MAYOR

SYLVESTER TURNER

CITY COUNCIL MEMBERS

AMY PECK - DISTRICT A
TARSHA JACKSON - DISTRICT B
ABBIE KAMIN - DISTRICT C
CAROLYN EVANS-SHABAZZ - DISTRICT D
DAVE MARTIN - DISTRICT E
TIFFANY D. THOMAS - DISTRICT F
GREG TRAVIS - DISTRICT G
KARLA CISNEROS - DISTRICT H
ROBERT GALLEGOS - DISTRICT I
EDWARD POLLARD - DISTRICT J
MARTHA CASTEX-TATUM - DISTRICT K

HOUSTON AIRPORTS

CONTROLLER

CHRIS BROWN

CITY COUNCIL MEMBERS AT LARGE

MIKE KNOX - AT-LARGE 1
DAVID ROBINSON - AT-LARGE 2
MICHAEL KUBOSH - AT-LARGE 3
LETITIA PLUMMER - AT-LARGE 4
SALLIE ALCORN - AT-LARGE 5

IDO BUILDING STANDARDS SPACE FIT-OUT

GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)

ISSUED FOR PERMIT, REVISION 2
JANUARY 28, 2022

TDLR # : TABS2020004106
BSG #: BSG-2021-220-IAH
TIP #: TIP-21-225-IAH

PROJECT TEAM

OWNER
HOUSTON AIRPORT SYSTEM

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ARCHITECT
JACOBS ENGINEERING GROUP

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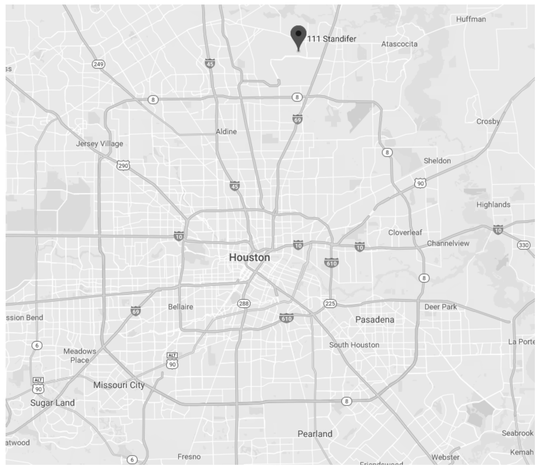

AREA MAP
N.T.S

VICINITY MAP
N.T.S

JACOBS
5985 Rogerdale Road
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www.jacobs.com
TBPE Firm #2966

REVISIONS

Mark	Date	Description
1	10/25/21	ISSUED FOR PERMIT
2	01/28/22	ISSUED FOR PERMIT, REV. 2

OWNER: HOUSTON AIRPORTS

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

CONSULTANT: 4b technology

SEAL:

REGISTERED ARCHITECT
BRIAN M. REDDY
25538
STATE OF TEXAS
1-14-2022

IDO BUILDING STANDARDS SPACE FIT-OUT

GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO: N/A

CIP NO: N/A

HAS NO: N/A

KEY PLAN:

Jacobs Project No.: WHXK7103

Drawing Title: COVER

Date: 01/28/22

Designed: Designer
Drawn: Author
Checked: Checker

Drawing No.: G-000

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SHEET INDEX

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REVISIONS

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OWNER:

HOUSTON AIRPORTS

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

CONSULTANT:

46 technology

SEAL:

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25536
STATE OF TEXAS

1-14-2022

IDO BUILDING STANDARDS SPACE FIT-OUT

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111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO: N/A

CIP NO: N/A

HAS NO: N/A

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Drawing Title:

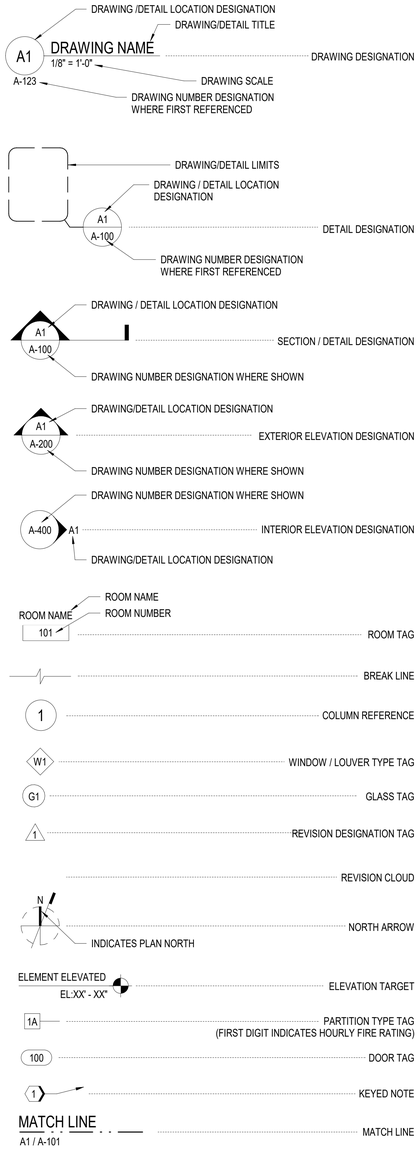
DRAWING INDEX

Date: 01/28/22

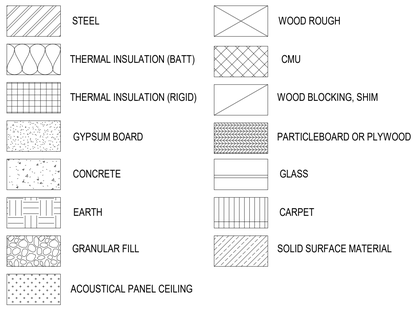
Designed: Designer
Drawn: Author
Checked: Checker

Drawing No.:
G-001

GENERAL SYMBOLS



MATERIAL LEGEND



GENERAL ABBREVIATIONS

ABA	ARCHITECTURAL BARRIERS ACT
ABI	ALTERNATE BID ITEM
ACI	AMERICAN CONCRETE INSTITUTE
ADA	AMERICANS WITH DISABILITIES ACT
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AISC	AMERICAN INSTITUTE OF STEEL CONSTURCITON
ALUM	ALUMINUM
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING ENGINEERS
ASTM	AMERICAN SOCIETY OF TESTING AND MATERIALS
AV	AUDIO VISUAL
AWP	ACOUSTIC WALL PANEL
BD	BOARD
BLDG	BUILDING
BM	BEAM
BOT	BOTTOM
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED
CJ	CONTROL JOINT
CLG	CEILING
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
COMM	COMMUNICATION
CONC	CONCRETE
CONT	CONTINUOUS
CPT	CARPET TILE
DIA	DIAMETER
DWG	DRAWING
E	EAST
EA	EACH
EJ	EXPANSION JOINT
EL	REFERENCE ELEVATION
ELEC	ELECTRIC OR ELECTRICAL
EQ	EQUAL
EWC	ELECTRIC WATER COOLER
EXP	EXPOSED
EXPAN	EXPANSION
EXT	EXTERIOR
EXTG	EXISTING
FCO	FLOOR CLEAN OUT
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FFE	FURNITURE, FIXTURES AND EQUIPMENT
FIN	FINISH
FLR	FLOOR
FM	FACTORY MANUAL
GA	GAGE OR GAUGE
GALV	GALVANIZED
GFGI	GOVERNMENT FURNISHED, GOVERNMENT INSTALLED
GFCI	GOVERNMENT FURNISHED, CONTRACTOR INSTALLED
GL	GLASS
GYP	GYPSUM
HD	HEAD
HDPE	HIGH DENSITY POLYETHYLENE
HDW	HARDWARE
HT	HEIGHT
HORIZ	HORIZONTAL
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
IBC	INTERNATIONAL BUILDING CODE
INSUL	INSULATION
IT	INFORMATION TECHNOLOGY
JAN	JANITOR
JT	JOINT
LAM	LAMINATE
MAX	MAXIMUM
MDF	MEDIUM DENSITY FIBERBOARD
MECH	MECHANICAL
MET	METAL
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MO	MASONRY OPENING
N	NORTH
N/A	NOT APPLICABLE
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRIC MANUFACTURERS ASSOCIATION
NGB	NATIONAL GUARD BUREAU
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
OA	OVERALL
OC	ON CENTER
OFD	OVERFLOW DRAIN
OH	OPPOSITE HAND
OPNG	OPENING
OPP	OPPOSITE
PART	PARTITION
PH	PHASE
PLAM	PLASTIC LAMINATE
PLAS	PLASTIC OR PLASTER
PLBG	PLUMBING
PLYWD	PLYWOOD
PREFAB	PREFABRICATED
PRESS	PRESSURE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PTD	PAINTED
PVC	POLYVINYL CHLORIDE
QT	QUARRY TILE
R	RISER
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
REBAR	REINFORCED STEEL BAR
REF	REFERENCE
REQ'D	REQUIRED
RM	ROOM
RO	ROUGH OPENING
SCHED	SCHEDULE
SHT	SHEET
SIM	SIMILAR
SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION
SPEC	SPECIFICATION(S)
SQ	SQUARE
SF	SQUARE FOOT
SS	STAINLESS STEEL
STC	SOUND TRANSMISSION CLASS
STL	STEEL
STOR	STORAGE
STRUCT	STRUCTURAL
T	TREAD
TELECOM	TELECOMMUNICATIONS
THK	THICK OR THICKNESS
TOC	TOP OF CONCRETE
TBD	TO BE DETERMINED
TCNA	TILE COUNCIL OF NORTH AMERICA
TOS	TOP OF SLAB
TPO	THERMOPLASTIC POLYOLEFIN
TYP	TYPICAL
UL	UNDERWRITERS LABORATORIES
UON	UNLESS OTHERWISE NOTED
V	VOLTS
VCT	VINYL COMPOSITE TILE
VERT	VERTICAL
VEST	VESTIBULE
VIF	VERIFY IN FIELD
VTR	VENT THROUGH ROOF
WD	WOOD
WR	WATER RESISTANT
WWF	WELDED WIRE FABRIC
YD	YARDS

GENERAL NOTES

1. THIS DRAWING HAS GENERAL INFORMATION, NOT ALL MAY APPLY TO THIS PROJECT.
2. THE "OWNER" IS THE HOUSTON AIRPORT SYSTEM. THE "ARCHITECT / ENGINEER" IS JACOBS.
3. IF, AT ANY TIME, THE CONTRACTOR DISCOVERS A CONDITION WHICH CONFLICTS WITH THE DRAWINGS AND/OR SPECIFICATION OR IF THE CONTRACTOR DISCOVERS AN UNCLEAR OR MISLEADING DIRECTIVE GIVEN IN THE DRAWINGS OR SPECIFICATIONS, THE CONTRACTOR SHALL BRING THE ISSUE IMMEDIATELY TO THE ATTENTION OF THE ARCHITECT/ENGINEER.
4. DO NOT SCALE THE DRAWINGS - FOLLOW WRITTEN DIMENSIONS ONLY.
5. ALL DIMENSIONS FOLLOWED BY +/- OR "VERIFY" ARE EXISTING DIMENSIONS AND SHALL BE VERIFIED IN THE FIELD. +/- AS USED IN NEW CONSTRUCTION SHALL MEAN THAT THE DIMENSION IS SLIGHTLY ADJUSTABLE TO ACCOMMODATE ACTUAL CONDITIONS.
6. "MINIMUM" AS USED IN THESE DOCUMENTS SHALL MEAN THAT THE CONDITION IS SLIGHTLY ADJUSTABLE BUT MAY NOT VARY TO A DIMENSION OR QUALITY LESSER THAN THAT INDICATED.
7. "MAXIMUM" AS USED IN THESE DOCUMENTS SHALL MEAN THAT THE CONDITION IS LIGHTLY ADJUSTABLE BUT MAY NOT VARY TO A DIMENSION OR QUALITY GREATER THAN THAT INDICATED.
8. "TYPICAL" AS USED IN THESE DOCUMENTS SHALL MEAN THAT THE CONDITION OR DIMENSION IS THE SAME OR REPRESENTATIVE FOR SIMILAR CONDITIONS THROUGHOUT.
9. "SIMILAR" AS USED IN THESE DOCUMENTS SHALL MEAN THAT THE CONDITION OR DIMENSION IS THE SAME OR REPRESENTATIVE FOR SIMILAR CONDITIONS THROUGHOUT.
10. "CLEAR" AS USED IN THESE DOCUMENTS SHALL MEAN THAT THE DIMENSION IS NOT ADJUSTABLE WITHOUT THE APPROVAL OF THE COR. CLEAR DIMENSIONS ARE TYPICALLY TO FINISHED FACE.
11. "ALIGN" AS USED IN THESE DOCUMENTS SHALL MEAN TO ACCURATELY LOCATE THE FINISHED FACES IN THE SAME PLANE.
12. FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO FABRICATION AND/OR CONSTRUCTION.
13. ALL WORK INDICATED ON THE DRAWINGS IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR UNLESS OTHERWISE NOTED.
14. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR MEANS AND METHODS AND SEQUENCE OF CONSTRUCTION. THE CONTRACTOR SHALL SOLELY AND COMPLETELY BE RESPONSIBLE FOR CONDITIONS OF THE PROJECT ON WHICH THE WORK IS TO BE PERFORMED AND FOR THE SAFETY OF ALL PERSONS AND/OR PROPERTY DURING THE PERFORMANCE OF THE CONTRACT.
15. KEYED NOTES LISTED ON DRAWINGS REFER ONLY TO THOSE KEYED NOTE SYMBOLS ASSOCIATED WITH THE PARTICULAR DRAWING WHERE THE KEYED NOTES ARE LISTED.
16. RESPECTIVE PLUMBING, MECHANICAL, ELECTRICAL AND FIRE PROTECTION SUBCONTRACTORS SHALL PROVIDE GENERAL CONTRACTOR WITH ALL REQUIRED ACCESS PANELS FOR GENERAL CONTRACTOR TO INSTALL IN THE BUILDING.
17. ALL EXPOSED STEEL SHALL BE PAINTED UNLESS OTHERWISE NOTED.
18. THERE ARE NO ASBESTOS CONTAINING MATERIALS SPECIFIED AND THEY SHALL NOT BE USED ON THIS PROJECT.
19. THE SITE SHALL BE AVAILABLE DURING NORMAL WORKING HOURS TO THE OWNER AND ARCHITECT WITHOUT NOTICE.
20. HAUL ROUTE TO THE SITE SHALL BE COORDINATED WITH THE OWNER.
21. ACCESS TO THE WORK AREA SHALL BE AS DIRECTED BY THE OWNER.
22. COORDINATE THE WORK OF ALL TRADES AND CHECK ALL DIMENSIONS. ALL DISCREPANCIES SHALL BE CALLED TO THE ATTENTION OF THE ARCHITECT/ENGINEER AND SHALL BE RESOLVED BEFORE PROCEEDING WITH THE WORK.
23. THE MECHANICAL, PLUMBING, FIRE PROTECTION FIRE ALARM, ELECTRICAL TELECOMMUNICATIONS AND SECURITY DRAWINGS, ARE SUPPLEMENTARY TO THE ARCHITECTURAL DRAWINGS. IF A DISCREPANCY EXISTS BETWEEN THE ARCHITECTURAL DRAWINGS AND ENGINEER'S DRAWINGS, SUCH DISCREPANCY SHALL BE BROUGHT TO THE ARCHITECT / ENGINEER'S ATTENTION IN WRITING PRIOR TO INSTALLATION OF SAID WORK. ANY WORK INSTALLED IN CONFLICT WITH THE ARCHITECTURAL DRAWINGS SHALL BE CORRECTED BY THE CONTRACTOR AT CONTRACTOR'S EXPENSE.
24. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED, BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS SHALL BE USED SUBJECT TO REVIEW BY THE ARCHITECT / ENGINEER.
25. EXPOSED CONCRETE FLOORS SHALL BE PROTECTED DURING CONSTRUCTION AND SHALL BE FREE OF ALL CONSTRUCTION MARKERS, STAINS, PAINTS, OIL, OR OTHER DEFECTS. PATCH, IF REQUIRED, PRIOR TO HARDENING AND SEALING.
26. CONFINE EQUIPMENT, STORAGE OF MATERIALS, AND OPERATIONS OF WORKERS TO LIMITS INDICATED AND AS DIRECTED.
27. OWNER ASSUMES NO RESPONSIBILITY FOR DAMAGE OR LOSS DUE TO STORING OF MATERIALS AND EQUIPMENT.
28. OWNER WILL MAKE USE OF THE AREAS IN AND SURROUNDING THE CONSTRUCTION AREAS. EVERY EFFORT SHALL BE MADE TO MINIMIZE THE DISTURBANCE TO EMPLOYEES, PATRONS, AND TENANTS.
29. MANUFACTURER'S NAME AND/OR MODEL NUMBERS ARE BEING UTILIZED FOR BASIS OF DESIGN ONLY. THE SPECIFICATION OUTLINES THE SPECIFIC CRITERIA FOR THE EQUIPMENT OR MATERIAL AND IS NON-PROPRIETARY.
30. ALL UTILITY LINES IN PUBLIC AREAS SHALL BE ENCLOSED IN FLOOR, WALL OR CEILING CONSTRUCTION UNLESS OTHERWISE NOTED.
31. MANUFACTURED MATERIALS, EQUIPMENT, ETC SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, INSTRUCTIONS, AND ABA/ADA REQUIREMENTS UNLESS OTHERWISE NOTED.
32. IF DRAWINGS IN THIS SET ARE NOT 30"x 42" THEY HAVE BEEN REVISED FROM THEIR ORIGINAL SIZE. SCALES NOTED ON PLANS AND DETAILS ARE NO LONGER APPLICABLE.
33. PROVIDE A RED LINED "RECORD" CONSTRUCTION DOCUMENT SET AT THE SITE. THE OWNER RESERVES THE RIGHT TO REVIEW THESE DOCUMENTS ON A DAILY BASIS.
34. KEEP MEANS OF EGRESS STAIRS AND CORRIDORS PROPERLY ILLUMINATED AND FREE OF OBSTRUCTIONS AT ALL TIMES DURING CONSTRUCTION.
35. WORK SHALL CONFORM TO APPLICABLE CODES, REGULATIONS, AND ORDINANCES. CONTRACTOR SHALL OBTAIN ALL REQUIRED BUILDING AND OCCUPANCY PERMITS.
36. ESTABLISH A SITE BENCHMARK FOR ALL SUBCONTRACTORS TO USE. ALL TRADES SHALL USE THE SAME BENCHMARK..
37. FOR LIFE SAFETY PLANS REFER TO G-101.
38. FOR ACCESSIBILITY REQUIREMENTS REFER TO G-100.
39. FOR FURNITURE PLANS REFER TO A-802.
40. DO NOT PAINT BUILDING GROUNDING CABLES.
41. ALL PENETRATIONS THROUGH SHEET METAL ROOF SHALL BE COORDINATED WITH THE SHEET METAL ROOFING MANUFACTURER / INSTALLER TO ENSURE PENETRATIONS LAND BETWEEN SEAMS/BATTENS.
42. MOUNT ALL PIPING, EQUIPMENT, DUCTWORK, ETC. AS HIGH AS POSSIBLE IN ALL AREAS UNLESS OTHERWISE NOTED. ALL HANGER SUPPORTS SHALL BE ATTACHED TO STRUCTURAL STEEL. NOTHING MAY BE SUPPORTED FROM ROOF DECK.

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OWNER: HOUSTON AIRPORTS

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

CONSULTANT: 4b technology

SEAL:

IDO BUILDING STANDARDS SPACE FIT-OUT

GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO: N/A

CIP NO: N/A

HAS NO: N/A

KEY PLAN:

Jacobs Project No.: WHXX7103

Drawing Title:
GENERAL NOTES, ABBREVIATIONS, AND SYMBOLS

Date: 01/28/22

Designed: Designer
Drawn: Author
Checked: Checker

Drawing No.: G-002

GENERAL ACCESSIBILITY REQUIREMENTS

GENERAL

1. REFER TO A-XXX FOR TOILET ROOM ACCESSORIES, FIXTURES AND MOUNTING HEIGHTS.
2. THESE REQUIREMENTS ARE FOR GENERAL REFERENCE AND MAY NOT BE APPLICABLE TO ALL PORTIONS OF THE PROJECT. THE FACILITY MAY BE EXEMPT AT SPECIFIC LOCATIONS BASED UPON THE FUNCTION OF THE FACILITY.
3. THESE REQUIREMENTS HAVE BEEN/SHALL BE APPLIED TO ALL AREAS OF THE BUILDING NOTED ON G-XXX AND G-XXX.

CLEAR FLOOR OR GROUND SPACE FOR WHEELCHAIRS

1. A MINIMUM SPACE OF 30" BY 48" IS REQUIRED TO ACCOMMODATE A WHEELCHAIR FOR FORWARD OR PARALLEL APPROACH. AREAS UNDER PROJECTING OBJECTS MAY BE USED WHEN ENOUGH KNEE SPACE IS AVAILABLE.
2. FORWARD REACH
   A. MAXIMUM 48" HIGH UNOBSTRUCTED REACH PERMITTED FOR FORWARD APPROACH.
   B. MINIMUM 15" LOW REACH PERMITTED FOR FORWARD APPROACH.
   C. MAXIMUM 44" HIGH REACH PERMITTED WHEN REACH IS OVER AN OBSTRUCTION BETWEEN 20" AND 25" WIDE.
3. SIDE REACH
   A. MAXIMUM 48" HIGH REACH UNOBSTRUCTED REACH PERMITTED FOR PARALLEL APPROACH.
   B. MINIMUM 15" LOW REACH PERMITTED FOR PARALLEL APPROACH
   C. MAXIMUM 46" HIGH REACH PERMITTED WHEN REACH IS OVER AN OBSTRUCTION BETWEEN 10" AND 24" WIDE.
4. ADDITIONAL MANEUVERING CLEARANCES FOR ALCOVES
   A. WHEN FORWARD APPROACH INTO ALCOVE EXCEEDS 24" PROVIDE A 36" WIDTH.
   B. WHEN PARALLEL APPROACH INTO ALCOVE EXCEEDS 15" PROVIDE A 60" LENGTH.

FLOORS

1. THE SURFACE OF THE FLOOR SHALL BE SLIP-RESISTANT.

ENTRANCES, DOORS AND DOORWAYS

1. ALL DESIGNATED PRIMARY ENTRANCES TO BUILDINGS AND FACILITIES SHALL BE MADE ACCESSIBLE TO PEOPLE WITH DISABILITIES AS RECOGNIZED BY ADA/ABA. REFER TO G-XXX AND G-XXX.

DOORS

1. HAND ACTIVATED DOOR OPENING HARDWARE SHALL BE MOUNTED 34" TO 44" ABOVE THE FLOOR AND BE OPERABLE WITH A SINGLE EFFORT BY LEVER TYPE HARDWARE.
2. MAXIMUM EFFORT TO OPERATE DOORS SHALL NOT EXCEED 8.5 POUNDS FOR EXTERIOR DOORS AND 5 POUNDS FOR INTERIOR DOORS.
3. THE BOTTOM 10" OF ALL DOORS (EXCEPT SLIDING AND AUTOMATIC) SHALL HAVE A SMOOTH UNINTERRUPTED SURFACE.
4. ALL REQUIRED EXIT DOORWAYS SHALL HAVE A MINIMUM 32" CLEAR OPENING WITH THE DOOR AT 90 DEGREES TO THE CLOSED POSITION.
5. ONE DOOR OF A PAIR OF DOORS SHALL MEET THE MINIMUM WIDTH REQUIREMENTS.
6. MAXIMUM HEIGHT OF THRESHOLD SHALL BE 1/2". MAXIMUM VERTICAL CHANGE AT EDGE IS 1/4" WITH A MAXIMUM LEVEL OF 45 DEGREE.
7. THE SPACE BETWEEN TWO CONSECUTIVE DOORS (VESTIBULE) SHALL PROVIDE A MINIMUM OF 48 INCHES CLEAR DEPTH BETWEEN THE OPEN AND SECOND CLOSED DOOR. BOTH DOORS AT A VESTIBULE SHALL SWING IN THE SAME DIRECTION, OR AWAY FROM THE SPACE BETWEEN THEM.
8. EXIT DOORS SHALL SWING IN DIRECTION OF EXIT TRAVEL WHEN SERVING ANY HAZARDOUS AREA OR WHEN SERVING AN OCCUPANT LOAD OF 50 OR MORE.
9. WIDTH AND HEIGHT OF REQUIRED EXIT DOORWAYS SHALL COMPLY WITH THE INTERNATIONAL BUILDING CODE.
10. THE WIDTH OF THE DOOR'S "CLEAR AREA" ON THE SWING SIDE OF THE DOOR SHALL EXTEND 24 INCHES PAST STRIKE JAMB FOR EXTERIOR DOORS AND 18 INCHES PAST STRIKE JAMB FOR INTERIOR DOORS.
11. THERE SHALL BE A CLEAR AREA ON EACH SIDE OF THE DOOR, 60 INCHES DEEP IN THE DIRECTION OF THE DOOR SWING AND 44 INCHES DEEP IN THE OPPOSITE DIRECTION OF THE DOOR SWING.

WALKS AND SLOPES

1. WALKS SHALL BE A MINIMUM 48 INCHES WIDE AND CONTINUOUS WITHOUT INTERRUPTIONS.
2. ABRUPT CHANGES SHALL NOT EXCEED 1/4" VERTICAL OR 1/2" BEVELED. CHANGES GREATER THAN 1/2" SHALL COMPLY WITH REQUIREMENTS FOR CURB RAMPS. NOT STEEPER THAN 1:2
3. WALKS WITH SLOPES GREATER THAN 5% SHALL COMPLY WITH RAMP REQUIREMENTS.
4. WALKS WITH SLOPES 5% AND GREATER SHALL HAVE A 5' LANDINGS EVERY 400 FEET.
5. CROSS SLOPES SHALL NOT EXCEED 1/4" PER FOOT.
6. GRATINGS SHALL HAVE A 1/2" MAXIMUM OPENING IN THE DIRECTION OF TRAVEL.
7. PROVIDE A 5' X 5' LANDING ON THE WALK SIDE OF DOORS THAT SWING TOWARD THE WALK.
8. PROVIDE A LANDING 48 INCHES WIDE BY 44 INCHES DEEP ON THE WALK SIDE OF DOORS THAT SWING AWAY FROM THE WALK.
9. WALK SHALL EXTEND 24 INCHES TO THE SIDE OF STRIKE EDGE OF DOOR THAT SWINGS TOWARD THE WALK.

GUARDRAIL

1. OPEN GUARDRAILS SHALL HAVE INTERMEDIATE RAILS OR AN ORNAMENTAL PATTERN SUCH THAT A SPHERE 4 INCHES IN DIAMETER CANNOT PASS THROUGH.
2. THE OPEN SPACE BETWEEN THE INTERMEDIATE RAILS IN AREAS OF COMMERCIAL AND INDUSTRIAL-TYPE OCCUPANCIES WHICH ARE NOT ACCESSIBLE TO THE PUBLIC MAY BE SUCH THAT A SPHERE OF 12 INCHES IN DIAMETER MAY NOT PASS THROUGH.
3. THE TRIANGULAR OPENINGS FORMED BY THE RISER, TREAD, AND BOTTOM ELEMENT OF A GUARDRAIL AT THE OPEN SIDE OF A STAIRWAY SHALL BE OF SUCH SIZE THAT A SPHERE 6 INCHES IN DIAMETER CANNOT PASS THROUGH.

SANITARY FACILITIES

(REFER TO __/G-111)

1. WHERE SANITARY FACILITIES ARE LOCATED ON ACCESSIBLE FLOORS OF A BUILDING, THEY SHALL BE MADE ACCESSIBLE TO PEOPLE WITH DISABILITIES
2. ENTRY TO SANITARY FACILITIES
   A. 44" CLEAR AISLES OR CORRIDORS WHERE OCCUPANT LOAD IS 10 OR MORE.
   B. DOORWAYS SHALL HAVE 32" CLEAR OPENING.
   C. ON APPROACH SIDE, PROVIDE A 60" CLEAR LEVEL SPACE WHEN DOOR SWINGS TOWARD APPROACH AND 44" SPACE WHEN DOOR SWINGS AWAY FROM APPROACH.
3. MULTIPLE ACCOMMODATION TOILET FACILITIES (HAVING MORE THAN ONE SANITARY FIXTURE).
   A. PROVIDE A CLEAR SPACE 60" IN DIAMETER AND 27" HIGH OR A CLEAR SPACE 56" BY 63" AND 27" HIGH.
   B. DOORS AT ACCESSIBLE TOILET COMPARTMENT SHALL NOT TO ENCROACH INTO THE CLEAR SPACE REQUIREMENT.
   C. PROVIDE A 28" CLEAR SPACE BETWEEN WATER CLOSET AND FIXTURE AND 32" CLEARANCE BETWEEN WATER CLOSET AND WALL.
   D. A 48" LONG CLEAR SPACE IS REQUIRED IN FRONT OF THE WATER CLOSET. A 60" CLEAR SPACE IS REQUIRED WHEN THE TOILET COMPARTMENT HAS A SIDE DOOR.
   E. DOOR TO WATER CLOSET COMPARTMENT SHALL PROVIDE 32" CLEAR OPENING FOR END ENTRY AND 34" CLEAR OPENING FOR SIDE ENTRY AND BE SELF-CLOSING.
   F. PROVIDE A 42" CLEAR SPACE IN FRONT OF THE COMPARTMENT DOOR.
4. SINGLE ACCOMMODATION TOILET FACILITY
   A. WATER CLOSET SHALL HAVE A 28" CLEARANCE FROM A FIXTURE AND 32" FROM A WALL. MOUNT DISTANCE 18" FROM NEAR WALL TO CENTER LINE OF FIXTURE.
   B. MINIMUM CLEAR SPACE IN FRONT OF WATER CLOSET SHALL BE 48".
5. GRAB BARS SHALL BE LOCATED ON ONE SIDE AND BACK OF WATER CLOSET REFER TO A5/G-111
   A. GRAB BARS SHALL BE 36" ABOVE AND PARALLEL TO THE FLOOR.
   B. SIDE GRAB BARS SHALL BE 42" LONG AND PROJECT 24" IN FRONT OF WATER CLOSET STOOL. GRAB BAR AT BACK SHALL BE 36" LONG.
   C. DIAMETER OF GRAB BARS SHALL BE 1 1/4" TO 1 1/2".
   D. PROVIDE 1 1/2" CLEARANCE BETWEEN GRAB BARS AND PARTITIONS.
   E. GRAB BARS (INCLUDING CONNECTORS, FASTENERS, SUPPORT BACKING, AND ETC.) SHALL BE DESIGNED TO SUPPORT A 250 POUND LOAD.
   F. GRAB BARS SHALL NOT ROTATE WITHIN THEIR FITTINGS.
6. LAVATORIES (REFER TO C5/G-111).
   A. PROVIDE A CLEAR FLOOR SPACE OF 30" BY 48" IN FRONT OF LAVATORY TO PERMIT A FORWARD APPROACH.
   B. PROVIDE A CLEAR SPACE BENEATH THE LAVATORY 29" HIGH BY 30" WIDE BY 8" DEEP AT THE TOP AND 9" HIGH BY 30" WIDE BY 17" DEEP AT THE BOTTOM.
   C. HOT AND COLD WATER SUPPLY AND VALVE AND DRAIN PIPES UNDER LAVATORY SHALL BE INSULATED OR COVERED AND BE FREE OF SHARP OR ABRASIVE SURFACES.
   D. FAUCET CONTROLS AND OPERATING MECHANISMS (OPERABLE WITH ONE HAND) SHALL BE OF THE TYPE NOT REQUIRING TIGHT GRASPING, PINCHING OR TWISTING OF THE WRISTS, OR AN OPERATING FORCE EXCEEDING 5 POUNDS.
   E. SELF CLOSING VALVES PERMITTED IF FAUCET REMAINS OPEN FOR ATLEAST 10 SECONDS.
   F. BOTTOM EDGE OF MIRROR SHALL BE 40 INCHES AFF MAXIMUM.
   G. A CLEAR SPACE BENEATH LAVATORIES 29 INCHES HIGH BY 30 INCHES WIDE BY 8 INCHES DEEP AT BOTTOM FROM FRONT OF LAVATORY. HOT \ WATER DRAIN PIPES SHALL BE INSULATED.
7. URINALS (REFER TO B5/G-111).
   A. RIM SHALL BE A MAXIMUM OF 17" ABOVE THE FLOOR.
   B. FLUSH CONTROLS SHALL BE OPERABLE BY AN OSCILLATING HANDLE WITH A MAXIMUM FORCE OF 3 POUNDS AND MOUNTED NO MORE THAN 44" ABOVE THE FLOOR.
   C. PROVIDE A CLEAR SPACE 30" BY 48" IN FRONT OF THE URINAL TO PERMIT A FORWARD APPROACH.
8. WATER CLOSETS.
   A. THE HEIGHT OF THE WATER CLOSET (TOP OF SEAT) SHALL BE BETWEEN 17 AND 19 INCHES.
   B. FLUSH CONTROLS SHALL BE OPERABLE BY AN OSCILLATING HANDLE WITH A MAXIMUM FORCE OF 3 POUNDS, AND SHALL BE ON THE WIDE SIDE OF THE TOILET STALL.
   C. PROVIDE A 28 INCH "CLEAR AREA" BETWEEN TOILET FIXTURE AND SINK FIXTURE AND 32 INCH "CLEAR AREA" BETWEEN TOILET FIXTURE AND WALL.
9. TOILET ROOM ACCESSORIES (WHERE PROVIDED)
   A. BOTTOM EDGE OF MIRRORS SHALL BE NO HIGHER THAN 40" FROM THE FLOOR.
   B. TOILET TISSUE DISPENSERS SHALL BE MOUNTED WITHIN 7"-9" FROM THE FRONT EDGE OF THE TOILET SEAT.
   C. OPERATING PARTS OF DISPENSING AND DISPOSAL FIXTURES (TOWEL, SANITARY NAPKINS, WASTE, COIN SLOTS, ETC.) SHALL BE WITHIN 40" FROM THE FLOOR.

HAZARDS

1. PROVIDE A WARNING CURB WHERE ABRUPT CHANGES OF 4 INCHES OR MORE OCCUR BETWEEN THE SIDEWALK AND ADJACENT AREAS SUCH AS PLANTERS, ETC.
2. WARNING CURBS SHALL BE 6 INCHES ABOVE THE WALK SURFACE.
3. WARNING CURBS ARE NOT REQUIRED WHEN HANDRAILS OR GUARDRAILS ARE PROVIDED WITH A GUIDE RAIL LOCATED 3 INCHES ABOVE THE SURFACE OF THE WALK.

SIGNS OF IDENTIFICATION

1. THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHALL BE THE STANDARD USED TO IDENTIFY FACILITIES THAT ARE ACCESSIBLE TO AND USABLE BY PHYSICALLY HANDICAPPED PERSONS.
   A. THE SYMBOL SHALL CONSIST OF A WHITE FIGURE ON A BLUE BACKGROUND.
   B. CONTRACTED GRADE 2 BRAILLE SHALL BE USED WHERE BRAILLE SYMBOLS ARE SPECIFICALLY REQUIRED IN OTHER PORTIONS OF THESE STANDARDS. DOTS SHALL BE 0.1 INCH ON CENTERS IN EACH CELL WITH 0.2 INCH BETWEEN CELLS. DOTS SHALL BE RAISED A MINIMUM OF 0.025 INCH ABOVE THE BACKGROUND.
   C. LETTERS AND NUMBERS ON SIGNS SHALL HAVE A WIDTH TO HEIGHT RATIO OF BETWEEN 3:5 AND 1:1 AND A STROKE WIDTH TO HEIGHT RATIO BETWEEN 1:5 AND 1:10.
   D. CHARACTERS AND SYMBOLS SHALL CONTRAST WITH THEIR BACKGROUND, EITHER LIGHT CHARACTERS ON A DARK BACKGROUND OR DARK CHARACTERS ON A LIGHT BACKGROUND.
   E. WHEN RAISED OR RECESSED CHARACTERS OR SYMBOLS ARE USED, THEY SHALL CONFORM TO THE FOLLOWING:
      (1) LETTERS AND NUMBERS ON SIGNS SHALL BE RAISED OR RECESSED 1/32" MINIMUM AND SHALL BE SANS SERIF CHARACTERS.
      (2) RAISED CHARACTERS OR SYMBOLS SHALL BE A MINIMUM OF 5/8" HIGH. RECESSED CHARACTERS OR SYMBOLS SHALL HAVE A 3/4" MINIMUM STROKE WIDTH.
2. SIGNS CONTAINING TACTILE CHARACTERS SHALL BE LOCATED SO THAT A CLEAR FLOOR SPACE OF 18" MINIMUM BY 18" MINIMUM, CENTERED ON THE TACTILE CHARACTERS, IS PROVIDED BEYOND THE ARC OF ANY DOOR SWING BETWEEN THE CLOSED POSITION AND 45 DEGREE OPEN POSITION. REFER TO D5/G-111.

PROTRUDING OBJECTS

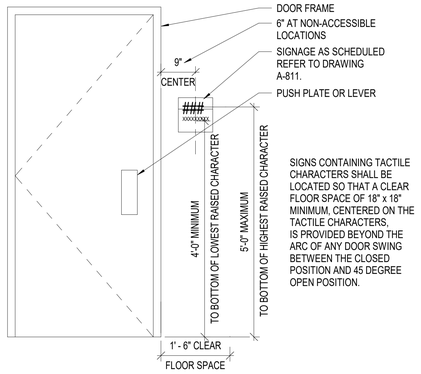
1. AT AREAS OF THE PROJECT THAT ARE ACCESSIBLE TO PEOPLE WITH DISABILITIES, OBJECTS WITH LEADING EDGES BETWEEN 27" AND 80" ABOVE FINISHED FLOOR SHALL PROTRUDE NO MORE THAN 4" INTO WALKS, CORRIDORS, ETC. REFER TO A4/G-111.

SIGNALING DEVICE

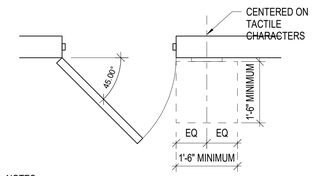
1. EVERY ALARM SIGNALING DEVICE SHALL BE OF THE SAME BASIC TYPE BELLS, HORNS, SPEAKERS, ETC. AS ALL OTHER SIGNALING DEVICES IN THE FACILITY.

ALARMS

1. EMERGENCY WARNING SYSTEMS SHALL ACTIVATE A MEANS OF WARNING THE HEARING IMPAIRED. FLASHING VISUAL WARNING SHALL HAVE A FREQUENCY OF NOT LESS THAN 60 FLASHES PER MINUTE AND SHALL BE SYNCHRONIZED.

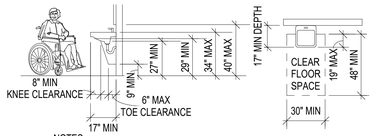


D4 TYPICAL SIGNAGE MOUNTING LOCATION AT DOOR
3/4" = 1'-0"



NOTES:
1. WHERE A TACTILE SIGN IS PROVIDED AT A DOOR, THE SIGN SHALL BE LOCATED ALONGSIDE THE DOOR AT THE LATCH SIDE. WHERE A TACTILE SIGN IS PROVIDED AT PAIR DOORS WITH ONE ACTIVE LEAF, THE SIGN SHALL BE LOCATED ON THE INACTIVE LEAF. WHERE A TACTILE SIGN IS PROVIDED AT PAIR DOORS WITH TWO ACTIVE LEAFS, THE SIGN SHALL BE LOCATED TO THE RIGHT OF THE RIGHT HAND DOOR. WHERE THERE IS NO WALL SPACE AT THE LATCH SIDE OF A SINGLE DOOR OR THE RIGHT SIDE OF THE DOUBLE DOORS, SIGNS SHALL BE LOCATED ON THE NEAREST ADJACENT PARTITION.

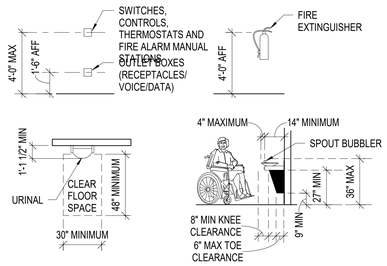
D5 TACTILE SIGNS AT DOORS
12" = 1'-0"



NOTES:
1. BOTTOM OF PANEL SHALL BE AS HIGH AS POSSIBLE AND STILL CONCEAL AND PROTECT PIPES.
2. PLACE LAVATORY BOWL AS FAR FORWARD AS POSSIBLE AND CUT OUT PIPE PROTECTION PANEL AROUND BOWL.

CLEARANCE REQUIREMENTS AND PROTECTIVE PANEL AT LAVATORY

C4 LAVATORIES
12" = 1'-0"



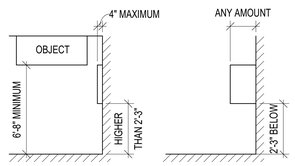
NOTE:
URINALS SHALL BE STALL-TYPE OR WALL - HUNG WITH RIM AT A MAXIMUM OF 17" AFF

STANDARD URINAL REQUIREMENTS

NOTE:
EQUIPMENT PERMITTED IN SHADED AREA

SPOUT HEIGHT AND CLEARANCE REQUIREMENTS AT DRINKING FOUNTAIN

C5 MISCELLANEOUS MOUNTING HEIGHTS
12" = 1'-0"



NOTES:
1. OBJECTS PROJECTING FROM WALLS WHOSE LEADING EDGES ARE BETWEEN 27" AND 80" ABOVE FINISH FLOOR SHALL NOT PROTRUDE MORE THAN 4" INTO WALKS, WALLS, CORRIDORS, PASSAGEWAYS, OR AISLES.
2. OBJECTS WHOSE LEADING EDGES ARE AT OR BELOW 27" ABOVE FINISH FLOOR, MAY PROTRUDE ANY AMOUNT.
3. WALKS, HALLS, CORRIDORS, PASSAGEWAYS, AISLES, OR OTHER CIRCULATING SPACES SHALL HAVE A MINIMUM 80" CLEAR HEADROOM.

B4 PROTRUDING OBJECTS
12" = 1'-0"

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REVISIONS

Mark	Date	Description
1	10/25/21	ISSUED FOR PERMIT
2	01/28/22	ISSUED FOR PERMIT, REV. 2

OWNER: HOUSTON AIRPORTS

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

CONSULTANT: 4b technology

SEAL: REGISTERED ARCHITECT BRIAN M. READY 25536 STATE OF TEXAS
1-14-2022

IDO BUILDING STANDARDS SPACE FIT-OUT

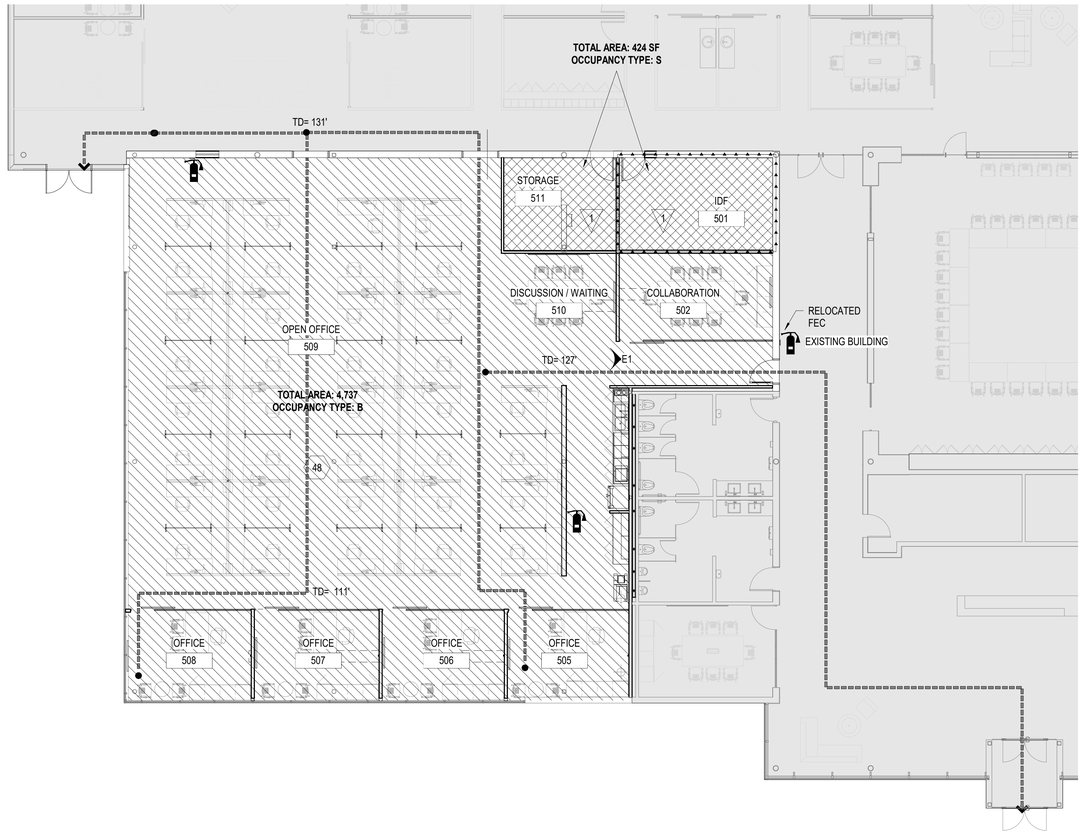
GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO: N/A
CIP NO: N/A
HAS NO: N/A
KEY PLAN:

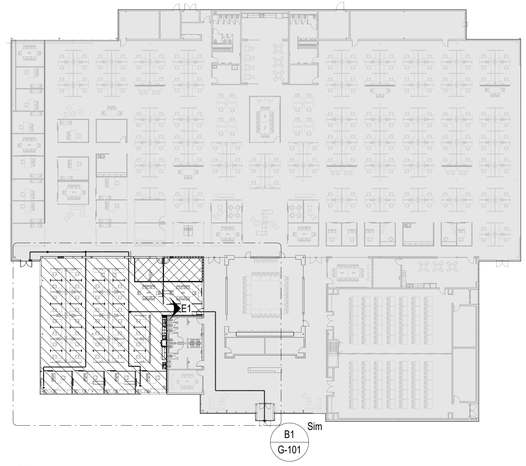
Jacobs Project No.: WHXX7103

Drawing Title: ACCESSIBILITY REQUIREMENTS AND DETAILS

Date: 01/28/22
Designed: Designer
Drawn: Author
Checked: Checker
Drawing No.: G-100



B1 LIFE SAFETY PLAN
1/8" = 1'-0"



D4 LIFE SAFETY PLAN OVERALL
1/32" = 1'-0"

EXISTING BUILDING CODE REVIEW: IBC 2012

PROJECT INFORMATION

PROJECT:	HOUSTON AIRPORT SYSTEM - IDO BUILDING
LOCATION:	111 STANDIFER STREET . BUILDING I.E645-A . HOUSTON TX 77338
BUILDING HEIGHTS:	SINGLE STORY
FLOOR AREA SUMMARY:	1st FLOOR CONDITIONED 49,055 SF 1st FLOOR NON-CONDITIONED 1,689 SF EXTERIOR UNDER ROOF TOTAL 50,744 SF

OCCUPANCY (SEC300)

PRIMARY OCCUPANCY: (SEC 304.1) BUSINESS GROUP "B"
SECONDARY OCCUPANCY: (SEC 303.4) ASSEMBLY GROUP "A-3" (LECTURE HALLS)

AUTOMATIC SPRINKLER SYSTEM YES

TYPE OF CONSTRUCTION: TYPE II-B

BUILDING AREA AND HEIGHT LIMITATIONS (SEC 500)

ALLOWABLE BASE AREA / BASE HEIGHT FOR GROUP "B" OCCUPANCY (TABLE 503) 23,000 SF / 3 STORIES

AREA INCREASE FOR SPRINKLERED BLDG (1 STORY) (SEC. 506.3) USED FOR UNLIMITED ALLOWABLE AREA PER SEC. 507.3

AREA INCREASE FOR FRONTAGE (PORTION OF PERIMETER FRONTS ON PUBLIC WAY OR OPEN SPACE GREATER THAN 60 FEET WIDE SEC. 507.3) UNLIMITED

TOTAL ALLOWABLE AREA / HEIGHT 50,744 SF / 1 STORIES

FIREPROOFING REQUIREMENTS (TABLE 601)

• STRUCTURAL FRAME	0 HOUR REQUIRED		
• EXTERIOR BEARING WALLS	0 HOUR REQUIRED	• STAIRWELL	N/A
• EXTERIOR NON BEARING WALLS	0 HOUR REQUIRED	• ELEVATOR SHAFT	N/A
• INTERIOR BEARING WALLS	0 HOUR REQUIRED	• DEMISING PARTITION WALL	N/A
• INTERIOR NON BEARING WALLS	0 HOUR REQUIRED	• FIRE RATED DOORS	N/A
		• FIRE RATED BARRIER	N/A
• FLOOR CONSTRUCTION	0 HOUR REQUIRED	• FIRE WALLS	N/A
• ROOF CONSTRUCTION	0 HOUR REQUIRED		
• CORRIDORS	0 HOUR REQUIRED		

FIRE PROTECTION REQUIREMENTS

	RATING	OPENING RATING
EXTERIOR WALLS (TAB 602) - ALL WALLS ARE GREATER THAN 60 FEET FROM PROPERTY LINES	NONE	NONE
CORRIDORS (TAB. 1018.1)	NONE	NONE

EGRESS OCCUPANCY CALCULATION

ASSEMBLY AREAS (A-3) CONCENTRATED (CHAIRS ONLY - NOT FIXED)	7 NET SF PER OCCUPANT
BUSINESS AREAS	100 GROSS SF PER OCCUPANT
STORAGE AREAS, **M**ECHANICAL, **EQ**UIP ROOM	300 GROSS SF PER OCCUPANT

DOORS

EGRESS WIDTH PER OCCUPANT (SECTION 1005.3.2, EXCEPTION): DOORS 0.15

BUSINESS B REQUIRED EGRESS WIDTH: 437 OCCUPANTS x 0.15" = 66"
PROVIDED = 199"

ASSEMBLY A-3 REQUIRED EGRESS WIDTH: 652 OCCUPANTS x 0.15" = 98"
PROVIDED = 285"

EGRESS TRAVEL REQUIREMENTS

ONE EXIT REQUIRED (TABLE 1015.1): A, B, E, F, M, U = 49 PEOPLE IN A ROOM MAX (TWO EXITS REQUIRED IF EXCEEDS 49 PEOPLE)
S = 29 PEOPLE IN A ROOM MAX

THREE OR MORE EXITS (SECTION 1015.1.1) THREE EXITS OR EXIT ACCESS DOORWAYS SHALL BE PROVIDED FROM ANY SPACE WITH AN OCCUPANT LOAD OF 501 TO 1,000. FOUR EXITS OR EXIT ACCESS DOORWAYS SHALL BE PROVIDED FROM ANY SPACE WITH AN OCCUPANT LOAD GREATER THAN 1,000.

MAX TRAVEL DISTANCE TO EXIT (TABLE 1016.2):

OCCUPANCY GROUP "B"	300' (SPRINKLERED BUILDING)
OCCUPANCY GROUP "A-3"	250' (SPRINKLERED BUILDING)
MAXIMUM LENGTH OF DEAD END CORRIDORS (SEC 1018.4):	50' -- UNLIMITED WHEN LESS THAN 2.5 TIMES LEAST WIDTH OF CORRIDOR
EXITS THROUGH ADJOINING ROOMS (SEC 1014.2):	PERMITTED THRU ACCESSORY, NON-HIGH-HAZARDOUS ROOMS. NOT PERMITTED THRU KITCHEN, STORAGE, OR SIMILAR ROOMS
COMMON PATH OF TRAVEL (SEC 014.3):	75' TO CHOICE OF 2 EXIT PATHS - OCCUPANCY GROUP "A" 100' TO CHOICE OF 2 EXIT PATHS - OCCUPANCY GROUP "B"

MISCELLANEOUS REQUIREMENTS

SECTION 708.4 CONTINUITY.

FIREBLOCKING OR DRAFTSTOPPING IS NOT REQUIRED AT THE PARTITION LINE IN BUILDINGS EQUIPPED WITH AN AUTOMATIC SPRINKLER SYSTEM INSTALLED THROUGHOUT IN ACCORDANCE WITH SECTION 903.3.1.1 OR 903.3.1.2, PROVIDED THAT AUTOMATIC SPRINKLERS ARE INSTALLED IN COMBUSTIBLE FLOOR/CEILING AND ROOF/CEILING SPACES.

OVERALL PLUMBING FIXTURE REVIEW IBC 2012

BUSINESS B

TOTAL OCCUPANT LOAD
FIRST FLOOR = 437

	WATER CLOSET		LAVATORY		DRINKING FOUNTAIN	SERVICE SINK
	MALE	FEMALE	MALE	FEMALE		
	1 PER 25 (FIRST 50)		1 PER 40 (FIRST 80)		1 PER 100	1 REQ'D
	1 PER 50 (THE REMAINDER ROM ABOVE)		1 PER 80 (FOR THE REMAINDER EXCEEDING 80)			

FIXTURE COUNT	MALE				FEMALE		MALE		FEMALE		BUSINESS GROUP "B"			
	URINAL		TOILET											
NOTE: C= NEEDED BY CODE P= PROVIDED IN	C	P	C	P	C	P	C	P	C	P	C	P	C	P
PROJECT	N/A	4	6	4	6	8	4	4	4	4	N/A	0	1	2
FIRST FLOOR											(BREAK RM PROVIDED)		YES TYPE II-B	

ASSEMBLY A-3

TOTAL OCCUPANT LOAD
FIRST FLOOR = 652

	WATER CLOSET		LAVATORY		DRINKING FOUNTAIN	SERVICE SINK
	MALE	FEMALE	MALE	FEMALE		
	1 PER 125	1 PER 65	1 PER 200		1 PER 500	1 REQ'D

FIXTURE COUNT	MALE				FEMALE		MALE		FEMALE					
	URINAL		TOILET											
NOTE: C= NEEDED BY CODE P= PROVIDED IN	C	P	C	P	C	P	C	P	C	P	C	P	C	P
PROJECT	N/A	2	3	3	6	5	2	2	2	2	N/A	0	1	0
FIRST FLOOR											(BREAK RM PROVIDED)			

SECTION 419.2 URINAL SUBSTITUTION FOR FOR WATER CLOSETS
IN EACH BATHROOM OR TOILET ROOM, URINALS SHALL NOT BE SUBSTITUTED FOR MORE THAN 67 PERCENT OF THE REQUIRED WATER CLOSETS IN ASSEMBLY AND EDUCATIONAL OCCUPANCIES. URINALS SHALL NOT BE SUBSTITUTED FOR MORE THAN 50 PERCENT OF THE REQUIRED WATER CLOSETS IN ALL OTHER OCCUPANCIES.

NOTE:

EXISTING BUILDING CODE ANALYSIS INCLUDES AREA DESCRIBED IN THESE DOCUMENTS, THE OCCUPANCY TYPE, AREA AND ACTUAL LOAD REMAIN THE SAME, ONLY THE LAYOUT AND ACCESS LOCATIONS HAVE CHANGED. ALL CODES, FIXTURE AND AREA CALCULATIONS AND EGRESS ROUTES / CAPATICITIES STLL APPLY. NO REVISION ARE REQUESTED / REQUIRED.

