY WORK BY THE UTILITY OWNER THROUGHOUT THE PROJECT. THIS SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS OF THE PROJECT.

QUALITY CONTROL NOTES

1. SURFACE PROTECTION

   A. AVOID EXCESSIVE GRINDING TO PREVENT DAMAGE TO THE PAVEMENT STRUCTURE. FOLLOW SPECIFIED DEPTH LIMITS TO MAINTAIN SURFACE INTEGRITY AND PREVENT WEAKENING OF THE PAVEMENT LAYERS.
   B. CONTRACTOR SHALL USE EQUIPMENT THAT PROVIDES PRECISE CONTROL TO MINIMIZE OVER-GRINDING AND MAINTAINS A CONSISTENT DEPTH ACROSS THE SURFACE.

2. DEPTH AND TOLERANCE CONTROL

   A. SET GRINDING AND GROOVING EQUIPMENT TO THE EXACT DEPTH REQUIREMENTS AS OUTLINED IN THE PROJECT SPECIFICATIONS.
   B. REGULARLY CHECK DEPTH SETTINGS AND MONITOR PROGRESS TO PREVENT DEVIATIONS THAT COULD IMPACT SURFACE QUALITY AND STRUCTURAL STRENGTH.

3. MOCK-UP TEST

   A. BEFORE COMMENCING FULL-SCALE GRINDING AND GROOVING, CONTRACTOR TO CONDUCT A MOCK-UP TEST SECTION TO VERIFY THAT THE EQUIPMENT SETTINGS, DEPTH, AND PATTERN MEET THE PROJECT'S REQUIREMENTS.
   B. HAVE THE MOCK-UP REVIEWED AND APPROVED BY THE PROJECT ENGINEER (EOR), AND OWNER AND CONFIRM THAT THE GRINDING AND GROOVING METHODS ARE SUITABLE FOR THE RUNWAY PAVEMENT WITHOUT CAUSING DAMAGE.
   C. ADJUST EQUIPMENT SETTINGS OR TECHNIQUES BASED ON THE RESULTS OF THE MOCK-UP TEST TO ENSURE OPTIMAL PERFORMANCE AND ADHERENCE TO PROJECT SPECIFICATIONS.

4. EQUIPMENT CALIBRATION

   A. ENSURE ALL GRINDING AND GROOVING MACHINERY IS PROPERLY CALIBRATED BEFORE STARTING TO MAINTAIN ACCURACY AND CONSISTENCY IN CUTS.
   B. CONDUCT PERIODIC CHECKS ON EQUIPMENT CALIBRATION THROUGHOUT THE PROJECT TO AVOID UNINTENDED OVER-GRINDING.

5. CONTROLLED SPEED AND PRESSURE

   A. OPERATE GRINDING AND GROOVING EQUIPMENT AT CONTROLLED SPEEDS AND WITH APPROPRIATE PRESSURE SETTINGS TO AVOID SCARRING, CHIPPING, OR CREATING UNNECESSARY DISTRESS ON THE PAVEMENT SURFACE.
   B. ADJUST EQUIPMENT SPEED AND PRESSURE ACCORDING TO THE PAVEMENT CONDITION AND ANY VARIATIONS IN SURFACE HARDNESS.

6. MONITORING AND INSPECTION (QA/QC)

   A. REFER TO SPECIFICATION SECTION C-100 CONTRACTOR QUALITY CONTROL PROGRAM FOR QA/QC REQUIREMENTS.
   B. THE PLAN SHALL INCLUDE PLAN TO PERFORM CONTINUOUS MONITORING OF THE GRINDING AND GROOVING PROCESS TO DETECT AND ADDRESS ANY POTENTIAL ISSUES EARLY.
   C. CONDUCT PERIODIC INSPECTIONS OF THE SURFACE TO ENSURE NO DAMAGE HAS OCCURRED AND THE GROOVE PATTERNS MEET SPECIFICATIONS.

7. PROPER CLEAN-UP

   A. REGULARLY CLEAN UP GRINDING DEBRIS FROM THE PAVEMENT SURFACE TO AVOID BUILDUP, WHICH COULD IMPACT SURFACE QUALITY OR LEAD TO UNINTENTIONAL ADDITIONAL GRINDING.
   B. ENSURE THAT ALL DEBRIS IS REMOVED AND DISPOSED OF FOLLOWING APPLICABLE ENVIRONMENTAL GUIDELINES.

8. END-OF-DAY CHECKS

   A. AT THE END OF EACH WORKDAY, INSPECT THE COMPLETED SECTIONS TO VERIFY THAT DEPTH AND PATTERN ACCURACY ARE MAINTAINED AND NO DAMAGE HAS OCCURRED.
   B. DOCUMENT ANY ADJUSTMENTS MADE TO EQUIPMENT OR TECHNIQUES TO ENSURE CONSISTENCY ACROSS THE PROJECT.
   C. THE PROJECT WILL REQUIRE TEMPORARY CONTROL MEASURES SPECIFIC TO THIS PROJECT. E.G. COLLECTION AND PROPER DISPOSAL OF THE SLURRY FROM MILLING AND GRINDING OPERATIONS, SAW CUTTING AND PAVEMENT MARKING REMOVAL UTILIZING SEDIMENT BASINS OR OTHER APPROVED METHODS TO ACHIEVE REQUIRED WATER QUALITY REQUIREMENTS PRIOR TO DISCHARGING WATER INTO SURFACE WATERS. CONTROL DUST FROM MILLING AND GRINDING OPERATIONS. IMPLEMENT CONTROL MEASURES ON HAUL ROUTES AND IN STAGING AREAS. AT END OF CONSTRUCTION OPERATIONS, REMOVE TEMPORARY CONTROL MEASURES AND RESTORE SITE.

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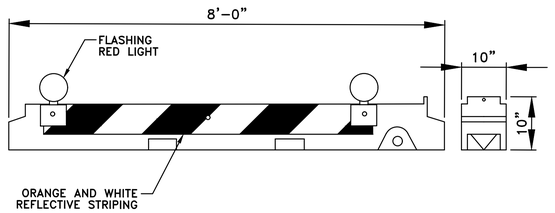
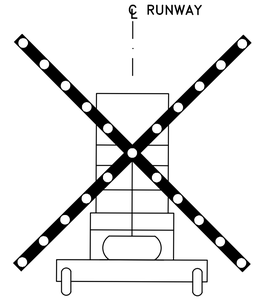
G-003



BARRICADE NOTES:

1. LOCATE BARRICADES AS SHOWN ON CONSTRUCTION PHASING PLAN SHEET GC-201 OR AS DIRECTED BY THE AIRPORT'S REPRESENTATIVE. CONTRACTOR SHALL HAVE AVAILABLE AT LEAST 10 BARRICADES BEYOND WHAT IS SHOWN ON THE PHASING PLANS FOR USE AT THE AIRPORT'S DISCRETION.
2. LOW-PROFILE BARRICADES TO BE PLACED CONTINUOUSLY WITH NO GAPS BETWEEN BARRICADES ALONG OPERATIONAL PAVEMENT, ADJACENT TO CONSTRUCTION, OR AS DIRECTED BY THE OAR. BARRICADES SHALL BE PLACED FULL WIDTH ACROSS CLOSED PAVEMENT AREAS FROM EDGE OF PAVEMENT TO EDGE OF PAVEMENT.
3. EACH BARRICADE SHALL BE EQUIPPED WITH TWO STEADY OR FLASHING RED LIGHTS. LIGHTS TO BE OMNI-DIRECTIONAL.
4. BARRICADE RED OBSTRUCTION LIGHTS MUST BE 100% OPERATIONAL AT ALL TIMES.
5. CONTRACTOR SHALL MAINTAIN FRESH BATTERIES IN FLASHERS AT ALL TIMES AND UTILIZE SOLAR PANELS.
6. BARRICADES SHALL COMPLY WITH THE REQUIREMENTS IN ADVISORY CIRCULAR 150/5370-2, CURRENT EDITION, MULTI BARRIER BARRICADE MODEL AR-10X96 OR APPROVED EQUAL.
7. TIMBER BARRICADES SHALL NOT BE ALLOWED.
8. BARRICADES SHALL BE FILLED WITH WATER. CONTRACTOR SHALL CHECK BARRICADES WEEKLY TO ENSURE THEY ARE HOLDING WATER. BARRICADES NOT HOLDING WATER SHALL BE REPAIRED OR REPLACED.
9. CONTRACTOR SHALL PREPARE AND SUBMIT A SAFETY PLAN COMPLIANCE DOCUMENT (SPCD) IN ACCORDANCE WITH AC 150/5370-2G TO THE AIRPORT FOR APPROVAL

1 GC100 LOW-PROFILE BARRICADE
SCALE: N.T.S.



LIGHTED CLOSURE MARKER NOTES:

1. CONTRACTOR SHALL SUPPLY 2 TRAILER MOUNTED L-893 LIGHTED RUNWAY CLOSURE MARKERS (RCM) DEVICES MEETING THE REQUIREMENTS OF FAA AC 150/5345-55 (LATEST EDITION) SIMILAR TO ABOVE FOR USE WITH ALL RUNWAY CLOSURES.
2. CONTRACTOR SHALL MAINTAIN RCM'S BY PROVIDING FUEL; MONITOR AND REPLACE ENGINE OIL AND FILTERS AS REQUIRED BY THE MANUFACTURER; AND REPLACE BULBS AS NEEDED FOR BOTH RCM'S DURING USE. CONTRACTOR SHALL ENSURE THAT THE RCM'S REMAIN OPERATIONAL THROUGHOUT THE ENTIRE RUNWAY CLOSURE PERIOD.
3. ALL LIGHTED X'S AND ASSOCIATED ACTIVITIES ARE INCIDENTAL TO MOBILIZATION.
4. A RECEPTACLE WILL BE PLACED UNDER THE RCM'S CAPABLE OF HOLDING SPILLED FUEL AND OIL.
5. CONTRACTOR SHALL LOCATE LIGHTED CLOSURE MARKER ON RUNWAY NUMBER OR AS INSTRUCTED BY OAR.
6. AFTER CONSTRUCTION CONTRACTOR SHALL RETURN CONTRACTOR FURNISHED LIGHTED CLOSURE MARKER TO OWNER.

2 GC100 PORTABLE LIGHTED RUNWAY CLOSURE MARKER DETAIL
SCALE: N.T.S.

IAH RWY 9-27 GRIND AND GROOVE PROJECT																	
CONSTRUCTION PHASING SCHEDULE																	
PHASE#	PHASE DESCRIPTION	CALENDAR DAYS	0	7	14	21	28	35	42	49	56	63	70	77	84	91	98
PHASE 1	RUNWAY GRIND & GROOVE	60															

3 GC100 PHASING SCHEDULE
SCALE: N.T.S.

HOUSTON AIRPORT SYSTEM
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON, TX

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LOCAL OFFICE:
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HOUSTON, TX 77024
TEL: (713) 576-8500
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#F-000474
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REVISIONS

NO.	DESCRIPTION	DATE	BY

GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)
RUNWAY 9-27 GRIND & GROOVE
CONSTRUCTION SAFETY & PHASING
NOTES AND DETAILS

PROJECT MGR:	JLV
DESIGNER:	EM
DRAWN BY:	GM
CHECK BY:	TO
SCALE:	
DATE:	4/3/2025

STATE OF TEXAS
JOHN L. VERBURG, JR.
125465
LICENSED
PROFESSIONAL ENGINEER
4-3-25

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

PROJECT NO.
100116454
A.I.P. NO.
C.I.P. NO.
H.A.S. NO.
SHEET NO.
GC-100

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CONSTRUCTION PLAN PHASE 1:
PROJECT CONSTRUCTION INCLUDES THE FOLLOWING ITEMS:

1. INSTALL CONSTRUCTION HAUL ROUTE SIGNAGE
2. BLACKOUT TAXIWAY PAINT MARKINGS
3. SETUP BARRICADES.
4. SETUP LIGHTED X RUNWAY CLOSURE MARKERS.
5. REMOVE ALL PAINT MARKINGS WITHIN PROJECT AREA.
6. COVER ELECTRICAL SIGNS.
7. COVER RUNWAY EDGE LIGHTS. GUIDANCE SIGN AND LIGHTING CIRCUITS FOR CLOSED TAXIWAYS AND RWY 9–27 INCLUDING RWY 9 AND 27 THRESHOLD AND APPROACH LIGHTS SHALL BE TURNED OFF AT THE ALCMS.
8. TEST RUN FOR RUNWAY GRINDING.
9. PROFILOGRAPH RUNWAY FOR EXISTING SMOOTHNESS CONDITIONS.
10. REMOVE ELECTRICAL LIGHTS AND MEASURE LIGHT BASE CAN LIDS FOR EXTENSION RING ORDER.
11. CONCRETE SPALL REPAIRS
12. CONCRETE LIGHT BLOCKOUT REPLACEMENTS
13. CAP LIGHT BASE CANS.
14. GRIND RUNWAY
15. GROOVE RUNWAY.
16. PROFILOGRAPH RUNWAY FOR POST–SMOOTHNESS VERIFICATION
17. REPLACE ELECTRICAL LIGHTS ON NEW EXTENSION RINGS AND SPACERS
18. SEAL RUNWAY JOINTS
19. APPLY SEAL COAT
20. PAINT RUNWAY MARKINGS
21. PAINT TAXIWAY MARKINGS
22. REMOVE BARRICADES
23. REMOVE LIGHTED X RUNWAY CLOSURE
24. REMOVE SIGN/LIGHT COVERS AND TEMPORARY JUMPERS

CONSTRUCTION TIME RESTRICTIONS:
NONE

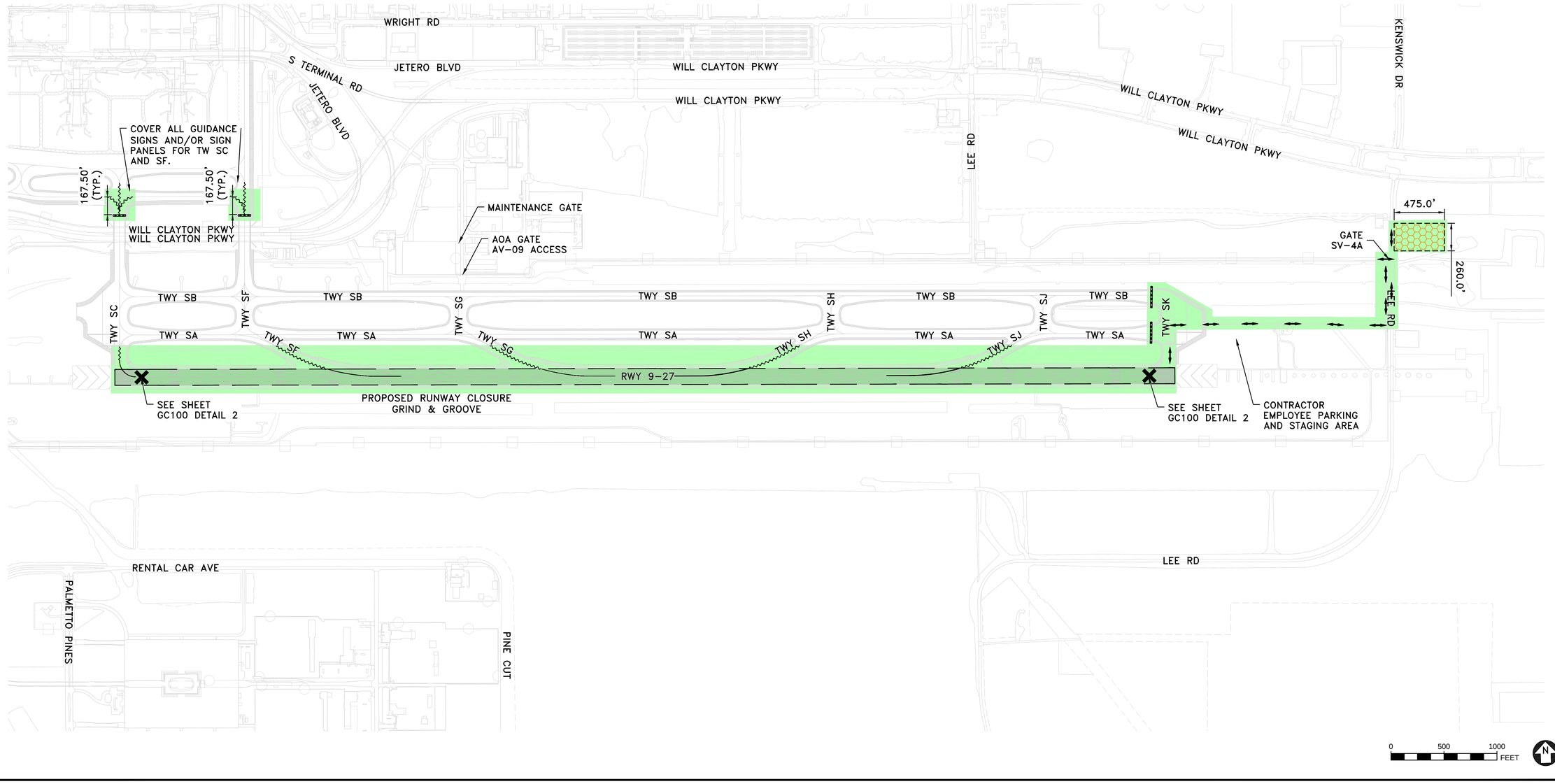
CONSTRUCTION DURATION:
60 CALENDAR DAYS

NOTES:

1. TAXIWAY CENTERLINE MARKINGS ARE REMOVED FROM PC/PT OF CURVE TO HOLD POSITION MARKING.
2. SHOULDERS MAY NEED TO BE GROUND.
3. IT IS ANTICIPATED MANY WORK SCOPE ITEMS WILL BE PERFORMED CONCURRENTLY. CONTRACTOR TO PROVIDE WORK SCHEDULE SHOWING OVERLAPPING WORK AREAS FOR REVIEW PRIOR TO MOBILIZING ON SITE.
4. CONTRACTOR SHALL PROVIDE PROFILOGRAPH RESULTS FOR AREAS PRIOR TO GRINDING FOR REVIEW/CONFIRMATION OF EXISTING CONDITIONS AND DETERMINE IF ADDITIONAL GRINDING IS NECESSARY WITHIN THESE AREAS TO CORRECT MINOR GRADE CORRECTIONS ON THE RUNWAY.
5. CONTRACTOR AND HAS SHALL WALK RUNWAY AND MARK ANY SPALLS REQUIRED FOR REPAIR PRIOR TO GRINDING OPERATIONS.
6. SEE ELECTRICAL SHEETS FOR TEMPORARY LIGHTING AND SIGNAGE REQUIREMENTS

LEGENDS

- RUNWAY CLOSURE AREA PROPOSED 0.25" GRIND AND GROOVE
- CONTRACTOR EMPLOYEE PARKING AND STAGING AREA
- LOW PROFILE BARRICADE
- HAUL ROUTE
- RUNWAY LIGHTED "X"
- REMOVE EXISTING PAVEMENT MARKING
- WORK AREA



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REVISIONS

NO.	DESCRIPTION	DATE	BY

GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)

RUNWAY 9-27 GRIND & GROOVE CONSTRUCTION SAFETY PHASING PLAN

PROJECT MGR:	JLV
DESIGNER:	EM
DRAWN BY:	GM
CHECK BY:	TO
SCALE:	
DATE:	4/3/2025

STATE OF TEXAS
JOHN L VERBURG JR
125465
LICENSED PROFESSIONAL ENGINEER
4-3-25

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

PROJECT NO.
100116454

A.I.P. NO.

C.I.P. NO.

H.A.S. NO.

SHEET NO.

GC-201

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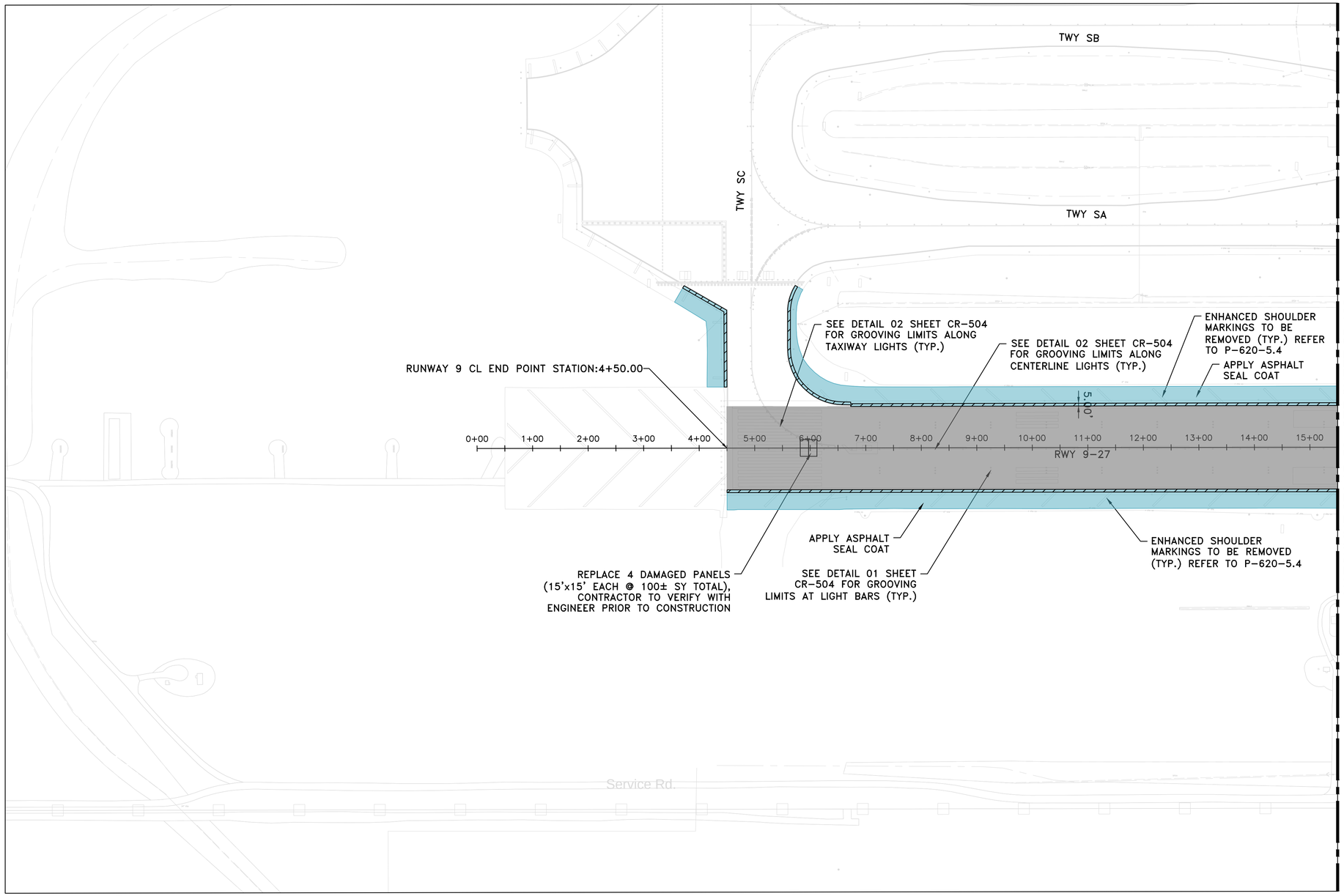
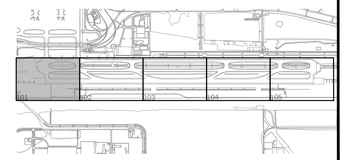


LEGENDS

- PROPOSED 0.25" GRIND AND GROOVE
- 5' WIDE MILL AND PAVE AREA
- APPLY SEAL COAT



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GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)

RUNWAY 9-27 GRIND & GROOVE

PROPOSED GRIND AND GROOVE PLAN

SHEET 01 OF 05

PROJECT MGR:	JLV
DESIGNER:	EM
DRAWN BY:	GM
CHECK BY:	TO
SCALE:	
DATE:	4/3/2025

STATE OF TEXAS
JOHN L. VERBURG, JR.
125465
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PROFESSIONAL ENGINEER
4-3-25

APPROVED BY:

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HOUSTON AIRPORT SYSTEM

PROJECT NO.
100116454

A.I.P. NO.

