

# CONSTRUCTION DOCUMENTS

## ALAMANCE - BURLINGTON SCHOOL SYSTEM

### 2022 SECURITY VESTIBULES

HAW RIVER ELEM.



CONSTRUCTION DOCUMENTS

ISSUE DATE: 02/24/22

REVISIONS

NO.	DATE
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ALAMANCE - BURLINGTON SCHOOL SYSTEM  
2022 SECURITY VESTIBULES  
HAW RIVER ELEM.



PROJECT NUMBER 2111

SHEET TITLE  
COVER SHEET

SHEET NUMBER

CS100  
HAW RIVER

DESIGN TEAM

ARCHITECT	ELECTRICAL & MECHANICAL
<b>Morris Berg Architects</b> 1401 W. Morehead St., Suite 125 Charlotte, NC 28208 P (704) 552-5800	<b>Schultz Engineering Group</b> PO Box 37008 Charlotte, NC 28237 P (704) 334-7363

INDEX OF DRAWINGS

DISCIPLINES			
ARCHITECTURAL		MECHANICAL & ELECTRICAL	
CS100	COVER SHEET	M101	MECHANICAL PLANS, NOTES AND SCHEDULES
LS100	LIFE SAFETY PLANS, PARTITION TYPES, AND DETAILS	E001	ELECTRICAL SYMBOLS, NOTES AND SPECIFICATIONS
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A1200	DOOR SCHEDULE & DETAILS		
A1400	FINISH PLAN, LEGEND, SCHEDULE, AND DETAILS		

EXISTING EGRESS CAPACITY IS NOT BEING ALTERED AS PART OF THE SCHOOL VESTIBULE PROJECT. NO CHANGE IN USE OR OCCUPANCY IS PART OF THIS PROJECT.

LEGEND

2225

CLASSROOM

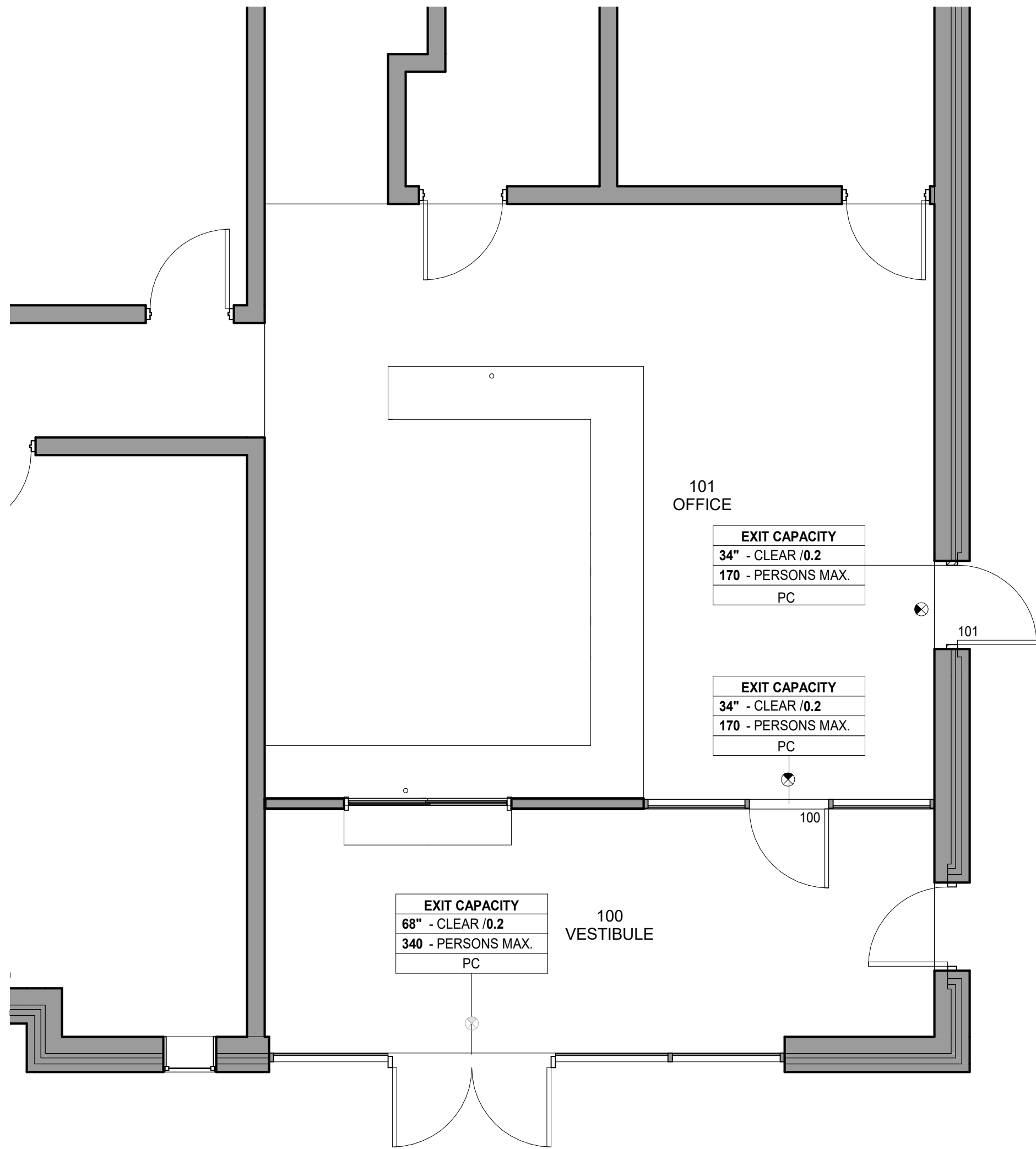
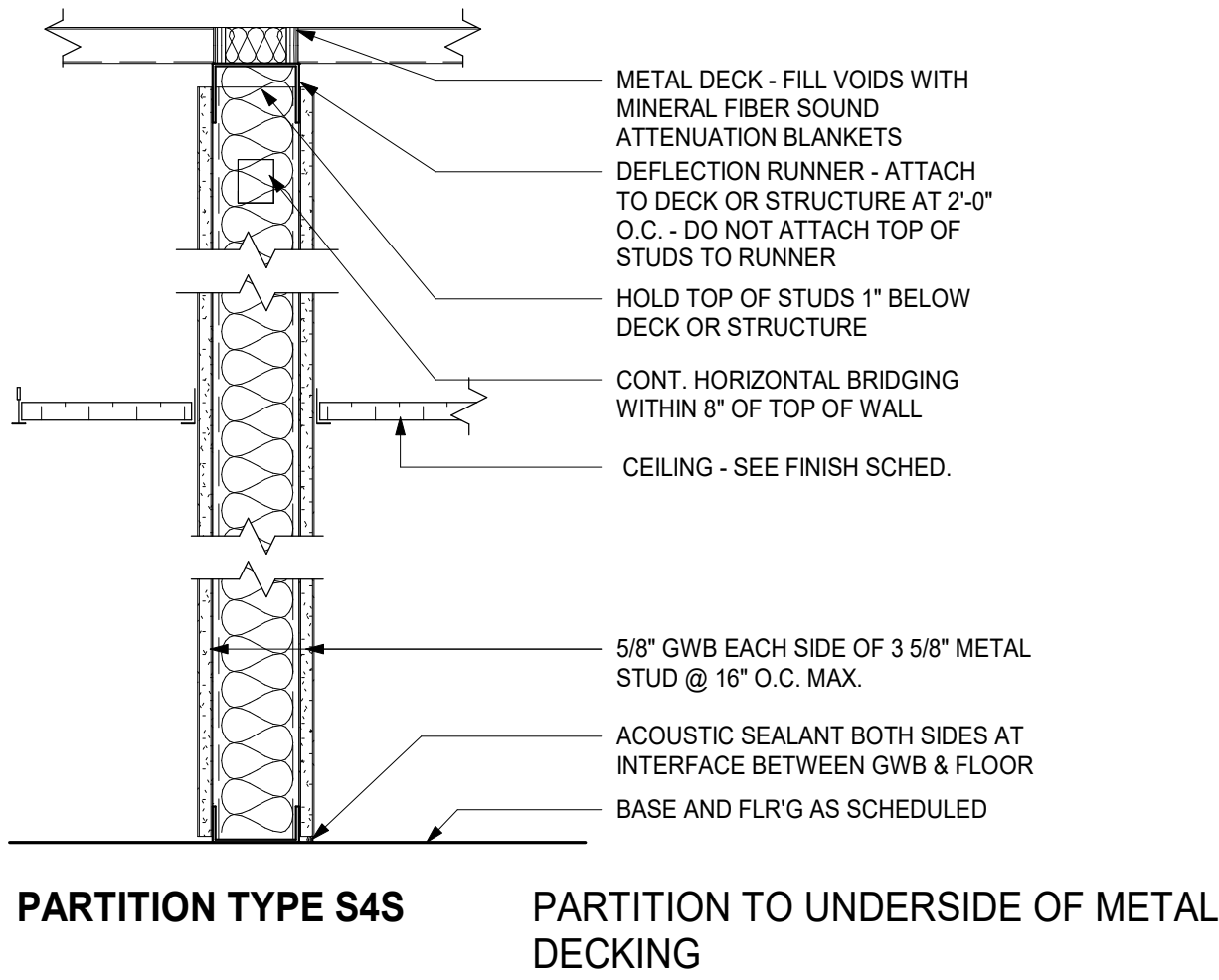
995 SF

ROOM NUMBER

ROOM NAME

ROOM SQUARE FOOTAGE

ACCESSIBLE ENTRANCE/EXIT



1 FIRST FLOOR PLAN - LIFE SAFETY PLAN  
1/4" = 1'-0"



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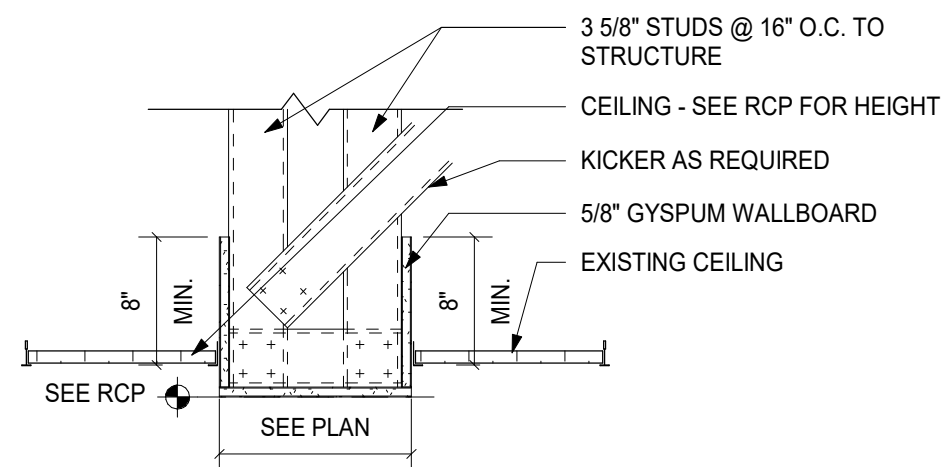
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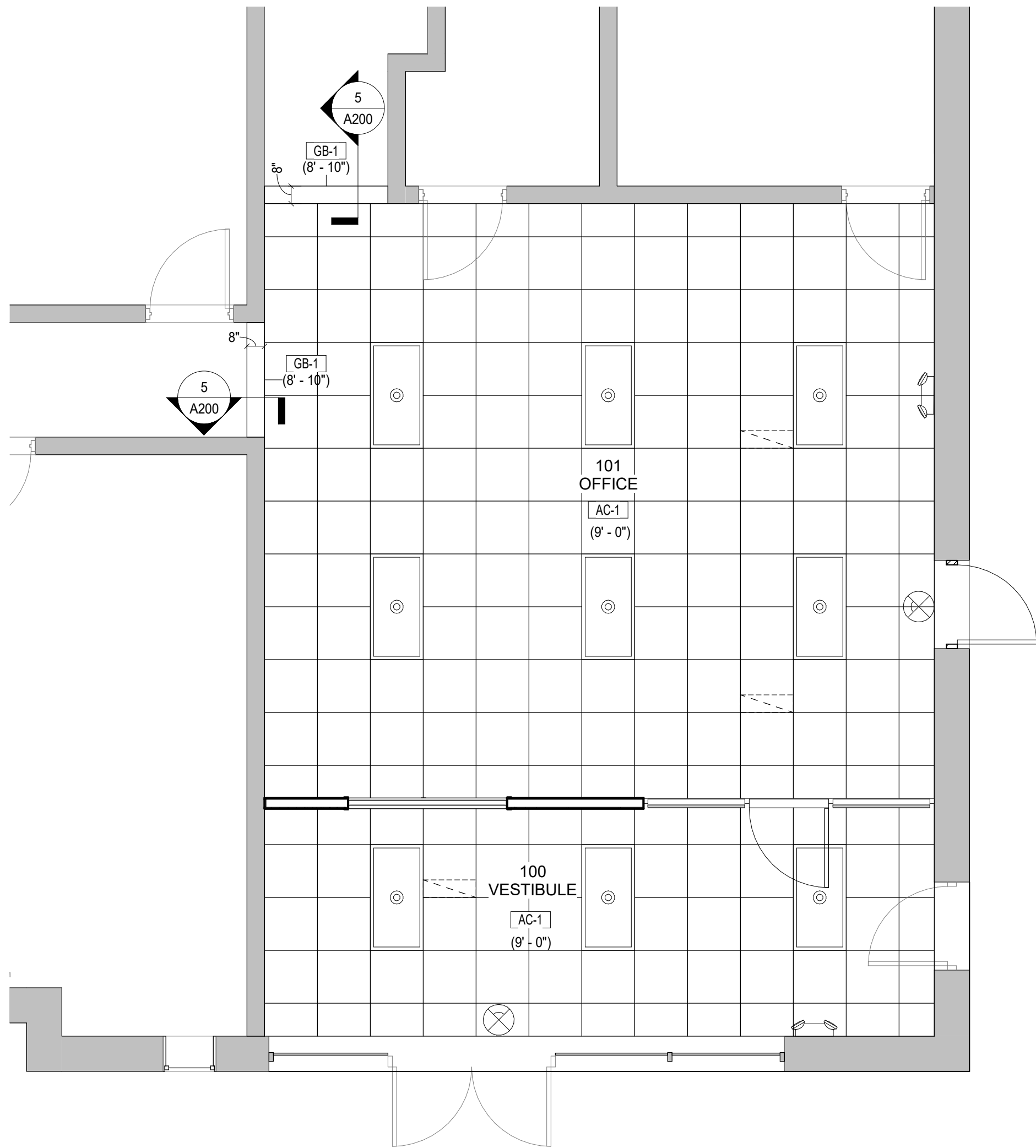
PROJECT NUMBER 2111  
SHEET TITLE  
LIFE SAFETY PLANS,  
PARTITION TYPES, AND  
DETAILS  
SHEET NUMBER

LS100  
HAW RIVER

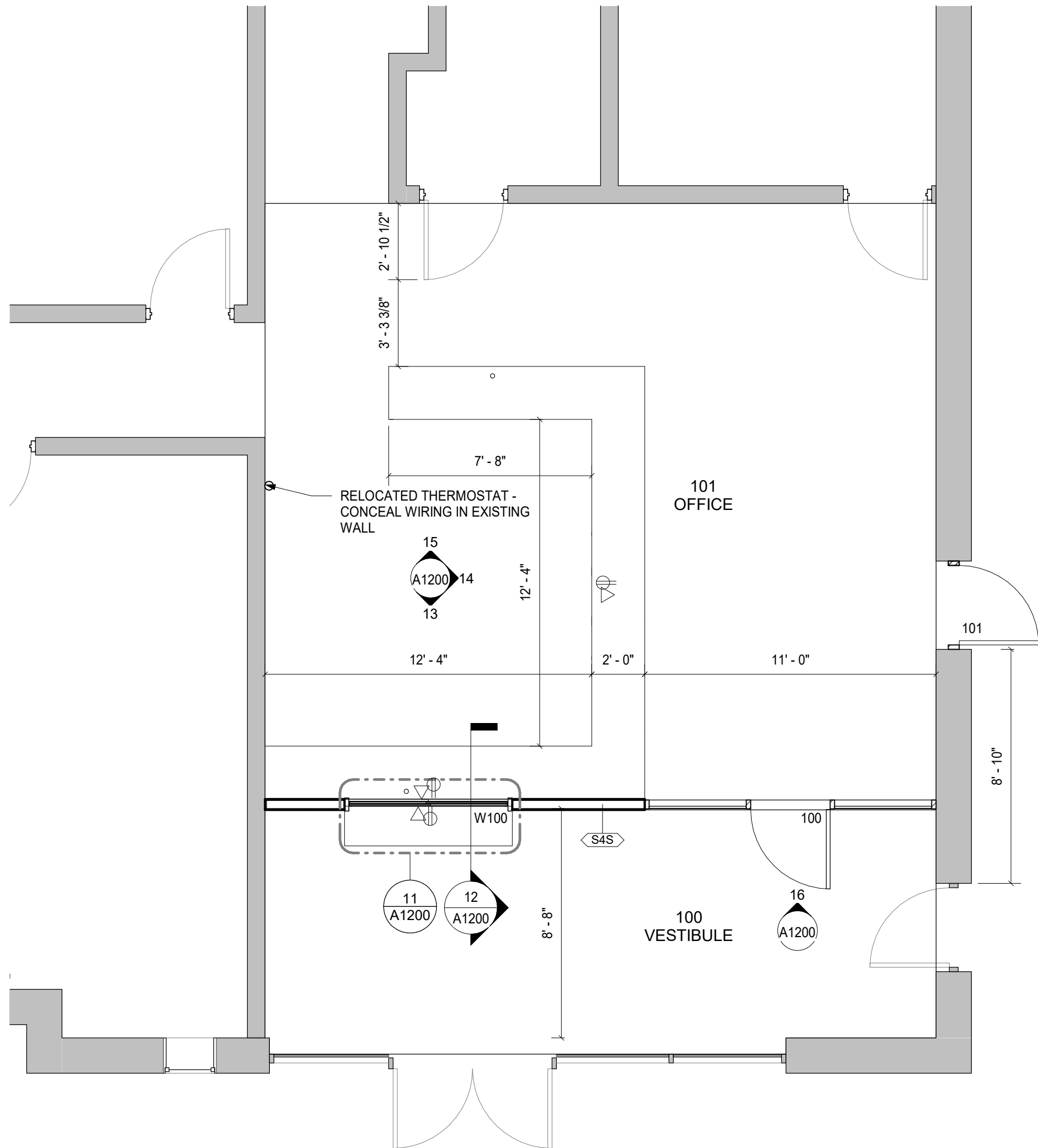




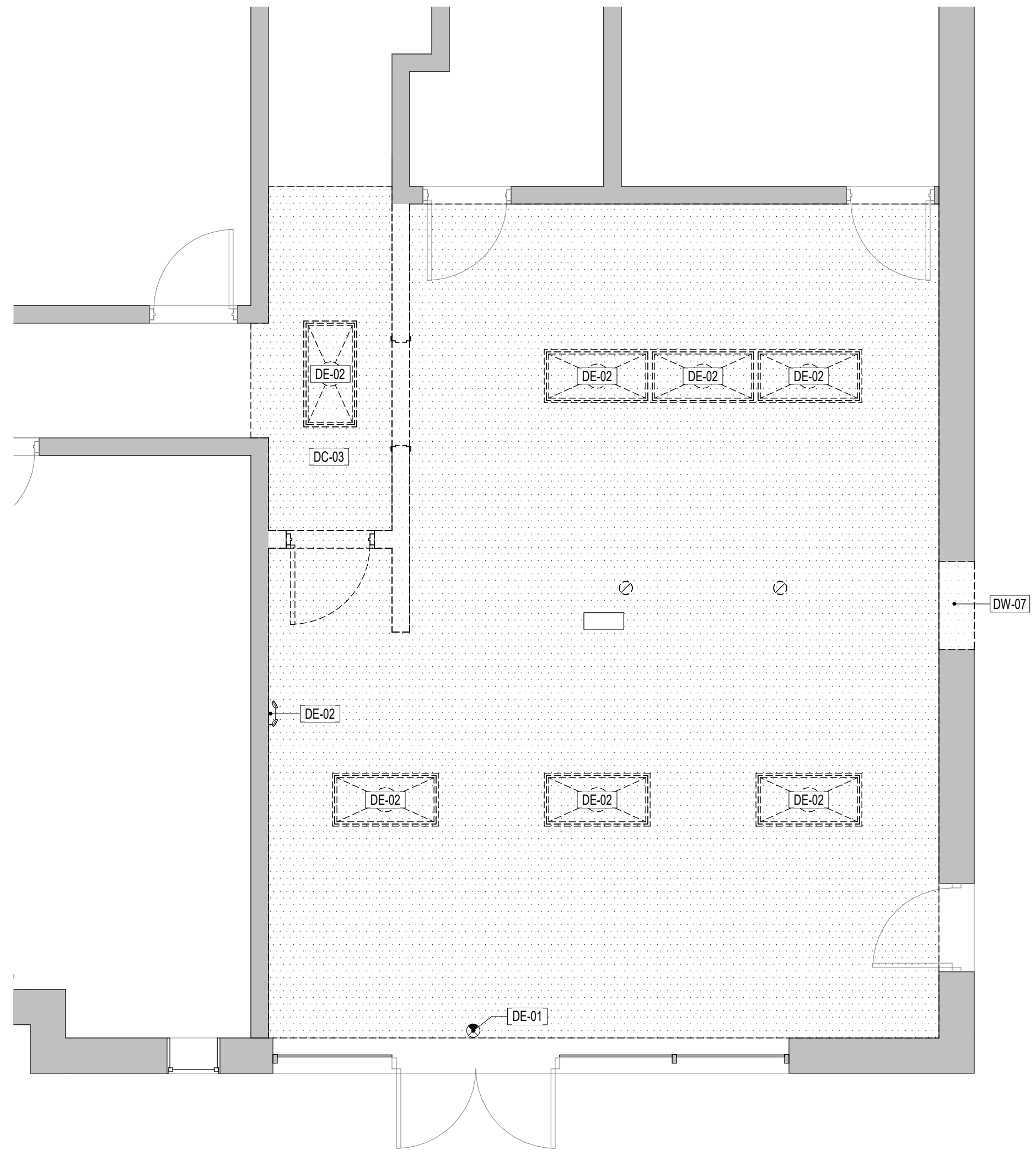
5 SECTION THRU GWB BULKHEAD  
1" = 1'-0"



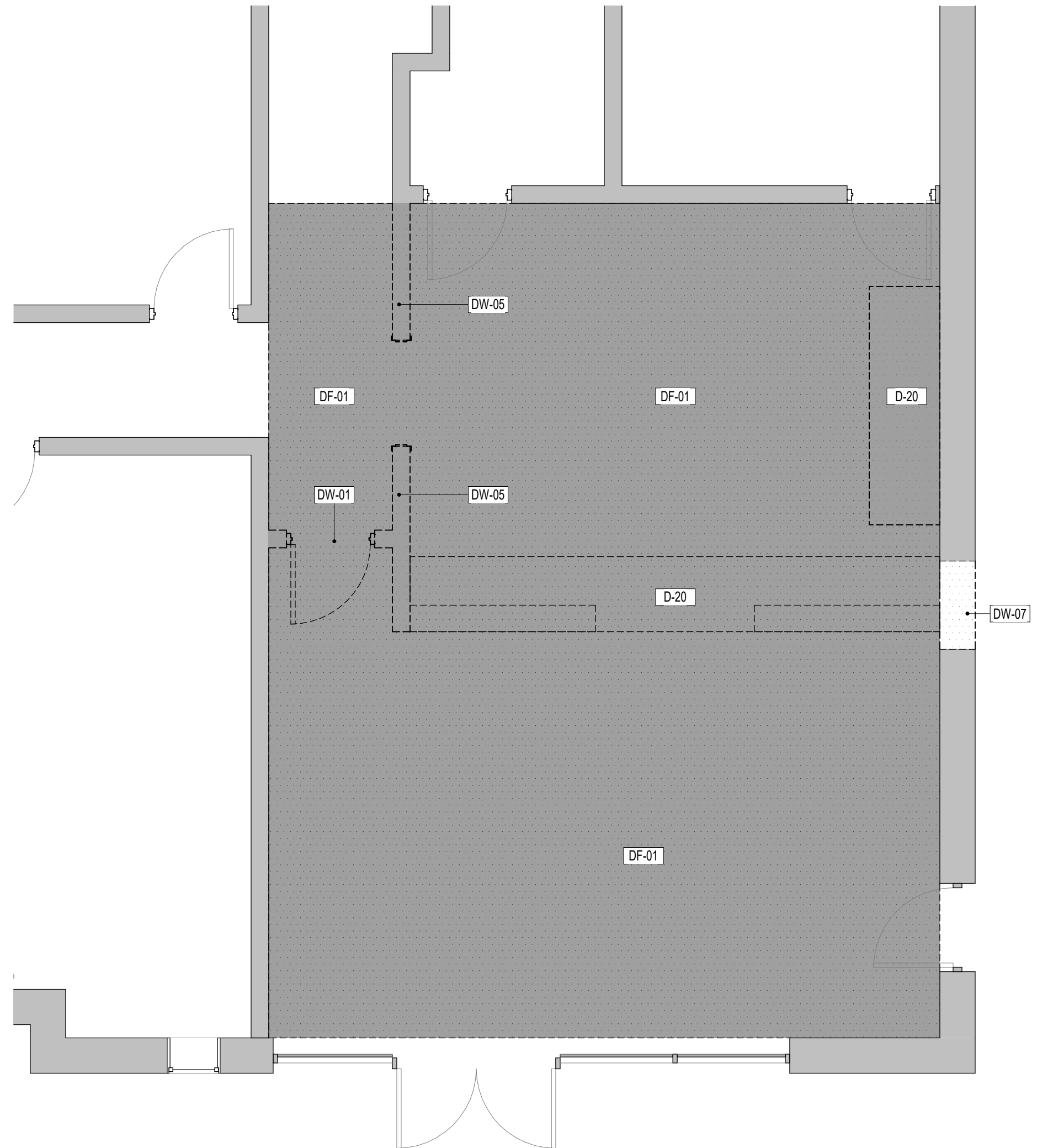
4 FIRST FLOOR RCP  
1/4" = 1'-0"



2 FIRST FLOOR PLAN - NEW WORK  
1/4" = 1'-0"



3 FIRST FLOOR - DEMO RCP  
1/4" = 1'-0"



1 FIRST FLOOR PLAN - DEMO  
1/4" = 1'-0"

## GENERAL NOTES

A. DO NOT SCALE DRAWING. CONTRACTOR SHALL RELY ON WRITTEN DIMENSIONS AS SHOWN. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT FOR CLARIFICATION. ALL DIMENSIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR AND COORDINATED WITH ALL OF THE WORK OF ALL TRADES. IF DISCREPANCIES ARE FOUND, THE GENERAL CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING FOR CLARIFICATION BEFORE STARTING THE WORK.

