

BUILDING CODE SUMMARY

PROJECT DESCRIPTION

THE SCOPE OF WORK INCLUDES THE INTERIOR RENOVATION OF AN EXISTING (B) BUSINESS OFFICE BUILDING, ADDITION OF TWO NEW EXTERIOR EXITS ON FIRST FLOOR, AND ADDITION OF A NEW EXTERIOR RAMP. THE CONSTRUCTION WILL BE PHASED AS NOTED. OTHER PORTIONS OF THE BUILDING WILL REMAIN FULLY OCCUPIED DURING CONSTRUCTION OF EACH PHASE. STRUCTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL DESIGN IS UNDER SEPARATE CONTRACT WITH THE OWNER, BUT COORDINATED AND INCLUDED IN THIS SET FOR REFERENCE.

1X1 DESIGN IS NOT UNDER CONTRACT TO PROVIDE CONSTRUCTION ADMINISTRATION SERVICES.

PROJECT INFORMATION

| | |
|--------------------------------|--|
| NAME OF PROJECT: | COLUMBIA HOUSING AUTHORITY MAIN OFFICE BUILDING RENOVATION |
| ADDRESS: | 1917 HARDEN STREET, COLUMBIA, SOUTH CAROLINA 29204 |
| EXISTING OR PREVIOUS USE: | (B) BUSINESS, OFFICE BUILDING |
| PROPOSED USE: | (B) BUSINESS, OFFICE BUILDING |
| OWNER OR AUTH. AGENT: | ADAM DALENBURG |
| CONTACT INFO: | 803.254.3886 ; ADALENBURG@COLUMBIAHOUSINGSC.ORG |
| OWNED BY: | COLUMBIA HOUSING AUTHORITY |
| CODE ENFORCEMENT JURISDICTION: | CITY OF COLUMBIA |

PROJECT DESIGN TEAM INFORMATION

| | | | | | | | |
|----------------------------|--------------------------|------------------------|--|------------|--|----------------|--|
| LEAD DESIGN PROFESSIONAL: | 1X1 DESIGN, INC. | CONTACT: | | LICENSE #: | | PHONE #: | |
| DESIGNER: | FIRM | CONTACT: | | LICENSE #: | | PHONE #: | |
| ARCHITECTURAL: | 1X1 DESIGN, INC. | ASHELEY SCOTT ST. JOHN | | | | (803) 834-4048 | |
| CIVIL: | -- | -- | | | | -- | |
| STRUCTURAL: | H2L CONSULTING ENGINEERS | -- | | | | -- | |
| MECHANICAL: | H2L CONSULTING ENGINEERS | -- | | | | -- | |
| PLUMBING: | H2L CONSULTING ENGINEERS | -- | | | | -- | |
| FIRE-PROTECTION/STANDPIPE: | -- | -- | | | | -- | |
| ELECTRICAL: | H2L CONSULTING ENGINEERS | -- | | | | -- | |
| FIRE ALARM: | -- | -- | | | | -- | |
| OTHER: | -- | -- | | | | -- | |
| GENERAL CONTRACTOR: | -- | -- | | | | -- | |

CODE COMPLIANCE

| | |
|--------------------------------------|--|
| INTERNATIONAL BUILDING CODE: | 2018 EDITION WITH SOUTH CAROLINA MODIFICATIONS |
| INTERNATIONAL MECHANICAL CODE: | 2018 EDITION |
| INTERNATIONAL PLUMBING CODE: | 2018 EDITION |
| NATIONAL ELECTRICAL CODE: | 2018 EDITION |
| IECC: | 2009 EDITION CLIMATE ZONE: 3 |
| ICC/ANSI - 117.1: | 2017 EDITION |
| AMERICAN WITH DISABILITIES ACT (ADA) | |