LIFE SAFETY PLAN LEGEND

- INDICATES 1-HOUR FIRE RATED CONSTRUCTION
- INDICATES 2-HOUR FIRE RATED CONSTRUCTION
- INDICATES SMOKE PARTIITON
- W = CLEAR WIDTH OF LIMITING COMPONENT (in)
  X = OCCUPANTS USING EXIT
  Y = EXIT CAPACITY
  Z = EGRESS WIDTH PER OCCUPANT (in/PERSON) (NFPA TABLE 7.3.3.1)
- TD = XX" — TRAVEL DISTANCE
- FIRE EXTINGUISHER LOCATION (FE GFGI)
- AED — AUTOMATED EXTERNAL DEFIBRILATOR (GFGI)
- EXIT DISCHARGE AT EXTERIOR
- EXIT ROUTE / DISCHARGE INSIDE THE BUILDING
- F — MANUAL FIRE ALARM BOX - REFER TO FIRE ALARM FOR LOCATIONS
- EMERGENCY SHOWER / EYEWASH - REFER TO PLUMBING

MAXIMUM NUMBER OF OCCUPANTS ACCORDING TO OCCUPANCY (IBC TABLE 1004.1.1) (NFPA 101 TABLE 7.3.1.2)

- 1 — BUSINESS (100 SQ. FT / PERSON GROSS) (200 SQ. FT / PERSON GROSS AT KITCHEN) (50 SQ. FT / PERSON GROSS AT EXERCISE ROOMS AND LOCKER ROOMS)
- 1 — STORAGE (300 SQ. FT / PERSON GROSS)
- BUSINESS
- STORAGE

DOOR EGRESS WIDTH

1 3'-0" DOOR (33.2" CLR) AT .15"/PERSON = 221 PERSONS

2 4'-0" DOOR (45.2" CLR) AT .15"/PERSON = 301 PERSONS

3 PAIR 3'-0" DOORS (66.4" CLR) AT .15"/PERSON = 442 PERSONS

4 PAIR 4'-0" DOORS (90.4" CLR) AT .15"/PERSON = 602 PERSONS

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REVISIONS

Mark	Date	Description
1	10/25/21	ISSUED FOR PERMIT
2	01/28/22	ISSUED FOR PERMIT, REV. 2

OWNER: HOUSTON AIRPORTS

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

CONSULTANT: 46 technology

SEAL: REGISTERED ARCHITECT BRIAN M. REDDY 25536 STATE OF TEXAS
1-14-2022

IDO BUILDING STANDARDS SPACE FIT-OUT

GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO: N/A
CIP NO: N/A
HAS NO: N/A

KEY PLAN: PLAN NORTH

Jacobs Project No.: WHXK7103

Drawing Title: LIFE SAFETY PLAN

Date: 01/28/22

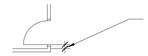
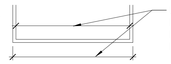
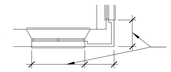
Designed: Designer
Drawn: Author
Checked: Checker

Drawing No.: G-101

COLD-FORMED METAL FRAMING GENERAL NOTES

1. DESIGN, FABRICATE AND INSTALL COLD-FORMED METAL FRAMING WALL SUPPORT SYSTEM AND COMPONENTS ACCORDING TO THE AMERICAN IRON AND STEEL INSTITUTE (AISI) STANDARD SPECIFICATION FOR THE DESIGN OF LIGHT GAGE COLD FORMED STEEL STRUCTURAL MEMBERS.
2. PROVIDE G-60 GALVANIZED STEEL MEETING ASTM A653 MEMBERS 16 GAGE AND THICKER SHALL HAVE A MINIMUM YIELD STRENGTH OF 50,000 PSI THAT MEETS ASTM A446, GRADE D. MEMBERS 18 GAGE AND THINNER SHALL HAVE A MINIMUM YIELD STRENGTH OF 33,000 PSI THAT MEETS ASTM A653, GRADE A.
3. SUBMIT SHOP DRAWINGS SHOWING ERECTION PLANS, FABRICATED ASSEMBLIES, AND ACCESSORIES. SHOW MEMBER DESIGNATIONS, SIZES, AND CONNECTIONS. SUBMIT DESIGN CALCULATIONS PREPARED BY A LICENSED ENGINEERED INDICATING STRENGTH, STABILITY, AND SERVICEABILITY OF MEMBERS AND CONNECTIONS.
4. SHOP AND FIELD WELD ASSEMBLIES TO THE GREATEST EXTENT POSSIBLE. FASTEN WITH #10 AND #12 SCREWS USING DRIVERS WITH CLUTCHES. FASTEN COMPONENTS TO CONCRETE WITH POWDER ACTIVATED NAILS OR WITH APPROVED CONCRETE ANCHORS. FASTEN PLYWOOD TO STEEL WITH SPIRAL SHANK NAILS OR SCREWS. ALL WELDING SHALL BE PERFORMED BY WELDERS CERTIFIED IN COLD FORMED METAL FRAMING WORK.
5. PROVIDE CONTINUOUS NEOPRENE GASKET UNDER COLD-FORMED METAL BASE CHANNELS WHERE THEY ENGAGE CONCRETE WHETHER INDICATED ON DETAIL OR NOT.
6. ANCHOR COLD-FORMED METAL BASE CHANNELS TO CONCRETE WITH LOW-VELOCITY POWDER-DRIVEN FASTENERS WITH A MINIMUM SHANK DIAMETER OF 0.177", AND A MINIMUM PENETRATION OF 1 7/16". LOCATE ANCHORS AT 3" FROM THE ENDS AND AT 16" OC MAXIMUM. ANCHORS SHALL BE PLACED AT ALL JAMBS, CORNER, INTERSECTIONS, AND ENDS OF WALLS. ALL BASE CHANNELS SHALL HAVE A MINIMUM OF 2 ANCHORS.
7. WHERE WELDING IS USED AT ZINC-COATED METAL FRAMING, COAT WELD WITH A ZINC RICH PAINT TO PROVIDE CORROSION RESISTANCE. ALL WELDING SHALL BE PERFORMED BY WELDERS CERTIFIED IN COLD-FORMED METAL FRAMING WORK.
8. PROVIDE LATERAL BRACING/BRIDGING ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
9. ALL FIELD CUTTING OF STUDS SHALL BE BY SAWING OR SHEARING. TORCH CUTTING OF COLD-FORMED METAL FRAMING MEMBERS IS NOT ALLOWED.
10. NO NOTCHING OR COPING OF STUDS IS ALLOWED WITHOUT THE WRITTEN CONSENT OF THE ARCHITECT.
11. ALL STUDS SHALL BE SECURELY SEATED FOR FULL END BEARING ON ALL TOP AND BASE CHANNELS, UNLESS OTHERWISE NOTED, PROVIDE DOUBLE STUDS AT ALL JAMBS, CORNERS, INTERSECTIONS, BEAM BEARINGS AND JOIST BEARINGS.
12. WHERE SPLICING OF WALL TRACK IS NECESSARY BETWEEN STUDS, A PIECE OF STUD SHALL BE PLACED IN THE ADJOINING TRACK SECTIONS AND FASTENED TO THE TRACK FLANGES AT BOTH SIDES OF THE WALL OR THE TRACKS SHALL BE BUTTED TIGHT TOGETHER AND FASTENED TO STRUCTURE EACH SIDE OF THE JOINT.
13. INSTALLATION OF SHEATHING SHALL BE PERFORMED IN ACCORDANCE WITH THE PRODUCT MANUFACTURER'S SPECIFICATIONS, AND AS OUTLINED IN THE CONTRACT DOCUMENTS.
14. ALL SLIDE CLIPS, SUPPORT CLIPS AND CLIP ANGLES SHALL BE 50 KSI, UNLESS OTHERWISE NOTED.
15. STUD GAGE AND SIZE INDICATED ON WALL SECTIONS ARE MINIMUMS. STUD SPACING IS MAXIMUM. DELEGATED DESIGN MAY REQUIRE MORE STRINGENT CRITERIA AT LOCATIONS ALONG THE WALLS.

ARCHITECTURAL DIMENSIONING

1. 
UNLESS OTHERWISE NOTED LOCATE THE EDGE OF DOOR JAMBS 4 INCHES OFF OF THE FINISHED FACE OF ADJACENT GYPSUM BOARD PARTITION AND 8" AT CMU PARTITION
2. 
UNLESS OTHERWISE NOTED ALL DIMENSION STRINGS ARE TO THE FINISH FACE OF WALL OR PARTITION
3. 
UNLESS OTHERWISE NOTED ALL EXTERIOR DIMENSION STRINGS ARE TO THE FINISH FACE OF WALL (EITHER FROM COLUMN CENTER LINES OR OPENINGS IN WALL)
4. DO NOT SCALE DRAWINGS - FOLLOW WRITTEN DIMENSIONS ONLY.
5. TYPICALLY, DIMENSIONS ARE TO CENTER OF COLUMNS, FACES OF FINISHED WALL OR PARTITION SURFACE OR TO EDGE OF OPENINGS.
6. COORDINATE DIMENSIONS INDICATED IN THESE DRAWINGS WITH FABRICATION OF ALL SYSTEMS AND ASSEMBLIES. COORDINATE DIMENSIONS INDICATED WITH ACTUAL FIELD CONDITIONS. REPORT ANY INCONSISTENCIES TO THE ARCHITECT PRIOR TO PROCEEDING WITH WORK.
7. "NOM" AS USED IN THESE DOCUMENTS IS THE ABBREVIATION FOR "NOMINAL" - MEANING THAT ACTUAL MANUFACTURED, ASSEMBLED FOR INSTALLED DIMENSIONS MAY VARY SLIGHTLY FROM WHAT IS INDICATED.
8. "EQ" AS USED IN THESE DOCUMENTS IS THE ABBREVIATION FOR "EQUAL" - MEANING THAT THE DIMENSIONS ON A STRING ARE INTENDED TO BE OF EQUAL LENGTH.
9. " +/- " OR "VERIFY" AS USED IN THESE DOCUMENTS MEANS THAT FOR EXISTING CONDITIONS THE DIMENSIONS SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR AND FOR NEW CONDITIONS THE ACTUAL DIMENSION AS CONSTRUCTED MAY BE ADJUSTED SLIGHTLY TO ACCOMMODATE OTHER FACTORS.
10. "MIN" AS USED IN THESE DOCUMENTS IS THE ABBREVIATION FOR "MINIMUM" - MEANING THAT THE CONDITION IS SLIGHTLY ADJUSTABLE BUT MAY NOT VARY TO A DIMENSION OR QUALITY LESSER THAN THAT INDICATED.
11. "MAX" AS USED IN THESE DOCUMENTS IS THE ABBREVIATION FOR "MAXIMUM" - MEANING THAT THE CONDITION IS SLIGHTLY ADJUSTABLE BUT MAY NOT VARY TO A DIMENSION OR QUALITY GREATER THAN THAT INDICATED.
12. "CLEAR" AS USED IN THESE DOCUMENTS SHALL MEAN THAT THE DIMENSION IS NOT ADJUSTABLE WITHOUT THE WRITTEN APPROVAL OF THE ARCHITECT OR ENGINEER. CLEAR DIMENSIONS ARE TYPICALLY TO FINISH FACE.
13. "ALIGN" AS USED IN THESE DOCUMENTS SHALL MEAN TO ACCURATELY LOCATE THE FINISHED FACES TO BE IN THE SAME PLANE.
14. ROUGH OPENING ("RO") DIMENSIONS SHOWN ON THESE DRAWINGS ARE NOMINAL OR MODULAR DIMENSIONS. ACTUAL DIMENSIONS MAY VARY DEPENDING ON THE TYPE OF BUILDING ELEMENT BEING DIMENSIONED.

SIGNAGE GENERAL NOTES

1. BUILDING STANDARDS SPACE SIGNAGE TO MATCH IDO BUILDING STANDARDS AND HAS SIGNAGE STANDARDS.
2. PROVIDE ALL REQUIRED EGRESS SIGNAGE TO MATCH EXISTING IDO BUILDING.
3. ALL SIGNAGE TO MEET ADA/TAS REQUIREMENTS AS REQUIRED ON G-100.

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REVISIONS

Mark	Date	Description
1	10/25/21	ISSUED FOR PERMIT
2	01/28/22	ISSUED FOR PERMIT, REV. 2

OWNER: HOUSTON AIRPORTS

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

CONSULTANT: 4b technology

SEAL:

REGISTERED ARCHITECT BRIAN M. REDDY 25538 STATE OF TEXAS

1-14-2022

IDO BUILDING STANDARDS SPACE FIT-OUT

GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO: N/A

CIP NO: N/A

HAS NO: N/A

KEY PLAN:

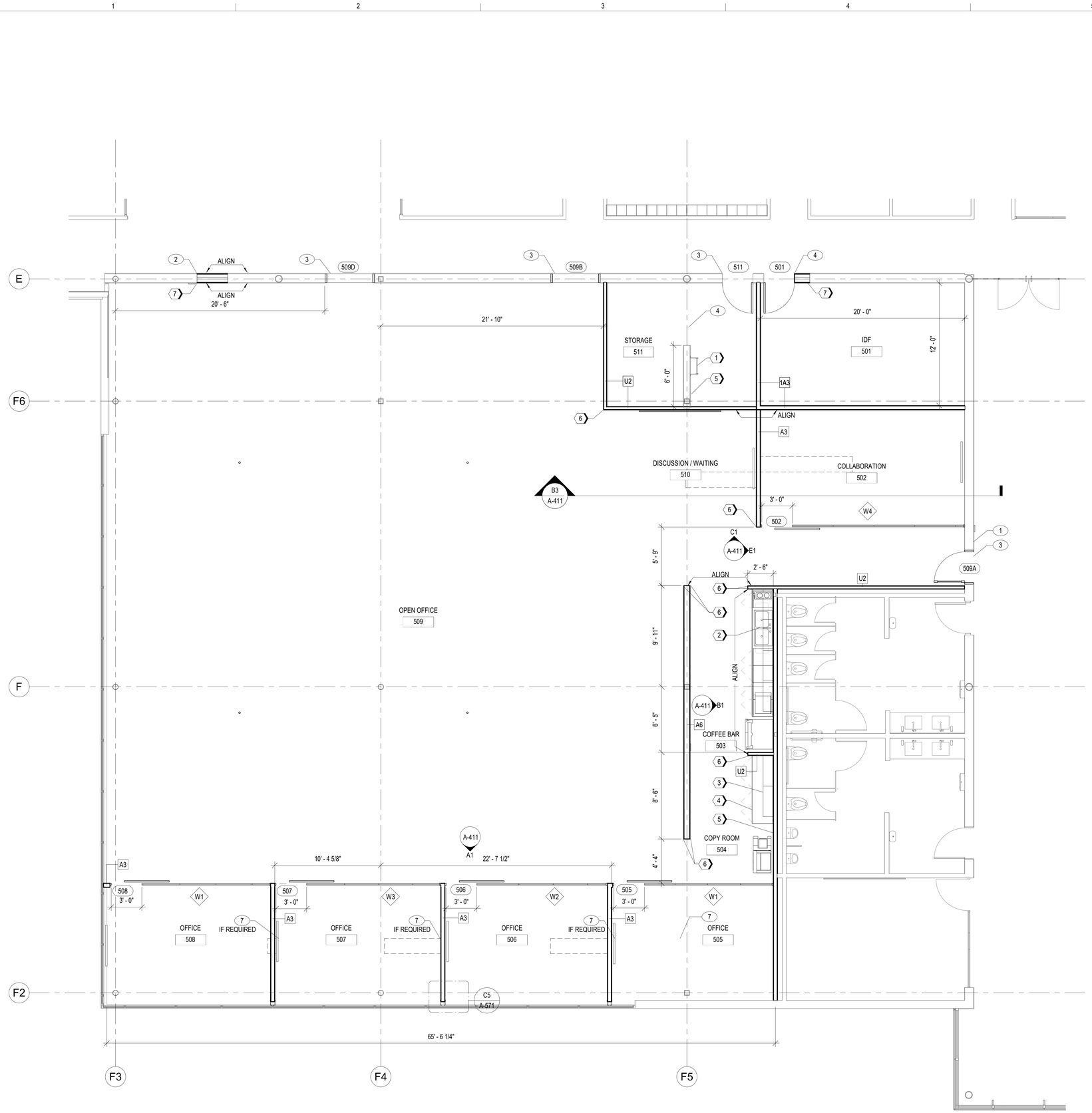
Jacobs Project No.: WHXK7103

Drawing Title: GENERAL NOTES

Date: 01/28/22

Designed: Designer
Drawn: Author
Checked: Checker

Drawing No.: A-001



A1 FLOOR PLAN
1/4" = 1'-0"
A-411

GENERAL NOTES

A. BUILDING STANDARDS FIT, OUT TO MATCH EXISTING IDO BUILDING STANDARDS IN ALL "LIKE SITUATIONS", INCLUDING, BUT NOT LIMITED TO, MATERIALS, MILLWORK, HARDWARE, GLAZING, FURNITURE, FIXTURES AND EQUIPMENT. IT IS THE INTENT OF THESE DOCUMNETS TO DEPICT THE APPLICATION OF THOSE STANDARDS TO THIS SPACE. IF THE DOCUMENTS VARY FROM ACTUAL CONDITIONS, OR STANDARDS, NOTIFY THE ARCHITECT/ ENGINEER TO CLARIFY DIRECTION.

DEMOLITION KEYNOTES

1. REMOVE AND RELOCATE EXISTING FIRE EXTINGUISHER
2. REMOVE EXISTING DOOR
3. DEMO PORTION OF WALL FOR NEW OPENING
4. REMOVE AND RELOCATE DOOR
5. TRENCH FLOOR FOR NEW ELECTRICAL AND TELECOM INSTALLATION
6. DEMOLISH EXISTING FRAMING
7. TRENCH LOCATION FOR IT/ELEC CONNECTIONS - COORDINATE WITH APPROVED FURNITURE LAYOUT.

KEYNOTES

1. ROOF ACCESS LADDER (EXISTING)
2. SINK COUNTERTOP WITH INTEGRAL APRON
3. WALL MOUNTED CABINET
4. BASE CABINET
5. 5/8" GYPSUM BOARD FINISH ON EXISTING WALL FRAMING
6. EMBEDDED CORNER GUARDS
7. INFILL WALL TO MATCH EXISTING

GRAPHIC SCALES:
0 2' 4' 8' 16'
1/4" = 1'-0"

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1	06/10/21	RE-ISSUE FOR PERMIT
2	01/28/22	ISSUED FOR PERMIT, REV. 2

OWNER: HOUSTON AIRPORTS

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

CONSULTANT: 46 technology

SEAL: REGISTERED ARCHITECT BRIAN M. REDDY 25536 STATE OF TEXAS
1-14-2022

IDO BUILDING STANDARDS SPACE FIT-OUT

GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO: N/A
CIP NO: N/A
HAS NO: N/A

KEY PLAN:

PLAN NORTH

Jacobs Project No.: WHXX7103
Drawing Title: FLOOR PLAN

Date: 01/28/22
Designed: Designer
Drawn: Author
Checked: Checker
Drawing No.: A-101

C:_Revit_Local_Models\2018\WHXX7103_HAS IDQ_NEW_rachel.henry.rvt
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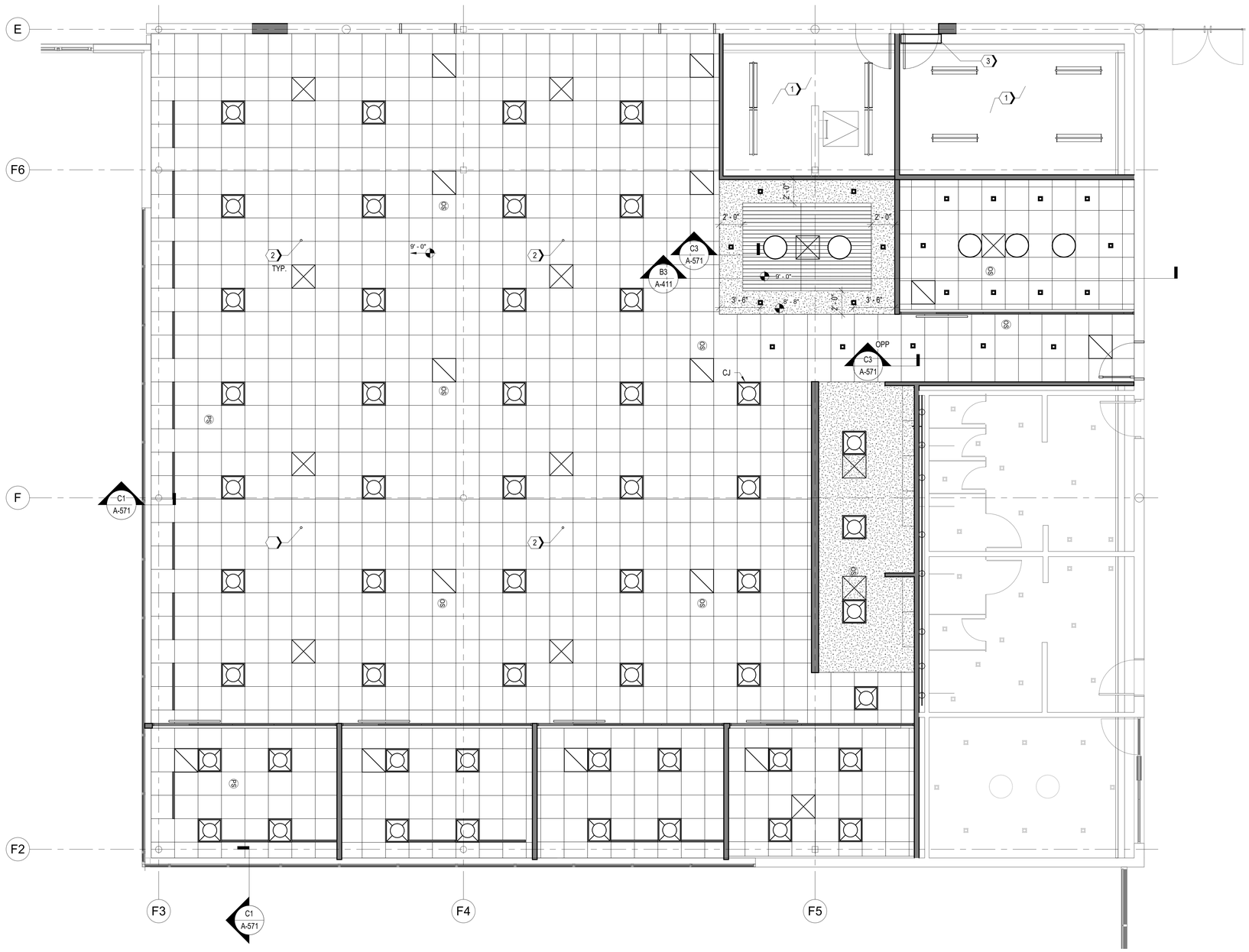

A1 REFLECTED CEILING PLAN
1/4" = 1'-0"

GENERAL NOTES

A. BUILDING STANDARDS FIT, OUT TO MATCH EXISTING IDO BUILDING STANDARDS IN ALL "LIKE SITUATIONS", INCLUDING, BUT NOT LIMITED TO, MATERIALS, MILLWORK, HARDWARE, GLAZING, FURNITURE, FIXTURES AND EQUIPMENT. IT IS THE INTENT OF THESE DOCUMNETS TO DEPICT THE APPLICATION OF THOSE STANDARDS TO THIS SPACE. IF THE DOCUMENTS VARY FROM ACTUAL CONDITIONS, OR STANDARDS, NOTIFY THE ARCHITECT/ ENGINEER TO CLARIFY DIRECTION.

B. REFERENCE MECHANICAL AND ELECTRICAL DRAWINGS FOR LOCATION OF EQUIPMENT, DEVICES AND ADDITIONAL UTILITY LAYOUTS.

KEYNOTES

1. EXPOSED TO STRUCTURE.
2. POWER POLE COORDINATE WITH FURNITURE PLAN.
3. NEW FAN COIL UNIT. REFERENCE MECHANICAL.

REFLECTED CEILING PLAN LEGEND

- ACOUSTICAL PANEL CEILING (ACP)
- GYPSUM BOARD CEILING
- LINEAR WOOD PANEL CEILING
- PE — PHOTOELECTRIC RELAY
- FIRE SUPPRESSION - WHITE CONCEALED SPRINKLER
- FIRE SUPPRESSION - SIDE WALL SPRINKLER
- FIRE ALARM - STROBE/ SPEAKER
- FIRE ALARM - CEILING SPEAKER
- EXHAUSE AIR GRILL
- EXHAUST FAN
- SUPPLY AIRE DIFFUSER
- RETURN AIR DIFFUSER
- LINEAR SUPPLY AIR DIFFUSER
- ACCESS PANEL
- LIGHTING FIXTURES, REFER TO ELECTRICAL
- OCCUPANCY SNESOR, CEILING MOUNTED, MULIT DIRECTIONAL
- EXIT SIGN (ARROW INDICATES DIRECTIONAL SIGN, DARKEN AREA DENOTES LIGHTED FACE)

GRAPHIC SCALES:
0 2' 4' 8' 16'
1/4" = 1'-0"

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2	01/28/22	ISSUED FOR PERMIT, REV. 2

OWNER: HOUSTON AIRPORTS

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

CONSULTANT: 4b technology

SEAL: REGISTERED ARCHITECT BRIAN M. REDDY 25538 STATE OF TEXAS
1-14-2022

IDO BUILDING STANDARDS SPACE FIT-OUT

GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO: N/A
CIP NO: N/A
HAS NO: N/A

KEY PLAN: PLAN NORTH

Jacobs Project No.: WHXK7103
Drawing Title: REFLECTED CEILING PLAN

Date: 01/28/22
Designed: Designer
Drawn: Author
Checked: Checker
Drawing No.: A-111

C:_Revit_Local_Models\2018\WHXK7103_HAS IDO_NEW_rachel.henry.rvt
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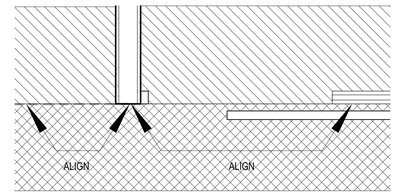
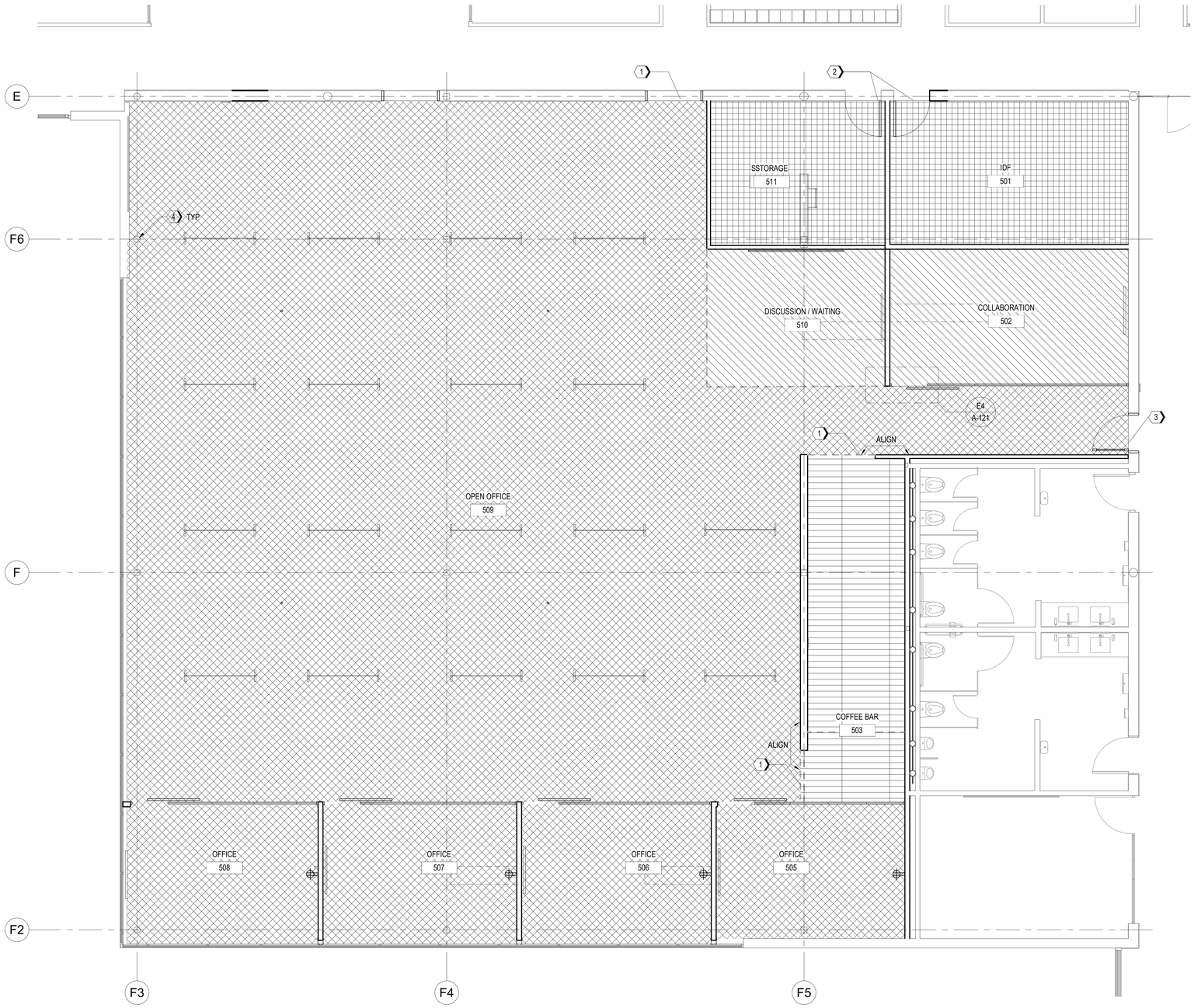


E4 FINISH PLAN - Callout 1
1" = 1'-0"



A1 FINISH PLAN
1/4" = 1'-0"

KEYNOTES

1. LVT TO CPT TRANSITION
2. LVT TO VCT TRANSITION
3. PORC. TILE TO CPT TRANSITION
4. PAINT EXISTING COLUMNS PT-1

MATERIAL LEGEND

- CARPET FLOORING
  MIX USE OF CPT-1, CPT-2, CPT-3
- CARPET FLOORING
  CPT-4
- VINYL FLOORING
  VCT-1
- VINYL FLOORING
  LVT-1

GRAPHIC SCALES:
0 2' 4' 8' 16'
1/4" = 1'-0"

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OWNER: HOUSTON AIRPORTS

APPROVED BY:

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HOUSTON AIRPORT SYSTEM

CONSULTANT: 4b technology

SEAL: REGISTERED ARCHITECT BRIAN M. REDDY 25536 STATE OF TEXAS
1-14-2022

IDO BUILDING STANDARDS SPACE FIT-OUT

GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO: N/A
CIP NO: N/A
HAS NO: N/A

KEY PLAN: PLAN NORTH

Jacobs Project No.: WHXK7103
Drawing Title: FINISH PLAN

Date: 01/28/22
Designed: Designer
Drawn: Author
Checked: Checker
Drawing No.: A-121

C:_Revit_Local_Models\2018\WHXK7103_HAS IDO_NEW_rachel.henry.rvt
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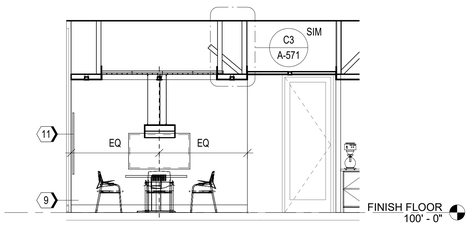
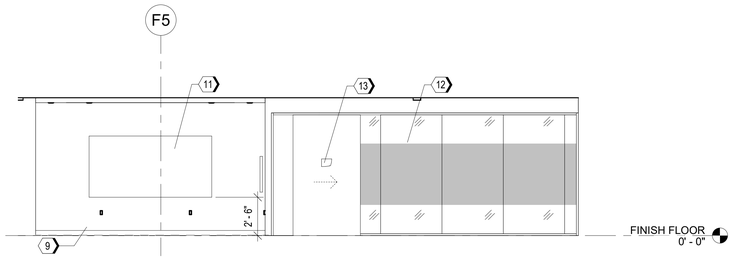
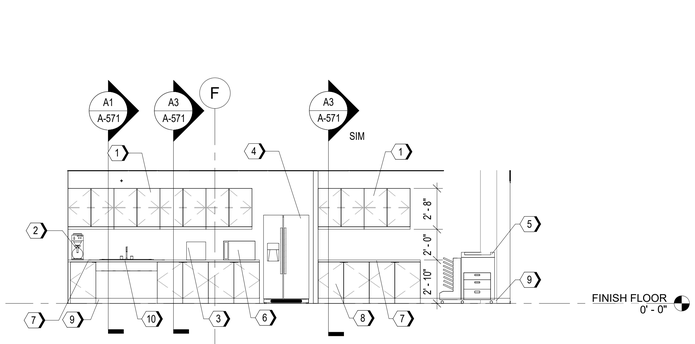


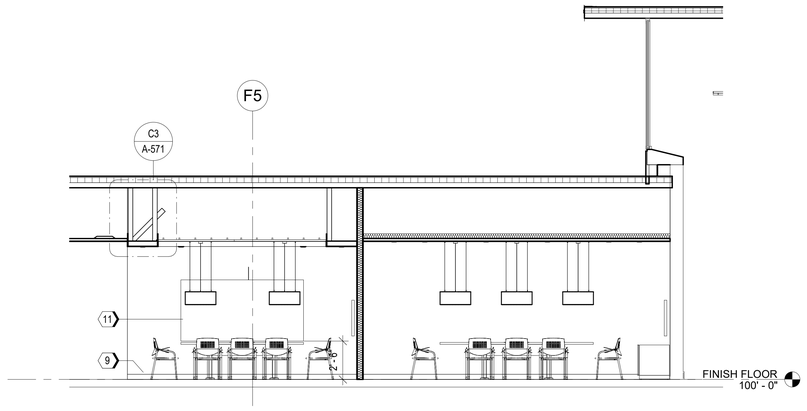
E1 INTERIOR ELEVATION - DISCUSSION AREA
1/4" = 1'-0"



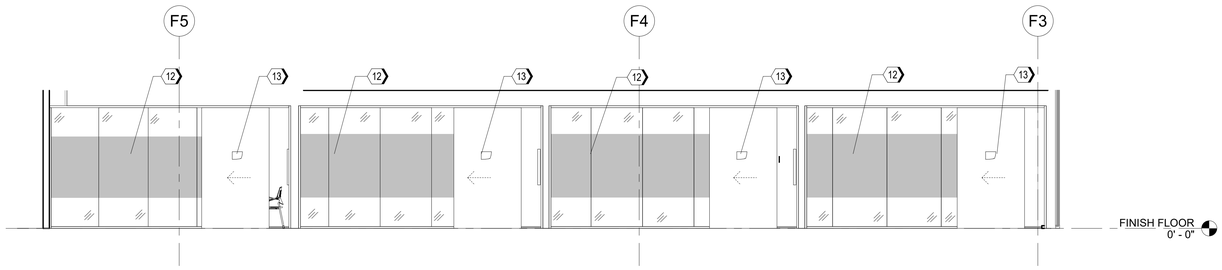
C1 INTERIOR ELEVATION - COLLABORATION AND DISCUSSION AREA
1/4" = 1'-0"



B1 INTERIOR ELEVATION-KITCHEN AND COPY ROOM
1/4" = 1'-0"



B3 INTERIOR SECTION - COLLABORATION AND DISCUSSION AREA
1/4" = 1'-0"



A1 INTERIOR ELEVATION-OFFICE'S ENTRANCE
1/4" = 1'-0"

GENERAL NOTES

A. BUILDING STANDARDS FIT, OUT TO MATCH EXISTING IDO BUILDING STANDARDS IN ALL "LIKE SITUATIONS", INCLUDING, BUT NOT LIMITED TO, MATERIALS, MILLWORK, HARDWARE, GLAZING, FURNITURE, FIXTURES AND EQUIPMENT. IT IS THE INTENT OF THESE DOCUMNETS TO DEPICT THE APPLICATION OF THOSE STANDARDS TO THIS SPACE. IF THE DOCUMENTS VARY FROM ACTUAL CONDITIONS, OR STANDARDS, NOTIFY THE ARCHITECT/ ENGINEER TO CLARIFY DIRECTION.

B. REFERENCE ROOM FINISH SCHEDULE FOR MATERIALS FINISHES NOT DEPICTED IN THE ELEVATIONS.

KEYNOTES

1	WALL MOUNTED CABINET, REFER TO MATERIAL LEGEND PLAM-1
2	COFFEE MACHINE
3	ICE MAKER
4	REFRIGERATOR
5	PRINTER
6	MICROWAVE
7	COUNTERTOP, REFER TO MATERIAL LEGEND SSM-1
8	BASE CABINET
9	BASE AS SCHEDULED
10	SINK COUNTERTOP WITH INGRAL APRON
11	WRITABLE GLASS MARKER BOARD
12	GRAPHIC FILM
13	ROOM SIGN

GRAPHIC SCALES:
0 2' 4' 8' 16'
1/4" = 1'-0"

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2	01/28/22	ISSUED FOR PERMIT, REV. 2

OWNER: HOUSTON AIRPORTS

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

CONSULTANT: 4b technology

SEAL: REGISTERED ARCHITECT BRIAN M. REDDY 25536 STATE OF TEXAS
1-14-2022

IDO BUILDING STANDARDS SPACE FIT-OUT

GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO: N/A

CIP NO: N/A

HAS NO: N/A

KEY PLAN:

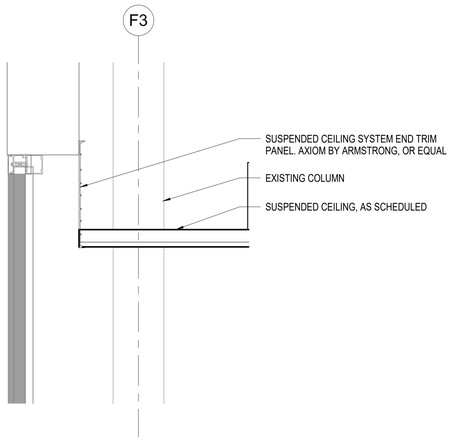
Jacobs Project No.: WHXX7103

Drawing Title: INTERIOR ELEVATIONS AND SECTIONS

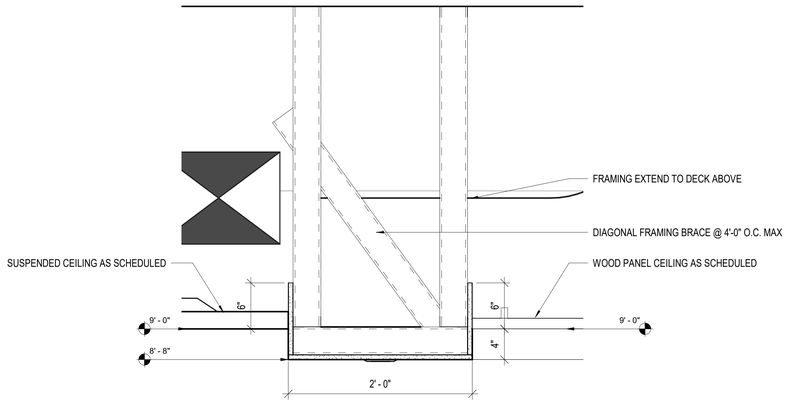
Date: 01/28/22

Designed: Designer
Drawn: Author
Checked: Checker

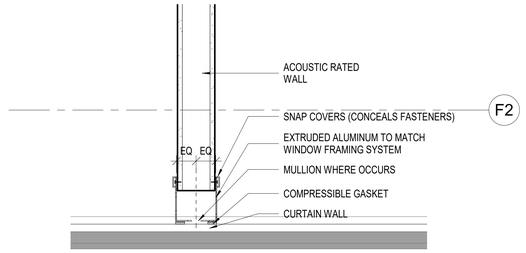
Drawing No.: A-411



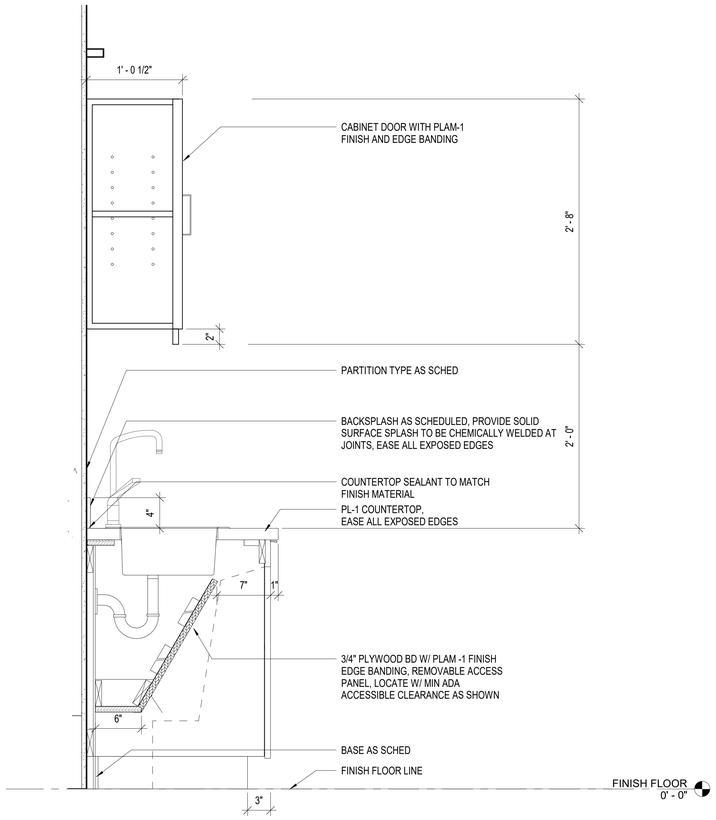
C1 CEILING PERIMETER DETAIL
1 1/2" = 1'-0"
A-111



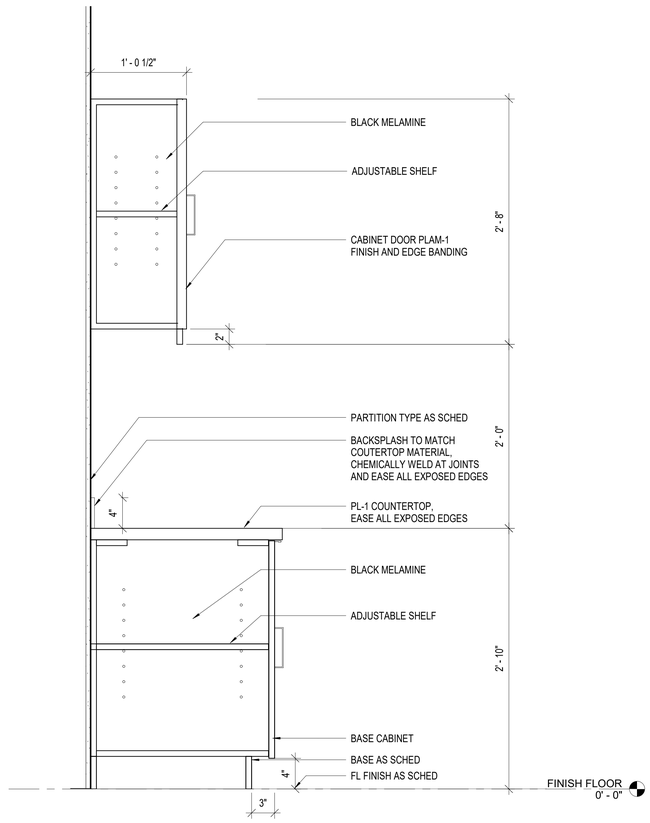
C3 CEILING DETAIL
1 1/2" = 1'-0"
A-111



C5 CURTAIN WALL DETAIL
1 1/2" = 1'-0"
A-101



A1 CASEWORK DETAIL
1 1/2" = 1'-0"
A-411



A3 CASEWORK DETAIL
1 1/2" = 1'-0"
A-411

GRAPHIC SCALES:
0 6" 1' 2'
1 1/2" = 1'-0"

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OWNER: HOUSTON AIRPORTS

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

CONSULTANT: 4b technology

SEAL:

REGISTERED ARCHITECT BRIAN M. REDDY 25538 STATE OF TEXAS

1-14-2022

IDO BUILDING STANDARDS SPACE FIT-OUT

GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO:	N/A
CIP NO:	N/A
HAS NO:	N/A

KEY PLAN:

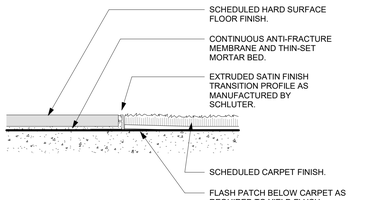
Jacobs Project No.: WHXK7103

Drawing Title:
INTERIOR DETAILS

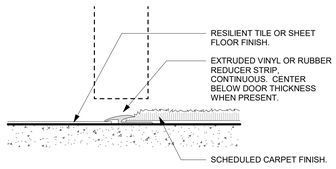
Date: 01/28/22
Designed: Designer
Drawn: Author
Checked: Checker
Drawing No.: A-571

ROOM FINISH SCHEDULE

ROOM NO.	NAME	FLOORING		BASE		NORTH WALL		EAST WALL		SOUTH WALL		WEST WALL			CEILING		CEILING HIEGHT	REMARKS
		SUBSTRATE MATERIAL	FLOORING SYSTEM	SUBSTRATE MATERIAL	BASE SYSTEM	SUBSTRATE MATERIAL	FINISH SYSTEM	SUBSTRATE MATERIAL	FINISH SYSTEM	SUBSTRATE MATERIAL	FINISH SYSTEM	SUBSTRATE MATERIAL	FINISH SYSTEM	FINISH COLOR	SUBSTRATE MATERIAL	FINISH SYSTEM		
501	IDF	CONC	VCT-1	GYP	RB-1	GYP	PT-1, FIRE RETARDANT PLYWOOD	GYP	PT-1, FIRE RETARDANT PLYWOOD	GYP	PT-1, FIRE RETARDANT PLYWOOD	GYP	PT-1, FIRE RETARDANT PLYWOOD	GYP	EXP	OPEN TO STRUCTURE	--	3
502	COLLABORATION	CONC	CPT-4	GYP	RB-2	GYP	PT-1,GPB-1	GYP	VWC-1	-	GPB-2	GYP	PT-1	GYP	APC	APC-1	9'-0"	
503	COFFEE BAR	CONC	LVT-1	GYP	RB-1	GYP	PT-1	GYP	PT-1	GYP	PT-1	GYP	PT-1	GYP	GYP	PT-1	8'-8"	
504	COPY ROOM	CONC	LVT-1	GYP	RB-1	GYP	PT-1	GYP	PT-1	GYP	GPB-1	GYP	PT-1	GYP	GYP	PT-1	8'-8"	
505	OFFICE	CONC	CPT-1, CPT-2, CPT-3	GYP	RB-2	--	G2	GYP	PT-1	EXST	EXST	GYP	PT-1, GPB-1	GYP	APC	APC-1	9'-0"	
506	OFFICE	CONC	CPT-1, CPT-2, CPT-3	GYP	RB-1, RB-2	--	G2	GYP	PT-2	EXST	EXST	GYP	PT-1, GPB-1	GYP	APC	APC-1	9'-0"	
507	OFFICE	CONC	CPT-1, CPT-2, CPT-3	GYP	RB-1, RB-2	--	G2	GYP	PT-2	EXST	EXST	GYP	PT-1, GPB-1	GYP	APC	APC-1	9'-0"	
508	OFFICE	CONC	CPT-1, CPT-2, CPT-3	GYP	RB-1, RB-2	--	G2	GYP	PT-2	EXST	EXST	EXST	EXST	GYP	APC	APC-1	9'-0"	
509	OPEN OFFICE	CONC	CPT-1, CPT-2, CPT-3	GYP	RB-1	GYP	PT-1	GYP	PT-1	--	G2	EXST	EXST	GYP	APC, GYP	APC-1, PT-1	VARY	6
510	DISCUSSION / WAITING	CONC	CPT-4	GYP	RB-1	GYP	PT-1,GPB-1	GYP	VWC-2	--	--	--	--	GYP	APC	APC-1, APC-3	VARY	6
511	STORAGE	CONC	VCT-1	GYP	RB-1	GYP	PT-1	GYP	PT-1	GYP	PT-1	GYP	PT-1	GYP	EXP	OPEN TO STRUCTURE	--	



A1 TILE TO CARPET TILE
6" = 1'-0"



A2 VCT TO CARPET TILE
6" = 1'-0"

ROOM FINISH SCHEDULE GENERAL NOTES

1. REFER TO PLANS FOR PARTITION TYPES.
2. PROVIDE "V" SHAPED CONTROL JOINTS IN GYPSUM BOARD ASSEMBLIES AT 30'-0" OC MAXIMUM OR AS NOTED.
3. PROVIDE FIRESTOPPING AT PERIMETERS AND PENETRATIONS OF FIRE RATED GYPSUM BOARD ASSEMBLIES.
4. PROVIDE TRANSITION STRIPS AT ALL CHANGES IN FLOOR FINISH MATERIALS.
5. PAINT ALL STEEL DOORS AND FRAMES.
6. PROVIDE WATER RESISTANT GYPSUM BOARD AT PARTITIONS WITH PLUMBING FIXTURES AND THROUGHOUT TOILET AND SHOWER ROOMS UNLESS OTHERWISE NOTED.

ROOM FINISH SCHEDULE REMARKS

1. PAINT ALL EXPOSED STEEL COLUMNS UNLESS OTHERWISE NOTED.
2. PROVIDE 1/2" CEMENT BOARD UNDER ALL WALL/PARTITION TILE OVER STUDS.
3. AT ALL ROOMS DESIGNATED AS "IT", "TELECOMMUNICATION", OR "TELECOM", PROVIDE 3/4", A/C GRADE OR BETTER, VOID-FREE, FIRE-RESISTANT PLYWOOD KILN-DRIED TO MAX MOISTURE CONTENT OF 15 PERCENT, ON FACE OF ALL PARTITIONS (COORDINATE WITH TELECOM REQUIREMENTS). EXTEND PLYWOOD FROM FLOOR TO 8'-0" AFF. FASTEN PLYWOOD THROUGH GYPSUM BOARD TO STEEL STUDS WITH 2" SCREWS AT 16" OC EACH WAY. PRIME AND PAINT PLYWOOD TO MATCH PARTITION. GYPSUM BOARD CONCEALED BY PLYWOOD NEED NOT BE PAINTED.
4. PAINT ALL SURFACES VISIBLE ABOVE VOIDS IN CEILING PT-1.
5. REFER TO INTERIOR ELEVATIONS FOR LOCATION OF FINISHES.
6. GYPSUM CEILING SHALL BE INSTALEED AT 8'-8" AND ACOUSTIC PANEL CEILING AT 9'-0".

ROOM FINISH SCHEDULE LEGEND

FLOORS
- CPT — CARPET TILE
- CONC — CONCRETE
- VCT — VINYL COMPOSITION TILE
- LVT — LUXURY VINYL TILE

BASE
- -- — NONE
- RB — RUBBER BASE

WALLS / PARTITIONS
- GL — GLAZING
- GYP — GYPSUM
- -- — NONE
- PT — PAINT
- GPB — GLASS PANEL BOARD
- EXST — EXISTING PARTITIONS

CEILINGS
- APC — ACOUSTICAL PANEL CEILING
- EXP — EXPOSED STRUCTURE
- GYP — GYPSUM BOARD
- -- — NONE
- PT — PAINT

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REVISIONS

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1	10/25/21	ISSUED FOR PERMIT
2	01/28/22	ISSUED FOR PERMIT, REV. 2

OWNER: HOUSTON AIRPORTS

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

CONSULTANT: 4b technology

SEAL:

REGISTERED ARCHITECT BRIAN M. REDDY 25536 STATE OF TEXAS

1-14-2022

IDO BUILDING STANDARDS SPACE FIT-OUT

GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO: N/A

CIP NO: N/A

HAS NO: N/A

KEY PLAN:

Jacobs Project No.: WHXK7103

Drawing Title: ROOM FINISH SCHEDULE

Date: 01/28/22

Designed: Designer
Drawn: Author
Checked: Checker

Drawing No.: A-601

MATERIAL LEGEND

FLOORS

CARPET FLOORING

CPT-1	MANUFACTURER:	SHAW CONTRACT
	STYLE NAME:	SEA TILE
	STYLE NUMBER:	5T172
	COLOR NAME:	SKYLINE
	COLOR NO.	72300
	SIZE:	24"X24"
	LOCATION:	COLLABORATION, OFFICE, OPEN OFFICE
CPT-2	MANUFACTURER:	SHAW CONTRACT
	STYLE NAME:	APPLIED TILE
	STYLE NUMBER:	5T004
	COLOR NAME:	PHASE
	COLOR NO:	04401
	SIZE:	24"X24"
	LOCATION:	COLLABORATION, OFFICE, OPEN OFFICE
CPT-3	MANUFACTURER:	SHAW CONTRACT
	STYLE NAME:	APPLIED TILE
	STYLE NUMBER:	5T004
	COLOR NAME:	PHASE
	COLOR NO:	04505
	SIZE:	24"X24"
	LOCATION:	COLLABORATION, OFFICE, OPEN OFFICE
CPT-4	MANUFACTURER:	SHAW CONTRACT
	STYLE NAME:	BASE HEXAGON
	STYLE NUMBER:	5T159
	COLOR NAME:	SCALE
	COLOR NO:	59501
	SIZE:	28.8"X24.9"
	LOCATION:	DISCUSSION / WAITING

VINYL COMPOSITION TILE

VCT-1	MANUFACTURER:	MATCH EXISTING
	SERIES:	MATCH EXISTING
	COLOR NAME:	MATCH EXISTING
	COLOR NO:	MATCH EXISTING
	SIZE:	MATCH EXISTING
	LOCATION:	IDF, STORAGE

LUXURY VINYL TILE

LVT-1	MANUFACTURER:	SHAW CONTRACT
	STYLE NAME:	GRAIN
	STYLE NUMBER:	0364V
	COLOR NAME:	GINGER
	COLOR NO:	64820
	SIZE:	7"X48" NOMINAL
	LOCATION:	COFFEE BAR, COPY ROOM

WALL BASE

RUBBER BASE

RB-1	MANUFACTURER:	ROPPE OR EQUIAL
	SERIES:	--
	COLOR NAME:	TO MATCH PT-1
	COLOR NO:	--
	HEIGHT:	2 1/2"
RB-2	MANUFACTURER:	ROPPE OR EQUIAL
	SERIES:	--
	COLOR NAME:	TO MATCH PT-2
	COLOR NO:	--
	HEIGHT:	2 1/2"

WALLS/PARTITIONS

INTERIOR PAINT

PT-1	MANUFACTURER:	SHERWIN WILLIAMS OR EQUAL
	COLOR NAME:	WHITETAIL
	COLOR NO:	SW 7103
	LOCATION:	ALL SPACES
	FINISH:	EGGSHELL
PT-2	MANUFACTURER:	SHERWIN WILLIAMS OR EQUAL
	COLOR NAME:	BLACK MAGIC
	COLOR NO:	SW 6991
	LOCATION:	OFFICE
	FINISH:	EGGSHELL

GLASS

G1	THICKNESS:	3/8"
	LOCATION:	ENTRANCE
	NOTE:	REFER TO DOOR TYPE FOR DIMENSION
G2	THICKNESS:	5/8"
	LOCATION:	OFFICE, COLLABORATION
	NOTE:	REFER TO WINDOW TYPE FOR DIMENSION

WALL COVERING

VWC-1	MANUFACTURER:	MAHARAM OR EQUAL
	WIDTH:	52"
	COLOR NAME:	SLATE
	COLOR NUMBER	016
	STYLE NAME:	SYSTEM
	STYLE NUMBER:	399600
	REPEAT:	FULL WIDTH
	LOCATION:	COLLABORATION
VWC-2	MANUFACTURER:	MAHARAM OR EQUAL
	WIDTH:	52"
	COLOR NAME:	BLACK
	COLOR NUMBER	001
	STYLE NAME:	SYSTEM
	STYLE NUMBER:	399600
	REPEAT:	FULL WIDTH
	LOCATION:	OFFICE (505)

MISCELLANEOUS

GPB-1	MANUFACTURER:	CLARUS OR EQUAL
	SIZE:	4'-0"X8'-0"
	LOCATION:	OFFICE
	NOTE:	WRITEABLE & MAGNETIC

ACOUSTICAL PANEL CEILINGS

APC-1	MANUFACTURER:	ARMSTRONG CEILING SOLUTIONS
	STYLE:	ULTIMA TEGULAR FINE TEXTURE
	SIZE:	24"X24"X3/4" (1952) BEVELED TEGULAR
	COLOR:	WHITE
	GRID:	COEXTRUDED ALUMINUM??
	GRID SIZE:	2'X2' GRID 9/16" SUPRAFINE
	GRID COLOR:	WHITE??
APC-2 (NOT USED)	MANUFACTURER:	
	STYLE:	
	SIZE:	
	PANEL VENEER	
	PERFORATION:	
	GRID:	
	GRID SIZE:	
	GRID COLOR:	
APC-3	MANUFACTURER:	ARMSTRONG CEILING SOLUTIONS
	STYLE:	WOODWORKS LINEAR SOLID WOOD PANELS
	SIZE:	12"X96"X3/4" (6893W1), NOMINAL 3" WIDE PLANKS
	PANEL COLOR	GRILLE CHERRY
	GRID:	COEXTRUDED ALUMINUM??
	GRID SIZE:	15/16" PRELUDE XL

CASE WORK (INTERIOR ARCHITECTURAL WOODWORK)

PLAM-1	MANUFACTURER:	FOMICA OR EQUAL
	COLOR NAME:	BLACK-MATTE
	COLOR NO:	909-58
	FINISH:	MATTE
	LOCATION:	COPY ROOM, COFFEE BAR

PLASTIC LAMINATE

PL-1	MANUFACTURER:	FOMICA COLORCORE 2
	COLOR NAME:	BLACK - MATTE
	COLOR NO:	909-58
	LOCATION:	COFFEE BAR, COPY ROOM
	NOTE:	PLAM COUNTERTOP

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OWNER: HOUSTON AIRPORTS

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

CONSULTANT: 4b technology

SEAL:

REGISTERED ARCHITECT
BRIAN M. REDDY
25536
STATE OF TEXAS

1-14-2022

IDO BUILDING STANDARDS SPACE FIT-OUT

GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO: N/A

CIP NO: N/A

HAS NO: N/A

KEY PLAN:

Jacobs Project No.: WHXK7103

Drawing Title: MATERIAL LEGEND

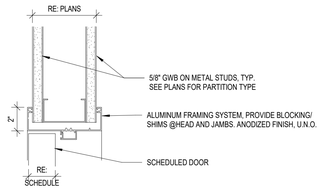
Date: 01/28/22

Designed: Designer
Drawn: Author
Checked: Checker

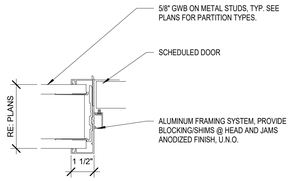
Drawing No.: A-602

DOOR SCHEDULE

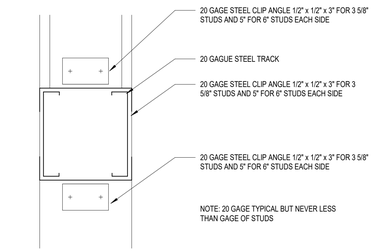
DOOR NO.	DOOR					FRAME					FIRE RATING	HARDWARE	REMARKS
	TYPE	MATERIAL	GLAZING	SIZE: WIDTH x HEIGHT	THICKNESS	TYPE	MATERIAL	HEAD DETAIL	JAMB DETAIL	SILL DETAIL			
501	F	WD	--	3'-0" X 8'-10 1/2"	0'-1 3/4"	1	HM	C1/A-603	C2/A-603	--	45 MIN	1	2, 6
502	S	WD	--	3'-2" X 7'-10 1/2"	0'-1 3/4"	2	ALUM	--	--	--	0	4	4
505	S	WD	--	3'-2" X 7'-10 1/2"	0'-1 3/4"	2	ALUM	--	--	--	0	3	3
506	S	WD	--	3'-2" X 7'-10 1/2"	0'-1 3/4"	2	ALUM	--	--	--	0	3	3
507	S	WD	--	3'-2" X 7'-10 1/2"	0'-1 3/4"	2	ALUM	--	--	--	0	3	3
508	S	WD	--	3'-2" X 7'-10 1/2"	0'-1 3/4"	2	ALUM	--	--	--	0	3	3
509A	FG	WD,G	G1	3'-0" X 8'-10 1/2"	0'-1 3/4"	1	ALUM	C1/A-603	C2/A-603	--	0	1	2, 6, 7
509B	--	--	--	4'-6" X 8'-10 1/2"	0'-1 3/4"	1	ALUM			--	--	--	
509D	--	--	--	4'-6" X 8'-10 1/2"	0'-1 3/4"	1	ALUM			--	--	--	
511	F	WD	--	3'-0" X 8'-10 1/2"	0'-1 3/4"	1	ALUM	C1/A-603	C2/A-603	--	0	2	5



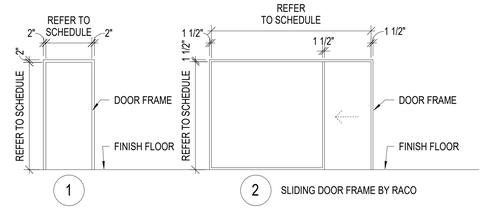
C1 DOOR HEAD DETAIL
3" = 1'-0"



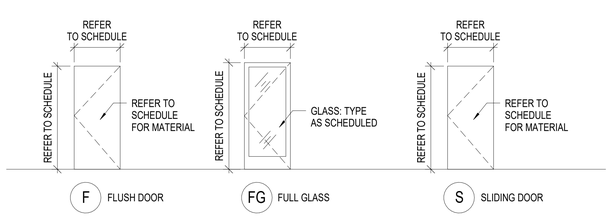
C2 DOOR JAMB DETAIL
3" = 1'-0"



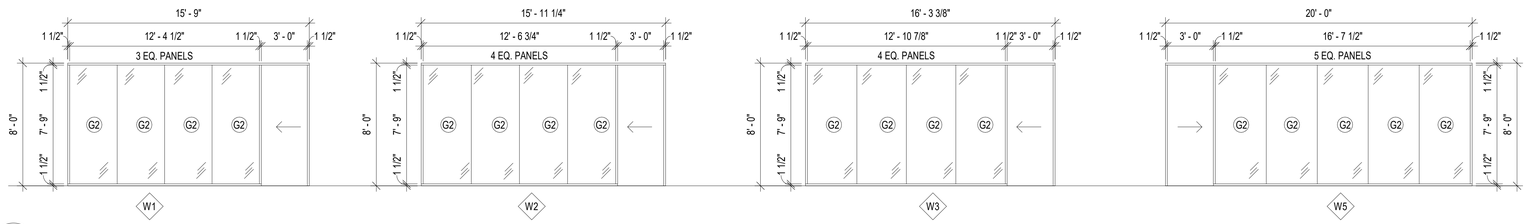
C3 BOXED HEADER DETAIL AT CASED OPENING
3" = 1'-0"



B1 FRAME TYPES
1/4" = 1'-0"



B2 DOOR TYPES
1/4" = 1'-0"



A1 WINDOW TYPES
1/4" = 1'-0"

DOOR SCHEDULE GENERAL NOTES

1. ALL WOOD DOORS SHALL BE PREFINISHED - REFER TO SPECIFICATIONS
2. DO NOT PAINT LABELS OF TESTING AGENCY ON FIRE-RATED DOORS AND FRAMES
3. ALL FIRE-RATED DOORS SHALL BE SELF-CLOSING AND SELF-LATCHING
4. FIRE DOORS AND FRAMES SHALL HAVE AN APPROVED LABEL OR LISTING MARK INDICATING THE FIRE-PROTECTION RATING, WHICH IS PRIMARILY AFFIXED AT THE FACTORY WHERE FABRICATION AND ASSEMBLY ARE PERFORMED.
5. FIRE-RATED DOOR FRAMES SHALL BE INSTALLED STRICTLY PER MANUFACTURER'S PRINTED INSTRUCTIONS. MANUFACTURER'S PRINTED INSTRUCTIONS SHALL BE MADE AVAILABLE TO THE INSPECTION AUTHORITY.
6. ALL EXIT DOOR HARDWARE SHALL ALLOW DOORS TO BE OPENED IN THE DIRECTION OF EXIT WITHOUT THE USE OF A KEY OR SPECIAL KNOWLEDGE OR EFFORT.
7. THE DOOR FRAME MANUFACTURER SHALL VERIFY ACTUAL WALL / PARTITION THICKNESS WITH CONTRACTOR PRIOR TO FABRICATION OF DOOR FRAMES.
8. REFER TO SPECIFICATIONS FOR HARDWARE GROUPS.
9. REFER TO FINISH SCHED. FOR GLAZING/GLASS TYPES.