**Morris Berg**  
ARCHITECTS  
1401 WEST WOODSIDE STREET, SUITE 100, CHARLOTTE, NC 28203  
(704) 366-7800 FAX (704) 366-7802

## KEYNOTES - DEMO

D-20 DEMO BUILT-IN CASEWORK IN ITS ENTIRETY. PATCH FLOOR AND WALLS AS NEEDED FOR NEW FLOOR AND WALL FINISHES.  
DC-03 REMOVE SHADED PORTION OF EXISTING CEILING IN ITS ENTIRETY. COORDINATE WITH ELECT. AND MECH. CONTRACTORS FOR REMOVAL OF LIGHT FIXTURES, DIFFUSERS, ETC.  
DE-01 EXISTING EXIT SIGN TO BE REMOVED BY ELECTRICAL CONTRACTOR - COORDINATE WORK WITH THE REMOVAL OF THE EXISTING CEILING SYSTEM.  
DE-02 EXISTING LIGHT FIXTURES TO BE REMOVED BY ELECTRICAL CONTRACTOR. COORDINATE WORK WITH THE REMOVAL OF THE EXISTING CEILING SYSTEM.  
DF-01 REMOVE SHADED PORTION OF EXISTING FLOOR FINISH IN ITS ENTIRETY TO SUBFLOOR - PATCH SUBFLOOR AS NECESSARY TO RECEIVE NEW FINISHES.  
DW-01 REMOVE EXISTING WALL IN ITS ENTIRETY INCLUDING ANY DOORS, FRAMES, WINDOWS, LOUVERS, ETC. PATCH WALLS AND FLOORS AS NECESSARY. COORDINATE WITH THE WORK OF OTHER CONTRACTORS.  
DW-05 REMOVE PORTION OF EXISTING WALL IN ITS ENTIRETY. PATCH FLOOR AND ADJACENT WALLS TO REMAIN AS NECESSARY TO RECEIVE NEW FINISHES.  
DW-07 REMOVE PORTION OF EXISTING WALL FOR NEW OPENING AS SHOWN - PROVIDE NEW LOOSE LINTEL AT EXTERIOR BRICK (2" X 8" X 1/4" ANGLE 8" BEARING EACH SIDE OF OPENING).

## KEYNOTES

AC-1 ACOUSTIC PANEL CEILING, (AC-1, 3/4" X 24" X 24"), SEE SPEC SECTION 095113.  
GB-1 GYPSUM BOARD FOR GWB CEILINGS, HEADERS, AND SOFFITS. SEE SPEC SECTION 09 29 00.

## SYMBOL LEGEND

SECTION TAG  
SIM DRAWING NUMBER  
A101 SHEET NUMBER  
DETAIL TAG  
SIM DRAWING NUMBER  
1 A101 SHEET NUMBER  
PARTITION TAG  
PARTITION TYPE (SEE SHEET LS300)  
KEYED NOTE  
MILLWORK/ELEVATION TAG  
DRAWING NUMBER  
A1000 4 ELEVATION LETTER  
SHEET NUMBER  
NEW EXIT SIGN - SEE ELECT.  
RELOCATED SUPPLY - SEE MECH.  
NEW 2' x 4' LIGHT FIXTURES - SEE ELECT.  
NEW EMERGENCY LIGHT FIXTURE - SEE ELECT.

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SHEET TITLE  
DEMO & FLOOR PLANS

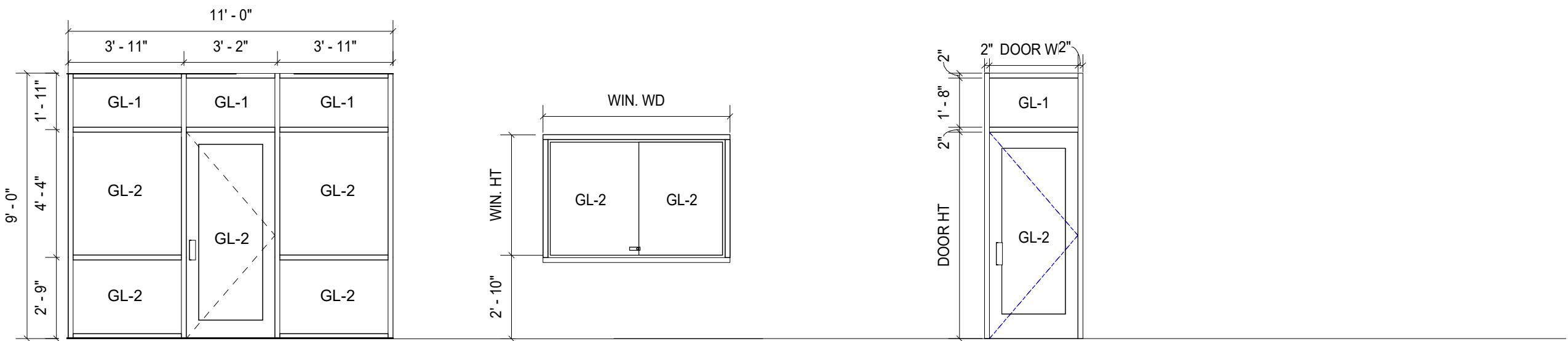
SHEET NUMBER

A200  
HAW RIVER



INT WINDOW SCHEDULE				
MARK	TYPE	WALL TYPE	DIMENSIONS	HEIGHT
			WIDTH	
FIRST FLOOR				
W100	A	S4S	6'-0"	4'-0"

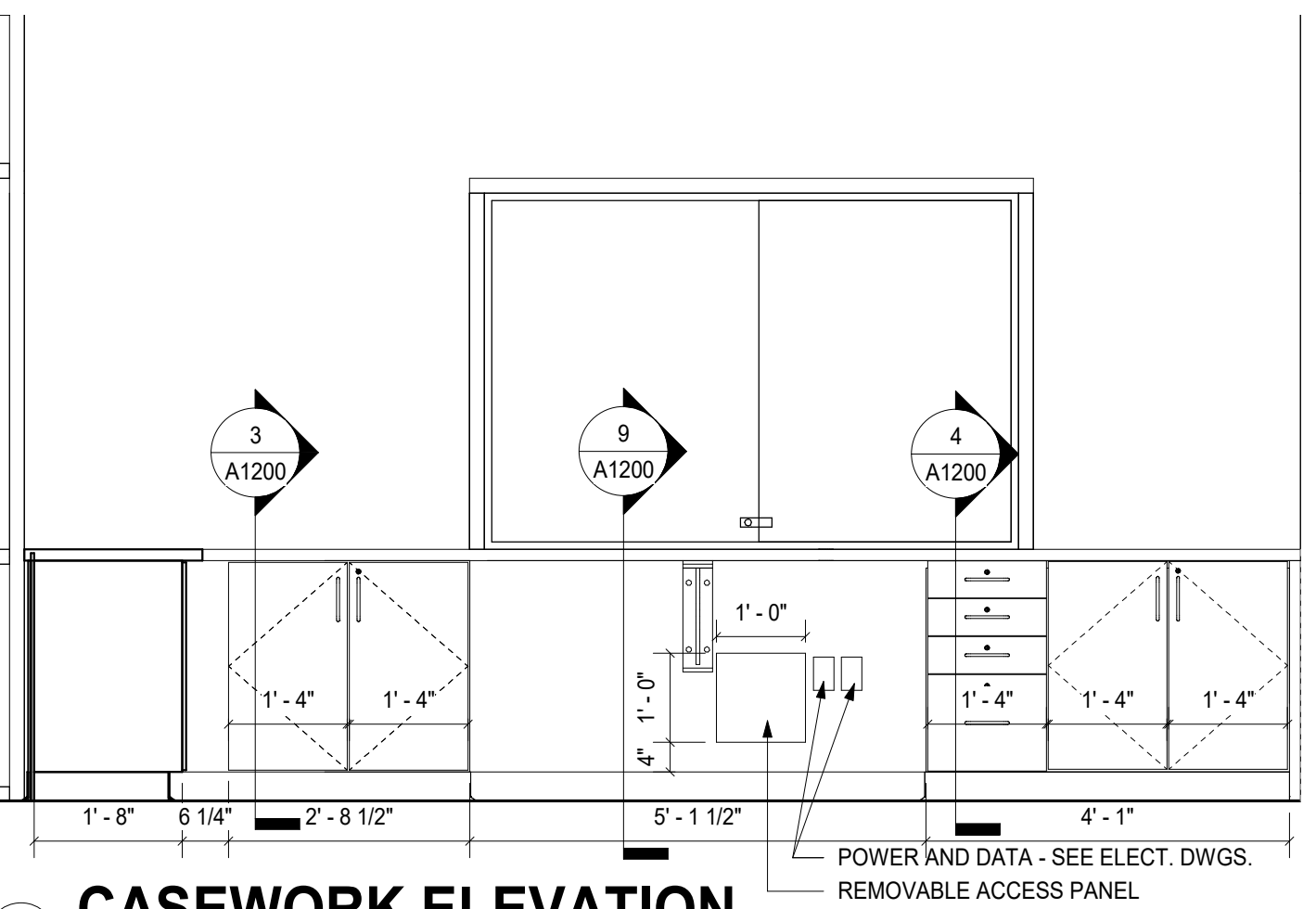
DOOR SCHEDULE								
MARK	TYPE	WALL TYPE	DIMENSIONS	HEIGHT	HEAD	JAMB	SILL	HARDWARE
			WIDTH					
FIRST FLOOR								
100	SF-1T	SF	3'-0"	7'-0"	1A/A1200	1B/A1200	1C/A1200	2.0
101	SF-1T	EXT	3'-0"	7'-0"	2A/A1200	2B/A1200	2C/A1200	1.0



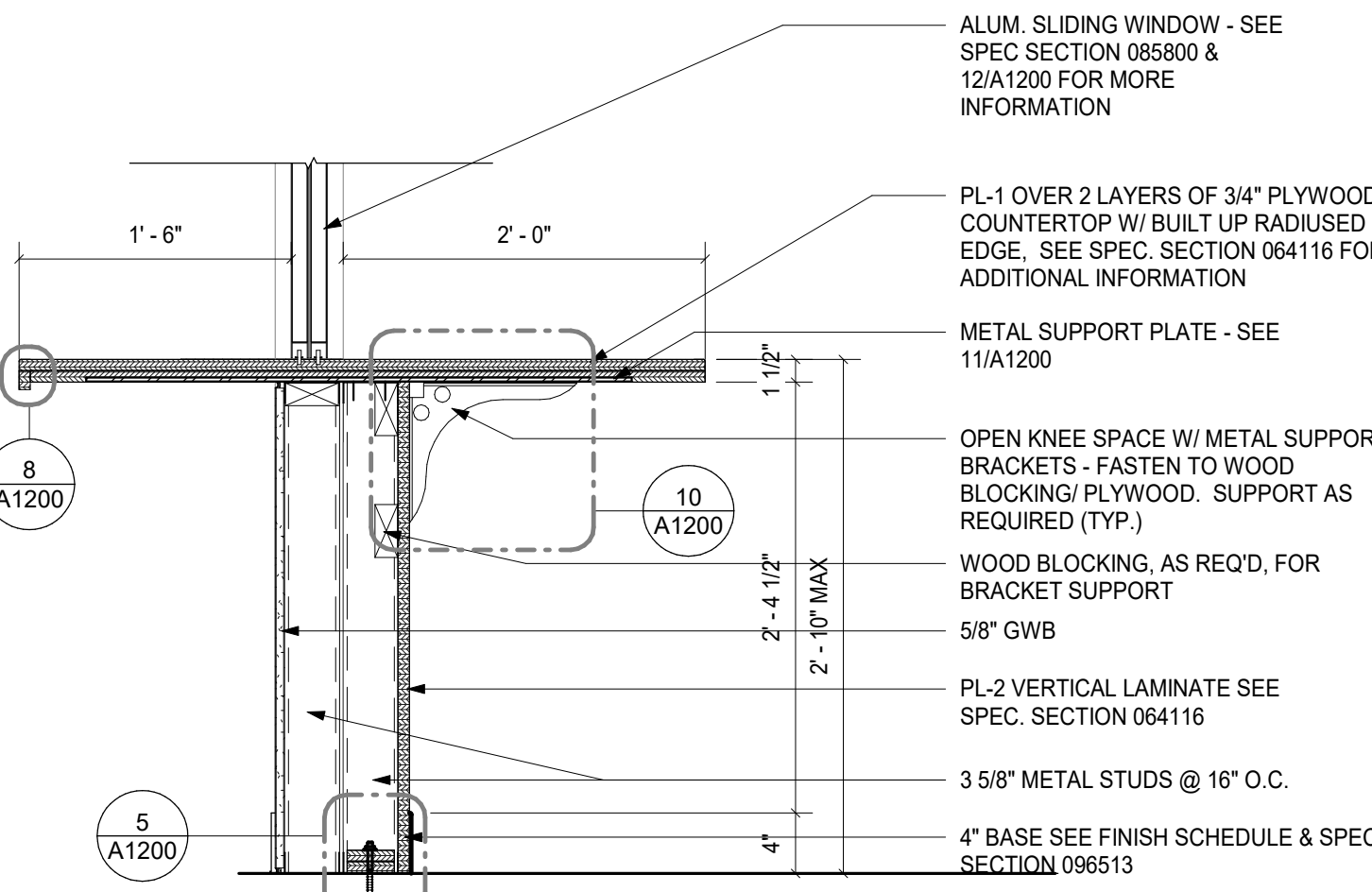
**16 STOREFRONT ELEVATION**  
1/4" = 1'-0"

**A** SLIDING WINDOW IN HOLLOW METAL FRAME  
**SF-1T** STOREFRONT DOOR SINGLE LEAF W/ TRANSOM IN STOREFRONT FRAME. SEE STOREFRONT ELEVATION FOR CONFIGURATION

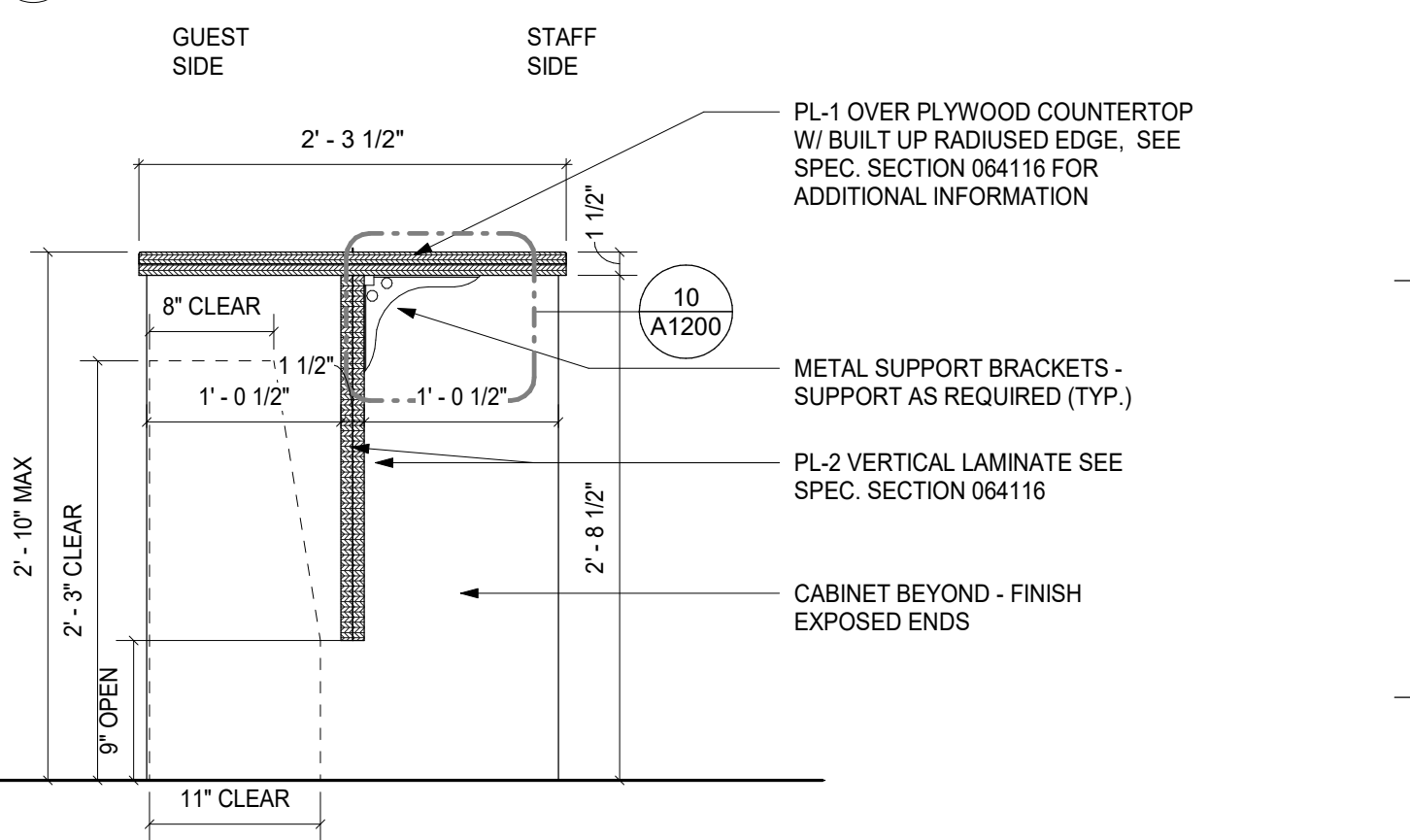
WINDOW TYPES DOOR TYPES



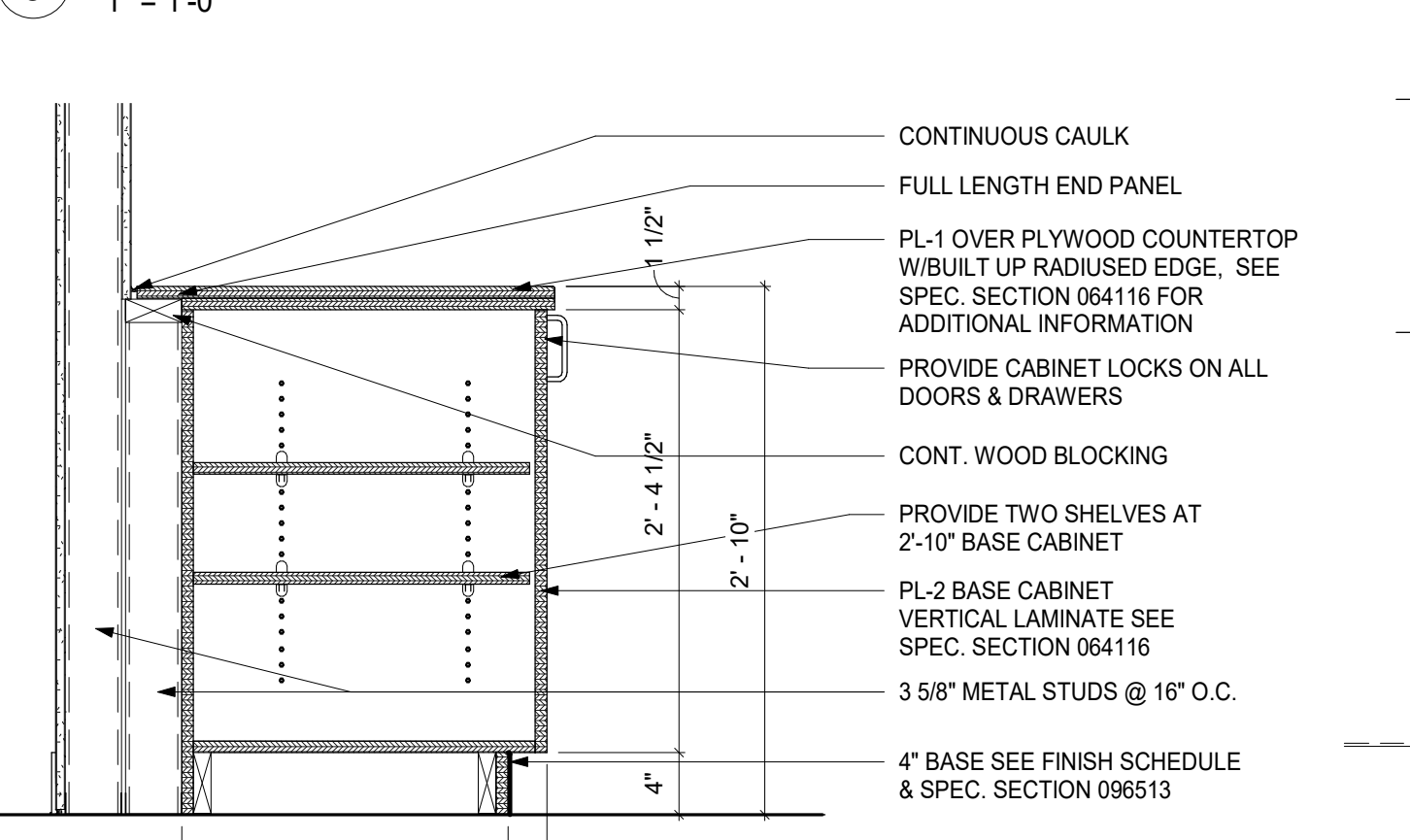
**13 CASEWORK ELEVATION**  
1/2" = 1'-0"