C.I.P. NO.

H.A.S. NO.

SHEET NO.
CP-101

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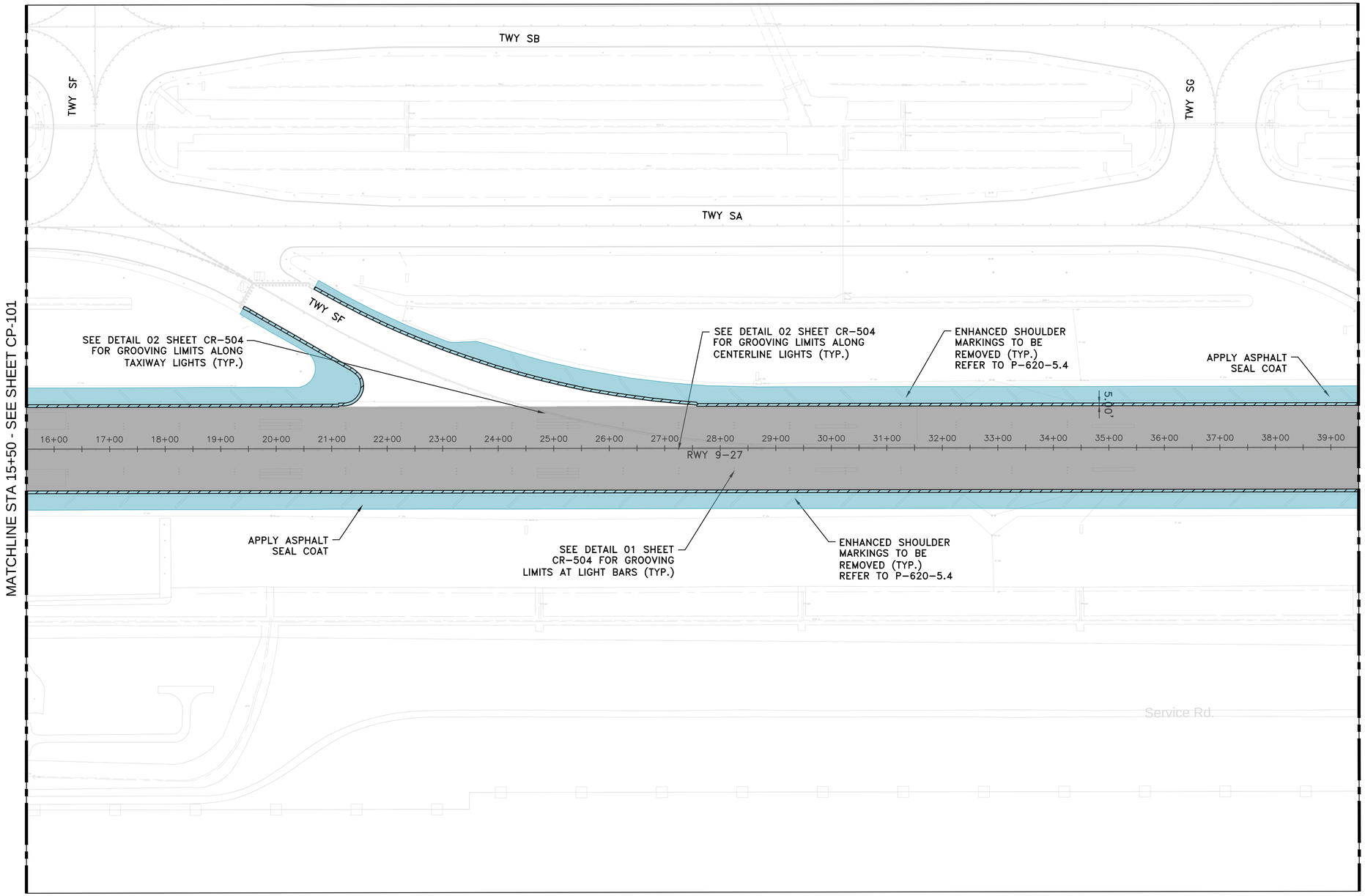
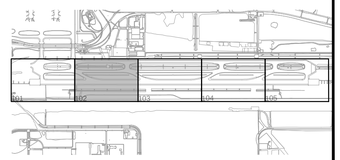


LEGENDS

- PROPOSED 0.25" GRIND AND GROOVE
- 5' WIDE MILL AND PAVE AREA
- APPLY SEAL COAT



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GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)

RUNWAY 9-27 GRIND & GROOVE PROPOSED GRIND AND GROOVE PLAN SHEET 02 OF 05

PROJECT MGR:	JLV
DESIGNER:	EM
DRAWN BY:	GM
CHECK BY:	TO
SCALE:	
DATE:	4/3/2025

STATE OF TEXAS
JOHN L. VERBURG, JR.
125465
LICENSED
PROFESSIONAL ENGINEER
4-3-25

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

PROJECT NO.
100116454

A.I.P. NO.

C.I.P. NO.

H.A.S. NO.

SHEET NO.
CP-102

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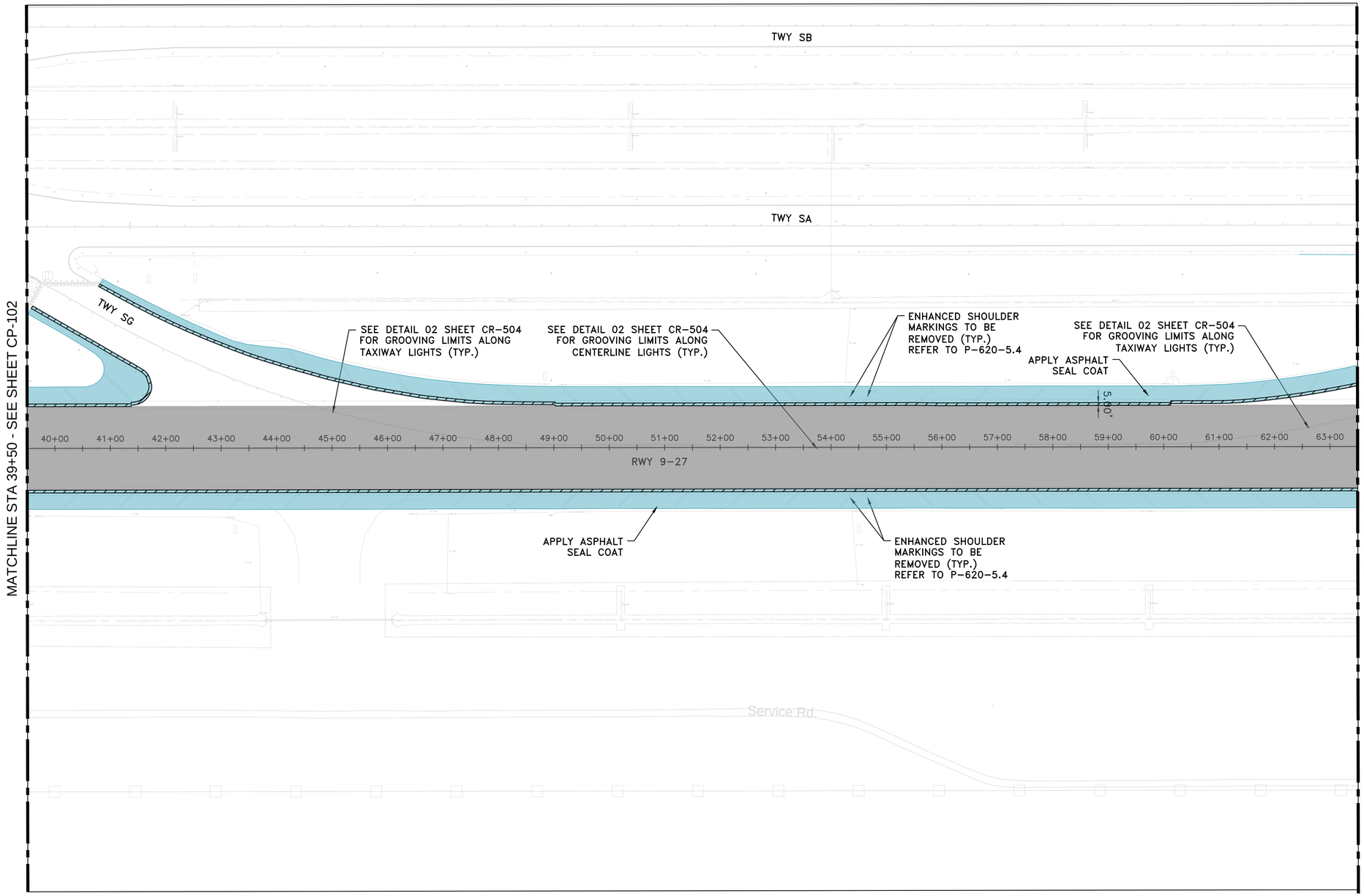
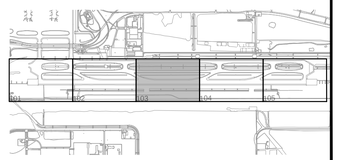


LEGENDS

- PROPOSED 0.25" GRIND AND GROOVE
- 5' WIDE MILL AND PAVE AREA
- APPLY SEAL COAT



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NO.	DESCRIPTION	DATE	BY

GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)

RUNWAY 9-27 GRIND & GROOVE
PROPOSED GRIND AND GROOVE PLAN
SHEET 03 OF 05

PROJECT MGR:	JLV
DESIGNER:	EM
DRAWN BY:	GM
CHECK BY:	TO
SCALE:	
DATE:	4/3/2025

STATE OF TEXAS
JOHN L. VERBURG, JR.
125465
LICENSED
PROFESSIONAL ENGINEER
4-3-25

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

PROJECT NO.
100116454

A.I.P. NO.

C.I.P. NO.

H.A.S. NO.

SHEET NO.

CP-103

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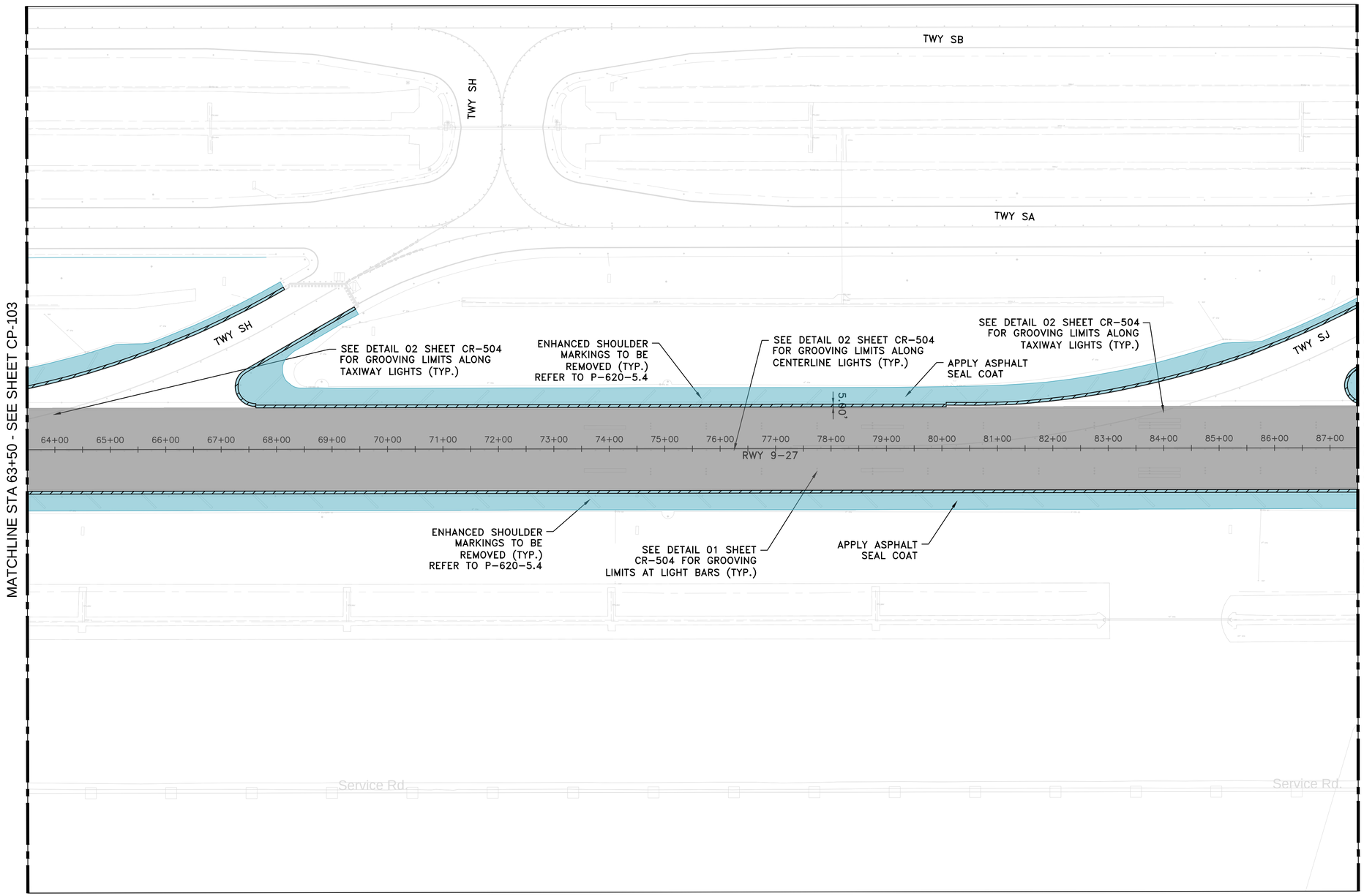
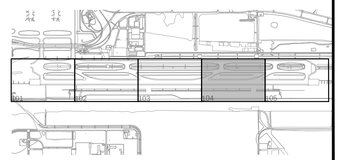


LEGENDS

- PROPOSED 0.25" GRIND AND GROOVE
- 5' WIDE MILL AND PAVE AREA
- APPLY SEAL COAT



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GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)

RUNWAY 9-27 GRIND & GROOVE
PROPOSED GRIND AND GROOVE PLAN
SHEET 04 OF 05

PROJECT MGR:	JLV
DESIGNER:	EM
DRAWN BY:	GM
CHECK BY:	TO
SCALE:	
DATE:	4/3/2025

STATE OF TEXAS
JOHN L. VERBURG, JR.
125465
LICENSED
PROFESSIONAL ENGINEER
4-3-25

APPROVED BY:

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HOUSTON AIRPORT SYSTEM

PROJECT NO.
100116454

A.I.P. NO.

C.I.P. NO.

H.A.S. NO.

SHEET NO.
CP-104

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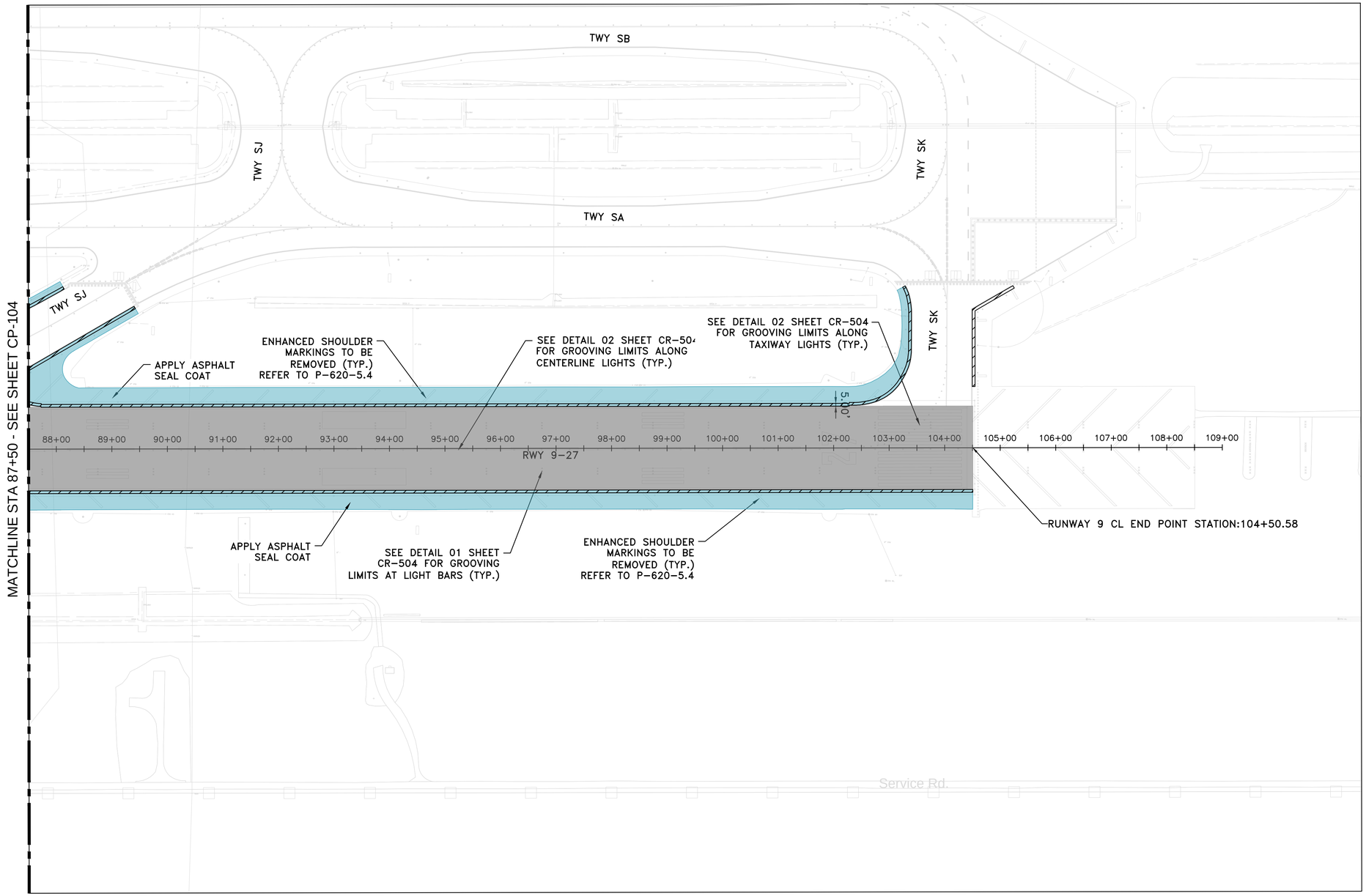
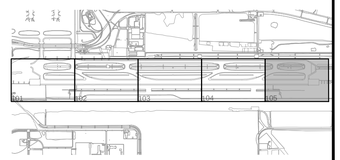


LEGENDS

- PROPOSED 0.25" GRIND AND GROOVE
- 5' WIDE MILL AND PAVE AREA
- APPLY SEAL COAT



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GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)

RUNWAY 9-27 GRIND & GROOVE
PROPOSED GRIND AND GROOVE PLAN
SHEET 05 OF 05

PROJECT MGR:	JLV
DESIGNER:	EM
DRAWN BY:	GM
CHECK BY:	TO
SCALE:	
DATE:	4/3/2025

STATE OF TEXAS
JOHN L. VERBURG, JR.
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LICENSED PROFESSIONAL ENGINEER
4-3-25

APPROVED BY:

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PROJECT NO.
100116454

A.I.P. NO.

C.I.P. NO.

H.A.S. NO.

SHEET NO.

CP-105

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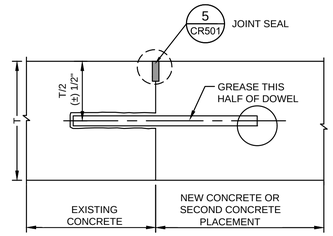
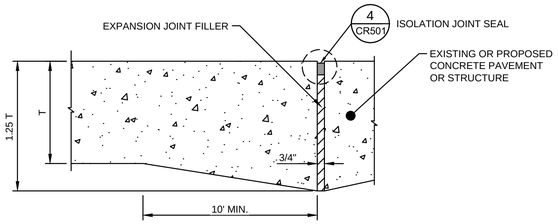
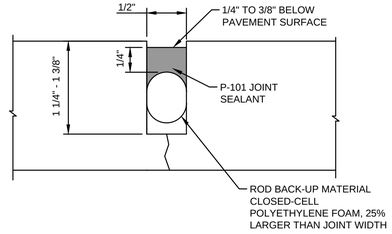


NOTE:
1. WHERE THE TWO CONCRETE PLACEMENTS HAVE DIFFERENT THICKNESSES, THE DOWEL IS PLACED AT MID-DEPTH OF THE THINNER CONCRETE, WITH A VERTICAL TOLERANCE OF +/- 1/2".