BASIC BUILDING DATA

| | |
|--------------------|-----------------------|
| CONSTRUCTION TYPE: | V-B (EXISTING) |
| SPRINKLERS: | NO |
| STANDPIPES: | NO |
| FIRE DISTRICT: | NA |
| FLOOD HAZARD AREA: | NO |
| BUILDING HEIGHT: | +/-38 FEET (EXISTING) |

GROSS BUILDING AREA:

| FLOOR | EXISTING (SQ FT) | NEW (SQ FT) | SUB-TOTAL (SQ FT) |
|--------------|------------------|-------------|-------------------|
| FIRST FLOOR | 9879 | 0 | 9879 |
| SECOND FLOOR | 8962 | 124 | 9086 |
| TOTAL | 18,841 | 124 | 18,965 |

ALLOWABLE AREA

| | |
|----------------------------------|--|
| PRIMARY OCCUPANCY: | (B) BUSINESS |
| SECONDARY OCCUPANCY: | NA |
| ACCESSORY OCCUPANCY: | (A-3) BOARD ROOM - 929 SF / 9879 SF = 9.4%, WHICH IS < 10% PER SECTION 508.2.3 |
| INCIDENTAL USE (TABLE 509): | NA |
| SPECIAL USE (CHAPTER 4): | NA |
| SPECIAL PROVISIONS: | NA |
| MIXED OCCUPANCY: | NO SEPARATION: NA EXCEPTION: 508.2.4 |
| INCIDENTAL USE SEPARATION (509): | NO |

THIS AREA IS NOT EXEMPT AS A NON-SEPARATED USE (SEE EXCEPTIONS)

- NON-SEPARATED MIXED OCCUPANCY (508.3) The required type of construction for the building shall be determined by applying the height and area limitations for each of the occupancies for the entire building. The most restrictive type of construction, so determined shall apply to the building.
- SEPARATED MIXED OCCUPANCY (508.3) The required type of construction for each story, the area of the occupancy shall be such that the sum of the ratios for the area of each use divided by the allowable floor area for each use shall not exceed 1.0.

$$\frac{ACTUAL AREA OF OCCUPANCY A}{ALLOWABLE AREA OF OCCUPANCY A} + \frac{ACTUAL AREA OF OCCUPANCY B}{ALLOWABLE AREA OF OCCUPANCY B} \leq 1$$

| BUILDING DESCRIPTION & USE | (a) (A) TABLE 506.2 AREA NS | (b) (NS) TABLE 506.2 NON-SPRINKLERED BUILDING AREA | (c) (I) SECTION 506.3 FACTOR INCREASE FOR OPEN SPACE | (d) (S) BUILDING STORIES | (e) (A) MAXIMUM BUILDING AREA OR UNLIMITED | (f) ACTUAL BUILDING AREA |
|--|-----------------------------|--|--|--------------------------|--|--------------------------|
| V-B, (B) BUSINESS, MULTIFLOOR, UNSPRINKLERED | 9,000 | 9,000 | 0.25 | 2 | 22,500 | 18,965 |

Building perimeter fronting public way or open space having 20ft min width: $F = 251 \cdot 8^*$

Total building perimeter: $P = 503 \cdot 6^*$

Minimum width of public way: $W = 30 \cdot 0^*$

$I_p = [0.5 - 0.25]30/30$

$I_p = 0.25$

$A_p = [A_p + (N_s \times I_p)] \times S_p$

$A_p = [9,000 + (9,000 \times 0.25)] \times 2$

$A_p = [11,250] \times 2$

$A_p = 22,500$

ALLOWABLE HEIGHT

| | ALLOWABLE (TABLE 504.3, 504.4, 506.2) | SHOWN ON PLANS | CODE REFERENCE |
|---------------------------|---------------------------------------|------------------------|----------------|
| TYPE OF CONSTRUCTION | TYPE: V-B (EXISTING) | TYPE: V-B (EXISTING) | -- |
| BUILDING HEIGHT (FT) | +/- 38 FEET (EXISTING) | +/- 38 FEET (EXISTING) | -- |
| BUILDING HEIGHT (STORIES) | 2 STORIES (EXISTING) | 2 STORIES (EXISTING) | -- |

