TYPE AC (BX) AND MC CABLE ARE PROHIBITED.

HOUSTON AIRPORT SYSTEM

MAYOR
JOHN WHITMIRE

DISTRICT COUNCIL MEMBERS
MARTHA CASTEX-TATUM
MARIO CASTILLO
CAROLYN EVANS-SHABAZZ
FRED FLICKINGER
MARY NAN HUFFMAN
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ABBIE KAMIN
JOAQUIN MARTINEZ
AMY PECK
EDWARD POLLARD
TIFFANY D. THOMAS

CONTROLLER
CHRIS HOLLINS

COUNCIL MEMBERS AT-LARGE
SALLIE ALCORN
TWILA CARTER
WILLIE DAVIS
LETITIA PLUMMER
JULIAN RAMIREZ

PLANS FOR CONSTRUCTION

OF

SOUTH LIGHTING VAULT RENOVATION

AT

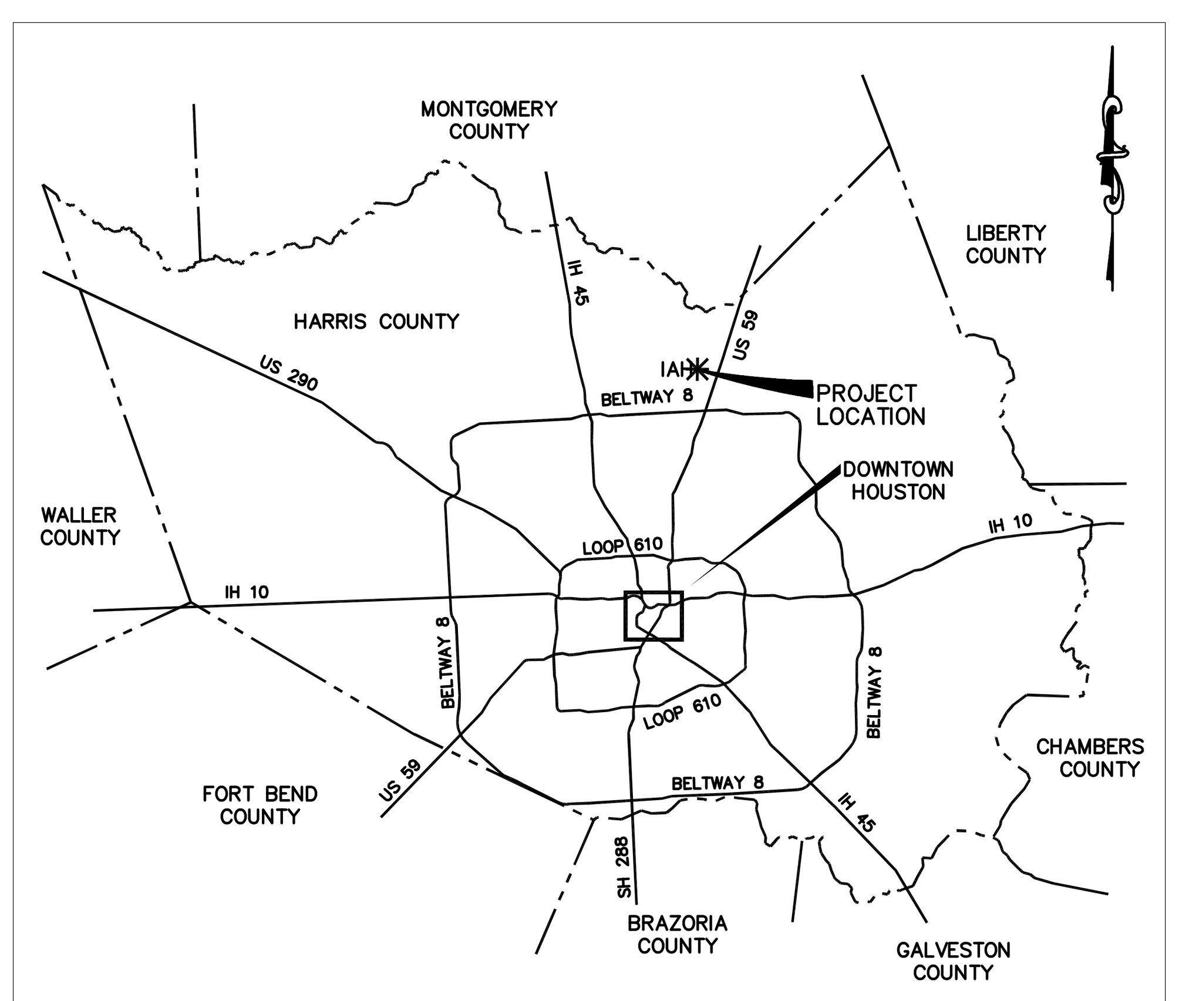
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON

HAS PROJECT No. 952

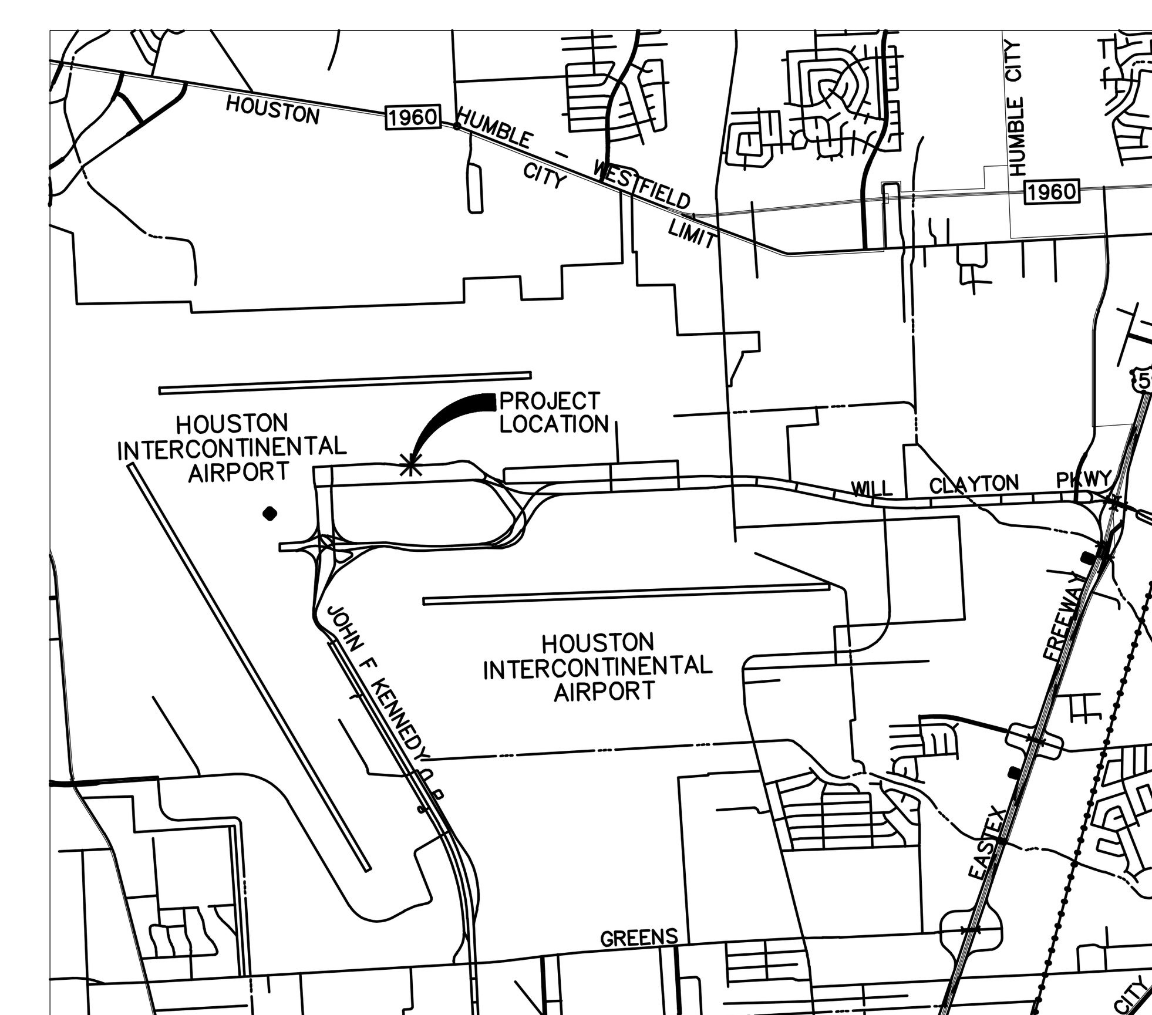
CIP No. A-000687
BSG No. 2024-31-IAH
TIP No. 24-28-IAH

PREPARED BY

Jacobs



AREA MAP
N.T.S.



VICINITY MAP
N.T.S.
KEY MAP NO. 374A **GIMS MAP NO. 5467C**

HOUSTON AIRPORT SYSTEM

Jacobs
818 Town & Country Blvd.
Suite 500
Houston, TX 77024
(281) 721-8400
www.jacobs.com TBPE Firm #2966

REVISIONS		
NO.	DESCRIPTION	DATE
	ISSUED FOR CONSTRUCTION	03/15/24

CITY OF HOUSTON
HOUSTON AIRPORTS SYSTEM
Recommended 03/29/2024
Houston Airports System Director or Designated Representative DATE

REVIEWED / NO EXCEPTIONS TAKEN
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HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032
SOUTH VAULT RENOVATIONS
COVER SHEET

PROJECT MGR: AEO
DESIGNER: AO
DRAWN BY: SH
CHECK BY: NM

DATE: 03/22/24

REGISTERED ARCHITECT TODD MICHAEL NIESNER 25135 STATE OF TEXAS
03/22/24

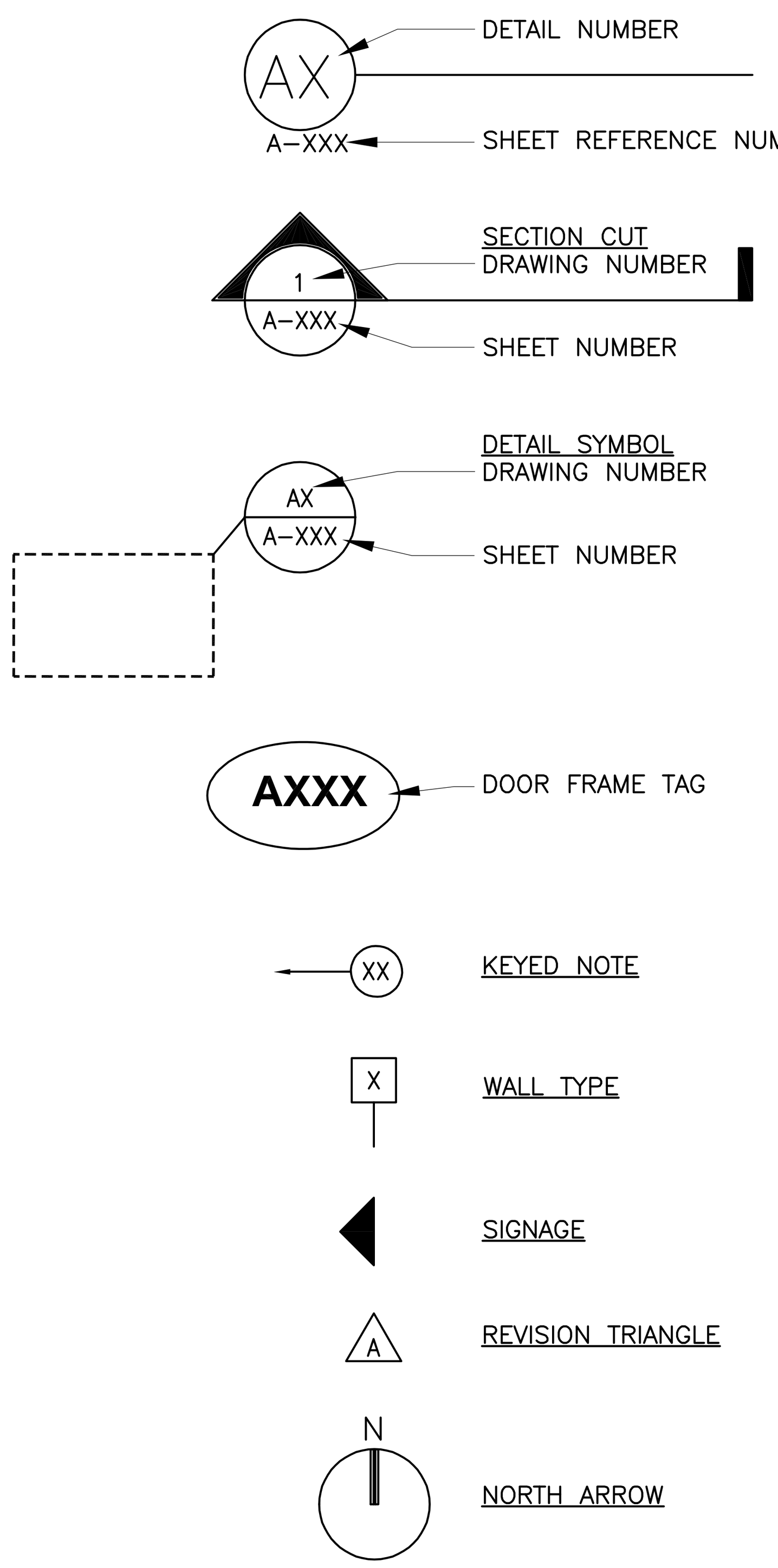
APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO.
SV-G0.01

LEGEND:



OCCUPANCY CLASSIFICATION

OCCUPANCIES	DESCRIPTION	SEPARATION	SECTION
F-1	MODERATE HAZARD ELECTRICAL	NON-SEPARATED USE	306

TYPES OF CONSTRUCTION

TYPE IIB, UNPROTECTED, NONCOMBUSTIBLE CONSTRUCTION

THERE IS NO CHANGE IN BUILDING USE.

TABLE 1004.1.2: MAXIMUM FLOOR AREA ALLOWANCE PER OCCUPANT = 300 GROSS S.F.

TOTAL OCCUPANTS = 5

THE FOLLOWING WILL BE PROVIDED BY THE CONTRACTOR AS A DELAYED SUBMITTAL FOR PERMIT:
1. EMERGENCY RESPONDER RADIO COVERAGE COMPLIANCE SUBMITTAL.
2. ELECTRONIC DOOR LOCK PERMIT SUBMITTAL
3. FIRE ALARM PERMIT SUBMITTAL

CODES AND GUIDELINES

JURISDICTION: CITY OF HOUSTON

2021 INTERNATIONAL BUILDING CODE WITH CITY OF HOUSTON AMENDMENTS.

2021 INTERNATIONAL FIRE CODE WITH CITY OF HOUSTON AMENDMENTS.

2021 UNIFORM MECHANICAL CODE WITH CITY OF HOUSTON AMENDMENTS.

2023 NATIONAL ELECTRICAL CODE WITH CITY OF HOUSTON AMENDMENTS.

2021 UNIFORM PLUMBING CODE WITH CITY OF HOUSTON AMENDMENTS.

2021 INTERNATIONAL ENERGY CONSERVATION CODE WITH CITY OF HOUSTON AMENDMENTS.

TEXAS ARCHITECTURAL BARRIERS ACT, ARTICLE 9102, TEXAS CIVIL STATUTES.

TEXAS ACCESSIBILITY STANDARDS (TAS)

FAA 150/5300-13B AIRPORT DESIGN.

FAA 150/5340-30 DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS

FAA 150/5360-13A PLANNING AND DESIGN.

GUIDELINES FOR AIRPORT TERMINAL FACILITIES.

HOUSTON AIRPORT SYSTEM (HAS) STANDARDS AND DESIGN MANUAL 2023

HOUSTON AIRPORT SYSTEM (HAS) IT 2023 STANDARDS

GEORGE BUSH INTERCONTINENTAL AIRPORT, HOUSTON SURVEYORS HANDBOOK.

BUILDING/PROJECT ADDRESS: GEORGE BUSH INTERCONTINENTAL AIRPORT
4104 WILL CLAYTON PARKWAY
(SOUTH AIRFIELD LIGHTING VAULT)
HOUSTON, TX 77032

SCOPE OF WORK:

1. THE WORK TO BE DONE SHALL BE ACCORDING TO THESE DRAWINGS AND SPECIFICATIONS AND FACILITIES CRITERIA DOCUMENT OF THE HOUSTON AIRPORT SYSTEM.
2. THE WORK INCLUDES MINOR DEMOLITION; SAW CUTTING AND REMOVING OF PORTIONS OF BUILDING WALLS, CEILINGS, WALL & FLOOR FINISHES AND ASSOCIATED MECHANICAL, PLUMBING, AND ELECTRICAL DEMOLITION.
3. THE WORK INCLUDES NEW CONSTRUCTION AT IAH SOUTH VAULT. THE WORK INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING:
   a. INTERIOR BUILDING IMPROVEMENTS INCLUDING WALLS, CEILINGS, ACCESSORIES, FINISHES.
   b. DEMOLITION OF EXISTING INTERIOR WALLS AND DOORS. REPLACEMENT OF EXISTING EXTERIOR DOORS AND ADDITION OF NEW EXTERIOR DOORS.
   c. REPLACEMENT OF INTERIOR BUILDING LIGHTING, LIGHTING CONTROLS AND RECEPTACLES.
   d. REPLACEMENT OF EXTERIOR BUILDING LIGHTING, LIGHTING CONTROLS AND SERVICE RECEPTACLES.
   e. REPLACEMENT OF BUILDING MAIN DISCONNECTS, AUTOMATIC TRANSFER SWITCHES, MAIN SWITCHBOARD, PANELBOARDS, AND STEP-DOWN TRANSFORMERS.
   f. NEW ENCLOSED EQUIPMENT YARD WITH NEW DIESEL GENERATOR, AND NEW OUTDOOR SWITCHBOARD AND CAMLOCK ENCLOSURES.
   g. REPLACEMENT OF AIRFIELD LIGHTING REGULATORS IN THE SOUTH VAULT.
   h. REPLACEMENT OF AIRFIELD LIGHTING CONTROL SYSTEMS FOR THE SOUTH VAULT
   i. REPLACEMENT OF AIRFIELD LIGHTING CONTROL SYSTEMS COMPONENTS IN THE NORTH VAULT, WEST VAULT, AIR TRAFFIC CONTROL TOWER, AND AIRFIELD SERVICE COMPLEX FOR COMPLETED AIRFIELD LIGHTING CONTROL SYSTEM WITH INTERFACES TO EXISTING COMPONENTS IN THE NORTH VAULT AND WEST VAULT.

   i. NORTH VAULT

1. REPLACE ALCMS NODE WITH NEW RACK WITH REDUNDANT PCS.
2. ALCMS I/O REQUIRED: GENERATOR AVAILABLE, GENERATOR ONLINE, UTILITY AVAILABLE, UTILITY ONLINE, GENERATOR ALARM, GENERATOR START/STOP, RW 8 LAHSO, RW 26 LAHSO
3. RETROFIT CCRS WITH NEW ACE 3 DOORS/COMPATIBLE INTERNALS AND EXISTING CORES OR REPLACE (41) 20KW AND (23) 30KW THYRISTOR, SWITCHGEAR STYLE LIBERTY CCRS.

   ii. WEST VAULT

1. REPLACE ALCMS NODE WITH NEW RACK WITH REDUNDANT PCS.
2. ALCMS I/O REQUIRED: GENERATOR AVAILABLE, GENERATOR ONLINE, UTILITY AVAILABLE, UTILITY ONLINE, GENERATOR ALARM, GENERATOR START/STOP.
3. RETROFIT CCRS WITH NEW ACE 3 DOORS AND REPLACE ROLL-OUT “SLEDS” WITH NEW SLEDS UTILIZING EXISTING CORES. 48 FERRORESONANT SWITCHGEAR STYLE LIBERTY CCRS. EXISTING CCRS ARE ARRANGED AS SWITCHGEAR LINEUPS BUT FED WITH INDIVIDUAL 480V CIRCUITS (NO BUSWORK INTERNAL TO SWITCHGEAR).

   iii. AIR TRAFFIC CONTROL TOWER

1. REPLACE ALCMS NODE WITH NEW RACK WITH REDUNDANT PCS.
2. REPLACE (2) TOUCHSCREENS IN TOWER CAB.
3. PROVIDE PRICING OPTION FOR AN ADDITIONAL NETWORKED PC WITH MONITOR FOR TOWER TRAINING.

   iv. AIRFIELD SERVICE CENTER

1. REPLACE ALCMS NODE WITH NEW DESKTOP PC/MONITOR AND FIBER OPTIC SWITCH ENCLOSURE.
2. PROVIDE ADDITIONAL SEPARATE COST, IF ANY, FOR CONTROL MODE CAPABILITY VS. VIEW ONLY AT AIRFIELD SERVICE CENTER

   v. RADIO BACKUP SYSTEM

1. REPLACE ETHERNET RADIO BACKUP SYSTEM AT ALL (5) NODES TO PROVIDE RADIOS, ANTENNAS, AND OTHER ASSOCIATED EQUIPMENT AND REQUIRED PROGRAMMING OF ALCMS TO REPLACE RADIO BACKUP SYSTEM AT ALL NODES.
4. MECHANICAL AND PLUMBING SYSTEMS ARE TO REMAIN, EXCEPT WHERE NOTED OTHERWISE. THE SUMP PUMPS AND SUMP PUMP CONTROLS IN THE WIRE VAULT LEVEL ARE TO BE REPLACED. THE HVAC UNITS IN THE SOUTH VAULT ARE EXISTING TO REMAIN BUT TEMPORARY RELOCATION MAY BE REQUIRED TO ENABLE INSTALLATION OF THE NEW AIRFIELD LIGHTING REGULATORS.
5. THE WORK REQUIRES CAREFUL AND THOROUGH COORDINATION WITH OWNER SYSTEMS AND APPROVAL OF CONSTRUCTION SEQUENCES AND WORK PLANS WITH HOUSTON AIRPORT SYSTEM OPERATIONS.

DRAWING LIST

TYPE AC (BX) AND MC CABLE ARE PROHIBITED.

SV-G0.01	COVER SHEET	ISSUED FOR CONSTRUCTION 03/15/24
SV-G0.02	CODES AND GUIDELINES AND DRAWING LIST	ISSUED FOR CONSTRUCTION 03/22/24
SV-G0.03	OVERAL LOCATION PLAN	ISSUED FOR CONSTRUCTION 03/15/24
SV-G0.04	ATCT LINE OF SIGHT STUDY	ISSUED FOR CONSTRUCTION 03/15/24
SV-AD1.01	ARCHITECTURAL DEMOLITION PLAN	ISSUED FOR CONSTRUCTION 03/15/24
SV-AD2.01	ARCHITECTURAL DEMOLITION ELEVATIONS	ISSUED FOR CONSTRUCTION 03/15/24
SV-A1.01	ARCHITECTURAL PLAN	ISSUED FOR CONSTRUCTION 03/15/24
SV-A1.02	ARCHITECTURAL VAULT CEILING PLAN AND EGRESS PLAN	ISSUED FOR CONSTRUCTION 03/15/24
SV-A1.03	ARCHITECTURAL SCHEDULES	ISSUED FOR CONSTRUCTION 03/22/24
SV-A2.01	ARCHITECTURAL ELEVATIONS	ISSUED FOR CONSTRUCTION 03/15/24
C0.01	CIVIL CONSTRUCTION NOTES	ISSUED FOR CONSTRUCTION 03/15/24
C1.00	CIVIL DEMOLITION PLAN	ISSUED FOR CONSTRUCTION 03/15/24
C2.00	CIVIL SITE PLAN	ISSUED FOR CONSTRUCTION 03/15/24
C3.00	CIVIL GRADING AND DRAINAGE PLAN	ISSUED FOR CONSTRUCTION 03/15/24
C4.00	CIVIL SWPP PLAN	ISSUED FOR CONSTRUCTION 03/15/24
C5.00	CIVIL DETAILS	ISSUED FOR CONSTRUCTION 03/15/24
C6.00	REFERENCE INFORMATION	ISSUED FOR CONSTRUCTION 03/22/24
SV-E0.01	ELECTRICAL ABBREVIATIONS, SYMBOLS AND NOTES	ISSUED FOR CONSTRUCTION 03/15/24
SV-E1.01	ELECTRICAL SITE PLAN	ISSUED FOR CONSTRUCTION 03/15/24
SV-ED2.01	ELECTRICAL SOUTH VAULT ELECTRICAL POWER DEMOLITION PLAN	ISSUED FOR CONSTRUCTION 03/15/24
SV-ED2.02	ELECTRICAL WIRE VAULT DEMOLITION PLAN	ISSUED FOR CONSTRUCTION 03/15/24
SV-EP2.01	ELECTRICAL POWER PLAN	ISSUED FOR CONSTRUCTION 03/15/24
SV-EP2.02	ELECTRICAL WIRE VAULT POWER PLAN	ISSUED FOR CONSTRUCTION 03/15/24
SV-EP2.03	ELECTRICAL GROUNDING PLAN	ISSUED FOR CONSTRUCTION 03/15/24
SV-EP2.04	ELECTRICAL GROUNDING SITE PLAN	ISSUED FOR CONSTRUCTION 03/15/24
SV-EP2.05	ELECTRICAL LIGHTNING PROTECTION PLAN	ISSUED FOR CONSTRUCTION 03/15/24
SV-ED3.01	ELECTRICAL LIGHTING DEMOLITION PLAN	ISSUED FOR CONSTRUCTION 03/15/24
SV-ED3.02	ELECTRICAL WIRE VAULT LIGHTING DEMOLITION PLAN	ISSUED FOR CONSTRUCTION 03/15/24
SV-EL3.01	ELECTRICAL LIGHTING PLAN	ISSUED FOR CONSTRUCTION 03/15/24
SV-EL3.02	ELECTRICAL WIRE VAULT LIGHTING PLAN	ISSUED FOR CONSTRUCTION 03/15/24
SV-EL3.03	ELECTRICAL SITE LIGHTING PLAN	ISSUED FOR CONSTRUCTION 03/15/24
SV-EF3.01	FIRE ALARM COORDINATION PLAN	ISSUED FOR CONSTRUCTION 03/15/24
SV-EF3.02	FIRE ALARM WIRE VAULT COORDINATION PLAN	ISSUED FOR CONSTRUCTION 03/15/24
SV-ED4.01	ELECTRICAL DEMO ONE LINE DIAGRAM	ISSUED FOR CONSTRUCTION 03/15/24
SV-E4.01	ELECTRICAL ONE LINE DIAGRAM	ISSUED FOR CONSTRUCTION 03/15/24
SV-E5.01	ELECTRICAL DETAILS	ISSUED FOR CONSTRUCTION 03/15/24
SV-E5.02	ELECTRICAL DETAILS	ISSUED FOR CONSTRUCTION 03/15/24
SV-E6.01	ELECTRICAL SCHEDULES	ISSUED FOR CONSTRUCTION 03/15/24
SV-E6.02	ELECTRICAL SCHEDULES	ISSUED FOR CONSTRUCTION 03/15/24
SV-E6.03	CONSTRUCTION SEQUENCE OVERVIEW	ISSUED FOR CONSTRUCTION 03/15/24
SV-E7.01	OVERALL ALCMS PROPOSED ARCHITECTURE DIAGRAM	ISSUED FOR CONSTRUCTION 03/15/24
SV-E7.02	SOUTH LIGHTING VAULT PROPOSED CCR SCHEDULE	ISSUED FOR CONSTRUCTION 03/15/24
SV-E7.03	WEST LIGHTING VAULT PROPOSED CCR SCHEDULE	ISSUED FOR CONSTRUCTION 03/15/24
SV-E7.04	NORTH LIGHTING VAULT PROPOSED CCR SCHEDULE	ISSUED FOR CONSTRUCTION 03/15/24
SV-PD1.01	PLUMBING DEMOLITION PLAN	ISSUED FOR CONSTRUCTION 03/15/24
SV-P1.01	PLUMBING PLAN	ISSUED FOR CONSTRUCTION 03/15/24
SV-S0.01	STRUCTURAL GENERAL NOTES	ISSUED FOR CONSTRUCTION 03/15/24
SV-S0.02	STRUCTURAL GENERAL NOTES	ISSUED FOR CONSTRUCTION 03/15/24
SV-S0.03	STRUCTURAL GENERAL NOTES	ISSUED FOR CONSTRUCTION 03/15/24
SV-S1.00	STRUCTURAL SITE PLAN	ISSUED FOR CONSTRUCTION 03/15/24
SV-S1.01	STRUCTURAL SITE SECTIONS	ISSUED FOR CONSTRUCTION 03/15/24
SV-S1.02	STRUCTURAL SITE DETAILS	ISSUED FOR CONSTRUCTION 03/15/24
SV-S1.03	STRUCTURAL SITE DETAILS	ISSUED FOR CONSTRUCTION 03/22/24
SV-S1.10	STRUCTURAL EXISTING AND DEMO PLAN	ISSUED FOR CONSTRUCTION 03/15/24
SV-S1.11	STRUCTURAL EXISTING AND DEMO DETAILS	ISSUED FOR CONSTRUCTION 03/15/24
SV-S1.12	STRUCTURAL EXISTING AND NEW PLAN	ISSUED FOR CONSTRUCTION 03/15/24
SV-S3.00	STRUCTURAL TYPICAL FOUNDATION DETAILS - CONCRETE COVER REQUIREMENTS	ISSUED FOR CONSTRUCTION 03/15/24
SV-S3.01	STRUCTURAL TYPICAL FOUNDATION DETAILS - DEVELOPMENT AND SPLICE LENGTHS	ISSUED FOR CONSTRUCTION 03/15/24
SV-S3.02	STRUCTURAL TYPICAL FOUNDATION DETAILS - SLAB ON GRADE	ISSUED FOR CONSTRUCTION 03/15/24
SV-S4.00S	STRUCTURAL TYPICAL MASONRY DETAILS	ISSUED FOR CONSTRUCTION 03/15/24
T0.00	TELECOM INDEX	ISSUED FOR CONSTRUCTION 03/15/24
T1.01	TELECOM LEVEL 1 TELECOM PLAN	ISSUED FOR CONSTRUCTION 03/15/24
TY0.00	SECURITY INDEX	ISSUED FOR CONSTRUCTION 03/15/24
TY1.01	SECURITY LEVEL 1 - SECURITY PLAN	ISSUED FOR CONSTRUCTION 03/15/24
TY5.00	SECURITY CAMERA DETAILS	ISSUED FOR CONSTRUCTION 03/15/24
TY5.01	SECURITY DOOR DETAILS	ISSUED FOR CONSTRUCTION 03/15/24

HOUSTON AIRPORT SYSTEM

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REVISIONS

NO.	DESCRIPTION	DATE
	ISSUE FOR CONSTRUCTION 03/22/24	

CITY OF HOUSTON
HOUSTON AIRPORTS SYSTEM
Recommended 03/29/2024
Houston Airports System DATE
Director or Designated Representative

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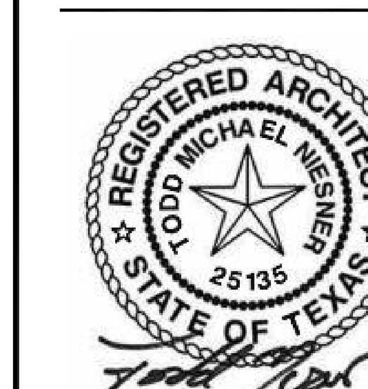
HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032
SOUTH VAULT RENOVATIONS

CODES, GUIDELINES AND DRAWING LIST

PROJECT MGR: AEO
DESIGNER: AO
DRAWN BY: SH
CHECK BY: NM

DATE: 03/22/24



03/22/24

APPROVED BY:

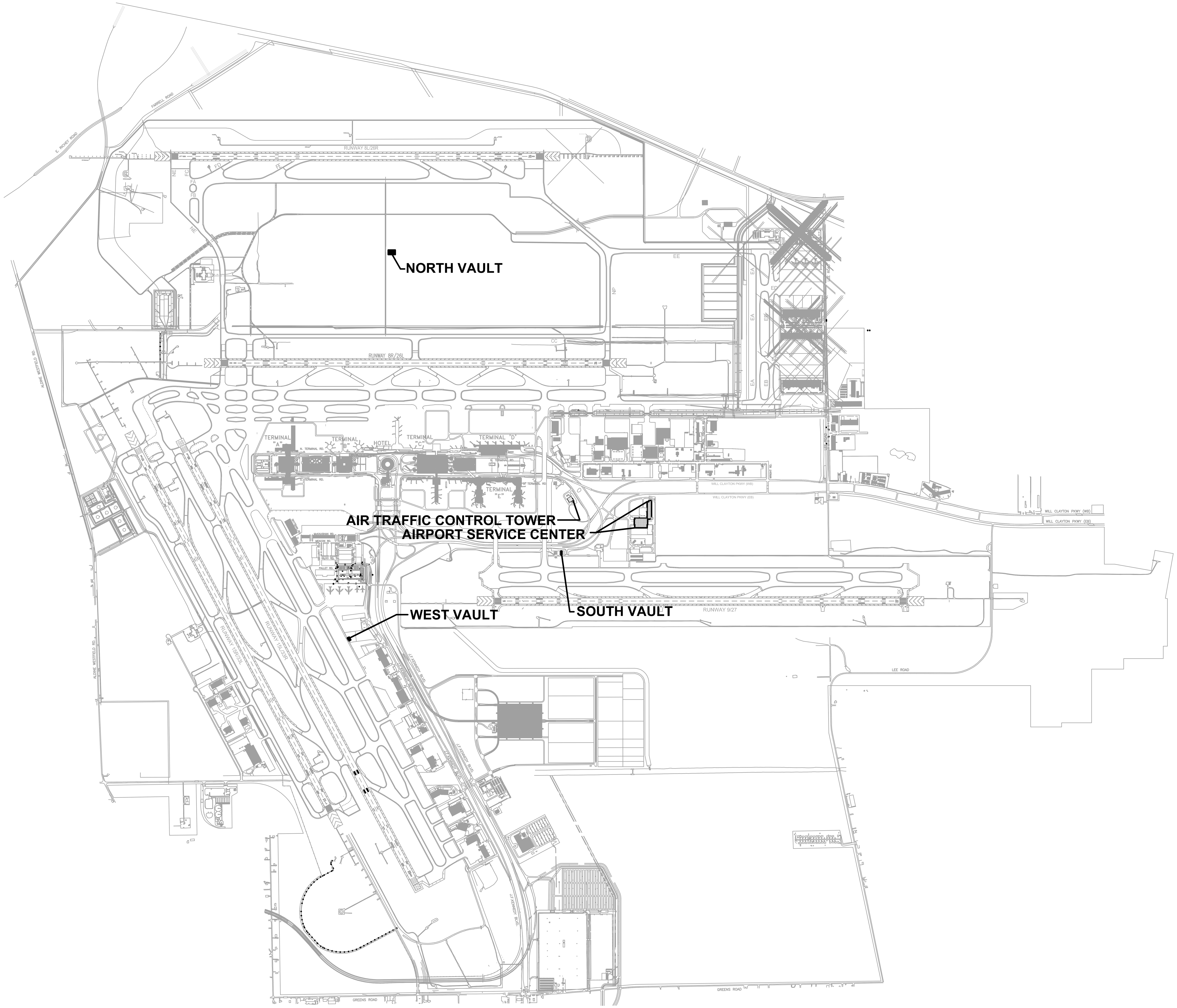
DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO.

SV-G0.02

TYPE AC (BX) AND MC CABLE ARE PROHIBITED.



1 SOUTH VAULT OVERALL LOCATION PLAN
SCALE: N.T.S.

HOUSTON AIRPORT SYSTEM

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HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH VAULT RENOVATIONS
OVERALL LOCATION PLAN

PROJECT MGR: AEO
DESIGNER: AO
DRAWN BY: SH
CHECK BY: NM

DATE: 03/22/24

REGISTERED ARCHITECT
TODD MICHAEL NIESNER
25135
STATE OF TEXAS
03/22/24

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
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C.I.P. NO. A–000687
B.S.G. NO. 2024–31–IAH
H.A.S. NO. PN 952
T.I.P. NO. 24–28–IAH

SHEET NO.
SV-G0.03

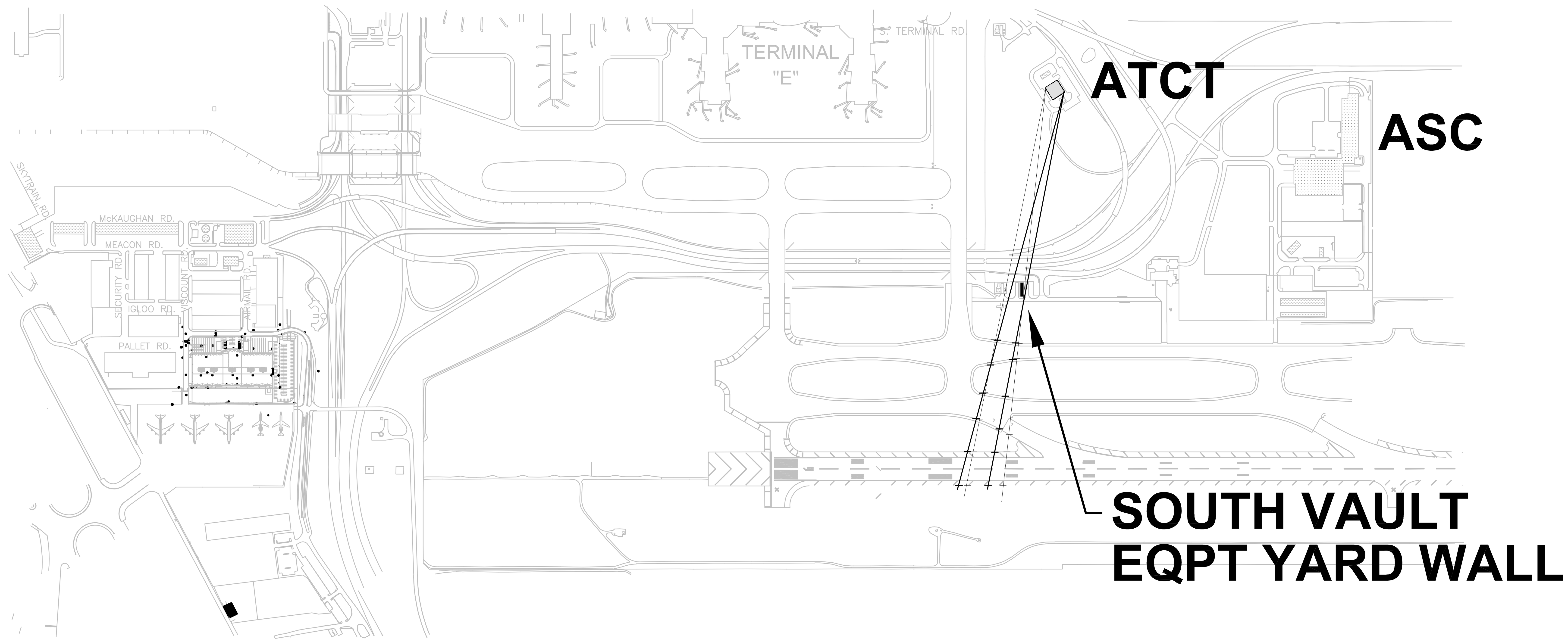
TYPE AC (BX) AND MC CABLE ARE PROHIBITED.

GENERAL NOTES

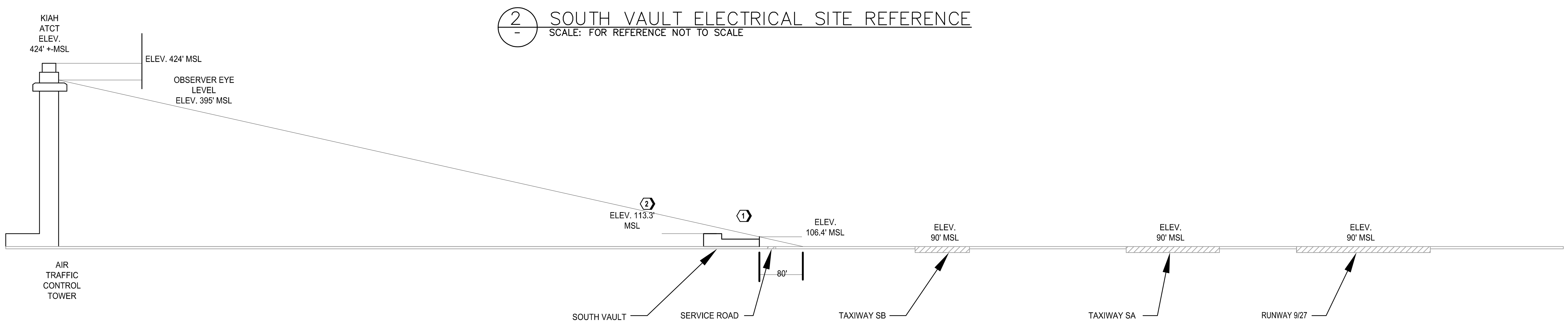
A. REFER TO SHEET SV–E0.01 FOR SYMBOLS, ABBREVIATIONS AND GENERAL NOTES.
B. EQUIPMENT INSTALLATION TO BE PHASED WITH ENABLING WORK FOR NEW EQUIPMENT TO REPLACE EXISTING EQUIPMENT, INSTALLATION OF NEW SERVICE FROM CENTERPOINT VAULT, INTERCONNECTION AND TESTING OF NEW EQUIPMENT, ENERGIZATION OF NEW EQUIPMENT, PHASED TRANSFER OF EXISTING LOADS TO NEW EQUIPMENT, DEMOLITION OF EQUIPMENT TO BE REMOVED. PHASING PLAN AND OUTAGES TO BE SUBMITTED TO OPERATIONS FOR APPROVAL 1 MONTH PRIOR AND COORDINATED WITH OPERATIONS AND CENTERPOINT ENERGY.

KEYED NOTES

1. NEW EQUIPMENT YARD WALL
2. LINE OF SIGHT TRAJECTORY



2 SOUTH VAULT ELECTRICAL SITE REFERENCE
SCALE: FOR REFERENCE NOT TO SCALE



1 SOUTH VAULT ELECTRICAL SIGHT LINE ANALYSIS
SCALE: FOR REFERENCE NOT TO SCALE

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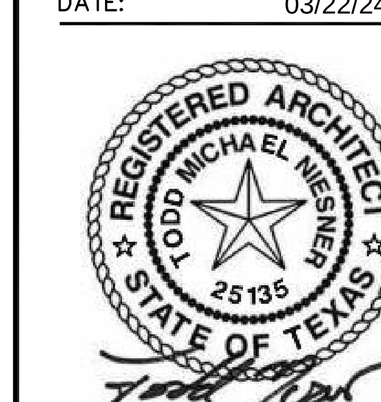
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH VAULT RENOVATIONS
ATCT LINE OF SIGHT STUDY

PROJECT MGR: AEO
DESIGNER: AO
DRAWN BY: SH
CHECK BY: NM

DATE: 03/22/24



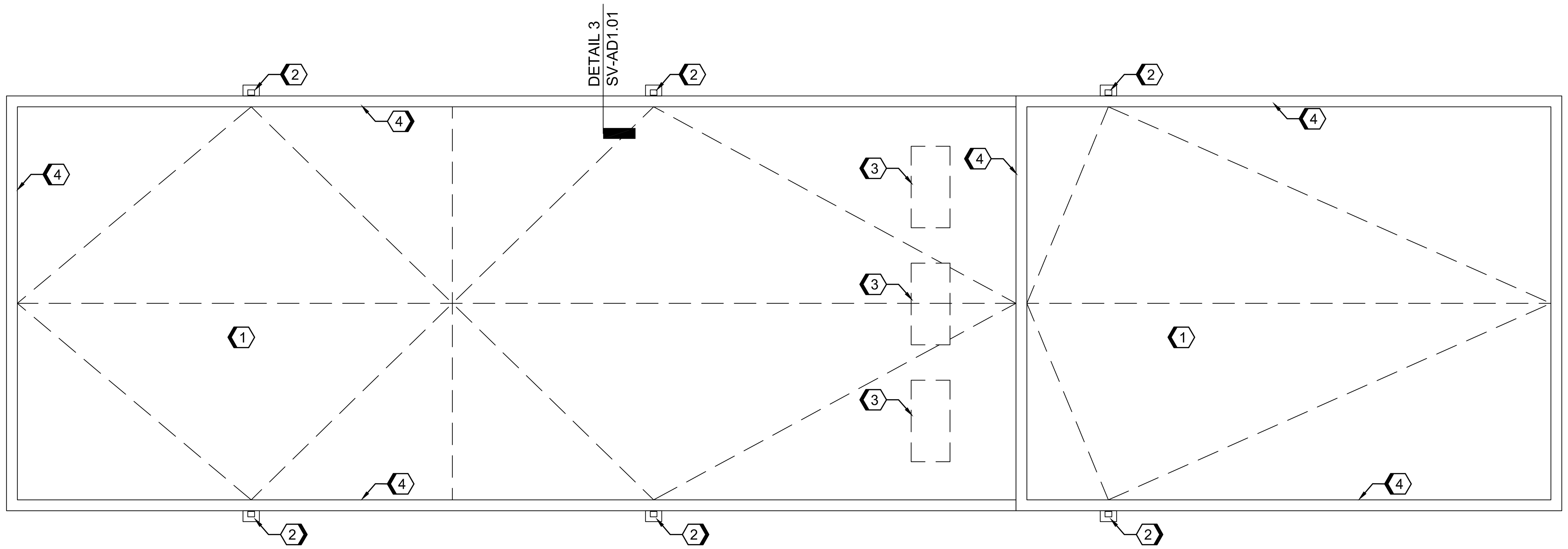
03/22/24

APPROVED BY:

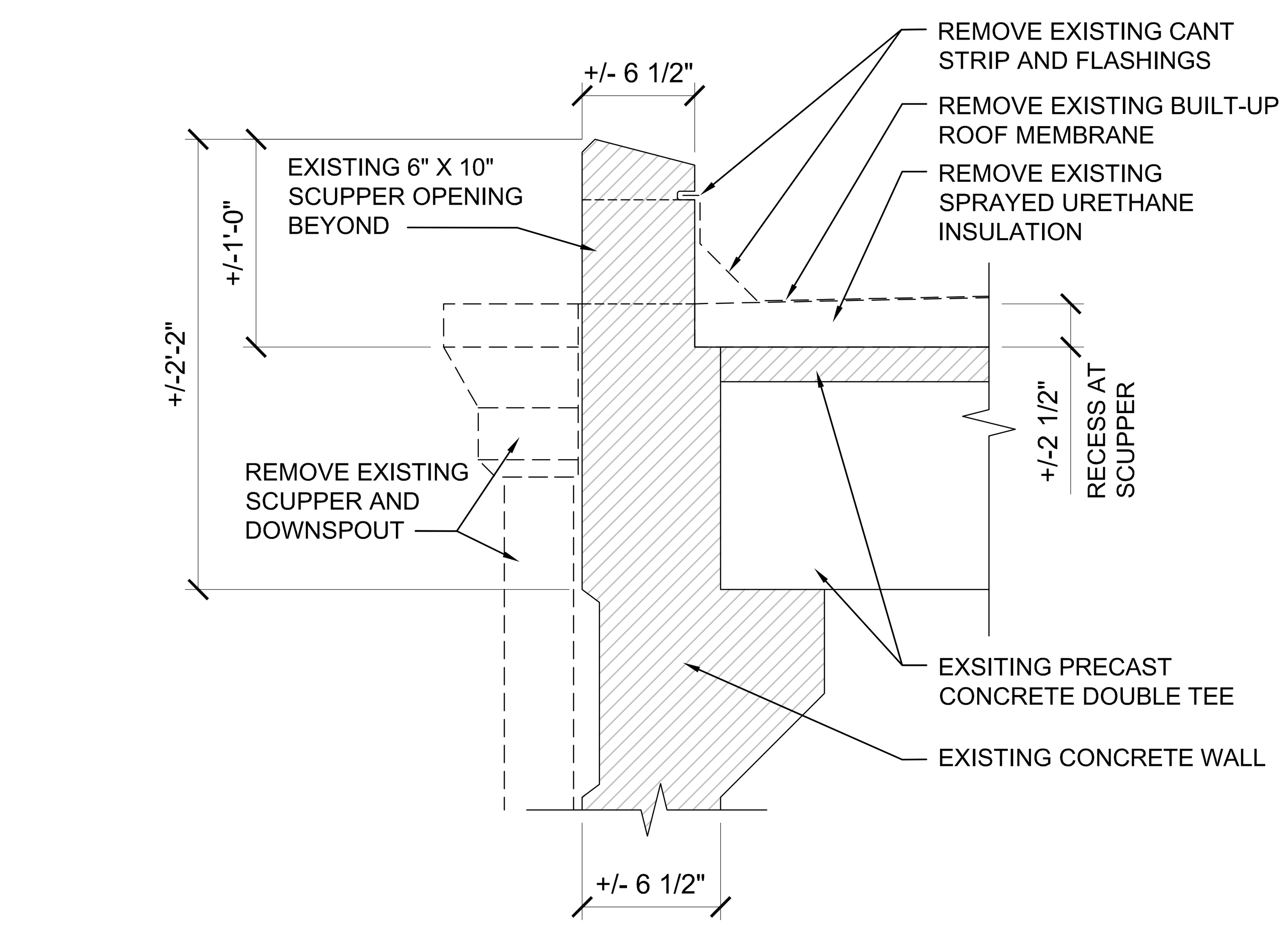
DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A–000687
B.S.G. NO. 2024–31–IAH
H.A.S. NO. PN 952
T.I.P. NO. 24–28–IAH

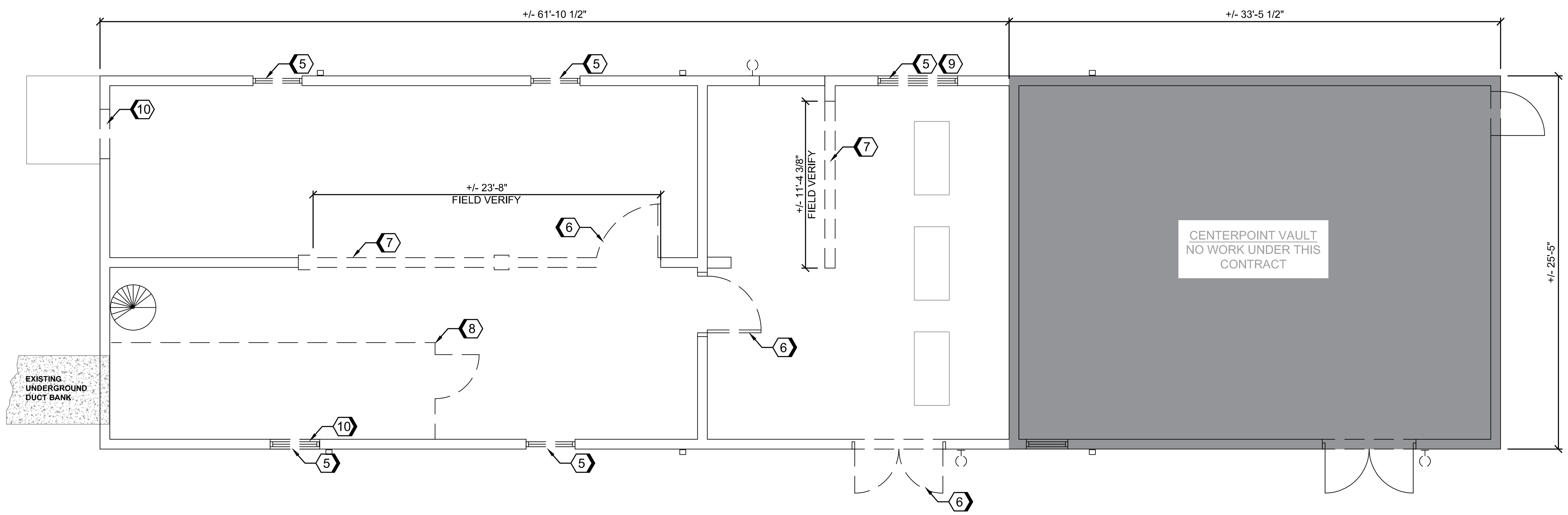
SHEET NO.
SV-G0.04



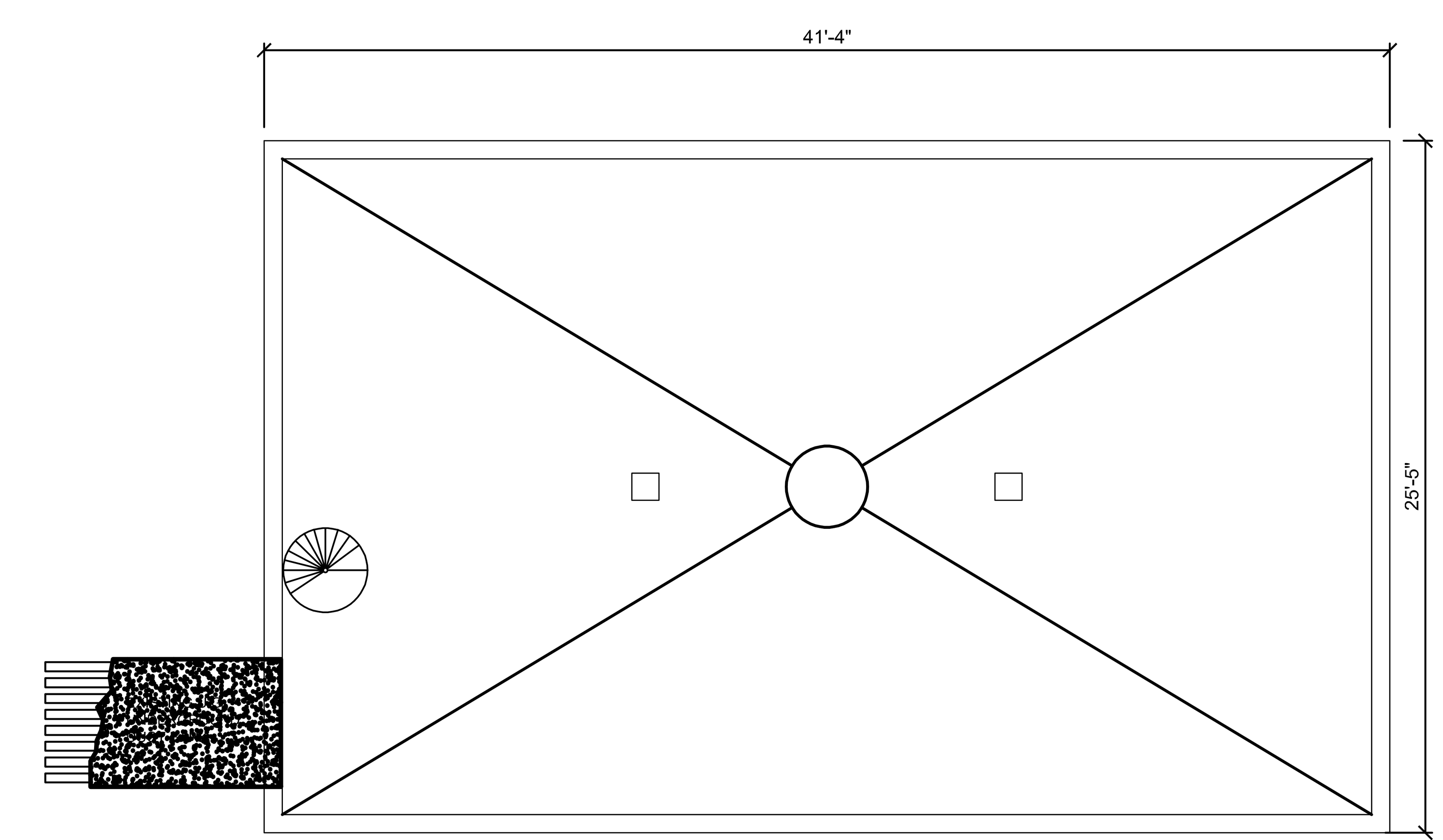
2 SOUTH VAULT DEMOLITION ROOF PLAN
SCALE: 3/16" = 1'-0"



4 PARAPET DETAIL - DEMOLITION
SCALE: 1 1/12" = 1'-0"



1 SOUTH VAULT DEMOLITION PLAN
SCALE: 3/16" = 1'-0"



3 SOUTH VAULT LOWER LEVEL PLAN
SCALE: 3/16" = 1'-0"

KEYNOTES

1. REMOVE EXISTING ROOF MEMBRANE AND INSULATION DOWN TO CONCRETE TOPPING.
2. REMOVE EXISTING SCUPPERS AND DOWNSPOUTS.
3. REMOVE EXISTING ROOF TOP RELIEF VENTS.
4. REMOVE EXISTING WALL FLASHING AND COUNTER FLASHING.
5. REMOVE EXISTING LOUVER AND FRAME.
6. REMOVE EXISTING DOOR AND FRAME.
7. REMOVE EXISTING CONCRETE OR CMU WALL. WHERE WALL HAS BEEN REMOVED, GRIND SMOOTH CONCRETE FLOOR SURFACE AND ELIMINATE ANY PROTRUDING REINFORCING.
8. REMOVE EXISTING CAGED WALL AND GATE SYSTEM.
9. SEE ELEVATIONS FOR ENLARGED OPENING TO ACCOMMODATE NEW DOOR.
10. SEE EXTERIOR ELEVATIONS WHERE WALL WILL BE REMOVED TO INSTALL NEW DOOR.

GENERAL NOTES

A. FIELD VERIFY ALL DIMENSIONS
B. LOWER LEVEL:
PRESSURE WASH WALLS AND COLUMNS IN PREPARATION FOR NEW PAINT.
PRESSURE WASH EXISTING CONCRETE FLOOR.
C. LOWER LEVEL, FIRST FLOOR, AND EXTERIOR WALLS:
REMOVE ABANDONED PANELS, CONDUIT, BRACKETS, AND FASTENERS ON ALL WALLS.

LEGEND

———	EXISTING
– – –	TO BE DEMOLISHED
(grey fill)	OUT OF SCOPE- NO WORK SCHEDULED IN THIS AREA

HOUSTON AIRPORT SYSTEM

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(281) 721-8400
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REVISIONS

NO.	DESCRIPTION	DATE
	ISSUED FOR CONSTRUCTION	03/15/24

CITY OF HOUSTON
HOUSTON AIRPORTS SYSTEM
Recommended 03/29/2024
Houston Airports System Director or Designated Representative DATE
REVIEWED / NO EXCEPTIONS TAKEN
The drawings & support documents submitted for permit review meet the design intent, and to the best of our knowledge, appear to be in compliance with current HAS approved standards.
Performance and approval of this review does not waive, nor relieve the applicant from full responsibility & liability to conform and comply with all applicable standards, codes, and regulations required from all Authorities Having Jurisdiction (AHJ).

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH AIRFIELD LIGHTING VAULT
ARCHITECTURAL DEMOLITION PLANS

PROJECT MGR: AEO
DESIGNER: D.J.
DRAWN BY: S.M.
CHECK BY: T.N.

DATE: 03/22/24

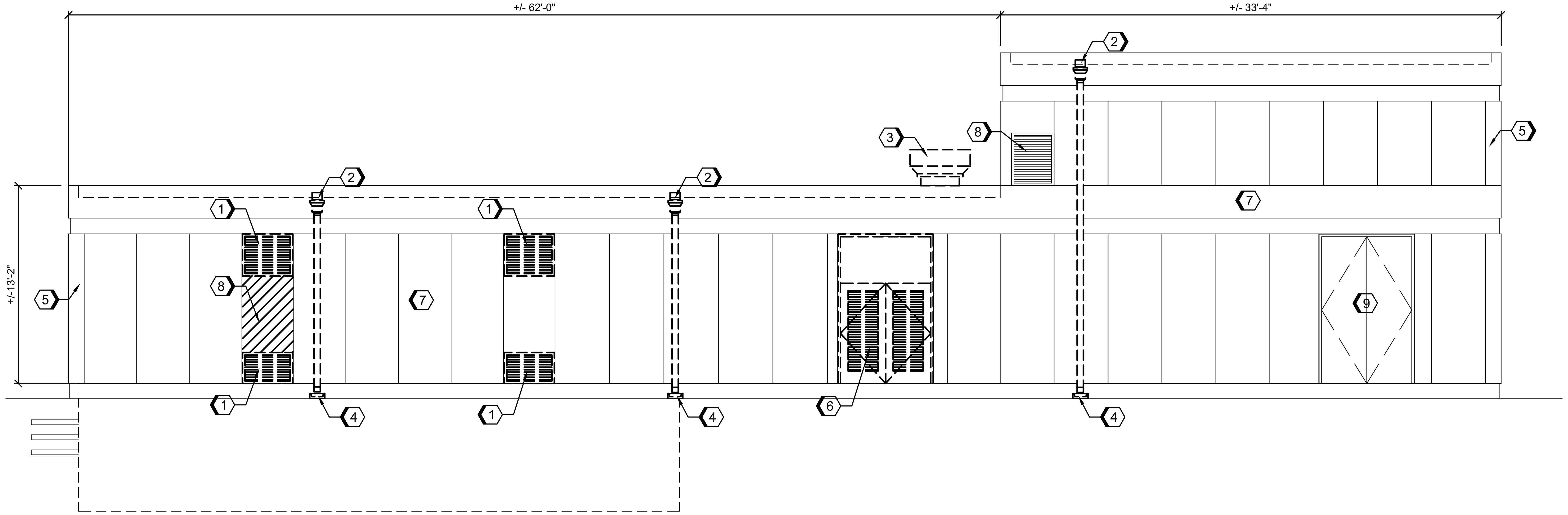
REGISTERED ARCHITECT
TODD MICHAEL NIESNER
25135
STATE OF TEXAS
03/22/24

APPROVED BY:

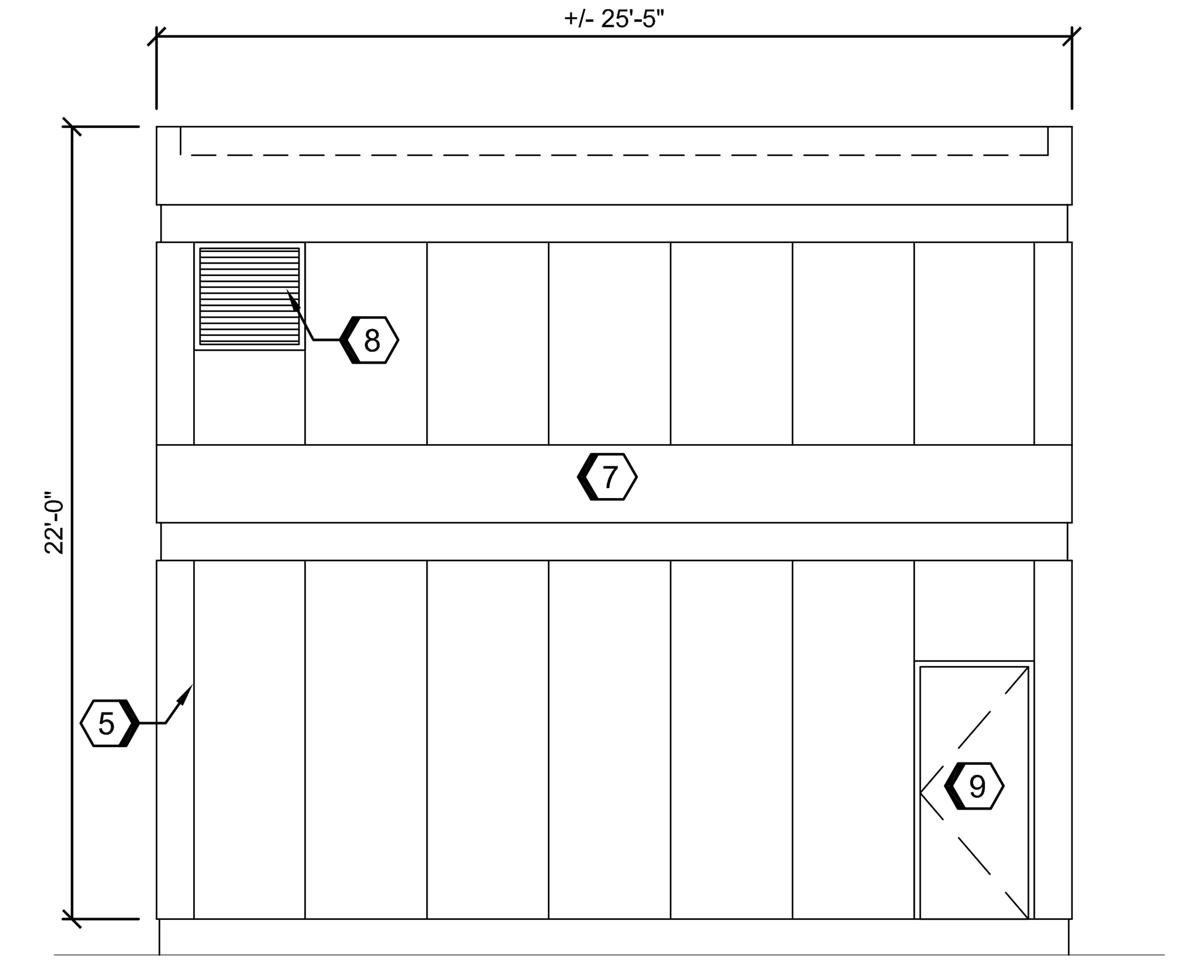
DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

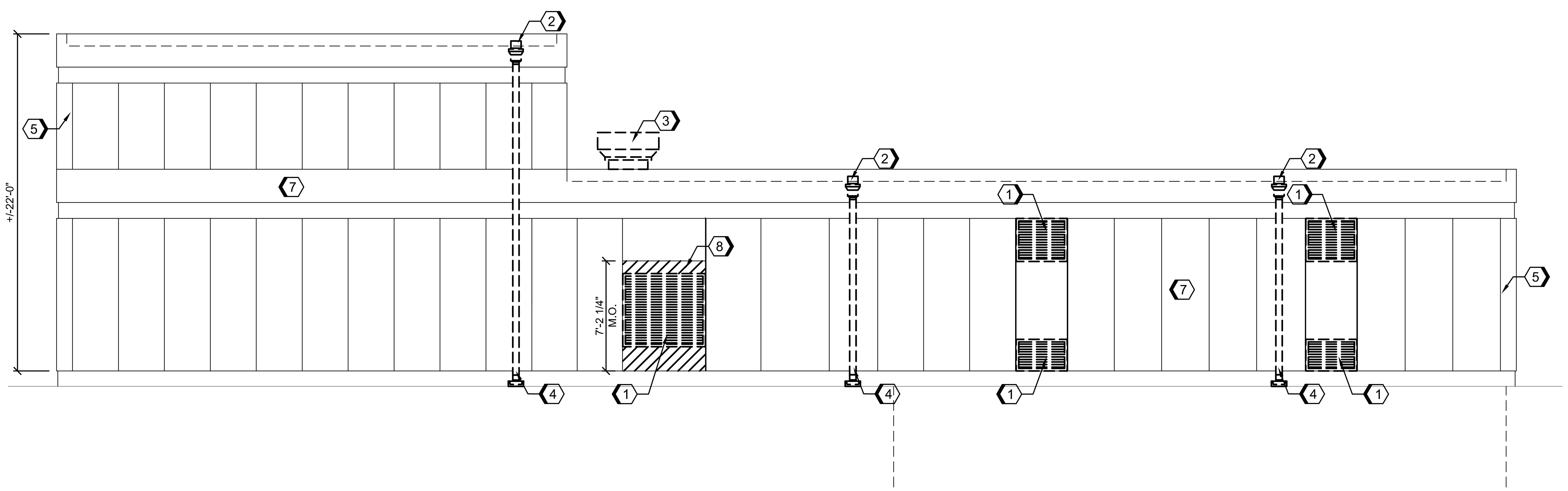
SHEET NO.
SV-AD1.01



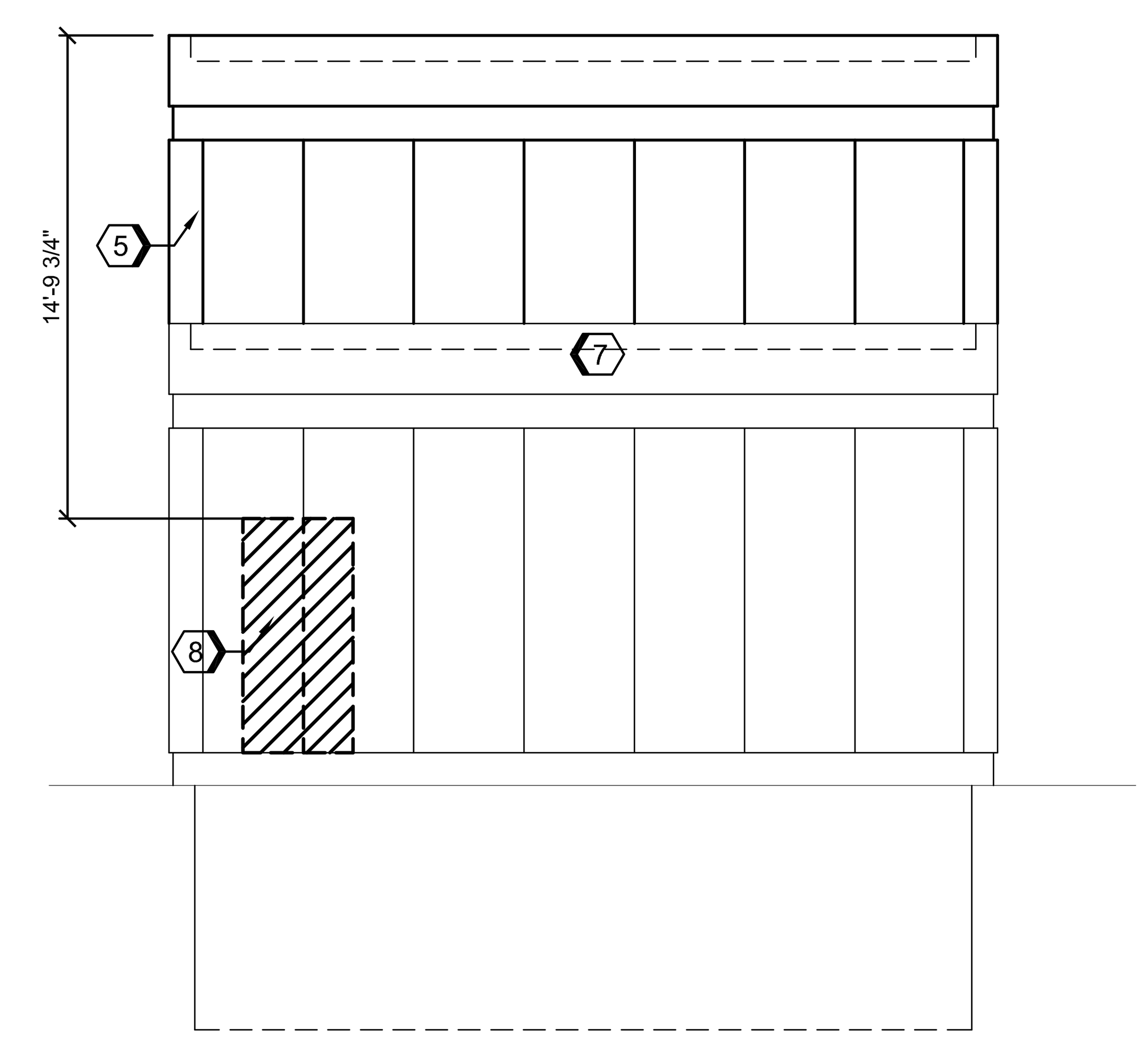
4 EAST ELEVATION - DEMOLITION
SCALE: 3/16" = 1'-0"



3 NORTH ELEVATION - DEMOLITION
SCALE: 3/16" = 1'-0"



2 WEST ELEVATION - DEMOLITION
SCALE: 3/16" = 1'-0"



1 SOUTH ELEVATION - DEMOLITION
SCALE: 3/16" = 1'-0"

KEYNOTES

1. REMOVE EXISTING LOUVER AND FRAME.
2. REMOVE EXISTING SCUPPER AND DOWNSPOUT.
3. REMOVE EXISTING ROOF TOP RELIEF VENTS.
4. REMOVE EXISTING CONCRETE SPLASH BLOCKS.
5. REMOVE EXISTING EXPANSION JOINT SEALANT AND BACKER ROD MATERIAL. TYPICAL AT ALL SEALED VERTICAL AND HORIZONTAL JOINTS.
6. REMOVE EXISTING DOOR AND FRAME.
7. EXISTING CAST - IN PLACE CONCRETE EXTERIOR WALLS.
8. CUT AND REMOVE EXISTING CONCRETE WALL TO ACCOMMODATE NEW DOOR.
9. EXISTING DOOR TO REMAIN. NO WORK UNDER THIS CONTRACT.
10. EXISTING LOUVER TO REMAIN. NO WORK UNDER THIS CONTRACT.

LEGEND

EXISTING

TO BE DEMOLISHED

NEW CONSTRUCTION

OUT OF SCOPE- NO WORK SCHEDULED IN THIS AREA

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GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH AIRFIELD LIGHTING VAULT
ARCHITECTURE DEMOLITION ELEVATIONS

PROJECT MGR: AEO
DESIGNER: D.J.
DRAWN BY: S.M.
CHECK BY: T.N.

DATE: 03/22/24

REGISTERED ARCHITECT
TODD MICHAEL NIESNER
25135
STATE OF TEXAS
03/22/24

APPROVED BY:

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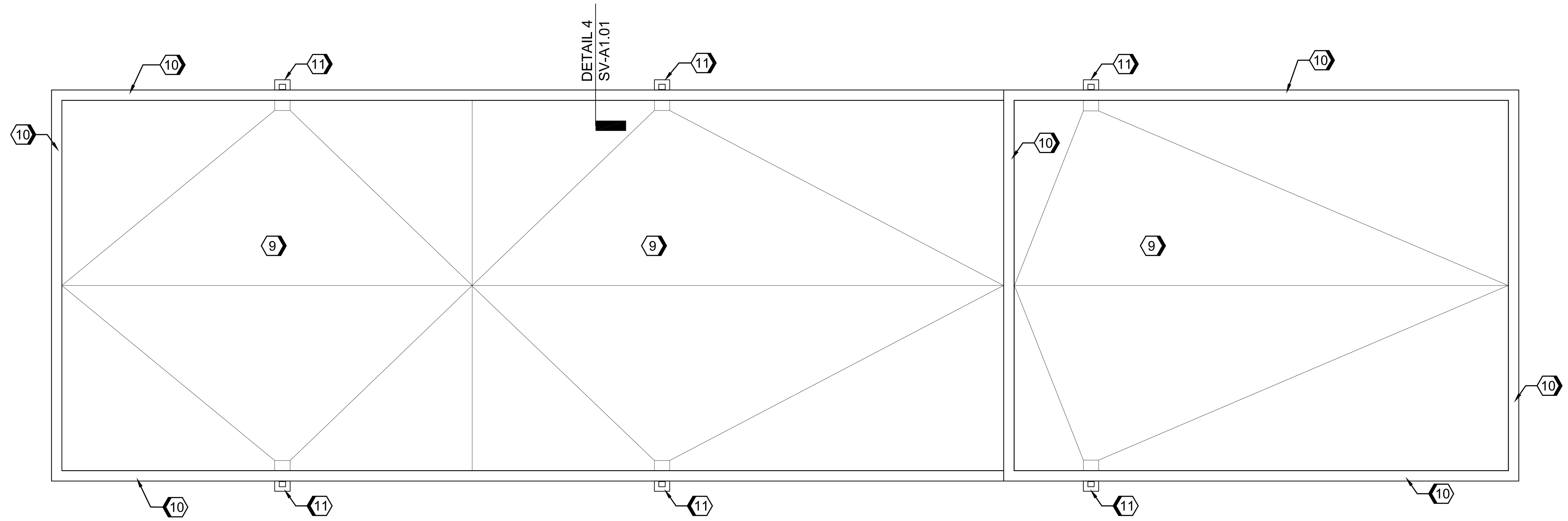
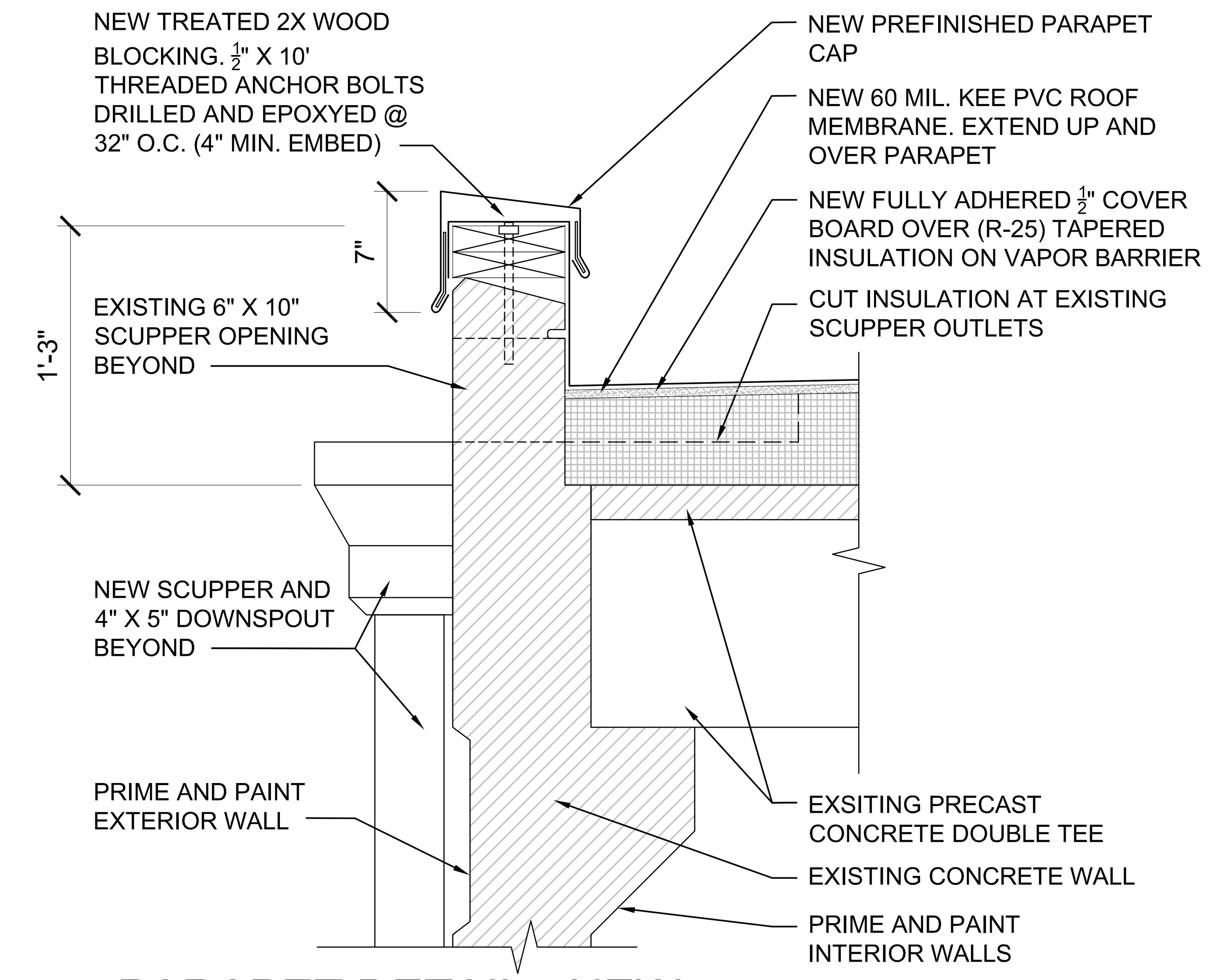
T.I.P. NO. 24-28-IAH

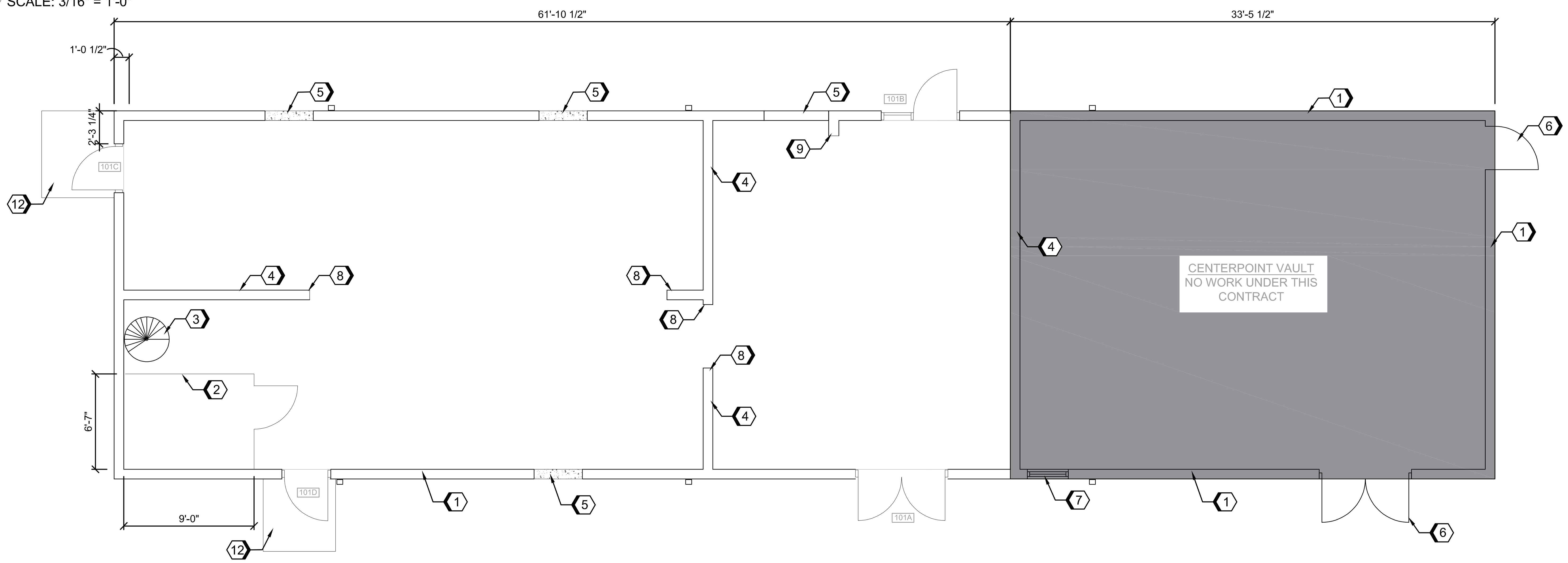
SHEET NO.
SV-AD2.01



2 SOUTH VAULT ARCHITECTURAL ROOF PLAN
SCALE: 3/16" = 1'-0"



4 PARAPET DETAIL - NEW
SCALE: 1 1/2" = 1'-0"



1 SOUTH VAULT ARCHITECTURAL PLAN
SCALE: 3/16" = 1'-0"

GENERAL NOTES

A. FIELD VERIFY ALL DIMENSIONS.
B. INTERIOR WALLS:
ALL INTERIOR WALLS SHALL BE PREPARED, PRIMED AND PAINTED. FINAL PAINT SYSTEM SHALL BE SUITABLE FOR CONCRETE SURFACES WITH HIGH DEW POINT/ MOISTURE DURING HUMID SEASONAL CONDITIONS.
COLORS SHALL BE SELECTED BY ARCHITECT/ OWNER.
C. EXTERIOR WALLS:
ROUTE AND SEAL ALL CRACKS, EXPANSION JOINTS AND CONTROL JOINTS.
PRIME AND FINISH PAINT WITH DOUBLE COAT.
D. SEE SPECIFICATION SECTION 07 54 16 FOR NEW KEE PVC ROOF.
E. ENCLOSED MECHANICAL YARD
E.A. NOT REPRESENTED IN THE ARCHITECTURAL DRAWINGS
E.B. SEE STRUCTURAL DRAWINGS FOR WALL DETAILS
E.C. SEE DOOR SCHEDULE FOR DOUBLE DOOR ENTRY TO YARD. REFER TO DOOR MARK A103.
E.D. ALL INTERIOR AND EXTERIOR YARD WALLS SHALL BE PRIMED AND PAINTED U.N.O.
F. PATCH AND REPAIR ANY DAMAGED FIRE PROOFING OR FIRE STOPPING IN WALLS, FLOORS OR CEILING. ALL NEW FIRE STOPPING MATERIAL TO MATCH EXISTING CONDITIONS.

(#) KEYNOTES

1. EXISTING 8" CONCRETE WALL.
2. NEW CHAINLINK FENCE AND GATE TO SECURED EQUIPMENT ROOM. FENCE TO EXTEND TO BOTTOM OF DECK. 3'-0" X 7'-0" GATE WITH PADLOCK HASP.
3. EXISTING SPIRAL STAIR. PREPARE ALL METAL SURFACES, PRIME AND PAINT.
4. EXISTING 8" CMU OR CONCRETE INTERIOR WALL.
5. INFILL LOUVER OPENING. (SEE STRUCTURAL)
6. EXISTING DOOR TO REMAIN. PRIME AND PAINT EXISTING FRAME AND DOOR LEADING TO CENTERPOINT VAULT.
7. EXISTING LOUVER. NO WORK UNDER THIS CONTRACT.
8. BREAKMETAL ENCLOSURE CAP AT WALL TO ENCLOSE ROUGH END OF WALL.
9. NEW KEE PVC ROOFING SYSTEM. MINIMUM R-25 INSULATION ABOVE CONCRETE DECK.
10. NEW PARAPET CAP AND FIRE RETARDANT TREATED WOOD BLOCKING (SEE DETAIL 4/A1.01).
11. NEW PREFINISHED SCUPPER WITH 4" X 5" PREFINISHED DOWNSPOUT.
12. NEW CAST-IN-PLACE CONCRETE STOOP. VERIFY FLOOR TO GRADE DIMENSIONS. PROVIDE 11" TREAD AND EQUAL RISERS NO GREATER THAN 7" WHERE REQUIRED.

LEGEND

(thin line)	EXISTING
(dashed line)	TO BE DEMOLISHED
(solid line)	NEW CONSTRUCTION
(grey fill)	OUT OF SCOPE- NO WORK SCHEDULED IN THIS AREA

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PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

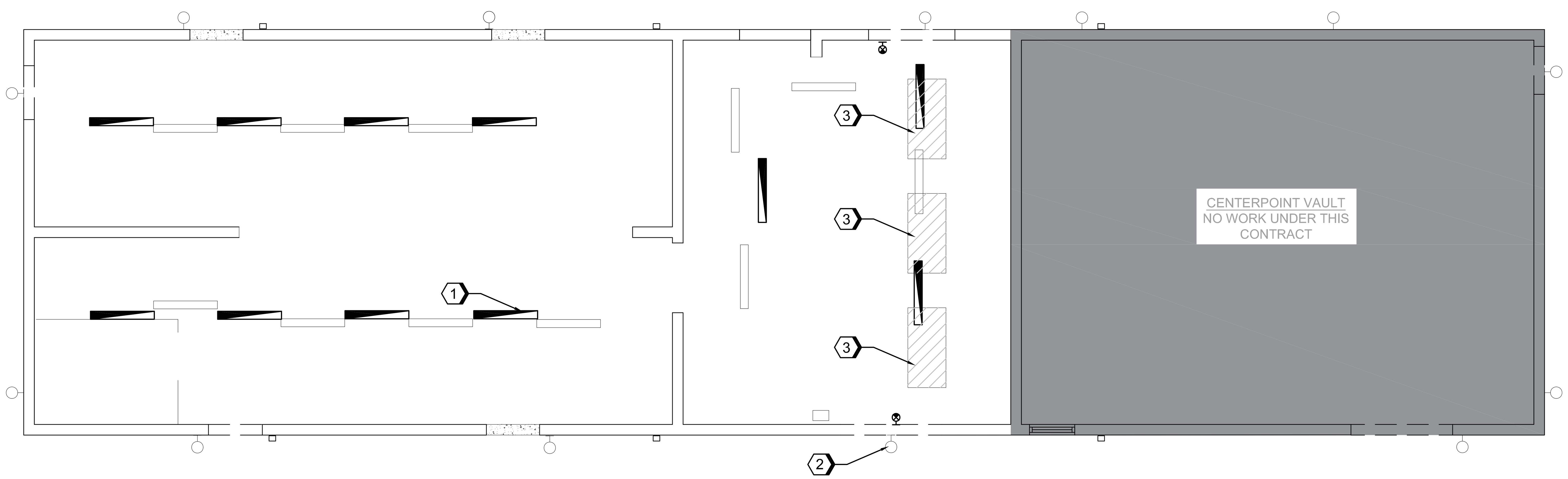
SOUTH AIRFIELD LIGHTING VAULT
ARCHITECTURAL PLANS

PROJECT MGR: AEO
DESIGNER: D.J.
DRAWN BY: S.M.
CHECK BY: T.N.
DATE: 03/22/24

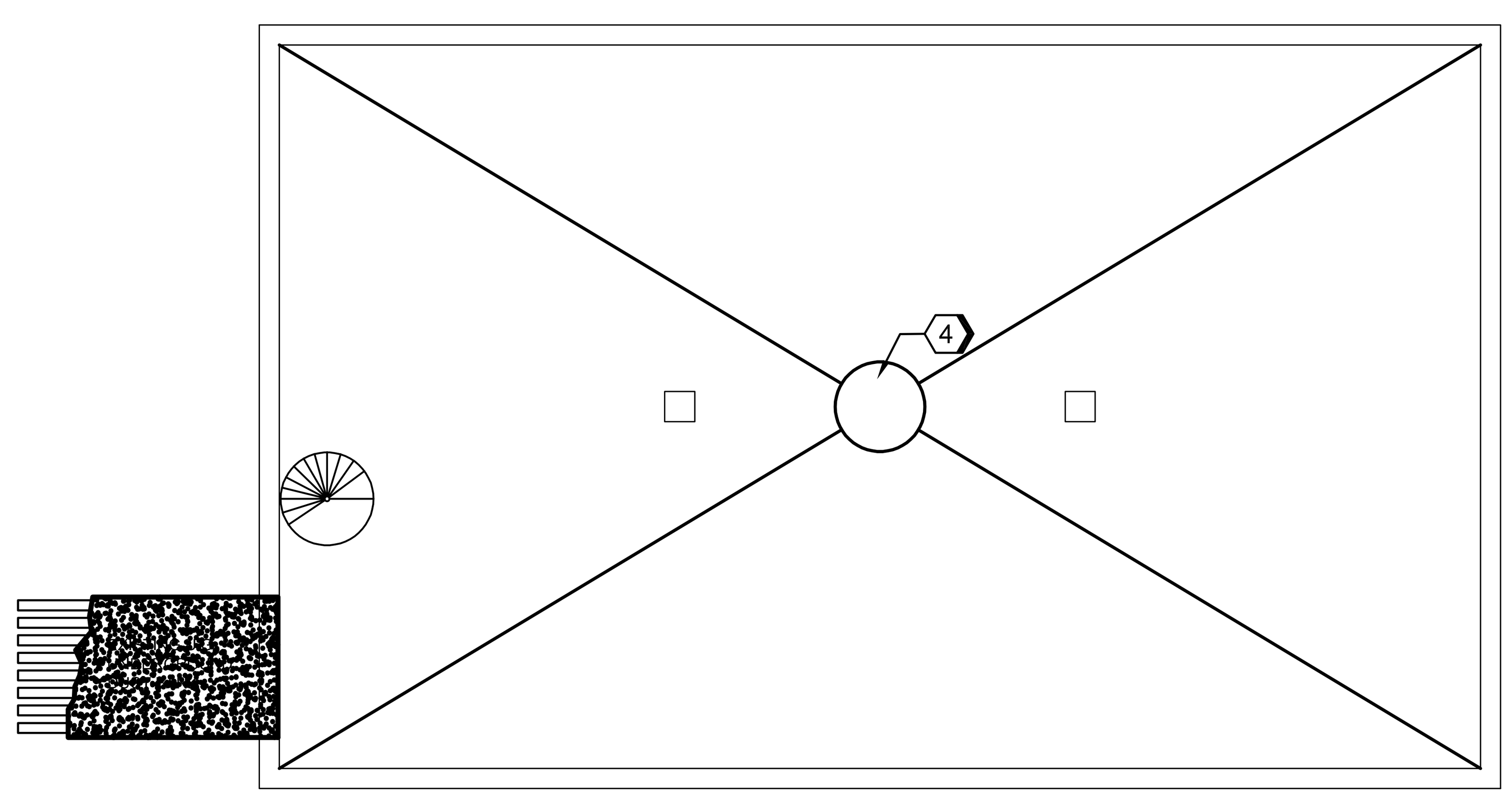
REGISTERED ARCHITECT
TODD MICHAEL NIESNER
25135
STATE OF TEXAS
03/22/24

APPROVED BY:
DIRECTOR
HOUSTON AIRPORT SYSTEM
JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

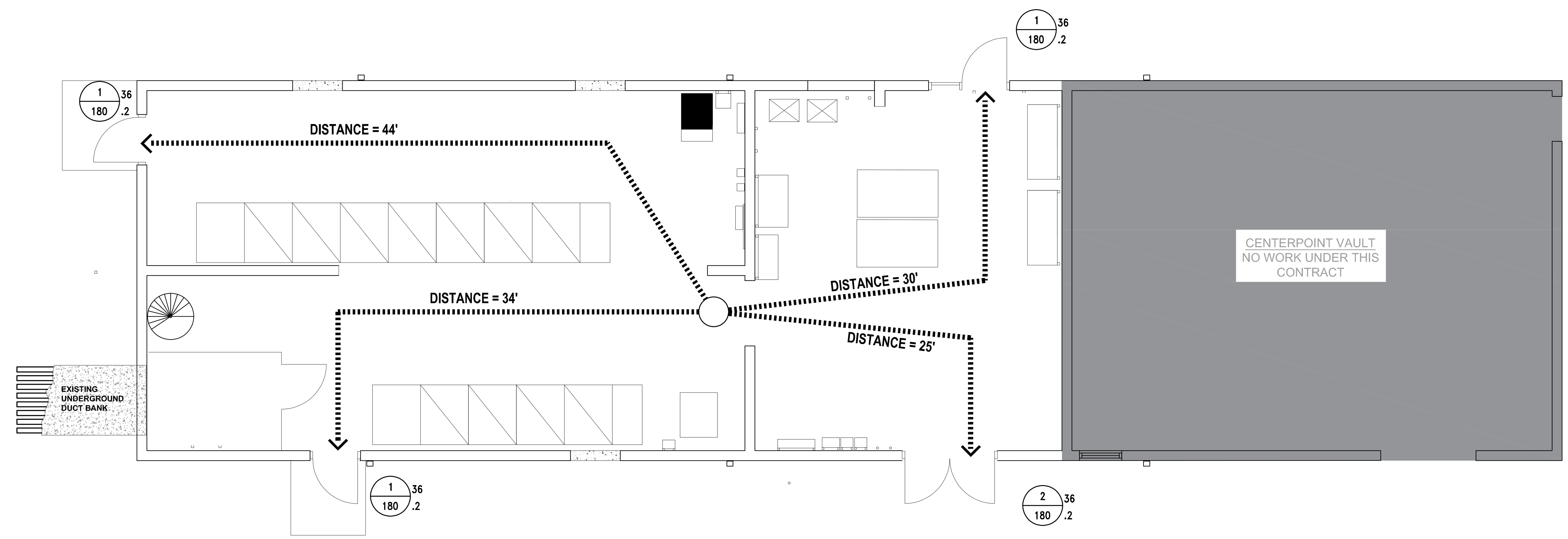
SHEET NO.
SV-A1.01



2 SOUTH VAULT ARCHITECTURAL CEILING PLAN
SCALE: 3/16" = 1'-0"



1 SOUTH VAULT LOWER LEVEL REFLECTED CEILING PLAN
SCALE: 3/16" = 1'-0"



3 SOUTH VAULT EGRESS PLAN
SCALE: 3/16" = 1'-0"

GENERAL NOTES

A. FIELD VERIFY ALL DIMENSIONS.
B. INTERIOR WALLS:
ALL WALLS SHALL BE PREPARED, PRIMED AND PAINTED. FINAL PAINT SYSTEM SHALL BE SUITABLE FOR CONCRETE SURFACES WITH HIGH DEW POINT/ MOISTURE DURING HUMID SEASONAL CONDITIONS. COLORS SHALL BE SELECTED BY ARCHITECT/ OWNER.
C. ROUTE AND SEAL PERIMETER OF CONCRETE FLOOR SLAB AND ANY CONTROL JOINTS OR CRACKS WITH ELASTOMERIC SEALANT.