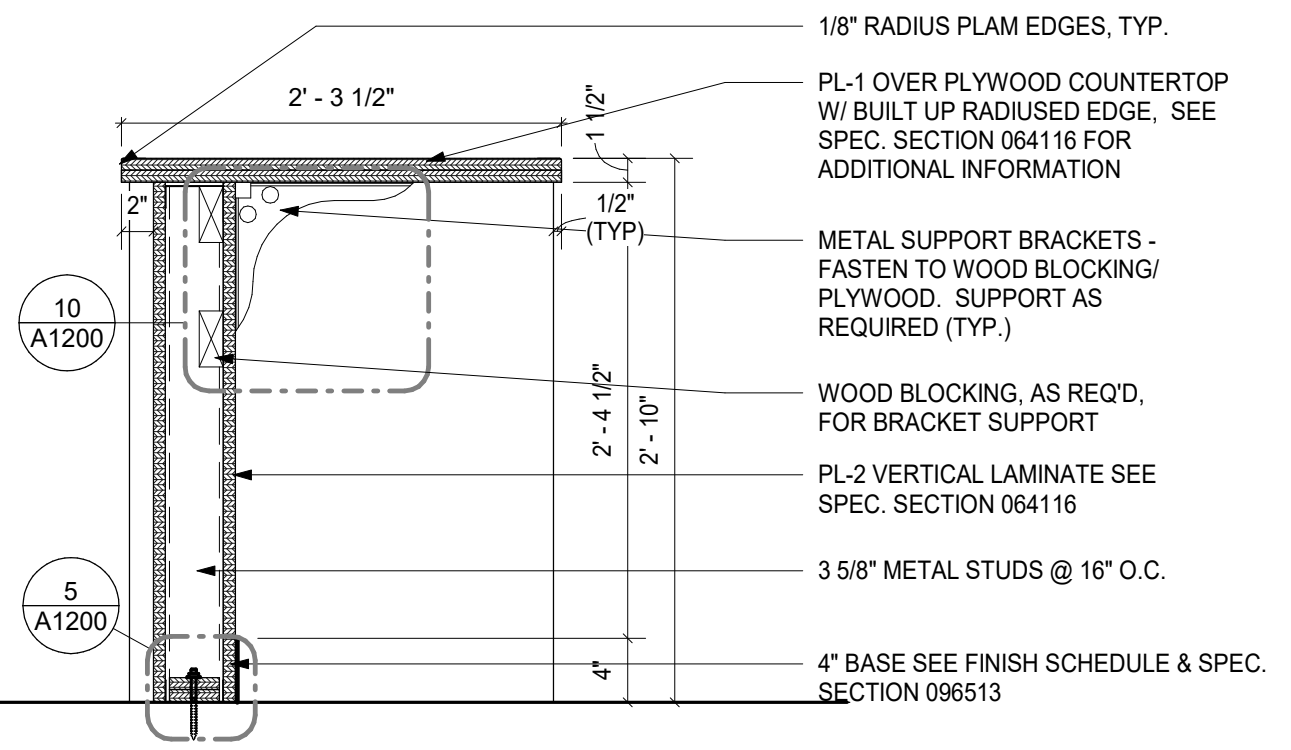
**9 SECTION @ OPEN KNEE AREA**  
1" = 1'-0"



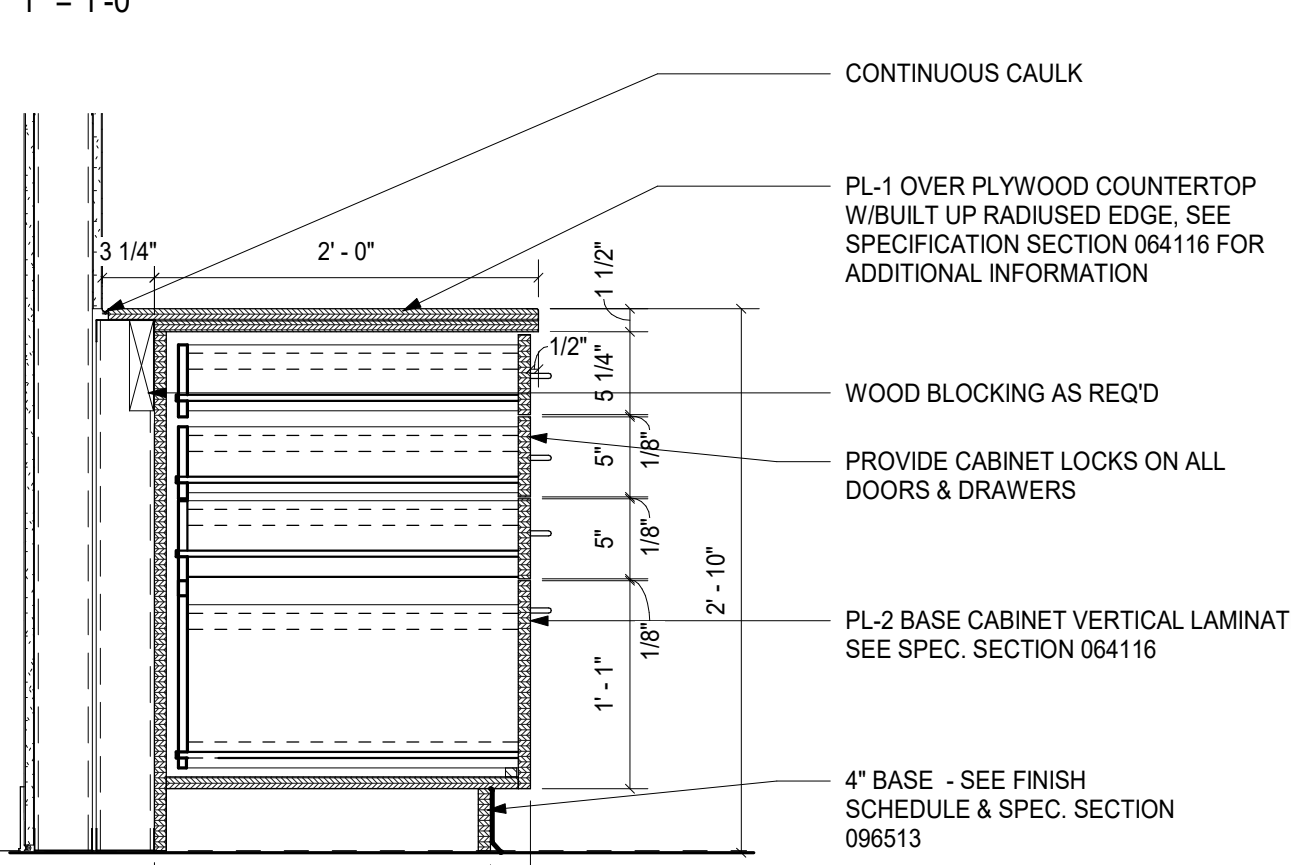
**6 SECTION @ OPEN KNEE - ADA**  
1" = 1'-0"



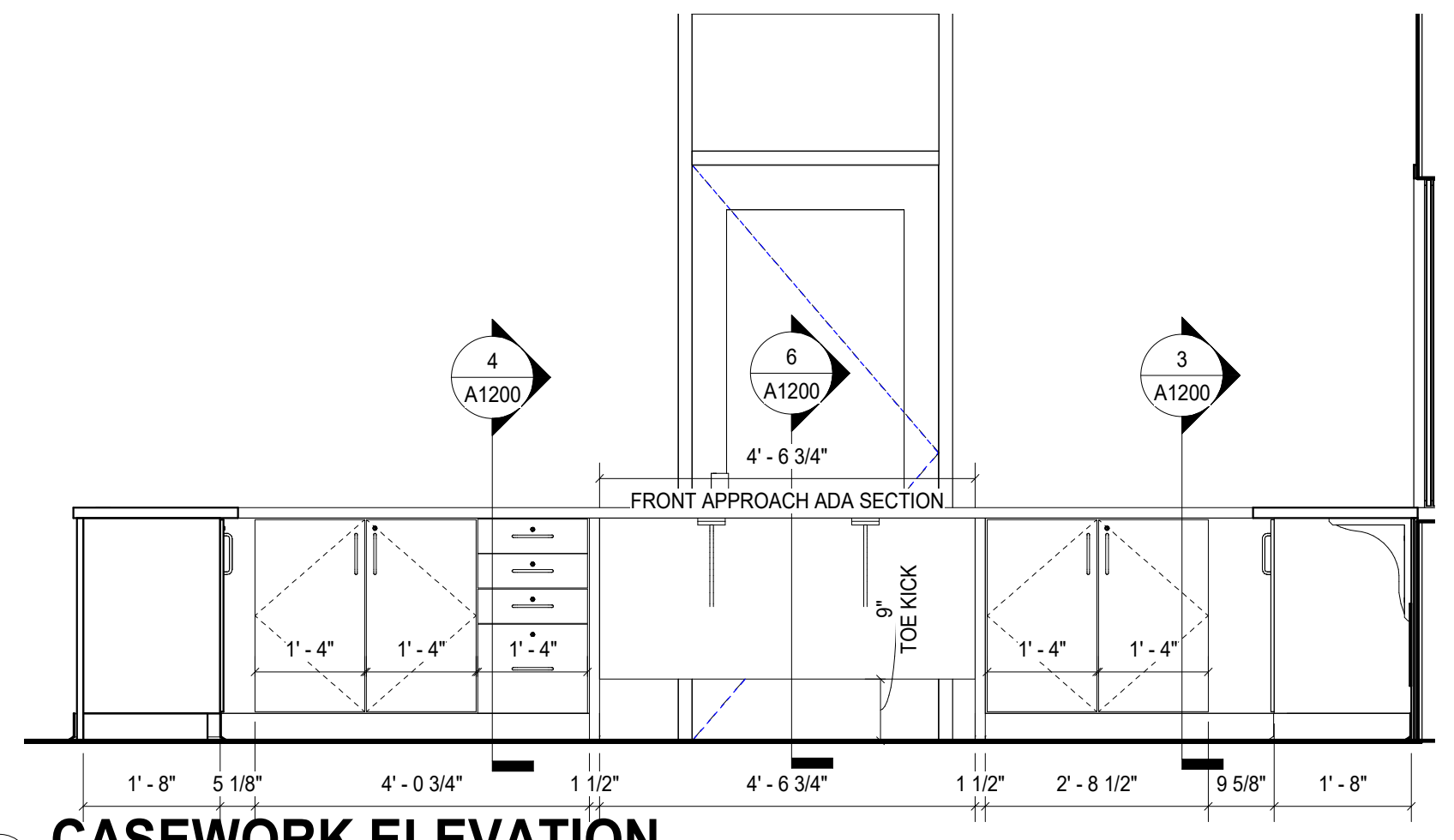
**3 SECTION @ DESK BASE CABINET**  
1" = 1'-0"



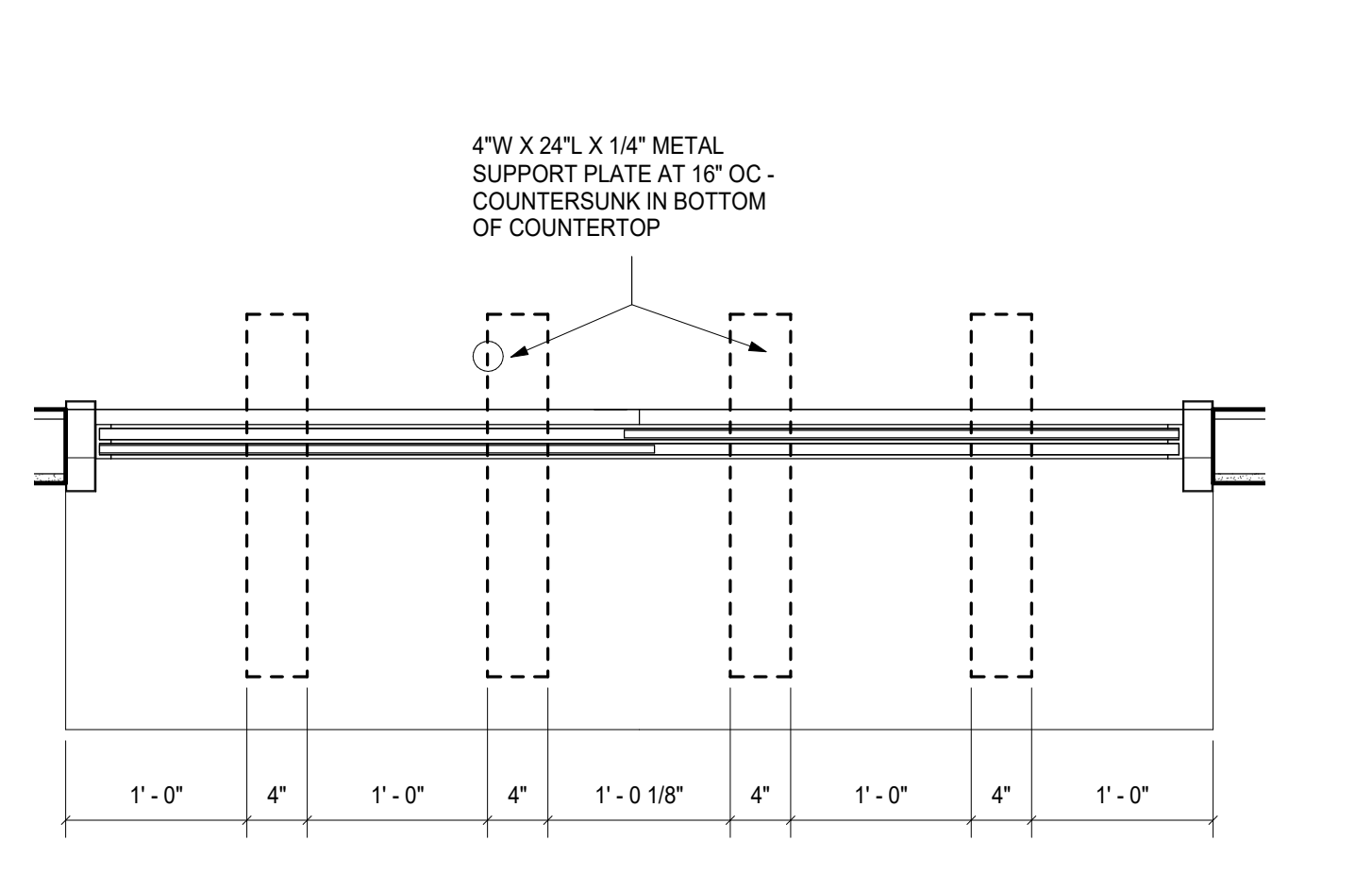
**7 SECTION @ OPEN KNEE**  
1" = 1'-0"



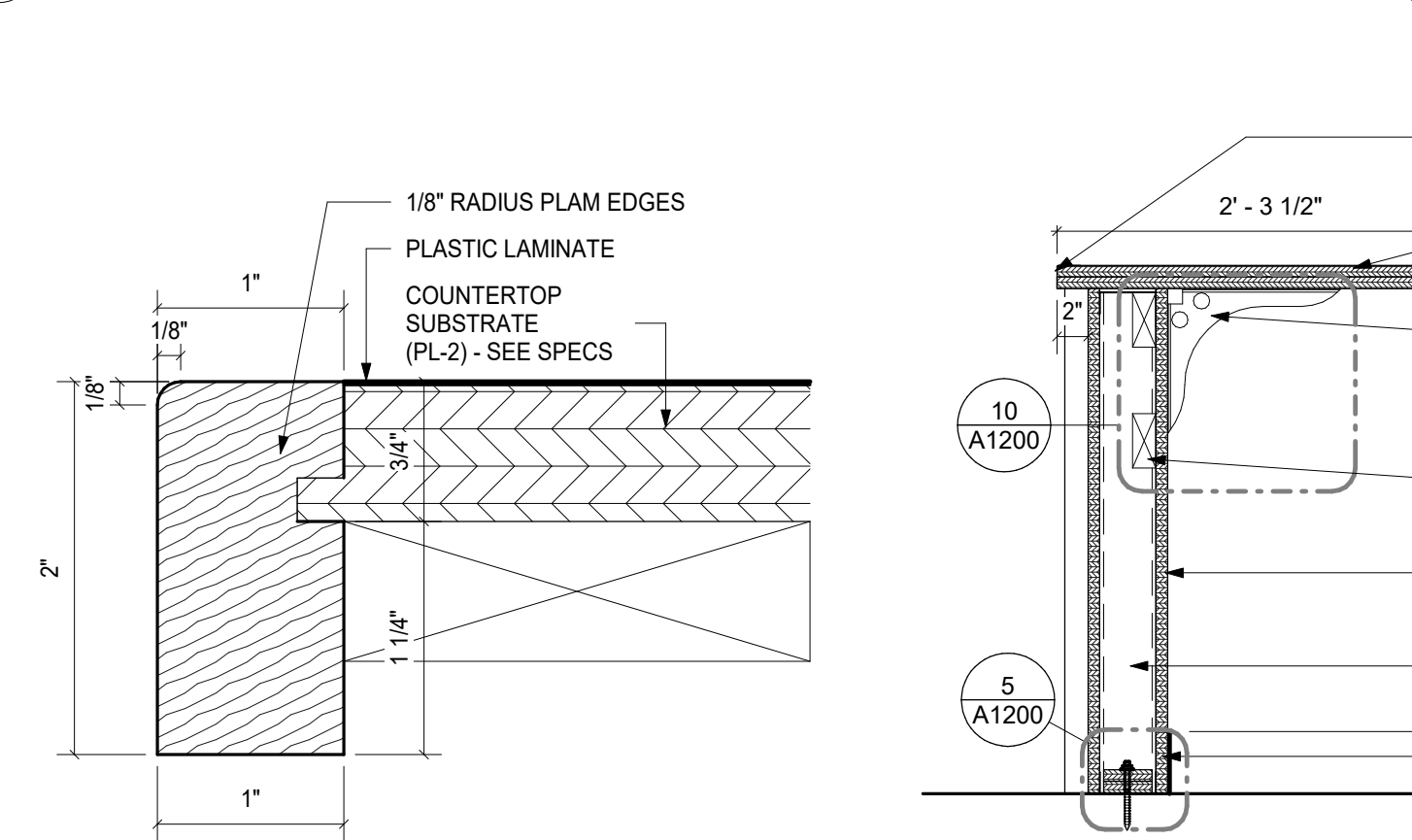
**4 SECTION @ DESK BASE CABINET W/DRAWERS**  
1" = 1'-0"



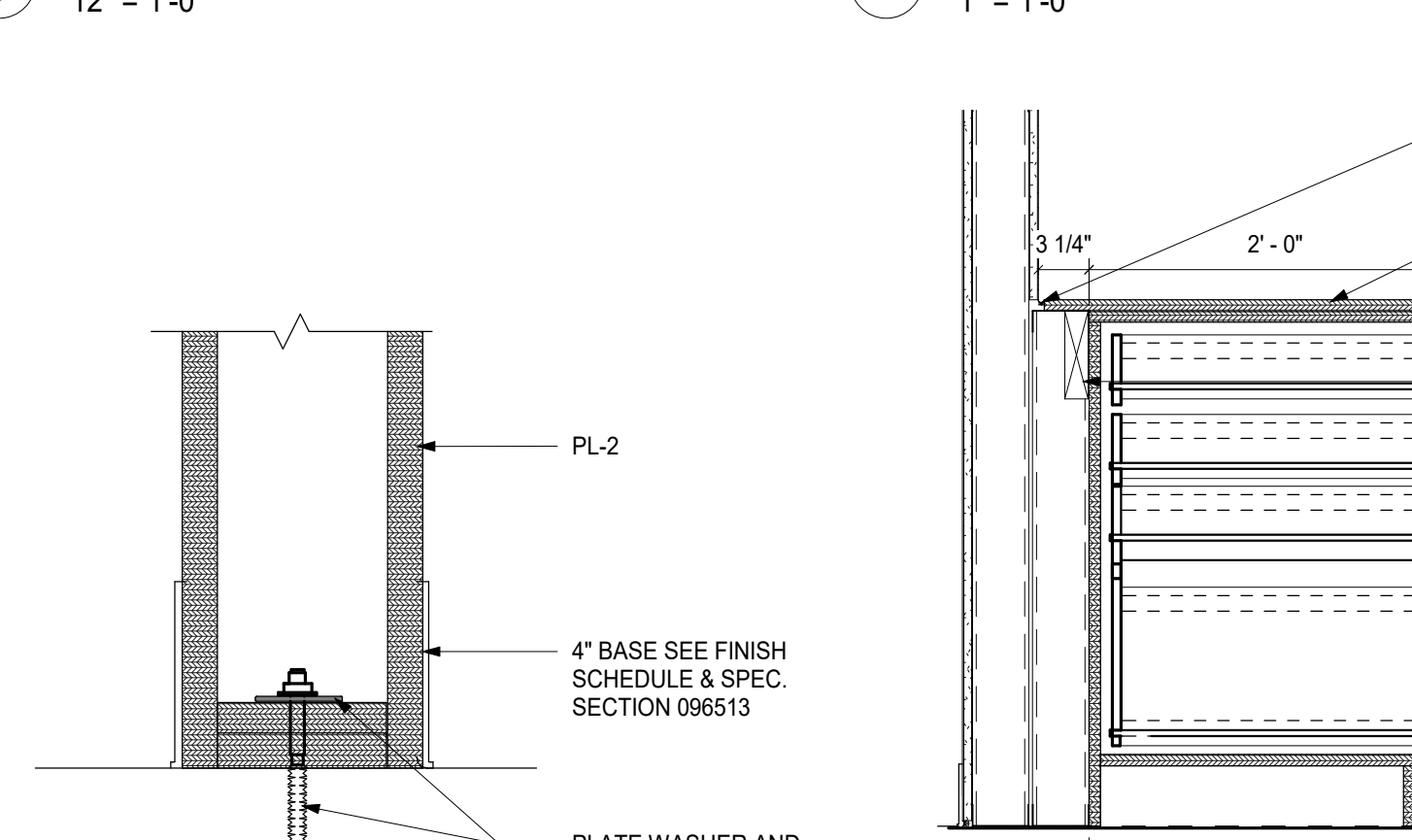
**14 CASEWORK ELEVATION**  
1/2" = 1'-0"



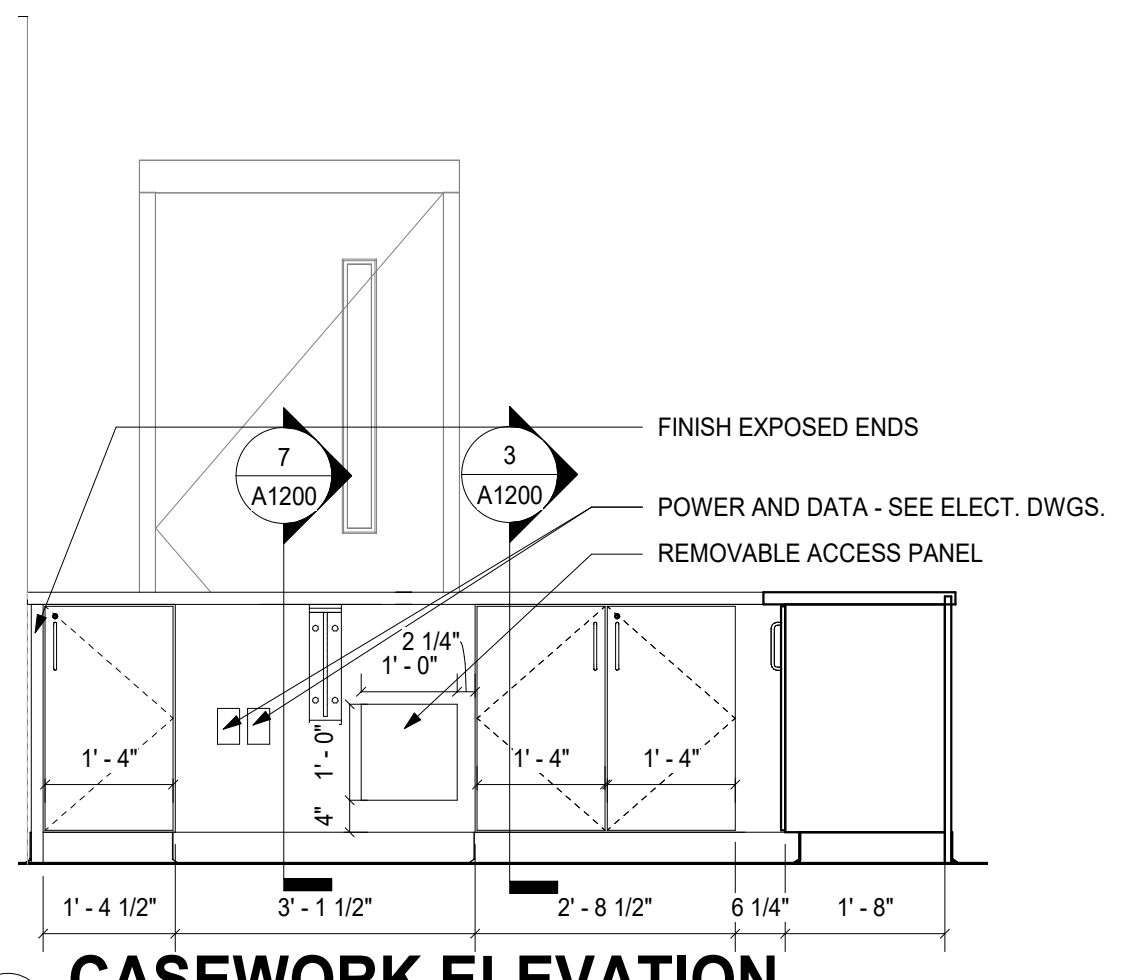
**11 SUPPORT AT SLIDING WINDOW**  
1" = 1'-0"