DESIGN OCCUPANT LOAD (TABLE 1004.1.2)

| FUNCTION OF SPACE | FLOOR AREA IN SQ FT PER OCCUPANT | AREA ON PLANS PER FLOOR | | | | | | | | TOTAL AREA (SF) | TOTAL OCCUPANTS PER FUNCTION |
|---------------------------|----------------------------------|-------------------------|--------------|---|---|---|---|---|---|-----------------|-------------------------------------|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | |
| ASSEMBLY - CONCENTRATED | 7 NET | 255 | 0 | | | | | | | 255 | 36.4 |
| ASSEMBLY - UNCONCENTRATED | 15 NET | 929 | 0 | | | | | | | 929 | 61.9 |
| BUSINESS AREAS | 150 SF | 3,308 | 5,197 | | | | | | | 8,505 | 56.7 |
| STORAGE AREAS | 300 SF | 416 | 372 | | | | | | | 788 | 2.6 |
| NON-OCCUPIED | NA | 4,971 | 3,517 | | | | | | | 8,478 | 0 |
| TOTAL | | 9,879 | 9,086 | | | | | | | 18,965 | 157.6 = 158 OCC (79 M, 79 F) |

FIRE PROTECTION REQUIREMENTS

| BUILDING ELEMENT | FIRE SEPARATION DISTANCE (FEET) | RATING | | DETAIL # AND SHEET | DESIGN # FOR RATED ASSEMBLY | DESIGN # FOR RATED PENETRATION | DESIGN # FOR RATED JOINTS |
|--|---------------------------------|--------|-----------------------------|--------------------|-----------------------------|--------------------------------|---------------------------|
| | | REQ'D | PROVIDED W/ --/-- REDUCTION | | | | |
| STRUCTURAL FRAMES, INCLUDING COLUMNS, GIRDERS, TRUSSES | -- | NA | -- | -- | -- | -- | -- |
| BEARING WALLS: | -- | -- | -- | -- | -- | -- | -- |
| EXTERIOR | -- | -- | -- | -- | -- | -- | -- |
| NORTH | -- | -- | -- | -- | -- | -- | -- |
| EAST | -- | -- | -- | -- | -- | -- | -- |
| WEST | -- | -- | -- | -- | -- | -- | -- |
| SOUTH | -- | -- | -- | -- | -- | -- | -- |
| INTERIOR | -- | -- | -- | -- | -- | -- | -- |
| NONBEARING WALLS AND PARTITIONS | -- | -- | -- | -- | -- | -- | -- |
| EXTERIOR WALLS | -- | -- | -- | -- | -- | -- | -- |
| NORTH | 10 ≤ X < 30 | 0 HOUR | 1 HOUR (XTR) | -- | -- | -- | -- |
| EAST | X ≥ 30 | 0 HOUR | 1 HOUR (XTR) | -- | -- | -- | -- |
| WEST | X ≥ 30 | 0 HOUR | 1 HOUR (XTR) | -- | -- | -- | -- |
| SOUTH | X ≥ 30 | 0 HOUR | 1 HOUR (XTR) | -- | -- | -- | -- |
| INTERIOR WALLS & PARTITIONS | -- | -- | -- | -- | -- | -- | -- |
| FLOOR CONSTRUCTION INCLUDING SUPPORTING BEAMS AND JOISTS | -- | 0 HOUR | 1 HOUR (XTR) | -- | -- | -- | -- |
| ROOF CONSTRUCTION INCLUDING SUPPORTING BEAMS AND JOISTS | -- | 0 HOUR | 0 HOUR (XTR) | -- | -- | -- | -- |
| SHAFT ENCLOSURES-EXIT | -- | 1 HOUR | 1 HOUR (XTR) | -- | -- | -- | -- |
| SHAFT ENCLOSURES-OTHER | -- | 1 HOUR | 1 HOUR (XTR) | -- | -- | -- | -- |
| CORRIDOR SEPARATION | -- | NA | -- | -- | -- | -- | -- |
| OCCUPANCY SEPARATION | -- | NA | -- | -- | -- | -- | -- |
| PARTY/FIRE WALL SEPARATION | -- | NA | -- | -- | -- | -- | -- |
| SMOKE BARRIER SEPARATION | -- | NA | -- | -- | -- | -- | -- |
| TENANT SEPARATION | -- | NA | -- | -- | -- | -- | -- |
| INCIDENTAL USE SEPARATION | -- | NA | -- | -- | -- | -- | -- |

