SYMBOLS

GRID LINE
GRID LINE BUBBLE & NUMBER

ROOM NAME ###
ROOM OR AREA NAME & NUMBER TAG

DETAIL SECTION TAG

INTERIOR ELEVATION TAG

DETAIL REFERENCE TAG
DETAIL REFERENCE BUBBLE

MATCH LINE
MATCH LINE TAG

2'-6"
DIMENSION TO FACE

1 1/4"
DIMENSION TO CENTERLINE

CENTER LINE SYMBOL

EL. 18'-0"
SPOT ELEVATION TAG

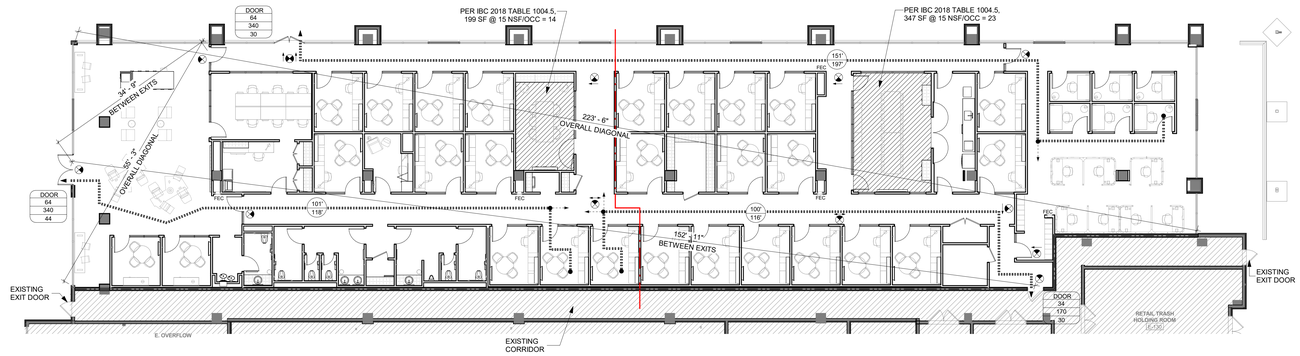
X
SPECIAL FINISH TAG

LABEL
LEADER LINES

BREAK LINE

REVISION CLOUD
REVISION DELTA REFERENCE TAG

LIFE SAFETY PLAN



1 LIFE SAFETY PLAN
G-000 SCALE: 3/32" = 1'-0"

SAFETY SYMBOL LEGEND

FUNCTION OF SPACE
BUSINESS
ASSEMBLY
NOT IN CONTRACT

PRIMARY EGRESS PATH
SECOND MEANS OF EGRESS PATH

DOOR / 0 / 0 / 0
COMPONENT TYPE
OPENING SIZE IN INCHES
MAX ALLOWABLE LOAD
ANTICIPATED ACTUAL LOAD

X / X
COMMON PATH OF TRAVEL (IN FEET)
TOTAL ACCESS TRAVEL DISTANCE (IN FEET)

EXIT LIGHTS

FEC
FIRE EXTINGUISHER CABINET

2 HR RATED PARTITION

GENERAL INFORMATION

1. GC SHALL VISIT PREMISES TO BECOME FAMILIAR WITH EXISTING CONDITIONS. VERIFY THE SCOPE OF WORK AND EVALUATE POTENTIAL PROBLEMS ATTENDANT TO ITS EXECUTION.
2. THE SUBMISSION OF PRICING SHALL BE EVIDENCE THAT THE CONTRACTOR HAS FULLY EVALUATED POTENTIAL PROBLEMS AND LATER ADDITIONAL COST CLAIMS FOR LABOR, EQUIPMENT, MATERIAL OR HARDSHIP WILL NOT BE CONSIDERED.
3. THE DOCUMENTS, DRAWINGS, AND CONSULTANT DOCUMENTS ARE COMPLIMENTARY IN NATURE, WHAT IS CALLED FOR BY ONE IS BINDING BY ALL. INFORM JACOBS OF ANY DISCREPANCIES SHOULD THEY OCCUR.
4. "TYPICAL" MEANS TYPICAL FOR ALL SIMILAR CONDITIONS, UNLESS NOTED OTHERWISE.
5. "SIMILAR" MEANS REFERENCED ITEM IS SIMILAR IN NATURE TO ACTUAL DETAIL, SECTION OR ELEVATION (i.e. OPPOSITE-HAND, REVERSE DIRECTION, ETC.).
6. GC SHALL OBTAIN ALL PERMITS.
7. DURING THE ENTIRE CONTRACT PERIOD, MAINTAIN IN OPERATING CONDITION ALL EXISTING EXITS, EXIT LIGHTING, FIRE PROTECTIVE DEVICES AND ALARMS AS PER CODE. COORDINATE WITH BASE BUILDING REPRESENTATIVE.
8. BASE BUILDING ELEMENTS (ACCESS COMPONENTS, EGRESS COMPONENTS, PARKING ACCOMMODATIONS, TOILET CORES, ETC.) SHALL COMPLY WITH ALL APPLICABLE CODES AND ACCESSIBLE GUIDELINES.
9. INFORMATION SHOWN ON THESE DRAWINGS IS BASED ON INFORMATION PROVIDED TO OR OBTAINED BY JACOBS INDICATING EXISTING CONDITIONS. ACTUAL FIELD CONDITIONS MAY VARY FROM THOSE INDICATED HEREIN, SHOULD ACTUAL CONDITIONS DIFFER SUBSTANTIALLY FROM THOSE INDICATED ON THE DRAWINGS OR FROM THOSE ORDINARILY ENCOUNTERED IN RENOVATION WORK OF THIS TYPE, PROMPTLY NOTIFY JACOBS BEFORE ANY OF THESE CONDITIONS ARE DISTURBED. FAILURE TO DO SO MAY WAIVE THE CONTRACTOR'S RIGHT TO ADDITIONAL TIME OR OTHER CONSIDERATIONS DUE TO SUCH CONDITIONS.
10. COORDINATE WITH BASE BUILDING REPRESENTATIVE ALLOWABLE WORK HOURS AND LEVEL OF NOISE GENERATED FROM WORK. CONFIRM WITH BASE BUILDING REPRESENTATIVE IF SUCH NOISE NEEDS TO BE PERFORMED AFTER HOURS.

PROJECT DESCRIPTION

THE PROJECT IS A FIRST GENERATION BUILD-OUT OF A FIRST FLOOR IN A NEW BUILDING. NO EXTERIOR WORK IS INCLUDED IN THIS SCOPE. THE FULL PROJECT IS APPROXIMATELY 10,530 GROSS SQUARE FEET.

SCOPE OF WORK WILL INCLUDE NEW LOBBY, OFFICES, CONFERENCE ROOMS, RESTROOMS AND A BREAK ROOM.

SCOPE OF WORK DOES NOT CHANGE EXISTING BUILDING EXTERIOR SKIN, EXISTING BUILDING HEIGHT, EXISTING BUILDING AREA, EXISTING BUILDING EXIT ACCESS DOORS AND CAPACITY.

RELATED DOCUMENTS

- STRUCTURAL CALCULATIONS
- COMCHECKS

BUILDING CODE ANALYSIS

A. APPLICABLE CODES CITY OF PHOENIX, AZ
- 2018 INTERNATIONAL BUILDING CODE
- 2017 NATIONAL ELECTRICAL CODE
- 2018 INTERNATIONAL MECHANICAL CODE
- 2018 INTERNATIONAL PLUMBING CODE WITH PHOENIX AMENDMENTS
- 2018 UNIFORM PLUMBING CODE
- 2018 INTERNATIONAL FIRE CODE WITH PHOENIX AMENDMENTS
- 2018 INTERNATIONAL ENERGY CONSERVATION CODE
- ICC A117.1-2009 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES
- 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN

B. BASE BUILDING TYPE OF CONSTRUCTION

EXISTING CONSTRUCTION TYPE: IIIA
NUMBER OF EXISTING STORIES: FIVE

C. LEVEL OF ALTERATION

LEVEL 3 = MULTIPLE TYPES OF WORK, NOT AFFECTING USE, EGRESS OR OCCUPANCY.
- PROJECT SCOPE DOES NOT CHANGE BASE BUILDING CONSTRUCTION CLASSIFICATION
- PROJECT SCOPE DOES NOT CHANGE BASE BUILDING HEIGHT OR AREA.
- PROJECT DESCRIPTION - PROJECT SCOPE IS TENANT FIT-OUT OF A BANKING INVESTMENT CENTER ON PARTIAL FIRST FLOOR OF AN EXISTING 1 STORY BUILDING. TO INCLUDE NEW TOILET ROOMS, PANTRY, PRIVATE OFFICES AND PUBLIC RECEPTION AREA.

D. USE AND OCCUPANCY CLASSIFICATION:

OCCUPANCY CLASSIFICATION: BUSINESS (FIRST FLOOR ONLY) GROUP B (BUSINESS)

E. SPRINKLER SYSTEM:

AUTOMATIC SPRINKLER SYSTEM: YES

F. FIRE-RESISTANCE RATING REQUIREMENTS: (TABLE 601 & 602)

BUILDING ELEMENT	FIRE RATING
STRUCTURAL FRAME	1 HRS
BEARING WALLS (EXTERIOR)	2 HRS
BEARING WALLS (INTERIOR)	1 HRS
NONBEARING WALLS & PARTITIONS (EXTERIOR):	
X < 5'-0"	1 HRS
5'-0" ≤ X < 10'-0"	1 HRS
10'-0" ≤ X < 30'-0"	1 HRS
X ≥ 30'-0"	0 HRS
NONBEARING WALLS & PARTITIONS (INTERIOR)	0 HRS
FLOOR CONSTRUCTION	1 HRS
ROOF CONSTRUCTION	1 HRS

G. FIRE SEPARATION REQUIREMENTS: (SECTION 508)

508.2 ACCESSORY OCCUPANCIES ACCESSORY OCCUPANCIES ARE THOSE OCCUPANCIES THAT ARE ANCILLARY TO THE MAIN OCCUPANCY OF THE BUILDING OR PORTION THEREOF. ACCESSORY OCCUPANCIES SHALL COMPLY WITH THE PROVISIONS OF SECTIONS 508.2.1 THROUGH 508.2.4.

508.2.4 SEPARATION OF OCCUPANCIES NO SEPARATION IS REQUIRED BETWEEN ACCESSORY OCCUPANCIES AND THE MAIN OCCUPANCY.

H. MEANS OF EGRESS:

EGRESS WIDTH REQUIRED:

DOOR (SECTION 1005.3.2):	0.20" PER OCCUPANT
STAIR (SECTION 1005.3.1):	0.30" PER OCCUPANT
CORRIDOR WIDTH MINIMUM: (SECTION 1020.2)	36" < 50 OCCUPANTS 44" > 50 OCCUPANTS
COMMON PATH OF TRAVEL: (SECTION 1006.2.1)	100' MAX.
SPACES W/ONE MEANS OF EGRESS: (TABLE 1006.2.1)	49 OCCUPANTS MAX. (B)
EXIT ACCESS TRAVEL DISTANCE: (TABLE 1017.2)	300' MAX (B) (W/ SPRINKLER SYSTEM)
CORRIDOR FIRE RATING: (TABLE 1020.1)	0 HR (B) (W/ SPRINKLER SYSTEM)
DEAD END CORRIDOR: (SECTION 1020.4 EXCEPTION 2)	50' (B) (W/ SPRINKLER SYSTEM)
NUMBER OF EXITS REQUIRED:	2
NUMBER OF EXITS PROVIDED:	3

OCCUPANT LOAD CALCULATION:

FUNCTION OF SPACE	FLOOR AREA	OCCUPANT LOAD FACTOR Per Table 1004.5	CALCULATED OCCUPANCY LOAD
FIRST FLOOR			
B (BUSINESS)	9,984 GSF	1/150 GSF	67 OCCUPANTS
A (ASSEMBLY) Undesignated Tables & Chairs	546 NSF	1/15 NSF	37 OCCUPANTS
TOTALS	10,530 GSF		104 OCCUPANTS

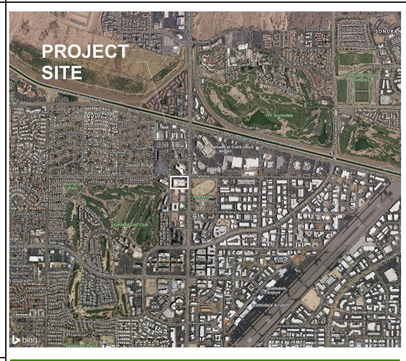
303.1.2 SMALL ASSEMBLY SPACES.

THE FOLLOWING ROOMS AND SPACES SHALL NOT BE CLASSIFIED AS ASSEMBLY OCCUPANCIES:
1. A ROOM OR SPACE USED FOR ASSEMBLY PURPOSES WITH AN OCCUPANT LOAD LESS THAN 50 PERSONS AND ACCESSORY TO ANOTHER OCCUPANCY SHALL BE CLASSIFIED AS A GROUP B OCCUPANCY OR AS PART OF THAT OCCUPANCY
2. A ROOM OR SPACE USED FOR ASSEMBLY PURPOSES THAT IS LESS THAN 750 SQUARE FEET IN AREA AND ACCESSORY TO ANOTHER OCCUPANCY SHALL BE CLASSIFIED AS A GROUP B OCCUPANCY OR AS PART OF THAT OCCUPANCY.

PLUMBING FIXTURE REVIEW

POPULATION		WATER CLOSET MEN		WATER CLOSET WOMEN		WATER CLOSET UNISEX		URINAL MEN		LAVATORIES MEN		LAVATORIES WOMEN		LAVATORIES UNISEX		WATER FOUNTAIN		UTILITY SINK	
		REQUIRED	PROVIDED	REQUIRED	PROVIDED	REQUIRED	PROVIDED	REQUIRED	PROVIDED	REQUIRED	PROVIDED	REQUIRED	PROVIDED	REQUIRED	PROVIDED	REQUIRED	PROVIDED	REQUIRED	PROVIDED
TOTAL POPULATION	M / F																		
104	52/52	3	2	3	3	0	1	0	1	2	1	2	2	0	1	2	2	1	1

VICINITY MAP



DRAWING LIST

SHEET NO.	DRAWING TITLE	23 DEC 2024 ISSUE FOR PERMIT AND CONSTRUCTION		
00 GENERAL				
G-000	DRAWING LIST, BUILDING & LIFE SAFETY INFO, PROJECT DIRECTORY, LEGENDS & NOTES	X		
01 STRUCTURAL				
S-001	GENERAL NOTES AND SPECIFICATIONS	X		
S-002	SPECIAL INSPECTIONS SHEET	X		
S-100	SLAB ON GROUND & FRAMING PLAN	X		
S-101	TYPICAL DETAILS AND SECTIONS	X		
02 INTERIORS				
ID-001	ACCESSIBILITY REQUIREMENTS AND STANDARD MOUNTING HEIGHTS	X		
ID-002	INTERIOR SPECIFICATIONS	X		
ID-003	INTERIOR SPECIFICATIONS & ABBREVIATIONS	X		
ID-101	INTERIOR PARTITION PLAN	X		
ID-201	INTERIOR POWER AND COMMUNICATION LOCATION PLAN	X		
ID-301	INTERIOR REFLECTED CEILING PLAN	X		
ID-401	INTERIOR FINISH PLAN	X		
ID-500	INTERIOR PARTITION DETAILS	X		
ID-501	INTERIOR CEILING DETAILS	X		
ID-510	INTERIOR DOOR, FRAME & HARDWARE SCHEDULES AND DETAILS	X		
ID-520	INTERIOR FINISH LEGEND AND TRANSITION DETAILS	X		
ID-521	INTERIOR FINISH DETAILS AND PATTERNS	X		
ID-600	INTERIOR RESTROOM PLANS, ELEVATIONS AND DETAILS	X		
ID-700	INTERIOR ELEVATIONS	X		
ID-800	INTERIOR LOBBY MILLWORK PLAN, ELEVATIONS AND DETAILS	X		
ID-801	INTERIOR MILLWORK DETAILS	X		
ID-802	INTERIOR PANTRY PLAN, ELEVATIONS AND DETAILS	X		
ID-803	INTERIOR MPR PLAN, ELEVATIONS AND DETAILS	X		
ID-901	INTERIOR FURNITURE PLAN	X		
03 FIRE ALARM				
FA-001	FIRE ALARM - SYMBOLS & ABBREVIATIONS	X		
FA-002	FIRE ALARM - NOTES & DESIGN CRITERIA	X		
FA-003	FIRE ALARM - SPECIFICATIONS	X		
FA-201	FIRE ALARM - LEVEL 1	X		
FA-501	FIRE ALARM - DETAILS	X		
FA-701	FIRE ALARM - RISER DIAGRAM	X		
04 FIRE PROTECTION				
FP-001	FIRE PROTECTION - SYMBOLS AND ABBREVIATIONS	X		
FP-002	FIRE PROTECTION - NOTES & DESIGN CRITERIA	X		
FP-003	FIRE PROTECTION - SPECIFICATIONS	X		
FP-201	FIRE PROTECTION - LEVEL 1	X		
FP-501	FIRE PROTECTION - DETAILS	X		
05 HVAC				
M-001	HVAC GENERAL NOTES & ABBREVIATIONS	X		
M-003	HVAC DIVISION 20 SPECIFICATIONS	X		
M-004	HVAC DIVISION 23 SPECIFICATIONS	X		
M-201	HVAC DUCTWORK - LEVEL 1	X		
M-203	HVAC - ROOF	X		
M-301	HVAC PIPING - LEVEL 1	X		
M-501	HVAC DETAILS	X		
M-601	HVAC SCHEDULES	X		
M-602	HVAC VRF DIAGRAM	X		
M-801	HVAC CONTROLS	X		
06 ELECTRICAL				
E-001	ELECTRICAL LEGEND & GENERAL NOTES	X		
E-002	SPECIFICATIONS	X		
E-003	ELECTRICAL COMCHECK	X		
E-201	LIGHTING - LEVEL 1	X		
E-301	POWER - LEVEL 1	X		
E-302	ELECTRICAL - ROOF PLAN	X		
E-501	ELECTRICAL DETAILS	X		
E-502	ELECTRICAL DETAILS	X		
E-701	ELECTRICAL RISER DIAGRAM AND PANEL SCHEDULES	X		
E-702	ELECTRICAL LIGHTING FIXTURE & MECHANICAL SCHEDULES	X		
07 PLUMBING				
P-001	PLUMBING LEGEND AND GENERAL NOTES	X		
P-002	PLUMBING SPECIFICATIONS	X		
P-003	PLUMBING SPECIFICATIONS	X		
P-201	PLUMBING - LEVEL 1 SANITARY PIPING PLAN	X		
P-202	PLUMBING - LEVEL 1 DOMESTIC WATER PIPING PLAN	X		
P-301	PLUMBING - SCHEDULES AND DETAILS	X		
08 TELECOM				
TC-000	TELECOM - LEGEND SHEET	X		
TC-001	TELECOM - SPECIFICATION SHEET	X		
TC-201	TELECOM - LEVEL 1	X		
TC-202	TELECOM - REFLECTED CEILING PLAN LEVEL 1	X		
TC-300	TELECOM - DETAILS SHEET	X		
TC-301	TELECOM - DETAILS SHEET	X		
TC-302	TELECOM - DETAILS SHEET	X		
09 ELECTRONIC SECURITY				
SE-000	SECURITY - LEGEND SHEET	X		
SE-001	SECURITY - DEVICE SPECIFICATION	X		
SE-100	SECURITY - DEVICE SCHEDULE	X		
SE-101	SECURITY - LENEL PROGRAMING	X		
SE-201	SECURITY - LEVEL 1	X		
SE-202	SECURITY - REFLECTED CEILING PLAN LEVEL 1	X		
SE-300	SECURITY - DEVICE CONTROL EQUIPMENT	X		
SE-301	SECURITY - DEVICE DETAILS	X		
SE-302	SECURITY - DEVICE DETAILS	X		
SE-303	SECURITY - DEVICE DETAILS	X		

PROJECT DIRECTORY

OWNER:	**FIDELITY REAL ESTATE CO., LLC** 245 SUMMER STREET BOSTON, MA 02210	ANN NIEMAN-SMITH 925.933.7790 ann.nieman-smith@fmr.com
INTERIOR DESIGNER:	**JACOBS** 2001 MARKET STREET SUITE 900 PHILADELPHIA, PA 19103	LAURA CRAGLE 210.403.6311 Laura.Cragle@jacobs.com
ARCHITECT:	**JACOBS** 2001 MARKET STREET SUITE 900 PHILADELPHIA, PA 19103	FRED GROSSFELD 919.274.6565 Fred.Grossfeld@jacobs.com
STRUCTURAL ENGINEER:	**JACOBS** 2001 MARKET STREET SUITE 900 PHILADELPHIA, PA 19103	TREVOR WINNELL 919.859.5190 Trevor.Winnell@jacobs.com
ENGINEER:	**R.G. VANDERWEIL ENGINEERS, LLP** 274 SUMMER STREET BOSTON, MA 02210	JULIAN NYLAND 617.956.4229 JNyland@Vanderweil.com
CONSTRUCTION MANAGER:	**STO BUILDING GROUP** 40 BROAD STREET BOSTON, MA 02109	JULIET MENDITTO 646.527.0577 juliet.mendittto@stobuildinggroup.com
BASE BUILDING REPRESENTATIVE:	**MILL CREEK RESIDENTIAL** 15210 N. SCOTTSDALE ROAD SUITE 210 SCOTTSDALE, AZ 85254	MARK SANFORD 602.635.6548 msanford@mcrtrust.com.com

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL
R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210
P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

REGISTERED ARCHITECT
CERTIFICATE NO.
69323
FREDERIC H. GROSSFELD
ARIZONA, U.S.A.
12/20/2024

General Notes:

Project Title:
Fidelity INVESTMENTS
Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
	Issued for Permit & Construction	23 DEC 24

Key Plan:
Project North
True North

Project No.: K2812554 R06
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Drawing Sheet Title:
DRAWING LIST, BUILDING & LIFE SAFETY INFO, PROJECT DIRECTORY, LEGENDS & NOTES

Drawing Sheet Number:
G-000

Owner's Branch No.:
134

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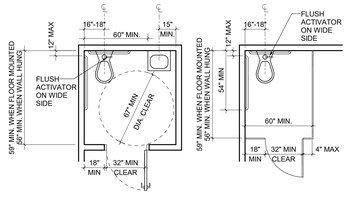
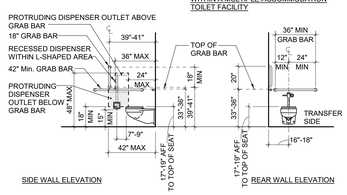
TOILET ROOMS

1. VERIFY THAT ALL EXISTING SANITARY FACILITIES OF THE BASE BUILDING ON THE FLOOR OF THE PROJECT SCOPE OF WORK COMPLY WITH SECTION 604 WATER CLOSETS AND TOILET COMPARTMENTS OF ICC ANSI/A117.1 AND THE ADA ACCESSIBILITY GUIDELINES. THE BUILDING OWNER SHALL BE NOTIFIED OF ANY NONCONFORMING CONDITIONS.
2. REFER TO ASSOCIATED DIAGRAMS BELOW:



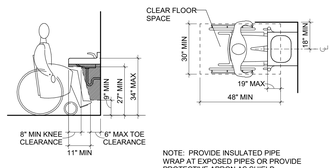
SINGLE-ACCOMMODATION TOILET FACILITY

ACCESSIBLE WATER CLOSET COMPARTMENT WITHIN A MULTIPLE-ACCOMMODATION TOILET FACILITY



TOILET STALLS MINIMUM DIMENSIONS

as per ANSI A117.1 Figs. 604.2, 604.3, 604.5.1, 604.5.2, 604.7, and 604.8.2.
as per ADA Figs. 604.5.2, 604.7, 604.8.1.1, 604.8.1.2, and 609.3



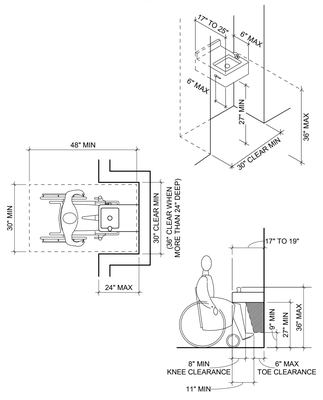
NOTE: PROVIDE INSULATED PIPE WRAP AT EXPOSED PIPES OR PROVIDE PROTECTIVE APRON AS SHIELD.

SINK KNEE CLEARANCE REQUIREMENTS

as per ANSI A117.1 Fig 306.3
as per ADA Fig. 606

DRINKING FOUNTAINS

1. VERIFY THAT NEW AND EXISTING DRINKING FOUNTAINS COMPLY WITH SECTION 306 KNEE AND TOE CLEARANCE AND SECTION 602 DRINKING FOUNTAINS OF ICC ANSI/A117.1 AND THE ADA ACCESSIBILITY GUIDELINES. THE BASE BUILDING REPRESENTATIVE SHALL BE NOTIFIED OF ANY NONCONFORMING CONDITIONS.
2. REFER TO ASSOCIATED DIAGRAMS BELOW:



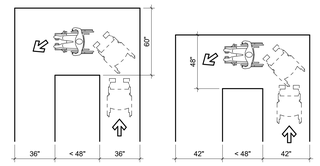
NOTE: EQUIPMENT IS PERMITTED IN SHADED AREA

DRINKING FOUNTAIN CLEARANCES

as per ANSI A117.1 Fig 306.3
as per ADA Figs. 306.2 and 306.3

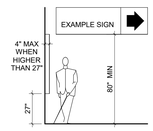
CORRIDORS and VESTIBULES

1. VERIFY THAT ALL EXISTING CORRIDORS, HALLWAYS, AND VESTIBULES OF THE BASE BUILDING ALONG THE PRESCRIBED ACCESSIBLE PATH OF TRAVEL COMPLY WITH SECTION 402 ACCESSIBLE ROUTES AND 307 PROTRUDING OBJECTS OF ICC ANSI/A117.1 AND THE ADA ACCESSIBILITY GUIDELINES. THE BASE BUILDING REPRESENTATIVE SHALL BE NOTIFIED OF ANY NONCONFORMING CONDITIONS.
2. NEW CORRIDORS, HALLWAYS, AND VESTIBULES ADDED AS PER PROJECT SCOPE OF WORK TO COMPLY WITH SECTION 402 ACCESSIBLE ROUTES AND 307 PROTRUDING OBJECTS OF ICC ANSI/A117.1 AND THE ADA ACCESSIBILITY GUIDELINES.
3. REFER TO ASSOCIATED DIAGRAMS BELOW:



WHEELCHAIR TURNING CLEARANCES

as per ANSI A117.1 Fig 403.5.1
as per ADA Fig. 403.5.2



PROTRUDING OBJECTS

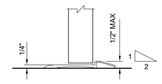
as per ANSI A117.1 Fig 307.2
as per ADA Fig. 307.2

ACCESSIBLE ENTRANCE and EXITS

1. ACCESSIBILITY FOR ENTRANCES, EXITS AND PATHS OF TRAVEL SHALL COMPLY WITH SECTION 402 ACCESSIBLE ROUTE AND SECTION 404 DOORS, DOORWAYS, AND GATES OF ICC ANSI/A117.1 AND THE 2012 ACCESSIBLE STANDARDS (ADA). VERIFY COMPLIANCE OF ENTRANCES, EXITS AND PATHS OF TRAVEL IN EXISTING PORTIONS OF EXISTING BUILDING NOT IN PROJECT SCOPE OF WORK AND NOTIFY THE BASE BUILDING REPRESENTATIVE OF ANY NONCONFORMING CONDITIONS.

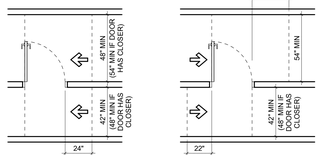
DOORS and GATES

1. VERIFY THAT ALL EXISTING DOORS AND GATES OF THE BASE BUILDING ALONG THE PRESCRIBED ACCESSIBLE PATH OF TRAVEL COMPLY WITH SECTION 303 CHANGES IN LEVEL AND SECTION 404 DOORS, DOORWAYS, AND GATES OF ICC ANSI/A117.1 AND THE 2012 ACCESSIBLE STANDARDS. THE BASE BUILDING REPRESENTATIVE SHALL BE NOTIFIED OF ANY NONCONFORMING CONDITIONS.
2. NEW DOORS AND GATES ADDED AS PER PROJECT SCOPE OF WORK TO COMPLY WITH SECTION 303 CHANGES IN LEVEL AND SECTION 404 DOORS, DOORWAYS, AND GATES OF ICC ANSI/A117.1 AND THE ACCESSIBLE STANDARDS .
3. REFER TO ASSOCIATED DIAGRAMS BELOW, AS PER SECTION 404.2.5 THRESHOLDS:



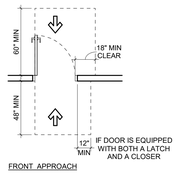
THRESHOLD PROFILE LIMITATIONS

as per ANSI A117.1 Fig 303.3
as per ADA Figs. 303.2 and 303.3



SIDE APPROACH at LATCH SIDE

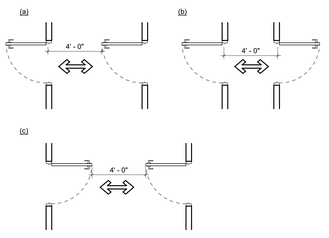
SIDE APPROACH at HINGE SIDE



FRONT APPROACH

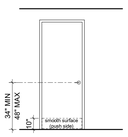
DOOR MANEUVERING CLEARANCES

as per ANSI A117.1 Fig 404.2.3.1
as per ADA Fig. 404.2.4.1



DOOR IN SERIES

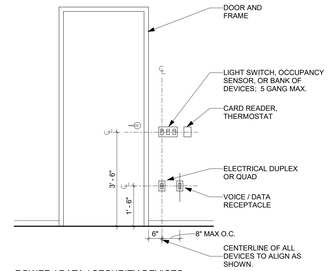
as per ANSI A117.1 Fig 404.2.5
as per ADA Fig. 404.2.6



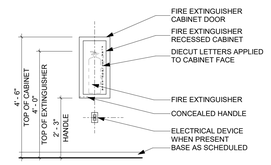
BASIC REQUIREMENTS FOR DOORS

as per ANSI A117.1 Fig 404.2
as per ADA Fig. 404.2

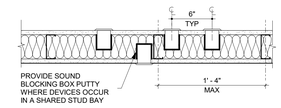
STANDARD MOUNTING HEIGHTS



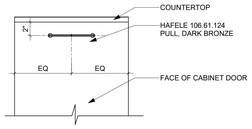
POWER / DATA / SECURITY DEVICES



FIRE EXTINGUISHER CABINET



STAGGERED POWER AND DATA DEVICE LAYOUT



TYPICAL CABINET PULL LOCATION

Jacobs

Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL

R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210

P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

REGISTERED ARCHITECT
CERTIFICATE NO.
69323
FREDERIC H. GROSSFELD
DATE SIGNED:
ARIZONA, U.S.A.

12/20/2024

General Notes:

Project Title:

Fidelity INVESTMENTS

Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project North
True North

Project No.: K2812554 R06

Drawing Sheet Title:

ACCESSIBILITY REQUIREMENTS AND STANDARD MOUNTING HEIGHTS

Drawing Sheet Number:

ID-001

Owner's Branch No.:

134

12/19/2024 11:32:45 AM

DIVISION 01 – GENERAL REQUIREMENTS

SECTION 011000 – PROJECT REQUIREMENTS
SECTION 017000 – EXECUTION AND CLOSEOUT REQUIREMENTS

INTENT:
1. DRAWINGS AND SPECIFICATIONS ARE INTENDED TO PROVIDE THE BASIS FOR THE PROPER COMPLETION OF THE PROJECT SUITABLE FOR THE INTENDED USE OF THE OWNER.
2. ITEMS NOT EXPRESSLY SET FORTH BUT WHICH ARE REASONABLY IMPLIED OR NECESSARY FOR THE PROPER PERFORMANCE OF THIS WORK SHALL BE INCLUDED.

COORDINATION:
1. COORDINATE THE WORK OF ALL TRADES. PROVIDE COORDINATION DRAWINGS SHOWING ALL TRADES ABOVE AND AT CEILINGS.
2. VERIFY LOCATION OF UTILITIES AND EXISTING CONDITIONS. NOTIFY ARCHITECT OF CONDITIONS DIFFERING FROM THOSE INDICATED ON THE DRAWINGS.
3. VERIFY DIMENSIONS ON DRAWINGS WITH DIMENSIONS AT THE PROJECT. DO NOT SCALE DRAWINGS.

CUTTING AND PATCHING:
1. PROVIDE CUTTING AND PATCHING WORK TO PROPERLY COMPLETE THE PROJECT.
2. DO NOT REMOVE OR ALTER STRUCTURAL COMPONENTS WITHOUT WRITTEN APPROVAL.
3. CUT WITH TOOLS APPROPRIATE FOR MATERIALS TO BE CUT.
4. PATCH WITH MATERIALS AND METHODS TO PRODUCE PATCH WHICH IS NOT VISIBLE FROM A DISTANCE OF FIVE FEET.
5. DO NOT CUT AND PATCH IN A MANNER THAT WOULD RESULT IN A FAILURE OF THE WORK TO PERFORM AS INTENDED, DECREASE FIRE PERFORMANCE, DECREASE ACOUSTICAL PERFORMANCE, DECREASE ENERGY PERFORMANCE, DECREASE OPERATIONAL LIFE, OR DECREASE SAFETY FACTORS.

FIELD ENGINEERING:
1. VERIFY AND LOCATE UTILITIES, EXISTING FACILITIES, AND EQUIPMENT.
2. SURVEY AND LAYOUT IMPROVEMENTS, UTILITIES, STRUCTURES, AND COMPONENTS.

PROJECT MEETINGS:
1. ARRANGE FOR PROGRESS MEETINGS ONCE A WEEK DURING CONSTRUCTION, PRIOR TO APPLICATION FOR PAYMENT. RECORD MINUTES AND DISTRIBUTE PROMPTLY.

SUBMITTALS:
1. SUBMIT FOR APPROVAL ALL SUBMITTALS LISTED IN INDIVIDUAL SECTIONS. SUBMIT ELECTRONICALLY, IN PDF FORMAT. SUBMITTALS SHALL CLEARLY INDICATE DEVIATIONS FROM REQUIREMENTS OF THE CONTRACT DOCUMENTS. SUBMITTALS SHALL INCLUDE DETAILS OF CONSTRUCTION AND ADJACENT CONSTRUCTION AS APPLICABLE. FOR PHYSICAL SAMPLES, SUBMIT 3 REPRESENTATIVE SAMPLES.
2. TIMING OF SUBMITTALS: SUBMIT TO ALLOW AT LEAST 5 BUSINESS DAYS FOR REVIEW AND HANDLING.
3. ARCHITECT'S ACTION ON SUBMITTALS: ARCHITECT WILL REVIEW SUBMITTALS, STAMP WITH "ACTION STAMP", MARK ACTION, AND RETURN TO CONTRACTOR. ARCHITECT WILL REVIEW SUBMITTALS ONLY FOR CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING COMPLIANCE WITH OTHER CONTRACT REQUIREMENTS, INCLUDING WITHOUT LIMITATION, PERFORMANCE REQUIREMENTS, FIELD DIMENSIONS, FABRICATION METHODS, MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES OF CONSTRUCTION, COORDINATION WITH OTHER WORK. THE ARCHITECT'S REVIEW AND APPROVAL OF SUBMITTALS SHALL BE HELD TO THE LIMITATIONS STATED IN THE OWNER/ARCHITECT AGREEMENT AND THE CONDITIONS OF THE CONTRACT. IN NO CASE SHALL APPROVAL OR ACCEPTANCE BY THE ARCHITECT BE INTERPRETED AS A RELEASE OF CONTRACTOR OF HIS RESPONSIBILITIES TO FULFILL ALL OF THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
4. REQUIRED RESUBMITTAL: UNLESS SUBMITTAL IS NOTED "APPROVED" OR "APPROVED AS NOTED", MAKE CORRECTIONS OR CHANGES TO ORIGINAL AND RESUBMIT TO ARCHITECT.
5. DISTRIBUTION: WHEN SUBMITTAL IS NOTED "APPROVED" OR "APPROVED AS NOTED", MAKE PRINTS OR COPIES AND DISTRIBUTE TO OWNER, SUBCONTRACTORS INVOLVED, AND TO ALL OTHER PARTIES REQUIRING INFORMATION FROM THE SUBMITTAL FOR PERFORMANCE OR COORDINATION OF RELATED WORK. PRINT SHOP DRAWINGS FOR DISTRIBUTION ONLY FROM THE FINAL APPROVED REPRODUCIBLE.
6. INCLUDE DETAILS OF CONSTRUCTION AND ADJACENT CONSTRUCTION IN SHOP DRAWINGS. CLEARLY INDICATE ANY DEVIATIONS FROM REQUIREMENTS OF THE CONTRACT DOCUMENTS. FABRICATE MATERIALS FROM APPROVED SHOP DRAWINGS ONLY.

REQUEST FOR INFORMATION (RFI)
1. IMMEDIATELY ON DISCOVERY OF THE NEED FOR ADDITIONAL INFORMATION, CLARIFICATION, OR INTERPRETATION OF THE CONTRACT DOCUMENTS, GC SHALL PREPARE AND SUBMIT AN RFI.
2. INCLUDE A DETAILED, LEGIBLE DESCRIPTION OF ITEM NEEDING INFORMATION OR INTERPRETATION.
3 ARCHITECT'S ACTION: ARCHITECT WILL REVIEW EACH RFI, DETERMINE ACTION REQUIRED, AND RESPOND. ALLOW 3 BUSINESS DAYS FOR ARCHITECT'S RESPONSE FOR EACH RFI. RFIs RECEIVED BY ARCHITECT AFTER 1PM WILL BE CONSIDERED AS RECEIVED THE FOLLOWING DAY.
4. ARCHITECT'S ACTION MAY INCLUDE A REQUEST FOR ADDITIONAL INFORMATION, IN WHICH CASE TIME FOR RESPONSE WILL DATE FROM TIME OF RECEIPT BY ARCHITECT OF ADDITIONAL INFORMATION.

QUALITY ASSURANCE:
1. COMPLY WITH APPLICABLE CODES, REGULATIONS, ORDINANCES AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION, INCLUDING ACCESSIBILITY GUIDELINES WHERE APPLICABLE. SUBMIT COPIES OF INSPECTION REPORTS, NOTICES AND SIMILAR DOCUMENTS TO ARCHITECT.
2. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS.
3. USE EXPERIENCED INSTALLERS. FURNISH EVIDENCE OF EXPERIENCE IF REQUESTED.
4. DELIVER, HANDLE, AND STORE MATERIALS IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND GREEN GLOBES REQUIREMENTS.
5. USE OF ANY SUPPLIER OR SUBCONTRACTOR IS SUBJECT TO OWNER'S APPROVAL.
6. ENGAGE AND PAY FOR TESTING AGENCIES AS REQUIRED. REFER TO INDIVIDUAL SECTIONS FOR ADDITIONAL REQUIREMENTS.

TEMPORARY FACILITIES:
1. PROVIDE TEMPORARY FACILITIES AND CONNECTIONS AS REQUIRED FOR THE PROPER COMPLETION OF THE PROJECT.
2. PROVIDE TEMPORARY PROTECTION FOR ADJACENT AREAS TO PREVENT CONTAMINATION BY CONSTRUCTION DUST AND DEBRIS.
3. PROVIDE TEMPORARY BARRICADES AS NECESSARY TO ENSURE PROTECTION OF THE PUBLIC.
4. PROVIDE SUITABLE WASTE DISPOSAL UNITS AND EMPTY REGULARLY. DO NOT PERMIT ACCUMULATION OF TRASH AND WASTE MATERIALS.
5. PROVIDE TEMPORARY SANITARY FACILITIES.
6. MAINTAIN EGRESS WITHIN AND AROUND CONSTRUCTION AREAS.
7. PROVIDE FIRE EXTINGUISHERS IN WORK AREAS DURING CONSTRUCTION.
8. PROVIDE TEMPORARY PROTECTION FOR ADJACENT CONSTRUCTION. PROMPTLY REPAIR ANY DAMAGE AT NO ADDITIONAL COST TO THE OWNER.

PRODUCTS AND SUBSTITUTIONS:
1. PROVIDE PRODUCTS AND MATERIALS SPECIFIED. REQUEST ARCHITECT'S SELECTION OF COLORS AND ACCESSORIES IN SUFFICIENT TIME TO AVOID DELAYING PROGRESS OF THE WORK.
2. DEVIATIONS FROM SPECIFIED MATERIALS AND INSTALLATIONS SHALL NOT BE PERMITTED UNLESS PRESENTED TO AND APPROVED BY JACOBS. ONLY SUBSTITUTIONS FOR CAUSE WILL BE CONSIDERED.
   A. SUBSTITUTIONS FOR CAUSE: CHANGES PROPOSED BY CONTRACTOR THAT ARE REQUIRED DUE TO CHANGED PROJECT CONDITIONS, SUCH AS UNAVAILABILITY OF PRODUCT, REGULATORY CHANGES, OR UNAVAILABILITY OF REQUIRED WARRANTY TERMS.
3. SUBSTITUTION FOR CAUSE DOCUMENTATION:
   A. CSI SUBSTITUTION REQUEST FORM 13.1A.
   B. STATEMENT INDICATING WHY SPECIFIED PRODUCT OR FABRICATION OR INSTALLATION METHOD CANNOT BE PROVIDED.
   C. PROVIDE DETAILED COMPARISON OF SIGNIFICANT QUALITIES OF PROPOSED SUBSTITUTION WITH THOSE OF THE WORK SPECIFIED.
   D. PRODUCT DATA AND SAMPLES (WHERE APPLICABLE).
4. SUBSTITUTIONS FOR CONVENIENCE ARE NOT ALLOWED.
5. REMOVE AND REPLACE WORK WHICH DOES NOT CONFORM TO THE CONTRACT DOCUMENTS AT NO ADDITIONAL EXPENSE TO THE OWNER.

INSTALLATION:
1. INSPECT SUBSTRATES AND REPORT UNSATISFACTORY CONDITIONS IN WRITING.
2. DO NOT PROCEED UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
3. TAKE FIELD MEASUREMENTS PRIOR TO FABRICATION WHERE PRACTICAL. FORM TO REQUIRED SHAPES AND SIZES WITH TRUE EDGES, LINES AND ANGLES. PROVIDE INSERTS AND TEMPLATES AS NEEDED FOR WORK OF OTHER TRADES.
4. INSTALL MATERIALS IN EXACT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPROVED SUBMITTALS.
5. INSTALL MATERIALS IN PROPER RELATION WITH ADJACENT CONSTRUCTION AND WITH PROPER APPEARANCE.
6. RESTORE UNITS DAMAGED DURING INSTALLATION. REPLACE UNITS WHICH CANNOT BE RESTORED AT NO ADDITIONAL EXPENSE TO THE OWNER.
7. REFER TO ADDITIONAL INSTALLATION REQUIREMENTS AND TOLERANCES SPECIFIED UNDER INDIVIDUAL SPECIFICATION SECTIONS.

CLOSEOUT:
1. PREPARE PUNCHLIST FOR REMAINING WORK FOR REVIEW BY THE ARCHITECT.
2. COMPLETE PUNCHLIST ITEMS PROMPTLY AT NO ADDITIONAL EXPENSE TO THE OWNER.
3. SUBMIT ACCURATE RECORD DOCUMENTS OF BUILDING AND SITE.
4. SUBMIT OPERATING MANUALS, MAINTENANCE MANUALS, AND WARRANTY INFORMATION.
5. OBTAIN AND SUBMIT COPY OF OCCUPANCY PERMITS.
6. TRAIN OWNER’S PERSONNEL IN USE OF BUILDING SYSTEMS.
7. REMOVE TEMPORARY FACILITIES AND PROVIDE FINAL CLEANING AND TOUCH UP.
8. RESTORE PORTIONS OF BUILDING, SITE IMPROVEMENTS, LANDSCAPING AND OTHER ITEMS DAMAGED BY CONSTRUCTION OPERATIONS TO THE SATISFACTION OF THE ARCHITECT AT NO ADDITIONAL EXPENSE TO THE OWNER.

DIVISION 02 – EXISTING CONDITIONS

SECTION 024119 – SELECTIVE DEMOLITIONS

SUMMARY:
1. PROVIDE SELECTIVE DEMOLITION OF SLABS, PARTITIONS, SYSTEMS, AND COMPONENTS DESIGNATED TO BE REMOVED.
2. PROTECT PORTIONS OF BUILDING, SITE AND ADJACENT STRUCTURES AFFECTED BY DEMOLITION OPERATIONS.
3. PROVIDE TEMPORARY PROTECTION FOR THE PUBLIC FROM DEMOLITION OPERATIONS.
4. PROVIDE POLLUTION CONTROL DURING DEMOLITION OPERATIONS.
5. PROVIDE REMOVAL AND LEGAL DISPOSAL OF MATERIALS; RECYCLE WASTE TO 75% LEVEL.

DEMOLITION:
1. SURVEY EXISTING CONDITIONS AND CORRELATE WITH DRAWINGS AND SPECIFICATIONS TO VERIFY EXTENT OF DEMOLITION REQUIRED. PROVIDE VIDEOTAPE OF EXISTING CONDITIONS IF CLARIFICATION OF EXISTING DAMAGE MAY BE CONSTRUED AS DAMAGE DONE BY CONSTRUCTION OPERATIONS.
2. VERIFY CONDITIONS AT SITE TO DETERMINE WHETHER DEMOLITION METHODS PROPOSED FOR USE WILL NOT ENDANGER EXISTING STRUCTURES BY OVERLOADING, FAILURE, OR UNPLANNED COLLAPSE.
3. PERFORM DEMOLITION OPERATIONS BY METHODS WHICH DO NOT ENDANGER ADJACENT SPACES, STRUCTURES, OR THE PUBLIC.
4. PERFORM DEMOLITION OPERATIONS TO PREVENT DUST AND POLLUTANT HAZARDS.
5. ARRANGE SELECTIVE DEMOLITION SCHEDULE SO AS NOT TO INTERFERE WITH OWNER'S OPERATIONS.

DIVISION 03 - CONCRETE

SECTION 030513 – CONCRETE SEALERS

PRODUCT: DAYTON-SUPERIOR SAFE CURE & SEAL 309 J-18.

SECTION 033000 – CAST-IN-PLACE CONCRETE

REFER TO THE STRUCTURAL DRAWINGS.

DIVISION 05 – METALS

SECTION 051200 – STRUCTURAL STEEL

REFER TO THE STRUCTURAL DRAWINGS.

SECTION 054000 – COLD-FORMED METAL FRAMING

SUMMARY:
1. PROVIDE COLD-FORMED METAL FRAMING FOR PARTITIONS.

SUBMITTALS:
1. SUBMIT PRODUCT DATA.

PRODUCTS:
1. COLD-FORMED STEEL FRAMING SHALL COMPLY WITH AISI S100, AISI S200. WALL STUDS SHALL COMPLY WITH AISI S211, HEADERS SHALL COMPLY WITH S212 AND LATERAL DESIGN SHALL COMPLY WITH AISI S213. REFER TO DRAWINGS FOR ADDITIONAL REQUIREMENTS.

INSTALLATION:
1. COMPLY WITH REQUIREMENTS OF SECTION 011000 - GENERAL REQUIREMENTS.

SECTION 055000 – METAL FABRICATIONS

SUMMARY:
1. PROVIDE MISCELLANEOUS STEEL FRAMING AND SUPPORTS AND UNIVERSAL GRID SYSTEM.
2. TOLERANCES: FABRICATION TOLERANCE 1/8 INCH IN 10 FEET; ERECTION TOLERANCE, 1/16 INCH.

SUBMITTALS:
1. SUBMIT PRODUCT DATA, ENGINEERED SHOP DRAWINGS.
2. CALCULATIONS STAMPED AND SIGNED BY A LICENSED PE IN PROJECT JURISDICTION.

PRODUCTS:
1. STEEL CHANNELS, PLATES, SHAPES AND BARS: ASTM A 36.
2. STEEL TUBING: ASTM A 500 OR A 501.
3. STEEL PIPE, BLACK FINISH: ASTM A 53.

INSTALLATION:
1. COMPLY WITH REQUIREMENTS OF SECTION 011000 - PROJECT REQUIREMENTS.
2. COMPLY WITH AISC CODES AND SPECIFICATIONS AND WITH AWS STRUCTURAL WELDING CODE.

DIVISION 06 – WOOD, PLASTICS, AND COMPOSITES

SECTION 061000 – ROUGH CARPENTRY

SUMMARY:
1. WOOD BLOCKING AND NAILERS.
2. PLYWOOD BACKING PANELS.

PRODUCTS:
1. LUMBER STANDARDS AND GRADE STAMPS: PS 20, AMERICAN SOFTWOOD LUMBER STANDARD AND INSPECTION AGENCY GRADE STAMPS.
2. FIRE RETARDANT TREATMENT FOR ALL INTERIOR CONCEALED CARPENTRY: AWPA C20 FOR LUMBER AND AWPA C27 FOR PLYWOOD; NONCORROSIVE TYPE.
3. PLYWOOD BACKING PANELS: APA C D PLUGGED EXPOSURE 1 WITH EXTERIOR GLUE, FIRE RETARDANT TREATED.
4. ALL WOOD BLOCKING SHALL BE FIRE-RETARDANT IN ACCORDANCE WITH SECTION 603 OF THE IBC.

INSTALLATION:
1. COMPLY WITH REQUIREMENTS OF SECTION 011000 - PROJECT REQUIREMENTS.
2. COMPLY WITH NFPA RECOMMENDED NAILING SCHEDULE, AND NFPA NATIONAL DESIGN SPECIFICATIONS FOR WOOD CONSTRUCTION.
3. COMPLY WITH APA DESIGN AND CONSTRUCTION GUIDE, COMMERCIAL CONSTRUCTION.
4. PROVIDE NAILERS, BLOCKING & GROUNDS WHERE REQ'D. SET WORK PLUMB, LEVEL & ACCURATELY CUT.
5. COMPLY WITH MANUFACTURER'S REQUIREMENTS FOR TREATED MATERIALS.

SECTION 062023 – INTERIOR FINISH CARPENTRY

SUMMARY:
1. FINISH CARPENTRY INCLUDES CLOSET ROD AND BRACKETS, ADJUSTABLE WOOD SHELVING, SHELVING, TACKBOARD SURFACING, AND GROMMETS WITHIN.

SUBMITTALS:
1. SUBMIT PRODUCT DATA.
2. SUBMIT SHOP DRAWINGS.

PRODUCTS:
1. AWI STANDARDS: ARCHITECTURAL WOODWORK STANDARDS, CUSTOM GRADE.
2. INTERIOR WOODWORK: SPECIES FOR TRANSPARENT FINISH: AS SELECTED BY ARCHITECT. REFER TO FINISH SCHEDULE.
3. FACTORY APPLIED TRANSPARENT FINISH: PREMIUM GRADE, STAIN AND GLOSS AS SELECTED BY ARCHITECT. MATCH ARCHITECT’S CONTROL SAMPLE.
4. CLOSET ROD AND ESCUTCHEONS: RICHELIEU ROD (MODEL #1215608900) AND ESCUTHEONS (MODEL # 2215602900 AND 2215612900) ALL IN MATTE BLACK.
5. ADJUSTABLE SHELVING BRACKETS AND STANDARDS: KNAPE & VOGT 82/182 SERIES - HEAVY DUTY, WALL MOUNTED; WHITE FINISH.
6. FLOATING SHELF BRACKETS:
   A. BR-1: RIGHT ON BRACKET; HEAVY DUTY MODEL, 8-INCHES LONG X 1/2-INCH THICK.
   B. BR-2: RIGHT ON BRACKET; HEAVY DUTY MODEL, 12-INCHES LONG X 1/2-INCH THICK.
7. GROMMETS:
   A. GR-1: DOUG MOCKETT; MODEL BG3. 1 1/2-INCH FLIP-TOP GROMMET SET. WHITE FINISH EACH SIDE.
   B. GR-2: DOUG MOCKETT; MODEL MM3. 1-7/8-INCH METAL CAP AND SLEEVE. ENGLISH ANTIQUE (10B) FINISH
   C. GR-3: DOUG MOCKETT; MODEL MM3. 1-7/8-INCH METAL CAP AND SLEEVE. BLACK FINISH.
   D. GR-4: DOUG MOCKETT; MODEL XG-1, 3-INCH PLASTIC SLEEVE ONLY. BLACK FINISH.

INSTALLATION:
1. COMPLY WITH REQUIREMENTS OF SECTION 011000 - PROJECT REQUIREMENTS.
2. COMPLY WITH STANDARDS REFERENCED; BACKPRIME WORK BEFORE INSTALLATION.
3. PROVIDE TRIM FOR SCRIBING AND SITE CUTTING.
4. INSTALL WORK PLUMB, LEVEL & IN PROPER ALIGNMENT; FREE FROM TOOL MARKS & BLEMISHES.
5. SECURELY FASTEN TO SUBSTRATES; INSTALL IN LENGTHS TO MINIMIZE JOINTS AND SEAMS.
6. COLOR MATCH WOOD FOR TRANSPARENT FINISH AT JOINTS FOR UNIFORM APPEARANCE.
7. TOUCH UP DAMAGED OR ABRADED FINISHES.

SECTION 064000 – INTERIOR ARCHITECTURAL WOODWORK

SUMMARY:
1. INCLUDES CUSTOM CASEWORK, WOODWORK, WOODWORK HARDWARE, PLASTIC LAMINATE, STONE COUNTERTOP SUPPORTS; FACTORY FINISHED.

SUBMITTALS:
1. SUBMIT PRODUCT DATA, SAMPLES. SAMPLES TO INCLUDE A MINIMUM OF 5 ROUNDS OF SOLID WOOD AND VENEER WOOD SAMPLES. FINISH VENEER SAMPLES TO INCLUDE VENEER ON ALL SIDES OF SAMPLE PANEL.
2. SAMPLES OF STONE COUNTERTOPS.
3. SUBMIT SHOP DRAWINGS GENERATED BY MILLWORKER. COPIES OF JACOBS DRAWINGS WILL NOT BE ACCEPTED.
   A. SUBMIT ELECTRONIC COPY OF MILLWORK SHOP DRAWINGS TO JACOBS FOR APPROVAL PRIOR TO FABRICATION. DRAWINGS SHALL BE SUBMITTED IN THE FOLLOWING SCALES:
      a. OVERALL PLANS AND ELEVATIONS: 1/4"=1'-0".
      b. PLANS AND ELEVATIONS OF COMPONENTS: 1"=1'-0".
      c. DETAILS: 3"=1'-0".
      d. TYPICAL PROFILES FOR EACH PIECE: HALF-SCALE MINIMUM.
   B. HARDWARE CUT SHEETS SHALL BE SUBMITTED WITH SHOP DRAWINGS FOR APPROVAL.

PRODUCTS:
1. AWI STANDARDS: ARCHITECTURAL WOODWORK STANDARDS, CUSTOM GRADE.
2. INTERIOR WOODWORK:
   A. LAMINATE FINISH: REFER TO FINISH SCHEDULE.
   B. WOOD VENEER: REFER TO FINISH SCHEDULE.
3. CASEWORK HARDWARE AND AUXILIARY MATERIALS:
   A. HARDWARE STANDARD: ANSI/BHMA A156.9.
   B. HARDWARE FINISH AND BASE METAL: MATTE BLACK OR OIL RUBBED BRONZE.
   C. GLASS: REFER TO DRAWINGS.
4. STONE COUNTERTOPS AND TRIM: REFER TO THE FINISH SCHEDULE.
5. FACTORY APPLIED TRANSPARENT FINISH: AWI PREMIUM GRADE, STAIN AND GLOSS AS SELECTED BY ARCHITECT. MATCH ARCHITECT’S CONTROL SAMPLE.

INSTALLATION:
1. COMPLY WITH REQUIREMENTS OF SECTION 011000 - PROJECT REQUIREMENTS.
2. COMPLY WITH STANDARDS REFERENCED; BACKPRIME WORK BEFORE INSTALLATION.
3. PROVIDE TRIM FOR SCRIBING AND SITE CUTTING.
4. INSTALL WORK PLUMB, LEVEL AND IN PROPER ALIGNMENT; PROVIDE WORK FREE FROM TOOL MARKS AND BLEMISHES
5. SECURELY FASTEN TO SUBSTRATES; INSTALL IN LENGTHS TO MINIMIZE JOINTS AND SEAMS.
6. COLOR MATCH WOOD FOR TRANSPARENT FINISH AT JOINTS AND REVEALS FOR UNIFORM APPEARANCE.
7. TOUCH UP DAMAGED OR ABRADED FINISHES.

DIVISION 07 – THERMAL AND MOISTURE PROTECTION

SECTION 078410 – PENETRATION FIRESTOPPING

SUMMARY:
1. PROVIDE FIRESTOPPING AT PENETRATIONS IN RATED CONSTRUCTION.

PRODUCTS:
1. FIRE PERFORMANCE: ASTM E 119, ASTM E 814, AND LOCAL REGULATIONS.

INSTALLATION:
1. COMPLY WITH REQUIREMENTS OF SECTION 011000 - PROJECT REQUIREMENTS.
2. INSPECT EXISTING & NEW WORK FOR PROPER FIRESTOPPING PRIOR TO CLOSE IN OF CEILINGS AND WALLS.
3. PROVIDE MATERIAL THICKNESSES NECESSARY TO PROVIDE FIRE RESISTANCE RATINGS INDICATED OR REQUIRED AUTHORITIES HAVING JURISDICTION.

SECTION 079200 – JOINT SEALANTS

SUMMARY:
1. PROVIDE JOINT SEALERS AT INTERIOR AND EXTERIOR VERTICAL AND HORIZONTAL JOINTS.

SUBMITTALS:
1. SUBMIT PRODUCT DATA.

PRODUCTS:
1. SILICONE ELASTOMERIC JOINT SEALANTS:
   A. TYPE: MULTI PART NONACID CURING SILICONE SEALANT, ASTM C 920, FOR VERTICAL AND HORIZONTAL JOINT MODULUS AS REQUIRED FOR APPLICATION,
   B. APPLICATION: JOINTS IN EXTERIOR WALLS AND SOFFITS. (NOT APPLICABLE AT THIS SITE)
2. LATEX JOINT SEALANTS:
   A. ACRYLIC TYPE: ACRYLIC EMULSION, ASTM C 834.
   B. APPLICATION: INTERIOR JOINTS IN VERTICAL AND OVERHEAD SURFACES WITH LIMITED MOVEMENT.
3. FIRE RESISTIVE JOINT SEALERS:
   A. TYPE: ONE PART FIRE STOPPING SEALANT.
   B. APPLICATION: PENETRATIONS IN FIRE RATED FLOOR AND WALL ASSEMBLIES.
4. URETHANE ELASTOMERIC JOINT SEALANTS:
   A. POURABLE TYPE: MULTI PART POURABLE URETHANE SEALANT, ASTM C 920.
   B. APPLICATION: EXTERIOR PAVING JOINTS.
5. ACOUSTICAL SEALANT FOR CONCEALED JOINTS:
   A. NON-STAINING, NOISEPROOFING SEALANT BY GREEN GLUE OR EQUAL.
6. AUXILIARY MATERIALS:
   A. PLASTIC FOAM JOINT FILLERS.
   B. ELASTOMERIC TUBING BACKER RODS.
   C. BOND BREAKER TAPE.

INSTALLATION:
1. COMPLY WITH REQUIREMENTS OF SECTION 011000 - PROJECT REQUIREMENTS.
2. TEST SEALANT ADHESION FOR EACH SUBSTRATE REQUIRED.
3. INSTALL IN PROPER RELATION WITH ADJACENT WORK.
4. CLEAN ADJACENT SURFACES SOILED WITH SEALANT IMMEDIATELY.

DIVISION 08 – OPENINGS

SECTION 081113 – HOLLOW METAL DOORS AND FRAMES

SUMMARY:
1. PROVIDE INTERIOR AND EXTERIOR STEEL DOORS AND FRAMES.

SUBMITTALS:
1. SUBMIT PRODUCT DATA, SHOP DRAWINGS.

PRODUCTS:
1. STANDARDS: ANSI/SDI 100, RECOMMENDED SPECIFICATIONS FOR STANDARD STEEL DOORS AND FRAMES.
2. FIRE RATED ASSEMBLIES: NFPA 80, AND ACCEPTABLE TESTING AGENCY LISTING.
3. STEEL DOORS: STANDARD SEAMLESS STEEL DOORS WITH HOLLOW OR COMPOSITE CONSTRUCTION.
   A. INTERIOR DOORS: ANSI/SDI 100, GRADE II, HEAVY DUTY, MINIMUM 18 GAUGE COLD ROLLED STEEL, 1 3/4 INCH THICK.
   B. EXTERIOR DOORS: ANSI/SDI 100, GRADE III, EXTRA HEAVY DUTY, MINIMUM 16 GAUGE GALVANIZED SHEET STEEL,1 3/4 INCHES THICK.
   C. FINISH: FACTORY PRIMED AND FIELD PAINTED.
4. STEEL FRAMES:
   A. INTERIOR FRAMES: KNOCKED DOWN TYPE, SHEET STEEL, MITERED OR COPED CORNERS, 16 GAUGE, 14 GAUGE FOR FRAMES WIDER THAN 5 FEET.
   B. EXTERIOR FRAMES: KNOCKED DOWN TYPE, GALVANIZED SHEET STEEL, MITERED OR COPED CORNERS, 14 GAUGE.
   C. ACCESSORIES: DOOR SILENCERS AND PLASTER GUARDS.
   D. FINISH: FACTORY PRIMED AND FIELD PAINTED.

INSTALLATION:
1. COMPLY WITH REQUIREMENTS OF SECTION 011000 - PROJECT REQUIREMENTS.
2. COMPLY WITH SDI 100, AND NFPA 80 FOR FIRE-RATED ASSEMBLIES.

SECTION 081200 – INTERIOR STOREFRONT SYSTEM - ALUMINUM

SUMMARY:
1. INTERIOR DOORS, FRAMES AND GLAZING FRAMES.

SUBMITTALS:
1. SUBMIT PRODUCT DATA, SAMPLES, SHOP DRAWINGS, WARRANTY.

PRODUCTS:
1. PRODUCTS: WILSON PARTITIONS; SNAP ON TRIM - SERIES 500
2. ALUMINUM FRAME: 1 ½” TRIM.
3. CORNERS: SQUARE.
4. GLAZING STOPS: BEVELED; WITH BLACK GLAZING VINYL.
5. GASKETS AND SEALS: MOHAIR DOOR SEAL; BLACK.
6. ALUMINUM FINISH: POWDERCOAT DARK BRONZE; AB-6.
7. SCRIBE: 2 INCHES FOR FIELD CUTTING.
8. GLASS: REFER TO SPECIFICATIONS SECTION 088000 AND TO DRAWINGS.
9. DOORS: WIDE STYLE; AB-6 FINISH. REFER TO DRAWINGS FOR SCHEDULE.
10. HARDWARE: REFER TO HARDWARE SETS ON DRAWINGS AND SPECIFICATION SECTION 087100. ALL HARDWARE SHALL HAVE OIL RUBBED BRONZE FINISH, 613.

INSTALLATION:
1. COMPLY WITH REQUIREMENTS OF SECTION 011000 - PROJECT REQUIREMENTS.

SECTION 081214 – TRIMLESS DOOR FRAMES

SUMMARY:
1. TRIMLESS INTERIOR DOOR FRAMES.

SUBMITTALS:
1. SUBMIT PRODUCT DATA, SHOP DRAWINGS, SCHEDULE, WARRANTY.

PRODUCTS:
1. PRODUCT: EZCONCEPT EZY JAMB SINGLE RABBET DOOR FRAMES (EZYJAMB SINGLE RABBET-SRC).
   A. MATERIAL: 18 GAUGE GALVANNEAL STEEL, ONE PIECE WITH PERFORATED FLANGES.
   B. DEPTH: SUITABLE FOR 1 3/4" THICK DOOR AND APPLICABLE PARTITION THICKNESS.
   C. HARDWARE: AS SPECIFIED IN HARDWARE SETS.

INSTALLATION:
1. COMPLY WITH REQUIREMENTS OF SECTION 011000 - PROJECT REQUIREMENTS.

SECTION 081400 – FLUSH WOOD DOORS

SUMMARY:
1. PROVIDE INTERIOR SOLID CORE FLUSH WOOD DOORS.

SUBMITTALS:
1. SUBMIT PRODUCT DATA, SAMPLES, SHOP DRAWINGS, WARRANTY.

PRODUCTS:
1. WOOD DOORS:
   A. MASONITE ARCHITECTURAL ASPIRO SERIES.
   B. VT INDUSTRIES HERITAGE COLLECTION; CLEAR FINISH.
   C. PACIFIC DOORS, INC.
2. INTERIOR SOLID CORE DOORS: PREMIUM GRADE, 5-PLY CONSTRUCTION, STRUCTURAL COMPOSITE CORE.
3. VENEER DOORS WITH CLEAR FINISH: RIFT CUT WHITE OAK, UNLESS NOTED TO BE BY MILLWORKER. MATCH FINISH REQUIREMENTS OF SECTION 064000.
   A. APPROVED SUBSTITUTIONS: RIFT CUT RED OAK.
4. SOLID CORE DOORS FOR PAINTED FINISH: FACTORY PRIMED AND FIELD PAINTED.
5. AWI QUALITY STANDARDS: NWWDA I.S. 1 A, AND AWI ARCHITECTURAL QUALITY STANDARDS.
6. FIRE RATED WOOD DOORS: MEETING ASTM E 152 REQUIREMENTS.
7. FITTING: FACTORY PREFIT AND PREMACHINE DOORS.

INSTALLATION:
1. COMPLY WITH REQUIREMENTS OF SECTION 011000 - PROJECT REQUIREMENTS.
2. COMPLY WITH NWMA IS 1 AND AWI QUALITY STANDARDS.
3. PREFIT DOORS TO FRAMES, PREMACHINE DOORS FOR HARDWARE, AND FACTORY BEVEL.
4. INSTALL WITH NOT MORE THAN 1/8 INCH CLEARANCE AT TOP AND SIDES, 1/4 INCH AT BOTTOM UNLESS UNDERCUT IS REQUIRED. REFER TO DOOR SCHEDULE.

SECTION 083100 – ACCESS DOORS AND FRAMES

SUMMARY:
1. PROVIDE ACCESS DOORS FOR WALLS AND CEILINGS.

SUBMITTALS:
1. SUBMIT PRODUCT DATA.

PRODUCTS:
1. GFRG SEAMLESS, ACCESS PANEL WITH SQUARE CORNER FOR CEILINGS:
   A. CASTLE ACCESS PANELS AND FORMS, INC.
   B. BABCOCK DAVIS.
   C. ACTIVAR CONSTRUCTION PRODUCTS GROUP, INC.
   D. ACUDOR PRODUCTS INC.
   E. OR ARCHITECT APPROVED EQUAL.
2. CEILING PANELS NOT TO EXCEED 24" x 24".

INSTALLATION:
1. COMPLY WITH REQUIREMENTS OF SECTION 011000 - PROJECT REQUIREMENTS.

SECTION 084226 – TEMPERED GLASS ENTRANCES & SIDELITES

SUMMARY:
1. PROVIDE TOP & BOTTOM PATCHFITTING TEMPERED GLASS DOOR AND TOP AND BOTTOM GLAZING CHANNEL FOR SIDELITE.

SUBMITTALS:
1. SUBMIT PRODUCT DATA, SHOP DRAWINGS, WARRANTY.

PRODUCTS:
1. PRODUCTS: LOW PROFILE TOP AND BOTTOM GLAZING CHANNEL. REFER TO DRAWINGS.
2. DOORS: MATCH BUILDING EXTERIOR DOOR.
3. GASKETS AND SEALS: AS STANDARD WITH MANUFACTURER.
4. FINISH: MATCH BUILDING EXTERIOR DOORS.
5. GLASS: REFER TO SPECIFICATIONS SECTION 088000:
6. HARDWARE: REFER TO DRAWINGS AND SPECIFICATION SECTION 087100.

INSTALLATION:
1. COMPLY WITH REQUIREMENTS OF SECTION 011000 - PROJECT REQUIREMENTS.

SECTION 084313 – ALUMINUM-FRAMED ENTRANCES

1. PROVIDE ALUMINUM-FRAMED ENTRANCES.

SUBMITTALS:
1. SUBMIT PRODUCT DATA, SHOP DRAWINGS.

PRODUCTS:
1. PRODUCTS: AS SELECTED BY ARCHITECT COMPLYING WITH THE FOLLOWING.
2. DOOR STYLE: WIDE STILE AND RAIL DOORS; COMPLY WITH PROFILES INDICATED ON THE DRAWINGS.
3. FRAMES: THERMAL BREAK TYPE.
4. ALUMINUM MEMBERS: ASTM B 221, B 209 AND B 211.
5. HARDWARE: PUSH/PULLS, DOOR STOPS, OVERHEAD HOLDERS, AND DEADLOCKS, WEATHERSTRIPPING AND THRESHOLDS, EXIT DEVICES. REFER TO HARDWARE SETS IN SECTION 087100.
6. ALUMINUM FINISH: FINISH TO MATCH EXISTING BUILDING STANDARD.

INSTALLATION:
1. COMPLY WITH REQUIREMENTS OF SECTION 011000 - PROJECT REQUIREMENTS.
2. ANCHOR SECURELY IN PLACE; INSTALL PLUMB, LEVEL AND IN TRUE ALIGNMENT.
3. ISOLATE DISSIMILAR METALS.
4. COORDINATE WITH GLAZING WORK AND HARDWARE REQUIREMENTS.

SECTION 087100 – DOOR HARDWARE

SUMMARY:
1. PROVIDE HARDWARE FOR SWINGING DOORS. REFER TO HARDWARE SCHEDULE.

SUBMITTALS:
1. SUBMIT PRODUCT DATA, SAMPLES, PROPOSED HARDWARE SCHEDULE, MAINTENANCE DATA.

PRODUCTS:
1. PRODUCT REQUIREMENTS:
   A. HARDWARE FOR FIRE RATED OPENINGS: NFPA 80, AND LOCAL REQUIREMENTS.
   B. HANDICAPPED ACCESSIBILITY: ANSI A117.1, ADAAG, AND LOCAL REQUIREMENTS.
   C. MATERIALS AND APPLICATION: ANSI A156 SERIES STANDARDS.
   D. QUALITY LEVEL: COMMERCIAL.
2. LOCKSETS AND LATCHSETS: SCHLAGE L9000 SERIES MORTISE. REFER TO HARDWARE SCHEDULE.
3. KEYING: AS REQUIRED BY OWNER.
4. HINGES AND BUTTS: BUTT HINGES AND INVISIBLE HINGES AS SPECIFIED IN HARDWARE SCHEDULE.
5. CLOSERS: SURFACE, CONCEALED OR FLOOR MOUNTED AS SPECIFIED IN HARDWARE SCHEDULE.
6. HARDWARE FINISHES: OIL RUBBED BRONZE, 613 OR US10B.
7. STOPS: OVERHEAD DOOR STOPS SURFACE MOUNTED AND CONCEALED TYPES AS APPLICABLE.
8. SILENCERS: AT ALL HOLLOW METAL FRAMES.
9. ACCESSORY HARDWARE: SOUNDSTRIPPING.

INSTALLATION:
1. COMPLY WITH REQUIREMENTS OF SECTION 011000 - PROJECT REQUIREMENTS.
2. COMPLY WITH DHI "RECOMMENDED LOCATIONS FOR BUILDER'S HARDWARE" AND HARDWARE MANUFACTURERS INSTRUCTIONS.

SECTION 088000 – GLAZING

SUMMARY:
1. PROVIDE GLASS AND GLAZING FOR ENTRANCES, CURTAINWALL, GLAZED SIDELITES, MIRRORS, ALUMINUM STOREFRONTS.

SUBMITTALS:
1. SUBMIT PRODUCT DATA, SAMPLES, SHOP DRAWINGS, WARRANTY, MAINTENANCE DATA.

PRODUCTS:
1. PRODUCTS: REFER TO THE FINISH SCHEDULE.
2. GLASS:
   A. PRIMARY GLASS PRODUCTS: CLEAR FLOAT LOW IRON, ASTM C 1036.
   B. HEAT TREATED GLASS PRODUCTS: HEAT STRENGTHENED, TEMPERED, ASTM C 1048.
   C. LAMINATED GLASS UNITS: NOT USED.
   D. SEALED INSULATING GLASS UNITS: ASTM E 774, CLASS A.
   E. MIRRORS: SILVERING AND PROTECTIVE COATINGS.
   F. HIGH PERFORMANCE COATINGS: LOW E (LOW EMISSIVITY) TYPE.
      GLASS FILM: SEE GRAPHICS PACKAGE.
   G. PROVIDE ANY NECESSARY STRUCTURAL REINFORCEMENT NEEDED GLAZING SYSTEM. COORDINATE SPANS AND LOADS WITH MANUFACUTERER.
3. GLAZING: ELASTOMERIC GLAZING SEALANT GLAZING OR PREFORMED GLAZING TAPE; SETTING BLOCKS, SPACERS, AND COMPRESSIBLE FILLER RODS.

INSTALLATION:
1. COMPLY WITH REQUIREMENTS OF SECTION 011000 - PROJECT REQUIREMENTS.
2. COMPLY WITH GANA GLAZING MANUAL AND MANUFACTURER'S RECOMMENDATIONS.
3. SET MIRRORS IN WOOD FRAME, PAINTED BLACK; AND MOUNT TO PARTITION WITH METAL CLEAT HANGING SYSTEM.

DIVISION 09 – FINISHES

SECTION 092310 – GYPSUM BOARD ASSEMBLIES

SUMMARY:
1. PROVIDE GYPSUM BOARD ASSEMBLIES INCLUDING SOUND ATTENUATION BLANKETS AND METAL FRAMING. REFER ALSO TO DRAWINGS FOR ADDITIONAL REQUIREMENTS.

SUBMITTALS:
1. SUBMIT PRODUCT DATA.

PRODUCTS:
1. GYPSUM BOARD: ASTM C 36, REGULAR, FIRE RATED AND HIGH PERFORMANCE TYPES, 5/8 INCH TYPICAL THICKNESS.
2. CEMENTITIOUS BACKER UNITS: ANSI A 118.9, CEMENT COATED PORTLAND CEMENT PANELS, 5/8 INCH NOMINAL.
3. TRIM ACCESSORIES:
   A. MATERIAL: METAL.
   B. TYPES: CORNERBEAD, EDGE TRIM, AND CONTROL JOINTS.
   C. DECORATIVE PROFILES: ALUMINUM REVEALS AND CHANNELS.
4. STEEL FRAMING FOR WALLS AND PARTITIONS:
   A. STEEL STUDS AND RUNNERS: ASTM C 645, 20 GAUGE (.0329 INCH).
   B. FURRING CHANNELS: ASTM C 645, 20 GAGE (.0329 INCH).
   C. AUXILIARY FRAMING COMPONENTS: FURRING BRACKETS, RESILIENT FURRING CHANNELS, Z FURRING MEMBERS, AND NON CORROSIVE FASTENERS.
   D. INSTALLATION STANDARD: ASTM C 754.
5. STEEL FRAMING FOR SUSPENDED AND FURRED CEILINGS: ASTM C 645, STANDARD CHANNELS.
   A. STEEL STUDS: MATCH STEEL STUDS USED FOR WALLS.
   B. ACCESSORIES: HANGERS AND INSERTS.
   C. INSTALLATION STANDARD: ASTM C 754.
6. GLASS REINFORCED GYPSUM FABRICATIONS:
   A. GYPSUM: ASTM C 22.
   B. GLASS FIBERS: ASTM D 578, TYPE E GLASS.
   C. FINISH: SURFACE SUITABLE FOR HIGH GLOSS PAINT. MIN LEVEL 4 FINISH.
7. AUXILIARY MATERIALS:
   A. GYPSUM BOARD SCREWS, ASTM C 1002.
   B. FASTENING ADHESIVE.
   C. CONCEALED ACOUSTICAL SEALANT.
   D. MINERAL FIBER SOUND ATTENUATION BLANKETS.
8. BARRIER MESH:
   A. PROVIDE CLARK DIETRICH; MODEL BM15 IN 16-GAUGE THICKNESS AND 1 1/2-INCH DIAMOND OPENINGS.
   B. ATTACH TO FRAMING WITH CLARK DIETRICH BM CLIPS.

INSTALLATION:
1. COMPLY WITH REQUIREMENTS OF SECTION 011000 - PROJECT REQUIREMENTS.
2. COMPLY WITH STANDARDS REFERENCED ABOVE AND ASTM C 840 AND GA 216.
3. INSTALL JOINTS ONLY OVER FRAMING MEMBERS. DO NOT ALLOW BUTT TO BUTT JOINTS.
4. PROVIDE BLOCKING FOR ITEMS SUCH AS RAILINGS, GRAB BARS, CASEWORK, TOILET ACCESSORIES, AV MONITORS, COAT HOOKS, AND SIMILAR ITEMS.
5. PROVIDE ACOUSTICAL SEALANT AT RUNNER TRACKS, WALL PERIMETERS, OPENINGS, EXPANSION, AND CONTROL JOINTS.
6. INSTALL GYPSUM BOARD ASSEMBLIES TRUE, PLUMB, LEVEL AND IN PROPER RELATION TO ADJACENT SURFACES.
7. WHERE NEW PARTITIONS MEET EXISTING CONSTRUCTION, REMOVE EXISTING CORNERBEADS TO PROVIDE SMOOTH TRANSITION.
8. PROVIDE 3 COAT JOINT TREATMENT SUCH THAT, AFTER FINISHING, JOINTS ARE NOT VISIBLE.
9. SAND AND LEAVE READY FOR FINISH PAINTING AND PARTITION TREATMENT, LEVEL 4 FINISH, UNLESS NOTED OTHERWISE.
10. PROVIDE CONTROL JOINTS AS REQUIRED.

SECTION 093000 – TILING

1. PROVIDE TILE FOR THE FOLLOWING APPLICATIONS:
   A. WALL TILE OVER TILE BACKER BOARD AT WET AREAS.
   B. FLOOR TILE OVER CONCRETE SLAB.

SUBMITTALS:
1. SUBMIT PRODUCT DATA, SAMPLES.
2. FOR PANTRY WALL TILE TL-4, SUBMIT INSTALLATION DIAGRAM AND "DRY" MOCK-UP ON FLOOR FOR ARCHITECT'S APPROVAL PRIOR TO INSTALLATION.

PRODUCTS:
1. PRODUCTS: REFER TO THE FINISH SCHEDULE OR AS SELECTED BY ARCHITECT COMPLYING WITH THE FOLLOWING.
2. TILE MATERIALS: ANSI A 118 SERIES STANDARD SPECIFICATIONS.
3. TILE ACCESSORIES: MATCHING TRIM UNITS AND THRESHOLDS.
   A. FLOOR TRANSITION AT PORCELAIN TILE TO CARPET: PROVIDE SCHLUTER SCHEINE IN BRUSHED STAINLESS FINISH.
4. SETTING MATERIALS:
   A. THIN-SET (UNDER 3/8 INCH): LATEX PORTLAND CEMENT MORTAR, ANSI A118.4.
   B. SETTING MATERIALS, MEDIUM-SET (3/8 TO 3/4 INCH): LATEX PORTLAND CEMENT MORTAR, ANSI A118.4.
   C. SETTING MATERIALS, THICK-SET (OVER 3/4 INCH): PORTLAND CEMENT MORTAR, ANSI A108.02
5. GROUT: LATEX PORTLAND CEMENT GROUT, ANSI A118.7.
6. SETTING ACCESSORIES:
   A. UNCOUPLING WATERPROOF MEMBRANE UNDER FLOOR TILE:
      a. PROVIDE THE DITRA SYSTEM BY SCHLUTER. REFER TO DETAILS.
   B. CEMENTITIOUS TILE BACKER BOARD.
   C. SEPARATION MEMBRANE.
7. ELASTOMERIC SEALANTS:
   A. ONE PART MILDEW RESISTANT SILICONE SEALANT FOR NON TRAFFIC AREAS.
   B. MULTI PART POURABLE URETHANE SEALANT FOR TRAFFIC AREAS.

INSTALLATION:
1. COMPLY WITH REQUIREMENTS OF SECTION 011000 - PROJECT REQUIREMENTS.
2. COMPLY WITH ANSI 108 SERIES STANDARD SPECIFICATIONS AND TILE COUNCIL OF NORTH AMERICA, HANDBOOK FOR CERAMIC TILE INSTALLATION.
3. LAYOUT TILE IN GRID PATTERN WITH ALIGNMENT OF GRIDS, TO PROVIDE UNIFORM JOINT WIDTH, AND TO MINIMIZE CUTTING.
4. GROUT, CURE, CLEAN AND PROTECT TILE SURFACES.
5. PROVIDE CONTROLS JOINTS TO MATCH GROUT COLOR AS REQUIRED. LOCATIONS SHALL BE APPROVED BY ARCHITECT.
6. PROVIDED CRACK SUPRESSION UNDERLAYMENT FOR TILES LARGER THAN 12”X24”.

SECTION 095100 – ACOUSTIC CEILINGS

SUMMARY:
1. PROVIDE ACOUSTICAL LAY IN CEILINGS, TRIM, AND METAL SUSPENSION SYSTEM.

SUBMITTALS:
1. SUBMIT PRODUCT DATA.
2. ATTIC STOCK: PROVIDE OWNER (1) FULL BOX OF 2' X 2' ACOUSTICAL CEILING PANEL.

PRODUCTS:
1. ACOUSTICAL PANEL CEILINGS: REFER TO THE FINISH SCHEDULE ACT-1 AND ACT-2. NO SUBSTITUTIONS.
2. SUSPENSION SYSTEMS:
   A. SUSPENSION SYSTEM, ASTM C 635 INTERMEDIATE DUTY CLASSIFICATION.
   B. FIRE RATING: NON FIRE RESISTANCE RATED SUSPENSION SYSTEM.
   C. SUSPENSION SYSTEM ACCESSORIES: ATTACHMENT DEVICES AND HANGERS, ASTM C 635.
   D. CAP MATERIAL: PAINTED STEEL.
   E. EDGE MOLDING AND TRIM.

INSTALLATION:
1. COMPLY WITH REQUIREMENTS OF SECTION 011000 - PROJECT REQUIREMENTS.
2. MEASURE AND LAYOUT ACOUSTICAL CEILINGS TO AVOID LESS THAN 1/2 PANEL UNITS WHENEVER PRACTICAL.
3. INSTALL SUSPENSION SYSTEMS IN ACCORDANCE WITH ASTM C 636.

SECTION 096513 – RESILIENT BASE AND ACCESSORIES

SUMMARY:
1. PROVIDE RESILIENT WALL BASE, RESILIENT STAIR ACCESSORIES, RESILIENT FLOORING ACCESSORIES, RESILIENT CARPET ACCESSORIES.

SUBMITTALS:
1. SUBMIT PRODUCT DATA AND SAMPLES.

PRODUCTS:
1. PRODUCTS: REFER TO FINISH SCHEDULE OR AS SELECTED BY ARCHITECT COMPLYING WITH THE FOLLOWING.
2. RUBBER WALL BASE: FS SS W 40, TYPE I, 0.125 INCHES THICK.
   A. STRAIGHT TYPE WITH NO TOE UNLESS OTHERWISE NOTED.
3. RESILIENT STAIR ACCESSORIES AT RISERS AND TREADS: PROFILED RUBBER, 0.125 INCHES THICK.
4. RESILIENT ACCESSORIES:
   A. RUBBER ACCESSORIES.
5. INSTALLATION ACCESSORIES:
   A. CONCRETE SLAB PRIMER: NONSTAINING TYPE.
   B. TROWELABLE UNDERLAYMENTS AND PATCHING COMPOUNDS: LATEX MODIFIED, PORTLAND CEMENT BASED FORMULATION.
   C. STAIR TREAD NOSE FILLER: TWO PART EPOXY COMPOUND.
   D. ADHESIVES: WATER RESISTANT TYPE.

INSTALLATION:
1. COMPLY WITH REQUIREMENTS OF SECTION 011000 - PROJECT REQUIREMENTS.

SECTION 096519 – RESILIENT TILE FLOORING

SUMMARY:
1. PROVIDE RESILIENT TILE INCLUDING STATIC DISSIPATIVE RESILIENT FLOORING.

SUBMITTALS:
1. SUBMIT PRODUCT DATA, SAMPLES, MAINTENANCE DATA.

PRODUCTS:
1. PRODUCTS: REFER TO FINISH SCHEDULE OR AS SELECTED BY ARCHITECT.
2. AUXILIARY MATERIALS: EDGE STRIPS AND TERMINATIONS.

INSTALLATION:
1. COMPLY WITH REQUIREMENTS OF SECTION 011000 - PROJECT REQUIREMENTS.
2. PREPARE SURFACES BY CLEANING, LEVELING AND PRIMING.
3. LEVEL TO 1/8 INCH IN 10 FEET TOLERANCE.
4. INSTALL TILE WITH TIGHT JOINTS AND REQUIRED PATTERNS.

SECTION 096816 – CARPET TILES

SUMMARY:
1. PROVIDE CARPET TILE AND FLOOR PREPARATION.

SUBMITTALS:
1. SUBMIT PRODUCT DATA, SAMPLES, SEAMING DIAGRAM, WARRANTY, MAINTENANCE DATA.
2. ATTIC STOCK: PROVIDE OWNER (1) FULL CARTON OF EACH CARPET TILE.

PRODUCTS:
1. PRODUCTS: REFER TO FINISH SCHEDULE OR AS SELECTED BY ARCHITECT COMPLYING WITH THE FOLLOWING.
2. AUXILIARY MATERIALS:
   A. EDGE GUARDS.
   B. ADHESIVES, CEMENTS AND FASTENERS.
3. CARPET INSTALLATION METHOD:
   A. DIRECT GLUE DOWN INSTALLATION.

INSTALLATION:
1. COMPLY WITH REQUIREMENTS OF SECTION 011000 - PROJECT REQUIREMENTS.
2. INSTALL WITH TIGHT SEAMS AND CARPET GRAIN RUNNING IN SAME DIRECTION.
3. PROVIDE CUTOUTS FOR FLOOR OUTLETS AND SIMILAR PENETRATIONS.
4. PROVIDE EDGE GUARDS AT CHANGE OF FLOORING MATERIALS.

SECTION 097700 – FRP WALL PANELS

SUMMARY:
1. PROVIDE FIBER-REINFORCED PLASTIC WALL PANELS.

SUBMITTALS:
1. SUBMIT PRODUCT DATA.

PRODUCTS:
1. PRODUCTS: PANOLAM, AS INDICATED ON THE FINISH SCHEDULE; OR EQUAL.
2. AUXILIARY MATERIALS: JOINT STRIPS.

INSTALLATION:
1. COMPLY WITH REQUIREMENTS OF SECTION 011000 - PROJECT REQUIREMENTS.
2. PREPARE SURFACES BY CLEANING, LEVELING AND PRIMING.
3. LEVEL TO 1/8 INCH IN 10 FEET TOLERANCE.

SECTION 099100 – PAINTING

SUMMARY:
1. PROVIDE PAINTING AND SURFACE PREPARATION FOR INTERIOR UNFINISHED SURFACES AS SCHEDULED.

SUBMITTALS:
1. SUBMIT PRODUCT DATA.
2. SAMPLES: SUBMIT (3) FULL SIZE DRAW DOWNS OF EACH SPECIFIED PAINT COLOR FOR ARCHITECT'S APPROVAL PRIOR TO INSTALLATION.

PRODUCTS:
1. PRODUCTS: PROVIDE MANUFACTURER INDICATED ON THE FINISH LEGEND. NO SUBSTITUTIONS.
2. REGULATIONS: COMPLIANCE WITH VOC AND ENVIRONMENTAL REGULATIONS.
3. FIRST LINE COMMERCIAL QUALITY PRODUCTS FOR ALL COATING SYSTEMS.
4. SCHEDULE:
   A. GYPSUM BOARD AND PLASTER WALLS: 1 COAT LATEX PRIMER AND 2 COATS LATEX FINISH. COLOR AND SHEEN AS INDICATED IN THE FINISH LEGEND.
   B. GYPSUM BOARD AND PLASTER CEILINGS: 1 COAT LATEX PRIMER AND 2 COATS LATEX FINISH. COLOR AND SHEEN AS INDICATED IN THE FINISH LEGEND.
   C. GYPSUM BOARD IN RESTROOMS, KITCHENS AND WET AREAS: 1 COAT LATEX PRIMER, 2 COATS ALKYD FINISH. COLOR AND SHEEN AS INDICATED IN THE FINISH LEGEND.
   D. FERROUS METALS: 1 COAT PRIMER, 2 COATS ALKYD ENAMEL. COLOR AND SHEEN AS INDICATED IN THE FINISH LEGEND.
   E. WOOD FOR OPAQUE FINISH: 1 COAT PRIMER, 2 COATS ALKYD FINISH. COLOR AND SHEEN AS INDICATED IN THE FINISH LEGEND.
   F. METAL STAIRS AND RAILINGS: 2 COATS EPOXY FINISH, TNEMEC 1029 ENDURATONE AT 2-3 MILS DFT, SURFACE PREP AS RECOMMENDED BY MANUFACTURER. COLOR AND SHEEN AS INDICATED IN THE FINISH LEGEND.

INSTALLATION:
1. COMPLY WITH REQUIREMENTS OF SECTION 011000 - PROJECT REQUIREMENTS.
2. TEST SAMPLE AREA FOR ADHESION FOR EACH TYPE OF PAINT.
3. REMOVE COVER PLATES AND PROTECT HARDWARE AND ADJACENT SURFACES.
4. SAND BEFORE PAINTING UNTIL SMOOTH AND FLAT AND SAND BETWEEN COATS.
5. APPLY PAINT TO ACHIEVE MANUFACTURER'S RECOMMENDED DRY FILM THICKNESSES.
6. PAINT ENTIRE SURFACE WHERE PATCH PAINTING IS REQUIRED.
7. RECOAT AREAS WHICH SHOW BLEED THROUGH OR DEFECTS.
8. CLEAN PAINT SPATTER FROM ADJACENT SURFACES AND GLASS.
9. TOUCH UP DAMAGED SURFACES AT COMPLETION OF CONSTRUCTION.

Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210
P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

General Notes:

REGISTERED ARCHITECT
69323
FREDERIC H. GROSSFELD
DATE SIGNED:
12/20/2024

Project Title:

Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project North
True North

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INTERIOR SPECIFICATIONS

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DIVISION 10 – SPECIALTIES

SECTION 101400 – SIGNAGE
SUMMARY:
1. COORDINATE BUILDING SIGNAGE TO COMPLY WITH CODE AND ACCESSIBILITY REGULATIONS.
2. COORDINATE EXTERIOR SIGNS, PARKING LOT SIGNS, INTERIOR SIGNAGE.
PRODUCTS:
1. PRODUCTS: AS SELECTED BY ARCHITECT COMPLYING WITH THE FOLLOWING. REFER TO GRAPHICS PACKAGE.

SECTION 102813 – TOILET ACCESSORIES
SUMMARY:
1. PROVIDE TOILET ACCESSORIES.
SUBMITTALS:
1. SUBMIT PRODUCT DATA.
PRODUCTS:
1. PRODUCTS: REFER TO TOILET ACCESSORIES SPECIFICATIONS ON DRAWINGS.
2. MATERIALS AND FINISHES: MANUFACTURERS STANDARD FINISH.
INSTALLATION:
1. COMPLY WITH REQUIREMENTS OF SECTION 011000 - GENERAL REQUIREMENTS.

SECTION 104000 – SAFETY SPECIALTIES
SUMMARY:
1. PROVIDE FIRE EXTINGUISHERS AND CABINETS:
A. FIRE EXTINGUISHERS.
B. FIRE EXTINGUISHER CABINETS AT PUBLIC AREAS.
C. FIRE EXTINGUISHER MOUNTING BRACKETS AT SERVICE AREAS.
D. KNOX BOX.
SUBMITTALS:
1. SUBMIT PRODUCT DATA.
PRODUCTS:
1. STANDARDS: UL AND FM LISTED PRODUCTS.
2. FIRE EXTINGUISHERS: KIDDE 4A-60B:C.
A. TYPE: MULTIPURPOSE DRY CHEMICAL.
B. RATING: SIZED FOR PROJECT REQUIREMENTS.
3. CABINETS: JL INDUSTRIES, EMBASSY SERIES, MODEL #5614.
A. DOOR: S21 SOLID WITH CONCEALED PULL.
B. LETTERING: BLACK VERTICAL "FIRE EXTINGUISHER" DIECUT LETTERS (LDCVBFE).
C. CABINET FINISH: POWDER-COATED WHITE.
INSTALLATION:
1. COMPLY WITH REQUIREMENTS OF SECTION 011000 - PROJECT REQUIREMENTS.

DIVISION 11 – EQUIPMENT

SECTION 110200 – WALL SAFE EQUIPMENT
SUMMARY:
1. PROVIDE WALL SAFE.
SUBMITTALS:
1. SUBMIT PRODUCT DATA.
PRODUCTS:
1. PRODUCTS: PROVIDE GARDALL INSULATED WALL SAFE WITH ONE-HOUR FIRE RATING AND ELECTRONIC LOCK; MODEL WMS912-G-E.
INSTALLATION:
1. PROVIDE ALL NECESSARY FLANGES, TRIMS, AND ACCESSORIES FOR A COMPLETE WALL-MOUNTED INSTALLATION.
2. COMPLY WITH REQUIREMENTS OF SECTION 011000 - GENERAL REQUIREMENTS.

SECTION 113100 – APPLIANCES
SUMMARY:
1. PROVIDE APPLIANCE PER THE EQUIPMENT SCHEDULE.
SUBMITTALS:
1. SUBMIT PRODUCT DATA, SHOP DRAWINGS, WARRANTY, MAINTENANCE DATA.
PRODUCTS:
1. PRODUCTS: REFER TO THE SCHEDULES; ENERGY STAR RATED.
INSTALLATION:
1. COMPLY WITH REQUIREMENTS OF SECTION 011000 - GENERAL REQUIREMENTS.

DIVISION 12 – FURNISHINGS

SECTION 122400 – WINDOW SHADES
1. PROVIDE MANUALLY OPERATED ROLLER SHADES.
SUBMITTALS:
1. SUBMIT PRODUCT DATA, SAMPLES, SHOP DRAWINGS, & WARRANTY.
PRODUCTS:
1. PRODUCTS: REFER TO FINISH SCHEDULE.
2. TYPES: MANUAL OPERATION.
3. WINDOW SHADECLOTH: REFER TO FINISH SCHEDULE.
INSTALLATION:
1. COMPLY WITH REQUIREMENTS OF SECTION 011000 - GENERAL REQUIREMENTS.

SECTION 122413 – MOTORIZED WINDOW SHADES
1. PROVIDE MOTOR-OPERATED ROLLER SHADES.
SUBMITTALS:
1. SUBMIT PRODUCT DATA, SAMPLES, SHOP DRAWINGS, & WARRANTY.
PRODUCTS:
1. PRODUCTS: REFER TO FINISH SCHEDULE.
2. TYPES: MOTOR OPERATED WHERE INDICATED. PROVIDE MC CABLE WHIP AT LOCATIONS WHERE STANDARD WHIP LENGTH (5'-0") IS NOT ADEQUATE TO REACH AN ACCESSIBLE CEILING LOCATION.
3. WINDOW SHADECLOTH: REFER TO FINISH SCHEDULE.
INSTALLATION:
1. COMPLY WITH REQUIREMENTS OF SECTION 011000 - GENERAL REQUIREMENTS.

SECTION 124810 – ENTRANCE GRILLES AND FLOOR MATS
SUMMARY:
1. PROVIDE FLOOR MATS AND FRAMES.
SUBMITTALS:
1. SUBMIT PRODUCT DATA, SAMPLES.
PRODUCTS:
1. PRODUCTS: REFER TO FINISH SCHEDULE.
INSTALLATION:
1. COMPLY WITH REQUIREMENTS OF SECTION 011000 - GENERAL REQUIREMENTS.

DIVISION 27 – COMMUNICATIONS

SECTION 275119 SOUND MASKING AND PAGING SYSTEM

1. PART ONE – GENERAL
1.1. SECTION INCLUDES
A. SOUND MASKING SYSTEMS.
B. PAGING SYSTEMS.
1.2. REFERENCES
A. UL 6500: STANDARD FOR AUDIO/VIDEO AND MUSICAL INSTRUMENT APPARATUS FOR HOUSEHOLD, COMMERCIAL AND SIMILAR GENERAL USE.
B. UL 2043: STANDARD FOR FIRE TEST FOR HEAT AND VISIBLE SMOKE RELEASE FOR DISCRETE PRODUCTS AND THEIR ACCESSORIES INSTALLED IN AIR-HANDLING SPACES; 1996
C. UL 1310: STANDARD FOR CLASS 2 POWER UNITS.
D. CSA CMP 75C FT6: COMMUNICATIONS CABLE INTENDED FOR USE WITHIN BUILDINGS IN DUCTS OR PLENUMS OR OTHER SPACES USED FOR ENVIRONMENTAL AIR.
E. FCC: PART 15, SUBPART B, CLASS A – UNINTENTIONAL RADIATORS.
F. ROHS: RESTRICTION OF HAZARDOUS SUBSTANCES DIRECTIVE 2002/95/EC.
G. IEC 60065: STANDARD FOR AUDIO, VIDEO AND SIMILAR ELECTRONIC APPARATUS – SAFETY REQUIREMENTS.
H. UL CL3P/CMP 75C: COMMUNICATIONS CABLE INTENDED FOR USE IN CLASS 2 OR CLASS 3 CIRCUITS WITHIN BUILDINGS IN DUCTS OR PLENUMS OR OTHER SPACES USED FOR ENVIRONMENTAL AIR.
I. EN 55103-1:1997: PRODUCT FAMILY STANDARD FOR AUDIO, VIDEO, AUDIO-VISUAL AND ENTERTAINMENT LIGHTING CONTROL APPARATUS FOR PROFESSIONAL USE, PART 1. EMISSION, ENVIRONMENT CATEGORY E2 – COMMERCIAL AND LIGHT INDUSTRIAL (INCLUDING THEATRES ENVIRONMENT.
J. EN 55103-2:1996: PRODUCT FAMILY STANDARD FOR AUDIO, VIDEO, AUDIO-VISUAL AND ENTERTAINMENT LIGHTING CONTROL APPARATUS FOR PROFESSIONAL USE, PART 2. IMMUNITY, ENVIRONMENT CATEGORY E2 – COMMERCIAL AND LIGHT INDUSTRIAL (INCLUDING THEATRES) ENVIRONMENT.
K. ASTM E1573-18 THE MEASUREMENT AND REPORTING OF MASKING LEVELS USING A-WEIGHTED AND ONE-THIRD-OCTAVE-BAND SOUND PRESSURE LEVELS.
1.3. SUBMITTALS
A. PRODUCT DATA: SUBMIT FOR EACH SYSTEM COMPONENT SPECIFIED.
B. SHOP DRAWINGS: PROVIDE THE SYSTEM DESIGN ON AN ARCHITECTURAL FLOOR PLAN SHOWING THE QUANTITY, TYPE AND LOCATION OF COMPONENTS, CABLING AND ACCESSORIES.
C. SYSTEM OVERVIEW: PROVIDE A SYSTEM SUMMARY INCLUDING A) THE TOTAL NUMBER OF LOUDSPEAKERS, B) THE TOTAL NUMBER OF LOCAL CONTROL ZONES, AND C) THE MEAN, MAXIMUM AND MINIMUM NUMBER OF LOUDSPEAKERS PER LOCAL CONTROL ZONE.
1.4. CLOSEOUT SUBMITTALS
A. WARRANTY DOCUMENTATION. PROVIDE WARRANTY DOCUMENTATION, WITH START DATE(S) AND SERVICE CONTACT(S).
B. RECORD DOCUMENTATION: PROVIDE THE AS-BUILT SYSTEM DESIGN ON AN ARCHITECTURAL FLOOR PLAN SHOWING THE QUANTITY, TYPE AND LOCATION OF COMPONENTS, CABLING AND ACCESSORIES.
C. SYSTEM REPORTS:
1. PROVIDE REPORTS IN ELECTRONIC FORM.
2. REPORT AN INVENTORY OF ELECTRONIC SYSTEM COMPONENTS, INCLUDING MODEL NUMBER, SERIAL NUMBER, AND FIRMWARE VERSION.
3. REPORT THE VERIFIED QUANTITY OF SPEAKERS INSTALLED PER LOCAL CONTROL ZONE.
4. REPORT ALL SYSTEM SETTINGS.
5. REPORT TESTING AND COMMISSIONING DATA.
D. SYSTEM SETTINGS BACKUP: PROVIDE AN ELECTRONIC BACKUP FILE OF ALL SYSTEM SETTINGS.
E. SECURITY ITEMS:
1. PROVIDE ONE SET OF KEYS FOR EACH LOCKED EQUIPMENT ENCLOSURE.
2. PROVIDE PASSWORDS TO ACCESS CONTROL FUNCTIONS FOR HARDWARE AND SOFTWARE USER INTERFACES.
1.5. QUALITY ASSURANCE
A. OBTAIN REQUIRED PERMITS.
B. FOLLOW APPLICABLE CODES, INCLUDING REGULATORY TESTING AND CERTIFICATIONS.
C. SOURCE ALL SOUND MASKING EQUIPMENT FROM A SINGLE SUPPLIER.
D. SOURCE SOUND MASKING EQUIPMENT FROM A MANUFACTURER WITH A MINIMUM OF 10 YEARS EXPERIENCE MANUFACTURING SOUND MASKING SYSTEMS.
E. HAVE THE SYSTEM DESIGNED BY AN AUTHORIZED MANUFACTURER REPRESENTATIVE.
F. ENSURE THE INSTALLATION CONTRACTOR HAS RECEIVED INSTRUCTION ON THE SPECIFIED PRODUCTS.
G. HAVE THE SYSTEM CONFIGURED AND COMMISSIONED BY AN AUTHORIZED MANUFACTURER REPRESENTATIVE OR THEIR APPROVED CONTRACTOR.
H. ENSURE SUPPLEMENTARY MATERIALS MEET APPLICABLE STANDARDS.
1.6. DELIVERY, STORAGE AND HANDLING
A. PROTECT EQUIPMENT FROM MOISTURE DURING SHIPPING, STORAGE AND HANDLING.
B. DELIVER IN MANUFACTURER'S ORIGINAL UNOPENED AND UNDAMAGED PACKAGES WITH MANUFACTURER'S LABELS LEGIBLE AND INTACT.
C. INSPECT MANUFACTURER'S PACKAGES UPON RECEIPT.
D. HANDLE PACKAGES CAREFULLY.
1.7. WARRANTY
A. PROVIDE A WRITTEN PRODUCT WARRANTY COVERING SOUND MASKING COMPONENTS FOR DEFECTS IN PARTS OR ASSEMBLY FOR A 5-YEAR PERIOD FROM DATE OF SYSTEM STARTUP.
B. PROVIDE A WRITTEN 1-YEAR INSTALLATION WARRANTY.

2. PART TWO – PRODUCTS
2.1. MANUFACTURERS
A. K.R. MOELLER ASSOCIATES LTD.; 3-1050 PACHINO COURT, BURLINGTON, ONTARIO L7L 6B9 CANADA. TOLL FREE: 866 LOGISON (1-866-564-4766). TEL: (905) 332-1730. FAX: (905) 332-8480. EMAIL: INFO@LOGISON.COM. WEB: http://www.logison.com" WWW.LOGISON.COM
B. SUBSTITUTION NOT PERMITTED.
2.2. REGULATORY TESTING AND CERTIFICATIONS
A. PROVIDE SYSTEM COMPONENTS CONFORMING TO AND LABELLED FOR:
1. UNITED STATES.
2. SAFETY AND ELECTRICAL: UL 6500.
3. PLENUM RATED COMPONENTS: UL 2043.
4. PLENUM RATED CABLING: UL CL3P/CMP 75C.
5. ELECTROMAGNETIC INTERFERENCE (EMI): FCC – PART 15, SUBPART B, CLASS A.
6. HEAVY METALS: ROHS.
7. LOW VOLTAGE POWER SUPPLIES: UL 1310.
2.3. DESIGN AND PERFORMANCE REQUIREMENTS
A. SYSTEM ARCHITECTURE
1. PROVIDE A NETWORKED-DECENTRALIZED SYSTEM WITH ADDRESSABLE MASKING DEVICES INSTALLED ALONGSIDE THE LOUDSPEAKERS THROUGHOUT THE SYSTEM AREA.
B. SYSTEM DESIGN
1. DESIGN SYSTEM IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DESIGN SYSTEM TO COVER THE FOLLOWING SPACES: LOBBY, TRANSACTION ROOMS, FR ROOM, CORRIDORS, GUIDANCE OFFICE, RESTROOMS, PANTRY, MEETING ROOM, COLLABORATION ROOM, FOCUS ROOM AND OPEN AREAS.
3. DESIGN LOCAL CONTROL ZONES BASED ON COMMON ACOUSTICAL CONDITIONS, INCLUDING SPACE TYPE, OCCUPANT FUNCTION AND INSTALLATION METHOD.
4. DO NOT EXCEED THREE (3) LOUDSPEAKERS PER ZONE.
C. SYSTEM CONTROL
1. PROVIDE DIGITAL CONTROLS FOR ALL SYSTEM SETTINGS.
2. PROVIDE A NETWORKED USER INTERFACE FOR CONTROLLING AND REVIEWING ALL SYSTEM SETTINGS.
D. MASKING SOUND GENERATION
1. PROVIDE A SOUND MASKING GENERATOR FOR EACH LOCAL CONTROL ZONE.
2. PROVIDE A RANDOM MASKING SOUND GENERATOR. ALTERNATIVELY, PROVIDE A PSEUDO-RANDOM GENERATOR WITH A CYCLE EXCEEDING 24 HOURS AND NO NOTICEABLE REPETITIVE PATTERN.
E. SOUND MASKING CONTROL
1. PROVIDE EACH LOCAL CONTROL ZONE WITH INDEPENDENT CONTROL OVER THE SOUND MASKING SIGNAL, INCLUDING:
a. AN EQUALIZER WITH AT LEAST 19 THIRD-OCTAVE BANDS FROM 100 TO 6,300 HZ.
b. A VOLUME CONTROL WITH 0.5 DBA INCREMENTS OVER A RANGE OF 35 TO 85 DBA, MEASURED AT A DISTANCE OF ONE METER.
F. SOUND MASKING COMMISSIONING AND TUNING
1. PROVIDE AUTOMATED FIELD TUNING OF MASKING VOLUME AND FREQUENCY LEVELS
2. ADJUST EACH LOCAL CONTROL ZONE IN REAL TIME BASED ON SITE MEASUREMENTS TO MEET PERFORMANCE TARGETS SET-OUT IN SECTION 3.4.C.
G. SOUND MASKING TIMER
1. PROVIDE A TIMER TO ADJUST SOUND MASKING VOLUME ACCORDING TO A PROGRAMMED SCHEDULE.
2. PROVIDE ONE (1) INDIVIDUALLY PROGRAMMABLE TIMER ZONE.
3. ALLOW EACH LOCAL CONTROL ZONE TO BE INDIVIDUALLY ASSIGNED TO A TIMER ZONE.
4. ALLOW UNIQUE SCHEDULES FOR EACH DAY OF THE WEEK.
5. ALLOW VARIABLE RATES OF VOLUME ADJUSTMENT FOR EACH SCHEDULED CHANGE.
6. PROVIDE CALENDAR-BASED PROGRAMMING.
7. PROVIDE PROGRAMMABLE DAYLIGHT SAVING TIME (DST) ADJUSTMENTS.
8. PROVIDE AN ACCLIMATIZATION FUNCTION TO GRADUALLY INCREASE THE MASKING VOLUME OVER A PERIOD OF TIME, ACCORDING TO A PROGRAMMED SCHEDULE AND WITH INDEPENDENT SCHEDULES IN EACH TIMER ZONE. ACTIVATE IF SYSTEM STARTUP OCCURS POST-OCCUPANCY.
H. PAGING AND BACKGROUND MUSIC ("AUDIO")
1. PROVIDE ABILITY TO BROADCAST AUDIO.
2. ALLOW EACH LOCAL CONTROL ZONE TO BE INDIVIDUALLY ASSIGNED TO AN AUDIO ZONE.
3. PROVIDE EACH MASKING DEVICE WITH INDEPENDENT CONTROL OVER THE AUDIO SIGNAL, INCLUDING:
a. AN EQUALIZER WITH AT LEAST 8 OCTAVE BANDS FROM 63 TO 8,000 HZ.
b. A VOLUME CONTROL WITH 0.5 DBA INCREMENTS OVER A RANGE OF 35 TO 85 DBA, MEASURED AT A DISTANCE OF ONE METER.
4. PROVIDE OPTION TO BROADCAST AUDIO WITH OR WITHOUT INTERRUPTION OF THE MASKING SOUND.
I. SYSTEM DIAGNOSTICS
1. INCLUDE THE CAPABILITY OF IDENTIFYING MASKING DEVICES THAT ARE NOT FUNCTIONING.
J. SYSTEM REPORTING
1. PROVIDE A USER INTERFACE FOR READING AND DISPLAYING ALL CURRENT SYSTEM SETTINGS.
2. INCLUDE THE ABILITY TO GENERATE DETAILED REPORTS OF ALL SYSTEM SETTINGS.
K. PHYSICAL AND ELECTRONIC SECURITY
1. HOUSE BELOW-CEILING ELECTRONIC COMPONENTS IN A LOCKED METAL ENCLOSURE.
2. PASSWORD PROTECT ACCESS TO SYSTEM CONTROL FUNCTIONS.
3. ALLOW ALL SETTINGS TO BE BACKED UP TO AN ELECTRONIC STORAGE MEDIUM.

3. PART THREE – EXECUTION
3.1. EXAMINATION
A. ENSURE THAT THE SITE IS AT A STAGE SUITABLE FOR THE SYSTEM INSTALLATION.
B. ENSURE THAT THE SITE IS CONSTRUCTED ACCORDING TO PLANS INCLUDING WALL LOCATIONS, CEILING TYPES AND PLENUM BARRIERS.
C. ENSURE PLANNED POWER SOURCES HAVE BEEN PROVIDED.
D. ENSURE PLANNED SPACE IS AVAILABLE FOR CENTRALLY LOCATED COMPONENTS.
E. ENSURE THIRD-PARTY COMPONENTS INTERFACING WITH THE SYSTEM HAVE BEEN PROVIDED.
3.2. INSTALLATION
A. FOLLOW MANUFACTURER'S INSTALLATION MANUAL.
B. FOLLOW THE SYSTEM DESIGN FOR LOCATION OF SYSTEM COMPONENTS AND WIRING.
C. RECORD ANY NECESSARY CHANGES TO THE SYSTEM DESIGN ON THE PLAN.
3.3. SITE QUALITY CONTROL
A. ENSURE PLENUM HEIGHT MEETS MANUFACTURER'S MINIMUM SPECIFICATIONS.
B. ENSURE THE DISTANCE BETWEEN THE TOP OF THE LOUDSPEAKER AND THE DECK MEETS MANUFACTURER'S MINIMUM SPECIFICATIONS.
C. SUSPEND LOUDSPEAKERS IN A LEVEL MANNER.
D. MINIMIZE OBSTRUCTIONS TO LOUDSPEAKERS.
E. SUPPORT CABLES PROPERLY IN THE CEILING.
F. SECURELY TERMINATE CABLES.
3.4. SYSTEM STARTUP AND COMMISSIONING
A. FOLLOW MANUFACTURER'S MANUALS FOR SYSTEM STARTUP.
B. FOLLOW MANUFACTURER'S MANUALS FOR CONFIGURATION OF SYSTEM, ACCORDING TO OWNER REQUIREMENTS, INCLUDING TIMER, AUDIO, DIAGNOSTIC, AND SECURITY FUNCTIONS.
C. SOUND MASKING COMMISSIONING.
1. SET EACH CONTROL ZONE TO THE APPROPRIATE OVERALL VOLUME.

AREA	OVERALL VOLUME (DBA)
OPEN OFFICE	47.0
PRIVATE OFFICE	44.0
MEETING ROOM	43.0
CORRIDOR	47.0
RECEPTION AREA	47.0

2. SET EACH CONTROL ZONE TO THE SOUND MASKING CURVE.

SOUND MASKING CURVE (45.0 DBA OVERALL VOLUME)

BAND CENTER FREQUENCY (HZ)	TARGET BAND LEVEL (DB)
100	46.9
125	45.9
160	44.7
200	43.9
250	42.7
315	41.4
400	40.4
500	38.9
630	37.4
800	35.4
1000	33.7
1250	31.4
1600	29.4
2000	27.4
2500	24.9
3150	22.4
4000	19.4
5000	16.4

SOURCE: NATIONAL RESEARCH COUNCIL OF CANADA SOUND MASKING CURVE FROM 100-5000 HZ. FOR CURVES AT DIFFERENT OVERALL VOLUMES, ADJUST TARGET BAND LEVELS BY 1 DB FOR EACH 1 DBA CHANGE IN OVERALL VOLUME.

3. COMMISSION THE SOUND MASKING SYSTEM WITH
a. CEILINGS FULLY INSTALLED,
b. ALL FURNISHINGS IN PLACE,
c. MECHANICAL SYSTEMS OPERATING AT NORMAL DAYTIME LEVELS PROVIDED THE EXISTING SOUNDS DO NOT INTERFERE WITH SYSTEM COMMISSIONING.
d. IN THE EVENT OF INTERFERENCE, COMMISSION THE SOUND MASKING SYSTEM WITH THE MECHANICAL SYSTEM OFF.
e. NO OCCUPANT NOISE DURING MEASUREMENTS.
4. SELECT A COMMISSIONING LOCATION WITHIN EACH LOCAL CONTROL ZONE THAT REFLECTS THE SEATED POSITION OF AN OCCUPANT IN OPEN PLAN AREAS OR THAT OF THE PRIMARY OCCUPANT IN A CLOSED ROOM.
a. MARK THE COMMISSIONING LOCATION PRECISELY ON THE AS-BUILT SYSTEM DESIGN.
b. ASSIGN THE COMMISSIONING LOCATION AN ALPHANUMERIC ID.
5. CONDUCT THIRD-OCTAVE SOUND LEVEL MEASUREMENTS AS PER ASTM E1573-18:
a. USE AN ANSI TYPE 1 THIRD-OCTAVE SOUND LEVEL ANALYZER.
b. SET ANALYZER FOR A-WEIGHTED EQUIVALENT AVERAGE LEVEL (LEQ).
c. SET ANALYZER FOR FAST RESPONSE.
d. HOLD THE ANALYZER MICROPHONE ORIENTED UPWARDS AT A HEIGHT BETWEEN 1.2 TO 1.4 METERS (4 TO 4.7 FEET) FROM THE FLOOR.
e. KEEP THE ANALYZER AT LEAST 1 METER (3.3 FEET) AWAY FROM VERTICAL OR HORIZONTAL SURFACES, TO THE EXTENT POSSIBLE.
f. MOVE THE ANALYZER THROUGH A SLOW HORIZONTAL ARC OF APPROXIMATELY 1 METER (3.3 FEET), IF POSSIBLE WHILE CONFORMING TO 3.4.C.5.E, BUT IN ANY EVENT NO LESS THAN 60 CENTIMETERS (2 FEET) DURING THE MEASUREMENT PERIOD.
g. MEASURE FOR AT LEAST 15 SECONDS.
6. CONDUCT A THIRD-OCTAVE SOUND LEVEL MEASUREMENT WITH THE SOUND MASKING DEACTIVATED TO DOCUMENT EXISTING CONDITIONS AT EACH COMMISSIONING LOCATION.
a. IDENTIFY ANY THIRD-OCTAVE BAND IN EXISTING CONDITIONS THAT EXCEEDS THE TARGET BAND LEVEL FOR THAT LOCATION.
7. USING AUTOMATED FIELD TUNING, ADJUST THE SOUND MASKING AT EACH COMMISSIONING LOCATION TO CONFORM TO THE SOUND MASKING CURVE AND OVERALL VOLUME FOR THAT LOCATION, SUCH THAT:
a. THE VOLUME IN EACH THIRD-OCTAVE BAND FROM 100 HZ AND 5000 HZ INCLUSIVE IS WITHIN PLUS OR MINUS TWO DECIBELS (+/- 2 DB) OF THE TARGET BAND LEVEL.
i. UNLESS EXISTING CONDITIONS EXCEED THE MAXIMUM LIMIT FOR THE BAND.
b. THE OVERALL VOLUME IS WITHIN PLUS OR MINUS ONE HALF DECIBEL (+/- 0.5 DBA) OF THE SPECIFIED OVERALL VOLUME.
i. UNLESS EXISTING CONDITIONS CAUSE OVERALL VOLUME TO EXCEED TOLERANCES.
8. IF THE SOUND MASKING CURVE AND OVERALL VOLUME REQUIREMENTS ARE NOT MET AT A COMMISSIONING LOCATION, MODIFY THE SYSTEM DESIGN, INSTALLATION OR COMMISSIONING, AT THE SUPPLIER'S EXPENSE, UNTIL CONFORMANCE IS ACHIEVED UNLESS DEVIATION CAN BE SHOWN TO BE DUE TO EXISTING CONDITIONS.
D. PROVIDE AN ELECTRONIC REPORT OF TESTING AND COMMISSIONING DATA, INCLUDING:
1. AS-BUILT SYSTEM DESIGN(S) SHOWING ALL COMMISSIONING LOCATIONS WITH ID REFERENCES AND LOCAL CONTROL ZONES.
2. A TABLE AND GRAPH OF COMMISSIONED SOUND MASKING MEASUREMENTS FOR EACH COMMISSIONING LOCATION, INCLUDING:
a. THIRD-OCTAVE LEVELS FOR BANDS WITHIN THE SOUND MASKING CURVE.
b. OVERALL VOLUME LEVEL.
c. THE SOUND MASKING CURVE, OVERALL VOLUME AND TOLERANCES SPECIFIED FOR THAT LOCATION.
3. EXPLANATION OF ANY SOUND MASKING MEASUREMENTS WHICH EXCEED TOLERANCES FOR THE SOUND MASKING CURVE OR OVERALL VOLUME WITH A TABLE AND GRAPH OF EXISTING CONDITIONS MEASUREMENTS FOR EACH SUCH COMMISSIONING LOCATION, INCLUDING:
a. THIRD-OCTAVE LEVELS FOR BANDS WITHIN THE SOUND MASKING CURVE.
b. OVERALL VOLUME LEVEL.
3.5. CLEANING AND WASTE MANAGEMENT
A. REMOVE EMPTY PACKAGING AND OTHER MATERIAL WASTE.
B. CLEAN SYSTEM COMPONENTS WHERE REQUIRED.
3.6. CLOSEOUT ACTIVITIES
A. DEMONSTRATE OPERATIONAL SYSTEM TO OWNER REPRESENTATIVE.
B. REVIEW CLOSEOUT SUBMITTALS WITH OWNER REPRESENTATIVE.
C. TRAIN OWNER'S REPRESENTATIVE TO MAINTAIN SYSTEM AND USE ANY OCCUPANT CONTROLS OR INTERFACES, AS REQUIRED.
D. REVIEW SERVICE AND SUPPORT CONTACTS.
3.7. ATTACHMENTS
A. SYSTEM DESIGN: THE SYSTEM DESIGN ON A FLOOR PLAN SHOWING THE QUANTITY AND LOCATION OF SPEAKERS AND THE SIZE AND LOCATION OF LOCAL CONTROL ZONES.

ABBREVIATIONS

A

ABV	ABOVE
A/C	AIR CONDITIONING
ACOUS	ACOUSTICAL
ACT	ACOUSTICLA CEILING TILE
ADD'L	ADDITIONAL
ADJ	ADJUSTABLE
ADH	ADHESIVE
AFF	ABOVE FINISHED FLOOR
AHJ	AUTHORITY HAVING JURISDICTION
AHU	AIR HANDLER UNIT
ALT	ALTERNATE
ALUM	ALUMINUM
ANOD	ANODIZED
APPL	APPLIANCE
ARCH	ARCHITECTURAL
AUTO	AUTOMATIC
AVG	AVERAGE

B

BD	BOARD
BLDG	BUILDING
BLKG	BLOCKING
BM	BEAM
B.O. B/O	BOTTOM OF BY OTHERS

C

CAB	CABINET
CALC	CALCULATION
CG	CORNER GUARD
CJ	CONTROL JOINT
CL	CENTERLINE
CLG	CEILING
CLR	CLEAR
CM	CONSTRUCTION MANAGER
CMU	CONCRETE MASONRY UNIT
CO	CLEAN OUT
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS
CONST	CONSTRUCTION
CPT	CARPET

D

D	DEEP
DEMO	DEMOLITION
DEPT	DEPARTMENT
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIM	DIMENSION
DISP	DISPENSER
DIV	DIVISION
DN	DOWN
DR	DOOR
DTL	DETAIL
DW	DISHWASHER
DWG	DRAWING

E

E	EAST
EA	EACH
EL	ELEVATION
ELEC	ELECTRICAL
ELEV	ELEVATION or ELEVATOR
EQ	EQUAL
EQUIP	EQUIMPENT
EXIST/EXG	EXISTING
EXP JT	EXPANSION JOINT
EXT	EXTERIOR

F

FA	FIRE ALARM
FD	FLOOR DRAIN
FEC	FIRE EXTINGUISHER CABINET
FHC	FIRE HOSE CABINET
FIN	FINISH
FIXT	FIXTURE
FL	FLOOR
FO	FINISHED OPENING
FTR	FIRE TREATED

G

GA	GAUGE
GC	GENERAL CONTRACTOR
GFRG	GLASS-FIBER REINFORCED GYPSUM
GL	GLASS
GWB	GYPSUM WALL BOARD

H

H	HIGH
HC	HOLLOW CORE
HDW	HARDWARE
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HR	HR
HT	HEIGHT
HVAC	HEATING, VENTILATING & AIR CONDITIOINING

I

ID	INSIDE DIAMETER
IN	INCH
INFO	INFORMATION
INT	INTERIOR

J

JAN	JANITOR
JC	JANITOR CLOSET
JT	JOINT

L

L	LENGTH
LAM	LAMINATED
LAV	LAVATORY
LB	POUND
LT	LIGHT
LVR	LOUVER

M

MAX	MAXIMUM
MANUF	MANUFACTURER
MDF	MEDIUM DENSITY FIBERBOARD
MECH	MECHANICAL
MED	MEDIUM
MEP	MECHANICAL/ELECTRICAL/ PLUMBING
MFR	MANUFACTURER
MISC	MISCELLANEOUS
MIN	MINIMUM or MINUTE
MO	MASONRY OPENING
MTL	METAL
MWK	MILLWORK

N

N	NORTH
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE

O

OC	ON CENTER
OD	OUTSIDE DIAMETER or OUTSIDE DIMENSION
OH	OVERHEAD
OPG	OPENING
OPP	OPPOSITE or OPPOSITE
ORIG	ORIGINAL
OZ	OUNCE

P

PLAM	PLASTIC LAMINATE
PLYWD	PLYWOOD
PT	PAINT
PTD	PAINTED
PTN	PARTITION
PVC	POLYVINYL CHLORIDE

R

R	RADIUS or RISER
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
REF	REFERENCE or REFRIGERATOR
REQ'D	REQUIRED
RM	ROOM
RO	ROUGH OPENING
RTU	ROOF TOP UNIT

S

S	SOUTH
SCH	SCHEDULED
SD	SMOKE DETECTOR
SECT	SECTION
SIM	SIMILAR
SHT	SHEET
SPEC	SPRCIFICATION or SPECIFIED
SPK	SPRINKLER
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
STC	SOUND TRANSMISSION COEFFICIENT
STL	STEEL
STR	STRUCTURAL

T

T	TREAD
TEL	TELEPHONE
TEMP	TEMPORARY
TLT	TOILET
TO	TOP OF
TOC	TOP OF CONCRETE
TOS	TOP OF STEEL or TOP OF SLAB
TYP	TYPICAL

U

UL	UNDERWRITERS LABORATORY
UNO	UNLESS NOTED OTHERWISE
U/S	UNDERSIDE

V

VB	VAPOR BARRIER
VERT	VERTICAL
VEST	VESTIBULE
VIF	VERIFY IN FIELD

W

W	WIDE or WEST
WC	WATER CLOSET
WD	WOOD
W/	WITH
WIN	WINDOW
W/O	WITHOUT
WP	WATERPROOF or WATER PROOFING
WR	WEATHER RESISTANT

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL
R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210

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F 617-423-7501
W www.vanderweil.com

Seals:

REGISTERED ARCHITECT
CERTIFICATE NO.
69323
FREDERIC H. GROSSFELD
DATE SIGNED:
ARIZONA, U.S.A.

12/20/2024

General Notes:

Project Title:
Fidelity INVESTMENTS
Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
	Issued for Permit & Construction	23 DEC 24

Key Plan:
Project North
True North

Project No.: K2812554 R06

Drawing Sheet Title:
INTERIOR SPECIFICATIONS & ABBREVIATIONS

Drawing Sheet Number:
ID-003

Owner's Branch No.:
134

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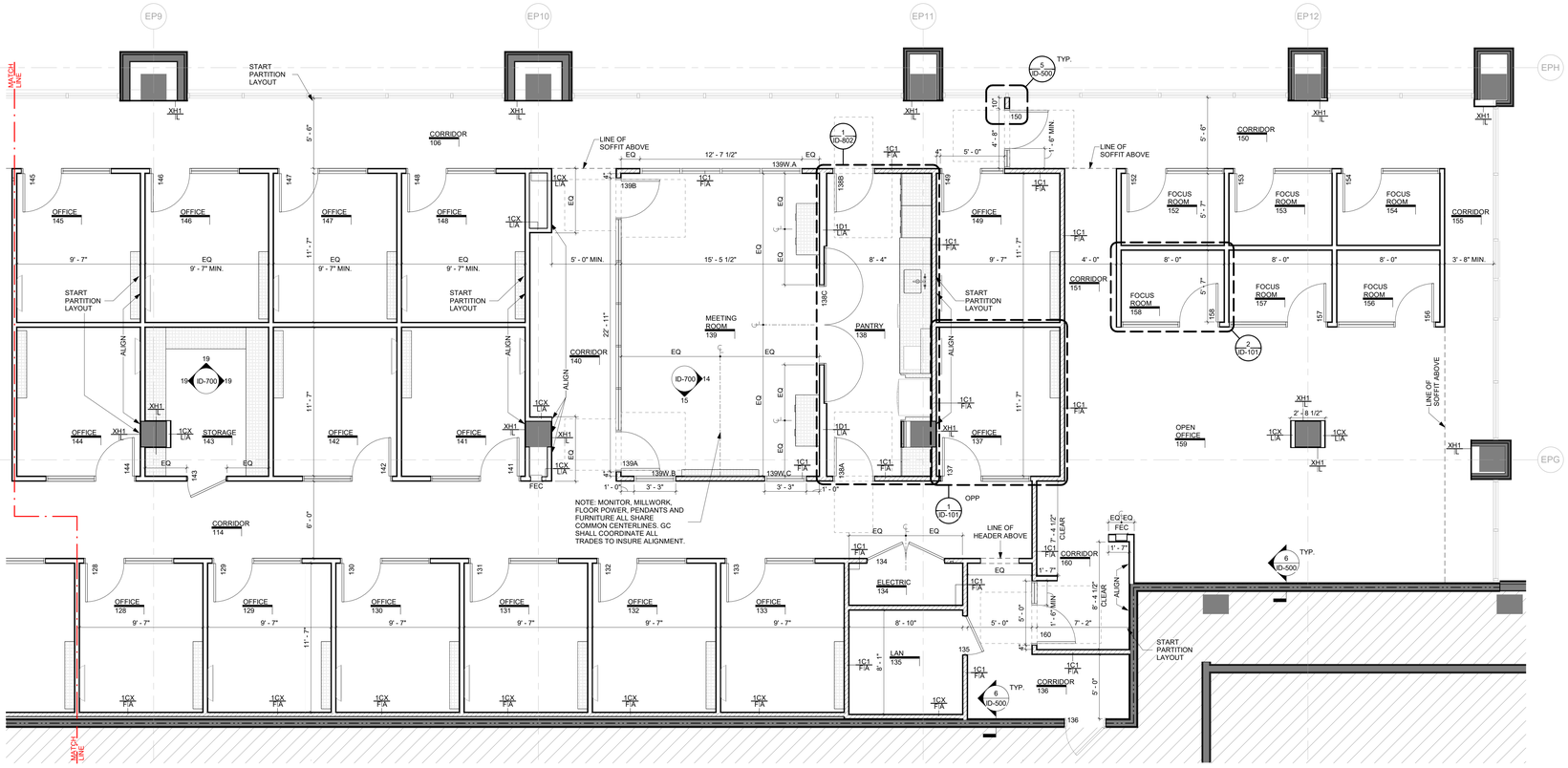


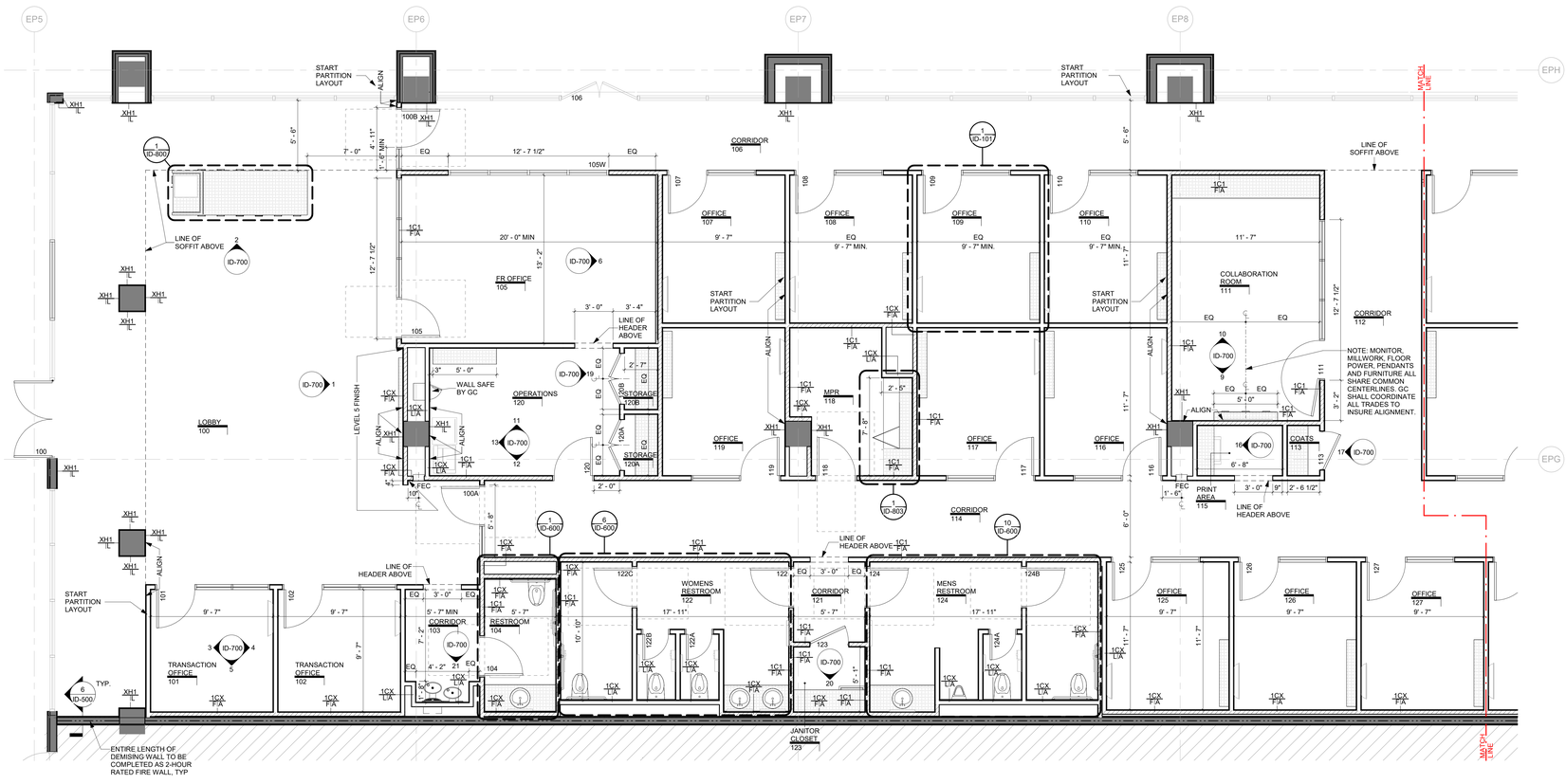
GENERAL PARTITION PLAN NOTES

1. ALL PARTITIONS SHALL BE TYPE 1C1 L/A WITH STEEL STUD FRAMING EXTENDED TO UNDERSIDE OF SLAB ABOVE AND 5/8" GYPSUM BOARD TO 6" ABOVE FINISHED CEILING, UNLESS NOTED OTHERWISE. ALL NEW PARTITIONS SHALL HAVE SOUND ATTENUATION BLANKETS AND ACOUSTICAL SEALANT AS REQUIRED.
2. PROVIDE LEVEL 4 GYPSUM BOARD FINISH THROUGHOUT, TYPICAL. PROVIDE LEVEL 5 GWB FINISH AT AREAS IDENTIFIED FOR FIDELITY BRANDING GRAPHICS.
3. VERIFY ALL FIELD DIMENSIONS AND INFORM ARCHITECT OF ANY DISCREPANCIES BEFORE BEGINNING CONSTRUCTION.
4. NEW CONSTRUCTION SHOWN ALIGNED WITH EXISTING CONSTRUCTION SHALL BE FLUSH AND SMOOTH.
5. NEW CONSTRUCTION ABUTTING EXISTING PERIMETER WINDOW MULLION AND SILL SHALL CONFORM TO BUILDING REQUIREMENTS.
6. DIMENSIONS ARE FACE OF PARTITION TO FACE OF PARTITION, UNO.
7. TYPICAL FINISHED DOOR JAMB SHALL BE 4" FROM ADJACENT, PERPENDICULAR PARTITION, UNO.
8. DIMENSIONS NOTED AS "HOLD" INDICATE REQUIRED UNOBSTRUCTED DISTANCE FROM FINISH FACE TO FINISH FACE. DEVIATION GREATER THAN 1/4" WILL RESULT IN REJECTION OF WORK.
9. MAINTAIN REQUIRED ACOUSTICAL RATINGS WHEREVER PARTITIONS PENETRATING FINISHED CEILING ARE PIERCED BY CABLE TRAY, CONDUIT, DUCTS, PIPES, OR STEEL.
10. PROVIDE CONCEALED BLOCKING IN PARTITIONS TO SUPPORT WALL MOUNTED ASSEMBLIES INCLUDING, BUT NOT LIMITED TO, AV MONITORS, WALL STOPS, COAT HOOKS, SHELVING, COAT RODS AND SHELVES; CABINETRY, COUNTERS, DOOR FRAMES AND HEADERS; AND SUPPORT OF TRIM.
11. GYPSUM BOARD SOFFIT HEIGHT SHALL BE MEASURED FROM THE HIGH POINT OF THE PATCHED FLOOR SLAB IN THE SOFFIT AREA. ALL SOFFITS IN SAME ROOM OR ALONG SAME PASSAGEWAY SHALL ALIGN.
12. EXISTING GYPSUM BOARD PARTITIONS, COLUMN ENCLOSURES AND CEILING SURFACES TO REMAIN SHALL BE PATCHED, SANDED SMOOTH AND/OR SKIM-COATED TO YIELD A LIKE-NEW APPEARANCE AND PREPARE TO RECEIVE NEW SCHEDULED FINISH.
13. EXISTING FLOOR SLAB SHALL BE PATCHED, REPAIRED, REFINISHED, LEVELED AND SEALED AS REQUIRED FOR PROPER INSTALLATION OF FINISH FLOOR MATERIALS.
14. PATCH OR PROVIDE NEW APPROVED FIRESTOPPING ASSEMBLY AT ALL EXISTING AND NEW WALL AND/OR FLOOR PENETRATIONS AS REQUIRED. PENETRATIONS INCLUDE, BUT ARE NOT LIMITED TO, DUCTWORK, PIPEWAYS, CABLE TRAYS, AND CONDUIT RUNS.
15. PATCH, REPAIR AND REFINISH AS REQUIRED ANY DAMAGES IN FLOOR AND PARTITIONS LEFT FROM THE REMOVAL OF ELECTRICAL AND COMMUNICATION RECEPTACLES, LIGHT SWITCHES, THERMOSTATS, SECURITY DEVICES, ETC.
16. WHERE SCHEDULED PARTITION TYPE IS TO BE FINISHED WITH TILE, OMIT GYPSUM BOARD AND PROVIDE CEMENT BOARD TYPE PRODUCT. WHERE SCHEDULED PARTITION TYPE IS LOCATED IN AN AREA OF HIGH HUMIDITY OR INCIDENTAL MOISTURE, PROVIDE MOISTURE RESISTANT TYPE PRODUCT.
17. GYPSUM BOARD SHALL CONTINUE CLOSE TO FLOOR SLAB TO ALLOW FOR PROPER INSTALLATION OF 2 1/2" HIGH WALL BASE.

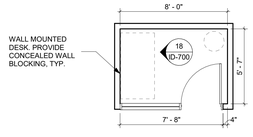
SYMBOLS LEGEND

- NEW CONSTRUCTION, REFER TO ID-500 FOR PARTITION TYPES
- EXISTING CONSTRUCTION TO REMAIN
- FULL HEIGHT PARTITION
- FULL HEIGHT PARTITION W/ BARRIER MESH
- 2 HR RATED PARTITION
- EXISTING DOOR FRAME AND HARDWARE TO REMAIN, UNO.
- NEW DOOR FRAME AND HARDWARE REFER TO ID-510
- 1C1 L/A — PARTITION TYPE IDENTIFICATION TAG REFER TO ID-500 LEGEND AND TYPES
- INDICATES MILLWORK ELEMENT. REFER TO NOTED ELEVATIONS FOR MILLWORK DIMENSIONS AND DETAILS.
- FINISHED WALL OPENING
- WALL MONITOR BY OWNER SHOWN FOR WALL BLOCKING COORDINATION.
- FEC — FIRE EXTINGUISHER CABINET; REFER TO SPEC 104000
- SAFE — WALL MOUNTED SAFE; REFER TO SPEC 110200
- MATCH LINE

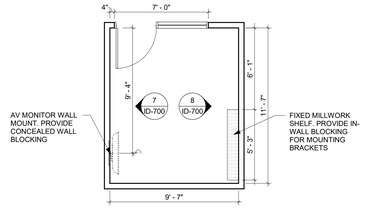
4 INTERIOR PARTITION PLAN - EAST
ID-101 SCALE: 1/4" = 1'-0"



3 INTERIOR PARTITION PLAN - WEST
ID-101 SCALE: 1/4" = 1'-0"



2 TYP. FOCUS ROOM
ID-101 SCALE: 1/4" = 1'-0"



1 TYP. OFFICE, PORTRAIT
ID-101 SCALE: 1/4" = 1'-0"

Jacobs
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Key Plan:

Project North
True North

Project No.: K2812554 R06

Drawing Sheet Title:
INTERIOR PARTITION PLAN

Drawing Sheet Number:
ID-101

Owner's Branch No.:
134

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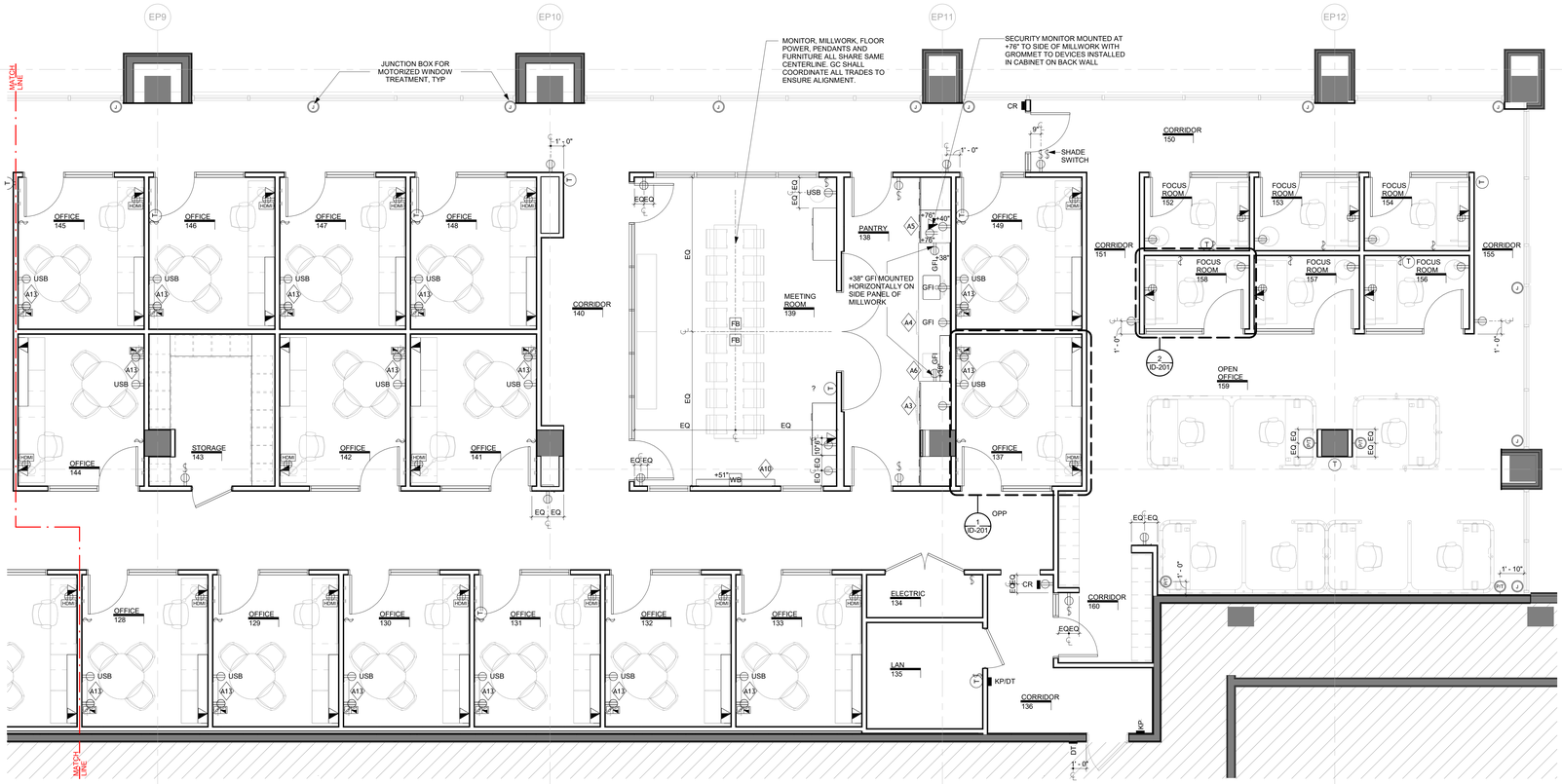
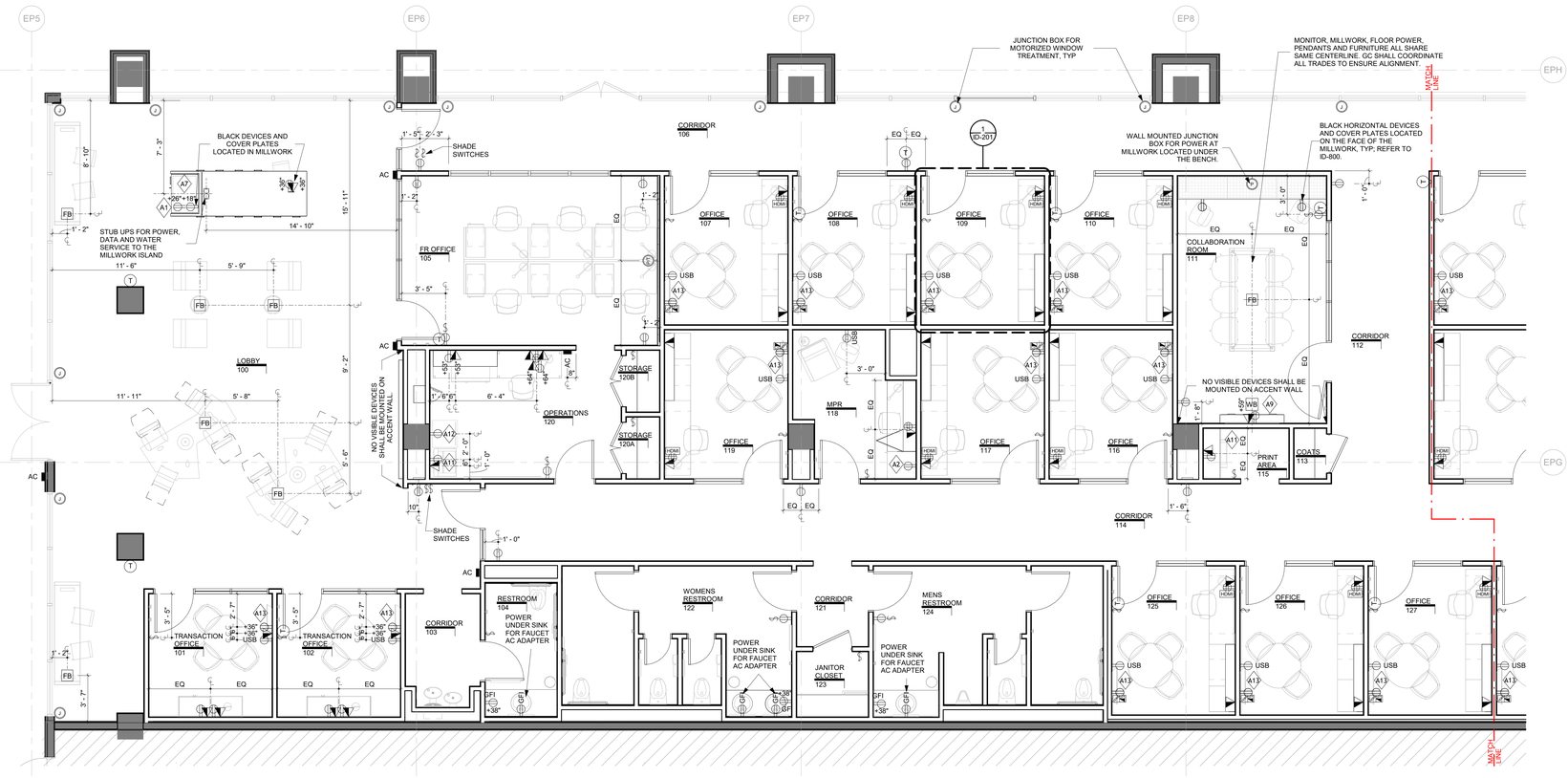


4 INTERIOR POWER & COMMUNICATION LOCATION PLAN - EAST

ID-201 SCALE: 1/4" = 1'-0"



3 INTERIOR POWER & COMMUNICATION LOCATION PLAN - WEST

ID-201 SCALE: 1/4" = 1'-0"

GENERAL NOTES

1. COORDINATE INSTALLATION OF CONDUIT, JUNCTION BOXES, PULL-STRINGS AND COVER PLATES WITH COMMUNICATIONS PROVIDER.
2. PROVIDE AND INSTALL ALL WORK IN STRICT ACCORDANCE WITH THE NATIONAL BOARD OF FIRE UNDERWRITERS, PUBLIC UTILITY COMPANIES, TELEPHONE COMPANIES, CABLE SUBSCRIPTION COMPANIES AND ALL OTHER AUTHORITIES HAVING JURISDICTION.
3. ALL NEW MATERIALS REQUIRED SHALL CONFORM WITH THE STANDARDS OF UNDERWRITERS LABORATORIES, INC. (UL) IN EVERY CONDITION WHERE SUCH A STANDARD HAD BEEN ESTABLISHED FOR THE PARTICULAR TYPE OF MATERIALS IN QUESTION.
4. ALL RECEPTACLE INSTALLATION SHALL CONFORM TO REQUIREMENTS SET FORTH BY THE AMERICANS WITH DISABILITIES ACT (ADA).
5. VERIFY ALL EQUIPMENT POWER REQUIREMENTS AND RECEPTACLE TYPES WITH EQUIPMENT MANUFACTURER(S) PRIOR TO POWER DISTRIBUTION AND RECEPTACLE INSTALLATION.
6. REFER TO 'ID'-SERIES DRAWINGS FOR POWER AND DATA LOCATIONS AND MOUNTING HEIGHTS. REFER TO 'E' SERIES DRAWINGS FOR SPECIFIC POWER INFORMATION.
7. ANY ELECTRICAL AND/OR COMMUNICATION RECEPTACLES SHOWN AS EXISTING IN HATCHED AREAS OF PLANS ARE TO REMAIN UNO.
8. COORDINATE INSTALLATION OF RECEPTACLES WITHIN MILLWORK TO ENSURE RECEPTACLE IS FLUSH WITH SURFACE OF MILLWORK FACE OR AS INDICATED IN DETAILS.
9. ALL RECEPTACLES, SWITCHES AND FACE PLATES SHALL BE WHITE, UNO. SPECIAL DEDICATION, DESIGNATED OR ISOLATED GROUND RECEPTACLES SHALL BE COLOR CODED.
10. REFER TO ID-001 FOR STANDARD MOUNTING HEIGHTS FOR RECETACLES, DATA DEVICES, SWITCHES, KEY PADS AND THERMOSTATS, UNO.
11. WALL RECEPTACLES SHALL NOT BE PLACED BACK TO BACK. STAGGER RECEPTACLES WITH A STUD BETWEEN THEM. REFER TO ID-001 FOR DIAGRAM.
12. ADJACENT WALL RECEPTACLES AND SWITCHES SHALL BE GANGED WHEN POSSIBLE WITH A COMMON FACE PLATE. IF RECEPTACLES CANNOT BE GANGED, THEY SHALL BE INSTALLED WITH A MINIMUM DISTANCE BETWEEN UNITS.
13. PROVIDE BLOCKING, JUNCTION BOXES, CONDUIT RUNS AND REQUIRED POWER FOR SECURITY DEVICES AS LOCATED ON PLANS. COORDINATE WITH SECURITY DRAWINGS AND SECURITY VENDOR.
14. ALL DIMENSIONS SHOWN ARE TO CENTERLINE OF RECEPTACLE OR GROUPS OF RECEPTACLES AND FINISH FACE OF PARTITIONS, UNO.
15. VERIFY RECEPTACLE HEIGHTS AND LOCATIONS WITH SPECIAL REQUIREMENTS OF EQUIPMENT PRIOR TO INSTALLATION.
16. WHERE ELECTRICAL OR COMMUNICATION RECEPTACLES OCCUR IN FIRE-RATED OR ACOUSTICALLY RATED CONSTRUCTION, PROVIDE JUNCTION BOX AND 1" CONDUIT STUBBED TO 6" ABOVE FINISHED CEILING WITH PULL STRING FOR COMMUNICATIONS PROVIDER.
17. REFER TO ID-001 FOR STANDARD MOUNTING HEIGHTS FOR RECETACLES, SWITCHES, KEY PADS AND THERMOSTATS, UNO.

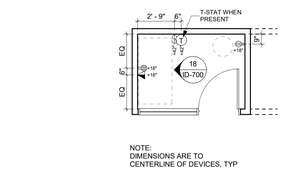
SYMBOLS LEGEND

REFER TO ENGINEERING DRAWINGS

SYMBOL	DESCRIPTION:	SYMBOL	DESCRIPTION:	SYMBOL	DESCRIPTION:
	DUPLEX RECEPTACLE	HDMI	HDMI CABLE: REFER TO ENGINEERING DRAWINGS	FDT	FLOOR MOUNTED POWER / DATA FURNITURE CONNECTION
USB	DUPLEX RECEPTACLE WITH USB PORTS	$	SWITCH / OCCUPANCY SENSOR	FP	WALL MOUNTED POWER FURNITURE CONNECTION
GFI	DUPLEX RECEPTACLE WITH GROUND FAULT INTERUPTER	AC	ACCESS CONTROL; REFER TO SECURITY DRAWINGS	FT	WALL MOUNTED TELE/DATA FURNITURE CONNECTION
	QUADRUPLEX RECEPTACLE	KP	KEY PAD; REFER TO SECURITY DRAWINGS	WB	WALL BOX; REFER TO ENGINEERING DRAWINGS
	VOICE/DATA RECEPTACLE	X	EQUIPMENT TAG	FB	FLOOR BOX; FINISH SHALL BE NICKEL
	DATA RECEPTACLE	J	JUNCTION BOX - ABOVE CEILING	CC	IN FLOOR CONDUIT STUB-UP
AV	AUDIO VISUAL JUNCTION BOX	J	WALL MOUNTED JUNCTION BOX		QUADRUPLEX / DUPLEX POKE-THROUGH
	VOICE/DATA/HDMI RECEPTACLE	T	THERMOSTAT		POWER / VOICE / DATA POKE-THROUGH

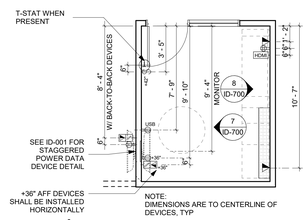
EQUIPMENT LEGEND

TAG	DESCRIPTION / REMARKS	MANUFACTURER	MODEL NUMBER	PROVIDE	INSTALL
A1	UNDERCOUNTER REFRIGERATOR - LOBBY ISLAND	SUMMIT	AL57G	GC	GC
A2	UNDERCOUNTER REFRIGERATOR - MPR	SUMMIT	AL55IF - PANEL READY	GC	GC
A3	REFRIGERATOR, FULL SIZE - PANTRY	KITCHENAID	KRFC302ESS	GC	GC
A4	DISHWASHER - PANTRY	BOSCH	SGX78C55UC	GC	GC
A5	MICROWAVE W/ TRIM KIT - PANTRY	GENERAL ELECTRIC	PEM31SFSS	GC	GC
A6	COFFEE MAKER - PANTRY	MARS	FLAVIA BARISTA	OTHER	OTHER
A7	COFFEE MAKER - LOBBY ISLAND	MARS DRINKS	FLAVIA CREATION 500	OTHER	OTHER
A9	LED DISPLAY AND MOUNT - 65" - COLLAB	REFER TO AV DRAWINGS		OTHER	OTHER
A10	LED DISPLAY AND MOUNT - 75" - MEETING ROOM	REFER TO AV DRAWINGS		OTHER	OTHER
A11	COLOR MULTI FUNCTION PRINTER / COPIER	LEXMARK	C792DTE	OTHER	OTHER
A12	SHREDDER	DESTROYIT	4005CC	OTHER	OTHER
A13	32" MONITOR AND ARM	REFER TO AV DRAWINGS		OTHER	OTHER



2 TYP. FOCUS ROOM

ID-201 SCALE: 1/4" = 1'-0"



1 TYP. OFFICE, PORTRAIT

ID-201 SCALE: 1/4" = 1'-0"

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9th Floor, Suite 900
Philadelphia, PA 19103

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Key Plan:

Project North
True North

Project No.: K2812554 R06

Drawing Sheet Title:

INTERIOR POWER AND COMMUNICATION LOCATION PLAN

Drawing Sheet Number:

ID-201

Owner's Branch No.:

134

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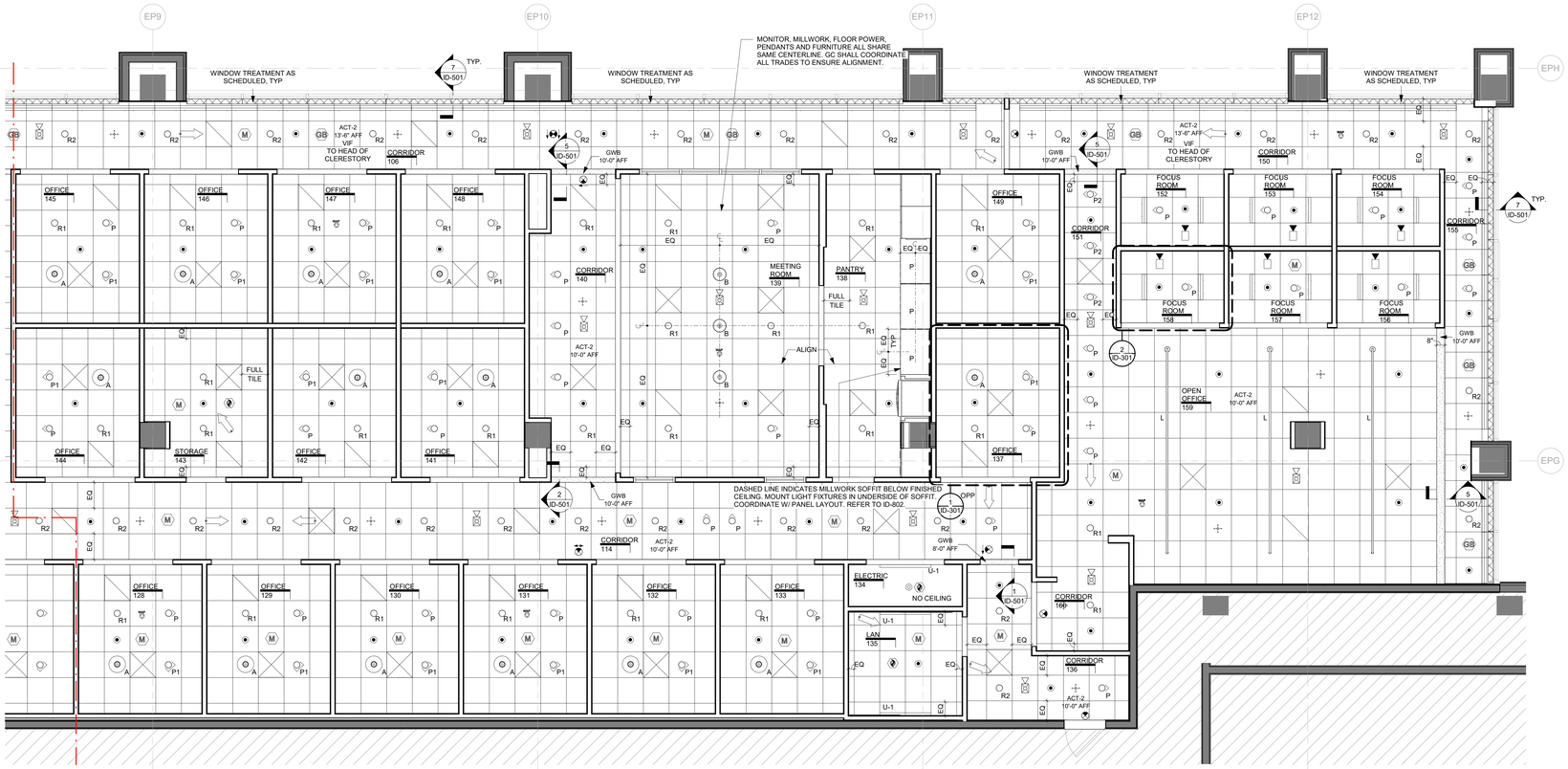
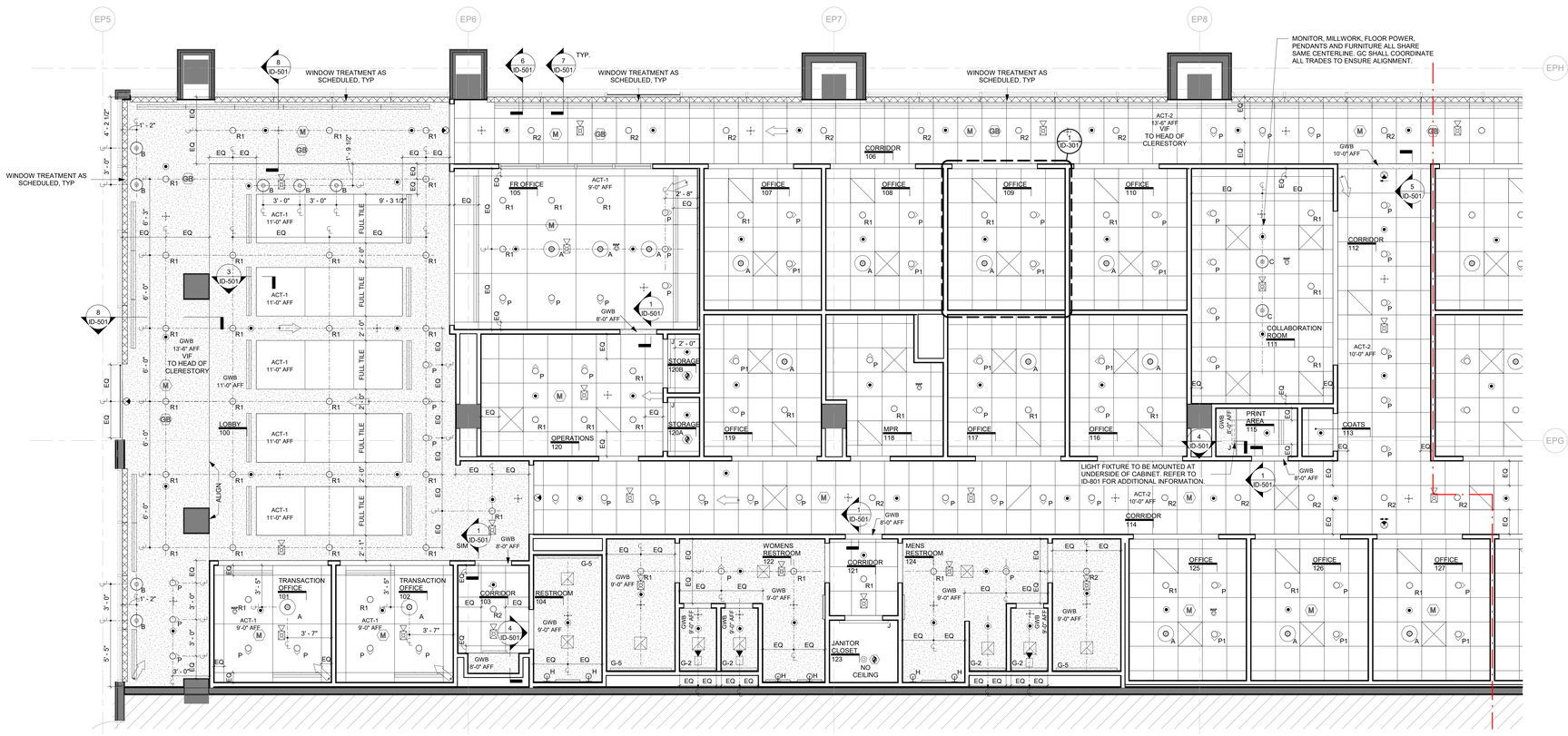


4 INTERIOR REFLECTED CEILING PLAN - EAST
ID-301 SCALE: 1/4" = 1'-0"



3 INTERIOR REFLECTED CEILING PLAN - WEST
ID-301 SCALE: 1/4" = 1'-0"

GENERAL RCP NOTES

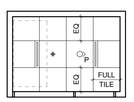
1. CEILINGS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS, LOCAL BUILDING CODES AND ALL OTHER APPLICABLE CODES. PROVIDE LATERAL BRACING AS REQUIRED.
2. ALL CEILING SHALL BE ACT-2 AND MOUNTED AT 9'-0" AFF, UNO.
3. VERIFY ALL CEILING HEIGHTS AND CEILING PLENUM CLEARANCES TO ASSURE FINISHED CEILING HEIGHTS CALLED OUT ON JACOBS DOCUMENTS. ANY DISCREPANCIES SHALL BE BROUGHT TO ARCHITECT'S ATTENTION IMMEDIATELY, PRIOR TO COMMENCEMENT OF WORK.
4. ANY CONFLICTS OR DISCREPANCIES AMONG FIXTURES, FIRE AND SMOKE DETECTION DEVICES, HVAC OR OTHER CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF JACOBS FOR CLARIFICATION PRIOR TO INSTALLATION.
5. ALL DIMENSIONS ARE TO CENTERLINE OF FIXTURE, UNO.
6. ALL CEILING GRIDS SHALL BE CENTERED IN SPACES WITH EQUAL TILES AT OPPOSITE SIDES AS SHOWN, UNO.
7. ALL CEILING MOUNTED FIXTURES SHALL BE CENTERED ON LAY-IN PANELS IN SUSPENDED CEILING AREAS AS SHOWN, UNO.
8. PROVIDE ADDITIONAL BLOCKING AND/OR ANCHORING ABOVE CEILINGS AS REQUIRED FOR SUPPORT OF LIGHT FIXTURES.
9. FIRE AND SMOKE DETECTION DEVICES AND STROBE LIGHT LOCATIONS SHALL BE COORDINATED BY CONTRACTORS AND SUBMITTED TO JACOBS FOR FINAL ALIGNMENT APPROVAL.
10. BOTTOM OF PENDANT FIXTURE MOUNTING HEIGHTS:

TAG	ROOM TYPE	MOUNTING HEIGHT
A	OFFICES	5'-8" TO BOTTOM OF PENDANT
B	LOBBY ISLAND & OPEN AREA	6'-0" TO BOTTOM OF PENDANT
B	MEETING ROOM	6'-2" TO BOTTOM OF PENDANT
C	COLLABORATION ROOM	6'-0" TO BOTTOM OF PENDANT

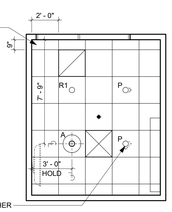
SYMBOLS LEGEND

REFER TO ENGINEERING DRAWINGS

SYMBOL:	DESCRIPTION:
CEILING FIXTURES:	
A B,C	DECORATIVE PENDANT
R1, R2	RECESSED LED DOWNLIGHT
P	RECESSED LED WALL WASHER
	RECESSED LINEAR LED FIXTURE
	UNDER CABINET LIGHTING
H	LED WALL SCONCE
	LED EDGE-LIT EXIT SIGNAGE WITH RECESSED HOUSING. SHADED QUADRANT INDICATES ILLUMINATED FACE(S) OF SIGN, ARROWS INDICATED DIRECTION OF TRAVEL
	SPRINKLER HEAD SEE ENGINEERING DRAWINGS
	UPRIGHT FRAME STANDARD SPRAY PATTERN SPRINKLER SEE ENGINEERING DRAWINGS
	SUPPLY AIR DIFFUSER REFER TO ENGINEERING DRAWINGS
	RETURN AIR DIFFUSER REFER TO ENGINEERING DRAWINGS
	LINEAR AIR DIFFUSER REFER TO ENGINEERING DRAWINGS
GB	GLASS BREAK
M	MOTION DETECTOR
	SECURITY CAMERA
WAP	CEILING MOUNTED WIRELESS ACCESS POINT OUTLET
AP	GFRG SEAMLESS ACCESS PANEL W/ SQUARE CORNER, BY CASTLE ACCESS PANELS & FORMS, INC, OR EQUAL, 24" X 24"
SP	SOUND MASKING SPEAKER
	COMBINATION AUDIBLE HORN / VISUAL STROBE - CLNG MOUNT
	OCCUPANCY SENSOR
	PHOTOELECTRIC SMOKE DETECTOR
CEILING FINISHES:	
GWB	GYPSUM WALLBOARD
ETS	EXPOSED TO STRUCTURE
ACT-1	ACOUSTICAL TILE, 4' X 4' REFER TO FINISH LEGEND
ACT-2	ACOUSTICAL TILE, 2' X 2' REFER TO FINISH LEGEND



2 TYP. FOCUS ROOM
ID-301 SCALE: 1/4" = 1'-0"



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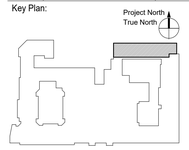

Drawing Sheet Title:

INTERIOR REFLECTED CEILING PLAN

Drawing Sheet Number:

ID-301

Owner's Branch No.:

134

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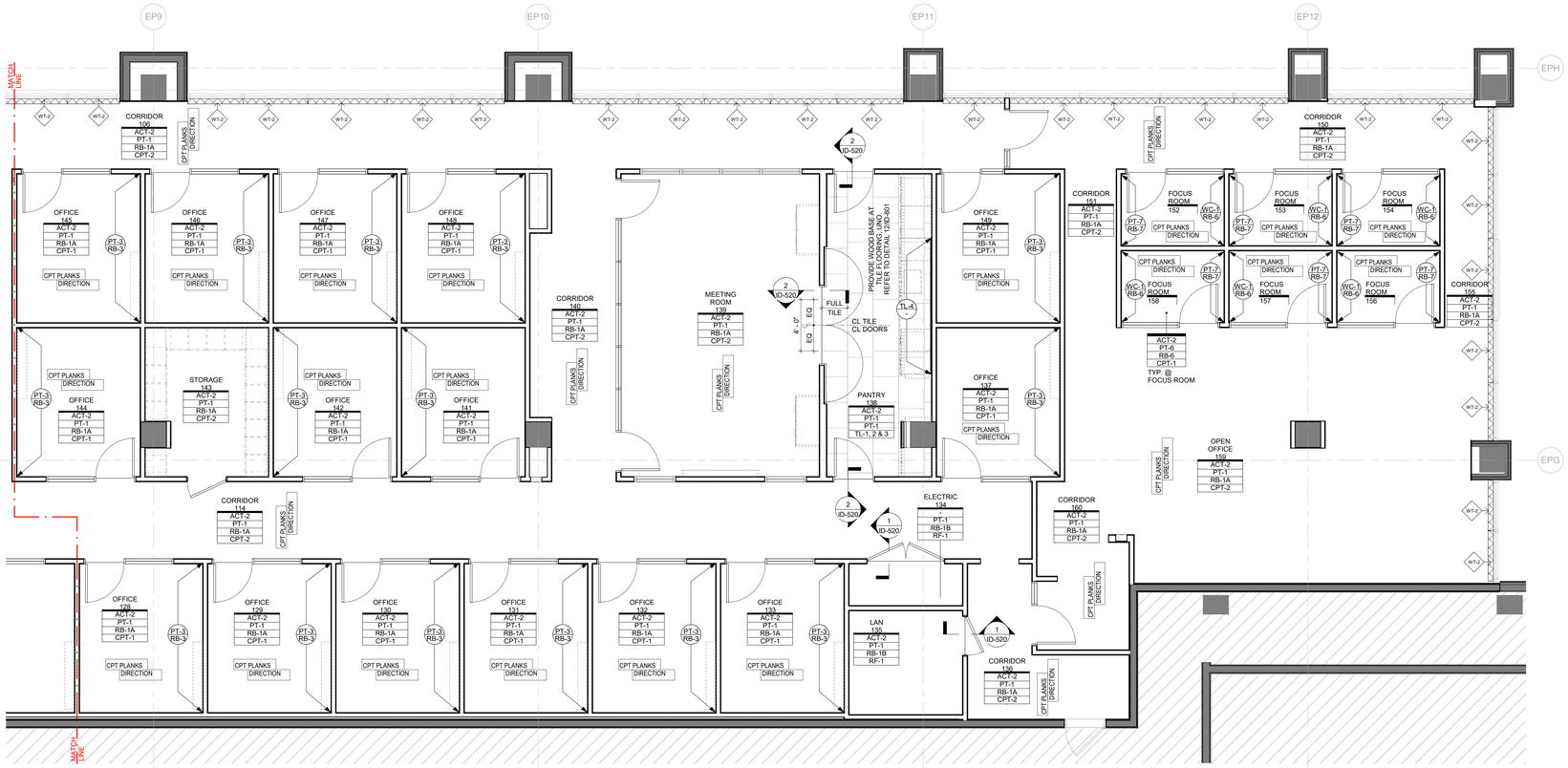
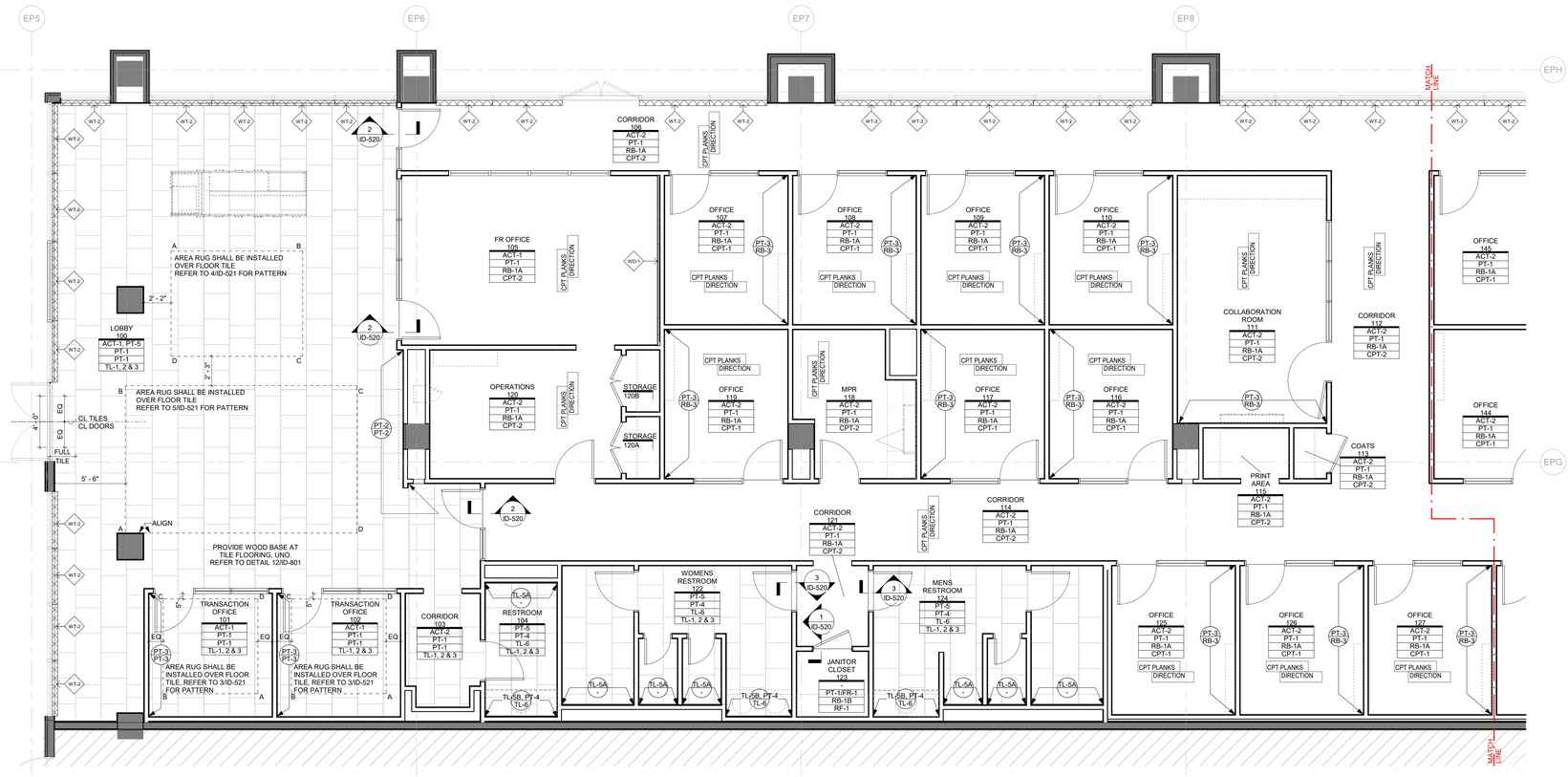


2 INTERIOR FINISH PLAN - EAST

ID-401 SCALE: 1/4" = 1'-0"



1 INTERIOR FINISH PLAN - WEST

ID-401 SCALE: 1/4" = 1'-0"

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GENERAL FINISH PLAN NOTES

1. DEVIATION FROM SPECIFIED MATERIALS AND INSTALLATIONS SHALL NOT BE PERMITTED, UNLESS PRESENTED TO OR APPROVED BY JACOBS PRIOR TO MODIFICATION.
2. SUBMITTALS SHALL BE SENT ELECTRONICALLY, WITH THE EXCEPTION OF PAINT AND WOOD VENEER SAMPLES. *INCLUDE **FIC 134 SCOTTSDALE, AZ** WITH EACH SUBMISSION.
3. ALL CARPET SHALL BE SAME DYE LOT WITHIN THEIR OWN TYPE.
4. FLOOR MATERIAL TRANSITIONS SHALL OCCUR UNDER THE CENTERLINE OF DOOR IN CLOSED POSITION, UNO. REFER TO ID-520 FOR DETAILS.
5. INSTALLED FLOORING FINISHES SHALL BE PROTECTED WITH BROWN PAPER OR PLASTIC SHEETING FOR DURATION OF CONSTRUCTION.
6. NEW WALL BASE THROUGHOUT SHALL BE RB-1A, UNO.
7. CONTINUOUS ADHESION IS REQUIRED BETWEEN FINISHED FACE OF PARTITION AND WALL BASE. INSTALLED BASE SHALL BE SMOOTH WITH NO RIPPLES. SEAMS IN RESILIENT BASE AT OUTSIDE CORNERS ARE NOT PERMITTED. BASE AT CORNERS SHALL BE TIGHT. KERF BACK OF BASE AS REQUIRED.
8. FINISHING AT GWB SHALL BE ONE COAT OF INTERIOR LATEX BASE PRIMER AND TWO COATS OF INTERIOR LATEX BASE PAINT. PRIMER COAT SHALL BE TINTED SIMILAR TO FINISH COAT COLOR. FINISH SHALL BE MATTE, UNO. PROVIDE ADDITIONAL PRIMER COAT AS REQUIRED TO CONCEAL EXISTING FINISHES.
9. TOP EDGES OF DISSIMILAR BASE MATERIALS SHALL ALIGN.
10. FINISHING AT DOOR FRAMES, WOOD RUNNING TRIMS AND METAL SURFACES SHALL BE ONE COAT ALKYD BASE PRIMER AND TWO COATS ALKYD BASE PAINT. PRIMER COAT SHALL BE TINTED SIMILAR TO FINISH COAT. FINISH SHALL BE SEMI-GLOSS, UNO. PROVIDE ADDITIONAL COATS AS REQUIRED TO CONCEAL EXISTING FINISHES OR BASE MATERIAL.
11. GYPSUM BOARD CONSTRUCTION THROUGHOUT SHALL BE FINISHED PT-1, UNO.
12. CLOSETS SHALL BE FINISHED TO MATCH ADJACENT SPACE, UNO.
13. GYPSUM BOARD CEILINGS, FLUSH CEILING TRANSITIONS AND SOFFITS THROUGHOUT SHALL BE PAINTED PT-5, FLAT FINISH, UNO.
14. PAINTED WOOD DOORS THROUGHOUT SHALL BE PAINTED TO MATCH ADJACENT PARTITION COLOR AND FINISH, UNO.
15. EXISTING HOLLOW METAL DOORS AND FRAMES SHALL BE PAINTED TO MATCH ADJACENT WALL FINISH, UNO.
16. REFER TO REFLECTED CEILING PLAN FOR CEILING SPECIFICATIONS AND EXTENTS.
17. FUNCTIONAL CABINET HARDWARE SHALL BE AS FOLLOWS, UNO:
    a. HINGES SHALL BE 135 DEGREE, CONCEALED EUROPEAN STYLE.
    b. DRAWER SLIDES SHALL BE HEAVY DUTY, FULL EXTENSION.
18. CABINETS SHALL BE INSTALLED WITH CONCEALED HANGING METHODS.
19. FINISHED SURFACES (JAMBS, SOFFITS, COUNTERTOPS, CABINETRY,ETC.) SHALL BE PROTECTED WITH DROP CLOTHS OR CARDBOARD ENCLOSURES FOR THE DURATION OF CONSTRUCTION TO PREVENT STAINING, DAMAGE, AND WEAR.