1 CR501 TYPE-E DOWELED CONSTRUCTION JOINT
SCALE: N.T.S.



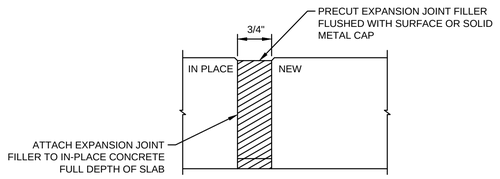
2 CR501 TYPE-A THICKENED EDGE ISOLATION JOINT
SCALE: N.T.S.



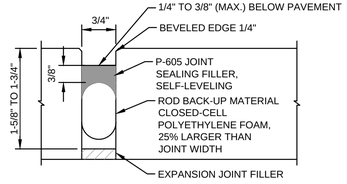
COMPLETED JOINT

3 CR501 RESEAL EXISTING JOINT ON HOLD PADS
SCALE: N.T.S.

NOTES:
1. CONTRACTOR SHALL COORDINATE ALL CONCRETE PAVEMENT REPAIR LIMITS WITH RPR PRIOR TO COMMENCING WORK.
2. REFER TO ITEM P-101 FOR ADDITIONAL REQUIREMENTS.

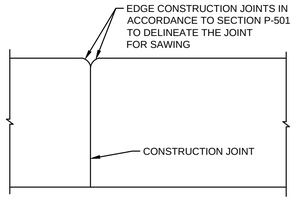


INITIAL SETUP

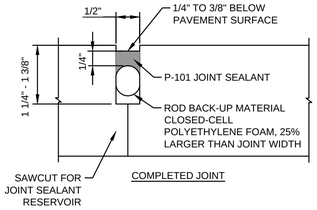


COMPLETED JOINT

4 CR501 ISOLATION JOINT SEAL
SCALE: N.T.S.

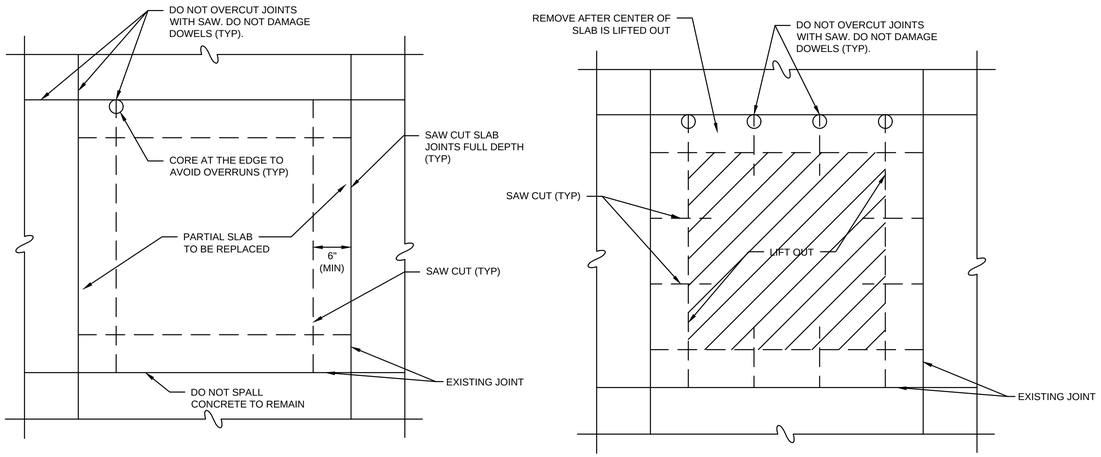


INITIAL SETUP



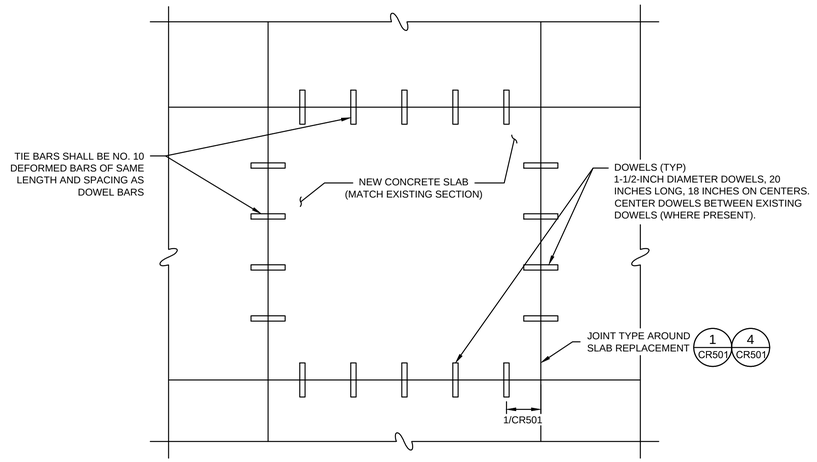
COMPLETED JOINT

5 CR501 SLAB REPLACEMENT CONSTRUCTION JOINT SEAL
SCALE: N.T.S.



NOTE:
1. PRIOR TO SLAB REMOVAL, THE CONTRACTOR SHALL OBTAIN CORES TO VERIFY CONCRETE THICKNESS, OBTAIN ONE CORE PER EACH DISIMILAR SLAB AND ONE CORE AT TIE-IN LOCATIONS.
2. USE LIFT OUT METHOD FOR SLAB REMOVAL. NO BREAKERS LARGER THAN 30 POUNDS SHALL BE USED.

6 CR501 PARTIAL SLAB REMOVAL DETAIL
SCALE: N.T.S.



NOTE:
1. PROVIDE A TYPE E JOINT WHERE DOWELS WERE CUT OFF. PROVIDE A TYPE A JOINT AT EXISTING ISOLATION JOINT LOCATIONS. EXISTING ISOLATION JOINTS LOCATIONS INCLUDE JOINTS WHERE THERE ARE MISMATCHED JOINTS AND THICKENED EDGE CONCRETE AND WHERE DOWELS ARE NOT ENCOUNTERED.
2. NEW CONCRETE SHALL REPLACE EXISTING CONCRETE THICKNESS IN KIND. PLACE GEOTEXTILE BOND BREAKER PER P-501.
3. REFER TO NOTES ON CR-502 FOR ADDITIONAL INFORMATION

7 CR501 PARTIAL SLAB REPLACEMENT DETAIL
SCALE: N.T.S.

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REVISIONS

NO.	DESCRIPTION	DATE	BY

GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)
RUNWAY 9-27 GRIND & GROOVE
PAVEMENT DETAILS
SHEET 01 OF 04

PROJECT MGR:	JLV
DESIGNER:	EM
DRAWN BY:	GM
CHECK BY:	TO
SCALE:	
DATE:	4/3/2025

STATE OF TEXAS
JOHN L. VERBURG, JR.
125465
LICENSED
PROFESSIONAL ENGINEER
4-3-25

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

PROJECT NO.
100116454

A.I.P. NO.

C.I.P. NO.

H.A.S. NO.

SHEET NO.
CR-501

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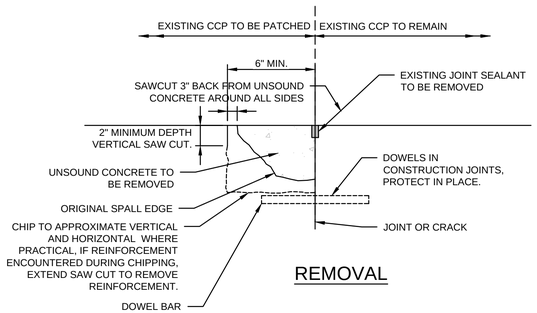
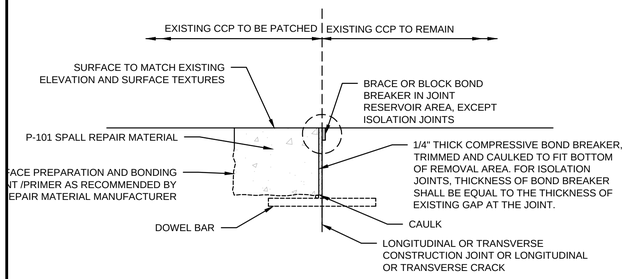
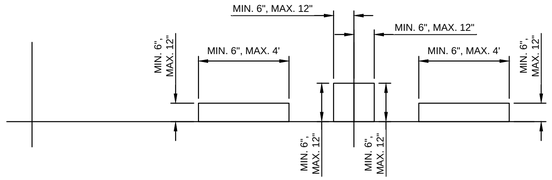


REMOVAL



REPLACEMENT

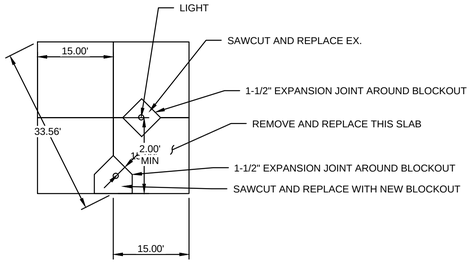


NOTE:

1. IF UNDERBREAK OF THE EXISTING CCP TO REMAIN OCCURS, THE ENTIRE SLAB SHALL BE REMOVED AND REPLACED AT NO COST TO THE OWNER.
2. REFER TO ITEM P-101 FOR ADDITIONAL REQUIREMENTS, INCLUDING SPALL REPAIR TEST SECTION.
3. REPLACE SLAB OR PARTIAL SLAB IF MORE THAN 5 SF OF SPALL REPAIR ARE REQUIRED.
4. CONTINUE SPALL REPAIR TO CORNER WHEN PATCH IS CLOSER THAN 2 FT TO JOINT CORNER.
5. COMBINE SPALL REPAIRS ALONG JOINT IF THEY ARE CLOSER THAN 2 FT TO THE ADJACENT PATCH.

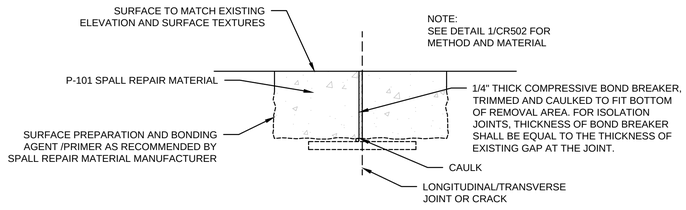
1 CR502 ISOLATED SPALL REPAIR ALONG CONTRACTION/CONSTRUCTION/ISOLATION JOINT

SCALE: N.T.S.



3 CR502 LIGHT BLOCKOUT DETAIL

SCALE: N.T.S.



2 CR502 ISOLATED SPALL REPAIR ALONG BOTH SIDE OF A JOINT/CRACK

SCALE: N.T.S.

SPALL REPAIR NOTES:

1. DO NOT REPAIR SPALLS THAT ARE LESS THAN 1 INCH WIDE FROM EDGE OF JOINT. REMOVE LOOSE MATERIAL AND FILL WITH JOINT SEALANT.

2. SELECTION OF REPAIR BOUNDARIES

   A. SURVEY THE PAVEMENT TO DETERMINE AREAS OF UNSOUND OR DELAMINATED CONCRETE TO ESTABLISH THE REPAIR BOUNDARIES. SOUNDING THE PAVEMENT TO FIND DELAMINATION AND SPALL REMOVAL AREAS IS ACCOMPLISHED BY STRIKING THE EXISTING CONCRETE SURFACE WITH A STEEL ROD OR CARPENTER'S HAMMER. DELAMINATED OR UNSOUND CONCRETE WILL PRODUCE A DULL OR HOLLOW THUD, WHILE SOUND CONCRETE WILL PRODUCE A SHARP METALLIC RING. ALL WEAK AND DETERIORATED CONCRETE SHALL BE INCLUDED IN THE SPALL REPAIR AREA.

   B. EXTEND THE REPAIR BOUNDARIES BEYOND THE DETECTED DELAMINATED OR SPALLED AREA AS INDICATED TO ENSURE REMOVAL OF ALL UNSOUND CONCRETE. KEEP THE REPAIR BOUNDARIES SQUARE OR RECTANGULAR. COMBINE REPAIR AREAS ALONG A JOINT IF THEY ARE CLOSER THAN 2 FT.

   C. MINIMUM LENGTH AND WIDTH OF THE RECTANGULAR SAWCUT BOUNDARY AROUND A JOINT SPALL IS AS SHOWN. FOR CORNER SPALLS, DO NOT MAKE THE RECTANGULAR SAW-CUT BOUNDARIES CLOSER THAN 6 INCHES FROM THE JOINT CORNER.

3. REMOVAL OF EXISTING CONCRETE
   A. REMOVE CONCRETE BY SAWING AND CHIPPING, MAKE A MINIMUM 2 INCH DEEP SAWCUT IN A RECTANGULAR PATTERN AT LEAST 3 INCHES OUTSIDE ALL UNSOUND CONCRETE AROUND THE PERIMETER OF THE REPAIR AREA. ADDITIONAL SAWCUTS MAY BE MADE WITHIN THE REPAIR AREA TO SPEED CHIPPING OPERATIONS.

   B. REMOVE CONCRETE WITHIN THE REPAIR AREA TO THE BOTTOM OF THE SAWCUTS INTO VISUALLY SOUND AND CLEAN EXPOSED CONCRETE. THE CHIPPING HAMMER FOR PARTIAL-DEPTH REPAIRS IS 30 POUNDS.

   C. IF THE SPALL DEPTH IS GREATER THAN ONE-THIRD OF THE SLAB THICKNESS OF SLAB, STEEL REBAR MAT IS ENCOUNTERED OR DOWEL BARS ARE EXPOSED USE PARTIAL SLAB REPLACEMENT SHOWN ON DETAIL 6 & 7/CR501.

4. CLEANING
   A. CLEAN THE EXPOSED CONCRETE FACES, BOTTOM OF THE REPAIR AREA, AND ANY EXPOSED STEEL OF DUST AND OTHER CONTAMINANTS. WASH WITH HIGH-PRESSURE WATER AND AIR-BLOW WITH COMPRESSED AIR.

5. PATCH AND JOINT PREPARATION
   A. DO NOT ALLOW THE REPAIR PATCH TO BOND TO THE JOINT FACE OF THE ADJACENT CONCRETE AND DO NOT ALLOW THE REPAIR MATERIAL TO PENETRATE INTO THE JOINT.

   B. USE A COMPRESSIBLE INSERT SUCH AS ASPHALT-IMPREGNATED FIBERBOARD OR PLASTIC JOINT INSERTS AS A BOND BREAKING MATERIAL PRIOR TO PLACING THE PATCH MATERIAL. WOOD SHALL NOT BE USED.

   C. ENSURE THE NEW JOINT OR CRACK WIDTH ADJACENT TO THE REPAIR IS EQUAL TO OR MORE THAN THE WIDTH OF THE EXISTING JOINT OR CRACK.

   D. ENSURE REPAIR AREA IS FREE OF WATER AND DRY PRIOR TO PLACING MATERIALS.

6. PLACEMENT OF PATCH MATERIALS
   A. FOR PATCHES EXCEEDING 12 INCHES X 24 INCHES, EPOXY MORTARS SHALL NOT BE USED.

   B. SAND-CEMENT GROUT OR EPOXY RESIN BONDING COURSE SHALL BE SCRUBBED INTO ALL EXPOSED CAVITY SURFACES, EXCEPT FACES OF JOINTS, IMMEDIATELY PRIOR TO PLACING CONCRETE PATCH MATERIALS.

   C. SLIGHTLY OVERFILL THE REPAIR AREA TO COMPENSATE FOR CONSOLIDATION. TAMP THE REPAIR TO CONSOLIDATE THE REPAIR MATERIAL. THE PATCH MATERIAL ALSO MAY BE CONSOLIDATED BY SMALL SPUD VIBRATORS TO ELIMINATE VOIDS AT THE INTERFACE OF THE PATCH AND THE EXISTING CONCRETE. DO NOT USE VIBRATORS OVER ONE (1) INCH IN DIAMETER.

7. INTERFACE
   A. USE THE PASTE PORTION OF THE REPAIR MATERIAL TO FILL ANY SAWCUT RUNOUTS THAT EXTEND BEYOND THE PATCH PERIMETER AT PATCH CORNERS.

   B. IF THE PATCH MATERIAL APPEARS TO BE PULLING AWAY FROM THE EXISTING CONCRETE, SEAL, REMOVE AND REPLACE THE PATCH.

8. FINISHING
   A. FINISH THE PATCH AREA FLUSH TO THE CROSS-SECTION OF THE EXISTING PAVEMENT WITHOUT LEAVING EXCESS MATERIAL ON THE ADJACENT PAVEMENT SURFACE.

   B. SCREED OR TROWEL FROM THE CENTER OF THE PATCH AREA TO THE PATCH BOUNDARIES.

   C. GIVE THE PATCH A BURLAP DRAG OR BROOM FINISH TO APPROXIMATELY MATCH THE SURFACE FINISH OF THE EXISTING ADJACENT CONCRETE PAVEMENT.

9. CURING

   A. FOLLOW MANUFACTURE RECOMMENDATIONS FOR CURING PROCEDURES.

10. JOINT SEALING
    A. SAWCUT / JOINT CLEANING

       i. SAWCUT JOINT LINE TO REESTABLISH JOINT.
       ii. FLUSH ALL DEBRIS AND CONCRETE SLURRY FROM JOINT AND SURROUNDING PAVEMENT WITH WATER AND USE HIGH-PRESSURE AIR TO REMOVE MATERIAL REMAINING IN THE SAWED CRACKS. INSURE CRACK IS DRY PRIOR TO PLACING SEALANT MATERIAL IN CRACK.

    B. SEALING PROCEDURES

       i. ENSURE THE JOINT FACES ARE CLEAN AND FREE OF MOISTURE. IF MOISTURE IS PRESENT, USE COMPRESSED AIR TO DRY THE CRACK FACE BEFORE SEALING. SEAL THE JOINT USING THE FOLLOWING STEPS:

          1. INSTALL BACKER ROD IN WIDENED SAWCUT. ENSURE BACKER ROD REMAINS IN POSITION DURING THE SEALING OPERATION.

          2. FILL THE JOINT FROM THE BOTTOM UP TO PREVENT AIR FROM BECOMING TRAPPED UNDER THE SEALANT AND BUBBLING.

          3. FILL THE JOINT FROM BEGINNING TO END IN ONE SMOOTH OPERATION WHENEVER PRACTICAL.

          4. FILL THE JOINT TO A DEPTH SHOWN IN THE DETAIL.

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REVISIONS		
NO.	DESCRIPTION	DATE BY

GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)

RUNWAY 9-27 GRIND & GROOVE

PAVEMENT DETAILS SHEET 02 OF 04

PROJECT MGR:	JLV
DESIGNER:	EM
DRAWN BY:	GM
CHECK BY:	TO
SCALE:	
DATE:	4/3/2025

STATE OF TEXAS
JOHN L VERBURG, JR
125465
LICENSED PROFESSIONAL ENGINEER
4-3-25

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

PROJECT NO.
100116454

A.I.P. NO.

C.I.P. NO.

H.A.S. NO.

SHEET NO.

CR-502

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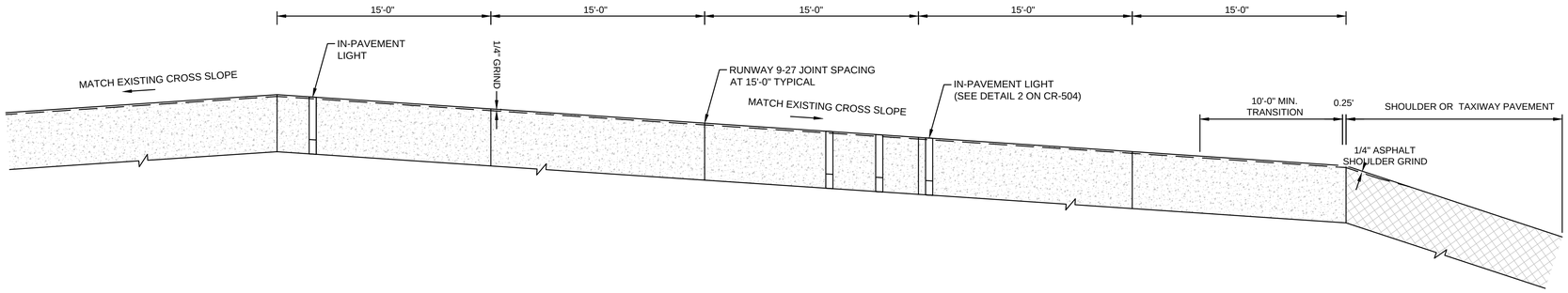
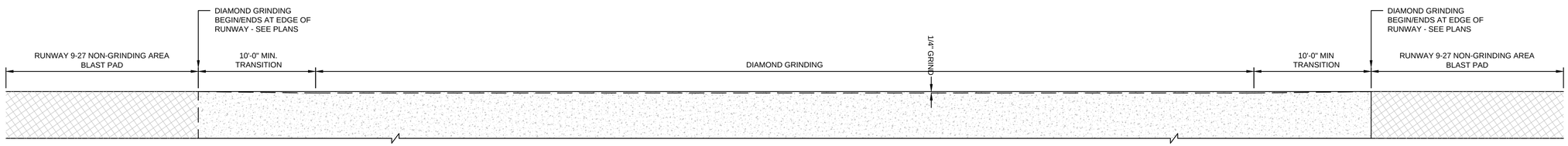
GRINDING NOTES:

1. EQUIPMENT SHALL HAVE A GRINDING HEAD NOT LESS THAN 4 FEET WIDE AND HAVE A POSITIVE MEANS OF VACUUMING THE GRINDING SLURRY.
2. GRINDING DEPTH SHALL BE TYPICAL $\frac{1}{4}$ INCH CONDUCTED ALONG THE RUNWAY. ADDITIONAL GRINDING MAY BE REQUIRED DUE TO SMOOTHNESS REQUIREMENTS OR SURFACE WEAR CONDITION.
3. CHECK TRANSVERSE STRAIGHT EDGE REQUIREMENTS BETWEEN GRINDING PASSES.
4. DAILY GRINDING SLURRY SHALL BE TEMPORARILY DISCHARGE AT THE LOCATION DIRECTED BY HAS OPERATIONS PRIOR TO FINAL DISPOSAL.
5. A CONTROL SECTION IS REQUIRED PRIOR TO FULL PRODUCTION.
6. CHECK SPECIFICATION ITEM P-101 FOR DETAILS REGARDING DIAMOND GRINDING PROCEDURES AND QUALITY CONTROL.



1 CR503 DIAMOND GRINDING RUNWAY CROSS SECTION

SCALE: N.T.S.