KEYNOTES

1. NEW CEILING LIGHT FIXTURES (SEE ELECTRICAL).
2. NEW WALL MOUNTED EXTERIOR LIGHT FIXTURE (SEE ELECTRICAL).
3. NEW DOUBLE TEE ROOF SLAB INFILL WHERE MECHANICAL EQUIPMENT WAS REMOVED (SEE STRUCTURAL).
4. EXISTING SUMP PIT. SEE PLUMBING FOR NEW SUMP PUMP AND EQUIPMENT.

LEGEND

EXISTING

TO BE DEMOLISHED

NEW CONSTRUCTION

OUT OF SCOPE- NO WORK SCHEDULED IN THIS AREA

DISTANCE = XX' — TRAVEL DISTANCE

X / Y — W / Z

OCCUPANCY LOAD
X = OCCUPANTS USING EXIT
Y = EXIT CAPACITY
W = CLEAR WIDTH OF LIMITING COMPONENT (in)
Z = EGRESS WIDTH PER OCCUPANT (in/PERSON)

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CITY OF HOUSTON
HOUSTON AIRPORTS SYSTEM
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The drawings & support documents submitted for permit review meet the design intent, and to the best of our knowledge, appear to be in compliance with current HAS approved standards.
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HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH AIRFIELD LIGHTING VAULT
ARCHITECTURAL CEILING PLANS AND EGRESS PLAN

PROJECT MGR: AEO
DESIGNER: D.J.
DRAWN BY: S.M.
CHECK BY: T.N.

DATE: 03/22/24

REGISTERED ARCHITECT
TODD MICHAEL NIESNER
25135
STATE OF TEXAS
03/22/24

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO.
SV-A1.02

DOOR SCHEDULE

DOOR						HDW SET	FIRE RATING	DOOR FRAME		DETAILS ON THIS SHEET			REMARKS
NO.	TYPE	SIZE	THICK	MATERIAL	FINISH			MATERIAL	FINISH	HEAD	JAMB	SILL	
101A	A	(2) 3'-0" x 9'-11 $\frac{1}{4}$"	1 $\frac{3}{4}$"	GALV. STL	PAINT	1	2 HR	GALV. STL	PAINT	2	2	2	1,2,3,4,5,6,7,8,9,10,12
101B	B	3'-0" x 7'-0"	1 $\frac{3}{4}$"	GALV. STL	PAINT	2	2 HR	GALV. STL	PAINT	2	2	2	1,2,3,4,5,6,7,8,9,10
101C	D	3'-0" x 7'-0"	1 $\frac{3}{4}$"	GALV. STL	PAINT	2	2 HR	GALV. STL	PAINT	2	2	2	1,2,3,4,5,6,7,8,9,10
101D	D	3'-0" x 7'-0"	1 $\frac{3}{4}$"	GALV. STL	PAINT	2	2 HR	GALV. STL	PAINT	2	2	2	1,2,3,4,5,6,7,8,9,10
102A	C	(2) 3'-0" x 6'-10"	1 $\frac{3}{4}$"	GALV. STL	PAINT	3	--	GALV. STL	PAINT	2	2	2	1,2,3,4,5,6,7,8,10,11,12

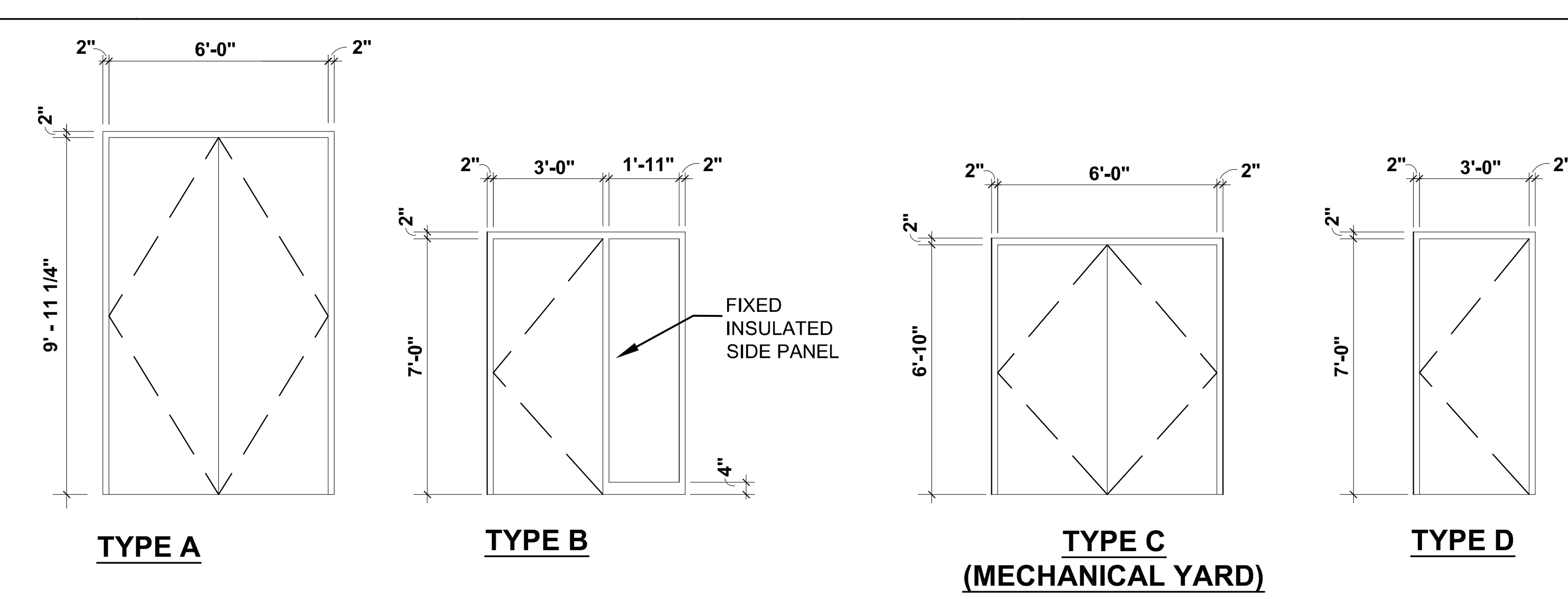
REMARKS:
1. DOOR TO BE FITTED WITH CONTACT CONNECTORS FOR SECURITY SYSTEM.
2. LEVEL 4 BULLET RESISTANT DOOR AND FRAME.
3. NOMINAL DOOR THICKNESS 1 $\frac{3}{4}$".
4. DOOR WEIGHT: 26.75 POUNDS PER SQUARE FOOT.
5. DOOR FACE SHEET: 14 GAUGE STEEL GALVANIZED.
6. DOOR FRAME: ARMORED 14 GAUGE STEEL.
7. FRAME ANCHORAGE PER MANUFACTURER
8. DOOR EDGES SHALL BE CONTINUOUSLY WELDED AND FINISHED SMOOTH.
9. INSULATED
10. FIELD VERIFY ALL OPENINGS.
11. MECHANICAL YARD
12. DOUBLE DOORS ARE EQUIPPED WITH PANIC HARDWARE ON BOTH LEAVES.

GENERAL NOTES

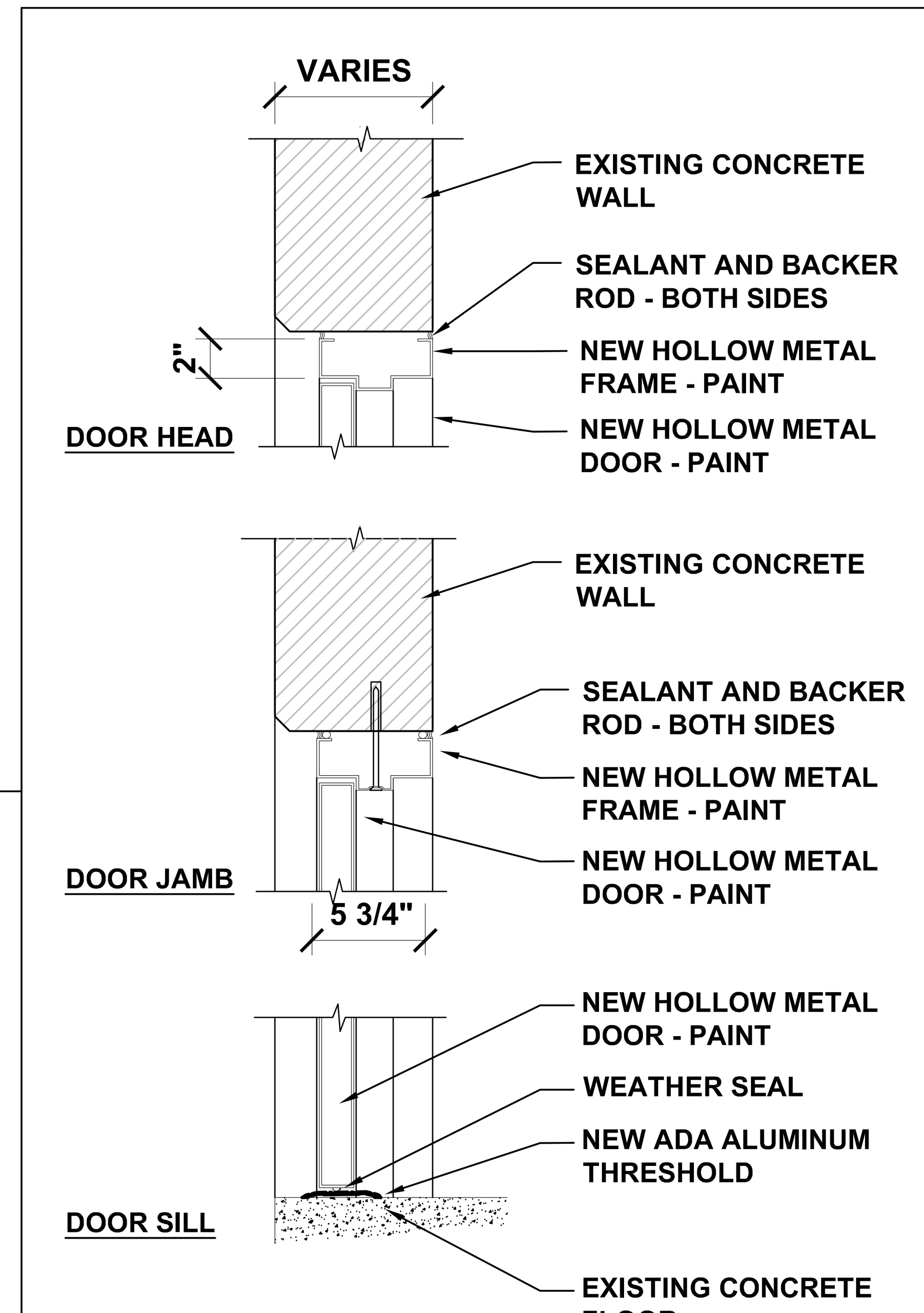
A. ALL LATCHES AND LOCKSETS ARE TO BE MORTISED TYPE U.N.O.
B. PROVIDE ADDITIONAL REINFORCEMENTS AS REQUIRED FOR ALL MORTISE HARDWARE SPECIFIED.
C. COORDINATE KEYING OF ALL HARDWARE WITH OWNER.
D. LABELED DOOR ASSEMBLIES TO HAVE UL LABELS PERMANENTLY ATTACHED TO DOOR AND FRAME. ALL DOOR OPENINGS, DOOR FRAMES, AND HARDWARE TO COMPLY WITH REQUIREMENTS OF UL RATINGS, APPLICABLE CITY/STATE BLDG. CODES, AND HARDWARE SPECIFICATIONS.
E. MOUNTING HEIGHT OF DOOR HARDWARE SHALL COMPLY WITH APPLICABLE CITY/STATE BLDG. CODES, ACCESSIBILITY STANDARDS, AND HARDWARE SPECIFICATIONS.
F. INTERCHANGEABLE CORE- FURNISH WITH CONSTRUCTION KEYING AND SEPARATE CORE FOR MASTER KEYING.
G. ALL ELEMENTS OF DOOR ASSEMBLY (DOOR, FRAME AND HARDWARE) TO MAINTAIN FIRE RATING DESIGNATION.
H. ACCESS CONTROL, HARDWARE AND DEVICES WILL BE SPECIFIED UNDER THE CLIENTS SECURITY TEAM. LISTED DOOR HARDWARE MAY BE SUBJECT TO CHANGE TO ACCOMMODATE THE CLIENTS SECURITY DEVICES.

FINISH HARDWARE SCHEDULE

SET NO.	ITEM	QTY	DESCRIPTION
1	STOP	2	IVES FS17 OR APPROVED EQUAL
	HINGES	4 PAIR	HAGER STAINLESS STEEL, NRP, US32D. CONCEALED ELECTRIC HINGES AND WIRE HARNESSES TO BE COORDINATED WITH TELECOM/ SECURITY.
	STRIKE	1	* ASA
	CLOSER	2	CLOSER WITH STOP, TS9356 SPT OR APPROVED EQUAL
	THRESHOLD	1	PEMKO OR APPROVED EQUAL
	WEATHER STRIPPING	3	NGP 700 SERIES ES AND SA OR APPROVED EQUAL
	LOCK	1	COORDINATE WITH AIRPORT STANDARD FOR LOCK, KEYING AND CORE REQUIREMENTS
	FLUSH BOLT	--	N/A
	PANIC DEVICE	2	SARGENT 80 PANIC HARDWARE 805H MODEL NO. 59-80 SERIES. EQUIPPED WITH (RTE) REQUEST TO EXIT HARDWARE TO RELEASE MAGNETIC LOCKS.
	ASTRAGAL	1	HAGER 756S OR APPROVED EQUAL
	DRIP GUARD	1	HAGER 810S DRIP, CLEAR ANODIZED
	SECURITY		SEE TELECOM/ SECURITY DRAWINGS & SPECIFICATIONS FOR SECURITY HARDWARE.
2			
	STOP	1	IVES FS17 OR APPROVED EQUAL
	HINGES	1.5 PAIR	HAGER STAINLESS STEEL, NRP, US32D. CONCEALED ELECTRIC HINGES TO BE COORDINATED WITH TELECOM/ SECURITY.
	STRIKE	1	* ASA
	CLOSER	1	CLOSER WITH STOP, TS9356 SPT OR APPROVED EQUAL
	THRESHOLD	1	PEMKO OR APPROVED EQUAL
	WEATHER STRIPPING	1	NGP 700 SERIES ES AND SA OR APPROVED EQUAL
	LOCK	1	COORDINATE WITH AIRPORT STANDARD FOR LOCK, KEYING AND CORE REQUIREMENTS
	PANIC DEVICE	1	VAN DUPRIN - 22F SERIES WITH 22L-F LEVER/LOCK FINISH SP29
	DRIP GUARD	1	HAGER 810S DRIP, CLEAR ANODIZED
	SECURITY		DOOR POSITION SWITCH AND SECURITY HARDWARE TO BE COORDINATED WITH SECURITY/ TELECOM.
3			
	STOP	2	IVES FS17 OR APPROVED EQUAL
	HINGES	1.5 PAIR	HAGER STAINLESS STEEL, NRP, US32D. CONCEALED ELECTRIC HINGES AND WIRE HARNESSES TO BE COORDINATED WITH SECURITY/ TELECOM.
	STRIKE	1	* ASA
	CLOSER	2	CLOSER WITH STOP, TS9356 SPT OR APPROVED EQUAL
	SILENCER	4	HAGER 307D OR APPROVED EQUAL
	LOCK	1	COORDINATE WITH AIRPORT STANDARD FOR LOCK, KEYING AND CORE REQUIREMENTS
	FLUSH BOLT	--	N/A
	PANIC DEVICE	2	SARGENT 80 PANIC HARDWARE 805H MODEL NO. 59-80 SERIES. EQUIPPED WITH (RTE) REQUEST TO EXIT HARDWARE TO RELEASE MAGNETIC LOCKS.
	SECURITY		SEE TELECOM/ SECURITY DRAWINGS & SPECIFICATIONS FOR SECURITY HARDWARE.



1 DOOR TYPES
SCALE: 1/4" = 1'-0"



2 DOOR DETAILS
SCALE: 1-1/2" = 1'-0"

HOUSTON AIRPORT SYSTEM

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GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH AIRFIELD LIGHTING VAULT
ARCHITECTURAL SCHEDULES

PROJECT MGR: AEO
DESIGNER: D.J.
DRAWN BY: S.M.
CHECK BY: T.N.

DATE: 03/22/24

REGISTERED ARCHITECT TODD MICHAEL NIESNER 25135 STATE OF TEXAS
03/22/24

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

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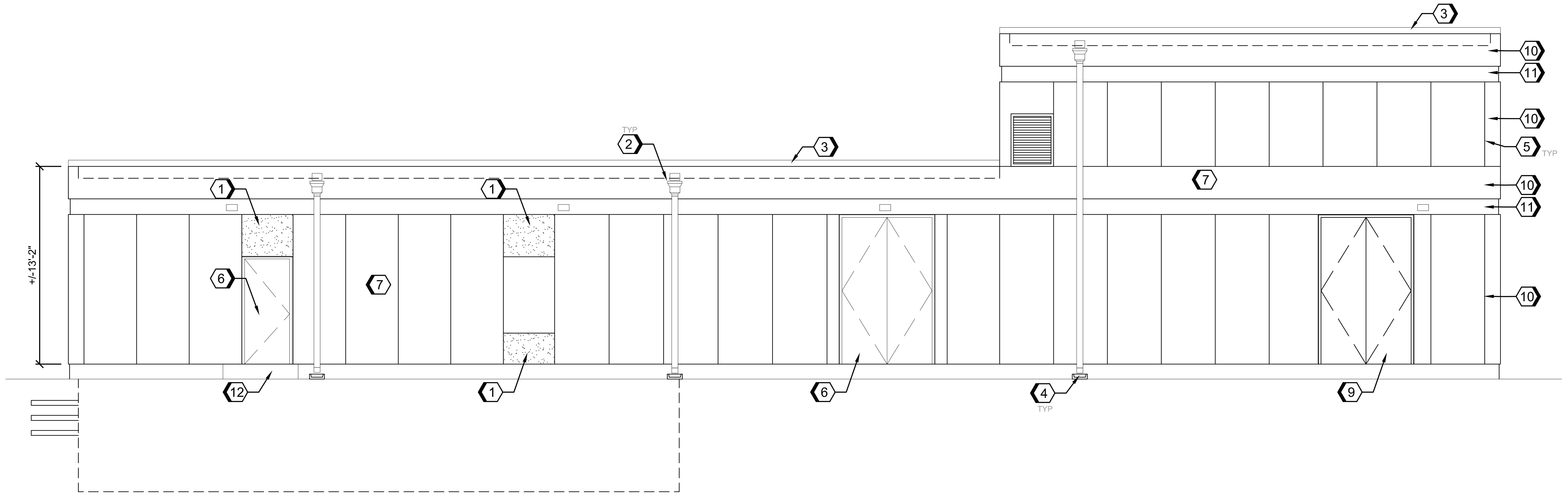
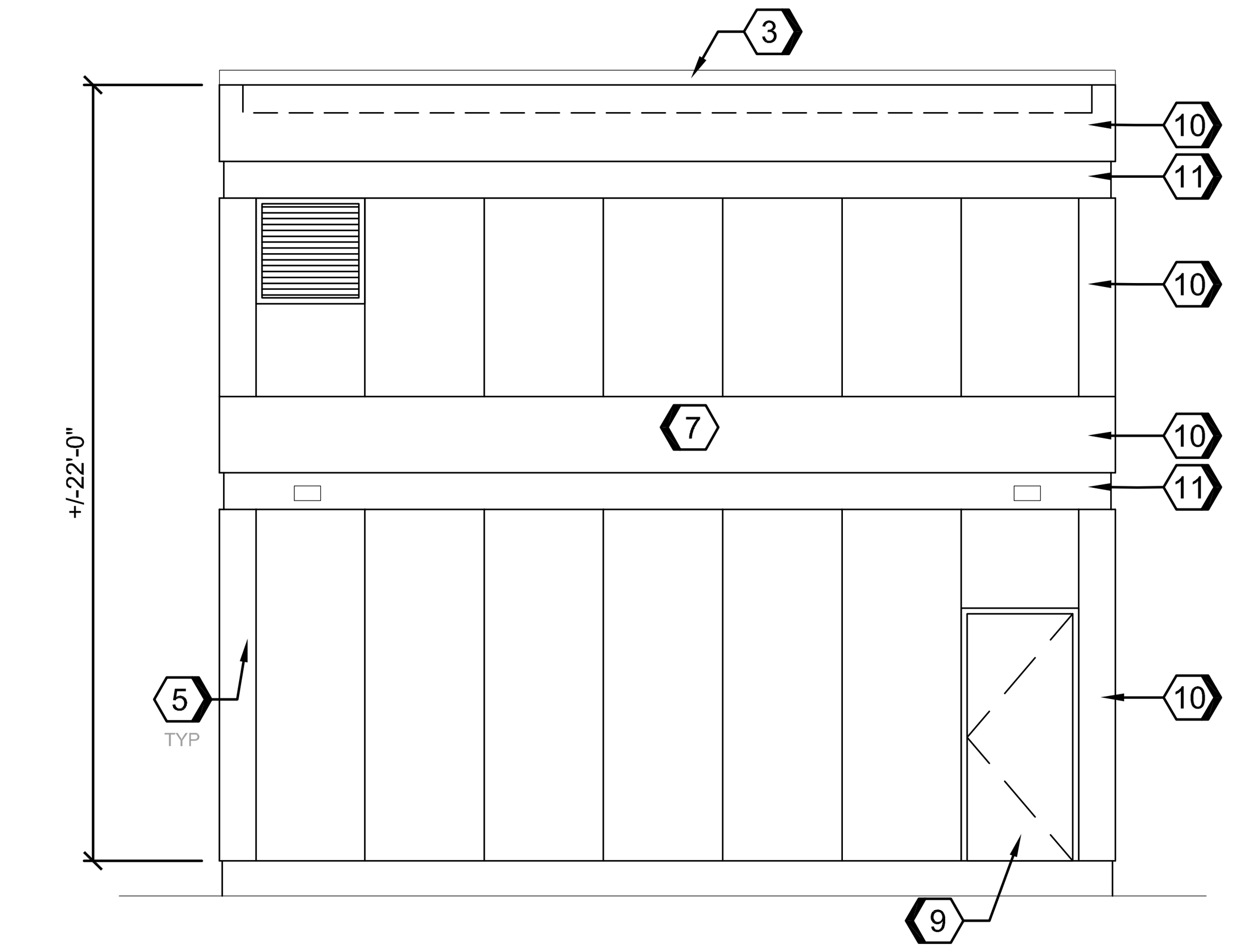
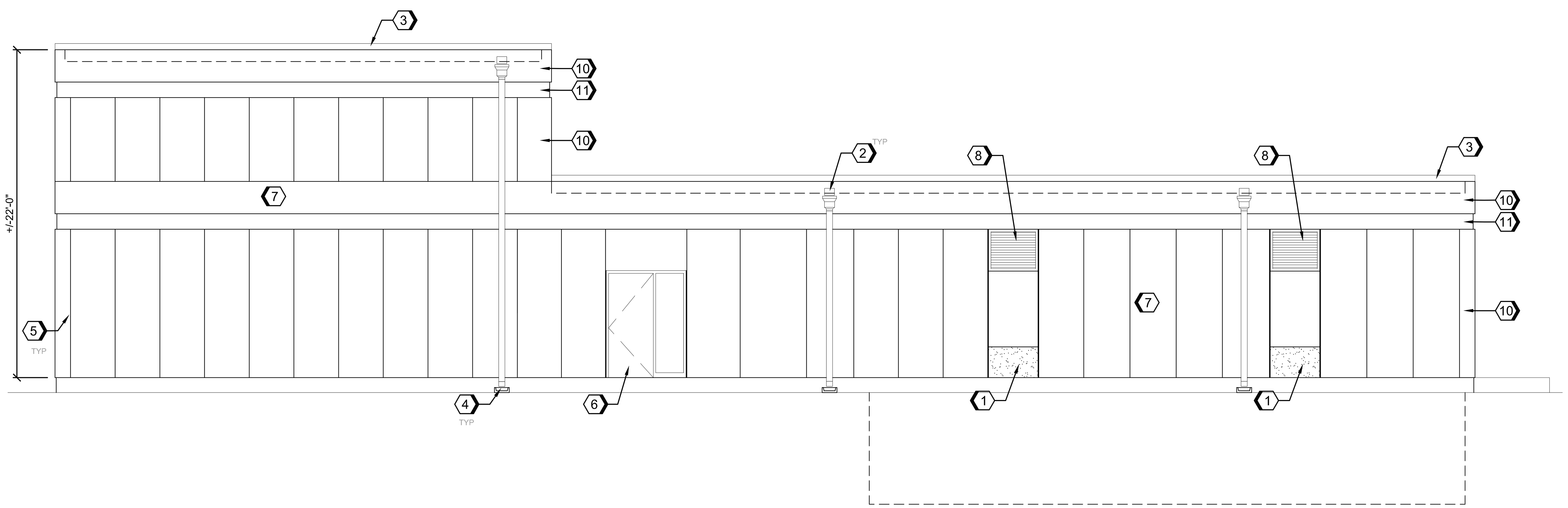
SHEET NO.
SV-A1.03



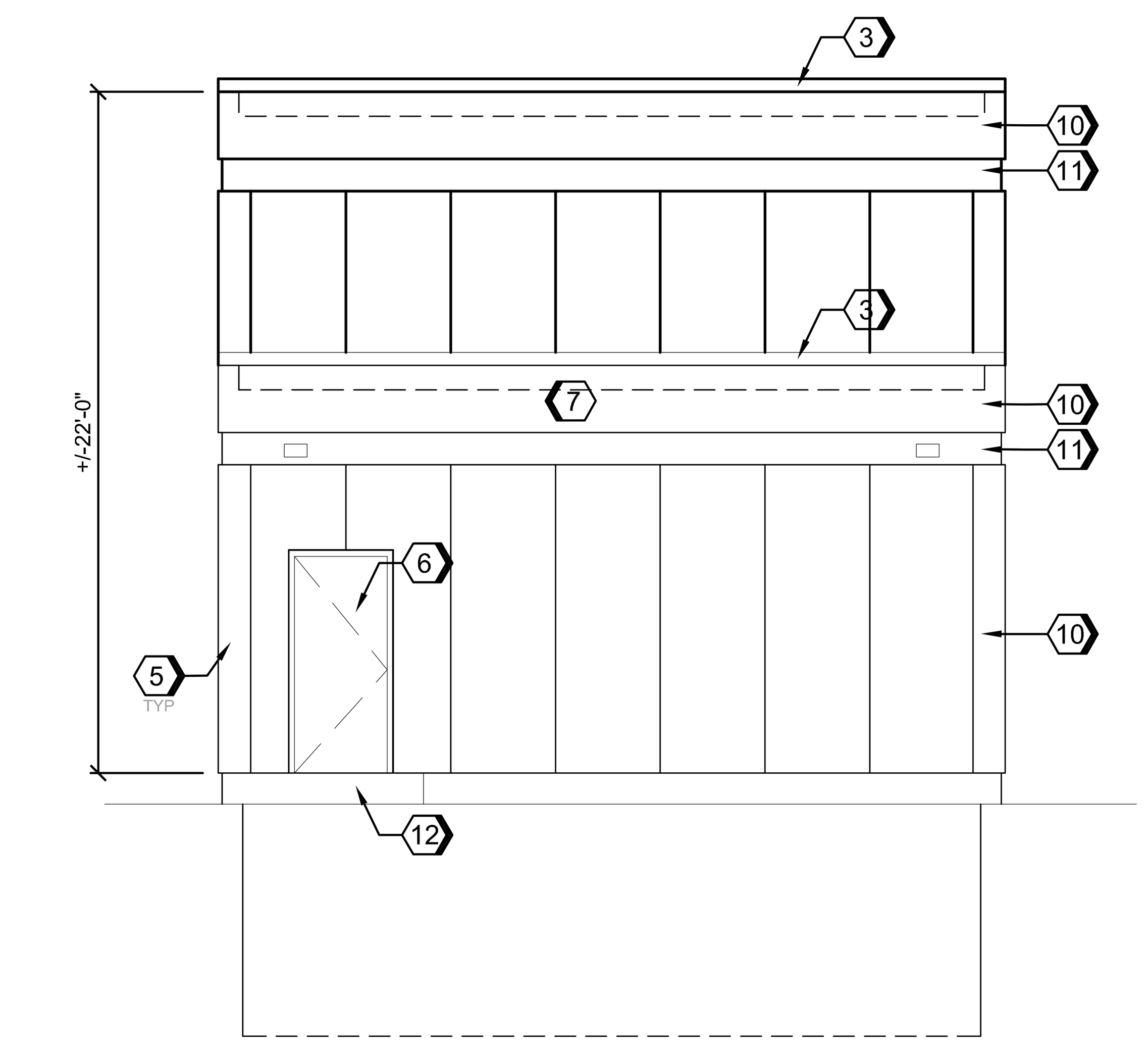
4 EAST ELEVATION
SCALE: 3/16" = 1'-0"



3 NORTH ELEVATION
SCALE: 3/16" = 1'-0"



2 WEST ELEVATION
SCALE: 3/16" = 1'-0"



1 SOUTH ELEVATION
SCALE: 3/16" = 1'-0"

KEYNOTES

1. INFILL OLD LOUVER OPENINGS WITH CONCRETE (SEE STRUCTURAL).
2. NEW PREFINISHED SCUPPER AND DOWNSPOUT TYPICAL AT ALL LOCATIONS.
3. NEW PREFINISHED PARAPET CAP.
4. NEW PRECAST CONCRETE SPLASH BLOCKS AT ALL DOWNSPOUT LOCATIONS.
5. NEW SEALANT AND BACKER ROD AT ALL EXPANSION JOINTS.
6. NEW DOOR AND FRAME - PAINT. (SEE DOOR SCHEDULE FOR DETAILS).
7. EXISTING CAST-IN-PLACE CONCRETE EXTERIOR WALLS.
8. NEW CLEAR ANODIZED ALUMINUM LOUVER TO MATCH EXISTING. PROVIDE INSULATED, FULLY WATERTIGHT BLANKED OFF PANEL ON THE INTERIOR SIDE OF THE LOUVER. PROVIDE ACCESS DOOR FOR FUTURE TEMPORARY DUCT CONNECTION.
9. PRIME AND PAINT EXISTING FRAME AND DOOR LEADING TO CENTERPOINT VAULT.
10. PAINT COLOR 1.
11. PAINT COLOR 2.
12. NEW CAST-IN-PLACE CONCRETE STOOP. VERIFY FLOOR TO GRADE DIMENSIONS. PROVIDE 11" TREAD AND EQUAL RISERS NO GREATER THAN 7" WHERE REQUIRED.

GENERAL NOTES

A. EXTERIOR WALLS:
ROUTE AND SEAL ALL CRACKS, EXPANSION JOINTS AND CONTROL JOINTS.
PRIME AND FINISH PAINT WITH DOUBLE COAT.
B. ENCLOSED MECHANICAL YARD
B.A. NOT REPRESENTED IN THE ARCHITECTURAL DRAWINGS
B.B. SEE STRUCTURAL DRAWINGS FOR WALL DETAILS
B.C. SEE DOOR SCHEDULE FOR DOUBLE DOOR ENTRY TO YARD. REFER TO DOOR MARK A103.
B.D. ALL INTERIOR AND EXTERIOR YARD WALLS SHALL BE PRIMED AND PAINTED U.N.O.

LEGEND

————	EXISTING
— — — —	TO BE DEMOLISHED
————	NEW CONSTRUCTION
■	OUT OF SCOPE- NO WORK SCHEDULED IN THIS AREA

HOUSTON AIRPORT SYSTEM

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www.jacobs.com TBPE Firm #2966

REVISIONS

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CITY OF HOUSTON
HOUSTON AIRPORTS SYSTEM
Recommended 03/29/2024
Houston Airports System Director or Designated Representative DATE

REVIEWED / NO EXCEPTIONS TAKEN
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HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH AIRFIELD LIGHTING VAULT
ARCHITECTURAL ELEVATIONS

PROJECT MGR: AEO
DESIGNER: D.J.
DRAWN BY: S.M.
CHECK BY: T.N.

DATE: 03/22/24

REGISTERED ARCHITECT
TODD MICHAEL NIESNER
25135
STATE OF TEXAS
03/22/24

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO.
SV-A2.01

GENERAL NOTES

1. CONSTRUCT STORM DRAINAGE AND PAVING IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, DRAWINGS AND CONSTRUCTION DETAILS.

2. THE GEOTECHNICAL INVESTIGATION AND SOILS REPORT WAS PREPARED BY ______ REPORT NO. ____, DATED ______, OR AS AMENDED.

3. UTILITIES PRESENTED ON THESE DRAWINGS ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION. CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS IN THE FIELD PRIOR TO COMMENCING CONSTRUCTION. CONTRACTOR SHALL NOTIFY TEXAS ONE CALL AT 713–223–4567/811 OR 800–344–8377 AND LONE STAR NOTIFICATION CENTER AT 800–669–8344 AT LEAST 48 HOURS BEFORE PROCEEDING WITH ANY EXCAVATION. UTILITIES MARKED WITHIN THE PUBLIC RIGHT OF WAY OR IN EASEMENTS SHALL COMPLY WITH TAC TITLE 16, PART 1, CHAPTER 18, RULE §18.6 AND THE AMERICAN PUBLIC WORKS ADMINISTRATION (APWA) UNIFORM COLOR CODE. REFER TOPOGRAPHIC AND SUE SURVEY SHEET C–100.2.

4. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO EXISTING WATER, WASTEWATER, STORM WATER LINES AND TRAFFIC CONTROL DEVICES. DAMAGES SHALL BE REPAIRED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AT NO ADDITIONAL COST.

5. ADEQUATE POSITIVE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION AND ANY DRAINAGE DITCH OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO EXISTING CONDITIONS OR BETTER.

6. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT ROOT SYSTEMS OF SHRUBS, PLANTS AND TREES NOT REMOVED AND WITHIN THE LIMITS OF WORK

7. CONTRACTOR SHALL COMPLY WITH LATEST EDITION OF OSHA REGULATIONS AND THE STATE OF TEXAS LAWS CONCERNING EXCAVATION.

8. CONTRACTOR SHALL MAINTAIN A SET OF REDLINE DRAWINGS AND RECORD AS–BUILT CONDITIONS DURING CONSTRUCTION. THESE REDLINE MARKED UP DRAWINGS WILL BE SUBMITTED TO THE DESIGN CONSULTANT WHO WILL MAKE THE CHANGES ON THE ORIGINAL TRACINGS, LABEL EACH SHEET IN THE SET AS "RECORD DRAWINGS", AND RETURN IT TO THE HOUSTON AIRPORT SYSTEM.

9. CONTRACTOR TO OBTAIN ALL FEDERAL, STATE AND MUNICIPAL DEVELOPMENT AND CONSTRUCTION PERMITS REQUIRED AT HIS EXPENSE PRIOR TO COMMENCEMENT OF WORK.

SWPPP CONSTRUCTION NOTES

1. CONTRACTOR SHALL IMPLEMENT INLET PROTECTION DEVICES AND REINFORCED FILTER FABRIC BARRIER ALONG ROAD AND SIDE DITCHES AT LOCATIONS SHOWN ON THE TYPICAL STORM WATER POLLUTION PREVENTION (SWPP) PLANS TO KEEP SILT AND OR EXCAVATED MATERIALS FROM ENTERING INTO THE STORM WATER INLETS AND DITCHES EVENTUALLY POLLUTING THE RECEIVING STORM.

2. DURING THE EXCAVATION PHASE OF THE PROJECT, CONTRACTOR SHALL SCHEDULE THE WORK IN SHORT SEGMENTS SO THAT EXCAVATION MATERIAL CAN BE QUICKLY HAULED AWAY FROM THE SITE AND TO PREVENT IT FROM STAYING UNCOLLECTED ON THE EXISTING PAVEMENT. ANY LOOSE EXCAVATED MATERIAL WHICH FALLS ON PAVEMENTS OR DRIVEWAYS SHALL BE SWEPT BACK INTO THE EXCAVATED AREA.

3. CONTRACTOR SHALL CLEAN UP THE EXISTING STREET INTERSECTIONS AND DRIVEWAYS DAILY, AS NECESSARY, TO REMOVE ANY EXCESS MUD, SILT OR ROCK TRACKED FROM THE EXCAVATED AREA.

4. CONTRACTOR SHALL FOLLOW GOOD HOUSEKEEPING PRACTICES DURING THE CONSTRUCTION OF THE PROJECT, ALWAYS CLEANING UP DIRT AND LOOSE MATERIAL AS CONSTRUCTION PROGRESSES.
   - LOOSE SOIL TO BE SPRINKLED TO PREVENT BLOWING AWAY BY WIND.
   - USE OF SILT FENCES AROUND CONSTRUCTION SITE.
   - HYDRO–MULCH OR SEEDING TO BE PERFORMED AS NEEDED TO PREVENT EROSION.

5. CONTRACTOR TO INSPECT AND MAINTAIN THE AREAS LISTED BELOW AT LEAST ONCE EVERY FOURTEEN (14) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM EVENT OF 0.5 INCHES OR GREATER.

   –DISTURBED AREAS OF THE CONSTRUCTION SITE THAT HAVE NOT BEEN FINAL STABILIZED.
   –AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION.
   –STRUCTURAL CONTROL MEASURES.
   –LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE.

6. CONTRACTOR TO BE RESPONSIBLE TO MAINTAIN EXISTING DITCHES AND/OR CULVERTS FOR UNOBSTRUCTED DRAINAGE AT ALL TIMES. WHERE SODDING IS DISTURBED BY EXCAVATION OR BACKFILLING OPERATIONS, SUCH AREAS SHALL BE REPLACED BY SEEDING OR SODDING. SLOPES 4:1 OR STEEPER SHALL BE REPLACED BY BLOCK SODDING.

GRADING NOTES

1. CONTRACTORS SHALL VERIFY THE SUITABILITY OF ALL EXISTING AND PROPOSED SITE CONDITIONS INCLUDING GRADES AND DIMENSIONS BEFORE STARTING CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES.

2. BEFORE STARTING CONSTRUCTION, CONTRACTOR SHALL VERIFY BENCHMARK ELEVATION AND NOTIFY ENGINEER IF ANY DISCREPANCY AND/OR CONFLICT IS FOUND.

3. CONTRACTOR SHALL ENSURE THERE IS POSITIVE DRAINAGE FROM THE PROPOSED BUILDINGS AND NO PONDING IN PAVED AREAS, AND SHALL NOTIFY ENGINEER IF ANY GRADING DISCREPANCIES ARE FOUND IN THE EXISTING AND PROPOSED GRADES PRIOR TO PLACEMENT OF PAVEMENT OR UTILITIES.

4. CONTRACTOR SHALL PROTECT ALL MANHOLES COVERS, VALVE COVERS, VAULT LIDS, FIRE HYDRANTS, POWER POLES, GUY WIRES, AND TELEPHONE BOXES THAT ARE TO REMAIN IN PLACE AND UNDISTURBED DURING CONSTRUCTION.

5. EXISTING CONCRETE PAVING, SIDEWALK, AND CURB DEMOLITION SHALL BE REMOVED AS CALLED OUT ON PLANS AND DISPOSED OF BY SUBCONTRACTOR. DISPOSAL SHALL BE AT AN APPROVED OFF–SITE, LAWFUL LOCATION, UNLESS DIRECTED OTHERWISE BY OWNER.

PAVING NOTES

1. DRIVEWAY CONNECTIONS AND SIDEWALKS IN PUBLIC STREET RIGHT–OF–WAY SHALL COMPLY WITH CITY OF HOUSTON STANDARD CONSTRUCTION SPECIFICATIONS AND DRIVEWAY DETAILS FOR STREETS WITH CURBS.
2. ALL PAVEMENT TO BE IN ACCORDANCE WITH THE MOST RECENT APPLICABLE GEOTECHNICAL REPORT FOR THE PROJET.
3. CONTRACTOR SHALL BLOCK OUT (SQUARE) AROUND ALL INLETS AND MANHOLES IN PROPOSED PAVING AS SHOWN ON TYPE "A" INLET AND TYPE "C" MANHOLE DETAILS.
4. PAVEMENT SHALL BE IN ACCORDANCE WITH THE DETAILS PROVIDED IN THIS PLAN SET.
5. THE CONTRACTOR(S) SHALL NOTIFY CITY OF HOUSTON ENGINEERING OFFICE 48 HOURS PRIOR TO START OF WORK ON THIS PROJECT.
6. ALL RETURNS SHALL HAVE A 25–FOOT RADIUS AT FACE OF CURB UNLESS OTHERWISE NOTED.
7. GUIDELINES SET FORTH IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" SHALL BE OBSERVED.
8. ALL FILL IN EXISTING OR PROPOSED CITY OF HOUSTON RIGHT–OF–WAY, INCLUDING BACKDRESSING BEHIND THE CURB, SHALL BE PLACED IN MAXIMUM LOOSE LIFTS OF EIGHT INCHES (8") OR LESS AND COMPACTED TO 95% OF MAXIMUM DENSITY AT –1% TO +3% MOISTURE CONTENT AS DETERMINED BY ASTM TEST METHOD D–698.
9. ALL CONCRETE PAVEMENT TO BE 28–FOOT B–B SIX (6) INCH REINFORCED CONCRETE WITH FOUR (4) INCH BY TWELVE (12) INCH REINFORCED CONCRETE CURBS, UNLESS OTHERWISE NOTED. CONCRETE MIX SHALL BE AS SPECIFIED.
10. PAVEMENT REINFORCEMENT FOR 28–FOOT B–B SIX (6) INCH REINF. CONCRETE SHALL BE #4, GRADE 60 STEEL REBARS ON 20–INCH CENTERS FOR LONGITUDINAL STEEL AND ON 36–INCH CENTERS FOR TRANSVERSE STEEL. REINFORCEMENT SHALL BE PLACED ON CHAIRS SPACED 36" CENTER TO CENTER. BENT BARS SHALL BE GRADE 40.
11. REFER TO THE LATEST CITY OF HOUSTON PAVEMENT MARKING DETAILS.
12. SIDEWALK BULLNOSES CONSTRUCTED IN ESPLANADES SHALL BE SIX INCHES (6") THICK WITH SURFACE COLORED BLACK, WHEN CURBS ARE TEN FEET (10') AND LESS IN WIDTH FROM FACE–TO–FACE OF CURBS. FOR CONCRETE ROADWAYS, SURFACE SHALL BE COLORED BLACK. FOR ASPHALT ROADWAYS, SURFACE SHALL BE UNCOLORED.

CLEARING, GRUBBING, FILL, GRADING NOTES

1. ALL UNSATISFACTORY AND/OR WASTE MATERIALS INCLUDING VEGETATION, ROOTS, CONCRETE, AND DEBRIS SHALL BE HAULED OFF–SITE AND DISPOSED OF BY THE CONTRACTOR IN A LAWFUL MANNER. SPREAD COST OF THIS WORK IN PAY ITEMS OF THIS PROJECT.
2. ALL AREAS TO BE FILLED ARE TO BE FREE OF VEGETATION, DEBRIS, PONDED WATER, LOOSE SOILS, MUD & MUCK.
3. ALL FILL OR DISPOSAL OF EXCESS MATERIAL SHALL BE COMPACTED IN 8" LOOSE LIFTS 95% STANDARD PROCTOR DENSITY.
4. CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING AND MAINTAINING SITE DRAINAGE AT ALL TIMES AT NO ADDITIONAL COST TO THE OWNER WHETHER BY GRADING OR PUMPING IN COMPLIANCE WITH THE "NATIONAL POLLUTANTS DISCHARGE ELIMINATION SYSTEM" (NPDES) REQUIREMENTS.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND PROTECTION OF CONSTRUCTION ACTIVITIES DURING THE CONTRACT PERIOD. THIS SHALL INCLUDE ANY EROSION CONTROL MEASURES AND RE–GRADING NECESSARY TO ACHIEVE THE LINES AND GRADES SET FORTH BY THESE PLANS.

AT&T TEXAS/SWBT FACILITIES NOTES

1. THE LOCATIONS OF AT&T TEXAS/SWBT FACILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.

2. THE CONTRACTOR SHALL CALL 1–800–344–8377 (TEXAS 811) A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE UNDERGROUND LINES FIELD LOCATED.

3. WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF AT&T TEXAS/SWBT FACILITIES, ALL EXCAVATIONS MUST BE ACCOMPLISHED USING NON–MECHANIZED EXCAVATION PROCEDURES. WHEN BORING, THE CONTRACTOR SHALL EXPOSE THE AT&T TEXAS/SWBT FACILITIES.

4. WHEN AT&T TEXAS/SWBT FACILITIES ARE EXPOSED, THE CONTRACTOR WILL PROVIDE SUPPORT TO PREVENT DAMAGE TO THE CONDUIT DUCTS OR CABLES. WHEN EXCAVATING NEAR TELEPHONE POLES THE CONTRACTOR SHALL BRACE THE POLE FOR SUPPORT.

5. THE PRESENCE OR ABSENCE OF AT&T TEXAS/SWBT UNDERGROUND CONDUIT FACILITIES OR BURIED CABLE FACILITIES SHOWN ON THESE PLANS DOES NOT MEAN THAT THERE ARE NO DIRECT BURIED CABLES OR OTHER CABLES IN CONDUIT IN THE AREA.

6. PLEASE CONTACT THE AT&T TEXAS DAMAGE PREVENTION MANAGER ROOSEVELT LEE JR. AT (713) 567–4552 OR EMAIL HIM AT RL7259@ATT.COM, IF THERE ARE QUESTIONS ABOUT BORING OR EXCAVATING NEAR OUR AT&T TEXAS/SWBT FACILITIES.

CENTERPOINT ENERGY NOTES

CAUTION: UNDERGROUND GAS FACILITIES

1. THE CONTRACTOR SHALL CONTACT THE UTILITY COORDINATING COMMITTEE AT 1–800–545–6005 OR 811 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE MAIN AND SERVICE LINES FIELD LOCATED.
   –WHEN CENTERPOINT ENERGY PIPE LINE MARKINGS ARE NOT VISIBLE, CALL 713–207–5463 OR 713–945–8037 (7:00 AM TO 4:30 PM) FOR STATUS OF LINE LOCATION REQUEST BEFORE EXCAVATION BEGINS.
   –WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF CENTERPOINT ENERGY FACILITIES, ALL EXCAVATION MUST BE ACCOMPLISHED USING NON–MECHANIZED EXCAVATION PROCEDURES.
   –WHEN CENTERPOINT ENERGY FACILITIES ARE EXPOSED, SUFFICIENT SUPPORT MUST BE PROVIDED TO THE FACILITIES TO PREVENT EXCESSIVE STRESS ON THE PIPING.
   –FOR EMERGENCIES REGARDING GAS LINES CALL 713–659–3552 OR 713–207–4200

2. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND FACILITIES.

WARNING: OVERHEAD ELECTRICAL LINES

1. OVERHEAD LINES MAY EXIST ON THE PROPERTY. THE LOCATION OF OVERHEAD LINES HAS NOT BEEN SHOWN ON THESE DRAWINGS AS THE LINES ARE CLEARLY VISIBLE, BUT YOU SHOULD LOCATE THEM PRIOR TO BEGINNING ANY CONSTRUCTION. TEXAS LAW, SECTION 752, HEALTH & SAFETY CODE FORBIDS ACTIVITIES THAT OCCUR IN CLOSE PROXIMITY TO HIGH VOLTAGE LINES, SPECIFICALLY:
   –ANY ACTIVITY WHERE PERSONS OR THINGS MAY COME WITHIN SIX (6) FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES; AND
   –OPERATING A CRANE, DERRICK, POWER SHOVEL, DRILLING RIG, PILE DRIVER,HOISTING EQUIPMENT, OR SIMILAR APPARATUS WITHIN 10 FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES.

2. PARTIES RESPONSIBLE FOR THE WORK, INCLUDING CONTRACTORS, ARE LEGALLY RESPONSIBLE FOR THE SAFETY OF CONSTRUCTION WORKERS UNDER THIS LAW. THIS LAW CARRIES BOTH CRIMINAL AND CIVIL LIABILITY. TO ARRANGE FOR LINES TO BE TURNED OFF OR REMOVED CALL CENTERPOINT ENERGY AT 713–207–2222.

ACTIVITIES ON/OR ACROSS CENTERPOINT ENERGY FEE OR EASEMENT PROPERTY

1. NO APPROVAL TO USE, CROSS, OR OCCUPY CENTERPOINT FEE OR EASEMENT PROPERTY IS GIVEN. IF YOU NEED TO USE CENTERPOINT PROPERTY, PLEASE CONTACT OUR SURVEYING AND RIGHT OF WAY DIVISION AT (713)207–6348 OR (713)207–5769.

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TBPE FIRM REGISTRATION #4575

ISANI PROJECT NO: 21LD59

HOUSTON AIRPORT SYSTEM

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REVISIONS

NO.	DESCRIPTION	DATE	BY
	ISSUED FOR CONSTRUCTION	03/15/24	

CITY OF HOUSTON
HOUSTON AIRPORTS SYSTEM
Recommended 03/29/2024
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PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

PROJECT MGR: RG
DESIGNER:
DRAWN BY:
CHECK BY:
SCALE:
DATE: 03/01/24

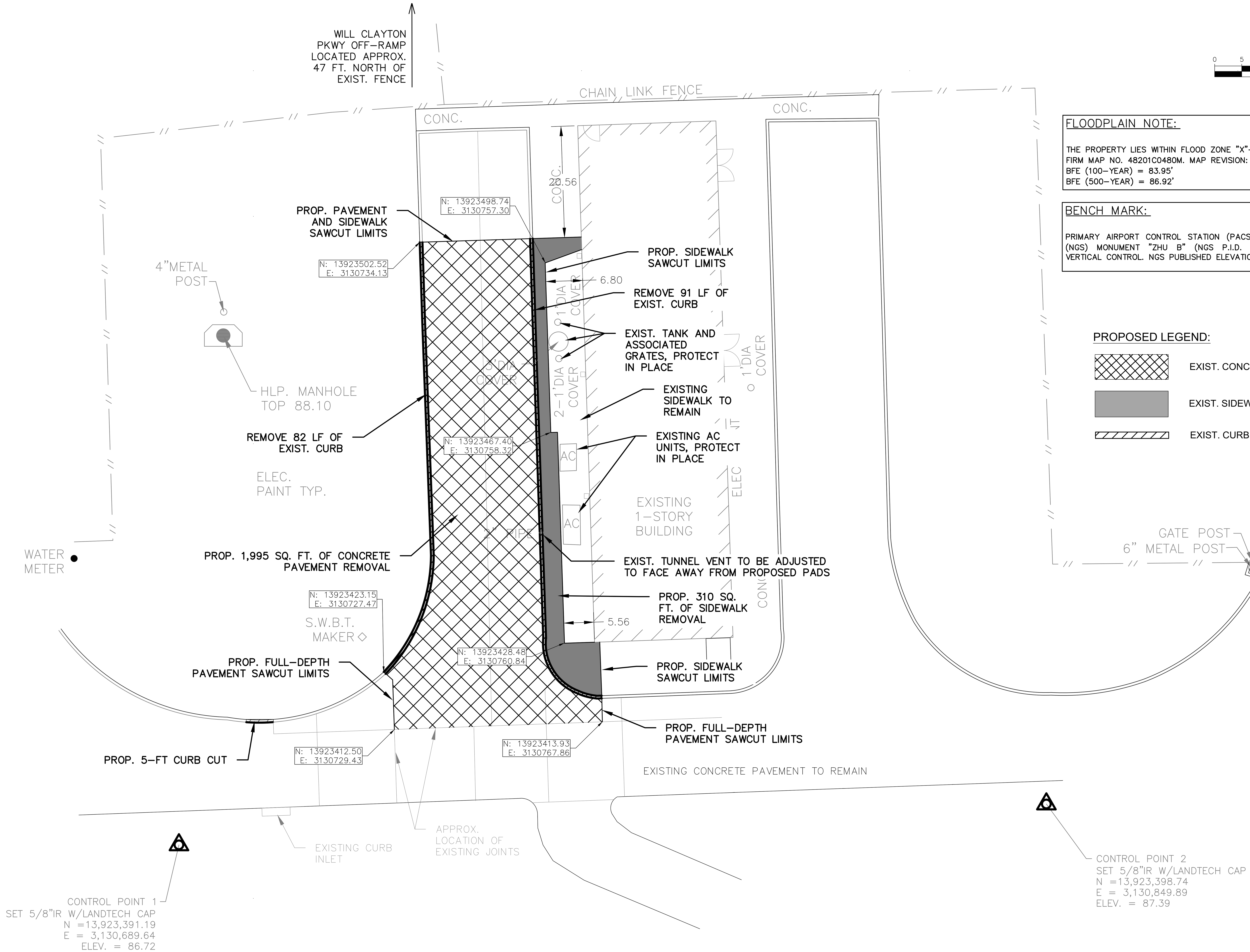
STATE OF TEXAS
RAM GULIANI
101094
LICENSED
PROFESSIONAL ENGINEER
03/15/2024

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM
JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A–000687
B.S.G. NO. 2024–31–IAH
H.A.S. NO. PN 952
T.I.P. NO. 24–28–IAH

SHEET NO. C0.01
CONSTRUCTION NOTES

FILE INFO:P:\ACTIVE\21LD59\WORKING\DRAWINGS\21LD59 – GENERAL CONSTRUCTION NOTES.dwg PLOTTED: Mar 15, 2024 2:21pm BY:jordan PLOT SCALE: 1=40



0 5 10 20 30
SCALE: 1" = 10'

N S W E

FLOODPLAIN NOTE:

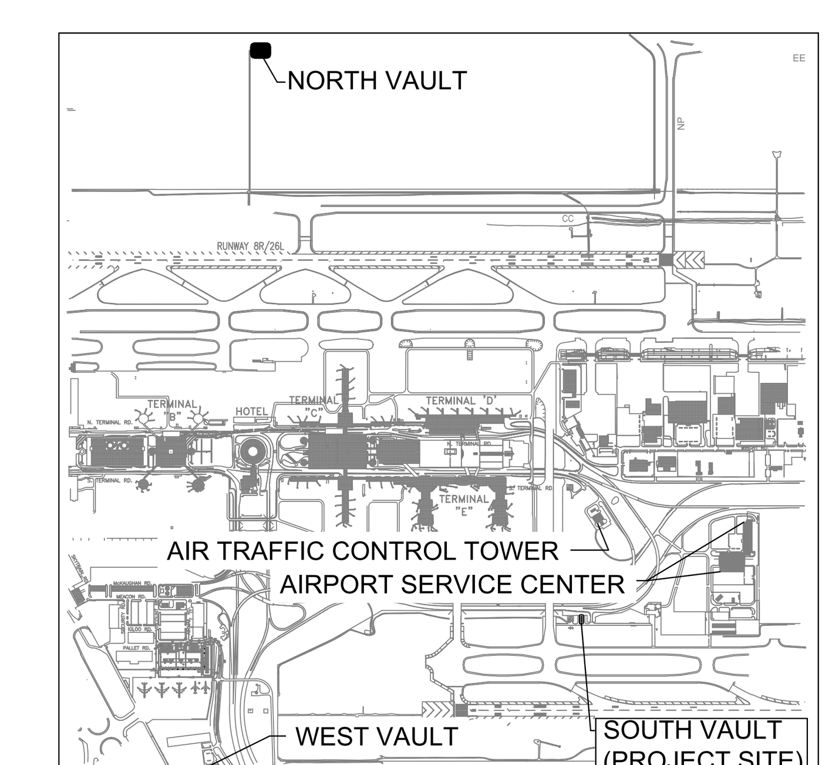
THE PROPERTY LIES WITHIN FLOOD ZONE "X"–UNSHADED, ACCORDING TO FIRM MAP NO. 48201C0480M. MAP REVISION: 06/09/2014.
BFE (100–YEAR) = 83.95'
BFE (500–YEAR) = 86.92'

BENCH MARK:

PRIMARY AIRPORT CONTROL STATION (PACS): NATIONAL GEODETIC SURVEY (NGS) MONUMENT "ZHU B" (NGS P.I.D. NO. AA3146) WAS HELD FOR VERTICAL CONTROL. NGS PUBLISHED ELEVATION = 81.033

PROPOSED LEGEND:

- EXIST. CONCRETE PAVEMENT REMOVAL
- EXIST. SIDEWALK REMOVAL
- EXIST. CURB REMOVAL



VICINITY MAP

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HOUSTON AIRPORT SYSTEM

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PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

PROJECT MGR: RG
DESIGNER:
DRAWN BY:
CHECK BY:
SCALE:
DATE: 03/01/24

STATE OF TEXAS
RAM GULIANI
101094
LICENSED
PROFESSIONAL ENGINEER
03/15/2024

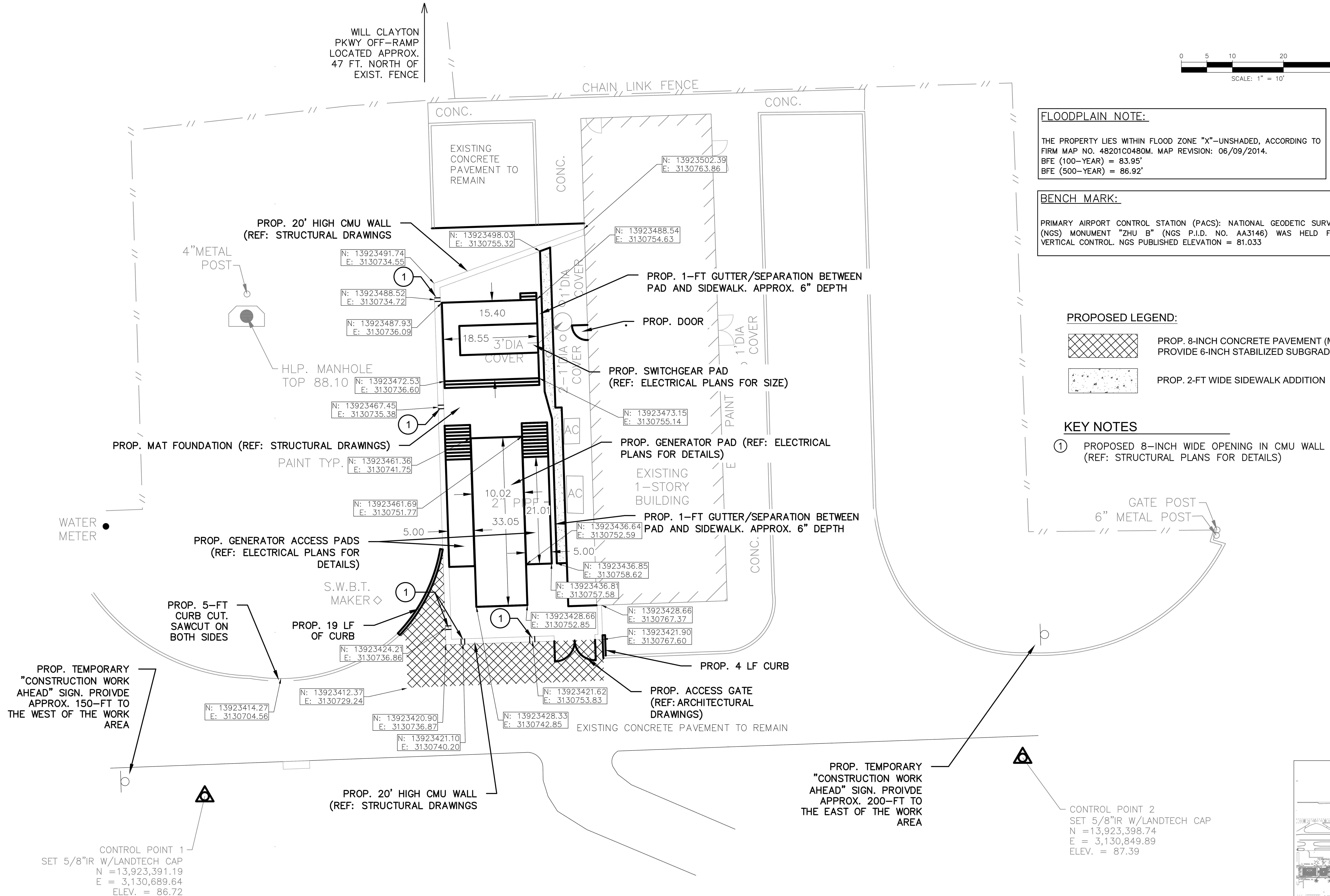
APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM
JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A–000687
B.S.G. NO. 2024–31–IAH
H.A.S. NO. PN 952
T.I.P. NO. 24–28–IAH

SHEET NO. C1.00

DEMOLITION PLAN

FILE INFO:P:\ACTIVE\21LD59\WORKING\DRAWINGS\21LD59 – Demolition Plan.dwg PLOTTED: Mar 15, 2024 2:21pm BY:jordan PLOT SCALE: 1=10



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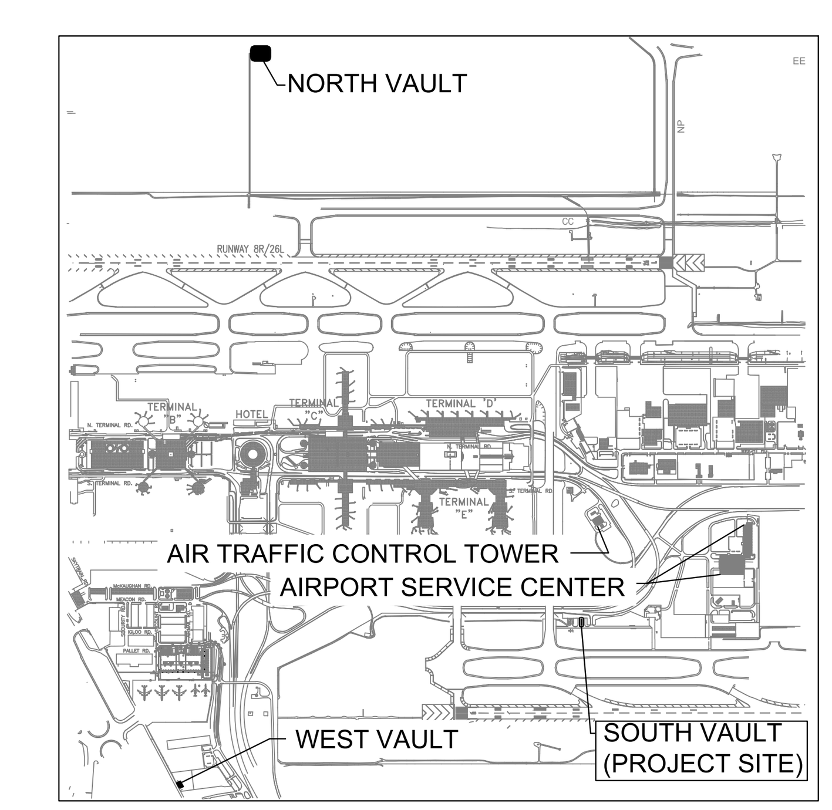
PROPOSED LEGEND:

PROP. 8-INCH CONCRETE PAVEMENT (MATCH EXISTING) PROVIDE 6-INCH STABILIZED SUBGRADE

PROP. 2-FT WIDE SIDEWALK ADDITION

KEY NOTES

1. PROPOSED 8–INCH WIDE OPENING IN CMU WALL AT PAVEMENT LEVEL (REF: STRUCTURAL PLANS FOR DETAILS)



VICINITY MAP

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HOUSTON AIRPORT SYSTEM

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GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

PROJECT MGR: RG
DESIGNER:
DRAWN BY:
CHECK BY:
SCALE:
DATE: 03/01/24

STATE OF TEXAS RAM GULIANI 101094 LICENSED PROFESSIONAL ENGINEER
03/15/2024

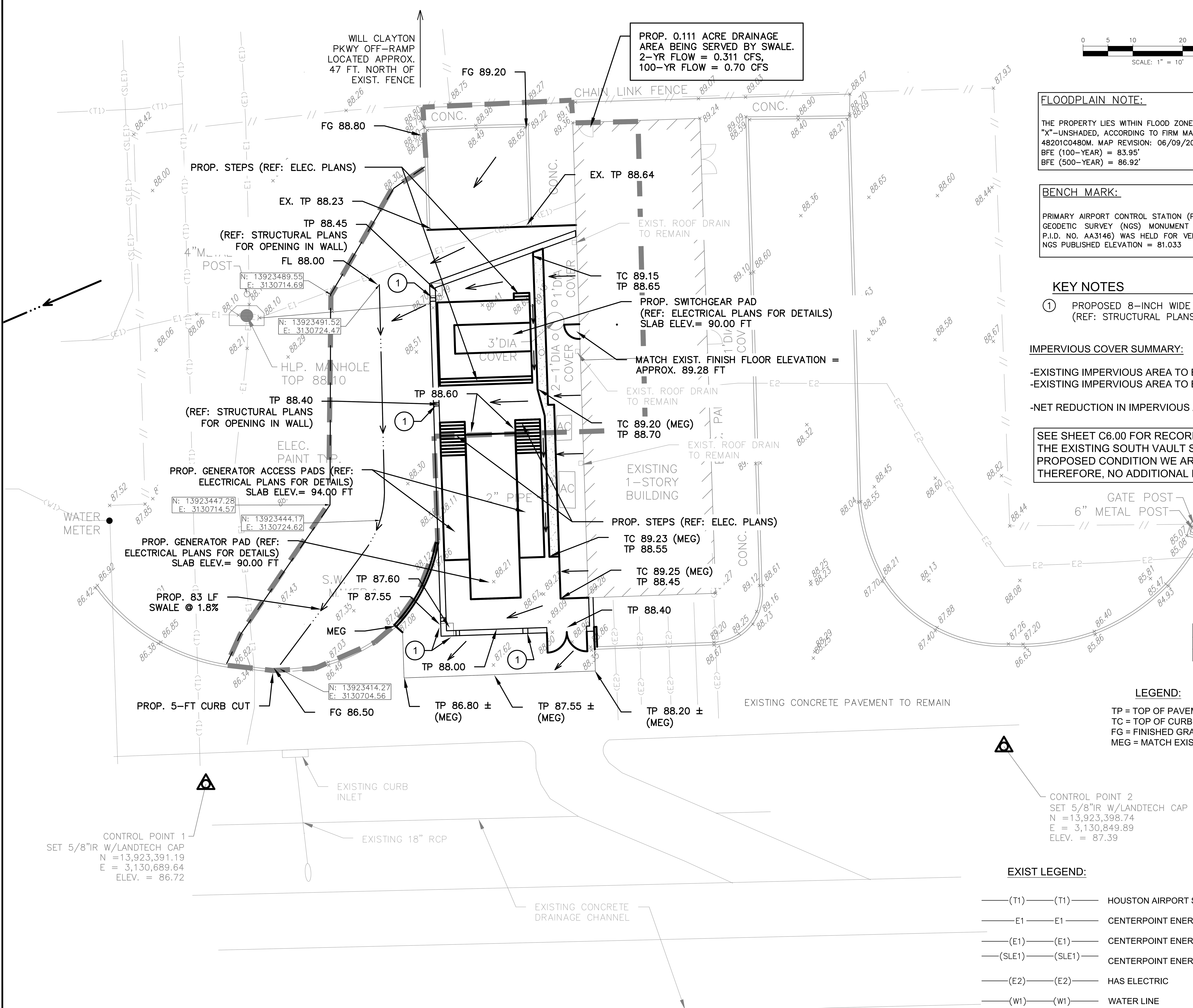
APPROVED BY:

DIRECTOR HOUSTON AIRPORT SYSTEM
JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A–000687
B.S.G. NO. 2024–31–IAH
H.A.S. NO. PN 952
T.I.P. NO. 24–28–IAH

SHEET NO. C2.00

SITE PLAN

FILE INFO:P:\ACTIVE\21LD59\WORKING\DRAWINGS\21LD59 – Site Plan.dwg PLOTTED: Mar 15, 2024 2:21pm BY:jordon PLOT SCALE: 1=10



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NOTE:

SLOPE PROPOSED EQUIPMENT PADS TO SOUTH. MAXIMUM 2 PERCENT

KEY NOTES

1. PROPOSED 8-INCH WIDE OPENING IN CMU WALL AT PAVEMENT LEVEL (REF: STRUCTURAL PLANS FOR DETAILS)

IMPERVIOUS COVER SUMMARY:

-EXISTING IMPERVIOUS AREA TO BE REMOVED = 175 SQ. FT.
-EXISTING IMPERVIOUS AREA TO BE REPLACED WITH NEW IMPROVEMENTS = 2,217 SQ. FT.

-NET REDUCTION IN IMPERVIOUS AREA = 175 SQ. FT.

SEE SHEET C6.00 FOR RECORD DRAWINGS (PN265 FROM 1985). DETENTION FOR THE EXISTING SOUTH VAULT SITE WAS PROVIDED WITH THAT PROJECT. IN THE PROPOSED CONDITION WE ARE REDUCING THE AMOUNT OF IMPERVIOUS AREA. THEREFORE, NO ADDITIONAL DETENTION IS REQUIRED.

SWALE CALCULATIONS

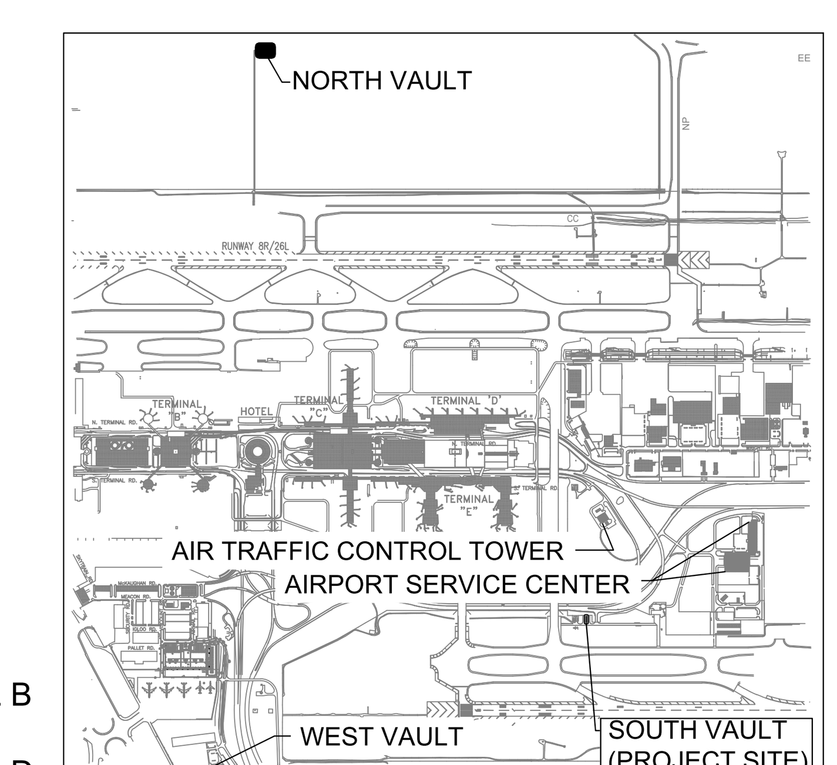
	WIDTH	DEPTH	MAX FLOW	ACTUAL Q-100 YR
START OF SWALE	20 FT	0.30 FT	3.19 CFS	0.17 CFS
END OF SWALE	20 FT	0.30 FT	4.21 CFS	0.70 CFS

LEGEND:

TP = TOP OF PAVEMENT
TC = TOP OF CURB
FG = FINISHED GRADE
MEG = MATCH EXISTING GRADE

EXIST LEGEND:

(T1)	HOUSTON AIRPORT SYSTEMS
E1	CENTERPOINT ENERGY ELECTRIC - LEVEL B
(E1)	CENTERPOINT ENERGY ELECTRIC - LEVEL D
(SLE1)	CENTERPOINT ENERGY STREET LIGHT
(E2)	HAS ELECTRIC
(W1)	WATER LINE



VICINITY MAP

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10448 WEST OFFICE DRIVE
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F: (713) 747 4797
TBPE FIRM REGISTRATION #4575
ISANI PROJECT NO: 21LD59

HOUSTON AIRPORT SYSTEM

Jacobs
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Houston, TX 77024
(281) 721-8400
www.jacobs.com TBPE Firm #2966

REVISIONS

NO.	DESCRIPTION	DATE	BY
	ISSUED FOR CONSTRUCTION	03/15/24	

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

PROJECT MGR: RG
DESIGNER:
DRAWN BY:
CHECK BY:
SCALE:
DATE: 03/01/24

STATE OF TEXAS
RAM GULIANI
101094
LICENSED PROFESSIONAL ENGINEER
03/15/2024

APPROVED BY:

DIRECTOR HOUSTON AIRPORT SYSTEM
JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO. C3.00

GRADING AND DRAINAGE PLAN

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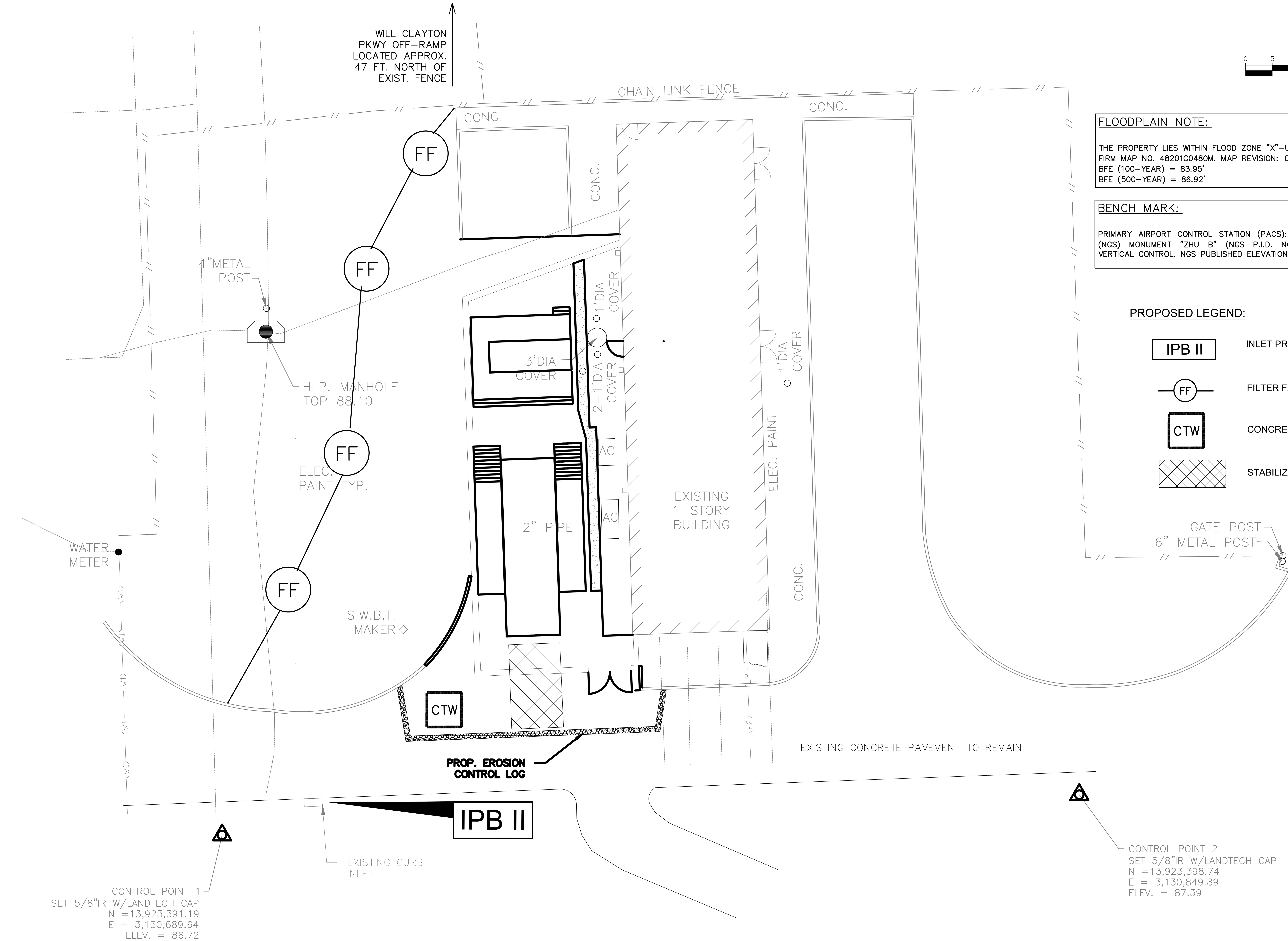

FLOODPLAIN NOTE:

THE PROPERTY LIES WITHIN FLOOD ZONE "X"–UNSHADED, ACCORDING TO FIRM MAP NO. 48201C0480M. MAP REVISION: 06/09/2014.
BFE (100–YEAR) = 83.95'
BFE (500–YEAR) = 86.92'

BENCH MARK:

PRIMARY AIRPORT CONTROL STATION (PACS): NATIONAL GEODETIC SURVEY (NGS) MONUMENT "ZHU B" (NGS P.I.D. NO. AA3146) WAS HELD FOR VERTICAL CONTROL. NGS PUBLISHED ELEVATION = 81.033

PROPOSED LEGEND:

IPB II	INLET PROTECTION BARRIER STAGE 2
FF	FILTER FABRIC BARRIER
CTW	CONCRETE TRUCK WASHOUT
	STABILIZED CONSTRUCTION ACCESS

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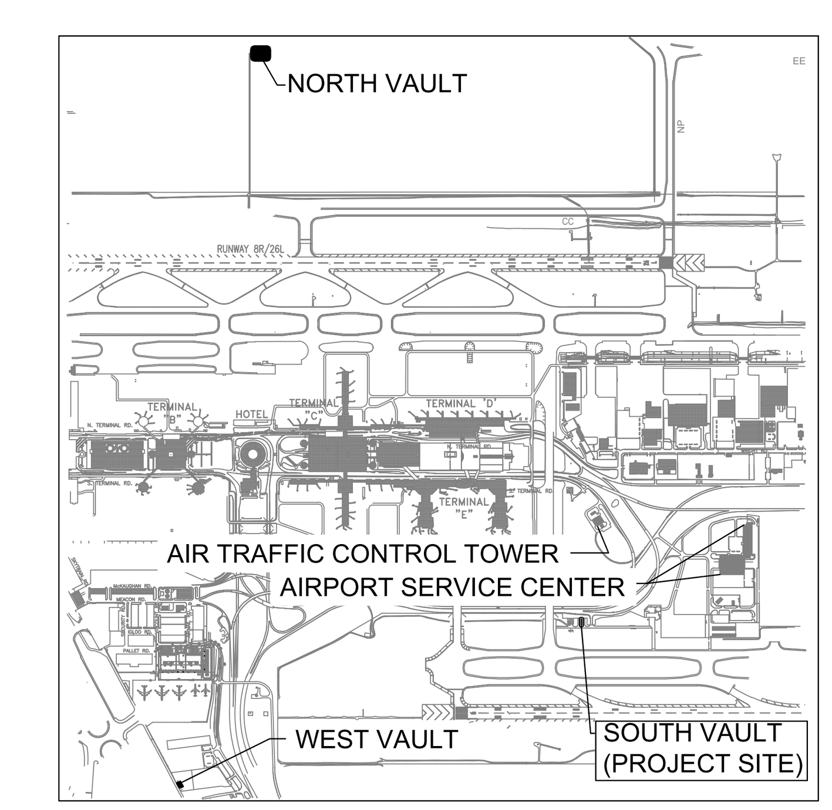

VICINITY MAP

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SHEET NO. C4.00

SWPP PLAN

FILE INFO:P:\ACTIVE\21LD59\WORKING\DRAWINGS\21LD59 – SWPPP.dwg PLOTTED: Mar 15, 2024 2:22pm BY:jordon PLOT SCALE: 1=40

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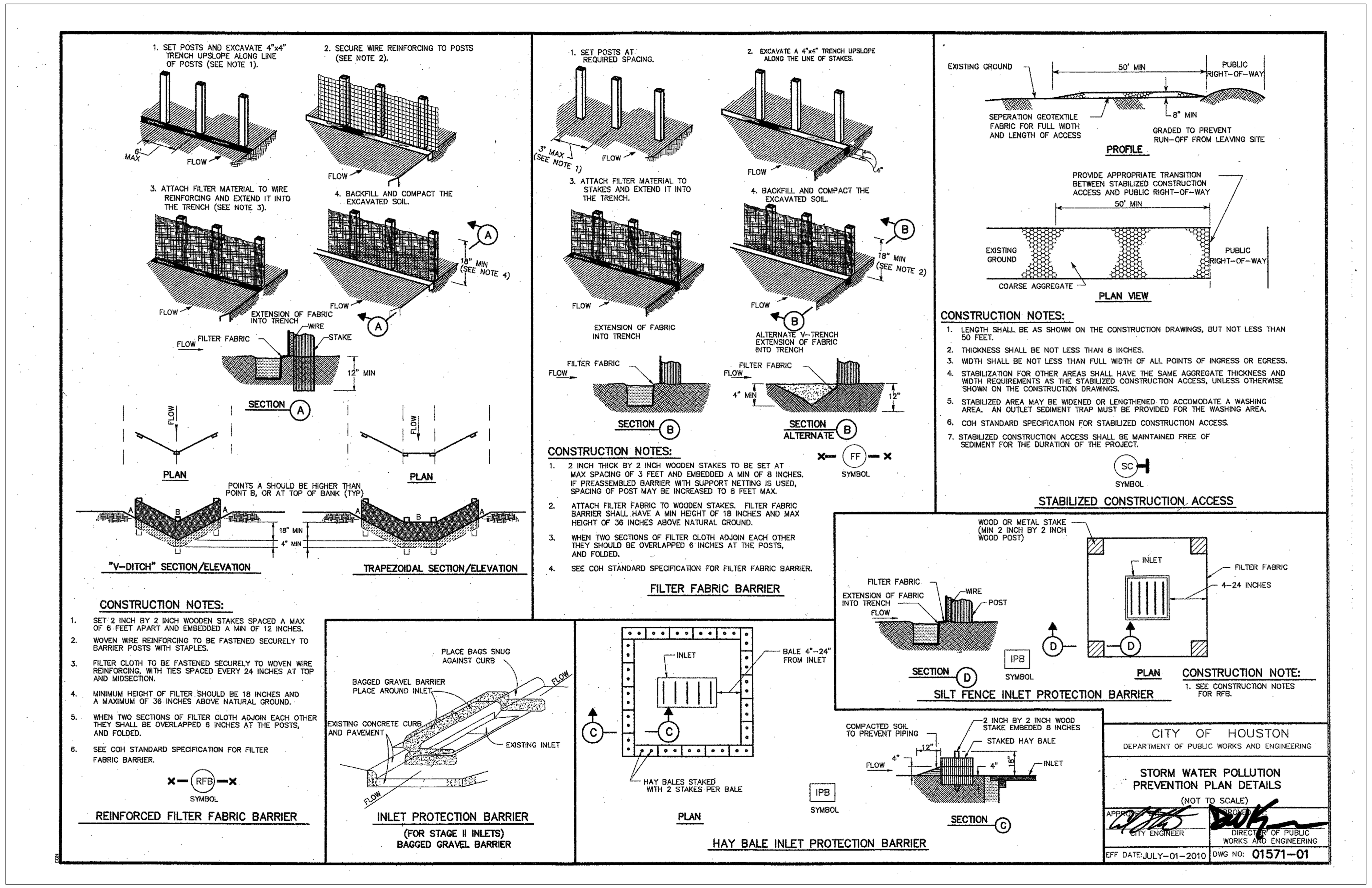
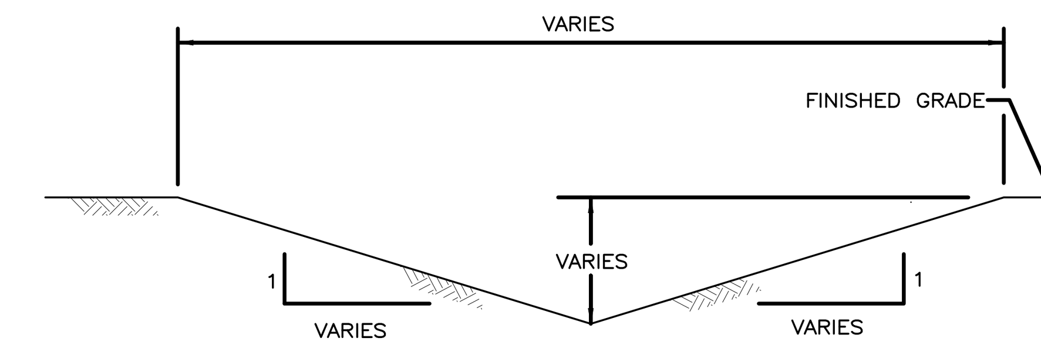
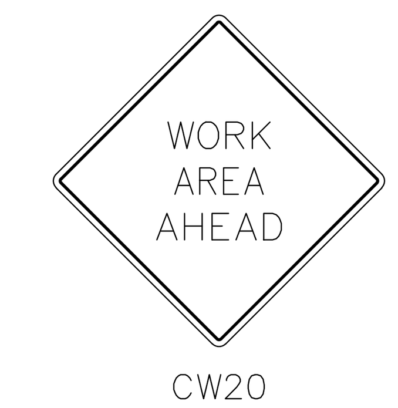


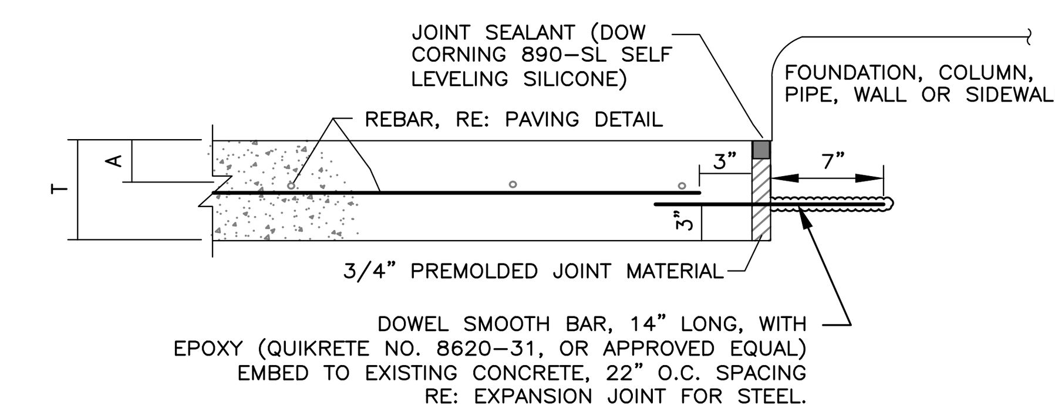
1 SWPPP DETAIL
SCALE: NTS



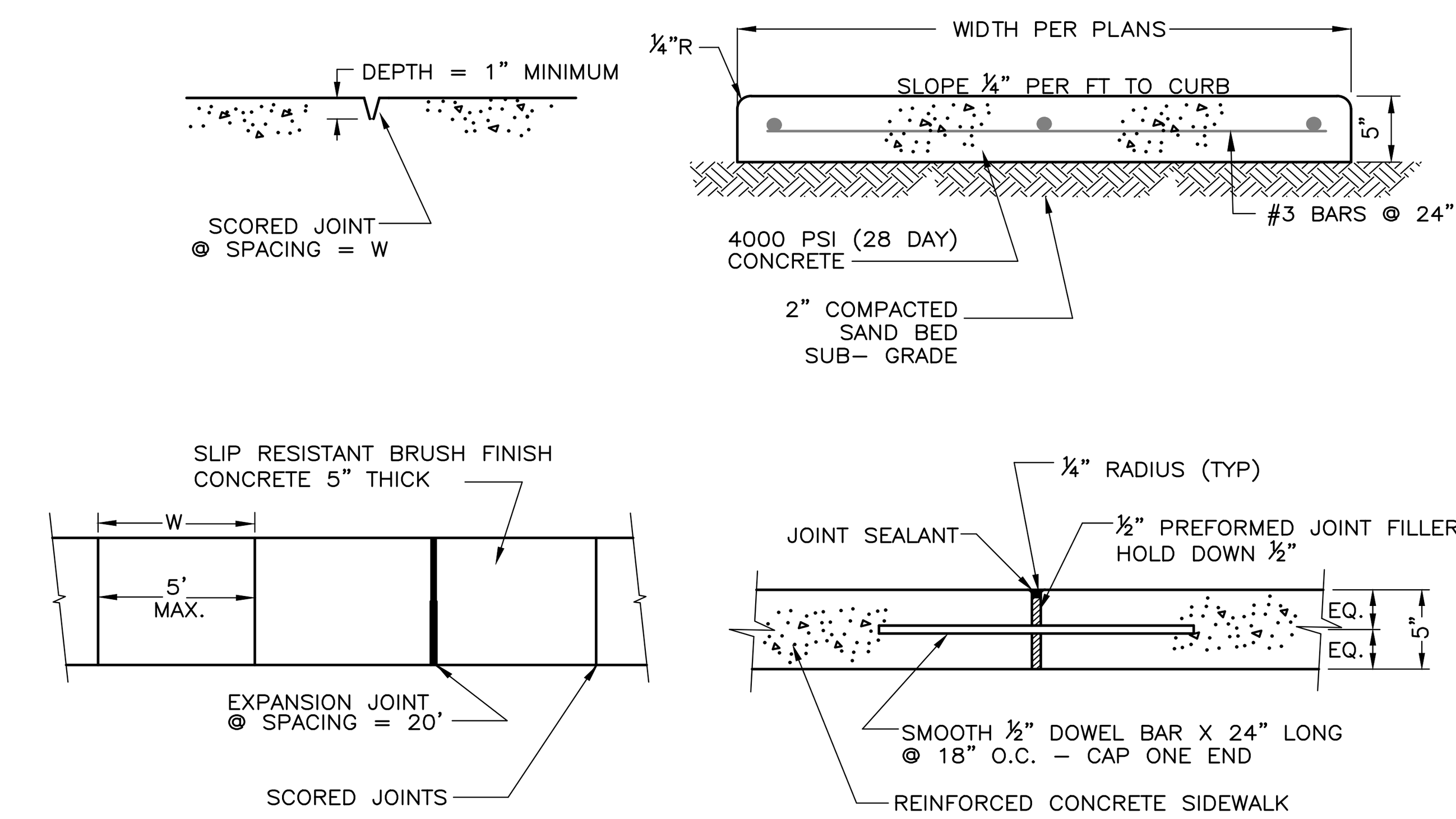
9 TYPICAL SWALE DETAIL
SCALE: NTS



8 TRAFFIC SIGN DETAIL
SCALE: NTS



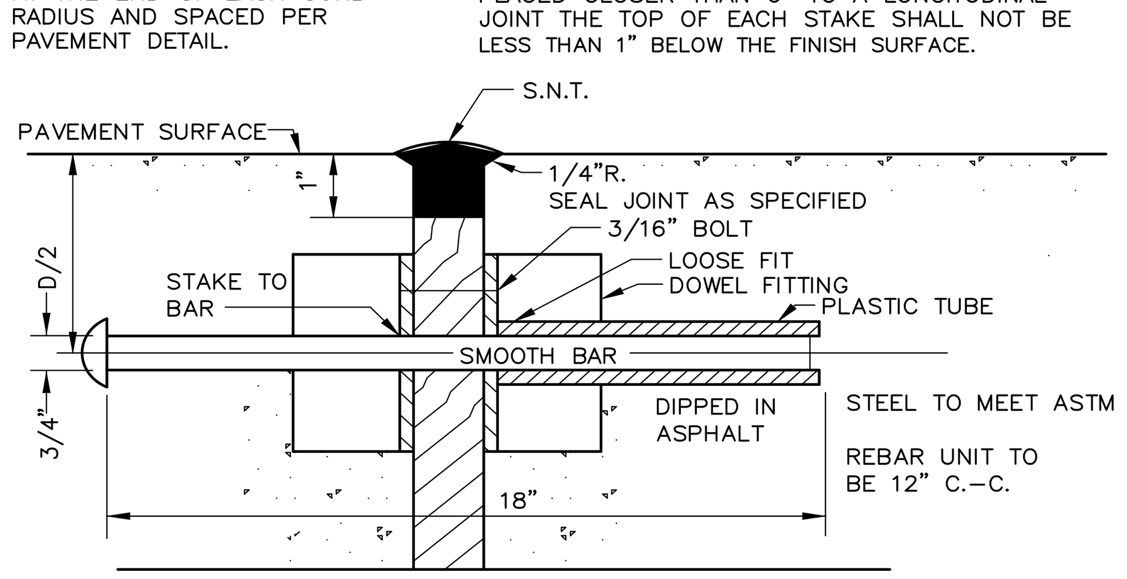
7 ISOLATION JOINT DETAIL
SCALE: NTS



6 SIDEWALK DETAILS
SCALE: NTS

EXPANSION JOINT TO BE PLACED AT THE END OF EACH CURB RADIUS AND SPACED PER PAVEMENT DETAIL.