FINISH PLAN SYMBOLS LEGEND

REFER TO ID-520 FOR FINISH LEGEND

ROOM FINISH TAG
X-X CEILING - REFER TO RCP
X-X WALL
X-X BASE
X-X FLOOR

WALL FINISH EXTENT
X-X WALL FINISH
X-X BASE FINISH

X-X SPECIAL FINISH TAG

WT-X WINDOW SHADE - '2' INDICATED MOTORIZED, REFER TO FINISH SCHEDULE

MATCH LINE

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

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VANDERWEIL
R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210

P 617-423-7423
F 617-423-7501
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Seals:

REGISTERED ARCHITECT
CERTIFICATE NO.
69323
FREDERIC H. GROSSFELD
DATE SIGNED:
ARIZONA, U.S.A.

12/20/2024

General Notes:

Project Title:

Fidelity INVESTMENTS

Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project North
True North

Project No.: K2812554 R06

Drawing Sheet Title:

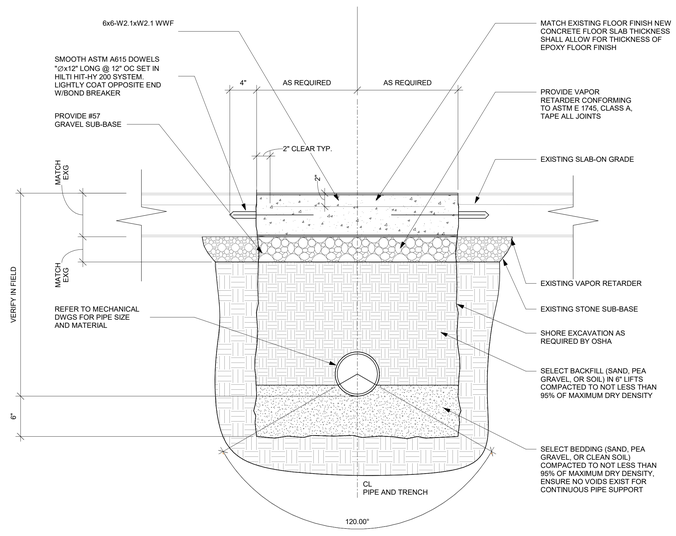
INTERIOR FINISH PLAN

Drawing Sheet Number:

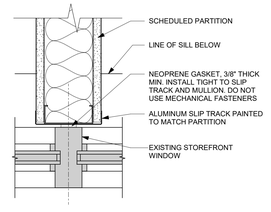
ID-401

Owner's Branch No.:

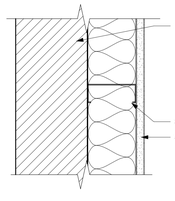
134



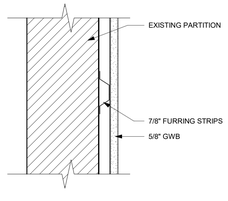
7 TYPICAL SLAB REPAIR DETAIL
ID-500 SCALE: 1 1/2" = 1'-0"



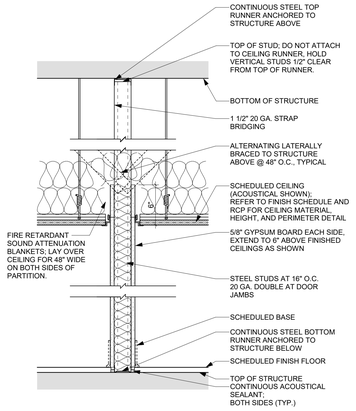
5 PARTITION ATTACHMENT AT MULLION
ID-500 SCALE: 3" = 1'-0"



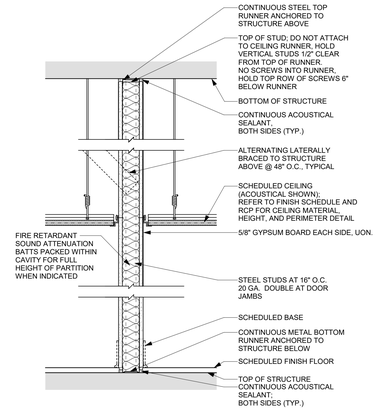
4 EXIST. PTN W/FURRING
ID-500 SCALE: 3" = 1'-0"



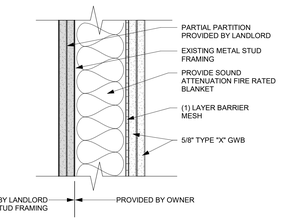
3 EXIST. PTN W/FURRING
ID-500 SCALE: 3" = 1'-0"



2 TYPICAL 'L' PARTITION - 6" ABOVE CEILING
ID-500 SCALE: 1 1/2" = 1'-0"



1 TYPICAL 'F' PARTITION - FULL HEIGHT
ID-500 SCALE: 1 1/2" = 1'-0"



6 2-HOUR FIRE RATED PTN W/ BARRIER MESH
ID-500 SCALE: 3" = 1'-0"

PARTITION TYPE LEGEND

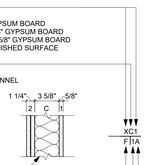
NOTE - NOT ALL CODES USED

SURFACE CODE

1	ONE LAYER 5/8" GYPSUM BOARD
2	TWO LAYERS OF 5/8" GYPSUM BOARD
3	THREE LAYERS OF 5/8" GYPSUM BOARD
X	EXPOSED OR UNFINISHED SURFACE

STUD SIZE

A	1 5/8" FURRING CHANNEL
B	2 1/2" STEEL STUD
C	3 5/8" STEEL STUD
D	6" STEEL STUD
E	4" STEEL STUD
F	8 " STEEL STUD
H	7/8" STEEL STUD
S4	4" STEEL STUD
Z2	2" STEEL STUD



EXTENT OF GYPSUM WALL BOARD

L	EXTEND GYPSUM BOARD 6" ABOVE FINISHED CEILING
F	EXTEND GYPSUM BOARD TO UNDERSIDE OF STRUCTURE

FIRE RATING

INDICATES RATING IN HOURS (USE TYPE 'X' GWB)

PERFORMANCE CODE

A	SOUND ATTENUATION BLANKET TO HEIGHT OF GYPSUM BOARD
M	(1) LAYER BARRIER MESH. REFER TO SPEC 092310

STUD SIZE SPECIFICATION

F	3 5/8" FULL HEIGHT STUD 362S250-43 (50 KSI) @ 16" OC MAX
L	3 5/8" FULL HEIGHT STUD 362S200-43 (50 KSI) @ 16" OC MAX

PARTITION TYPE NOTES

1. PARTITION TYPES ARE DRAWN IN PLAN VIEW AND ARE KEYED TO THE FLOOR PLANS. REFER TO PARTITION TYPE LEGEND
2. THE PARTITION TYPE KEY LISTS THE MATERIAL COMPONENTS IN THE ORDER IN WHICH THEY OCCUR IN A PARTITION. PLEASE NOTE THAT THE KEY WILL THEREFORE DENOTE THE ORIENTATION OF ASYMMETRICAL PARTITIONS.
3. TYPICAL PARTITION SECTION DETAILS SHOW GENERIC CONDITIONS AT THE BASE, CEILING, AND/OR UNDERSIDE OF STRUCTURE OF PARTITIONS, AND APPLY TO MORE THAN ONE PARTITION TYPE. BECAUSE THEIR DRAWING TITLES ARE SELF-EXPLANATORY, THESE TYPICAL SECTION DETAILS ARE NOT ORDINARILY KEYED TO THE OTHER DRAWINGS.
4. ALL FIRE & SMOKE RATED PARTITIONS MUST EXTEND TO THE UNDERSIDE OF DECK AND BE FIRE SEALED AROUND THE ENTIRE PERIMETER. REFER TO THE LIFE SAFETY PLAN.
5. ALL PARTITIONS SHALL RECEIVE ACOUSTIC SOUND BATT INSULATION. ACOUSTIC BATT INSULATION SHALL CONTINUE BEHIND ALL ELECTRICAL AND TELE/DATA DEVICES/BOXES AND SHALL EXTEND FULL HEIGHT OF PARTITION. FILL ALL PENETRATIONS MADE FOR ROUTING OF CABLING, ETC.
6. PARTITION ASSEMBLIES SHALL INCLUDE THE FOLLOWING:

A. STEEL STUD FRAMING: METAL STUD FRAMING SHALL BE AS FOLLOWS, UNO

1. STUD SIZE: PROVIDE STUDS SIZES INDICATED. REFER TO PARTITION TYPE LEGEND FOR STUD SIZES.
2. HEIGHT: EXCEPT FOR TYPE H, R AND Z FURRING ALL STUDS SHALL BE FULL HEIGHT FROM FLOOR TO UNDERSIDE OF FLOOR OR ROOF ABOVE. STUDS SHALL BE CUT SHORT AT HEAD TRACK/RUNNER TO ALLOW FOR DIFFERENTIAL LIVE LOAD DEFLECTION AS REQUIRED HEREIN.
   A. TYPE H, R AND Z FURRING SHALL EXTEND FROM FLOOR TO SIX-INCHES ABOVE FINISHED CEILING, OR IF THERE IS NO CEILING, TO STRUCTURAL DECK ABOVE.
3. SPACING: ALL STUDS SHALL BE SPACED AS REQUIRED TO SUPPORT APPLIED FINISHES AND LOADS, BUT NOT MORE THAN 16" ON CENTER. TYPE "S" STUDS SHALL BE SPACED AT 24" ON CENTER.
4. DOOR AND BORROWED LIGHT OPENINGS: PROVIDE FULL HEIGHT, UNPUNCHED, DOUBLE STUDS AT ALL JAMB AND HEAD CONDITIONS.
5. TRACKS/RUNNERS: PROVIDE MINIMUM 20 GAUGE TRACKS/RUNNERS TO MATCH STUD SIZE UNO. AT HEAD PROVIDE TRACKS/RUNNERS WITH VERTICAL LEGS OF SUFFICIENT HEIGHT TO ACCOMMODATE DIFFERENTIAL LIVE LOAD DEFLECTION DIMENSION BETWEEN FLOORS.
   A. PARTITIONS WITHIN 15 FEET OF A COLUMN LINE: ALLOW FOR 1/2" LIVE LOAD DEFLECTION.
   B. PARTITIONS MORE THAN 15 FEET BUT LESS THAN 30 FEET FROM A COLUMN LINE: ALLOW FOR 3/4" LIVE LOAD DEFLECTION.
   C. PARTITIONS MORE THAN 30 FEET FROM A COLUMN LINE: ALLOW FOR 1" LIVE LOAD DEFLECTION.
6. AT PARTITIONS EXTENDING OVER ROUGH OPENINGS (DOORS, SIDELIGHTS, BORROWED LIGHTS AND THE LIKE), IN EXCESS OF 6'-4" WIDE PROVIDE LIGHT GAUGE METAL FRAMING (ITEM 0540C) OF DEPTH TO MATCH ABUTTING PARTITIONS. PROVIDE CONCEALED DIAGONAL BRACING TO STRUCTURE ABOVE AT 4'-0" OC, CONFIGURED TO CLEAR STRUCTURAL, MECHANICAL AND ELECTRICAL SYSTEMS.
7. AT PARTITIONS FRAMED WITH STUD SIZE C (3 5/8"), PROVIDE DIAGONAL BRACING AT 4'-0" OC EXTENDING FROM 12" ABOVE CEILING TO DECK ABOVE AT 12/12 SLOPE, CONFIGURED TO CLEAR STRUCTURAL, MECHANICAL AND ELECTRICAL SYSTEMS.
8. PROVIDE BLOCKING IN PARTITIONS FOR ALL SUPPORTED/ATTACHED ITEMS/SYSTEMS.
   A. PROVIDE WOOD BLOCKING FROM 2'-0" ABOVE FLOOR TO 4'-0" ABOVE FLOOR IN ALL ACCESSIBLE (HANDICAP) TOILET STALLS.
   B. PROVIDE WOOD BLOCKING REQUIRED FOR WALL MOUNTED OWNER PROVIDED EQUIPMENT. COORDINATE WITH OWNER FOR TYPE, SIZE AND LOCATION OF BLOCKING REQUIRED.
9. WHERE FRAMING CONNECTS TO CEMENTITIOUS FIREPROOFING COATED STRUCTURAL STEEL/DECK PROVIDE Z-FURRING, ITEM FASTENED TO STRUCTURAL STEEL/DECK PRIOR TO APPLICATION OF FIREPROOFING. Z-FURRING SHALL MATCH FIREPROOFING THICKNESS AND SHALL BE CONFIGURED FOR PROPER SUPPORT/ATTACHMENT OF FRAMING. MINIMUM GAUGE AND SPACING SHALL MATCH FRAMING REQUIREMENTS.
10. WHERE A SINGLE LAYER PARTITION TYPE ALIGNS WITH A MULTILAYER LAYER PARTITION TYPE, ADJUST FRAMING LOCATION TO ALIGN FINISHED FACES OF WALL BOARD ACROSS PARTITION TYPES UNLESS REQUIRED OTHERWISE.
11. FRAMING IS INDICATED DIAGRAMMATICALLY TYPICALLY IN THE DOCUMENTS. IT IS NOT THE INTENT OF THE DOCUMENTS TO DELINEATE EVERY CONDITION NOR MEMBER SIZE REQUIRED. THE CONTRACTOR SHALL PROVIDE CONFIGURATIONS OF FRAMING AS REQUIRED BY THE DOCUMENTS TO MAINTAIN THE SHAPE AND PROFILES OF SURFACES/MATERIALS REQUIRED, COORDINATE WITH THE BUILDING STRUCTURE, AND SUPPORT LOADS REQUIRED.
12. FORM RADIUS/CURVED WORK TO TRUE RADIUS WITHOUT SEGMENTATION, FACETING, BUCKLING, WARPING OR OTHERWISE ALTERING MEMBER DIMENSION OR APPEARANCE.
13. PROVIDE FRAMING LOCATED TO CLEAR CEILING/WALL MOUNTED DEVICES/EQUIPMENT. COORDINATE FRAMING WITH DEVICE/EQUIPMENT REQUIREMENTS FOR CLEARANCES AND SUPPORT. DEVICE SHALL TAKE PRECEDENCE.
14. WHERE UTILITIES SUCH AS ELECTRICAL, TELEDATA, PLUMBING AND THE LIKE CAN NOT BE CONCEALED ABOVE CEILINGS PROVIDE PUNCHED STUDS CONFIGURED TO PERMIT UTILITY DISTRIBUTION WITHIN THE FRAMING. WHERE SUCH PUNCHES ARE PROVIDED THEY SHALL BE ALIGNED WITHIN THE FRAMING TO PERMIT STRAIGHT UTILITY RUNS WITH MINIMAL OFFSETS. COORDINATE WITH UTILITIES FOR SIZE, NUMBER AND LOCATIONS OF PUNCHES REQUIRED.

B. GYPSUM BOARD: GYPSUM BOARD SHALL BE AS FOLLOWS, UNO:

1. THICKNESS: 5/8" UNLESS REQUIRED OTHERWISE.
2. HEIGHT: ALL GYPSUM BOARD SHALL EXTEND 6" ABOVE CEILING HEIGHT UNO.
3. BOARD TYPE: PROVIDE FIRE-RESISTIVE CORE GYPSUM BOARD FOR ALL PARTITION TYPES EXCEPT AS NOTED HEREIN:
   A. SHAFTWALL LINER BOARD: PROVIDE AT ALL SHAFTWALL (TYPE S) PARTITIONS ON THE SHAFT SIDE OF THE PARTITION.
   B. HIGH-STRENGTH CEILING BOARD: PROVIDE FOR ALL CEILING/SOFFIT BOARD.
   C. BACKER-BOARD: PROVIDE AS THE FIRST LAYER (NOT EXPOSED) AT ALL MULTIPLE LAYER APPLICATIONS.
   D. MOISTURE RESISTANT BOARD: PROVIDE AS OUTER LAYER ON PARTITIONS WHERE FINISH IS PAINT IN TOILET ROOMS. DO NOT USE MOISTURE RESISTANT GYPSUM BOARD ON CEILINGS.
   E. HI-IMPACT RESISTANT BOARD: PROVIDE AS OUTER LAYER INDICATED.
   F. CEMENTITIOUS BACKERBOARD: PROVIDE AS SUBSTRATE FOR CERAMIC WALL TILE. NOTE: GYPSUM PLASTER BASE: MOISTURE RESISTANT, ABUSE RESISTANT, IMPACT RESISTANT, AND COMBINATION HI-ABUSE AND HI-IMPACT RESISTANT BOARD SHALL BE SUBSTITUTED FOR FACE/OUTER LAYER OF GYPSUM BOARD IN ACCORDANCE REQUIREMENTS HEREIN AND FINISH SYSTEM(S) REQUIRED. REFER TO FINISH INFORMATION (PLANS/SCHEDULE) FOR ADDITIONAL REQUIREMENTS.
4. MULTI-LAYER GYPSUM BOARD: PROVIDE ALTERNATING ORIENTATION (VERTICAL/HORIZONTAL) OF GYPSUM BOARD LAYERS IN MULTI-LAYER PARTITION TYPES. STAGGER JOINTS IN LAYERS EACH WAY. SECURE EACH LAYER TO FRAMING WITH SCREWS.

C. FIRE-RESISTIVE RATED PARTITIONS: REFER TO PLANS FOR DEFINITION OF SCOPE OF FIRE-RESISTIVE PARTITIONS. ALL FIRE-RESISTIVE PARTITIONS SHALL CONFORM TO THE FOLLOWING:

1. WHERE AN UNDERWRITERS LABORATORY OR OTHER TESTING AGENCY NUMBER IS INDICATED ON THE PARTITION TYPE DETAIL, THE PARTITION SHALL BE CONSTRUCTED IN STRICT ACCORDANCE WITH THE DICTATES OF THE TESTED ASSEMBLY.
2. OVERSIZE "CUT-OUTS" FOR ELECTRICAL DEVICE BOXES WILL NOT BE PERMITTED.
3. PROVIDE FIRESTOP SYSTEM, AT ALL PENETRATIONS OF FIRE-RESISTIVE RATED PARTITIONS AND AT ALL OTHER LOCATIONS NECESSARY TO MAINTAIN THE FIRE RESISTIVE INTEGRITY OF THE ASSEMBLY.
4. PROVIDE FIRE RESISTIVE JOINT SYSTEM, AT TOP OF ALL FIRE-RESISTIVE RATED PARTITIONS AT DECK ABOVE AND AT CONTROL JOINTS
5. WHERE FIRE RATED PARTITION INTERSECTS NON-RATED PARTITION FIRE RATED PARTITION SHALL EXTEND THROUGH NON-RATED PARTITIONS. WHERE TWO FIRE RATED PARTITIONS INTERSECT GREATER FIRE RESISTANCE RATING SHALL EXTEND THROUGH LESSER FIRE RATED PARTITION.

D. GYPSUM BOARD CONTROL JOINT REQUIREMENTS: PROVIDE CONTROL JOINTS IN HORIZONTAL AND VERTICAL GYPSUM BOARD SURFACES IN ACCORDANCE WITH THE REQUIREMENTS OF THE SPECIFICATIONS AND AS NOTED BELOW. REFER TO ELEVATIONS AND PLANS FOR JOINT LOCATIONS, OR, WHERE NOT INDICATED, PROVIDE CONTROL JOINTS AS FOLLOWS:

1. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL OF CONTROL JOINT LOCATIONS PRIOR TO INSTALLATION OF FRAMING.
2. PROVIDE CONTROL JOINTS AT 30' MAXIMUM OC. PROVIDE CONTROL JOINTS WHERE GYPSUM BOARD ABUTS DISSIMILAR MATERIALS. CONTROL JOINTS AT DISSIMILAR MATERIALS SHALL BE L BEAD/EDGE TRIM AND SEALANT AS SPECIFIED.
3. WHERE CONTROL JOINTS ARE REQUIRED IN A SURFACE THEY SHALL BE CONFIGURED TO COORDINATE WITH THE BUILDING GEOMETRY/LAYOUT. PROVIDE ADDITIONAL CONTROL JOINTS AT EACH END OF OPENINGS OVER 8' IN ANY DIMENSION.
4. PROVIDE CONTROL JOINTS AT THE EDGE OF HORIZONTAL GYPSUM BOARD WHERE IT ABUTS VERTICAL GYPSUM BOARD SURFACES BELOW.
5. PROVIDE CONTROL JOINTS IN GYPSUM BOARD WHERE CONTROL JOINTS ARE REQUIRED IN FINISHES OR WHERE CONTROL JOINTS OCCUR IN SUBSTRATES.
6. PROVIDE CONTROL JOINTS IN ACCORDANCE WITH THE REQUIREMENTS ABOVE AT HORIZONTAL WALL BOARD CEILINGS/SOFFITS.
7. PROVIDE CUSTOM FORMED RADIUS CONTROL JOINT TRIM AT RADIUS WORK. TRIM SHALL BE EXTRUDED ALUMINUM.

E. ACOUSTICAL PERFORMANCE PARTITIONS: REFER TO ARCHITECTURAL FLOOR PLANS FOR DEFINITION OF SCOPE OF ACOUSTICAL PERFORMANCE PARTITIONS. ANY PARTITION SYMBOL SHOWN WITH NOTE "A" SHALL BE BY DEFINITION AN ACOUSTICAL PERFORMANCE PARTITION. ALL ACOUSTICAL PERFORMANCE PARTITIONS SHALL CONFORM TO THE FOLLOWING:

1. JOINTS IN GYPSUM BOARD: SHALL BE TAPED AND FINISHED AS REQUIRED BELOW EVEN IN CONCEALED LOCATIONS SUCH AS ABOVE SUSPENDED CEILINGS.
2. ELECTRICAL DEVICES BOXES: BOXES FACING OPPOSITE SIDES OF THE PARTITION SHALL NOT BE LOCATED BACK-TO-BACK OR BE LOCATED WITHIN THE SAME CAVITY BETWEEN STUDS.
3. ACOUSTICAL SEALANT: PROVIDE ACOUSTICAL SEALANT, IN ACCORDANCE WITH SECTION 079200 AND AS FOLLOWS:
   A. CONTINUOUSLY AROUND PENETRATIONS AT OUTER LAYER OF WALL BOARD AT EACH FACE.
   B. CONTINUOUSLY BETWEEN CONCRETE FLOORS AND OUTER LAYER OF GYPSUM BOARD AT EACH FACE.
   C. CONTINUOUSLY BETWEEN TOP OF OUTER LAYER OF GYPSUM BOARD AND DECK ABOVE AT EACH FACE.
   D. CONTINUOUSLY UNDER BASE RUNNER TRACKS.
4. ACOUSTICAL INSULATION: PROVIDE ACOUSTICAL INSULATION, AS FOLLOWS.
   A. BETWEEN STUDS FOR FULL DEPTH AND HEIGHT OF PARTITION.
   B. AT TOP OF PARTITION TO FILL THE VOIDS AT METAL DECK INTERFACE. NOTE, IF PARTITION IS ALSO A FIRE RESISTIVE RATED PARTITION FOLLOW NOTES HEREIN.
   C. ACOUSTICAL INSULATION IS NOT TYPICALLY SHOWN IN THE DRAWINGS.

F. TRIM: PROVIDE METAL TRIM SCREWED TO FRAMING AT ALL EXPOSED GYPSUM BOARD EDGES OR CORNERS EXCEPT WHERE CEMENTITIOUS BACKERBOARD, IS REQUIRED. WHERE RADIUS TRIM IS REQUIRED PROVIDE CUSTOM FORMED EXTRUDED ALUMINUM TRIM. WHERE CEMENTITIOUS BACKBOARD, IS REQUIRED PROVIDE PLASTIC TRIM. NO PAPER OR COMBINATION PAPER/METAL OR PAPER/PLASTIC TRIM SHALL BE PERMITTED/ACCEPTED.

G. FINISH: PROVIDE LEVEL 4 FINISH AT ALL EXPOSED GYPSUM BOARD SURFACES EXTENDING TO NOT LESS THAN 4" ABOVE FINISHED CEILING, UNO:

1. PROVIDE LEVEL 1 FINISH AT SURFACES ABOVE CEILINGS, EXCEPT FIRE RESISTIVE RATED PARTITIONS.
2. PROVIDE LEVEL 2 IN MECHANICAL AND ELECTRICAL TYPE ROOMS.
3. PROVIDE LEVEL 3 FINISH AT SURFACES OF FIRE RESISTANCE RATED PARTITIONS ABOVE CEILINGS.

H. TYPICAL PARTITION DETAILS: DETAILS DO NOT INDICATE EVERY COMBINATION OF MATERIALS REQUIRED. REFER TO FLOOR PLAN INDICATIONS FOR PARTITION TYPES REQUIRED.

J. GYPSUM BOARD AT EXTERIOR WALL FRAMING: PROVIDE GYPSUM BOARD AT INTERIOR FACE OF ALL EXISTING EXTERIOR WALL FRAMING EXPOSED TO VIEW OR WHERE REQUIRED FOR ACOUSTICAL OR FIRE RESISTIVE REQUIREMENTS. GYPSUM BOARD SHALL CONFORM TO THE REQUIREMENTS HEREIN.

K. CLEANING: CLEAN INSIDE OF ALL STUD CAVITIES BEFORE ENCLOSING WALL.

L. PLYWOOD BACK BOARDS: PROVIDE 4'x8'x3/4' FIRE-RESISTANT PLYWOOD BACK BOARDS TO LINE ROOM IN TELECOM/DATA ROOMS, AND ELECTRICAL CLOSETS. BACKBOARD SHALL BE MOUNTED VERTICALLY, 4" ABOVE FLOOR, TIGHT TO PARTITION FACE. WHERE MOUNTED ON MASONRY PARTITION, PAINT FACE OF MASONRY WITH HIGH PERFORMANCE INTERIOR COATING TO REDUCE MOISTURE TRANSMISSION.PAINT FACE AND EDGES FLAT BLACK.

Jacobs

Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL

R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210

P 617-423-7423
F 617-423-7501
W www.vanderweil.com

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FREDERIC H.
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	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project North
True North

Project No.: K2812554 R06

Drawing Sheet Title:

INTERIOR PARTITION DETAILS

Drawing Sheet Number:

ID-500

Owner's Branch No.:

134

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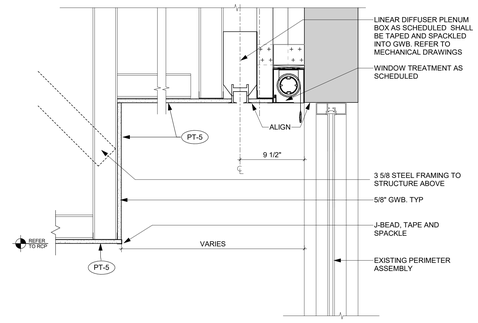
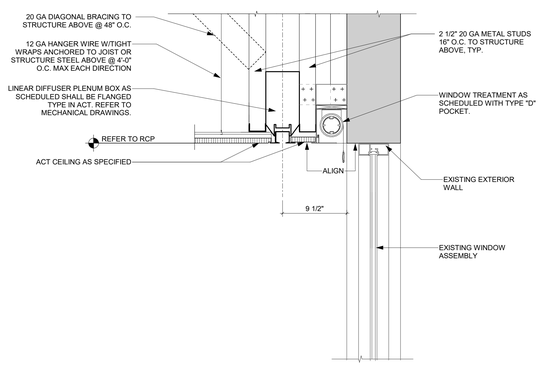
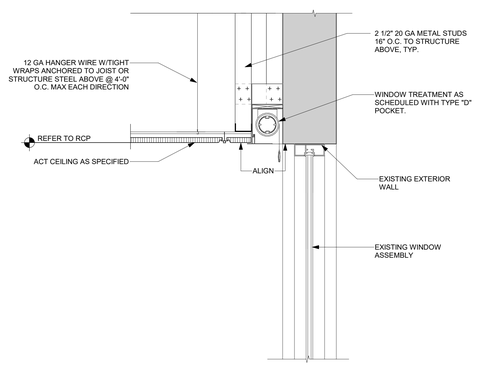


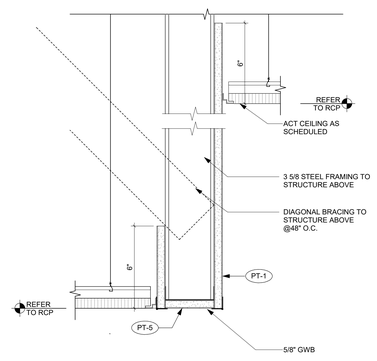
8 PERIMETER DETAIL @ LOBBY
ID-501 SCALE: 1 1/2" = 1'-0"



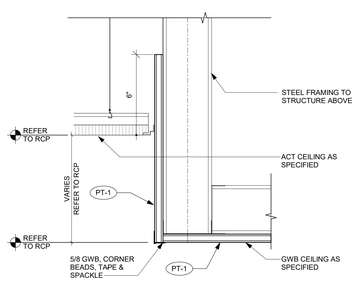
7 PERIMETER DETAIL W/ DIFFUSER
ID-501 SCALE: 1 1/2" = 1'-0"



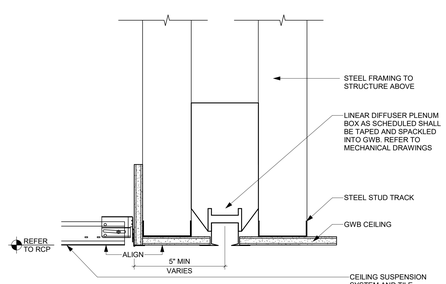
6 PERIMETER DETAIL W/OUT DIFFUSER
ID-501 SCALE: 1 1/2" = 1'-0"



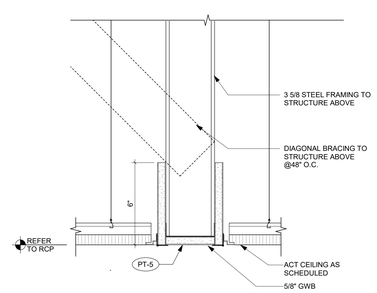
5 ACT/ACT CEILING TRANSITION W/ CEILING STEP
ID-501 SCALE: 3" = 1'-0"



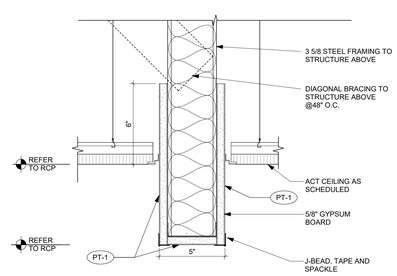
4 GWB SOFFIT DETAIL
ID-501 SCALE: 3" = 1'-0"



3 FLUSH ACT/GWB CEILING TRANSITION
ID-501 SCALE: 3" = 1'-0"



2 FLUSH ACT / ACT CEILING TRANSITION
ID-501 SCALE: 3" = 1'-0"



1 ACT / GWB CEILING TRANSITION
ID-501 SCALE: 3" = 1'-0"

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL
R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210
P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

REGISTERED ARCHITECT
CERTIFICATE NO.
69323
FREDERIC H. GROSSFELD
DATE SIGNED:
ARIZONA, U.S.A.

12/20/2024

General Notes:

Project Title:

Fidelity INVESTMENTS
Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project North
True North

Project No.: K2812554 R06

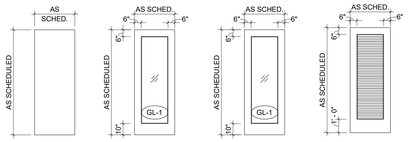
Drawing Sheet Title:
INTERIOR CEILING DETAILS

Drawing Sheet Number:
ID-501

Owner's Branch No.:
134

12/19/2024 11:33:18 AM

DOOR TYPES



FLUSH
F

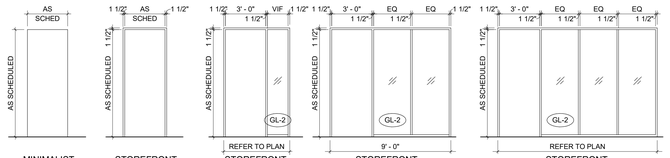
FULL GLASS ALUMINUM
FG1

FULL GLASS WOOD
FG2

V. LOUVERED
L

FRAME TYPES

NOTE: REFER TO FLOOR PLANS FOR OVERALL DIMENSIONS OF FRAMES.



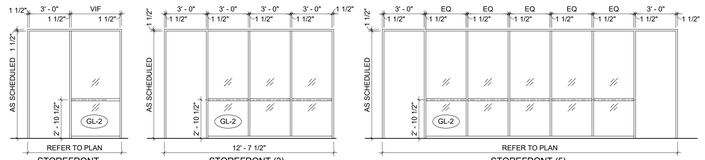
MINIMALIST FRAME
FM1

STOREFRONT
FR1

STOREFRONT (1) SIDELITE
FR2

STOREFRONT (2) SIDELITE
FR3

STOREFRONT (3) SIDELITE
FR4

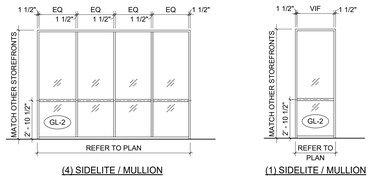


STOREFRONT SIDELITE / MULLION
FR5

STOREFRONT (3) SIDELITE / MULLION
FR6

STOREFRONT (5) SIDELITE / MULLION
FR7

FIXED GLAZING



(4) SIDELITE / MULLION
FR8

(1) SIDELITE / MULLION
FR9

DOOR SCHEDULE

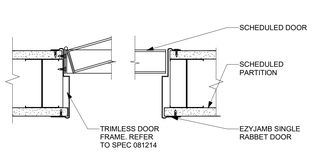
DOOR NO.	ROOM	HDW SET	FIRE RATING	DOOR TYPE	LEAVES	DOOR NOMINAL SIZE WIDTH	HEIGHT	THK	DOOR MATERIAL	DOOR FINISH	FRAME TYPE	FRAME MATERIAL	FRAME FINISH	DETAILS	REMARKS
100	LOBBY	09	-	EXG	EXG	EXG	EXG	EXG	EXG	EXG	EXG	EXG	EXG	-	
100A	CORRIDOR	02	-	FG1	1	3' - 0"	8' - 0"	1 3/4"	AL/GL	AB-6	FR2	AL	AB-6	-	
100B	CORRIDOR	02	-	FG1	1	3' - 0"	8' - 0"	1 3/4"	AL/GL	AB-6	FR2	AL	AB-6	-	
101	TRANSACTION OFFICE	01	-	FG1	1	3' - 0"	8' - 0"	1 3/4"	AL/GL	AB-6	FR3	AL	AB-6	-	
102	TRANSACTION OFFICE	01	-	FG1	1	3' - 0"	8' - 0"	1 3/4"	AL/GL	AB-6	FR3	AL	AB-6	-	
104	RESTROOM	05B	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR1	AL	AB-6	-	
105	FR OFFICE	02	-	FG1	1	3' - 0"	8' - 0"	1 3/4"	AL/GL	AB-6	FR4	AL	AB-6	-	
106	CORRIDOR	11	-	EXG	EXG	EXG	EXG	EXG	EXG	EXG	EXG	EXG	EXG	-	
107	OFFICE	01	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR5	AL	AB-6	-	
108	OFFICE	01	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR5	AL	AB-6	-	
109	OFFICE	01	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR5	AL	AB-6	-	
110	OFFICE	01	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR5	AL	AB-6	-	
111	COLLABORATION ROOM	01	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR6	AL	AB-6	-	
113	COATS	03	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	PT-1	FM1	AL	PT-1	4,5/ID-510	MINIMALIST FRAME
116	OFFICE	01	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR5	AL	AB-6	-	
117	OFFICE	01	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR5	AL	AB-6	-	
118	MPR	05C	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR1	AL	AB-6	-	
119	OFFICE	01	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR5	AL	AB-6	-	
120	OPERATIONS	01A	-	FG2	1	3' - 0"	8' - 0"	1 3/4"	WD/GL	CLEAR	FR1	AL	AB-6	-	
120A	STORAGE	04	-	F	2	4' - 0"	8' - 0"	1 3/4"	WD	PT-1	FM1	AL	PT-1	4,5/ID-510	MINIMALIST FRAME
120B	STORAGE	04	-	F	2	4' - 0"	8' - 0"	1 3/4"	WD	PT-1	FM1	AL	PT-1	4,5/ID-510	MINIMALIST FRAME
122	WOMENS RESTROOM	05	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR1	AL	AB-6	-	
122A	WOMENS RESTROOM	13	-	L	1	2' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR1	AL	AB-6	-	
122B	WOMENS RESTROOM	13	-	L	1	2' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR1	AL	AB-6	-	
122C	WOMENS RESTROOM	13A	-	L	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR1	AL	AB-6	-	
123	JANITOR CLOSET	03	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	PT-1	FM1	AL	PT-1	4,5/ID-510	MINIMALIST FRAME
124	MENS RESTROOM	05	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR1	AL	AB-6	-	
124A	MENS RESTROOM	13	-	L	1	2' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR1	AL	AB-6	-	
124B	MENS RESTROOM	13A	-	L	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR1	AL	AB-6	-	
125	OFFICE	01	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR5	AL	AB-6	-	
126	OFFICE	01	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR5	AL	AB-6	-	
127	OFFICE	01	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR5	AL	AB-6	-	
128	OFFICE	01	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR5	AL	AB-6	-	
129	OFFICE	01	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR5	AL	AB-6	-	
130	OFFICE	01	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR5	AL	AB-6	-	
131	OFFICE	01	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR5	AL	AB-6	-	
132	OFFICE	01	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR5	AL	AB-6	-	
133	OFFICE	01	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR5	AL	AB-6	-	
134	ELECTRIC	06B	-	F	2	6' - 0"	8' - 0"	1 3/4"	WD	PT-1	FM1	AL	PT-1	4,5/ID-510	MINIMALIST FRAME
135	LAN	07A	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	PT-1	FM1	AL	PT-1	4,5/ID-510	MINIMALIST FRAME
136	CORRIDOR	09	-	EXG	EXG	EXG	EXG	EXG	EXG	SEE REMARKS	EXG	EXG	SEE REMARKS	-	SPLIT FINISH: INTERIOR FRAME AND DOOR TO BE PT-1; EXISTING CORRIDOR TO REMAIN BASE BUILDING FINISH
137	OFFICE	01	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR5	AL	AB-6	-	
138A	PANTRY	01	-	FG2	1	3' - 0"	8' - 0"	1 3/4"	WD/GL	CLEAR	FR1	AL	AB-6	-	
138B	PANTRY	01	-	FG2	1	3' - 0"	8' - 0"	1 3/4"	WD/GL	CLEAR	FR1	AL	AB-6	-	
138C	MEETING ROOM	08	-	F	2	6' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR1	AL	AB-6	6/ID-510	
139A	MEETING ROOM	01	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR7	AL	AB-6	-	
139B	MEETING ROOM	01	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR7	AL	AB-6	-	
141	OFFICE	01	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR5	AL	AB-6	-	
142	OFFICE	01	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR5	AL	AB-6	-	
143	STORAGE	03	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	PT-1	FM1	AL	PT-1	4,5/ID-510	MINIMALIST FRAME
144	OFFICE	01	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR5	AL	AB-6	-	
145	OFFICE	01	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR5	AL	AB-6	-	
146	OFFICE	01	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR5	AL	AB-6	-	
147	OFFICE	01	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR5	AL	AB-6	-	
148	OFFICE	01	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR5	AL	AB-6	-	
149	OFFICE	01	-	F	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR5	AL	AB-6	-	
150	CORRIDOR	02	-	FG2	1	3' - 0"	8' - 0"	1 3/4"	WD/GL	CLEAR	FR5	AL	AB-6		
152	FOCUS ROOM	01	-	FG2	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR5	AL	AB-6		REFER TO ID-101 FOR WIDTH
153	FOCUS ROOM	01	-	FG2	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR5	AL	AB-6		REFER TO ID-101 FOR WIDTH
154	FOCUS ROOM	01	-	FG2	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR5	AL	AB-6		REFER TO ID-101 FOR WIDTH
156	FOCUS ROOM	01	-	FG2	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR5	AL	AB-6		REFER TO ID-101 FOR WIDTH
157	FOCUS ROOM	01	-	FG2	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR5	AL	AB-6		REFER TO ID-101 FOR WIDTH
158	FOCUS ROOM	01	-	FG2	1	3' - 0"	8' - 0"	1 3/4"	WD	CLEAR	FR5	AL	AB-6		REFER TO ID-101 FOR WIDTH
160	CORRIDOR	02	-	FG2	1	3' - 0"	8' - 0"	1 3/4"	WD/GL	CLEAR	FR5	AL	AB-6		

FIXED GLAZING SCHEDULE

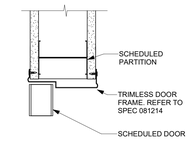
105W	FR OFFICE	-	-	-	-	12' - 7 1/2"	8' - 0"	-	-	-	FR8	AL	AB-6	1/ID-510	VIF; WINDOW UNIT ONLY - NO DOOR
139W.A	MEETING ROOM	-	-	-	-	12' - 7 1/2"	8' - 0"	-	-	-	FR8	AL	AB-6	1/ID-510	VIF; WINDOW UNIT ONLY - NO DOOR
139W.B	MEETING ROOM	-	-	-	-	3' - 3"	8' - 0"	-	-	-	FR9	AL	AB-6	1/ID-510	VIF; WINDOW UNIT ONLY - NO DOOR
139W.C	MEETING ROOM	-	-	-	-	3' - 3"	8' - 0"	-	-	-	FR9	AL	AB-6	1/ID-510	VIF; WINDOW UNIT ONLY - NO DOOR

DOOR, FRAME & HARDWARE NOTES:

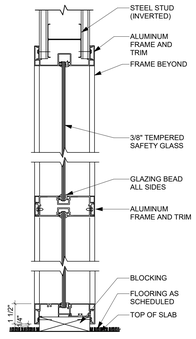
1. COORDINATE KEYING AND QUANTITIES WITH CONSTRUCTION MANAGER.
2. ALL HARDWARE METAL FINISHES SHALL MATCH 613 (US10B), DARK OXIDIZED SATIN BRONZE, OIL RUBBED, UNO.
3. LEVER STYLE BASIS OF DESIGN IS SCHLAGE, 05A.
4. PROVIDE EXTENDED STRIKE PLATES AS REQUIRED.
5. INTERIOR ALUMINUM STOREFRONT SYSTEM SHALL BE WILSON PARTITION, NO SUBSTITUTIONS.
6. HOLLOW METAL FRAMES SHALL BE KNOCK-DOWN.
7. ALUMINUM DOOR SHALL BE WILSON WIDE STYLE, AB-6 DARK BRONZE FINISH, WITH GL-1, 1/4" TEMPERED SAFETY GLASS.
8. CLEAR WOOD DOORS SHALL BE MASONITE ARCHITECTURAL ASPIRO SERIES WOOD VENEER OR VT INDUSTRIES HERITAGE COLLECTION FLUSH WOOD VENEER SEIRES, RIFT CUT WHITE OAK, UNLESS NOTED TO BE BY MILLWORKER. NO SUBSTITUTIONS.
9. PAINTED DOORS SHALL BE SOLID CORE WOOD DOOR.
10. DOORS SHALL HAVE 3/4" UNDERCUT, TYP.
11. FOR GLAZING TYPES, REFER TO FINISH SCHEDULE.
12. REFER TO ID-003 FOR ABBREVIATION LIST.



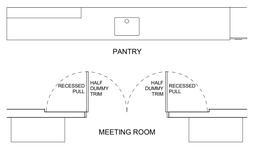
5 MINIMALIST JAMB DETAIL
ID-510 SCALE: 3" = 1'-0"



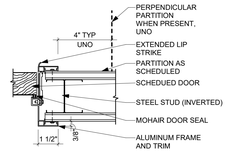
4 MINIMALIST HEAD DETAIL
ID-510 SCALE: 3" = 1'-0"



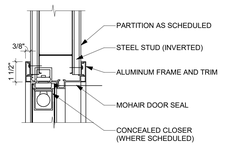
1 STOREFRONT SECTION, TYP
ID-510 SCALE: 3" = 1'-0"



6 MEETING ROOM / PANTRY DOOR
ID-510 SCALE: 1/4" = 1'-0"



3 STOREFRONT JAMB DETAIL
ID-510 SCALE: 3" = 1'-0"



2 STOREFRONT HEAD DETAIL
ID-510 SCALE: 3" = 1'-0"

HARDWARE SETS

SET 01 - OFFICES, COLLAB, PANTRY				
4 EA	HINGES	IVES	5BB1 4.5" X 4.5"	613
1 EA	PASSAGE SET	SCHLAGE	L9010 05A	613
1 EA	FLOOR STOP	ROCKWOOD	446	613
	REMARKS:			
SET 01A - OPERATIONS				
4 EA	HINGES	IVES	5BB1 4.5" X 4.5"	613
1 EA	PASSAGE SET	SCHLAGE	L9010 05A	613
1 EA	CONCEALED CLOSER	LCN	3130 SERIES	695
1 EA	FLOOR STOP	ROCKWOOD	446	613
	REMARKS:			
SET 02 - SECURITY DOORS / FR OFFICE				
3 EA	HINGE	IVES	5BB1 4.5" X 4.5"	613
1 EA	ELECTRIC HINGE	IVES	5BB1 4.5" X 4.5" TW8	613
1 EA	ELECTRIC STOREROOM LOCKSET	SCHLAGE	L9092EL 05A	613
1 EA	CONCEALED CLOSER	LCN	3130 SERIES	695
1 EA	FLOOR STOP	ROCKWOOD	446	613
	REMARKS:			
SET 03 - SINGLE STORAGE, JANITOR CLOSET				
4 EA	INVISIBLE HINGE	SOSS	218	613
1 EA	EGDE PULL	TYDIX	SF 5/16" x 4"	US10B
1 EA	ROLLER LATCH	IVES	RL 30	613
	REMARKS:	ROLLER LATCH IN DOOR HEAD		
SET 04 - PAIR STORAGE, COATS				
8 EA	INVISIBLE HINGE	SOSS	218	613
2 EA	EGDE PULL	TYDIX	SAF 5/16" x 4"	US10B
2 EA	ROLLER LATCH	IVES	RL 30	613
	REMARKS:	ROLLER LATCH IN DOOR HEAD		
SET 05 MULTI USER RESTROOM				
4 EA	HINGES	IVES	5BB1 4.5" X 4.5"	613
1 EA	PUSH PLATE	ROCKWOOD	73C 4" X 16"	613
1 EA	PULL	ROCKWOOD	RM3301 16" OA *OPT 2	613
1 EA	KICK PLATE	ROCKWOOD	K1050 8" X 34"	613
1 EA	CONCEALED CLOSER	LCN	3130 SERIES	695
1 EA	WALL STOP	IVES	WS406/407-CVX	US10B
	REMARKS:	* HANDS-FREE, EXTRA DISTANCE ON ONE END		
SET 05B SINGLE USER RESTROOM				
4 EA	HINGES	IVES	5BB1 4.5" X 4.5"	613
1 EA	PRIVACY w/ "OCCUPIED" INDICATOR	SCHLAGE	L9040 05A w/L283-722	613
1 EA	ADA THUMBTURN	SCHLAGE	09-509xL583-363	613
1 EA	CONCEALED CLOSER	LCN	3130 SERIES W/ BUMP	695
	REMARKS:	W/ TRACK BUMPER FOR BACKCHECK ASSIST		
SET 05C MPR				
4 EA	HINGES	IVES	5BB1 4.5" X 4.5"	613
1 EA	PRIVACY w/ "OCCUPIED" INDICATOR	SCHLAGE	L9040 05A	613
1 EA	ADA THUMBTURN	SCHLAGE	09-509xL583-363	613
1 EA	FLOOR STOP	ROCKWOOD	446	613
	REMARKS:	-		
SET 06B - ELECTRICAL ROOM - PAIR				
8 EA	INVISIBLE HINGE	SOSS	218 IC	613
1 EA	STOREROOM LOCKSET	SCHLAGE	L9080 05A	613
2 EA	SURFACE CLOSER	LCN	4040XP - PUSH SIDE	695
1 EA	FLUSH BOLTS	IVES	FB41P	613
1 EA	DUSTPROOF STRIKE	IVES	DP1	613
	REMARKS:	-		
SET 07A - LAN - SINGLE				
4 EA	INVISIBLE HINGE	SOSS	218	613
1 EA	ELECTRIC POWER TRANSFER	VON DURPIN	EPT	905
1 EA	ELECTRIC STOREROOM LOCKSET	SCHLAGE	L9092EL 05A	613
1 EA	SURFACE CLOSER	LCN	4040XP - PUSH SIDE	695
1 EA	AUTOMATIC DOOR BOTTOM	PEMKO	411 NBL - FULL MORTISE	WSP
	REMARKS:	POWER SUPPLY AS REQUIRED FOR ELECTRICAL LOCKSET		
SET 08 - PAIR MEETING ROOM / PANTRY				
8 EA	HINGES	IVES	5BB1 4.5" X 4.5"	613
2 EA	DUMMY TRIM	SCHLAGE	L0170 05A	613
2 EA	RECESSED PULLS	ROCKWOOD	RM780	613
2 EA	ROLLER LATCH	IVES	RL30	613
	REMARKS:	RECESSED PULLS ON PANTRY SIDE OF DOOR. PULLS TO BE PREPPED IN THE FIELD.		
SET 09 - EXIT DOOR				
4 EA	HINGE	IVES	5BB1 4.5" X 4.5"	613
1 EA	STOREROOM LOCKSET	SCHLAGE	L9080 05A	**
1 EA	CONCEALED CLOSER	LCN	3130 SERIES	695
1 EA	FLOOR STOP	ROCKWOOD	446	613
	REMARKS:	** SPLIT FINISH IS REQUIRED		
SET 11 - PAIR FRAMELESS GLASS DOORS, ACCESS CONTROLLED - COORD W/LANDLORD				
2 EA	TOP & BOTTOM RAIL	CR LAURENCE	DRATDU12S	625
2 EA	PUSH/ PULL *	CR LAURENCE	H-10D-JS	625
2 EA	HEADER TUBE	ASSA ABLOY	HDS 2" X 6"	625
2 EA	CONCEALED FLOOR CLOSER	DORMA	BTS75V G NHO	625
1 EA	DOUBLE ELECTRIC STRIKE/STOP	CR LAURENCE FOLGER ADAMS	ESK2BS 310-1 (3/4)	625
1 EA	FLOOR STOP	ROCKWOOD	446	625
	REMARKS:	*W/DOGGING FEATURE ON BOTH LEAVES AND CYLINDER ON ONE LEAF		
SET 12 - PAIR FRAMELESS MILLWORK WOOD DOORS				
2 SET	CENTER HUNG PIVOT SET	RIXSON	128-3/4	613E
2	EDGE PULL	TYDIX	SAF 5/16" x 4"	US10B
2	MAGNETIC CATCH	IVES	327	A92
	REMARKS:	-		
SET 13 - PRIVATE WATER CLOSET				
4 EA	HINGES	IVES	5BB1 4.5" X 4.5"	613
1 EA	DOOR PULL, BACK-TO-BACK	ROCKWOOD	RM1210 6" OA SS	613
1 EA	DOOR BOLT 'OCCUPIED' INDICATOR	SCHLAGE	B571	613
1 EA	ROLLER LATCH	IVES	RL30	613
1 EA	WALL STOP	ROCKWOOD	RM877	613
	REMARKS:			
SET 13A - PRIVATE WATER CLOSET, ADA				
2 EA	HINGES	IVES	5BB1 4.5" X 4.5"	613
2 EA	SPRING HINGES	IVES	3SP1 4.5" X 4.5"	613
1 EA	DOOR PULL, BACK-TO-BACK	ROCKWOOD	RM1210 6" OA SS	613
1 EA	DOOR BOLT 'OCCUPIED' INDICATOR	SCHLAGE	B571	613
1 EA	ROLLER LATCH	IVES	RL30	613
1 EA	WALL STOP	ROCKWOOD	RM877	613
	REMARKS:			

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL
R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210

P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

REGISTERED ARCHITECT
CERTIFICATE NO.
69323
FREDERIC H. GROSSFELD
DATE SIGNED:
ARIZONA, U.S.A.

12/20/2024

General Notes:

Project Title:

Fidelity INVESTMENTS

Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project North
True North

Project No.: K2812554 R06

Drawing Sheet Title:
INTERIOR DOOR, FRAME & HARDWARE SCHEDULES AND DETAILS

Drawing Sheet Number:
ID-510

Owner's Branch No.:
134

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FINISH LEGEND

ACOUSTICAL CEILING PANEL & GRID		
ACT-1	MANUFACTURER	ARMSTRONG
	STYLE	OPTIMA 9/16 TEGULAR
	NUMBER - SIZE	3256 - 48" x 48" x 7/8"
	COLOR	WHITE
	NRC	95
	CLASSIFICATION	CLASS A
	REMARKS	LOBBY, FR AND TRANSACTION OFFICES
ACT-2	MANUFACTURER	ARMSTRONG
	STYLE	ULTIMA 9/16 TEGULAR
	NUMBER - SIZE	1912 - 24" x 24" x 3/4"
	COLOR	WHITE
	NRC	75
	CLASSIFICATION	CLASS A
	REMARKS	
GRID	MANUFACTURER	ARMSTRONG
	STYLE	INTERLUDE XL & SHADOW WALL MOLDING
	SIZE	9/16"
	COLOR	WHITE
	REMARKS	USE WITH ACT-1 & ACT-2

CARPET		
CPT-1	MANUFACTURER	INTERFACE
	COLLECTION	ETCHED & THREADED
	PATTERN	E613
	COLOR	103372
	SIZE	25 cm x 1 m
	CLASSIFICATION	CLASS A
CPT-2	MANUFACTURER	INTERFACE
	COLLECTION	WORLD WOVEN WW860
	STYLE #	128190AK00
	COLOR	105356 - NATURAL TWEED
	SIZE	25cm X 1m
	INSTALLATION	ASHLAR
	CLASSIFICATION	CLASS A
CPT-3A	MANUFACTURER	FLOR
	COLLECTION	MADE YOU LOOK
	PRODUCT NUMBER	21-1361-57
	COLOR	FOREST
	SIZE	19.7 in X 19.7 in
	CLASSIFICATION	CLASS A
CPT-3B	MANUFACTURER	FLOR
	COLLECTION	MADE YOU LOOK
	PRODUCT NUMBER	21-1361-53
	COLOR	MINT
	SIZE	19.7 in X 19.7 in
	CLASSIFICATION	CLASS A
CPT-3C	MANUFACTURER	FLOR
	COLLECTION	MADE YOU LOOK
	PRODUCT NUMBER	21-1361-42
	COLOR	GREY
	SIZE	19.7 in X 19.7 in
	CLASSIFICATION	CLASS A
CPT-3D	MANUFACTURER	FLOR
	COLLECTION	TAILORED TOUCH
	PRODUCT NUMBER	21-1450-08
	COLOR	KIWI
	SIZE	19.7 in X 19.7 in
	CLASSIFICATION	CLASS A
	REMARKS	MONOLITHIC INSTALLATION
CPT-3E	MANUFACTURER	FLOR
	COLLECTION	TAILORED TOUCH
	PRODUCT NUMBER	21-1450-02
	COLOR	NATURAL
	SIZE	19.7 in X 19.7 in
	CLASSIFICATION	CLASS A
	REMARKS	MONOLITHIC INSTALLATION
CPT-4	MANUFACTURER	INTERFACE
	COLLECTION	WORLD WOVEN WW860
	STYLE #	128190AK00
	COLOR	105356 - NATURAL TWEED
	SIZE	2m UNBACKET SHEETGOODS
	CLASSIFICATION	CLASS A
	REMARKS	OPEN STAIRS

ENTRANCE MAT		
EM-1	MANUFACTURER	INTERFACE
	COLLECTION	STEP REPEAT SR999
	NUMBER	1388702500
	SIZE	50CM X 50CM
	COLOR	104945 ONYX
	CLASSIFICATION	CLASS A

WALL PROTECTION		
FR-1	MANUFACTURER	PANOLAM
	COLOR	GREY
	NUMBER	FRP
	FINISH	SMOOTH FINISH
	CLASSIFICATION	CLASS C

WALLCOVERING		
WC-1	MANUFACTURER	MAHARAM
	STYLE	GEMMA MULTI
	NUMBER	466569
	COLOR	131 PALLIUM REVERSE
	CLASSIFICATION	CLASS A

GLAZING		
GL-1	TYPE	TEMPERED SAFETY GLASS - DOOR GLAZING
	COLOR	CLEAR
	SIZE	1/4" THICK
	REMARKS:	SHALL COMPLY W/ 2018 IBC 2403.1 & 2403.4
GL-2	TYPE	TEMPERED SAFETY GLASS - SIDELIGHTS
	COLOR	CLEAR
	SIZE	3/8" THICK
	REMARKS:	SHALL COMPLY W/ 2018 IBC 2403.1 & 2403.4
GL-3	TYPE	TEMPERED SAFETY GLASS - BUTT GLAZING
	COLOR	CLEAR
	SIZE	1/2" THICK
	REMARKS:	
GL-4	TYPE	MIRRORED TEMPERED SAFETY GLASS
	COLOR	CLEAR
	SIZE	1/4" THICK
	REMARKS	RESTROOMS & OPERATIONS STORAGE

PAINT		
PT-1	MANUFACTURER	BENJAMIN MOORE
	COLOR	BABY FAWN
	NUMBER	OC-15
	FINISH	MATTE (ULTRA SPEC SCUFF-XN484)
	REMARKS	GENERAL PAINT, INCLUDING PAINT GRADE DOORS
PT-2	MANUFACTURER	BENJAMIN MOORE
	COLOR	BACKWOODS
	NUMBER	CC-630
	FINISH	MATTE (ULTRA SPEC SCUFF-XN484)
	REMARKS	ACCENT WALL - LOBBY
PT-3	MANUFACTURER	BENJAMIN MOORE
	COLOR	ALEXANDRIA BEIGE
	NUMBER	HC-77
	FINISH	MATTE (ULTRA SPEC SCUFF-XN484)
	REMARKS	ACCENT WALL
PT-4	MANUFACTURER	BENJAMIN MOORE
	COLOR	CALM
	NUMBER	CP-2111-70
	FINISH	MATTE 522 (AURA INTERIOR PAINT - SCRUBBABLE)
	REMARKS	RESTROOMS
PT-5	MANUFACTURER	BENJAMIN MOORE
	COLOR	SNOW WHITE
	NUMBER	OC-66
	FINISH	MATTE (ULTRA SPEC SCUFF-XN484)
	REMARKS	GWB CEILINGS THROUGHOUT
PT-6	MANUFACTURER	BENJAMIN MOORE
	COLOR	CALM
	NUMBER	CP-2111-70
	FINISH	MATTE (ULTRA SPEC SCUFF-X N484)
	REMARKS	PHONEBOOTH GENERAL PAINT
PT-7	MANUFACTURER	BENJAMIN MOORE
	COLOR	GRAY HUSKIE
	NUMBER	1473
	FINISH	MATTE (ULTRA SPEC SCUFF-X N484)
	REMARKS	PHONEBOOTH ACCENT WALL PAINT

PLASTIC LAMINATE		
PL-1	MANUFACTURER	WILSONART
	COLOR	NATURAL RECON
	NUMBER	7996-38
	FINISH	FINE VELVET FINISH
	REMARKS	PANTRY, RESTROOM
PL-3	MANUFACTURER	WILSONART
	COLOR	DESIGNER WHITE (OR WHITE)
	NUMBER	D354-60 (OR 1570-60)
	FINISH	MATTE
	REMARKS	ADJUSTABLE SHELVING

RESILIENT BASE		
RB-1A	MANUFACTURER	ROPPE
	STYLE	VINYL, TOELESS
	COLOR	NATURAL
	NUMBER	122
	SIZE	2.5" HIGH, 120' ROLL
	REMARKS	@ PT-01 WALLS
	CLASSIFICATION	CLASS B
RB-1B	MANUFACTURER	ROPPE
	STYLE	VINYL, WITH TOE AT RESILIENT FLOOR
	COLOR	NATURAL
	NUMBER	122
	SIZE	4" HIGH, 120' ROLL
	REMARKS	@ PT-01 WALLS IN UTILITY ROOMS
	CLASSIFICATION	CLASS B
RB-3	MANUFACTURER	ROPPE
	STYLE	VINYL, TOELESS
	COLOR	CAMEL
	NUMBER	191
	SIZE	2.5" HIGH, 120' ROLL
	REMARKS	@ PT-03 WALLS
	CLASSIFICATION	CLASS B
RB-6	MANUFACTURER	JOHNSONITE
	STYLE	VINYL, TOELESS
	COLOR	MIST
	NUMBER	27
	SIZE	2.5" HIGH, 120' ROLL
	REMARKS	@ PT-6 WALLS
	CLASSIFICATION	CLASS B
RB-7	MANUFACTURER	ROPPE
	STYLE	VINYL, TOELESS
	COLOR	DOVER
	NUMBER	TB3
	SIZE	2.5" HIGH, 120' ROLL
	REMARKS	@ PT-7 WALLS
	CLASSIFICATION	CLASS B

RESILIENT FLOORING		
RF-1	MANUFACTURER	ARMSTRONG
	COLLECTION	EXCELON SDT
	NUMBER	51951
	COLOR	ARMOR GREY
	SIZE	12" X 12" TILE
TR-1	MANUFACTURER	TARKETT
	STYLE	JOHNSONITE SLIM LINE TRANSITION
	COLOR	GREY HAZE
	NUMBER	24
	SIZE	SLT-24-A
	CLASSIFICATION	CLASS B

SOLID SURFACE MATERIAL		
ST-1	MANUFACTURER	CAESARSTONE
	PRODUCT	QUARTZ SURFACE
	COLOR/NO.	4600 ORGANIC WHITE
	THICKNESS	1.25 inch
	REMARKS	PANTRY, LOBBY HOSPITALITY BAR
ST-2	MANUFACTURER	CAESARSTONE
	PRODUCT	QUARTZ SURFACE
	COLOR/NO.	5143 WHITE ATTICA
	THICKNESS	1.25 inch
	REMARKS	RESTROOM

WALLCOVERING		
WC-1	MANUFACTURER	MAHARAM
	STYLE	GEMMA MULTI
	NUMBER	466569
	COLOR	131 PALLIUM REVERSE
	CLASSIFICATION	CLASS A
	REMARKS	DIRECT GLUE APPLICATION

WINDOW TREATMENTS		
WT-1	MANUFACTURER	DRAPER NO SUBSTITUTIONS
	STYLE	CLUTCH OPERATED FLEXSHADE
	FABRIC	SHEARWEAVE
	COLOR	PW4901- V28 SLATE - 1% OPENNESS
	ENCLOSURE COLOR	WHITE
	CLASSIFICATION	CLASS A
	REMARKS	
WT-2	MANUFACTURER	DRAPER NO SUBSTITUTIONS
	STYLE	MOTORIZED FLEXSHADE
	FABRIC	SHEARWEAVE
	COLOR	PW4901 - V28 SLATE - 1% OPENNESS
	ENCLOSURE COLOR	WHITE
	CLASSIFICATION	CLASS A
	REMARKS	MOTORIZED SHADE WITH SWITCH AND TIMER

WOOD VENEER		
WD-1	DESCRIPTION	VENEER WOOD PANELS
	MANUFACTURER	M. BOHLKE VENEER CORP NO SUBSTITUTIONS
	NAME / NUMBER	QTR. WHITE OAK /FIDELITY/SCOTTSDALE, AZ / 33435
	FLITCH	2436507A
	MATCHING	SLIP MATCH
	FINISH	2%-3% ULTRA MATTE CLEAR FINISH
	CONTACT	LARRY MUSIL (513) 746-1955, LMUSIL@mbveneer.com
	REMARKS	SUBMIT (4) FINISH SAMPLES FOR APPROVAL

TILE		
TL-1A	MANUFACTURER	STONE SOURCE BY 41ZERO42
1A NAT	STYLE	OTTO
	COLOR	GRIGIO
	SIZE	24" x 48"
	FINISH	NATURAL
	GROUT	LATICRETE SPECTRALOCK PRO PREMIUM, #78 STERLING SILVER, 1/8" GROUT LINE
	REMARKS	REFER TO TILE PATTERN 1/ID-521
TL-1B	MANUFACTURER	STONE SOURCE BY 41ZERO42
1B NAT	STYLE	OTTO
	COLOR	FANGO
	SIZE	24" x 48"
	FINISH	NATURAL
	GROUT	LATICRETE SPECTRALOCK PRO PREMIUM, #78 STERLING SILVER, 1/8" GROUT LINE
	REMARKS	REFER TO TILE PATTERN 1/ID-521
TL-2A	MANUFACTURER	STONE SOURCE BY 41ZERO42
2A NAT	STYLE	OTTO
	COLOR	GRIGIO
2A GOCCIO	SIZE	24" x 24"
	FINISH	50% NATURAL, 25% GOCCIA, 25% GRAFFIO
2A GRAFFIO	GROUT	LATICRETE SPECTRALOCK PRO PREMIUM, #78 STERLING SILVER, 1/8" GROUT LINE
	REMARKS	REFER TO TILE PATTERN 1/ID-521
TL-2B	MANUFACTURER	STONE SOURCE BY 41ZERO42
2B NAT	STYLE	OTTO
	COLOR	FANGO
2B GOCCIO	SIZE	24" x 24"
	FINISH	50% NATURAL, 25% GOCCIA, 25% GRAFFIO
2B GRAFFIO	GROUT	LATICRETE SPECTRALOCK PRO PREMIUM, #78 STERLING SILVER, 1/8" GROUT LINE
	REMARKS	REFER TO TILE PATTERN 1/ID-521
TL-3A	MANUFACTURER	STONE SOURCE BY 41ZERO42
3A NAT	STYLE	OTTO
	COLOR	GRIGIO
3A GOCCIO	SIZE	12" x 24"
	FINISH	50% NATURAL, 25% GOCCIA, 25% GRAFFIO
3A GRAFFIO	GROUT	LATICRETE SPECTRALOCK PRO PREMIUM, #78 STERLING SILVER, 1/8" GROUT LINE
	REMARKS	REFER TO TILE PATTERN 1/ID-521
TL-3B	MANUFACTURER	STONE SOURCE BY 41ZERO42
3B NAT	STYLE	OTTO
	COLOR	FANGO
3B GOCCIO	SIZE	12" x 24"
	FINISH	50% NATURAL, 25% GOCCIA, 25% GRAFFIO
3B GRAFFIO	GROUT	LATICRETE SPECTRALOCK PRO PREMIUM, #78 STERLING SILVER, 1/8" GROUT LINE
	REMARKS	REFER TO TILE PATTERN 1/ID-521
TL- 4A	MANUFACTURER	STONE SOURCE BY MUTINA + RAW EDGES
	STYLE	TEX
	SIZE	RUNNER 50.46
	COLOR	RUNNER 8 OLIVE
	LAYOUT	SCHEME 2 - DOUBLE COMPOSITION
	GROUT	MAPEI GROUT 5220 EGGSHELL, 1/8" GROUT LINE
	REMARKS	PANTRY BACKSPLASH - REFER TO 2/ID-521
TL- 4B	MANUFACTURER	STONE SOURCE BY MUTINA + RAW EDGES
	STYLE	TEX
	SIZE	11, 5.20
	COLOR	WHITE
	FINISH	RANDOM MIX OF TONES AND TEXTURES
	GROUT	MAPEI GROUT 5220 EGGSHELL, 1/8" GROUT LINE
	REMARKS	PANTRY BACKSPLASH - REFER TO 2/ID-521
TL- 4C	MANUFACTURER	STONE SOURCE BY MUTINA + RAW EDGES
	STYLE	TEX
	SIZE	SKIRTING, 5.20
	COLOR	WHITE
	FINISH	RANDOM MIX OF TONES AND TEXTURES
	GROUT	MAPEI GROUT 5220 EGGSHELL, 1/8" GROUT LINE
	REMARKS	PANTRY BACKSPLASH - REFER TO 2/ID-521
TL- 5A	MANUFACTURER	GARDEN STATE TILE
	STYLE	HEXA WALL
	SIZE	7 x 6
	COLOR	GREEN ECHO
	FINISH	GLOSSY
	GROUT	LATICRETE SPECTRALOCK PRO PREMIUM, #78 STERLING SILVER, 1/8" GROUT LINE
	REMARKS	RESTROOM
TL- 5B	MANUFACTURER	GARDEN STATE TILE
	STYLE	HEXA WALL
	SIZE	7 x 6
	COLOR	LEMON SORBET
	FINISH	GLOSSY
	GROUT	LATICRETE SPECTRALOCK PRO PREMIUM, #78 STERLING SILVER, 1/8" GROUT LINE
	REMARKS	RESTROOM
TL- 6	MANUFACTURER	CROSSVILLE
	STYLE	COLOR BY NUMBERS
	SIZE	TRIM 4 x 12 WT02/.10412BNG, SINGLE BULLNOSE
	COLOR	TEA FOR TWO GLOSSY
	LAYOUT	WHITE
	GROUT	LATICRETE SPECTRALOCK PRO PREMIUM, #78 STERLING SILVER, 1/8" GROUT LINE
	REMARKS	RESTROOM - BASE AT PAINTED WALLS

MATERIAL CLASSIFICATIONS

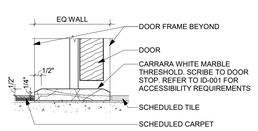
TABLE 803.9 INTERIOR WALL AND CEILING FINISH REQUIREMENTS BY OCCUPANCY

GROUP	SPRINKLERED BUILDING		
	INTERIOR EXIT STAIRWAYS, INTERIOR EXIT RAMPS, AND EXIT PASSAGEWAYS	CORRIDORS AND ENCLOSURE FOR EXIT ACCESS STAIRWAYS AND EXIT ACCESS RAMPS	ROOMS AND ENCLOSED SPACES
B	B	C	C

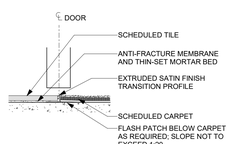
CLASS A: FLAME SPREAD INDEX 0-25; SMOKE DEVELOPED INDEX 0-450

CLASS B: FLAME SPREAD INDEX 26-75; SMOKE DEVELOPED INDEX 0-450

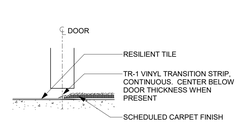
CLASS C: FLAME SPREAD INDEX 76-200; SMOKE DEVELOPED INDEX 0-450



3 STONE THRESHOLD DETAIL
ID-520 SCALE: 3" = 1'-0"



2 TILE TO CPT TRANSITION DETAIL
ID-520 SCALE: 3" = 1'-0"



1 RESILIENT TILE TO CPT TRANSITION DETAIL
ID-520 SCALE: 3" = 1'-0"

Jacobs

Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

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VANDERWEIL

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P 617-423-7423
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Number	Description	Date
	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project North
True North

Project No.: K2812554 R06

Drawing Sheet Title:

INTERIOR FINISH LEGEND AND TRANSITION DETAILS

Drawing Sheet Number:

ID-520

Owner's Branch No.:

134

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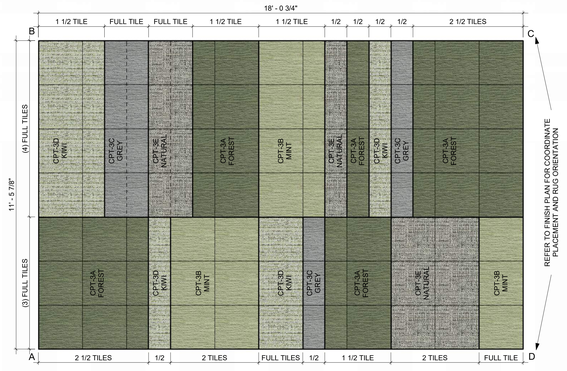
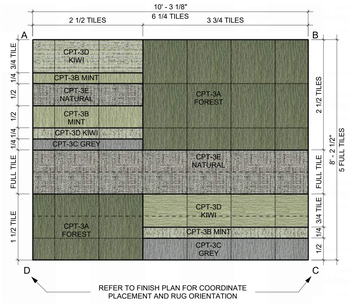
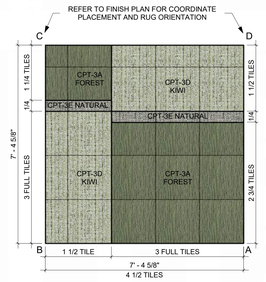


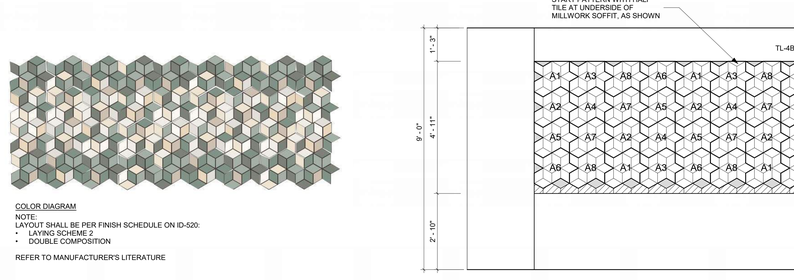
5 LOBBY AREA RUG - LARGE
ID-521 SCALE: 1/2" = 1'-0"



4 LOBBY AREA RUG - MEDIUM
ID-521 SCALE: 1/2" = 1'-0"



3 TR OFFICE AREA RUG
ID-521 SCALE: 1/2" = 1'-0"

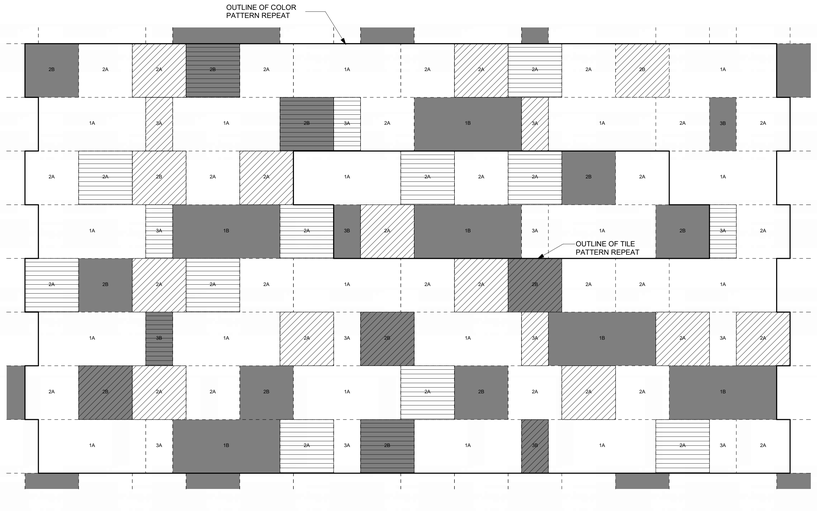


COLOR DIAGRAM

NOTE:
LAYOUT SHALL BE PER FINISH SCHEDULE ON ID-520:
- LAYING SCHEME 2
- DOUBLE COMPOSITION

REFER TO MANUFACTURER'S LITERATURE

2 PANTRY BACKSPLASH
ID-521 SCALE: 1/2" = 1'-0"



TILE PATTERN NOTES:

1. COLOR PATTERN REPEAT = 448 SF

   75% GRIGIO = 336 SF
   25% FANGO = 112 SF

   (24) 24 x 48 TILE
   1A - 75% GRIGIO = (18) TILES = 144 SF
   1B - 25% FANGO = (6) TILES = 48 SF

   (56) 24 x 24 TILE
   2A - 75% GRIGIO = (42) TILES = 168 SF
   50% NATURAL = (21) TILES
   25% GOCCIA = (11) TILES
   25% GRAFFIO = (10) TILES
   2B - 25% FANGO = (14) TILES = 56 SF
   50% NATURAL = (7) TILES
   25% GOCCIA = (4) TILE
   25% GRAFFIO = (3) TILES

   (16) 12 x 24 TILES
   3A - 75% GRIGIO = (12) TILES = 24 SF
   50% NATURAL = (6) TILES
   25% GOCCIA = (3) TILES
   25% GRAFFIO = (3) TILES
   3B - 25% FANGO = (4) TILES = 8 SF
   50% NATURAL = (2) TILES
   25% GOCCIA = (1) TILE
   25% GRAFFIO = (1) TILE

2. REFER TO ID-520 FOR TILE SPECIFICATIONS

3. ALL FLOOR TILE SHALL BE INSTALLED OVER SCHLUTER DITRA UNCOUPLING MEMBRANE.

1 ENLARGED FLOOR TILE PATTERN
ID-521 SCALE: 1/2" = 1'-0"

Jacobs

Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL

R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210

P 617-423-7423
F 617-423-7501
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Seals:

REGISTERED ARCHITECT
CERTIFICATE NO.
69323
FREDERIC H. GROSSFELD
DATE SIGNED:
ARIZONA, U.S.A.

12/20/2024

General Notes:

Project Title:

Fidelity INVESTMENTS

Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project North
True North

Project No.: K2812554 R06

Drawing Sheet Title:

INTERIOR FINISH DETAILS AND PATTERNS

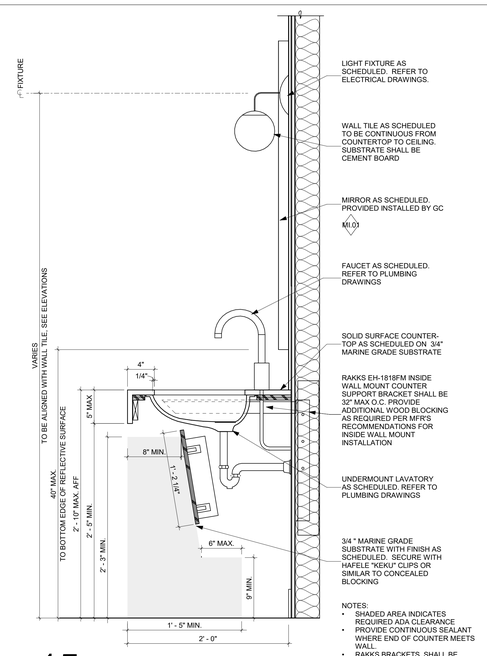
Drawing Sheet Number:

ID-521

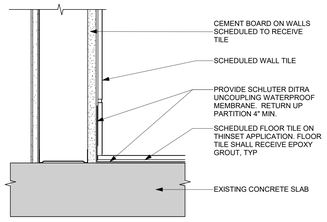
Owner's Branch No.:

134

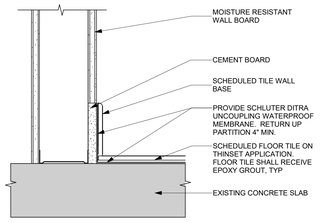
12/19/2024 3:00:10 PM



15 SECTION AT LAVATORY
ID-600 SCALE: 1 1/2" = 1'-0"



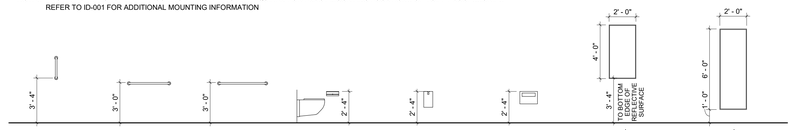
14 WALL TILE DETAIL
ID-600 SCALE: 3" = 1'-0"



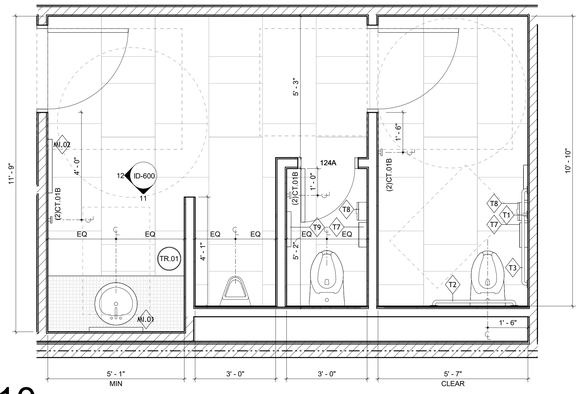
13 TILE BASE DETAIL
ID-600 SCALE: 3" = 1'-0"

TOILET ACCESSORIES - SPECIFICATIONS AND MOUNTING HEIGHTS

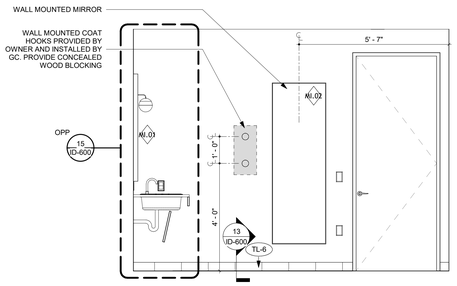
NOTES: PROVIDE ADDITIONAL WALL BLOCKING AND FRAMING AS REQUIRED FOR EXACT MOUNTING LOCATIONS OF TOILET ACCESSORIES
REFER TO ID-001 FOR ADDITIONAL MOUNTING INFORMATION



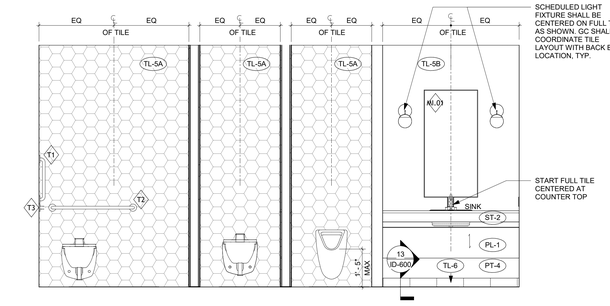
T1	T2	T3	T7	T8	T9	MI.03	MI.02
BOBRICK STRAIGHT GRAB BAR MODEL B-5806x18 18" LONG GRAB BAR INSTALLED ON SIDE WALL	BOBRICK STRAIGHT GRAB BAR MODEL B-5806x36 36" LONG GRAB BAR INSTALLED ON BACK WALL	BOBRICK STRAIGHT GRAB BAR MODEL B- 5806x42 42" LONG GRAB BAR INSTALLED ON SIDE WALL	BOBRICK SURFACE-MOUNTED TOILET TISSUE DISPENSER AND UTILITY SHELF MODEL B-540	BOBRICK SURFACE-MOUNTED SANITARY NAPKIN DISPOSAL MODEL B-35139	BOBRICK SURFACE-MOUNTED SEAT COVER DISPENSER MODEL B-221	BOBRICK COUNTER MIRROR MATTE BLACK FINISH 24" x 48" MODEL B-290 2448.MBLK	BOBRICK FULL LENGTH MIRROR MATTE BLACK FINISH 24" x 72" MODEL B-290 2472.MBLK



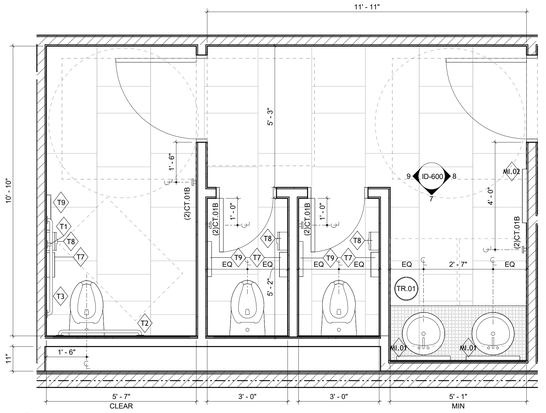
10 ENLARGED MENS RESTROOM PLAN
ID-600 SCALE: 1/2" = 1'-0"



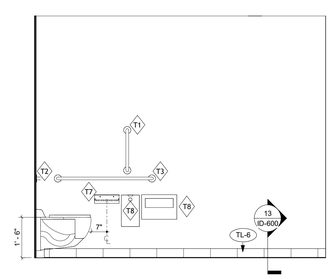
12 DOOR WALL
ID-600 SCALE: 1/2" = 1'-0"



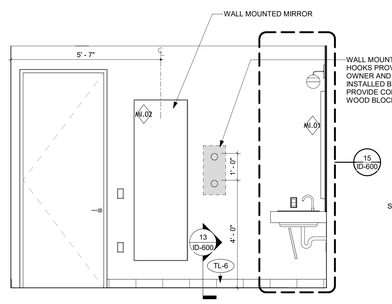
11 MENS SINK AND TOILET WALL
ID-600 SCALE: 1/2" = 1'-0"



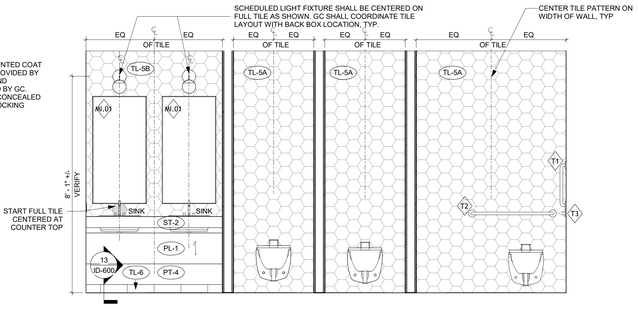
6 ENLARGED WOMENS RESTROOM PLAN
ID-600 SCALE: 1/2" = 1'-0"



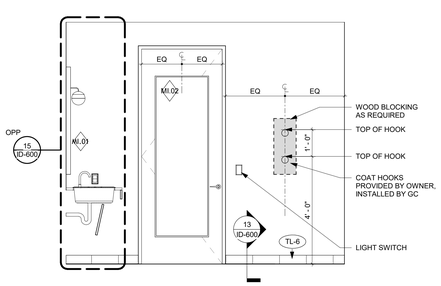
9 SIDE WALL
ID-600 SCALE: 1/2" = 1'-0"



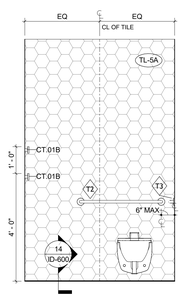
8 DOOR WALL
ID-600 SCALE: 1/2" = 1'-0"



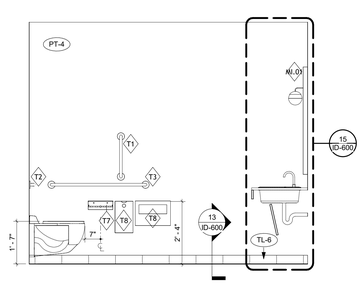
7 WOMENS SINK AND TOILET WALL
ID-600 SCALE: 1/2" = 1'-0"



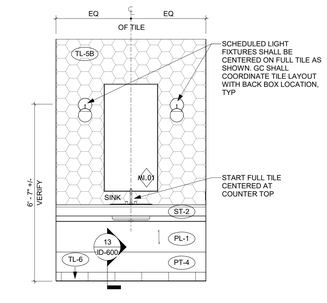
5 DOOR WALL
ID-600 SCALE: 1/2" = 1'-0"



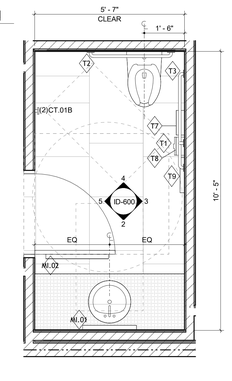
4 TOILET WALL
ID-600 SCALE: 1/2" = 1'-0"



3 SIDE WALL
ID-600 SCALE: 1/2" = 1'-0"



2 SINK WALL
ID-600 SCALE: 1/2" = 1'-0"



1 ENLARGED SINGLE USER RESTROOM PLAN
ID-600 SCALE: 1/2" = 1'-0"

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

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Number	Description	Date
	Issued for Permit & Construction	23 DEC 24

Key Plan:
Project North
True North

Project No.: K2812554 R06

Drawing Sheet Title:
INTERIOR RESTROOM PLANS, ELEVATIONS AND DETAILS

Drawing Sheet Number:
ID-600

Owner's Branch No.:
134

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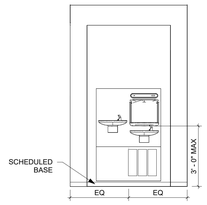
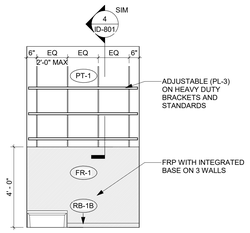
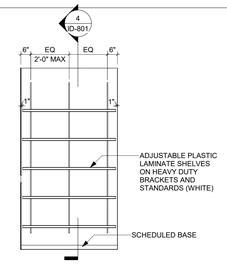


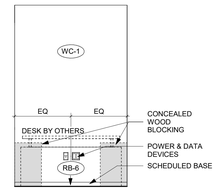
21 DRINKING FOUNTAIN
ID-700 SCALE: 3/8" = 1'-0"



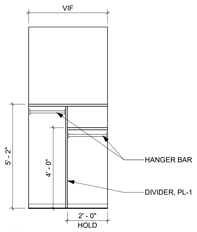
20 JANITOR CLOSET
ID-700 SCALE: 3/8" = 1'-0"



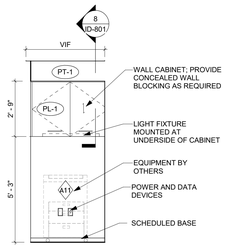
19 TYP.STORAGE
ID-700 SCALE: 3/8" = 1'-0"



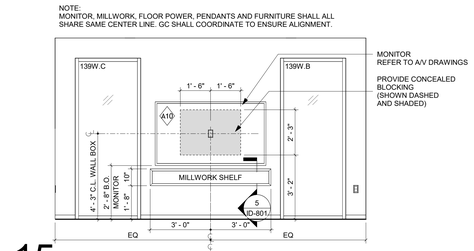
18 TYP. FOCUS ROOM
ID-700 SCALE: 3/8" = 1'-0"



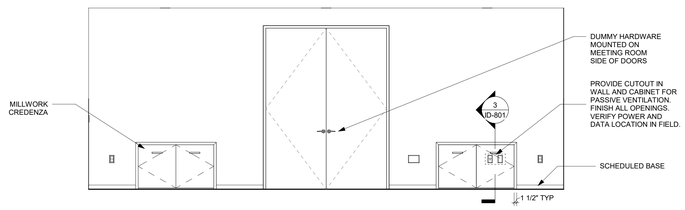
17 COATS
ID-700 SCALE: 3/8" = 1'-0"



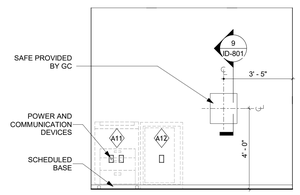
16 PRINT AREA
ID-700 SCALE: 3/8" = 1'-0"



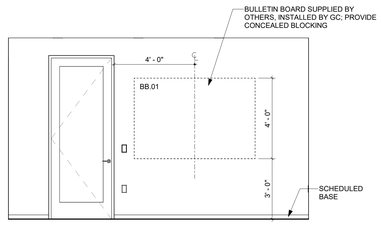
15 MEETING ROOM MONITOR WALL
ID-700 SCALE: 3/8" = 1'-0"



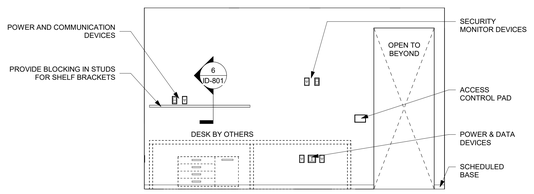
14 MEETING ROOM LOOKING TOWARDS PANTRY
ID-700 SCALE: 3/8" = 1'-0"



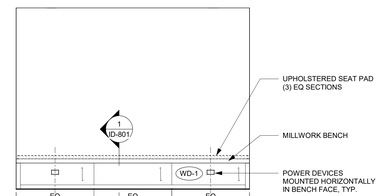
13 OPERATIONS - PRINT WALL
ID-700 SCALE: 3/8" = 1'-0"



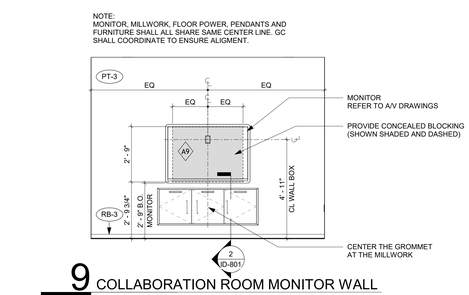
12 OPERATIONS - DOOR WALL
ID-700 SCALE: 3/8" = 1'-0"



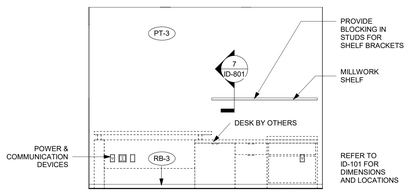
11 OPERATIONS - WORK WALL
ID-700 SCALE: 3/8" = 1'-0"



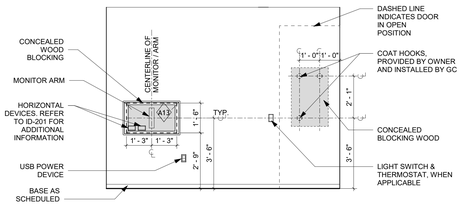
10 COLLABORATION ROOM BENCH WALL
ID-700 SCALE: 3/8" = 1'-0"



9 COLLABORATION ROOM MONITOR WALL
ID-700 SCALE: 3/8" = 1'-0"



8 TYP. OFFICE - WORK WALL
ID-700 SCALE: 3/8" = 1'-0"



7 TYP. OFFICE - MONITOR WALL
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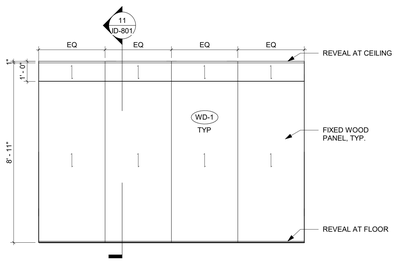
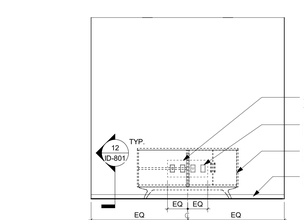
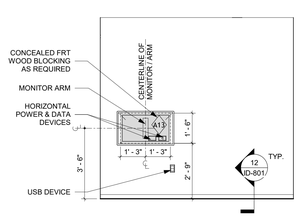


6 FR OFFICE - WOODEN WALL
ID-700 SCALE: 3/8" = 1'-0"



5 TR OFFICE - BACK WALL
ID-700 SCALE: 3/8" = 1'-0"



4 TR OFFICE - MONITOR WALL
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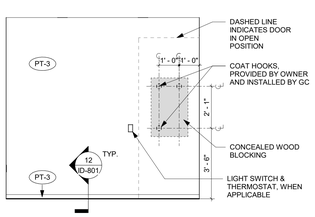

3 TR OFFICE - DOOR WALL
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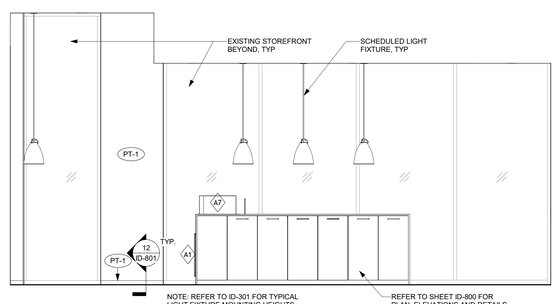
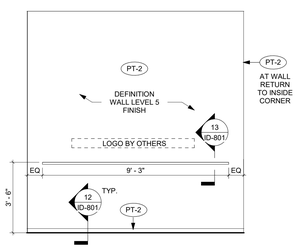


2 LOBBY ISLAND
ID-700 SCALE: 3/8" = 1'-0"



1 DEFINITION WALL
ID-700 SCALE: 3/8" = 1'-0"

Jacobs
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ARIZONA, U.S.A.

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Boston, MA 20110

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Scottsdale, AZ 85254

Number	Description	Date
	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project North
True North

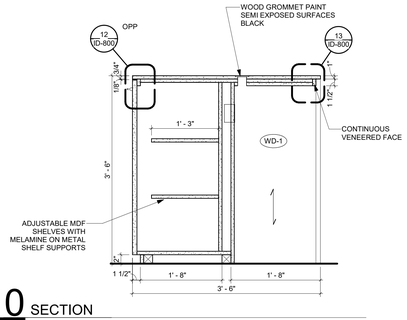
Project No.: K2812554 R06

Drawing Sheet Title:
INTERIOR ELEVATIONS

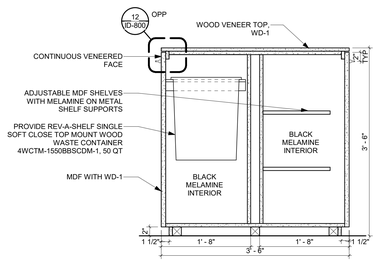
Drawing Sheet Number:
ID-700

Owner's Branch No.:
134

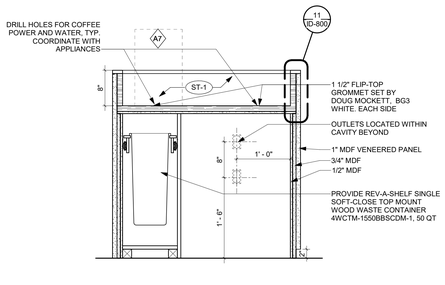
12/19/2024 11:35:23 AM



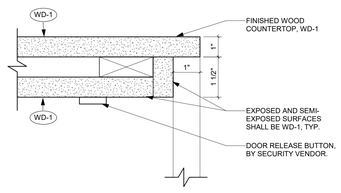
10 SECTION
ID-800 SCALE: 1" = 1'-0"



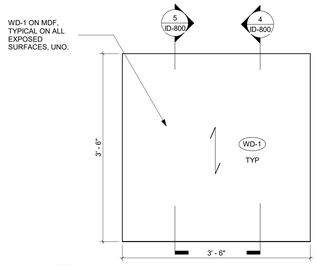
9 SECTION
ID-800 SCALE: 1" = 1'-0"



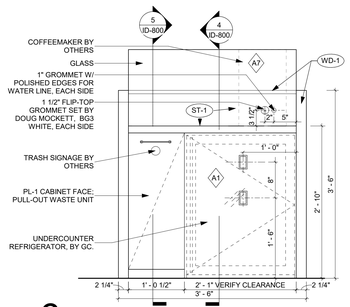
8 SECTION
ID-800 SCALE: 1" = 1'-0"



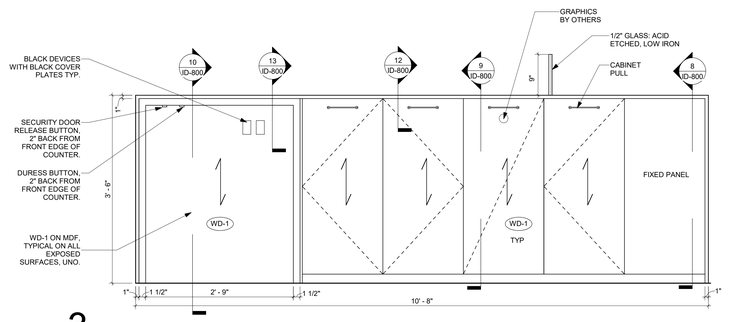
13 DETAIL AT SECURITY BUTTON
ID-800 SCALE: 6" = 1'-0"



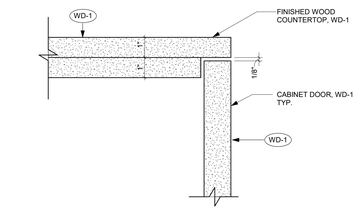
7 LOBBY MILLWORK ELEVATION A
ID-800 SCALE: 1" = 1'-0"



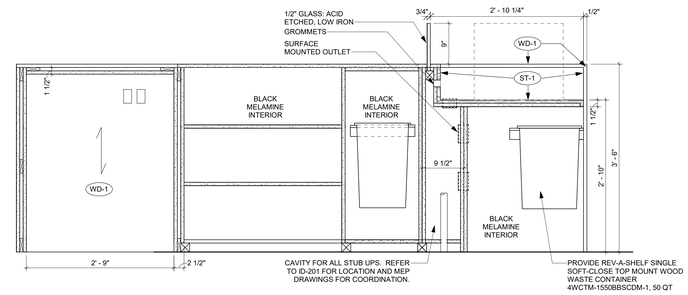
6 LOBBY MILLWORK ELEVATION B
ID-800 SCALE: 1" = 1'-0"



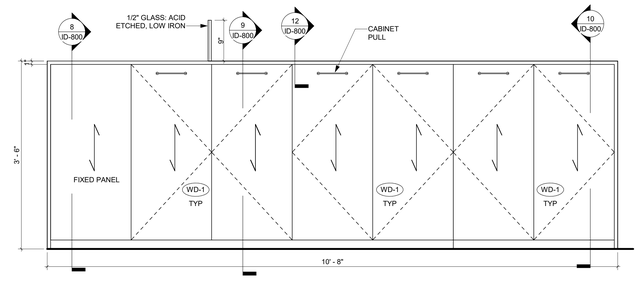
3 LOBBY MILLWORK - BACK ELEVATION
ID-800 SCALE: 1" = 1'-0"



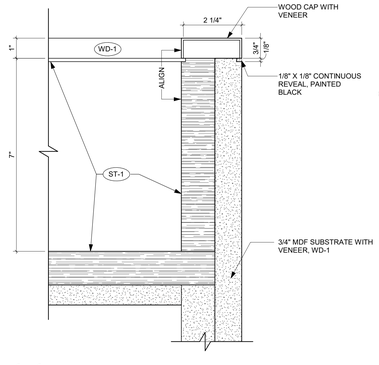
12 DETAIL AT DOOR
ID-800 SCALE: 6" = 1'-0"



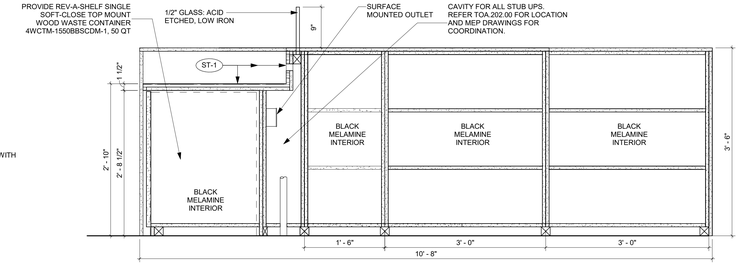
5 LOBBY MILLWORK SECTION
ID-800 SCALE: 1" = 1'-0"



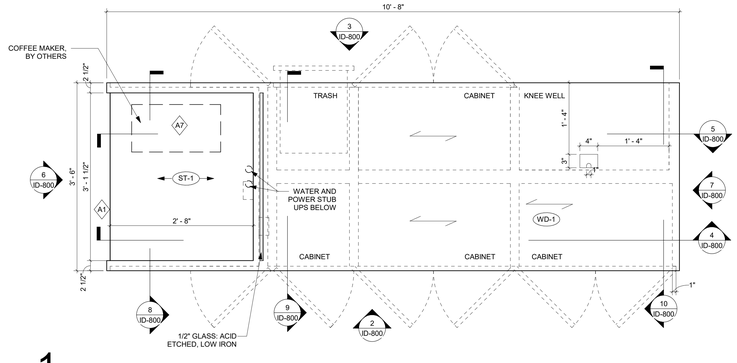
2 LOBBY MILLWORK - FRONT ELEVATION
ID-800 SCALE: 1" = 1'-0"



11 DETAIL AT STONE LINER
ID-800 SCALE: 6" = 1'-0"



4 LOBBY MILLWORK SECTION
ID-800 SCALE: 1" = 1'-0"



1 LOBBY MILLWORK - ENLARGED PLAN
ID-800 SCALE: 1" = 1'-0"

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Two Commerce Square
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12/20/2024

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Number	Description	Date
	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project North
True North

Project No.: K2812554 R06

Drawing Sheet Title:

INTERIOR LOBBY MILLWORK PLAN, ELEVATIONS AND DETAILS

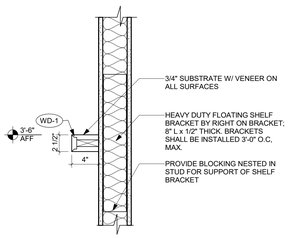
Drawing Sheet Number:

ID-800

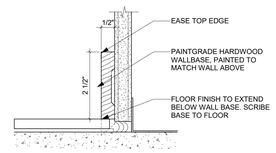
Owner's Branch No.:

134

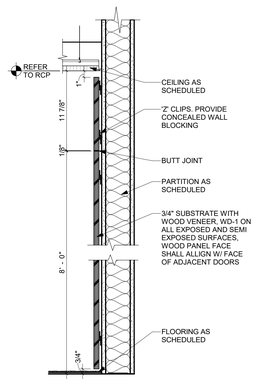
12/19/2024 11:35:25 AM



13 LEDGE AT LOGO WALL
ID-801 SCALE: 1 1/2" = 1'-0"



12 PAINT GRADE WOOD BASE
ID-801 SCALE: 6" = 1'-0"



11 WOOD PANEL SECTION
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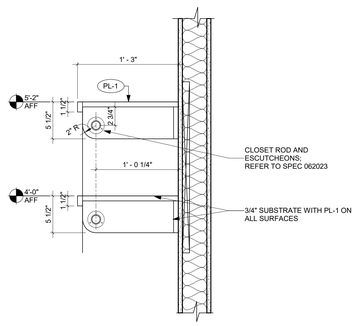
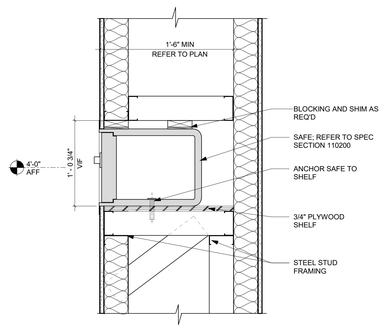
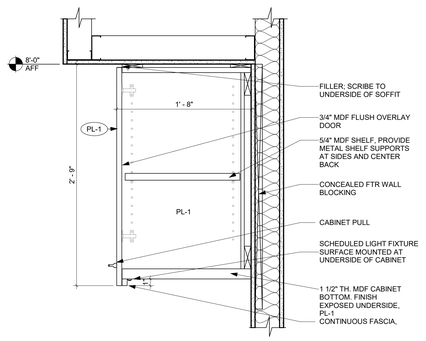


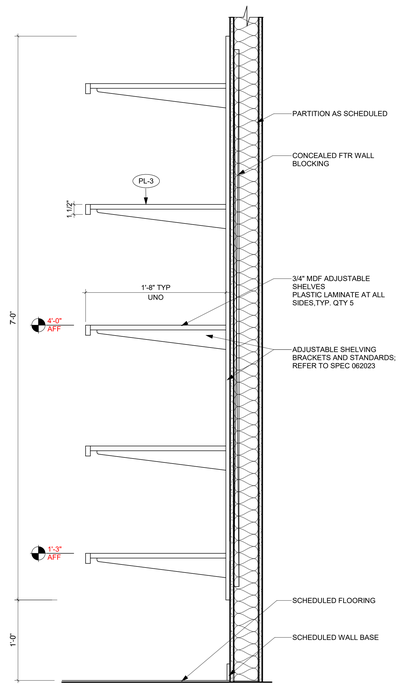
10 COAT ROD AND SHELF
ID-801 SCALE: 1 1/2" = 1'-0"



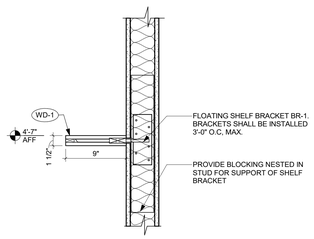
9 WALL MOUNTED SAFE
ID-801 SCALE: 1 1/2" = 1'-0"



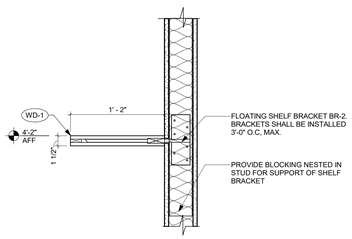
8 WALL CABINET AT PRINT AREA
ID-801 SCALE: 1 1/2" = 1'-0"



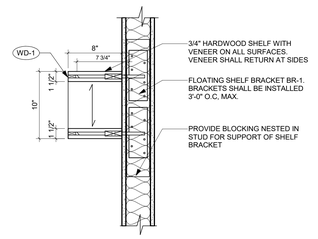
4 ADJUSTABLE SHELVES
ID-801 SCALE: 1 1/2" = 1'-0"



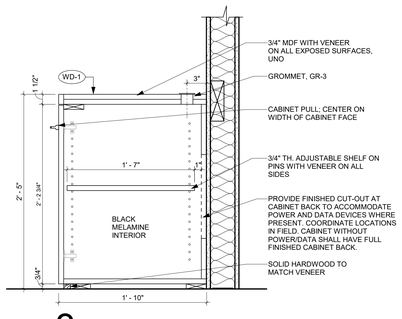
7 SHELF AT GUIDANCE OFFICE
ID-801 SCALE: 1 1/2" = 1'-0"



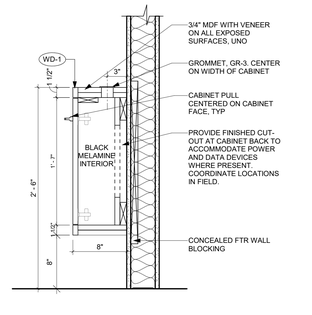
6 SHELF IN OPERATIONS
ID-801 SCALE: 1 1/2" = 1'-0"



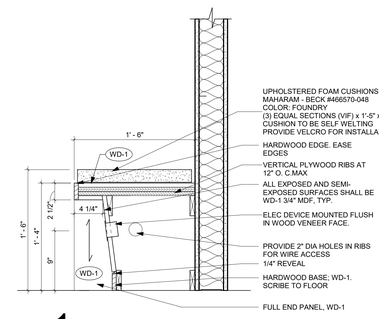
5 SHELF AT AV MONITORS
ID-801 SCALE: 1 1/2" = 1'-0"



3 CREDENZA AT MEETING ROOM
ID-801 SCALE: 1 1/2" = 1'-0"



2 COLLABORATION CABINET
ID-801 SCALE: 1 1/2" = 1'-0"



1 COLLABORATION ROOM BENCH
ID-801 SCALE: 1 1/2" = 1'-0"

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3. FOR PANTRY, ALL EXPOSED AND SEMI-EXPOSED SURFACES SHALL BE PLASTIC LAMINATES, PL-1. ALL INTERIOR SURFACES SHALL BE WHITE, UNO.
4. COFFEE COUNTER SHALL BE STONE, ST-1. EASED EDGES TO BE 1/16" MAX.
5. HINGES AT CABINET DOORS SHALL BE INSET BY HAFELE OR EQUAL AND SHALL BE SOFT CLOSE.
6. CABINET PULL SHALL BE CENTERED ON WIDTH OF CABINET DOOR, HORIZONTAL MOUNTED, TYP, UNO. REFER TO ID-001.
7. REFER TO DRAWING ID-520 FOR FINISH LEGEND.
8. REFER TO ID-201 FOR EQUIPMENT LEGEND.
9. ALL DRAWER SLIDES SHALL BE FULL EXTENSION, SOFT CLOSE.

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Key Plan:

Project North
True North

Project No.: K2812554 R06

Drawing Sheet Title:

INTERIOR MILLWORK DETAILS

Drawing Sheet Number:

ID-801

Owner's Branch No.:

134

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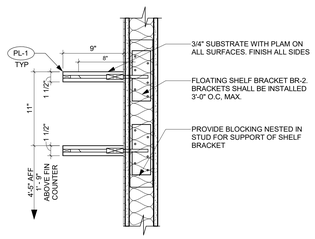
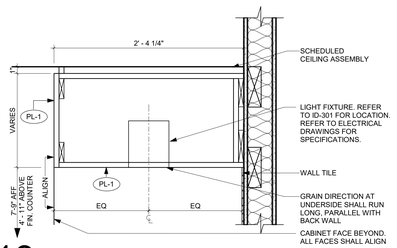
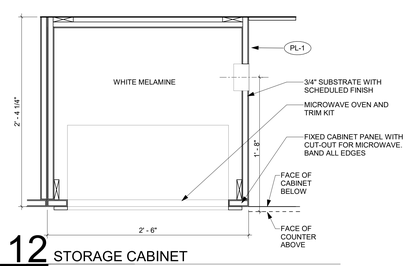


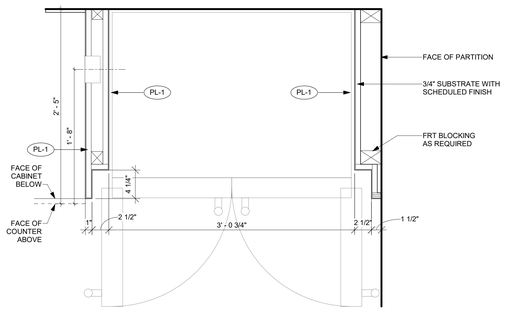
14 FIXED SHELVING
ID-802 SCALE: 1 1/2" = 1'-0"



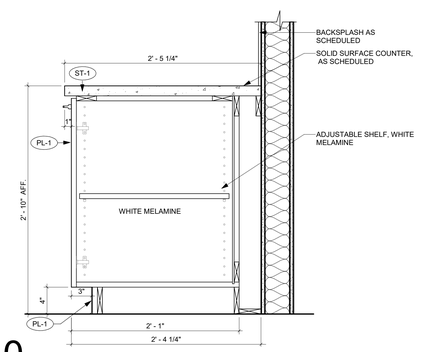
13 BULKHEAD
ID-802 SCALE: 1 1/2" = 1'-0"



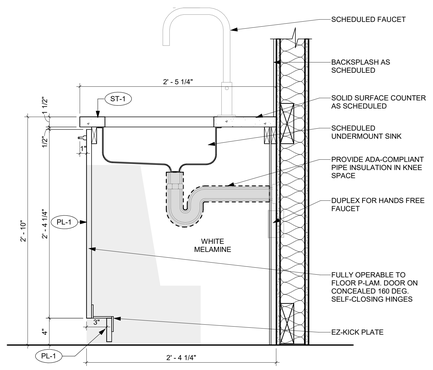
12 STORAGE CABINET
ID-802 SCALE: 1 1/2" = 1'-0"



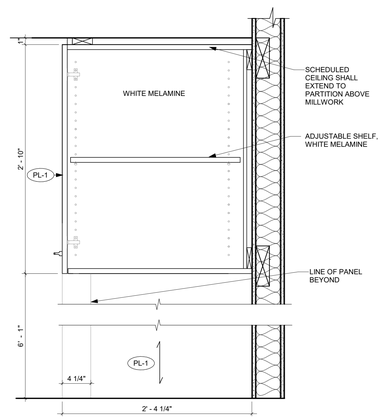
11 ENLARGED PLAN AT REFRIGERATOR CABINET
ID-802 SCALE: 1 1/2" = 1'-0"



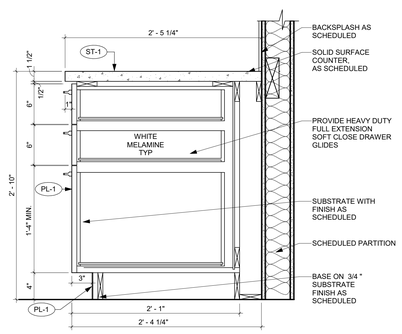
10 BASE CABINET
ID-802 SCALE: 1 1/2" = 1'-0"



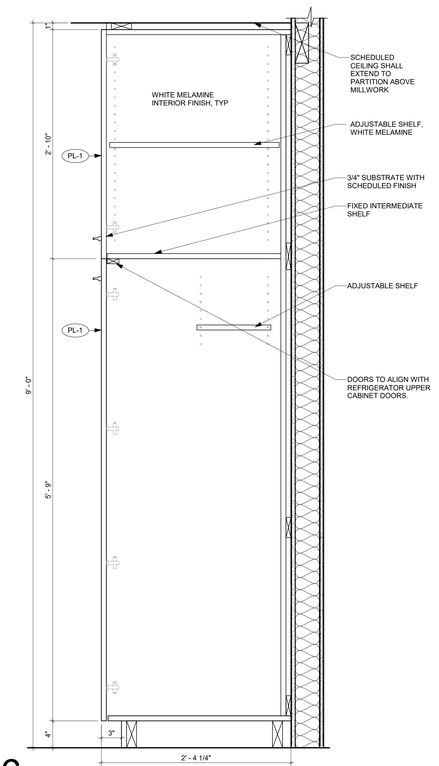
9 BASE CABINET AT SINK
ID-802 SCALE: 1 1/2" = 1'-0"



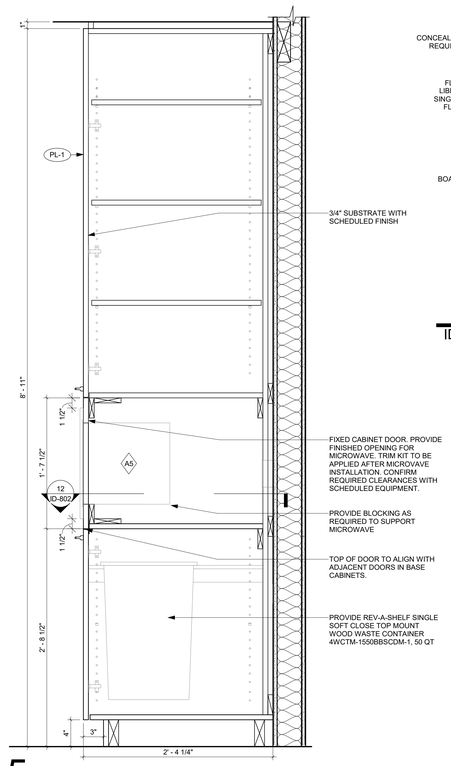
8 WALL CABINET OVER REFRIGERATOR
ID-802 SCALE: 1 1/2" = 1'-0"



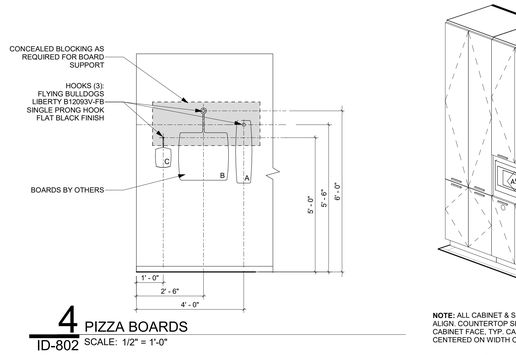
7 BASE CABINET with DRAWERS
ID-802 SCALE: 1 1/2" = 1'-0"



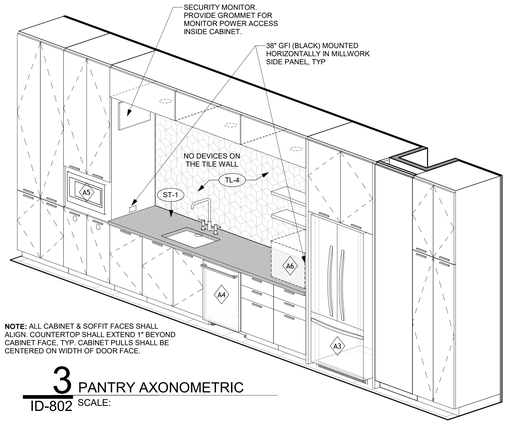
6 TALL STORAGE CABINET W/ BROOM CLOSET
ID-802 SCALE: 1 1/2" = 1'-0"



5 TALL STORAGE CABINET W/ MICROWAVE
ID-802 SCALE: 1 1/2" = 1'-0"

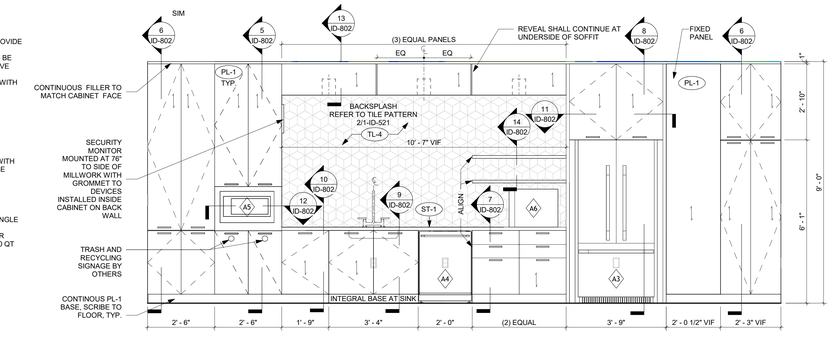


4 PIZZA BOARDS
ID-802 SCALE: 1/2" = 1'-0"

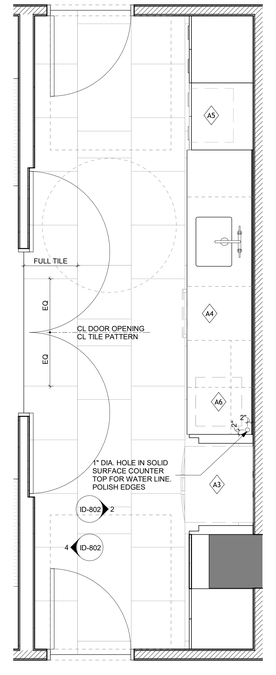


NOTE: ALL CABINET & SOFFIT FACES SHALL ALIGN. COUNTERTOP SHALL EXTEND 1" BEYOND CABINET FACE, TYP. CABINET PULLS SHALL BE CENTERED ON WIDTH OF DOOR FACE.

3 PANTRY AXONOMETRIC
ID-802 SCALE:



2 PANTRY ELEVATION
ID-802 SCALE: 1/2" = 1'-0"



1 PANTRY ENLARGED PLAN
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True North

Project No.: K2812554 R06

Drawing Sheet Title:

INTERIOR PANTRY PLAN, ELEVATIONS AND DETAILS

Drawing Sheet Number:

ID-802

Owner's Branch No.:

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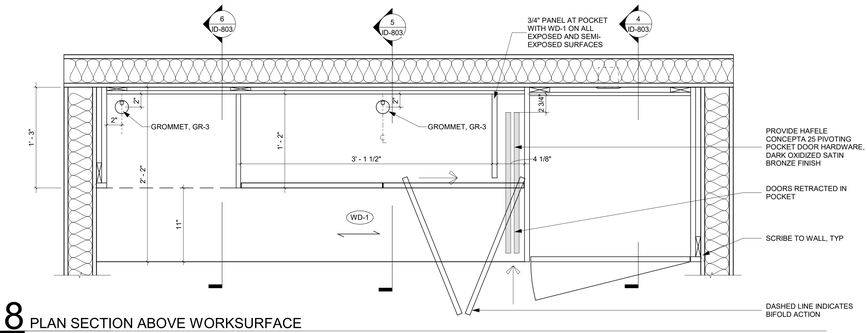
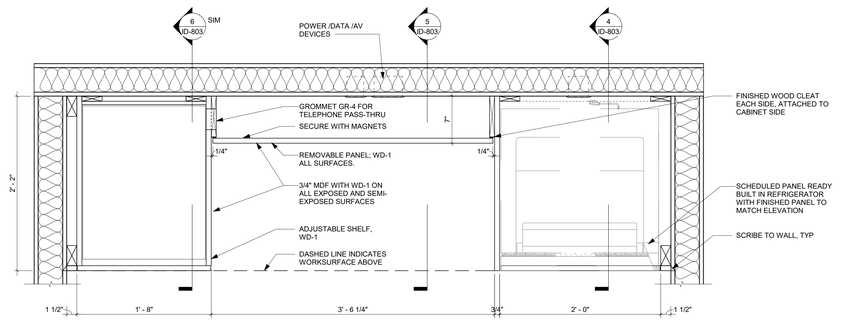
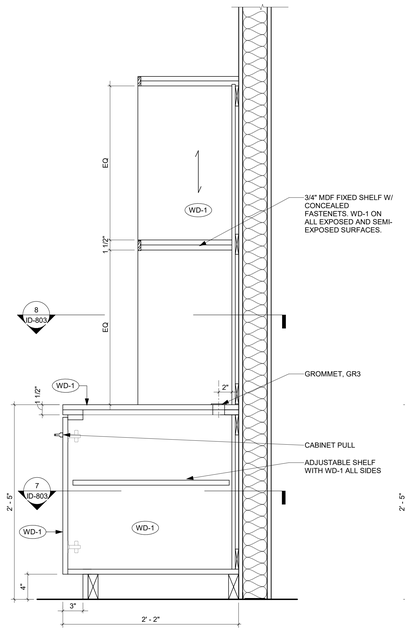


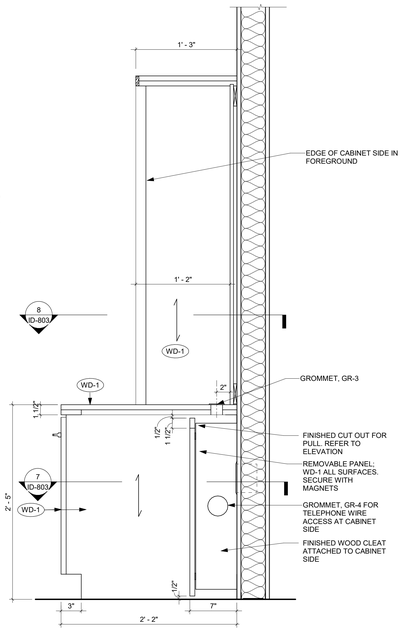
8 PLAN SECTION ABOVE WORKSURFACE
ID-803 SCALE: 1 1/2" = 1'-0"



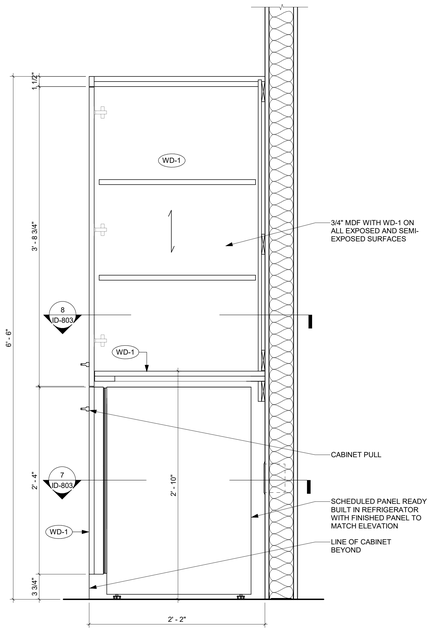
7 PLAN SECTION BELOW WORKSURFACE
ID-803 SCALE: 1 1/2" = 1'-0"



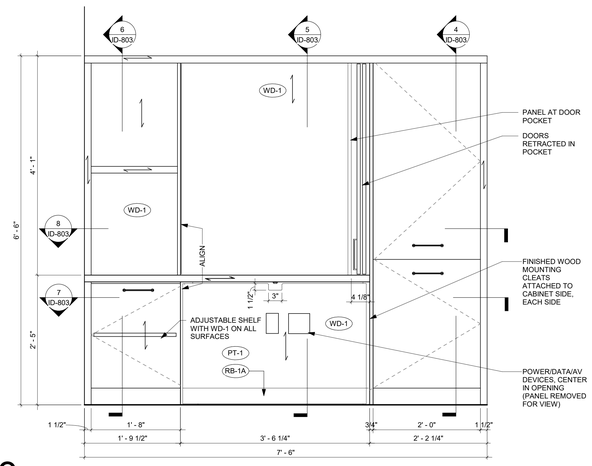
6 SECTION AT KNEE SPACE AND SLIDING DOORS
ID-803 SCALE: 1 1/2" = 1'-0"



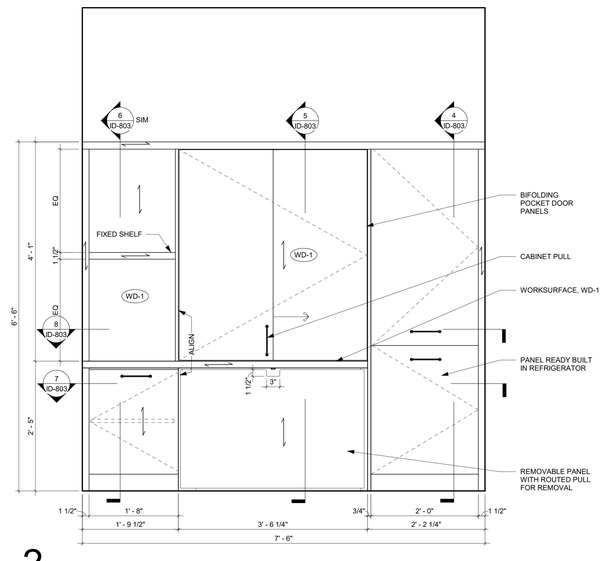
5 SECTION AT KNEE SPACE AND SLIDING DOORS
ID-803 SCALE: 1 1/2" = 1'-0"



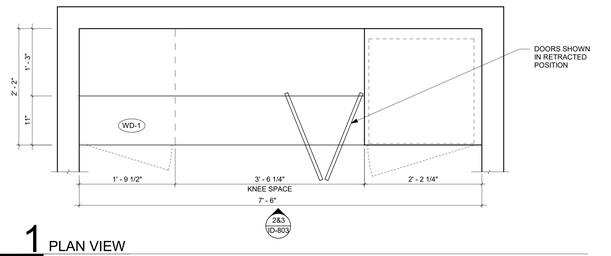
4 SECTION AT REF. CABINET AND FIXED SHELF
ID-803 SCALE: 1 1/2" = 1'-0"



3 ELEVATION - DOORS OPENED
ID-803 SCALE: 1" = 1'-0"



2 ELEVATION - DOORS CLOSED
ID-803 SCALE: 1" = 1'-0"



1 PLAN VIEW
ID-803 SCALE: 1" = 1'-0"

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL
R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210
P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

REGISTERED ARCHITECT
CERTIFICATE NO.
69323
FREDERIC H. GROSSFELD
DATE SIGNED:
ARIZONA, U.S.A.
12/20/2024

General Notes:

Project Title:
Fidelity INVESTMENTS
Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date

Key Plan:
Project North
True North

Project No.: K2812554 R06

Drawing Sheet Title:
INTERIOR MPR PLAN, ELEVATIONS AND DETAILS

Drawing Sheet Number:
ID-803

Owner's Branch No.:
134

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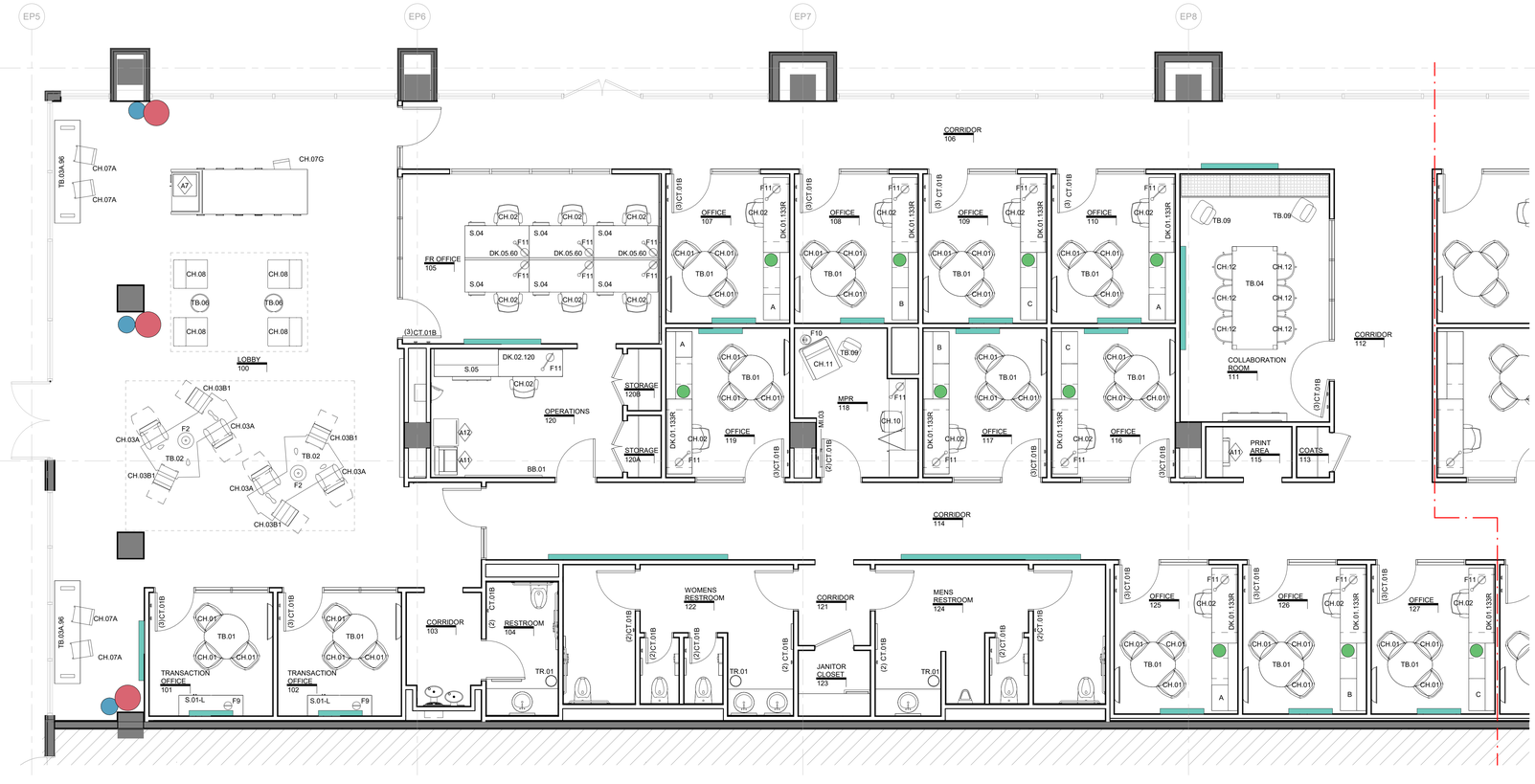
2 FURNITURE, ART AND PLANTER PLAN - EAST

ID-901 SCALE: 1/4" = 1'-0"



1 FURNITURE, ART AND PLANTER PLAN - WEST

ID-901 SCALE: 1/4" = 1'-0"

FURNITURE SCHEDULE - FOR REFERENCE ONLY FURNITURE DEALER TO VERIFY COUNTS1

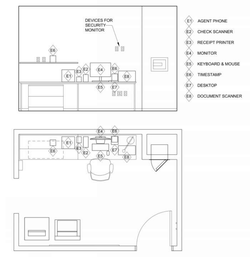
QTY	CODE	DESCRIPTION
9	A	SEAT PAD - GARDEN
8	B	SEAT PAD - BAMBOO
1	BB.01	BULLETIN BOARD
8	C	SEAT PAD - TERRAIN
81	CH.01	CHAIR - GUEST
45	CH.02	CHAIR - DESK
4	CH.03A	CHAIR, W/ ARMS, LOBBY
4	CH.03B1	CHAIR - ARMLESS, LOBBY
16	CH.03B2	CHAIR - ARMLESS, MEETING ROOM
2	CH.04C.71	BENCH - 71" WIDE
4	CH.07A	STOOL - COUNTER HEIGHT, W/ BACKREST - LOBBY, OPEN AREA
1	CH.07G	STOOL - BAR HEIGHT W/ BACKREST - AT LOBBY ISLAND
4	CH.08	CHAIR - LOUNGE, LOBBY
1	CH.10	CHAIR - TASK, MRP
1	CH.11	CHAIR - LOUNGE, MPR
6	CH.12	CHAIR - TASK, COLLABORATION ROOM
105	CT.01B	COAT HOOK - NATURAL OAK
1	DK.01.133L	DESK - 133" - LEFT HAND
24	DK.01.133R	DESK - 133" - RIGHT HAND
1	DK.02.120	DESK - OPERATIONS - 120"
6	DK.03	DESK - FOCUS ROOM
3	DK.05.60	DESK - FR, 60" WIDE
2	F2	LAMP - LOBBY
8	F9	LAMP - TRANSACTION OFFICE
1	F10	LAMP - FLOOR, MPR
33	F11	DESK LAMP - OFFICE
45	LI.01	LOCKER INSERT
1	LK.01.21	LOCKERS - 21 UNITS, 85.5" WIDE
1	LK.01.24	LOCKERS - 24 UNITS, 97.5" WIDE
1	MI.03	MPR - MIRROR
2	S.01-L	CREDENZA - TR OFFICE - LEFT HAND
6	S.04	FILE - STORAGE, OFFICE, FR OFFICE
1	S.05	FILE - LATERAL, 2 DRAWER, 36" WIDE
1	ST.03	STOOL, 4 PACK
27	TB.01	TABLE - OFFICE, 42" DIA.
2	TB.02	TABLE - LOBBY
2	TB.03A.96	TABLE - PARSONS, W/ POWER 96" W x 24" D x 36" H
1	TB.04	TABLE - CONFERENCE, COLLABORATION ROOM
2	TB.05.98	TABLE - CONFERENCE, MEETING ROOM - 98" W X 39" D X 29" H
2	TB.06	TABLE - OCCASIONAL, LOBBY
3	TB.09	TABLE - LAPTOP
6	TB.12	TABLE - FOCUS ROOM
3	TR.01	TRASH BIN
7	WS.01	WORKSTATION

EQUIPMENT LEGEND - BY FURNITURE VENDOR

TAG	DESCRIPTION / REMARKS	MANUFACTURER	MODEL NUMBER
A6	COFFEE MAKER - PANTRY	MARS	FLAVIA BARISTA
A7	COFFEE MAKER - LOBBY ISLAND	MARS DRINKS	FLAVIA CREATION 500
A11	COLOR MULTI FUNCTION PRINTER / COPIER	LEXMARK	C792DTE
A12	SHREDDER	DESTROYIT	4005CC

OPERATIONS EQUIPMENT DIAGRAM

1. THIS LAYOUT IS SHOWN FOR DIAGRAMATIC PURPOSES. ACTUAL FURNITURE LAYOUT MAY VARY. REFER TO FLOOR PLAN.



PLANTS GENERAL NOTES

1. PLANTS INDICATED IN THIS PLAN ARE FOR BASIS OF DESIGN, SUBJECT TO A SUITABILITY REVIEW FOR SCALE, QUANTITY AND LOCATION BY THE PLANT TEAM.
2. A SITE VISIT IS RECOMMENDED TO EVALUATE PLANTS SIZES, LIGHTING AND HUMIDITY CONDITIONS.
3. ALL PLANTS SHALL BE SPREAD THROUGHOUT THE BRANCH IN A RANDOM, INFORMAL, AND DOMESTIC WAY - TO CREATE A LOOSE AND RELAXED FEEL.
4. ALL PLANTERS SHALL BE FITTED WITH A SELF WATERING SYSTEM.
5. ALL PLANTERS SHALL RECEIVE ONE PLANT PER POT.

PLANT SYMBOLS LEGEND

FOR REFERENCE ONLY, PROVIDED BY OTHERS

SYMBOL	DESCRIPTION:	MIN. TO MAX. W & H
	SMALL TABLE PLANT; POT SIZE: 6"	9" - 12" W x 9" - 12" H
	MEDIUM FLOOR PLANT; POT SIZE: 10"	16" - 24" W x 26" - 36" H
	LARGE FLOOR PLANT; POT SIZE: 10" / 12" / 14"	20" - 30" W x 48" - 72" H
	POSSIBLE ART LOCATION	---

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	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project North
True North

Project No.: K2812554 R06

Drawing Sheet Title:

INTERIOR FURNITURE PLAN

Drawing Sheet Number:

ID-901

Owner's Branch No.:

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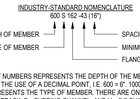

GENERAL CONSTRUCTION NOTES

1. ALL CONSTRUCTION SHALL BE IN STRICT COMPLIANCE WITH THE REQUIREMENTS OF THE REFERENCED CODES, OR LOCAL BUILDING CODE REQUIREMENTS, IF MORE STRINGENT.
2. THE DESIGN PROFESSIONAL WHOSE SEAL APPEARS ON THESE DRAWINGS IS THE STRUCTURAL ENGINEER OF RECORD (SER) FOR THE NEW STRUCTURES, ADDITIONS AND/OR ALTERATIONS TO THE EXISTING STRUCTURES, ONLY AS NOTED ON THESE DRAWINGS. THE SER BEARS THE RESPONSIBILITY OF THE NEW PRIMARY STRUCTURAL ELEMENTS NOTED AND THE PERFORMANCE OF THOSE ELEMENTS. UNLESS SPECIFICALLY NOTED OR AFFECTED BY THE ADDITION TO THE STRUCTURE, THE SER HAS NOT ANALYZED, VERIFIED, NOR ASSUMES THE RESPONSIBILITY FOR THE EXISTING STRUCTURE. NO OTHER PARTY MAY REVISE, ALTER, OR DELETE THESE CONSTRUCTION DOCUMENTS WITHOUT WRITTEN PERMISSION OF JACOBS OR THE SER. FOR THE PURPOSES OF THESE CONSTRUCTION DOCUMENTS THE SER AND JACOBS SHALL BE CONSIDERED THE SAME ENTITY.
3. DIMENSIONS AND STRUCTURAL COMPONENTS WERE TAKEN FROM THE DESIGN DOCUMENTS BY CARUSO TURLEY SCOTT INC SEALED BY SANDRA J. HERD OF CARUSO TURLEY SCOTT INC, LICENSE NUMBER 24471, SEALED ON DATE 03/24/23. NEW CONSTRUCTION SHALL NOT BEGIN UNTIL THE CONTRACTOR HAS REVIEWED EXISTING CONSTRUCTION AND VERIFIED THESE AND ALL OTHER ITEMS WHICH MAY AFFECT NEW CONSTRUCTION. ANY DISCREPANCIES BETWEEN ACTUAL CONDITIONS AND THOSE SHOWN ON THESE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF JACOBS BEFORE WORK PROCEEDS.
4. DO NOT SCALE THESE DRAWINGS TO DETERMINE DIMENSIONS. USE THE DIMENSIONS SHOWN. REFER TO VENDOR EQUIPMENT DRAWINGS AND OTHER DISCIPLINE DRAWINGS FOR DIMENSIONS NOT SHOWN UNLESS OTHERWISE NOTED.
5. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LIMIT LOADS IMPOSED UPON STRUCTURAL COMPONENTS AND FRAMING SYSTEMS DURING CONSTRUCTION SO THEY DO NOT EXCEED THE DESIGN CAPACITY OF THOSE ITEMS AT THE TIME THE LOADS ARE IMPOSED.
6. THIS STRUCTURE IS ONLY STABLE IN ITS COMPLETED FORM. THESE DRAWINGS DO NOT SHOW PROVISIONS FOR SAFETY DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED TEMPORARY BRACING AND SAFETY DEVICES DURING CONSTRUCTION TO STABILIZE THE STRUCTURE. FOR RENOVATIONS, ESPECIALLY MODIFICATIONS OF LOAD BEARING ELEMENTS, THE SHORING, BRACING, ETC. SHOULD BE DONE UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER. TEMPORARY SHORING AND BRACING METHODS ARE NOT THE RESPONSIBILITY OF JACOBS AND ARE BEYOND THE SCOPE OF THESE DRAWINGS.
7. JACOBS IS NOT RESPONSIBLE FOR CONSTRUCTION SEQUENCES, METHODS, OR TECHNIQUES IN CONNECTION WITH THE CONSTRUCTION OF THIS STRUCTURE. THE SER WILL NOT BE HELD RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CONFORM TO THE CONSTRUCTION DOCUMENTS, SHOULD ANY NON-CONFORMITIES OCCUR.
8. ANY STRUCTURAL ELEMENTS OR DETAILS NOT FULLY DEVELOPED ON THE CONSTRUCTION DRAWINGS SHALL BE COMPLETED UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER. SHOP DRAWINGS FOR SAID DETAILS SHALL BE SUBMITTED TO JACOBS FOR REVIEW BEFORE ANY CONSTRUCTION BEGINS. SEE THE "SUBMITTALS" SECTION OF THESE SPECIFICATIONS.
9. CONTRACTOR SHALL USE THE STRUCTURAL DRAWINGS IN CONJUNCTION WITH THE ARCHITECTURAL, MECHANICAL, PIPING, ELECTRICAL, AND CIVIL DRAWINGS. SHOULD ANY DISCREPANCIES BECOME APPARENT, THE CONTRACTOR SHALL NOTIFY JACOBS BEFORE ANY CONSTRUCTION BEGINS.
10. CONTRACTOR SHALL COORDINATE THE EXACT SIZE AND LOCATION OF ALL SLEEVES AND OPENINGS THROUGH ROOF, WALLS OR CONCRETE SLABS WITH MECHANICAL, PLUMBING DRAWINGS AND ALL OTHER APPLICABLE CONTRACT DOCUMENTS DEVELOPED FOR THIS PROJECT.
11. VERIFICATION OF ASSUMED FIELD CONDITIONS IS NOT THE RESPONSIBILITY OF THE SER. THE CONTRACTOR SHALL VERIFY THE FIELD CONDITIONS FOR ACCURACY AND REPORT ANY DISCREPANCIES TO JACOBS BEFORE CONSTRUCTION BEGINS.
12. THE SER IS NOT RESPONSIBLE FOR ANY SECONDARY STRUCTURAL ELEMENTS OR NON-STRUCTURAL ELEMENTS, EXCEPT FOR THE ELEMENTS SPECIFICALLY NOTED ON THE STRUCTURAL DRAWINGS.
13. THIS STRUCTURE AND ALL CONSTRUCTION SHALL CONFORM TO ALL APPLICABLE SECTIONS OF THE REFERENCED CODES INDICATED IN THE DESIGN CRITERIA SECTION OF THESE NOTES AS WELL AS ANY LOCAL LAWS WHERE THE STRUCTURE IS TO BE CONSTRUCTED.

STRUCTURAL DESIGN CRITERIA

1. BUILDING CODES	
A. 2018 PHOENIX BUILDING CONSTRUCTION CODE (IBC 2018 AMENDED)	
B. MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES, ASCE 7-16	
2. DEAD LOAD	
A. ROOF DEAD LOAD	20 PSF
3. LIVE LOAD	
A. INTERIOR WALLS AND PARTITIONS	
a. INTERNAL LIVE LOAD	5 PSF
4. ROOF LIVE LOAD	20 PSF
5. SNOW LOAD	N/A (INTERIOR FIT UP)
6. WIND LOADS / DATA	
A. RISK CATEGORY	II
B. ULTIMATE WIND SPEED	101 MPH
C. EXPOSURE	C
D. TOPOGRAPHY FACTOR, Kzt	1.00
E. APPLIED DIRECTIONALITY FACTOR, Kd	0.85
7. SEISMIC LOADS / DATA	
A. SEISMIC IMPORTANCE FACTOR, Is	1.00
B. RISK CATEGORY	II
C. MAX. CONSIDERED EARTHQUAKE	
D. MOTION (0.2 sec.), Ss	0.217
E. MAX. CONSIDERED EARTHQUAKE	
F. MOTION (1.0 sec.), S1	0.072
G. SITE CLASS	C
H. SITE COEFFICIENT, Fa	1.300
I. SITE COEFFICIENT, Fv	1.500
J. SPECTRAL RESPONSE COEFFICIENT, Sds	0.188
K. SPECTRAL RESPONSE COEFFICIENT, Sd1	0.072
L. SEISMIC DESIGN CATEGORY	B
M. ANALYSIS PROCEDURE	EQUIVALENT LATERAL FORCE

SUBMITTALS

1. SHOP DRAWINGS AND SUBMITTALS SHALL BE SUBMITTED TO JACOBS FOR REVIEW BEFORE ANY CONSTRUCTION BEGINS. THESE SUBMITTALS WILL BE REVIEWED FOR OVERALL COMPLIANCE AS IT RELATES TO THE STRUCTURAL DESIGN OF THIS PROJECT. VERIFICATION OF THE SHOP DRAWINGS FOR ACTUAL FIELD CONDITIONS THAT MAY DIFFER FROM THE DESIGN DRAWINGS, IS NOT THE RESPONSIBILITY OF JACOBS.
2. ALLOW ENOUGH TIME FOR SUBMITTAL REVIEW, INCLUDING TIME FOR RESUBMITTAL. TIME FOR REVIEW SHALL COMMENCE ON JACOBS' RECEIPT OF SUBMITTAL. ALLOW 10 DAYS FOR INITIAL REVIEW OF EACH SUBMITTAL AND 10 DAYS FOR REVIEW OF EACH RESUBMITTAL. AFTER JACOBS REVIEW AND APPROVAL, JACOBS WILL FORWARD SUBMITTAL TO BUILDING OFFICIAL FOR THEIR REVIEW. THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THE DESIGN AND SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL.
3. HIGHLIGHT, ENCIRCLE, OR OTHERWISE SPECIFICALLY IDENTIFY DEVIATIONS FROM THE CONTRACT DOCUMENTS ON SUBMITTALS.
4. CONTRACTOR SHALL REVIEW EACH SUBMITTAL AND CHECK FOR COORDINATION WITH OTHER WORK OF THE CONTRACT AND FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS BEFORE SUBMITTING DOCUMENTS FOR JACOBS REVIEW. NOTE ANY CORRECTIONS AND/OR FIELD DIMENSIONS. CONTRACTOR SHALL MARK WITH APPROVAL STAMP BEFORE SUBMITTING TO JACOBS. CONTRACTOR SUBMITTAL REVIEW STAMP SHALL INCLUDE NAME OF REVIEWER, DATE OF CONTRACTOR'S APPROVAL, AND STATEMENT CERTIFYING THAT SUBMITTAL HAS BEEN REVIEWED, CHECKED, AND APPROVED FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS.
5. WHERE PROFESSIONAL DESIGN SERVICES OR CERTIFICATIONS BY A DESIGN PROFESSIONAL ARE SPECIFICALLY REQUIRED OF CONTRACTOR BY THE CONTRACT DOCUMENTS, PROVIDE PRODUCTS AND SYSTEMS COMPLYING WITH SPECIFIC PERFORMANCE AND DESIGN CRITERIA INDICATED. IN ADDITION, SUBMIT COPIES OF A STATEMENT, SIGNED AND SEALED BY THE RESPONSIBLE DESIGN PROFESSIONAL, FOR EACH PRODUCT AND SYSTEM SPECIFICALLY ASSIGNED TO CONTRACTOR TO BE DESIGNED OR CERTIFIED BY A DESIGN PROFESSIONAL.
6. PROVIDE THE FOLLOWING SUBMITTALS FOR THIS PROJECT.
    - A. CAST-IN-PLACE CONCRETE
        - a. IN ADDITION TO THE FOLLOWING, COMPLY WITH SUBMITTAL REQUIREMENTS IN ACI 301
        - b. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED
        - c. DESIGN MIXTURES: FOR EACH CONCRETE MIXTURE.
        - d. REBAR SHOP DRAWINGS
        - e. SHOP DRAWINGS FOR THE DESIGN, ERECTION AND REMOVAL OF FORMWORK, SHORES AND RESHORES PREPARED BY OR UNDER THE SUPERVISION OF A QUALIFIED PROFESSIONAL ENGINEER.
        - f. SHOP DRAWINGS, INCLUDE STRUCTURAL ANALYSIS DATA SIGNED AND SEALED BY THE QUALIFIED PROFESSIONAL ENGINEER RESPONSIBLE FOR THEIR PREPARATION.
        - g. COMPLY WITH REQUIREMENTS IN "ACI MANUAL OF CONCRETE PRACTICE".
    - B. STRUCTURAL STEEL
        - a. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED
        - b. SHOP DRAWINGS: SHOW FABRICATION OF STRUCTURAL-STEEL COMPONENTS
            - INCLUDE DETAILS OF CUTS, CONNECTIONS, SPLICES, CAMBER, HOLES, AND OTHER PERTINENT DATA.
            - INDICATE WELDS BY STANDARD AWS SYMBOLS, DISTINGUISH BETWEEN AND SHOW ALL SHOP AND FIELD WELDS, AND SHOW SIZE, LENGTH, AND TYPE OF EACH WELD. SHOW BACKING BARS THAT ARE TO BE REMOVED AND SUPPLEMENTAL FILLET WELDS WHERE BACKING BARS ARE TO REMAIN.
            - INDICATE TYPE, SIZE, AND LENGTH OF BOLTS, DISTINGUISH BETWEEN SHOP AND FIELD BOLTS.
        - c. WELDING CERTIFICATES
    - C. COLD-FORMED METAL FRAMING
        - a. PRODUCT DATA: FOR EACH TYPE OF COLD-FORMED METAL FRAMING PRODUCT AND ACCESSORY INDICATED
        - b. SHOP DRAWINGS, INCLUDE STRUCTURAL ANALYSIS DATA SIGNED AND SEALED BY THE QUALIFIED PROFESSIONAL ENGINEER RESPONSIBLE FOR THEIR PREPARATION.
        - c. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED
    - D. SELECTIVE DEMOLITION: SEE "SELECTIVE DEMOLITION" SECTION OF THESE SPECIFICATIONS

SELECTIVE DEMOLITION

1. DEMOLISH AND REMOVE EXISTING CONSTRUCTION ONLY TO THE EXTENT REQUIRED BY NEW CONSTRUCTION AND AS INDICATED. USE METHODS REQUIRED TO COMPLETE THE WORK WITHIN LIMITATIONS OF GOVERNING REGULATIONS.
2. PROVIDE AND MAINTAIN SHORING, BRACING, AND STRUCTURAL SUPPORTS AS REQUIRED TO PRESERVE STABILITY AND PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF CONSTRUCTION AND FINISHES TO REMAIN, AND TO PREVENT UNEXPECTED OR UNCONTROLLED MOVEMENT OR COLLAPSE OF CONSTRUCTION BEING DEMOLISHED. STRENGTHEN OR ADD NEW SUPPORTS WHEN REQUIRED DURING PROGRESS OF SELECTIVE DEMOLITION. DESIGN OF SHORING IS NOT THE RESPONSIBILITY OF JACOBS.
3. LOCATE, IDENTIFY, DISCONNECT, AND SEAL OR CAP OFF INDICATED UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS SERVING AREAS TO BE SELECTIVELY DEMOLISHED.
4. PROCEED WITH SELECTIVE DEMOLITION SYSTEMATICALLY, FROM HIGHER TO LOWER LEVEL. COMPLETE SELECTIVE DEMOLITION OPERATIONS ABOVE EACH FLOOR OR TIER BEFORE DISTURBING SUPPORTING MEMBERS ON THE NEXT LOWER LEVEL.
5. NEATLY CUT OPENINGS AND HOLES PLUMB, SQUARE, AND TRUE TO DIMENSIONS REQUIRED. USE CUTTING METHODS LEAST LIKELY TO DAMAGE CONSTRUCTION TO REMAIN OR ADJOINING CONSTRUCTION. USE HAND TOOLS OR SMALL POWER TOOLS DESIGNED FOR SAWING OR GRINDING, NOT HAMMERING AND CHOPPING, TO MINIMIZE DISTURBANCE OF ADJACENT SURFACES. TEMPORARILY COVER OPENINGS TO REMAIN. CORE DRILL CORNERS OF SAWCUT SLAB OPENINGS AS TO NOT OVER-CUT.
6. MAINTAIN ADEQUATE VENTILATION WHEN USING CUTTING TORCHES. DO NOT USE CUTTING TORCHES UNTIL WORK AREA IS CLEARED OF FLAMMABLE MATERIALS. AT CONCEALED SPACES, SUCH AS DUCT AND PIPE INTERIORS, VERIFY CONDITION AND CONTENTS OF HIDDEN SPACE BEFORE STARTING FLAME-CUTTING OPERATIONS. MAINTAIN FIRE WATCH AND PORTABLE FIRE-SUPPRESSION DEVICES DURING FLAME-CUTTING OPERATIONS.
7. LOCATE SELECTIVE DEMOLITION EQUIPMENT AND REMOVE DEBRIS AND MATERIALS SO AS NOT TO IMPOSE EXCESSIVE LOADS ON SUPPORTING WALLS, FLOORS, OR FRAMING.
8. DISPOSE OF DEMOLISHED ITEMS AND MATERIALS PROMPTLY.
9. IF HAZARDOUS MATERIALS ARE ENCOUNTERED DURING DEMOLITION OPERATIONS, COMPLY WITH APPLICABLE REGULATIONS, LAWS, AND ORDINANCES CONCERNING REMOVAL, HANDLING, DISPOSAL, AND PROTECTION AGAINST EXPOSURE OR ENVIRONMENTAL POLLUTION.
10. DEMOLISH CONCRETE IN SECTIONS. CUT CONCRETE FULL DEPTH AT JUNCTURES WITH CONSTRUCTION TO REMAIN AND AT REGULAR INTERVALS, USING POWER-DRIVEN SAW, THEN REMOVE CONCRETE BETWEEN SAW CUTS.

CAST IN PLACE CONCRETE

1. CONCRETE SHALL BE PROPORTIONED, MIXED, PLACED, AND TESTED IN ACCORDANCE WITH THE FOLLOWING:
    - A. ACI 117 "SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS". ACI 301 "SPECIFICATION FOR STRUCTURAL CONCRETE".
    - B. ACI 304 "RECOMMENDED PRACTICE FOR MEASURING, MIXING, TRANSPORTING AND PLACING CONCRETE"
    - C. ACI 318 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE"
    - D. ACI 347 "RECOMMENDED PRACTICE FOR CONCRETE FORMWORK"
    - E. ASTM E1155 "STANDARD TEST METHOD FOR DETERMINING FLOOR FLATNESS AND LEVELNESS USING THE F-NUMBER SYSTEM"
2. STEEL REINFORCEMENT SHALL COMPLY WITH THE FOLLOWING SPECIFICATIONS:

A. REINFORCING BARS	ASTM A615, GRADE 60, DEFORMED
B. PLAIN-STEEL WIRE	ASTM A82, AS DRAWN
C. EPOXY COATED BARS	ASTM A775
D. PLAIN-STEEL WELDED WIRE REINFORCEMENT	ASTM A185, FABRICATED FROM AS-DRAWN STEEL WIRE INTO FLAT SHEETS

3. CONCRETE SHALL HAVE A UNIT WEIGHT OF 145 PCF. CONCRETE MATERIALS SHALL COMPLY WITH THE FOLLOWING SPECIFICATIONS:

A. PORTLAND CEMENT	ASTM C150, TYPE I OR TYPE II TYPE V IF SOIL CONTAINS SULFATES (SEE NOTE 6)
B. FLY ASH	ASTM C618, CLASS F
C. BLENDED HYDRAULIC CEMENT	ASTM C595, TYPE I (PM) POZZOLAN-MODIFIED PORTLAND
D. NORMAL-WEIGHT AGGREGATE	ASTM C33, GRADED, 1-1/2" NOMINAL MAXIMUM AGGREGATE SIZE
E. WATER	POTABLE

4. NO ADMIXTURES SHALL BE ADDED TO ANY STRUCTURAL CONCRETE WITHOUT WRITTEN PERMISSION OF JACOBS. ALL PROPOSED ADMIXTURES SHALL BE SUBMITTED TO JACOBS WITH THE PROPOSED MIX DESIGNS AND SHALL INCLUDE CERTIFICATION FROM THE MANUFACTURER THAT THE ADMIXTURE IS COMPATIBLE WITH OTHER ADMIXTURES AND NOT CONTRIBUTE WATER-SOLUBLE CHLORIDE IONS EXCEEDING THOSE PERMITTED IN HARDENED CONCRETE. DO NOT USE CALCIUM CHLORIDE OR ANY ADMIXTURE CONTAINING CALCIUM CHLORIDE.
5. NORMAL-WEIGHT CONCRETE MIXTURES SHALL HAVE BEEN ASSIGNED THE FOLLOWING EXPOSURE CLASSES IN ACCORDANCE WITH ACI 318 TABLE 19.3.1. THE CONCRETE SUPPLIER SHALL REFER TO TABLES 19.3.2.1 AND 19.3.3.1 OF THAT CODE FOR ADDITIONAL INFORMATION REGARDING WATER/CEMENT RATIOS AND AIR CONTENT PARAMETERS.

ELEMENT	MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS	EXPOSURE CLASS (SEE NOTE 6)
A. INTERIOR SLAB-ON-GROUND	4000 PSI	F0

6. SOIL IN CONTACT WITH CONCRETE IS ASSUMED NOT TO CONTAIN ANY SULFATES. IF GEOTECHNICAL FINDINGS INDICATE THAT SULFATES ARE IN THE SOIL ALL CONCRETE IN CONTACT WITH THE SOIL SHALL BE EXPOSURE CLASS S3.
7. TRANSPORT AND PLACE CONCRETE NOT MORE THAN 90 MINUTES AFTER WATER HAS BEEN ADDED TO THE DRY INGREDIENTS
8. COMPLY WITH CRSI'S "MANUAL OF STANDARD PRACTICE" FOR FABRICATING, PLACING AND SUPPORTING REINFORCEMENT.
9. PLACING SLEEVES THROUGH CONCRETE ELEMENTS IS NOT PERMITTED UNLESS SHOWN ON THE DRAWINGS, ON APPROVED SLEEVING SHOP DRAWINGS, OR AS AUTHORIZED BY JACOBS IN WRITING.
10. PRIOR TO PLACING NEW CONCRETE AGAINST EXISTING CONCRETE, EXISTING CONCRETE SHALL BE CLEANED AND ROUGHENED AND BONDING AGENT APPLIED TO EXISTING SURFACES.
11. SEE ARCHITECTURAL DRAWINGS FOR FINISHING REQUIREMENTS OF FORMED CONCRETE SURFACES. FOR UNFORMED SURFACES COMPLY WITH ACI 302.1R FOR SCREEDING, AND FINISHING OPERATIONS UNLESS OTHERWISE NOTED ON THE ARCHITECTURAL DRAWINGS.
12. CURE FORMED AND UNFORMED CONCRETE FOR AT LEAST SEVEN DAYS BY ONE OF THE FOLLOWING METHODS; MOISTURE CURING, MOISTURE-RETAINING-COVER CURING, APPLICATION OF A CURING COMPOUND, OR BY APPLICATION OF A CURING AND SEALING COMPOUND.
13. ENGAGE A QUALIFIED INDEPENDENT TESTING AND INSPECTING AGENCY TO SAMPLE MATERIALS, PERFORM TESTS, AND SUBMIT REPORTS DURING CONCRETE PLACEMENT ACCORDING TO ACI 301.
14. COMPLY WITH ACI 301 FOR MEASURING, BATCHING, MIXING, TRANSPORTING, AND PLACING CONCRETE. BEFORE TEST SAMPLING AND PLACING CONCRETE, WATER MAY BE ADDED AT THE PROJECT SITE, SUBJECT TO LIMITATIONS OF ACI 301 AND THE CONCRETE BATCH TICKET FROM THE PATCH PLANT.
15. TESTING OF COMPOSITE SAMPLES OF FRESH CONCRETE SHALL BE OBTAINED ACCORDING TO ASTM C172 AND SHALL BE PERFORMED ACCORDING TO THE FOLLOWING REQUIREMENTS:
    - A. TESTING FREQUENCY: OBTAIN ONE COMPOSITE SET FOR EACH DAYS POUR OF EACH CONCRETE MIXTURE LESS THAN OR EQUAL TO 25 CU YDS, PLUS ONE SET FOR EACH ADDITIONAL 50 CU. YD OR FRACTION THEREOF.
    - B. WHEN FREQUENCY OF TESTING WILL PROVIDE FEWER THAN FIVE COMPRESSIVE-STRENGTH TESTS FOR EACH CONCRETE MIXTURE, TESTING SHALL BE CONDUCTED FROM AT LEAST FIVE RANDOMLY SELECTED BATCHES OR FROM EACH BATCH IF FEWER THAN FIVE ARE USED.
    - C. A SET OF CONCRETE SAMPLES SHALL CONSIST OF (1) CYLINDER TO BE TESTED @ 7 DAYS, (2) AT 28 DAYS AND (1) CYLINDER IS TO BE HELD IN RESERVE. STRUCTURAL ENGINEER IS TO BE PROVIDED A COPY OF ALL CONCRETE REPORTS ISSUED BY LABORATORY.

POST INSTALLED ANCHORS

1. POST-INSTALLED ANCHORS SHALL ONLY BE USED WHERE SPECIFIED ON THE CONSTRUCTION DOCUMENTS. INSTALLATION OF ALL POST-INSTALLED ANCHORS SHALL BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS. SUBSTITUTION REQUESTS FOR PRODUCTS OTHER THAN THOSE LISTED BELOW MAY BE SUBMITTED BY THE CONTRACTOR TO THE SER FOR REVIEW, ALONG WITH CALCULATIONS THAT ARE PREPARED & SEALED BY A REGISTERED PROFESSIONAL ENGINEER. SUBSTITUTIONS WILL ONLY BE CONSIDERED FOR PRODUCTS HAVING AN ICC CODE REPORT RECOGNIZING THE PRODUCT FOR THE APPROPRIATE APPLICATION. SUBSTITUTION REQUESTS SHALL INCLUDE CALCULATIONS THAT DEMONSTRATE THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING THE EQUIVALENT PERFORMANCE VALUES OF THE SPECIFIED POST-INSTALLED ANCHORS INDICATED ON THE CONSTRUCTION DOCUMENTS.
    - A. CONTRACTOR SHALL CONTACT POST-INSTALLED ANCHOR MANUFACTURER'S REPRESENTATIVE FOR PRODUCT INSTALLATION TRAINING AND A LETTER SHALL BE SUBMITTED TO THE SER INDICATING TRAINING HAS TAKEN PLACE.
    - B. PERIODIC OBSERVATIONS OF THE INSTALLATION OF POST INSTALLED ANCHORS SHALL BE PERFORMED BY A SPECIAL INSPECTOR OR A THIRD PARTY TESTING AGENCY AND A REPORT DOCUMENTING THE OBSERVATIONS SHALL BE PROVIDED TO THE SER. PERIODIC OBSERVATIONS SHALL CONSIST OF A MINIMUM EACH OF THE FOLLOWING:
        - a. 3 OBSERVATIONS OF A CORRECT INSTALLATION OCCURRING IN A ROW PER ANCHOR TYPE
        - b. 3 OBSERVATIONS OF A CORRECT INSTALLATION OCCURRING IN A ROW PER MATERIAL THAT ANCHORS ARE TO BE EMBEDDED.
2. ANCHORS USED TO FASTEN TO CONCRETE (UNLESS NOTED OTHERWISE)
    - A. MECHANICAL ANCHORS FOR USE IN CRACKED AND UNCRACKED CONCRETE SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ACI 355.2 AND ICC-ES AC193. PRE-APPROVED MECHANICAL ANCHORS INCLUDE:
        - a. SIMPSON STRONG-TIE "STRONG-BOLT 2" (ICC-ES ESR-3037)

CONCRETE FLOOR AND SLABS

1. REQUIREMENTS NOTED IN THIS SECTION APPLY TO CONCRETE SLABS-ON-GROUND AND ELEVATED FLOOR SLABS. REFER TO THE CONCRETE SECTION OF THESE GENERAL NOTES FOR FURTHER REQUIREMENTS.
2. CONCRETE SLABS-ON-GROUND SHALL BE CONSTRUCTED IN ACCORDANCE WITH ACI 302.1R "GUIDE FOR CONCRETE SLAB AND SLAB CONSTRUCTION".
3. SLABS-ON-GROUND DEPEND ON THE INTEGRITY OF BOTH THE SLAB AND FULL SOIL SUPPORT. PROVIDE SATISFACTORY SOIL MATERIALS UNDER SLABS-ON-GROUND ACCORDING TO GEOTECHNICAL ENGINEER'S WRITTEN RECOMMENDATIONS. PROOF-ROLL SUBGRADE BELOW THE BUILDING SLABS WITH HEAVY PNEUMATIC-TIRED EQUIPMENT TO IDENTIFY SOFT POCKETS AND AREAS OF EXCESS YIELDING.
4. COMPACT SOIL MATERIALS AND SUBGRADE TO NOT LESS THAN 98% OF MAXIMUM DRY UNIT WEIGHT, UNLESS OTHERWISE RECOMMENDED BY THE GEOTECHNICAL ENGINEER.
5. PROVIDE PLASTIC VAPOR RETARDER OVER THE SUBGRADE OR SUBBASE BUT UNDER THE BASE COURSE (GRANULAR FILL). VAPOR RETARDER SHALL CONFORM TO ASTM E 1745, CLASS C, NOT LESS THAN 10 MILS THICK. VAPOR RETARDER MAY BE OMITTED ONLY WHEN STATED IN THE GEOTECHNICAL ENGINEER'S WRITTEN RECOMMENDATIONS.
6. PROVIDE A MINIMUM OF 4" OF GRANULAR FILL DIRECTLY UNDER SLAB-ON-GROUND. FILL SHALL CONSIST OF A CLEAN MIXTURE OF CRUSHED STONE OR CRUSHED OR UNCRUSHED GRAVEL PER ASTM D448, SIZE 57, WITH 100 PERCENT PASSING A 1- 1/2" SIEVE AND 0 TO 5 PERCENT PASSING A NO. 8 SIEVE.
7. REINFORCE CONCRETE SLABS-ON-GROUND WITH WELDED WIRE REINFORCEMENT (FABRIC) AS INDICATED. WELDED WIRE REINFORCEMENT SHALL BE SUPPLIED IN FLAT SHEETS AND INSTALLED IN LONGEST PRACTICABLE LENGTHS ON BAR SUPPORTS OR CONCRETE BRICKS SPACED TO MINIMIZE SAGGING. LAP EDGES AND ENDS OF ADJOINING SHEETS AT LEAST ONE MESH SPACING. OFFSET LAPS OF ADJOINING SHEET WIDTHS TO PREVENT CONTINUOUS LAPS IN EITHER DIRECTION. LACE OVERLAPS WITH WIRE TIES AND DO NOT EXTEND REINFORCEMENT THROUGH JOINTS.
8. DEPOSIT AND CONSOLIDATE CONCRETE FOR FLOORS AND SLABS IN A CONTINUOUS OPERATION, WITHIN LIMITS OF CONSTRUCTION JOINTS, UNTIL PLACEMENT OF A PANEL OR SECTION IS COMPLETE AND AS FOLLOWS:
    - A. CONSOLIDATE CONCRETE DURING PLACEMENT OPERATIONS SO CONCRETE IS THOROUGHLY WORKED AROUND REINFORCEMENT AND OTHER EMBEDDED ITEMS AND INTO CORNERS.
    - B. MAINTAIN REINFORCEMENT IN POSITION ON CHAIRS DURING CONCRETE PLACEMENT.
    - C. SCREED SLAB SURFACES WITH A STRAIGHTEDGE AND STRIKE OFF TO CORRECT ELEVATIONS.
    - D. SLOPE SURFACES UNIFORMLY TO DRAINS WHERE REQUIRED.
    - E. BEGIN INITIAL FLOATING USING BULL FLOATS OR DARBIES TO FORM A UNIFORM AND OPEN-TEXTURED SURFACE PLANE, BEFORE EXCESS BLEEDWATER APPEARS ON THE SURFACE. DO NOT FURTHER DISTURB SLAB SURFACES BEFORE STARTING FINISHING OPERATIONS.
9. APPLY A TROWEL FINISH TO CONCRETE SLAB-ON-GROUND SURFACES UNLESS OTHERWISE NOTED. VERIFY THIS FINISH WITH THE ARCHITECTURAL REQUIREMENTS BEFORE CONSTRUCTION. AFTER APPLYING FLOAT FINISH, APPLY FIRST TROWELING AND CONSOLIDATE CONCRETE BY HAND OR POWER-DRIVEN TROWEL. CONTINUE TROWELING PASSES UNTIL SURFACE IS FREE OF TROWEL MARKS AND UNIFORM IN TEXTURE AND APPEARANCE. GRIND SMOOTH ANY SURFACE DEFECTS THAT WOULD TELEGRAPH THROUGH APPLIED COATINGS OR FLOOR COVERINGS.
10. FORM WEAKENED-PLANE CONTRACTION JOINTS, SECTIONING CONCRETE INTO AREAS AS INDICATED BUT NOT MORE THAN THE FOLLOWING:

SLAB THICKNESS	JOINT SPACING
A. 4"	12-0" O.C

11. CONSTRUCT CONTRACTION JOINTS FOR A DEPTH EQUAL TO AT LEAST ONE-FOURTH OF CONCRETE THICKNESS. FORM CONTRACTION JOINTS WITH POWER SAWS EQUIPPED WITH SHATTERPROOF ABRASIVE OR DIAMOND-RIMMED BLADES WITHIN 4 TO 12 HOURS AFTER THE SLAB HAS BEEN FINISHED. CUT 1/8" WIDE JOINTS INTO CONCRETE WHEN CUTTING ACTION WILL NOT TEAR, ABRADE, OR OTHERWISE DAMAGE SURFACE AND BEFORE CONCRETE DEVELOPS RANDOM CONTRACTION CRACKS.
12. CURE CONCRETE SLABS-ON-GROUND FOR AT LEAST SEVEN DAYS BY ONE OF THE FOLLOWING METHODS; MOISTURE CURING, MOISTURE-RETAINING-COVER CURING, APPLICATION OF A CURING COMPOUND, OR BY APPLICATION OF A CURING AND SEALING COMPOUND.

COLD FORMED METAL FRAMING

1. LIGHT GAGE STRUCTURAL STEEL FRAMING SHALL BE DESIGNED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISI'S "STANDARD FOR COLD-FORMED STEEL FRAMING - GENERAL PROVISIONS".
2. LIGHT GAGE STRUCTURAL STEEL FRAMING AS SHOWN ON THESE PLANS CONFORMS TO THE INDUSTRY-STANDARD NOMENCLATURE. EXPLANATION OF THIS NOMENCLATURE IS SHOWN BELOW FOR REFERENCE.

    - A. THE FIRST SET OF NUMBERS REPRESENTS THE DEPTH OF THE MEMBER TO TWO (2) DECIMAL PLACES WITHOUT THE USE OF A DECIMAL POINT, I.E. 600 = 6". 1000 = 10", 362 = 3-5/8", ETC.
    - B. THE LETTER REPRESENTS THE TYPE OF MEMBER. THERE ARE ONLY FOUR LETTERS USED, S = "C" MEMBERS, T = TRACK, F = FURRING CHANNEL, AND U = "U" CHANNEL
    - C. THE SECOND SET OF NUMBERS REPRESENTS THE FLANGE WIDTH OF THE MEMBER TO TWO (2) DECIMAL PLACES WITHOUT THE USE OF A DECIMAL POINT, I.E. 162 = 1-5/8", 200 = 2", 125 = 1-1/4", ETC.
    - D. THE THIRD NUMBER REPRESENTS THE MINIMUM UNCOATED METAL THICKNESS EXPRESSED IN MILS. (0.001 in.). THESE CORRESPOND TO REFERENCE GAGES AS FOLLOWS: -18 (24ga.), -27 (22ga.), - 33 (20ga.), -43 (18ga.), -54 (16ga.), -68 (14ga.), AND -97 (12ga.). THE MILS DEFINE THE MINIMUM ALLOWABLE UNCOATED METAL THICKNESS AND ARE 5% LESS THAN THE DESIGN THICKNESS. THE 5% VARIANCE IN METAL THICKNESS IS PERMITTED PER SECTION A 3.4 OF THE AISI SPECIFICATION.
    - E. THE LAST NUMBER DENOTED IN (#), IS NOT PART OF THE INDUSTRY-STANDARD NOMENCLATURE, HOWEVER JACOBS USES THIS NUMBER TO REPRESENT THE MAXIMUM SPACING OF THE MEMBERS IN THE SYSTEM.
3. PREPARATION OF SHOP DRAWINGS, DESIGN CALCULATIONS, AND OTHER STRUCTURAL DATA BY A QUALIFIED PROFESSIONAL ENGINEER IS REQUIRED FOR THIS PROJECT, SEE "SUBMITTALS". THE SHOP DRAWINGS SHALL BE BASED UPON THE MEMBER SIZES AND SPACINGS INDICATED ON THESE DRAWINGS AND SHALL BE SIMILAR TO THOSE INDICATED FOR THIS PROJECT IN MATERIAL, DESIGN, AND EXTENT. SHOP DRAWINGS SHALL ALSO INCLUDE MISCELLANEOUS FRAMING AND CONNECTIONS, INCLUDING SUPPLEMENTARY FRAMING, WEB STIFFENERS, CLIP ANGLES, CONTINUOUS ANGLES, ANCHORS, AND FASTENERS, TO PROVIDE A COMPLETE AND COLD FORMED METAL FRAMING SYSTEM. COLD-FORMED METAL FRAMING CAPABLE OF WITHSTANDING DESIGN LOADS WITHOUT DEFLECTIONS GREATER THAN THE REQUIREMENTS AS NOTED IN THE NORTH CAROLINA STATE BUILDING CODE ARE INDICATED AS SHOWN.
4. PROVIDE COLD FORMED METAL FRAMING AS FOLLOWS:
    - A. STEEL SHEET PER ASTM A1003, STRUCTURAL GRADE, TYPE H, METALLIC COATED. STEEL SHALL BE GRADE ST33H AND COATED WITH A G60 MINIMUM COATING.
    - B. STEEL SHEET FOR VERTICAL DEFLECTION AND DRIFT CLIPS PER ASTM A 653, STRUCTURAL STEEL, ZINC COATED. STEEL SHALL BE GRADE 50 AND COATED WITH A G90 MINIMUM COATING
    - C. STRUCTURAL MEMBERS SHALL HAVE THE MINIMUM YIELD STRESS AS FOLLOWS:
        - a. 33 mil, 43 mil = 33 KSI
        - b. 54 mil, 68 mil, 97 mil = 50 KSI
5. PROVIDE ANCHORS, CLIPS, AND FASTENERS AS FOLLOWS:
    - A. STEEL ANCHOR HEX-HEADED BOLTS AND CARBON-STEEL NUTS; AND FLAT, HARDENED-STEEL WASHERS; ZINC COATED BY MECHANICALLY DEPOSITION ACCORDING TO ASTM B695, CLASS 50.
    - B. EXPANSION ANCHORS FABRICATED FROM CORROSION-RESISTANT MATERIALS, WITH CAPABILITY TO SUSTAIN, WITHOUT FAILURE, A LOAD EQUAL TO 5 TIMES DESIGN LOAD, AS DETERMINED BY TESTING PER ASTM E 488.
    - C. POWDER-ACTUATED ANCHORS: FASTENER SYSTEM OF TYPE SUITABLE FOR APPLICATION. FASTENER SHALL HAVE A SHANK DIAMETER OF 0.177" AND A 1-1/2" MINIMUM EMBEDMENT. SCREW SHALL HAVE A MINIMUM TENSION VALUE OF 205 lbs. AND A SHEAR VALUE OF 285 lbs. INTO 3000 PSI CONCRETE.
    - D. MECHANICAL FASTENERS: ASTM C 1513, CORROSION-RESISTANT-COATED, SELF-DRILLING, SELF-TAPPING STEEL DRILL SCREWS. UNLESS OTHERWISE NOTED SCREWS SHALL BE #10 MINIMUM AND HAVE A MINIMUM TENSION VALUE OF 98 lbs. AND A SHEAR VALUE OF 263 lbs. IN 0.043" (43 mil) MATERIAL.
    - E. POWDER ACTUATED FASTENERS: KNURL SHANKED POWDER ACTUATED FASTENERS. FASTENER SHALL HAVE A SHANK DIAMETER OF 0.177". SCREW SHALL HAVE A MINIMUM TENSION VALUE OF 330 lbs. AND A SHEAR VALUE OF 359 lbs. IN A MINIMUM STRUCTURAL STEEL THICKNESS OF 3/16".
6. INSTALL COLD-FORMED METAL FRAMING AND ACCESSORIES PLUMB, SQUARE, AND TRUE TO LINE, AND WITH CONNECTIONS SECURELY FASTENED.
7. LOCATE MECHANICAL FASTENERS AND INSTALL ACCORDING TO SHOP DRAWINGS, AND COMPLYING WITH REQUIREMENTS FOR SPACING, EDGE DISTANCES, AND SCREW PENETRATION AS NOTED ON THESE DRAWINGS.
8. COMPLY WITH THE FOLLOWING FOR NON-LOAD-BEARING WALL INSTALLATION.
    - A. INSTALL CONTINUOUS TRACKS SIZED TO MATCH STUDS. ALIGN TRACKS ACCURATELY AND SECURELY ANCHOR AT CORNERS AND ENDS, AND AT SPACINGS AS INDICATED.
    - B. FASTEN BOTH FLANGES OF STUDS TO BOTTOM TRACK, UNLESS OTHERWISE INDICATED. SPACE STUDS PER THE WALL FRAMING SCHEDULE.
    - C. ISOLATE NON-LOAD-BEARING STEEL FRAMING FROM BUILDING STRUCTURE TO PREVENT TRANSFER OF VERTICAL LOADS WHILE PROVIDING LATERAL SUPPORT. CLIPS SHALL ALLOW FOR AN UPWARD AND DOWNWARD MOVEMENT OF 1", UNLESS OTHERWISE NOTED.
    - D. WALLS UNLESS NOTED OTHERWISE SHALL BE SHEATHED WITH PAPER-SURFACED GYPSUM WALL SHEATHING, CONFORMING TO ASTM C 79 OR ASTM C 1396, GYPSUM SHEATHING; WITH WATER-RESISTANT-TREATED CORE AND WITH WATER-REPELLENT PAPER BONDED TO CORE'S FACE, BACK, AND LONG EDGES. FASTEN GYPSUM SHEATHING TO STUDS PER ICC'S "INTERNATIONAL BUILDING CODE."
    - E. INSTALL HORIZONTAL BRIDGING IN STUD SYSTEM, SPACED AS INDICATED ON SHOP DRAWINGS BUT NOT GREATER THAN 48" O.C. FASTEN AT EACH STUD INTERSECTION.
9. COMPLY WITH THE FOLLOWING FOR JOIST INSTALLATION.
    - A. INSTALL PERIMETER JOIST TRACK SIZED TO MATCH JOISTS. ALIGN AND SECURELY ANCHOR OR FASTEN TRACK TO SUPPORTING STRUCTURE AT CORNERS, ENDS, AND SPACINGS INDICATED.
    - B. INSTALL JOISTS BEARING ON SUPPORTING FRAME OR WALL, LEVEL, STRAIGHT, AND PLUMB; ADJUST TO FINAL POSITION, BRACE, AND REINFORCE. FASTEN JOISTS TO BOTH FLANGES OF JOIST TRACK. REINFORCE ENDS AND BEARING POINTS OF JOISTS WITH WEB STIFFENERS, END CLIPS, JOIST HANGERS, STEEL CLIP ANGLES, OR STEEL-STUD SECTIONS AS INDICATED ON SHOP DRAWINGS.
    - C. PLACE JOISTS NOT MORE THAN 2 INCHES FROM ABUTTING WALLS, AND AS NOTED IN THE WALL FRAMING SCHEDULE.
    - D. FRAME OPENINGS WITH BUILT-UP JOIST HEADERS CONSISTING OF JOIST AND JOIST TRACK, NESTING JOISTS, OR ANOTHER COMBINATION OF CONNECTED JOISTS IF INDICATED.
    - E. INSTALL JOIST REINFORCEMENT AT INTERIOR SUPPORTS WITH A SINGLE, SHORT LENGTH OF JOIST SECTION LOCATED DIRECTLY OVER INTERIOR SUPPORT, WITH LAPPED JOISTS OF EQUAL LENGTH TO JOIST REINFORCEMENT, OR AS INDICATED ON THE DRAWINGS. ALSO PROVIDE WEB STIFFENERS TO TRANSFER AXIAL LOADS OF WALLS ABOVE.
    - F. INSTALL BRIDGING AT INTERVALS INDICATED ON SHOP DRAWINGS. FASTEN BRIDGING AT EACH JOIST INTERSECTION.
    - G. SECURE JOISTS TO LOAD-BEARING INTERIOR WALLS TO PREVENT LATERAL MOVEMENT OF BOTTOM FLANGE.