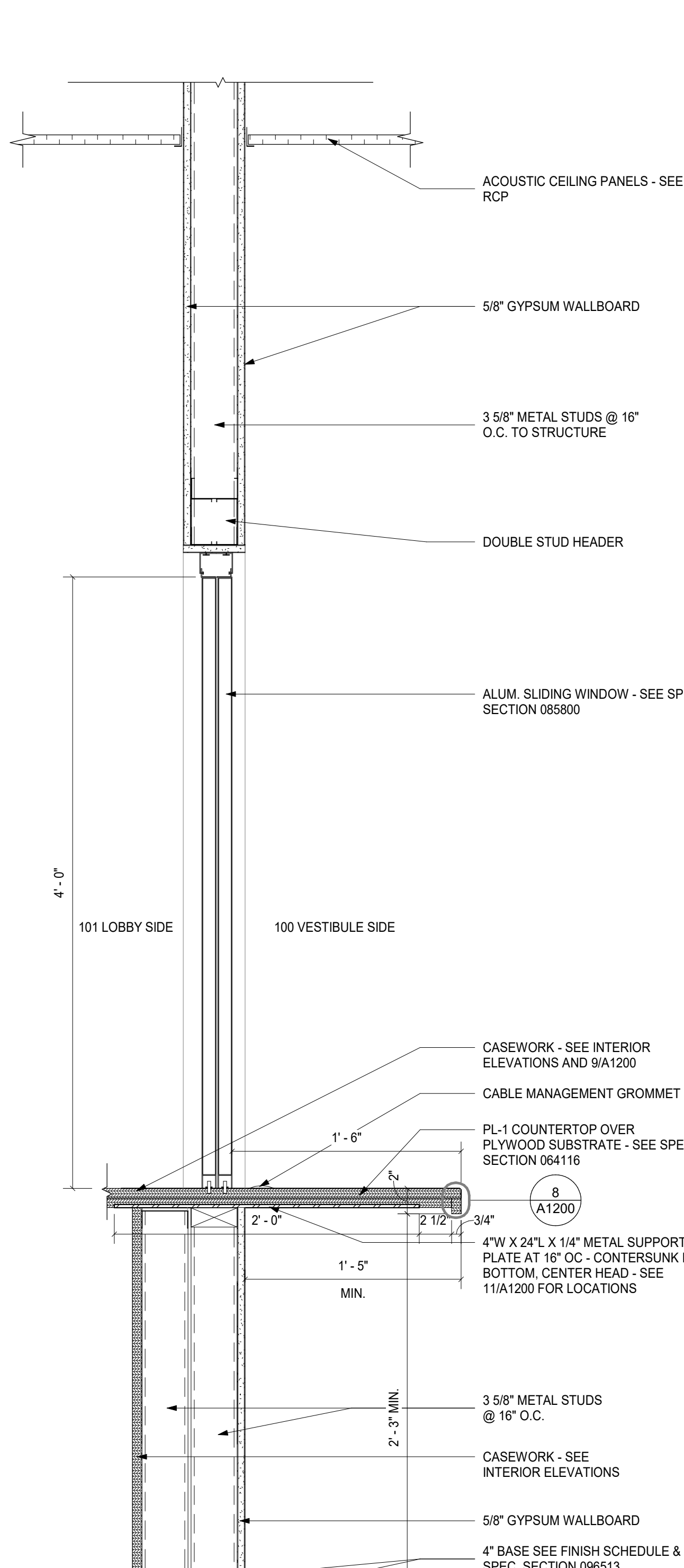
**8 WOOD NOSING DETAIL**  
12" = 1'-0"



**5 MILLWORK BASE DETAIL**  
3" = 1'-0"



**15 CASEWORK ELEVATION**  
1/2" = 1'-0"



**12 SECTION THRU SLIDING WINDOW**  
1 1/2" = 1'-0"



## GENERAL DOOR NOTES

- THE INTENT OF THE HEAD/JAMB/SILL DETAILS SHOWN ON THIS SHEET ARE TO SHOW SIZE, CONFIGURATION, AND TYPES OF DOORS AND FRAMES PLUS CONNECTIONS TO ADJACENT STRUCTURE. ADJACENT MATERIALS (BRICK VENEER, DRYWALL, CEILINGS, FLOOR CONDITIONS, LINTELS, FLASHING, INSULATION, ETC.) MAY VARY. VERIFY EACH DOOR AND FRAME BY REFERRING TO PLANS, ELEVATIONS, AND DETAILS. FIELD VERIFY ROUGH OPENINGS. COORDINATE SHOP DRAWINGS FOR FRAME SIZES.
- CAULK ALL FRAME EDGES (INTERIOR AND EXTERIOR) AT ADJACENT SURFACES.
- STOREFRONT SECTIONS ARE APPROXIMATE AND ARE SUBJECT TO MINOR VARIATIONS TO BE MADE FROM MANUFACTURER'S STANDARD PARTS. DETAILS ARE TO SHOW PROFILES ONLY. INTERNAL CONFIGURATIONS, DRAINAGE SYSTEM, AND ATTACHMENTS ARE TO BE PER SPECIFICATION, MANUFACTURER'S STANDARDS AND INDUSTRY STANDARDS.
- LOCATE ALL INTERIOR DOOR FRAMES EIGHT INCHES (4") FROM THE THROAT RETURN TO THE CLOSEST ADJACENT PERPENDICULAR PARTITION @ GYPSUM WALLBOARD WALLS, U.O.N.

## GLAZING TYPES:

- GL-1 CLEAR TEMPERED FLOAT GLASS
  - GL-2 CLEAR LAMINATED SECURITY GLASS
  - GL-4 INSULATED TEMPERED SECURITY GLASS
- (NOTE: SEE SPECIFICATION SECTION 088000 FOR FURTHER DESCRIPTION OF GLAZING TYPES.)



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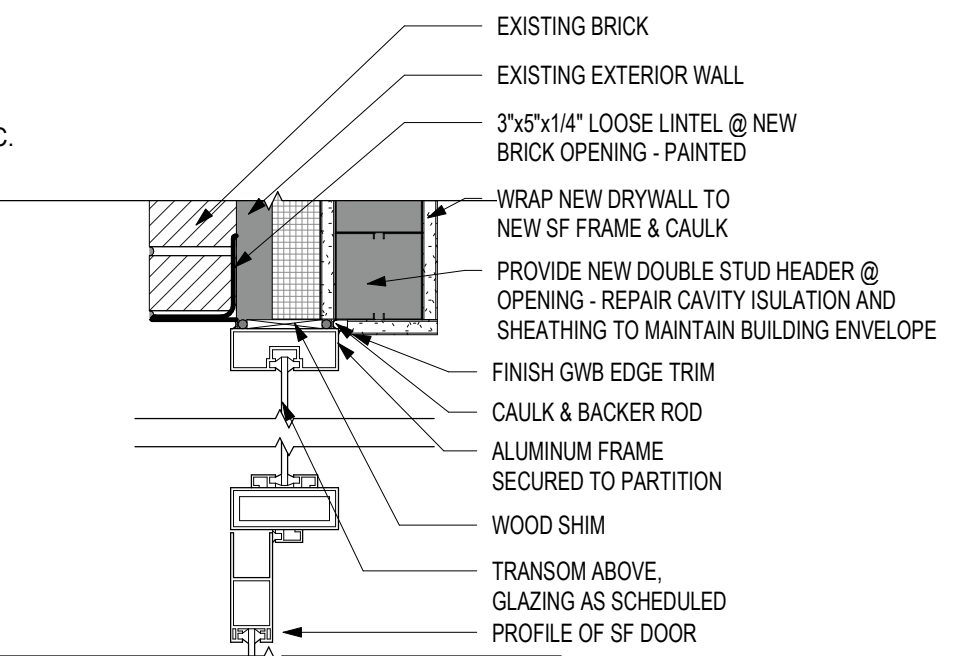
PROJECT NUMBER 2111