STAKES FOR TRANSVERSE JOINTS SHALL NOT BE PLACED CLOSER THAN 6" TO A LONGITUDINAL JOINT THE TOP OF EACH STAKE SHALL NOT BE LESS THAN 1" BELOW THE FINISH SURFACE.

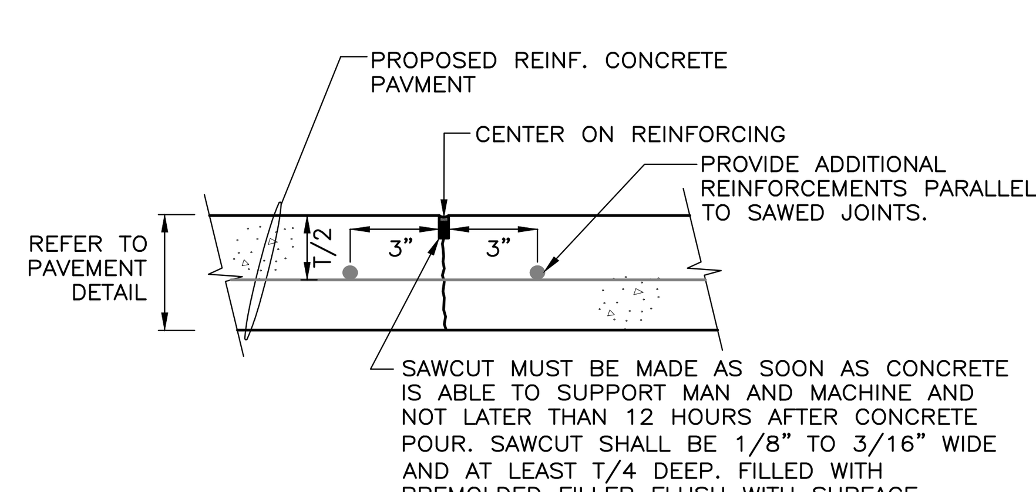


DOWEL TYPE EXPANSION JOINT

N.T.S.

CANTILEVER TYPE, CAST MALLEABLE IRON LOAD TRANSMISSION UNIT STAR-LUG MODEL D-27 OR EQUAL ON 12" C-C. ACCEPTABLE AS ALTERNATIVES. ALSO, MARINE LUMBER COMPANY EXPANSION JOINT WITH POWER DRIVEN PIN IS ACCEPTABLE.

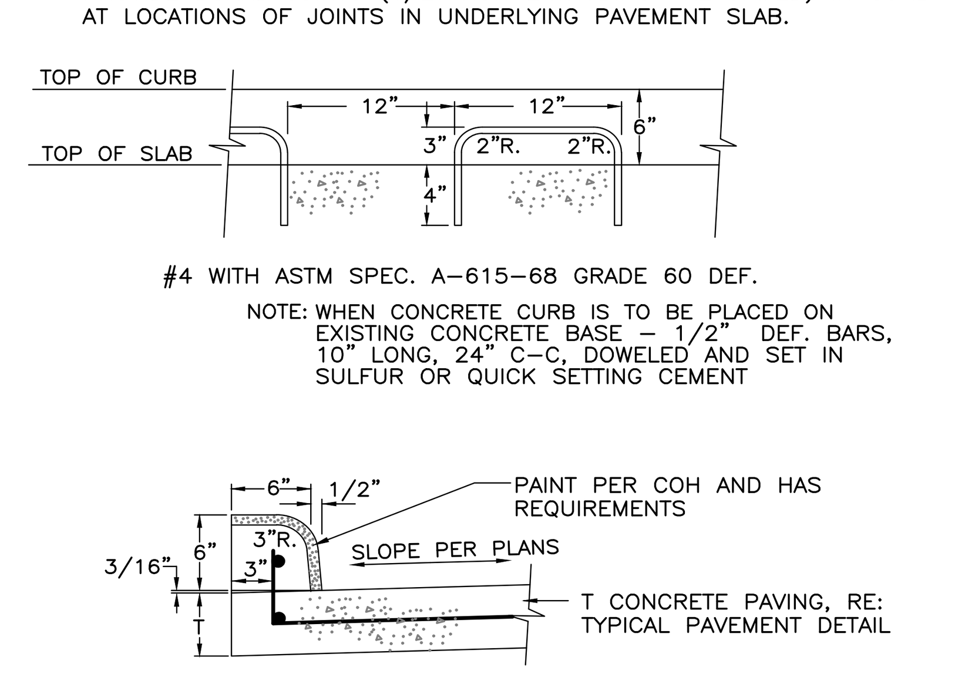
2 EXPANSION JOINT DETAIL
SCALE: NTS



NOTES:
1. CONSTRUCTION JOINT PAVEMENT DETAIL MAY BE SUBSTITUTED FOR CONTROL JOINT AT CONTRACTOR'S OPTION.

3 CONTROL JOINT
SCALE: NTS

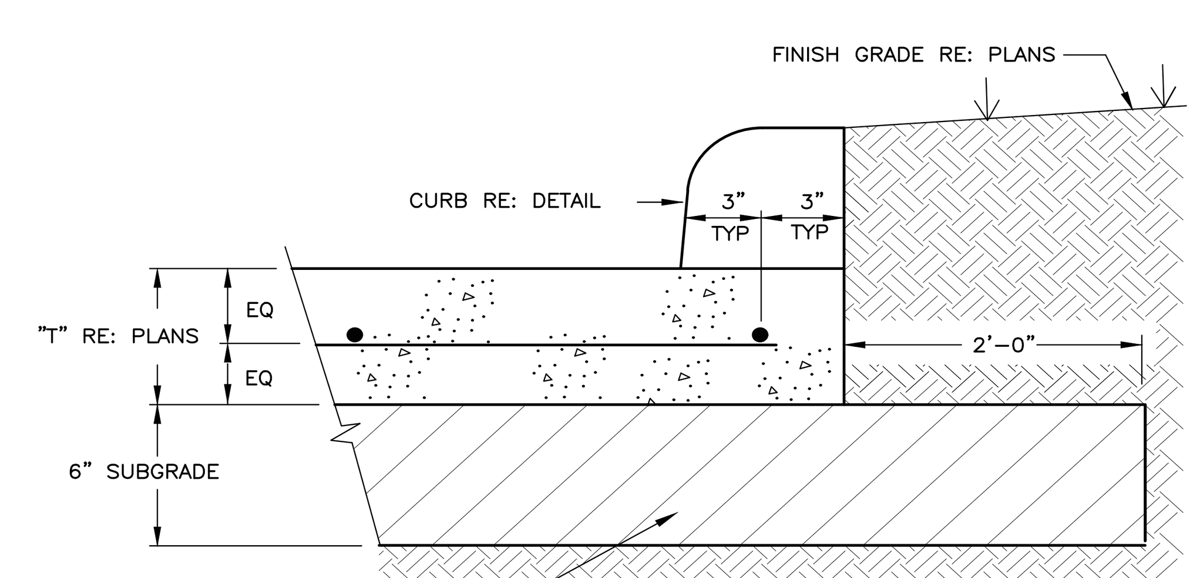
PROVIDE BOARD JOINTS (1/2" NON EXTRUDING PREFORMED) IN CURB AT LOCATIONS OF JOINTS IN UNDERLYING PAVEMENT SLAB.



MORTAR FINISH NOT REQUIRED WHEN CURB IS POURED BY MACHINE, BUT CURB WILL HAVE THE SAME OUTSIDE DIMENSIONS
T = RE: CONCRETE PAVING DETAIL.

DOWEL CONCRETE CURB

4 DOWEL-ON CONCRETE CURB
SCALE: NTS



SUBGRADE STABILIZATION NOTE:
LIME-STABILIZED SUBGRADE (HYDRATED LIME CONTENT OF 6% BY DRY WEIGHT) IN ACCORDANCE WITH COH SPECIFICATION 02336, COMPACTED TO 95% OF STANDARD PROCTOR MAXIMUM DRY DENSITY WITHIN ±2% OF OPTIMUM MOISTURE CONTENT (ASTM D-698).
(ACTUAL LIME REQUIREMENTS SHOULD BE VERIFIED IN THE FIELD AFTER STRIPPING AND GRADING)

REFER TO SITE PLAN FOR PAVING THICKNESS.

5 CONCRETE PAVEMENT DETAIL
SCALE: NTS

PAVING/JOINTING NOTES:-

1. REINFORCING STEEL: STEEL BARS SHALL BE GRADE 60
   6" THICK CONCRETE: #4 BARS SPACED AT 18 INCHES ON CENTERS IN BOTH DIRECTIONS.
   8" THICK CONCRETE: #4 BARS SPACED AT 16 INCHES ON CENTERS IN BOTH DIRECTIONS.
2. CONTROL JOINT SPACING: MAXIMUM OF 15 FEET, IF SAWCUT. CONTROL JOINTS SHOULD BE CUT WITHIN 4 TO 12 HOURS OF CONCRETE PLACEMENT.
3. EXPANSION JOINT SPACING: MAXIMUM OF 60 FEET.
4. DOWELS AT EXPANSION JOINTS: 3/4 INCH BARS, 18 INCHES IN LENGTH, WITH ONE END TREATED TO SLIP, SPACED AT 12 INCHES ON CENTER AT EACH JOINT.
5. REINFORCED CONCRETE PAVEMENT – THE PORTLAND CEMENT CONCRETE MIX SHOULD HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI, AND A MINIMUM OF THREE PERCENT ENTRAINED AIR.
6. CURBS ARE 6 INCHES IN HEIGHT UNLESS NOTED OTHERWISE.

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T.I.P. NO. 24-28-IAH

SHEET NO. C5.00
CIVIL DETAILS

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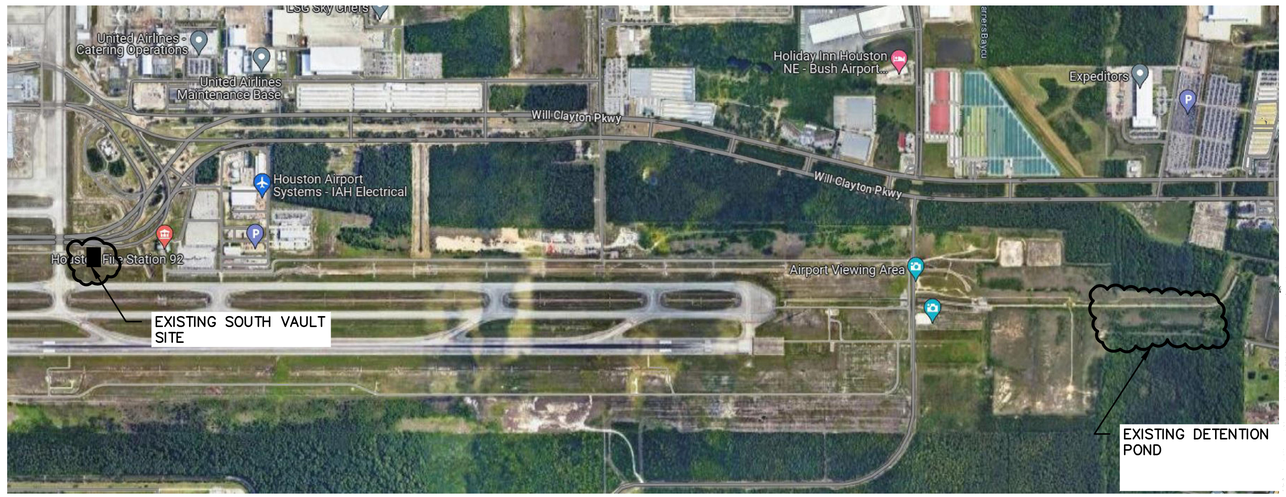
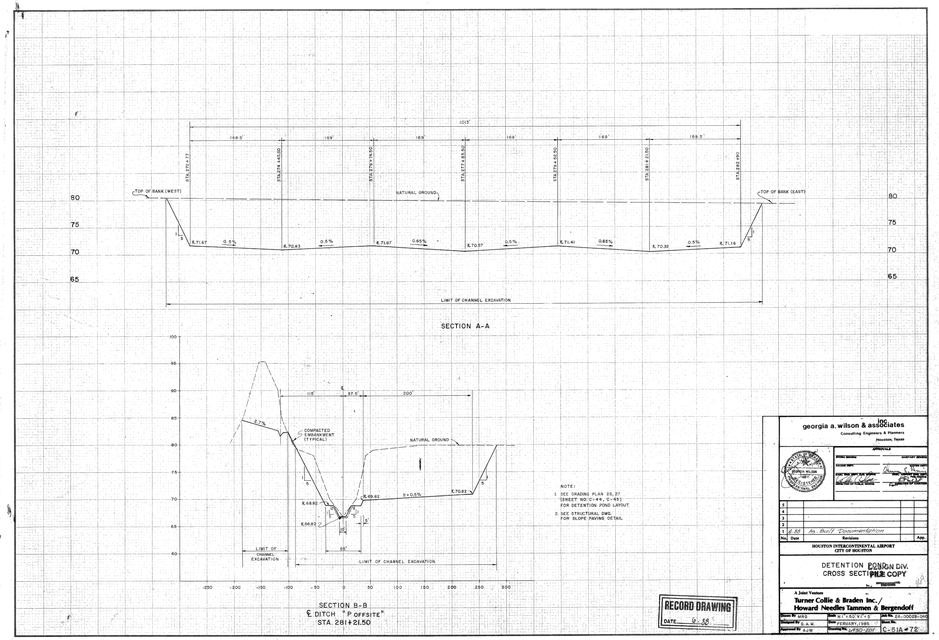
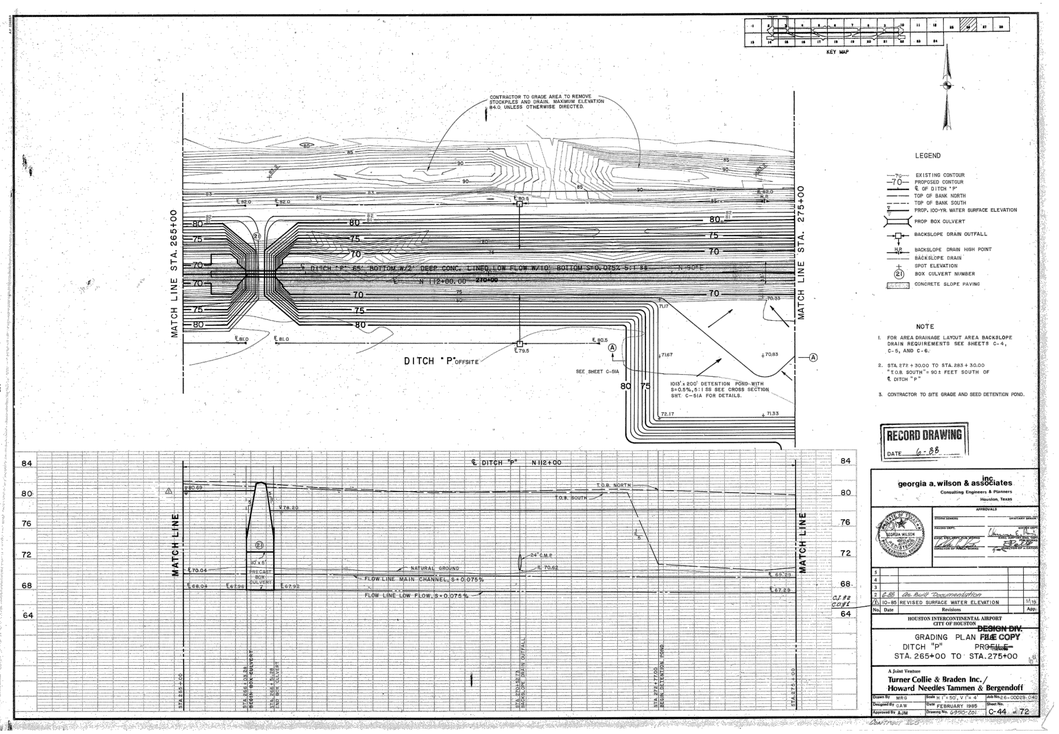
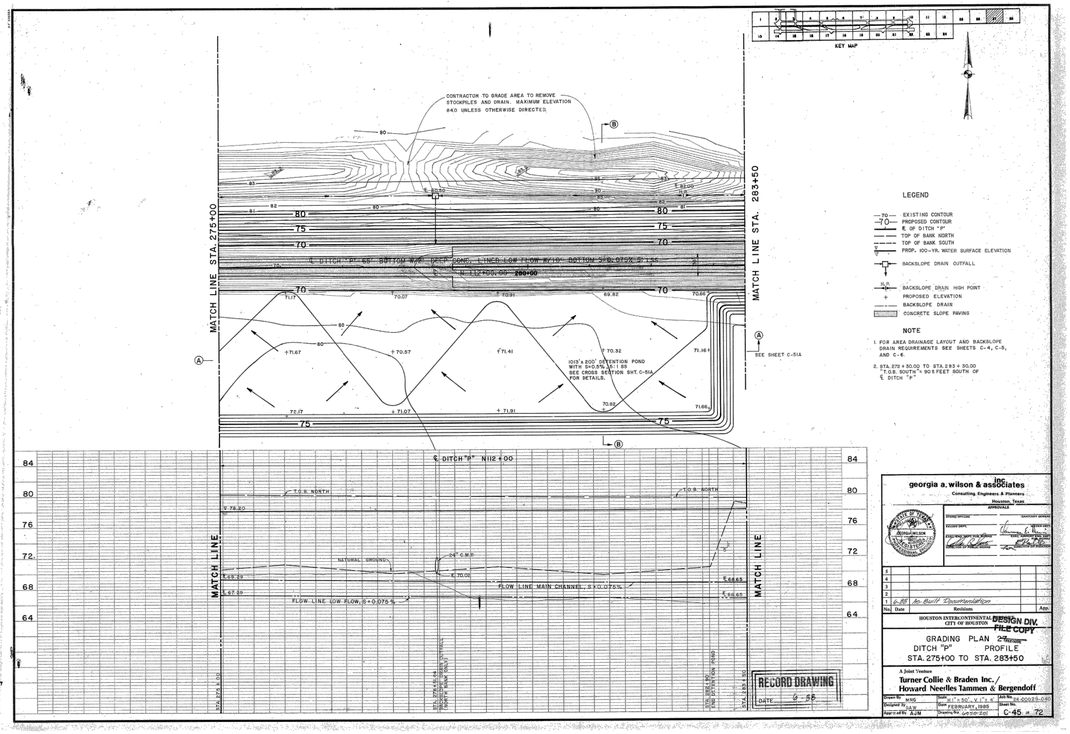


GOOGLE AERIAL

RECORD DRAWINGS SHOWN ON THIS SHEET ARE FOR PROJECT PN265 FROM 1985. DETENTION FOR THE EXISTING SOUTH VAULT SITE WAS PROVIDED WITH THIS PROJECT. IN THE PROPOSED CONDITION WE ARE REDUCING THE AMOUNT OF IMPERVIOUS AREA. THEREFORE, NO ADDITIONAL DETENTION IS REQUIRED.







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ISANI PROJECT NO: 21LD59

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GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

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T.I.P. NO. 24-28-IAH

SHEET NO. C6.00
REFERENCE INFORMATION

FILE INFO:P:\ACTIVE\21LD59\WORKING\DRAWINGS\21LD59 - As builts for Reference.dwg PLOTTED: Mar 15, 2024 2:22pm BYjordan PLOT SCALE: 1=40

TYPE AC (BX) AND MC CABLE ARE PROHIBITED.

ABBREVIATIONS

(ALL ABBREVIATIONS SHOWN ARE NOT NECESSARILY USED ON DRAWINGS)

A

A/C	AIR CONDITIONING
ABV	ABOVE
AC	ALTERNATING CURRENT
ADJ	ADJUSTABLE
AF	AMPERE FUSE
AFF	ABOVE FINISHED FLOOR
AIC	AMPERE INTERRUPTING CAPACITY
AL	ALUMINUM
ALCMS	AIRFIELD LIGHTING CONTROL AND MONITORING SYSTEM
A, AMPS	AMPERES
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ARCH	ARCHITECT, ARCHITECTURAL
AS	AMPERE SWITCH
ASC	AIRFIELD SERVICES CENTER
ATCT	AIR TRAFFIC CONTROL TOWER
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE

B

BKR	BREAKER
BLDG	BUILDING

C

C	CONDUIT
CATV	CABLE TELEVISION SYSTEM
CCR	CONSTANT CURRENT REGULATOR
CCTV	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
℄	CENTERLINE
CLG	CEILING
CU	COPPER

D

DC	DIRECT CURRENT
DIA	DIAMETER
DISC	DISCONNECT
DN	DOWN
DP	DISTRIBUTION PANEL
DPDT	DOUBLE-POLE, DOUBLE-THROW
DPST	DOUBLE-POLE, SINGLE-THROW
DWG	DRAWING

E

EA	EACH
EF	EXHAUST FAN
ELEC	ELECTRICAL
ENCL	ENCLOSURE
EQUIP	EQUIPMENT
EWC	ELECTRICAL WATER COOLER
EXH	EXHAUST
EXIST	EXISTING

F

F	FUSE
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE
FS	FUSED SWITCH
FT	FEET
FVNR	FULL-VOLTAGE, NON-REVERSING
FV2SP	FULL-VOLTAGE, TWO SPEED
FWE	FURNISHED WITH EQUIPMENT

G

G,GND	GROUND
GA	GAUGE
GALV	GALVANIZED
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT INTERRUPTER
GFR	GROUND FAULT RELAY

H

HOA	HAND-OFF-AUTO
HORIZ	HORIZONTAL
HP	HORSEPOWER
HTR	HEATER
HVAC	HEATING, VENTILATION, AND AIR CONDITIONING
HZ	HERTZ

I

IAC	INTERRUPTING AMP CAPACITY
ID	INSIDE DIAMETER
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
IES	ILLUMINATING ENGINEERING SOCIETY
IG	ISOLATED GROUND
IN	INCHES
IP##	INGRESS PROTECTION (RATED PER ##)

J

J-BOX	JUNCTION BOX

K

K	KILO (1000)
KCMIL	1000 CIRCULAR MILS
KK	KIRK KEY
KV	KILOVOLT
KSCA	KILO SHORT CIRCUIT AMPS
KVA	KILOVOLT-AMPS
KW	KILOWATT
KWH	KILOWATT-HOUR

L

LF	LINEAR FEET
LRA	LOCKED ROTOR AMPS
LSIG	BREAKER TRIP: LONG/SHORT/INSTANTANEOUS/GROUND FAULT
LTG	LIGHTING

M

MAX	MAXIMUM
MCA	MINIMUM CIRCUIT AMPACITY
MCB	MAIN CIRCUIT BREAKER
MD	MOTORIZED DAMPER
MECH	MECHANICAL
MFGR	MANUFACTURER
MG	MOTOR GENERATOR
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MTD	MOUNTED

N

N/A	NOT APPLICABLE
N.C.	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRIC MANUFACTURER'S ASSOCIATION
NEMA #	NEMA ENCLOSURE RATING #X (1,3R,4X)
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
N.O.	NORMALLY OPEN
N.T.S.	NOT TO SCALE

O

O.C.	ON CENTER
OD	OUTSIDE DIAMETER
OH	OVERHEAD
OS	OCCUPANCY / VACANCY SENSOR
OS&Y	OUTSIDE STEM & YOKE

P

P	POLE
PF	POWER FACTOR
PH	PHASE
PLBG	PLUMBING
PNL	PANEL
PVC	POLYVINYL CHLORIDE

Q

QTY	QUANTITY

R

RA	RETURN AIR
RCP	REFLECTED CEILING PLAN
RE:	REFERENCE, REFER
REQD	REQUIRED
REV	REVISED, REVISION, REVISE
RGS	RIGID GALVANIZED STEEL
RLA	RUNNING LOAD AMPS
RM	ROOM

S

S1	S1 AIRFIELD LIGHTING CIRCUIT CUTOUT
SCA	SHORT CIRCUIT AMPS
SECT	SECTION
SF	SQUARE FEET
SHT	SHEET
SIM	SIMILAR
SPEC	SPECIFICATIONS
SPD	SURGE PROTECTION DEVICE
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
SURF	SURFACE
SUSP	SUSPEND
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR

T

TFMR	TRANSFORMER
THRU	THROUGH
TYP	TYPICAL

U

U/F	UNDERFLOOR
U/G, UG	UNDERGROUND
U/S	UNDERSLAB
UL	UNDERWRITERS LABORATORIES, INC.
UON, UNO	UNLESS OTHERWISE NOTED
	UNLESS NOTE OTHERWISE
UPS	UNINTERRUPTIBLE POWER SUPPLY

V

V	VOLT
VA	VOLT-AMPERE
VAC	VACUUM
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VSD	VARIABLE SPEED DRIVE

W

W	WATT, WIDTH
W/	WITH
W/O	WITHOUT
WR	WEATHER RESISTANT

X

XFMR	TRANSFORMER

OTHER

4X	NEMA 4X STAINLESS STEEL

ELECTRICAL SYMBOLS

(ALL SYMBOLS SHOWN ARE NOT NECESSARILY USED ON DRAWINGS)

LIGHTING

- A — SURFACE OR RECESSED LIGHTING FIXTURE, LETTER DENOTES TYPE
- B — WALL WASHER LIGHTING FIXTURE, LETTER DENOTES
- X — EXIT SIGN, ARROWS AS INDICATED, LETTER DENOTES TYPE DARKENED AREA DENOTES LIGHTED FACE
- B — STRIP LED LIGHTING FIXTURE, LETTER DENOTES TYPE
- B C — LIGHT FIXTURE ON EMERGENCY OR UNSWITCHED CIRCUIT, LETTER DENOTES TYPE
- B — LED LIGHT FIXTURE, LETTER DENOTES TYPE,
- B — WALL MOUNTED LIGHT FIXTURE, LETTER DENOTES TYPE
- EMERGENCY LIGHTING FIXTURE WITH BATTERY PACK
- C — SITE LIGHT. LETTER INDICATES TYPE.

SWITCHES

- SWITCH, SPST, 20A, 120/277V
- ^{3} — SWITCH, 20A, 120/277V, "2" DENOTES DPST, "3" DENOTES THREE-WAY, "4" DENOTES FOUR-WAY
- SWITCH, SPDT, CENTER OFF, MOMENTARY CONTACT
- ^{K} — SWITCH, SPST, 20A, 120/277V, "K" DENOTES KEY SWITCH, "P" DENOTES PILOT LIGHT
- DIMMER CONTROL SWITCH, 1000 WATT PRESET WITH ON/OFF UNLESS OTHERWISE NOTED
- OS — OCCUPANCY SENSOR. WALL MOUNTED.
- OS — OCCUPANCY SENSOR. CEILING MOUNTED.
- OR — OCCUPANCY SENSOR RELAY ABOVE CEILING.

RECEPTACLES AND OUTLETS

- SIMPLEX WALL RECEPTACLE, NEMA 5-20R, 20A, 125V
- DUPLEX WALL RECEPTACLE, NEMA 5-20R, 20A, 125V,
- FOURPLEX WALL RECEPTACLE. NEMA 5-20R, 20A, 125V
- DUPLEX WALL RECEPTACLE GFCI
- FOURPLEX WALL RECEPTACLE GFCI
- DUPLEX WALL RECEPTACLE ISOLATED GROUND NEMA 5-20R, 20A, 125V.
- DUPLEX WALL RECEPTACLE MOUNTED 6" ABOVE COUNTER OR BACKSPLASH.
- WR — DUPLEX WALL RECEPTACLE. "WR" DENOTES WEATHER RESISTANT
- SPECIAL RECEPTACLE, NEMA CONFIGURATION AS NOTED
- FLUSH FLOOR RECEPTACLE
- COMBINATION RECEPTACLE AND TELEPHONE/DATA IN FLUSH FLOOR BOX.
- MULTI-OUTLET SURFACE RACEWAY WITH NEMA 5-20R, 20A, 125V RECEPTACLES AT 12" ON CENTER
- JUNCTION BOX
- DIRECT CONNECTION TO EQUIPMENT

CIRCUITING AND WIRING

- CIRCUIT CONCEALED IN WALL OR CEILING
- CIRCUIT BELOW SLAB OR GRADE OR CAST IN SLAB ABOVE GRADE UNLESS OTHERWISE NOTED.
- 3LA-2,4 — HOMERUN TO PANEL WITH CIRCUIT NUMBER(S) AS INDICATED.
- CONDUIT UP
- CONDUIT DOWN

ELECTRICAL EQUIPMENT

- SWITCHBOARD, DISTR. PNL OR MOTOR CONTROL CENTER
- PANELBOARD (FLUSH OR SURFACE MOUNT) AS INDICATED ON PANEL SCHEDULE.
- DRY-TYPE TRANSFORMER
- GAP — GENERATOR REMOTE ANNUNCIATOR PANEL
- PLYWOOD TERMINAL BOARD, TYPE AS NOTED, 4' X 8' X 3/4" UNLESS OTHERWISE NOTED
- BUS DUCT

PANEL DESIGNATIONS

- 2HA — "2" DENOTES FLOOR WHERE PANEL IS LOCATED
- 2LA — "H" DENOTES VOLTAGE - "H"=480Y/277V, "L"=208Y/120V "A" DENOTES PANEL SEQUENCE
- E2HA — "E" DENOTES EMERGENCY POWER

COMMUNICATION OUTLETS

- TELEPHONE OUTLET "P" DENOTES PAY/PUBLIC TELEPHONE 'H' INDICATES HANDICAP.
- DATA OUTLET
- ABOVE COUNTER DATA OUTLET
- COMBINATION TELEPHONE/DATA OUTLET
- ABOVE COUNTER COMBINATION TELEPHONE/DATA OUTLET
- FLUSH FLOOR TELEPHONE OUTLET
- FLUSH FLOOR DATA OUTLET
- FLUSH FLOOR COMBINATION TELEPHONE/DATA OUTLET
- TELEVISION OUTLET
- SPEAKER

MOTORS AND CONTROLS

- SINGLE OR THREE PHASE MOTOR (NUMBER INSIDE SYMBOL CAN INDICATE HORSEPOWER)
- EDH — ELECTRIC DUCT HEATER
- DISCONNECT (SAFETY) SWITCH "200/3/150" DENOTES AMPERES/POLE/FUSE, "NF" DENOTES NON-FUSED
- MOTOR STARTER, NEMA SIZE AS NOTED. 'VFD' INDICATES VARIABLE FREQUENCY DRIVE.
- COMBINATION DISCONNECT (SAFETY) SWITCH AND MOTOR STARTER, "30/3/15/1" DENOTES AMPERES/POLES/ /FUSE(OR BREAKER)/ NEMA STARTER SIZE, "NF" DENOTES NON-FUSED.
- MANUAL MOTOR STARTER WITH THERMAL OVERLOAD
- LIGHTING CONTACTOR
- PHOTOCELL
- PUSH BUTTON STATION
- DOOR CONTACT SWITCH
- TIME SWITCH
- VFD — VARIABLE FREQUENCY DRIVE

ONE LINE AND RISER DIAGRAMS

- T1 45KVA — TRANSFORMER, DESIGNATION AND RATINGS AS NOTED
- 800A — SWITCH, RATINGS AS SHOWN, 3 POLE UNLESS OTHERWISE NOTED
- 400A — FUSE, RATING AS SHOWN
- 200A — CIRCUIT BREAKER, TRIP RATING AS SHOWN, 3 POLE UNLESS OTHERWISE NOTED
- 800A — DRAWOUT CIRCUIT BREAKER, TRIP RATING AS SHOWN, 3 POLE UNLESS OTHERWISE NOTED
- XX/YY — CIRCUIT BREAKER. XX = FRAME SIZE; YY = TRIP SETTING
- ST — SHUNT TRIP
- GFR — GROUND FAULT RELAY
- ELECTRIC INTERLOCK
- KIRK-KEY INTERLOCK
- 0-2000 — AMMETER, RANGE AS SHOWN
- AS — AMMETER SWITCH
- 0-600 — VOLTMETER, RANGE AS SHOWN
- VS — VOLTMETER SWITCH
- DM — DIGITAL MULTI-FUNCTION METER
- 1200:5 — CURRENT TRANSFORMER(CT), RATED AS SHOWN
- 12.47KV 120V — POTENTIAL TRANSFORMER(PT), RATING AS SHOWN
- GROUND CONNECTION
- LIGHTNING ARRESTOR
- AUTOMATIC TRANSFER SWITCH
- DISCONNECT SWITCH
- XX,XXX — INDICATES AVAILABLE FAULT CURRENT. AMPS RMS SYM
- INDICATES NEW FEEDER AND EQUIPMENT
- INDICATES EXISTING FEEDER AND EQUIPMENT TO REMAIN
- DIESEL GENERATOR

BREAKER SPEC/TRIP CODE:
L=LONG-TIME ADJ.
S=SHORT TIME ADJ.
I=INSTANTANEOUS ADJ.
G=GROUND FAULT TRIP
ST=SHUNT TRIP
100%=100% RATED

MISCELLANEOUS

(1) DRAWING NOTE REFERENCE (NOTES BY SYMBOL)

GENERAL NOTES

A. REFER TO SPECIFICATIONS FOR MATERIALS AND METHODS FOR ELECTRICAL CONSTRUCTION. INSTALL ALL WORK IN ACCORDANCE WITH NFPA 70, LATEST EDITION.

B. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR THE EXACT LOCATION OF ALL CEILING MOUNTED DEVICES.

C. REFER TO ARCHITECTURAL INTERIOR ELEVATION DRAWINGS, WHERE THE ARCHITECT HAS DRAWN SUCH ELEVATIONS, FOR THE LOCATIONS OF ALL WALL MOUNTED DEVICES.

D. COORDINATE EXACT LOCATION OF ALL LIGHTING FIXTURES IN MECHANICAL / ELECTRICAL SPACES WITH EQUIPMENT, DUCTWORK AND PIPING. TO PROVIDE MAXIMUM LIGHT IN WORK AREAS.

E. ALL CIRCUITING: 2#10 1#10G, UNLESS NOTED OTHERWISE ON THE DRAWINGS OR IN THE SPECIFICATIONS.

F. MINIMUM SIZE CONDUIT FOR HOMERUNS IS 3/4" C. UNLESS OTHERWISE NOTED

G. ROUTE CONDUIT SERVING ROOFTOP MECHANICAL EQUIPMENT WITHIN THE RESPECTIVE ROOF CURB.

H. COORDINATE ALL SLAB PENETRATIONS AND SLEEVES PRIOR TO EACH CONCRETE POUR.

I. FURNISH ACCESS DOORS FOR INSTALLATION IN WALLS AND CEILINGS WHERE ACCESS IS REQUIRED TO CONCEALED ELECTRICAL EQUIPMENT.

J. ARRANGE WITH AUTHORITIES AND UTILITY COMPANIES FOR PERMITS, FEES, AND SERVICE CONNECTIONS, VERIFYING LOCATIONS AND ARRANGEMENT AND PAYING ALL CHARGES, INCLUDING INSPECTIONS.

K. COORDINATE WORK WITH ARCHITECTURAL FEATURES AND COORDINATE WORK SO THAT INTERFERENCES BETWEEN CONDUITS, LIGHTING, EQUIPMENT, PLUMBING WORK, MECHANICAL WORK, AND BUILDING STRUCTURE WILL BE AVOIDED.

L. FOR CONNECTIONS TO AIR HANDLING UNITS WITH INTERNALLY MOUNTED MOTORS, PROVIDE JUNCTION BOX ON SIDE OF UNIT. DRILL OPENING IN UNIT WALL (AVOIDING ACCESS PANELS AND SUPPORT MEMBERS) AND CONNECT TO MOTOR TERMINAL BOX WITH FLEXIBLE CONDUIT. PROVIDE AIRTIGHT SEAL BETWEEN JUNCTION BOX AND UNIT WALL.

M. DISCONNECT SWITCHES SERVING MECHANICAL EQUIPMENT ARE NOT TO BE MOUNTED ON THE EQUIPMENT BUT ADJACENT TO AND CONNECTED USING FLEXIBLE CONDUIT.

N. PERFORM ALL WORK IN ACCORDANCE WITH THE 2023 EDITION OF THE NATIONAL ELECTRICAL CODE WITH LOCAL AMENDMENTS AND ALL OTHER APPLICABLE BUILDING CODES AS INTERPRETED BY THE LOCAL AUTHORITY HAVING JURISDICTION INCLUDING BUT NOT EXCLUSIVE OF CODES AND STANDARDS LISTED ON SV-G0.02 AND LOCAL CITY OF HOUSTON AMENDMENTS, 2021 NEC 70E, OSHA 1904, OSHA 1910 AND OSHA 1926.

ALL ELECTRICAL EQUIPMENT SHALL BE LISTED AND LABELED FOR THE QUALIFIED USE.

O. ALL MOUNTING HEIGHTS INDICATED ARE MEASURED FROM FINISHED FLOOR TO THE CENTER OF DEVICE UNLESS OTHERWISE SHOWN OR NOTED.

P. SOME LEGEND SYMBOLS MIGHT NOT BE USED. SEE FLOOR PLANS FOR APPLICABLE DEVICES.

Q. THE ELECTRICAL DRAWINGS ARE DIAGRAMMATICAL IN NATURE AND INDICATE THE GENERAL LOCATION OF OUTLETS. EQUIPMENT AND THE CIRCUIT ARRANGEMENT OF THE REQUIRED WIRING. ALTHOUGH THE DRAWINGS DO NOT NECESSARILY INDICATE

R. THE ACTUAL ROUTES OF CONDUITS, WHERE INDICATED, SHALL BE FOLLOWED AS CLOSELY AS PROPER COORDINATION WITH THE WORK OF OTHER TRADES AND SPACE WILL PERMIT. THE DRAWINGS ARE NOT INTENDED TO BE SCALED AND THE ELECTRICAL CONTRACTOR SHALL REFER TO THE COMPLETE SET OF CONSTRUCTION DRAWINGS FOR COORDINATION. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND INDICATE THE GENERAL ARRANGEMENT OF THE WORK. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL PULL BOXES, JUNCTION BOXES AND INCIDENTAL MATERIALS AND LABOR FOR COMPLETELY FULLY FUNCTIONAL SYSTEMS. EXISTING SURFACE AND SUBSURFACE STRUCTURES (GAS MAINS, WATER MAINS, STORM SEWERS, TELEPHONE CABLES, ETC.) ARE SHOWN ON THE PLANS BASED ON RECORD DRAWINGS AND OBSERVATIONS, BUT IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SURVEY THE EXISTING INSTALLATION, AVOID DAMAGE AT HIS OWN EXPENSE AND RESTORE THE STRUCTURE TO ITS FULLY FUNCTIONAL USE.

S. ALL REUSED EQUIPMENT SHOULD BE CLEANED OF DEBRIS AND CORROSION. COPPER BUS BARS SHALL BE CLEANED PRIOR TO MAKING CONNECTIONS TO REMOVE SURFACE OXIDATION. CLEAN SURFACES OF DEVICES AND EQUIPMENT TO BE BONDED TO BARE METAL, PER NEC 250-12.

T. A COPY OF THE ONE LINE DIAGRAM WILL BE FRAMED, COVERED WITH A TRANSPARENT PLASTIC (PLEXIGLASS) COVER, AND MOUNTED WHERE APPROVED BY THE IAH ENGINEER OR ELECTRICAL SUPERINTENDENT. THIS LOCATION MAY BE A CONVENIENT WALL OR THE BACK OF THE ELECTRICAL ROOM DOOR.

U. WHERE LOW VOLTAGE EQUIPMENT RATED (1000 VOLTS AND BELOW) 800 AMPS OR MORE AND ALL MEDIUM VOLTAGE EQUIPMENT (RATED ABOVE 1000 VOLTS) THAT CONTAINS OVERCURRENT DEVICES, SWITCHING DEVICES, OR CONTROL DEVICES IS INSTALLED AND THERE IS A PERSONNEL DOOR(S) INTENDED FOR ENTRANCE TO AND EGRESS FROM THE WORKING SPACE LESS THAN 7.6 M (25 FT) FROM THE EDGE OF THE WORKING SPACE, THE DOOR(S) SHALL OPEN IN THE DIRECTION OF EGRESS AND BE EQUIPPED WITH LISTED PANIC HARDWARE. ARTICLE 110.26(C)(3) 2023 N.E.C AND 110.33(A)(3).

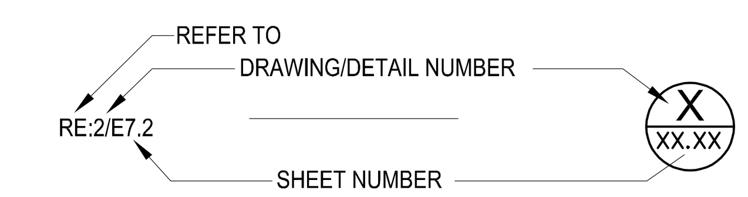
V. WHERE LOW VOLTAGE EQUIPMENT RATED (1000 VOLTS AND BELOW) 1200 AMPS OR MORE AND OVER 6 FOOT WIDE AND MEDIUM VOLTAGE EQUIPMENT (RATED ABOVE 1000 VOLT) OVER 6 FOOT WIDE THAT CONTAINS OVERCURRENT DEVICES, SWITCHING DEVICES, OR CONTROL DEVICES IS INSTALLED THERE WILL BE PERSONNEL DOOR(S) INTENDED FOR ENTRANCE TO AND EGRESS FROM THE WORKING SPACE AT EACH END OF THE WORKING SPACE. ARTICLE 110.26(C)(2) 2023 N.E.C AND 110.33(A)(1).

W. THE GROUNDING, BONDING, AND LIGHTNING PROTECTION RECORD DRAWINGS AND AS-BUILTS WILL BE SUBMITTED ON SEPARATE PLANS WITH SUPPORTING DOCUMENTATION, CALCULATIONS AND TESTING REPORTS CERTIFIED AND NOTARIZED WITH THE MASTER ELECTRICIANS SIGNATURE.

X. LIGHTING PROTECTION MUST BE INSTALLED AND PROVIDED PER NFPA 780, LPI AND UL96. A LETTER CERTIFYING THAT THESE STANDARDS ARE MET AND NOTARIZED WITH MASTER ELECTRICIANS SIGNATURE WILL BE REQUIRED FOR ELECTRICAL FINAL SUBMITTAL.

Y. GENERATOR MUST INCLUDE ALL ACCESSORIES, CONTROLS AND INTERFACES TO MEET ALL FAA REQUIREMENTS.

DRAWING/DETAIL REFERENCE KEY



MOUNTING HEIGHTS

(UNLESS OTHERWISE NOTED)

WALL SWITCHES-42" A.F.F. TO CENTER OF SWITCH.
WALL RECEPTACLES:
FINISHED AREAS-18" A.F.F. TO CENTER OF RECEPTACLE.
UNFINISHED AREAS- 42" A.F.F. TO CENTER OF RECEPTACLE.
WALL TELEPHONE/DATA OUTLETS:
FINISHED AREAS-18" A.F.F. TO CENTER OF OUTLET.
UNFINISHED AREAS- 42" A.F.F. TO CENTER OF OUTLET.
PUBLIC TELEPHONES-42" A.F.F. TO CENTER OF OUTLET.
HANDICAP TELEPHONES-32" A.F.F. TO CENTER OF OUTLET.
WALL DIMMER SWITCHES-42" A.F.F. TO CENTER OF SWITCH.
WALL MOUNTED EMERGENCY LIGHT FIXTURE-84" A.F.F. TO CENTER OF FIXTURE.
CLOCK OUTLET-84" A.F.F. TO CENTER OF OUTLET.
FIRE ALARM PULL STATION-42" A.F.F. TO CENTER OF STATION.
FIRE ALARM AV SIGNAL-80" A.F.F. TO BOTTOM OF HORN OR BELL.

GENERAL CIRCUITING NOTES

5 24" — WIRING DEVICE, DISCONNECT SWITCH, STARTER, ETC. SUBSCRIPT INDICATES CIRCUIT NUMBER AND MOUNTING HEIGHT (IF OTHER THAN STANDARD HEIGHT)

5 INDICATES CIRCUIT NUMBER
24" INDICATES MOUNTING HEIGHT

B a 3 — LIGHTING FIXTURE SUBSCRIPTS INDICATE FIXTURE TYPE, CONTROLLING SWITCH AND CIRCUIT NUMBER.

B INDICATES FIXTURE TYPE
a INDICATES CONTROLLING SWITCH (IF NOT APPARENT)
3 INDICATES CIRCUIT NUMBER

REFER TO INDIVIDUAL SHEETS FOR ADDITIONAL CIRCUIT IDENTIFICATION INFORMATION.

LIGHTING FIXTURE CIRCUITING NOTES

A. THE LIGHTING PLANS INDICATE SWITCHING AND BRANCH CIRCUIT NUMBERS FOR ALL LIGHTING FIXTURES. LOWER CASE LETTERS AT SWITCHES AND LIGHT FIXTURES INDICATE SWITCHING WHERE THE CONTROL PATTERN IS NOT OBVIOUS. INSTALL BRANCH CIRCUIT WIRING IN RACEWAY TO ALL RIGIDLY ATTACHED LIGHT FIXTURES AND TO JUNCTION BOXES FOR ALL LAY-IN LIGHT FIXTURES, AS REQUIRED TO PROVIDE SWITCHING AND CIRCUITING AS SHOWN ON THE DRAWINGS. RE: SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

B. PER H A S STANDARDS, NO MORE THAN 3 BRANCH CIRCUITS PER CONDUIT. LIMIT 120V OR 277V BRANCH CIRCUIT HOMERUNS IN A SINGLE CONDUIT TO THREE CIRCUITS (ON DIFFERENT PHASES), EACH WITH AN INDIVIDUAL NEUTRAL CONDUCTOR AND A SINGLE GROUND CONDUCTOR.

C. ALL LAY-IN LIGHTING FIXTURES SHALL BE CONNECTED TO A BRANCH CIRCUIT JUNCTION BOX WITH FLEXIBLE CONDUIT(WHIP), A MAXIMUM OF FOUR FIXTURE WHIPS SHALL BE CONNECTED TO A SINGLE JUNCTION BOX. FIXTURE TO FIXTURE WIRING OF LAY-IN LIGHTING FIXTURES IS NOT PERMITTED.

POWER PLAN CIRCUITING NOTES

A. PER H A S STANDARDS, NO MORE THAN 3 BRANCH CIRCUITS PER CONDUIT. LIMIT 120V OR 277V BRANCH CIRCUIT HOMERUNS IN A SINGLE CONDUIT TO THREE CIRCUITS (ON DIFFERENT PHASES), EACH WITH AN INDIVIDUAL NEUTRAL CONDUCTOR AND A SINGLE GROUND CONDUCTOR.

FIRE ALARM

- FACP — FIRE ALARM CONTROL PANEL (FLUSH)
- RGA — FIRE ALARM REMOTE GRAPHIC ANNUNCIATOR
- RLA — FIRE ALARM REMOTE LED ANNUNCIATOR
- F — FIRE ALARM MANUAL PULL STATION. SEMI-FLUSH MTD
- AV — FIRE ALARM SPEAKER, WITH VISUAL STROBE LIGHT.
- A — FIRE ALARM SPEAKER. FLUSH WALL MTD
- FIRE ALARM SPEAKER. FLUSH CEILING MTD
- V — FIRE ALARM VISUAL STROBE LIGHT. FLUSH WALL MTD
- H — HEAT DETECTOR - RATE OF RISE. CEILING MTD
- S — AREA SMOKE DETECTOR. CEILING MTD
- D_S — DUCT MOUNTED SMOKE DETECTOR. "S" SUPPLY, "R" RETURN
- FS — SPRINKLER FLOW SWITCH
- TS — VALVE TAMPER SWITCH
- FIREMANS TELEPHONE OUTLET
- FIREMANS TELEPHONE OUTLET WITH HANDSET

WZXXYY — SUBSCRIPT INDICATES ZONE IDENTIFICATION'
ZONE NUMBER
FLOOR
ZONE TYPE
A = AUDIBLE
D = DETECTION
F = FLOW SWITCH
M = MANUAL PULL
T = TAMPER SWITCH
V = VISUAL
C = CONTROL

HOUSTON AIRPORT SYSTEM

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REVISIONS		
NO.	DESCRIPTION	DATE
	ISSUED FOR CONSTRUCTION	03/15/24

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH VAULT RENOVATIONS
ABBREVIATIONS SYMBOLS, AND NOTES

PROJECT MGR: AEO
DESIGNER: AO
DRAWN BY: SH
CHECK BY: NM

DATE:

STATE OF TEXAS
ARTHUR E. OTTO
75035
REGISTERED PROFESSIONAL ENGINEER
03/15/24

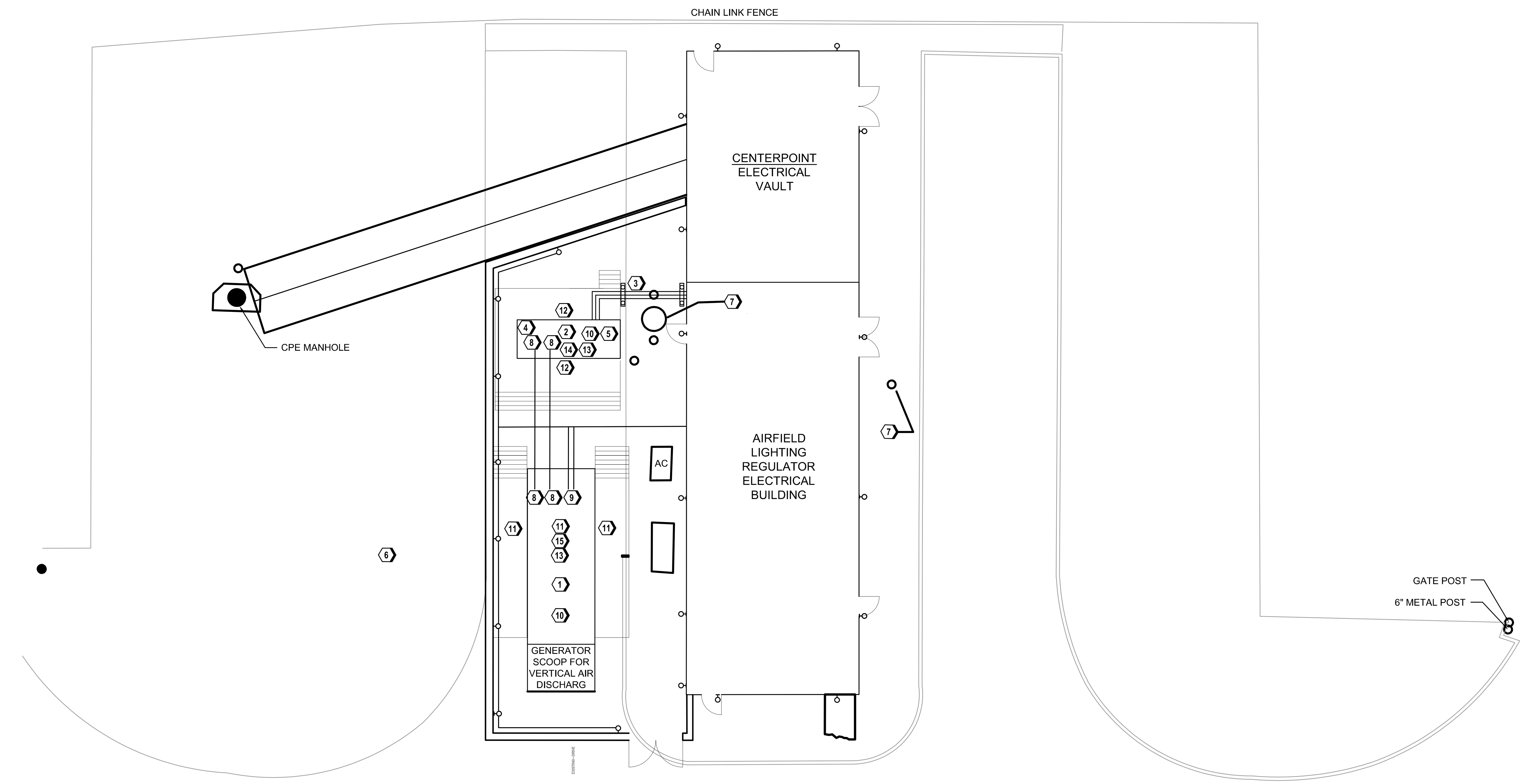
APPROVED BY:

DIRECTOR HOUSTON AIRPORT SYSTEM
JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO.

SV-E0.01

TYPE AC (BX) AND MC CABLE ARE PROHIBITED.



1 SOUTH VAULT ELECTRICAL SITE PLAN

SCALE: 3/32" = 1'-0"

GENERAL NOTES

A. REFER TO SHEET SV-E0.01 FOR SYMBOLS, ABBREVIATIONS AND GENERAL NOTES.

B. EQUIPMENT INSTALLATION TO BE PHASED WITH ENABLING WORK FOR NEW EQUIPMENT TO REPLACE EXISTING EQUIPMENT, INSTALLATION OF NEW SERVICE FROM CENTERPOINT VAULT, INTERCONNECTION AND TESTING OF NEW EQUIPMENT, ENERGIZATION OF NEW EQUIPMENT, PHASED TRANSFER OF EXISTING LOADS TO NEW EQUIPMENT, DEMOLITION OF EQUIPMENT TO BE REMOVED. PHASING PLAN AND OUTAGES TO BE SUBMITTED TO OPERATIONS FOR APPROVAL 1 MONTH PRIOR AND COORDINATED WITH OPERATIONS AND CENTERPOINT ENERGY.

KEYED NOTES

1. NEW GENERATOR.
2. NEW GENERATOR SWITCHGEAR. NEMA 4X. SWITCHGEAR MANUFACTURER TO PROVIDE HEAT SOURCE AND THERMOSTAT IN SWITCHGEAR TO MAINTAIN TEMPERATURE ABOVE CONDENSATION DEWPOINT AND PROVIDE PROVISIONS FOR MOISTURE TO DRAIN ON CAMBERED SLAB TO PERIMETER OF SWITCHGEAR. REF. 01/SV-E5.02.
3. GENERATOR FEEDER ROUTED ON PIPE SUPPORTS TO ATS-2. PROVIDE EXTENSION PULL BOX ON SWITCHGEAR FOR CONDUIT ROUTING IN BACK PANEL OF SWITCHGEAR AND ABOVE WORKING CLEARANCES FOR SWITCHGEAR. PROVIDE FLASHING AT CONDUIT EXTERNAL CONDUIT SHALL BE PVC COATED RIGID CONDUIT WITH CONDUIT RINGS AND SEALED AT PENETRATIONS OF SWITCHGEAR AND FLASHING AND SEALANT AT PENETRATION OF BUILDING. REF. 01/SV-E5.02..
4. PROVISIONS FOR CONNECTION TO LOAD BANK FOR GENERATOR LOAD TESTING.
5. CAMLOCK ENCLOSURE FOR CONNECTION TO FUTURE TEMPORARY GENERATOR FOR FUTURE GENERATOR MAINTENANCE AND LOAD BANK FOR TESTING. REFERENCE 02/SV-E5.02. NIPPLE FORM SWITCHGEAR TO CAMLOCK ENCLOSURE.
6. DESIGNATED AREA FOR TRAILER MOUNTED TEMPORARY GENERATOR.
7. EXISTING UNDERGROUND TANK TO REMAIN..
8. UNDERGROUND DUCT BANK. REFER TO ELECTRICAL ONE-LINE AND DETAILS.
9. UNDERGROUND DUCT BANK WITH (2) 2" AND (4) 1-1/4" CONDUITS FOR GENERATOR ACCESSORIES POWER, GENERATOR START SIGNAL, GENERATOR MONITORING, AND SITE LIGHTING POWER.
10. PERMANENT GENERATOR AND SWITCHGEAR TO BE LOCATED ON NEW CONCRETE PAD.
11. GENERATOR PAD ELEVATED ON CONCRETE PAD WITH CONCRETE STEPS FOR GENERATOR ACCESS.
12. SWITCHGEAR ELEVATED ON CONCRETE PAD WITH CONCRETE STEPS FOR WORKING SERVICE CLEARANCE ACCESS. PROVIDE RAILS WITH REMOVABLE SECTIONS FOR ACCESS AND EGRESS.
13. CAMBER SUPPORTING SLAB DOWN INSIDE OUTDOOR EQUIPMENT TO DRAIN TO PERIMETER. REFERENCE SV-E5.02 DETAILS 2 AND 3.
14. LVS-30 FOR SWITCHGEAR HEATERS.
15. PROVIDE ACCESSORY POWER TO GENERATOR. REFER TO PANEL VP SCHEDULE FOR CIRCUITS.

0 8 16 32
GRAPHIC SCALE: 3/32" = 1'-0"

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REVISIONS

NO.	DESCRIPTION	DATE
	ISSUED FOR CONSTRUCTION	03/15/24

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH VAULT RENOVATIONS
ELECTRICAL SITE PLAN

PROJECT MGR: AEO
DESIGNER: AO
DRAWN BY: SH
CHECK BY: NM

DATE:

STATE OF TEXAS
ARTHUR E. OTTO
75035
REGISTERED PROFESSIONAL ENGINEER
03/15/24

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO.
SV-E1.01

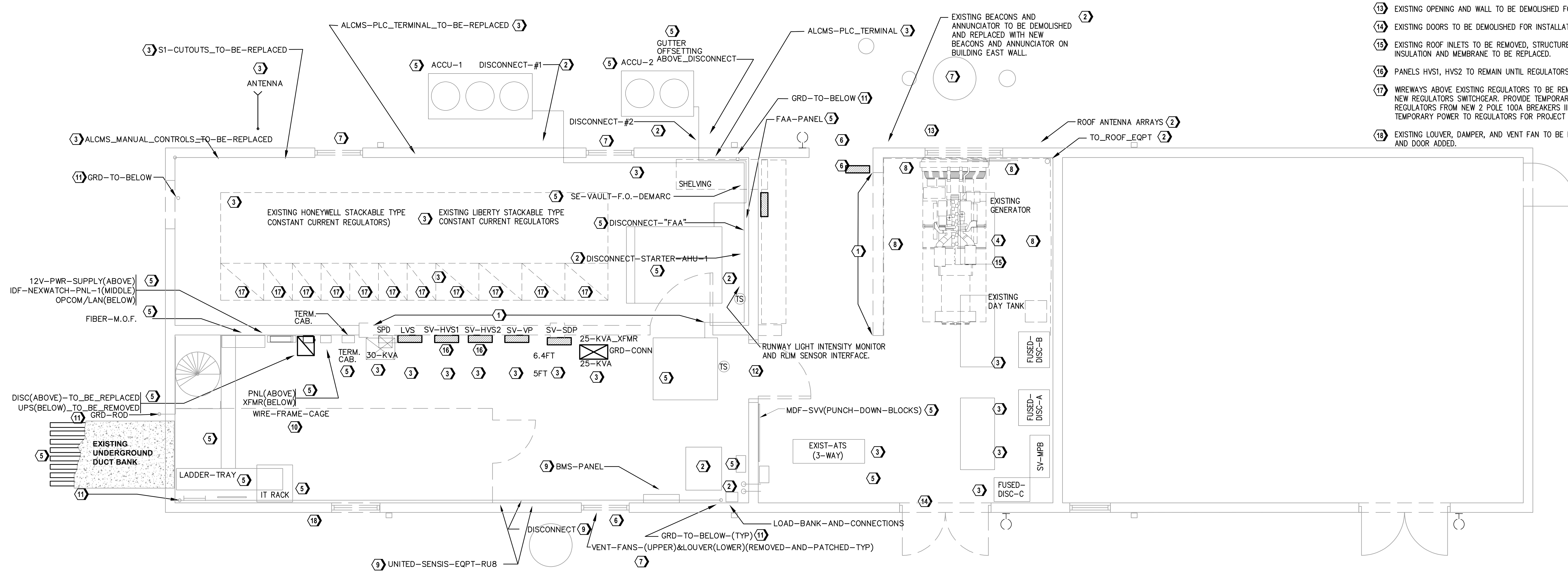
TYPE AC (BX) AND MC CABLE ARE PROHIBITED.

GENERAL NOTES

A. REFER TO SHEET SV-E0.01 FOR SYMBOLS, ABBREVIATIONS AND GENERAL NOTES.
B. EQUIPMENT INSTALLATION TO BE PHASED WITH ENABLING WORK FOR NEW EQUIPMENT TO REPLACE EXISTING EQUIPMENT, INSTALLATION OF NEW SERVICE FROM CENTERPOINT VAULT, INTERCONNECTION AND TESTING OF NEW EQUIPMENT, ENERGIZATION OF NEW EQUIPMENT, PHASED TRANSFER OF EXISTING LOADS TO NEW EQUIPMENT, DEMOLITION OF EQUIPMENT TO BE REMOVED. PHASING PLAN AND OUTAGES TO BE SUBMITTED TO OPERATIONS FOR APPROVAL 1 MONTH PRIOR AND COORDINATED WITH OPERATIONS AND CENTERPOINT ENERGY.

KEYED NOTES

1. EXISTING WALL TO BE REMOVED.
2. EXISTING TO BE REPLACED.
3. EXISTING EQUIPMENT TO BE DEMOLISHED AFTER LOADS / CONTROL SYSTEMS ARE TRANSFERRED TO NEW EQUIPMENT.
4. EXISTING GENERATOR, RADIATOR, DAY TANK, MUFFLER, ACCESSORIES AND INTERCONNECTIONS TO BE REMOVED. PIPING TO BE REMOVED AND SEALED AT FLOOR.
5. EXISTING EQUIPMENT TO REMAIN.
6. EXISTING LOUVER, DAMPER, AND VENT FAN TO BE REMOVED AND WALL RESTORED.
7. EXISTING LOUVER TO REMAIN WITH REMOVABLE INSULATED PANEL FOR TEMPORARY USE FOR SPOT COOLER.
8. EXISTING INSULATION TO BE REMOVED FROM WALLS AND CEILING.
9. EXISTING EQUIPMENT TO BE RELOCATED TO NEW LOCATION.
10. WIRE CAGE TO BE DEMOLISHED AND NEW CAGE PROVIDED FOR EXISTING INFORMATION TECHNOLOGY EQUIPMENT TO REMAIN.
11. EXISTING GROUND TO BE RECONNECTED TO NEW SERVICE GROUND.
12. EXISTING DOORS, TRANSOM AND FRAME TO BE REMOVED.
13. EXISTING OPENING AND WALL TO BE DEMOLISHED FOR INSTALLATION OF NEW DOOR.
14. EXISTING DOORS TO BE DEMOLISHED FOR INSTALLATION OF NEW DOORS.
15. EXISTING ROOF INLETS TO BE REMOVED, STRUCTURE REPAIRED AND ROOF INSULATION AND MEMBRANE TO BE REPLACED.
16. PANELS HVS1, HVS2 TO REMAIN UNTIL REGULATORS REPLACED.
17. WIREWAYS ABOVE EXISTING REGULATORS TO BE REMOVED AS REQUIRED TO INSTALL NEW REGULATORS SWITCHGEAR. PROVIDE TEMPORARY FEEDERS TO EXISTING REGULATORS FROM NEW 2 POLE 100A BREAKERS IIN NEW HVS DESIGNATED FOR TEMPORARY POWER TO REGULATORS FOR PROJECT PHASING.
18. EXISTING LOUVER, DAMPER, AND VENT FAN TO BE REMOVED. WALL TO BE RESTORED AND DOOR ADDED.



1 SOUTH VAULT ELECTRICAL POWER DEMOLITION PLAN
SCALE: 1/4" = 1'-0"

0 4 8 12
GRAPHIC SCALE: 1/4" = 1'-0"

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	ISSUED FOR CONSTRUCTION	03/15/24

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH VAULT RENOVATIONS
ELECTRICAL POWER DEMOLITION PLAN

PROJECT MGR: AEO
DESIGNER: AO
DRAWN BY: SH
CHECK BY: NM
DATE:

STATE OF TEXAS
ARTHUR E. OTTO
75035
REGISTERED PROFESSIONAL ENGINEER
03/15/24

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM
JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO.
SV-ED2.01

TYPE AC (BX) AND MC CABLE ARE PROHIBITED.

GENERAL NOTES

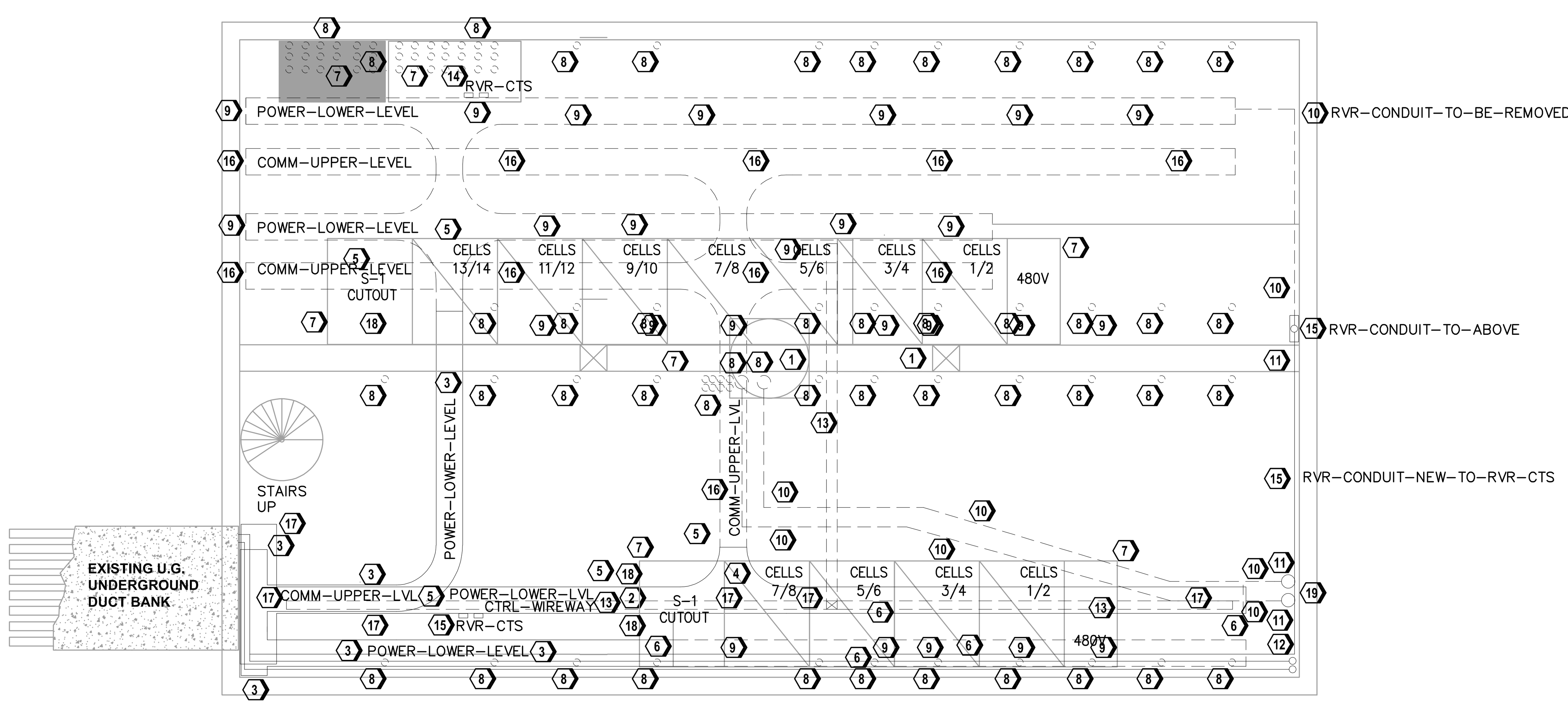
A. REFER TO SHEET SV–E0.01 FOR SYMBOLS, ABBREVIATIONS AND GENERAL NOTES.

B. NEW 5KV CABLES FROM NEW S1 CABINETS TO BE ROUTED TO WIRE VAULT LEVEL. PROVIDE NEW GALVANIZED CABLE TRAY SUPPORTED ON STAINLESS STEEL UNISTRUT FOR 5 KV CABLES TO CONNECT FROM S1 CABINETS AND EXIT AT SOUTH END OF WIRE VAULT. SUBMIT PROPOSED SPLICE LOCATION TO OPERATIONS FOR APPROVAL AT LEAST 4 WEEKS PRIOR TO INSTALLATION OF NEW SPLICE TO CONNECT NEW CABLE TO EXISTING CABLE EXITING THE WIRE VAULT. WHERE NOT UTILIZED FOR CABLE ROUTING, THE EXISTING CABLE TRAY AND UNISTRUT IS TO BE REMOVED AS REQUIRED FOR INSTALLATION OF THE NEW CABLE TRAY AND THE REMAINDER OF THE EXISTING CABLE TRAY REMOVED UPON COMPLETION OF THE NEW INSTALLATION.

C. ALL CONDUIT IN WIRE VAULT IS TO BE WEATHER RESISTANT PVC COATED RIGID GALVANIZED CONDUIT (RGC) WITH PVC COATED OR STAINLESS STEEL (316L) PROVIDE INTERIOR CONDUIT SEALS PENETRATIONS TO LEVEL ABOVE AND TO EXTERIOR. JUNCTION BOXES AND BACK BOXES SHALL BE CAST IRON FS/FD RATED WITH SEALANT ON FITTING THREADS.

KEYED NOTES

1. EXISTING SUBMERSIBLE SUMP PUMPS, CONTROLS AND CIRCUITS TO BE DEMOLISHED. (PUMPS TO BE REPLACED WITH NEW PUMPS AND CONTROLS. REF. SV–EP2.02)
2. EXISTING CABLE TRAY TO BE REPLACED IN PHASES TO SUPPORT EXISTING CABLES UNTIL ALL EXISTING REGULATORS ARE REPLACED AND NEW CABLES ROUTED FROM NEW REGULATORS TO SPLICE POINT NEAR CABLE VAULT EXIT TO UNDERGROUND DUCTBANK. EXISTING CABLE TRAY UNISTRUT SUPPORTS AND HARDWARE TO BE REPLACED WITH NEW STAINLESS STEEL UNISTRUT AND HARDWARE SECURED TO THE EXISTING TRAY AND FLOOR IN PHASES TO MAINTAIN SUPPORT OF THE EXISTING TRAY. AFTER CABLES HAVE BEEN REPLACED AND SECTIONS OF THE TRAY ARE NO LONGER IN USE, CAP THE ENDS OF THE ACTIVE SECTION WITH CABLE TRAY MANUFACTURED END CLOSURES. REPLACE ALL EXISTING GROUNDS AND GROUND STRAPS IN THE CABLE TRAY FOR A NEW A COMPLETE CABLE TRAY GROUNDING SYSTEM.
3. EXISTING CABLE TRAY (LOWER LEVEL POWER CABLE TRAY AND UPPPER LEVEL COMMUNICATIONS CABLE TRAY) SUPPORTS TO BE REPLACED WITH 316L STAINLESS STEEL FOR UNISTRUT AND ALL HARDWARE.
4. EXISTING CABLE TRAY (LOWER LEVEL POWER CABLE TRAY) TO BE MODIFIED FOR THE NEW ROUTING.
5. NEW CABLE TRAY (LOWER LEVEL POWER CABLE TRAY) ROUTE FROM NEW PENETRATIONS TO NEW S1 CABINETS ABOVE AT END OF REGULATOR SWITCHGEAR LINE UP ABOVE.
6. EXISTING CABLE TRAY (LOWER LEVEL POWER CABLE TRAY) ROUTE FROM EXISTING S1 CABINET AND PREVIOUS REGULATOR LOCATIONS TO BE REDUCED AND ORIGINAL CABLE TRAY MANUFACTURER END CAPS INSTALLED TO CLOSE CABLE TRAY ENDS FOR CABLE TRAY SECTIONS TO REMAIN IN USE FOR FINAL CONDITION.
7. NEW REGULATORS, NEW S1 CABINETS, AND EXISTING S1 CABINET ABOVE SHOWN FOR REFERENCE.
8. EXISTING CONDUIT PENETRATIONS TO BE GROUND DOWN ON LEVEL ABOVE, CAPPED BELOW AND FILLED WITH CONCRETE. TYPICAL FOR ALL UNUSED PENETRATIONS.
9. EXISTING CABLE TRAY (LOWER LEVEL POWER CABLE TRAY) TO BE REMOVED. TYPICAL WHERE NO LONGER REQUIRED FOR NEW CABLE TRAY LAYOUT.
10. EXISTING CONDUIT TO BE REMOVED..
11. EXISTING CONDUIT FITTING WITH EXISTING COMMUNICATION CABLES FROM TRAY TO ABOVE TO REMAIN.
12. NEW CONDUIT WITH NEW CABLES FOR CONNECTION TO RELOCATED RVR CTS..
13. EXISTING WIREWAY TO BE REMOVED.
14. EXISTING CURRENT TRANSDUCERS FOR RVR TO BE RELOCATED.
15. NEW LOCATION FOR CURRENT TRANSDUCERS FOR RVR. PROVIDE NEW 2" CONDUIT TO EXISTING JUNCTION BOX ON NORTH WALL AND NEW SENSING WIRES FROM CURRENT TRANSDUCERS TO RVR EQUIPMENT ON LEVEL ABOVE.
16. EXISTING CABLE TRAY (UPPER LEVEL COMMUNICATIONS CABLE TRAY) TO BE REMOVED. TYPICAL WHERE NO LONGER REQUIRED FOR NEW COMMUNICATIONS CABLE TRAY LAYOUT.
17. EXISTING CABLE TRAY (UPPER LEVEL COMMUNICATIONS CABLE TRAY) TO REMAIN. CABLE TRAY SUPPORTS TO BE REPLACED WITH 316L STAINLESS STEEL FOR UNISTRUT AND ALL HARDWARE.
18. NEW PENETRATIONS TO S1 CABINET ABOVE. REFER TO STRUCTURAL TYPICAL DETAILS AND SPECIFICATIONS. COORDINATE LOCATION WITH EXISTING STRUCTURE AND S1 CABINET MANUFACTURERS INSTALLATION REQUIREMENTS.
19. EXISTING COMMUNICATIONS CABLES FROM TRAY TO CONDUIT FITTINGS TO PENETRATION TO LEVEL ABOVE



1 WIRE VAULT ELECTRICAL POWER DEMOLITION PLAN
SCALE: 1/4" = 1'–0"

0 4 8 12
GRAPHIC SCALE: 1/4" = 1'–0"

HOUSTON AIRPORT SYSTEM

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REVISIONS

NO.	DESCRIPTION	DATE
	ISSUED FOR CONSTRUCTION	03/15/24

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH VAULT RENOVATIONS
WIRE VAULT ELECTRICAL POWER DEMOLITION PLAN

PROJECT MGR: AEO
DESIGNER: AO
DRAWN BY: SH
CHECK BY: NM

DATE:

STATE OF TEXAS
ARTHUR E. OTTO
75035
REGISTERED PROFESSIONAL ENGINEER
03/15/24

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A–000687
B.S.G. NO. 2024–31–IAH
H.A.S. NO. PN 952
T.I.P. NO. 24–28–IAH

SHEET NO.
SV-ED2.02

TYPE AC (BX) AND MC CABLE ARE PROHIBITED.

GENERAL NOTES

A. REFER TO SHEET SV-E0.01 FOR SYMBOLS, ABBREVIATIONS AND GENERAL NOTES.
B. EQUIPMENT INSTALLATION TO BE PHASED WITH ENABLING WORK FOR NEW EQUIPMENT TO REPLACE EXISTING EQUIPMENT, INSTALLATION OF NEW SERVICE FROM CENTERPOINT VAULT, INTERCONNECTION AND TESTING OF NEW EQUIPMENT, ENERGIZATION OF NEW EQUIPMENT, PHASED TRANSFER OF EXISTING LOADS TO NEW EQUIPMENT, DEMOLITION OF EQUIPMENT TO BE REMOVED. PHASING PLAN AND OUTAGES TO BE SUBMITTED TO OPERATIONS FOR APPROVAL 1 MONTH PRIOR AND COORDINATED WITH OPERATIONS AND CENTERPOINT ENERGY.
C. HIGH VOLTAGE CIRCUITS (AIRFIELD LIGHTING 5000 VOLT SERIES CIRCUITS AND OTHER CIRCUITS RATED ABOVE 600 VOLTS) AND LOW VOLTAGE CIRCUITS (RATED 600 VOLTS AND BELOW) SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, DUCT, RACEWAY, JUNCTION STRUCTURE, OR HANDHOLE.
D. SUBSCRIPT INDICATES CIRCUIT NUMBER:
   1 INDICATES CIRCUIT NUMBER
   ◍1 PANEL LVS UNLESS OTHERWISE NOTED

KEYED NOTES

(14) EXISTING DOORS TO BE REPLACED WITH NEW DOUBLE DOOR AND FRAME DOOR WITH PANIC HARDWARE. (REFER TO ARCHITECTURAL PLANS) AND ELECTRONIC LOCK CONTROLS (REFER TO SECURITY PLANS).

(15) RECEPTACLE FOR PORTABLE AHU (NEMA L6-30R)

(16) AHU AND TRANSOM TO BE TEMPORARILY RELOCATED TO FACILITATE RIGGING OF NEW REGULATOR SWITCHGEAR INTO ROOM.

(17) PROVIDE INTERNAL CONDUIT SEALS AND TEST FOR AIR TIGHTNESS UNDER 20 PSIG.

(18) REFER TO SECURITY DRAWINGS FOR DEVICES AND CONDUIT AND BACK BOX REQUIREMENTS. SECURITY POWER FOR MAGLOCKS, CAMERAS, AND POWER SHALL BE CONNECTED TO LVS-16 (EAST DOOR), LVS-18 (WEST DOOR), LVS-20 (EQUIPMENT YARD DOOR), LVS-22 (SOUTHWEST DOOR), LVS-24 (SOUTHEAST DOOR) AND LVS-26 (IT CAGE AND DOOR).

(19) EXISTING S-1 CABINET TO REMAIN IN SERVICE UNTIL ALL LOADS ARE TRANSFERRED TO NEW S-1 SECTION AT END OF SWITCHGEAR LINE UP. DURING INITIAL PHASE OF REGULATOR SWGR SGR-2, SGR-2 INITIAL REGULATORS WILL SUPPLY NEW TEMPORARY FEEDERS AND SPLICE IN EXISTING S-1 CABINET FOR INTERIM SUPPLY TO AIRFIELD LIGHTING CIRCUITS. DURING LATER PHASE AFTER INSTALLATION OF SGR-2 S1 CABINET, NEW MEDIUM VOLTAGE FEEDERS WILL BE SUPPLIED FROM NEW S-1 SECTION AT END OF SGR-2 TO SPLICE TO EXISTING MEDIUM VOLTAGE CABLE IN CABLE TRAY IMMEDIATELY BEFORE CABLE DROP TO EXIT FROM CABLE VAULT TO EXISTING UNDERGROUND DUCTBANK. COORDINATE WITH HAS OPERATIONS FOR SPLICE LOCATION TO ALLOW FOR FUTURE MEDUM VOLTAGE CABLE TO SPLICE IN FIRST AIRFIELD MANHOLE TO CONNECT TO EXISTING AIRFIELD LIGHTING CIRCUITS REPLACED UNDER OTHER PROJECTS. SUBMIT SPLICING PLAN TO AIRPORT ELECTRIC SHOP FOR APPROVAL OF SPLICING LOCATIONS.

(20) LOCATION FOR REGULATOR LOAD BANK AFTER DEMOLITION OF EXISTING ATS.

(21) EXISTING INTAKE LOUVER AND DAMPERS BELOW TO BE REMOVED AND THE WALL RESTORED. EXISTING EXHAUST LOUVER ABOVE TO BE REPLACED. EXISTING DAMPER AND VENT FAN ABOVE TO BE REMOVED AND REPLACED WITH 2" INSULATED PANEL WITH 24" X 24" INSULATED ACCESS DOOR FOR FUTURE TEMPORARY SPOT COOLER DUCTS.

(22) EXISTING PANEL L1 AND TRANSFORMER TO BE REPLACED.

(23) EXISTING UPS TO BE REMOVED.

(24) EXISTING LOUVER, DAMPER, AND VENT FAN TO BE REMOVED. WALL TO BE RESTORED AND DOOR ADDED.

(25) DOOR AND FRAME WITH PANIC HARDWARE (REFER TO ARCHITECTURAL PLANS) AND ELECTRONIC LOCK CONTROLS (REFER TO SECURITY PLANS).

KEYED NOTES

(1) 3 / 8" X 4"X42" INSULATED COPPER BUS MAIN GROUND BAR ON WALL.

(2) NEW EQUIPMENT TO REPLACE EXISTING EQUIPMENT.

(3) EXISTING EQUIPMENT TO BE DEMOLISHED AFTER LOADS / CONTROL SYSTEMS ARE TRANSFERRED TO NEW EQUIPMENT.

(4) NEW MEDIUM VOLTAGE CABLE FROM SWITCHGEAR STYLE REGULATORS TO SPLICES AT CABLE TRAY NEAREST WIRE VAULT CABLE TRAY DROP FOR EXIT TO UNDERGROUND DUCTBANK. COORDINATE WITH HAS OPERATIONS FOR SPLICE LOCATION TO ALLOW FOR FUTURE MEDIUM VOLTAGE CABLE TO SPLICE IN FIRST AIRFIELD MANHOLE FOR FUTURE CONNECTION TO EXISTING AIRFIELD LIGHTING CIRCUITS REPLACED UNDER OTHER PROJECTS. SUBMIT SPLICING PLAN TO AIRPORT ELECTRIC SHOP FOR APPROVAL OF SPLICING LOCATIONS.

(5) EXISTING EQUIPMENT TO REMAIN.

(6) EXISTING INTAKE AND EXHAUST LOUVERS, DAMPERS, AND VENT FAN TO BE REMOVED AND WALL RESTORED.

(7) PROVIDE TWO SUPPLEMENTAL 250 KCMIL GROUND CONDUCTORS FROM ELECTRICAL EQUIPMENT WITH ONE TO MAIN GROUND BAR IN ELECTRICAL ROOM AND ONE TO GROUND LOOP SECURED TO WALLS OF EQUIPMENT ROOMS. PROVIDE NEW 250 KCMIL LOOP ON ALL WALLS OF REGULATOR AND ELECTRICAL ROOMS AND TERMINATE WITH 250 KCMIL GROUND CONDUCTOR FROM ELECTRICAL EQUIPMENT TO NEW 42" X 4" MAIN GROUND BAR IN ELECTRICAL ROOM. TERMINATE GROUND LEADS FROM EXISTING GROUND RODS WIRING TO NEW GROUND LOOP. REMOVE EXISTING WALL MOUNTED GROUND LOOP AFTER REMOVAL OF EXISTING REGULATORS. PROVIDE NEW 250 KCMIL GROUND WIRE FROM NEW MAIN GROUND BAR TO NEW 24" X 4" CPI GROUND BAR IN IDF IT EQUIPMENT CAGE AND RETERMINATE ALL IT EQUIPMENT GROUNDS TO THE IDF GROUND BAR. RETERMINATE ALL EXISTING COMMUNICATION AND FAA EQUIPMENT GROUND LEADS TO NEW WALL MOUNTED GROUND LOOP. ALL GROUNDS SHALL BE BARE COPPER WITH CADWELDED CONNECTIONS TO MAIN GROUND BAR FROM EARTH GROUNDING CONDUCTORS AND EXCEPT WHERE OTHERWISE NOTED. DOUBLE BOLT CONNECTIONS WITH LONG BARREL CRIMP CONNECTIONS AT GROUND BAR.. PROVIDE BENDS OF 5 FOOT RADIUS WHERE POSSIBLE (24" MINIMUM WHERE 5 FOOT RADIUS ARE NOT POSSIBLE.

(8) NEW ALCMS EQUIPMENT.

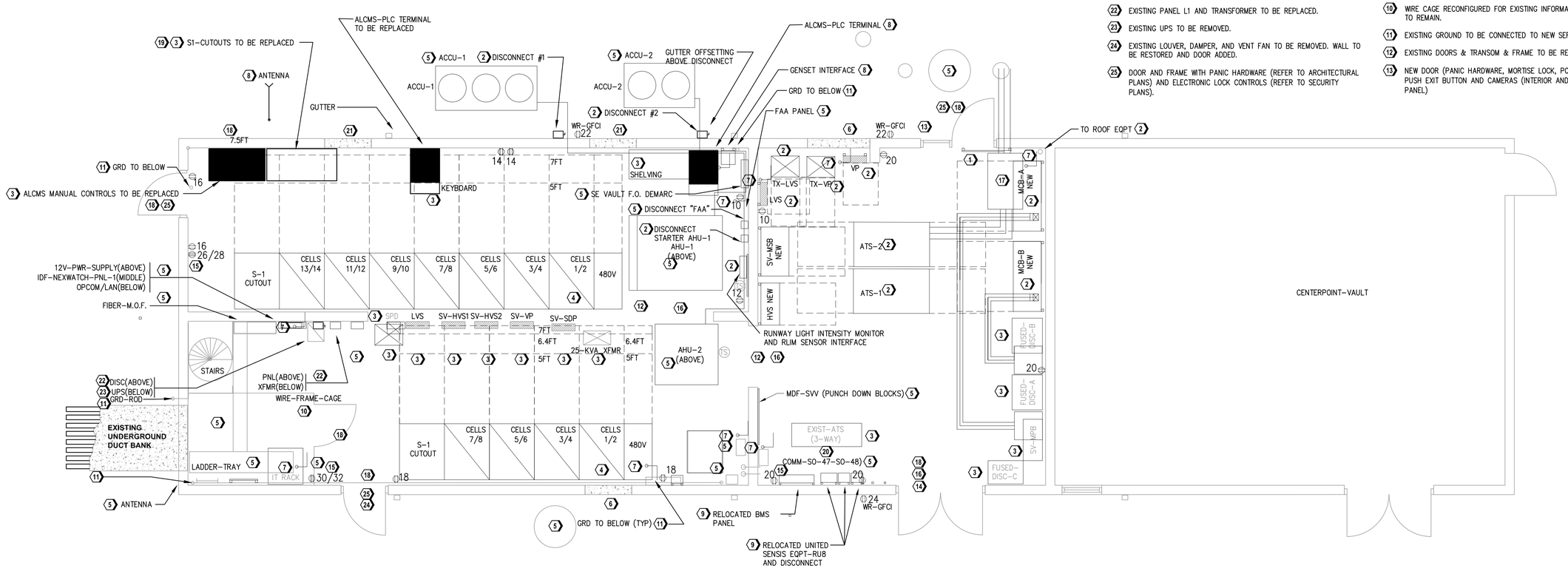
(9) EXISTING EQUIPMENT RELOCATED TO LOCATION SHOWN.