STRUCTURAL STEEL

1. STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE FOLLOWING STANDARDS AS REFERENCED IN THE GOVERNING BUILDING CODE:
    - A. AISC'S "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" AS REFERENCED IN THE GOVERNING BUILDING CODE.
      AISC'S "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES"
    - B. AISC'S "SEISMIC PROVISIONS FOR STRUCTURAL STEEL BUILDINGS" AND "SUPPLEMENT NO. 2", IF THE RESPONSE MODIFICATION FACTOR IS GREATER THAN 3.0
    - C. RCSC'S "SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS"
    - D. AWS'S "STRUCTURAL WELDING CODE AWS D1.1"
2. STEEL ERECTION SHALL BE PERFORMED IN STRICT COMPLIANCE WITH OSHA STEEL ERECTION STANDARDS (LATEST EDITION). BEAMS AND DIAGONAL BRACING MEMBERS ARE NOT TO BE RELEASED FROM HOISTING CABLE UNTIL THEIR BOLTED OR FIELD WELDED CONNECTIONS HAVE BEEN COMPLETED. THE CONTRACTOR SHALL PROVIDE ADEQUATE TEMPORARY BRACING, SHORING AND GUYING OF STEEL FRAMING AGAINST WIND, CONSTRUCTION LOADS AND OTHER TEMPORARY FORCES. ALL BOLTED CONNECTIONS AND FIELD WELDS AT PRIMARY STRUCTURAL FRAMING MEMBERS AND LATERAL BRACING COMPONENTS MUST BE COMPLETED BEFORE SUCH PROTECTION IS REMOVED, UNLESS OTHERWISE NOTED ON THE DRAWINGS. ALSO, PROVIDE TEMPORARY SUPPORTS IN STEEL TO STEEL CONNECTIONS AND ALL OTHER LOCATIONS PER OSHA REQUIREMENTS.
3. ALL STRUCTURAL STEEL MATERIALS SHALL CONFORM TO THE FOLLOWING:

A. CHANNELS, ANGLES, M-SHAPES, S-SHAPES	ASTM A36
B. COLD-FORMED HOLLOW STRUCTURAL SECTIONS	ASTM A500, GRADE C
C. WELDING ELECTRODES	CLASS E70XX

4. UNLESS OTHERWISE NOTED ON THE DESIGN DOCUMENTS, APPLY A 1-COAT, NONASPHALTIC PRIMER COMPLYING WITH SSPC-PS GUIDE 7.00, "PAINTING SYSTEM GUIDE 7.00: GUIDE FOR SELECTING ONE-COAT SHOP PAINTING SYSTEMS", TO PROVIDE A DRY FILM THICKNESS OF NOT LESS THAN 1.5 MILS TO ALL STEEL SURFACES NOT EXPOSED TO WEATHER EXCEPT THE FOLLOWING:
    - A. SURFACES EMBEDDED IN CONCRETE OR MORTAR. EXTEND PRIMING OF PARTIALLY EMBEDDED MEMBERS TO A DEPTH OF 2".
    - B. SURFACES TO BE FIELD WELDED.
    - C. SURFACES TO BE HIGH-STRENGTH BOLTED WITH SLIP-CRITICAL CONNECTIONS
    - D. SURFACES TO RECEIVE SPRAYED FIRE-RESISTIVE MATERIALS
    - E. GALVANIZED SURFACES
5. BOLTS, CONNECTORS, AND ANCHORS SHALL CONFORM TO THE FOLLOWING:
    - A. ASTM A325 BOLTED CONNECTIONS: ASTM A325, TYPE 1, HEAVY HEX STEEL STRUCTURAL BOLTS; ASTM A563 HEAVY HEX CARBON-STEEL NUTS; AND ASTM F436 HARDENED CARBON-STEEL WASHERS.
        - a. FINISH SHALL BE AS FOLLOWS:
          INTERIOR: PLAIN
          EXTERIOR: HOT DIPPED GALVANIZED PER ASTM F2329
    - B. ASTM A490 BOLTED CONNECTIONS: ASTM A490, TYPE 1, HEAVY HEX STEEL STRUCTURAL BOLTS; ASTM A563 HEAVY HEX CARBON-STEEL NUTS; AND ASTM F436 HARDENED CARBON-STEEL WASHERS.
        - a. FINISH SHALL BE AS FOLLOWS:
          INTERIOR: PLAIN
          EXTERIOR: COATED PER ASTM F1136
          GRADE 3 - BOLTS & WASHERS
          GRADE 5 - NUTS
    - C. ANCHOR RODS: ASTM F1554, GRADE 55 (w/ SUPPLEMENT), STRAIGHT ROD (UNLESS NOTED OTHERWISE)
        - a. NUTS: ASTM A563, HEAVY HEX
        - b. PLATE WASHERS: ASTM A36 CARBON STEEL, THICKNESS AND SIZE PER AISC TABLE 14-2 BASED ON BASE PLATE HOLE DIMENSION.
        - c. FINISH: HOT DIPPED GALVANIZED PER ASTM F2329
    - D. THREADED RODS: ASTM A307, GRADE A
        - a. NUTS: ASTM A563
        - b. WASHERS: ASTM A36
        - c. FINISH SHALL BE AS FOLLOWS:
          INTERIOR: PLAIN
          EXTERIOR: HOT DIPPED GALVANIZED PER ASTM F2393
6. IF A RESUBMITTAL OF SHOP DRAWINGS IS REQUIRED, STEEL DETAILER SHALL CLOUD OR HIGHLIGHT ALL REVISIONS MADE TO AVOID ANY RE-REVIEW OF ITEMS ALREADY REVIEWED BY THE SER IN THE ORIGINAL SUBMITTAL. IF THE CHANGES MADE ARE NOT CLEARLY INDICATED ON THE SHOP DRAWINGS WITH CLOUDS OR HIGHLIGHTS, THE DRAWINGS WILL BE RETURNED UNAPPROVED AND A RESUBMITTAL FOLLOWING THAT REQUIREMENT WILL BE ENFORCED.
7. IN BOLTED CONNECTIONS, PROVIDE HIGH STRENGTH BOLTS, NUTS AND WASHERS IN BOLTED STEEL CONNECTIONS AND INSTALL SAID CONNECTORS ACCORDING TO RCSC'S "SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS". CUT, DRILL, OR PUNCH BOLT HOLES PERPENDICULAR TO METAL SURFACES FLAME CUTTING OF STEEL TO ENLARGE HOLES OR FOR ANY OTHER PURPOSE IS STRICTLY PROHIBITED. EITHER HIGH-STRENGTH BOLTS MAY BE USED FOR SNUG TIGHTENED CONNECTIONS HOWEVER, ASTM A490 BOLTS ARE REQUIRED FOR SLIP CRITICAL CONNECTIONS. ALL CONNECTIONS EXCEPT LISTED BELOW SHALL BE SNUG TIGHTENED. THE FOLLOWING CONNECTION SHALL BE CONSIDERED SLIP CRITICAL JOINTS
    - A. JOINTS THAT UTILIZE OVER-SIZED HOLES
    - B. JOINTS FOR SUPPORTS OF ROTATING EQUIPMENT OR CRANES
    - C. JOINTS THAT UTILIZE SLOTTED HOLES EXCEPT THOSE WITH APPLIED LOAD APPROXIMATELY NORMAL (WITHIN 80° TO 100°) TO THE DIRECTION OF THE LONG DIMENSION OF THE SLOT.
8. IN WELDED CONNECTIONS, COMPLY WITH AWS D1.1 FOR WELDING PROCEDURE SPECIFICATIONS, TOLERANCES, APPEARANCE, AND QUALITY OF WELDS AND FOR METHODS USED IN CORRECTING WELDING WORK. COMPLY WITH AISC MINIMUM WELDING REQUIREMENTS.
9. BASE AND OR BEARING PLATES WHICH ARE SUPPORTED OVER CONCRETE OR MASONRY SHALL BE PLACED OVER 2" OF GROUT WITH A TOLERANCE OF ± 1/2" UNLESS OTHERWISE NOTED. CLEAN CONCRETE AND MASONRY SURFACES OF BOND REDUCING MATERIAL AND ROUGHEN SURFACES. SET PLATES FOR STRUCTURAL MEMBERS ON WEDGES, SHIMS, OR SETTING NUTS AS REQUIRED. TIGHTEN ANCHOR RODS AFTER MEMBER IS POSITIONED AND PLUMBED. DO NOT REMOVE WEDGES, BUT IF PROTRUDING, CUT OFF FLUSH WITH BASE PLATE. PROMPTLY PACK GROUT SOLIDLY BETWEEN BEARING SURFACES SO NO VOIDS REMAIN. PRE-GROUTING OF COLUMN BASE PLATES IS NOT PERMITTED.
10. FURNISH ANCHORAGE ITEMS EMBEDDED OR ATTACHED TO OTHER CONSTRUCTION BY USE OF SETTING DIAGRAMS AND TEMPLATES, DO NOT FLOAT-IN THESE ITEMS.
11. ACCURATELY FINISH ENDS OF COLUMNS AND OTHER MEMBERS TRANSMITTING BEARING LOADS.
12. MAINTAIN ERECTION TOLERANCES OF STRUCTURAL STEEL WITHIN AISC'S "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES".
13. SPLICING OF STRUCTURAL STEEL MEMBERS IS PROHIBITED WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER AS TO LOCATION AND TYPE OF SPLICE. ANY MEMBER FABRICATED WITH A SPLICE NOT SHOWN AND DETAILED ON THE SHOP DRAWINGS CAN NOT BE ERECTED AND MUST BE REPLACED AT NO COST TO THE OWNER.
14. CONTRACTOR SHALL ENGAGE A QUALIFIED INDEPENDENT TESTING AND INSPECTION AGENCY TO INSPECT FIELD WELDS AND HIGH-STRENGTH BOLTED CONNECTIONS. SHOP-BOLTED CONNECTIONS WILL BE INSPECTED ACCORDING TO RCSC'S "SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS". FIELD WELDS WILL BE VISUALLY INSPECTED ACCORDING TO AWS D1.1, EXCEPT FULL PENETRATION WELDS SHALL BE ALSO BE INSPECTED PER ULTRASONIC INSPECTION PER ASTM E164. THE STRUCTURAL ENGINEER SHALL BE PROVIDED A COPY OF ALL INSPECTION AND TEST REPORTS ISSUED BY THE TESTING AGENCY.
15. CONTRACTOR SHALL CHECK FOR AND RESOLVE CONFLICTS WITH EXISTING CONDITIONS WHERE NEW STEEL IS TO BE INSTALLED. THIS SHALL BE DONE BEFORE SUBMISSION OF STEEL SHOP DRAWINGS OR COMMENCEMENT OF CONSTRUCTION.

COMMON ABBREVIATIONS

&	AND
@	AT
AB	ANCHOR BOLT
ACI	AMERICAN CONCRETE INSTITUTE
AD	AREA DRAIN
ADDL	ADDITIONAL
ADH	ADHESIVE
ADJ	ADJACENT
AE	AIR ENTRAINED
AHR	ANCHOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALNMT	ALIGNMENT
ALT	ALTERNATE
APA	AMERICAN PLYWOOD ASSOCIATION
APPROX	APPROXIMATE
AR	ANCHOR ROD
ARCH	ARCHITECT or ARCHITECTURAL
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS
AWS	AMERICAN WELDING SOCIETY
B/	BOTTOM OF
B/B	BACK TO BACK
BF	BOTH FACES
BLDG	BUILDING
BM	BEAM
B/STL	BOTTOM OF STEEL
BOT	BOTTOM
BP or B PL	BASE PLATE
BRDG	BRIDGING
BRG	BEARING
BRG PL	BEARING PLATE
BS	BOTH SIDES
BSMT	BASEMENT
BTW	BETWEEN
C TO C	CENTER TO CENTER
CANT	CANTILEVER
CF	CUBIC FEET
CFMF	COLD FORMED METAL FRAMING
CHFR	CHAMFER
CIP	CAST-IN-PLACE
CJ	CONTROL JOINT
CL	CENTER LINE
CLMS	CONTROLLED LOW STRENGTH MATERIALS
CLR	CLEAR
CMPST	COMPOSITE
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONST JT	CONSTRUCTION JOINT
CONT	CONTINUOUS
CONTR	CONTRACTOR
COORD	COORDINATE
COTR	CONTRACTING OFFICER TECH REPRESENTATIVE
CY	CUBIC YARD
D	DEPTH
db	REINF BAR DIAMETER
DBA	DEFORMED BAR ANCHOR
DBE	DECK BEARING ELEVATION
DBL	DOUBLE
DEAD LOAD	DEAD LOAD
DEMO	DEMOLITION
DEP	DEPRESSED or DEPRESSION
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DJ	DOUBLE JOINT
DK	DECK
DN	DOWN
DR	DRAIN
DTL	DETAIL
DWG(S)	DRAWING(S)
EA	EACH
EE	EACH END
EF	EACH FACE
EL	ELEVATION
ELEC	ELECTRIC or ELECTRICAL
ELEV	ELEVATOR
EMBED	EMBED or EMBEDDED
EOD	EDGE OF DECK
EOS	EDGE OF SLAB
EOW	EDGE OF WALL
EQ	EQUAL
EQL SP	EQUALLY SPACED
EQUIP	EQUIPMENT
EST	ESTIMATE
ETC	ET CETERA
EW	EACH WAY
EW EF	EACH WAY EACH FACE
EXIST or (E)	EXISTING
EXP JT or EJ	EXPANSION JOINT
EXT	EXTERIOR
FA	FALL ARREST ANCHOR
FD	FLOOR DRAIN
FDN	FOUNDATION
FFE	FINISHED FLOOR ELEVATION
FLG	FLANGE
FIN	FINISH or FINISHED
FLR	FLOOR
FOW	FACE OF WALL
FP	FIRE PROTECTION
FT	FOOT or FEET
FTG	FOOTING
GA	GAGE or GAUGE
GALV	GALVANIZED
GALV STL	GALVANIZED STEEL
GC	GENERAL CONTRACTOR
GR	GRADE
GR BM	GRADE BEAM
GRTG	GRATING
H	HIGH
H EF	HORIZONTAL EACH FACE
HCA	HEADED CONCRETE ANCHOR
HDG	HOT DIPPED GALVANIZED
HGR	HANGER
HK	HOOK
HORIZ	HORIZONTAL
HP	HIGH POINT
HPC	HIGH PERFORMANCE COATING
HSA	HEADED SHEAR ANCHOR
HSS	HOLLOW STRUCTURAL SECTION
HT	HEIGHT
HVAC	HEATING, VENTILATING, AND AIR CONDITIONING
ID	INSIDE DIAMETER
IF	INSIDE FACE
IN	INCH
INCL	INCLUDED
INFO	INFORMATION
INT	INTERIOR
INV EL	INVERT ELEVATION
IP	INFLECTION POINT
JBE	JOIST BEARING ELEVATION
JCT	JUNCTION
JST	JOIST
JT	JOINT
KB	KNEE BRACE
KIP	1000 POUNDS
KOP	KNOCK OUT PANEL
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
L	ANGLE
LB	POUND
Ld	REINF BAR DEVELOPMENT LENGTH
LE	LEFT END
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LP	LOW POINT
LTWT	LIGHT WEIGHT
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MC	MOMENT CONNECTION
MECH	MECHANICAL
MEP	MECHANICAL, ELECTRICAL, AND PLUMBING
MEZZ	MEZZANINE
MFR	MANUFACTURE(R)
MID	MIDDLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MTL	METAL
MW	MEMBRANE WATERPROOFING
N	NORTH
N.I.C.	NOT IN CONTRACT
NLWT	NORMAL WEIGHT
No or #	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER OPENING
OF	OUTSIDE FACE
OH or OPP HD	OPPOSITE HAND
OHD	OVERHEAD DOOR
OPNG	OPENING
OPP	OPPOSITE
P.L. or PROP LINE	PROPERTY LINE
PC	PILE CAP
PC CONC	PRECAST CONCRETE
PEN	PENETRATION
PJP	PARTIAL JOINT PENETRATION
PL	PLATE
PLCS	PLACES
PLUMB	PLUMBING
PROJ	PROJECTION
PS CONC	PRESTRESSED CONCRETE
PSF	POUND PER SQUARE FOOT
PSI	POUND PER SQUARE INCH
PT	POST-TENSIONED
PT CONC	POST-TENSIONED CONCRETE
RAD or R	RADIUS
RE	RIGHT END
REBAR	REINFORCING STEEL BARS
REF	REFERENCE
REINF	REINFORCEMENT or REINFORCING
REQD	REQUIRED
REV	REVISION
RF	ROOF
RFI	REQUEST FOR INFORMATION
SC	SLIP CONNECTION
SCH or SCHED	SCHEDULE
SECT	SECTION
SER	STRUCTURAL ENGINEER OF RECORD
SHT	SHEET
SIM	SIMILAR
SJI	STEEL JOIST INSTITUTE
SK	SKETCH
SLV	SLEEVE
SOG	SLAB-ON-GRADE
SPA	SPACES
SPEC	SPECIFICATION
SQ	SQUARE
SQ FT	SQUARE FOOT
SSTL	STAINLESS STEEL
STAG	STAGGERED
STD	STANDARD
STIF	STIFFENER
STIR	STIRRUPS
STL	STEEL
STRUCT	STRUCTURAL
SUPP	SUPPORT
SW	SHEAR WALL
SYMM	SYMMETRICAL or SYMMETRY
T&B	TOP AND BOTTOM
T/	TOP OF
T/CONC	TOP OF CONCRETE
T/SLAB	TOP OF SLAB
TB	THROUGH BOLT
TEMP	TEMPORARY
THK	THICK or THICKNESS
THRU	THROUGH
TMS	THE MASONRY SOCIETY
T/FTG	TOP OF FOOTING
T/GRTG	TOP OF GRATING
T/JST	TOP OF JOIST
TOL	TOLERANCE
TOM	TOP OF MASONRY
T/STL	TOP OF STEEL
T/WALL	TOP OF WALL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
V EF	VERTICAL EACH FACE
VERT	VERTICAL
VIF	VERIFY IN FIELD
VR	VAPOR RETARDER
W	WIDTH
W/	WITH
W/O	WITHOUT
WD	WOOD
WF	WIDE FLANGE
WP	WATERPROOFING
WP	WORK POINT
WS	WATERSTOP
WT	WEIGHT
WWR	WELDED WIRE REINFORCEMENT

STRUCTURAL DRAWING INDEX

DRAWING NO.	DRAWING TITLE	CURRENT REVISION	CURRENT REVISION DESCRIPTION	CURRENT REVISION DATE
S-001	GENERAL NOTES AND SPECIFICATIONS	0	ISSUE FOR CONSTRUCTION	12/20/2024
S-002	SPECIAL INSPECTIONS SHEET	0	ISSUE FOR CONSTRUCTION	12/20/2024
S-100	SLAB ON GROUND & FRAMING PLAN	0	ISSUE FOR CONSTRUCTION	12/20/2024
S-101	TYPICAL DETAILS & SECTIONS	0	ISSUE FOR CONSTRUCTION	12/20/2024

Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210
P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

69305
S. TREVOR
WINNELL
Date Signed 12/20/24

General Notes:

Project Title:

Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane,
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
0	ISSUE FOR CONSTRUCTION	12/20/2024

Key Plan:

Project North
True North

Project No.: K2812549 R01

Drawing Sheet Title:

GENERAL NOTES AND SPECIFICATIONS

Drawing Sheet Number:

S-001

Owner's Branch No.:

134

STATEMENT OF SPECIAL INSPECTIONS

PROJECT NAME: FIDELITY INVESTOR CENTER

PROJECT ADDRESS: 7171 E. PARADISE LANE, SUITE R-120, SCOTTSDALE, AZ, 85254

BUILDING OWNER'S NAME: FIDELITY INVESTMENTS

OWNER'S ADDRESS: 245 SUMMER STREET, BOSTON, MA 20110

REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE: FRED GROSSFELD 69323 (NAME & LICENSE) JACOBS (COMPANY)

ARCHITECT OF RECORD: FRED GROSSFELD 69323 (NAME & LICENSE) JACOBS (COMPANY)

STRUCTURAL ENGINEER OF RECORD: TREVOR WINNELL 69305 (NAME & LICENSE) JACOBS (COMPANY)

GEOTECHNICAL ENGINEER OF RECORD: N/A (NAME & LICENSE) (COMPANY)

SPECIAL INSPECTIONS ENGINEER OF RECORD: TBD (NAME & LICENSE) (COMPANY)

GENERAL CONTRACTOR: TBD (NAME & LICENSE) (COMPANY)

THIS STATEMENT OF SPECIAL INSPECTIONS IS SUBMITTED IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE. THE SPECIAL INSPECTION AND TESTING SCHEDULE IS AN INTEGRAL PART OF THE STATEMENT OF SPECIAL INSPECTIONS.

BEFORE CONSTRUCTION CAN BEGIN, TWO (2) COPIES OF THIS AGREEMENT, INCLUDING THE STATEMENT OF SPECIAL INSPECTIONS AND THE SPECIAL INSPECTION AND TESTING SCHEDULE, WITH THE REQUIRED ACKNOWLEDGMENTS, SHALL BE COMPLETED BY THE OWNER, OR REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE ACTING AS THE OWNER'S AGENT, A PRECONSTRUCTION CONFERENCE WITH THE PARTIES INVOLVED MAY BE REQUIRED TO REVIEW THE SPECIAL INSPECTION REQUIREMENTS AND PROCEDURES.

SPECIAL INSPECTION AND TESTING SHALL MEET THE MINIMUM REQUIREMENTS OF SECTION 1704 THROUGH 1707 OF THE INTERNATIONAL BUILDING CODE. THE CONDITIONS LOCATED ON THE FOLLOWING PAGES ARE ALSO APPLICABLE.

ACKNOWLEDGMENTS

I HAVE READ AND AGREE TO COMPLY WITH THE TERMS AN CONDITIONS OF THIS AGREEMENT.

SIGNATURE & DATE

PREPARED BY: _____ PRINT NAME _____

REVIEWED BY REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE: _____

BUILDING OWNER'S AUTHORIZATION: _____

CONTRACTOR: _____

SPECIAL INSPECTOR/SPECIAL INSPECTION AGENCY : _____

0THER AS REQUIRED BY ENFORCING JURISDICTION: _____

ENFORCING JURISDICTION'S ACCEPTANCE: _____

NOTE 1: THIS SIGNATURE MAY BE THAT OF THE RESPONSIBLE PROFESSIONAL ENGINEER WITHIN THE SPECIAL INSPECTION AGENCY.

APPROVAL OF SPECIAL INSPECTORS: SPECIAL INSPECTORS MAY HAVE NO FINANCIAL INTEREST IN PROJECTS FOR WHICH THEY PROVIDE SPECIAL INSPECTION. SPECIAL INSPECTORS SHALL BE APPROVED BY THE ENFORCING JURISDICTION PRIOR TO PERFORMING ANY DUTIES. SPECIAL INSPECTORS SHALL SUBMIT THEIR QUALIFICATIONS AND ARE SUBJECT TO PERSONAL INTERVIEWS FOR PREQUALIFICATION. SPECIAL INSPECTORS SHALL DISPLAY APPROVED IDENTIFICATION, AS STIPULATED BY THE ENFORCING JURISDICTION, WHEN PERFORMING THE FUNCTION OF SPECIAL INSPECTOR.

THE FOLLOWING CONDITIONS ARE APPLICABLE:

A. DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPECTOR

1) GENERAL REQUIREMENTS - SPECIAL INSPECTORS SHALL REVIEW APPROVED PLANS AND SPECIFICATIONS FOR SPECIAL INSPECTION REQUIREMENTS. SPECIAL INSPECTORS SHALL COMPLY WITH THE SPECIAL INSPECTION REQUIREMENTS OF THE ENFORCING JURISDICTION FOUND IN THE STATEMENT OF SPECIAL INSPECTIONS, INCLUDING WORK AND MATERIALS.

2) SIGNIFY PRESENCE AT JOB-SITE - SPECIAL INSPECTORS SHALL NOTIFY CONTRACTOR PERSONNEL OF THEIR PRESENCE AND RESPONSIBILITIES AT THE JOBSITE. IF REQUIRED BY THE ENFORCING JURISDICTION, THEY SHALL SIGN IN ON THE APPROPRIATE FORM POSTED WITH THE BUILDING PERMIT.

3) OBSERVE ASSIGNED WORK - SPECIAL INSPECTORS SHALL INSPECT ALL WORK ACCORDING TO THE STATEMENT OF SPECIAL INSPECTIONS FOR WHICH THEY ARE RESPONSIBLE FOR CONFORMANCE WITH THE ENFORCING JURISDICTION IS APPROVED (STAMPED) PLANS AND SPECIFICATIONS AND APPLICABLE PROVISIONS OF IBC SECTION 1704.

4) REPORT NONCONFORMING ITEMS (DISCREPANCIES) - SPECIAL INSPECTORS SHALL BRING ALL NONCONFORMING ITEMS TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR. IF ANY SUCH ITEM IS NOT RESOLVED IN A TIMELY MANNER OR IS ABOUT TO BE INCORPORATED INTO THE WORK, THE ENGINEER OR ARCHITECT OF RECORD AND THE ENFORCING JURISDICTION SHOULD BE NOTIFIED IMMEDIATELY AND THE ITEM NOTED IN THE SPECIAL INSPECTOR'S WRITTEN REPORT (SECTION 1704.1.2). THE ENFORCING JURISDICTION MAY REQUIRE THIS REPORT TO BE POSTED IN A CONSPICUOUS PLACE ON THE JOB-SITE. THE SPECIAL INSPECTOR SHOULD INCLUDE IN THE REPORT, AS A MINIMUM, THE FOLLOWING INFORMATION ABOUT EACH NONCONFORMING ITEM:

- DESCRIPTION AND EXACT LOCATION.
- REFERENCE TO APPLICABLE DETAIL OF APPROVED PLANS/SPECIFICATIONS.
- NAME AND TITLE OF EACH INDIVIDUAL NOTIFIED AND METHOD OF NOTIFICATION.
- RESOLUTION OR CORRECTIVE ACTION TAKEN.

5) PROVIDE TIMELY PROGRESS REPORTS - THE SPECIAL INSPECTOR SHALL COMPLETE WRITTEN INSPECTION REPORTS FOR EACH INSPECTION VISIT AND PROVIDE THE REPORTS ON A TIMELY BASIS AS DETERMINED BY THE ENFORCING JURISDICTION. THE SPECIAL INSPECTOR OR INSPECTION AGENCY SHALL FURNISH THESE REPORTS DIRECTLY TO THE ENFORCING JURISDICTION AND TO THE DESIGN PROFESSIONAL IN CHARGE (SECTION 1704.1.2). THESE REPORTS SHOULD BE ORGANIZED ON A DAILY FORMAT AND MAY BE SUBMITTED WEEKLY AT THE OPTION OF THE ENFORCING JURISDICTION. IN THESE REPORTS, SPECIAL INSPECTORS SHOULD:

- DESCRIBE INSPECTIONS AND TESTS MADE WITH APPLICABLE LOCATIONS AND WHETHER THE WORK MEETS THE REQUIREMENTS OF THE STATEMENT OF SPECIAL INSPECTIONS.
- INDICATE NONCONFORMING ITEMS (DISCREPANCIES) AND HOW THEY WERE RESOLVED.
- LIST UNRESOLVED ITEMS. PARTIES NOTIFIED, AND TIME AND METHOD OF NOTIFICATION.
- ITEMIZE CHANGES AUTHORIZED BY ENGINEER OR ARCHITECT OF RECORD IF NOT INCLUDED IN NONCONFORMING ITEMS.

6) SUBMIT FINAL REPORT - SPECIAL INSPECTORS OR INSPECTION AGENCIES SHALL SUBMIT A FINAL SIGNED REPORT TO THE BUILDING DEPARTMENT STATING THAT ALL ITEMS REQUIRING SPECIAL INSPECTION AND TESTING BY THE STATEMENT OF SPECIAL INSPECTIONS WERE FULFILLED AND REPORTED AND, TO THE BEST OF THEIR KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS (SECTION 1704.1.2). JURISDICTIONS MAY ALSO REQUIRE THE DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE TO SIGN THE REPORT BEFORE IT IS SUBMITTED TO THE ENFORCING JURISDICTION. ITEMS NOT IN CONFORMANCE, UNRESOLVED ITEMS OR ANY DISCREPANCIES IN INSPECTION COVERAGE (I.E., MISSED INSPECTIONS, PERIODIC INSPECTION WHEN CONTINUOUS WAS REQUIRED, ETC.) SHOULD BE SPECIFICALLY ITEMIZED IN THIS REPORT.

B. OWNER RESPONSIBILITIES
THE PROJECT OWNER, THE ENGINEER OR ARCHITECT OF RECORD, OR AN AGENT OF THE OWNER IS RESPONSIBLE FOR FUNDING SPECIAL INSPECTION SERVICES. MEASURES SHOULD BE TAKEN TO ENSURE THAT THE SCOPE OF WORK AND DUTIES OF THE SPECIAL INSPECTOR AS OUTLINED IN THE STATEMENT OF SPECIAL INSPECTIONS ARE NOT COMPROMISED.

C. REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE
THE DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE SHOULD BE A CONSENTING PARTY BY WRITTEN ACKNOWLEDGMENT OF SPECIAL INSPECTION AND TESTING AGREEMENTS. THE DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE HAS MANY DUTIES AND RESPONSIBILITIES RELATED TO SPECIAL INSPECTIONS, INCLUDING THE FOLLOWING:
THE STATEMENT OF SPECIAL INSPECTIONS IS SUBMITTED AS PART OF THE STRUCTURAL DOCUMENTS. THE CONTENT OF THE STATEMENT CONTAINS THE FOLLOWING INFORMATION:

1) MATERIALS, SYSTEMS, COMPONENTS AND WORK REQUIRED TO HAVE SPECIAL INSPECTION. DUTIES OF THE ENFORCING JURISDICTION AND THE REGISTERED DESIGN PROFESSIONAL RESPONSIBLE FOR EACH PART OF THE WORK ARE TO BE STATED.

2) TYPE AND EXTENT OF EACH SPECIAL INSPECTION AND THE NAME OF INDIVIDUAL OR FIRMS PERFORMING THE INSPECTIONS.

3) TYPE AND EXTENT OF EACH TEST.

4) SPECIAL INSPECTION OF REQUIRED SEISMIC RESISTANCE SYSTEMS AND COMPONENTS.

5) SPECIAL INSPECTION OF REQUIRED WIND RESISTANCE SYSTEMS AND COMPONENTS.

6) PROVIDE NAME AND CONTACT INFORMATION OF SPECIAL INSPECTOR OR SPECIAL INSPECTION AGENCY. SUBJECT TO THE APPROVAL OF THE ENFORCING JURISDICTION, SPECIAL INSPECTORS HOLDING CURRENT CERTIFICATION BY ICC IN THE DISCIPLINE IN WHICH THEY WILL BE INSPECTING CAN BE CONSIDERED QUALIFIED WITHIN THE APPROPRIATE SCOPE OF ACCREDITATION FOR THE DISCIPLINES TO BE INSPECTED. THE CHOICE OF SPECIAL INSPECTORS OR SPECIAL INSPECTION AGENCIES SHOULD INCLUDE THE FOLLOWING CONSIDERATIONS:

- PROJECT SIZE AND COMPLEXITY - EXPERIENCE WITH SIMILAR PROJECTS.
- INSPECTION STAFFING - SUFFICIENT QUALIFIED INSPECTORS.
- SITE LOCATION - PROXIMITY OF INSPECTION AND TESTING FACILITIES.
- OFF-SITE INSPECTION - CAPABILITIES FOR INSPECTION AT REMOTE LOCATIONS.

7) RESPOND TO FIELD DISCREPANCIES - THE ENGINEER OR ARCHITECT OF RECORD SHALL RESPOND TO SPECIAL INSPECTOR REPORTS OF UNCORRECTED NON-COMPLYING (DISCREPANCIES) ITEMS AND SHALL APPROVE REMEDIAL MEASURES.

8) REVIEW SHOP DRAWINGS AND SUBMIT REVISIONS TO APPROVED PLANS - THE DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE SHALL ACKNOWLEDGE AND APPROVE SHOP DRAWINGS THAT MAY DETAIL STRUCTURAL INFORMATION. THE DESIGN PROFESSIONAL SHALL SUBMIT TO THE ENFORCING JURISDICTION AND THE SPECIAL INSPECTOR/INSPECTION AGENCY WRITTEN APPROVAL OF ANY VERBALLY APPROVED DEVIATIONS FROM THE APPROVED PLANS AND SHALL SUBMIT REVISED PLANS FOR ENFORCING JURISDICTION APPROVAL (SECTION 107.3.4).

D. CONTRACTOR RESPONSIBILITIES
SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE ENFORCING JURISDICTION AND THE OWNER PRIOR TO COMMENCEMENT OF THE WORK ON THE SYSTEM OR COMPONENT. THE CONTRACTORS STATEMENT OF RESPONSIBILITY IS TO CONTAIN THE FOLLOWING:

1) ACKNOWLEDGEMENT OF AWARENESS OF THE SPECIAL REQUIREMENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS;

2) ACKNOWLEDGEMENT THAT CONTROL WILL BE EXERCISED TO OBTAIN CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS APPROVED BY THE ENFORCING JURISDICTION;

3) PROCEDURES FOR EXERCISING CONTROL WITHIN THE CONTRACTOR'S ORGANIZATION, THE METHOD AND FREQUENCY OF REPORTING AND THE DISTRIBUTION OF THE REPORTS; AND

4) IDENTIFICATION AND QUALIFICATIONS OF THE PERSON(S) EXERCISING SUCH CONTROL AND THEIR POSITION(S) IN THE ORGANIZATION.

SUGGESTED JOB-SITE PROTOCOL FOR SPECIAL INSPECTION:
1) NOTIFY THE SPECIAL INSPECTOR - ADEQUATE NOTICE SHALL BE PROVIDED SO THAT THE SPECIAL INSPECTOR HAS TIME TO BECOME FAMILIAR WITH THE PROJECT.

2) PROVIDE ACCESS TO APPROVED PLANS - THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE SPECIAL INSPECTOR WITH ACCESS TO APPROVED PLANS.

3) RETAIN SPECIAL INSPECTION RECORDS - WHEN REQUIRED BY THE ENFORCING JURISDICTION, THE CONTRACTOR IS RESPONSIBLE FOR RETAINING AT THE JOB-SITE ALL SPECIAL INSPECTION RECORDS SUBMITTED BY THE SPECIAL INSPECTOR AND PROVIDING THESE RECORDS FOR REVIEW BY THE ENFORCING JURISDICTION'S INSPECTOR UPON REQUEST.

E. ENFORCING JURISDICTION RESPONSIBILITIES
1) REVIEW SUBMITTAL DOCUMENTS FOR COMPLIANCE WITH SPECIAL INSPECTION REQUIREMENTS AS OUTLINED IN THE STATEMENT OF SPECIAL INSPECTIONS. THE ENFORCING JURISDICTION IS CHARGED WITH THE LEGAL AUTHORITY TO REVIEW THE PLANS, SPECIFICATIONS, SPECIAL INSPECTION PROGRAM AND OTHER SUBMITTAL DOCUMENTS FOR COMPLIANCE WITH CODE REQUIREMENTS.

2) APPROVE FABRICATOR(S) USED FOR BUILDING COMPONENTS INSTALLED ON-SITE.

3) APPROVE SPECIAL INSPECTION PROGRAM - THE ENFORCING JURISDICTION IS RESPONSIBLE FOR APPROVING THE SPECIAL INSPECTION PROGRAM SUBMITTED BY THE DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE (SECTION 107.1) AND MAY REQUIRE A PRECONSTRUCTION CONFERENCE TO REVIEW THE PROGRAM WITH ALL APPLICABLE MEMBERS OF THE CONSTRUCTION TEAM.

4) MONITOR SPECIAL INSPECTION ACTIVITIES - THE ENFORCING JURISDICTION SHOULD MONITOR THE SPECIAL INSPECTION ACTIVITIES AT THE JOBSITE TO ASSURE THAT QUALIFIED SPECIAL INSPECTORS ARE PERFORMING THEIR DUTIES WHEN WORK REQUIRING SPECIAL INSPECTION IS IN PROGRESS.

5) ISSUANCE OF STOP WORK ORDERS - THE ENFORCING JURISDICTION IS RECOGNIZED AS HAVING THE AUTHORITY TO STOP WORK AT THE JOB-SITE.

6) APPROVAL TO PROCEED - THERE ARE CERTAIN POINTS OF COMPLETION WHERE WORK SHALL NOT PROCEED UNTIL APPROVAL BY THE ENFORCING JURISDICTION HAS BEEN GIVEN.

7) REVIEW INSPECTION REPORTS - THE ENFORCING JURISDICTION RECEIVES AND REVIEWS SPECIAL INSPECTION PROGRESS REPORTS AND FINAL REPORTS FOR CONFORMANCE WITH THE APPROVED PLANS, SPECIFICATIONS AND WORKMANSHIP PROVISIONS OF THE CODE.

8) PERFORM FINAL INSPECTION - THE ENFORCING JURISDICTION SHOULD NOT PERFORM THE FINAL INSPECTION AND APPROVAL FOR A PROJECT UNTIL THE FINAL SPECIAL INSPECTION REPORT HAS BEEN REVIEWED AND APPROVED.

FREQUENCY OF "PERIODIC" AND "CONTINUOUS" SPECIAL INSPECTION

THE INTERNATIONAL BUILDING CODE, SECTION 1702, INCLUDES THE FOLLOWING DEFINITIONS:

SPECIAL INSPECTION, PERIODIC - THE PART-TIME OR INTERMITTENT OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK HAS BEEN OR IS BEING PERFORMED AND AT THE COMPLETION OF THE WORK.

SPECIAL INSPECTION, CONTINUOUS - THE FULL-TIME OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK IS BEING PERFORMED.

THE DEFINITIONS OF "PERIODIC" AND "CONTINUOUS" SPECIAL INSPECTION ARE IDENTICAL EXCEPT FOR TWO THINGS:

- PERIODIC INSPECTION MAY BE PERFORMED ON A PART-TIME OR INTERMITTENT BASIS WHILE CONTINUOUS INSPECTION IS DONE ON A FULL-TIME BASIS.
- PERIODIC INSPECTION MAY BE PERFORMED BY AN INSPECTOR WHO IS IN THE AREA WHERE THE WORK "HAS BEEN" PERFORMED WHILE CONTINUOUS INSPECTION MUST BE PERFORMED WHERE THE WORK "IS BEING" PERFORMED.

NOTE: WORK SUBJECT TO PERIODIC SPECIAL INSPECTION REQUIRES THE PRESENCE OF THE SPECIAL INSPECTOR PRIOR TO START OF WORK, FROM TIME TO TIME DURING THE WORK, AND UPON COMPLETION OF THE WORK.

PERIODIC SPECIAL INSPECTION: WHEN "PERIODIC" SPECIAL INSPECTION IS REQUIRED, "PART TIME OR INTERMITTENT" MEANS THAT INSPECTION OF THE TASK NEEDS TO BE PERFORMED FROM TIME TO TIME DURING THE PROGRESS OF THE TASK. THE PERIOD OF TIME BETWEEN INSPECTIONS VARIES GREATLY FOR DIFFERENT TYPES OF WORK DEPENDING ON THE TYPE OF INSPECTION PERFORMED. FOR EXAMPLE, THE LAYING OF MASONRY BLOCK MUST BE INSPECTED ALMOST CONSTANTLY; THE SPECIAL INSPECTOR SHALL NOT LEAVE WHILE WORK IS PROCEEDING FOR MORE THAN A FEW MINUTES; CONVERSELY THE PROTECTION OF MASONRY DURING COLD WEATHER GENERALLY MAY ONLY NEED TO BE INSPECTED ONCE AT THE END OF THE DAY AND ONCE AT THE BEGINNING. THE PERIOD OF TIME BETWEEN INSPECTIONS ALSO DEPENDS ON THE PACE OF THE CONSTRUCTION, THE NUMBER OF WORKERS, THE QUALITY OF THE WORKMANSHIP, AND OTHER FACTORS.

IT IS THE RESPONSIBILITY OF THE SPECIAL INSPECTOR TO PROVIDE INSPECTIONS AT AN APPROPRIATE FREQUENCY AND AT APPROPRIATE TIMES DURING CONSTRUCTION. THE INSPECTOR MUST HAVE ADEQUATE EXPERIENCE AND EXHIBIT GOOD JUDGMENT IN DETERMINING THE FREQUENCY AND TIMING OF INSPECTIONS.

CONTINUOUS SPECIAL INSPECTION: WHEN CONTINUOUS INSPECTION IS REQUIRED, THE SPECIAL INSPECTOR MUST ALWAYS BE PRESENT WHERE THE WORK IS BEING PERFORMED.

CATEGORY OF TESTING AND INSPECTION	MINIMUM QUALIFICATIONS (REFER TO KEY AT END OF TABLE)			
	SHOP INSPECTION	FIELD INSPECTION/ REVIEW	REVIEW SUBMITTALS	REVIEW TESTING, CERTIFICATION, & LAB REPORTS
1704.2.5 INSPECTION OF FABRICATORS				
PRE-CAST CONCRETE	A,C,D,E			
STRUCTURAL STEEL CONSTRUCTION	C,F,G			
WOOD CONSTRUCTION	A			
COLD FORMED METAL CONSTRUCTION	A			
1705.2 & 1705.10.1 STEEL CONSTRUCTION				
WELDING	C,F,G	C,F,G	A	A,B
HIGH STRENGTH BOLTING, INSPECTION OF STEEL FRAME JOINT DETAILS		A,C	A	A,B
1705.3 & 1705.12.1 CONCRETE CONSTRUCTION				
REINFORCEMENT PLACEMENT, CAST-IN-PLACE ANCHORS, PRE-STRESSING STEEL INSTALLATION, CONCRETE AND SHOTCRETE PLACEMENT AND CURING OPERATIONS		A,C,H,I		
ERECTION OF PRE-CAST CONCRETE MEMBERS		A,C,H		
OBSERVE CONCRETE FIELD TESTING		A,I,J,H,C		
REVIEW CERTIFIED MILL REPORTS AND DESIGN MIXES			A	
REVIEW USE OF REQUIRED DESIGN MIX		A,I,J,H,C		
PRE-STRESSED (PRE-TENSIONED) CONCRETE FORCE APPLICATION	A,C,E			
POST-TENSIONED CONCRETE FORCE APPLICATION		A,C,D		
REVIEW OF IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING POST-TENSIONED CONCRETE			A	
REINFORCING STEEL WELDABILITY, REINFORCING WELDING, WELD FILLER MATERIAL		C,F,G		
1705.4, 1705.4.2 & 1705.12 MASONRY				
REVIEW F'm PRIOR TO CONSTRUCTION			A	
MORTAR JOINT CONSTRUCTION, GROUT PROTECTION AND PLACEMENT, MATERIALS PROPORTION, TYPE/SIZE/LOCATION OF REINFORCEMENT, STRUCTURAL ELEMENTS, ANCHORAGE, AND CONNECTORS		A,C,K		
OBSERVE SAMPLING/TESTING OF GROUT/MORTAR SPECIMENS		A,C,J		
OBSERVE PREPARATION OF MASONRY PRISMS FOR TESTING OF COMPRESSIVE STRENGTH OF MASONRY F'm		A,C,K		
INSPECTION OF WELDING OF REINFORCING STEEL		C,F,G		
1705.6 & 1803 SOILS				
OBSERVE SITE PREPARATION AND FILL PLACEMENT WITH TESTING OF COMPACTION FOR COMPLIANCE WITH GEOTECHNICAL REPORT FOR THE PROJECT		A,I		
OBSERVE AND TEST BEARING MATERIALS BELOW SHALLOW FOUNDATIONS FOR ABILITY TO ACHIEVE DESIGN BEARING CAPACITY		A,L		
REVIEW COMPACTION TESTING FOR COMPLIANCE WITH GEOTECHNICAL REPORT FOR THE PROJECT				A
1705.7, 1705.8, 1705.9 & 1807 PILE AND PIER FOUNDATIONS				
OBSERVE INSTALLATION		A,L		
OBSERVE LOAD TESTS		A		
1705.14 & 1705.15 SPRAYED FIRE RESISTANCE MATERIALS		A,C	A,B	A,B
1705.1.1 SPECIAL CASES				
WORK OF UNUSUAL OR SPECIAL NATURE		A,B,M		
1705, 1705.11 & 1705.12 SEISMIC AND WIND RESISTANCE				
PERIODIC INSPECTION OF FABRICATION, INSTALLATION AND/OR ANCHORAGE OF BUILDING SYSTEMS AND COMPONENTS		A		

KEY:
A. PROFESSIONAL ENGINEER (PE) REGISTERED IN THE PROJECT STATE AND COMPETENT IN THE SPECIFIC TASK AREA OR GRADUATE OF ACCREDITED ENGINEERING/ENGINEERING TECHNOLOGY PROGRAM UNDER THE DIRECT AND CONTINUOUS SUPERVISION OF A COMPETENT PROFESSIONAL ENGINEER.

B. LICENSED ARCHITECT (RA) REGISTERED IN THE PROJECT STATE OR GRADUATE OF ACCREDITED ARCHITECTURE/ARCHITECTURE TECHNOLOGY PROGRAM UNDER THE DIRECTION OF A RA.

C. INTERNATIONAL CODE COUNCIL (ICC) SPECIAL INSPECTOR CERTIFICATION SPECIFIC TO THE PARTICULAR MATERIAL AND TESTING METHODOLOGY APPLICABLE TO EACH CATEGORY OF TESTING AND INSPECTION LISTED IN THE TABLE.

D. POST-TENSIONING INSTITUTE (PTI) CERTIFICATION.

E. PRE-STRESSED CONCRETE INSTITUTE (PCI) CERTIFIED INSPECTOR.

F. AMERICAN WELDING SOCIETY (AWS) CERTIFIED WELDING INSPECTOR (CWI) OR AWS CERTIFIED ASSOCIATE WELDING INSPECTOR WORKING UNDER THE DIRECT ON-SITE SUPERVISION OF A CWI.

G. AMERICAN SOCIETY FOR NONDESTRUCTIVE TESTING (ASNT) LEVEL II CERTIFICATION, OR LEVEL III CERTIFICATION PREVIOUSLY CERTIFIED AS LEVEL II SPECIFIC TO THE PARTICULAR MATERIAL AND TESTING METHODOLOGY APPLICABLE TO EACH CATEGORY OF TESTING AND INSPECTION LISTED IN THE TABLE.

H. AMERICAN CONCRETE INSTITUTE (ACI) CONCRETE CONSTRUCTION SPECIAL INSPECTOR.

I. NATIONAL INSTITUTE FOR CERTIFICATION OF ENGINEERING TECHNICIANS (NICET) LEVEL II OR III CERTIFICATION SPECIFIC TO THE PARTICULAR MATERIAL AND TESTING METHODOLOGY APPLICABLE TO EACH CATEGORY OF TESTING AND INSPECTION LISTED IN THE TABLE.

J. ACI CONCRETE FIELD TESTING TECHNICIAN WITH GRADE 1 CERTIFICATION.

K. NATIONAL CONCRETE MASONRY ASSOCIATION (NCMA) CONCRETE MASONRY TESTING PROCEDURES CERTIFICATION.

L. NICET CERTIFIED ENGINEERING TECHNOLOGIST (CT).

M. OTHER QUALIFIED SPECIAL INSPECTOR AS APPROVED BY THE ENFORCING JURISDICTION.

NOTES:
THE MINIMUM QUALIFICATIONS SHOWN ARE EITHER ONE OR THE OTHER PER CATEGORY (NOT ALL) UNLESS OTHERWISE STATED. MATERIALS TESTING SHALL BE DONE BY AN APPROVED TESTING AGENCY MEETING THE REQUIREMENTS OF IBC SECTION 1703 AND ASTM E329.

THE ENFORCING JURISDICTION IS AUTHORIZED TO APPROVE SPECIAL INSPECTORS WHO HAVE DOCUMENTED RELEVANT EXPERIENCE AND ARE PROGRESSING TOWARDS ACHIEVING THE MINIMUM QUALIFICATIONS NOTED ABOVE.

STATEMENT OF SPECIAL INSPECTIONS REQUIREMENTS FOR WIND RESISTANCE
(IBC 1704.3.3)

SEE THE SCHEDULE OF SPECIAL INSPECTIONS FOR INSPECTION AND TESTING REQUIREMENTS

BASIC WIND SPEED (3 SECOND GUST): 101 MPH

WIND EXPOSURE CATEGORY: C

STATEMENT OF SPECIAL INSPECTION FOR WIND RESISTANCE REQUIRED (YES/NO): NO

DESCRIPTION OF MAIN WIND FORCE-RESISTING SYSTEM SUBJECT TO SPECIAL INSPECTION FOR WIND RESISTANCE:

N/A

DESCRIPTION OF MAIN WIND FORCE-RESISTING COMPONENTS SUBJECT TO SPECIAL INSPECTION FOR WIND RESISTANCE:

N/A

STATEMENT OF RESPONSIBILITY

EACH CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OR FABRICATION OF A SYSTEM OR COMPONENT DESIGNATED ABOVE MUST SUBMIT A STATEMENT OF RESPONSIBILITY TO THE ENFORCING JURISDICTION AND OWNER
PER IBC 1704.4.

STATEMENT OF SPECIAL INSPECTIONS REQUIREMENTS FOR SEISMIC RESISTANCE IBC 1704.3.2

SEE THE SCHEDULE OF SPECIAL INSPECTIONS FOR INSPECTION AND TESTING REQUIREMENTS

SEISMIC DESIGN CATEGORY: B

STATEMENT OF SPECIAL INSPECTION FOR SEISMIC RESISTANCE REQUIRED (YES/NO): NO

(REQUIRED FOR SEISMIC DESIGN CATEGORIES C, D, E OR F)

DESCRIPTION OF SEISMIC FORCE-RESISTING SYSTEM SUBJECT TO SPECIAL INSPECTION FOR SEISMIC RESISTANCE:

N/A

STATEMENT OF RESPONSIBILITY

EACH CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OR FABRICATION OF A SYSTEM OR COMPONENT DESIGNATED ABOVE MUST SUBMIT A STATEMENT OF RESPONSIBILITY TO THE ENFORCING JURISDICTION AND OWNER PER IBC 1704.4.

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL
R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210

P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

COMMONWEALTH OF MASSACHUSETTS 69305 S. TREVOR WINNELL REGISTERED PROFESSIONAL ENGINEER

General Notes:

Project Title:

Fidelity INVESTMENTS

Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane,
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
0	ISSUE FOR CONSTRUCTION	12/20/2024

Key Plan:

Project North
True North

Project No.: K2812549 R01

Drawing Sheet Title:
SPECIAL INSPECTIONS SHEET

Drawing Sheet Number:
S-002

Owner's Branch No.:
134

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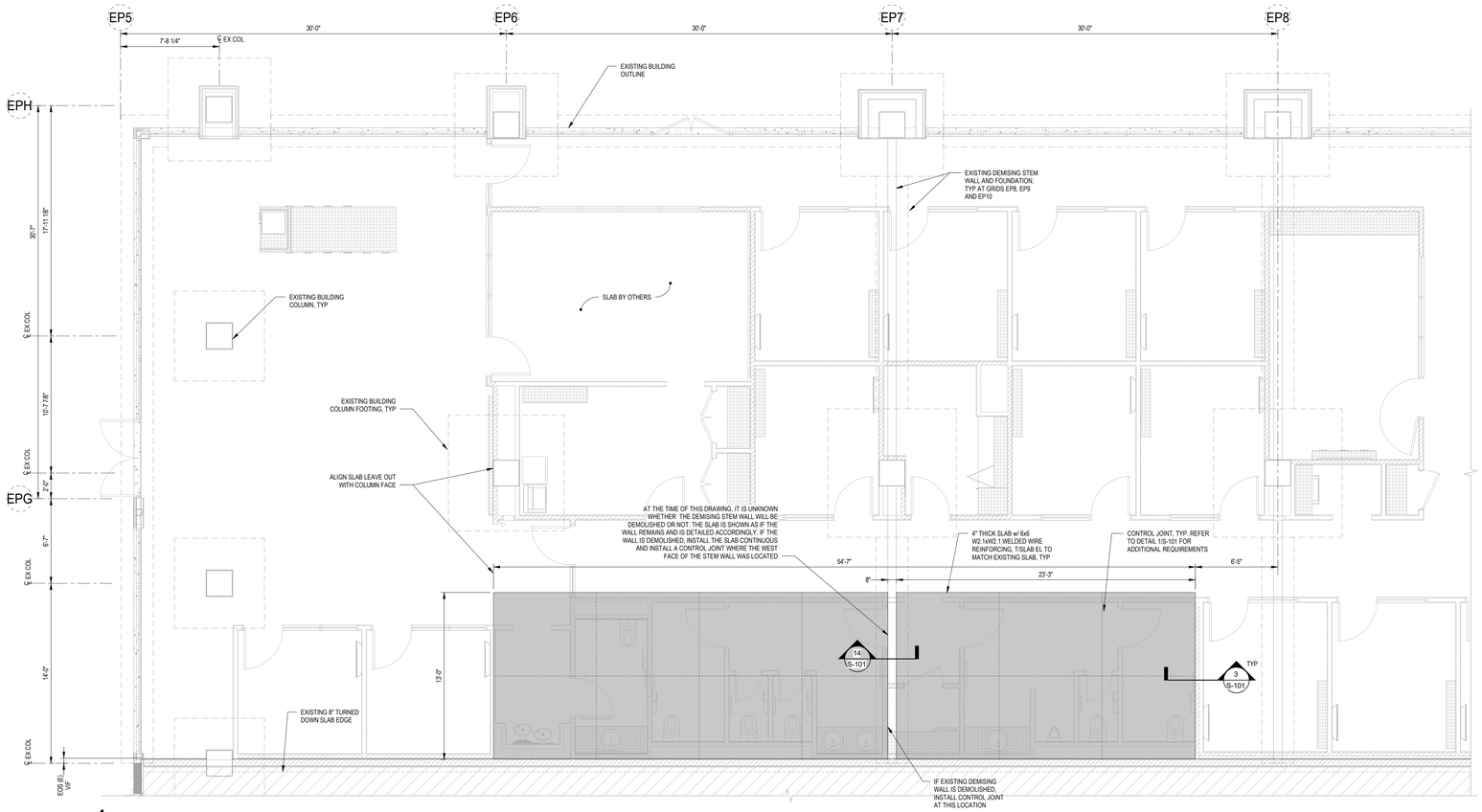
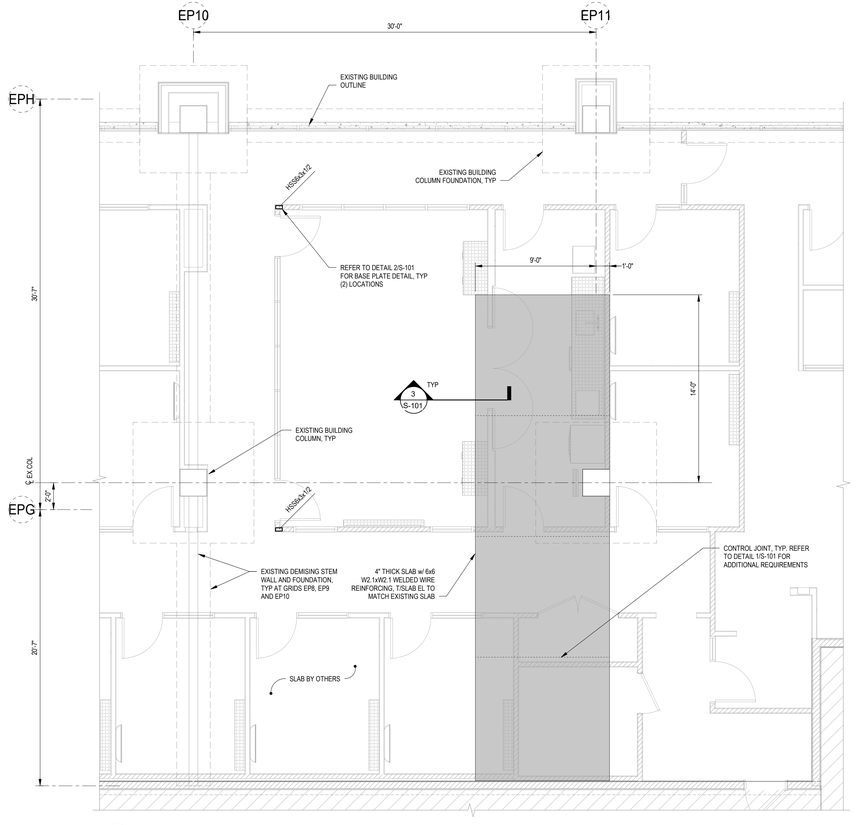


1 SLAB ON GROUND PLAN AREA 1

S-100 SCALE: 1/4" = 1'-0"

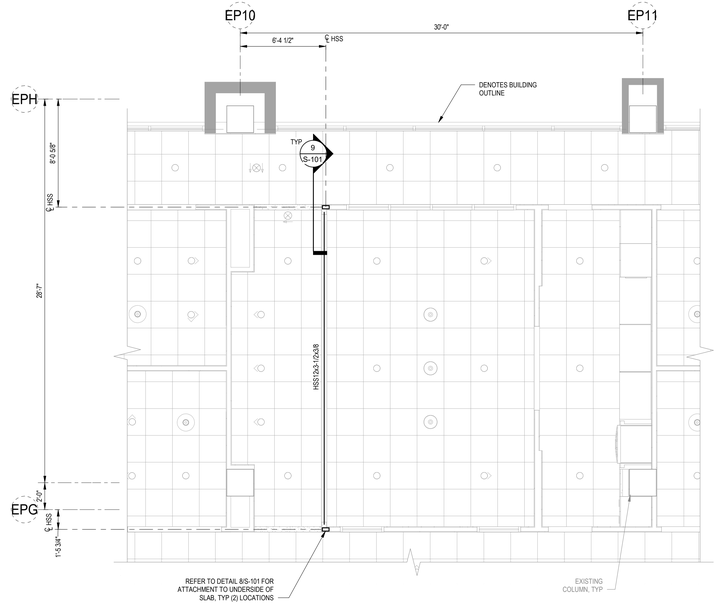
NOTES:
1. REFER TO GENERAL NOTES AND SPECIFICATIONS ON SHEETS S-001 FOR ADDITIONAL STRUCTURAL INFORMATION.
2. T/SLAB FFE TO MATCH THE EXISTING T/CONCRETE SLAB ELEVATION



2 SLAB ON GROUND PLAN AREA 2

S-100 SCALE: 1/4" = 1'-0"

NOTES:
1. REFER TO GENERAL NOTES AND SPECIFICATIONS ON SHEET S-001 FOR ADDITIONAL STRUCTURAL INFORMATION.
2. LOCATIONS OF COLUMNS AND FRAMING SHALL BE COORDINATED WITH LOCATION OF WALLS. REFER TO ARCHITECTURAL DRAWINGS.



3 CONFERENCE ROOM HEADER FRAMING PLAN

S-100 SCALE: 1/4" = 1'-0"

NOTES:
1. REFER TO GENERAL NOTES AND SPECIFICATIONS ON SHEET S-001 FOR ADDITIONAL STRUCTURAL INFORMATION.
2. LOCATIONS OF COLUMNS AND FRAMING SHALL BE COORDINATED WITH LOCATION OF WALLS. REFER TO ARCHITECTURAL DRAWINGS.
3. BOTTOM OF HSS HEADER ELEVATION = 8'-2" ABOVE REFERENCE FFE.
4. EXISTING FLOOR FRAMING ABOVE IS A 13" POST TENSIONED SLAB, SUPPORTED BY CONCRETE COLUMNS WITH DROP CAPS. THE CONTRACTOR SHALL SCAN AND LOCATE EXISTING REBAR AND POST TENSIONING TENDONS PRIOR TO FASTENING INTO CONCRETE TO PREVENT DAMAGE TO REINFORCING. THE CONTRACTOR SHALL COORDINATE WITH EXISTING DRAWINGS TO AVOID MAJOR STRUCTURAL ELEMENTS. CONTRACTOR SHALL CONTACT JACOBS WITH ANY DOCUMENTED INTEREFERENCES PRIOR TO DRILLING INTO CONCRETE.

0 4" 8" 12"
1/4" = 1'-0"

Jacobs

Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL

R.G. Vanderweil Engineers, LPP
274 Summer Street
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P 617-423-7423
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Number	Description	Date
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Key Plan:

Project North
True North

Project No.: K2812549 R01

Drawing Sheet Title:

SLAB ON GROUND & FRAMING PLAN

Drawing Sheet Number:

S-100

Owner's Branch No.:

134

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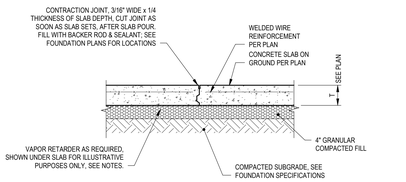
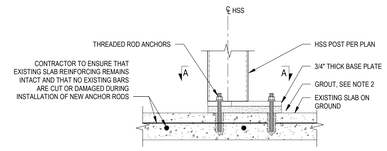


SLAB-ON-GROUND NOTES:

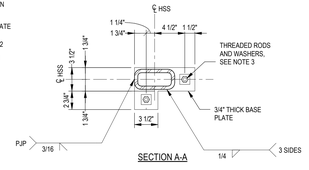
1. THIS DETAIL DEPICTS JOINT TYPES AS WELL AS TYPICAL SLAB REQUIREMENTS. REFER TO THE CONCRETE SLAB AND FLOOR SPECIFICATIONS FOR FURTHER REQUIREMENTS.
2. UNLESS OTHERWISE NOTED PROVIDE A SLAB FLATNESS (FF) BETWEEN 25-35 AND A SLAB LEVELNESS (FL) BETWEEN 20-25.
3. PROVIDE (2) # 3 x 2'-6" LONG, CENTERED IN SLAB AT ALL RE-ENTRANT CORNERS EVEN IF NOT SHOWN ON THE FOUNDATION PLAN.
4. PROVIDE ISOLATION JOINTS AT JUNCTIONS WITH WALLS (NOT REQUIRING LATERAL RESTRAINT FROM THE SLAB), COLUMNS, EQUIPMENT FOUNDATIONS, FOOTINGS OR OTHER POINTS OF RESTRAINT SUCH AS DRAINS, MANHOLES, SUMPS AND STAIRWAYS EVEN IF NOT SHOWN ON THE FOUNDATION PLAN.
5. PROVIDE A VAPOR RETARDER UNDER ALL SLABS ON GRADE, SEE SPECIFICATIONS FOR RETARDER REQUIREMENTS. THE RETARDER SHALL BE PLACED UNDER GRANULAR FILL IF THE SLAB IS PLACED UNDER A WATERTIGHT ROOF OR FLOOR SYSTEM. IF THE SLAB IS PLACED BEFORE THE INSTALLATION OF SAID ROOF, PLACE THE RETARDER UNDER THE SLAB ITSELF.
6. IF CONCRETING IS INTERRUPTED LONG ENOUGH FOR THE PLACED CONCRETE TO HARDEN PROVIDE A CONSTRUCTION JOINT PER ACI 302-1R. CONSTRUCTION JOINTS SHALL NOT BE PLACED CLOSER THAN 5'-0" FROM ANY JOINT TO WHICH THEY ARE PARALLEL.
7. PROVIDE CONTRACTION JOINTS IN 4" SLAB AT MAXIMUM SPACING, 12'-0" OC

1 TYPICAL SLAB ON GROUND DETAIL
S-101 SCALE: 3/4" = 1'-0"



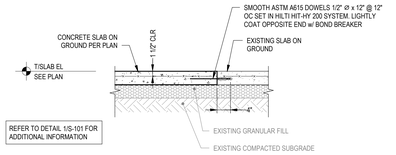
NOTES:

1. ALL BASE PLATES SHALL BE ORIENTED SUCH THAT THEY ARE HIDDEN WITHIN THE METAL STUD WALLS (ROTATE 180 DEGREES AS REQUIRED).
2. POSTS SHALL BE PLUMBED WITH SHIM PLATES. PROVIDE 1" NON-SHRINK GROUT UNDER BASE PLATES AFTER POSTS ARE PLUMBED.
3. THREADED RODS SHALL BE 1/2" Ø IN HILTI HIT-HY 200 (ICC-ES-ESR-3187) WITH MINIMUM 2-3/4" EMBEDMENT AND MINIMUM 1/2" EXTENSION ABOVE TOP NUT. PLATE WASHERS SHALL BE 1/4" x 1 1/2" x 1 1/2".
4. CONTRACTOR SHALL VERIFY 4" MINIMUM THICKNESS OF EXISTING SLAB PRIOR TO FABRICATION. IF SLAB THICKNESS IS LESS THAN 4", CONTRACTOR SHALL NOTIFY JACOBS FOR ANCHORAGE REDESIGN. NO EXISTING SLAB REINFORCING BARS SHALL BE CUT OR DAMAGED DURING VERIFICATION OF SLAB THICKNESS OR DURING INSTALLATION OF ANCHOR RODS.



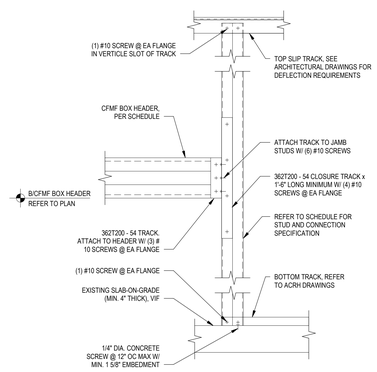
SECTION A-A

2 BASE PLATE AT HSS COLUMN
S-101 SCALE: 1 1/2" = 1'-0"

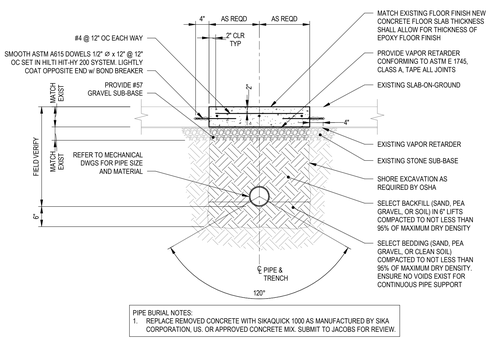


REFER TO DETAIL 1/S-101 FOR ADDITIONAL INFORMATION

3 NEW TO EXISTING SLAB INTERFACE
S-101 SCALE: 3/4" = 1'-0"



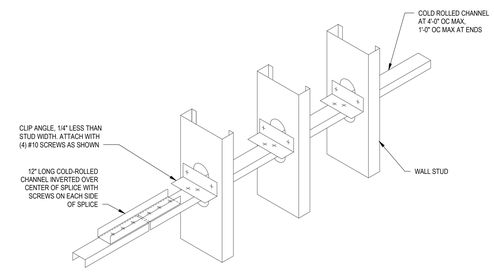
4 CFMF BOX HEADER TO JAMB CONNECTION
S-101 SCALE: 1 1/2" = 1'-0"



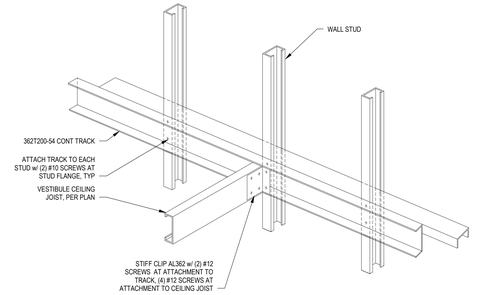
PIPE BURIAL NOTES:

1. REPLACE REMOVED CONCRETE WITH SIKAQUICK 1000 AS MANUFACTURED BY SIKA CORPORATION, US. OR APPROVED CONCRETE MIX. SUBMIT TO JACOBS FOR REVIEW.

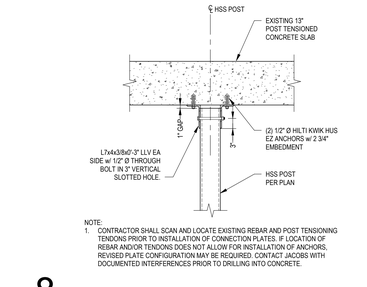
5 SLAB REPAIR AFTER ACCESS TO EXISTING PIPE
S-101 SCALE: 3/4" = 1'-0"



6 WALL BRIDGING TYPICAL DETAIL
S-101 SCALE: 3/4" = 1'-0"



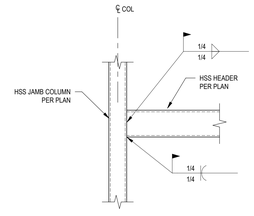
7 CEILING JOIST TO WALL STUD CONNECTION
S-101 SCALE: 1" = 1'-0"



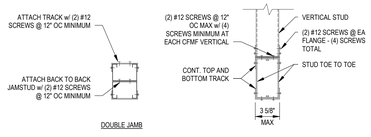
NOTE:

1. CONTRACTOR SHALL SCAN AND LOCATE EXISTING REBAR AND POST TENSIONING TENDONS PRIOR TO INSTALLATION OF CONNECTION PLATES. IF LOCATION OF REBAR AND/OR TENDONS DOES NOT ALLOW FOR INSTALLATION OF ANCHORS, REVISED PLATE CONFIGURATION MAY BE REQUIRED. CONTACT JACOBS WITH DOCUMENTED INTERFERENCES PRIOR TO DRILLING INTO CONCRETE.

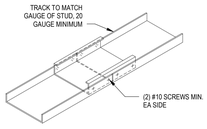
8 TOP OF HSS CONNECTION AT UNDERSIDE OF SLAB
S-101 SCALE: 3/4" = 1'-0"



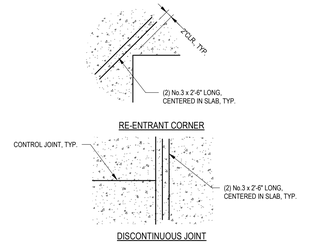
9 HSS HEADER TO HSS COLUMN CONNECTION
S-101 SCALE: 1" = 1'-0"



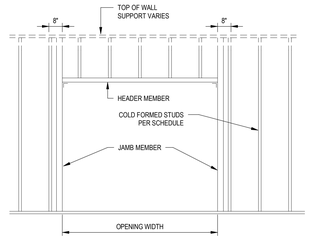
10 BOX HEADER AND JAMB DETAIL FOR OPENINGS
S-101 SCALE: 1 1/2" = 1'-0"



11 TOP AND BOTTOM TRACK SPLICE DETAIL
S-101 SCALE: 1 1/2" = 1'-0"



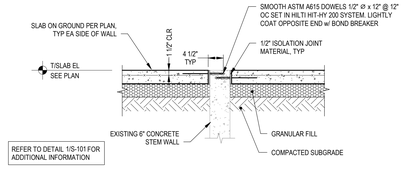
12 RE-ENTRANT CORNER REINFORCING
S-101 SCALE: 3/4" = 1'-0"



LOCATION	OPENING WIDTH (MAX)	MEMBERS		CONNECTIONS		
		JAMB	HEADER	TOP OF JAMB	BASE OF JAMB	HEADER
RM 139 MEETING ROOM RM 111 COLLABORATION ROOM OPENING RM 105 FR OFFICE ROOM OPENING	12'-7 1/2"	(3) 362JAM250-68 (50 KSI) (3) 362T150-68 (50 KSI)	(2) HL 362T150-97 (50 KSI) (2) VL 1000S162-118 (50 KSI)	VertiClip SL362	StiffClip AL362	(2) StiffClip AL362
TRANSACTION OFFICE	9'-0"	(2) 362JAM250-68 (50 KSI) (2) 362T150-68 (50 KSI)	(2) HL 362T150-68 (50 KSI) (2) VL 400S162-68 (50 KSI)	VertiClip SL362	StiffClip AL362	StiffClip AL362
TYPICAL OFFICE RTOOM	7'-0"	(2) 362JAM250-68 (50 KSI)	(1) 362JAM250-97 (50 KSI)	VertiClip SL362	StiffClip AL362	StiffClip AL362

1. ONLY HEADER AND JAMBS FOR THE LOCATIONS SPECIFIED HAVE BEEN DESIGNED BY JACOBS ENGINEERING GROUP.
2. CLIPS AND CONNECTORS ARE BASED UPON PRODUCTS MANUFACTURED BY THE STEEL NETWORK. ALTERNATE CONNECTORS MAY BE USED IF APPROVED BY JACOBS ENGINEERING GROUP. SUBMIT ALTERNATES AND SUPPORTING DOCUMENTATION WITH SHOP DRAWINGS.
4. HEADER AND JAMB MEMBERS SHALL BE ORIENTED SUCH THAT SOLID FLAT SURFACES CAN BE USED TO ATTACH DOOR FRAME.
5. ALL CONNECTION HOLES FOR VertiClip SL TO JAMB MEMBER AT "TOP OF JAMB" CONNECTION SHALL BE FILLED WITH No.12 TEK SCREWS. PROVIDE *(3) Hilti TYPE EDS 0.177" Ø PAF* FOR ATTACHMENT OF VertiClip SL TO UNDERSIDE OF STEEL FRAMING.
6. REFER TO DETAIL 5/1-S-101 FOR BUILT UP ATTACHMENT REQUIREMENTS ON BOX HEADER AND JAMB CONFIGURATION
7. PROVIDE NUMBER OF FASTENERS AND SCREW PATTERN FOR ATTACHMENT OF StiffClip CL TO JAMB MEMBER AT "BASE OF JAMB" CONNECTION AS SHOWN IN SCHEDULE. PROVIDE 1/2"Ø Hilti EXP ANCHOR WITH 2 1/4" EMBED FOR StiffClip CL ATTACHMENT TO CONCRETE.
8. ALL CONNECTION HOLES FOR StiffClip AL TO JAMB MEMBER AT "BASE OF JAMB" CONNECTION SHALL BE FILLED WITH No.12 SCREWS. PROVIDE *(3) Hilti TYPE DS 0.177" Ø PAF* FOR ATTACHMENT OF StiffClip AL TO CONCRETE MEMBER.
9. ALL CONNECTION HOLES FOR StiffClip AL TO HEADER AND/OR SILL MEMBERS AT "HEADER" AND/OR "SILL" CONNECTION SHALL BE FILLED WITH No.12 SCREWS.
10. BACK TO BACK JAMB STUDS SHALL BE ATTACHED TOGETHER WITH (2) No.12 SCREWS @ 12" O.C.; PROVIDE CLOSURE TRACK ON OPEN FACE OF JAMB FOR ATTACHMENT OF WINDOW FRAME.
11. ALL CONNECTIONS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AS LISTED IN PRODUCT CATALOG PUBLISHED BY THE STEEL NETWORK.

13 COLD FORMED HEADER AND JAMB SCHEDULE
S-101 SCALE: 3/8" = 1'-0"



REFER TO DETAIL 1/S-101 FOR ADDITIONAL INFORMATION

14 NEW SLAB INTERFACE WITH EXISTING DEMISING STEM WALL
S-101 SCALE: 3/4" = 1'-0"

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

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Number	Description	Date
0	ISSUE FOR CONSTRUCTION	12/20/2024

Key Plan:

Project North
True North

Project No.: K2812549 R01

Drawing Sheet Title:

TYPICAL DETAILS & SECTIONS

Drawing Sheet Number:

S-101

Owner's Branch No.:

134

0 3" 6" 9" 1' 2'
1 1/2"=1'-0"
0 1' 2' 3'
1"=1'-0"
0 1' 2' 3' 4'
3/4" = 1'-0"

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SYMBOLS

EQUIPMENT & COMPONENTS

ACE	ACCESSORY CABINET ENCLOSURE
ADSP	AIR SAMPLING SMOKE DETECTOR POWER SUPPLY
AMP	AMPLIFIER
BATT	BATTERY CABINET
DACR	DIGITAL ALARM COMMUNICATOR RECEIVER
DACT	DIGITAL ALARM COMMUNICATOR TRANSMITTER
DARR	DIGITAL ALARM RADIO RECEIVER
DART	DIGITAL ALARM RADIO TRANSMITTER
DCCR	DIGITAL CELLULAR COMMUNICATION RECEIVER
DCCT	DIGITAL CELLULAR COMMUNICATION TRANSMITTER
DOCS	DOCUMENT STORAGE CABINET
MICR	EMERGENCY VOICE MICROPHONE MODULE
	END OF LINE RESISTOR
FAA	FIRE ALARM REMOTE ANNUNCIATOR
FACU	FIRE ALARM CONTROL UNIT (# = NODE DESIGNATION)
FATC	FIRE ALARM TERMINAL CABINET
FFSC	FIRE FIGHTER'S SMOKE CONTROL PANEL
FSRU	FIRE SUPPRESSION RELEASING CONTROL UNIT
FSRUA	FIRE SUPPRESSION RELEASING CONTROL UNIT (CONVENTIONAL)
GAP	GRAPHIC ANNUNCIATOR PANEL
IIPCR	INTERNET PROTOCOL COMMUNICATION RECEIVER
IIPCT	INTERNET PROTOCOL COMMUNICATION TRANSMITTER
IS	ISOLATION MODULE
JB	JUNCTION BOX
KB	KEY BOX
MD	MAGNETIC DOOR HOLDER
MB	MUNICIPAL MASTER BOX
PRN	PRINTER
RAI	REMOTE ALARM INDICATOR
RPS	REMOTE POWER SUPPLY
RTP	ROOM TEMPERATURE SWITCH
RTS	REMOTE TEST SWITCH

INTERFACE MODULES

CM	CONTROL MODULE
MM	MONITOR MODULE
RM	RELAY MODULE

MANUAL INITIATING DEVICES AND CONTROLS

F	FIRE ALARM MANUAL PULL STATION
FC	FIRE ALARM MANUAL PULL STATION (CONVENTIONAL)
FX	MANUAL PULL STATION - FIRE SUPPRESSION SYSTEM RELEASE
FXC	MANUAL PULL STATION (CONVENTIONAL) - FIRE SUPPRESSION SYSTEM RELEASE
A	MANUAL PUSH BUTTON - FIRE SUPPRESSION SYSTEM ABORT
EC	MANUAL PULL STATION (CONVENTIONAL) - EMERGENCY ALARM (HAZMAT)

SYMBOLS

SYSTEM SPOT-TYPE FIRE DETECTORS

- BASIC SYMBOL FOR SPOT-TYPE FIRE DETECTOR - WALL MOUNT
- BASIC SYMBOL FOR SPOT-TYPE FIRE DETECTOR - CLNG MOUNT
- BASIC SYMBOL FOR SPOT-TYPE FIRE DETECTOR - W/ SOUNDER BASE
- PHOTOELECTRIC SMOKE DETECTOR
- PHOTOELECTRIC IN-DUCT SMOKE DETECTOR
- PHOTOELECTRIC SAMPLING-TUBE DUCT SMOKE DETECTOR
- FIXED TEMPERATURE / RATE OF RISE HEAT DETECTOR (t = ACTIVATION TEMPERATURE OF FIXED TEMP THERMAL ELEMENT)
- COMBINATION PHOTOELECTRIC SMOKE / FIXED TEMP HEAT DETECTOR (t = ACTIVATION TEMPERATURE OF THERMAL ELEMENT)
- COMBINATION PHOTOELECTRIC SMOKE / CO DETECTOR
- MULTI-CRITERIA PHOTOELECTRIC SMOKE / FIXED TEMP HEAT / CO DETECTOR (t = ACTIVATION TEMPERATURE OF THERMAL ELEMENT)

SPECIAL TECHNOLOGY FIRE DETECTORS

- BASIC SYMBOL FOR SPECIAL TECHNOLOGY FIRE DETECTOR - WALL MOUNT
- BASIC SYMBOL FOR SPECIAL TECHNOLOGY FIRE DETECTOR - CLNG MOUNT
- AIR SAMPLING SMOKE DETECTOR
- AIR SAMPLING TYPE DUCT DETECTOR
- COMBINATION AIR SAMPLING SMOKE / CO DETECTOR
- COMBINATION AIR SAMPLING SMOKE / H2 DETECTOR
- END-TO-END OPTICAL BEAM SMOKE DETECTOR (TRANSMITTER UNIT)
- END-TO-END OPTICAL BEAM SMOKE DETECTOR (RECEIVER UNIT)
- SINGLE-END OPTICAL BEAM SMOKE DETECTOR (TRANSMITTER / RECEIVER UNIT)
- SINGLE-END OPTICAL BEAM SMOKE DETECTOR (REFLECTOR PANEL)
- ULTRAVIOLET SPECTRUM FLAME DETECTOR
- INFRARED SPECTRUM FLAME DETECTOR
- COMBINATION ULTRAVIOLET / INFRARED SPECTRUM FLAME DETECTOR

CONVENTIONAL SPOT-TYPE FIRE DETECTORS

- BASIC SYMBOL FOR CONVENTIONAL FIRE DETECTOR - WALL MOUNT
- BASIC SYMBOL FOR CONVENTIONAL FIRE DETECTOR - CEILING MOUNT
- CONVENTIONAL PHOTOELECTRIC SMOKE DETECTOR
- CONVENTIONAL FIXED TEMPERATURE HEAT DETECTOR (t = ACTIVATION TEMPERATURE)

SINGLE / MULTIPLE STATION SMOKE ALARMS

- BASIC SYMBOL FOR SMOKE ALARM - WALL MOUNT
- BASIC SYMBOL FOR SMOKE ALARM - CEILING MOUNT
- SINGLE / MULTIPLE STATION SMOKE ALARM
- SINGLE / MULTIPLE STATION COMBINATION SMOKE / CO ALARM

RADIO PES COMMUNICATIONS ENHANCEMENT SYSTEMS

BDA	BI-DIRECTIONAL RADIO SIGNAL AMPLIFIER
BDAA	BI-DIRECTIONAL RADIO SIGNAL AMPLIFIER ALARM PANEL

WIRED FIRE FIGHTER COMMUNICATION SYSTEMS

FFPC	FIRE FIGHTER'S PHONE CONTROLLER / HANDSET - PRIORITY COMMAND LOCATION
FFP	FIRE FIGHTER'S PHONE HANDSET
FFJ	FIRE FIGHTER'S PHONE PLUG-IN PHONE JACK

NOTE - NOT ALL SYMBOLS USED FOR THIS PROJECT

SYMBOLS

NOTIFICATION APPLIANCES

- AUDIBLE HORN - WALL MOUNT
- AUDIBLE HORN - CLNG MOUNT
- VISUAL STROBE - WALL MOUNT
- VISUAL STROBE - CLNG MOUNT
- COMBINATION AUDIBLE HORN / VISUAL STROBE - WALL MOUNT
- COMBINATION AUDIBLE HORN / VISUAL STROBE - CLNG MOUNT
- AUDIBLE & INTELLIGIBLE SPEAKER - WALL MOUNT
- AUDIBLE & INTELLIGIBLE SPEAKER - CLNG MOUNT
- COMBINATION AUDIBLE & INTELLIGIBLE SPEAKER / VISUAL STROBE - WALL MOUNT
- COMBINATION AUDIBLE & INTELLIGIBLE SPEAKER / VISUAL STROBE - CLNG MOUNT
- VISUAL FLASHING BEACON
- AUDIBLE ALARM BELL

NOTIFICATION APPLIANCE ANNOTATION

C	=	CEILING MOUNT
cd	=	VISUAL STROBE CANDELA OUTPUT
w	=	SPEAKER WATTAGE TAP

EXISTING EQUIPMENT DESIGNATIONS

XM	EXISTING EQUIPMENT TO REMAIN. WHERE ARCHITECTURAL WORK IS REQUIRED AT DEVICE LOCATION, DISCONNECT, REMOVE AND REINSTALL DEVICE AS NECESSARY TO ACCOMMODATE ARCHITECTURAL WORK. FOR SURFACE MOUNTED RACEWAY, THIS DESIGNATION SHALL INDICATE RACEWAY AND DEVICES TO REMAIN UNLESS OTHERWISE NOTED.
XN	EXISTING EQUIPMENT TO BE DISCONNECTED, REMOVED AND REPLACED WITH NEW. EXISTING CIRCUIT WIRING AND PATHWAY TO BE MAINTAINED AND REUSED FOR NEW EQUIPMENT CONNECTION.
XR	EXISTING EQUIPMENT TO NEW "XL" LOCATION. CUT BACK AND/OR EXTEND EXISTING CIRCUIT WIRING AND PATHWAY AS REQUIRED SO AS TO PROVIDE A COMPLETE OPERATIONAL INSTALLATION.
XL	EXISTING RELOCATED "XR" EQUIPMENT AT "XL" NEW LOCATION.
XD	REMOVE EXISTING EQUIPMENT. PROVIDE NOTICE TO OWNER OF EQUIPMENT REMOVED. AS DIRECTED BY THE OWNER, BOX REMOVED EQUIPMENT AND RETURN TO THE OWNER AS SPARE INVENTORY.

GENERAL ANNOTATION

- SECTION NUMBER / DRAWING NUMBER
- ELEVATION NUMBER / DRAWING NUMBER
- DETAIL / PART-PLAN NUMBER / DRAWING NUMBER
- CONNECT TO EXISTING
- KEY NOTE

NOTE - NOT ALL SYMBOLS USED FOR THIS PROJECT

FIRE ALARM ABBREVIATIONS (GENERAL)

A	AMPERES
ACT	ACOUSTICAL CEILING TILE
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AHJ	AUTHORITY HAVING JURISDICTION
ARCH	ARCHITECT
AWG	AMERICAN WIRE GAUGE
BLDG	BUILDING
CL	CENTER LINE
CMU	CONCRETE MASONRY UNIT
CO	CARBON MONOXIDE
CONT	CONTINUATION
DWG	DRAWING
ELEC	ELECTRICAL
ELEV	ELEVATION
EX	EXISTING
GALV	GALVANIZED
GND	GROUND
GWB	GYPSUM WALL BOARD
HAZMAT	HAZARDOUS MATERIAL
M	METERS
MAX	MAXIMUM
MECH	MECHANICAL
MIN	MINIMUM
MISC	MISCELLANEOUS
MM	MILLIMETERS
NA	NOT APPLICABLE
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NRTL	NATIONALLY RECONIZED TESTING LABORATORY
NTS	NOT TO SCALE
PES	PUBLIC EMERGENCY SERVICE
QTY	QUANTITY
SQFT	SQUARE FEET
SQM	SQUARE METERS
TEMP	TEMPERATURE
TYP	TYPICAL
V	VOLTS
W	WITH
WP	WEATHER PROOF
XP	EXPLOSION PROOF

FIRE ALARM ABBREVIATIONS (SYSTEMS, EQUIPMENT, AND...

ACU	AUTONOMOUS CONTROL UNIT
AMP	AMPLIFIER
ASSD	AIR-SAMPLING SMOKE DETECTOR
AUX	AUXILIARY 24V POWER CIRCUIT
AVC	ANALOG VOICE CIRCUIT
BDA	BI-DIRECTIONAL AMPLIFIER
BDAA	BI-DIRECTIONAL AMPLIFIER ALARM PANEL
CAX	COAXIAL CABLE
COM	NETWORK COMMUNICATION CIRCUIT
DVC	DIGITAL VOICE CIRCUIT
ECS	EMERGENCY COMMUNICATION SYSTEM
EMT	ELECTRICAL METALLIC TUBING
EOL	END OF LINER RESISTOR
FACU	FIRE ALARM CONTROL UNIT
FAS	FIRE ALARM SYSTEM
FATC	FIRE ALARM TERMINAL CABINET
FMC	FLEXIBLE METALLIC CONDUIT
FMCL	LIQUID TIGHT FLEXIBLE METALLIC CONDUIT
FO	FIBER OPTIC CABLE
FPL	POWER LIMITED FIRE ALARM CABLE
FPLP	POWER LIMITED FIRE ALARM CABLE - PLENUM
FPLR	POWER LIMITED FIRE ALARM CABLE - RISER
FSRU	FIRE SUPPRESSION RELEASING UNIT
FT	FIXED TEMPERATURE
GAP	GRAPHIC ANNUNCIATOR PANEL
HLI	HIGH LEVEL INTERFACE
IM	INTERFACE MODULE
JB	JUNCTION BOX
MC	METAL CLAD CABLE
MD	MAGNETIC DOOR HOLD-OPEN
MFVN	MANAGED FACILITIES-BASED VOICE NETWORK
NAC	NOTIFICATION APPLIANCE CIRCUIT
PP	PROTECTED PREMISES
PRN	PRINTER
PSTN	PUBLIC-SWITCHED TELEPHONE NETWORK
RAI	REMOTE ALARM INDICATOR
RCES	RADIO COMMUNICATION ENHANCEMENT SYSTEM
RMC	RIGID METALLIC CONDUIT
ROR	RATE OF RISE
RPS	REMOTE POWER SUPPLY
RS	RELEASING SERVICE
SLC	SIGNALING LINE CIRCUIT
SPK	SPEAKER CIRCUIT
STR	STROBE CIRCUIT
TB	TERMINAL BLOCK

FIRE ALARM - DRAWING LIST

FAS INTERFACE MODULE/FIRE SUPPRESSION

FSA	FSRU COMMON ALARM OUTPUT (MM)
FSAD	FSRU CLEAN AGENT DISCHARGE OUTPUT (MM)
FSS	FSRU COMMON SUPERVISORY OUTPUT (MM)
FST	FSRU COMMON TROUBLE OUTPUT (MM)
FSWF	FSRU WATER FLOW OUTPUT (MM)
KMS	KEY MAINTENANCE SWITCH (MM)
LPS	LOW AIR OR WATER SPRINKLER / STANDPIPE SYSTEM PRESSURE (MM)
N2P	NITROGEN GENERATOR LOW PURITY (MM)
RCA	ENERGIZE CLEAN AGENT RELEASING ACTUATOR (RM)
RSL	ENERGIZE PREACTION SPRINKLER RELEASING SOLENOID (RM)
TS	SPRINKLER/ STANDPIPE VALVE TAMPER SWITCH IN OFF-NORMAL POSITION (MM)
TSC	CLEAN AGENT ACTUATOR CONTROL HEAD TAMPER SWITCH IN OFF-NORMAL POSITION (MM)
WF	SPRINKLER / STANDPIPE SYSTEM WATER FLOW (MM)
WTH	FIRE WATER TANK HIGH LEVEL ALARM (MM)
WTL	FIRE WATER TANK LOW LEVEL ALARM (MM)
WTVL	FIRE WATER TANK VERY LOW LEVEL ALARM (MM)

FAS/ELECTRIC FIRE PUMP INTERFACES

FPCS	FIRE PUMP CONNECTED TO STANDBY POWER (MM)
FPLT	FIRE PUMP LOW TEMPERATURE (MM)
FPPL	FIRE PUMP POWER PHASE LOSS (MM)
FPPV	FIRE PUMP POWER PHASE REVERSAL (MM)
FPRN	FIRE PUMP RUNNING (MM)
FPVB	FIRE PUMP VFD BYPASS ENGAGED (MM)
FPVF	FIRE PUMP VFD FAILURE (MM)
FPVO	FIRE PUMP VFD OVERPRESSURE (MM)

FAS/DIESEL FIRE PUMP INTERFACES

FPET	FIRE PUMP ENGINE TROUBLE (MM)
FPLF	FIRE PUMP LOW FUEL (MM)
FPLT	FIRE PUMP LOW TEMPERATURE (MM)
FPMS	FIRE PUMP MAIN SWITCH IN OFF OR MANUAL POSITION (MM)
FPRN	FIRE PUMP RUNNING (MM)

FAS ELEVATOR INTERFACES

ELAI	ACTIVATE "FLASHING HAT" ALARM INDICATOR (RM)
ELHV	OPEN ELEVATOR HOISTWAY VENT (RM)
ELRA	RECALL CAB(S) TO ALTERNATE RECALL LEVEL (RM)
ELRP	RECALL CAB(S) TO PRIMARY RECALL LEVEL (RM)
ELSP	SHUNT ELEVATOR POWER (RM)
OEE	OCCUPANT EVACUATION ELEVATOR INTERFACE (RM)

FAS/HVAC & SMOKE CONTROL INTERFACES

@-AFL	SMOKE CONTROL FAN ID "@" AIRFLOW VERIFICATION (MM)
@-CL	DAMPER/COMPONENT ID "@"IN CLOSED POSITION (MM)
@-DSC	SMOKE CONTROL FAN ID "@" LOCAL POWER DISCONNECT OPEN (MM)
@-OP	DAMPER/COMPONENT ID "@" IN OPEN POSITION (MM)
FSD	FIRE SMOKE DAMPER (RM)
OC-@	OPEN/CLOSE DAMPER/COMPONENT ID "@" (RM)
SD	SMOKE DAMPER (RM)
STA-@	START HVAC/SMOKE CONTROL FAN ID "@" (RM)
STP-@	STOP HVAC/SMOKE CONTROL FAN ID "@" (RM)
XDCT	CONVENTIONAL DUCT SMOKE DETECTOR ALARM (MM)

FAS BI-DIRECTIONAL AMPLIFIER INTERFACES

BDAC	LOSS OF AC POWER (MM)
BDAM	ANTENNA MALFUNCTION (MM)
BDLB	LOW BATTERY (MM)
BDSM	SIGNAL BOOSTER FAILURE (MM)

FAS CONVENTIONAL INITIATING DEVICES

FC	CONVENTIONAL FIRE ALARM MANUAL PULL STATION (MM)
HDA	CONVENTIONAL HEAT DETECTOR ALARM (MM)

FAS/OTHER SYSTEM INTERFACES

@-PW	EQUIPMENT ID "@" POWER OFF NORMAL (MM)
AV	OVERRIDE SOUND CONTROLS-SHUTDOWN AV SYSTEMS (RM)
BMSA	FAS COMMON ALARM TO BMS (RM)
BMSS	FAS COMMON SUPERVISORY TO BMS (RM)
BMST	FAS COMMON TROUBLE TO BMS (RM)
DR	RELEASE DOOR(S) (RM)
FAS	COMMON TROUBLE SIGNAL TO SECURITY SYSTEM (RM)
FOP	SHUT DOWN FUEL OIL PUMP(S) (RM)
GAS	DE-ENERGIZE NATURAL GAS SUPPLY SHUTOFF SOLENOID (RM)
GENR	EMERGENCY/STANDBY GENERATOR RUNNING (MM)
LTG	OVERRIDE LIGHTING CONTROLS TO NORMAL (RM)
PASO	OVERRIDE PUBLIC ADDRESS SYSTEM-MUTE SOUND (RM)
RT	ROOM TEMPERATURE SWITCH (MM)
SECA	FAS COMMON ALARM SIGNAL TO SECURITY SYSTEM (RM)
SECS	FAS COMMON SUPERVISORY SIGNAL TO SECURITY SYSTEM (RM)
SM	OVERRIDE SOUND MASKING CONTROLS (RM)

FAS SPECIAL TECHNOLOGY DETECTION

ASD1	AIR SAMPLING SMOKE DETECTION FIRE 1
ASD2	AIR SAMPLING SMOKE DETECTION FIRE 2
ASDP	AIR SAMPLING SMOKE DETECTION PRE-ALARM (ALERT/ACTION)
ASDT	AIR SAMPLING SMOKE DETECTOR / POWER SUPPLY TROUBLE
BDT	BEAM DETECTOR TROUBLE (MM)
BEDA	BEAM DETECTOR ALARM (MM)

NOTE - NOT ALL ABBREVIATIONS USED FOR THIS PROJECT

Jacobs

Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL

R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210

P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

Registered Professional Engineer — CERTIFICATE NO. 82048 — BRIAN CIELINSKI — State of ARIZONA, U.S.A.

12/19/2024

General Notes:

Project Title:

Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project No.: C0115.00

Drawing Sheet Title:

FIRE ALARM - SYMBOLS & ABBREVIATIONS

Drawing Sheet Number:

FA-001

Owner's Branch No.:

134

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MODIFICATIONS TO EXISTING SYSTEMS

1. PREPARE, IN NARRATIVE AND DRAWING FORMAT AS DIRECTED BY THE AUTHORITY OF HAVING JURISDICTION, A FORMAL IMPAIRMENT PLAN.
2. COORDINATE IMPAIRMENT PLAN WITH GENERAL CONTRACTOR FOR INCORPORATION INTO THE NFPA 241 FIRE SAFETY PROGRAM PREPARED BY THE GENERAL CONTRACTOR.
3. IMPAIRMENT PLAN SHALL IDENTIFY THE BUILDING OCCUPANCY (OR VACANCY) DURING CONSTRUCTION AND NATURE OF THE SYSTEM IMPAIRMENT.
4. IMPAIRMENT PLAN SHALL IDENTIFY MAXIMUM IMPAIRMENT DURATION PERMITTED BY THE AUTHORITY HAVING JURISDICTION BEFORE ALTERNATE PROTECTION OR FIRE WATCHES ARE NECESSARY.
5. IMPAIRMENT PLAN SHALL IDENTIFY THE DURATION AND TIMING OF FIRE ALARM SYSTEM SHUTDOWNS AND RESULTANT REQUIREMENT FOR TEMPORARY PROTECTION MEASURES OR FIRE WATCHES, IF ANY.
6. IMPAIRMENT PLAN SHALL IDENTIFY THE NECESSARY PROVISIONS FOR TEMPORARY CIRCUIT CONNECTIONS TO EXISTING FIRE ALARM DEVICES AND APPLIANCES TO REMAIN IN SERVICE.
7. IMPAIRMENT PLAN SHALL IDENTIFY ADDITIONAL PROTECTION FEATURES INCLUDING FIRE WATCHES AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
8. FIRE ALARM OUTSIDE OF RENOVATION WORK AREA. INITIATING DEVICES AND NOTIFICATION APPLIANCES IN AREAS ADJACENT TO THE RENOVATION WORK AREA MUST REMAIN IN SERVICE THROUGHOUT THE DURATION OF CONSTRUCTION. PROVIDE TEMPORARY CIRCUIT CONNECTIONS AS NECESSARY TO MAINTAIN SERVICE UNTIL NEW CIRCUITS ARE COMPLETED.
9. STROBE SYNCHRONIZATION ALLOWANCE. THE FLASH PATTERN OF EXISTING STROBE NOTIFICATION APPLIANCES ADJACENT TO THE RENOVATION WORK AREA BUT OPEN TO VIEW OF NEW STROBE NOTIFICATION APPLIANCES WITHIN THE RENOVATION WORK AREA SHALL BE SYNCHRONIZED. INCLUDE A COST ALLOWANCE FOR THE REPLACEMENT OF EXISTING NOTIFICATION APPLIANCES, NEW POWER SUPPLIES, SYNC-MODULES, AND OTHER NECESSARY MODULES REQUIRED FOR SYNCHRONIZATION WHERE THE EXISTING FIRE ALARM SYSTEM IS DETERMINED IN THE FIELD TO NOT BE CAPABLE OF SYNCHRONIZATION BETWEEN EXISTING AND NEW NOTIFICATION APPLIANCES.
10. FIRE ALARM PULL BOXES WITHIN RENOVATION WORK AREA. MAINTAIN MANUAL PULL BOXES AT EXITS WITHIN AREA OF RENOVATION. REPLACE PULL BOXES WITH NEW AT THE CONCLUSION OF CONSTRUCTION.
11. FIRE ALARM NOTIFICATION APPLIANCES WITHIN RENOVATION WORK AREA. MAINTAIN NOMINAL AUDIBLE AND VISIBLE SIGNALING WITHIN THE RENOVATION WORK AREA. AT A MINIMUM, LOCATE COMBINATION AUDIBLE / VISIBLE NOTIFICATION APPLIANCES AT EACH EXIT FROM THE WORK AREA.
12. SMOKE AND HEAT DETECTORS WITHIN RENOVATION WORK AREA. PROTECT EXISTING DETECTORS TO REMAIN FROM DUST AND DEBRIS THROUGHOUT THE DURATION OF CONSTRUCTION. REPLACE DETECTORS WITH NEW AT THE CONCLUSION OF CONSTRUCTION.
13. FIRE ALARM INTERFACE MODULES WITHIN RENOVATION WORK AREA. MAINTAIN THE OPERATION OF EXISTING INPUT AND OUTPUT INTERFACE MODULES TO EXISTING EQUIPMENT THROUGHOUT THE DURATION OF CONSTRUCTION.
14. PROTECTION. PROTECT EXISTING FIRE ALARM DEVICES, APPLIANCES, AND EQUIPMENT FROM DUST, DEBRIS, PAINT, SPRAY-ON FIRE-PROOFING, AND SIMILAR THROUGHOUT THE DURATION OF CONSTRUCTION.
15. FIXED-TEMPERATURE LINEAR HEAT DETECTION. INSTALL TEMPORARY FIXED-TEMPERATURE (190°F) LINEAR HEAT DETECTION IN RENOVATION WORK AREAS WHERE THE SPRINKLER SYSTEM WILL BE IMPAIRED FOR LONGER THAN ONE (1) WORK SHIFT OR AS OTHERWISE REQUIRED BY THE AUTHORITY HAVING JURISDICTION. COORDINATE REQUIREMENTS FOR TEMPORARY LINEAR HEAT DETECTION WITH DIVISION 21 WORK. WHERE REQUIRED, INSTALL LINEAR HEAT DETECTION WITHIN EACH BEAM POCKET WITH CABLES PARALLEL TO STRUCTURAL BEAMS. LINEAR HEAT DETECTION SHALL BE SUPERVISED BY THE BUILDING FIRE ALARM SYSTEM. ACTIVATION OF THE LINEAR HEAT DETECTION SYSTEM SHALL INITIATE THE BUILDING ALARM SEQUENCE OF OPERATION.
16. PROGRAMMING. UPDATE FIRE ALARM SYSTEM PROGRAMMING AS REQUIRED TO INCLUDE NEW ADDRESSES, DELETED ADDRESSES AND SEQUENCE OF OPERATIONS CHANGES. MATCH EXISTING DEVICE ADDRESS NOMENCLATURE. VERIFY BUILDING ROOM NAMES AND NUMBERS IN FIELD.
17. EXISTING WORK STATIONS. UPDATE PROGRAMMING AND GRAPHICS FILES OF EXISTING WORKSTATIONS AS REQUIRED TO ACCURATELY REFLECT FIRE ALARM SYSTEM MODIFICATIONS.
18. EXISTING GRAPHIC ANNUNCIATORS & SWITCHES. REPLACE EXISTING GRAPHIC ANNUNCIATOR, OPERATOR SWITCHES, LABELS AND SIMILAR AS REQUIRED TO ACCURATELY REFLECT THE FIRE ALARM SYSTEM MODIFICATIONS.
19. EXISTING IDENTIFICATION. REPLACE EXISTING FIRE ALARM SIGNAGE, GRAPHICS, FRAMED MAPS, AND SIMILAR WITH NEW AS REQUIRED TO ACCURATELY REFLECT FIRE ALARM SYSTEM MODIFICATIONS.
20. EXISTING DOCUMENTATION. AMEND EXISTING PROPERTY RECORDS WITH SUPPLEMENTAL FIRE ALARM RECORD DOCUMENTATION INCLUDING DRAWINGS AND TEST REPORTS FOR THE ALTERATION WORK PERFORMED.

DOCUMENT SUBMITTAL PROCESS

1. THE DESIGN CONTENT OF THESE DRAWINGS IS INTENDED TO SATISFY THE STATE BUILDING CODE REQUIREMENTS FOR CONSTRUCTION DOCUMENTS. WHEN STAMPED AND SEALED BY THE ENGINEER OF RECORD THEY ARE INTENDED TO BE USED AS PART OF THE BUILDING PERMIT APPLICATION ONLY.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING A COMPLETE SHOP DRAWING SUBMITTAL INCLUSIVE OF ALL INFORMATION REQUIRED BY THE STATE BUILDING CODE AND THE CONSTRUCTION DOCUMENTS. SHOP DRAWINGS REVIEWED BY THE ENGINEER OF RECORD SHALL BE USED FOR SUPPLEMENTAL FIRE PROTECTION SYSTEM INSTALLATION PERMITS OR SUBMITTALS WHERE SUCH PERMITS OR SUBMITTALS ARE REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING A COMPLETE RECORD DRAWING SUBMITTAL INCLUSIVE OF ALL FIELD CHANGES AND ALL INFORMATION REQUIRED BY THE STATE BUILDING CODE AND THE CONSTRUCTION DOCUMENTS.
4. SHOP DRAWINGS AND RECORD DRAWING SUBMITTALS SHALL BE PREPARED BY THE CONTRACTOR'S QUALIFIED ENGINEERING TECHNICIAN AND SHALL INDICATE THE TECHNICIAN'S NICET CERTIFICATION NUMBER OR PROFESSIONAL ENGINEERING SEAL & SIGNATURE AS REQUIRED BY THE CONSTRUCTION DOCUMENTS.
5. THE ENGINEER OF RECORD SHALL NOT SIGN AND SEAL SHOP DRAWING OR RECORD DRAWING SUBMITTALS PREPARED BY THE CONTRACTOR. WHERE THE AUTHORITY HAVING JURISDICTION REQUIRES SHOP DRAWING OR RECORD DRAWING SUBMITTALS TO BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER, THE SUBMITTALS SHALL BE PREPARED BY A QUALIFIED PROFESSIONAL ENGINEER RETAINED BY THE CONTRACTOR.

INSPECTION AND TESTING

1. PREPARE A TYPEWRITTEN COMPUTER-OUTPUT TEST PLAN THAT CLEARLY ESTABLISHES THE SCOPE OF FIRE ALARM AND SIGNALING SYSTEM TESTING. INCLUDE AT A MINIMUM TESTING METHODS, PERSONNEL, DURATION, PLANNED IMPAIRMENTS, AND REQUIRED COORDINATION FOR INTEGRATED TESTING OF EMERGENCY CONTROL FUNCTION INTERFACES. COORDINATE NFPA 3 "RECOMMENDED PRACTICE FOR COMMISSIONING OF FIRE PROTECTION AND LIFE SAFETY SYSTEMS" AND NFPA 4 "STANDARD FOR INTEGRATED FIRE PROTECTION AND LIFE SAFETY SYSTEM TESTING" REQUIREMENTS WITH THE FIRE AND LIFE SAFETY COMMISSION AGENT (FCxA) WHERE AN FCxA IS CONTRACTED BY THE OWNER.
2. FUNCTIONAL FIELD TESTS SHALL BE WITNESSED BY THE CONSTRUCTION MANAGER (CM), THEIR DESIGNEES, AND WHEN CONTRACTED BY THE OWNER THE FIRE AND LIFE SAFETY COMMISSION AGENT (FCxA); PROVIDE NOTIFICATIONS A MINIMUM OF TWO (2) WEEKS IN ADVANCE.
3. ACCEPTANCE FIELD TESTING SHALL BE WITNESSED BY THE CM, THEIR DESIGNEES, AND AUTHORITIES HAVING JURISDICTION (AHJ); PROVIDE NOTIFICATIONS A MINIMUM OF TWO (2) WEEKS IN ADVANCE.
4. PERFORM VISUAL INSPECTIONS IN ACCORDANCE WITH FIRE ALARM SYSTEM MANUFACTURER RECOMMENDATIONS AND NFPA 72 FOR INITIAL ACCEPTANCE INSPECTIONS. CORRECT DEFICIENCIES.
5. DOCUMENT INSPECTIONS BY COMPLETING APPLICABLE SECTIONS OF THE NFPA 72 “SYSTEM RECORD OF INSPECTION AND TESTING” REPORT.
6. PROVIDE WRITTEN NOTIFICATIONS FOR FUNCTIONAL FIELD TESTS; INCLUDE TEST PLAN.
7. PERFORM FUNCTIONAL TESTING IN ACCORDANCE WITH ACCORDANCE WITH FIRE ALARM SYSTEM MANUFACTURER RECOMMENDATIONS NFPA 72 FOR “INITIAL ACCEPTANCE TESTING”. CORRECT DEFICIENCIES. REPEAT FUNCTIONAL TESTING INCLUDING RETESTING OF UNAFFECTED COMPONENTS IN ACCORDANCE WITH NFPA 72 FOR “REACCEPTANCE TESTING”.
8. REPEAT FUNCTIONAL TESTING AS REQUIRED BY THE FIRE AND LIFE SAFETY COMMISSION AGENT (FCxA) WHERE AN FCxA IS CONTRACTED BY THE OWNER.
9. DOCUMENT 100 PERCENT SATISFACTORY FUNCTIONAL TESTS BY COMPLETING REMAINING SECTIONS OF THE NFPA 72 “SYSTEM RECORD OF INSPECTION AND TESTING” REPORT.
10. SUBMIT NFPA 72 “STATEMENT OF COMPLETION” AND COMPLETED NFPA 72 “SYSTEM RECORD OF INSPECTION AND TESTING” REPORT.
11. PROVIDE WRITTEN NOTIFICATIONS FOR ACCEPTANCE FIELD TESTS; INCLUDE TEST PLAN, NFPA 72 “STATEMENT OF COMPLETION”, NFPA 72 “SYSTEM RECORD OF INSPECTION AND TESTING” REPORT, AND NFPA 72 “SYSTEM RECORD OF COMPLETION”.
12. PERFORM ACCEPTANCE FIELD TESTING. DEMONSTRATE SYSTEM OPERATION TO THE SATISFACTION OF THE AHJ. CORRECT AHJ NOTED DEFICIENCIES.REPEAT FUNCTIONAL TESTING INCLUDING RETESTING OF UNAFFECTED COMPONENTS IN ACCORDANCE WITH NFPA 72 FOR “REACCEPTANCE TESTING”. AMEND NFPA 72 “SYSTEM RECORD OF INSPECTION AND TESTING” REPORT, AND NFPA 72 “SYSTEM RECORD OF COMPLETION”.
13. PLACE SYSTEM INTO NORMAL OPERATING SERVICE WITHOUT SYSTEM FAULTS OR OUTSTANDING WORK.

GENERAL REQUIREMENTS

1. PURPOSE OF ENGINEERING DRAWINGS. THE DRAWINGS ARE DIAGRAMMATIC. THEY ARE NOT INTENDED TO BE ABSOLUTELY PRECISE; THEY ARE NOT INTENDED TO SPECIFY OR TO SHOW EVERY REQUIRED COMPONENT OF THE SYSTEMS DESCRIBED. THE PURPOSE OF THE DRAWINGS IS TO INDICATE A SYSTEM CONCEPT, THE MAIN COMPONENTS OF THE SYSTEMS, AND THEIR APPROXIMATE GEOMETRIC RELATIONSHIPS. BASED UPON THE SYSTEMS CONCEPT, THE MAIN COMPONENTS, AND THEIR APPROXIMATE GEOMETRIC RELATIONSHIPS, PROVIDE ALL OTHER COMPONENTS AND MATERIALS NECESSARY TO MAKE THE SYSTEMS FULLY COMPLETE AND OPERATIONAL. GENERIC PERFORMANCE CRITERIA WIRING DIAGRAMS ARE REPRESENTED BY THE ENGINEERING DRAWINGS. ADAPT DIAGRAM ARRANGEMENT AS NECESSARY TO ACHIEVE SPECIFIED PERFORMANCE WITH FAS MANUFACTURER-SPECIFIC TECHNOLOGY.
2. MINIMUM PERFORMANCE REQUIREMENTS. INTERPRET DRAWING AND SPECIFICATION REQUIREMENTS THAT ARE MORE STRINGENT THAN FEDERAL, STATE, & MUNICIPAL CODE-MINIMUM AS DELIBERATELY CONSIDERED PERFORMANCE CRITERIA THAT ARE A MANDATORY PART OF THE WORK. WHERE DRAWINGS AND SPECIFICATIONS ARE SILENT ON A CODE REGULATED CONDITION, COMPLY WITH FEDERAL, STATE, & MUNICIPAL CODE-MINIMUM. COMPLY WITH NFPA STANDARD EDITIONS REFERENCED BY APPLICABLE FEDERAL, STATE, & MUNICIPAL CODES.
3. DESIGN STANDARDS. COMPLY WITH NFPA 70 & 72.
4. APPROVALS. PRODUCTS SHALL BE UL LISTED AND FM APPROVED FOR FIRE PROTECTION DUTY AND THE INTENDED SERVICE APPLICATION.
5. ALL WORK IS NEW. UNLESS SPECIFICALLY NOTED AS EXISTING, ALL COMPONENTS INDICATED BY THE DRAWINGS ARE NEW.
6. RELATED DOCUMENTS. THE NECESSARY UNDERSTANDING OF THE PROJECT SCOPE AND FIRE ALARM AND SIGNALING WORK CANNOT BE OBTAINED WITHOUT REVIEW OF ALL PROJECT DOCUMENTS. REVIEW COMPLETE PACKAGE OF PROJECT DRAWINGS, SPECIFICATIONS, AND NARRATIVES TO FULLY UNDERSTAND THE PROJECT SCOPE AND TO COORDINATE THE FIRE ALARM AND SIGNALING WORK WITH OTHER DIVISIONS.
7. GENERAL INSTALLATION. INSTALL SYSTEM IN A WORKMANLIKE FASHION AND IN A RECTILINEAR ARRANGEMENT WITH PATHWAYS, EQUIPMENT, DEVICES, AND APPLIANCE PERPENDICULAR AND PARALLEL WITH BUILDING ARCHITECTURAL AND STRUCTURAL ELEMENTS. CONDUIT SHALL BE TIGHT TO UNDERSIDE OF DECK. EXPOSED CONDUIT SHALL BE APPROVED BY THE ARCHITECT PRIOR TO INSTALLATION AND SHALL MAINTAIN NECESSARY CLEARANCES.
8. FIRE DEPARTMENT OPERATIONS. INSTALL FIRE ALARM DISPLAYS, AND CONTROLS, PRIVATE-MODE SIGNALING APPLIANCES, SIGNAGE, AND OTHER COMPONENTS REQUIRING FIRE FIGHTER PERSONNEL INTERFACE DURING EMERGENCY OPERATIONS IN READILY IDENTIFIABLE LOCATIONS, WITH ADEQUATE OPERATIONAL CLEARANCES, AND IN ACCORDANCE WITH RESPONDING FIRE DEPARTMENT STANDARD EMERGENCY OPERATIONAL PROCEDURES.
9. RACEWAY. UNLESS OTHERWISE NOTED, WIRE AND CABLE PATHWAYS SHALL BE DEDICATED CONTINUOUS METAL RACEWAY THROUGHOUT. COMPLY WITH NFPA 72 REQUIREMENTS - BOTH MANDATORY AND RECOMMENDED - FOR MINIMUM PHYSICAL SEPARATION OF SUPPLY AND RETURN PATHWAYS.CONDUIT SHALL BE MINIMUM 3/4-IN NOMINAL WITH RED MARKINGS EVERY 10-FT OR SOLID RED COLOR.
10. WIRE AND CABLE. FPL POWER-LIMITED FIRE ALARM SHALL BE CABLE RUN CONTINUOUS BETWEEN COMPONENT TERMINALS WITHOUT SPLICES. POWER LIMITED CIRCUITS SHALL NOT BE RUN IN THE SAME RACEWAY AS NON-POWER LIMITED CIRCUITS.
11. SURVIVABILITY. FIRE ALARM EQUIPMENT AND PATHWAYS SHALL BE SURVIVABLE AGAINST THE EFFECTS OF FIRE DAMAGE AS INDICATED.
12. T-TAPPING. CIRCUITS SHALL BE ARRANGED WITHOUT T-TAPS.
13. INTERFACES. DIVISION 28 WORK INCLUDES WIRING AND TERMINATIONS FROM INTERFACE MODULES TO ASSOCIATED EQUIPMENT TERMINALS. COORDINATE VOLTAGE REQUIREMENTS OF CONTROLLED EQUIPMENT WITH THE RATINGS OF THE ASSOCIATED FIRE ALARM INTERFACE MODULE. PROVIDE INTERPOSING RELAYS WHERE INDICATED OR OTHERWISE REQUIRED. UNLESS NOTED AS PERMISSIBLE FOR FAIL-SAFE CONTROL CIRCUITS, ADDRESSABLE RELAY MODULES SHALL BE LOCATED WITHIN 3-FT OF THE ASSOCIATED DEVICE OR CIRCUIT BEING CONTROLLED.
14. PRIMARY POWER SUPPLY SHALL BE FROM A SEPARATE FUSED CIRCUIT FREE FROM FAULTS INCLUDING GROUNDS, SHORTS, OPENS, STRAY VOLTAGE, OR INDUCED VOLTAGE. EACH BREAKER SHALL BE LOCKABLE AND IDENTIFIED AT BOTH THE POWER PANEL AND THE POWERED EQUIPMENT. A SURGE PROTECTIVE DEVICE SHALL BE PROVIDED FOR EACH PRIMARY POWER CIRCUIT.
15. COORDINATION. MAKE REASONABLE AND NECESSARY MODIFICATIONS IN LAYOUTS AND COMPONENT ARRANGEMENT NEEDED TO PREVENT CONFLICT WITH AND TO ACCOMMODATE OTHER DIVISIONS OF THE WORK.
16. CLEARANCES. INSTALL CONDUIT, BOXES, CABINETS, AND SYSTEM COMPONENTS TO MAINTAIN MINIMUM CLEARANCES REQUIRED TO OPERATE AND MAINTAIN FIRE ALARM AND SIGNALING EQUIPMENT; TO INSTALL, OPERATE AND MAINTAIN EQUIPMENT AND FEATURES OF OTHER DIVISIONS; TO ACCOMMODATE FINISHED CEILING HEIGHTS; AND TO MAINTAIN MAXIMUM HEADROOM IN AREAS OPEN TO STRUCTURE ABOVE.
17. PENETRATIONS. USE SPECIFIED SLEEVES, SLEEVE SEALS, AND ESCUTCHEONS AT RACEWAY PENETRATIONS. AT FIRE RESISTANCE RATED PENETRATIONS, THE PENETRATED FLOOR OR WALL, PENETRATING RACEWAY, SLEEVE OR SLEEVE SEAL, AND FIRESTOP MATERIAL AS AN ASSEMBLY SHALL COMPLY WITH A DESIGNATED UL THROUGH-PENETRATION FIRESTOP SYSTEM.
18. ACCESS TO COMPONENTS. INSTALL WALL MOUNT EQUIPMENT CABINETS WITH CONTROLS AND DISPLAYS SUCH THAT THEY ARE READILY ACCESSIBLE AND VISIBLE TO RESPONDING PERSONNEL. INSTALL EQUIPMENT TO READILY PERMIT TESTING SERVICING, AND BATTERY REPLACEMENT. INSTALL FIRE DETECTORS SUCH THAT THEY WILL BE READILY ACCESSIBLE FOR TESTING AND MAINTENANCE FROM THE FLOOR SURFACE BELOW.
19. SUPPORT. CONDUITS, CABLES, AND RACEWAY SHALL NOT BE SUPPORTED BY CEILING GRID SYSTEMS. SECURE CONDUITS, CABLES, AND RACEWAYS TO THE BUILDING STRUCTURE.
20. IDENTIFICATION. PROVIDE IDENTIFICATION AT ALL DEVICES, APPLIANCES, MODULES, AND CABINET ENCLOSURES.
21. FIRE PROTECTION DURING CONSTRUCTION. PROVIDE FIRE PROTECTION DURING CONSTRUCTION INCLUDING BUT NOT LIMITED TO SPRINKLER / STANDPIPE SUPERVISION, AUDIBLE AND VISIBLE ALARMS, AND CENTRAL STATION SUPERVISION AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
22. ON-STE AS-BUILT DOCUMENTATION. MAINTAIN COMPLETE AND SEPARATE SET OF INSTALLATION DRAWINGS ON SITE AT ALL TIMES. RECORD WORK COMPLETED AND ALL MODIFICATIONS CLEARLY AND ACCURATELY.

Jacobs

Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL

R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210

P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

Signed by: Brian Cielinski
39596D740E894F4...

Registered Professional Engineer (Fire Protection)
CERTIFICATE NO.
82048
BRIAN
CIELINSKI
Date Signed
ARIZONA, U.S.A.

12/19/2024

General Notes:

Project Title:

Fidelity INVESTMENTS

Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project No.: C0115.00

Drawing Sheet Title:

FIRE ALARM - NOTES & DESIGN CRITERIA

Drawing Sheet Number:

FA-002

Owner's Branch No.:

134

PART 1 - GENERAL

1. SUMMARY

1.1. THE WORK UNDER THIS SECTION INCLUDES ALL LABOR, MATERIALS, FEES, AND ACTIVITIES REQUIRED TO INSTALL AND / OR MODIFY, TEST, AND COMMISSION AN ADDRESSABLE FIRE ALARM AND SIGNALING SYSTEM.

2. RELATED DOCUMENTS

2.1. THE WORK REQUIREMENTS DESCRIBED WITHIN DIVISION 20 "COMMON MECHANICAL / ELECTRICAL REQUIREMENTS" FORM COMPLIMENTARY REQUIREMENTS TO THE SCOPE OF WORK OF THIS SECTION.

3. SUBMITTALS

3.1. COMPLY WITH DRAWINGS; STATE/LOCAL REGULATIONS; AND NFPA 72 "DOCUMENTATION" CHAPTER.

3.2. SUBMIT ACTION SUBMITTALS PRIOR TO APPLYING FOR AUTHORITY HAVING JURISDICTION INSTALLATION PERMITS (WHERE REQUIRED) AND SYSTEM INSTALLATION.

3.3. SUBMIT INFORMATIONAL SUBMITTALS AFTER SUCCESSFUL INITIAL SYSTEM TESTING AND PRIOR TO SCHEDULING AUTHORITY HAVING JURISDICTION FINAL APPROVAL DEMONSTRATION TESTING.

3.4. SUBMIT CLOSEOUT SUBMITTALS AS PART OF PROJECT CLOSEOUT PROCEDURE.

4. ACTION SUBMITTALS

4.1. PRODUCT DATA: FOR EACH TYPE OF PRODUCT, INCLUDING FURNISHED OPTIONS AND ACCESSORIES.

4.2. SHOP DRAWINGS: FOR FIRE ALARM SYSTEM AND FIRE SAFETY CONTROL INTERFACES. INCLUDE FLOOR PLANS, RISER DIAGRAM, COMPONENT WIRING DIAGRAMS AND SEQUENCE OF OPERATIONS.

4.3. CALCULATIONS: INCLUDE VOLTAGE DROP CALCULATIONS, POWER SUPPLY AND BATTERY CALCULATIONS, AMPLIFIER LOADING CALCULATIONS, SPEAKER CIRCUIT DB LOSS CALCULATIONS AND CONDUIT FILL CALCULATIONS.

5. INFORMATIONAL SUBMITTALS

5.1. QUALIFICATION DATA: FOR QUALIFIED INSTALLER AND CERTIFIED ENGINEERING TECHNICIAN.

5.2. SEISMIC QUALIFICATION CERTIFICATES: WHERE APPLICABLE, FOR FIRE ALARM CONTROL UNIT, ACCESSORIES, AND COMPONENTS, FROM MANUFACTURER.

5.3. RECORD OF INSPECTION AND TESTING DOCUMENTATION: INITIAL ACCEPTANCE OR RE-ACCEPTANCE TESTING. USE NFPA 72 "SYSTEM RECORD OF INSPECTION AND TESTING" FORMS.

5.4. STATEMENT OF COMPLETION: WRITTEN STATEMENT THAT SYSTEM HAS BEEN INSTALLED IN ACCORDANCE WITH APPROVED PLANS AND TESTED IN ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED INSTRUCTIONS AND APPROPRIATE NFPA 72 REQUIREMENTS.

6. CLOSEOUT SUBMITTALS

6.1. RECORDS OF COMPLETION DOCUMENTATION: USE NFPA 72 "SYSTEM RECORD OF COMPLETION" FORMS. FOR MODIFICATIONS TO EXISTING SYSTEMS, FORMAT AS A DATED REVISION TO THE ORIGINAL RECORD OF COMPLETION.

6.2. RECORD DRAWINGS: SHOP DRAWING RE-SUBMITTAL UPDATED TO REFLECT ACTUAL FINAL SYSTEM INSTALLATION AND SEQUENCE OF OPERATION. FOR MODIFICATIONS TO EXISTING SYSTEMS, FORMAT AS A DATED REVISION TO THE ORIGINAL RECORD DRAWINGS.

6.3. DEVICE ADDRESS LIST: ORGANIZED BY SLC LOOP AND SYSTEM NODE. FOR MODIFICATIONS TO EXISTING SYSTEMS, FORMAT AS A DATED REVISION TO THE ORIGINAL DEVICE ADDRESS LIST.

6.4. OPERATION AND MAINTENANCE DATA: FOR FIRE ALARM SYSTEMS AND COMPONENTS TO INCLUDE IN EMERGENCY, OPERATION, AND MAINTENANCE MANUALS.

7. QUALITY ASSURANCE

7.1. INSTALLER QUALIFICATIONS: PERSONNEL LICENSED BY THE GOVERNING LICENSING AUTHORITY FOR THE INSTALLATION OF FIRE ALARM SYSTEMS. SUCCESSFULLY INSTALLED, TESTED, OBTAINED APPROVALS FOR, AND PUT INTO SERVICE NO LESS THAN THREE (3) FIRE ALARM SYSTEMS SIMILAR IN TYPE, SIZE, AND COMPLEXITY TO THAT OF THE WORK OF THIS SECTION.

7.2. CERTIFIED ENGINEERING TECHNICIAN QUALIFICATIONS: PERSONNEL TRAINED AND CERTIFIED BY THE FIRE ALARM SYSTEM MANUFACTURER AS AN APPROVED TECHNICIAN. SHOP DRAWINGS AND CALCULATIONS PREPARED BY PERSONNEL CERTIFIED BY NICET AS FIRE ALARM LEVEL III OR IV TECHNICIAN, OR LICENSED AS A PROFESSIONAL FIRE PROTECTION ENGINEER BY THE GOVERNING LICENSING AUTHORITY.

7.3. SOURCE LIMITATIONS FOR FIRE ALARM SYSTEM AND COMPONENTS: SINGLE VENDOR SOURCE TO PROVIDE FIRE ALARM SYSTEM COMPONENTS AND CONNECTED NON-SYSTEM COMPONENTS AS A SINGLE LISTED ADDRESSABLE FIRE ALARM AND SIGNALING SYSTEM.

7.4. MODIFICATIONS TO EXISTING SYSTEMS: COMPONENTS COMPATIBLE WITH, AND OPERATE AS AN EXTENSION OF, EXISTING SYSTEM.

7.5. PRODUCT STANDARDS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, INDICATION OF A UL PRODUCT REQUIREMENT WITHIN PART 2 SHALL BE CONSTRUED TO BE INCLUSIVE OF A CORRESPONDING FM GLOBAL APPROVED PRODUCT, WITH OR WITHOUT UL LISTING.

7.6. COORDINATION

7.6.1. COORDINATE CONSTRUCTION OPERATIONS WITH THOSE OF OTHER SECTIONS OF THE WORK AND OTHER ENTITIES TO ENSURE EFFICIENT AND ORDERLY INSTALLATION OF EACH PART OF THE WORK AND ACCESSIBILITY FOR REQUIRED MAINTENANCE, SERVICE AND REPAIR.

7.7. MAINTENANCE MATERIALS

7.7.1. FURNISH EXTRA MATERIALS THAT MATCH PRODUCTS INSTALLED AND THAT ARE PACKAGED WITH PROTECTIVE COVERING FOR STORAGE AND IDENTIFIED WITH LABELS DESCRIBING CONTENTS.

7.7.2. PROVIDE A MINIMUM ONE (1) OR 2 PERCENT OF EACH INSTALLED INITIATING AND NOTIFICATION DEVICE, WHICHEVER QUANTITY IS LARGER.

7.8. WARRANTY

7.8.1. MANUFACTURER'S WARRANTY: MANUFACTURER AGREES TO REPAIR OR REPLACE FIRE ALARM SYSTEM EQUIPMENT AND COMPONENTS THAT FAIL IN MATERIALS OR WORKMANSHIP WITHIN SPECIFIED WARRANTY PERIOD.

7.8.2. WARRANTY EXTENT: ALL EQUIPMENT AND COMPONENTS NOT COVERED IN THE MAINTENANCE SERVICE AGREEMENT.

7.8.3. WARRANTY PERIOD: TWO (2) YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

PART 2 - PRODUCTS

1. MANUFACTURERS

1.1. SUBJECT TO COMPLIANCE WITH REQUIREMENTS MANUFACTURERS SHALL MATCH EXISTING BUILDING SYSTEMS.

1.2. WHERE ADDITIONAL MANUFACTURER LISTINGS OR BASIS OF DESIGN PRODUCTS ARE INDICATED, PROVIDE PRODUCTS LISTED AND DUTY-RATED AS COMPATIBLE WITH THE SELECTED FIRE ALARM AND SIGNALING TECHNOLOGY PLATFORM.

2. PERFORMANCE REQUIREMENTS

2.1. COMPONENT PRIMARY POWER: 24-V DC, FROM PREMISES AC POWER SUPPLY. ALARM CURRENT DRAW OF COMPONENTS CONNECTED TO EACH POWER SUPPLY MODULE NO GREATER THAN 80 PERCENT OF THE POWER SUPPLY MODULE RATING.

2.2. COMPONENT STANDBY POWER: 24-V DC SUPPLY SYSTEM WITH BATTERIES, AUTOMATIC BATTERY CHARGER, AND AUTOMATIC TRANSFER SWITCH. SYSTEM OPERATION FOR:

2.2.1. NON-VOICE SYSTEMS: FOUR (4) HOURS UNDER QUIESCENT LOAD PLUS FIVE (5) MINUTES OPERATING ALL ALARM NOTIFICATION APPLIANCES. SPARE CAPACITY: 20 PERCENT.

2.3. MODIFICATION OF EXISTING SYSTEMS: MAINTAIN EXISTING SYSTEM PERFORMANCE AND SEQUENCES; MATCH EXISTING SYSTEM WIRE AND CABLE TYPES; MATCH EXISTING CIRCUIT PATHWAY PRODUCTS, NFPA CLASS AND NFPA LEVEL; MATCH EXISTING INITIATING DEVICES AND NOTIFICATION APPLIANCES.

2.4. SEISMIC PERFORMANCE: WHERE APPLICABLE, FIRE ALARM CONTROL UNIT AND RACEWAYS SHALL WITHSTAND THE EFFECTS OF EARTHQUAKE MOTIONS DETERMINED ACCORDING TO ASCE/SEI 7.

3. FIRE ALARM CONTROL UNITS

3.1. UL 864; POWER-LIMITED, FIELD-PROGRAMMABLE, MICROPROCESSOR-BASED, MODULAR DESIGN. INTERCONNECTED POWER SUPPLIES, CIRCUIT BOARD MODULES, DISPLAYS, AND ASSOCIATED ELECTRONICS MOUNTED TO STANDARD MOUNTING CHASSIS WITHIN COMMON CONTROL UNIT CABINET ENCLOSURE. CONTROL UNIT CABINET ASSEMBLIES CONFIGURED AS CONTROL UNITS WITH INTEGRAL DISPLAY AND CONTROLS OR AS TRANSPONDER UNITS WITH SOLID DOOR AND NO LOCAL DISPLAY/CONTROLS.

4. REMOTE ANNUNCIATORS

4.1. GENERAL: DISPLAY AND CONTROLS REMOTE FROM FIRE ALARM CONTROL UNIT, INCLUDING SYSTEM STATUS INDICATION, EVENT STATUS INDICATION, MANUAL QUERY INPUTS, MANUAL PROGRAMMING INPUTS, AND MANUAL OUTPUT FUNCTIONS.

5. POWER SUPPLIES

5.1. GENERAL: SWITCHED-MODE SUPERVISED POWER SUPPLY BASE AND EXPANSION MODULES SUPPLYING REGULATED AND FILTERED 24-V DC POWER TO SYSTEM COMPONENTS, NOTIFICATION APPLIANCES, AND AUXILIARY POWER LOADS.

5.2. RPS APPLICATIONS: POWER SUPPLY MODULES AND BATTERIES MOUNTED WITHIN DISTRIBUTED REMOTE POWER SUPPLY (RPS) EQUIPMENT CABINETS TO PROVIDE SUPPLEMENTAL POWER TO CONNECTED NOTIFICATION APPLIANCE CIRCUITS AND CONNECTED AUXILIARY POWER CIRCUITS.

6. MANUAL FIRE ALARM BOXES

6.1. GENERAL: UL 38; DIE-CAST METAL HOUSING, RED FINISH, WITH MOLDED, RAISED-LETTER OPERATING INSTRUCTIONS AND "FIRE" IDENTIFICATION IN CONTRASTING COLOR; DEVICE SHALL SHOW VISIBLE INDICATION OF OPERATION. DOUBLE-ACTION, PULL-LEVER TYPE, WITH INTEGRAL OR ATTACHED ADDRESSABLE MODULE.

7. SYSTEM SMOKE DETECTORS

7.1. UL 268, PHOTOELECTRIC SPOT-TYPE WITH INSECT-SCREEN PROTECTED SENSING CHAMBER; FOR INSTALLATION IN TWIST-LOCK SYSTEM BASES.

7.2. OPERATING TEMPERATURE RANGE: 32 – 100 DEG F (0 – 38DEG C).

7.3. OPERATING HUMIDITY RANGE: 10 - 95 PERCENT RH.

7.4. SENSITIVITY RANGE: 0.2 - 3.7 PERCENT OBS/FT.

7.5. AIR VELOCITY RATING: 0 - 4,000 FPM (0 - 1220 MPM).

PART 2 - PRODUCTS

8. NOTIFICATION APPLIANCES

8.1. GENERAL: 24VDC; FLUSH-MOUNT, POLYCARBONATE HOUSING; AUDIBLE-ONLY, VISUAL-ONLY, OR COMBINATION AUDIO / VISUAL APPLIANCE AS INDICATED ON DRAWINGS. MOUNTING FACEPLATE FACTORY FINISH TO MATCH EXISTING BUILDING FIRE ALARM NOTIFICATION DEVICES.

8.2. AUDIBLE HORNS: UL 464, HORNS SHALL PRODUCE A SOUND-PRESSURE LEVEL OF 90 dBA, MEASURED 10 FEET (3 m) FROM THE HORN, USING THE CODED SIGNAL PRESCRIBED IN UL 464 TEST PROTOCOL.

8.3. VISUAL STROBES: UL 1971, WITH CLEAR OR NOMINAL WHITE POLYCARBONATE LENS MOUNTED ON A ALUMINUM FACEPLATE. FIELD SELECTABLE CANDELA OUTPUT. FACEPLATE IDENTIFIER ("FIRE", "ALERT" OR "EMERGENCY") TO MATCH EXISTING BUILDING FIRE ALARM NOTIFICATION DEVICES.

9. ADDRESSABLE INTERFACE MODULES

9.1. GENERAL: MICROELECTRONIC INTERFACE MODULE FOR SUPERVISION AND CONTROL OF PREMISES FIRE SAFETY FUNCTIONS WITH INTEGRAL ADDRESS-SETTING MEANS, INTERNAL CODE FOR FACU IDENTIFICATION BY MODULE TYPE, AND OUTPUT CONTACT RATINGS TO MATCH CONTROLLED/SUPERVISED EQUIPMENT. OUTPUT MODULES WITH A MINIMUM OF TWO NORMALLY OPEN AND TWO NORMALLY CLOSED CONTACTS AVAILABLE FOR FIELD WIRING.

10. FAULT ISOLATION MODULES

10.1. MODULE CAPABLE OF SENSING AND AUTOMATICALLY ISOLATING SLC SHORT CIRCUIT FAULT.

11. MAGNETIC DOOR HOLDERS

11.1. DESCRIPTION: UL 228, NORMALLY POWERED HOLD OPENS, FAIL-CLOSED; EQUIPPED FOR WALL OR FLOOR FLUSH-MOUNTING AND COMPLETE WITH MATCHING DOORPLATE. FINISH MATCHING DOOR HARDWARE. ELECTROMAGNET REQUIRES NO MORE THAN 3-W TO DEVELOP 25-LBF HOLDING FORCE.

11.2. OPERATING VOLTAGE: 120-V AC.

12. SURGE PROTECTIVE DEVICES

12.1. GENERAL: UL 497B, LISTED FOR POWER-LIMITED FIRE ALARM CIRCUIT APPLICATIONS INTENDED TO PREVENT COMPONENT DAMAGE OR NUISANCE ALARMS INDUCED BY LIGHTNING STRIKES, STRAY CURRENTS, OR VOLTAGE TRANSIENTS.

13. MAINTENANCE BYPASS SWITCHES

13.1. DESCRIPTION: KEYED OR PUSH-BUTTON OPERATED SWITCHES TO OPEN CONNECTED CIRCUITS THAT PERMIT SYSTEM TESTING WITHOUT OPERATING ASSOCIATED AUXILIARY FIRE SAFETY FUNCTIONS. ACTIVATED SWITCHES SHALL ANNUNCIATE AS A TROUBLE CONDITION AT THE FIRE ALARM CONTROL UNIT. INCLUDE TRIM PLATE WITH LED INDICATORS FACTORY-MARKED "NORMAL" AND "DISABLE".

14. WEATHERPROOF ENCLOSURE

14.1. BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ENVIROARMOUR®, WATERPROOF ENCLOSURE BY SAFETY TECHNOLOGY INTERNATIONAL (STI).

14.2. GENERAL: UL 50; NEMA-3R, 4 OR 4X, NON-METALLIC; LOCKABLE POLYCARBONATE OR FIBERGLASS ENCLOSURE. COVERS ARE LOCKABLE OR SCREW-DOWN DOOR, A/C WITH HEATER OPTION AND DUAL THERMOSTAT.

14.3. OPERATING VOLTAGE: 120-V AC NOMINAL FOR A/C WITH HEATER.

15. RACEWAY & JUNCTION BOXES

15.1. ELECTRICAL METALLIC TUBING (EMT): ZINC-COATED STEEL CONFORMING TO ANSI C80.3, UL STANDARD NO. 797 AND FEDERAL SPECIFICATION WW-C-563; COUPLINGS: ZINC PLATED PRESSED STEEL SET SCREW OR COMPRESSION TYPE.

15.2. JUNCTION BOXES: GALVANIZED STEEL, MINIMUM 16-GAUGE WITH FACTORY APPLIED RED FINISH FOR COVER PLATES AND CONNECTORS; DIMENSIONS AS REQUIRED BY NEC OR MANUFACTURER RECOMMENDATIONS.

16. GUARDS AND SHIELDS

16.1. DESCRIPTION: WELDED WIRE MESH OF SIZE AND SHAPE FOR THE MANUAL STATION, SMOKE DETECTOR, NOTIFICATION APPLIANCE, OR OTHER DEVICE REQUIRING PROTECTION. FACTORY FABRICATED AND FURNISHED BY DEVICE MANUFACTURER.

16.2. FINISH: PAINT OF COLOR TO MATCH THE PROTECTED DEVICE.

17. WIRE & CABLE

17.1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:

17.1.1. BELDEN INC.
17.1.2. SOUTHWIRE CO.
17.1.3. WEST PENN WIRE.

17.2. UL 1424, TYPE FLP, FPLR AND FPLP, POWER-LIMITED FIRE ALARM CABLE; RED-JACKETED, TWISTED-PAIR INSULATED SOLID COPPER CONDUCTOR; UNSHIELDED AND SHIELDED. USE SHIELDED WIRE SHALL ONLY AS DIRECTED BY THE FIRE ALARM MANUFACTURER REQUIREMENTS.

17.3. WIRE SIZE: MATCH EXISTING FIRE ALARM SYSTEM WIRING SIZE.

17.4. METAL CLAD (MC) CABLE: UL 1424, TYPE MC-FPLP POWER-LIMITED FIRE ALARM CABLE; JACKETED, TWISTED-PAIR SOLID COPPER CONDUCTORS WITH RED ALUMINUM INTERLOCKING OUTER ARMOR JACKET; UNSHIELDED AND SHIELDED. LOCK NUT CONNECTORS AT TERMINATION POINTS; FACTORY APPLIED TRACER IDENTIFIER ALONG THE ENTIRE LENGTH.

17.4.1. BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE RED ALERT MC-FPLP CABLE, MANUFACTURED BY SOUTHWIRE CO.

17.5. MULTI-CONDUCTOR FIRE-RESISTIVE CABLE: UL 2196 FIRE RESISTIVE, TYPE FPL, POWER-LIMITED FIRE ALARM CABLE; CERAMIFIABLE SILICON INSULATION; JACKETED, SOLID COPPER CONDUCTORS; UNSHIELDED AND SHIELDED.

17.5.1. BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE DURALIFE FPL FIRE RESISTIVE ALARM CABLE, MANUFACTURED BY RADIX WIRE CO.

18. FIRE ALARM TERMINAL CABINETS

18.1. ENCLOSURE: 16 GAUGE STEEL; FACTORY APPLIED RED ENAMEL FINISH; REMOVABLE HINGED DOOR WITH KEYED LOCKING LATCH; WITH EMBEDDED 1/2-INCH, 3/4-INCH, 1-INCH, 1-1/2-INCH AND 2-INCH KNOCKOUT CLUSTERS.

18.2. TERMINALS: QUICK-CONNECT WIRE TERMINATION POINTS AND INTEGRAL TEST PORT; SIZED TO ACCEPT 20 - 12 AWG AND RATED FOR 20 AMP AT 250V (CLASS B/UL) 300V (CSA).

18.3. IDENTIFICATION: MARKED " FIRE ALARM TERMINAL CABINET " IN 2-INCH WHITE FACTORY APPLIED INDELIBLE SCREENED LETTERING; FIELD IDENTIFICATION LABELS ON THE INSIDE COVER CORRESPONDING TO THE TERMINAL STRIP LABELING INSIDE THE BACK BOX.

18.3.1. 18.3.1. BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE IF-SERIES FIRE ALARM TERMINAL CABINETS, MANUFACTURED BY SPACE AGE ELECTRONICS INC.

PART 3 -EXECUTION

1. PREPARATION

1.1. PREPARE AND SUBMIT "ACTION SUBMITTALS" PRIOR TO EQUIPMENT PROCUREMENT.

2. TECHNICIAN DESIGN AND LAYOUT

2.1. ROLES AND RESPONSIBILITIES SHALL BE AS SET FORTH IN NSPE POSITION STATEMENT NO. 1749 "SFPE / NSPE / NICET JOINT POSITION OF THE ENGINEER AND THE ENGINEERING TECHNICIAN DESIGNING THE FIRE PROTECTION SYSTEM", AVAILABLE AT NSPE.ORG.

2.2. AS APPLIED TO THE WORK, THE CONTRACT DOCUMENTS HAVE BEEN PREPARED BY THE "ENGINEER" AND SHOP DRAWINGS REQUIRED BY THIS SECTION OF THE WORK ARE PREPARED BY THE "CERTIFIED ENGINEERING TECHNICIAN".

2.3. AS THE CERTIFIED ENGINEERING TECHNICIAN, PREPARE SHOP DRAWINGS INCLUDING DRAWINGS, CALCULATIONS, CERTIFICATIONS, AND STATEMENTS INDICATING SYSTEM LAYOUT, CIRCUITING, AND CAPACITIES IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

2.4. COMPLY WITH THE PERFORMANCE REQUIREMENTS INDICATED BY THE CONTRACT DOCUMENTS WHERE SUCH REQUIREMENTS ARE MORE STRINGENT THAN THOSE OF THE DESIGN AND INSTALLATION STANDARD(S); OTHERWISE, COMPLY WITH THE PERFORMANCE REQUIREMENTS OF THE DESIGN AND INSTALLATION STANDARD(S).

3. EXAMINATION

3.1. EXAMINE AREAS AND CONDITIONS FOR COMPLIANCE WITH REQUIREMENTS FOR VENTILATION, TEMPERATURE, HUMIDITY, AND OTHER CONDITIONS AFFECTING PERFORMANCE OF THE WORK. VERIFY THAT MANUFACTURER'S WRITTEN INSTRUCTIONS FOR ENVIRONMENTAL CONDITIONS HAVE BEEN PERMANENTLY ESTABLISHED IN SPACES WHERE EQUIPMENT AND WIRING ARE INSTALLED, BEFORE INSTALLATION BEGINS.

3.2. CONFIRM FIRE RESISTANCE RATING OF BUILDING CONSTRUCTION REQUIRED TO PERFORM AS FIRE ALARM SYSTEM SURVIVABILITY PROTECTION BEFORE INSTALLATION.

3.3. EXAMINE DEPTH OF STUD WALLS TO VERIFY CLEARANCE FOR FLUSH-MOUNT EQUIPMENT BEFORE INSTALLATION.

3.4. EXAMINE ROUGHING-IN FOR ELECTRICAL CONNECTIONS TO VERIFY ACTUAL LOCATIONS OF CONNECTIONS BEFORE INSTALLATION.

3.5. EXAMINE PROPOSED MOUNTING LOCATIONS OF EQUIPMENT CABINETS WITH USER DISPLAYS AND/OR CONTROLS WITH THE LOCAL FIRE OFFICIAL TO VERIFY SATISFACTORY ACCESS AND EASE OF IDENTIFICATION BEFORE INSTALLATION.

3.6. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

4. EQUIPMENT INSTALLATION

4.1. COMPLY WITH THE MOST RESTRICTIVE REQUIREMENTS OF THIS SECTION AND APPLICABLE DIVISION 26 SECTIONS FOR THE INSTALLATION OF LOW VOLTAGE ELECTRICAL SYSTEMS.

4.2. COMPLY WITH NFPA 72, AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION FOR INSTALLATION AND TESTING OF FIRE ALARM EQUIPMENT. INSTALL ALL ELECTRICAL WIRING TO COMPLY WITH REQUIREMENTS IN NFPA 70 INCLUDING, BUT NOT LIMITED TO, ARTICLE 760, "FIRE ALARM SYSTEMS."

5. FIRE ALARM PATHWAY INSTALLATION

5.1. PATHWAYS FOR FIRE ALARM: THE PATHWAY SYSTEM FOR FIRE ALARM SHALL BE DEDICATED CONTINUOUS METAL RACEWAY THROUGHOUT.

5.2. COMPLY WITH DIVISION 26 FOR APPLICATION AND INSTALLATION OF EMT, IMC, RGS, FMC, AND LFMC WITH RESPECT TO ENVIRONMENTAL CONDITIONS AND RESISTANCE TO PHYSICAL DAMAGE.

5.3. MC FIRE ALARM CABLE SHALL BE PERMITTED IN PLACE OF CONTINUOUS METAL RACEWAY FOR THE FOLLOWING APPLICATIONS: ABOVE FINISHED CEILINGS.

5.4. PATHWAYS BENEATH SLAB, WITHIN SLAB, AND BURIED: COMPLY WITH DIVISION 26 FOR APPLICABLE RNC INSTALLATION REQUIREMENTS.

5.5. CLASS A AND X PATHWAYS: UNLESS GREATER DISTANCES ARE INDICATED ON THE DRAWINGS OR SPECIFICATIONS, INSTALL CLASS A AND X PATHWAYS IN COMPLIANCE WITH NFPA 72 RECOMMENDATIONS FOR MINIMUM HORIZONTAL AND VERTICAL SEPARATION BETWEEN SUPPLY AND RETURN PATHWAYS.

6. FIRE RESISTIVE PATHWAY INSTALLATION

6.1. WHERE NFPA 72 SURVIVABILITY LEVEL 2 OR 3 PATHWAYS (2-HR FIRE RESISTANCE RATED) ARE INDICATED OR REQUIRED, PROVIDE ONE OF THE FOLLOWING:

6.1.1. UL 1424, FIRE ALARM CABLE INSTALLED WITHIN 2-HR FIRE RESISTANCE RATED SHAFT CONSTRUCTION OR SIMILAR 2-HR RATED BUILDING CONSTRUCTION.

6.1.2. UL 2196, FIRE RESISTIVE FIRE ALARM CABLE (CATEGORY FHJR) INSTALLED WITHIN METAL RACEWAY IN ACCORDANCE WITH THE CORRESPONDING UL "CIRCUIT INTEGRITY SYSTEM" (CATEGORY FHIT).

6.1.3. UL 1424, FIRE ALARM CABLE INSTALLED WITHIN METAL RACEWAY PROTECTED BY AN ENDOTHERMIC WRAP ASSEMBLY INSTALLED IN ACCORDANCE WITH THE CORRESPONDING UL "CIRCUIT INTEGRITY SYSTEM" (CATEGORY FHIT).

6.1.3.1. BASIS-OF-DESIGN PRODUCT: INTERAM ENDOTHERMIC MAT, MANUFACTURED BY 3M.

7. FIRE ALARM CABLE INSTALLATION

7.1. INSTALL FIRE ALARM CABLES WITHIN DEDICATED CONTINUOUS METAL RACEWAY THROUGHOUT. WIRING SHALL BE CONTINUOUS BETWEEN EQUIPMENT, DEVICE, AND APPLIANCE TERMINALS WITHOUT SPLICES.

7.2. T-TAPPING: NOT PERMITTED FOR ANY FIRE ALARM CIRCUIT.

7.3. DO NOT INSTALL FIRE ALARM SYSTEM WIRING WITHIN CONDUITS, JUNCTION BOXES, OR OUTLET BOXES CONTAINING CONDUCTORS OF LIGHTING OR POWER SYSTEMS.

7.4. NOT MORE THAN TWO CONDUCTORS SHALL BE INSTALLED UNDER ANY DEVICE SCREW TERMINAL. THE WIRES UNDER THE SCREW TERMINAL SHALL BE STRAIGHT WHEN PLACED UNDER THE TERMINAL THEN CLAMPED IN PLACE UNDER THE SCREW TERMINAL. THE WIRES SHALL BE BROKEN AND NOT TWISTED AROUND THE TERMINAL.

8. INSTALLATION FOR SURVIVABILITY

8.6. WHERE NFPA 72 SURVIVABILITY LEVEL 2 OR 3 PATHWAYS ARE INDICATED OR REQUIRED, INSTALL FIRE ALARM SYSTEM CABLES AND PATHWAYS WITHIN 2-HR FIRE RESISTANCE RATED ENCLOSURES OR COMPLY WITH DIVISION 28 FOR "FIRE RESISTIVE PATHWAY INSTALLATION".

8.7. INSTALL CONTROL UNITS, AMPLIFIERS, POWER SUPPLIES, JUNCTION BOXES, TERMINAL CABINETS, OR SIMILAR COMPONENTS WITHIN DEDICATED 2-HR FIRE RESISTANCE RATED FIRE ALARM SYSTEM EQUIPMENT ROOMS WHERE THE COMPONENTS ORIGINATE OR COMPRISE A PORTION OF A NFPA 72 SURVIVABILITY LEVEL 2 OR 3 PATHWAY.

9. MANUAL FIRE ALARM BOX INSTALLATION

9.1. LOCATION AND SPACING: COMPLY WITH DRAWINGS, APPLICABLE BUILDING CODES AND NFPA 72. INSTALL MANUAL FIRE ALARM BOXES ON A BACKGROUND OF A CONTRASTING COLOR.

9.2. INDOOR PROTECTIVE COVERS: AS DIRECTED BY OWNER, PROVIDE COVERS FOR MANUAL FIRE ALARM BOXES LOCATED IN AREAS PRONE TO MALICIOUS OR ACCIDENTAL DAMAGE.

9.3. OUTDOOR PROTECTIVE COVERS: PROVIDE COVERS FOR MANUAL FIRE ALARM BOXES LOCATED OUTDOORS.

PART 3 -EXECUTION

10. SYSTEM SPOT-TYPE FIRE DETECTOR INSTALLATION

10.1. LOCATION AND SPACING: COMPLY WITH DRAWINGS, APPLICABLE BUILDING CODES AND NFPA 72. LOCATE SPOT-TYPE FIRE DETECTORS IN A MANNER THAT READILY PERMITS ACCESS FOR DETECTOR INSPECTION, TESTING, AND MAINTENANCE.

10.2. INSTALL REMOTE ALARM INDICATORS IN A VISIBLE LOCATION AS REQUIRED BY NFPA 72 FOR CONCEALED FIRE DETECTORS AND AS INDICATED BY THE DRAWINGS.

11. NOTIFICATION APPLIANCE INSTALLATION

11.1. LOCATION AND SPACING: COMPLY WITH DRAWINGS, APPLICABLE BUILDING CODES AND NFPA 72.

12. CONNECTIONS AND INTERFACES

12.1. INCLUDE NECESSARY INTERFACE MODULES, RELAYS, WIRING, RESISTORS, AND COMPONENTS AS REQUIRED TO ACHIEVE THE INPUT/OUTPUT SEQUENCE OF OPERATIONS PERFORMANCE CRITERIA INDICATED BY THE DRAWINGS.

12.2. COORDINATE VOLTAGE AND CURRENT RATINGS OF CONNECTED COMPONENTS SUCH THAT CONNECTIONS AND INTERFACES OPERATE WITHIN LISTED LIMITATIONS. USE INTERPOSING RELAYS WHERE CONNECTED LOADS EXCEED RATING OF ADDRESSABLE INTERFACE MODULES.

12.3. ARRANGE CONNECTIONS AND INTERFACES SUCH THAT CIRCUITS ARE MONITORED FOR INTEGRITY AS REQUIRED BY NFPA 72.

12.4. INTERFACE TO PREMISES SYSTEMS AND COMPONENTS REQUIRING EMERGENCY CONTROL FUNCTION INTERFACE WITH ADDRESSABLE INTERFACE RELAY MODULES INSTALLED WITHIN 36 INCHES OF THE INTERFACE WIRING TERMINATION POINT.

12.5. EACH ADDRESSABLE INTERFACE RELAY MODULE USED FOR EMERGENCY CONTROL FUNCTION INTERFACE SHALL INCLUDE ONE (1) SET OF SPARE CONTACTS FOR MONITORING CONNECTION TO SECONDARY PREMISES SYSTEMS.

12.6. FOR EACH HVAC AIR DISTRIBUTION UNIT, COORDINATE WITH DIVISION 23 FOR EXACT INTERFACE REQUIREMENTS, QUANTITY OF FAN DRIVES, AND DETAILED SEQUENCING FOR PROPER SHUTDOWN OF THE ASSOCIATED AIR DISTRIBUTION EQUIPMENT.

13. NEC CLASSIFIED HAZARDOUS LOCATIONS

13.1. COMPLY WITH NFPA 70 AND DIVISION 26.

14. IDENTIFICATION

14.1. IDENTIFY SYSTEM COMPONENTS, WIRING, CABLING, AND TERMINALS. COMPLY WITH DIVISION 26. LABEL ADDRESSABLE INITIATING DEVICES AND BASES AND NOTIFICATION APPLIANCES. COMPLY WITH DRAWINGS.

15. GROUNDING

15.1. COMPLY WITH DIVISION 26 AND FIRE ALARM SYSTEM MANUFACTURER'S INSTALLATION GUIDELINES FOR GROUNDING. GROUND FIRE ALARM CONTROL UNIT AND ASSOCIATED CIRCUITS; COMPLY WITH IEEE 1100. INSTALL A GROUND WIRE FROM MAIN SERVICE GROUND TO FIRE ALARM CONTROL UNIT.

16. FIELD QUALITY CONTROL

16.1. DEVICES INSTALLED BUT NOT YET PLACED IN SERVICE SHALL BE PROTECTED FROM CONSTRUCTION DUST, DEBRIS, DIRT, MOISTURE, AND DAMAGE ACCORDING TO MANUFACTURER'S WRITTEN STORAGE INSTRUCTIONS.

16.2. DEVICES PLACED IN SERVICE BEFORE ALL OTHER TRADES HAVE COMPLETED CLEANUP SHALL BE REPLACED.

17. TESTING

17.1. FIELD INSPECTIONS AND TESTING SHALL BE PERFORMED BY FIRE ALARM SYSTEM MANUFACTURER'S FACTORY-AUTHORIZED SERVICE TECHNICIANS.

17.2. NEW SYSTEMS: PERFORM "INITIAL ACCEPTANCE TESTING" ACTIVITIES PER NFPA 72.

17.3. MODIFICATIONS TO EXISTING SYSTEMS: PERFORM "RE-ACCEPTANCE TESTING" ACTIVITIES PER NFPA 72; INCLUDING REQUIRED TESTING OF DEVICES NOT AFFECTED BY THE SCOPE OF WORK.

17.4. SMOKE CONTROL SYSTEMS: IN ADDITION TO DIV. 28 FIRE ALARM SYSTEM INSPECTION AND TESTING REQUIREMENTS, PERFORM ADDITIONAL INSPECTIONS AND INTEGRATED FUNCTIONAL TESTING AS REQUIRED TO SUPPORT SMOKE CONTROL SYSTEM SPECIAL INSPECTIONS COMMISSIONING.

17.5. CONFIRM RECEIPT OF ALARM, SUPERVISORY AND TROUBLE SIGNALS AT THE SUPERVISING STATION(S).

18. SYSTEM ACCEPTANCE

18.1. PREPARE AND SUBMIT PRELIMINARY AND FINAL VERSIONS OF THE "FIRE ALARM RECORD OF COMPLETION" FOR REVIEW. CERTIFICATE MUST INCLUDE ALL INFORMATION REQUIRED BY NFPA 72 AND BE ENDORSED IN WRITING FOR APPROVAL.

18.2. PREPARE AND SUBMIT FOR REVIEW AS-BUILT SHOP DRAWING PLANS INCLUSIVE OF IN-FIELD CHANGES FROM ORIGINAL SHOP DRAWING SUBMITTAL.

18.3. AFTER ENGINEER REVIEW OF TEST CERTIFICATES AND AS-BUILT DRAWINGS, SCHEDULE ENGINEER FINAL WALK-THRU VIA WRITTEN NOTIFICATION IN THE FORM OF A LETTER STATING THAT WORK HAS BEEN COMPLETED AND TESTED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS, APPLICABLE CODES AND STANDARDS; AND THAT THE SYSTEM IS READY FOR FINAL INSPECTION. THE LETTER SHALL BE SIGNED BY THE CONTRACTOR AND SHALL INDICATE COMPANY NAME AND LICENSE NUMBER.

18.4. FIRE ALARM FOREMAN SHALL BE PRESENT FOR THE FINAL INSPECTION TO ANSWER QUESTIONS AND TO OPERATE SYSTEM FEATURES AS NECESSARY. FOREMAN SHALL DOCUMENT AND ADDRESS ENGINEER FINAL "PUNCH LIST" OBSERVATIONS.

18.5. AFTER "PUNCH-LIST" OBSERVATIONS ARE ADDRESSED, SCHEDULE AUTHORITY HAVING JURISDICTION FINAL APPROVAL INSPECTION. FOREMAN SHALL BE PRESENT FOR THE WALK-THRU TO ANSWER QUESTIONS AND TO OPERATE SYSTEM FEATURES AS NECESSARY.

19. PROJECT CLOSEOUT

19.1. PREPARE AND SUBMIT FINAL CLOSEOUT DOCUMENTATION AS REQUIRED BY OTHER SECTIONS OF THE WORK; INCLUDE STATEMENT OF WARRANTEE, OPERATION AND MAINTENANCE MANUALS, FINAL HARD-COPY AND AUTOCAD VERSIONS OF AS-BUILT PLANS.

19.2. SCHEDULE AND PERFORM OWNER DEMONSTRATION TRAINING.

Jacobs

Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL

R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210
P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

Signed by:
Brian Cielinski

82048
BRIAN
CIELINSKI
12/19/2024

General Notes:

Project Title:

Fidelity INVESTMENTS

Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project No.: C0115.00

Drawing Sheet Title:

FIRE ALARM - SPECIFICATIONS

Drawing Sheet Number:

FA-003

Owner's Branch No.:

134

1 FIRE ALARM - LEVEL 1 EAST
1/4" = 1'-0"

2 FIRE ALARM - LEVEL 1 WEST
1/4" = 1'-0"

GENERAL NOTES:

A. REFER TO ARCHITECTURAL & STRUCTURAL SERIES DRAWINGS FOR STRUCTURAL FRAMING PLANS, DETAILED REFLECTED CEILING PLANS, ELEVATIONS, AND SECTIONS.

B. IN AREAS WITH FINISHED CEILINGS, LOCATE CEILING MOUNTED DEVICES AND APPLIANCES IN THE CENTER OF SUSPENDED CEILING TILES, ALONG THE CENTER-LINE OF CEILING FEATURES AND IN-LINE WITH ADJACENT CEILING FIXTURES.

C. LOCATE WALL MOUNTED DEVICES AND APPLIANCES IN ACCORDANCE WITH NFPA 72 REQUIREMENTS AND IN ALIGNMENT WITH ADJACENT WALL MOUNT SWITCHES, WALL PLATES AND SIMILAR ELEMENTS.

D. LOCATE CEILING MOUNTED SMOKE AND HEAT DETECTORS WITH RESPECT TO CEILING POCKETS AND OBSTRUCTIONS SUCH AS EXPOSED BEAMS AND SOFFITS IN ACCORDANCE WITH NFPA 72.

E. COMPLY WITH NFPA 72 AND THE DESIGN INTENT INDICATED ON THE DRAWINGS WITH RESPECT TO INTERFACES REQUIRED FOR EMERGENCY CONTROL FUNCTIONS SUCH AS (BUT NOT LIMITED TO) ELEVATOR RECALL, FIRE / SMOKE DAMPER OPERATION, AND HVAC UNIT SHUTDOWN. DETERMINATION OF THE EXACT QUANTITY AND ARRANGEMENT OF INTERFACE MODULES REQUIRED SHALL BE THE RESPONSIBILITY OF THE INSTALLER'S QUALIFIED DESIGNER.

F. SHOP DRAWINGS INCLUSIVE OF DEVICE AND APPLIANCE LAYOUTS, PATHWAYS AND CIRCUITING, COMPONENT ADDRESSES, EMERGENCY CONTROL INTERFACES AND CORRESPONDING CALCULATIONS SHALL BE PREPARED BY THE INSTALLER'S QUALIFIED ENGINEERING TECHNICIAN. SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW AND SHALL BE USED FOR FIRE ALARM SYSTEM INSTALLATION PERMITS.

G. ALL NEW FIRE ALARM INITIATING DEVICES SHALL BE CONNECTED TO THE NEAREST INITIATING CIRCUIT ASSOCIATED WITH THE EXISTING LANDLORD FIRE ALARM SYSTEM.

H. ALL NEW FIRE ALARM NOTIFICATION DEVICES SHALL BE CONNECTED TO THE NEAREST NOTIFICATION CIRCUIT ASSOCIATED WITH THE EXISTING LANDLORD FIRE ALARM SYSTEM.

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Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :
VANDERWEIL
R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210
P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:
Signed by: Brian Cielinski
39596D740E894F0...
Registered Professional Engineer (Fire Protection) CERTIFICATE NO. 82048 BRIAN CIELINSKI Date Signed ARIZONA, U.S.A.
12/19/2024

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Fidelity INVESTMENTS
Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
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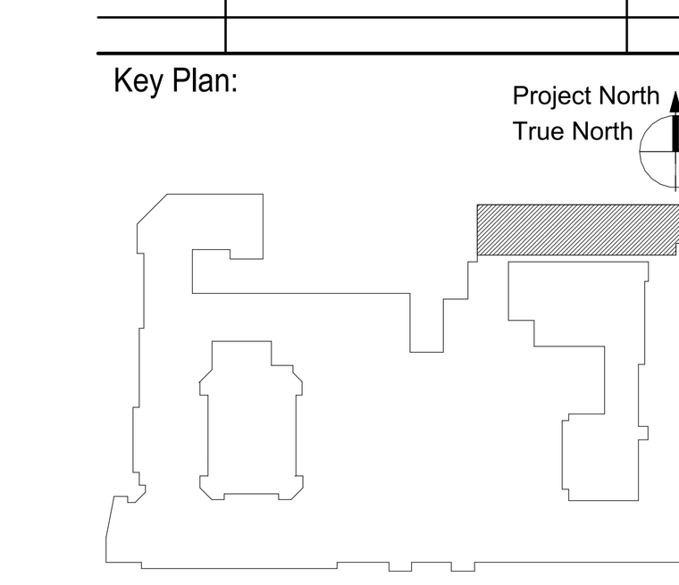
Key Plan:

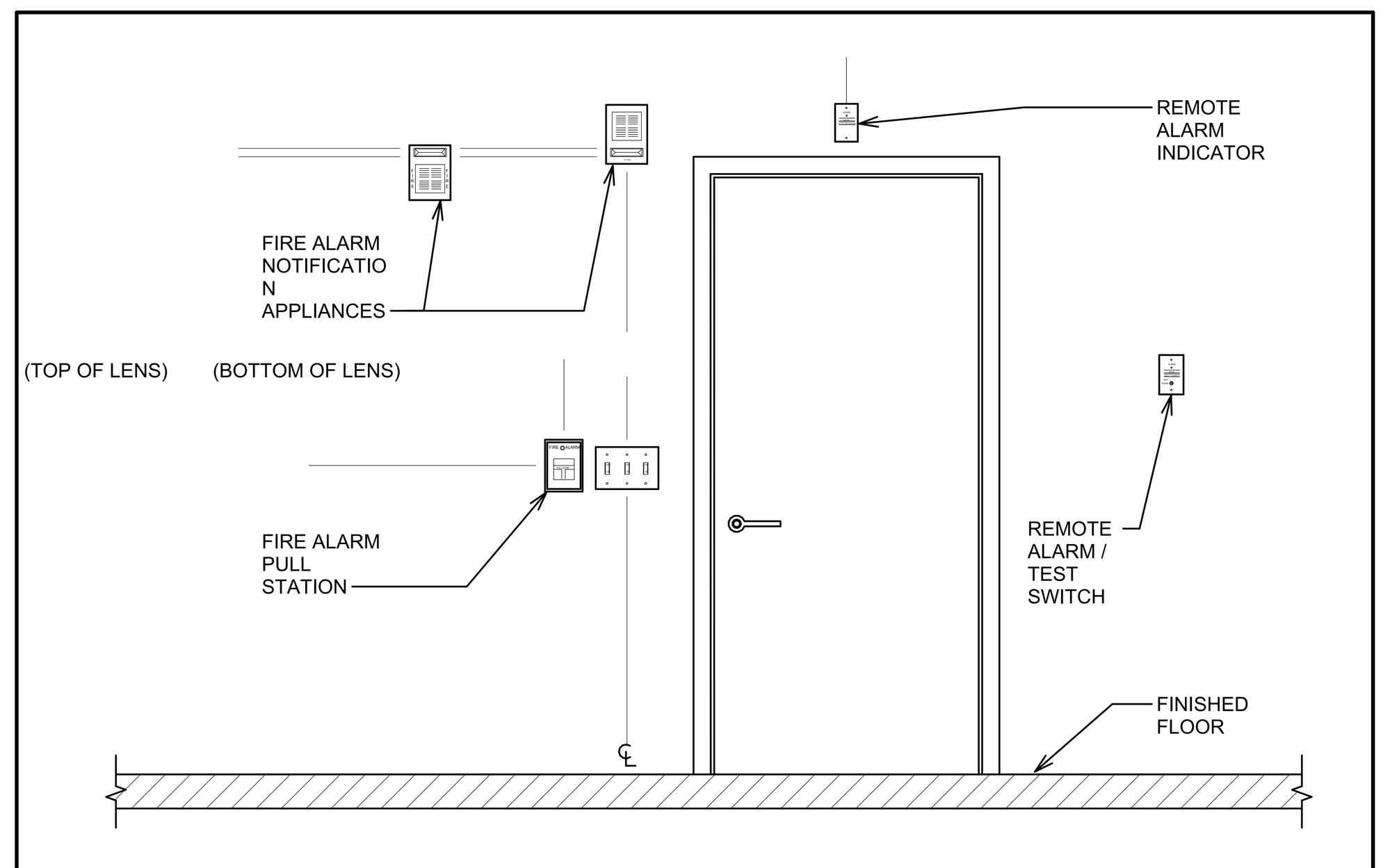


Project No.: C0115.00

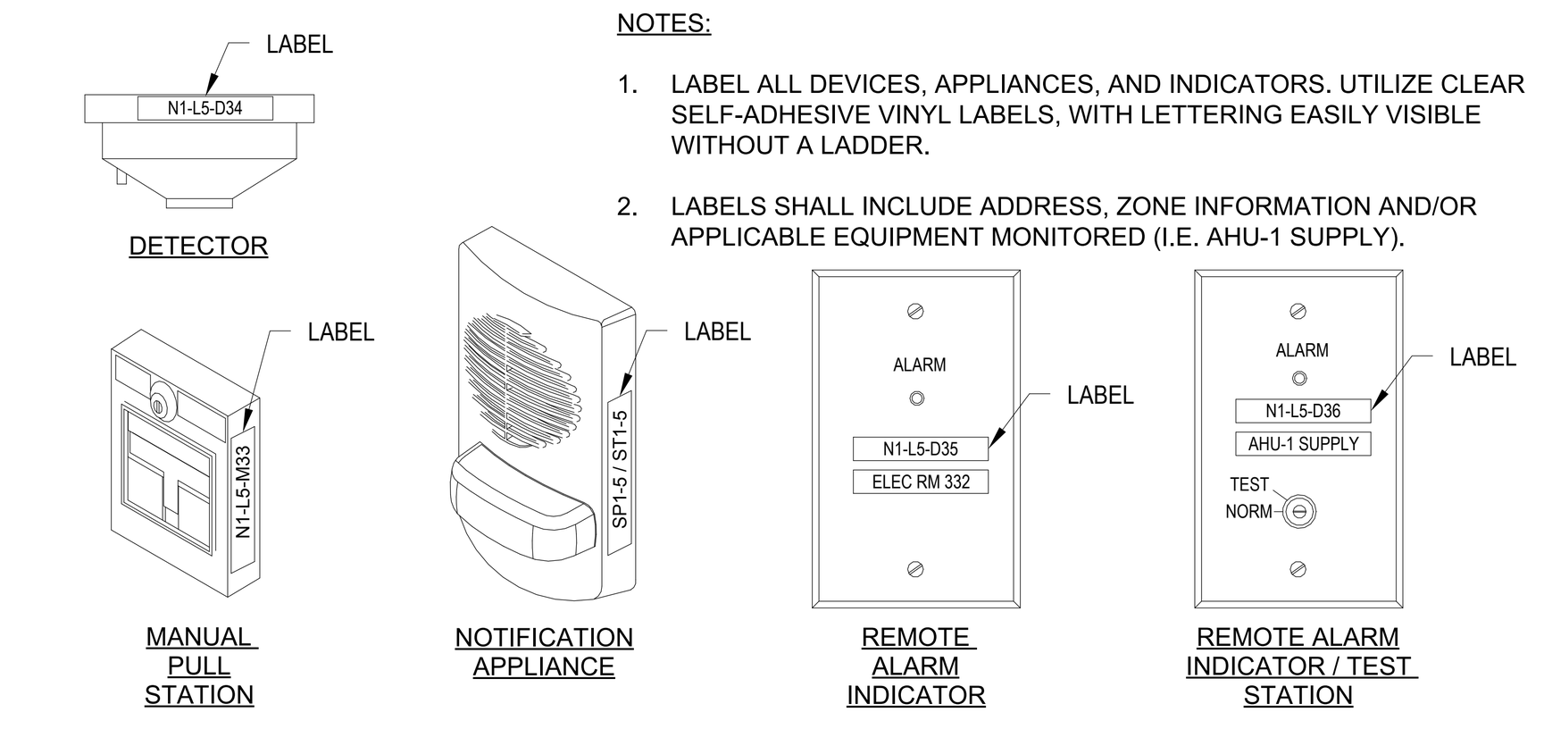
Drawing Sheet Title:
FIRE ALARM - LEVEL 1

Drawing Sheet Number:
FA-201

Owner's Branch No.:
134



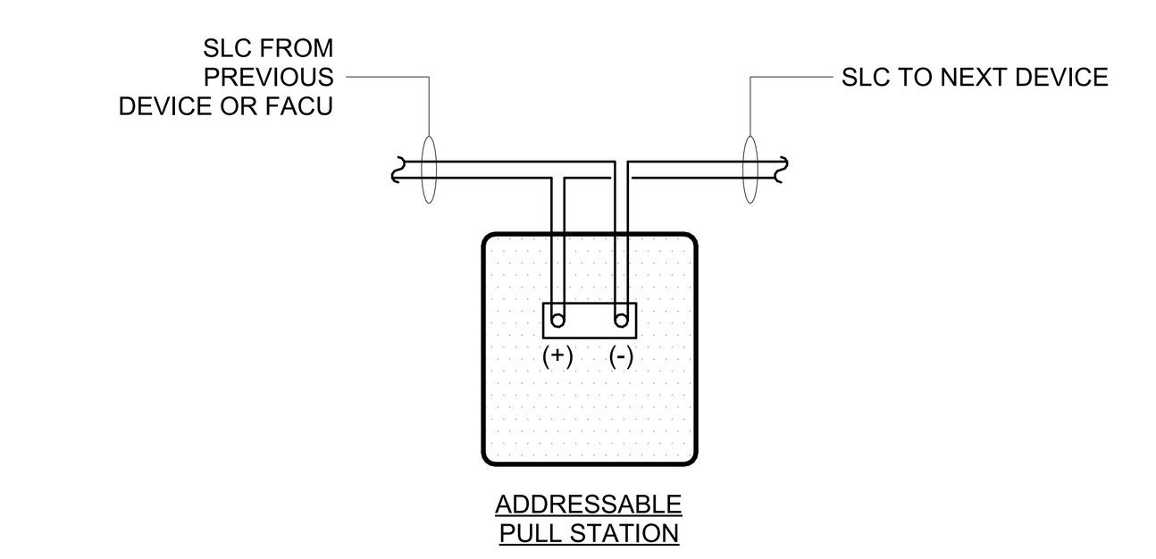
01 **WALL-MOUNT DEVICE AND APPLIANCE MOUNTING LOCATION CRITERIA**
SCALE: NONE



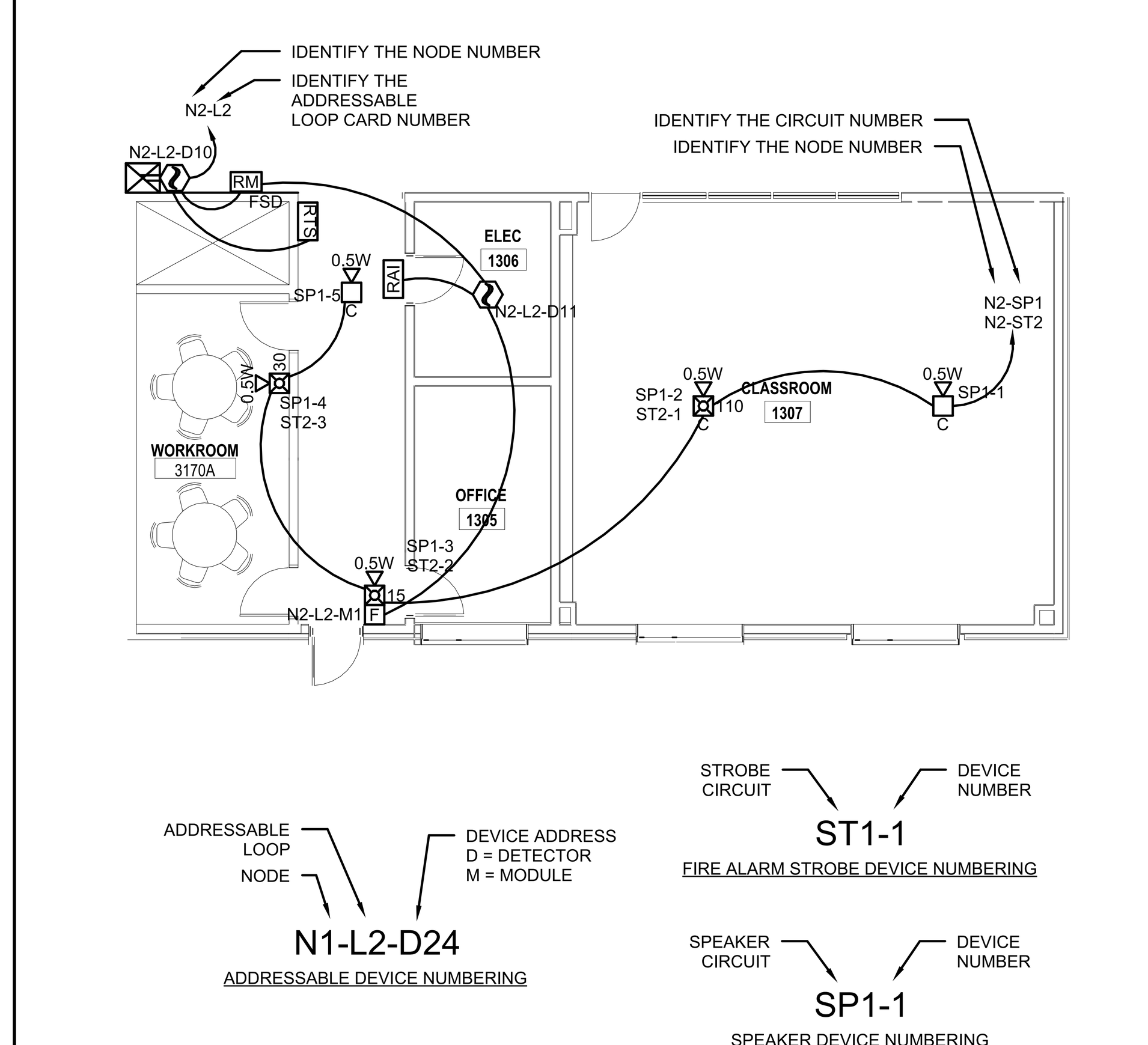
NOTES:

1. LABEL ALL DEVICES, APPLIANCES, AND INDICATORS. UTILIZE CLEAR SELF-ADHESIVE VINYL LABELS, WITH LETTERING EASILY VISIBLE WITHOUT A LADDER.
2. LABELS SHALL INCLUDE ADDRESS, ZONE INFORMATION AND/OR APPLICABLE EQUIPMENT MONITORED (I.E. AHU-1 SUPPLY).