SHEET TITLE  
DOOR SCHEDULE & DETAILS

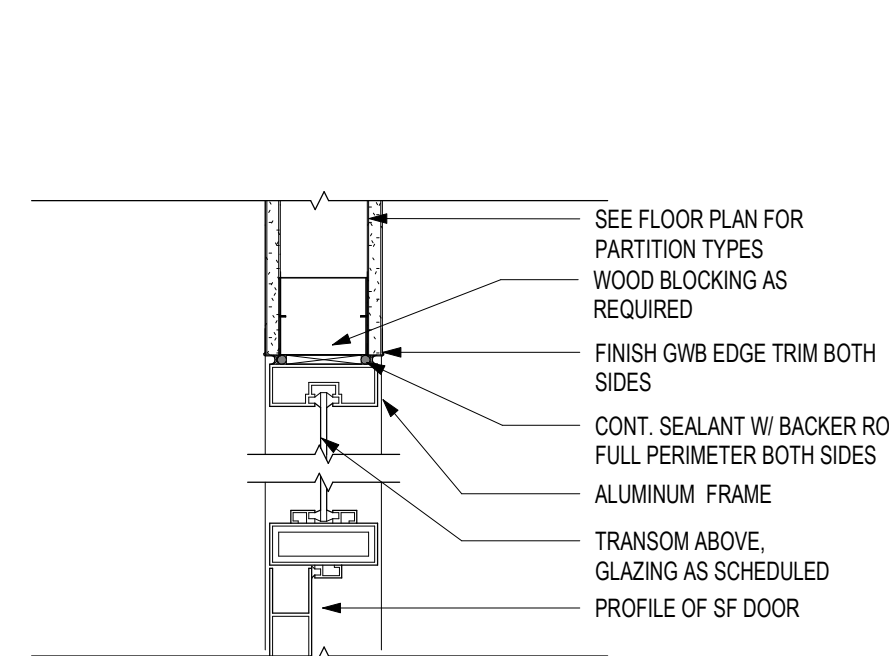
SHEET NUMBER

**A1200**

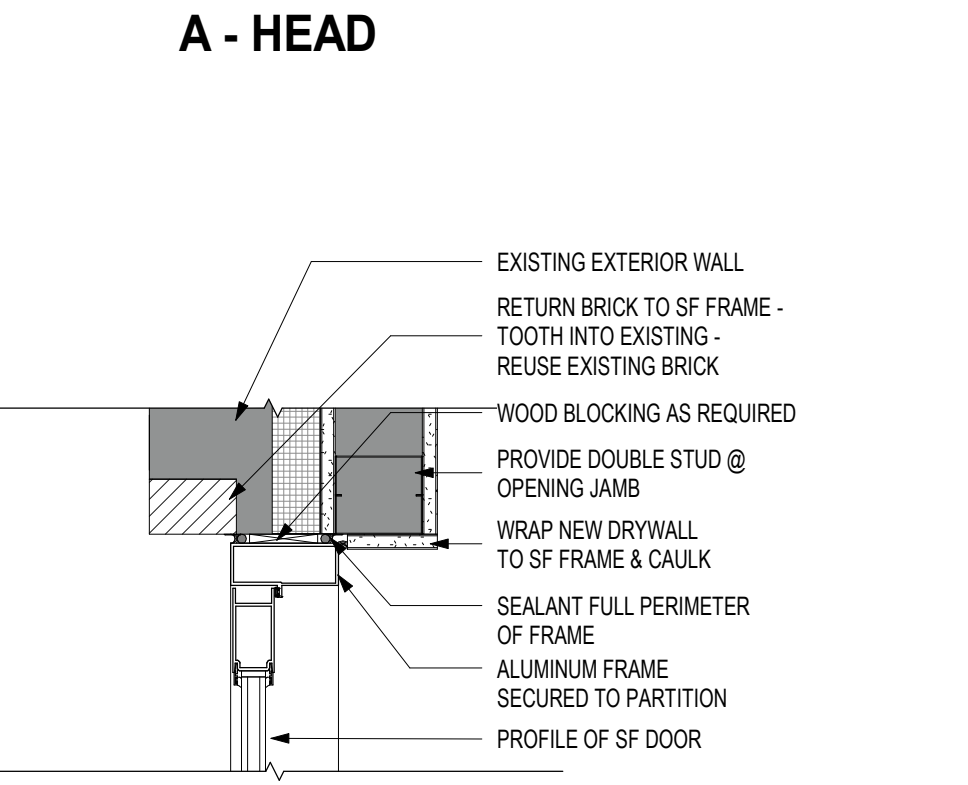
HAW RIVER



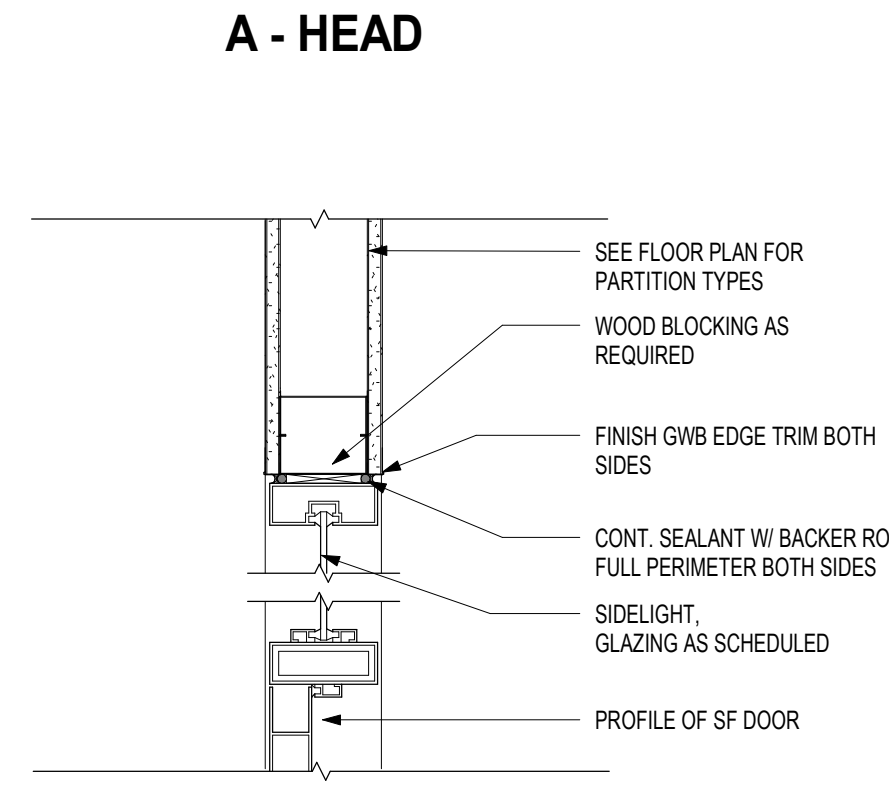
**A - HEAD**



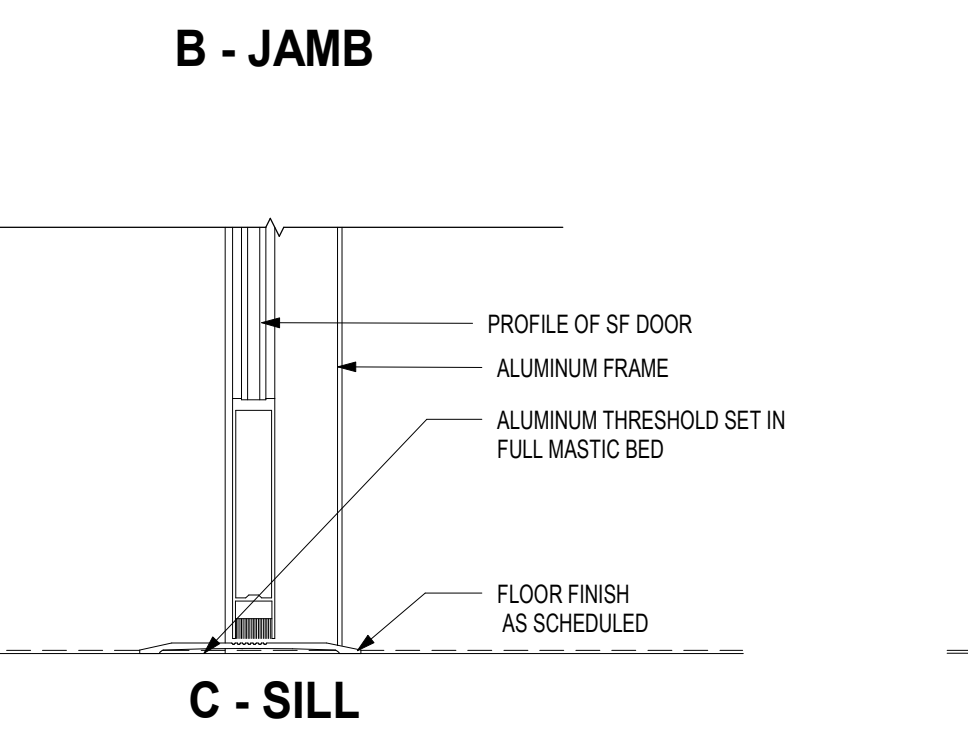
**A - HEAD**



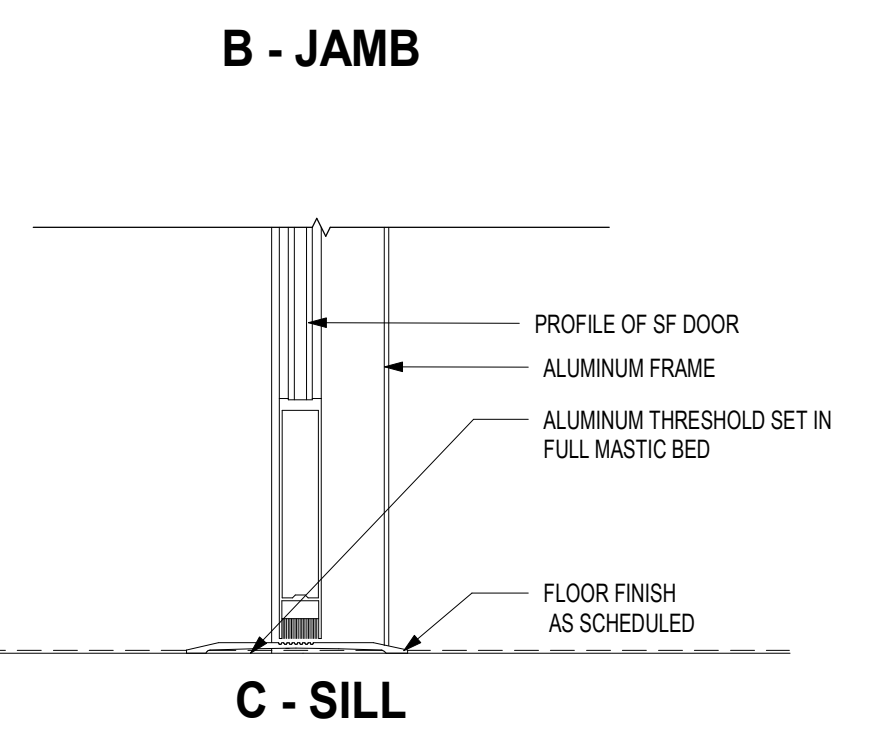
**B - JAMB**



**B - JAMB**



**C - SILL**



**C - SILL**

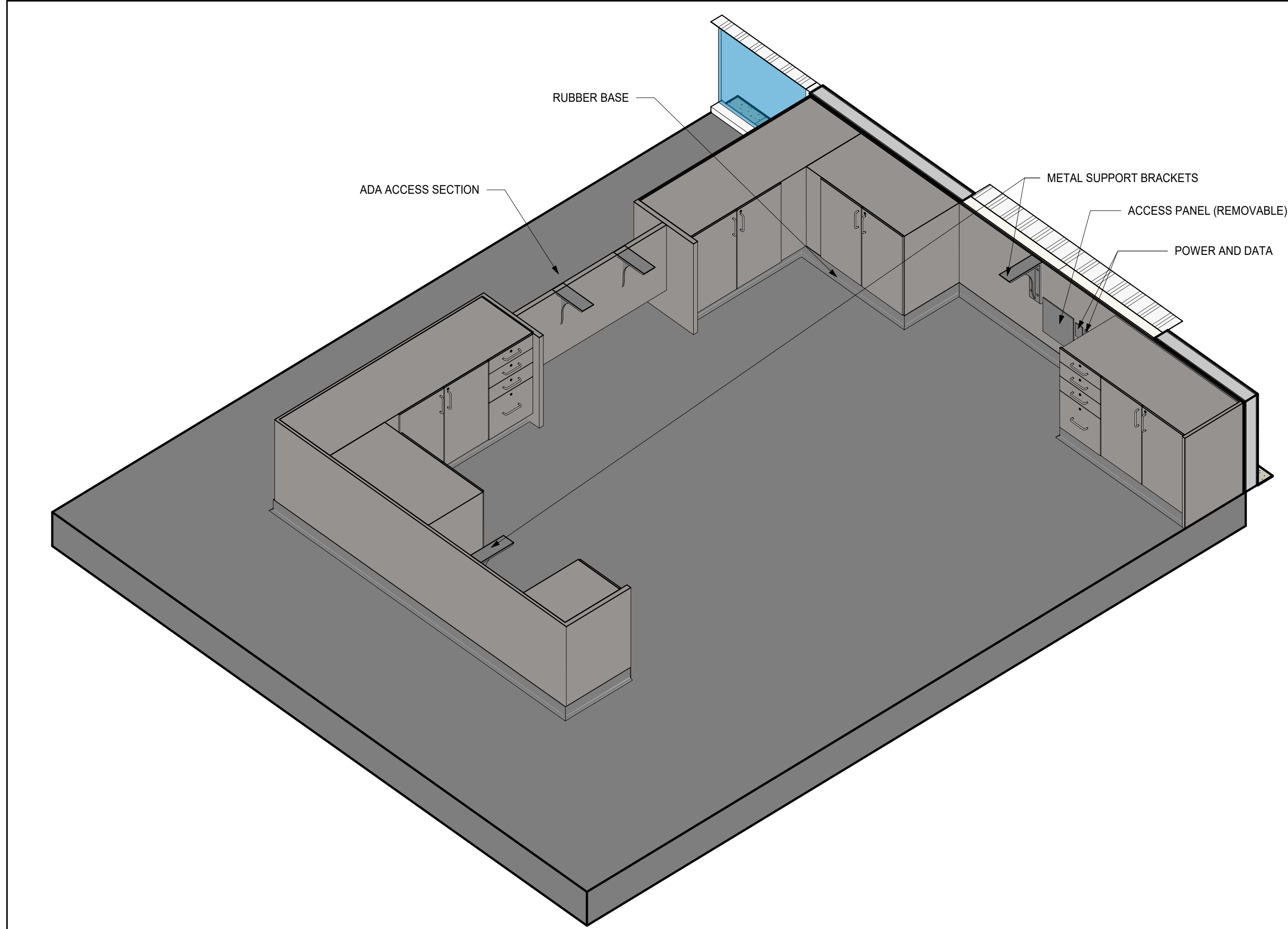
## EXT. STOREFRONT IN EXISTING WALL

**2** 1 1/2" = 1'-0"

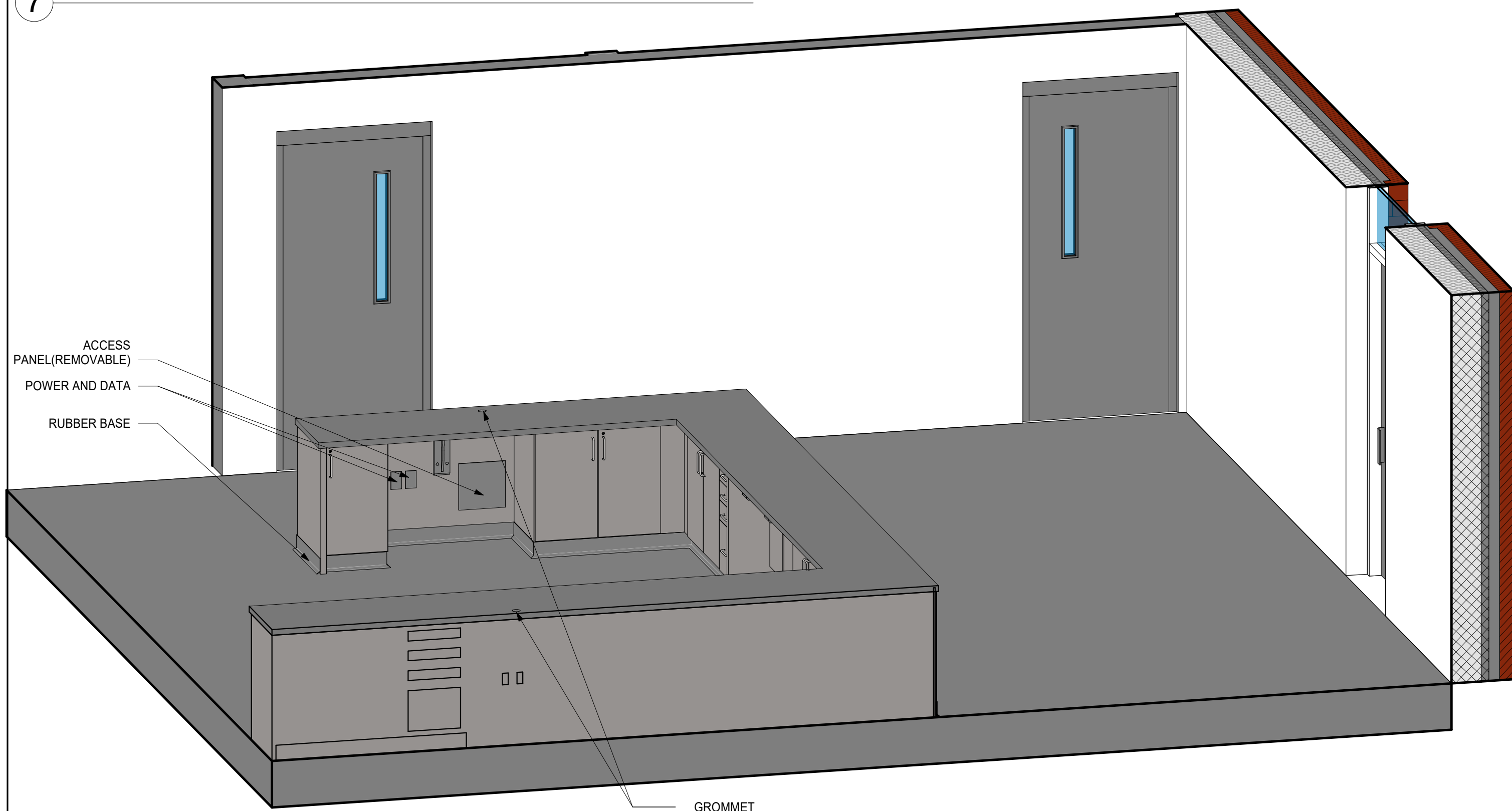
## INT. STOREFRONT

**1** 1 1/2" = 1'-0"

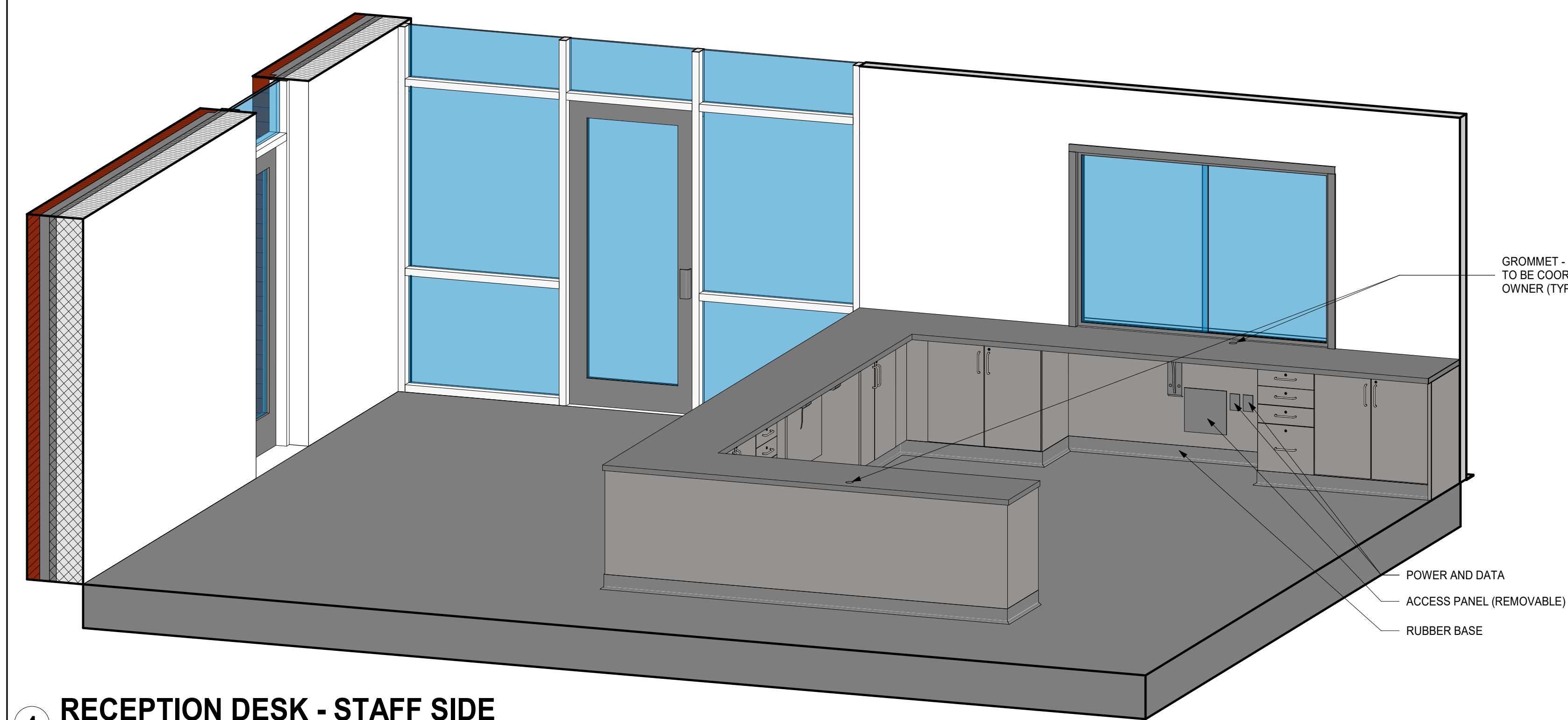




7 RECEPTION DESK - SECTION THRU DESK



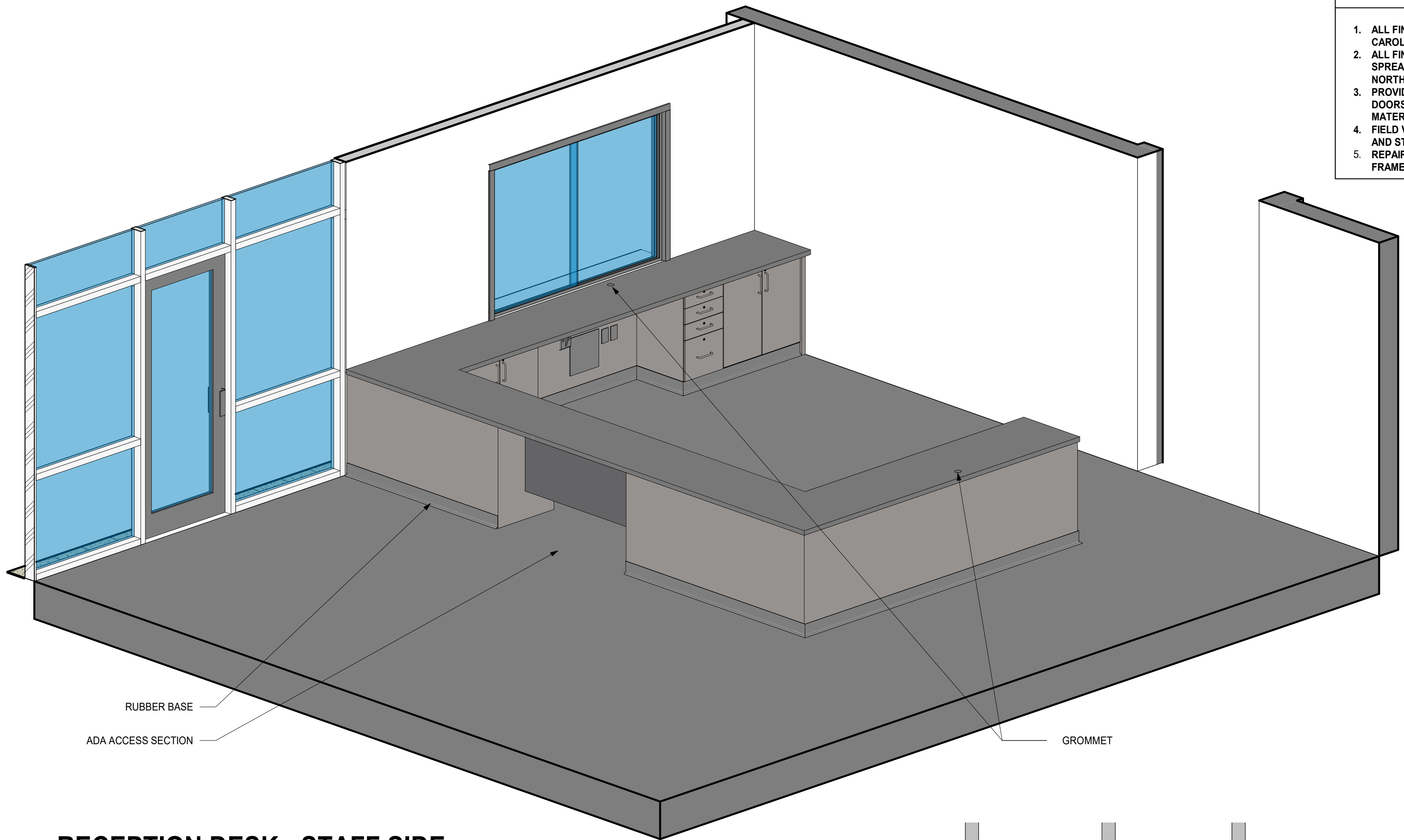
5 RECEPTION DESK - STAFF SIDE



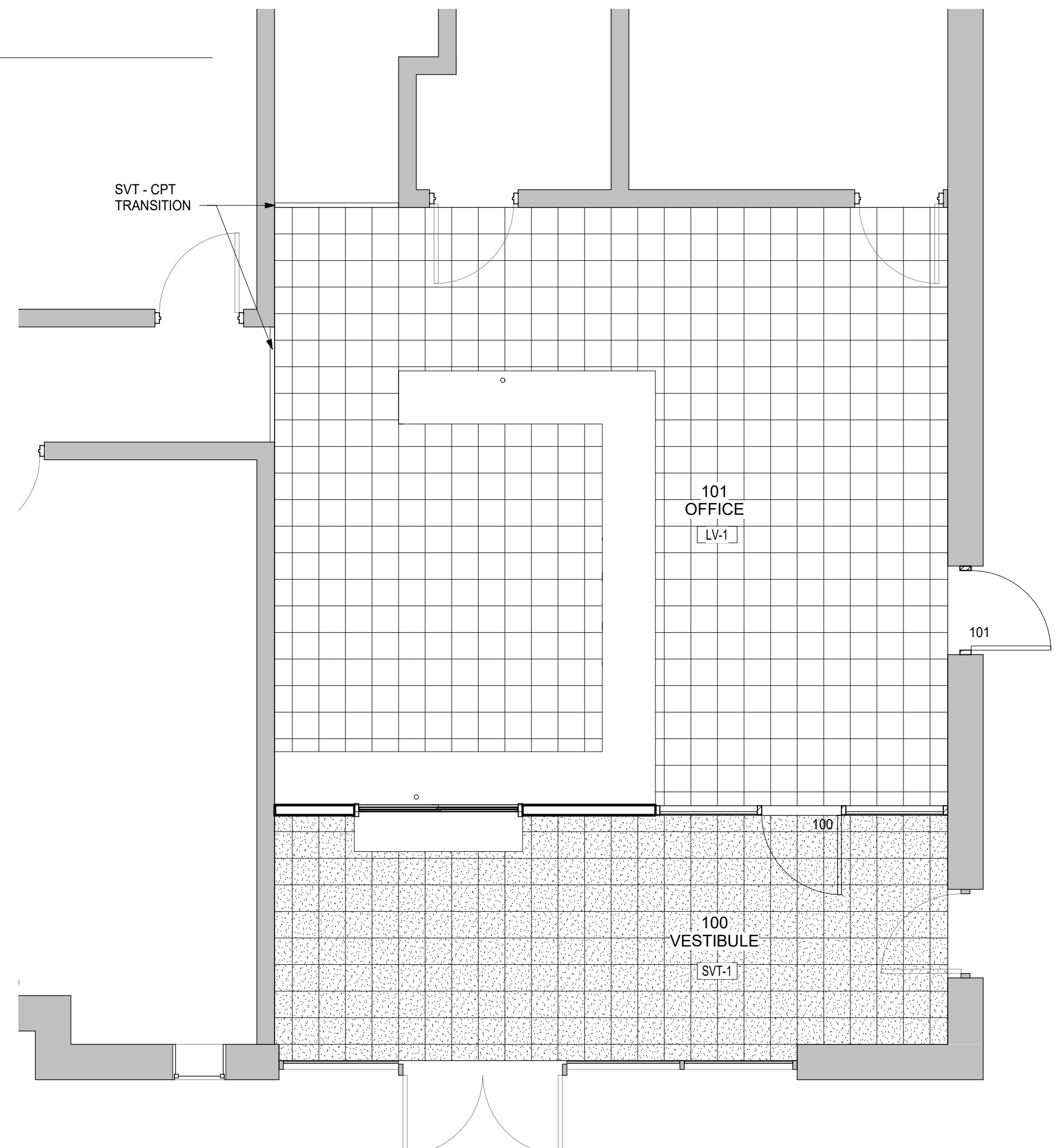
4 RECEPTION DESK - STAFF SIDE

FINISH LEGEND								
FINISH TYPE	TAG	MANUFACTURER	STYLE	COLOR/FINISH	SIZE	COMMENTS	EQUAL PRODUCT 1	EQUAL PRODUCT 2
BASE	RB-1	BURKEBASE	TYPE TS	BLACK	4"		ROPPE	JOHNSONITE
CEILING	AC-1	ARMSTRONG	949 TEXTURED	WHITE	2' X 2'	SQUARE EDGE	CERTANTEED	USG INTERIORS
FLOOR	LV-1	MOHAWK	LIVING LOCAL - STONEWORK	250 METAMORPHIC	12" X 24"	INSTALLATION PATTERN: 1/3 ASHLAR	SHAW	INTERFACE
FLOOR	SVT-1	ARMSTRONG	SLIP RETARDANT SAFETY ZONE	SHALE GRAY 97001	12" X 12"		THARKETT - COLOR ESSENSE SR	AMERICAN TILE INC - PREMIUM SLIP GRIP
MISCELLANEOUS	PL-1	WILSONART	FINE VELVET FINISH	STEEL MESH 4879-38	-	COUNTERTOP	FORMICA	NEVAMAR
MISCELLANEOUS	PL-2	WILSONART	FINE VELVET FINISH	NATURAL RECON 7996-38	-	CABINETS	FORMICA	NEVAMAR
WALL	EP-1	SHERWIN WILLIAMS	EGG-SHELL OR SEMI-GLOSS - MATCH EXISTING	SW 7002 DOWNY		OVERALL EPOXY WALL PAINT	PPG PAINTS	BENJAMIN MOORE
WALL	P-1	SHERWIN WILLIAMS	EGG-SHELL OR SEMI-GLOSS - MATCH EXISTING	SW 7002 DOWNY		OVERALL WALL PAINT	PPG PAINTS	BENJAMIN MOORE
WALL	P-2	SHERWIN WILLIAMS	EGG-SHELL OR SEMI-GLOSS - MATCH EXISTING	MATCH EXISTING DOOR FRAMES		DOOR FRAMES: SEMI-GLOSS	PPG PAINTS	BENJAMIN MOORE

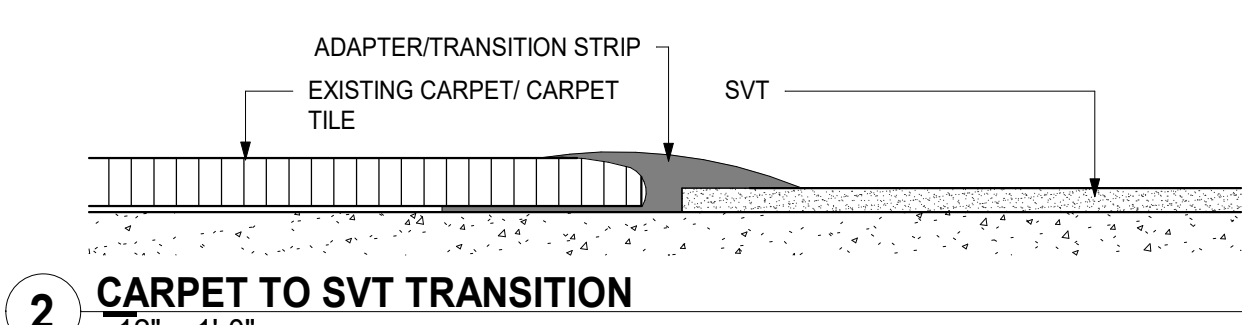
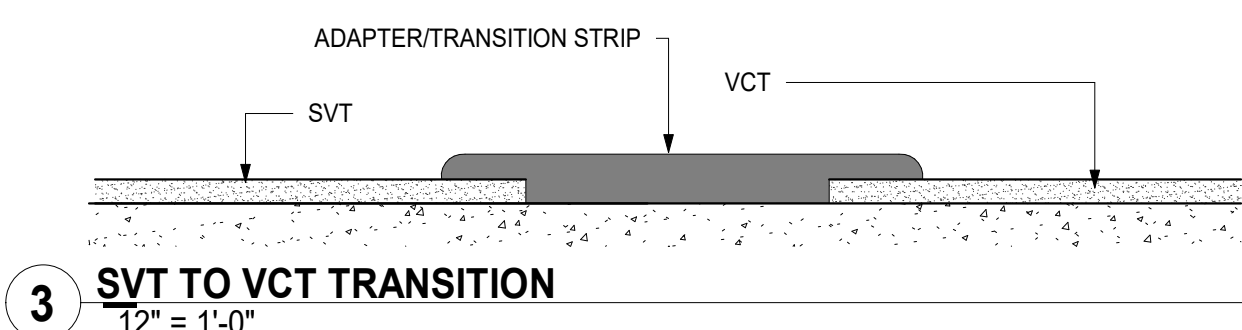
FINISH SCHEDULE								
ROOM		FLOOR	BASE	WALL	CEILING	WINDOW TREATMENT	Area	REMARKS
NUMBER	NAME							
FIRST FLOOR								
100	VESTIBULE	SVT-1	RB-1	EP-1	AC-1	N/A	223 SF	FINISH NOTE 5
101	OFFICE	LV-1	RB-1	P-1	AC-1	N/A	575 SF	FINISH NOTE 5



6 RECEPTION DESK - STAFF SIDE



1 FIRST FLOOR PLAN - FINISH PLAN



### FLOOR FINISHES

VINYL COMPOSITION TILE 12" X 12" - SPEC SECTION 096519

- LV-1: FIELD COLOR
- SVT-1: SLIP RESISTANT VINYL TILE

#### FINISH DESCRIPTION

<b>FLOOR</b>
SVT-1 SLIP RESISTANT VINYL TILE (SHALE GRAY)
LV-1 VINYL TILE (GRAY)
EX EXISTING FLOOR FINISH TO REMAIN
- NO SCHEDULED FLOOR FINISH

<b>BASE</b>
RB-1 RUBBER - TYPE TS (TAUPE)
EX EXISTING BASE FINISH TO REMAIN
- NO SCHEDULED BASE FINISH

<b>WALL</b>
EP-1 EPOXY WALL PAINT
P-1 WALL PAINT - MATCH EXISTING
P-2 DOOR FRAMES - MATCH EXISTING
EX EXISTING FINISH TO REMAIN
- NO SCHEDULED WALL FINISH

<b>CEILING</b>
AC-1 2X2 LAY-IN ACOUSTICAL
EX EXISTING CEILING FINISH TO REMAIN
- NO SCHEDULED CEILING FINISH

#### FINISH NOTES

- ALL FINISHES ARE TO COMPLY WITH THE 2012 NORTH CAROLINA STATE BUILDING CODE CHAPTER 6.
- ALL FINISH MATERIALS TO MEET OR EXCEED THE FLAME SPREAD REQUIREMENTS OF TABLE 803.11 OF THE 2018 NORTH CAROLINA STATE BUILDING CODE.
- PROVIDE APPROPRIATE TRANSITION STRIP AT ALL DOORS AND LOCATIONS WHERE FLOOR FINISH MATERIALS CHANGE.
- FIELD VERIFY ALL ACCENT WALL LOCATIONS (START AND STOP POINTS) WITH ARCHITECT BEFORE PAINTING.
- REPAIR, TOUCHUP, AND REPAINT ANY DAMAGED DOOR FRAMES. PAINTED TO MATCH EXISTING FRAME COLOR.