(10) WIRE CAGE RECONFIGURED FOR EXISTING INFORMATION TECHNOLOGY EQUIPMENT TO REMAIN.

(11) EXISTING GROUND TO BE CONNECTED TO NEW SERVICE GROUND.

(12) EXISTING DOORS & TRANSOM & FRAME TO BE REMOVED.

(13) NEW DOOR (PANIC HARDWARE, MORTISE LOCK, POSITION SENSOR, CARD READER, PUSH EXIT BUTTON AND CAMERAS (INTERIOR AND EXTERIOR) TO SECURITY PANEL)



1 / - SOUTH VAULT ELECTRICAL POWER PLAN
SCALE: 1/4" = 1'-0"

0 4 8 12
GRAPHIC SCALE: 1/4" = 1'-0"

HOUSTON AIRPORT SYSTEM

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REVISIONS

NO.	DESCRIPTION	DATE
	ISSUED FOR CONSTRUCTION	03/15/24

CITY OF HOUSTON HOUSTON AIRPORTS SYSTEM
Recommended _____ 03/29/2024
Director, Houston Airport System Date
Approved _____ 03/29/2024
Deputy Director, Houston Airport System Date
THE ENGINEER OF RECORD FOR THIS PROJECT, OR A DULY AUTHORIZED REPRESENTATIVE, HAS REVIEWED EACH SHOP DRAWING SUBMITTAL AND ASSOCIATED SUBSTITUTION REQUEST AND TAKEN APPROPRIATE ACTION FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR REMAINS RESPONSIBLE FOR SPECIFIC DIMENSIONS, QUANTITIES, AND FOR THE FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION. COORDINATION OF THE WORK WITH ALL TRADES; AND FOR PERFORMING WORK IN A SAFE MANNER. THE REVIEW AND APPROVAL OF THIS SUBMITTAL DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO COMPLY WITH ALL CONTRACT REQUIREMENTS, UNLESS SPECIFICALLY NOTED AND ACCEPTED IN WRITING BY THE ENGINEER OF RECORD.

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH VAULT RENOVATIONS
ELECTRICAL POWER PLAN

PROJECT MGR: AEO
DESIGNER: AO
DRAWN BY: SH
CHECK BY: NM

DATE:

STATE OF TEXAS
ARTHUR E. OTTO
75035
REGISTERED PROFESSIONAL ENGINEER
03/15/24

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO.

SV-EP2.01

TYPE AC (BX) AND MC CABLE ARE PROHIBITED.

GENERAL NOTES

A. REFER TO SHEET SV–E0.01 FOR SYMBOLS, ABBREVIATIONS AND GENERAL NOTES.
B. NEW 5KV CABLES FROM NEW S1 CABINETS TO BE ROUTED TO WIRE VAULT LEVEL. PROVIDE NEW GALVANIZED CABLE TRAY SUPPORTED ON STAINLESS STEEL UNISTRUT FOR 5 KV CABLES TO CONNECT FROM S1 CABINETS AND EXIT AT SOUTH END OF WIRE VAULT. SUBMIT PROPOSED SPLICE LOCATION TO OPERATIONS FOR APPROVAL AT LEAST 4 WEEKS PRIOR TO INSTALLATION OF NEW SPLICE TO CONNECT NEW CABLE TO EXISTING CABLE EXITING THE WIRE VAULT. WHERE NOT UTILIZED FOR CABLE ROUTING, THE EXISTING CABLE TRAY AND UNISTRUT IS TO BE REMOVED AS REQUIRED FOR INSTALLATION OF THE NEW CABLE TRAY AND THE REMAINDER OF THE EXISTING CABLE TRAY REMOVED UPON COMPLETION OF THE NEW INSTALLATION.
C. ALL CONDUIT IN WIRE VAULT IS TO BE WEATHER RESISTANT PVC COATED RIGID GALVANIZED CONDUIT (RGC) WITH PVC COATED OR STAINLESS STEEL (316L) PROVIDE INTERIOR CONDUIT SEALS PENETRATIONS TO LEVEL ABOVE AND TO EXTERIOR. JUNCTION BOXES AND BACK BOXES SHALL BE CAST IRON FS/FD RATED WITH SEALANT ON FITTING THREADS.

KEYED NOTES

1. TWO NEW SUBMERSIBLE SUMP PUMPS IN EXISTING SUMP. PUMPS TO BE SUPPLIED WITH SEPARATE CIRCUITS FROM EXISTING PANEL LVS IN INTERIM AND RELOCATED TO NEW PANEL LVS FOR FINAL INSTALLATION. PROVIDE MULTIPLE FLOATS FOR PUMP 1 ON AT LOW LEVEL, PUMP 2 ON AT INTERMEDIATE LEVEL AND HIGH ALARM AT HIGH LEVEL TO BUILDING MANAGEMENT ALARMS AT IT CAGE ON LEVEL ABOVE. DEMOLISH EXISTING PUMPS AND ELECTRICAL INSTALLATION BACK TO PANEL ON LEVEL ABOVE.

2. PROVIDE NEW FLOOR PENETRATIONS FOR CABLES FROM NEW S1 CABINET ON LEVEL ABOVE. REFER TO STRUCTURAL TYPICAL DETAILS AND SPECIFICATIONS. COORDINATE LOCATION WITH EXISTING STRUCTURE AND S1 CABINET MANUFACTURERS INSTALLATION REQUIREMENTS.
ROUTE CABLES IN NEW AND EXISTING POWER CABLE TRAYS (LOWER LEVEL CABLE TRAYS) TO WIRE EXIT IN SOUTHWEST CORNER OF WIRE VAULT. REUSE EXISTING POWER CABLE TRAY WITH MODIFIED CABLE TRAY ROUTED TO NEW PENETRATIONS TO REGULATORS ABOVE.
EXISTING CABLE TRAY TO BE REPLACED IN PHASES TO SUPPORT EXISTING CABLES UNTIL ALL EXISTING REGULATORS ARE REPLACED AND NEW CABLES ROUTED FROM NEW REGULATORS TO SPLICE POINT NEAR CABLE VAULT EXIT TO UNDERGROUND DUCTBANK.
PROVIDE NEW MEDIUM VOLTAGE CABLE FROM SWITCHGEAR STYLE REGULATORS TO SPLICES AT CABLE TRAY NEAREST WIRE VAULT CABLE TRAY DROP FOR EXIT TO UNDERGROUND DUCTBANK. COORDINATE WITH HAS OPERATIONS FOR SPLICE LOCATION TO ALLOW FOR FUTURE MEDIUM VOLTAGE CABLE TO SPLICE IN FIRST AIRFIELD MANHOLE FOR FUTURE CONNECTION TO EXISTING AIRFIELD LIGHTING CIRCUITS REPLACED UNDER OTHER PROJECTS. SUBMIT SPLICING PLAN TO AIRPORT ELECTRIC SHOP FOR APPROVAL OF SPLICING LOCATIONS.
EXISTING CABLE TRAY UNISTRUT SUPPORTS AND HARDWARE TO BE REPLACED WITH NEW STAINLESS STEEL UNISTRUT AND HARDWARE SECURED TO THE EXISTING TRAY AND FLOOR IN PHASES TO MAINTAIN SUPPORT OF THE EXISTING TRAY. AFTER CABLES HAVE BEEN REPLACED AND SECTIONS OF THE TRAY ARE NO LONGER IN USE, CAP THE ENDS OF THE ACTIVE SECTION WITH CABLE TRAY MANUFACTURED END CLOSURES. REPLACE ALL EXISTING GROUNDS AND GROUND STRAPS IN THE CABLE TRAY FOR A NEW A COMPLETE CABLE TRAY GROUNDING SYSTEM.

3. PROVIDE INTERNAL CONDUIT SEALS AT ALL CONDUIT PENETRATIONS OF THE EXTERIOR WALL AND TEST FOR WATER TIGHT.

4. EXISTING POWER CABLE TRAY (LOWER LEVEL) TO BE MODIFIED FOR NEW ROUTE. EXISTING CABLE TRAY SUPPORTS TO BE REPLACED WITH 316L STAINLESS STEEL FOR UNISTRUT AND ALL HARDWARE. EXISTING CABLE TRAY TO BE MODIFIED FOR THE NEW ROUTING.

5. NEW POWER CABLE TRAY (LOWER LEVEL) ROUTED FROM NEW PENETRATIONS TO NEW S1 CABINETS ABOVE AT END OF REGULATOR SWITCHGEAR LINE UP ABOVE.

6. EXISTING POWER CABLE TRAY (LOWER LEVEL) ROUTED FROM EXISTING S1 CABINET AND PREVIOUS REGULATOR LOCATIONS TO BE REDUCED AND ORIGINAL CABLE TRAY MANUFACTURER END CAPS INSTALLED TO CLOSE CABLE TRAY ENDS FOR CABLE TRAY SECTIONS TO REMAIN IN USE FOR FINAL CONDITION..

7. NEW REGULATORS, NEW S1 CABINETS, AND EXISTING S1 CABINET ABOVE SHOWN FOR REFERENCE.

8. EXISTING CONDUIT FITTING WITH EXISTING COMMUNICATION CABLES FROM TRAY TO ABOVE TO REMAIN.

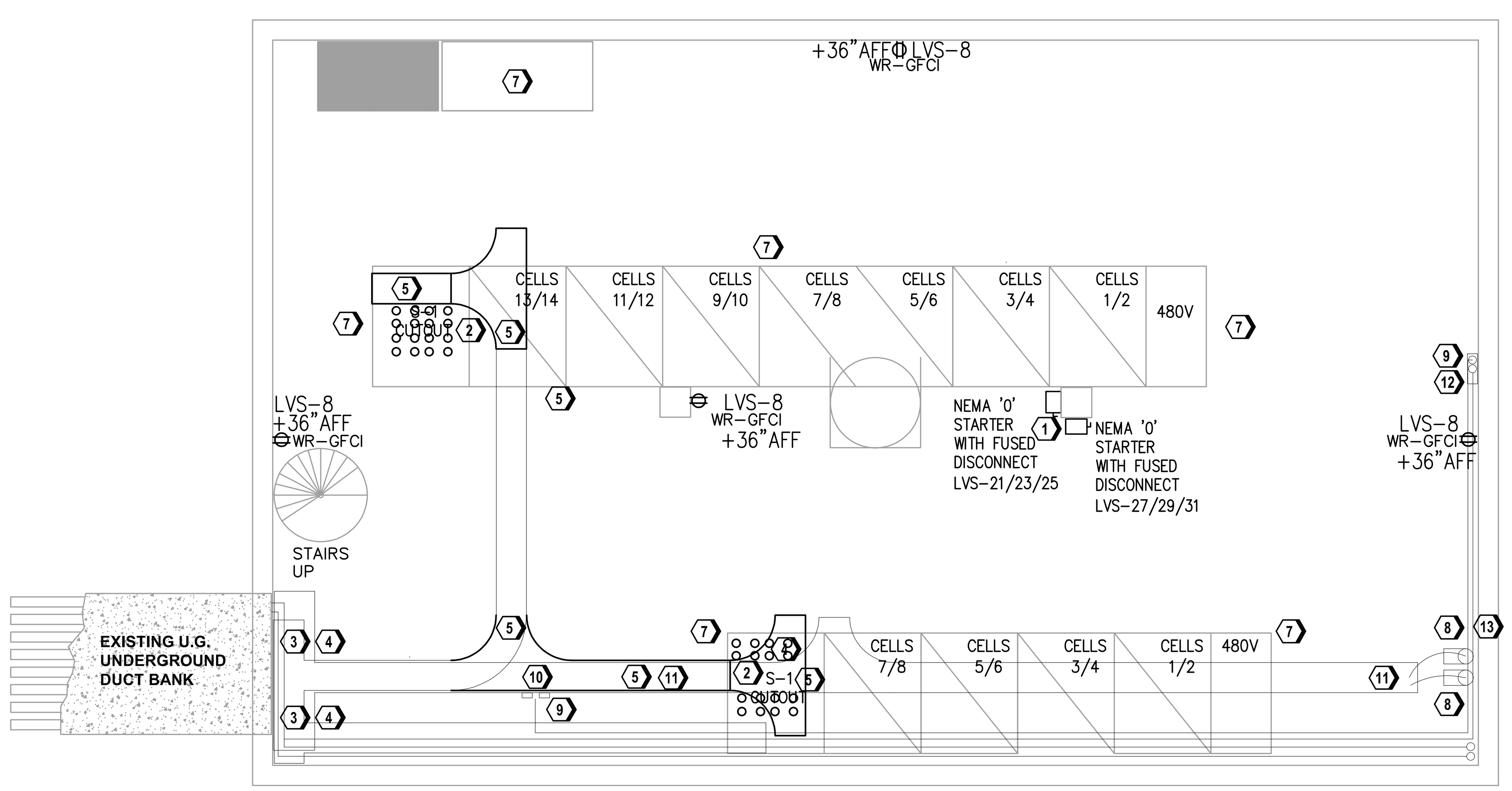
9. NEW CONDUIT WITH NEW CABLES FOR CONNECTION TO RELOCATED RVR CTS..

10. NEW LOCATION FOR CURRENT TRANSDUCERS FOR RVR. PROVIDE NEW 2" CONDUIT TO EXISTING JUNCTION BOX ON NORTH WALL AND NEW SENSING WIRES FROM CURRENT TRANSDUCERS TO RVR EQUIPMENT ON LEVEL ABOVE.

11. EXISTING COMMUNICATIONS CABLE TRAY (UPPER LEVEL) TO REMAIN. CABLE TRAY SUPPORTS TO BE REPLACED WITH 316L STAINLESS STEEL FOR UNISTRUT AND ALL HARDWARE.

12. EXISTING JUNCTION BOX AND CONDUIT TO ABOVE WITH NEW RVR CABLES.

13. EXISTING CONDUIT FROM JUNCTION BOX TO REMAIN WITH NEW ALCMS CABLES.



1 WIRE VAULT ELECTRICAL POWER PLAN
SCALE: 1/4" = 1'-0"

0 4 8 12
GRAPHIC SCALE: 1/4" = 1'-0"

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REVISIONS		
NO.	DESCRIPTION	DATE
	ISSUED FOR CONSTRUCTION	03/15/24

CITY OF HOUSTON
HOUSTON AIRPORTS SYSTEM
Recommended 03/29/2024
Houston Airports System Director or Designated Representative DATE
REVIEWED / NO EXCEPTIONS TAKEN

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH VAULT RENOVATIONS
WIRE VAULT ELECTRICAL POWER PLAN

PROJECT MGR: AEO
DESIGNER: AO
DRAWN BY: SH
CHECK BY: NM
DATE:

STATE OF TEXAS
ARTHUR E. OTTO
75035
REGISTERED PROFESSIONAL ENGINEER
03/15/24

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A–000687
B.S.G. NO. 2024–31–IAH
H.A.S. NO. PN 952
T.I.P. NO. 24–28–IAH

SHEET NO.
SV-EP2.02

TYPE AC (BX) AND MC CABLE ARE PROHIBITED.

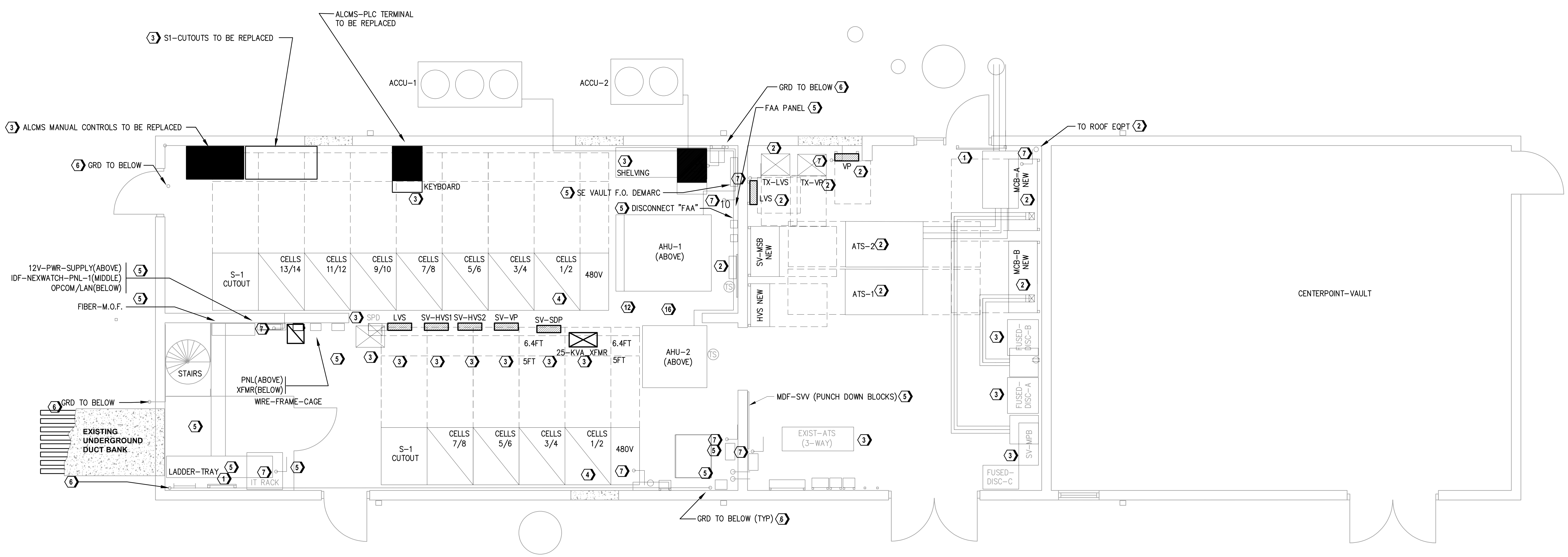
GENERAL NOTES

A. REFER TO SHEET SV-E0.01 FOR SYMBOLS, ABBREVIATIONS AND GENERAL NOTES.

B. EQUIPMENT INSTALLATION TO BE PHASED WITH ENABLING WORK FOR NEW EQUIPMENT TO REPLACE EXISTING EQUIPMENT, INSTALLATION OF NEW SERVICE FROM CENTERPOINT VAULT, INTERCONNECTION AND TESTING OF NEW EQUIPMENT, ENERGIZATION OF NEW EQUIPMENT, PHASED TRANSFER OF EXISTING LOADS TO NEW EQUIPMENT, DEMOLITION OF EQUIPMENT TO BE REMOVED. PHASING PLAN AND OUTAGES TO BE SUBMITTED TO OPERATIONS FOR APPROVAL 1 MONTH PRIOR AND COORDINATED WITH OPERATIONS AND CENTERPOINT ENERGY.

KEYED NOTES

1. 3 / 8" X 4"X42" INSULATED COPPER BUS MAIN GROUND BAR ON WALL.
2. NEW EQUIPMENT TO REPLACE EXISTING EQUIPMENT.
3. EXISTING EQUIPMENT TO BE DEMOLISHED AFTER LOADS / CONTROL SYSTEMS ARE TRANSFERRED TO NEW EQUIPMENT.
4. NEW SWITCHGEAR STYLE REGULATORS WITH NEW 5 KV CABLE AND SPLICES IN FIRST AIRFIELD MANHOLE TO CONNECT NEW WIRGN TO EXISTING AIRFIELD LIGHTING CIRCUITS REPLACED UNDER OTHER PROJECTS.
5. EXISTING EQUIPMENT TO REMAIN.
6. EXISTING GROUND TO BE CONNECTED TO NEW BUILDING GROUND SYSTEM..
7. PROVIDE TWO SUPPLEMENTAL 4 / 0 AWG GROUND CONDUCTORS FROM ELECTRICAL EQUIPMENT WITH ONE TO MAIN GROUND BAR IN ELECTRICAL ROOM AND ONE TO GROUND LOOP SECURED TO WALLS OF EQUIPMENT ROOMS. PROVIDE NEW 4 / 0 AWG LOOP ON ALL WALLS OF REGULATOR AND ELECTRICAL ROOMS AND TERMINATE WITH TWO 4 / 0 AWG GROUND CONDUCTOR FROM ELECTRICAL EQUIPMENT TO NEW 42" X 4" MAIN GROUND BAR IN ELECTRICAL ROOM. TERMINATE GROUND LEADS FROM EXISTING GROUND RODS WIRING TO NEW GROUND LOOP. REMOVE EXISTING WALL MOUNTED GROUND LOOP AFTER REMOVAL OF EXISTING REGULATORS. PROVIDE NEW 4/0 AWG GROUND WIRE FROM NEW MAIN GROUND BAR TO NEW 24" X 4" CPI GROUND BAR IN IDF IT EQUIPMENT CAGE AND RETERMINATE ALL IT EQUIPMENT GROUNDS TO THE IDF GROUND BAR. RETERMINATE ALL EXISTING COMMUNICATION AND FAA EQUIPMENT GROUND LEADS TO NEW WALL MOUNTED GROUND LOOP. ALL GROUNDS SHALL BE BARE COPPER WITH CADWELDED CONNECTIONS TO MAIN GROUND BAR FROM EARTH GROUNDING CONDUCTORS AND EXCEPT WHERE OTHERWISE NOTED. DOUBLE BOLT CONNECTIONS WITH LONG BARREL CRIMP CONNECTIONS AT GROUND BAR.. PROVIDE BENDS OF 5 FOOT RADIUS WHERE POSSIBLE (24" MINIMUM WHERE 5 FOOT RADIUS ARE NOT POSSIBLE.



1 SOUTH VAULT ELECTRICAL GROUNDING PLAN

SCALE: 1/4" = 1'-0"

0 4 8 12

GRAPHIC SCALE: 1/4" = 1'-0"

HOUSTON AIRPORT SYSTEM

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REVISIONS

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	ISSUED FOR CONSTRUCTION	03/15/24

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH VAULT RENOVATIONS
ELECTRICAL GROUNDING PLAN

PROJECT MGR: AEO
DESIGNER: AO
DRAWN BY: SH
CHECK BY: NM

DATE:

STATE OF TEXAS
ARTHUR E. OTTO
75035
REGISTERED PROFESSIONAL ENGINEER
03/15/24

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO.

SV-EP2.03

TYPE AC (BX) AND MC CABLE ARE PROHIBITED.

GENERAL NOTES

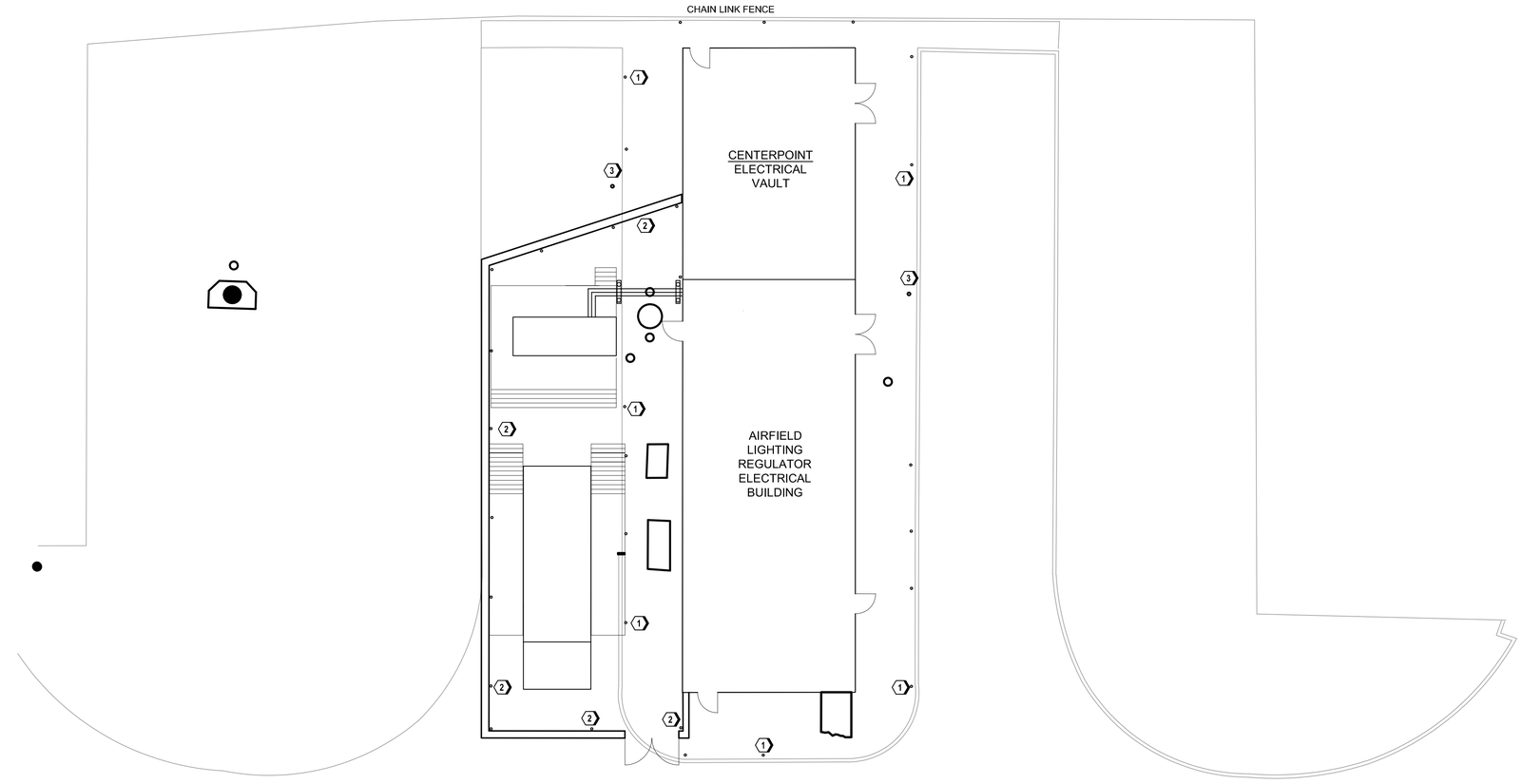
A. REFER TO SHEET SV-E0.01 FOR SYMBOLS, ABBREVIATIONS AND GENERAL NOTES.
B. BUILDING GROUNDING SYSTEM DESIGN WILL BE DEFERRED SUBMITTAL BY CONTRACTORS GROUNDNG SYSTEM VENDORS GROUNDING DESIGN TEAM TO MEET REQUIREMENTS OF PLANS AND SPECIFICATIONS.
C. ALL UNDERGROUND BUILDING GROUNDING SYSTEM CONDUCTORS WILL BE EXOTHERMICALLY WELDED EXCEPT AT TEST HANDHOLE LOCATIONS.
F. BUILDING GROUNDING SYSTEM CONDUCTORS ARE TO BE ROUTED WITH 5 FOOT RADIUS MINIMUM AND CONNECTED TO DEDICATED BUILDING GROUNDING SYSTEM EARTH GROUNDED AND TEST CERTIFICATION REPORTS PROVIDED FOR LESS THAN 5 OHMS TO EARTH.
G. PROVIDE LIST OF MATERIAL FOR THE LIGHTNING PROTECTION SYSTEM AND MINIMUM OF 25% SPARE PARTS INCLUDING ACCESSORIES AND FITTINGS.

KEYED NOTES

(1) PROVIDE BUILDING SYSTEM GROUND RODS ON 20 FOOT PERIMETERS OR LESS AND CONNECT EXOTHERMICALLY TO GROUNDING LOOP 5 FOOT MINIMUM FROM BUILDING . (TYPICAL)

(2) PROVIDE BUILDING SYSTEM GROUND RODS ON 20 FOOT PERIMETERS OR LESS AND CONNECT EXOTHERMICALLY TO GROUNDING LOOP ADJACENT TO WALL (TYPICAL)

(3) PROVIDE BUILDING SYSTEM TEST WELLS AND CONNECT MECHANICALLY EXOTHERMICALLY TO GROUNDING LOOP.



1 SOUTH VAULT GROUNDING SITE PLAN
SCALE: 3/32" = 1'-0"

0 8 16 32
GRAPHIC SCALE: 3/32" = 1'-0"

HOUSTON AIRPORT SYSTEM

Jacobs
818 Town & Country Blvd.
Suite 500
Houston, TX 77024
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REVISIONS

NO.	DESCRIPTION	DATE
	ISSUED FOR CONSTRUCTION	03/15/24

CITY OF HOUSTON
HOUSTON AIRPORTS SYSTEM
Recommended _____ 03/29/2024
Director, Facility Design & Construction Date
Houston Airport System Representative

THE APPROVAL OF THESE PLANS AND SPECIFICATIONS BY THE HOUSTON AIRPORT SYSTEM IS GIVEN SOLELY FOR THE PURPOSE OF ENSURING COMPLIANCE WITH THE AIRPORT LAYOUT PLAN, AIRPORT RULES AND REGULATIONS, AIRPORT MINIMUM STANDARDS, AND FEDERAL AVIATION REGULATIONS. THE REVIEW AND APPROVAL OF THESE PLANS DO NOT RELIEVE THE DESIGN PROFESSIONAL OF RESPONSIBILITY TO COMPLY WITH ALL CODES AND LAWS OF ANY APPLICABLE GOVERNMENTAL AUTHORITY HAVING JURISDICTION OVER THE PROJECT.

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH VAULT RENOVATIONS
GROUNDING SITE PLAN

PROJECT MGR: AEO
DESIGNER: AO
DRAWN BY: SH
CHECK BY: NM

DATE:

STATE OF TEXAS
ARTHUR E. OTTO
75035
REGISTERED PROFESSIONAL ENGINEER
03/15/24

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO.

SV-EP2.04

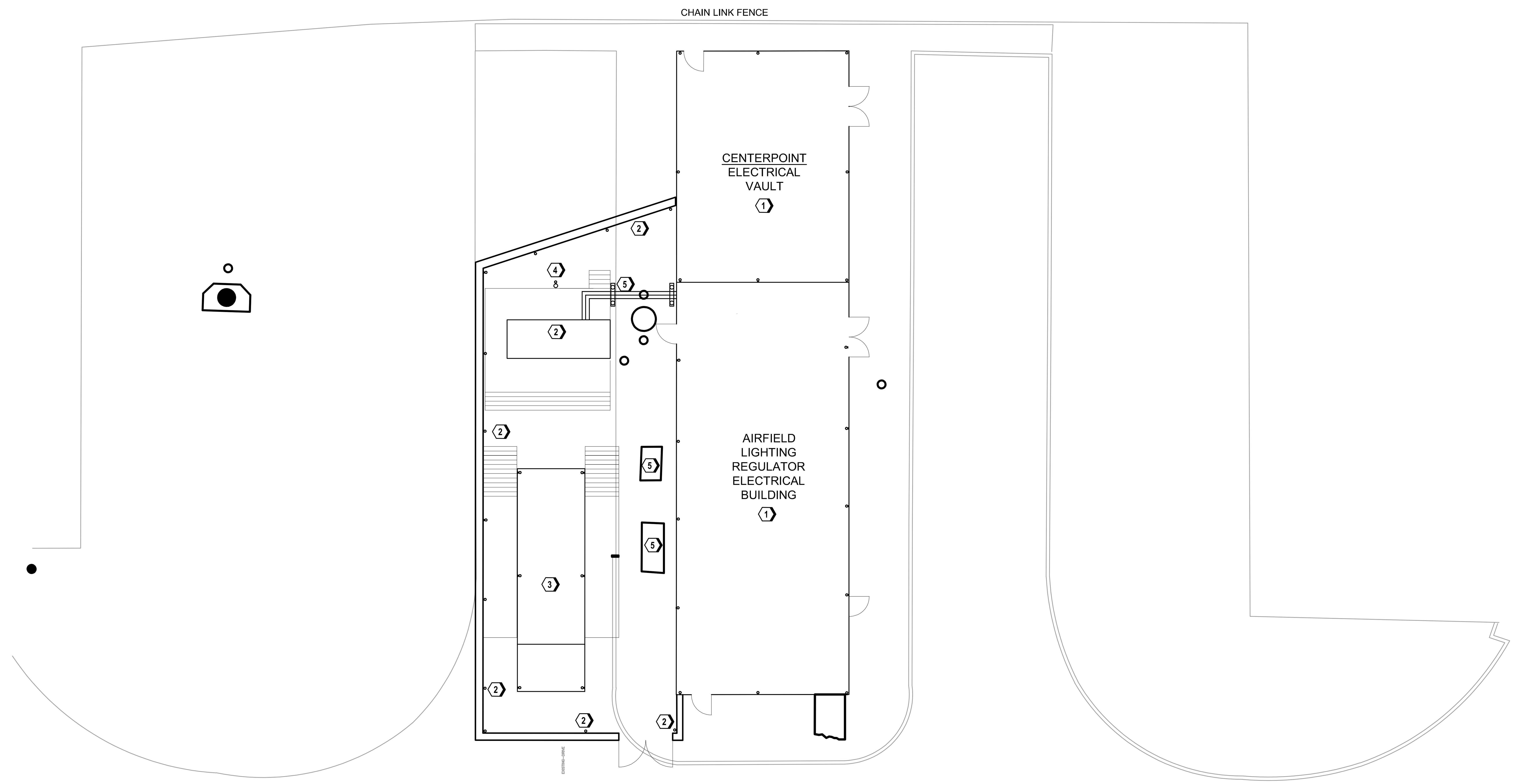
TYPE AC (BX) AND MC CABLE ARE PROHIBITED.

GENERAL NOTES

A. REFER TO SHEET SV–E0.01 FOR SYMBOLS, ABBREVIATIONS AND GENERAL NOTES.
B. LIGHTNING PROTECTION LOCATIONS SHOWN FOR COORDINATION.
C. LIGHTNING PROTECTION DESIGN WILL BE DEFERRED SUBMITTAL BY LIGHTNING PROTECTION VENDORS LIGHTNING PROTECTION INSTITUTE CERTIFIED DESIGN TEAM.
D. ALL UNDERGROUND LIGHTING PROTECTION CONDUCTORS WILL BE EXOTHERMICALLY WELDED EXCEPT AT TEST HANDHOLE LOCATIONS AND INSTALLED IN JUNCTION BOXES AND CONDUIT.
F. LIGHTNING PROTECTION DOWNLEADS WILL BE ROUTED IN CONDUIT.
G. LIGHTING PROTECTION CONDUCTORS ARE TO BE ROUTED WITH 5 FOOT RADIUS MINIMUM AND CONNECTED TO DEDICATED LIGHTNING PROTECTION EARTH GROUNDING SYSTEM. LIGHTNING PROTECTION CONDUCTOR SHALL BE EARTH GROUNDED AND TEST CERTIFICATION REPORTS PROVIDED FOR LESS THAN 5 OHMS TO EARTH. A DEDICATED BONDING GROUND CONDUCTOR FROM LIGHTING PROTECTION GROUNDING SYSTEM WILL BE BONDED TO THE BUILDING MAIN GROUND BAR IN THE ELECTRICAL ROOM.
H. LIGHTNING PROTECTION AERIALS ARE TO BE 24" LONG MINIMUM AND 18" MINIMUM ABOVE THE HIGHEST ELEVATION.
I. PROVIDE LIST OF MATERIAL FOR THE LIGHTNING PROTECTION SYSTEM AND MINIMUM OF 25% SPARE PARTS INCLUDING ACCESSORIES AND FITTINGS.

KEYED NOTES

1. PROVIDE LIGHTNING PROTECTION AERIALS ON ROOF PARAPET ON 20 FOOT PERIMETERS OR LESS. (TYPICAL)
2. PROVIDE LIGHTNING PROTECTION AERIALS ON TOP OF WALL AT ALL CORNERS AND ON 20 FOOT PERIMETERS OR LESS.(TYPICAL)
3. PROVIDE LIGHTNING PROTECTION AERIALS ON TOP OF GENERATOR AT ALL CORNERS AND ON 20 FOOT PERIMETERS OR LESS. BOND ALL OUTDOOR SWITCHGEAR TO LIGHTNING PROTECTION SYSTEM. (TYPICAL)
4. PROVIDE LIGHTNING PROTECTION AERIALS ON MAST ABOVE SWITCHGEAR. BOND ALL OUTDOOR SWITCHGEAR TO LIGHTNING PROTECTION SYSTEM.
5. BOND ALL OUTDOOR EQUIPMENT TO LIGHTNING PROTECTION SYSTEM.(TYPICAL)



1 — SOUTH VAULT LIGHTNING PROTECTION PLAN
SCALE: 3/32" = 1'–0"

0 8 16 32
GRAPHIC SCALE: 3/32" = 1'–0"

HOUSTON AIRPORT SYSTEM

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REVISIONS

NO.	DESCRIPTION	DATE
	ISSUED FOR CONSTRUCTION	03/15/24

CITY OF HOUSTON
HOUSTON AIRPORTS SYSTEM
Recommended 03/29/2024
Houston Airports System Director or Designated Representative DATE

REVIEWED / NO EXCEPTIONS TAKEN
The drawings & support documents submitted for permit review meet the design intent, and to the best of our knowledge, appear to be in compliance with current HAS approved standards.
Performance and approval of this review does not waive, nor relieve the applicant from full responsibility & liability to conform and comply with all applicable standards, codes, and regulations required from all Authorities Having Jurisdiction (AHJ).

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH VAULT RENOVATIONS
LIGHTNING PROTECTION PLAN

PROJECT MGR: AEO
DESIGNER: AO
DRAWN BY: SH
CHECK BY: NM
DATE:

STATE OF TEXAS
ARTHUR E. OTTO
75035
REGISTERED PROFESSIONAL ENGINEER
03/15/24

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A–000687
B.S.G. NO. 2024–31–IAH
H.A.S. NO. PN 952
T.I.P. NO. 24–28–IAH

SHEET NO.
SV-EP2.05

TYPE AC (BX) AND MC CABLE ARE PROHIBITED.

GENERAL NOTES

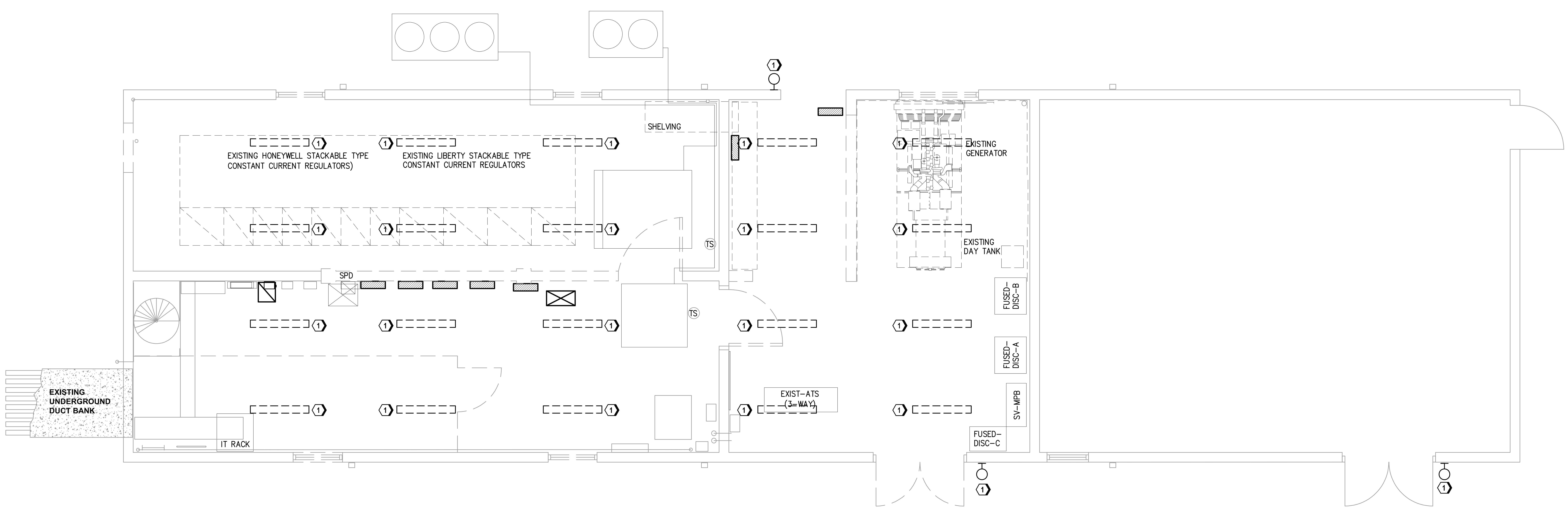
A. REFER TO SHEET SV–E0.01 FOR SYMBOLS, ABBREVIATIONS AND GENERAL NOTES.

B. DEMOLISH ALL EXISTING LIGHTING FIXTURES AND FIXTURE SUPPORTS IN ELECTRICAL ROOMS, REGULATOR ROOMS, AND BUILDING EXTERIOR LIGHTING. REMOVE ALL SWITCHES, CONTROLS, BRANCH CIRCUIT WIRING, CONDUIT AND JUNCTION BOXES SUPPLYING LIGHTING FIXTURES BACK TO PANEL. WHERE EXISTING CIRCUIT SUPPLYING LIGHTING ALSO SERVES EXISTING EQUIPMENT OR RECEPTACLES TO REMAIN, REMOVE CONDUIT AND WIRING BACK TO EXISTING EQUIPMENT AND RESTORE TO WORKING CONDITION FOR COMPLETE SYSTEM.

C. DEMOLITION AND NEW INSTALLATION TO BE PHASED WITH ENABLING WORK FOR NEW EQUIPMENT TO REPLACE EXISTING EQUIPMENT, INSTALLATION OF NEW SERVICE FROM CENTERPOINT VAULT, INTERCONNECTION AND TESTING OF NEW EQUIPMENT, ENERGIZATION OF NEW EQUIPMENT, PHASED TRANSFER OF EXISTING LOADS TO NEW EQUIPMENT, DEMOLITION OF EQUIPMENT TO BE REMOVED. PHASING PLAN AND OUTAGES TO BE SUBMITTED TO OPERATIONS FOR APPROVAL 1 MONTH PRIOR AND COORDINATED WITH OPERATIONS AND CENTERPOINT ENERGY.

KEYED NOTES

(1) EXISTING FIXTURE TO BE REMOVED (TYPICAL) REMOVE EXISTING LIGHTING FIXTURES, FIXTURE SUPPORTS AND CONDUIT, JUNCTION BOXES AND WIRING TO PANEL.



1 SOUTH VAULT ELECTRICAL LIGHTING DEMOLITION PLAN
SCALE: 1/4" = 1'–0"

0 4 8 12
GRAPHIC SCALE: 1/4" = 1'–0"

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CITY OF HOUSTON
HOUSTON AIRPORTS SYSTEM
Recommended 03/29/2024
Houston Airports System Director or Designated Representative DATE

REVIEWED / NO EXCEPTIONS TAKEN
The drawings & support documents submitted for permit review meet the design intent, and to the best of our knowledge, appear to be in compliance with current HAS approved standards.
Performance and approval of this review does not waive, nor relieve the applicant from full responsibility & liability to conform and comply with all applicable standards, codes, and regulations required from all Authorities Having Jurisdiction (AHJ).

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH VAULT RENOVATIONS
ELECTRICAL LIGHTING DEMOLITION PLAN

PROJECT MGR: AEO
DESIGNER: AO
DRAWN BY: SH
CHECK BY: NM

DATE:

STATE OF TEXAS
ARTHUR E. OTTO
75035
REGISTERED PROFESSIONAL ENGINEER
03/15/24

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A–000687
B.S.G. NO. 2024–31–IAH
H.A.S. NO. PN 952
T.I.P. NO. 24–28–IAH

SHEET NO.

SV-ED3.01

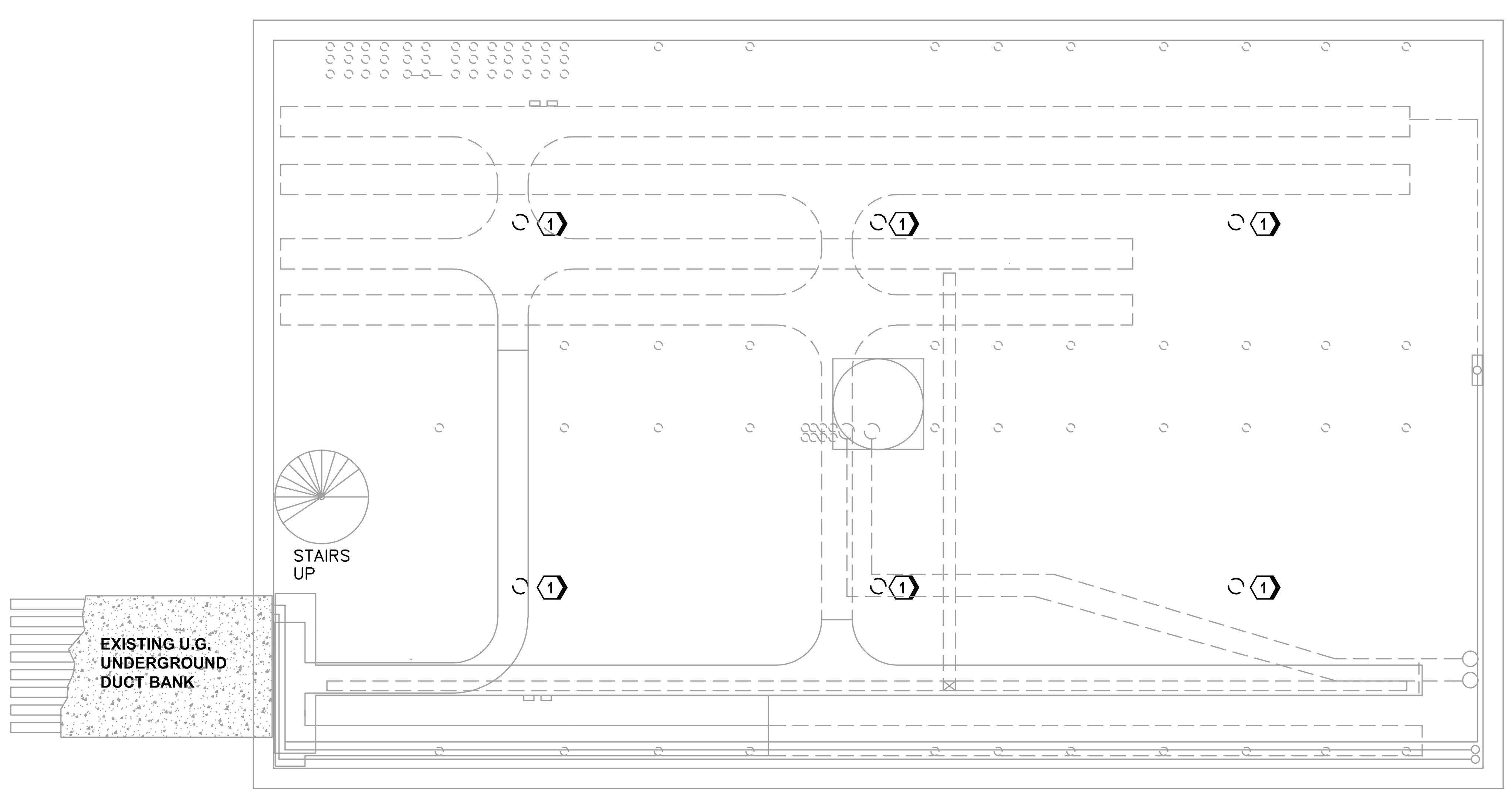
TYPE AC (BX) AND MC CABLE ARE PROHIBITED.

GENERAL NOTES

A. REFER TO SHEET SV-E0.01 FOR SYMBOLS, ABBREVIATIONS AND GENERAL NOTES.
B. DEMOLISH ALL EXISTING LIGHTING FIXTURES AND FIXTURE SUPPORTS IN WIRE VAULT. REMOVE ALL SWITCHES, CONTROLS, BRANCH CIRCUIT WIRING, CONDUIT AND JUNCTION BOXES SUPPLYING LIGHTING FIXTURES BACK TO PANEL. WHERE EXISTING CIRCUIT SUPPLYING LIGHTING ALSO SERVES EXISTING EQUIPMENT OR RECEPTACLES TO REMAIN, REMOVE CONDUIT AND WIRING BACK TO EXISTING EQUIPMENT AND RESTORE TO WORKING CONDITION FOR COMPLETE SYSTEM.
C. DEMOLITION AND NEW INSTALLATION TO BE PHASED WITH ENABLING WORK FOR NEW EQUIPMENT TO REPLACE EXISTING EQUIPMENT, INSTALLATION OF NEW SERVICE FROM CENTERPOINT VAULT, INTERCONNECTION AND TESTING OF NEW EQUIPMENT, ENERGIZATION OF NEW EQUIPMENT, PHASED TRANSFER OF EXISTING LOADS TO NEW EQUIPMENT, DEMOLITION OF EQUIPMENT TO BE REMOVED. PHASING PLAN AND OUTAGES TO BE SUBMITTED TO OPERATIONS FOR APPROVAL 1 MONTH PRIOR AND COORDINATED WITH OPERATIONS AND CENTERPOINT ENERGY.

KEYED NOTES

1. EXISTING FIXTURE TO BE REMOVED (TYPICAL) REMOVE EXISTING LIGHTING FIXTURES, FIXTURE SUPPORTS AND CONDUIT, JUNCTION BOXES AND WIRING TO PANEL.



1 WIRE VAULT ELECTRICAL LIGHTING DEMOLITION PLAN
SCALE: 1/4" = 1'-0"

GRAPHIC SCALE: 1/4" = 1'-0" (0 4 8 12)

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REVISIONS

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	ISSUED FOR CONSTRUCTION	03/15/24

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH VAULT RENOVATIONS
WIRE VAULT ELECTRICAL LIGHTING DEMOLITION PLAN

PROJECT MGR: AEO
DESIGNER: AO
DRAWN BY: SH
CHECK BY: NM

DATE:

STATE OF TEXAS
ARTHUR E. OTTO
75035
REGISTERED PROFESSIONAL ENGINEER
03/15/24

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO.

SV-ED3.02

TYPE AC (BX) AND MC CABLE ARE PROHIBITED.

GENERAL NOTES

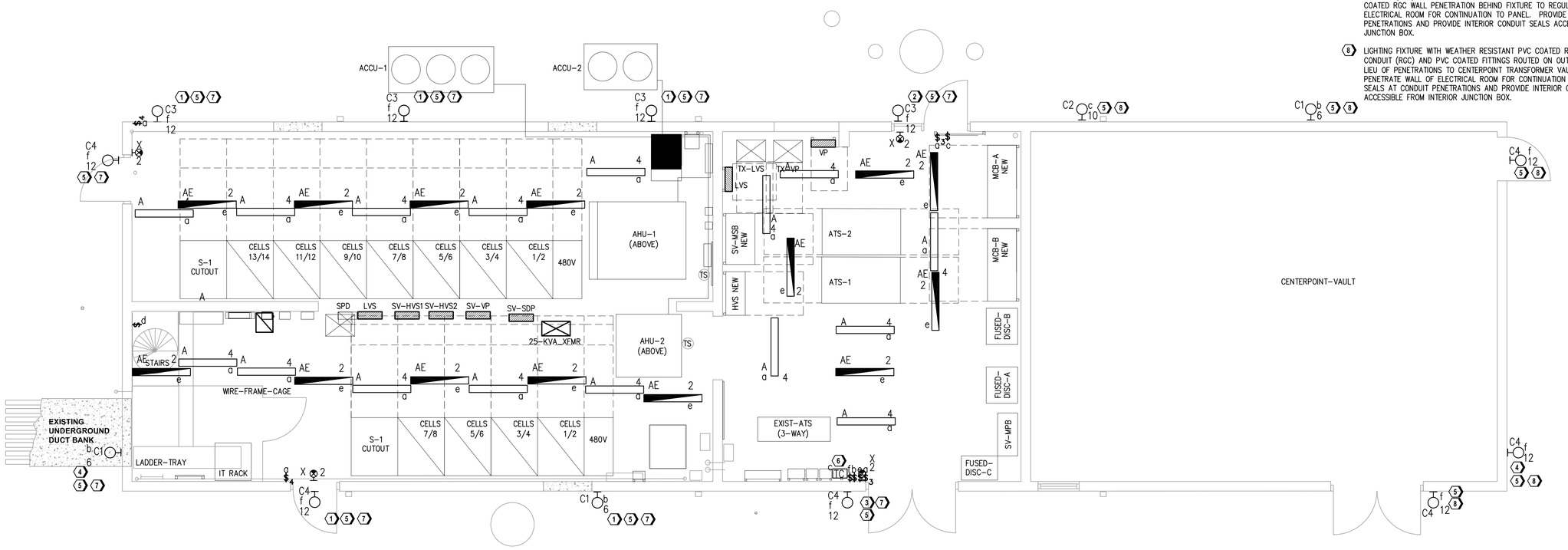
A. REFER TO SHEET SV-E0.01 FOR SYMBOLS, ABBREVIATIONS AND GENERAL NOTES.
B. EQUIPMENT INSTALLATION TO BE PHASED WITH ENABLING WORK FOR NEW EQUIPMENT TO REPLACE EXISTING EQUIPMENT, INSTALLATION OF NEW SERVICE FROM CENTERPOINT VAULT, INTERCONNECTION AND TESTING OF NEW EQUIPMENT, ENERGIZATION OF NEW EQUIPMENT, PHASED TRANSFER OF EXISTING LOADS TO NEW EQUIPMENT, DEMOLITION OF EQUIPMENT TO BE REMOVED. PHASING PLAN AND OUTAGES TO BE SUBMITTED TO OPERATIONS FOR APPROVAL 1 MONTH PRIOR AND COORDINATED WITH OPERATIONS AND CENTERPOINT ENERGY.
C. SUBSCRIPT INDICATES FIXTURE TYPE, CONTROLLING SWITCH AND CIRCUIT NUMBER. I.E.:

A — A — 1 — a

A INDICATES FIXTURE TYPE
a INDICATES CONTROLLING SWITCH (a,b,c)
PC INDICATES PHOTOCELL CONTROL
1 INDICATES CIRCUIT NO.
PANEL LVS UNLESS OTHERWISE NOTED

LIGHTING PLAN KEYED NOTES

1. NEW LIGHTING FIXTURE TO BE COORDINATED WITH WALL RESTORATION WHEN EXISTING LOUVER, DAMPER, AND VENT FAN ARE REMOVED AND WALL RESTORED.
2. NEW EXTERIOR LIGHTING FIXTURE AT LOCATION OF NEW DOOR.
3. NEW EXTERIOR LIGHTING FIXTURE TO BE LOCATED AT EXISTING DOORS AND COORDINATED WITH NEW DOUBLE DOOR, TRANSOM AND FRAME.
4. PROVIDE INDICATING LIGHT (YELLOW FLASHING BEACON). MATCH AIRPORT STANDARDS. LIGHT TO OPERATE WHEN UTILITY HAS PERFORMED AUTO ROLL-OVER TO SECONDARY FEED.
5. EXTERIOR LIGHTING PROVIDED WITH INTEGRAL PHOTOCELL AND WITH CIRCUIT FROM ASTRONOMICAL TIME CLOCK.RELAY.
6. ASTRONOMICAL TIME CLOCK WITH 24 HOUR 7 DAY PER WEEK PROGRAMMABLE SCHEDULE WITH 12 LIGHTING CONTROL RELAYS WITH LOCAL OVER-RIDE SWITCHES AT DOORS FOR UP TO FOUR CONTROL ZONES. PROVIDE SEPARATE CONTROL ZONES AND OVER-RIDE SWITCHES FOR EACH LIGHTING CONTROL ZONE b, CONTROL ZONE c AND PROVISIONS FOR UP TO TWO FUTURE CONTROL ZONES. TIME CLOCK CONTROL POWER CIRCUIT LVS-13.
7. LIGHTING FIXTURE WITH WEATHER RESISTANT PVC COATED RIGID GALVANIZED CONDUIT (RGC) AND PVC COATED FITTINGS WITH CAST IRON BACK BOX AND PVC COATED RGC WALL PENETRATION BEHIND FIXTURE TO REGULATOR ROOM OR ELECTRICAL ROOM FOR CONTINUATION TO PANEL. PROVIDE SEALS AT CONDUIT PENETRATIONS AND PROVIDE INTERIOR CONDUIT SEALS ACCESSIBLE FROM INTERIOR JUNCTION BOX.
8. LIGHTING FIXTURE WITH WEATHER RESISTANT PVC COATED RIGID GALVANIZED CONDUIT (RGC) AND PVC COATED FITTINGS ROUTED ON OUTSIDE OF BUILDING IN LIEU OF PENETRATIONS TO CENTERPOINT TRANSFORMER VAULT. CONDUIT WILL PENETRATE WALL OF ELECTRICAL ROOM FOR CONTINUATION TO PANEL. PROVIDE SEALS AT CONDUIT PENETRATIONS AND PROVIDE INTERIOR CONDUIT SEALS ACCESSIBLE FROM INTERIOR JUNCTION BOX.



1 — SOUTH VAULT ELECTRICAL LIGHTING PLAN
SCALE: 1/4" = 1'-0"

0 4 8 12
GRAPHIC SCALE: 1/4" = 1'-0"

HOUSTON AIRPORT SYSTEM

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REVISIONS

NO.	DESCRIPTION	DATE
	ISSUED FOR CONSTRUCTION	03/15/24

CITY OF HOUSTON
HOUSTON AIRPORTS SYSTEM
Recommended _____ 03/29/2024
Director, Houston Airport System Date
Authorized Signature Representative

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH VAULT RENOVATIONS
ELECTRICAL LIGHTING PLAN

PROJECT MGR: AEO
DESIGNER: AO
DRAWN BY: SH
CHECK BY: NM

DATE:

STATE OF TEXAS
ARTHUR E. OTTO
75035
REGISTERED PROFESSIONAL ENGINEER
03/15/24

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO.

SV-EL3.01

TYPE AC (BX) AND MC CABLE ARE PROHIBITED.

GENERAL NOTES

A. REFER TO SHEET SV-E0.01 FOR SYMBOLS, ABBREVIATIONS AND GENERAL NOTES.

B. EQUIPMENT INSTALLATION TO BE PHASED WITH ENABLING WORK FOR NEW EQUIPMENT TO REPLACE EXISTING EQUIPMENT, INSTALLATION OF NEW SERVICE FROM CENTERPOINT VAULT, INTERCONNECTION AND TESTING OF NEW EQUIPMENT, ENERGIZATION OF NEW EQUIPMENT, PHASED TRANSFER OF EXISTING LOADS TO NEW EQUIPMENT, DEMOLITION OF EQUIPMENT TO BE REMOVED. PHASING PLAN AND OUTAGES TO BE SUBMITTED TO OPERATIONS FOR APPROVAL 1 MONTH PRIOR AND COORDINATED WITH OPERATIONS AND CENTERPOINT ENERGY.

C. SUBSCRIPT INDICATES FIXTURE TYPE, CONTROLLING SWITCH AND CIRCUIT NUMBER. I.E.:

A INDICATES FIXTURE TYPE
a INDICATES CONTROLLING SWITCH (a,b,c)
PC INDICATES PHOTOCELL CONTROL
1 INDICATES CIRCUIT NO.
PANEL LVS UNLESS OTHERWISE NOTED

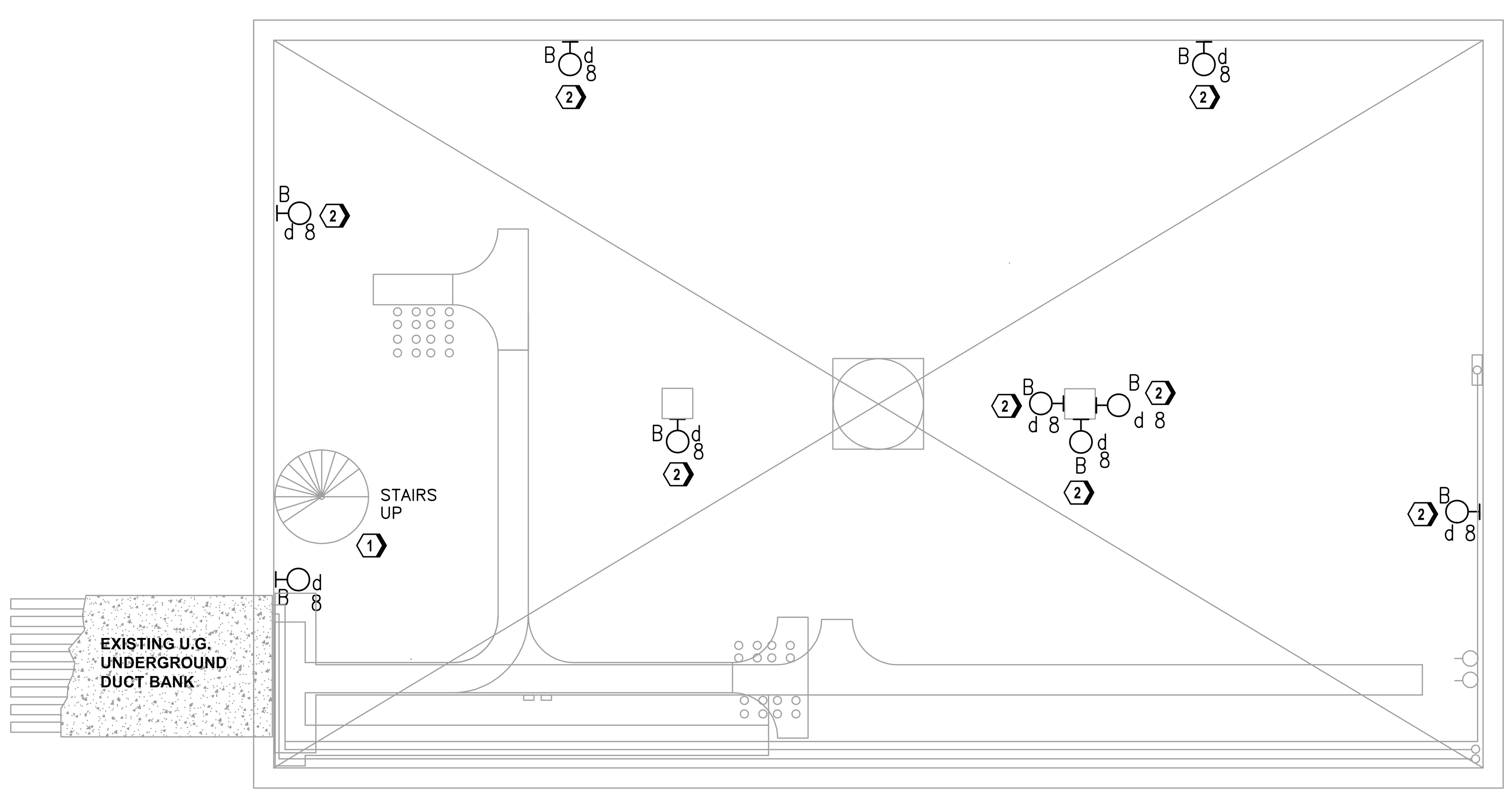
D. WIRE VAULT LIGHTING FIXTURES WILL BE OUTDOOR WEATHER RESISTANT RATED AND PROVIDED WITH WEATHER RESISTANT PVC COATED RIGID GALVANIZED CONDUIT (RGC) AND PVC COATED FITTINGS WITH CAST IRON BACK BOX AND PVC COATED RGC CONDUIT SEALS IN PENETRATIONS TO ELECTRICAL ROOM LEVEL ABOVE. ACCESSIBLE FROM INTERIOR JUNCTION BOX.

E. ALL CONDUIT IN WIRE VAULT IS TO BE WEATHER RESISTANT PVC COATED RIGID GALVANIZED CONDUIT (RGC) WITH PVC COATED OR STAINLESS STEEL (316L) PROVIDE INTERIOR CONDUIT SEALS PENETRATIONS TO LEVEL ABOVE AND TO EXTERIOR. JUNCTION BOXES AND BACK BOXES SHALL BE CAST IRON FS/FD RATED WITH SEALANT ON FITTING THREADS.

LIGHTING PLAN KEYED NOTES

(1) SWITCH ON LEVEL ABOVE WITH LED TO INDICATE WHEN SWITCH IS IN THE ON POSITION.

(2) NEW LIGHTING FIXTURES TO BE COORDINATED WITH CABLE TRAY.



1 WIRE VAULT ELECTRICAL LIGHTING PLAN
SCALE: 1/4" = 1'-0"

0 4 8 12
GRAPHIC SCALE: 1/4" = 1'-0"

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HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH VAULT RENOVATIONS
WIRE VAULT ELECTRICAL LIGHTING PLAN

PROJECT MGR: AEO
DESIGNER: AO
DRAWN BY: SH
CHECK BY: NM
DATE:

STATE OF TEXAS
ARTHUR E. OTTO
75035
REGISTERED PROFESSIONAL ENGINEER
03/15/24

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO.
SV-EL3.02

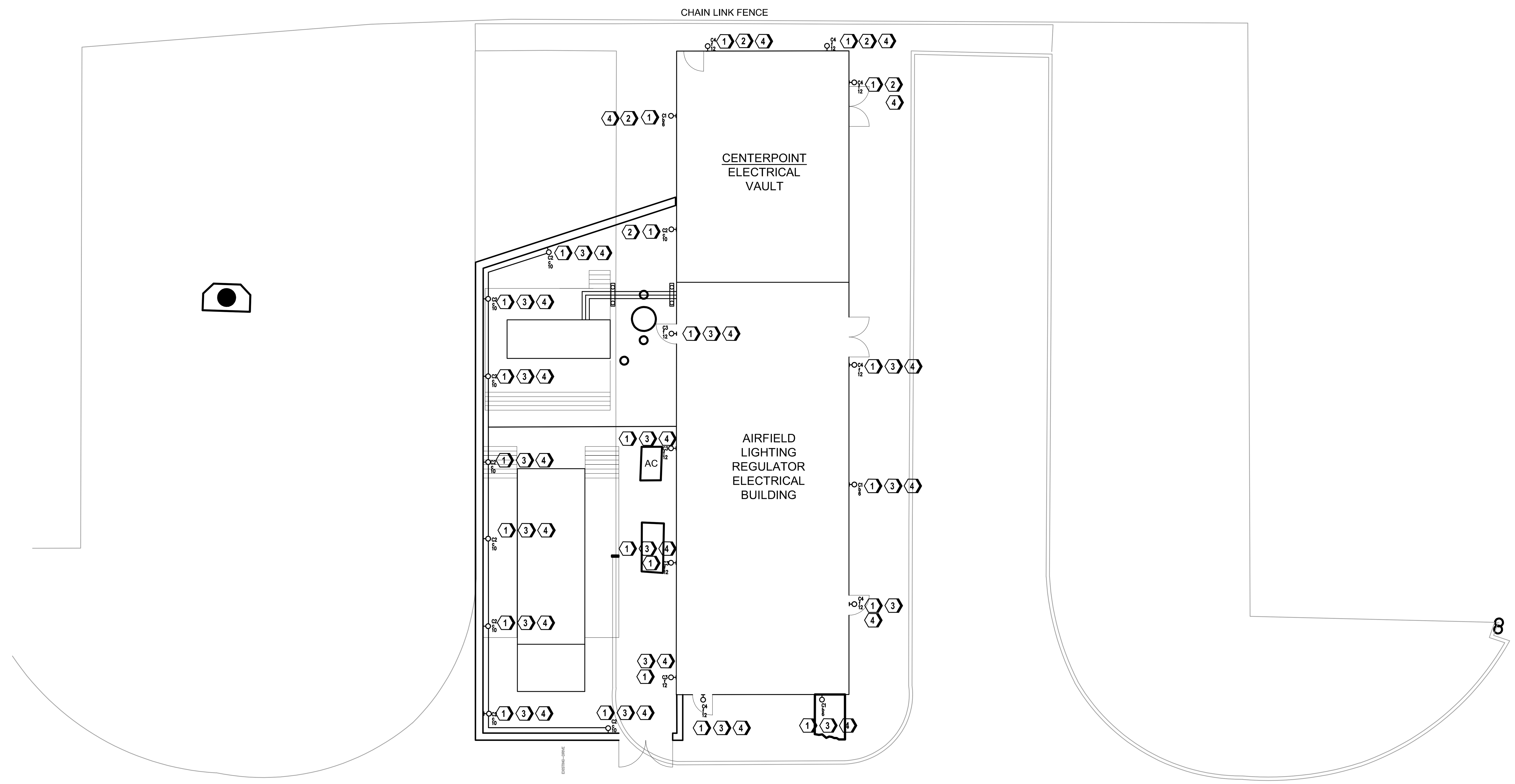
TYPE AC (BX) AND MC CABLE ARE PROHIBITED.

GENERAL NOTES

A. REFER TO SHEET SV-E0.01 FOR SYMBOLS, ABBREVIATIONS AND GENERAL NOTES.
B. EQUIPMENT INSTALLATION TO BE PHASED WITH ENABLING WORK FOR NEW EQUIPMENT TO REPLACE EXISTING EQUIPMENT, INSTALLATION OF NEW SERVICE FROM CENTERPOINT VAULT, INTERCONNECTION AND TESTING OF NEW EQUIPMENT, ENERGIZATION OF NEW EQUIPMENT, PHASED TRANSFER OF EXISTING LOADS TO NEW EQUIPMENT, DEMOLITION OF EQUIPMENT TO BE REMOVED. PHASING PLAN AND OUTAGES TO BE SUBMITTED TO OPERATIONS FOR APPROVAL 1 MONTH PRIOR AND COORDINATED WITH OPERATIONS AND CENTERPOINT ENERGY.

LIGHTING PLAN KEYED NOTES

1. NEW EXTERIOR LIGHTING FIXTURE (TYPICAL)
2. LIGHTING FIXTURE WITH WEATHER RESISTANT PVC COATED RIGID GALVANIZED CONDUIT (RGC) AND PVC COATED FITTINGS ROUTED ON OUTSIDE OF BUILDING IN LIEU OF PENETRATIONS TO CENTERPOINT TRANSFORMER VAULT. CONDUIT WILL PENETRATE WALL OF ELECTRICAL ROOM FOR CONTINUATION TO PANEL. PROVIDE SEALS AT CONDUIT PENETRATIONS AND PROVIDE INTERIOR CONDUIT SEALS ACCESSIBLE FROM INTERIOR JUNCTION BOX.
3. LIGHTING FIXTURE WITH WEATHER RESISTANT PVC COATED RIGID GALVANIZED CONDUIT (RGC) AND PVC COATED FITTINGS WITH CAST IRON BACK BOX AND PVC COATED RGC WALL PENETRATION BEHIND FIXTURE TO REGULATOR ROOM OR ELECTRICAL ROOM FOR CONTINUATION TO PANEL. PROVIDE SEALS AT CONDUIT PENETRATIONS AND PROVIDE INTERIOR CONDUIT SEALS ACCESSIBLE FROM INTERIOR JUNCTION BOX.
4. EXTERIOR LIGHTING PROVIDED WITH INTEGRAL PHOTOCELL AND WITH CIRCUIT FROM ASTRONOMICAL TIME CLOCK.RELAY. (TYPICAL FOR ALL EXTERIOR LIGHTING FIXTURES)



1 SOUTH VAULT ELECTRICAL SITE LIGHTING PLAN
SCALE: 3/32" = 1'-0"

0 8 16 32
GRAPHIC SCALE: 3/32" = 1'-0"

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HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH VAULT RENOVATIONS
ELECTRICAL SITE LIGHTING PLAN

PROJECT MGR: AEO
DESIGNER: AO
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CHECK BY: NM
DATE:

STATE OF TEXAS
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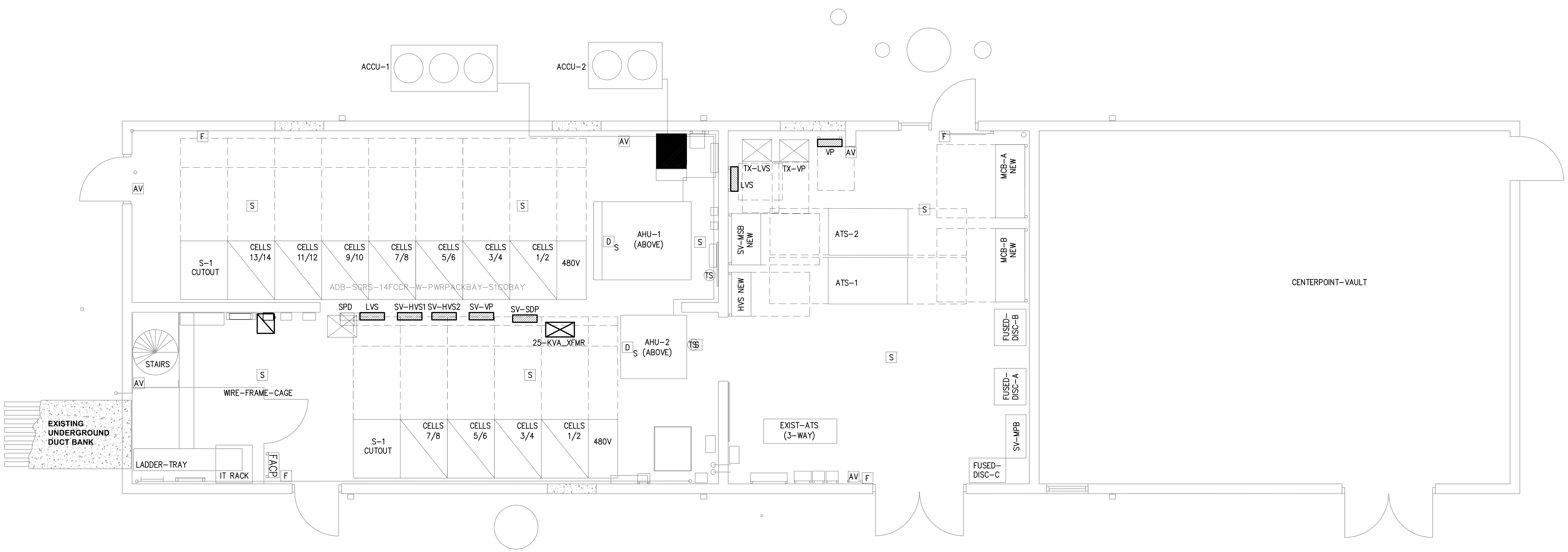
JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO.
SV-EL3.03

TYPE AC (BX) AND MC CABLE ARE PROHIBITED.

GENERAL NOTES

A. REFER TO SHEET SV-E0.01 FOR SYMBOLS, ABBREVIATIONS AND GENERAL NOTES.
B. FIRE ALARM DEVICES ARE SHOWN FOR COORDINATION.
C. FIRE ALARM DESIGN WILL BE DEFERRED SUBMITTAL BY FIRE ALARM CONTRACTORS NICET LEVEL 3 DESIGN TEAM.
D. ALL FIRE ALARM DEVICES AND CABLING WILL BE INSTALLED IN JUNCTION BOXES AND CONDUIT.



1 SOUTH VAULT FIRE ALARM COORDINATION PLAN
SCALE: 1/4" = 1'-0"

0 4 8 12
GRAPHIC SCALE: 1/4" = 1'-0"

HOUSTON AIRPORT SYSTEM

Jacobs

818 Town & Country Blvd.
Suite 500
Houston, TX 77024
(281) 721-8400
www.jacobs.com TBPE Firm #2966

REVISIONS

NO.	DESCRIPTION	DATE
	ISSUED FOR CONSTRUCTION	03/15/24

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH VAULT RENOVATIONS
FIRE ALARM COORDINATION PLAN

PROJECT MGR: AEO
DESIGNER: AO
DRAWN BY: SH
CHECK BY: NM

DATE:

STATE OF TEXAS
ARTHUR E. OTTO
75035
REGISTERED PROFESSIONAL ENGINEER
03/15/24

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

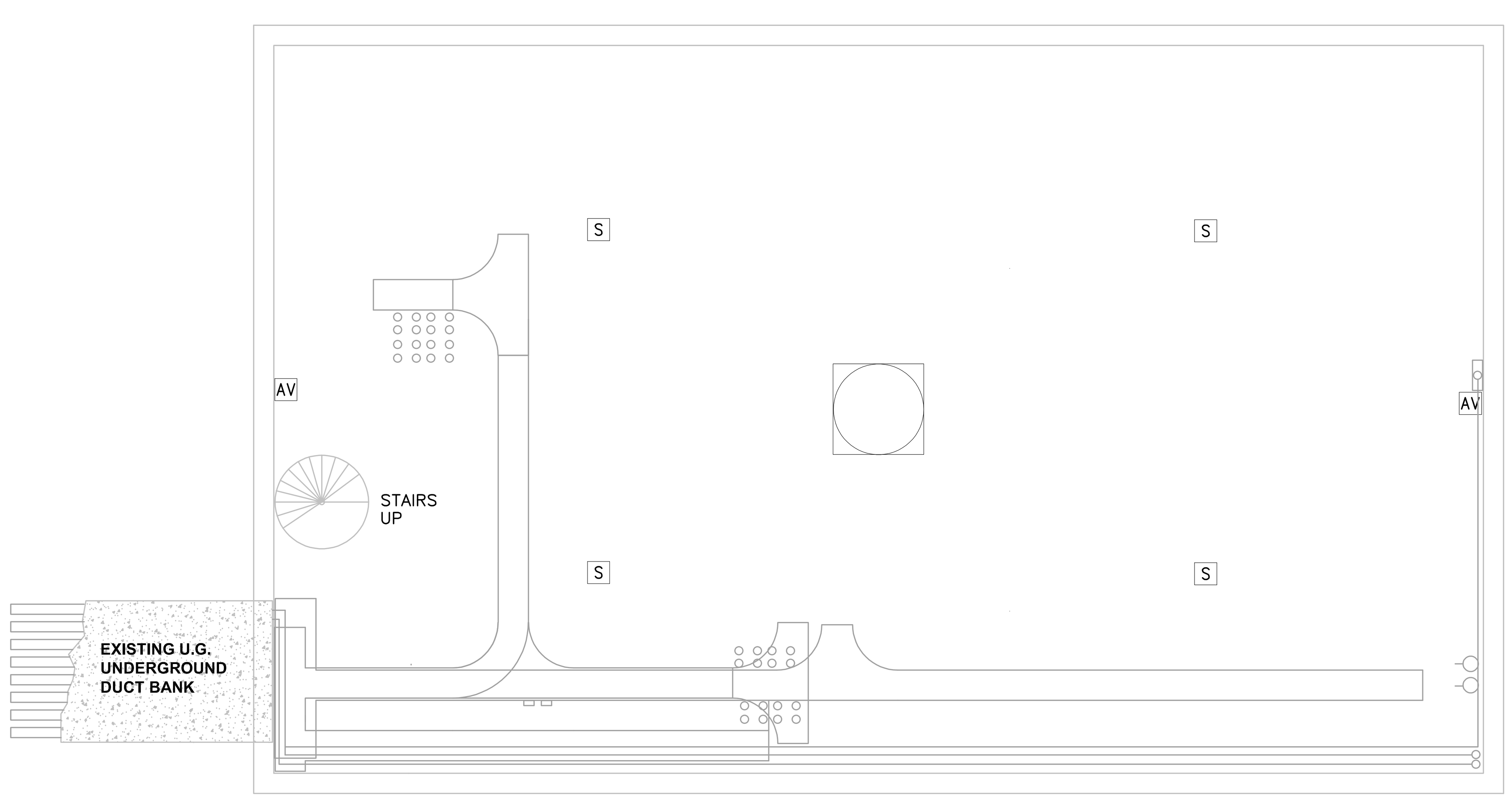
SHEET NO.

SV-EF3.01

TYPE AC (BX) AND MC CABLE ARE PROHIBITED.

GENERAL NOTES

A. REFER TO SHEET SV-E0.01 FOR SYMBOLS, ABBREVIATIONS AND GENERAL NOTES.
B. FIRE ALARM DEVICES ARE SHOWN FOR COORDINATION.
C. FIRE ALARM DESIGN WILL BE DEFERRED SUBMITTAL BY FIRE ALARM CONTRACTORS NICET LEVEL 3 DESIGN TEAM.
D. ALL FIRE ALARM DEVICES AND CABLING WILL BE INSTALLED IN JUNCTION BOXES AND CONDUIT.
E. ALL CONDUIT IN WIRE VAULT IS TO BE WEATHER RESISTANT PVC COATED RIGID GALVANIZED CONDUIT (RGC) WITH PVC COATED OR STAINLESS STEEL (316L) PROVIDE INTERIOR CONDUIT SEALS PENETRATIONS TO LEVEL ABOVE AND TO EXTERIOR. JUNCTION BOXES AND BACK BOXES SHALL BE CAST IRON FS/FD RATED WITH SEALANT ON FITTING THREADS.



1 WIRE VAULT FIRE ALARM COORDINATION PLAN
SCALE: 1/4" = 1'-0"

0 4 8 12
GRAPHIC SCALE: 1/4" = 1'-0"

HOUSTON AIRPORT SYSTEM

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REVISIONS

NO.	DESCRIPTION	DATE
	ISSUED FOR CONSTRUCTION	03/15/24

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH VAULT RENOVATIONS
WIRE VAULT FIRE ALARM COORDINATION PLAN

PROJECT MGR: AEO
DESIGNER: AO
DRAWN BY: SH
CHECK BY: NM
DATE:

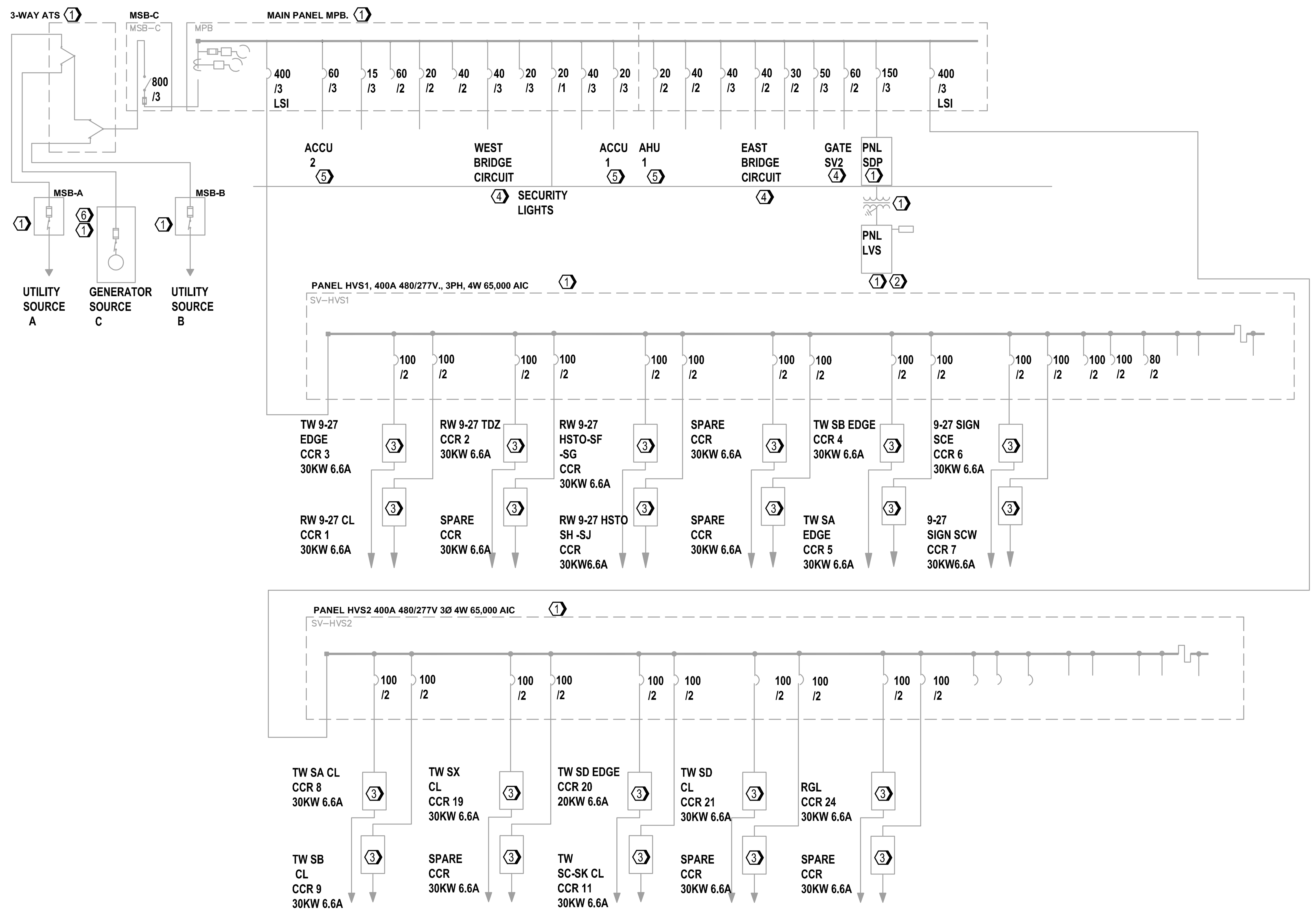
STATE OF TEXAS
ARTHUR E. OTTO
75035
REGISTERED PROFESSIONAL ENGINEER
03/15/24

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO.
SV-EF3.02



TYPE AC (BX) AND MC CABLE ARE PROHIBITED.

GENERAL NOTES

A. REFER TO SHEET SV-E0.01 FOR SYMBOLS, ABBREVIATIONS AND GENERAL NOTES.
B. EQUIPMENT INSTALLATION TO BE PHASED WITH ENABLING WORK FOR NEW EQUIPMENT TO REPLACE EXISTING EQUIPMENT, INSTALLATION OF NEW SERVICE FROM CENTERPOINT VAULT, INTERCONNECTION AND TESTING OF NEW EQUIPMENT, ENERGIZATION OF NEW EQUIPMENT, PHASED TRANSFER OF EXISTING LOADS TO NEW EQUIPMENT, DEMOLITION OF EQUIPMENT TO BE REMOVED. PHASING PLAN AND OUTAGES TO BE SUBMITTED TO OPERATIONS FOR APPROVAL 1 MONTH PRIOR AND COORDINATED WITH OPERATIONS AND CENTERPOINT ENERGY.

NEW CONSTRUCTION
EXISTING TO BE DEMOLISHED

XX,XXX INDICATES AVAILABLE FAULT CURRENT. AMPS RMS SYM

BREAKER SPEC/TRIP CODE:

L=LONG-TIME ADJ.
S=SHORT TIME ADJ.
I=INSTANTANEOUS ADJ.
G=GROUND FAULT TRIP
ST=SHUNT TRIP
EO=ELECTRICALLY OPERATED

KEYED NOTES

1. EXISTING PANELS, TRANSFORMERS AND FEEDERS TO BE REPLACED WITH NEW ELECTRICAL DISTRIBUTION INDICATED ON SV-E401.
2. EXISTING PANEL TO BE REPLACED WITH NEW PANEL AND NEW FEEDERS FROM UPSTREAM PANEL. RECONNECT NEW BRANCH BREAKERS TO SUPPLY EXISTING LOADS UNLESS OTHERWISE NOTED.
3. EXISTING REGULATORS TO BE REPLACED WITH NEW REGULATORS AND NEW 5 KV CABLE TO S1 CABINET AND TO NEW SPLICE POINT IN BASEMENT TO SPLICE TO EXISTING AIRFIELD LIGHTING CIRCUIT. EXISTING REGULATORS TO BE TEMPORARILY RE-SUPPLIED FROM NEW HVS PANEL FOR PHASING REQUIREMENTS TO INSTALL NEW REGULATOR SGR2.
4. FEEDER TO EXISTING PANEL TO BE RE-SUPPLIED FROM NEW DISTRIBUTION SWITCHBOARD OR PANEL WITH SPLICE AT BUILDING CONDUIT EXIT TO EXISTING FEEDERS..
5. EXISTING EQUIPMENT TO BE RE-SUPPLIED FROM NEW PANEL WITH NEW FEEDERS AND NEW FUSED DISCONNECT AT EQUIPMENT.
6. ORIGINAL GENERATOR IS OUT OF SERVICE. EXISTING 3-WAY ATS IS CONNECTED TO TEMPORARY GENERATOR UNTIL REPLACEMENT.

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HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH VAULT RENOVATIONS
ELECTRICAL DEMO ONE LINE DIAGRAM

PROJECT MGR: AEO
DESIGNER: AO
DRAWN BY: SH
CHECK BY: NM

DATE:

STATE OF TEXAS
ARTHUR E. OTTO
75035
REGISTERED PROFESSIONAL ENGINEER
03/15/24

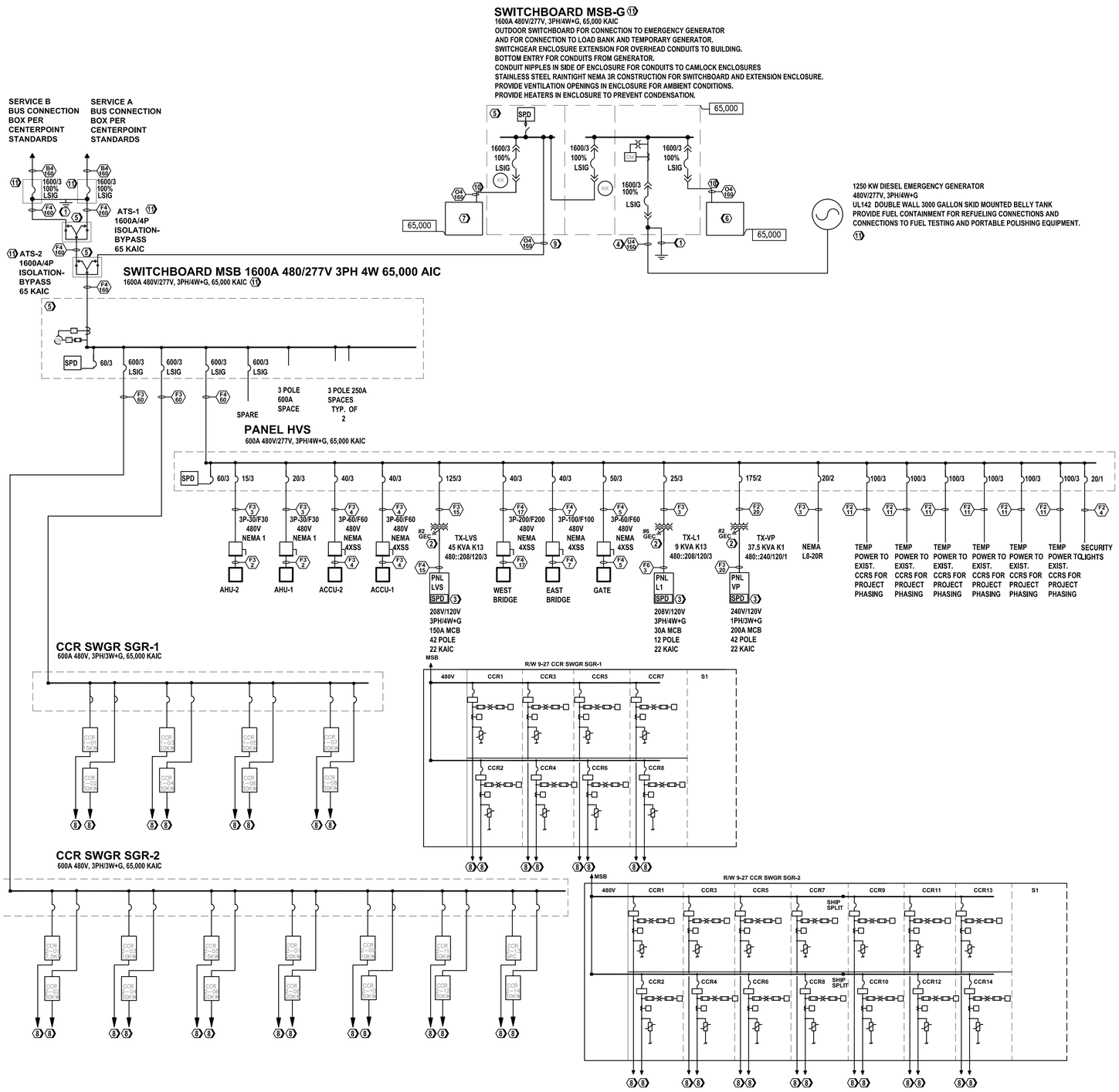
APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO.
SV-ED4.01

TYPE AC (BX) AND MC CABLE ARE PROHIBITED.