2 CR503 DIAMOND GRINDING RUNWAY PROFILE

SCALE: N.T.S.

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REVISIONS			
NO.	DESCRIPTION	DATE	BY

GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)

RUNWAY 9-27 GRIND & GROOVE

PAVEMENT DETAILS SHEET 03 OF 04

PROJECT MGR:	JLV
DESIGNER:	EM
DRAWN BY:	GM
CHECK BY:	TO
SCALE:	
DATE:	4/3/2025

STATE OF TEXAS
JOHN L VERBURG, JR.
125465
LICENSED
PROFESSIONAL ENGINEER
4-3-25

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

PROJECT NO.
100116454

A.I.P. NO.

C.I.P. NO.

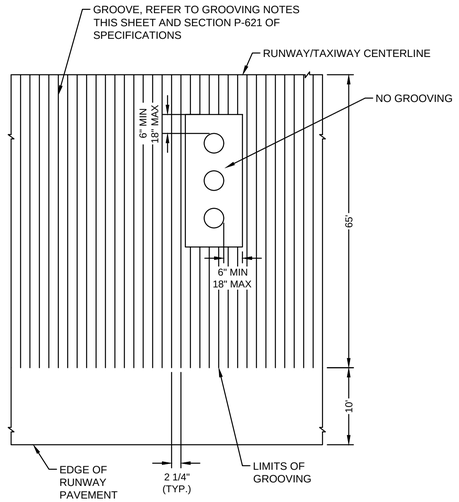
H.A.S. NO.

SHEET NO.

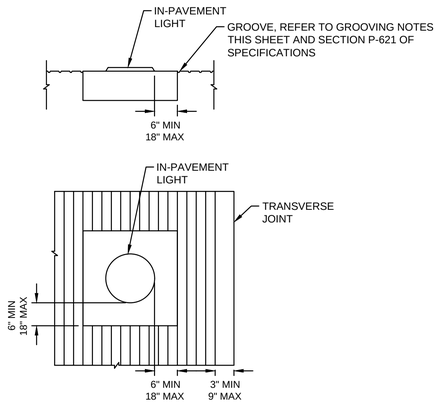
CR-503

GROOVING NOTES:

1. EQUIPMENT SHALL HAVE A DRUM NOT LESS THAN 3 FEET WIDE AND HAVE A POSITIVE MEANS OF VACUUMING THE GROOVING SLURRY.
2. A CONTROL STRIP SHALL BE PLACED TO DEMONSTRATE THE PROCEDURES AND QUALITY PRIOR TO FULL PRODUCTION.
3. CHECK SPECIFICATION ITEM P-621 FOR DETAILS REGARDING GROOVING PROCEDURES AND QUALITY CONTROL.



1 CR504 TYPICAL GROOVING DETAIL ADJACENT TO TOUCHDOWN ZONE LIGHTS
SCALE: N.T.S.



2 CR504 TYPICAL GROOVING DETAIL ADJACENT TO IN-PAVEMENT LIGHTS
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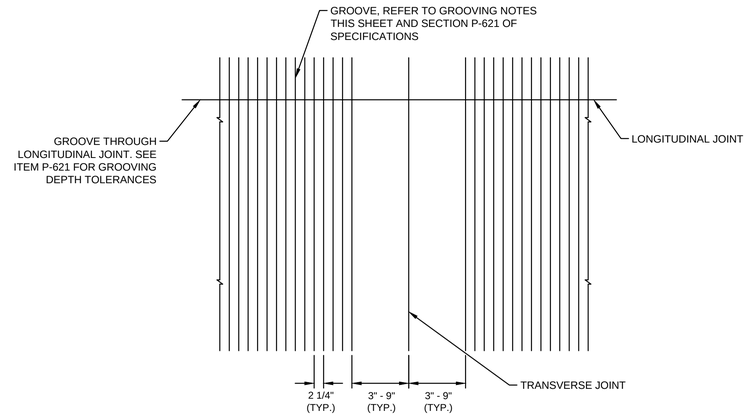

3 CR504 TYPICAL GROOVING DETAIL THROUGH LONGITUDINAL JOINT
SCALE: N.T.S.

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REVISIONS

NO.	DESCRIPTION	DATE	BY

GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)
RUNWAY 9-27 GRIND & GROOVE
PAVEMENT DETAILS SHEET 04 OF 04

PROJECT MGR:	JLV
DESIGNER:	EM
DRAWN BY:	GM
CHECK BY:	TO
SCALE:	
DATE:	4/3/2025

STATE OF TEXAS
JOHN L VERBURG, JR
125465
LICENSED
PROFESSIONAL ENGINEER
4-3-25

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

PROJECT NO.
100116454

A.I.P. NO.

C.I.P. NO.

H.A.S. NO.

SHEET NO.
CR-504

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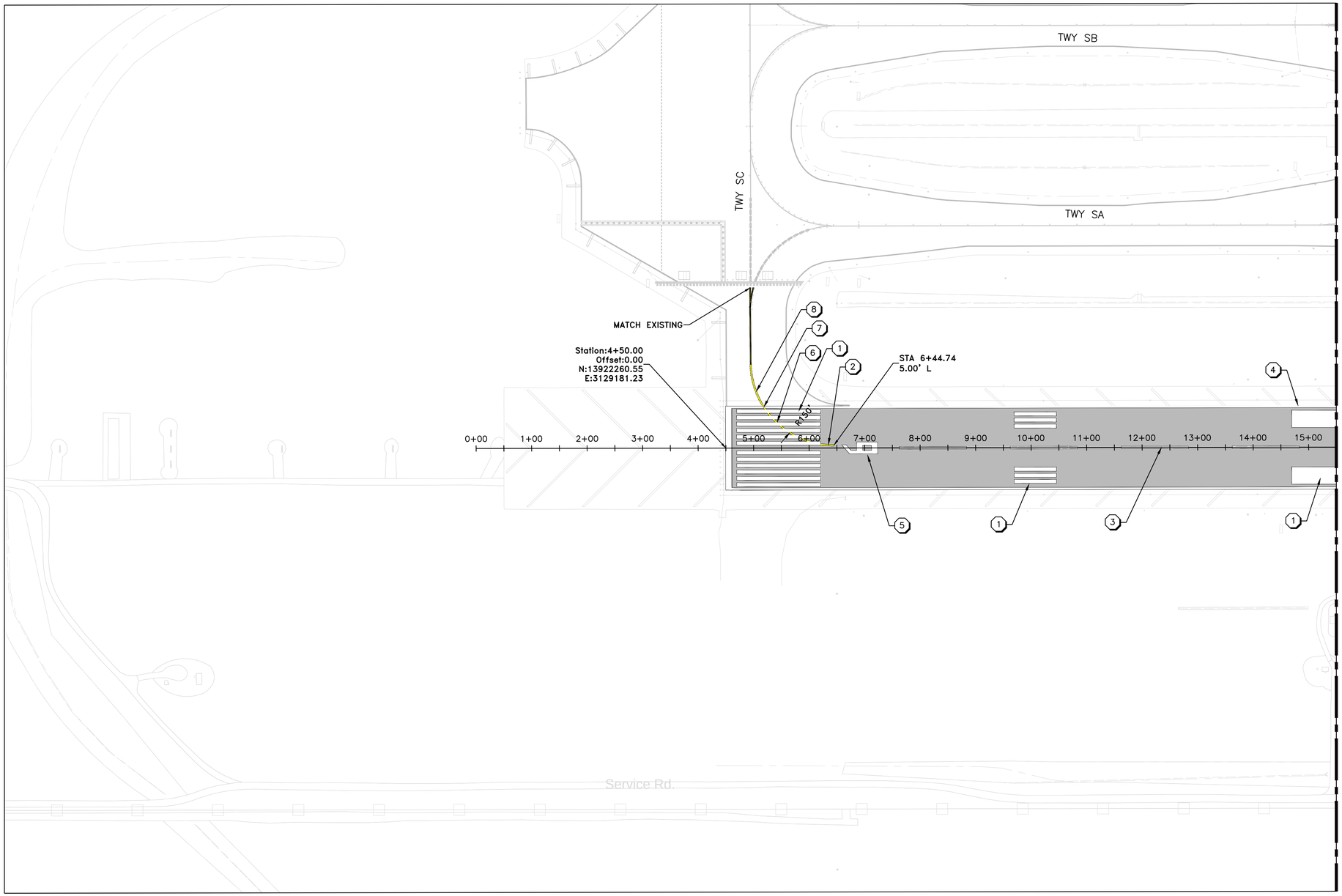
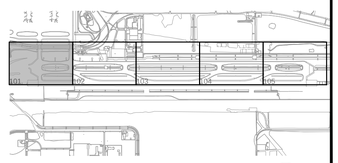


KEYNOTES

1. RUNWAY THRESHOLD,TOUCHDOWN ZONE AND AIMING POINT MARKING (SEE DETAIL 1 SHEET CM-501)
2. RUNWAY CENTERLINE WITH TAXIWAY LEAD-OFF MARKING (SEE DETAIL 2 SHEET CM-501)
3. RUNWAY CENTERLINE MARKING (SEE DETAIL 3 SHEET CM-501)
4. RUNWAY EDGE MARKING (SEE DETAIL 4 SHEET CM-501)
5. RUNWAY DESIGNATION MARKING (SEE DETAIL 5 SHEET CM-501)
6. INTERSECTION TDZ MARKING (SEE DETAIL 6 SHEET CM-502)
7. INTERSECTION OF TAXIWAY CENTERLINE AT RUNWAY EDGE MARKING (SEE DETAIL 7 SHEET CM-502)
8. TAXIWAY CENTERLINE MARKING DETAIL (SEE DETAIL 8 SHEET CM-502)



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GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)

RUNWAY 9-27 GRIND & GROOVE

MARKING PLAN SHEET 01 OF 05

PROJECT MGR:	JLV
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SCALE:	
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STATE OF TEXAS
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PROJECT NO.
100116454

A.I.P. NO.

C.I.P. NO.

H.A.S. NO.

SHEET NO.

CM-101

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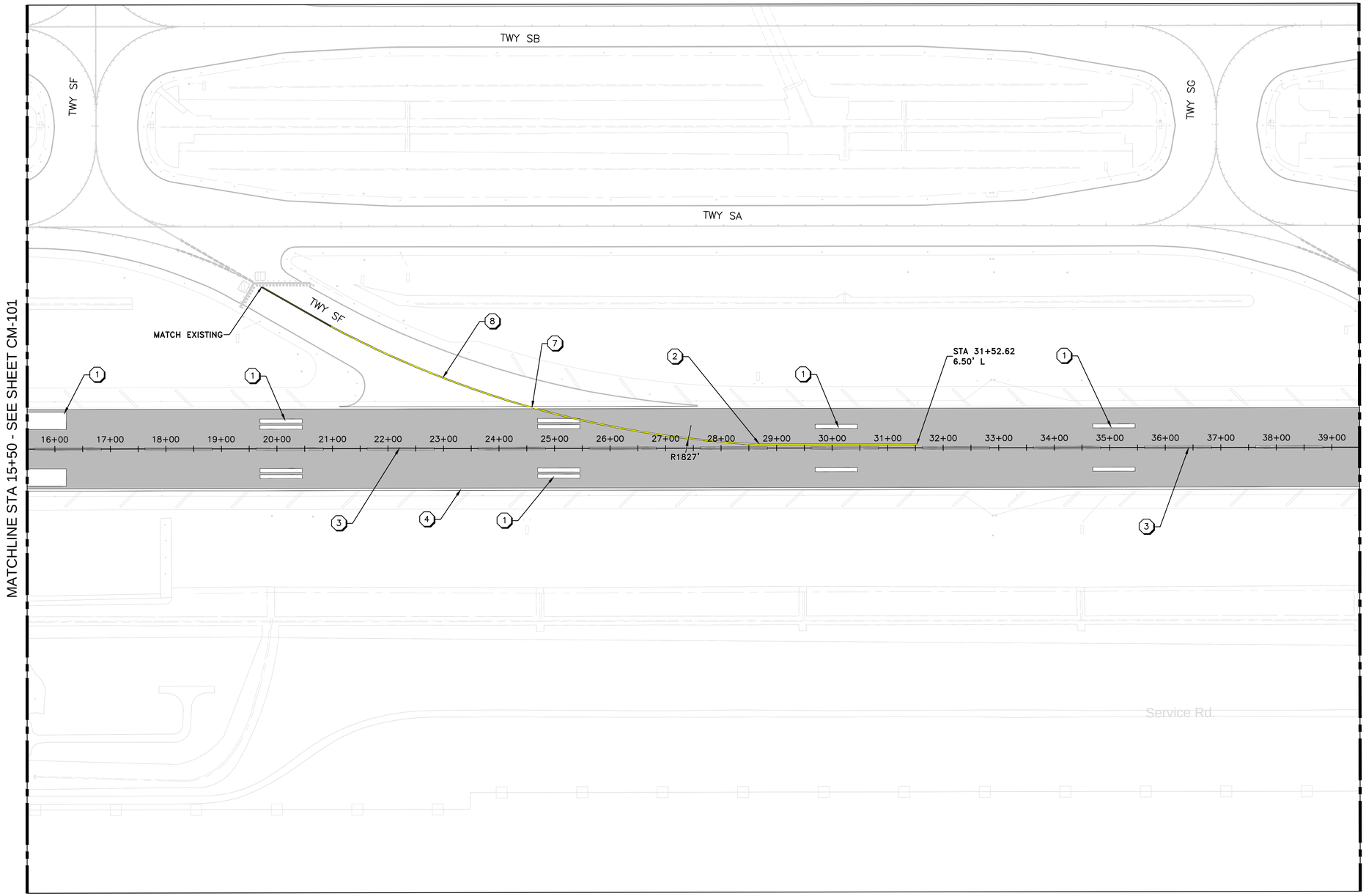

KEYNOTES

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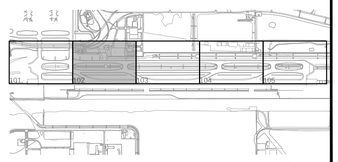
8. TAXIWAY CENTERLINE MARKING DETAIL (SEE DETAIL 8 SHEET CM-502)



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GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)

RUNWAY 9-27 GRIND & GROOVE

MARKING PLAN SHEET 02 OF 05

PROJECT MGR:	JLV
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H.A.S. NO.

SHEET NO.
CM-102

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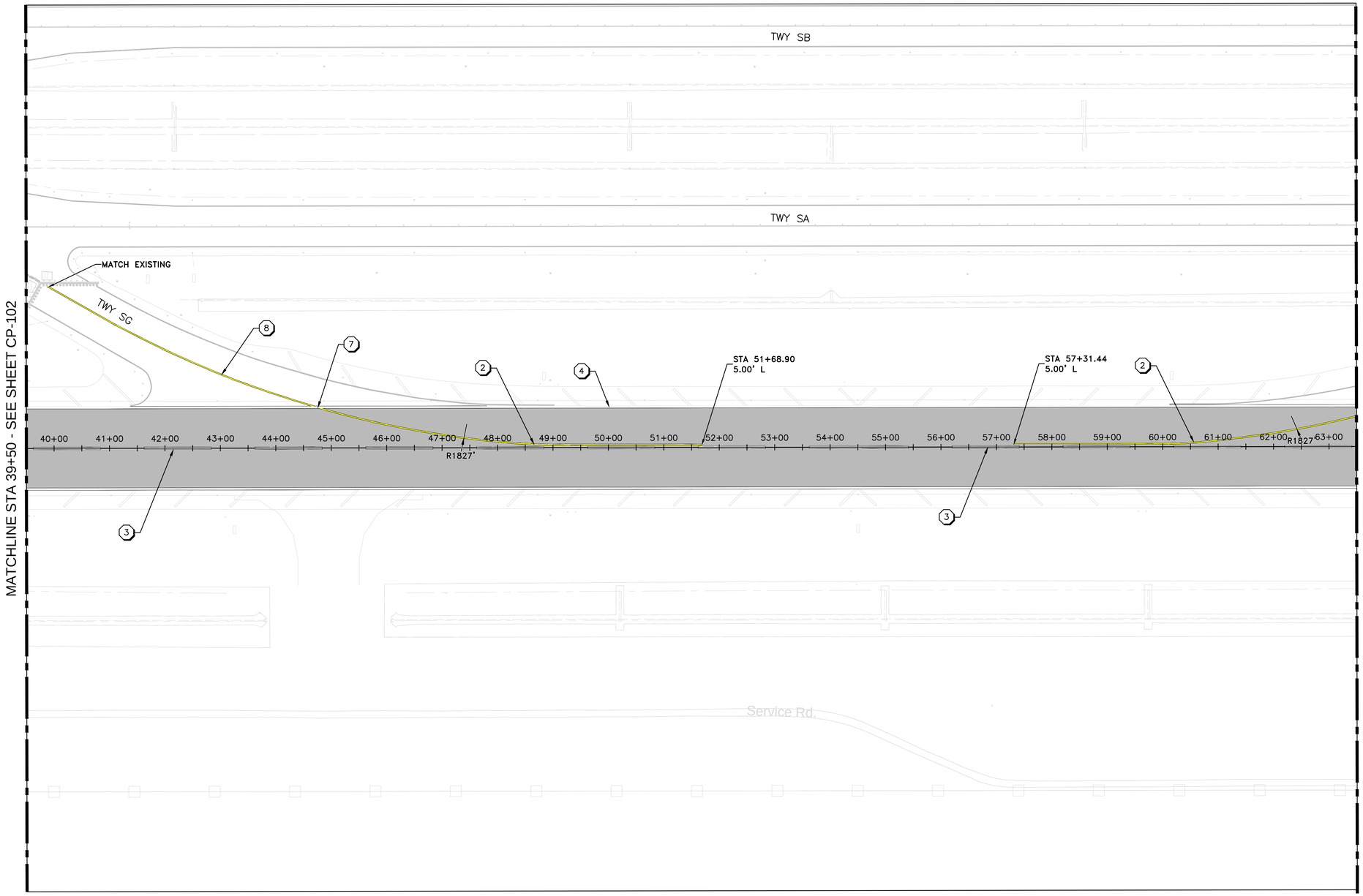

KEYNOTES

1. RUNWAY THRESHOLD,TOUCHDOWN ZONE AND AIMING POINT MARKING (SEE DETAIL 1 SHEET CM-501)
2. RUNWAY CENTERLINE WITH TAXIWAY LEAD-OFF MARKING (SEE DETAIL 2 SHEET CM-501)
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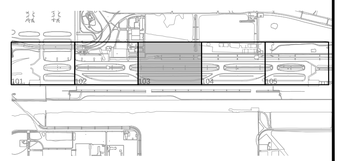
8. TAXIWAY CENTERLINE MARKING DETAIL (SEE DETAIL 8 SHEET CM-502)



0 100 200 FEET

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GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)

RUNWAY 9-27 GRIND & GROOVE MARKING PLAN SHEET 03 OF 05

PROJECT MGR:	JLV
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DATE:	4/3/2025

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APPROVED BY:

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C.I.P. NO.

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SHEET NO.

CM-103

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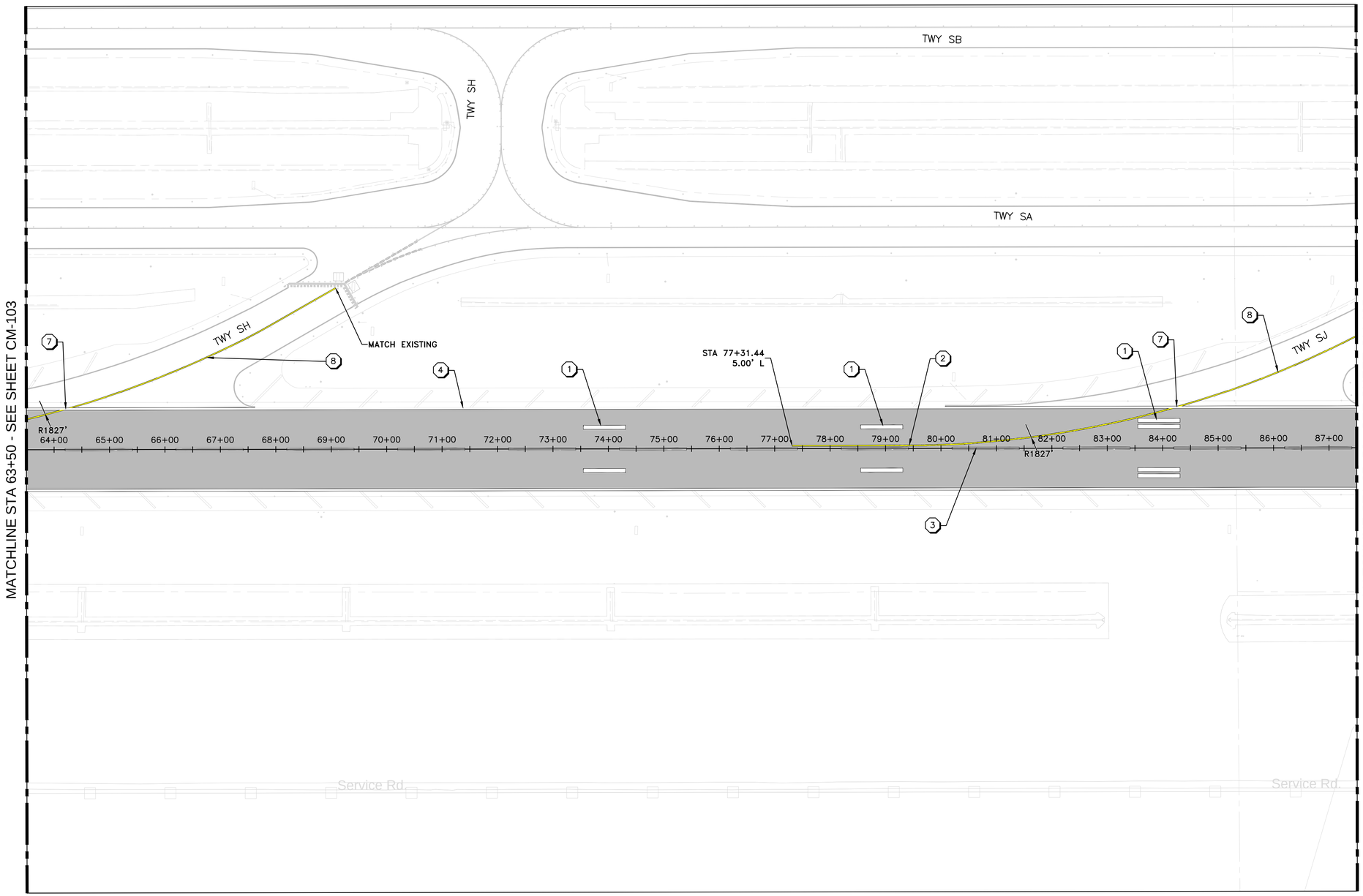
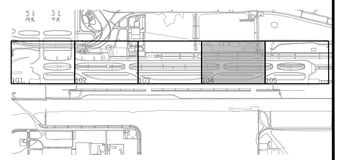


KEYNOTES

1. RUNWAY THRESHOLD,TOUCHDOWN ZONE AND AIMING POINT MARKING (SEE DETAIL 1 SHEET CM-501)
2. RUNWAY CENTERLINE WITH TAXIWAY LEAD-OFF MARKING (SEE DETAIL 2 SHEET CM-501)
3. RUNWAY CENTERLINE MARKING (SEE DETAIL 3 SHEET CM-501)
4. RUNWAY EDGE MARKING (SEE DETAIL 4 SHEET CM-501)
5. RUNWAY DESIGNATION MARKING (SEE DETAIL 5 SHEET CM-501)
6. INTERSECTION TDZ MARKING (SEE DETAIL 6 SHEET CM-502)
7. INTERSECTION OF TAXIWAY CENTERLINE AT RUNWAY EDGE MARKING (SEE DETAIL 7 SHEET CM-502)
8. TAXIWAY CENTERLINE MARKING DETAIL (SEE DETAIL 8 SHEET CM-502)



0 100 200 FEET

HOUSTON AIRPORT SYSTEM

GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON, TX

AtkinsRéalis
LOCAL OFFICE:
920 MEMORIAL CITY WAY
STE. 400
HOUSTON, TX 77024
TEL: (713) 576-8500
ATKINSREALIS
PE FIRM REG.
#F-000474
WWW.ATKINSREALIS.COM

REVISIONS

NO.	DESCRIPTION	DATE	BY

GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)

RUNWAY 9-27 GRIND & GROOVE
MARKING PLAN SHEET 04 OF 05

PROJECT MGR:	JLV
DESIGNER:	EM
DRAWN BY:	GM
CHECK BY:	TO
SCALE:	
DATE:	4/3/2025

STATE OF TEXAS
JOHN L. VERBURG, JR.
125465
LICENSED
PROFESSIONAL ENGINEER
4-3-25

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

PROJECT NO.
100116454

A.I.P. NO.