DOOR SCHEDULE REMARKS

1. UNDERCUT DOOR 3/4" COORDINATE BOTTOM/UNDERCUT OF DOORS WITH FINISH MATERIALS, THRESHOLDS, ETC.
2. CARD READER
3. MATCH TYPICAL OFFICE DOOR TYPE
4. MATCH TYPICAL QUIET ROOM DOOR TYPE, DOORS 204, 205
5. MATCH TYPICAL JANITOR/STORAGE DOOR TYPE, DOOR 230
6. MATCH TYPICAL IDF DOOR TYPE, DOOR 109
7. FULL HEIGHT GRAPHIC FILM OVER GLAZING TO MATCH EXISTING DOORS.

DOOR SCHEDULE LEGEND

ALUM	ALUMINUM
WD	SOLID CORE WOOD
G	GLASS

GLASS TYPE SCHEDULE

G1	3/8" CLEAR, FULLY TEMPERED
G2	5/8" CLEAR, FULLY TEMPERED

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REVISIONS

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1	10/25/21	ISSUED FOR PERMIT
2	01/28/22	ISSUED FOR PERMIT, REV. 2

OWNER: HOUSTON AIRPORTS

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

CONSULTANT: 4b technology

SEAL:

REGISTERED ARCHITECT
BRIAN M. REDDY
25536
STATE OF TEXAS
1-14-2022

IDO BUILDING STANDARDS SPACE FIT-OUT

GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO: N/A

CIP NO: N/A

HAS NO: N/A

KEY PLAN:

Jacobs Project No.: WHXX7103

Drawing Title:
DOOR SCHEDULE, DOOR DETAILS, AND WINDOW TYPES

Date: 01/28/22

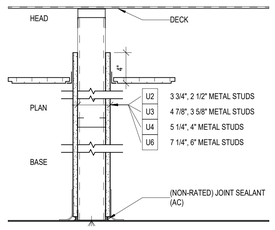
Designed: Designer
Drawn: Author
Checked: Checker

Drawing No.: A-603

TYPE	FIRE RATING	STUD GAUGE	STUD SPACING	LIMITING HEIGHT L/240	LIMITING HEIGHT L/360	ACOUSTIC INSULATION	STC	UL #
A3	NR	25	16" O.C.	14'-4"	12'-4"	3 1/2"	46	-
1A3	1	25	16" O.C.	14'-4"	12'-4"	3 1/2"	46	U465
A4	NR	25	16" O.C.	15'-4"	13'-4"	4"	47	-
1A4	1	25	16" O.C.	15'-4"	13'-4"	4"	47	U465
A6	NR	25	16" O.C.	16'-9	17'-11"	6"	50	-
1A6	1	25	16" O.C.	16'-9"	17'-11"	6"	50	U465

A | INTERIOR PARTITION TYPE SCALE: 1 1/2" = 1'-0"

A1 PARTITION TYPE - A
1 1/2" = 1'-0"



TYPE	FIRE RATING	STUD GAUGE	STUD SPACING	LIMITING HEIGHT L/240	LIMITING HEIGHT L/360	ACOUSTIC INSULATION	STC	UL #
U2	NR	25	16" O.C.	-	-	-	-	-
U3	NR	25	16" O.C.	-	-	-	-	-
U4	NR	25	16" O.C.	-	-	-	-	-
U6	NR	25	16" O.C.	-	-	-	-	-

H | INTERIOR PARTITION TYPE SCALE: 1 1/2" = 1'-0"

A2 PARTITION TYPE - U
1 1/2" = 1'-0"

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OWNER: HOUSTON AIRPORTS

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

CONSULTANT: 4b technology

SEAL:

REGISTERED ARCHITECT BRIAN M. READY 25536 STATE OF TEXAS

1-14-2022

IDO BUILDING STANDARDS SPACE FIT-OUT

GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO: N/A

CIP NO: N/A

HAS NO: N/A

KEY PLAN:

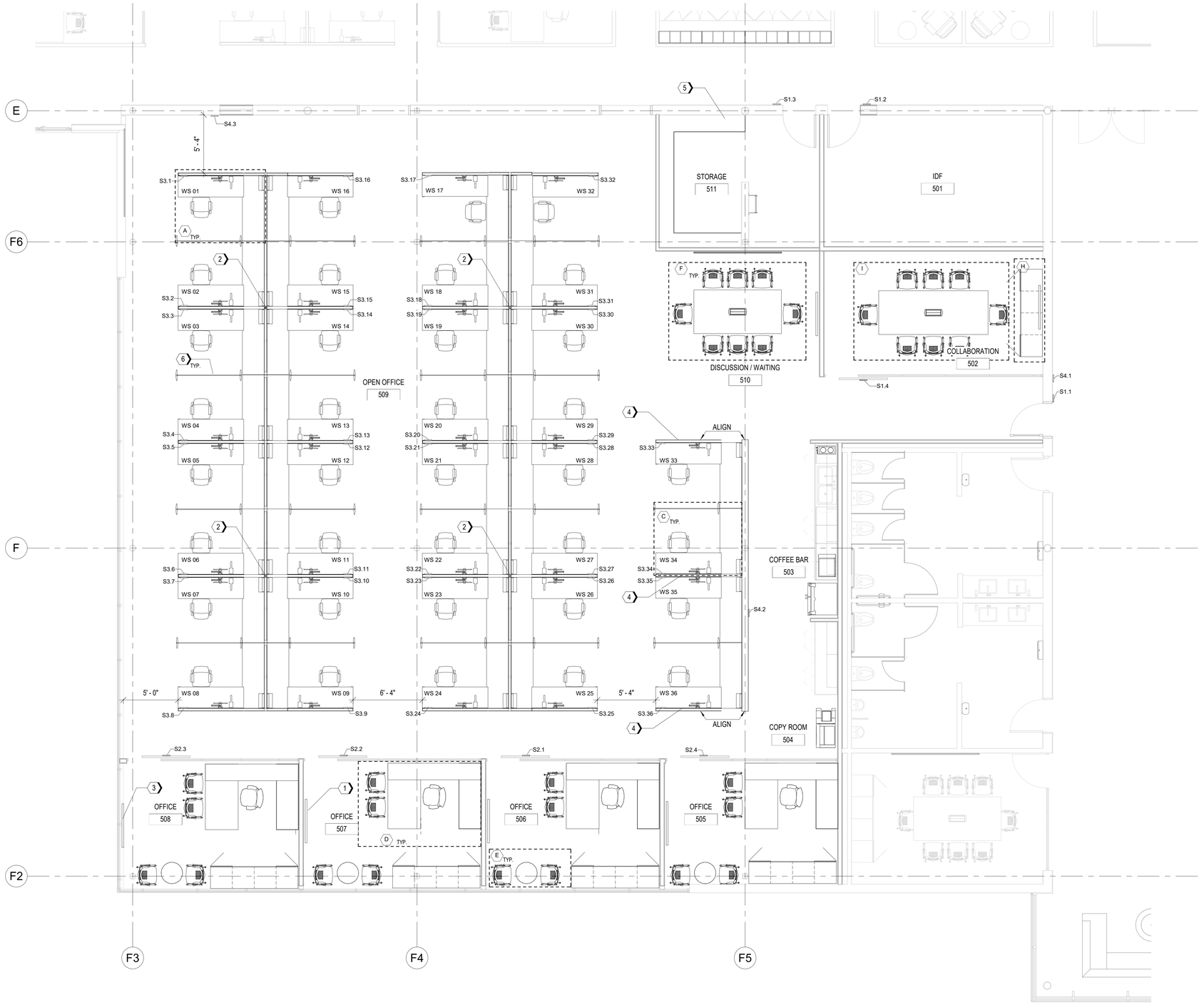
Jacobs Project No.: WHXK7103

Drawing Title:
PARTITION TYPES

Date: 01/28/22

Designed: Designer
Drawn: Author
Checked: Checker

Drawing No.: A-701



GENERAL NOTES

A. ELECTRICAL RECEPTACLES TO BE MOUNTED AT 5'-0" AFF. AT THE LOCATION OF MONITORS.

B. BUILDING STANDARDS FIT. OUT TO MATCH EXISTING IDO BUILDING STANDARDS IN ALL "LIKE SITUATIONS", INCLUDING, BUT NOT LIMITED TO, MATERIALS, MILLWORK, HARDWARE, GLAZING, FURNITURE, FIXTURES AND EQUIPMENT. IT IS THE INTENT OF THESE DOCUMNETS TO DEPICT THE APPLICATION OF THOSE STANDARDS TO THIS SPACE. IF THE DOCUMENTS VARY FROM ACTUAL CONDITIONS, OR STANDARDS, NOTIFY THE ARCHITECT/ ENGINEER TO CLARIFY DIRECTION.

C. REFER TO A-802 FOR FURNITURE SCHEDULE AND SIGNAGE SCHEDULE.

KEYNOTES

1. WALL MONITOR DISPLAY.
2. POWER POLE LOCATION
   REFER TO TA DRAWINGS FOR DISPLAY SIZE.
3. OVERHEAD MOUNTED DISPLAY
   REFERENCE TA DRAWINGS FOR DISPLAY SIZE.
4. HIGH WALL CUBICLES.
5. SHELVING - BUILT IN.
6. ACRYLIC PARTITION WORKSTATION DIVIDER.

A1 FURNITURE AND SIGNAGE PLAN

1/4" = 1'-0"

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111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO: N/A

CIP NO: N/A

HAS NO: N/A

KEY PLAN:

PLAN NORTH

Jacobs Project No.: WHXK7103

Drawing Title:
FURNITURE AND SIGNAGE PLAN

Date: 01/28/22

Designed: Designer
Drawn: Author
Checked: Checker

Drawing No.: A-801

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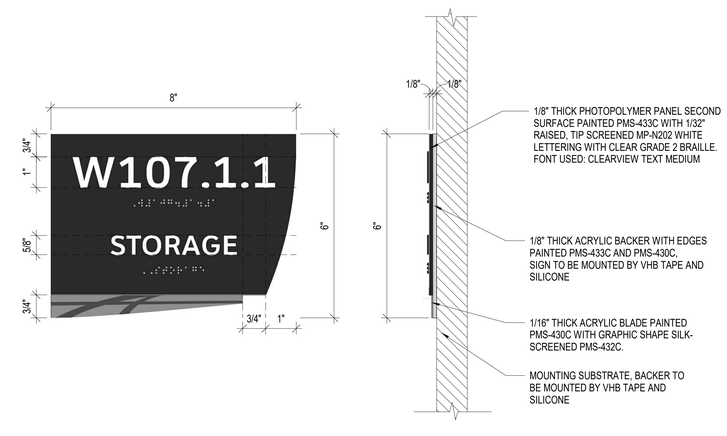
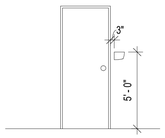
SIGNAGE SCHEDULE

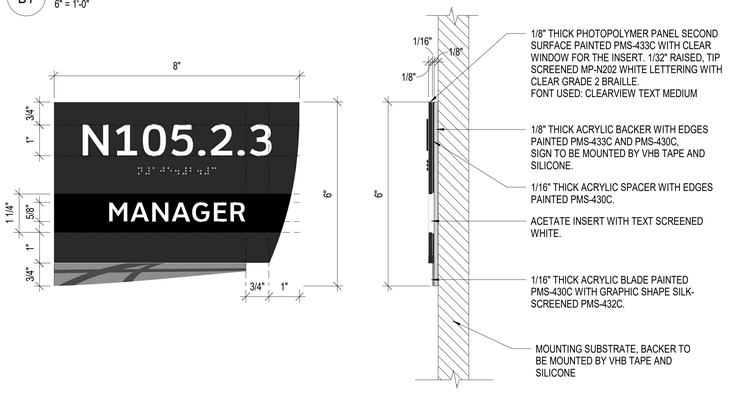
SIGN #	SIGN TYPE	NUMBER ON SIGN	TEXT ON SIGN	DETAILS	REMARKS
S1.1	ROOM ID	T.B.D	T.B.D	A1, B3/A-802	NUMBER AND TEXT ON SIGN TO BE PROVIDED BY HAS
S1.2	ROOM ID	T.B.D	IDF	A1, B3/A-802	NUMBER ON SIGN TO BE PROVIDED BY HAS
S1.3	ROOM ID	T.B.D	STORAGE	A1, B3/A-802	NUMBER ON SIGN TO BE PROVIDED BY HAS
S1.4	ROOM ID	T.B.D	C. ALFRED ANDERSON	A1, A3/A-802	NUMBER ON SIGN TO BE PROVIDED BY HAS
S2.1	ROOM ID WITH INSERT	T.B.D	T.B.D	B1, A3/A-802	NUMBER AND TEXT ON SIGN TO BE PROVIDED BY HAS
S2.2	ROOM ID WITH INSERT	T.B.D	T.B.D	B1, A3/A-802	NUMBER AND TEXT ON SIGN TO BE PROVIDED BY HAS
S2.3	ROOM ID WITH INSERT	T.B.D	T.B.D	B1, A3/A-802	NUMBER AND TEXT ON SIGN TO BE PROVIDED BY HAS
S2.4	ROOM ID WITH INSERT	T.B.D	T.B.D	B1, A3/A-802	NUMBER AND TEXT ON SIGN TO BE PROVIDED BY HAS
S3.1	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S3.2	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S3.3	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S3.4	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S3.5	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S3.6	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S3.7	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S3.8	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S3.9	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S3.10	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S3.11	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S3.12	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S3.13	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S3.14	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S3.15	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S3.16	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S3.17	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S3.18	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S3.19	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S3.20	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S3.21	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S3.22	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S3.23	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S3.24	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S3.25	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S3.26	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S3.27	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S3.28	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S3.29	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S3.30	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S3.31	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S3.32	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S3.33	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S3.34	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S3.35	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S3.36	WORKSTATION ID WITH INSERT	T.B.D	T.B.D	T.B.D	GUIDELINE OF SIGNAGE DESIGN TO BE PROVIDED BY HAS
S4.1	FIRE EXTINGUISHER SIGN	N.A	FIRE EXTINGUISHER	N.A	RELOCATED SIGN, MATCH EXISTING MOUNTING REQUIREMENTS
S4.2	FIRE EXTINGUISHER SIGN	N.A	FIRE EXTINGUISHER	N.A	MATCH EXISTING MOUNTING REQUIREMENTS
S4.3	FIRE EXTINGUISHER SIGN	N.A	FIRE EXTINGUISHER	N.A	MATCH EXISTING MOUNTING REQUIREMENTS



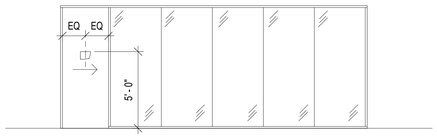
B1 SIGNAGE DETAIL - ROOM ID
6" = 1'-0"



B3 SIGNAGE MOUNTING DETAIL
1/4" = 1'-0"



A1 SIGNAGE DETAIL - ROOM ID WITH INSERT
6" = 1'-0"



A3 SIGNAGE MOUNTING DETAIL
1/4" = 1'-0"

FURNITURE SCHEDULE

TYPE A

HERMAN MILLER, CANVAS SERIES W/ TU STORAGE
- PANEL HEIGHT: 42"H
- PANEL UPHOLSTERY: GR1, GEM, SLATE GREY
- PANEL TRIM: GRAPHITE
- ELECTRICAL: (2) DUPLEX/STATION, POWER POLE: GRAPHITE
- WORKSURFACE: LAMINATE, AGED CHERRY
- WORKSURFACE SUPPORTS: LAMINATE END PANEL/AGED CHERRY, CANTILEVERS-MISC./GRAPHITE
- STORAGE: LAMINATE, AGED CHERRY W/ GRAPHITE ACCENT
- PED CUSHION: LOOM, BRICK AND MORTAR
- ACCESSORY: PRIVACY SCREEN, FROSTED ACRYLIC & CLAMP MOUNTED
- ELECTRICAL RECEPTACLE, GRAPHITE

HERMAN MILLER, VERUS TASK CHAIR
- FEATURES: MESH BACK, SYNCHRONOUS TILT, SEAT DEPTH ADJ, ADJ LUMBAR
- SUPPORT: ADJ HEIGHT ARMS
- WEIGHT CAPACITY: 350 LBS.
- BACK: INTERWEAVE, CHARCOAL
- SEAT: GR1, TAILORED, GRAPHITE
- FRAME: BLACK
- CASTERS: CARPET APPLICATION

NOTES: ACRYLIC PARTITION WORKSTATION DIVIDER TO MATCH OFFICE STANDARD

TYPE B - NOT USED

TYPE C

HERMAN MILLER, CANVAS SERIES W/ TU STORAGE
- PANEL HEIGHT: 72"H (MATCH EXISTING)
- PANEL UPHOLSTERY: GR1, GEM, SLATE GREY
- PANEL TRIM: GRAPHITE
- ELECTRICAL: (2) DUPLEX/STATION, POWER POLE: GRAPHITE
- WORKSURFACE: LAMINATE, AGED CHERRY
- WORKSURFACE SUPPORTS: LAMINATE END PANEL/AGED CHERRY, CANTILEVERS-MISC./GRAPHITE
- STORAGE: LAMINATE, AGED CHERRY W/ GRAPHITE ACCENT
- PED CUSHION: LOOM, BRICK AND MORTAR
- ACCESSORY: PRIVACY SCREEN, FROSTED ACRYLIC & CLAMP MOUNTED
- ELECTRICAL RECEPTACLE, GRAPHITE

HERMAN MILLER, VERUS TASK CHAIR
- FEATURES: MESH BACK, SYNCHRONOUS TILT, SEAT DEPTH ADJ, ADJ LUMBAR
- SUPPORT: ADJ HEIGHT ARMS
- WEIGHT CAPACITY: 350 LBS.
- BACK: INTERWEAVE, CHARCOAL
- SEAT: GR1, TAILORED, GRAPHITE
- FRAME: BLACK
- CASTERS: CARPET APPLICATION

NOTES:

TYPE D

HERMAN MILLER, CANVAS SERIES W/ TU STORAGE & MOTIA ADJ HEIGHT TABLE
- WORKSURFACE: LAMINATE, AGED CHERRY
- WORKSURFACE SUPPORTS: LAMINATE, AGED CHERRY
- STORAGE: LAMINATE, AGED CHERRY
- DRAWER PULL: GRAPHITE
- TABLE BASES: GRAPHITE SATIN
- ACCESSORY: CLAMP MOUNTED ELECTRICAL RECEPTACLE, GRAPHITE

HERMAN MILLER, VERUS TASK CHAIR
- FEATURES: MESH BACK, SYNCHRONOUS TILT, SEAT DEPTH ADJ, ADJ LUMBAR
- SUPPORT: ADJ HEIGHT ARMS
- WEIGHT CAPACITY: 350 LBS.
- BACK: INTERWEAVE, CHARCOAL
- SEAT: GR1, TAILORED, GRAPHITE
- FRAME: BLACK
- CASTERS: CARPET APPLICATION

HERMAN MILLER, VERUS SIDE CHAIR (PRIVATE OFFICE GUEST CHAIR)
- FEATURES: MESH, FIXED ARMS, CASTERS (NOT SHOWN)
- BACK: INTERWEAVE, BLACK
- SEAT: GR1, TAILORED, BLACK
- FRAME: METALLIC SILVER
- CASTERS: CARPET APPLICATION

NOTES: WALL CABINETS TO BE MOUNTED ON REAR WALL

TYPE E

HERMAN MILLER, EVERYWHERE TABLE SERIES
- TOP: LAMINATE, AGED CHERRY
- EDGE: THERMO EDGE, AGED CHERRY
- BASE: GRAPHITE SATIN

HERMAN MILLER, VERUS SIDE CHAIR
- FEATURES: MESH, FIXED ARMS, CASTERS
- BACK: INTERWEAVE, BLACK
- SEAT: GR1, TAILORED, BLACK
- FRAME: METALLIC SILVER
- CASTERS: CARPET APPLICATION

NOTES:

TYPE F

HERMAN MILLER, CANVAS SERIES W/ TU STORAGE
- PANEL HEIGHT: 42"H
- PANEL UPHOLSTERY: GR1, GEM, SLATE GREY
- PANEL TRIM: GRAPHITE
- ELECTRICAL: (2) DUPLEX/STATION, POWER POLE: GRAPHITE
- WORKSURFACE: LAMINATE, AGED CHERRY
- WORKSURFACE SUPPORTS: LAMINATE END PANEL/AGED CHERRY, CANTILEVERS-MISC./GRAPHITE
- STORAGE: LAMINATE, AGED CHERRY W/ GRAPHITE ACCENT
- PED CUSHION: LOOM, BRICK AND MORTAR
- ACCESSORY: PRIVACY SCREEN, FROSTED ACRYLIC & CLAMP MOUNTED
- ELECTRICAL RECEPTACLE, GRAPHITE

NOTES:

TYPE G

HERMAN MILLER, EVERYWHERE TABLE SERIES
- TOP: LAMINATE, AGED CHERRY
- EDGE: THERMO EDGE, AGED CHERRY
- BASE: GRAPHITE SATIN

HERMAN MILLER, VERUS SIDE CHAIR
- FEATURES: NO ARMS, CASTERS
- BACK: INTERWEAVE, BLACK
- SEAT: GR1, TAILORED, BLACK
- FRAME: METALLIC SILVER
- CASTERS: CARPET APPLICATION

NOTES:

TYPE H

NATIONAL, WAVEWORKS SERIES
- WORKSURFACE: LAMINATE, AUTUMN CHERRY
- BASE: LAMINATE, AUTUMN CHERRY
- DRAWER/DOOR HARDWARE: BAR, BLACK

NOTES:

TYPE I

NATIONAL, UNIVERSAL TABLE SERIES
- TOP: LAMINATE, AUTUMN CHERRY
- BASE: LAMINATE, AUTUMN CHERRY
- ELECTRICAL/DATA: BLACK

HERMAN MILLER, VERUS SIDE CHAIR
- FEATURES: MESH, FIXED ARMS, CASTERS
- BACK: INTERWEAVE, BLACK
- SEAT: GR1, TAILORED, BLACK
- FRAME: METALLIC SILVER
- CASTERS: CARPET APPLICATION

NOTES:

JACOBS
5985 Rogerdale Road
Houston, TX 77072 (281) 721-8400
www.jacobs.com
TBPE Firm #2966

REVISIONS

Mark	Date	Description
1	10/25/21	ISSUED FOR PERMIT
2	01/28/22	ISSUED FOR PERMIT, REV. 2

OWNER: HOUSTON AIRPORTS

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

CONSULTANT: 4b technology

SEAL:

REGISTERED ARCHITECT
BRIAN W. M. REDDY
25536
STATE OF TEXAS
1-14-2022

IDO BUILDING STANDARDS SPACE FIT-OUT

GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO: N/A

CIP NO: N/A

HAS NO: N/A

KEY PLAN:

Jacobs Project No.: WHXK7103

Drawing Title:
FURNITURE AND SIGNAGE SCHEDULES

Date: 01/28/22

Designed: Designer
Drawn: Author
Checked: Checker

Drawing No.: A-802

C:_Revit_Local_Models\2018\WHXK7103_HAS IDO_NEW_rachel.henry.rvt

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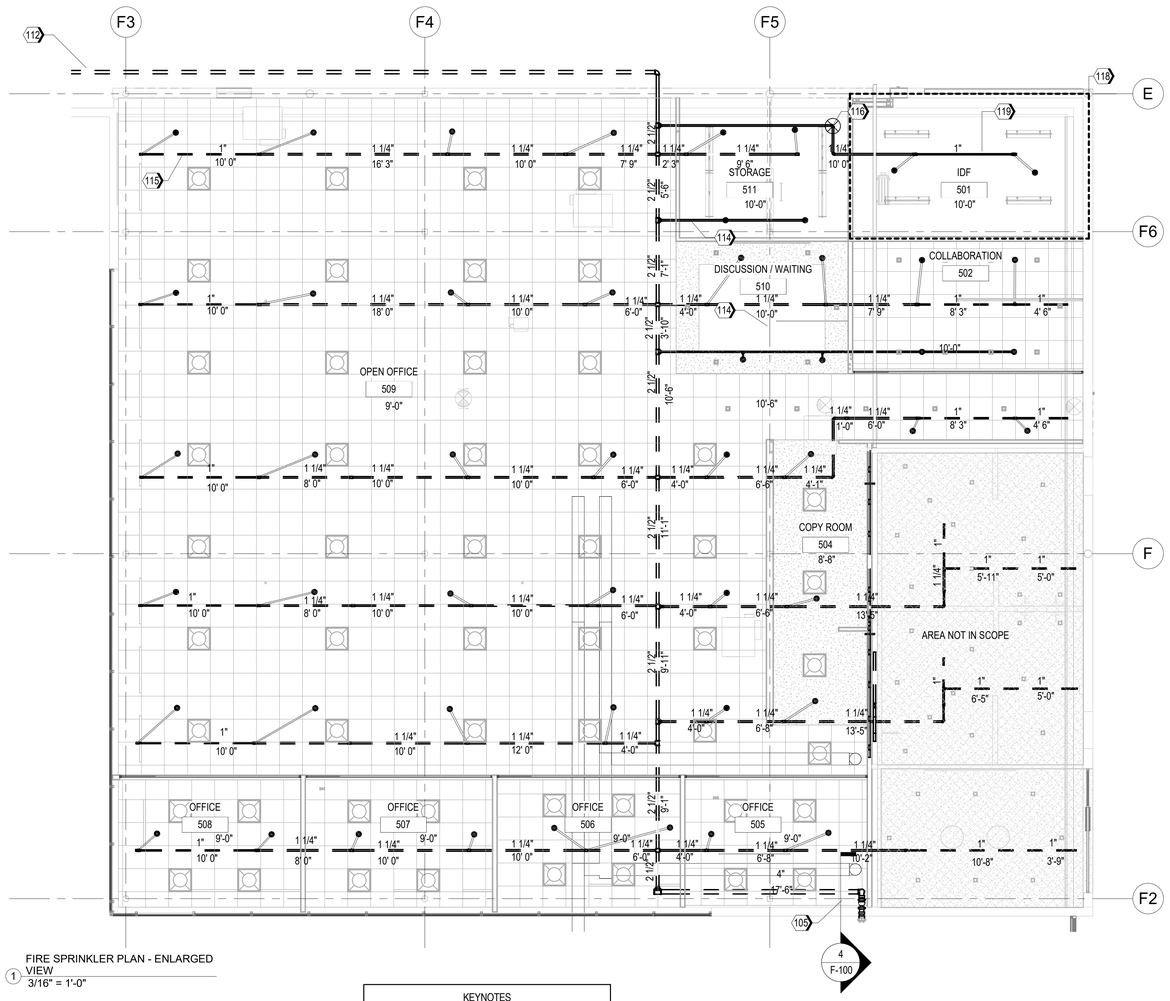
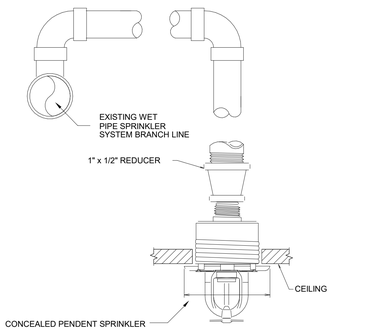


1 FIRE SPRINKLER PLAN - ENLARGED VIEW
3/16" = 1'-0"

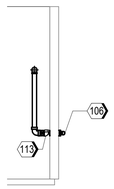
KEYNOTES	
Key Value	Keynote Text
105	EXISTING FDC LOCATION
106	EXISTING FDC
112	SEE F101 FOR CONTINUATION BACK TO RISER
113	CHECK VALVE
114	PROVIDE NEW PIPING
115	DASHED LINES INDICATE EXISTING PIPES (TYP)
116	LOCATION FOR DOUBLE INTERLOCK PREACTION RISER. MAIN DRAIN TO BE PIPED TO EXISTING RESTROOM
118	PROVIDE PREACTION COVERAGE THROUGHOUT IDF SPACE
119	DEMOLISH EXISTING WET PIPE OVER TOP OF IDF SPACE



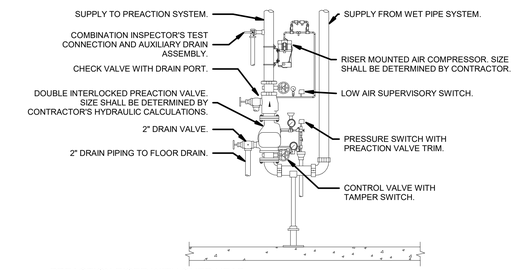
NOTE: A. REFER TO SPRINKLER SCHEDULE AND PROJECT SPECIFICATIONS FOR SPRINKLER TYPE.

B. CENTER IN CEILING GRID.

2 RETURN BEND DETAIL
N.T.S



4 EXISTING FDC DETAIL
3/16" = 1'-0"



3 PREACTION RISER WITH OVER HEAD SUPPLY
N.T.S.

FIRE PROTECTION DESIGN CRITERIA

SYMBOL	OCCUPANCY	TYPE	DESIGN DENSITY (GPM/SF)	HYDRAULIC REMOTE AREA (SF)	MAX. COVERAGE PER SPRINKLER HEAD (SF)	HOSE STREAM		AREAS OF COVERAGE
						INSIDE GPM	OUTSIDE GPM	
LH	LIGHT HAZARD	WET	0.10	1500	225		100	OFFICE ROOMS, HUDDLE ROOM.
OH-1	ORDINARY HAZARD GROUP I	WET	0.15	1500	130		250	MISC STORAGE LESS THAN 8 FEET HIGH.
OH-2	ORDINARY HAZARD GROUP II	WET	0.20	1500	130		250	MISC STORAGE 8 - 12 FEET HIGH.
OH-2	ORDINARY HAZARD GROUP II	PRE-ACTION	0.20	1950	130		250	IDF

APPLICABLE PUBLICATIONS: THE FOLLOWING PUBLICATIONS SHALL BE USED AS A REFERENCE FOR THE DESIGN OF THE FIRE PROTECTION SYSTEM ON THIS PROJECT:

1. INTERNATIONAL BUILDING CODE - 2012 EDITION
2. NFPA 13 - STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS - 2010 EDITION

NOTE: DURING DESIGN CALCULATIONS, AN ALLOWANCE SHALL BE MADE FOR HOSE STREAM.

FIRE PROTECTION GENERAL NOTES

1. THE INTENT OF THESE PLANS IS TO PROVIDE INFORMATION TO THE REVIEWING AUTHORITIES THAT THE BUILDING WILL BE PROTECTED BY A SPRINKLER SYSTEM.
2. GENERAL AND SPECIAL CONDITIONS OF THE CONTRACT APPLY TO THE FIRE PROTECTION SCOPE OF WORK. THE FIRE PROTECTION DRAWINGS AND SPECIFICATIONS SHALL NOT BE INTERPRETED AS WAIVING OR OVERRULING ANY REQUIREMENTS EXPRESSED IN GENERAL CONDITIONS.
3. SCOPE: REVAMP EXISTING WET PIPE SPRINKLER SYSTEM AND ADD NEW DOUBLE INTERLOCK PREACTION SYSTEM IN SCOPE AREA FOR NEW CEILINGS AND PARTITION LAYOUT IN FULL COMPLIANCE WITH THE REQUIREMENTS OF 2010 NFPA 13, INTERNATIONAL BUILDING CODE AND THE LOCATION AUTHORITY HAVING JURISDICTION.
4. PERMITS: APPLY AND PAY FOR ALL NECESSARY PERMITS, FEES AND INSPECTION REQUIRED BY AND PUBLIC AUTHORITY HAVING JURISDICTION. ACREAGE CHARGES, FACILITIES CHARGES AND BOND PROPERTY ASSESSMENTS ARE NOT TO BE CONSTRUED TO BE A PART OF THIS CONTRACT.
5. WARRANTY: PROVIDE A ONE YEAR WARRANTY, FROM THE DATE OF ACCEPTANCE OF WORK BY THE OWNER, FOR ALL SPRINKLER SYSTEM MATERIALS AND EQUIPMENT.
6. COORDINATE ALL SPRINKLER PIPING LOCATIONS, SPRINKLER LOCATIONS AND EQUIPMENT LOCATIONS WITH OTHER TRADES TO AVOID CONFLICTS AND INTERFERENCES. FINAL PIPING AND EQUIPMENT LOCATIONS SHALL BE A CODE COMPLIANT INSTALLATION FOR ALL TRADES.
7. WHERE DISCREPANCIES ARE FOUND IN THE DRAWINGS AND SPECIFICATIONS THE MORE STRINGENT SHALL APPLY. CONTACT ENGINEER FOR CLARIFICATION.
8. OBTAIN A CURRENT FLOW TEST, LESS THAN 1 YEAR OLD, PRIOR TO STARTING THE DESIGN OF THE SPRINKLER SYSTEM. THE FLOW TEST CRITERIA SHALL INCLUDE THE STATIC PRESSURE, RESIDUAL PRESSURE, FLOW IN GPM, HORIZONTAL AND VERTICAL DISTANCE OF TEST FROM BASE OF FIRE RISER, THE NAME OF THE PERSON AND COMPANY WHOM PERFORMED THE FLOW TEST, THE TESTING COMPANY'S PHONE NUMBER, AND THE DATE AND TIME THE TEST WAS PERFORMED.
9. DESIGN AND HYDRAULICALLY CALCULATE THE SPRINKLER SYSTEM UTILIZING THE CURRENT FLOW TEST DATA. MEET ALL NFPA 13 REQUIREMENTS WHETHER OR NOT SPECIFICALLY INDICATED WITHIN THESE DOCUMENTS. TERMINATE THE HYDRAULIC CALCULATIONS AT THE CITY CONNECTION MINIMUM. INDICATE ON DRAWINGS ALL UNDERGROUND PIPE AND FITTINGS BOTH NEW AND EXISTING.
10. THE CONTRACTOR SHALL HAVE A DESIGNER ON STAFF WITH A CURRENT N.I.C.E.T. LEVEL III CERTIFICATION TO PREPARE THE WORKING PLANS AND HYDRAULIC CALCULATIONS IN ACCORDANCE WITH NFPA 13. THE N.I.C.E.T. DESIGNERS NAME. SIGNATURE AND CERTIFICATE NUMBER SHALL APPEAR ON THE WORKING DRAWINGS AND HYDRAULIC CALCULATIONS.
11. SUBMIT WORKING PLANS, HYDRAULIC CALCULATIONS AND MATERIALS DATA AND ACCESSORIES IN ELECTRONIC FORMAT (PDF) TO THE ARCHITECT / ENGINEER FOR REVIEW AND OBTAIN APPROVAL BEFORE STARTING THE INSTALLATION OF THE SPRINKLER SYSTEM.
12. THE CONTRACTOR SHALL SUBMIT WORKING PLANS AND HYDRAULIC CALCULATIONS EXPEDIENTLY TO THE AUTHORITIES HAVING JURISDICTION. APPROVAL FROM ALL AUTHORITIES HAVING JURISDICTION SHALL BE OBTAINED BEFORE STARTING THE INSTALLATION OF THE SPRINKLER SYSTEM.
13. AT THE COMPLETION OF THE PROJECT, PROVIDE TWO SETS OF RECORD DRAWINGS TO THE OWNER, CLEARLY SHOWING ANY CHANGES AND/OR MODIFICATIONS, ADDITIONS OR DELETIONS TO AND FROM THE CONSTRUCTION DOCUMENTS. THESE SETS SHALL BE REVIEWED BY THE ARCHITECT / ENGINEER BEFORE BEING TURNING OVER TO THE OWNER.
14. THESE DOCUMENTS DEPICT A PERFORMANCE LEVEL ENGINEERING DESIGN LAYOUT TO BE UTILIZED AS GUIDANCE FOR THE PLANNING OF THE FIRE ALARM SYSTEM BY THE CONTRACTOR. PROVIDE COMPLETE DOCUMENTS FOR REVIEW AND APPROVAL FROM THE ENGINEER AND THE AUTHORITY HAVING JURISDICTION PRIOR TO INSTALLATION. INCLUDE IN THE SHOP DRAWINGS, CALCULATIONS, AND ANY INCLUDE IN THE SHOP DRAWINGS, CALCULATIONS, AND ANY INSTALLATION AND COMPLY WITH LOCAL CODES AND AMENDMENTS.

INSTALLATION REQUIREMENTS:

1. PROVIDE ALL NECESSARY OFFSETS, RISES OR DROPS IN THE PIPING AND AUXILIARY DRAINS AS REQUIRED BY ALL APPLICABLE CODES WHETHER OR NOT SHOWN ON THE PLANS.
2. CUT WALLS, FLOORS AND CEILINGS AS REQUIRED FOR INSTALLATION OF SPRINKLER WORK. ALL CUTTING SHALL BE HELD TO A MINIMUM. PATCH AND FINISH SURFACES TO MATCH ADJOINING SURFACES. AVOID PENETRATING ANY MAIN STRUCTURAL BEAM. NOTIFY ARCHITECT OF ANY CONFLICTS.
3. CONCEALED FIRE PROTECTION SYSTEM ABOVE CEILINGS.
4. PAINT ALL EXPOSED FIRE PROTECTION SYSTEM PIPING . COLOR TO BE SELECTED BY THE ARCHITECT.
5. SPRINKLER LOCATIONS ARE TO BE IN THE CENTER OF THE CEILING TILE USING THE REFLECTED CEILING PLANS AND AS COORDINATED WITH THE CEILING CONTRACTOR.
6. WARRANT THE SYSTEM LABOR, MATERIALS AND EQUIPMENT FOR THE AMOUNT OF TIME SPECIFIED IN THE PROJECT MANUAL. IF NO WARRANTY SECTION IS PROVIDED, THEN WARRANT THE SYSTEM LABOR, MATERIAL AND EQUIPMENT FOR A MINIMUM OF ON YEAR AFTER COMPLETION AND ACCEPTANCE. PRIOR TO TURNING THE COMPLETED SYSTEM OVER TO THE OWNER, REVIEW THE INSTALLATION WITH THE ARCHITECT / ENGINEER AND REPLACE OR REPAIR ANY DEFECTIVE WORKMANSHIP, EQUIPMENT AND MATERIALS AT NO ADDITIONAL COST TO THE OWNER.

TESTING AND FLUSHING:

1. OVERHEAD SPRINKLER PIPING: TO BE TESTED FOR A PERIOD OF TWO HOURS AT A HYDROSTATIC PRESSURE OF 200 PSI OR 50 PSI IN ACCORDANCE WITH NFPA 13. AND ALL PIPING, VALVES, HEADS, ETC. SHALL BE WATERTIGHT.

SPRINKLER SCHEDULE

1. PROVIDE ADJUSTABLE CONCEALED PENDENT SPRINKLERS ALL LAY-IN ACOUSTICAL TITLE AND GYPBOARD CEILINGS. COORDINATE COLOR OF CONCEALED SPRINKLER HEAD COVER-PLATE WITH ARCHITECT.
2. SPRINKLERS SHALL BE QUICK RESPONSE, INTERMEDIATE TEMP UNLESS OTHERWISE REQUIRED BY NFPA 13.

* INSTALL SPRINKLERS IN ACCORDANCE WITH NFPA 13 AND THE MANUFACTURERS APPROVAL LISTING.

FIRE PROTECTION MATERIALS

1. ABOVE GRADE PIPING: BLACK STEEL PIPING (ASTM A53, ASTM A135, OR ASTM A795) SHALL BE LISTED FOR FIRE SPRINKLER PIPING USE. PIPING 2" AND SMALLER SHALL BE SCHEDULE 40 BLACK STEEL PIPE WELDED / THREADED OR ROLL GROOVED FOR MECHANICAL FITTINGS. PIPING 2 1/2" AND LARGER SHALL BE SCHEDULE 10 BLACK STEEL PIPE THREADED, OR ROLL GROOVED FOR MECHANICAL FITTINGS.
2. THREADED FITTINGS: UL-LISTED, STANDARD WEIGHT SUITABLE FOR PRESSURE UP TO 175 PSIG, CAST IRON MEETING ASTM A126 OR MALLEABLE IRON MEETING ASTM A197. THREADED CAST IRON FITTING SHALL MEET ANSI B16.4; FLANGED CAST IRON FITTINGS SHALL MEET ANSI B16.1. THREADED MALLEABLE IRON FITTINGS SHALL MEET ANSI B16.3.
3. GROOVED FITTINGS AND COUPLINGS: UL-LISTED. DUCTILE IRON MEETING ASTM A536, UTILIZING AN EDPM GASKET. PLAN-END FITTINGS AND COUPLINGS, OR WELDED-SEGMENTED FITTINGS SHALL NOT BE USED. CHANGES IN PIPE DIAMETER SHALL BE MADE USING TAPERED REDUCING FITTINGS. BUSHINGS OR GROOVED-END REDUCING COUPLINGS SHALL NOT BE USED UNLESS STANDARD REDUCING FITTINGS ARE NOT REGULARLY AVAILABLE.
4. PIPE HANGERS: UL-LISTED SWIVEL LOOP TYPE WITH PRE-GALVANIZED CARBON STEEL BAND, HANGER RODS SIZED PER NFPA 13, UL-LISTED STEEL OR MALLEABLE IRON BEAM CLAMPS, UL-LISTED ANCHORS. POWER DRIVEN ANCHORS SHALL NOT BE USED.
5. VALVES SHALL BE UL LISTED AND APPROVED FOR FIRE PROTECTION SERVICE.
6. ESCUTCHEON PLATES: PROVIDE CHROME PLATED ESCUTCHEON PLATES WHERE PIPES PASS THROUGH FINISHED WALLS, FLOORS, OR CEILING. PROVIDE PRIME COAT PAINTED ESCUTCHEON PLATES WHERE PIPES PASS THROUGH WALLS, CEILINGS, ETC. IN UNFINISHED EXPOSED AREAS.

FLOW TEST DATA

DATE/ TIME	LOCATION	PRESSURE		FLOW (GPM)	FLOW AT 20 PSI (GPM)
		STATIC (PSI)	RESIDUAL (PSI)		
03/18/2020 at 7:30 AM	HAS IDO	55	40	1061	1677

FLOW TEST PERFORMED BY: JOSH BELMONT
FIRETROL PROTECTION SYSTEMS

FLOW TEST NOTES:

1. THE CONTRACTOR SHALL OBTAIN A NEW FIRE FLOW TEST ON WHICH TO BASE CALCULATIONS.
2. THE FLOW TEST USED FOR THE WORKING PLAN DESIGN SHALL BE PERFORMED AS INDICATED IN NFPA 291 WHICH USES TWO HYDRANTS; A PRESSURE HYDRANT AND A FLOW HYDRANT. THE TWO HYDRANTS SHALL BE AS CLOSE TO THE POINT OF CONNECTION AS POSSIBLE. PROVIDE A COPY OF THE FLOW TEST AND TEST HYDRANT LOCATIONS WITH THE SUBMITTED SPRINKLER SHOP DRAWING PACKAGE.

FIRE PROTECTION SHEET INDEX

FIRE PROTECTION SYMBOLS

- NEW PIPE
- EXISTING PIPE
- NEW PENDENT SPRINKLER
- PRE-ACTION RISER

0 4' 8' 16'
3/16" = 1'-0"

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www.jacobs.com
TBPE Firm #2966

REVISIONS

Mark	Date	Description
1	10/25/21	ISSUED FOR PERMIT
2	01/28/22	ISSUED FOR PERMIT. REV. 2

OWNER: HOUSTON AIRPORTS
APPROVED BY:
DIRECTOR
HOUSTON AIRPORT SYSTEM

CONSULTANT:

SEAL:
STATE OF TEXAS
MAX L. NEWTON
138064
LICENSED
PROFESSIONAL ENGINEER
18 FEBRUARY 2022

IDO BUILDING STANDARDS
SPACE FIT-OUT

GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO: N/A
CIP NO: N/A
HAS NO: N/A

KEY PLAN:
PLAN NORTH

Jacobs Project No.: WHXK7103

Drawing Title:
FIRE PROTECTION GENERAL NOTE AND DETAILS

Date: 01/28/22
Designed: S. BECHTELHEIMER
Drawn: T. LIU
Checked: M. NEWTON
Drawing No.: F-100

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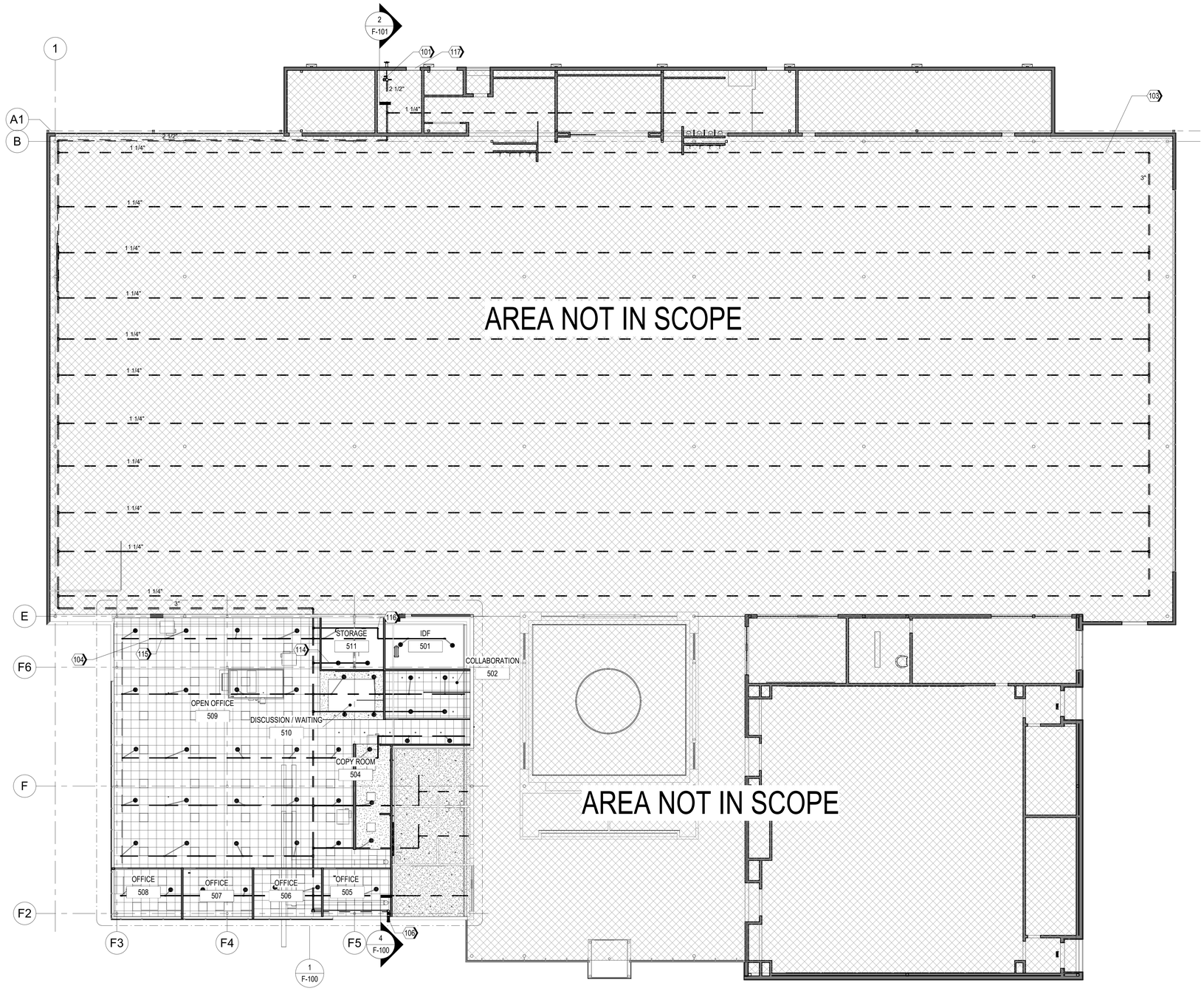
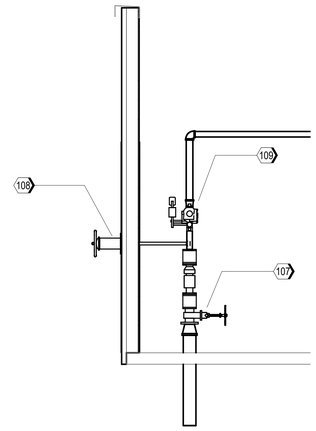


1 FIRE SPRINKLER PLAN
3/32" = 1'-0"

KEYNOTES	
Key Value	**Keynote Text**
101	EXISTING RISER LOCATION
103	EXISTING 1 1/4" BRANCHLINE
104	EXISTING BRANCHLINE TO FEED NEW HEADS IN AREA OF WORK
106	EXISTING FDC
107	3" AMES COLT C200 WITH OS&Y AND NRS VALVE. OS&Y TO BE 180 DEGREE ROTATED
108	MUELLER A-20814 WALL TYPE PIV WITH TAMPER SWITCH
109	3" VICTAULIC G/G 751 ALARM CHECK VALVE WITH CLOSED DRAIN TRIM AND RETARD CHAMBER - SEMI-ASSEMBLED
114	PROVIDE NEW PIPING
115	DASHED LINES INDICATE EXISTING PIPES (TYP)
116	LOCATION FOR DOUBLE INTERLOCK PREACTION RISER. MAIN DRAIN TO BE PIPED TO EXISTING RESTROOM
117	EXISTING NOTIFIER FACP LOCATION



2 EXISTING FIRE RISER DETAIL
3/8" = 1'-0"

0 8' 16' 32'
3/32" = 1'-0"

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KEY PLAN:

Jacobs Project No.: WHXK7103

Drawing Title:
FIRE PROTECTION
OVERALL PLAN

Date: 01/28/22

Designed: S. BECHTELHEIMER
Drawn: T. LIU
Checked: M. NEWTON

Drawing No.: F-101

ABBREVIATIONS

(ALL ABBREVIATIONS SHOWN ARE NOT NECESSARILY USED ON THE DRAWINGS)

A

A/C AIR CONDITIONING
AAR ARCNET ROUTER
ABV ABOVE
AC ALTERNATING CURRENT
ACC AIR COOLED CHILLER
ACCU AIR COOLED CONDENSING UNIT
ADJ ADJUSTABLE
AF AMPERE FUSE
AFC ABOVE FINISHED CEILING
AFF ABOVE FINISHED FLOOR
AI ANALOG INPUT
AO ANALOG OUTPUT
ALC AUTOMATED LOGIC CONTROLS
AMPS AMPERES
ANSI AMERICAN NATIONAL STANDARDS INSTITUTE
ARCH ARCHITECT, ARCHITECTURAL
ARI AIR CONDITIONING AND REFRIGERATION INSTITUTE
ASHRAE AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING ENGINEERS
ASME AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASTM AMERICAN SOCIETY OF TESTING AND MATERIALS
AV ANALOG VALUE
AWG AMERICAN WIRE GAUGE
AWS AMERICAN WELDING SOCIETY
AWWA AMERICAN WATER WORKS ASSOCIATION

B

BD BACKDRAFT DAMPER
BFF BELOW FINISHED FLOOR
BI BINARY INPUT
BKR BREAKER
BLDG BUILDING
BMS BUILDING MANAGEMENT SYSTEM
BO BINARY OUTPUT
BOD BOTTOM OF DUCT
BOP BOTTOM OF PIPE
BOS BOTTOM OF STRUCTURE
BTU BRITISH THERMAL UNIT
BV BINARY VALUE
B1 BASEMENT LEVEL 1
B2 BASEMENT LEVEL 2

C

C CONDUIT
CATV CABLE TELEVISION SYSTEM
CCTV CLOSED CIRCUIT TELEVISION
CFH CUBIC FEET PER HOUR
CFM CUBIC FEET PER MINUTE
CFS CUBIC FEET PER SECOND
CI CAST IRON
CIRC CIRCULATING
CKT CIRCUIT
C CENTERLINE
CLG CEILING
CMU CONCRETE MASONRY UNIT
CO CLEANOUT
CW COLD WATER
°C DEGREES CELSIUS
COTG CLEANOUT TO GRADE

D

DB DRY BULB
dB DECIBEL
DC DIRECT CURRENT
DCW DOMESTIC COLD WATER
DEG DEGREES
DESIG DESIGNATION
DIA DIAMETER
DIM DIMENSION
DN DOWN
DS DOWNSPOUT
DWG DRAWING
DWP DOMESTIC WATER PUMP
DCOTG DOUBLE CLEANOUT TO GRADE
(D) DEMOLISH

E

EA EACH
EAT ENTERING AIR TEMPERATURE
ECC ECCENTRIC
EDB ENTERING DRY BULB
EF EXHAUST FAN
EL ELEVATION
ELEC ELECTRICAL
EQUIP EQUIPMENT
ESP EXTERNAL STATIC PRESSURE
EWB ENTERING WET BULB
EWC ELECTRICAL WATER COOLER
EWT ENTERING WATER TEMPERATURE
EXH EXHAUST
EXIST(E) EXISTING
EWH ELECTRIC WATER HEATER

F

FA FIRE ALARM
FACP FIRE ALARM CONTROL PANEL
FCO FLOOR CLEANOUT
FL FLOW LINE
FLA FULL LOAD AMPS
FP FIRE PUMP
FPM FEET PER MINUTE
FT FOOT, FEET
°F DEGREES FAHRENHEIT

G

G,GND GROUND
GA GAUGE
GAL GALLON
GALV GALVANIZED
GC GENERAL CONTRACTOR
GFI GROUND FAULT INTERRUPTER
GFR GROUND FAULT RELAY
GPD GALLONS PER DAY
GPH GALLONS PER HOUR
GPM GALLONS PER MINUTE
GT GREASE TRAP

H

H HEIGHT
HD HEAD, HUB DRAIN
HID HIGH INTENSITY DISCHARGE
HOA HAND-OFF-AUTOMATIC
HORIZ HORIZONTAL
HP HORSEPOWER
HSTAT HUMIDISTAT
HTG HEATING
HTR HEATER
HVAC HEATING, VENTILATING AND AIR CONDITIONING
HW HOT WATER
HYD HYDRANT
HZ HERTZ

I

ID INSIDE DIAMETER
IE INVERT ELEVATION
IES ILLUMINATING ENGINEERING SOCIETY
IG ISOLATED GROUND
IN INCH
IN WC INCHES OF WATER COLUMN

J

J-BOX JUNCTION BOX
JP JOCKEY PUMP

K

KV KILOVOLT
KVA KILOVOLT-AMPS
KW KILOWATT
KWH KILOWATT-HOUR

L

L LENGTH
LAT LEAVING AIR TEMPERATURE
LB,# POUNDS
LDB LEAVING DRY BULB
LF LINEAR FEET
LP LOW PRESSURE
LRA LOCKED ROTOR AMPS
LSTM LOW PRESSURE STEAM (15 PSIG)
LTG LIGHTING
LWB LEAVING WET BULB
LWT LEAVING WATER TEMPERATURE

M

MAX MAXIMUM
MBH 1000 BTU PER HOUR
MCA MINIMUM CIRCUIT AMPACITY
MCB MAIN CIRCUIT BREAKER
MCC MOTOR CONTROL CENTER
MD MOTORIZED DAMPER
MECH MECHANICAL
MFGR MANUFACTURER
MG MOTOR GENERATOR
MH MANHOLE, METAL HALIDE
MIN MINIMUM
MLO MAIN LUGS ONLY
MTD MOUNTED

N

N/A NOT APPLICABLE
NC NORMALLY CLOSED
NEC NATIONAL ELECTRICAL CODE
NEMA NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
NFPA NATIONAL FIRE PROTECTION ASSOCIATION
NIC NOT IN CONTRACT
N.O. NORMALLY OPEN
N.T.S. NOT TO SCALE

O

OA OUTSIDE AIR
OBD OPPOSED BLADE DAMPER
O.C. ON CENTER
OD OUTSIDE DIAMETER
OS&Y OUTSIDE STEM AND YOKE
OSHA OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

P

PCAWR PRECONDITIONED AIR WATER RETURN
PCAWS PRECONDITIONED AIR WATER SUPPLY
PD PRESSURE DROP
PH PHASE, PENTHOUSE
PIV POST INDICATOR VALVE
PLBG PLUMBING
PNL PANEL
PSF POUNDS PER SQUARE FOOT
PSI POUNDS PER SQUARE INCH
PSIA POUNDS PER SQUARE INCH ABSOLUTE
PSIG POUNDS PER SQUARE INCH GAUGE
PSV PRESSURE SAFETY VALVE, RELIEF VALVE
PV PLUG VALVE
PVC POLYVINYL CHLORIDE

Q

QTY QUANTITY

R

RA RETURN AIR
RCP REFLECTED CEILING PLAN, REINFORCED CONCRETE PIPE
RD ROOF DRAIN
RE: REFERENCE, REFER
RECIRC RECIRCULATE
REINF REINFORCING
REQD REQUIRED
REV REVISION, REVISE
RGS RIGID GALVANIZED STEEL
RH RELATIVE HUMIDITY
RL REFRIGERANT LIQUID
RLA RUNNING LOAD AMPS
RM ROOM
RPM REVOLUTIONS PER MINUTE
RS REFRIGERANT SUCTION

S

SA SUPPLY AIR
SD SMOKE DAMPER, STORM DRAIN
SECT SECTION
SF SQUARE FEET
SHT SHEET
SIM SIMILAR
SMACNA SHEET METAL AND AIR CONDITIONING CONTRACTOR'S NATIONAL ASSOCIATION
SP STATIC PRESSURE
SPEC SPECIFICATION
SQ SQUARE
SS STAINLESS STEEL, SANITARY SEWER
ST SOUND TRAP, STEAM TRAP
STD STANDARD
STL STEEL
SURF SURFACE

T

TDH TOTAL DYNAMIC HEAD
THRU THROUGH
TP TOTAL PRESSURE
TSP TOTAL STATIC PRESSURE
TSTAT THERMOSTAT
TYP TYPICAL
TMV TEMPERATURE MIXING VALVE

U

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

V

V VOLT
VA VOLT-AMPERE
VAC VACUUM
VAV VARIABLE AIR VOLUME
VCP VITRIFIED CLAY PIPE
VD VOLUME DAMPER
VEL VELOCITY
VERT VERTICAL
VTR VENT THROUGH ROOF

W

W WATT, WIDTH
W/ WITH
W/O WITHOUT
WB WET BULB
WC WATER COLUMN
WCO WALL CLEAN OUT
WPD WATER PRESSURE DROP
WP WEATHER PROOF
WT WATERTIGHT, WEIGHT
WH WALL HYDRANT

X

XFMR TRANSFORMER

PIPING LEGEND

- SANITARY DRAIN BELOW FLOOR
- SANITARY DRAIN ABOVE FLOOR
- SANITARY VENT
- GT — GREASE (KITCHEN) WASTE
- SD — STORM DRAIN ABOVE FLOOR
- SD — STORM DRAIN BELOW FLOOR
- OD — OVERFLOW DRAIN
- COLD WATER
- HOT WATER
- HOT WATER RECIRCULATION
- G — NATURAL GAS
- TP — TRAP PRIMER
- D — DRAIN LINE
- DI — DEIONIZED WATER
- DIR — DEIONIZED WATER RETURN
- SW — SOFT WATER
- MV — MED VACUUM
- WAGD — WASTE ANESTHETIC GAS DISPOSAL (VACUUM)
- MA — MEDICAL AIR
- LV — LAB VACUUM
- LA — LAB AIR
- DOMESTIC COLD WATER UNDERSLAB
- DOMESTIC HOT WATER UNDERSLAB
- PCW — PUMPED COLD WATER
- PHW — PUMPED HOT WATER
- XX(EX) — EXIST. PIPE TYPICAL

MISCELLANEOUS

- FLOOR DRAIN/AREA DRAIN
- FLOOR SINK DRAIN
- FLOOR DRAIN WITH P-TRAP
- P-TRAP
- ROOF DRAIN
- OVERFLOW DRAIN
- HOSE BIBB/WALL HYDRANT
- POINT OF CONNECTION TO EXISTING
- POINT OF DISCONNECTION FROM EXISTING
- PLUMBING FIXTURES
- A — AIR OUTLET
- DCBFP — DOUBLE CHECK BACKFLOW PREVENTER
- RPBFP — REDUCED PRESSURE BACKFLOW PREVENTER
- P / 1 — RISER DESIGNATION. "P" DENOTES WASTE/VENT OR WASTE/VENT/WATER, "F" DENOTES FIRE, "DS" DENOTES DOWNSPOUTS

PIPING SYMBOLS

- ELBOW UP
- ELBOW DOWN
- VALVE IN DROP
- VALVE IN CENTER DROP
- VALVE IN RISE
- DIRECTION OF FLOW
- DIRECTION OF SLOPE DN
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- TEE OUTLET UP
- TEE OUTLET DOWN
- UNION
- PIPE ANCHOR
- EXPANSION JOINT
- STRAINER WITH BLOWDOWN VALVE
- GATE VALVE
- GLOBE VALVE
- BALL VALVE
- OS&Y VALVE
- CHECK VALVE
- PRESSURE REDUCING VALVE
- BUTTERFLY VALVE
- SOLENOID VALVE VALVE
- PNEUMATIC OPERATOR
- SHOCK ARRESTOR
- CAP ON END OF LINE
- FS — FLOW SWITCH
- PS — PRESSURE SWITCH
- TS — TAMPER SWITCH
- T&P RELIEF VALVE
- VACUUM BREAKER
- LINE CLEANOUT
- FLOOR CLEANOUT
- PRESSURE GAUGE WITH GAUGE COCK
- THERMOMETER
- FLEXIBLE CONNECTION
- PIPE FLANGE
- THERMOMETER WELL
- HWR BALANCING VALVE
- PLUG VALVE
- GAS PRESSURE REGULATOR W/VENT

GENERAL NOTES

A. REFER TO SPECIFICATIONS FOR MATERIALS AND METHODS FOR CONSTRUCTION. SPECIFICATIONS ARE PART OF THE CONSTRUCTION DOCUMENTS AND ARE TO BE USED IN CONJUNCTION WITH THE DRAWINGS.