02 FIRE ALARM DEVICE LABEL REQUIREMENTS
SCALE: NONE



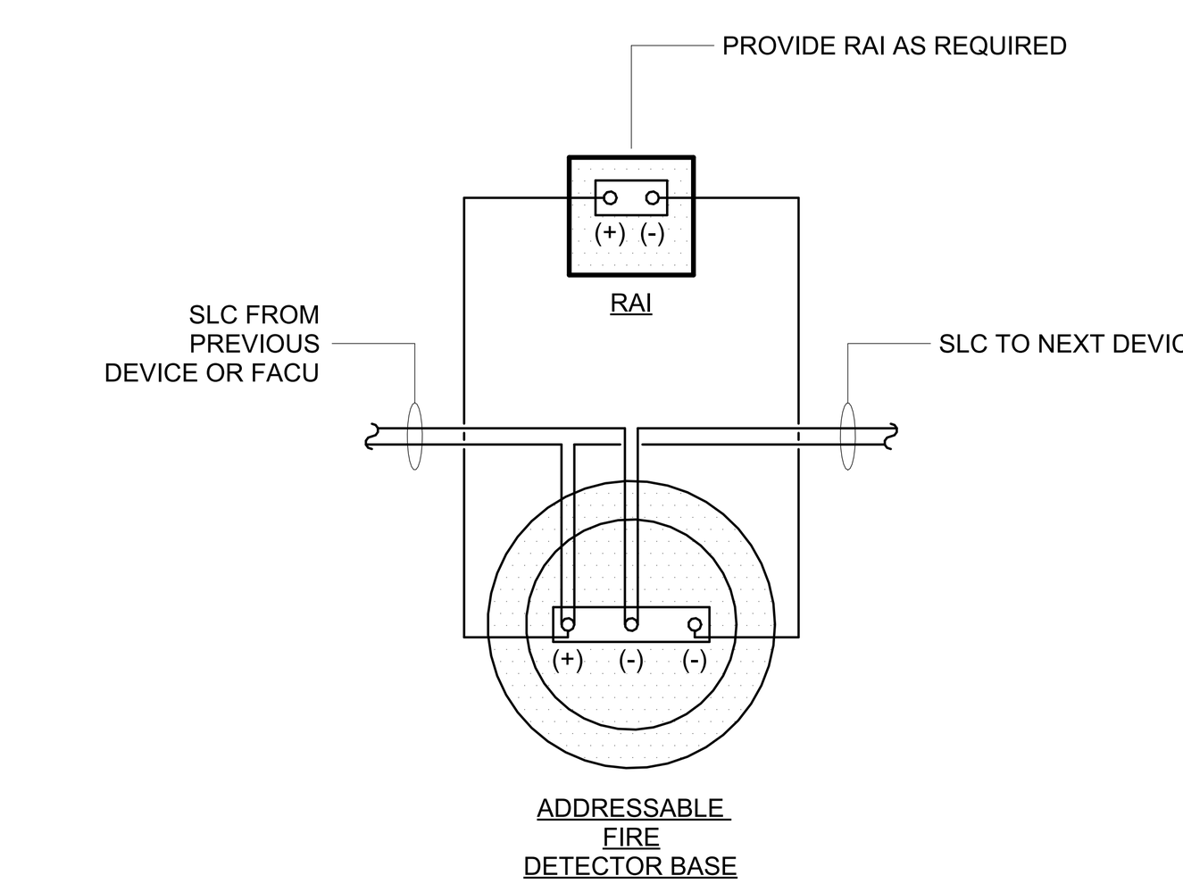
03 **MANUAL PULL STATION WIRING SCHEMATIC**
SCALE: NONE



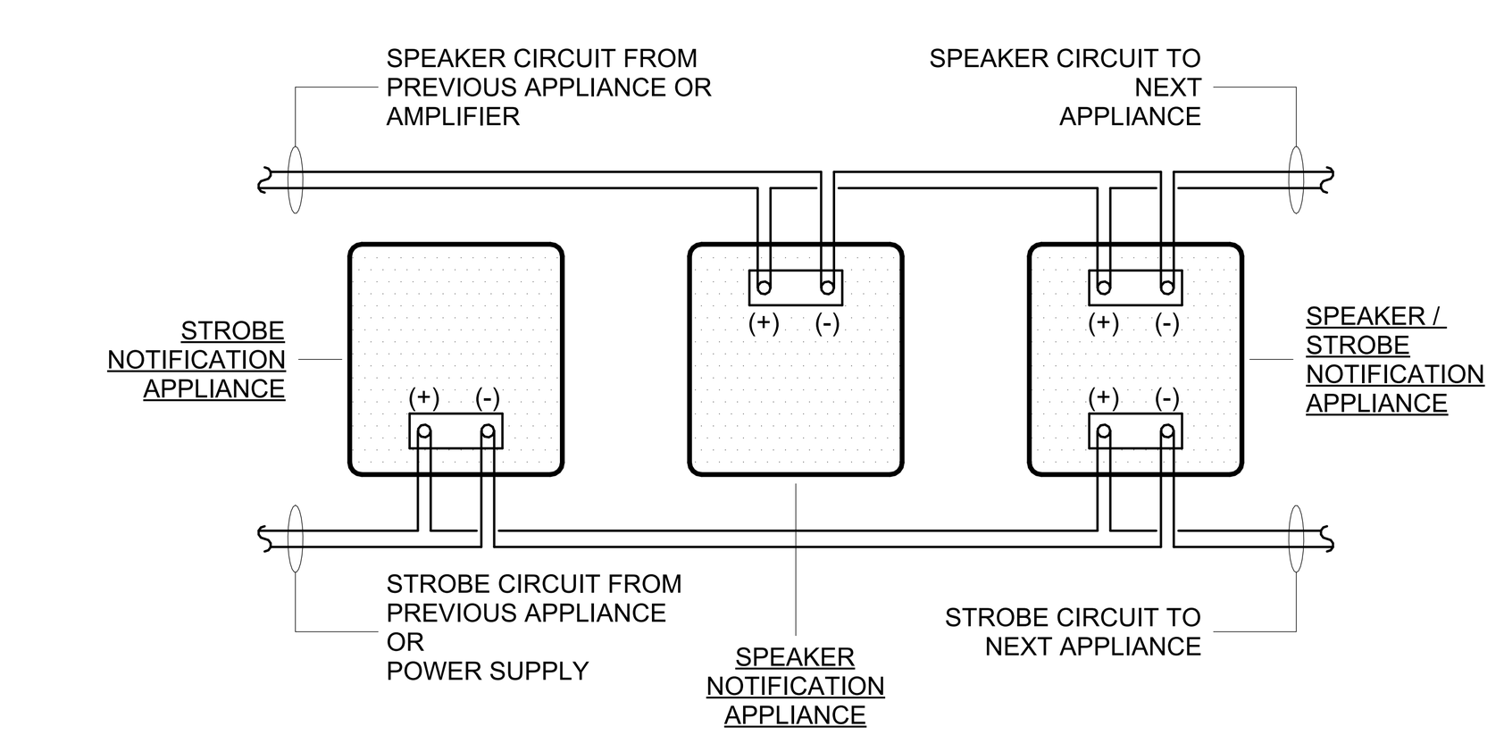
NOTES:

1. SHOP DRAWINGS SHALL INCLUDE ALL SIGNALING LINE CIRCUITS AND NOTIFICATION APPLIANCE CIRCUITS WITH ALL CONNECTED DEVICES, APPLIANCES, AND COMPONENTS.
2. SHOP DRAWINGS SHALL INCLUDE EACH ADDRESS FOR EACH DEVICE ON THE ADDRESSABLE LOOP. ALL MODULES SHALL BE LABELED FOR FUNCTION (I.E. FSD FOR FIRE SMOKE DAMPER, ETC).
3. SHOP DRAWINGS SHALL INCLUDE EACH AUDIBLE DEVICE SPEAKER TAP SETTING AND SPEAKER CIRCUIT NUMBER.
4. SHOP DRAWINGS SHALL INCLUDE EACH VISIBLE DEVICE STROBE SETTING AND NAC CIRCUIT NUMBER.

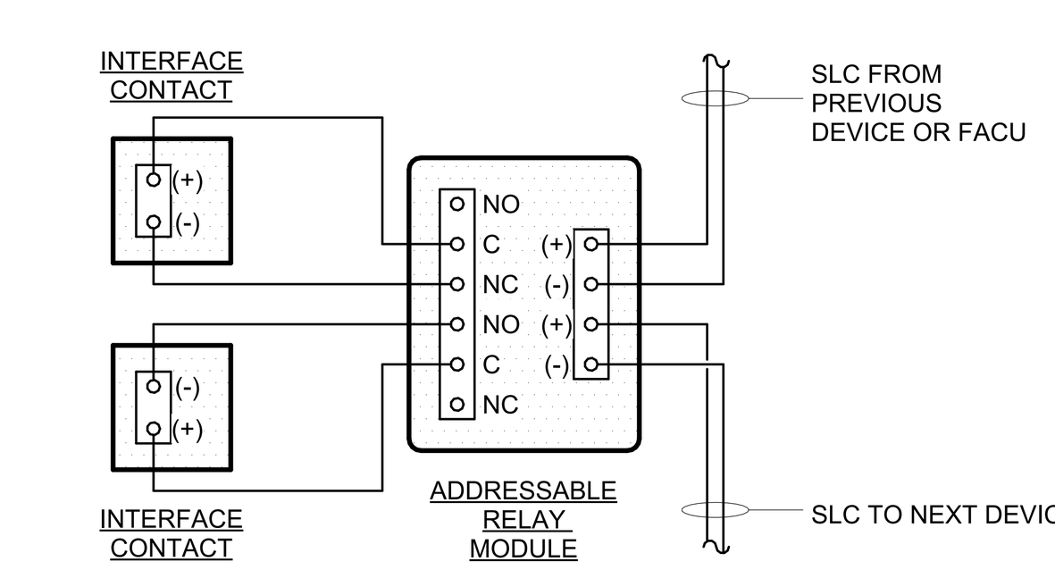
04 FIRE ALARM SHOP DRAWING CONTENT REQUIREMENTS
SCALE: NONE



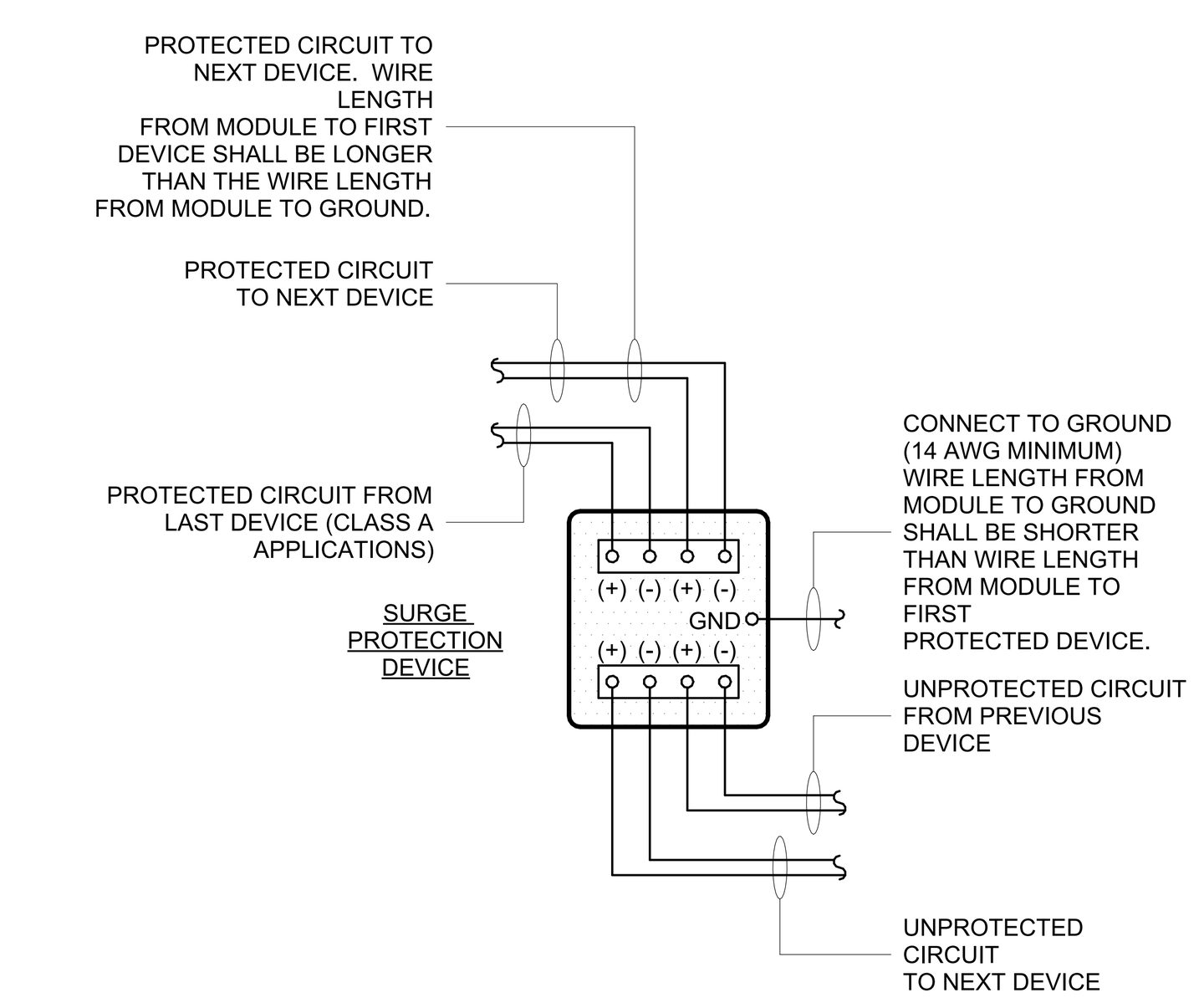
05 **SYSTEM FIRE DETECTOR BASE WIRING SCHEMATIC**
SCALE: NONE



06 **NOTIFICATION APPLIANCE (VOICE) WIRING SCHEMATIC**
SCALE: NONE



07 **INTERFACE RELAY MODULE WIRING SCHEMATIC**
SCALE: NONE



08 **SURGE PROTECTION DEVICE WIRING SCHEMATIC**
SCALE: NONE

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Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

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VANDERWEIL
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Seals: Signed by: Brian Cielinski 39596D740E894F0...
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FIRE ALARM - DETAILS

Drawing Sheet Number:
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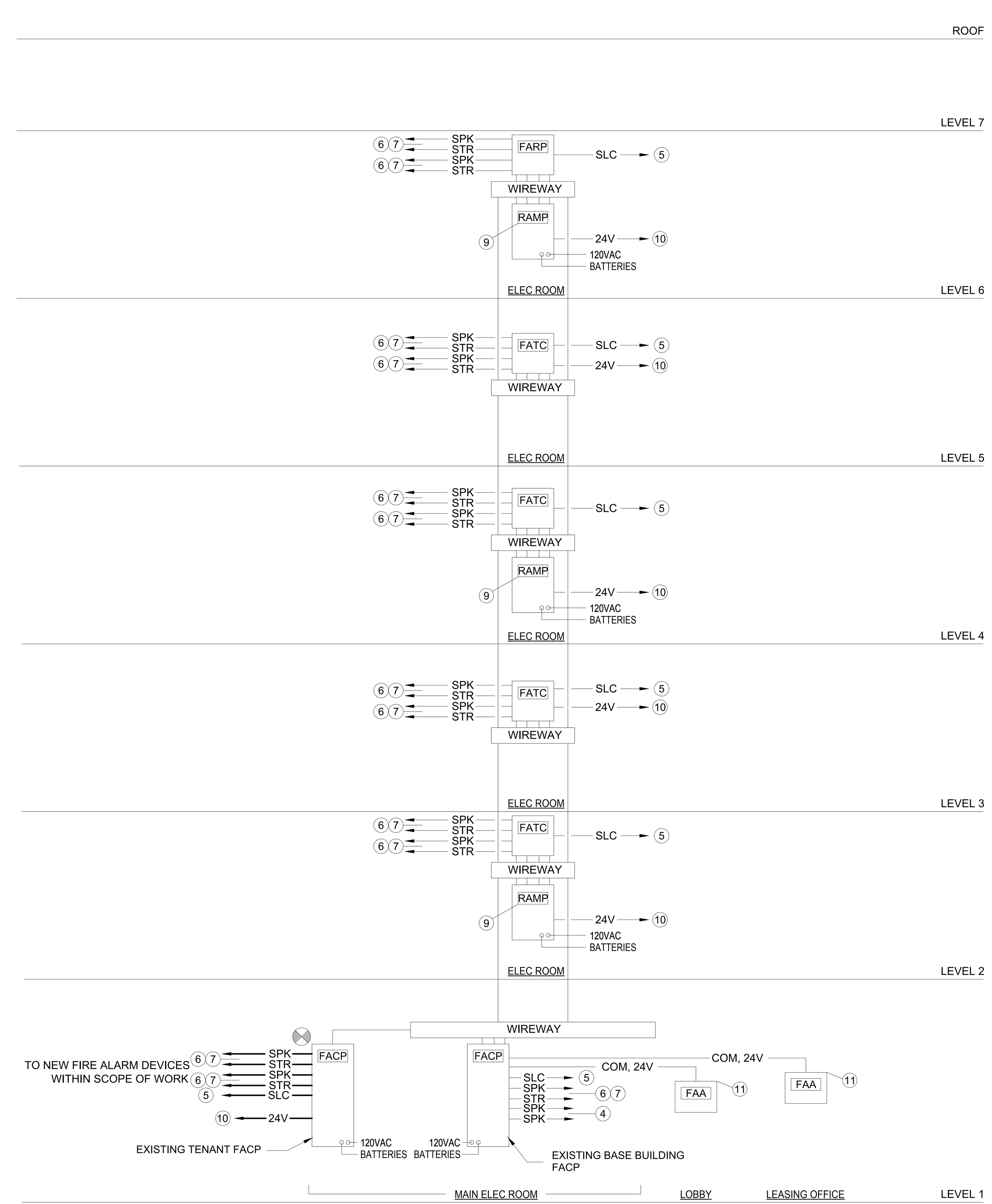

FIRE ALARM RISER KEY NOTES:

1. MAIN FIRE ALARM/EMERGENCY COMMUNICATIONS SYSTEM CONTROL UNIT.
2. SUB FIRE ALARM CONTROL UNIT.
3. FIRE ALARM POWER SUPPLIES. FINAL EQUIPMENT QUANTITIES TO BE COORDINATED AND SHOWN ON SHOP DRAWINGS.
4. IP CONNECTION TO SUPERVISING STATION. FROM DIGITAL ALARM COMMUNICATOR TRANSMITTER (DACT).
5. SIGNALING LINE CIRCUIT (SLC) - USED FOR INITIATING DEVICES SUCH AS: PULL STATIONS, AREA SMOKE DETECTORS, DUCT SMOKE DETECTORS, CONTROL RELAYS, SPRINKLER SYSTEM SUPERVISION, ETC.
6. FIRE ALARM STROBE CIRCUITS (STR) - USED FOR OCCUPANT NOTIFICATION, VIA STROBE APPLIANCES. FINAL EQUIPMENT QUANTITIES TO BE COORDINATED AND SHOWN ON SHOP DRAWINGS.
7. SPEAKER CIRCUITS (SPK) - USED FOR OCCUPANT NOTIFICATION, VIA FIRE ALARM VOICE EVACUATION SPEAKER APPLIANCES. FINAL EQUIPMENT QUANTITIES TO BE COORDINATED AND SHOWN ON SHOP DRAWINGS.
8. SPEAKER CIRCUITS (SPK) - DEDICATED FOR OCCUPANT NOTIFICATION (PAGING ONLY) IN THE TOWER STAIRWELLS.
9. FIRE ALARM DIGITAL AUDIO AMPLIFIERS. FINAL EQUIPMENT QUANTITIES TO BE COORDINATED AND SHOWN ON SHOP DRAWINGS.
10. 24V POWER FOR DOOR HOLDS (IF REQUIRED)
11. REMOTE FIRE ALARM ANNUNCIATOR PANEL

FIRE ALARM CIRCUIT LEGEND	
"---"X-Y	BDAA - BI-DIRECTIONAL AMPLIFIER ALARM PANEL COM - NETWORK COMMUNICATION COX - BI-DIRECTIONAL AMPLIFIER COAX CABLE DVC - DIGITAL VOICE COMMUNICATION SLC - SIGNALING LINE CIRCUIT SPK - SPEAKER CIRCUIT STR - FIRE ALARM STROBE CIRCUIT SCC - FIRE ALARM STROBE SYNC CIRCUIT 24V - 24VDC POWER CIRCUIT
X: DENOTES FACP, POWER SUPPLY OR AMPLIFIER NODE # Y: DENOTES CIRCUIT #	

FIRE ALARM RISER GENERAL NOTES:

1. THE INSTALLED FIRE ALARM SYSTEM SHALL MEET THE *SURVIVABILITY* REQUIREMENTS OF NFPA 72. ALL COMMUNICATION AUDIBLE AND VISUAL CIRCUITS SHALL BE INSTALLED SUCH THAT ATTACK BY FIRE WITHIN AN EVACUATION SIGNAL ZONE SHALL NOT IMPAIR THE CONTROL AND OPERATION OF THE NOTIFICATION APPLIANCES OUTSIDE THE EVACUATION SIGNALING ZONE. ALL CIRCUITS NECESSARY FOR THE OPERATION OF THE NOTIFICATION APPLIANCES SHALL BE PROTECTED UNTIL THEY ENTER THE EVACUATION SIGNALING ZONE THAT THEY SERVE. ANY OF THE FOLLOWING METHODS SHALL BE CONSIDERED ACCEPTABLE MEANS AS MEETING THESE REQUIREMENTS:
   A. 2-HOUR RATED CABLE OR CABLE SYSTEM
   B. A 2-HOUR RATED ENCLOSURE

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
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FIRE ALARM - RISER DIAGRAM

Drawing Sheet Number:
FA-701

Owner's Branch No.:
134

12/19/2024 9:21:12 AM

SYMBOLS

PREACTION / CLEAN AGENT FIRE ALARM & SIGNALING

Symbol	Description
	VISUAL FLASHING BEACON
	AUDIBLE ALARM BELL
FX	MANUAL PULL STATION - FIRE SUPPRESSION SYSTEM RELEASE
A	MANUAL PUSH BUTTON - FIRE SUPPRESSION SYSTEM ABORT
AS	AIR SAMPLING SMOKE DETECTOR
ADSP	AIR SAMPLING SMOKE DETECTOR POWER SUPPLY
FSRU	FIRE SUPPRESSION RELEASING CONTROL UNIT
KMS	KEY MAINTENANCE SWITCH
CM	CONTROL MODULE
MM	MONITOR MODULE

ABBREVIATIONS

ADDRESSABLE INTERFACE MODULES

CAD	CLEAN AGENT DISCHARGE (MM)
KMS	KEY MAINTENANCE SWITCH (MM)
LPS	LOW AIR OR WATER SPRINKLER / STANDPIPE SYSTEM PRESSURE (MM)
RCA	ENERGIZE CLEAN AGENT RELEASING ACTUATOR (RM)
RSL	ENERGIZE PREACTION SPRINKLER RELEASING SOLENOID (RM)
TS	SPRINKLER / STANDPIPE VALVE TAMPER SWITCH IN OFF-NORMAL POSITION (MM)
TSC	CLEAN AGENT ACTUATOR CONTROL HEAD TAMPER SWITCH IN OFF-NORMAL POSITION (MM)
WF	SPRINKLER SYSTEM WATER FLOW (MM)

FIRE PROTECTION - DRAWING LIST

SHEET NUMBER	SHEET NAME
FP-001	FIRE PROTECTION - SYMBOLS AND ABBREVIATIONS
FP-002	FIRE PROTECTION - NOTES & DESIGN CRITERIA
FP-003	FIRE PROTECTION - SPECIFICATIONS
FP-201	FIRE PROTECTION - LEVEL 1
FP-501	FIRE PROTECTION - DETAILS

SYMBOLS

SINGLE-LINE SYMBOLS - VALVES AND PIPE ACCESSORIES

Symbol	Description
	CHECK VALVE
FM	FLOW METER
	INDICATING ISOLATION VALVE
	INDICATING PRESSURE REGULATING ISOLATION VALVE
	NON-INDICATING (DRAIN) VALVE
	PILOT OPERATED PRESSURE CONTROL VALVE
	PILOT OPERATED PRESSURE RELIEF VALVE
	POST INDICATING ISOLATION VALVE
	PRESSURE GAUGE
	PRESSURE RELIEF VALVE (SPRING OPERATED)
	SELECTOR VALVE (GASEOUS AGENTS / WATER MIST)
	TEST AND DRAIN VALVE
	WATER FLOW SWITCH
AR	WET SYSTEM AIR RELEASE VENT

SINGLE-LINE SYMBOLS - RISER AND ALARM CHECK VALVES

Symbol	Description
	WET-PIPE RISER CHECK VALVE
	WET-PIPE ALARM CHECK VALVE
	DRY-PIPE ALARM CHECK VALVE
	PREACTION ALARM CHECK VALVE
	DELUGE ALARM CHECK VALVE

SINGLE-LINE SYMBOLS - BACKFLOW PREVENTERS

Symbol	Description
	BACKFLOW PREVENTER - DOUBLE CHECK VALVE ASSEMBLY
	BACKFLOW PREVENTER - REDUCED PRESSURE ZONE ASSEMBLY

SINGLE-LINE SYMBOLS - FIRE HOSE VALVES

Symbol	Description
	FIRE HOSE VALVE
	FIRE HOSE VALVE - PRESSURE REGULATING TYPE
	FIRE HOSE VALVE AND HOSE REEL
	FIRE HOSE VALVE CABINET
	FIRE HOSE VALVE / HOSE REEL CABINET

SINGLE-LINE SYMBOLS - CONNECTIONS

Symbol	Description
FDC	FIRE DEPARTMENT INLET CONNECTION
FDH	FIRE DEPARTMENT OUTLET HYDRANT CONNECTION
TH	FIRE PUMP TEST HEADER CONNECTION

NOTE - NOT ALL SYMBOLS USED FOR THIS PROJECT

SYMBOLS

SPRINKLERS AND NOZZLES

Symbol	Description
	PENDENT FRAME STANDARD SPRAY PATTERN SPRINKLER
	UPRIGHT FRAME STANDARD SPRAY PATTERN SPRINKLER
	SIDEWALL FRAME STANDARD SPRAY PATTERN SPRINKLER
EC	PENDENT FRAME EXTENDED COVERAGE SPRAY PATTERN SPRINKLER
EC	UPRIGHT FRAME EXTENDED COVERAGE SPRAY PATTERN SPRINKLER
EC	SIDEWALL FRAME EXTENDED COVERAGE SPRAY PATTERN SPRINKLER
DRY	PENDENT FRAME STANDARD SPRAY PATTERN DRY SPRINKLER
DRY	UPRIGHT FRAME STANDARD SPRAY PATTERN DRY SPRINKLER
DRY	SIDEWALL FRAME STANDARD SPRAY PATTERN DRY SPRINKLER
ESFR	PENDENT FRAME ESFR SPRINKLER
ESFR	UPRIGHT FRAME ESFR SPRINKLER
CMSA	PENDENT FRAME CMSA STORAGE PROTECTION SPRINKLER
CMSA	UPRIGHT FRAME CMSA STORAGE PROTECTION SPRINKLER
WS	PENDENT-VERTICAL SIDEWALL FRAME NRTL LISTED WINDOW SPRINKLER
WS	HORIZONTAL SIDEWALL FRAME NRTL LISTED WINDOW SPRINKLER
A	UPRIGHT FRAME NRTL LISTED ATTIC SPRINKLER
CC	UPRIGHT FRAME NRTL LISTED COMBUSTIBLE CONCEALED SPACE SPRINKLER
R	PENDENT FRAME RESIDENTIAL SPRINKLER
R	SIDEWALL FRAME RESIDENTIAL SPRINKLER
	PENDENT FRAME STANDARD SPRAY PATTERN OPEN DELUGE SPRINKLER
	UPRIGHT FRAME STANDARD SPRAY PATTERN OPEN DELUGE SPRINKLER
	SIDEWALL FRAME STANDARD SPRAY PATTERN OPEN DELUGE SPRINKLER
	360-DEGREE DISCHARGE NOZZLE
	180-DEGREE DISCHARGE NOZZLE

EXISTING EQUIPMENT*

* DASHED LINE-TYPE APPLIES UNIFORMLY TO EXISTING DIV. 21 EQUIPMENT AND PIPING; SYMBOLS SHOWN ARE REPRESENTATIVE.

Symbol	Description
	EXISTING DIV. 21 EQUIPMENT AND PIPING
	REMOVAL OF EXISTING DIV. 21 EQUIPMENT AND PIPING
	EXISTING SPRINKLER OR NOZZLE
D	REMOVAL OF EXISTING SPRINKLER OR NOZZLE

GENERAL ANNOTATION

Symbol	Description
x / dwg	SECTION NUMBER DRAWING NUMBER
y / dwg	ELEVATION NUMBER DRAWING NUMBER
z / dwg	DETAIL / PART-PLAN NUMBER DRAWING NUMBER
r / #	RISER DESIGNATION - SYSTEM TYPE RISER DESIGNATION - RISER NUMBER
	BEAM PENETRATION
	CONNECT TO EXISTING
	DIRECTION OF SLOPE
	FLOW ARROW
XXX	HYDRAULIC CALCULATION NODE
##	KEY NOTE

NOTE - NOT ALL SYMBOLS USED FOR THIS PROJECT

FIRE PROTECTION ABBREVIATIONS (GENERAL)

ACT	ACOUSTICAL CEILING TILE
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AHJ	AUTHORITY HAVING JURISDICTION
ARCH	ARCHITECT
BLDG	BUILDING
BOP	BOTTOM OF PIPE
BOR	BOTTOM OF RISER
CL	CENTER LINE
CMU	CONCRETE MASONRY UNIT
CONT	CONTINUATION
DN	DOWN
DWG	DRAWING
ELEC	ELECTRICAL
ELEV	ELEVATION
EX	EXISTING
FT	FEET
GALV	GALVANIZED
GPM	GALLONS PER MINUTE
GWB	GYPSUM WALL BOARD
HAZMAT	HAZARDOUS MATERIAL
INT	INTERLOCK
INV	INVERT
LPM	LITERS PER MINUTE
M	METERS
MAX	MAXIMUM
MECH	MECHANICAL
MIN	MINIMUM
MISC	MISCELLANEOUS
MM	MILLIMETERS
NA	NOT APPLICABLE
NAS	NO AUTOMATIC SPRINKLERS
NC	NORMALLY CLOSED
NHS	NATIONAL HOSE STANDARD
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NRTL	NATIONALLY RECOGNIZED TESTING LABORATORY
NTS	NOT TO SCALE
OED	OPEN END DRAIN
QTY	QUANTITY
SQFT	SQUARE FEET
SQM	SQUARE METERS
TEMP	TEMPERATURE
TOR	TOP OF RISER
TYP	TYPICAL
W/	WITH

FIRE PROTECTION ABBREVIATIONS (SYSTEM DESIGNATIONS)

CA	CLEAN AGENT
DFM	DRY STANDPIPE FEED-MAIN
DSP	DRY SPRINKLER
DST	DRY STANDPIPE
FDC	FIRE DEPARTMENT CONNECTION
FSP	FOAM-WATER SPRINKLER
FWS	FIRE WATER SERVICE
HCO2	HIGH PRESSURE CARBON DIOXIDE
LCO2	LOW PRESSURE CARBON DIOXIDE
PSP	PREACTION SPRINKLER
SD	SPRINKLER DRAIN
WBFS	WATER BASED FIRE SUPPRESSION
WCST	WET COMBINATION SPRINKLER/STANDPIPE
WFM	WET STANDPIPE FEED-MAIN
WMST	WATER MIST
WSP	WET SPRINKLER
WST	WET STANDPIPE

FIRE PROTECTION ABBREVIATIONS (EQUIPMENT & MATERIALS)

ACV	ALARM CHECK VALVE
ATS	AUTOMATIC TRANSFER SWITCH
BFP	BACKFLOW PREVENTER
BV	BUTTERFLY OR BALL INDICATING VALVE
DAV	DRY-PIPE ALARM VALVE
DVCA	DOUBLE CHECK VALVE ASSEMBLY
DCDA	DOUBLE CHECK VALVE DETECTOR ASSEMBLY
DRA	DRY-PIPE MAIN RISER ASSEMBLY
FHV	FIRE HOSE VALVE
FHVC	FIRE HOSE VALVE CABINET
FHZC	FIRE HOSE VALVE & ZONE CONTROL ASSEMBLY
FPU-#	FIRE PUMP
FPUC-#	FIRE PUMP CONTROLLER
FRA	FOAM-WATER SPRINKLER MAIN RISER ASSEMBLY
FS	FLOW SWITCH
LPS	LOW PRESSURE SWITCH
NRS	NON RISING STEM GATE VALVE
OSY	OUTSIDE SCREW & YOKE INDICATING VALVE
PIV	POST INDICATING VALVE
PIVW	POST INDICATING VALVE - WALL MOUNT
PMP-#	PRESSURE MAINTENANCE PUMP
PMPC-#	PRESSURE MAINTENANCE PUMP CONTROLLER
PRA	PREACTION MAIN RISER ASSEMBLY
PRAC	PREACTION MAIN RISER ASSEMBLY CABINET
PRV	PRESSURE REGULATING VALVE
PS	PRESSURE SWITCH
RPZA	REDUCED PRESSURE ZONE ASSEMBLY
SDR	SPRINKLER DRAIN RISER
TH	TEST HEADER
TS	TAMPER SWITCH
VFD	VARIABLE FREQUENCY DRIVE
WAV	WET-PIPE ALARM VALVE
WRA	WE-PIPE MAIN RISER ASSEMBLY
ZCA	ZONE CONTROL ASSEMBLY
ZCAC	ZONE CONTROL ASSEMBLY CABINET

NOTE - NOT ALL ABBREVIATIONS USED FOR THIS PROJECT

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :
VANDERWEIL
R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210
P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals: Signed by: Brian Cielinski 39596D740E894F0...
Registered Professional Engineer (Fire Protection) CERTIFICATE NO. 82048 BRIAN CIELINSKI Date Signed ARIZONA, U.S.A.
12/19/2024

General Notes:

Project Title:
Fidelity INVESTMENTS
Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project No.: C0115.00

Drawing Sheet Title:
FIRE PROTECTION - SYMBOLS AND ABBREVIATIONS

Drawing Sheet Number:
FP-001

Owner's Branch No.:
134

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SPRINKLER SCHEDULE

HEAD DESIGNATION	DESCRIPTION	K-FACTOR	ORIFICE SIZE	RESPONSE	TEMP	COVERAGE	FINISH	ESCUTCHEON	NOTE
◉	CONCEALED PENDENT SPRINKLER	5.6	1/2"	QUICK	155	STANDARD	WHITE POLY	FLAT PLATE	
◎	UPRIGHT SPRINKLER	5.6	1/2"	QUICK	155	STANDARD	BRONZE	N/A	

SPRINKLER SYSTEM DESIGN CRITERIA - FM GLOBAL DS 3-26

HAZARD CATEGORY	AREA DESCRIPTION	CEILING HEIGHT (FT)	MINIMUM K-FACTOR	DESIGN DENSITY (GPM/SQFT)	CALCULATION AREA (SQFT)	HOSE STREAM (GPM)
HC-1	OFFICE SPACE	< 30	5.6	0.10	1500	250
HC-1	MEETING ROOM, CONFERENCE ROOM	< 30	5.6	0.10	1500	250
HC-2	MECHANICAL ROOM, ELECTRICAL ROOM, TEL/DATA	< 30	5.6	0.20	2500	250

MODIFICATIONS TO EXISTING SYSTEMS

1. PREPARE, IN NARRATIVE AND DRAWING FORMAT AS DIRECTED BY THE AUTHORITY OF HAVING JURISDICTION, A FORMAL IMPAIRMENT PLAN.
2. COORDINATE IMPAIRMENT PLAN WITH GENERAL CONTRACTOR FOR INCORPORATION INTO THE NFPA 241 FIRE SAFETY PROGRAM PREPARED BY THE GENERAL CONTRACTOR.
3. IMPAIRMENT PLAN SHALL IDENTIFY THE BUILDING OCCUPANCY (OR VACANCY) DURING CONSTRUCTION AND NATURE OF THE SYSTEM IMPAIRMENT.
4. IMPAIRMENT PLAN SHALL IDENTIFY MAXIMUM IMPAIRMENT DURATION PERMITTED BY THE AUTHORITY HAVING JURISDICTION BEFORE ALTERNATE PROTECTION OR FIRE WATCHES ARE NECESSARY.
5. IMPAIRMENT PLAN SHALL IDENTIFY THE DURATION AND TIMING OF FIRE SUPPRESSION SYSTEM SHUTDOWNS AND RESULTANT REQUIREMENT FOR TEMPORARY LINEAR HEAT DETECTION, IF ANY.
6. IMPAIRMENT PLAN SHALL IDENTIFY THE NEED FOR FIRE WATCHES, IF ANY.
7. IMPAIRMENT PLAN SHALL IDENTIFY THE NECESSARY PROVISIONS FOR TEMPORARY PIPING CONNECTIONS TO EXISTING FIRE SUPPRESSION SYSTEMS TO REMAIN IN SERVICE.
8. IMPAIRMENT PLAN SHALL IDENTIFY ADDITIONAL PROTECTION FEATURES AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
9. SPRINKLERS OUTSIDE OF RENOVATION WORK AREA. SPRINKLERS PROTECTING AREAS ADJACENT TO THE RENOVATION WORK AREA MUST REMAIN IN SERVICE THROUGHOUT THE DURATION OF CONSTRUCTION. PROVIDE TEMPORARY PIPING CONNECTIONS AS NECESSARY TO MAINTAIN SERVICE UNTIL NEW PIPING SYSTEMS ARE COMPLETED.
10. SPRINKLERS WITHIN RENOVATION WORK AREA. MAINTAIN SPRINKLER PROTECTION WITHIN THE RENOVATION WORK AREA TO THE GREATEST EXTENT PRACTICABLE. FOR SPRINKLERS SYSTEMS REQUIRING DRAIN-DOWN, REFILL SPRINKLER PIPING AT END OF EACH WORK SHIFT; OR WHERE REFILL IS NOT PRACTICABLE PROVIDE ALTERNATE PROTECTION OR FIRE WATCHES AS DIRECTED BY THE AUTHORITY HAVING JURISDICTION.
11. PROTECTION. PROTECT EXISTING FIRE SUPPRESSION EQUIPMENT FROM DUST, DEBRIS, PAINT, SPRAY-ON FIRE-PROOFING, AND SIMILAR THROUGHOUT THE DURATION OF CONSTRUCTION. REPLACE WITH NEW EXISTING SPRINKLERS THAT BECOME DAMAGED, PAINTED, SPRAYED OR SIMILAR.
12. RENOVATION WORK AREA ON MULTIPLE FLOORS. NO TWO ADJACENT FLOOR SPRINKLER SYSTEMS SHALL BE IMPAIRED SIMULTANEOUSLY.
13. FIRE DEPARTMENT CONNECTIONS. ALL BUILDING FIRE DEPARTMENT CONNECTIONS MUST REMAIN IN SERVICE THROUGHOUT THE DURATION OF CONSTRUCTION. PROVIDE TEMPORARY PIPING CONNECTIONS AS NECESSARY TO MAINTAIN SERVICE UNTIL NEW PIPING SYSTEMS ARE COMPLETED.
14. WET STANDPIPES. AT LEAST ONE BUILDING WET-PIPE STANDPIPE MUST REMAIN IN SERVICE THROUGHOUT THE DURATION OF CONSTRUCTION. ALL BUILDING WET-PIPE STANDPIPES MUST REMAIN IN SERVICE DURING NORMAL BUSINESS HOURS.
15. EXISTING IDENTIFICATION. REPLACE EXISTING FIRE SUPPRESSION SIGNAGE, GRAPHICS, FRAMED MAPS, AND SIMILAR WITH NEW AS REQUIRED TO REFLECT FIRE SUPPRESSION SYSTEM MODIFICATIONS.
16. EXISTING DOCUMENTATION. AMEND EXISTING PROPERTY RECORDS WITH SUPPLEMENTAL FIRE SUPPRESSION RECORD DOCUMENTATION INCLUDING DRAWINGS AND TEST REPORTS FOR THE ALTERATION WORK PERFORMED.

DOCUMENT SUBMITTAL PROCESS

1. THE DESIGN CONTENT OF THESE DRAWINGS IS INTENDED TO SATISFY THE STATE BUILDING CODE REQUIREMENTS FOR CONSTRUCTION DOCUMENTS. WHEN STAMPED AND SEALED BY THE ENGINEER OF RECORD THEY ARE INTENDED TO BE USED AS PART OF THE BUILDING PERMIT APPLICATION ONLY.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING A COMPLETE SHOP DRAWING SUBMITTAL INCLUSIVE OF ALL INFORMATION REQUIRED BY THE STATE BUILDING CODE AND THE CONSTRUCTION DOCUMENTS. SHOP DRAWINGS REVIEWED BY THE ENGINEER OF RECORD SHALL BE USED FORSUPPLEMENTAL FIRE PROTECTION SYSTEM INSTALLATION PERMITS OR SUBMITTALS WHERE SUCH PERMITS OR SUBMITTALS ARE REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING A COMPLETE RECORD DRAWING SUBMITTAL INCLUSIVE OF ALL FIELD CHANGES AND ALL INFORMATION REQUIRED BY THE STATE BUILDING CODE AND THE CONSTRUCTION DOCUMENTS.
4. SHOP DRAWINGS AND RECORD DRAWING SUBMITTALS SHALL BE PREPARED BY THE CONTRACTOR'S QUALIFIED ENGINEERING TECHNICIAN AND SHALL INDICATE THE TECHNICIAN'S NICET CERTIFICATION NUMBER OR PROFESSIONAL ENGINEERING SEAL & SIGNATURE AS REQUIRED BY THE CONSTRUCTION DOCUMENTS.
5. THE ENGINEER OF RECORD SHALL NOT SIGN AND SEAL SHOP DRAWING OR RECORD DRAWING SUBMITTALS PREPARED BY THE CONTRACTOR. WHERE THE AUTHORITY HAVING JURISDICTION REQUIRES SHOP DRAWING OR RECORD DRAWING SUBMITTALS TO BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER, THE SUBMITTALS SHALL BE PREPARED BY A QUALIFIED PROFESSIONAL ENGINEER RETAINED BY THE CONTRACTOR.

INSPECTION AND TESTING

1. PREPARE A TYPEWRITTEN COMPUTER-OUTPUT TEST PLAN THAT CLEARLY ESTABLISHES THE SCOPE OF FIRE SUPPRESSION SYSTEM TESTING. INCLUDE AT A MINIMUM TESTING METHODS, PERSONNEL, DURATION, PLANNED IMPAIRMENTS, AND REQUIRED COORDINATION FOR INTEGRATED TESTING OF EMERGENCY CONTROL FUNCTION INTERFACES. COORDINATE NFPA 3 "RECOMMENDED PRACTICE FOR COMMISSIONING OF FIRE PROTECTION AND LIFE SAFETY SYSTEMS" AND NFPA 4 "STANDARD FOR INTEGRATED FIRE PROTECTION AND LIFE SAFETY SYSTEM TESTING" REQUIREMENTS WITH THE FIRE AND LIFE SAFETY COMMISSION AGENT (FCxA) WHERE AN FCxA IS CONTRACTED BY THE OWNER.
2. FUNCTIONAL FIELD TESTS SHALL BE WITNESSED BY THE CONSTRUCTION MANAGER (CM), THEIR DESIGNEES, AND WHEN CONTRACTED BY THE OWNER THE FIRE AND LIFE SAFETY COMMISSION AGENT (FCxA). PROVIDE NOTIFICATIONS A MINIMUM OF TWO (2) WEEKS IN ADVANCE.
3. ACCEPTANCE FIELD TESTING SHALL BE WITNESSED BY THE CM, THEIR DESIGNEES, AND AUTHORITIES HAVING JURISDICTION (AHJ). PROVIDE NOTIFICATIONS A MINIMUM OF TWO (2) WEEKS IN ADVANCE.
4. FLUSH, TEST, AND INSPECT SYSTEM PIPING IN ACCORDANCE WITH THE APPLICABLE NFPA WATER-BASED FIRE SUPPRESSION SYSTEM DESIGN AND INSTALLATION STANDARDS.
5. HYDROSTATICALLY TEST SYSTEM PIPING IN ACCORDANCE WITH THE APPLICABLE NFPA WATER-BASED FIRE SUPPRESSION SYSTEM DESIGN AND INSTALLATION STANDARDS. REPAIR LEAKS AND RETEST UNTIL NO LEAKS EXIST.
6. INSPECT AND ADJUST ALARM AND DELAY SETTINGS OF ALARM DEVICES.
7. INSPECT AND ADJUST ALARM VALVE TRIM SETTINGS.
8. INSPECT AND ADJUST AIR / NITROGEN SUPPLY AND DELIVERY SYSTEM SETTINGS.
9. INSPECT AND ADJUST PRESSURE RELIEF VALVES SUCH THAT NO WATER IS DISCHARGED UNDER NORMAL SYSTEM WORKING CONDITIONS.
10. INSPECT AND ADJUST PRESSURE REGULATING VALVES IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
11. VERIFY THAT EQUIPMENT HOSE THREADS ARE SAME AS LOCAL
12. PROVIDE WRITTEN NOTIFICATIONS FOR FUNCTIONAL FIELD TESTS; INCLUDE TEST PLAN.
13. FUNCTIONALLY TEST WATER-BASED FIRE SUPPRESSION SYSTEMS, INCLUDING REQUIRED FULL-FLOW TESTS, IN ACCORDANCE WITH THE APPLICABLE NFPA WATER-BASED FIRE SUPPRESSION SYSTEM DESIGN AND INSTALLATION STANDARDS. COMBINE TESTS TO CONSERVE WATER. CORRECT DEFICIENCIES AND RETEST SATISFACTORY RESULTS ARE ACHIEVED.
14. REPEAT FUNCTIONAL TESTING AS REQUIRED BY THE FIRE AND LIFE SAFETY COMMISSION AGENT (FCxA) WHERE AN FCxA IS CONTRACTED BY THE OWNER.
15. PREPARE TEST AND INSPECTION REPORTS. USE NFPA "CONTRACTOR'S MATERIAL AND TEST CERTIFICATE" FORMAT.
16. PLACE SYSTEM INTO NORMAL OPERATING SERVICE WITHOUT SYSTEM IMPAIRMENTS OR OUTSTANDING WORK.

GENERAL REQUIREMENTS

1. PURPOSE OF ENGINEERING DRAWINGS. THE DRAWINGS ARE DIAGRAMMATIC. THEY ARE NOT INTENDED TO BE ABSOLUTELY PRECISE; THEY ARE NOT INTENDED TO SPECIFY OR TO SHOW EVERY REQUIRED COMPONENT OF THE SYSTEMS DESCRIBED. THE PURPOSE OF THE DRAWINGS IS TO INDICATE A SYSTEM CONCEPT, THE MAIN COMPONENTS OF THE SYSTEMS, AND THEIR APPROXIMATE GEOMETRIC RELATIONSHIPS. BASED UPON THE SYSTEMS CONCEPT, THE MAIN COMPONENTS, AND THEIR APPROXIMATE GEOMETRIC RELATIONSHIPS, PROVIDE ALL OTHER COMPONENTS AND MATERIALS NECESSARY TO MAKE THE SYSTEMS FULLY COMPLETE AND OPERATIONAL.
2. MINIMUM PERFORMANCE REQUIREMENTS. INTERPRET DRAWING AND SPECIFICATION REQUIREMENTS THAT ARE MORE STRINGENT THAN FEDERAL, STATE, & MUNICIPAL CODE-MINIMUM AS DELIBERATELY CONSIDERED PERFORMANCE CRITERIA THAT ARE A MANDATORY PART OF THE WORK. WHERE DRAWINGS AND SPECIFICATIONS ARE SILENT ON A CODE REGULATED CONDITION, COMPLY WITH FEDERAL, STATE, & MUNICIPAL CODE-MINIMUM. COMPLY WITH NFPA STANDARD EDITIONS REFERENCED BY APPLICABLE FEDERAL, STATE, & MUNICIPAL CODES.
3. DESIGN STANDARDS. COMPLY WITH NFPA 13.
4. APPROVALS. PRODUCTS SHALL BE UL LISTED AND FM APPROVED FOR FIRE PROTECTION DUTY AND THE INTENDED SERVICE APPLICATION.
5. ALL WORK IS NEW. UNLESS SPECIFICALLY NOTED AS EXISTING, ALL COMPONENTS INDICATED BY THE DRAWINGS ARE NEW.
6. RELATED DOCUMENTS. THE NECESSARY UNDERSTANDING OF THE PROJECT SCOPE AND FIRE SUPPRESSION WORK CANNOT BE OBTAINED WITHOUT REVIEW OF ALL PROJECT DOCUMENTS. REVIEW COMPLETE PACKAGE OF PROJECT DRAWINGS, SPECIFICATIONS, AND NARRATIVES TO FULLY UNDERSTAND THE PROJECT SCOPE AND TO COORDINATE THE FIRE SUPPRESSION WORK WITH OTHER DIVISIONS.
7. GENERAL INSTALLATION. INSTALL SYSTEM IN A WORKMANLIKE FASHION AND IN A RECTILINEAR ARRANGEMENT WITH PIPING AND SYSTEM COMPONENTS PERPENDICULAR AND PARALLEL WITH BUILDING ARCHITECTURAL AND STRUCTURAL ELEMENTS. PIPING SHALL BE CONCEALED ABOVE CEILING FINISHES. EXPOSED PIPING SHALL BE APPROVED BY THE ARCHITECT PRIOR TO INSTALLATION AND SHALL MAINTAIN NECESSARY CLEARANCES.
8. FIRE DEPARTMENT OPERATIONS. INSTALL FIRE HOSE VALVES, INLET CONNECTIONS, OUTLET CONNECTIONS, ISOLATION VALVES, PUMP CONTROLLERS, SIGNAGE AND OTHER COMPONENTS REQUIRING FIRE FIGHTER PERSONNEL INTERFACE DURING EMERGENCY OPERATIONS IN READILY IDENTIFIABLE LOCATIONS, WITH ADEQUATE OPERATIONAL CLEARANCES, AND IN ACCORDANCE WITH RESPONDING FIRE DEPARTMENT STANDARD EMERGENCY OPERATIONAL PROCEDURES.
9. ALIGNMENT. SPRINKLERS INSTALLED IN FINISHED CEILINGS SHALL BE CENTER OF TILE OR ALIGNED WITH CEILING COMPONENTS WITH NO VISIBLE DEVIATION AND IN ACCORDANCE WITH ARCHITECTURAL REFLECTED CEILING PLANS.
10. RETURN BENDS. INSTALL PENDENT SPRINKLERS IN FINISHED CEILINGS WITH RETURN BENDS CONNECTED TO THE TOP OF THE SUPPLYING BRANCH PIPE OR FLEXIBLE SPRINKLER CONNECTION.
11. BUSHINGS. USE CONCENTRIC REDUCING FITTINGS FOR PIPE SIZE TRANSITIONS AND SPRINKLER NPT CONNECTIONS. BUSHINGS SHALL NOT BE USED.
11. TEMPERATURE RATING. PROVIDE ORDINARY TEMPERATURE RATED SPRINKLERS UNLESS OTHERWISE NOTED. PROVIDE INTERMEDIATE OR HIGH TEMPERATURE RATED SPRINKLERS WHERE REQUIRED BY NFPA 13 BASED UPON PROXIMITY TO HEAT SOURCES OR AMBIENT CEILING TEMPERATURE.
12. GUARDS. INSTALL GUARDS ON SPRINKLERS SUSCEPTIBLE TO MECHANICAL DAMAGE INCLUDING, BUT NOT LIMITED TO SPRINKLERS IN MECHANICAL ROOMS AND SPRINKLERS INSTALLED LESS THEN 7 FT AFF.
13. DRAINAGE. PRE-PLAN SYSTEM INSTALLATION WITH OTHER DIVISIONS OF WORK TO MINIMIZE THE NEED FOR AUXILIARY DRAIN VALVES. ARRANGE SYSTEM PIPING TO DRAIN BACK TO MAIN RISER DRAIN VALVE OR ZONE CONTROL ASSEMBLY DRAIN VALVE.
14. COORDINATION. MAKE REASONABLE AND NECESSARY MODIFICATIONS IN LAYOUTS AND COMPONENT ARRANGEMENT NEEDED TO PREVENT CONFLICT WITH AND TO ACCOMMODATE OTHER DIVISIONS OF THE WORK.
15. CLEARANCES. INSTALL PIPING, VALVES, AND SYSTEM COMPONENTS TO MAINTAIN MINIMUM CLEARANCES REQUIRED TO OPERATE AND MAINTAIN FIRE SUPPRESSION VALVES AND EQUIPMENT; TO INSTALL, OPERATE AND MAINTAIN EQUIPMENT AND FEATURES OF OTHER DIVISIONS; TO ACCOMMODATE FINISHED CEILING HEIGHTS; AND TO MAINTAIN MAXIMUM HEADROOM IN AREAS OPEN TO STRUCTURE ABOVE.
16. PENETRATIONS. USE SPECIFIED SLEEVES, SLEEVE SEALS, AND ESCUTCHEONS AT PIPE PENETRATIONS. AT FIRE RESISTANCE RATED PENETRATIONS, THE PENETRATED FLOOR OR WALL, PENETRATING PIPE, SLEEVE OR SLEEVE SEAL, AND FIRESTOP MATERIAL AS AN ASSEMBLY SHALL COMPLY WITH A DESIGNATED UL THROUGH-PENETRATION FIRESTOP SYSTEM.
17. ACCESS TO VALVES. INSTALL VALVES SUCH THAT THEY ARE READILY ACCESSIBLE AND VISIBLE. LOCATE OVERHEAD VALVES SUCH THAT THEY ARE ACCESSIBLE VIA 8-FT (MAX) LADDER AND WITH POSITION INDICATOR CLEARLY VISIBLE FROM THE FLOOR BELOW.
18. SUPPORT. ATTACH HANGERS AND SUPPORTS DIRECTLY TO STRUCTURAL BEAMS, COLUMNS AND FLOOR SLABS. DO NOT ATTACH TO METAL-DECK ROOF / CEILING PANS. DO NOT ATTACH OR SUPPORT ANY DIVISION 21 WORK FROM NON-STRUCTURAL ELEMENTS OF ANY KIND. THREADED ROD SHALL NOT BE FORMED OR BENT. ALL BOWED, BENT OR OTHERWISE DEFORMED THREADED ROD SHALL BE REPLACED WITH NEW.
19. RESTRAINT AGAINST MOVEMENT. INDEPENDENT OF CONSIDERATION OF SEISMIC PROTECTION, FIRE SUPPRESSION FEED-MAIN, STANDPIPE, AND SYSTEM RISER PIPING SUPPLIED BY FIRE PUMPS SHALL BE RIGIDLY RESTRAINED AGAINST MOVEMENT RESULTING FROM PUMP-INDUCED WATER PRESSURE AND VELOCITY FORCES.
20. IDENTIFICATION. INSTALL VALVE SIGNAGE AND TAGS AT EACH CONTROL VALVE, INSTALL PIPE IDENTIFICATION LABELS; INSTALL HYDRAULIC DATA SIGNS AT EACH SYSTEM RISER; INSTALL SIGNAGE AT FIRE DEPARTMENT CONNECTIONS INDICATING SYSTEMS SERVED AND REQUIRED PRESSURE; INSTALL SUPPLEMENTAL SIGNAGE AS DIRECTED BY THE AUTHORITY HAVING JURISDICTION.
21. FIRE PROTECTION DURING CONSTRUCTION. PROVIDE FIRE PROTECTION DURING CONSTRUCTION INCLUDING BUT NOT LIMITED TO MANUAL AND AUTOMATIC DRY-PIPE STANDPIPES AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
22. ON-SITE AS-BUILT DOCUMENTATION. MAINTAIN COMPLETE AND SEPARATE SET OF INSTALLATION DRAWINGS ON SITE AT ALL TIMES. RECORD WORK COMPLETED AND ALL MODIFICATIONS CLEARLY AND ACCURATELY.

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL
R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210

P 617-423-7423
F 617-423-7501
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Seals:

12/19/2024

General Notes:

Project Title:

Fidelity INVESTMENTS

Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project No.: C0115.00

Drawing Sheet Title:

FIRE PROTECTION - NOTES & DESIGN CRITERIA

Drawing Sheet Number:

FP-002

Owner's Branch No.:

134

PART 1 - GENERAL

1. SUMMARY

1.1. THE WORK UNDER THIS SECTION INCLUDES ALL LABOR, MATERIALS, FEES, AND ACTIVITIES REQUIRED TO INSTALL AND / OR MODIFY, TEST, AND COMMISSION A WATER-BASED FIRE SUPPRESSION SYSTEM.

2. RELATED DOCUMENTS

2.1. THE WORK REQUIREMENTS DESCRIBED WITHIN DIVISION 20 “COMMON MECHANICAL / ELECTRICAL REQUIREMENTS” FORM COMPLIMENTARY REQUIREMENTS TO THE SCOPE OF WORK OF THIS SECTION.

3. SUBMITTALS

3.1. SUBMIT ACTION SUBMITTALS PRIOR TO APPLYING FOR AUTHORITY HAVING JURISDICTION INSTALLATION PERMITS (WHERE REQUIRED) AND SYSTEM INSTALLATION.

3.2. SUBMIT INFORMATIONAL SUBMITTALS RELATED TO TESTING AND INSPECTIONS AFTER SUCCESSFUL SYSTEM TESTING AND PRIOR TO SCHEDULING AUTHORITY HAVING JURISDICTION FINAL APPROVAL DEMONSTRATION TESTING.

3.3. SUBMIT CLOSEOUT SUBMITTALS AS PART OF PROJECT CLOSEOUT PROCEDURE.

4. ACTION SUBMITTALS

4.1. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED. INCLUDE RATED CAPACITIES, OPERATING CHARACTERISTICS, ELECTRICAL CHARACTERISTICS, AND FURNISHED SPECIALTIES AND ACCESSORIES.

4.2. SHOP DRAWINGS: FOR WATER-BASED FIRE SUPPRESSION SYSTEMS. INCLUDE PLANS, ELEVATIONS, SECTIONS, DETAILS, AND ATTACHMENTS TO OTHER WORK. INCLUDE ALL INFORMATION REQUIRED BY THE APPLICABLE NFPA WATER-BASED FIRE SUPPRESSION STANDARD(S) FOR “WORKING PLANS”. COMPLY WITH PART 3 “TECHNICIAN DESIGN AND LAYOUT”.

4.3. HYDRAULIC CALCULATIONS: PERFORM CALCULATIONS IN ACCORDANCE WITH APPLICABLE NFPA WATER-BASED FIRE SUPPRESSION DESIGN AND INSTALLATION STANDARD(S) FOR “HYDRAULIC CALCULATIONS”.

5. INFORMATIONAL SUBMITTALS

5.1. QUALIFICATION DATA: FOR QUALIFIED INSTALLER AND CERTIFIED ENGINEERING TECHNICIAN.

5.2. WATER SUPPLY EVALUATION REPORT: INCLUDE WATER SUPPLY FLOW TEST REPORT AND CERTIFIED ENGINEERING TECHNICIAN EVALUATION REPORT CONFIRMING ADEQUACY OF WATER SUPPLY AND SIGNIFICANT DEVIATIONS FROM HISTORICAL DATA OR CONTRACT DOCUMENTS.

5.3. FIELD TEST REPORTS AND CERTIFICATES: INDICATE AND INTERPRET TEST RESULTS FOR COMPLIANCE WITH PERFORMANCE REQUIREMENTS AND AS DESCRIBED IN NFPA WATER-BASED FIRE SUPPRESSION SYSTEM DESIGN AND INSTALLATION STANDARDS. INCLUDE "CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR ABOVEGROUND PIPING" CORRESPONDING TO EACH WATER- BASED FIRE SUPPRESSION SYSTEM.

5.4. FIELD QUALITY-CONTROL REPORTS.

6. CLOSEOUT SUBMITTALS

6.1. RECORD DRAWINGS: COMPLETE SHOP DRAWING RE-SUBMITTAL UPDATED TO REFLECT ACTUAL FINAL SYSTEM INSTALLATION.

6.2. OPERATION AND MAINTENANCE DATA: FOR WATER-BASED FIRE SUPPRESSION SYSTEM SPECIALTIES TO INCLUDE IN EMERGENCY, OPERATION, AND MAINTENANCE MANUALS.

7. QUALITY ASSURANCE

7.1. INSTALLER QUALIFICATIONS: PERSONNEL LICENSED BY THE GOVERNING LICENSING AUTHORITY FOR THE INSTALLATION OF WATER-BASED FIRE SUPPRESSION SYSTEMS. SUCCESSFULLY INSTALLED, TESTED, OBTAINED APPROVALS FOR, AND PUT INTO SERVICE NO LESS THAN THREE (3) WATER- BASED FIRE SUPPRESSION SYSTEMS SIMILAR IN TYPE, SIZE, AND COMPLEXITY TO THAT OF THE WORK OF THIS SECTION. FOR CPVC PIPING INSTALLATIONS, PERSONNEL CERTIFIED BY THE PIPING MANUFACTURER AS AN APPROVED INSTALLER WITHIN THE LAST TWO (2) YEARS.

7.2. CERTIFIED ENGINEERING TECHNICIAN QUALIFICATIONS: SHOP DRAWINGS AND CALCULATIONS PREPARED BY PERSONNEL LICENSED AS A PROFESSIONAL FIRE PROTECTION ENGINEER BY THE GOVERNING LICENSING AUTHORITY OR, WHERE PERMITTED BY LOCAL AUTHORITIES HAVING JURISDICTION, NICET CERTIFIED AS A FIRE PROTECTION, WATER-BASED SYSTEMS LAYOUT LEVEL III OR IV TECHNICIAN.

7.3. SOURCE LIMITATIONS: OBTAIN PRODUCTS FOR EACH PRODUCT CATEGORY FROM A SINGLE MANUFACTURER.

7.4. PRODUCT STANDARDS: LISTED IN THE "FIRE PROTECTION EQUIPMENT DIRECTORY" PUBLISHED BY UL OR THE "APPROVAL GUIDE" PUBLISHED BY FM GLOBAL.

7.5. ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND APPLICATION.

8. COORDINATION

8.1. COORDINATE CONSTRUCTION OPERATIONS WITH THOSE OF OTHER SECTIONS OF THE WORK AND OTHER ENTITIES TO ENSURE EFFICIENT AND ORDERLY INSTALLATION OF EACH PART OF THE WORK AND ACCESSIBILITY FOR REQUIRED MAINTENANCE, SERVICE AND REPAIR.

9. MAINTENANCE MATERIALS

9.1. FURNISH EXTRA MATERIALS THAT MATCH PRODUCTS INSTALLED AND THAT ARE PACKAGED WITH PROTECTIVE COVERING FOR STORAGE AND IDENTIFIED WITH LABELS DESCRIBING CONTENTS.

9.2. PROVIDE A MINIMUM ONE (1) OR 2 PERCENT OF EACH INSTALLED INITIATING AND NOTIFICATION DEVICE, WHICHEVER QUANTITY IS LARGER.

PART 2 - PRODUCTS

1. PERFORMANCE REQUIREMENTS

1.1. DESIGN AND INSTALLATION STANDARD(S):

1.1.1. SPRINKLER SYSTEMS: COMPLY WITH NFPA 13.
1.1.2. STANDPIPE SYSTEMS: COMPLY WITH NFPA 14.
1.1.3. FM GLOBAL: COMPLY WITH FM GLOBAL DATASHEETS FOR THE DESIGN, INSTALLATION, AND TESTING OF WATER-BASED FIRE SUPPRESSION SYSTEMS.

1.2. STANDARD-PRESSURE PIPING SYSTEM COMPONENT: LISTED FOR 175 PSIG MINIMUM WORKING PRESSURE.

1.3. HIGH-PRESSURE PIPING SYSTEM COMPONENT: LISTED FOR 250 PSIG MINIMUM WORKING PRESSURE.

1.4. SEISMIC PERFORMANCE: WHERE REQUIRED, PIPING SYSTEMS SHALL WITHSTAND THE EFFECTS OF EARTHQUAKE MOTIONS DETERMINED ACCORDING TO NFPA 13 AND ASCE/SEI 7.

2. MANUFACTURERS

2.1. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS SHALL MATCH EXISTING BUILDING SYSTEMS UNLESS OTHERWISE SPECIFIED.

3. PIPING AND FITTINGS

3.1. STANDARD-PRESSURE WET-PIPE WATER-BASED FIRE SUPPRESSION APPLICATIONS:

3.1.1. ASTM A 53, A795 OR A135 SCHEDULE 40 STEEL PIPE WITH THREADED ENDS; UNCOATED ASME B16.4 CAST IRON THREADED FITTINGS; AND THREADED JOINTS.
3.1.2. ASTM A 53, A795 OR A135 SCHEDULE 40 STEEL PIPE WITH CUT-GROOVED ENDS; UL 213 GROOVED-END FITTINGS; UL 213 GROOVED-END PIPE COUPLINGS; AND GROOVED JOINTS.
3.1.3. PERMITTED FOR NPS 2-1/2 AND LARGER: ASTM A 135 OR ASTM A 795 SCHEDULE 10 STEEL PIPE WITH ROLL-GROOVED ENDS; UL 213 GROOVED-END FITTINGS; UL 213 GROOVED-END PIPE COUPLINGS; AND GROOVED JOINTS.

3.2. STANDARD-PRESSURE DRY-PIPE WATER-BASED FIRE SUPPRESSION, INCLUDING DRAIN PIPING, APPLICATIONS:

3.2.1. ASTM A 53, A795 OR A135 SCHEDULE 40 GALVANIZED-COATED STEEL PIPE WITH THREADED ENDS; GALVANIZED-COATED ASME B16.4 CAST IRON THREADED FITTINGS; AND THREADED JOINTS.
3.2.2. ASTM A 53, A795 OR A135 SCHEDULE 40 GALVANIZED-COATED STEEL PIPE WITH CUT-GROOVED ENDS; GALVANIZED-COATED UL 213 GROOVED-END FITTINGS; GALVANIZED-COATED UL 213 GROOVED-END PIPE COUPLINGS; AND GROOVED JOINTS.

3.3. GROOVED-JOINT FITTINGS AND COUPLINGS

3.3.1. FITTINGS: ASTM A 47/A 47M MALLEABLE-IRON CASTING OR ASTM A 536 DUCTILE-IRON CASTING; WITH DIMENSIONS MATCHING STEEL PIPE.

3.3.2. COUPLINGS: AWWA C606 AND UL213; RIGID PATTERN, UNLESS OTHERWISE INDICATED, FOR STEEL-PIPE DIMENSIONS. INCLUDE FERROUS HOUSING SECTION, EPDM-RUBBER GASKET, AND BOLTS AND NUTS.

3.4. STEEL WELDED OUTLET FITTINGS

3.4.1. GENERAL: UL 213B; FORGED STEEL, SCHEDULE 40 WALL THICKNESS, WITH THREADED OR GROOVED-END OUTLET.

4. LISTED FIRE-PROTECTION VALVES

4.1. GENERAL: UL 1091 (BUTTERFLY); UL 262 (GATE) ISOLATION VALVES SHALL BE INDICATING TYPE AND SHALL INCLUDE INTEGRAL OR EXTERNAL VALVE POSITION TAMPER SWITCHES AS INDICATED. VALVE -INLETS AND -OUTLETS SHALL INCLUDE PLUGGED THREADED TAPS FOR THE INSTALLATION OF PRESSURE GAUGES, ALARM DEVICES, DRAINS, AND SIMILAR TRIM. IRON VALVES SHALL INCLUDE FACTORY APPLIED INTERIOR AND EXTERIOR EPOXY COATING IN COMPLIANCE WITH ANSI/AWWA C550 AND NSF-61.

4.2. BRONZE CHECK VALVES: UL 312; MINIMUM PRESSURE RATING: 175 PSIG. THREADED END CONNECTIONS.

4.3. IRON CHECK VALVES: UL 312; MINIMUM PRESSURE RATING: 250 PSIG . FLANGED OR GROOVED END CONNECTIONS:

4.4. WET-PIPE RISER-CHECK VALVES: UL 312; MINIMUM PRESSURE RATING: 300 PSIG. THREADED TAPS FOR INLET PRESSURE GAUGE, OUTLET PRESSURE GAUGE AND MAIN SYSTEM RISER DRAIN. FLANGED OR GROOVED END CONNECTIONS.

4.5. WET-PIPE ALARM CHECK VALVES: UL 193; MINIMUM PRESSURE RATING: 300 PSIG. INCLUDE TRIM SETS FOR BYPASS, DRAIN, ELECTRICAL ALARM SWITCH(ES), PRESSURE GAUGES, RETARDING CHAMBER, AND FILL-LINE ATTACHMENT WITH STRAINER. FLANGED OR GROOVED END CONNECTIONS.

4.6. DRY-PIPE ALARM CHECK VALVES: UL 260; MINIMUM PRESSURE RATING: 300 PSIG. DIFFERENTIAL PRESSURE TYPE; INCLUDE TRIM SETS FOR BYPASS, DRAIN, UL 260A AIR MAINTENANCE DEVICE(S), ELECTRICAL ALARM SWITCH(ES), PRESSURE GAUGES, AND FILL-LINE ATTACHMENT WITH STRAINER; INCLUDE QUICK OPENING DEVICES, EXHAUSTERS, AND ACCELERATORS NECESSARY TO SATISFY WATER DELIVERY TIME REQUIREMENTS FOR CONNECTED SYSTEM PIPING VOLUME. FLANGED OR GROOVED END CONNECTIONS.

4.7. PRESSURE-REGULATING ISOLATION VALVES: UL 1468; MINIMUM PRESSURE RATING: 300 PSIG. FACTORY-SET, NON-ADJUSTABLE DIRECT-ACTING TYPE. FEMALE THREADED END CONNECTIONS. INCLUDE MONITOR SWITCH ADAPTER. ROUGH BRASS OR BRONZE FINISH.

4.8. PRESSURE CONTROL VALVES: UL 1739; MINIMUM PRESSURE RATING: 300 PSIG. PILOT-OPERATED TYPE. FLANGED OR GROOVED END CONNECTIONS.

4.9. AUTOMATIC (BALL DRIP) DRAIN VALVES: UL 1726.

5. TRIM AND DRAIN VALVES

5.1. STANDARD: UL 258.

PART 2 - PRODUCTS

6. SPECIALTY FIRE-PROTECTION PIPE FITTINGS

6.1. FLEXIBLE SPRINKLER CONNECTIONS:

6.1.1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:

6.1.1.1. FLEXHEAD INDUSTRIES, INC.
6.1.1.2. VICTAULIC COMPANY.

6.1.2. STANDARD: UL 1474.

6.2. FLOW DETECTION AND TEST ASSEMBLIES: UL'S "FIRE PROTECTION EQUIPMENT DIRECTORY", CATEGORY VEOY.

6.3. TEST-AND-DRAIN FITTINGS: UL'S "FIRE PROTECTION EQUIPMENT DIRECTORY", CATEGORY VEHZ.

6.4. INSPECTOR ’ S TEST FITTINGS: UL'S "FIRE PROTECTION EQUIPMENT DIRECTORY", CATEGORY VEHZ.

6.5. PRESSURE RELIEF VALVES: UL 1478A; 175 PSIG MINIMUM PRESSURE RATING; BRASS BODY WITH STAINLESS STEEL SPRING AND FLUSHING HANDLE; THREADED END CONNECTIONS.

6.5.1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:

6.5.1.1. AGF MANUFACTURING INC.
6.5.1.2. OCV CONTROL VALVES.
6.5.1.3. RELIABLE AUTOMATIC SPRINKLER CO., INC.
6.5.1.4. WATTS WATER TECHNOLOGIES, INC.
6.5.1.5. ZURN WILKINS.

6.6. AUTOMATIC AIR RELEASE VENTS: UL 2573.

6.6.1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:

6.6.1.1. AGF MANUFACTURING INC.
6.6.1.2. POTTER ELECTRIC SIGNAL CO., LLC.

7. ALARM DEVICES

7.1. GENERAL: NEMA ENCLOSURE SUITABLE FOR APPLICATION, METAL COVER, 250-PSI RATED, TWO SETS OF SPDT (FORM C) CONTACTS. EXPLOSION-PROOF APPLICATIONS: LISTED AND LABELED FOR USE IN “HAZARDOUS (CLASSIFIED) LOCATIONS ” ; CLASS AND DIVISION LISTING APPROPRIATE TO INTENDED LOCATION AND APPLICATION.

7.2. FLOW SWITCHES: UL 346, PADDLE TYPE WITH FIELD ADJUSTABLE 0-90 SECOND DELAY ADJUSTMENT.

7.3. PRESSURE SWITCHES: UL 753, FIELD ADJUSTABLE FOR OPERATION UPON PRESSURE INCREASE OR PRESSURE DECREASE.

7.4. TAMPER SWITCHES: UL 753, MOUNTING BRACKETS SUITABLE FOR VALVE TYPE, WITH NORMALLY CLOSED CONTACTS FOR SUPERVISION OF VALVE STEM POSITION.

8. PRESSURE GAUGES

8.1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:

8.1.1. AMETEK; U.S. GAUGE DIVISION.
8.1.2. ASHCROFT, INC.
8.1.3. BRECCO CORPORATION.
8.1.4. WIKA INSTRUMENT CORPORATION.

8.2. STANDARD: UL 393.

9. SPRINKLERS

9.1. UNLESS OTHERWISE INDICATED OR REQUIRED BY APPLICATION, SPRINKLER PRESSURE RATING SHALL BE 175 PSIG.

9.2. UNLESS OTHERWISE INDICATED OR REQUIRED BY APPLICATION, SPRINKLER K-FACTOR AND THERMAL SENSITIVITY SHALL COMPLY WITH THE FOLLOWING:

9.2.1. LIGHT HAZARD: QUICK RESPONSE, MINIMUM 5.6 K-FACTOR.
9.2.2. ORDINARY HAZARD: QUICK RESPONSE, MINIMUM 8.0 K-FACTOR.
9.2.3. EXTRA HAZARD: STANDARD RESPONSE, MINIMUM 8.0 K-FACTOR.

9.3. UNLESS OTHERWISE INDICATED OR REQUIRED BY APPLICATION, SPRINKLERS SHALL BE NFPA 13 ORDINARY TEMPERATURE CLASSIFICATION.

9.4. AREAS WITH FINISHED CEILINGS: UL 199; NON-PERFORATED; STANDARD-SPRAY, CONCEALED-PENDENT, WHITE FINISH.

9.4.1. SEISMIC APPLICATIONS: OVERSIZED TO CONCEAL SPRINKLER CEILING PENETRATION INCLUDING REQUIRED 1 INCH ANNULAR CLEARANCE AROUND PENETRATING SPRINKLER ASSEMBLY.

9.5. AREAS EXPOSED TO STRUCTURE: UL 199; STANDARD-SPRAY, UPRIGHT OR PENDENT; BRONZE FINISH.

9.6. WALL APPLICATION: UL 199; STANDARD-SPRAY, CONCEALED-SIDEWALL; WHITE-PAINT FINISH.

9.7. DRY-TYPE SPRINKLER APPLICATION: UL 199; STANDARD-SPRAY, CONCEALED-DRY-PENDENT AND SIDEWALL; WHITE-PAINT FINISH.

9.5. SPRINKLER GUARDS: LISTED FOR USE WITH ATTACHED SPRINKLER; SINGLE-PIECE, WIRE CAGE WITH FASTENING DEVICE FOR ATTACHMENT TO SPRINKLER.

10. PIPE HANGERS AND FASTENERS

10.1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:

10.1.1. TOLCO.
10.1.2. COOPER B-LINE.
10.1.3. ANVIL INTERNATIONAL.

10.1. PIPE HANGERS: STEEL, GALVANIZED ADJUSTABLE BAND TYPE AND CLEVIS BAND TYPE HANGERS USED ON CPVC PIPING SHALL HAVE FLARED OR BEVELED EDGES; CARBON STEEL, GALVANIZED HANGER ROD.

10.2. ATTACHMENTS TO STEEL: CARBON OR MALLEABLE STEEL, GALVANIZED BEAM CLAMP.

10.3. DROP IN ANCHORS: UL 203; MILD STEEL WITH ZINC PLATING.

10.3.1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
10.3.1.1. HILTI CORP.
10.3.1.2. ITW RED HEAD.
10.3.1.3. POWERS FASTNERS, INC.

PART 3 - EXECUTION

1. PREPARATION

1.1. SCHEDULE AND CONDUCT WATER SUPPLY FLOW TESTS PROMPTLY TO ESTABLISH AVAILABLE WATER SUPPLY FLOW AND PRESSURE CHARACTERISTICS.

2. TECHNICIAN DESIGN AND LAYOUT

2.1. ROLES AND RESPONSIBILITIES SHALL BE AS SET FORTH IN NSPE POSITION STATEMENT NO. 1749 “SFPE / NSPE / NICET JOINT POSITION OF THE ENGINEER AND THE ENGINEERING TECHNICIAN DESIGNING THE FIRE PROTECTION SYSTEM”, AVAILABLE ATNSPE.ORG .

2.2. AS APPLIED TO THE WORK, THE CONTRACT DOCUMENTS HAVE BEEN PREPARED BY THE “ENGINEER” AND SHOP DRAWINGS REQUIRED BY THIS SECTION OF THE WORK ARE PREPARED BY THE “CERTIFIED ENGINEERING TECHNICIAN”.

2.3. AS THE CERTIFIED ENGINEERING TECHNICIAN, PREPARE SHOP DRAWINGS INDICATING SYSTEM LAYOUT AND SIZING IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, INCLUDING BUT NOT LIMITED TO:
2.3.1. EVALUATION OF WATER SUPPLY ADEQUACY.
2.3.2. DETAILED SIZING AND LAYOUT OF PIPING AND APPURTENANCES INCLUDING FEED-MAINS, RISERS, CROSS MAINS, BRANCH LINES, VALVES, DRAINAGE PROVISIONS, HANGERS, RESTRAINTS, SUPPORTS, AND SIMILAR.
2.3.3. DETAILED SPRINKLER LAYOUTS.
2.3.4. HYDRAULIC CALCULATIONS.
2.3.5. INSTALLATION DETAILS FOR THE SPECIFIC EQUIPMENT BEING FURNISHED.

2.4. COMPLY WITH THE PERFORMANCE REQUIREMENTS INDICATED BY THE CONTRACT DOCUMENTS WHERE SUCH REQUIREMENTS ARE MORE STRINGENT THAN THOSE OF THE DESIGN AND INSTALLATION STANDARD(S); OTHERWISE, COMPLY WITH THE PERFORMANCE REQUIREMENTS OF THE DESIGN AND INSTALLATION STANDARD(S).

2.5. DESIGN AND LAYOUT FIRE SUPPRESSION PIPING TO SATISFY PERFORMANCE REQUIREMENTS:

2.5.1. RECTILINEAR FIRE SUPPRESSION PIPING ARRANGEMENT WITH RESPECT TO BUILDING PARTITIONS AND STRUCTURAL ELEMENTS.

2.5.2. CONCEALED FIRE SUPPRESSION PIPING INSTALLATION THROUGHOUT FINISHED SPACES AND MAXIMUM HEADROOM BENEATH EXPOSED FIRE SUPPRESSION PIPING IN AREAS EXPOSED TO STRUCTURE ABOVE.

2.5.3. NO FIRE SUPPRESSION PIPING WITHIN ELECTRICAL, INFORMATION TECHNOLOGY, OR SIMILAR SPACES OTHER THAN BRANCH PIPING SERVING SPRINKLERS PROTECTING SUCH ELECTRICAL, INFORMATION TECHNOLOGY, OR SIMILAR SPACE SPACES.

2.5.4. NO FIRE SUPPRESSION PIPING DIRECTLY ABOVE ELECTRICAL EQUIPMENT, ELECTRICAL PANELS, INFORMATION TECHNOLOGY EQUIPMENT, OR SIMILAR ENERGIZED EQUIPMENT.

2.5.5. NO FIRE SUPPRESSION PIPING WITHIN EXIT ENCLOSURES EXCEPT STANDPIPES SUPPLYING HOSE VALVES WITHIN THE EXIT ENCLOSURE, SPRINKLER ZONE CONTROL ASSEMBLIES AND PIPING IMMEDIATELY DOWNSTREAM, BRANCH PIPING SUPPLYING SPRINKLERS WITHIN THE EXIT ENCLOSURE, AND ASSOCIATED DRAIN CONNECTIONS AND RISERS.

2.5.6. NO FIRE SUPPRESSION PIPING WITHIN OR IN PROXIMITY TO HAZARDOUS MATERIALS STORAGE OR PROCESSING OPERATIONS OTHER THAN BRANCH PIPING SERVING SPRINKLERS PROTECTING SUCH HAZARDOUS MATERIALS STORAGE OR PROCESSING OPERATIONS.

2.5.7. FIRE SUPPRESSION PIPING SUPPORTED FROM PRIMARY BUILDING STRUCTURAL ELEMENTS OR APPROVED SUPPLEMENTAL SUPPORTS CAPABLE OF SUPPORTING THE ATTACHED LOAD.

2.5.8. FIRE SUPPRESSION PIPING CROSSING BUILDING EXPANSION JOINTS PROVIDED WITH EXPANSION FITTINGS APPROPRIATE TO THE JOINT DESIGN DEFLECTION VALUE.

2.5.9. FIRE SUPPRESSION PIPING PROTECTED AGAINST DAMAGE WHERE SUBJECT TO EARTHQUAKES.

2.5.10. FIRE SUPPRESSION PIPING PROTECTED AGAINST DAMAGE WHERE SUBJECT TO FREEZING WITHOUT THE USE OF HEAT-TRACE CABLES UNLESS INDICATED OTHERWISE.

2.5.11. FIRE SUPPRESSION PIPING ARRANGED SUCH THAT PIPING DRAINS BACK TO MAIN DRAINS AND DRAIN RISERS WITHOUT THE USE OF AUXILIARY DRAINS.

2.6. HYDRAULICALLY DESIGN WATER-BASED FIRE SUPPRESSION SYSTEM PIPING USING THE HAZEN-WILLIAMS OR DARCY-WEISBACH FORMULAS IN ACCORDANCE WITH THE DESIGN AND INSTALLATION STANDARD(S).

2.6.1. CALCULATION AREAS SHALL NOT BE REDUCED FOR QUICK RESPONSE SPRINKLER APPLICATIONS.

2.6.2. MARGIN OF SAFETY BETWEEN AVAILABLE AND REQUIRED PRESSURE AT DESIGN FLOWRATE: 10 PSI MINIMUM, INCLUDING LOSSES THROUGH WATER-SERVICE PIPING,VALVES, AND BACKFLOW PREVENTERS.

2.6.3. FOR FIRE PUMP APPLICATIONS, SUBMIT FIRE PUMP PRODUCT DATA INCLUDING MANUFACTURER ’ S CHARACTERISTIC PUMP CURVE PRIOR TO PREPARING HYDRAULIC CALCULATIONS.

2.6.4. FOR DIRECT-ACTING PRESSURE REGULATING VALVE APPLICATIONS, INCLUDE MANUFACTURER'S PRESSURE LOSS CHART AND INDICATE THE CALCULATED FLOW THROUGH THE VALVE AND RESULTING PRESSURE LOSS.

2.6.5. FOR APPLICATIONS WITH SYSTEM PRESSURES GREATER THAN 175 PSIG, PREPARE A CALCULATION AT MAXIMUM STATIC PRESSURE TO IDENTIFY BUILDING FLOOR ELEVATIONS REQUIRING PRESSURE REGULATING VALVES.

2.6.5.1. RISER DIAGRAM: INDICATE MAXIMUM STATIC PRESSURE AT EACH FLOOR ELEVATION,INCLUDING INLET AND OUTLET PRESSURE AT PRESSURE REGULATING VALVES WHERE PROVIDED.
2.6.5.2. INCLUDE PRESSURE LOSSES ASSOCIATED WITH SPECIALTY FITTINGS AND ASSEMBLIES SUCH AS SEISMIC SEPARATION ASSEMBLIES AND FLEXIBLE SPRINKLER CONNECTIONS.

3. ON-SITE AS-BUILT DRAWINGS

3.1. AS WORK PROGRESSES AND FOR THE DURATION OF THE CONSTRUCTION OPERATIONS, MAINTAIN COMPLETE AND SEPARATE SET OF PRINTS OF SHOP DRAWINGS (WORKING PLANS) AT PROJECT SITE AT ALL TIMES. RECORD WORK COMPLETED AND ALL DEVIATIONS FROM REVIEWED SHOP DRAWINGS (WORKING PLANS) CLEARLY AND ACCURATELY. INCLUDE ACTUAL LOCATIONS OF EXISTING UTILITIES IF THEY DIFFER FROM DESIGN DOCUMENTS. RECORD VALVE TAG DESIGNATIONS AS INSTALLED.

4. EXAMINATION

4.1. EXAMINE SLEEVED PENETRATIONS THROUGH CONCRETE AND STRUCTURAL PENETRATIONS THROUGH STEEL AND VERIFY THAT THEY ARE SUITABLE FOR INTENDED PIPING INSTALLATION.

4.2. EXAMINE WALLS AND PARTITIONS AND VERIFY THAT THEY ARE SUITABLE FOR INSTALLATION OF PIPING, CABINETS, INLET CONNECTIONS AND SIMILAR PRODUCTS.

4.3. EXAMINE AREAS TO CONTAIN STANDPIPE HOSE OUTLETS INCLUDING STAIRWELLS AND VESTIBULES AND VERIFY THAT DOOR SWINGS OR OTHER OBSTRUCTIONS WILL NOT INTERFERE WITH THE INSTALLATION OR FUTURE OPERATION OF HOSE VALVES.

4.4. FURNISH DRAIN HOSE ASSEMBLY FOR CONDUCTING SPRINKLER DRAIN OUTLET DISCHARGE-TO-GRADE AWAY FROM BUILDING FAÇADE AND ADJACENT HARD-SCAPE SUBJECT TO STAINING; INCLUDE:

4.4.1. BRASS HEX NIPPLE FITTING; FURNISH ONE FITTING FOR EACH DRAIN OUTLET FITTING SIZE USED.
4.4.2. BRASS SWIVEL HOSE ADAPTER FITTINGS FOR CONNECTION TO 2 1/2 IN HOSE COUPLING; FURNISH ONE ADAPTER FITTING FOR EACH HEX NIPPLE OUTLET SIZE USED.
4.4.3. INDUSTRIAL DOUBLE-JACKET EPDM RUBBER-LINED INTERIOR EXTERIOR FIRE HOSE WITH HOSE-COUPLING ENDS; 2 1/2 IN, 75 FT
4.4.4. GALVANIZED-STEEL, WALL-MOUNT, HOSE AND COUPLING STORAGE RACK. MOUNT ADJACENT TO MAIN SYSTEM RISER.

PART 3 - EXECUTION

5. PIPING INSTALLATION

5.1. LOCATIONS AND ARRANGEMENTS: DRAWING PLANS, SCHEMATICS, AND DIAGRAMS INDICATE GENERAL LOCATION AND ARRANGEMENT OF PIPING. INSTALL PIPING AS INDICATED.

5.2. DEVIATIONS FROM APPROVED SHOP DRAWINGS REQUIRE WRITTEN APPROVAL FROM AUTHORITIES HAVING JURISDICTION. FILE WRITTEN APPROVAL WITH ARCHITECT BEFORE DEVIATING FROM APPROVED WORKING PLANS.

5.3. WHERE APPLICABLE INSTALL SEISMIC RESTRAINTS AND FLEXIBLE COUPLINGS IN ACCORDANCE WITH NFPA 13.

5.4. INSTALL PROVISIONS TO ACCOMMODATE BUILDING EXPANSION JOINTS. PROVIDE FOR EXPANSION AT BUILDING EXPANSION JOINTS WITH ASSEMBLIES LISTED FOR THAT PURPOSE. COORDINATE THE MAXIMUM VALUE OF BUILDING DEFLECTION WITH THE APPROPRIATE STRUCTURAL SECTION OF THE WORK.

5.5. INSTALL SLEEVES, SLEEVE-SEALS, FIRE-STOPPING, AND PIPE ESCUTCHEONS. HOLE-CUT FITTINGS: WHERE USED, USE TWO-PIECE CAST TYPE FITTINGS ONLY; FITTINGS UTILIZING STRAPS, U-BOLTS, OR SIMILAR ARE NOT PERMITTED. INSTALL WATER-BASED FIRE SUPPRESSION PIPING WITH DRAINS FOR COMPLETE SYSTEM DRAINAGE.

6. VALVE AND SPECIALTIES INSTALLATION

6.1. INSTALL LISTED FIRE-PROTECTION VALVES, TRIM AND DRAIN VALVES, SPECIALTY VALVES AND TRIM, CONTROLS, AND SPECIALTIES ACCORDING TO THE DESIGN AND INSTALLATION STANDARDS AND AUTHORITIES HAVING JURISDICTION.

6.2. INSTALL LISTED FIRE-PROTECTION SHUTOFF VALVES SUPERVISED OPEN, LOCATED TO CONTROL SOURCES OF WATER SUPPLY EXCEPT FROM FIRE-DEPARTMENT CONNECTIONS. INSTALL PERMANENT IDENTIFICATION SIGNS INDICATING PORTION OF SYSTEM CONTROLLED BY EACH VALVE.

6.3. INSTALL VALVES IN LOCATIONS THAT ARE READILY ACCESSIBLE. INSTALL SYSTEM CONTROL VALVES IN AREAS THAT ALLOW FOR SAFE FIRE DEPARTMENT ACCESS DURING EMERGENCY CONDITIONS.

6.4. INSTALL INDICATING VALVES SUCH THAT INDICATOR IS CLEARLY VISIBLE FROM THE FLOOR LEVEL BELOW.

6.5. PIPE PRESSURE RELIEF VALVE- AND AIR RELEASE FITTING-DISCHARGE TO SPRINKLER DRAIN RISERS.

7. SPRINKLER INSTALLATION

7.1. INSTALL SPRINKLERS IN SUSPENDED CEILINGS IN CENTER OF ACOUSTICAL CEILING PANELS WITH NO VISIBLE DEVIATION AND SUCH THAT COVER PLATE OR ESCUTCHEON IS FLUSH AND UNIFORM WITH RESPECT TO PENETRATED CEILING OR WALL FINISH AND COMPLIES WITH MANUFACTURER INSTALLATION REQUIREMENTS.

7.1.1. ADJUSTABLE SPRINKLER DROP NIPPLES ARE NOT PERMITTED.

7.2. DO NOT INSTALL PENDENT OR SIDEWALL, WET-TYPE SPRINKLERS IN AREAS SUBJECT TO FREEZING. INSTALL DRY-TYPE SPRINKLERS WITH WATER SUPPLY FROM HEATED SPACE.

7.3. WHERE PENDENT SPRINKLERS ARE INDICATED FOR DRY-PIPE OR PREACTION SPRINKLER SYSTEMS, USE DRY-TYPE SPRINKLERS.

7.4. PIPING USED FOR SPRINKLER CONNECTION RETURN-BENDS, DROP-NIPPLES, AND RISER-SPRINGS SHALL BE NO SMALLER THAN NPS 1.

7.5. SUPPLY PENDENT SPRINKLERS USING A RETURN-BEND PIPING ARRANGEMENT WITH CONNECTION AT THE TOP OF THE BRANCH PIPE TO PREVENT THE ACCUMULATION OF PIPING CORROSION, SCALE, AND SEDIMENT AT THE SPRINKLER.

7.6. INSTALL SPRINKLERS IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA 13 AND FM GLOBAL REGARDING OBSTRUCTIONS TO SPRINKLER DISCHARGE.

7.7. PROVIDE AND INSTALL GUARDS ON SPRINKLERS SUSCEPTIBLE TO MECHANICAL DAMAGE. AT A MINIMUM PROVIDE GUARDS FOR PENDENT AND UPRIGHT SPRINKLERS LOCATED IN THE FOLLOWING LOCATIONS:

7.7.1. ELECTRICAL ROOMS AND CLOSETS
7.7.2. NEAR ADJACENT TO CEILING MOUNTED EQUIPMENT REQUIRING MAINTENANCE
7.7.3. BENEATH OBSTRUCTIONS SUCH AS DUCTWORK OR CATWALKS
7.7.4. WALK-IN FREEZERS OR COLD ROOMS
7.7.5. BENEATH STAIR LANDINGS.

7.8. WHERE NOT PROVIDED UNDER OTHER SECTIONS OF THE WORK, PROVIDE AND INSTALL NON-COMBUSTIBLE BAFFLES BETWEEN SPRINKLERS LESS THAN 6 FEET APART TO PREVENT COLD-SOLDERING.

7.9. INSTALL FLEXIBLE SPRINKLER CONNECTIONS IN ACCORDANCE WITH MANUFACTURER’S RECOMMENDATIONS.

7.10. BRANCH CONNECTIONS SHALL BE MADE A MINIMUM 45 DEGREES FROM HORIZONTAL. WHERE CONNECTIONS FROM THE SIDE OR BOTTOM OF BRANCH ARE REQUIRED DUE TO COORDINATION, LOCATIONS SHALL BE CLEARLY INDICATED OR SHOP DRAWINGS AND APPROVED BY THE ENGINEER.

8. IDENTIFICATION

8.1. INSTALL LABELING AND PIPE MARKERS ON EQUIPMENT AND PIPING ACCORDING TO NFPA 13 FOR IDENTIFICATION FOR FIRE SUPPRESSION PIPING AND EQUIPMENT.

9. FIELD QUALITY CONTROL

9.1. FLUSH, TEST, AND INSPECT SPRINKLER SYSTEMS ACCORDING TO APPLICABLE NFPA "SYSTEMS ACCEPTANCE" CHAPTER.

9.2. HYDROSTATICALLY TEST SYSTEM PIPING IN ACCORDANCE WITH THE APPLICABLE NFPA WATER-BASED FIRE SUPPRESSION SYSTEM DESIGN AND INSTALLATION STANDARDS. REPAIR LEAKS AND RETEST UNTIL NO LEAKS EXIST.

9.3. INSPECT SYSTEM COMPONENTS IN ACCORDANCE WITH THE APPLICABLE NFPA WATER-BASED FIRE SUPPRESSION SYSTEM DESIGN AND INSTALLATION STANDARDS. ADJUST SETTINGS OR REPLACE DAMAGED OR MALFUNCTIONING COMPONENTS AND RETEST UNTIL PROPER OPERATION IS ACHIEVED.

9.4. FUNCTIONALLY TEST WATER-BASED FIRE SUPPRESSION SYSTEMS, INCLUDING REQUIRED FULL-FLOW TESTS, IN ACCORDANCE WITH THE APPLICABLE NFPA WATER-BASED FIRE SUPPRESSION SYSTEM DESIGN AND INSTALLATION STANDARDS. COMBINE TESTS TO CONSERVE WATER. CORRECT DEFICIENCIES AND RETEST SATISFACTORY RESULTS ARE ACHIEVED.

9.5. WATER-BASED FIRE SUPPRESSION SYSTEM WILL BE CONSIDERED DEFECTIVE IF IT DOES NOT PASS TESTS AND INSPECTIONS.

9.6. PREPARE TEST AND INSPECTION REPORTS. USE NFPA “CONTRACTOR’S MATERIAL AND TEST CERTIFICATE” FORMAT.

10. CLEANING

10.1. CLEAN DIRT AND DEBRIS FROM SYSTEM COMPONENTS. REMOVE AND REPLACE SPRINKLERS WITH PAINT OTHER THAN FACTORY FINISH OR SIMILAR.

11. DEMONSTRATION

11.1. TRAIN OWNER’S MAINTENANCE PERSONAL TO ADJUST, OPERATE, AND MAINTAIN WATER-BASED FIRE SUPPRESSION SYSTEMS.

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :
VANDERWEIL
R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210
P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:
Signed by:
Brian Cielinski
39596D740E894F0...
Registered Professional Engineer (Fire Protection)
CERTIFICATE NO.
82048
BRIAN
CIELINSKI
Date Signed
ARIZONA, U.S.A.
12/19/2024

General Notes:

Project Title:
Fidelity Investments
Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project No.: C0115.00

Drawing Sheet Title:
FIRE PROTECTION - SPECIFICATIONS

Drawing Sheet Number:
FP-003

Owner's Branch No.:
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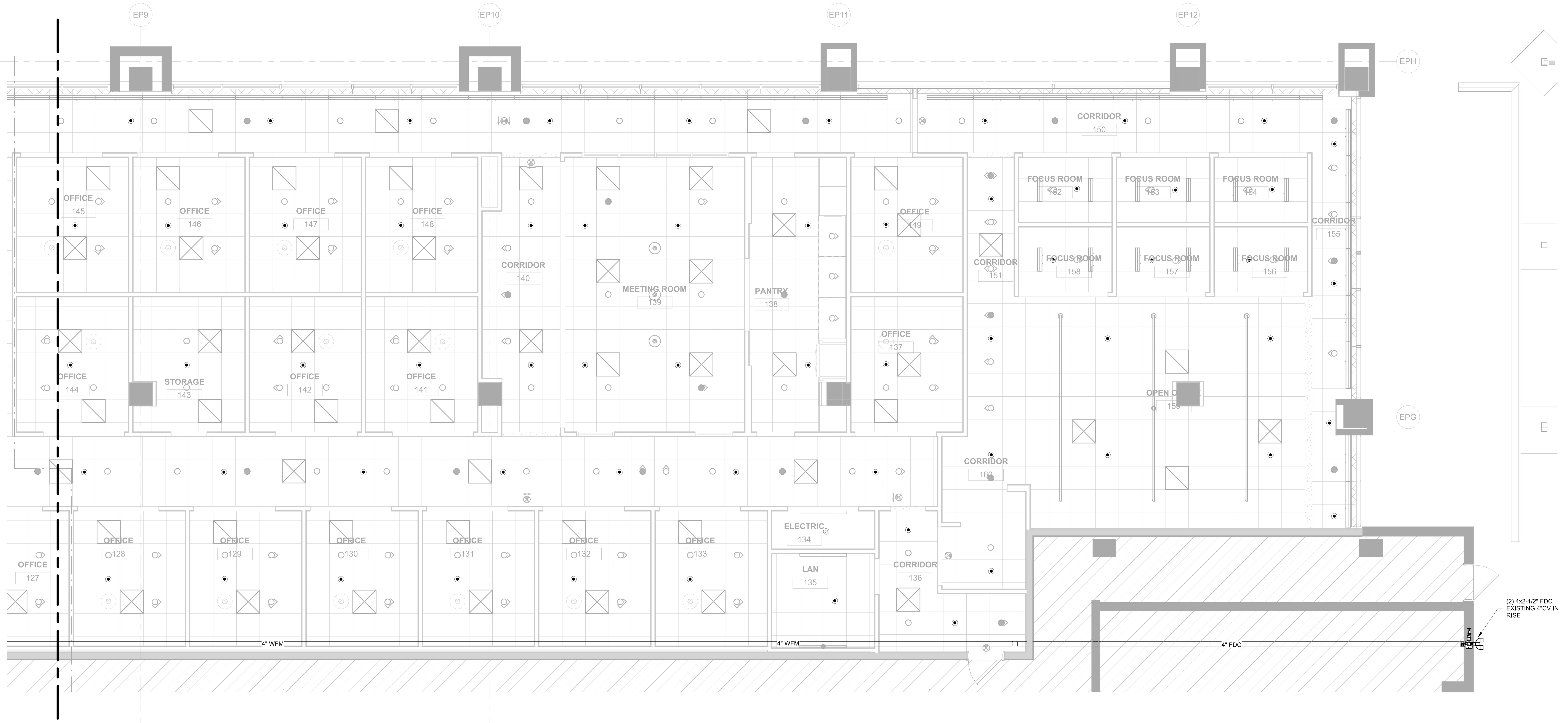
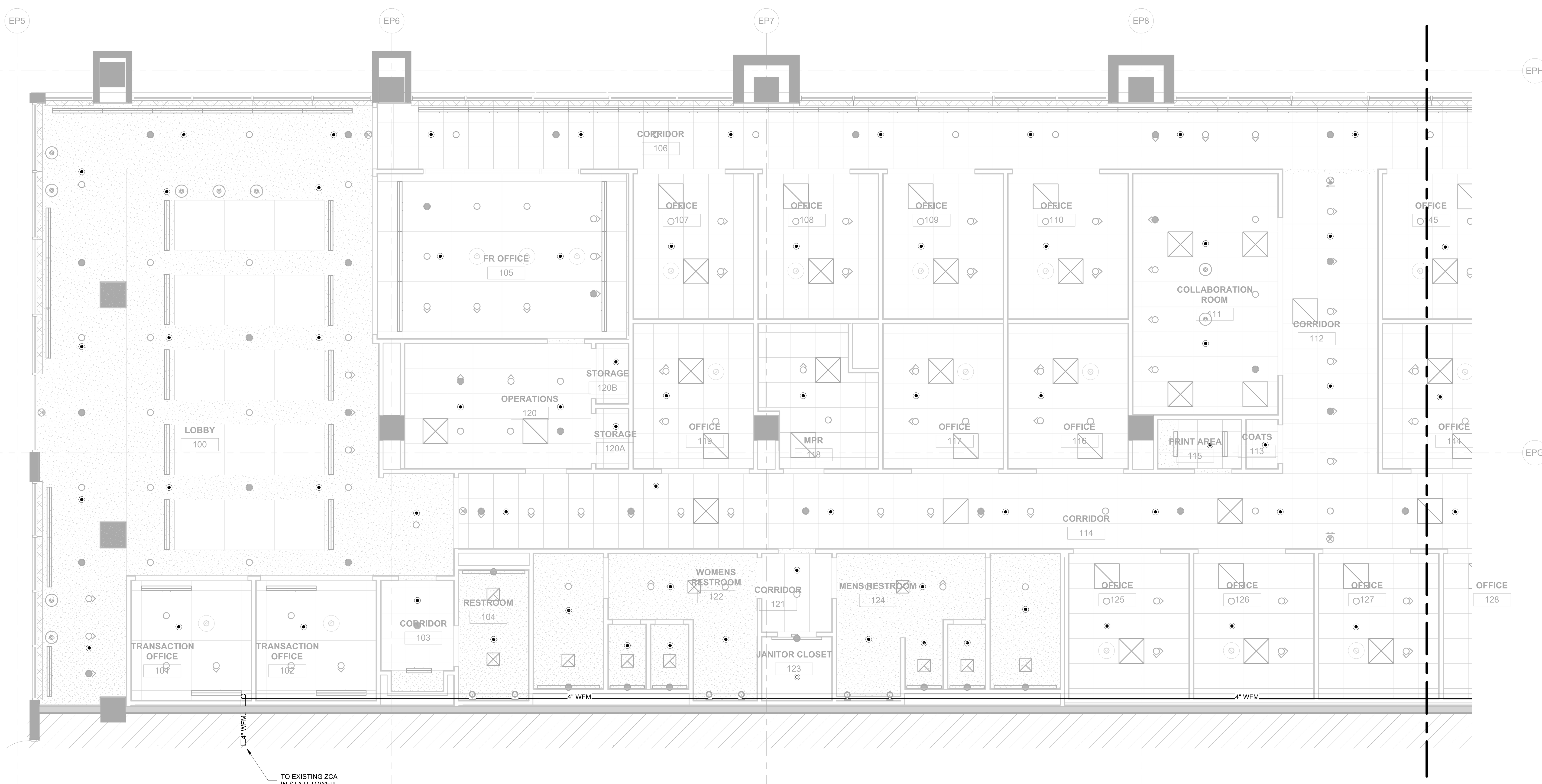


3 FIRE PROTECTION - LEVEL ONE EAST
1/4" = 1'-0"



1 FIRE PROTECTION - LEVEL ONE WEST
1/4" = 1'-0"

GENERAL NOTES:

A. PROVIDE SPRINKLER PROTECTION THROUGHOUT IN ACCORDANCE WITH NFPA 13. IN AREAS WHERE FIRE SUPPRESSION OR ARCHITECTURAL DRAWINGS INDICATE SPRINKLER LOCATIONS, COMPLY WITH THE DESIGN INTENT INDICATED BY THE DRAWINGS AND NFPA 13. IN AREAS WHERE FIRE SUPPRESSION OR ARCHITECTURAL DRAWINGS DO NOT INDICATE SPRINKLER LOCATIONS, COMPLY WITH NFPA 13.

B. REFER TO ARCHITECTURAL & STRUCTURAL SERIES DRAWINGS FOR STRUCTURAL FRAMING PLANS, DETAILED REFLECTED CEILING PLANS, ELEVATIONS, AND SECTIONS.

C. IN AREAS WITH FINISHED CEILINGS, LOCATE SPRINKLERS IN THE CENTER OF SUSPENDED CEILING TILES, ALONG THE CENTER-LINE OF CEILING FEATURES AND IN-LINE WITH ADJACENT CEILING FIXTURES.

D. IN AREAS OPEN TO STRUCTURE ABOVE, LOCATE SPRINKLERS WITHIN BEAM POCKETS AND MAINTAIN SPRINKLER CLEARANCE FROM STRUCTURAL MEMBERS IN ACCORDANCE WITH NFPA 13.

E. LOCATE SPRINKLERS WITH RESPECT TO CEILING AND FLOOR MOUNTED OBSTRUCTIONS SIMILAR TO (BUT NOT LIMITED TO) SHELVING, ROOM DIVIDERS, LIGHT FIXTURES, EXIT SIGNS, SOFFITS AND CHANGES IN CEILING ELEVATION AND MAINTAIN CLEARANCE IN ACCORDANCE WITH NFPA 13.

F. SHOP DRAWINGS INCLUSIVE OF SPRINKLER AND BRANCH PIPING LAYOUTS AND CORRESPONDING HYDRAULIC CALCULATIONS SHALL BE PREPARED BY THE INSTALLER'S QUALIFIED ENGINEERING TECHNICIAN. SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW AND SHALL BE USED FOR FIRE PROTECTION SYSTEM INSTALLATION PERMITS.

G. PROVIDE NEW SPRINKLER HEADS WITHIN THE AREA OF SCOPE BASED ON SPRINKLER HEAD LAYOUT AS SHOWN. NEW SPRINKLER HEAD LAYOUTS SHALL BE CONNECTED TO THE EXISTING SPRINKLER MAINS, NEW BRANCHLINES SHALL BE RUN TO NEW SPRINKLER HEAD LOCATIONS.

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :
VANDERWEIL
R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210
P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals: Signed by: Brian Cielinski 39596D740E894F0...
Registered Professional Engineer (Fire Protection) CERTIFICATE NO. 82048 BRIAN CIELINSKI Date Signed ARIZONA, U.S.A.
12/19/2024

General Notes:

Project Title:
Fidelity INVESTMENTS
Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

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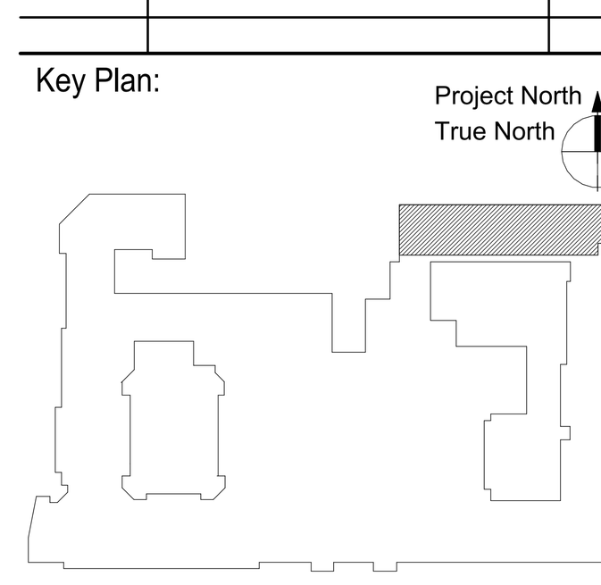

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FIRE PROTECTION - LEVEL 1

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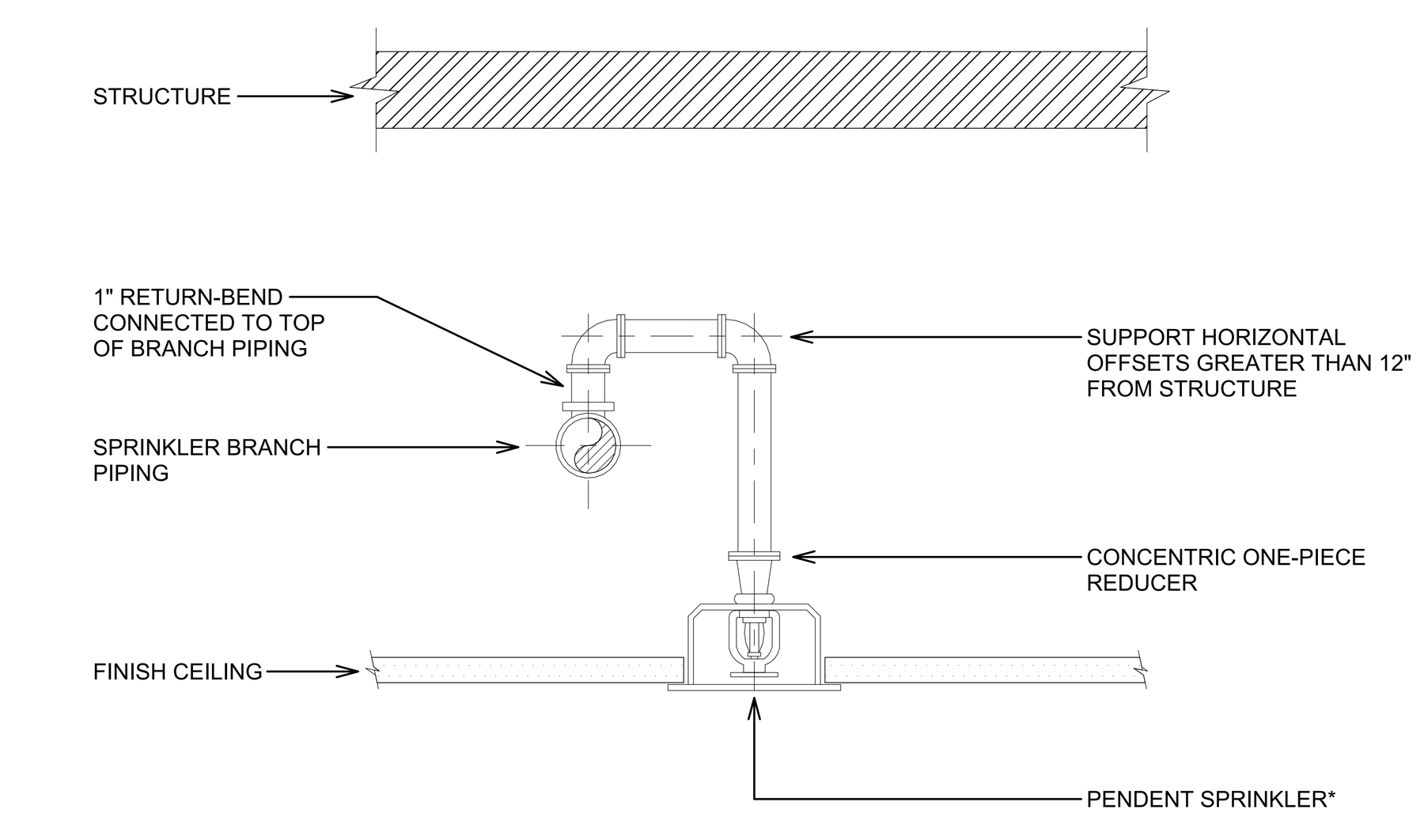

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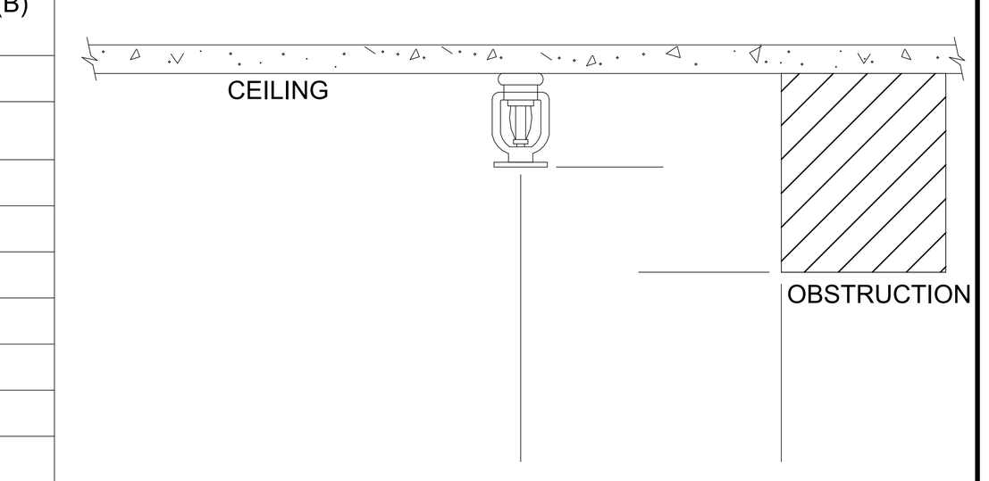
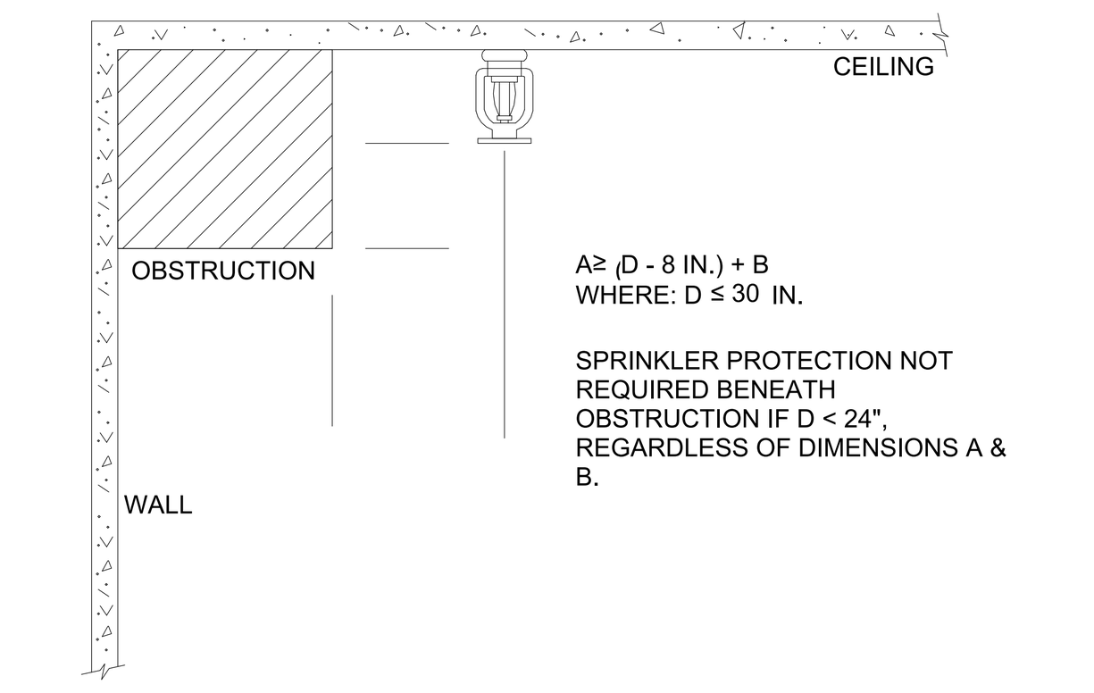
01 RETURN-BEND PIPING
SCALE: NONE

NFPA 13 POSITIONING OF SPRINKLER TO AVOID OBSTRUCTION TO DISCHARGE	
DISTANCE FROM SPRINKLERS TO SIDE OF OBSTRUCTION (A)	MAXIMUM ALLOWABLE DISTANCE OF DEFLECTOR ABOVE BOTTOM OF OBSTRUCTION (INCHES) (B)
LESS THAN 1 FT	0
1'-0" TO LESS THAN 1'-6"	0'-2 1/2"
1'-6" TO LESS THAN 2'-0"	0'-3 1/2"
2'-0" TO LESS THAN 2-6'"	0'-5 1/2"
2'-6" TO LESS THAN 3'-0"	0'-7 1/2"
3'-0" TO LESS THAN 3'-6"	0'-9 1/2"
3'-6" TO LESS THAN 4'-0"	1'-0"
4'-0" TO LESS THAN 4'-6"	1'-2"
4'-6" TO LESS THAN 5'-0"	1'-4 1/2"
5'-0" TO LESS THAN 5'-6"	1'-6"
5'-6" TO LESS THAN 6'-0"	1'-8"
6'-0" TO LESS THAN 6'-6"	2'-0"
6'-6" TO LESS THAN 7'-0"	2'-6"
7'-0" TO LESS THAN 7'-6"	2'-11"



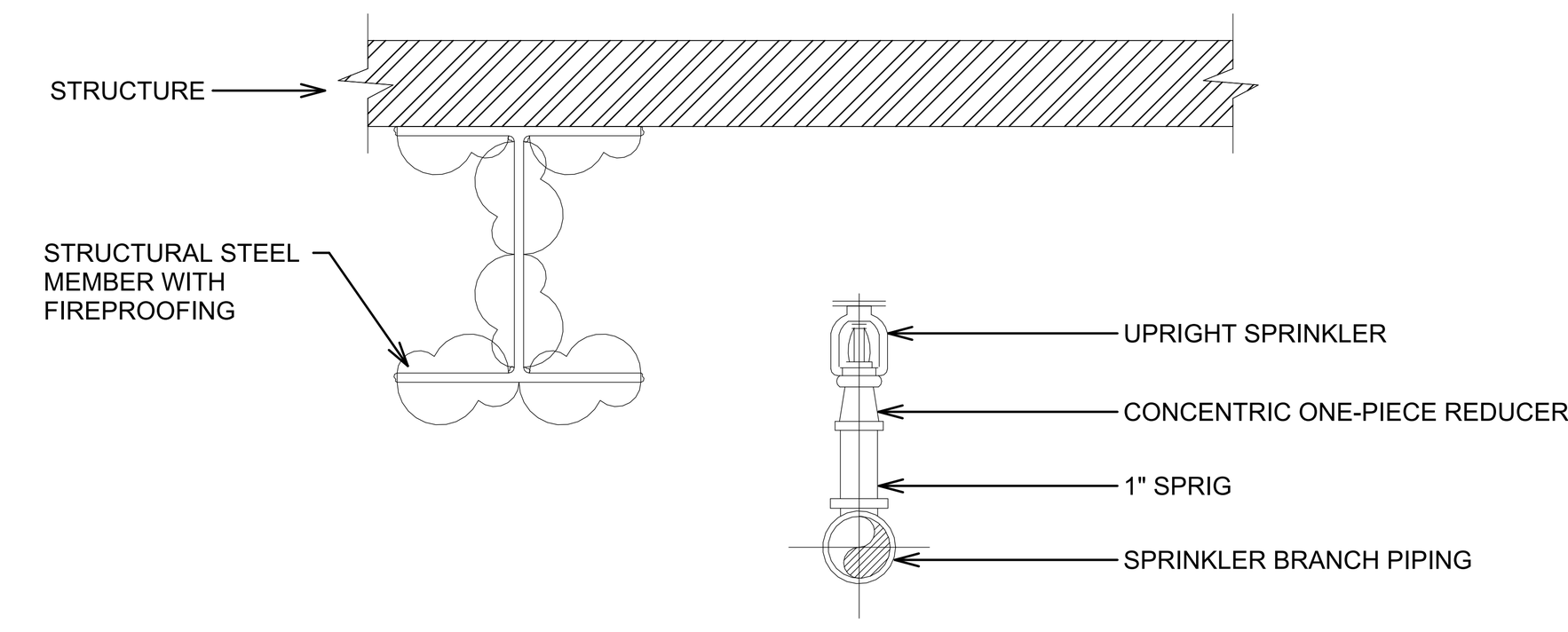
02 STANDARD SPRAY PENDENT SPRINKLER CLEARANCE TO CEILING OBSTRUCTION
SCALE: NONE



A≥ (D - 8 IN.) + B
WHERE: D ≤ 30 IN.

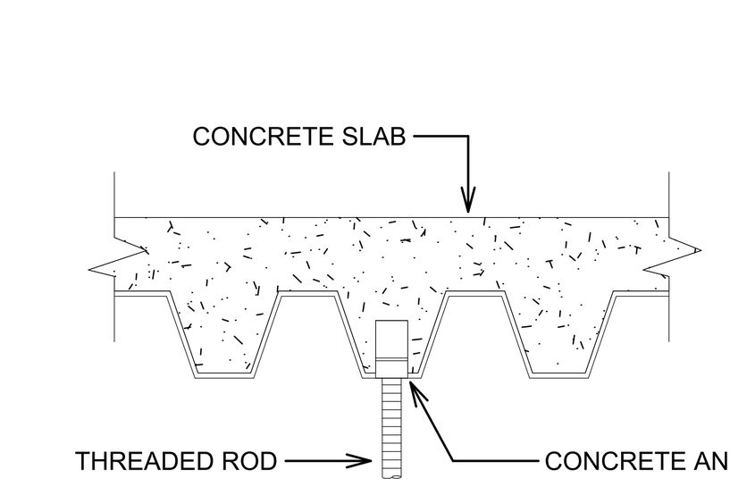
SPRINKLER PROTECTION NOT REQUIRED BENEATH OBSTRUCTION IF D < 24", REGARDLESS OF DIMENSIONS A & B.

03 STANDARD SPRAY PENDENT SPRINKLER CLEARANCE TO CEILING OBSTRUCTION ALONG WALL
SCALE: NONE

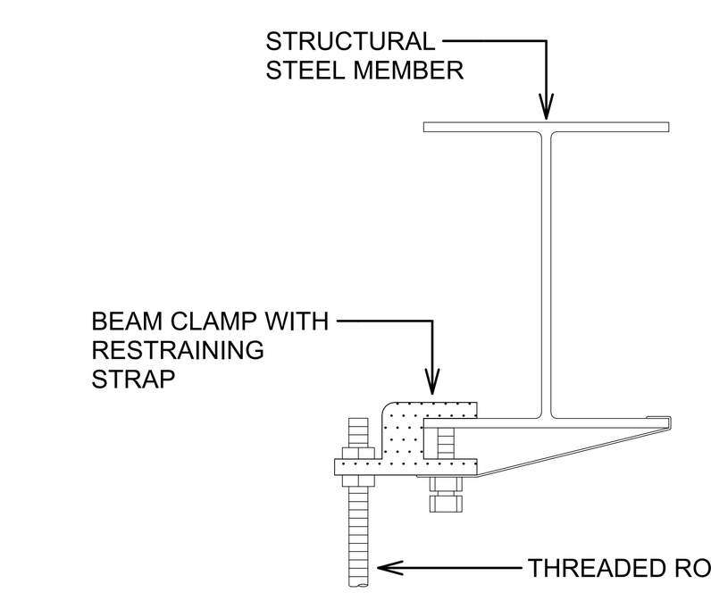


*POSITION DEFLECTOR WITH RESPECT TO STRUCTURAL ELEMENTS PER NFPA 13 REQUIREMENTS FOR CONSTRUCTION TYPE.

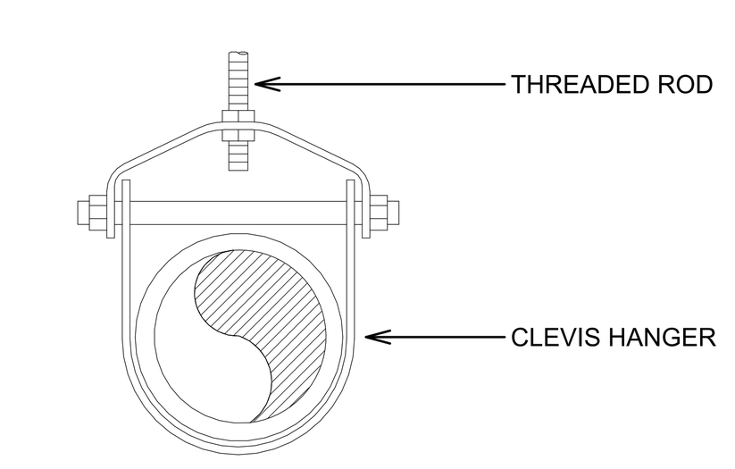
04 UPRIGHT SPRINKLER
SCALE: NONE



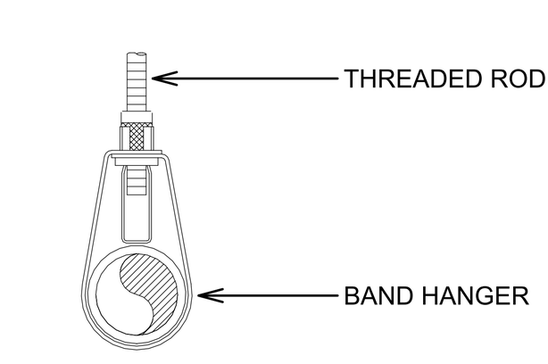
ATTACHMENT TO CONCRETE STRUCTURE



ATTACHMENT TO STEEL STRUCTURE



PIPE HANGERS FOR NPS 4" AND LARGER



PIPE HANGERS FOR NPS 3" AND SMALLER

NOTE: SPRINKLER PIPING SHALL NOT BE SUPPORTED FROM METAL ROOF DECKING

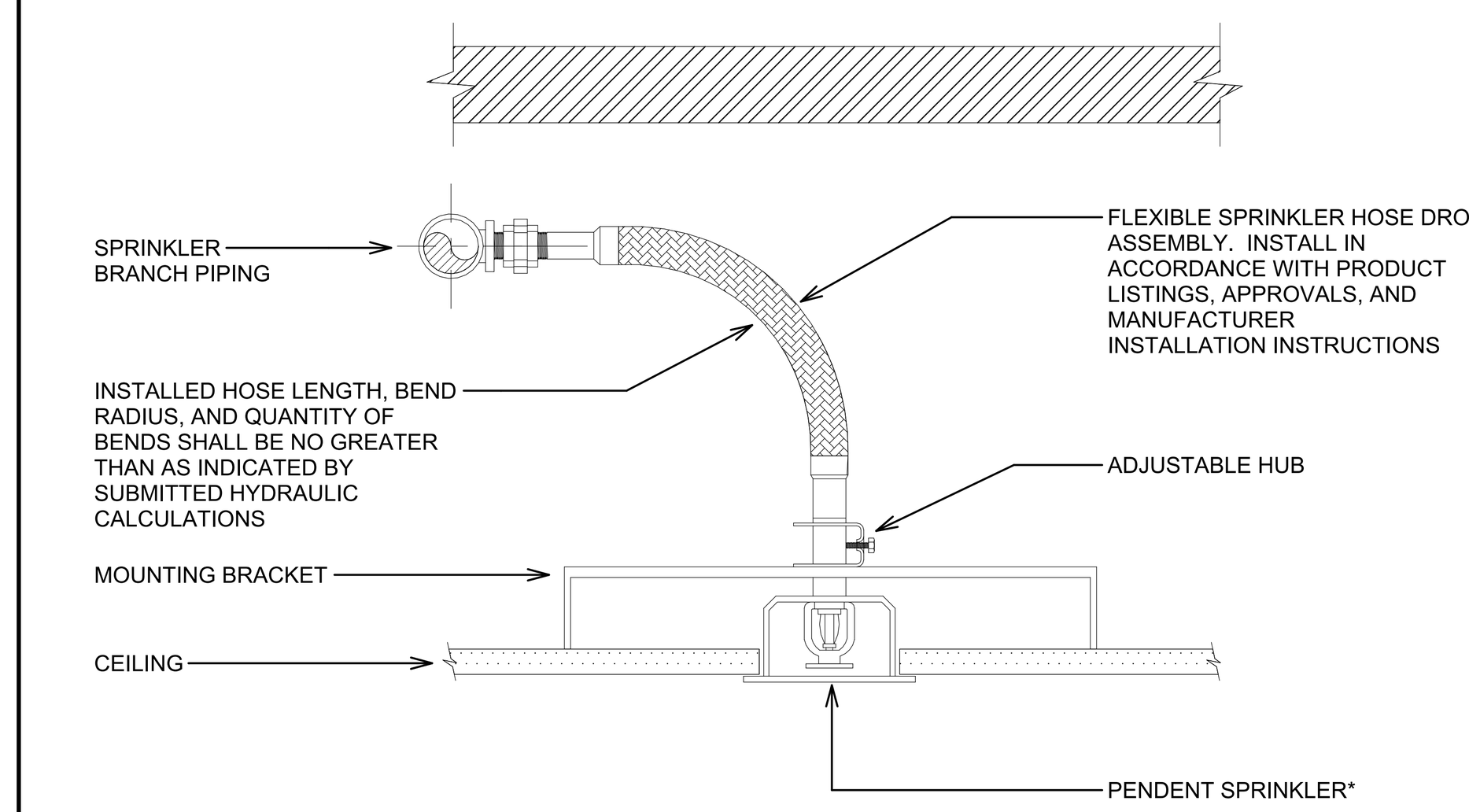
NFPA 13 MINIMUM REQUIRED HANGER ROD SIZES	
PIPE SIZE	DIAMETER OF ROD
UP TO AND INCLUDING 4"	3/8"
5", 6", 8"	1/2"
10", 12"	5/8"

SURGE RESTRAINT

PROVIDE SURGE RESTRAINT AT HANGER VIA RESTRAINT CLIP OR THREADED ROD EXTENSION TO PIPE SURFACE AS REQUIRED BY NFPA 13.

1. END OF BRANCH PIPING WHERE MAXIMUM SYSTEM PRESSURE EXCEEDS 100 PSI.
2. RETURN BEND OFFSETS GREATER THAN 12" WHERE MAXIMUM SYSTEM PRESSURE EXCEEDS 100 PSI.
3. RETURN BEND OFFSETS GREATER THAN 24"

05 PIPING SUPPORT
SCALE: NONE



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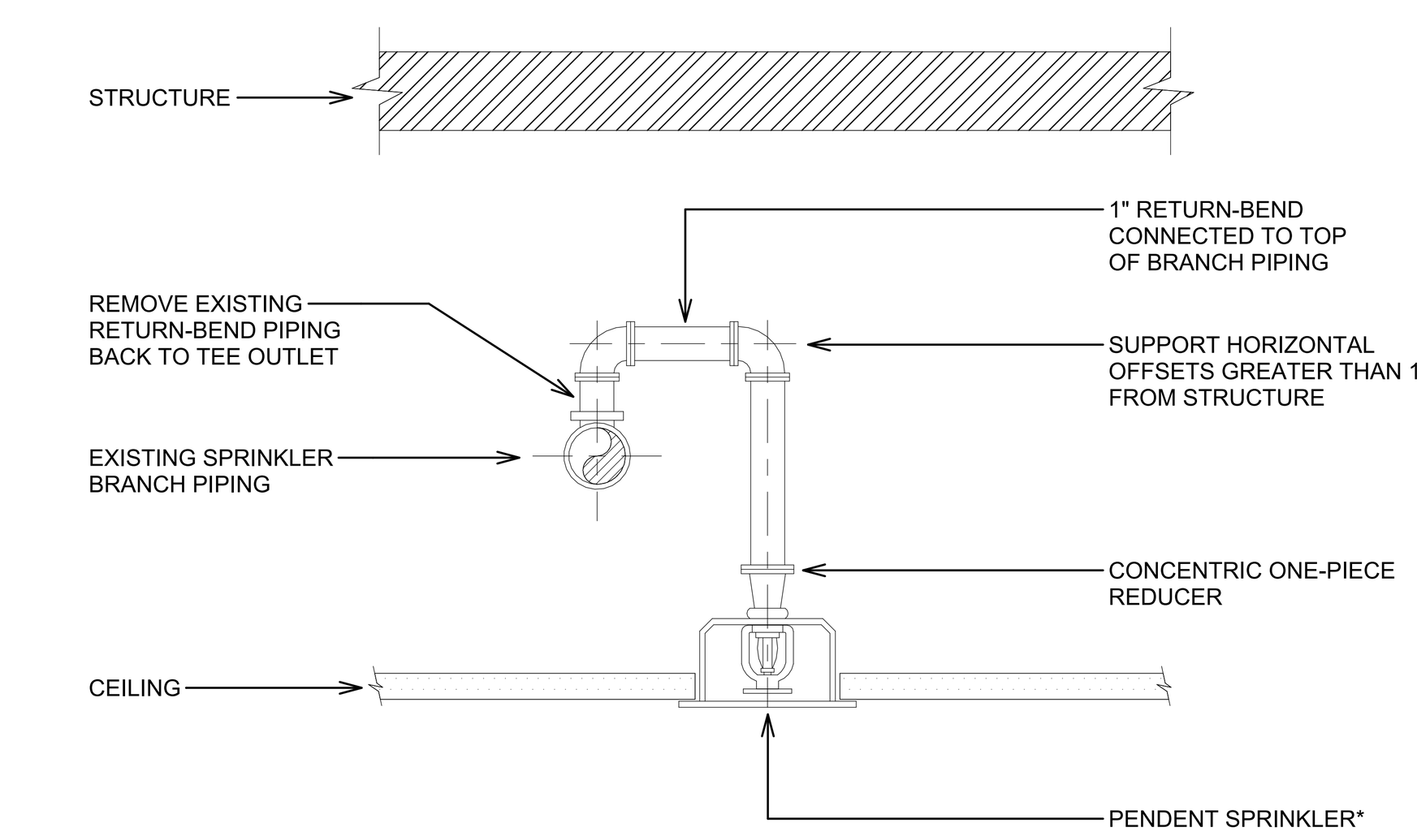
06 FLEXIBLE SPRINKLER HOSE DROP
SCALE: NONE



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07 RETURN-BEND PIPING CONNECTED TO EXISTING BRANCH PIPING
SCALE: NONE

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :
VANDERWEIL
R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210
P 617-423-7423
F 617-423-7501
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Seals:
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39596D740E894F0...
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Fidelity INVESTMENTS
Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

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Drawing Sheet Title:
FIRE PROTECTION - DETAILS

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DUCTWORK

SINGLE LINE		DOUBLE LINE
	EXISTING DUCT LINETYPE	
	NEW DUCT LINETYPE	
	HORIZONTAL OFFSET SUPPLY/RETURN /EXHAUST	
RISE/DROP	RISE OR DROP SUPPLY/RETURN/ EXHAUST	RISE/DROP
	STANDARD RADIUS ELBOW (R = W) SUPPLY/RETURN EXHAUST	R = W
	BULLHEAD SPLIT SUPPLY	GOOD FOR TAKEOFF TO RING DUCT
	TAKEOFF TO DIFF/GRILLE W/BRANCH TAKE-OFF VOLUME DAMPER	HARD ELBOW
	CEILING DUCT MTD DIFF/GRILLE W/BRANCH TAKE-OFF VOLUME DAMPER	
	ACOUSTICALLY LINED DUCT	
OR	EXISTING DUCT TO BE REMOVED	OR
	OPEN END DUCT W/VD & 1/2"x1/2" WMS	
	FLEXIBLE DUCT	

SINGLE LINE		DOUBLE LINE
	ROUND SUPPLY DUCT UP	
	ROUND SUPPLY DUCT DOWN	
	RECTANGULAR SUPPLY DUCT UP	
	RECTANGULAR SUPPLY DUCT DOWN	
	ROUND RETURN DUCT UP	
	ROUND RETURN DUCT DOWN	
	RECTANGULAR RETURN DUCT UP	
	RECTANGULAR RETURN DUCT DOWN	
	ROUND EXHAUST DUCT UP	
	ROUND EXHAUST DUCT DOWN	
	RECTANGULAR EXHAUST DUCT UP	
	RECTANGULAR EXHAUST DUCT DOWN	
	90° TAKE-OFF W/BRANCH TAKE-OFF VOLUME DAMPER (VD IN LOW PRESSURE SYSTEMS ONLY)	RING DUCT
	BULLHEAD CONVERGE RETURN/EXHAUST W/BRANCH TAKE-OFF VOLUME DAMPER	
	SIDEWALL DUCT MTD REGISTER/GRILLE W/BRANCH TAKE-OFF VOLUME DAMPER	
	SUPPLY SIDEWALL LINEAR DIFFUSER (W/ 1" INTERNALLY LINED SM PLENUM) BRANCH CONN W/VD FOR EVERY 4' OF LINEAR	
	SUPPLY CEILING LINEAR DIFFUSER (W/ 1" INTERNALLY LINED SM PLENUM) BRANCH CONN W/VD FOR EVERY 4' OF LINEAR	BOOT BY LD MFR

AVS	AIR VOLUME TRAVERSE STATION	OR	ROOF EXHAUST FAN SHOWN ON ROOF
SGD	SLIDE GATE DAMPER	OR	ROOF EXHAUST FAN SHOWN ON FLOOR PLAN
VD	MANUAL VOLUME DAMPER	UC 1/2"	UNDERCUT DOOR
FD	SELF-CLOSING FIRE DAMPER W/ACCESS DOOR	LVDR 1.5 SF	LOUVERED DOOR
ACD	AUTOMATIC CONTROL DAMPER W/ACCESS DOOR		RETURN OR EXHAUST AIR FLOW
SD	AUTOMATIC SMOKE DAMPER W/ACCESS DOOR		SUPPLY AIR FLOW
FSD	COMBINATION SMOKE/FIRE DAMPER W/ACCESS DOOR		
BDD	BACKDRAFT DAMPER		
	STANDARD 4-WAY BLOW SUPPLY DIFFUSER		
	BLANKED FOR 3-WAY BLOW SUPPLY DIFFUSER		
OR	BLANKED FOR 2-WAY BLOW SUPPLY DIFFUSER		
	BLANKED FOR 1-WAY BLOW SUPPLY DIFFUSER		

GENERIC HVAC ABBREVIATIONS (REFER TO CONTROL ABBREVIATIONS FOR ADDITIONAL NOMENCLATURE)

°F	DEGREES FAHRENHEIT
°C	DEGREES CELSIUS
Ø	DIAMETER
ACV	AUTOMATIC CONTROL VALVE
AD	ACCESS DOOR
ADJ	ADJUSTABLE
ADDL	ADDITIONAL
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ALT	ALTERNATE
AP	ACCESS PANEL
ARCH	ARCHITECT
ATC	AUTOMATIC TEMPERATURE CONTROL
ATCC	ATC COMPRESSOR
ATCD	ATC COMPRESSOR DRYER
ATCR	ATC COMPRESSOR RECEIVER
ATV	ATMOSPHERIC VENT
AVG	AVERAGE
BBD	BOILER BLOW DOWN
BDT	BLOWDOWN TANK
BF	BOILER FEED WATER
BFF	BELOW FINISHED FLOOR
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BLR	BOILER
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BSMT	BASEMENT
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
C	CONVECTOR
CA	COMPRESSED AIR
CF	CEILING FAN
CL	CENTERLINE
CLG	CEILING
CO	CLEAN-OUT
COL	COLUMN
COMP	COMPRESSOR
CONC	CONCRETE
CONN	CONNECTION
CONTR	CONTRACTOR
CORR	CORRIDOR
CUF	CUBIC FEET
CUH	CABINET UNIT HEATER
CYL	CYLINDER
D	DRAIN
DB	DRY BULB TEMPERATURE
DC	DRY COOLER
DDC	DIRECT DIGITAL CONTROL
DDCFP	DIRECT DIGITAL CONTROL FIELD PANEL
DIA	DIAMETER
DIM	DIMENSION
DN	DOWN
DWG	DRAWING
EA	EACH
EAT	ENTERING AIR TEMPERATURE
EFF	EFFICIENCY
ECUH	ELECTRIC CABINET UNIT HEATER
ELEC	ELECTRICAL
ELEV	ELEVATION
EMER	EMERGENCY
EMS	ENERGY MANAGEMENT SYSTEM
ENT	ENTERING
EQUIP	EQUIPMENT
EUH	ELECTRIC UNIT HEATER
EXH	EXHAUST
EXP	EXPANSION
FTR	FINNED TUBE RADIATION
FCV	FLOW CONTROL VALVE
FFOP	FIREFIGHTERS OVERRIDE PANEL
FG	FIBERGLASS
FLEX	FLEXIBLE
FLR	FLOOR
FLRDR	FLOOR DRAIN
FP	FIRE PROTECTION
FPM	FEET PER MINUTE
FT	FEET
FT/SEC	FEET PER SECOND
FURN	FURNISHED
FVNR	FULL VOLTAGE NON-REVERSING
G	GAS
GA	GAUGE
GAL	GALLONS
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GND	GROUND
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GRD	GRADE (GROUND LEVEL)
GWB	GYPSUM WALL BOARD
H	HEIGHT
HCPD	HANDICAPPED
HD	HEAD
HP	HORSEPOWER
HPG	HIGH PRESSURE GAS
HR	HOUR
HZ	HERTZ
HX	HEAT EXCHANGER
ID	INSIDE DIAMETER
IN	INCHES
INSUL	INSULATION
KW	KILOWATT
KVA	KILOVOLT AMPERE
L	LENGTH
LB	POUND
LAB	LABORATORY
LF	LINEAR FEET
LVG	LEAVING
M	ONE THOUSAND
MAX	MAXIMUM
MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
MCA	MINIMUM CIRCUIT AMPS
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL
MEZZ	MEZZANINE
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MTD	MOUNTED
MU	MAKEUP WATER
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NC	NOISE CRITERIA
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NO.	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
OB	OCTAVE BAND
OC	ON CENTER
OD	OUTSIDE DIAMETER
ODP	OPEN DRIP PROOF
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED OWNER INSTALLED
OV	OUTLET VELOCITY
PCF	POUNDS PER CUBIC FOOT
PD	PRESSURE DROP
PH	PHASE
PLBG	PLUMBING
POS	PROVIDED BY OTHER SECTION(S)
PRESS	PRESSURE
PRIM	PRIMARY
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSID	POUNDS PER SQUARE INCH DIFFERENTIAL
PSIG	POUNDS PER SQUARE INCH GAUGE
PVC	POLYVINYL CHLORIDE
REP	REPRESENTATIVE
RET	RETURN
REQD	REQUIRED
REQS	REQUIREMENTS
RH	RELATIVE HUMIDITY
RM	ROOM
RPM	REVOLUTIONS PER MINUTE
SCH	SCHEDULE
SOV	SOLENOID OPERATED VALVE
SPECS	SPECIFICATIONS
SQ	SQUARE
SQFT	SQUARE FEET
SS	STAINLESS STEEL
STD	STANDARD
STDBY	STANDBY
STL	STEEL
SUCT	SUCTION
SUP	SUPPLY
TA	THROW-AWAY
TAV	THERMOSTATIC AIR VENT
TEFC	TOTALLY ENCLOSED FAN COOLED
TEL	TELEPHONE
TEMP	TEMPERATURE
TOD	TOP OF DUCT
TOP	TOP OF PIPE
TYP	TYPICAL
UH	UNIT HEATER
V	VENT
VEL	VELOCITY
VERT	VERTICAL
VFC	VARIABLE FREQUENCY CONTROLLER
VTR	VENT THROUGH ROOF
W	WIDTH
W/	WITH
W/O	WITHOUT
WB	WET BULB TEMPERATURE
WF	WIDE FLANGE
WG	WATER GAUGE
WRT	WITH RESPECT TO
X	EXISTING EQUIPMENT TO BE REMOVED
XM	EXISTING EQUIPMENT TO REMAIN
XN	NEW LOCATION OF RELOCATED EQUIPMENT
XR	EXISTING EQUIPMENT TO BE RELOCATED

AIR SYSTEM SPECIFIC ABBREVIATIONS

AC	AIR CONDITIONING
ACC	AIR COOLED CONDENSER
ACCU	AIR COOLED CONDENSING UNIT
ACD	AUTOMATIC CONTROL DAMPER
ACU	AIR CONDITIONING UNIT
AF	AIR FOIL
AHU	AIR HANDLING UNIT
ALD	ACOUSTICALLY LINED DUCTWORK
ATD	AIR TERMINAL DEVICE
AVS	AIR VOLUME TRAVERSE STATION
BDD	BACKDRAFT DAMPER
BI	BACKWARD INCLINED
BOD	BOTTOM OF DUCT
CACU	COMPUTER ROOM AIR CONDITIONING UNIT
CC	COOLING COIL
CD	CEILING DIFFUSER
CFM	CUBIC FEET PER MINUTE
CG	CEILING GRILLE
DD	DUAL DUCT SUPPLY AIR TERMINAL
DIFF	DIFFUSER
DWDI	DOUBLE WIDTH DOUBLE INLET
DWSI	DOUBLE WIDTH SINGLE INLET
DX	DIRECT EXPANSION
EF	EXHAUST FAN
EG	EXHAUST GRILLE
EHC	ELECTRICAL HEATING COIL
EPHC	ELECTRIC PREHEAT COIL
ER	EXHAUST REGISTER
ERHC	ELECTRIC REHEAT COIL
ESP	EXTERNAL STATIC PRESSURE
F	FAN
F&B	FACE AND BYPASS
FB	FAN BOX
FC	FORWARD CURVED
FA	FREE AREA
FCU	FAN COIL UNIT
FD	FIRE DAMPER (W/ ACCESS DOOR)
FLTR	FILTER
FPI	FINS PER INCH
FSD	COMBINATION AUTOMATIC FIRE/SMOKE DAMPER WITH ACCESS DOOR
GE	GENERAL EXHAUST
GH	GRAVITY HOOD
HC	HEATING COIL
HPU	HEAT PUMP UNIT
HRU	HEAT RECOVERY UNIT
HV	HEATING & VENTILATING UNIT
HU	HUMIDIFIER
IH	INTAKE HOOD
LAT	LEAVING AIR TEMPERATURE
LD	LINEAR DIFFUSER
LUVR	LOUVER
LVDR	LOUVERED DOOR
OA	OUTSIDE AIR
OAI	OUTSIDE AIR INTAKE
OBD	OPPOSED BLADE DAMPER
OED	OPEN END DUCT
PHC	PREHEAT COIL
RA	RETURN AIR
RD	REFRIGERANT DISCHARGE (HOT GAS)
RF	RETURN FAN
RG	RETURN GRILLE
RHC	REHEAT COIL
RL	REFRIGERANT LIQUID
RLF	RELIEF
RR	RETURN REGISTER
RS	REFRIGERANT SUCTION
RTU	ROOF TOP UNIT
RV	ROOF VENT
SA	SUPPLY AIR
SATT	SOUND ATTENUATOR
SCR	SCREEN
SD	SMOKE DAMPER
SDET	SMOKE DETECTOR
SEF	SMOKE EXHAUST FAN
SF	SUPPLY FAN
SG	SUPPLY GRILLE
SGD	SLIDE GATE DAMPER
SM	SHEETMETAL
SP	STATIC PRESSURE
SR	SUPPLY REGISTER
SWDI	SINGLE WIDTH DOUBLE INLET
SWSI	SINGLE WIDTH SINGLE INLET
TE	TOILET EXHAUST
TF	TRANSFER FAN
TG	TRANSFER GRILLE
TR	TRANSFER
TSP	TOTAL STATIC PRESSURE
UC	UNDERCUT DOOR
VD	VOLUME DAMPER
VV	VARIABLE VOLUME SUPPLY AIR TERMINAL BOX
VVE	VARIABLE VOLUME EXHAUST AIR TERMINAL BOX
WMS	WIRE MESH SCREEN

HVAC SHEET LIST

SHEET NUMBER	SHEET NAME
M-001	HVAC GENERAL NOTES & ABBREVIATIONS
M-003	HVAC DIVISION 20 SPECIFICATIONS
M-004	HVAC DIVISION 23 SPECIFICATIONS
M-201	HVAC DUCTWORK - LEVEL 1
M-203	HVAC - ROOF
M-301	HVAC PIPING - LEVEL 1
M-501	HVAC DETAILS
M-601	HVAC SCHEDULES
M-602	HVAC VRF DIAGRAM
M-801	HVAC CONTROLS

EQUIPMENT TAG SYMBOLS & ABBREVIATIONS

EQUIPMENT NOT REQUIRING ELECTRIC SERVICE — TAG / NO / TAG DATA / DATA (DATA) → SEE SCHEDULE FOR PERFORMANCE REQUIREMENTS → TAG / NO / TAG DATA / DATA (DATA) → EQUIPMENT REQUIRING ELECTRIC SERVICE

EXAMPLE EQUIPMENT TAGS:

- ACU 1 — DX INDOOR UNIT
- ACCU 1 — DX OUTDOOR UNIT
- EUH 1 — UNIT HEATER
- EHC 1 — ELECTRIC DUCT HEATER

CALL OUT SYMBOLS

- POINT OF CONNECTION TO EXISTING
- POINT OF DISCONNECTION FROM EXISTING
- 1 / HS.1 — SECTION DESIGNATION / SHEET NUMBER
- 1 / HS.1 — DETAIL DESIGNATION / SHEET NUMBER
- 1 — REVISION NUMBER
- EQUIPMENT ACCESS ZONE
- REFER TO DRAWINGS (XXX) FOR CONTINUATION
- SYMBOL DESIGNATES ASSOCIATED SYSTEM OR SERVICE (ie LPS)
- DIFFUSER, GRILLE, REGISTER LETTER DESIGNATOR (See schedule for ATD type)
- DESIGN CFM
- A(200) / (200) — ALTERNATE CFM LOCATION

REFER TO CONTROLS LEGEND SHEET FOR SYMBOLS USED ON FLOOR PLANS TO INDICATE LOCATION OF TEMPERATURE SENSORS, PRESSURE SENSORS AND GAS SENSORS (E.G. CARBON DIOXIDE)

HVAC GENERAL NOTES

GENERAL

1. HVAC GENERAL NOTES, SYMBOLS LIST AND DETAILS ARE APPLICABLE TO ALL "M" SERIES DRAWINGS.
2. DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO INDICATE CAPACITY, SIZE, APPROXIMATE LOCATION AND GENERAL ARRANGEMENT. DETERMINE EXACT LOCATIONS OF SYSTEMS AND COMPONENTS IN FIELD.
3. DRAWINGS CANNOT BE FULLY AND CORRECTLY INTERPRETED WITHOUT REFERENCE TO LEGENDS, DETAILS, SCHEDULES AND SPECIFICATIONS. IT IS THE INTENT OF THE DRAWINGS TO SHOW THE INSTALLATION, AS DETAILED BY THE TYPICAL ARRANGEMENT. ITEMS SHOWN ONCE ON THE FLOOR PLANS, ELEVATIONS, DETAILS, OF DIAGRAMS MAY NOT BE REPEATED IN FULL FOR OTHER TYPICAL INSTANCES.
4. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
5. COORDINATE ROOF AND WALL PENETRATIONS WITH WORK OF OTHER SECTIONS AND WITH FLASHING REQUIREMENTS. COORDINATE SLAB PENETRATIONS WITH WORK OF OTHER SECTIONS AND WITH EXISTING POST-TENSION CABLES.
6. RUN DUCTS AND PIPING CONCEALED, UNLESS SPECIFIED OTHERWISE, AND CLEAR OF CEILING INSERTS. ALL DUCTWORK SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO WALL AND UNDERSIDE OF BEAMS AND JOISTS.
7. INSTALL SENSORS (TEMPERATURE, HUMIDITY, CO2, THERMOSTATS) AT LOCATIONS SHOWN ON PLANS OR AS DIRECTED BY ARCHITECT. MOUNTING HEIGHT AFF SHALL COMPLY WITH ADA AND SHALL BE MOUNTED LEVEL WITH ADJACENT SWITCHES (IE LIGHT SWITCHES).
8. COORDINATE WORK OF THIS SECTION WITH THAT OF OTHER SECTIONS AND WITH ALL TRADES INVOLVED. PROVIDE OFFSETS IN PIPING AND DUCTS AND TRANSITIONS AROUND OBSTRUCTIONS.
9. ACCESS PANELS SHALL BE PROVIDED TO CLEAN COILS AND SERVICE DAMPERS, HEATERS, VALVES AND ALL CONCEALED MECHANICAL EQUIPMENT. PROVIDE ACCESS PANELS THROUGH BUILDING ASSEMBLIES TO SERVICE AND MAINTAIN EQUIPMENT UNLESS SUCH EQUIPMENT IS INSTALLED IN EXPOSED LOCATIONS OR ABOVE LAY-IN CEILINGS. COORDINATE THE LOCATION OF ACCESS DOORS AND PANELS AND VERIFY THE EXACT QUANTITY, SIZE, AND LOCATIONS AFTER THE SYSTEMS AND EQUIPMENT REQUIRING ACCESS HAVE BEEN INSTALLED AND PRIOR TO THE CLOSURE OF THE AFFECTED CEILINGS AND BUILDING ASSEMBLIES. MINIMUM ACCESS PANEL AND DOOR SIZE SHALL BE 18"x18" UNLESS OTHERWISE NOTED. OBTAIN APPROVAL FOR ALL PANEL LOCATIONS FROM ARCHITECT.
10. ELEMENTS OF THE WORK SHALL BE INSTALLED IN A MANNER SUCH THAT AT SUBSTANTIAL COMPLETION THE FOLLOWING ITEMS, NEW OR EXISTING SHALL BE "FULLY AND REASONABLY ACCESSIBLE": HVAC CONTROL BOXES, JUNCTION BOXES, VALVES (OF EVERY SHAPE, SORT AND FUNCTION), DDC CONTROL BOXES, ELECTRICAL PANELS, FILTERS, BELTS, WATER COILS, DISCONNECT SWITCHES, AND MAINTENANCE ACCESS ELEMENTS INCLUDING PULL SPACE.
    A. "FULLY AND REASONABLY ACCESSIBLE" SHALL BE DEFINED AS: NATIONAL ELECTRIC CODE REQUIRED CLEARANCE FOR POWERED EQUIPMENT AND CAPABLE OF BEING ACCESSED FOR SERVICE, REPAIR OR REPLACEMENT BY AN AVERAGE SIZED INDIVIDUAL (ON A LADDER IF NECESSARY) AND CAPABLE OF BEING SERVICED OR REMOVED WITHOUT REMOVING OR MODIFYING OR DISTORTING OTHER COMPONENTS OF THE WORK. THE DESIGN INTENT PROVIDES A MINIMUM 2'x2'x2' ZONE FOR MAINTENANCE.
    B. CONFLICT WITH MEETING THESE REQUIREMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE IN A TIMELY MANNER AND SHALL BE CORRECTED AT NO ADDITIONAL COST.
11. SUPPORT ALL EQUIPMENT, PIPING AND DUCTWORK FROM BUILDING STRUCTURE. PROVIDE VIBRATION ISOLATION FOR ROTATING EQUIPMENT, DUCTWORK AND PIPING IN ACCORDANCE WITH THE SPECIFICATIONS. PROVIDE TO GC A LIST OF ALL WEIGHTS AND METHODS OF SUPPORT FOR COORDINATION. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
12. ALL CONTROL WIRE AND CONDUIT SHALL COMPLY WITH NEC, AND DIVISION 16000 SPECIFICATIONS.
13. ALL MATERIALS AND EQUIPMENT SHALL BE NEW.

AIR SYSTEM SPECIFIC NOTES:

1. VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DIMENSIONS BEFORE FABRICATION.
2. SHEETMETAL FITTINGS SHOWN ARE TO BE PROVIDED. NO SUBSTITUTES SHALL BE ALLOWED WITHOUT PRIOR CONSENT FROM ARCHITECT/ENGINEER.
3. REFER TO SPECIFICATIONS FOR DUCTWORK CONSTRUCTION CLASSES, SEAL, AND LEAKAGE CLASSES.
4. REFER TO REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF AIR TERMINAL DEVICES.
5. INTERNAL AIR FLOW DIMENSIONS ARE SHOWN FOR DUCTS. INCREASE SIZE FOR LINER IF APPLICABLE.
6. DIFFUSER SIZES SHOWN ARE NECK SIZES; REGISTER AND GRILLE SIZE ARE NOMINAL. REFER TO DIFFUSER SCHEDULE FOR DUCT RUN-OUT SIZES.
7. PROVIDE FLEXIBLE CONNECTIONS ON ALL DUCTS CONNECTING TO FANS AND AIR HANDLING UNITS UNLESS INTERNALLY ISOLATED. ALL DUCTS TO BE GROUNDED ACROSS FLEXIBLE CONNECTION WITH FLEXIBLE COPPER GROUNDING STRAPS.
8. THE INSIDE OF DUCTWORK VISIBLE THROUGH A GRILLE OR DIFFUSER SHALL BE PAINTED FLAT BLACK.
9. ALL RETURN AIR OPENINGS ABOVE CEILING SHALL BE PROVIDED WITH A 1/4" MESH ALUMINUM OR GALVANIZED SCREEN (80% FREE AREA MINIMUM).
10. INSULATE DUCTWORK: PERFORM TESTS BEFORE INSULATING.
11. ELBOWS IN DUCT SYSTEMS SHALL BE FULL RADIUS (CENTERLINE RADIUS = 1.5 DUCT WIDTH) WHERE SPACE PERMITS. WHERE LIMITED CLEARANCE OCCURS, PROVIDE SHORT RADIUS ELBOW WITH FULL LENGTH SPLITTER VANES PER SMACNA. MITERED (SQUARE) ELBOWS WITH TURNING VANES MAY NOT BE USED.
12. MANUAL DAMPERS ARE NOT SHOWN ON THE DRAWINGS IN ORDER FOR DRAWING CLARITY. PROVIDE MANUAL ADJUSTABLE DAMPERS ON EACH LOW PRESSURE SUPPLY, RETURN, AND EXHAUST DUCT TAKE OFF, AND AT EACH TAKE OFF TO REGISTERS, GRILLES, DIFFUSERS.

PIPING SYSTEM SPECIFIC NOTES:

1. VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER CERTIFIED DRAWINGS. VERIFY AND PROVIDE FITTINGS TO TRANSITION TO FURNISHED EQUIPMENT CONNECTION SIZES. FIELD VERIFY AND COORDINATE ALL DIMENSIONS BEFORE FABRICATION.
2. ALL CONDENSATE DRAIN LINES SHALL BE PIPED FULL SIZE OF THE UNIT DRAIN OUTLET, WITH "P" TRAP, CONNECTED TO BUILDING DRAINAGE SYSTEMS. SIZE DEPTH OF TRAP FOR ASSOCIATED AIR PRESSURE DIFFERENTIAL. REFER TO DETAIL ON DRAWINGS.
3. PERFORM SPECIFIED TESTS BEFORE INSULATING PIPING.
4. PROVIDE HANGERS, CLAMPS, OFFSETS, EXPANSION JOINTS, ANCHORS AND GUIDES TO PREVENT STRESS ON PIPING.
5. PROVIDE AT LEAST THREE-ELBOW SWING FOR PIPE TAKE-OFFS TO TERMINAL EQUIPMENT.
6. PITCH CONDENSATE PIPING DOWNWARD IN DIRECTION OF FLOW. REFER TO SPECIFICATIONS FOR REQUIRED PITCH (I.E. GRADE OR SLOPE).
7. REFER TO EQUIPMENT SCHEDULES FOR PIPE RUN-OUT SIZES TO INDIVIDUAL PIECES OF EQUIPMENT.

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL
R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210

P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

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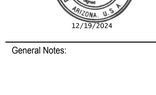

General Notes:

Project Title:

Fidelity INVESTMENTS

Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project No.: C0115.00

Drawing Sheet Title:

HVAC GENERAL NOTES & ABBREVIATIONS

Drawing Sheet Number:

M-001

Owner's Branch No.:

134

DIVISION 20: MECHANICAL AND ELECTRICAL GENERAL REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 01 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.

B. WHERE PARAGRAPHS OF THIS SECTION CONFLICT WITH SIMILAR PARAGRAPHS OF DIVISION 01, THE MORE STRINGENT SPECIFICATION REQUIREMENTS SHALL PREVAIL.

C. THIS SECTION SHALL APPLY TO THE FOLLOWING DIVISIONS:

1. DIVISION 21 - FIRE SUPPRESSION
2. DIVISION 22 - PLUMBING
3. DIVISION 23 - HEATING, VENTILATING, AND AIR CONDITIONING (HVAC)
4. DIVISION 26 - ELECTRICAL
5. DIVISION 28 - ELECTRONIC SAFETY AND SECURITY

1.2 SUMMARY

A. PERFORM WORK AND PROVIDE MATERIAL AND EQUIPMENT AS SHOWN ON THE DRAWINGS, AS SPECIFIED AND IN ACCORDANCE WITH THIS SECTION. COMPLETELY COORDINATE WORK OF THIS DIVISION WITH WORK OF OTHERS AND PROVIDE A COMPLETE AND FULLY FUNCTIONAL INSTALLATION.

B. DRAWINGS AND SPECIFICATIONS FORM COMPLIMENTARY REQUIREMENTS. PROVIDE WORK SPECIFIED AND NOT SHOWN, WORK SHOWN AND NOT SPECIFIED AS THOUGH EXPLICITLY REQUIRED BY BOTH. ALTHOUGH WORK IS NOT SPECIFICALLY SHOWN OR SPECIFIED, PROVIDE SUPPLEMENTARY OR MISCELLANEOUS ITEMS, APPURTENANCES, DEVICES AND MATERIALS OBVIOUSLY NECESSARY FOR A SOUND, SECURE AND COMPLETE INSTALLATION

C. GIVE NOTICES, FILE PLANS, OBTAIN PERMITS AND LICENSES, PAY FEES AND BACK CHARGES, AND OBTAIN NECESSARY APPROVALS FROM AUTHORITIES THAT HAVE JURISDICTION. PERFORM WORK IN ACCORDANCE WITH ALL LEGAL REQUIREMENTS AND WITH SPECIFICATIONS,DRAWINGS, ADDENDA AND CHANGE ORDERS, ALL OF WHICH ARE PART OF CONTRACT DOCUMENTS.

D. EXAMINE DRAWINGS AND OTHER SECTIONS OF SPECIFICATIONS FOR REQUIREMENTS THAT AFFECT WORK OF THIS SECTION.

E. OBTAIN CONSTRUCTION STANDARDS, IF ANY, FROM BUILDING OWNER, AND ENSURE ALL WORK COMPLIES.

1.3 DEFINITIONS

A. AS USED IN ALL SECTIONS, "PROVIDE" MEANS "FURNISH AND INSTALL." "FURNISH" MEANS "TO PURCHASE AND DELIVER TO THE PROJECT SITE COMPLETE WITH EVERY NECESSARY APPURTENANCE AND SUPPORT," AND "INSTALL" MEANS "TO UNLOAD AT THE DELIVERY POINT AT THE SITE AND PERFORM EVERY OPERATION NECESSARY TO ESTABLISH SECURE MOUNTING AND CORRECT OPERATION AT THE PROPER LOCATION IN THE PROJECT. 'POS' MEANS PROVIDED UNDER OTHER SPECIFICATION SECTION. "ARCHITECT" MEANS THE "PRIME DESIGN CONSULTANT." IF R.G. VANDERWEIL ENGINEERS, LLP IS NOT THE PRIME DESIGN CONSULTANT, THE ARCHITECT MAY AUTHORIZE R.G. VANDERWEIL ENGINEERS, LLP TO ACT ON THE ARCHITECT'S BEHALF IN MATTERS CONCERNING THE ALL SECTIONS OF SPECIFICATIONS.

1.4 CONTRACT DOCUMENTS

A. REFER TO ARCHITECTURAL, FIRE PROTECTION, PLUMBING, HVAC, ELECTRICAL, STRUCTURAL, TELE/DATA AND ALL OTHER DRAWINGS AND OTHER SECTIONS THAT INDICATE TYPES OF CONSTRUCTION IN WHICH WORK SHALL BE INSTALLED AND WORK OF OTHER TRADES WITH WHICH WORK OF THIS SECTION MUST BE COORDINATED

B. EXCEPT WHERE MODIFIED BY A SPECIFIC NOTATION TO THE CONTRARY, IT SHALL BE UNDERSTOOD THAT THE INDICATION AND/OR DESCRIPTION OF AN ITEM, IN THE DRAWINGS OR SPECIFICATIONS OR BOTH, CARRIES WITH IT THE INSTRUCTION TO FURNISH AND INSTALL THE ITEM, REGARDLESS OF WHETHER OR NOT THIS INSTRUCTION IS EXPLICITLY STATED AS PART OF THE INDICATION OR DESCRIPTION.

C. ITEMS REFERRED TO IN SINGULAR NUMBER IN CONTRACT DOCUMENTS SHALL BE PROVIDED IN QUANTITIES NECESSARY TO COMPLETE WORK.

D. DRAWINGS ARE DIAGRAMMATIC. THEY ARE NOT INTENDED TO BE ABSOLUTELY PRECISE; THEY ARE NOT INTENDED TO SPECIFY OR TO SHOW EVERY OFFSET, FITTING, AND COMPONENT. THE PURPOSE OF THE DRAWINGS IS TO INDICATE A SYSTEMS CONCEPT, THE MAIN COMPONENTS OF THE SYSTEMS, AND THE APPROXIMATE GEOMETRICAL RELATIONSHIPS. BASED ON THE SYSTEMS CONCEPT, THE MAIN COMPONENTS, AND THE APPROXIMATE GEOMETRICAL RELATIONSHIPS, PROVIDE ALL OTHER COMPONENTS AND MATERIALS NECESSARY TO MAKE THE SYSTEMS FULLY COMPLETE, COORDINATED WITH OTHER SYSTEMS AND THE STRUCTURE AND SPACE AVAILABLE, AND OPERATIONAL.

E. INFORMATION AND COMPONENTS SHOWN ON SINGLE LINE /SCHEMATIC DIAGRAMS BUT NOT SHOWN ON PLANS, AND VICE VERSA, SHALL APPLY OR BE PROVIDED AS IF EXPRESSLY REQUIRED ON BOTH.

F. DATA THAT MAY BE FURNISHED ELECTRONICALLY (ON COMPACT DISK (CD), ELECTRONIC MAIL, OR OTHERWISE) IS DIAGRAMMATIC. ELECTRONICALLY FURNISHED INFORMATION IS SUBJECT TO THE SAME LIMITATION OF PRECISION DESCRIBED ABOVE. IF FURNISHED, ELECTRONIC DATA IS FOR CONVENIENCE AND GENERALIZED REFERENCE, AND SHALL NOT SUBSTITUTE FOR SEALED OR STAMPED CONSTRUCTION DOCUMENTS.

1.5 ELECTRONIC CAD FILES

A. ELECTRONIC CAD FILES FOR FIRE PROTECTION, PLUMBING, HVAC, ELECTRICAL, TELE/DATA AND SECURITY DRAWINGS WILL BE FURNISHED BY ENGINEER AT CONTRACTOR'S REQUEST. ENGINEER WILL FORWARD THE 'RELEASE OF LIABILITY' FORM TO CONTRACTOR FOR COMPLETION/SIGNATURE. CONTRACTOR TO RETURN FORM TO ENGINEER PRIOR TO ENGINEER'S ISSUANCE OF ELECTRONIC CAD FILES.

1.6 DISCREPANCIES IN DOCUMENTS

A. WHERE DRAWINGS OR SPECIFICATIONS CONFLICT OR ARE UNCLEAR, SUBMIT CLARIFICATION REQUEST IN WRITING BEFORE AWARD OF CONTRACT. OTHERWISE, ARCHITECT'S INTERPRETATION OF CONTRACT DOCUMENTS SHALL BE FINAL, AND NO ADDITIONAL COMPENSATION SHALL BE PERMITTED DUE TO DISCREPANCIES OR UN-CLARITIES THUS RESOLVED.

B. WHERE DRAWINGS OR SPECIFICATIONS DO NOT COINCIDE WITH MANUFACTURERS' RECOMMENDATIONS OR WITH APPLICABLE CODES AND STANDARDS, SUBMIT CLARIFICATION REQUEST IN WRITING BEFORE INSTALLATION. OTHERWISE, MAKE CHANGES IN INSTALLED WORK REQUIRED FOR COMPLIANCE WITH MANUFACTURER INSTRUCTIONS OR CODES AND STANDARDS WITHIN CONTRACT PRICE.

C. IF THE REQUIRED MATERIAL, INSTALLATION, OR WORK CAN BE INTERPRETED DIFFERENTLY FROM DRAWING TO DRAWING, OR BETWEEN DRAWINGS AND SPECS, PROVIDE MATERIAL, INSTALLATION OR WORK THAT IS OF THE HIGHER STANDARD.

D. IT IS THE REQUIREMENT OF THESE CONTRACT DOCUMENTS TO REQUIRE PROVISION OF SYSTEMS AND COMPONENTS THAT ARE FULLY COMPLETE AND OPERATIONAL AND FULLY SUITABLE FOR THE INTENDED USE. THERE MAY BE SITUATIONS IN THE DOCUMENTS WHERE INSUFFICIENT INFORMATION EXISTS TO PRECISELY DESCRIBE A CERTAIN COMPONENT OR SUBSYSTEM, OR THE ROUTING OF A COMPONENT OR ITS COORDINATION WITH OTHER BUILDING ELEMENTS. IN THESE CASES, WHERE NOTIFICATION REQUIRED BY PARAGRAPH (A) ABOVE HAS NOT BEEN SUBMITTED, PROVIDE THE SPECIFIC COMPONENT OR SUBSYSTEM WITH ALL PARTS NECESSARY FOR THE INTENDED USE, FULLY COMPLETE AND OPERATIONAL, AND INSTALLED IN WORKMANLIKE MANNER EITHER CONCEALED OR EXPOSED IN ACCORDANCE WITH THE DESIGN INTENT.

E. IN CASES COVERED BY PARAGRAPH (D) ABOVE, WHERE THE CONTRACTOR BELIEVES ENGINEERING GUIDANCE IS NEEDED THE CONTRACTOR SHALL, SUBMIT A SKETCH IDENTIFYING PROPOSED SOLUTION. ARCHITECT SHALL REVIEW, NOTE IF NECESSARY, AND APPROVE THE SKETCH.

F. WHERE DISCREPANCIES EXIST BETWEEN THE MECHANICAL, PLUMBING, FIRE PROTECTION, ELECTRICAL AND TELE/DATA DRAWINGS IN REGARDS TO WHAT TRADE OWNS EQUIPMENT SUCH AS DISCONNECTS, STARTERS, ETC., THE DISCREPANCY SHALL BE BROUGHT TO THE ARCHITECT'S ATTENTION IN ACCORDANCE WITH PARAGRAPH (A) ABOVE. IF THE SCOPE IS NOT RESOLVED PRIOR TO THE AWARD OF CONTRACT, THE ELECTRICAL CONTRACTOR SHALL PROVIDE SUCH ITEMS.

1.7 MODIFICATIONS IN LAYOUT

A. DRAWINGS ARE DIAGRAMMATIC. THEY INDICATE GENERAL ARRANGEMENTS OF MECHANICAL SYSTEMS AND OTHER WORK. THEY DO NOT SHOW ALL OFFSETS REQUIRED FOR COORDINATION NOR DO THEY SHOW THE EXACT ROUTINGS AND LOCATIONS NEEDED TO COORDINATE WITH STRUCTURE AND OTHER TRADES AND TO MEET CEILING HEIGHTS AND OTHER ARCHITECTURAL REQUIREMENTS.

B. TO OBTAIN THE INTENDED AESTHETICS IN SPACES USED BY BUILDING OCCUPANTS, PRIOR TO INSTALLATION OF VISIBLE MATERIAL AND EQUIPMENT (INCLUDING ACCESS PANELS), REVIEW ARCHITECTURAL DRAWINGS FOR DESIRED LOCATIONS. WHERE NOT DEFINITIVELY INDICATED THE CONTRACTOR SHALL REQUEST INFORMATION FROM ARCHITECT.

C. CHECK CONTRACT DRAWINGS, AS WELL AS SHOP DRAWINGS, TO VERIFY AND COORDINATE SPACES IN WHICH WORK OF THIS SECTION WILL BE INSTALLED.

D. MAINTAIN MAXIMUM HEADROOM AT ALL LOCATIONS. ALL PIPING, DUCT, CONDUIT, AND ASSOCIATED COMPONENTS TO BE AS TIGHT TO UNDERSIDE OF STRUCTURE AS POSSIBLE.

E. MAKE REASONABLE MODIFICATIONS IN LAYOUT AND COMPONENTS NEEDED TO PREVENT CONFLICT WITH WORK OF OTHER TRADES AND TO COORDINATE ACCORDING TO PARAGRAPHS ABOVE. SYSTEMS SHALL BE RUN IN A RECTILINEAR FASHION.

F. WHERE CONFLICTS OR POTENTIAL CONFLICTS EXIST AND ENGINEERING GUIDANCE IS DESIRED THE CONTRACTOR SHALL SUBMIT SKETCH OF PROPOSED RESOLUTION TO ARCHITECT FOR REVIEW AND APPROVAL AS DESCRIBED/OUTLINED BELOW IN 'REQUEST FOR INFORMATION' (RFI) SECTION.

1.8 REQUEST FOR INFORMATION (RFI'S)

A. WHERE AN RFI IS A REQUEST TO RESOLVE A CONFLICT OR AN UN-CLARITY, OR A REQUEST FOR ADDITIONAL DETAIL, CONTRACTOR'S RFI SHALL INCLUDED SKETCH OR EQUIVALENT DESCRIPTION OF CONTRACTOR'S PROPOSED SOLUTION, IN ACCORDANCE WITH PARAGRAPHS “DISCREPANCIES IN DOCUMENTS; AND “MODIFICATIONS IN LAYOUT” ABOVE.

B. TO EXPEDITE THE PROCESSING OF RFIS, THE CONTRACTOR SHALL SUBMIT AN ELECTRONIC CORRESPONDENCE WITH THE FOLLOWING INFORMATION CONTAINED WITHIN, AT THE MINIMUM, AS WELL AS THE CONTRACTOR'S PROPOSED SOLUTION, WITH SKETCHES AS REQUIRED:

1. PROJECT NAME
2. DATE OF RFI SUBMISSION / DATE OF REQUIRED RFI RESPONSE (3-DAY MINIMUM)
3. RFI NUMBER
4. NAME OF CONTRACTING COMPANY SUBMITTING RFI AND NAME OF PERSON SUBMITTING RFI
5. SPECIFICATION SECTION CITED
6. DRAWING NUMBER REFERENCED
7. CONTRACTOR EMAIL ADDRESS AND FAX NUMBER (FOR RESPONSE)
8. CONTRACTOR FIELD QUESTION (PROVIDE A NARRATIVE WITH SUPPLEMENTAL SKETCH)
9. CONTRACTOR PROPOSED SOLUTION (PROVIDE A NARRATIVE WITH SUPPLEMENTAL SKETCH)
10. RESPONDENT NARRATIVE BOX (FOR ENGINEER'S RESPONSE)

1.9 EXISTING CONDITIONS AND PREPARATORY WORK

A. DRAWINGS ARE DIAGRAMMATIC, THEREFORE DETERMINE EXACT LOCATIONS OF SYSTEMS AND COMPONENTS IN THE FIELD.

B. CARE SHALL BE TAKEN DURING THE INSTALLATION OF THE NEW WORK, AS NOT TO DAMAGE OR INTERRUPT THE EXISTING BUILDING SYSTEMS AND SERVICES INSTALLED.

C. LOCATION OF EQUIPMENT OR THE ROUTING OF THE VARIOUS SYSTEMS AS WELL AS OPENINGS IN FLOOR SLABS OR WALLS SHALL BE GOVERNED BY THE EXISTING CONDITIONS AS THEY APPEAR IN THE FIELD.

D. THIS PROJECT INVOLVES CONSTRUCTION INSIDE AN EXISTING STRUCTURE. CONTRACTORS, BY SUBMITTING A BID, ARE DEEMED TO BE COMPLETELY FAMILIAR WITH THE EXISTING CONDITION OF THE BUILDING AS IT INFLUENCES THE WORK DESCRIBED. POTENTIAL PROBLEMS AREA SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT IMMEDIATELY.

E. ANY/ALL DEMOLITION SHALL BE COORDINATED WITH OWNER, ARCHITECT, G.C.. AND ENGINEER.

F. BEFORE STARTING WORK IN A PARTICULAR AREA OF THE PROJECT, VISIT THE LOCATION AND EXAMINE CONDITIONS UNDER WHICH WORK MUST BE PERFORMED INCLUDING PREPARATORY WORK DONE UNDER OTHER SECTIONS OR OTHER CONTRACTS OR BY THE OWNER. REVIEW GEOMETRICAL CONSTRAINTS, SUCH AS CEILING HEIGHTS, TO ENSURE CONSTRUCTABILITY AND ACCESS FOR MAINTENANCE. REPORT CONDITIONS THAT MIGHT ADVERSELY AFFECT WORK IN WRITING TO THE ARCHITECT. DO NOT PROCEED WITH WORK UNTIL DEFECTS HAVE BEEN CORRECTED AND CONDITIONS ARE SATISFACTORY. COMMENCEMENT OF WORK SHALL BE CONSTRUED AS COMPLETE ACCEPTANCE OF EXISTING CONDITIONS AND PREPARATORY WORK.

1.10 CODES, STANDARDS, AUTHORITIES AND PERMITS

A. PERFORM WORK IN ACCORDANCE WITH RULES, REGULATIONS, STANDARDS, CODES, ORDINANCES, AND LAWS OF LOCAL, STATE, AND FEDERAL GOVERNMENTS, AND OTHER AUTHORITIES THAT HAVE LEGAL JURISDICTION OVER THE SITE.

B. PRIOR TO COMMENCEMENT OF WORK, NOTIFY STATE AND APPLICABLE AUTHORITIES AND SUBMIT ALL OF THE APPLICABLE NOTIFICATIONS FOR CONSTRUCTION, OPERATION AND/OR DEMOLITION.