GENERAL NOTES

A. REFER TO SHEET SV-E0.01 FOR SYMBOLS, ABBREVIATIONS AND GENERAL NOTES.
B. EQUIPMENT INSTALLATION TO BE PHASED WITH ENABLING WORK FOR NEW EQUIPMENT TO REPLACE EXISTING EQUIPMENT, INSTALLATION OF NEW SERVICE FROM CENTERPOINT VAULT, INTERCONNECTION AND TESTING OF NEW EQUIPMENT, ENERGIZATION OF NEW EQUIPMENT, PHASED TRANSFER OF EXISTING LOADS TO NEW EQUIPMENT, DEMOLITION OF EQUIPMENT TO BE REMOVED. PHASING PLAN AND OUTAGES TO BE SUBMITTED TO OPERATIONS FOR APPROVAL 1 MONTH PRIOR AND COORDINATED WITH OPERATIONS AND CENTERPOINT ENERGY.
C. PERFORM SHORT CIRCUIT STUDY, COORDINATION STUDY AND ARC FLASH STUDY AS SPECIFIED BY 260573.13, 260573.16, 260573.19. ADJUST CIRCUIT BREAKERS AND PLACE ARC-FLASH LABEL ON ALL ELECTRICAL EQUIPMENT.
MEG-OHM TEST ALL FEEDER AND SERVICE ENTRANCE CONDUCTORS. ALL TESTING DOCUMENTATION SHALL BE DOCUMENTED, RECORDED AND SIGNED BY MASTER ELECTRICIAN.
D. TORQUE AND MARK ALL FEEDER AND SERVICE ENTRANCE CONDUCTOR TERMINATIONS. ALL TESTING DOCUMENTATION SHALL BE DOCUMENTED, RECORDED AND SIGNED BY MASTER ELECTRICIAN.
E. TEST AND DOCUMENT ALL FEEDER, SERVICE ENTRANCE CONDUCTOR, TRANSFORMER, BRANCH CIRCUIT AND RECEPTACLE POLARITIES. ALL TESTING DOCUMENTATION SHALL BE DOCUMENTED, RECORDED AND SIGNED BY MASTER ELECTRICIAN.
F. ALL TESTING DOCUMENTATION SHALL BE DOCUMENTED, RECORDED AND SIGNED BY MASTER ELECTRICIAN.

——— NEW CONSTRUCTION
——— EXISTING TO REMAIN

XX,XXX INDICATES AVAILABLE FAULT CURRENT. AMPS RMS SYM

BREAKER SPEC/TRIP CODE:

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G=GROUND FAULT TRIP
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EO=ELECTRICALLY OPERATED

KEYED NOTES

(1) TEST EXISTING GROUND SYSTEM AND ADD GROUND RODS AS REQUIRED FOR 3 OHMS TO EARTH PER SOIL TESTING. CONNECT MAIN GROUND BAR TO BUILDING STRUCTURAL STEEL, BUILDING METAL PIPING, CONCRETE ENCASED REINFORCING BARS OF BUILDING. PROVIDE SEPARATE INSULATED DOWNLEADS AND GROUNDING FIELD FOR NEW LIGHTNING PROTECTION SYSTEM WITH 10 FOOT MINIMUM BETWEEN THE TWO GROUNDING SYSTEMS. BOND LIGHTNING PROTECTION SYSTEM WITH INSULATED CONDUCTOR TO MAIN GROUND BAR IN ELECTRICAL ROOM. PROVIDE 4"X36" INSULATED COPPER BUS GROUND BAR AT 108" ON WALL. CONDUIT FOR TERMINATION OF CONDUCTORS FROM SERVICE EARTH GROUND AND TO STEP DOWN TRANSFORMERS, CABLE TRAY, AND CONDUIT BOND RINGS AND EQUIPMENT. CONDUITS FOR GROUND CONDUCTORS SHALL BE BONDED AT EACH END.

(2) PROVIDE GROUND CONDUCTORS FROM TRANSFORMERS TO BUILDING STEEL AND TO 4"X24" INSULATED COPPER BUS GROUND BAR (KEY NOTE 5). CONDUITS FOR GROUND CONDUCTORS SHALL BE BONDED AT EACH END.

(3) REPLACE EXISTING PANEL WITH NEW PANEL WITH BREAKERS TO MATCH EXISTING PANEL AND RECONNECT TO EXISTING FEEDERS. NEW TRANSFORMER TO BE LOCATED ADJACENT TO EXISTING PANEL FOR 10 FT OR LESS WIRE LENGTH FROM TRANSFORMER TO MAIN CIRCUIT BREAKER IN PANEL.

(4) FEEDER IN CONCRETE ENCASED DUCTBANK.

(5) PROVIDE PERMANENT LAMINATED ENGRAVED PLACARD DENOTING THE LOCATION OF ALL OTHER ELECTRICAL SERVICES PER NEC ARTICLE 230.2(E) AND FAULT CURRENT PER NEC 110.24.

(6) CAMLOCK CONNECTION FOR PORTABLE GENERATOR LOAD BANK

(7) CAMLOCK CONNECTION FOR FUTURE TEMPORARY GENERATOR

(8) NEW REGULATOR WITH NEW 5 KV CABLE TO S1 CABINET AND TO NEW SPLICE POINT IN BASEMENT TO SPLICE TO EXISTING AIRFIELD LIGHTING CIRCUIT.

(9) FEEDER ON OVERHEAD PIPE SUPPORTS.

(10) FEEDER NIPPLES BETWEEN SWITCHGEAR AND CAMLOCK BOX.

(11) PROVIDE INFRARED SCANNING PORTS ON SWITCHBOARDS, TRANSFORMERS, MAIN ENCLOSED BREAKERS, GENERATOR TERMINALS, AND AUTOMATIC TRANSFER SWITCHES FOR INFRARED SCANNING OF CABLE TERMINATIONS AND BUS JOINTS.

HOUSTON AIRPORT SYSTEM

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REVISIONS

NO.	DESCRIPTION	DATE
	ISSUED FOR CONSTRUCTION	03/15/24

CITY OF HOUSTON HOUSTON AIRPORTS SYSTEM
Recommended _____ 02/29/2024
Director, Facility Design & Construction Date
Houston Airport System Representative
The review by the Houston Airport System is only for general conformance with the design concept of the project and general compliance with the information given in the contract documents. It does not relieve the Contractor of responsibility for any deviations from the requirements of the contract documents. The Contractor is responsible for confirming and correlating all quantities and dimensions, selecting fabrication processes and techniques of construction, coordinating his work with that of all other trades and performing his work in a safe and satisfactory manner. HOUSTON AIRPORT SYSTEM

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH VAULT RENOVATIONS
ELECTRICAL ONE LINE DIAGRAM

PROJECT MGR: AEO
DESIGNER: AO
DRAWN BY: SH
CHECK BY: NM
DATE:

STATE OF TEXAS
ARTHUR E. OTTO
75035
REGISTERED PROFESSIONAL ENGINEER
03/15/24

APPROVED BY:

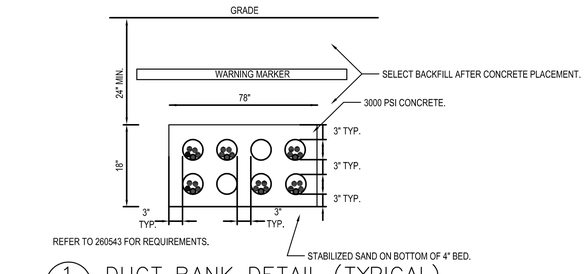
DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

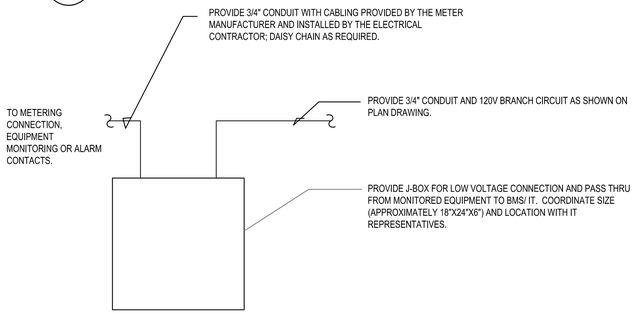
SHEET NO.

SV-E4.01

TYPE AC (BX) AND MC CABLE ARE PROHIBITED.

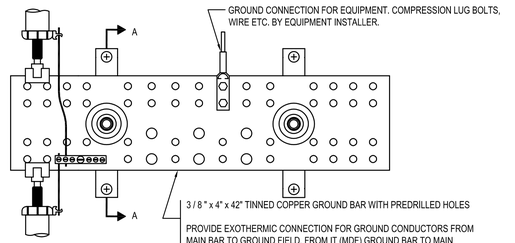


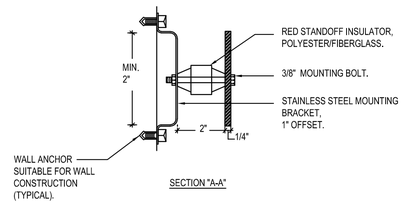
1 – DUCT BANK DETAIL (TYPICAL)
SCALE: N.T.S.



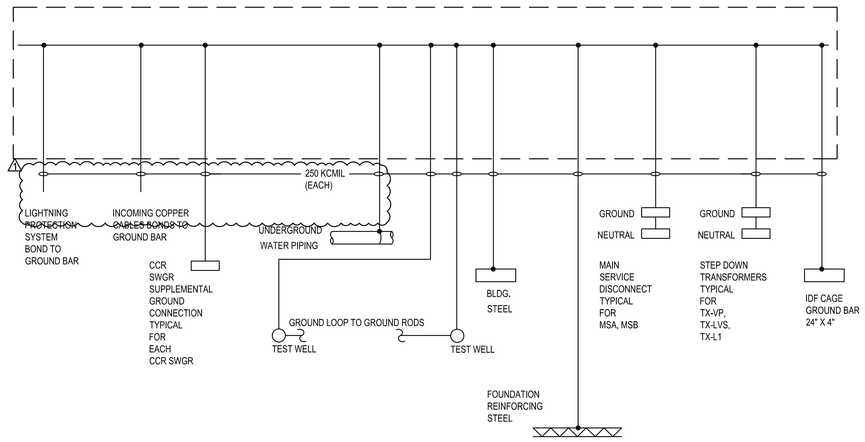
NOTES:
1. DAISY CHAIN 3/4" CONDUIT TO ALL DEVICES BEING MONITORED IN THE AREA.
2. PROVIDE CONDUIT AND CABLING FROM THE J-BOX TO THE MONITORED EQUIPMENT AND FROM THE J-BOX TO THE IT EQUIPMENT CAGE AND TERMINATE FOR REMOTE MONITORING.

2 – BMS INTERFACE
SCALE: N.T.S.



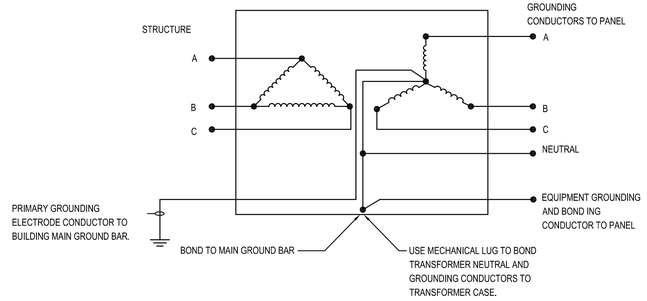


3 – GROUND BAR
SCALE: N.T.S.

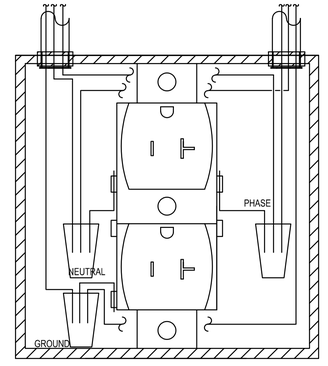


4 – SERVICE ENTRANCE EQUIPMENT GROUNDING DETAIL
SCALE: N.T.S.

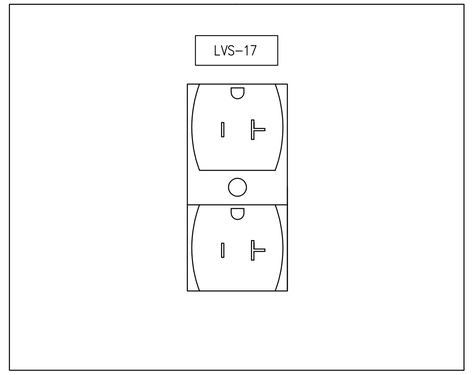
PRIMARY	SECONDARY
480V, 3Ø, 3W FOR 480: 208/120V/3Ø TRANSFORMERS 480V, 1Ø, 2W FOR 480: 240/120V/1Ø TRANSFORMERS	208Y/120, 3Ø, 4W 240/120, 1Ø, 3W



5 – TRANSFORMER GROUNDING DETAIL
SCALE: N.T.S.



PROVIDE SCOTCH LOCK CONNECTORS FOR CONTINUATION TO NEXT RECEPTACLE.
PROVIDE ELECTRICAL TAPE AROUND PERIMETER OF RECEPTACLE BODY TO INSULATE TERMINAL SCREWS.



PROVIDE STAINLESS FACEPLATE AND JUNCTION BOX.
PROVIDE CIRCUIT IDENTIFICATION.

6 – RECEPTACLE, RECEPTACLE TERMINATIONS AND FACEPLATE DETAILS
SCALE: N.T.S.

HOUSTON AIRPORT SYSTEM

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REVISIONS

NO.	DESCRIPTION	DATE
ISSUED FOR CONSTRUCTION		03/15/24

CITY OF HOUSTON HOUSTON AIRPORTS SYSTEM
Recommended _____ 03/29/2024
Director, Facility Design & Construction Date
Houston Airport System Representative
THE APPROVAL OF THESE PLANS AND SPECIFICATIONS IS NOT TO BE CONSTRUED AS AUTHORIZATION OR APPROVAL OF THE VIOLATION OF ANY ORDINANCE, CODE OR LAW. IT IS UNDERSTOOD AND AGREED THAT THE PERFORMANCE AND APPROVAL OF THESE PLANS DO NOT RELIEVE THE ENGINEER OF RESPONSIBILITY TO COMPLY WITH ALL CODES AND LAWS AND ASSUMES NO RESPONSIBILITY FOR ANY VIOLATIONS THEREOF.

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH VAULT RENOVATIONS
DETAILS

PROJECT MGR: AEO
DESIGNER: AO
DRAWN BY: SH
CHECK BY: NM

DATE:

STATE OF TEXAS
ARTHUR E. OTTO
75035
REGISTERED PROFESSIONAL ENGINEER
03/15/24

APPROVED BY:

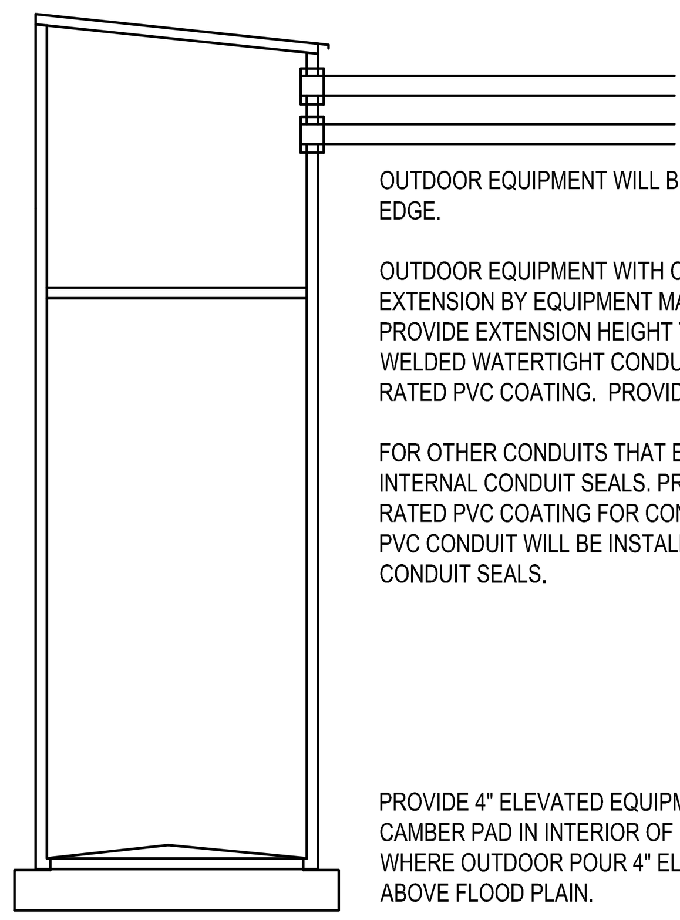
DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO.

SV-E5.01

TYPE AC (BX) AND MC CABLE ARE PROHIBITED.



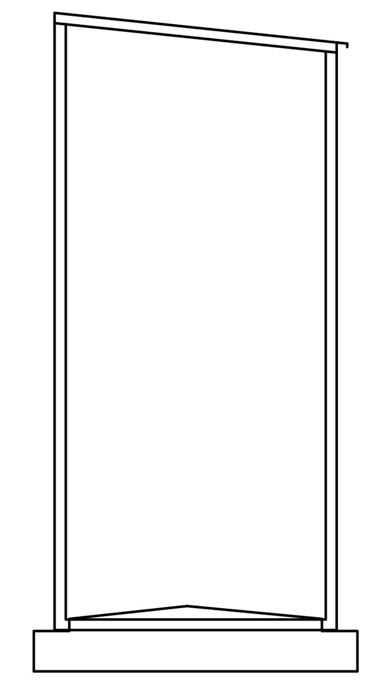
OUTDOOR EQUIPMENT WILL BE NEMA 4X AND RAIN RESISTANT WITH SLOPED ROOF TO DRIP EDGE.

OUTDOOR EQUIPMENT WITH CONDUIT ON ELEVATED STRUCTURE WILL BE PROVIDED WITH EXTENSION BY EQUIPMENT MANUFACTURER FOR CONDUITS AT REAR OF ENCLOSURE. PROVIDE EXTENSION HEIGHT TO MAINTAIN NEC BEND RADIUS FOR CONDUCTORS. PROVIDE WELDED WATERTIGHT CONDUIT CONNECTIONS FOR RIGID METAL CONDUIT WITH OUTDOOR RATED PVC COATING. PROVIDE INTERNAL CONDUIT SEALS.

FOR OTHER CONDUITS THAT ENTER AND EXIT AT BOTTOM OF ENCLOSURE. PROVIDE INTERNAL CONDUIT SEALS. PROVIDE RIGID METAL CONDUIT AND ELBOWS WITH OUTDOOR RATED PVC COATING FOR CONNECTION TO UNDERGROUND PVC CONDUIT. UNDERGROUND PVC CONDUIT WILL BE INSTALLED IN CONCRETE ENCASED DUCTBANK. PROVIDE INTERNAL CONDUIT SEALS.

PROVIDE 4" ELEVATED EQUIPMENT PAD EXTENDED TO 2" OUTSIDE EQUIPMENT FOOTPRINT. CAMBER PAD IN INTERIOR OF EQUIPMENT FROM THE CENTER DOWN TO THE SIDES. WHERE OUTDOOR POUR 4" ELEVATED PAD AS PART OF EQUIPMENT FOUNDATION ELEVATED ABOVE FLOOD PLAIN.

1 / – OUTDOOR EQUIPMENT DETAIL
SCALE: N.T.S.

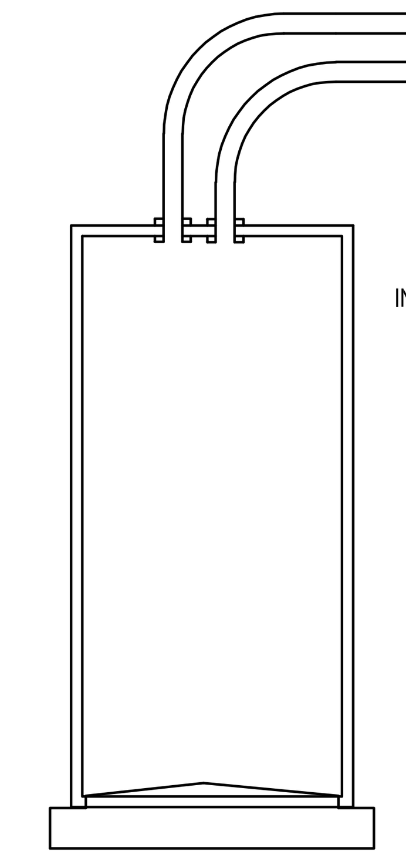


OUTDOOR EQUIPMENT WILL BE NEMA 4X AND RAIN RESISTANT WITH SLOPED ROOF TO DRIP EDGE.

CONDUIT WILL ENTER AND EXIT AT BOTTOM OF ENCLOSURE. PROVIDE INTERNAL CONDUIT SEALS. PROVIDE RIGID METAL CONDUIT AND ELBOWS WITH OUTDOOR RATED PVC COATING FOR CONNECTION TO UNDERGROUND PVC CONDUIT. UNDERGROUND PVC CONDUIT WILL BE INSTALLED IN CONCRETE ENCASED DUCTBANK. PROVIDE INTERNAL CONDUIT SEALS.

PROVIDE 4" ELEVATED EQUIPMENT PAD EXTENDED TO 2" OUTSIDE EQUIPMENT FOOTPRINT. CAMBER PAD IN INTERIOR OF EQUIPMENT FROM THE CENTER DOWN TO THE SIDES. WHERE OUTDOOR POUR 4" ELEVATED PAD AS PART OF EQUIPMENT FOUNDATION ELEVATED ABOVE FLOOD PLAIN.

2 / – OUTDOOR EQUIPMENT DETAIL
SCALE: N.T.S.



INDOOR EQUIPMENT WILL BE NEMA 1 (NEMA 3R WHERE SPECIFIED)

PROVIDE 4" ELEVATED EQUIPMENT PAD EXTENDED TO 2" OUTSIDE EQUIPMENT FOOTPRINT. CAMBER PAD IN INTERIOR OF EQUIPMENT FROM THE CENTER DOWN TO THE SIDES. WHERE OUTDOOR POUR 4" ELEVATED PAD AS PART OF EQUIPMENT FOUNDATION ELEVATED ABOVE FLOOD PLAIN.

3 / – INDOOR EQUIPMENT DETAIL
SCALE: N.T.S.

HOUSTON AIRPORT SYSTEM

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REVISIONS

NO.	DESCRIPTION	DATE
	ISSUED FOR CONSTRUCTION	03/15/24

CITY OF HOUSTON
HOUSTON AIRPORTS SYSTEM
Recommended SALAZAR 03/29/2024
Houston Airports System DATE
Director or Designated Representative

REVIEWED / NO EXCEPTIONS TAKEN
The drawings & support documents submitted for permit review meet the design intent, and to the best of our knowledge, appear to be in compliance with current HAS approved standards.
Performance and approval of this review does not waive, nor relieve the applicant from full responsibility & liability to conform and comply with all applicable standards, codes, and regulations required from all Authorities Having Jurisdiction (AHJ).

HOUSTON AIRPORT SYSTEM
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4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH VAULT RENOVATIONS
DETAILS

PROJECT MGR: AEO
DESIGNER: AO
DRAWN BY: SH
CHECK BY: NM

DATE:

STATE OF TEXAS
ARTHUR E. OTTO
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B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO.
SV-E5.02

TYPE AC (BX) AND MC CABLE ARE PROHIBITED.

FEEDER SCHEDULE

MARK	CONDUIT	CONDUCTORS PER CONDUIT
F2 3	1"	2 #10, 1 #10G
F3 3	1"	3 #10, 1 #10G
F4 3	1"	3 #10, 1 #10 N, 1 #10G
F2 4	1"	2 #8, 1 #10G
F3 4	1"	3 #8, 1 #10G
F4 4	1"	4 #8, 1 #10G
F3 5	1"	3 #6, 1 #10G
F4 5	1"	3 #6, 1 #6 N, 1 #10G
F3 7	1"	3 #4, 1 #8G
F4 7	1-1/4"	3 #4, 1 #4 N, 1 #8G
F5 7	1-1/4"	3 #4, 2 #4 N, 1 #8G
F3 8	1-1/4"	3 #3, 1 #8G
F4 8	1-1/4"	3 #3, 1 #3 N, 1 #8G
F2 11	1-1/2"	2 #1, 1#6G
F3 11	1-1/2"	3 #1, 1#6G
F4 11	2"	3 #1, 1 #1 N, 1 #6G
F3 12	1-1/2"	3 #1/0, 1 #6G
F4 12	2"	3 #1/0, 1 #1/0N, 1 #6G
F3 15	1-1/2"	3 #1/0, 1#6G
F4 15	2"	3 #1/0, 1 #1/0 N, 1 #6G
F5 15	2"	3 #1/0, 2 #1/0 N, 1 #6G,
F3 17	2"	3 #2/0, 1 #6G
F4 17	2"	3 #2/0, 1 #2/0 N, 1 #6G
F2 20	2"	2 #3/0, 1 #6G
F3 20	2"	3 #3/0, 1 #6G
F4 20	2-1/2"	3 #3/0, 1 #3/0 N, 1 #6G
F3 22	2"	3 #4/0, 1 #4G
F4 22	2-1/2"	3 #4/0, 1 #4/0 N, 1 #4G
F5 22	3"	3 #4/0, 2 #4/0 N, 1 #4G,
F2 25	2-1/2"	2 #250kcmil, 1 #4G
F3 25	2-1/2"	3 #250kcmil, 1 #4G
F4 25	3"	3 #250kcmil, 1 #250kcmil N, 1 #4G
F2 30	3"	3 #350kcmil, 1 #4G
F3 30	3"	3 #350kcmil, 1 #4G
F4 30	3"	3 #350kcmil, 1 #350kcmil N, 1 #4G
F2 35	3"	2 #500kcmil, 1 #2G
F3 35	3"	3 #500kcmil, 1 #2G
F4 35	3-1/2"	3 #500kcmil, 1 #500kcmil N, 1 #2G
F2 40	3-1/2"	2 #600kcmil, 1 #2G
F3 40	4"	3 #600kcmil, 1 #2G
F4 40	4"	3 #600kcmil, 1 500kcmil N, 1#2G
F5 40	4"	3 #600kcmil, 2 #500kcmil N, 1#2G
F3 45	(2) 2"	3 #4/0, 1 #2G
F4 45	(2) 2-1/2"	3 #4/0, 1 #4/0 N, 1 #2G
F2 50	(2) 2-1/2"	2 #250kcmil, 1 #2G
F3 50	(2) 2-1/2"	3 #250kcmil, 1 #2G
F4 50	(2) 3"	3 #250kcmil, 1 #250kcmil N, 1 #2G
F5 50	(2) 3"	3 #250kcmil, 2 #250kcmil N, 1 #2G
F3 60	(2) 3"	3 #350kcmil, 1 #1G
F4 60	(2) 3"	3 #350kcmil, 1 #350kcmil N, 1 #1G
F3 80	(2) 4"	3 #600kcmil, 1 #1/0G
F4 80	(2) 4"	3 #600kcmil, 1 #600kcmil N, 1 #1/0G
F5 80	(2) 4"	3 #600kcmil, 2 #600kcmil N, 1 #1/0G
F3 100	(3) 3"	3 #400kcmil, 1 #2/0G
F4 100	(3) 3-1/2"	3 #400kcmil, 1 #400kcmil N, 1 #2/0G

FEEDER SCHEDULE

MARK	CONDUIT	CONDUCTORS PER CONDUIT
F3 120	(4) 3"	3 #350kcmil, 1 #3/0G
F4 120	(4) 4"	3 #350kcmil, 1 #350kcmil N, 1 #3/0G
F3 160	(5) 3"	3 #400kcmil, 1 #4/0G
F4 160	(5) 3-1/2"	3 #400kcmil, 1 #400kcmil N, 1 #4/0G
F4 200	(6) 3-1/2"	3 #400kcmil, 1 #400kcmil N, 1 #250kcmilG
F4 250	(7) 3-1/2"	3 #500kcmil, 1 #500kcmil N, 1 #350kcmilG
F4 300	(8) 3-1/2"	3 #500kcmil, 1 #500kcmil N, 1 #400kcmilG
F4 400	(11) 4"	3 #500kcmil, 1 #500kcmil N, 1 #500kcmil G
S3 11	2"	3 #1, 6 G FOR 240/3 OR 480/3 2 #1, 1 #1 N, 6 G FOR 240/120/1
S4 11	2"	3 #1, 1 #1 N, #6 G
S3 12	2"	3 #1/0, 6 G FOR 240/3 OR 480/3 2 #1/0, 1 #1/0 N, 6 G FOR 240/120/1
S3 15	2-1/2"	3 #1/0, #6 G FOR 240/3 OR 480/3 2 #1/0, 1 #1/0 N, #6 G FOR 240/120/1
S4 15	2"	3 #1/0, 1 #1/0 N, #6 G
S3 20	2-1/2"	3 #3/0, #4 G FOR 240/3 OR 480/3 2 #3/0, 1 #3/0 N, #4 G FOR 240/120/1
S3 22	2-1/2"	3 #4/0, #2 G FOR 240/3 OR 480/3 2 #4/0, 1 #4/0 N, #2 G FOR 240/120/1
S4 22	4"	3 #4/0, 1 #4/0 N, #2 G
S4 38	4"	3 #500 kcmil, 1 #500kcmil N, #1/0 G
S3 40	4"	3 #600kcmil, #1/0 G FOR 240/3 OR 480/3 2 #600kcmil, 1 #600 N, #1/0 G FOR 240/120/1
S3 45	(2) 2-1/2"	3 #4/0, 1/0 G FOR 240/3 OR 480/3 2 #4/0, 1 #4/0 N, #1/0 G FOR 240/120/1
S3 60	(2) 3"	3 #350kcmil, 2/0 G FOR 240/3 OR 480/3 2 #350kcmil, 1 #350kcmil N, #2/0 G FOR 240/120/1
S3 80	(2) 4"	3 #600kcmil, 3/0 G FOR 240/3 OR 480/3 2 #600 kcmil, 1 #600kcmil N, #3/0 G FOR 240/120/1
S4 80	(2) +(1) 4"	3 #600 kcmil, 1 #600kcmil N, #3/0 G
S3 100	(3) 3-1/2"	3 #400kcmil, 3/0 G FOR 240/3 OR 480/3 2 #400kcmil, 1 #400kcmil N, 3/0 G FOR 240/120/1
S4 120	(5) 4" +(1) 4" SPARE	3 #500kcmil, 1 #500kcmil N, 1# 350 kcmil G
S4 160	(7) 4" +(1) 4" SPARE	3 #500kcmil, 1 #500kcmil N, 1# 500 kcmil G
S4 250	(10) 4" +(1) 4" SPARE	3 #600kcmil, 1 #600kcmil N, 1# 600 kcmil G
U3 40	4"	3 #600kcmil, 1 #1/0G FOR 240/3 2 #600kcmil, 1 #600kcmil N, 1 #1/0G FOR 240/120/1
U3 80	(2) 3-1/2"	3 #500kcmil, 250G FOR 240/3 OR 480/3 3 #500kcmil, 1 #500kcmil N, 250G FOR 240/120/1
U4 160	(6) 4" +(2) 4" SPARE	3 #600kcmil, 1 #600kcmil N, 1# 600 kcmil G
O4 160	(6) 4" 4" SPARE	3 #600kcmil, 1 #600kcmil N, 1# 250 kcmil G
B4 160	1600A Feeder Busway	3 Phase 4 Wire Copper Bus NEMA 1 with bus collector, phenolic, and 3 hr fire rated bus penetration to utility.

FEEDER SCHEDULE GENERAL NOTES

1. PROVIDE SPARE CONDUIT WITH PULL WIRE IN ALL UNDERGROUND FEEDERS.
2. FEEDER SIZES INDICATED ARE MINIMUMS. INCREASE FEEDER SIZE WHERE REQUIRED BY THERMAL MODELING.
3. UNDERGROUND FEEDERS WTIH LESS THAN 3 CONDUITS WILL BE RUN SEPARATELY FROM OTHER UNDERGROUNG FEEDERS WITH SPACING AS REQUIRED BY THERMAL MODELING.
4. UNDERGROUND FEEDERS WITH MORE THAN 6 (5 + 1 SPARE) PARALLEL CONDUITS WILL BE ORGANIZED INTO SEPARATE DUCTBANKS OF 6 CONDUITS OR LESS PER DUCTBANK. 5 FOOT MINIMUM EDGE TO EDGE SPACING BETWEEN DUCTBANKS OR LARGER IS TO BE PROVIDED WHERE REQUIRED BY THERMAL MODELING.
5. ALL FEEDERS ARE COPPER WIRE WITH XHHW-2 INSULATION FOR UNDERGROUND FEEDERS LESS THAN OR EQUAL TO 480 VOLTS AND THHN/THWN FOR OTHER FEEDERS LESS THAN OR EQUAL TO 480 VOLTS.

TRANSFORMER SCHEDULE

MARK	KVA	VOLTAGE	PHASE	K-RATING	MOUNTING	SECONDARY FEEDER	XFMR GROUND
TX-LVS	45	480Δ-208/120Y	3	13	FLOOR	4#1/0, 1#2G, 2"C	#2G
TX-VP	37.5	480Δ-240/120/1	1	1	FLOOR	3#3/0, 1#2G, 2.5"C	#2G
TX-L1	9	480Δ-208/120Y	3	13	WALL	4#8, 1#6G, 1.25"C	#6G

SURGE SUPPRESSION DEVICE SCHEDULE

MARK		VOLTAGE	PHASE	MODES OF PROTECTION	SURGE CURRENT	
PNL-LVS		208/120Y	3	7	120 KAIC	
PNL-VP		240/120/1	1	6	120 KAIC	
PNL-L1		208/120Y	3	7	120 KAIC	
MSB		480/277Y	3	7	240 KAIC	
MSB-G		480/277Y	3	7	240 KAIC	
HVS		480/277Y	3	7	240 KAIC	

LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURER , MODEL NUMBER & DESCRIPTION	LAMPS	HEIGHT/ MT.	VOLTS	WATTS EACH	NOTES
A	4-FT LED STRIPLIGHT WITH LENSED COVER "LITHONIA LIGHTING" FEML48 4000LM IMA-CD-WD MVOLT GZ10 40K 80CRI WET LOCATION BAA	LED	NOTES 1 & 2	MVOLT	32	1 & 2
AE	4-FT LED STRIPLIGHT WITH LENSED COVER "LITHONIA LIGHTING" FEML48 4000LM IMA-CD-WD MVOLT GZ10 E10WMCP 40K 80CRI WET LOCATION BAA	LED	NOTES 1 & 2	MVOLT	32	1 & 2
B	LED WALL LUMINAIRE WET LOCATION "VERSALED LIGHTING" #WP3.5-C-MCT 30W 4150 LUMEN 40K EM QT	LED	WALL	MVOLT	32	
C1	LED WALL LUMINAIRE OUTDOOR "LITHONIA LIGHTING" #WDGE2 LED P3 40K 80CRI T3M MVOLT PBBW/SRM/AWS PE BAA, WEDGE2 LED WITH P3-PERFORMANCE PACKAGE, 4000K, 80CRI, TYPE 3 MEDIUM OPTIC	LED	WALL	MVOLT	32	3
C2	LED WALL LUMINAIRE OUTDOOR "LITHONIA LIGHTING" #WDGE2 LED P5 40K 80CRI VW, MVOLT CCE PBBW-BCE/SRM/AWS PE BAA, WEDGE2 LED WITH P5 PERFORMANCE PACKAGE, 4000K, 80CRI, VISUAL COMFORT WIDE OPTIC	LED	WALL	MVOLT	32	3
C3	LED WALL LUMINAIRE OUTDOOR "LITHONIA LIGHTING" #WDGE2 LED P5 40K 80CRI VW MVOLT E20WC CCE PBBW-BCE/SRM/AWS PE BAA, WEDGE2 LED WITH P5 PERFORMANCE PACKAGE, 4000K, 80CRI, VISUAL COMFORT WIDE OPTIC	LED	WALL	MVOLT	32	3
C4	LED WALL LUMINAIRE OUTDOOR "LITHONIA LIGHTING" #WDGE2 LED P3 40K 80CRI T3M MVOLT E20WC PBBW/SRM/AWS PE BAA, WEDGE2 LED WITH P3-PERFORMANCE PACKAGE, 4000K, 80CRI, TYPE 3 MEDIUM OPTIC	LED	WALL	MVOLT	32	3
X	"LITHONIA LIGHTING" #WLTE W 1 R EL SD	LED	WALL	120/277	3.6	3

NOTES:

1. MOUNT 4-FT LED STRIPLIGHTS TO STRUCTURAL TEES ABOVE. TYPICAL.
2. WHERE FIXTURE CANNOT BE MOUNTED TO TEES, MOUNT FIXTURE IN BEAM POCKET TO UNISTRUT ATTACHED TO TEES. ALIGN BOTTOM OF FIXTURE LENS WITH BOTTOM OF TEES.
3. SUBMIT FINISH COLOR SAMPLES DATA SHEET AND MOUNTING BRACKET FOR ARCHITECT APPROVAL.
4. PROVIDE EXTERNAL INVERTER BATTERY BACK LOCATED IN ELECTRICAL ROOM FOR BATTERY BACKUP SUPPLY TO FIXTURE.

HOUSTON AIRPORT SYSTEM

Jacobs
818 Town & Country Blvd.
Suite 500
Houston, TX 77024
(281) 721-8400
www.jacobs.com TBPE Firm #2966

REVISIONS

NO.	DESCRIPTION	DATE
	ISSUED FOR CONSTRUCTION	03/15/24

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH VAULT RENOVATIONS
SCHEDULES

PROJECT MGR: AEO
DESIGNER: AO
DRAWN BY: SH
CHECK BY: NM

DATE:

STATE OF TEXAS
ARTHUR E. OTTO
75035
REGISTERED PROFESSIONAL ENGINEER
03/15/24

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO.

SV-E6.01

TYPE AC (BX) AND MC CABLE ARE PROHIBITED.

PANEL: SWBD MSB

VOLTAGE: 277/480 | 3 PH | 4 W | AIC: 65,000 | REMARKS:
MAINS: 1600 AMPS ■MLO □MCB | ■SURFACE □FLUSH
LUGS: □SUB-FEED □FEED-THRU | ■NEMA1 □NEMA 3R

NOTE	C"*	WIRE*	LOAD DESCRIPTION	kVA	BKR	CKT	CKT	BKR	kVA	LOAD DESCRIPTION	WIRE*	C"*	NOTE
			SURGE PROTECTION DEVICE	0.0	100/ 3	1	2	600/ 3	123.6	CCR SGR-2			
				0.0					127.4				
				0.0					109.0				
			CCR SGR-1	95.6	600/ 3	3	4	600/ 3	85.1	HVS			
				95.6					81.5				
				66.0					66.9				
			SPARE	0.0	600/ 3	5	6	600/ 3	0.0	SPARE			
				0.0					0.0				
				0.0					0.0				
			SPACE	0.0	250/ 3	7	8	250/ 3	0.0	SPACE			
				0.0					0.0				
				0.0					0.0				

* REFER TO 1-LINE & SCHEDULES FOR FEEDERS UNLESS OTHERWISE NOTED
NOTES:

850.8	kVA CONNECTED
1020.8	kVA DEMAND
1228.3	AMPS DEMAND @ 480V

PANEL: CCR SGR-1

VOLTAGE: 480 | 3 PH | 4 W | AIC: 65,000 | REMARKS:
MAINS: 600 AMPS ■MLO □MCB | ■SURFACE □FLUSH
LUGS: □SUB-FEED □FEED-THRU | ■NEMA1 □NEMA 3R

NOTE	C"*	WIRE*	LOAD DESCRIPTION	kVA	BKR	CKT	CKT	BKR	kVA	LOAD DESCRIPTION	WIRE*	C"*	NOTE
			CCR-1-01	10.0	100/ 2	1	2	100/ 2	19.6	CCR-1-02			
			15 KW	10.0					19.6	30 KW			
			CCR-1-03	13.4	100/ 2	3	4	100/ 2	19.6	CCR-1-04			
			20 KW	13.4					19.6	30 KW			
			CCR-1-05	13.4	100/ 2	5	6	100/ 2	19.6	CCR-1-06			
			20 KW	13.4					19.6	30 KW			
			CCR-1-07	13.4	100/ 2	7	8	100/ 2	19.6	CCR-1-08			
			20 KW	13.4					19.6	30 KW			

* REFER TO 1-LINE & SCHEDULES FOR FEEDERS UNLESS OTHERWISE NOTED
NOTES:

257.3	kVA CONNECTED
321.6	kVA DEMAND
387.0	AMPS DEMAND @ 480V

PANEL: CCR SGR-2

VOLTAGE: 480 | 3 PH | 4 W | AIC: 65,000 | REMARKS:
MAINS: 600 AMPS ■MLO □MCB | ■SURFACE □FLUSH
LUGS: □SUB-FEED □FEED-THRU | ■NEMA1 □NEMA 3R

NOTE	C"*	WIRE*	LOAD DESCRIPTION	kVA	BKR	CKT	CKT	BKR	kVA	LOAD DESCRIPTION	WIRE*	C"*	NOTE
			CCR-2-01	5.0	100/ 2	1	2	100/ 2	19.6	CCR-2-02			
			7.5 KW	5.0					19.6	30 KW			
			CCR-2-03	6.7	100/ 2	3	4	100/ 2	19.6	CCR-2-04			
			10 KW	6.7					19.6	30 KW			
			CCR-2-05	10.0	100/ 2	5	6	100/ 2	13.4	CCR-2-06			
			15 KW	10.0					13.4	20 KW			
			CCR-2-07	13.4	100/ 2	7	8	100/ 2	13.4	CCR-2-08			
			20 KW	13.4					13.4	20 KW			
			CCR-2-09	6.7	100/ 2	9	10	100/ 2	19.6	CCR-2-10			
			10 KW	6.7					19.6	30 KW			
			CCR-2-11	13.4	100/ 2	11	12	100/ 2	19.6	CCR-2-12			
			20 KW	13.4					19.6	30 KW			
			CCR-2-13	0.0	100/ 2	13	14	100/ 2	19.6	CCR-2-14			
			SPC	0.0					19.6	30 KW			

* REFER TO 1-LINE & SCHEDULES FOR FEEDERS UNLESS OTHERWISE NOTED
NOTES:

360.1	kVA CONNECTED
450.1	kVA DEMAND
541.6	AMPS DEMAND @ 480V

PANEL: L1 SECTION 1

VOLTAGE: 120/208 | 3 PH | 4 W | AIC: 22,000 | REMARKS: S.E. LABEL: 200% NEUTRAL
MAINS: 30 AMPS □MLO ■MCB | ■SURFACE □FLUSH
LUGS: □SUB-FEED ■FEED-THRU | ■NEMA1 □NEMA 3R

NOTE	C"*	WIRE*	LOAD DESCRIPTION	kVA	BKR	CKT	CKT	BKR	kVA	LOAD DESCRIPTION	WIRE*	C"*	NOTE
			RECEPTACLE	0.4	20/ 1	1	2	20/ 1	0.4	RECEPTACLE			
			RECEPTACLE	0.4	20/ 1	3	4	20/ 1	0.4	RECEPTACLE			
			RECEPTACLE	0.4	20/ 1	5	6	20/ 1	0.4	RECEPTACLE			
			SPARE	0.0	20/ 1	7	8	30/ 3		SURGE PROTECTION DEVICE			
			SPARE	0.0	20/ 1	9	10	X		* COMPLY WITH MFCTR INSTRUCTI			
			SPARE	0.0	20/ 1	11	12	X					

* ALL WIRING IS 2#10, 1#10G IN 3/4" C UNLESS OTHERWISE NOTED
NOTES:

2.2	kVA CONNECTED
2.2	kVA DEMAND
6.0	AMPS DEMAND @ 208V

PANEL: VP

VOLTAGE: 120/240 | 1 PH | 3 W | AIC: 22,000 | REMARKS: S.E. LABEL, 200% NEUTRAL
MAINS: 200 AMPS □MLO ■MCB | ■SURFACE □FLUSH
LUGS: □SUB-FEED ■FEED-THRU | ■NEMA1 □NEMA 3R

NOTE	C"*	WIRE*	LOAD DESCRIPTION	kVA	BKR	CKT	CKT	BKR	kVA	LOAD DESCRIPTION	WIRE*	C"*	NOTE
			REGULATOR ROOM LIGHTS	0.35	20/ 1	1	2	60/ 2	0.00	SURGE PROTECTOR	*	1	
			SE REC AND BSMT LIGHTS	0.59	20/ 1	3	4	X	0.00	* COMPLY WITH MFCTR INSTRUCTI			
			SPARE (WAS 2400V REG CTRL PWR	0.00	20/ 1	5	6	20/ 1	1.92	RVR (FAA)			
			CARD READER	1.20	20/ 1	7	8	20/ 1	0.00	SPARE			
			SPARE (WAS WEST INTAKE FANS)	0.00	20/ 1	9	10	20/ 1	0.00	SPARE (WAS EAST INTAKE FANS)			
			SPARE	0.00	20/ 2	11	12	20/ 1	0.60	FUEL LEAK DETECTION	2#8,#8G	2	
			"	0.00	X	13	14	20/ 1	0.98	GEN BATT CHARGER	2#8,#8G	2	
			MONITORING SYSTEM	1.00	20/ 1	15	16	20/ 1	0.00	SPARE (WAS XFMR RM FAN)			
			MULTIPLEXER	1.00	20/ 1	17	18	40/ 2	3.00	GEN JACKET HEATER	3#6,#6G	2	
			MEGGER / MULTIPLEXER	1.00	20/ 2	19	20	X	3.00	"			
			MEGGER	1.00	X	21	22	20/ 1	0.50	REGULATOR ROOM LIGHTS			
			SPARE	0.00	20/ 1	23	24	20/ 1	1.44	NORTH RECEPTACLES			
			SENSIS (UNITED)	1.92	15/ 1	25	26	40/ 2	3.00	GEN HEATER	3#6,#6G	2	
			SPARE	0.00	60/ 2	27	28	X	3.00	"			
			"	0.00	X	29	30	20/ 1	1.20	GEN VENT FAN	2#8,#8G	2	
			SPARE	0.00	20/	31	32	20/ 1	0.00	SPARE			
			SPARE	0.00	20/	33	34	20/ 1	0.00	SPARE			
			SPARE	0.00	20/	35	36	20/ 1	0.00	SPARE			
			SPARE	0.00	20/	37	38	20/ 1	0.00	SPARE			
			SPARE	0.00	20/ 1	39	40	60/ 2		SURGE PROTECTION DEVICE			
			SPARE	0.00	20/ 1	41	42	X		* COMPLY WITH MFCTR INSTRNS			

* ALL WIRING IS 2#12, 1#12G IN 3/4" C UNLESS OTHERWISE NOTED
NOTES: 1. PROVIDE GFCI CIRCUIT BREAKER.

Phase A	Phase B		
14.87	11.83	26.7	kVA CONNECTED
14.95	11.98	26.9	kVA DEMAND
124.6	99.8	124.6	AMPS HIGHEST PH DEMAND @240V

PANEL: HVS FINAL CONDITION

VOLTAGE: 277/480 | 3 PH | 3 W | AIC: 65,000 | REMARKS:
MAINS: 600 AMPS ■MLO □MCB | ■SURFACE □FLUSH
LUGS: □SUB-FEED □FEED-THRU | ■NEMA1 □NEMA 3R

NOTE	C"*	WIRE*	LOAD DESCRIPTION	kVA	BKR	CKT	CKT	BKR	kVA	LOAD DESCRIPTION	WIRE*	C"*	NOTE
			SPD	0.0	60/ 3	1	2	15/ 3	1.3	AHU-2			
				0.0					1.3				
				0.0					1.3				
			AHU-1	2.1	20/ 3	3	4	40/ 3	6.6	ACCU-2			
				2.1					6.6				
				2.1					6.6				
			ACCU-1	8.8	40/ 3	5	6	125/ 3	5.5	XFMR TX-LVS			
				8.8					5.4				
				8.8					5.7				
			WEST BRIDGE	8.9	40/ 3	7	8	40/ 3	8.9	EAST BRIDGE			
				8.9					8.9				
				8.9					8.9				
			GATE	1.3	50/ 3	9	10	25/ 3	3.0	XFMR TX-L1			
				1.3					3.0				
				1.3					3.0				
			ERASE	0.0	20/ 1	11	12	20/ 3	3.8	MUX - RECEPT			
			XFMR TX-VP	14.9	175 2	13			3.8				
				15.0			14	100/ 2	0.0	SPARE			
			SPARE	0.0	100/ 2	15			0.0				
				0.0			16	100/ 2	0.0	SPARE			
			SPARE	0.0	100/ 2	15			0.0				
				0.0			18	100/ 2	0.0	SPARE			
			SPARE	0.0	100/ 2	15			0.0				
				0.0				20/ 1	4.4	SECURITY LIGHTS			

* REFER TO 1-LINE & SCHEDULES FOR FEEDERS UNLESS OTHERWISE NOTED
NOTES:

225.8	kVA CONNECTED
241.4	kVA DEMAND
290.5	AMPS DEMAND @ 480V

PANEL: HVS TEMPORARY CCRS

VOLTAGE: 277/480 | 3 PH | 3 W | AIC: 65,000 | REMARKS:
MAINS: 600 AMPS ■MLO □MCB | ■SURFACE □FLUSH
LUGS: □SUB-FEED □FEED-THRU | ■NEMA1 □NEMA 3R

NOTE	C"*	WIRE*	LOAD DESCRIPTION	kVA	BKR	CKT	CKT	BKR	kVA	LOAD DESCRIPTION	WIRE*	C"*	NOTE
			SPD	0.0	60/ 3	1	2	15/ 3	1.3	AHU-2			
				0.0					1.3				
				0.0					1.3				
			AHU-1	2.1	20/ 3	3	4	40/ 3	6.6	ACCU-2			
				2.1					6.6				
				2.1					6.6				
			ACCU-1	8.8	40/ 3	5	6	125/ 3	5.5	XFMR TX-LVS			
				8.8					5.4				
				8.8					5.7				
			WEST BRIDGE	8.9	40/ 3	7	8	40/ 3	8.9	EAST BRIDGE			
				8.9					8.9				
				8.9					8.9				
			GATE	1.3	50/ 3	9	10	25/ 3	3.0	XFMR TX-L1			
				1.3					3.0				
				1.3					3.0				
			ERASE	0.0	20/ 1	11	12	20/ 3	3.8	MUX - RECEPT			
			XFMR TX-VP	14.9	175/ 2	13			3.8				
				15.0			14	100/ 2	19.6	TEMP POWER TO CCRS			
			TEMP POWER TO CCRS	19.6	100/ 2	15			19.6				
				19.6			16	100/ 2	19.6	TEMP POWER TO CCRS			
			TEMP POWER TO CCRS	19.6	100/ 2	15			19.6				
				19.6			18	100/ 2	19.6	TEMP POWER TO CCRS			
			TEMP POWER TO CCRS	19.6	100/ 2	15			19.6				
				19.6				20/ 1	4.4	SECURITY LIGHTS			

* REFER TO 1-LINE & SCHEDULES FOR FEEDERS UNLESS OTHERWISE NOTED
NOTES:

343.5	kVA CONNECTED
388.5	kVA DEMAND
467.5	AMPS DEMAND @ 480V

PANEL: LVS SECTION 1

VOLTAGE: 120/208 | 3 PH | 4 W | AIC: 22,000 | REMARKS: S.E. LABEL; 200% NEUTRAL
MAINS: 150 AMPS □MLO ■MCB | ■SURFACE □FLUSH
LUGS: □SUB-FEED ■FEED-THRU | ■NEMA1 □NEMA 3R

NOTE	C"*	WIRE*	LOAD DESCRIPTION	kVA	BKR	CKT	CKT	BKR	kVA	LOAD DESCRIPTION	WIRE*	C"*	NOTE
			ALCMS PSA1	1.9	20/ 1	1	2	20/ 1	0.4	LIGHTING (LVL 1AE FIXTURES)	3#10+G	3/4"	
			ALCMS PSA2	1.9	20/ 1	3	4	20/ 1	0.3	LIGHTING (LVL 1 A FIXTURES)	3#10+G	3/4"	
			PC CABINET	1.9	20/ 1	5	6	20/ 1	0.4	LIGHTING (EXTERIOR FIXTURES)	3#10+G	1"	
			SPARE	0.0	20/ 1	7	8	20/ 1	0.3	LIGHTING (WIRE VAULT)	3#10+G	1"	
			SPARE	0.0	20/ 1	9	10	20/ 1	0.3	LIGHTING (EXTERIOR FIXTURES)	3#10+G	1"	
			SPARE	0.0	20/ 1	11	12	20/ 1	0.3	LIGHTING (EXTERIOR FIXTURES)	3#10+G	1"	
			TIME CLOCK	0.1	20/ 1	13	14	20/ 1	0.0	SPARE			
			SPARE	0.0	20/ 1	15	16	20/ 1	1.0	SECURITY (EAST DOOR)			
			SPARE	0.0	20/ 1	17	18	20/ 1	1.0	SECURITY (WEST DOOR)			
			SPARE	0.0	20/ 1	19	20	20/ 1	1.0	SECURITY (EQPT YARD DOOR)			
			SPARE	0.0	20/ 1	21	22	20/ 1	1.0	SECURITY (WEST DOOR)			
			SPARE	0.0	20/ 1	23	24	20/ 1	1.0	SECURITY (SOUTHEAST DOOR)			
			SPARE	0.0	20/ 1	25	26	20/ 1	1.0	SECURITY (IT CAGE & DOOR)			
			SPARE	0.0	20/ 1	27	28	20/ 1	0.0	SPARE			
			SPARE	0.0	20/ 1	29	30	20/ 1	0.6	OUTDOOR SWGR HEATERS			
			SPARE	0.0	20/ 1	31	32	20/ 1	0.6	SPARE			
			SPARE	0.0	20/ 1	33	34	20/ 1	0.0	SPARE			
			SPARE	0.0	20/ 1	35	36	20/ 1	0.0	SPARE			
			SPARE	0.0	20/ 1	37	38	60/ 3		SURGE PROTECTION DEVICE			
			SPARE	0.0	20/ 1	39	40	X		* COMPLY WITH MFCTR INSTRUCTI			
			SPARE	0.0	20/ 1	41	42	X					

* ALL WIRING IS 2#10, 1#10G IN 3/4" C UNLESS OTHERWISE NOTED
NOTES:

15.1	kVA CONNECTED
15.1	kVA DEMAND
42.0	AMPS DEMAND @ 208V

ELECTRICAL LOAD ANALYSIS

LOAD CATEGORY	CONNECTED LOAD	NEC FACTOR	NEC LOAD	NEC LOAD
LOAD CATEGORY	KVA		KVA	AMPS
AIRFIELD LIGHTING				
SWGR 1	257	125%	321	387
SWGR 2	360	125%	450	542
SUB-TOTAL	617	125%	771	928
LTG (INTERIOR)	2.9	125% OF LARGEST OF NEC MIN. OR ACTUAL	3.6	4
LTG (EXTERIOR)	0.8	125%	1	1
HVAC	56	LOAD + 25 % LARGEST MOTOR BELOW	56	68
BRIDGES	53	125%	67	64
GATE	4	100%	4	5
EQUIPMENT	37	100%	37	45
RECEPTACLES	10	1ST 10 KVA @ 100% + 50% REMAINDER	10	11
OTHER	80	100%	80	96
SUB-TOTAL	861		1030	1223
LARGEST MOTOR	14	25%	3	4
SUB-TOTAL	875		1033	1227
25% SPARE	219		258	307
SUM	1080		1292	1530

NEC LOAD FACTORS FOR LOAD ANALYSIS CALCULATIONS

LOAD CATEGORY	NEC ARTICLES	LOAD DATA	NEC LOAD FACTOR
LIGHTING	220.45, 220.42	LARGEST OF ACTUAL OR NEC TABLE 220.42(A) MINIMUM VA PER SQ. FT.	125%
MOTORS	220.14, 220.50	LARGEST OF NAMEPLATE OR NEC TABLE 430.250	LOAD + 25 % OF LARGEST MOTOR
COOLING AND HEATING	220.60, 220.50	LARGEST OF COOLING OR HEATING	100%
EQUIPMENT	220.14		100%
RECEPTACLES	220.47		1ST 10 KVA @ 100% + 50% REMAINDER
OTHER	220.14		100%

HOUSTON AIRPORT SYSTEM

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REVISIONS

NO.	DESCRIPTION	DATE
	ISSUED FOR CONSTRUCTION	03/15/24

CITY OF HOUSTON
HOUSTON AIRPORTS SYSTEM
Recommended 03/29/2024
Houston Airports System Director or Designated Representative DATE
REVIEWED / NO EXCEPTIONS TAKEN

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH VAULT RENOVATIONS
SCHEDULES

PROJECT MGR: AEO
DESIGNER: AO
DRAWN BY: SH
CHECK BY: NM

DATE:

STATE OF TEXAS
ARTHUR E. OTTO
75035
REGISTERED PROFESSIONAL ENGINEER
03/15/24

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO.
SV-E6.02

TYPE AC (BX) AND MC CABLE ARE PROHIBITED.

SOUTH VAULT PHASING SEQUENCE OVERVIEW

THE FOLLOWING IS AN OVERVIEW OF THE GENERAL SEQUENCE OF THE DEMOLITION AND CONSTRUCTION.
THE CONTRACTOR SHALL SUBMIT A DETAILED SEQUENCE OF DEMOLITION AND CONSTRUCTION AND SUBMIT AS REQUIRED BY THE SPECIFICATIONS.
THE CONTRACTOR IS RESPONSIBLE FOR ALL WORK INDICATED ON THE DRAWINGS AND SPECIFICATIONS.

1. ENABLING, GENERAL PREPARATION, AND INITIAL DEMOLITION
   a. CLEAN EXISTING BASEMENT FLOOR
   b. REPLACE EXISTING BASEMENT SUMP PUMPS AND DISCHARGE PIPING.
   c. PROVIDE TEMPORARY WALL CLOSURE AT RADIATOR AND GENERATOR EXHAUST.
   d. REMOVE EXISTING GENERATOR, DAY TANK AND CAP EXISTING PIPING AT FLOOR.
   e. MODIFY EXISTING IT CHAIN LINK ENCLOSURE WITH RELOCATED GATE AND ACCESS CONTROLS.
   f. CLEAN EXISTING GENERATOR AREA WALLS AND PREPARE FOR EQUIPMENT INSTALLATION AND WALL REMOVAL.
   g. REMOVE INTERIOR WALLS TO BE DEMOLISHED AT EXISTING GENERATOR ROOM AND STORAGE ROOM.
   h. REMOVE DOOR FROM ELECTRICAL ROOM TO THE EAST REGULATOR ROOM.
   i. REMOVE DOOR FROM EAST REGULATOR ROOM TO WEST REGULATOR ROOM.
   j. REMOVE THE ROOF VENTILATORS, INSTALL CONCRETE AT THE ROOF, INSTALL NEW LIGHTNING PROTECTION SYSTEM, AND REPLACE THE EXISTING ROOF MEMBRANE.
   k. REPLACE EXISTING ROOF SCUPPERS AND DOWNSPOUTS.
   l. REMOVE THE EXISTING WALL VENTILATORS AND RESTORE EXISTING WALLS. INSTALL TEMPORARY PROVISIONS FOR CONDENSER EXHAUST AND MAKEUP FOR SPOT COOLERS.
   m. REMOVE EXISTING GENERATOR BREAKER MCB-C.
   n. TEST EXISTING GROUNDING SYSTEM, REPLACE OR ADD NEW GROUNDING AND RETEST WITH FALL OF POTENTIAL TESTING FOR 3 OHMS TO EARTH. ADD NEW MAIN GROUND BAR IN PANI CONFIGURATION AND INSTALL GROUND CONNECTIONS FROM GROUND BAR TO EARTH GROUNDING COUNTERPOISE SYSTEM, LIGHTNING PROTECTION SYSTEM, GROUNDING ELECTRODE SYSTEM, EQUIPMENT GROUNDING AND RESTORE HALO GROUND SYSTEM.
2. INITIAL CONSTRUCTION
   a. INSTALL NEW EXTERIOR YARD ENCLOSURE GRADE BEAM, STRUCTURAL PADS, AND UNDERGROUND CONDUITS.
   b. INSTALL NEW DOOR AT WEST WALL OF ELECTRICAL ROOM WITH SECURITY ACCESS CONTROL, INDOOR CAMERA, AND EXTERIOR CAMERA.
   c. INSTALL NEW EXTERIOR SWITCHGEAR AND GENERATOR.
   d. CONSTRUCT NEW EQUIPMENT YARD WALL, DOORS, AND LIGHTS.
   e. INSTALL NEW MAIN DISCONNECTS, ATSS, PANELS, GENERATOR, OUTDOOR SWITCHGEAR, AND FEEDERS.
   f. INSTALL NEW CABLE TRAY SUPPORTS IN CABLE VAULT LEVEL AND ADD NEW SLEEVED FLOOR PENETRATIONS FOR NEW AIRFIELD LIGHTING CIRCUITS.
3. INITIAL ELECTRICAL TESTING
   a. PRE-TEST FEEDERS
   b. PRE-TEST ELECTRICAL EQUIPMENT.
   c. TEST GENERATOR WITH LOAD BANK.
   d. TEST ENERGIZATION OF EQUIPMENT FROM GENERATOR.
   e. CONFIRM ATS IS SUPPLIED FROM 2^{ND} UTILITY SOURCE.
   f. LOCKOUT TRANSFER TO 2^{ND} UTILITY SOURCE AT ATS.
   g. TEST ATS TO CONFIRM UTILITY TO GENERATOR ATS IS OPERATIONAL AND RESPONSIVE TO ATCT CONTROL SIGNAL FOR PREFERRED SOURCE TRANSFER TO GENERATOR.
4. SOURCE 2 FROM UTILITY TO NEW ATS-1 AND NEW DISTRIBUTION. SERVICE FROM GENERATOR TO NEW ATS-2.
   a. PARTIAL VAULT DE-ENERGIZATION FOR 2^{ND} UTILITY SOURCE TO EXISTING 3 WAY ATS.
   b. REMOVE MCB-B AND FEEDERS TO 3-WAY ATS.
   c. INSTALL AND CONNECT 2^{ND} UTILITY SOURCE FEEDER TO NEW ATS AS UTILITY SOURCE 1.
   d. REMOVE 2^{ND} UTILITY SOURCE TO EXISTING ATS.
   e. CONFIGURE NEW UTILITY SOURCE TO UTILITY SOURCE ATS-1 WITH UTILITY SOURCE 1 AS PREFERRED SOURCE.
   f. ENERGIZE AND TEST UTILITY SOURCE TO ATS-1 AND SWITCHGEAR.
   g. TEST UTILITY SOURCE TO GENERATOR SOURCE ATS-2 AND GENERATOR.
   h. INSTALL RELAY CONTROLS TO OPERATE BOTH THE EXISTING THREE-WAY ATS AND THE NEW ATS-2 TO OPERATE ON EACH ATS'S EMERGENCY SOURCE UPON CAT II/III SIGNAL FROM ATCT AND TEST OPERATION.
   i. ENERGIZE NEW ELECTRICAL DISTRIBUTION PANELS AND TRANSFORMERS.
   j. PROVIDE TEMPORARY LIGHTING, REMOVE EXISTING LIGHTING, AND INSTALL NEW LIGHTING.
   k. INSTALL NEW CONVENIENCE RECEPTACLES AND RECEPTACLES FOR SPOT COOLERS.
5. EARLY LOAD TRANSFERS TO NEW ELECTRICAL DISTRIBUTION
   a. BEGIN PHASED OUTAGES TO TRANSFER EXISTING 208/120 VOLT AND 240/120 VOLT LOADS FROM EXISTING PANELS TO REPLACEMENT PANELS.
   i. LVS
   ii. VP
   b. BEGIN PHASED OUTAGES TO TRANSFER EXISTING 480/277 VOLT LOADS FROM EXISTING PANELS TO REPLACEMENT PANELS.
   i. MDP
   ii. SDP
   c. REMOVE SELECTED PANELS AND TRANSFORMERS IN EAST REGULATOR ROOM AFTER TRANSFER OF ALL LOADS TO NEW PANELS.
   i. LVS
   ii. VP
6. PREPARATION FOR INSTALLATION OF REGULATORS IN EAST REGULATOR ROOM
   a. REMOVE PARTIAL WALLS BETWEEN THE EAST REGULATOR ROOM AND THE WEST REGULATOR ROOM.
   b. TEMPORARILY REMOVE EXISTING AHU DRAIN PANS.
   c. INSTALL SPOT COOLERS AND TEMPORARILY RAISE OR SEQUESTER REFRIGERANT AND REMOVE EXISTING AHU'S TO FACILITATE INSTALLATION OF NEW REGULATORS.
   d. REMOVE EXISTING STORAGE RACKS AND DESK TO PREPARE FOR INSTALLATION OF NEW ALCMS.
7. INITIAL ALCMS INSTALLATION
   a. INSTALL NEW ALCMS AT SOUTH VAULT, WEST VAULT, NORTH VAULT, ACS AND ATCT AND TEST OPERATION. AIRFIELD IS STILL CONTROLLED BY LIBERTY ALCMS AT THIS POINT.
   b. NORTH AND WEST VAULT. INSTALL INTERFACE FROM NEW ALCMS TO EXISTING ALCMS COMPUTERS AND CONDUCT TESTING DURING VFR CONDITIONS. MAKE FINAL CONNECTIONS TO NEW ALCMS.
   c. SOUTH VAULT. INSTALL CONTROL INTERFACE FROM NEW ALCMS TO EXISTING CCRS.
   d. SWAP AIRFIELD CONTROL OVER TO NEW ALCMS SYSTEM.
   e. TEST OPERATION OF NEW AND EXISTING ALCMS FOR ALL VAULTS, ACS AND ATCT.
   f. PREPARE ALCMS FOR INITIAL GROUP OF REGULATOR TRANSFERS IN SOUTH VAULT.
8. INSTALLATION OF THE INITIAL GROUP OF NEW REGULATORS IN THE EAST REGULATOR ROOM.
   a. INSTALL AND ENERGIZE NEW REGULATORS AND COMMISSION LINE UP.
   b. BEGIN PHASED OUTAGES TO TRANSFER THE INITIAL GROUP OF AIRFIELD LIGHTING CIRCUITS FROM EXISTING REGULATORS. EXISTING HOMERUN CIRCUITS WILL BE REDIRECTED TO THE NEW S-1 CUTOUT CABINET VIA CABLE TRAY IN BASEMENT.
   c. CONTROL OF INITIAL GROUP OF NEW CCRS WILL BE INITIATED BY NEW ALCMS.
9. INSTALLATION OF THE NEXT GROUP OF NEW REGULATORS IN THE WEST REGULATOR ROOM.
   a. REMOVE THE FIRST GROUP OF EXISTING REGULATORS TO BE REMOVED.
   b. REMOVED EXISTING DEACTIVATED CABLE TRAY PATHWAYS IN CABLE VAULT.
   c. PATCH FLOOR PENETRATIONS.
   d. PROVIDE TEMPORARY POWER FROM NEW HVS TO EXISTING REGULATORS.
   e. DEMO AND MODIFY OVERHEAD DISTRIBUTION ABOVE EXISTING REGULATORS TO ENABLE INSTALLATION OF NEW REGULATORS.
   f. ENERGIZE, TEST AND COMMISSION NEW REGULATORS.
   g. BEGIN PHASED OUTAGES TO TRANSFER THE NEXT GROUP OF AIRFIELD LIGHTING CIRCUITS FROM EXISTING REGULATORS. EXISTING HOMERUN CIRCUITS WILL BE TEMPORARILY ROUTED FROM NEW CCR'S TO EXISTING S-1 CUTOUT CABINET IN WEST REGULATOR ROOM.
   h. CONTROL OF NEXT GROUP OF NEW CCRS WILL BE INITIATED BY NEW ALCMS.
10. INSTALLATION OF THE FINAL GROUP OF NEW REGULATORS IN THE WEST REGULATOR ROOM.
   a. REMOVE THE FINAL GROUP OF EXISTING REGULATORS SCHEDULED FOR DEMOLITION.
   b. REMOVED EXISTING DEACTIVATED CABLE TRAY PATHWAYS IN CABLE VAULT.
   c. PATCH FLOOR PENETRATIONS.
   d. REMOVE EXISTING OVERHEAD DISTRIBUTION ABOVE EXISTING REGULATORS TO ENABLE INSTALLATION OF NEW REGULATORS.
   e. INSTALL, ENERGIZE, TEST AND COMMISSION NEW REGULATORS.
   f. COMPLETE PHASED OUTAGES TO TRANSFER THE FINAL GROUP OF ANY REMAINING AIRFIELD LIGHTING CIRCUITS FROM EXISTING REGULATORS. EXISTING HOMERUN CIRCUITS WILL BE REDIRECTED TO THE NEW S-1 CUTOUT CABINET VIA CABLE TRAY IN BASEMENT.
   g. CONTROL OF FINAL GROUP OF NEW CCRS WILL BE INITIATED BY NEW ALCMS.
11. SOURCE 1 FROM UTILITY TO ATS-1.
   a. PARTIAL VAULT DE-ENERGIZATION FOR 2^{ND} UTILITY SOURCE TO EXISTING 3-WAY ATS.
   b. INSTALL AND CONNECT 2^{ND} UTILITY SOURCE FEEDER TO ATS-1 AS UTILITY SOURCE 1.
   c. REMOVE 2^{ND} UTILITY SOURCE TO EXISTING 3-WAY ATS.
   d. REMOVE MCB-A AND FEEDERS TO 3-WAY ATS.
   e. CONFIGURE NEW UTILITY SOURCE TO UTILITY SOURCE ATS-1 WITH UTILITY SOURCE 1 AS PREFERRED SOURCE.
   f. ENERGIZE AND TEST UTILITY SOURCE TO ATS-1 AND SWITCHGEAR.
   g. TEST UTILITY SOURCE TO GENERATOR SOURCE ATS-2 AND GENERATOR.
   h. REMOVE RELAY CONTROLS FROM THE EXISTING THREE-WAY ATS AND DEDICATE RELAY CONTROLS FOR ATS-2 TO OPERATE ON EMERGENCY SOURCE UPON CAT II/III SIGNAL FROM ATCT AND TEST OPERATION.
12. DEMOLITION OF EXISTING ELECTRICAL DISTRIBUTION.
   a. MCB-A
   b. MDP
   c. SDP
   d. HVS1
   e. HVS2
   f. DEMOLITION OF PARTIAL WALLS AFTER ELECTRICAL EQUIPMENT REMOVAL.
13. FINAL CONSTRUCTION
   a. REMOVE DOUBLE DOOR AND TRANSOM AT EAST EXTERIOR WALL. REPLACE WITH NEW DOUBLE DOOR, SECURITY ACCESS CONTROL SYSTEMS, INTERIOR CAMERA, EXTERIOR CAMERA, EXTERIOR LIGHTING, AND PATCH WALL.
   b. PATCH UNUSED PENETRATIONS TO CABLE VAULT.
   c. REPLACEMENT OF PANEL L1 AND TRANSFORMER.
14. DECONSTRUCTION
   a. AFTER NEW CCR'S AND ALCMS HAS EXPERIENCED 30 TROUBLE FREE DAYS OF OPERATION, REMOVE ORIGINAL ALCMS CONTROLS AFTER NOT IN USE.
   b. REMOVE EXISTING DEACTIVATED S1 CUTOUT CABINET AND ALCMS RACK.
   c. REMAINING DEMOLITION AND PATCHING.

HAS SCOPE OF WORK OVERVIEW (REFER TO DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS):

1. THE WORK TO BE DONE SHALL BE ACCORDING TO THESE DRAWINGS AND SPECIFICATIONS AND FACILITIES CRITERIA DOCUMENT OF THE HOUSTON AIRPORT SYSTEM.

2. THE WORK INCLUDES MINOR DEMOLITION; SAW CUTTING AND REMOVING OF PORTIONS OF BUILDING WALLS, CEILINGS, WALL & FLOOR FINISHES AND ASSOCIATED MECHANICAL, PLUMBING, AND ELECTRICAL DEMOLITION.

3. THE WORK INCLUDES NEW CONSTRUCTION AT IAH SOUTH VAULT. THE WORK INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING:
   - 3.1. INTERIOR BUILDING IMPROVEMENTS INCLUDING WALLS, CEILINGS, ACCESSORIES, FINISHES.
   - 3.2. DEMOLITION OF EXISTING INTERIOR WALLS AND DOORS. REPLACEMENT OF EXISTING EXTERIOR DOORS AND ADDITION OF NEW EXTERIOR DOORS.
   - 3.3. REPLACEMENT OF INTERIOR BUILDING LIGHTING, LIGHTING CONTROLS AND RECEPTACLES.
   - 3.4. REPLACEMENT OF EXTERIOR BUILDING LIGHTING, LIGHTING CONTROLS AND SERVICE RECEPTACLES.
   - 3.5. REPLACEMENT OF BUILDING MAIN DISCONNECTS, AUTOMATIC TRANSFER SWITCHES, MAIN SWITCHBOARD, PANELBOARDS, AND STEP-DOWN TRANSFORMERS.
   - 3.6. NEW ENCLOSED EQUIPMENT YARD WITH NEW DIESEL GENERATOR, AND NEW OUTDOOR SWITCHBOARD AND CAMLOCK ENCLOSURES.
   - 3.7. REPLACEMENT OF AIRFIELD LIGHTING REGULATORS IN THE SOUTH VAULT.
   - 3.8. REPLACEMENT OF AIRFIELD LIGHTING CONTROL SYSTEMS FOR THE SOUTH VAULT

4. REPLACEMENT OF AIRFIELD LIGHTING CONTROL SYSTEMS COMPONENTS IN THE NORTH VAULT, WEST VAULT, AIR TRAFFIC CONTROL TOWER, AND AIRFIELD SERVICE COMPLEX FOR COMPLETED AIRFIELD LIGHTING CONTROL SYSTEM WITH INTERFACES TO EXISTING COMPONENTS IN THE NORTH VAULT AND WEST VAULT.
   - 4.1. NORTH VAULT
     - 4.1.1. REPLACE ALCMS NODE WITH NEW RACK WITH REDUNDANT PCS.
     - 4.1.2. ALCMS I/O REQUIRED: GENERATOR AVAILABLE, GENERATOR ONLINE, UTILITY AVAILABLE, UTILITY ONLINE, GENERATOR ALARM, GENERATOR START/STOP, RW 8 LAHSO, RW 26 LAHSO
     - 4.1.3. RETROFIT CCRS WITH NEW ACE 3 DOORS/COMPATIBLE INTERNALS AND EXISTING CORES [(41) 20KW AND (23) 30KW THYRISTOR, SWITCHGEAR STYLE LIBERTY CCRS].
   - 4.2. WEST VAULT
     - 4.2.1. REPLACE ALCMS NODE WITH NEW RACK WITH REDUNDANT PCS.
     - 4.2.2. ALCMS I/O REQUIRED: GENERATOR AVAILABLE, GENERATOR ONLINE, UTILITY AVAILABLE, UTILITY ONLINE, GENERATOR ALARM, GENERATOR START/STOP.
     - 4.2.3. RETROFIT CCRS WITH NEW ACE 3 DOORS AND REPLACE ROLL-OUT "SLEDS" WITH NEW SLEDS UTILIZING EXISTING CORES. [48 FERRORESONANT SWITCHGEAR STYLE LIBERTY CCRS. EXISTING CCRS ARE ARRANGED AS SWITCHGEAR LINEUPS BUT FED WITH INDIVIDUAL 480V CIRCUITS (NO BUSWORK INTERNAL TO SWITCHGEAR)].
   - 4.3. AIR TRAFFIC CONTROL TOWER
     - 4.3.1. REPLACE ALCMS NODE WITH NEW RACK WITH REDUNDANT PCS.
     - 4.3.2. REPLACE (2) TOUCHSCREENS IN TOWER CAB.
     - 4.3.3. PROVIDE PRICING OPTION FOR AN ADDITIONAL NETWORKED PC WITH MONITOR FOR TOWER TRAINING.
   - 4.4. AIRFIELD SERVICE CENTER
     - 4.4.1. REPLACE ALCMS NODE WITH NEW DESKTOP PC/MONITOR AND FIBER OPTIC SWITCH ENCLOSURE.
     - 4.4.2. PROVIDE ADDITIONAL SEPARATE COST, IF ANY, FOR CONTROL MODE CAPABILITY VS. VIEW ONLY AT AIRFIELD SERVICE CENTER

5. RADIO BACKUP SYSTEM
   - 5.1. REPLACE ETHERNET RADIO BACKUP SYSTEM AT ALL (5) NODES (SOUTH VAULT, NORTH VAULT, WEST VAULT, AIR TRAFFIC CONTROL TOWER AND AIRFIELD SERVICE CENTER) TO PROVIDE RADIOS, ANTENNAS, AND OTHER ASSOCIATED EQUIPMENT AND REQUIRED PROGRAMMING OF ALCMS TO REPLACE RADIO BACKUP SYSTEM AT ALL NODES.

6. MECHANICAL AND PLUMBING SYSTEMS ARE TO REMAIN, EXCEPT WHERE NOTED OTHERWISE. THE SUMP PUMPS AND SUMP PUMP CONTROLS IN THE WIRE VAULT LEVEL ARE TO BE REPLACED. THE HVAC UNITS IN THE SOUTH VAULT ARE EXISTING TO REMAIN BUT TEMPORARY RELOCATION MAY BE REQUIRED TO ENABLE INSTALLATION OF THE NEW AIRFIELD LIGHTING REGULATORS.

7. THE WORK REQUIRES CAREFUL AND THOROUGH COORDINATION WITH OWNER SYSTEMS AND APPROVAL OF CONSTRUCTION SEQUENCES AND WORK PLANS WITH HOUSTON AIRPORT SYSTEM OPERATIONS. THE CONTRACTORS DETAILED PHASING PLAN IS TO BE PROVIDED AS AN EARLY SUBMITTAL WITHIN 6 WEEKS OF NTP (MANDATORY).

HOUSTON AIRPORT SYSTEM

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www.jacobs.com TBPE Firm #2966

REVISIONS		
NO.	DESCRIPTION	DATE
	ISSUED FOR CONSTRUCTION	03/15/24

CITY OF HOUSTON
HOUSTON AIRPORTS SYSTEM
Recommended 03/29/2024
Houston Airports System Director or Designated Representative DATE

REVIEWED / NO EXCEPTIONS TAKEN
The drawings & support documents submitted for permit review meet the design intent, and to the best of our knowledge, appear to be in compliance with current HAS approved standards.
Performance and approval of this review does not waive, nor relieve the applicant from full responsibility & liability to conform and comply with all applicable standards, codes, and regulations required from all Authorities Having Jurisdiction (AHJ).

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH VAULT RENOVATIONS
CONSTRUCTION SEQUENCE OVERVIEW

PROJECT MGR: AEO
DESIGNER: AO
DRAWN BY: SH
CHECK BY: NM

DATE:

STATE OF TEXAS
ARTHUR E. OTTO
75035
REGISTERED PROFESSIONAL ENGINEER
03/15/24

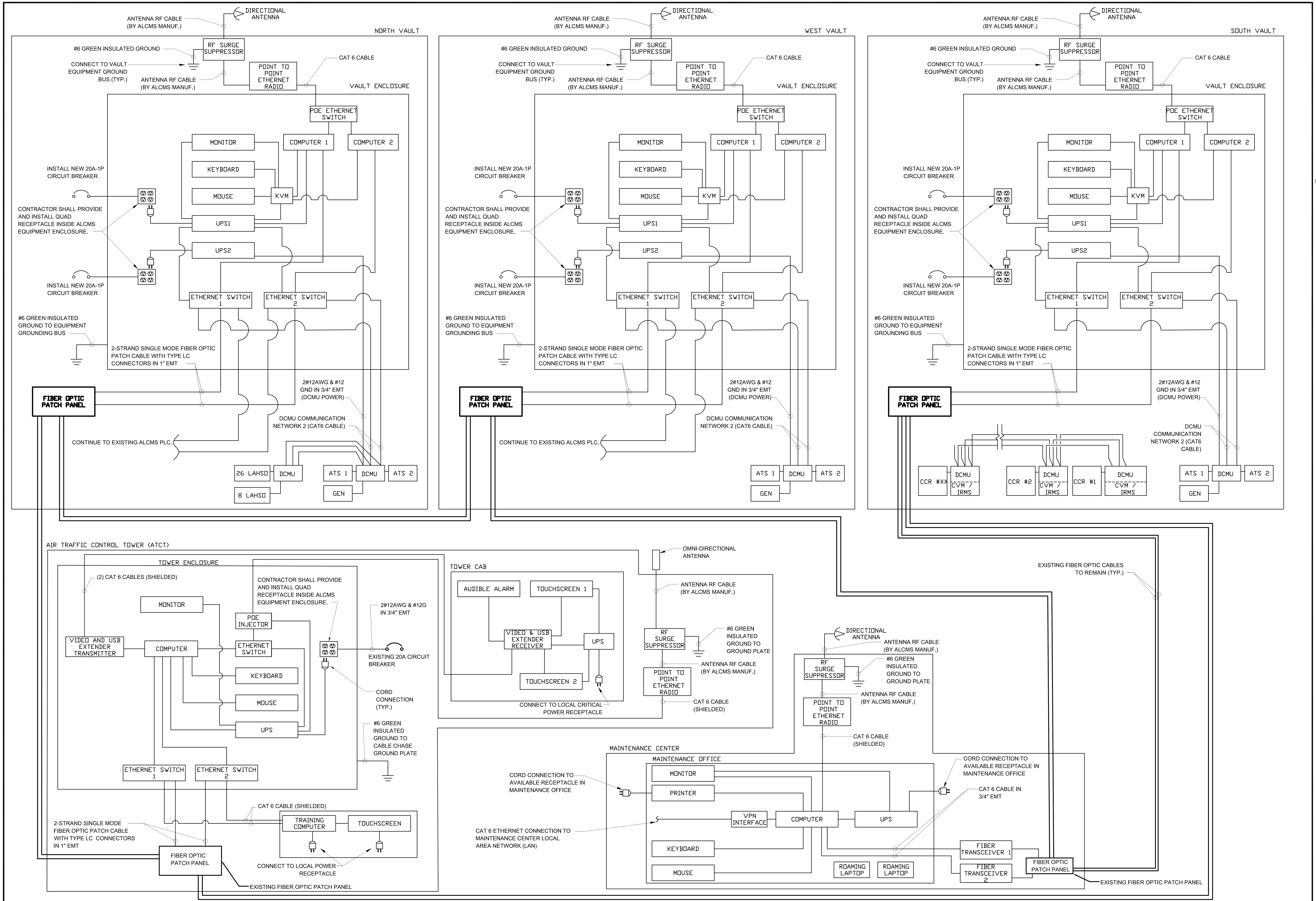
APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO.