B. COORDINATE ALL SLAB PENETRATIONS AND SLEEVES WITH EXISTING CONDITIONS.

C. FURNISH ACCESS DOORS FOR INSTALLATION IN WALLS AND CEILINGS WHERE ACCESS IS REQUIRED TO CONCEALED PLUMBING EQUIPMENT, VALVES, CONTROLS AND OTHER DEVICES.

D. INSTALL PIPING TO PROVIDE THE MAXIMUM POSSIBLE CLEAR HEIGHT UNDERNEATH. MAINTAIN A MINIMUM OF 10 INCHES ABOVE FINISHED CEILING TO PROVIDE CLEARANCE FOR LIGHTING FIXTURES.

E. COORDINATE THE EXACT LOCATION OF FLOOR DRAINS WITH THE MECHANICAL EQUIPMENT LOCATIONS PRIOR TO INSTALLATION OF DRAINS.

F. COORDINATE WORK WITH ARCHITECTURAL FEATURES AND COORDINATE WORK SO THAT INTERFERENCES BETWEEN PIPING, EQUIPMENT, MECHANICAL WORK, ELECTRICAL WORK, AND BUILDING STRUCTURE WILL BE AVOIDED.

G. CONTRACTOR SHALL BACK FILL ANY AND ALL PIPING GOING BELOW THE GRADE BEAM WITH CEMENT STABILIZED SAND. EXTEND 5'-0" EACH SIDE OF THE CENTER LINE OF THE GRADE BEAM.

H. ALL FAUCETS, VALVES, HOSE BIBBS, ETC. SHALL BE LOW LEAD/LEAD FREE MODELS.

I. VERIFY EXISTING CONDITIONS AND DIMENSIONS PRIOR TO BEGINNING ANY WORK OR FABRICATING MATERIALS. NOTIFY A/E OF DISCREPANCIES BEFORE PROCEEDING WITH ANY PHASE OF WORK.

J. TRAP GUARDS SHALL BE INSTALLED TO FIT FLOOR DRAIN MANUFACTURER, NOT PIPE.

K. CONTRACTOR SHALL PATCH EXISTING HOLES IN CONCRETE SLAB USING A POLYMER REPAIR MORTAR AND COMPATIBLE BONDING AGENT.
   A. ACCEPTABLE PRODUCTS:
      1. SIKA CHEMICAL CO. - SIKATOP 123 PLUS
      2. BASF BUILDING SYSTEMS - GEL PATCH
      3. THE EUCLID CHEMICAL COMPANY - VERICOAT
   B. ROUGHEN INSIDE SURFACE OF EXISTING CORES TO MINIMUM AMPLITUDE OF 1/4"
   C. PREPARE SURFACE AND APPLY PRODUCT IN STRICT CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
   D. EXTEND PRODUCT WITH SUITABLE AGGREGATE FOR THICK APPLICATIONS, AS RECOMMENDED BY THE MANUFACTURER.

   NOTE: MAX ANTICIPATED DIAMETER OPENING IS 6". IF LARGER OPENINGS ARE ENCOUNTERED, CONTRACTOR SHALL NOTIFY ENGINEER FOR ALTERNATIVE PATCH METHOD.

L. CORE EXISTING SLAB, FOR NEW FLOOR DRAINS IN A TWO STEP CORE PROCESS. BACKFILL VOID BETWEEN FLOOR DRAIN AND EXISTING SLAB WITH CONCRETE TO MATCH EXISTING SLAB. PROVIDE A MINIMUM 3'-0" DIAMETER WATERPROOFING MEMBRANE AROUND FLOOR DRAIN.

M. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND COORDINATE WITH OWNER FOR ALL HOT-WORK INCLUDING SOLDERING, BRAZING, WELDING ETC. PRIOR TO COMMENCING WORK.

N. CONTRACTOR TO COORDINATE ANY OUTAGES WITH OWNER PRIOR TO SHUTTING DOWN ANY BUILDING SYSTEM (PLUMBING, ELECTRICAL, ETC...)

O. ALL WELDING TO BE DONE BY A CERTIFIED WELDER. CONTRACTOR TO VERIFY WELDER'S QUALIFICATIONS AND CERTIFICATIONS PRIOR TO ANY WELDING BEING PERFORMED.

PIPING MATERIALS

DOMESTIC WATER PIPING SHALL BE:
PIPE 2-1/2 INCH AND SMALLER:
DRAWN (HARD) COPPER WATER TUBE, TYPE "L", ASTM B88, WITH WROUGHT COPPER FITTINGS, ANSI B16.22 AND 95-5 SOLDER (LEAD FREE) JOINTS.
PIPE LARGER THAN 2-1/2 INCH:
SCHEDULE 40 ASTM A53 GALVANIZED STEEL PIPE

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CONSULTANT:
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AIP NO: N/A
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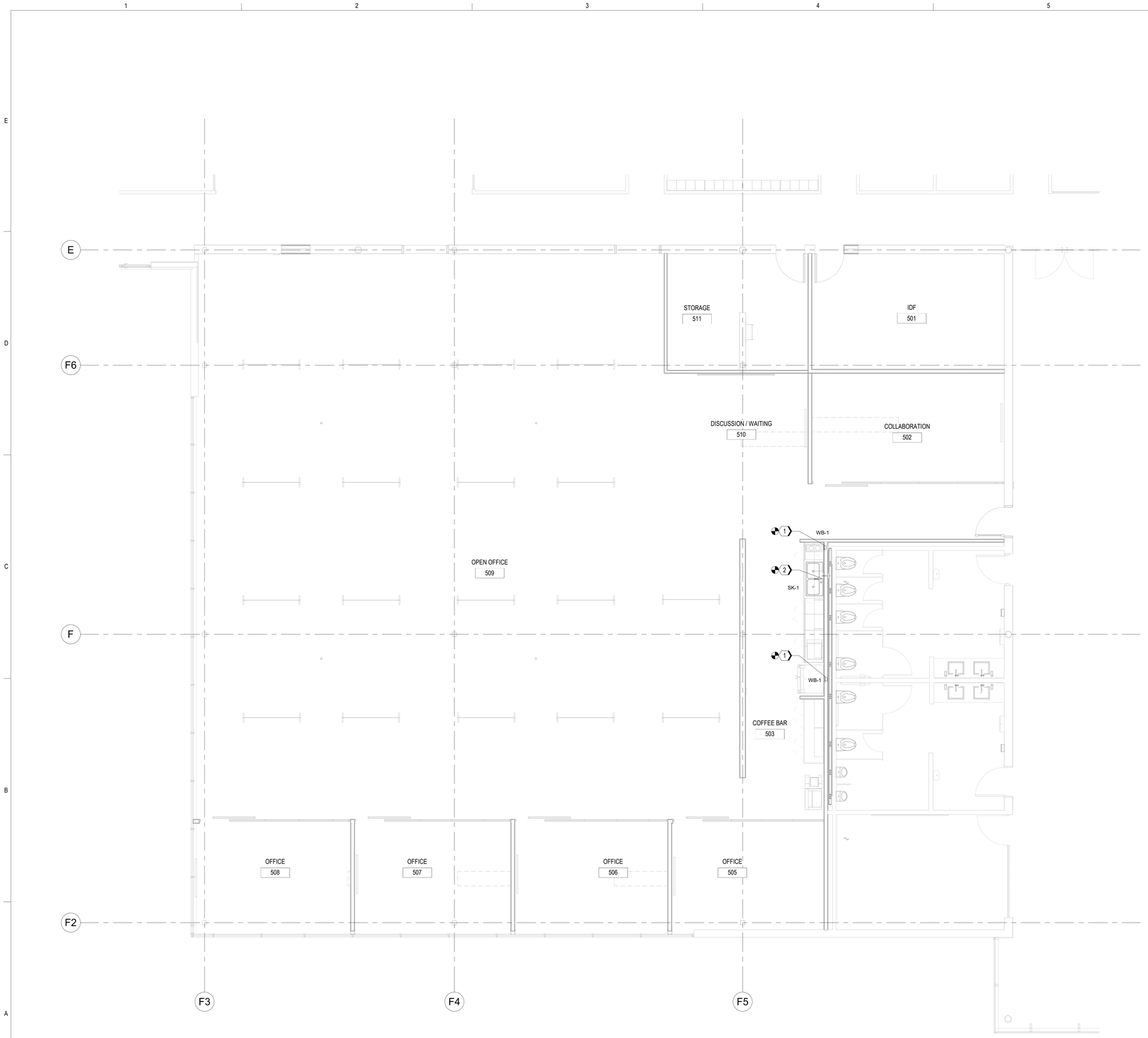
HAS NO: N/A
KEY PLAN:

Jacobs Project No.: WHXX7103
Drawing Title: PLUMBING LEGEND AND GENERAL NOTES
Date: 01/28/22
Designed: Designer
Drawn: Author
Checked: Checker
Drawing No.: P-001



A1 PLUMBING RENOVATION PLAN
1/4" = 1'-0"

GENERAL NOTES

KEYNOTES

1 CONNECT 1/2" DOMESTIC COLD WATER TO WB-1 FROM EXISTING DOMESTIC COLD WATER SERVING PLUMBING CHASE. CONTRACTOR TO VERIFY EXACT LOCATION AND REQUIREMENTS IN FIELD.

2 CONNECT 2" SANITARY, 2" VENT, AND 3/4" DOMESTIC COLD WATER TO EXISTING UTILITIES SERVING PLUMBING CHASE. CONTRACTOR TO VERIFY EXACT LOCATION AND REQUIREMENTS IN FIELD.

GRAPHIC SCALES:

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KEY PLAN:

Jacobs Project No.: WHXK7103

Drawing Title:
PLUMBING
RENOVATION PLAN

Date: 01/28/22

Designed: Designer
Drawn: Author
Checked: Checker

Drawing No.: P-101

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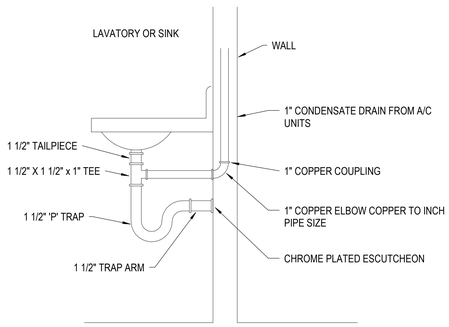
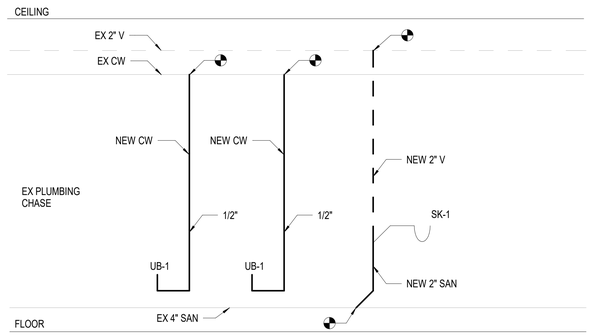
A1 UTILITY WALL BOX
NOT TO SCALE



A2 LAVATORY TAILPIECE DETAIL
NOT TO SCALE



A3 PLUMBING RISER DIAGRAM
NOT TO SCALE

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Drawing Title:
PLUMBING DETAILS

Date: 01/28/22

Designed: Designer
Drawn: Author
Checked: Checker

Drawing No.: P-501

PLUMBING FIXTURE SCHEDULE	
MARK	REMARKS
SK-1	ELKAY #LRAD-3122 LUSTERTONE, COUNTER MOUNTED, 18 GA STAINLESS STEEL. FAUCET: DELTA TECK #26C39974, 6" GOOSENECK FAUCET ON 8" CENTERS, 1.0 GPM LAMINAR FLOW CONTROL IN SPOUT BASE, 4" WRIST BLAD HANDLES, ADA COMPLIANT, MEETING LEAD FREE REQUIREMENTS. TRIM: MCGUIRE #1151AWC, 1-1/2" CHROME PLATED CAST BRASS OFFSET TAILPIECE WITH STAINLESS STEEL BASKET STRAINER. MCGUIRE #8912C CHROME PLATED CAST BRASS P-TRAP AND CLEANOUT PLUG WITH HEAVY BRASS SLIP NUTS. MCGUIRE #LFH2165LK LOOSE KEY ANGLE STOPS WITH CHROME PLATED COPPER RISERS. INSULATION KIT: PLUMBEREX OR TREBRO INSULATION ON TAILPIECE, P-TRAP, STOPS AND SUPPLIES.
WB-1	IPS UTILITY BOX, MODEL RMDW1AB - WALL SUPPLY UTILITY BOX WITH STOP AND WATER HAMMER ARRESTOR.

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KEY PLAN:

Jacobs Project No.: WHXK7103

Drawing Title:
PLUMBING SCHEDULES

Date: 01/28/22

Designed: Designer
Drawn: Author
Checked: Checker

Drawing No.: P-601

MECHANICAL SYMBOLS (SOME SYMBOLS MAY NOT BE USED ON THE DRAWINGS)

GENERAL NOTES

A. ALL MECHANICAL WORK SHALL COMPLY WITH ALL APPLICABLE STATE AND LOCAL BUILDING CODES AND THE REQUIREMENTS OF THE CHEVRON STANDARD PRACTICES AND BASE BUILDING SPECIFICATIONS. CONTACT CHEVRON FOR A COPY OF THEIR STANDARD PRACTICES AND A COPY OF THE BASE BUILDING SPECIFICATIONS.

B. ALL DUCTWORK SIZES SHOWN ARE INSIDE CLEAR FREE AIR STREAM DIMENSIONS.

C. INSTALL DUCTWORK TO PROVIDE THE MAXIMUM POSSIBLE CLEAR HEIGHT UNDERNEATH. (BETWEEN STRUCTURE OR CEILING AND TOP OF DUCT) .

D. COORDINATE THE DUCTWORK WITH THE FIRE, SMOKE AND FIRE-SMOKE PARTITIONS. PROVIDE SMOKE AND FIRE-SMOKE DAMPERS AT ALL LOCATIONS WHERE THEY ARE REQUIRED, EVEN IF THEY ARE NOT SHOWN ON THE MECHANICAL DRAWINGS.

E. ALL INTERRUPTIONS OF SERVICES (POWER, WATER, HVAC, ETC.) AND ALL WORK IN OCCUPIED TENANT SPACES (E.G. PLUMBING OR ELECTRICAL WORK IN AN OCCUPIED TENANT'S SPACE BELOW A SPACE UNDER CONSTRUCTION) MUST BE SCHEDULED THROUGH THE BUILDING MANAGER A MINIMUM OF 72 HOURS IN ADVANCE. ANY INTERRUPTIONS OF CONSTRUCTION WHICH WILL AFFECT NORMAL OPERATION OF THE BUILDING OR ITS OCCUPANTS SHALL BE SCHEDULED ON AN AFTER-HOURS BASIS.

F. FURNISH ALL LABOR, MATERIALS FOR EQUIPMENT, APPARATUS AND APPURTENANCES REQUIRED FOR A COMPLETE WORKING AND COORDINATED SYSTEM.

G. WHERE APPROVAL CODES HAVE BEEN ESTABLISHED BY OSHA, UNDERWRITER'S LABORATORY, AMERICAN CODES, ANSI, ASME, ASA, ASHRAE, ASTM, ARI, NEL, NFPA, SMACNA, OR THE STATE FIRE INSURANCE REGULATORY BODY, FOLLOW THESE STANDARDS WHETHER OR NOT INDICATED ON THE DRAWINGS AND SPECIFICATIONS.

H. PERFORM WORK IN ACCORDANCE WITH THE LATEST EDITIONS, REVISIONS, AMENDMENTS OR SUPPLEMENTS OF APPLICABLE STATUTES, ORDINANCES, CODES OR REGULATIONS OF FEDERAL, STATE AND LOCAL AUTHORITIES HAVING JURISDICTION IN EFFECT ON THE DATE BIDS ARE RECEIVED.

I. COORDINATE WORK SO THAT INTERFERENCES BETWEEN PIPING, DUCTWORK, EQUIPMENT, PLUMBING WORK, ELECTRICAL WORK, AND BUILDING STRUCTURE WILL BE AVOIDED.

J. ALL RECTANGULAR ELBOWS SHALL BE LONG-RADIUS ELBOWS UNLESS OTHERWISE SHOWN OR NOTED. ALL SUPPLY AIR STANDARD NON-RADIUS (MITRED) 90° ELBOWS SHALL HAVE DOUBLE THICKNESS TURNING VANES.

K. ALL LAB EXHAUST DUCTWORK SHALL BE STAINLESS STEEL AND CONSTRUCTED IN ACCORDANCE WITH THE LATEST EDITION OF "SMACNA" UNLESS MODIFIED BY THE DRAWINGS OR THE SPECIFICATION.

L. CONTRACTOR SHALL SEAL ALL DUCTWORK JOINTS (LONGITUDINAL AND TRANSVERSE) EXTERNALLY, AIR AND VAPOR TIGHT, WITH DUCT SEALANT MASTIC REINFORCED WITH 20X20 GLASS FABRIC.

M. DUCTWORK SHALL BE INDEPENDENTLY SUPPORTED, AND EACH SUPPORT SHALL BE INDEPENDENT OF PARTITION AND CEILING SYSTEM SUPPORTS.

N. ALL DUCTWORK SHALL BE SEALED TO LIMIT THE LEAKAGE TO LESS THAN 1% OF DUCT SYSTEM DESIGN AIR QUANTITY. DUCT TAPE IS NOT AN ACCEPTABLE SEALING METHOD.

O. ALL DUCTS PENETRATING AREAS TO BE EXHAUSTED SHALL HAVE THE SPACE BETWEEN DUCT AND WALL SEALED AIRTIGHT.

P. ALL MASTICS, COATINGS, AND ADHESIVES SHALL COMPLY WITH NFPA 90A AND 90B AND HAVE COMBINED U.L. FLAME SPREAD OF LESS THAN 25 AND SMOKE DEVELOPMENT OF LESS THAN 50.

Q. ALL WORK OF OTHER DIVISIONS AND TRADES INDICATED FOR REFERENCE HAS BEEN SHOWN LIGHTLY FOR LOCATION PURPOSES. NEW MECHANICAL WORK IS SHOWN WITH A HEAVY OUTLINE.

R. ALL DUCTWORK SHALL BE INSTALLED TO MAXIMIZE CLEAR HEIGHT FROM THE LOWEST POINT ON OUTSIDE SURFACE (INCLUDING INSULATION, REINFORCING ANGLES ETC.) OF THE DUCTWORK TO THE BOTTOM OF THE CEILING FOR LIGHTING, PLUMBING PIPING, ELECTRICAL CONDUIT, ETC..

S. OBTAIN ALL NECESSARY PERMITS, PAY ALL LEGAL FEES AND COMPLY WITH ALL LOCAL CODES AND ORDINANCES RELATING TO BUILDING AND PUBLIC SAFETY.

T. PROTECT EQUIPMENT AND WORK FROM DAMAGE DURING HANDLING AND INSTALLATION UNTIL COMPLETION OF CONSTRUCTION. REMOVE ALL EXCESS MATERIAL AND DEBRIS.

U. THE MECHANICAL CONTRACTOR AND HIS SUBCONTRACTORS SHALL GUARANTEE ALL WORKMANSHIP AND MATERIALS PROVIDED AND/OR INSTALLED BY HIM OR ANY OF HIS SUB-CONTRACTORS WITHIN THE WARRANTY PERIOD IN THE CONTRACT SPECIFICATION BUT NOT LESS THAN A PERIOD OF ONE (1) YEAR AFTER THE DATE OF FINAL ACCEPTANCE BY THE OWNER, ORDINARY WEAR AND TEAR EXCEPTED. THE MECHANICAL CONTRACTOR SHALL REPAIR OR REPLACE, AT NO ADDITIONAL COST TO THE OWNER, ANY PART THEREOF WHICH MAY BECOME DEFECTIVE AND SHALL BE RESPONSIBLE FOR, AND PAY FOR, ANY DAMAGES CAUSED BY, OR RESULTING FROM, DEFECTS IN HIS WORK.

V. CONTRACTORS SHALL COORDINATE ALL MECHANICAL WORK CLOSELY WITH ALL ELECTRICAL, PLUMBING AND FIRE PROTECTION SYSTEMS.

W. ALL EXISTING FACILITIES SHALL BE PROTECTED DURING THE CONSTRUCTION ACTIVITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE AND STORE ITEMS WHICH ARE SUBJECT TO BREAKAGE OR DAMAGE.

X. THE MECHANICAL CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH ALL EXISTING CONDITIONS RELATED TO THEIR WORK AND THE WORK OF ALL OTHER TRADES, PRIOR TO SUBMITTING PROPOSALS. ANY DISCREPANCIES IN THE CONTRACT DOCUMENTS WHICH ARE NOTED DURING THIS VISIT SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT, OWNER AND ENGINEER PRIOR TO SUBMITTING PROPOSALS. SUBMISSION OF PROPOSALS SHALL BE TAKEN AS EVIDENCE THAT SUCH INSPECTIONS HAVE BEEN MADE. CLAIMS FOR ADDITIONAL COMPENSATION FOR WORK THAT COULD HAVE BEEN REASONABLY FORESEEN BY CONDUCTING A SITE INSPECTION, WHETHER INDICATED ON CONTRACT DOCUMENTS OR NOT, WILL NOT BE ACCEPTED OR PAID.

Y. CONTRACTORS SHALL MAINTAIN AN UP TO DATE SET OF PRINTS AT THE SITE, TO BE USED AS "AS-BUILT" DRAWINGS, AVAILABLE FOR REVIEW AT ANY TIME BY THE OWNER AND ENGINEER.

Z. COORDINATE THE LOCATION OF DUCTWORK AND PIPING WITH OTHER TRADES AND PROVIDE OFFSETS IN DUCTWORK AND PIPING AS REQUIRED.

AA. ACQUIRE PROPER CHEVRON APPROVALS PERMITS AND FIRE SAFETY REQUIREMENTS PRIOR TO PERFORMING HOT-WORK.

AB. SYSTEM SHALL BE COMPLETE AND WORKING AT COMPLETION OF CONSTRUCTION.

AC. THE CONTRACTOR SHALL CLOSE ALL OPENINGS IN THE EXISTING DUCTS WITH SHEETMETAL (SCREWED IN PLACE) AND SEALED AIR TIGHT WITH DUCT SEALANT AS SPECIFIED AND REINFORCED WITH 20 X 20 GLASS FABRIC

AD. REPAIR ANY DAMAGED INSULATION. DUCTWORK INSULATION SHALL MEET OR EXCEED THE MINIMUM REQUIREMENTS OF TABLE 6.4.4.1.1 OF THE CITY OF HOUSTON COMMERICIAL ENERGY CONSERVATION CODE.

ABBREVIATIONS

AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
BMCS CONTROL	BUILDING MANAGEMENT AND SYSTEM
BCU	BLOWER COIL UNIT
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
(D)	DEMOLITION
DDC CONTROLLER	DIRECT DIGITAL CONTROL OR
(E)	EXISTING TO REMAIN
EAT	ENTERING AIR TEMPERATURE
EWT	ENTERING WATER TEMPERATURE
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FSD	COMBINATION FIRE-SMOKE DAMPER
FPTU	FAN-POWERED TERMINAL UNIT
HVU	HEATING AND VENTILATING UNIT
LAT	LEAVING AIR TEMPERATURE
LWT	LEAVING WATER TEMPERATURE
MAHU	MAKE-UP AIR HANDLING UNIT
(N)	NEW
N.C.	NORMALLY CLOSED
N.I.C	NOT IN CONTRACT
N.O.	NORMALLY OPEN
N/A	NOT APPLICABLE
OA	OUTSIDE AIR
(R)	EXISTING TO BE RELOCATED
RA	RETURN AIR
RAF	RELIEF AIR FAN
SA	SUPPLY AIR
SD	SMOKE DAMPER
TOD	TOP OF DUCT
TOS	TOP OF STEEL
TU	TERMINAL UNIT
TYP	TYPICAL
VAV	VARIABLE AIR VOLUME
VFD	VARIABLE FREQUENCY DRIVE

SHEET SYMBOLS

XX DETAIL TITLE
XX.XX 1/?" = 1'-0"

REFER TO DRAWING/DETAIL NUMBER
RE: 3/M4.01 REFERENCE TAG 3 M4.01
SHEET NUMBER

X SECTION
XX.XX

4-200 DEVICE TYPE AIRFLOW (CFM)

HW TYPE OF SERVICE (I.E. HW = HOT WATER)
1 RISER BUBBLE
RISER NUMBER

AHU-BS-1 EQUIPMENT TAG

1 KEYED NOTE

1 REVISION

CONTROL INSTRUMENTS

TEMPERATURE SENSOR
HUMIDISTAT
THERMOSTAT
HUMIDITY SENSOR
DUCT SMOKE DETECTOR
DUCT STATIC PRESSURE SENSOR
OCCUPANCY SENSOR
CARBON DIOXIDE SENSOR
AIR PRESSURE SENSOR (ZONE "X")

MECHANICAL EQUIPMENT

FIRE DAMPER
COMBINATION FIRE/SMOKE DAMPER
SMOKE DAMPER
VARIABLE FREQUENCY DRIVE
CONTROLLER OR CONTROL PANEL
UNIT HEATER
DUCT-MOUNTED FILTER
DUCT-MOUNTED WATER COIL
DUCT-MOUNTED ELECTRIC COIL
DUCT-MOUNTED SOUND ATTENUATOR
SINGLE-DUCT TERMINAL UNIT
FAN-POWERED TERMINAL UNIT
(HW) (ELEC.) SINGLE-DUCT TERMINAL UNIT W/ HEATING COILS
SINGLE-DUCT TERMINAL UNIT W/ SOUND ATTENUATOR
DUAL-DUCT TERMINAL UNIT W/ SOUND ATTENUATOR
ROOF EXHAUST FAN
NEW EQUIPMENT (SIZE, SHAPE WILL VARY)
EQUIPMENT TO BE REMOVED (SIZE, SHAPE WILL VARY)
EQUIPMENT TO REMAIN (SIZE, SHAPE WILL VARY)
ARCHITECTURAL BACKGROUND (SCREENED)
EXISTING DUCT
EXISTING DUCT TO BE REMOVED

MISCELLANEOUS

POINT OF CONNECTION (NEW TO EXISTING)
POINT OF DISCONNECTION
TYPICAL LEADERS
AIR FLOW INDICATOR

DUCTWORK

DOUBLE LINE	SINGLE LINE	
		FLEXIBLE DUCT
		90° ELBOW W/ TURNING VANES (TYP. FOR ALL UNLESS OTHERWISED NOTED)
		45° MITERED ELBOW W/ TURNING VANES (TYP. FOR ALL UNLESS OTHERWISE NOTED)
		90° LONG RADIUS ELBOW
		45° LONG RADIUS ELBOW
		CONCENTRIC TRANSITION
		ECCENTRIC TRANSITION
		RECTANGULAR TO ROUND TRANSITION
		RECTANGULAR BRANCH TAP (SMACNA 45)
		CONICAL BRANCH TAP (W/ VOLUME DAMPER)
		DUCT CAP
		DUCT CONTINUATION - ROUND
		DUCT CONTINUATION - RECTANGULAR
		DUCT ACCESS DOOR
		SUPPLY DUCT (UP / DOWN)
		RETURN DUCT (UP / DOWN)
		EXHAUST DUCT (UP / DOWN)
		ROUND DUCT (UP / DOWN)
		FLAT OVAL DUCT (UP / DOWN)
18/14	18/14	RECTANGULAR DUCT SIZE (WIDTH x HEIGHT)
18"Ø	18"Ø	ROUND DUCT SIZE (DIAMETER)
18/14	18/14	FLAT OVAL DUCT SIZE (WIDTH x HEIGHT)
		FLEXIBLE DUCT CONNECTION
		IN-LINE 90 DEGREE DROP (RISE) IN DUCT (HIDDEN LINE INDICATES HIDDEN ELBOW)
UP	UP	INCLINED RISE IN DUCT
DN	DN	INCLINED DROP IN DUCT
		DUCT EXTRACTOR
		SPLITTER DAMPER
		MAJOR SPLIT
		SIDEWALL REGISTER TAP
HM	HM	DUCT MOUNTED HUMIDIFIER
M	M	MOTORIZED DAMPER
		DUCT TO BE DEMOLISHED

DUCTWORK (CONTINUED)

DIFFUSER FLOW ARROWS (IF NO ARROWS ARE SHOWN, DIFFUSER IS 4-WAY THROW)
SUPPLY DIFFUSER
RETURN REGISTER
EXHAUST REGISTER
SIDEWALL SUPPLY GRILLE
SIDEWALL RETURN GRILLE
LOUVER W/ SCREEN (IN WALL)
SLOT OR LINEAR DIFFUSER
RETURN AIR SLOT DEVICE
DUCT WITH LINER
MANUAL DAMPER
24/18 TRANSFER BOOT (WIDTH x HEIGHT)

PIPING LABELS

CWS	CONDENSER WATER SUPPLY
CWR	CONDENSER WATER RETURN
CHS	CHILLED WATER SUPPLY
CHR	CHILLED WATER RETURN
HWS	HEATING HOT WATER SUPPLY
HWR	HEATING HOT WATER RETURN
HSTM	HIGH PRESSURE STEAM 100 PSI
MSTM	MEDIUM PRESSURE STEAM 60 PSI
LSTM	LOW PRESSURE STEAM 15 PSI
PC	PUMPED CONDENSATE RETURN
CR	GRAVITY CONDENSATE RETURN
CD	CONDENSATE DRAIN (COLD)
D	DRAIN LINE
A	COMPRESSED AIR
MU	MAKE-UP WATER
RS	REFRIGERANT SUCTION LINE
RL	REFRIGERANT LIQUID LINE
PRO	PROCESS
RC	RECOVERY
SPC	SPECIAL
PA	PROCESS AIR
BR	BRINE
AAA	EXISTING PIPE "AAA" DENOTES TYPE
AAA	EXISTING PIPE TO BE REMOVED, "AAA" DENOTES TYPE
VAC	VACUUM

PIPING SYMBOLS

PIPE CONTINUATION
PIPE UP (AND DN)
ELBOW DOWN
TEE OUTLET UP
TEE OUTLET DOWN
PIPE FLANGE
UNION
PIPE ANCHOR
DIRECTION OF FLOW
DIRECTION OF SLOPE DOWN
CONCENTRIC REDUCER
ECCENTRIC REDUCER
EXPANSION JOINT
FLEXIBLE CONNECTION
STRAINER WITH BLOWDOWN VALVE
PIPE SUPPORT
PIPE GUIDE
PIPE CAP
2-WAY CONTROL VALVE
3-WAY CONTROL VALVE
MOTOR OPER. VALVE
SOLENOID VALVE
PNEUMATIC OPER. VALVE
VALVE IN DROP
VALVE IN CENTER DROP
VALVE IN RISE
GATE VALVE
GLOBE VALVE
BALL VALVE
BALANCING VALVE W/ DIFFERENTIAL PRESS. TAPS
OS&Y VALVE
CHECK VALVE
PRESSURE REDUCING VALVE
PLUG VALVE
BUTTERFLY VALVE
GAUGE COCK
FLOW SWITCH
PRESSURE SWITCH
MANUAL AIR VENT
AUTOMATIC AIR VENT
T&P RELIEF VALVE
PRESSURE GAUGE WITH GAUGE COCK
THERMOMETER
THERMOMETER WELL
PETE'S PLUG
VENTURI FLOWMETER
STEAM TRAP

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Mark	Date	Description
1	10/25/21	ISSUED FOR PERMIT
2	01/28/22	ISSUED FOR PERMIT, REV. 2

OWNER: HOUSTON AIRPORTS
APPROVED BY:
DIRECTOR
HOUSTON AIRPORT SYSTEM

CONSULTANT: 4b technology

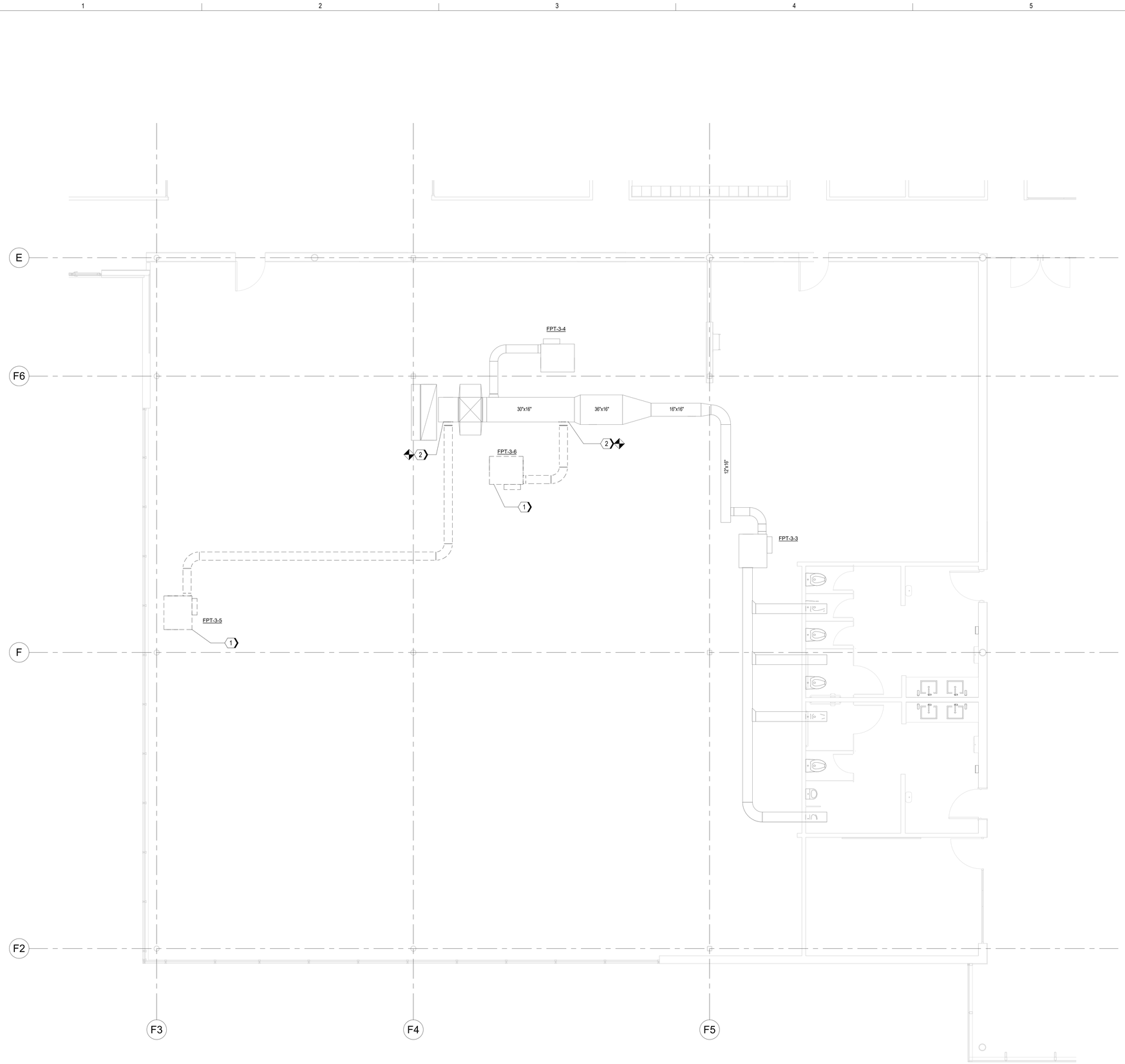
SEAL: STATE OF TEXAS · ERIC A MILLER · 132062 · LICENSED PROFESSIONAL ENGINEER
01.14.2022

IDO BUILDING STANDARDS SPACE FIT-OUT

GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO: N/A
CIP NO: N/A
HAS NO: N/A
KEY PLAN:

Jacobs Project No.: WHXK7103
Drawing Title: MECHANICAL LEGEND AND GENERAL NOTES
Date: 01/28/22
Designed: Designer
Drawn: Author
Checked: Checker
Drawing No.: M-001



A1 MECHANICAL DEMO PLAN
1/4" = 1'-0"

GENERAL NOTES

KEYNOTES

1 EXISTING FPT TO BE RELOCATED. RE: M-102 FOR FINAL LOCATION.

2 DEMOLISH EXISTING DUCT BACK TO TAP AS SHOWN. CAP, SEAL AIR-TIGHT, AND REINSULATE AS REQUIRED TO MAINTAIN VAPOR BARRIER.

GRAPHIC SCALES:

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IDO BUILDING STANDARDS SPACE FIT-OUT

GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO: N/A

CIP NO: N/A

HAS NO: N/A

KEY PLAN:

Jacobs Project No.: WHXK7103

Drawing Title: MECHANICAL DEMOLITION PLAN

Date: 01/28/22

Designed: Designer
Drawn: Author
Checked: Checker

Drawing No.: M-101

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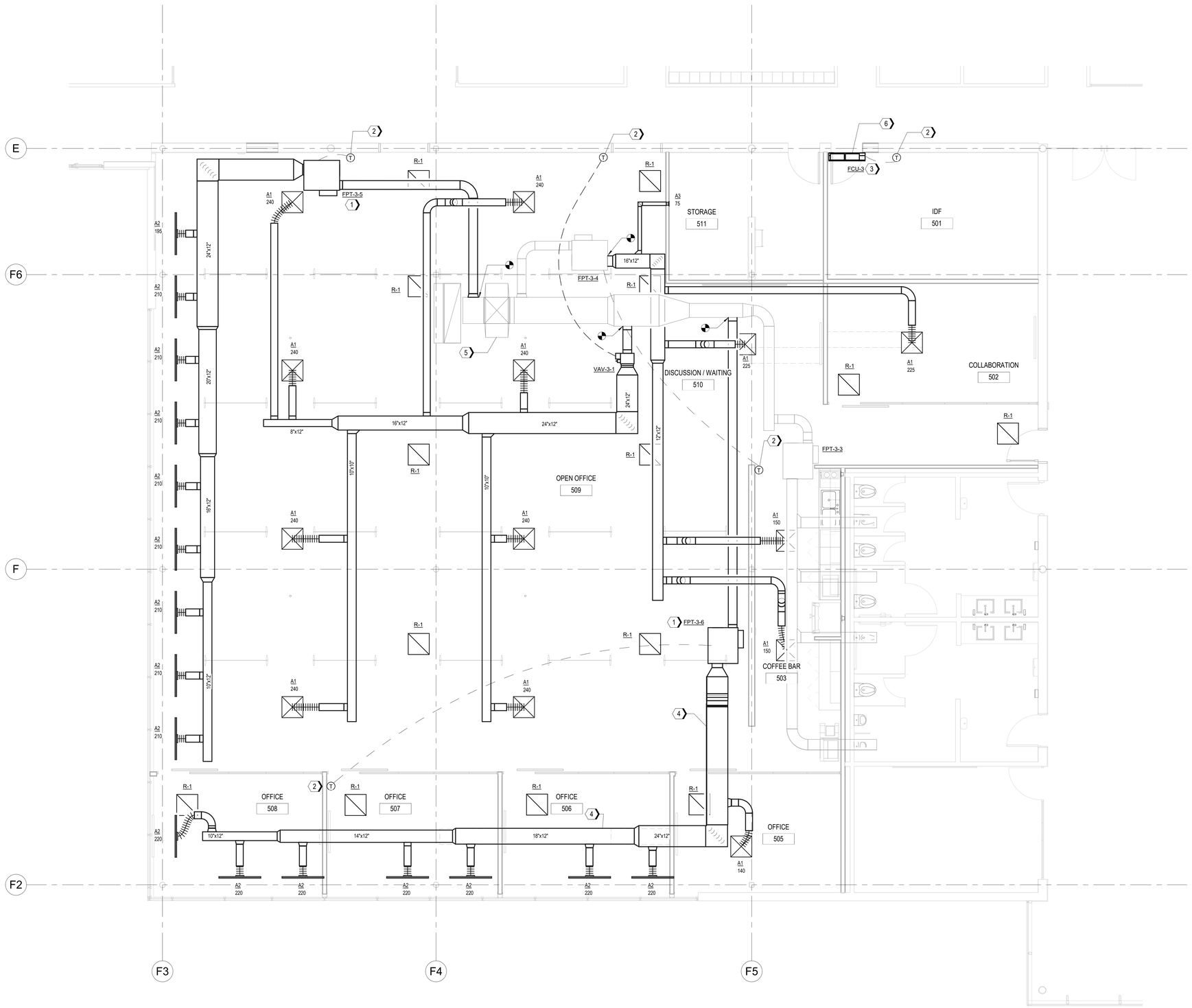

A1 MECHANICAL RENO PLAN
1/4" = 1'-0"

GENERAL NOTES

KEYNOTES

1 EXISTING FPT TO BE RELOCATED.

2 COORDINATE FINAL LOCATION OF THERMOSTAT WITH OWNER AND ARCHITECT.

3 PROVIDE WALL MOUNTED FAN COIL UNIT ABOVE DOOR AS SHOWN. RE: ME-202 FOR LOCATION OF CONDENSING UNIT ON ROOF.

4 OFFSET DUCT AS REQUIRED IN THIS AREA TO AVOID CONFLICT WITH EXISTING STORM PIPING.

5 CONTRACTOR TO VERIFY THAT DUCT MOUNTED SMOKE DETECTOR IS INSTALLED. IF NONE IS PRESENT, INSTALL DUCT MOUNTED SMOKE DETECTOR. SMOKE DETECTOR SHALL SEND SIGNAL TO ASSOCIATED RTU TO SHUT DOWN UPON DETECTION OF PRODUCTS OF COMBUSTION.

6 ROUTE FULL SIZE INSULATED CONDENSATE DRAIN LINE FROM FCU-3 TO SINK DRAIN TAILPIECE OF SK-1. PIPE SHALL BE ROUTED OUTSIDE OF IDF ROOM. SLOPE HORIZONTAL PIPE AT A MINIMUM OF 1/8" PER FOOT AND COORDINATE ROUTING WITH EXISTING UTILITIES.

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CONSULTANT: 4b technology

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HOUSTON, TX 77032

AIP NO: N/A

CIP NO: N/A

HAS NO: N/A

KEY PLAN:

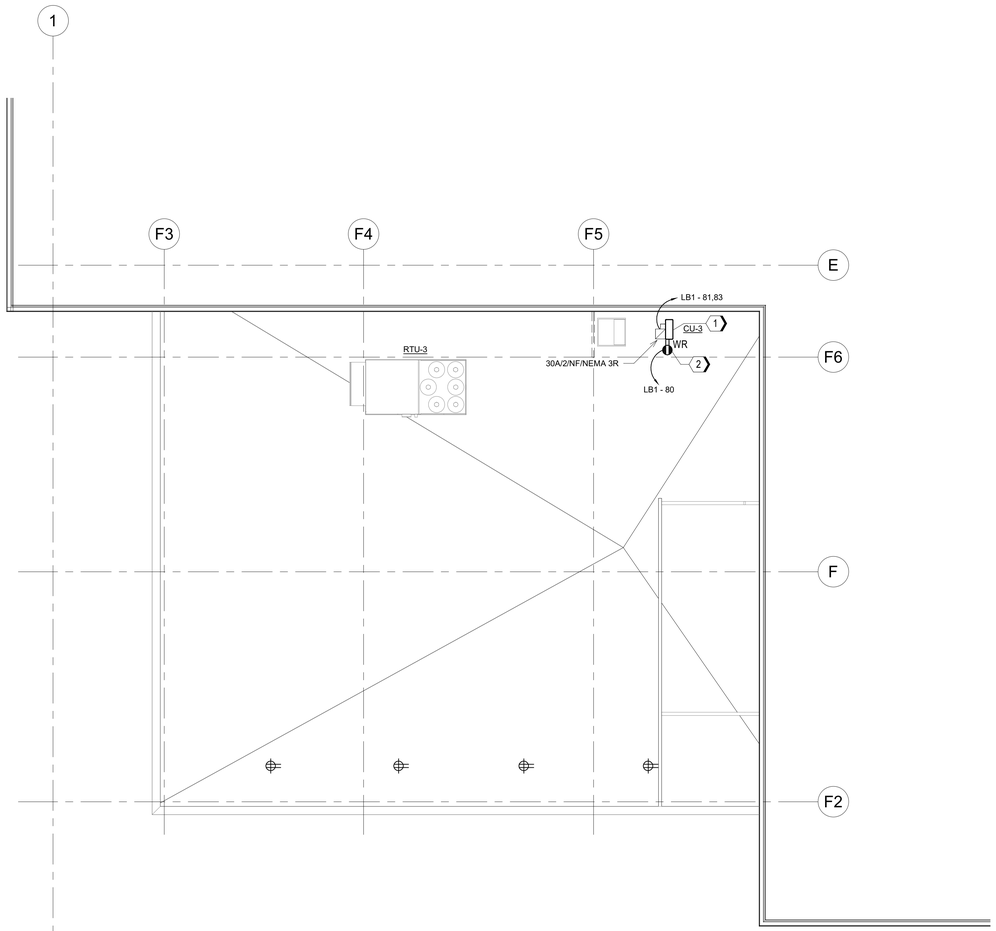
Jacobs Project No.: WHXK7103

Drawing Title: MECHANICAL RENOVATION PLAN

Date: 01/28/22

Designed: Designer
Drawn: Author
Checked: Checker

Drawing No.: M-102



A1 MECHANICAL ROOF PLAN
1/8" = 1'-0"

GENERAL NOTES

1. REFER TO SHEET E-001 FOR SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES.
2. ALL CONDUIT ROUTING AND ELECTRICAL EQUIPMENT ARE DRAWN DIAGRAMMATICALLY.
3. REFER TO LINE WEIGHTS FOR SHEET BELOW:

   EXISTING TO REMAIN
   EXISTING TO BE DEMOLISHED
   NEW WORK

4. REFER TO 'T. TA', AND 'TY' SERIES DRAWINGS FOR TELECOM, A/V, AND SECURITY REQUIREMENTS FOR BOXES, RACEWAYS, AND CONDUITS.
5. ALL RECEPTACLES ABOVE COUNTERS SHALL BE MOUNTED HORIZONTAL.

KEYNOTES

1 COORDINATE FINAL LOCATION OF CONDENSING UNIT WITH OWNER AND ARCHITECT. PROVIDE ROOF JACK FOR REFRIGERANT PIPING. RE: MECHANICAL DETAIL.

2 MOUNT RECEPTACLE TO A UNISTRUT ON CU-3-1.

GRAPHIC SCALES:

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OWNER: HOUSTON AIRPORTS

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

CONSULTANT: 4b technology

SEAL:

STATE OF TEXAS
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01.14.2022

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HOUSTON, TX 77032

AIP NO: N/A

CIP NO: N/A

HAS NO: N/A

KEY PLAN:

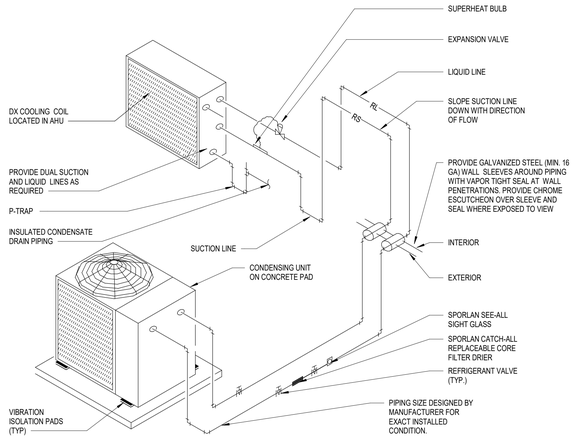
Jacobs Project No.: WHXK7103

Drawing Title:
ROOF PLAN

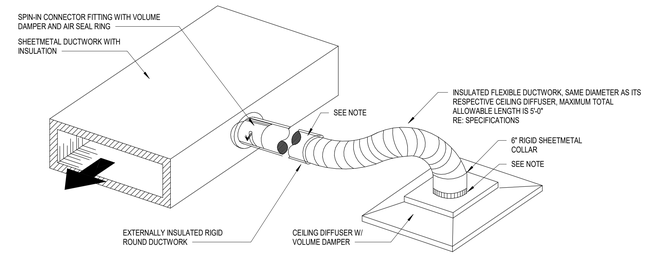
Date: 01/28/22

Designed: Designer
Drawn: Author
Checked: Checker

Drawing No.: M-201

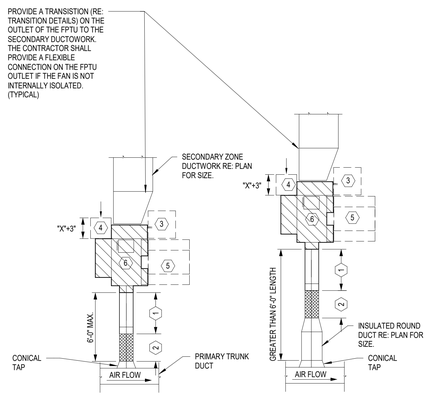


D3 REFRIGERANT PIPING DETAIL
NOT TO SCALE

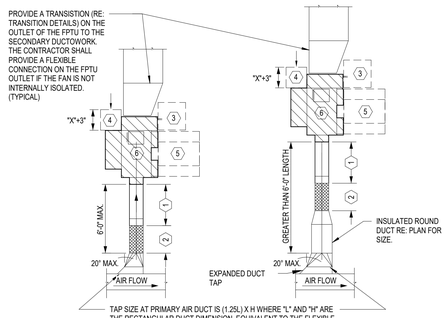


NOTE:
SECURE FLEXIBLE DUCT TO SLEEVE OR COLLAR WITH STAINLESS STEEL DRAW BAND. IF DUCT COLLAR EXCEEDS 12"ø, THE DRAW BAND MUST BE POSITIONED BEHIND A BEAD ON THE METAL COLLAR. FIT INSULATION AND VAPOR BARRIERS OVER CORE CONNECTION AND SECURE WITH NON METALLIC DRAW BAND.

D5 FLEXIBLE DUCT EXTENSION DETAIL
NOT TO SCALE



PRIMARY DUCT HEIGHT GREATER THAN THE BRANCH TAP SIZE



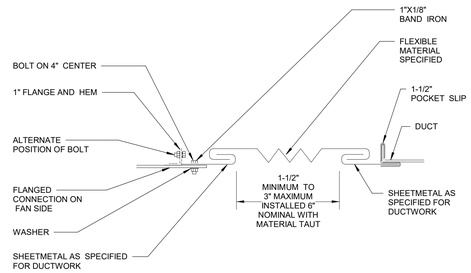
TAP SIZE AT PRIMARY AIR DUCT IS (1.25L) X H WHERE "L" AND "H" ARE THE RECTANGULAR DUCT DIMENSION EQUIVALENT TO THE FLEXIBLE DUCT SIZE INDICATED ON THE DRAWINGS WITH "H" EQUAL TO THE HEIGHT OF PRIMARY DUCT LESS 2". (PROVIDE THIS TAP WHEN THE FLEXIBLE DUCT SIZE EXCEEDS THE MAXIMUM CONICAL TAP ALLOWABLE IN THE SIDE OF THE PRIMARY AIR DUCT).

PRIMARY DUCT HEIGHT LESS THAN THE BRANCH TAP SIZE

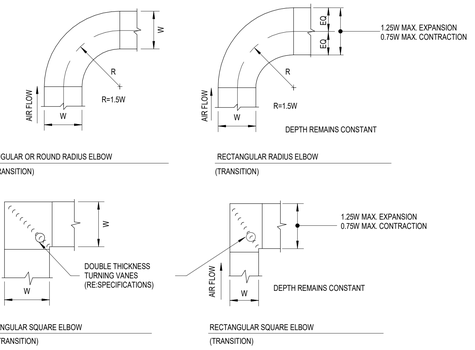
NOTES:

1. RIGID, INSULATION DUCTWORK OF THE FPTU INLET SIZE. MAINTAIN MINIMUM STRAIGHT DUCTDIAMETERS AS RECOMMENDED BY THE FAN POWERED TERMINAL DEVICE BUT NOT LESS THAN 3'-0".
2. INSULATE FLEXIBLE DUCTWORK OF THE FPTU INLET SIZE (MAXIMUM 2'-0"). RE: SPECIFICATIONS.
3. REHEAT COIL PIPING CLEARANCE (MIN. 24"x 24").
4. INTAKE CLEARANCE EQUAL TO INLET HEIGHT "X" PLUS 3" BY INLET WIDTH. SEE MANUFACTURER'S DATA FOR INLET HEIGHT AND WIDTH.
5. SERVICE CLEARANCE FOR FPTU CONTROLLERS (MIN. 30"X30").
6. FAN POWERED TERMINAL UNIT WITH HOT WATER REHEAT COIL AND INLET SOUND ATTENTUATOR. THE CONTRACTOR SHALL MAINTAIN THE AREA BELOW TERMINAL CLEAR OF PIPE, DUCT, CONDUIT, ETC. FOR SERVICE ACCESS. COORDINATE WITH OTHER TRADES TO MAINTAIN CLEARANCE.

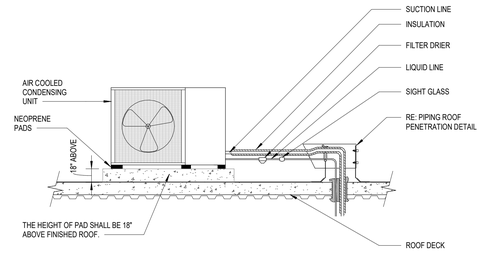
A1 FAN POWERED TERMINAL UNIT "FPTU" DETAIL
NOT TO SCALE



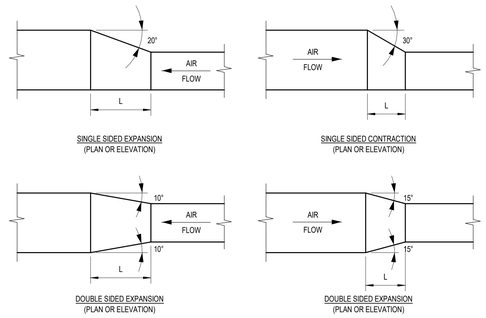
C3 TYPICAL FLEXIBLE CONNECTION DETAIL
NOT TO SCALE



A3 DUCT ELBOW DETAIL
NOT TO SCALE



C5 AIR COOLED CONDENSING UNIT (ROOF MOUNTED) DETAIL
NOT TO SCALE



TRANSITION LENGTH "L" SHALL BE DETERMINED FOR PLAN WIDTH AND PLAN HEIGHT THE LARGER OF THE CALCULATED LENGTHS SHALL BE THE MINIMUM ALLOWED LENGTH BUT NOT LESS THAN 12". THE CONTRACTOR SHALL PROVIDE TRANSITIONS OF LENGTH AS PER THIS DETAIL OR AS SHOWN DRAWING, WHICHEVER IS GREATER.