C. MATERIALS AND EQUIPMENT SHALL BE MANUFACTURED, INSTALLED AND TESTED AS SPECIFIED IN LATEST EDITIONS OF APPLICABLE PUBLICATIONS, STANDARDS, RULINGS AND DETERMINATIONS OF:

1. LOCAL AND STATE BUILDING, PLUMBING, MECHANICAL, ELECTRICAL, FIRE AND HEALTH DEPARTMENT CODES.
2. AMERICAN GAS ASSOCIATION (AGA).
3. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA).
4. AMERICAN INSURANCE ASSOCIATION (AIA) (FORMERLY NATIONAL BOARD OF FIRE UNDERWRITERS).
5. OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA).
6. UNDERWRITERS LABORATORIES (UL)
7. FACTORY MUTUAL ASSOCIATION (FM)
8. OWNER'S INSURANCE UNDERWRITER.
9. SHEET METAL & AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA)

D. MATERIAL AND EQUIPMENT SHALL BE LISTED BY UNDERWRITERS' LABORATORIES (UL), AND APPROVED BY ASME, ANSI, ASTM, AND AGA FOR INTENDED SERVICE.

E. WHEN REQUIREMENTS CITED IN THIS SPECIFICATION CONFLICT WITH EACH OTHER OR WITH CONTRACT DOCUMENTS, MOST STRINGENT SHALL GOVERN WORK.

F. SECURE AND PAY FOR ALL PERMITS AND INSPECTIONS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION. SECURE TRADE PERMITS PRIOR TO BEGINNING WORK.

G. PERFORM ALL WORK IN ACCORDANCE WITH BASE BUILDING RULES, REGULATIONS, SPECIFICATIONS AND STANDARDS.

1.11 WARRANTY

A. WARRANT THE WORK OF THIS SECTION IN WRITING FOR ONE YEAR FOLLOWING THE DATE OF SUBSTANTIAL COMPLETION. IF THE EQUIPMENT IS USED FOR VENTILATION, TEMPORARY HEAT, OR OTHER USE PRIOR TO INITIAL BENEFICIAL OCCUPANCY BY THE OWNER, THE BID PRICE SHALL INCLUDE AN EXTENDED PERIOD OF WARRANTY COVERING THE ONE-YEAR OF BENEFICIAL OCCUPANCY BY THE OWNER. THE WARRANTY SHALL REPAIR OR REPLACE DEFECTIVE MATERIALS, EQUIPMENT, WORKMANSHIP AND INSTALLATION THAT DEVELOP WITHIN THIS PERIOD, PROMPTLY AND TO ARCHITECT'S SATISFACTION AND CORRECT DAMAGE CAUSED IN MAKING NECESSARY REPAIRS AND REPLACEMENTS UNDER WARRANTY WITHIN CONTRACT PRICE.

1.12 COORDINATION DRAWINGS

A. A SINGLE SET OF COORDINATION DRAWINGS SHALL BE MUTUALLY PREPARED BY ALL MECHANICAL AND ELECTRICAL TRADES. THE INITIATION OF THESE DRAWINGS BEGINS WITH THE SHEET METAL SUBCONTRACTOR.

B. THE SHEET METAL SUBCONTRACTOR SHALL PREPARE A COMPLETE SET OF ELECTRONIC DRAWINGS IN APPROVED VERSIONS OF AUTOCAD, REVIT, OR APPROVED ALTERNATIVE, AT SCALE NOT LESS THAN 3/8” EQUALS 1'-0" SHOWING: STRUCTURE, RATED PARTITIONS, CEILING TYPE AND OTHER INFORMATION AS NEEDED FOR COORDINATION. ALL TRADES SHALL ELECTRONICALLY ADD THEIR SYSTEMS TO THE ELECTRONIC FORMATTED DRAWINGS, EACH TRADE IN A DIFFERENT COLOR, SHOWING REQUIRED OFFSETS AND DIMENSIONS TO AVOID INTERFERENCES. THESE ELECTRONIC FILES WILL BE CONSIDERED THE PROJECT COORDINATION DRAWINGS.

C. WHERE CONFLICTS OCCUR WITH PLACEMENT OF MATERIALS OF VARIOUS TRADES, THE SHEET METAL SUBCONTRACTOR WILL BE RESPONSIBLE TO COORDINATE THE AVAILABLE SPACE TO ACCOMMODATE ALL TRADES.

D. SHEET METAL FABRICATION SHALL NOT START UNTIL COPIES OF COMPLETED COORDINATION DRAWINGS ARE RECEIVED BY THE ARCHITECT AND HAVE BEEN REVIEWED.

E. REVIEW BY ENGINEER OF COORDINATION DRAWINGS IS LIMITED TO CONFIRMING THAT REQUIREMENTS FOR COORDINATION AND PREPARATION OF PLANS HAVE BEEN COMPLIED WITH BY THE CONSTRUCTION MANAGER OR GENERAL CONTRACTOR AND SHALL NOT DIMINISH RESPONSIBILITY UNDER THIS CONTRACT FOR FINAL COORDINATION OF INSTALLATION AND MAINTENANCE CLEARANCES OF ALL SYSTEMS AND EQUIPMENT WITH ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL AND OTHER RELATED WORK.

1.13 SHOP DRAWING SUBMITTALS

A. SUBMITTAL COVER SHEET:

1. SHOP DRAWING SUBMITTAL FOR EACH PRODUCT SHALL INCLUDE A COPY OF THE FOLLOWING COVER SHEET COMPLETELY FILLED OUT. INCOMPLETE OR INCORRECT COVER SHEET SUBMITTAL SHALL CONSTITUTE REASON FOR REJECTION.

2. PROVIDE SEPARATE COVER SHEET (BELOW) FOR EACH PRODUCT, RATHER THAN ONE COVER SHEET FOR MULTIPLE PRODUCTS, WHETHER OR NOT SUPPLIED BY ONE MANUFACTURER OR VENDOR.

B. SUBMITTAL PROCEDURES, CONTENTS, AND FORMAT

1. CONSTRUCTION MANAGER OR GENERAL CONTRACTOR SHALL FIRST REVIEW SUBMITTAL PACKAGES FOR COMPLIANCE WITH CONTRACT DOCUMENTS. UPON REVIEW BY THE G.C. THE SUBMITTALS WILL THEN BE SUBMITTED FOR REVIEW BY ARCHITECT. REVIEW BY CONSTRUCTION MANAGER OR CONTRACTOR IS INTENDED TO ENSURE THAT THE SUBMITTALS INCLUDE THE FOREGOING COVER SHEET, ARE IN THE CORRECT ELECTRONIC FORMAT AS SPECIFIED BELOW, AND THAT THE DEVICES/EQUIPMENT/ITEMS FIT INTO THE SPACE PROVIDED. ALSO, THAT THE SUBMITTAL CONTAINS ADEQUATE INFORMATION TO VERIFY SPECIFICATION REQUIREMENTS AS WELL AS THE PERFORMANCE AND DIMENSIONAL REQUIREMENTS SHOWN ON THE DRAWINGS. IF A SHOP DRAWING IS RETURNED WITH A SUBMITTAL STATUS OF “REJECTED” OR “REJECTED: REVISE AND RESUBMIT”, IT INDICATES THE SHOP DRAWING WAS NOT ADEQUATELY REVIEWED BY THE CONTRACTOR. SUBSEQUENT RE-SUBMITTALS SHALL BE COMPLETE AND SHALL INCLUDE A COVER LETTER SUMMARIZING THE CORRECTIONS MADE IN RESPONSE TO THE REVIEW COMMENTS.

2. SUBMITTALS WILL BE PROVIDED TO ENGINEER IN ELECTRONIC (PDF) FORMAT. A SINGLE PDF FILE SHALL BE SUBMITTED FOR EACH RESPECTIVE SUBMITTAL. THE PDF FILE WILL BE FORMATTED IN THE FOLLOWING WAY:

a. SUBMITTALS WILL BE 'EMAILED' TO THE MECHANICAL/ELECTRICAL TEAM VIA THE FOLLOWING EMAIL ADDRESS(ES):

1. JNyland@vanderweil.com
2. DL-BOS-SHOPDRAWINGS@VANDERWEIL.COM

3. SUBMITTAL CONTENTS

a. ELECTRONIC SUBMITTALS SHALL BE COMPREHENSIVE AND FULLY SELF CONTAINED AND SHALL NOT CONTAIN LINKS TO ASSOCIATED WEBSITES.

b. SUBMITTALS SHALL INCLUDE ALL CATALOG DATA AND PHYSICAL AND PERFORMANCE CHARACTERISTICS AND PLANS AND DIAGRAMS AS NECESSARY TO CONFIRM COMPLIANCE WITH PLANS AND SPECIFICATIONS.

c. SUBMITTALS SHALL CONTAIN ONLY INFORMATION RELEVANT TO THE PARTICULAR EQUIPMENT OR MATERIALS TO BE FURNISHED. CLEARLY INDICATE THE PIECE OF EQUIPMENT OR MATERIAL BEING PROVIDED. DO NOT SUBMIT GENERIC CATALOG CUTS WHICH DESCRIBE SEVERAL DIFFERENT ITEMS IN ADDITION TO THOSE SPECIFIC ITEMS BEING PROVIDED.

4. SHOP DRAWINGS SHOWING MANUFACTURER'S PRODUCT DATA SHALL CONTAIN DETAILED DIMENSIONAL DRAWINGS, ACCURATE AND COMPLETE DESCRIPTION OF MATERIALS OF CONSTRUCTION, MANUFACTURER'S PUBLISHED PERFORMANCE CHARACTERISTICS AND CAPACITY RATINGS (PERFORMANCE DATA, ALONE, IS NOT ACCEPTABLE), ELECTRICAL REQUIREMENTS AND WIRING DIAGRAMS. DRAWINGS SHALL CLEARLY INDICATE LOCATION (TERMINAL BLOCK OR WIRE NUMBER), VOLTAGE AND FUNCTION FOR ALL FIELD TERMINATIONS, AND OTHER INFORMATION NECESSARY TO DEMONSTRATE COMPLIANCE WITH ALL REQUIREMENTS OF CONTRACT DOCUMENTS.

5. HVAC CONTROLS SHALL BE COORDINATED WITH ANY PACKAGE CONTROLS PROVIDED WITH EQUIPMENT TO ENSURE THAT THE HVAC CONTROLS SUBMITTAL INCLUDES ALL REQUIRED SEQUENCES.

D. ACCEPTABLE MANUFACTURERS: SUBSTITUTION OF PRODUCTS OTHER THAN THOSE OF THE ACCEPTABLE MANUFACTURERS SPECIFIED HEREIN SHALL NOT BE MADE. ONLY THE SPECIFIED ITEMS, OR COMPARABLE PRODUCTS BY ONE OF THE OTHER NAMED ALTERNATIVE MANUFACTURERS SHALL BE SUBMITTED. OTHER MANUFACTURERS AND PRODUCTS WILL NOT BE USED.

E. DEVIATIONS

1. PROPOSED DEVIATIONS FROM CONTRACT DOCUMENTS SHALL BE REQUESTED INDIVIDUALLY IN WRITING WHETHER DEVIATIONS RESULT FROM FIELD CONDITIONS, STANDARD SHOP PRACTICE, OR OTHER CAUSE. SUBMIT LETTER WITH TRANSMITTAL OF SHOP DRAWINGS WHICH FLAGS THE DEVIATION TO THE ATTENTION OF THE ARCHITECT.

2. WITHOUT LETTERS FLAGGING THE DEVIATION TO THE ARCHITECT, IT IS POSSIBLE THAT THE ARCHITECT MAY NOT NOTICE SUCH DEVIATION OR MAY NOT REALIZE ITS RAMIFICATIONS. THEREFORE, IF SUCH LETTERS ARE NOT SUBMITTED TO THE ARCHITECT, THE CONTRACTOR SHALL HOLD THE ARCHITECT AND HIS CONSULTANTS HARMLESS FOR ANY AND ALL ADVERSE CONSEQUENCES RESULTING FROM THE DEVIATIONS BEING IMPLEMENTED. THIS SHALL APPLY REGARDLESS OF WHETHER THE ARCHITECT HAS REVIEWED OR APPROVED SHOP DRAWINGS CONTAINING THE DEVIATION, AND WILL BE STRICTLY ENFORCED.

3. APPROVAL OF PROPOSED DEVIATIONS, IF ANY, WILL BE MADE AT DISCRETION OF ARCHITECT.

F. SUBMITTAL STATUS: SUBMITTALS WILL BE RETURNED MARKED/NOTED AS ILLUSTRATED BELOW:

- "APPROVED AS NOTED": REVIEWED AND FOUND GENERALLY ACCEPTABLE. MINOR DEVIATIONS NOTED. NO FURTHER SUBMITTAL IS REQUIRED IF NOTED DEVIATIONS ARE COMPLIED WITH/ CORRECTED.
- "REJECTED: REVISE AND RESUBMIT": SUBMITTAL CONTAINS DEVIATIONS WHICH SHALL BE CORRECTED AND CONFIRMED BY A NEW SUBMITTAL.
- "REJECTED": SUBMITTAL IS INCORRECT TO SUCH AN EXTENT THAT MATERIAL IS UNACCEPTABLE, OR IS INCOMPLETE TO SUCH AN EXTENT THAT A COMPLETE REVIEW CANNOT BE MADE. RESUBMIT IN ACCORDANCE WITH REQUIREMENTS OF THE CONTRACT DOCUMENTS.
- "NO ACTION": SUBMITTAL NOT REVIEWED.
- "REVIEWED FOR INFORMATION": THIS SUBMITTAL IS FOR INFORMATION ONLY.

G. RESPONSIBILITY: INTENT OF ARCHITECT'S SUBMITTAL REVIEW IS TO CHECK FOR CAPACITY, RATING, AND CERTAIN CONSTRUCTION FEATURES. CONTRACTOR SHALL ENSURE THAT WORK MEETS REQUIREMENTS OF CONTRACT DOCUMENTS REGARDING INFORMATION THAT PERTAINS TO FABRICATION PROCESSES OR MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES OF CONSTRUCTION; AND FOR COORDINATION OF WORK OF THIS AND OTHER SECTIONS. WORK SHALL COMPLY WITH SUBMITTALS MARKED "REVIEWED" TO EXTENT THAT THEY AGREE WITH CONTRACT DOCUMENTS. SUBMITTAL REVIEW SHALL NOT DIMINISH RESPONSIBILITY UNDER THIS CONTRACT FOR DIMENSIONAL COORDINATION, QUANTITIES, INSTALLATION, WIRING, SUPPORTS AND ACCESS FOR SERVICE, NOR SHOP DRAWING ERRORS OR DEVIATIONS FROM REQUIREMENTS OF CONTRACT DOCUMENTS. NOTING OF SOME ERRORS WHILE OVERLOOKING OTHERS WILL NOT EXCUSE PROCEEDING IN ERROR. CONTRACT DOCUMENTS REQUIREMENTS ARE NOT LIMITED, WAIVED NOR SUPERSEDED BY REVIEW.

H. SCHEDULE: INCORPORATE SHOP DRAWING REVIEW PERIOD INTO CONSTRUCTION SCHEDULE SO THAT WORK IS NOT DELAYED. CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR DELAYS CAUSED BY NOT INCORPORATING THE FOLLOWING SHOP DRAWING REVIEW TIME REQUIREMENTS INTO HIS PROJECT SCHEDULE. WORKING DAYS LISTED REFERENCE THE TIME IN THE ENGINEER'S OFFICE. IT DOES NOT INCLUDE TRANSMITTAL OR REVIEW TIME OF OTHERS. ALLOW AT LEAST 7 WORKING DAYS, EXCLUSIVE OF TRANSMITTAL TIME, FOR REVIEW EACH TIME SHOP DRAWING IS SUBMITTED OR RESUBMITTED WITH THE EXCEPTION THAT 14 WORKING DAYS, EXCLUSIVE OF TRANSMITTAL TIME, ARE REQUIRED FOR THE FOLLOWING:

1. HVAC TEMPERATURE CONTROL SUBMITTALS.
2. COORDINATION DRAWINGS.
3. FIRE PROTECTION FABRICATION DRAWINGS.
4. IF MORE THAN FIVE SHOP DRAWINGS OF A SINGLE TRADE ARE RECEIVED IN ONE CALENDAR WEEK.

1.14 RECORD DRAWINGS (AS-BUILTS)

A. AS WORK PROGRESSES AND FOR DURATION OF CONTRACT, MAINTAIN COMPLETE AND SEPARATE SET OF PRINTS OF CONTRACT DRAWINGS AT JOB SITE AT ALL TIMES. RECORD WORK COMPLETED AND ALL CHANGES FROM ORIGINAL CONTRACT DRAWINGS. SUCH CHANGES SHALL INCLUDE, BUT NOT BE LIMITED TO, THOSE RESULTING FROM RFI'S, FIELD CONDITIONS, AND MODIFICATIONS AND ADDITIONS. INCLUDE ACTUAL LOCATION OF EXISTING UTILITIES IF THEY DIFFER FROM DESIGN DOCUMENTS. AT COMPLETION OF PROJECT CONTRACTOR SHALL INCORPORATE ALL CHANGES INTO RECORD AS-BUILT DRAWINGS IN ELECTRONIC FORMAT AND SUBMIT FOR REVIEW AND APPROVAL.

B. AT COMPLETION OF WORK, PREPARE A COMPLETE SET OF RECORD DRAWINGS IN ELECTRONIC FORMAT. DELIVER TO THE ARCHITECT FOR APPROVAL.

C. AFTER APPROVAL, DELIVER THE FOLLOWING:

1. ORIGINAL (NOT SCANNED) ELECTRONIC VERSION OF DRAWINGS IN APPROVED FORMAT, NOTATED AS “RECORD DRAWINGS,” AND CONFORMED TO INCORPORATE ALL CHANGES TO THE ORIGINAL DESIGN NOTED ABOVE, THE CHANGES SHALL BE CLOUDED AND APPROPRIATELY IDENTIFIED. DELIVER ONE COPY EACH TO THE GENERAL CONTRACTOR, OWNER, ARCHITECT, AND ENGINEER.

1.15 BULLETINS, MANUALS, AND OPERATING INSTRUCTIONS - ELECTRONIC FORMAT

A. PROVIDE ELECTRONICALLY FORMATTED (SEARCHABLE PDF) FILES OF MANUFACTURER'S OPERATING AND MAINTENANCE INSTRUCTIONS FOR EACH PIECE OF EQUIPMENT AND SYSTEM. COMPILE RESPECTIVE WORK OF EACH DISCIPLINE INTO A SINGLE FILE FOR EACH DISCIPLINE. ALL NAME TAG INFORMATION SUCH AS MAKE, TYPE, SIZE, CAPACITY, SERIAL NUMBER, ETC. SHALL BE INCLUDED AS PART OF THE MANUAL. PROVIDE, WITHIN THE ELECTRONIC FILE, TABLE OF CONTENTS/INDEX LISTING.

1.16 SPECIAL RESPONSIBILITIES

A. COOPERATE AND COORDINATE WITH WORK OF OTHER SECTIONS IN EXECUTING WORK OF THIS SECTION.

1. PERFORM WORK SO THAT PROGRESS OF ENTIRE PROJECT INCLUDING WORK OF OTHER SECTIONS SHALL NOT BE INTERFERED WITH OR DELAYED.

2. PROVIDE INFORMATION AS REQUESTED ON ITEMS FURNISHED UNDER ONE SECTION WHICH SHALL BE INSTALLED UNDER OTHER SECTIONS.

3. FOR EQUIPMENT PROVIDED UNDER ANY DIVISION OR SECTION WHICH HAS CONNECTION MADE UNDER THE MECHANICAL OR ELECTRICAL SECTIONS, OBTAIN DETAILED INSTALLATION AND HOOKUP INFORMATION FROM THE EQUIPMENT MANUFACTURERS.

4. OBTAIN FINAL ROUGHING DIMENSIONS OR OTHER INFORMATION AS NEEDED FOR COMPLETE INSTALLATION OF ITEMS FURNISHED UNDER OTHER SECTIONS OR BY OWNER.

5. KEEP FULLY INFORMED AS TO SHAPE, SIZE AND POSITION OF OPENINGS REQUIRED FOR MATERIAL OR EQUIPMENT TO BE PROVIDED UNDER ALL SECTIONS. GIVE FULL INFORMATION SO THAT OPENINGS REQUIRED BY WORK OF THIS SECTION MAY BE COORDINATED WITH OTHER WORK AND OTHER OPENINGS AND MAY BE PROVIDED FOR IN ADVANCE. IN CASE OF FAILURE TO PROVIDE SUFFICIENT INFORMATION IN PROPER TIME, PROVIDE CUTTING AND PATCHING OR HAVE SAME DONE, AT OWN EXPENSE AND TO FULL SATISFACTION OF ARCHITECT.

6. NOTIFY ARCHITECT OF LOCATION AND EXTENT OF EXISTING PIPING, CONDUIT, DUCTWORK AND EQUIPMENT THAT INTERFERES WITH NEW CONSTRUCTION. IN COORDINATION WITH AND WITH APPROVAL OF ARCHITECT, RELOCATE PIPING, DUCTWORK AND EQUIPMENT TO PERMIT NEW WORK TO BE PROVIDED. REMOVE NON_FUNCTIONING AND ABANDONED PIPING, DUCTWORK AND EQUIPMENT. DISPOSE OF OR STORE ITEMS.

B. BUILDING EXPANSION JOINTS AND FIREWALLS

1. DUCTWORK, CONDUIT, CABLE TRAY, PIPING, AND OTHER HORIZONTAL DISTRIBUTION SYSTEMS SHALL BE PROVIDED WITH APPROVED EXPANSION PROVISIONS WHEN PASSING BY BUILDING EXPANSION JOINTS. PROVIDE COPPER GROUND JUMPER ACROSS EXPANSION JOINTS FOR ELECTRICAL COMPONENTS. SYSTEMS SHALL BE RUN THROUGH RATED WALLS, PARTITIONS, AND FLOORS VIA APPROVED FIREPROOFED SLEEVES.

C. INSTALLATION SHALL PROVIDE ACCESS TO SYSTEMS

1. INSTALLATION SHALL ALLOW CLEARANCES FOR EASY ACCESS TO SYSTEMS FOR ROUTINE MAINTENANCE, FOR REPAIRS, AND FOR INSTALLING NEW CABLE IN CONDUIT AND CABLE TRAYS.

2. ACCESS PANELS SHALL BE INSTALLED IN CEILINGS THAT ARE NOT COMPOSED OF REMOVABLE TILES. THESE SHALL BE LOCATED WHEREVER SYSTEMS COMPONENTS EXIST THAT HAVE MOVING PARTS, MOTORS, OR OTHER COMPONENTS REQUIRING PERIODIC MAINTENANCE, ADJUSTMENT, OR REPLACEMENT. ACCESS PANELS SHALL BE SHOWN ON COORDINATION DRAWINGS AND SHALL BE OF THE TYPE AND FINISH AS APPROVED BY THE ARCHITECT.

D. PROTECTION OF WORK

1. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR WORK AND EQUIPMENT UNTIL FINALLY INSPECTED, TESTED, AND ACCEPTED. CAREFULLY STORE MATERIALS AND EQUIPMENT THAT IS NOT IMMEDIATELY INSTALLED AFTER DELIVERY TO SITE. CLOSE OPEN ENDS OF WORK WITH TEMPORARY COVERS OR PLUG DURING CONSTRUCTION TO PREVENT ENTRY OF OBSTRUCTING MATERIAL. COVER WORK SUBJECT TO FALLING DEBRIS WITH TEMPORARY COVERS.

2. PROVIDE ALL MATERIALS, EQUIPMENT AND LABOR TO PROVIDE ADEQUATE PROTECTION OF ALL EQUIPMENT DURING THE COURSE OF CONSTRUCTION. THIS INCLUDES PROTECTION FROM MOISTURE AND FOREIGN MATERIAL. AT COMPLETION, ALL WORK MUST BE TURNED OVER TO OWNER CLEAN AND IN NEW CONDITION.

3. PROTECT THE WORK AND MATERIAL OF OTHER TRADES THAT MIGHT BE DAMAGED BY WORK OR WORKMEN AND MAKE GOOD ALL DAMAGE THUS CAUSED.

E. FIREPROOFING: PATCHING AND REPAIRING OF FIREPROOFING DUE TO CUTTING OR DAMAGING TO FIREPROOFING DURING COURSE OF WORK SPECIFIED UNDER THIS SECTION SHALL BE PERFORMED BY INSTALLER OF FIREPROOFING AND PAID FOR BY TRADE RESPONSIBLE FOR DAMAGE AND SHALL NOT CONSTITUTE GROUNDS FOR AN EXTRA TO OWNER.

1.17 CONTINUITY OF SERVICES

A. DO NOT INTERRUPT EXISTING SERVICES WITHOUT OWNER'S WRITTEN APPROVAL.

B. SCHEDULE INTERRUPTIONS IN ADVANCE, ACCORDING TO OWNER'S INSTRUCTIONS. SUBMIT, IN WRITING, WITH REQUEST FOR INTERRUPTION, METHODS PROPOSED TO MINIMIZE LENGTH OF INTERRUPTION.

C. INTERRUPTIONS SHALL BE SCHEDULED AT TIMES OF DAY AND WORK SO THAT THEY HAVE MINIMAL IMPACT ON OWNER'S OPERATIONS.

D. SUBCONTRACTOR SHALL COORDINATE SHUTDOWNS OF EXISTING SYSTEMS.

E. INCLUDE PREMIUM TIME WORK ASSOCIATED WITH INTERRUPTIONS OF SERVICES AND/OR SHUTDOWNS TO AVOID DISRUPTION TO OWNER'S OPERATIONS.

1.18 PROJECT PUNCH LIST PROCEDURE:

A. WHEN THE CONTRACT WORK IS SUBSTANTIALLY COMPLETE, EACH TRADE CONTRACTOR SHALL PHYSICALLY WALK DOWN THE INSTALLATION AND PREPARE A PUNCH LIST CONTAINING AN ITEMIZATION OF WORK REMAINING FOR 100% COMPLETION. THE PUNCH LIST SHALL BE SUBMITTED TO THE ARCHITECT AS A PREREQUISITE TO THE ARCHITECT’S OWN PUNCH LIST, WHICH WILL THEN BE DEVELOPED TO COMPLEMENT THAT OF THE TRADE CONTRACTOR.

B. REGARDLESS OF WHAT THE ENGINEER OBSERVES AND DOES NOT OBSERVE IN THE WALK-THROUGH, THE RESPONSIBILITY FOR SUCCESSFUL COMPLETION OF THE CONTRACT IN ALL OF ITS DETAILS REMAINS WITH THE CONTRACTOR.

C. IF, WHEN THE ENGINEER ARRIVES AT THE SITE CERTAIN AREAS ARE NOT COMPLETE AND READY FOR PUNCH OUT, THE ENGINEER WILL NOT REVIEW THESE AREAS. WHEN A SECOND NOTIFICATION IS ISSUED INDICATING THE INSTALLATION IS COMPLETED AND THE CONTRACTOR HAS PUNCHED AND CORRECTED THESE AREAS, THE ENGINEER WILL THEN RE-VISIT THE SITE FOR FINAL OBSERVATIONS AND PUNCH LIST.

D. CONFIRMATION OF PUNCH LIST REMEDIATION. ONCE THE ENGINEER HAS SUBMITTED THE ENGINEERING PUNCH LIST, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONFIRM THAT ALL THE LISTED ITEMS HAVE BEEN CORRECTLY REMEDIED. THE ENGINEER WILL NOT VISIT THE PROJECT TO RE-OBSERVE THE AREAS ALREADY VISITED IN THE FINAL WALK-THROUGH.

1.19 ELECTRONIC FILES

A. ELECTRONIC FILES FOR FIRE PROTECTION, PLUMBING, HVAC, ELECTRICAL, COMMUNICATION, OR ELECTRONIC SAFETY AND SECURITY DRAWINGS WILL BE FURNISHED BY ENGINEER AT CONTRACTOR’S REQUEST. THESE FILES WILL BE PROVIDED ON ENGINEER’S FTP SITE IN THE SOFTWARE RELEASE USED BY THE ENGINEER. IF OTHER MEDIA OR SOFTWARE VERSION IS REQUESTED, ENGINEER WILL REQUIRE ADVANCE REIMBURSEMENT OF PROCESSING COSTS.

B. REQUESTS SHOULD BE MADE BY FILLING OUT A FORM LETTER AND PROVIDING AN AUTHORIZED SIGNATURE. THE REQUESTED INFORMATION WILL NOT BE RELEASED PRIOR TO RECEIPT OF THIS LETTER FOR THE APPROPRIATE DOCUMENTS. THE CONTRACTOR SHALL REQUEST THE FORM LETTER FROM PROJECT MANAGER.

1.20 PROJECT CLOSE-OUT PROCEDURE:

A. REVIEW REQUIREMENTS OF EACH SECTION OF THE SPECIFICATIONS AND SUBMIT FOR APPROVAL TO ARCHITECT THE SIGN-OFF FORMS THAT SHALL BECOME THE PROJECT CLOSE-OUT CHECKLIST. THESE, AT A MINIMUM, SHALL INCLUDE THE FOLLOWING INFORMATION SHOWN IN ATTACHED PROJECT CLOSEOUT CHECKLIST EXAMPLE. THE ARCHITECT AND/OR OWNER MAY INCORPORATE ADDITIONAL SPECIFIC ITEMS TO THE FOLLOWING CHECKLIST WHICH SHALL BECOME PART OF THE PROJECT REQUIREMENTS. REQUIREMENTS SHALL ALSO INCLUDE THE FOLLOWING:

a. NFPA 13 - FIRE PROTECTION TEST CERTIFICATE COMPLETED AND SIGNED

b. NFPA 72 - FIRE ALARM COMPLETED FORM

c. EMERGENCY LIGHTING LOAD LETTER FROM ELECTRICAL CONTRACTOR CONFIRMING EMERGENCY LIGHTING SYSTEM IS FULLY INSTALLED AND OPERATIONAL.

d. LIGHTING CONTROLS COMMISSIONING REPORT

e. A PLUMBING DISINFECTION OF WATER SYSTEM TEST CERTIFICATE

f. HVAC TESTING AND BALANCING REPORT

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :
VANDERWEIL
R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210
P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

DocuSigned by:
Edward S. Dalton
D6BE7F41467946B...

58580
EDWARD S.
DALTON
12/19/2024

General Notes:

Project Title:
Fidelity INVESTMENTS
Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project No.: C0115.00

Drawing Sheet Title:
HVAC DIVISION 20
SPECIFICATIONS

Drawing Sheet Number:
M-003

Owner's Branch No.:
134

DIVISION 23: HVAC SPECIFICATIONS

GENERAL REQUIREMENTS

1. THIS PROJECT INVOLVES CONSTRUCTION INSIDE AN EXISTING STRUCTURE. CONTRACTORS, BY SUBMITTING A BID, ARE DEEMED TO BE COMPLETELY FAMILIAR WITH THE EXISTING CONDITION OF THE BUILDING AS IT INFLUENCES THE WORK DESCRIBED. POTENTIAL PROBLEMS AREA SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT IMMEDIATELY.

2. ANY DEMOLITION SHALL BE COORDINATED WITH OWNER, ARCHITECT, G.C.. AND ENGINEER.

3. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF AIR TERMINAL DEVICES.

4. ALL MATERIALS AND EQUIPMENT SHALL BE UNUSED AND OF NEW MANUFACTURE.

5. ACCESS PANELS SHALL BE PROVIDED TO CLEAN AND SERVICE DAMPERS, HEATERS, VALVES, AND ALL CONCEALED MECHANICAL EQUIPMENT.

6. INSTALL THERMOSTATS AT MOUNTING HEIGHTS ABOVE FINISHED FLOOR IN ACCORDANCE WITH "ADA" REQUIREMENTS, OR AS DIRECTED OTHERWISE BY ARCHITECT.

7. CONTRACTOR SHALL REPORT ANY EQUIPMENT DEFICIENCIES FOUND TO THE OWNER AND THE ARCHITECT AND/OR ENGINEER.

8. WORK SHALL CONFORM TO THE CURRENT IN-FORCE EDITIONS OF THE FOLLOWING:
   A. SHEET METAL SMACNA STANDARDS.
   B. INTERNATIONAL MECHANICAL CODE (IMC).
   C. INTERNATIONAL ENERGY CONSERVATION CODE (IECC).
   D. ALL OTHER APPLICABLE STATE AND LOCAL CODES AND ORDINANCES.
   E. WORK SHALL ALSO CONFORM TO BASE BUILDING SPECIFICATIONS AND STANDARDS.

9. GIVE NOTICES, FILE PLANS, OBTAIN PERMITS AND LICENSES, PAY FEES AND BACK CHARGES, AND OBTAIN NECESSARY APPROVALS FROM AUTHORITIES THAT HAVE JURISDICTION.

10. SUBMITTALS
    A. MECHANICAL CONTRACTOR SHALL SUBMIT FOR REVIEW, SHOP DRAWINGS FOR ALL MATERIAL AND EQUIPMENT, CONTRACTOR SHALL POINT OUT ANY DEVIATIONS OF THE SHOP DRAWINGS FROM THE DESIGN, SCHEDULE AT LEAST TEN WORKING DAYS EXCLUSIVE OF TRANSMITTAL TIME, FOR SUBMITTAL REVIEW. SHOP DRAWINGS MAY BE PAPER OR ELECTRONIC. ELECTRONIC SHOP DRAWINGS SHALL BE IN SEARCHABLE PDF FORMAT. IN ADDITION TO THE FOREGOING, SUBMIT PAPER SHOP DRAWINGS SHOWING THE FOLLOWING:
       a. DUCTWORK SHOP DRAWINGS AND DETAILS. THE ROUTING OF DUCTWORK ON VANDERWEIL'S DRAWINGS IS SHOWN DIAGRAMMATICALLY AND APPROXIMATELY, AS ARE THE POSITIONS OF NEW VAV BOXES AND OTHER ABOVE-THE-CEILING COMPONENTS. THE CONTRACTOR SHALL DETERMINE EXACT ROUTING AND LOCATIONS, PROVIDING PROPER CLEARANCES, MAKING PROVISIONS FOR MAINTENANCE ACCESS, AND COORDINATING WITH EXISTING AND NEW COMPONENTS OF OTHER TRADES, THE STRUCTURE, AND OTHER OBSTRUCTIONS. THE DUCTWORK SHOP DRAWING SUBMITTAL SHALL BE BASED ON THIS COORDINATION EFFORT AND SHALL SHOW ALL AIR DISTRIBUTION COMPONENTS. DUCTWORK AND COMPONENTS SHALL BE DRAWN TO SCALE, AND DUCT SIZES SHALL BE INDICATED.
       b. PIPING SHOP DRAWINGS SHOWING LAYOUT, COMPONENTS, AND DETAILS.
       c. CONTROLS SHOP DRAWINGS, INCLUDING EQUIPMENT AND SYSTEM CONTROL SCHEMATICS, SEQUENCES OF OPERATIONS, LOGIC DIAGRAMS AND SYSTEM COMPONENTS INCLUDING DETAILS OF TIE-IN TO EXISTING BUILDING CONTROL MANAGEMENT SYSTEM.

11. AS-BUILT DRAWINGS: MAINTAIN ONE SET OF PRINTS ON THE SITE AND NOTE ALL CHANGES OR DEVIATIONS FROM THE ORIGINAL DESIGN THEREON. AT THE COMPLETION OF THE PROJECT INCORPORATE ALL CHANGES INTO RECORD AS-BUILT DRAWINGS IN ELECTRONIC FORMAT AND SUBMIT CD FOR APPROVAL.

12. OPERATING AND MAINTENANCE INSTRUCTIONS: PROVIDE THREE SETS OF MANUFACTURERS OPERATING AND MAINTENANCE INSTRUCTIONS FOR EACH PIECE OF EQUIPMENT AND SYSTEM. COMPILE INTO THREE HARD COVER THREE RING BINDERS WITH INDEX PAGE AND INDEXING TABS. ALL NAME TAG INFORMATION SUCH AS MAKE, TYPE, SIZE, CAPACITY, SERIAL NUMBER, ETC. SHALL BE INCLUDED AS PART OF THE MANUAL.

13. MOTORS, STARTERS, AND WIRING: PROVIDE MOTORS AND CONTROLS, AND FURNISH STARTERS FOR HVAC EQUIPMENT, EXCEPT FOR UNITS SERVED BY MCC WHICH ARE PROVIDED UNDER ELECTRIC WORK. PROVIDE CONTROL AND OTHER RELATED WIRING INCLUDING INTERLOCKS. ALL MOTORS SHALL TO BE PREMIUM EFFICIENCY. ALL THREE PHASE MOTORS SHALL BE RATED FOR INVERTER DUTY SERVICE.

14. VIBRATION ISOLATION: PROVIDE VIBRATION ISOLATION FOR EACH PIECE OF ROTATING OR RECIPROCATING HVAC EQUIPMENT SHOWN ON THE DRAWINGS. ALL ISOLATION COMPONENTS SHALL BE SUPPLIED BY A SINGLE MANUFACTURER - MASON INDUSTRIES OR AMBER BOOTH. TYPES OF ISOLATORS, REQUIRED DEFLECTIONS, AND INSTALLATION PRACTICES SHALL BE IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS OF THE VIBRATION ISOLATION MANUFACTURER.

15. SEISMIC RESTRAINTS: PROVIDE RESTRAINTS AS REQUIRED BY CODE. FOR EACH SEISMIC RESTRAINT, PROVIDE CERTIFIED CALCULATIONS TO VERIFY ADEQUACY TO MEET THE FOLLOWING DESIGN REQUIREMENTS: ABILITY TO ACCOMMODATE RELATIVE SEISMIC DISPLACEMENTS OF SUPPORTED ITEM BETWEEN POINTS OF SUPPORT. ABILITY TO ACCOMMODATE THE REQUIRED SEISMIC FORCES. FOR EACH RESPECTIVE SET OF ANCHOR BOLTS PROVIDE CALCULATIONS TO VERIFY ADEQUACY TO MEET COMBINED SEISMIC-INDUCED SHEER AND TENSION FORCES. FOR EACH WELDMENT BETWEEN STRUCTURE AND ITEM SUBJECT TO SEISMIC FORCE, PROVIDE CALCULATIONS TO VERIFY ADEQUACY. CALCULATIONS SHALL BE STAMPED BY A PROFESSIONAL ENGINEER WHO IS REGISTERED IN THE STATE WHERE THE WORK IS BEING PERFORMED AND HAS SPECIFIC EXPERIENCE IN SEISMIC CALCULATIONS. RESTRAINTS SHALL MAINTAIN THE RESTRAINED ITEM IN A CAPTIVE POSITION WITHOUT SHORT CIRCUITING THE VIBRATION ISOLATION.

16. HANGERS AND SUPPORTS: STRUCTURAL STEEL SUPPORTS, HANGERS, ETC. SHALL BE ANGLE IRON, STEEL CHANNEL OR STEEL ROD USED WITH APPROVED CLAMPS, INSERTS, ETC.. ALL SUPPORTS, HANGERS, BRACKETS, ETC.., SHALL BE AS APPROVED BY THE ENGINEER. ALL HANGERS SHALL BE GALVANIZED OR PAINTED WITH TWO COATS OF RUSTOLEUM PAINT BEFORE THEIR INSTALLATION. ATTACH HANGERS AND SUPPORTS DIRECTLY ONTO THE STRUCTURE BY FIRST REMOVING EXISTING FIRE PROOFING AND AFTER SECURING THE ATTACHMENT, REPAIRING THE FIRE PROOFING TO ITS ORIGINAL CONDITION, CONTINUOUSLY OVER THE ATTACHMENT.

17. CLEANING: ENTIRE INSTALLATION AND ALL WORK AREAS SHALL BE LEFT AS CLEAN AS NEW. CLEAN INTERNALS OF ALL DUCTWORK AND AIR HANDLING UNITS, AND REPLACE FILTERS AFTERWARDS. FLUSH AND CLEAN PIPING.

18. START UP, TESTING, AND BALANCING
    A. START UP ALL SYSTEMS, PRESSURE TEST DUCTWORK AND PIPING, AND BALANCE SYSTEMS INCLUDING ALL NEW AND EXISTING REGISTERS, GRILLES, DIFFUSERS, TO PERFORMANCE DATA SHOWN ON PLANS, SCHEDULES, AND AS SPECIFIED.
       1. MEASUREMENTS TO BE RECORDED:
       a. AIRFLOW MEASUREMENTS AT EACH DIFFUSER, GRILLE, REGISTER.
       b. AIRFLOW MEASUREMENTS AT EACH PIECE OF MECHANICAL EQUIPMENT.
       c. OUTSIDE AIR TEMPERATURE AT THE TIME OF BALANCING.
       d. AIR TEMPERATURE AND FLOWRATE IN EACH SECTION OF THE MECHANICAL EQUIPMENT, INCLUDING SUPPLY AIR AND RETURN AIR.
       e. SUPPLY AIR TEMPERATURE AT THE FIRST AND LAST DIFFUSER IN THE RUN.
       f. RETURN AIR TEMPERATURE AT THE FIRST AND LAST GRILLE/REGISTER IN THE RUN.
       g. SPACE TEMPERATURE.
       h. SETPOINT TEMPERATURE AT THE THERMOSTAT.

       2. PROCEDURE:
       a. AIR AND WATER BLANCING SHALL INCLUDE MEASURING AND ADJUSTING AIRFLOW AND WATER FLOW RATES TO ENSURE THEY MEET DESIGN SPECIFICATIONS.
       b. ANY DISCREPANCIES IN AIRFLOW OR WATER FLOW AND TEMPERATURE SHALL BE ADJUSTED AND RE-MEASURED TO ENSURE PROPER BALANCE.
       c. THE AIR BALANCE SHALL BE CONDUCTED IN COOLING MODE.
       d. UPON COMPLETION OF THE AIR BALANCE IN COOLING MODE, THE SYSTEM SHALL BE SWITCHED TO HEATING MODE.
       e. ALL MEASUREMENTS SHALL BE RECORDED AND DOCUMENTED IN BOTH MODES.

    B. DO NOT COVER OR CONCEAL WORK BEFORE TESTING AND INSPECTION AND OBTAINING APPROVAL.
    C. LEAKS, DAMAGE AND DEFECTS DISCOVERED OR RESULTING FROM STARTUP, TESTING, AND BALANCING SHALL BE REPAIRED OR REPLACED TO LIKE-NEW CONDITION WITH ACCEPTABLE MATERIALS. TEST SHALL BE CONTINUED UNTIL SYSTEM OPERATES WITHOUT ADJUSTMENT OR REPAIR.
    D. REPORT ON REPORTING FORMS, SUBMITTED TO ARCHITECT FOR APPROVAL IN ADVANCE.
    E. SUBMIT SIX (6) COPIES OF TESTING AND BALANCING REPORTS TO ARCHITECT FOR APPROVAL.
    F. THIS CONTRACTOR SHALL FURNISH ALL TEST MEDIUMS AND DISPOSE OF ALL TEST MEDIUMS AT AN APPROVED OFF SITE LOCATION AFTER TESTING IS COMPLETE.
    G. NOTE REQUIREMENT ABOVE FOR CFM AND STATIC PRESSURE READINGS PRIOR TO DEMOLITION.

18. WARRANTY: PROVIDE WARRANTY FOR WORK OF THIS SECTION IN WRITING FOR ONE YEAR FROM DATE OF OWNERS ACCEPTANCE OF SUBSTANTIAL COMPLETION. REPAIR OR REPLACE DEFECTIVE MATERIALS,EQUIPMENT, WORKMANSHIP AND INSTALLATION THAT DEVELOP WITHIN THIS PERIOD, PROMPTLY AND TO OWNER'S SATISFACTION AND CORRECT DAMAGE CAUSED IN MAKING NECESSARY REPAIRS AND REPLACEMENTS UNDER WARRANTY WITHIN CONTRACT PRICE.

DUCTWORK AND AIR DISTRIBUTION EQUIPMENT

1. ROUTING AND SIZING OF DUCTWORK: REFER TO GENERAL NOTE "SUBMITTALS", FOR ROUTING. WHERE DUCT SIZES ARE NOT INDICATED, CONTRACTOR SHALL SELECT SIZES BASED ON THE CFM USING THE "LOW PRESSURE DUCT SIZING TABLE."

LOW PRESSURE DUCT SIZING TABLE

Airflow (cfm)	Round Duct Size (inches)	Equivalent Rectangular Duct Sizes (inches x inches)				
100	6"	6"x6"	-	-	-	-
200	8"	10"x6"	8"x8"	-	-	-
300	10"	12"x6"	10"x8"	-	-	-
400	10"	16"x6"	12"x8"	10"x10"	-	-
500	12"	20"x6"	14"x8"	10"x10"	-	-
600	12"	-	16"x8"	12"x10"	-	-
700	14"	-	18"x8"	14"x10"	12"x12"	-
800	14"	-	20"x8"	16"x10"	12"x12"	-
900	14"	-	22"x8"	18"x10"	14"x12"	-
1000	16"	-	24"x8"	18"x10"	16"x12"	14"x14"
1100	16"	-	26"x8"	20"x10"	16"x12"	14"x14"
1200	16"	-	28"x8"	22"x10"	18"x12"	14"x14"
1300	16"	-	-	22"x10"	18"x12"	16"x14"
1400	18"	-	-	24"x10"	20"x12"	18"x14"
1500	18"	-	-	26"x10"	20"x12"	18"x14"
1600	18"	-	-	28"x10"	22"x12"	18"x14"
1700	18"	-	-	28"x10"	22"x12"	20"x14"
1800	18"	-	-	30"x10"	24"x12"	20"x14"
1900	20"	-	-	32"x10"	26"x12"	22"x14"
2000	20"	-	-	32"x10"	26"x12"	22"x14"

2. SPECIAL DUCTWORK REQUIREMENTS
   A. INTERNAL AIR FLOW DIMENSIONS ARE SHOWN FOR DUCTS. CONTRACTOR SHALL INCREASE SIZE FOR LINER IF APPLICABLE.

   B. DIFFUSER SIZES SHOWN ARE NECK SIZES; REGISTER AND GRILLE SIZES ARE NOMINAL.

   C. PROVIDE FLEXIBLE CONNECTIONS ON ALL DUCTS CONNECTING TO FANS AND HEAT PUMPS. ALL DUCTS SHALL BE GROUNDED ACROSS FLEXIBLE CONNECTION WITH FLEXIBLE COPPER GROUNDING STRAPS.

   D. MAXIMUM LENGTH OF FLEXIBLE RUN-OUT TO DIFFUSERS SHALL BE 5'-0". PROVIDE ADDITIONAL LENGTH OF RIGID DUCT (ROUND OR RECTANGULAR) ON RUN-OUT AS REQUIRED. SAG SHALL NOT EXCEED 1/2" PER FOOT OF SPACING BETWEEN SUPPORTS.

   E. ALL DUCTS PENETRATING RATED FIRE WALLS SHALL BE PROVIDED WITH FIRE DAMPERS AND ACCESS DOORS.

   F. DUCTWORK SHALL NOT RUN ALONG FULL HEIGHT PARTITIONS.

   G. PATCH AND SEAL ALL EXISTING OPENINGS IN DUCTWORK NOT UTILIZED FOR NEW LAYOUT.

   H. THE INSIDE OF ALL UNLINED DUCTWORK VISIBLE THROUGH A GRILLE OR DIFFUSER SHALL BE PAINTED FLAT BLACK.

   I. WHEN SECTION OF DUCTWORK IS NOT LABELED FOR SIZE, THE LARGER SIZE INDICATED ON THE CONNECTED DUCT SHALL PREVAIL. SIZE OF DUCT RUN-OUTS TO DIFFUSER SHALL EQUAL DIFFUSER NECK SIZE.

   J. DUCT BRANCH CONNECTIONS AND TAKE OFFS SHALL BE MADE WITH 45° CONNECTION, BELLMOUTH OR CONICAL ONLY. SPIN IN COLLARS AND STRAIGHT TAPS SHALL NOT BE USED.

   K. ELBOWS AND BENDS FOR RECTANGULAR DUCTS SHALL HAVE CENTER LINE RADIUS OF 1.5 TIMES DUCT WIDTH WHEREVER POSSIBLE. WHERE CENTERLINE RADIUSIS LESS THAN 1.5 TIMES DUCT WITH, ELBOWS SHALL BE RADIUS THROAT WITH RADIUS HEEL AND FULL LENGTH SPLITTER VANES.

3. MATERIALS AND PRESSURE RATING
   A. SHEET METAL DUCTS SHALL BE CONSTRUCTED OF HOT DIPPED G90 GALVANIZED SHEET METAL UNLESS OTHERWISE SPECIFIED.

   B. ALL MEDIUM PRESSURE DUCTWORK BETWEEN MAIN SYSTEM FAN AND AIR TERMINAL DEVICE SHALL BE MINIMUM 4"(wg) PRESSURE CLASS, SEAL CLASS A, LEAKAGE CLASS 6.

   C. ALL LOW PRESSURE DUCTWORK BETWEEN TERMINAL DEVICE AND AIR OUTLETS SHALL BE MINIMUM 2"(wg) PRESSURE CLASS. SEAL CLASS B, LEAKAGE CLASS 12.

4. FLEXIBLE DUCTWORK
   A. FLEXIBLE DUCTWORK, CONNECTING TO UNINSULATED OR UNLINED DUCT, SHALL BE VINYL COATED FIBERGLASS CLOTH 0.0057" MINIMUM THICKNESS, 25 STRANDS PER INCH MINIMUM THREAD COUNT WITH CORROSION-RESISTANT HELICAL WIRE REINFORCEMENT, AND RATED FOR 12" W.C. POSITIVE PRESSURE.

   B. RATING SHALL BE 2" W.C. NEGATIVE PRESSURE WITH A MAXIMUM VELOCITY OF 4000 FPM. FLEXDUCT MUST BE LISTED AS A CLASS 1 CONNECTOR ACCORDING TO UL 181 AND SHALL MEET THE REQUIREMENTS OF NFPA 90A - MAXIMUM ASTM E-84 FIRE HAZARD RATING. UNINSULATED FLEXIBLE DUCT SHALL BE EQUIVALENT TO FLEXMASTER TYPE 4.

   C. FLEXIBLE DUCT CONNECTED TO INSULATED OR LINED DUCT SHALL BE INSULATED WITH 1-1/2", 1/2 LB. DENSITY FIBERGLASS INSULATION AND FLAME RETARDANT (UL LISTED) VAPOR BARRIER, MEETING ASTM E-84 RATING.

5. VOLUME DAMPERS: PROVIDE MANUAL ADJUSTABLE VOLUME DAMPERS, WITH EXTENDED MOUNT INDICATING AND LOCKING QUADRANTS ON EACH SUPPLY, RETURN, AND GENERAL EXHAUST DUCT TAKEOFF, AND AT EACH TAKEOFF TO A REGISTER, GRILLE, OR DIFFUSER (NOT ALL DAMPERS ARE SHOWN ON DRAWINGS). DAMPERS SHALL BE LOCATED AS FAR UPSTREAM AS POSSIBLE IN THE BRANCH DUCT OR TAKE OFF TO MINIMIZE DOWNSTREAM NOISE.

6. DIFFUSERS, REGISTERS, AND GRILLES: PROVIDE DIFFUSERS, REGISTERS, AND GRILLES FOR SUPPLY, RETURN, AND EXHAUST OUTLETS, OF SIZE, TYPE, MATERIAL AND DESIGN SHOWN ON DRAWINGS. ACCEPTABLE MANUFACTURERS SHALL BE TUTTLE & BAILEY, ANEMOSTAT, KRUEGER, METALAIRE, OR TITUS. SOUND PRESSURE LEVELS SHALL NOT EXCEED NC 20. COLOR AND FINISH SHALL BE SELECTED BY THE ARCHITECT. WHERE LINEAR TYPE DIFFUSERS ARE USED IN A SPACE, BOTH SUPPLY AND RETURN SHALL BE OF THE SAME TYPE (IE. ALL SHALL BE SIMILAR FINISH, COLOR, SLOT QUANTITY, SLOT WIDTH ETC.) TO PROVIDE A CONSISTENT LINEAR LOOK.

DUCTWORK AND AIR DISTRIBUTION EQUIPMENT CONTINUED

7. ACOUSTICAL SOUND LINING
   A. PROVIDE 1" THICK ACOUSTICAL LINING BY CERTAIN-TEED, KNAUF, OWENS CORNING, OR MANVILLE FOR THE FOLLOWING DUCTWORK:
      a. SUPPLY AND RETURN AIR DUCTWORK, INCLUDING PLENUMS, FOR MINIMUM OF 20 FEET FROM AIR HANDLING UNITS.

      b. ALL LOW PRESSURE DUCTWORK DOWNSTREAM OF VARIABLE VOLUME, CONSTANT VOLUME BOXES AND FAN BOXES.

      c. ALL TRANSFER AIR DUCTS.

      d. DUCTWORK INDICATED AS LINED ON DRAWINGS.

   B. MATERIALS AND INSTALLATION SHALL MEET THE FOLLOWING STANDARDS, AS APPLICABLE:
      a. NFPA-90A, UL723, NFPA-255; SMACNA DUCT LINER APPLICATIONS STANDARD; SMACNA MECHANICAL FASTENERS STANDARD; ADHESIVE AND SEALANT COUNCIL; ADHESIVES STANDARD FOR DUCT LINER - ASC-A-7001A; ASTM E-84 FIRE HAZARD CLASSIFICATIONS OF 25 FLAME SPREAD, 50 SMOKE DEVELOPED, AND 50 FUEL CONTRIBUTED.

8. DUCT INSULATION (EXTERNAL): INSULATION SHALL BE CERTAIN-TEED, KNAUF, MANVILLE, OR OWENS CORNING. MATERIALS SHALL MEET REQUIREMENTS OF ADHESIVE AND SEALANT COUNCIL STANDARDS AND SMACNA. INSULATE (EXISTING AND NEW) SUPPLY AND FRESH AIR DUCTS AND PLENUMS IN CONCEALED SPACES AND RETURN DUCT NOT IN CEILING PLENUM WITH AT LEAST 2" THICK, 3/4 LB/CU.FT. (MINIMUM R VALUE OF 6) DENSITY, FIBROUS GLASS DUCT WRAP, WITH FOIL-KRAFT FLAME RESISTANT VAPOR BARRIER. ASTM E-84 FIRE HAZARD RATINGS SHALL BE 25 FLAME SPREAD. 50 SMOKE DEVELOPED AND 50 FUEL CONTRIBUTED.

9. DUCT LABELING: PROVIDE MULTILAYER, MULTICOLOR, POLYESTER, VINYL OR PLASTIC LABELS, MINIMUM 5 MILS THICK. INCLUDE DUCT SERVICE ABBREVIATION, DUCT SIZE AND AN ARROW INDICATING FLOW DIRECTION. LETTERING SIZE AT LEAST 1-1/2 INCHES HIGH. SUPPLY AIR SHALL BE GREEN BACKGROUND WITH WHITE LETTERS. GENERAL EXHAUST AIR SHALL BE YELLOW BACKGROUND WITH BLACK LETTERS. OUTSIDE AIR AND RETURN SHALL BE BLUE BACKGROUND WITH WHITE LETTERS.

10. ENERGY RECOVERY UNITS: PROVIDE 2" DOUBLE WALL CENTRAL STATION AIR HANDLING UNITS BY RENEWAIRE OR GREENHECK, OF CAPACITIES AND CONFIGURATIONS SHOWN ON DRAWINGS. FANS SHALL BE STATICALLY AND DYNAMICALLY BALANCED AND RATED IN ACCORDANCE WITH THE LATEST EDITION OF ARI STANDARD 430. PROVIDE ALL NECESSARY FILTERS, INCLUDING THOSE SHOWN ON THE SCHEDULES. PROVIDE ALL FEATURES AND ACCESSORIES INDICATED IN THE SCHEDULE OR SHOWN ON THE DRAWINGS.

11. EQUIPMENT INSULATION
    A. INSULATION SHALL BE CERTAIN-TEED, KNAUF, MANVILLE, OR OWENS CORNING AND SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

    B. INSULATE DRAIN PANS.

    C. INSULATION SHALL BE FIBROUS GLASS RIGID BLOCK OR SEMI-RIGID BOARD RATED FOR TEMPERATURE INTENDED. 2" THICK FOR HEATING SYSTEM HEAT EXCHANGERS, 1" THICK FOR ALL OTHER EQUIPMENT. INSULATION SHALL BE FORMED OR FABRICATED TO FIT EQUIPMENT.

HYDRONIC SYSTEMS

1. PIPING AND FITTINGS
   A. PIPE MATERIALS AND FITTING MATERIALS SHALL BE AS INDICATED IN SCHEDULE OF PIPE AND FITTING MATERIALS. PROVIDE DIELECTRIC FITTINGS TO CONNECT DIFFERENT PIPING MATERIALS.

   B. SCHEDULE OF PIPE AND FITTING MATERIALS

SERVICE	PIPE MATERIAL WEIGHT	FOR TYPE OF JOINTS	FITTING MATERIAL	PRESSURE RATING PSI SWP. OR WEIGHT
CONDENSATE DRAIN	COPPER TYPE L	95/5 SOLDERED	WROUGHT COPPER	125

2. PIPE INSULATION
   A. COOLING COIL CONDENSATE DRAIN PIPING AND OUTDOOR COOLING TOWER DRAIN PIPING SHALL HAVE 3/4" THICK RIGID CLOSED CELL FOAM INSULATION SIMILAR TO ARMSTRONG ARMAFLEX.

   B. REFRIGERANT SUCTION LINES, REFRIGERANT HOT GAS BYPASS LINES, CONDENSATE DRAIN LINES, AND OUTDOOR REFRIGERANT LIQUID LINES SHALL BE INSULATED WITH 1" THICK RIGID CLOSED CELL FOAM INSULATION, ARMSTRONG RIGID ARMAFLEX, MANVILLE, OWNES CORNING, OR HALSTEAD/NOMACO (INSULTUBE). ALL OUTDOOR PIPING SHALL BE ADDITIONALLY COVERED WITH WEATHERPROOF ALUMINUM JACKET.

COOLING EQUIPMENT

1. VARIABLE REFRIGERANT FLOW (VRF)
   A. PROVIDE SYSTEMS OF CAPACITIES AND TYPE AS SHOWN ON DRAWINGS BY TRANE/MITSUBISHI OR DAIKIN. SYSTEM SHALL BE PROVIDED WITH ALL COMPONENTS NECESSARY FOR A COMPLETE WORKING SYSTEM, INCLUDING BUT NOT LIMITED TO:
      a. INDOOR UNITS SIZED PER SCHEDULE WITH WALL MOUNTED PROGRAMMABLE THERMOSTAT. INDOOR UNITS SHALL HAVE HARD WIRED MICROPROCESSOR CONTROLS, FILTER BOXES AND ADJUSTABLE FAN SPEED.

      b. MANUFACTURER MASTER CONTROLLER.

      c. ISOLATION BALL VALVES SHALL BE PROVIDED AT EACH PIECE OF EQUIPMENT.

   B. PROVIDE REFRIGERANT PIPING BETWEEN BRANCH CIRCUIT CONTROLLER AND AC UNIT. PROVIDE ALL NECESSARY AUXILIARIES AND APPURTENANCES. REFRIGERANT PIPING SHALL BE ACR COPPER TUBING WITH WROUGHT COPPER FITTINGS AND BRAZED JOINTS. REFRIGERANTS SHALL BE R-410A.

2. SPLIT SYSTEM DIRECT EXPANSION AIR CONDITIONING
   A. PROVIDE COMPLETE DX SYSTEM FOR CENTRAL STATION AIR CONDITIONING UNITS OF TYPES, SIZES, AND CAPACITIES SHOWN ON SCHEDULES BY TRANE/MITSUBISHI OR DAIKIN AND TIE INTO VRF MASTER CONTROLLER. SYSTEM SHALL CONSIST OF MATCHING AIR COOLED CONDENSING UNITS, COMPRESSORS, PIPING, CONTROLS, WIRING, AND OTHER ACCESSORIES AND APPURTENANCES NECESSARY TO PROVIDE FULLY AUTOMATICALLY FUNCTIONING SYSTEM.

   B. DX AIR CONDITIONING SYSTEM SHALL BE CAPABLE OF STARTING AND OPERATING DOWN TO 0°F AMBIENT. LOW AMBIENT OPERATION SHALL BE ACCOMPLISHED BY VARYING THE SPEED OF CONDENSER FAN BASED ON SENSING OF HEAD PRESSURE IN REFRIGERANT LIQUID LINE, BY MODULATING DAMPER IN CONDENSER FAN DISCHARGE BASED ON REFRIGERANT HEAD PRESSURE SENSING, OR BY FLOODING THE CONDENSER COIL WITH LIQUID REFRIGERANT TO MAINTAIN THE DESIRED CONDENSER PRESSURE. PROVIDE TIME DELAY RELAY FOR TIMED BYPASS OF THE LOW PRESSURE SWITCH OR OTHER MEANS TO START CONDENSING UNIT AT 0°F WITHOUT NUISANCE SAFETY TRIP UNITS. WHEN SPECIFIED, HOT GAS BYPASS IS TO BE PRE-PIPED INTEGRAL TO THE UNIT.

   C. PROVIDE REFRIGERANT PIPING BETWEEN AIR-COOLED CONDENSING UNIT AND AC UNIT. PROVIDE ALL NECESSARY AUXILIARIES AND APPURTENANCES. REFRIGERANT PIPING SHALL BE ACR COPPER TUBING WITH WROUGHT COPPER FITTINGS AND BRAZED JOINTS. REFRIGERANTS SHALL BE R-410A.

AUTOMATIC TEMPERATURE CONTROL

1. THE EQUIPMENT/SYSTEMS IN THIS BUILDING WILL BE TIED INTO A CENTRAL MASTER CONTROLLER. INDIVIDUAL CONTROL COMPONENTS MAY NOT BE SHOWN ON CONTRACT DOCUMENTS, BUT CONTRACTOR SHALL PROVIDE ALL COMPONENTS AND CONTROL WIRING NECESSARY FOR A COMPLETE OPERABLE SYSTEM. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SYSTEM COMPONENTS.

2. ALL CONTROL WIRING SHALL COMPLY WITH THE REQUIREMENTS OF THE ELECTRICAL SECTION OF THESE CONTRACT DOCUMENTS.

3. NEW DSS, ERV, AND VRF EQUIPMENT TO BE TIED INTO NEW MASTER CONTROLLER TO BE LOCATED IN LAN ROOM. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING AND IF THE LANDLORD IS NOT PROVIDING A MASTER CONTROLLER (TE-200A OR SIMILAR) THEN FIDELITY'S CONTRACTOR SHALL PROVIDE THE MASTER CONTROLLER.

4. ALL ZONES ARE PROVIDED WITH A THERMOSTAT THAT IS EQUIPPED WITH THE FOLLOWING FUNCTIONS:
   A. DIGITAL DISPLAY SHOWING:

      a. HVAC ZONE STATUS

      b. CURRENT TEMPERATURE

      c. HEATING & COOLING SETPOINT TEMPERATURES

   B. ABILITY FOR THE THERMOSTAT TO BE LOCKED OUT

   C. ABILITY FOR THE THERMOSTAT TO HAVE +/- 3°F ADJUSTMENTS WHILE ALL OTHER FUNCTIONS ARE LOCKED OUT.

   D. ENSURE THAT ANY OCCUPANCY SENSOR FUNCTION IS DISABLED IN THERMOSTATS THAT SERVE MORE THAN ONE ROOM.

   E. ADMINISTRATOR AND MAINTENANCE PASSWORDS SHALL BE PROVIDED IN THE CLOSEOUT PACKAGE.

COMMISSIONING

1. THE HVAC SYSTEMS SHALL BE PROVIDED WITH SYSTEM COMMISSIONING BY THE CONTRACTOR IN ACCORDANCE WITH THE STATE'S ENERGY CODE.

2. RELATED DOCUMENTS: DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND OTHER DIVISION 01 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.

3. SUMMARY: SECTION INCLUDES GENERAL REQUIREMENTS THAT APPLY TO IMPLEMENTATION OF COMMISSIONING WITHOUT REGARD TO SPECIFIC SYSTEMS, ASSEMBLIES, OR COMPONENTS.

4. COMMISSIONING TEAM:
   A. MEMBERS APPOINTED BY CONTRACTOR(S): INDIVIDUALS, EACH HAVING THE AUTHORITY TO ACT ON BEHALF OF THE ENTITY HE OR SHE REPRESENTS, EXPLICITLY ORGANIZED TO IMPLEMENT THE COMMISSIONING PROCESS THROUGH COORDINATED ACTION. THE COMMISSIONING TEAM SHALL CONSIST OF, BUT NOT BE LIMITED TO, REPRESENTATIVES OF CONTRACTOR, INCLUDING PROJECT SUPERINTENDENT AND SUBCONTRACTORS, INSTALLERS, SUPPLIERS, AND SPECIALISTS DEEMED APPROPRIATE BY THE CXA.

   B. MEMBERS APPOINTED BY OWNER:
      A. CXA: THE DESIGNATED PERSON, COMPANY, OR ENTITY THAT PLANS, SCHEDULES, AND COORDINATES THE COMMISSIONING TEAM TO IMPLEMENT THE COMMISSIONING PROCESS. OWNER WILL ENGAGE THE CXA UNDER A SEPARATE CONTRACT.

      B. REPRESENTATIVES OF THE FACILITY USER AND OPERATION AND MAINTENANCE PERSONNEL.

      C. ARCHITECT AND ENGINEERING DESIGN PROFESSIONALS.

5. OWNER'S RESPONSIBILITIES: ASSIGN OPERATION AND MAINTENANCE PERSONNEL AND SCHEDULE THEM TO BE PRESENT DURING COMMISSIONING TEAM ACTIVITIES.

6. CONTRACTOR'S RESPONSIBILITIES
   A. THE CONTRACTOR SHALL ASSIGN REPRESENTATIVES WITH EXPERTISE AND AUTHORITY TO ACT ON ITS BEHALF AND SHALL SCHEDULE THEM TO PARTICIPATE IN AND PERFORM COMMISSIONING PROCESS ACTIVITIES. THE REPRESENTATIVES SO ASSIGNED SHALL INCLUDE REPRESENTATIVES OF THE ENTITIES WHICH PROVIDED THE SYSTEMS TO BE COMMISSIONED AS WELL AS INSTALLERS, VENDORS, EQUIPMENT AND CONTROLS SPECIALISTS, AND OTHER PROJECT PARTICIPANTS, ALL AS DEEMED APPROPRIATE BY THE CXA. THE COMMISSIONING PROCESS ACTIVITIES THEY SHALL PERFORM INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
      A. EVALUATE PERFORMANCE DEFICIENCIES IDENTIFIED IN TEST REPORTS AND, IN COLLABORATION WITH ENTITY RESPONSIBLE FOR SYSTEM AND EQUIPMENT INSTALLATION, RECOMMEND CORRECTIVE ACTION.

      B. COOPERATE WITH THE CXA FOR RESOLUTION OF ISSUES RECORDED IN THE ISSUES LOG.

      C. ATTEND COMMISSIONING TEAM MEETINGS AS REQUESTED BY OWNER.

      D. INTEGRATE AND COORDINATE COMMISSIONING PROCESS ACTIVITIES WITH CONSTRUCTION SCHEDULE.

      E. REVIEW AND ACCEPT CONSTRUCTION CHECKLISTS PROVIDED BY THE CXA AND PERFORM NECESSARY REMEDIAL WORK.

      F. FILL OUT PAPER CONSTRUCTION CHECKLISTS AS REMEDIAL WORK IS COMPLETED AND PROVIDE TO THE CXA.

      g. REVIEW AND ACCEPT COMMISSIONING PROCESS TEST PROCEDURES PROVIDED BY THE COMMISSIONING AUTHORITY.

      h. SETUP & CONDUCT THE COMMISSIONING PROCESS TEST AND INSPECTION PROCEDURES REQUIRED BY THE PRE-FUNCTIONAL CHECKLIST AND FUNCTIONAL PERFORMANCE TEST FORMS FOR THE CXA.

7. CXA RESPONSIBILITIES
   A. ORGANIZE AND LEAD THE COMMISSIONING TEAM.

   B. CONVENE COMMISSIONING TEAM MEETINGS.

   C. PROVIDE PROJECT-SPECIFIC CONSTRUCTION CHECKLISTS AND COMMISSIONING PROCESS TEST PROCEDURES.

   D. THE SAMPLING RATE SHOULD BE 100 PERCENT. VERIFICATION WILL INCLUDE, BUT IS NOT LIMITED TO, EQUIPMENT SUBMITTALS, CONSTRUCTION CHECKLISTS, TRAINING, OPERATING AND MAINTENANCE DATA, TESTS, AND TEST REPORTS TO VERIFY COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS.

   E. PREPARE AND MAINTAIN THE ISSUES LOG.

   F. PREPARE AND MAINTAIN COMPLETED CONSTRUCTION CHECKLIST LOG.

   G. WITNESS SYSTEMS, ASSEMBLIES, EQUIPMENT, AND COMPONENT STARTUP.

   H. COMPILE TEST DATA, INSPECTION REPORTS, AND CERTIFICATES; INCLUDE THEM IN THE COMMISSIONING PROCESS REPORT.

8. COMMISSIONING: THE HVAC SYSTEM AND THE HVAC CONTROLS SHALL BE COMMISSIONED. THE CONTRACTORS SHALL COMPLETE CONSTRUCTION CHECKLISTS PROVIDED BY CXA.

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :
VANDERWEIL
R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210
P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:
DocuSigned by:
Edward S. Dalton
D6BE7F41467946B...
58580
EDWARD S.
DALTON
12/19/2024

General Notes:

Project Title:
Fidelity Investments
Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project No.: C0115.00

Drawing Sheet Title:
HVAC DIVISION 23
SPECIFICATIONS

Drawing Sheet Number:
M-004

Owner's Branch No.:
134

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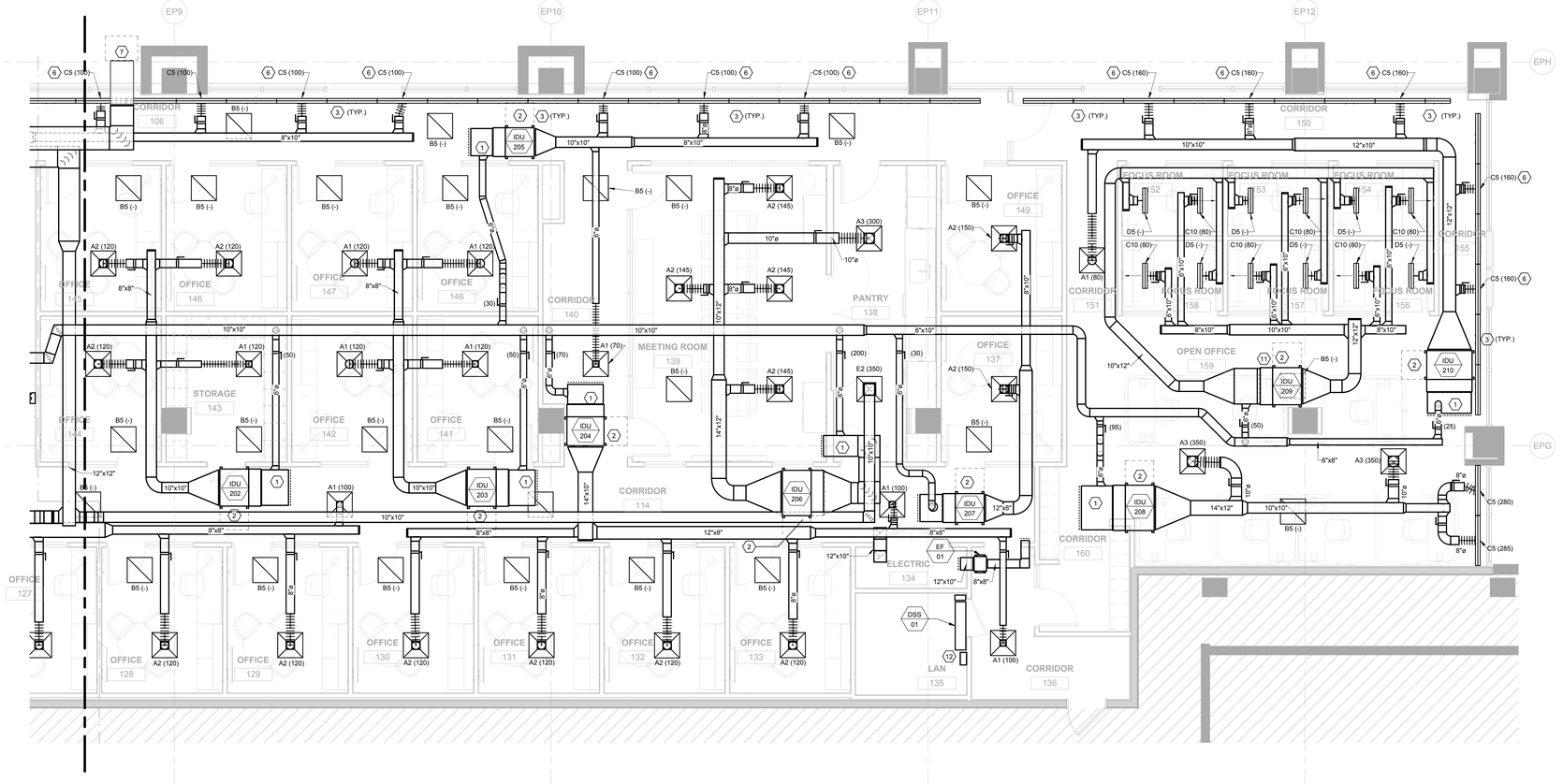
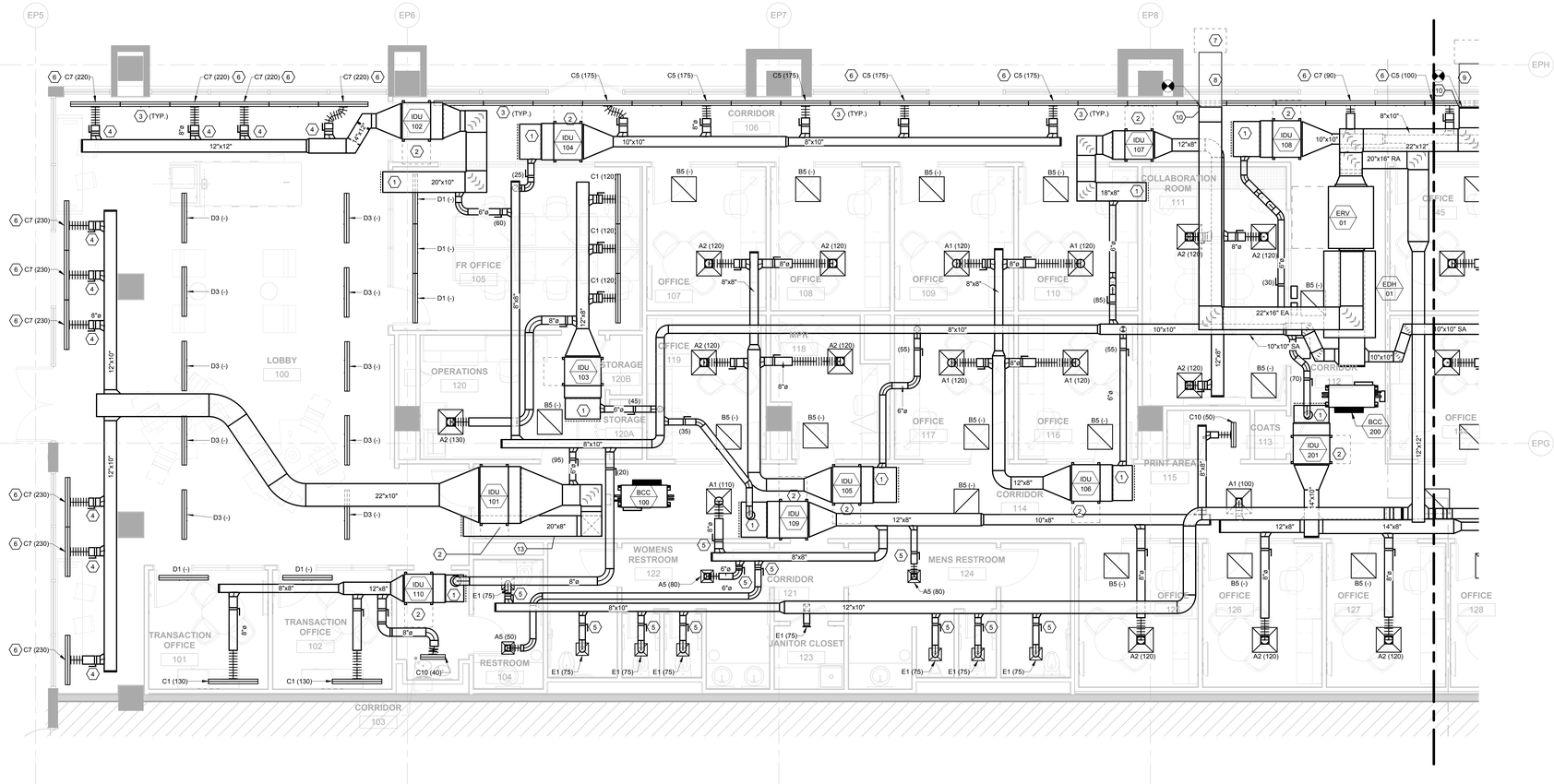


1 HVAC DUCTWORK - LEVEL 1 EAST
1/4" = 1'-0"



2 HVAC DUCTWORK - LEVEL 1 WEST
1/4" = 1'-0"

NOTES

1. REFER TO SHEET M-001 & M-002 FOR HVAC LEGEND.
2. CONTRACTOR TO ENSURE A RETURN AIR PATH IS AVAILABLE FROM ALL ROOMS AND SPACES BACK TO THE MAIN RETURN AIR DUCT INLETS. CONTRACTOR SHALL PROVIDE TRANSFER DUCTS AT ALL FULL HEIGHT PARTITIONS. ALL TRANSFER DUCTS SHALL BE LINED AND CONSTRUCTED ACCORDING TO DETAIL. MAXIMUM VELOCITY SHALL BE 300 FPM.
3. PROVIDE VOLUME DAMPERS AT EACH DIFFUSER, REGISTER AND GRILLE (AIR DEVICE). DAMPERS SHALL BE OPPOSED BLADE ADJUSTABLE TYPE. ALL VOLUME DAMPERS SHALL BE ACCESSIBLE. DAMPERS LOCATED IN INACCESSIBLE LOCATIONS SHALL BE REMOTE OPERATED BY UNITED ENERTECH OR EQUAL.
4. CONTRACTORS SHALL FIELD VERIFY ALL DUCT AND PIPE SIZES AND LOCATIONS PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL INFORM ENGINEER OF ANY DISCREPANCIES ON DRAWINGS.
5. PROVIDE FIRE DAMPERS AT ALL FIRE RATED PARTITIONS, SMOKE DAMPERS AT ALL SMOKE RATED PARTITIONS AND FIRE/SMOKE DAMPERS AT ALL FIRE AND SMOKE RATED PARTITIONS.
6. ALL DUCT RUNOUTS TO DIFFUSERS SHALL MATCH SCHEDULED DIFFUSER NECK SIZE, UNLESS OTHERWISE NOTED.
7. HVAC CONTRACTOR SHALL INCLUDE AS PART OF PROJECT SCOPE (1) 8 HOUR DAY FOR HVAC TECHNICIAN, BALANCING CONTRACTOR AND CONTROLS CONTRACTOR TO INTERFACE WITH THE HVAC DESIGN ENGINEER AFTER THE REQUIRED START UP AND BALANCING HAS BEEN COMPLETED TO VERIFY PROPER OPERATIONS OF ALL MECHANICAL SYSTEMS BEFORE THE SPACE IS TURNED OVER TO FIDELITY INVESTMENTS. DURING THIS MEETING, THE CONTRACTORS SHALL HAVE WITH THEM ALL NECESSARY EQUIPMENT TO VERIFY OPERATIONS OF EQUIPMENT AND TO VERIFY AIRFLOWS (DIFFUSER AND TRAVERSE). ANY DEFICIENCES FOUND DURING THIS WALK THROUGH SHALL BE CORRECTED AT NO ADDITIONAL EXPENSE TO OWNER.
8. ALL MAJOR EQUIPMENT IN THE CEILING TO BE MOUNTED AT ACCESSIBLE HEIGHT IN THE CEILING PLENUM.
9. PROVIDE A MINIMUM OF 3FT AND A MAXIMUM OF 5FT FLEX DUCT ON ALL SUPPLY AND RETURN AIR DIFFUSER/GRILLE CONNECTIONS.

KEYNOTES

1 OPEN ENDED DUCT WITH WIRE MESH SCREEN. DUCT SHALL MATCH UNIT CONNECTION SIZE.

2 DASHED LINES INDICATE ACCESS CLEARANCE. ACCESS CLEARANCE SHALL REMAIN CLEAR TO ALLOW REQUIRED MAINTENACE OF EQUIPMENT. COORDINATE WITH OTHER SUB-CONTRACTORS TO ENSURE THIS AREA REMAINS CLEAR. TYPICAL.

3 PROVIDE BLANKOFF LINEAR DIFFUSER TO MAINTAIN CONTINUOUS APPEARANCE. COORDINATE WITH ARCHITECTURAL DETAILS TO MAINTAIN MINIMUM CLEARANCE FROM SHADE.

4 PROVIDE REMOTE BALANCING DAMPER, SEE DETAIL 12 ON SHEET M-501.

5 PROVIDE REMOTE BALANCING DAMPER, SEE DETAIL 13 ON SHEET M-501.

6 COORDINATE LINEAR DIFFUSER LOCATION WITH ARCHITECTURE DETAILS TO MAINTAIN MINIMUM CLEARANCE FROM SHADE.

7 EXISTING RETURN AIR INLET SHALL REMAIN IN PLACE.

8 EXISTING 22"x12" EA DUCT TO LOUVER.

9 EXISTING 22"x12" OA DUCT TO LOUVER.

10 CONNECT ERV INTAKE AND EXHAUST TO EXISTING DUCTS AND LOUVERS.

11 PROVIDE 1" OF INTERNAL LINE FOR SA MAIN DUCT. PROVIDE 1" OF INTERNAL LINED DUCT ON THE RETURN AIR FUCT FOR 5'.

12 VRF CENTRAL CONTROLLER. TRANE MITSUBISHI MODEL TE-200A.

13 ROUTE RETURN DUCT UP TO BE ABOVE THE CLEARANCE AREA OF THE IDU.

Jacobs
Jacobs Engineering Group, Inc.
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2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

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W www.jacobs.com

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VANDERWEIL
R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210

P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

Developed by
Edward S. Dalton
REGISTERED PROFESSIONAL ENGINEER
58580
EDWARD S. DALTON
Not Valid Without Signature
ARIZONA U.S.A.
12/19/2024

General Notes:

Project Title:
Fidelity INVESTMENTS
Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

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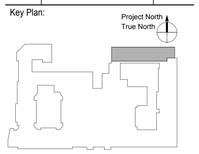
Key Plan:



Drawing Sheet Title:
HVAC DUCTWORK - LEVEL 1

Drawing Sheet Number:
M-201

Owner's Branch No.:
134

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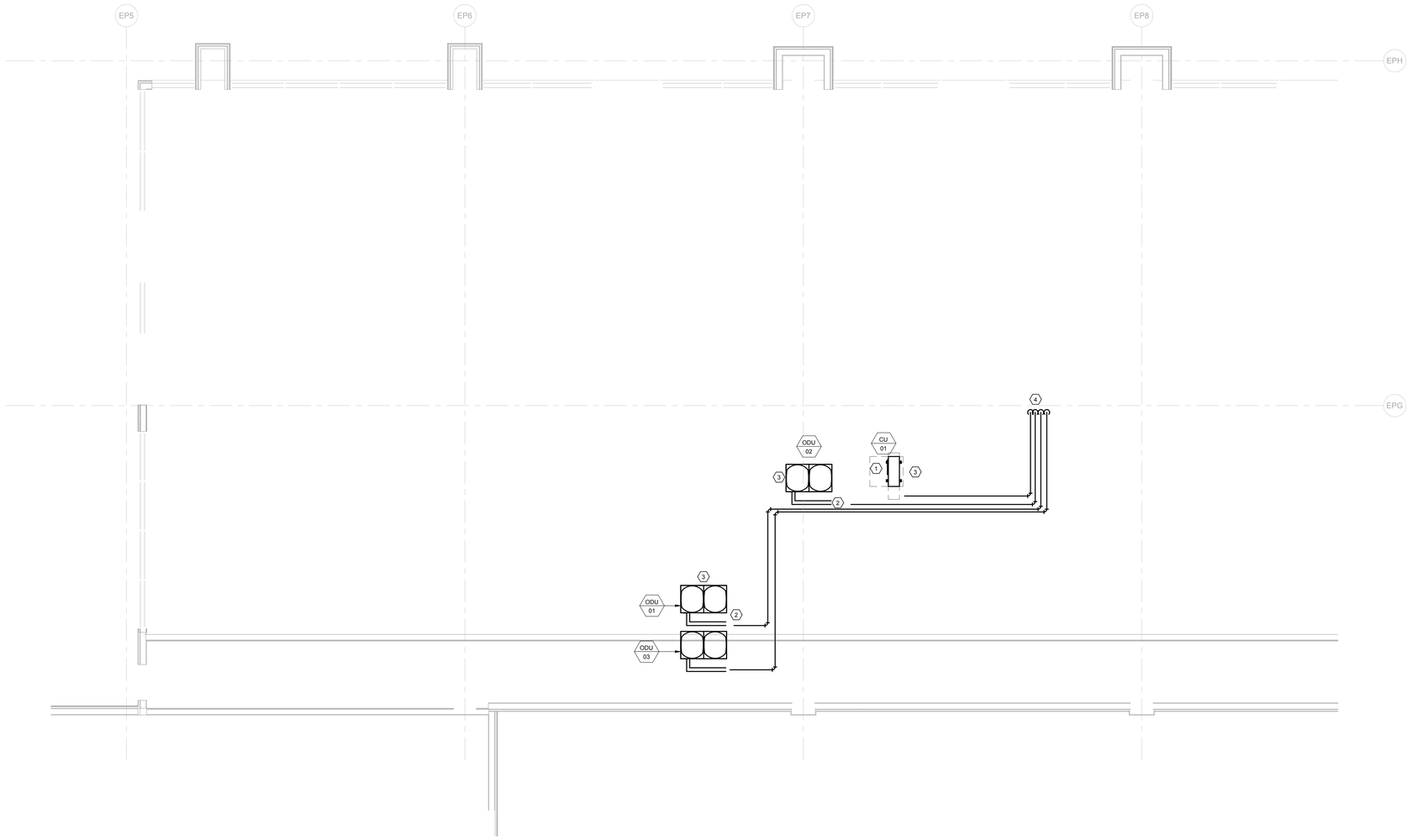


1 HVAC ROOF PLAN
1/4" = 1'-0"

NOTES

1. REFER TO SHEET M-001 & M-002 FOR HVAC LEGEND.
2. CONTRACTORS SHALL FIELD VERIFY ALL DUCT AND PIPE SIZES AND LOCATIONS PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL INFORM ENGINEER OF ANY DISCREPANCIES ON DRAWINGS.
3. HVAC CONTRACTOR SHALL INCLUDE AS PART OF PROJECT SCOPE (1) 8 HOUR DAY FOR HVAC TECHNICIAN, BALANCING CONTRACTOR AND CONTROLS CONTRACTOR TO INTERFACE WITH THE HVAC DESIGN ENGINEER AFTER THE REQUIRED START UP AND BALANCING HAS BEEN COMPLETED TO VERIFY PROPER OPERATIONS OF ALL MECHANICAL SYSTEMS BEFORE THE SPACE IS TURNED OVER TO FIDELITY INVESTMENTS. DURING THIS MEETING, THE CONTRACTORS SHALL HAVE WITH THEM ALL NECESSARY EQUIPMENT TO VERIFY OPERATIONS OF EQUIPMENT AND TO VERIFY AIRFLOWS (DIFFUSER AND TRAVERSE). ANY DEFICIENCES FOUND DURING THIS WALK THROUGH SHALL BE CORRECTED AT NO ADDITIONAL EXPENSE TO OWNER.
4. ALL EQUIPMENT LOCATIONS ON ROOF TO BE COORDINATED WITH THE LANDLORD.

KEYNOTES

1 REFRIGERANT LINES BETWEEN INDOOR UNIT AND OUTDOOR UNIT ON ROOF. CONTRACTOR SHALL CONFIRM FINAL ROUTING SIZING WITH MANUFACTURER'S RECOMMENDATIONS BEFORE INSTALLATION.

2 REFRIGERANT LINES BETWEEN INDOOR UNIT AND OUTDOOR UNIT ON ROOF. CONTRACTOR SHALL CONFIRM FINAL ROUTING AND SIZING WITH MANUFACTURER'S RECOMMENDATIONS BEFORE INSTALLATION.

3 INSTALL ROOF EQUIPMENT ON CURB RAILS. SEE DETAIL ON SHEET M-501.

4 COORDINATE NEW PIPE ROUTING WITH EXISTING SHAFT/PENETRATION

Jacobs

Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL

R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210

P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

Registered Professional Engineer
Certificate No. 58580
EDWARD S. DALTON
Arizona U.S.A.

12/19/2024

General Notes:

Project Title:

Fidelity INVESTMENTS

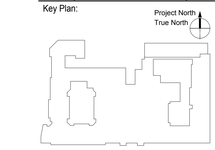
Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project North
True North



Project No.: C0115.00

Drawing Sheet Title:

HVAC - ROOF

Drawing Sheet Number:

M-203

Owner's Branch No.:

134

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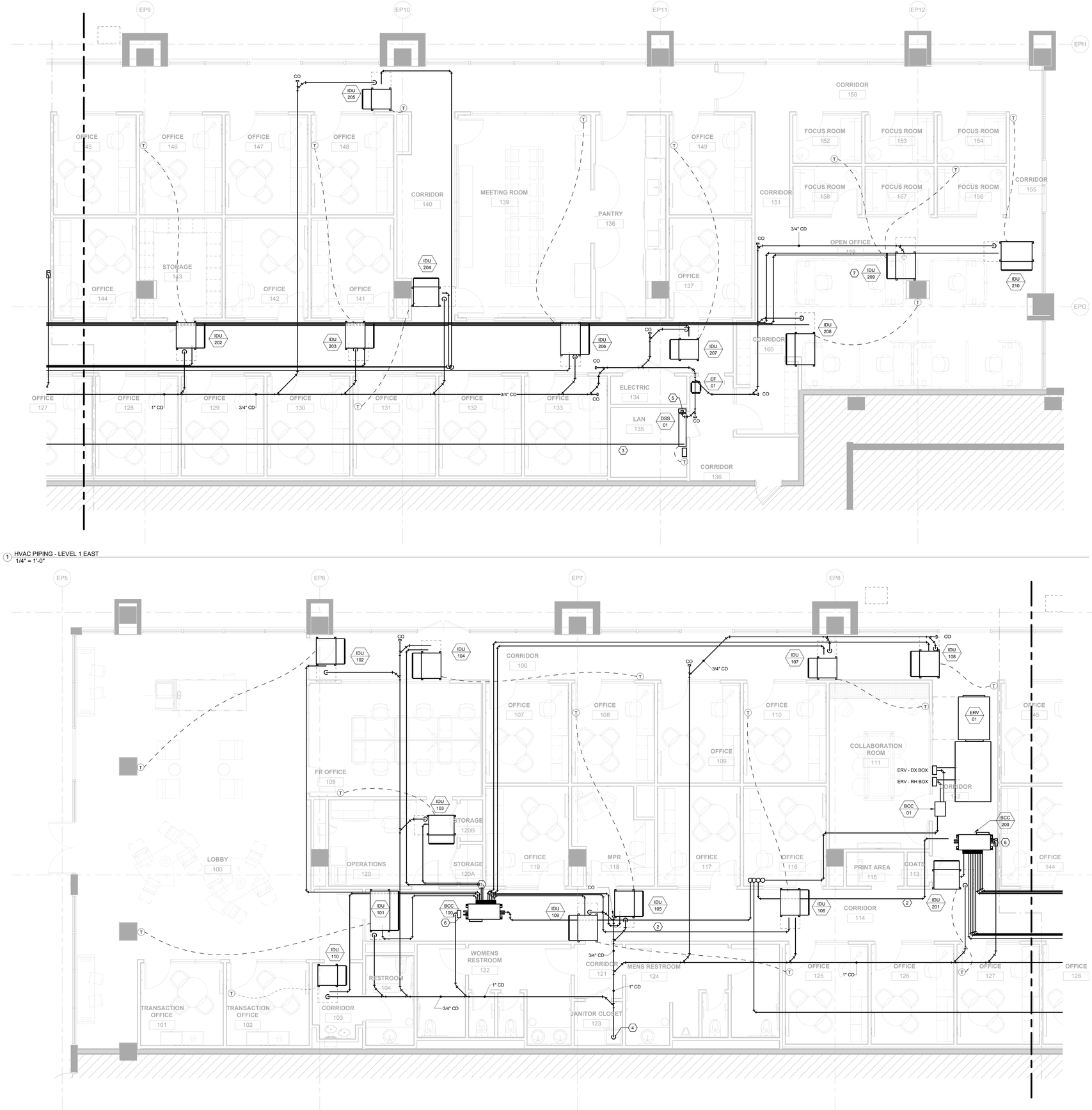

1 HVAC PIPING - LEVEL 1 EAST
1/4" = 1'-0"

2 HVAC PIPING - LEVEL 1 WEST
1/4" = 1'-0"

NOTES

1. REFER TO SHEET M-001 & M-002 FOR HVAC LEGEND.
2. CONTRACTORS SHALL FIELD VERIFY ALL DUCT AND PIPE SIZES AND LOCATIONS PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL INFORM ENGINEER OF ANY DISCREPANCIES ON DRAWINGS.
3. ALL CONDENSATE PIPING RUNOUTS TO TERMINAL EQUIPMENT SHALL BE 3/4" UNLESS OTHERWISE NOTED.
4. CONDENSATE DRAIN PIPING SHALL PITCH DOWN 1/8 INCH PER 1 FOOT TO APPROVED DRAIN LOCATION.
5. HVAC CONTRACTOR SHALL INCLUDE AS PART OF PROJECT SCOPE (1) 8 HOUR DAY FOR HVAC TECHNICIAN, BALANCING CONTRACTOR AND CONTROLS CONTRACTOR TO INTERFACE WITH THE HVAC DESIGN ENGINEER AFTER THE REQUIRED START UP AND BALANCING HAS BEEN COMPLETED TO VERIFY PROPER OPERATIONS OF ALL MECHANICAL SYSTEMS BEFORE THE SPACE IS TURNED OVER TO FIDELITY INVESTMENTS. DURING THIS MEETING, THE CONTRACTORS SHALL HAVE WITH THEM ALL NECESSARY EQUIPMENT TO VERIFY OPERATIONS OF EQUIPMENT AND TO VERIFY AIRFLOWS (DIFFUSER AND TRAVERSE). ANY DEFICIENCES FOUND DURING THIS WALK THROUGH SHALL BE CORRECTED AT NO ADDITIONAL EXPENSE TO OWNER.
6. THERMOSTATS SHALL BE MOUNTED 4'-0" ABOVE FINISHED FLOOR, COORDINATE EXACT LOCATION WITH THE ARCHITECT. THERMOSTATS SHALL NOT BE MOUNTED ABOVE DIMMERS.

KEYNOTES

1 REFRIGERANT SET FOR THE VRF SYSTEM. VRF REFRIGERANT PIPING SHALL BE SIZED AND ROUTED PER THE MANUFACTURER'S INSTRUCTIONS.

2 NEW REFRIGERANT PIPING FROM THE BCC TO THE VRF OUTDOOR UNIT LOCATED ON THE ROOF. VRF OUTDOOR UNIT IS ON THE ROOF SEE SHEET M-203 FOR APPROXIMATE NEW LOCATION.

3 REFRIGERANT LINES BETWEEN INDOOR UNIT AND OUTDOOR UNIT ON THE ROOF. CONTRACTOR SHALL CONFIRM FINAL ROUTING AND SIZING WITH MANUFACTURER'S RECOMMENDATIONS BEFORE INSTALLATION.

4 ROUTE CD DOWN TO THE JAN MOP SINK.

5 PROVIDE MANUFACTURERS OPTIONAL CONDENSATE PUMP WITH RESERVOIR. WIRE PUMP TO SHUT DOWN DSS/CU. PUMP SHALL BE POWERED BY THE SAME CIRCUIT AS THE DSS/CU.

6 PROVIDE MANUFACTURERS OPTIONAL CONDENSATE PUMP WITH RESERVOIR. WIRE PUMP TO SHUT DOWN BCC. PUMP SHALL BE PLENUM RATED AND POWERED BY SAME CIRCUIT AS THE BCC.

7 PROVIDE AVERAGING THERMOSTATS.

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL
R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210

P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

Developed by
REGISTERED PROFESSIONAL ENGINEER
CERTIFICATE NO.
58580
EDWARD S. DALTON
On Signed
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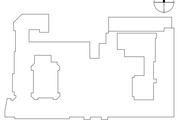

Project No.: C0115.00

Drawing Sheet Title:
HVAC PIPING - LEVEL 1

Drawing Sheet Number:
M-301

Owner's Branch No.:
134

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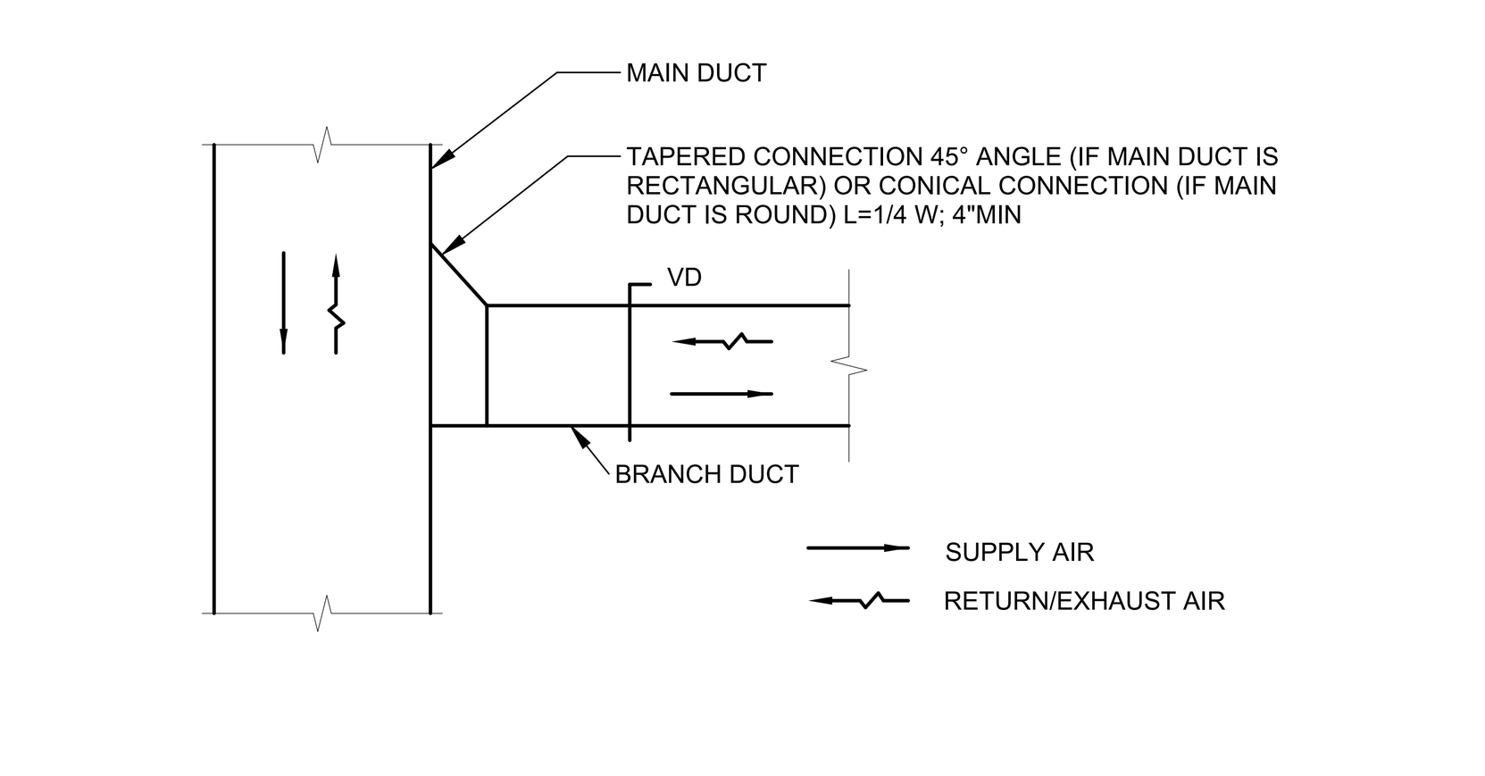
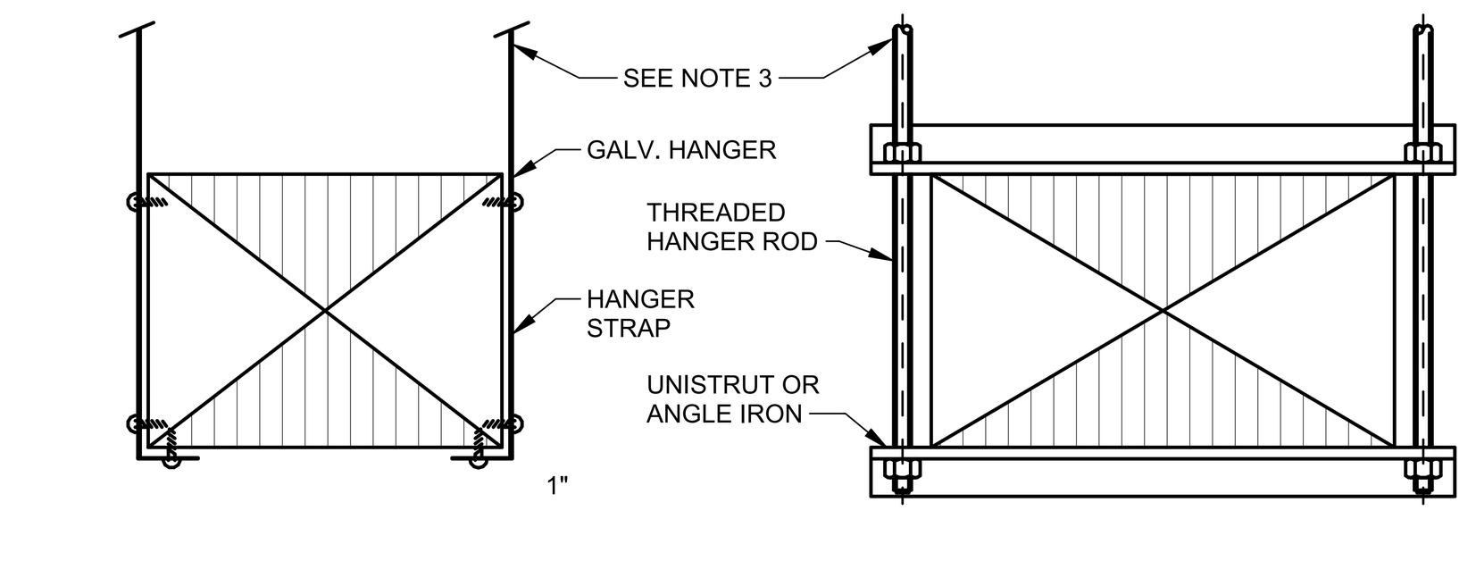


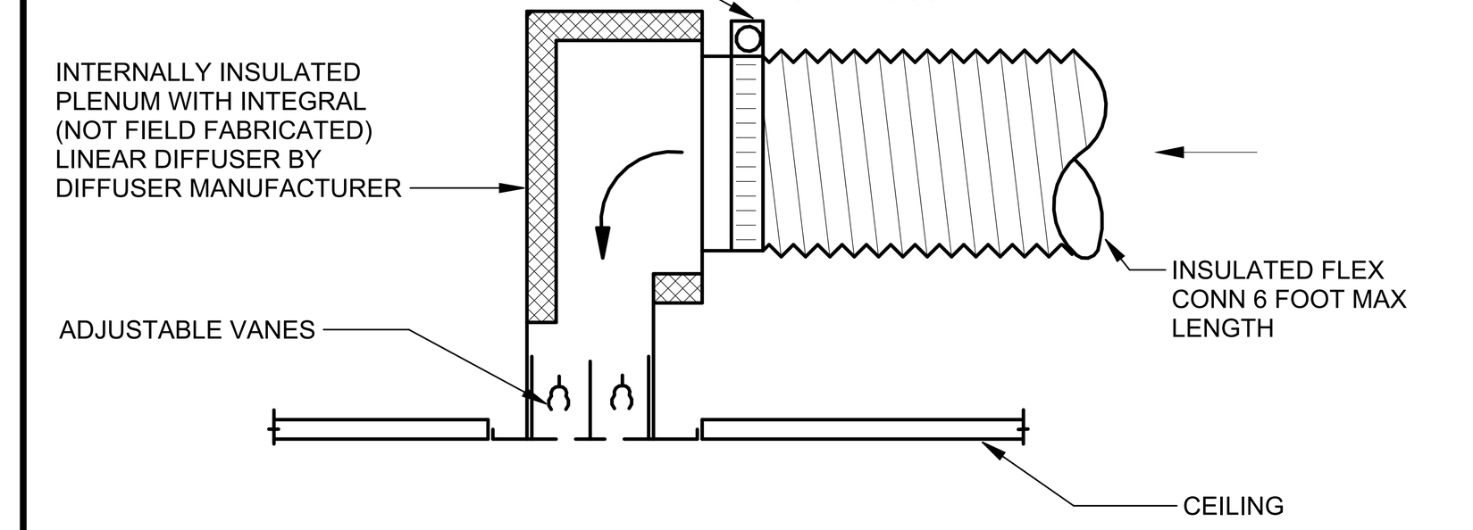
1 LOW PRESSURE BRANCH TAKE-OFFS
SCALE:NTS



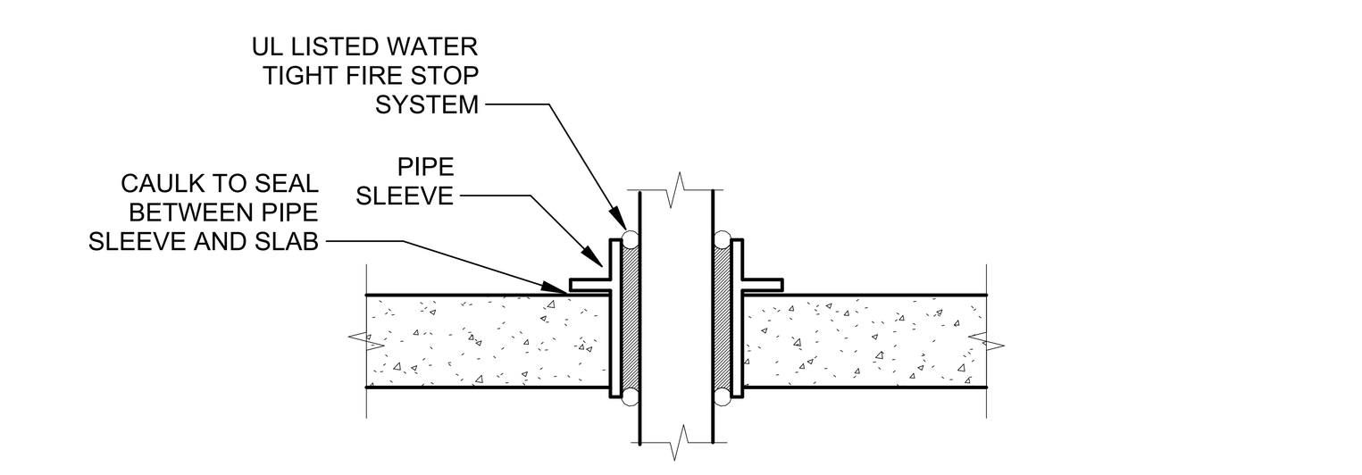
NOTES :
1. ON DUCTS OVER 48" WIDE, BOTTOM SHALL BE BRACED BY ANGLE. FOR CROSS SECTION AREA MORE THAN 8 SQ FT, DUCT SHALL BE BRACED BY ANGLES ON ALL FOUR SIDES.
2. CUTTING AND PATCHING SHALL BE LIMITED TO A MINIMUM AS REQUIRED FOR PROPER INSTALLATION.
3. SUPPORTS SHALL BE SPACED AND SIZED AS PER SMACNA.

2 DUCT HANGER SUPPORT
SCALE: NTS

NOTES:
1. INSTALL FLEX DUCT WITH GRADUAL OFFSETS NOT EXCEEDING 30 DEG. PROVIDE HARD DUCT WHERE OFFSETS EXCEED 30 DEG.
2. INSTALL FLEX DUCT WITH A MAXIMUM 1/2 INCH SAG/FT.
3. FOR PERIMETER DIFFUSERS LOCATE DISTANCE FROM OUTSIDE WALL SHOWN ON ARCH PLANS.
4. PROVIDE HARD DUCT AND VOLUME DAMPER CONNECTION TO MAIN DUCT.

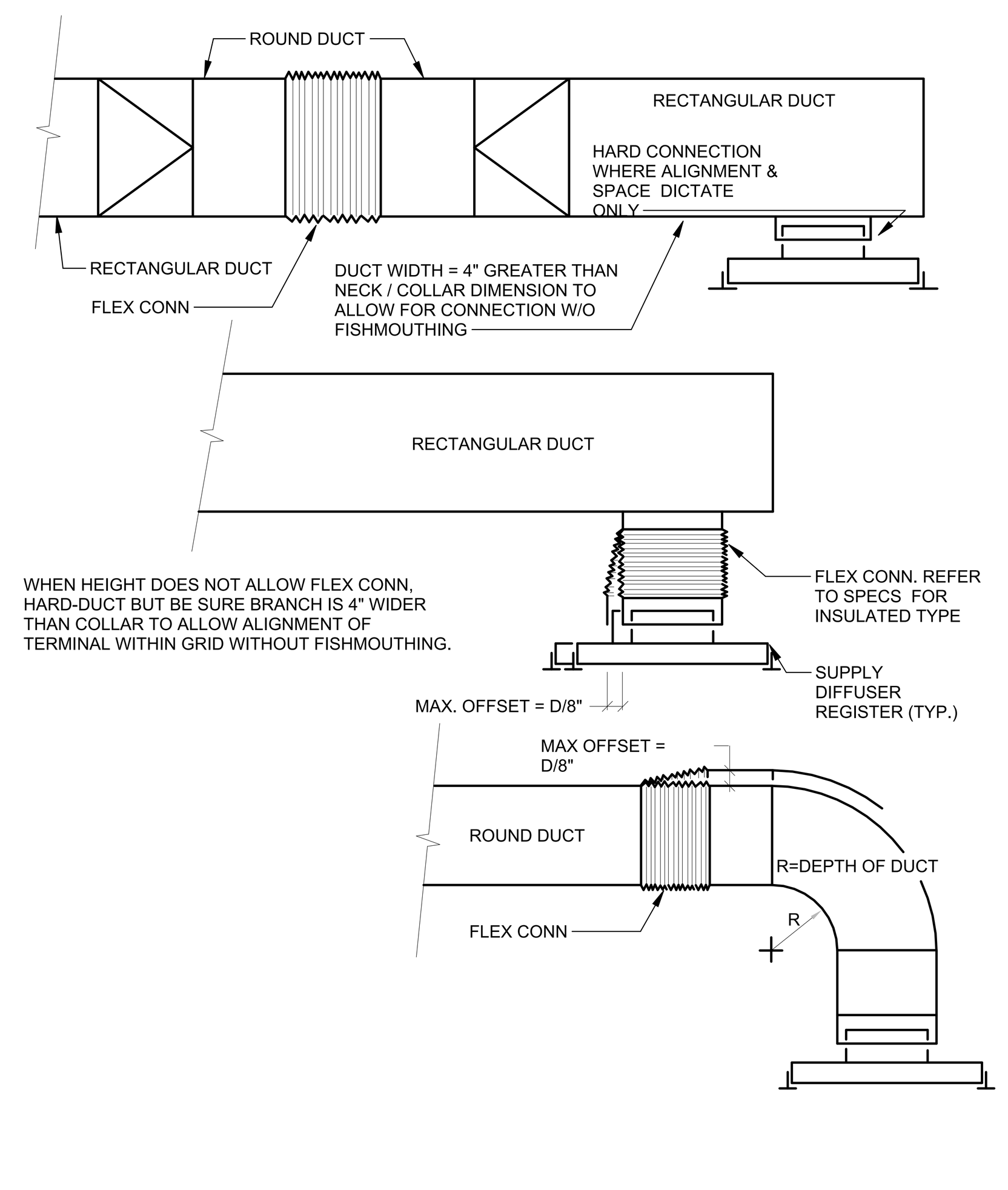


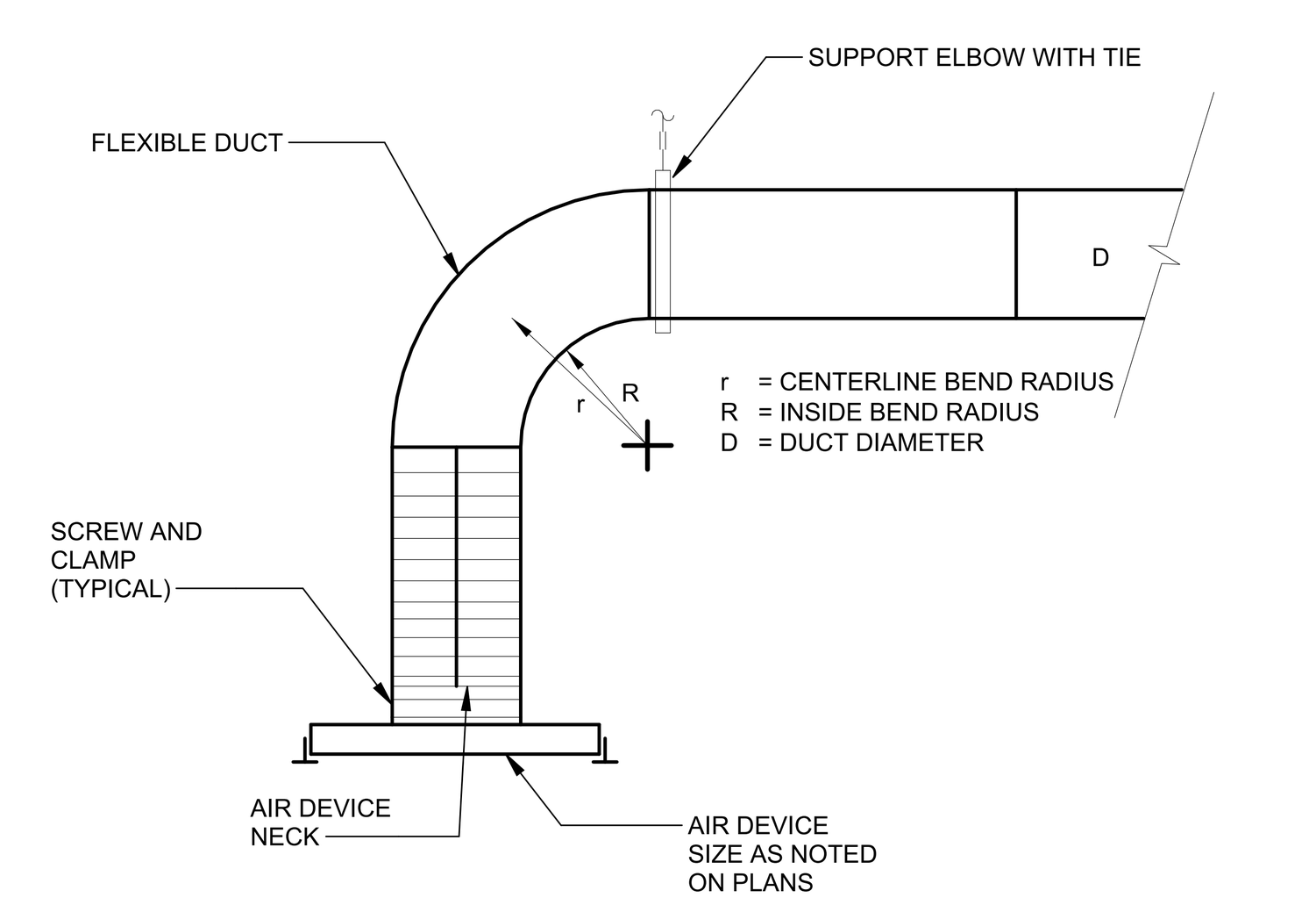
3 LINEAR SUPPLY DIFFUDER CONNECTION WITH LINED PLENUM
SCALE: NTS



NOTES:
1. THIS DETAIL ONLY SHALL APPLY FOR CORED OPENINGS IN EXISTING SLABS. FOR NEW CONSTRUCTION, ALL PIPE PENETRATIONS SHALL HAVE SLEEVE INSTALLED DURING SLAB CREATION.
2. PIPE SLEEVE SHALL BE ONE NOMINAL SIZE LARGER THAN PIPE.
3. PIPE INSULATION SHALL EXTEND UP TO PIPE SLEEVE WITH INSULATION COVER AROUND END.

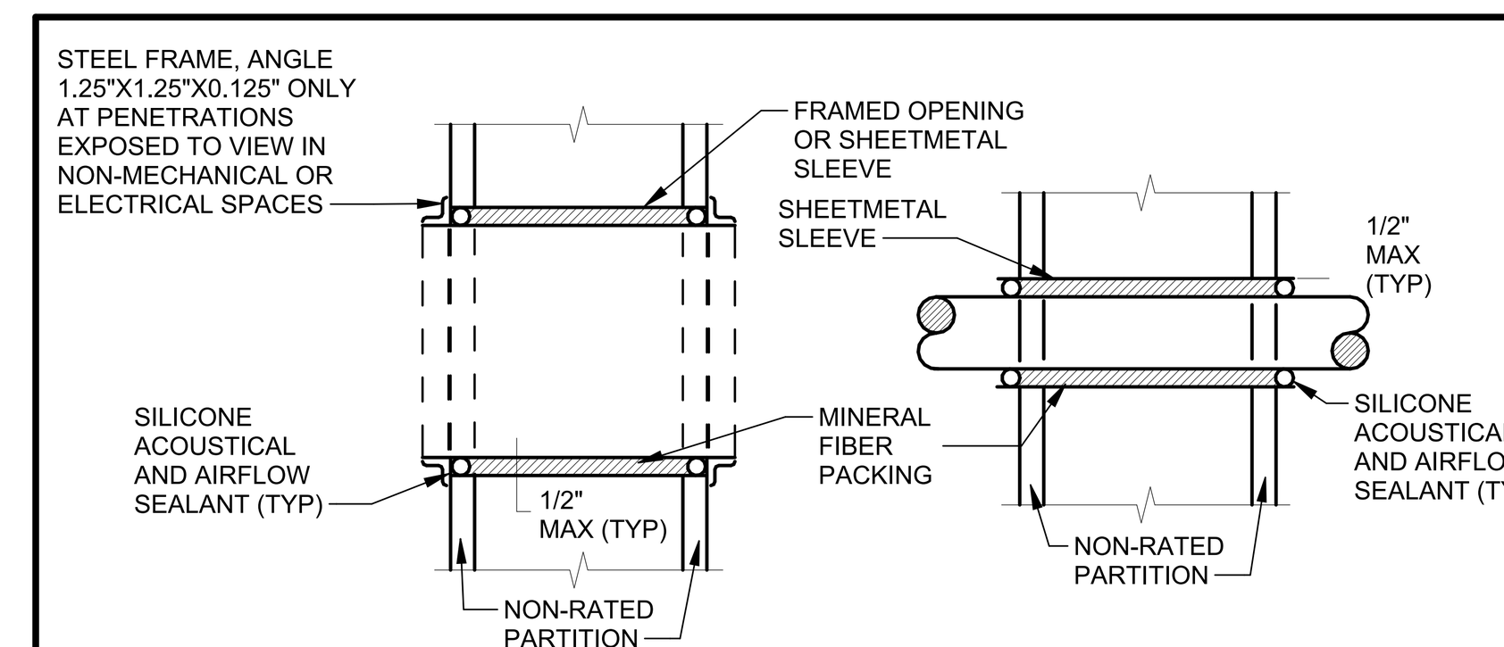
4 PIPE PENETRATION OF EXISTING CONCRETE SLAB
SCALE: NTS





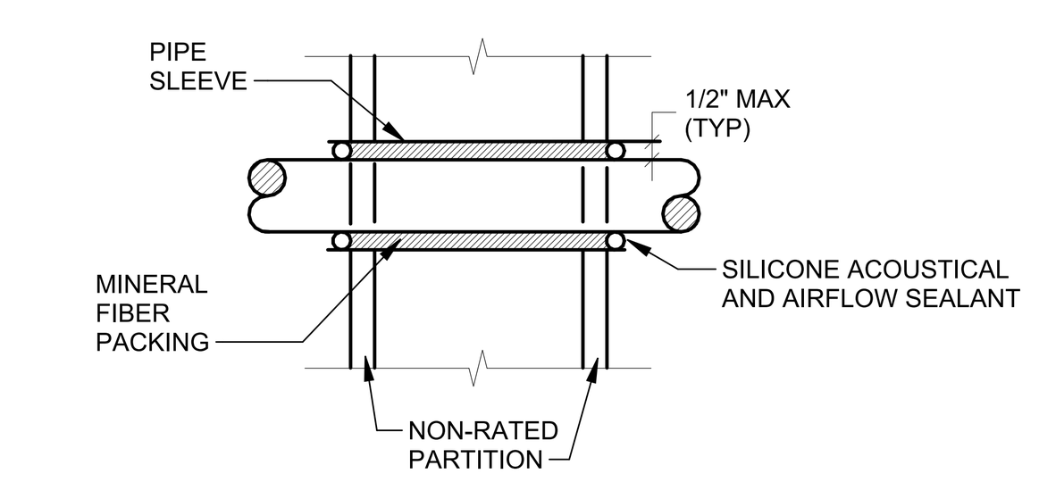
NOTES:
1. DETAIL ALLOWS DUCTWORK TO BE INSTALLED BEFORE CEILING GRID THEN ALLOWS DIFFUSERS AND REGISTERS TO BE POSITIONED INTO GRID.
2. PROVIDE INSULATED TRANSITION ROUND TO SQUARE INLET DIFFUSERS.
3. SECURE FLEXIBLE DUCT TO METAIL DUCT WITH (2) STAINLESS STEEL CLAMPS OR NYLON TY-WRAPS TO INDIVIDUALLY SECURE FLEXIBLE DUCT INNER SLEEVE AND OUTER SLEEVE. WHEN INSTALLED ON INSULATED SYSTEM SEAL INSULATION JOIN WITH VAPOR BARRIER MASTIC. PROVIDE NYLON TY-WRAP TOOL OR REUSABLE SS DRAW BANDS.
4. PROVIDE DUCT MOUNTED VOLUME DAMPER. AVOID NECK DAMPERS.
5. FLEXIBLE DUCTS SHALL BEND IN ONE DIRECTION ONLY WITH A MAXIMUM CHANGE IN DIFFERENCE OF 90 DEGREES.
6. UNLESS SHOWN OTHERWISE FLEXIBLE DUCT SIZE AND COLLAR OF TAP OFF SHALL BE SAME SIZE AS DIFFUSER NECK.
7. IF RUN-OUT LENGTH REQUIRES SEGMENT OF HARD DUCT, SIZE SHALL BE SAME AS DIFFUSER NECK. RUN-OUT TO DIFFUSER SHALL BE AS STRAIGHT AS POSSIBLE.
8. INSTALL BENDS IN FLEXIBLE DUCTS WITH MINIMUM CENTERLINE RADIUS EQUAL TO 1.5 DUCT DIAMETERS (r >= 1.5 x D)
9. DO NOT EXCEED 5'-0" MAXIMUM LENGTH OF FLEX DUCT RECOMMENDED IN THE 2017 ASHRAE FUNDAMENTALS HANDBOOK. INSTALL FLEX DUCT WITH NO MORE THAN 1/2" SAG PER FOOT.

5 DIFFUSER/REGISTER DUCTWORK CONNECTIONS
SCALE: NTS



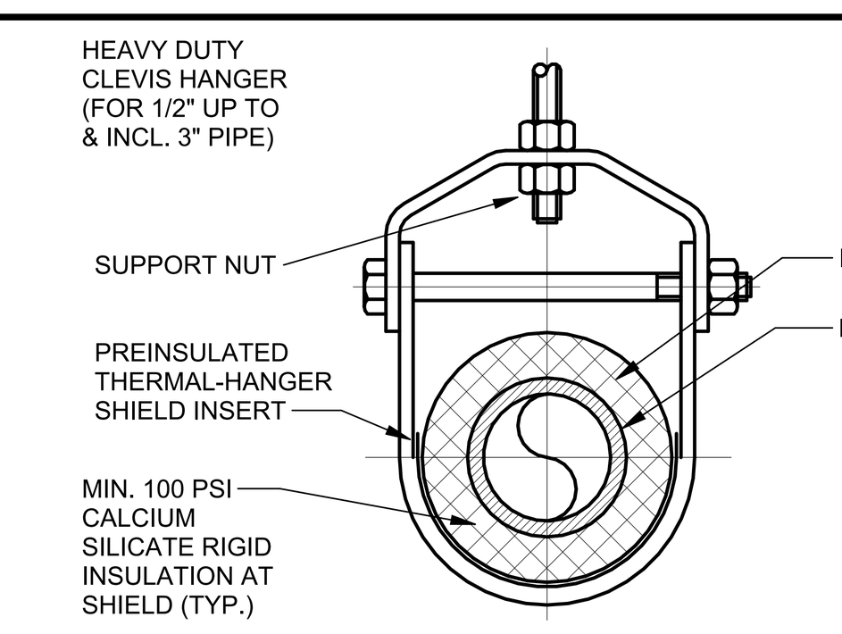
NOTES:
1. AT FIRE RATED PARTITIONS WITHOUT FIRE DAMPER, REPLACE PACKING AND SILICONE SEALANT WITH UL LISTED FIRE STOP SYSTEM. INSTALL IN ACCORDANCE WITH UL LISTING.
2. FIRE STOP DUCT PENETRATIONS THRU RATED AND NON-RATED CORRIDOR WALLS ABOVE CEILINGS.

6 DUCT PENETRATION OF FULL HEIGHT PARTITIONS
SCALE:NTS



NOTES:
1. AT FIRE RATED PARTITIONS, REPLACE PACKING AND SILICONE SEALANT WITH UL LISTED FIRE STOP SYSTEM. INSTALL IN ACCORDANCE WITH UL LISTING.
2. FIRE STOP PIPE PENETRATIONS THRU CORRIDOR WALLS ABOVE CEILINGS.

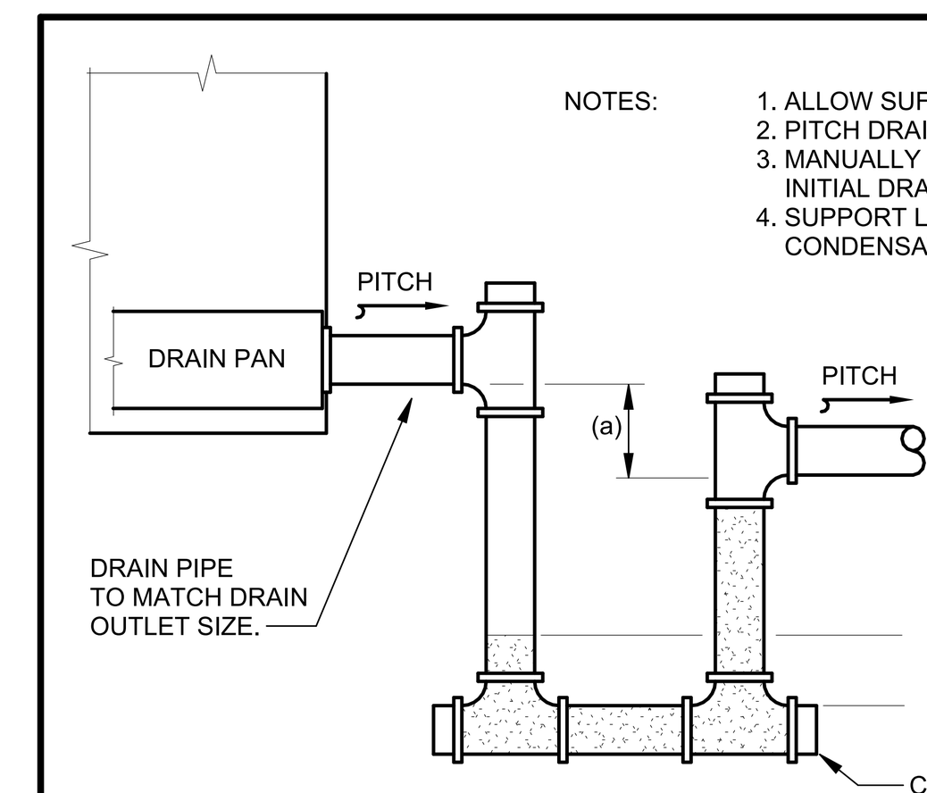
7 PIPE PENETRATION OF FULL HEIGHT PARTITONS
SCALE:NTS



NOTES:
1. SEE SPECIFICATION FOR HANGER SIZES AND THERMAL HANGER SHIELD REQUIREMENTS.
2. MAINTAIN VAPOR BARRIER FOR CHILLED WATER SERVICE THROUGH THERMAL HANGER SHIELD.
3. SHIELD INSULATION THICKNESS SHALL MATCH SPECIFIED PIPE INSULATION THICKNESS.

8 PIPE HANGER SUPPORT
SCALE: NTS

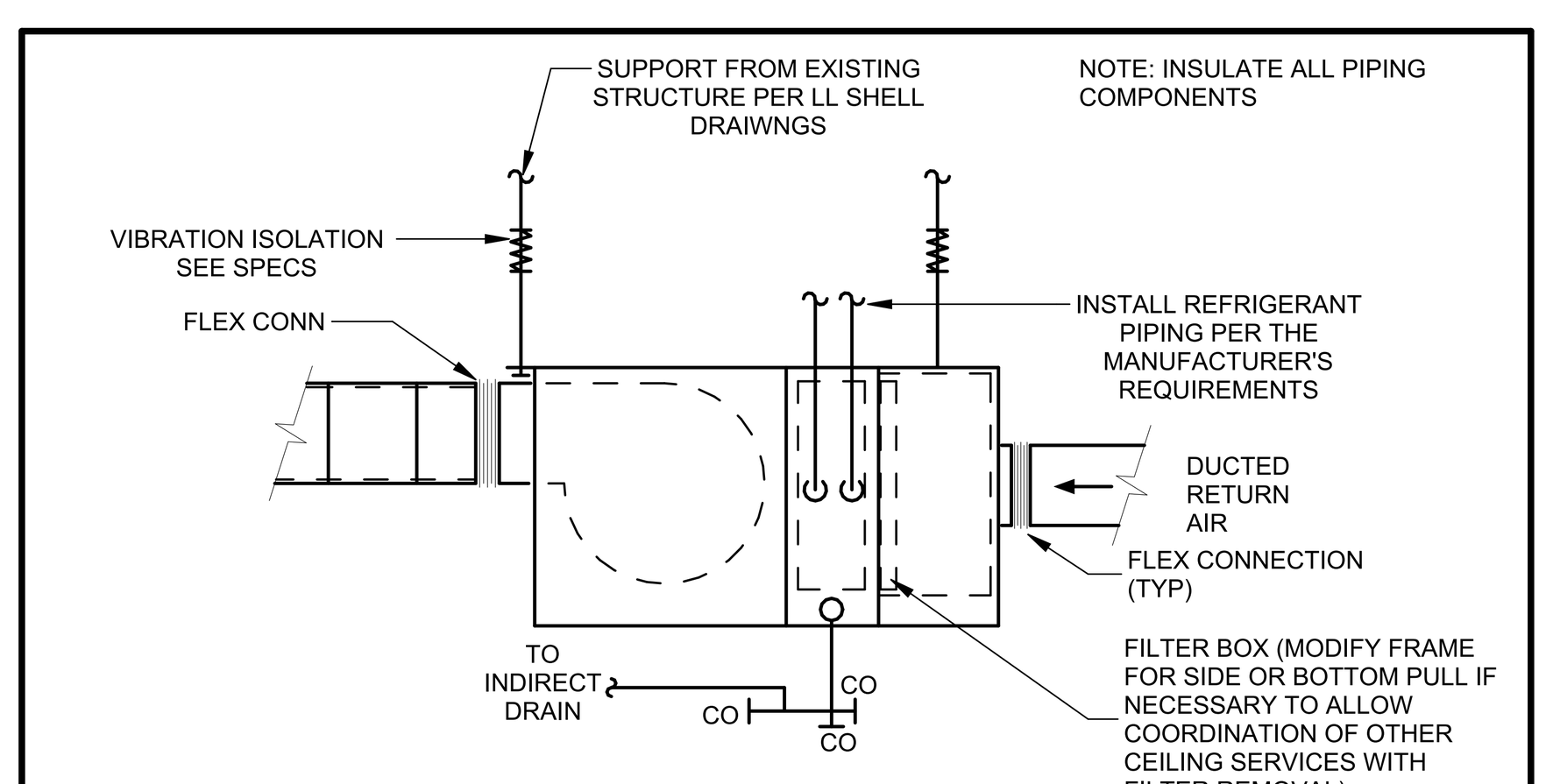
NOTES:
1. ALLOW SUFFICIENT SPACE BELOW DRAIN PAN FOR TRAP.
2. PITCH DRAIN FOR PROPER RUNOFF.
3. MANUALLY PRIME FILL TRAP BEFORE START-UP TO FORM INITIAL DRAIN SEAL.
4. SUPPORT LENGTHY DRAIN LINES TO PREVENT SAG AND CONDENSATE OVERFLOW



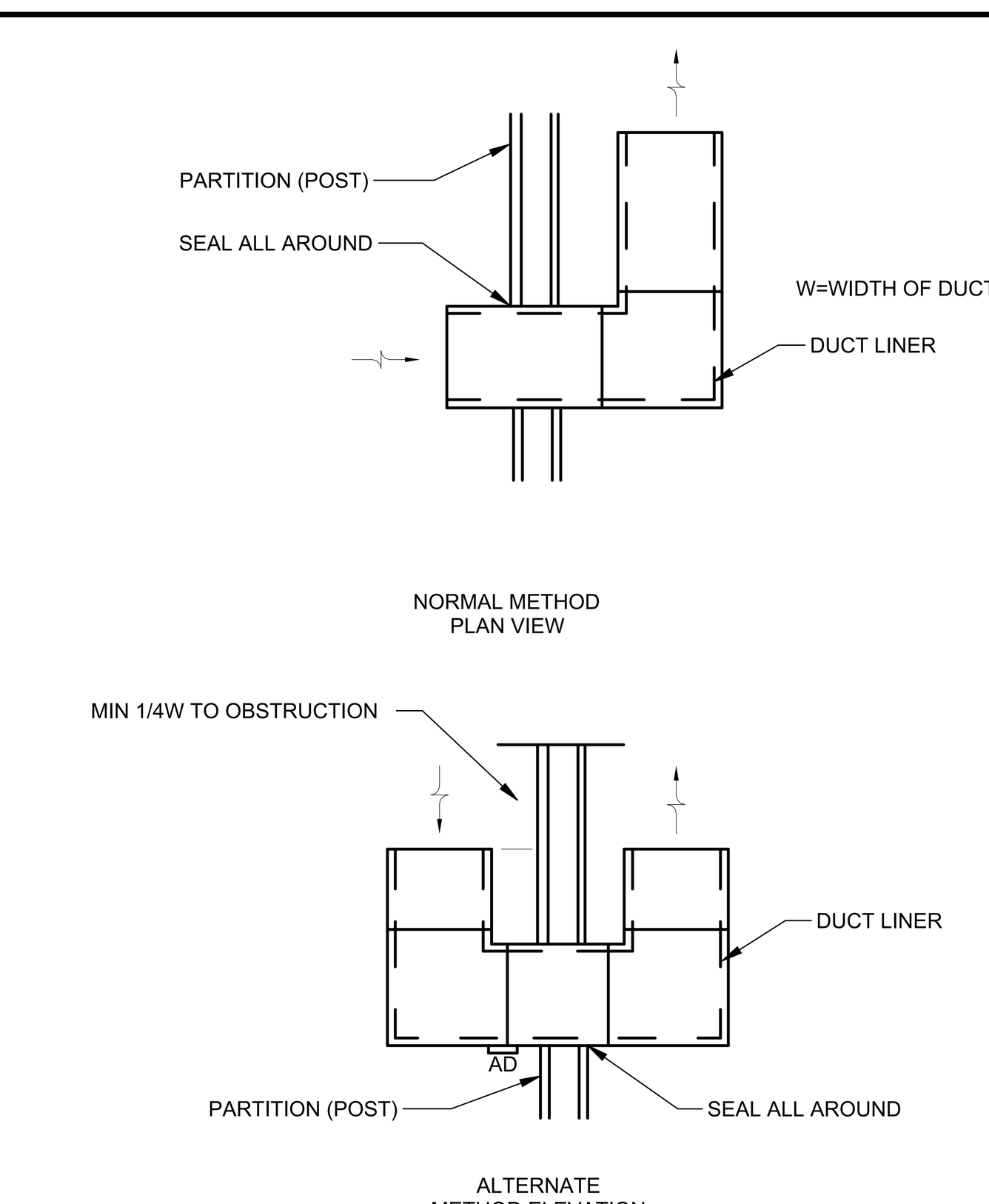
(a) DRAIN MUST BE LOWER THAN PAN OUTLET
(b) THIS DIMENSION IN INCHES MUST BE GREATER THAN THE MAXIMUM FAN DISCHARGE STATIC PRESSURE IN INCHES WC (WITH DIRTY FILTERS, COILS AND MAXIMUM AIR FLOW.
(c) 1" WATER SEAL.

9 BLOW THROUGH UNIT CONDENSATE TRAP
SCALE: NTS

NOTE: INSULATE ALL PIPING COMPONENTS

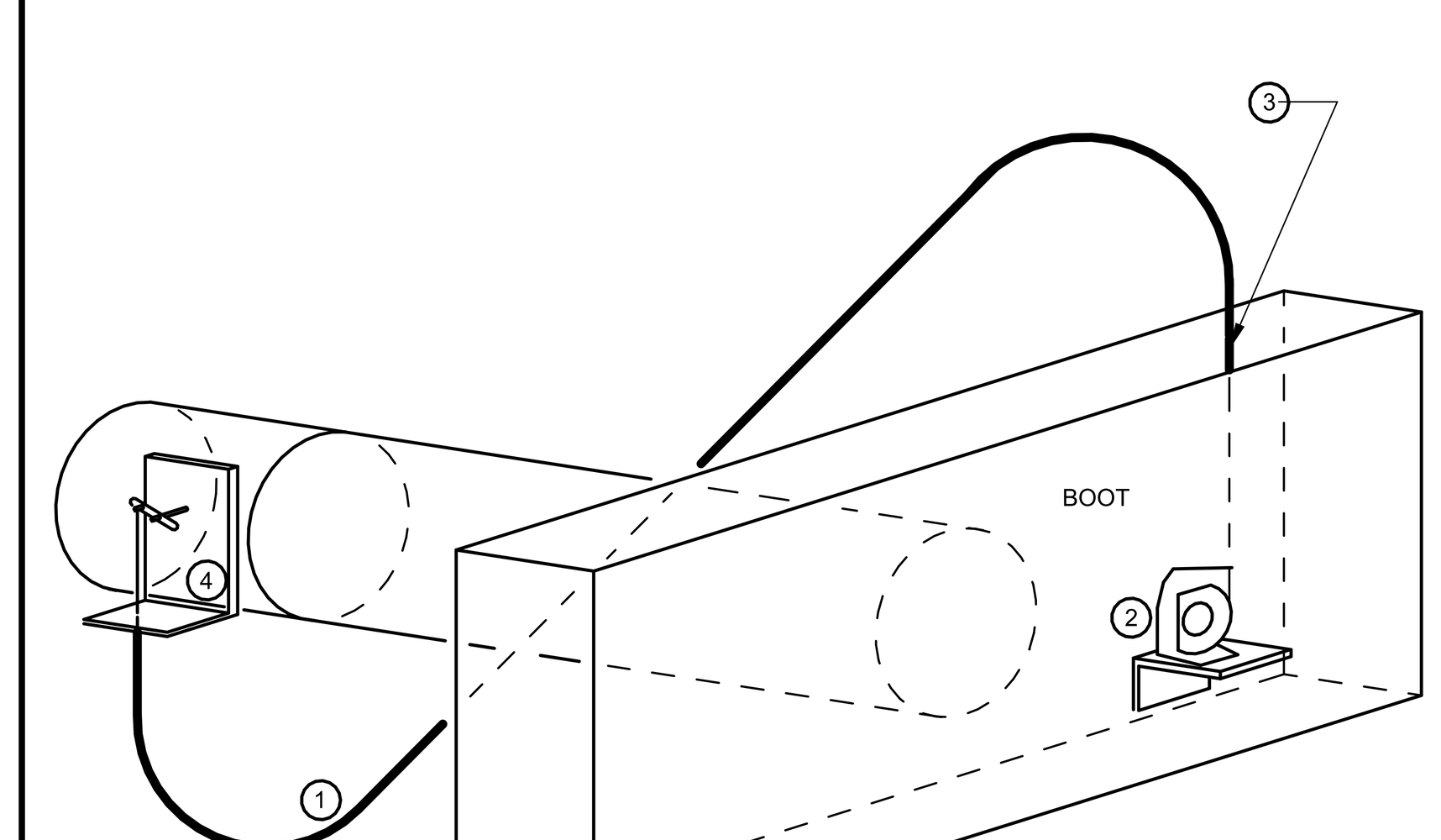


10 DUCTED INDOOR UNIT CONNECTION DETAIL
SCALE: NTS



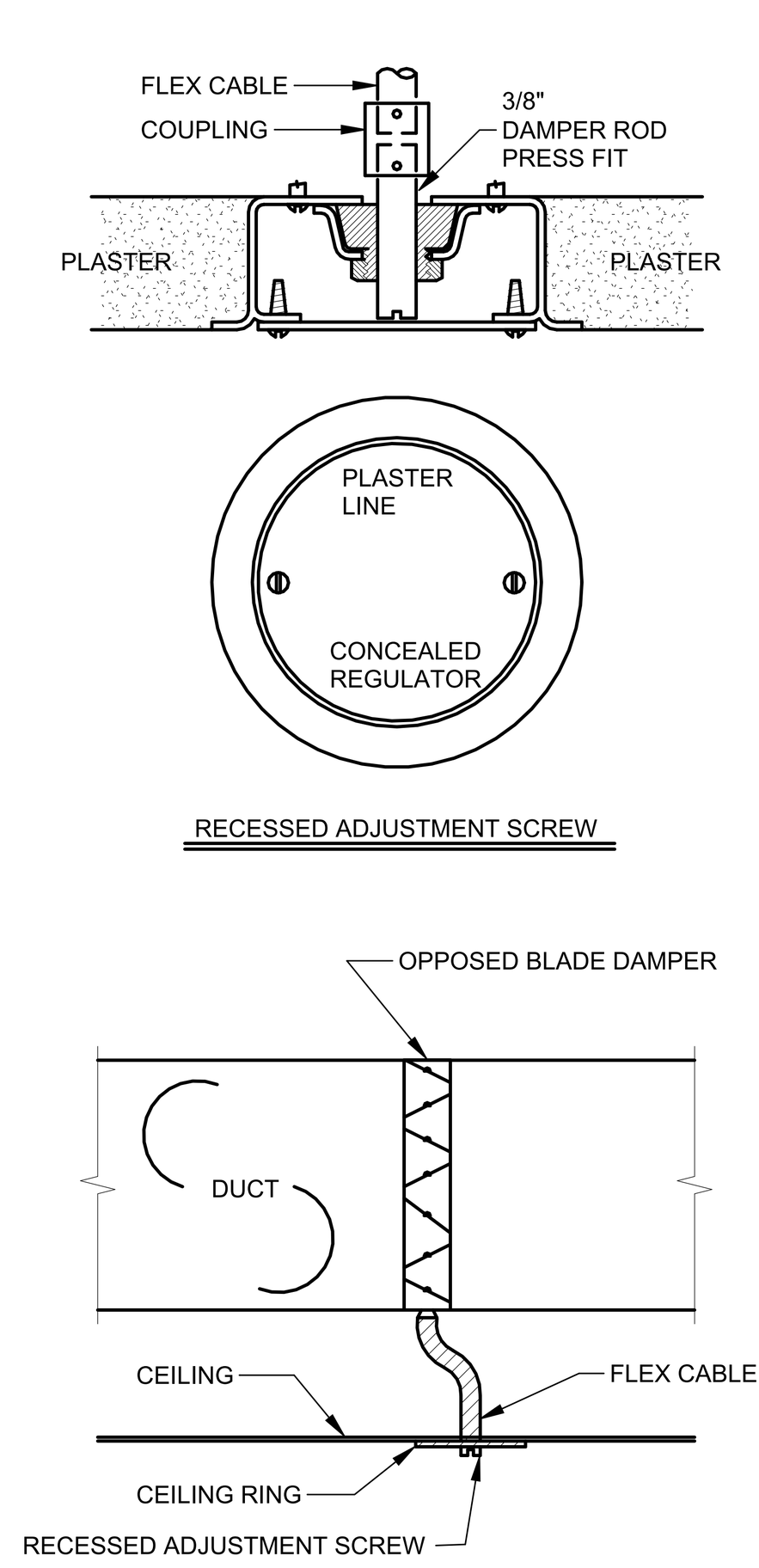
NOTES:
1. DUCTWORK SHALL BE GALVANIZED SHEETMETAL WITH 1" FIBERGLASS ACOUSTICAL LINER OR FIBERGLASS-DUCTBOARD DUCT WITH MITERED RECTUANGULAR ELBOWS (NO VANES).
2. PROVIDE FIRE DAMPER AT FIRE RATED PARTITIONS.
3. SEE PLANS FOR SIZE AND LOCATION OF RETURN AIR TRANSFER DUCTS.
4. PROVIDE 1/2" X 1/2" WIRE MESH SCREEN AT OPEN ENDS OF DUCTS.

11 PLENUM TRANSFER DUCT
SCALE: NTS

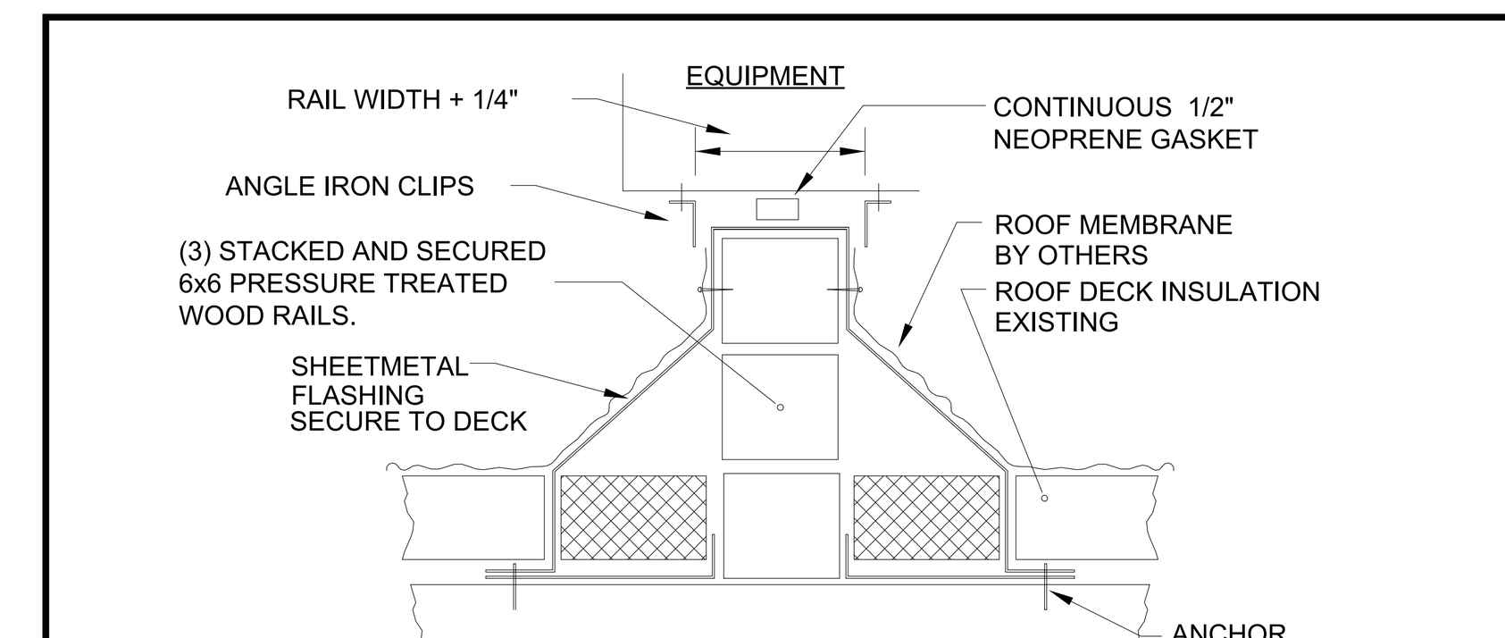


NOTES:
1. CABLE: 0.054" STAINLESS STEEL CONTROL WIRE IN 1'16" FLEXIBLE GALVANIZED SPIRAL SHEATH.
2. LOCKING RACK AND PINION GEAR DRIVE: 14 GAUGE STEEL SOCKET WRENCH OR PHILLIPS HEAD SCREWDRIVER OPERATED RIGLY FASTENED TO INERIOR OF BOOT.
3. PROVIDE PLASTIC ANTI-ABRASION GROMMET AT BOOT PENETRATION. HOLE DIAMETER PER OPERATOR'S INSTALLATION INSTRUCTIONS.
4. BALANCING DAMPER WITH CONTROL SHAFT AND DRIVEN END SUPPORT. MAKE RIGID CONNECTION TO DAMPER ASSEMBLY HOUSING.

12 LINEAR DIFFUSER WITH REMOTE CABLE OPERATED BALANCING DAMPER
SCALE:NTS

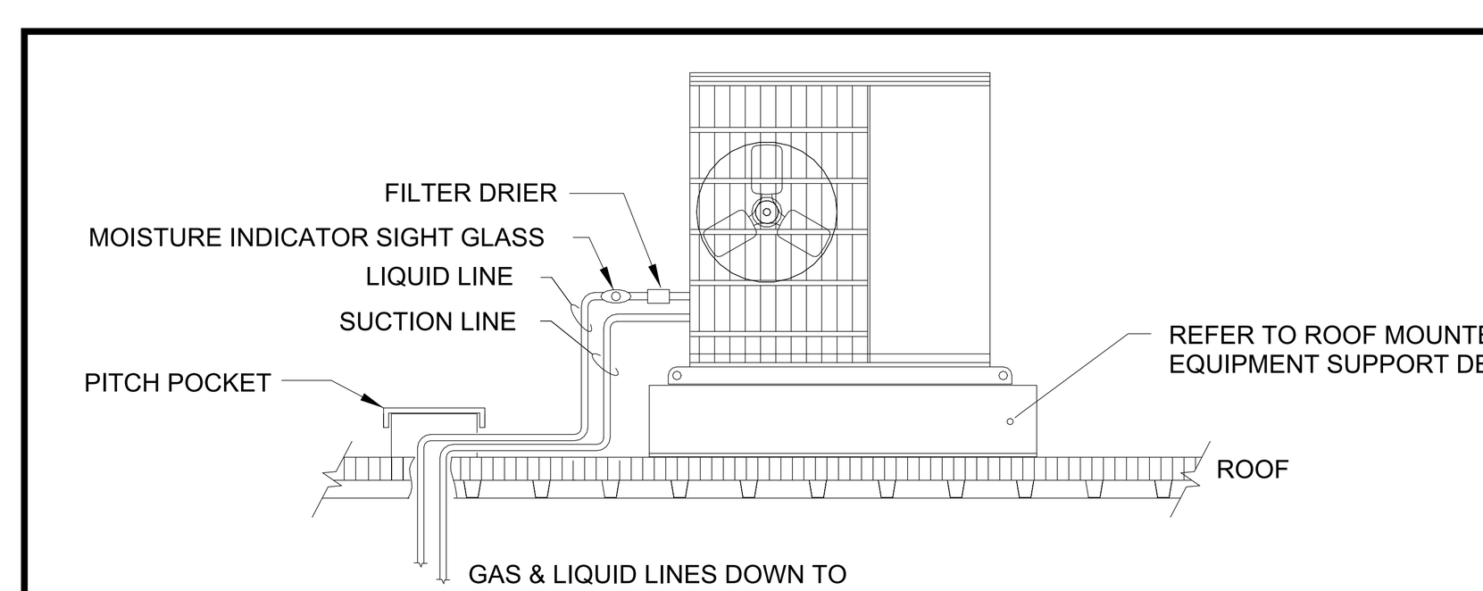


13 REMOTE ADJUSTABLE BALANCING DAMPER
SCALE: NTS
H01-310



NOTES:
1) PROVIDE RAIL SUPPORT ON 2 LONGER SIDES OF UNIT ONLY.
2) FOR SEISMIC DATA REFER TO SPECIFICATIONS.

14 ROOF MOUNTED EQUIPMENT CURB RAIL SUPPORT DETAIL
SCALE: NTS



NOTES:
1) CONDENSING UNIT SHALL BE MECHANICALLY ATTACHED TO EQUIPMENT SUPPORTS.
2) REFRIGERANT PIPING SHALL BE PIPED IN STRICT COMPLIANCE WITH MANUFACTURER'S LONG-LINE APPLICATION GUIDELINE.

15 ROOF MOUNTED CONDENSING UNIT (CU / ACCU) DETAIL
SCALE: NTS

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :
VANDERWEIL
R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210
P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:
12/19/2024

General Notes:

Project Title:
Fidelity INVESTMENTS
Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project No.: C0115.00

Drawing Sheet Title:
HVAC DETAILS

Drawing Sheet Number:
M-501

Owner's Branch No.:
134

12/19/2024 3:50:49 PM

HVAC - ENERGY RECOVERY UNIT

REMARKS:
1. PROVIDE WITH STARTER AND DISCONNECT SWITCH.
2. UNIT SHALL HAVE END DUCT CONNECTIONS.
3. PROVIDE UNIT WITH LOW LEAKAGE OUTDOOR AIR DAMPER AND EXAUST AIR DAMPER.
4. PROVIDE UNIT WITH MANUFACTURER'S REMOTE DISPLAY OPTION.
5. PROVIDE UNIT WITH DX/RH CONTROL BOXES 208/1/60.

UNIT NUMBER	LOCATION	SUPPLY FAN DATA					EXHAUST FAN DATA					SUMMER DATA							WINTER DATA							FILTER DATA		COIL DATA				HEATING COIL		ELECTRICAL DATA				WEIGHT (LBS.)	(AS STANDARD)		REMARKS
		AIRFLOW (CFM)	ESP (IN WG)	RPM	BHP	MOTOR HP	AIRFLOW (CFM)	ESP (IN WG)	RPM	BHP	MOTOR HP	EFFECTIVENESS (%)	EXHAUST AIR EAT (DEG F)		SUPPLY AIR EAT (DEG F)		LAT (DEG F)		EFFECTIVENESS (%)	EXHAUST AIR EAT (DEG F)		SUPPLY AIR EAT (DEG F)		LAT (DEG F)		OUTSIDE AIR	RETURN AIR	COOLING COIL TOTAL CAPACITY (BTU/h)	COOLING COIL FACE VELOCITY (FPM)	COOLING COIL APD (IN. WG)	HEATING COIL TOTAL CAPACITY (BTU/h)	HEATING COIL FACE VELOCITY (FPM)	HEATING COIL APD (IN. WG)	V	P	H	MCA		MANUFACTURER	MODEL	
													DB	WB	DB	WB	DB	WB		EAT DB	EAT WB	EAT DB	EAT WB	LAT DB	LAT WB														
ERV-01	CORRIDOR	1,500	0.5	2321	0.88	1	1,300	0.5	2256	0.81	1	54	70	55	106	68	83	60	54	70	54	39	32	58	45	MERV 13	MERV 8	50,900	430	0.19	37,100	430	0.10	208	1	60	9.9	527	OXYGEN 8	C20IN	ALL

HVAC - VRF OUTDOOR UNIT

REMARKS:
1. INDOOR UNIT AND OUTDOOR UNIT SHALL BE THE SAME MANUFACTURER
2. REFRIGERANT TYPE IS R410A.

UNIT NUMBER	LOCATION	COOLING DATA		HEATING DATA		COMPRESSOR		AHRI RATINGS		ELECTRICAL DATA					WEIGHT (LBS.)	(AS STANDARD)		REMARKS
		TOTAL CAPACITY (BTU/h)	OUTDOOR TEMP (F)	TOTAL MBH	OUTDOOR TEMP (F)	TYPE	QUANTITY	IEER	COP	V	P	H	MCA	MOCP		MANUFACTURER	MODEL	
ODU-01	ROOF	192,000	116	215	28	INVERTER	1	21.2	3.49	460	3	60	38	60	680	TRANE-MITSUBISHI	TURYE1924AN41AN	ALL
ODU-02	ROOF	192,000	116	215	28	INVERTER	1	21.2	3.49	460	3	60	38	60	680	TRANE-MITSUBISHI	TURYE1924AN41AN	ALL
ODU-03	ROOF	69,000	95	69	28	INVERTER	1	12.8	2.4	208	3	60	38.1	45	727	OXYGEN 8	REYQ72XBTJA	ALL

HVAC - VRF BRANCH CIRCUIT CONTROLLER

REMARKS:
1. COORDINATE MOUNTING LOCATION WITH ARCHITECTURAL ACCESS PANELS.
2. REFRIGERANT BALL VALVES ARE EXISTING ON ALL PORTS.
3. PROVIDE MANUFACTURERS OPTIONAL CONDENSATE PUMP WITH RESERVOIR. WIRE PUMP TO SHUT DOWN BCC. PUMP SHALL BE PLENUM RATED AND POWERED BY THE SAME CIRCUIT AS THE BCC.

UNIT NUMBER	SERVICE	LOCATION	ELECTRICAL DATA			NUMBER OF PORTS	WEIGHT (LBS.)	(AS STANDARD)		REMARKS
			V	P	H			MANUFACTURER	MODEL	
BCC-100	ODU-1	LEVEL 1	208	1	60	12	133	TRANE-MITSUBISHI	TCMBM1012JA21N4	ALL
BCC-200	ODU-2	LEVEL 1	208	1	60	12	133	TRANE-MITSUBISHI	TCMBM1012JA21N4	ALL
BCC-01	ERV-01	LEVEL 1	208	1	60	4	49	OXYGEN 8	BSF4O54TVJ	ALL

HVAC - VRF INDOOR UNIT

REMARKS:
1. INDOOR UNIT AND OUTDOOR UNIT SHALL BE THE SAME MANUFACTURER
2. PROVIDE HORIZONTAL UNIT WITH FILTER BOX ACCESSORY.
3. REFRIGERANT TYPE IS R410A.
4. INDOOR UNIT SHALL INCLUDE INTEGRAL CONDENSATE LIFT PUMP.

UNIT NUMBER	SERVICE	COOLING DATA				HEATING DATA		ELECTRICAL DATA						WEIGHT (LBS.)	(AS STANDARD)		REMARKS
		AIRFLOW (CFM)	TOTAL CAPACITY (BTU/h)	SENSIBLE CAPACITY (BTU/h)	EAT (DEG F) DB	EAT (DEG F) WB	CAPACITY (BTU/h)	EAT (DEG F)	V	P	H	MCA	MOCP		MANUFACTURER	MODEL	
IDU-101	100	1,400	35,918.0	30,800.0	75.0	63.0	41,309.0	70	208	1	60	4.38	15	91	TRANE-MITSUBISHI	TPEFYP054MA144A	ALL
IDU-102	100	880	11,972.0	11,972.0	75.0	63.0	13,769.0	70	208	1	60	2.88	15	67	TRANE-MITSUBISHI	TPEFYP018MA145A	ALL
IDU-103	105, 120	490	9,977.0	9,341.0	75.0	63.0	11,704.0	70	208	1	60	2.88	15	58	TRANE-MITSUBISHI	TPEFYP015MA144A	ALL
IDU-104	106	880	11,972.0	11,972.0	75.0	63.0	13,769.0	70	208	1	60	2.88	15	67	TRANE-MITSUBISHI	TPEFYP018MA145A	ALL
IDU-105	107, 108, 118, 119	490	9,977.0	9,341.0	75.0	63.0	11,704.0	70	208	1	60	2.88	15	58	TRANE-MITSUBISHI	TPEFYP015MA144A	ALL
IDU-106	109, 110, 116, 117	490	9,977.0	9,341.0	75.0	63.0	11,704.0	70	208	1	60	2.88	15	58	TRANE-MITSUBISHI	TPEFYP015MA144A	ALL
IDU-107	111	370	7,981.0	6,745.0	75.0	63.0	9,294.0	70	208	1	60	2.13	15	47	TRANE-MITSUBISHI	TPEFYP012MA144A	ALL
IDU-108	106, 112	490	9,977.0	9,341.0	75.0	63.0	11,704.0	70	208	1	60	2.88	15	58	TRANE-MITSUBISHI	TPEFYP015MA144A	ALL
IDU-109	114, 122, 124	490	9,977.0	9,341.0	75.0	63.0	11,704.0	70	208	1	60	2.88	15	58	TRANE-MITSUBISHI	TPEFYP015MA144A	ALL
IDU-110	101, 102	300	5,321.0	5,321.0	75.0	63.0	6,196.0	70	208	1	60	1.75	15	47	TRANE-MITSUBISHI	TPEFYP008MA144A	ALL
IDU-201	114, 126, 127, 128, 129	880	12,531.0	12,531.0	75.0	63.0	14,180.0	70	208	1	60	2.88	15	67	TRANE-MITSUBISHI	TPEFYP018MA145A	ALL
IDU-202	143, 144, 145, 146	490	10,443.0	9,528.0	75.0	63.0	12,053.0	70	208	1	60	2.88	15	58	TRANE-MITSUBISHI	TPEFYP015MA144A	ALL
IDU-203	141, 142, 147, 148	490	10,443.0	9,528.0	75.0	63.0	12,053.0	70	208	1	60	2.88	15	58	TRANE-MITSUBISHI	TPEFYP015MA144A	ALL
IDU-204	114, 130, 131, 132, 133, 136	880	12,531.0	12,531.0	75.0	63.0	14,180.0	70	208	1	60	2.88	15	67	TRANE-MITSUBISHI	TPEFYP018MA145A	ALL
IDU-205	106, 140	370	8,354.0	6,900.0	75.0	63.0	9,571.0	70	208	1	60	2.13	15	47	TRANE-MITSUBISHI	TPEFYP012MA144A	ALL
IDU-206	138, 139	880	16,709.0	16,247.0	75.0	63.0	19,142.0	70	208	1	60	2.88	15	67	TRANE-MITSUBISHI	TPEFYP024MA144A	ALL
IDU-207	137, 149	300	5,569.0	5,438.0	75.0	63.0	6,381.0	70	208	1	60	1.75	15	47	TRANE-MITSUBISHI	TPEFYP008MA144A	ALL
IDU-208	159	1,270	20,886.0	20,886.0	75.0	63.0	24,105.0	70	208	1	60	4.25	15	84	TRANE-MITSUBISHI	TPEFYP030MA145A	ALL
IDU-209	152, 153, 154, 156, 157, 158	490	10,443.0	9,528.0	75.0	63.0	12,053.0	70	208	1	60	2.88	15	58	TRANE-MITSUBISHI	TPEFYP015MA144A	ALL
IDU-210	150, 155	880	16,709.0	16,247.0	75.0	63.0	19,142.0	70	208	1	60	2.88	15	67	TRANE-MITSUBISHI	TPEFYP024MA144A	ALL

HVAC - FAN

REMARKS:
1. PROVIDE DISCONNECT SWITCH.
2. PROVIDE VARI-GREEN EC MOTOR, 120V ACTUATED DAMPER WITH ENDSWITCH AND NEOPRENE HANGING VIBRATION ISOLATION.

UNIT NUMBER	SERVICE	LOCATION	FAN DATA				MOTOR DATA	ELECTRICAL DATA				SONES	WEIGHT (LBS.)	(AS STANDARD)		REMARKS
			FLOW RATE (CFM)	EXTERNAL STATIC (IN. WC)	RPM	BHP	DRIVE	V	P	H	FLA			MANUFACTURER	MODEL	
EF-01	ELEC ROOM	ELEC ROOM	350	0.5	1209	0.11	DIRECT	115	1	60	2.45	2.2	36	GREENHECK	CSP-A510-VG	ALL

HVAC - DX SPLIT SYSTEM UNIT

REMARKS:
1. INDOOR UNIT AND OUTDOOR UNIT SHALL BE THE SAME MANUFACTURER
2. OUTDOOR UNIT POWER SUPPLY FEEDS INDOOR UNIT.
3. PROVIDE COMPLETE REFRIGERATION SYSTEM SIZED AND INSTALLED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. REFRIGERATION SYSTEM SHALL INCLUDE BUT IS NOT LIMITED TO SIGHT GLASS / MOISTURE INDICATOR, FILTER-DRIER, EXPANSION VALVES AND LIQUID RECEIVER.
4. PROVIDE STARTER / DISCONNECT FOR BOTH UNITS.
5. PROVIDE WITH LOW AMBIENT KIT.
6. PROVIDE WALL MOUNTED CONTROLLER BY UNIT MANUFACTURER.
7. TIE IN UNIT CONTROLS TO MITSUBISHI VRF CENTRAL CONTROLLER.
8. PROVIDE MANUFACTURERS OPTIONAL CONDENSATE PUMP. WITH RESERVOIR. WIRE PUMP TO SHUT DOWN DSS/CU. PUMP SHALL BE PLENUM RATED AND POWERED BY THE SAME CIRCUIT AS THE DSS/CU.

UNIT NUMBER	SERVICE	TYPE	INDOOR UNIT							OUTDOOR UNIT				ELECTRICAL DATA					(AS STANDARD)		REMARKS
			FAN DATA		COOLING DATA			EAT (DEG F)			UNIT NUMBER	NOMINAL TONNAGE	SEER2	WEIGHT (LBS.)	V	P	H	MCA	MOCP	MANUFACTURER	MODEL	
			AIRFLOW (CFM)	ESP (IN WG)	TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	REFRIG. TYPE	DB	WB	DB											
DSS-01	LAN	DUCTLESS	385	0.0	12.0	13.5	R410A	80	67	95	CU-1	1	12	200	208	1	60	11	28	TRANE-MITSUBISHI	TPKA0A012/TRUYA012	1-8

VENTILATION CALCULATION - 2021 ARIZONA STATE MECHANICAL CODE TABLE 403.3.1.1									
ZONE	ROOM	ROOM TYPE	AREA (SQ FT)	OCCUPANT DENSITY (#/1000 SQ FT)	PEOPLE	CFM / PERSON	CFM / SQ FT	AIR DISTRIBUTION EFFECTIVENESS, Ez	MIN. VENTILATION AIRFLOW (CFM)	AIRFLOW USED (CFM)
IDU-101 IDU-102	100 - LOBBY	LOBBY	1192	10	11	5	0.06	0.8	155	155
IDU-103	105 - FR OFFICE	OFFICE	260	5	1	5	0.06	0.8	26	45
	120 - OPERATIONS	OFFICE	192	5	1	5	0.06	0.8	16	
IDU-104	106 - CORRIDOR	CORRIDOR	387	0	0	5	0.06	0.8	23	25
IDU-108	106 - CORRIDOR	CORRIDOR	250	0	0	5	0.06	0.8	15	30
	112 - CORRIDOR	CORRIDOR	183	0	0	5	0.06	0.8	12	
IDU-105	107 - OFFICE	OFFICE	110	5	1	5	0.06	0.8	13	55
	108 - OFFICE	OFFICE	110	5	1	5	0.06	0.8	13	
	118 - MPR	OFFICE	95	5	1	5	0.06	0.8	11	
	119 - OFFICE	OFFICE	110	5	1	5	0.06	0.8	13	
IDU-106	109 - OFFICE	OFFICE	110	5	1	5	0.06	0.8	13	55
	110 - OFFICE	OFFICE	110	5	1	5	0.06	0.8	13	
	116 - OFFICE	OFFICE	110	5	1	5	0.06	0.8	13	
	117 - OFFICE	OFFICE	110	5	1	5	0.06	0.8	13	
IDU-107	111 - COLLABORATION	CONFERENCE	223	50	11	5	0.06	0.8	85	85
IDU-109	114 - CORRIDOR	CORRIDOR	319	0	1	5	0.06	0.8	19	35
	125 - OFFICE	OFFICE	117	5	1	5	0.06	0.8	13	
IDU-110	101 - TRANSACTION OFFICE	OFFICE	95	5	1	5	0.06	0.8	10	20
	102 - TRANSACTION OFFICE	OFFICE	95	5	1	5	0.06	0.8	10	
IDU-201	114 - CORRIDOR	CORRIDOR	268	0	0	5	0.06	0.8	16	65
	126 - OFFICE	OFFICE	110	5	1	5	0.06	0.8	12	
	127 - OFFICE	OFFICE	110	5	1	5	0.06	0.8	12	
	128 - OFFICE	OFFICE	110	5	1	5	0.06	0.8	12	
	129 - OFFICE	OFFICE	110	5	1	5	0.06	0.8	12	
IDU-202	143 - STORAGE	CORRIDOR	110	0	0	5	0.06	0.8	12	50
	144 - OFFICE	OFFICE	110	5	1	5	0.06	0.8	12	
	145 - OFFICE	OFFICE	110	5	1	5	0.06	0.8	12	
	146 - OFFICE	OFFICE	110	5	1	5	0.06	0.8	12	
IDU-203	141 - OFFICE	OFFICE	110	5	1	5	0.06	0.8	12	50
	142 - OFFICE	OFFICE	110	5	1	5	0.06	0.8	12	
	147 - OFFICE	OFFICE	110	5	1	5	0.06	0.8	12	
	148 - OFFICE	OFFICE	110	5	1	5	0.06	0.8	12	
IDU-204	130 - OFFICE	OFFICE	110	5	1	5	0.06	0.8	12	70
	131 - OFFICE	OFFICE	110	5	1	5	0.06	0.8	12	
	132 - OFFICE	OFFICE	110	5	1	5	0.06	0.8	12	
	133 - OFFICE	OFFICE	110	5	1	5	0.06	0.8	12	
	114 - CORRIDOR	CORRIDOR	245	0	0	5	0.06	0.8	15	
	136 - CORRIDOR	CORRIDOR	100	0	0	5	0.06	0.8	6	
IDU-205	106 - CORRIDOR	CORRIDOR	207	0	0	5	0.06	0.8	15	25
	140 - CORRIDOR	CORRIDOR	137	0	0	5	0.06	0.8	9	
IDU-206	139 - MEETING	CONFERENCE	368	50	18	5	0.06	0.8	140	160
	138 - PANTRY	OFFICE	193	1	1	5	0.06	0.8	17	
IDU-207	137 - OFFICE	OFFICE	110	5	1	5	0.06	0.8	12	25
	149 - OFFICE	OFFICE	110	5	1	5	0.06	0.8	12	
IDU-208	159 - OPEN OFFICE	OFFICE	637	10	7	5	0.06	0.8	92	95
IDU-209	152 - FOCUS ROOM	OFFICE	45	5	1	5	0.06	0.8	8	50
	153 - FOCUS ROOM	OFFICE	45	5	1	5	0.06	0.8	8	
	154 - FOCUS ROOM	OFFICE	45	5	1	5	0.06	0.8	8	
	156 - FOCUS ROOM	OFFICE	45	5	1	5	0.06	0.8	8	
	157 - FOCUS ROOM	OFFICE	45	5	1	5	0.06	0.8	8	
	158 - FOCUS ROOM	OFFICE	45	5	1	5	0.06	0.8	8	
IDU-210	155 - CORRIDOR	CORRIDOR	60	0	0	5	0.06	0.8	5	25
	150 - CORRIDOR	CORRIDOR	185	0	0	5	0.06	0.8	12	
	151 - CORRIDOR	CORRIDOR	60	0	0	5	0.06	0.8	5	
										1150

EXHAUST CALCULATION						
Room	Area (SQ FT)	Fixtures	CFM/Fixture	CFM/SF	Minimum Airflow (CFM)	Airflow Used (CFM)
122 - RESTROOMS	200	3	75	0	225	225
124 - RESTROOMS	200	3	75	0	225	225
104 - RESTROOM	60	1	75	0	75	75
138 - PANTRY	194	0	0	.3	58	350
123 - JC	30	0	0	1	30	75
						950

DIFFUSER, GRILLE & REGISTER SCHEDULE

NOTES:

1. BORDER TYPES SHALL BE COMPATIBLE WITH CEILING TYPE FOR THE ROOM IN WHICH IT IS LOCATED. CONTRACTOR SHALL REVIEW THE ARCHITECTURAL REFLECTED CEILING PLANS FOR SPECIFIC CEILING TYPES IN EACH SPACE.
2. FINISHES, COLOR AND BORDER TYPES SHALL BE COORDINATED WITH THE ARCHITECT
3. REFER TO PLANS FOR LOCATION, AIR QUANTITIES, TYPE AND BLOW PATTERN OF EACH DEVICE.
4. PROVIDE ALUMINUM CONSTRUCTION FOR DEVICES INSTALLED IN HIGH MOISTURE AREAS INCLUDING TOILET ROOMS, KITCHEN AREAS, ETC.
5. WHERE CONTINUOUS LENGTH IS SPECIFIED, COORDINATE EXACT LENGTH WITH ARCHITECT. BLANK-OFF INACTIVE SECTIONS AS REQUIRED FOR CONTINUOUS LOOK.
6. PROVIDE MANUFACTURERS ACOUSTICALLY LINED SHEET METAL PLENUM FOR EACH LINEAR DIFFUSER SHOWN ON DRAWINGS.
7. BRANCH RUNOUTS SHALL BE SAME AS NECK SIZE SCHEDULED, UNLESS OTHERWISE INDICATED ON FLOOR PLANS.
8. INSULATE BACK OF SUPPLY DIFFUSERS.
9. SURFACE MOUNT FRAME SHALL BE TAPED AND MUD IN TYPE FRAME
10. PROVIDE LINEAR SLOT RETURNS WITH LIGHT SHIELD ACCESSORY.
11. PROVIDE OPEN TO PLENUM RETURN GRILLES WITH MANUFACTURER'S RETURN CANOPY ACCESSORY OR WITH FABRICATED RETURN AIR BOOT PER DETAIL 1 ON SHEET M-502.

SYMBOL	NECK SIZE/ RUNOUT SIZE	FACE SIZE	SELECTION RANGE (CFM)	SERVICE	MAXIMUM AIR P.D.	MAXIMUM N.C. LEVEL	MOUNTING	ACCESSORIES	MANUFACTURER MODEL NUMBER (AS STANDARD)	REMARKS
A1	6"	24"x24"	0-100	SUPPLY	0.10	<20	24x24 LAY-IN MODULE	-	TITUS OMNI	1, 2, 3, 4, 7, 8
A2	8"	24"x24"	100-210	SUPPLY	0.10	<20	24x24 LAY-IN MODULE	-	TITUS OMNI	1, 2, 3, 4, 7, 8
A3	10"	24"x24"	210-360	SUPPLY	0.10	<20	24x24 LAY-IN MODULE	-	TITUS OMNI	1, 2, 3, 4, 7, 8
A4	12"	24"x24"	360-475	SUPPLY	0.10	<20	24x24 LAY-IN MODULE	-	TITUS OMNI	1, 2, 3, 4, 7, 8
A5	6"	12"x12"	0-100	SUPPLY	0.10	<20	12x12 SURFACE MOUNT	-	TITUS OMNI	1, 2, 3, 4, 7, 8
A6	8"	12"x12"	0-210	SUPPLY	0.10	<20	12x12 SURFACE MOUNT	-	TITUS OMNI	1, 2, 3, 4, 7, 8
A7	18"x8"	20"x10"	0-440	SUPPLY	0.10	<20	SURFACE MOUNT	-	TITUS 300 FL	1, 2, 3, 5, 6, 7
B1	8"	24"x24"	0-100	RETURN	0.10	<20	LAY-IN MODULE	-	TITUS OMNI	1, 2, 3, 4, 7, 11
B2	10"	24"x24"	0-210	RETURN	0.10	<20	LAY-IN MODULE	-	TITUS OMNI	1, 2, 3, 4, 7, 11
B3	12"	24"x24"	0-400	RETURN	0.10	<20	LAY-IN MODULE	-	TITUS OMNI	1, 2, 3, 4, 7, 11
B4	14"	24"x24"	0-640	RETURN	0.10	<20	LAY-IN MODULE	-	TITUS OMNI	1, 2, 3, 4, 7, 11
B5	15"	24"x24"	0-790	RETURN	0.10	<20	LAY-IN MODULE	-	TITUS OMNI	1, 2, 3, 4, 7, 11
B6	22"x22"	24"x24"	0-1300	RETURN	0.10	<20	LAY-IN MODULE	-	TITUS PAR	1, 2, 3, 4, 11
B7	10"x10"	12"x12"	0-350	RETURN/EXHAUST	0.10	<20	LAY-IN MODULE	-	TITUS PAR	1, 2, 3, 4
C1	8"	4'-0" MODULE	0-210	SUPPLY	0.10	<25	LAY-IN BORDER	1 SLOT LINEAR - 1" SLOT	TITUS FL-10-HT	1, 2, 3, 5, 6, 7
C2	12"	4'-0" MODULE	0-330	SUPPLY	0.10	<25	LAY-IN BORDER	1 SLOT LINEAR - 2" SLOT	TITUS FL-20-HT	1, 2, 3, 5, 6, 7
C3	8"	4'-0" MODULE	0-210	SUPPLY	0.10	<25	SURFACE MOUNT BORDER	1 SLOT LINEAR - 1" SLOT	TITUS FL-10-HT	1, 2, 3, 5, 6, 7, 9
C4	12"	4'-0" MODULE	0-330	SUPPLY	0.10	<25	SURFACE MOUNT BORDER	1 SLOT LINEAR - 2" SLOT	TITUS FL-20-HT	1, 2, 3, 5, 6, 7, 9
C5	8"	4'-0" MODULE	0-240	SUPPLY	0.10	<25	LAY-IN BORDER	1 SLOT LINEAR - 1" SLOT	TITUS FL-10-JT	1, 2, 3, 5, 6, 7
C6	12"	4'-0" MODULE	0-360	SUPPLY	0.10	<25	LAY-IN BORDER	1 SLOT LINEAR - 2" SLOT	TITUS FL-20-JT	1, 2, 3, 5, 6, 7
C7	8"	4'-0" MODULE	0-240	SUPPLY	0.10	<25	SURFACE MOUNT BORDER	1 SLOT LINEAR - 1" SLOT	TITUS FL-10-JT	1, 2, 3, 5, 6, 7, 9
C8	12"	4'-0" MODULE	0-360	SUPPLY	0.10	<25	SURFACE MOUNT BORDER	1 SLOT LINEAR - 2" SLOT	TITUS FL-20-JT	1, 2, 3, 5, 6, 7, 9
C9	8"	2'-0" MODULE	0-105	SUPPLY	0.10	<25	LAY-IN BORDER	1 SLOT LINEAR - 2" SLOT	TITUS FL-10-JT	1, 2, 3, 5, 6, 7
C10	8"	2'-0" MODULE	0-105	SUPPLY	0.10	<25	LAY-IN BORDER	1 SLOT LINEAR - 2" SLOT	TITUS FL-10-HT	1, 2, 3, 5, 6, 7
D1	8"	4'-0" MODULE	0-100	RETURN	0.10	<25	LAY-IN BORDER	1 SLOT LINEAR - 1" SLOT	TITUS FL-10-HT	1, 2, 3, 5, 10
D2	12"	4'-0" MODULE	0-250	RETURN	0.10	<25	LAY-IN BORDER	1 SLOT LINEAR - 2" SLOT	TITUS FL-20-HT	1, 2, 3, 5, 10
D3	8"	4'-0" MODULE	0-180	RETURN	0.10	<25	SURFACE MOUNT BORDER	1 SLOT LINEAR - 2" SLOT	TITUS FL-20-HT	1, 2, 3, 5, 9, 10
D4	12"	4'-0" MODULE	0-290	RETURN	0.10	<25	SURFACE MOUNT BORDER	1 SLOT LINEAR - 2" SLOT	TITUS FL-20-HT	1, 2, 3, 5, 9, 10
D5	8"	2'-0" MODULE	0-100	RETURN	0.10	<25	LAY-IN BORDER	1 SLOT LINEAR - 1" SLOT	TITUS FL-10-HT	1, 2, 3, 5, 10
E1	6"	12"x12"	0-100	EXHAUST	0.10	<20	12x12 SURFACE MOUNT	-	TITUS OMNI	1, 2, 3, 4, 7
E2	14"	24"x24"	250-600	EXHAUST	0.10	<20	24x24 SURFACE MOUNT	-	TITUS OMNI	1, 2, 3, 4, 7

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL
R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210

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F 617-423-7501
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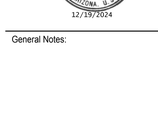


12/19/2024

General Notes:

Project Title:

Fidelity INVESTMENTS

Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

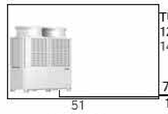
Key Plan:

Project No.: C0115.00

Drawing Sheet Title:
HVAC SCHEDULES

Drawing Sheet Number:
M-601

Owner's Branch No.:
134



TURYE1924AN41AN
123,052 BTU/h
142,863 BTU/h

Pipe Dia. Liquid / Gas | Model Number | Elevation | Clg Total (Sens.) | Htg Total
Pipe Length (Elbows) | Address / Group / Room / Tag Ref.