FIRE PROTECTION REQUIREMENTS

| | | |
|--------------------------|-----|--|
| EMERGENCY LIGHTING: | YES | NOTE: PER 2018 INTERNATIONAL FIRE CODE SECTION 509.1, DOORS TO ROOMS CONTAINING FIRE PROTECTION EQUIPMENT, CONTROLS FOR AIR CONDITIONING SYSTEMS, SPRINKLER RISERS, AND VALVES, OR OTHER FIRE DETECTION, SUPPRESSION, OR CONTROL ELEMENTS, SHALL BE IDENTIFIED FOR THE USE OF THE FIRE DEPARTMENT WITH DURABLE MATERIALS, PERMANENTLY INSTALLED, AND READILY VISIBLE. INSTALL "SPRINKLER RISER ROOM" AND "FIRE ALARM CONTROL PANEL" SIGNS. |
| EXIT SIGNS: | YES | |
| FIRE ALARM: | NO | |
| SMOKE DETECTION SYSTEMS: | NO | |
| PANIC HARDWARE: | NO | |

LIFE SAFETY PLAN REQUIREMENTS

| | |
|-------------------------------------|--|
| LIFE SAFETY PLAN SHEET #: | G101 |
| LIFE SAFETY PLAN INFORMATION: | |
| INCLUDED | N/A FOR PROJECT |
| <input checked="" type="checkbox"/> | FIRE AND/OR SMOKE RATED WALL LOCATIONS (CHAPTER 7) |
| <input checked="" type="checkbox"/> | ASSUMED AND REAL PROPERTY LINES LOCATIONS |
| <input checked="" type="checkbox"/> | EXTERIOR WALL OPENING AREA WITH RESPECT TO DISTANCE TO ASSUMED PROPERTY LINES (705.8) |
| <input checked="" type="checkbox"/> | EXISTING STRUCTURES WITHIN 30' OF PROPOSED BUILDING |
| <input checked="" type="checkbox"/> | OCCUPANCY TYPES FOR AREA AS IT RELATES TO OCCUPANT LOAD CALCULATIONS (TABLE 1004.1.2) |
| <input checked="" type="checkbox"/> | OCCUPANT LOADS FOR EACH AREA |
| <input checked="" type="checkbox"/> | EXIT ACCESS TRAVEL DISTANCES (1017) |
| <input checked="" type="checkbox"/> | COMMON PATH OF TRAVEL DISTANCES (1006.2.1 & 1029.8) |
| <input checked="" type="checkbox"/> | DEAD END LENGTHS (1020.4) |
| <input checked="" type="checkbox"/> | CLEAR EXIT WIDTH FOR EACH EXIT DOOR |
| <input checked="" type="checkbox"/> | MAXIMUM OCCUPANT LOAD CAPACITY EACH EXIT DOOR CAN ACCOMMODATE BASED ON EGRESS WIDTH (1005.1) |
| <input checked="" type="checkbox"/> | ACTUAL OCCUPANT LOAD FOR EACH EXIT DOOR |
| <input checked="" type="checkbox"/> | SEPARATE SCHEMATIC PLAN INDICATING WHERE FIRE RATED FLOOR/CEILING AND/OR ROOF STRUCTURE IS PROVIDED FOR PURPOSES OF OCCUPANCY SEPARATION |
| <input type="checkbox"/> | LOCATION OF DOORS WITH PANIC HARDWARE (1010.1.10) |
| <input type="checkbox"/> | LOCATION OF DOORS WITH DELAYED EGRESS LOCKS AND AMOUNT OF DELAY (1010.1.10) |
| <input type="checkbox"/> | LOCATION OF DOORS WITH ELECTROMAGNETIC EGRESS LOCKS (1010.1.9.7) |
| <input type="checkbox"/> | LOCATION OF DOORS EQUIPPED WITH HOLD-OPEN DEVICES |
| <input type="checkbox"/> | LOCATION OF EMERGENCY ESCAPE WINDOWS (1030) |
| <input type="checkbox"/> | THE SQUARE FOOTAGE OF EACH FIRE AREA (901.7, 903) |
| <input type="checkbox"/> | THE SQUARE FOOTAGE OF EACH SMOKE COMPARTMENT (407.5) |
| <input type="checkbox"/> | NOTE ANY CODE EXCEPTIONS OR TABLE NOTES THAT MAY HAVE BEEN UTILIZED REGARDING THE ITEMS ABOVE. |
| <input type="checkbox"/> | NOTES: NA |