C.I.P. NO.

H.A.S. NO.

SHEET NO.
CM-104

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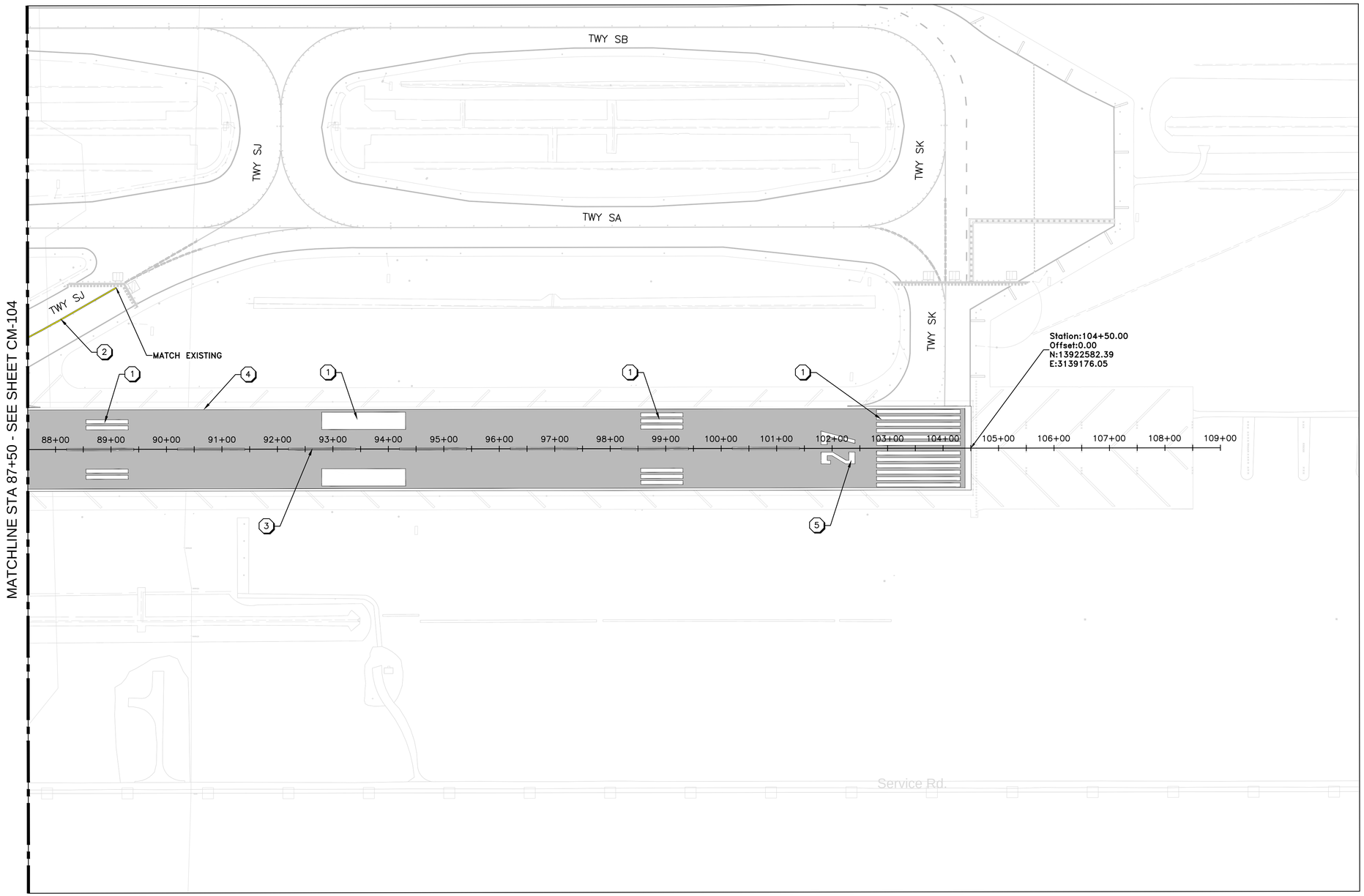

KEYNOTES

1. RUNWAY THRESHOLD,TOUCHDOWN ZONE AND AIMING POINT MARKING (SEE DETAIL 1 SHEET CM-501)
2. RUNWAY CENTERLINE WITH TAXIWAY LEAD-OFF MARKING (SEE DETAIL 2 SHEET CM-501)
3. RUNWAY CENTERLINE MARKING (SEE DETAIL 3 SHEET CM-501)
4. RUNWAY EDGE MARKING (SEE DETAIL 4 SHEET CM-501)
5. RUNWAY DESIGNATION MARKING (SEE DETAIL 5 SHEET CM-501)
6. INTERSECTION TDZ MARKING (SEE DETAIL 6 SHEET CM-502)
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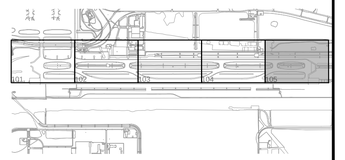

0 100 200 FEET

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HOUSTON, TX 77024
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REVISIONS

NO.	DESCRIPTION	DATE	BY

GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)

RUNWAY 9-27 GRIND & GROOVE

MARKING PLAN SHEET 05 OF 05

PROJECT MGR:	JLV
DESIGNER:	EM
DRAWN BY:	GM
CHECK BY:	TO
SCALE:	
DATE:	4/3/2025

STATE OF TEXAS
JOHN L. VERBURG, JR.
125465
LICENSED
PROFESSIONAL ENGINEER
4-3-25

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

PROJECT NO.
100116454

A.I.P. NO.

C.I.P. NO.

H.A.S. NO.

SHEET NO.
CM-105

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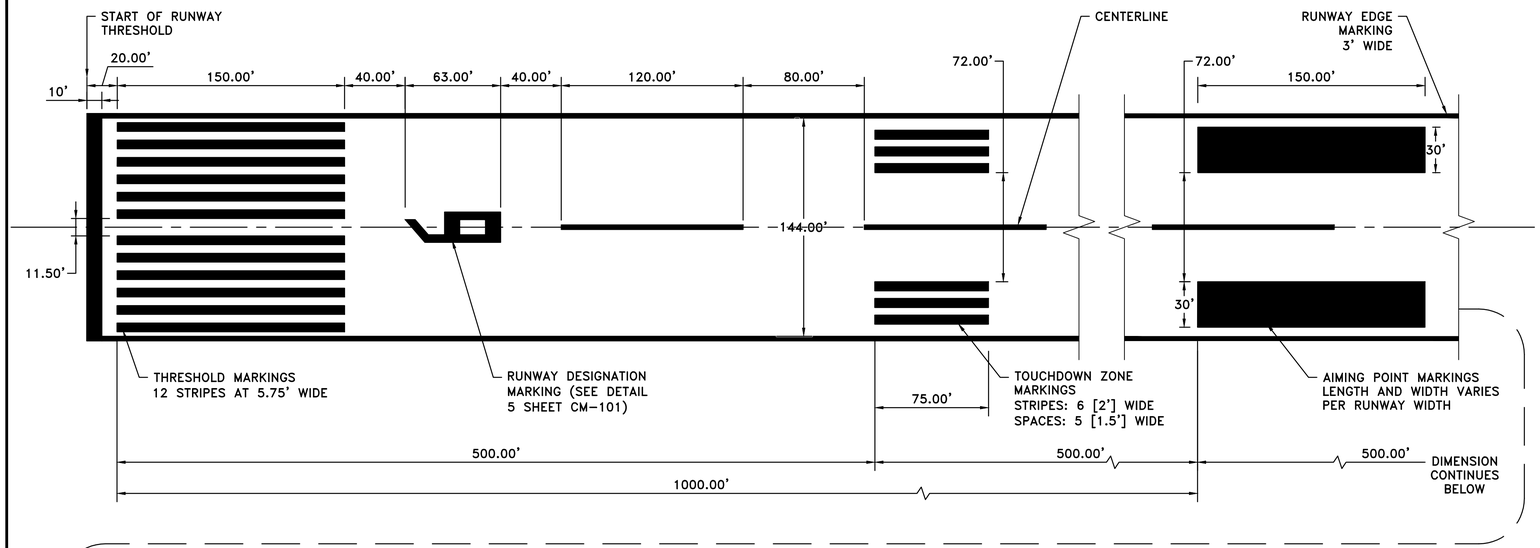
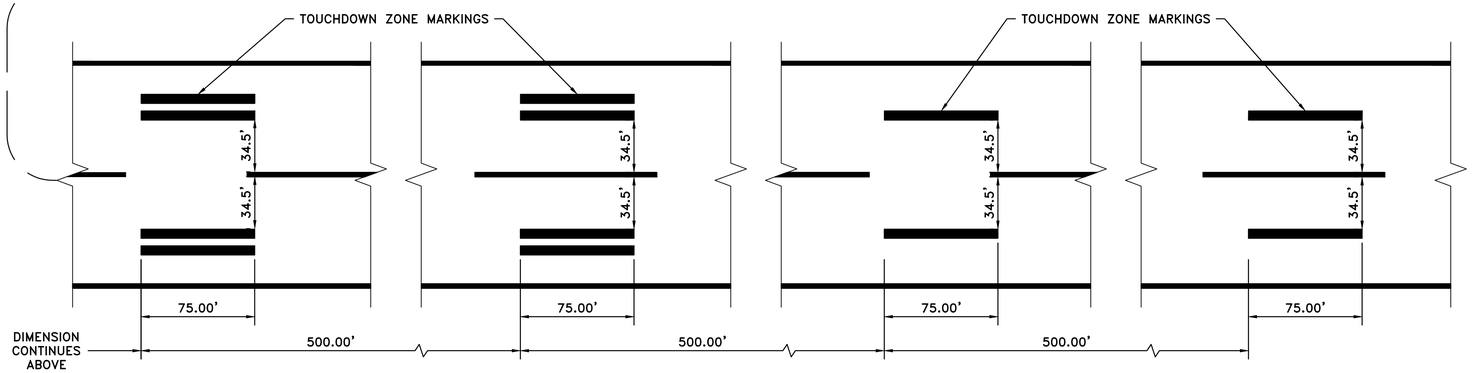
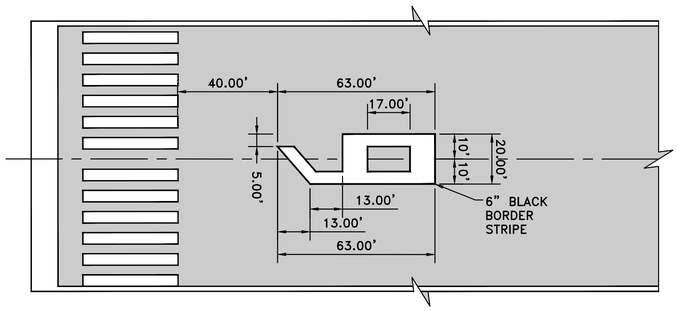
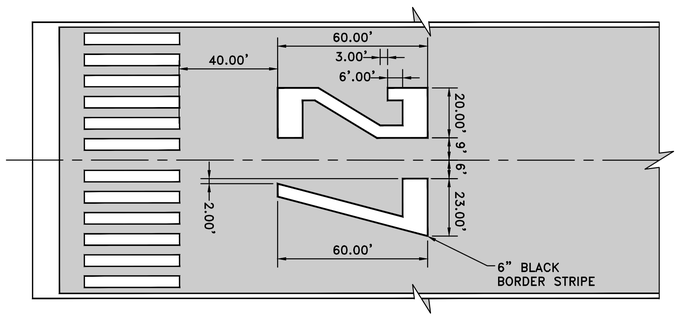




1 CM501 RUNWAY MARKINGS
SCALE: NTS

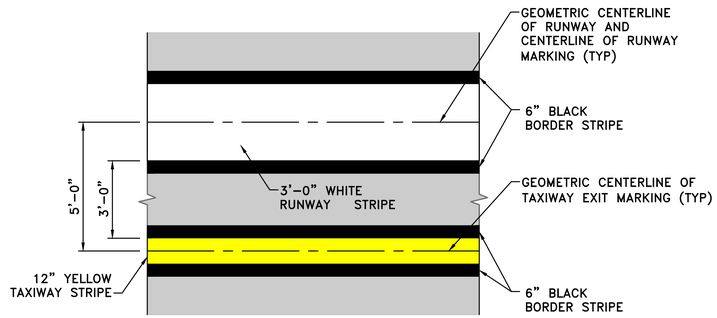




5 CM501 RUNWAY DESIGNATION MARKING DETAIL
SCALE: NTS

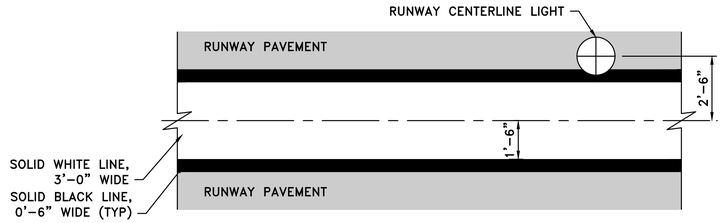
GENERAL NOTES:

1. SEE SHEET SET CM-101-CM-105 FOR PAVEMENT MARKING PLANS.
2. ALL MARKINGS SHALL COMPLY WITH FAA AC 150/5340-1M CRITERIA.



RUNWAY CENTERLINE WITH TAXIWAY LEAD-OFF MARKING DETAIL

2 CM501 SCALE: NTS

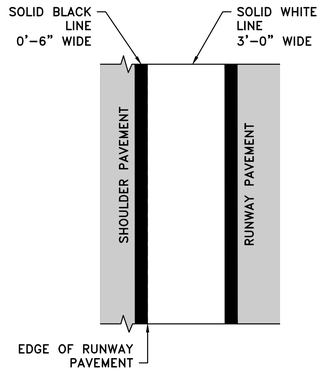


NOTES:

1. SEE PAVEMENT MARKING PLANS FOR LENGTH DIMENSIONS.

RUNWAY CENTERLINE MARKING DETAIL

3 CM501 SCALE: NTS



4 CM501 RUNWAY EDGE MARKING DETAIL
SCALE: NTS

HOUSTON AIRPORT SYSTEM
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REVISIONS

NO.	DESCRIPTION	DATE	BY

GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)
RUNWAY 9-27 GRIND & GROOVE
MARKING DETAILS SHEET 01 OF 03

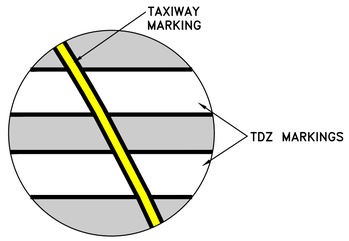
PROJECT MGR:	JLV
DESIGNER:	EM
DRAWN BY:	GM
CHECK BY:	TO
SCALE:	
DATE:	4/3/2025

STATE OF TEXAS
JOHN L. VERBURG, JR.
125465
LICENSED PROFESSIONAL ENGINEER
4-3-25

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

PROJECT NO.
100116454
A.I.P. NO.
C.I.P. NO.
H.A.S. NO.
SHEET NO.
CM-501

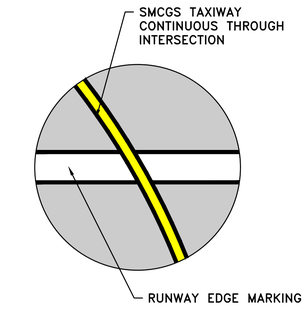


NOTE:

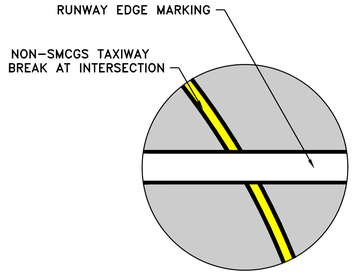
1. TAXIWAYS FOLLOWING THE SMGCS ROUTE DETAIL AS SHOWN INCLUDE TAXIWAYS SC, SF, SG, SH, SJ AND SK.

6 CM502 INTERSECTION OF TDZ MARKINGS AND TAXIWAY CENTERLINE MARKING DETAIL

SCALE: NTS



SMGCS ROUTE



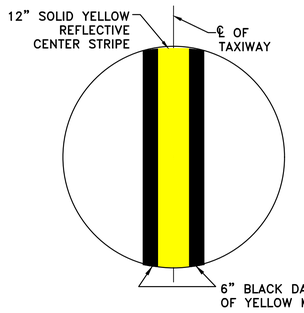
NON-SMGCS ROUTE AND HIGH SPEED EXIT TAXIWAYS

NOTE:

1. CROSSING RUNWAY 9-27, TAXIWAY MARKINGS SHALL BE MARKED BACK TO EXISTING SMGCS CONDITION.

7 CM502 INTERSECTION OF TAXIWAY CENTERLINE AT RUNWAY EDGE DETAIL

SCALE: NTS



NOTES:

1. THE TAXILANE CENTERLINE MARKING IS INTERRUPTED SO THAT IT IS 12" FROM BOTH SIDES OF THE NON-MOVEMENT AREA BOUNDARY MARKING.
2. THIS MARKING HAS PRECEDENCE OVER VSR MARKINGS.

8 CM502 TAXIWAY CENTERLINE MARKING

SCALE: NTS

HOUSTON AIRPORT SYSTEM

GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON, TX

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HOUSTON, TX 77024
TEL: (713) 576-8500
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PE FIRM REG.
#F-000474

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REVISIONS

NO.	DESCRIPTION	DATE	BY

GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)

RUNWAY 9-27 GRIND & GROOVE

MARKING DETAILS SHEET 02 OF 03

PROJECT MGR:	JLV
DESIGNER:	EM
DRAWN BY:	GM
CHECK BY:	TO
SCALE:	
DATE:	4/3/2025

STATE OF TEXAS
JOHN L. VERBURG, JR.
125465
LICENSED
PROFESSIONAL ENGINEER
4-3-25

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

PROJECT NO.
100116454

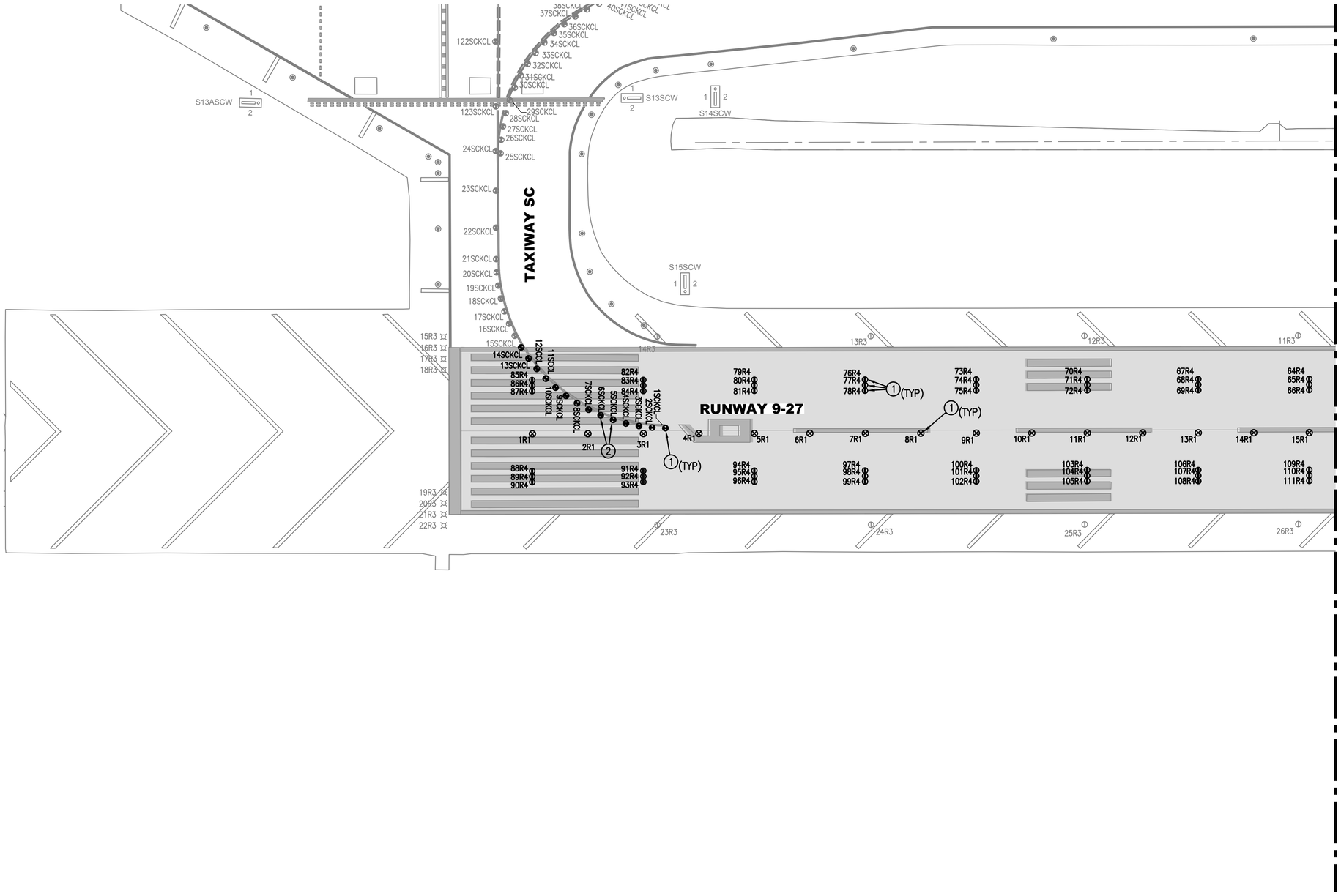
A.I.P. NO.