51
ODU-01

7/8 / 1-1/8
150.0ft (15)

TCMBM1012JA21N4 52

123,052 BTU/h (113,519 BTU/h)
142,863 BTU/h

3/8 / 5/8	50.0ft (5)	TPEFYP054MA144A 1 / 1 / IDU-101	35,918 BTU/h (30,800 BTU/h) 41,310 BTU/h
1/4 / 1/2	50.0ft (5)	TPEFYP018MA145A 2 / 2 / IDU-102	11,973 BTU/h (11,973 BTU/h) 13,770 BTU/h
1/4 / 1/2	50.0ft (5)	TPEFYP015MA144A 3 / 3 / IDU-103	9,977 BTU/h (9,341 BTU/h) 11,704 BTU/h
1/4 / 1/2	50.0ft (5)	TPEFYP018MA145A 4 / 4 / IDU-104	11,973 BTU/h (11,973 BTU/h) 13,770 BTU/h
1/4 / 1/2	50.0ft (5)	TPEFYP015MA144A 5 / 5 / IDU-105	9,977 BTU/h (9,341 BTU/h) 11,704 BTU/h
1/4 / 1/2	50.0ft (5)	TPEFYP015MA144A 6 / 6 / IDU-106	9,977 BTU/h (9,341 BTU/h) 11,704 BTU/h
1/4 / 1/2	50.0ft (5)	TPEFYP012MA144A 7 / 7 / IDU-107	7,982 BTU/h (6,746 BTU/h) 9,295 BTU/h
1/4 / 1/2	50.0ft (5)	TPEFYP015MA144A 8 / 8 / IDU-108	9,977 BTU/h (9,341 BTU/h) 11,704 BTU/h
1/4 / 1/2	50.0ft (5)	TPEFYP015MA144A 9 / 9 / IDU-109	9,977 BTU/h (9,341 BTU/h) 11,704 BTU/h
1/4 / 1/2	50.0ft (5)	TPEFYP008MA144A 10 / 10 / IDU-110	5,321 BTU/h (5,321 BTU/h) 6,196 BTU/h
	0.0ft (0)		
	0.0ft (0)		
	0.0ft (0)		

TURYE1924AN41AN
124,622 BTU/h
142,863 BTU/h

Pipe Dia. Liquid / Gas | Model Number | Elevation | Clg Total (Sens.) | Htg Total
Pipe Length (Elbows) | Address / Group / Room / Tag Ref.

61
ODU-02

7/8 / 1-1/8
150.0ft (15)

TCMBM1012JA21N4 62

124,622 BTU/h (119,372 BTU/h)
142,863 BTU/h

1/4 / 1/2	50.0ft (5)	TPEFYP018MA145A 11 / 11 / IDU-201	12,532 BTU/h (12,532 BTU/h) 14,180 BTU/h
1/4 / 1/2	50.0ft (5)	TPEFYP015MA144A 12 / 12 / IDU-202	10,443 BTU/h (9,529 BTU/h) 12,053 BTU/h
1/4 / 1/2	50.0ft (5)	TPEFYP015MA144A 13 / 13 / IDU-203	10,443 BTU/h (9,529 BTU/h) 12,053 BTU/h
1/4 / 1/2	50.0ft (5)	TPEFYP018MA145A 14 / 14 / IDU-204	12,532 BTU/h (12,532 BTU/h) 14,180 BTU/h
1/4 / 1/2	50.0ft (5)	TPEFYP012MA144A 15 / 15 / IDU-205	8,355 BTU/h (6,901 BTU/h) 9,571 BTU/h
3/8 / 5/8	50.0ft (5)	TPEFYP024MA144A 16 / 16 / IDU-206	16,709 BTU/h (16,248 BTU/h) 19,143 BTU/h
1/4 / 1/2	50.0ft (5)	TPEFYP008MA144A 17 / 17 / IDU-207	5,570 BTU/h (5,439 BTU/h) 6,381 BTU/h
3/8 / 5/8	50.0ft (5)	TPEFYP030MA145A 18 / 18 / IDU-208	20,886 BTU/h (20,886 BTU/h) 24,106 BTU/h
1/4 / 1/2	50.0ft (5)	TPEFYP015MA144A 19 / 19 / IDU-209	10,443 BTU/h (9,529 BTU/h) 12,053 BTU/h
3/8 / 5/8	50.0ft (5)	TPEFYP024MA144A 20 / 20 / IDU-210	16,709 BTU/h (16,248 BTU/h) 19,143 BTU/h
	0.0ft (0)		
	0.0ft (0)		
	0.0ft (0)		

TRUYA0121KA70NA

Pipe Dia. Liquid / Gas | Model Number | Elevation | Clg Total (Sens.) | Htg Total
Pipe Length (Elbows) | Address / Group / Room / Tag Ref.

21
CU-1

1/4 / 1/2
165.0ft (0)

TPKA0A0121LA10A
21 / 21

8,520 BTU/h (8,520 BTU/h) Est. Cooling Discharge Air Temp: 53.5

Jacobs
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W www.jacobs.com

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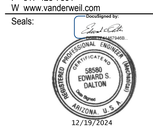

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Key Plan:

Project No.: C0115.00

Drawing Sheet Title:
HVAC VRF DIAGRAM

Drawing Sheet Number:
M-602

Owner's Branch No.:
134

CONTROLS LEGEND

FIRST LETTER(S)			SUCCEEDING LETTER(S)		
	PROCESS OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER FLAME		USERS CHOICE(*)	USERS CHOICE(*)	USERS CHOICE(*)
C	USERS CHOICE(*)			CONTROL	
D	DEWPOINT	DIFFERENTIAL		DAMPER	
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO			
G	GAS		GLASS	GATE	
H	HAND (MANUAL)				HIGH
I	CURRENT		INDICATE		
J	POWER	SCAN			
K	TIME OR SCHEDULE	RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	MOISTURE	MOMENTARY			
N	USERS CHOICE(*)		USERS CHOICE(*)	USERS CHOICE(*)	USERS CHOICE(*)
O	USERS CHOICE(*)		ORIFICE, RESTRICTION		
P	PRESSURE (OR VACUUM)		POINT (TEST CONNECTION)		
Q	QUANTITY OR EVENT (*)	INTEGRATE	INTEGRATE		
R	RADIATION		RECORD OR PRINT		
S	SPEED OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE(*)		MULTIFUNCTION(*)	MULTIFUNCTION(*)	MULTIFUNCTION(*)
V	VIBRATION, MECH ANALYSIS			VALVE	
W	WEIGHT OR FORCE		WELL		
X	SMOKE		UNCLASSIFIED(*)	TRANSFORMER	UNCLASSIFIED(*)
Y	EVENT (STATUS)			RELAY OR COMPUTE(*)	
Z	POSITION, DIMENSION			DRIVER, ACTUATOR OR UNCLASSIFIED FINAL CONTROL ELEMENT	

(*) WHEN USED, EXPLANATION IS SHOWN ADJACENT TO INSTRUMENT SYMBOL, SEE ABBREVIATIONS AND LETTER SYMBOLS. EXAMPLE: PT=PRESSURE TRANSMITTER HS=HAND SWITCH

GENERAL INSTRUMENT/FUNCTION SYMBOLS

CONTROL DEVICE OR INSTRUMENT TAG

BAS INPUT/OUTPUT IDENTIFIER

MODIFIER SYMBOLS AND DESCRIPTIONS SHOWN BELOW

OC	OPEN/CLOSE
OO	ON/OFF
SS	START/STOP
AUTO	AUTO
PAL	PRESSURE ALARM LOW LIMIT
PAH	PRESSURE ALARM HIGH LIMIT
TSL	TEMPERATURE ALARM LOW LIMIT
TSH	TEMPERATURE ALARM HIGH LIMIT
MAL	MOISTURE ALARM LOW LIMIT
MAH	MOISTURE ALARM HIGH LIMIT
R	MANUAL RESET

SAMPLE DEVICE TAGS

DUCT SMOKE DETECTOR WITHAUXILIARY CONTACTS AND MANUAL RESET

HIGH & LOW MOISTURE "OUT OF RANGE" LIMITS FOR FAULTY SENSOR ALARM

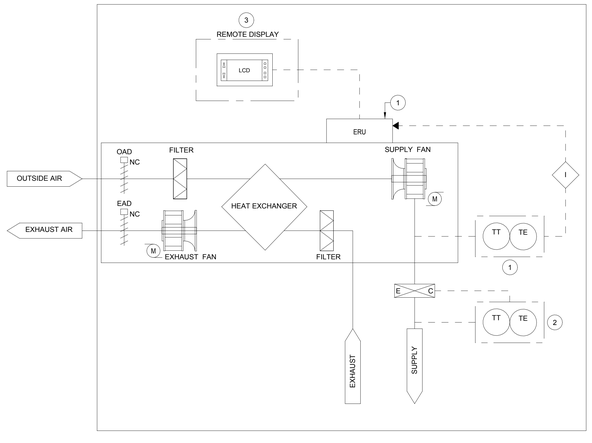
PILOT LIGHT

NOTES:

1. INSTRUMENTATION IDENTIFICATION TAGS SHOWN ON THE ENCLOSED CONTROL DRAWINGS ARE INTENDED TO BE SPECIFIC FOR EACH SEQUENCE. NO ATTEMPT HAS BEEN MADE TO COORDINATE SEQUENTIAL TAGS IN ALL SEQUENCES AS THIS EFFORT WOULD NOT AID IN THE UNDERSTANDING OF THE DESIGN INTENT. THEREFORE THERE MAY BE INSTRUMENTS ON THE CONTROL DRAWINGS WHICH APPEAR TO HAVE THE SAME IDENTIFICATION NUMBER.
2. PROVIDE AND COORDINATE A COMPLETE LIST OF INSTRUMENTATION, THE ASSOCIATED IDENTIFICATION TAGS AND A CROSS REFERENCE TO BE USED IN THE BAS (BUILDING AUTOMATION SYSTEM) PROGRAM CODE.

EQUIPMENT SYMBOLS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	CENTRIFUGAL FAN		PUMP		TWO POSITION ACTUATOR - FAILS LAST POSITION
	TUBULAR CENTRIFUGAL OR VANEAXIAL FAN	HOA	HANDS-OFF-AUTOMATIC CONTROL STATION		TWO POSITION ACTUATOR - FAILS OPEN
	PROP FAN		FILTER BANK		TWO POSITION ACTUATOR - FAILS CLOSED
	COIL: DX-DIRECT EXPANSION COOLING COIL EC-ELECTRIC HEATING COIL	MS	MOTOR STARTER		BACKPRESSURE REGULATOR - SELF CONTAINED
					PRESSURE REDUCING REGULATOR - SELF CONTAINED
					TWO WAY VALVE ASSOCIATED WITH ACTUATOR - SEE DRAWINGS & SPECS FOR VALVE TYPE
					OPPOSED BLADE DAMPER ASSOCIATED WITH ACTUATOR
					PARALLEL BLADE DAMPER ASSOCIATED WITH ACTUATOR



1 ENERGY RECOVERY UNIT CONTROLS
CONTROL DIAGRAM & SEQUENCE

KEY NOTES

1. PROVIDE STANDALONE CONTROLS. UNIT SHALL OPERATE THROUGH IT'S OWN MICROPROCESSOR CONTROLLER. OCCUPIED AND UNOCCUPIED CYCLES SHALL BE CONTROLLED BY TIMECLOCK. SEQUENCE PROVIDED TO DESCRIBE THE DESIGN INTENT.
2. THE DUCT HEATER SHALL BE CONTROLLED BY MANUFACTURER PROVIDED SENSOR. HEATER SHALL HAVE SCR CONTROL.
3. PROVIDE WITH REMOTE DISPLAY. LOCATE REMOTE DISPLAY IN LAN ROOM. COORDINATE FINAL LOCATION WITH FIDELITY.

NORMAL OPERATION

1. THE ERV SHALL OPERATE CONTINUOUSLY DURING OCCUPIED MODE.
2. AT THE START OF OCCUPIED MODE, THE EXHAUST AIR DAMPER (EAD) AND OUTSIDE AIR DAMPER (OAD) SHALL OPEN. THE SUPPLY AND EXHAUST FANS SHALL START AND RUN CONTINUOUSLY.
3. AT THE START OF UNOCCUPIED MODE, THE SUPPLY AND EXHAUST FANS SHALL TURN OFF. THE EXHAUST AIR DAMPER (EAD) AND OUTSIDE AIR DAMPER (OAD) SHALL CLOSE.
4. IF THE ERV DISCHARGE AIR TEMPERATURE IS BELOW 60 F (ADJ), THE ELECTRIC HEATER SHALL ACTIVATE AND MAINTAIN A LAT OF 60 F (ADJ) ONCE AIRFLOW IS PROVED BY AIRFLOW SWITCH PROVIDED WITH HEATER.

SAFETIES AND MONITORING

1. IF THE DISCHARGE TEMPERATURE LEAVING THE ERV DROPS BELOW 45 F, THE UNIT SHALL BE SHUTDOWN.

HVAC CONTROL SYSTEM NOTES - GENERAL

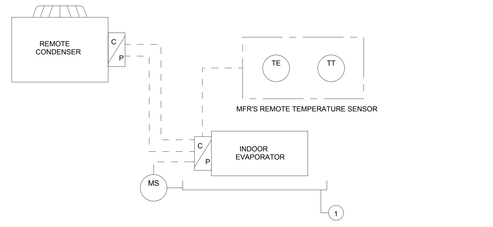
GENERAL REQUIREMENTS:

1. THE DESIGN INTENT IS FOR ALL CONTROLS TO BE STANDALONE WITHOUT A CENTRAL DDC SYSTEM. SEQUENCES SHOWN ARE PROVIDED TO DESCRIBE DESIGN INTENT.
2. SEQUENCES OUTLINED (UNLESS OTHERWISE SPECIFIED) SHALL BE PERFORMED BY STANDALONE, MANUFACTURER PROVIDED CONTROLLERS.
3. ALL HVAC EQUIPMENT SHALL BE STARTED/ENABLED AND STOPPED/DISABLED AS DESCRIBED IN THE SEQUENCES.
4. SAFETIES SHALL BE HARDWIRED TO THE EQUIPMENT UNLESS NOTED OTHERWISE.
5. INDICATED VALUES OF ALL PARAMETERS IN THE SEQUENCES (TEMPERATURES, PERCENTAGES, LIMITS, DEADBANDS, ETC.) SHALL BE MANUALLY ADJUSTABLE. SETPOINTS AND STATUS SHALL BE ADJUSTABLE ON AN INDIVIDUAL COMPONENT BASIS. ALL SETPOINTS, DELAYS AND OTHER PARAMETERS SHALL BE ADJUSTABLE BY THE OPERATOR THROUGH THE LOCAL CONTROLLERS WITHOUT ANY HARDWARE OR SOFTWARE REVISIONS.
6. COORDINATE ALL SENSOR INSTALLATION LOCATIONS AND SUBMIT PROPOSED POSITIONS ON APPLICABLE DUCTWORK COORDINATION SUBMITTALS. COORDINATE AND ENSURE MANUFACTURER RECOMMENDED UPSTREAM AND DOWNSTREAM DUCT DIAMETERS ARE PROVIDED.
7. ALL CONTROL DEVICES SHALL BE INSTALLED IN SUCH A WAY TO BE ACCESSIBLE FOR MAINTENANCE AND REPAIR.
8. UNLESS NOTED OTHERWISE THE FOLLOWING SHALL BE INITIAL SPACE TEMPERATURE AND HUMIDITY SETPOINTS:
   a. NORMALLY OCCUPIED SPACES:
      OCCUPIED COOLING 73 DEGREES F, NO RH LIMIT
      OCCUPIED HEATING 68 DEGREES F, NO RH LIMIT
      UNOCCUPIED COOLING 85 DEGREES F, NO RH LIMIT
      UNOCCUPIED HEATING 55 DEGREES F, NO RH LIMIT
9. REFER TO INDIVIDUAL SEQUENCES FOR ADDITIONAL VARIABLE SETPOINTS.
10. OCCUPANCY SCHEDULES:
    a. INITIAL SCHEDULES (COORDINATE WITH BUILDING OPERATORS):
       1. OCCUPIED: 7 AM TO 7 PM (ADJ.).
       2. UNOCCUPIED: ALL OTHER TIME PERIODS

SENSOR LEGEND

REFER TO PLANS FOR SPACE TEMPERATURE, HUMIDITY, PRESSURE AND CARBON DIOXIDE SENSORS/TRANSMITTERS INDICATED BY THE FOLLOWING SYMBOLS:

TEMPERATURE SENSOR/TRANSMITTER = (T)
HUMIDITY SENSOR/TRANSMITTER = (H)
PRESSURE SENSOR/TRANSMITTER = (P)
EQUIPMENT ALARM CABLE LOCATION = (A) (1 CABLE WITH 8 CONDUCTORS)
CARBON DIOXIDE SENSOR = (C)
AIRFLOW DIRECTION INDICATOR = (ADI)
ALARM STROBE/HORN =



1 SPLIT AC UNIT CONTROLS
CONTROL DIAGRAM & SEQUENCE

KEY NOTES:

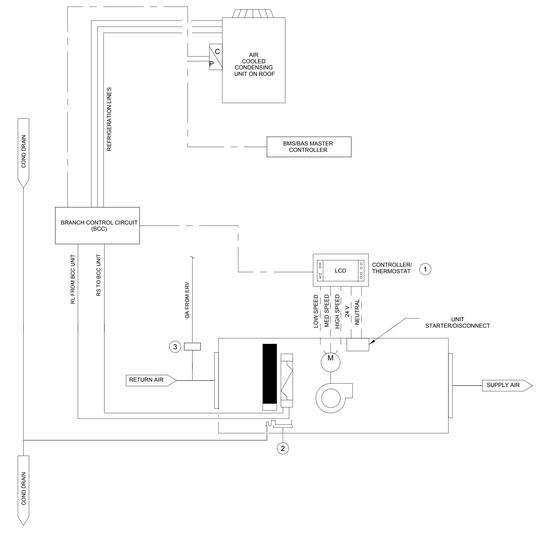
1. ALL COOLING COILS ARE PROVIDED WITH A SECONDARY DRAIN PAIN (NON-PIPED). DETECTION OF WATER (MS-1) SHOULD DE-ENERGIZE UNIT.

SEQUENCE OF OPERATIONS

A. GENERAL

1. THE AC UNITS SHALL BE CONTROLLED BY THE WALL MOUNTED SEVEN DAY PROGRAMMABLE THERMOSTAT PROVIDED BY THE AC UNIT MANUFACTURER AND TIE INTO THE VRF CONTROLLER (SAME MANUFACTURER).
2. THE AC UNITS SHALL OPERATE 24 / 7 AND SHALL MODULATE TO MAINTAIN THE COOLING SETPOINT.
3. TEMPERATURE SETTINGS SHALL BE AS FOLLOWS:

   A) COOLING SETPOINT: 75°F (ADJ)



2 VRF SYSTEM CONTROLS
CONTROL DIAGRAM

KEY NOTES:

1. VRF UNIT CONTROLLER/PROGRAMMABLE LCD THERMOSTAT AND LEAK DETECTION. THE CONTROLLER/THERMOSTAT SHALL BE PROGRAMMED SCHEDULING FOR OCCUPIED AND UNOCCUPIED HOURS.
2. PROVIDE WATER DETECTION SWITCH AND HARD WIRE TO UNIT STARTER. DETECTION OF WATER SHALL DE-ENERGIZE UNIT & CLOSE REFRIGERATION VALVE.
3. BALANCING DAMPER

SEQUENCE OF OPERATION FOR VRF SYSTEMS:

INDOOR UNIT SEQUENCE OF OPERATIONS:

A. ON/OFF CONTROL: THE INDOOR UNITS WILL BE COMMANDED ON/OFF AT THE THERMOSTAT/CONTROLLER PER THE OCCUPANCY SCHEDULE. IF ALL INDOOR UNITS ARE OFF, THE OUTDOOR UNIT SHALL TURN OFF. WITH THE NIGHT SETBACK FUNCTION/MODE, THE SYSTEM SHALL CYCLE ON DURING UNOCCUPIED PERIODS AS NEEDED TO MAINTAIN UNOCCUPIED TEMPERATURE SET POINT. THE CONTROLLER/THERMOSTAT SHALL BE PROGRAMMED FOR TEMPERATURE SET-POINTS AND OCCUPIED/UNOCCUPIED MODES WITH OVERRIDES AS NOTES ON SHEET M-801. DURING OCCUPIED MODE THE FAN SHALL RUN CONTINUOUSLY.

B. MORNING WARM-UP/COOL-DOWN: THE VRF SYSTEM SHALL SWITCH TO THE OCCUPIED SETPOINTS EACH MORNING 2 HOURS (ADJ.) BEFORE THE START OF THE BUILDING SET OCCUPIED START TIME. DURING THIS PERIOD THE SYSTEM SHALL CYCLE ON/OFF AS NEEDED TO MAINTAIN THE TEMPERATURE SET POINT.

C. SPACE TEMPERATURE CONTROL: THE INDOOR UNIT SHALL MODULATE ITS INTERNAL LINEAR EXPANSION VALVE (LEV) TO MAINTAIN THE TEMPERATURE SET POINT VIA THE INDOOR UNIT'S INTERNAL CONTROLS.

1. THE SET POINT IS ADJUSTABLE AT THE THERMOSTAT/CONTROLLER.

C. MODE CONTROL:

1. AUTO MODE:
   a. THE INDOOR UNIT SHALL DETERMINE WHETHER IT SHOULD BE IN AUTO-HEAT MODE OR AUTO-COOL MODE BASED ON SPACE TEMPERATURE RELATIVE TO TEMPERATURE SET POINT. IF THE INDOOR UNIT IS IN AUTO HEAT MODE, THE INDOOR UNIT CONTROL BOARD SHALL FOLLOW THE HEAT MODE SEQUENCE. IF THE INDOOR UNIT IS IN AUTO COOL MODE, THE INDOOR UNIT CONTROL BOARD SHALL FOLLOW THE COOL MODE SEQUENCE.
2. HEATING MODE: THE INDOOR UNIT SHALL MODULATE ITS LINEAR EXPANSION VALVE (LEV) TO MAINTAIN TEMPERATURE SET POINT.
3. COOLING MODE: THE INDOOR UNIT SHALL MODULATE ITS LINEAR EXPANSION VALVE (LEV) TO MAINTAIN TEMPERATURE SET POINT.

D. ALARM:

1. PROVIDE HIGH/LOW SPACE TEMPERATURE ALARM 5 DEGREES ABOVE/BELOW SET-POINT
2. PROVIDE A COMMON FAULT ALARM POINT
3. COOLING COIL DRAIN OVERFILL ALARM.
4. ALARM SHALL BE AUDIBLE AT THE VRF CENTRAL CONTROLLER. CENTRAL CONTROLLER SHALL BE LOCATED IN THE OPERATIONS ROOM, COORDINATE LOCATION WITH TENANT.

Jacobs
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HVAC CONTROLS

Drawing Sheet Number:
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Owner's Branch No.:
134

GENERAL ABBREVIATIONS

A	AMPERES
ADA	AMERICANS WITH DISABILITIES ACT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHJ	AUTHORITY HAVING JURISDICTION
AHU	AIR HANDLING UNIT
AIC	AMPERE INTERRUPTING CAPACITY
AL	ALUMINUM
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ARCH	ARCHITECT
ATS	AUTOMATIC TRANSFER SWITCH
ATC	AUTOMATIC TEMPERATURE CONTROL
AWG	AMERICAN WIRE GAUGE
BFG	BELOW FINISHED GRADE
BLDG	BUILDING
C	CONDUIT
CAT	CATALOG
CB	CIRCUIT BREAKER
CBM	CERTIFIED BALLAST MANUFACTURERS
CKT	CIRCUIT
CL	CENTERLINE
CLF	CURRENT LIMITING FUSE
COF	COFFEE MACHINE
COL	COLUMN
CPT	CONTROL POWER TRANSFORMER
CT	CURRENT TRANSFORMER
CU	COPPER
CUH	CABINET UNIT HEATER
DDL	DIRECT DIGITAL CONTROL
DW	DISHWASHER
DWG	DRAWING
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
EPO	EMERGENCY POWER OFF
EWC	ELECTRIC WATER COOLER
F	FUSE
FA	FIRE ALARM
FCU	FAN COIL UNIT
FLA	FULL LOAD AMPERES
FMC	FLEXIBLE METAL CONDUIT
FT	FEET
GFI	GROUND FAULT INTERRUPTER
GND,G	GROUND OR GROUNDING
GRMC	GALVANIZED RIGID METALLIC CONDUIT
HOA	HAND, OFF, AUTOMATIC SWITCH
HPF	HIGH POWER FACTOR
IG	ISOLATED GROUND
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS
IMC	INTERMEDIATE METAL CONDUIT
INT	INTERLOCK
kcmil	THOUSAND CIRCULAR MILS
kVA	KILOVOLT AMPERES
kW	KILOWATTS
LTG	LIGHTING
LFMC	LIQUIDTIGHT FLEXIBLE METAL CONDUIT
MC	METAL CLAD CABLE
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MISC	MISCELLANEOUS
MLO	MAIN LUGS ONLY
MW	MICROWAVE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURES ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
N.I.C.	NOT IN CONTRACT
NO	NORMALLY OPEN OR NUMBER
NTS	NOT TO SCALE
P	POLE
PB	PUSHBUTTON
PNL	PANEL
POS	PROVIDED UNDER OTHER SECTIONS
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE
PWR	POWER
QTY	QUANTITY
REF	REFRIGERATOR
REQ'D	REQUIRED
RMC	RIGID METAL CONDUIT
RMS	ROOT MEAN SQUARED
RNMC	RIGID NON-METALLIC CONDUIT
RTU	ROOF TOP UNIT
SP	SPARE
SW	SWITCH
SYM	SYMMETRICAL
TEL	TELEPHONE
TMCB	THERMAL MAGNETIC CIRCUIT BREAKER
UG	UNDERGROUND OR UNDERGRADE
UL	UNDERWRITERS LABORATORIES
U.O.N.	UNLESS OTHERWISE NOTED
UH	UNIT HEATER
UPS	UNINTERRUPTABLE POWER SUPPLY
V	VOLT
W	WIRE
WH	WATER HEATER
WP	WEATHERPROOF
XFMR	TRANSFORMER
△	DELTA
Y	WYE
Φ	PHASE

GENERAL NOTES

1. DRAWINGS ARE DIAGRAMMATIC. REFER TO THE ARCHITECTS PLANS FOR EXACT LOCATION AND MOUNTING HEIGHTS OF EQUIPMENT. ROUTING OF RACEWAYS SHALL BE COORDINATED WITH THE EQUIPMENT REQUIREMENTS AND FIELD CONDITIONS.
2. ALL EQUIPMENT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER, RECTILINEAR TO BUILDING STRUCTURE.
3. ALL COMPONENTS SHOWN ON THE RISER DIAGRAMS, BUT NOT ON THE PLAN OR VICE VERSA, SHALL BE INCLUDED AS IF SHOWN ON BOTH.
4. EXACT LOCATION OF MECHANICAL EQUIPMENT THAT REQUIRES ELECTRICAL CONNECTION IS SHOWN ON THE MECHANICAL DRAWINGS.
5. ALL RACEWAYS CROSSING BUILDING EXPANSION JOINTS SHALL BE EQUIPPED WITH EXPANSION FITTINGS.
6. CONDUIT HOMERUNS SHOWN ON THE DRAWING WITH MORE THAN 3 CURRENT CARRYING CONDUCTORS ARE SHOWN DIAGRAMMATICALLY. THIS CONTRACTOR SHALL NOT INSTALL MORE THAN 3 CURRENT CARRYING CONDUCTORS IN A RACEWAY UNLESS INSTALLATION COMPLIES WITH ARTICLE 310 OF THE NATIONAL ELECTRICAL CODE, NOTES TO AMPACITY TABLES REGARDING CONDUCTOR ADJUSTMENT FACTORS.
7. ALL FLUSH MOUNTED PANELS SHALL HAVE AN EMPTY A MINIMUM OF (3) 3/4" CONDUIT STUBBED ABOVE ACCESSIBLE CEILING FOR FUTURE SPARE CIRCUITS. FOR PANELS PROVIDED WITH MORE THAN (6) SPARE BREAKERS, PROVIDE AN ADDITIONAL 3/4" CONDUIT FOR EVERY THREE (3) POLES.
8. CONTRACTOR SHALL REVIEW ALL TRADES' CONTRACT DOCUMENTS TO DETERMINE SPECIFIC MOUNTING LOCATIONS FOR ELECTRICAL EQUIPMENT. COORDINATE EXACT MOUNTING LOCATIONS WITH THE ARCHITECT.
9. ELEMENTS OF THE ELECTRICAL WORK SHALL BE INSTALLED SUCH THAT AT COMPLETION THE ELEMENT SHALL BE "FULLY AND REASONABLY ACCESSIBLE". ELEMENTS OF THE ELECTRICAL WORK INCLUDE, BUT ARE NOT LIMITED TO PANELS, SWITCHBOARDS, MOTOR CONTROLS, TRANSFORMER, DISCONNECTS, JUNCTION BOXES, AND ALL MAINTENANCE ACCESS POINTS INCLUDING CABLE PULL SPACE. "FULLY AND REASONABLE ACCESSIBLE" SHALL BE DEFINED AS; CAPABLE OF BEING ACCESSED FOR SERVICE, REPAIR OR REPLACEMENT BY AN AVERAGE SIZED INDIVIDUAL, ON A LADDER IF NECESSARY, AND CAPABLE OF BEING SERVICED OR REMOVED WITHOUT REMOVING, MODIFYING OR DISTORTING OTHER COMPONENTS OF THE WORK OF OTHER TRADES. CONFLICTS WITH MEETING THIS REQUIREMENT SHALL BE BROUGHT TO THE ATTENTION OF THE OWNERS REPRESENTATIVE IN A TIMELY MANNER. BOXES ABOVE SUSPENDED CEILING SHALL BE ACCESSIBLE PER NEC AT COMPLETION OF PROJECT. BOXES MUST BE ACCESSIBLE FROM BELOW OR SIDES AND THE ACCESS OPENING MAY NOT BE LESS THAN 18" FROM A DUCT, PIPE OR STRUCTURAL ELEMENT (EXCLUDE THE CEILING GRID). JUNCTION BOXES LOCATED ABOVE CEILING SHALL BE INSTALLED FACING DOWN.
10. EACH LIGHTING AND RECEPTACLE BRANCH CIRCUIT SHALL INCLUDE A SEPARATE NEUTRAL CONDUCTOR FOR EACH AND EVERY CIRCUIT, UNLESS SPECIFICALLY NOTED OTHERWISE.
11. ALL CONDUITS SHALL HAVE INSULATED BUSHINGS WITH GROUND CLAMPS. ALL EMPTY CONDUITS SHALL BE INSTALLED WITH NYLON PULL WIRE. PULL WIRE SHALL BE LABELED AT BOTH ENDS.
12. THE METHOD OF INSTALLATION OF BOXES IN WALLS, AND THE METHOD OF PASSAGE OF CONDUITS AND WIREWAYS THROUGH ACOUSTICALLY SENSITIVE WALLS SHALL BE COORDINATED WITH THE ACOUSTICAL CONSULTANT.
13. ALL RECEPTACLES INCLUDING RECEPTACLES INSTALLED IN WIREWAY SHALL BE GFCI TYPE IF LOCATED WITHIN 6'-0" OF ANY SINK. SINGLE GFCI OUTLET TO PROTECT DOWN STREAM DEVICES IS NOT ACCEPTABLE. ALL GFCI RECEPTACLES NEED TO BE ON LINE SIDE ONLY.
14. ALL WIRING SHALL BE RUN CONCEALED UNLESS SPECIFIED OTHERWISE.
15. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL INCIDENTAL ACCESSORIES NECESSARY TO MAKE THE ELECTRICAL WORK COMPLETE & READY FOR OPERATION.
16. MINIMUM SIZE RACEWAY SHALL BE 1/2" UNLESS NOTED OTHERWISE. ELECTRICAL RACEWAY SHALL ENTER AND BE SECURED TO CABINET, JUNCTION BOX, PULL BOX OR OUTLET BOX. PROVIDE INSULATED BUSHINGS ON ALL RACEWAYS INCLUDING LOW VOLTAGE RACEWAYS THAT ARE STUBBED TO PLENUMS OR CABLE TRAY. PROVIDE INSULATED BUSHINGS WITH GROUNDING BUSHING FOR ALL CONDUITS ENTERING ALL PANELS, SWITCHBOARDS, MOTOR CONTROLLERS, VFDS, ETC. AND ALL BOXES 12" x 12" AND LARGER.
17. ALL CABLE AND CONDUIT SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE, INDEPENDENT OF OTHER SYSTEMS INCLUDING PLUMBING PIPING, HVAC DUCTWORK, DROP CEILING SUPPORTS, ETC.
18. THE CONTRACTOR SHALL COORDINATE ALL MANUFACTURER'S SHOP DRAWINGS FOR EXACT LOCATION AND ROUGHIN IN DIMENSIONS OF ALL EQUIPMENT AND SHALL MAKE ALL FINAL CONNECTIONS AS REQUIRED.
19. FLEXIBLE METAL CONDUIT WITH PVC COATING SHALL BE USED FOR CONNECTIONS TO MOTORS AND EQUIPMENT.
20. ALL BRANCH CIRCUIT CONDUCTORS SHALL BE 98 PERCENT CONDUCTIVITY COPPER MINIMUM #12 AWG SIZE, THWN INSULATION, 75 DEGREE C., RATED 600 VOLTS, UNLESS OTHERWISE NOTED.
21. GROUND CONDUCTORS SIZED FROM NATIONAL ELECTRICAL CODE GROUNDING CONDUCTOR TABLE 250-95 SHALL BE INCLUDED IN ALL BRANCH CIRCUITS.
22. UNLESS OTHERWISE NOTED, THE AMPACITY OF CONDUCTORS 600 VOLTS AND BELOW SHALL, BASED ON TERMINALS, NOT EXCEED 60°C (140°F) FOR CONDUCTORS SIZE 10AWG THROUGH 1AWG OR 75°C (167°F) FOR CONDUCTOR SIZES OVER 1AWG.
23. NO PIPING, DUCTS OR EQUIPMENT FOREIGN TO ELECTRICAL EQUIPMENT SHALL BE PERMITTED TO BE LOCATED WITHIN THE DEDICATED SPACE ABOVE ELECTRICAL EQUIPMENT.
24. SCCR RATINGS FOR PANELBOARDS BASED ON CALCULATED AVAILABLE FAULT CURRENT. ALL PANELBOARDS ARE FULLY RATED FOR INDICATED FAULT CURRENT. REFER TO SINGLE LINE DIAGRAM FOR AVAILABLE FAULT CURRENT AT EACH PANEL. SHORT CIRCUIT ANALYSIS AND FAULT CURRENT CALCULATIONS INCLUDE CONTRIBUTING MOTOR LOADS. FUSE LET-THRU METHOD WAS NOT UTILIZED AS PART OF THE CALCULATIONS.
25. SERIES RATING OF CIRCUIT BREAKERS WAS NOT UTILIZED AS PART OF THE SHORT CIRCUIT PROTECTION DESIGN AND IS NOT PERMITTED.
26. FEEDER AMPERE RATINGS ARE BASED ON NEC SECTION 310.15(C). WHERE THE NUMBER OF CONDUCTORS IN A RACEWAY EXCEEDS THREE (3), THE ALLOWABLE AMPACITY OF EACH CONDUCTOR HAS BEEN REDUCED PER NEC TABLE 310.15(C)(1).
27. ELECTRICAL CONDUIT AND CABLE SHALL NOT BE INSTALLED ON FOREIGN SYSTEMS (I.E. DUCTWORK, PIPING CEILING GRID, ETC) AND SHALL BE INDEPENDENTLY SUPPORTED FROM THE STRUCTURE USING LISTED COMPONENTS. LOW VOLTAGE WIRING (COMMUNICATIONS, AUDIO-VISUAL, ETC) SHALL NOT BE INSTALLED ON FOREIGN SYSTEMS AND SHALL BE INDEPENDENTLY SUPPORTED FROM THE STRUCTURE USING LISTED COMPONENTS.
28. IDENTIFY WIRING IN JUNCTION BOXES, TROUGHS, AND POINTS OF TERMINATION WITH PANELBOARD AND CIRCUIT NUMBER.
29. PLANS MAY NOT SHOW ALL ITEMS REQUIRING GROUND FAULT PROTECTION. ELECTRICAL CONTRACTOR SHALL PROVIDE GFCI RECEPTACLES FOR OUTLETS SERVING BATHROOMS, JANITORS CLOSETS, VENDING MACHINES, AND FOR ANY EXTERIOR OUTLETS. WHERE GFCI CIRCUIT BREAKERS ARE USED IN LIEU OF OUTLETS, BREAKER SHALL BE OF SAME MANUFACTURER AS THE ELECTRIC PANELBOARD.
30. CONDUIT PENETRATIONS THROUGH CABINET BACKS AND SIDES SHALL BE PROVIDED WITH ESCUTCHEON PLATES BY DIVISION 26.

WIRING DEVICES LEGEND

2	125 VOLT, 2 POLE, 3 WIRE, 20 AMP, DUPLEX RECEPTACLE. "2" DENOTES CIRCUIT NUMBER.
	125 VOLT, 2 POLE, 3 WIRE, 20 AMP, DOUBLE DUPLEX RECEPTACLE.
G	125 VOLT, 2 POLE, 3 WIRE, 20 AMP, DUPLEX RECEPTACLE EQUIPPED WITH INTEGRAL GROUND FAULT INTERRUPTER.
GF	125 VOLT, 2 POLE, 3 WIRE, 20 AMP, DUPLEX RECEPTACLE CONNECTED TO GROUND FAULT CIRCUIT BREAKER.
WP	125 VOLT, 2 POLE, 3 WIRE, 20 AMP, DUPLEX RECEPTACLE EQUIPPED WITH INTEGRAL GROUND FAULT INTERRUPTER AND MOUNTED IN CAST OUTLET BOX WITH WEATHERPROOF COVER.
U	125 VOLT, 2 POLE, 3 WIRE, 20 AMP, DUPLEX RECEPTACLE. "USB" DENOTES COMBINATION RECEPTACLE WITH (1) TYPE A USB AND (1) TYPE C USB CHARGER
	125 VOLT, 2 POLE, 3 WIRE, 20 AMP, PLUG LOAD DUPLEX OR QUAD RECEPTACLE. FILL DENOTES 100% / 50% PLUG LOAD CONTROL. RECEPTACLE TO BE OCCUPANCY SENSOR CONTROLLED. PROVIDE PLUG LOAD CONTROLLER OR POWER PACK COMPATIBLE WITH LIGHTING CONTROL SYSTEM.
	125 VOLT, 2 POLE, 3 WIRE, 20 AMP, DUPLEX RECEPTACLE. FILL DENOTES MOUNTING HEIGHT ABOVE COUNTER.
4	SPECIAL PURPOSE RECEPTACLE. REFER TO "SPECIAL PURPOSE RECEPTACLE SCHEDULE".
5	SPECIAL PURPOSE RECEPTACLE CEILING MOUNTED. REFER TO "SPECIAL PURPOSE RECEPTACLE SCHEDULE".
5	SPECIAL PURPOSE RECEPTACLE, FLUSH MOUNTED. REFER TO "SPECIAL PURPOSE RECEPTACLE SCHEDULE".
	WIREMOLD EVOLUTION WALL BOX EFSBX. WALLBOX CONTAINS (1) DUPLEX RECEPTACLE, DATA OUTLET, AND AV OUTLETS. REFER TO TELECOM DRAWINGS FOR ADDITIONAL INFORMATION.
	BACKBOX LOCATION FOR HDMI CONNECTION. EC TO PROVIDE 1-1/4"C FROM COMPUTER BACKBOX LOCATION TO MONITOR BACKBOX IN PRIVATE OFFICES.

NOTES:

1. ALL RECEPTACLES SHALL BE INSTALLED WITH GROUND PRONG IN THE UP POSITION.
2. ALL RECEPTACLES SHALL BE SIDE WIRED (NO BACK WIRING).

FURNITURE DEVICE LEGEND

F	FURNITURE FEED WHIP. PROVIDE CIRCUITS AS INDICATED ON PLAN. CONFIRM CONNECTION WITH FURNITURE VENDOR AND MANUFACTURER INSTALLATION INSTRUCTIONS
FFB	FLOOR BOX FURNITURE FEED - 1 CIRCUIT FURNITURE FEED 6" DEVICE WITH POWER AND DATA COMPARTMENT. LEGRAND EVOLUTION SERIES OR EQUIVALENT
FB1	REACH-IN FLOOR BOX, 4-GANG DEVICE WITH (2) DUPLEX RECEPTACLES. LEGRAND EVOLUTION SERIES OR EQUIVALENT. (1) DUPLEX RECEPTACLE SHALL BE PLUG-LOAD CONTROLLED VIA OCCUPANCY SENSOR (IF APPLICABLE) PER ENERGY CODE AND TITLE 24 PART 6 REQUIREMENTS. CONTROLLED RECEPTACLE SHALL BE PERMANENTLY LABELLED "CONTROLLED"
FB2	REACH-IN FLOOR BOX, 6-GANG DEVICE WITH (2) DUPLEX RECEPTACLES AND DATA/AV PROVISIONS. LEGRAND EVOLUTION SERIES OR EQUIVALENT

EQUIPMENT CONNECTION LEGEND

J J J J	JUNCTION AND/OR PULL BOX. PROVIDE WITH WITH FLEX CONNECTION TO EQUIPMENT. FLEX SHALL BE LIQUID TIGHT IN EXPOSED LOCATIONS OR TO EQUIPMENT IN MECHANICAL ROOMS. CONNECTION TYPE DESIGNATIONS ARE AS FOLLOWS: "ATC" DENOTES TO CONNECT TO AUTOMATIC TEMPERATURE CONTROL SYSTEM. "EWC DENOTES TO CONNECT TO ELECTRIC WATER COOLER. "EV" DENOTES TO CONNECT TO ELECTRIC VEHICLE CHARGING STATION. "EVR" DENOTES ELECTRIC VEHICLE READY (EMPTY CONDUIT). "FSD" DENOTES CONNECTION TO FIRE SMOKE DAMPER. "HT" DENOTES CONNECTION TO HEAT TRACE "SEC" DENOTES CONNECTION TO SECURITY PANEL. "SP" DENOTES SECURITY POWER CONNECTION. "SN" DENOTES INTERNALLY LIT SIGN AND COORDINATE ROUGH IN WITH SIGNAGE VENDOR. "TD" DENOTES ELECTRIC PAPER TOWEL DISPENSER.

EXISTING EQUIPMENT LEGEND

XM	"XM" ADJACENT TO EQUIPMENT DENOTES EXISTING EQUIPMENT TO REMAIN.
XN	"XN" ADJACENT TO EQUIPMENT DENOTES EXISTING EQUIPMENT TO BE REMOVED AND REPLACED WITH NEW.
XR	"XR" ADJACENT TO EQUIPMENT DENOTES EXISTING TO BE RELOCATED AS SHOWN. CUT BACK AND/OR EXTEND EXISTING BRANCH CIRCUIT WIRING AND CONDUIT AS REQUIRED SO AS TO PROVIDE A COMPLETE OPERATIONAL INSTALLATION.
XD	"XD" ADJACENT TO EQUIPMENT DENOTES EXISTING TO BE REMOVED. CUT BACK AND MAKE SAFE ALL ASSOCIATED BRANCH CIRCUIT WIRING CONDUIT BACK TO POWER SOURCE AND LABEL BREAKER IN PANELBOARD AS SPARE. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING CIRCUITRY TO DEVICES UNAFFECTED BY DEMOLITION.
XL	"XL" ADJACENT TO EQUIPMENT DENOTES RELOCATED EXISTING AT NEW LOCATION
XS	"XS" ADJACENT TO EQUIPMENT DENOTES EXISTING TO BE REMOVED, STORED, CLEANED AND REINSTALLED IN EXISTING LOCATION.

POWER RISER DIAGRAM LEGEND

M	METER (MICRO PROCESSOR BASED)
PANEL	PANELBOARD
T3	DRY TYPE TRANSFORMER, "T3" DENOTES TYPE. REFER TO "DRY TYPE TRANSFORMER SCHEDULE" FOR DESCRIPTIONS. AN ASTERISK "*" DENOTES TRAPEZE MOUNTED, REFER TO "DRY-TYPE TRANSFORMER MOUNTING DETAIL" FOR ADDITIONAL INFORMATION.

EQUIPMENT LEGEND

	208Y/120 VOLT, 3Ø, 4 WIRE PANEL
	480Y/277 VOLT, 3Ø, 4 WIRE PANEL
T3	DRY TYPE TRANSFORMER. "T3" DENOTES TYPE. REFER TO "DRY TYPE TRANSFORMER SCHEDULE" FOR DESCRIPTIONS. AN ASTERISK "*" DENOTES TRAPEZE MOUNTED, REFER TO "DRY-TYPE TRANSFORMER MOUNTING DETAIL" FOR ADDITIONAL INFORMATION.
5	MOTOR NUMERAL INDICATES HORSEPOWER RATING
S	MAGNETIC MOTOR STARTER
VFD	VARIABLE FREQUENCY DRIVE
	DISCONNECT SWITCH (UNFUSED)
	DISCONNECT SWITCH (FUSED)
XX X M44N-2	PLUMBING AND MECHANICAL EQUIPMENT DESIGNATION. REFER TO SCHEDULE. DESIGNATION "M44N-2" DENOTES BRANCH CIRCUIT DESIGNATION FOR EQUIPMENT SUCH AS UNIT HEATERS, WHERE THERE ARE SEVERAL UNITS WITH THE SAME EQUIPMENT DESIGNATION.

LIGHTING FIXTURE LEGEND

(REFER TO LIGHTING FIXTURE SPECIFICATIONS FOR ADDITIONAL INFORMATION)

A a 13	LIGHT FIXTURE "A" INDICATES FIXTURE TYPE "13" INDICATES CIRCUIT NUMBER "a" INDICATES SWITCH CONTROL
	LIGHTING FIXTURES INDICATED WITH SHADING DENOTES CIRCUITED TO NORMAL/EMERGENCY SUPPLY.
A NL 7	LIGHTING FIXTURES WITH DESIGNATION "NL" DENOTES FIXTURE SHALL BE CONSTANT ON.
	ILLUMINATED "EXIT" SIGN LIGHTING FIXTURE. CEILING MOUNTED OR WALL MOUNTED. PROVIDE DIRECTIONAL ARROWS AS INDICATED ON FLOOR PLANS. SHADED AREA DENOTES SIDE WITH FACE.

LIGHTING CONTROL LEGEND

S S3 S4	LINE VOLTAGE ON/OFF TOGGLE SWITCH. "3" DENOTES 3-WAY SWITCH AND "4" DENOTES 4-WAY SWITCH.
SA1 S A2 SA3 S A4	LOW VOLTAGE ON/OFF SWITCH. "A" DENOTES A BANK OF LOW VOLTAGE SWITCHES. "A1" - DENOTES A QUANTITY OF ONE (1) SWITCH. "A2" - DENOTES A QUANTITY OF TWO (2) SWITCHES. "A3" - DENOTES A QUANTITY OF THREE (3) SWITCHES. "A4" - DENOTES A QUANTITY OF FOUR (4) SWITCHES. nLIGHT # nPODMA DX OR EQUAL AS DESCRIBED IN SPECIFICATIONS.
SB1 S B2 SB3 S B4	LOW VOLTAGE ON/OFF & RAISE LOWER SWITCH. "B" DENOTES A BANK OF LOW VOLTAGE SWITCHES. "B1" - DENOTES A QUANTITY OF ONE (1) SWITCH. "B2" - DENOTES A QUANTITY OF TWO (2) SWITCHES. "B3" - DENOTES A QUANTITY OF THREE (3) SWITCHES. "B4" - DENOTES A QUANTITY OF FOUR (4) SWITCHES. nLIGHT # nPODMA DX OR EQUAL AS DESCRIBED IN SPECIFICATIONS.
S1	CEILING MOUNTED, DUAL-TECHNOLOGY VACANCY SENSOR. STANDARD COVERAGE nLIGHT #nCM PDT 9 OR EQUAL AS DESCRIBED IN SPECIFICATIONS.
S2	CEILING MOUNTED, DUAL-TECHNOLOGY OCCUPANCY SENSOR EXTENDED COVERAGE nLIGHT #nCM PDT-10 OR EQUAL AS DESCRIBED IN SPECIFICATIONS.
S3	CEILING MOUNTED, DUAL-TECHNOLOGY OCCUPANCY SENSOR EXTENDED COVERAGE W/ INTEGRAL PHOTOCELL nLIGHT #nCM PDT-10-ADCX OR EQUAL AS DESCRIBED IN SPECIFICATIONS.
SD	WALL MOUNTED, DUAL-TECHNOLOGY VACANCY SENSOR ON/OFF RAISE LOWER COMBINATION SWITCH nLIGHT #nWSX PDT LV DX OR EQUAL AS DESCRIBED IN SPECIFICATIONS.
S4	WALL MOUNTED, DUAL-TECHNOLOGY OCCUPANCY SENSOR ON/OFF SWITCH # INDICATES POLE COUNT. SENSOR SWITCH #WSX PDT 1P/2P OR EQUAL AS DESCRIBED IN SPECIFICATIONS.
P1	LOW VOLTAGE AUTOMATIC DIMMING PHOTOCELL. nLIGHT #nCM ADCX (RJ8) OR EQUAL AS DESCRIBED IN SPECIFICATIONS.
LCP	nLIGHT LIGHTING SYSTEM CONTROLLER #nECY PROVIDE ALL REQUIRED ACCESSORIES AND COMPONENTS FOR A COMPLETE SYSTEM.

NOTES:

1. ALL LIGHTING CONTROLS AND RELAYS FOR ENERGY RECEPTACLES SHALL BE LABELED ON GRID WITH COLORED DOTS TO IDENTIFY LOCATION.
2. LIGHTING CONTROL DEVICES SHALL BE LABELED AND IDENTIFIED.

LEGEND NOTES

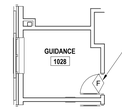
1. THIS SHEET IS A GENERAL LIST OF SYMBOLS AND SHALL BE USED AS A REFERENCE TO DEFINE ITEMS INDICATED ON THE DRAWINGS. NOT ALL SYMBOLS ARE NECESSARILY USED ON THIS PROJECT.

ELECTRICAL SHEET LIST

SHEET NUMBER	SHEET NAME
E-001	ELECTRICAL LEGEND & GENERAL NOTES
E-002	SPECIFICATIONS
E-201	LIGHTING - LEVEL 1
E-301	POWER - LEVEL 1
E-302	ELECTRICAL - ROOF PLAN
E-501	ELECTRICAL DETAILS
E-502	ELECTRICAL DETAILS
E-701	ELECTRICAL RISER DIAGRAM AND PANEL SCHEDULES
E-702	ELECTRICAL LIGHTING FIXTURE & MECHANICAL SCHEDULES

KEY LEGEND

225Y	FEEDER SIZE TAG SYMBOL. REFER TO "LEGEND OF FEEDER SIZES".
1 601	DETAIL CALL-OUT. DENOTES DETAIL "1" ON DRAWING "E601".
22000	AVAILABLE 3-PHASE FAULT CURRENT (RMS, SYM. AMPS).
2	DENOTES KEY NOTE.



LETTERED KEY NOTE IN ROOM DENOTES LIGHTING CONTROL INTENT.

PLAN DESIGNATION

BUILDING GROUNDING GRID LEGEND

MGB	BUILDING SYSTEM GROUND BUS. "MGB" DENOTES MAIN GROUNDING ELECTRODE.
SGB	BUILDING SYSTEM GROUND BUS. "SGB" DENOTES SUPPLEMENTAL GROUNDING ELECTRODE.
TGB	BUILDING SYSTEM GROUND BUS. "TGB" DENOTES TELECOM GROUNDING ELECTRODE.

CIRCUITRY, RACEWAYS AND FEEDERS LEGEND

LP2A-1,3,5	HOMERUN TO PANEL "LP2A", CIRCUIT #1,3,5 VIA 20A-1P CIRCUIT BREAKERS. EACH ARROW HEAD INDICATES TWO (2) #12 AWG CU (MINIMUM) PHASE AND NEUTRAL CONDUCTORS. EQUIPMENT GROUNDING CONDUCTORS AND ISOLATED GROUND CONDUCTORS ARE NOT INDICATED. PROVIDE GROUNDING CONDUCTORS IN ACCORDANCE WITH SPECIFICATIONS AND NEC MINIMUM SIZE CONDUIT SHALL BE 1/2" UNLESS OTHERWISE NOTED. REFER TO THE "BRANCH CIRCUIT SCHEDULE" NOTES AND CIRCUIT LENGTH TABLE FOR WIRE SIZE INCREASES DUE TO VOLTAGE DROP. REFER TO GENERAL NOTES ON THIS DRAWING FOR ADDITIONAL INFORMATION.
L2PA-2 60A-3P"	HOMERUN TO PANEL "L2PA" CIRCUIT #2 VIA 60A-3P CIRCUIT BREAKER. REFER TO "BRANCH CIRCUITS SCHEDULE" FOR CONDUCTOR QUANTITIES AND CONDUIT SIZES (NOTE THAT: ASTERISK "*" INDICATES NEUTRAL CONDUCTOR REQUIRED IN CIRCUIT, AS INDICATED IN THE "BRANCH CIRCUIT SCHEDULE".)

WINDOW SHADE LEGEND

ES	MOTORIZED WINDOW SHADE FURNISHED AND INSTALLED BY DIVISION 12, WIRED BY DIVISION 26.
S ES	MOTORIZED WINDOW SHADE SWITCH FURNISHED BY DIVISION 12, INSTALLED AND WIRED BY DIVISION 26. PROVIDE (1)-3/4" CONDUITS TO ABOVE HUNG CEILING WITH CAT 5 CONTROL WIRING TO SHADE.

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL
R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210

P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

General Notes:

Project Title:

Fidelity INVESTMENTS

Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project North
True North

Project No.: C0115.00

Drawing Sheet Title:
ELECTRICAL LEGEND & GENERAL NOTES

Drawing Sheet Number:
E-001

Owner's Branch No.:
134

26600 SHORT CIRCUIT & ARC FLASH STUDY

PART 1 - GENERAL

1.1 SUMMARY

A. PROVIDE A COMPUTER BASED, FAULT CURRENT ARC FLASH AND OVERCURRENT PROTECTIVE DEVICE COORDINATION STUDIES. PROTECTIVE DEVICES SHALL BE SET BASED ON THE RESULTS OF THE STUDY.

B. THE STUDIES SHALL BE SUBMITTED TO THE DESIGN ENGINEER PRIOR TO RECEIVING FINAL APPROVAL OF THE DISTRIBUTION EQUIPMENT SHOP DRAWINGS AND/OR PRIOR TO RELEASE OF EQUIPMENT FOR MANUFACTURE. I FORMAL COMPLETION OF THE STUDIES MAY CAUSE DELAY IN EQUIPMENT MANUFACTURE, APPROVAL FROM THE ENGINEER MAY BE OBTAINED FOR A PRELIMINARY SUBMITTAL OF SUFFICIENT STUDY DATA TO ENSURE THAT THE SELECTION OF DEVICE RATINGS AND CHARACTERISTICS WILL BE SATISFACTORY.

1.2 ARC FLASH STUDY

A. PROVIDE AN ELECTRICAL ARC FLASH HAZARD ANALYSIS ON THE FACILITY TO DETERMINE INCIDENT ENERGY, ARC FLASH PROTECTION BOUNDARIES, AND REQUIRED PERSONAL PROTECTION EQUIPMENT (PPE) FOR ALL ELECTRICAL EQUIPMENT IN THE FACILITY. THE CALCULATIONS SHALL COMPLY WITH NFPA 70E 2015, AND IEEE 1584 2002. GENERAL LABELS SHALL ALSO BE PROVIDED FOR EQUIPMENT AS OUTLINED.

B. THE PURPOSE OF THIS STUDY IS TO PROVIDE A COMPREHENSIVE SOFTWARE MODEL OF THE FACILITY ELECTRICAL DISTRIBUTION SYSTEM, WHICH WILL DOCUMENT FACILITY COMPLIANCE WITH NFPA 70E MANDATES AS DESCRIBED BELOW. THIS MODEL WILL SERVE AS AN INTEGRAL PART OF AN ONGOING SAFETY PROGRAM BY PROVIDING INTEGRAL WORK PERMITS AND ARC FLASH CALCULATIONS IN COMPLIANCE WITH NFPA 70E 2015 ARTICLE 130.5 FOR EACH ELECTRICAL EQUIPMENT IN THE FACILITY. AN ELECTRONIC COPY OF THE STUDY SHALL BE SUBMITTED TO THE OWNER AT COMPLETION OF PROJECT.

C. THE ANALYSIS SHALL BE PERFORMED WITH SEVERAL SCENARIOS WHICH SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:
   a. SERVICE TRANSFORMER IN OPERATION.

D. THE ANALYSIS AND PROCEDURES SHALL COMPLY WITH THE FOLLOWING STANDARDS AND RECOMMENDED PRACTICES FOR POWER SYSTEM STUDIES:
   a. NFPA 70E-2015 STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE
   b. IEEE 1584-2002
   c. IEEE-242 BUFF BOOK PROTECTION AND COORDINATION OF INDUSTRIAL POWER SYSTEMS
   d. IEEE-399 BROWN BOOK POWER SYSTEM ANALYSIS
   e. IEEE-141 RED BOOK ELECTRIC POWER DISTRIBUTION FOR INDUSTRIAL PLANTS

E. A DETAILED ARC FLASH STUDY SHALL BE PERFORMED TO DETERMINE POTENTIAL ARC FLASH INCIDENT ENERGIES, ARC FLASH BOUNDARIES, SHOCK HAZARD BOUNDARIES AND PROPER PERSONAL PROTECTIVE EQUIPMENT (PPE) FOR ALL ENERGIZED ELECTRICAL SYSTEM EQUIPMENT TASKS FOR THE ELECTRICAL SYSTEM STUDIED. THE CALCULATIONS SHALL COMPLY WITH NFPA 70E 2015, AND IEEE 1584-2002. BOLTED SHORT CIRCUIT CALCULATIONS USED IN THE ABOVE STANDARDS SHALL COMPLY WITH ANSI C37.010, C37.13, C37.5, IEEE - 141, AND IEEE - 399. THE PURPOSE OF THIS STUDY IS TO DETERMINE ARC FLASH HAZARDS IN CONFORMANCE WITH NFPA - 70E, AND TO PROVIDE A COMPREHENSIVE SOFTWARE MODEL OF THE ELECTRICAL DISTRIBUTION SYSTEM, WHICH PROVIDES INTEGRAL WORK PERMITS AND ARC FLASH CALCULATIONS IN COMPLIANCE WITH NFPA 70E ARTICLE 130.1(A)(2) FOR ALL EQUIPMENT IN THE FACILITY. THE SOFTWARE PROGRAM USE D IN THIS STUDY SHALL COMPLY WITH THE ABOVE STANDARDS. NO SUBSTITUTIONS IN CALCULATION METHODS WILL BE ALLOWED.

F. THE ARC FLASH STUDY SHALL DETERMINE THE FOLLOWING RESULTS. THE RESULTS SHALL BE PROVIDED IN SPREADSHEET FORMAT FOR EACH MODE AND ELECTRICAL SYSTEM LOCATION TO PROVIDE EASY VIEWING AND COMPARISON. WORST CASE ARC FLASH ENERGY LEVELS SHALL BE FLAGGED AND THE SPREADSHEET COMPARISON TABLE SHALL BE CAPABLE OF PROVIDING ITS OUTPUT DIRECTLY TO HIGH QUALITY VINYL LABEL PRINTERS. THE CALCULATIONS SHALL, AS A MINIMUM, INCLUDE A COMPARISON OF BOTH 100% AND 85% ARCING CURRENTS FOR LOW VOLTAGE EQUIPMENT FOR EACH ELECTRICAL SYSTEM CONFIGURATION OR OPERATING MODE, INDICATING WORST CASE ARC FLASH HAZARDS. THE SPREADSHEET RESULTS SHALL INCLUDE:
   a. EQUIPMENT NAME AND VOLTAGE.
   b. UPSTREAM EQUIPMENT DEVICE NAME AND ANSI FUNCTION, I.E. 51/50, ETC.
   c. EQUIPMENT TYPE, I.E. SWITCHGEAR, MCC, PANEL, VFD, ETC.
   d. EQUIPMENT ARC GAP.
   e. BOLTED AND ESTIMATED ARCHING FAULT CURRENT AT THE FAULT POINT (EQUIPMENT) IN ESTIMATED ARCING CURRENT SHOULD BE BASED ON THE SYMMETRICAL AMPERES. THE ARCING CURRENT EQUATIONS USED.
   f. TRIP TIME, OPENING TIME, AND TOTAL CLEARING TIME (TOTAL ARC TIME) OF PROTECTIVE DEVICE.
   g. WORST CASE ARC FLASH BOUNDARY FOR EACH BUS/EQUIPMENT IN THE MODEL.
   h. WORST CASE ARC FLASH HAZARD INCIDENT ENERGY IN CAL/CM2 FOR EACH BUS/EQUIPMENT IN THE MODEL.
   i. WORST CASE PERSONAL PROTECTIVE EQUIPMENT (PPE) FOR EACH BUS/EQUIPMENT IN THE MODEL.
   j. WORKING DISTANCES FOR UP TO FIVE DIFFERENT DISTANCES SHOWING ITEMS WORST CASE ARC FLASH BOUNDARY, WORST CASE ARC FLASH HAZARD INCIDENT ENERGY, AND WORST CASE PERSONAL PROTECTIVE EQUIPMENT (PPE) FOR EACH DISTANCE.
   k. INDICATE DANGER/HAZARDOUS AREAS WHERE INCIDENT ENERGY IS GREATER THAN 40 CAL/CM2 AND PROVIDE RECOMMENDATIONS TO REDUCED ARC FLASH ENERGY LEVELS FOR THESE AREAS.
   l. FLAG RESULTS WHERE 85% ARCING CURRENT PROVIDED WORST CASE RESULTS.
   m. EACH MODE OF OPERATION SHALL INCLUDE A DETAILED WRITE UP INDICATING AREAS WHERE INCIDENT ENERGY CALCULATIONS AND PPE REQUIREMENTS ARE HIGHER THAN CALCULATED IN THE NORMAL OPERATING MODE.

G. PROVIDE A DETAILED ARC FLASH ANALYSIS REPORT INCLUDING AS A MINIMUM:
   a. INTRODUCTION.
   b. METHODOLOGY.
   c. INFORMATION SOURCES.
   d. KEY ASSUMPTIONS.
   e. ARC FLASH ENERGY AND OTHER CONSIDERATION FOR VARIOUS SYSTEM MODES OF OPERATION (MAINTENANCE MODE, BUS - TIE, CO GEN ON/OFF, ETC.).
   f. ARC ENERGY AT 100% AND REDUCED CURRENTS.
   g. IEEE 1584 - 2002 CONSIDERATIONS.
   h. OVERCURRENT PROTECTIVE DEVICE CHANGES, REPLACEMENTS OR SETTING CHANGES IMPLEMENTED IN STUDY TO REDUCE ARC FLASH HAZARD EXPOSURE.
   i. EXPLANATION OF DATA IN ARC FLASH HAZARD REPORT TABLES.
   j. NFPA 70E INFORMATION.
   k. SHOCK HAZARDS WITH COVERS REMOVED.
   l. SHOCK HAZARDS APPROACH BOUNDARIES.
   m. LIMITED APPROACH BOUNDARY.
   n. RESTRICTED APPROACH BOUNDARY.
   o. PROHIBITED APPROACH BOUNDARY.
   p. ARC FLASH HAZARD BOUNDARIES.
   q. ARC FLASH LABELS FOR APPLICATION BY THE EC
   r. RESULTS OF ARC FLASH HAZARD ANALYSIS FOR LOW VOLTAGE SYSTEMS INCLUDING:
      - WORKING DISTANCES
      - ENERGY LEVELS
      - PPE REQUIREMENTS
      - RECOMMENDATIONS TO REDUCE ARC FLASH HAZARD ENERGY AND EXPOSURE.
      - ARC FLASH HAZARD REPORT
      - ELECTRONIC COPY IN ADOBE ACROBAT FORMAT (6.0 OR LATER)

260100 BASIC ELECTRICAL REQUIREMENTS

PART 1 - GENERAL

1.1 REFERENCES

A. THE WORK REQUIREMENTS DESCRIBED WITHIN DIVISION 20 SPECIFICATION SECTION "COMMON MECHANICAL/ELECTRICAL REQUIREMENTS" FORM COMPLIMENTARY REQUIREMENTS TO THE SCOPE OF WORK CONTAINED WITHIN DIVISION 23. REFER TO HVAC DRAWINGS FOR DIVISION 20 REQUIREMENTS.

B. EXAMINE DRAWINGS AND OTHER SECTIONS OF SPECIFICATIONS FOR REQUIREMENTS THAT AFFECT WORK OF THIS SECTION.

C. AS USED IN THIS SECTION, "PROVIDE" MEANS "FURNISH AND INSTALL" AND "POS" MEANS "PROVIDED UNDER OTHER SECTIONS". "FURNISH" MEANS "TO PURCHASE AND DELIVER TO THE PROJECT SITE COMPLETE WITH EVERY NECESSARY APPURTENANCE AND SUPPORT," AND "INSTALL" MEANS "TO UNLOAD AT THE DELIVERY POINT AT THE SITE AND PERFORM EVERY OPERATION NECESSARY TO ESTABLISH SECURE MOUNTING AND CORRECT OPERATION AT THE PROPER LOCATION IN THE PROJECT."

D. PERFORM WORK AND PROVIDE MATERIAL AND EQUIPMENT AS SHOWN ON DRAWINGS AND AS SPECIFIED OR INDICATED IN THIS SECTION OF THE SPECIFICATIONS. PROVIDE WORK SPECIFIED AND NOT SHOWN, AND WORK SHOWN AND NOT SPECIFIED AS THOUGH EXPLICITLY REQUIRED BY BOTH. ALTHOUGH WORK IS NOT SPECIFICALLY SHOWN OR SPECIFIED, PROVIDE SUPPLEMENTARY OR MISCELLANEOUS ITEMS, APPURTENANCES, DEVICES AND MATERIALS OBVIOUSLY NECESSARY FOR A SOUND, SECURE AND COMPLETE INSTALLATION. REMOVE ALL DEBRIS CAUSED BY CONTRACTORS WORK.

E. AS WORK PROGRESSES AND FOR DURATION OF CONTRACT, MAINTAIN COMPLETE AND SEPARATE SET OF PRINTS OF CONTRACT DRAWINGS AT JOB SITE AT ALL TIMES. RECORD WORK COMPLETED AND ALL CHANGES FROM ORIGINAL CONTRACT DRAWINGS CLEARLY AND ACCURATELY INCLUDING WORK INSTALLED AS A MODIFICATION OR ADDITION TO THE ORIGINAL DESIGN.

F. ITEMS REFERRED TO IN SINGULAR NUMBER IN CONTRACT DOCUMENTS SHALL BE PROVIDED IN QUANTITIES NECESSARY TO COMPLETE WORK.

1.2 CONTRACT DOCUMENTS

A. EXCEPT WHERE MODIFIED BY A SPECIFIC NOTATION TO THE CONTRARY, IT SHALL BE UNDERSTOOD THAT THE INDICATION AND/OR DESCRIPTION OF ANY ITEM, IN THE DRAWINGS OR SPECIFICATIONS OR BOTH, CARRIES WITH IT THE INSTRUCTION TO FURNISH AND INSTALL THE ITEM, REGARDLESS OF WHETHER OR NOT THIS INSTRUCTION IS EXPLICITLY STATED AS PART OF THE INDICATION OR DESCRIPTION.

B. DRAWINGS ARE DIAGRAMMATIC. THEY ARE NOT INTENDED TO BE ABSOLUTELY PRECISE; THEY ARE NOT INTENDED TO SPECIFY OR TO SHOW EVERY OFFSET, FITTING, AND COMPONENT. THE PURPOSE OF THE DRAWINGS IS TO INDICATE A SYSTEMS CONCEPT, THE MAIN COMPONENTS OF THE SYSTEMS, AND THE APPROXIMATE GEOMETRICAL RELATIONSHIPS. BASED ON THE SYSTEMS CONCEPT, THE MAIN COMPONENTS, AND THE APPROXIMATE GEOMETRICAL RELATIONSHIPS, THE CONTRACTOR SHALL PROVIDE ALL OTHER COMPONENTS AND MATERIALS NECESSARY TO MAKE THE SYSTEMS FULLY COMPLETE AND OPERATIONAL.

C. BRANCH CIRCUIT WIRING MAY NOT BE GRAPHICALLY SHOWN ON DRAWINGS AND MAY BE SHOWN BY CIRCUIT NUMBERS BESIDE DEVICES AND EQUIPMENT. PROVIDE COMPLETE WIRING SYSTEM WHETHER OR NOT SHOWN GRAPHICALLY. WIRING IS SHOWN BY CONDUIT RUNS ON DRAWINGS WHERE SPECIFIC ROUTING IS REQUIRED OR FOR SPECIAL REASONS. ONLY ROOMS WITH MULTIPLE SWITCHING HAVE "SWITCH CONTROL LETTERS" ASSIGNED.

D. REMOVE, EXTEND, ALTER AND RECONNECT EXISTING CONDUITS AS DIRECTED BY OWNER. RECONNECT EXISTING CONDUIT THAT IS CUT AND DISCONNECTED TO ACCOMMODATE WORK. PROVIDE NEW CONDUIT WHERE WIRE CANNOT BE PULLED IN EXISTING. CONNECT NEW AND EXISTING WORK TO FUNCTION AS COMPLETE, CONTINUOUSLY GROUNDED SYSTEM. REMOVE CONDUIT AND EQUIPMENT NOT INTENDED FOR REUSE AND STORE WHERE DIRECTED.

E. THE E.C. SHALL FURNISH AND INSTALL ALL INCIDENTAL ACCESSORIES NECESSARY TO MAKE THE ELECTRICAL WORK COMPLETE AND READY FOR OPERATION.

F. EXACT LOCATION OF MECHANICAL EQUIPMENT THAT REQUIRE ELECTRICAL CONNECTIONS ARE SHOWN ON THE MECHANICAL DRAWINGS.

1.3 DISCREPANCIES IN DOCUMENTS

A. ADDRESS QUESTIONS REGARDING DRAWINGS TO OWNER IN WRITING BEFORE AWARD OF CONTRACT. OTHERWISE, OWNER'S INTERPRETATION OF MEANING AND INTENT OF DRAWINGS SHALL BE FINAL.

1.4 CODES, STANDARDS, AUTHORITIES, AND PERMITS

A. PERFORM WORK IN STRICT ACCORDANCE WITH THE RULES, REGULATIONS, STANDARDS, CODES, ORDINANCES, AND LAWS OF LOCAL, STATE, AND OTHER AUTHORITIES HAVING LEGAL JURISDICTION OVER THE SITE.

B. MATERIAL AND EQUIPMENT SHALL BE LISTED BY UNDERWRITERS' LABORATORIES (UL).

C. GIVE NOTICES, FILE PLANS, OBTAIN PERMITS AND LICENSES, PAY FEES AND BACKCHARGES, AND OBTAIN NECESSARY APPROVALS FROM AUTHORITIES THAT HAVE JURISDICTION.

1.5 GUARANTEE

A. GUARANTEE WORK IN WRITING FOR ONE YEAR FROM DATE OF FINAL ACCEPTANCE. REPAIR OR REPLACE DEFECTIVE MATERIALS OR INSTALLATION AT NO COST TO OWNER. CORRECT DAMAGE CAUSED IN MAKING NECESSARY REPAIRS AND REPLACEMENTS UNDER GUARANTEE AT NO COST TO OWNER.

B. SUBMIT GUARANTEE TO OWNER BEFORE FINAL PAYMENT.

C. STATEMENT OF GUARANTEE REQUIREMENTS SHALL NOT BE INTERPRETED TO LIMIT OWNER'S RIGHTS UNDER LAW AND THIS CONTRACT.

1.6 SUBMITTALS

A. SUBMIT SHOP DRAWINGS AND PRODUCT DATA WITHIN 30 DAYS AFTER AWARD OF CONTRACT. CHECK, STAMP AND MARK WITH PROJECT NAME SUBMITTALS BEFORE TRANSMITTING TO OWNER. INDICATE DEVIATIONS FROM CONTRACT DOCUMENTS.

B. DEVIATIONS FROM CONTRACT DOCUMENTS, OR PROPOSED SUBSTITUTION OF MATERIALS OR EQUIPMENT FOR THOSE SPECIFIED SHALL BE REQUESTED IN SEPARATE LETTER WHETHER DEVIATIONS ARE DUE TO FIELD CONDITIONS, STANDARD SHOP PRACTICE, OR OTHER CAUSE.

C. SCHEDULE AT LEAST TEN WORKING DAYS, EXCLUSIVE OF TRANSMITTAL TIME, FOR SUBMITTAL REVIEW.

D. MATERIAL AND EQUIPMENT REQUIRING SHOP DRAWING AND PRODUCT DATA SUBMITTAL SHALL INCLUDE CABLE, CONDUIT, DISCONNECTS, VFD'S AND FILTERS.

1.7 NAMEPLATES

A. PROVIDE NAMEPLATES IN OR ON PANELBOARDS. NAMEPLATES SHALL BE WHITE BAKELITE WITH 1/4" HIGH BLACK RECESSED LETTERS. NAMEPLATES SHALL BE SECURED TO EQUIPMENT WITH GALVANIZED SCREWS.

1.8 MATERIALS AND WORKMANSHIP

A. WORK SHALL BE EXECUTED IN WORKMANLIKE MANNER AND SHALL PRESENT NEAT, RECTILINEAR AND MECHANICAL APPEARANCE WHEN COMPLETED. MAINTAIN MAXIMUM HEADROOM AT ALL TIMES. DO NOT RUN RACEWAYS EXPOSED UNLESS SHOWN EXPOSED ON DRAWINGS. MATERIAL AND EQUIPMENT SHALL BE NEW AND INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDED BEST PRACTICE SO THAT COMPLETED INSTALLATION SHALL OPERATE SAFELY AND EFFICIENTLY.

1.9 CONTINUITY OF SERVICES

A. DO NOT INTERRUPT EXISTING SERVICES WITHOUT OWNER'S AND ENGINEER'S APPROVALS.

26440 PANELBOARDS

PART 1 - GENERAL

1.1 CONSTRUCTION

A. PROVIDE UL-LISTED SAFETY DEAD-FRONT POWER PANELBOARDS WHERE SHOWN ON DRAWINGS AND AS SCHEDULED. PANELBOARDS SHALL MEET OR EXCEED REQUIREMENTS OF NEMA STANDARDS PUBLICATION PB-1 AND UL-50 AND 67. PROVIDE CABINETS WITH FLUSH HINGES AND COMBINATION CATCH AND LOCK. PROVIDE WIRING GUTTERS TO ACCOMMODATE LARGE MULTIPLIER FEEDER CABLES AND LUGS. EXCEPT AS SHOWN OTHERWISE ON DRAWINGS, WIRING GUTTERS SHALL BE AT LEAST 4".

B. PANELBOARDS SHALL BE BY GE OR APPROVED EQUAL.

C. PANELBOARDS SHALL HAVE INTEGRATED SHORT CIRCUIT CURRENT RATING EQUAL TO OR GREATER THAN CIRCUIT BREAKER AIC RATINGS SHOWN ON DRAWINGS.

D. MAIN BUS BARS SHALL BE COPPER, SIZED AS REQUIRED BY UL STANDARDS.

E. PROVIDED MOLDED CASE, BOLT-ON, THERMAL-MAGNETIC TRIP, SINGLE, TWO OR THREE POLE BRANCH CIRCUIT BREAKERS AS SHOWN ON DRAWINGS. MULTIPLE POLE BREAKERS SHALL BE SINGLE HANDLE, COMMON TRIP. CIRCUIT BREAKERS SHALL BE LISTED AND LABELED FOR 75° CONDUCTOR AMPACITIES.

F. PROVIDE BUS CONNECTIONS FOR FUTURE OVER CURRENT DEVICE WITH SUITABLE INSULATION AND BRACING TO MAINTAIN PROPER SHORT CIRCUIT RATING AND VOLTAGE CLEARANCES, WHERE REQUIRED ON DRAWINGS. PROVIDE FOR READY INSERTION OF FUTURE BREAKER.

G. PROVIDE SEPARATE EQUIPMENT GROUND BUS FOR EACH PANELBOARD.

H. PANELS SHALL HAVE HEAVY DUTY, CONTINUOUS, SECTION VERTICAL-HINGING TO BOX SECTION FOR ACCESS TO WIRING GUTTERS IN ADDITION TO TRIM DOOR (DOOR IN DOOR TYPE). OPENING INNER DOOR SHALL EXPOSE CIRCUIT BREAKER OPERATOR HANDLES AND PANELBOARD DIRECTORY. OPENING OUTER DOOR SHALL EXPOSE TERMINALS AND CIRCUIT BREAKERS IN A SINGLE OPERATION.

I. PROVIDE 1/2" SPACERS FOR PANELBOARDS MOUNTED AT EXTERIOR WALLS BELOW GRADE TO ESTABLISH 1/2" AIR SPACE BEHIND PANEL.

J. PROVIDE TYPED PANELBOARD DIRECTORIES THAT SHOW USE OF EACH CIRCUIT AND ELECTRICAL CHARACTERISTICS OF PANELBOARD. PANELBOARD DESIGNATIONS SHALL BE LABELED ON THE FRONT OF THE PANEL WITH A SCREW-ON NAMEPLATE, AND ON THE DIRECTORY.

260600 GROUNDING AND BONDING

PART 1 - GENERAL

1.1 GROUNDING

A. PROVIDE EQUIPMENT GROUNDING SYSTEM AS PER NEC.

B. SYSTEM SHALL MEET NEC REQUIREMENTS, MODIFIED AS SHOWN ON DRAWINGS AND AS SPECIFIED.

C. A GROUNDING CONDUCTOR SHALL BE INCLUDED IN EACH RACEWAY AND SIZED IN ACCORDANCE WITH THE NEC.

260700 TESTING, INSPECTION, AND CLEANING

PART 1 - GENERAL

1.1 SUMMARY

A. TEST WIRING AND CONNECTIONS FOR CONTINUITY AND GROUNDS BEFORE CONNECTING; DEMONSTRATE INSULATION RESISTANCE BY MEGGER TEST AS REQUIRED. INSULATION RESISTANCE BETWEEN CONDUCTORS AND GROUNDS FOR SECONDARY DISTRIBUTIONS SYSTEMS SHALL MEET NEC REQUIREMENTS.

B. VERIFY AND CORRECT AS NECESSARY: VOLTAGES, TRIP SETTINGS AND PHASING ON EQUIPMENT FROM SECONDARY DISTRIBUTION SYSTEM TO POINTS OF USE. TEST SECONDARY VOLTAGES AT PANELBOARDS, AND AT OTHER LOCATIONS ON DISTRIBUTION SYSTEMS AS NECESSARY. TEST SECONDARY VOLTAGES UNDER NO-LOAD AND FULL-LOAD CONDITIONS.

C. PROVIDE NECESSARY TESTING EQUIPMENT AND TESTING.

D. FAILURE OR DEFECTS IN WORKMANSHIP OR MATERIALS REVEALED BY TESTS OR INSPECTION SHALL BE CORRECTED PROMPTLY AND RETESTED. REPLACE DEFECTIVE MATERIAL.

E. CLEAN PANELS. PANELBOARD INTERIORS SHALL BE CLEANED AND VACUUMED.

F. BEFORE ENERGIZING ANY MOTOR, IT SHALL BE VISUALLY INSPECTED FOR SERVICEABILITY. VERIFY THAT PROPER ALIGNMENT HAS BEEN PERFORMED. CHECK NAMEPLATE FOR ELECTRICAL POWER REQUIREMENTS.

G. CHECK BOLT TORQUES FOR FEEDER TERMINATIONS AND OTHER ASSOCIATED EQUIPMENT IN THIS SECTION BY CALIBRATED TORQUE WRENCH METHOD.

H. TEST RUN ALL MOTORS PREFERABLY UNCOUPLED OR UNLOADED, BEFORE PLACING INTO REGULAR SERVICE. A CHECK ON THE MOTOR FOR ROTATION, SPEED, CURRENT AND TEMPERATURE RISE SHALL BE MADE AND RESULTS RECORDED.

PART 2 - INSTALLATION

2.1 FEEDER TESTING

A. PERFORM TESTS AND INSPECTIONS AND PREPARE TEST REPORTS.

B. TESTS AND INSPECTIONS:
   a. AFTER INSTALLING CONDUCTORS AND CABLES AND BEFORE ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, TEST ALL FEEDER CONDUCTORS, FOR COMPLIANCE WITH REQUIREMENTS.
   b. PERFORM EACH VISUAL AND MECHANICAL INSPECTION AND ELECTRICAL TEST STATED IN NETA ACCEPTANCE TESTING SPECIFICATION. CERTIFY COMPLIANCE WITH TEST PARAMETERS.
   c. PERFORM FIELD QUALITY CONTROL TEST REPORTS FOR EACH FEEDER AND RECORD RESULTS IN FORM BELOW.
   d. INFRARED SCANNING: AFTER SUBSTANTIAL COMPLETION, BUT NOT MORE THAN 60 DAYS AFTER FINAL ACCEPTANCE, PERFORM AN INFRARED SCAN OF EACH FEEDER IN UNIT SUBSTATIONS AND DISTRIBUTION PANEL. REMOVE EQUIPMENT COVERS SO CONDUCTORS AND BUSSING ARE ACCESSIBLE TO PORTABLE SCANNER.
   e. FOLLOW-UP INFRARED SCANNING: PERFORM AN ADDITIONAL FOLLOW-UP INFRARED SCAN OF EACH SPLICE 11 MONTHS AFTER DATE OF SUBSTANTIAL COMPLETION.
   f. INSTRUMENT: USE AN INFRARED SCANNING DEVICE DESIGNED TO MEASURE TEMPERATURE OR TO DETECT SIGNIFICANT DEVIATIONS FROM NORMAL VALUES. PROVIDE CALIBRATION RECORD FOR DEVICE.
   g. RECORD OF INFRARED SCANNING: PREPARE A CERTIFIED REPORT THAT IDENTIFIES SPLICES CHECKED AND THAT DESCRIBES SCANNING RESULTS. INCLUDE NOTATION OF DEFICIENCIES DETECTED, REMEDIAL ACTION TAKEN, AND OBSERVATIONS AFTER REMEDIAL ACTION.

C. TEST REPORTS: PREPARE A WRITTEN REPORT TO RECORD THE FOLLOWING:
   a. TEST PROCEDURES USED.
   b. TEST RESULTS THAT COMPLY WITH REQUIREMENTS.
   c. TEST RESULTS THAT DO NOT COMPLY WITH REQUIREMENTS AND CORRECTIVE ACTION TAKEN TO ACHIEVE COMPLIANCE WITH REQUIREMENTS.
   d. REMOVE AND REPLACE MALFUNCTIONING UNITS AND RETEST AS SPECIFIED ABOVE.

2.2 PANELBOARDS

A. PERFORM TESTS AND INSPECTIONS.

B. ACCEPTANCE TESTING PREPARATION:
   a. TEST INSULATION RESISTANCE FOR EACH PANELBOARD BUS, COMPONENT, CONNECTING SUPPLY, FEEDER, AND CONTROL CIRCUIT.
   b. TEST CONTINUITY OF EACH CIRCUIT.

C. TESTS AND INSPECTIONS:
   a. PERFORM EACH VISUAL AND MECHANICAL INSPECTION AND ELECTRICAL TEST STATED IN NETA ACCEPTANCE TESTING SPECIFICATION. CERTIFY COMPLIANCE WITH TEST PARAMETERS.
   b. CORRECT MALFUNCTIONING UNITS ON-SITE, WHERE POSSIBLE, AND RETEST TO DEMONSTRATE COMPLIANCE; OTHERWISE, REPLACE WITH NEW UNITS AND RETEST.
   c. PERFORM THE FOLLOWING INFRARED SCAN TESTS AND INSPECTIONS AND PREPARE REPORTS:
      - INFRARED SCANNING: AFTER SUBSTANTIAL COMPLETION, BUT NOT MORE THAN 60 DAYS AFTER FINAL ACCEPTANCE, PERFORM AN INFRARED SCAN OF EACH PANELBOARD. REMOVE FRONT PANELS SO JOINTS AND CONNECTIONS ARE ACCESSIBLE TO PORTABLE SCANNER.
      - FOLLOW-UP INFRARED SCANNING: PERFORM AN ADDITIONAL FOLLOW-UP INFRARED SCAN OF EACH PANELBOARD 11 MONTHS AFTER DATE OF SUBSTANTIAL COMPLETION.
      - INSTRUMENTS AND EQUIPMENT: USE AN INFRARED SCANNING DEVICE DESIGNED TO MEASURE TEMPERATURE OR TO DETECT SIGNIFICANT DEVIATIONS FROM NORMAL VALUES. PROVIDE CALIBRATION RECORD FOR DEVICE.
   d. PANELBOARDS WILL BE CONSIDERED DEFECTIVE IF THEY DO NOT PASS TESTS AND INSPECTIONS.
   e. PREPARE TEST AND INSPECTION REPORTS, INCLUDING A CERTIFIED REPORT THAT IDENTIFIES PANELBOARDS INCLUDED AND THAT DESCRIBES SCANNING RESULTS. INCLUDE NOTATION OF DEFICIENCIES DETECTED, REMEDIAL ACTION TAKEN, AND OBSERVATIONS AFTER REMEDIAL ACTION.

262200 DRY TYPE TRANSFORMERS

ACCEPTABLE MANUFACTURERS ARE SQUARE D AND GENERAL ELECTRIC.
DESIGN, MANUFACTURE AND TESTING OF TRANSFORMERS SHALL MEET THE REQUIREMENTS OF NEMA TP-1.

MATERIALS

TRANSFORMER WINDINGS SHALL BE COPPER WITH CONTINUOUS WOUND CONSTRUCTION. TRANSFORMER CORE SHALL BE CONSTRUCTED WITH HIGH-GRADE, NON-AGING, GRAIN-ORIENTED SILICON STEEL WITH HIGH MAGNETIC PERMEABILITY AND LOW HYSTERESIS AND EDDY CURRENT LOSSES. MAXIMUM MAGNETIC FLUX DENSITIES SHALL BE SUBSTANTIALLY BELOW THE SATURATION POINT. THE CORE LAMINATIONS SHALL BE TIGHTLY CLAMPED AND COMPRESSED.

EACH PRIMARY WINDING OF EACH TRANSFORMER LARGER THAN 15 KVA SHALL HAVE FOUR OR SIX TAPS, TWO OF WHICH SHALL PROVIDE 2½% INCREMENTS ABOVE FULL RATED VOLTAGE AND TWO OR FOUR OF WHICH SHALL PROVIDE 2½% INCREMENTS BELOW FULL RATED VOLTAGE.

TRANSFORMERS RATED HIGHER THAN 15 KVA SHALL HAVE 220 C INSULATION SYSTEM BASED UPON 115 C RISE AND SHALL BE RATED FOR CONTINUOUS OPERATION AT RATED KVA. TRANSFORMER SURFACE TEMPERATURE RISE SHALL NOT EXCEED 65 C.

PROVIDE SUITABLE TERMINAL COMPARTMENT TO ACCOMMODATE REQUIRED PRIMARY AND SECONDARY WIRING CONNECTIONS AND SIDE OR BOTTOM CONDUIT ENTRANCE. TRANSFORMERS RATED HIGHER THAN 25KVA SHALL HAVE TERMINAL BOARDS EQUIPPED WITH FACTORY INSTALLED CLAMP CONNECTORS. TERMINAL COMPARTMENT TEMPERATURE SHALL NOT EXCEED 75°C WHEN TRANSFORMER IS OPERATING CONTINUOUSLY AT RATED LOAD WITH AMBIENT TEMPERATURE OF 40°C. TERMINALS FOR WIRING CONNECTIONS SHALL BE SUITABLE FOR COPPER OR ALUMINUM WIRING.

ACCESSORIES

TRANSFORMERS SHALL HAVE INTEGRAL VIBRATION ISOLATION SUPPORTS BETWEEN CORE AND COIL ASSEMBLY AND TRANSFORMER ENCLOSURE. CONNECTION TO TRANSFORMERS SHALL BE MADE WITH FLEXIBLE METALLIC CONDUIT, NO LESS THAN 18" OR MORE THAN 36" IN LENGTH, OR WITH APPROVED ISOLATING CONNECTORS.

ALL TRANSFORMERS SHALL BE MOUNTED ON MASON TYPE ND VIBRATION ISOLATION PADS.

INSTALLATION

INSTALL TRANSFORMERS WHERE INDICATED, IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS, GUIDELINES AND THE APPLICABLE REQUIREMENTS OF THE NEC. COORDINATE TRANSFORMER INSTALLATION WORK WITH ELECTRICAL RACEWAY AND CABLE WORK, AS NECESSARY FOR PROPER INTERFACE.

PROVIDE ALL NECESSARY HARDWARE TO SECURE THE TRANSFORMER IN PLACE. PROVIDE VIBRATION ISOLATION AS DENOTED IN OTHER PARTS OF THIS SPECIFICATION. MOUNT FREE STANDING TRANSFORMERS ON 3.5" CONCRETE PADS WITH 1" CHAMFERED EDGES.

CONNECTIONS TO TRANSFORMERS SHALL BE MADE WITH FLEXIBLE METAL CONDUIT, NO LESS THAN 18" OR MORE THAN 36" IN LENGTH OR WITH APPROVED ISOLATING CONNECTORS.

PROVIDE TRANSFORMER ENCLOSURE EQUIPMENT GROUNDING IN ACCORDANCE WITH THE NEC.

ADJUST THE FULL CAPACITY TAPS UNDER NO LOAD SO THAT THE AVERAGE SECONDARY PHASE TO NEUTRAL VOLTAGE FOR THE 3 PHASES IS AS CLOSE AS POSSIBLE TO 120 VOLTS.

ALL 480 VOLT PRIMARY, AIR-COOLED, TRANSFORMERS SHALL BE GIVEN AN INSULATION TEST, BY MEANS OF A MEGGER, AFTER CONNECTIONS WITH THE PRIMARY CABLES ARE COMPLETE. CONTINUITY AND CORRECTNESS OF CONNECTIONS OF ALL WINDINGS SHALL BE CHECKED.

260943 LIGHTING CONTROL SYSTEM FUNCTIONAL TESTING

PART 1 - GENERAL

1.1 SUMMARY

A. LIGHTING SYSTEM FUNCTIONAL TESTING. CONTROLS FOR AUTOMATIC LIGHTING SYSTEMS SHALL COMPLY WITH THIS SECTION.

B. FUNCTIONAL TESTING. PRIOR TO ISSUING THE FINAL ELECTRICAL AFFIDAVITS, THE REGISTERED DESIGN PROFESSIONAL SHALL BE PROVIDED WITH FORMAL EVIDENCE THAT THE LIGHTING CONTROL SYSTEMS HAVE BEEN TESTED TO ENSURE THAT CONTROL HARDWARE AND SOFTWARE ARE CALIBRATED, ADJUSTED, PROGRAMMED AND IN PROPER WORKING CONDITION IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AND MANUFACTURER'S INSTRUCTIONS. FUNCTIONAL TESTING SHALL BE IN ACCORDANCE WITH SECTIONS 3, 4 AND 5 FOR THE APPLICABLE CONTROL TYPE.

C. OCCUPANT SENSOR CONTROLS. WHERE OCCUPANT SENSOR CONTROLS ARE PROVIDED, THE FOLLOWING PROCEDURES SHALL BE PERFORMED:
   a. CERTIFY THAT THE OCCUPANT SENSOR HAS BEEN LOCATED AND AIMED IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
   b. FOR PROJECTS WITH SEVEN OR FEWER OCCUPANT SENSORS, EACH SENSOR SHALL BE TESTED.
   c. FOR PROJECTS WITH MORE THAN SEVEN OCCUPANT SENSORS TESTING SHALL BE DONE FOR EACH UNIQUE COMBINATION OF SENSOR TYPE AND SPACE GEOMETRY. WHERE MULTIPLES OF EACH UNIQUE COMBINATION OF SENSOR TYPE AND SPACE GEOMETRY ARE PROVIDED, NOT LESS THAN 10 PERCENT, BUT IN NO CASE LESS THAN ONE, OF EACH COMBINATION SHALL BE TESTED UNLESS THE CODE OFFICIAL REQUIRES A HIGHER PERCENTAGE TO BE TESTED. WHERE 30 PERCENT OR MORE OF THE TESTED CONTROLS FAIL, ALL REMAINING IDENTICAL COMBINATIONS SHALL BE TESTED. FOR OCCUPANT SENSOR CONTROLS TO BE TESTED, VERIFY THE FOLLOWING:
      - WHERE OCCUPANT SENSOR CONTROLS INCLUDE STATUS INDICATORS, VERIFY CORRECT OPERATION.
      - THE CONTROLLED LIGHTS TURN OFF OR DOWN TO THE PERMITTED LEVEL WITHIN THE REQUIRED TIME.
      - FOR AUTO-ON OCCUPANT SENSOR CONTROLS , THE LIGHTS TURN ON TO THE PERMITTED LEVEL WHEN AN OCCUPANT ENTERS THE SPACE.
      - FOR MANUAL-ON OCCUPANT SENSOR CONTROLS , THE LIGHTS TURN ON ONLY WHEN MANUALLY ACTIVATED.
      - THE LIGHTS ARE NOT INCORRECTLY TURNED ON BY MOVEMENT IN ADJACENT AREAS OR BY HVAC OPERATION.

D. TIME-SWITCH CONTROLS. WHERE TIME-SWITCH CONTROLS ARE PROVIDED, THE FOLLOWING PROCEDURES SHALL BE PERFORMED:
   a. CONFIRM THAT THE TIME-SWITCH CONTROL IS PROGRAMMED WITH ACCURATE WEEKDAY, WEEKEND, AND HOLIDAY SCHEDULES.
   b. PROVIDE DOCUMENTATION TO THE OWNER OF TIME-SWITCH CONTROLS PROGRAMMING INCLUDING WEEKDAY, WEEKEND, HOLIDAY SCHEDULES, AND SET-UP AND PREFERENCE PROGRAM SETTINGS.
   c. VERIFY THE CORRECT TIME AND DATE IN THE TIME-SWITCH.
   d. VERIFY THAT ANY BATTERY BACK-UP IS INSTALLED AND ENERGIZED.
   e. VERIFY THAT THE OVERRIDE TIME LIMIT IS SET TO NOT MORE THAN 2 HOURS.
   f. SIMULATE OCCUPIED CONDITION. VERIFY AND DOCUMENT THE FOLLOWING:
      - ALL LIGHTS CAN BE TURNED ON AND OFF BY THEIR RESPECTIVE AREA CONTROL SWITCH.
      - THE SWITCH ONLY OPERATES LIGHTING IN THE ENCLOSED SPACE IN WHICH THE SWITCH IS LOCATED.
   g. SIMULATE UNOCCUPIED CONDITION. VERIFY AND DOCUMENT THE FOLLOWING:
      - NONEXEMPT LIGHTING TURNS OFF.
      - MANUAL OVERRIDE SWITCH ALLOWS ONLY THE LIGHTS IN THE ENCLOSED SPACE WHERE THE OVERRIDE SWITCH IS LOCATED TO TURN ON OR REMAIN ON UNTIL THE NEXT SCHEDULED SHUTOFF OCCURS.

E. DAYLIGHT RESPONSIVE CONTROLS. WHERE DAYLIGHT RESPONSIVE CONTROLS ARE PROVIDED, THE FOLLOWING SHALL BE VERIFIED:
   a. CONTROL DEVICES HAVE BEEN PROPERLY LOCATED, FIELD CALIBRATED AND SET FOR ACCURATE SETPOINTS AND THRESHOLD LIGHT LEVELS.

F. THE ELECTRICAL CONTRACTOR IS TO PROVIDE FORMAL DOCUMENTATION THAT THE ABOVE REQUIRED TESTING HAS OCCURRED. THE ELECTRICAL CONTRACTOR IS TO SUBMIT A LIST OF ALL THE SPACES AND AREAS WITHIN THE SCOPE OF THIS PROJECT WITH LIGHTING CONTROLS. THE LIST IS TO BE ON THE CONTRACTORS LETTER HEAD AND SIGNED BY THE ELECTRICAL CONTRACTORS REPRESENTATIVE WHO'S LICENSES WAS USED TO OBTAIN THE PERMIT. THE LIST WILL INDICATE EACH AND EVERY ROOM DEFINED BY NAME AND NUMBER AND THE RESULTS OF THE REQUIRED TESTING. LIGHTING CONTROL SYSTEMS SHALL BE COMMISSIONED BY THE AUTHORIZED MANUFACTURERS FACTORY TECHNICIAN. FORMAL DOCUMENTATION IS TO BE INCLUDED IN THIS DOCUMENT BY THE MANUFACTURERS REPRESENTATIVE THAT THE SYSTEM(S) IS FULLY TESTED AND IN PERFECT OPERATING CONDITION. DOCUMENTATION IS TO BE ON THE MANUFACTURERS LETTER HEAD AND SIGNED.

26130 BOXES AND DEVICES

PART 1 - GENERAL

1.1 OUTLET BOXES

A. OUTLET BOXES ON CONCEALED WORK SHALL BE AT LEAST 4" SQUARE OR OCTAGONAL, GALVANIZED PRESSED STEEL WITH PLASTER RINGS AS REQUIRED. OUTLET BOXES FOR EXPOSED CONDUIT WORK SHALL BE CAST ALUMINUM ALLOY WITH CAST ALUMINUM ALLOY COVERS, TYPE "FS" BOX.

B. SWITCH BOXES, RECEPTACLE BOXES AND OTHER OUTLET BOXES SHALL BE STANDARD 4" SQUARE WITH PLASTER RINGS OR GANG COVER AS REQUIRED.

C. OUTLET BOXES SHALL BE BY STEEL CITY ELECTRIC COMPANY, APPLETON ELECTRIC COMPANY, NATIONAL ELECTRIC PRODUCTS COMPANY OR APPROVED EQUAL.

D. PROVIDE ONLY ENOUGH CONDUIT OPENINGS TO ACCOMMODATE CONDUITS AT INDIVIDUAL LOCATION. EACH BOX SHALL BE LARGE ENOUGH TO ACCOMMODATE NUMBER AND SIZES OF CONDUITS, WIRES AND SPLICES TO MEET NEC REQUIREMENTS, BUT SHALL BE AT LEAST SIZE SHOWN OR SPECIFIED. NECESSARY VOLUME SHALL BE OBTAINED BY USING BOXES OF PROPER DIMENSIONS. BOX DEPTHS GREATER THAN 2 " SHALL NOT BE USED TO OBTAIN NECESSARY VOLUME, BUT MAY BE USED WITH ARCHITECT'S APPROVAL TO FACILITATE INSTALLATION. OCTAGONAL HUNG CEILING BOXES WITH SUSPENSION BARS MAY BE 3 1/2 " DEEP. RECTANGULAR BOXES FOR INTER-CONNECTION OF BRANCH CIRCUIT CONDUITS MAY BE 2 1/2 DEEP.

1.2 JUNCTION BOXES, PULL BOXES, AND CABLE TROUGHS

A. PROVIDE CODE GAUGE GALVANIZED STEEL JUNCTION AND PULL BOXES FOR CONDUIT 11/4" TRADE SIZE AND LARGER, WHERE INDICATED AND AS NECESSARY TO FACILITATE INSTALLATION, OF REQUIRED DIMENSIONS, WITH ACCESSIBLE, REMOVABLE SCREW-ON COVERS. PROVIDE JUNCTION AND PULL BOXES IN SPECIAL SIZES AND SHAPES DETERMINED IN FIELD WHERE NECESSARY. JUNCTION BOXES FOR EXPOSED CONDUIT WORK IN FINISHED AREAS SHALL BE CAST ALUMINUM ALLOY WITH CAST ALUMINUM ALLOY COVERS.

B. JUNCTION BOX COVERS SHALL BE READILY ACCESSIBLE. DO NOT INSTALL JUNCTION BOXES ABOVE SUSPENDED CEILINGS EXCEPT WHERE CEILING IS REMOVABLE OR WHERE ACCESS PANEL IS PROVIDED.

1.3 WIRING DEVICES AND PLATES

A. PROVIDE WIRING DEVICES BY SINGLE MANUFACTURER: CATALOG DESIGNATIONS OF HUBBELL ARE SPECIFIED TO ESTABLISH STANDARDS OF QUALITY FOR MATERIALS AND PERFORMANCE ACCEPTABLE ALTERNATES ARE ARROW-HART, LEVITON, BRYANT, OR APPROVED EQUAL.

B. COLOR OF THE DEVICES AND FACEPLATES SHALL BE BY ARCHITECT. NAMEPLATE DESIGNATIONS FOR DEVICE PLATES SHALL BE STICK-ON TYPE WITH PANEL AND CIRCUIT NUMBER.

261200 RACEWAY & WIRING

PART 1 - GENERAL

1.1 RACEWAYS

A. RIGID METALLIC CONDUIT (RMC) AND ELECTRICAL METALLIC TUBING (EMT) SHALL BE OF ZINC-COATED STEEL MANUFACTURED BY ALLIED TUBE AND CONDUIT, WHEATLAND TUBE, OR APPROVED EQUAL.

B. FLEXIBLE METALLIC CONDUIT SHALL BE GALVANIZED STEEL, SPIRAL WRAPPED METALLIC CONDUIT (GREENFIELD).

C. CONDUIT EXPANSION FITTINGS SHALL BE THREADED HOT-DIPPED GALVANIZED MALLEABLE IRON WITH INTERNAL BONDING ASSEMBLY BY O.Z./GEDNEY OR APPROVED EQUAL.

D. CONDUIT FIRE SEAL FITTINGS SHALL HAVE HEAT-ACTIVATED INTUMESCENT MATERIAL FOR FIRE RATING EQUAL TO OR HIGHER THAN THAT OF FLOOR OR WALL BY O.Z./GEDNEY OR APPROVED EQUAL.

E. PROVIDE THREADED MALLEABLE IRON OR STEEL CONNECTORS AND COUPLINGS WITH INSULATED THROATS; MANUFACTURED ELBOWS; LOCKNUTS; AND PLASTIC OR BAKELITE BUSHINGS AT TERMINATIONS, AS NECESSARY. COUPLINGS AND CONNECTORS SHALL BE GLAND AND RING COMPRESSION OR STAINLESS STEEL MULTIPLE POINT LOCKING OR STEEL CONCRETE-TIGHT SET SCREW. COMPRESSION COUPLINGS AND CONNECTORS SHALL FORM POSITIVE GROUND. BUSHINGS FOR RIGID STEEL AND CONNECTORS FOR EMT SHALL HAVE INSULATING INSERTS THAT MEET REQUIREMENTS OF UL 514 FLAME TEST.

1.2 WIRE AND CABLE (600V INSULATION)

A. PROVIDE SINGLE-CONDUCTOR, ANNEALED COPPER WIRE AND CABLE WITH INSULATION RATED 600 V, OF SIZES SPECIFIED AND SCHEDULED ON DRAWINGS BY ROME, OKONITE OR APPROVED EQUAL. WIRE SIZES SHOWN AND SPECIFIED ARE AMERICAN WIRE GAUGE FOR COPPER.

B. WIRE #10 AND LARGER SHALL BE STRANDED. WIRE AND CABLE SHALL HAVE THWN-THHN OR XHHW INSULATION.

1.3 TERMINATIONS

A. PROVIDE STANDARD BOLT-ON LUGS WITH HEX SCREWS TO ATTACH COPPER WIRE AND CABLE TO PANELBOARDS AND ELECTRICAL EQUIPMENT.

1.4 COLOR CODING

A. MAKE TERMINATIONS AND SPLICES FOR CONDUCTORS #6 AND LARGER WITH CORROSION-RESISTANT, HIGH-CONDUCTIVITY PRESSURE INDENT, HEX SCREW OR BOLT-CLAMP CONNECTORS, WITH OR WITHOUT TONGUES, DESIGNED SPECIFICALLY FOR INTENDED SERVICE.

B. COLOR CODE SECONDARY SERVICE, FEEDERS AND BRANCH CIRCUIT CONDUCTORS AS FOLLOWS: 208/120 VOLTS, 3∅, 4W - BLACK, RED, BLUE, WHITE, GREEN 480/277 VOLTS, 3∅, 4W - BROWN, ORANGE, YELLOW, WHITE, GREEN

PART 2 - INSTALLATION

2.1 WIRING METHODS

A. ALL FEEDERS SHALL BE EMT UNLESS NOTED OTHERWISE. REFER TO DETAILS ON DRAWINGS FOR ADDITIONAL INFORMATION.

B. THE BRANCH CIRCUIT WIRING INTENT IS A COMBINATION OF ELECTRICAL METALLIC TUBING (EMT) WITH WIRING AND METAL CLAD (MC) CABLE. ALL HOME RUNS TO THE PANELS MAY BE CONDUIT AND WIRE OR MC CABLE. AS MC CABLE CONVERGES ON THE PANELS THE BRANCH CIRCUITS SHALL BE RUN WITHIN CABLE TRAY WITH A SOLID BOTTOM PLATE. THE PLATE AND TRAY WILL BE PAINTED OUT BY OTHERS.

C. CONDUITS SHALL BE MINIMUM OF 3/4" AND CONTAIN A MAXIMUM OF THREE (3) BRANCH CIRCUITS PER CONDUIT. EACH CIRCUIT SHALL HAVE A DEDICATED NEUTRAL CONDUCTOR FOR EACH PHASE CONDUCTOR.

D. MC CABLE SHALL CONSIST OF SINGLE CIRCUIT CABLE AND MULTI-CONDUCTOR CABLE FOR HOMERUNS THAT CONTAIN A MAXIMUM OF THREE (3) BRANCH CIRCUITS PER CABLE. EACH CIRCUIT SHALL HAVE A DEDICATED NEUTRAL CONDUCTOR FOR EACH PHASE CONDUCTOR.

E. EACH BRANCH CIRCUIT SHALL CONTAIN AN EQUIPMENT GROUND CONDUCTOR. THE EQUIPMENT GROUND CONDUCTOR MAY BE SHARED AMONGST A MAXIMUM OF THREE (3) BRANCH CIRCUITS RUN AS A MULTI-WIRE BRANCH CIRCUIT.

F. INSTALL CONNECTORS AND COUPLINGS AS RECOMMENDED BY MANUFACTURERS. COMPRESSION FITTINGS SHALL NOT BE USED WITH RIGID STEEL OR INTERMEDIATE METALLIC CONDUITS.

G. SIZE RIGID STEEL CONDUIT, EMT AND FLEXIBLE METALLIC CONDUIT AS REQUIRED BY NEC EXCEPT AS SPECIFIED OR SHOWN ON DRAWINGS OTHERWISE.

H. INSTALL CONDUIT SYSTEMS COMPLETE BEFORE DRAWING IN CONDUCTORS. BLOW THROUGH AND CLEAN CONDUIT FREE OF DEBRIS BEFORE CONDUCTORS ARE INSTALLED.

I. CHECK RACEWAY SIZES TO DETERMINE THAT GREEN EQUIPMENT GROUND CONDUCTOR FITS IN SAME RACEWAY WITH PHASE AND NEUTRAL CONDUCTORS TO MEET NEC PERCENTAGE OF FILL REQUIREMENTS. INCREASE DUCT, CONDUIT, TUBING AND RACEWAY SIZES SHOWN OR SPECIFIED AS REQUIRED TO ACCOMMODATE CONDUCTORS.

J. EXPANSION/DEFLECTION FITTINGS: CONDUIT OR EMT SECURED RIGIDLY ON OPPOSITE SIDES OF BUILDING EXPANSION JOINTS AND LONG RUNS OF EXPOSED RACEWAY SUBJECT TO STRESS SHALL HAVE EXPANSION FITTINGS. FITTINGS SHALL SAFELY DEFLECT AND EXPAND TO TWICE DISTANCE OF STRUCTURAL MOVEMENT.PROVIDE SEPARATE EXTERNAL COPPER BONDING JUMPER SECURED WITH GROUNDING STRAPS ON EACH END OF FITTING.

K. ATTACH PULL ROPES TO CONDUCTORS WITH BASKET-WEAVE GRIPS ON PULLING EYES. PULL CABLES THAT SHARE CONDUIT AT SAME TIME.

L. WIRE AND CONDUIT SIZES INDICATED ON HOMERUNS SHALL BE CONTINUOUS THROUGHOUT THE CIRCUIT. CONDUIT HOMERUNS SHOWN ON THE DRAWING WITH MORE THAN 3 CURRENT CARRYING CONDUCTORS ARE SHOWN DIAGRAMATICALLY. THIS CONTRACTOR SHALL NOT INSTALL MORE THAN 3 CURRENT CARRYING CONDUCTORS IN A RACEWAY UNLESS DONE SO STRICTLY BY THE NATIONAL ELECTRIC CODE.

M. THE E.C. IS RESPONSIBLE FOR ALL NECESSARY CORE DRILLING. ALSO, THE E.C. SHALL PROVIDE FIRE STOPPING AND WEATHERPROOF SEALANT AROUND THE ANNULAR OF EACH CONDUIT THAT IS CORE DRILLED.

N. ALL CONDUITS SHALL BE SUPPORTED BY USE OF HOT DIPPED GALVANIZED POWER STRUT, RACKS, THREADED ROD, BEAM CLAMPS, POWER TRAP AND ALL NECESSARY ACCESSORIES FOR A COMPLETE WIRING SYSTEM. ALL RACKS SHALL BE PROVIDED WITH DOUBLE TIERS FOR FUTURE CONDUITS.

O. ALL WIRING SHALL BE RUN CONCEALED WHERE POSSIBLE.

264100 SAFETY DISCONNECT SWITCHES

PART 1 - GENERAL

1.1 SWITCHES

A. PROVIDE UL-LISTED QUICK-MAKE/QUICK-BREAK SAFETY SWITCHES. CURRENT-CARRYING PARTS SHALL BE HIGH-CONDUCTIVITY COPPER. CONTACTS SHALL BE SILVER-TUNGSTEN OR PLATED.

B. TYPE HD, (HEAVY DUTY), UNLESS SPECIFIED OTHERWISE. PROVIDE [DUST PROOF] NEMA 1 ENCLOSURE FOR DRY APPLICATION. PROVIDE NEMA 12 ENCLOSURE FOR MECHANICAL SPACES IN DRY APPLICATIONS. PROVIDE NEMA 3R FOR WET APPLICATIONS. SWITCHES SHALL BE RATED 600V MINIMUM AS REQUIRED FOR VOLTAGE OF ASSOCIATED CIRCUIT AND SHALL BE RATED IN HORSEPOWER. FUSES SHALL INTERRUPT LOCKED ROTOR CURRENT OF ASSOCIATED MOTOR OR TEN TIMES FULL RATED LOAD CURRENT, WHICHEVER IS GREATER.

C. CURRENT-CARRYING PARTS SHALL BE HIGH-CONDUCTIVITY COPPER. CONTACTS SHALL BE SILVER-TUNGSTEN OR PLATED. PROVIDE POSITIVE PRESSURE FUSE CLIPS AND SWITCH OPERATING MECHANISM SUITABLE FOR CONTINUOUS USE AT RATED CAPACITY WITHOUT AUXILIARY SPRINGS IN CURRENT PATH.

D. SWITCHES SHALL WITHSTAND AVAILABLE FAULT CURRENT OR LET-THROUGH CURRENT BEFORE OPERATING, WITHOUT DAMAGE OR RATING CHANGE.

265100 LIGHTING

PART 1 - GENERAL

1.1 SUMMARY

A. PROVIDE LIGHTING FIXTURES, EQUIPMENT AND COMPONENTS WHERE SHOWN ON DRAWINGS, AS LISTED IN THE LIGHTING FIXTURE SCHEDULE AND AS SPECIFIED, WIRED, AND ASSEMBLED. PROVIDE APPROVED LIGNER CANOPIES, HANGERS, AND OTHER APPURTENANCES AS REQUIRED.

Jacobs

Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL

R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210
P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

DocuSigned by:
Robert Chaves

56399
ROBERT CHAVES
12/20/2024

General Notes:

Project Title:

Fidelity Investments

Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project North
True North

Project No.: C0115.00

Drawing Sheet Title:
SPECIFICATIONS

Drawing Sheet Number:
E-002

Owner's Branch No.:
134

COM*check* Software Version COMcheckWeb

Envelope Compliance Certificate

Project Information

Energy Code: 2021 IECC
Project Title: C0115 - Scottsdale, AZ
Location: Scottsdale, Arizona
Climate Zone: 2b
Project Type: New Construction

Construction Site:
7171 E Paradise Lane, Suite R-120
Scottsdale, Arizona 85254

Owner/Agent:

Designer/Contractor:

Additional Efficiency Package(s)

Credits: 10.0 Required 0.0 Proposed

Building Area	Floor Area
1-Office : Nonresidential	10394

Envelope Assemblies

(a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements.

Envelope TBD: Efficiency package credits below minimum required

COM*check* Software Version COMcheckWeb

Interior Lighting Compliance Certificate

Project Information

Energy Code: 2021 IECC
Project Title: C0115 - Scottsdale, AZ
Project Type: New Construction

Construction Site:
7171 E Paradise Lane, Suite R-120
Scottsdale, Arizona 85254

Owner/Agent:

Designer/Contractor:

Additional Efficiency Package(s)

Credits: 10.0 Required 0.0 Proposed

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts
1-Office	10394	0.64	6652
		Total Allowed Watts =	6652

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	E (C X D)
1-Office				
LED: A: DECORATIVE BLOOM: Other:	1	32	5	160
LED: B: DECORATIVE TAISHO PENDANT: Other:	1	11	6	66
LED: C: DECORATIVE EDO PENDANT: Other:	1	2	6	12
LED: G2: COVE FIXTURE: Other:	1	4	6	24
LED: G5: COVE FIXTURE: Other:	1	3	15	45
LED: H: DECORATIVE SCONCE: Other:	1	6	6	36
LED: J2: LINEAR TASK LIGHT: Other:	1	1	7	7
LED: J4: LINEAR TASK LIGHT: Other:	1	3	14	42
LED: L: INDIRECT UPLIGHT: Other:	1	3	40	120
LED: P: ROUND ADJUSTABLE: Other:	1	95	8	760
LED: P1: ROUND ADJUSTABLE: Other:	1	26	8	208
LED: P2: ROUND ADJUSTABLE: Other:	1	3	8	24
LED: R1: ROUND, 1000: Other:	1	84	8	672
LED: R2: ROUND, 1500: Other:	1	50	12	600
LED: U1: STRIP LIGHT: Other:	1	3	21	63
			Total Proposed Watts =	2839

Interior Lighting PASSES: Design 57% better than code

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2021 IECC requirements in COM*check* Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Terrence J Marshall — Name - Title
Signature
12/17/2024 — Date

COM*check* Software Version COMcheckWeb

Inspection Checklist

Energy Code: 2021 IECC

Requirements: 100.0% were addressed directly in the COM*check* software

Text in the "Comments/Assumptions" column is provided by the user in the COM*check* Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
C103.2 [PR4][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C406 [PR9][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the additional energy efficiency package options.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.3.1 [EL22][1]	Spaces required to have light-reduction controls have a manual control that allows the occupant to reduce the connected lighting load in a reasonably uniform illumination pattern >= 50 percent.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.2.1, C405.2.1.1 [EL18][1]	Occupancy sensors installed in classrooms/lecture/training rooms, conference/meeting/multipurpose rooms, copy/print rooms, lounges/breakrooms, enclosed offices, open plan office areas, restrooms, storage rooms, locker rooms, corridors, warehouse storage areas, and other spaces <= 300 sqft that are enclosed by floor-to-ceiling height partitions. Reference section language C405.2.1.2 for control function in warehouses and section C405.2.1.3 for open plan office spaces.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.2.1.2 [EL19][1]	Occupancy sensors control function in warehouses: In warehouses, the lighting in aisleways and open areas is controlled with occupant sensors that automatically reduce lighting power by 50% or more within 20 minutes of when the areas are unoccupied. The occupant sensors control lighting in each aisleway independently and do not control lighting beyond the aisleway being controlled by the sensor. Lights not turned off by occupant sensors is done so by time-switch.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.2.1.3 [EL20][1]	Occupant sensor control function in open plan office areas: Occupant sensor controls in open office spaces >= 300 sq.ft. have controls 1) configured so that general lighting can be controlled separately in control zones with floor areas <= 600 sq.ft. within the space, 2) general lighting in each zone permitted to turn on upon occupancy in control zone, 3) automatically turn off general lighting in all control zones within 20 minutes after all occupants have left the space, 4) are configured so that general lighting power in each control zone is reduced by >= 80% of the full zone general lighting power within 20 minutes of all occupants leaving that control zone.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.2.2, C405.2.2.1 [EL21][1]	Each area not served by occupancy sensors (per C405.2.1.1) have time-switch controls and functions detailed in sections C405.2.2.1.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C303.3, C408.2.5.2 [FI17][1]	Furnished O&M instructions for systems and equipment to the building owner or designated representative.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.1.1 [FI57][1]	Building operations and maintenance documents will be provided to the owner. Documents will cover manufacturers' information, specifications, programming procedures and means of illustrating to owner how building, equipment and systems are intended to be installed, maintained, and operated.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.2.5 [FI16][1]	Furnished as-built drawings for electric power systems within 90 days of system acceptance.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.3 [FI33][1]	Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.4, C405.2.4.1, C405.2.4.2 [EL23][1]	Daylight zones provided with individual controls that control the lights independent of general area lighting. See section C405.2.3 Daylight-responsive controls for applicable spaces. C405.2.3.1 Daylight responsive control function and section C405.2.3.2 Sidelit zone.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C405.2.5 [EL27][1]	Additional interior lighting power allowed for special functions per the approved lighting plans and is automatically controlled and separated from general lighting.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.7 [EL26][1]	Low-voltage dry-type distribution electric transformers meet the minimum efficiency requirements of Table C405.6.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.8 [EL27][1]	Electric motors meet the minimum efficiency requirements of Tables C405.7(1) through C405.7(4). Efficiency verified through certification under an approved certification program or the equipment efficiency ratings shall be provided by motor manufacturer (where certification programs do not exist).	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.9.1, C405.9.2 [EL28][1]	Escalators and moving walks comply with ASME A17.1/CSA B44 and have automatic controls configured to reduce speed to the minimum permitted speed in accordance with ASME A17.1/CSA B44 or applicable local code when not conveying passengers.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.10 [EL29][1]	Total voltage drop across the combination of feeders and branch circuits <= 5%.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.1.1 [EL30][1]	At least 90% of dwelling unit permanently installed lighting shall have lamp efficacy >= 65 lm/W or luminaires with efficacy >= 45 lm/W or comply with C405.2.4 or C405.3.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.11, C405.11.1 [EL31][1]	50% of 15/20 amp receptacles installed in enclosed offices, conference rooms, copy rooms, break rooms, classrooms and workstations and > 25% of branch circuit feeders for modular furniture will have automatic receptacle control in accordance with C405.11.1.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL
R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210

P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

Digitally signed by Robert Chaves
ARIZONA U.S.A. REGISTERED PROFESSIONAL ENGINEER 58399 ROBERT CHAVES
12/20/2024

General Notes:

Project Title:
Fidelity INVESTMENTS
Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:

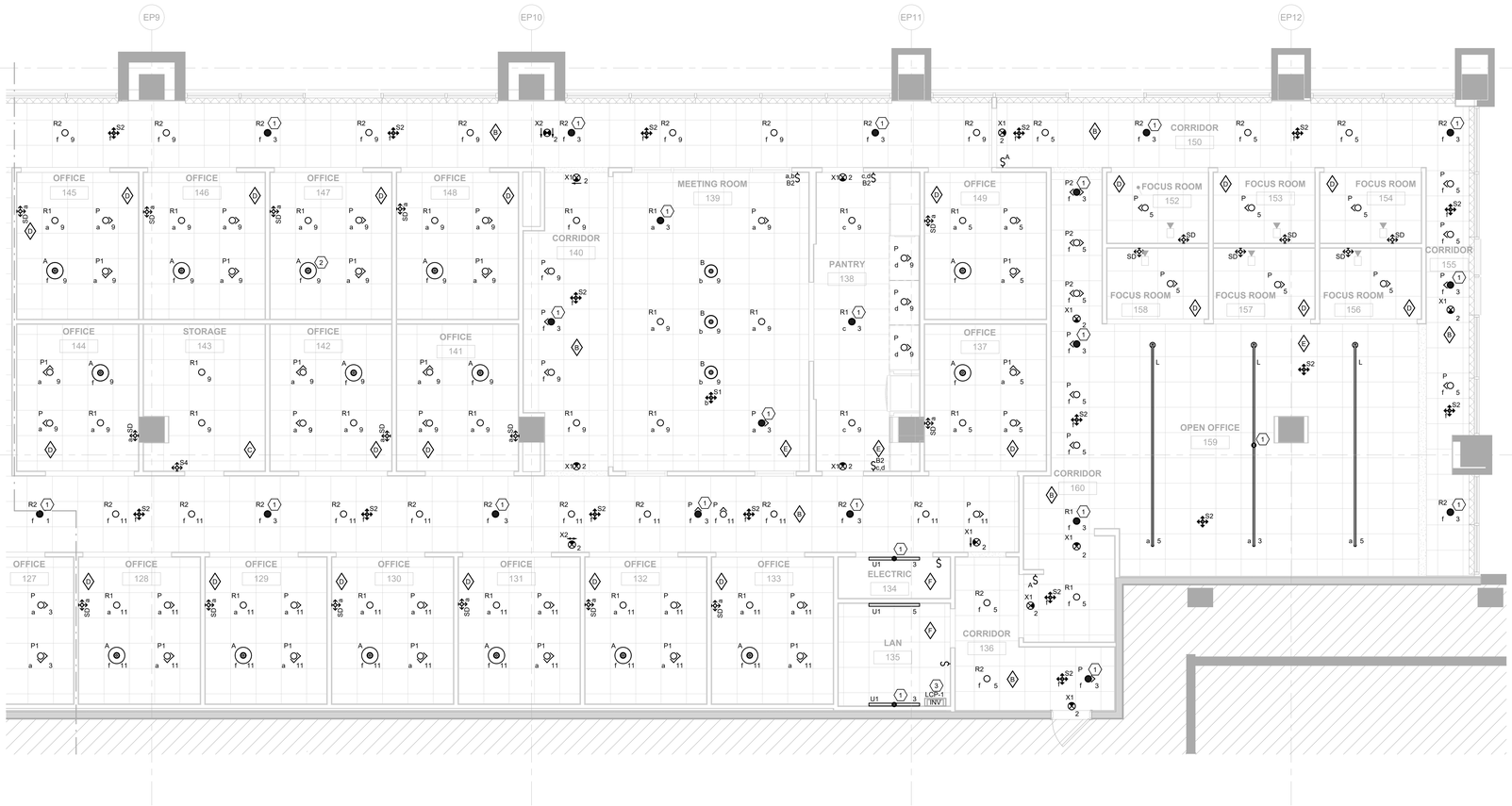
Project North
True North

Project No.: C0115.00

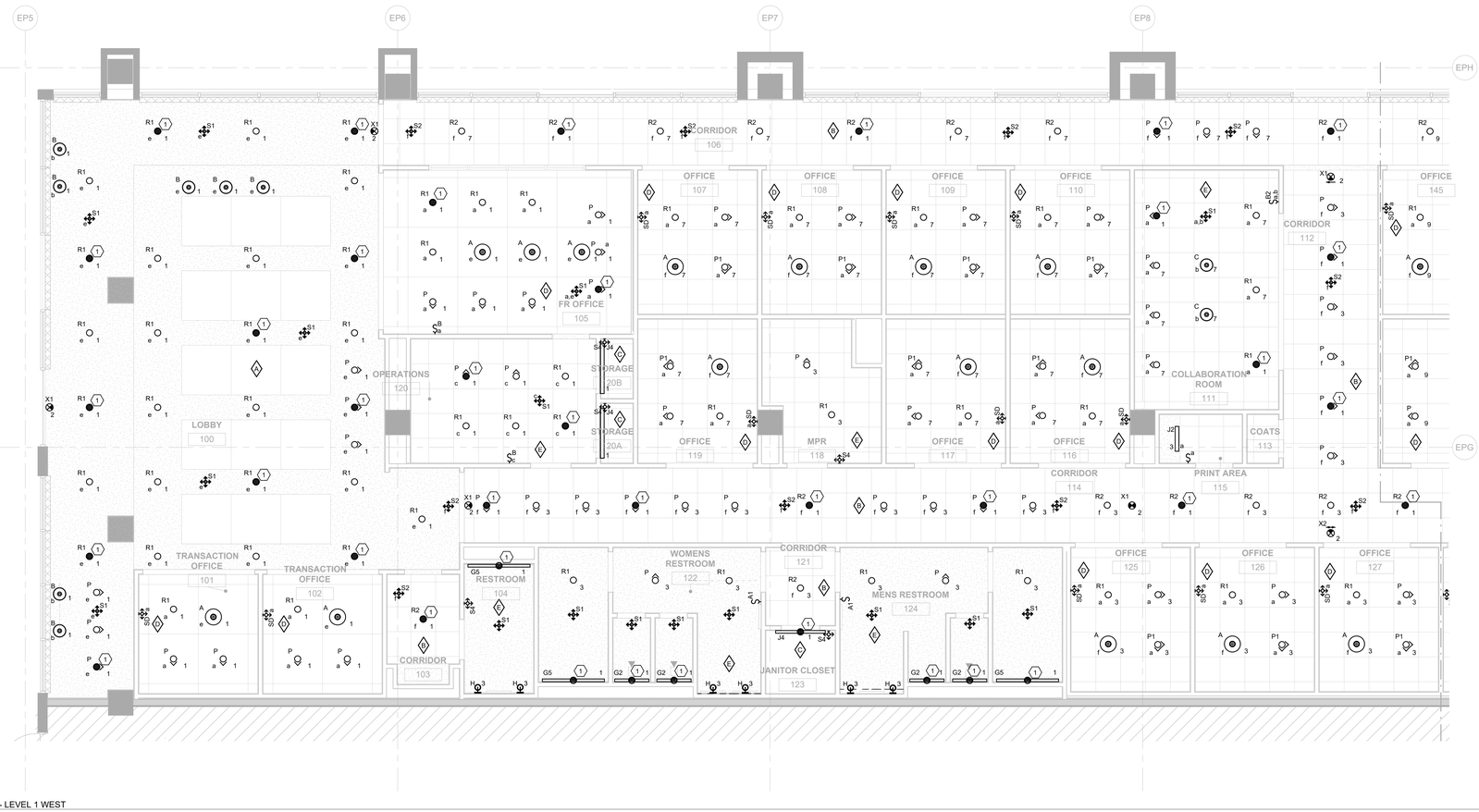
Drawing Sheet Title:
ELECTRICAL COMCHECK

Drawing Sheet Number:
E-003

Owner's Branch No.:
134



2 LIGHTING - LEVEL 1 EAST
1/4" = 1'-0"



1 LIGHTING - LEVEL 1 WEST
1/4" = 1'-0"

NOTES

A. FOR ELECTRICAL LEGEND AND GENERAL NOTES, REFER TO DRAWING E-001.

B. FOR LIGHTING FIXTURE SCHEDULE, REFER TO DRAWING E-702.

C. FOR EXACT LOCATIONS, QUANTITIES AND MOUNTING HEIGHTS OF ALL LIGHTING FIXTURES, REFER TO ARCHITECT'S REFLECTED CEILING PLANS AND ELEVATIONS.

D. PROVIDE METAL BARRIERS IN ALL MULTI-GANG SWITCH LOCATIONS.

E. ALL EXIT SIGNS SHALL BE CONNECTED TO A CONSTANT, UNSWITCHED SOURCE ON THE CLOSEST BRANCH LIGHTING CIRCUIT.

F. CIRCUIT NUMBERS ARE FOR DESCRIPTIVE PURPOSES ONLY. EXACT NUMBERS SHALL BE DETERMINED IN THE FIELD.

G. ALL OCCUPANCY SENSOR LOCATIONS ARE APPROXIMATE. REFER TO MANUFACTURER'S INSTALLATION REQUIREMENTS PRIOR TO INSTALLATION.

H. CEILING MOUNTED OCCUPANCY SENSORS SHALL BE LOCATED A MINIMUM OF FOUR FEET FROM HVAC SUPPLY VENTS.

I. CONTRACTOR IS RESPONSIBLE FOR: OCCUPANCY SENSOR PROPER SENSITIVITY & TIME DELAY SETTINGS (FOR NON-ADAPTIVE PRODUCTS) RECOMMENDED PLACEMENT, AND FIELD VERIFICATION OF CIRCUITS WITHIN RESPECT TO POWER PLACEMENT.

J. OCCUPANCY SENSORS MOUNTED OVER THE DOOR MUST BE PLACED ONE FOOT INSIDE THE THRESHOLD.

KEYNOTES

1 FIXTURES INDICATED AS EMERGENCY SHALL OPERATE WITH DIMMING/ZONE CONTROLS. UPON LOSS OF NORMAL POWER, THE FIXTURE SHALL TURN 100% ON VIA EMERGENCY LIGHTING TRANSFER SWITCH (ELTS) LEGRAND MODEL ELCU OR APPROVED EQUAL CONNECTED TO INVERTER 'INV' IN ELECTRIC ROOM 134 OUTPUT CIRCUIT.

2 ACCENT LIGHT 'A' IN OFFICES TO BE CONTROLLED WITH CORRIDOR/LOBBY ZONE NEARBY. OFFICE WALL SWITCH SHALL CONTROL RECESSED DOWNLIGHTS AND WALL WASHERS ONLY. REFER TO PLAN ZONE INDICATORS "a,b,c" ETC.

3 INVERTER ISOLITE MODEL E3MINI OR EQUIVALENT 550VA. ALL EMERGENCY LIGHTING AND EXIT SIGNS SHALL BE CONNECTED TO 'INV' VIA BRANCH CIRCUIT ELTS DEVICES, SEE NOTE 1.

LIGHTING CONTROL SCHEDULE: LCP-1

RELAY #	ZONE	VOLTAGE	PANEL	CKT #	DESCRIPTION
LCP-1	-	120	R1	4	EXTERIOR SIGNAGE S1
LCP-1	-	120	R1	4	EXTERIOR SIGNAGE S2
LCP-1	-	120	R1	65	EXTERIOR SIGNAGE S3
LCP-1	-	120	R2	63	EXTERIOR SIGNAGE S4
LCP-1	-	120	R2	63	EXTERIOR SIGNAGE S5

LIGHTING CONTROL INTENT SCHEDULE

DESIGNATION	ROOM TYPE	CONTROLS	SEQUENCE
A	VESTIBULE/LOBBY/WAITING	CONTROL PANEL / TIME CLOCK WITH SCHEDULE CEILING MOUNTED OCCUPANCY SENSORS CEILING MOUNTED OCCUPANCY W/AMBIENT LIGHT SENSORS (DAYLIGHT HARVESTING) DOWNLIGHTS ARE 0-10V DIMMING LCP --LMCP8 & NECY MVOLT ENC BW GFXK OR --ARP INTENC08 NLT 8FCR MVOLT SC SM DTC SENSORS --NCM PDT 10 RJB, NCM PDT 10 ADCX RJB NOTE: PROVIDE PHASE DIMMING POWER PACK FOR 'B' PENDANT FIXTURE FOR PROGRAMABILITY OF ON/OFF AND DIMMING CONTROL AND SCHEDULING.	TIMECLOCK SCHEDULE ON: 06:00 OFF:19:00 OUTSIDE OF NORMAL OPERATING HOURS TIMECLOCK OVERRIDE AUTOMATIC ON WITH OCCUPANCY, AUTOMATIC OFF AFTER 20 MINUTE DELAY UPON VACANCY.
B	CORRIDORS	CONTROL PANEL / TIME CLOCK WITH SCHEDULE CEILING MOUNTED OCCUPANCY SENSORS CEILING MOUNTED OCCUPANCY W/AMBIENT LIGHT SENSORS (DAYLIGHT HARVESTING) LCP --LMCP8 & NECY MVOLT ENC BW GFXK OR --ARP INTENC08 NLT 8FCR MVOLT SC SM DTC SENSORS --NCM PDT 9 RJB, NCM PDT 9 ADCX RJB	TIMECLOCK SCHEDULE ON: 06:00 OFF:19:00 OUTSIDE OF NORMAL OPERATING HOURS TIMECLOCK OVERRIDE AUTOMATIC ON WITH OCCUPANCY, AUTOMATIC OFF AFTER 20 MINUTE DELAY UPON VACANCY.
C	SINGLE RESTROOMS, STORAGE, MPR, LOCKERS, JANITOR	LOCAL OCCUPANCY WALL SWITCH SENSOR TYPICAL AESTHETIC WALL SENSOR SWITCH -- NWSXA PDT LV WH JANITOR/STORAGE WALL SENSOR SWITCH -- WSXA PDT WH	AUTOMATIC ON WITH OCCUPANCY, AUTOMATIC OFF AFTER 20 MINUTE DELAY UPON VACANCY MANUAL ON/OFF OVERRIDE
D	PRIVATE OFFICES	LOCAL VACANCY WALL SWITCH SENSOR TYPICAL WALL SENSOR SWITCH WITH DIMMING -- NWSXA PDT LV DX WH NOTE: PROVIDE PHASE DIMMING POWER PACK FOR 'A' PENDANT FIXTURE FOR FUTURE PROGRAMABILITY OF ON/OFF AND DIMMING CONTROL AND SCHEDULING.	MANUAL ON, AUTOMATIC OFF AFTER 20 MINUTE DELAY UPON VACANCY MANUAL ON/OFF OVERRIDE MANUAL RAISE/LOWER DIMMING
E	MEETING & OPERATIONS	LOCAL LOW VOLTAGE SWITCH WITH DIMMING, # INDICATES CONTROL ZONES, WHERE APPLICABLE 'a' INDICATES FIXTURES ON EACH ZONE, WHERE APPLICABLE CEILING MOUNTED OCCUPANCY SENSORS CEILING MOUNTED OCCUPANCY W/AMBIENT LIGHT SENSORS (DAYLIGHT HARVESTING) SWITCHES -- NPODMA DX WH -- NPODMA 2P DX WH SENSORS --NCM PDT 9 RJB, NCM PDT 9 ADCX RJB NOTE: WHERE APPLICABLE, PROVIDE PHASE DIMMING POWER PACK FOR 'A' PENDANT FIXTURE FOR PROGRAMABILITY OF ON/OFF AND DIMMING CONTROL AND SCHEDULING.	MANUAL ON, AUTOMATIC OFF AFTER 20 MINUTE DELAY UPON VACANCY MANUAL ON/OFF OVERRIDE MANUAL RAISE/LOWER DIMMING
F	ELECTRIC / LAN ROOMS	LOCAL SWITCH, SWITCHES -- NPODMA WH OR -- STANDARD 120V 20A SINGLE POLE TOGGLE	MANUAL ON/OFF OPERATION ROOMS NOT ON AUTOMATIC CONTROL FOR SAFETY CONSIDERATION

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

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Key Plan:
Project North
True North

Project No.: C0115.00

Drawing Sheet Title:
LIGHTING - LEVEL 1

Drawing Sheet Number:
E-201

Owner's Branch No.:
134

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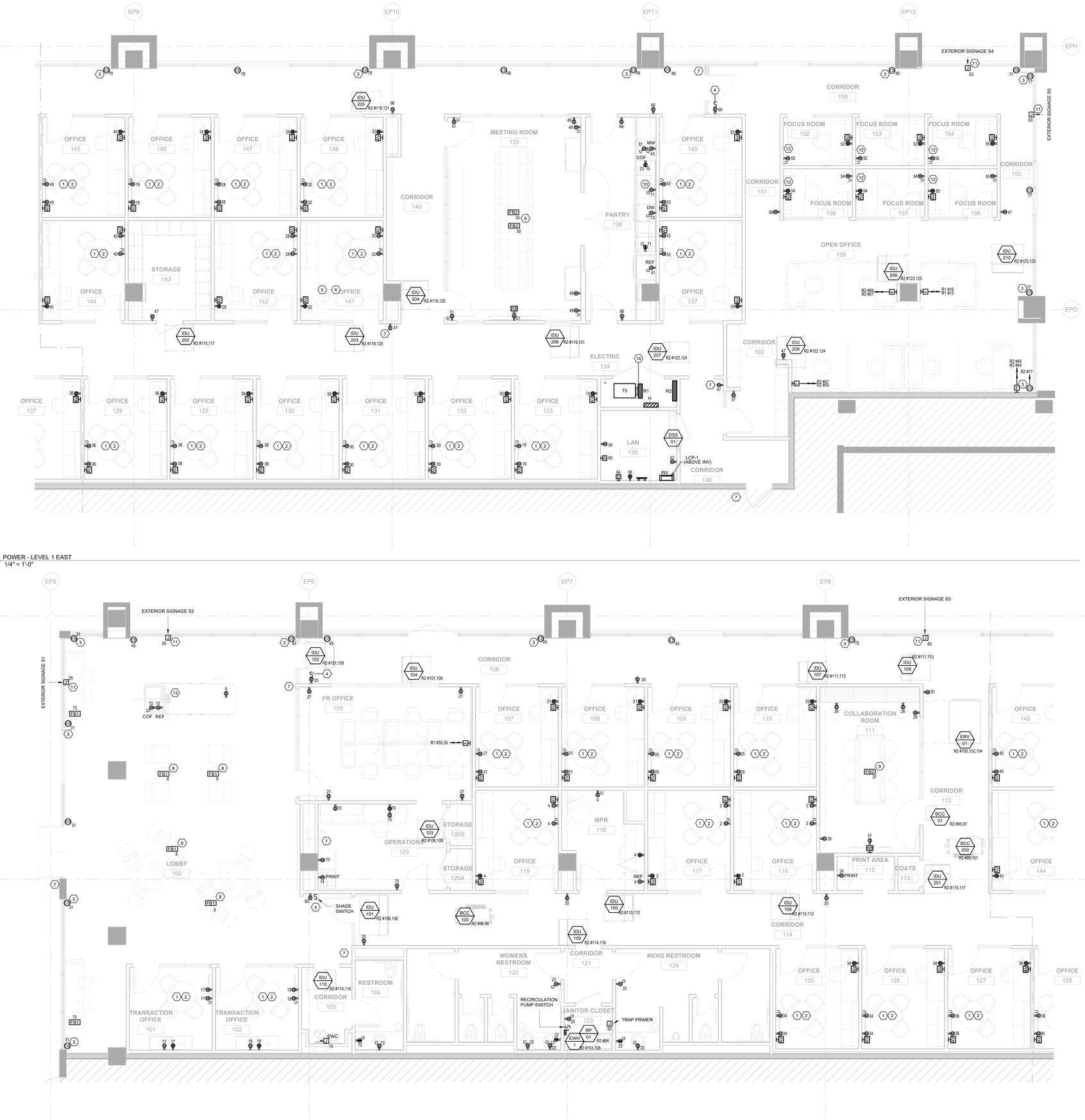

1 POWER - LEVEL 1 EAST
1/4" = 1'-0"

2 POWER - LEVEL 1 WEST
1/4" = 1'-0"

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NOTES:

A. FOR THE ELECTRICAL LEGEND AND GENERAL NOTES, REFER TO DRAWING E-001.

B. FOR THE ELECTRICAL RISER DIAGRAM, REFER TO DRAWING E-701.

C. FOR EXACT MOUNTING HEIGHTS OF ALL DEVICES, REFER TO ARCHITECTURAL PLANS AND ELEVATIONS. MOUNT DEVICES IN A COMMON VERTICAL PLANE, AND PROVIDE MULTI-GANG DEVICE PLATES WHEREVER POSSIBLE.

D. CIRCUIT NUMBERS SHOWN ON DRAWINGS ARE FOR DESCRIPTIVE PURPOSES ONLY. EXACT CIRCUIT NUMBERS SHALL BE DETERMINED IN THE FIELD.

E. REFER TO THE MECHANICAL EQUIPMENT SCHEDULE ON DRAWING E-702 FOR MECHANICAL EQUIPMENT CIRCUITING INFORMATION. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATIONS OF ALL MECHANICAL EQUIPMENT. COORDINATE EXACT ELECTRICAL CONNECTION LOCATIONS WITH MECHANICAL CONTRACTOR.

F. COORDINATE LOCATION OF ELECTRICAL EQUIPMENT INSTALLED IN MECHANICAL ROOMS WITH MECHANICAL CONTRACTOR. NO PIPING, DUCTWORK OR OTHER MECHANICAL EQUIPMENT SHALL BE ALLOWED TO PASS THROUGH THE DEDICATED ELECTRICAL SPACE ABOVE ELECTRICAL EQUIPMENT OR ELECTRICAL WORKING CLEARANCE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, SECTION 110.26.

G. ELECTRICAL PANELS, DISCONNECT SWITCHES, VFD'S, STARTERS, CONTROL PANELS, ETC., SHALL NOT BE LOCATED WITHIN STORAGE ROOMS.

H. EC SHALL COORDINATE ALL A/V CONDUIT PATHWAYS WITH A/V CONTRACTOR.

I. WHERE MORE THAN (1) ONE ELECTRICAL BOXES SHARE A STUD BAY, EACH ELECTRICAL BOX SHALL BE FURNISHED WITH AN ACOUSTICAL TREATMENT.

KEYNOTES

1 REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS, LOCATIONS, AND FINISHES OF ALL DEVICES IN PRIVATE OFFICES.

2 PROVIDE 3/4" CONDUIT ABOVE CEILING TO NEAREST SECURED SPACE ACCESSIBLE CEILING FOR ALL MOTION SENSORS, VIDEO CAMERA, GLASS BREAK, AND MAGNETIC CONTACT LOCATIONS THAT ARE INSTALLED IN GYP CEILING ABOVE UNSECURED SPACE. COORDINATE ALL CONDUIT RUNS WITH MECHANICAL AND PLUMBING CONTRACTORS. COORDINATE SECURITY SYSTEM DEVICE LOCATIONS WITH SECURITY DRAWINGS.

3 MOTORIZED SHADE. LOCATE JUNCTION BOX ABOVE NEAREST ACCESSIBLE CEILING AND PROVIDE CABLE LENGTHS AS REQUIRED. REFER TO MANUFACTURER'S RECOMMENDATIONS. COORDINATE LOCATION OF JUNCTION BOX WITH ARCHITECTURAL DRAWINGS.

4 MOTORIZED SHADE CONTROL. PROVIDE AND WIRE UP/DOWN CONTROL SWITCHES FOR MOTORIZED SHADES. REFER TO MANUFACTURER'S RECOMMENDATIONS. COORDINATE EXACT LOCATION WITH ARCHITECTURAL DRAWINGS. SHADE RESET TO THE UP POSITION AFTER OFFICE HOURS PER TIMER. PROVIDE MULTI-GANG BOX AS REQUIRED.

5 PROVIDE PLUG STRIP: PLUGMOLD WITH 8 RECEPTACLES AT 6" ON CENTER WITH 20A NEMA L5-20P PLUG CORD END. PLUG STRIP MOUNTED VERTICALLY AND PLUGGED INTO L5-20R RECEPTACLE ON WALL. COORDINATE LOCATION WITH LOW VOLTAGE CONTRACTOR AND IT REPRESENTATIVE FOR EXACT LOCATION FOR EQUIPMENT SERVED.

6 PROVIDE PLUG STRIP FOR SOUND MASKING: PLUGMOLD WITH 8 RECEPTACLES AT 6" ON CENTER WITH 20A NEMA 5-20P PLUG CORD END. PLUG STRIP MOUNTED VERTICALLY AND PLUGGED INTO QUAD RECEPTACLE ON WALL. COORDINATE LOCATION WITH LOW VOLTAGE CONTRACTOR AND IT REPRESENTATIVE FOR EXACT LOCATION FOR EQUIPMENT SERVED.

7 PROVIDE 3/4" CONDUIT ABOVE CEILING TO NEAREST SECURED SPACE FOR ALL CARD READER AND KEYPAD LOCATIONS. REFER TO SECURITY DRAWINGS AND ARCHITECTURAL DRAWINGS FOR LOCATIONS.

8 FLOOR BOX LOCATION FOR POWER. TRENCH FLOOR TO NEAREST FULL-HEIGHT WALL LOCATION. PROVIDE (1) 3/4" CONDUIT FOR POWER. FLOOR BOX SHALL HAVE (2) DUPLEX RECEPTACLES. ROUTE FROM FLOOR BOX LOCATION TO NEAREST FULL-HEIGHT WALL AND STUB OUT ABOVE FINISHED CEILING. PROVIDE PULL-STRING AND CONDUIT BUSHING. COORDINATE EXACT LOCATION WITH ARCHITECTURAL DRAWINGS.

9 POKE-THRU LOCATION FOR POWER, A/V, AND DATA. PROVIDE (1) 3/4" CONDUIT FOR POWER, (1) 1" CONDUIT FOR DATA, AND (1) 1-1/2" CONDUIT FOR A/V CABLING. ROUTE FROM POKE-THRU LOCATION TO DISPLAY WALL AND STUB OUT ABOVE FINISHED CEILING. PROVIDE PULL-STRING AND CONDUIT BUSHING. FOR POKE-THRU FACE-PLATE DETAILS, COORDINATE WITH OWNER, AV/IT REPRESENTATIVE, AND LOW VOLTAGE CONTRACTOR. POKE-THRU SHALL HAVE (2) DUPLEX RECEPTACLES, A/V, DATA PROVISIONS. COORDINATE EXACT LOCATION WITH ARCHITECTURAL DRAWINGS.

10 PROVIDE GFI BREAKER FOR EQUIPMENT.

11 ELECTRICAL PROVISION FOR EXTERIOR SIGNAGE. COORDINATE LOCATION OF POWER CONNECTION WITH SIGN MANUFACTURER.

12 PROVIDE ACOUSTICAL PUDDY PADS FOR ELECTRICAL BOXES INSTALLED IN THE WALL INDICATED.

13 PROVIDE 3/4" STUB-UP TO ISLAND FOR POWER CONNECTIONS. ROUTE CONDUIT UNDER SLAB TO NEAREST FULL-HEIGHT WALL. ELECTRICAL CONTRACTOR SHALL COORDINATE ROUTING UNDER SLAB WITH PLUMBING CONTRACTOR.

14 PANEL R1 TO BE MOUNTED ON UNISTRUT FRAME BESIDE PAD MOUNTED TRANSFORMER FOR CLEARANCE.

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

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VANDERWEIL
R.G. Vanderweil Engineers, LPP
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P 617-423-7423
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Date Signed by: Robert Chaves
REGISTERED PROFESSIONAL ENGINEER
58389 ROBERT CHAVES
ARIZONA, U.S.A.
12/20/2024

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Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:
Project North
True North

Project No.: C0115.00

Drawing Sheet Title:
POWER - LEVEL 1

Drawing Sheet Number:
E-301

Owner's Branch No.:
134

NOTES:

1. FOR THE ELECTRICAL LEGEND AND GENERAL NOTES, REFER TO DRAWING E-001.
2. FOR THE ELECTRICAL RISER DIAGRAM, REFER TO DRAWING E-701.
3. CIRCUIT NUMBERS SHOWN ON DRAWINGS ARE FOR DESCRIPTIVE PURPOSES ONLY. EXACT CIRCUIT NUMBERS SHALL BE DETERMINED IN THE FIELD.
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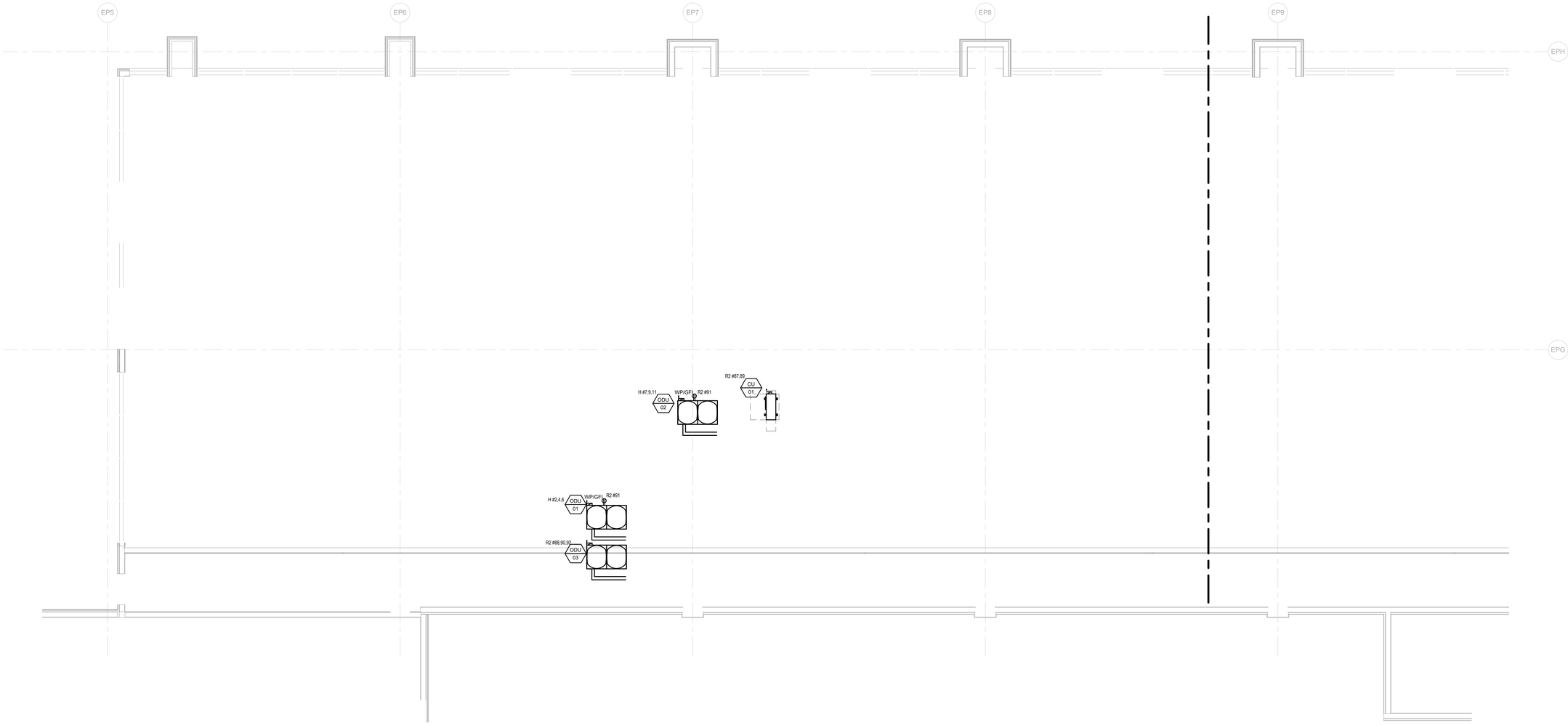

1 HVAC ROOF PLAN Copy 1
1/4" = 1'-0"

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Key Plan:

Project North
True North

Project No.: C0115.00

Drawing Sheet Title:
ELECTRICAL - ROOF PLAN

Drawing Sheet Number:
E-302

Owner's Branch No.:
134

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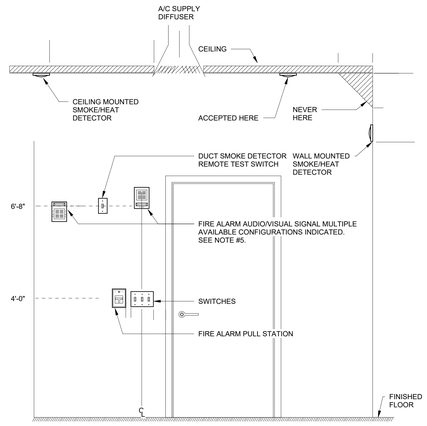
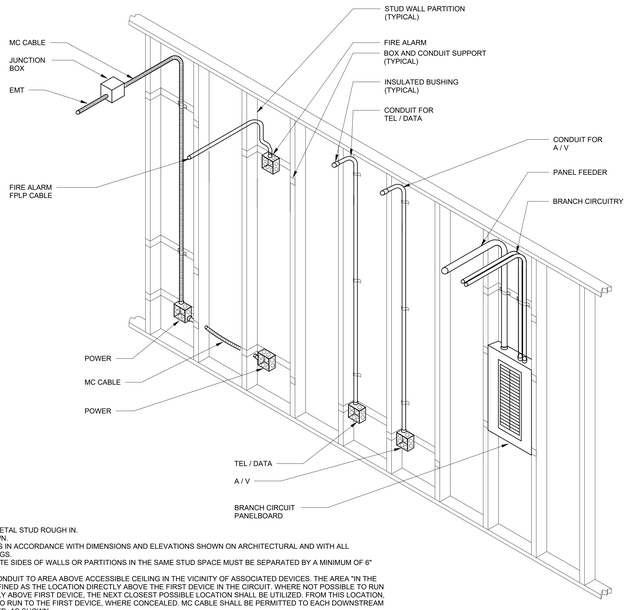


NOTES:

1. DEVICE LOCATIONS AND MOUNTING HEIGHTS SHALL B1.E CHECKED AGAINST THE ARCHITECTURAL PLANS AND ELEVATIONS PRIOR TO ROUGH-IN IN ORDER TO AVOID INTERFERENCE'S WITH CASEWORK, FURNITURE, WINDOWS, MIRRORS, EQUIPMENT, ETC.
2. LOCATIONS OF OUTLETS AND EQUIPMENT AS INDICATED ON THE DRAWINGS ARE APPROXIMATE. THE EXACT CENTER OF ALL OUTLETS SHALL BE PLACED IN COOPERATION WITH THE GENERAL CONTRACTOR AND ARCHITECT. CONTRACTOR SHALL EXAMINE ALL INTERIOR DETAILS OF THE CONSTRUCTION DRAWINGS FOR OUTLET LOCATIONS NOT CONFORMING TO THE DETAIL ABOVE. WHERE DETAILED TO SPECIFIC LOCATIONS, THE ARCHITECTURAL DRAWINGS SHALL TAKE PRECEDENCE. IF AN OUTLET IS INSTALLED IN SUCH A LOCATION AS TO BE OUT OF PROPER RELATION TO WALLS OR DETAILS OF THE BUILDING, ITS LOCATION SHALL BE CORRECTED BY AND AT THE EXPENSE OF THE CONTRACTOR UNDER THE DIRECTION OF THE ARCHITECT OR ENGINEER.
3. DEVICES SHALL BE CENTERED IN A COMMON VERTICAL PLANE. HEIGHT SHALL BE MEASURED FROM FINISHED FLOOR TO CENTERLINE OF DEVICE EXCEPT EXIT SIGNS, AND FIRE ALARM SIGNALS. COORDINATE LOCATION WITH MATERIALS SUCH AS MASONRY UNITS.
4. REFER TO THE ARCHITECT'S ELEVATION DETAILS FOR EXACT MOUNTING HEIGHT AND LENGTH OF SURFACE RACEWAYS. RECEPTACLE MOUNTING HEIGHT ABOVE COUNTERS SHALL BE COORDINATED WITH CASEWORK HEIGHTS.
5. THE ENTIRE LENS OF A FIRE ALARM A/V SIGNAL OR VISUAL-ONLY SIGNAL SHALL BE LOCATED BETWEEN 6'-8" A.F.F. AND 8'-0" A.F.F. OR 6" BELOW CEILING (WHICHEVER IS LOWER). ELEVATION SHALL BE CONSISTENT THROUGHOUT PROJECT.
6. SMOKE/HEAT DETECTORS SHALL BE MOUNTED IN ACCORDANCE WITH NFPA 72. CEILING MOUNTED UNITS SHALL BE MOUNTED A MINIMUM OF 4" FROM WALL. WALL MOUNTED UNITS SHALL BE MOUNTED A MINIMUM OF 4" FROM CEILING BUT NO MORE THAN 12" FROM CEILING.

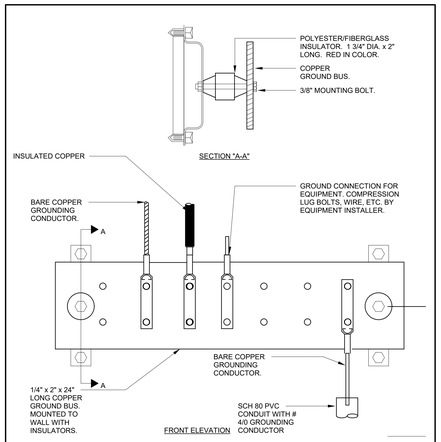
1 TYPICAL DEVICE MOUNTING HEIGHTS
SCALE: NTS



NOTES

1. TYPICAL FOR WOOD AND METAL STUD ROUGH IN.
2. PLASTER RINGS NOT SHOWN.
3. LOCATE ALL OUTLET BOXES IN ACCORDANCE WITH DIMENSIONS AND ELEVATIONS SHOWN ON ARCHITECTURAL AND WITH ALL APPLICABLE SHOP DRAWINGS.
4. OUTLET BOXES ON OPPOSITE SIDES OF WALLS OR PARTITIONS IN THE SAME STUD SPACE MUST BE SEPARATED BY A MINIMUM OF 6" HORIZONTAL DISTANCE.
5. HOMERUNS SHALL BE IN CONDUIT TO AREA ABOVE ACCESSIBLE CEILING IN THE VICINITY OF ASSOCIATED DEVICES. THE AREA "IN THE VICINITY OF " SHALL BE DEFINED AS THE LOCATION DIRECTLY ABOVE THE FIRST DEVICE IN THE CIRCUIT. WHERE NOT POSSIBLE TO RUN CONDUIT TO AREA DIRECTLY ABOVE FIRST DEVICE, THE NEXT CLOSEST POSSIBLE LOCATION SHALL BE UTILIZED. FROM THIS LOCATION, MC SHALL BE PERMITTED TO RUN TO THE FIRST DEVICE. WHERE CONCEALED. MC CABLE SHALL BE PERMITTED TO EACH DOWNSTREAM DEVICE, WHERE CONCEALED, AS SHOWN.
6. REFER TO ARCHITECTURAL, AUDIO / VISUAL, AND TEL / COM DOCUMENTS FOR LOCATIONS OF LOW VOLTAGE DEVICES AND DEVICE REQUIREMENTS.
7. PROVIDE EMPTY CONDUIT FOR A / V AND TEL / DATA DEVICES AS SHOWN IN THIS DETAIL. PROVIDE EACH EMPTY CONDUIT WITH NYLON PULL STRING.
8. CONDUIT FOR A / V AND TEL / DATA DEVICES SHALL BE STUBBED TO NEAREST ACCESSIBLE CEILING.
9. MINIMUM CONDUIT SIZE FOR POWER, LIGHITNG, AND FIRE ALARM SHALL BE 3/4" EMT. MINIMUM CONDUIT SIZE FOR A/V AND TEL / DATA SHALL BE 1", UNLESS OTHERWISE DIRECTED ON THE A / V OR TEL / DATA SERIES DRAWINGS. VERIFY SIZE OF ALL A / V AND TEL / DATA CONDUITS WITH A / V, TEL / DATA, AND ARCHITECTURAL DOCUMENTS PRIOR TO ROUGH-IN.
10. ALL EXPOSED CONDUIT SHALL BE PAINTED TO MATCH SURROUNDING STRUCTURE. REFER TO ARCHITECTURAL DOCUMENTS FOR FURTHER INFORMATION.

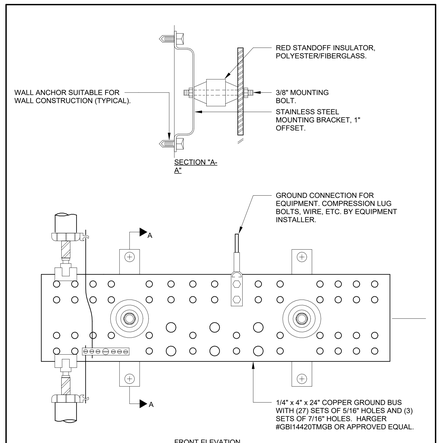
2 METHOD OF INSTALLING ELECTRICAL BRANCH CIRCUITS INTO PARTITION WALL
SCALE: NTS



NOTES:

1. REFER TO BUILDING GROUNDING ELECTRODE SYSTEM DETAIL FOR EXACT CONFIGURATION.
2. LENGTH OF GROUND BUS AS REQUIRED IN THE FIELD. MINIMUM 2'FT IN LENGTH.
3. SECURE ALL VERTICAL GROUNDING CONDUITS OR CONDUCTORS AS REQUIRED TO STRUCTURE.
4. PROVIDE INSULATED THROAT GROUNDING BUSHING ON RMC CONDUITS AND BOND TO GROUND BUS.

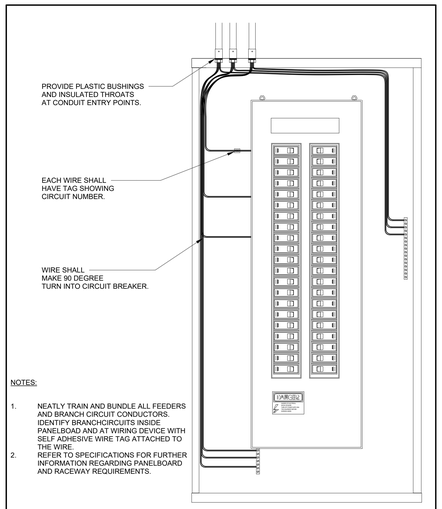
3 BUILDING SYSTEM GROUND BUS
SCALE: NTS



NOTES:

1. ADDITIONAL GROUND CONNECTIONS SHALL BE BY TELECOMMUNICATIONS EQUIPMENT INSTALLER.
2. LOCATED IN NETWORK ROOM AND AS REQUIRED BY THE TELECOMMS PERSONNEL.

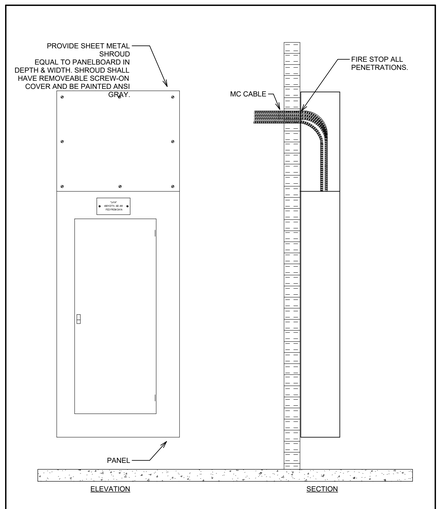
4 TELECOMMUNICATIONS EQUIPMENT GROUND BUS
SCALE: NTS



NOTES:

1. NEATLY TRAIN AND BUNDLE ALL FEEDERS AND BRANCH CIRCUIT CONDUCTORS. IDENTIFY BRANCHCIRCUITS INSIDE PANELBOAD AND AT WIRING DEVICE WITH SELF ADHESIVE WIRE TAG ATTACHED TO THE WIRE.
2. REFER TO SPECIFICATIONS FOR FURTHER INFORMATION REGARDING PANELBOARD AND RACEWAY REQUIREMENTS.

5 TYPICAL PANELBOARD WIRING
SCALE: NTS



6 TYPICAL BRANCH CIRCUIT WIRING FROM PANELBOARD
SCALE: NTS

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245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project North
True North

Project No.: C0115.00

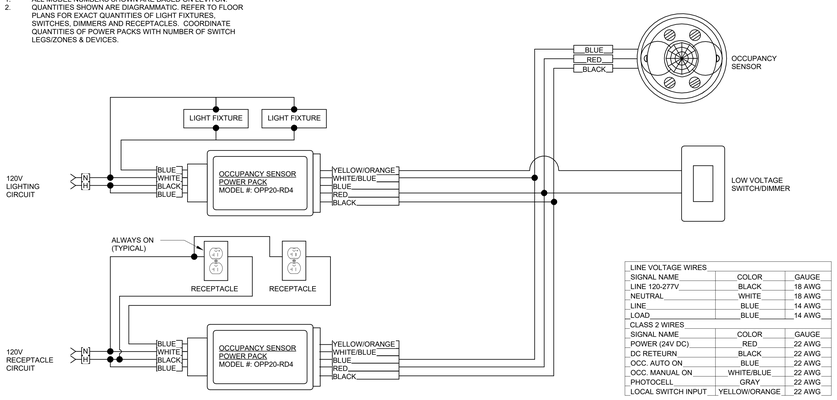
Drawing Sheet Title:
ELECTRICAL DETAILS

Drawing Sheet Number:
E-501

Owner's Branch No.:
134

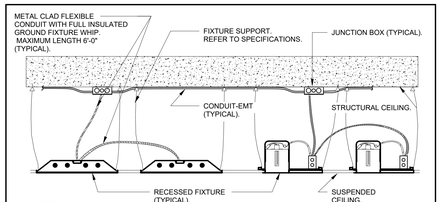
NOTES:

1. ALL MODEL NUMBERS SHOWN ARE BASED ON LEVITON. QUANTITIES SHOWN ARE DIAGRAMMATIC. REFER TO FLOOR PLANS FOR EXACT QUANTITIES OF LIGHT FIXTURES, SWITCHES, DIMMERS AND RECEPTACLES. COORDINATE QUANTITIES OF POWER PACKS WITH NUMBER OF SWITCH LEGS/ZONES & DEVICES.



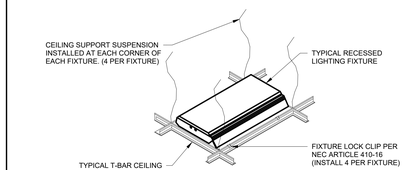
LINE VOLTAGE WIRES		
SIGNAL NAME	COLOR	GAUGE
LINE 120-277V	BLACK	18 AWG
NEUTRAL	WHITE	18 AWG
LINE	BLUE	14 AWG
LOAD	BLUE	14 AWG
CLASS 2 WIRES		
SIGNAL NAME	COLOR	GAUGE
POWER (24V DC)	RED	22 AWG
DC RETEURN	BLACK	22 AWG
OCC. AUTO ON	BLUE	22 AWG
OCC. MANUAL ON	WHITE/BLUE	22 AWG
PHOTOCELL	GRAY	22 AWG
LOCAL SWITCH INPUT	YELLOW/ORANGE	22 AWG

1 **TYPICAL ROOM CONTROLS: OCCUPANCY SENSOR LIGHTING AND RECEPTACLES (WHERE REQUIRED)**
SCALE: NTS

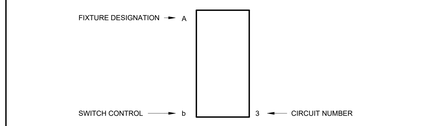


NOTE:
FIXTURES SHALL BE RATED FOR THRU WIRING.

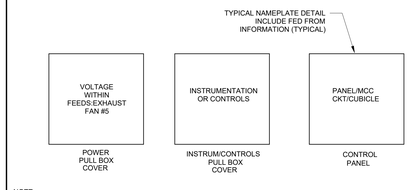
2 **TYPICAL LIGHTING FIXTURE CONNECTIONS**
SCALE: NTS



3 RECESSED FIXTURE MOUNTING
SCALE: NTS

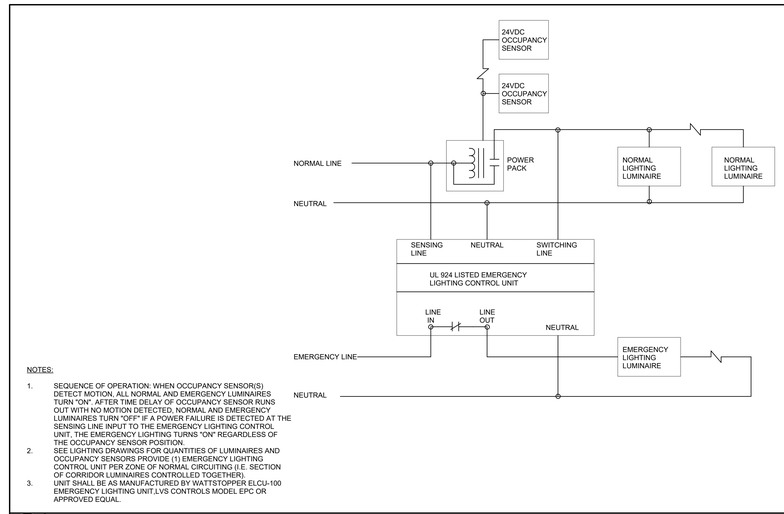


4 TYPICAL LIGHT DESIGNATION STYLE
SCALE: NTS



NOTE:
1. REFER TO SPECIFICATIONS FOR LABEL MATERIAL REQUIREMENTS.

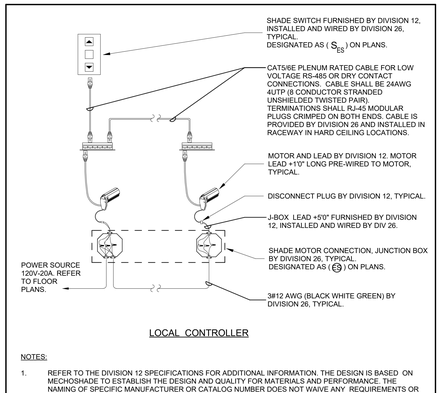
5 TYPICAL LABELING OF SYSTEM ON PULLBOXES AND CONTROL PANELS
SCALE: NTS



NOTES:

1. SEQUENCE OF OPERATION: WHEN OCCUPANCY SENSOR(S) DETECT MOTION, ALL NORMAL AND EMERGENCY LUMINAIRES TURN "ON". AFTER TIME DELAY OF OCCUPANCY SENSOR RUNS OUT WITH NO MOTION DETECTED, NORMAL AND EMERGENCY LUMINAIRES TURN "OFF" IF A POWER FAILURE IS DETECTED AT THE SENSING LINE INPUT TO THE EMERGENCY LIGHTING CONTROL UNIT, THE EMERGENCY LIGHTING TURNS "ON" REGARDLESS OF THE OCCUPANCY SENSOR POSITION.
2. SEE LIGHTING DRAWINGS FOR QUANTITIES OF LUMINAIRES AND OCCUPANCY SENSORS PROVIDE (1) EMERGENCY LIGHTING CONTROL UNIT PER ZONE OF NORMAL CIRCUITING (I.E. SECTION OF CORRIDOR LUMINAIRES CONTROLLED TOGETHER).
3. UNIT SHALL BE AS MANUFACTURED BY WATTSTOPPER ELCU-100 EMERGENCY LIGHTING UNIT,LVS CONTROLS MODEL EPC OR APPROVED EQUAL.

6 OCCUPANCY SENSOR CONTROL OF NORMAL & EMERGENCY LIGHTING CONTROL
SCALE: NTS

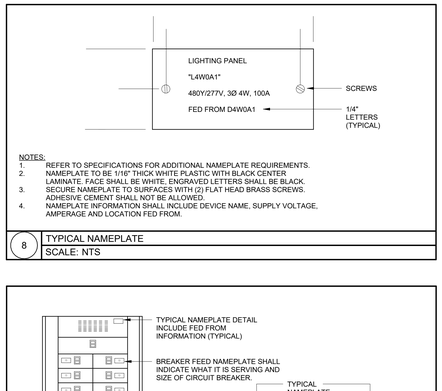


LOCAL CONTROLLER

NOTES:

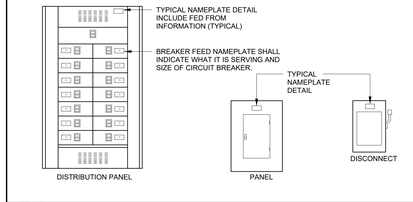
1. REFER TO THE DIVISION 12 SPECIFICATIONS FOR ADDITIONAL INFORMATION. THE DESIGN IS BASED ON MECHOSHADE TO ESTABLISH THE DESIGN AND QUALITY FOR MATERIALS AND PERFORMANCE. THE NAMING OF SPECIFIC MANUFACTURER OR CATALOG NUMBER DOES NOT WAIVE ANY REQUIREMENTS OR PERFORMANCE OF THE DESIGN INTENT AND THE DIVISION 12 SPECIFICATION.
2. REFER TO FLOOR PLANS FOR SHADE AND SWITCH LOCATIONS.
3. SHADES ARE OPERATED AT LINE VOLTAGE AND ARE FURNISHED WITH A 1' LONG, 4 CONDUCTOR SHADE MOTOR LEAD WITH DISCONNECT PLUG. A STANDARD WHIP WITH DISCONNECT RECEPTACLE, APPROXIMATELY 5' LONG, IS ALSO FURNISHED WITH EACH SHADE AND IS COMPATIBLE WITH THE PLUG ON THE MOTOR LEAD. PROVIDE FINAL CONNECTION OF WHIP AT POWER CONNECTION POINT. CUT BACK THE 5' LONG WHIP FOR MINIMAL EXPOSED CONDUCTOR.
4. PROVIDE ALL NECESSARY WIRING AND RACEWAY FOR PROPER OPERATION OF THE EQUIPMENT.
5. SHADE SWITCH(S) SHALL BE MOUNTED IN A 4-11/16" SQUARE BOX WITH A SINGLE GANG PLASTER RING.

7 SHADE POWER CONNECTIONS DIAGRAM
SCALE: NONE

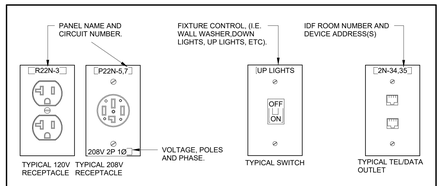


NOTES:
1. REFER TO SPECIFICATIONS FOR ADDITIONAL NAMEPLATE REQUIREMENTS.
2. NAMEPLATE TO BE 1/16" THICK WHITE PLASTIC WITH BLACK CENTER LAMINATE. FACE SHALL BE WHITE. ENGRAVED LETTERS SHALL BE BLACK.
3. SECURE NAMEPLATE TO SURFACES WITH (2) FLAT HEAD BRASS SCREWS. ADHESIVE CEMENT SHALL NOT BE ALLOWED.
4. NAMEPLATE INFORMATION SHALL INCLUDE DEVICE NAME, SUPPLY VOLTAGE, AMPERAGE AND LOCATION FED FROM.

8 TYPICAL NAMEPLATE
SCALE: NTS



9 TYPICAL NAMEPLATE LOCATIONS
SCALE: NTS



NOTE:
1. REFER TO SPECIFICATIONS FOR LABEL MATERIAL REQUIREMENTS.