A5 DUCT TRANSITION DETAIL
NOT TO SCALE

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REVISIONS

Mark	Date	Description
1	10/25/21	ISSUED FOR PERMIT
2	01/28/22	ISSUED FOR PERMIT, REV. 2

OWNER:
HOUSTON AIRPORTS

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

CONSULTANT:
4b technology

SEAL:
STATE OF TEXAS
ERIC A MILLER
132062
LICENSED PROFESSIONAL ENGINEER
01.14.2022

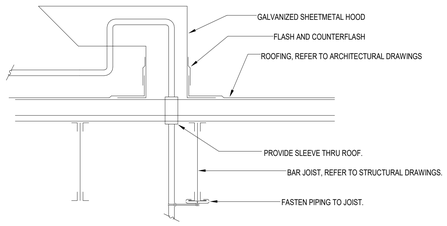
IDO BUILDING STANDARDS SPACE FIT-OUT

GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

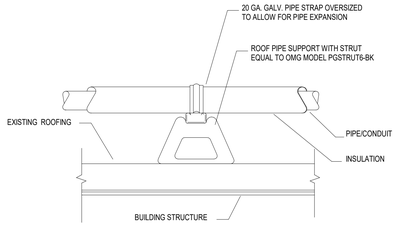
AIP NO: N/A
CIP NO: N/A
HAS NO: N/A
KEY PLAN:

Jacobs Project No.: WHXK7103
Drawing Title: MECHANICAL DETAILS
Date: 01/28/22
Designed: Designer
Drawn: Author
Checked: Checker
Drawing No.: M-501

C:_Revit_Local_Models\2018\WHXK7103_HAS IDO_NEW_rachel.henry.rvt
1/28/2022 1:36:45 PM



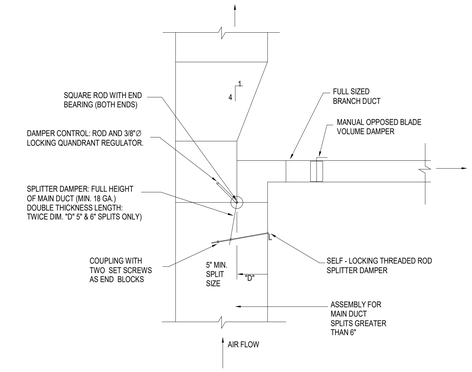
C1 ROOF JACK DETAIL
NOT TO SCALE



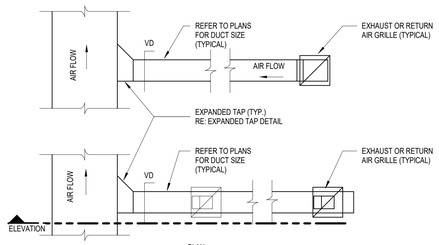
NOTES:

1. PLACE PIPE SUPPORTS ON MAXIMUM 8'-0" CENTERS AND ON ALL SIDES OF FITTINGS.

C3 PIPE ROOF SUPPORT
NOT TO SCALE

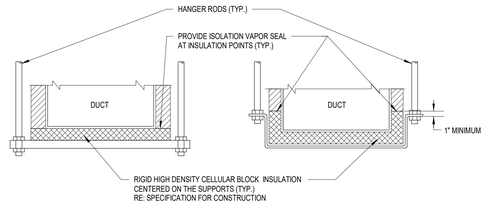


C5 TYPICAL SPLITTER DAMPER DETAIL
NOT TO SCALE

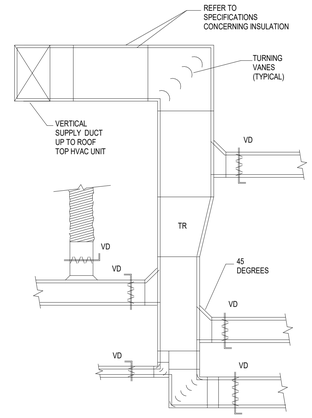


NOTE:
1. EXPANDED TAPS MAY NOT BE SHOWN ON PLANS AT ALL LOCATIONS. PROVIDE EXPANDED TAPS AT ALL RECTANGULAR TO RECTANGULAR DUCT TAPS.
2. VOLUME DAMPERS SHALL BE PROVIDED AT ALL TAPS WHETHER INDICATED ON THE PLANS OR NOT.

A1 EXH. OR RETURN AIR GRILLE AND RECTANGULAR BRANCH DUCT CONNECTION DETAIL
NOT TO SCALE



A3 RECTANGULAR DUCT HANGERS DETAIL
NOT TO SCALE



A5 TYPICAL SUPPLY DUCT
NOT TO SCALE

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111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO: N/A

CIP NO: N/A

HAS NO: N/A

KEY PLAN:

Jacobs Project No.: WHXK7103

Drawing Title: MECHANICAL DETAILS

Date: 01/28/22

Designed: Designer
Drawn: Author
Checked: Checker

Drawing No.: M-502

FAN POWERED TERMINAL UNIT SCHEDULE										
TAG	INLET DIAMETER	MAXIMUM AIRFLOW (CFM)	DEISGN AIRFLOW (CFM)	MINIMUM AIRFLOW (CFM)	ESP	MAX N.C. (IN WG)	FAN SUPPLY (CFM)	FLA	VOLTAGE	NOTES
FPT-3-3	10	1100	600	330						2
FPT-3-4	10	1100	825	330						2
FPT-3-5	12	1875	1875	562						1
FPT-3-6	12	1680	1680	504						1

NOTES:

1. EXISTING TO BE RELOCATED.
2. EXISTING TO REMAIN.

VAV TERMINAL UNIT SCHEDULE						
TAG	INLET DIAMETER	AIRFLOW (CFM)	MINIMUM AIRFLOW (CFM)	VOLTAGE	MANUFACTURER	NOTES
VAV-3-1	12	1920	575		CARRIER	

SPLIT SYSTEM SCHEDULE												
	INDOOR UNIT							OUTDOOR UNIT				
TAG	VOLTAGE	TONNAGE	CAPACITY	MIN CAP	MAX CAP	SEER	MODEL	VOLTAGE	MCA	MOCP	MODEL	NOTES
FCU-3	208/230-1-60	1.4	17000	5800	18600	19.0	40MHHC18---3	208/230-1-60	15	20	38MHRBC18AA3	1

NOTES:

1. PROVIDE UNIT-MOUNTED CONDENSATE RECEIVER/PUMP FOR FCU-3

AIR DEVICE SCHEDULE						
TAG	SERVICE	FACE	STYLE	MATERIAL	PATTERN	NOTES
A1	SUPPLY	24 X 24	SQUARE CONE DIFFUSER	STEEL	4 - WAY	
A2	SUPPLY	-	SLOT	STEEL	2 DIRECTION AUTO-CHANGEOVER	
A3	SUPPLY	4" X 6"	SIDEWALL	STEEL	2 - WAY THROW FIXED PATTERN	
R-1	RETURN	24 X 24	PERFORATED GRILLE	STEEL	-	

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HAS NO: N/A

KEY PLAN:

Jacobs Project No.: WHXK7103

Drawing Title: MECHANICAL SCHEDULES

Date: 01/28/22

Designed: Designer
Drawn: Author
Checked: Checker

Drawing No.: M-601

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
A. AMPS	AMPERES
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ARCH	ARCHITECT, ARCHITECTURAL
AS	AMPERE SWITCH
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE

B

BKR	BREAKER
BLDG	BUILDING

C

C	CONDUIT
CATV	CABLE TELEVISION SYSTEM
CCTV	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
CL	CENTERLINE
CLG	CEILING
CU	COPPER

D

DC	DIRECT CURRENT
DIA	DIAMETER
DISC	DISCONNECT
DN	DOWN
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

FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE
FVNR	FULL-VOLTAGE, NON-REVERSING
FV2SP	FULL-VOLTAGE, TWO SPEED
FWE	FURNISHED WITH EQUIPMENT

G

G.GND	GROUND
GA	GAUGE
GALV	GALVANIZED
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

ID	INSIDE DIAMETER
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
IES	ILLUMINATING ENGINEERING SOCIETY
IG	ISOLATED GROUND

J

J-BOX	JUNCTION BOX

K

KCMIL	1000 CIRCULAR MILS
KV	KILOVOLT
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
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&Y	OUTSIDE STEM & YOKE

P

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

SECT	SECTION
SF	SQUARE FEET
SHT	SHEET
SIM	SIMILAR
SPEC	SPECIFICATIONS
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
SURF	SURFACE
SUSP	SUSPEND

T

THRU	THROUGH
TYP	TYPICAL

U

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

V

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

W

W	WATT, WIDTH
W/	WITH
W/O	WITHOUT
WP	WEATHER-PROOF

X

XFMR	TRANSFORMER

ELECTRICAL SYMBOLS

(ALL SYMBOLS SHOWN ARE NOT NECESSARILY USED ON DRAWINGS)

LIGHTING

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

SWITCHES

- SWITCH, SPST, 20A, 120/277V
- SWITCH, 20A, 120/277V, "2" DENOTES DPST, "3" DENOTES THREE-WAY, "4" DENOTES FOUR-WAY
- SWITCH, SPDT, CENTER OFF, MOMENTARY CONTACT
- 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
- OCCUPANCY SENSOR. WALL MOUNTED.
- OCCUPANCY SENSOR. CEILING MOUNTED.
- 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.
- DUPLEX WALL RECEPTACLE. "WP" DENOTES WEATHERPROOF
- 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
- (E) 2LA "H" DENOTES VOLTAGE - "H"=480Y/277V, "L"=208Y/120V "A" DENOTES PANEL SEQUENCE. "(E)"DENOTES EXISTING
- 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
- S 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
- C LIGHTING CONTACTOR
- P PHOTOCELL
- PUSH BUTTON STATION
- DOOR CONTACT SWITCH
- TS TIME SWITCH
- KP KEYPAD
- CR CARD READER

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
- E ELECTRIC INTERLOCK
- K KIRK-KEY INTERLOCK
- A 0-2000 AMMETER, RANGE AS SHOWN
- AS AMMETER SWITCH
- V 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

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

W Z X X Y Y — 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

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#12, 1#12G, 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.

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. LIMIT 120V OR 277V BRANCH CIRCUIT HOMERUNS IN A SINGLE CONDUIT TO 3 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. 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.

DRAWING/DETAIL REFERENCE KEY

RE:2/E7.2 — REFER TO DRAWING/DETAIL NUMBER X; SHEET NUMBER XXXX

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

A / 5 a — LIGHTING FIXTURE SUBSCRIPTS INDICATE FIXTURE TYPE, CONTROLLING SWITCH AND CIRCUIT NUMBER.
- A INDICATES FIXTURE TYPE
- a INDICATES CONTROLLING SWITCH (IF NOT APPARENT)
- 5 INDICATES CIRCUIT NUMBER

REFER TO INDIVIDUAL SHEETS FOR ADDITIONAL CIRCUIT IDENTIFICATION INFORMATION.

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REVISIONS

Mark	Date	Description
1	10/25/21	ISSUED FOR PERMIT
2	01/28/22	ISSUED FOR PERMIT, REV. 2

OWNER: HOUSTON AIRPORTS

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

CONSULTANT: 4b technology

SEAL: STATE OF TEXAS — H. MARK STEPHENS — 78352 — LICENSED PROFESSIONAL ENGINEER — 1-14-22

IDO BUILDING STANDARDS
SPACE FIT-OUT

GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO: N/A
CIP NO: N/A
HAS NO: N/A
KEY PLAN:

Jacobs Project No.: WHXX7103
Drawing Title: ELECTRICAL GENERAL NOTES & SYMBOLS
Date: 01/28/22
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Checked: Checker
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SECTION 26 05 00
COMMON WORK RESULTS FOR ELECTRICAL

1. GENERAL

A. WORK TO COMPLY WITH ALL PERTINENT STATE, COUNTY, AND CITY OF HOUSTON ORDINANCES AND CODES. ALL WORK TO COMPLY WITH NFPA 70, THE NATIONAL ELECTRICAL CODE. ALL ELECTRICAL MATERIALS USED ON THIS PROJECT MUST BE U.L. LISTED AND LABELED.

B. THE CONTRACTOR WILL OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND INSPECTIONS THAT ARE REQUIRED.

C. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR COORDINATING WITH ALL OTHER TRADES PRIOR TO THE CONSTRUCTION OF RACEWAYS AND OR INSTALLATION OF ELECTRICAL EQUIPMENT.
WORK WILL BE EXECUTED IN A WORKMANLIKE MANNER AND INCLUDE ALL LABOR AND MATERIALS ESSENTIAL

D. TO PROVIDE COMPLETE FUNCTIONING SYSTEMS AS DESCRIBED IN THE CONTRACT DOCUMENTS. IN CASES OF DOUBT AS TO THE WORK INTENDED, OR IN THE EVENT OF NEED FOR EXPLANATION, THE CONTRACTOR WILL REQUEST ADDITIONAL INFORMATION FROM THE ARCHITECT.

E. UNLESS SPECIFICALLY INDICATED OTHERWISE, ALL WORK INDICATED ON THE DRAWINGS IS TO BE INCLUDED AS PART OF THE BASE BID.

F. ALL ELECTRICAL MATERIALS ARE REQUIRED TO BE LISTED, LABELED AND INSTALLED PER A NATIONALLY RECOGNIZED TESTING LABORATORY.

G. MOVE OR RELOCATE ANY ELECTRICAL DEVICE OR LIGHT FIXTURE AND ASSOCIATED CIRCUIT UP TO 5'-0" AT NO COST TO OWNER.

H. REQUIRED SUBMITTALS

1. INDIVIDUAL SUBMITTALS THAT ARE REQUIRED FOR BUT NOT LIMITED TO THE FOLLOWING:

a. MATERIAL AND DEVICE IDENTIFICATION
b. RACEWAY AND CONDUIT
c. 600 VOLT WIRE AND CABLE
d. BOXES AND FITTINGS
e. WIRING DEVICES
f. PANELBOARDS
g. TRANSFORMERS

2. IDENTIFICATION

A. IDENTIFY SOURCE AND CIRCUIT NUMBERS IN EACH CABINET, PULL BOX, AND JUNCTION BOX. COLOR-CODING TO BE USED FOR VOLTAGE AND PHASE INDICATION.

B. PROVIDE SCHEDULES FOR ALL PANELBOARDS, PROVIDING FRAMED, TYPED CIRCUIT SCHEDULES WITH EXPLICIT DESCRIPTION AND IDENTIFICATION OF ITEMS SERVED BY EACH INDIVIDUAL BREAKER.

C. COLOR-CODE CONDUCTORS FOR FEEDER AND BRANCH CIRCUIT CONDUCTORS THROUGHOUT THE SECONDARY ELECTRICAL SYSTEM. FACTORY-APPLY COLOR THE ENTIRE LENGTH OF THE CONDUCTORS. ONLY #8 AND SMALLER.

D. APPLY EQUIPMENT IDENTIFICATION LABELS OF ENGRAVED PLASTIC LAMINATE ON EACH MAJOR UNIT OF EQUIPMENT. EXCEPT AS OTHERWISE INDICATED, PROVIDE A SINGLE LINE OF TEXT WITH 1/2-INCH-HIGH LETTERING ON 1-1/2-INCH-HIGH LABEL; WHERE 2 LINES OF TEXT ARE REQUIRED, USE 2 INCH HIGH LABEL. LABELING WILL INCLUDE THE NAME OF EQUIPMENT THE DEVICE FEEDS. USE WHITE LETTERING ON BLACK FIELD. APPLY LABELS FOR EACH PANELBOARD, DISCONNECT, ETC.

3. CUTTING AND PATCHING

A. CUT, CHANNEL, CHASE, AND DRILL FLOORS, WALLS, PARTITIONS, CEILINGS, AND OTHER SURFACES NECESSARY FOR ELECTRICAL INSTALLATIONS. PERFORM CUTTING BY SKILLED MECHANICS OF THE TRADES INVOLVED.

B. CUTTING WILL BE DONE UNDER THE SUPERVISION OF THE OWNER'S REPRESENTATIVE. THIS CONTRACTOR WILL NOT BE PERMITTED TO CUT OR MODIFY ANY STRUCTURAL MEMBERS.

C. REPAIR DISTURBED SURFACES TO MATCH ADJACENT UNDISTURBED SURFACES.

D. THOROUGHLY CLEAN DAMAGED AREAS AND PROVIDE PRIMER, INTERMEDIATE, AND FINISH COATS TO SUIT THE DEGREE OF DAMAGE AT EACH LOCATION.

E. ALL EQUIPMENT NOT FINISHED AT THE FACTORY WILL BE GIVEN A PRIME COAT AND THEN FINISH PAINTED WITH TWO COATS OF ENAMEL IN A COLOR AS DIRECTED BY THE ARCHITECT/ENGINEER. NO NAMEPLATES ON EQUIPMENT WILL BE PAINTED.

F. ROOF PENETRATIONS WILL COMPLY WITH 'SMACNA' AND 'NRCA' STANDARDS AND WITH REQUIREMENTS OF THE ROOFING WARRANTY OR GUARANTEE. DO NOT PERFORM ROOFING PENETRATIONS IN A MANNER WHICH WOULD VOID OR OTHERWISE LIMIT THE ROOFING GUARANTEE.

4. ARC FLASH HAZARD

A. PERFORM CALCULATIONS TO DETERMINE THE ARC FLASH HAZARD AT SWITCHBOARDS, PANELBOARDS, MOTOR CONTROL CENTERS, STARTERS AND INDUSTRIAL CONTROL PANELS.

B. INSTALL ARC FLASH HAZARD LABELS AT EACH PIECE OF EQUIPMENT IN ACCORDANCE WITH NFPA 70, ARTICLE 110.16.

END OF SECTION 26 05 00

SECTION 25 05 19
LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

1. GENERAL

A. CONDUCTOR DESCRIPTION: INSULATED SOFT ANNEALED 98% PURE COPPER, ALUMINUM CONDUCTORS ARE NOT ALLOWED. SOLID CONDUCTOR FOR #10 AWG AND SMALLER, STRANDED CONDUCTOR FOR #8 AWG AND LARGER.

B. INSULATION:

1. BRANCH CIRCUITS: TYPE THHN/THWN, IN RACEWAY.
2. SERVICE ENTRANCE: TYPE THWN, IN RACEWAY.
3. WET-LOCATIONS: INCLUDING KITCHEN AND OUTDOOR - TYPE THWN, IN RACEWAY.

C. CONNECTORS AND SPLICES: UNITS OF SIZE, AMPACITY RATING, MATERIAL, TYPE, AND CLASS SUITABLE FOR SERVICE INDICATED. SELECT TO COMPLY WITH PROJECT'S INSTALLATION REQUIREMENTS.

D. CONDUCTOR SPLICES: KEEP TO A MINIMUM AND COMPLY WITH THE FOLLOWING:

1. INSTALL SPLICES AND TAPS OF EQUIVALENT OR BETTER MECHANICAL STRENGTH, AMPACITY AND INSULATION RATINGS THAN UNSPLICED CONDUCTORS.
2. USE SPLICE AND TAP CONNECTORS THAT ARE COMPATIBLE WITH CONDUCTOR MATERIAL.
3. SERVICE ENTRANCE, FEEDERS, AND HOME RUN CONDUCTORS ARE NOT TO BE SPLICED.

E. THE USE OF TYPES AC (BX) AND MC CABLES AND ½" EMT CONDUIT ARE PROHIBITED, EXCEPT BY SPECIAL WRITTEN PERMISSION OF THE HOU ELECTRICAL DIVISION MANAGER.

F. STRANDED WIRE SMALLER THAN NO. 8 AWG MAY BE USED FOR BRANCH CIRCUITS PROVIDING:

1. THEY ARE CONNECTED TO WIRING DEVICES THAT UTILIZE CLAMP TYPE TERMINATIONS RATHER THAN BINDER HEAD SCREW CONNECTIONS.
2. THEY ARE TERMINATED WITH SPADE TYPE LUGS FOR BINDER HEAD SCREW CONNECTIONS.
3. THEY ARE SPLICED TO SOLID CONDUCTORS FOR BINDER HEAD SCREW CONNECTIONS.

G. STRANDED CONDUCTORS SHALL BE USED FOR ALL MOTOR AND CONTROL CIRCUIT WIRING.

H. CONDUCTORS COLOR CODING SHALL BE CONSISTENT ALONG THE ENTIRE LENGTH OF A CIRCUIT.

A.	120/208	A PHASE-BLACK B PHASE-RED C PHASE-BLUE NEUTRAL-WHITE	277/480	A PHASE-BROWN B PHASE-PURPLE C PHASE-YELLOW NEUTRAL-GRAY

END OF SECTION 26 05 19

SECTION 26 05 33
CONDUIT, RACEWAYS AND BOXES

1. GENERAL

A. COMPLETE SYSTEM: FOR EACH ELECTRICAL WIREWAY SYSTEM INDICATED, PROVIDE A COMPLETE ASSEMBLY OF CONDUIT, TUBING OR DUCT WITH FITTINGS INCLUDING, BUT NOT NECESSARILY LIMITED TO, CONNECTORS, NIPPLES, COUPLINGS, LOCKNUTS, BUSHINGS, EXPANSION FITTINGS, AND OTHER COMPONENTS AND ACCESSORIES AS NEEDED TO FORM A COMPLETE SYSTEM OF THE TYPE INDICATED.

B. INDOORS:

1. INDOOR WIRING:

a. EXPOSED: RIGID STEEL OR EMT. EMT WILL NOT BE USED WHERE SUBJECT TO DAMAGE.
b. CONCEALED: RIGID STEEL OR EMT.

2. INDOOR BOXES AND ENCLOSURES: NEMA 250, TYPE 1.

C. OUTDOOTS/UNDERFLOOR:

1. OUTDOOR/UNDERFLOOR WIRING: SCHEDULE 40PVC OR PVC COATED RIGID STEEL. SCHEDULE 40 PVC WILL NOT BE USED WHERE EXPOSED OR SUBJECT TO DAMAGE.
2. OUTDOOR BOXES AND ENCLOSURES: NEMA 250, TYPE 3R.

D. MINIMUM RACEWAY SIZE: 3/4-INCH TRADE SIZE FOR HOMERUNS, I-INCH TRADE SIZE FOR ALL WORK UNDERFLOOR AND COMMUNICATION/DATA CABLING.

E. USE TEMPORARY CLOSURES TO PREVENT FOREIGN MATTER FROM ENTERING RACEWAYS.

F. MAKE BENDS AND OFFSETS SO INSIDE DIAMETER IS NOT REDUCED. KEEP LEGS OF BENDS IN THE SAME PLANE AND STRAIGHT LEGS OF OFFSETS PARALLEL. ALL BENDS WILL BE FREE FROM DENTS OR FLATTENING.

G. NO MORE THAN THE EQUIVALENT OF FOUR (4) 90° BENDS WILL BE USED IN ANY RUN BETWEEN TERMINALS AND CABINETS, OR BETWEEN JUNCTION OR PULL BOXES.

H. INSTALL EXPANSION FITTINGS IN RACEWAYS WHERE RACEWAY CROSSES BUILDING EXPANSION J OINTS, IN STRAIGHT RUNS IN EXCESS OF 150 FEET, AND FOR RACEWAYS ENTERING LOCATIONS SUBJECT TO THERMAL EXPANSION.

I. SLEEVES: INSTALL FOR CABLE AND RACEWAY PENETRATIONS OF CONCRETE SLABS AND WALLS, EXCEPT WHERE CORE-DRILLED HOLES ARE USED. INSTALL FOR CABLE AND RACEWAY PENETRATIONS OF MASONRY AND FIRE-RATED GYPSUM WALLS AND OF ALL OTHER FIRE-RATED WALL ASSEMBLIES.

J. FIRESTOPPING: APPLY TO CABLE, RACEWAY AND BUSWAY PENETRATIONS OF FIRE-RATED WALL ASSEMBLIES. PERFORM FIRESTOPPING TO REESTABLISH THE ORIGINAL FIRE-RESISTANCE RATING OF THE ASSEMBLY AT THE PENETRATION.

K. CONNECTIONS AND SUPPORTS.

1. CONNECT COMPONENTS TO WIRING SYSTEMS AND TO GROUND AS INDICATED AND INSTRUCTED BY MANUFACTURER. TIGHTEN CONNECTORS AND TERMINALS, INCLUDING SCREWS AND BOLTS, ACCORDING TO EQUIPMENT MANUFACTURER'S PUBLISHED TORQUE-TIGHTENING VALUES FOR EQUIPMENT CONNECTORS. WHERE MANUFACTURER'S TORQUING REQUIREMENTS ARE NOT INDICATED, TIGHTEN CONNECTORS AND TERMINALS ACCORDING TO TIGHTENING REQUIREMENTS SPECIFIED IN UL 486A.
2. INSTALL DEVICES TO SECURELY AND PERMANENTLY FASTEN AND SUPPORT ELECTRICAL COMPONENTS.
3. RACEWAY SUPPORTS: COMPLY WITH NFPA 70 AND THE FOLLOWING REQUIREMENTS:

a. CONFORM TO MANUFACTURER'S RECOMMENDATIONS FOR SELECTING AND INSTALLING SUPPORTS.
b. INSTALL INDIVIDUAL AND MULTIPLE RACEWAY HANGERS AND RISER CLAMPS TO SUPPORT RACEWAYS. PROVIDE U BOLTS, CLAMPS, ATTACHMENTS, AND OTHER HARDWARE NECESSARY FOR HANGER ASSEMBLY AND FOR SECURING HANGER RODS AND CONDUITS.
c. SUPPORT INDIVIDUAL HORIZONTAL RACEWAYS WITH SEPARATE, MALLEABLE IRON PIPE HANGERS OR CLAMPS.
d. HANGER RODS: 1/4-INCH DIAMETER OR LARGER THREADED STEEL, EXCEPT AS OTHERWISE INDICATED.
e. IN VERTICAL RUNS, ARRANGE SUPPORT SO THE LOAD PRODUCED BY THE WEIGHT OF THE RACEWAY AND THE ENCLOSED CONDUCTORS IS CARRIED ENTIRELY BY THE CONDUIT SUPPORTS, WITH NO WEIGHT LOAD ON RACEWAY TERMINALS.
f. VERTICAL CONDUCTOR SUPPORTS: INSTALL SIMULTANEOUSLY WITH CONDUCTORS.

L. IN LOCATIONS WHERRE CONDUITS ARE SUBJECT TO SEVERE PHYSICAL DAMAGE, SUCH AS WAREHOUSES, LANDING DOCKS OR BAGGAGE HANDLING AREAS WHERE VEHICULAR TRAFFIC IS A POTENTIAL SOURCE OF DAMAGE, CONDUITS SHALL BE RIGID GALVANIZED STEEL TO A MINMUM HEIGHT OF 8' AFF.

M. BOXES

1. PULL BOXES, HAND HOLES, OR FITTINGS

a. SHALL BE SPACED A MAXIMUM OF 450' APART FOR OUTDOOR FEEDER INSTALLATIONS
b. SHALL BE SPACED A MAXMUM OF 90' APART FOR INDOOR/OUTDOOR BRANCH CIRCUITS
c. SHALL BE SPACED A MAXIMUM OF 150' APART FOR INDOOR FEEDERS
d. THE ABOVE SPACING DOES NOT PRECLUDE THE NEC LIMITING THE MAXMUM NUMBER OF BENDS IN A CONDUIT RUN
e. ALL BOXES (EXCEPT IN-GROUND) SHALL BE SUPPORTED INDEPENDENTLY OF THE CONDUIT AND TO THE STRUCTURE OF THE BUILDINGS

2. DEVICE BOXES

a. SHALL BE A MINIMUM OF 4"X"4"X1 1/2" AND USE A DEVICE RING
b. ALL BOXES SHALL BE SUPORTED INDEPENDETLY OF THE CONDUIT AND TO THE STRUCTURE OF THE BUILDING

END OF SECTION 26 05 33.13

SECTION 26 27 26.16
WIRING DEVICES

1. GENERAL

A. MANUFACTURERS: LEVITON MANUFACTURING CO. OR ENGINEER APPROVED EQUAL.

B. SUBSTITUTIONS: OTHER MANUFACTURERS' PRODUCTS WITH EQUAL PERFORMANCE CHARACTERISTICS MAY BE CONSIDERED. ALL SUBSTITUTIONS MUST BE APPROVED BY THE ENGINEER PRIOR TO BID ACCEPTANCE.

C. ENCLOSURES: NEMA 1 EQUIVALENT, EXCEPT AS OTHERWISE INDICATED.

D. ALL WIRING DEVICES WILL BE DECORATOR STYLE, COMMERCIAL SPECIFICATION GRADE DEVICES.

2. DEVICES

A. RECEPTACLES (STRAIGHT-BLADE OR LOCKING TYPE): COMPLY WITH UL STANDARD 498, "ELECTRICAL ATTACHMENT PLUGS AND RECEPTACLES" AND WHITE, NEMA 5-20R, HEAVY-DUTY GRADE EXCEPT AS OTHERWISE INDICATED.

B. GROUND-FAULT CIRCUIT INTERRUPTER RECEPTACLES: COMPLY WITH UL STANDARD 943, "GROUND FAULT CIRCUIT INTERRUPTERS" WHITE, FEED-THROUGH TYPE WITH INTEGRAL NEMA 5-20R DUPLEX RECEPTACLE ARRANGED TO PROTECT CONNECTED DOWNSTREAM RECEPTACLES ON THE SAME CIRCUIT AND CAPABLE IF INSTALLATION IN A 2-3/4" DEEP OUTLET BOX WITHOUT AN ADAPTER.

C. SNAP SWITCHES: HEAVY-DUTY, 120V, 20 AMP QUIET TYPE A.C. SWITCHES IN FINISHED SPACES. QUIET TYPE A.C. SWITCHES, NRTL LISTED AND LABELED AS COMPLYING WITH UL STANDARD 20 "GENERAL USE SNAP SWITCHES" AND WITH FEDERAL SPECIFICATION W-S-896 FOR EQUIPMENT SWITCH APPLICATIONS.

D. WALL PLATES: SINGLE AND COMBINATION TYPES THAT MATE AND MATCH WITH CORRESPONDING WIRING DEVICES. IN FINISHED SPACES, ALL FLUSH WALL PLATES FOR WIRING DEVICES, OR WITH BUSHED OPENINGS FOR CABLES SHALL BE STAINLESS STEEL .

E. WIRING DEVICES THAT DEPEND ON “STAB-IN” OR “SPEED WIRING” TERMINALS SHALL BE PROHIBITED

3.OCCUPANCY SENSORS:

A. PROVIDE CEILING MOUNTED, DIGITAL , DUAL TECHNOLOGY WITH 360 DEGREE SENSING. RATED FOR 1000 SF WITH 10' CEILING.

B. PROVIDE SWITCH PACKS AS NECESSARY TO PERFORM THE REQUIRED OPERATION.

4. INSTALLATION

A. COMMON GANG: INSTALL DEVICES IN COMMON GANG WHERE POSSIBLE. PROVIDE FULL BOX DIVIDER BETWEEN DIFFERING VOLTAGES.

B. INSTALL DEVICE AND ASSEMBLIES PLUMB AND SECURE.

C. INSTALL WALL PLATES WHEN WALL FINISHING IS COMPLETE. PROTECT DEVICES AND ASSEMBLIES DURING WALL FINISHING.

D. ARRANGEMENT OF DEVICES: EXCEPT AS OTHERWISE INDICATED, MOUNT FLUSH, WITH LONG DIMENSION VERTICAL AND GROUNDING TERMINAL OF RECEPTACLE ON TOP. WHERE ABOVE COUNTERTOPS, MOUNT FLUSH, WITH LONG DIMENSION HORIZONTAL.

E. CONNECT WIRING DEVICE GROUNDING TERMINAL TO OUTLET BOX WITH BONDING JUMPER AND TO BRANCH-CIRCUIT EQUIPMENT GROUNDING CONDUCTOR.
INSTALL OCCUPANCY SENSORS AS RECOMMENDED BY THE MANUFACTURER FOR COVERAGE AND TO AVOID

F. MECHANICAL SUPPLY AND RETURN GRILLES.

4. IDENTIFICATION

A. SWITCHES: WHERE THREE (3) OF MORE SWITCHES ARE GANGED, AND ELSEWHERE WHERE INDICATED, IDENTIFY EACH SWITCH WITH APPROVED LEGEND ENGRAVED ON WALL PLATE.

B. RECEPTACLES: IDENTIFY THE PANELBOARD AND CIRCUIT NUMBER FROM WHICH SERVED. USE DURABLE WIRE MARKERS OR TAGS WITHIN OUTLET BOXES. LABEL CIRCUIT NUMBER ON COVERPLATE PER BUILDING STANDARDS.

C. SWITCHES: IDENTIFY THE PANELBOARD AND CIRCUIT NUMBER FROM WHICH SERVED. USE DURABLE WIRE MARKERS OR TAGS WITHIN OUTLET BOXES. LABEL CIRCUIT NUMBER ON COVERPLATE PER BUILDING STANDARDS.

END OF SECTION 26 27 26.16

SECTION 26 22 13
LOW VOLTAGE DISTRIBUTION TRANSFORMERS

1. GENERAL

A. MANUFACTURERS: CUTLER-HAMMER/EATON, GENERAL ELECTRIC, SIEMENS, SQUARE-D, OR ENGINEER APPROVED EQUAL.

B. SUBSTITUTIONS: OTHER MANUFACTURERS' PRODUCTS WITH EQUAL PERFORMANCE CHARACTERISTICS MAY BE CONSIDERED. ALL SUBSTITUTIONS MUST BE APPROVED BY THE ENGINEER PRIOR TO BID ACCEPTANCE.

2. NEW TRANSFORMERS

A. ENCLOSURES

1. VENTILATED DRY TYPE SUITABLE OFR FLOOR OR WALL MOUNTING

B. WINDINGS: COPPER WITH ELECTROSTATIC SHIELD AND SEPARATE INSULATED GROUND CONNECTION.

C. TEMPERATURE RATING: 115 DEG C RISE

D. HARMONICS: IEEE C57.12.91, UL 1561 ANE NEMA ST 20 WITH K-13 RATING FOR NON-LINEAR LOADS

E. WINDING TAPS: TWO 2-1/2%%% BELOW AND TWO 2-1/2%%% ABOVE.

F. SOUND LEVEL: 10-50KVA 45 DECIBELS

G. BASIC IMPULSE LEVEL: 10KV

H. ALL DISTRIBUTION TRANSFORMERS WILL HAVE A 120/208 VOLT, THREE PHASE SECONDARY

I. UNLESS CLEARLY EVIDENT, TRANSFORMERS WILL BE LABELED AS TO FEEDER LOCATION (DISTRIBUTION CENTER

J. NAME AND CIRCUIT NUMBER)

K. ALL DISTRIBUTION TRANSFORMERS WILL BE SET ON ISOLATION PADS

END OF SECTION 26 22 13

SECTION 26 05 26
GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

1. GENERAL

A. COMPLY WITH UL 467.

B. EQUIPMENT GROUNDING CONDUCTORS: COMPLY WITH NEC ARTICLE 250 FOR TYPES, SIZES, AND QUANTITIES OF EQUIPMENT GROUNDING CONDUCTORS, EXCEPT WHERE SPECIFIC TYPES, LARGER SIZES, OR MORE CONDUCTORS THAN REQUIRED BY NEC ARE INDICATED. ENSURE ELECTRICAL CONTINUITY OF THE GROUNDING SYSTEM.

C. RACEWAYS: INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL NONMETALLIC RACEWAYS UNLESS THEY ARE DESIGNATED FOR TELEPHONE OR DATA CABLES. NO RACEWAY WILL BE ALLOWED AS A GROUNDING MEANS. CONNECTIONS: MAKE CONNECTIONS SO POSSIBILITY OF GALVANIC ACTION OR ELECTROLYSIS IS MINIMIZED.

D. SELECT CONNECTORS, CONNECTION HARDWARE, CONDUCTORS, AND CONNECTION METHODS SO METALS IN DIRECT CONTACT WILL BE GALVANICALLY COMPATIBLE. TIGHTEN SCREWS AND BOLTS FOR GROUNDING AND BONDING CONNECTORS AND TERMINALS ACCORDING TO MANUFACTURER'S PUBLISHED TORQUE-TIGHTENING VALUES. WHERE THESE REQUIREMENTS ARE NOT AVAILABLE, USE THOSE SPECIFIED IN UL 486A AND UL 486B.

E. WHERE AN EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED BY THE NEC TO SUPPLEMENT THE GROUNDING CAPACITY OF FLEXIBLE CONDUIT, IT SHALL BE INSTALLED OUTSIDE THE CONDUIT.

END OF SECTION 26 05 26

SECTION 26 24 16
PANELBOARDS

1. GENERAL

A. MANUFACTURERS: CUTLER-HAMMER/EATON, GENERAL ELECTRIC, SIEMENS, SQUARE-D, OR ENGINEER APPROVED EQUAL.

B. SUBSTITUTIONS: OTHER MANUFACTURERS' PRODUCTS WITH EQUAL PERFORMANCE CHARACTERISTICS MAY BE CONSIDERED. ALL SUBSTITUTIONS MUST BE APPROVED BY THE ENGINEER PRIOR TO BID ACCEPTANCE.

2. NEW PANELBOARDS

A. ENCLOSURES

1. INDOOR: NEMA PB 1, TYPE 1, UNLESS OTHERWISE INDICATED.
2. OUTDOOR: NEMA 250, TYPE 3R, UNLESS OTHERWISE INDICATED.

B. DOORS: IN PANELBOARD FRONT, WITH CONCEALED HINGES. SECURE WITH FLUSH CATCH AND TUMBLER LOCK, ALL KEYED ALIKE. PROVIDE BOX WITH DOOR-IN-DOOR CONSTRUCTION.

C. BUS: HARD DRAWN COPPER OF 98 PERCENT CONDUCTIVITY. BUS WILL RUN ENTIRE LENGTH OF PANEL. BUSING WILL BE OF THE "SEQUENCE" TYPE SO THAT MULTI-POLE BREAKERS CAN BE SUBSTITUTED FOR SINGLE-POLE BREAKERS WITHOUT BUS OR ASSEMBLY REARRANGEMENT.

D. MAIN AND NEUTRAL LUGS: COMPRESSION TYPE.

E. EQUIPMENT GROUND BUS: ADEQUATE FOR FEEDER AND BRANCH-CIRCUIT EQUIPMENT GROUND CONDUCTORS. BONDED TO BOX. COPPER. PROVIDE ISOLATED GROUND BUS, INSULATED FROM BOX, WHERE INDICATED ON DRAWINGS.

F. SERVICE EQUIPMENT APPROVAL: LISTED FOR USE AS SERVICE ENTRANCE EQUIPMENT FOR PANELBOARDS WITH MAIN SERVICE DISCONNECT.

G. NEUTRAL BUS:

1. ALL PANELS WILL CONTAIN A NEUTRAL BUS OF FULL CAPACITY (MINIMUM).PROVIDE TYPE "NL" PANELS WITH DOUBLE NEUTRAL WHERE INDICATED.
2. BONDING: BOND NEUTRAL BUS TO EQUIPMENT GROUND BUS AT MAIN ELECTRICAL SERVICE ONLY.

H. FEED-THROUGH LUGS: SIZED TO ACCOMODATE FULL BUS CAPACITY

I. INTEGRATED EQUIPMENT RATING: EACH PANELBOARD, AS A COMPLETE UNIT, WILL BE BRACED FOR AN INTEGRATED EQUIPMENT RATING EQUAL TO THE INTERRUPTING RATING INDICATED ON PANEL SCHEDULE. THE MINIMUM RATING WILL BE 10,000 AIC, INTEGRATED EQUIPMENT BUT IN NO CASE WILL BE LESS THAN THE RATING SHOWN N THE PANELBOARD SCHEDULE OR ON THE PLANS.

J. BRANCH OVERCURRENT PROTECTIVE DEVICE: BOLT-ON MOLDED CASE CIRCUIT BREAKERS, REPLACEABLE WITHOUT DISTRURBING ADJACENT UNITS. ONLY FULL-MODULE BREAKERS ARE ACCEPTACLE.

K. MOUNTING HEIGHTS: TOP OF TRIM 74 INCHES ABOE FINISHED FLOOR, UNLESS OTHERWISE INDACATED.

L. CIRCUIT DIRECTORY: TYPE DIRECTORY TO INDICATE INSTALLED CIRCUIT LOADS FROM BALANCING PANELBOARD . LOADS AND MOUNT INSIDE EACH OPANEL BOARD DOOR.

M. SURFACE-MOUNTED PANELS: INSTALL ENCLOSURE WITH A 1/4" MIN GAP BETWEEN BACK OF PANEL AND THE WALL. MOUNT ON UNISTRUT AS REQUIRED.

O. ALL BREAKERSASSEMBLIES WITH A 100A AND LARGER MAIN BREAKER OR FEEDER WILL HAVE COPPER-CLAD BUSSING.

P. ALL BREAKER ASSEMBLIES WITH A 100A AND LARGER MAIN BREAKER OR FEEDER AND DESIGNED TO ACCOMMODATE MORE THAN 18 SINGLE POLES WILL HAV E A"DOOR IN DOOR" TYPE COVER.

Q. UNLESS CLEARLY EVIDENT, LOAD CENTERS WILL BE LABELED AS TO FEEDER LOCATION (DISTRIBUTION CENTER NAME AND CIRCUIT NUMBER)

3. CIRCUIT BREAKERS

A. MANUFACTURERS: ALL BREANCH CIRCUIT BREAKERS WILL BE OF THE SAME MANUFACTURER AS THE PANELBOARD WITHIN WHICH IT IS INSTALLED.

B. INTERRUPTING RATING: ALL BRANCH CIRCUIT BREAKER WILL HAVE A MINIMUM INTERRUPT RATING EQUAL TO THE PANELBOARD WITHIN WHICH IT IS INSTALLED.

C. RETURN ALL SPARE BREAKERS TO THE "OFF" POSITION.

4. ONE-LINE DIAGRAM

A. A SUITABLE PROTECTED ONE-LINE DIAGRAM SHALL BE MOUNTED ON THE COVER OF THE DISTRIBUTION PANEL.

5. PROJECT DOCUMENTS

A. UPON COMPLETION OF A PROJECT, THE CONTRACTOR SHALL PROVIDE AN UPDATED, TYPED PANEL SCHEDULE FOR ALL CIRCUIT BREAKER PANELS INSTALLED OR MODIFIED.

END OF SECTION 26 24 16

SECTION 26 28 16
ENCLOSED SWITCHES AND CIRCUIT BREAKERS

1. GENERAL

A. MANUFACTURERS: CUTLER-HAMMER/EATON, GENERAL ELECTRIC, SIEMENS, SQUARE-D, OR ENGINEER APPROVED EQUAL.

B. SUBSTITUTIONS: OTHER MANUFACTURERS' PRODUCTS WITH EQUAL PERFORMANCE CHARACTERISTICS MAY BE CONSIDERED. ALL SUBSTITUTIONS MUST BE APPROVED BY THE ENGINEER PRIOR TO BID ACCEPTANCE.

2. SWITCH COMPONENTS

A. ENCLOSED, NON-FUSIBLE SWITCH: HEAVY-DUTY SWITCH WITH NUMBER OF POLES AS REQUIRED AND WITH LOCKABLE HANDLE.

B. CURRENT-CARRYING PARTS: WILL BE CONSTRUCTED OF HIGH CONDUCTIVITY COPPER.

C. LUGS: WILL BE SUITABLE FOR COPPER CABLES AND WILL BE FRONT REMOVABLE.

D. OPERATING HANDLE: WILL BE A PART OF THE BOX, NOT OF THE COVER.

E. ENCLOSURE:

1. INDOOR AND DRY LOCATIONS: NEMA TYPE 1 UNLESS OTHERWISE SPECIFIED.
2. OUTDOOR AND DAMP LOCATIONS: NEMA TYPE 3R WITH WEATHERPROOF THREADED HUBS FOR ALL CONDUIT ENTRIES INTO SWITCH. PROVIDE NEMA TYPE 4X WHERE INDICATED ON DRAWINGS.

F. NEUTRAL/GROUND IN CIRCUIT: WHERE A NEUTRAL IS PRESENT IN THE CIRCUIT, FURNISH A SOLID NEUTRAL BLOCK WITH THE SAFETY SWITCH. WHERE A GROUND CONDUCTOR IS PRESENT IN THE CIRCUIT, FURNISH A SOLID GROUND BLOCK WITH THE SAFETY SWITCH.

G. AS MOTOR DISCONNECTS: SWITCHES USED AS MOTOR DISCONNECTS WILL BE HORSEPOWER RATED FOR THE MOTOR SERVED.

3. INSTALLATION

A. INSTALL DISCONNECT SWITCHES LEVEL AND PLUMB AT ALL LOCATIONS REQUIRED, ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

B. INSTALL DISCONNECT SWITCHES WHERE SHOWN AND AT EQUIPMENT WHICH IS OUT OF SIGHT OF, OR GREATER THAN 50 FEET FROM THE SWITCH OR PANEL FROM WHICH THE MOTOR CIRCUIT IS FED.

END OF SECTION 26 28 16

SECTION 26 51 13
INTERIOR LIGHT FIXTURES, LAMPS, AND BALLASTS

1. GENERAL

A. MANUFACTURERS: REFER TO LIGHTING FIXTURE SCHEDULE ON DRAWINGS.

B. SUBSTITUTIONS: WHERE ONLY ONE MANUFACTURER IS LISTED FOR A SPECIFIC LIGHTING FIXTURE, ONLY THAT MANUFACTURER WILL BE USED.

2. FIXTURE COMPONENTS

A. SHEET METAL COMPONENTS: HEAVY GAUGE STEEL, EXCEPT AS INDICATED. FORM AND SUPPORT TO PREVENT WARPING ANG SAGGING

B. REFLECTING SURFACES: MINIMUM REFLECTANCE AS FOLLOWS, EXCEPT AS OTHERWISE INDICATED

1. WHITE SURFACES: 85 PERCENT.
2. SPECULAR SURFACES: 83 PERCENT.
3. DIFFUSING SPECULAR SURFACES: 75 PERCENT.
4. LAMINATED SILVER METALLIZED FILM: 90 PERCENT.

C. LENSES, DIFFUSERS, COVERS, AND GLOBES: 100 PERCENT VIRGIN ACRYLIC PLASTIC OR WATER WHITE, ANNEALED CRYSTAL GLASS, EXCEPT AS OTHERWISE INDICATED. PLASTIC WILL BE HIGH RESISTANCE TO YELLOWING AND OTHER CHANGES DUE TO AGING, EXPOSURE TO HEAT, AND UV RADIATION. LENS THICKNESS WILL BE 0.125 INCH MINIMUM, EXCEPT WHERE GREATER THICKNESS IS INDICATED.

3. FLUORESCENT LAMPS:

A. COLOR TEMPERATURE: TO BE DETERMINED BY OWNER.

B. MINIMUM COLOR-RENDERING INDEX (CRI): TO BE DETERMINED BY OWNER.

C. NON-HAZARDOUS MATERIALS: ALL LINEAR FLUORESCENT LAMPS WILL BE OF SUCH CONSTRUCTION THAT DOES NOT REQUIRE DISPOSAL AS A HAZARDOUS WASTE.

D. END-OF-LIFE PROTECTION: ALL COMPACT FLUORESCENT LAMP/BALLAST COMBINATION WILL HAVE END-OF-LIFE PROTECTION FROM MELTING OF ANY PLASTIC PARTS AND BREAKAGE OF GLASS.

E. PURCHASING: COORDINATE LAMP PURCHASING WITH LOCAL DISTRIBUTORS.

4. EMERGENCY LIGHTING:

A. BATTERY BACK-UP: ALL FIXTURES DESIGNATED TO CONTAIN BATTERY BACK-UP WILL HAVE BATTERIES CAPABLE OF OPERATING THE LIGHT FIXTURE AT FULL LIGHT OUTPUT FOR A PERIOD OF 90 MINUTES.

B. CHARGE INDICATION: ALL BATTERY BACK-UP LIGHT FIXTURES WILL CONTAIN A RED INDICATING LIGHT TO SHOW LIGHT FIXTURE'S BATTERIES HAVE REACHED FULL CHARGE.

5. CLEAN FIXTURES AFTER INSTALLATION. USE METHODS AND MATERIALS RECOMMENDED BY MANUFACTURER.

END OF SECTION 26 51 13

SECTION 28 31 00
FIRE DETECTION AND ALARM SYSTEM

1. GENERAL

A. DISTRIBUTED MICROPROCESSOR BASED 24VDC, SUPERVISED, ANALOG "INTELLIGENT" FIRE ALARM SYSTEM.

B. NOTIFIER ONLY TO MATCH EXISTING FIRE ALARM SYSTEM.

2. COMPONENTS

A. PHOTOELECTRIC SMOKE DETECTORS: NOTIFIER MODEL FSP-751. SEMI-FLUSH MOUNTE, CENTERED IN CEILING TILE. WHITE FINISH.

B. DUCT DETECTOR: NOTIFIER MODEL FSD-751P.

C. HEAT DETECTORS: NOTIFIER MODEL FST-751. SEMI-FLUSH MOUNTED. WHITE FINISH.

D. MANUAL PULL STATIONS: NOTIFIER MODEL NGB-12LX, RED LEXAN, DUAL ACTION.

E. AUDIO VISUAL APPLIANCES: WHEELOCK NS SERIES. WHITE FINISH.

F. AUDIBLE SIGNALLING APPLIANCES: WHEELOCK MT SERIES. WHITE FINISH.

G. VISUAL SIGNALLING APPLIANCES: WHEELOCK RSS SERIES. WHITE FINISH.

3. INSTALLATION

A. PINSTALL ALL FIRE ALARM WIRING IN CONDUIT.

B. COLOR CODE ALL CONDUIT AND BOXES.

C. TEST EVERY DEVICE FOR PROPER OPERATION.

D. PERFORM VOLTAGE DROP AND LOAD CALCULATIONS FOR EACH CIRCUIT.

END OF SECTION 28 31 00

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TBPE Firm #2966

REVISIONS

Mark	Date	Description
	10/30/19	ISSUED FOR PERMIT

OWNER: HOUSTON AIRPORTS

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

CONSULTANT: 4b technology

SEAL:
H. MARK STEPHENS
78352
H. Mark Stephens
1-14-22

IDO BUILDING STANDARDS
SPACE FIT-OUT

GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO: N/A
CIP NO: N/A
HAS NO: N/A
KEY PLAN:

Jacobs Project No.: WHXK7103
Drawing Title:
ELECTRICAL
SPECIFICATIONS

Date: 01/28/22
Designed: Designer
Drawn: Author
Checked: Checker
Drawing No.: E-002

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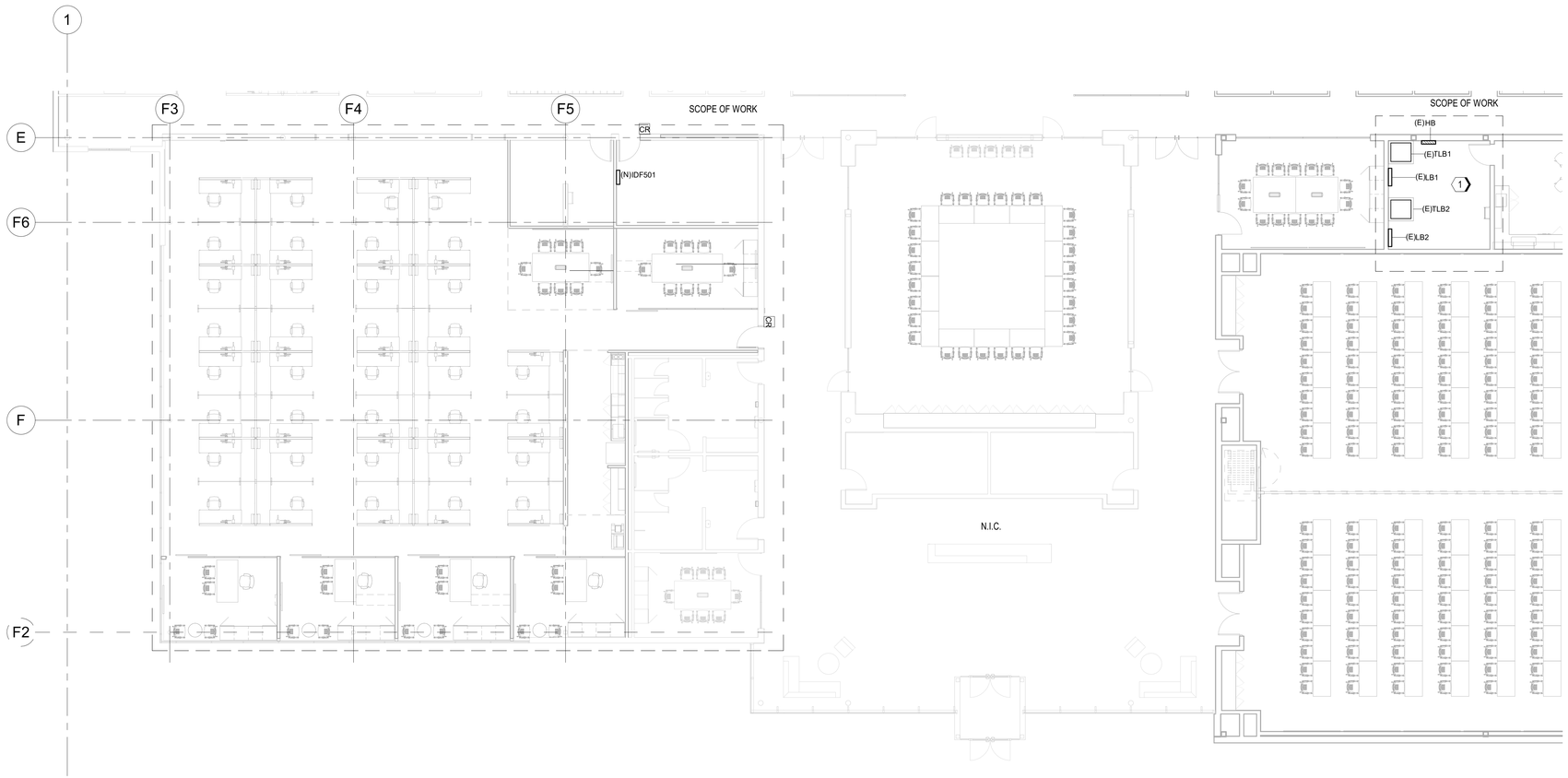

A1 ELECTRICAL OVERALL PLAN
1/8" = 1'-0"

GENERAL NOTES

1. REFER TO SHEET E-001 FOR SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES.
2. ALL CONDUIT ROUTING AND ELECTRICAL EQUIPMENT ARE DRAWN DIAGRAMMATICALLY.
3. REFER TO LINE WEIGHTS FOR SHEET BELOW:

   _____ EXISTING TO REMAIN
   - - - - - - EXISTING TO BE DEMOLISHED
   _____ NEW WORK

4. REFER TO 'I'. TA', AND 'TY' SERIES DRAWINGS FOR TELECOM, A/V, AND SECURITY REQUIREMENTS FOR BOXES, RACEWAYS, AND CONDUITS.
5. ALL RECEPTACLES ABOVE COUNTERS SHALL BE MOUNTED HORIZONTAL.

KEYNOTES

1 ALL ELECTRICAL EQUIPMENT IN THIS ROOM IS EXISTING TO REMAIN.

GRAPHIC SCALES:
0 4' 8' 16' 24'
1/8" = 1'-0"

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TBPE Firm #2966

REVISIONS

Mark	Date	Description
1	10/25/21	ISSUED FOR PERMIT
2	01/28/22	ISSUED FOR PERMIT, REV. 2

OWNER: HOUSTON AIRPORTS

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

CONSULTANT: 4b technology

SEAL:
STATE OF TEXAS
H. MARK STEPHENS
78352
LICENSED
PROFESSIONAL ENGINEER
1-14-22

IDO BUILDING STANDARDS SPACE FIT-OUT

GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

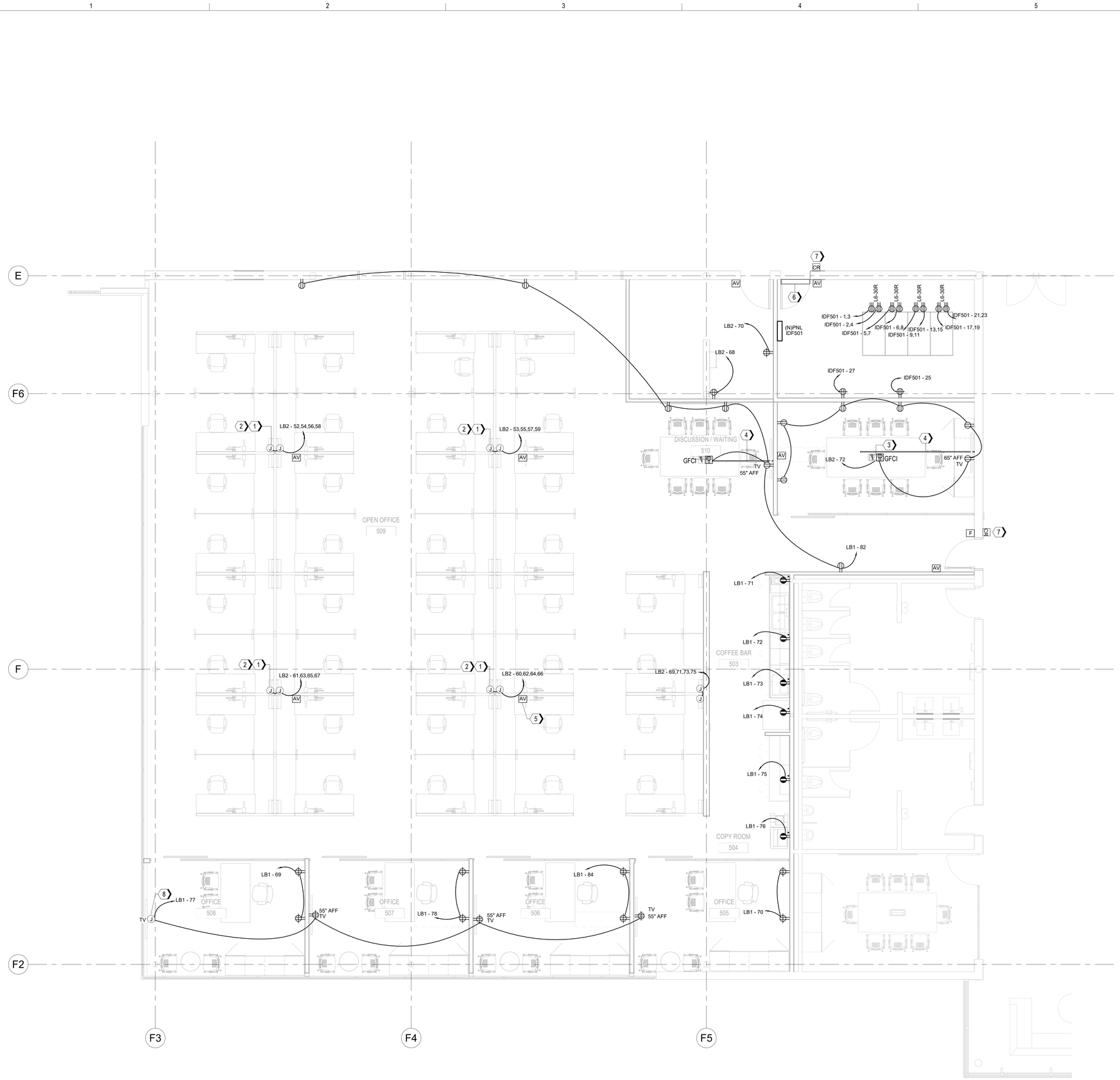
AIP NO: N/A
CIP NO: N/A
HAS NO: N/A

KEY PLAN:

Jacobs Project No.: WHXK7103

Drawing Title:
ELECTRICAL
OVERALL PLAN

Date: 01/28/22
Designed: Designer
Drawn: Author
Checked: Checker
Drawing No.: E-101



A1 ELECTRICAL POWER PLAN
1/4" = 1'-0"

GENERAL NOTES

1. REFER TO SHEET E-001 FOR SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES.
2. ALL CONDUIT ROUTING AND ELECTRICAL EQUIPMENT ARE DRAWN DIAGRAMMATICALLY.
3. REFER TO LINE WEIGHTS FOR SHEET BELOW:

   _____ EXISTING TO REMAIN
   - - - - - - EXISTING TO BE DEMOLISHED
   _____ NEW WORK

4. REFER TO 'T', TA', AND 'TY' SERIES DRAWINGS FOR TELECOM, A/V, AND SECURITY REQUIREMENTS FOR BOXES, RACEWAYS, AND CONDUITS.
5. ALL RECEPTACLES ABOVE COUNTERS SHALL BE MOUNTED HORIZONTAL.