EXIT REQUIREMENTS

| FLOOR, ROOM OR SPACE | NUMBER AND ARRANGEMENT OF EXITS ² | | TRAVEL DISTANCE | | ARRANGEMENTS MEANS OF EGRESS (SECTION 1007.1.1) ^{1,3} | |
|----------------------|--|----------------|--|---------------------------------------|--|--------------------------------|
| | REQ'D | SHOWN ON PLANS | ALLOWABLE TRAVEL DISTANCE (TABLE 1017.2) | ACTUAL TRAVEL DISTANCE SHOWN ON PLANS | REQUIRED DISTANCE BETWEEN EXIT DOORS | ACTUAL DISTANCE SHOWN ON PLANS |
| FIRST FLOOR | 2 | 6 | 200' - 0" | 83' - 0" | 95' - 5 1/2" | 103' - 3" |
| SECOND FLOOR | 2 | 2 | 200' - 0" | 131' - 6" | 95' - 5 1/2" | 72' - 2" |

¹ Corridor dead ends (section 1020.4)

² Single exits (from spaces - table 1006.2.1; from story - tables 1006.3.1 and 1006.3.2(2))

³ Common path of travel (table 1006.2.1)

EXIT WIDTH

| USE GROUP OR SPACE DESIGNATION | OCCUPANT LOAD BASED ON 1004.1.2 | EGRESS WIDTH PER OCCUPANT (SECTION 1005) | REQUIRED WIDTH | | ACTUAL EXIT WIDTH SHOWN ON PLANS | |
|--------------------------------|---------------------------------|--|----------------|----------------|----------------------------------|----------------|
| | | | STAIRS | OTHER ELEMENTS | STAIRS | OTHER ELEMENTS |
| FIRST FLOOR | 122 | 0.3 / 0.2 | 36.6" | 24.4" | NA | 224" |
| SECOND FLOOR | 36 | 0.3 / 0.2 | 10.8" | 7.2" | 88" | 64" |

PLUMBING FIXTURE REQUIREMENTS (TABLE 2902.1)

| | | | | | | | | |
|------------------------|---------------|---------|------------|---------------|--------------------|----|-----|-----|
| | WATER CLOSETS | URINALS | LAVATORIES | SHOWERS /TUBS | DRINKING FOUNTAINS | | | |
| | MALE: | FEMALE: | MALE: | FEMALE: | REGULAR: ANS/JADA: | | | |
| REQUIRED: (79 M, 79 F) | 2.1 | 2.1 | -- | 1.5 | 1.5 | -- | 1.6 | 1.6 |
| PROVIDED: (79 M, 79 F) | *5 | *11 | -- | *3 | *8 | -- | 2 | 2 |