10 TYPICAL LABELING OF SYSTEM ON DEVICE PLATES
SCALE: NTS

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

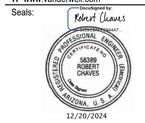
P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL
R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210

P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:



General Notes:

Project Title:

Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project No.: C0115.00

Drawing Sheet Title:
ELECTRICAL DETAILS

Drawing Sheet Number:
E-502

Owner's Branch No.:
134

PANEL NAME: R1

MOUNTING: Surface
VOLTAGE: 208Y/120V **SSC RATING:** 10K
FED FROM: TR-1

BUS AMPS: 225

MLO: No
MCB: Yes
MCB RATING: 225A
SHUNT TRIP: No

PANELBOARD OPTIONS & ACCESSORIES

NEUTRAL BUS: Yes **SUB-FEED LUGS:** No
NEUTRAL BUS RATING: 100% **FEED-THRU LUGS:** Yes
EQUIPMENT GROUND: Yes **SURGE SUPPRESSION:** No
ISOLATED GROUND: No

CKT	TYPE	DESCRIPTION	BKR TYPE	TRIP	POLE	A (kVA)		B (kVA)		C (kVA)		POLE	TRIP	BKR TYPE	DESCRIPTION	TYPE	CKT
1	Oth...	LTG - WEST		20	1	0.33	1.44					1	20		REC - OFFICE 116 / 117	R	2
3	Oth...	LTG - SOUTHWEST		20	1			0.34	1.56			1	20		REC - OFFICE 119 / MPR	R; N	4
5	Oth...	LTG - EAST		20	1					0.25	0.1	1	20	G	REC - LOBBY ISLAND, COFFEE	N	6
7	Oth...	LTG - CENTRAL WEST		20	1	0.32	0.72					1	20		REC - LOBBY FFBs	R	8
9	Oth...	LTG - CENTRAL EAST		20	1			0.41	0.18			1	20		REC - LOBBY ISLAND	R	10
11	Oth...	LTG - SOUTH EAST		20	1					0.28	0.12	1	20	G	REC - LOBBY ISLAND, REF	R	12
13	R	REC - FURNITURE FEEDS		20	1	0.18	0.1					1	20		REC - OPS PRINTER	N	14
15	R	EWC	G	20	1			0.08	0.18			1	20		REC - FURNITURE FEEDS	R	16
17	R	REC - TR OFFICES 101		20	1					0.9	0.9	1	20		REC - TR OFFICES 102	R	18
19	R	REC - OFFICE 146 / 133		20	1	1.44	1.26					1	20		REC - WEST COORIDORS	R	20
21	R	REC - OFFICE 107 / 108		20	1			1.44	1.26			1	20		REC - LARGE RESTROOMS	R	22
23	N	REC - PANTRY COFFEE		20	1					1	0.1	1	20		REC - PRINTER	N	24
25	R	REC - OFFICE 109 / 110		20	1	1.44	0.72					1	20		REC - COLLAB ROOM	R	26
27	R	REC - FR OFFICE		20	1			0.72	1.44			1	20		REC - OFFICE 142 / 147	R	28
29	R	REC - EXTERNAL SIGNAGE S...		20	1					0.36	1.44	1	20		REC - OFFICE 131 / 132	R	30
31	R	REC - WEST ELEC SHADES		20	1	0.9	1.44					1	20		REC - OFFICE 141 / 148	R	32
33	R	REC - FR OFFICE FF	HT	20	1			0.18	1.44			1	20		REC - OFFICE 125 / 126	R	34
35	R	REC - FR OFFICE FF	HT	20	1					0.18	1.44	1	20		REC - OFFICE 127 / 128	R	36
37	R	REC - MEETING FFB/ WB REC		20	1	0.36	1.44					1	20		REC - OFFICE 129 / 130	R	38
39	--	SPARE	--	20	1			0	1.44			1	20		REC - OFFICE 144 / 145	R	40
41	--	SPARE	--	20	1					0	0	1	20	--	SPARE	--	42
			PHASE LOAD:			27.46		25.5		23.01							
			PHASE AMPS:			232		216		192							

LOAD TYPE	CONNECTED (kVA)	DEMAND (kVA)	LOAD TYPE KEY	BREAKER TYPE KEY	PANEL TOTALS	
M	27.12	27.12	R = RECEPTACLE	BLANK = STANDARD		
Other	0	0	L = LIGHTING	G3 = GROUND FAULT 30 mA (EQUIP)	**CONNECTED LOAD (kVA):**	75.95
R	44.22	27.11	M = MECH/EQUIP	G = GROUND FAULT 5 mA...	**DEMAND LOAD (kVA):**	59.37
N	6.3	6.3	K = KITCHEN	A = ARC FAULT	**CONNECTED LOAD (AMPS):**	211
L	1.93	1.93	C = CONTINUOUS	ST = SHUNT TRIP	**DEMAND LOAD (AMPS):**	165
			N = NONCONTINUOUS	LH = LOCKING HASP	**DEMAND LOAD x 125% (AMPS):**	206
				HT = HANDLE TIE		

Notes:

PANEL NAME: R2

MOUNTING: Surface
VOLTAGE: 208Y/120V **SSC RATING:** 10K
FED FROM: R1

BUS AMPS: 225

MLO: Yes
MCB: No
MCB RATING: –
SHUNT TRIP: No

PANELBOARD OPTIONS & ACCESSORIES

NEUTRAL BUS: Yes **SUB-FEED LUGS:** Yes
NEUTRAL BUS RATING: 100% **FEED-THRU LUGS:** Yes
EQUIPMENT GROUND: Yes **SURGE SUPPRESSION:** No
ISOLATED GROUND: No

CKT	TYPE	DESCRIPTION	BKR TYPE	TRIP	POLE	A (kVA)		B (kVA)		C (kVA)		POLE	TRIP	BKR TYPE	DESCRIPTION	TYPE	CKT
43	N	REC - PANTRY MW	G	20	1	1.5	0.18					1	20	HT	REC - FURNITURE FEEDS	R	44
45	R	REC - ELEC SHADES		20	1			0.9	0.18			1	20	HT	REC - FURNITURE FEEDS	R	46
47	R	REC - EAST COORIDORS		20	1					1.08	0.72	1	20		REC - ELEC SHADES	R	48
49	R	REC - MEETING ROOM		20	1	0.72	0.36					1	20		REC - MEETING FFBs	R	50
51	R	REC - MEETING ROOM		20	1			0.54	1.08			1	20		REC - FOCUS 152 / 153	R	52
53	R	REC - OFFICE 137 / 149		20	1					1.44	1.08	1	20		REC - FOCUS 157 / 158	R	54
55	R	REC - FOCUS 154 / 156		20	1	1.08	0.18					1	20		REC - LAN	R	56
57	R	REC - FURNITURE FEEDS	HT	20	1			0.18	0.36			1	20		REC - LAN QUAD	R	58
59	R	REC - FURNITURE FEEDS	HT	20	1					0.18	0.5	1	20		REC - LAN L5-20R	R	60
61	N	REC - PANTRY REF	G	20	1	1.2	0.18					1	20		REC - LAN	R	62
63	R	REC - EXTERNAL SIGNAGE,...		20	1			0.36	0.5			1	20		REC - LAN L5-20R	R	64
65	R	REC - EXTERNAL SIGNAGE S3		20	1					0.18	0.72	1	20		REC - NORTHEAST ELEC...	R	66
67	R	REC - FURNITURE FEEDS	HT	20	1	0.18	0.36					1	20		REC - PANTRY	R	68
69	R	REC - FURNITURE FEEDS	HT	20	1			0.18	1.08			1	20		REC - OPERATIONS	R	70
71	R; N	REC - PANTRY		20	1					1.18	0.36	1	20		REC - LOBBY / RESTROOM	R	72
73	N	REC - PANTRY DW	G	20	1	1	0					1	20	--	SPARE	--	74
75	R	REC - LOBBY FURNITURE...		20	1			0.36	0			1	20	--	SPARE	--	76
77	R	REC - ELEC SHADES		20	1					0.9	0	1	20	--	SPARE	--	78
79	R	REC - ELEC SHADES		20	1	0.72	0					1	20	--	SPARE	--	80
81	R	REC - PANTRY MONITER		20	1			0.18	0			1	20	--	SPARE	--	82
83	R	REC - LOBBY		20	1					0.18	0	1	20	--	SPARE	--	84
85	--	SPARE	--	20	1	0	0					1	20	--	SPARE	--	86
87	M	CU-01		20	2			0.92	3.65			3	45		ODU-03	M	88
89										0.92	3.65						90
91	R	REC - ROOF MAINTENANCE		20	1	0.36	3.65										92
93	R	TRAP PRIMER		20	1			0.18	0.07			1	20		RP-01	M	94
95	M	BCC-01		20	2					0.02	0.02	2	15		BCC 100	M	96
97						0.02	0.02										98
99	M	BCC 200		15	2			0.02	1.32			3	15		ERV	M	100
101										0.02	1.32						102
103	M	EWH		20	2	1.5	1.32										104
105								1.5	0.5			2	15		IDU 101 / 103	M	106
107	M	IDU 102 / 104		15	2					0.42	0.5						108
109						0.42	0.29					2	15		IDU 105 / 106	M	110
111	M	IDU 107 / 108		15	2			0.32	0.29								112
113										0.32	0.29	2	15		IDU 109 / 110	M	114
115	M	IDU 201 / 202		15	2	0.32	0.29										116
117								0.32	0.32			2	15		IDU 203 / 204	M	118
119	M	IDU 205 / 206		15	2					0.35	0.32						120
121						0.35	0.38					2	15		IDU 207 / 208	M	122
123	M	IDU 209 / 210		15	2			0.38	0.38								124
125										0.38	0	1	20	--	SPARE	--	126
			PHASE LOAD:			15.74		15.31		16.18							
			PHASE AMPS:			132		128		135							

LOAD TYPE	CONNECTED (kVA)	DEMAND (kVA)	LOAD TYPE KEY	BREAKER TYPE KEY	PANEL TOTALS	
M	27.12	27.12	R = RECEPTACLE	BLANK = STANDARD		
R	17.92	13.96	L = LIGHTING	G3 = GROUND FAULT 30 mA (EQUIP)	**CONNECTED LOAD (kVA):**	47.21
N	4.7	4.7	M = MECH/EQUIP	G = GROUND FAULT 5 mA...	**DEMAND LOAD (kVA):**	43.51
			K = KITCHEN	A = ARC FAULT	**CONNECTED LOAD (AMPS):**	131
			C = CONTINUOUS	ST = SHUNT TRIP	**DEMAND LOAD (AMPS):**	121
			N = NONCONTINUOUS	LH = LOCKING HASP	**DEMAND LOAD x 125% (AMPS):**	151
				HT = HANDLE TIE		

Notes:

PANEL NAME: H

MOUNTING: Surface
VOLTAGE: 480Y/277V **SSC RATING:** 14K
FED FROM:

BUS AMPS: 225

MLO: No
MCB: Yes
MCB RATING: 200A
SHUNT TRIP: No

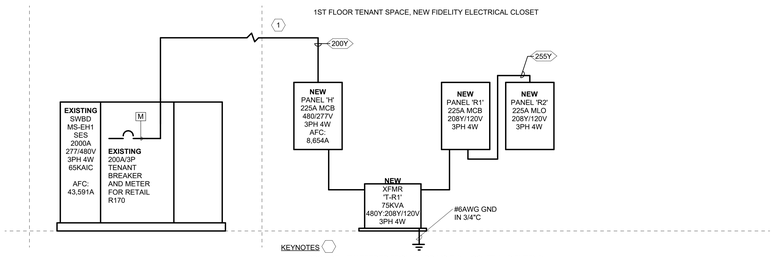
PANELBOARD OPTIONS & ACCESSORIES

NEUTRAL BUS: Yes **SUB-FEED LUGS:** Yes
NEUTRAL BUS RATING: 100% **FEED-THRU LUGS:** No
EQUIPMENT GROUND: Yes **SURGE SUPPRESSION:** Yes
ISOLATED GROUND: No

CKT	TYPE	DESCRIPTION	BKR TYPE	TRIP	POLE	A (kVA)		B (kVA)		C (kVA)		POLE	TRIP	BKR TYPE	DESCRIPTION	TYPE	CKT
1	Other ; Spa...	PANEL R1 & R2 VIA XFMR TR-1 (SUB FED BREAKER)		150	3	27...	8.42					3	60		ODU-01	M	2
3								25.5	8.42								4
5										23.01	8.42						6
7	M	ODU-02		60	3	8.42	--					1	--	--	SPACE	--	8
9								8.42	--			1	--	--	SPACE	--	10
11										8.42	--	1	--	--	SPACE	--	12
13	--	SPARE	--	20	1	0	--					1	--	--	SPACE	--	14
15	--	SPARE	--	20	1			0	--			1	--	--	SPACE	--	16
17	--	SPARE	--	20	1					0	--	1	--	--	SPACE	--	18
19	--	SPARE	--	20	1	0	--					1	--	--	SPACE	--	20
21	--	SPARE	--	20	1			0	--			1	--	--	SPACE	--	22
23	--	SPARE	--	20	1					0	--	1	--	--	SPACE	--	24
25	--	SPACE	--	--	1	--	--					1	--	--	SPACE	--	26
27	--	SPACE	--	--	1			--	--			1	--	--	SPACE	--	28
29	--	SPACE	--	--	1					--	--	1	--	--	SPACE	--	30
31	--	SPACE	--	--	1	--	--					1	--	--	SPACE	--	32
33	--	SPACE	--	--	1			--	--			1	--	--	SPACE	--	34
35	--	SPACE	--	--	1					--	--	1	--	--	SPACE	--	36
37	--	SPACE	--	--	1	--	--					1	--	--	SPACE	--	38
39	--	SPACE	--	--	1			--	--			1	--	--	SPACE	--	40
41	--	SPACE	--	--	1					--	--	1	--	--	SPACE	--	42
			PHASE LOAD:			43.25		41.53		39.03							
			PHASE AMPS:			158		151		141							

LOAD TYPE	CONNECTED (kVA)	DEMAND (kVA)	LOAD TYPE KEY	BREAKER TYPE KEY	PANEL TOTALS	
M	77.67	77.67	R = RECEPTACLE	BLANK = STANDARD		
Other	0	0	L = LIGHTING	G3 = GROUND FAULT 30 mA (EQUIP)	**CONNECTED LOAD (kVA):**	123.79
R	44.22	27.11	M = MECH/EQUIP	G = GROUND FAULT 5 mA...	**DEMAND LOAD (kVA):**	108.16
N	6.3	6.3	K = KITCHEN	A = ARC FAULT	**CONNECTED LOAD (AMPS):**	149
L	1.93	1.93	C = CONTINUOUS	ST = SHUNT TRIP	**DEMAND LOAD (AMPS):**	130
			N = NONCONTINUOUS	LH = LOCKING HASP	**DEMAND LOAD x 125% (AMPS):**	163
				HT = HANDLE TIE		

Notes:
150A/3P XFMR BREAKER TO BE SUB FED



KEYNOTES

1. PROVIDE NEW FEEDER FROM SWBD MS-EH1. LOCATE AND EXTEND EXISTING 2" CONDUIT PATHWAY NEAR COLUMN LINE EP10 FOR FEEDER RUN. REFER TO FEEDER SIZING LEGEND FOR CONDUCTOR SIZING INFORMATION. USE PROVIDED TENANT 200A METER SECTION & BREAKER AVAILABLE FOR RETAIL TENANT R170. NOTIFY LANDLORD PRIOR TO ALL SHUTDOWN OPERATIONS.

① ELECTRICAL POWER ONE-LINE DIAGRAM
None

TRANSFORMER SCHEDULE

TAG	kVA	PRIMARY (480V - 3 PHASE)			SECONDARY (120/208V. - 3 PHASE)				TAG
		AMPS	OCP	FEEDER SIZE	BONDING COND. "GEC"	AMPS	OCP	FEEDER SIZE	
T1	9	11	20A-3P	3-12 AWG, & 1-12 AWG GND. -3/4"C	1-8AWG 3/4"C.	25	40A-3P	4-8 AWG, & 1-8 AWG GND.-3/4"C.	T1
T1K								3-6 AWG, 1-3 AWG N., & 1-8 AWG GND.-1 1/4"C.	T1K
T1G								3-6 AWG, 1-3 AWG N., 1-10 AWG IG & 1-8 AWG GND.-1 1/2"C.	T1G
T2	15	18	30A-3P	3-10 AWG, & 1-10 AWG GND. -3/4"C	1-8AWG 3/4"C.	42	50A-3P	4-6 AWG, & 1-8 AWG GND.-1"C.	T2
T2K								3-4 AWG, 1-1 AWG N., & 1-8 AWG GND.-1 1/2"C.	T2K
T2G								3-4 AWG, 1-1 AWG N., 1-10 AWG IG & 1-8 AWG GND.-1 1/4"C.	T2G
T3	30	36	60A-3P	3-6 AWG, & 1-10 AWG GND-3/4"C.	1-6AWG 3/4"C.	83	100A-3P	4-1 AWG, & 1-6 AWG GND.-2"C.	T3
T3K								3-1 AWG, 2-1/0 AWG N., & 1-6 AWG GND.-2"C.	T3K
T3G								3-1 AWG, 2-1/0 AWG N., 1-8 AWG IG & 1-6 AWG GND.-2"C.	T3G
T4	45	54	90A-3P	3-3 AWG, & 1-8 AWG GND -1 1/4"C.	1-6AWG 3/4"C.	125	150A-3P	4-1/0 AWG, & 1-6 AWG GND.-2"C.	T4
T4K								5-3/0 AWG, & 1-4 AWG GND.-2 1/2"C.	T4K
T4G								5-3/0 AWG, 1-6 AWG IG & 1-4 AWG GND.-2 1/2"C.	T4G
T5	75	90	150A-3P	3-1/O AWG, & 1-6 AWG GND -1 1/2"C.	1-2AWG 3/4"C.	208	225A-3P	4-4/0 AWG, & 1-2 AWG GND.-2 1/2"C.	T5
T5K								3-250kcmil, 2-250kcmil N, & 1-2 AWG GND.-3"C.	T5K
T5G								3-250kcmil, 2-250kcmil N, 1-4 AWG IG & 1-2 AWG GND.-3"C.	T5G
T6	112 $^1/_2$	135	200A-3P	3-3/O AWG, & 1-6 AWG GND-2"C.	1-1/OAWG 3/4"C.	313	400A-3P	4-600kcmil, & 1-1/0 AWG GND.-4"C.	T6
T6K								2 SETS (3-250kcmil, 2-250kcmil N, & 1-1/0 AWG GND.-3"C).	T6K
T6G								2 SETS (3-250kcmil, 2-250kcmil N, & 1-3 AWG IG & 1-1/0 AWG GND.-3"C).	T6G
T7	150	181	300A-3P	3-350kcmil, & 1-4 AWG GND-3"C.	1-2/OAWG 3/4"C.	417	500A-3P	2 SETS (4-250kcmil, & 1-2/0 AWG GND.-3"C).	T7
T7K								2 SETS (3-300kcmil, 2-300kcmil N, & 1-2/0 AWG GND.-3 1/2"C).	T7K
T7G								2 SETS (3-300kcmil, 2-300kcmil N, 1-2 AWG IG & 1-2/0 AWG GND.-3 1/2"C).	T7G
T8	225	271	400A-3P	3-500kcmil, & 1-3 AWG GND-3"C.	1-3/OAWG 3/4"C.	625	800A-3P	2 SETS (4-600kcmil, & 1-3/O AWG GND.-4"C).	T8
T8K								3 SETS (3-350kcmil, 2-350kcmil N, & 1-3/O AWG GND.-4"C).	T8K
T8G								3 SETS (3-350kcmil, 2-350kcmil N, 1-1/O AWG IG & 1-3/O AWG GND.-4"C).	T8G
T9	300	361	500A-3P	2 SETS (3-250kcmil, & 1-2 AWG GND-2 1/2"C.)	1-3/OAWG 3/4"C.	833	1000A-3P	3 SETS (4-400kcmil, & 1-3/0 AWG GND.-4"C).	T9
T9K								3 SETS (3-400kcmil, 2-400kcmil N, & 1-4/0 AWG GND.-4"C).	T9K
T9G								3 SETS (3-400kcmil, 2-400kcmil N, 1-2/0 AWG IG & 1-4/0 AWG GND.-4"C).	T9G
T10	500	602	800A-3P	2 SETS (3-600kcmil, & 1-1/0 AWG GND-4"C.)	1-3/OAWG 3/4"C.	1388	1600A-3P	5 SETS (4-500kcmil, & 1-4/O AWG GND.-4"C).	T10
T10K								5 SETS (3-500kcmil, 2-500kcmil N, & 1-4/O AWG GND.-4"C).	T10K
T10G								5 SETS (3-500kcmil, 2-500kcmil N, 1-4/O AWG IG & 1-4/O AWG GND.-4"C).	T10G

NOTES:

1. TAG DESIGNATIONS ARE AS FOLLOWS: T# IS NEMA TP1 TRANSFORMER , T#K IS A MINIMUM K13 RATED TRANSFORMER AND T#G IS MINIMUM K13 RATED TRANSFORMER WITH ISOLATED GROUND ON SECONDARY. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
2. GROUND TRANSFORMER TO NEAREST AVAILABLE EFFECTIVELY-GROUNDED STRUCTURAL STEEL ELEMENT, WATER PIPE AND/OR ONE OF THE METHODS LISTED IN NATIONAL ELECTRIC CODE WITH A GROUNDING ELECTRODE CONDUCTOR "GEC" SIZED PER SCHEDULE ABOVE. BOND NEUTRAL OF TRANSFORMER SECONDARY TO TRANSFORMER CASE WITH BONDING JUMPER PER NATIONAL ELECTRIC CODE.
3. PRIMARY OCPD DEVICE SHALL ACCOMMODATE ASSOCIATED TRANSFORMER IN-RUSH CURRENT. TRANSFORMERS WITH HIGHER THAN TYPICAL IN-RUSH CURRENTS MAY REQUIRE A LARGER PRIMARY OCPD; INCREASE PRIMARY OCPD AND ASSOCIATED WIRE AND CONDUIT SIZES IF NECESSARY.
4. PROVIDE SECONDARY OVERCURRENT PROTECTION DEVICE WITHIN TEN FEET OF TRANSFORMER SECONDARY TERMINALS EITHER IN A PANELBOARD MAIN DEVICE OR AN INDIVIDUALLY-MOUNTED OVERCURRENT DEVICE.
5. ADJUST PRIMARY AND SECONDARY TAP SETTINGS TO COMPENSATE FOR VOLTAGE VARIATIONS. ADJUST SETTINGS TO SATISFY OWNER-PROVIDED EQUIPMENT REQUIREMENTS.
6. ALL CONDUCTOR SIZES ARE FOR COPPER CONDUCTORS. ALUMINUM CONDUCOTRS SHALL NOT BE USED ON THE PRIMARY OR SECONDARY CONNECTIONS.
7. PROVIDE MINIMUM 4-INCH HIGH CONCRETE HOUSEKEEPING PADS FOR FLOOR-MOUNTED TRANSFORMERS.
8. MAKE CONDUIT CONNECTIONS TO TRANSFORMERS SO THAT TRANSFER OF NOISE AND VIBRATION IS MINIMIZED. UTILIZE A MINIMUM OF 18-INCHES OF FLEXIBLE CONDUIT WHEN CONNECTING CONDUIT TO TRANSFORMERS.
9. MOUNT TRANSFORMERS UTILIZING DOUBLE-DEFLECTION NEOPRENE ISOLATION MOUNTS WITH 0.50 INCH DEFLECTION.
10. ASTERISK "*" DENOTES TRAPEZE MOUNTED.

LEGEND OF FEEDER SIZES (COPPER CONDUCTORS)

AMPERE RATING	FEEDER TAG		CONDUCTORS	MINIMUM RACEWAY SIZE (INCHES)
60	60*	-	3-6 AWG; 1-10 AWG GND.	1"
		Y	3-6 AWG; 1-6 AWG N; 1-10 AWG GND.	
		K	CHANGE NEUTRAL TO 1-4 AWG	1.25"
		G	ADD 1-10 AWG IG	
70	70*	-	3-4 AWG; 1-8 AWG GND.	1.25"
		Y	3-4 AWG; 1-4 AWG N; 1-8 AWG GND.	
		K	CHANGE NEUTRAL TO 1-1/0 AWG	1.5"
		G	ADD 1-8 AWG IG	
100	100*	-	3-1 AWG; 1-8 AWG GND.	1.5"
		Y	3-1 AWG; 1-1 AWG N; 1-8 AWG GND.	2"
		K	CHANGE NEUTRAL TO 1-3/0 AWG	
		G	ADD 1-8 AWG IG	
125	125*	-	3-1/0 AWG; 1-6 AWG GND.	2"
		Y	3-1/0 AWG; 1-1/0 AWG N; 1-6 AWG GND.	
		K	CHANGE NEUTRAL TO 2-1/0 AWG	2.5"
		G	ADD 1-6 AWG IG	
150	150*	-	3-1/0 AWG; 1-6 AWG GND.	2"
		Y	3-1/0 AWG; 1-1/0 AWG N; 1-6 AWG GND.	
		K	CHANGE NEUTRAL TO 2-1/0 AWG	2.5"
		G	ADD 1-6 AWG IG	
175	175*	-	3-2/0 AWG; 1-6 AWG GND.	2"
		Y	3-2/0 AWG; 1-2/0 AWG N; 1-6 AWG GND.	
		K	CHANGE NEUTRAL TO 2-2/0 AWG	2.5"
		G	ADD 1-6 AWG IG	
200	200*	-	3-3/0 AWG; 1-6 AWG GND.	2"
		Y	3-3/0 AWG; 1-3/0 AWG N; 1-6 AWG GND.	
		K	CHANGE NEUTRAL TO 2-3/0 AWG	2.5"
		G	ADD 1-6 AWG IG	
225	225*	-	3-4/0 AWG; 1-4 AWG GND.	2.5"
		Y	3-4/0 AWG; 1-4/0 AWG N; 1-4 AWG GND.	
		K	CHANGE NEUTRAL TO 2-4/0 AWG	2.5"
		G	ADD 1-4 AWG IG	

AMPERE RATING	FEEDER TAG		CONDUCTORS	MINIMUM RACEWAY SIZE (INCHES)
250	250*	-	3-250 kcmil; 1-4 AWG GND.	3"
		Y	3-250 kcmil ; 1-250 kcmil N; 1-4 AWG GND.	
		K	CHANGE NEUTRAL TO 2-250 kcmil	3"
		G	ADD 1-4 AWG IG	
300	300*	-	3-350 kcmil; 1-4 AWG GND.	3"
		Y	3-350 kcmil ; 1-350 kcmil N; 1-4 AWG GND.	
		K	CHANGE NEUTRAL TO 2-350 kcmil AWG	3"
		G	ADD 1-4 AWG IG	
350	350*	-	3-500 kcmil; 1-3 AWG GND.	4"
		Y	3-500 kcmil ; 1-500 kcmil N; 1-3 AWG GND.	
		K	CHANGE NEUTRAL TO 2-500 kcmil	4"
		G	ADD 1-3 AWG IG	
400	400*	-	3-600 kcmil ; 1-3 AWG GND.	4"
		Y	3-600 kcmil ; 1-600 kcmil N; 1-3 AWG GND.	
		K	CHANGE NEUTRAL TO 2-600 kcmil	4"
		G	ADD 1-3 AWG IG	
500	500*	Y	(2 SETS 0F) 3-250 kcmil ; 1-250 kcmil N; 1-2 AWG GND.	(2)-3"
600	600*	Y	(2 SETS OF) 3-350 kcmil ; 1-350 kcmil N; 1-1 AWG GND.	(2)-3.5"
800	800*	Y	(2 SETS OF) 3-600 kcmil ; 1-600 kcmil N; 1-1/0 AWG GND.	(2)-4"
1000	1000*	Y	(3 SETS OF) 3-500 kcmil; 1-500 kcmil N; 1-2/0 AWG GND.	(3) 3.5"
1200	1200*	Y	(3 SETS OF) 3-600 kcmil; 1-600 kcmil N; 1-3/0 AWG GND.	(3)-4"
1600	1600*	Y	(4 SETS OF) 3-600 kcmil; 1-600 kcmil N; 1-4/0 AWG GND.	(4)-4"
2000	2000*	Y	(5 SETS OF) 3-600 kcmil; 1-600 kcmil N; 1-250 kcmil GND.	(5)-4"
2500	2500*	Y	(6 SETS OF) 3-600 kcmil; 1-600 kcmil N; 1-350 kcmil GND.	(6)-4"
3000	3000*	Y	(8 SETS OF) 3-500 kcmil; 1-500 kcmil N; 1-400 kcmil GND.	(8)-4"
3200	3200*	Y	(8 SETS OF) 3-600 kcmil; 1-600 kcmil N; 1-500 kcmil GND.	(8)-4"
3500	3600*	Y	(9 SETS OF) 3-600 kcmil; 1-600 kcmil N; 1-500 kcmil GND.	(9)-4"
4000	4000*	Y	(10 SETS OF) 3-600 kcmil; 1-600 kcmil N; 1-500 kcmil GND.	(10)-4"

DESIGNATIONS

THE ASTERISK ABOVE IS FILLED IN WITH ONE OR MORE OF THE FOLLOWING DESIGNATIONS ON THE RISER.
Y - THREE PHASE FOUR WIRE FEEDER.
K - THREE PHASE FEEDER WITH OVERSIZED NEUTRAL.
G - THREE PHASE FEEDER WITH ISOLATED GROUND.

NOTES:

1. WIRE AND CONDUIT TAGS REPRESENT BASE AMPACITY AND NUMBER OF WIRES (NOT INCLUDING GROUNDS.)
2. BASE AMPACITIES INDICATED ARE VALID FOR 90°C RATED COPPER CONDUCTORS (APPLIED AT THEIR 60°C RATING FOR #1AWG AND SMALLER; APPLIED AT THEIR 75°C RATING FOR #1/0AWG AND LARGER) IN 30°C AMBIENT TEMPERATURE. INCREASE WIRE AND CONDUIT SIZES TO COMPENSATE FOR LOWER TEMPERATURE RATED WIRES AND HIGHER AMBIENT TEMPERATURES.
3. INCREASE WIRE AND CONDUIT SIZES AS REQUIRED TO LIMIT VOLTAGE DROP FOR FEEDERS TO NO GREATER THAN 2% AND FOR BRANCH CIRCUITS TO NO GREATER THAN 3%. CALCULATE VOLTAGE DROP AT 70% CIRCUIT LOADING. (FOR EXAMPLE, 80-AMP CIRCUIT CONDUCTORS ARE ASSUMED TO BE CARRYING 56 AMPS.)

NOTES CONTINUED:

4. CONDUIT SIZES INDICATED ARE VALID FOR THHN/THWN AND XHHW CONDUCTOR TYPES INSTALLED IN EMT, ENT, FMC, IMC, LFMC, RMC AND RIGID PVC (SCHEDULE 80, SCHEDULE 40, TYPE A, AND TYPE EB) CONDUIT TYPES UNLESS INDICATED OTHERWISE. INCREASE CONDUIT SIZES AS REQUIRED TO COMPENSATE FOR CONDUCTOR TYPES WITH LARGER OVERALL DIAMETERS AND FOR CONDUIT TYPES WITH SMALLER INTERNAL DIAMETERS.
5. FOR CIRCUITS INDICATED, INCREASE CONDUIT SIZE TO 5-INCHES WHEN USING RIGID PVC SCHEDULE 80.
6. CONDUIT SIZES INDICATED ARE REQUIRED MINIMUM SIZES AND MAY BE INCREASED FOR LONG RUNS OR WHERE MULTIPLE BENDS ARE NECESSARY.
7. CONDUITS SMALLER THAN 3 INCHES SHALL BE UPGRADED TO THE NEXT LARGER TRADE SIZE WHEN USED FOR DIRECT-BURIED AND IN-SLAB INSTALLATIONS.
8. UPGRADE CONDUIT SIZES FOR CIRCUITS RUN IN CONCRETE-ENCASED UNDERGROUND DUCTBANKS TO THE SIZES INDICATED FOR THE DUCTBANK CONDUITS.
9. FEEDERS MAY HAVE A COMBINATION OF OVERSIZED NEUTRAL AND ISOLATED GROUND (DESIGNATION K AND G). REFER TO RISER FOR FEEDER DESIGNATIONS. TAGS WITH ISOLATED GROUND (G) INDICATED SHALL INCLUDE A SEPARATE IG CONDUCTOR, SAME SIZE AS ASSOCIATED CIRCUIT GROUND CONDUCTOR, TIED TO THE IG BUS. CONDUIT SIZES INDICATED IN SCHEDULE ABOVE ARE LARGE ENOUGH TO ACCOMMODATE AN IG CONDUCTOR IN ADDITION TO CONDUCTORS SHOWN.
10. TAGS WITH "Y" ARE 4 WIRE CIRCUITS.
11. COORDINATE LUG SIZE AND QUANTITY WITH TERMINATIONS. LUG ADAPTOR KITS SHALL BE PROVIDED AS REQUIRED.

SPECIAL PURPOSE RECEPTACLE SCHEDULE

SYMBOL	NEMA NO.	DEVICE RATINGS		CIRCUIT BREAKER	BRANCH CIRCUIT
20	L5-20R	20A., 125V., 2P., 3W.	TWIST-LOCK	20A-1P	2#12 & 1#12 GND - 3/4"
24	L6-30R	30A., 250V., 2P., 3W.	TWIST-LOCK	30A-2P	2#10 & 1#10 GND - 3/4"

NOTE:
1. COORDINATE EXACT NEMA CONFIGURATION WITH EQUIPMENT MANUFACTURER/PROVIDER.

BRANCH CIRCUITS SCHEDULE

120 OR 277 VOLT 1Φ, 2W. CIRCUITS

CIRCUIT BREAKER	CONDUCTOR
20A-1P	2 #12 & 1 #12 GND. - 3/4"C.
30A-1P	2 #10 & 1 #10 GND. - 3/4"C.
40A-1P	2 #8 & 1 #10 GND. - 3/4"C.
50A-1P	2 #6 & 1 #10 GND. - 3/4"C.
60A-1P	2 #6 & 1 #10 GND. - 3/4"C.

208 VOLT 1Φ, 2W. CIRCUITS

20A-2P	2 #12 & 1 #12 GND. - 3/4"C.
30A-2P	2 #10 & 1 #10 GND. - 3/4"C.
40A-2P	2 #8 & 1 #10 GND. - 3/4"C.
50A-2P	2 #6 & 1 #10 GND. - 3/4"C.
60A-2P	2 #6 & 1 #10 GND. - 3/4"C.

208/120 VOLT, 1Φ, 3W. CIRCUITS

20A-2P*	3 #12 & 1 #12 GND. - 3/4"C.
30A-2P*	3 #10 & 1 #10 GND. - 3/4"C.
40A-2P*	3 #8 & 1 #10 GND. - 3/4"C.
50A-2P*	3 #6 & 1 #10 GND. - 3/4"C.
60A-2P*	3 #6 & 1 #10 GND. - 3/4"C.

208 OR 480 VOLTS, 3Φ, 3W. CIRCUITS

20A-3P	3 #12 & 1 #12 GND. - 3/4"C.
30A-3P	3 #10 & 1 #10 GND. - 3/4"C.
40A-3P	3 #8 & 1 #10 GND. - 3/4"C.
50A-3P	3 #6 & 1 #10 GND. - 3/4"C.
60A-3P	3 #6 & 1 #10 GND. - 3/4"C.

208Y/120 & 480Y/277 VOLT, 3Φ,4W. CIRCUITS

20A-3P*	4 #12 & 1 #12 GND. - 3/4"C.
30A-3P*	4 #10 & 1 #10 GND. - 3/4"C.
40A-3P*	4 #8 & 1 #10 GND. - 3/4"C.
50A-3P*	4 #6 & 1 #10 GND. - 1"C.
60A-3P*	4 #6 & 1 #10 GND. - 1"C.

NOTES:

1. ALL BRANCH CIRCUIT SIZES ARE BASED ON RACEWAY LENGTH OF 65 FEET FOR 120 VOLT BRANCH CIRCUITS AND 150 FEET FOR 277 VOLT BRANCH CIRCUITS. IF LENGTH EXCEEDS 65 FEET (120 VOLT CIRCUITS) OR 150 FEET (277 VOLT CIRCUITS) THEN USE WIRE SIZE DENOTED BELOW AND INCREASE RACEWAY ACCORDINGLY. REDUCE LARGE CABLE SIZES IN JUNCTION BOX PRIOR TO DEVICE TERMINATION. PROVIDE WIRE REDUCERS AT BREAKERS WHEN REQUIRED.

CIRCUIT LENGTH

WIRE SIZE	120V CIRCUIT	277V CIRCUIT
#10	65 FT. TO 120 FT.	150 FT. TO 240 FT.
#8	120 FT. TO 180 FT.	ABOVE 240 FT.
#6	ABOVE 180 FT.	-

2. EACH BRANCH CIRCUIT SHALL HAVE A DEDICATED NEUTRAL CONDUCTOR. SHARED NEUTRALS ARE NOT ACCEPTABLE.
3. CONDUCTOR AMPACITIES ARE VALID FOR 90°C RATED COPPER CONDUCTORS (APPLIED AT THEIR 60°C RATING) IN 30°C AMBIENT TEMPERATURE. INCREASE WIRE AND CONDUIT SIZES TO COMPENSATE FOR LOWER TEMPERATURE RATED WIRES AND HIGHER AMBIENT TEMPERATURES.
4. WHERE OVERSIZED CONDUCTORS ARE TOO LARGE TO DIRECTLY CONNECT TO SOURCE OR DEVICE TERMINALS, TRANSITION TO SMALLER CONDUCTORS (NO LESS THAN MINIMUM SIZE SHOWN IN SCHEDULE ABOVE) TO ACCOMMODATE REQUIRED TERMINATIONS. PROVIDE SPLICES, WIRE REDUCERS OR POWER BLOCKS IN APPROPRIATELY SIZED JUNCTION BOXES TO TRANSITION BETWEEN DIFFERENT SIZE CONDUCTORS. LENGTHS OF CONDUCTOR BETWEEN TRANSITION TO SMALLER CABLE AND FINAL TERMINATION SHOULD BE LIMITED TO NO MORE THAN 10 FEET WHEREVER POSSIBLE.
5. FOR CIRCUIT LENGTHS EXCEEDING MAXIMUM LENGTHS SHOWN IN SCHEDULE ABOVE, UPSIZE WIRE AND CONDUIT SIZES AS REQUIRED TO LIMIT VOLTAGE DROP TO NO MORE THAN 3% (FOR BRANCH CIRCUITS) AT 70% CIRCUIT LOADING. (FOR EXAMPLE, 20-AMP CIRCUIT CONDUCTORS ARE ASSUMED TO BE CARRYING 14 AMPS.) VOLTAGE DROP SHALL BE LIMITED TO 2% WHEN CIRCUITS ARE TO BE USED AS FEEDERS.
6. WHERE CIRCUITS ARE TO BE USED FOR FEEDERS, RATHER THAN BRANCH CIRCUITS, VOLTAGE DROP SHALL BE LIMITED TO NO MORE THAN 2%. ALLOWABLE MAXIMUM DISTANCES INDICATED IN SCHEDULE ABOVE SHALL BE REDUCED BY 33%.
7. CONDUIT SIZES INDICATED ARE VALID FOR THHN/THWN AND XHHW CONDUCTOR TYPES INSTALLED IN EMT, ENT, FMC, IMC, LFMC, RMC AND RIGID PVC (SCHEDULE 80, SCHEDULE 40, TYPE A, AND TYPE EB) CONDUIT TYPES. INCREASE CONDUIT SIZES AS REQUIRED TO COMPENSATE FOR CONDUCTOR TYPES WITH LARGER OVERALL DIAMETERS AND FOR CONDUIT TYPES WITH SMALLER INTERNAL DIAMETERS.
8. CONDUIT SIZES INDICATED ARE REQUIRED MINIMUM SIZES AND MAY BE INCREASED FOR LONG RUNS OR WHERE MULTIPLE BENDS ARE NECESSARY.

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :
VANDERWEIL
R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210
P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:
DocuSigned by:
Robert Chaves
58389
ROBERT CHAVES
12/20/2024

General Notes:

Project Title:
Fidelity INVESTMENTS
Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:
Project North
True North

Project No.: C0115.00

Drawing Sheet Title:
ELECTRICAL RISER DIAGRAM AND PANEL SCHEDULES

Drawing Sheet Number:
E-701

Owner's Branch No.:
134

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MOUNTING	MANUFACTURER	MODEL	ALT. MANUFACTURER	DIMMING	VOLTAGE	TOTAL WATTAGE	COLOR TEMP.	COMMENTS
A	DECORATIVE 15" NOMINAL DIAMETER BLOWN GLASS GLOBE "BLOOM" PENDANT	SUSPENDED	RESIDENT	GLASS-WHT-BLM005	NO APPROVED EQUALS	Yes	120	5	3000 K	DEFAULT IS 2700K - REQUIRES REPLACEMENT BULB FOR OTHER COLOR TEMP. PROVIDE 6W 3000K LED EQUIVALENT BULB.
B	DECORATIVE 9" DIAMETER CONICAL SPUN ALUMINUM "TAISHO" PENDANT	SUSPENDED	SONNEMAN	2750.25-E	SLV LIGHTING/PABLO	Yes	120	6	3000 K	BULB NOT INCLUDED, PROVIDE 6W 3000K LED EQUIVALENT BULB
C	DECORATIVE 22" DIAEMTER CONICAL SPUN ALUMINUM "EDO" PENDANT	SUSPENDED	SONNEMAN	2754.25-E	GLOBAL/PABLO	Yes	120	6	3000 K	BULB NOT INCLUDED, PROVIDE 6W 3000K LED EQUIVALENT BULB
G2	RECESSED CONTINUOUS 2" LINEAR LED COVE FIXTURE WITH REGRESSED LENSE, FLANGED TRIM	RECESSED	AMERLUX	EDR-6227-GRUV4-HE-J/FLG-COVE-A16-PL-5-30-HW-120/277-2-IND-0-10V	LUMENWERX / AXIS	Yes	120	10	3000 K	3W SELECTION REQUIRES 4' OR MORE LENGTH, IF USING <4' THEN SPEC 5W. 2.5" REGRESSED LENSE
G5	RECESSED CONTINUOUS 5" LINEAR LED COVE FIXTURE WITH REGRESSED LENSE, FLANGED TRIM	RECESSED	AMERLUX	EDR-6227-GRUV4-HE-J/FLG-COVE-A16-PL-3-30-HW-120/277-5-IND-0-10V	LUMENWERX / AXIS	Yes	120	15	3000 K	3W SELECTION REQUIRES 4' OR MORE LENGTH, IF USING <4' THEN SPEC 5W. 2.5" REGRESSED LENSE
H	DECORATIVE WALL SCONCE, BIRCH WOOD CANOPY, MATTE BLACK FINISH, OPAL SHADE, ELV DIMMING	SURFACE	CEDAR & MOSS	ALTO SCONCE 6" BLK	NO APPROVED EQUALS	Yes	120	6	3000 K	BULB NOT INCLUDED, PROVIDE 4W 3000K LED EQUIVALENT BULB
J2	SURFACE MOUNTED LINEAR TASK LIGHT WITH FROSTED ACRYLIC LENS, REMOTE DRIVER	SURFACE	FEELUX	NDP7-3000K-24V-C90_NDPPC(8')_XLD75-124V-FC	MAXLITE LITEBAR	Yes	120	7	3000 K	22" SECTION LENGTH, HARDWIRED DRIVER
J4	SURFACE MOUNTED LINEAR TASK LIGHT WITH FROSTED ACRYLICLENS, REMOTE DRIVER	SURFACE	FEELUX	NDP15-3000K-24V-C90_NDPPC(8')_XLD75-124V-FC	MAXLITE LITEBAR	Yes	120	14	3000 K	44" SECTION LENGTH, HARDWIRED DRIVER
L	4' LINEAR LED INDIRECT UPLIGHT SUSPENDED	SUSPENDED	AMERLUX	LIN1.5I-A16-BAT-ASW10-10-30-HW-120/277-4-IND-0-10V	LUMENWERX / AXIS	Yes	120	40	3000 K	HEIGHT ABOVE FINISHED FLOOR TO BOTTOM OF FIXTURE TO BE DETERMINED BY ARCHITECT.
P	4" DIAMETER ROUND RECESSED LED ADJUSTABLE ACCENT WITH CLEAR ANODIZED CONE, WHITE OVERLAP FLANGE, 1000 LUMEN	RECESSED	LIGHTOLIER	4RN-C4L-10-930-W-Z10-U-C4RWWCC	GOTHAM EVO 4 SERIES, EDISON PRICE APLUS SERIES	Yes	120	8	3000 K	INSTALL CONES IN WALL WASHERS WITH CUTOUT(S) IN INNER REFLECTOR FACING WALL(S) TO BE LIT.
P1	4" DIAMETER ROUND RECESSED LED ADJUSTABLE ACCENT WITH CLEAR ANODIZED CONE, WHITE OVERLAP FLANGE, 1000 LUMEN, DOUBLE WALL WASH	RECESSED	LIGHTOLIER	4RN-C4L-10-930-W-Z10-U-C4RCWCC	GOTHAM EVO 4 SERIES, EDISON PRICE APLUS SERIES	Yes	120	8	3000 K	INSTALL CONES IN WALL WASHERS WITH CUTOUT(S) IN INNER REFLECTOR FACING WALL(S) TO BE LIT.
P2	4" DIAMETER ROUND RECESSED LED ADJUSTABLE ACCENT WITH CLEAR ANODIZED CONE, WHITE OVERLAP FLANGE, 1000 LUMEN	RECESSED	LIGHTOLIER	4RN-C4L-10-930-W-Z10-U-C4RDWCC	GOTHAM EVO 4 SERIES, EDISON PRICE APLUS SERIES	Yes	120	8	3000 K	INSTALL CONES IN WALL WASHERS WITH CUTOUT(S) IN INNER REFLECTOR FACING WALL(S) TO BE LIT.
R1	4" DIAMETER ROUND RECESSED LED, 1000 LUMEN	RECESSED	LIGHTOLIER	4RN-C4L-10-930-W-Z10-U-C4RDLCC	GOTHAM EVO 4 SERIES, EDISON PRICE APLUS SERIES	Yes	120	8	3000 K	UNLESS NOTED TO THE CONTRARY, PROVIDE WHITE CEILING TRIMS FOR ALL RECESSED LUMINARIES.
R2	4" DIAMETER ROUND RECESSED LED, 1500 LUMEN	RECESSED	LIGHTOLIER	4RN-C4L-15-930-W-Z10-U-C4RDLCC	GOTHAM EVO 4 SERIES, EDISON PRICE APLUS SERIES	Yes	120	12	3000 K	UNLESS NOTED TO THE CONTRARY, PROVIDE WHITE CEILING TRIMS FOR ALL RECESSED LUMINARIES.
U1	4' LENSED LED STRIP LIGHT	SURFACE MOUNTED	METALUX	4SNLED-LD5-27SL-LW-UNV-L830-CD1-U	HE WILLIAMS, COLUMBIA LIGHTING	Yes	120	21	3000 K	
X1	GREEN LED SINGLE FACE EXIT SIGN, MIRROR BACKGROUND, ARROWS PER FLOOR PLANS	SUSPENDED	ISOLITE	ELT-AC-G-1M-AG-BA-MRC-ARROWS		Yes	120	2	0 K	COORDINATE ARROWS AND FACES WITH PLANS. REFER TO ARCHITECTURAL EGRESS AND RCP PLANS FOR MORE INFORMATION
X2	GREEN LED DOUBLE FACE EXIT SIGN, MIRROR BACKGROUND, ARROWS PER FLOOR PLANS	SUSPENDED	ISOLITE	ELT-AC-G-2M-AG-BA-MRC-ARROWS		Yes	120	2	0 K	COORDINATE ARROWS AND FACES WITH PLANS. REFER TO ARCHITECTURAL EGRESS AND RCP PLANS FOR MORE INFORMATION

ELECTRICAL SHEET NOTES - LIGHT FIXTURE SCHEDULE

1	FURNISH ALL LIGHTING FIXTURES COMPLETE WITH MOUNTING ACCESSORIES TO MEET JOB REQUIREMENTS. VERIFY FIXTURE MOUNTING AND LOCATION AGAINST ARCHITECTS PLANS, ELEVATIONS AND DETAIL DRAWINGS. EXACT LOCATION OF ALL FIXTURES SHALL BE CONFIRMED WITH THE ARCHITECT PRIOR TO ROUGHING IN. REFER TO ARCHITECT \ LIGHTING DESIGNER DRAWINGS AND/OR SPECIFICATIONS FOR ADDITIONAL FIXTURES OR REQUIREMENTS NOT SHOWN IN ELECTRICAL LIGHTING FIXTURE SCHEDULE.
2	FIXTURE SUBMITTAL PACKAGE SHALL BE IN ELECTRONIC SEARCHABLE FORMAT (NOT SCANNED) AND INCLUDE THE FOLLOWING INFORMATION: (A). SUMMARY SHEET LISTING ALL THE LIGHT FIXTURES TYPES, THE CATALOG NUMBER FOR EACH, THE QUANTITY OF EACH FIXTURE THE LAMP TYPE AND MANUFACTURER, THE BALLAST AND THE VOLTAGE. (B). EACH FIXTURE TYPE SHALL HAVE AN INDIVIDUAL SUMMARY SHEET THAT IDENTIFIES THE FOLLOWING: - FIXTURE TYPE - FIXTURE MANUFACTURER - FIXTURE CATALOG NUMBER - VOLTAGE - SYSTEM WATTAGE (LAMP AND BALLAST) - LAMP MANUFACTURER/CATALOG NUMBER - LAMP TYPE AND QUANTITY PER FIXTURE - BALLAST MANUFACTURER/CATALOG NUMBER - CONTRACTORS COMMENTS (C). EACH FIXTURE TYPE SHALL HAVE A FIXTURE SPEC SHEET THAT INCLUDES PHOTOMETRIC DATA, FOLLOWED BY A CUT SHEET OF THE LAMP WHICH IS FOLLOWED BY A CUT SHEET OF THE BALLAST. (D). PRODUCT DATA SHALL INCLUDE PHYSICAL DIMENSIONS, AND ANY SPECIAL MOUNTING DETAILS.
3	THE SPECIFIED FIXTURES HAVE BEEN SELECTED FOR PERFORMANCE AND/OR AESTHETIC REASONS. "ALTERNATE MANUFACTURER" AND "OR APPROVED EQUAL" MEANS EQUIVALENT OR SUPERIOR IN PERFORMANCE, MATERIALS, WORKMANSHIP AND APPEARANCE TO THE SPECIFIED EQUIPMENT. FIXTURE SUBSTITUTIONS SHALL ONLY BE CONSIDERED IF: (A) THE SUBMITTING AGENT MUST SUBMIT IN WRITING THE REASONS THAT THIS FIXTURE SHOULD BE CONSIDERED AN EQUAL. TO BE CONSIDERED, THE ACCEPTANCE OR REJECTION OF ANY FIXTURE SUBSTITUTION SHALL BE SOLE DETERMINATION OF THE DESIGN TEAM AND BASED ON, BUT NOT LIMITED TO: OPTICAL PERFORMANCE, CONSTRUCTION QUALITY, AESTHETICS, SHAPE, SIZE, LAMPING, FUNCTIONALITY, ACCESSORIES, LEAD TIMES, COSTS, AND FEATURES. (B) THE SUBSTITUTED FIXTURE SHALL BE ACCOMPANIED BY A CUT SHEET OF THE BASIS OF DESIGN FIXTURE FOR A SIDE BY SIDE COMPARISON. (C) IF REQUESTED BY THE DESIGN TEAM, A WORKING SAMPLE OF THE SUBSTITUTION FIXTURE MUST BE PROVIDED TO THE ARCHITECT, WITHIN 10 WORKING DAYS UPON REQUEST.
4	SERIES FIXTURES SHALL SATISFY LENGTHS AS SHOWN ON THE DRAWINGS. FIXTURE LETTERS SHOWN ONCE ON A CONTINUOUS ROW OF FIXTURES SHALL BE TYPICAL FOR THAT ROW UNLESS OTHERWISE NOTED.
5	ALL FIXTURES SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE, INDEPENDENT OF HUNG CEILING WITH ROD OR JACK CHAIN SUPPORT. STEM LENGTHS, STEM FINISHES AND STEM LOCATIONS OF ALL PENDANT FIXTURES TO BE VERIFIED AND CONFIRMED BY OWNER, ARCHITECT AND ENGINEER PRIOR TO ORDERING STEMS.
6	ALL FLUORESCENT LAMPS SHALL BE 3500°K WITH CRI OF 80 OR BETTER.
7	ALL BALLASTS USED WITH OCCUPANCY SENSORS SHALL BE PROGRAMMED START TYPE.
8	ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL TRANSFORMERS AND/OR BALLAST'S REQUIRED TO OPERATE ALL LAMPS SPECIFIED, INCLUDING REMOTE BALLAST'S AND/OR TRANSFORMERS AND THE ENCLOSURES FOR SAME. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF COMPATIBILITY BETWEEN LAMPS SPECIFIED, BALLAST'S AND/OR TRANSFORMERS SPECIFIED, AND DIMMING AND OTHER CONTROL DEVICES SPECIFIED. NOTIFY ARCHITECT AND ENGINEER CONSULTANT OF ANY INCOMPATIBILITY PRIOR TO ORDERING EQUIPMENT.
9	ELECTRICAL SUBCONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE COORDINATION OF ALL LIGHTING EQUIPMENT AND CONTROL DEVICES WITH CEILING AND WALL TYPES SPECIFIED PRIOR TO ORDERING LIGHTING EQUIPMENT.
10	PRELIMINARY AIMING OF ALL ADJUSTABLE LIGHTING EQUIPMENT SHALL BE DONE DURING INSTALLATION BY THE ELECTRICAL CONTRACTOR AS INDICATED ON THE LIGHTING PLANS / AIMING DIAGRAM, WHERE SUCH A DIAGRAM IS INCLUDED IN CONTRACT DOCUMENTS OR AS AN ADDENDUM. FINAL AIMING OF ALL ADJUSTABLE LIGHTING EQUIPMENT SHALL BE DONE BY THE ELECTRICAL CONTRACTOR AS DIRECTED BY THE ARCHITECT.
11	IN ALL FIXTURES WITH ADJUSTABLE SOCKETS, SET SOCKETS DURING INSTALLATION TO LOCATE SPECIFIED LAMP IN CORRECT RELATIONSHIP TO REFLECTOR AS RECOMMENDED BY FIXTURE MANUFACTURER.
12	INSTALL CONES IN WALL WASHERS WITH CUTOUT(S) IN INNER REFLECTOR FACING WALL(S) TO BE LIT.
13	UNLESS NOTED TO THE CONTRARY PROVIDE WHITE CEILING TRIMS FOR ALL RECESSED LUMINAIRES.
14	WHERE CONTROL DEVICES WITH FINNED HEAT SINKS, SUCH AS LUTRON "NOVA" SERIES, ARE SPECIFIED, FINS SHALL NOT BE REMOVED TO MAKE DEVICES FIT BOXES MORE CONVENIENTLY. REFER TO MANUFACTURERS SPECIFICATIONS FOR THE NUMBER OF GANG BOXES REQUIRED TO ACCOMMODATE THE SPECIFIED EQUIPMENT WITHOUT BREAKING OFF FINS.
15	RELAYS USED FOR CONTROL OF LIGHTING (IF ANY) SHALL BE LOCATED AND THE LOCATION SOUNDPROOFED SO AS TO BE INAUDIBLE FROM NORMALLY OCCUPIED AREAS WHEN ACTIVATED.
16	TO ASSURE THE MINIMIZATION OF NOISE, FIXTURES MUST BE MOUNTED SECURELY TO THE SUPPORTING STRUCTURE, AND ALL LOOSE INTERNAL PARTS MUST BE SECURELY TIGHTENED BEFORE ACTIVATING CIRCUITS. WHERE TRANSFORMERS HAVE SELECTOR SWITCHES TO ALLOW USE OF VARIOUS WATTAGE LAMPS, THESE SWITCHES MUST BE SET TO THE WATTAGE OF THE SPECIFIED LAMP.
17	FOR COVE MOUNTED LINEAR FLUORESCENT FIXTURES PROVIDE DETAILED SHOP DRAWINGS FOR EACH COVE DENOTING FIXTURE LAYOUT. COVE DIMENSIONS SHALL BE OBTAINED FROM ARCHITECTURAL DRAWINGS.
18	INCLUDE COST OF ADDING 20 ADDITIONAL EXIT SIGNS LOCATED PER DIRECTION OF THE FIRE MARSHALL DURING WALK THROUGH. COST SHALL INCLUDE PREMIUM TIME AND ALL ASSOCIATED WIRING.

MECHANICAL EQUIPMENT SCHEDULE

TAG NAME	TAG #	DESCRIPTION	TRADE	LOAD HP	LOAD W	LOAD FLA	VOLTAGE	Φ	POWER SYSTEM	CIRCUIT BREAKER	BRANCH CIRCUITRY CONDUCTORS	BRANCH CIRCUITRY GROUND	BRANCH CIRCUITRY CONDUIT	PANEL	CKT	DEVICE	FUSE	LOCATION	KEY NOTE
BCC	01	VRF BRANCH CIRCUIT CONTROLLER	HVAC	0	0	0	208	1	NORMAL	15A-2P	2-12 AWG	1-12 AWG	3/4"C	R2	95,97	-	15A	REFER TO HVAC DRAWINGS	-
BCC	100	VRF BRANCH CIRCUIT CONTROLLER	HVAC	0	0	0	208	1	NORMAL	-	-	-	-	R2	96,98	-	-	REFER TO HVAC DRAWINGS	-
BCC	200	VRF BRANCH CIRCUIT CONTROLLER	HVAC	0	0	0	208	1	NORMAL	15A-2P	2-12 AWG	1-12 AWG	3/4"C	R2	99,101	-	15A	REFER TO HVAC DRAWINGS	-
CU	01	DX SPLIT SYSTEM UNIT-OUTDOOR	HVAC	0	900	9	208	1	NORMAL	15A-2P	2-12 AWG	1-12 AWG	3/4"C	R2	87,89	-	15A	REFER TO HVAC DRAWINGS	-
DSS	01	DX SPLIT SYSTEM UNIT-INDOOR	HVAC	0	0	0	208	1	NORMAL	-	-	-	-	-	-	-	-	REFER TO HVAC DRAWINGS	-
ERV	01	ENERGY RECOVERY UNIT	HVAC	0	0	11	208	3	NORMAL	15A-3P	3-12 AWG	1-12 AWG	3/4"C	R2	100,102, 104	FDS	15A	REFER TO HVAC DRAWINGS	-
EWH	1	ELECTRIC WATER HEATER	PLBG	0	3000	14	208	1	NORMAL	20A-2P	2-12 AWG	1-12 AWG	3/4"C	R2	103,105	FDS	20A	REFER TO HVAC DRAWINGS	-
IDU	101	VRF INDOOR UNIT	HVAC	0	0	3	208	1	NORMAL	15A-2P	2-12 AWG	1-12 AWG	3/4"C	R2	106,108	FDS	15A	REFER TO HVAC DRAWINGS	-
IDU	102	VRF INDOOR UNIT	HVAC	0	0	2	208	1	NORMAL	15A-2P	2-12 AWG	1-12 AWG	3/4"C	R2	107,109	FDS	15A	REFER TO HVAC DRAWINGS	-
IDU	103	VRF INDOOR UNIT	HVAC	0	0	1	208	1	NORMAL	15A-2P	2-12 AWG	1-12 AWG	3/4"C	R2	106,108	FDS	15A	REFER TO HVAC DRAWINGS	-
IDU	104	VRF INDOOR UNIT	HVAC	0	0	2	208	1	NORMAL	15A-2P	2-12 AWG	1-12 AWG	3/4"C	R2	107,109	FDS	15A	REFER TO HVAC DRAWINGS	-
IDU	105	VRF INDOOR UNIT	HVAC	0	0	1	208	1	NORMAL	15A-2P	2-12 AWG	1-12 AWG	3/4"C	R2	110,112	FDS	15A	REFER TO HVAC DRAWINGS	-
IDU	106	VRF INDOOR UNIT	HVAC	0	0	1	208	1	NORMAL	15A-2P	2-12 AWG	1-12 AWG	3/4"C	R2	110,112	FDS	15A	REFER TO HVAC DRAWINGS	-
IDU	107	VRF INDOOR UNIT	HVAC	0	0	1	208	1	NORMAL	15A-2P	2-12 AWG	1-12 AWG	3/4"C	R2	111,113	FDS	15A	REFER TO HVAC DRAWINGS	-
IDU	108	VRF INDOOR UNIT	HVAC	0	0	2	208	1	NORMAL	15A-2P	2-12 AWG	1-12 AWG	3/4"C	R2	111,113	FDS	15A	REFER TO HVAC DRAWINGS	-
IDU	109	VRF INDOOR UNIT	HVAC	0	0	1	208	1	NORMAL	15A-2P	2-12 AWG	1-12 AWG	3/4"C	R2	114,116	FDS	15A	REFER TO HVAC DRAWINGS	-
IDU	110	VRF INDOOR UNIT	HVAC	0	0	1	208	1	NORMAL	15A-2P	2-12 AWG	1-12 AWG	3/4"C	R2	114,116	FDS	15A	REFER TO HVAC DRAWINGS	-
IDU	201	VRF INDOOR UNIT	HVAC	0	0	2	208	1	NORMAL	15A-2P	2-12 AWG	1-12 AWG	3/4"C	R2	115,117	FDS	15A	REFER TO HVAC DRAWINGS	-
IDU	202	VRF INDOOR UNIT	HVAC	0	0	1	208	1	NORMAL	15A-2P	2-12 AWG	1-12 AWG	3/4"C	R2	115,117	FDS	15A	REFER TO HVAC DRAWINGS	-
IDU	203	VRF INDOOR UNIT	HVAC	0	0	1	208	1	NORMAL	15A-2P	2-12 AWG	1-12 AWG	3/4"C	R2	118,120	FDS	15A	REFER TO HVAC DRAWINGS	-
IDU	204	VRF INDOOR UNIT	HVAC	0	0	2	208	1	NORMAL	15A-2P	2-12 AWG	1-12 AWG	3/4"C	R2	118,120	FDS	15A	REFER TO HVAC DRAWINGS	-
IDU	205	VRF INDOOR UNIT	HVAC	0	0	2	208	1	NORMAL	15A-2P	2-12 AWG	1-12 AWG	3/4"C	R2	119,121	FDS	15A	REFER TO HVAC DRAWINGS	-
IDU	206	VRF INDOOR UNIT	HVAC	0	0	2	208	1	NORMAL	15A-2P	2-12 AWG	1-12 AWG	3/4"C	R2	119,121	FDS	15A	REFER TO HVAC DRAWINGS	-
IDU	207	VRF INDOOR UNIT	HVAC	0	0	1	208	1	NORMAL	15A-2P	2-12 AWG	1-12 AWG	3/4"C	R2	122,124	FDS	15A	REFER TO HVAC DRAWINGS	-
IDU	208	VRF INDOOR UNIT	HVAC	0	0	2	208	1	NORMAL	15A-2P	2-12 AWG	1-12 AWG	3/4"C	R2	122,124	FDS	15A	REFER TO HVAC DRAWINGS	-
IDU	209	VRF INDOOR UNIT	HVAC	0	0	1	208	1	NORMAL	15A-2P	2-12 AWG	1-12 AWG	3/4"C	R2	123,125	FDS	15A	REFER TO HVAC DRAWINGS	-
IDU	210	VRF INDOOR UNIT	HVAC	0	0	2	208	1	NORMAL	15A-2P	2-12 AWG	1-12 AWG	3/4"C	R2	123,125	FDS	15A	REFER TO HVAC DRAWINGS	-
ODU	01	VRF OUTDOOR UNIT	HVAC	0	0	30	480	3	NORMAL	60A-3P	3-8 AWG	1-10 AWG	3/4"C	H	2,4,6	FDS	40A	REFER TO HVAC DRAWINGS	-
ODU	02	VRF OUTDOOR UNIT	HVAC	0	0	30	480	3	NORMAL	60A-3P	3-8 AWG	1-10 AWG	3/4"C	H	7,9,11	FDS	40A	REFER TO HVAC DRAWINGS	-
ODU	03	VRF OUTDOOR UNIT	HVAC	0	0	30	208	3	NORMAL	45A-3P	3-8 AWG	1-10 AWG	3/4"C	R2	88,90,92	FDS	45A	REFER TO HVAC DRAWINGS	-
RP	01	RECIRCULATION PUMP	PLBG	0.1	0	1	120	1	NORMAL	15A-1P	2-12 AWG	1-12 AWG	3/4"C	R2	94	SWITCH	1A	REFER TO PLBG DRAWINGS	-

ELECTRICAL SHEET NOTES - MECHANICAL EQUIPMENT SCHEDULE

1	REFER TO THE MECHANICAL, PLUMBING AND FIRE PROTECTION DRAWINGS AND SPECIFICATIONS FOR THE LOCATIONS OF ALL EQUIPMENT REQUIRING AN ELECTRICAL CONNECTION. PROVIDE FLEXIBLE CONNECTIONS TO ASSOCIATED EQUIPMENT.
2	LOCATE DISCONNECT SWITCHES, COMBINATION CONTROLLERS AND VFD`S AS CLOSE AS PRACTICABLE TO EQUIPMENT SERVED, AND IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE. CONTROL EQUIPMENT NOT WITHIN SITE OF THE MOTOR SHALL BE PROVIDED WITH A LOCAL FUSED DISCONNECT WITH ENCLOSURE PROPERLY RATED FOR THE APPLICATION. ELECTRICAL EQUIPMENT SHALL BE RATED FOR THE MAXIMUM AVAILABLE FAULT CURRENT, AND SHALL BE RATED IN HORSEPOWER TO MEET THE REQUIREMENTS OF THE EQUIPMENT SERVED.
3	PROVIDE NAMEPLATE FOR EACH CONTROLLER AND/OR DISCONNECT MOUNTED ON FRONT OF UNIT ENCLOSURE. NAMEPLATE SHALL INDICATE EQUIPMENT NAME (I.E. AHU-4), CONTROLLER DESIGNATION (I.E. VFD, STARTER, ETC), EQUIPMENT ELECTRICAL CHARACTERISTICS (I.E. VOLTAGE, PHASE, HP), SOURCE FED FROM (I.E. FED FROM PANEL M432) AND LOCATION OF SOURCE (I.E. LOCATED IN ELEC RM 142).
4	REFER TO POWER PLANS FOR ALL FAN COIL, FAN BOX, AND UNIT HEATER BRANCH CIRCUIT WIRING INFORMATION.
5	AQUASTAT FOR WATER HEATER CIRCULATION PUMP, FURNISHED AND INSTALLED BY PLUMBING CONTRACTOR, WIRED BY ELECTRICAL CONTRACTOR.

MECHANICAL EQUIPMENT SCHEDULE DEVICE LEGEND

ABBREVIATION	DESCRIPTION
CP	CONTROL PANEL: EQUIPMENT HAVING A CONTROL PANEL SHALL BE FURNISHED AND INSTALLED BY DIVISION 22 OR 23 AND WIRED BY DIVISION 26.
CSD	COMBINATION FUSED DISCONNECT & STARTER: EQUIPMENT REQUIRING A STARTER SHALL BE PROVIDED WITH A COMBINATION STARTER/FUSED DISCONNECT BY DIVISION 26. THE ELECTRICAL CONTRACTOR SHALL INSTALL AND WIRE THE COMBINATION STARTER/FUSED DISCONNECT AND CONNECT TO MOTOR.
FDS	FUSED DISCONNECT SWITCH: UNLESS OTHERWISE INDICATED, ALL FUSED DISCONNECT SWITCHES ARE PROVIDED BY DIVISION 26. COORDINATE FINAL FUSE SELECTION WITH THE EQUIPMENT PROVIDED.
JB	JUNCTION BOX: UNLESS OTHERWISE INDICATED, JUNCTION BOX AND EQUIPMENT CONNECTION PROVIDED BY DIVISON 26.
MMS	MANUAL MOTOR STARTER: THERMAL OVERLOAD AND EQUIPMENT CONNECTION PROVIDED BY DIV. 26.
VFD	VARIABLE FREQUENCY DRIVE BY DIV 26: UNLESS OTHERWISE INDICATED, VARIABLE FREQUENCY DRIVES PROVIDED BY DIV. 26. PROVIDE CONNECTION FROM VFD TO EQUIPMENT IN SEPARATE CONDUIT FROM VFD FEEDER. REFER TO VFD SPECIFICATION FOR ADDITIONAL INFORMATION. COORDINATE LOCATION OF VFD WITH MECHANICAL CONTRACTOR AND FIELD CONDITIONS.
VFD-23	VARIABLE FREQUENCY DRIVE BY DIV 23: VFD'S SHOWN IN THIS SCHEDULE DENOTED WITH "VFD-23" INDICATES VFD PROVIDED WITH EQUIPMENT. ELECTRICAL CONTRACTOR SHALL PROVIDE FUSED DISCONNECT SWITCH AHEAD OF VFD. COORDINATE LOCATION OF VFD WITH MECHANICAL CONTRACTOR AND FIELD CONDITIONS.
VFD-23-LD	VARIABLE FREQUENCY DRIVE BY DIV 23 LOCATED REMOTE FROM EQUIPMENT WITH LOCAL FUSED DISCONNECT AT EQUIPMENT: VFD'S SHOWN IN THIS SCHEDULE DENOTED WITH "VFD-23-LD" INDICATES VFD FURNISHED WITH EQUIPMENT, INSTALLED AND WIRED IN A REMOTE LOCATION BY DIVISION 26. ELECTRICAL CONTRACTOR SHALL PROVIDE FUSED DISCONNECT SWITCH AT REMOTE EQUIPMENT. DISCONNECT SWITCHES SERVED BY A VFD, SHALL HAVE ELECTRICAL INTERLOCK KIT FOR INTERFACE TO VFD SHUTDOWN. A PIVOT ARM OPERATES FROM THE SWITCH MECHANISM, BREAKING THE CONTROL CIRCUIT BEFORE THE MAIN SWITCH BLADES BREAK. PROVIDE, IN ADDITION TO THE MOTOR FEED, 2#12 IN A 3/4" CONDUIT FROM THE DISCONNECT TO THE VFD. COORDINATE LOCATION OF VFD WITH MECHANICAL CONTRACTOR AND FIELD CONDITIONS.
VFD-LD	VARIABLE FREQUENCY DRIVE BY DIV 26 LOCATED REMOTE FROM EQUIPMENT WITH LOCAL FUSED DISCONNECT AT EQUIPMENT: UNLESS OTHERWISE INDICATED, VARIABLE FREQUENCY DRIVES PROVIDED BY DIV. 26. PROVIDE CONNECTION FROM VFD TO EQUIPMENT IN SEPARATE CONDUIT FROM VFD FEEDER. REFER TO VFD SPECIFICATION FOR ADDITIONAL INFORMATION. EQUIPMENT WITH VFD NOT WITHIN SIGHT OF THE ASSOCIATED EQUIPMENT SHALL BE PROVIDED WITH A LOCAL FUSED DISCONNECT. DISCONNECT SWITCHES LOCATED AT MOTORS, SERVED BY A VFD, SHALL HAVE ELECTRICAL INTERLOCK KIT FOR INTERFACE TO VFD SHUTDOWN. A PIVOT ARM OPERATES FROM THE SWITCH MECHANISM, BREAKING THE CONTROL CIRCUIT BEFORE THE MAIN SWITCH BLADES BREAK. PROVIDE, IN ADDITION TO THE MOTOR FEED, 2#12IN A 3/4" CONDUIT FROM THE DISCONNECT TO THE VFD. COORDINATE LOCATION OF VFD WITH MECHANICAL CONTRACTOR AND FIELD CONDITIONS.

ELECTRICAL KEY NOTES - MECHANICAL EQUIPMENT SCHEDULE

KEY NOTE	DESCRIPTION
1	INDOOR UNIT POWERED BY OUTDOOR CONDENSER, REFER TO MECHANICAL AND POWER PLANS FOR LOCATIONS, COORDINATE CONDUIT, WIRING, AND REQUIREMENTS WITH MANUFACTURER

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL
R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210

P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

Digitally signed by Robert Chaves
REGISTERED PROFESSIONAL ENGINEER
58389 ROBERT CHAVES
ARIZONA, U.S.A.
12/20/2024

General Notes:

Project Title:
Fidelity INVESTMENTS
Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:
Project North
True North

Project No.: C0115.00

Drawing Sheet Title:
ELECTRICAL LIGHTING FIXTURE & MECHANICAL SCHEDULES

Drawing Sheet Number:
E-702

Owner's Branch No.:
134

PLUMBING NOTES - GENERAL

1. GENERAL NOTES, SYMBOLS LIST AND DETAILS ARE APPLICABLE TO ALL DRAWINGS MARKED P
2. DRAWINGS ARE DIAGRAMATIC: DETERMINE LOCATIONS OF SYSTEMS AND COMPONENTS IN FIELD.
3. DIMENSIONS SHOWN ON PLAN ARE HORIZONTAL. DIMENSIONS SHOWN IN ELEVATION ARE VERTICAL.
4. DETERMINE EXACT LOCATIONS IF EXISTING UTILITIES IN FIELD, WHETHER OR NOT SHOWN ON DRAWINGS. EXERCISE CAUTION AND IDENTIFY LOCATIONS OF UNMARKED UTILITY LINES AS NECESSARY TO PERFORM WORK OF THIS SECTION.
5. ALL PLUMBING WORK SHALL BE IN ACCORDANCE WITH THE LATEST PLUMBING CODE AND ALL APPLICABLE LOCAL CODES.
6. IT SHALL BE THE RESPONSABILITY OF THIS CONTRACTOR TO COORDINATE THE WORK WITH THAT OF ALL OTHER TRADES, INCLUDING BUT NOT LIMIT TO, ELECTRICAL, HVAC, PROCESS PIPING, SPRINKLER, PLUMBING, STRUCTURAL AND GENERAL ARCHITECTURE.
7. ANY INTERFERENCE SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE, AND SHALL BE RESOLVED PRIOR TO THE INSTALLATION OF THE WORK.
8. NO WORK SHALL BE INSTALLED IN VIOLATION OF ANY GOVERNING CODES. ANY WORK SHOWN ON THE DRAWINGS WHICH IS IN VIOLATION OF SUCH CODES SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE AND SHALL BE RESOLVED PRIOR TO THE INSTALLATION OF THE WORK.
9. ALL PIPING PENETRATING CEILINGS AND WALL SHALL BE INSTALLED WITH ESCUTCHEONS AT THE PENETRATON. ALL PIPING PENETRATING EXTERIOR WALLS AND ROOFS SHALL BE FLASHED IN AN APPROVED MANNER AND SHALL BE SEALED WEATHERTIGHT. PIPING PENETRATING FIRE RATED PARTITIONS SHALL BE PROVIDED WITH FIRE RATED SEALS AS REQUIRED BY LOCAL CODE AUTHORITY. (SEE DETAILS)
10. MANUFACTURERS' MODEL NUMBERS ARE SPECIFIED SOLELY TO ESTABLISH STANDARDS OF QUALITY FOR PERFORMANCE AND MATERIALS.
11. INSTALLATION SHALL ADHERE TO MANUFACTURERS' RECOMMENDATIONS.
12. PROVIDE ACCESS PANELS TO SYSTEM COMPONENTS THAT ARE CONCEALED AND REQUIRE PERIODIC SERVICE.
13. TOPS OF ALL FLOOR DRAINS SHALL BE SET FLUSH WITH FINISHED FLOOR. ALL PIPING ABOVE GRADE SHALL BE PROPERLY SUPPORTED BY THE BUILDING STRUCTURE AND SHALL NOT REST ON CEILING STRUCTURE OR COMPONENTS.
14. ALL PLUMBING EQUIPMENT, PIPING, INSULATION, ETC., INSTALLED IN HVAC PLENUM SPACES SHALL MEET CODE REQUIREMENTS FOR SMOKE AND COMBUSTIBILITY.
15. PROVIDE SHUTOFF VALVES ON ALL BRANCH PIPING AND ON ALL SUPPLIES TO INDIVIDUAL FIXTURES AND EQUIPMENT. PROVIDE BALL VALVES ON ALL WATER MAIN BRANCHES IN CORRIDORS AND WHERE INDICATED ON DRAWINGS.
16. PROVIDE CLAMPS, OFFSETS, EXPANSION JOINTS, ANCHORS AND GUIDES AS NECESSARY TO PREVENT STRESS ON PIPING.
17. PROVIDE VENTS AT HIGHT POINTS IN PIPING SYSTEMS AND DRAIN VALVES AT LOW POINTS.
18. PROVIDE GAUGE FITTINGS AND THERMOMETER WELLS AT HOT WATER SUPPLY AND RETURN BRANCHES AND AT PUMP INLETS AND OUTLETS.
19. PITCH PRESSURE PIPING IN DIRECTION OF FLOW.
20. VERIFY EXACT SIZES, LOCATIONS, INVERTS AND ELEVATIONS PRIOR TO RUNNING ANY PIPING. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF ALL FIXTURES AND EQUIPMENT. REFER TO KITCHEN LAYOUT DRAWING FOR EXACT LOCATION AND ROUGHT-IN REQUIREMENTS OF ALL KITCHEN FIXTURES AND EQUIPMENT.

PLUMBING ABBREVIATIONS - DOMESTIC FIXTURE

BT	BATH TUB
DF	DRINKING FOUNTAIN
EWC	ELECTRIC WATER COOLER
HB	HOSE BIBB W/ VACUUM BREAKER
JS	JANITOR SINK
L	LAVATORY
MSB	MOP SERVICE BASIN
SH	SHOWER
SK	SINK
SS	SERVICE SINK
UR	URINAL
WC	WATER CLOSET
WH	WALL HYDRANT

PLUMBING ABBREVIATIONS - DOMESTIC WATER

140F HW	140° HOT WATER SUPPLY
140F HWR	140° HOT WATER RETURN
CW	COLD WATER
CWR	CHILLED DRINKING WATER RETURN
CWS	CHILLED DRINKING WATER SUPPLY
HW	HOT WATER
HWR	HOT WATER RETURN
NPCW	NON-POTABLE COLD WATER
W	WATER SERVICE

PLUMBING ABBREVIATIONS - INSTRUMENTS

FM	FLOW METER
FS	FLOW SWITCH
PI	PRESSURE INDICATOR
RM	RESISTIVITY METER

PLUMBING ABBREVIATIONS - DRAINAGE

CI	CAST IRON
CO	CLEANOUT
FD	FLOOR DRAIN
SAN	SANITARY
SS	SOIL STACK
TD	TRENCH DRAIN
V	VENT
VS	VENT STACK
W	WASTE
W & T	WASTE & TRAP
W & V	WASTE & VENT
WS	WASTE STACK

PLUMBING ABBREVIATIONS - MATERIAL

CI	CAST IRON
CLDI	CEMENT LINED DUCTILE IRON
GALV	GALVANIZED
GWB	GYPSUM WALL BOARD
PP	POLYPROPYLENE
PVC	POLYVINYL CHLORIDE
RCP	REINFORCED CONCRETE PIPE
ST.ST	STAINLESS STEEL

PLUMBING - DRAWING LIST

SHEET NUMBER	SHEET NAME
P-001	PLUMBING LEGEND AND GENERAL NOTES
P-002	PLUMBING SPECIFICATIONS
P-003	PLUMBING SPECIFICATIONS
P-201	PLUMBING - LEVEL 1 SANITARY PIPING PLAN
P-202	PLUMBING - LEVEL 1 DOMESTIC WATER PIPING PLAN
P-301	PLUMBING - SCHEDULES AND DETAILS

PLUMBING ABBREVIATIONS - GENERAL

ABB.	ABBREVIATION
AC	AIR CHAMBER
AFF	ABOVE FINISH FLOOR
AHJ	AUTHORITY HAVING JURISDICTION
AP	ACCESS PANEL
ARCH	ARCHITECT
AVB	ATMOSPHERIC VACUUM BREAKER
BLDG	BUILDING
BOP	BOTTOM OF PIPE
BOR	BOTTOM OF RISER
BV	BALL VALVE
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CI	CAST IRON
CL	CENTER LINE
CLDI	CEMENT LINED DUCTILE IRON
CLG	CEILING
COL	COLUMN
CONT	CONTINUATION
CP	CHROME PLATED
CP-#	HOT WATER CIRCULATING PUMP #
CTE	CONNECT TO EXISTING
CV	CHECK VALVE
DIA	DIAMETER
DN	DOWN
DWG	DRAWING
EL	ELEVATION
EQ	EQUAL
ETBR	EXISTING TO BE REMOVED
ETR	EXISTING TO REMAIN
EWH	ELECTRIC WATER HEATER
FC	FAIL CLOSED
FFE	FINISH FLOOR ELEVATION
FO	FAIL OPEN
FT	FEET
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GPD	GALLONS PER DAY
GPM	GALLONS PER MINUTE
GV	GATE VALVE
GWH	GAS WATER HEATER
HC	HANDICAPPED ACCESSIBLE
HP	HORSEPOWER
HZ	HERTZ
ID	INSIDE DIAMETER
IN	INCHES
INV	INVERT
KW	KILOWATTS
MAX	MAXIMUM
MECH	MECHANICAL
MEZZ	MEZZANINE
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MTD	MOUNTED
MV	MIXING VALVE
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
No.	NUMBER
NTS	NOT TO SCALE
NUM	NUMBER
OC	ON CENTER
OD	OUTSIDE DIAMETER OR OVERFLOW DRAIN
OS&Y	OUTSIDE SCREW & YOKE
PC	PLUMBING CONTRACTOR
PH	PHASE
POS	PROVIDED UNDER OTHER SECTION
PP	POLYPROPYLENE
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PVB	PRESSURE VACUUM BREAKER
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
RCP	REINFORCED CONCRETE PIPE
REQ'D	REQUIRED
RPBP	REDUCED PRESSURE BACKFLOW PREVENTOR
RPM	REVOLUTIONS PER MINUTE
SCH	SCHEDULE
SF	SQUARE FOOT
ST.ST.	STAINLESS STEEL
SWH	STEAM WATER HEATER
TOR	TOP OF RISER
TP	TRAP PRIMER
TYP	TYPICAL
V/V	VALVE IN VERTICAL
VTR	VENT THROUGH THE ROOF
W/	WITH
WHA	WATER HAMMER ARRESTOR
WM	WATER METER

SYMBOLS - GENERAL

	AUTO-VENT
BF	BLIND FLANGE
	CONNECT TO EXISTING
	CAP OR END OF PIPE
	CONCENTRIC REDUCER
	CONCENTRIC REDUCER
	DIRECTION OF FLOW
	DIRECTION OF SLOPE
	ECCENTRIC REDUCER
	ECCENTRIC REDUCER
	ECCENTRIC REDUCER
	EXPANSION JOINT
	EXPANSION JOINT
	ETBR/DEMOLISH
	FLEXIBLE CONNECTION
	HEAT TRACE
	HOSE BIBB
HC	HOSE CONNECTION (GENERIC)
	IN-LINE MIXER
	PIPE ANCHOR
	PIPE BREAK
	PIPE FITTING DOWN OR DROP
	PIPE FITTING TEE DOWN
	PIPE FITTING UP
	PIPE SLEEVE OR BEAM PENETRATION
	QUICK DISCONNECT - FEMALE
	SIGHT GLASS
	STRAINER
	UNION FITTING
	VACUUM RELIEF
	WALL HYDRANT
	WATER HAMMER ARRESTOR
	WATERPROOF SLEEVE
	Y STRAINER W/ PLUGGED BLOWDOWN
	Y STRAINER W/ VALVE

SYMBOLS - DRAINAGE

	AREA DRAIN
	BACK WATER VALVE
	CLEANOUT
	FLOOR OR GRADE CLEANOUT
	FLOOR DRAIN
	P TRAP/OPEN END DRAIN
	ROOF DRAIN (PRIMARY) / PLANTER DRAIN
	ROOF DRAIN (OVERFLOW)
	TRENCH DRAIN

SYMBOLS - VALVES

	ANGLE VALVE
	BALL VALVE
	BALANCING VALVE ASSEMBLY
	BUTTERFLY VALVE
	CHECK VALVE
	DIAPHRAGM VALVE (CLOSED)
	DIAPHRAGM VALVE (OPEN)
	DOUBLE CHECK VALVE
	FOUR WAY VALVE
	FUSIBLE LINK VALVE
	GAS COCK
	GATE VALVE (CLOSED)
	GATE VALVE (OPEN)
	KNIFE GATE VALVE
	MIXING VALVE
	NEEDLE VALVE
	NEEDLE VALVE
	OS&Y VALVE
	PINCH VALVE
	POST VALVE
	PRESSURE REDUCING VALVE
	REDUCED PRESSURE BACKFLOW PREVENTOR
	SOLENOID VALVE
	TEMP. & PRESSURE RELIEF VALVE
	THREE WAY BALL VALVE
	THREE WAY CONTROL VALVE
	TWO WAY CONTROL VALVE
	VALVE IN THE VERTICAL

SYMBOLS - INSTRUMENTS

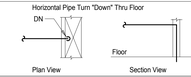
FM	FLOW METER
FS	FLOW SWITCH
	PRESSURE GAUGE W/BALL VALVE
RM	RESISTIVITY METER
	TEMPERATURE GAUGE W/BALL VALVE

PIPE LINETYPES

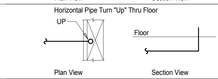
	PIPE (EXISTING)
	PIPE (ABOVE GRADE)
	VENT PIPE (ABOVE GRADE)
	PIPE (BELOW GRADE)
	VENT PIPE (BELOW GRADE)

PIPE DIRECTION

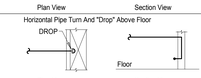
Horizontal Pipe Turn "Down" Thru Floor



Horizontal Pipe Turn "Up" Thru Floor



Horizontal Pipe Turn And "Drop" Above Floor



Vertical Pipe "Rise" To Above Ceiling

Vertical Pipe Thru Floor "Up & Dn"

REFERENCE

X / X-#	X: DETAIL DESIGNATION NUMBER X-#: DETAIL DESIGNATION DRAWING
XX: # / X-#	XX: RISER SERVICE DESIGNATION #: RISER NUMBER DESIGNATION X-#: RISER DESIGNATION DRAWING
X / X-#	X: SECTION DESIGNATION LETTER X-#: SECTION DESIGNATION DRAWING
XX: # / X-#	XX: EQUIP. SERVICE DESIGNATION #: EQUIP. NUMBER DESIGNATION X-#: EQUIP. DESIGNATION DRAWING PLBG EQUIPMENT TAG FOR EQUIPMENT REQUIRING AN ELECTRICAL CONNECTION
XX: # / X-#	XX: EQUIP. SERVICE DESIGNATION #: EQUIP. NUMBER DESIGNATION X-#: EQUIP. DESIGNATION DRAWING PLBG EQUIPMENT TAG
NUM	KEYNOTE DESIGNATION
	HANDICAPPED ACCESSIBLE (HC)

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL
R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210

P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

Developed by

12/19/2024

General Notes:

Project Title:

Fidelity INVESTMENTS

Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project No.: C0115.00

Drawing Sheet Title:

PLUMBING LEGEND AND GENERAL NOTES

Drawing Sheet Number:

P-001

Owner's Branch No.:

134

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PART 1 - GENERAL

1.1 SUMMARY

A. REQUIREMENTS OF THIS SECTION APPLY TO DIVISION 22 SECTIONS. FURNISH SERVICES, SKILLED AND COMMON LABOR, AND APPARATUS AND MATERIALS REQUIRED FOR THE COMPLETE INSTALLATION AS SHOWN AND WITHIN THE INTENT OF THE DRAWINGS AND THESE SPECIFICATIONS. AND IN ACCORDANCE WITH REQUISITE LOCAL PLUMBING CODES. THE FOLLOWING REQUIREMENTS ARE MINIMUM:

1. PREPARE COORDINATION DRAWINGS, SHOP DRAWINGS, SUBMITTALS, AS-BUILT DRAWINGS, AND OPERATING AND MAINTENANCE INSTRUCTIONS.
2. DETERMINE ITEMS AND QUANTITIES REQUIRED.
3. PROVIDE COMPLETE, CONTINUOUS, OPERATIONAL, AND FUNCTIONING SYSTEMS.
4. FULLY COORDINATE WITH WORK OF OTHER SECTIONS, INCLUDING FIELD VERIFICATION OF ELEVATIONS, DIMENSIONS, CLEARANCE, AND ACCESS.
5. REPAIR OF ALL DAMAGE DONE TO PREMISES AS A RESULT OF THIS INSTALLATION AND REMOVAL OF DEBRIS LEFT BY THOSE ENGAGED IN THIS INSTALLATION.
6. RIGGING, HOISTING, TRANSPORTATION, AND ASSOCIATED WORK NECESSARY FOR PLACEMENT OF EQUIPMENT IN THE FINAL LOCATION SHOWN.
7. DISASSEMBLY AND RE-ASSEMBLY OF EQUIPMENT FURNISHED UNDER THIS SECTION, SHOULD THIS BE REQUIRED IN ORDER TO MOVE EQUIPMENT INTO FINAL LOCATION SHOWN ON THE DRAWINGS.
8. TEMPORARY SCAFFOLDING NECESSARY FOR PERFORMANCE OF THE WORK IN THIS DIVISION.
9. CUTTING AND CORE DRILLING REQUIRED
10. PIPE SLEEVES FOR ALL HOLES IN WALLS, FLOORS, AND CEILINGS, AND CUTTING OF FLOOR SLABS AND SLABS ON GRADE.
11. WATERPROOFING WHERE NECESSARY FOR INSTALLATION UNDER THIS DIVISION.
12. COOPERATION WITH AND ASSISTANCE TO THE BUILDING MANAGEMENT SYSTEM CONTRACTOR AS REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL PLUMBING SYSTEM.
13. COUNTERFLASHING OF ROOF PENETRATIONS FOR WORK OF DIVISION 22.
14. SIZES, AND LOCATIONS FOR INSTALLATION OF ANY CURBS AND PADS FOR WORK OF DIVISION 22.
15. TEMPORARY AND PERMANENT STANDS AND SUPPORTS FOR EQUIPMENT REQUIRING THEM INCLUDING VIBRATION ISOLATION.
16. TEMPORARY PROTECTION OF EXISTING INSTALLATION.
17. PIPING, VALVES AND EQUIPMENT IDENTIFICATION.
18. FIRESTOPPING OF PENETRATIONS OF PIPING, THROUGH WALLS, FLOORS, AND CEILING ASSEMBLIES.
19. TEMPORARY UTILITIES AS REQUIRED TO INSTALL WORK ON DIVISION 22 INCLUDING LIGHTING, WATER, GAS, ELECTRICITY, ETC.
20. FEES, PERMITS, INSPECTIONS, TAXES, AND APPROACH FROM AGENCIES THAT HAVE JURISDICTION OVER INSTALLATION OF DIVISION 22. GIVE NOTICES, FILE PLANS, OBTAIN PERMITS AND LICENSES, PAY FEES AND BACK CHARGES, AND OBTAIN NECESSARY APPROVALS FROM AUTHORITIES THAT HAVE JURISDICTION. PERFORM WORK IN ACCORDANCE WITH ALL LEGAL REQUIREMENTS AND WITH SPECIFICATIONS,, DRAWINGS, ADDENDA AND CHANGE ORDERS, ALL OF WHICH ARE PART OF CONTRACT DOCUMENTS.
21. POTABLE WATER DISINFECTION REPORT
22. PARTICIPATION IN AND COORDINATION WITH THE COMMISSIONING PROCESS.
23. WARRANTY.

1.2 DEFINITIONS

A. "PROVIDE" MEANS "FURNISH AND INSTALL."

B. "FURNISH" MEANS "TO PURCHASE AND DELIVER TO THE PROJECT SITE COMPLETE WITH EVERY NECESSARY APPURTENANCE AND SUPPORT,"

C. "INSTALL" MEANS "TO UNLOAD AT THE DELIVERY POINT AT THE SITE AND PERFORM EVERY OPERATION NECESSARY TO ESTABLISH SECURE MOUNTING AND CORRECT OPERATION AT THE PROPER LOCATION IN THE PROJECT.

D. 'POS' MEANS PROVIDED UNDER OTHER SPECIFICATION SECTION.

E. "ARCHITECT" MEANS THE "PRIME DESIGN CONSULTANT." IF R.G. VANDERWEIL ENGINEERS, LLP IS NOT THE PRIME DESIGN CONSULTANT, THE ARCHITECT MAY AUTHORIZE R.G. VANDERWEIL ENGINEERS, LLP TO ACT ON THE ARCHITECT'S BEHALF IN MATTERS CONCERNING THE ALL SECTIONS OF SPECIFICATIONS.

1.3 CONTRACT DOCUMENTS

A. REFER TO ARCHITECTURAL, FIRE PROTECTION, PLUMBING, HVAC, ELECTRICAL, STRUCTURAL, TELE/DATA AND ALL OTHER DRAWINGS AND OTHER SECTIONS THAT INDICATE TYPES OF CONSTRUCTION IN WHICH WORK SHALL BE INSTALLED AND WORK OF OTHER TRADES WITH WHICH WORK OF THIS SECTION MUST BE COORDINATED

B. EXCEPT WHERE MODIFIED BY A SPECIFIC NOTATION TO THE CONTRARY, IT SHALL BE UNDERSTOOD THAT THE INDICATION AND/OR DESCRIPTION OF AN ITEM, IN THE DRAWINGS OR SPECIFICATIONS OR BOTH, CARRIES WITH IT THE INSTRUCTION TO FURNISH AND INSTALL THE ITEM, REGARDLESS OF WHETHER OR NOT THIS INSTRUCTION IS EXPLICITLY STATED AS PART OF THE INDICATION OR DESCRIPTION.

C. ITEMS REFERRED TO IN SINGULAR NUMBER IN CONTRACT DOCUMENTS SHALL BE PROVIDED IN QUANTITIES NECESSARY TO COMPLETE WORK.

D. ELIMINATE THIS PARAGRAPH - SEE ITEM 3.2 IS REDUNDANT A.

E. DATA THAT MAY BE FURNISHED ELECTRONICALLY (ON COMPACT DISK (CD), ELECTRONIC MAIL, OR OTHERWISE) IS DIAGRAMMATIC. ELECTRONICALLY FURNISHED INFORMATION IS SUBJECT TO THE SAME LIMITATION OF PRECISION DESCRIBED ABOVE. IF FURNISHED, ELECTRONIC DATA IS FOR CONVENIENCE AND GENERALIZED REFERENCE, AND SHALL NOT SUBSTITUTE FOR SEALED OR STAMPED CONSTRUCTION DOCUMENTS.

1.4 ELECTRONIC CAD FILES

A. ELECTRONIC CAD FILES FOR PLUMBING DRAWINGS WILL BE FURNISHED BY ENGINEER AT CONTRACTOR'S REQUEST. ENGINEER WILL FORWARD THE 'RELEASE OF LIABILITY' FORM TO CONTRACTOR FOR COMPLETION/SIGNATURE. CONTRACTOR TO RETURN FORM TO ENGINEER PRIOR TO ENGINEER'S ISSUANCE OF ELECTRONIC CAD FILES.

1.5 DISCREPANCIES IN DOCUMENTS

A. WHERE DRAWINGS OR SPECIFICATIONS CONFLICT OR ARE UNCLEAR, SUBMIT CLARIFICATION REQUEST IN WRITING BEFORE AWARD OF CONTRACT. OTHERWISE, ARCHITECT'S INTERPRETATION OF CONTRACT DOCUMENTS SHALL BE FINAL, AND NO ADDITIONAL COMPENSATION SHALL BE PERMITTED DUE TO DISCREPANCIES OR UN-CLARITIES THUS RESOLVED.

B. WHERE DRAWINGS OR SPECIFICATIONS DO NOT COINCIDE WITH MANUFACTURERS' RECOMMENDATIONS OR WITH APPLICABLE CODES AND STANDARDS, SUBMIT CLARIFICATION REQUEST IN WRITING BEFORE INSTALLATION. OTHERWISE, MAKE CHANGES IN INSTALLED WORK REQUIRED FOR COMPLIANCE WITH MANUFACTURER INSTRUCTIONS OR CODES AND STANDARDS WITHIN CONTRACT PRICE.

C. THIS IS STATED IN PART 3IT IS THE REQUIREMENT OF THESE CONTRACT DOCUMENTS TO REQUIRE PROVISION OF SYSTEMS AND COMPONENTS THAT ARE FULLY COMPLETE AND OPERATIONAL AND FULLY SUITABLE FOR THE INTENDED USE. THERE MAY BE SITUATIONS IN THE DOCUMENTS WHERE INSUFFICIENT INFORMATION EXISTS TO PRECISELY DESCRIBE A CERTAIN COMPONENT OR SUBSYSTEM, OR THE ROUTING OF A COMPONENT OR ITS COORDINATION WITH OTHER BUILDING ELEMENTS. IN THESE CASES, WHERE NOTIFICATION REQUIRED BY PARAGRAPH (A) ABOVE HAS NOT BEEN SUBMITTED, PROVIDE THE SPECIFIC COMPONENT OR SUBSYSTEM WITH ALL PARTS NECESSARY FOR THE INTENDED USE, FULLY COMPLETE AND OPERATIONAL, AND INSTALLED IN WORKMANLIKE MANNER EITHER CONCEALED OR EXPOSED IN ACCORDANCE WITH THE DESIGN INTENT.

D. IN CASES COVERED BY PARAGRAPH (C) ABOVE, WHERE THE CONTRACTOR BELIEVES ENGINEERING GUIDANCE IS NEEDED THE CONTRACTOR SHALL, SUBMIT A SKETCH IDENTIFYING PROPOSED SOLUTION. ARCHITECT SHALL REVIEW, NOTE IF NECESSARY, AND APPROVE THE SKETCH.

E. WHERE DISCREPANCIES EXIST BETWEEN THE MECHANICAL, PLUMBING, FIRE PROTECTION, ELECTRICAL AND TELE/DATA DRAWINGS IN REGARDS TO WHAT TRADE OWNS EQUIPMENT SUCH AS DISCONNECTS, STARTERS, ETC.,, SUBMIT RFI TO THE ARCHITECT REGARDING SUCH DISCREPANCY.

1.6 MODIFICATIONS IN LAYOUT

A. TO OBTAIN THE INTENDED AESTHETICS IN SPACES USED BY BUILDING OCCUPANTS, PRIOR TO INSTALLATION OF VISIBLE MATERIAL AND EQUIPMENT (INCLUDING ACCESS PANELS), REVIEW ARCHITECTURAL DRAWINGS FOR DESIRED LOCATIONS AND WHERE NOT DEFINITIVELY INDICATED, REQUEST INFORMATION FROM ARCHITECT.

B. CHECK CONTRACT DRAWINGS, AS WELL AS SHOP DRAWINGS, TO VERIFY AND COORDINATE SPACES IN WHICH WORK OF THIS SECTION WILL BE INSTALLED.

C. MAINTAIN MAXIMUM HEADROOM AT ALL LOCATIONS. ALL PIPING, DUCT, CONDUIT, AND ASSOCIATED COMPONENTS TO BE AS TIGHT TO UNDERSIDE OF STRUCTURE AS POSSIBLE.

D. MAKE REASONABLE MODIFICATIONS IN LAYOUT AND COMPONENTS NEEDED TO PREVENT CONFLICT WITH WORK OF OTHER TRADES . SYSTEMS SHALL BE RUN IN A RECTILINEAR FASHION.

1.7 REQUEST FOR INFORMATION (RFI'S)

A. WHERE AN RFI IS A REQUEST TO RESOLVE A CONFLICT OR AN UN-CLARITY, OR A REQUEST FOR ADDITIONAL DETAIL, CONTRACTOR'S RFI SHALL INCLUDED SKETCH OR EQUIVALENT DESCRIPTION OF CONTRACTOR'S PROPOSED SOLUTION, IN ACCORDANCE WITH PARAGRAPHS “DISCREPANCIES IN DOCUMENTS; AND “MODIFICATIONS IN LAYOUT” ABOVE.

B. TO EXPEDITE THE PROCESSING OF RFI'S, THE CONTRACTOR SHALL SUBMIT AN ELECTRONIC CORRESPONDENCE WITH THE FOLLOWING INFORMATION CONTAINED WITHIN, AT THE MINIMUM, AS WELL AS THE CONTRACTOR'S PROPOSED SOLUTION, WITH SKETCHES AS REQUIRED:

1. PROJECT NAME AND RFI NUMBER
2. DATE OF RFI SUBMISSION / DATE OF REQUIRED RFI RESPONSE (3-DAY MINIMUM)
3. NAME OF CONTRACTING COMPANY SUBMITTING RFI AND NAME OF PERSON SUBMITTING RFI
4. SPECIFICATION SECTION CITED AND DRAWING NUMBER REFERENCED
5. CONTRACTOR EMAIL ADDRESS AND FAX NUMBER (FOR RESPONSE)
6. CONTRACTOR FIELD QUESTION (PROVIDE A NARRATIVE WITH SUPPLEMENTAL SKETCH)
7. CONTRACTOR PROPOSED SOLUTION (PROVIDE A NARRATIVE WITH SUPPLEMENTAL SKETCH)
8. RESPONDENT NARRATIVE BOX (FOR ENGINEER'S RESPONSE)

1.8 CODES, STANDARDS, AUTHORITIES AND PERMITS

A. PERFORM WORK IN ACCORDANCE WITH RULES, REGULATIONS, STANDARDS, CODES, ORDINANCES, AND LAWS OF LOCAL, STATE, AND FEDERAL GOVERNMENTS, AND OTHER AUTHORITIES THAT HAVE LEGAL JURISDICTION OVER THE SITE.

B. PRIOR TO WORK COMMENCEMENT OF WORK, NOTIFY STATE AND APPLICABLE AUTHORITIES AND SUBMIT ALL OF THE APPLICABLE NOTIFICATIONS FOR CONSTRUCTION, OPERATION AND/OR DEMOLITION.

C. MATERIALS AND EQUIPMENT SHALL BE MANUFACTURED, INSTALLED AND TESTED AS SPECIFIED IN LATEST EDITIONS OF APPLICABLE PUBLICATIONS, STANDARDS, RULINGS AND DETERMINATIONS THEREOF:

1.9 1.12 GUARANTEE

A. A. GUARANTEE THE WORK OF THIS SECTION IN WRITING FOR ONE YEAR FOLLOWING THE DATE OF SUBSTANTIAL COMPLETION. IF THE EQUIPMENT IS USED FOR VENTILATION, TEMPORARY HEAT, OR OTHER USE PRIOR TO INITIAL BENEFICIAL OCCUPANCY BY THE OWNER, THE BID PRICE SHALL INCLUDE AN EXTENDED PERIOD OF WARRANTY COVERING THE ONE-YEAR OF BENEFICIAL OCCUPANCY BY THE OWNER. THE GUARANTEE SHALL REPAIR OR REPLACE DEFECTIVE MATERIALS, EQUIPMENT, WORKMANSHIP AND INSTALLATION THAT DEVELOP WITHIN THIS PERIOD, PROMPTLY AND TO ARCHITECT'S SATISFACTION AND CORRECT DAMAGE CAUSED IN MAKING NECESSARY REPAIRS AND REPLACEMENTS UNDER GUARANTEE WITHIN CONTRACT PRICE.

1.10 SUBMITTALS

A. SUBMIT UNDER PROVISIONS OF DIVISION 01 SECTIONS "GENERAL REQUIREMENTS", AND DIVISION 01 SECTION "SPECIAL PROCEDURES."

B. PRODUCT DATA: SUBMIT MANUFACTURER'S TECHNICAL PRODUCT SPECIFICATION SHEETS FOR EACH SYSTEM COMPONENT AND DEVICE TO BE PROVIDED THAT INCLUDES DATA NEEDED TO PROVE COMPLIANCE WITH THIS SPECIFICATION. CLEARLY INDICATE THE EXACT MODEL OF EACH COMPONENT TO BE PROVIDED.

SHOP DRAWINGS SHALL BE DRAWN TO A SCALE OF 1/4 INCH = 1 FOOT (1:25) OR LARGER, AND SHALL INCLUDE COMPLETE DIMENSIONS, LOCATIONS, ELEVATIONS, AND CLEARANCES FOR PLUMBING, PIPING, DUCTWORK, EQUIPMENT, AND VALVE NUMBERS. IDENTIFY EQUIPMENT USING DESIGNATIONS SHOWN ON THE CONTRACT DOCUMENTS

ALL SHOP DRAWINGS SHALL CLEARLY CALL OUT IN BOLD LETTERS AND CLOUD SYMBOLS DEVIATIONS FROM THE SPECIFICATIONS AND CONTRACT DOCUMENTS, NO MATTER HOW MINOR.

C. SHOP DRAWINGS SHALL BE SUBMITTED WITH A SEPARATE COVER SHEET COMPLETED FOR EACH PRODUCT, RATHER THAN ONE COVER SHEET FOR MULTIPLE PRODUCTS, WHETHER OR NOT SUPPLIED BY ONE MANUFACTURER OR VENDOR.

SHOP DRAWING COVER SHEET			
PROJECT:		CONTRACTOR:	
DIVISION NO.:		SECTION NO.:	
DESCRIPTION:			
CONTRACT DRAWING REFERENCE NO:			
EQUIPMENT TAG:			
SUBMISSION (CIRCLE ONE): FIRST, SECOND, THIRD, FOURTH			
DATE:			
INFORMATION AND CHECKLIST			

1.	Contractor's Log #ID			
2.	Name, address, and phone number of supplier.			
3.	Are all specified or scheduled items included and exactly match scheduled/specified items?	Yes	No	
4.	Is this item a substitution?	Yes	No	
5.	Are deviations clearly identified?	Yes	No	
6.	Does equipment fit space shown on construction documents, coordination drawings, and actual field conditions?	Yes	No	
7.	Has support, erection, weights, and installation been coordinated with all trades?	Yes	No	
8.	Does the proposed installation void warranties and/or violate UL or code requirements?	Yes	No	
9.	Does this material/equipment add expense to other trades or project costs?	Yes	No	
10.	Does equipment require interface with other trades? List divisions and specifics requiring coordination?	Yes	No	
11.	Is control interface coordinated?	Yes	No	
12.	List electrical characteristics (Voltage/Phase/Hz/Amps)			

D. SUBMITTAL PROCEDURES, CONTENTS, AND FORMAT

1. CONSTRUCTION MANAGER OR GENERAL CONTRACTOR SHALL FIRST REVIEW SUBMITTAL PACKAGES FOR COMPLIANCE WITH CONTRACT DOCUMENTS. UPON REVIEW BY THE G.C. THE SUBMITTALS WILL THEN BE SUBMITTED FOR REVIEW BY ARCHITECT. REVIEW BY CONSTRUCTION MANAGER OR CONTRACTOR IS INTENDED TO ENSURE THAT THE SUBMITTALS INCLUDE THE FOREGOING COVER SHEET, ARE IN THE CORRECT ELECTRONIC FORMAT AS SPECIFIED BELOW, AND THAT THE DEVICES/EQUIPMENT/ITEMS FIT INTO THE SPACE PROVIDED. ALSO, THAT THE SUBMITTAL CONTAINS ADEQUATE INFORMATION TO VERIFY SPECIFICATION REQUIREMENTS AS WELL AS THE PERFORMANCE AND DIMENSIONAL REQUIREMENTS SHOWN ON THE DRAWINGS. IF A SHOP DRAWING IS RETURNED WITH A SUBMITTAL STATUS OF “REJECTED” OR “REVISE AND RESUBMIT”, IT INDICATES THE SHOP DRAWING WAS NOT ADEQUATELY REVIEWED BY THE CONTRACTOR. SUBSEQUENT SUBMITTALS SHALL INCLUDE A WRITTEN RESPONSE TO PREVIOUS ITEMS.
2. SUBMITTALS WILL BE PROVIDED TO ENGINEER IN ELECTRONIC (PDF) FORMAT. A SINGLE PDF FILE SHALL BE SUBMITTED FOR EACH RESPECTIVE SUBMITTAL. THE PDF FILE WILL BE FORMATTED IN THE FOLLOWING WAY:
   a. FIRST PAGE: CONTRACTOR TRANSMITTAL
   b. SECOND PAGE: SHOP DRAWING COVER SHEET (ILLUSTRATED ABOVE) FILLED OUT/COMPLETED BY SUBMITTING CONTRACTOR.
   c. SUBSEQUENT PAGES: EQUIPMENT/DEVICE SUBMITTAL INFORMATION, DIAGRAMS, MANUFACTURER REQUIREMENTS, ETC.
   d. SUBMITTALS WILL BE 'EMAILED' TO THE MECHANICAL/ELECTRICAL TEAM VIA THE ARCHITECT:

1.11 COORDINATION DRAWINGS:

A. A SINGLE SET OF COORDINATION DRAWINGS SHALL BE MUTUALLY PREPARED BY ALL MECHANICAL, PLUMBING, FP AND ELECTRICAL TRADES.

B. THE INITIATION OF THESE DRAWINGS BEGINS WITH THE SHEET METAL SUBCONTRACTOR.

C. FABRICATION SHALL NOT START UNTIL COPIES OF COMPLETED COORDINATION DRAWINGS ARE RECEIVED BY THE ARCHITECT AND HAVE BEEN REVIEWED.

D. REVIEW BY ENGINEER OF COORDINATION DRAWINGS IS LIMITED TO CONFIRMING THAT REQUIREMENTS FOR COORDINATION AND PREPARATION OF PLANS HAVE BEEN COMPLIED WITH BY THE CONSTRUCTION MANAGER OR GENERAL CONTRACTOR AND SHALL NOT DIMINISH RESPONSIBILITY UNDER THIS CONTRACT FOR FINAL COORDINATION OF INSTALLATION AND MAINTENANCE CLEARANCES OF ALL SYSTEMS AND EQUIPMENT WITH ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL AND OTHER RELATED WORK.

E. HOLD REGULAR COORDINATION SESSIONS WITH TRADES UNTIL COORDINATION ISSUES ARE RESOLVED.

F. PREPARE SEPARATE COMPOSITE COORDINATION DRAWINGS TO A SCALE OF 1/4 INCH = 1 FOOT (1:25) OR LARGER, SHOWING WORK OF DIVISIONS TO DEMONSTRATE COORDINATION, CLEARANCE, ACCESS, ETC. BETWEEN DUCTWORK, EQUIPMENT, TEMPERATURE CONTROLS, CABLE TRAYS, CONDUITS, LIGHT FIXTURES, PIPING, PLUMBING, STRUCTURAL ELEMENTS, ARCHITECTURAL ELEMENTS, ETC. THESE DRAWINGS ARE TO BE THE BASIS FOR THE DETAILED SHOP DRAWINGS AND NEED NOT BE SUBMITTED, BUT ARE TO BE AVAILABLE FOR REVIEW UPON REQUEST.

1. PREPARE FLOOR PLANS, ELEVATIONS, AND DETAILS TO INDICATE PENETRATIONS IN FLOORS, WALLS, AND CEILINGS AND THEIR RELATIONSHIP TO OTHER PENETRATIONS AND INSTALLATIONS.
2. EACH TRADE IS TO ADJUST THEIR SHOP DRAWINGS BASED ON THE OUTCOME OF COORDINATION SESSIONS.
3. INDICATE LOCATIONS WHERE SPACE IS LIMITED FOR INSTALLATION AND ACCESS AND WHERE SEQUENCING AND COORDINATION OF INSTALLATIONS ARE OF IMPORTANCE TO THE EFFICIENT FLOW OF THE WORK.
4. INDICATE SCHEDULING, SEQUENCING, MOVEMENT, AND POSITIONING OF LARGE EQUIPMENT INTO THE BUILDING DURING CONSTRUCTION.

5. INDICATE THE PROPOSED LOCATIONS, OF PIPING, DUCTWORK, EQUIPMENT, AND MATERIALS. INCLUDE THE FOLLOWING:
   a. CLEARANCES FOR INSTALLING AND MAINTAINING INSULATION.
   b. CLEARANCES FOR SERVICING AND MAINTAINING EQUIPMENT, INCLUDING SPECIFIC CEILING TILE OR CEILING ACCESS PANEL ACCESS AND SPACE FOR EQUIPMENT DISASSEMBLY REQUIRED FOR PERIODIC MAINTENANCE.
   c. EQUIPMENT CONNECTIONS AND SUPPORT DETAILS.
   d. FIRE-RATED WALL AND FLOOR PENETRATIONS.
   e. SIZES AND LOCATION OF REQUIRED CONCRETE PADS AND BASES.
   f. VALVE STEM MOVEMENT.
   g. SIZES AND LOCATIONS OF NEW AND EXISTING EQUIPMENT SUPPORT CURBS ON ROOF.
   h. SIZES AND LOCATIONS OF NEW OPENINGS, EITHER SLEEVED, CUT, OR CORE-DRILLED, IN NEW CONCRETE CONSTRUCTION UNLESS SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWINGS.
6. MAINTAIN ONE COMPLETE SET OF COMPOSITE COORDINATION DRAWINGS AT THE JOB SITE. PERIODICALLY UPDATE DRAWINGS BASED ON ACTUAL FIELD CONDITIONS.
7. SUBMIT FINAL COORDINATION DRAWINGS AS PART OF RECORD DOCUMENT REQUIREMENTS.

1.12 RECORD DRAWINGS

A. AS WORK PROGRESSES AND FOR DURATION OF CONTRACT, MAINTAIN COMPLETE AND SEPARATE SET OF PRINTS OF CONTRACT DRAWINGS AT JOB SITE AT ALL TIMES. RECORD WORK COMPLETED AND ALL CHANGES FROM ORIGINAL CONTRACT DRAWINGS. SUCH CHANGES SHALL INCLUDE, BUT NOT BE LIMITED TO, THOSE RESULTING FROM RFI'S, FIELD CONDITIONS, AND MODIFICATIONS AND ADDITIONS. INCLUDE ACTUAL LOCATION OF EXISTING UTILITIES IF THEY DIFFER FROM DESIGN DOCUMENTS. AT COMPLETION OF PROJECT CONTRACTOR SHALL INCORPORATE ALL CHANGES INTO RECORD AS-BUILT DRAWINGS IN ELECTRONIC FORMAT AND SUBMIT FOR REVIEW AND APPROVAL.

B. THE INSTALLING CONTRACTOR SHALL CERTIFY RECORD DRAWINGS FOR ACCURACY. THE ARCHITECT/ENGINEER WILL NOT CERTIFY THE ACCURACY OF THE RECORD DRAWINGS - THIS IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

C. AT COMPLETION OF WORK, PREPARE A COMPLETE SET OF RECORD DRAWINGS IN ELECTRONIC FORMAT. DELIVER THESE TO THE ARCHITECT FOR APPROVAL.

1. DRAWINGS SHALL SHOW RECORD CONDITION OF DETAILS, SECTIONS, RISER DIAGRAMS, CONTROL CHANGES AND CORRECTIONS TO SCHEDULES. SCHEDULES SHALL SHOW ACTUAL MANUFACTURER AND MAKE AND MODEL NUMBERS OF FINAL EQUIPMENT INSTALLATION.

D. AFTER APPROVAL, DELIVER THE FOLLOWING:

1. ORIGINAL (NOT SCANNED) ELECTRONIC VERSION OF DRAWINGS IN APPROVED FORMAT, NOTATED AS “RECORD DRAWINGS,” AND CONFORMED TO INCORPORATE ALL CHANGES TO THE ORIGINAL DESIGN NOTED ABOVE. THE CHANGES SHALL BE CLOUDED AND APPROPRIATELY IDENTIFIED. DELIVER ONE COPY EACH TO THE GENERAL CONTRACTOR, OWNER, ARCHITECT, AND ENGINEER.
2. DELIVER TO THE OWNER ONE SET OF BLACKLINE RECORD DRAWINGS STAMPED “RECORD” AND SIGNED BY THE APPROPRIATE SUBCONTRACTORS.
3. ELECTRONIC VERSION OF CONTRACT SPECIFICATIONS WITH ADDENDA INCORPORATED, WILL BE PROVIDED BY VANDERWEIL AS THE RECORD SPECIFICATIONS.

E. BULLETINS, MANUALS, AND OPERATING INSTRUCTIONS - ELECTRONIC FORMAT

1. PROVIDE ELECTRONICALLY FORMATTED (SEARCHABLE PDF) FILES OF MANUFACTURER'S OPERATING AND MAINTENANCE INSTRUCTIONS FOR EACH PIECE OF EQUIPMENT AND SYSTEM. COMPILE RESPECTIVE WORK OF EACH DISCIPLINE INTO A SINGLE FILE FOR EACH DISCIPLINE. PROVIDE, WITHIN THE ELECTRONIC FILE, TABLE OF CONTENTS/INDEX LISTING.
2. PROVIDE VALVE DIRECTORY FOR ALL ISOLATION VALVES.

F. RECORD DOCUMENTS: UPON COMPLETION OF THE WORK COVERED BY THIS CONTRACT, . INCLUDE CHANGES INSTALLED UNDER THIS CONTRACT WHICH ARE NOT IN ACCORDANCE WITH THE CONTRACT DRAWINGS. NOTE THAT THESE AS-BUILT DRAWINGS ARE TO BE BASED ON THE CONTRACT DRAWINGS. IN ADDITION, SUBMIT FINAL COPIES OF THE SHOP DRAWINGS AND COORDINATION DRAWINGS.

1.13 RESPONSIBILITY

A. INTENT OF ARCHITECT'S SUBMITTAL REVIEW IS TO CHECK FOR CAPACITY, RATING, AND CERTAIN CONSTRUCTION FEATURES. CONTRACTOR SHALL ENSURE THAT WORK MEETS REQUIREMENTS OF CONTRACT DOCUMENTS REGARDING INFORMATION THAT PERTAINS TO FABRICATION PROCESSES OR MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES OF CONSTRUCTION; AND FOR COORDINATION OF WORK OF THIS AND OTHER SECTIONS. WORK SHALL COMPLY WITH SUBMITTALS MARKED "REVIEWED" TO EXTENT THAT THEY AGREE WITH CONTRACT DOCUMENTS. SUBMITTAL REVIEW SHALL NOT DIMINISH RESPONSIBILITY UNDER THIS CONTRACT FOR DIMENSIONAL COORDINATION, QUANTITIES, INSTALLATION, WIRING, SUPPORTS AND ACCESS FOR SERVICE, NOR SHOP DRAWING ERRORS OR DEVIATIONS FROM REQUIREMENTS OF CONTRACT DOCUMENTS. NOTING OF SOME ERRORS WHILE OVERLOOKING OTHERS WILL NOT EXCUSE PROCEEDING IN ERROR. CONTRACT DOCUMENTS REQUIREMENTS ARE NOT LIMITED, WAIVED NOR SUPERSEDED BY REVIEW.

B. SCHEDULE: INCORPORATE SHOP DRAWING REVIEW PERIOD INTO CONSTRUCTION SCHEDULE SO THAT WORK IS NOT DELAYED. CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR DELAYS CAUSED BY NOT INCORPORATING THE FOLLOWING SHOP DRAWING REVIEW TIME REQUIREMENTS INTO HIS PROJECT SCHEDULE. WORKING DAYS LISTED REFERENCE THE TIME IN THE ENGINEER'S OFFICE. IT DOES NOT INCLUDE TRANSMITTAL OR REVIEW TIME OF OTHERS.

1.14 START-UP TRAINING

A. PREPARE A FORMAL TRAINING PROGRAM FOR OPERATING STAFF PRIOR TO THE SCHEDULED START-UP DATE. THE PROGRAM WILL CONSIST OF THE DESIGN, START-UP, AND OPERATION OF THE PLUMBING SYSTEMS. COORDINATE THE TRAINING PROGRAM WITH THE PRODUCTION OF THE OPERATION AND MAINTENANCE MANUALS. PROVIDE INDEXED BINDER AND TRAINING MATERIALS TO EACH PARTICIPANT.

PART 2 - PRODUCTS

2.1 GENERAL

A. IN ADDITION TO MATERIAL AND EQUIPMENT SPECIFIED, PROVIDE INCIDENTAL MATERIALS TO EFFECT A COMPLETE INSTALLATION. SUCH INCIDENTAL MATERIALS INCLUDE SOLDERS, TAPES, CAULKING, MASTICS, GASKETS AND SIMILAR ITEMS.

B. MATERIALS AND EQUIPMENT SHALL BE UNIFORM THROUGHOUT THE INSTALLATION. EQUIPMENT OF THE SAME TYPE SHALL BE OF THE SAME MANUFACTURER. MATERIALS AND EQUIPMENT SHALL BE NEW.

2.2 MATERIALS AND SUBSTITUTIONS

A. COMPLY WITH DIVISION 01 SECTION "GENERAL REQUIREMENTS - SPECIFIED ITEMS AND SUBSTITUTES."

2.3 PLUMBING FIXTURES AND TRIM

A. REFER TO ARCHITECTURAL AND PLUMBING DRAWINGS FOR QUANTITIES, LOCATIONS AND MOUNTING HEIGHTS OF FIXTURES PROVIDED UNDER THIS SECTION

B. FIXTURE TRIM, TRAPS, FAUCETS, ESCUTCHEONS AND WASTE PIPES EXPOSED TO VIEW IN FINISHED SPACES SHALL BE I.P.S. BRASS WITH POLISHED CHROMIUM PLATING OVER NICKEL FINISH.

C. PRODUCT INSTALLATION SHALL ADHERE TO MANUFACTURER'S RECOMMENDATIONS.

D. FIXTURE FITTINGS INTENDED TO DELIVER POTABLE WATER FOR HUMAN CONSUMPTION SHALL BE CERTIFIED FOR "LEAD-FREE" AND SHALL COMPLY WITH THE NEW FEDERAL MANDATE KNOWN AS THE "REDUCTION OF LEAD IN DRINKING WATER ACT-2014"

2.4 PIPE, FITTINGS AND VALVES

A. ALL PIPE, FITTINGS, AND VALVES USED IN POTABLE WATER DISTRIBUTION SYSTEM MUST COMPLY WITH THE NEW FEDERAL MANDATE KNOWN AS THE "REDUCTION OF LEAD IN DRINKING WATER ACT-2014".

B. PLASTIC PIPING SYSTEMS: DO NOT USE PLASTIC PIPING SYSTEMS IN RETURN AIR PLENUMS. ALL PIPING USED IN PLENUM APPLICATIONS SHALL BE SO RATED.

C. PIPE MATERIALS

WATER PIPING SERVICES	CODE	PIPE MATERIAL	FABRICATION OR JOINTING METHOD	VALVES
POTABLE HOT, COLD, HWR DOMESTIC WATER	CW HW HWR	TYPE L SEAMLESS COPPER TUBING, CONFORMING TO ASTM B-88	ASTM SOLDER FILLER MATERIAL SHALL BE LEAD FREE TO COMPLY WITH THE FEDERAL MANDATE OF 2014. ASTM B-813 LIQUID OR PASTE FLUX. SOLDERING PROCEDURES SHALL COMPLY WITH ASTM B-828. PRESS FITTINGS 1/2" THROUGH 4" SHALL BE JOINED USING CERTIFIED VIEGA PROPRESS TOOLS. 2-1/2" THROUGH 4". INSTALLERS SHALL BE TRAINED AND CERTIFIED BY MANUFACTURER’S REPRESENTATIVE. FOR PIPE SIZES ≥ 2½”, COPPER TUBE WITH EQUIVALENT VICTAULIC JOINTING PROCESS IS ACCEPTABLE ALTERNATIVE FOR USE	2 “ AND SMALLER - ALL BRONZE LEAD FREE, 2-PIECE, FULL PORT, PTFE SEATS, SOLDER END CONNECTIONS. 600 PSIG WOG. APOLLO 77BLF-100, WATTS MILWAUKEE, WATTS LF-B6081. 2½ “ AND LARGER - BUTTERFLY VALVES: EQUAL TO APOLLO VALVE MODEL LD141 SERIES OR VICTAULIC SERIES 608 BUTTERFLY VALVES BUBBLE-TIGHT SHUT-OFF TO 300 PSI, LEAD FREE DESIGN, PROPRESS BALL VALVES: 2 “ AND SMALLER - VIEGA PROPRESS, 2-PIECE, FULL PORT, ZERO LEAD BRONZE BODY, STAINLESS STEEL BALL VALVE, EPDM SEALING ELEMENTS, MODEL 2970.3 ZL & 2971.3 ZL
TRAP PRIMER	TP	TYPE L SEAMLESS COPPER TUBING, CONFORMING TO ASTM B-88	ASTM SOLDER FILLER MATERIAL SHALL BE LEAD FREE TO COMPLY WITH THE FEDERAL MANDATE OF 2014. ASTM B-813 LIQUID OR PASTE FLUX. SOLDERING PROCEDURES SHALL COMPLY WITH ASTM B-828. PRESS FITTINGS 1/2" THROUGH 4" SHALL BE JOINED USING CERTIFIED VIEGA PROPRESS TOOLS. 2-1/2" THROUGH 4". INSTALLERS SHALL BE TRAINED AND CERTIFIED BY MANUFACTURER’S REPRESENTATIVE.	2 “ AND SMALLER - ALL BRONZE LEAD FREE, 2-PIECE, FULL PORT, PTFE SEATS, SOLDER END CONNECTIONS. 600 PSIG WOG. APOLLO 77BLF-100, WATTS MILWAUKEE, WATTS LF-B6081. PROPRESS BALL VALVES: 2 “ AND SMALLER - VIEGA PROPRESS, 2-PIECE, FULL PORT, ZERO LEAD BRONZE BODY, STAINLESS STEEL BALL VALVE, EPDM SEALING ELEMENTS, MODEL 2970.3 ZL & 2971.3 ZL

NOTES
1. JOINTS MADE BETWEEN DISSIMILAR MATERIALS SHALL BE JOINED WITH PROPER ADAPTERS AND TRANSITION FITTINGS ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

DRAINAGE PIPING SERVICES	CODE	PIPE MATERIAL	FABRICATION OR JOINTING METHOD	OTHER
SANITARY WASTE & VENT ABOVE & BELOW GRADE	S, W OR V	CAST IRON SERVICE WEIGHT SERVICE WEIGHT CAST IRON NO-HUB PIPE CONFORMING TO CISPI 301	HEAVY DUTY CISPI APPROVED STAINLESS STEEL NO-HUB PATTERN, TO SUIT PIPE MATERIAL. COUPLING, NEOPRENE GASKET, 95/5 SOLDER FOR COPPER. STAINLESS STEEL CLAMPS SHALL BE EQUAL TO HUSKY SD400 OR CLAMP-ALL HI-TORQUE 125.	

NOTES
1. JOINTS MADE BETWEEN DISSIMILAR MATERIALS SHALL BE JOINED WITH PROPER ADAPTERS AND TRANSITION FITTINGS ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

2.5 SPECIALTY VALVES

A. BACKFLOW PREVENTERS. : REDUCED PRESSURE BACKFLOW PREVENTERS WITH 175 PSI WORKING PRESSURE, 140°F TEMPERATURE RATING, SEPARATE STRAINER AND VALVES ON INLET AND OUTLET WHERE INDICATED ON THE DRAWINGS. PROVIDE SPARE PARTS KIT WITH FULL SET OF SEALS, WASHERS, AND SPECIAL TOOLS. BFP SHALL BE ALL-BRONZE, THREADED END, WITH BALL VALVE SHUTOFF TESTED AND CERTIFIED UNDER AWWA-ASSE STANDARDS: WATTS 909, BEECO 6C OR FEBCO 825Y OR APPROVED EQUAL.

B. TRAP PRIMER VALVES: MOUNTED STEEL BOX WITH STAINLESS STEEL COVER, 24 HOUR TIMER, SOLENOID VALVE, AND MANUAL SWITCH FOR VAC POWER. FURNISH PROPER NUMBER OF OUTLETS UP TO EIGHT PER VALVE FOR PRIMING OPTION. EQUAL TO ZURN MODEL Z-1020

2.6 PIPE IDENTIFICATION

A. PROVIDE COLOR-CODED PIPE IDENTIFICATION MARKERS AT INTERVALS NO LONGER THAN 20'-0”. PIPE MARKERS SHALL BE SNAP-ON LAMINATED PLASTIC PROTECTED BY CLEAR ACRYLIC COATING. PIPE MARKERS SHALL BE APPLIED AFTER ARCHITECTURAL PAINTING WHERE SUCH IS REQUIRED.

B. PROVIDE ARROW MARKER WITH EACH PIPE IDENTIFICATION MARKER TO INDICATE DIRECTION OF FLOW. IF FLOW CAN BE IN EITHER DIRECTION, USE DOUBLE-HEADED ARROW MARKER.

C. PROVIDE PVC JACKETS COVERS OVER ASJ IN ALL MECHANICAL ROOMS AREAS. IN ADDITION, PROVIDE PVC COVERS ON ALL EXPOSED PIPING LOWER THAN 8 FEET THROUGHOUT

D. VALVE TAGS: UPON COMPLETION OF WORK, ATTACH ENGRAVED LAMINATED PLASTIC TAGS TO ALL VALVES. TAGS SHALL HAVE BLACK CHARACTERS ON WHITE FACE, CONSECUTIVELY NUMBERED AND PREFIXED WITH LETTER P FOR GENERAL VALVES. TAGS SHALL BE AT LEAST 1" DIAMETER WITH NUMERALS AT LEAST 3/8" HIGH AND ATTACHED BY AN "S" HOOK.

E. WHERE VALVES ARE INSTALLED IN AN EXISTING BUILDING, SYNCHRONIZE AND CONTINUE VALVE TAG NUMBERING SYSTEM. COORDINATE WITH OWNER.

2.7 INSULATION

Jacobs

Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL

R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210

P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

EDWARD S. DALTON
12/19/2024

General Notes:

Project Title:

Fidelity

Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project North
True North

Project No.: C0115.00

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Drawing Sheet Title:

PLUMBING SPECIFICATIONS

Drawing Sheet Number:

P-002

Owner's Branch No.:

134

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A. INSULATE ALL HOT, COLD, AND RE-CIRCULATING PIPING. INSULATION SHALL BE BY OWENS-CORNING, CERTAIN-TEED OR MANVILLE. PER THE ENERGY CODE

B. INSULATION, JACKETS AND ADHESIVES SHALL BE FLAME RETARDANT AND SHALL HAVE ASTM E-84 FIRE HAZARD RATINGS OF 25 FLAME SPREAD, 50 SMOKE DEVELOPED AND 50 FUEL CONTRIBUTED.

C. HOT WATER SUPPLY PIPING SHALL BE INSULATED WITH HEAVY DENSITY FIBERGLASS WITH SELF-SEALING LAP AND ALL SERVICE JACKET. FITTINGS AND VALVES SHALL BE INSULATED WITH TWO LAYERS BLANKET INSULATION WITH PVC COVERS. INSULATION SHALL BE RATED FOR MAXIMUM OPERATING TEMPERATURE OF 450° F. INSULATION THICKNESS SHALL BE 1"UP TO 1¼" PIPE DIAMETER AND 1½" FOR ALL PIPING EQUAL TO AND LARGER THAN 1½" IN DIAMETER

D. COLD WATER SUPPLY PIPING, VALVES AND FITTINGS SHALL BE ½" UP TO 1¼" DIAMETER TUBE AND 1" FOR LARGER SIZES. IN ADDITION, CONTINUOUS VAPOR BARRIER SHALL BE MAINTAINED.

2.8 **HANGERS, ANCHORS, CLAMPS AND INSERTS**

A. PROVIDE ADJUSTABLE CLEVIS HANGERS FOR PIPING 4" & LARGER, AND CAST BRASS SPLIT-RING HINGED HANGERS FOR SMALLER PIPING. SUPPORT PIPING FROM BUILDING STRUCTURE TO MAINTAIN REQUIRED GRADE AND PITCH OF PIPE LINES, PREVENT VIBRATION, SECURE PIPING IN PLACE. SECURE HANGERS TO INSERTS WHERE PRACTICAL. HANGER RODS SHALL HAVE MACHINE THREADS.

B. HANGER RODS SHALL BE CONNECTED TO BEAM CLAMP, UL-APPROVED CONCRETE INSERTS OR PHILLIPS OR APPROVED EQUAL EXPANSION SHIELDS. RAMSET OR POWER DRIVEN INSERTS WILL NOT BE ALLOWED.

C. COVER INSERTS WITH JACKET MATERIAL MATCHING ADJACENT PIPE INSULATION. INSTALL SHIELDS OVER JACKET, ARRANGED TO PROTECT JACKET FROM TEAR OR PUNCTURE BY HANGER, SUPPORT, AND SHIELD.

D. PROVIDE SUPPORT MATERIALS: HANGER STRAPS, HANGER RODS, SADDLES, SUPPORT RINGS, AND HIGH DENSITY INSERTS.

E. HANGER SPACING SHALL MEET REQUIREMENTS OF STATE AND LOCAL CODES.

2.9 **SLEEVES AND PENETRATIONS**

A. PROVIDE SLEEVES FOR ALL PENETRATIONS. PIPE SLEEVES THROUGH FIRE-RATED CONSTRUCTION SHALL BE SCHEDULE 40 STEEL. SLEEVES THROUGH PARTITIONS AND NON-FIRE-RATED CONSTRUCTION SHALL BE 26 GAUGE GALVANIZED STEEL WITH LOCK LONGITUDINAL SEAMS. AS SPECIFIED IN THIS SECTION OF THE SPECIFICATIONS. GIVE NOTICES, FILE PLANS, OBTAIN PERMITS AND LICENSES, PAY FEES AND BACK CHARGES, AND OBTAIN NECESSARY APPROVALS

B. FIRE STOP PENETRATION SEALS IN FIRE-RATED CONSTRUCTION SHALL BE CERAMIC FIBER, MINERAL FIBER, OR SILICONE FOAM. PROVIDE MINERAL FIBER BOARD, MATTING OR PUTTY INSTALL NEW ELECTRIC WATER HEATERS, ELECTRIC WATER COOLERS, KITCHEN SINKS, FOR DAMMING AND FORMING. FINISH SEALS FLUSH TO WALL SURFACE AND FILL GAPS WITH SILICONE ADHESIVE SEALANT CAULKING.

C. COORDINATE PROPER FIRE SEAL STOPPING OF THERMOPLASTIC PIPE PENETRATIONS: PROVIDE A PROPER ENGINEERED UL FIRESTOPPED PENETRATION PRODUCT EQUAL TO THE WALL OR FLOOR THROUGH WHICH IT PASSES, SUBMIT PROPER HILTI, 3M FOR FIRESPEC UL DETAILS FOR EACH PENETRATION.

D. PACKING FOR SLEEVES THAT DO NOT REQUIRE MAINTENANCE OF FIRE RATING SHALL BE OAKUM, SILICATE FOAM, CERAMIC FIBER OR MINERAL FIBER WITH APPROVED SEALANT.

E. PACK OR FOAM TO WITHIN ONE INCH OF BOTH WALL SURFACES. SEAL PENETRATION PACKING WITH APPROVED CAULKING AND PAINTABLE WATERPROOF MASTIC SURFACE FINISH OR SILICONE CAULKING.

PART 3 - EXECUTION

3.1 **EXAMINATION OF SITE**

A. VISIT AND EXAMINE THE SITE AND BECOME FAMILIAR WITH CONDITIONS THAT MAY AFFECT THE WORK COVERED BY THIS DIVISION OF THE SPECIFICATIONS. TAKE MEASUREMENTS, EXAMINE AREAS WHERE WORK IS TO BE PERFORMED AND GET SUCH OTHER INFORMATION NECESSARY FOR PROPER EXECUTION OF THE WORK. ASCERTAIN AND CHECK CONDITIONS WITH THE DRAWINGS AND SPECIFICATIONS, OTHER TRADES, EXISTING CONDITIONS AND BY WHAT MEANS THE WORK IS TO BE PERFORMED. NO ALLOWANCE SHALL SUBSEQUENTLY BE MADE FOR EXTRA EXPENSE DUE TO FAILURE OR NEGLECT TO MAKE SUCH EXAMINATION AND CORRELATION. WHERE REVISIONS OR CHANGES IN THE EXISTING WORK ARE REQUIRED TO PERMIT THE INSTALLATION OF NEW WORK, THEY SHALL BE MADE AT NO ADDITIONAL COST NO ALLOWANCE SHALL BE SUBSEQUENTLY MADE FOR ERROR OR OMISSION.

B. UNDERSTANDING OF WORK:

1. STUDY, EXAMINE, AND COMPARE OF THE CONTRACT DOCUMENTS, INCLUDING DRAWINGS AND SPECIFICATIONS. THE SUBCONTRACTOR SHALL HAVE A FULL UNDERSTANDING OF HOW THE WORK IN THIS PART IS SCHEDULED, PHASED, AND INSTALLED WITH WORK OF OTHER TRADES.
2. INCLUDE IN THIS INSTALLATION PIPING, DUCTWORK, DEVICES, AND EQUIPMENT THAT ARE NECESSARY FOR COMPLETE AND OPERATING SYSTEMS AS SPECIFIED AND AS REQUIRED.
3. CONNECT PIPING AND DUCTWORK FROM FIXTURES, OUTLETS, AND DEVICES FULL SIZE TO THE NEAREST SUITABLE MAIN OR RISER.
4. CERTAIN INSTALLATIONS MAY BE PRESENTED AS TYPICAL, AND FULL DETAILS ARE NOT REPEATED FOR EACH CASE. SUBCONTRACTOR SHALL PROVIDE COMPLETE INSTALLATION AS IF FULL DETAILS APPLY TO EACH AND EVERY CASE, AND MAKE ADJUSTMENTS TO TYPICAL DETAILS TO SUIT EACH SPECIFIC INSTALLATION AS PART OF THE BASIC WORK.
5. INSTALLATION OF WORK PRESENTED ON THE DIAGRAMS ARE APPLICABLE TO THE PLANS, AND WORK DEPICTED ON THE PLANS ARE APPLICABLE TO THE DIAGRAMS.
6. IF THERE IS A DISCREPANCY IN THE DRAWINGS OR SPECIFICATIONS, THE CONTRACTOR SHALL FIGURE THE WORK BASED ON THE MOST STRINGENT REQUIREMENTS TO COMPLETE THE INSTALLATION AND OBTAIN CLARIFICATION FROM THE ARCHITECT BEFORE INSTALLATION.

3.2 **ACCURACY OF DATA - THIS SECTION IS REPEATED IN PART 1 REVIEW AND DELETE ONE OF THEM**

A. THE DRAWINGS INDICATE THE GENERAL ARRANGEMENT AND LOCATION OF PIPING, DUCTS, AND EQUIPMENT. SHOULD IT BE NECESSARY TO DEVIATE FROM ARRANGEMENT OR LOCATION INDICATED IN ORDER TO MEET ARCHITECTURAL CONDITIONS OR SITE CONDITIONS, OR DUE TO INTERFERENCE WITH OTHER WORK, MAKE SUCH DEVIATIONS AS OFFSETS, RISES AND DROPS IN PIPING AND DUCTS THAT MAY BE NECESSARY, WHETHER SHOWN OR NOT, WITHOUT EXTRA EXPENSE . EXTREME ACCURACY OF THE DATA GIVEN HEREIN AND ON THE DRAWINGS IS NOT GUARANTEED. THE DRAWINGS AND SPECIFICATIONS ARE FOR THE ASSISTANCE AND GUIDANCE OF THIS SECTION AND EXACT LOCATIONS, DISTANCES, AND ELEVATIONS SHALL BE GOVERNED BY ACTUAL SITE CONDITIONS.

B. DRAWINGS ARE DIAGRAMMATIC. THEY INDICATE GENERAL ARRANGEMENTS OF PLUMBING SYSTEMS AND OTHER WORK. THEY DO NOT SHOW ALL OFFSETS REQUIRED FOR COORDINATION NOR DO THEY SHOW THE EXACT ROUTINGS AND LOCATIONS NEEDED TO COORDINATE WITH STRUCTURE AND OTHER TRADES AND TO MEET CEILING HEIGHTS AND OTHER ARCHITECTURAL REQUIREMENTS.

C. INFORMATION AND COMPONENTS SHOWN ON SINGLE LINE /SCHEMATIC DIAGRAMS BUT NOT SHOWN ON PLANS, AND VICE VERSA, SHALL APPLY OR BE PROVIDED AS IF EXPRESSLY REQUIRED ON BOTH

3.3 **COORDINATION ITEMS**

A. COORDINATE MECHANICAL WORK WITH THAT OF OTHER TRADES IN ORDER TO: AVOID INTERFERENCES BETWEEN GENERAL CONSTRUCTION, MECHANICAL, ELECTRICAL, STRUCTURAL AND OTHER SPECIALTY TRADES. MAINTAIN CLEARANCES AND ADVISE OTHER TRADES OF CLEARANCE REQUIREMENTS FOR OPERATION, REPAIR, REMOVAL AND TESTING OF MECHANICAL EQUIPMENT.

B. INDICATE AISLE WAYS AND ACCESS WAYS REQUIRED ON COORDINATED SHOP DRAWINGS FOR ROOF EQUIPMENT AREA, MECHANICAL EQUIPMENT ROOMS, DATA AND TELECOMM ROOMS, CORRIDORS, CEILING SPACES, SHAFTS, ETC.

1. COOPERATE AND COORDINATE WITH WORK OF OTHER SECTIONS IN EXECUTING WORK OF THIS SECTION.
2. PERFORM WORK SO THAT PROGRESS OF ENTIRE PROJECT INCLUDING WORK OF OTHER SECTIONS SHALL NOT BE INTERFERED WITH OR DELAYED.
3. PROVIDE INFORMATION AS REQUESTED ON ITEMS FURNISHED UNDER ONE SECTION WHICH SHALL BE INSTALLED UNDER OTHER SECTIONS.
4. FOR EQUIPMENT PROVIDED UNDER ANY DIVISION OR SECTION WHICH HAS CONNECTION MADE UNDER THE MECHANICAL OR ELECTRICAL SECTIONS, OBTAIN DETAILED INSTALLATION AND HOOKUP INFORMATION FROM THE EQUIPMENT MANUFACTURERS.
5. OBTAIN FINAL ROUGHING DIMENSIONS OR OTHER INFORMATION AS NEEDED FOR COMPLETE INSTALLATION OF ITEMS FURNISHED UNDER OTHER SECTIONS OR BY OWNER.
6. KEEP FULLY INFORMED AS TO SHAPE, SIZE AND POSITION OF OPENINGS REQUIRED FOR MATERIAL OR EQUIPMENT TO BE PROVIDED UNDER ALL SECTIONS. GIVE FULL INFORMATION SO THAT OPENINGS REQUIRED BY WORK OF THIS SECTION MAY BE COORDINATED WITH OTHER WORK AND OTHER OPENINGS AND MAY BE PROVIDED FOR IN ADVANCE. IN CASE OF FAILURE TO PROVIDE SUFFICIENT INFORMATION IN PROPER TIME, PROVIDE CUTTING AND PATCHING OR HAVE SAME DONE, AT OWN EXPENSE AND TO FULL SATISFACTION OF ARCHITECT.
7. NOTIFY ARCHITECT OF LOCATION AND EXTENT OF EXISTING PIPING, CONDUIT, DUCTWORK AND EQUIPMENT THAT INTERFERES WITH NEW CONSTRUCTION. IN COORDINATION WITH AND WITH APPROVAL OF ARCHITECT, RELOCATE PIPING, DUCTWORK AND EQUIPMENT TO PERMIT NEW WORK TO BE PROVIDED. REMOVE NONFUNCTIONING AND ABANDONED PIPING, DUCTWORK AND EQUIPMENT. DISPOSE OF OR STORE ITEMS.

3.4 **SEQUENCE, COORDINATE, AND INTEGRATE THE VARIOUS ELEMENTS OF MECHANICAL SYSTEMS, MATERIALS, AND EQUIPMENT. COMPLY WITH THE FOLLOWING REQUIREMENTS:**

A. COORDINATE MECHANICAL SYSTEMS, EQUIPMENT, AND MATERIALS INSTALLATION WITH OTHER BUILDING COMPONENTS.

B. VERIFY DIMENSIONS BY FIELD MEASUREMENTS.

C. ARRANGE FOR CHASES, SLOTS, AND OPENINGS IN OTHER BUILDING COMPONENTS DURING PROGRESS OF CONSTRUCTION, TO ALLOW FOR MECHANICAL INSTALLATIONS.

D. COORDINATE THE INSTALLATION OF REQUIRED SUPPORTING DEVICES AND SLEEVES TO BE SET IN POURED-IN-PLACE CONCRETE AND OTHER STRUCTURAL COMPONENTS, AS THEY ARE CONSTRUCTED.

E. SEQUENCE, COORDINATE, AND INTEGRATE INSTALLATIONS OF MECHANICAL MATERIALS AND EQUIPMENT FOR EFFICIENT FLOW OF THE WORK. GIVE PARTICULAR ATTENTION TO LARGE EQUIPMENT REQUIRING POSITIONING PRIOR TO CLOSING IN THE BUILDING.

F. WHERE MOUNTING HEIGHTS ARE NOT DETAILED OR DIMENSIONED, INSTALL SYSTEMS, MATERIALS AND EQUIPMENT TO PROVIDE THE MAXIMUM HEADROOM POSSIBLE. WORK SHALL BE ABOVE CEILINGS OR CEILING LINE.

G. COORDINATE INSTALLATION AND CONNECTION OF MECHANICAL SYSTEMS WITH EXTERIOR UNDERGROUND AND OVERHEAD UTILITIES AND SERVICES. COMPLY WITH REQUIREMENTS OF GOVERNING REGULATIONS, FRANCHISED SERVICE COMPANIES, AND CONTROLLING AGENCIES. PROVIDE REQUIRED CONNECTION FOR EACH SERVICE.

H. INSTALL SYSTEMS, MATERIALS, AND EQUIPMENT TO CONFORM WITH APPROVED SUBMITTAL DATA, INCLUDING COORDINATION DRAWINGS, TO GREATEST EXTENT POSSIBLE. CONFORM TO ARRANGEMENTS INDICATED BY THE CONTRACT DOCUMENTS, RECOGNIZING THAT PORTIONS OF THE WORK ARE SHOWN ONLY IN DIAGRAMMATIC FORM. COORDINATE WITH INDIVIDUAL SYSTEM REQUIREMENTS.

I. INSTALL SYSTEMS, MATERIALS, AND EQUIPMENT LEVEL AND PLUMB, PARALLEL AND PERPENDICULAR TO OTHER BUILDING SYSTEMS AND COMPONENTS, WHERE INSTALLED EXPOSED IN FINISHED SPACES.

J. INSTALL MECHANICAL EQUIPMENT TO FACILITATE SERVICING, MAINTENANCE, AND REPAIR OR REPLACEMENT OF EQUIPMENT COMPONENTS. AS MUCH AS IS PRACTICAL, CONNECT EQUIPMENT FOR EASE OF DISCONNECTING, WITH MINIMUM OF INTERFERENCE WITH OTHER INSTALLATIONS. EXTEND GREASE FITTINGS TO AN ACCESSIBLE LOCATION.

K. INSTALL SYSTEMS, MATERIALS, AND EQUIPMENT GIVING RIGHT-OF-WAY PRIORITY TO SYSTEMS REQUIRED TO BE INSTALLED AT A SPECIFIED SLOPE.

L. COORDINATE WITH THE LOCATIONS OF ELECTRICAL PANELS AND AVOID INSTALLING PIPING AND DUCTWORK OVER THEM. ELECTRICAL PANELS ARE PURPOSELY LOCATED AND HAVE PRIORITY FOR LOCATION. THE CONTRACTOR IS RESPONSIBLE FOR REQUIRED PIPING AND DUCTWORK OFFSETS TO INSURE THAT THE PANELS ARE LOCATED AS DESIGNED AND FOR OTHER CONDITIONS.

3.5 **BUILDING EXPANSION JOINTS AND FIREWALLS**

A. PLUMBING PIPING AND OTHER HORIZONTAL DISTRIBUTION SYSTEMS SHALL BE PROVIDED WITH APPROVED EXPANSION PROVISIONS WHEN PASSING BY BUILDING EXPANSION JOINTS. SYSTEMS SHALL BE RUN THROUGH RATED WALLS, PARTITIONS, AND FLOORS VIA APPROVED FIREPROOFED SLEEVES.

3.6 **INSTALLATION SHALL PROVIDE ACCESS TO SYSTEMS**

A. INSTALLATION SHALL ALLOW CLEARANCES FOR EASY ACCESS TO SYSTEMS FOR ROUTINE MAINTENANCE, FOR REPAIRS, AND FOR INSTALLING NEW CABLE IN CONDUIT AND CABLE TRAYS.

B. ACCESS PANELS SHALL BE INSTALLED IN CEILINGS THAT ARE NOT COMPOSED OF REMOVABLE TILES. THESE SHALL BE LOCATED WHEREVER SYSTEMS COMPONENTS EXIST THAT HAVE MOVING PARTS, MOTORS, OR OTHER COMPONENTS REQUIRING PERIODIC MAINTENANCE, ADJUSTMENT, OR REPLACEMENT. ACCESS PANELS SHALL BE SHOWN ON COORDINATION DRAWINGS AND SHALL BE OF THE TYPE AND FINISH AS APPROVED BY THE ARCHITECT.

3.7 **INSTALLATION**

A. MANUFACTURER'S DIRECTIONS: FOLLOW MANUFACTURER'S DIRECTIONS COVERING POINTS NOT SHOWN ON THE DRAWINGS OR SPECIFIED HEREIN. MANUFACTURER'S DIRECTIONS DO NOT TAKE PRECEDENCE OVER DRAWINGS AND SPECIFICATIONS. WHERE THESE ARE IN CONFLICT WITH THE DRAWINGS AND SPECIFICATIONS, NOTIFY THE PROJECT MANAGER FOR CLARIFICATION BEFORE INSTALLING THE WORK.

B. CARPENTRY, CUTTING, PATCHING, AND CORE DRILLING:

1. PROVIDE CARPENTRY, CUTTING, PATCHING, AND CORE DRILLING REQUIRED FOR INSTALLATION OF MATERIAL AND EQUIPMENT SPECIFIED IN THIS DIVISION.
2. NO PENETRATIONS SHALL BE SLEEVED, CUT, OR CORE DRILLED THROUGH CONCRETE CONSTRUCTION WITHOUT A SUBMITTAL INDICATING EXACT LOCATIONS AND SIZES AND SPECIFIC WRITTEN APPROVAL FROM THE UNIVERSITY OR UNLESS SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWINGS.
3. IT IS THE SUBCONTRACTOR'S RESPONSIBILITY TO ACCURATELY SIZE AND LOCATE OPENINGS THROUGH THE STRUCTURE. THE DIMENSIONS SHOWN ON THE STRUCTURAL DRAWINGS ARE FOR GENERAL INFORMATION ONLY. PROVIDE SPECIFIC SIZES, DIMENSIONS, REQUIREMENTS, ETC.

C. SEISMIC MOUNTING:

1. MATERIAL AND EQUIPMENT, INCLUDING FLOOR MOUNTED EQUIPMENT, PIPING, AND APPURTENANCES SHALL COMPLY WITH DIVISION 01 SECTION "LATERAL FORCE PROCEDURES".

D. WATERPROOF CONSTRUCTION:

1. MAINTAIN WATERPROOF INTEGRITY OF PENETRATIONS OF MATERIALS INTENDED TO BE WATERPROOF. PROVIDE FLASHINGS AT EXTERIOR ROOF PENETRATIONS. CAULK PENETRATIONS OF FOUNDATION WALLS AND FLOORS WATERTIGHT. PROVIDE MEMBRANE CLAMPS AT PENETRATIONS OF WATERPROOF MEMBRANES.
2. PROVIDE WATERPROOF NEMA 3R ENCLOSURES FOR EQUIPMENT OR DEVICES MOUNTED OUTSIDE OR OTHERWISE EXPOSED TO THE WEATHER.

E. PAINTING OF MECHANICAL EQUIPMENT AND HARDWARE:

1. COMPLY WITH APPLICABLE DIVISION 09 SECTIONS FOR PAINTS AND COATINGS.
2. PROVIDE MOISTURE RESISTANT PAINT FOR EXTERIOR PAINTING.
3. COLORS SHALL BE AS SHOWN ON THE DRAWINGS UNLESS SPECIFIED.
4. COMPLY WITH INDIVIDUAL SECTIONS FOR OTHER EQUIPMENT TO BE PAINTED.
5. REPAIR DAMAGED GALVANIZING, PAINT, OR COATINGS. USE Z.R.C. (NO KNOWN EQUAL) COLD GALVANIZED COMPOUND FOR GALVANIZED REPAIRS.

F. CONCRETE EQUIPMENT BASES:

1. ALL EQUIPMENT LOCATED ON CONCRETE FLOOR INSIDE THE BUILDING OR ON GRADE OUTSIDE THE BUILDING, SHALL BE MOUNTED ON A CONCRETE BASE. THE CONCRETE BASE SHALL BE FOUR INCHES HIGH AND SHALL EXTEND SIX INCHES BEYOND THE EDGE OF EQUIPMENT BASE UNLESS INDICATED OTHERWISE ON DRAWINGS.
2. COORDINATE CONCRETE BASES: CONCRETE BASES INDICATED ON ARCHITECTURAL OR STRUCTURAL DRAWINGS ARE SPECIFIED IN OTHER DIVISIONS. CONCRETE BASES NOT ON ARCHITECTURAL OR STRUCTURAL DRAWINGS ARE REQUIREMENTS OF THIS DIVISION.

3.8 **PROTECTION OF WORK**

A. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR WORK AND EQUIPMENT UNTIL FINALLY INSPECTED, TESTED, AND ACCEPTED. CAREFULLY STORE MATERIALS AND EQUIPMENT THAT IS NOT IMMEDIATELY INSTALLED AFTER DELIVERY TO SITE. CLOSE OPEN ENDS OF WORK WITH TEMPORARY COVERS OR PLUG DURING CONSTRUCTION TO PREVENT ENTRY OF OBSTRUCTING MATERIAL. COVER WORK SUBJECT TO FALLING DEBRIS WITH TEMPORARY COVERS.

B. PROVIDE ALL MATERIALS, EQUIPMENT AND LABOR TO PROVIDE ADEQUATE PROTECTION OF ALL EQUIPMENT DURING THE COURSE OF CONSTRUCTION. THIS INCLUDES PROTECTION FROM MOISTURE AND FOREIGN MATERIAL. AT COMPLETION, ALL WORK MUST BE TURNED OVER TO OWNER CLEAN AND IN NEW CONDITION.

C. PROTECT THE WORK AND MATERIAL OF OTHER TRADES THAT MIGHT BE DAMAGED BY WORK OR WORKMEN AND MAKE GOOD ALL DAMAGE THUS CAUSED.

3.9 **FIREPROOFING:**

A. CLIPS, HANGERS, CLAMPS, SUPPORTS AND OTHER ATTACHMENTS TO SURFACES TO BE FIREPROOFED SHALL BE INSTALLED, INSOFAR AS POSSIBLE, PRIOR TO START OF SPRAY FIBER WORK.

B. PIPING AND OTHER ITEMS THAT WOULD INTERFERE WITH PROPER APPLICATION OF FIREPROOFING SHALL BE INSTALLED AFTER COMPLETION OF SPRAY FIBER WORK.

C. PATCHING AND REPAIRING OF FIREPROOFING DUE TO CUTTING OR DAMAGING TO FIREPROOFING DURING COURSE OF WORK SPECIFIED UNDER THIS SECTION SHALL BE PERFORMED BY INSTALLER OF FIREPROOFING AND PAID FOR BY TRADE RESPONSIBLE FOR DAMAGE AND SHALL NOT CONSTITUTE GROUNDS FOR AN EXTRA TO OWNER.

D. ASSUME RESPONSIBILITY FOR DAMAGE TO OF THE WORK OR PREMISES BEFORE SUBSTANTIAL COMPLETION. SHOULD NEW OR EXISTING EQUIPMENT BECOME DAMAGED, RESTORE IT TO ITS ORIGINAL CONDITION AND FINISH BEFORE FINAL ACCEPTANCE. DAMAGE INCURRED TO OWNER PROPERTY OR TO THE WORK OF OTHER DIVISIONS, CAUSED BY THIS DIVISION, SHALL BE REPLACED OR REPAIRED BY, AND AT THE EXPENSE OF, THE SUBCONTRACTORWARRANTY

3.10 **CONTINUITY OF SERVICES**

A. DO NOT INTERRUPT EXISTING SERVICES WITHOUT OWNER'S APPROVAL.

B. SCHEDULE INTERRUPTIONS IN ADVANCE, ACCORDING TO OWNER'S INSTRUCTIONS. SUBMIT, IN WRITING, WITH REQUEST FOR INTERRUPTION, METHODS PROPOSED TO MINIMIZE LENGTH OF INTERRUPTION.

C. INTERRUPTIONS SHALL BE SCHEDULED AT TIMES OF DAY AND WORK SO THAT THEY HAVE MINIMAL IMPACT ON OWNER'S OPERATIONS.

D. .SUBCONTRACTOR SHALL COORDINATE SHUTDOWNS OF EXISTING SYSTEMS.

3.11 **CLEANING**

A. PIPING

1. FURNISH PIPE CLEANING CHEMICALS, CHEMICAL FEED EQUIPMENT, MATERIALS AND LABOR NECESSARY TO CLEAN PIPING.

2. PERMANENTLY INSTALL NECESSARY CHEMICAL INJECTION FITTINGS COMPLETE WITH STOP VALVES.
3. AFTER PIPING SYSTEMS HAVE BEEN PRESSURE TESTED AND APPROVED FOR TIGHTNESS, CLEAN AND FLUSH PIPING AS SPECIFIED AND IN ACCORDANCE WITH APPLICABLE CODES.
4. MAINTAIN CONTINUOUS BLOWDOWN AND MAKE-UP DURING FLUSHING OPERATION.

B. EQUIPMENT

1. AFTER COMPLETION OF PROJECT, CLEAN THE EXTERIOR SURFACE OF EQUIPMENT, INCLUDING CONCRETE RESIDUE, DIRT AND PAINT RESIDUE.

3.12 **TESTS**

A. UPON COMPLETION OF THE MECHANICAL CONSTRUCTION WORK, PERFORM TESTS AND PROVIDE TEST REPORTS AS SPECIFIED IN THIS AND OTHER SECTIONS.

B. EACH TRADE SHALL ARRANGE THAT AN OFFICER OF THE CONTRACTING COMPANY SHALL CERTIFY THAT EACH AND EVERY SYSTEM HAS BEEN TESTED. AT THE CONCLUSION OF THE TESTS, SUBMIT A LETTER AND ENCLOSED COMMISSIONING FORMS SIGNED BY THE OFFICER STATING:

C. ALL TESTS SHALL BE MADE IN THE PRESENCE OF A REPRESENTATIVE OF THE PROJECT MANAGER. THE SUBCONTRACTOR SHALL SUBMIT TO THE PROJECT MANAGER 3 COPIES OF TEST RESULTS, CERTIFIED IN WRITING, WITNESSED, SIGNED AND DATED, IMMEDIATELY UPON COMPLETION OF WORK. UNSATISFACTORY CONDITION REVEALED BY THESE TEST RESULTS, OR UNSATISFACTORY METHODS OF TESTS AND/OR TESTING APPARATUS AND INSTRUMENTS, SHALL BE CORRECTED BY THE SUBCONTRACTOR TO THE SATISFACTION OF THE PROJECT MANAGER.

D. THE PROJECT MANAGER RESERVES THE RIGHT TO REQUIRE THAT THE SUBCONTRACTOR PERFORM AND REPEAT TESTS THAT ARE DEEMED NECESSARY TO COMPLETE OR CHECK THE TESTS OR THE CERTIFIED RECORDS OF THE SUBCONTRACTOR DURING THE COURSE OF THE WORK. CORRECT UNSATISFACTORY PORTION OF ITS WORK THAT IS REVEALED BY THE TESTS OR THAT MAY BE DUE TO PROGRESSIVE DETERIORATION DURING THIS PERIOD, UNLESS THE ITEM IN QUESTION WAS A DIRECT SPECIFICATION.

E. TESTING CRITERIA

SYSTEM	TEST MEDIUM	TEST PRESSURE	TEST DURATION	OTHER
DRAINAGE AND VENT (ALL SYSTEMS)	WATER	10 FEET	30 MINUTES	
WATER (ALL SYSTEMS)	WATER	150 PSIG MIN OR 1.5 OPERATING PRESSURE	1 HOUR	DO NOT SUBMIT THERMOPLASTIC PIPING SYSTEMS TO TEST PRESSURES HIGHER THAN 90 PSIG

1. FOR EACH SYSTEM NOTED ABOVE, AT THE END OF THE TEST PERIOD FLUSH THE SYSTEM WITH COMPONENT FLUID AND THE SYSTEM SHALL BE DRAINED COMPLETELY; FILL SYSTEM WITH THE PRODUCT FLUID CONTRACTOR SHALL RETURN THE PIPING SYSTEM TO ITS PRE-TEST CONDITION
2. SUBMIT AS PART OF THE CLOSEOUT DOCUMENTS, A TEST REPORT FOR EACH FLUID SYSTEM ABOVE. THE TEST FORM FOR THE SELECTED PIPING SYSTEM SHALL BE FILLED-OUT, SIGNED AND DATED BY THE CONTRACTOR AND OWNER OR ITS REPRESENTATIVE WITNESSING THE TEST AS THE ACCEPTANCE DOCUMENT FOR FILING IN OWNER'S DOCUMENTATION FILE FOR THE PROJECT.
3. REPAIR ALL SYSTEMS LEAKS WHERE FOUND DURING TEST PROCEDURES. RETEST SYSTEMS AFTER REPAIRS PER THE ABOVE TABLE.

3.13 **DISINFECTION OF WATER SYSTEMS**

A. WATER PIPING SYSTEMS SHALL BE THOROUGHLY DISINFECTED WITH A SOLUTION CONTAINING NO LESS THAN 50 PARTS PER MILLION OF AVAILABLE CHLORINE.

B. CHLORINATING MATERIALS SHALL BE EITHER LIQUID CHLORINE OR SODIUM HYPO CHLORITE SOLUTION, SHALL BE INTRODUCED INTO THE SYSTEM AND DRAWN TO ALL POINTS IN THE SYSTEM.

C. DISINFECTION SOLUTION SHALL BE ALLOWED TO REMAIN IN SYSTEM FOR 24 HOURS, DURING THIS TIME, VALVES AND FAUCETS SHALL BE OPENED AND CLOSED SEVERAL TIMES. AFTER DISINFECTION, SOLUTION SHALL BE FLUSHED FROM THE SYSTEM WITH CLEAR WATER UNTIL RESIDUAL CHLORINE CONTENT IS NO GREATER THAN 0.2 PARTS PER MILLION.

D. SUBMIT A CHLORINATION DISINFECTION REPORT AS RECORD OF PROCEDURE.

3.14 **PROJECT PUNCH LIST PROCEDURE**

A. IF, WHEN THE ENGINEER ARRIVES AT THE SITE CERTAIN AREAS ARE NOT COMPLETE AND READY FOR PUNCH OUT, THE ENGINEER WILL NOT REVIEW THESE AREAS. WHEN A SECOND NOTIFICATION IS ISSUED INDICATING THE INSTALLATION IS COMPLETED AND THE CONTRACTOR HAS PUNCHED AND CORRECTED THESE AREAS, THE ENGINEER WILL THEN RE-VISIT THE SITE FOR FINAL OBSERVATIONS AND PUNCH LIST.

1. SYSTEMS SHALL BE OPERATED UNDER ACTUAL OR SIMULATED FULL LOAD CONDITIONS. IDENTIFY THE OPERATING CONDITIONS IN THE WORK PLAN.
2. WORK PLAN SHALL INCORPORATE THE "DEMONSTRATION OF SUCCESSFUL OPERATION" DESCRIBED BELOW.
3. THE ARCHITECT/OWNER MAY CHECK THE COMPLETED AND COMMISSIONED INSTALLATION EITHER SEQUENTIALLY AS DIFFERENT PARTS ARE COMPLETED, AND/OR WHEN THE ENTIRE INSTALLATION IS COMPLETE, AT THE SOLE OPTION OF THE ARCHITECT/OWNER.

3.15 **PROJECT CLOSE-OUT PROCEDURE**

A. A. PROJECT CLOSE-OUT CHECKLIST

1. 1. REVIEW REQUIREMENTS OF EACH SECTION OF THE SPECIFICATIONS AND SUBMIT FOR APPROVAL TO ARCHITECT THE SIGN-OFF FORMS THAT SHALL BECOME THE PROJECT CLOSE-OUT CHECKLIST. THIS, AT A MINIMUM, SHALL INCLUDE THE FOLLOWING INFORMATION SHOWN IN ATTACHED PROJECT CLOSEOUT CHECKLIST EXAMPLE. THE ARCHITECT AND/OR OWNER MAY INCORPORATE ADDITIONAL SPECIFIC ITEMS TO THE FOLLOWING CHECKLIST WHICH SHALL BECOME PART OF THE PROJECT REQUIREMENTS.
2. SUBMIT RECORD DRAWINGS TO OWNER AND ARCHITECT/ENGINEER

3.16 **MAINTENANCE AND OPERATING INSTRUCTIONS AND TRAINING**

A. REFER TO DIVISION 01 SECTION "GENERAL REQUIREMENTS", FOR MAINTENANCE AND OPERATING INSTRUCTIONS, AND TRAINING REQUIREMENTS.

B. AT TIME OF OCCUPANCY, ARRANGE FOR MANUFACTURER'S REPRESENTATIVES TO INSTRUCT OPERATING AND MAINTENANCE PERSONNEL IN THE USE OF EQUIPMENT REQUIRING OPERATING AND MAINTENANCE. ARRANGE FOR PERSONNEL TO BE INSTRUCTED AT ONE TIME. COSTS FOR THIS SERVICE SHALL BE INCLUDED IN THE SUBCONTRACT.

C. MAINTENANCE AND OPERATING INSTRUCTIONS AND TRAINING FOR -FURNISHED EQUIPMENT WILL BE PROVIDED BY THE EQUIPMENT VENDOR. THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR OTHER EQUIPMENT.

Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210
P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

DocuSigned by:
D6BE7F41467946B...
REGISTERED PROFESSIONAL ENGINEER (Mechanical)
CERTIFICATE NO 58580
EDWARD S. DALTON
Date Signed
ARIZONA, U.S.A.
12/19/2024

General Notes:

Project Title:

Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:
Project North
True North

Project No.: C0115.00

Drawing Sheet Title:
PLUMBING SPECIFICATIONS

Drawing Sheet Number:
P-003

Owner's Branch No.:
134

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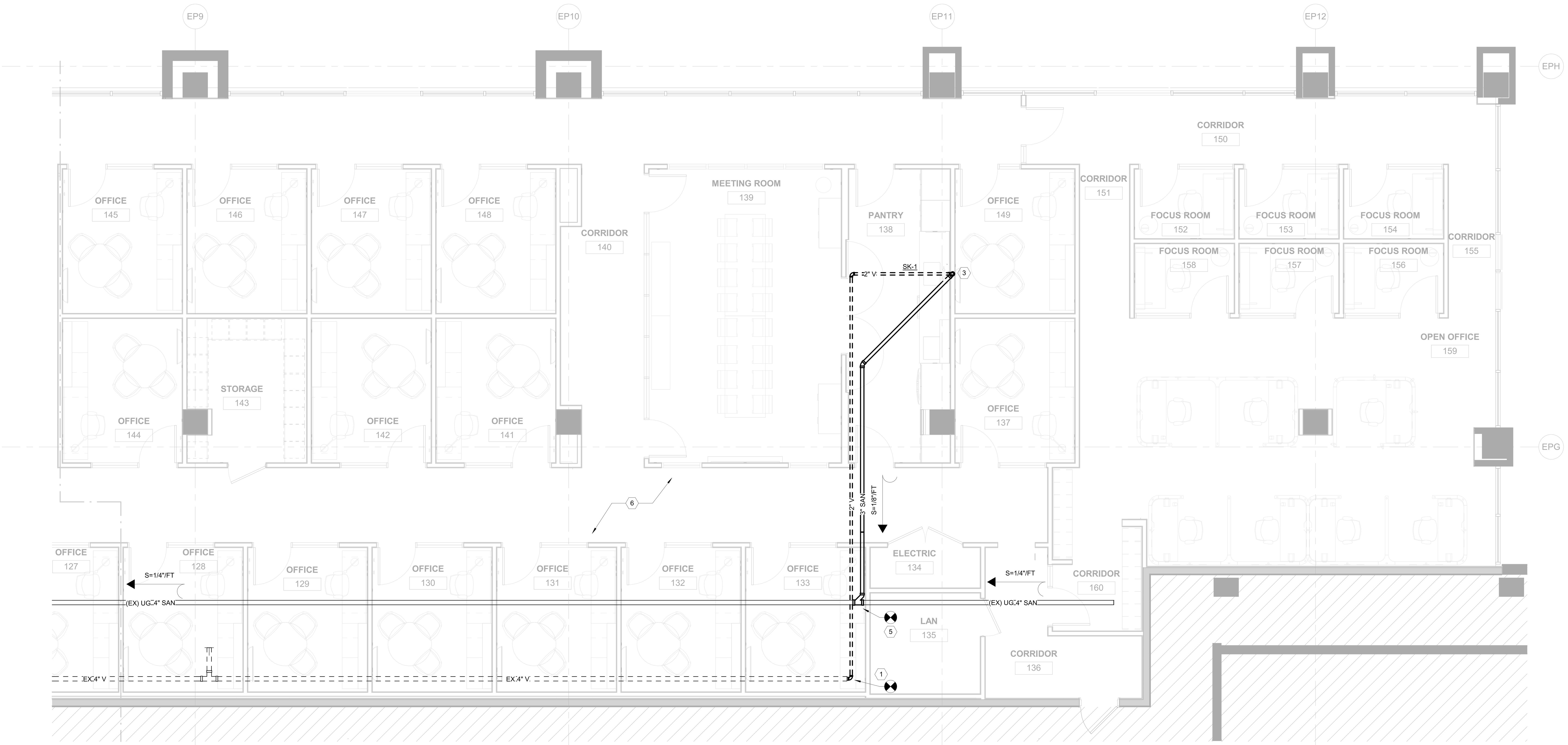
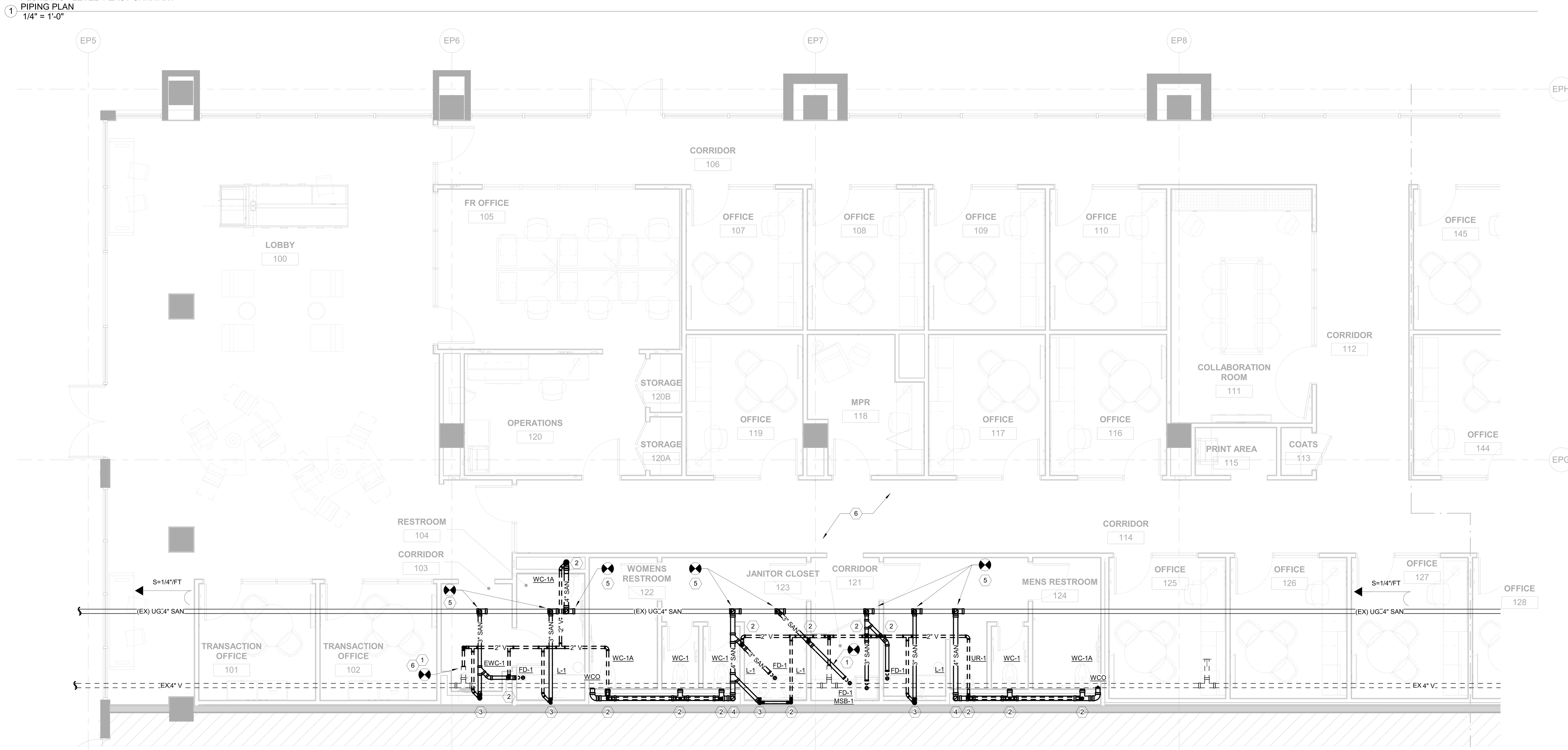


PLUMBING - LEVEL 1 EAST SANITARY PIPING PLAN
1/4" = 1'-0"



PLUMBING - LEVEL 1 WEST SANITARY PIPING PLAN
1/4" = 1'-0"

KEYNOTES:

1. CONNECT TO EXISTING ABOVE CEILING 4" V PIPING IN AREA. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF EXISTING 4" V PIPING PRIOR TO START OF WORK.
2. 2" V UP
3. 2" SAN DN
4. 4" SAN DN
5. CONNECT TO EXISTING UNDERGROUND 4" SAN PIPING IN AREA. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF EXISTING 4" SAN PIPING PRIOR TO START OF WORK.
6. ALL EXISTING PVC PIPING PROVIDED BY THE LANDLORD IN THE CEILING PLENUM TO BE FIRE WRAPPED. THIS INCLUDES ALL PIPING THAT IS ASSOCIATED WITH THE RESIDENTIAL UNITS LOCATED ABOVE THE FIDELITY SPACE.

Jacobs

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Two Commerce Square
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Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL

R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210

P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

DocuSigned by: D6BE7F41467946B...

REGISTERED PROFESSIONAL ENGINEER (Mechanical) CERTIFICATE NO 58580 EDWARD S. DALTON Date Signed ARIZONA, U.S.A.

12/19/2024

General Notes:

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Fidelity INVESTMENTS

Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

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Project No.: C0115.00

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PLUMBING - LEVEL 1 SANITARY PIPING PLAN

Drawing Sheet Number:

P-201

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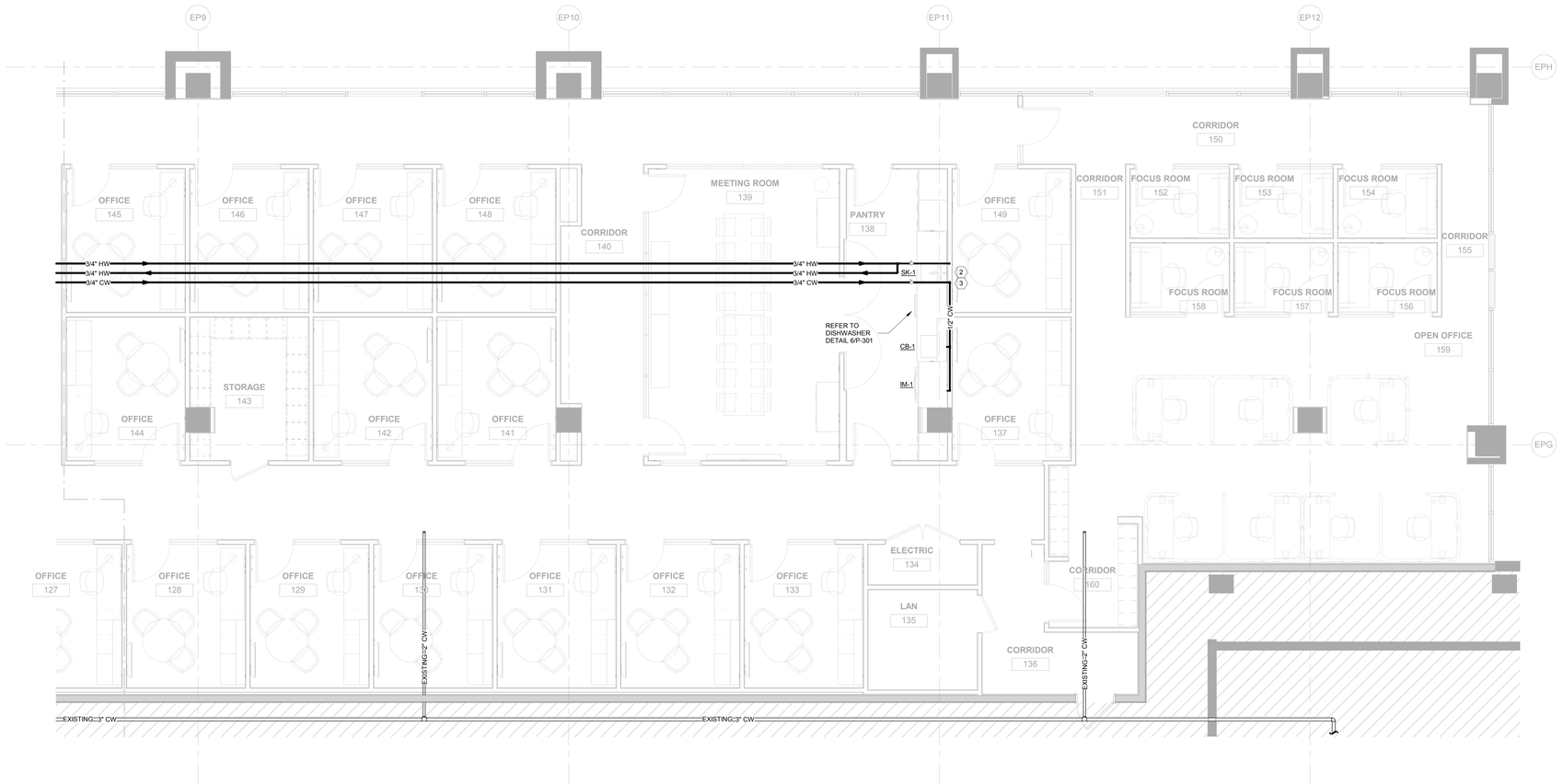
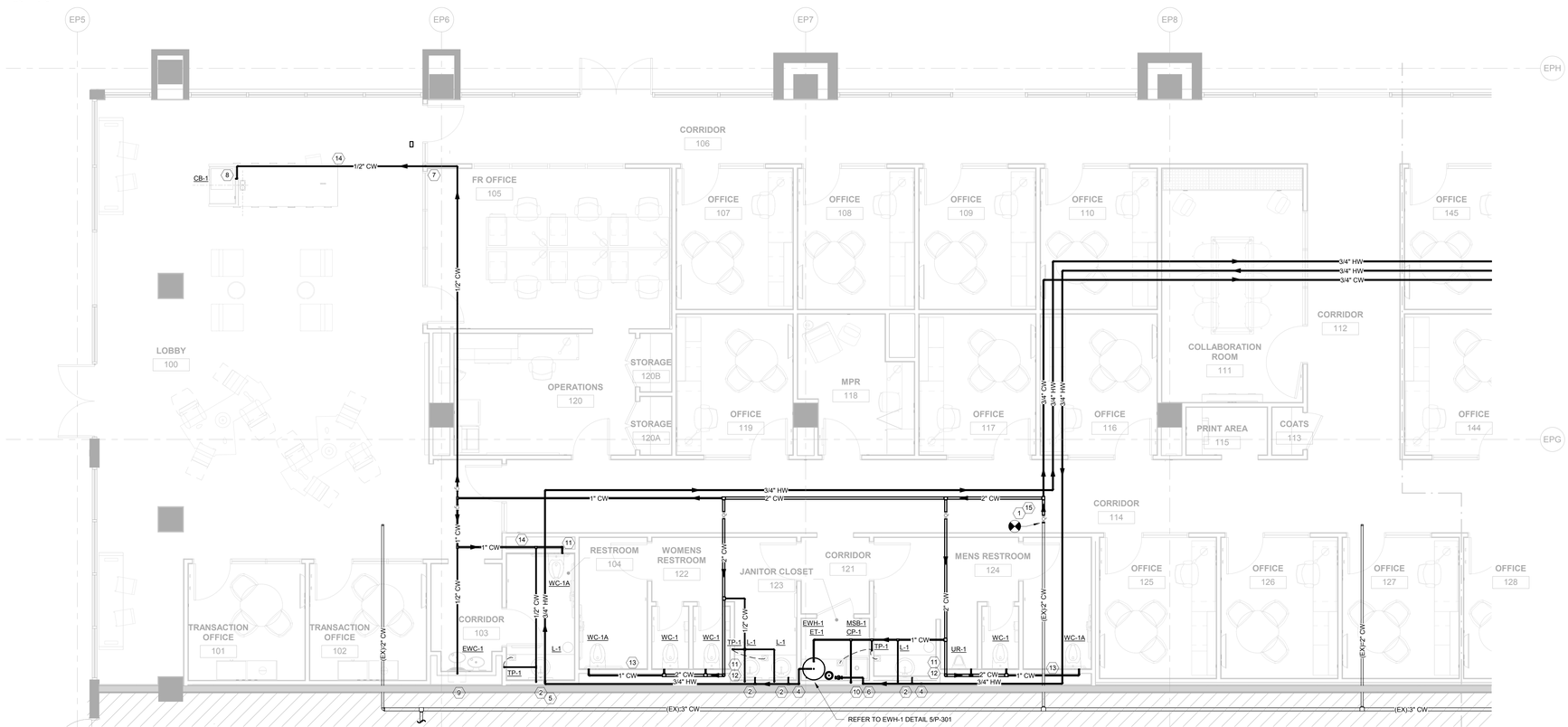
134



1 PLUMBING - LEVEL 1 EAST DOMESTIC WATER PIPING PLAN
1/4" = 1'-0"



2 PLUMBING - LEVEL 1 WEST DOMESTIC WATER PIPING PLAN
1/4" = 1'-0"

KEYNOTES:

1. CONNECT TO EXISTING CW PIPING IN AREA. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF EXISTING CW PIPING PRIOR TO START WORK.
2. 1/2" CW/HW TO FIXTURE
3. 1/2" CW DN TO EQUIPMENT
4. 3/4" HW DN
5. 3/4" HW UP
6. 1/2" HWR UP
7. 1/2" CW DN BELOW FLOOR
8. 1/2" UP TO EQUIPMENT. PROVIDE WATER FILTER BELOW THE COUNTER.
9. 1/2" CW TO FIXTURE
10. 3/4" CW/HW TO FIXTURE
11. 1" CW TO FIXTURE
12. 2" CW DN CHASE
13. PROVIDE WHA W/ ACCESS PANEL
14. 1/2" CW BELOW THE SLAB
15. LANDLORD TO PROVIDE WATER-SUBMETER

Jacobs
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Two Commerce Square
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Philadelphia, PA 19103

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Fidelity's Engineering Consultant :

VANDERWEIL
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Key Plan:
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Project No.: C0115.00

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PLUMBING - LEVEL 1 DOMESTIC WATER PIPING PLAN

Drawing Sheet Number:
P-202

Owner's Branch No.:
134

12/17/2024 11:05:43 AM

PLUMBING SCHEDULE - FIXTURE

ABB.	FIXTURE			FITTING			TRAP	LOCATION	NOTES
	MANUFACTURER	MODEL	TYPE	MANUFACTURER & MODEL	TYPE	SUPPLY			
CB-1	IPS	AB9700HA 87978	RECESSED COFFEE MAKER BOX OUTLET	----------	----------	1/2" SUPPLY	---------	LOBBY	WITH QUARTER TURN VALVE AND WATER HAMMER ARRESTER.
EWC-1	HALSEY TAYLOR	HTHB-OVLSER-I	BOTTLE FILLING STATION	----------	----------	1/2" SUPPLY	INTEGRAL	CORRIDOR	WITH BI-LEVEL INTEGRAL SWIRLFLOW
IM-1	IPS	AB9700HA 87978	RECESSED ICE MAKER BOX OUTLET	----------	----------	1/2" SUPPLY	---------	PANTRY	WITH QUARTER TURN VALVE AND WATER HAMMER ARRESTER.
L-1	KOHLER	CAXTON K-2210	OVAL BASIN WITH UNGLAZED UNDERSIDE	MAC FA444HD-31	OIL RUBBED BRONZE FINISH (0.5GPM)	1/2" SUPPLIES McGUIRE #LF-170	1-1/2" P-TRAP McGUIRE #8912C	BATHROOM	PROVIDE W/0.5GPM AERATOR. PROVIDE W/ AC PLUG-IN ADAPTER. PROVIDE OFFSET GRID DRAIN ASSEMBLY W/ TRUE BRO INSULATION ON PIPING UNDER LAVATORY. PROVIDE NEW C.P.SUPPLIES AND ANGLE STOPS. PROVIDE LEONARD LF-170 MIXING VALVE BELOW SINK.. ADA COMPLIANT
MSB-1	FIAT	TSB-100	12" DEPTH CONTINUOUS	CHICAGO 897-RCF	----------	3/4" SUPPLIES	3" P-TRAP	JANITORS CLOSET	3/4" HOSE CONNECTION WITH VB AND PAIL HOOK.
SK-1	ELKAY	ELUHAD211555	SINGLE BOWL UNDERMOUNT ADA SINK	WATERSTONE FULTON BRIDGE 7825 (1.5GPM)	ORB FINISH	1/2" SUPPLIES McGUIRE #LF-170	1-1/2" P-TRAP McGUIRE #8912C	PANTRY	PROVIDE ADA ACCESSIBLE BASKET STRAINER W/ OFFSET P-TRAP & TAIL PIECE W 1/2"CP ANGLE SUPPLIES (2). PROVIDE TRU BRO INSULATION ON PIPING BENEATH SINK. ADA COMPLIANT
UR-1	KOHLER	K-4991-ET	URINAL	SLOAN 8186	----------	3/4" SUPPLY	INTEGRAL	BATHROOM	HIGH EFFICIENCY URINAL WITH WHITE VITREOUS CHINA, 3/4" TOP SPUD, WALL HUNG MOUNTED
WC-1	KOHLER	K-84325	TOP SPUD FLOSHOMETER BOWL	SLOAN 8111-1.28-OR	SENSOR FLUSHOMETER (1.28GPF)	1" SUPPLY	INTEGRAL	BATHROOM	FURNISH AND INSTALL SOLID PLASTIC ELONGATED OPEN FRONT SEAT.
WC-1A	KOHLER	K-84325	TOP SPUD FLOSHOMETER BOWL	SLOAN 8111-1.28-OR	SENSOR FLUSHOMETER (1.28GPF)	1" SUPPLY	INTEGRAL	BATHROOM	FURNISH AND INSTALL SOLID PLASTIC ELONGATED OPEN FRONT SEAT.