KEYNOTES

1 UTILIZE EXISTING KNOLL #INTERPOLE: CONDUIT POWER POLES FOR ROUTING OF POWER AND DATA FROM OVERHEAD J-BOXES TO POWERED FURNITURE. POWER AND DATA WILL BE ROUTED IN SEPARATE CHANNELS WITHIN POWER POLES. COORDINATE EXACT LOCATION OF POWER POLE WITH ARCHITECT PRIOR TO ROUGH-IN.

2 THE FOUR CIRCUITS SHOWN ON THE FLOOR PLAN WILL FEED THE FOLLOWING WIRES IN THE FUNITURE PROVIDED WHIPS: CIRCUIT 1/2-A,B,NI,GI(GENERAL PURPOSE RECEPTACLES/LIGHTING), CIRCUITS 3/4-Y,X,N2,G2 (COMPUTER RECEPTACLES).

3 CONTRACTOR TO CUT SLAB TO INSTALL HUBBELL SYSTEMONE RECESSED 6 GANG CONCRETE FLOOR BOX #CFB6G30CR WITH RECTANGULAR COVER OR APPROVED EQUAL. COORDINATE FINISH WITH ARCHITECT. PROVIDE (2) 20A EXTRA HEAVY DUTY GFCI DUPLEX RECEPTACLES. REMAINING (4) GANGS PROVIDE WITH RECTANGULAR OPENING FOR TELECOM/AV. PROVIDE 2"C FOR POWER AND 2"C FOR DATA.

4 PROVIDE 3/4" C FROM FLOORBOX TO NEAREST WALL FOR POWER AND 1-1/2"C FROM FLOORBOX TO WALL FOR DATA.

5 TIE NEW FIRE ALARM DEVICES INTO EXISTING FIRE ALARM CONTROL PANEL. EXPAND FACP AS REQUIRED TO INCORPORATE NEW DEVICES.

6 FAN COIL UNIT TO BE WIRED TO CONDENSING UNIT ON ROOF. COORDINATE REQUIREMENTS WITH MECHANICAL CONTRACTOR.

7 CONTRACTOR TO PROVIDE CARD READER WITH MAG LOCK. COORDINATE EXACT REQUIREMENTS WITH HAS SECURITY. REFER TO IT DOCUMENTS AND COORDINATE WITH VENDORS FOR A COMPLETE AND OPERATING SYSTEM.

8 JBOX TO BE INSTALLED AT THIS LOCATION FOR CEILING MOUNTED TV. COORDINATE EXACT LOCATION AND ALL REQUIREMENTS WITH CONTRACTOR PRIOR TO THE START OF WORK AND PROVIDE ACCORDINGLY.

GRAPHIC SCALES:
0 2' 4' 8' 12'
1/4" = 1'-0"

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TBPE Firm #2966

REVISIONS

Mark	Date	Description
1	10/25/21	ISSUED FOR PERMIT
2	01/28/22	ISSUED FOR PERMIT, REV. 2

OWNER: HOUSTON AIRPORTS
APPROVED BY:
DIRECTOR
HOUSTON AIRPORT SYSTEM

CONSULTANT: 4b technology

SEAL: STATE OF TEXAS · H. MARK STEPHENS · 78352 · LICENSED PROFESSIONAL ENGINEER · 1-14-22

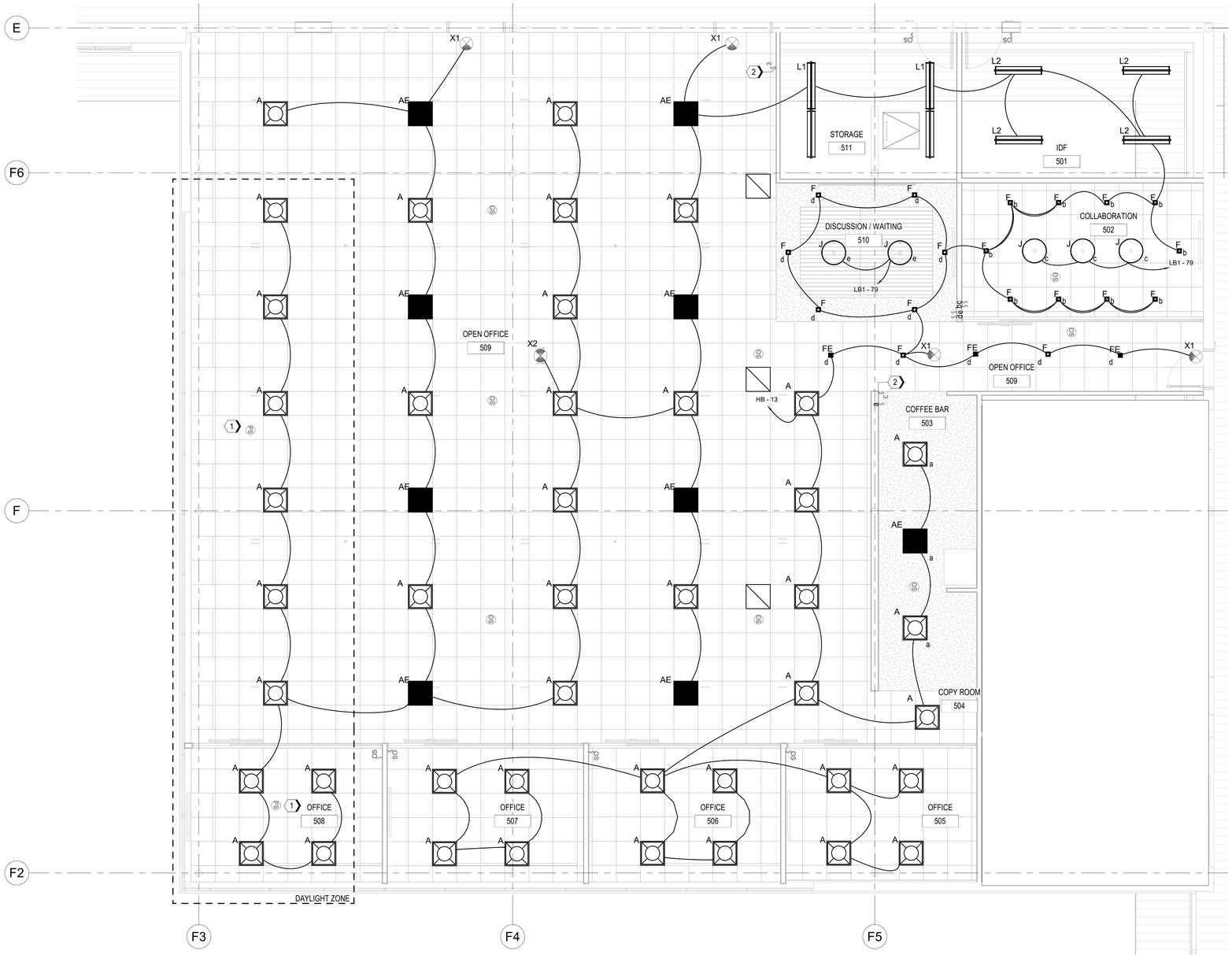
IDO BUILDING STANDARDS SPACE FIT-OUT

GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO: N/A
CIP NO: N/A
HAS NO: N/A
KEY PLAN:

Jacobs Project No.: WHXK7103
Drawing Title: ELECTRICAL POWER / FIRE ALARM
Date: 01/28/22
Designed: Designer
Drawn: Author
Checked: Checker
Drawing No.: E-201

Lighting Fixture Schedule							
Type Mark	Description	Manufacturer	Voltage	Lamp	Wattage	Mounting	Remarks
A	2'X2' LED TROFFER RECESSED FIXTURE WITH 0-10V DIMMING DRIVER.	METALUX #22FP4235		LED			
AE	SAME AS TYPE 'A'. PROVIDE WITH EMERGENCY BATTERY PACK WITH CAPABILITY OF PROVIDING 1400 LUMENS FOR A MIN. OF 90 MIN.	METALUX #22FP4235 WITH EL14W		LED			
F	3' BLACK SQUARE DOWNLIGHT FIXTURE WITH 0-10V DIMMING DRIVER.	CSL LIGHTING #EDL-NC-40K-4/EDL-1001-4		LED			
FE	SAME AS TYPE 'FE'. PROVIDE WITH EMERGENCY BATTERY PACK WITH CAPABILITY OF PROVIDING 1400 LUMENS FOR A MIN. OF 90 MIN.	CSL LIGHTING #EDL-NC-40K-4/EDL-1001-4/EM-XXXX		LED			
J	LED PENDANT FIXTURE WITH 0-10V DIMMING DRIVER	KUZCO LIGHTING #PD11415-BK-120V-3500K	120 V	LED	35 W	PENDANT	
L1	8' SUSPENDED DIRECT/INDIRECT PENDANT LED FIXTURE WITH BLACK FINISH, 0-10V DIMMING DRIVER, AND SUSPENDED WITH AIR CRAFT CABLE.	METALUX #WSL-LD2-45S-SPS-UPL8-UNV-L835-CDI-U	277 V	LED	80 W	SUSPENDED	
L2	4' SUSPENDED DIRECT/INDIRECT PENDANT LED FIXTURE WITH BLACK FINISH, 0-10V DIMMING DRIVER, AND SUSPENDED WITH AIR CRAFT CABLE.	METALUX #WSL-LD2-45S-SPS-UPL8-UNV-L835-CDI-U	277 V	LED	45 W	SUSPENDED	
X1	SINGLE FACE LED EDGE-LIT EXIT SIGN WTH DIRECTIONAL ARROWS AS INDICATED ON PLANS. PROVIDE WITH NICKEL CADMIUM BATTERY PACK. CONNECT TO NEAREST NON-SWITCHED HOT LEG.	EVENLITE #SOV-AC-R-IC-BA-SC-UC	277 V	LED	10 W	SURFACE	
X2	DOUBLE FACE LED EDGE-LIT EXIT SIGN WTH DIRECTIONAL ARROWS AS INDICATED ON PLANS. PROVIDE WITH NICKEL CADMIUM BATTERY PACK. CONNECT TO NEAREST NON-SWITCHED HOT LEG.	EVENLITE #SOV-AC-R-2M-BA-SC-UC	277 V	LED	10 W	CEILING	



1 REFLECTED CEILING PLAN
1/4" = 1'-0"

GENERAL NOTES

1. REFER TO SHEET E-001 FOR SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES.
2. ALL CONDUIT TO BE 3/4" MINIMUM AND ROUTING IS SHOWN DIAGRAMMATICALLY.
3. CONTROL INTENT HAS BEEN IDENTIFIED ON THE DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL COMPONENTS FOR A COMPLETE AND OPERATING SYSTEM AS DESIGNED.
4. PROVIDE ADDITIONAL UNSWITCHED CONDUCTOR TO ALL FIXTURES ON NORMAL BUILDING POWER WITH BATTERY PACKS TO ALLOW NORMAL SWITCHING.
5. PROVIDE 90 MINS BACK UP EMERGENCY BATTERY PACK FOR ALL EMERGENCY FIXTURES AND EXIT SIGNS. EXIT SIGNS SHALL BE UNSWITCHED.

KEYNOTES

1 ALL LIGHT FIXTURES WITHIN THE DAYLIGHT HARVESTING ZONE WILL BE CONTROLLED BY THE FOLLOWING: PROVIDE POWERPACK DIMMING MODULE WITH ECOSYSTEM LUTRON #RMJ-ECO-32-DV-B AND CEILING MOUNTED DAYLIGHT SENSOR LUTRON #LRF20DCRB-WH, CONNECTED TO PICO WIRELESS CONTROL LUTRON #MRF2-2BRL-L WALL SWITCH.

2 PROVIDE DIMMER THREE WAY SWITCHES AT THIS LOCATION FOR CONTROL OF LIGHTING IN OPEN OFFICE AREA.

GRAPHIC SCALES:
0 2' 4' 8' 12'
1/4" = 1'-0"

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TBPE Firm #2966

REVISIONS

Mark	Date	Description
1	10/25/21	ISSUED FOR PERMIT
2	01/28/22	ISSUED FOR PERMIT, REV. 2

OWNER: HOUSTON AIRPORTS
APPROVED BY:
DIRECTOR
HOUSTON AIRPORT SYSTEM

CONSULTANT: 4b technology

SEAL: STATE OF TEXAS · H. MARK STEPHENS · 78352 · LICENSED PROFESSIONAL ENGINEER · 1-14-22

IDO BUILDING STANDARDS SPACE FIT-OUT

GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO: N/A
CIP NO: N/A
HAS NO: N/A
KEY PLAN:

Jacobs Project No.: WHXK7103
Drawing Title: ELECTRICAL LIGHTING

Date: 01/28/22
Designed: Designer
Drawn: Author
Checked: Checker
Drawing No.: E-301

1/28/2022 1:35:28 PM C:_Revit_Local_Models\2018\WHXK7103_HAS IDO_NEW_rachel.henry.rvt

Branch Panel: LB2

Location:
Supply From:
Mounting: Surface
Enclosure: Type 1

Volts: 208/120V Wye
Phases: 3
Wires: 4

A.I.C. Rating: 22
Mains Type: Do Not Use
Mains Rating: 225 A
MCB Rating: 225 A

Notes:
THIS IS A TWO SECTION PANELBOARD WITH 42 POLES IN EACH SECTION.
PROVIDE NEW CIRCUIT BREAKER IN EXISTING SPACE WHERE TEXT IS BOLD.

CKT	Comments	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	Comments	CKT
1		EXISTING LOAD	20 A	1	1200...	1200...					1	20 A	EXISTING LOAD		2
3		EXISTING LOAD	20 A	1			1200...	1200...			1	20 A	EXISTING LOAD		4
5		EXISTING LOAD	20 A	1					1200...	1200...	1	20 A	EXISTING LOAD		6
7		EXISTING LOAD	20 A	1	1200...	1200...					1	20 A	EXISTING LOAD		8
9		EXISTING LOAD	20 A	1			1600...	1600...			1	20 A	EXISTING LOAD		10
11		EXISTING LOAD	20 A	1					1600...	1600...	1	20 A	EXISTING LOAD		12
13		EXISTING LOAD	20 A	1	1600...	1600...					1	20 A	EXISTING LOAD		14
15		EXISTING LOAD	20 A	1			1600...	1600...			1	20 A	EXISTING LOAD		16
17		EXISTING LOAD	20 A	1					1600...	1600...	1	20 A	EXISTING LOAD		18
19		EXISTING LOAD	20 A	1	1600...	1600...					1	20 A	EXISTING LOAD		20
21		EXISTING LOAD	20 A	1			1600...	1600...			1	20 A	EXISTING LOAD		22
23		EXISTING LOAD	20 A	1					1600...	1600...	1	20 A	EXISTING LOAD		24
25		EXISTING LOAD	20 A	1	1500...	720 VA					1	20 A	EXISTING LOAD		26
27		EXISTING LOAD	20 A	1			720 VA	940 VA			1	20 A	EXISTING LOAD		28
29		EXISTING LOAD	20 A	1					800 VA	1500...	1	20 A	EXISTING LOAD		30
31		EXISTING LOAD	20 A	1	800 VA	720 VA					1	20 A	EXISTING LOAD		32
33		EXISTING LOAD	20 A	1			800 VA	800 VA			1	20 A	EXISTING LOAD		34
35		EXISTING LOAD	20 A	1					800 VA	800 VA	1	20 A	EXISTING LOAD		36
37		EXISTING LOAD	20 A	1	1000...	800 VA					1	20 A	EXISTING LOAD		38
39		EXISTING LOAD	20 A	1			400 VA	540 VA			1	20 A	EXISTING LOAD		40
41		EXISTING LOAD	20 A	1					760 VA	400 VA	1	20 A	EXISTING LOAD		42
43		EXISTING LOAD	20 A	1	800 VA	540 VA					1	20 A	EXISTING LOAD		44
45		EXISTING LOAD	20 A	1			900 VA	1500...			1	20 A	EXISTING LOAD		46
47		EXISTING LOAD	20 A	1					900 VA	1500...	1	20 A	EXISTING LOAD		48
49		EXISTING LOAD	20 A	1	800 VA	900 VA					1	20 A	EXISTING LOAD		50
51		EXISTING LOAD	20 A	1			720 VA	1600...			**2**	**20 A**	**SYS. FURNITURE++**	**1-#10,1-#10,1-#10,3/4"C**	**52**
53	**1-#10,1-#10,1-#10,3/4"C**	**SYS. FURNITURE++**	**20 A**	**2**					1600...	1600...	--	--	--		**54**
55		**--**	**--**	**--**	1600...	1600...					**2**	**20 A**	**SYS. FURNITURE++**	**1-#10,1-#10,1-#10,3/4"C**	**56**
57	**1-#10,1-#10,1-#10,3/4"C**	**SYS. FURNITURE++**	**20 A**	**2**			1600...	1600...			--	--	--		**58**
59		**--**	**--**	**--**					1600...	1600...	**2**	**20 A**	**SYS. FURNITURE++**	**1-#10,1-#10,1-#10,3/4"C**	**60**
61	**1-#10,1-#10,1-#10,3/4"C**	**SYS. FURNITURE++**	**20 A**	**2**	1600...	1600...					--	--	--		**62**
63		**--**	**--**	**--**			1600...	1600...			**2**	**20 A**	**SYS. FURNITURE++**	**1-#10,1-#10,1-#10,3/4"C**	**64**
65	**1-#10,1-#10,1-#10,3/4"C**	**SYS.FURNITURE++**	**20 A**	**2**					1600...	1600...	--	--	--		**66**
67		**--**	**--**	**--**	1600...	360 VA					**1**	**20 A**	**STORAGE ROOM QUAD**	**1-#12,1-#12,1-#12,3/4"C**	**68**
69	**1-#10,1-#10,1-#10,3/4"C**	**SYS. FURNITURE++**	**20 A**	**2**			1600...	360 VA			**1**	**20 A**	**STORAGE ROOM QUAD**	**1-#12,1-#12,1-#12,3/4"C**	**70**
71		**--**	**--**	**--**					1600...	1480...	**1**	**20 A**	**6 RECPTS & 1 FLOOR...**	**1-#12,1-#12,1-#12,3/4"C**	**72**
73	**1-#10,1-#10,1-#10,3/4"C**	**SYS. FURNITURE++**	**20 A**	**2**	1600...	0 VA					--	--	Space		74
75		**--**	**--**	**--**			1600...	0 VA			--	--	Space		76
77		Space	--	--					0 VA	0 VA	--	--	Space		78
79		Space	--	--	0 VA	6360...					**3**	**100 A**	**IDF501**	**3#1,2#1N,1#6G,2"C**	**80**
81		Space	--	--			0 VA	5360...			--	--	--		**82**
83		Space	--	--					0 VA	5000...	--	--	--		**84**
				Total Load:	36100 VA		36240 VA		37140 VA						
				Total Amps:	301 A		302 A		310 A						

Legend:
++ PROVIDE 4 POLE HANDLE TIE THAT WILL OPEN ALL 4 CIRCUIT BREAKERS AT ONCE EITHER AUTOMATICALLY OR MANUALLY.

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	16000 VA	100.00%	16000 VA		
Receptacles	90560 VA	55.52%	50280 VA	**Total Conn. Load:**	109480 VA
				Total Est. Demand:	69200 VA
				Total Conn. Current:	304 A
				Total Est. Demand Current:	192 A

Notes:

Branch Panel: LB1

Location:
Supply From:
Mounting: Surface
Enclosure: Type 1

Volts: 208/120V Wye
Phases: 3
Wires: 4

A.I.C. Rating: 22
Mains Type: Do Not Use
Mains Rating: 225 A
MCB Rating: 225 A

Notes:
THIS IS A TWO SECTION PANEL BOARD WITH 42 POLES IN EACH SECTION.
PROVIDE NEW CIRCUIT BREAKER IN EXISTING SPACE WHERE TEXT IS BOLD.

CKT	Comments	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	Comments	CKT
1		EXISTING LOAD	20 A	1	1200...	800 VA					1	20 A	EXISTING LOAD		2
3		EXISTING LOAD	20 A	1			1200...	800 VA			1	20 A	EXISTING LOAD		4
5		EXISTING LOAD	20 A	1					1200...	800 VA	1	20 A	EXISTING LOAD		6
7		EXISTING LOAD	20 A	1	1200...	800 VA					1	20 A	EXISTING LOAD		8
9		EXISTING LOAD	20 A	1			1600...	1600...			1	20 A	EXISTING LOAD		10
11		EXISTING LOAD	20 A	1					1600...	1600...	1	20 A	EXISTING LOAD		12
13		EXISTING LOAD	20 A	1	1600...	1600...					1	20 A	EXISTING LOAD		14
15		EXISTING LOAD	20 A	1			1600...	1600...			1	20 A	EXISTING LOAD		16
17		EXISTING LOAD	20 A	1					360 VA	900 VA	1	20 A	EXISTING LOAD		18
19		EXISTING LOAD	20 A	1	1500...	720 VA					1	20 A	EXISTING LOAD		20
21		EXISTING LOAD	20 A	1			1500...	1080...			1	20 A	EXISTING LOAD		22
23		EXISTING LOAD	20 A	1					800 VA	400 VA	1	20 A	EXISTING LOAD		24
25		EXISTING LOAD	20 A	1	800 VA	720 VA					1	20 A	EXISTING LOAD		26
27		EXISTING LOAD	20 A	1			800 VA	180 VA			1	20 A	EXISTING LOAD		28
29		EXISTING LOAD	20 A	1					800 VA	1500...	1	20 A	EXISTING LOAD		30
31		EXISTING LOAD	20 A	1	400 VA	720 VA					1	20 A	EXISTING LOAD		32
33		EXISTING LOAD	20 A	1			360 VA	800 VA			1	20 A	EXISTING LOAD		34
35		EXISTING LOAD	20 A	1					1080...	800 VA	1	20 A	EXISTING LOAD		36
37		EXISTING LOAD	20 A	1	1500...	800 VA					1	20 A	EXISTING LOAD		38
39		EXISTING LOAD	20 A	1			1500...	900 VA			1	20 A	EXISTING LOAD		40
41		EXISTING LOAD	20 A	1					940 VA	400 VA	1	20 A	EXISTING LOAD		42
43		EXISTING LOAD	20 A	1	1000...	200 VA					1	20 A	EXISTING LOAD		44
45		EXISTING LOAD	20 A	1			1000...	400 VA			1	20 A	EXISTING LOAD		46
47		EXISTING LOAD	20 A	1					1600...	1260...	1	20 A	EXISTING LOAD		48
49		EXISTING LOAD	20 A	1	540 VA	1056...					1	20 A	EXISTING LOAD		50
51		EXISTING LOAD	20 A	1			100 VA	1200...			1	20 A	EXISTING LOAD		52
53		EXISTING LOAD	20 A	1					1200...	0 VA	--	--	Space		54
55		Space	--	--	0 VA	0 VA					--	--	Space		56
57		Space	--	--			0 VA	0 VA			--	--	Space		58
59		Space	--	--					0 VA	0 VA	--	--	Space		60
61		Space	--	--	0 VA	0 VA					--	--	Space		62
63		Space	--	--			0 VA	0 VA			--	--	Space		64
65		Space	--	--					0 VA	0 VA	--	--	Space		66
67		Space	--	--	0 VA	0 VA					--	--	Space		68
69	**1-#12,1-#12,1-#12,3/4"C**	OFFICE REC	**20 A**	**1**			800 VA	800 VA			**1**	**20 A**	**OFFICE REC**	**1-#12,1-#12,1-#12,3/4"C**	**70**
71	**1-#12,1-#12,1-#12,3/4"C**	**COFFEE MACHINE**	**20 A**	**1**					1000...	1440...	**1**	**20 A**	**KITCHEN RCPT**	**1-#12,1-#12,1-#12,3/4"C**	**72**
73	**1-#12,1-#12,1-#12,3/4"C**	**MICROWAVE**	**20 A**	**1**	1440...	1440...					**1**	**20 A**	**REFRIGERATOR**	**1-#12,1-#12,1-#12,3/4"C**	**74**
75	**1-#12,1-#12,1-#12,3/4"C**	**KITCHEN RCPT**	**20 A**	**1**			1440...	1440...			**1**	**20 A**	**COPIER**	**1-#12,1-#12,1-#12,3/4"C**	**76**
77	**1-#10,1-#10,1-#10,3/4"C**	**4 TVS**	**20 A**	**1**					1700...	800 VA	**1**	**20 A**	**4 RCPTS + 1 TV**	**1-#10,1-#10,1-#10,3/4"C**	**78**
79	**1-#10,1-#10,1-#10,3/4"C**	**J-LIGHTING**	**20 A**	**1**	245 VA	360 VA					**1**	**20 A**	**WP RCPT FOR RTU**	**1-#10,1-#10,1-#10,3/4"C**	**80**
81	**2-#10,1-#10,3/4"C**	**CU-3-1**	**20 A**	**2**			1560...	1480...			**1**	**20 A**	**7 RCPTS**	**1-#12,1-#12,1-#12,3/4"C**	**82**
83		**--**	**--**	**--**					1560...	800 VA	**1**	**20 A**	**OFFICE REC**	**1-#12,1-#12,1-#12,3/4"C**	**84**
				Total Load:	20641 VA		25740 VA		24540 VA						
				Total Amps:	172 A		219 A		209 A						

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Lighting	245 VA	125.00%	306 VA		
Motor	2000 VA	112.50%	2250 VA	**Total Conn. Load:**	70921 VA
Receptacles	50060 VA	59.99%	30030 VA	**Total Est. Demand:**	47788 VA
HVAC	1056 VA	100.00%	1056 VA	**Total Conn. Current:**	197 A
				Total Est. Demand Current:	133 A

Notes:

Branch Panel: HB

Location:
Supply From:
Mounting: Surface
Enclosure: Type 1

Volts: 480/277V Wye
Phases: 3
Wires: 4

A.I.C. Rating: 35
Mains Type: Do Not Use
Mains Rating: 225 A
MCB Rating: 225 A

Notes:
PROVIDE NEW CIRCUIT BREAKER IN EXISTING SPACE WHERE TEXT IS BOLD.

CKT	Comments	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	Comments	CKT
1		Spare	20 A	1	0 VA	0 VA					1	20 A	Spare		2
3		Spare	20 A	1			0 VA	0 VA			1	20 A	Spare		4
5		Spare	20 A	1					0 VA	0 VA	1	20 A	Spare		6
7		Spare	20 A	1	0 VA	0 VA					1	20 A	Spare		8
9		Spare	20 A	1			0 VA	0 VA			1	20 A	Spare		10
11		Spare	20 A	1					0 VA	0 VA	1	20 A	Spare		12
13		**LIGHTING**	**20 A**	**1**	2842...	4157...					3	30 A	EXISTING LOAD		14
15		Space	--	--			0 VA	4157...			--	--	--		16
17		Space	--	--					0 VA	4157...	--	--	--		18
19		Space	--	--	0 VA	0 VA					--	--	Space		20
21		Space	--	--			0 VA	0 VA			--	--	Space		22
23		Space	--	--					0 VA	0 VA	--	--	Space		24
25		Space	--	--	0 VA	0 VA					--	--	Space		26
27		Space	--	--			0 VA	0 VA			--	--	Space		28
29		Space	--	--					0 VA	0 VA	--	--	Space		30
31		EXISTING XFMR 'TLB1'	125 A	3	2064...	3610...					3	125 A	EXISTING XFMR 'TLB2'		32
33		--	--	--			2574...	3624...			--	--	--		34
35		--	--	--					2454...	3714...	--	--	--		36
				Total Load:	63671 VA		66137 VA		65837 VA						
				Total Amps:	230 A		240 A		239 A						

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Lighting	3081 VA	125.00%	3852 VA		
Motor	2000 VA	112.50%	2250 VA	**Total Conn. Load:**	195643 VA
Other	16000 VA	100.00%	16000 VA	**Total Est. Demand:**	120229 VA
Receptacles	153090 VA	53.27%	81545 VA	**Total Conn. Current:**	235 A
HVAC	1056 VA	100.00%	1056 VA	**Total Est. Demand Current:**	145 A

Notes:

Branch Panel: IDF501

Location:
Supply From:
Mounting: Surface
Enclosure: Type 1

Volts: 208/120V Wye
Phases: 3
Wires: 4

A.I.C. Rating: 22KAIC
Mains Type: Do Not Use
Mains Rating: 100 A
MCB Rating: 100 A

Notes:
NEW PANEL, 200% NEUTRAL

CKT	Comments	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	Comments	CKT
1	**3-#10,1-#10,1-#10,3/4"C**	**L6-30R**	**30 A**	**2**	1000...	1000...					**2**	**30 A**	**L6-30R**	**3-#10,1-#10,1-#10,3/4"C**	2
3		--	--	--			1000...	1000...			--	--	--		4
5	**3-#10,1-#10,1-#10,3/4"C**	**L6-30R**	**30 A**	**2**					1000...	1000...	**2**	**30 A**	**L6-30R**	**3-#10,1-#10,1-#10,3/4"C**	6
7		--	--	--	1000...	1000...					--	--	--		8
9	**3-#10,1-#10,1-#10,3/4"C**	**L6-30R**	**30 A**	**2**			1000...	0 VA			**1**	**20 A**	**Spare**		10
11		--	--	--					1000...	0 VA	**1**	**20 A**	**Spare**		12
13	**3-#10,1-#10,1-#10,3/4"C**	**L6-30R**	**30 A**	**2**	1000...	0 VA					**1**	**20 A**	**Spare**		14
15		--	--	--			1000...	0 VA			**1**	**20 A**	**Spare**		16
17	**3-#10,1-#10,1-#10,3/4"C**	**L6-30R**	**30 A**	**2**					1000...	0 VA	**1**	**20 A**	**Spare**		18
19		--	--	--	1000...	0 VA					**1**	**20 A**	**Spare**		20
21	**3-#10,1-#10,1-#10,3/4"C**	**L6-30R**	**30 A**	**2**			1000...	0 VA			--	--	Space		22
23		--	--	--					1000...	0 VA	--	--	Space		24
25	**1-#12,1-#12,1-#12,3/4"C**	**DEDICATED QUAD FOR I...**	**20 A**	**1**	360 VA	0 VA					--	--	Space		26
27	**1-#12,1-#12,1-#12,3/4"C**	**DEDICATED QUAD FOR I...**	**20 A**	**1**			360 VA	0 VA			--	--	Space		28
29		Space	--	--					0 VA	0 VA	--	--	Space		30
31		Space	--	--	0 VA	0 VA					--	--	Space		32
33		Space	--	--			0 VA	0 VA			--	--	Space		34
35		Space	--	--					0 VA	0 VA	--	--	Space		36
37		Space	--	--	0 VA	0 VA					--	--	Space		38
39		Space	--	--			0 VA	0 VA			--	--	Space		40
41		Space	--	--					0 VA	0 VA	--	--	Space		42
				Total Load:	6360 VA		5360 VA		5000 VA						
				Total Amps:	53 A		45 A		42 A						

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	16000 VA	100.00%	16000 VA		
				Total Conn. Load:	16720 VA
				Total Est. Demand:	16720 VA
				Total Conn. Current:	46 A
				Total Est. Demand Current:	46 A

Notes:

EXISTING ELECTRICAL RISER

LOAD ANALYSIS LB1

EXISTING LOAD	32.64	KVA
DEMOLISHED LOAD	0	KVA
NEW LOAD	36.44	KVA
NEW LIGHTING LOAD AT 125%	0.31	KVA
TOTAL LOAD	**69.32**	**KVA**

PANEL HB SIZE IS **225A.**
NEW DEMAND LOAD IS **192A**
PANEL IS **ADEQUATE.**

LOAD ANALYSIS LB2

EXISTING LOAD	36.98	KVA
DEMOLISHED LOAD	0	KVA
NEW LOAD	24.22	KVA
TOTAL LOAD	**61.2**	**KVA**

PANEL HB SIZE IS **225A.**
NEW DEMAND LOAD IS **170A**
PANEL IS **ADEQUATE.**

LOAD ANALYSIS HB

EXISTING LOAD	64.62	KVA
DEMOLISHED LOAD	0	KVA
NEW LIGHTING LOAD AT 125%	3.85	KVA
TOTAL LOAD	**68.47**	**KVA**

PANEL HB SIZE IS **225A.**
NEW DEMAND LOAD IS **133A**
PANEL IS **ADEQUATE.**

OVERALL ANALYSIS MDP

EXISTING LOAD	841.00	KVA
DEMOLISHED LOAD	0	KVA
NEW LOAD	64.51	KVA
TOTAL LOAD	**905.51**	**KVA**

MDP MAIN CIRCUIT BREAKER IS **1200A** AND IS **100% RATED.** NEW DEMAND LOAD IS **1088A**
PANEL IS **ADEQUATE.**

GENERAL NOTES

1. REFER TO SHEET E-001 FOR SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES.
2. ALL CONDUIT ROUTING AND ELECTRICAL EQUIPMENT ARE DRAWN DIAGRAMMATICALLY.
3. REFER TO LINE WEIGHTS FOR SHEET BELOW:
   - EXISTING TO REMAIN
   - EXISTING TO BE DEMOLISHED
   - NEW WORK
4. REFER TO 'T. TA', AND 'TY' SERIES DRAWINGS FOR TELECOM, A/V, AND SECURITY REQUIREMENTS FOR BOXES, RACEWAYS, AND CONDUITS.
5. ALL RECEPTACLES ABOVE COUNTERS SHALL BE MOUNTED HORIZONTAL.

JACOBS
5985 Rogerdale Road
Houston, TX 77072 (281) 721-8400
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TBPE Firm #2966

REVISIONS

Mark	Date	Description
1	10/25/21	ISSUED FOR PERMIT
2	01/28/22	ISSUED FOR PERMIT, REV. 2

OWNER:
HOUSTON AIRPORTS
APPROVED BY:
DIRECTOR
HOUSTON AIRPORT SYSTEM

CONSULTANT:
46 technology

SEAL:
STATE OF TEXAS
H. MARK STEPHENS
78352
LICENSED
PROFESSIONAL ENGINEER
H. Mark Stephens
1-14-22

IDO BUILDING STANDARDS SPACE FIT-OUT

GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO: N/A
CIP NO: N/A
HAS NO: N/A

KEY PLAN:

Jacobs Project No.: WHXK7103
Drawing Title:
ELECTRICAL ONE-LINE

Date: 01/28/22
Designed: Designer
Drawn: Author
Checked: Checker
Drawing No.: E-601

TELECOM NOTES

GENERAL NOTES

1. THE CONTRACTOR SHALL OBTAIN, READ AND COMPLY WITH GENERAL NOTES INCLUDED IN THIS SHEET.
2. IN THE INSTALLATION OF THIS WORK, THE CONTRACTOR SHALL COMPLY IN EVERY WAY WITH THE REQUIREMENTS OF LOCAL LAWS AND ORDINANCES, THE LAWS OF THE STATE OF TEXAS, THE NATIONAL FIRE PROTECTION ASSOCIATION AND THE NATIONAL ELECTRICAL CODE.
3. THE ARCHITECTURAL PLANS AND SPECIFICATIONS, GENERAL CONDITIONS, SUPPLEMENTARY GENERAL CONDITIONS AND OTHER REQUIREMENTS OF DIVISION 1, THE MECHANICAL PLANS AND SPECIFICATIONS, THE ELECTRICAL PLANS AND SPECIFICATIONS, AND THE SECURITY PLANS AND SPECIFICATIONS, MAY APPLY TO THE WORK SPECIFIED IN THE TELECOMMUNICATIONS SPECIFICATIONS SECTIONS AND SHALL BE COMPLIED WITH IN EVERY RESPECT. THE CONTRACTOR SHALL EXAMINE ALL OF THESE DOCUMENTS, WHICH MAKE UP THE CONTRACT DOCUMENTS AND SHALL COORDINATE THEM WITH ALL TELECOM WORK ON THE TELECOMMUNICATIONS PLANS AND IN THE TELECOM SECTIONS OF THESE SPECIFICATIONS.
4. TELECOMMUNICATIONS CABLING CONTRACTOR HEREIN AFTER REFERRED TO AS "CONTRACTOR" SHALL PROVIDE ALL MATERIALS, COMPONENTS, TOOLS, AND LABOR TO COMPLETE A TELECOMMUNICATION INFRASTRUCTURE AS SET FORTH IN THE STRUCTURED CABLING SYSTEM DOCUMENTS, CONTRACTS AND DRAWINGS.
5. CONTRACTOR SHALL REFER TO COMMUNICATIONS 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 TELECOMMUNICATIONS CABLING SYSTEM DOCUMENTS AND APPLY THEM AS APPROPRIATE FOR WORK IN THIS SECTION. REFERENCE DIVISION 26 AND T DRAWINGS.
7. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL MATERIALS, COMPONENTS, TOOLS, AND LABOR TO COMPLETE A TELECOMMUNICATION CABLING PATHWAY, ELECTRICAL POWER DISTRIBUTION AND TELECOMMUNICATIONS BUILDING GROUNDING SYSTEM AS SET FORTH IN THE TELECOMMUNICATIONS CABLING SYSTEM AND ELECTRICAL DOCUMENTS, SPECIFICATIONS AND DRAWINGS.
8. CONTRACTOR SHALL NOTE AND REPORT TO THE CITY ENGINEER, OR THEIR DESIGNATED REPRESENTATIVE, WORK PERFORMED OR LACK THEREOF BY DIV 26 ELECTRICAL CONTRACTOR FOR THE TELECOMMUNICATIONS SYSTEM WHICH DOES NOT COMPLY WITH THE TELECOMMUNICATIONS SPECIFICATIONS AND DRAWINGS AND THE ELECTRICAL SPECIFICATIONS AND DRAWINGS WHICH ARE INTENDED FOR TELECOMMUNICATIONS SYSTEM COMPONENTS.
9. CONTRACTOR SHALL TAKE ALL NECESSARY MEANS TO ASSURE ALL DATA/VOICE SYSTEM COMPONENTS ARE PROTECTED FROM MECHANICAL DAMAGE BEFORE, DURING AND AFTER CONSTRUCTIONS.
10. CAREFULLY EXAMINE THE PREMISES TO DETERMINE THE EXTENT OF WORK AND CONDITION UNDER WHICH IT MUST BE DONE. CHECK AND VERIFY CONTRACT DOCUMENTS WITH FIELD CONDITIONS FOR ACCURACY, CONFIRMING THAT WORK HAS BEEN COMPLETED BEFORE PROCEEDING WITH INSTALLATION. IF THERE ARE ANY QUESTIONS REGARDING THE PROJECT, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING CLARIFICATIONS FROM THE OWNER, OR THEIR DESIGNATED REPRESENTATIVE, BEFORE PROCEEDING WITH OR RELATED WORK IN QUESTION.
11. ANY DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS MUST BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE OWNER, OR THEIR DESIGNATED REPRESENTATIVE FOR CLARIFICATION.
12. CONTRACTOR AND/OR DIV 26 ELECTRICAL CONTRACTOR SHALL OBTAIN THE GENERAL CONTRACTOR AND HIS STRUCTURAL ENGINEER'S PERMISSION BEFORE PROCEEDING WITH ANY WORK NECESSITATING CUTTING INTO OR THROUGH ANY PART OF BUILDING STRUCTURES SUCH AS GIRDERS, BEAMS, CONCRETE OR TILE FLOORS, PARTITIONS AND/OR CEILINGS.
13. ALL WORK SHALL BE DONE IN A THROUGH AND CONSCIENTIOUS MANNER ACCORDING TO INDUSTRY STANDARDS AND SHALL BE SUBJECT TO INSPECTION AND ACCEPTANCE. WORK THAT IS DEEMED SUB-STANDARD, NON-COMPLIANT, OR NOT TO INDUSTRY STANDARD WILL BE SUBJECT TO REPLACEMENT OR REPAIR AT THE EXPENSE OF THE CONTRACTOR.
14. PRIOR TO STARTING THE INSTALLATION, THE CONTRACTOR'S ON SITE RCDD SHALL PARTICIPATE IN A WALK-THROUGH OF THE PROJECT LOCATION WITH THE OWNER, OR THEIR DESIGNATED REPRESENTATIVE TO REVIEW THE INSTALLATION DOCUMENTATION, VERIFY THAT ALL CONSTRUCTION NECESSARY FOR THE INSTALLATION HAS BEEN COMPLETED AND TO VERIFY ALL INSTALLATION METHODS AND CABLE ROUTES.
15. THE CONTRACTOR IS REQUIRED TO PROPERLY FIRE-STOP ANY PENETRATIONS THROUGH FIRE BARRIERS UTILIZED FO THE PLACEMENT OF TELECOM CABLING. PROVIDE FIRE RESISTANT INTUMESCENT MATERIALS TO RESTORE FIRE RATINGS TO WALL, FLOOR, OR CEILING PENETRATIONS ACCORDING TO LOCAL AND NATIONAL CODES.
16. FIRE STOP SOLUTIONS, MATERIAL AND INSTALLATION SHALL BE COMPLIANT WITH SYSTEMS DESCRIBED IN THIS AND DIVISION 7 SPECIFICATIONS AND ANY OTHER REQUIREMENTS SET FORTH BY THE ARCHITECT AND GENERAL CONTRACTOR.
17. NO HORIZONTAL PERMANENT LINK SHALL BE LONGER THAN NINETY-(90) METERS. IF THE INSTALLER BELIEVES ANY HORIZONTAL PERMANENT LINK WILL BE LONGER THAN NINETY-(90) METERS, WRITTEN APPROVAL FROM THE TELECOMMUNICATIONS CONSULTANT WILL BE REQUIRED PRIOR TO INSTALLATION OF THE HORIZONTAL PERMANENT LINK.
18. FOR ADDITIONAL CONSTRUCTION DETAILS REFER TO SPECIFICATIONS DIVISION 26 AND 27.
19. TECHNOLOGY INFRASTRUCTURE SHALL FOLLOW HAS IT STANDARDS AND SPECIFICATIONS.

TELECOM NOTES

COMMUNICATIONS PATHWAYS

1. OUTLET FACEPLATES MUST BE LABELED PER HOUSTON AIRPORT SYSTEM STANDARDS.
2. BACK BOXES INSTALLED FOR COMMUNICATIONS DATA AND VOICE WIRING TERMINATION SHALL BE 4 11/16"x4 11/16"x3 1/4" DEEP BOXES. THESE BOXES SHALL BE SEPARATE FROM ELECTRICAL JUNCTION BOXES AND BE EXCLUSIVELY FOR DATA AND VOICE COMMUNICATIONS.
3. MUD RINGS SHALL BE INSTALLED ON ALL COMMUNICATIONS WALL BOXES.
4. CONDUITS TO COMMUNICATION WALL BOXES SHALL BE A MINIMUM OF ONE INCH (1") IN DIAMETER AND SHALL BE COMPLETE WITH A NYLON PULL STRING.
5. FURNISH AND INSTALL CABLE MANAGEMENT DEVICES (VELCRO WRAPS, ETC.) AND MOUNTING HARDWARE AND CABLE SADDLES AS REQUIRED. (UNLESS SPECIFIED FOR INSTALLATION BY ELECTRICAL CONTRACTOR).
6. SUPPLY SOLUTIONS AND SHOP DRAWINGS SUBMITTALS FOR CONDUIT, SEALING MATERIALS AND SYSTEMS FOR WRITTEN APPROVAL OF MATERIALS/SYSTEM PRIOR TO PURCHASE AND INSTALLATION. MATERIALS AND SYSTEMS SHALL BE COMPLETE UPON INSTALLATION.
7. CONDUIT RUNS SHALL BE INSTALLED WITH NO MORE THAN TWO (2) 90 DEGREE BENDS AND NOT EXCEED 100 FEET. IF THESE CONDITIONS CAN NOT BE MET, A JUNCTION BOX MUST BE PLACED IN THE RUN, WITH THE ABILITY TO ACCESS BOX THROUGH THE CEILING.
8. CONDUIT SHALL HAVE CONNECTORS, PROTECTIVE BUSHINGS, PULL STRINGS AND SHALL BE GROUNDED BEFORE CABLES ARE PLACED IN THE CONDUIT.
9. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH ARCHITECT AND TELECOMMUNICATION CONSULTANT ON ENTRY, PATHWAYS AND OUTLET BOX PLACEMENT IN MODULAR FURNITURE AND CUSTOM MILLWORK.
10. NO EXPOSED COMMUNICATION CONDUIT IS ALLOWED UNLESS APPROVED IN ADVANCE BY THE ARCHITECT.
11. CONTRACTOR SHALL SUBMIT CONDUIT AND CABLE TRAY ROUTING PLAN SUBMITTALS FOR APPROVAL PRIOR TO INSTALLATION. INCLUDE NOTATIONS AT ELEVATION CHANGES, VERTICAL TRANSITIONS, FIRE-RATED PENETRATIONS, JUNCTION BOXES AND PULL BOXES.
12. CONDUIT SHALL BE BONDED AT THE CABLE TRAY OR COMMUNICAITONS ROOM TERMINATION POINT AS APPLICABLE.

FIRE STOPPING

1. FIRE STOP SOLUTIONS, MATERIALS AND INSTALLATION SHALL BE COMPLIANT WITH SYSTEMS DESCRIBED IN THIS DOCUMENT AND DIVISION 7 SPECIFICATIONS AND ANY OTHER REQUIREMENTS SET FORTH BY THE ARCHITECT AND GC.
2. CONTRACTOR SHALL SUPPLY SOLUTIONS AND SHOP DRAWING SUBMITTALS FOR FIRE STOP MATERIALS AND SYSTEMS FOR WRITTEN APPROVAL OF MATERIALS/SYSTEMS PRIOR TO PURCHASE AND INSTALLATION. MATERIALS AND SYSTEMS SHALL BE COMPLETE UPON INSTALLATION.
3. CONTRACTOR SHALL PROVIDE AND INSTALL LISTED AND APPROVED FIRE RESISTANT INTUMESCENT MATERIALS AND SYSTEMS TO RESTORE FIRE RATINGS TO WALLS, FLOORS AND CEILING / DECK PENETRATIONS USED IN THE DISTRIBUTION AND INSTALLATION FOR COMMUNICATIONS CABLING SYSTEM. COORDINATE FIRE STOPPING PROCEDURES, SYSTEMS AND MATERIALS WITH GENERAL CONTRACTOR.
4. CONTRACTOR SHALL INSTALL AND SEAL PENETRATIONS THROUGH FIRE-RATED BARRIERS CREATED BY OR MADE ON THE BEHALF OF THE INSTALLER TO PREVENT THE PASSAGE OF SMOKE, FIRE, TOXIC GAS OR WATER THROUGH THE PENETRATIONS.
5. CONTRACTOR SHALL INSTALL MATERIALS PER MANUFACTURER INSTRUCTIONS, BE UL LISTED FOR INTENDED USE, AND MEET NEC AND LOCAL CODES FOR FIRE STOPPING MEASURES.
6. THE MATERIAL CHOSEN SHALL BE DISTINCTIVELY COLORED TO BE CLEARLY DISTINGUISHABLE FROM OTHER MATERIALS, ADHEREE TO ITSELF, AND REMAIN RESILIENT AND PLIABLE TO ALLOW FOR THE REMOVAL AND/OR ADDITION OF COMMUNICATION CABLES WITHOUT THE NECESSITY OF DRILLING HOLES IN THE MATERIAL.

ELECTRICAL

1. ELECTRICAL CONTRACTOR SHALL PROVIDE A MINIMUM OF ONE (1) AC DUPLEX RECEPTACLE WITHIN 12" OF EACH COMMUNICAITONS INFORMAITON OUTLET (I/O). EXCEPTION - WALL PHONE AND SECURITY CAMERAS, ETC., UNLESS OTHERWISE SPECIFIED.
2. FOR SPECIFIC POWER AND RECEPTACLE REQUIREMENTS IN COMMUNICATIONS ROOMS, REFERENCE ELECTRICAL SPECIFICATIONS AND DRAWINGS AND VERIFY AGAINST COMMUNICAITONS SPECIFICATIONS AND DRAWINGS. REPORT TO GC DISCREPANCIES PRIOR TO PURCHASE OR INSTALLATION.
3. PROVIDE UTILITY QUAD CIRCUITS MOUNTED EVERY 6' ON EACH OF THE PERIMETER WALLS IN THE COMMUNICATIONS ROOM (BY ELECTRICAL CONTRACTOR).

TELECOM NOTES

GROUNDING AND BONDING

1. ALL METAL RACKS, FRAMES, CABINETS AND MISCELLANEOUS EQUIPMENT ENCLOSURES SHALL BE BONDED TOGETHER USING GREEN INSULATED COPPER WIRE SO THAT ALL EQUIPMENT, STRUCTURED CABLE RACKS ARE AT THE SAME GROUND POTENTIAL. TEST USING TWO-POINT BONDING MEASUREMENTS WITH AN EARTH GROUNDING RESISTANCE TESTER CONFIGURED FOR A CONTINUITY TEST. THE RECOMMENDED MAXIMUM VALUE OF THE BONDING RESISTANCE BETWEEN TWO POINTS 0.1 ohms.
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. BUS BARS SHALL BE PRE-DRILLED WITH STANDARD NEMA BOLT HOLE SIZING AND SPACING. (BY ELECTRICAL CONTRACTOR)

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
I/O	INFORMATION OUTLET
LAN	LOCAL AREA NETWORK
MC	MAIN CROSS CONNECT (MDF)
MDF	MAIN DISTRIBUTION FRAME (MC)
N/A	NOT APPLICABLE
NIC	NOT INCLUDED IN CONTRACT
TBB	TELECOMMUNICATIONS BONDING BACKBONE
TBC	TELECOMMUNICATIONS BONDING CONDUCTOR
TGB	TELECOMMUNICATIONS GROUND BUSBAR
TMBC	TELECOMMUNICATIONS MAIN BONDING CONDUCTOR
TMGB	TELECOMMUNICATIONS MAIN GROUNDING BUSBAR
TR	TELECOMMUNICATIONS ROOM
TS	TRADE SIZE
UTP	UNSHIELDED TWISTED PAIR
WP	WATER PROOF
SM	SINGLEMODE (FIBER)
MM	MULTIMODE (FIBER)

TELECOM SYMBOLS LEGEND

△	DATA OUTLET, 1-(D)ATA CABLE UNLESS OTHERWISE SPECIFIED. MOUNTED +18" AFF UNLESS NOTED OTHERWISE.
△ AED	AED MONITORING CONNECTION, 1-DATA CABLE, RED IN COLOR, TERMINATING IN AED ENCLOSURE.
◭ 1D/TV	ONE DATA AND ONE RG-6 COAXIAL CABLE ROUTED TO THE CLOSEST HAS TELECOM ROOM. INSTALL ALL TV CABLES IN MIN. 1" CONDUIT FROM OUTLET TO IDF. COORDINATE WITH TV MOUNTING HEIGHT.
△ CAM	DATA OUTLET FOR IP SECURITY CAMERA, 1-(D)ATA CABLE UNLESS OTHERWISE SPECIFIED. (REFER TO SECURITY DRAWINGS FOR LOCATIONS)
(△) CAM	CEILING DATA OUTLET FOR IP SECURITY CAMERA, 1-(D)ATA CABLE UNLESS OTHERWISE SPECIFIED. (REFER TO SECURITY DRAWINGS FOR LOCATIONS)
(△)	CEILING DATA OUTLET, 1-(D)ATA CABLE UNLESS OTHERWISE SPECIFIED.
(△) WAP	CEILING DATA OUTLET FOR WIRELESS ACCESS POINT, 2-(D)ATA CABLES UNLESS OTHERWISE SPECIFIED.
▲	VOICE OUTLET (ANALOG), 1-(D)ATA CABLE UNLESS OTHERWISE SPECIFIED.
[△]	FLOOR DATA OUTLET, 1-(D)ATA CABLE UNLESS OTHERWISE SPECIFIED.
△ KP	DATA OUTLET FOR KEYPAD, COORDINATE WITH AUDIOVISUAL DRAWINGS.