SV-E6.03



HOUSTON AIRPORT SYSTEM

Jacobs
818 Town & Country Blvd. Suite 500 Houston, TX 77024 (281) 721-8400 www.jacobs.com TBPE Firm #2966

REVISIONS

NO.	DESCRIPTION	DATE
	ISSUED FOR CONSTRUCTION	03/15/24

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH VAULT RENOVATIONS
OVERALL ALCMS PROPOSED ARCHITECTURE DIAGRAM

PROJECT MGR: AEO
DESIGNER: JPH
DRAWN BY: JPH
CHECK BY: JAM

DATE:

STATE OF TEXAS 3/15/24 JAMES A. McDONALD 119579 LICENSED

APPROVED BY:

DIRECTOR HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO.
SV-E7.01

SOUTH VAULT PROPOSED CONSTANT CURRENT REGULATOR SCHEDULE

	CCR #	CIRCUIT ID	SIZE (KW)	OUTPUT CURRENT (AMPS)	OUTPUT STEPS	B1 / B10	B2 / B30	B3 / B100	B4	B5	INPUT VOLTAGE	CONTROL VOLTAGE	TYPE	MONITORING	NEW/EXISTING	NOTES
CCR LINEUP 1	1	27 TDZ	15	6.6	5	X	X	X	X	X	480V	120V	FERRORESONANT	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS	NEW	
	2	9/27 CENTERLINE	30	6.6	5	X	X	X	X	X	480V	120V	FERRORESONANT	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS	NEW	
	3	SIGNS SCE	20	6.6	1	X					480V	120V	FERRORESONANT	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS	NEW	
	4	9/27 EDGE	30	6.6	5	X	X	X	X	X	480V	120V	FERRORESONANT	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS	NEW	
	5	SIGNS SCW	20	6.6	1	X					480V	120V	FERRORESONANT	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS	NEW	
	6	SPARE	30	6.6	5	X	X	X	X	X	480V	120V	FERRORESONANT	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS	NEW	
	7	EMPTY (FUTURE)									480V	120V	FERRORESONANT	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS	NEW	
	8	SPARE	20	6.6	5	X	X	X	X	X	480V	120V	FERRORESONANT	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS	NEW	
CCR LINEUP 2	9	RGL 9/27	7.5	6.6	3	X	X	X			480V	120V	FERRORESONANT	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS	NEW	
	10	9 HSTO SH-SJ CENTERLINE	30	6.6	5	X	X	X	X	X	480V	120V	FERRORESONANT	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS	NEW	
	11	SA CENTERLINE	10	6.6	5	X	X	X	X	X	480V	120V	FERRORESONANT	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS	NEW	
	12	27 HSTO SF-SG CENTERLINE	30	6.6	5	X	X	X	X	X	480V	120V	FERRORESONANT	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS	NEW	
	13	SC/SF BRIDGE CENTERLINE	15	6.6	5	X	X	X	X	X	480V	120V	FERRORESONANT	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS	NEW	
	14	SB EDGE	20	6.6	3	X	X	X			480V	120V	FERRORESONANT	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS	NEW	
	15	SA EDGE	20	6.6	3	X	X	X			480V	120V	FERRORESONANT	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS	NEW	
	16	SC-SK CENTERLINE	20	6.6	5	X	X	X	X	X	480V	120V	FERRORESONANT	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS	NEW	
	17	SB CENTERLINE	10	6.6	5	X	X	X	X	X	480V	120V	FERRORESONANT	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS	NEW	
	18	RA CENTERLINE	30	6.6	5	X	X	X	X	X	480V	120V	FERRORESONANT	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS	NEW	
	19	SPARE	20	6.6	5	X	X	X	X	X	480V	120V	FERRORESONANT	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS	NEW	
	20	RB CENTERLINE	30	6.6	5	X	X	X	X	X	480V	120V	FERRORESONANT	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS	NEW	
	21	EMPTY (FUTURE)									480V	120V	FERRORESONANT	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS	NEW	
	22	SPARE	30	6.6	5	X	X	X	X	X	480V	120V	FERRORESONANT	L-829, INPUT POWER STATUS, REMOTE/LOCAL STATUS	NEW	

HOUSTON AIRPORT SYSTEM

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Houston, TX 77024
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REVISIONS

NO.	DESCRIPTION	DATE
	ISSUED FOR CONSTRUCTION	03/15/24

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH VAULT RENOVATIONS
SOUTH LIGHTING VAULT PROPOSED CCR SCHEDULE

PROJECT MGR: AEO
DESIGNER:JPH
DRAWN BY:JPH
CHECK BY: JAM

DATE:

STATE OF TEXAS
3.15.24
JAMES A. McDONALD
119579
LICENSED
PROFESSIONAL ENGINEER

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO.
SV-E7.02

WEST VAULT CONSTANT CURRENT REGULATOR SCHEDULE

	CCR #	CIRCUIT ID	SIZE (KW)	OUTPUT CURRENT (AMPS)	OUTPUT STEPS	B1 / B10	B2 / B30	B3 / B100	B4	B5	INPUT VOLTAGE	CONTROL VOLTAGE	MANUFACTURER	MODEL #	NEW/EXISTING	NOTES
CCR LINEUP 3	1	WA EDGE NORTH	30	6.6	3	X	X	X			480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	2	WA EDGE SOUTH	30	6.6	3	X	X	X			480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	3	WA CENTERLINE NORTH	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	4	WA CENTERLINE SOUTH	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	5	SPARE	30	6.6							480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	6	SPARE	30	6.6							480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	7	WB EDGE NORTH	30	6.6	3	X	X	X			480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	8	WB EDGE SOUTH	30	6.6	3	X	X	X			480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	9	WB CENTERLINE NORTH	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	10	WB CENTERLINE SOUTH	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	11	RA CENTERLINE	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	12	RB CENTERLINE	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	13	SIGN SCW1	30	6.6	1	X					480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	14	SIGN SCW2	30	6.6	1	X					480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	15	SIGN SCW3	30	6.6	1	X					480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	16	SIGN SCW4	30	6.6	1	X					480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
CCR LINEUP 2	21	15R EDGE	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	22	15R CENTERLINE	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	23	15R TDZ	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	24	33L TDZ	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	25	WP CENTERLINE	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	26	WP EDGE NORTH	30	6.6	3	X	X	X			480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	27	WP EDGE SOUTH	30	6.6	3	X	X	X			480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	28	SPARE	30	6.6							480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	29	WC EDGE NORTH	30	6.6	3	X	X	X			480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	30	WC EDGE SOUTH	30	6.6	3	X	X	X			480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	31	WST CENTERLINE	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	32	WQR CENTERLINE	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	33	SPARE	30	6.6							480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	34	SPARE	30	6.6							480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	35	RGL 15R-33L NORTH	30	6.6	3	X	X	X			480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	36	RGL 15R-33L SOUTH	30	6.6	3	X	X	X			480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
CCR LINEUP 1	41	15L EDGE	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	42	15L CENTERLINE	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	43	15L TDZ (FUTURE)	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	44	33R TDZ (FUTURE)	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	45	WW CENTERLINE	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	46	SPARE	30	6.6							480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	47	TW CONNECTOR EDGE (FUTURE)	30	6.6	3	X	X	X			480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	48	TW CONNECTOR EDGE (FUTURE)	30	6.6	3	X	X	X			480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	49	TW CONNECTOR CL (FUTURE)	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	50	TW CONNECTOR CL (FUTURE)	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	51	WHKM CENTERLINE	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	52	WDGJ CENTERLINE	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	53	SIGN SCW5	30	6.6	1	X					480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	54	SPARE	30	6.6							480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	55	RGL 15L-33R NORTH	30	6.6	3	X	X	X			480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	
	56	RGL 15L-33R SOUTH	30	6.6	3	X	X	X			480V	120V	LIBERTY SYSTEMS	FSF9S-30A3A5-22-23-26-27-41	EXISTING	

HOUSTON AIRPORT SYSTEM

Jacobs

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REVISIONS

NO.	DESCRIPTION	DATE
	ISSUED FOR CONSTRUCTION	03/15/24

CITY OF HOUSTON
HOUSTON AIRPORTS SYSTEM
Recommended 03/29/2024
Houston Airports System Director or Designated Representative DATE
REVIEWED / NO EXCEPTIONS TAKEN

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH VAULT RENOVATIONS
WEST LIGHTING VAULT CCR SCHEDULE

PROJECT MGR: AEO
DESIGNER:JPH
DRAWN BY:JPH
CHECK BY: JAM

DATE:

STATE OF TEXAS
3/15/24
JAMES A. McDONALD
119579
LICENSED
PROFESSIONAL ENGINEER

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO.
SV-E7.03

NORTH VAULT CONSTANT CURRENT REGULATOR SCHEDULE

	CCR #	CIRCUIT ID	SIZE (KW)	OUTPUT CURRENT (AMPS)	OUTPUT STEPS	B1 / B10	B2 / B30	B3 / B100	B4	B5	INPUT VOLTAGE	CONTROL VOLTAGE	MANUFACTURER	MODEL #	NEW/EXISTING	NOTES
SWITCHGEAR REG-1A	1	8R/26L EDGE	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS		EXISTING	
	2	8R/26L CENTERLINE	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS		EXISTING	
	3	8R/26L SIGNS	30	6.6	1	X					480V	120V	LIBERTY SYSTEMS		EXISTING	
	4	8R TDZ	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS		EXISTING	
	5	26L TDZ	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS		EXISTING	
	6	NB CENTERLINE EAST	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS		EXISTING	
	7	NA CENTERLINE WEST	20	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS		EXISTING	
	8	NF NH NL EDGE	20	6.6	3	X	X	X			480V	120V	LIBERTY SYSTEMS		EXISTING	
	9	NG NN NK EDGE	20	6.6	3	X	X	X			480V	120V	LIBERTY SYSTEMS		EXISTING	
	10	NF NH NL CENTERLINE	20	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS		EXISTING	
	11	NG NN NK CENTERLINE	20	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS		EXISTING	
	12	NA EDGE	20	6.6	3	X	X	X			480V	120V	LIBERTY SYSTEMS		EXISTING	
	13	NB EDGE	20	6.6	3	X	X	X			480V	120V	LIBERTY SYSTEMS		EXISTING	
	14	NB CENTERLINE WEST	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS		EXISTING	
SWITCHGEAR REG-1B	15	EA CENTERLINE	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS		EXISTING	
	16	NB EXT. CENTERLINE	20	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS		EXISTING	
	17	NC EDGE	20	6.6	3	X	X	X			480V	120V	LIBERTY SYSTEMS		EXISTING	
	18	NC CENTERLINE	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS		EXISTING	
	19	SIGNS WEST	30	6.6	1	X					480V	120V	LIBERTY SYSTEMS		EXISTING	
	20	SIGNS EAST	30	6.6	1	X					480V	120V	LIBERTY SYSTEMS		EXISTING	
	21	NA CENTERLINE EAST	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS		EXISTING	
	22	SPARE	20	6.6							480V	120V	LIBERTY SYSTEMS		EXISTING	
	23	NB EXT. AND CARGO EDGE	20	6.6	3	X	X	X			480V	120V	LIBERTY SYSTEMS		EXISTING	
	24	EB CENTERLINE	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS		EXISTING	
	25	N RAMP	20	6.6	3	X	X	X			480V	120V	LIBERTY SYSTEMS		EXISTING	
	26	SPARE #2	30	6.6	1	X					480V	120V	LIBERTY SYSTEMS		EXISTING	
	27	8L GUARD LIGHTS	30	6.6	3	X	X	X			480V	120V	LIBERTY SYSTEMS		EXISTING	
	28	8R GUARD LIGHTS	30	6.6	3	X	X	X			480V	120V	LIBERTY SYSTEMS		EXISTING	
SWITCHGEAR REG-2A	51	SPARE #1	20	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS		EXISTING	
	52	8L EDGE	20	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS		EXISTING	
	53	26R EDGE	20	6.6	3	X	X	X			480V	120V	LIBERTY SYSTEMS		EXISTING	
	54	8L CENTERLINE	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS		EXISTING	
	55	8L TDZ	20	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS		EXISTING	
	56	26R TDZ	20	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS		EXISTING	
	57	SPARE	20	6.6							480V	120V	LIBERTY SYSTEMS		EXISTING	
	58	SPARE	20	6.6							480V	120V	LIBERTY SYSTEMS		EXISTING	
	59	SPARE	20	6.6							480V	120V	LIBERTY SYSTEMS		EXISTING	
	60	CC CENTERLINE #1 (WEST)	20	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS		EXISTING	
	61	CC CENTERLINE #2 (MIDDLE)	20	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS		EXISTING	
	62	CC CENTERLINE #3 (EAST)	20	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS		EXISTING	
	63	FA CENTERLINE #1 (WEST)	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS		EXISTING	
	64	FA CENTERLINE #2 (MIDDLE)	20	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS		EXISTING	
	65	FA CENTERLINE #3 (EAST)	20	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS		EXISTING	
	66	FC CENTERLINE	20	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS		EXISTING	
	67	FJ CENTERLINE	20	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS		EXISTING	
	68	NE CENTERLINE	20	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS		EXISTING	
SWITCHGEAR REG-2B	69	NP CENTERLINE	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS		EXISTING	
	70	FD CENTERLINE	20	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS		EXISTING	
	71	FE CENTERLINE	20	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS		EXISTING	
	72	FG CENTERLINE	20	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS		EXISTING	
	73	FH CENTERLINE	20	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS		EXISTING	
	74	SPARE #2	20	6.6	1	X					480V	120V	LIBERTY SYSTEMS		EXISTING	
	75	8L/26R SIGNS #1	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS		EXISTING	
	76	SIGNS DRM #1A	20	6.6	1	X					480V	120V	LIBERTY SYSTEMS		EXISTING	
	77	8L/26R SIGNS #2	20	6.6	1	X					480V	120V	LIBERTY SYSTEMS		EXISTING	
	78	SPARE	20	6.6							480V	120V	LIBERTY SYSTEMS		EXISTING	
	79	SPARE	20	6.6							480V	120V	LIBERTY SYSTEMS		EXISTING	
	80	SPARE #3	30	6.6	3	X	X	X			480V	120V	LIBERTY SYSTEMS		EXISTING	
	81	SPARE #4	30	6.6	5	X	X	X	X	X	480V	120V	LIBERTY SYSTEMS		EXISTING	
	82	SPARE #5	20	6.6	3	X	X	X			480V	120V	LIBERTY SYSTEMS		EXISTING	
	83	FA EDGE 1	20	6.6	3	X	X	X			480V	120V	LIBERTY SYSTEMS		EXISTING	
	84	FA EDGE 2	20	6.6	3	X	X	X			480V	120V	LIBERTY SYSTEMS		EXISTING	
	85	CC EDGE	20	6.6	3	X	X	X			480V	120V	LIBERTY SYSTEMS		EXISTING	
	86	NP EDGE	20	6.6	3	X	X	X			480V	120V	LIBERTY SYSTEMS		EXISTING	

HOUSTON AIRPORT SYSTEM

Jacobs
818 Town & Country Blvd.
Suite 500
Houston, TX 77024
(281) 721-8400
www.jacobs.com TBPE Firm #2966

REVISIONS

NO.	DESCRIPTION	DATE
	ISSUED FOR CONSTRUCTION	03/15/24

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH VAULT RENOVATIONS
NORTH LIGHTING VAULT CCR SCHEDULE

PROJECT MGR: AEO
DESIGNER: JPH
DRAWN BY: JPH
CHECK BY: JAM

DATE:

STATE OF TEXAS
3.15.24
JAMES A. McDONALD
119579
LICENSED PROFESSIONAL ENGINEER

APPROVED BY:

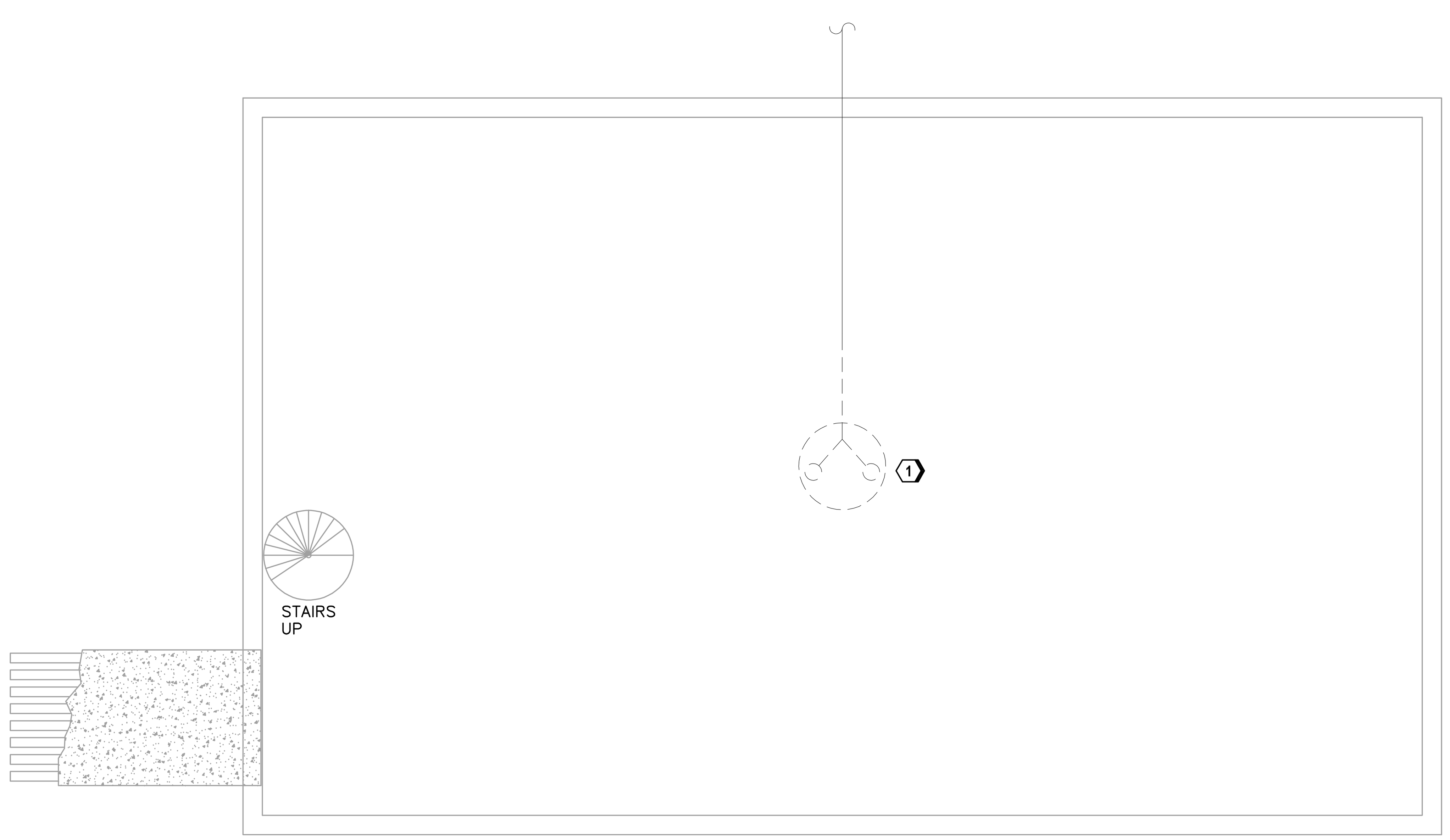
DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A–000687
B.S.G. NO. 2024–31–IAH
H.A.S. NO. PN 952
T.I.P. NO. 24–28–IAH

SHEET NO.
SV-E7.04

KEYED NOTES

1. DEMOLISH EXISTING DUPLEX SUMP PUMP, COVER, CONTROLS AND APPURTENANCES.



1 PLUMBING DEMOLITION PLAN
SCALE: 1/4" = 1'-0"

0 4 8 12
GRAPHIC SCALE: 1/4" = 1'-0"

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HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH VAULT RENOVATIONS
PLUMBING DEMOLITION PLAN

PROJECT MGR: AEO
DESIGNER: AO
DRAWN BY: SH
CHECK BY: NM

DATE:

STATE OF TEXAS
VICTORIA ROSE OWENS HERMAN
120708
LICENSED
PROFESSIONAL ENGINEER
3-15-24

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM
JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO.
SV-PD1.01

PLUMBING - SUMP PUMP SCHEDULE

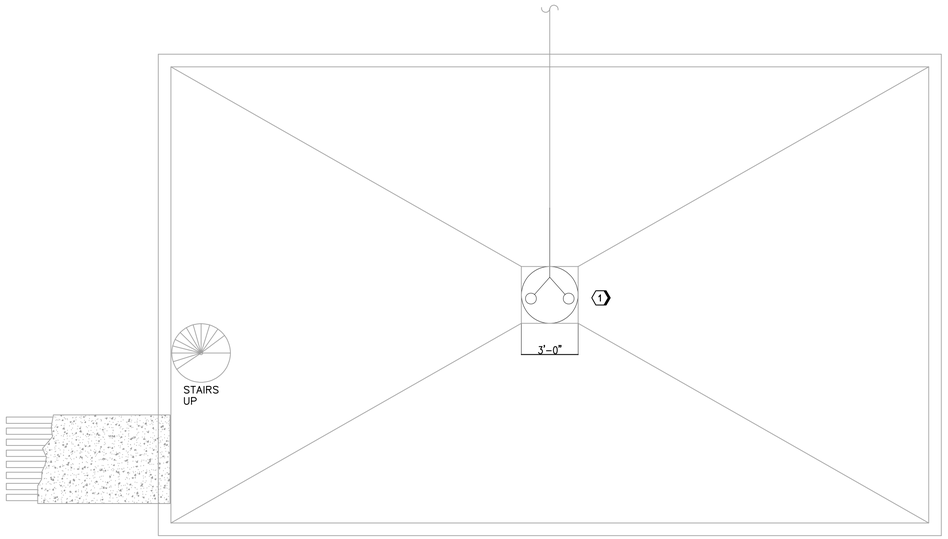
ITEM		DESCRIPTION	MANUFACTURER	MODEL NO.	SIZE		FLOW	PUMP HEAD	PUMP	MOTOR DATA				NOTES
TYPE	NO				SUCTION	DISCHARGE	(GPM EACH)	(FT)	(RPM)	HP (EACH)	V	PHASE	HZ	
SP	1,2	SUBMERISBLE SUMP PUMP	GRUNDFOS	PIP 1092L	2"	2"	35	40	3500	1	208	3	60	ALL

NOTES:

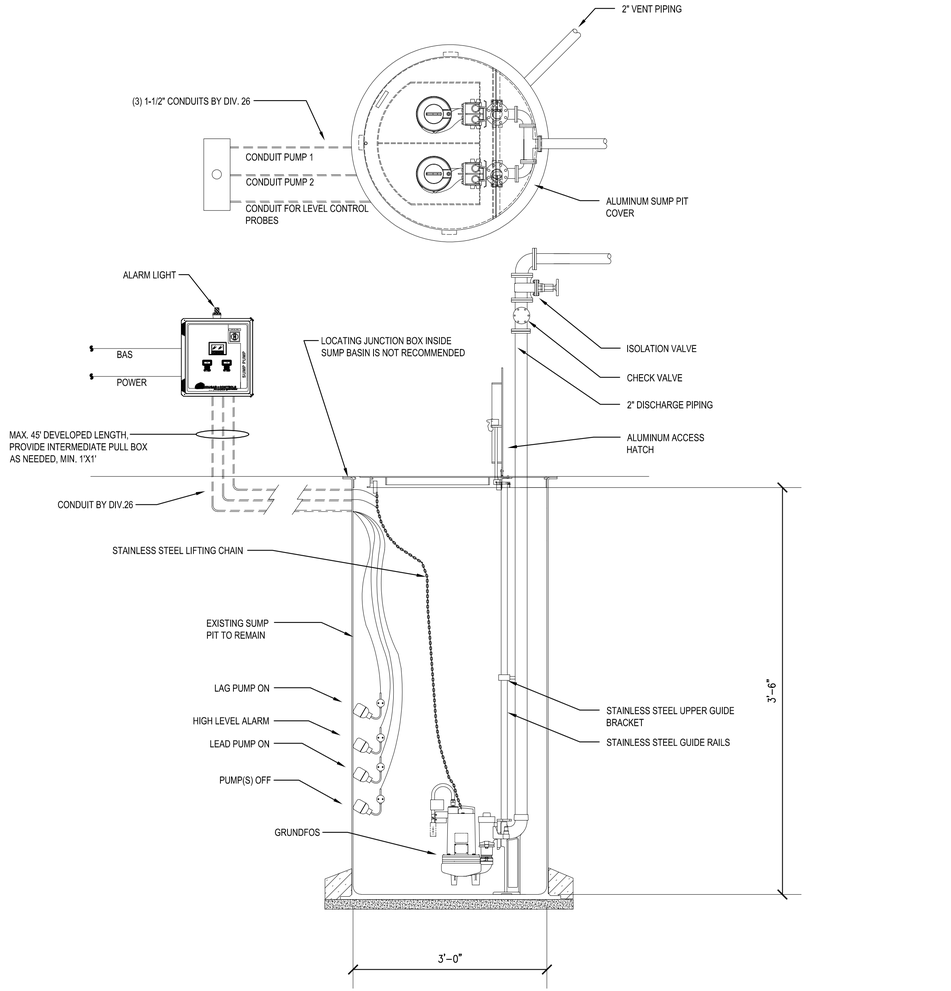
1. UL 508A DUPLEX PLC BASED CONTROL PANEL WITH TOUCHSCREEN INTERFACE, SIMILAR TO COUGAR SYSTEMS ELITE SUMP PUMP PANEL
2. REPLACE COVER WITH ALUMINUM DIAMOND PLATE COVER WITH HATCH.
3. FOUR NARROW ANGLE FLOAT CONTROL MAX ACCEPTABLE NPSH REQUIRED SHALL BE 25 FEET. ASSUMING 1 FOOT OF WATER ABOVE SUMP PUMP PUMP AND 5 FEET OF LOSS AT SUCTION INLET.
4. THROUGH-THE-DOOR MAIN DISCONNECT
5. HIGH TEMP CIRCUITS WITH INDICATION
6. GENERAL ALARM CONTACT
7. MONITORING ALARMS (HIGH LEVEL ALARM, PUMPS FAIL-TO-RUN ALARM, EXTENDED RUN TIME ALARMS, HIGH TEMP/OVERLOAD ALARMS, SEAL FAIL ALARMS)
8. START UP TO BE DONE BY SYSTEM SUPPLIER

KEYED NOTES

(1) PROVIDE NEW SUBMERSIBLE DUPLEX SUMP PUMP AND CONTROLS IN EXISTING PIT AND RECONNECT TO EXISTING PIPING. PROVIDE NEW CONTROLLER INTEGRATE INTO EXISTING ALERTON HAS FRONT END. CONTRACTOR SHALL CONFIRM EXISTING PIPING IS CLEAR AND NOTIFY THE OWNER AND ENGINEER OF ANY BLOCKED OR DAMAGED PIPE. EXTEND THE EXISTING PIPE 12" ABOVE THE NEW DRAIN CHANNEL AT THE PREVIOUS CURB LINE.



1 PLUMBING PLAN
SCALE: 1/4" = 1'-0"



2 DUPLEX NON-CLOG SUMP PUMP
SCALE: N.T.S.

0 4 8 12
GRAPHIC SCALE: 1/4" = 1'-0"

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REVISIONS

NO.	DESCRIPTION	DATE
	ISSUED FOR CONSTRUCTION	03/15/24

CITY OF HOUSTON
HOUSTON AIRPORTS SYSTEM
Recommended _____ 03/29/2024
Director, Engineering Date
Houston Airport System Representative

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SOUTH VAULT RENOVATIONS
PLUMBING PLAN

PROJECT MGR: AEO
DESIGNER: AO
DRAWN BY: SH
CHECK BY: NM

DATE:

STATE OF TEXAS
VICTORIA ROSE OWENS HERMAN
120708
LICENSED
PROFESSIONAL ENGINEER
3-15-24

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO.

SV-P1.01

PART I - DESIGN CRITERIA

A. GENERAL BUILDING CODE

1. THE CONSTRUCTION DOCUMENTS ARE BASED ON THE REQUIREMENTS OF THE **INTERNATIONAL BUILDING CODE (IBC) 2021 EDITION WITH THE CITY OF HOUSTON AMENDMENTS TO THE BUILDING CODE**.

B. DEAD LOADS

1. ROOF DEAD (EXIST ROOF) 15 PSF
2. NEW MECHANICAL EQUPMENT
   A. SWITCHGEAR 20, 000 LBS
   B. GENSET WITH TANK 65,000 LBS OVER 301 INCH X 97 INCH

C. LIVE LOADS

1. DESIGN LIVE LOADS ARE BASED ON THE MORE RESTRICTIVE OF THE UNIFORM LOAD LISTED BELOW OR THE CONCENTRATED LOAD LISTED ACTING OVER AN AREA 2.5 FEET SQUARE OR, IN THE CASE OF PARKING GARAGES, 20 SQUARE INCHES.

CATEGORY	UNIFORM LOAD (PSF)	CONCENTRATED LOAD (LB)
PLATFORM	60	N/A
STAIRS	100	

D. WIND LOADS

1. WIND PRESSURES ARE BASED ON THE AMERICAN SOCIETY OF CIVIL ENGINEERS, MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES, ASCE 7-**16** AND THE FOLLOWING CRITERIA:
   a. BASIC WIND SPEED: 140 MPH
   b. BUILDING CATEGORY: **IV**
   c. WIND EXPOSURE CATEGORY: **C**
   d. MAXIMUM WIND PRESSURE FOR A SOLID FREE STANDING WALL**: 65 PSF**

E. VEHICLE BARRIER LOAD

1. CMU WALL ON SOUTH SIDE OF SITE IS DESIGNED FOR A CAR IMPACT LOAD AS SPECIFIED IN THE REFERENCED BUILDING CODE, NOT LESS THAN THE EFFECT OF A SINGLE FACTORED LOAD OF 10,000 POUNDS APPLIED HORIZONTALLY IN ANY DIRECTION TO THE WALL SYSTEM UNDER TWO LOADING CONDITIONS. THE FIRST CONDITION SHALL APPLY THE LOAD AT A HEIGHT OF 1'-6" ABOVE THE DRIVING SURFACE AND THE SECOND LOADING CONDITION SHALL APPLY THE LOAD AT 2'-3" ABOVE THE DRIVING SURFACE.

F. HANDRAILS AND GUARDS

1. THE HANDRAIL ASSEMBLIES AND GUARDS SHALL BE DESIGNED FOR 50 PLF OR A CONCENTRATED LOAD OF 200 POUNDS AT ANY POINT APPLIED IN ANY DIRECTION AT THE TOP AND TO TRANSFER THIS LOAD THROUGH THE SUPPORTS TO THE STRUCTURE. THESE LOADS NEED NOT BE ASSUMED TO ACT CONCURRENTLY.

PART II - FOUNDATION

A. GEOTECHNICAL INFORMATION

1. FOUNDATION DESIGN IS BASED ON TABLE 1806.2 IN IBC 2021 -PRESUMPTIVE LOAD BEARING VALUES.
   a. FOR SAND, SILTY SAND, CLAYEY SAND, MAXIMUM ALLOWABLE VERTICAL FOUNDATION PRESSURE SHOULD NOT EXCEED 2000 PSF WITH A COEFFICIENT OF FRICTION OF 0.25 FOR LATERAL SLIDING RESISTANCE.
   b. FOR CLAY, SANDY CLAY, AND SILTY CLAY, MAXIMUM ALLOWABLE VERTICAL FOUNDATION PRESSURE SHOULD NOT EXCEED 1500 PSF WITH A COHESION COEFFICIENT OF 130 PSF FOR LATERAL SLIDING RESISTANCE.

PART III - REINFORCED CONCRETE

A. CLASSES OF CONCRETE

1. ALL CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF THE "CLASSES OF CONCRETE MATRIX" ON SHEET SV-**S0.0.3** UNLESS NOTED OTHERWISE ON THE DRAWINGS.

B. HORIZONTAL CONSTRUCTION JOINTS IN CONCRETE POURS

1. THERE SHALL BE NO HORIZONTAL CONSTRUCTION JOINTS IN ANY CONCRETE POURS UNLESS SHOWN ON THE DRAWINGS.

C. REINFORCING STEEL

1. ALL REINFORCING STEEL SHALL BE ASTM A 615 GRADE 60 UNLESS NOTED OTHERWISE ON THE DRAWINGS OR IN THESE NOTES.

D. REINFORCING STEEL COVERAGE

1. REINFORCING STEEL COVERAGE SHOULD CONFORM TO THE REQUIREMENTS SPECIFIED IN DETAILS LABELED "TYPICAL CLEAR CONCRETE COVER" ON SHEETS **SV-S3.0X** UNLESS NOTED OTHERWISE ON THE DRAWINGS. COVER SPECIFIED SHALL BE CONSIDERED MINIMUMS THAT MAY REQUIRE INCREASING WHERE REINFORCING STEEL INTERSECTS FOR DIFFERENT MEMBER TYPES. COVER IN STRUCTURAL MEMBERS NOT SPECIFIED IN THE DETAILS SHALL CONFORM TO THE REQUIREMENTS OF ACI 318 UNLESS SPECIFIED OTHERWISE ON THE DRAWINGS. THE REINFORCING STEEL DETAILER SHALL ADJUST REINFORCING STEEL CAGE SIZES AT INTERSECTING STRUCTURAL MEMBERS AS REQUIRED TO ALLOW CLEARANCE FOR INTERSECTING REINFORCING BAR LAYERS WITH MINIMUM SPECIFIED COVER.

PART IV - CONCRETE MASONRY

A. CONCRETE MASONRY UNITS.

1. CONCRETE STRENGTH OF MASONRY UNITS (BASED ON NET AREA) SHALL BE **1,900 PSI** MINIMUM.
2. UNITS SHALL CONFORM TO ASTM C 55 OR ASTM C 90 AND SAMPLED IN ACCORDANCE WITH ASTM C 140.

B. MORTAR

1. USE ONLY PORTLAND CEMENT/LIME, TYPE M OR S, MORTAR CONFORMING TO ASTM C 270. PROVIDE AN AVERAGE COMPRESSIVE STRENGTH AT 28 DAYS OF **1,800 PSI** MINIMUM.

C. GROUT

1. MIX DESIGNS:
   a. FOR FILLING SPACES 4" OR LARGER IN BOTH HORIZONTAL DIRECTIONS, USE "COARSE GROUT" WITH A MINIMUM COMPRESSIVE STRENGTH OF **3,000 PSI**. THE GROUT SHALL BE TESTED IN ACCORDANCE WITH ASTM C1019. FOR FILLING SPACES LESS THAN 4" IN ONE OR BOTH HORIZONTAL DIRECTIONS, USE "FINE GROUT" PROPORTIONED PER ASTM C 476.
   b. USE **3,000 PSI** NORMALWEIGHT CONCRETE FOR FILLING SPACES 10" AND LARGER IN BOTH DIRECTIONS. THE GROUT SHALL BE TESTED IN ACCORDANCE WITH ASTM C 1019.
   c. ALL GROUT MIX DESIGN SUBMITTALS SHALL INCLUDE THE RESULTS OF THE TESTS PERFORMED IN ACCORDANCE WITH ASTM C 1019.
   d. SLUMP RANGE AT POINT OF FINAL DISCHARGE: 8" TO 11".
   e. THE USE OF AIR ENTRAINING ADMIXTURES IS NOT ALLOWED.

D. MINIMUM REINFORCEMENT FOR CONCRETE MASONRY UNITS

1. PROVIDE VERTICAL REINFORCEMENT IN CELLS OF CONCRETE MASONRY UNITS (FULLY EMBEDDED IN GROUT) AS SHOWN ON THE PLANS AND OTHER DETAILS.
2. MINIMUM LAP OF ALL REINFORCING STEEL SHALL BE AS FOLLOWS:
   a. REFER TO DETAILS AND SCHEDULES FOR LAP SPLICE LENGTH REQUIREMENTS.DO NOT LAP VERTICAL REINFORCEMENT AT INTERSECTING BOND BEAMS. REINFORCEMENT SHALL BE CONTINUOUS THROUGH INTERSECTING BOND BEAMS.
3. TERMINATION OF REINFORCING STEEL:
   a. ALL VERTICAL REINFORCEMENT SHALL HAVE STANDARD HOOK INTO BOND BEAM. HOOK SHALL EXTEND TO THE UPPERMOST HORIZONTAL REINFORCEMENT OF THE BOND BEAM AND HAVE A MINIMUM EMBEDMENT OF 6".
   b. ALL HORIZONTAL REINFORCEMENT AT ENDS OF BOND BEAMS SHALL HAVE STANDARD HOOK INTO VERTICAL CONCRETE COLUMNS.

E. REINFORCING STEEL COVERAGE

1. COVER TO REINFORCING STEEL WITHIN MASONRY ELEMENTS SHALL NOT BE LESS THAN THE FOLLOWING:
   a. EXPOSED TO EARTH OF WEATHER: 2" (#6 AND LARGER BARS), 1.5" (#5 AND SMALLER BARS).
   b. NOT EXPOSED TO EARTH OF WEATHER: 1.5"
   c. LONGITUDINAL WIRES OF JOINT REINFORCEMENT SHALL BE FULLY EMBEDDED IN MORTAR OR GROUT WITH A MINIMUM COVER OF 5/8" WHEN EXPOSED TO EARTH AND WEATHER AND 1/2" WHEN NOT EXPOSED TO EARTH OR WEATHER.

F. CONTROL JOINTS

1. DO NOT PROVIDE JOINTS UNLESS SHOWN ON DRAWINGS

G. STABILITY AND BRACING OF MASONRY WALLS DURING CONSTRUCTION

1. ALL MASONRY WALLS SHOWN ON THE STRUCTURAL DRAWINGS HAVE BEEN DESIGNED TO RESIST THE REQUIRED CODE VERTICAL AND LATERAL FORCES APPLIED TO THEM IN THE FINAL CONSTRUCTED CONFIGURATION ONLY ASSUMING FULL BRACING BOTTOM, AND SIDE OF WALL. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROPERLY AND ADEQUATELY BRACE ALL MASONRY WALLS AT ALL STAGES DURING CONSTRUCTION TO RESIST ERECTION LOADS AND LATERAL LOADS THAT COULD POSSIBLY BE APPLIED PRIOR TO COMPLETION OF CONSTRUCTION.

PART V - SELECTIVE DEMOLITION

A. RESPONSIBILITY OF THE CONTRACTOR FOR STABILITY OF THE STRUCTURE DURING DECONSTRUCTION / DEMOLITION

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL REQUIRED BRACING DURING DEMOLITION TO MAINTAIN THE STABILITY AND SAFETY OF ALL STRUCTURAL ELEMENTS DURING THE DEMOLITION PROCESS. CONTRACTOR SHALL ENGAGE A PROFESSIONAL ENGINEER TO SURVEY CONDITION OF BUILDING TO DETERMINE WHETHER REMOVING ANY ELEMENT MIGHT RESULT IN STRUCTURAL DEFICIENCY OR UNPLANNED COLLAPSE OF ANY PORTION OF STRUCTURE OR ADJACENT STRUCTURES DURING SELECTIVE DEMOLITION OPERATIONS.

B. DEFINITIONS

1. REMOVE: DETACH ITEMS FROM EXISTING CONSTRUCTION AND LEGALLY DISPOSE OF THEM OFF-SITE, UNLESS INDICATED TO BE REMOVED AND SALVAGED OR REMOVED AND REINSTALLED.
2. REMOVE AND SALVAGE: DETACH ITEMS FROM EXISTING CONSTRUCTION AND DELIVER THEM TO OWNER READY FOR REUSE. OWNER TO IDENTIFY ITEMS TO BE REUSED OR SALVAGED.
3. EXISTING TO REMAIN: EXISTING ITEMS OF CONSTRUCTION THAT ARE NOT TO BE REMOVED AND THAT ARE NOT OTHERWISE INDICATED TO BE REMOVED, REMOVED AND SALVAGED, OR REMOVED AND REINSTALLED.

C. MATERIAL OWNERSHIP

1. EXCEPT FOR ITEMS OR MATERIALS INDICATED TO BE REUSED, SALVAGED, OR OTHERWISE INDICATED TO REMAIN OWNER'S PROPERTY, DEMOLISHED MATERIALS SHALL BECOME CONTRACTOR'S PROPERTY AND SHALL BE REMOVED FROM PROJECT SITE. THE MATERIALS REMOVED SHALL BE DISPOSED IN A PROPER AND LEGAL MANNER PER FEDERAL/STATE OR LOCAL ORDINANCES.

D. QUALITY ASSURANCE

1. DEMOLITION FIRM QUALIFICATIONS: AN EXPERIENCED FIRM THAT HAS SPECIALIZED IN DEMOLITION WORK SIMILAR IN MATERIAL AND EXTENT TO THAT INDICATED FOR THIS PROJECT.
2. PROFESSIONAL QUALIFICATIONS OF ENGINEER ENGAGED BY CONTRACTOR: CURRENT REGISTRATION IN THE STATE WHERE THE PROJECT IS LOCATED.
3. REGULATORY REQUIREMENTS: COMPLY WITH GOVERNING OWNER, LOCAL, STATE, FEDERAL, AND EPA NOTIFICATIONS AND REGULATIONS BEFORE BEGINNING SELECTIVE DECONSTRUCTION / DEMOLITION. COMPLY WITH HAULING AND DISPOSAL REGULATIONS OF AUTHORITIES HAVING JURISDICTION.
4. PHOTO DOCUMENTATION OF EXISTING CONDITIONS OF THE BUILDING AND ADJOINING PROPERTIES SHALL BE PERFORMED BY CONTRACTOR PRIOR TO DEMOLITION. PHOTOS SHALL BE SUBMITTED TO OWNER AND ENGINEER OF RECORD.
5. PRE-DEMOLITION CONFERENCE: CONDUCT CONFERENCE AT PROJECT SITE TO ADDRESS THE FOLLOWING:
   a. INSPECT AND DISCUSS CONDITION OF CONSTRUCTION TO BE SELECTIVELY DEMOLISHED.
   b. REVIEW STRUCTURAL LOAD LIMITATIONS OF EXISTING STRUCTURE AS APPROPRIATE FOR THE PROPOSED MEANS AND METHODS.
   c. REVIEW AND FINALIZE SELECTIVE DEMOLITION SCHEDULE AND VERIFY AVAILABILITY OF MATERIALS, DEMOLITION PERSONNEL, EQUIPMENT, AND FACILITIES NEEDED TO MAKE PROGRESS AND AVOID DELAYS.

E. PROJECT CONDITIONS

1. CONDUCT SELECTIVE DEMOLITION SO OWNER'S OPERATIONS WILL NOT BE DISRUPTED. PROVIDE NOT LESS THAN 72-HOUR NOTICE TO OWNER OF ACTIVITIES THAT WILL AFFECT OWNER'S OPERATIONS.
2. MAINTAIN ACCESS TO EXISTING WALKWAYS, CORRIDORS, AND OTHER ADJACENT OCCUPIED OR USED FACILITIES. DO NOT CLOSE OR OBSTRUCT WALKWAYS, CORRIDORS, OR OTHER OCCUPIED OR USED FACILITIES WITHOUT WRITTEN PERMISSION FROM AUTHORITIES HAVING JURISDICTION.
3. OWNER ASSUMES NO RESPONSIBILITY FOR CONDITION OF AREAS TO BE SELECTIVELY DEMOLISHED.
   a. CONDITIONS EXISTING AT TIME OF INSPECTION FOR BIDDING PURPOSE WILL BE MAINTAINED BY OWNER AS FAR AS PRACTICAL.
   b. BEFORE SELECTIVE DEMOLITION, OWNER WILL REMOVE ITEMS WITHIN SPACE AS NEEDED.
4. CONTRACTOR TO REVIEW PRELIMINARY ASBESTOS SURVEY FOR THE FACILITY BEFORE BIDDING AND BEGINNING OF WORK. IF MATERIALS SUSPECTED OF CONTAINING HAZARDOUS MATERIALS ARE ENCOUNTERED, DO NOT DISTURB; IMMEDIATELY NOTIFY ENGINEER AND OWNER. THESE MATERIALS SHALL BE REMOVED AS DISPOSED AS APPROVED BY GOVERNING AGENCY.
5. STORAGE OR SALE OF REMOVED ITEMS OR MATERIALS ON-SITE WILL NOT BE PERMITTED.
6. UTILITY SERVICE: MAINTAIN EXISTING UTILITIES INDICATED TO REMAIN IN SERVICE AND PROTECT THEM AGAINST DAMAGE DURING SELECTIVE DEMOLITION OPERATIONS. MAINTAIN FIRE-PROTECTION FACILITIES IN SERVICE DURING SELECTIVE DEMOLITION OPERATIONS.
7. PROTECT ADJACENT PAVING (ASPHALT OR CEMENT ROADWAYS, SEWERS, ETC.),AND DRAINAGE DITCHES AS NEEDED.
8. ALL AREAS OUTSIDE OF DEMOLITION SCOPE TO BE PROTECTED FROM DAMAGE BY CONTRACTOR. RESTORE AREAS SUBJECT TO INCIDENTAL DAMAGE TO THEIR PRE-DEMOLITION CONDITION.

F. UTILITY SERVICES

1. REFER TO DIVISION 01 SECTIONS REGARDING REQUIREMENTS FOR MAINTAINING EXISTING UTILITIES IN SERVICE AND FOR INTERRUPTIONS OF EXISTING UTILITIES.

G. PREPARATION

1. DANGEROUS MATERIALS: DRAIN, PURGE, OR OTHERWISE REMOVE, COLLECT, AND DISPOSE OF CHEMICALS, GASES, EXPLOSIVES, ACIDS, FLAMMABLES, OR OTHER DANGEROUS MATERIALS BEFORE PROCEEDING WITH SELECTIVE DEMOLITION OPERATIONS.
   A. PROTECT EXISTING SITE IMPROVEMENTS, APPURTENANCES, AND LANDSCAPING TO REMAIN.
   B. ERECT A PLAINLY VISIBLE FENCE AROUND DRIP LINE OF INDIVIDUAL TREES OR AROUND PERIMETER DRIP LINE OF GROUPS OF TREES TO REMAIN.
2. CONTRACTOR TO MAINTAIN ACCESS TO EXITS AND EXIT STAIRS AT ALL TIMES. FIRE ALARMS AND SMOKE DETECTION SYSTEM SHALL REMAIN OPERATIONAL AT ALL TIMES. PROTECT SMOKE DETECTORS AS REQUIRED AND IN CONFORMANCE TO LOCAL CODES AND LOCAL AUTHORITIES.
3. TEMPORARY FACILITIES: PROVIDE TEMPORARY BARRICADES AND OTHER PROTECTION REQUIRED TO PREVENT INJURY TO PEOPLE AND DAMAGE TO ADJACENT BUILDINGS AND FACILITIES TO REMAIN.
   a. PROVIDE PROTECTION TO ENSURE SAFE PASSAGE OF PEOPLE AROUND SELECTIVE DEMOLITION AREA AND TO AND FROM OCCUPIED PORTIONS OF ADJACENT FACILITIES.
4. CONTRACTOR TO PROVIDE ALL NECESSARY TRAFFIC CONTROL AND PEDESTRIAN CONTROL MEASURES AS REQUIRED.
5. CONTRACTOR TO CO-ORDINATE WITH OWNER IF ANY REMOVAL OF LANDSCAPE IS REQUIRED.
6. TEMPORARY PARTITIONS: ERECT AND MAINTAIN DUSTPROOF PARTITIONS AND TEMPORARY ENCLOSURES TO LIMIT DUST AND DIRT MIGRATION AND TO SEPARATE AREAS FROM FUMES AND NOISE.
7. TEMPORARY SHORING: PROVIDE AND MAINTAIN INTERIOR AND EXTERIOR SHORING, BRACING, OR STRUCTURAL SUPPORT TO PRESERVE STABILITY AND TO PREVENT UNEXPECTED OR UNCONTROLLED MOVEMENT OR COLLAPSE OF CONSTRUCTION BEING DEMOLISHED. STRENGTHEN OR ADD TEMPORARY SUPPORTS WHEN REQUIRED DURING PROGRESS OF SELECTIVE DEMOLITION.

PART VI - SPECIAL INSPECTIONS

A. THE OWNER'S TESTING LABORATORY SHALL PROVIDE SPECIAL INSPECTION SERVICES IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE FOR THE FOLLOWING ITEMS.

1. CONCRETE CONSTRUCTION:
   a. CONCRETE WORK
   b. CONTINUOUS INSPECTION OF REINFORCING STEEL PLACING
   c. REINFORCING STEEL PLACEMENT
2. SOILS:
   a. PREPARED SUBGARDE
3. MASONRY CONSTRUCTION

B. STATEMENT OF SPECIAL INSPECTIONS

1. SPECIAL INSPECTION IS REQUIRED FOR THE ITEMS LISTED ABOVE. REFER TO SPECIFICATION FOR TYPE AND EXTENT OF EACH SPECIAL INSPECTION AND EACH TEST. THE SPECIFICATION ALSO INDICATES WHETHER CONTINUOUS OR PERIODIC INSPECTION IS REQUIRED FOR THE ITEMS LISTED ABOVE ADDITIONAL INFORMATION.

PART VII - SUBMITTALS

A. SUBMITTAL LIST AND SCHEDULE

1. THE GENERAL CONTRACTOR SHALL PREPARE A DETAILED LIST AND SCHEDULE OF ALL SUBMITTAL ITEMS TO BE SENT TO THE STRUCTURAL ENGINEER PRIOR TO THE START OF CONSTRUCTION. THIS LIST SHALL BE UPDATED AND REVISED AND KEPT CURRENT AS THE JOB PROGRESSES. THE SUBMITTAL LIST SHALL BE ORGANIZED AS SHOWN BELOW:
   a. SHOP DRAWINGS
   b. DESIGN CALCULATIONS
   c. PRODUCT DATA, CERTIFICATES, REPORTS, AND OTHER LITERATURE

B. SUBMITTALS TO BE PROVIDED TO STRUCTURAL ENGINEER

1. STRUCTURAL SUBMITTALS: IN ADDITION TO THE SUBMITTALS REQUIRED BY THE STRUCTURAL SPECIFICATIONS, THE FOLLOWING SUBMITTALS SHALL BE PROVIDED:
   a. LAYOUT OF MECHANICAL, ELECTRICAL, AND PLUMBING OPENINGS IN MAT SLABS.
   b. LAYOUT OF PENETRATIONS IN CMU WALL.
2. DEFERRED SUBMITTALS:
   a. THE FOLLOWING ITEMS ARE CONSIDERED DEFERRED SUBMITTALS BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE:
      1. BRACING OF EXISTING BUILDING WALLS, IF REQUIRED (REC)
      2. HANDRAILS AND GUARDRAILS (S&S)

      NOTES:
      (S&S) ITEMS MARKED THUS SHALL HAVE THE SHOP DRAWINGS AND DELEGATED DESIGN SUBMITTALS (INCLUDING CALCULATIONS) SEALED PER THE PROJECT SPECIFICATIONS BY AN ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS LOCATED.
      (REC) ITEMS MARKED THUS SHALL BE SUBMITTED TO ENGINEER FOR RECORD ONLY AND WILL NOT HAVE THE ENGINEER'S SHOP DRAWING STAMP AFFIXED.
   a. DOCUMENTS FOR DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE REGISTERED DESIGN PROFESSIONAL AND SHALL BE FORWARDED TO THE BUILDING OFFICIAL.
   b. DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL.
1. SUBMITTALS WITH IMPACT TO STRUCTURE:
   a. MECHANICAL EQUIPMENT WEIGHTS
2. SUBMITTAL REQUIREMENTS:
   a. ALL SHOP DRAWINGS MUST BE REVIEWED AND STAMPED BY THE GENERAL CONTRACTOR PRIOR TO SUBMITTAL.
   b. CONTRACTOR SHALL SUBMIT THREE SETS OF PRINTS FOR ALL SHOP DRAWINGS SPECIFIED TO BE RETURNED BY THE ENGINEER.
   c. THE OMISSION FROM THE SHOP DRAWINGS OF ANY MATERIALS REQUIRED BY THE CONTRACT DOCUMENTS TO BE FURNISHED SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF FURNISHING AND INSTALLING SUCH MATERIALS, REGARDLESS OF WHETHER THE SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED.

C. REPRODUCTION

1. THE USE OF ELECTRONIC FILES OR REPRODUCTIONS OF THESE CONTRACT DOCUMENTS BY ANY CONTRACTOR, SUBCONTRACTOR, ERECTOR, FABRICATOR, OR MATERIAL SUPPLIER IN LIEU OF PREPARATION OF SHOP DRAWINGS SIGNIFIES THEIR ACCEPTANCE OF ALL INFORMATION SHOWN HEREON AS CORRECT, AND OBLIGATES THEMSELVES TO ANY JOB EXPENSE, REAL OR IMPLIED, ARISING DUE TO ANY ERRORS THAT MAY OCCUR HEREON

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REVISIONS

NO.	DESCRIPTION	DATE
	ISSUED FOR CONSTRUCTION	03/15/24

CITY OF HOUSTON HOUSTON AIRPORTS SYSTEM
Recommended 03/29/2024
REVIEWED / NO EXCEPTIONS TAKEN

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

GENERAL NOTES

PROJECT MGR: AEO
DESIGNER: ER
DRAWN BY: CM
CHECK BY: ER

DATE: 03/01/2024

Henderson Rogers
Structural Engineers, LLC
TBPE Firm Registration No. 8755

STATE OF TEXAS
K. ELAINE ROGERS
65566
LICENSED PROFESSIONAL ENGINEER
K. Elaine Rogers
03/15/2024

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO.
SV-S0.01

PART VIII - MISCELLANEOUS

A. CONTRACT DOCUMENTS

1. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO OBTAIN ALL CONTRACT DOCUMENTS AND LATEST ADDENDA AND TO SUBMIT SUCH DOCUMENTS TO ALL SUBCONTRACTORS AND MATERIAL SUPPLIERS PRIOR TO THE SUBMITTAL OF SHOP DRAWINGS, FABRICATION OF ANY STRUCTURAL MEMBERS, AND ERECTION IN THE FIELD.

2. THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE, AND, EXCEPT WHERE SPECIFICALLY SHOWN, DO NOT INDICATE THE METHOD OR MEANS OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, PROCEDURES, TECHNIQUES, AND SEQUENCE.

3. OPENINGS THROUGH FLOORS, ROOFS, AND WALLS FOR DUCTS, PIPING, AND/OR CONDUIT SHALL BE COORDINATED BY THE CONTRACTOR. CONTRACTOR SHALL VERIFY SIZES AND LOCATIONS OF HOLES AND OPENINGS WITH THE MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION DRAWINGS AND THE RESPECTIVE SUBCONTRACTORS.

4. REFER TO DRAWINGS OTHER THAN STRUCTURAL FOR COMPLETE INFORMATION INCLUDING: TYPES OF FLOOR SLAB FINISHES AND THEIR LOCATIONS, FLOOR SLAB DEPRESSIONS AND CURBS, OPENINGS IN STRUCTURAL WALLS, ROOFS AND FLOORS REQUIRED BY MEP FEATURES, STAIRS, RAMPS, ETC.

5. IF CERTAIN FEATURES ARE NOT FULLY SHOWN OR SPECIFIED ON THE DRAWINGS OR IN THE SPECIFICATIONS, THEIR CONSTRUCTION SHALL BE OF THE SAME CHARACTER AS SHOWN OR SPECIFIED IN SIMILAR CONDITIONS.

B. DRAWING CONFLICTS

1. THE GENERAL CONTRACTOR SHALL COMPARE THE MECHNICAL, CIVIL, AND STRUCTURAL DRAWINGS AND REPORT ANY DISCREPANCY BETWEEN EACH SET OF DRAWINGS AND WITHIN EACH SET OF DRAWINGS TO THE ENGINEER PRIOR TO THE FABRICATION AND INSTALLATION OF ANY STRUCTURAL MEMBERS.

C. CONFLICTS IN STRUCTURAL REQUIREMENTS

1. WHERE CONFLICT EXISTS AMONG THE VARIOUS PARTS OF THE STRUCTURAL CONTRACT DOCUMENTS, STRUCTURAL DRAWINGS, GENERAL NOTES, AND SPECIFICATIONS, THE STRICTEST REQUIREMENTS, AS INDICATED BY THE ENGINEER, SHALL GOVERN.

D. EXISTING CONDITIONS

1. THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS OF THE EXISTING BUILDING AT THE JOB SITE AND REPORT ANY DISCREPANCIES FROM ASSUMED CONDITIONS SHOWN ON THE DRAWINGS TO THE ENGINEER PRIOR TO THE FABRICATION AND ERECTION OF ANY MEMBERS.

2. WORK SHOWN ON THE DRAWINGS IS NEW, UNLESS NOTED AS EXISTING.

3. EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS WAS OBTAINED FROM EXISTING CONSTRUCTION DOCUMENTS AND LIMITED SITE OBSERVATION. THESE DRAWINGS OF EXISTING CONSTRUCTION ARE AVAILABLE FOR CONTRACTOR USE. HOWEVER, THE AVAILABLE DRAWINGS OF EXISTING CONSTRUCTION ARE NOT NECESSARILY COMPLETE. THE CONTRACTOR SHALL FIELD VERIFY ALL PERTINENT INFORMATION.

4. DEMOLITION, CUTTING, DRILLING, ETC. OF EXISTING WORK SHALL BE PERFORMED WITH GREAT CARE SO AS NOT TO JEOPARDIZE THE STRUCTURAL INTEGRITY OF THE EXISTING BUILDING. IF ANY ARCHITECTURAL, STRUCTURAL, OR MEP MEMBERS NOT DESIGNATED FOR REMOVAL INTERFERE WITH THE NEW WORK, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY AND APPROVAL OBTAINED PRIOR TO REMOVAL OF THOSE MEMBERS.

5. THE CONTRACTOR SHALL SAFELY SHORE EXISTING CONSTRUCTION WHEREVER EXISTING SUPPORTS ARE REMOVED TO ALLOW THE INSTALLATION OF NEW WORK. ALL SHORING METHODS AND SEQUENCING OF DEMOLITION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND HIS ENGINEER.

6. THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UTILITIES PRIOR TO THE START OF CONSTRUCTION AND TAKE CARE TO PROTECT EXISTING UTILITIES THAT ARE TO REMAIN IN SERVICE.

7. THE CONTRACTOR SHALL REPAIR ALL DAMAGE CAUSED DURING CONSTRUCTION WITH SIMILAR MATERIALS AND WORKMANSHIP TO RESTORE CONDITIONS TO LEVELS ACCEPTABLE TO THE OWNER AND ENGINEER.

E. ADJACENT BUILDINGS AND PROPERTY

1. THE GENERAL CONTRACTOR SHALL ENSURE THAT ALL CONSTRUCTION METHODS USED WILL NOT CAUSE DAMAGE TO THE ADJACENT BUILDINGS AND PROPERTY. THIS SHALL INCLUDE ALL FOUNDATION INSTALLATION.

2. THE GENERAL CONTRACTOR IS ADVISED TO PERFORM ALL PHOTOGRAPHIC SURVEYS AND OTHER DOCUMENTATION OF THE ADJACENT BUILDINGS BEFORE THE START OF AND DURING CONSTRUCTION.

F. RESPONSIBILITY OF THE CONTRACTOR FOR STABILITY OF THE STRUCTURE DURING CONSTRUCTION

1. ALL STRUCTURAL ELEMENTS OF THE PROJECT HAVE BEEN DESIGNED BY THE STRUCTURAL ENGINEER TO RESIST THE REQUIRED CODE VERTICAL AND LATERAL FORCES THAT COULD OCCUR IN THE FINAL COMPLETED STRUCTURE ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL REQUIRED BRACING DURING CONSTRUCTION TO MAINTAIN THE STABILITY AND SAFETY OF ALL STRUCTURAL ELEMENTS DURING THE CONSTRUCTION PROCESS UNTIL ALL CONCRETE ELEMENTS AND CMU WALLS HAVE REACHED A MINIMUM OF 75% OF THEIR DESIGN STRENGTH.

PART VIII - MISCELLANEOUS

G. CONTRACTOR SUBSTITUTIONS

1. ANY MATERIALS OR PRODUCTS SUBMITTED FOR APPROVAL THAT ARE DIFFERENT FROM THE MATERIAL OR PRODUCTS SPECIFIED IN THE STRUCTURAL CONTRACT DOCUMENTS WILL BE APPROVED ONLY IF THE FOLLOWING CRITERIA ARE SATISFIED:
   a. A COST SAVINGS TO THE OWNER IS DOCUMENTED AND SUBMITTED WITH THE REQUEST.
   b. THE MATERIAL OR PRODUCT HAS BEEN APPROVED BY THE INTERNATIONAL CODE COUNCIL (ICC) AND THE ICC REPORT IS SUBMITTED WITH THE REQUEST.
      1. THE ICC ESR THAT IS SUBMITTED MUST REFERENCE THE BUILDING CODE UNDER WHICH THE PROJECT IS PERMITTED.
      2. ICC REPORTS THAT HAVE BEEN DISCONTINUED AT THE TIME OF PRODUCT INSTALLATION WILL NOT BE ACCEPTED.
2. SUBMITTALS NOT SATISFYING THE ABOVE CRITERIA WILL NOT BE CONSIDERED.

H. MECHANICAL EQUIPMENT WEIGHTS

1. THE GENERAL CONTRACTOR SHALL SUBMIT ACTUAL WEIGHTS OF EQUIPMENT TO BE USED IN THE PROJECT TO THE STRUCTURAL ENGINEER FOR VERIFICATION OF LOADS USED IN THE DESIGN AT LEAST THREE WEEKS PRIOR TO FABRICATION AND CONSTRUCTION OF THE SUPPORTING STRUCTURE.

I. THE STRUCTURAL ENGINEER'S ROLE DURING CONSTRUCTION

1. THE ENGINEER SHALL NOT HAVE CONTROL NOR CHARGE OF, AND SHALL NOT BE RESPONSIBLE FOR, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES, FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, FOR THE ACTS OR OMISSION OF THE CONTRACTOR, SUBCONTRACTOR, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK, OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

2. PERIODIC SITE OBSERVATION BY FIELD REPRESENTATIVES OF **HENDERSON ROGERS STRUCTURAL ENGINEERS, LLC.** IS SOLELY FOR THE PURPOSE OF BECOMING GENERALLY FAMILIAR WITH THE PROGRESS AND QUALITY OF THE WORK COMPLETED AND DETERMINING, IN GENERAL, IF THE WORK OBSERVED IS BEING PERFORMED IN A MANNER INDICATING THAT THE WORK, WHEN FULLY COMPLETED, WILL BE IN ACCORDANCE WITH THE STRUCTURAL CONTRACT DOCUMENTS. THIS LIMITED SITE OBSERVATION SHOULD NOT BE CONSTRUED AS EXHAUSTIVE OR CONTINUOUS TO CHECK THE QUALITY OR QUANTITY OF THE WORK, BUT RATHER PERIODIC IN AN EFFORT TO GUARD THE OWNER AGAINST DEFECTS OR DEFICIENCIES IN THE WORK OF THE CONTRACTOR.

J. MAINTENANCE STATEMENT

1. ALL STRUCTURES REQUIRE PERIODIC MAINTENANCE TO EXTEND LIFESPAN AND TO ENSURE STRUCTURAL INTEGRITY FROM EXPOSURE TO THE ENVIRONMENT. A PLANNED PROGRAM OF MAINTENANCE SHALL BE ESTABLISHED BY THE BUILDING OWNER. THIS PROGRAM SHALL INCLUDE SUCH ITEMS SUCH AS BUT NOT LIMITED TO PAINTING OF STRUCTURAL STEEL, PROTECTIVE COATING FOR CONCRETE, SEALANTS, CAULKED JOINTS, EXPANSION JOINTS, CONTROL JOINTS, SPALLS AND CRACKS IN CONCRETE, AND PRESSURE WASHING OF EXPOSED STRUCTURAL ELEMENTS EXPOSED TO A SALT ENVIRONMENT OR OTHER HARSH CHEMICALS.

PART IX - DRAWING INTERPRETATION

A. DRAWING VIEWS LABELED AS "TYPICAL"

1. PARTIAL PLANS, ELEVATIONS, SECTIONS, DETAILS, OR SCHEDULES LABELED WITH "TYPICAL" AT THE BEGINNING OF THEIR TITLE SHALL APPLY TO ALL SITUATIONS OCCURRING ON THE PROJECT THAT ARE THE SAME OR SIMILAR TO THOSE SPECIFICALLY SHOWN. THE APPLICABILITY OF THE CONTENT OF THESE VIEWS TO LOCATIONS ON THE PLAN CAN BE DETERMINED FROM THE TITLE OF THE VIEWS. SUCH VIEWS SHALL APPLY WHETHER OR NOT THEY ARE KEYED IN AT EACH LOCATION. DECISIONS REGARDING APPLICABILITY OF THESE "TYPICAL" VIEWS SHALL BE DETERMINED BY THE STRUCTURAL ENGINEER.

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PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
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GENERAL NOTES

PROJECT MGR: AEO
DESIGNER: ER
DRAWN BY: CM
CHECK BY: ER

DATE: 03/01/2024

Henderson Rogers
Structural Engineers, LLC
TBPE Firm Registration No. 8755

STATE OF TEXAS
K. ELAINE ROGERS
65566
LICENSED PROFESSIONAL ENGINEER
K. Elaine Rogers
03/15/2024

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
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SHEET NO.
SV-S0.02

CLASSES OF CONCRETE MATRIX

CONCRETE USAGE	MINIMUM COMPRESSIVE STRENGTH [fc]	CONCRETE TYPE	EXPOSURE CLASSES	MAXIMUM W/CM RATIO	PERMISSIBLE AIR CONTENT	REQUIRED CEMENT REPLACEMENT	MAXIMUM AGGREGATE SIZE	ADDITIONAL REMARKS
FOUNDATIONS								
MAT SLAB	4,000 PSI AT 28 DAYS	NWC	C1	N/A	N/A	0-50%	1 1/2"	
SLABS-ON-FOAM								
SLABS-ON-FOAM	4,500 PSI AT 28 DAYS	NWC	C1	0.45	N/A	0-50%	3/4"	
FLOOR/ROOF FRAMING								
CAST-IN-PLACE COLUMNS	4,500 PSI AT 28 DAYS	NWC	C1	N/A	N/A	25-50%	1"	
NOTES:								

NOTES:

1. ALL CONCRETE SHALL BE CONSIDERED TO BE IN EXPOSURE CLASS F0, S0, P0, AND C0 ACCORDING TO ACI 318-11 UNLESS NOTED OTHERWISE IN TABLE ABOVE, IN NOTES BELOW, OR ELSEWHERE ON THE STRUCTURAL DRAWINGS.
2. CONCRETE NOTED ABOVE OR ON PLAN TO BE IN EXPOSURE CLASSES F1, F2, F3, S1, S2, S3, P1, C1, OR C2 SHALL BE PROPORTIONED TO COMPLY WITH ACI 318-08 TABLES 4.3.1, 4.4.1, AND 4.4.2 IN ADDITION TO THE NOTATIONS IN THE TABLE ABOVE AND THE STRICTER REQUIREMENTS SHALL GOVERN. REFER TO THE SPECIFICATIONS FOR OTHER REQUIREMENTS FOR VARIOUS EXPOSURE CLASSES RELATIVE TO CEMENT TYPE, AIR ENTRAINMENT REQUIREMENTS, CHLORIDE ION LIMITS, AND POZZOLAN LIMITS.
3. CONCRETE BALCONIES AND ELEVATED STRUCTRUAL SLABS, EXPOSED TO THE WEATHER ARE IN EXPOSURE CLASS C1.

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GENERAL NOTES

PROJECT MGR: AEO
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DATE: 03/01/2024

Henderson Rogers
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TBPE Firm Registration No. 8755

STATE OF TEXAS
K. ELAINE ROGERS
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K. Elaine Rogers
03/15/2024

APPROVED BY:

DIRECTOR
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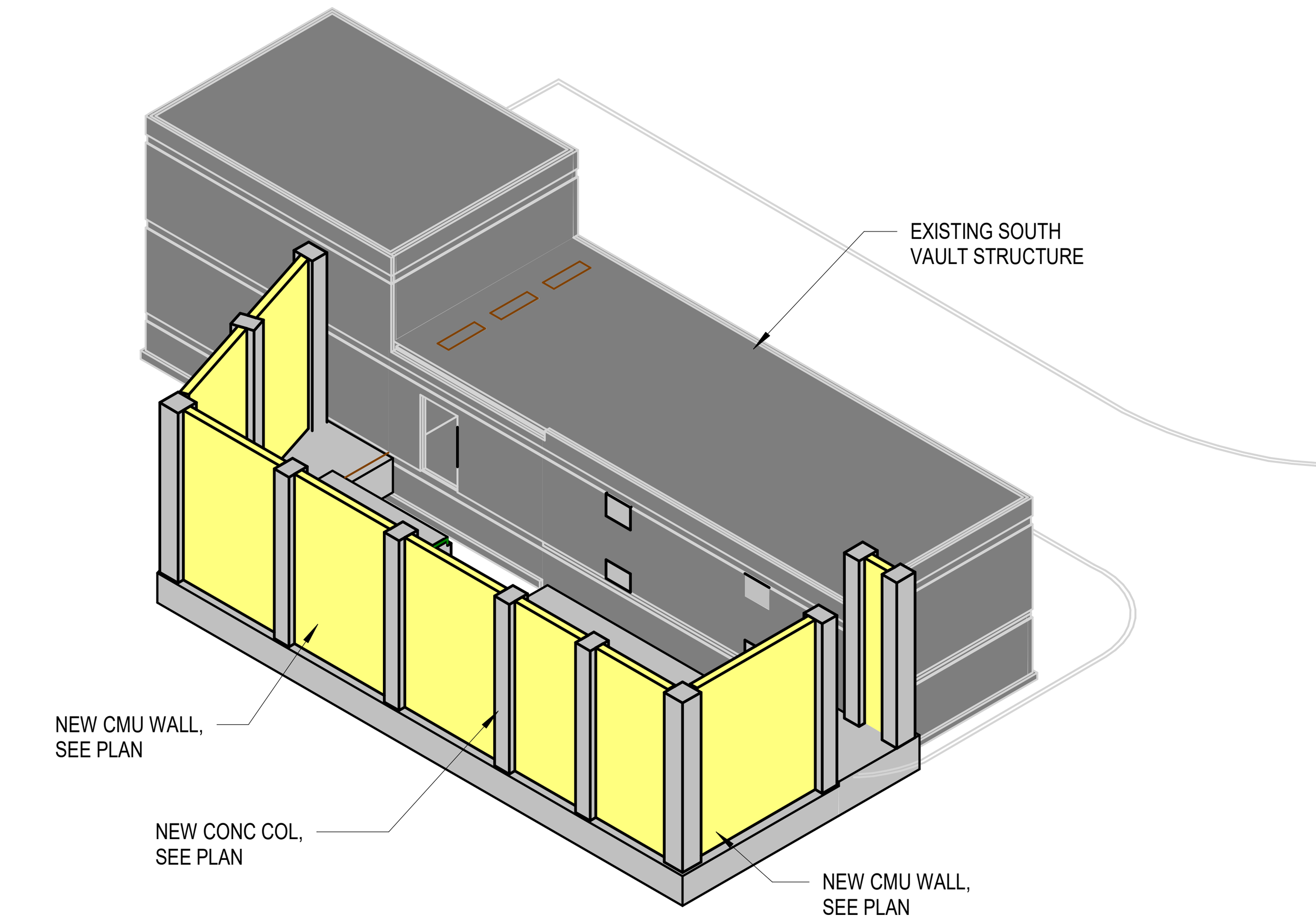
T.I.P. NO. 24-28-IAH

SHEET NO.
SV-S0.03

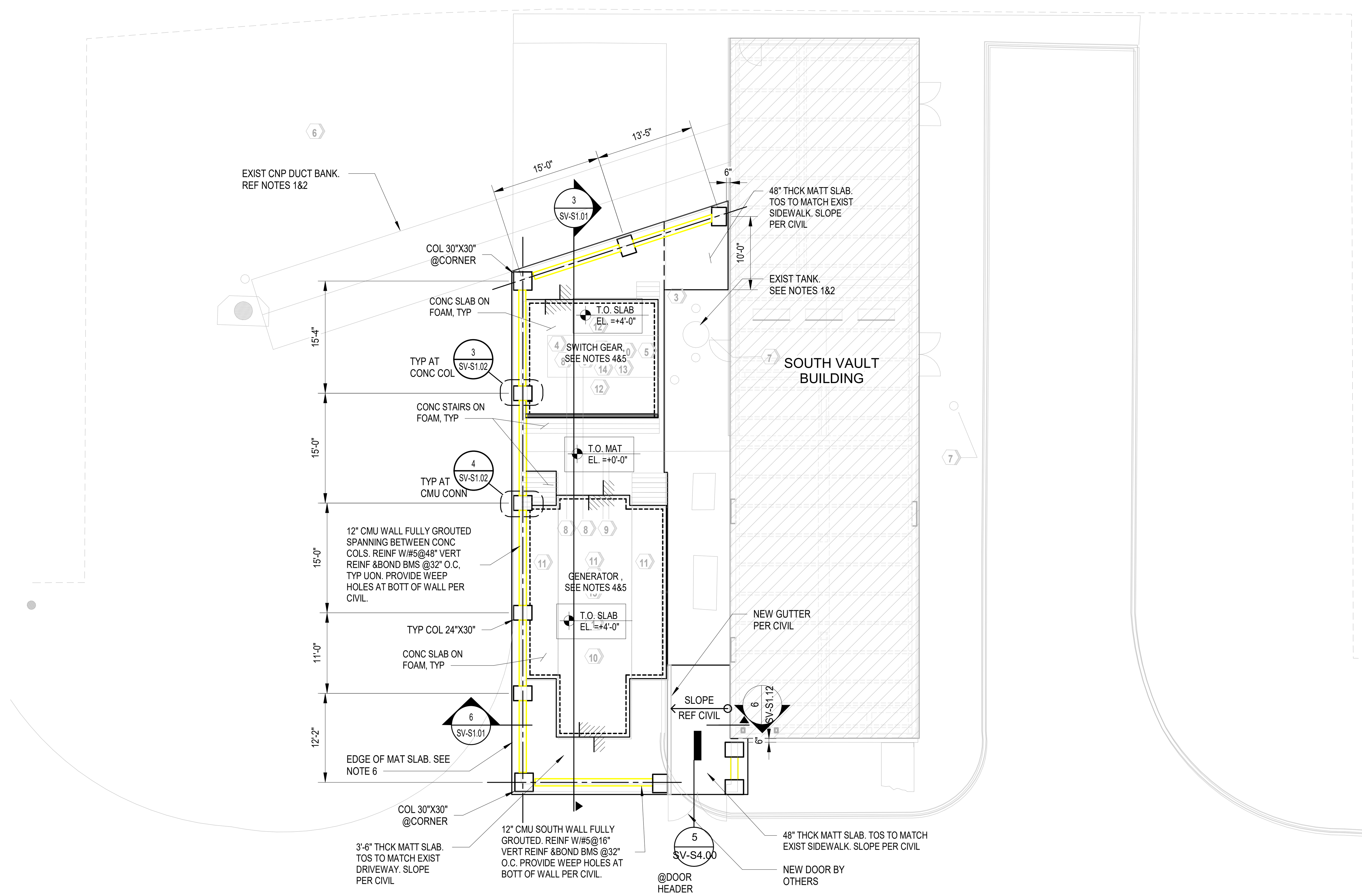


2 AXONOMETRIC VIEW - SOUTH VAULT

NO SCALE (NTS)

NOTES:

1. CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS BEFORE BEGINNING OF WORK. REPORT TO MEP AND CIVIL ANY BELOW GRADE UTILITIES THAT ARE NOT SHOWN IN THE SURVEY.
2. FIELD VERIFY LOCATION OF CNP DUCTBANK AND BELOW GRADE TANK.
3. BRACE EXISTING BASEMENT WALL AND PERIMETER WALLS AS REQUIRED DURING EXCAVATION AND POURING FOUNDATIONS.
4. SEE MECHANICAL DRAWINGS FOR PAD DIMENSIONS, LOCATION, AND EXACT LOCATION OF ALL EQUIPMENT. ATTACHMENT OF NEW EQUIPMENT TO ELEVATED PADS IS BY MANUFACTURER.
5. SEE CIVIL FOR SLAB ELEVATION.
6. SEE MECHANIC AND CIVIL SHEETS FOR MAT SLAB EXTENTS.
   a. AT WEST SIDE, CAST NEW CONCRETE CURB TO MATCH EXISTING ON TOP OF NEW MAT SLAB
   b. AT NORTH SIDE, EDGE OF SLAB TO REMAIN OUTSIDE CENTER POINT EASEMENT. SEE MEP SHEETS.



1 SITE PLAN - SOUTH VAULT

SCALE: 3/32" = 1'-0"

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4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SITE PLAN

PROJECT MGR: AEO
DESIGNER: ER
DRAWN BY: CM
CHECK BY: ER

DATE: 03/01/2024

Henderson Rogers
Structural Engineers, LLC
TBPE Firm Registration No. 8755

STATE OF TEXAS
K. ELAINE ROGERS
65566
LICENSED PROFESSIONAL ENGINEER

03/15/2024

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

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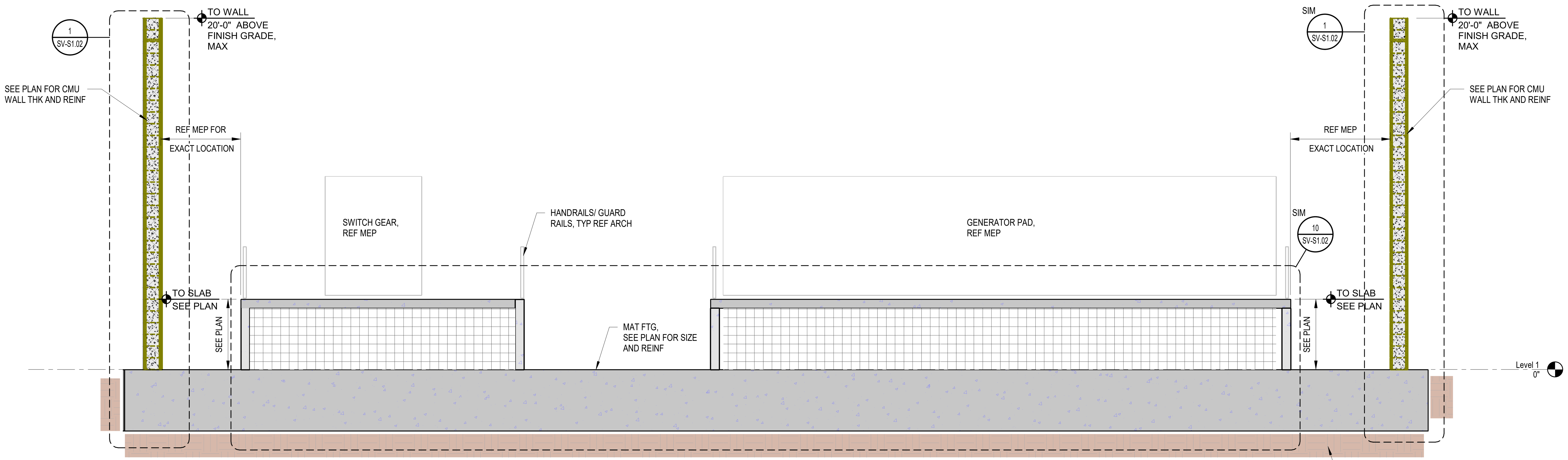
T.I.P. NO. 24-28-IAH

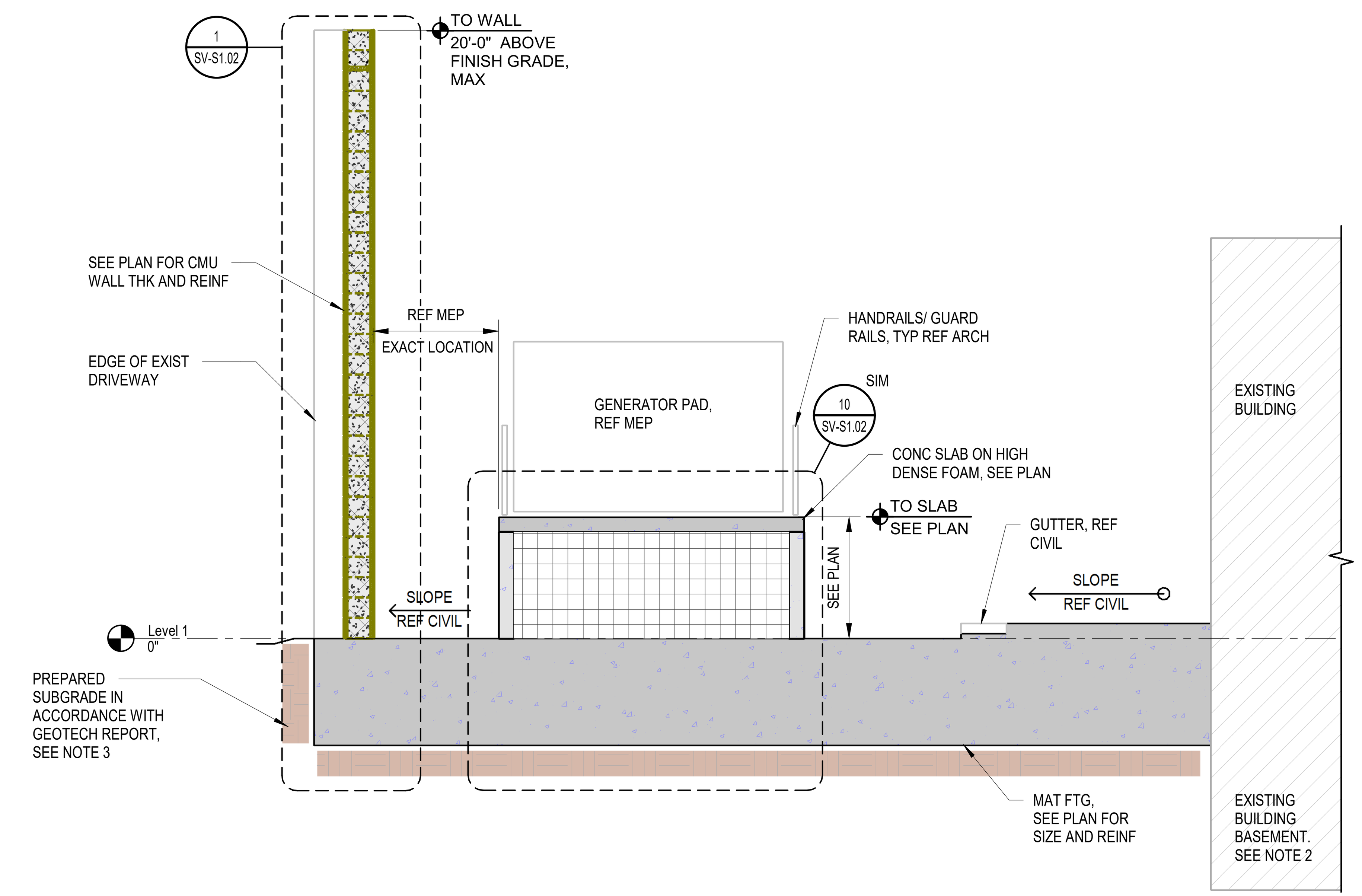
SHEET NO.

SV-S1.00

NOTES:
1. CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS BEFORE BEGINNING OF WORK. REPORT TO MEP AND CIVIL ANY BELOW GRADE UTILITIES THAT ARE NOT SHOWN IN THE SURVEY.
2. BRACE EXISTING BASEMENT WALL AND PERIMETER WALLS AS REQUIRED DURING EXCAVATION AND POURING FOUNDATIONS.
3. GEOTECHNICAL ENGINEER TO CONFIRM THE APPROPRIATE SUBGRADE MODULUS, BEARING STRENGTH AND COEFFICIENT OF FRICTION. GEOTECHNICAL ENGINEER TO REVIEW PROPOSED WALL LOCATION AND IMPOSED LOADING ON SOIL, AND NOTIFY STRUCTURAL ENGINEER IF IMPOSED LOADS EXCEED CAPACITY.



3 SECTION
SCALE: 1/4" = 1'-0"



6 SECTION
SCALE: 1/4" = 1'-0"

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SITE SECTIONS

PROJECT MGR: AEO
DESIGNER: ER
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CHECK BY: ER
DATE: 03/01/2024

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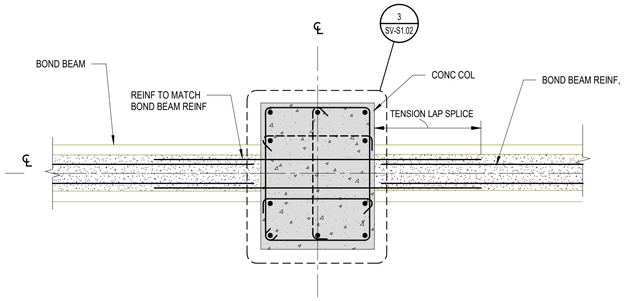
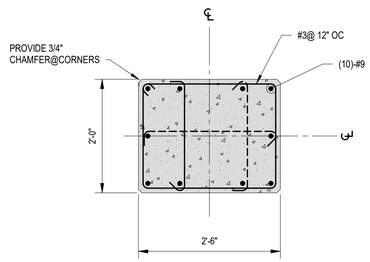
SV-S1.01



4 PLAN- CMU WALL CONNECTION TO CONCRETE COLUMN

SCALE: 3/4" = 1'-0"

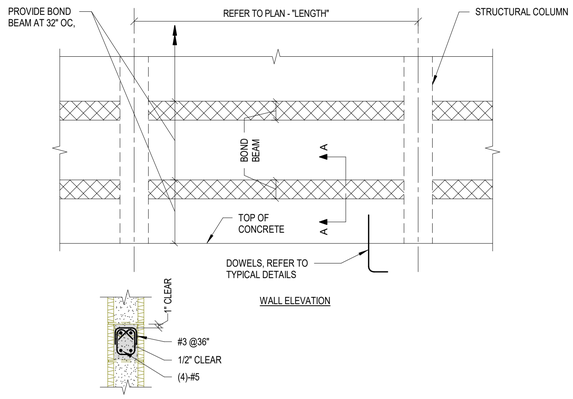


NOTES:

1. MINIMUM CONCRETE COVER SHALL BE 1 1/2" TO TIES.
2. ALTERNATE HOOKS IN SUCCESIVE SETS OF TIES.

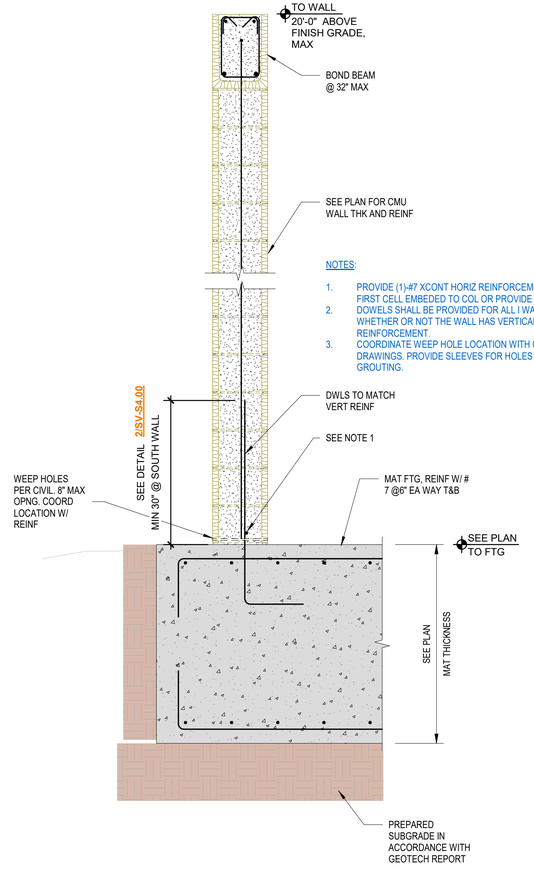
3 COLUMN REINFORCEMENT

SCALE: 3/4" = 1'-0"



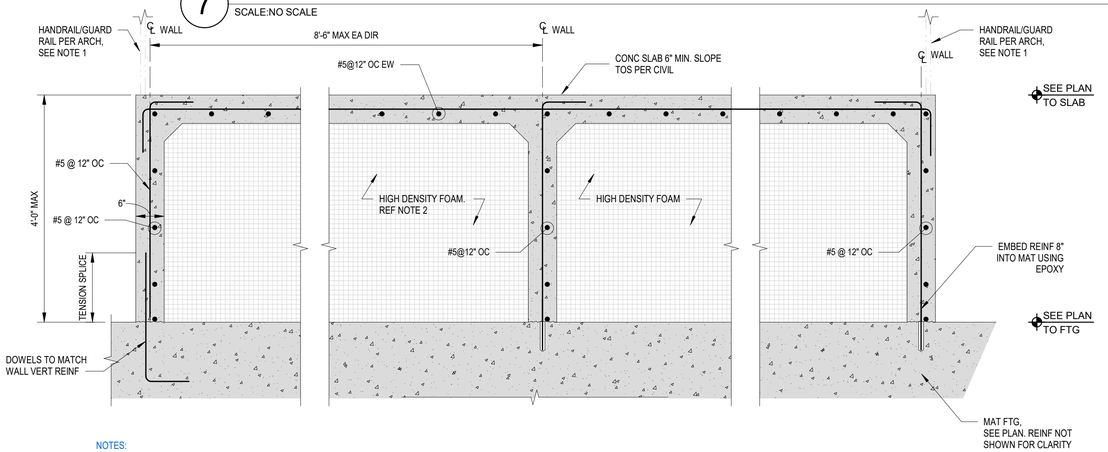
2 CMU WALL-BOND BEAM

NO SCALE (NTS)



7 CONCRETE COLUMN CONNECTION TO MAT

SCALE:NO SCALE

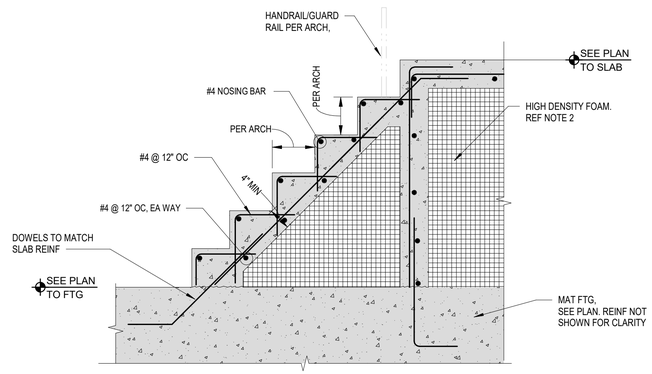


NOTES:

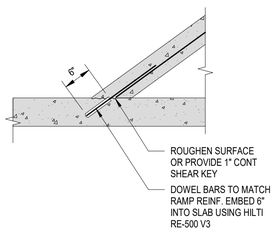
1. HANDRAIL AND GUARD RAIL ARE DELEGATED DESIGN PER GENERAL NOTES, REFERENCE ARCH DRAWINGS FOR LOCATION.
2. PROVIDE HIGH LOAD FOAM WITH MINIMUM COMPRESSIVE STRENGTH OF 4 PSI PER ASTM D1621

1 CMU WALL CONNECTION TO FOUNDATIONS

SCALE: 3/4" = 1'-0"



AT STAIRS



10 SECTION AT SLAB BUILD UP AT GENERATOR AND SWITCH GEAR

N.T.S.

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CITY OF HOUSTON
HOUSTON AIRPORTS SYSTEM
Recommended _____ 03/29/2024
Director, Facility Design & Construction Date
Houston Airport System Representative

The Contractor is responsible for the means, methods, techniques, sequences and procedures of construction, and safety precautions and programs in connection with the activities and operations of this review does not relieve the Contractor of the responsibility for performing all work in accordance with applicable laws, ordinances, rules, regulations, and codes.

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SITE DETAILS

PROJECT MGR: AEO
DESIGNER: ER
DRAWN BY: CM
CHECK BY: ER

DATE: 03/01/2024

Henderson Rogers
Structural Engineers, LLC
TBPE Firm Registration No. 8755

STATE OF TEXAS
K. ELAINE ROGERS
65566
LICENSED
PROFESSIONAL ENGINEER
K. Elaine Rogers
03/15/2024

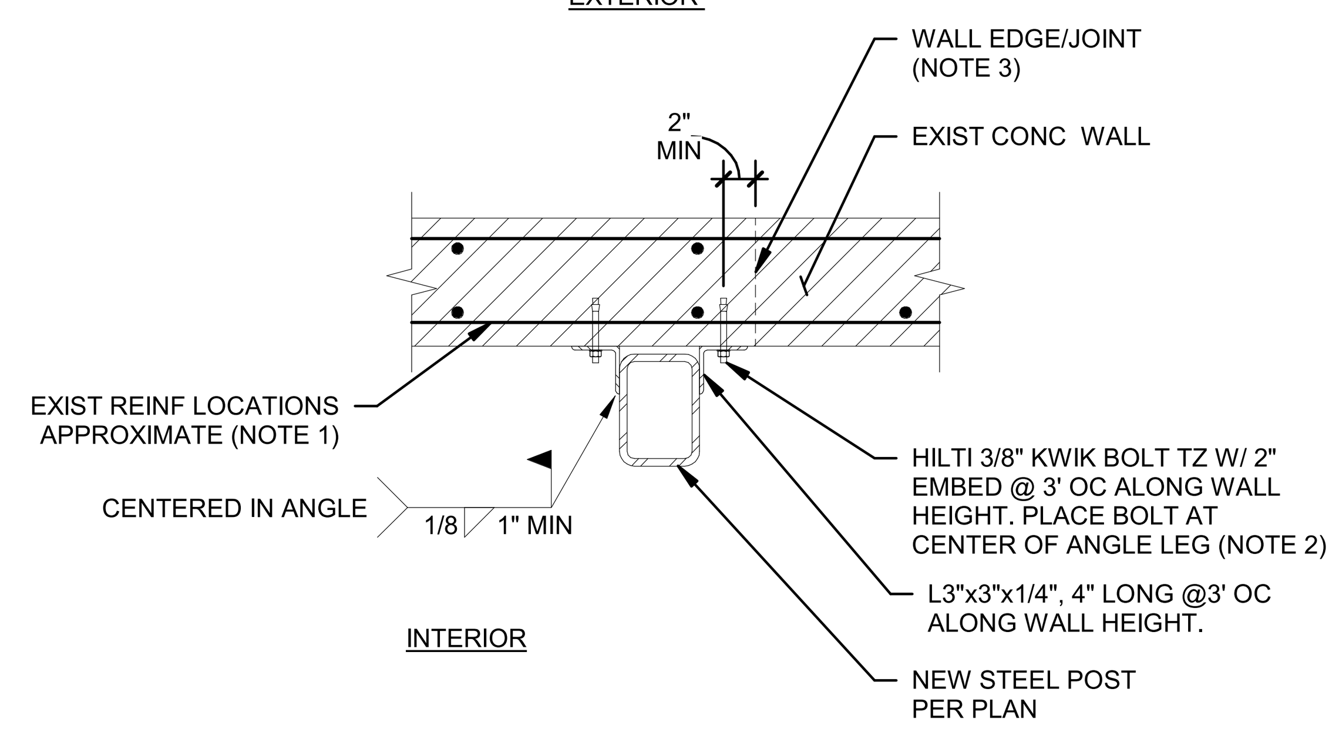
APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO.

SV-S1.02

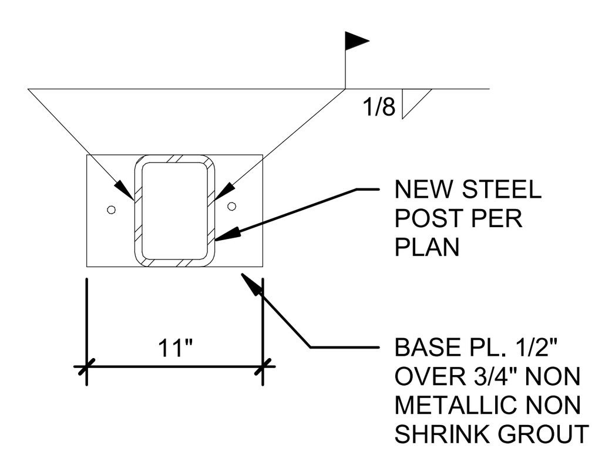


NOTES:

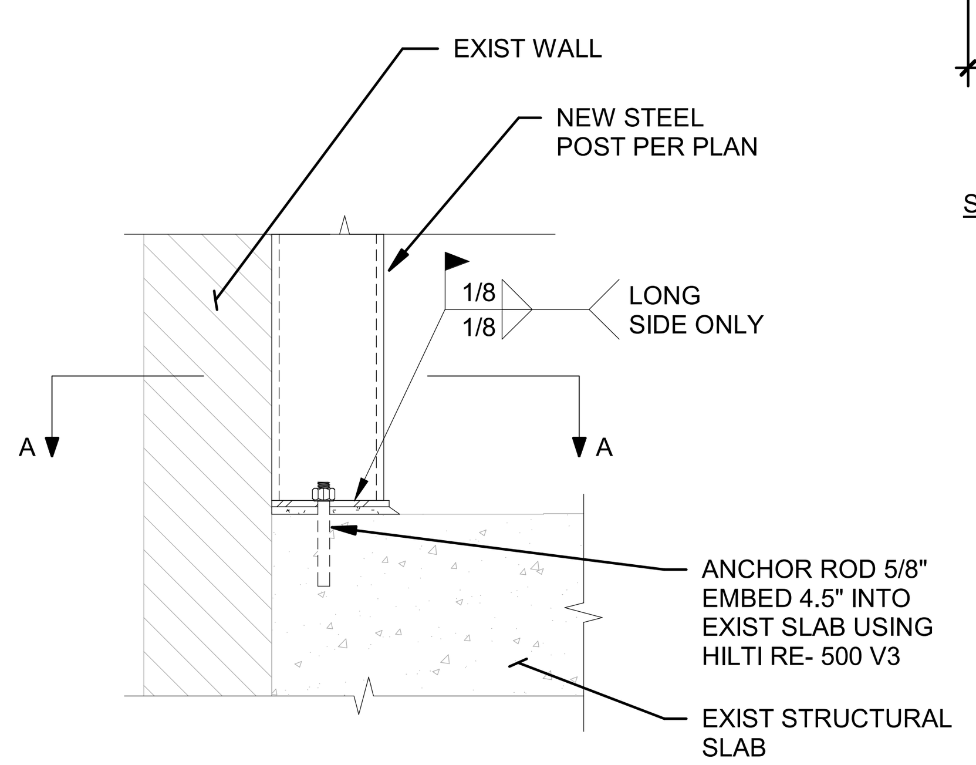
1. USE NON-DESTRUCTIVE EVALUATION TO LOCATE WALL REINFORCEMENT IN PRECAST WALL PRIOR TO DRILLING ANCHOR HOLES AND WELDING COLUMN TO BASE PLATE. IF EXISTING REINFORCEMENT INTERFERES WITH NEW ANCHOR LOCATIONS, CONTACT ENGINEER.
2. ANCHOR LOCATIONS MAY BE SHIFTED +/- 1 INCH IN ANY DIRECTION AS LONG AS MINIMUM EDGE DISTANCE IS PROVIDED. POST LOCATION SHALL BE ADJUSTED ACCORDINGLY.
3. CONTACT ENGINEER IF MINIMUM ANCHOR EDGE DISTANCE CANNOT BE ACHIEVED.