PLUMBING SCHEDULE - WATER HEATER (ELECTRIC)

TAG ABB.	DESCRIPTION	TYPE	MANUFACTURER	MODEL	STORAGE CAPACITY	RECOVERY GPH	RECOVERY DEG RISE	TEMP SETTING	ELECTRICAL KW	ELECTRICAL VOLTAGE	REMARKS
EWH-1	ELECTRIC WATER HEATER	ELECTRIC	A.O. SMITH	DEL-20S-4	20.0 gal	14	100	140	4	208	

PLUMBING SCHEDULE - TANKS

TAG ABB.	DESCRIPTION	TYPE	MANUFACTURER	MODEL	DIMENSIONS HEIGHT	DIMENSIONS WIDTH	STORAGE CAPACITY	PIPE SIZE	REMARKS
ET-1	EXPANSION TANK	3/4-INCH THERMALEXPANSION ABSORBER BRASS	AMTROL	THERM-X-TROL-ST-5	1' - 1"	0' - 8"	2.0 gal	3/4"	

PLUMBING SCHEDULE - PUMP

TAG ABB.	DESCRIPTION	TYPE	MANUFACTURER	MODEL	FLOW (GPM)	ELECTRICAL VOLTAGE	SYSTEM SERVED	REMARKS
CP-1	CIRCULATION PUMP	IN-LINE	GRUNFOS	UPS 15-18 BUCS	1.5	115	HOT WATER RETURN	

PLUMBING SCHEDULE - DRAIN

TAG ABB.	DESCRIPTION	SIZE	MANUFACTURER	MODEL	OUTLET	STRAINER	REMARKS
FD-1	FLOOR DRAIN	3"	WATTS	FD-100-A	CAULK	ROUND NICKEL BRONZE	PROVIDE TRAP PRIMER CONNECTION.

PLUMBING SCHEDULE - TRAP PRIMER

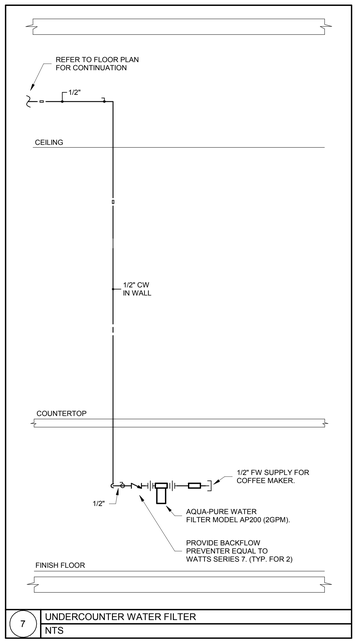
VV ABB.	DESCRIPTION	TYPE	MANUFACTURER	MODEL	REMARKS
TP-1	TRAP PRIMER VALVE	WITH DISTRIBUTION UNIT	PRECISION PLUMBING PRODUCTS	PR-500	REFER TO FLOOR PLANS FOR DISTRIBUTION UNITS REQUIRED. ELECTRONIC TRAP PRIMER W/ BOX AND ACCESS COVER. 120v/1a, 0.23 AMPS.

PLUMBING SCHEDULE - WATER HAMMER ARRESTOR

TAG EQUIP	TAG NUM	FIXTURE UNIT	SIZE	REMARKS
WHA	A	1 - 11	3/4"	W/12" X 12" ACCESS PANEL
WHA	B	12 - 32	3/4"	W/12" X 12" ACCESS PANEL
WHA	C	33 - 60	1"	W/12" X 12" ACCESS PANEL
WHA	D	61 - 113	1"	W/12" X 12" ACCESS PANEL
WHA	E	114 - 154	1"	W/12" X 12" ACCESS PANEL
WHA	F	115 - 330	2"	W/12" X 12" ACCESS PANEL

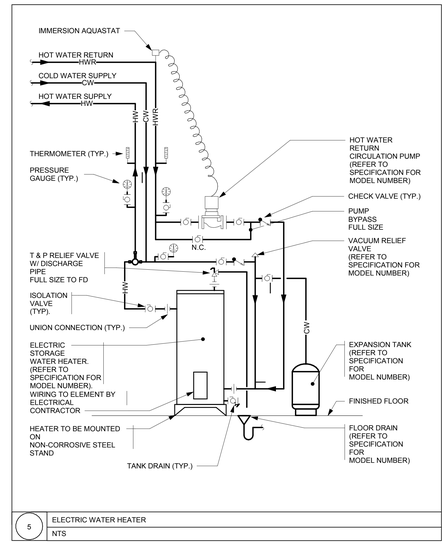
PLUMBING SCHEDULE - FIXTURE CONNECTION

DESCRIPTION	SOIL / WASTE	VENT	COLD WATER	HOT WATER
COFFEE BREWER			1/2"	
ELECTRIC WATER COOLER	2"	1 1/2"	1"	
ICE MACHINE	0"	0"	1/2"	
KICHENETTE SINK	1 1/2"	2"	1/2"	1/2"
LAVATORY	1 1/2"	2"	1/2"	1/2"
MOP SERVICE BASIN	3"	2"	3/4"	3/4"
URINAL	2"	2"	3/4"	
WATER CLOSET	4"	2"	1"	

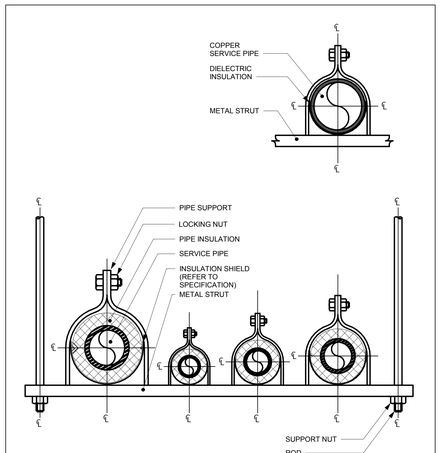


7 UNDERCOUNTER WATER FILTER
NTS

6 DISHWASHER CONNECTION UNDERCOUNTER
NTS

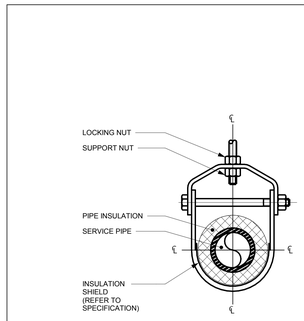


5 ELECTRIC WATER HEATER
NTS



NOTE:
1. SEE SPECIFICATION FOR HANGER SIZES.

4 PIPE HANGER SUPPORT
NTS

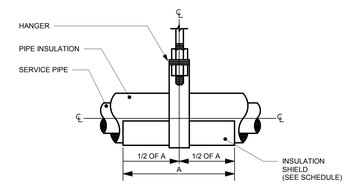


HEAVY DUTY CLEVIS HANGER

NOTE:
1. SEE SPECIFICATION FOR HANGER SIZES.

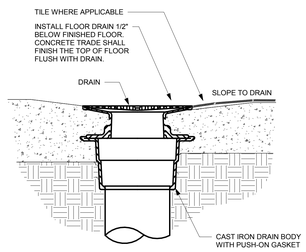
3 PIPE HANGER SUPPORT
NTS

INSULATION SHIELD SCHEDULE			
PIPE SIZE	DIMENSION "A"	GAUGE OF SHIELD	SHIELD THICKNESS
1/2" TO 4"	12"	18	0.0480
5" TO 6"	18"	16	0.0600
ABOVE 6"	24"	14	0.0750



NOTE:
1. SEE SPECIFICATION FOR FLANGER SIZES

2 PIPE HANGER SUPPORT
NTS



NOTE:
WHERE EDGE OF FLOOR DRAIN IS WITHIN 24 INCHES OF WALL, ADJUST SLOPE TO SUIT INSTALLATION.

1 FINISHED FLOOR DRAIN
NTS

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL
R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210
P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

Developed by
CERTIFICATE NO. 58580 EDWARD S. DALTON REGISTERED PROFESSIONAL ENGINEER STATE OF ARIZONA U.S.A.
12/19/2024

General Notes:

Project Title:
Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:
Project North
True North

Project No.: C0115.00

Drawing Sheet Title:
PLUMBING - SCHEDULES AND DETAILS

Drawing Sheet Number:
P-301

Owner's Branch No.:
134

GENERAL NOTES

1. THE WORK REQUIREMENTS DESCRIBED WITHIN DIVISION 20 SPECIFICATION SECTION "COMMON MECHANICAL / ELECTRICAL REQUIREMENTS" FORM COMPLIMENTARY REQUIREMENTS TO THE SCOPE OF WORK CONTAINED WITHIN DIVISION 27 AND 28.
2. PROVIDE ITEMS REFERRED TO IN SINGULAR OR PLURAL NUMBERS IN CONTRACT DOCUMENTS IN QUANTITIES NECESSARY TO COMPLETE WORK.
3. PERFORM WORK AS REQUIRED BY CODES, REGULATIONS AND LAWS OF LOCAL, STATE AND FEDERAL GOVERNMENTS AND OTHER AUTHORITIES WITH LAWFUL JURISDICTION.
4. MATERIAL AND EQUIPMENT SHALL BE UL, NEMA, ANSI, IEEE, ADA & CBM APPROVED FOR INTENDED SERVICE. MATERIAL AND INSTALLATION SHALL MEET REQUIREMENTS OF NATIONAL AND STATE ELECTRICAL CODE.
5. MAINTAIN RECORD DRAWINGS ON SITE. RECORD SET MUST BE COMPLETE AND CURRENT AND AVAILABLE FOR INSPECTION WHEN REQUISITIONS FOR PAYMENT ARE SUBMITTED.
6. GUARANTEE WORK IN WRITING FOR ONE YEAR FROM DATE OF FINAL ACCEPTANCE. REPAIR OR REPLACE DEFECTIVE MATERIALS OR INSTALLATION AT NO COST TO OWNER. CORRECT DAMAGE CAUSED IN MAKING NECESSARY REPAIRS AND REPLACEMENTS UNDER GUARANTEE AT NO COST TO OWNER.
7. SUBMIT GUARANTEE TO ARCHITECT BEFORE APPLICATION FOR FINAL PAYMENT.
8. STATEMENT OF GUARANTEE REQUIREMENTS SHALL NOT BE INTERPRETED TO LIMIT OWNER'S RIGHTS UNDER LAW AND THIS CONTRACT.
9. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS. PROVIDE INFORMATION AND COMPONENTS SHOWN ON RISER DIAGRAMS BUT NOT SHOWN ON PLANS, AND VICE VERSA, AS IF EXPRESSLY REQUIRED ON BOTH.
10. ALL WIRING SHALL BE RUN CONCEALED UNLESS SPECIFIED OTHERWISE.
11. ALL RACEWAYS RUNNING THROUGH BUILDING EXPANSION JOINTS SHALL BE EQUIPPED WITH EXPANSION FITTINGS.
12. CONTRACTOR SHALL REVIEW ALL TRADES' CONTRACT DOCUMENTS TO DETERMINE SPECIFIC MOUNTING HEIGHTS AND LOCATIONS FOR TELECOM EQUIPMENT. COORDINATE EXACT MOUNTING LOCATIONS WITH THE ARCHITECT.
13. ALL GROUNDING SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL AND STATE ELECTRICAL CODES.
14. REFER TO DRAWINGS FOR CABLE COLORS.
15. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL CONDUIT, JUNCTION BOXES, CABLE TRAYS, PANELS, PULL STRINGS, ENCLOSURES, FLOOR BOXES, POWER CIRCUITS, TELCOM GROUNDING SYSTEM, POWER CABLE AND POWER CONNECTIONS UNDER THIS SECTION.
16. CONDUIT SHALL NOT EXCEED 100'-0" OR A TOTAL OF 180 DEGREES IN BENDS BETWEEN PULL BOXES FOR DISTRIBUTION OF TELE/DATA CABLE.
17. VERIFY ALL DEVICE PLATE FINISHES WITH ARCHITECT AND/OR OWNER.
18. LABEL ALL CABLE, CONDUIT AND BACK BOXES FOR EASE OF IDENTIFICATION.
19. ALL CABLE RUNS MUST BE CONTINUOUS FROM SOURCE TO DESTINATION. NO EXCEPTIONS.
20. PROVIDE A SERVICE LOOP OF 15'-0" MINIMUM AT ALL BACKBONE TERMINATION LOCATIONS AND SPLICE POINTS.
21. WHEN ROUTING COMMUNICATIONS CABLES USING OPEN CABLING METHODS, MAINTAIN A MINIMUM SPACING OF 1'-0" FROM ELECTRICAL FEEDERS, BRANCH CIRCUIT WIRING AND AUXILIARY SYSTEM CABLING.
22. WHEN ROUTING COMMUNICATIONS CABLES USING OPEN CABLING METHODS, MINIMUM SPACING FROM ELECTRICAL APPARATUS SUCH AS MOTOR DRIVEN EQUIPMENT AND TRANSFORMERS SHALL BE 4'-0". SPACING REQUIREMENTS SHALL APPLY TO OPEN CABLE PATHS WHERE EQUIPMENT IS LOCATED ON THE SAME FLOOR, FLOOR ABOVE, FLOOR BELOW OR IN ROOMS ADJACENT TO SUCH EQUIPMENT AS THOUGH WALLS AND FLOORS DID NOT EXIST. EXCEPTION: BUILDING CONSTRUCTION THAT RESULTS IN METALLIC BARRIER BETWEEN ELECTRICAL APPARATUS AND CABLE PATHWAYS SHALL BE CONSIDERED SUITABLE SEPARATION.

WESCO - ACCOUNT MANAGER

1. POINT OF CONTACT FOR FIDELITY PREFERRED PRICING.
   - DAVID HINTON
     ACCOUNT MANAGER
     CELL: 919-883-6379
     OFFICE: 919-461-5375
     EMAIL: David.Hinton@Anixter.com

CONSTRUCTION NOTES

1. FOR GENERAL LEGEND, NOTES AND ABBREVIATIONS REFER TO TELECOM DRAWING TC-000.
2. REFER TO ARCHITECTURAL DRAWINGS FOR ASSOCIATED NOTES, MOUNTING DETAILS, HEIGHTS AND EXACT LOCATIONS OF ALL DEVICES.
3. PATCH PANEL QUANTITES SHOWN ARE DIAGRAMMATIC ONLY. PROVIDE APPROPRIATE QUANTITY OF PATCH PANELS WITHIN EACH RACK TO ACCOMODATE THE REQUIRED NUMBER OF CABLES PER THE FLOOR PLANS AND SPECIFICATIONS.
4. THIS CONTRACTOR SHALL COORDINATE EXACT LOCATIONS OF ALL RACK AND WALL FIELD TERMINATION AND ASSOCIATED TELECOMMUNICATIONS HARDWARE WITH THE OWNER'S INFORMATION TECHNOLOGY REPRESENTATIVE PRIOR TO INSTALLATION. THIS CONTACTTOR SHALL PROVIDE DIMENSIONED DRAWINGS OF LAYOUT COORDINATION TO ENGINEER FOR RECORD.
5. THIS CONTRACTOR SHALL FURNISH AND INSTALL PATCH CORDS AT EACH PORT AND BLOCK AT THE RACK/WALL FIELD END AS WELL AS AT EACH WORK AREA OUTLET IN ACCORDANCE WITH THE SPECIFICATIONS.
6. ALL PATCH CORDS SHALL BE MANUFACTURED BY ORTRONICS.
7. ORTRONICS PATCH PANELS SHALL HAVE COMPUTER COLOR CODED ICONS APPLIED TO THE APPROPRIATE LOCATIONS. COORDINATE ALL LOCATIONS WITH FIDELITY IT.
8. PROVIDE CAT 6A CABLE AND COMPONENTS FOR AP'S. PROVIDE PLENUM RATED COMPONENTS WHERE REQUIRED. PROVIDE 25 FEET OF EXTRA CABLE ABOVE CEILING.

TELECOM CONDUIT FILL CHART - 40% FILL

			CONDUIT INNER DIAMETER SIZE							
CABLE TYPE	JACKET	O.D.	0.75"	1"	1.25"	1.5"	2"	2.5"	3"	4"
CAT6	CMR	0.2	5	9	14	20	36	56	81	100
CAT6A	CMR	0.34	1	3	4	6	12	19	27	48
CAT6A	CMR	0.307	2	4	7	10	18	28	41	73
CAT6	CMP	0.2	5	9	14	21	37	57	83	110
CAT6A	CMP	0.34	2	3	5	7	13	21	30	53

TELECOM BACKBOX REQUIREMENTS

1. FOR WIRELESS LOCATIONS:
   PROVIDE A SINGLE GANG, 3" x 2", 2-3/4" DEEP, OUTLET BOX WITH A SINGLE GANG PLASTER RING AND A CONDUIT SIZED AS REQUIRED BASED ON THE CABLE FILL CHART, WITH CONNECTORS, BUSHINGS AND PULL STRING TO THE NEAREST ACCESSIBLE CEILING SPACE ON THE SAME FLOOR AS THE ROOM BEING SERVED BY THE OUTLET LOCATION.
2. FOR WALL MOUNTED LOCATIONS:
   PROVIDE A TWO GANG, 4-11/16" SQUARE, 2-1/8" DEEP, OUTLET BOX WITH A SINGLE GANG PLASTER RING AND A CONDUIT SIZED AS REQUIRED BASED ON THE CABLE FILL CHART, WITH CONNECTORS, BUSHINGS AND PULL STRING TO THE NEAREST ACCESSIBLE CEILING SPACE ON THE SAME FLOOR AS THE ROOM BEING SERVED BY THE OUTLET LOCATION.
3. FOR FLOOR MOUNTED LOCATIONS:
   PROVIDE A CONDUIT SIZED AS REQUIRED BASED ON THE CABLE FILL CHART, WITH CONNECTORS, BUSHINGS AND PULL STRING TO THE NEAREST ACCESSIBLE CEILING SPACE ON THE SAME FLOOR AS THE ROOM BEING SERVED BY THE OUTLET LOCATION.

TELECOM SYMBOLS LEGEND

WAP	WALL MOUNTED WIRELESS LOCATION (2) - CAT 6A CMP CABLES EACH WIRELESS LOCATION WILL BE INSTALLED WITH 25' OF SLACK AT THE WAP LOCATION
WAP	CEILING MOUNTED WIRELESS LOCATION (2) - CAT 6A CMP CABLES EACH WIRELESS LOCATION WILL BE INSTALLED WITH 25' OF SLACK AT THE WAP LOCATION
1	WALL MOUNTED DATA 1 LOCATION (1) - CAT 6 CMP CABLE
2	WALL MOUNTED DATA 2 LOCATION (2) - CAT 6 CMP CABLES
3	WALL MOUNTED DATA 3 LOCATION (3) - CAT 6 CMP CABLES
1-AV	WALL MOUNTED DATA 1 LOCATION & HDMI, FEED THRU, TYPE A, FEMALE TO FLIPPED FEMALE FOR AV VENDOR, MOUNTED BEHIND DISPLAY (1) - CAT 6 CMP CABLE
2-AV	WALL MOUNTED DATA 2 LOCATION & HDMI, FEED THRU, TYPE A, FEMALE TO FLIPPED FEMALE FOR AV VENDOR, MOUNTED BEHIND DISPLAY (2) - CAT 6 CMP CABLES
1-SEC	WALL MOUNTED DATA 1 LOCATION - FOR SECURITY MONITOR (1) - CAT 6 CMP CABLE
2-FR	FURNITURE MOUNTED DATA 2 LOCATION - FOR FR DESK (1) - CAT 6 CMP CABLES
RS	WALL MOUNTED DATA 1 LOCATION - FOR ROOM SCHEDULER (1) - CAT 6 CMP CABLE
TV	WALL MOUNTED COAX LOCATION - FOR TV (1) - RG6 COAX CABLE, PROVIDE RG11 CABLE FOR DISTANCES THAT EXCEED150 FT.
W	WALL MOUNTED PHONE VOICE 1 LOCATION (1) - CAT 6 CMP CABLE
1	FLOOR MOUNTED DATA 1 LOCATION (1) - CAT 6 CMP CABLE
2	FLOOR MOUNTED DATA 2 LOCATION (2) - CAT 6 CMP CABLES
3	FLOOR MOUNTED DATA 3 LOCATION (3) - CAT 6 CMP CABLES
1	CEILING MOUNTED DATA 1 LOCATION (1) - CAT 6 CMP CABLE
2	CEILING MOUNTED DATA 2 LOCATION (2) - CAT 6 CMP CABLES
CAM	CEILING MOUNTED DATA 1 LOCATION - FOR CAMERA (1) - CAT 6 CMP CABLE
F #	FEED LOCATION (# DENOTES THE NUMBER OF CABLES AT THE FEED LOCATION) PROVIDE A 2-GANG MUDRING WITH GROMMET FACEPLATE AT FEED LOCATIONS AS IDENTIFIED ON PLANS. PROVIDE POLYETHYLENE SLEEVE FROM GROMMET TO MODULAR FURNITURE ENTRY POINT.

VANDERWEIL PROJECT INFO

PROJECT NUMBER	C0115.00
PROJECT NAME	FIDELITY - SCOTTSDALE, AZ

TELECOM - SHEET LIST

Sheet Number	Sheet Name
TC-000	TELECOM - LEGEND SHEET
TC-001	TELECOM - SPECIFICATION SHEET
TC-201	TELECOM - LEVEL 1
TC-202	TELECOM - REFLECTED CEILING PLAN LEVEL 1
TC-300	TELECOM - DETAILS SHEET
TC-301	TELECOM - DETAILS SHEET
TC-302	TELECOM - DETAILS SHEET

ELECTRICAL LEGEND

	125 VOLT, 2 POLE, 3 WIRE, 20 AMP, DUPLEX RECEPTACLE.
	125 VOLT, 2 POLE, 3 WIRE, 20 AMP, DOUBLE DUPLEX RECEPTACLE.
	125 VOLT, 2 POLE, 3 WIRE, 20 AMP, DUPLEX RECEPTACLE FLUSH FLOOR MOUNTED
	125 VOLT, 2 POLE, 3 WIRE, 20 AMP, DOUBLE DUPLEX RECEPTACLE FLUSH FLOOR MOUNTED
20	L5-20R - 20 AMP, 125 VOLT, 2 POLE, 3 WIRE TWIST LOCK RECEPTACLE
21	L5-30R - 30 AMP, 125 VOLT, 2 POLE, 3 WIRE TWIST LOCK RECEPTACLE
23	L6-20R - 20 AMP, 250 VOLT, 2 POLE, 3 WIRE TWIST LOCK RECEPTACLE
24	L6-30R - 30 AMP, 250 VOLT, 2 POLE, 3 WIRE TWIST LOCK RECEPTACLE
	GROUND BAR WITH INSULATED #6 CONNECTED TO GROUND IN ELECTRICAL ENTRANCE ROOM

ELECTRICAL LEGEND NOTES

1. ELECTRICAL DEVICES SHOWN FOR COORDINATION PURPOSES ONLY. PLEASE REFER TO ELECTRICAL DRAWINGS FOR ALL ELECTRICAL WORK.

KEY LEGEND

X / TC-XX	DETAIL CALL-OUT - PLAN VIEW. DENOTES DETAIL "X" ON DRAWING "TC-XX".
#	SEE KEY NOTES # ON SHEET FOR DESCRIPTION

LEGEND NOTES

1. THIS SHEET IS A GENERAL LIST OF SYMBOLS AND SHALL BE USED AS A REFERENCE TO DEFINE ITEMS INDICATED ON THE DRAWINGS. NOT ALL SYMBOLS ARE NECESSARILY USED ON THIS PROJECT.

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL
R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210

P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

General Notes:

Project Title:

Fidelity INVESTMENTS

Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project No.: C0115.00

Drawing Sheet Title:
TELECOM - LEGEND SHEET

Drawing Sheet Number:
TC-000

Owner's Branch No.:
134

12/19/2024 3:49:39 PM

SECTION 271000 - STRUCTURED CABLING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Where Paragraphs of this Section conflict with similar paragraphs of the General and Supplementary Conditions and Division 1, requirements of this Section shall prevail.

1.2 SUMMARY
- A. Description, this project consists of, but is not limited to, the following:
  1. A complete and operational horizontal cabling distribution system consisting of:
     - a. Plenum rated Category 6 / 6A UTP cabling;
     - b. Associated terminations, connections, connectors, mounts, brackets, enclosures and accessories to ensure a complete system.
  2. A 20 year applications and system warranty.
- B. Section Includes:
  1. Pathways.
  2. UTP cable
  3. UTP cable hardware.
  4. Grounding.
  5. Identification products.

1.3 STANDARDS
- A. ANSI/TIA-568-C.0: Generic Telecommunications Cabling for Customer Premises.
- B. ANSI/TIA-568-C.1: Commercial Building Telecommunications Cabling Standard
- C. ANSI/TIA-568-C.2: Balanced Twisted-Pair Telecommunications Cabling and Components Standards.
- D. ANSI/TIA/EIA-569-B: Commercial Building Standard for Telecommunications Pathways and Spaces.
- E. ANSI/TIA/EIA-606-A: Administration Standard for the Telecommunications Infrastructure of Commercial Buildings
- F. ANSI/J-STD-607-A: Commercial Building Grounding and Bonding Requirements for Telecommunications.
- G. ANSI/TIA-1152, Requirements for Field Test Instruments and Measurements for Balance Twisted-Pair Cabling.

1.4 DEFINITIONS
- A. ANSI: American National Standards institute.
- B. BICSI: Building Industry Consulting Service International.
- C. Cross-Connect: A facility enabling the termination of cable elements and their interconnection or cross-connection.
- D. EIA: Electronic Industries Alliance.
- E. EMI: Electromagnetic interference.
- F. ER: Equipment Room.
- G. HC: Horizontal Cross-Connect
- H. IDC: Insulation displacement connector.
- I. ITSIM: Information Technology Systems Installation Methods Manual
- J. LAN: Local area network.
- K. Telecommunications Outlet/Connectors: A connecting device in the work area on which horizontal cable terminates.
- L. RCDD: Registered Communications Distribution Designer.
- M. TIA: Telecommunications Industry Association.
- N. TDMM: Telecommunications Distribution Methods Manual.
- O. TR: Telecommunications Room.
- P. UTP: Unshielded twisted pair.

1.5 ADMINISTRATIVE REQUIREMENTS
- A. Coordinate layout and installation of telecommunications cabling with Owner, Architect and architectural drawings and elevations.
- B. Review the related drawings and specifications for other trades/sections, including but not limited to: Architectural, Mechanical, Electrical, Electrical, Structural and Civil.
- C. Coordinate telecommunications outlet/connector locations with location of power receptacles.

1.6 ACTION SUBMITTALS
- A. Shop Drawings:
  1. System Labeling Schedules: Electronic copy of labeling schedules, in software and format selected by Owner.
  2. Electronic form cabling administration drawings.
  3. Wiring diagrams for each system and subsystem to show typical wiring schematics, including the following:
     - a. Cross-connects.
     - b. Horizontal cable.
     - c. Patch panels.
     - d. Patch cords and work area cords.
  4. Cross-connects and patch panels. Detail mounting assemblies, and show elevations and physical relationship between the installed components.

1.7 INFORMATIONAL SUBMITTALS
- A. Qualification Data: For Installer, qualified layout technician, installation supervisor, and field inspector.
- B. Submit documentation regarding the manufacturer's warranty. The documentation will include a sample of the warranty that would be provided to the customer when the installation is complete and documentation of the support procedure for warranty issues. Provide an application assurance manual documenting the vendor supported applications and application guidelines. In addition the contractor will furnish manufacturer's documentation stating the c ontractor is certified to perform warranty work.

1.8 CLOSEOUT SUBMITTALS
- A. Submit, upon completion of the installation:
  1. Electronic copies of complete operating manuals and user guide for each system and record drawings. Instructions must include part numbers and names, addresses, and telephone numbers of parts source.
  2. Test reports, as specified in field quality control article under execution, on CDs using excel or other similar software. If the software used to document test results is proprietary, than the contractor will include the necessary software and licenses to read and store the test results.
  3. Electronic floor plans showing communications outlets and identification numbers for each system. Submit completed cable schedules for each cable by system, using the final room numbers. This submittal must be approved prior to authorization for final payment.

1.9 QUALITY ASSURANCE
- A. Installer Qualifications: Cabling Installer must have personnel certified by BICSI on staff.
  1. Project Manager: Shall be an RCDD.
  2. Layout Responsibility: Preparation of Shop Drawings, Cabling Administration Drawings, and field testing program development by an RCDD.
  3. Installation Supervision: Installation shall be under the direct supervision of BICSI Certified ITS Technician, who shall be present at all times when Work of this Section is performed at Project site.

SECTION 271000 - STRUCTURED CABLING

- B. Provide evidence that the contractor is authorized by the manufacturer to furnish warranty services, components, and systems.
- C. Provide and/or warranty section a warranty for all parts, components, and materials against defects, faulty workmanship, and/or failure for one full year following system(s) acceptance.
- D. Meet with designated representative of the owner, architect and consultant for coordination meeting prior to commencement of work.

1.10 DELIVERY, STORAGE, AND HANDLING
- A. Schedule, arrange, and coordinate with involved parties/trades for shipment, arrivals, loading dock, elevators (as applicable), acceptance, storage, and security of equipment and materials. Assure that these activities do not interfere with other trades or the progress of this project.
- B. Store and protect materials according to manufacturer's specifications and recommendations.

1.11 WARRANTY
- A. Extended Warranty: Manufacturer's standard form in which manufacturer agrees to repair or place horizontal UTP cabling and components that fail within specified warranty period.
  1. Warranty Period: Twenty years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PATHWAYS
- A. General Requirements: Comply with ANSI/TIA/EIA-569-B.
- B. Cable Support: Cable supports shall be sized to allow a fill ratio that meets the standards specified herein and identified to support the Category of cabling being installed, designed to prevent degradation of cable performance and pinch points that could damage cable.
  1. Spools, J-hooks, Velcro straps and D-rings.

2.2 UTP CABLE
- A. Manufacturers: Provide products as noted on plan.
- B. Horizontal Cabling Description: 100-ohm, four-pair UTP, covered with a thermoplastic jacket.
  1. Provide the following colors as shown on plan:
- C. Patch and Work Area Cords Description: Provide patch cords as noted on plan

2.3 UTP CABLE HARDWARE
- A. Manufacturers: Provide products as noted on plan.
- B. Patch Panel: modular panels housing multiple-numbered jack units with IDC-type connectors at each jack for permanent termination of pair groups of installed cables.
  1. Number of Jacks per Field: One for each four-pair UTP cable indicated, plus 25 percent spare per system or as shown on the plan set.
- C. Telecommunications Outlet Connectors: 100-ohm, Modular, color-coded, 8-position 8-contact, twisted-pair connector.
  - a. Color: Match cable color.
  - b. Icon: Indicate service provided.
- D. Workstation Faceplate: Multi-port-connector assemblies mounted in double gang faceplate.
  1. Plastic Faceplate: High-impact plastic.
  2. For use with snap-in jacks.
     - a. Flush mounting jacks.
  3. Legend: Machine printed, in the field, using adhesive-tape label.

2.4 IDENTIFICATION PRODUCTS
- A. Comply with ANSI/TIA/EIA-606-A for labeling materials, including label stocks, laminating adhesives, and inks used by label printers.

PART 3 - EXECUTION

3.1 WIRING METHODS
- A. Install cables in pathways and cable trays except within consoles, cabinets, desks, and counters and except in accessible ceiling spaces and in gypsum board partitions where unenclosed wiring method may be used unless otherwise noted. Conceal pathways and cables unless otherwise noted.

3.2 INSTALLATION OF CABLES
- A. Comply with NECA 1.
- B. Four pair UTP cabling wiring scheme: T568B.
- C. General Requirements for Cabling:
  1. Comply with ANSI/TIA-568-C.1.
  2. Comply with BICSI ITSIM, Cable Termination Practices.
  3. Install 110-style IDC termination hardware unless otherwise indicated.
  4. Terminate conductors; no cable shall contain unterminated elements unless otherwise noted. Make terminations only at indicated outlets, terminals, cross-connects, and patch panels.
  5. Cables may not be spliced. Secure and support cables at intervals not exceeding 5 feet. Install lacing bars to restrain cables, to prevent straining connections, and to prevent bending cables to smaller radii than minimums recommended by manufacturer.
  6. Bundle, lace, and train conductors to terminal points without exceeding manufacturer's limitations on bending radii, but not less than radii specified in BICSI ITSIM, "Cabling Termination Practices" Chapter. Install lacing bars and distribution spools.
  7. Install conductors parallel with or at right angles to sides and back of enclosure.
  8. Do not install bruised, kinked, scored, deformed, or abraded cable. Do not splice cable between termination, tap, or junction points. Remove and discard cable if damaged during installation and replace it with new cable.
  9. Cold-Weather Installation: Bring cable to room temperature before dereeling. Heat lamps shall not be used for heating.
  10. Route cables, in bundles of no more than fifty. Bundle cables using Hook and Loop wire management straps, tie wraps are not acceptable.
  11. In the communications equipment room, install a 10 foot long cable service loop.
  12. In the ceiling above the work area outlet, install a 3 foot long cable service loop.
  13. Pulling Cable: Comply with BICSI ITSIM, monitor cable pull tensions.
- D. Group connecting hardware for cables into separate logical fields.
- E. Separation from EMI Sources:
  1. Comply with BICSI TDMM and ANSI/TIA-569-B for separating unshielded copper voice and data communication cable from potential EMI sources, including electrical power lines and equipment.
  2. Separation between open communications cables or cables in nonmetallic raceways and unshielded power conductors and electrical equipment shall be as follows:
     - a. Electrical Equipment Rating Less Than 2 kVA: A minimum of 5 i nches.
     - b. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 12 inches.

SECTION 271000 - STRUCTURED CABLING

     - c. Electrical Equipment Rating More Than 5 kVA: A minimum of 24 inches .
  3. Separation between communications cables in grounded metallic raceways and unshielded power lines or electrical equipment shall be as follows:
     - a. Electrical Equipment Rating Less Than 2 kVA: A minimum of 2-1/2 inches.
     - b. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 6 inches.
     - c. Electrical Equipment Rating More Than 5 kVA: A minimum of 12 inches.
  4. Separation between communications cables in grounded metallic raceways and power lines and electrical equipment located in grounded metallic conduits or enclosures shall be as follows:
     - a. Electrical Equipment Rating Less Than 2 kVA: No requirement.
     - b. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 3 inches.
     - c. Electrical Equipment Rating More Than 5 kVA: A minimum of 6 inches.
  5. Separation between Communications Cables and Electrical Motors and Transformers, 5 kVA or HP and Larger: A minimum of 48 inches.
  6. Separation between Communications Cables and Fluorescent Fixtures: A minimum of 5 inches.

3.3 FIRESTOPPING
- A. Comply with requirements in Section 078413 "Penetration Firestopping."
- B. Comply with ANSI/TIA-569-B, Annex A, "Firestopping."
- C. Comply with BICSI TDMM, "Firestopping Systems" Article.

3.4 GROUNDING
- A. Install grounding according to BICSI TDMM, "Bonding and Grounding (Earthing)" Chapter.
- B. Comply with ANSI/J-STD-607-A.

3.5 IDENTIFICATION
- A. Identify system components, wiring, and cabling complying with ANSI/TIA/EIA-606-A.
  1. Administration Class: 2.
  2. Color-code cross-connect fields. Apply colors to voice and data service backboards, connections, covers, and labels.
- B. Paint and label colors for equipment identification shall comply with ANSI/TIA/EIA-606-A for Class 2 level of administration.
- C. Cable Schedule: Post in prominent location in communications each equipment room. List incoming and outgoing cables and their designations, origins, and destinations. Protect with rigid frame and clear plastic cover. Furnish an electronic copy of final comprehensive schedules for Project.
- D. Cabling Administration Drawings: Show building floor plans with cabling administration-point labeling. Identify labeling convention and show labels for telecommunications closets, hardware, horizontal cables, work areas, grounding buses and pathways, and equipment grounding conductors. Follow convention of ANSI/TIA/EIA-606-A. Furnish electronic record of all drawings, in software and format selected by Owner.
- E. Cable Identification:
  1. Label each horizontal cable within 4 inches of each termination, where it is accessible in a rack, cabinet, junction box or outlet box.
  2. Identification within Connector Fields in Equipment Rooms and Wiring Closets: Prior to labeling, coordinate with owner for labeling scheme. Label each connector, faceplate, 110-block or other connecting hardware.
- F. Labels shall be preprinted or computer-printed type with printing area and font color that contrasts with cable jacket color but still complies with requirements in ANSI/TIA/EIA-606-A.
  1. Cables use flexible vinyl or polyester that flex as cables are bent.

3.6 FIELD QUALITY CONTROL
- A. Perform the following tests and inspections:
  1. Visually inspect cable jacket materials for NRTL certification markings. Inspect cabling terminations in communications equipment rooms for compliance with color-coding for pin assignments, and inspect cabling connections for compliance with standards.
  2. Visually confirm correct marking of outlets, cover plates, outlet/connectors, and patch panels.
  3. Visually inspect cable placement, cable termination, grounding and bonding, equipment, patch cords and work area cords, and labeling of all components.
  4. Test instruments shall meet or exceed applicable requirements in standards specified herein.
  5. Horizontal UTP Performance Tests:
     - a. Test for each outlet. Perform the following tests according to ANSI/TIA-568-C.2:
       1) Wire map.
       2) Length (physical vs. electrical, and length requirements).
       3) DC loop resistance.
       4) Return loss.
       5) Insertion loss.
       6) ACRF.
       7) PSACRF.
       8) Propagation delay skew.
       9) PSANEXT loss.
       10) Average PSANEXT loss.
       11) PSAACRF.
       12) Average PSAACRF loss.
       13) Return loss.
       14) Propagation delay.
- B. End-to-end cabling will be considered defective if it does not pass tests and inspections.
- C. Prepare test and inspection reports.

3.7 CLEANING
- A. Clean equipment any work areas prior to presentation for acceptance by client. This work will include wiping of work areas, removal of streaks, dust, stains, etc., and assurances that systems and components as represented are new and undamaged.

3.8 DEMONSTRATION
- A. Train Owner's maintenance personnel in cable-plant management operations, including changing signal pathways for different workstations, rerouting signals in failed cables, and keeping records of cabling assignments and revisions when extending wiring to establish new workstation outlets.

3.9 SYSTEM ACCEPTANCE
- A. Obtain written acceptance from the owner or the owner's representative at the completion of system installation, testing, documentation and training. Failure of the contractor to obtain sign off will result in the contractor remaining responsible for extending, at no charge to the owner, conditions of the warranty and guarantees until such time that sign off had occurred. Time included in the above condition will be presented to the owner in addition to the standard warranties.

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL
R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210
P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

General Notes:

Project Title:

Fidelity INVESTMENTS
Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project No.: C0115.00

Drawing Sheet Title:
TELECOM -
SPECIFICATION SHEET

Drawing Sheet Number:
TC-001

Owner's Branch No.:
134

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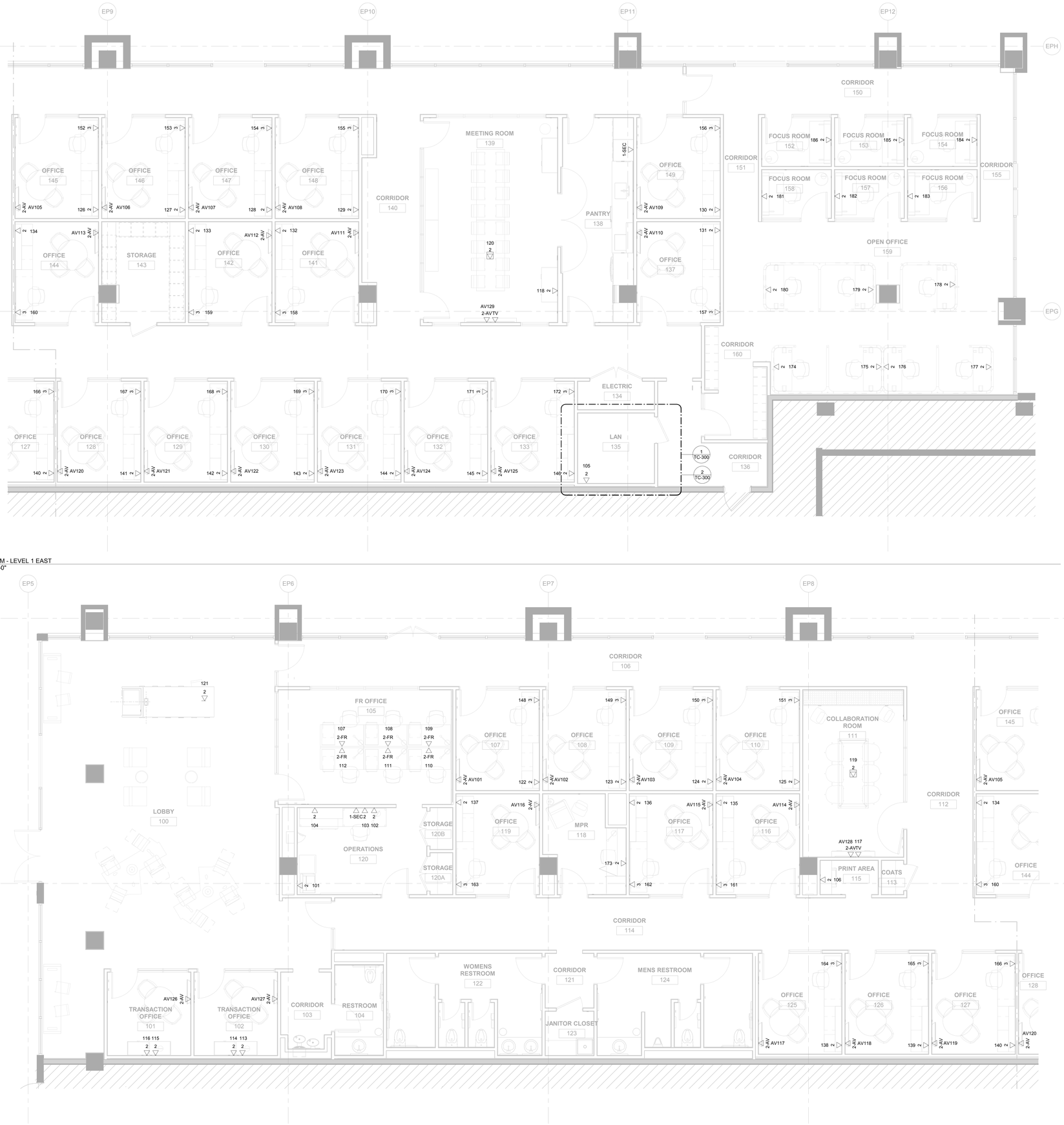

1 TELECOM - LEVEL 1 EAST
1/4" = 1'-0"

2 TELECOM - LEVEL 1 WEST
1/4" = 1'-0"

SHEET NOTES:
1. FOR GENERAL LEGEND, NOTES AND ABBREVIATIONS REFER TO TELECOM DRAWING TC-000.

2. REFER TO ARCHITECTURAL DRAWINGS FOR ASSOCIATED NOTES, MOUNTING DETAILS, HEIGHTS AND EXACT LOCATIONS OF ALL DEVICES.

3. ALL TELECOM OUTLETS SHALL BE WIRED BACK TO THE LAN ROOM.

4. THIS CONTRACTOR SHALL COORDINATE EXACT CABLE TERMINATIONS TO AND WITHIN ALL CONFERENCE ROOM TABLES WITH ARCHITECT, AV VENDOR, AND TABLE VENDOR PRIOR TO CABLE TERMINATION.

5. PROVIDE RG6 COAX CABLE TO NEW TV OUTLET LOCATIONS. PROVIDE RG11 FOR DISTANCES THAT EXCEED 150 FT.

6. PROVIDE GREEN 3RD CABLE FOR VIDEO MONITOR, TERMINATE GREEN CABLE ON CCTV PATCH PANEL. VIDEO MONITOR CABLE SHALL NOT BE PATCHED THROUGH AT THE CCTV RACK END. THESE LOCATIONS WILL REQUIRE MOVING THE CCTV MONITOR PATCH CABLE IF NECESSARY BY FIDELITY.

7. REFER TO SECURITY DRAWINGS FOR CCTV VIDEO CAMERA SPECIFICATIONS. PROVIDE SURFACE MOUNTED BOX AT ALL SECURITY CAMERA LOCATIONS.

8. TELECOM OUTLETS WITHIN OPERATIONS ROOM COUNTER SHALL BE MOUNTED IN SURFACE MOUNTED POWER/TELECOM RACEWAY. PROVIDE APPROPRIATE WIREMOLD 5400 SERIES FITTINGS TO ACCOMMODATE TELECOM MODULAR INSERTS.

9. WIRELESS ACCESS POINT OUTLET SHALL BE LOCATED ABOVE THE CEILING. PROVIDE 25 FEET OF SLACK ABOVE CEILING. CONTRACTOR SHALL PROVIDE PLENUM RATED COMPONENTS WHERE REQUIRED. CONTRACTOR SHALL INSTALL FIDELITY PROVIDED WIRELESS ACCESS POINT AT THE CENTER OF THE CEILING TILE PER MOUNTING DETAIL.

10. TELECOM OUTLETS SHALL BE MOUNTED IN WIREMOLD EVOLUTION WALL BOX EFSBX. PROVIDE APPROPRIATE FITTINGS TO ACCOMODATE THE TELECOM MODULAR INSERTS. ROUTE COAXIAL CABLES THRU AV CONDUIT AND TERMINATE WITH F-CONNECTORS.

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL
R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210
P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

General Notes:

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Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project North
True North

Drawing Sheet Title:
TELECOM - LEVEL 1

Drawing Sheet Number:
TC-201

Owner's Branch No.:
134

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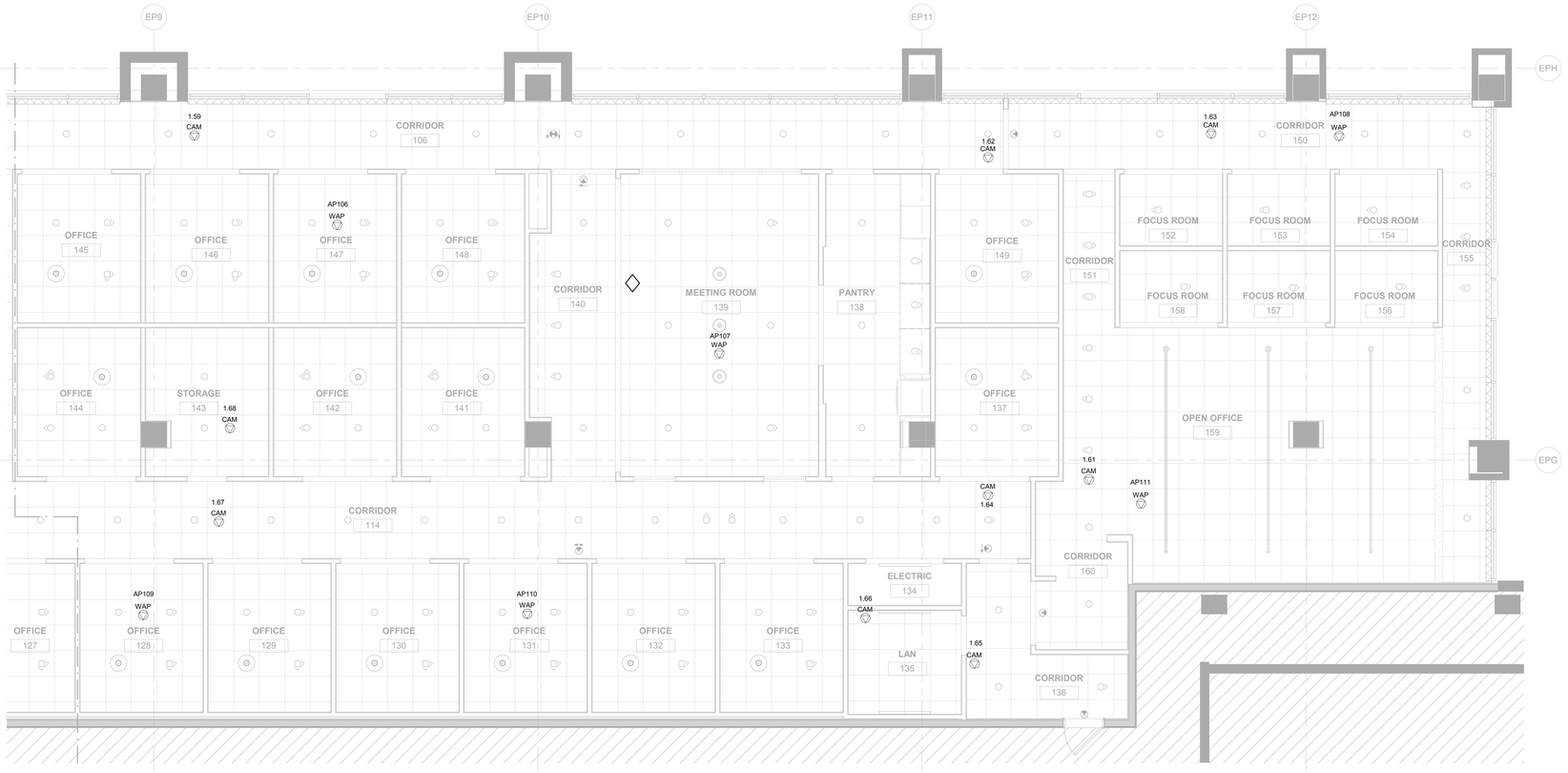
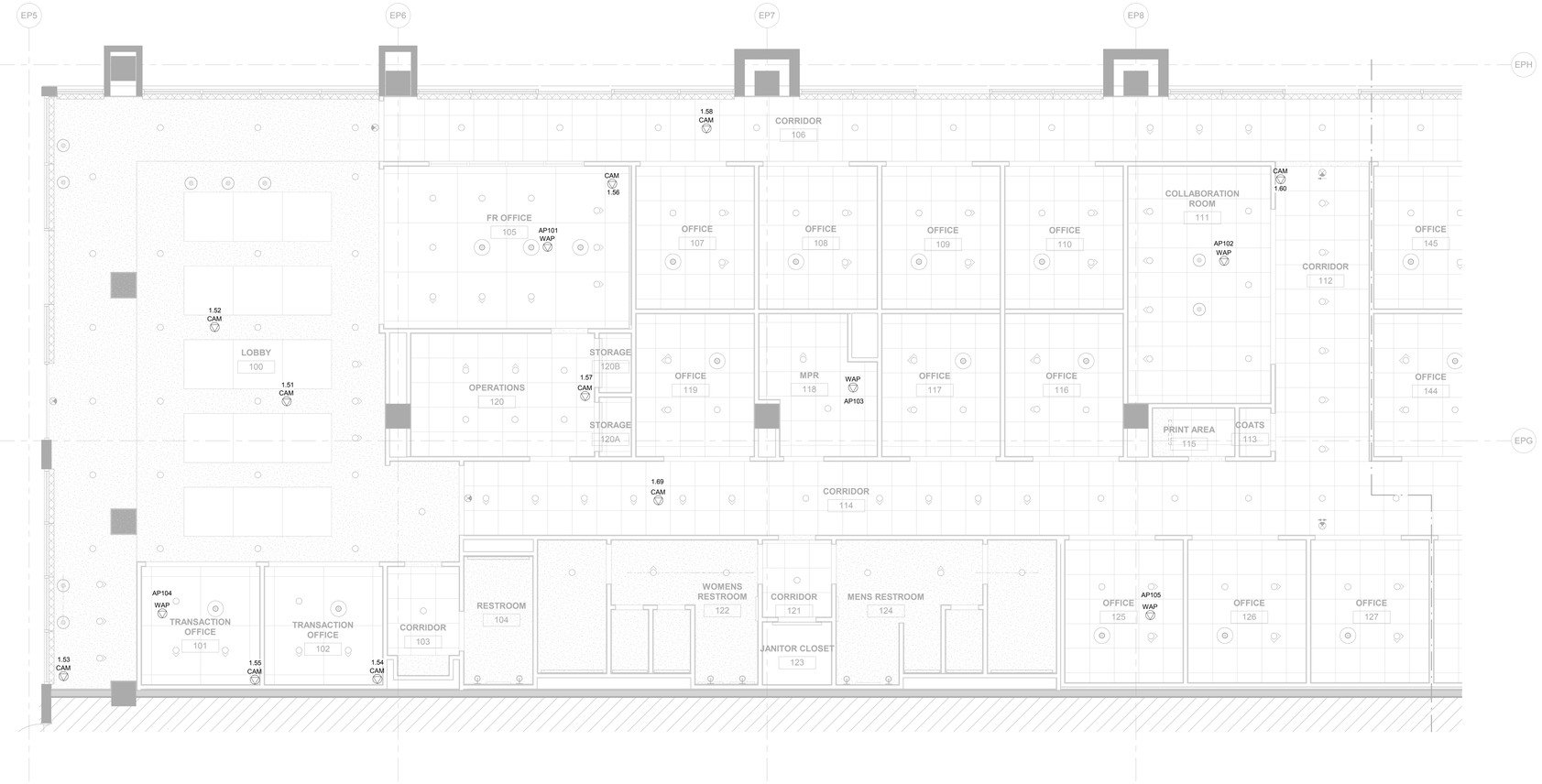


2 - LEVEL 1 EAST-
1/4" = 1'-0"



1 - LEVEL 1 WEST -
1/4" = 1'-0"

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Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL

R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210

P 617-423-7423
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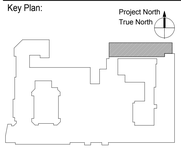


Drawing Sheet Title:

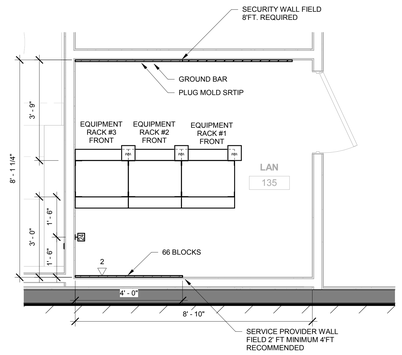
TELECOM - REFLECTED CEILING PLAN LEVEL 1

Drawing Sheet Number:

TC-202

Owner's Branch No.:

134



1 TELECOM - LEVEL 1 EAST - LAN EQUIPMENT LAYOUT
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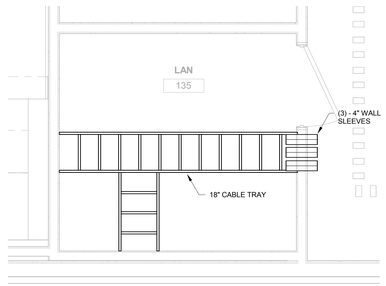

2 TELECOM - LEVEL 1 EAST - LAN CABLETRAY LAYOUT
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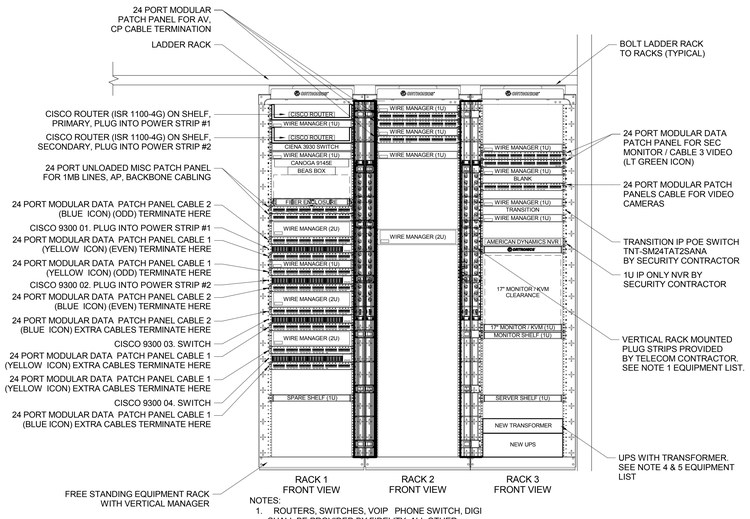
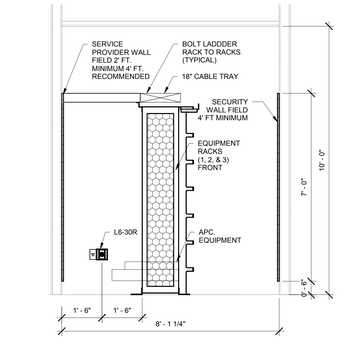


NOTES:
1. ROUTERS, SWITCHES, VOIP PHONE SWITCH, DIGI SHALL BE PROVIDED BY FIDELITY. ALL OTHER EQUIPMENT, SHELVES, UPS, PASSIVE TERMINATION EQUIPMENT, RACKS PATCH CORDS AND WIRE MANAGEMENT SHALL BE PROVIDED BY TELECOM CONTRACTOR.

3 FIDELITY - RACK ELEVATION DETAIL
LAN ROOM
1" = 1'-0"



6 TELECOM - LAN ROOM WEST
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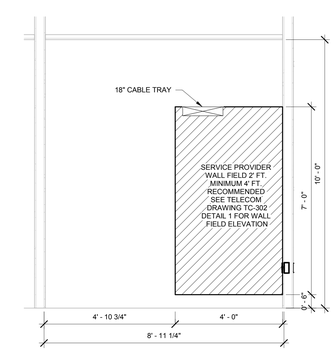

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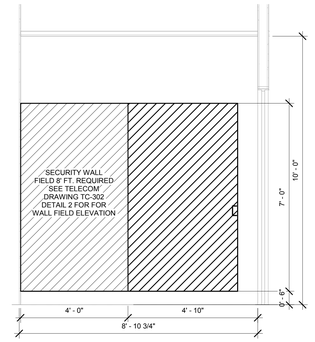

4 TELECOM - LAN ROOM NORTH
1/2" = 1'-0"

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Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL
R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210
P 617-423-7423
F 617-423-7501
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Fidelity Investments

Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
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Key Plan:

Project No.: C0115.00

Drawing Sheet Title:
TELECOM - DETAILS SHEET

Drawing Sheet Number:
TC-300

Owner's Branch No.:
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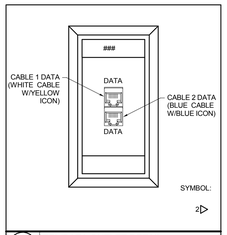

1 TEL/DATA OUTLET DETAIL
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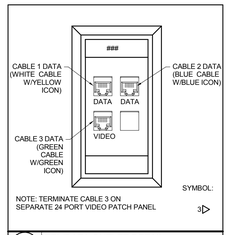

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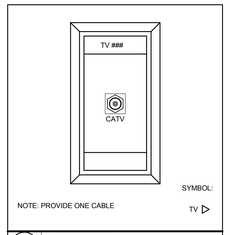

3 CATV OUTLET DETAIL
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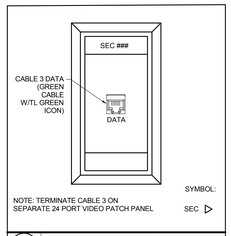

4 SEC MONITOR OUTLET DETAIL
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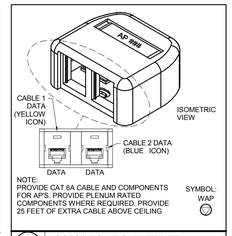

5 ACCESS POINT OUTLET DETAIL
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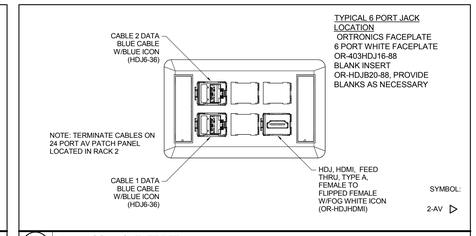

6 AV LAN CONN OUTLET DETAIL
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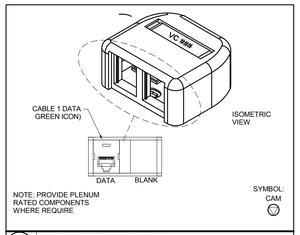

7 SECURITY CAMERA DETAIL
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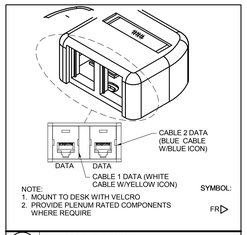
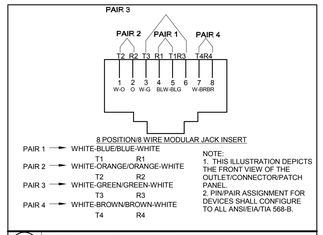
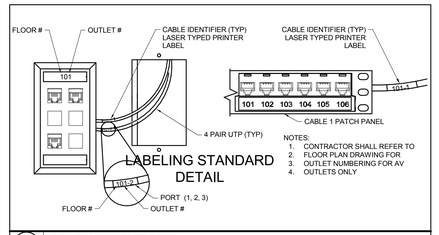


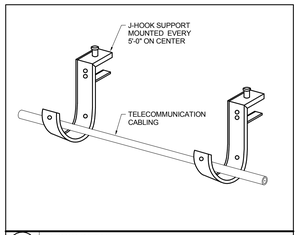
8 TEL/DATA (FR DESK)
SCALE: NONE



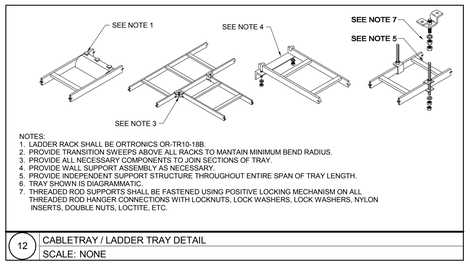
9 EIA/TIA 568 T-568B WIRING SCHEME DETAIL
SCALE: NONE



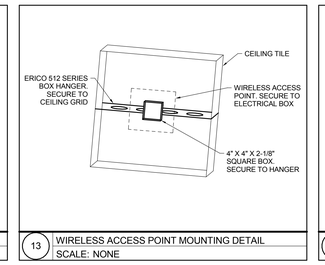
10 LABELING STANDARD DETAIL
SCALE: NONE



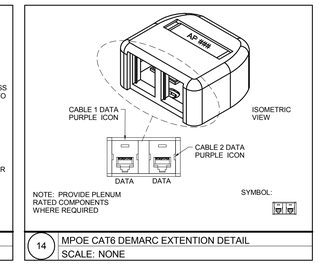
11 J-HOOK DETAIL
SCALE: NONE



12 CABLETRAY / LADDER TRAY DETAIL
SCALE: NONE



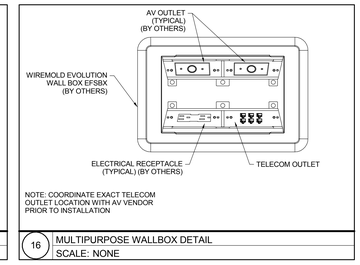
13 WIRELESS ACCESS POINT MOUNTING DETAIL
SCALE: NONE



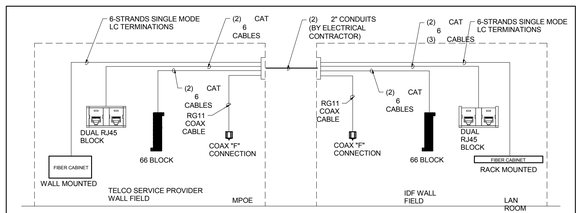
14 MPOE CAT6 DEMARC EXTENTION DETAIL
SCALE: NONE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
WIRE MANAGER																								WIRE MANAGER
X01	X03	X05	X07	X09	X11	X13	X15	X17	X19	X21	X23	X25	X27	X29	X31	X33	X35	X37	X39	X41	X43	X45	X47	YELLOW ODD
SWITCH #1																								SWITCH
X01	X04	X06	X08	X10	X12	X14	X16	X18	X20	X22	X24	X26	X28	X30	X32	X34	X36	X38	X40	X42	X44	X46	X48	YELLOW EVEN
WIRE MANAGER																								WIRE MANAGER
X01	X03	X05	X07	X09	X11	X13	X15	X17	X19	X21	X23	X25	X27	X29	X31	X33	X35	X37	X39	X41	X43	X45	X47	YELLOW ODD
SWITCH #2																								SWITCH
X02	X04	X06	X08	X10	X12	X14	X16	X18	X20	X22	X24	X26	X28	X30	X32	X34	X36	X38	X40	X42	X44	X46	X48	BLUE EVEN
WIRE MANAGER																								WIRE MANAGER
X49	X50	X51	X52	X53	X54	X55	X56	X57	X58	X59	X60	X61	X62	X63	X64	X65	X66	X67	X68	X69	X70	X71	X72	BLUE EXTRA CABLES
SWITCH #3 (OPTIONAL)																								SWITCH
X49	X50	X51	X52	X53	X54	X55	X56	X57	X58	X59	X60	X61	X62	X63	X64	X65	X66	X67	X68	X69	X70	X71	X72	YELLOW EXTRA CABLES
"X" - INDICATES FLOOR NUMBER																								

15 SAMPLE LAN ROOM PATCH PANEL LAYOUT
SCALE: NONE



16 MULTIPURPOSE WALLBOX DETAIL
SCALE: NONE



17 TELECOM MPOE TO LAN ROOM RISER PLAN
SCALE: NONE

Jacobs

Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL

R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210

P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

General Notes:

Project Title:

Fidelity INVESTMENTS

Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project No.: C0115.00

Drawing Sheet Title:

TELECOM - DETAILS SHEET

Drawing Sheet Number:

TC-301

Owner's Branch No.:

134

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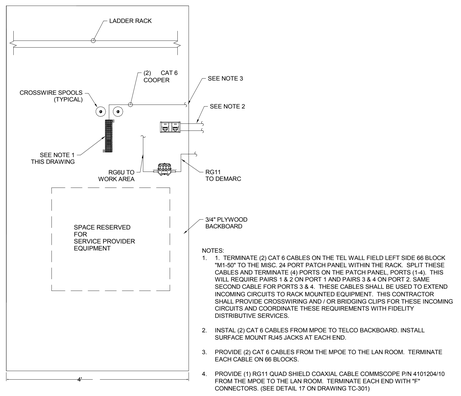
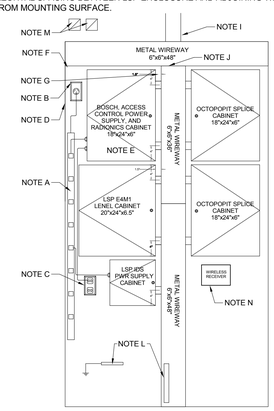


1 | THE WALL FIELD ELEVATION LAN ROOM
SCALE: NONE

GENERAL NOTES:

A. PLUG MOLD STRIP WITH A MINIMUM OF 8 RECEPTACLES AT 6" ON CENTER AND A 20AMP TWIST-LOCK NEMA L5-20R PLUG.
B. UTILITY POWER - 20AMP SINGLE NEMA 5-20R TWIST-LOCK RECEPTACLE. (BY OTHERS).
C. TELEPHONE/DATA JACK WITH MINIMUM OF FOUR (4) PATCHED AND ACTIVE JACKS. (BY OTHERS).
D. 3/4" FIRE RETARDENT PLYWOOD WITH FIRE RETARDENT WHITE PAINT. (BYGC)
E. ALL IDS CABINETS TO BE HINGED, KEY LOCKABLE A WITHOUT KNOCK OUTS. HINGED SIDE OF CABINET TO BE MOUNTED OPPOSITE OF KEY LATCH AS SHOWN ON DRAWING. CABINETS CAN BE ORDERED FROM NORTHEAST ELECTRIC (781-401-8543 JOHN KERNS) WITH CAT6G KEYLOCK.
F. 1" VERTICAL SPACING BETWEEN PANELS TYPICAL.
G. 1-1/2" HORIZONTAL SPACING BETWEEN PANELS TYPICAL.
H. 2" DIAMETER RIGID CONNECTORS TYPICAL, NO LONGER THAN 3" IN LENGTH, WITH BUSHINGS.
I. 4" CONDUIT SHALL BE STUBBED UP FROM METAL WIREWAY OF SECURITY CONTROL PANEL TO 6" ABOVE CEILING.
J. CONNECT ALL WIREWAY WITH 4" CHASE NIPPLES & BUSHINGS.
K. BOSCH 16.5VAC 40VA PLUG IN TRANSFORMER PROVIDED WITH PANEL "GROUND BUS" GE#TGL2 EQUIPMENT GROUND KIT.
L. EXTEND #12 GND FROM "GROUND BUS" TO EACH CABINET GROUND LUG. EXTEND #6 GND FROM "GROUND BUS" TO DEDICATED GROUND BAR.
M. TWO (2) NORMALLY CLOSED DRY CONTACTS FROM FIRE ALARM SYSTEM THAT OPENS DURING GENERAL ALARM WITHIN FIDELITY SPACE. DMARC WHERE FIRE ALARM CONTRACTOR EXTENDS 2-COND CABLE AND SECURITY CONTRACTOR MAKES CONNECTION. (BY GC)
N. WIRELESS RECEIVER MOUNTING LOCATION.
O. 2" MINIMUM HORIZONTAL SPACING BETWEEN LSP ENCLOSURE AND ADJOINING WALLS OR EQUIPMENT EXTENDING MORE THAN 3" FROM MOUNTING SURFACE.



2 | 4' BOSCH/LENEL CONTROL PANEL LAYOUT
SCALE: NONE

RACKS & EQUIPMENT			
ITEM	DESCRIPTION	MANUFACTURER	PART NUMBER
FREE STANDING RACK, BLACK (45RU)	23.75"W x 10.50" x 84"H	LEGRAND / ORTRONICS	MM20710-B
VETICAL WIRE MANAGEMENT, BLACK	4"W x 6"D x 84"H	LEGRAND / ORTRONICS	MM20VML-704-B
HORIZONTAL WIRE MANAGER, W/ COVER	1RU	LEGRAND / ORTRONICS	808000010
HORIZONTAL WIRE MANAGER, W/ COVER	2RU	LEGRAND / ORTRONICS	808044549
24 PORT FLAT PATCH PANEL	UNLOADED / KEYSTONE	PANDUIT	NKPP24FMY
JACKS FOR UNLOADED PATCH PANELS	BLUE CAT 6 KEYSTONE	LEGRAND / ORTRONICS	KS6A-36
JACKS FOR UNLOADED PATCH PANELS	YELLOW CAT 6 KEYSTONE	LEGRAND / ORTRONICS	KS6A-44
JACKS FOR UNLOADED PATCH PANELS	GREEN CAT 6 KEYSTONE	LEGRAND / ORTRONICS	KS6A-45
JACKS FOR UNLOADED PATCH PANELS	FOG WHITE CAT 6A KEYSTONE	LEGRAND / ORTRONICS	KTZJ6A
SHELF	1RU	LEGRAND / ORTRONICS	604045681
ROUTER SHELF	(1RU) 19"W x 10"D x 3.44"H	CHATSWORTH	10758-701
VERTICAL RACK POWER STRIPS (16 OUTLETS), 15 FT CORD, 5-15P, 48 IN.	POWER STRIPS	TRIPPLITE	PS4816
HORIZONTAL RACK POWER STRIPS 1.4 KW 120V 15A, (8) NEMA 5-15P OUTLETS	(1RU) CONTROLLED OUTLET POWER STRIPS	APC	AP7900B
66 BLOCKS	WALL FIELD CIRCUITS	HUBBELL	HPW66M125
MONITOR - 8 PORT NETDIRECTOR RACK MNT. CONSOLE KVM SWITCH W/ 17 IN LCD	(1RU) KVM CONSOLE	TRIPPLITE	B020-008-17
APC SMART-UPS, ON-LINE, 5.4KVA, 208V, 2x L6-30R+2x L6-30R NEMA OUTLETS, NETWORK CARD+SMARTSLOT, EXTENDED RUNTIME, WITH RAIL KIT	(3RU) APC SMART UPS, FOR LAN ROOM	APC	SRT5KRMXLT
APC TRANSFORMER 208V IN - 120V OUT, WITH 5-20 RECEPTACLES	(2RU) 120V STEP DOWN	APC	AP9626
APC TSMART UPS RAILS	UPS 2-POST RAIL KIT	APC	AP9625
APC Smart-UPS On-Line, 2200VA, Rackmount 2U, 120V, 6x 5-20R+1x L5-20R NEMA outlets, Network Card, Extended runtime, W/ rail kit	(2RU) APC SMART UPS, FOR BOOSTER ROOM DUAL RACK	APC (From Dan Hinton)	SRT2200RMXLA-NC

CABLING			
HORIZONTAL CABLING 1 WHITE	CATEGORY 6	SUPERIOR ESSEX	54-246-4B
HORIZONTAL CABLING 2 BLUE	CATEGORY 6	SUPERIOR ESSEX	54-246-2B
HORIZONTAL CABLING 3 GREEN	CATEGORY 6	SUPERIOR ESSEX	54-246-5B
HORIZONTAL CABLING WIRELESS ACCESS POINTS WITH DISCONTINUOUS ISOLATION WRAP	CATEGORY 6A	SUPERIOR ESSEX	6H-246-2B

NOTES:

1. PROVIDE TWO (2) VERTICAL RACK MOUNTED POWER STRIPS IN THE LAN ROOM.

2. PROVIDE TWO (2) CATEGORY 6 CABLES FROM TEL WALL FIELD TO RACK. SEE NOTE 6 THIS DRAWING.

3. TERMINATE CABLE 3 GREEN (LT GREEN ICON) IN SECURITY RACK #2.

4. CONTRACTOR SHALL PLUG ONE VERTICAL RACK MOUNTED POWER STRIP INTO CIRCUIT 1 ON THE UPS TRANSFORMER AND ONE VERTICAL POWER STRIP INTO CIRCUIT 2 ON UPS TRANSFORMER.

5. CONTRACTOR SHALL PROVIDE AND INSTALL 2-POT TRAIL KIT FOR UPS AND STEP DOWN TRANSFORMER.

6. CONTRACTOR SHALL PLUG CABLE MODEM AND MX64 INTO HORIZONTAL MOUNTED CONTROLLED OUTLET POWER STRIP.

FACEPLATES / INSERTS			
ITEM	DESCRIPTION	MANUFACTURER	PART NUMBER
DEMOUNTABLE	SURF MNT OFFICE BOX, FOG WHITE	LEGRAND / ORTRONICS	40300185
WALL MOUNTED BRACKET, STEEL	CADDY MPLS1	CADDY	MPLS1
DEMOUNTABLE / WALL MTD / WHITE	2-PORT TRACJACK FACEPLACE	LEGRAND / ORTRONICS	40300548-88
DEMOUNTABLE / WALL MTD / WHITE	4-PORT TRACJACK FACEPLACE	LEGRAND / ORTRONICS	40300546-88
DEMOUNTABLE / WALL MTD / WHITE	6-PORT TRACJACK FACEPLACE	LEGRAND / ORTRONICS	40300545-88
DEMOUNTABLE / WALL MTD / WHITE	CAT 6 LAN 568B TRACJACK	LEGRAND / ORTRONICS	TJ600-88
DEMOUNTABLE / WALL MTD / GREEN	CAT 6A LAN 568B TRACJACK	LEGRAND / ORTRONICS	TJ6A-44
DEMOUNTABLE / WALL MOUNTED	YELLOW LAN #1 ICON	LEGRAND / ORTRONICS	40324200
DEMOUNTABLE / WALL MOUNTED	BLUE LAN #2 ICON	LEGRAND / ORTRONICS	40326200
DEMOUNTABLE / WALL MOUNTED	LT GREEN VIDEO #1 ICON	LEGRAND / ORTRONICS	40325200
DEMOUNTABLE / WALL MOUNTED	BLANK MODULE, WHITE	LEGRAND / ORTRONICS	42100002-88
WALL MOUNTED	SS WALL PHONE FACEPLATE	HUBBELL	P6305R1GJ8
DEMOUNTABLE	SURF MNT CONF TABLE LEG	LEGRAND / ORTRONICS	404TJ2
WALL MOUNTED (LECTURN)	STYLISTICS (FP) - FOG WHITE	LEGRAND / ORTRONICS	40300271
WALL MOUNTED (LECTURN)	STYLISTICS FRAME - FOG WHITE	LEGRAND / ORTRONICS	41900017-88
WALL MOUNTED (LAPTOP)	STYLISTICS (FP) - FOG WHITE	LEGRAND / ORTRONICS	40300271
WALL MOUNTED (LAPTOP)	3 GANG WALL PLATE, DECORATOR - WHITE	LEGRAND	SP263W

FIBER			
FIBER OPTIC CABLE	SEE NOTE 1 BELOW	BERK-TEK	PDPK006AB0707
FIBER OPTIC CABLE	SEE NOTE 1 BELOW	BERK-TEK	PDPK012AB0707
FIBER OPTIC CABLE	SEE NOTE 2 BELOW	BERK-TEK	PDPK012FB3010/F5
ENCLOSURE	WALL MOUNTED	LEGRAND / ORTRONICS	615SMFC-24P/S
ENCLOSURE	1RU	LEGRAND / ORTRONICS	INFC01U-M4-E
ENCLOSURE	2RU	LEGRAND / ORTRONICS	INFC02U-M4-E
ENCLOSURE	4RU	LEGRAND / ORTRONICS	INFC04U-M4-E
ADAPTER PANELS	SINGLE MODE 24 LC	LEGRAND / ORTRONICS	HDFP-LCQ24AC
ADAPTER PANELS	MULTI MODE 24 LC	LEGRAND / ORTRONICS	HDFP-LCQ24LC
CONNECTORS	SINGLE MODE LC UPC POLISH	LEGRAND / ORTRONICS	205KNT9SA-09
CONNECTORS	MULTI MODE LC OM4	LEGRAND / ORTRONICS	205KNT9GA-50T
PIGTAILS	SINGLE MODE LC, 1 METER, OS2 UPC POLISH	LEGRAND / ORTRONICS	P1PC9FRSZZZ001M
PIGTAILS	SINGLE MODE LC, 1 METER, OM4 PC POLISH	LEGRAND / ORTRONICS	P3PG9FRGZZZ001M
FIBER SPLICE ON CONNECTORS	SEE NOTE 3 BELOW	LEGRAND / ORTRONICS	205KNT9GA-50E

NOTES:

1. SINGLE MODE OS2 PLENUM RATED ARMORED, TIGHT BUFFERED WITH KEVLAR TENSILE STRENGTH MEMBERS.

2. 12- STRAND MULTIMODE LASER OM4 50 MICRON, PLENUM RATED ARMORED, TIGHT BUFFERED WITH KEVLAR TENSILE STRENGTH MEMBERS.

3. SINGLEMODE / MULTIMODE, FACTORY CLEAVED 900 MICRON STUB, UV HEAT SHRINK TUBES, STRAIN RELIEF BOOT.

4. ALL CONNECTORS MUST BE FACTORY TERMINATED OR FUSION SPLICED (PIGTAILS OR SPLICE ON CONNECTORS)

EQUIPMENT CONNECTIONS
COMCAST MODEMS / MERAKI
COMCAST HIGH SPEED CONNECTS TO ROUTER 2
COMCAST LOW SPEED CONNECTS TO INTERNET PORT ON MERAKI
MERAKI - MX64 PORT 1 CONNECTS TO SWITCH 1 PORT 45
MERAKI - MX67 PORT 5 CONNECTS TO SWITCH 1 PORT 45
PDU CONNECTIONS
PORT 1 - MERAKI MX64
PORT 2 - COMCAST HIGH SPEED MODEM
PORT 3- COMCAST LOW SPEED MODEM
PORT 4 - COMCAST CABLE TV (IF IN LAN ROOM)

PATCH CABLES			
COLOR	LENGTH	QUANTITY	CABLE TYPE / PART NUMBER
YELLOW	6 INCH	24 PER SWITCH	CATEGORY 6 / MC6.50-04
YELLOW	8 INCH	15	CATEGORY 6 / MC6.66-04
YELLOW	10 INCH	15	CATEGORY 6 / MC6.83-04
YELLOW	1 FOOT	10	CATEGORY 6 / OR-MC601-04
YELLOW	3 FOOT	20	CATEGORY 6 / OR-MC603-04
YELLOW	5 FOOT	15	CATEGORY 6 / OR-MC605-04
YELLOW	7 FOOT	15	CATEGORY 6 / OR-MC607-04
YELLOW	20 FOOT	2	CATEGORY 6 / OR-MC620-04
BLUE	6 INCH	10	CATEGORY 6 / MC6.50-06
BLUE	8 INCH	10	CATEGORY 6 / MC6.66-06
BLUE	10 INCH	15	CATEGORY 6 / MC6.83-06
BLUE	1 FOOT	10	CATEGORY 6 / OR-MC601-06
BLUE	3 FOOT	10	CATEGORY 6 / OR-MC603-06
BLUE	5 FOOT	10	CATEGORY 6 / OR-MC605-06
BLUE	7 FOOT	10	CATEGORY 6 / OR-MC607-06
BLACK (AUDIO VISUAL)	10 FOOT	GUIDANCE ROOM# + 10%	CATEGORY 6 / OR-MC610-00
GREEN (CCTV)	8 INCH	10	CATEGORY 6 / MC6.66-05
GREEN (CCTV)	7 FOOT	20	CATEGORY 6 / OR-MC607-05
GREEN (CCTV)	3 FOOT	10	CATEGORY 6 / OR-MC603-05
GREEN (CCTV)	1 FOOT	10	CATEGORY 6 / OR-MC601-05
YELLOW (WIRELESS)	1 FOOT	15	CATEGORY 6A / OR-MC6A01-04
YELLOW (WIRELESS)	3 FOOT	7	CATEGORY 6A / OR-MC6A03-04
YELLOW (WIRELESS)	5 FOOT	7	CATEGORY 6A / OR-MC6A05-04
YELLOW (WIRELESS)	10 FOOT	7	CATEGORY 6A / OR-MC6A10-04

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL
R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210
P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

General Notes:

Project Title:
Fidelity Investments
Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project No.: C0115.00

Drawing Sheet Title:
TELECOM - DETAILS SHEET

Drawing Sheet Number:
TC-302

Owner's Branch No.:
134

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SECURITY CABLE LEGEND

TYPE NO.	MANF.	CAT NO	O.D.	CABLE TYPE	RATING	DISCRIPTION
1	Belden	658AFJ	0.463 in.	STANDARD JACKETED COMPOSITE	PLENUM	4C, 18 AWG, Shielded 6302FE Flamearrest Gray; 3TP 22 AWG, OAS 6542FE Flamearrest Orange; 2C 22 AWG, Shielded 6500FE Flamearrest White; 4C 22 AWG, Shielded 6502FE Flamearrest Blue, Overall Jacket Yellow.
2	Belden	6545FE	0.268 in.	6PR 22AWG	PLENUM	22 AWG bare copper conductors, twisted into pairs, multiple pairs cabled together, overall shield tape (foil side out) w/drain wire, jacket with ripcord. Sequential footage marking every two feet.
3	Belden	6504FE	0.175 in.	6COND 22AWG	PLENUM	22 AWG bare copper conductors,insulation, conductors cabled, overall tape shield (foil side out) and drain wire, jacket with ripcord. Sequential footage marking every two feet.
4	Belden	6300FE	0.162 in.	1PR 18AWG	PLENUM	18 AWG bare copper conductors, conductors cabled, Overall tape shield (foil side out) and drain wire, jacket with ripcord, sequential footage marking every two feet.
5	Belden	6500FE	0.128 in.	1PR 22AWG	PLENUM	22 AWG bare copper conductors, insulation, conductors cabled, Overall tape shield (foil side out) and drainwire, jacket with ripcord, sequential footage marking every two feet.
6	Belden	643948	0.193 in.	RG59U COAX	PLENUM	20 AWG bare copper conductor, foam FEP insulation, bare copper braid shield, jacket, sequential footage markingevery two feet.
7	Belden	9873	0.341 in.	3PR 20AWG	NON PLENUM	20 AWG stranded (7x28) TC conductors, polypropylene insulation, twisted pairs, individually shielded (100%coverage), 22 AWG stranded TC drain wire, overall PVC jacket.
8	Belden	9774	0.56 in.	6PR 18AWG	NON PLENUM	18 AWG stranded (19x30) TC conductors, polypropylene insulation, twisted pairs, individually shielded(100%coverage), 20 AWG stranded TC drain wire, PVC jacket.
9	Belden	5439X5	.244 in.	RG59U COAX	DRCT. BUR.	20 AWG solid bare copper conductor, gas-injected foam polyethylene insulation, bare copper braid shield (95% coverage), waterresistant tape, PVC jacket.
10	Belden	5339X5	0.279 in.	RG6 COAX	DRCT. BUR.	18 AWG solid bare copper conductor, gas-injected foam polyethylene insulation, bare copper braid shield (95% coverage), waterresistant tape, PVC jacket.
11	Belden	6200FE	0.184 in.	1PR 16AWG	PLENUM	16 AWG bare copper conductors, conductors cabled, Overall tape shield (foil side out) and drain wire, jacket with ripcord, sequential footage marking every two feet.
12	Belden	5300F1	.222 in.	1PR 18AWG	WTR. BLOK.	18 AWG tinned copper conductors, PVC insulation, cabled with overall water-blocking tape, PVC jacket with ripcord. Sequentialfootage marking every two feet.
13	Belden	5439W5	.236 in.	RG59U COAX	WTR. BLOK.	20 AWG bare copper conductor, foam polyethylene insulation, (100% coverage) plus a tinned copper braid shield (95% coverage),flooding grease, PVC jacket. Sequential footage marking every two feet.
14	Belden	5339W5	.270 in.	RG6 COAX	WTR. BLOK.	18 AWG bare copper conductor, foam polyethylene insulation, bare copper braid shield, sequential footage marking every two feet.
15	Belden	633948	.228 in.	RG6 COAX	PLENUM	18 AWG bare copper conductor, foam FEP insulation, bare copper braid shield, jacket, sequential footage marking every two feet.
16	Belden	OSP6AF	.260 in.	CAT6A	DRCT. BUR.	4 Pair, F/UTP-Foil Shielded, Outdoor OSP, Premise Horizontal Cable, 23 AWG Solid Bare Copper Conductors, Polyolefin Insulation, Patented X-Spline, Gel-Filled, UV resistant LLDPE Inner Jacket, Overall Beldfoil® Shield with Drain Wire, Ripcord, UV Resistance
17	Belden	5140F1	0.326 in.	1PR 14AWG	DRCT. BUR.	14 AWG stranded (19x27) tinned copper conductors, PVC insulation,shield (100% coverage), drain wire, water-blocking tape, PVC jacket.
18	Belden	649948	0.199 in.	RG59U+2C 18AWG (SIAMESE)	PLENUM	RG59U-20 AWG bare copper conductor, foam polyolefin insulation, bare copper braid shield, PVC jacket. 18 AWG bare copper conductors, unshielded (7x26)
19	Belden	639948	0.232 in.	RG6+2C 18AWG (SIAMESE)	PLENUM	RG6-18 AWG bare copper conductor, foam polyolefin insulation, bare copper braid shield, PVC jacket. 18 AWG bare copper conductors, unshielded (7x26)
20	Belden	9746	0.281 in.	4PR 22AWG	NON PLENUM	22 AWG stranded (7x30) tinned copper conductors, PVC insulation, twisted pairs, unshielded, PVC jacket.
21	Belden	8748	0.389 in.	9PR 22AWG	NON PLENUM	22 AWG stranded (7x30) tinned copper conductors, PVC insulation, twisted pairs, unshielded, PVC jacket.
22	Belden	9157	0.381 in.	4PR 18AWG	NON PLENUM	18 AWG stranded (16x30) tinned copper conductors, PVC insulation, twisted pairs, unshielded, PVC jacket.
23	Belden	5302U1	0.254 in.	4COND 18AWG	WTR. BLOK.	Multi-Conductor - Water-Blocked 18 AWG stranded (7x27) tinned copper conductors, PVC insulation, water-blocking tape, PVC jacket.
24	Belden	4813	0.255 in.	CAT 6+ - GREEN	PLENUM	23 AWG Solid Bare Copper Conductors, Dual FRPO/FEP insulation, Patented X-Spline, Ripcord, Flamarrest® Jacket
25	Belden	6342FE	0.282 in.	6COND 18AWG	PLENUM	18 AWG bare copper conductors,insulation, conductors cabled, overall tape shield (foil side out) and drain wire, jacket with ripcord. Sequential footage marking every two feet.
26	Belden	6502UE	0.139 in.	4COND 22AWG	PLENUM	22 AWG bare copper conductors,insulation, conductors cabled, jacket with ripcord. Sequential footage marking every two feet.
27	Belden	6504UE	0.168 in.	6COND 22AWG	PLENUM	22 AWG bare copper conductors,insulation, conductors cabled, jacket with ripcord. Sequential footage marking every two feet.

SECURITY SYMBOLS LEGEND

CP	CONTROL PANEL
FA	FIRE ALARM
GB	GLASS BREAK DETECTOR
KP	KEY PAD
M	MOTION DETECTOR
MC	MAGNETIC CONTACT WITH TRANSMITTER
MCX	MONITOR POINT WITH TRANSMITTER
PB	DURESS BUTTON WITH TRANSMITTER
RX	WIRELESS RECEIVER
TX	WIRELESS TRANSMITTER
TS	TEMPERATURE SENSOR
VM	VIDEO MONITOR
CR	CARD READER
IM	INTERCOM ANSWER STATTION
VI	VIDEO INTERCOM DOOR STATION
VC	VIDEO CAMERA
180	VIDEO CAMERA (180 DEGREE)

SECURITY NOTES

1. REFER TO ELECTRICAL DRAWINGS FOR PROPOSED PATHWAYS.
2. COORDINATE WITH CONTRACTOR, UTILITIES, TRADES AND ARCHITECT AS REQUIRED.
3. REFER TO ELECTRONIC SECURITY DRAWINGS AND SPECIFICATIONS FOR DETAILS. SPECIFICATIONS SHALL BE PROVIDED UPON REQUEST.
4. FIELD VERIFY EXACT LOCATIONS FOR ALL ELECTRONIC SECURITY DEVICES.
5. PROVIDE SUPERVISED INPUTS AND END OF LINE SUPERVISION COMPONENTS CONNECTED TO EACH DEVICE TO MONITOR DEVICE. CONNECT MONITOR DEVICE AT FAR END AND PROVIDE 4-STATE SUPERVISION.
6. ALL ELECTRONIC SECURITY CABLES TO BE PLENUM RATED.
7. VERIFY LABELING STANDARD WITH OWNER, SUBMIT LABELING SCHEME FOR APPROVAL. LABELING SHALL BE IN ACCORDANCE WITH ANSI/EIA/TIA-606A STANDARDS. SECURITY CONTRACTOR SHALL PROVIDE ALL NECESSARY FITTINGS, PLATES
8. AND INSERTS TO ACCEPT THE CONNECTIVITY PRODUCTS WITHIN THE ELECTRICAL CONTRACTOR PROVIDED BOXES, CONDUIT AND SURFACE RACEWAY.
9. REFER TO DETAIL DRAWINGS FOR EXACT QUANTITY OF CABLES AND DEVICES REQUIRED AT EACH TYPICAL DOOR.

VANDERWEIL PROJECT INFO

PROJECT NUMBER	C0115.00
PROJECT NAME	FIDELITY - SCOTTSDALE, AZ

SECURITY - SHEET LIST

KEY LEGEND

X / TC-XX	DETAIL CALL-OUT - PLAN VIEW. DENOTES DETAIL "X" ON DRAWING "TC-XX".
X / TC-XX	DETAIL CALL-OUT - ELEVATION VIEW. DENOTES DETAIL "X" ON DRAWING "TC-XX".
#	SEE KEY NOTES # ON SHEET FOR DESCRIPTION

LEGEND NOTES

1. THIS SHEET IS A GENERAL LIST OF SYMBOLS AND SHALL BE USED AS A REFERENCE TO DEFINE ITEMS INDICATED ON THE DRAWINGS. NOT ALL SYMBOLS ARE NECESSARILY USED ON THIS PROJECT.

Jacobs

Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL

R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210

P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

General Notes:

Project Title:

Fidelity INVESTMENTS

Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project No.: C0115.00

Drawing Sheet Title:

SECURITY - LEGEND SHEET

Drawing Sheet Number:

SE-000

Owner's Branch No.:

134

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28 00 00 - ELECTRONIC SAFETY AND SECURITY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The General Conditions for contracts of construction, referred to in the contract documents as the General Conditions, together with the following articles of the specifications, which amend, modify and supplement various articles and provisions of the General Conditions, are made part of the Contract and shall apply to all work under the Contract.

B. All articles or parts of articles of the General Conditions not so amended, modified or supplemented by these specifications shall remain in full force and effect. Should any discrepancy become apparent between the General Conditions and the specifications notify Architect, in writing and the Architect shall interpret and decide such matters in accordance with the provisions of the General Conditions.

C. Comply with all applicable governmental regulations and with all Federal, State, County, City, and other applicable codes and ordinances.

D. These specifications are not intended as a material list of items required by the Contract.

E. Coordinate with others who will be working in the space at the same time as this work.

F. It is the intent of these specifications to provide a complete and workable security system ready for the Owner's use. Any item not specifically shown on the drawings or called for in the specifications, but normally required to conform to the intent, are to be considered as part of the Contract.

G. Any given item of equipment or material shall be the product of one manufacturer throughout the facility. Multiple manufacturers of any one item shall not be permitted, unless specifically noted otherwise.

H. These specifications are equipment and performance specifications. Actual installation shall be as indicated on the Drawings. Any discrepancies found between the Specification and the Drawing shall be immediately brought to the attention of the Architect and Construction Manager.

1.2 SUMMARY

A. Work under this specification shall include devices as reflected on drawings.

B. All information in this specification shall be used in conjunction with Manufacturers' Specifications for a complete security system.

C. The Security Subcontractor shall provide all security equipment reflected on drawings and listed in this specification. The Security Subcontractor will be responsible for all final connections of each device at each junction box, security control panel and as described in this specification.

E. Provide all other devices and appurtenance as required for complete installation of those devices supplied by Fidelity to include, but not limited to all screws, fasteners, cover plates, connectors and hangers as required

F. Coordinate with General Contractor and FREC- Security Infrastructure Group for the execution of all work to ensure its proper and timely completion. This work shall include but may not be limited to the following;

1. Furnish one (1) electronic set of "as-built" drawings to the Security Project Manager within 30 days of project commissioning. If provided AutoCAD at the start of the project, furnish as-built AutoCAD drawing files in AutoCAD Release 2012 or later. If provided PDF files at the start of the project, furnish as-built PDF files with RED LINE markups. No drawing file shall be write-protected.
2. Provide labeling and complete documentation of all cables, wiring boxes, equipment cabinets, pull boxes and termination strips installed under this contract.
3. Adhere Asset Tags to all components that have circuit boards per the Device Schedule utilizing the Asset Tags provided for the project and document required asset information on the Fidelity Asset Form . Should additional components with circuit boards be required for completion of the project, utilize the next available Asset Tag Number and include that component's information on the Asset Form (additional asset tags are provided with the original issue of tags).
4. Submit the completed Asset Form to the Security Project Manager within 30 days of project commissioning.
5. Remove and dispose of all refuse related to the security system installation from site on a daily basis and perform a final, thorough cleaning of the LAN room at the end of the project.
6. Provide warranty services for the specified period from the date of acceptance.

1.3 QUALITY ASSURANCE

A. Materials shall conform to NEMA and NEC Standards.

B. Materials shall bear UL labels and be UL approved for the application for which they are used.

C. All workmanship shall conform to the standards set forth by FREC and the Security Infrastructure Group.

1.4 DELIVERY, STORAGE AND HANDLING

A. Security Subcontractor shall be responsible for equipment from time of receiving.

B. Coordinate storage space requirements prior to delivery with General Contractor, Area Manager or Branch Manager (depending on type/location of project) to ensure components are undamaged, stored in a clean, dry location and are not impeding other work.

C. Handle devices carefully to avoid damage to material components, enclosures, and finish.

D. Protect devices from dirt, fumes, water and physical damage .

1.5 CONTRACTOR QUALIFICATIONS

A. Security Subcontractor shall have a minimum of 10 years experience in the installation of security systems of the type and size to be provided on this project.

B. The Security Subcontractor's project manager shall have a minimum of 7 years project management experience on like size project. The Security subcontractor's foreman shall have a minimum of 5 years experience on like size projects.

C. All technicians shall be licensed within the state they are working. Apprentices (unlicensed technicians) shall be supervised at all times by a licensed technician.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Wire specified is that as shown on drawings.

B. Only devices specified on drawings shall be used.

2.2 MATERIALS

A. Wiring General
1. Type as indicated on the Security Cable Legend.
2. Only those cables and wires or their equivalent types required for the devices listed for this particular installation shall be used.
3. All cables in wet or damp locations including underground raceways shall be listed for use in these locations.
4. Joints, splices, and terminations shall be made inside a box or enclosure and shall be made with Plain B wire connectors, or rosin-core soldered, where applicable. All home run cables are to be without splices, unless otherwise noted.
5. Wires and cables shall be clearly, logically and permanently marked.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Security Subcontractor shall examine areas and conditions under which security equipment is to be installed. Examine the drawings of other trades to determine the existing design conditions that may affect the work. The Security subcontractor shall be held responsible for any assumptions in regard thereto.

B. Notify Architect and Construction Manager in writing of conditions detrimental to proper and timely completion of work.

C. Do not proceed with work until satisfactory conditions are present.

D. Inform Architect in writing of any application requirements that are not specified or that are detrimental to proper installation of equipment for clarification and specifications.

E. Existing Contract Documents for all other trades shall be made available for review through the General Contractor.

F. Verify all dimensions and distances in the field and document all cable lengths and materials provided. Furnish and install all miscellaneous hardware, i.e., nuts, bolts, tie wraps, etc., whether specified or not, necessary to the proper operation of the specified systems.

3.2 INSTALLATION

A. Location of Equipment

1. The specifications describe only approximate locations of the work. Verify all locations in the field.
2. Locate equipment and accessories to provide easy access for proper service and maintenance.
3. Coordinate device rough in with hard ceilings and architectural walls with architect.
4. Any conflict with other trades shall be submitted for approval to architect.

B. Wiring

1. Refer to typical security details on drawings for location of devices and wiring information.
2. All cable shall enter the Security Control Panel location, through the 3" nipples on top of the horizontal trough. A minimum of 6' of spare cable shall be left neatly bundled in the horizontal trough. The cable shall be fed down to the bottom of the vertical trough, no coiled slack shall be left in the vertical trough. Each individual cable shall be stripped back of its outer insulation and plastic wrapping. Each individual pair of wires contained in a cable shall be stripped of their shielding and plastic wrapping. Each individual cable shall be stripped back to the level which is 18" below top horizontal trough. All of the drain wires for the cable pairs shall be twisted together and insulated with appropriately sized shrink-wrap, ensuring none of the grounds are exposed. Black tape shall be used to provide a 4" band over the transition area of the stripped back cable; this will also prevent the shrink-wrap from slipping. All unused conductors will be stripped back of their outer insulation and secured uncoiled in the vertical trough. All unused conductors of a single cable will be secured to each other and labeled with the associated security device number spaced 2' apart.
3. For ceiling distribution environments, "J-hook" hangers must be used to support the cable runs. All J-hook hangers will be installed per manufacturers' instructions separated by a maximum of 60-inches (5-feet) center-to-center. Large bundles of cables may require cable tray to support.

C. Devices

1. Provide resistor matrices across the monitoring loop at each intrusion, or alarm device.
2. Provide any combination video gear/equipment needed and as shown on drawings for each video camera location and head end.
3. Terminate cabinet tampers in all cabinets shown on Security Control Panel drawings.
4. Adjust any closed circuit video camera as needed. (focus, iris, etc.)
5. Provide labels on all security devices as per "Identification" section of this specification.
6. Ensure Asset Tags are properly adhered to each device with a circuit board and asset data has been noted on the Asset Form.
7. Conduct a thorough pre-test and final acceptance test using provided test report/documentation forms.

D. Conduit and Raceway System

1. Provide Shop drawings for conduit design, routing, sizing and junction boxes for Electrical Trade Contractor.
2. Review and coordinate conduit and wire way (conduit) installation with the Electrical Trade Contractor to ensure proper function and operation of the security systems. Contractors shall reference all electrical drawings and specifications for site standards regarding the installation of all electrical conduits and cabling.
3. All security wiring installed in an inaccessible area shall be installed in conduit.
4. All security wiring installed in exposed areas shall be installed in conduit or cable tray.
5. All security wiring installed beyond the Owner's secure space shall be in conduit.
6. All conduit shall be parallel with, or at right angles to, walls and ceilings. It shall be adequately supported by means of approved hangers.
7. Conduit fill shall not exceed 40% of conduit cross-sectional area.
8. Nominal trade sizes for conduit shall be 1"-inch minimum and 4-inch maximum for home run conduits. ¾"-inch minimum size conduit for branch raceways.
9. All junction boxes and pull boxes utilized in the raceway system shall be installed as per NEC.

E. Grounding

1. The vertical raceway located at control panels (CP) shall have a "ground bus" capable of receiving all grounding drains for the cables that terminate from that vertical raceway. Extend a single grounding electrode from the "ground bus" to cold water, building steel, or dedicated grounding system that is non-fire system related.
2. Each control panel shall have a bonding jumper from the "ground bus" located in the vertical raceway and a ground lug inside each panel location.
3. Grounding and shielding shall conform to the following procedures. AC grounding applies only to power circuits intended for powering Security equipment.
4. It is the primary intent if the following procedures to provide a safe system for personnel to operate.
5. The power cord from active equipment shall not have its third prong-grounding conductor (if present) defeated.
6. To reduce noise voltages in the system it is intended that only one ground connection path exist between two pieces of equipment.
7. Where mounting hardware is indicated as a means of grounding, ensure both a solid electrical and mechanical connection is made.
8. Permanently and effectively, bond to building earth ground per applicable codes. Insulated connections between conduit and wall boxes, junction boxes, or wire ways are not permitted.
9. Passive Equipment Chassis: Connect an appropriately sized (green) insulated ground cable to the copper ground terminal block (provided under the electrical contract), to the ground bus bar within each equipment rack. This ground bus bar shall be bonded to bright metal of each equipment rack with the appropriate anti-oxidant employed at the copper to rack interface. Each adjacent equipment rack shall have its grounding conductor home-run to the copper ground terminal block.

F. Mounting Boxes/Enclosures

1. Mounting boxes and enclosures shall be rigidly and securely mounted to the building structure. Wiring contained in them shall be accessible. Install blanking devices or threaded plugs in all unused holes.
2. Clean all interiors thoroughly before installing plates, panels or covers.
3. Back Box Requirements.
   a. PB Duress Button (under cntr)
      1) NA
      2) Under cabinet (verify with architect)
   b. M Motion detector
      1) Single gang
      2) Ceiling Mount or 9'6" Wall Mount
   c. GB Glass Break
      1) Single gang
      2) Ceiling Mount or 9'6" Wall Mount
   d. TS Temp sensor
      1) Horz. single gang with single gang stainless steel wall plate.
      2) 5' to center (verify with architect)
   e. Fire alarm point
      1) 4-11/16" j-box

2) Mount demarcation as per Control panel elevation detail. Raceway, wire, terminations and coordination from demarcation point to contacts to be monitored, shall be provided by appropriate trade and manufacturer representative.

G. Electrical Power 120V AC

1. Any 110V AC electrical work will be provided by Electrical subcontractor.
2. Review and coordinate electrical power system installation with the Electrical Trade Contractor to ensure proper function and operation of the Security systems.
3. Reference all electrical drawings and specifications for site standards regarding the installation of all electrical power.
4. Verify that all power circuits designed for Security equipment, both fixed-in-place and portable, are properly wired, phased and grounded. Report any discrepancies found to the Construction Manager and the Owner/Engineer so that appropriate corrective action can be taken.
5. Ensure distribution of electrical power within all equipment racks, enclosures and consoles. For each branch circuit provide a minimum of two (2) spare receptacles in each plug mold strip. Provide a minimum of one (1) unswitched receptacle power strip (rack mounted) per each equipment rack cabinet group.

H. Finishes

1. All enclosures, housings and supporting structures supplied by the Security Subcontractor not having a standard factory protective finish shall be painted. Paint specifications will be supplied by the Owner/Engineer or indicated herein.
2. Any equipment or materials supplied, which are exposed to public view, shall be approved by the Architect. Provide, as may be required by the Architect, custom color and/or finish for all such items. This does NOT exclude equipment or materials that are supplied with standard colors or finishes as specified herein.

3.3 IDENTIFICATION

A. All cabling shall be labeled as per below.

LABEL CONFIGURATIONS
WIRE LABELS

CCTV WIRE LABELS

Wire class
1.01.20
DVR & position on DVR

CCTV Wire label Classification
- xxx.xxx.20 Camera video coax
- xxx.xxx.21 Camera power
- xxx.xxx.22 PTZ camera data
- xxx.xxx.24 UTP cable

VIDEO MONITOR WIRE LABELS

Wire class
VM.01.20
Device No.

Video Monitor Wire label Classification
- xxx.xxx.20 Monitor video coax
- xxx.xxx.21 Monitor power
- xxx.xxx.22 PTZ Controller data
- xxx.xxx.24 Monitor UTP cable

INTRUSION/OTHER POINTS WIRE LABELS

ZONE No. Wire class
Z-001.30

Intrusion/Other points Wire label Classification
- Z-xxx.30 Device power
- Z-xxx.31 Device input signal
- Z-xxx.32 Device output signal

LOW VOLTAGE POWER/COMMUNICATION CABLE LABELS

Device No.
001.40
Power wire class

Power Wire label Classification
- xxxx.45 Bosch control panel power 16.5vac
- xxxx.46 Security Device power supply 12vdc
- xxxx.47 Expansion Module power and communication
- xxxx.48 Keypad power and comunication

ACCESS CONTROL WIRE LABELS

Device Wire class
KP.001.00
Key- Pad Number

Access Control Wire label Classification
- xxxx.xxxx.00 Keypad Data/Power cable from panels to doors
- xxxx.xxxx.01 Door contact cable from panel to doors
- xxxx.xxxx.02 Request to exit power cable from panel to doors
- xxxx.xxxx.03 Request to exit signal cable from panel to doors
- xxxx.xxxx.04 Spare
- xxxx.xxxx.05 Spare
- xxxx.xxxx.06 Lock power cable from panel to doors
- xxxx.xxxx.07 Auxiliary power cable from panel to doors
- xxxx.xxxx.08 Spare
- xxxx.xxxx.09 Spare
- xxxx.xxxx.10 Spare
- xxxx.xxxx.11 Communication cable for door interface boards

A. All cables and terminal strips shall be labeled with machine generated black uppercase lettering on a permanent sleeve type labels. Labels shall be placed on both ends of the cable and no more than 6" from the point at which the cable is broken out into individual copper pairs and 1" from the connector or terminal block. All labels shall be readily visible.

B. Hand lettered label stock shall not be accepted for final installation. Hand lettered stock is only acceptable for use with temporary labeling required during construction phases.

C. If at any time during the project, the cable label becomes illegible or removed, the Contractor shall immediately replace it with a duplicate pre-printed cable label.

D. All cable IDs shall be both physically and visually accessible upon completion of the project.

E. All enclosures at head end cluster shall have a clear plastic sleeve with an adhesive back installed inside enclosure on back side of door with an updated program sheet and or panel schedule for equipment and points installed in enclosure. Install sleeve horizontally.

F. All devices and enclosures shall be labeled as per below.

LABEL CONFIGURATIONS
SECURITY DEVICE TAGS

CCTV DEVICE TAGS

1.01
DVR & position on DVR

Camera tag number shall be placed on camera housing, viewable from the ground. (1/4" strike, ARIAL - black lettering on clear tape). Remove all manufacturer labels and identification.

INTRUSION/OTHER POINTS DEVICE TAGS

Zone No.
Z-001

Intrusion/Other device tag number shall be placed on device, viewable from the ground. (1/4" strike, ARIAL - black lettering on clear tape). Remove all manufacturer labels and identification.

ENCLOSURE TAGS

OCTOPOPIT ALARM POINT SPLICE ENCLOSURE

ALARM POINT SPLICE

BOSCH CONTROL PANEL ENCLOSURE

CONTROL PANEL

SECURITY DEVICE POWER SUPPLY

DEVICE POWER

ACCESS CONTROL POWER SUPPLY

ACCESS CONTROL POWER

3.4 ACCEPTANCE

A. Provide labor to conduct a thorough pre-test and final acceptance test using report/documentation forms and script provided.

B. During acceptance testing, provide services of a fully qualified security systems technician who is knowledgeable of the project.

C. Using the commissioning test data, the Owner/Engineer and/or his representative shall select, at random, functions to be demonstrated. The Contractor in accordance with the acceptance test procedure shall demonstrate these functions. At 100-percent of the systems, functions shall be demonstrated. All of the functions demonstrated must perform, as specified and documented on commissioning data sheets or the system must be re-tested.

D. Furnish instruments required for testing.

E. After the acceptance tests are complete and the system is demonstrated to be functioning as specified, a thirty-day endurance test period requiring only routine maintenance and adjustment, the system shall be accepted. If during the endurance test period the system fails to perform as specified and cannot be corrected within eight hours, the Owner/Engineer may request that the endurance tests be repeated after problems have been corrected.

F. If acceptance is delayed because of defects in or failure of equipment or because the installation fails to meet the requirements of this specification, Security Subcontractor shall pay the Engineer, at the Engineer's standard rate in effect at that time, for any additional time and expenses during any extension of the acceptance testing periods.

G. Coordinate testing period so that free access, work lighting and electrical power are available on site.

H. Ensure that technical areas are in clean and orderly condition, ready for acceptance testing.

I. Submit to Security Project Manager within 30 days of project commissioning; Electronic As-Built Drawings with Red Line Markups of any deviations from original Scope Of Work, Asset Data Form completed with required asset information.

END OF SECTION

Jacobs

Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

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Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project No.: C0115.00

Drawing Sheet Title:
SECURITY - DEVICE SPECIFICATION

Drawing Sheet Number:
SE-001

Owner's Branch No.:
134

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SECURITY CONTROL EQUIPMENT, CAMERAS, AND FIELD DEVICE SCHEDULE
SCOTTSDALE, AZ - IC 134
7171 E. PARADISE LANE

REF NO.	DESCRIPTION	DEVICE TYPE	MODEL	DETAIL	CABLE TYPE	CABLE DESTINATION	SERIAL #	IP ADDRESS	MAC ADDRESS	COMMENTS
	SEE CONTROL PANEL DETAILS	CP	B9512G	1,2,4/SE-300	N/A	LAN ROOM				
	VIDEO HEAD END	NVR	SV-2040E-R4-48T-16-336	5/SE-300	N/A	LAN ROOM				
	IP CAMERA LICENSES	IPL	GSC-SB-OM-1C	5/SE-301	N/A	LAN ROOM				32 LICENSES
	NETWORK SWITCH	NTSW	SM24TAT2SA-NA	5/SE-300	N/A	LAN ROOM				
	LSP E4M LENEL CABINET	LKPS	FPO150-B100 2D8PM8NL4E4M1/P8-A	3,4/SE-300	N/A	LAN ROOM				NOTE E4M1 ENCLOSURE LAYOUT
	POWER SUPPLY - DEVICES	DVPS	FPO150-C8E1	7/SE-300	N/A	LAN ROOM				
	BOSCH WIRELESS RECEIVER KIT	RX	EN-KIT SDI2	2/SE-302	N/A	LAN ROOM				
	OUTPUT BOARD	OUTPUT	B308	1/SE-300	N/A	LAN ROOM				
	DECODER-1	DCD	D1110	5/SE-300	N/A	LAN ROOM				
	DECODER-2	DCD	D1110	5/SE-300	N/A	LAN ROOM				
	DECODER-3	DCD	D1110	5/SE-300	N/A	LAN ROOM				
	DECODER-4	DCD	D1110	5/SE-300	N/A	LAN ROOM				
	OCTO POPIT-1	OCPOP	B208	1,2/SE-300	N/A	LAN ROOM				
	OCTO POPIT-2	OCPOP	B208	1,2/SE-300	N/A	LAN ROOM				
	OCTO POPIT-3	OCPOP	B208	1,2/SE-300	N/A	LAN ROOM				
	OCTO POPIT-4	OCPOP	B208	1,2/SE-300	N/A	LAN ROOM				
	OCTO POPIT-5	OCPOP	B208	1,2/SE-300	N/A	LAN ROOM				
	OCTO POPIT-6	OCPOP	B208	1,2/SE-300	N/A	LAN ROOM				
	OCTO POPIT-7	OCPOP	B208	1,2/SE-300	N/A	LAN ROOM				
	OCTO POPIT-8	OCPOP	B208	1,2/SE-300	N/A	LAN ROOM				
	OCTO POPIT-9	OCPOP	B208	1,2/SE-300	N/A	LAN ROOM				
	OCTO POPIT-10	OCPOP	B208	1,2/SE-300	N/A	LAN ROOM				
	LENEL ISC	CP	LNL-X4420/M4420	3/SE-300	N/A	LAN ROOM				
	LENEL READER CONTROLLER	CP	LNL-1320S3	3/SE-300	N/A	LAN ROOM				
	LENEL READER CONTROLLER	CP	LNL-1320S3	3/SE-300	N/A	LAN ROOM				
	LENEL READER CONTROLLER	CP	LNL-1320S3	3/SE-300	N/A	LAN ROOM				
REF NO.	DESCRIPTION	DEVICE TYPE		DETAIL	CABLE TYPE	CABLE DESTINATION	SERIAL #	IP ADDRESS	MAC ADDRESS	COMMENTS
1.51	LOBBY ENT	VC	P3267-LV	8/SE-301	24	LAN ROOM				
1.52	LOBBY	VC-360	M4328-P	8/SE-301	24	LAN ROOM				
1.53	LOBBY	VC	M3086-V	8/SE-301	24	LAN ROOM				
1.54	TXN OFFICE 102	VC	M3086-V	8/SE-301	24	LAN ROOM				
1.55	TXN OFFICE 101	VC	M3086-V	8/SE-301	24	LAN ROOM				
1.56	FR OFFICE	VC	M3086-V	8/SE-302	25	LAN ROOM				
1.57	OPS	VC	M3086-V	8/SE-303	26	LAN ROOM				
1.58	HW 106	VC	M3086-V	8/SE-304	27	LAN ROOM				CORRIDOR FORMAT
1.59	HW 106	VC-180	P3827-PVE	8/SE-301	24	LAN ROOM				
1.60	HW 112	VC	M3086-V	8/SE-306	29	LAN ROOM				
1.61	WEALTH ENT	VC	M3086-V	8/SE-306	29	LAN ROOM				
1.62	HW 106	VC	M3086-V	8/SE-308	31	LAN ROOM				
1.63	WEALTH ENT	VC	M3086-V	8/SE-306	29	LAN ROOM				
1.64	HW 136	VC	M3086-V	8/SE-310	33	LAN ROOM				
1.65	REAR EXIT	VC	M3086-V	8/SE-311	34	LAN ROOM				
1.66	LAN	VC	M3086-V	8/SE-312	35	LAN ROOM				
1.67	HW 114	VC-180	P3827-PVE	8/SE-301	24	LAN ROOM				
1.68	STORAGE 143	VC	M3086-V	8/SE-306	29	LAN ROOM				
1.69	HW 114	VC	M3086-V	8/SE-306	29	LAN ROOM				
REF NO.	DESCRIPTION	DEVICE TYPE		DETAIL	CABLE TYPE	CABLE DESTINATION	SERIAL #	IP ADDRESS	MAC ADDRESS	COMMENTS
Z-001	LOBBY ENT	MC	195-12W	5,6/SE-302	3	LAN ROOM				NO ASSET TAG REQUIRED
Z-002	NORTH EXIT	MC	195-12W	5,6/SE-302	3	LAN ROOM				NO ASSET TAG REQUIRED
Z-003	LOBBY ENT MOTION	M	DS9370	3/SE-301	3	LAN ROOM				NO ASSET TAG REQUIRED
Z-004	LOBBY MOTION	M	DS9370	3/SE-301	3	LAN ROOM				NO ASSET TAG REQUIRED
Z-005	FR OFFICE 105	M	DS9370	3/SE-301	3	LAN ROOM				
Z-006	OPS 120	M	DS9370	3/SE-301	3	LAN ROOM				
Z-007	HW 106 MOTION	M	DS9370	3/SE-301	3	LAN ROOM				
Z-008	HW 106 MOTION	M	DS9370	3/SE-301	3	LAN ROOM				
Z-011	HW 106 MOTION	M	DS9370	3/SE-301	3	LAN ROOM				
Z-012	HW 106 MOTION	M	DS9370	3/SE-301	3	LAN ROOM				
Z-013	HW 106 MOTION	M	DS9370	3/SE-301	3	LAN ROOM				
Z-014	WEALTH MOTION	M	DS9370	3/SE-301	3	LAN ROOM				
Z-015	WEALTH MOTION	M	DS9370	3/SE-301	3	LAN ROOM				
Z-016	HW 136 MOTION	M	DS9370	3/SE-301	3	LAN ROOM				
Z-017	LAN MOTION	M	DS9370	3/SE-301	3	LAN ROOM				
Z-018	HW 118 MOTION	M	DS9370	3/SE-301	3	LAN ROOM				
Z-021	HW 114 MOTION	M	DS9370	3/SE-301	3	LAN ROOM				
Z-022	HW 114 MOTION	M	DS9370	3/SE-301	3	LAN ROOM				
Z-023	HW 114 MOTION	M	DS9370	3/SE-301	3	LAN ROOM				
Z-024	HW 114 MOTION	M	DS9370	3/SE-301	3	LAN ROOM				
Z-025	OFFICE 125 MOTION	M	DS9370	3/SE-301	3	LAN ROOM				
Z-026	OFFICE 126 MOTION	M	DS9370	3/SE-301	3	LAN ROOM				
Z-027	OFFICE 127 MOTION	M	DS9370	3/SE-301	3	LAN ROOM				
Z-028	OFFICE 128 MOTION	M	DS9370	3/SE-301	3	LAN ROOM				
Z-031	OFFICE 129 MOTION	M	DS9370	3/SE-301	3	LAN ROOM				
Z-032	OFFICE 130 MOTION	M	DS9370	3/SE-301	3	LAN ROOM				
Z-033	OFFICE 131 MOTION	M	DS9370	3/SE-301	3	LAN ROOM				
Z-034	OFFICE 132 MOTION	M	DS9370	3/SE-301	3	LAN ROOM				
Z-035	OFFICE 133 MOTION	M	DS9370	3/SE-301	3	LAN ROOM				
Z-036	STO 143 MOTION	M	DS9370	3/SE-301	3	LAN ROOM				
Z-037	SPARE									
Z-038	LOBBY GB	GB	FG1625SN	4/SE-301	3	LAN ROOM				
Z-041	LOBBY GB	GB	FG1625SN	4/SE-301	3	LAN ROOM				
Z-042	LOBBY GB	GB	FG1625SN	4/SE-301	3	LAN ROOM				
Z-043	HW 106 GB	GB	FG1625SN	4/SE-301	3	LAN ROOM				
Z-044	HW 106 GB	GB	FG1625SN	4/SE-301	3	LAN ROOM				
Z-045	HW 106 GB	GB	FG1625SN	4/SE-301	3	LAN ROOM				
Z-046	HW 106 GB	GB	FG1625SN	4/SE-301	3	LAN ROOM				
Z-047	HW 106 GB	GB	FG1625SN	4/SE-301	3	LAN ROOM				
Z-048	WEALTH GB	GB	FG1625SN	4/SE-301	3	LAN ROOM				
Z-051	WEALTH GB	GB	FG1625SN	4/SE-301	3	LAN ROOM				
Z-052	WEALTH GB	GB	FG1625SN	4/SE-301	3	LAN ROOM				
Z-053	WEALTH GB	GB	FG1625SN	4/SE-301	3	LAN ROOM				
Z-054	SPARE									
Z-055	GREETER PB	PB	HUB2B	1,2/SE-301	3	LAN ROOM				
Z-056	FR OFFICE PB	PB	HUB2B	1,2/SE-301	3	LAN ROOM				
Z-057	OPS PB	PB	HUB2B	1,2/SE-301	3	LAN ROOM				
Z-058	TXN OFFICE 101 DURESS	PBX	HUB2B	1,2/SE-301	3	LAN ROOM				
Z-061	TXN OFFICE 102 DURESS	PBX	HUB2B	1,2/SE-301	3	LAN ROOM				
Z-062	TXN OFFICE 101 MOTION	M	DS9370	3/SE-301	3	LAN ROOM				
Z-063	TXN OFFICE 102 MOTION	M	DS9370	3/SE-301	3	LAN ROOM				
Z-064	BL OFFICE DURESS	PBX	HUB2B	1,2/SE-301	3	LAN ROOM				
Z-065	SPARE					LAN ROOM				
Z-066	SPARE					LAN ROOM				
Z-067	SPARE					LAN ROOM				
Z-068	SPARE					LAN ROOM				
Z-071	SPARE					LAN ROOM				
Z-072	SPARE					LAN ROOM				
Z-073	SPARE					LAN ROOM				
Z-074	SPARE					LAN ROOM				
Z-075	SPARE					LAN ROOM				
Z-076	SPARE					LAN ROOM				
Z-077	SPARE					LAN ROOM				
Z-078	SPARE					LAN ROOM				
Z-081	SPARE					LAN ROOM				
Z-082	SPARE					LAN ROOM				
Z-083	SPARE					LAN ROOM				
Z-084	SPARE					LAN ROOM				
Z-085	SPARE					LAN ROOM				
Z-086	SPARE					LAN ROOM				
Z-087	SPARE					LAN ROOM				
Z-088	LAN TEMP	TS	EA200-12	5/SE-301	3	LAN ROOM				
PANEL TERM 6+9	BRANCH HORN/STROBE	HORN/STROBE	DOBERMAN	8/SE-302	3	LAN ROOM				
							SERIAL #	IP ADDRESS	MAC ADDRESS	COMMENTS
001	VIDEO INTERCOM	VI	2N IP02407-001	4/SE-302	24	LAN ROOM				
002	INTERCOME MASTER STATION	IM	2N IP02087-001	3/SE-302	24	LAN ROOM				
							SERIAL #	IP ADDRESS	MAC ADDRESS	COMMENTS
001	(1) WELDEX WDL-1040M 10" MONITOR - BRANCH MANAGER'S OFFICE	VM	WDL1040M	6/SE-301	24	LAN ROOM				
002	(1) WELDEX WDL-1040M 10" MONITOR - FLOATER	VM	WDL1040M	6/SE-301	24	LAN ROOM				
003	(1) DELL P2425H 24" MONITOR, (1) CRIMSON A30F WALL MOUNT - OPS ROOM	VM	P2425H	7/SE-301	24	LAN ROOM				
004	(1) DELL P2425H 24" MONITOR, (1) CRIMSON A30F WALL MOUNT - BREAK ROOM	VM	P2425H	7/SE-301	24	LAN ROOM				
							SERIAL #	IP ADDRESS	MAC ADDRESS	COMMENTS
ISC#.3207	1_134_RDRL.61##0007	DR	909S-MO	2/SE-301	3	LAN ROOM				NO ASSET TAG REQUIRED
ISC#.0003	1_134_RDRL.61##0103	DR	909S-MO	2/SE-301	3	LAN ROOM				NO ASSET TAG REQUIRED
ISC#.0007	1_134_RDRL.61##0107	DR	909S-MO	2/SE-301	3	LAN ROOM				NO ASSET TAG REQUIRED
							SERIAL #	IP ADDRESS	MAC ADDRESS	COMMENTS
ISC#.3201	1_###_LAN_DR	DT	LNL-R10325-FID	3/SE-303	1	LAN ROOM				
ISC#.3205	1_###_FRONT_ENTRY	DT	LNL-R10325-FID	3/SE-303	1	LAN ROOM				
ISC#.0001	1_###_REAR_ENTRY	DT	LNL-R10325-FID	3/SE-303	1	LAN ROOM				
ISC#.0005	1_###_SECR_LBY_DR_OPS	CR	LNL-R10320-FID	4/SE-303	1	LAN ROOM				
ISC#.0101	1_###_SECR_LBY_DR_HW106	CR	LNL-R10320-FID	4/SE-303	1	LAN ROOM				
ISC#.0105	1_###_SECR_LBY_DR_HW114	CR	LNL-R10320-FID	4/SE-303	1	LAN ROOM				
ISC#.0201	1_###_WEALTH	CR	LNL-R10320-FID	2/SE-303	3	LAN ROOM				
ISC#.0205	1_###_WEALTH	CR	LNL-R10320-FID	4/SE-303	1	LAN ROOM				
ISC#.0301	1_###_GREETER	CR	LNL-R10320-FID	4/SE-303	1	LAN ROOM				
ISC#.0305	SPARE	CR	LNL-R10320-FID	4/SE-303	1	LAN ROOM				
							SERIAL #	IP ADDRESS	MAC ADDRESS	COMMENTS
001	AREA 1 ARM / DISARM KEYPAD - OPS	KP	B942W	7/SE-302	3	LAN ROOM				
002	AREA 1 ARM / DISARM KEYPAD - LAN	KP	B942W	7/SE-302	3	LAN ROOM				
003	AREA 2 ARM / DISARM KEYPAD - REAR DOOR	KP	B942W	7/SE-302	3	LAN ROOM				

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL
R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210
P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

General Notes:

Project Title:

Fidelity INVESTMENTS

Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project No.: C0115.00

Drawing Sheet Title:

SECURITY - DEVICE SCHEDULE

Drawing Sheet Number:

SE-100

Owner's Branch No.:

134

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ISC NUMBER	61##
ISC NAME	61##_IC_1_134

READER ADDRESS	REF.#	READER TYPE	DESCRIPTION (23 CHARACTERS)	LOCK CONFIG.	CONTACT CONFIG.	EGRESS CONFIG.	HARDWARE REFERENCE	SOFTWARE REFERENCE	PERIMETER	LOCK TYPE MANUFACTURE	PERIMETER CAMERA	COMMENTS
3201	61##3201	PIN - 12VDC	1_134_LAN_DR	N.O	N.C	N.O	BOARD 0	ADDRESS 0	NO	MORTISE		ONBOARD READER
				OUTPUT 1	INPUT 1	INPUT 2	READER 1			SCHLAGE		
3205	61##3205	PIN - 12VDC	1_134_FRONT_ENTRY	N.O	N.C	N.O	BOARD 0	ADDRESS 1	YES	EXTERIOR TRIM	1.51	ONBOARD READER
				OUTPUT 4	INPUT 5	INPUT 6	READER 2			VON DUPRIN		
0001	61##0001	PIN - 12VDC	1_134_REAR_ENTRY	N.O	N.C	N.O	BOARD 1	ADDRESS 2	YES	STRIKES	1.65	
				OUTPUT 1	INPUT 1	INPUT 2	READER 1			FOLGER ADAMS		
0005	61##0005	CARD - 12VDC	1_134_SECR_LBY_DR_OPS	N.O	N.C	N.O	BOARD 1	ADDRESS 3	NO	MORTISE		
				OUTPUT 4	INPUT 5	INPUT 6	READER 2			SCHLAGE		
0101	61##0101	CARD - 12VDC	1_134_SECR_LBY_DR_HW106	N.C	N.C	N.O	BOARD 2	ADDRESS 4	NO	MORTISE		
				OUTPUT 1	INPUT 1	INPUT 2	READER 1			SCHLAGE		
0105	61##0105	CARD - 12VDC	1_134_SECR_LBY_DR_HW_114	N.C	N.C	N.O	BOARD 2	ADDRESS 5	NO	MORTISE		
				OUTPUT 4	INPUT 5	INPUT 6	READER 2			SCHLAGE		
0201	61##201	CARD - 12VDC	1_134_WEALTH	N.C	N.C	N.O	BOARD 3	ADDRESS 6	NO	MORTISE		
				OUTPUT 1	INPUT 1	INPUT 2	READER 1			SCHLAGE		
0205	61##0205	CARD - 12VDC	1_134_WEALTH	N.C	N.C	N.O	BOARD 3	ADDRESS 7	NO			
				OUTPUT 4	INPUT 5	INPUT 6	READER 2					
0301	61##205	CARD - 12VDC	1_134_GREETER_RDRL	N.C	N.C	N.O	BOARD 3	ADDRESS 7	NO			
				OUTPUT 4	INPUT 5	INPUT 6	READER 2					
0305	61##0205	CARD - 12VDC	SPARE	N.C	N.C	N.O	BOARD 3	ADDRESS 7	NO			
				OUTPUT 4	INPUT 5	INPUT 6	READER 2					

NOTES:

POINT ADDRESS	REF.#	POINT TYPE	DESCRIPTION (23 CHARACTERS MAX)	EOL	EOL LOCATION	CONTACT CONFIG.	# OF DEVICE ON INPUT	HARDWARE REFERENCE	PERIMETER DEVICE	ASSOCIATED CAMERA	SOFTWARE REFERENCE
3203		ISC LOW BATTERY	1_###.ISC.61##.LBAT	NO		N.O	1	BOARD 0 INPUT 3			BOARD 0 READER 1 AUX INPUT 1
3204		FIRE ALARM	1_##_FA	NO		N.O	1	BOARD 0 INPUT 4			BOARD 0 READER 1 AUX INPUT 2
3207				YES	DEVICE	N.O	1	BOARD 0 INPUT 7			BOARD 0 READER 2 AUX INPUT 1
3208				YES	DEVICE	N.O	1	BOARD 0 INPUT 8			BOARD 0 READER 2 AUX INPUT 2
0003				YES	DEVICE	N.O	1	BOARD 1 INPUT 3			BOARD 1 READER 1 AUX INPUT 1
0004				YES	DEVICE	N.O	1	BOARD 1 INPUT 4			BOARD 1 READER 1 AUX INPUT 2
0007		REMOTE DOOR RELEASE	1_###_RDRL.61##.0005	YES	DEVICE	N.O	1	BOARD 1 INPUT 7			BOARD 1 READER 2 AUX INPUT 1
0008				YES	DEVICE	N.O	1	BOARD 1 INPUT 8			BOARD 1 READER 2 AUX INPUT 2
0103		REMOTE DOOR RELEASE	1_###_RDRL.61##.0101	YES	DEVICE	N.O	1	BOARD 2 INPUT 3			BOARD 2 READER 1 AUX INPUT 1
0104				YES	DEVICE	N.O	1	BOARD 2 INPUT 4			BOARD 2 READER 1 AUX INPUT 2
0107		REMOTE DOOR RELEASE	1_###_RDRL.61##.0105	YES	DEVICE	N.O	1	BOARD 2 INPUT 7			BOARD 2 READER 2 AUX INPUT 1
0108				YES	DEVICE	N.O	1	BOARD 2 INPUT 8			BOARD 2 READER 2 AUX INPUT 2
0203				YES	DEVICE	N.O	1	BOARD 3 INPUT 3			BOARD 3 READER 1 AUX INPUT 1
0204				YES	DEVICE	N.O	1	BOARD 3 INPUT 4			BOARD 3 READER 1 AUX INPUT 2
0207				YES	DEVICE	N.O	1	BOARD 3 INPUT 7			BOARD 3 READER 2 AUX INPUT 1
0208				YES	DEVICE	N.O	1	BOARD 3 INPUT 8			BOARD 3 READER 2 AUX INPUT 2

Jacobs

Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL

R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210

P 617-423-7423
F 617-423-7501
W www.vanderweil.com

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7171 E. Paradise Lane
Suite R-120
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Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project No.: C0115.00

Drawing Sheet Title:

SECURITY - LENEL PROGRAMING

Drawing Sheet Number:

SE-101

Owner's Branch No.:

134

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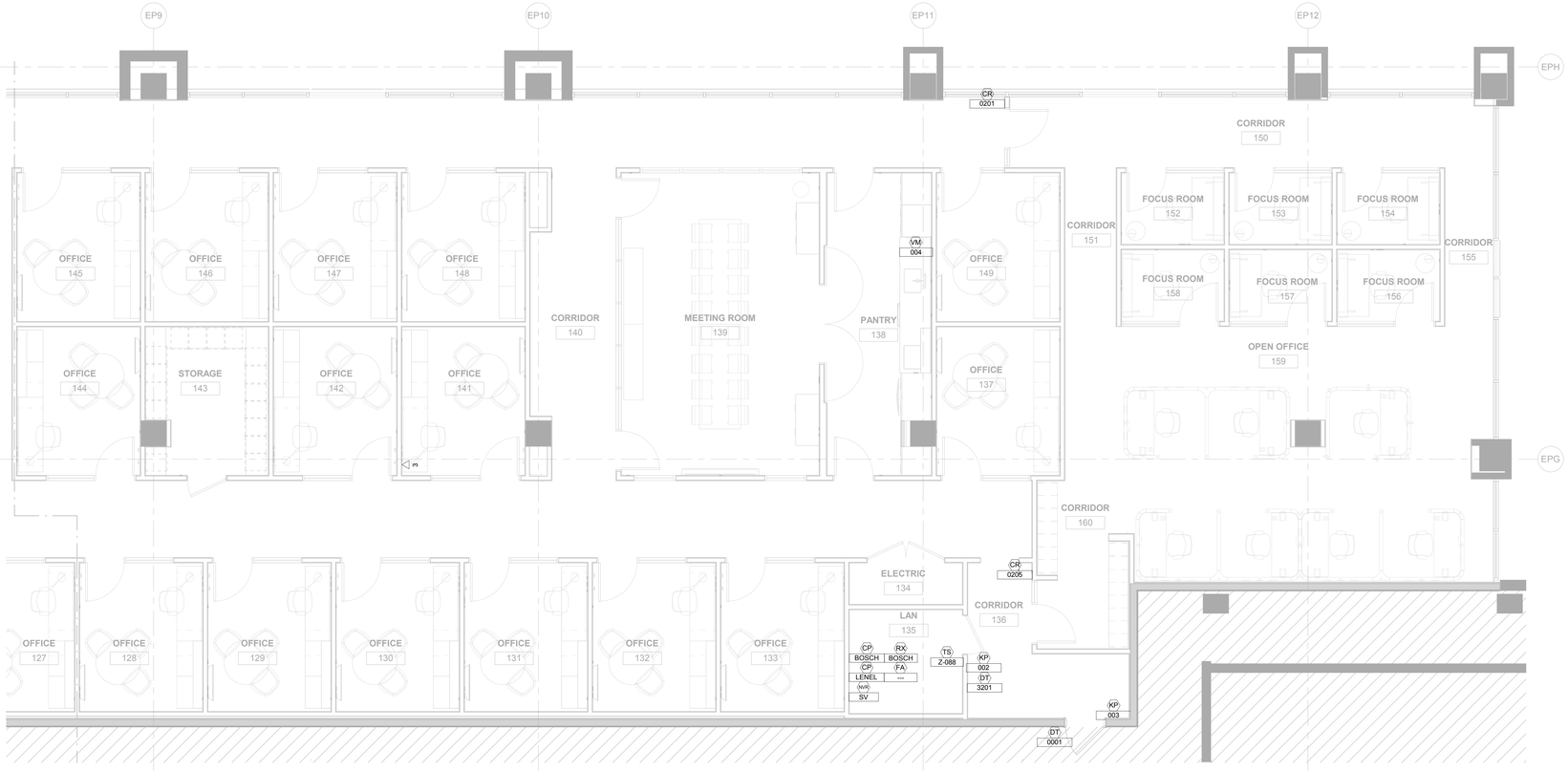
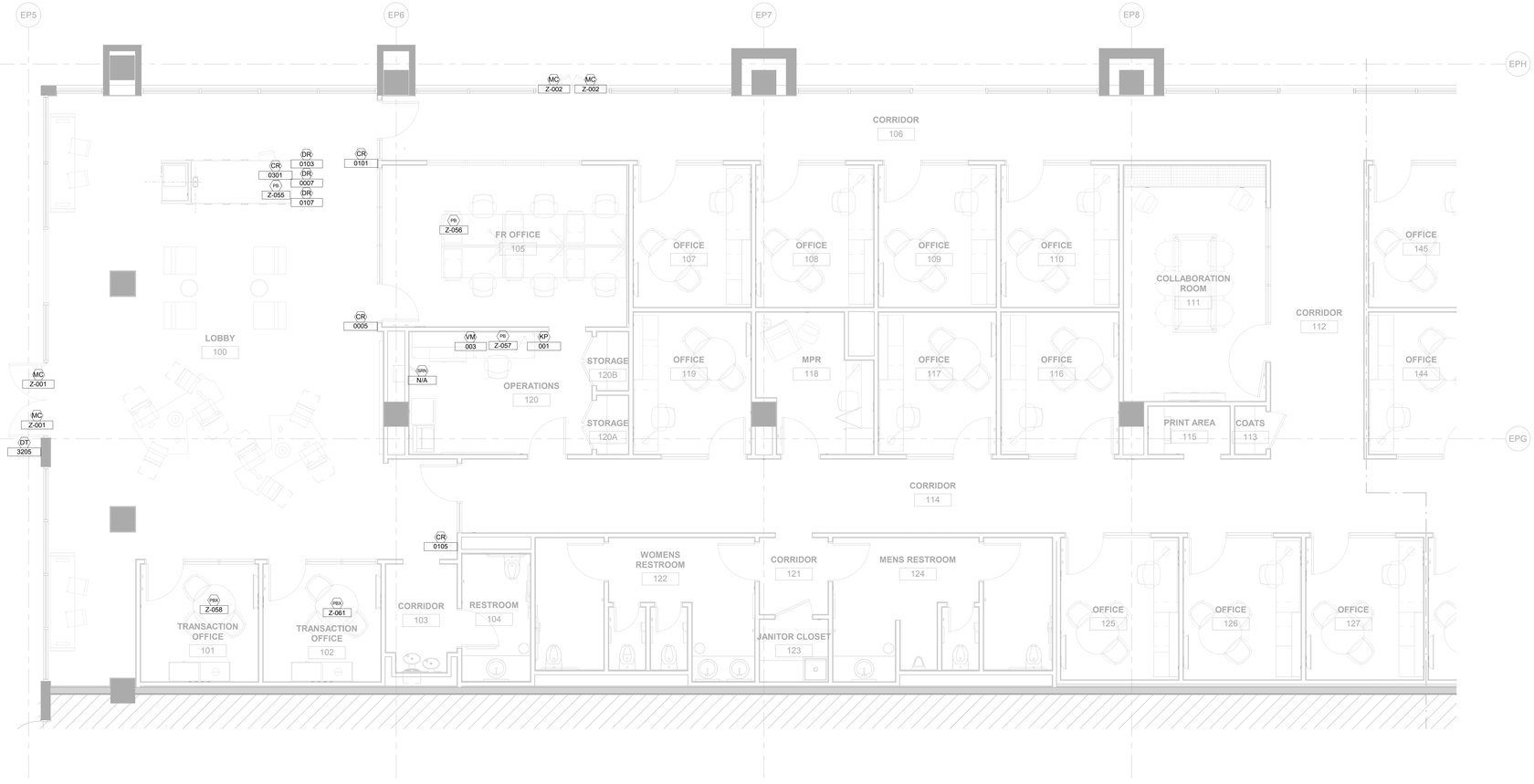


1 SECURITY - LEVEL 1 EAST
1/4" = 1'-0"



2 SECURITY - LEVEL 1 WEST
1/4" = 1'-0"

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Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL

R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210

P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

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Fidelity INVESTMENTS

Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:

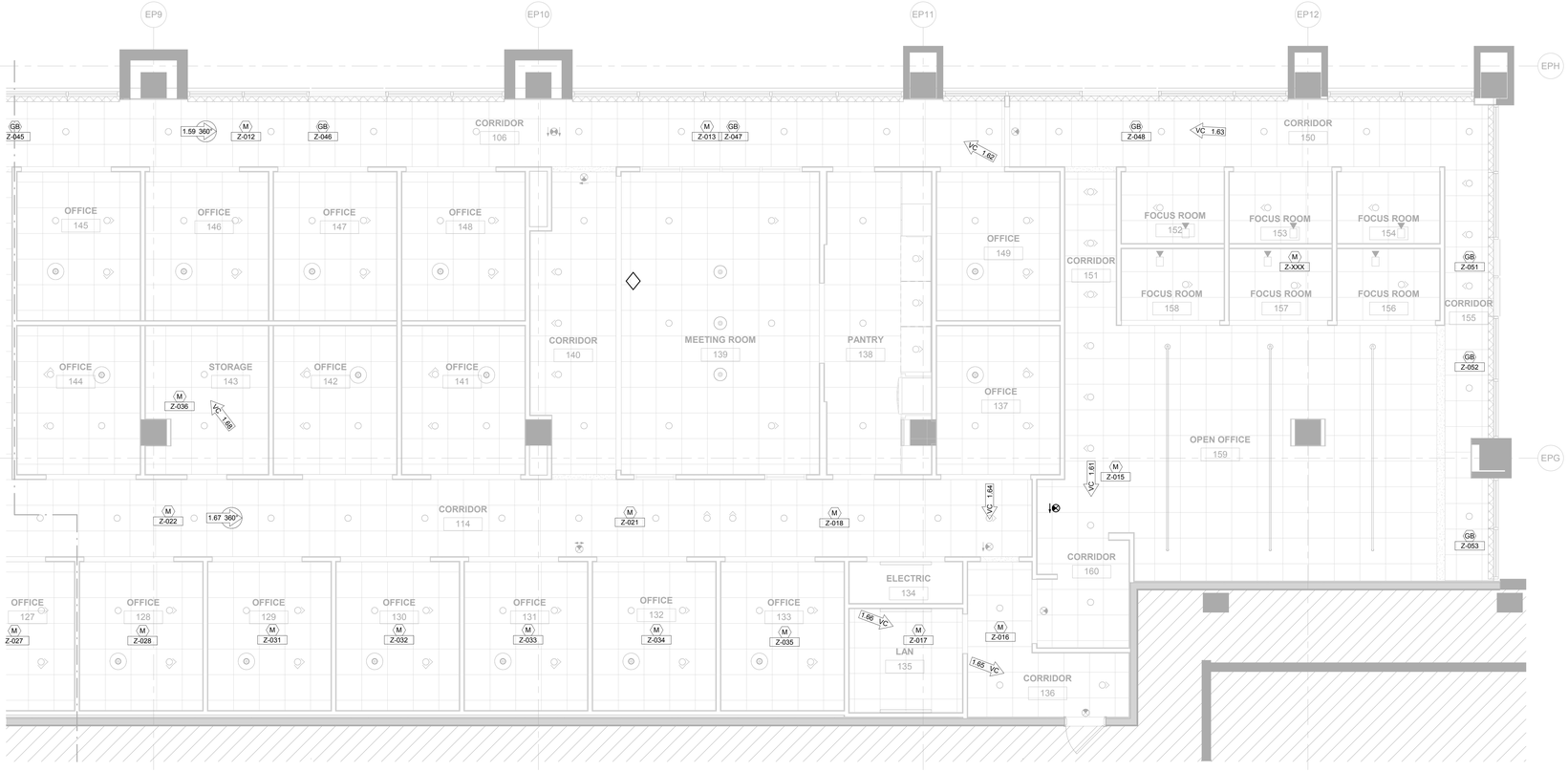
Project North
True North

Project No.: C0115.00

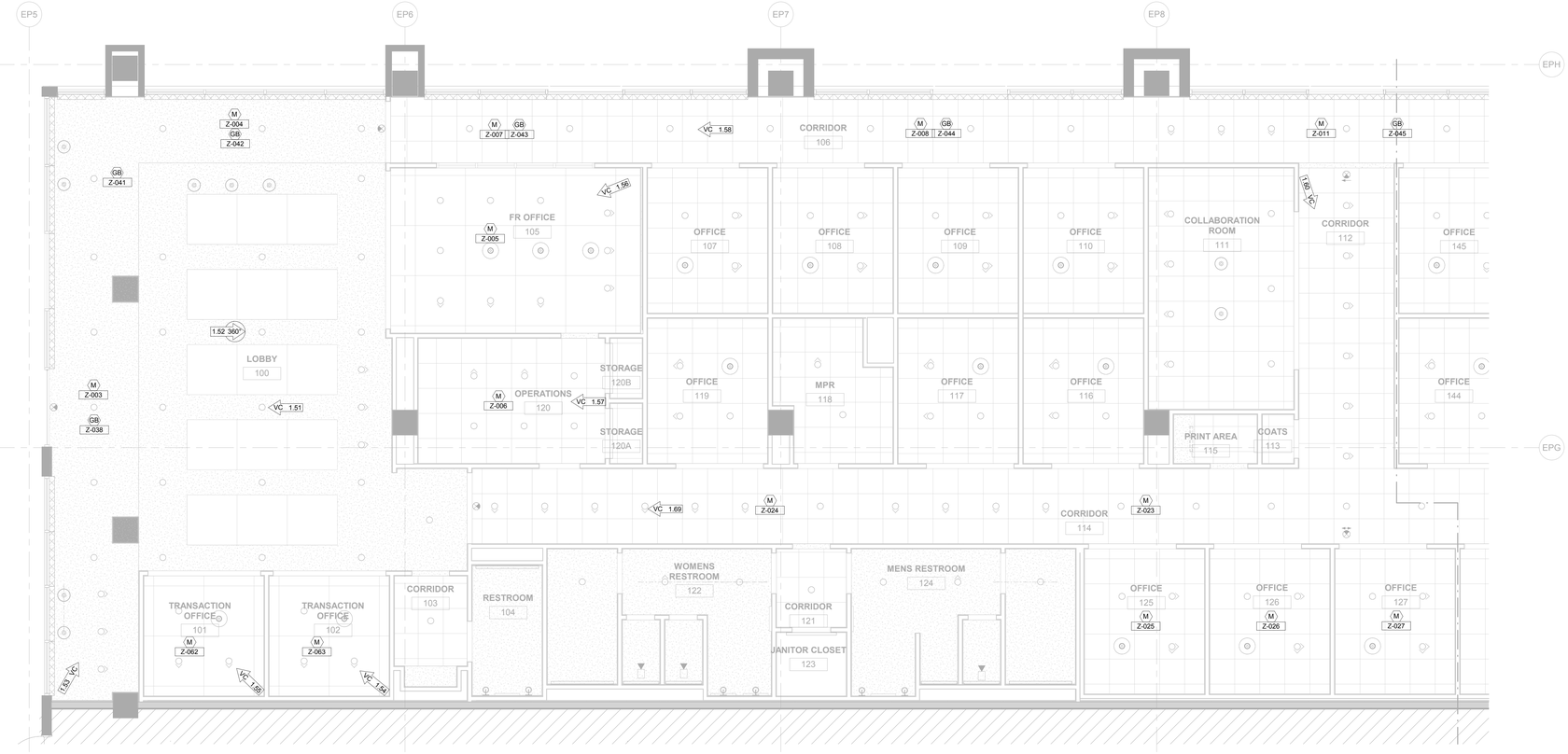
Drawing Sheet Title:
SECURITY - LEVEL 1

Drawing Sheet Number:
SE-201

Owner's Branch No.:
134



2 - LEVEL 1 EAST
1/4" = 1'-0"



1 - LEVEL 1 WEST
1/4" = 1'-0"

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Jacobs

Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL

R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210

P 617-423-7423
F 617-423-7501
W www.vanderweil.com

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Fidelity Real Estate Company
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Number	Description	Date
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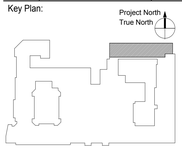
Key Plan:

Project North
True North



Drawing Sheet Title:

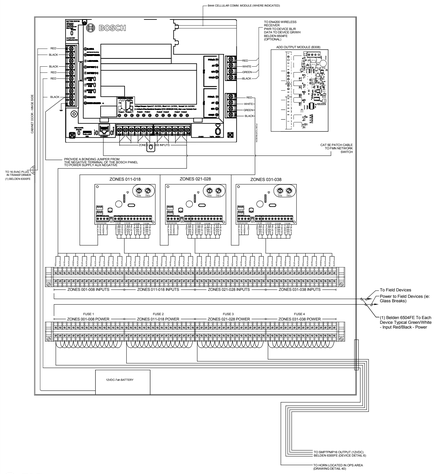
SECUIRITY - REFLECTED CEILING PLAN LEVEL 1

Drawing Sheet Number:

SE-202

Owner's Branch No.:

134

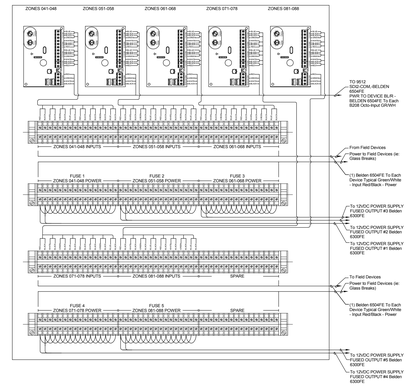


Fidelity Investments

1 CUSTOM PANEL - BOSCH, ACCESS CONTROL POWER SUPPLY AND OCTO-INPUT ALARM POINT
SCALE : NTS

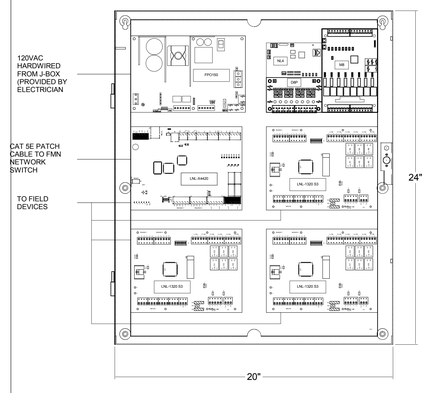
GENERAL NOTES:

1. COMPONENTS SUPPLIED BY CONTRACTOR AND PANEL BUILT BY FIDELITY CORPORATE SECURITY



Fidelity Investments

2 OCTO-INPUT ALARM POINT SPLICE BACKPLANE
SCALE : NTS

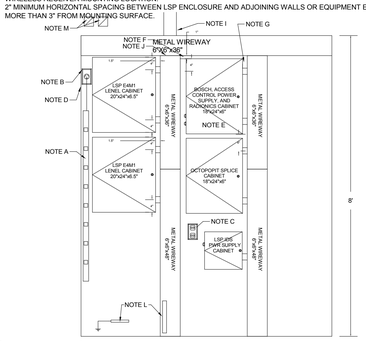


Fidelity Investments

3 LIFESAFETY POWER MERCURY 8DR PROWIRE ENCLOSURE
SCALE : NONE

GENERAL NOTES:

A. PLUG MOLD STRIP WITH A MINIMUM OF 8 RECEPTACLES AT 6" ON CENTER AND A 20AMP TWIST-LOCK NEMA L5-20R PLUG.
B. UTILITY POWER - 20AMP SINGLE NEMA 5-20R TWIST-LOCK RECEPTACLE. (BY OTHERS).
C. TELEPHONE/DATA JACK WITH MINIMUM OF FOUR (4) PATCHED AND ACTIVE JACKS. (BY OTHERS).
D. 3/4" FIRE RETARDENT PLYWOOD WITH FIRE RETARDENT WHITE PAINT. (BYGC)
E. ALL IDS CABINETS TO BE HINGED, KEY LOCKABLE A WITHOUT KNOCK OUTS. HINGED SIDE OF CABINET TO BE MOUNTED OPPOSITE OF KEY LATCH AS SHOWN ON DRAWING. CABINETS CAN BE ORDERED FROM NORTHEAST ELECTRIC (781-401-8543 JOHN KERNS) WITH CAT60 KEY/LOCK.
F. 1" VERTICAL SPACING BETWEEN PANELS TYPICAL.
G. 1-1/2" HORIZONTAL SPACING BETWEEN PANELS TYPICAL.
H. 2" DIAMETER RIGID CONNECTORS TYPICAL, NO LONGER THAN 3" IN LENGTH, WITH BUSHINGS.
I. 4" CONDUIT SHALL BE STUBBED UP FROM METAL WIREWAY OF SECURITY CONTROL PANEL TO 6" ABOVE CEILING.
J. CONNECT ALL WIREWAY WITH 4" CHASE NIPPLES & BUSHINGS.
K. BOSCH 16.5VAC 40VA PLUG IN TRANSFORMER PROVIDED WITH PANEL "GROUND BUS" GE#TGL2 EQUIPMENT GROUND KIT.
L. EXTEND #12 GND FROM "GROUND BUS" TO EACH CABINET GROUND LUG. EXTEND #6 GND FROM "GROUND BUS" TO DEDICATED GROUND BAR.
M. TWO (2) NORMALLY CLOSED DRY CONTACTS FROM FIRE ALARM SYSTEM THAT OPENS DURING GENERAL ALARM WITHIN FIDELITY SPACE. DMARC WHERE FIRE ALARM CONTRACTOR EXTENDS 2-COND CABLE AND SECURITY CONTRACTOR MAKES CONNECTION. (BY GC)
N. WIRELESS RECEIVER MOUNTING LOCATION.
O. 2" MINIMUM HORIZONTAL SPACING BETWEEN LSP ENCLOSURE AND ADJOINING WALLS OR EQUIPMENT EXTENDING MORE THAN 3" FROM MOUNTING SURFACE.



Fidelity Investments

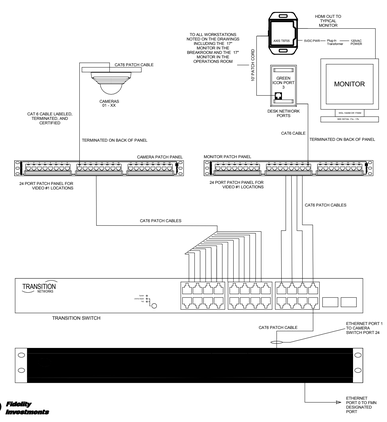
4 6'-10" BOSCH/LENEL CONTROL PANEL LAYOUT
SCALE : NTS

GENERAL NOTES:

1. NETWORK CONTRACTOR TO PROVIDE AND INSTALL CAT6 CABLE TO CAMERAS.
2. NETWORK CONTRACTOR TO PROVIDE ALL CAT6 PATCH CABLES (COLOR: GREEN).
5. NETWORK CONTRACTOR TO PROVIDE AND INSTALL FIBER IF NEEDED.

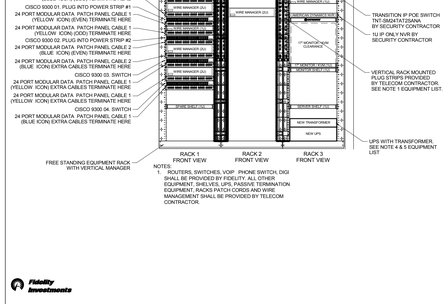
6. SECURITY VENDOR TO PROVIDE GENETEC ADVANTAGE LICENSES THROUGH OCTOBER 30TH 2027.
   6.1. ALL ADDED CAMERAS REQUIRE CAMERA CONNECTION LICENSING.
   6.2. ALL ADDED CAMERAS REQUIRE FAILOVER CAMERA LICENSING.
   6.3. EACH NVR REQUIRES INTRUSION ALARM PANEL LICENSING BASED ON THE NUMBER OF ALARM PANELS ADDED.

7. SECURITY VENDOR TO SUPPLY SECURITY POE SWITCH # AS NEEDED.



Fidelity Investments

5 VIDEO - HEAD END VIDEO DISTRIBUTION (DECODER) - TYPICAL CABLING AND LAYOUT
SCALE : NTS



NOTES:
1. ROUTERS, SWITCHES, VOIP PHONE SWITCH, DIGI SHALL BE PROVIDED BY FIDELITY. ALL OTHER EQUIPMENT, SHELVES, UPS, PASSIVE TERMINATION EQUIPMENT, RACKS PATCH CORDS AND WIRE MANAGEMENT SHALL BE PROVIDED BY TELECOM CONTRACTOR.

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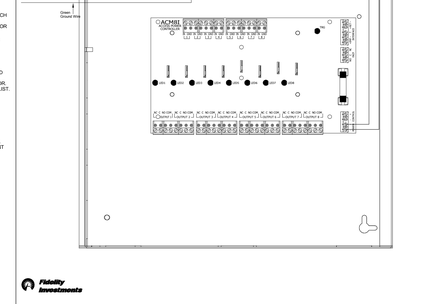
6 LAN TELECOMMUNICATIONS ROOM - RACK ELEVATION
SCALE : NTS

GENERAL NOTES:

1. REQUIRED CAT 60 REPLACEMENT LOCK.
2. REQUIRED POLARIZED TYPE SJT POWER CORD.



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7 IC INTRUSION DEVICE - POWER SUPPLY LAYOUT
SCALE : NTS

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL
R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210

P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

General Notes:

Project Title:

Fidelity Investments

Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project No.: C0115.00

Drawing Sheet Title:
SECURITY - DEVICE CONTROL EQUIPMENT

Drawing Sheet Number:
SE-300

Owner's Branch No.:
134

12/20/2024 12:52:33 PM

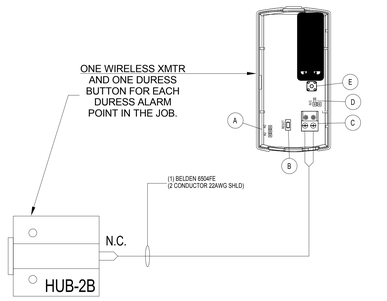
QTY	MATERIALS	MAKE	MODEL / PART#
(1)	WIRELESS TRANSMITTER	INOVONICS	EN1210
(1)	UNDER COUNTER HOLD UP BUTTON	USP	HUB-2B

GENERAL NOTES:

1. WIRELESS TRANSMITTER MOUNTED UNDER DESK BEHIND HUB DURESS BUTTON

KEY NOTES:

A. FREQUENCY BAND SELECTION PINS.
B. RESET BUTTON.
C. INPUT TERMINAL.
D. N/O - N/C SELECTION PINS.
E. TAMPER BUTTON AND SPRING.



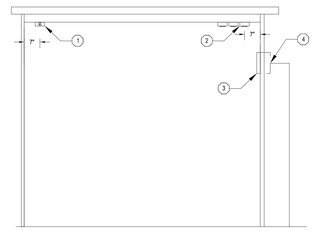
1 INOVONICS WIRELESS DURESS BUTTON
SCALE : NTS

GENERAL NOTES:

1. INSTALL 1K E.O.L RESISTOR FOR EACH BUTTON.
2. DESK IS SHOWN FOR REFERENCE ONLY.

KEY NOTES:

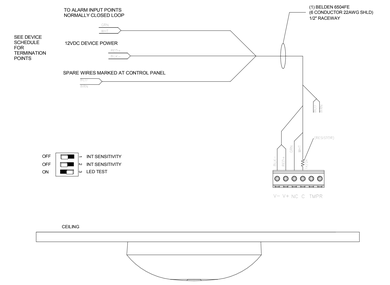
1. DURESS BUTTON. LOCATE 2" BACK FROM FRONT EDGE OF COUNTER.
2. DOOR RELEASE BUTTON. LOCATE 2" BACK FROM FRONT EDGE OF COUNTER.
3. CARD READER. LOCATE 4" BACK FROM FRONT EDGE OF COUNTER. COORDINATE LOCATION WITH MILLWORK VENDOR AND ELECTRICIAN.
4. BACK BOX WITH CABLE PATHWAY TO SECURITY HEAD END BY OTHERS.



2 TYPICAL SECURITY DURESS BUTTON - DOOR RELEASE
SCALE : NTS

GENERAL NOTES:

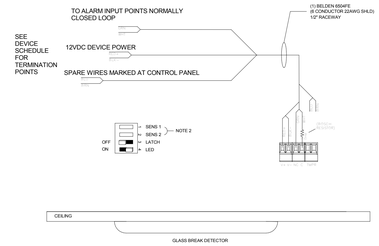
1. REQUIRED 1K E.O.L RESISTOR.



3 INTRUSION MOTION DETECTOR
SCALE : NTS

GENERAL NOTES:

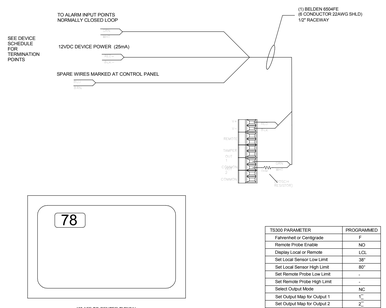
1. MOUNT PARALLEL AND WITHIN 15' OF GLASS.
2. REFER TO MANUFACTURER INSTRUCTIONS FOR SENSITIVITY SETTINGS.
3. REQUIRED 1K E.O.L RESISTOR.



4 GLASS BREAK SENSOR - BOSCH
SCALE : NTS

GENERAL NOTES:

1. SET HIGH TEMP ALARM TO 80 DEGREES.
2. SET LOW TEMP ALARM TO 38 DEGREES

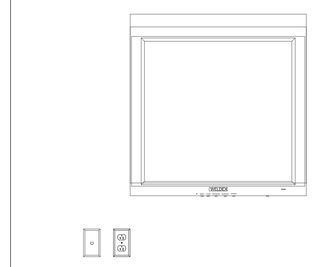


TS300 PARAMETER	PROGRAMMED
Fahrenheit or Centigrade	F
Remote Probe Enable	NO
Display Local or Remote	LCL
Set Local Sensor Low Limit	38°
Set Local Sensor High Limit	80°
Set Remote Probe Low Limit	-
Set Remote Probe High Limit	-
Select Output Mode	NC
Set Output Map for Output 1	1
Set Output Map for Output 2	2
Set Alarm Delay for Output 1	3
Set Alarm Delay for Output 2	0
Enable Audible Alarm	NO
Audible Alarm Silence Timeout	0
Hysteresis - Degrees d°	2

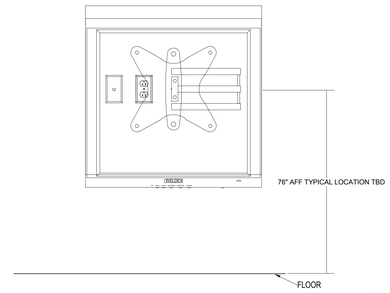
5 TEMP SENSOR - LOW & HIGH TEMPERATURE BOSCH
SCALE : NTS

GENERAL NOTES:

1. MONITOR PLACED ON DESK - ACTUAL LOCATION TBD BY ARCHITECT AND RELAYED TO ELECTRICAL AND TELECOM VENDORS.



6 10.4" VIDEO MONITOR
SCALE : NTS



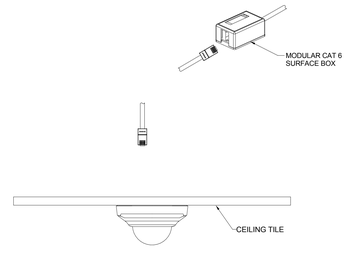
7 WALL MOUNTED 17" VIDEO MONITOR AND WALL MOUNT
SCALE : NONE

GENERAL NOTES:

1. MONITOR MUST COMPLETELY COVER POWER AND LAN PLATES WHEN STOWED AGAINST WALL.

GENERAL NOTES:

1. SPECIFIC CAMERA MODEL NOTED ON DEVICE SCHEDULE.



8 FIXED IP CEILING DOME - SURFACE MOUNT
SCALE : NONE

Jacobs
Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL
R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210
P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

General Notes:

Project Title:

Fidelity Real Estate Company
245 Summer Street
Boston, MA 02110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project No.: C0115.00

Drawing Sheet Title:

SECURITY - DEVICE DETAILS

Drawing Sheet Number:

SE-301

Owner's Branch No.:

134

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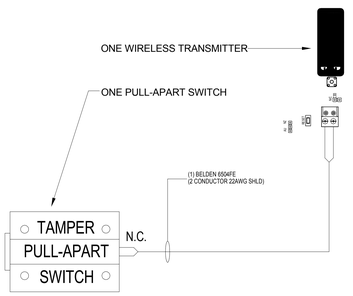
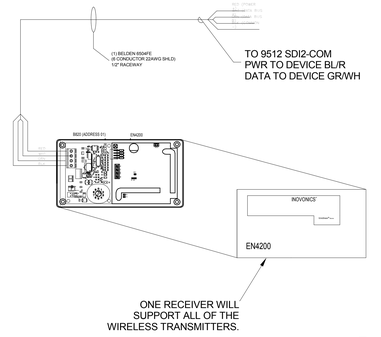
QTY	MATERIALS	MAKE	MODEL / PART#
(1)	WIRELESS TRANSMITTER	INOVONICS	EN1210
(1)	PULL-APART SWITCH W/ ARMORED JACKETED LEADS	GEORGE RISK INDUSTRIES (GRI)	4714A

GENERAL NOTES:

1. WIRELESS TRANSMITTER MOUNTED UNDER KIOSK COUNTER TOP.
2. PULL-APART SWITCH HOUSING TO BE MOUNTED TO FLOOR UNDER FALSE KIOSK FLOOR.



1 INOVONICS WIRELESS TAMPER SWITCH
SCALE : NTS



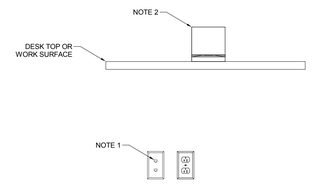
2 INOVOICS WIRLESS RECEIVER KIT
NTS

GENERAL NOTES:

1. ANSWERING STATION PLACED ON DESK - ACTUAL LOCATION TBD BY ARCHITECT AND RELAYED TO ELECTRICAL AND TELECOM VENDORS.

KEY NOTES:

1. LAN JACK PATCHED TO SECURITY PATCH PANEL (GREEN LABEL)
2. ANSWERING STATION TO BE PROVIDED WITH SUITABLE DESK STAND (BY SECURITY CONTRACTOR)



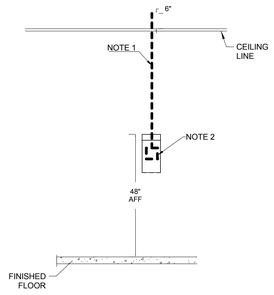
3 2N ANSWERING STATION - INDOOR COMPACT
NTS

GENERAL NOTES:

1. DOOR STATION TO BE SURFACE MOUNTED ON WALL UNLESS CLEARNACES REQUIRE FLUSH MOUNTING
2. TOPMOST OPERABLE PORTION OF DOOR STATION TO BE LOCATED 48" ABOVE FINISHED FLOOR
3. POE+ 802.3 POWER AND ETHERNET REQUIRED. LAN CABLE PATCHED TO SECURITY PATCH PANEL (GREEN LABEL)

KEY NOTES:

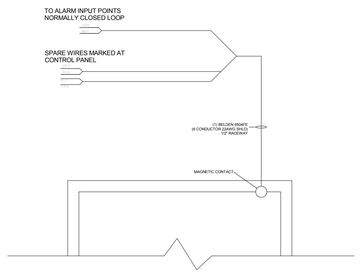
1. CONDUIT WITH PULL STRING FROM J-BOX TO 6" ABOVE CEILING OR OTHER COORDINATED ACCESSIBLE LOCATION.
2. 4" SQ. BOX WITH SINGLE GANG TRIM



4 2N DOOR STATION - IP STYLE
NTS

GENERAL NOTES:

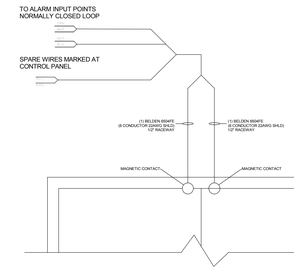
1. REQUIRED 1K E.O.L RESISTOR.



5 TYPICAL MAG CONTACT WIRING DIAGRAM
NTS

GENERAL NOTES:

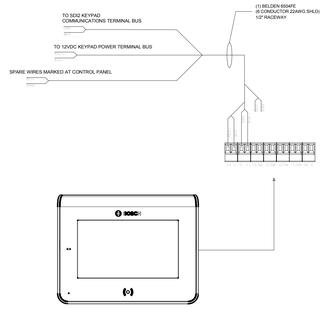
1. REQUIRED 1K E.O.L RESISTOR.



6 TYPICAL MAG CONTACT WIRING DIAGRAM - DOUBLE DOOR
NTS

GENERAL NOTES:

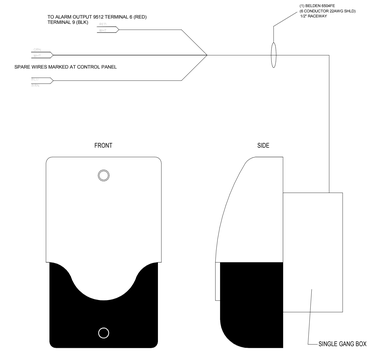
1. MOUNTING HEIGHT TO BE 48" UNLESS OTHERWISE NOTED.
2. SET ADDRESS SPECIFIED IN DEVICE SCHEDULE



7 BOSCH ALARM KEYPAD SURFACE MOUNT
SCALE : NTS

GENERAL NOTES:

1. DEVICE TO BE MOUNTED AT LOCATION DESIGNATED ON WALL 6" TO 10" BELOW CEILING.
2. STROBE AND SIREN WIRED TO OPERATE SIMULTANEOUSLY.
3. MOUNTED TO SINGLE GANG BOX.



8 DOBERMAN SIREN-STROBE
SCALE : NONE

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Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
W www.jacobs.com

Fidelity's Engineering Consultant :

VANDERWEIL

R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210

P 617-423-7423
F 617-423-7501
W www.vanderweil.com

Seals:

General Notes:

Project Title:

Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project No.: C0115.00

Drawing Sheet Title:

SECURITY - DEVICE DETAILS

Drawing Sheet Number:

SE-302

Owner's Branch No.:

134

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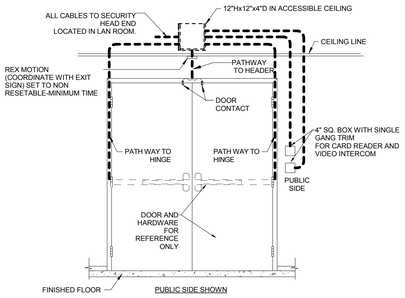
GENERAL NOTES:

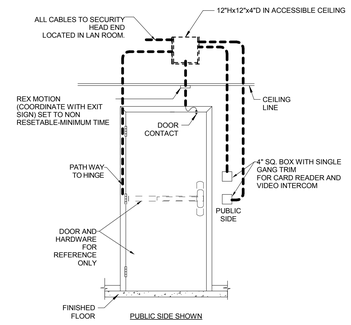
1. (1) CABLE TYPE #24
2. (1) CABLE TYPE #28



1 DOUBLE FRONT DOOR - CARD READER AND VIDEO INTERCOM
NTS

GENERAL NOTES:

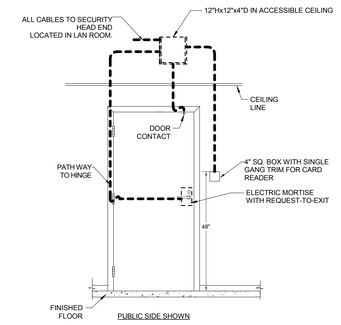
1. (1) CABLE TYPE #24
2. (1) CABLE TYPE #28



2 SINGLE DOOR - CARD READER - VIDEO INTERCOM
NTS

GENERAL NOTES:

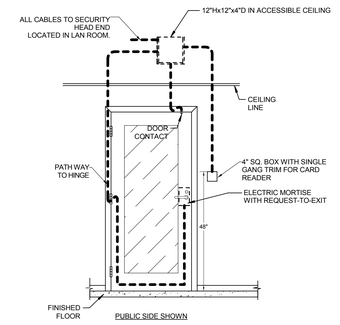
1. (1) CABLE TYPE #28



3 SINGLE WOOD DOOR - CARD READER - ELECTRIC MORTISE
NTS

GENERAL NOTES:

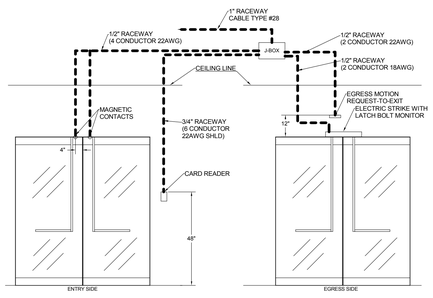
1. (1) CABLE TYPE #28



4 SINGLE STOREFRONT DOOR - CARD READER - ELECTRIC MORTISE
NTS

GENERAL NOTES:

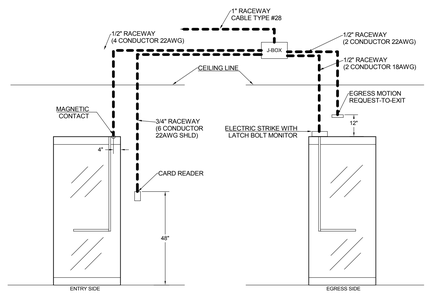
1. (1) CABLE TYPE #28



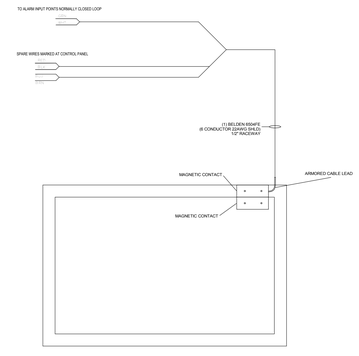
5 DOUBLE GLASS CRL DOOR - CARD READER - ELECTRIC STRIKE
NTS

GENERAL NOTES:

1. (1) CABLE TYPE #28



6 SINGLE STOREFRONT DOOR - CARD READER - ELECTRIC STRIKE
NTS



QTY	MATERIALS	MAKE	MODEL / PART#
(1)	MAG CONTACT	SENTROL	2505-A
(2)	RESISTOR	VK RESISTOR	--

7 ROOF HATCH MAG - CONTACT WIRING DIAGRAM
NTS

Jacobs

Jacobs Engineering Group, Inc.
Two Commerce Square
2001 Market Street
9th Floor, Suite 900
Philadelphia, PA 19103

P 215.569.2900 F 215.569.5963
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VANDERWEIL

R.G. Vanderweil Engineers, LPP
274 Summer Street
Boston, MA 02210

P 617-423-7423
F 617-423-7501
W www.vanderweil.com

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Fidelity INVESTMENTS

Fidelity Real Estate Company
245 Summer Street
Boston, MA 20110

7171 E. Paradise Lane
Suite R-120
Scottsdale, AZ 85254

Number	Description	Date
1	Issued for Permit & Construction	23 DEC 24

Key Plan:

Project No.: C0115.00

Drawing Sheet Title:

SECURITY - DEVICE DETAILS

Drawing Sheet Number:

SE-303

Owner's Branch No.:

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