DRAWING INDEX

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1	10/30/19	ISSUED FOR PERMIT
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OWNER: HOUSTON AIRPORTS

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

CONSULTANT: 4b technology

SEAL:

IDO BUILDING STANDARDS
SPACE FIT-OUT

GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO:	N/A
CIP NO:	N/A
HAS NO:	913

KEY PLAN:

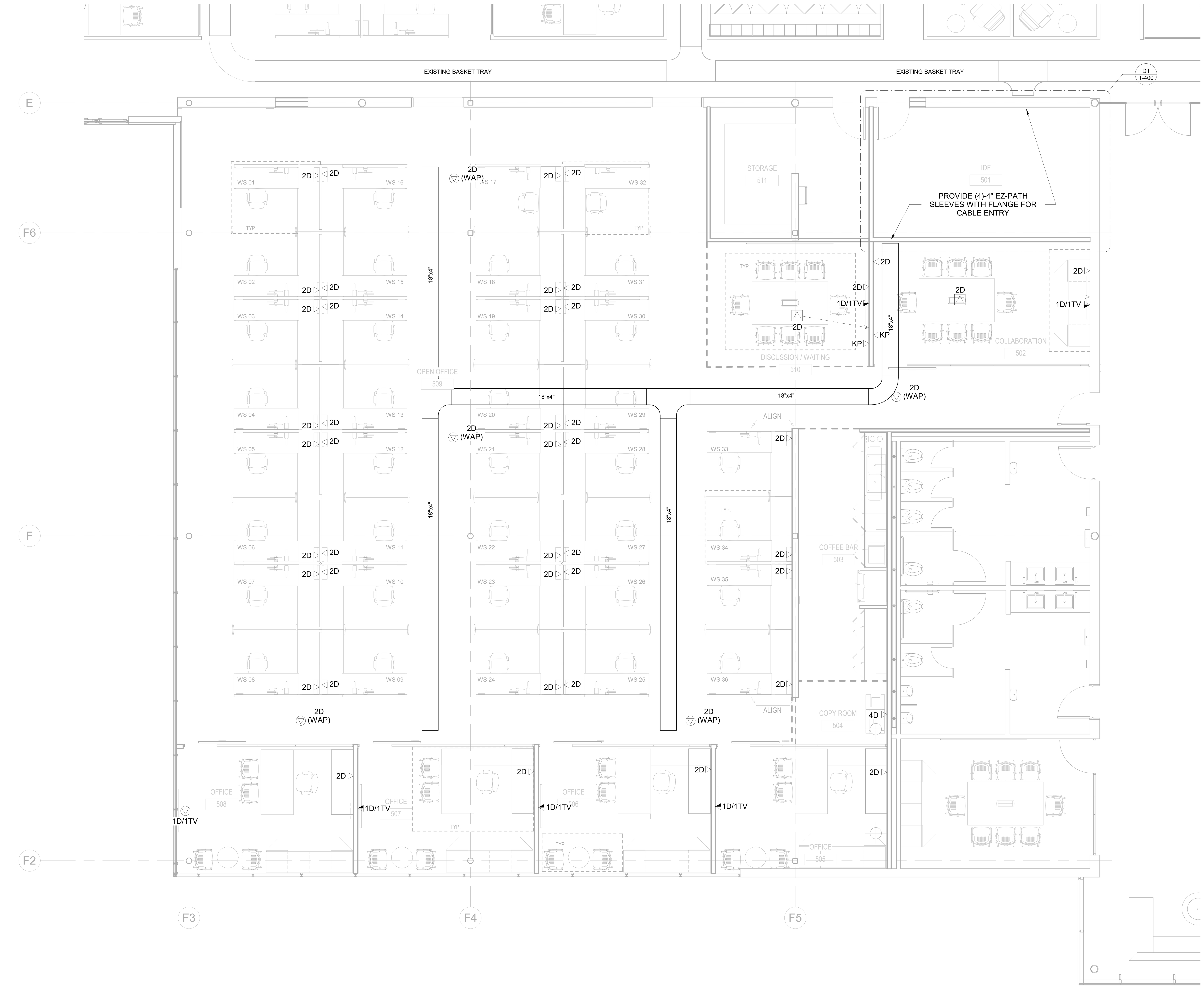
Jacobs Project No.: WHXK7103

Drawing Title:
TELECOM INDEX

Date: 01/28/22

Designed: MB
Drawn: CS
Checked: MB

Drawing No.:
T-001



A1 Level 1 - TELECOM
1/4" = 1'-0"

GENERAL NOTES

KEYNOTES

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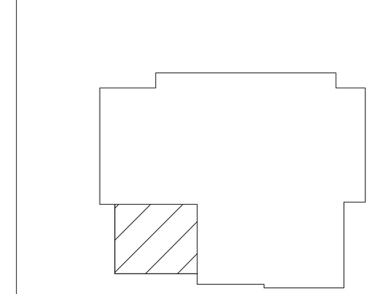
GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO: N/A

CIP NO: N/A

HAS NO: 913

KEY PLAN:



Jacobs Project No.: WHXK7103

Drawing Title:

TELECOM PLAN

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

Date: 01/28/22

Designed: MB
Drawn: CS
Checked: MB

Drawing No.: T-101

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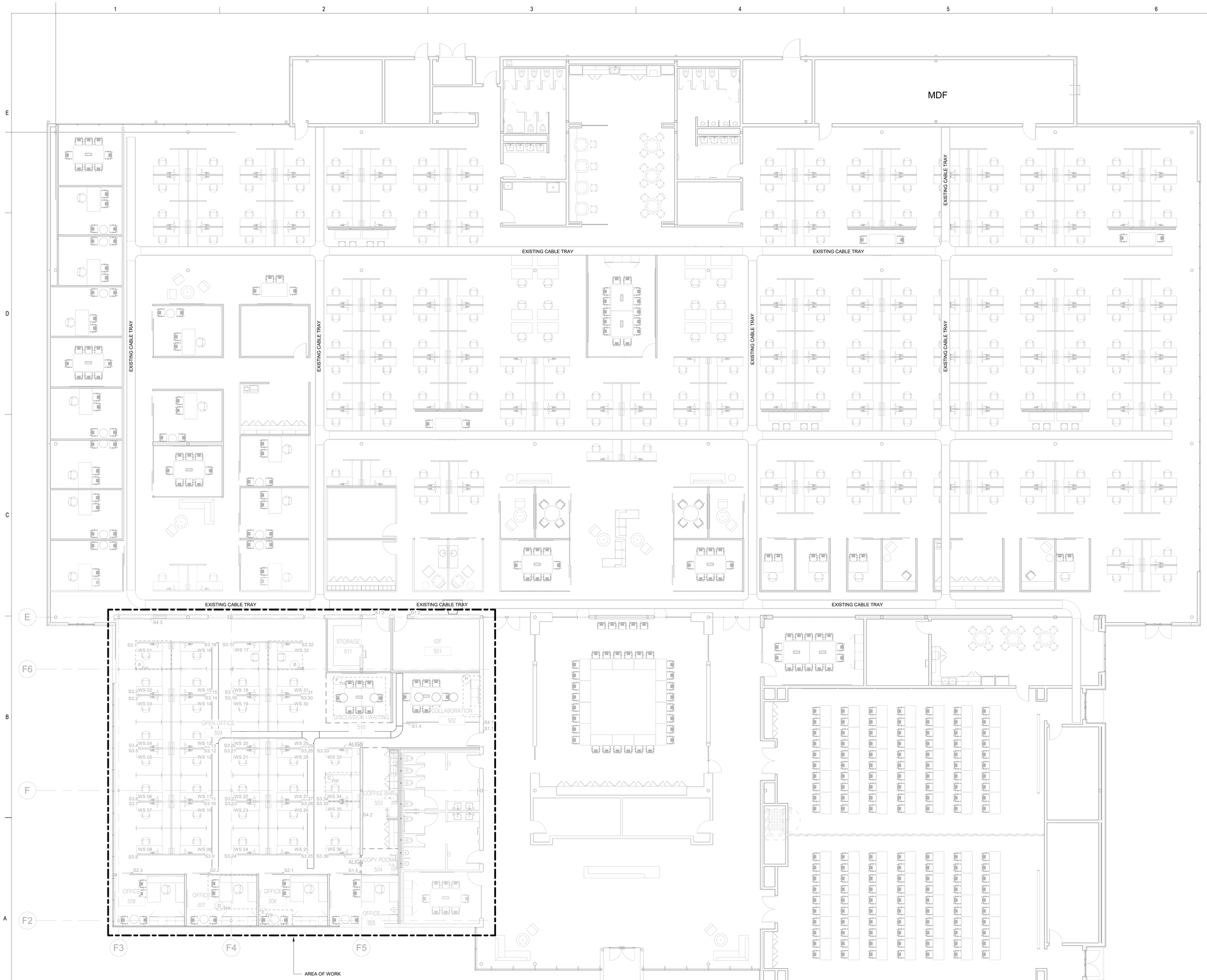

A1 OVERALL BUILDING PLAN - CABLE TRAY
1/8" = 1'-0"

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HOUSTON, TX 77032

AIP NO: N/A

CIP NO: N/A

HAS NO: 913

KEY PLAN:

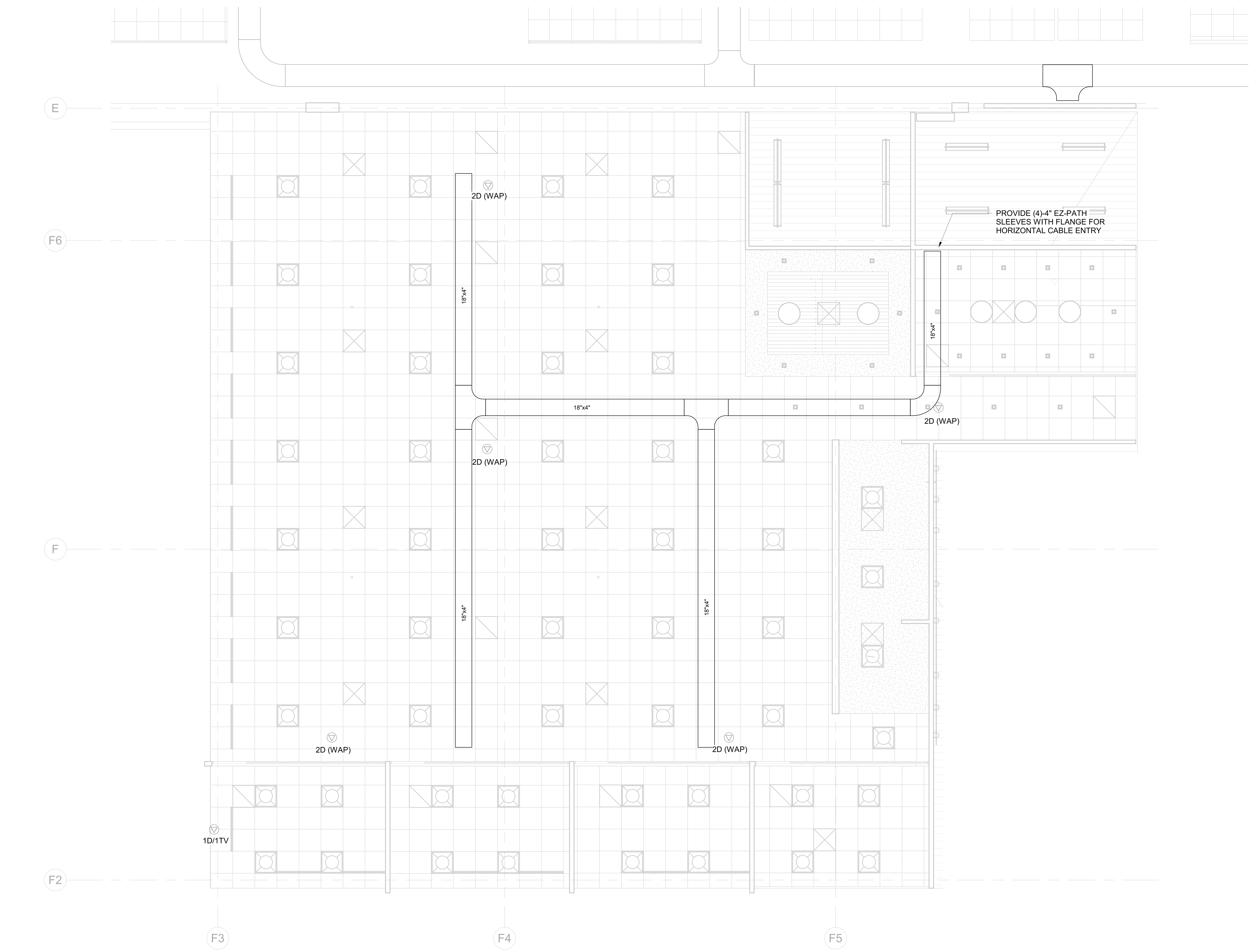
Jacobs Project No.: WHXK7103

Drawing Title:
TELECOM
OVERALL PLAN -
CABLE TRAY

Date: 01/28/22

Designed: MB
Drawn: CS
Checked: MB

Drawing No.:
T-102



A1 TELECOM RCP
1/4" = 1'-0"

GENERAL NOTES

KEYNOTES

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AIP NO: N/A

CIP NO: N/A

HAS NO: 913

KEY PLAN:

Jacobs Project No.: WHXK7103

Drawing Title:

TELECOM RCP

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

Date: 01/28/22

Designed: MB
Drawn: CS
Checked: MB

Drawing No.: T-201

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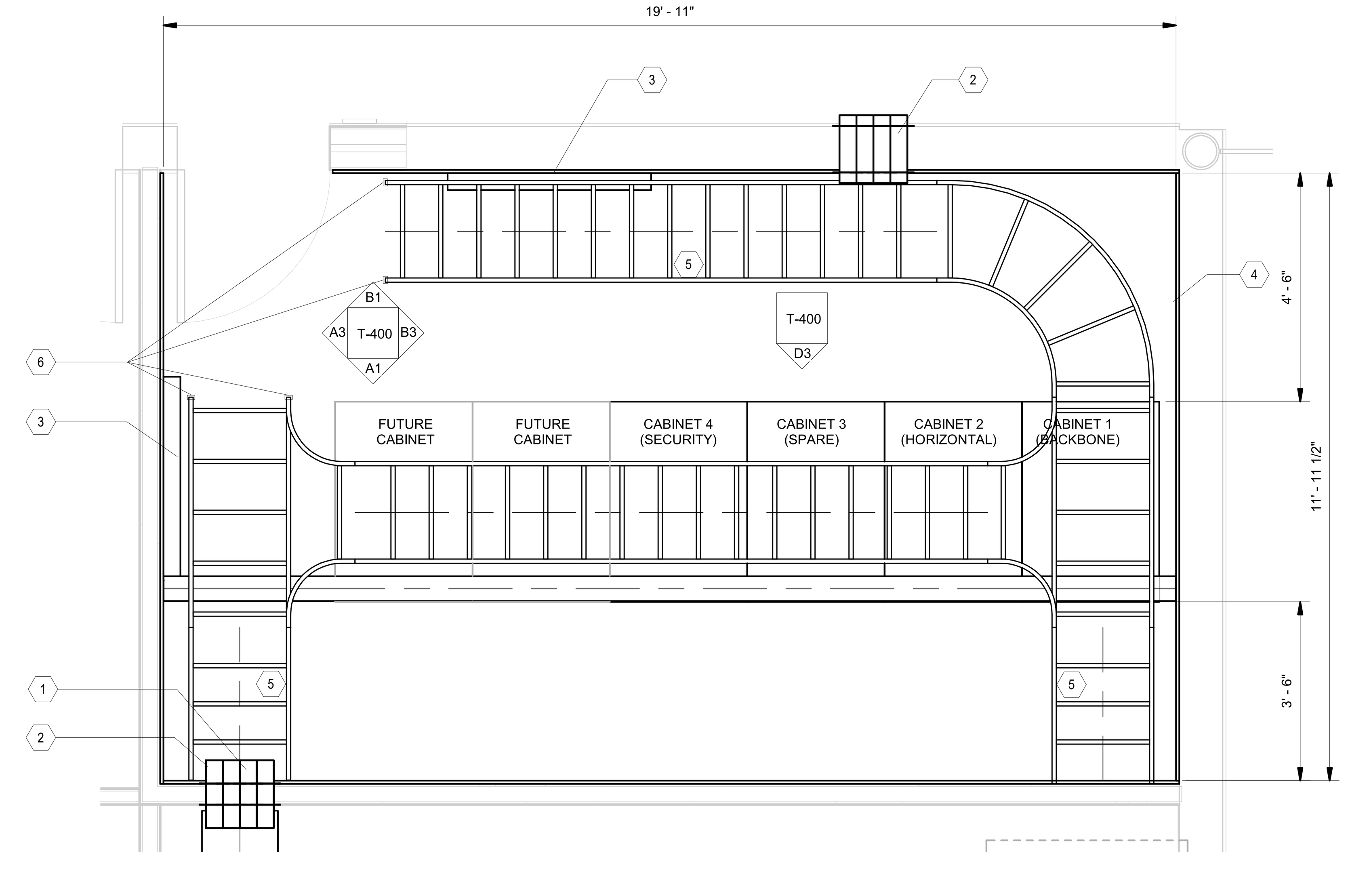
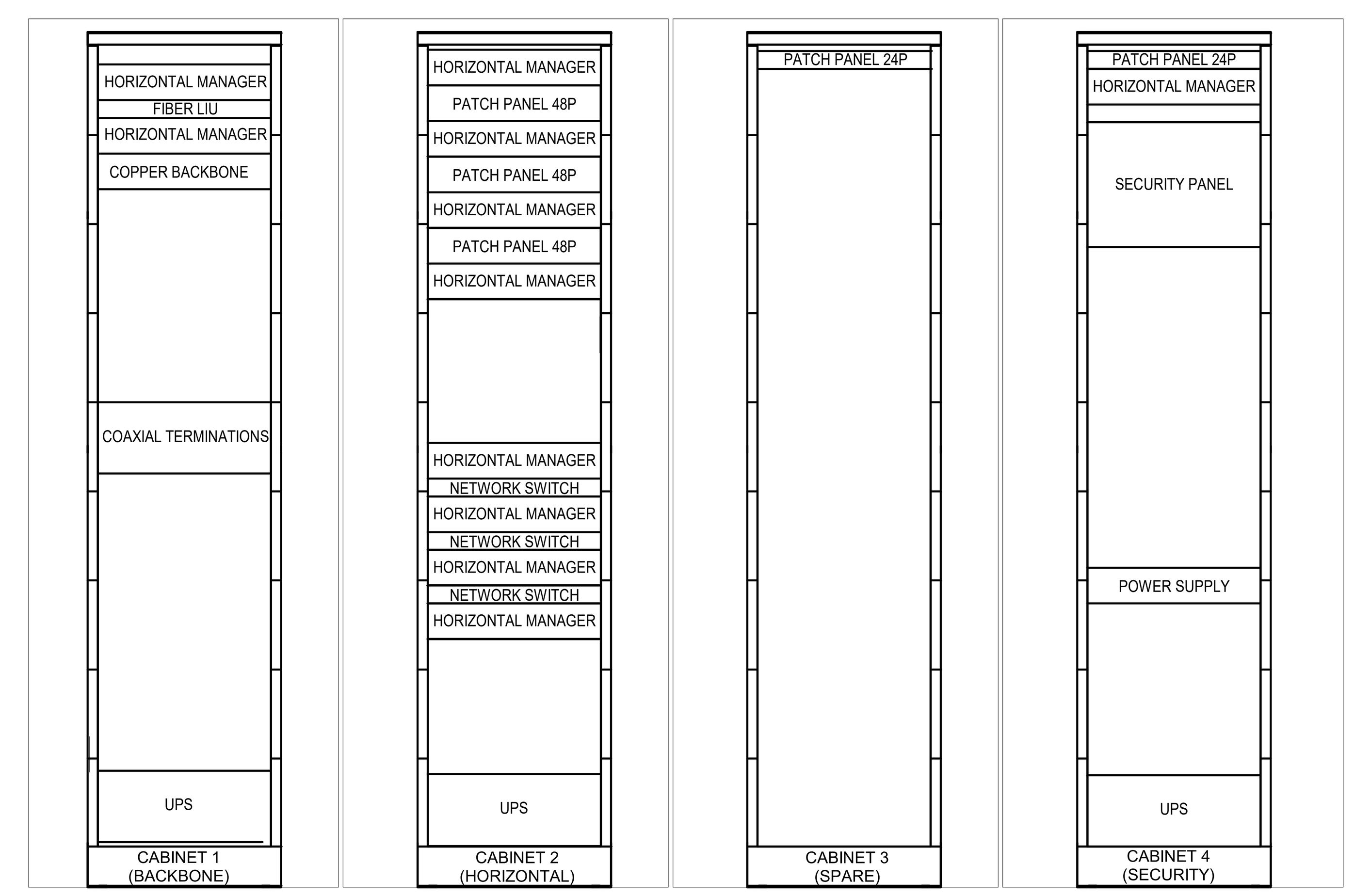
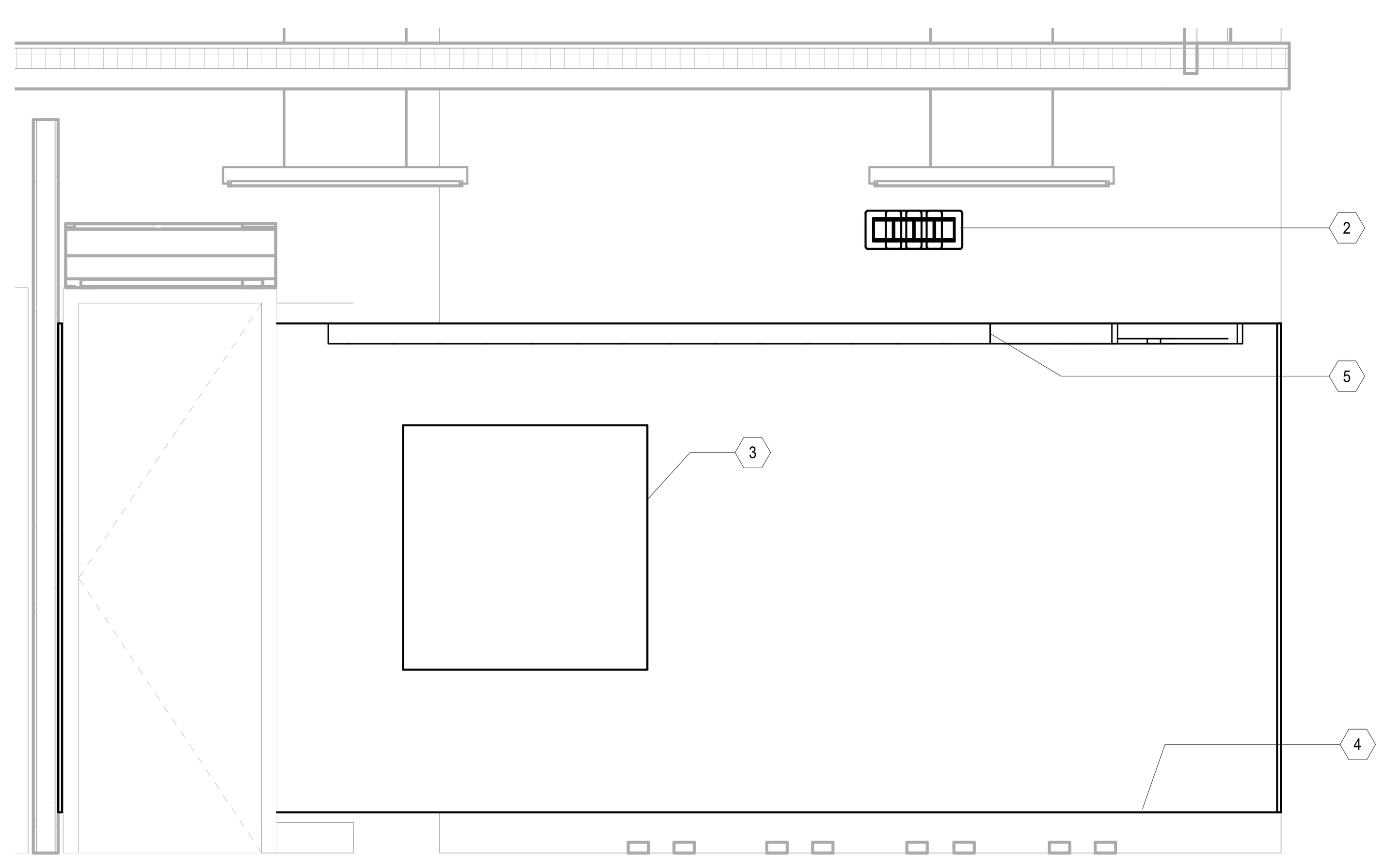


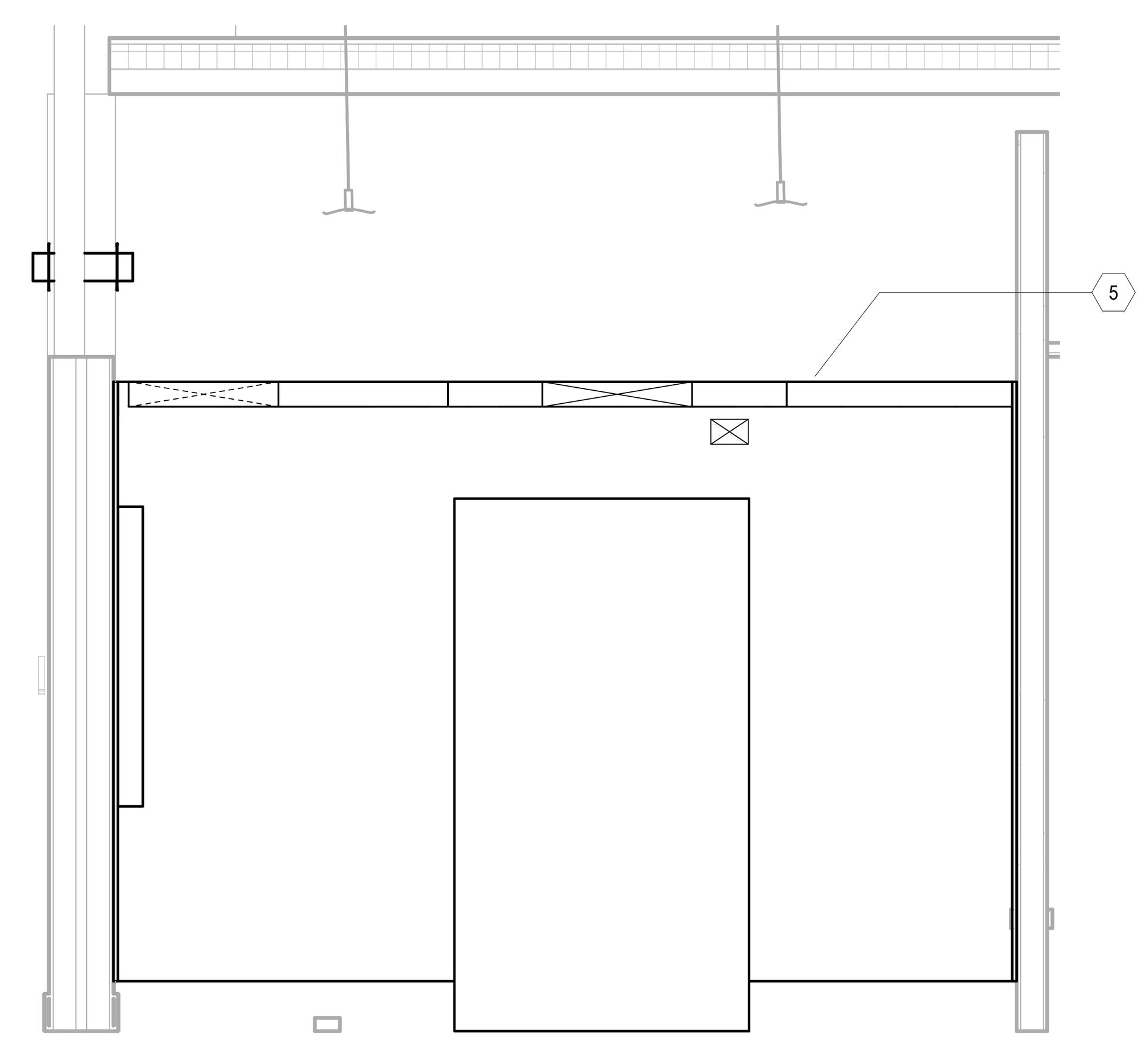
D1 TELECOM ENLARGED PLAN - IDF 501
1/2" = 1'-0"



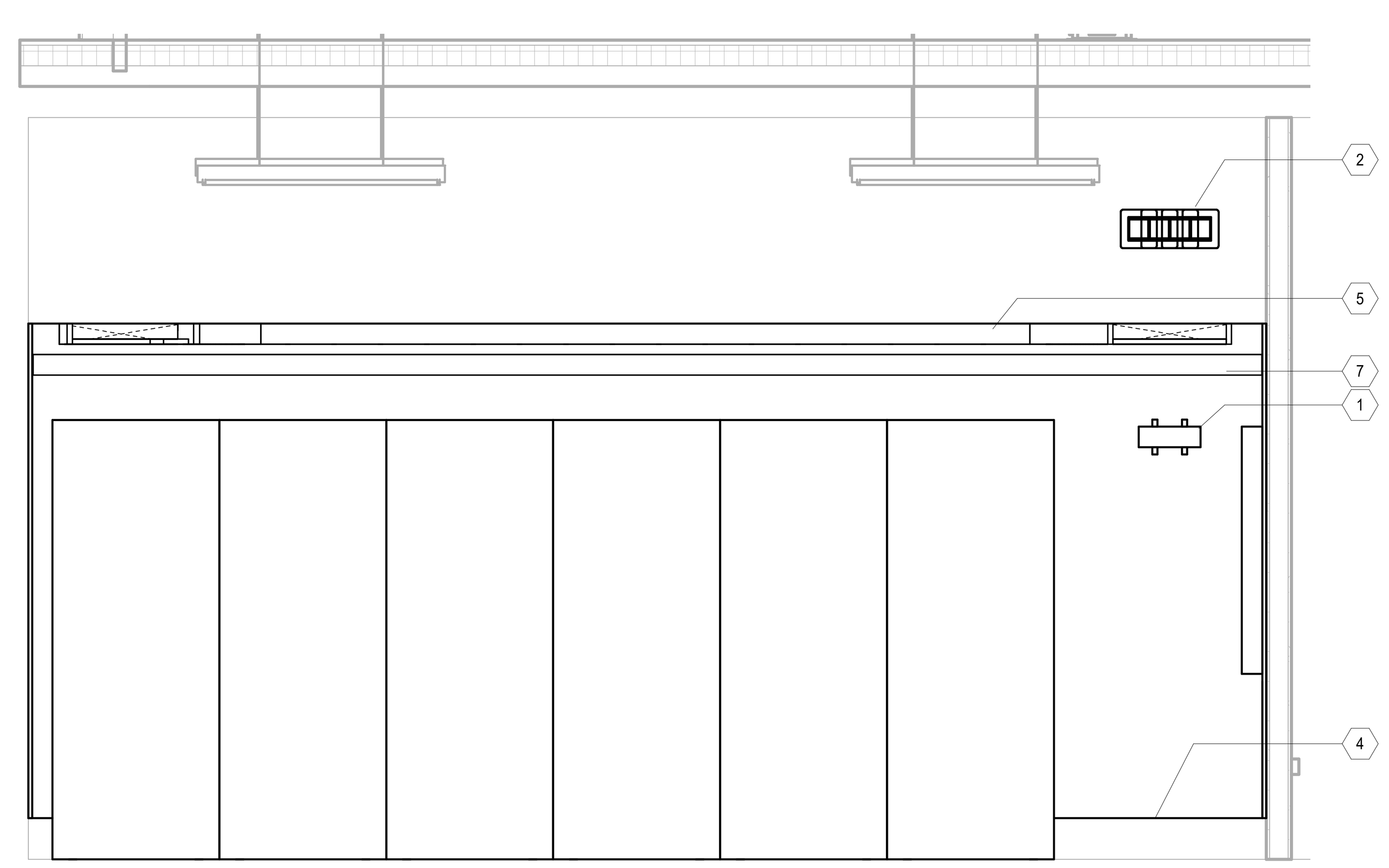
D3 IDF 501 - CABINET ELEVATIONS
1" = 1'-0"



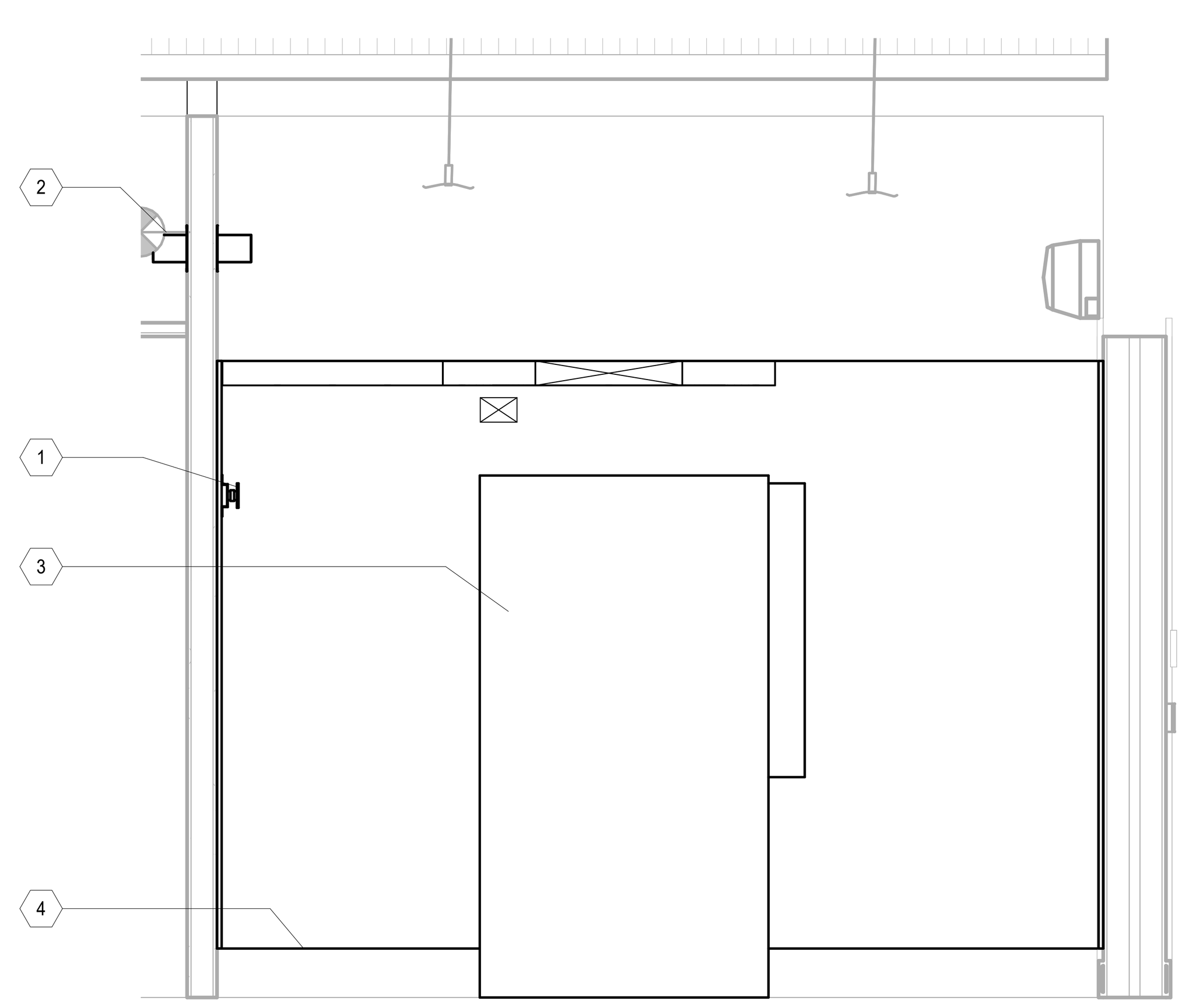
B1 IDF 501 - ELEVATION A
1/2" = 1'-0"



B3 IDF 501 - ELEVATION B
1/2" = 1'-0"



A1 IDF 501 - ELEVATION C
1/2" = 1'-0"



A3 IDF 501 - ELEVATION D
1/2" = 1'-0"

GENERAL NOTES

TELECOM ROOM GENERAL NOTES:

1. COVER ALL WALL OF EACH TELECOM ROOM IN 4'x8'x3/4" PLYWOOD, FIRE RATED, A/C GRADE OR BETTER, VOID FREE WITH 'A' GRADE SIDE FACING OUT, PAINTED WITH AT LEAST TWO COATS OF LIGHT COLORED FIRE RESISTANT PAINT AS REQUIRED TO STOP BLEED-THROUGH OF THE PLYWOOD. DO NOT COVER RATING STAMP WITH PAINT. INSTALL PLYWOOD SHEETS AT +6" AFF TO +8'-6" AFF.
2. FOR ADDITIONAL CONSTRUCTION DETAILS REFER TO SPECIFICATIONS - DIVISION 26 AND 27.
3. ALL CABLES, CABLE TRAY OR LADDER TRAY WITH A VERTICAL TO HORIZONTAL CHANGE OF DIRECTION TO HAVE RADIUS DROP OUTS OR VERTICAL OUTSIDE BENDS.

SHEET GENERAL NOTES:

1. FROM THE MDF, PROVIDE 50 PAIR COPPER AND 48 STRANDS SINGLEMODE FIBER WITH THE LAST 12 STRANDS TERMINATED IN LC/APC TYPE CONNECTORS. ROUTED IN BUILDINGS EXISTING BASKET TRAY AND TERMINATED IN CABINET 1. PROVIDE NEW TERMINATION HARDWARE IN MDF AS REQUIRED.
2. CONTRACTOR TO PROVIDE NETWORK EQUIPMENT INCLUDING WAPs, SWITCHES, TRANSCEIVERS, UPS DEVICES AND VERTICAL PDUs ETC.

KEYNOTES

1	TELECOMMUNICAITONS GROUND BUSBAR (TGB)
2	(4)-4" EZ-PATHS WITH FRAME AND RADIUS CONTROL MODULE
3	RESERVED WALL SPACE
4	3/4" FIRE RATED PLYWOOD, ALL WALLS
5	24" CABLE TRAY
6	TRAY END CAPS
7	FIBER RUNNER

GRAPHIC SCALES:
0 1' 2' 4' 8'
1/2" = 1'-0"

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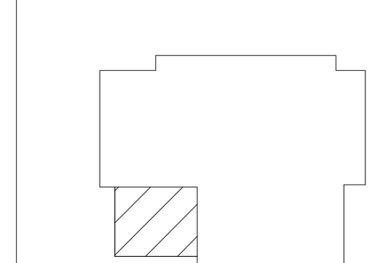
HOUSTON, TX 77032

AIP NO: N/A

CIP NO: N/A

HAS NO: 913

KEY PLAN:



Jacobs Project No.: WHXK7103

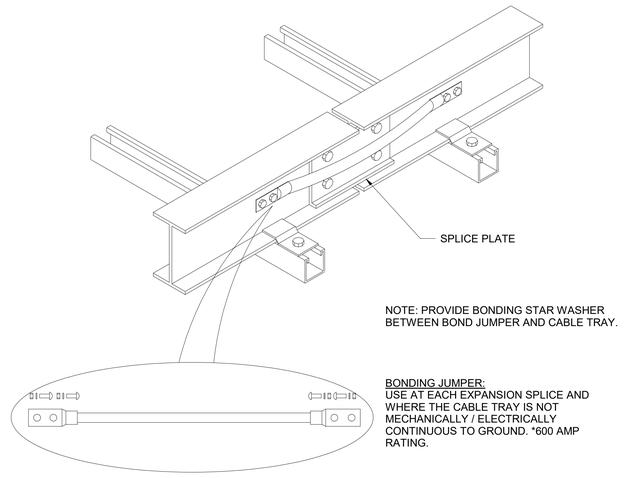
Drawing Title:

TELECOM
ENLARGED PLANS

Date: 01/28/22

Designed: MB
Drawn: CS
Checked: MB

Drawing No.: T-400

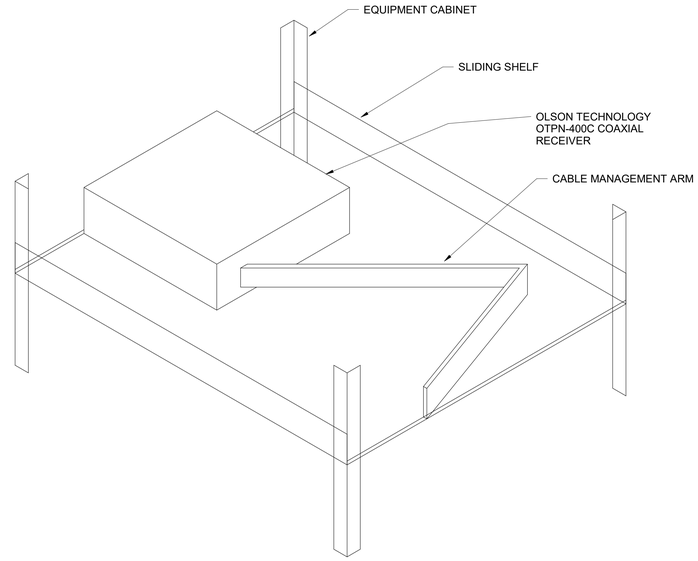


NOTE: PROVIDE BONDING STAR WASHER BETWEEN BOND JUMPER AND CABLE TRAY.

BONDING JUMPER:
USE AT EACH EXPANSION SPLICE AND WHERE THE CABLE TRAY IS NOT MECHANICALLY / ELECTRICALLY CONTINUOUS TO GROUND. *600 AMP RATING.

C2 3CABLE TRAY BONDING JUMPER
3/4" = 1'-0"

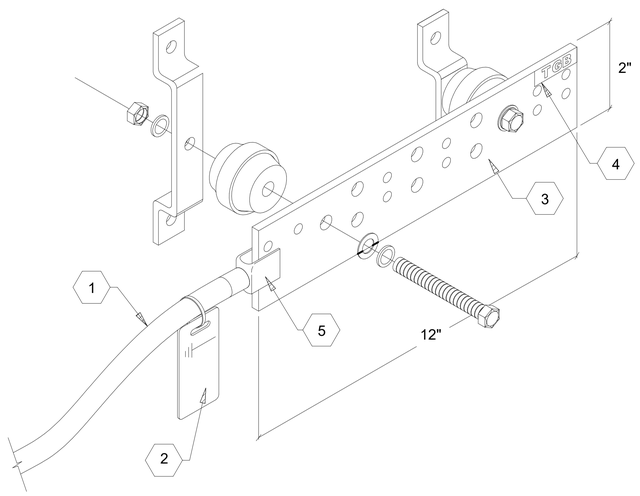
COAXIAL SCOPE NOTES:
1. PROVIDE AND INSTALL COAXIAL TO FIBER TRANSMITTER (OLSON TECHNOLOG OTOT-1000E SERIES) IN TERMINAL B MDF. COORDINATE LOCATION OF TRANSMITTER WITH HAS IT.
2. INSTALL TERMINATE AND TEST NEW HORIZONTAL COAXIAL CABLES FROM COAXIAL RACK MOUNTED SHELF TO OUTLETS. PER HAS IT STANDARD, INSTALL ALL COAXIAL CABLING IN CONDUIT FROM OUTLET TO IDF. CONSOLIDATION OF PATHWAY IS PERMITTED PROVIDING CONDUIT 40% CONDUIT FILL IS NOT EXCEEDED.
3. PROVIDE AND INSTALL FIBER/COAXIAL RECEIVER (OLSON TECHNOLOGY OTPN-400C) AND APPROPRIATE BLONDER TONGUE 8 PORT TAPS AS REQUIRED TO OPTIMIZE SIGNAL LEVELS ON BOTH HORIZONTAL CABLES AND ON FINAL TAP OUTPUT.
4. INSTALL ALL CONNECTIONS IN IDF WITH COAXIAL SECURITY SLEEVES.



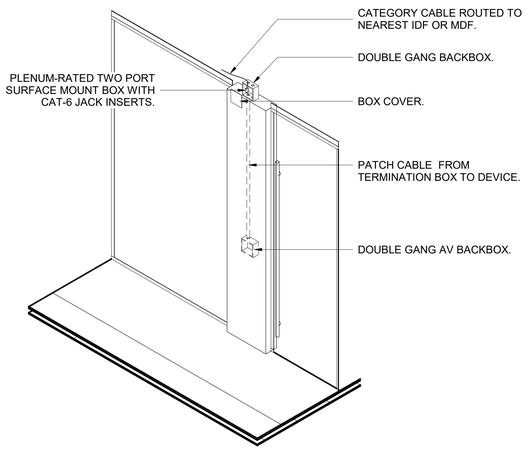
C4 COAXIAL DETAIL
3" = 1'-0"

KEYED NOTES:

1. BONDING BACKBONE
2. GROUNDING TAG
3. BUSBAR
4. BUSBAR LABEL
5. EXOTHERMIC WELD



A1 TYPICAL GROUNDING BUSBAR DETAIL
NTS



A4 KEYPAD ROUGH-IN DETAIL
NTS

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DIRECTOR
HOUSTON AIRPORT SYSTEM

CONSULTANT: 4b technology

SEAL:

IDO BUILDING STANDARDS SPACE FIT-OUT

GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO: N/A

CIP NO: N/A

HAS NO: 913

KEY PLAN:

Jacobs Project No.: WHXK7103

Drawing Title:
TELECOM DETAILS

Date: 01/28/22

Designed: MB
Drawn: CS
Checked: MB

Drawing No.:
T-500

GENERAL NOTES

1. THE ARCHITECTURAL PLANS AND SPECIFICATIONS, GENERAL CONDITIONS, SUPPLEMENTARY GENERAL CONDITIONS AND OTHER REQUIREMENTS OF DIVISION 1, THE MECHANICAL, ELECTRICAL, COMMUNICATIONS AND SECURITY PLANS AND SPECIFICATIONS, MAY APPLY TO THE WORK SPECIFIED.
2. THE CONTRACTOR SHALL CAREFULLY EXAMINE THE PREMISES TO DETERMINE THE EXTENT OF WORK AND CONDITION UNDER WHICH IT WILL BE DONE. REVIEW AND VERIFY CONTRACT DOCUMENTS IN RELATION TO FIELD CONDITIONS TO VERIFY ACCURACY, CONFIRMING WITH THE 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 CLARIFICATIONS FROM THE OWNER, OR THEIR DESIGNATED REPRESENTATIVE, PRIOR TO PROCEEDING WITH THE WORK OR RELATED WORK IN QUESTION.
3. SHOULD THERE BE CONFLICT BETWEEN THE DOCUMENTS LISTED ABOVE, THE MOST STRINGENT SPECIFICATION SHALL APPLY.
4. ANY 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. THE CONTRACTOR SHALL OBTAIN THE OWNER'S PERMISSION PRIOR TO PROCEEDING WITH ANY WORK NECESSITATING CUTTING INTO OR THROUGH ANY PART OF BUILDING STRUCTURES SUCH AS GIRDERS, BEAMS, CONCRETE OR TILE FLOORS, PARTITIONS AND/OR CEILINGS.

PROJECT NOTES

1. AUDIOVISUAL ELEMENTS FOR EACH ROOM ARE ROUTED TO THE ASSOCIATED AUDIOVISUAL OUTLET IN CONDUIT AND CABLE TRAY
2. FLAT PANEL DISPLAYS TO INCLUDE DISPLAY MOUNTS AND BACK BOXES WITH CONDUIT AND CABLING TO ASSOCIATED AUDIOVISUAL OUTLET.
3. DATA AND FIBER OPTIC CABLE MUST BE INSTALLED, TESTED AND DOCUMENTED BY A TELECOM CONTRACTOR.
4. AUDIOVISUAL CABLES SHALL NOT BE PAINTED.
5. CONTRACTOR TO COORDINATE FINAL LOCATIONS OF ALL SPEAKERS, PROJECTORS, CAMERAS AND MICROPHONES WITH ELECTRICAL LIGHTING LAYOUT.
6. GENERAL CONTRACTOR TO PROVIDE BACKER BOARD FOR ALL WALL MOUNTED FLAT SCREEN DISPLAYS.
7. ALL AUDIOVISUAL CABLE PLACED IN CEILING CABLE TRAY MUST BE PLACED BY COMMUNICATIONS CONTRACTOR.

COORDINATION NOTES

1. CONTRACTOR TO COORDINATE ALL AV PLATE FINISHES WITH ARCHITECT.
2. CONTRACTOR TO COORDINATE ALL CEILING MOUNTED SPEAKERS WITH ELECTRICAL LIGHTING LAYOUT. CENTER ALL SPEAKERS IN CEILING TILE. CONTACT ARCHITECT AND A/V DESIGNER OF ANY DISCREPANCIES.
3. CONTRACTOR TO COORDINATE WITH OWNER ON ALL FINAL LOCATIONS FOR AUDIO VIDEO CONTROL PLATE AND INTERCONNECT PLATES.
4. ALL AV WALL PLATES, BACK BOXES, AND FLOOR BOXES REQUIRE CONDUIT BACK TO ACCESSIBLE CEILING SPACE.
5. ALL AV FLOOR BOXES SHALL HAVE CONDUIT RUNNING TO ACCESILBLE CEILING.
6. WALLS WITH DISPLAYS MOUNTED ON OPPOSING SIDES OF THE WALL MUST BE FRAMED OUT FOR BACKBOXES TO FIT BACK TO BACK.
7. GENERAL CONTRACTOR TO PROVIDE AND INSTALL ALL CONDUIT INFRASTRUCTURE, PLENUM BOXES, BACKBOXES, FRAMING AND 110VAC OR GREATER POWER.
8. AV CONTRACTOR TO PROVIDE AND INSTALL ALL AV EQUIPMENT, MOUNTING EQUIPMENT AND AV CABLING.
9. CONTRACTOR TO PROVIDE MIN 3/4" BACKER BOARD ACROSS 3 STUDS FOR ALL DISPLAYS.

ELECTRICAL NOTES

1. FOR SPECIFIC POWER AND RECEPTACLE REQUIREMENTS IN THE PROJECT REFERENCE ELECTRICAL SPECIFICATIONS AND DRAWINGS AND VERIFY WITH COMMUNICATION SPECIFICATIONS AND DRAWINGS. REPORT TO GC DISCREPANCIES PRIOR TO PURCHASE OR INSTALLATION.
2. CONDUITS TO AV WALL BOXES SHALL BE A MINIMUM OF ONE INCH (1") DIAMETER (UNLESS OTHERWISE NOTED) AND SHALL BE COMPLETE WITH NYLON PULL STRING.
3. CONDUITS SHALL HAVE A STEEL COMPRESSION THROATED CONNECTOR WITH BUSHING INSTALLED ON EXPOSED ENDS AND STUBBED OUT INTO INTO ACCESSIBLE CEILING SPACE 6", A MINIMUM OF TWO INCHES ABOVE DROP CEILING UNLESS OTHERWISE NOTED ON THE AV PLANS.
4. PENETRATION THROUGH OR INTO FIREWALLS SHALL USE AN APPROPRIATE EZ-PATH PRODUCT.
5. BACK BOXES INSTALLED FOR AUDIO VISUAL WIRING SHALL BE 4"X4"X3-1/2" DEEP BOXES. THESE BOXES SHALL BE SEPARATE FROM ELECTRICAL JUNCTION BOXES AND BE EXCLUSIVELY FOR AUDIO VISUAL.
6. MUD RINGS SHALL BE INSTALLED ON ALL AUDIO VISUAL WALL BOXES.
7. CONDUITS SHALL HAVE STEEL COMPRESSION COUPLERS, STEEL COMPRESSION THROATED CONNECTORS, PROTECTIVE BUSHINGS, PULL STRINGS, AND GROUNDING BUSHINGS.
8. CONDUIT RUNS SHALL BE INSTALLED WITH NO MORE THAN TWO (2) 90 DEGREE BENDS AND NOT EXCEED ABILITY TO ACCESS BOX THROUGH THE CEILING.

AV ROUGH-IN CABLE SCHEDULE

M	MICROPHONE LEVEL CABLE. WEST PENN 25454, BELDEN 9451P, LIBERTY AV 22-1P-CMP-EZ OR APPROVED EQUIVALENT.
L	LINE LEVEL CABLE. WEST PENN 25454, BELDEN 9451P, LIBERTY AV 22-1P-CMP-EZ OR APPROVED EQUIVALENT.
S	SPEAKER LEVEL CABLE 16AWG. WEST PENN 25225B, BELDEN 6200UE, LIBERTY AV 16-2C-P-GRY OR APPROVED EQUIVALENT.
S2	SPEAKER LEVEL CABLE 12AWG. WEST PENN 25227B, BELDEN 6200UE, LIBERTY AV 12-2C-P-GRY OR APPROVED EQUIVALENT.
CAT6	CATEGORY 6 CABLE. PROVIDED AND INSTALLED BY DATA CONTRACTOR.
DM	DIGITAL MEDIA CABLE. CRESTRON DM-CBL-8G-P OR EXTRON XTP DTP 24P OR APPROVED EQUIVALENT. MUST BE TERMINATED WITH MANUFACTURER RECOMMENDED CONNECTORS AND COLORED BOOT.
OP	OPTICAL PLENUM CABLE. LIBERTY FSR DR-PCB-HXXM DIGITAL RIBBON CABLES OR APPROVED EQUIVALENT.

ABBREVIATIONS

AWG	AMERICAN WIRE GAGE
AFF	ABOVE FINISHED FLOOR
CATV	COMMUNITY ANTENNA TELEVISION
CCTV	CLOSED CIRCUIT TELEVISION
COE	CENTRAL OFFICE EQUIPMENT
CO	CENTRAL OFFICE
dB	DECIBEL
DEMARC	DEMARCATION POINT
EQ	EQUAL
EMT	ELECTRIC METALLIC TUBING
EQUIP	EQUIPMENT
ER	EQUIPMENT ROOM
HH	HANDHOLE
IDF	INTERMEDIATE DISTRIBUTION FRAME
LAN	LOCAL AREA NETWORK
MDF	MAIN DISTRIBUTION FRAME
MH	MANHOLE
MM	MULTIMODE
NEC	NATIONAL ELECTRIC CODE
OFOI	OWNER FURNISHED OWNER INSTALLED
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMIN.
OTDR	OPTICAL TIME DOMAIN REFLECTOMETER
PABX	PRIVATE AUTOMATIC BRANCH EXCHANGE
PB	PULLBOX
PIC	PLASTIC INSULATED CONDUCTOR
PR	PAIR POLYVINYL CHLORIDE
PVC	RADIO FREQUENCY
RFI	INTERFERENCE
SM	SINGLE MODE
STP	SHIELDED TWISTED PAIR
TBB	TELECOMMUNICATIONS BONDING BACKBONE
TC	TELECOMMUNICATIONS CLOSET
TDR	TIME DOMAIN REFLECTOMETER
TR	TELECOMMUNICATIONS ROOM
TELCO	TELEPHONE COMPANY
TGB	TELECOMMUNICATIONS GROUNDING BAR
TIA	TELECOMMUNICATIONS INDUSTRY ASSOCIATION
TMGB	TELECOMMUNICATIONS MAIN GROUNDING BUSBAR
UPS	UNINTERRUPTIBLE POWER SUPPLY
TS	TRADE SIZE

AUDIO VISUAL SYMBOL LEGEND

AV	A/V INTERCONNECTION PLATE PROVIDE ONE (1) 1-1/4" T.S. CONDUIT FROM (1) GANG ELECTRICAL BACK BOX. MOUNT AT 18" AFF, UNLESS NOTED OTHERWISE. REFER TO ROUGH-IN DETAILS FOR CONDUIT PATH.
KP	KEYPAD CONTROL. PROVIDE 1" TS CONDUIT FROM 2-GANG BACKBOX LOCATED AT 48" AFF TO DATA CABLE TRAY. PROVIDE (1) DATA DROP TERMINATED WITH RJ-45 PLUG AND SUPPLYING POWER VIA POE.
XX" FPD	FLAT PANEL DISPLAY, WALL MOUNTED, PROVIDE 1-DATA AND 1 COAX CABLE UNLESS OTHERWISE NOTED. PROVIDE CONDUIT AND BACK BOX PER ROUGH-IN DETAILS.
XX" FPD-C	FLAT PANEL DISPLAY, CEILING MOUNTED, PROVIDE 1-DATA AND 1 COAX CABLE UNLESS OTHERWISE NOTED.
FB	AV FLOOR BOX. PROVIDE DATA PER "T" SHEETS. PROVIDE 120VAC, 20A, DEDICATED DUPLEX POWER. PROVIDE MIN. (1) 1-1/4" TS CONDUITS FOR AUDIOVISUAL EQUIPMENT.