C.I.P. NO.

H.A.S. NO.

SHEET NO.

CM-502



GENERAL NOTES

1. ALL ITEMS SHOWN IN HEAVY LINEWEIGHT ARE TO BE REMOVED AND SALVAGED.
2. THE CONTRACTOR SHALL PROVIDE LOCK–OUT PROCEDURES PER NEC TO INSURE SAFETY OF PERSONNEL. REFER TO SECTION L–104.
3. KEYED NOTES ARE TYPICAL FOR ALL SHEETS OF THIS SERIES. ALL LISTED KEYED NOTES FOR A PARTICULAR SHEET MAY NOT APPLY AND THEREFORE THE KEYED NOTE IDENTIFIER WILL NOT BE SHOWN ON THE PLAN PORTION OF THE SHEET.

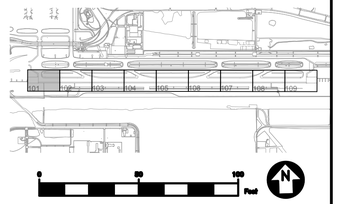
KEYED NOTES

(1) CONTRACTOR TO REMOVE AND SALVAGE EXISTING IN–PAVEMENT LIGHT FIXTURE, RECORDING LOCATION OF EXISTING FIXTURE. TOP SECTION OF BASE CAN TO BE REMOVED DURING GRINDING AND GROOVING OPERATIONS. BOTTOM SECTION OF BASE CAN, ISOLATION TRANSFORMER, AND ALL OTHER ASSOCIATED EQUIPMENT TO REMAIN. UPON COMPLETION OF GRINDING AND GROOVING OPERATIONS, CONTRACTOR TO INSTALL NEW BASE CAN TOP SECTION AND REINSTALL PREVIOUSLY SALVAGED LIGHT FIXTURE, AT THE SAME LOCATION IT WAS ORIGINALLY OR INSTALL A NEW OWNER PROVIDED LED FIXTURE ON THE EXISTING BASE CAN.

(2) REMOVE AND SALVAGE EXISTING IN–PAVEMENT LIGHT FIXTURE. BASE CAN TO BE REMOVED. INSTALL NEW BASE CAN IN MODIFIED PAVEMENT SECTION. REINSTALL EXISTING SALVAGED LIGHT FIXTURE ON NEW BASE CAN.

AIRFIELD LIGHTING LEGEND

- ELEVATED TAXIWAY EDGE LIGHT TO REMAIN
- IN–PAVEMENT BIDIRECTIONAL TAXIWAY CENTERLINE LIGHT TO REMAIN.
- L–868B BASE CAN WITH COVER PLATE TO REMAIN
- IN–PAVEMENT RUNWAY GUARD LIGHT TO REMAIN
- ELEVATED THRESHOLD/END LIGHT TO REMAIN
- ELEVATED HIRL TO REMAIN
- IN–PAVEMENT HIRL TO REMAIN
- SIGN TO REMAIN
- MANHOLE TO REMAIN
- PULL CAN TO REMAIN
- MILL AND GROOVE SCOPE AREA SHOWN FOR REFERENCE ONLY
- IN–PAVEMENT RUNWAY CENTERLINE LIGHT TO BE REMOVED AND REINSTALLED
- IN–PAVEMENT TAXIWAY CENTERLINE LIGHT TO BE REMOVED AND REINSTALLED
- IN–PAVEMENT UNI–DIRECTIONAL TAXIWAY CENTERLINE LIGHT TO BE REMOVED AND REINSTALLED
- IN–PAVEMENT RUNWAY TDZ LIGHT TO BE REMOVED AND REINSTALLED
- EXISTING CONDUIT AND CABLES SHOWN FOR REFERENCE ONLY
- 2 — INDICATES NUMBER OF 2" DUCTS
- 2 — INDICATES NUMBER OF 4" DUCTS
- DB — CONCRETE ENCASED DUCTS TO REMAIN



HOUSTON AIRPORT SYSTEM
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON, TX

Ferguson Consulting
aviation Specialists for Electrical, Telecommunications and Security Systems
Ferguson Consulting Inc.
10200 Grogans Mill Rd. Ste. #420
The Woodlands, TX 77380
(281) 252-9232 Firm No. 6864

REVISIONS		
NO.	DESCRIPTION	DATE BY

GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)

RUNWAY 9-27 GRIND & GROOVE AIRFIELD LIGHTING PLANS

PROJECT MGR:	JLV
DESIGNER:	RCF
DRAWN BY:	FR
CHECK BY:	CLF
SCALE:	
DATE:	4/01/2025

STATE OF TEXAS
C. LECETTE FERGUSON
81460
REGISTERED PROFESSIONAL ENGINEER
F-6864 4/01/25

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

PROJECT NO.
100116454

A.I.P. NO.

C.I.P. NO.

H.A.S. NO.

SHEET NO.
E-101

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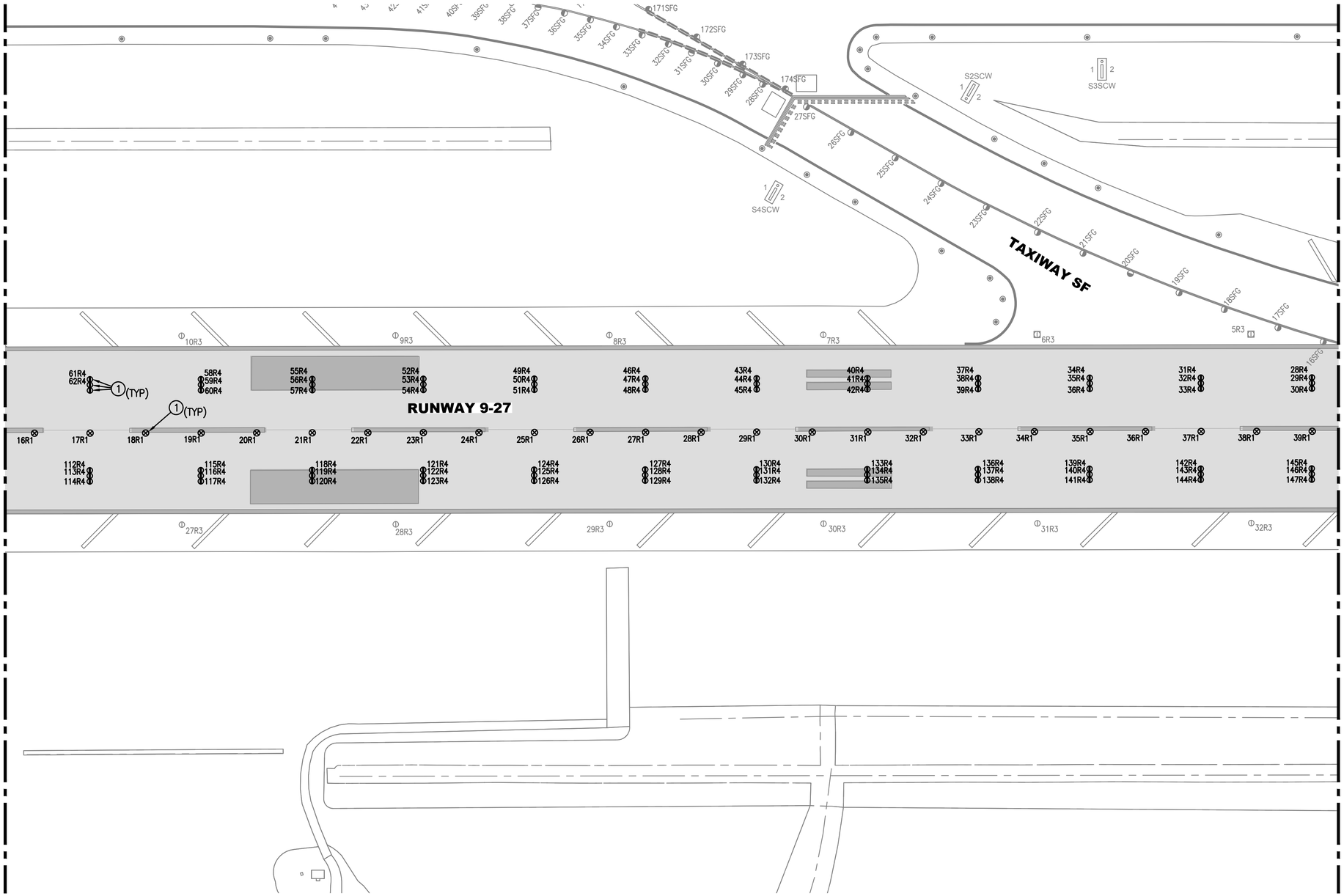

GENERAL NOTES

1. ALL ITEMS SHOWN IN HEAVY LINEWEIGHT ARE TO BE REMOVED AND SALVAGED.
2. THE CONTRACTOR SHALL PROVIDE LOCK–OUT PROCEDURES PER NEC TO INSURE SAFETY OF PERSONNEL. REFER TO SECTION L–104.
3. KEYED NOTES ARE TYPICAL FOR ALL SHEETS OF THIS SERIES. ALL LISTED KEYED NOTES FOR A PARTICULAR SHEET MAY NOT APPLY AND THEREFORE THE KEYED NOTE IDENTIFIER WILL NOT BE SHOWN ON THE PLAN PORTION OF THE SHEET.

KEYED NOTES

(1) CONTRACTOR TO REMOVE AND SALVAGE EXISTING IN–PAVEMENT LIGHT FIXTURE, RECORDING LOCATION OF EXISTING FIXTURE. TOP SECTION OF BASE CAN TO BE REMOVED DURING GRINDING AND GROOVING OPERATIONS. BOTTOM SECTION OF BASE CAN, ISOLATION TRANSFORMER, AND ALL OTHER ASSOCIATED EQUIPMENT TO REMAIN. UPON COMPLETION OF GRINDING AND GROOVING OPERATIONS, CONTRACTOR TO INSTALL NEW BASE CAN TOP SECTION AND REINSTALL PREVIOUSLY SALVAGED LIGHT FIXTURE, AT THE SAME LOCATION IT WAS ORIGINALLY OR INSTALL A NEW OWNER PROVIDED LED FIXTURE ON THE EXISTING BASE CAN.

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AIRFIELD LIGHTING LEGEND

- ELEVATED TAXIWAY EDGE LIGHT TO REMAIN
- IN–PAVEMENT BIDIRECTIONAL TAXIWAY CENTERLINE LIGHT TO REMAIN.
- L–868B BASE CAN WITH COVER PLATE TO REMAIN
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- ELEVATED HIRL TO REMAIN
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- 2 — INDICATES NUMBER OF 2" DUCTS
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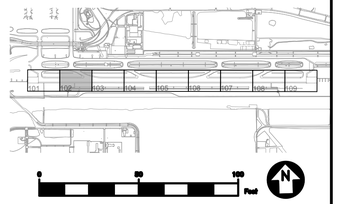

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Ferguson Consulting Inc.
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REVISIONS

NO.	DESCRIPTION	DATE	BY

GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)

RUNWAY 9-27 GRIND & GROOVE AIRFIELD LIGHTING PLANS

PROJECT MGR:	JLV
DESIGNER:	RCF
DRAWN BY:	FR
CHECK BY:	CLF
SCALE:	
DATE:	4/01/2025

STATE OF TEXAS
C. LECETTE FERGUSON
81460
REGISTERED PROFESSIONAL ENGINEER
F–6864 4/01/25

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

PROJECT NO.
100116454

A.I.P. NO.

C.I.P. NO.

H.A.S. NO.

SHEET NO.
E-102

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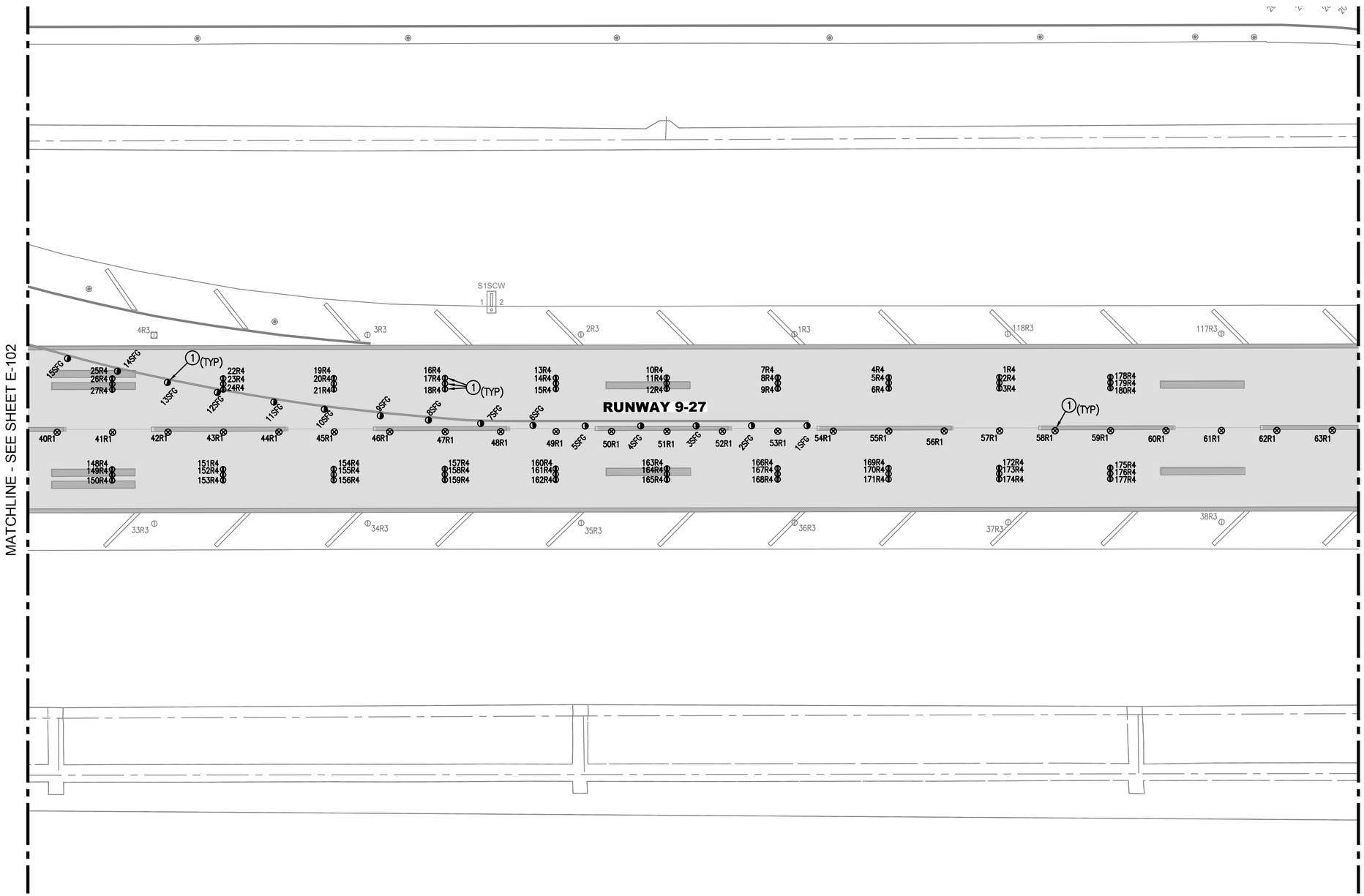

GENERAL NOTES

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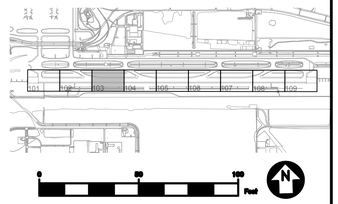

HOUSTON AIRPORT SYSTEM
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON, TX

Ferguson Consulting
aviation Specialists for Electrical, Telecommunications and Security Systems
Ferguson Consulting Inc.
10200 Grogans Mill Rd. Ste. #420
The Woodlands, TX 77380
(281) 252-9232 Firm No. 6864

REVISIONS

NO.	DESCRIPTION	DATE	BY

GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)

RUNWAY 9-27 GRIND & GROOVE AIRFIELD LIGHTING PLANS

PROJECT MGR:	JLV
DESIGNER:	RCF
DRAWN BY:	FR
CHECK BY:	CLF
SCALE:	
DATE:	4/01/2025

STATE OF TEXAS
C. LECETTE FERGUSON
81460
REGISTERED PROFESSIONAL ENGINEER
F-6864 4/01/25

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

PROJECT NO. 100116454

A.I.P. NO.

C.I.P. NO.

H.A.S. NO.

SHEET NO. E-103

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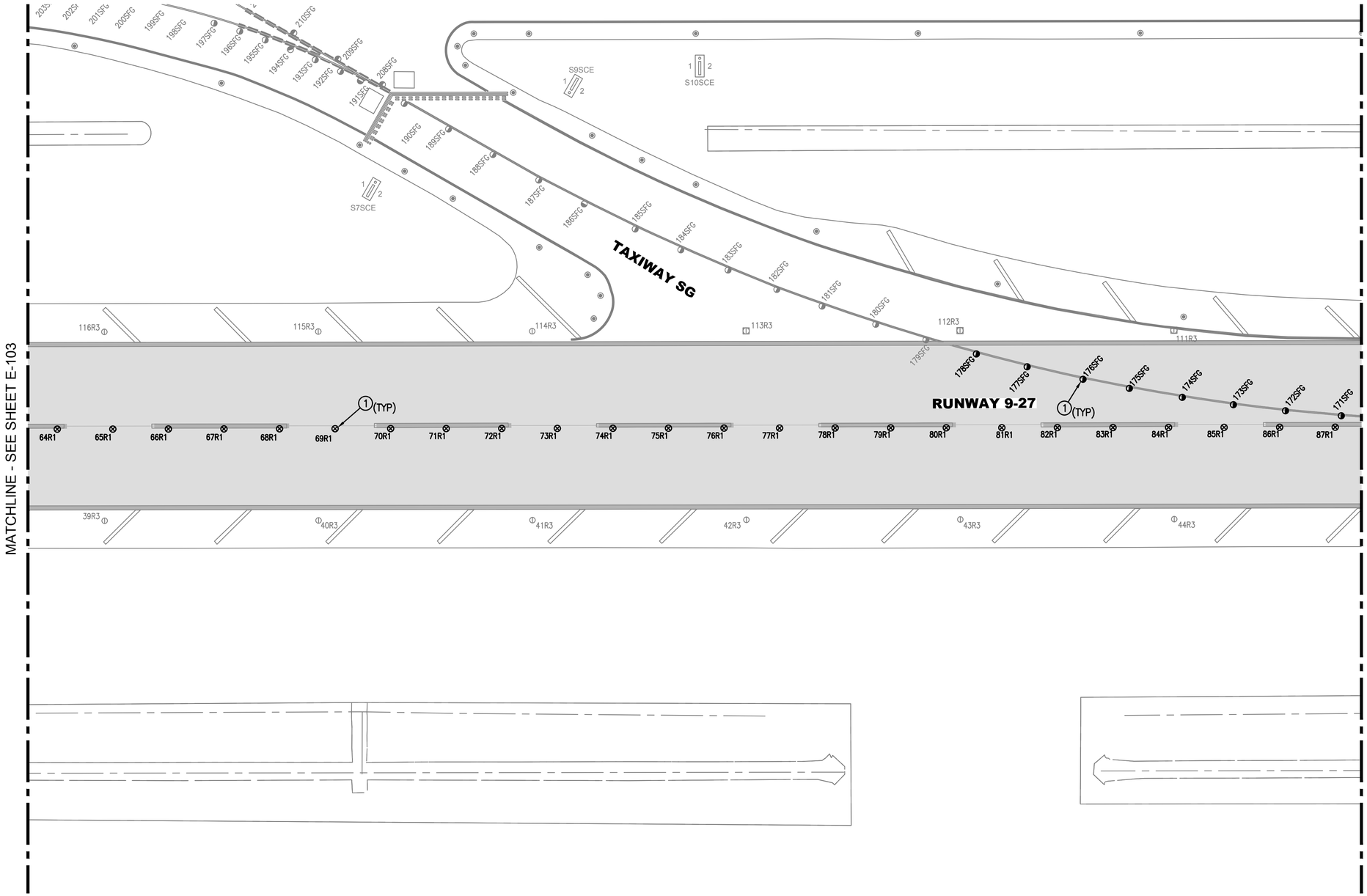

GENERAL NOTES

1. ALL ITEMS SHOWN IN HEAVY LINEWEIGHT ARE TO BE REMOVED AND SALVAGED.
2. THE CONTRACTOR SHALL PROVIDE LOCK–OUT PROCEDURES PER NEC TO INSURE SAFETY OF PERSONNEL. REFER TO SECTION L–104.
3. KEYED NOTES ARE TYPICAL FOR ALL SHEETS OF THIS SERIES. ALL LISTED KEYED NOTES FOR A PARTICULAR SHEET MAY NOT APPLY AND THEREFORE THE KEYED NOTE IDENTIFIER WILL NOT BE SHOWN ON THE PLAN PORTION OF THE SHEET.