4 NEW STEEL POST CONNECTION TO EXISTING WALL

NO SCALE

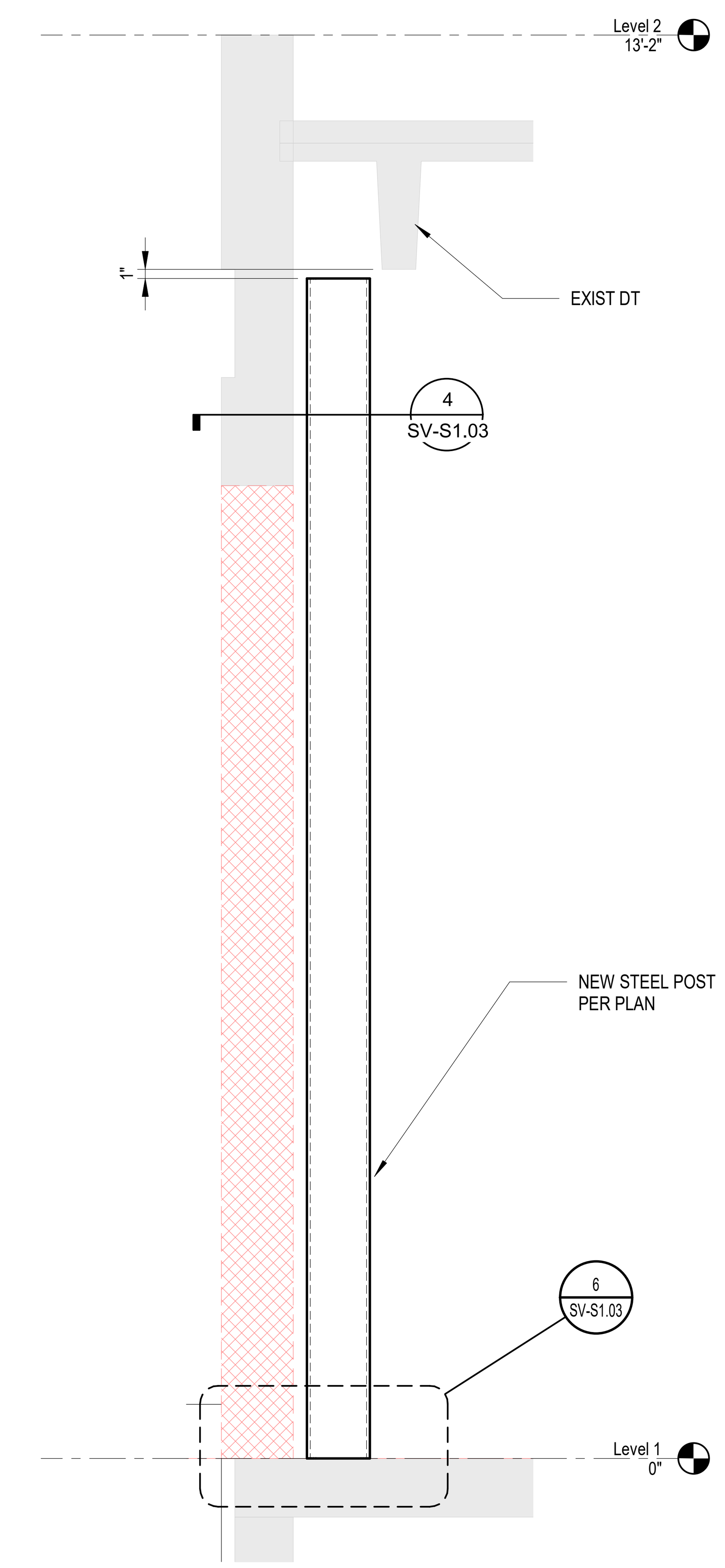


SECTION A-A



6 NEW STEEL POST CONNECTION TO NEW SLAB ON GRADE

NO SCALE



1 NEW POST AT NEW DOOR OPENING

NO SCALE

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REVISIONS

NO.	DESCRIPTION	DATE
	ISSUED FOR CONSTRUCTION	03/15/24

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

SITE DETAILS

PROJECT MGR: AEO
DESIGNER: Approver
DRAWN BY: Author
CHECK BY: Checker
DATE: 03/01/2024

Henderson Rogers
Structural Engineers, LLC
TBPE Firm Registration No. 8755

STATE OF TEXAS
K. ELAINE ROGERS
65566
LICENSED PROFESSIONAL ENGINEER
K. Elaine Rogers
03/15/2024

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
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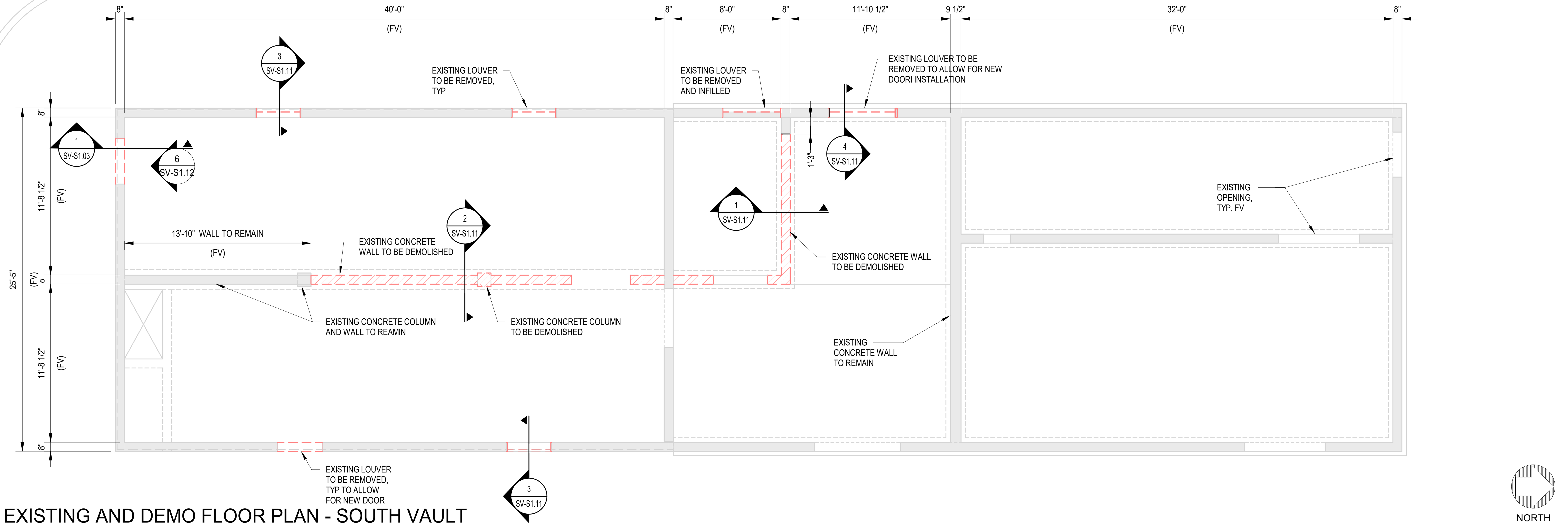
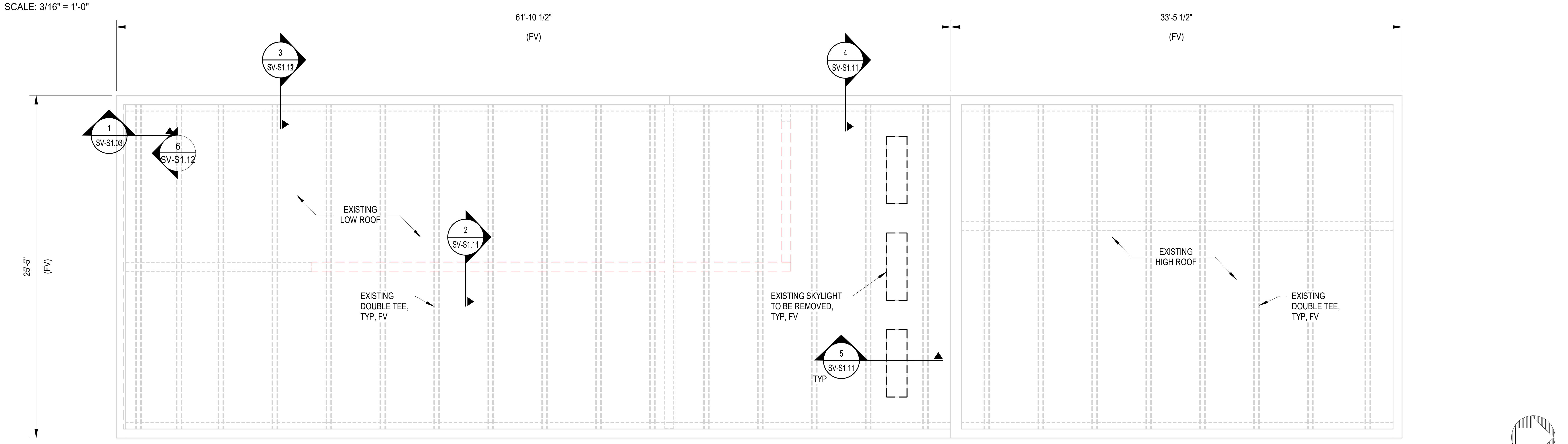
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO.
SV-S1.03



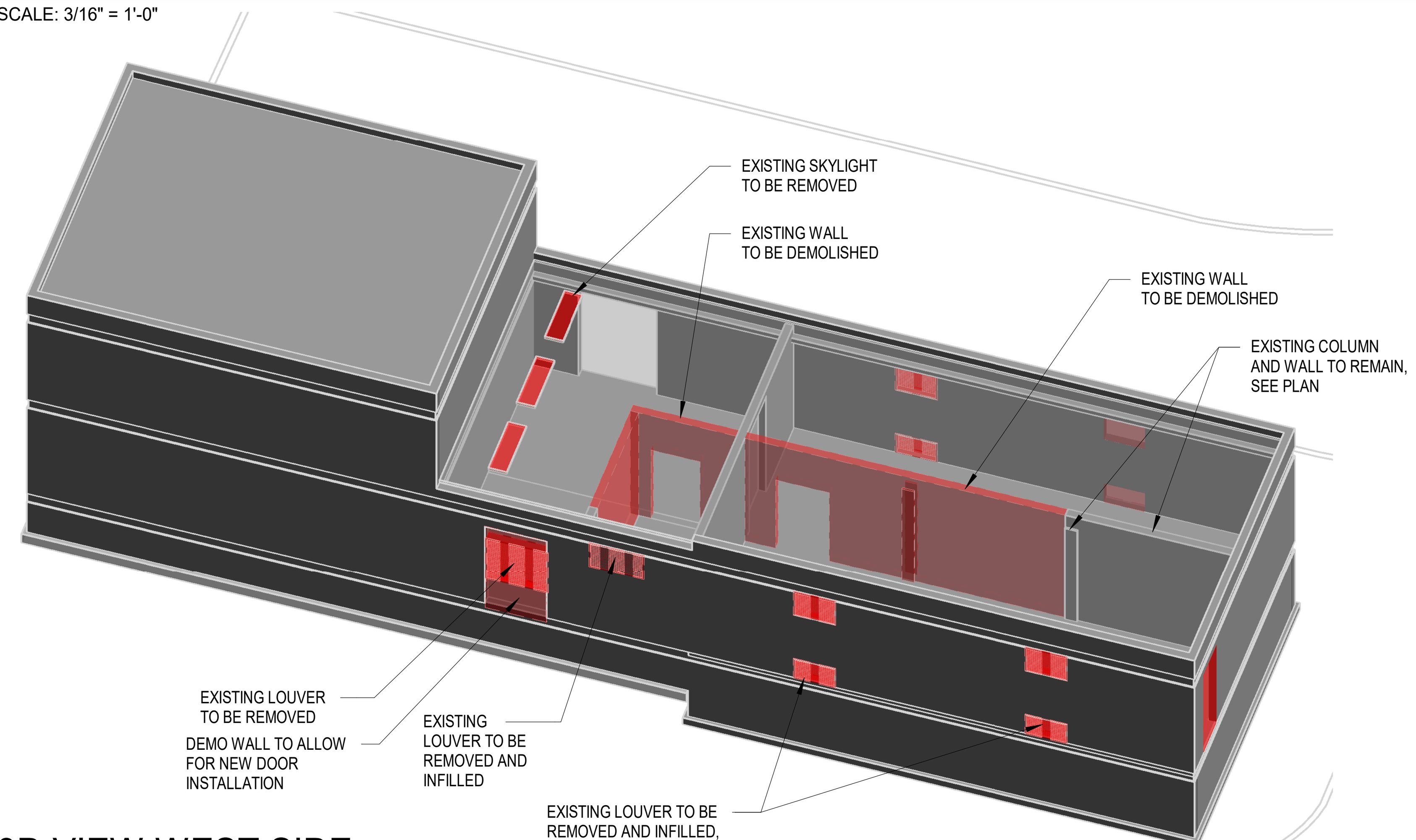
1 EXISTING AND DEMO FLOOR PLAN - SOUTH VAULT

SCALE: 3/16" = 1'-0"



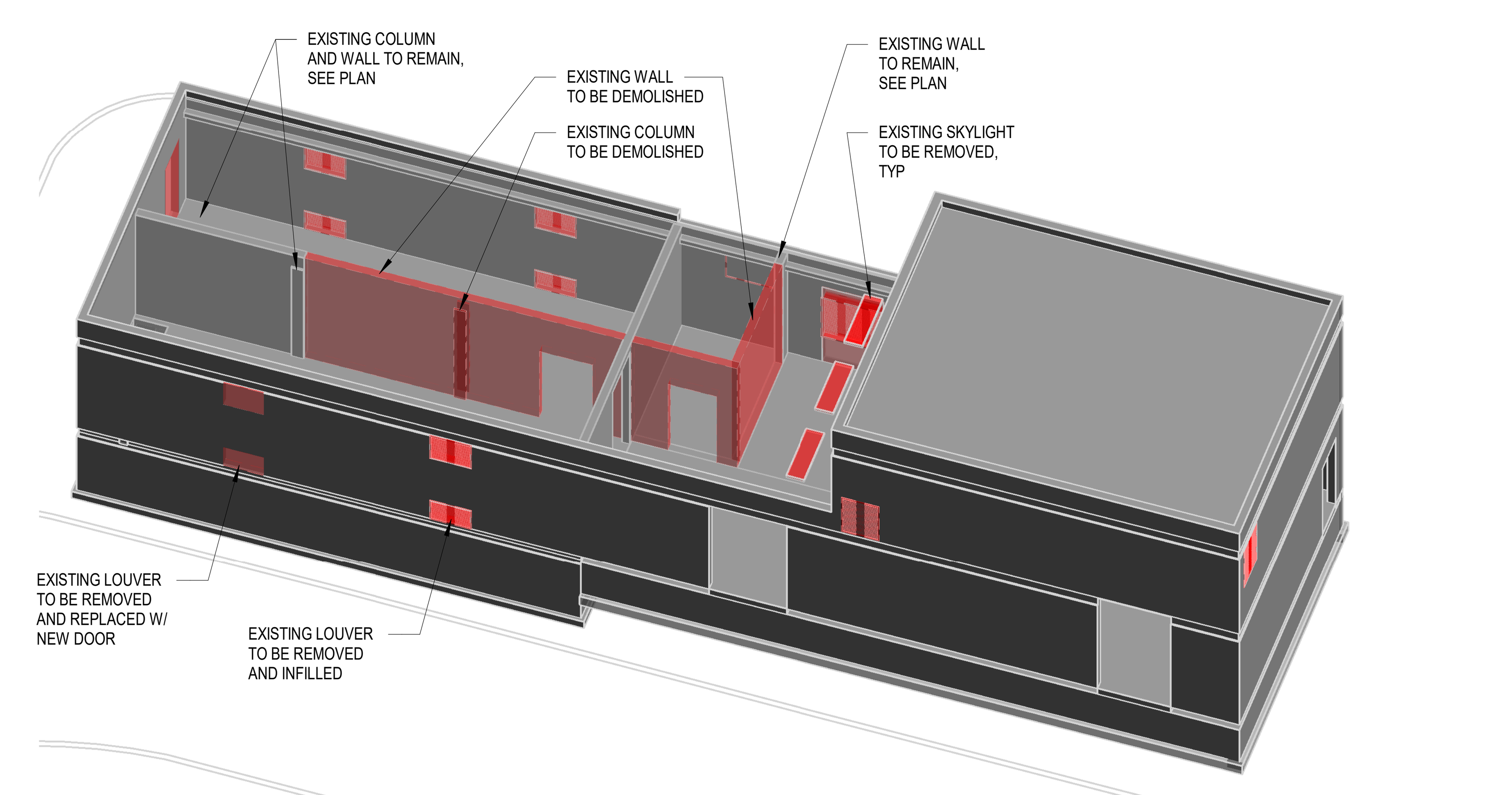
2 EXISTING AND DEMO ROOF PLAN - SOUTH VAULT

SCALE: 3/16" = 1'-0"



4 3D VIEW WEST SIDE

N.T.S.



3 3D VIEW EAST SIDE

N.T.S.

DEMOLITION PLAN NOTES:

1. REFER TO ARCHITECTURAL, AND MEP DEMOLITION DRAWINGS FOR ADDITIONAL INFORMATION. CONTRACTOR TO SELECT DEMOLITION TOOLS AND TECHNIQUES THAT WILL NOT DAMAGE OR COMPROMISE EXISTING STRUCTURAL ELEMENTS TO REMAIN.
2. GENERAL CONTRACTOR TO SUBMIT DEMOLITION DRAWINGS TO STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL PRIOR TO COMMENCEMENT OF WORK.
3. DEMOLITION, CUTTING, DRILLING, ETC. OF EXISTING WORK SHALL BE PERFORMED WITH GREAT CARE SO AS NOT TO JEOPARDIZE THE STRUCTURAL INTEGRITY OF THE EXISTING BUILDING. IF ANY ARCHITECTURAL, STRUCTURAL, OR MEP MEMBERS NOT DESIGNATED FOR REMOVAL INTERFERE WITH THE NEW WORK, THE ARCHITECT SHALL BE NOTIFIED IMMEDIATELY AND APPROVAL OBTAINED PRIOR TO REMOVAL OF THOSE MEMBERS.
4. ALL EXPOSED REBAR/TENDONS NEEDS TO BE PROTECTED BETWEEN DEMOLITION AND NEW CONCTRUCTION TO PREVENT CORROSION.
5. "FV" DENOTES FIELD VERIFY.

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HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

EXISTING AND DEMO PLAN

PROJECT MGR: AEO
DESIGNER: ER
DRAWN BY: CM
CHECK BY: ER

DATE: 03/01/2024

Henderson Rogers
Structural Engineers, LLC
TBPE Firm Registration No. 8755

STATE OF TEXAS
K. ELAINE ROGERS
65566
LICENSED PROFESSIONAL ENGINEER
03/15/2024

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM
JACOBS NO. WHXK7125
A.I.P. NO.
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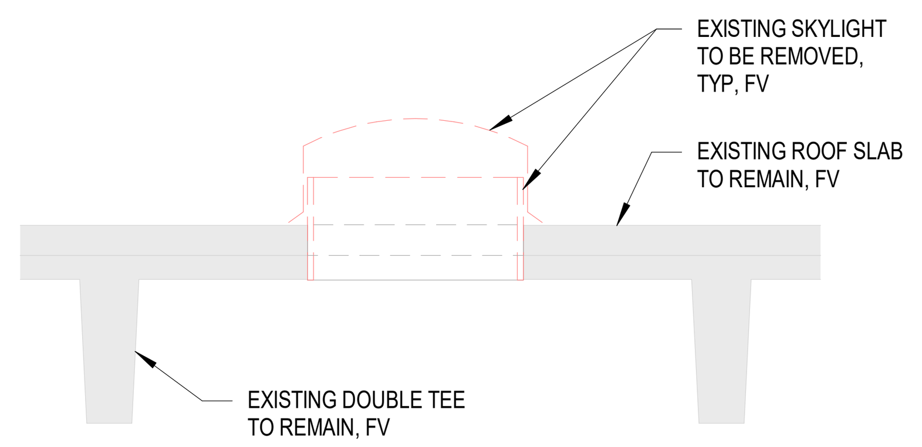
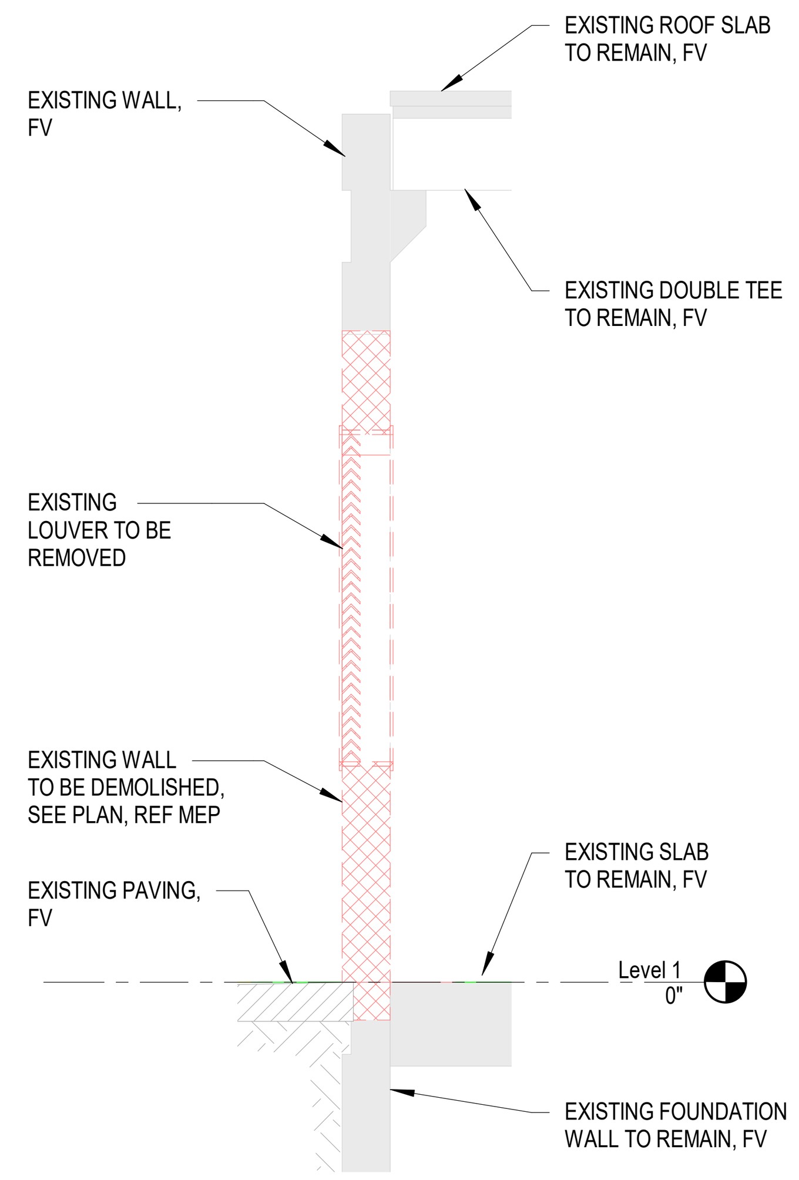
SHEET NO.

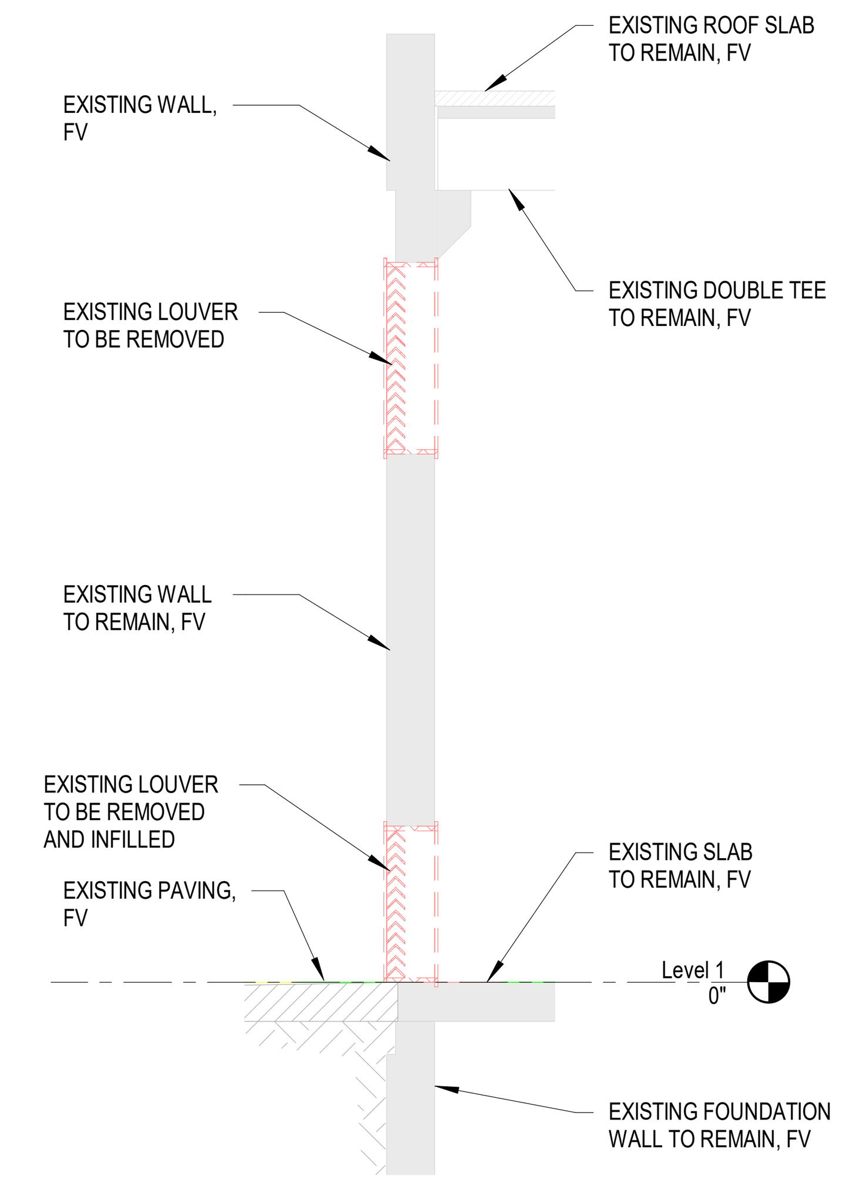
SV-S1.10



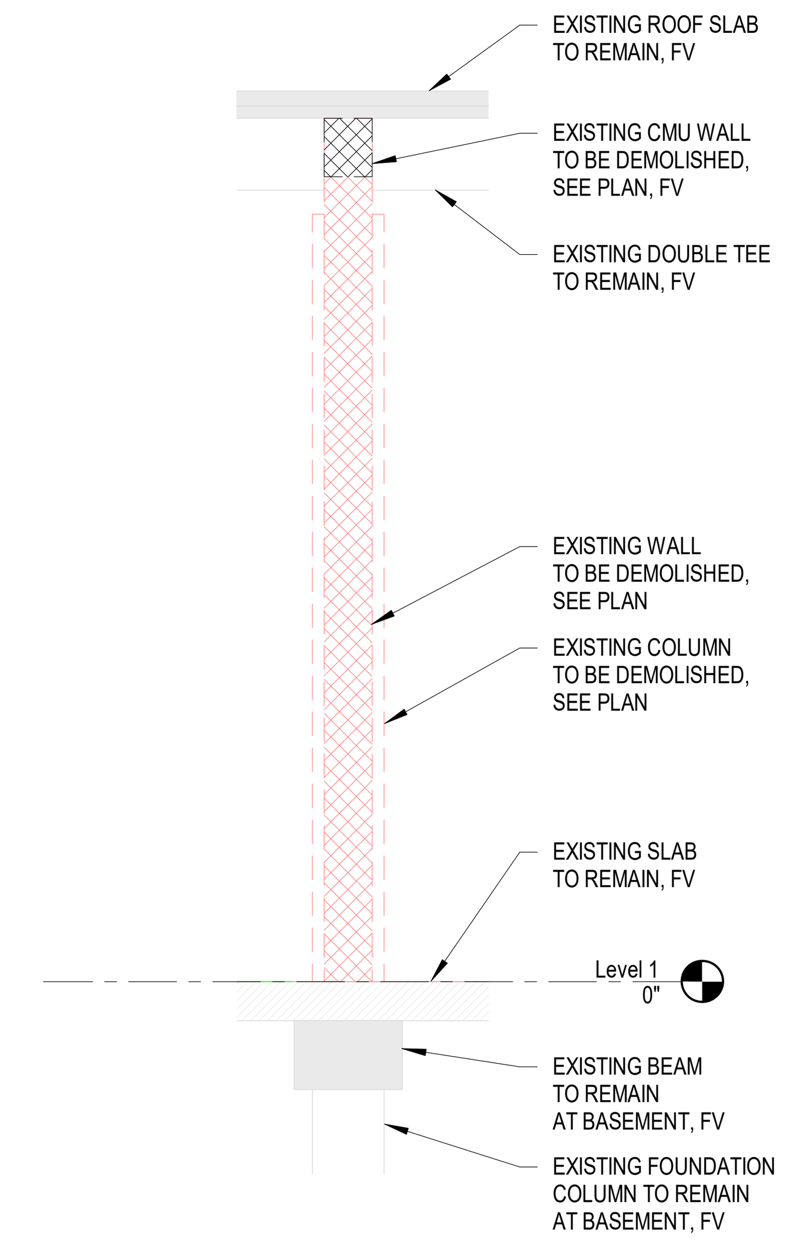
5 SECTION
SCALE: 3/4" = 1'-0"



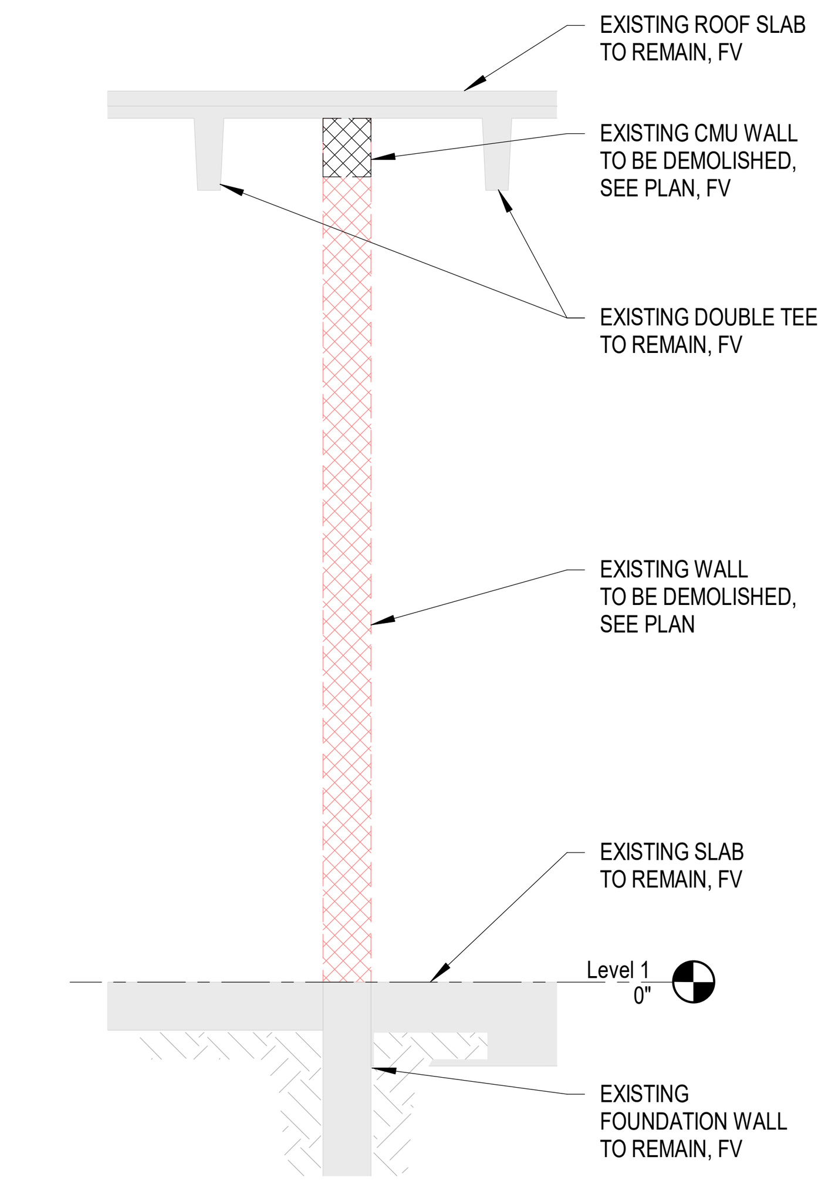
4 SECTION
SCALE: 3/8" = 1'-0"



3 SECTION
SCALE: 3/8" = 1'-0"



2 SECTION
SCALE: 3/8" = 1'-0"



1 SECTION
SCALE: 3/8" = 1'-0"

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REVISIONS		
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	ISSUED FOR CONSTRUCTION	03/15/24

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

EXISTING AND DEMO DETAILS

PROJECT MGR: AEO
DESIGNER: ER
DRAWN BY: CM
CHECK BY: ER
DATE: 03/01/2024

Henderson Rogers
Structural Engineers, LLC
TBPE Firm Registration No. 8755

STATE OF TEXAS
K. ELAINE ROGERS
65566
LICENSED PROFESSIONAL ENGINEER
K. Elaine Rogers
03/15/2024

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
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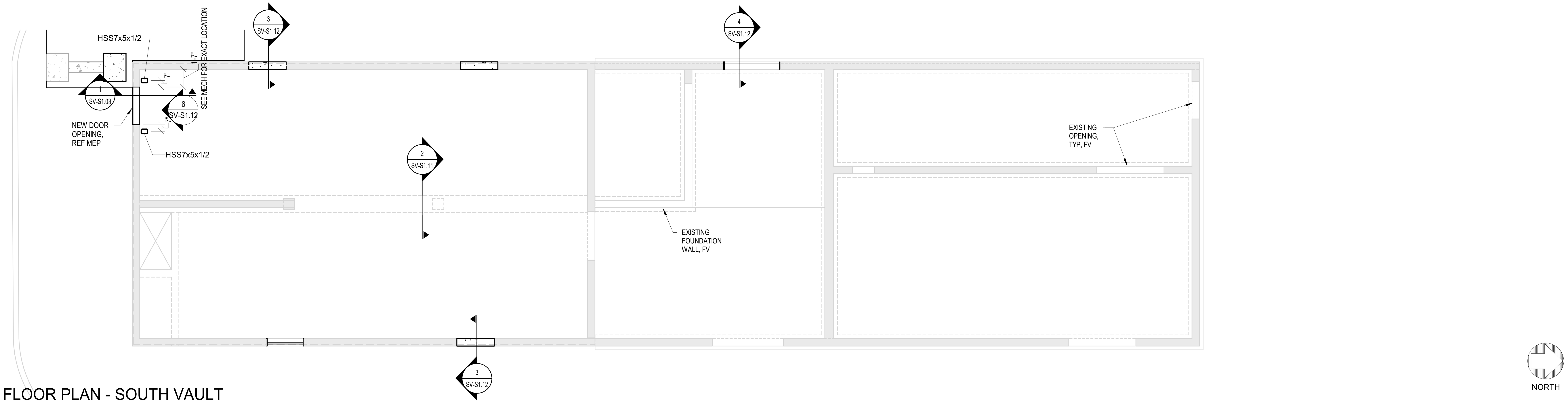
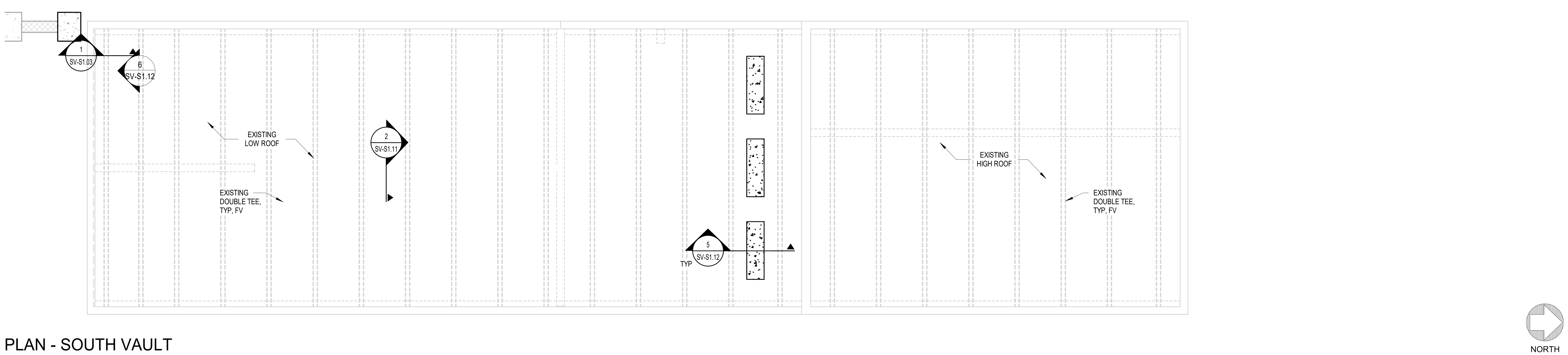
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO.
SV-S1.11



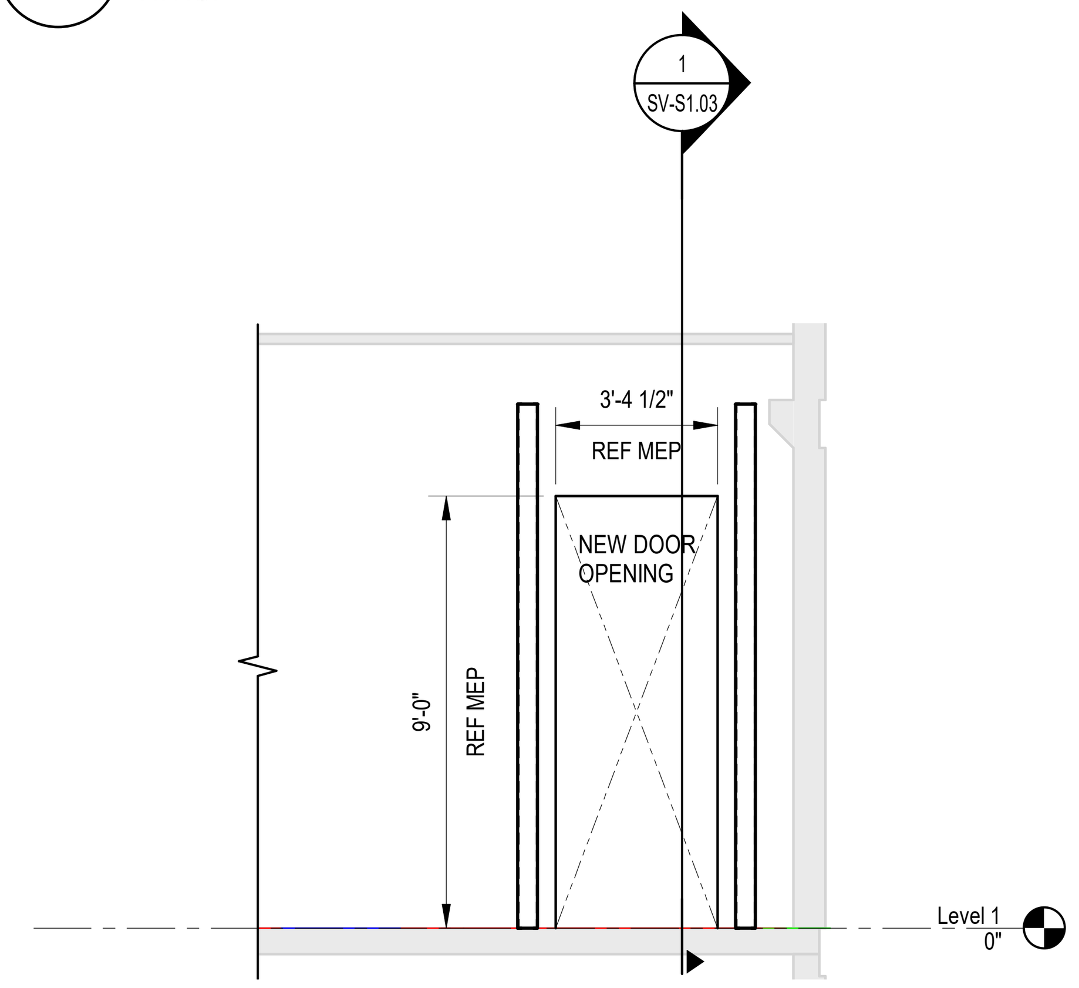
1 EXISTING AND NEW FLOOR PLAN - SOUTH VAULT

N.T.S.



2 EXISTING AND NEW ROOF PLAN - SOUTH VAULT

N.T.S.

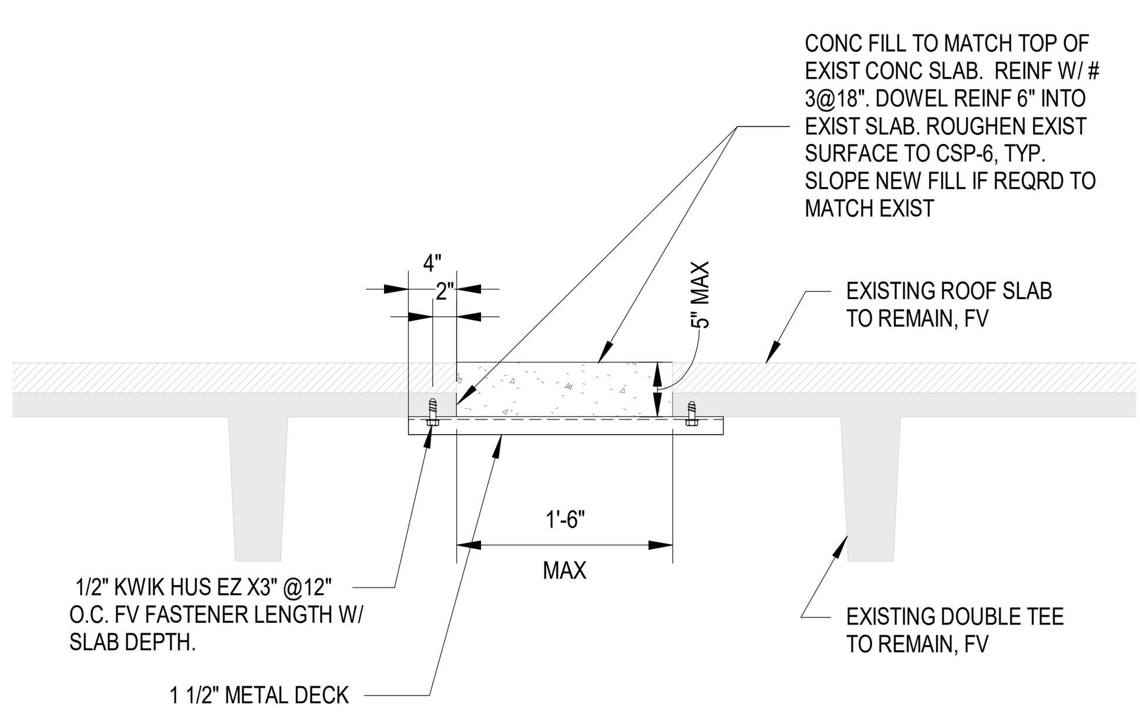


NOTES:

1. INSTALL NEW STEEL TUBES BEFORE BEGINNING OF WORK
2. USE DEMO TOOLS AND BEST PRACTICE TO MINIMIZE CRACKING IN CONCRETE WALL TO REMAIN AS PROVIDING CORES AT CORNERS
3. NEW OPENING CROSSES EXISTING CONTROL JOINTS. LONG TERM CRACKING MAY OCCUR AT THIS LOCATION.

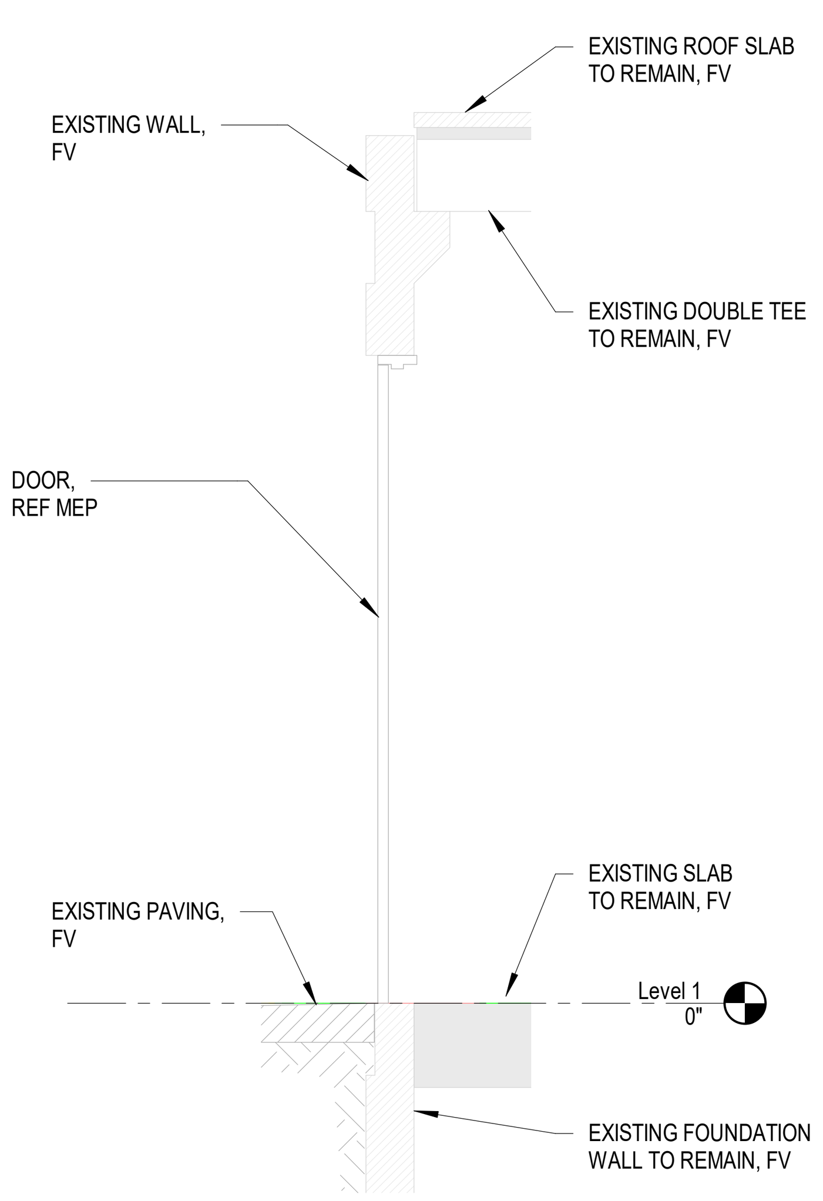
6 ELEVATION AT NEW DOOR OPNG

SCALE: 1/4" = 1'-0"



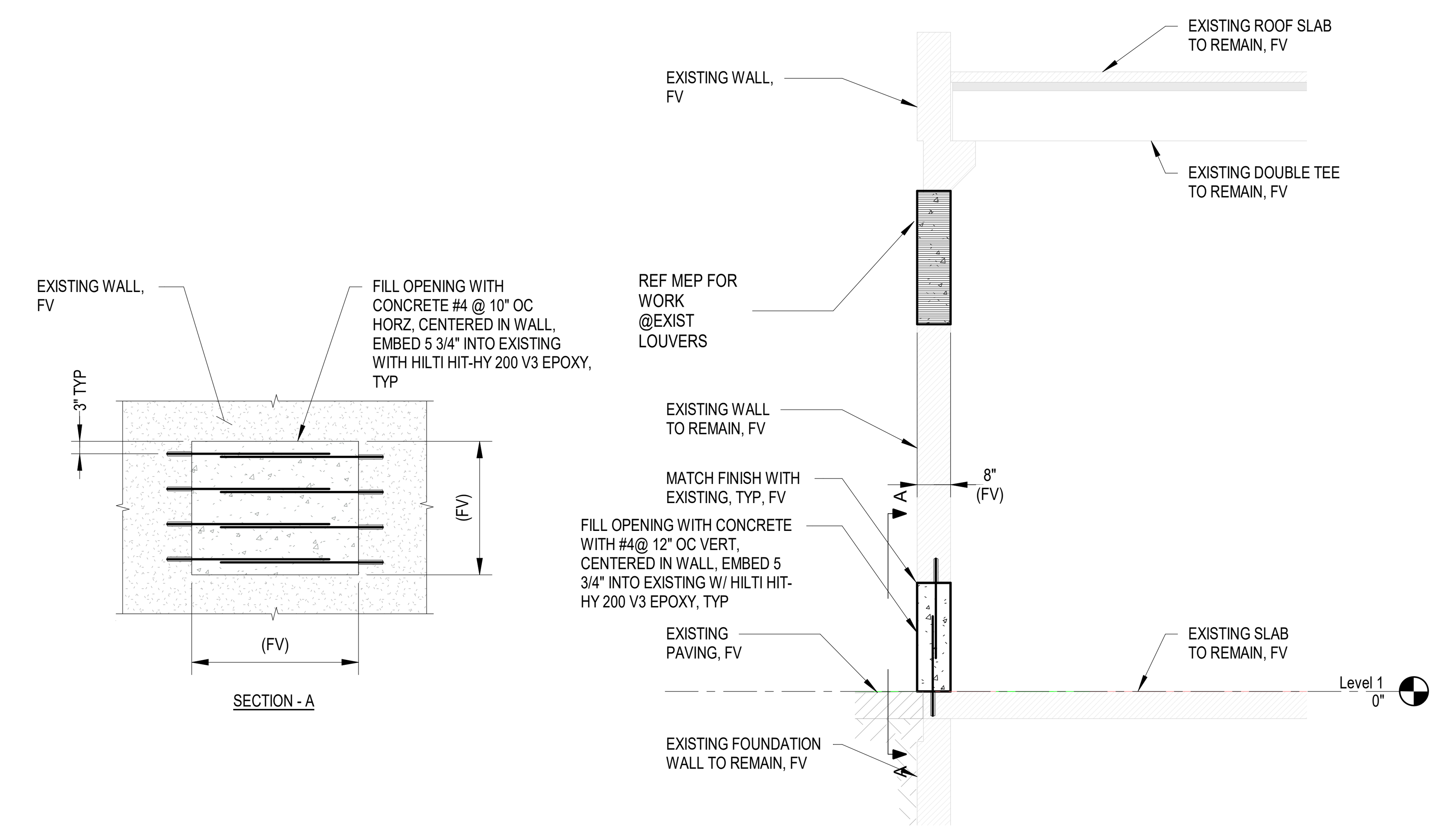
5 SECTION

SCALE: 3/4" = 1'-0"



4 SECTION

SCALE: 3/8" = 1'-0"



3 SECTION

SCALE: 3/8" = 1'-0"

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REVISIONS		
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CITY OF HOUSTON
HOUSTON AIRPORTS SYSTEM
Recommended 03/29/2024
Houston Airports System Director or Designated Representative DATE

REVIEWED / NO EXCEPTIONS TAKEN
The drawings & support documents submitted for permit review meet the design intent, and to the best of our knowledge, appear to be in compliance with current HAS approved standards.
Performance and approval of this review does not waive, nor relieve the applicant from full responsibility & liability to conform and comply with all applicable standards, codes, and regulations required from all Authorities Having Jurisdiction (AHJ).

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

EXISTING AND NEW PLAN

PROJECT MGR: AEO
DESIGNER: ER
DRAWN BY: CM
CHECK BY: ER

DATE: 03/01/2024

Henderson Rogers
Structural Engineers, LLC
TBPE Firm Registration No. 8755

STATE OF TEXAS
K. ELAINE ROGERS
65566
LICENSED PROFESSIONAL ENGINEER
K. Elaine Rogers
03/15/2024

APPROVED BY:

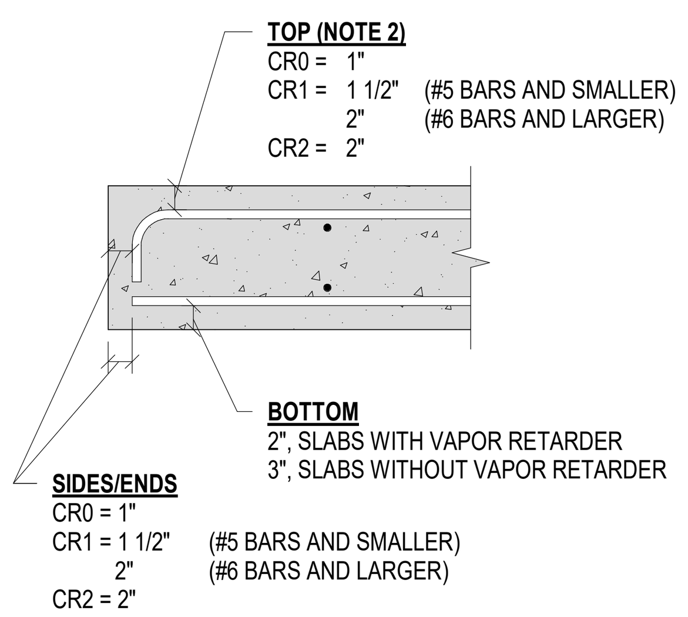
DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO.

SV-S1.12

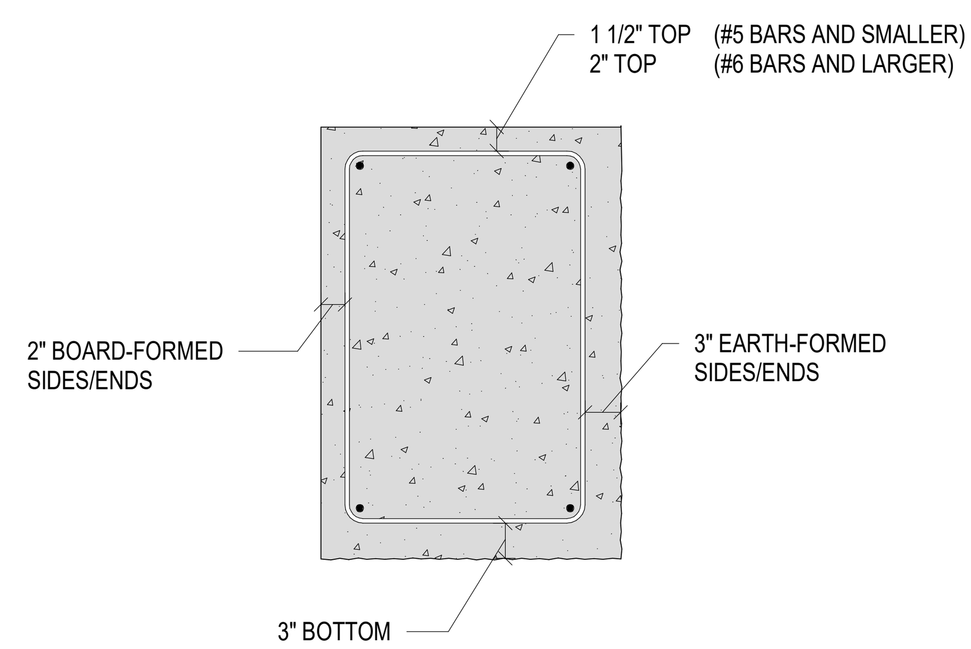
SEE TYP DETAIL 1/SV-S3.00 FOR ITEMS SHOWN BUT NOT NOTED OR ADDITIONAL INFORMATION



4 TYPICAL CLEAR CONCRETE COVER FOR REINFORCING STEEL IN SLABS-ON-GRADE

NO SCALE (NTS)

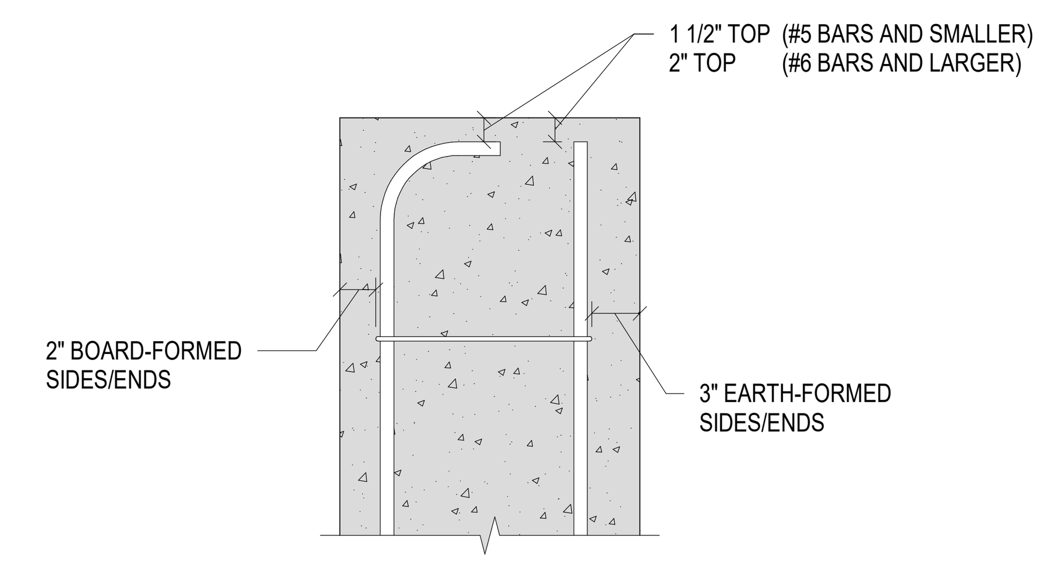
SEE TYP DETAIL 1/SV-S3.00 FOR ITEMS SHOWN BUT NOT NOTED OR ADDITIONAL INFORMATION



3 TYPICAL CLEAR CONCRETE COVER FOR REINFORCING STEEL IN GRADE BEAMS

NO SCALE (NTS)

SEE TYP DETAIL 1/SV-S3.00 FOR ITEMS SHOWN BUT NOT NOTED OR ADDITIONAL INFORMATION



2 TYPICAL CLEAR CONCRETE COVER FOR REINFORCING STEEL IN PLINTHS/PILASTERS

NO SCALE (NTS)

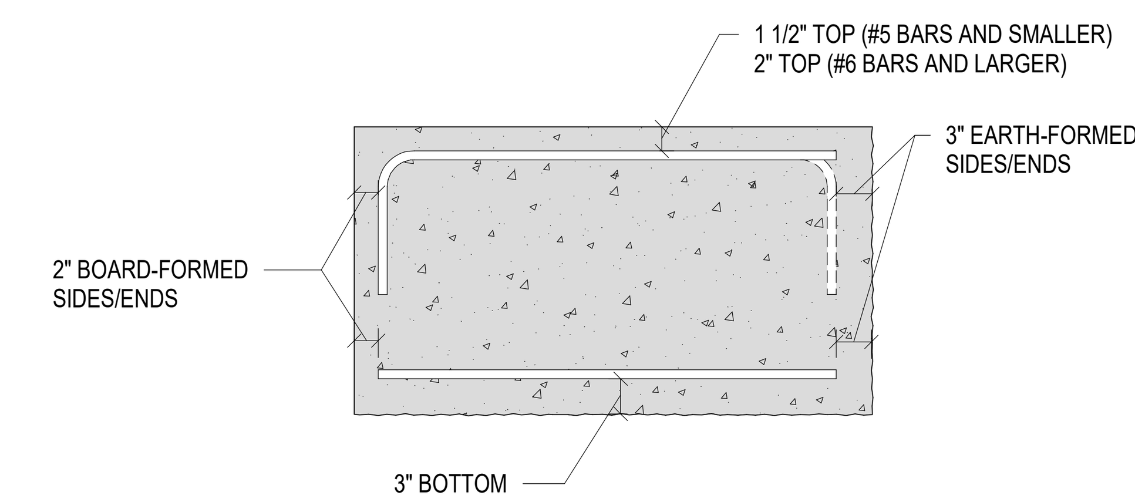
NOTES:

1. CONCRETE PROFILES AND REINFORCING STEEL CONFIGURATIONS ARE SCHEMATIC AND ARE PROVIDED FOR ESTABLISHING TYPICAL CLEAR CONCRETE COVERS ONLY. SEE STRUCTURAL PLANS AND DETAILS FOR ALL OTHER INFORMATION.
2. ALL COVERS SHOWN ARE CLEAR FROM THE OUTERMOST SURFACE OF REINFORCING STEEL TO THE CLOSEST OUTER SURFACE OF THE CONCRETE, INCLUDING REVEALS, DRIP GROOVES, OR RUSTICATIONS.
3. WHERE COVERS ARE DIFFERENT AS A FUNCTION OF BAR SIZE, DETAILER SHALL ADJUST LOCATION OF TRANSVERSE REINFORCING STEEL AS REQUIRED SUCH THAT CLEAR COVERS ARE MET FOR BOTH TRANSVERSE AND LONGITUDINAL STEEL.
4. "CR0", "CR1", AND "CR2" DENOTES THE CORROSION EXPOSURE CLASS OF THE CONCRETE ELEMENT. SEE CLASSES OF CONCRETE MATRIX AND GENERAL NOTES FOR ADDITIONAL INFORMATION.

1 NOTES FOR TYPICAL CLEAR CONCRETE COVER FOR REINFORCING STEEL

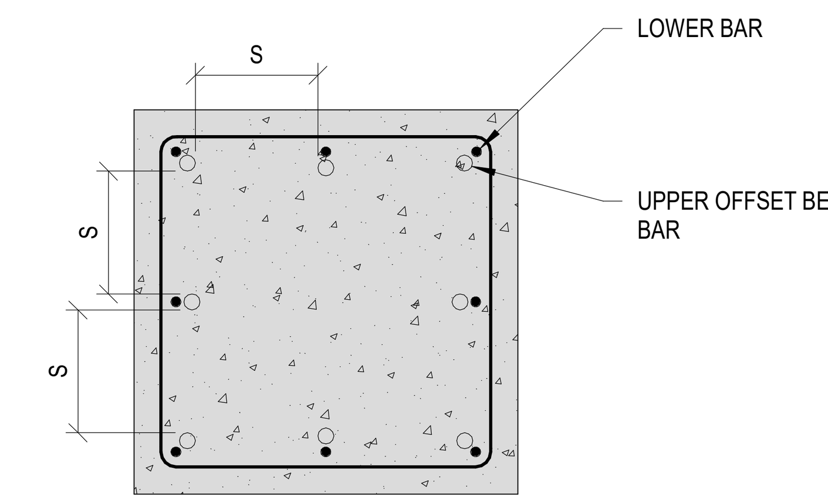
NO SCALE (NTS)

SEE TYP DETAIL 1/SV-S3.00 FOR ITEMS SHOWN BUT NOT NOTED OR ADDITIONAL INFORMATION



6 TYPICAL CLEAR CONCRETE COVER FOR REINFORCING STEEL IN MATS

NO SCALE (NTS)



NOTES:

1. UPPER COLUMN VERTICAL BARS SHALL BE OFFSET BENT IN THE SHOP TOWARD THE INTERIOR OF THE COLUMN AS SHOWN.
2. "S" IS THE CLEAR BAR SPACING TO BE USED FOR DETERMINATION OF TENSION SPLICE LENGTH CATEGORY.
3. WHEN CLEAR BAR SPACING IS NOT THE SAME AT DIFFERENT COLUMN FACES, SMALLER SPACING SHALL BE USED TO DETERMINE THE APPLICABLE SPLICE CATEGORY.

5 TYPICAL NORMAL LAP SPLICE SQUARE OR RECTANGULAR COLUMNS

NO SCALE (NTS)

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REVISIONS

NO.	DESCRIPTION	DATE
	ISSUED FOR CONSTRUCTION	03/15/24

CITY OF HOUSTON
HOUSTON AIRPORTS SYSTEM
Recommended 03/29/2024
Houston Airports System Director or Designated Representative DATE

REVIEWED / NO EXCEPTIONS TAKEN
The drawings & support documents submitted for permit review meet the design intent, and to the best of our knowledge, appear to be in compliance with current HAS approved standards.
Performance and approval of this review does not waive, nor relieve the applicant from full responsibility & liability to conform and comply with all applicable standards, codes, and regulations required from all Authorities Having Jurisdiction (AHJ).

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

TYPICAL FOUNDATION DETAILS - CONCRETE COVER REQUIREMENTS

PROJECT MGR: AEO
DESIGNER: ER
DRAWN BY: CM
CHECK BY: ER

DATE: 03/01/2024

Henderson Rogers
Structural Engineers, LLC
TBPE Firm Registration No. 8755

STATE OF TEXAS
K. ELAINE ROGERS
65566
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03/15/2024

APPROVED BY:

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JACOBS NO. WHXK7125
A.I.P. NO.
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B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO.

SV-S3.00

GRADE 60 REINFORCEMENT, NORMALWEIGHT CONCRETE

DEVELOPMENT LENGTHS OF STANDARD HOOKS IN TENSION

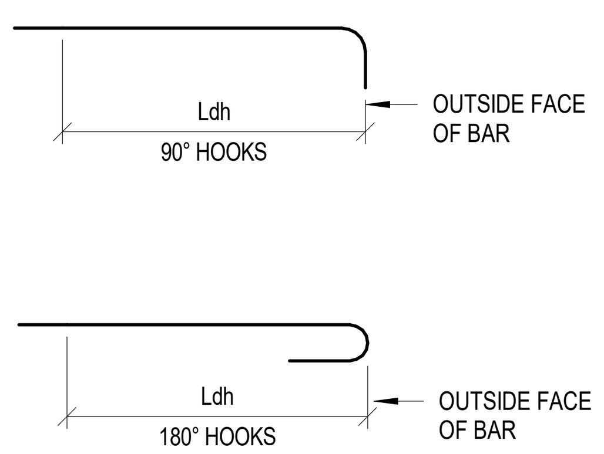
BAR SIZE	f'c=3000 PSI Lhb	f'c=3000 PSI 0.7 Lhb	f'c=4000 PSI Lhb	f'c=4000 PSI 0.7 Lhb	f'c=5000 PSI Lhb	f'c=5000 PSI 0.7 Lhb	f'c=6000 PSI Lhb	f'c=6000 PSI 0.7 Lhb
#3	9	7	8	6	7	6	6	6
#4	11	8	10	7	9	7	8	6
#5	14	10	12	9	11	8	10	7
#6	17	12	15	11	13	10	12	9
#7	20	14	17	12	15	11	14	10
#8	22	16	19	14	17	12	16	12
#9	25	18	22	16	20	14	18	13
#10	28	20	25	18	22	16	20	14
#11	31	22	27	19	24	17	22	16
#14	38	-	33	-	29	-	27	-
#18	50	-	43	-	39	-	35	-

DEVELOPMENT LENGTHS OF STANDARD HOOKS IN TENSION

f'c=7000 PSI Lhb	f'c=7000 PSI 0.7 Lhb	f'c=8000 PSI Lhb	f'c=8000 PSI 0.7 Lhb	f'c=9000 PSI Lhb	f'c=9000 PSI 0.7 Lhb	f'c≥10000 PSI Lhb	f'c≥10000 PSI 0.7 Lhb	BAR SIZE
6	6	6	6	6	6	6	6	#3
8	6	7	6	7	6	6	6	#4
9	7	9	7	8	6	8	6	#5
11	8	11	8	10	7	9	7	#6
13	10	12	9	12	9	11	8	#7
15	11	14	10	13	10	12	9	#8
17	12	16	12	15	11	14	10	#9
19	14	18	13	17	12	16	12	#10
21	15	19	14	18	13	17	12	#11
25	-	23	-	22	-	21	-	#14
33	-	31	-	29	-	28	-	#18

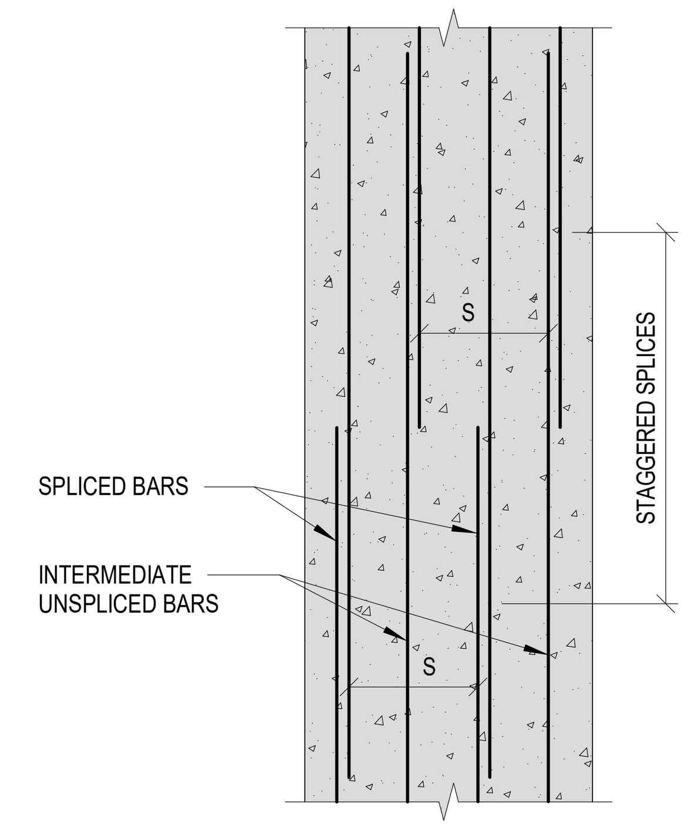
NOTES:

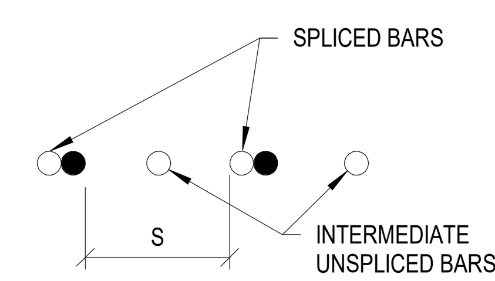
1. Ldh = DEVELOPMENT LENGTH OF STANDARD HOOKS IN TENSION (INCHES).
2. Ldh = Lhb UNLESS CONDITIONS OF NOTE 3 ARE SATISFIED.
3. Ldh = 0.7Lhb FOR #11 BARS AND SMALLER WHEN SIDE COVER (NORMAL TO PLANE OF HOOK)
4. IS NOT LESS THAN 2 1/2 INCHES AND FOR 90°
5. HOOKS COVER ON BAR EXTENSION BEYOND HOOK IS NOT LESS THAN 2 INCHES. HOOKS ARE NOT CONSIDERED EFFECTIVE FOR DEVELOPING BARS IN COMPRESSION. Ldh SHALL BE MULTIPLIED BY 1.2 FOR EPOXY-COATED HOOKED REINFORCING BARS.



8 TYPICAL DEVELOPMENT LENGTHS OF STANDARD HOOKS IN TENSION

NO SCALE (NTS)



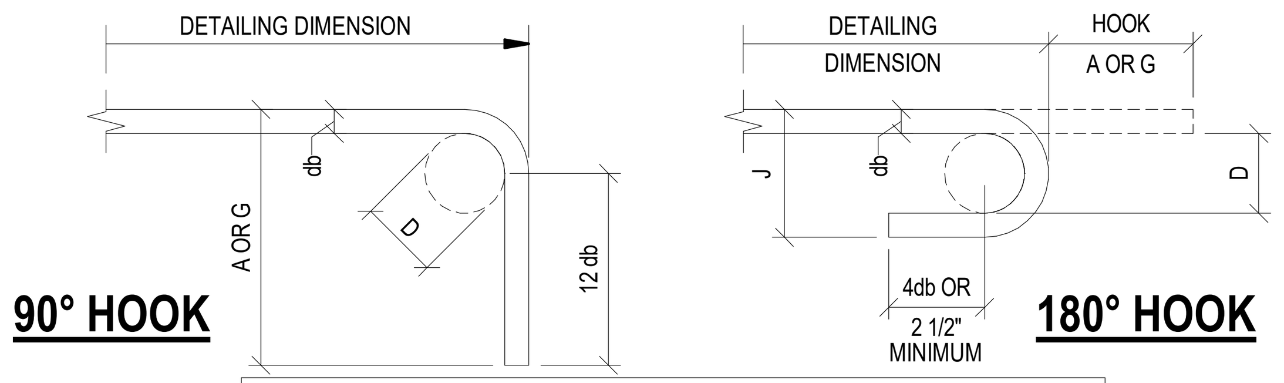


NOTE:

1. "S" = CLEAR BAR SPACING TO BE USED FOR DETERMINATION OF TENSION SPLICE LENGTH CATEGORY

3 TYPICAL CLEAR SPACING CRITERIA OF LAP SPLICED BARS, STAGGERED SPLICES

NO SCALE (NTS)



END HOOK DIMENSIONS

BAR SIZE	FINISHED BEND DIAMETER D, (INCHES)	180° HOOKS A OR G, (INCHES)	180° HOOKS J, (INCHES)	90° HOOK A OR G, (INCHES)
#3	2 1/4	5	3	6
#4	3	6	4	8
#5	3 3/4	7	5	10
#6	4 1/2	8	6	12
#7	5 1/4	10	7	14
#8	6	11	8	16
#9	9 1/2	15	11 3/4	19
#10	10 3/4	17	13 1/4	22
#11	12	19	14 3/4	24
#14	18 1/4	27	21 3/4	31
#18	24	36	28 1/2	41

D = INSIDE DIAMETER OF BEND

2 TYPICAL END HOOK TYPES

NO SCALE (NTS)

COLUMN TENSION DEVELOPMENT AND LAP SPLICE LENGTHS

GRADE 60 REINFORCEMENT, NORMALWEIGHT CONCRETE

BAR SIZE	LAP CLASS	f'c = 3000 PSI CATEGORY 1	f'c = 3000 PSI CATEGORY 2	f'c = 4000 PSI CATEGORY 1	f'c = 4000 PSI CATEGORY 2	f'c = 5000 PSI CATEGORY 1	f'c = 5000 PSI CATEGORY 2	f'c = 6000 PSI CATEGORY 1	f'c = 6000 PSI CATEGORY 2	f'c = 7000 PSI CATEGORY 1	f'c = 7000 PSI CATEGORY 2	f'c = 8000 PSI CATEGORY 1	f'c = 8000 PSI CATEGORY 2
#5	A	19	21	19	19	19	19	19	19	19	19	19	19
	B	24	27	21	24	19	21	19	19	19	19	19	19
#6	A	23	30	23	26	23	23	23	23	23	23	23	23
	B	30	38	26	33	23	30	23	27	23	25	23	24
#7	A	33	44	29	38	27	34	27	31	27	29	27	27
	B	43	57	37	49	33	44	31	40	28	37	27	35
#8	A	39	52	34	45	30	40	30	37	30	34	30	32
	B	50	67	43	58	39	52	36	47	33	44	31	41
#9	A	44	59	38	51	34	46	34	42	34	39	34	36
	B	57	76	50	66	45	59	41	54	38	50	35	47
#10	A	51	66	44	57	39	51	39	47	39	43	39	40
	B	66	85	57	74	51	66	47	60	43	56	40	52
#11	A	57	71	49	62	44	55	43	51	43	47	43	44
	B	74	92	64	80	57	72	52	66	48	61	45	57

NOTES:

1. ALL SPLICE LENGTHS ARE IN INCHES.
2. THIS TABLE SHALL BE USED FOR COLUMNS ONLY. SEE OTHER DEVELOPMENT LENGTH TABLES FOR OTHER MEMBERS.
3. THE TENSION DEVELOPMENT LENGTH (Ld) IS EQUAL TO THE SCHEDULED "CLASS A" LAP SPLICE LENGTH.
4. FOR DETERMINING THE BAR CATEGORY, "db" IS DEFINED AS THE DIAMETER OF THE LARGER BAR BEING SPLICED.
5. THE "CATEGORY 1" LAP LENGTH SHALL BE USED WHEN THE CLEAR SPACING BETWEEN BARS AT THE SPLICE IS EQUAL TO OR GREATER THAN 3db.
6. THE "CATEGORY 2" LAP LENGTH SHALL BE USED WHEN THE CLEAR SPACING BETWEEN BARS AT THE SPLICE IS LESS THAN 3db AND GREATER THAN 2db.
7. WHEN THE CLEAR SPACING BETWEEN BARS AT THE SPLICE IS EQUAL TO OR LESS THAN 2db, SPLICES SHALL BE STAGGERED SO THAT NO MORE THAN 50% OF BARS ARE SPLICED AT ANY GIVEN LOCATION. SEE DETAIL 3/SV-S3.01 FOR CRITERIA TO DETERMINE CLEAR SPACING "S" FOR BARS AT STAGGERED SPLICES.
8. IN CASES WHERE BAR SPACING IS NOT THE SAME AT DIFFERENT COLUMN FACES, THE SMALLER SPACING SHALL BE USED TO DETERMINE THE APPLICABLE SPLICE CATEGORY.
9. FOR EPOXY-COATED BARS, MULTIPLY THE TABULATED SPLICE LENGTHS BY 1.5.
10. WHEN LAP SPLICING BARS OF DIFFERENT SIZES, THE LAP LENGTH IS DETERMINED BY THE SMALLER BAR BUT MAY NOT BE LESS THAN THE "CLASS A" SPLICE LENGTH OF THE LARGER BAR.
11. FOR CONCRETE STRENGTHS IN BETWEEN THOSE TABULATED HERE, USE DEVELOPMENT AND LAP SPLICE LENGTHS OF LOWER CONCRETE STRENGTH.

7 TYPICAL COLUMN TENSION DEVELOPMENT AND LAP SPLICE LENGTHS

NO SCALE (NTS)

COMPRESSION DEVELOPMENT AND LAP SPLICE LENGTHS

GRADE 60 REINFORCEMENT

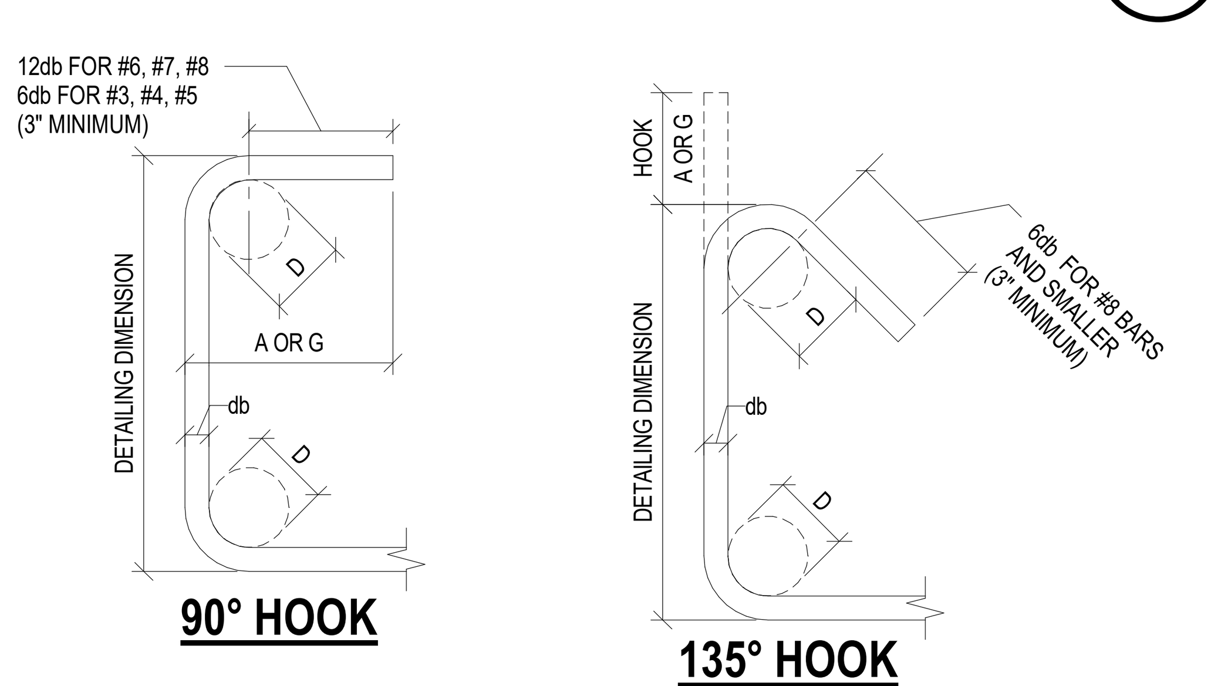
BAR SIZE	DEVELOPMENT LENGTH f'c=3000 PSI	f'c=4000 PSI	f'c=5000 PSI	f'c=6000 PSI	f'c=7000 PSI	f'c=8000 PSI	LAP LENGTH ALL f'c
#3	9	8	8	8	8	8	12
#4	11	10	9	9	9	9	15
#5	14	12	12	12	12	12	19
#6	17	15	14	14	14	14	23
#7	20	17	16	16	16	16	27
#8	22	19	18	18	18	18	30
#9	25	22	21	21	21	21	34
#10	28	25	23	23	23	23	39
#11	31	27	26	26	26	26	43

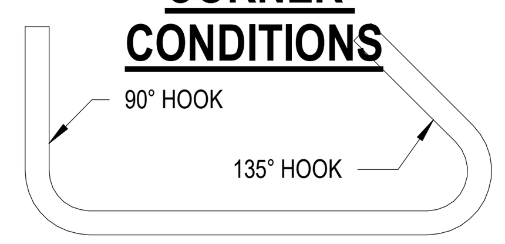
NOTES:

1. ALL SPLICE LENGTHS ARE IN INCHES.
2. DEVELOPMENT LENGTHS LISTED ABOVE SHALL ONLY BE USED FOR BAR END TERMINATIONS (NOT LAPS) SPECIFICALLY DESIGNATED AS COMPRESSION BARS.
3. LAP LENGTHS LISTED ABOVE SHALL ONLY BE USED FOR BAR LAP SPLICES SPECIFICALLY DESIGNATED AS COMPRESSION SPLICES.
4. IF BAR TERMINATIONS OR SPLICES ARE NOT SPECIFICALLY DESIGNATED AS COMPRESSION, THE APPROPRIATE TENSION DEVELOPMENT LENGTH SHALL BE USED.
5. WHEN BARS OF DIFFERENT SIZE ARE LAP SPLICED, THE SPLICE LENGTH SHALL BE THE LARGER OF EITHER THE DEVELOPMENT LENGTH OF THE LARGER BAR OR THE LAP LENGTH OF THE SMALLER BAR.
6. LENGTHS LISTED ARE VALID FOR BOTH NORMALWEIGHT AND LIGHTWEIGHT CONCRETE.

5 TYPICAL COMPRESSION DEVELOPMENT AND LAP SPLICE LENGTHS

NO SCALE (NTS)

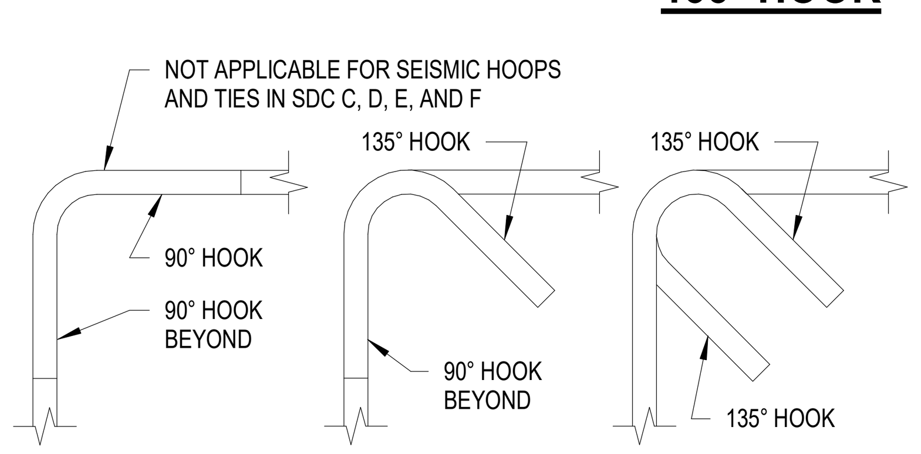




HOOK DIMENSIONS

BAR SIZE	D (INCHES)	90° HOOK A OR G (INCHES)	135° HOOK A OR G (INCHES)
#3	1 1/2	4	4 1/4
#4	2	4 1/2	4 1/2
#5	2 1/2	6	5 1/2

D = INSIDE DIAMETER OF BEND



12 TYPICAL STIRRUP, HOOP, AND TIE HOOKS

NO SCALE (NTS)

SLAB TENSION DEVELOPMENT AND LAP SPLICE LENGTHS

GRADE 60 REINFORCEMENT, NORMALWEIGHT CONCRETE

BAR SIZE	LAP CLASS	f'c = 3000 PSI BOTTOM BARS	f'c = 3000 PSI OTHER BARS	f'c = 4000 PSI BOTTOM BARS	f'c = 4000 PSI OTHER BARS	f'c = 5000 PSI BOTTOM BARS	f'c = 5000 PSI OTHER BARS	f'c = 6000 PSI BOTTOM BARS	f'c = 6000 PSI OTHER BARS	f'c = 7000 PSI BOTTOM BARS	f'c = 7000 PSI OTHER BARS	f'c = 8000 PSI BOTTOM BARS	f'c = 8000 PSI OTHER BARS
#3	A	12	13	12	12	12	12	12	12	12	12	12	12
	B	16	17	16	16	16	16	16	16	16	16	16	16
#4	A	17	22	15	19	13	17	12	16	12	14	12	14
	B	23	29	20	25	17	23	16	21	16	19	16	19
#5	A	25	32	21	28	19	25	18	23	16	21	15	20
	B	33	42	28	37	25	33	24	30	21	28	20	26
#6	A	33	43	29	37	26	34	24	31	22	28	21	27
	B	43	56	38	49	34	45	32	41	29	37	28	36
#7	A	53	69	46	60	42	54	38	49	35	46	33	43
	B	69	90	60	78	55	71	50	64	46	60	43	56
#8	A	66	86	57	74	51	67	47	61	44	56	41	53
	B	86	112	75	97	67	88	62	80	58	73	54	69
#9	A	80	104	69	90	62	81	57	74	53	68	49	64
	B	104	136	90	117	81	106	75	97	69	89	64	84
#10	A	96	125	83	108	75	97	68	88	63	82	59	77
	B	125	163	108	141	98	127	89	115	82	107	77	101
#11	A	113	146	98	127	87	114	80	104	74	96	69	90
	B	147	190	128	166	114	149	104	136	97	125	90	117

NOTES:

1. ALL SPLICE LENGTHS ARE IN INCHES.
2. THIS TABLE SHALL BE USED FOR SLABS ONLY. REFER TO OTHER DEVELOPMENT LENGTH TABLES FOR OTHER MEMBERS.
3. THE TENSION DEVELOPMENT LENGTH (Ld) IS EQUAL TO THE SCHEDULED "CLASS A" LAP SPLICE LENGTH.
4. A BOTTOM BAR IS DEFINED AS ANY BAR THAT DOES NOT HAVE MORE THAN 12" OF FRESH CONCRETE BELOW THE BAR.
5. OTHER BARS INCLUDE TOP BARS AND ALL OTHER BARS THAT HAVE MORE THAN 12" OF FRESH CONCRETE BELOW THE BAR. FOR TOP REINFORCEMENT IN SLABS THAT ARE 12" THICK OR LESS, TABULATED SPLICE LENGTHS FOR BOTTOM BARS SHALL BE USED.
6. FOR EPOXY-COATED BARS, MULTIPLY THE TABULATED SPLICE LENGTHS OF BOTTOM BARS BY 1.5 AND THE TABULATED SPLICE LENGTHS OF OTHER BARS BY 1.3.
7. WHEN LAP SPLICING BARS OF DIFFERENT SIZES, THE LAP LENGTH IS DETERMINED BY THE SMALLER BAR BUT MAY NOT BE LESS THAN THE "CLASS A" SPLICE LENGTH OF THE LARGER BAR.
8. FOR CONCRETE STRENGTHS IN BETWEEN THOSE TABULATED HERE, USE DEVELOPMENT AND LAP SPLICE LENGTHS OF LOWER CONCRETE STRENGTH.

10 TYPICAL SLAB TENSION DEVELOPMENT AND LAP SPLICE LENGTHS

NO SCALE (NTS)

HOUSTON AIRPORT SYSTEM

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REVISIONS

NO.	DESCRIPTION	DATE
	ISSUED FOR CONSTRUCTION	03/15/24

CITY OF HOUSTON HOUSTON AIRPORTS SYSTEM Recommended 03/29/2024 Houston Airports System Director or Designated Representative DATE

REVIEWED / NO EXCEPTIONS TAKEN

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

TYPICAL FOUNDATION DETAILS - DEVELOPMENT AND SPLICE LENGTHS

PROJECT MGR: AEO
DESIGNER: ER
DRAWN BY: CM
CHECK BY: ER

DATE: 03/01/2024

Henderson Rogers
Structural Engineers, LLC
TBPE Firm Registration No. 8755

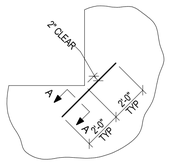
STATE OF TEXAS
K. ELAINE ROGERS
65566
LICENSED PROFESSIONAL ENGINEER
K. Elaine Rogers
03/15/2024

APPROVED BY:

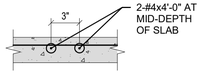
DIRECTOR HOUSTON AIRPORT SYSTEM
JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO.

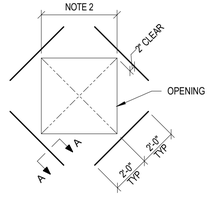
SV-S3.01



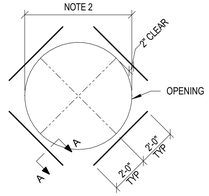
RE-ENTRANT CORNER



SECTION A-A



RECTANGULAR OPENING



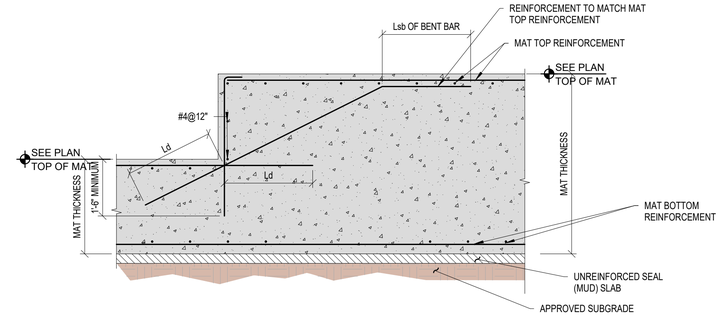
CIRCULAR OPENING

NOTES:

1. ADDITIONAL REINFORCEMENT SHALL NOT CROSS SLAB-ON-GRADE CONSTRUCTION AND CONTROL JOINTS. SKEW OR OMIT ADDITIONAL REINFORCEMENT AS REQUIRED.
2. COORDINATE OPENING SIZES AND LOCATIONS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.
3. OPENINGS OR GROUPS OF OPENINGS 10" AND SMALLER DO NOT REQUIRE ADDITIONAL REINFORCEMENT. FOR RECTANGULAR OPENINGS, USE LARGER DIMENSION TO DETERMINE IF ADDITIONAL REINFORCEMENT IS REQUIRED.