AUDIO VISUAL DRAWINGS INDEX

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OWNER: HOUSTON AIRPORTS

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

CONSULTANT: 4b technology

SEAL:

IDO BUILDING STANDARDS SPACE FIT-OUT

GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO: N/A

CIP NO: N/A

HAS NO: 913

KEY PLAN:

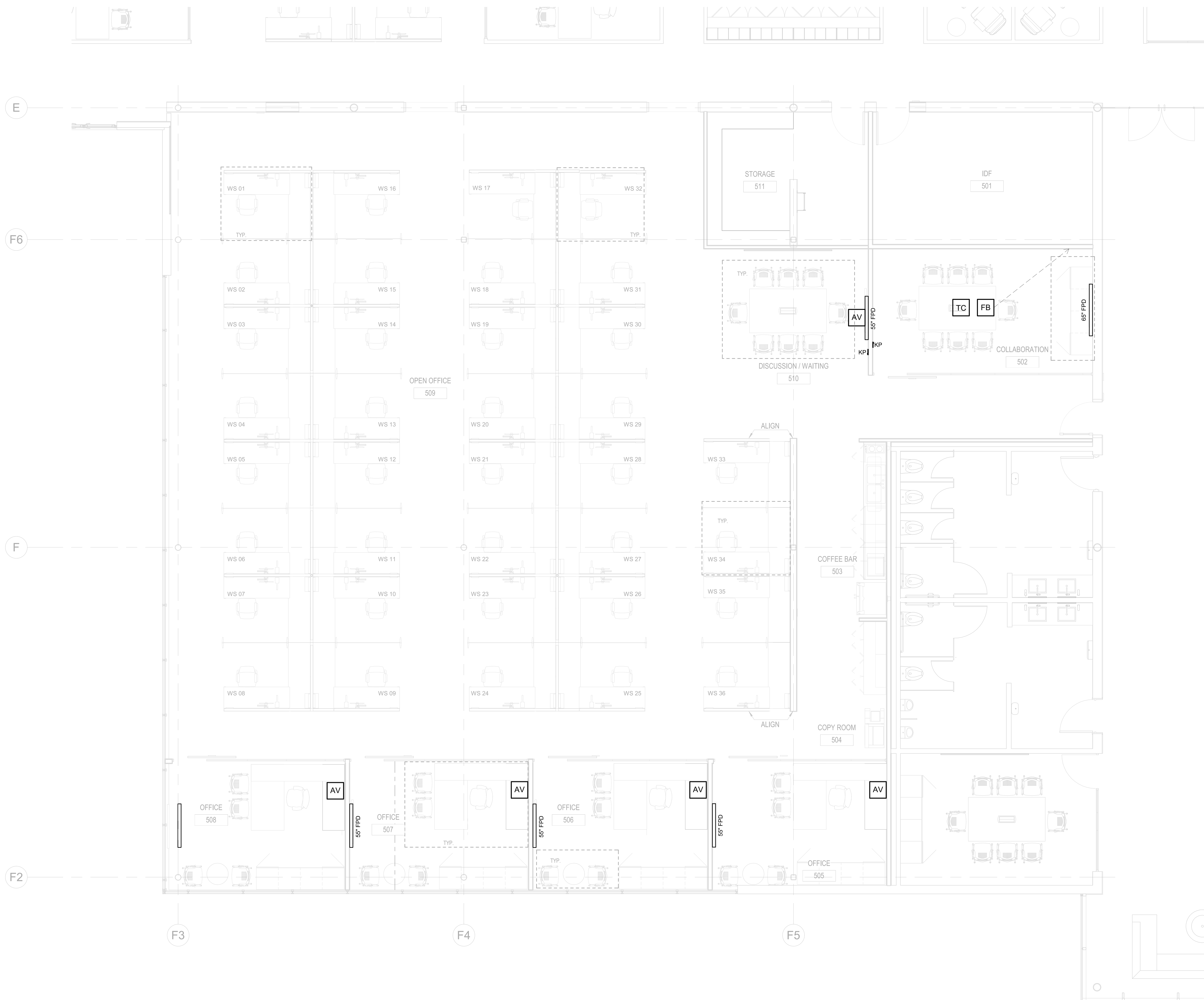
Jacobs Project No.: WHXK7103

Drawing Title: AUDIOVISUAL INDEX

Date: 01/28/22

Designed: AC
Drawn: AC
Checked: MB

Drawing No.: TA-001



A1 AV FLOOR PLAN - SW
1/4" = 1'-0"

GENERAL NOTES

KEYNOTES

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HOUSTON AIRPORT SYSTEM

CONSULTANT:

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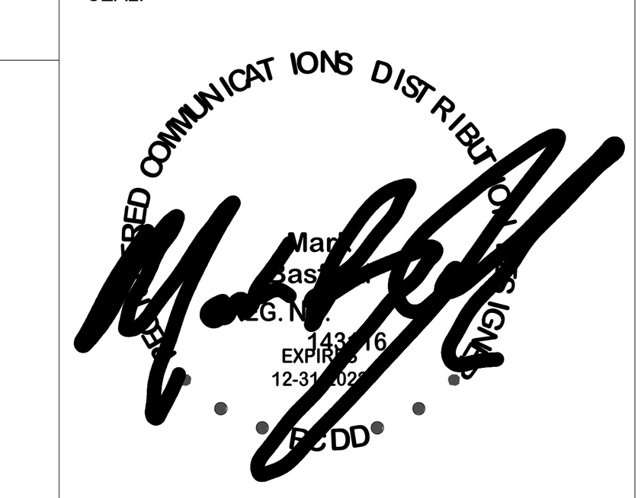
SEAL:



IDO BUILDING STANDARDS SPACE FIT-OUT

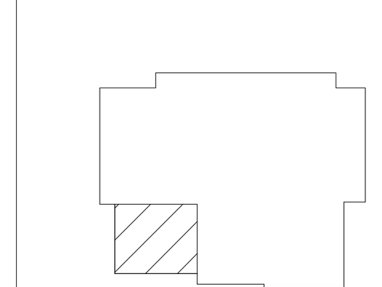
GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO: N/A

CIP NO: N/A

HAS NO: 913

KEY PLAN:



Jacobs Project No.: WHXK7103

Drawing Title:

AUDIOVISUAL PLAN

GRAPHIC SCALES:
0 2' 4' 8' 16'
1/4" = 1'-0"

Date: 01/28/22

Designed: AC
Drawn: AC
Checked: MB

Drawing No.:
TA-101

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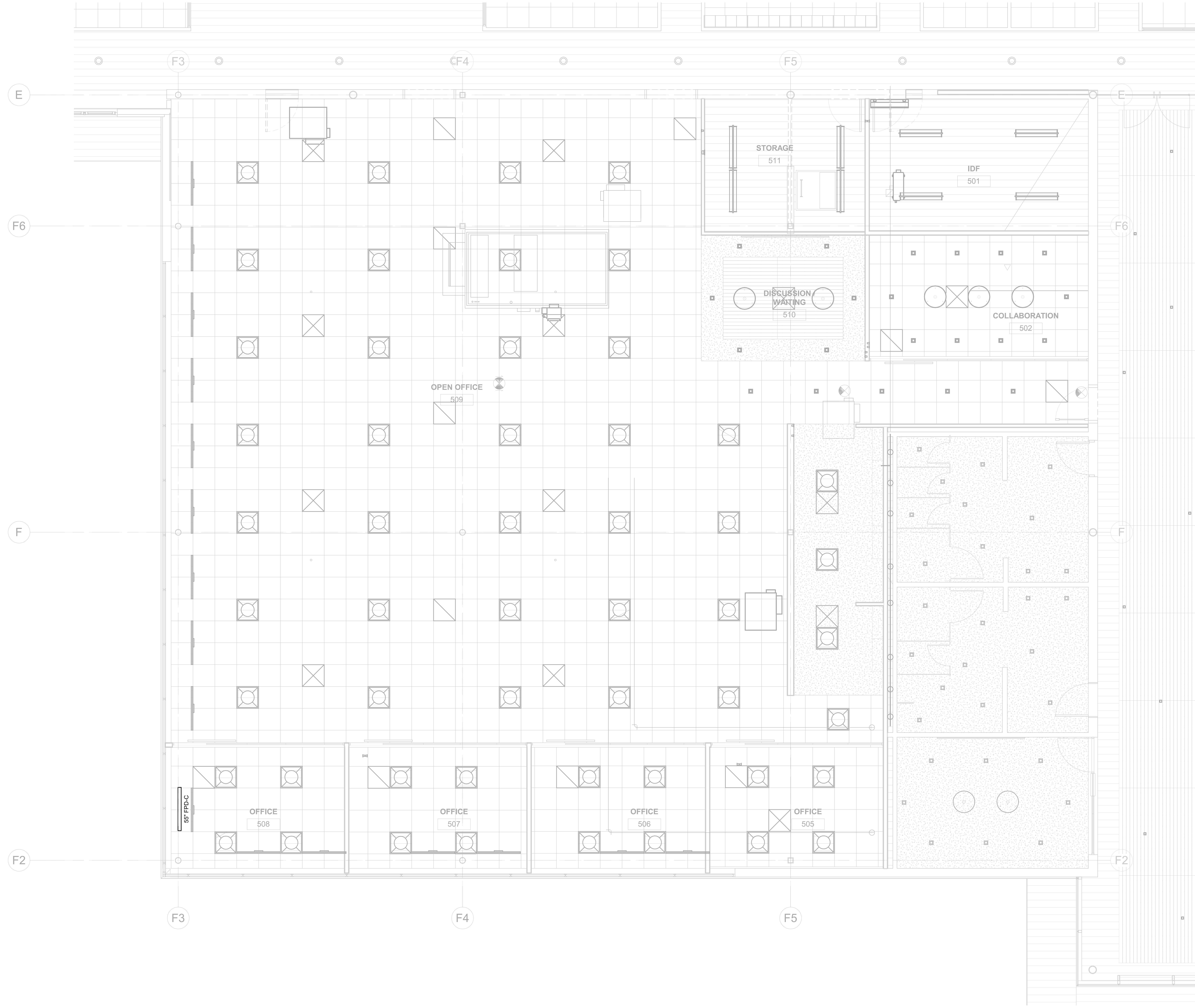

A1 AV RCP- SW
1/4" = 1'-0"

GENERAL NOTES

KEYNOTES

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SEAL:

IDO BUILDING STANDARDS
SPACE FIT-OUT

GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO: N/A

CIP NO: N/A

HAS NO: 913

KEY PLAN:

Jacobs Project No.: WHXK7103

Drawing Title:
AUDIOVISUAL RCP

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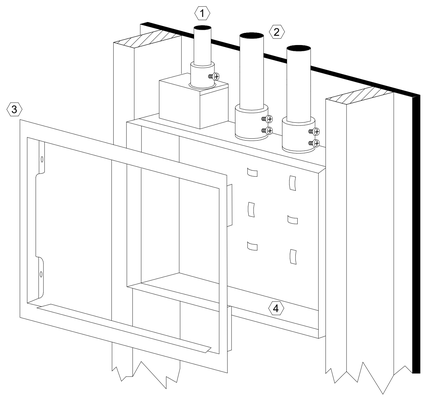
1/4" = 1'-0"

Date: 01/28/22

Designed: AC
Drawn: AC
Checked: MB

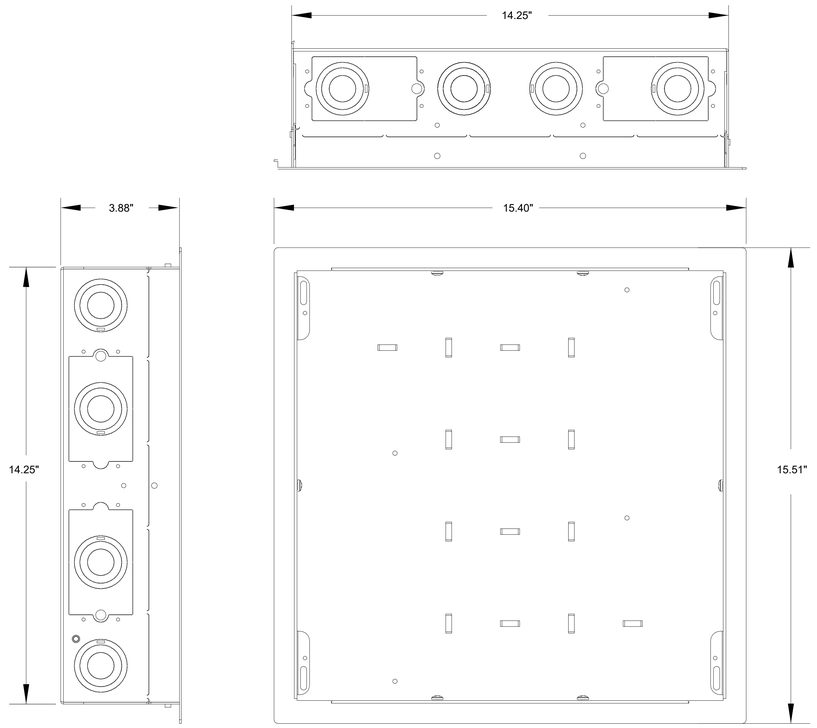
Drawing No.:
TA-201



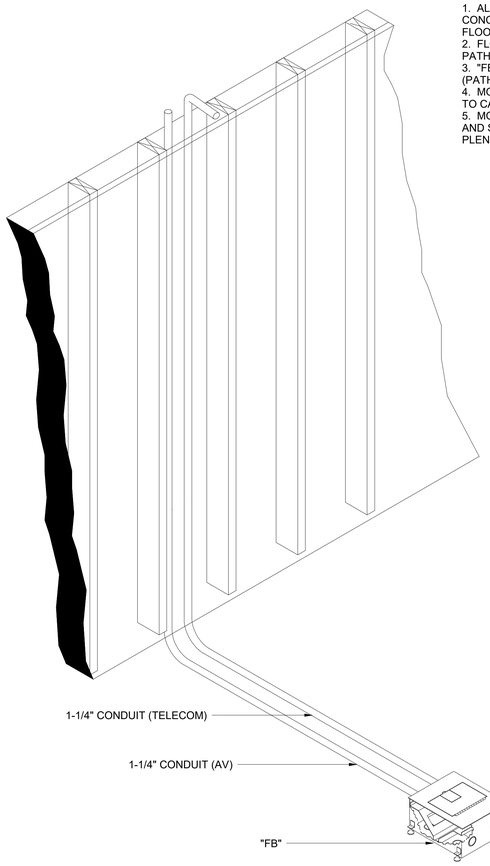
KEYNOTES:

1. CONDUIT FOR POWER OUTLET
2. 1.25" CONDUIT FOR AV CONNECTIVITY
3. KEEP FLANGE AND COVER FOR TRIM-OUT AFTER ROUGH-IN
4. PROVIDE CONDUIT DOWN TO ANY DEVICES REQUIRED BELOW DISPLAY LOCATION. DO NOT RUN HIGH VOLTAGE WIRING OR CONDUIT THROUGH AV JUNCTION BOX

D1 CHIEF PAC526F ROUGH-IN DETAILS
NTS



C4 CHIEF PAC 526F DIMENSIONS
NTS



NOTES:
1. ALL FIRST LOCATIONS ON-GRADE REQUIRE CONCRETE FLOOR PAN OR ON-GRADE APPROVED FLOOR BOX.
2. FLOOR PLAN SHOWS INTENDED CONDUIT PATH WITH LINE TO NEAREST WALL.
3. "FB" REQUIRES AC POWER BY OTHERS (PATHWAY NOT SHOWN).
4. MOUNT TELECOM CONDUIT ABOVE CEILING TO CABLE TRAY.
5. MOUNT AV CONDUITS ABOVE FINISHED CEILING AND SWEEP 90 DEGREES INTO ACCESSIBLE PLENUM.

A1 "FB" FLOORBOX ROUGH-IN DETAIL
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SEAL:

IDO BUILDING STANDARDS SPACE FIT-OUT

GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO:	N/A
CIP NO:	N/A
HAS NO:	913

KEY PLAN:

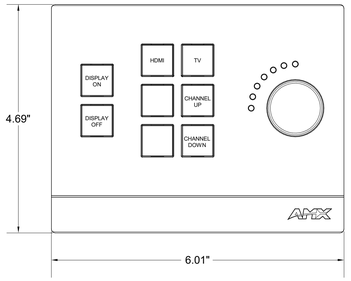
Jacobs Project No.: WHXK7103

Drawing Title:
AUDIOVISUAL DETAILS

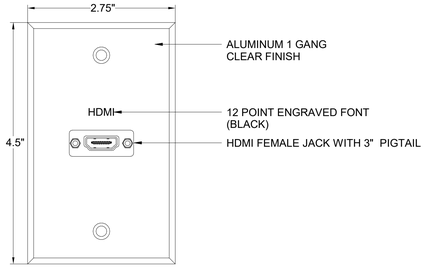
Date: 01/28/22

Designed: AC
Drawn: AC
Checked: MB

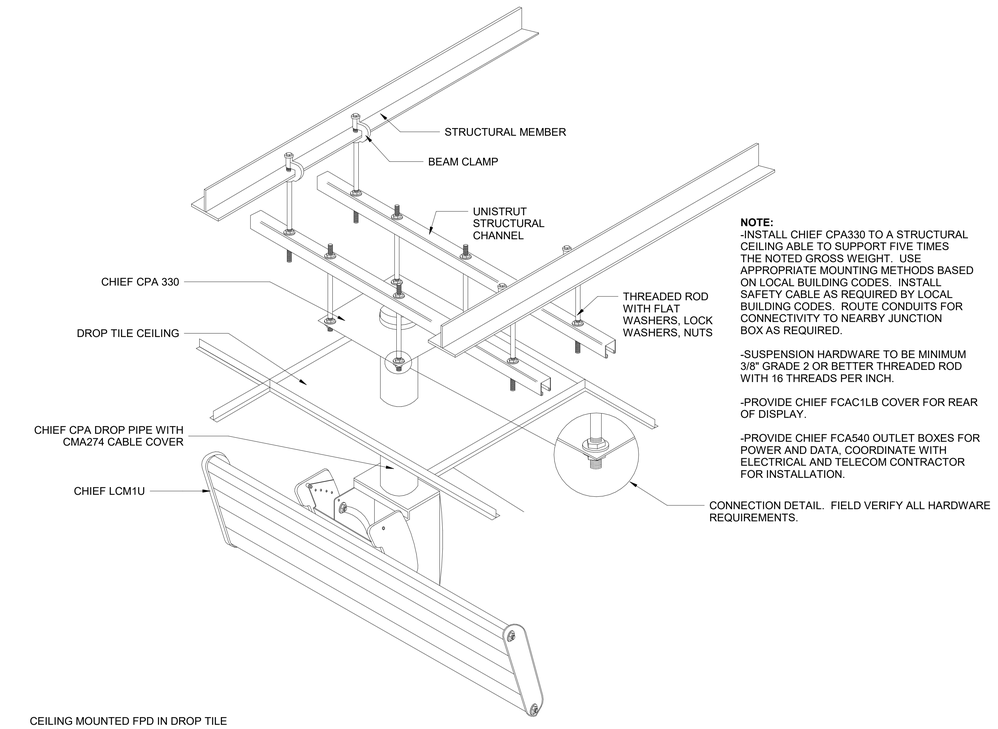
Drawing No.:
TA-501



D1 KEPAD DETAIL
3/8" = 1'-0"



D2 "AV" - HDMI INPUT PLATE
NTS



NOTE:
-INSTALL CHIEF CPA330 TO A STRUCTURAL CEILING ABLE TO SUPPORT FIVE TIMES THE NOTED GROSS WEIGHT. USE APPROPRIATE MOUNTING METHODS BASED ON LOCAL BUILDING CODES. INSTALL SAFETY CABLE AS REQUIRED BY LOCAL BUILDING CODES. ROUTE CONDUITS FOR CONNECTIVITY TO NEARBY JUNCTION BOX AS REQUIRED.

-SUSPENSION HARDWARE TO BE MINIMUM 3/8" GRADE 2 OR BETTER THREADED ROD WITH 16 THREADS PER INCH.

-PROVIDE CHIEF FCAC1LB COVER FOR REAR OF DISPLAY.

-PROVIDE CHIEF FCA540 OUTLET BOXES FOR POWER AND DATA, COORDINATE WITH ELECTRICAL AND TELECOM CONTRACTOR FOR INSTALLATION.

A1 CEILING MOUNTED FPD IN DROP TILE ROUGH-IN DETAIL
3" = 1'-0"

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CONSULTANT: 4b technology

SEAL:

IDO BUILDING STANDARDS SPACE FIT-OUT

GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO: N/A

CIP NO: N/A

HAS NO: 913

KEY PLAN:

Jacobs Project No.: WHXK7103

Drawing Title:
AUDIOVISUAL DETAILS

Date: 01/28/22

Designed: AC
Drawn: AC
Checked: MB

Drawing No.: TA-502

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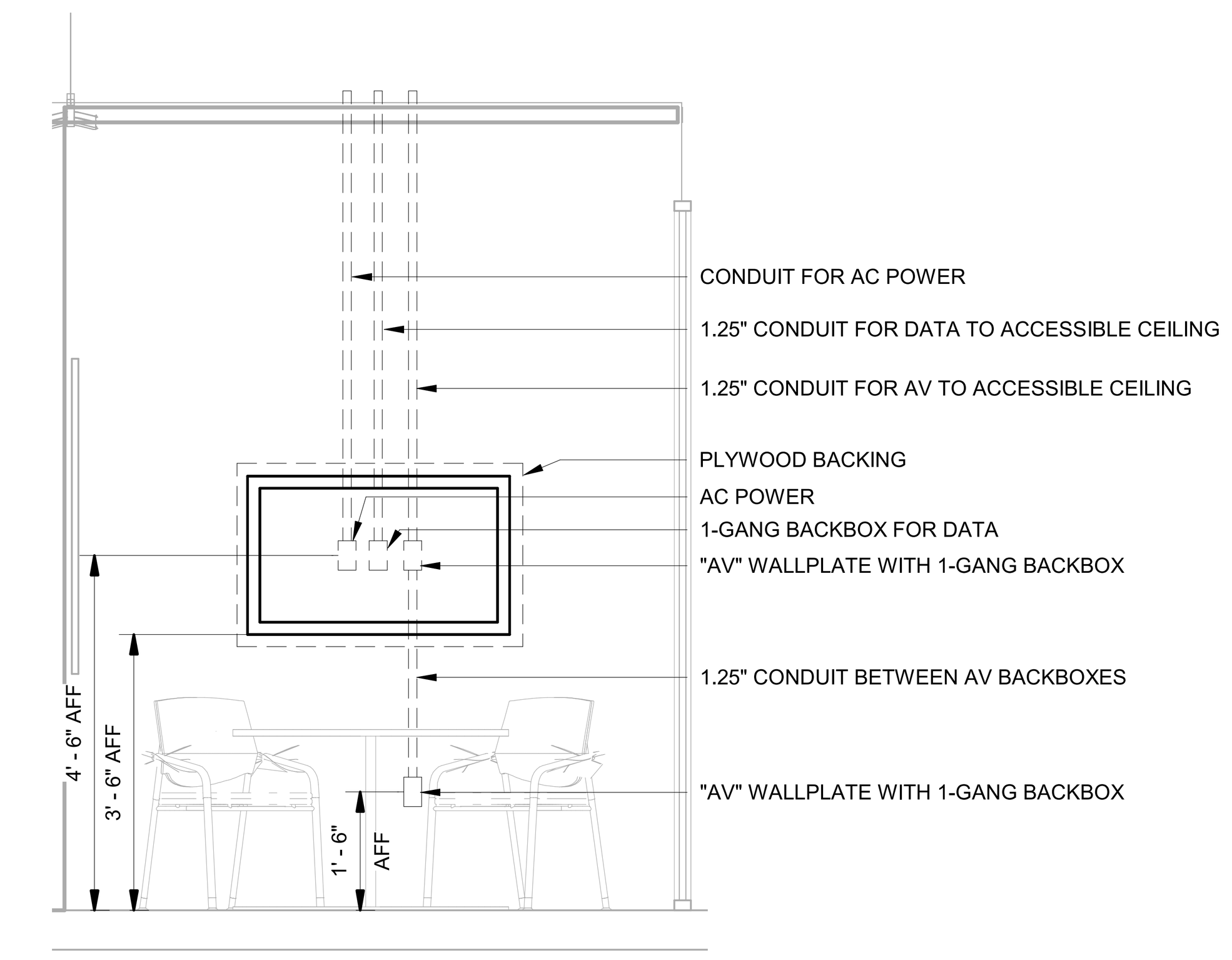
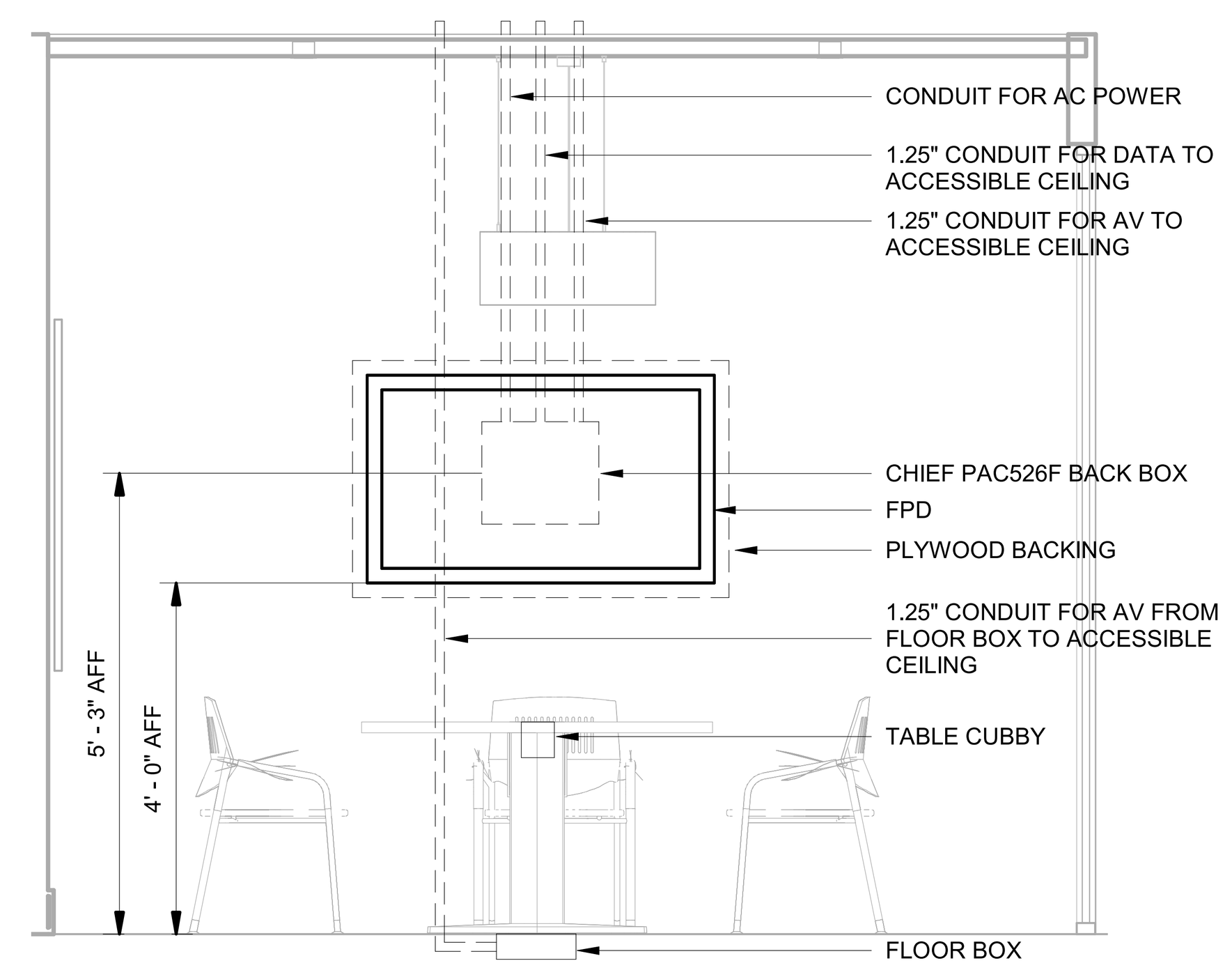
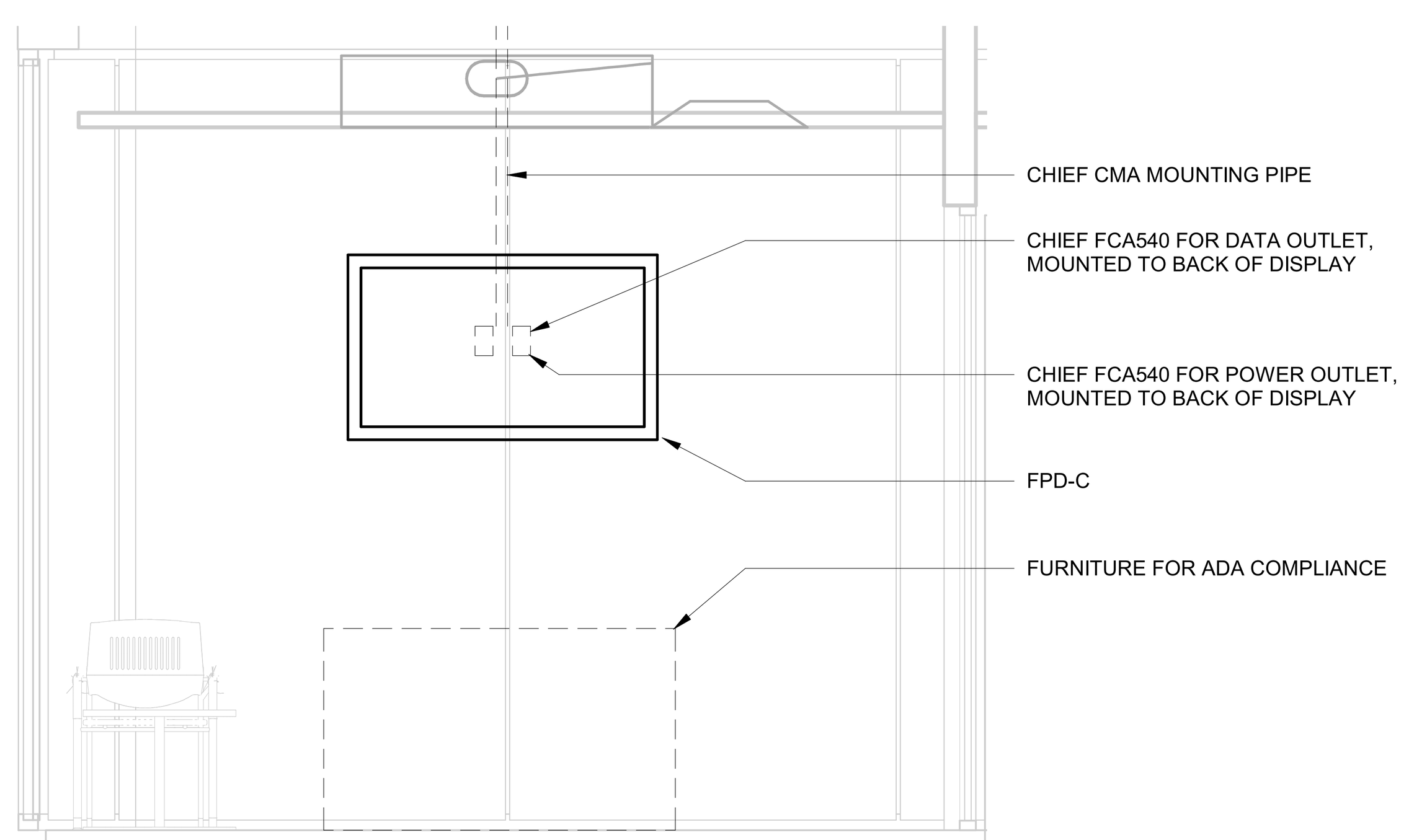


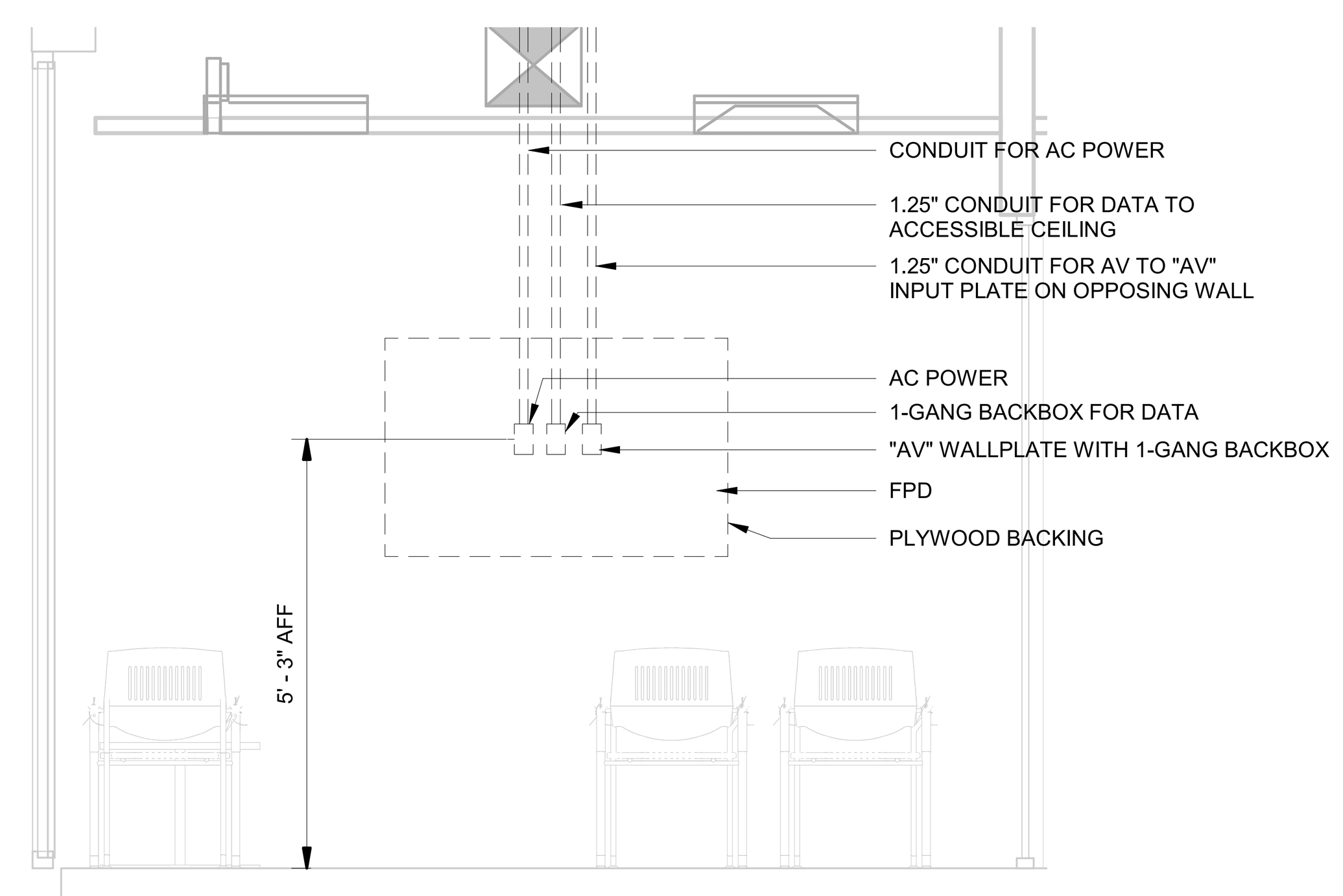
D1 HUDDLE & DISCUSSION ELEVATION
NTS



D3 COLLABORATION ELEVATION
NTS



C1 OFFICE 508 ELEVATION
NTS



C3 OFFICE 505, 506, & 507 ELEVATION
NTS

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111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO: N/A
CIP NO: N/A
HAS NO: 913
KEY PLAN:

Jacobs Project No.: WHXK7103
Drawing Title:
AUDIOVISUAL ELEVATIONS

Date: 01/28/22
Designed: AC
Drawn: AC
Checked: MB
Drawing No.: TA-601

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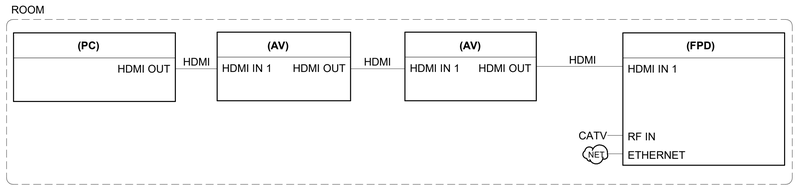
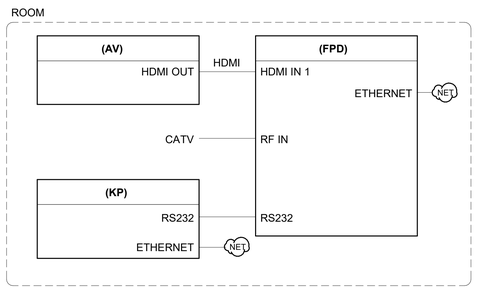
SYMBOL	DESCRIPTION	MAKE	MODEL	NOTES
AV	HDMI WALLPLATE	LIBERTY	PC-G1791-E-P	CONFIRM COLOR WITH ARCHITECT PRIOR TO ORDERING
FPD	FLAT PANEL DISPLAY	NEC	E558	DISPLAY CONTROL VIA THE MANUFACTURERS IR REMOTE
PC	LOCAL COMPUTER	DELL	OFOI	



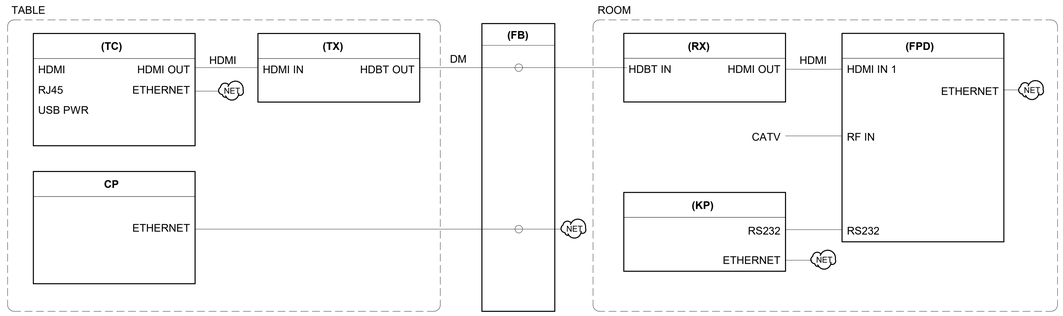
D1 AV SCHEMATIC - OFFICE
NTS

SYMBOL	DESCRIPTION	MAKE	MODEL	NOTES
AV	HDMI WALLPLATE	LIBERTY	PC-G1791-E-P	CONFIRM COLOR WITH ARCHITECT PRIOR TO ORDERING.
KP	KEYPAD CONTROLLER	AMX	MCP-108	CONFIRM COLOR WITH ARCHITECT.
FPD	FLAT PANEL DISPLAY	NEC	E558	



A1 AV SCHEMATIC - DISCUSSION
NTS

SYMBOL	DESCRIPTION	MAKE	MODEL	NOTES
TC	TABLE CUBBY	AMX	HPX-600	COORDINATE COLOR WITH ARCHITECT. PROVIDE WITH HDMI RETRACTOR AND AC & USB POWER MODULES.
TX	AV TRANSMITTER	AMX	DX-TX-DWP-4K	
RX	AV RECEIVER	AMX	DX-RX	
KP	KEYPAD CONTROLLER	AMX	MCP-108	COORDINATE COLOR WITH ARCHITECT.
FB	FLOOR BOX	FSR	FL-500P-8	PROVIDED BY OTHERS. AV CONTRACTOR TO PROVIDE AV CONNECTIVITY AS REQUIRED.
FPD	FLAT PANEL DISPLAY	NEC	E657Q	
CP	CONFERENCE PHONE	CISCO	CP-8831	PROVIDE USER LICENCE ALIGNNED TO THE OWNERS UCM VERSION.



A3 AV SCHEMATIC - COLLABORATION
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DIRECTOR
HOUSTON AIRPORT SYSTEM

CONSULTANT: 4b technology

SEAL:

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GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO: N/A

CIP NO: N/A

HAS NO: 913

KEY PLAN:

Jacobs Project No.: WHXK7103

Drawing Title:
AUDIOVISUAL SCHEMATICS

Date: 01/28/22

Designed: AC
Drawn: AC
Checked: MB

Drawing No.:
TA-701

SECURITY NOTES

GENERAL NOTES

1. 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.

2. 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, TY DRAWINGS AND E DRAWINGS.

3. THE CONTRACTOR SHALL CAREFULLY EXAMINE THE SITE TO DETERMINE THE EXTENT OF WORK AND CONDITION 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 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.

4. DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS MUST BE BROUGHT TO THE IMMEDIATE ATTENTION OF OWNER, OR THEIR DESIGNATED REPRESENTATIVE, FOR CLARIFICATION.

5. REFER TO SECURITY AND ELECTRICAL 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 ELECTRONIC SAFETY AND SECURITY SYSTEM DOCUMENTS AND APPLY THEM AS APPROPRIATE FOR WORK IN THIS SECTION. REF DIVISION 28 AND TY DRAWINGS.

7. 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.

8. 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.

9. CONTRACTOR SHALL TAKE NECESSARY MEANS TO ASSURE SECURITY SYSTEM COMPONENTS ARE PROTECTED FROM MECHANICAL DAMAGE BEFORE, DURING AND AFTER CONSTRUCTION.

SECURITY PATHWAY

1. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL CONDUITS, PULL STRINGS, CORES, AND JUNCTION BOXES AS REQUIRED ON THE TY DRAWINGS.

2. CONDUIT RUNS SHALL BE INSTALLED WITH NO MORE THAN TWO (2) 90 DEG. RADIUS BENDS AND NOT EXCEED 100FT FOR INTERIOR CABLING.

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 CABLE MANAGEMENT DEVICES (VELCRO WRAPS, ETC) AND CEILING MOUNTING HARDWARE, CABLE SADDLES AS REQUIRED. (UNLESS SPECIFIED FOR INSTALLATION BY ELECTRICAL CONTRACTOR)

SECURITY NOTES

VIDEO SURVEILLANCE

1. CONTRACTOR SHALL PROVIDE AND INSTALL MOUNTS AND HARDWARE AS SHOWN ON TY DRAWINGS.

2. CONTRACTOR SHALL PROVIDE AND INSTALL CAMERAS AT THE HEIGHT ABOVE GRADE OR ABOVE FINISHED FLOOR AS INDICATED ON THE TY PLANS.

3. CONTRACTOR SHALL LOCATE CAMERA AND CONFIGURE LENS SETTINGS TO OPTIMIZE CAMERA VIEWS.

4. CONTRACTOR SHALL PROVIDE AND INSTALL ALL COMPONENTS AS DETAILED IN THE TY DRAWINGS.

5. CONTRACTOR SHALL PROVIDE AND INSTALL ALL MISCELLANEOUS NUTS, BOLTS MOUNTING PLATES AND OTHER ACCESSORIES REQUIRED FOR A FULL TURN KEY INSTALLATION.

6. CONTRACTOR IS RESPONSIBLE FOR CAMERA LICENSES, SOFTWARE REVISIONS, STORAGE SERVER AND CAMERA FIELD OF VIEWS. AS WELL AS COORDINATION WITH OWNER TO ENSURE SUCCESSFUL TIE INTO EXISTING VIEWING AND RECORDING SYSTEM.

7. ALL CABLING FOR IP CAMERAS WILL BE PROVIDED AND INSTALLED BY COMMUNICATION CABLING CONTRACTOR.

8. COORDINATE WITH COMMUNICATION CABLING CONTRACTOR FOR INSTALLATION OF CATEGORY 6 CAMERA CABLING.

9. 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.

GROUNDING AND BONDING

1. CONTRACTOR SHALL ADHERE TO ALL GROUNDING AND BONDING REQUIREMENTS SET FOURTH IN THE ANSI-J-STD-607- A COMMERCIAL GROUNDING AND BONDING STANDARDS.

ACCESS CONTROL

1. DOOR CONTRACTOR SHALL PROVIDE AND INSTALL ALL ELECTRIC LOCKS AS SHOWN ON DRAWINGS AND COMPLY WITH BUILDING HARDWARE SCHEDULE.

2. DOOR CONTRACTOR SHALL PROVIDE AND INSTALL EXTERIOR KEY- BYPASS OPTION ON ALL ELECTRIC LOCK DOORS TO ALLOW MANUAL ENTRY. LOCKS SHALL BE THE SAME MANUFACTURER AS REQUIRED BY BUILDING HARDWARE SCHEDULE.

3. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL DOOR PREP TO INCLUDE CONDUIT, PULL STRINGS AND JUNCTION BOXES AS SHOWN ON THE TY DRAWINGS.

4. 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.

5. SECURITY CONTRACTOR TO HOME-RUN ALL SECURITY DOOR DEVICE COMPOSITE CABLING TO TELECOM ROOM.

6. SECURITY CONTRACTOR TO LEAVE 24" SERVICE LOOPS OF COMPOSITE CABLING ABOVE DOOR AND ABOVE THE ENCLOSURE IN THE TELECOM ROOM.

7. SECURITY CONTRACTOR SHALL PROVIDE AND INSTALL THE FOLLOWING:

A. CARD READERS

B. SUPERVISED RESISTORS

C. DOOR CONTACTS

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.

8. ALL DELAYED EGRESS DOORS SHALL BE EQUIPED WITH AN AUDIBLE LOCAL ALARM WHICH SOUNDS WHEN CRASH BAR IS PRESSED. ALARM IS SHUNTED ON SUCCESSFUL CARD READ.

PROJECT NOTES

ELECTRICAL

1. FOR SPECIFIC POWER AND RECEPTACLE REQUIREMENTS IN THE PROJECT REFERENCE ELECTRICAL SPECIFICATIONS AND DRAWINGS AND VERIFY WITH SECURITY SPECIFICATIONS AND DRAWINGS. REPORT TO GC DISCREPANCIES PRIOR TO PURCHASE OR INSTALLATION.

2. FOR SPECIFIC POWER REQUIREMENTS FOR CAMERAS AND ACCESS CONTROL, REFERENCE ELECTRICAL SPECIFICATIONS AND DRAWINGS AND VERIFY AGAINST SECURITY SPECIFICATIONS AND DRAWINGS. REPORT TO GC DISCREPANCIES PRIOR TO PURCHASE OR INSTALLATION.

3. ELECTRICAL CONTRACTOR SHALL INSTALL NORMAL AND GENERATOR BACK-UP 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.

ABBREVIATIONS

ACS	ACCESS CONTROL SYSTEM
AFF	ABOVE FINISHED FLOOR
APS	ACCESS CONTROL POWER SUPPLY
AWG	AMERICAN WIRE GAUGE
CCTV	CLOSED CIRCUIT TELEVISION
CH	CHANNEL
CPS	CAMERA POWER SUPPLY
CPU	CENTRAL PROCESSING UNIT
CON.	CONDUCTOR
CRT	CATHODE RAY TUBE
DB	DECIBEL
DGP	DATA GATHERING PANEL
DVR	DIGITAL VIDEO RECORDER
EL	ELECTRONIC LOCKSET
ESS	ELECTRONIC SAFETY & SECURITY
FC	FOOT CANDLE
FOV	FIELD OF VIEW
FPS	FRAMES PER SECONDS
FSD	FLAT SCREEN DISPLAY
IDF	INTERMEDIATE DISTRIBUTION FRAME
IP	INTERNET PROTOCOL
IR	INFRARED
JPEG	JOINT PHOTOGRAPHIC EXPERTS GROUP
LPS	LOCK POWER SUPPLY
MDF	MAIN DISTRIBUTION FRAME
MPEG	MOTION PICTURE EXPERTS GROUP
NTSC	NATIONAL TELEVISION STANDARDS COMMITTEE
NVR	NETWORK VIDEO RECORDER
PIR	PASSIVE INFRARED
POE	POWER OVER ETHERNET
PP	PATCH PANEL
PPF	PIXELS PER FOOT
PTZ	PAN-TILT-ZOOM
REX	REQUEST TO EXIT
SMS	SOFTWARE MANAGEMENT SYSTEM
TP	TERMINATION POINT
TS	TRADE SIZE
TR	TELECOM ROOM
TY	SECURITY DISCIPLINE DESIGNATOR
UM	MICRON
UPS	UNINTERRUPTIBLE POWER SUPPLY
UTP	UNSHIELDED TWISTED PAIR
VMS	VIDEO MANAGEMENT SOFTWARE
WDR	WIDE DYNAMIC RANGE

SECURITY SYMBOLS LEGEND

	SECURITY IP CAMERA, PROVIDE (1) CAT-6 CABLE TO EACH LOCATION, PLACE IN CENTER OF CEILING TILE WHERE APPLICABLE
CR	CARD ACCESS READER
DC	DOOR CONTACT SWITCH
KP	KEY PAD
DB	DURESS BUTTON, MOUNTED UNDER DESK/MILLWORK
DB	DURESS BUTTON, WALL MOUNTED (+42" AFF)
DA	DUESS ALARM, WITH KEY OVERRIDE AUDIBLE/VISUAL SWITCH
MD	MOTION DETECTOR
AED	PROVIDE DATA CABLE FOR AED TAMPER SWITCH

DRAWING INDEX

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REVISIONS

Mark	Date	Description
1	10/30/19	ISSUED FOR PERMIT
2	01/28/22	ISSUED FOR PERMIT REV. 2

OWNER: HOUSTON AIRPORTS

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

CONSULTANT: 4b technology

SEAL:

IDO BUILDING STANDARDS SPACE FIT-OUT

GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO: N/A

CIP NO: N/A

HAS NO: 913

KEY PLAN:

Jacobs Project No.: WHXK7103

Drawing Title:
SECURITY INDEX

Date: 01/28/22

Designed: MB
Drawn: CS
Checked: MB

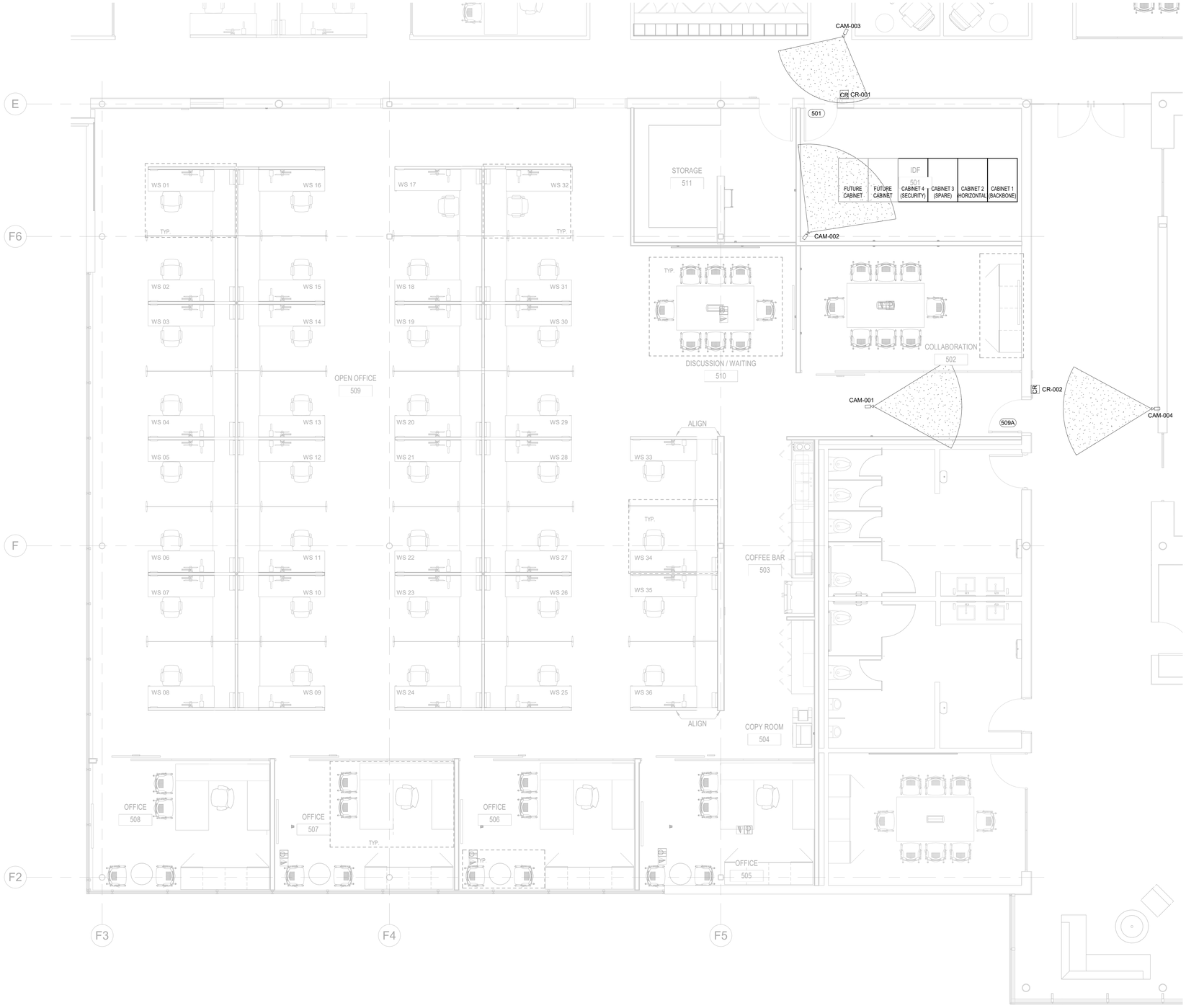
Drawing No.: TY-001

ACCESS CONTROL SCHEDULE

DEVICE NUMBER	DOOR NUMBER	DETAIL NUMBER
CR-001	501	A1/TY501
CR-002	509A	A1/TY501

CAMERA SCHEDULE

CAMERA NUMBER	CAMERA MOUNT	CAMERA MOUNTING HEIGHT	CAMERA DETAIL NO.
CAM-001	CEILING	9'-0"	A3/TY-500
CAM-002	WALL	7'-0"	A1/TY-500
CAM-003	PENDANT	10'-0"	C1/TY-500
CAM-004	WALL	12'-0"	A1/TY-500



A1/ Level 1 - SECURITY
1/4" = 1'-0"

GENERAL NOTES

KEYNOTES

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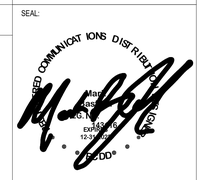

IDO BUILDING STANDARDS SPACE FIT-OUT

GEORGE BUSH INTERCONTINENTAL AIRPORT
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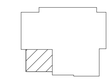
KEY PLAN:



Jacobs Project No.: WHXK7103

Drawing Title:
SECURITY PLAN

GRAPHIC SCALES:
0 2' 4' 8' 16'
1/4" = 1'-0"

Date: 01/28/22
Designed: MB
Drawn: CS
Checked: MB
Drawing No.: TY-101

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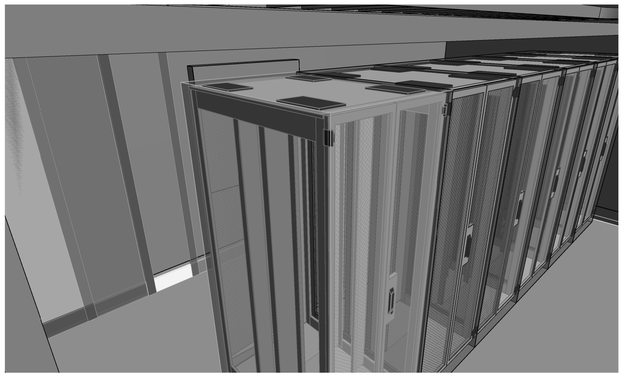
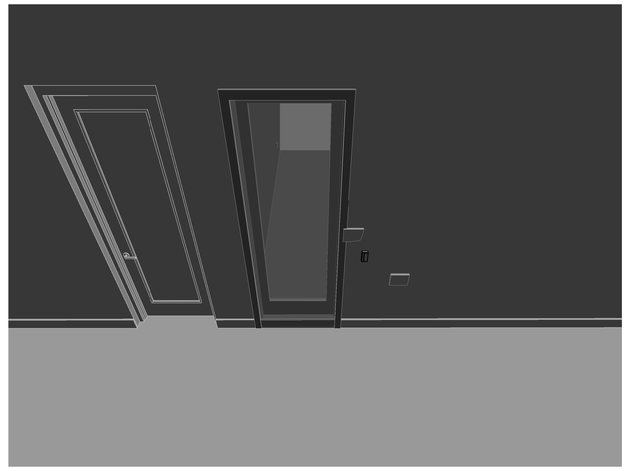


D3 CAM-002 VIEW

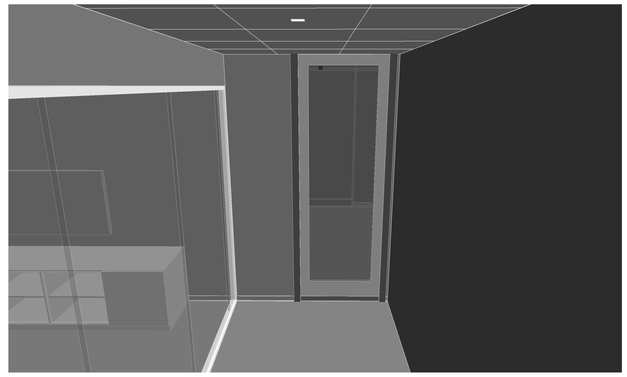


D5 CAM-004 VIEW

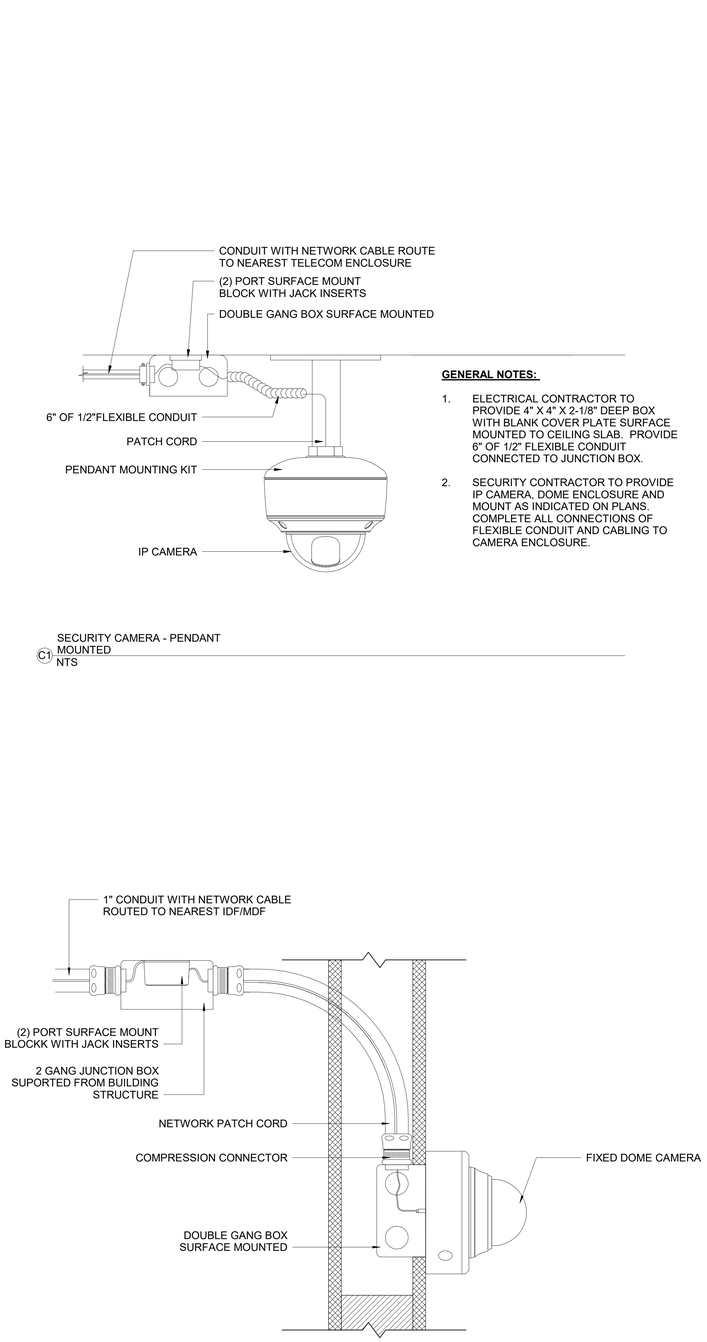
GENERAL NOTES:

1. ELECTRICAL CONTRACTOR TO PROVIDE 4" X 4" X 2-1/8" DEEP BOX WITH BLANK COVER PLATE SURFACE MOUNTED TO CEILING SLAB. PROVIDE 6" OF 1/2" FLEXIBLE CONDUIT CONNECTED TO JUNCTION BOX.
2. SECURITY CONTRACTOR TO PROVIDE IP CAMERA, DOME ENCLOSURE AND MOUNT AS INDICATED ON PLANS. COMPLETE ALL CONNECTIONS OF FLEXIBLE CONDUIT AND CABLING TO CAMERA ENCLOSURE.

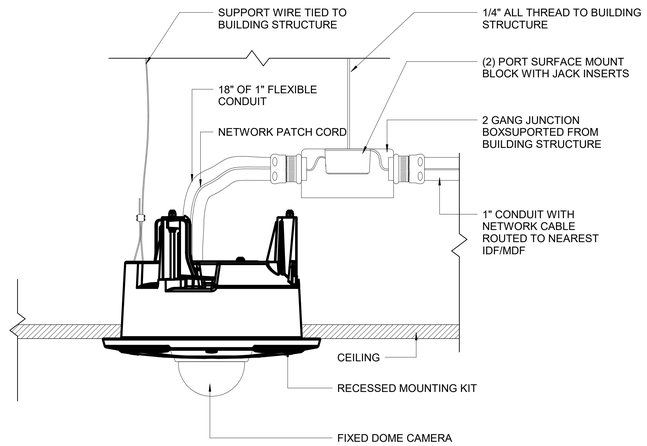
C1 SECURITY CAMERA - PENDANT MOUNTED
NTS



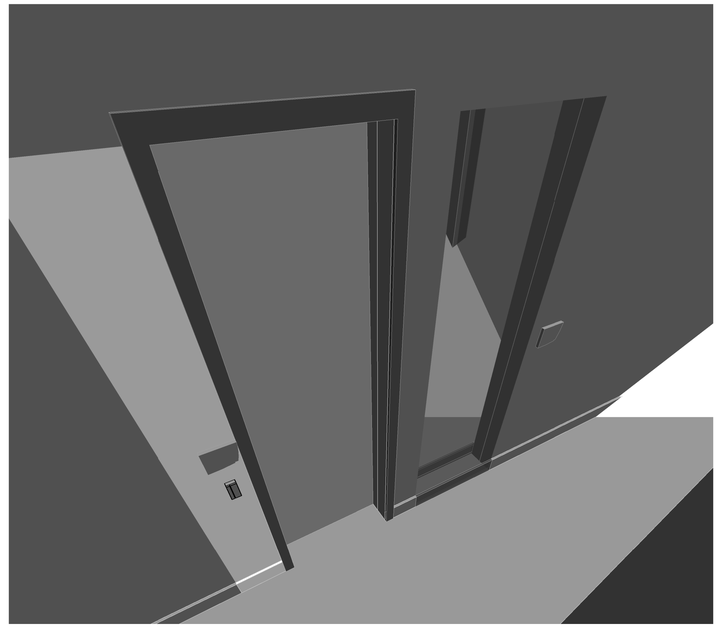
C5 CAM-001 VIEW



A1 SECURITY CAMERA - SURFACE WALL MOUNTED
NTS



A3 SECURITY CAMERA - RECESSED CEILING MOUNTED
NTS



A5 CAM-003 VIEW

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OWNER: HOUSTON AIRPORTS

APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

CONSULTANT: 4lb technology

SEAL:

IDO BUILDING STANDARDS SPACE FIT-OUT

GEORGE BUSH INTERCONTINENTAL AIRPORT
111 STANDIFER STREET
HOUSTON, TX 77032

AIP NO: N/A

CIP NO: N/A

HAS NO: 913

KEY PLAN:

Jacobs Project No.: WHXK7103

Drawing Title
SECURITY CAMERA DETAILS

Date: 01/28/22

Designed: MB
Drawn: CS
Checked: MB

Drawing No.: TY-500

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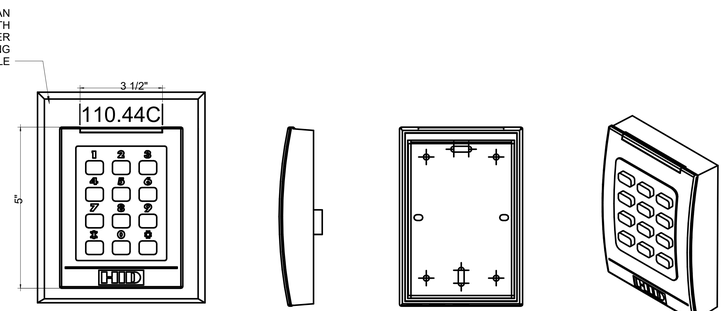
CARD READER LEXAN BACKPLATE WITH ENGRAVED CARD READER NUMBER, MATCH EXISTING STYLE



FRONT VIEW

SIDE VIEW

BACK VIEW

ISO VIEW

A1 CARD READER DETAIL
1/8" = 1'-0"

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DIRECTOR
HOUSTON AIRPORT SYSTEM

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KEY PLAN:

Jacobs Project No.: WHXK7103

Drawing Title:
SECURITY DETAILS

Date: 01/28/22

Designed: MB
Drawn: CS
Checked: MB

Drawing No.:
TY-501