**Morris Berg ARCHITECTS**

1401 WEST WOODBURN STREET, SUITE 100, CHARLOTTE, NC 28203  
(704) 392-1800 FAX (704) 392-1802

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FINISH PLAN, LEGEND, SCHEDULE, AND DETAILS

SHEET NUMBER  
**A1400**

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**A1400**

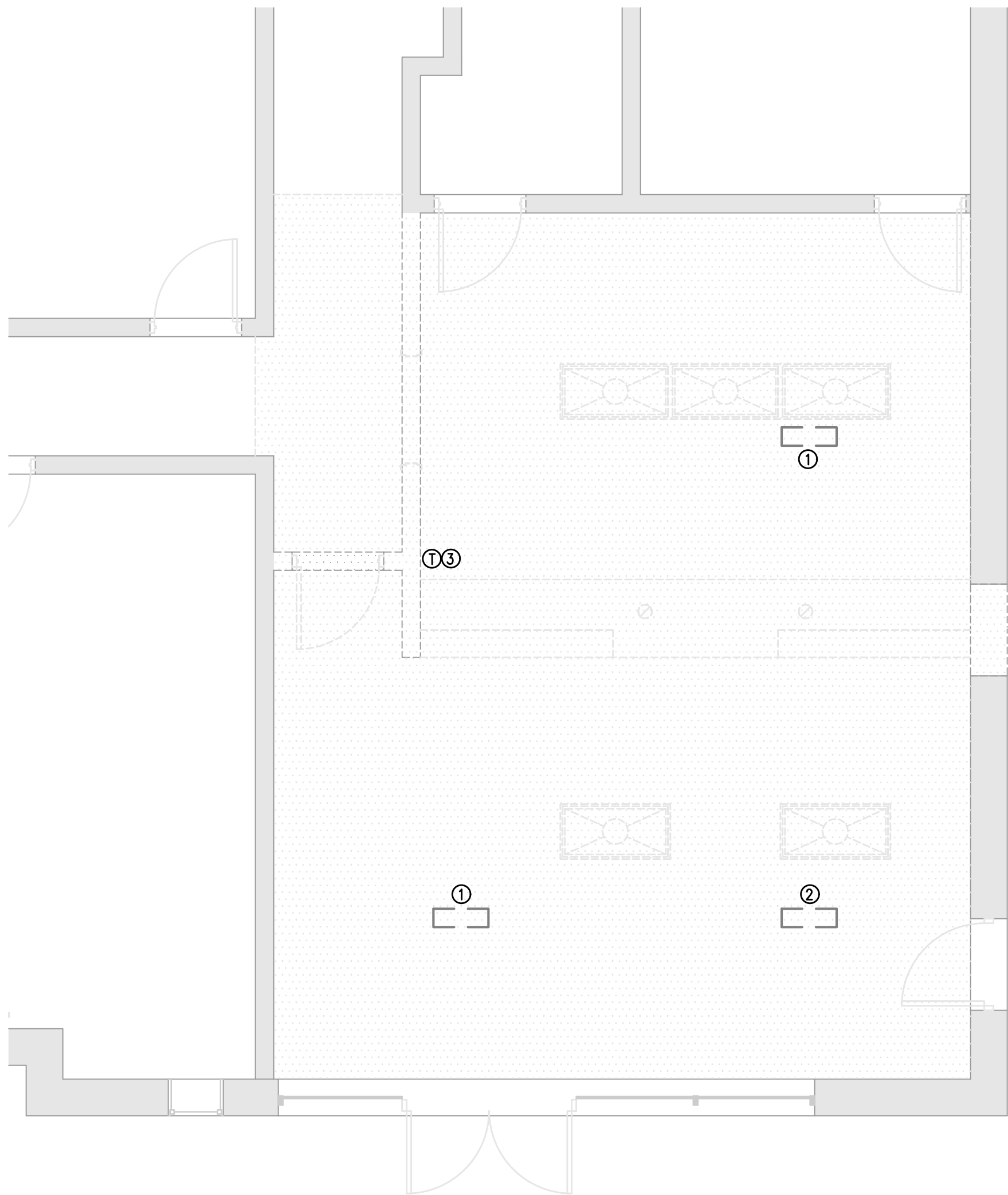
HAW RIVER



ENERGY REQUIREMENTS:	
MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT	
THERMAL ZONE	4A
EXTERIOR DESIGN CONDITIONS	
WINTER DRY BULB	18
SUMMER DRY BULB	94
INTERIOR DESIGN CONDITIONS	
WINTER DRY BULB	72
SUMMER DRY BULB	75
RELATIVE HUMIDITY	30-60%
BUILDING HEATING LOAD	EXISTING
BUILDING COOLING LOAD	EXISTING
MECHANICAL SPACE CONDITIONING SYSTEM	
UNITARY	
DESCRIPTION OF UNIT	EXISTING
HEATING EFFICIENCY	EXISTING
COOLING EFFICIENCY	EXISTING
HEAT OUTPUT OF UNIT	EXISTING
COOLING OUTPUT OF UNIT	EXISTING
BOILER	
TOTAL BOILER OUTPUT	NA
CHILLER	
TOTAL CHILLER OUTPUT	NA
LIST EQUIPMENT EFFICIENCIES	EXISTING
EQUIPMENT SCHEDULES WITH MOTORS (MECHANICAL SYSTEMS)	
MOTOR HORSEPOWER	EXISTING
NUMBER OF PHASES	EXISTING
MINIMUM EFFICIENCY	EXISTING
MOTOR TYPE	EXISTING
NUMBER OF POLES	EXISTING

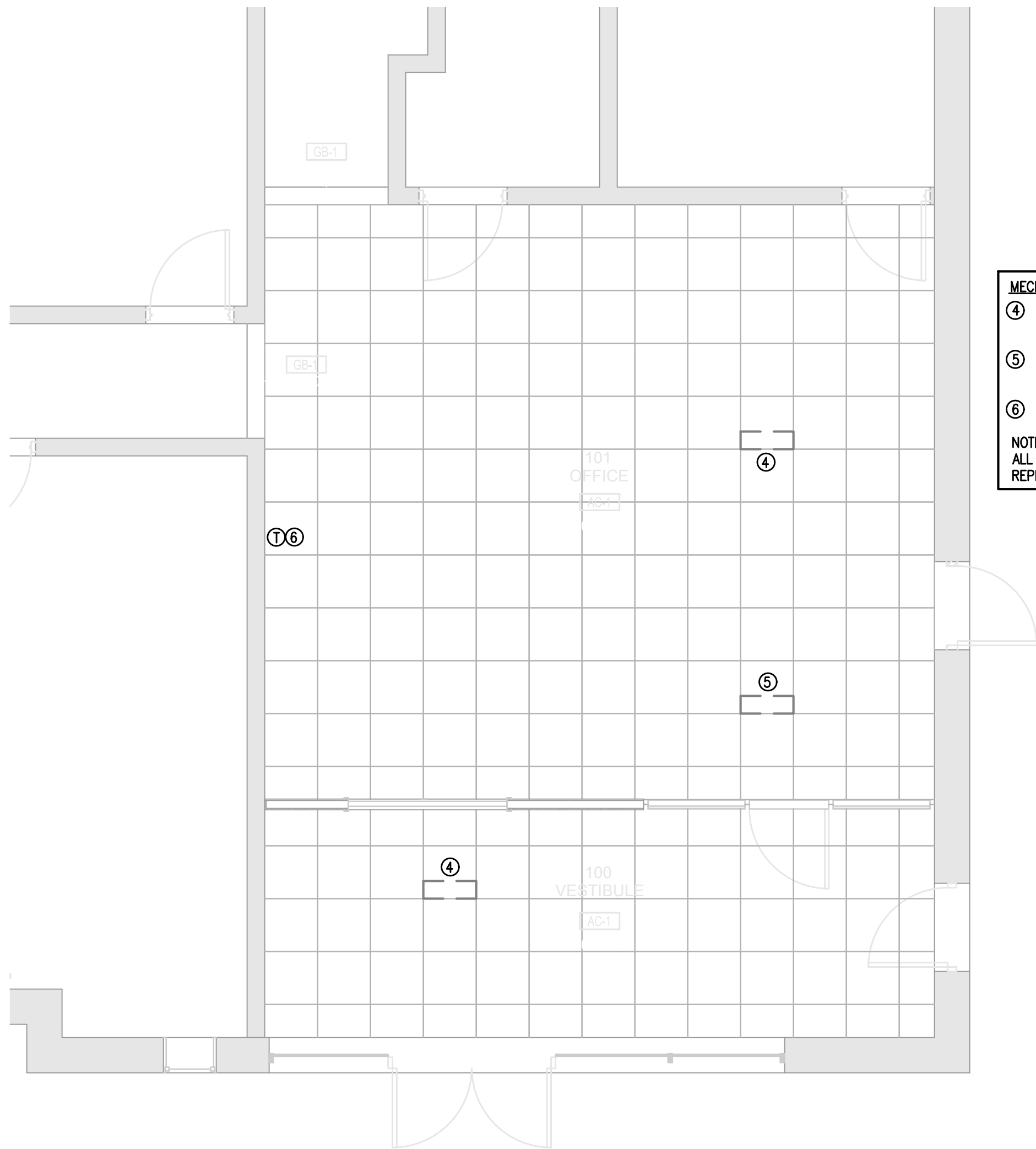
MECHANICAL LEGEND	
	EXISTING SUPPLY DIFFUSER TO REMAIN
CFM	CUBIC FEET PER MINUTE
AFF	ABOVE FINISHED FLOOR
EER	ENERGY EFFICIENCY RATIO
SP	STATIC PRESSURE
(X)	EXISTING

- HVAC GENERAL NOTES**
- FURNISH ALL LABOR, MATERIAL AND EQUIPMENT REQUIRED FOR THE COMPLETE INSTALLATION AND OPERATION OF ALL SYSTEMS IN THIS SECTION OF WORK IN ACCORDANCE WITH RECOMMENDED PRACTICE AND ALL APPLICABLE CODES.
  - DO NOT SCALE DRAWINGS. SEE ARCHITECTURAL DRAWINGS & REFLECTED CEILING PLANS FOR EXACT LOCATION OF DOORS, WINDOWS, CEILING DIFFUSERS, ETC.
  - ALL MECHANICAL PERMITS AND INSPECTION FEES SHALL BE OBTAINED AND PAID FOR BY THE MECHANICAL CONTRACTOR.
  - MECHANICAL CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS FOR ONE YEAR, EFFECTIVE THE DAY THE PROJECT IS ACCEPTED BY THE OWNER. REFRIGERANT COMPRESSORS SHALL BE GUARANTEED FOR FIVE YEARS.
  - DRAWINGS ARE DIAGRAMMATIC AND MAY NOT SHOW ALL REQUIRED FITTINGS. CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE TYPE, SIZE AND LOCATION OF ALL AIR DEVICES, DUCTWORK, PIPING AND EQUIPMENT WITH THE CEILING PLAN, LIGHTS, STRUCTURAL ELEMENTS AND OTHER TRADES. CONTRACTOR TO FURNISH AND INSTALL ALL BENDS, OFFSETS, ELBOWS, ETC. AS REQUIRED. VERIFY ALL CLEARANCES PRIOR TO FABRICATING DUCTWORK OR ORDERING EQUIPMENT.
  - CONTRACTOR IS RESPONSIBLE FOR PROVIDING MATERIALS AND INSTALLING THE WORK IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND NATIONAL CODES.
  - DUCTWORK
    - ALL DUCTWORK SHALL BE GALVANIZED SHEET METAL CONSTRUCTED IN ACCORDANCE WITH SMACNA STANDARDS WITH A MINIMUM PRESSURE CLASSIFICATION OF 2", SEAL CLASS C, WITH A MAXIMUM LEAKAGE RATE OF 5%.
    - ALL SQUARE ELBOWS SHALL HAVE TURNING VANES. ALL RECTANGULAR ELBOWS SHALL BE LONG RADIUS UNLESS SPACE LIMITATIONS REQUIRE SQUARE ELBOWS.
    - ALL DUCT DIMENSIONS SHOWN ARE INTERIOR CLEAR DIMENSIONS.
    - PROVIDE A MANUAL BALANCING DAMPER AT ALL SUPPLY AND RETURN BRANCH TAKEOFFS.
    - FLEXIBLE DUCT, IF SHOWN ON DRAWINGS, SHALL BE INSULATED ROUND DUCT WITH AN OUTER GLASS REINFORCED SILVER MYLAR JACKET ENCLOSED MIN. 1-1/2" THICK GLASS FIBER INSULATION AROUND A CONTINUOUS INNER LINER, AND SHALL CONFORM TO THE REQUIREMENTS OF U.L. 181 FOR CLASS 1 FLEXIBLE AIR DUCTS. MAXIMUM LENGTH OF FLEXIBLE DUCT SHALL BE 6 FEET. "R" VALUE TO MEET/EXCEED ENERGY CODE (R=5)
    - ALL DUCT SYSTEMS ARE TO BE PER U.L. STANDARDS. DUCTS ARE TO BE INSTALLED WITH NO RESTRICTIONS AND AN ABSOLUTE MINIMUM AMOUNT OF AIR LEAKAGE.
  - ALL PIPING, DUCTS, VENTS, ETC., EXTENDING THROUGH WALLS & ROOF SHALL BE FLASHED & COUNTER-FLASHED IN A WATERPROOF MANNER.
  - ALL EQUIPMENT SHALL BE INSTALLED PER CODE & MANUFACTURER'S REQUIREMENTS FOR SERVICE AND ACCESS CLEARANCES.
  - ALL EQUIPMENT SHALL BE U.L. LISTED.
  - LOCATE ALL THERMOSTATS AND SWITCHES 4'-0" ABOVE FINISHED FLOOR.
  - PRIOR TO BEGINNING ANY WORK, MECHANICAL CONTRACTOR IS RESPONSIBLE TO NOTIFY THE OWNER'S REPRESENTATIVE, ARCHITECT OR ENGINEER IF THE MECHANICAL DESIGN CONFLICTS WITH UNFORESEEN FIELD CONDITIONS.



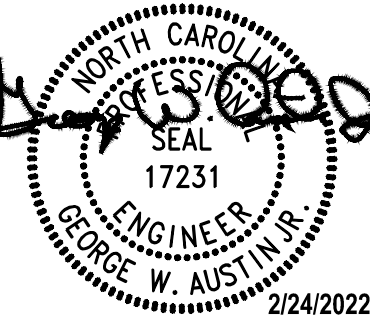
- MECHANICAL DEMOLITION KEY NOTES:**
- ADJUST EXISTING SUPPLY CEILING GRILLE TO LINE UP WITH NEW CEILING GRIDS, SEE 2/M101
  - RELOCATE EXISTING SUPPLY CEILING GRILLE, SEE 2/M101
  - RELOCATE EXISTING THERMOSTAT, SEE 2/M101
- NOTE:  
ALL OTHER HVAC EQUIPMENT NOT SHOWN OR NOT IN WORK SCOPE SHALL REMAIN AS-IS.

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



- MECHANICAL RENOVATION KEY NOTES:**
- ADJUST EXISTING SUPPLY CEILING GRILLE INTO NEW CEILING GRID
  - RELOCATED EXISTING SUPPLY CEILING GRILLE
  - RELOCATED EXISTING THERMOSTAT
- NOTE:  
ALL EXISTING DIFFUSERS SHALL BE CLEANED OR REPLACED WITH NEW AS REQUIRED.

**2 MECHANICAL RENOVATION PLAN**  
SCALE: 1/4" = 1'-0"



**CONSTRUCTION DOCUMENTS**

ISSUE DATE: 02/24/22

REVISIONS	
NO.	DATE

**ALAMANCE - BURLINGTON SCHOOL SYSTEM**  
**2022 SECURITY VESTIBULES**  
HAW RIVER ELEM.



PROJECT NUMBER 2111  
SHEET TITLE MECHANICAL PLANS, NOTES AND SCHEDULES  
SHEET NUMBER

**M101**  
HAW RIVER



SECTION 16100  
ELECTRICAL SYSTEMS DESCRIPTIONS

- A. PROJECT INCLUDES:
- ELECTRICAL SYSTEMS FOR THE FOLLOWING APPLICATIONS: REFER TO INDIVIDUAL SPECIFICATION SECTIONS FOLLOWING FOR DETAILED REQUIREMENTS.
  - POWER AND DISTRIBUTION.
  - LIGHTING, INCLUDING EXIT AND EMERGENCY LIGHTING.
  - FIRE ALARM AND LIFE SAFETY.
  - TELEPHONE.
  - POWER CONNECTIONS FOR HVAC, PLUMBING AND OWNER-PROVIDED EQUIPMENT.

- B. PRODUCTS:
- SYSTEMS, PRODUCTS, AND STANDARDS ARE LISTED IN INDIVIDUAL SPECIFICATION SECTIONS WHICH FOLLOW.

2. ALL MATERIALS, DEVICES, APPLIANCES, AND EQUIPMENT SHALL BE NEW AND LABEL LISTED BY AN APPROVED THIRD PARTY TESTING AGENCY APPROVED BY THIS STATE.

- C. GENERAL PROJECT REQUIREMENTS:
- PROVIDE ALL WORK AND MATERIALS FOR THE INSTALLATION OF COMPLETE WIRING SYSTEMS AS SPECIFIED HEREIN AND SHOWN ON THE DRAWINGS.

2. ALL ELECTRICAL PERMITS AND INSPECTION FEES SHALL BE OBTAINED AND PAID FOR BY THE ELECTRICAL CONTRACTOR.

3. ELECTRICAL CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS FOR ONE YEAR EFFECTIVE THE DAY THE PROJECT IS ACCEPTED BY THE OWNER.

4. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE MOST RECENT ADOPTED VERSION OF THE NFPA, NATIONAL ELECTRICAL CODE (N.E.C.), AND ALL APPLICABLE STATE AND LOCAL CODES.

5. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL CUTTING AND PATCHING FOR INSTALLATION OF ELECTRICAL WORK AND REPAIR ANY DAMAGE DONE.

6. SHOP DRAWINGS AND CATALOG DATA SHALL BE SUBMITTED FOR ANY NEW LIGHTING FIXTURES, PANELBOARDS, DISCONNECT SWITCHES, STARTERS, WIRING DEVICES AND MISCELLANEOUS MATERIALS. SHOP DRAWINGS SHALL BE SUBMITTED AS SPECIFIED IN ARCHITECTURAL SPECIFICATIONS, OR AT A MINIMUM, PROVIDE AN ELECTRONIC "PDF" FILE OF ALL SUBMITTAL MATERIALS.

7. PROVIDE ENGRAVED PHENOLIC NAMEPLATES FOR ANY NEW PANELBOARDS, WIRING TROUBLES, MOTOR STARTERS AND DISCONNECT SWITCHES. LABELS SHALL BE WHITE LETTERS ON BLACK FIELD FOR "NORMAL" POWER SYSTEM AND WHITE LETTERS OR RED FIELD FOR "EMERGENCY" SYSTEM. NAMEPLATE SHALL INDICATE EQUIPMENT NAME, VOLTAGE, AND CIRCUIT/FEEDER SERVING EQUIPMENT (WHERE APPLICABLE).

8. IT SHALL BE THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO COORDINATE ANY ALTERATIONS TO THE POWER SERVICE WITH THE LOCAL POWER COMPANY PRIOR TO SUBMISSION OF BID. ANY ADDITIONAL COSTS REQUIRED BY THE POWER COMPANY SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR AND SHALL BE INCLUDED IN THE BID.

9. ELECTRICAL CONTRACTOR SHALL TEST ALL WIRING FOR CONTINUITY AND GROUNDS PRIOR TO WIRING BEING ENERGIZED. FAULTY WIRING SHALL BE REPLACED.

10. ELECTRICAL CONTRACTOR SHALL CONNECT ALL HVAC, PLUMBING, AND OTHER CONTRACTOR OR OWNER FURNISHED EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS (UNLESS OTHERWISE NOTED). CONTROL WIRING FOR EQUIPMENT NOT PROVIDED BY THE ELECTRICAL CONTRACTOR, SHALL BE PROVIDED BY THE RESPECTIVE CONTRACTOR. COORDINATE WITH EQUIPMENT SHOP DRAWINGS AND EQUIPMENT CONTRACTOR FOR DISCONNECT SWITCH, CONDUIT, WIRING REQUIREMENTS, FUSE AND BREAKER SIZES, AND VOLTAGE REQUIREMENTS. ALL FINAL CONNECTIONS TO JUNCTION BOXES SHALL BE BY THE ELECTRICAL CONTRACTOR.

11. EACH BIDDER SHALL VISIT THE JOB SITE PRIOR TO BIDDING TO FAMILIARIZE HIMSELF WITH EXISTING CONDITIONS. FAILURE TO VISIT SITE SHALL NOT EXCUSE CONTRACTOR FROM PERFORMING REQUIRED WORK, NOR SHALL IT BE AN ACCEPTABLE REASON FOR REQUESTING ADDITIONS TO THE CONTRACT.

12. THE EXISTING PORTIONS OF THIS FACILITY WILL REMAIN IN OPERATION DURING THIS CONSTRUCTION. ELECTRICAL CONTRACTOR SHALL CAUSE AS LITTLE DISRUPTION AS POSSIBLE TO THE FUNCTIONING OF THE FACILITY IN ORDER TO MAINTAIN THE COMFORT AND SAFETY OF THE OCCUPANTS.

13. THIS PROJECT INVOLVES SOME WORK ON EXISTING ELECTRICAL FACILITIES, EXISTING FEEDER, BRANCH CIRCUITS, COMMUNICATIONS, RACEWAYS, ETC. WHICH ARE DISRUPTED BY THIS PROJECT SHALL BE RE-ROUTED AND/OR RE-FEED FROM A NEW SOURCE AS REQUIRED TO MAINTAIN THEM IN FULL AND PERMANENT SERVICE.

14. THIS PROJECT INVOLVES SOME DEMOLITION WORK. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER REMOVAL OF WIRING, RACEWAY, FIXTURES, OUTLETS, ETC. AS NECESSARY TO ACCOMPLISH THE DEMOLITION WORK.

15. IF APPLICABLE, PROVIDE MIN. 24" HORIZONTAL SEPARATION BETWEEN BOXES INSTALLED ON OPPOSITE SIDES OF THE SAME FIRE-RATED WALL AS REQUIRED BY N.E.C. ART. 300.21.

16. IF APPLICABLE, FIRE-STOPPING OF PENETRATIONS IN RATED WALLS AND FLOORS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE

MOST RECENT, ADOPTED EDITION OF THE STATE BUILDING CODE USING APPROVED ASSEMBLIES SUCH AS THE FOLLOWING:

CONDUIT PENETRATIONS OF 1, 2 OR 4 HOUR GYPSBOARD WALLS - U.L. #RW-1-1000

CONDUIT PENETRATIONS OF 1 OR 2 HOUR CONCRETE WALLS OR FLOORS OR BLOCK WALLS - U.L. #C-AJ-1004

CONDUIT PENETRATIONS OF 4 HOUR CONCRETE WALLS OR FLOORS OR BLOCK WALLS - U.L. #C-AJ-1004

17. IF APPLICABLE, IN REQUIRED FIRE-RATED WALLS AND PARTITIONS, OPENINGS FOR INSTALLATION OF BOXES THAT ARE GREATER THAN 16 SQUARE INCHES SHALL BE PROTECTED AS REQUIRED BY A THIRD PARTY TESTING AGENCY APPROVED BY THIS STATE. COORDINATE CLOSELY WITH THE GENERAL CONTRACTOR TO INSURE THAT THE INTEGRITY OF THE RATING IS MAINTAINED

18. IT IS THE RESPONSIBILITY OF ALL CONTRACTORS AND TRADES TO COORDINATE THE INSTALLATION OF THEIR WORK WITH THE INSTALLATION OF WORK BY ALL OTHER CONTRACTORS AND TRADES. THE REQUIREMENTS OF THESE DRAWINGS, GENERAL REQUIREMENTS AND ALL ITEMS OF THE CONTRACT DOCUMENTS ARE EQUALLY BINDING ON ALL CONTRACTORS AND TRADES. EACH CONTRACTOR IS REQUIRED TO MAINTAIN FULL SETS OF THE CONTRACT DOCUMENTS FOR HIS EMPLOYEES' USE, ON THE PROJECT, TO ASSURE THAT ALL WORK IS PROPERLY COORDINATED AND INSTALLED WITH THE WORK OF OTHER CONTRACTORS AND TRADES.

19. WHENEVER THERE ARE DISCREPANCIES BETWEEN DRAWINGS, EQUIPMENT AND MATERIALS PURCHASED AND/OR INSTALLED, CONFLICTS WITHIN THE SPECIFICATIONS AND/OR DRAWINGS, AND SUCH DISCREPANCY IS NOT CALLED TO THE ENGINEER'S ATTENTION IN TIME TO PERMIT CLARIFICATION BY ADDENDUM, THE CONTRACTOR SHALL BASE HIS BID UPON PROVIDING THE BETTER QUALITY OR GREATER OF WORK OR MATERIAL CALLED FOR, SHALL SUBMIT A WRITTEN STATEMENT WITH HIS PROPOSAL NOTING SUCH DISCREPANCIES, AND SHALL SO FURNISH AND INSTALL SUCH BETTER QUALITY OR GREATER QUANTITY UNLESS OTHERWISE ORDERED IN WRITING.

20. CONTRACTOR SHALL ASSUME FULL LIABILITY FOR ANY WORK, EQUIPMENT AND MATERIALS PURCHASED AND/OR INSTALLED THAT ARE IN DISCREPANCY, IF IT IS NOT FIRST BROUGHT TO THE ATTENTION OF THE ENGINEER, IN WRITING, FOR CLARIFICATION. IF NOT BROUGHT TO THE ENGINEER'S ATTENTION, CONTRACTOR SHALL PAY FOR ANY EQUIPMENT, MATERIALS AND WORK THAT MUST BE REPLACED.

SECTION 16101  
ELECTRICAL DEMOLITION

- A. EXECUTION:
- THE EXTENT OF THE ELECTRICAL DEMOLITION WORK IS INDICATED ON THE ELECTRICAL AND ARCHITECTURAL DRAWINGS AND SPECIFIED HEREIN.

2. WHILE DEMOLISHING THE EXISTING ELECTRICAL SYSTEMS, ALL NECESSARY MODIFICATIONS TO THE EXISTING ELECTRICAL SYSTEMS, WHICH ARE TO REMAIN, SHALL BE MADE SO THAT THE ENTIRE SYSTEM(S) CONTINUES TO FUNCTION AS INTENDED, EVEN AFTER DEMOLITION AND ASSOCIATED NEW CONSTRUCTION.

3. ELECTRICAL DEMOLITION, RELOCATION OF EXISTING EQUIPMENT, AND ANY CUTTING AND PATCHING REQUIRED FOR THE INSTALLATION OF THIS NEW ELECTRICAL WORK IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.

4. THE ELECTRICAL CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE EXISTING BUILDING AND WITH THE WORK OF ALL OTHER TRADES AND INCLUDE ALL WORK NECESSARY TO COMPLY WITH THE INTENT OF THE DEMOLITION.

5. IT SHALL BE UNDERSTOOD THAT FIELD CONDITIONS MAY BE ENCOUNTERED DURING THE EXECUTION OF THIS CONTRACT, WHICH WILL REQUIRE EXTENSION OR RELOCATION OF EXISTING SYSTEMS OR EQUIPMENT WHICH ARE NOT SPECIFICALLY SHOWN ON THE DRAWINGS, BUT WHICH ARE REQUIRED TO MEET THE STATED INTENT THAT THE BUILDING CONTINUES TO FUNCTION UNIMPACTED BY THE DEMOLITION AND ASSOCIATED NEW CONSTRUCTION. THIS CONTRACTOR SHALL INCLUDE SUCH WORK AS WOULD NORMALLY BE EXPECTED IN AN EXISTING BUILDING OF THIS AGE AND TYPE.

6. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR, REGARDING DEMOLITION OF THE EXISTING ELECTRICAL SYSTEMS, AS IS NECESSARY, SO THAT THE DEMOLITION OF THE GENERAL CONTRACTOR SHALL NOT DAMAGE THOSE PORTIONS OF THE ELECTRICAL SYSTEMS THAT ARE TO REMAIN IN SERVICE, ARE TO BE REUSED, OR ARE TO BECOME THE PROPERTY OF THE OWNER.

7. ALL SALVAGEABLE MATERIALS RESULTING FROM DEMOLITION SHALL REMAIN THE PROPERTY OF THE OWNER. THE OWNER SHALL DETERMINE WHAT IS SALVAGEABLE. SALVAGEABLE ITEMS SHALL BE TURNED OVER TO THE OWNER. NON-SALVAGEABLE ITEMS SHALL BE PROPERLY DISPOSED OF BY THE ELECTRICAL CONTRACTOR.

8. EQUIPMENT OR MATERIALS WHICH ARE TO BE REUSED OR TURNED OVER TO THE OWNER SHALL BE CAREFULLY REMOVED AND STORED IN A CLEAN, DRY AREA. SHOULD THE CONTRACTOR ENCOUNTER SUCH EQUIPMENT WHICH IS NOT IN SATISFACTORY CONDITION FOR REUSE AND IS NOT IN WORKING ORDER, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER IMMEDIATELY.

9. ELECTRICAL CONTRACTOR SHALL DISCONNECT ELECTRICAL SERVICES TO ALL EQUIPMENT REQUIRING REMOVAL AND SHALL DISCONNECT

ELECTRICAL SPECIFICATIONS

AND REMOVE ALL RECEPTACLES AND TELEPHONE OUTLETS FROM PARTITIONS TO BE DEMOLISHED. CONDUIT SHALL BE REMOVED BACK TO THE POINT WHERE IT WILL BE CONCEALED AT THE COMPLETION OF THIS CONTRACT. WIRE AND CABLE SHALL BE REMOVED BACK TO THE FIRST OUTLET BOX, PANELBOARD, CABINET OR TERMINATION POINT WHICH IS TO REMAIN.

10. WHERE NEW WALL OR FLOOR FINISHES CONFLICT WITH EXISTING ELECTRICAL WORK THAT IS TO REMAIN, RELOCATE THE ELECTRICAL WORK INVOLVED OR PROVIDE BOX EXTENSIONS OR SIMILAR DEVICES AND REINSTALL ON THE NEW FINISH.

11. REMOVE ANY ABANDONED CONDUITS, WIRING AND BOXES ENCOUNTERED WITHIN THE PROJECT EXTENTS.

SECTION 16110  
RACEWAYS AND BOXES

- A. PROJECT INCLUDES:
- ELECTRICAL CONDUIT, TUBING, SURFACE RACEWAYS, BOXES, AND CABINETS FOR ELECTRICAL, POWER AND SIGNAL DISTRIBUTION.

- B. PRODUCTS:

- WIRING METHODS:
  - CONCEALED OR EXPOSED INDOOR WIRING: ZINC-COATED ELECTRICAL METALLIC TUBING FOR SIZES 1/2" THROUGH 4", INTERMEDIATE STEEL CONDUIT FOR SIZES LARGER THAN 4".
  - EXPOSED OUTDOOR WIRING: RIGID OR INTERMEDIATE STEEL CONDUIT.
  - CONCEALED OUTDOOR WIRING: INTERMEDIATE STEEL CONDUIT OR SCHEDULE 80 OR 40 PVC.
  - UNDERGROUND WIRING, GROUPED: SCHEDULE 80 OR 40 PVC.
  - UNDERGROUND WIRING, GROUPED: SCHEDULE 80 OR 40 PVC.
  - CONNECTION TO EQUIPMENT: FLEXIBLE METAL CONDUIT, LIQUIDTIGHT AT EXTERIOR OR IN DAMP LOCATIONS.

2. FITTINGS FOR ELECTRICAL METALLIC TUBING SHALL BE HEXAGONAL, GALVANIZED STEEL, AND TYPE, COMPRESSION OR SET-SCREW TYPE AND THREADLESS.

3. RACEWAY ACCESSORY MATERIALS:
  - CONDUIT BOXES: SHALL COMPLY WITH N.E.C. REQUIREMENTS.
  - SURFACE RACEWAYS, METALLIC: GALVANIZED STEEL, WITH SNAP-ON COVERS AND VORY ENAMEL FINISH. SURFACE RACEWAY MAY ONLY BE USED WITH PRIOR, WRITTEN APPROVAL FROM OWNER, ARCHITECT AND ENGINEER.
  - ALL EMPTY CONDUITS SHALL BE PROVIDED WITH PULL WIRES AND NYLON BUSHINGS AT BOTH ENDS.

4. BOXES AND FITTINGS:
  - CABINET BOXES: CODE GAUGE GALVANIZED SHEET METAL, NEMA 1-INDOORS, NEMA 3R-OUTDOORS OR IN DAMP LOCATIONS.
  - PULL AND JUNCTION BOXES: CODE GAUGE GALVANIZED SHEET METAL, NEMA 1-INDOORS, NEMA 3R-OUTDOORS OR IN DAMP LOCATIONS.
  - METAL OUTLET, DEVICE AND SMALL WIRING BOXES: SHALL COMPLY WITH UL 514A.
  - CONDUIT RUN THROUGH BUILDING EXPANSION JOINTS SHALL HAVE APPROPRIATE CONDUIT EXPANSION FITTINGS.

- C. EXECUTION:
- PROPERLY SUPPORT ALL CONDUITS WITH STRAPS AND CLAMPS PER THE MOST RECENT, ADOPTED EDITIONS OF THE N.E.C. AND STATE BUILDING CODE. RUN ALL CONDUITS PARALLEL OR PERPENDICULAR TO BUILDING WALLS/SURFACES.

2. MINIMUM CONDUIT SIZE ABOVE SLAB/GRADE SHALL BE 1/2". MINIMUM CONDUIT SIZE IN OR BELOW FLOOR SLAB SHALL BE 3/4".

3. RACEWAY PENETRATIONS THROUGH FLOOR SLABS AND FIRE-RATED WALLS SHALL BE FILLED WITH IMPERMEABLE, NON-SHRINK GROUT, SUFFICIENTLY TIGHT TO PREVENT THE TRANSFER OF SMOKE, FIRE, WATER, AND DUST.

4. CONDUITS INSTALLED UNDERGROUND OR IN CONCRETE SHALL HAVE JOINTS MADE WATER-TIGHT BY USING A POLYETHYLENE-FLUOROPOLYMER TAPE. ALL METALLIC UNDERGROUND CONDUITS SHALL BE THOROUGHLY COATED WITH TWO COATS OF ASPHALTUM OR BITUMASTIC. APPROVED SEALS SHALL BE PROVIDED IN HAZARDOUS LOCATIONS AS REQUIRED BY THE N.E.C.

5. PROVIDE PULLWIRE IN ALL EMPTY CONDUITS.

SECTION 16120  
WIRES AND CABLES

- A. PROJECT INCLUDES:
- WIRES, CABLES, AND CONNECTORS FOR POWER, LIGHTING, SIGNAL, CONTROL, AND RELATED SYSTEMS RATED 600 VOLTS AND LESS.

- B. PRODUCTS:

- WIRE COMPONENTS:
  - CONDUCTORS FOR POWER AND LIGHTING CIRCUITS: SOLID CONDUCTORS FOR SIZES #14 AWG THROUGH #6 AWG, STRANDED CONDUCTORS FOR #6 AWG AND LARGER.
  - CONDUCTOR MATERIAL: COPPER.
  - INSULATION: THIN/TW.
  - JACKET: FACTORY-APPLIED NYLON OR PVC, COLOR CODED: "BLACK/RED/BLUE/WHITE" FOR "A", "B" AND "C" PHASES, NEUTRAL, RESPECTIVELY FOR 120/208-VOLT SYSTEM, "BROWN/GRANITE/YELLOW/LIGHT GRAY" FOR "A", "B" AND "C" PHASES, NEUTRAL, RESPECTIVELY FOR 277/480-VOLT SYSTEM.
  - BRANCH CIRCUIT CONDUCTORS: SHALL NOT BE SMALLER THAN #12 AWG. CONTROL WIRING MAY BE #14 AWG.

SECTION 16140  
WIRING DEVICES

- A. PROJECT INCLUDES:
- WIRING DEVICES FOR ELECTRICAL SERVICE.

- B. PRODUCTS:

- RECEPTACLES: 15-AMP DUPLEX (HUBBELL #5252, OR APPROVED EQUIVALENT), 20-AMP DUPLEX (HUBBELL #5362, OR APPROVED EQUIVALENT).
- GROUND-FAULT INTERRUPTER (GFI) RECEPTACLES: FEED-THRU TYPE GROUND-FAULT CIRCUIT INTERRUPTER WITH INTEGRAL DUPLEX RECEPTACLES. (HUBBELL #GF-5362, OR APPROVED EQUIVALENT).
- ISOLATED GROUND RECEPTACLES: LISTED AND LABELED, EQUIPMENT GROUNDING CONTACTS INTEGRAL TO RECEPTACLE CONSTRUCTION.
- PLUGS AND PUGH CONNECTOR: AS SPECIFIED ON DRAWINGS.
- SNAP SWITCHES: SINGLE-POLE, 20 AMPERE (HUBBELL #1221, OR APPROVED EQUIVALENT), THREE-WAY, 20 AMPERE (HUBBELL #1223, OR APPROVED EQUIVALENT).
- WALL PLATES: SINGLE AND COMBINATION TYPES, NYLON MATCHING EXISTING BUILDING STANDARD, UNLESS OTHERWISE NOTED ON DRAWINGS.
- COLOR OF ALL DEVICES AND COVERPLATES TO BE WHITE. MATCH EXISTING BUILDING STANDARD, UNLESS OTHERWISE NOTED ON DRAWINGS.

- C. EXECUTION:
- DUPLEX RECEPTACLES ON DEDICATED CIRCUIT SHALL BE 20-AMP. OTHER DUPLEX RECEPTACLES MAY BE 15-AMP.

2. DEVICE/OUTLET BOXES SHALL NOT BE MOUNTED BACK-TO-BACK IN WALLS.

3. ALL 125V AND 250V NON-LOCKED TYPE RECEPTACLES SHALL BE TAMPER RESISTANT TYPE, UNLESS PERMITTED OTHERWISE BY NEC 406.12.

4. WEATHERPROOF COVERS SHALL PROTECT THE OUTLET WHILE IN USE. EQUIVALENT TO LEVITON #M5999. COVERS SHALL BE EXTRA DEEP, METALLIC WITH MOUNTED IN HORIZONTAL ORIENTATION.

5. PROVIDE ALL OUTLETS (INCLUDING TELEPHONE) WITH APPROPRIATE COVERPLATES.

SECTION 16400  
SERVICE AND DISTRIBUTION

- A. PROJECT MAY INCLUDE:
- ELECTRICAL SERVICE AND DISTRIBUTION INCLUDING GROUNDING, PANELBOARDS, OVERCURRENT PROTECTIVE DEVICES, DISCONNECT SWITCHES.

- B. PRODUCTS:

- GROUNDING:
  - GROUNDING EQUIPMENT: COPPER CONDUCTORS, N.E.C. APPROVED CONNECTORS.
  - GROUNDING ELECTRODES: COPPER-CLAD STEEL GROUND RODS.
  - GROUNDING SYSTEM: SHALL COMPLY WITH N.E.C. ARTICLE 250.
- PANELBOARDS:
  - PANELBOARD TYPE: LIGHTING AND APPLIANCE BRANCH CIRCUIT PANELBOARDS, BOLT ON CIRCUIT BREAKERS.
  - SERIES RATING IS NOT ALLOWED FOR ALL NEW PANELBOARDS, CIRCUIT BREAKERS AND DEVICES.
  - ACCEPTABLE MANUFACTURERS: SQUARE D, SIEMENS, G.E. OR OUTLER-HAMMER.
- DISCONNECT SWITCHES:
  - WIRES, CABLES, AND CONNECTORS FOR POWER, LIGHTING, SIGNAL, CONTROL, AND RELATED SYSTEMS RATED 600 VOLTS AND LESS.
  - HEAVY-DUTY TYPE.
  - NEMA 1 ENCLOSURE - INDOORS, NEMA 3R ENCLOSURE - OUTDOORS AND WET AREAS.
  - FUSED OR NON-FUSED AS INDICATED ON DRAWINGS.
  - FUSED SWITCHES SHALL HAVE REACTION-TYPE FUSE CLIPS.
  - ALL DISCONNECTS SHALL BE HEAVY-DUTY RATED, AND SHALL HAVE A MECHANICAL INTERLOCK TO PREVENT THE DOOR FROM BEING OPENED, WITHOUT DEFEATING THE INTERLOCK. THE MECHANICAL INTERLOCK SHALL ALSO PREVENT ACTIVATING THE SWITCH WHEN THE DOOR IS OPEN. THE MECHANICAL INTERLOCK SHALL BE DE-FEATABLE BY A SPECIAL TOOL, AND SHALL BE UL LISTED AS PART OF THE DISCONNECT.
  - ACCEPTABLE MANUFACTURERS: SQUARE D, SIEMENS, G.E. OR OUTLER-HAMMER.
- OVERCURRENT PROTECTIVE DEVICES:
  - OVERCURRENT PROTECTIVE DEVICES: INTEGRAL TO PANELBOARD.

- NEUTRAL CONDUCTORS: #10 AWG MINIMUM FOR ALL MULTIWIRE BRANCH CIRCUITS.
- "MC" TYPE CABLE WITH INTEGRAL, GREEN, INSULATED GROUND CONDUCTOR, MAY ONLY BE UTILIZED WHERE CONCEALED TO SERVE BRANCH CIRCUITS SIZED #6 AWG OR SMALLER NOT BE USED.
- WIRING TO LIGHTING FIXTURES SHALL BE AS REQUIRED BY UL LABEL.

- CABLES:
  - PORTABLE CORD FOR FLEXIBLE PENDANT LEADS TO OUTLETS AND EQUIPMENT: UL TYPE S.
  - CONTROL/SIGNAL TRANSMISSION MEDIA: TWISTED PAIR TYPE.

3. CONNECTORS: UL LISTED SOLDERLESS METAL CONNECTORS WITH APPROPRIATE TEMPERATURE RATINGS.

6. FUSES:
  - SIZES INDICATED ON DRAWINGS.
  - CLASS R-5, TIME DELAY, UNLESS OTHERWISE NOTED.
  - A SET OF 3 SPARE FUSES OF EACH SIZE AND TYPE SHALL BE FURNISHED TO THE OWNER.
  - ACCEPTABLE MANUFACTURERS: BUSSMAN, GULF SHAMMUT OR LITLITE FUSE.

- C. EXECUTION:
- ALL NEW MULTI-CIRCUIT HOMERUNS SHALL BE PROTECTED WITH A MULTI-POLE, SIMULTANEOUS-TRIP CIRCUIT BREAKER PER N.E.C. 210-4B.

2. ALL TERMINATION'S ON NEW ELECTRICAL GEAR/EQUIPMENT (I.e. PANELBOARDS, DISCONNECT SWITCHES, etc.) SHALL HAVE DUAL RATED 60-DEGREE / 75-DEGREE LUGS/TERMINALS.

3. PROVIDE A COMPLETE PANEL DIRECTORY FOR EACH PANEL. DIRECTORY SHALL BE TYPE WRITTEN FOR ALL CIRCUITS.

4. ALL SPARE BREAKER HANDLES SHALL BE IN THE OFF POSITION.

SECTION 16510  
INTERIOR AND EXTERIOR LIGHTING

- A. PROJECT INCLUDES:
- INTERIOR AND EXTERIOR LIGHTING FIXTURES, LAMPS, BALLASTS, EMERGENCY LIGHTING UNITS, EXIT SIGNS AND ACCESSORIES.

- B. PRODUCTS:

- INTERIOR AND EXTERIOR LIGHTING COMPONENTS (SEE "LIGHT FIXTURE SCHEDULE").
  - EXIT SIGNS (L.E.D., SELF-POWERED N-CAD BATTERY TYPE, MIN 90 MINUTE CAPACITY).
  - EMERGENCY LIGHTING UNITS: L.E.D. LAMPS, INTEGRAL, N-CAD BATTERY, MIN. 90 MINUTE CAPACITY.
  - CEILING LENS: A-12, 12" MINIMUM.
  - L.E.D. LAMPS SHALL BE MINIMUM OF 85 CR, 3500 KELVIN IN INTERIOR LIGHT FIXTURES AND 5000 KELVIN IN EXTERIOR LIGHT FIXTURES, UNLESS NOTED OTHERWISE ON LIGHT FIXTURE SCHEDULE.

- C. EXECUTION:

- LAY-IN FIXTURES SHALL BE SUSPENDED FROM BUILDING STRUCTURE WITH MINIMUM OF FOUR WIRES ONE AT EACH CORNER. FIXTURES SHALL ALSO BE ATTACHED TO GRID SYSTEM WITH EARTHQUAKE CLIPS. DO NOT SUPPORT FIXTURES FROM CEILING GRID.

2. SEE ARCHITECTURAL "REFLECTED CEILING PLANS" OR ELECTRICAL LIGHTING PLANS FOR EXACT LOCATIONS OF ALL LIGHT FIXTURES.

3. COORDINATE LIGHT FIXTURE MOUNTING METHODS WITH ARCHITECTURAL FINISHES PRIOR TO ORDERING MATERIAL. COORDINATE FIXTURE TYPE AND TRIM WITH CEILING CONSTRUCTION.

4. DOWNLIGHTS INSTALLED AT INACCESSIBLE CEILINGS SHALL HAVE BOTTOM ACCESS LISTING.

5. COORDINATE LIGHT FIXTURE VOLTAGE WITH VOLTAGE OF LIGHTING CIRCUIT SERVING LIGHT FIXTURE.

6. ANY FIXTURES INDICATED ON THE PLANS TO BE CONTROLLED WITH A DIMMER SHALL BE PROVIDED WITH DIMMING BALLAST/COVER COMPATIBLE WITH THE LIGHTING CONTROLS. PROVIDE ALL ACCESSORIES AND/OR WIRING TO MAKE COMPLETE.

7. CONNECT ALL BATTERY UNITS IN EXIT AND EMERGENCY EGRESS LIGHT FIXTURES TO LOCAL LIGHTING CIRCUIT AHEAD OF ALL SWITCHING UNLESS NOTED OTHERWISE.

8. LIGHTING FIXTURES INDICATED TO BE INSTALLED IN WET OR DAMP LOCATIONS SHALL BE UL LISTED AND LABELED "WET" OR "DAMP" ACCORDINGLY.

9. IN COMPLIANCE WITH THE ENERGY CONSERVATION CODE, ALL RECESSED LIGHT FIXTURES INSTALLED IN THE BUILDING THERMAL ENVELOPE SHALL BE IC-RATED AND LABELED FOR MEETING ASTM E 283. THESE FIXTURES SHALL BE SEALED WITH GASKET OR CAULK BETWEEN THE HOUSING AND THE INTERIOR WALL OR CEILING COVERING.

10. CATALOG NUMBERS GIVEN ON PLANS OR IN SPECIFICATIONS DENOTE MINIMUM QUALITY AND PERFORMANCE REQUIRED. APPROVED EQUIVALENT EQUIPMENT BY OTHER MANUFACTURERS IS ACCEPTABLE.

END OF SPECIFICATIONS

APPENDIX B  
BUILDING CODE SUMMARY FOR ALL  
COMMERCIAL PROJECTS (ELECTRICAL DESIGN)

ELECTRICAL SYSTEM AND EQUIPMENT

METHOD OF COMPLIANCE

ENERGY CODE: ☒ PRESRIPTIVE ☐ PERFORMANCE  
ASHRAE 90.1: ☐ PRESRIPTIVE ☐ PERFORMANCE

LIGHTING SCHEDULE

LAMP TYPE REQUIRED IN FIXTURE	SEE LIGHT FIXTURE SCHEDULE
NUMBER OF LAMPS IN FIXTURE	
BALLAST TYPE USED IN FIXTURE	
NUMBER OF BALLASTS IN FIXTURE	
TOTAL WATTAGE PER FIXTURE	
TOTAL INTERIOR WATTAGE SPECIFIED VS. ALLOWED	0.288 KW vs. 0.957 KW
TOTAL EXTERIOR WATTAGE SPECIFIED VS. ALLOWED	N/A
TOTAL EXTERIOR WATTAGE SPECIFIED VS. ALLOWED (NON-TRADEABLE)	N/A

EXISTING EXTERIOR LIGHTING TO REMAIN.

ADDITIONAL EFFICIENCY PACKAGE OPTIONS

- ☐ C406.2 MORE EFFICIENT HVAC EQUIPMENT PERFORMANCE  
☐ C406.3 REDUCED LIGHTING POWER DENSITY  
☐ C406.4 ENHANCED DIGITAL LIGHTING CONTROLS  
☐ C406.5 ON-SITE RENEWABLE ENERGY  
☐ C406.6 DEDICATED OUTDOOR AIR SYSTEM  
☐ C406.7 REDUCED ENERGY USE IN SERVICE WATER HEATING



2/24/2022

CONSTRUCTION  
DOCUMENTS

ISSUE DATE: 02/24/22

REVISIONS

NO. DATE

ALAMANCE - BURLINGTON SCHOOL SYSTEM  
2022 SECURITY VESTIBULES  
HAW RIVER ELEM.



PROJECT NUMBER 2111

SHEET TITLE  
ELECTRICAL  
SYMBOLS, NOTES  
AND SPECIFICATIONS  
SHEET NUMBER

E001  
HAW RIVER

FIRE ALARM SEQUENCE OF OPERATION

UPON CHANGE IN STATUS OF ANY DEVICE ON THE SYSTEM, THE FIRE ALARM CONTROL PANEL SHALL ACTIVATE AUDIBLE AND VISIBLE CHANGE INDICATORS AND DISPLAY THE SYSTEM POINT NUMBER, POINT DESCRIPTION AND MESSAGE ASSOCIATED WITH THE POINT. ACTIVATION OF ANY MANUAL STATION, KITCHEN HOOD EXTINGUISHING SYSTEM, WATERFLOW DEVICE, SMOKE DETECTOR, HEAT DETECTOR, SUPERVISORY DEVICE OR OTHER INITIATING DEVICE WILL CAUSE THE FOLLOWING FUNCTIONS TO OCCUR:

MANUAL STATION OPERATION SHALL:

- ACTIVATE AUDIBLE AND VISUAL STATUS CHANGE INDICATORS AND DISPLAY POINT NUMBER, POINT DESCRIPTION, AND MESSAGE ASSOCIATED WITH THE POINT ON THE PANEL.
- TRANSMIT AN ALARM SIGNAL TO A UL LISTED CENTRAL STATION.
- ACTIVATE THE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES ON THE FLOOR.
- RELEASE THE DOOR LOCKING SYSTEM.