KEYED NOTES

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AIRFIELD LIGHTING LEGEND

- ELEVATED TAXIWAY EDGE LIGHT TO REMAIN
- IN–PAVEMENT BIDIRECTIONAL TAXIWAY CENTERLINE LIGHT TO REMAIN.
- L–868B BASE CAN WITH COVER PLATE TO REMAIN
- IN–PAVEMENT RUNWAY GUARD LIGHT TO REMAIN
- ELEVATED THRESHOLD/END LIGHT TO REMAIN
- ELEVATED HIRL TO REMAIN
- IN–PAVEMENT HIRL TO REMAIN
- SIGN TO REMAIN
- MANHOLE TO REMAIN
- PULL CAN TO REMAIN
- MILL AND GROOVE SCOPE AREA SHOWN FOR REFERENCE ONLY
- IN–PAVEMENT RUNWAY CENTERLINE LIGHT TO BE REMOVED AND REINSTALLED
- IN–PAVEMENT TAXIWAY CENTERLINE LIGHT TO BE REMOVED AND REINSTALLED
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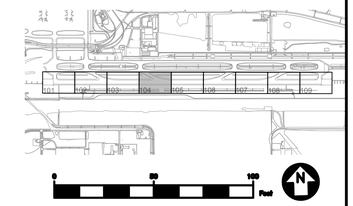
- IN–PAVEMENT RUNWAY TDZ LIGHT TO BE REMOVED AND REINSTALLED
- EXISTING CONDUIT AND CABLES SHOWN FOR REFERENCE ONLY
- 2 — INDICATES NUMBER OF 2" DUCTS
- 2 — INDICATES NUMBER OF 4" DUCTS
- DB — CONCRETE ENCASED DUCTS TO REMAIN



HOUSTON AIRPORT SYSTEM
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON, TX

Ferguson Consulting
aviation Specialists for Electrical, Telecommunications and Security Systems
Ferguson Consulting Inc.
10200 Grogans Mill Rd. Ste. #420
The Woodlands, TX 77380
(281) 252-9232 Firm No. 6864

REVISIONS		
NO.	DESCRIPTION	DATE BY

GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)

RUNWAY 9-27 GRIND & GROOVE AIRFIELD LIGHTING PLANS

PROJECT MGR:	JLV
DESIGNER:	RCF
DRAWN BY:	FR
CHECK BY:	CLF
SCALE:	
DATE:	4/01/2025

STATE OF TEXAS
C. LECETTE FERGUSON
81460
REGISTERED PROFESSIONAL ENGINEER
F–6864 4/01/25

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

PROJECT NO.
100116454

A.I.P. NO.

C.I.P. NO.

H.A.S. NO.

SHEET NO.
E-104

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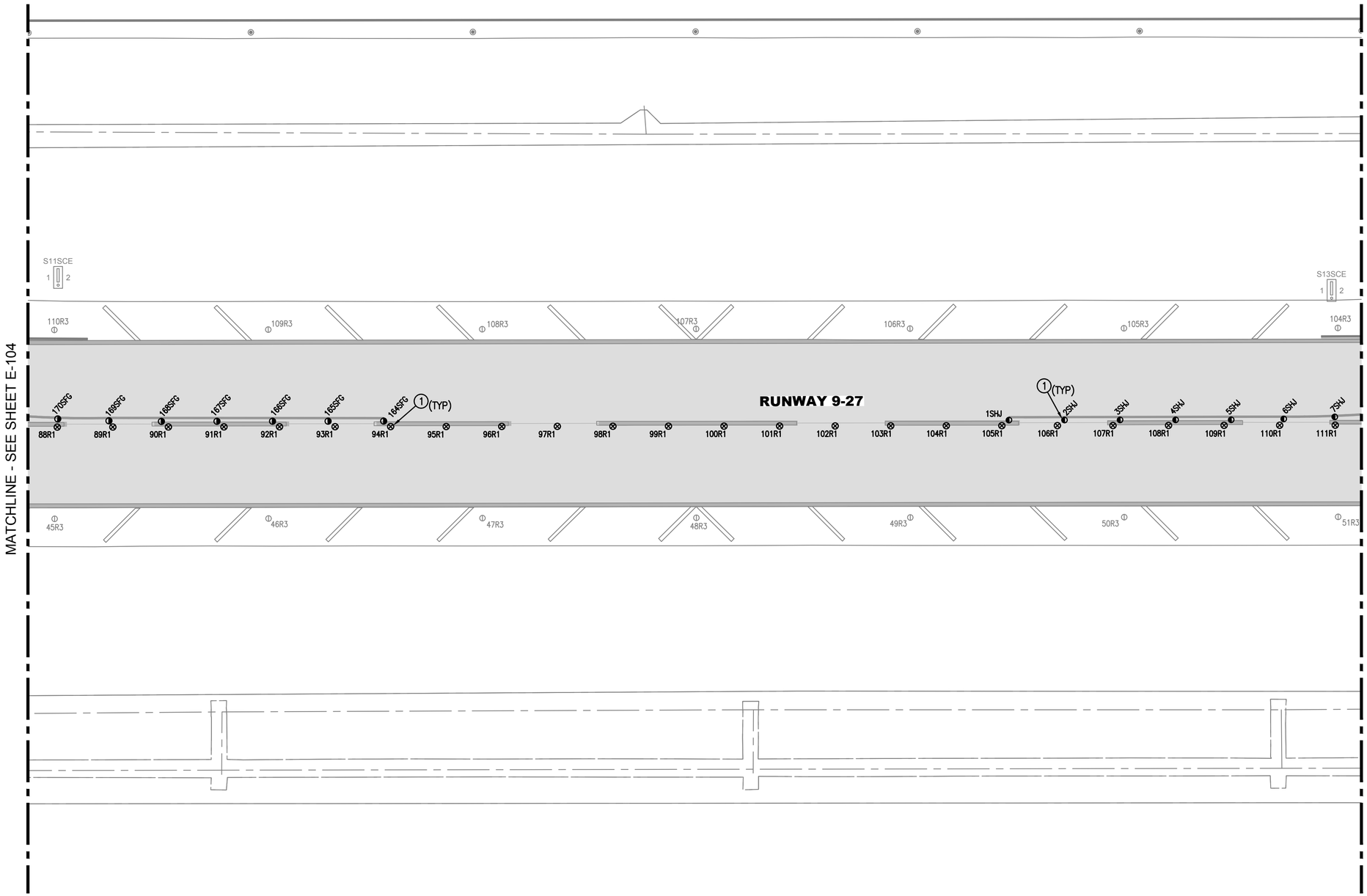

GENERAL NOTES

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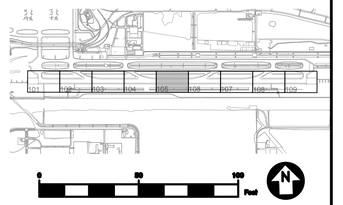

HOUSTON AIRPORT SYSTEM
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The Woodlands, TX 77380
(281) 252-9232 Firm No. 6864

REVISIONS

NO.	DESCRIPTION	DATE	BY

GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)

RUNWAY 9-27 GRIND & GROOVE

PROJECT MGR:	JLV
DESIGNER:	RCF
DRAWN BY:	FR
CHECK BY:	CLF
SCALE:	
DATE:	4/01/2025

STATE OF TEXAS
C. LECETTE FERGUSON
81460
REGISTERED PROFESSIONAL ENGINEER
F-6864 04/01/25

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

PROJECT NO.
100116454

A.I.P. NO.

C.I.P. NO.

H.A.S. NO.

SHEET NO.
E-105

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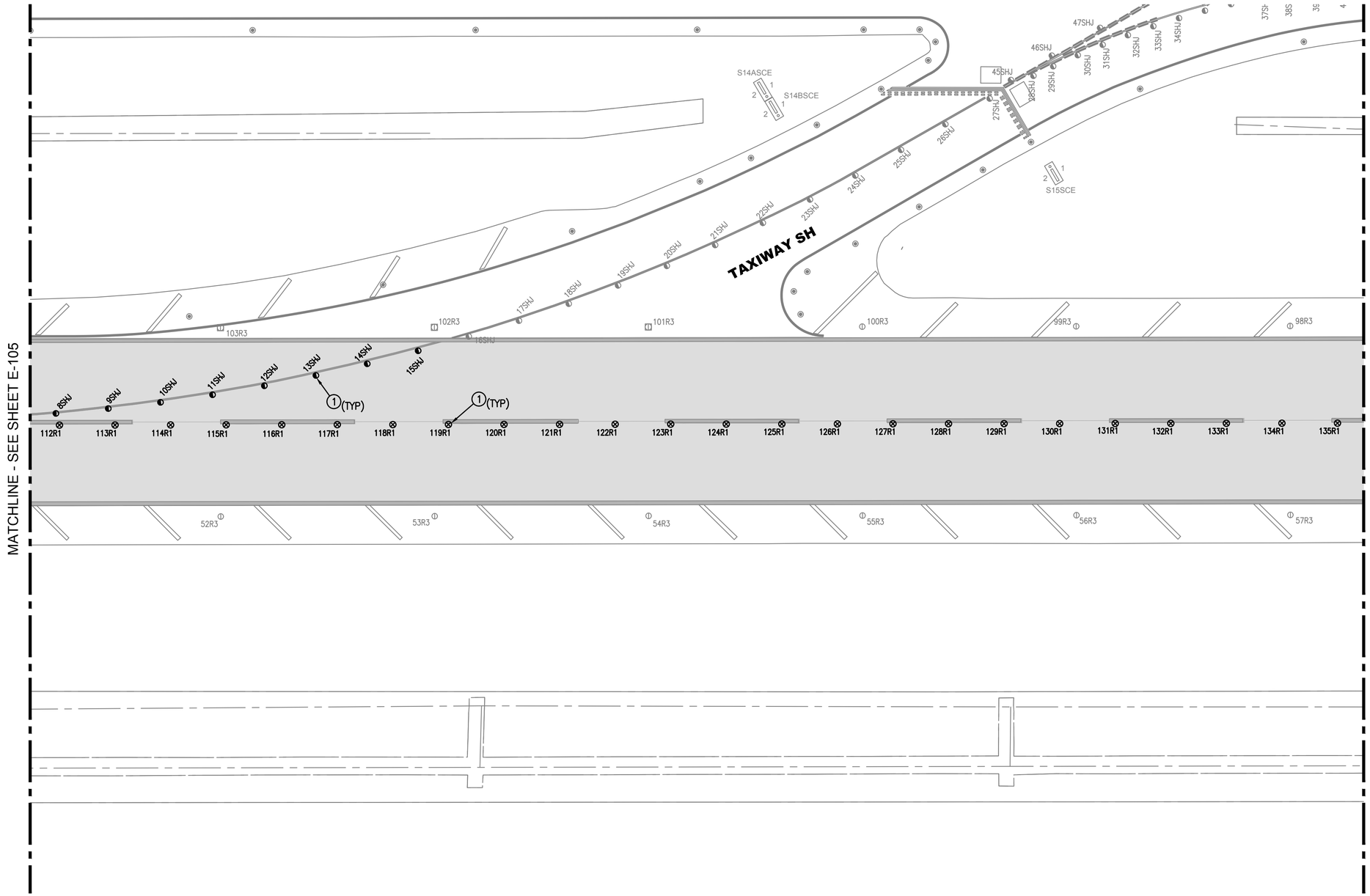

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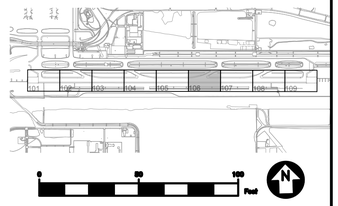

HOUSTON AIRPORT SYSTEM
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON, TX

Ferguson Consulting
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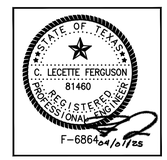
Ferguson Consulting Inc.
10200 Grogans Mill Rd. Ste. #420
The Woodlands, TX 77380
(281) 252-9232 Firm No. 6864

REVISIONS		
NO.	DESCRIPTION	DATE BY

GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)

RUNWAY 9-27 GRIND & GROOVE AIRFIELD LIGHTING PLANS

PROJECT MGR:	JLV
DESIGNER:	RCF
DRAWN BY:	FR
CHECK BY:	CLF
SCALE:	
DATE:	4/01/2025



APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

PROJECT NO.
100116454

A.I.P. NO.

C.I.P. NO.

H.A.S. NO.

SHEET NO.
E-106

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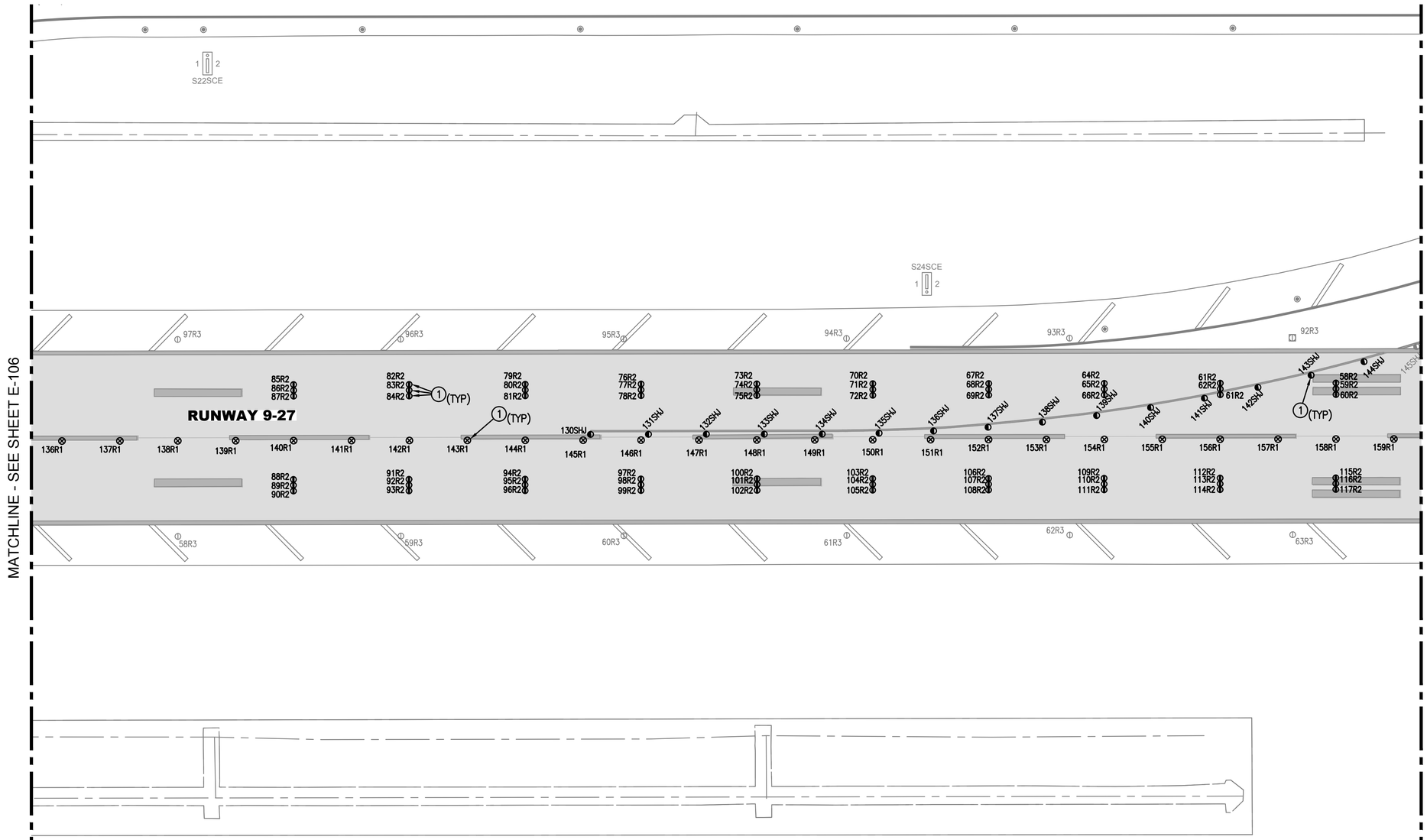

GENERAL NOTES

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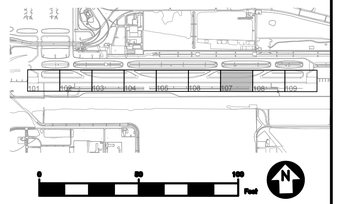

HOUSTON AIRPORT SYSTEM
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON, TX

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(281) 252-9232 Firm No. 6864

REVISIONS

NO.	DESCRIPTION	DATE	BY

GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)

RUNWAY 9-27 GRIND & GROOVE AIRFIELD LIGHTING PLANS

PROJECT MGR:	JLV
DESIGNER:	RCF
DRAWN BY:	FR
CHECK BY:	CLF
SCALE:	
DATE:	4/01/2025

STATE OF TEXAS
C. LECETTE FERGUSON
81460
REGISTERED PROFESSIONAL ENGINEER
F-6864 4/01/25

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

PROJECT NO.
100116454

A.I.P. NO.

C.I.P. NO.

H.A.S. NO.

SHEET NO.
E-107

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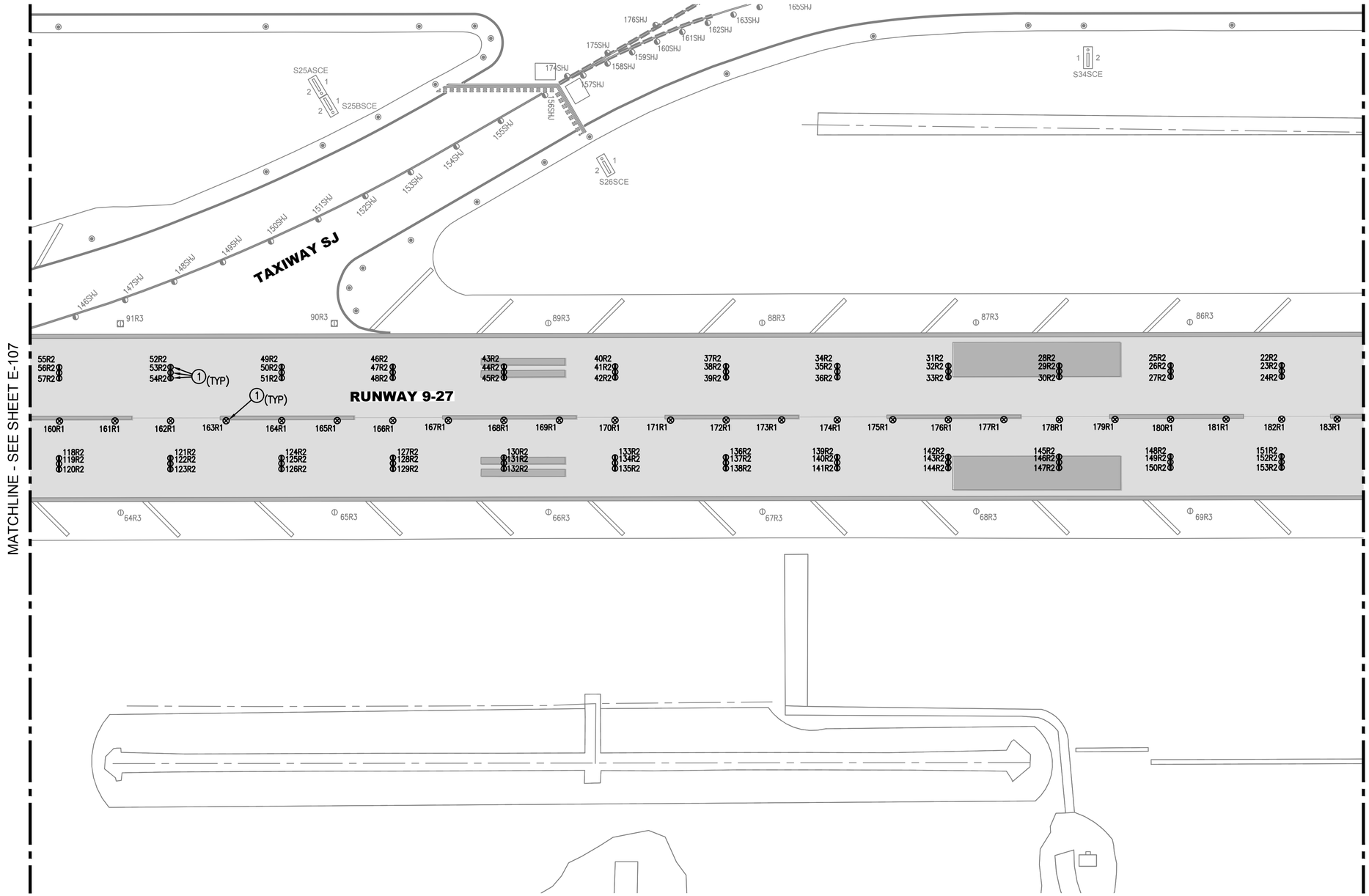

GENERAL NOTES

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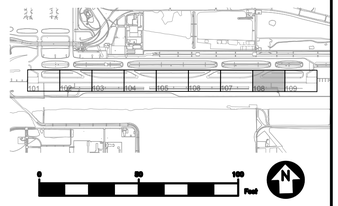

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REVISIONS

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GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)

RUNWAY 9-27 GRIND & GROOVE AIRFIELD LIGHTING PLANS

PROJECT MGR:	JLV
DESIGNER:	RCF
DRAWN BY:	FR
CHECK BY:	CLF
SCALE:	
DATE:	4/01/2025

STATE OF TEXAS
C. LECETTE FERGUSON
81460
REGISTERED PROFESSIONAL ENGINEER
F–6864 4/01/25

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

PROJECT NO.
100116454

A.I.P. NO.

C.I.P. NO.

H.A.S. NO.