4 TYPICAL SLAB-ON-GRADE OPENING AND CORNER REINFORCEMENT

NO SCALE (NTS)

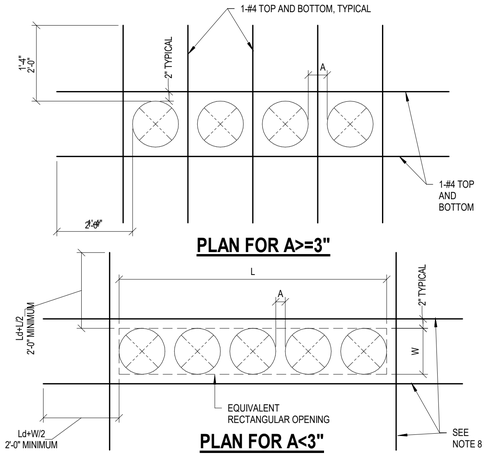


NOTES:

1. Ld DENOTES BAR TENSION DEVELOPMENT LENGTH.

1 TYPICAL CONCRETE MAT TRANSITION AT STEP

NO SCALE (NTS)



NOTES:

1. WHERE CLEAR SPACING BETWEEN ADJACENT SLEEVES IS LESS THAN 3", THE SLEEVE GROUP SHALL BE TREATED AS AN EQUIVALENT RECTANGULAR OPENING WITH LENGTH "L" AND WIDTH "W" AS SHOWN.
2. WHERE CLEAR SPACING BETWEEN ADJACENT SLEEVES IS GREATER THAN OR EQUAL TO 3", SCHEDULED SLAB BAR REINFORCEMENT SHALL BE OFFSET AS REQUIRED TO MISS SLEEVES.
3. REINFORCEMENT SHOWN IS IN ADDITION TO SCHEDULED SLAB REINFORCEMENT.
4. SCHEDULED SLAB MESH REINFORCEMENT MAY BE CUT AS REQUIRED TO MISS PIPE SLEEVES.
5. REFER TO MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR LOCATION AND SIZE OF SLEEVES.
6. ISOLATED PIPE SLEEVES THAT ARE SMALLER THAN 5" AND DO NOT INTERRUPT REINFORCEMENT DO NOT REQUIRE THE USE OF THIS DETAIL.
7. THIS DETAIL SHOULD NOT BE USED FOR OPENING GROUPS WITH DIAMETERS LARGER THAN 12". CONSULT STRUCTURAL ENGINEER FOR FRAMING OF SUCH CONDITIONS.
8. PROVIDE HALF OF INTERRUPTED REINFORCEMENT PLUS ONE ADDITIONAL BAR OF SAME SIZE ON EACH SIDE OF EQUIVALENT RECTANGULAR OPENING. PROVIDE A MINIMUM OF 1-#4 TOP AND BOTTOM EACH SIDE OF OPENING.

6 ADDITIONAL REINFORCEMENT AROUND PIPE SLEEVES IN SLAB-ON-GRADE

NO SCALE (NTS)

HOUSTON AIRPORT SYSTEM

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REVISIONS

NO.	DESCRIPTION	DATE
	ISSUED FOR CONSTRUCTION	03/15/24

CITY OF HOUSTON
HOUSTON AIRPORTS SYSTEM
Recommended _____ 02/29/2024
Director, Facility Design Date
Houston Airport System Representative

THE APPROVAL OF THIS PLAN, SPECIFICATION OR REPORT BY THE HOUSTON AIRPORT SYSTEM (HAS) IS ONLY FOR COMPLIANCE WITH HAS REQUIREMENTS AND DOES NOT IMPLY APPROVAL OF ANY OTHER REQUIREMENT. HAS IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN SHOWN ON THIS PLAN, SPECIFICATION OR REPORT. THE PURCHASE AND APPROVAL OF THIS PLAN DOES NOT AUTHORIZE THE USE OF COPYRIGHTED MATERIAL BY OWNER, OR OWNER'S AGENTS OR EMPLOYEES IN THE PREPARATION OF CONSTRUCTION DOCUMENTS. OWNER INDEMNIFIES HAS AGAINST ANY VIOLATION.

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

TYPICAL FOUNDATION DETAILS - SLAB ON GRADE

PROJECT MGR: AEO
DESIGNER: ER
DRAWN BY: CM
CHECK BY: ER

DATE: 03/01/2024

Henderson Rogers
Structural Engineers, LLC
TBPE Firm Registration No. 8755

STATE OF TEXAS
K. ELAINE ROGERS
65566
LICENSED
PROFESSIONAL ENGINEER
03/15/2024

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO.

SV-S3.02

CMU WALL VERTICAL BAR TENSION DEVELOPMENT AND LAP SPLICE LENGTHS

GRADE 60 REINFORCEMENT, STANDARD BLOCK (f'm = 1500 PSI)

BAR SIZE	4" CMU	6" CMU		8" CMU		10" CMU		12" CMU	
	1 BAR /CELL	1 BAR /CELL	2 BARS /CELL	1 BAR /CELL	2 BARS /CELL	1 BAR /CELL	2 BARS /CELL	1 BAR /CELL	2 BARS /CELL
#3	19	16	19	16	17	16	17	16	17
#4	34	25	34	21	29	21	29	21	29
#5	NP	40	45	27	45	26	45	26	45
#6	NP	NP	NP	51	54	40	54	40	54
#7	NP	NP	NP	63	63	52	63	46	63
#8	NP	NP	NP	72	NP	72	72	63	72
#9	NP	NP	NP	NP	NP	NP	NP	81	81
#10	NP	NP	NP	NP	NP	NP	NP	NP	NP
#11	NP	NP	NP	NP	NP	NP	NP	NP	NP

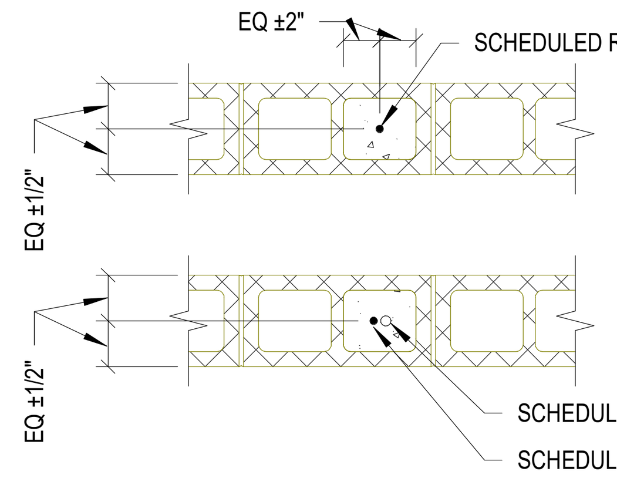
NP = NOT PERMITTED

NOTES:

1. ALL DEVELOPMENT AND LAP SPLICE LENGTHS ARE IN INCHES.
2. THIS TABLE SHALL BE USED FOR ALL REINFORCED CMU WALLS, PILASTERS, AND COLUMNS UNLESS NOTED OTHERWISE IN DETAILS.
3. INCREASE TABULATED VALUES BY 50% FOR EPOXY COATED REINFORCEMENT.
4. WITH APPROVAL BY THE ENGINEER, WELDED SPLICES AND MECHANICAL SPLICES DEVELOPING AT LEAST 125% OF THE YIELD STRENGTH, Fy, OF THE BAR MAY BE SUBSTITUTED IN SOME LOCATIONS.
5. WHEN LAP SPLICING BARS OF DIFFERENT SIZES, THE LAP LENGTH IS DETERMINED BY THE SMALLER BAR.
6. SEE DETAIL 1/SV-S4.00 FOR BAR POSITIONING IN CELLS.

2 TYPICAL CMU VERTICAL BAR TENSION DEVELOPMENT AND LAP SPLICE LENGTHS

NO SCALE (NTS)

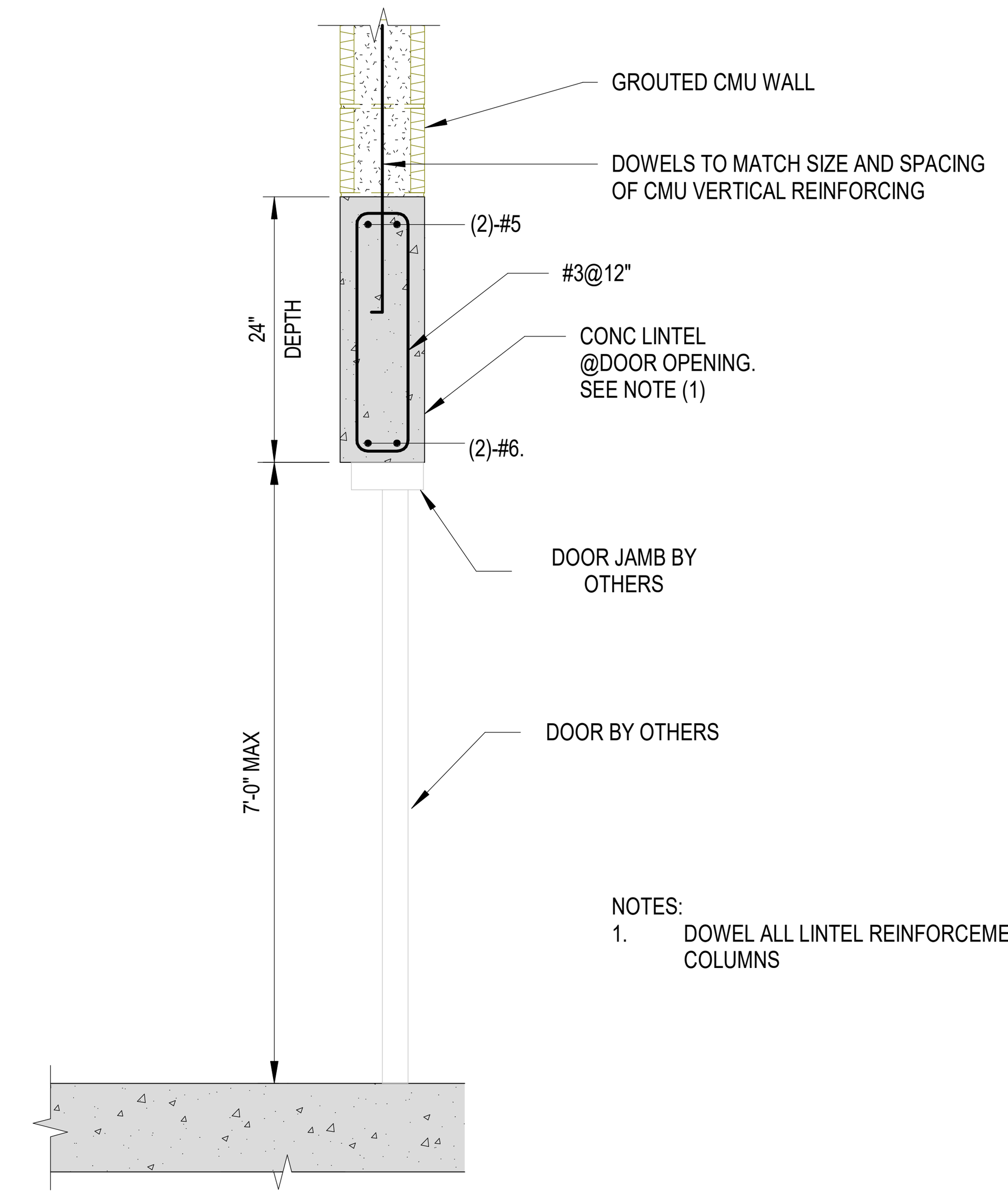


NOTES:

1. REINFORCEMENT MUST BE PLACED USING REINFORCING BAR POSITIONERS THAT LOCATE THE BAR AS SPECIFIED AND PREVENT MOVEMENT OF THE BAR DURING CONSTRUCTION.
2. SPLICED REINFORCEMENT MUST BE A CONTACT LAP SPLICE WITH SPLICED BARS ALIGNED PARALLEL TO THE WALL AS SHOWN.
3. THE ENGINEER MUST BE NOTIFIED PRIOR TO PLACEMENT OF REINFORCEMENT THAT IS REQUIRED TO BE PLACED OUTSIDE OF THE TOLERANCES OF THIS DETAIL SUCH AS TO AVOID INTERFERENCE WITH OTHER REINFORCEMENT, CONDUITS, OR EMBEDDED ITEMS.

1 TYPICAL CMU VERTICAL BAR PLACEMENT

NO SCALE (NTS)



NOTES:
1. DOWEL ALL LINTEL REINFORCEMENT INTO CONCRETE COLUMNS

5 LINTEL AT DOOR OPENING

NO SCALE (NTS)

HOUSTON AIRPORT SYSTEM

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REVISIONS		
NO.	DESCRIPTION	DATE
	ISSUED FOR CONSTRUCTION	03/15/24

CITY OF HOUSTON
HOUSTON AIRPORTS SYSTEM
Recommended 03/29/2024
Houston Airports System Director or Designated Representative DATE

REVIEWED / NO EXCEPTIONS TAKEN
The drawings & support documents submitted for permit review meet the design intent, and to the best of our knowledge, appear to be in compliance with current HAS approved standards.
Performance and approval of this review does not waive, nor relieve the applicant from full responsibility & liability to conform and comply with all applicable standards, codes, and regulations required from all Authorities Having Jurisdiction (AHJ).

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

TYPICAL MASONRY DETAILS

PROJECT MGR: AEO
DESIGNER: ER
DRAWN BY: CM
CHECK BY: ER

DATE: 03/01/2024

Henderson Rogers
Structural Engineers, LLC
TBPE Firm Registration No. 8755

STATE OF TEXAS
K. ELAINE ROGERS
65566
LICENSED PROFESSIONAL ENGINEER
K. Elaine Rogers
03/15/2024

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM
JACOBS NO. WHXK7125
A.I.P. NO.
C.I.P. NO. A-000687
B.S.G. NO. 2024-31-IAH
H.A.S. NO. PN 952
T.I.P. NO. 24-28-IAH

SHEET NO.
SV-S4.00

GENERAL NOTES

1. THE GENERAL CONDITIONS, SUPPLEMENTARY GENERAL CONDITIONS, SPECIFICATIONS AND REQUIREMENTS OF OTHER DIVISIONS REQUIRE COORDINATION AND SHALL APPLY TO THE DIVISION 27 CONTRACTOR. ANY CONTRADICTING INFORMATION SHALL BE SUBMITTED VIA A REQUEST FOR INFORMATION (RFI).
2. COMMUNICATIONS CABLING INTEGRATOR HEREAFTER REFERRED TO, AS "CONTRACTOR" SHALL PROVIDE ALL MATERIALS, COMPONENTS, TOOLS, AND LABOR TO COMPLETE A TELECOMMUNICATIONS INFRASTRUCTURE AS SET FORTH IN THE TK SET AND DIVISION 27 SPECIFICATIONS AS WELL AS OTHER TECHNOLOGY AND ELECTRICAL DRAWINGS.
3. THE CONTRACTOR SHALL CAREFULLY EXAMINE THE SITE TO DETERMINE THE EXTENT OF WORK AND CONDITIONS UNDER WHICH IT WILL BE DONE. REVIEW AND VERIFY CONTRACT DOCUMENTS IN RELATION TO FIELD CONDITIONS TO VERIFY ACCURACY. THE OWNER OR THEIR DESIGNATED REPRESENTATIVE SHOULD BE CONSULTED AS NEEDED FOR CLARIFICATION OR DIRECTION REGARDING ANY PROJECT RELATED QUESTIONS. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING CLARIFICATION FROM THE OWNER OR THEIR DESIGNATED REPRESENTATIVE PRIOR TO PROCEEDING WITH THE WORK OR RELATED WORK IN QUESTION.
4. DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS MUST BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE OWNER OR THEIR DESIGNATED REPRESENTATIVE FOR CLARIFICATION.
5. REFER TO TECHNOLOGY CONTRACT DOCUMENTS, DRAWINGS AND SPECIFICATIONS AS A UNIT AND IN WHOLE IN THE BIDDING AND INSTALLATION OF THIS PROJECT.
6. ELECTRICAL CONTRACTOR SHALL READ IN THEIR ENTIRETY ALL SECTIONS OF THE COMMUNICATIONS CABLING SYSTEM DOCUMENTS AND APPLY THEM AS APPROPRIATE FOR WORK IN THIS SECTION. REF DIVISION 27 AND TELECOMMUNICATIONS DRAWINGS.
7. ELECTRICAL CONTRACTOR SHALL PROVIDE MATERIALS, COMPONENTS, TOOLS, AND LABOR TO COMPLETE COMMUNICATIONS CABLING PATHWAY, ELECTRICAL POWER DISTRIBUTION AND GROUNDING SYSTEM AS SET FORTH IN THE COMMUNICATIONS CABLING SYSTEM DOCUMENTS AND THE ELECTRICAL DOCUMENTS, SPECIFICATIONS AND DRAWINGS.
8. CONTRACTOR SHALL NOTE AND REPORT TO GC WORK PERFORMED BY ELECTRICAL CONTRACTOR WHICH DOES NOT COMPLY WITH COMMUNICATIONS SPECIFICATIONS AND DRAWINGS INTENDED FOR THE COMMUNICATIONS SYSTEMS COMPONENTS.
9. CONTRACTOR SHALL TAKE NECESSARY MEANS TO PROTECT COMMUNICATIONS SYSTEM COMPONENTS FROM MECHANICAL DAMAGE BEFORE, DURING AND AFTER CONSTRUCTION.
10. CONTRACTOR IS REQUIRED TO REFERENCE DIVISION 27 SPECIFICATIONS FOR ITEMIZED PRICING REQUIREMENTS.

COMMUNICATION PATHWAY

1. OUTLET FACEPLATES MUST BE LABELED WITH THE JACK NUMBERS OR PATCH PANEL PORTS PER SPECIFICATIONS. ALL JACKS MUST BE FLUSH WITH THE FACEPLATE.
2. BACK BOXES INSTALLED FOR COMMUNICATIONS DATA AND VOICE WIRING TERMINATION SHALL BE 4 11/16"X4 11/16"X3" DEEP BOXES TO ALLOW FOR THE REQUIRED WORKING CLEARANCE FOR THE CAT6 AND CAT6A UTP CABLE. THESE BOXES SHALL BE SEPARATE FROM ELECTRICAL JUNCTION BOXES AND BE DEDICATED EXCLUSIVELY FOR DATA AND VOICE COMMUNICATIONS.
3. MUD RINGS SHALL BE INSTALLED ON ALL COMMUNICATIONS WALL BOXES.
4. CONDUITS TO COMMUNICATIONS WALL BOXES SHALL BE MINIMUM OF (1") IN DIAMETER AND SHALL BE COMPLETE WITH NYLON PULL STRING AND PROTECTIVE BUSHINGS. OUTLETS HAVING MORE THAN TWO CABLES REQUIRE AN ADDITIONAL (1") CONDUIT PER WALL BOX.
5. SUPPLY SOLUTIONS AND SHOP DRAWINGS SUBMITTALS FOR CONDUIT SEALING MATERIALS AND SYSTEMS FOR WRITTEN APPROVAL PRIOR TO PURCHASE AND INSTALLATION.
6. MAXIMUM TWO SWEEPING 90 DEG. BENDS WITHIN EVERY 100' OF CONDUIT. IF THESE CONDITIONS CAN NOT BE MET, A J-BOX MUST BE PLACED IN THE RUN WITH THE ABILITY TO ACCESS BOX THROUGH ACCESSIBLE CEILING OR ACCESS PANEL.
7. CONDUITS SHALL HAVE CONNECTORS, PROTECTIVE BUSHINGS, PULL STRINGS AND SHALL BE GROUNDED.
8. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH ARCHITECT AND TELECOMMUNICATIONS CONSULTANT ON ENTRY, PATHWAYS AND OUTLET BOX PLACEMENT IN MODULAR FURNITURE AND CUSTOM MILLWORK.
9. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL REQUIRED BASKET TRAY AS SHOWN IN TELECOMMUNICATIONS DRAWINGS.

COMMUNICATIONS ROOMS

1. TELECOMMUNICATIONS ROOM LAYOUTS AND EQUIPMENT ARE SHOWN FOR COORDINATION AND INFORMATIONAL PURPOSES ONLY.
2. FURNISH AND INSTALL CABLE SUPPORT, CABLE MANAGEMENT AND ASSOCIATED HARDWARE WITHIN TELECOMMUNICATIONS ROOMS.
3. CONTRACTOR TO PROVIDE AUTOCAD FLOOR PLAN AS-BUILT ON "D" SIZE PAPER, LAMINATED WITH PLASTIC AND MOUNTED BEHIND CUT PLEXI-GLASS ON THE WALL IN THE MDF/IDFs.

GROUNDING AND BONDING

1. ALL METAL RACKS, FRAMES, CABINETS AND MISCELLANEOUS EQUIPMENT ENCLOSURES SHALL BE BONDED TOGETHER USING GREEN INSULATED 6AWG COPPER WIRE SO THAT ALL EQUIPMENT, STRUCTURED CABLING RACKS ARE AT THE SAME GROUND POTENTIAL. A VOLT-OHM-METER (VOM) MEASUREMENT BETWEEN ANY TWO POINTS ON METAL RACKS AND EQUIPMENT ENCLOSURES IN THE TELECOMMUNICATIONS ROOMS SHALL BE LESS THAN 1.25 VOLTS DC OR AC POTENTIAL.
2. ALL GROUNDS USED SHALL BE BONDED TOGETHER TO FORM A SINGLE GROUNDING ELECTRODE SYSTEM AS REQUIRED IN ARTICLE 250 OF NFPA 70 - NATIONAL ELECTRICAL CODE.
3. SURFACES SHALL BE PREPARED TO PROVIDE A PROPER PATH TO GROUND. ANY SURFACE TO BE GROUNDED MUST BE FREE OF PAINT OR OTHER COATING THAT MIGHT PREVENT AN EFFECTIVE GROUND. PAINT SHOULD BE SCRAPED AWAY UNTIL METALLIC SURFACE HAS BEEN EXPOSED BEFORE THE ATTACHMENT OF GROUNDING OR BONDING WIRE.
4. CONTRACTOR TO INSTALL MANUFACTURER PROVIDED STAR WASHERS PER PANEL INSTALLED IN ORDER FOR PANELS TO BE BONDED TO RACK. ONLY ONE (1) STAR WASHER IS REQUIRED PER PANEL.
5. CONTRACTOR TO PROVIDE "L" BRACKETS 18" APART ON CABLE RUNWAY IN IDF'S. "L" BRACKETS TO HANG BENEATH CABLE RUNWAY AND SUPPORT GROUNDING WIRE AROUND TRAY TO RACKS AND WALL FIELDS. ATTACH GROUND WIRE TO "L" BRACKETS WITH VELCRO.
6. NO GROUND WIRE SHALL BE RAN IN CABLE RUNWAY WITH HORIZONTAL CABLING OR ATTACHED TO THE OUTSIDE OF THE RACEWAY. "L" BRACKETS ARE REQUIRED.

ELECTRICAL

1. FOR SPECIFIC POWER AND RECEPTACLE REQUIREMENTS, REFER TO ELECTRICAL SPECIFICATIONS AND DRAWINGS AND VERIFY WITH COMMUNICATION SPECIFICATIONS AND DRAWINGS. REPORT ANY DISCREPANCIES TO THE GC PRIOR TO PURCHASE OR INSTALLATION.

COMMUNICATIONS CABLE

1. CONTRACTOR SHALL PROVIDE AND INSTALL HORIZONTAL COPPER DATA CABLES.
2. HORIZONTAL DATA CABLING SHALL CONSIST OF 23 AWG PLENUM CAT6 4PR UTP/STP CABLES TO EACH DATA OUTLET.
3. WIRELESS DATA CABLING SHALL CONSIST OF 23 AWG PLENUM CAT6A 4PR UTP CABLES TO EACH ACCESS POINT.
4. SECURITY IP CAMERA DATA CABLING SHALL CONSIST OF 23 AWG PLENUM CAT6 4PR UTP CABLES TO EACH SECURITY CAMERA.
5. NO HORIZONTAL CABLE SHALL BE LONGER THAN 295 FEET FROM TERMINATION TO TERMINATION. IF THE CONTRACTOR BELIEVES ANY STATION CABLE WILL EXCEED THE 295 FEET LIMIT WRITTEN APPROVAL FROM THE OWNER'S ARCHITECT/ENGINEER WILL BE REQUIRED PRIOR TO INSTALLATION.
6. PROVIDE CATEGORY 6 CABLING FROM EACH WORKSTATION OUTLET LOCATION TO THE APPROPRIATE TELECOM ROOM LOCATED ON EACH FLOOR.
7. HORIZONTAL DATA CABLING SHALL TERMINATE ON RACK MOUNTED PATCH PANELS LOCATED IN TELECOM ROOM, AND ON 8P8C INSERTS AT THE OUTLET. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
8. WIRELESS AND STP DATA CABLING SHALL TERMINATE ON SEPARATE RACK MOUNTED PATCH PANELS LOCATED IN TELECOM ROOM.
9. COMMUNICATIONS CABLE SHALL NOT BE PAINTED.
10. LABEL CABLES PER OWNER STANDARD. COORDINATE FINAL NOMENCLATURE WITH OWNER PRIOR TO INSTALLATION.
11. ALL CABLING INSTALLED UNDERGROUND IN CONCRETE SLABS, IN DIRECT CONTACT WITH THE EARTH, LOCATIONS SUBJECT TO SATURATION WITH LIQUIDS AND UNPROTECTED LOCATIONS EXPOSED TO WEATHER SHALL BE CONSTRUCTED WITH APPROPRIATE WEATHER PROOFING COMPOUNDS AND SHEATHING.
12. ALL CABLING ROUTED TO EXTERIOR DEVICES, TERMINATING IN INTERIOR IDFs, SHALL BE INDOOR/OUTDOOR PLENUM RATED.

TELECOMMUNICATIONS RESPONSIBILITY MATRIX

TELECOM RESPONSIBILITY MATRIX	GC	IT CONTRACTOR	OWNER
NETWORK CABLING TO IDF'S		X	
CONDUITS	X		
J-BOXES	X		
POWER	X		
IDF/MDF BUILDOUT - RACKS, CABLE TRAY, PATCH PANELS, PATCH CORDS, GROUNDING		X	
OUTSIDE PLANT CONDUIT PATHWAY	X		
DATA SWITCHES			X - (OFOI)

TELECOMMUNICATIONS SYMBOLS

CAM	IP SECURITY CAMERA OUTLET(CAM), CEILING MOUNT DATA OUTLET 1 DATA RUN PER LOCATION UNLESS NOTED OTHERWISE. REFER TO RELATED SPECIFICATION SECTION FOR CABLE AND OUTLET TYPE TO BE PROVIDED BY DIVISION 27 INTEGRATOR. REFER TO TY DRAWINGS FOR ROUGH-IN AND TERMINATION REQUIREMENTS.
CAM	IP SECURITY CAMERA OUTLET(CAM), WALL MOUNT DATA OUTLET 1 DATA RUN PER LOCATION UNLESS NOTED OTHERWISE. REFER TO RELATED SPECIFICATION SECTION FOR CABLE AND OUTLET TYPE TO BE PROVIDED BY DIVISION 27 INTEGRATOR. REFER TO TY DRAWINGS FOR ROUGH-IN AND TERMINATION REQUIREMENTS.
xD USER	USER SPECIFIC (REFERENCE USER LEGEND) WALL MOUNTED DATA OUTLET (D), MOUNTED +18" A.F.F. UNLESS NOTED OTHERWISE. (x) = NUMBER OF CABLE RUNS PER LOCATION AS INDICATED. REFER TO RELATED SPECIFICATION SECTION FOR CABLE AND OUTLET TYPE TO BE PROVIDED BY DIVISION 27 INTEGRATOR.

NOTES:

1. REFER TO FLOOR PLANS AND REFLECTED CEILING PLANS FOR JACK LOCATIONS.
2. COORDINATE THE INSTALLATION OF ALL COMMUNICATION JACKS WITH ELECTRICAL DRAWINGS TO ENSURE ALL COMPONENTS AND/OR EQUIPMENT CONNECTED TO ANY COMMUNICATIONS NETWORK HAS THE NECESSARY 120 VAC ELECTRICAL POWER NECESSARY FOR OPERATION. REFER TO ELECTRICAL AND FURNITURE DRAWINGS FOR ADDITIONAL INFORMATION.

THIS IS A STANDARD SYMBOL LIST. ALL SYMBOLS MAY NOT APPEAR ON THIS PROJECT.

SHEET LIST

HOUSTON AIRPORT SYSTEM

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REVISIONS

NO.	DESCRIPTION	DATE
	ISSUED FOR CONSTRUCTION	03/15/24

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

PROJECT MGR: AEO
DESIGNER:
DRAWN BY: CO
CHECK BY: MB

DATE: 03/15/2024

03/15/2024

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO
C.I.P. NO. A-000687
B.S.G. NO. 2054-31-IAH
H.A.S. NO. PN 952
T.I.P NO 24-28-IAH

SHEET NO.

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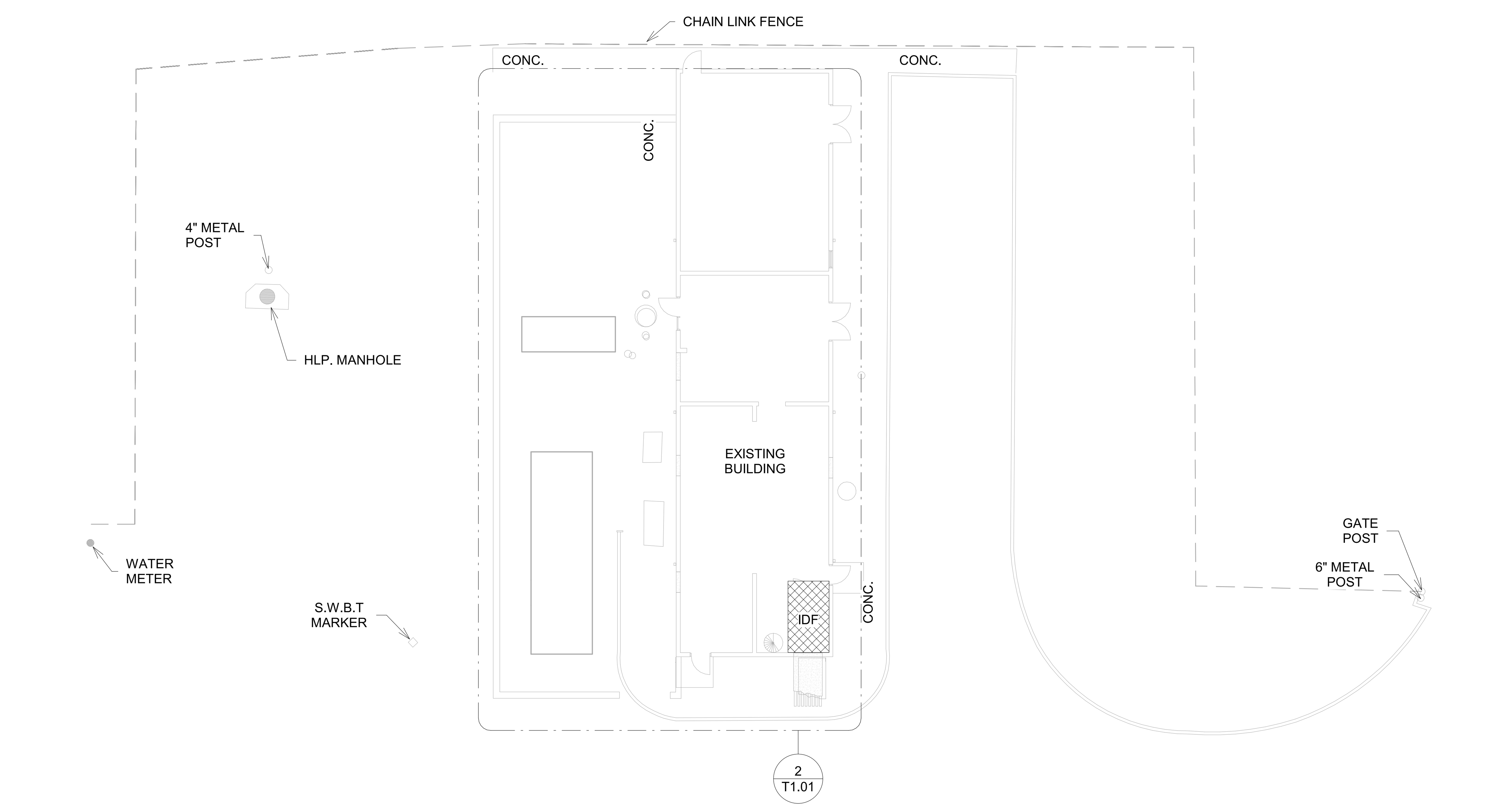
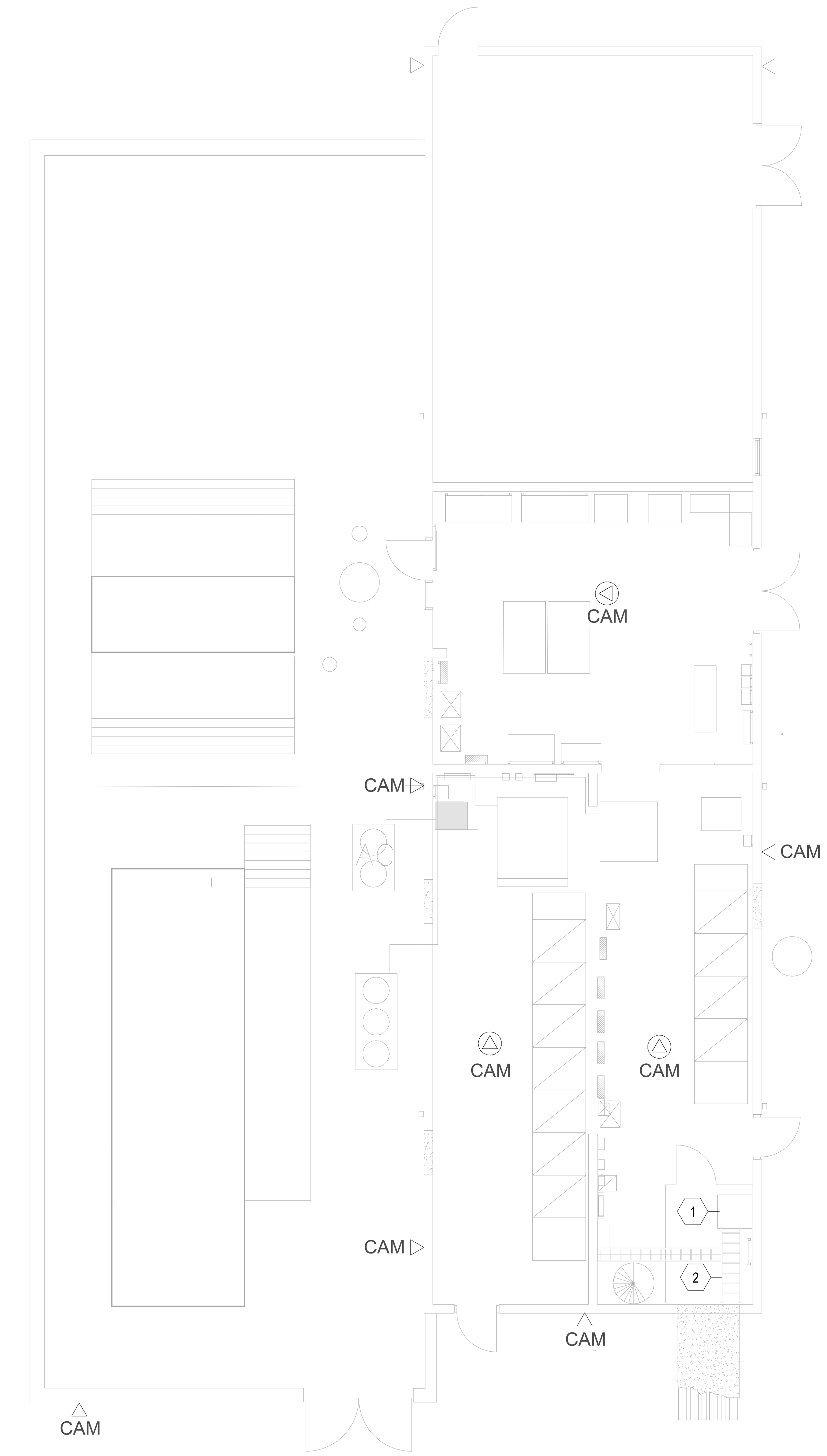
FILE NAME: Autodesk Docs://2022_013_Jacobs On Call /4b IAH South Vault_R24.rvt
DATE STAMP: 3/15/2024 12:07:13 PM



1 Telecom Site Plan
1/16" = 1'-0"



2 TELECOM FLOOR PLAN - LEVEL 1
1/8" = 1'-0"

GENERAL NOTES

1. ROUTE ALL CABLING PATHWAY TO EXISTING IDF CAGE LADDER TRAY

2. TERMINATE NEW DATA CABLES IN EXISTING TELECOM CABINET. PROVIDE NEW TERMINATION HARDWARE AS REQUIRED

KEYNOTE	KEYNOTE DESCRIPTION
1	EXISTING TELECOM CABINET
2	EXISTING LADDER TRAY

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GENERAL NOTES

1. THE FOLLOWING DOCUMENTS ADDRESS ACCESS CONTROL AND SURVEILLANCE ELEMENTS REQUIRED BY THE HOUSTON AIRPORT SYSTEM (HAS), UNITED AIRLINES (UA), AND THE TRANSPORTATION SECURITY ADMINISTRATION. FOR NETWORK AND WIRELESS EQUIPMENT INFORMATION REFERENCE TN DRAWINGS. FOR SPECIAL SYSTEMS INFORMATION REFERENCE TA DRAWINGS. FOR TECHNOLOGY INFRASTRUCTURE INFORMATION REFERENCE TJ DRAWINGS.
2. THE GENERAL CONDITIONS, SUPPLEMENTARY GENERAL CONDITIONS AND OTHER REQUIREMENTS OF DIVISION 1, THE ELECTRICAL, COMMUNICATION, AND SECURITY PLANS AND SPECIFICATIONS, MAY APPLY TO THE WORK SPECIFIED.
3. SECURITY INTEGRATOR HERE AFTER REFERRED TO AS "CONTRACTOR" SHALL PROVIDE ALL MATERIALS, COMPONENTS, TOOLS, AND LABOR TO COMPLETE A VIDEO SURVEILLANCE AND ACCESS CONTROL SYSTEM AS SET FORTH IN THE ELECTRONIC SAFETY AND SECURITY SYSTEM DOCUMENTS, CONTRACTS AND DRAWINGS. REF. DIVISION 27/28 SECURITY DRAWINGS AND ELECTRICAL DRAWINGS.
4. THE CONTRACTOR SHALL CAREFULLY EXAMINE THE SITE TO DETERMINE THE EXTENT OF WORK AND CONDITIONS UNDER WHICH IT WILL BE DONE. REVIEW AND VERIFY CONTRACT DOCUMENTS IN RELATION TO FIELD CONDITIONS TO VERIFY ACCURACY, CONFIRMING WITH OWNER, OR THEIR DESIGNATED REPRESENTATIVE, THAT THE WORK HAS BEEN COMPLETED PRIOR TO PROCEEDING WITH INSTALLATION. REGARDING ANY PROJECT RELATED QUESTIONS; THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING CLARIFICATION FROM OWNER, OR THEIR DESIGNATED REPRESENTATIVE, PRIOR TO PROCEEDING WITH THE WORK OR RELATED WORK IN QUESTION.
5. DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS MUST BE BROUGHT TO THE IMMEDIATE ATTENTION OF OWNER, OR THEIR DESIGNATED REPRESENTATIVE, FOR CLARIFICATION.
6. REFER TO SECURITY AND ELECTRICAL CONTRACT DOCUMENTS, DRAWINGS AND SPECIFICATIONS AS A UNIT AND IN WHOLE IN THE BIDDING AND INSTALLATION OF THIS PROJECT.
7. ELECTRICAL CONTRACTOR SHALL READ IN THEIR ENTIRETY ALL SECTIONS OF THE ELECTRONIC SAFETY AND SECURITY SYSTEM DOCUMENTS AND APPLY THEM AS APPROPRIATE FOR WORK IN THIS SECTION. REFER TO DIVISION 28 AND SECURITY DRAWINGS.
8. ELECTRICAL CONTRACTOR SHALL PROVIDE MATERIALS, COMPONENTS, TOOLS, AND LABOR TO COMPLETE SECURITY CABLING PATHWAY, ELECTRICAL POWER DISTRIBUTION AND GROUNDING SYSTEM AS SET FORTH IN THE ELECTRONIC SAFETY AND SECURITY SYSTEM DOCUMENTS AND THE ELECTRICAL DOCUMENTS, SPECIFICATIONS AND DRAWINGS.
9. CONTRACTOR SHALL NOTE AND REPORT TO GC SECURITY SYSTEM WORK PERFORMED OR NOT PERFORMED BY ELECTRICAL CONTRACTOR WHICH DOES NOT COMPLY WITH ELECTRONIC SAFETY AND SECURITY SPECIFICATIONS AND DRAWINGS AND ARE INTENDED FOR THE SECURITY SYSTEMS COMPONENTS.
10. CONTRACTOR SHALL TAKE NECESSARY MEANS TO ASSURE SECURITY SYSTEM COMPONENTS ARE PROTECTED FROM MECHANICAL DAMAGE, DUST AND DIRT DURING CONSTRUCTION.
11. ALL COMPONENTS AND DEVICES SHOWN ON THESE DRAWINGS ARE FOR APPROXIMATE LOCATION AND POSITIONING ONLY. VERIFY EXACT LOCATIONS WITH THE OWNER OR GC PRIOR TO INSTALLATION.

GROUNDING AND BONDING

1. CONTRACTOR SHALL ADHERE TO ALL GROUNDING AND BONDING REQUIREMENTS SET FOURTH IN THE ANSI-J-STD-607-B COMMERCIAL GROUNDING AND BONDING STANDARDS.

ELECTRICAL

1. FOR SPECIFIC POWER AND RECEPTACLE REQUIREMENTS, REFER TO ELECTRICAL SPECIFICATIONS AND DRAWINGS AND VERIFY WITH SECURITY SPECIFICATIONS AND DRAWINGS. REPORT ANY DISCREPANCIES TO THE GC PRIOR TO PURCHASE OR INSTALLATION.
2. FOR SPECIFIC POWER REQUIREMENTS FOR CAMERAS AND ACCESS CONTROL, REFER TO ELECTRICAL SPECIFICATIONS AND DRAWINGS AND VERIFY AGAINST SECURITY SPECIFICATIONS AND DRAWINGS. REPORT ANY DISCREPANCIES TO THE GC PRIOR TO PURCHASE OR INSTALLATION.
3. ELECTRICAL CONTRACTOR SHALL INSTALL UPS-BACKED POWER AS REQUIRED BY THE SECURITY SYSTEM AND COORDINATED BY THE SECURITY CONTRACTOR.
4. ELECTRICAL CONTRACTOR SHALL PROVIDE 120V AC FOR ELECTRIC LOCK POWER SUPPLIES, SECURITY POWER SUPPLIES AND CAMERA POWER SUPPLIES AS REQUIRED. SECURITY AND DOOR CONTRACTORS SHALL IDENTIFY LOCATIONS ON SUBMITTALS.

SECURITY PATHWAY

1. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL CONDUITS, PULL STRINGS, CORES, AND JUNCTION BOXES AS REQUIRED ON THE SECURITY DRAWINGS.
2. INTERIOR CONDUIT RUNS SHALL BE INSTALLED WITH NO MORE THAN TWO (2) 90 DEGREE RADIUS BENDS FOR EVERY 100' OF CONDUIT.
3. PRIOR TO SUBSTANTIAL COMPLETION ALL SECURITY PATHWAY CONDUITS AND UNUSED "SECURITY INTENDED USE CONDUITS" SHALL BE PROPERLY FIRESTOPPED AND LABELED.
4. CONDUIT SIZES INDICATED ON THE DRAWINGS AND HOME RUN SIZES SHOWN ON DETAIL SHEETS ARE TO BE CONSIDERED THE MINIMUM SIZE TO BE INSTALLED. PROVIDE LARGER OR ADDITIONAL CONDUIT IF REQUIRED. CONDUIT SIZES INDICATE DEDICATED HOME RUNS BUT MAY BE COMBINED WITH OTHER LOCATIONS BY SYSTEM TYPE (VIDEO SURVEILLANCE, INTERCOM AND ACCESS CONTROL) AS LONG AS NEC MAXIMUM FILL REQUIREMENTS ARE MAINTAINED.
5. FURNISH AND INSTALL ALL REQUIRED ABOVE CEILING CABLE MANAGEMENT DEVICES (VELCRO WRAPS, ETC), CEILING MOUNTING HARDWARE AND CABLE SUPPORT AS REQUIRED. (UNLESS SPECIFIED FOR INSTALLATION BY ELECTRICAL CONTRACTOR)
6. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL HOMERUN CONDUIT PATHWAYS FROM EACH CAMERA LOCATIONS BACK TO NEAREST TELECOM ROOM SECURITY WALL FIELD. PROVIDE PULL STRINGS AND PROTECTIVE BUSHINGS, CORES, AND JUNCTION BOXES AS REQUIRED.

VIDEO SURVEILLANCE

1. CONTRACTOR SHALL PROVIDE AND INSTALL MOUNTS AND HARDWARE AS SHOWN ON SECURITY DRAWINGS.
2. CONTRACTOR SHALL PROVIDE AND INSTALL CAMERAS AT THE HEIGHT ABOVE GRADE OR ABOVE FINISHED FLOOR AS INDICATED ON THE SECURITY PLANS.
3. COORDINATE LOCATION OF CAMERAS WITH ALL CEILING MOUNTED ARCHITECTURAL AND MEP EQUIPMENT.
4. CONTRACTOR SHALL LOCATE CAMERA AND CONFIGURE LENS SETTINGS TO OPTIMIZE CAMERA VIEWS.
5. CONTRACTOR SHALL PROVIDE AND INSTALL ALL COMPONENTS AS DETAILED IN THE SECURITY DRAWINGS.
6. CONTRACTOR SHALL PROVIDE AND INSTALL ALL MISCELLANEOUS NUTS, BOLTS MOUNTING PLATES AND OTHER ACCESSORIES REQUIRED FOR A FULL TURN KEY INSTALLATION.
7. CONTRACTOR IS RESPONSIBLE FOR CAMERA LICENSES, SOFTWARE REVISIONS, NVR, AND CAMERA FIELD OF VIEWS AS WELL AS COORDINATION AND TRAINING WITH OWNER TO LEARN THE VIEWING AND RECORDING SYSTEM.
8. CONTRACTOR SHALL PROVIDE NETWORK STORAGE CALCULATIONS AS PART OF SUBMITTAL PACKAGE.
9. MOTION DETECTION WINDOWS ARE TO BE CONFIGURED WITH THE INVOLVEMENT OF THE OWNER IN ORDER TO MINIMIZE FALSE MOTION EVENTS.
10. ALL CABLING FOR IP CAMERAS WILL BE PROVIDED AND INSTALLED BY COMMUNICATIONS CABLING CONTRACTOR.
11. COORDINATE WITH COMMUNICATIONS CABLING CONTRACTOR FOR INSTALLATION OF CAMERA CABLING.
12. THE CAMERA INSTALLER SHALL VERIFY THERE ARE NO PHYSICAL OBSTRUCTIONS TO THE INTENDED CAMERA VIEW PRIOR TO INSTALLATION. SHOULD ANY OBSTRUCTION BE PRESENT IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE CONSULTANT AND OWNER AND ADJUST THE CAMERA POSITION AS NEEDED.
13. CONTRACTOR SHALL PROVIDE SECURITY CAMERA POWER SUPPLY AS REQUIRED FOR PAN/TILT/ZOOM (PTZ) CAMERA'S TO CONTROL PTZ FUNCTIONS.

ACCESS CONTROL

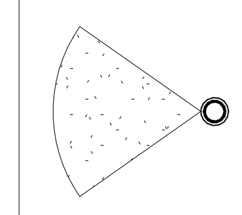
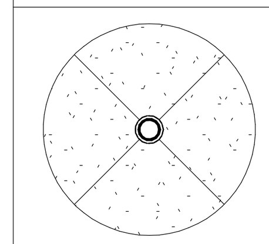
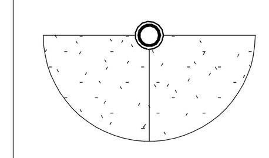
1. DOOR CONTRACTOR SHALL PROVIDE AND INSTALL ALL ELECTRIC LOCKS AS SHOWN ON SECURITY DRAWINGS AND COMPLY WITH BUILDING HARDWARE SCHEDULE.
2. DOOR CONTRACTOR SHALL PROVIDE AND INSTALL ALL ELECTRICAL TRANSFER HINGES AS SHOWN ON SECURITY DRAWINGS AND COMPLY WITH BUILDING HARDWARE SCHEDULE.
3. FIRE ALARM CONTRACTOR SHALL PROVIDE FIRE ALARM SIGNAL INTERFACES AS REQUIRED AND COORDINATED BY THE SECURITY CONTRACTOR FOR RELEASE OF SECURITY CONTROLLED DOORS PER CURRENT LIFE SAFETY CODES.
4. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL DOOR PREP TO INCLUDE CONDUIT, PULL STRINGS AND JUNCTION BOXES AS SHOWN ON THE SECURITY DRAWINGS.
5. ELECTRICAL CONTRACTOR SHALL REFER TO SECURITY DRAWINGS TO VERIFY LOCATIONS OF SECURITY GANG BOXES AND CONDUIT AND PROVIDE THOSE COMPONENTS PRIOR TO THE SECURITY INSTALLATION.
6. SECURITY CONTRACTOR TO HOME-RUN ALL SECURITY DOOR DEVICE COMPOSITE CABLING TO DESIGNATED SECURITY PANEL PER FLOOR.
7. SECURITY CONTRACTOR TO LEAVE 24" SERVICE LOOPS OF COMPOSITE CABLING ABOVE DOOR AND ABOVE THE DESIGNATED SECURITY PANEL.
8. ALL DOORS ARE SET TO FAIL SECURE WITH PUSHBAR OR HANDLE ACTIVATED REQUEST TO EXIT AND EGRESS AND KEY LOCK INGRESS.
9. SECURITY CONTRACTOR TO SIZE DOOR CONTROLLERS, ENCLOSURES, BOARDS AND POWER SUPPLIES TO PREPARE FOR FUTURE ACCESS CONTROL DOORS.
10. SECURITY CONTRACTOR SHALL PROVIDE AND INSTALL THE FOLLOWING:
    - A. CARD READERS
    - B. SUPERVISED RESISTORS
    - C. DOOR POSITION SWITCH
    - D. BOARD ENCLOSURE
    - E. CONTROLLER
    - F. EXPANSION BOARDS AS REQUIRED
    - G. POWER SUPPLIES
    - H. LOW VOLTAGE CABLE AS REQUIRED
    - I. PROJECT MANAGEMENT AND CUSTOMER TRAINING.
    - J. COORDINATION WITH OWNER TO ENSURE SUCCESSFUL TIE INTO OWNERS ACCESS CONTROL SYSTEM.

EMERGENCY CALL PEDESTALS

1. PROVIDE HAS SPECIFIC TALK-A-PHONE VIA AC-PM-1HC WITH TWO BUTTON VIDEO STATION AND CUSTOM SCREEN PRINTING FOR EACH OF THE EIGHT LEVELS OF THE PARKING GARAGE.
2. ENROLL CAMERAS ONTO VMS AND COORDINATE PROGRAMMING OF CIP INTERFACE WITH HAS-IT TO SEPARATE PARKING ASSISTANCE BUTTON CALLS FROM EMERGENCY BUTTON CALLS.

SHEET LIST

SECURITY SYMBOL LEGEND

	DOME CAMERA (VIDEO SURVEILLANCE)
	360D DOME CAMERA (VIDEO SURVEILLANCE)
	180D EXTERIOR CAMERA (VIDEO SURVEILLANCE)
CR	CARD READER (RP40 KEYPAD READER) LOCATIONS INCLUDE READER, DOOR POSITION SWITCH, REX, AND POWER FOR ELECTRIFIED LOCKSET. ELECTRIFIED LOCKSET PROVIDED BY DOOR CONTRACTOR
ACP	ACCESS CONTROL PANEL
PS	BLUE PULL STATION EMERGENCY DOOR RELEASE FOR USE EXITING MAGNETICALLY LOCKED DOORS
EB	RED REX EXIT BUTTON EMERGENCY DOOR RELEASE FOR USE EXITING MAGNETICALLY LOCKED DOORS
DP	DOOR POSITION SWITCH USED ON EXIT ONLY DOORS

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REVISIONS

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	ISSUED FOR CONSTRUCTION	03/15/24

CITY OF HOUSTON
HOUSTON AIRPORTS SYSTEM
Recommended 03/29/2024
Houston Airports System DATE
Director or Designated Representative

REVIEWED / NO EXCEPTIONS TAKEN
The drawings & support documents submitted for permit review meet the design intent, and to the best of our knowledge, appear to be in compliance with current HAS approved standards.
Performance and approval of this review does not waive, nor relieve the applicant from full responsibility & liability to conform and comply with all applicable standards, codes, and regulations required from all Authorities Having Jurisdiction (AHJ).

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

PROJECT MGR: AEO
DESIGNER:
DRAWN BY: CO
CHECK BY: MB

DATE: 03/15/2024

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
Mark Basford
REG. NO. 143116
EXPIRES 12-31-2024
RCDD
03/15/2024

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM
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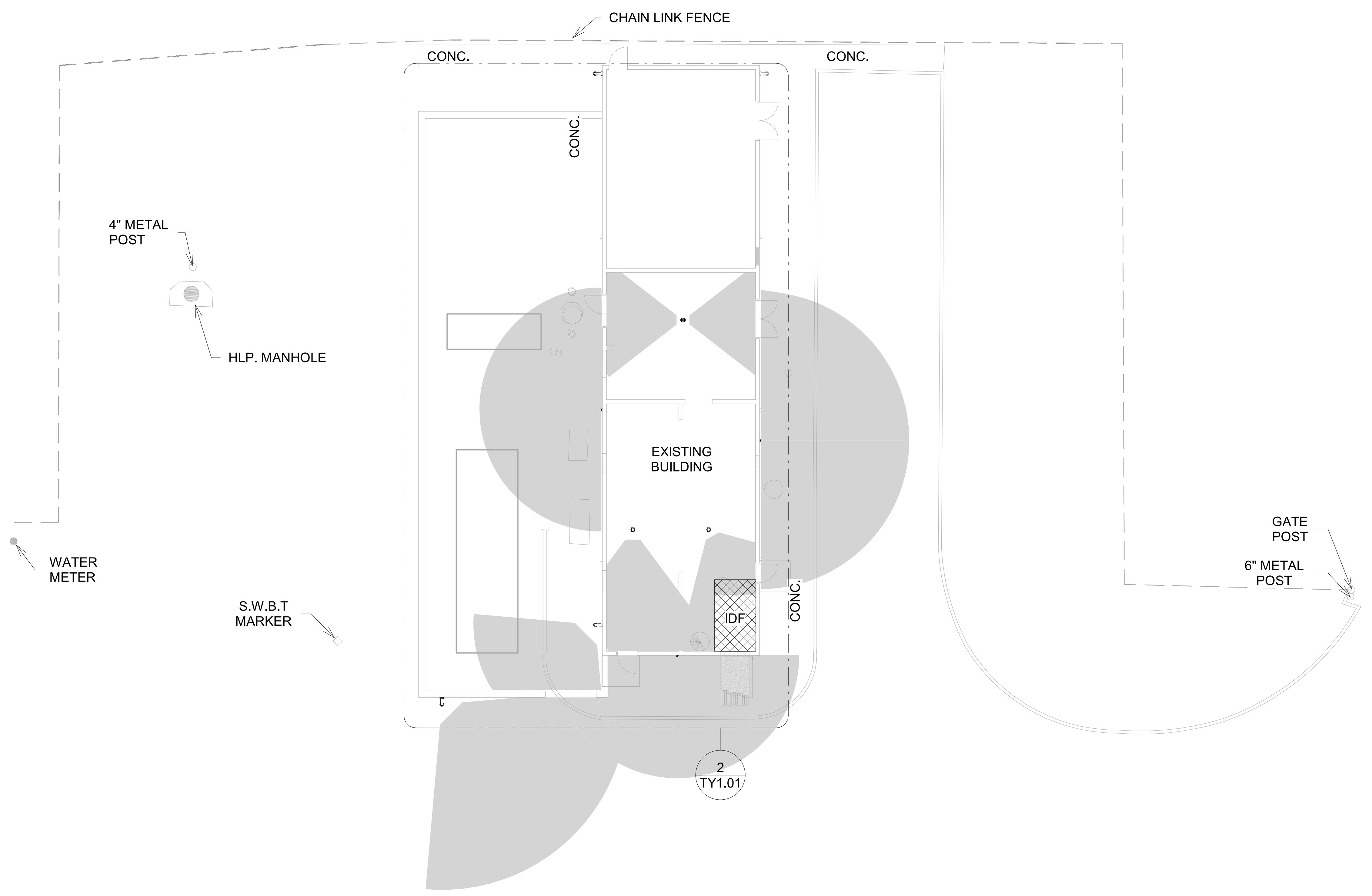
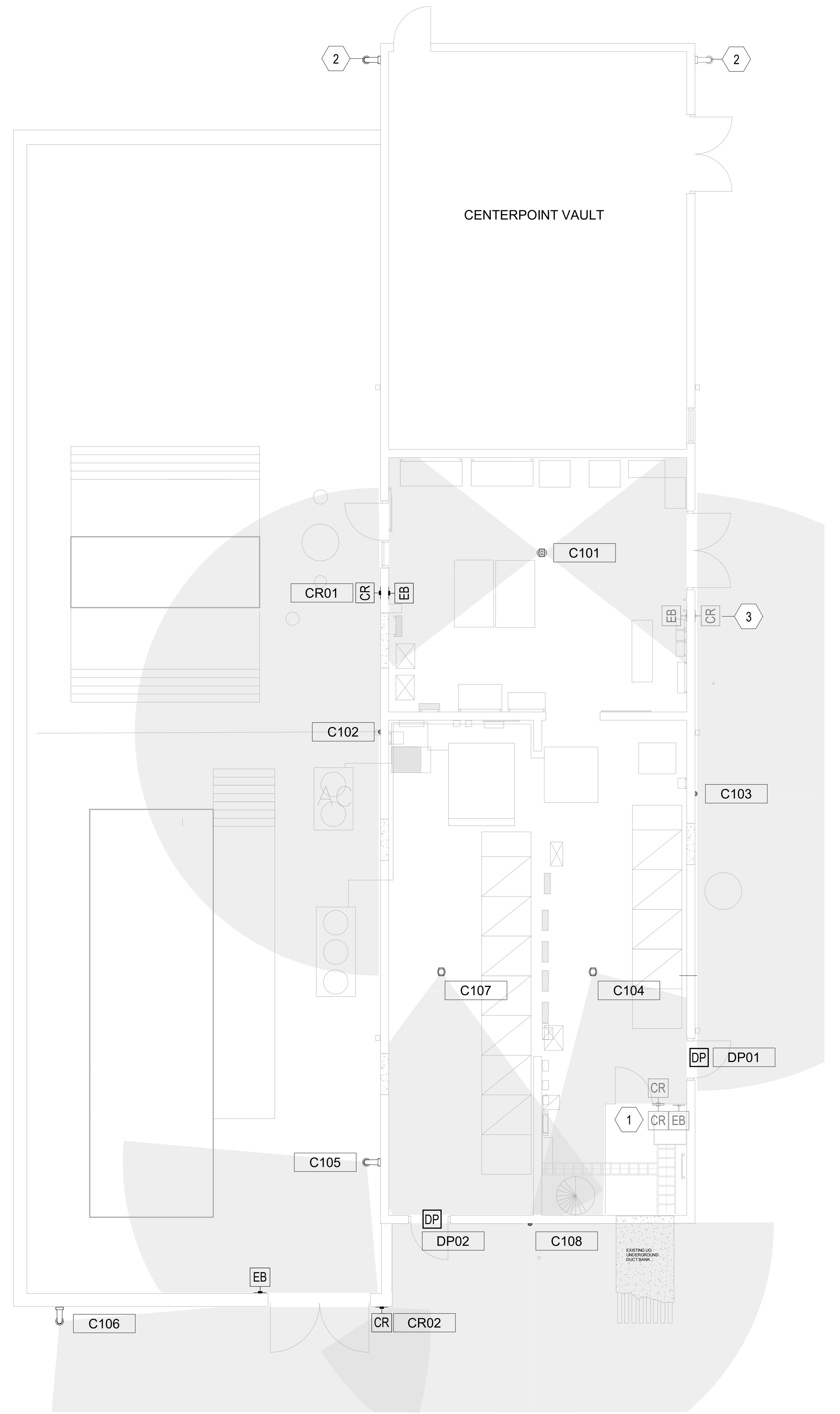


1 Security Site Plan
1/16" = 1'-0"



2 SECURITY FLOOR PLAN - LEVEL 1
1/8" = 1'-0"

ACCESS CONTROL SCHEDULE								
Device ID	Model	Door Number	Assoc CCTV ID A	Assoc CCTV ID B	AC Cable Termination Location	Door Hardware Set	Elevation	Detail Number
CR01	HID multiCLASS SE - RK40		C101	C102	IDF CAGE		3' - 4"	TY 5.01 / 1
CR02	HID multiCLASS SE - RK40		C105	C106	IDF CAGE		3' - 4"	TY 5.01 / 2
DP01			C104	C103	IDF CAGE		7' - 6"	TY 5.01 / 3
DP02			C107	C108	IDF CAGE		7' - 6"	TY 5.01 / 3

CAMERA SCHEDULE						
Device ID	Camera Model	PPF	IT Cable Label	Elevation	Mount Type	Detail Number
C101	AXIS P4705-PLVE	82		9' - 0"	Pendant	TY 5.00 / 3
C102	Honeywell HFD6GR1	32		10' - 0"	Surface	TY 5.00 / 1
C103	Honeywell HFD6GR1	26		10' - 0"	Surface	TY 5.00 / 1
C104	AXIS P3265-LV	44		9' - 0"	Pendant	TY 5.00 / 3
C105	AXIS P3265-LVE	41		10' - 0"	Wall	TY 5.00 / 2
C106	AXIS P3265-LVE	27		10' - 0"	Wall	TY 5.00 / 2
C107	AXIS P3265-LV	59		9' - 0"	Pendant	TY 5.00 / 3
C108	Honeywell HFD6GR1	32		10' - 0"	Surface	TY 5.00 / 1

KEYNOTE	KEYNOTE DESCRIPTION
1	IDF CAGE DOOR TO RELOCATE. REUSE EXISTING READER AND HARDWARE.
2	REUSE EXISTING CAMERA
3	REUSE EXISTING READER AND HARDWARE.

GENERAL NOTE

1. FIRE ALARM CONTRACTOR SHALL PROVIDE FIRE ALARM SIGNAL INTERFACES AS REQUIRED AND COORDINATE BY THE SECURITY CONTRACTOR FOR RELEASE OF SECURITY CONTROLLED DOORS PER CURRENT LIFE SAFETY CODE.

2. COORDINATE FINAL DEVICE LABELING WITH HAS SECURITY PRIOR TO INSTALLATION

SECURITY SENSITIVE INFORMATION - LAW ENFORCEMENT CONFIDENTIAL. DO NOT PHOTOCOPY. THIS INFORMATION IS PROTECTED AGAINST DISCLOSURE BY THE PROVISIONS CONTAINED IN THE HOMELAND SECURITY ACT OF 2002, 49 U.S.C. 114(s), AND TSA'S REGULATION IMPLEMENTING THIS AUTHORITY, SET FORTH IN 49 CFR PART 1520

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HOUSTON AIRPORT SYSTEM

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REVISIONS		
NO.	DESCRIPTION	DATE
	ISSUED FOR CONSTRUCTION	03/15/24

CITY OF HOUSTON
HOUSTON AIRPORTS SYSTEM
Recommended 03/29/2024
Houston Airports System Director or Designated Representative DATE
REVIEWED / NO EXCEPTIONS TAKEN

HOUSTON AIRPORT SYSTEM
PROJECT 952 SOUTH LIGHTING VAULT RENOVATION
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON
4104 WILL CLAYTON PARKWAY, HOUSTON, TX 77032

PROJECT MGR: AEO
DESIGNER:
DRAWN BY: CO
CHECK BY: MB

DATE: 03/15/2024

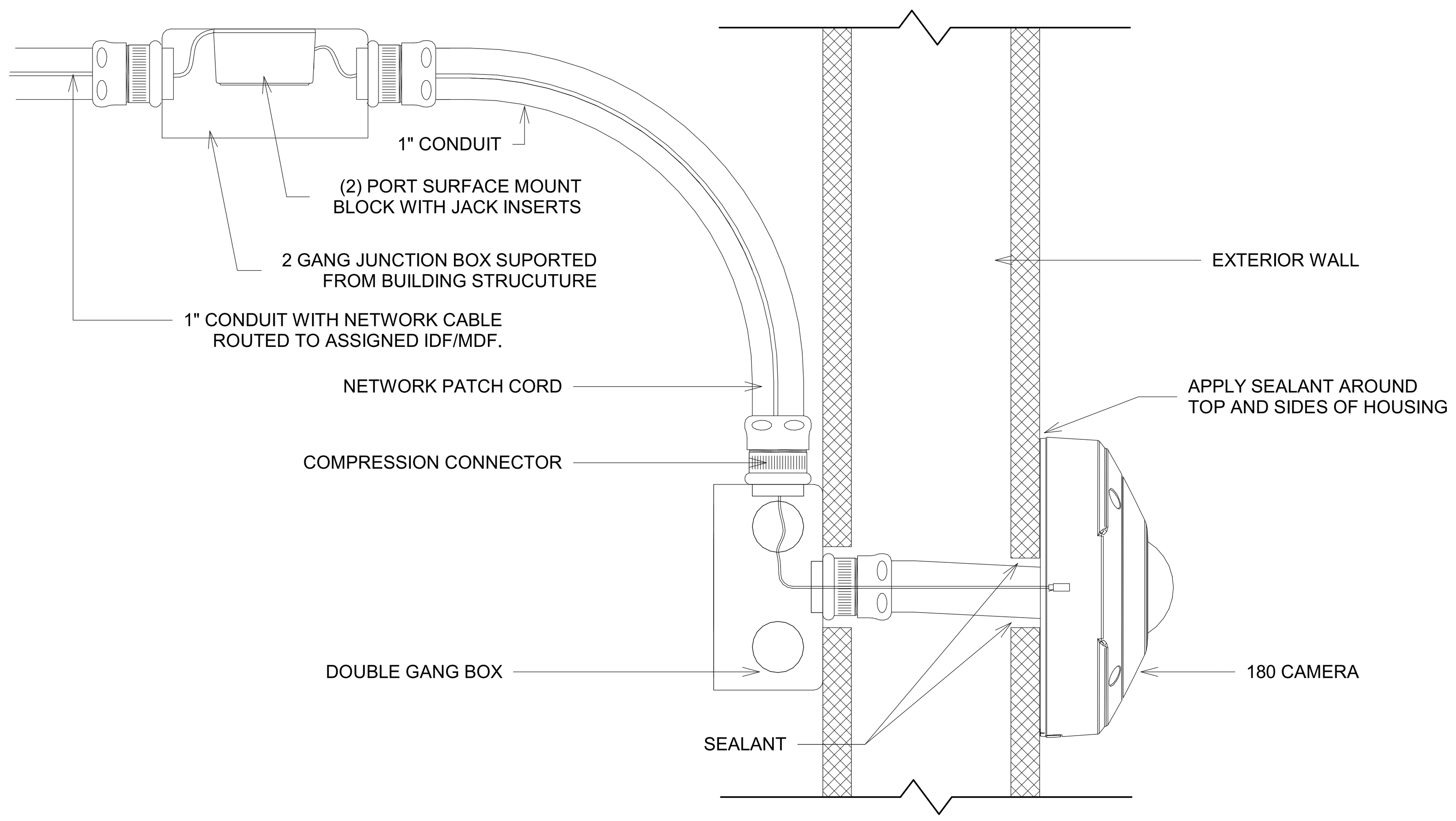
BICSI REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
Mark Basford
REG. NO. 143116
EXPIRES 12-31-2024
RCDD
03/15/2024

APPROVED BY:

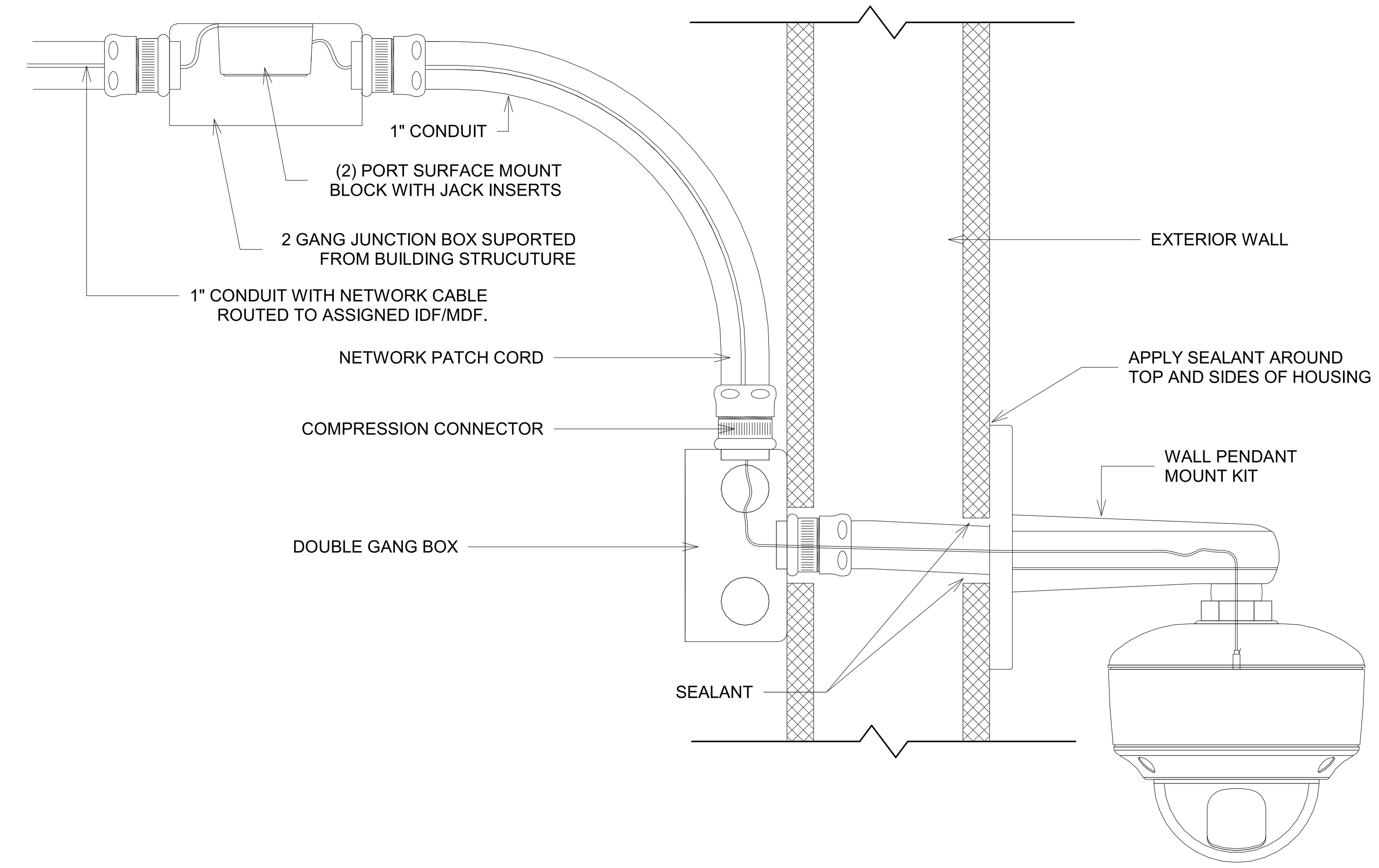
DIRECTOR
HOUSTON AIRPORT SYSTEM

JACOBS NO. WHXK7125
A.I.P. NO
C.I.P. NO. A-000687
B.S.G. NO. 2054-31-IAH
H.A.S. NO. PN 952
T.I.P NO. 24-28-IAH

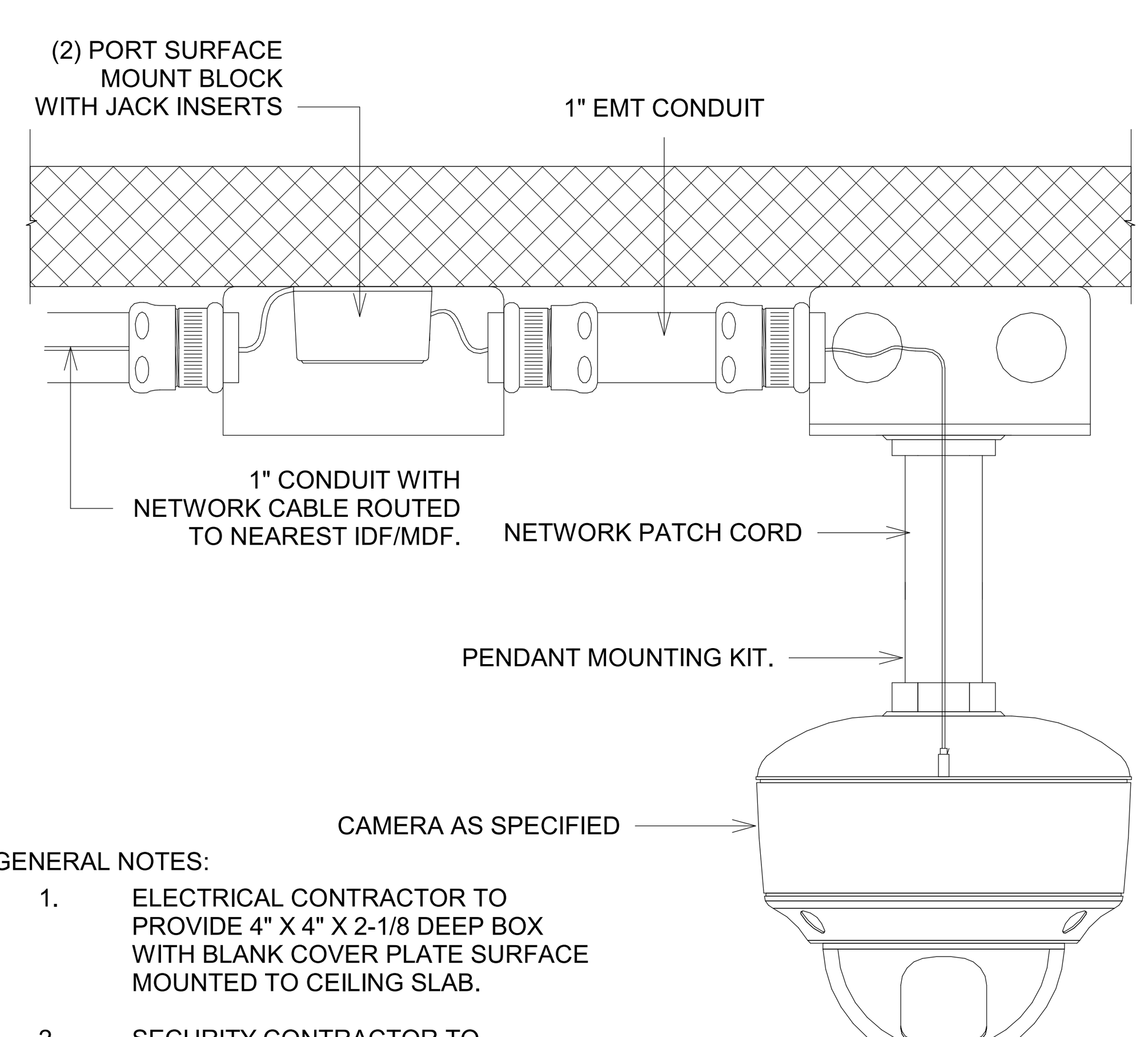
SHEET NO.
TY1.01



1 CAMERA DETAIL - 180 WALL SURFACE
NTS



2 CAMERA DETAIL - 180 WALL SURFACE
NTS



GENERAL NOTES:

1. ELECTRICAL CONTRACTOR TO PROVIDE 4" X 4" X 2-1/8 DEEP BOX WITH BLANK COVER PLATE SURFACE MOUNTED TO CEILING SLAB.

2. SECURITY CONTRACTOR TO PROVIDE IP CAMERA, DOME ENCLOSURE AND MOUNT AS INDICATED ON PLANS. COMPLETE ALL CONNECTIONS OF PATCH CORD TO CAMERA ENCLOSURE.

3 CAMERA DETAIL - CEILING PENDANT
NTS

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REVIEWED / NO EXCEPTIONS TAKEN
The drawings & support documents submitted for permit review meet the design intent, and to the best of our knowledge, appear to be in compliance with current HAS approved standards.
Performance and approval of this review does not waive, nor relieve the applicant from full responsibility & liability to conform and comply with all applicable standards, codes, and regulations required from all Authorities Having Jurisdiction (AHJ).

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CHECK BY: MB

DATE: 03/15/2024

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APPROVED BY:

DIRECTOR
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T.I.P NO. 24-28-IAH

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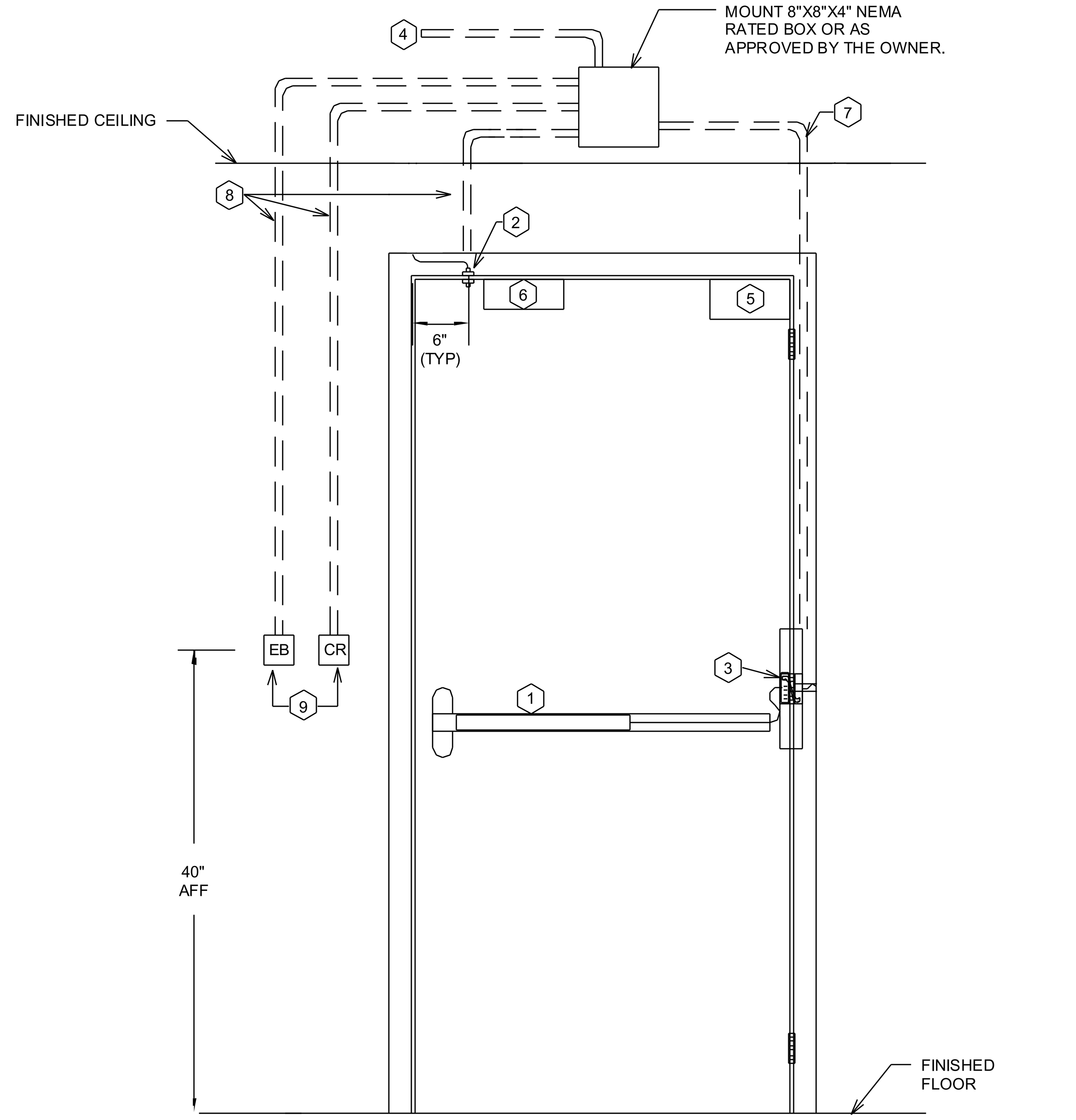
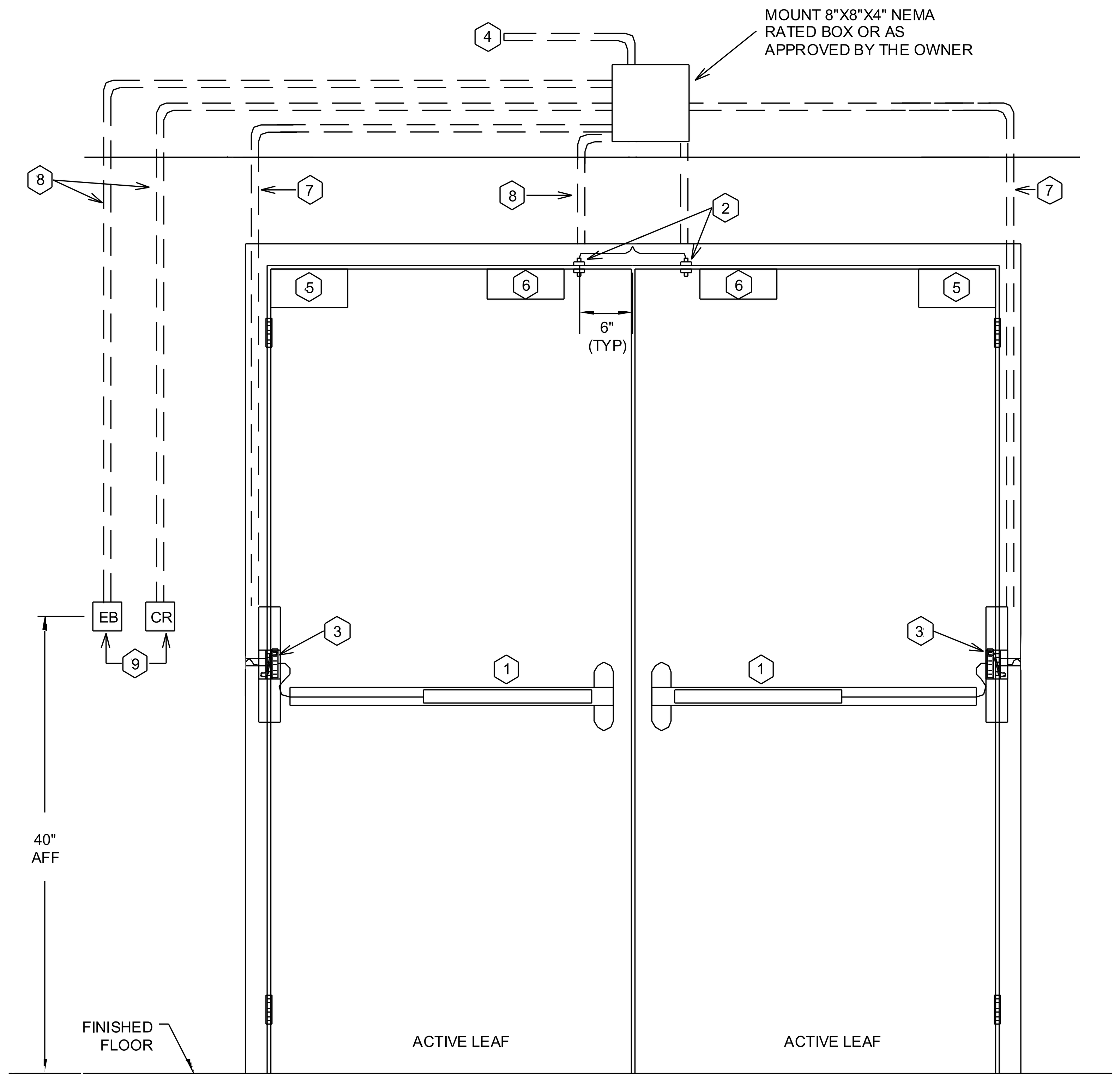
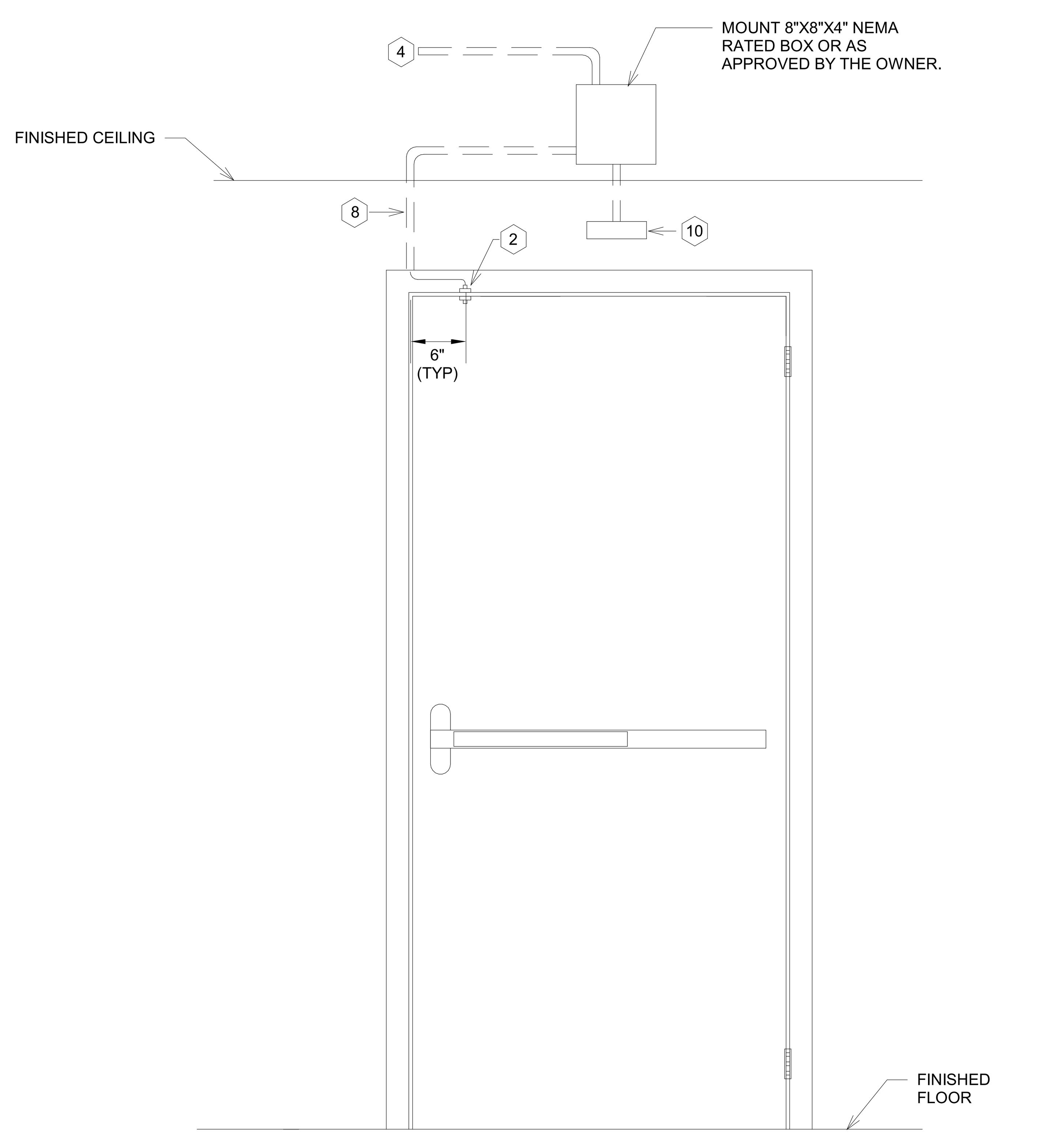


1 SINGLE DOOR, MAGNETIC LOCK: READER IN / INTEGRATED REX EXIT HARDWARE, PUSH BUTTON OUT
NTS



2 DOUBLE DOOR, MAGNETIC LOCK: READER IN / INTEGRATED REX EXIT HARDWARE, PUSH BUTTON OUT
NTS



3 SINGLE DOOR, MAGNETIC LOCK: READER IN / INTEGRATED REX EXIT HARDWARE, PUSH BUTTON OUT
NTS

KEYED NOTES

1. EXIT PANIC BAR WITH DPDT REX SWITCH (BY DIV 8) SWITCH TO DIRECTLY INTERRUPT LOCK POWER
2. STUB CONDUIT INTO HEAD OF DOOR FRAME FOR CONCEALED DOOR POSITION SWITCH
3. ELECTRIC POWER TRANSFER (BY DIV 8)
4. 1" CONDUIT TO ASSIGNED IDF
5. DOOR CLOSER (BY DIV 8)
6. ELECTROMAGNETIC LOCK
7. 3/4" CONDUIT CONNECTED TO POWER TRANSFER BACK BOX
8. EMT CONDUIT MIN. 3/4"
9. SURFACE MOUNT BACKBOX
10. MOTION REX

GENERAL SHEET NOTES

A. ADDITIONAL CONDUIT REQUIREMENTS AND CARD READER BACK BOX ROUGH-IN HEIGHTS ARE READER TYPE AND LOCATION DEPENDANT. REFERENCE FLOOR PLANS AND READER ROUGH-IN DETAILS FOR MORE INFORMATION.

B. VIEW SHOWN IS FROM SECURED SIDE OF PORTAL, CONDUIT BOXES AND EQUIPMENT SHALL BE MOUNTED ON SECURED SIDE OF PORTAL, UNLESS OTHERWISE NOTED.

C. CONDUITS MAY BE COMBINED. IF COMBINED, CONTRACTOR SHALL ENSURE CONDUIT IS SIZED TO ACCEPT REQUIRED CONDUCTORS PER NEC.

D. COORDINATE MOUNTING LOCATIONS, ROUGH-IN AND FINISHES WITH THE OWNER.

E. DOOR HARDWARE SHOWN FOR REFERENCE ONLY. TYPE OF HARDWARE SHALL HAVE KEY CYLINDER UNLESS OTHERWISE NOTED.

F. PROVIDE CONDUIT ONLY WHERE WIRING CANNOT ROUTE IN MULLION TYPE DOOR FRAME.

G. ALL SECURITY DOORS SHALL HAVE DOOR CLOSER.

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