SMOKE DETECTOR OR HEAT DETECTOR OPERATION SHALL:

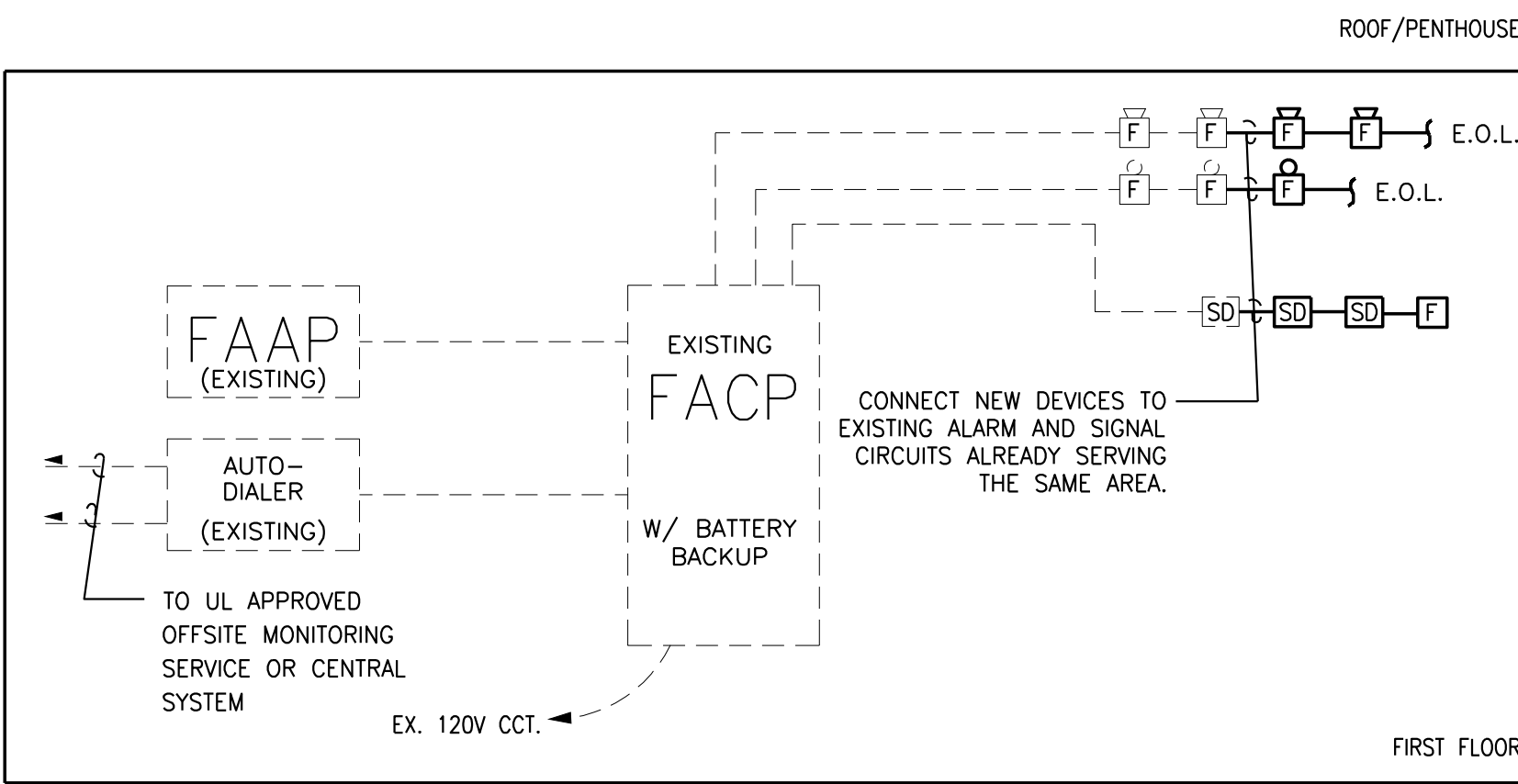
- ACTIVATE AUDIBLE AND VISIBLE STATUS CHANGE INDICATORS AND DISPLAY THE SYSTEM POINT NUMBER, POINT DESCRIPTION, AND MESSAGE ASSOCIATED WITH THE POINT ON THE PANEL.
- TRANSMIT AN ALARM SIGNAL TO A UL LISTED CENTRAL STATION.
- ACTIVATE THE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES ON THE FLOOR.
- SHUT DOWN AHU'S.

SUPERVISORY DEVICE ACTIVATION, INCLUDING VALVE SUPERVISORY DEVICES SHALL:

- ACTIVATE AUDIBLE AND VISIBLE STATUS CHANGE INDICATORS AND DISPLAY THE SYSTEM POINT NUMBER, POINT DESCRIPTION, AND MESSAGE ASSOCIATED WITH THE POINT ON THE PANEL.
- TRANSMIT A SUPERVISORY SIGNAL TO A UL LISTED CENTRAL STATION. THIS SIGNAL SHALL BE DISTINCTLY DIFFERENT THAN A TROUBLE SIGNAL.

REMOVAL OF ANY DEVICE, WIRING DISARRANGEMENT, OR SYSTEM COMPONENT FAILURE SHALL DISPLAY ON THE OPERATOR TERMINAL THE CHANGE OF STATUS, TIME, DATE, POINT DESCRIPTION ON A POINT BY POINT BASIS, AND THE MESSAGE ASSOCIATED WITH THE POINT AND TRANSMIT A TROUBLE SIGNAL TO A UL LISTED CENTRAL STATION.

INDICATION EVACUATION TONE SHALL BE THREE BEAT TEMPORAL PATTERN, UNLESS HIGH RISE OR LARGE ASSEMBLY.



1 PARTIAL FIRE ALARM SYSTEM RISER DIAGRAM  
NOT TO SCALE

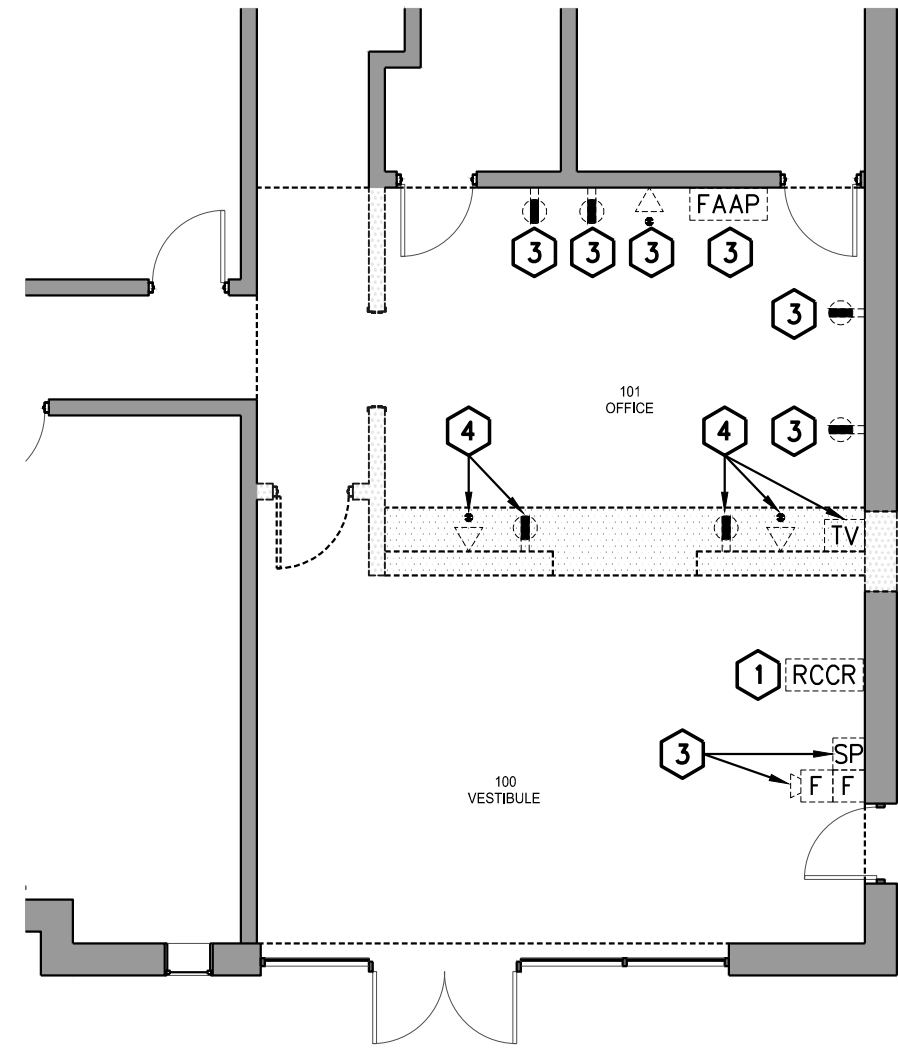
FIRE ALARM SYSTEM RISER NOTES

- ALL DEVICE QUANTITIES SHALL BE TAKEN OFF OF THE FLOOR PLANS. THE RISER DIAGRAM IS DIAGRAMMATIC ONLY.
- ALL FIRE ALARM INITIATING DEVICES SHALL MATCH EXISTING FIRE ALARM SYSTEM EQUIPMENT.
- ALL FIRE ALARM WIRING SHALL BE PER MANUFACTURER'S RECOMMENDATIONS AND N.E.C. REQUIREMENTS.
- CONFIRM NUMBER AND LOCATIONS OF ALL TAMPER AND FLOW SWITCHES WITH SPRINKLER CONTRACTOR AND CIVIL ENGINEER PRIOR TO ROUGH-IN.
- INSTALLATION OF ALL WIRING AND DEVICES SHALL BE IN ACCORDANCE WITH ALL APPLICABLE CITY CODES AND NFPA CODES.
- UPON FIRE ALARM SYSTEM GOING INTO ALARM, ALL DOOR SECURITY MAG-LOCKS AND ALL DOOR HOLD-OPENS SHALL BE RELEASED, ALLOWING SECURITY DOORS TO OPEN AND FIRE DOORS TO CLOSE.
- PROVIDE ADDITIONAL CONTROL CARDS, POWER SUPPLIES, EXTENDER CABINET(S), etc. AS NEEDED TO ACCOMMODATE DEVICES SHOWN ON PLANS. ANY ADDITIONAL CABINETS REQUIRED SHALL BE LOCATED AS DIRECTED BY OWNER.
- PROVIDE ADDITIONAL FIRE ALARM DEVICES AS DIRECTED BY THE FIRE MARSHAL AT NO ADDITIONAL COST TO THE PROJECT/OWNER.
- ALL ITEMS SHOWN DASHED ARE EXISTING TO REMAIN.
- BUILDING FIRE ALARM SYSTEM SHALL COMPLY WITH NFPA 72-2013 AND N.E.C. FIRE CODE 907.2.12.2.

ROOF/PENTHOUSE

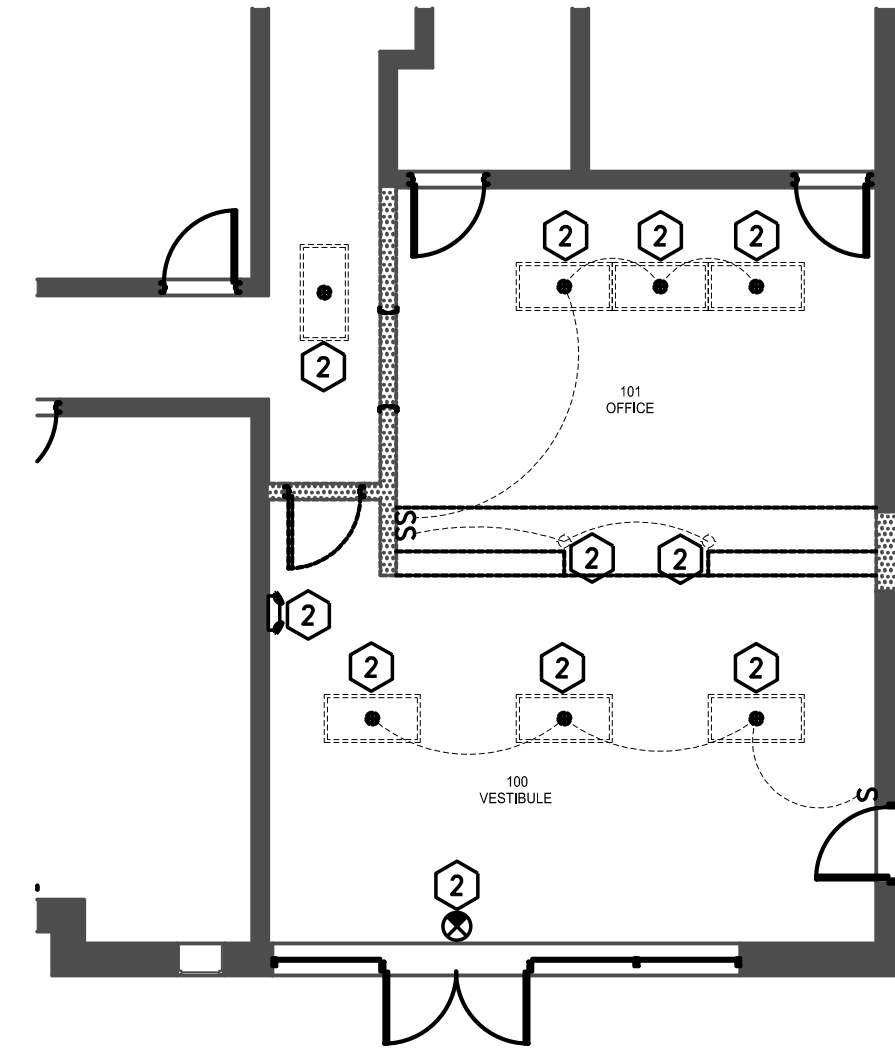
SYMBOL	DESCRIPTION
	CONDUIT RUN CONCEALED IN CEILING OR IN WALL.
	CONDUIT RUN CONCEALED IN FLOOR OR BELOW SLAB/GRADE.
	CONDUIT RUN EXPOSED ON SURFACE.
	CIRCUIT HOME RUN. NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS.
	1





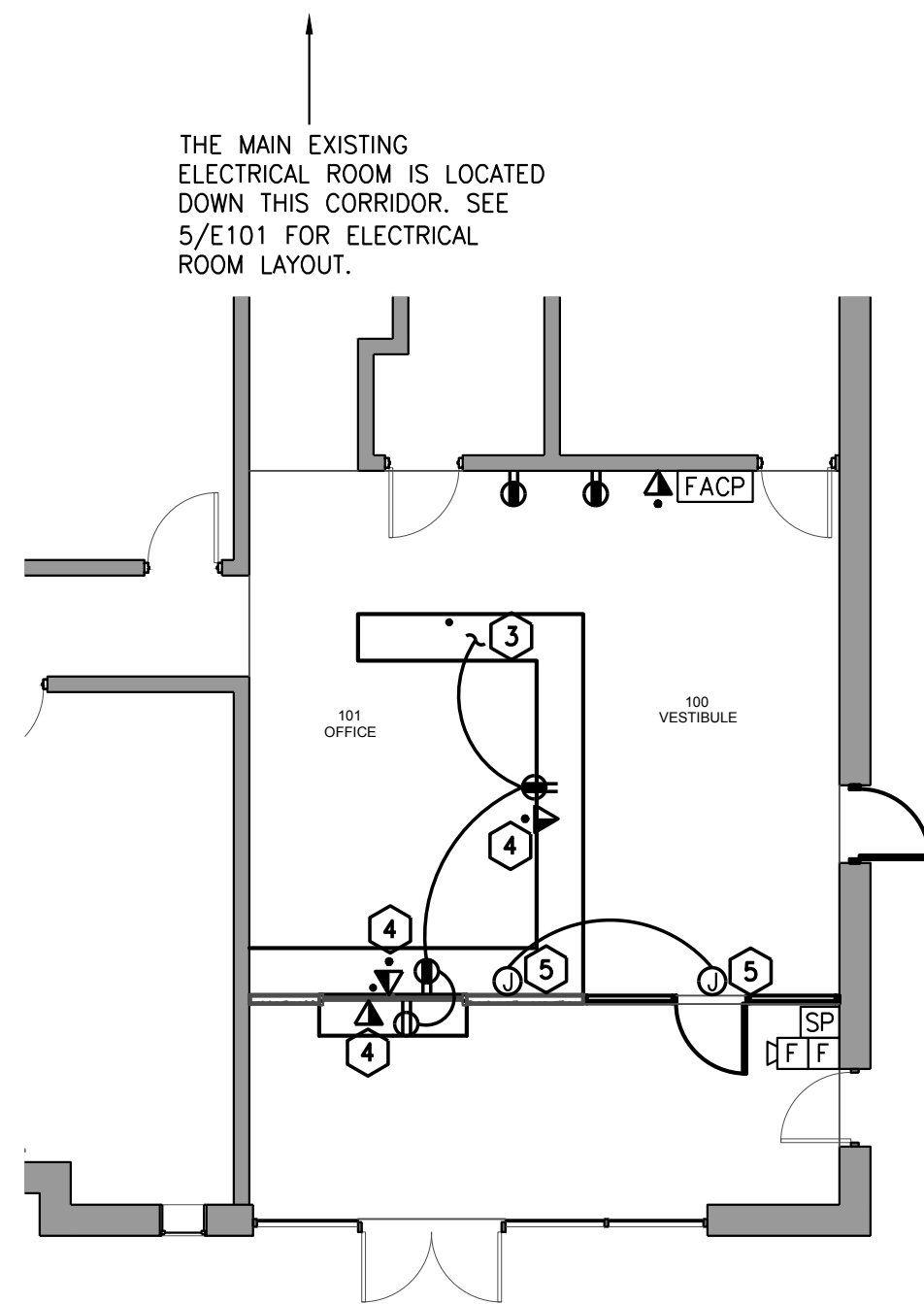
1 ELECTRICAL FLOOR PLAN - DEMOLITION  
SCALE: 1/8"=1'-0"

- DEMOLITION PLAN NOTES
- EXISTING CARD READER TO BE RELOCATED.
  - EXISTING LIGHT FIXTURE TO BE REMOVED.
  - EXISTING TO REMAIN.
  - EXISTING TO BE REMOVED.



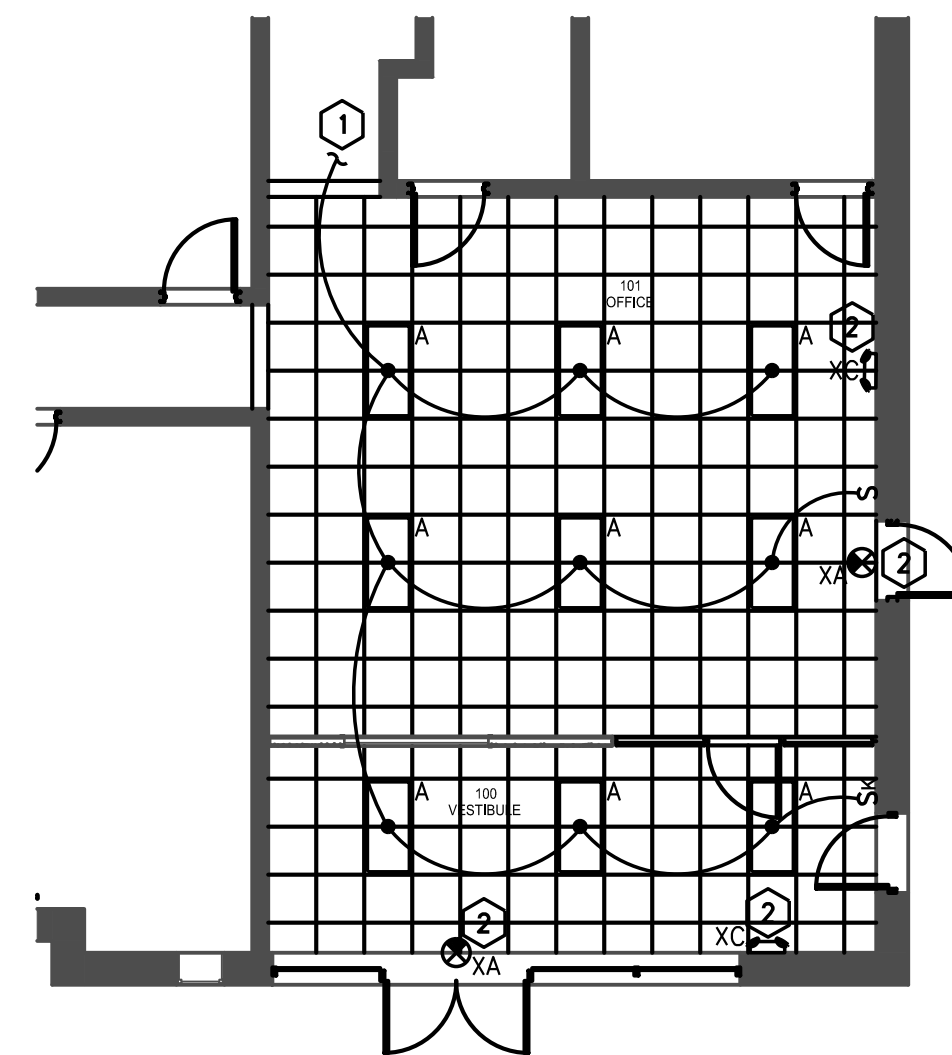
2 ELECTRICAL REFLECTED CEILING FLOOR PLAN - DEMOLITION  
SCALE: 1/8"=1'-0"

LIGHT FIXTURE SCHEDULE									
A	DESCRIPTION:	2'x 4' RECESSED LED TROFFER WITH A-12, 125 ACRYLIC PRISMATIC LENS, STEEL HOUSING WITH WHITE ENAMEL FINISH	LAMP INFO:	NO.	TYPE	BALLAST TYPE:	ELECTRONIC	NOTE(S):	
	MANUFACTURER:	LITHONIA	CATALOG SERIES:	2BLT4 40L ADP EZ1 LP840 FAC	EQUIVALENT MANUFACT:	APPROVED EQUIVALENT		TOTAL FIXT. WATTAGE:	32
XA	DESCRIPTION:	L.E.D. EXIT SIGN WITH WHITE POLYCARBONATE HOUSING AND RED LETTERS, WITH ARROWS AND NO. OF FACES AS SHOWN ON PLANS	LAMP INFO:	NO.	TYPE	BALLAST TYPE:	NA	NOTE(S):	
	MANUFACTURER:	SURE-LITES	CATALOG SERIES:	LPX	EQUIVALENT MANUFACT:	APPROVED EQUIVALENT		TOTAL FIXT. WATTAGE:	2.5
XC	DESCRIPTION:	EMERGENCY BATTERY PACK LIGHT FIXTURE, POLYCARBONATE HOUSING WITH WHITE FINISH, (2)-LED LIGHT HEADS.	LAMP INFO:	NO.	TYPE	BALLAST TYPE:	NA	NOTE(S):	
	MANUFACTURER:	SURE-LITES	CATALOG SERIES:	SEL50	EQUIVALENT MANUFACT:	APPROVED EQUIVALENT		TOTAL FIXT. WATTAGE:	1.0
LIGHT FIXTURE SCHEDULE NOTES									
1. VOLTAGES OF LIGHT FIXTURES SHALL BE COORDINATED WITH LIGHTING CIRCUIT TO WHICH FIXTURE IS CONNECTED.									
2. ALL EXIT SIGNS AND EMERGENCY LIGHTS SHALL BE CONNECTED TO EXISTING EMERGENCY GENERATOR CIRCUIT AHEAD OF LIGHTING CONTROLS.									
3. COORDINATE MOUNTING REQUIREMENTS OF ALL FIXTURES WITH ARCHITECTURAL PLANS AND FINISH SCHEDULES.									
4. FLANGES AND TRIMS SHALL MATCH CEILING TYPES.									

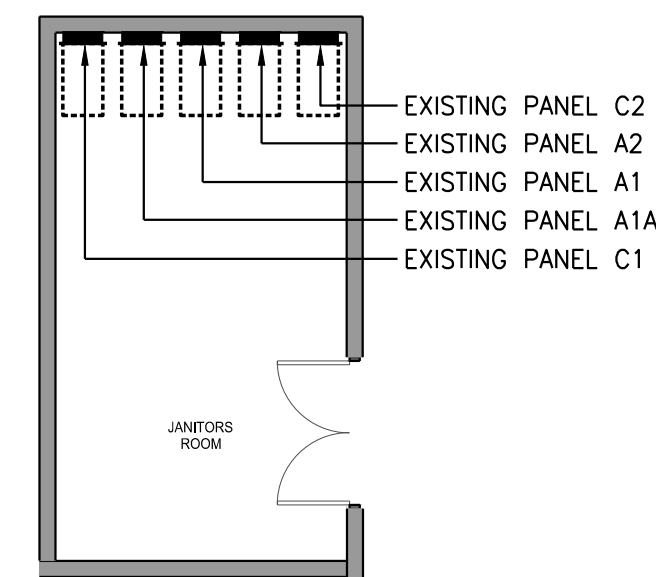


3 ELECTRICAL FLOOR PLAN - NEW WORK  
SCALE: 1/8"=1'-0"

- NEW WORK PLAN NOTES
- EXTEND EXISTING CONDUIT AND CONDUCTORS AS REQUIRED FOR CONNECTION OF NEW LAY-IN LIGHT FIXTURES.
  - CONNECT TO NEW LOCAL BRANCH CIRCUIT CONDUCTORS UN-SWITCHED.
  - CONNECT TO EXISTING RECEPTACLE BRANCH CIRCUIT CONDUCTORS.
  - INSTALL 3/4" EMPTY CONDUIT TO ABOVE ACCESSIBLE CEILING FOR CONNECTION TO EXISTING DATA/TELEPHONE SYSTEM.
  - JUNCTION BOX FOR CONNECTION TO REMOTE DOOR CONTROL EQUIPMENT.



4 ELECTRICAL REFLECTED CEILING FLOOR PLAN - NEW WORK  
SCALE: 1/8"=1'-0"



5 ELECTRICAL ROOM FLOOR PLAN - EXISTING  
SCALE: 1/8"=1'-0"