SHEET NO.
E-108

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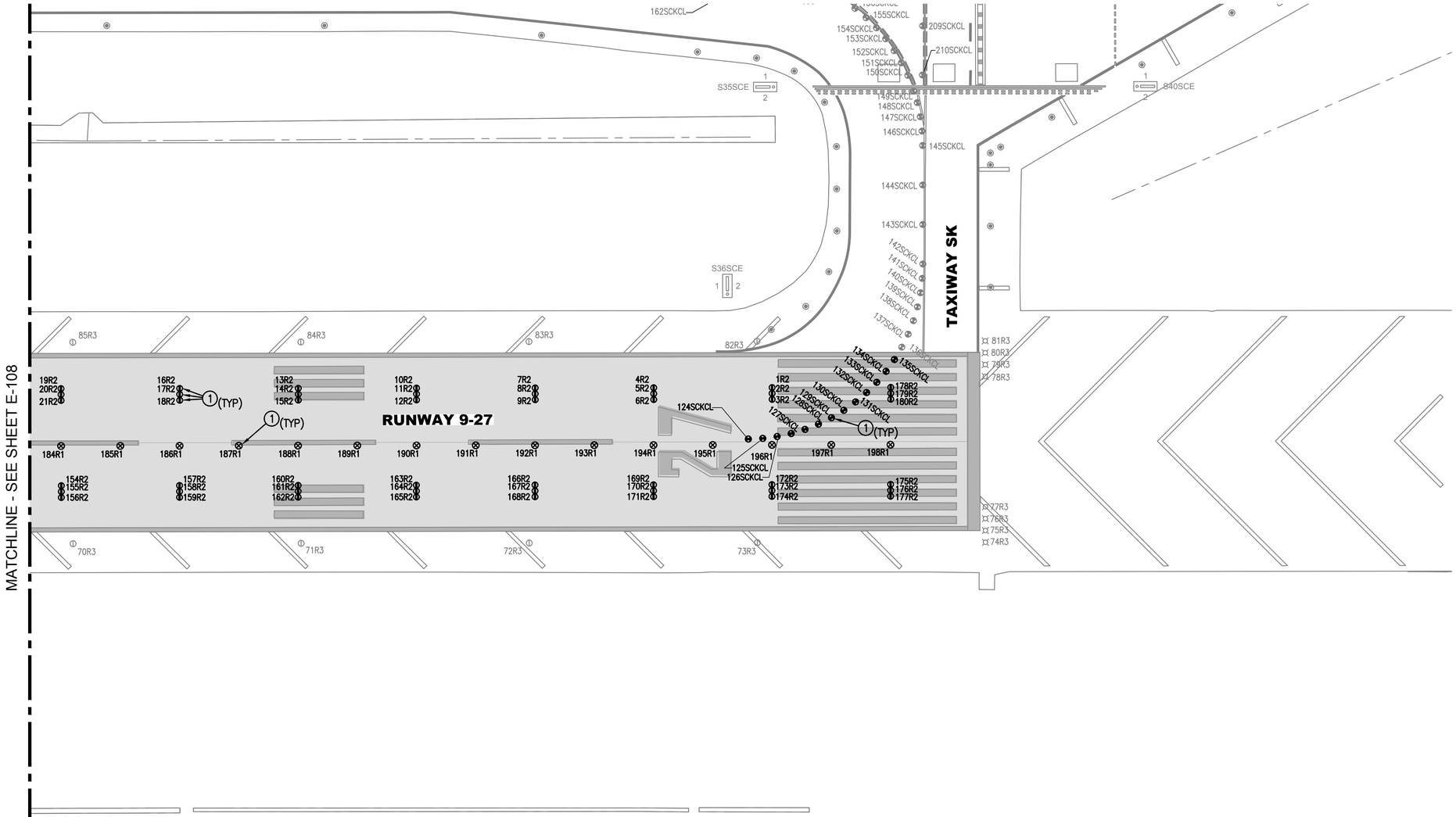

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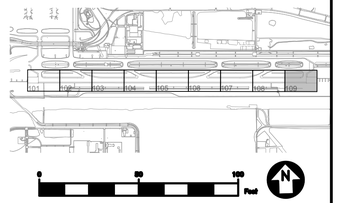
- ELEVATED TAXIWAY EDGE LIGHT TO REMAIN
- IN–PAVEMENT BIDIRECTIONAL TAXIWAY CENTERLINE LIGHT TO REMAIN.
- L–868B BASE CAN WITH COVER PLATE TO REMAIN
- IN–PAVEMENT RUNWAY GUARD LIGHT TO REMAIN
- ELEVATED THRESHOLD/END LIGHT TO REMAIN
- ELEVATED HIRL TO REMAIN
- IN–PAVEMENT HIRL TO REMAIN
- SIGN TO REMAIN
- MANHOLE TO REMAIN
- PULL CAN TO REMAIN
- MILL AND GROOVE SCOPE AREA SHOWN FOR REFERENCE ONLY
- IN–PAVEMENT RUNWAY CENTERLINE LIGHT TO BE REMOVED AND REINSTALLED
- IN–PAVEMENT TAXIWAY CENTERLINE LIGHT TO BE REMOVED AND REINSTALLED
- IN–PAVEMENT UNI–DIRECTIONAL TAXIWAY CENTERLINE LIGHT TO BE REMOVED AND REINSTALLED
- IN–PAVEMENT RUNWAY TDZ LIGHT TO BE REMOVED AND REINSTALLED
- EXISTING CONDUIT AND CABLES SHOWN FOR REFERENCE ONLY
- 2 — INDICATES NUMBER OF 2" DUCTS
- 2 — INDICATES NUMBER OF 4" DUCTS
- DB — CONCRETE ENCASED DUCTS TO REMAIN



HOUSTON AIRPORT SYSTEM
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON, TX

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10200 Grogans Mill Rd. Ste. #420
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(281) 252-9232 Firm No. 6864

REVISIONS		
NO.	DESCRIPTION	DATE BY

GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)

RUNWAY 9-27 GRIND & GROOVE AIRFIELD LIGHTING PLANS

PROJECT MGR:	JLV
DESIGNER:	RCF
DRAWN BY:	FR
CHECK BY:	CLF
SCALE:	
DATE:	4/01/2025

STATE OF TEXAS
C. LECETTE FERGUSON
81460
REGISTERED PROFESSIONAL ENGINEER
F-6864 4/01/25

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

PROJECT NO.
100116454

A.I.P. NO.

C.I.P. NO.

H.A.S. NO.

SHEET NO.
E-109

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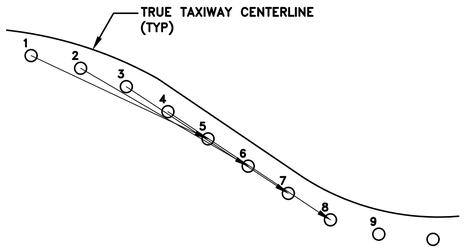
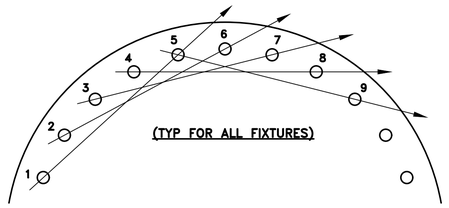


UNIDIRECTIONAL LIGHT ON SPIRAL CURVE

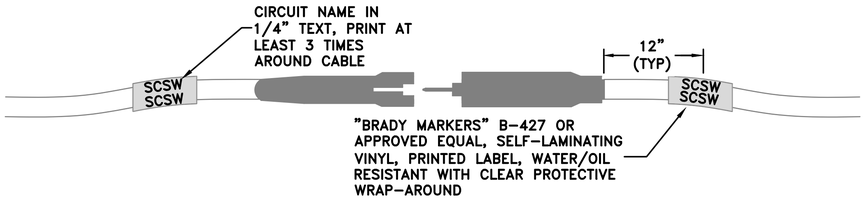


UNIDIRECTIONAL LIGHT ON CIRCULAR CURVE

NOTES:

1. TAXIWAY CENTERLINE LIGHT FIXTURES ADJACENT TO THE TAXIWAY CENTERLINE SHALL BE AIMED SUCH THAT THE BEAM AXIS IS "TOED IN" TO INTERSECT THE CENTERLINE AT A POINT APPROXIMATELY EQUAL TO FOUR TIMES THE SPACING OF LIGHTS (EVERY FOURTH LIGHT) ON THE CURVE PORTION.

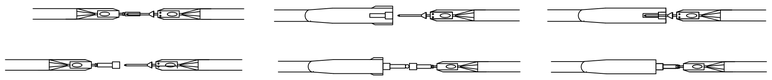
1 / E-501 FIXTURE AIMING DETAIL
SCALE:NTS



NOTES:

PROVIDE WATERPROOF VINYL CIRCUIT IDENTIFICATION LABELS FOR ALL CIRCUITS AFFECTED BY THE PROJECT. INSTALL CIRCUIT IDENTIFICATION LABELS ON BOTH SIDES OF ALL SPLICE LOCATIONS, AT THE END OF ALL "BLACK" JACKETED CONDUCTORS, AND ON ALL AIRFIELD LIGHTING CABLES ENTERING OR EXITING HANDHOLES, MANHOLES, JUNCTION CAN PLAZAS, LIGHT BASES AND PULL BOXES. PROVIDE SEPARATE LABEL WITH UNIQUE IDENTIFICATION FOR EACH ADDITIONAL SPLICE LOCATION.

2 / E-501 CIRCUIT IDENTIFICATION LABEL DETAIL
SCALE:NTS



TYPE A
FOR SPLICES FOR USE AT JUNCTION OF HOMERUN WITH LOOP CIRCUIT

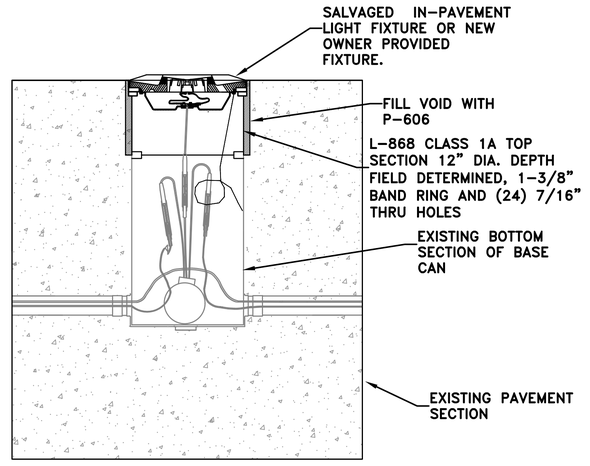
TYPE B
FOR SPLICES AT LIGHTS OR SIGNS

CONTRACTOR SHALL USE FAA APPROVED L-823 PRIMARY CONNECTOR KITS. CONNECTOR KITS SHALL BE MOLDED IN THERMOPLASTIC RUBBER. CONNECTION MUST BE WATER-TIGHT. CONNECTOR KITS SHALL HAVE EXTENDED STRAIN/BEND RELIEF, INTEGRALLY MOLDED O-RINGS AND ROLL OVER FLAPS

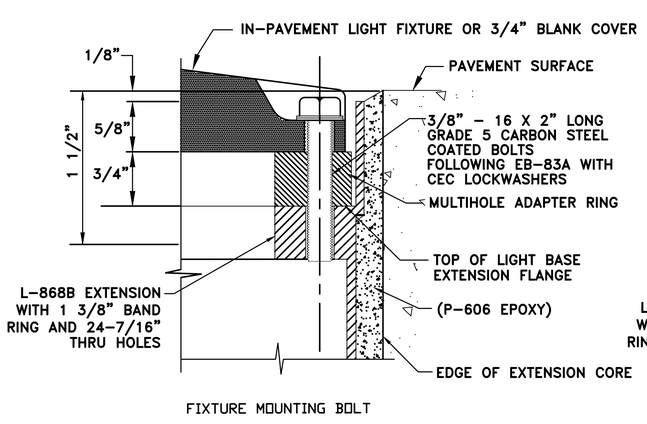
3 / E-501 CABLE SPLICE DETAIL
SCALE:NTS

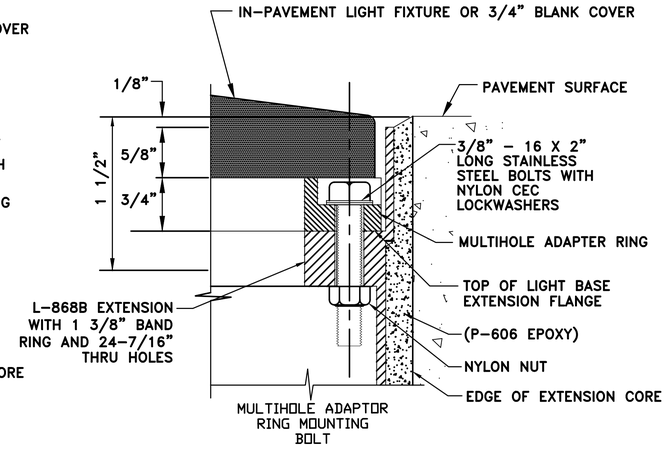
IN-PAVMENT LIGHT FIXTURE AND BASE CAN TOP SECTION INSTALLATION GUIDELINES:

1. CORE DRILL A 14" DIAMETER TO THE DEPTH REQUIRED TO REMOVE EXISTING BASE CAN TOP SECTION. ONCE TOP SECTION IS REMOVED, INSTALL A MUD PLATE ON BOTTOM SECTION TO PROTECT EXISTING CAN AND ASSOCIATED EQUIPMENT FROM MILLING AND GROOVING OPERATIONS AS WELL AS DEBRIS.
2. AFTER MILLING AND GROOVING OPERATIONS HAVE CONCLUDED, INSTALL A NEW L-868B TOP SECTION ON THE EXISTING BOTTOM SECTION, TOP SECTION HEIGHT SHALL BE FIELD DETERMINED. INSTALL WITH MULTI-HOLE ADAPTOR RING AND FILL ANNULAR VOID WITH P-606 EPOXY.
3. PHASING RESTRICTIONS WITHIN THE AREA WILL REQUIRE THE INSTALLATION OF ONLY MAXIMUM (3) SPACER RINGS OF VARIED THICKNESS TO BRING FINAL FIXTURE ELEVATION TO MEET FAA A/C 150/5340-30J. THE MULTIHOLE ADAPTER RING IS CONSIDERED A SPACER.
4. INSTALL SALVAGED OR NEW OWNER PROVIDED LIGHT FIXTURE ON CAN AND MAKE ALL NECESSARY ELECTRICAL CONNECTIONS.



5 / E-501 IN-PAVEMENT FIXTURE IN MODIFIED PAVEMENT AREAS
SCALE:NTS





4 / E-501 DETAILS FOR IN-PAVEMENT FIXTURE MOUNTING BOLT AND MULTIHOLE ADAPTOR RING
SCALE:NTS

1. BOLTS SHALL BE LENGTH SPECIFIED ABOVE UNLESS OTHERWISE APPROVED BY ENGINEER.
2. STANDARD BAND RING EXTENDS 1-3/8" ABOVE TOP OF UPPER BASE SECTION TO ALLOW 3/4" FIXTURE RECESS AND 3/4" MULTIHOLE ADAPTER RING. TOP OF FLANGE RING BAND IS 1/8" BELOW PAVEMENT SURFACE. SEE NOTE 7.
3. TORQUE BOLTS HOLDING FIXTURE TO 330 INCH-POUNDS. TORQUE REMAINING BOLTS TO MANUFACTURERS RECOMMENDATIONS.
4. BLANK LIDS FOR L-868 BASES IN RIGID PAVEMENT SHALL BE 3/4" THICK.
5. ALL LIGHT BASE BOLTS SHALL BE PROVIDED WITH TWO-PIECE CEC LOCK WASHERS.
6. FOR L-850 HIRL FIXTURES, THE BAND RING EXTENDS 1-7/8" FOR A TOTAL RECESS OF 2" FROM THE PAVEMENT SURFACE TO THE TOP OF THE LIGHT BASE EXTENSION FLANGE.
7. BOLTS FOR L-850 HIRL FIXTURES SHALL BE APPROPRIATELY SIZED TO EXTEND APPROX 3/4" BELOW MULTIHOLE ADAPTER RING AS SHOWN.

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RUNWAY 9-27 GRIND & GROOVE
AIRFIELD ELECTRICAL DETAILS

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C.I.P. NO.

H.A.S. NO.

SHEET NO.
E-501

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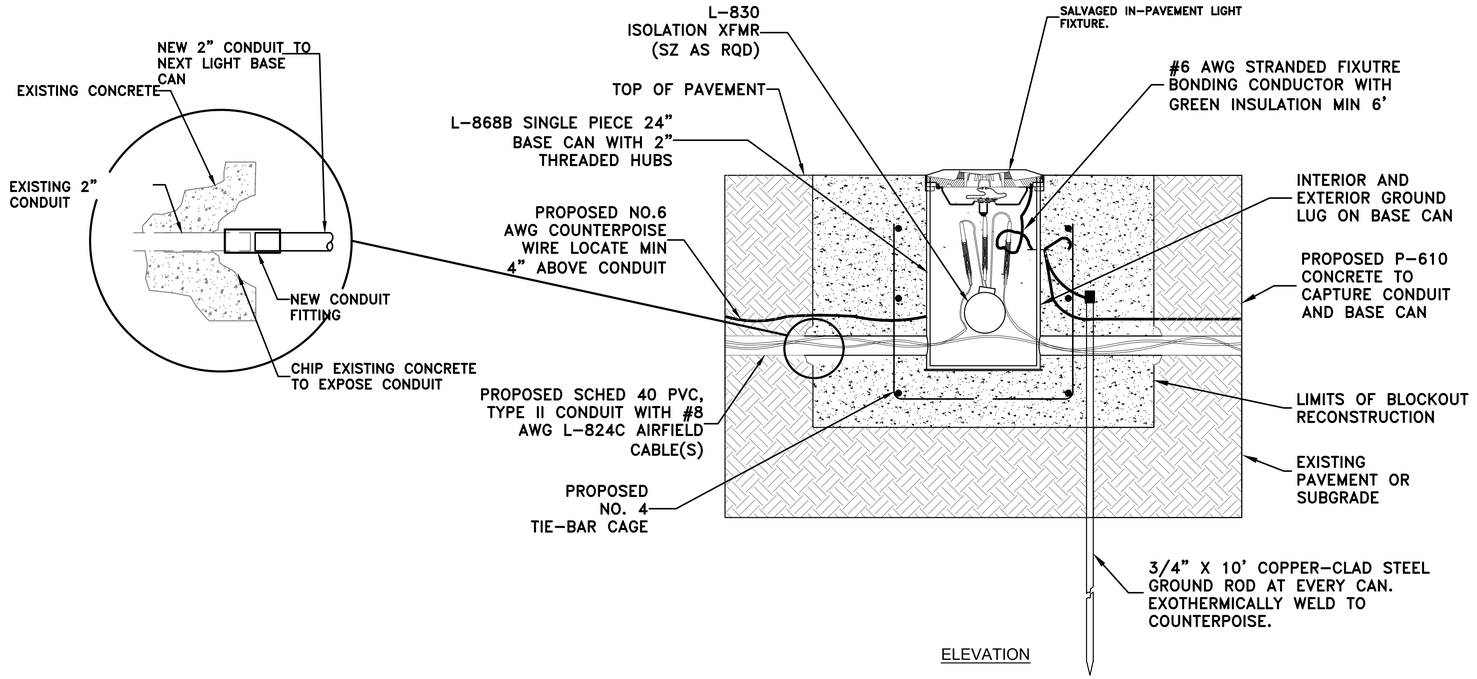
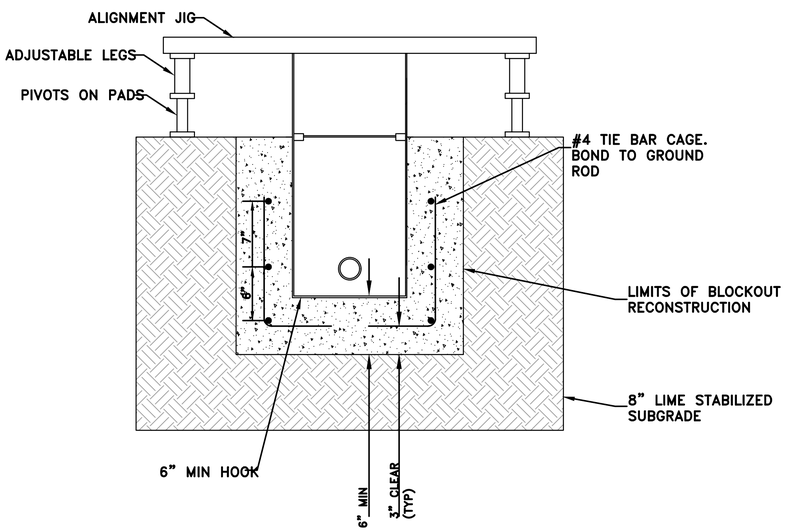


1 EP507 IN-PAVEMENT FIXTURE IN MODIFIED PAVEMENT AREAS

NTS



2 EP507 CAPTURE SECTION

NTS

NEW IN-PAVEMENT FIXTURE IN MODIFIED PAVEMENT AREAS

1. AFTER BLOCK OUT PAVEMENT HAS BEEN REMOVED, PREPARE A CAPTURE SECTION FOR A SINGLE PIECE L-868B (24"H) BASE CAN USING ALIGNMENT JIG TO KEEP ALIGNMENT AND ELEVATION PER FAA A/C. PROVIDE #4 TIE-BAR CAGE AS DETAILED ON CAPTURE SECTION DETAIL.
2. RUN 2" SCHEDULE 40 PVC FROM BASE CAN. MAKING CONNECTION TO EXISTING CONDUIT AS SHOWN IN DETAIL 1.
3. INSTALL #6 COUNTERPOISE WIRE A MINIMUM OF 4" ABOVE CONDUIT. BOND COUNTERPOISE FIRST TO GROUND ROD AT BASE CAN, THEN FROM GROUND ROD TO REINFORCEMENT BARS AT BASE CAN AND BASE CAN GROUND TAB.
4. INSTALL SEPARATE GROUND ROD FOR EVERY BASE CAN AND EXOTHERMICALLY WELD TO LOCAL COUNTERPOISE WHICH IS TERMINATED AT CUSTOM FACTORY MANUFACTURED MECHANICAL TERMINATION POINT, WHICH HAS BEEN BONDED TO BASE CAN PRIOR TO GALVANIZATION PROCESS.
5. CAPTURE BASE CAN IN NEW PAVEMENT SECTION, REFER TO CIVIL DRAWINGS FOR DETAILS.
6. PHASING RESTRICTIONS WITHIN THE AREA WILL REQUIRE THE INSTALLATION OF ONLY MAXIMUM (3) SPACER RINGS OF VARIED THICKNESS TO BRING FINAL FIXTURE ELEVATION TO MEET FAA A/C 150/5340-30J.

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