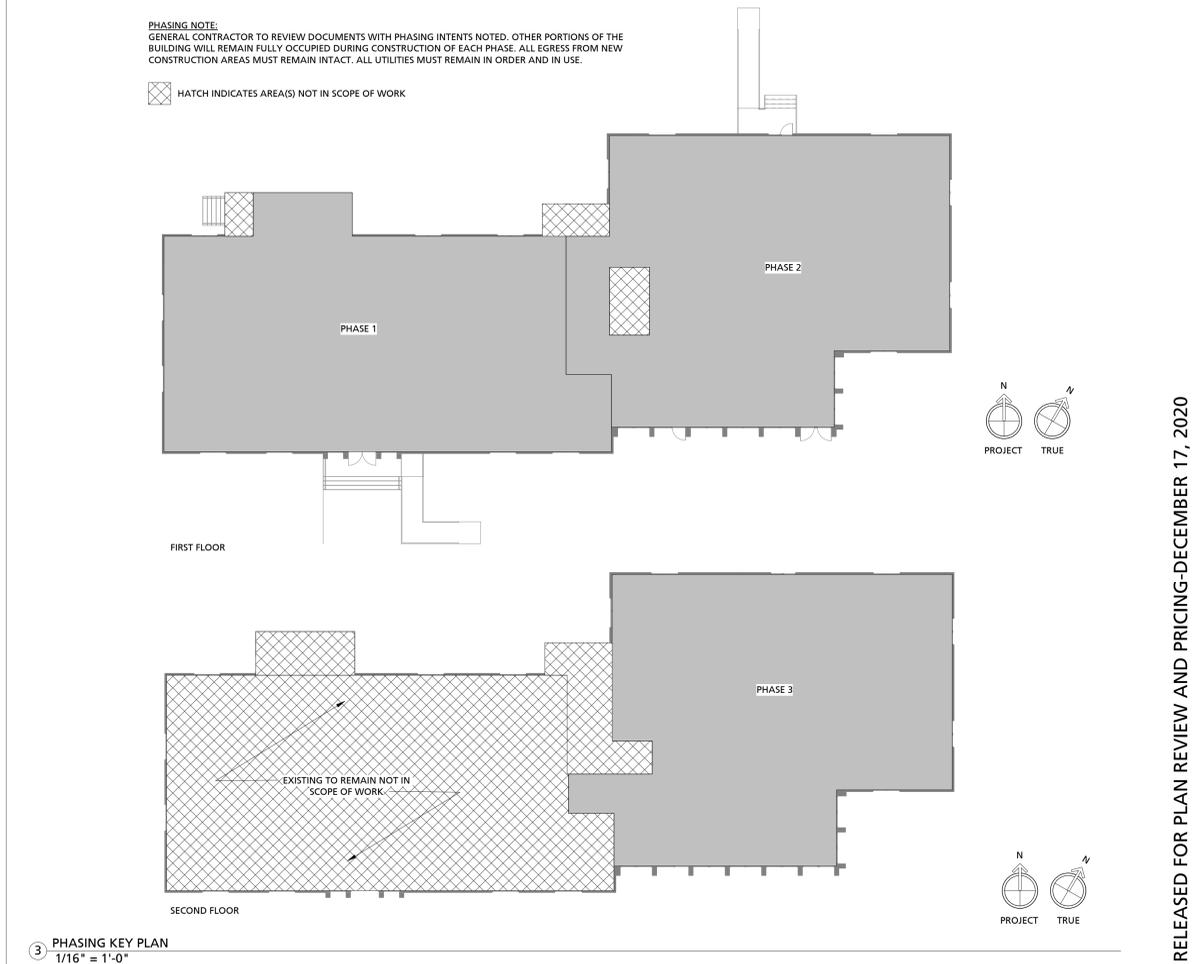
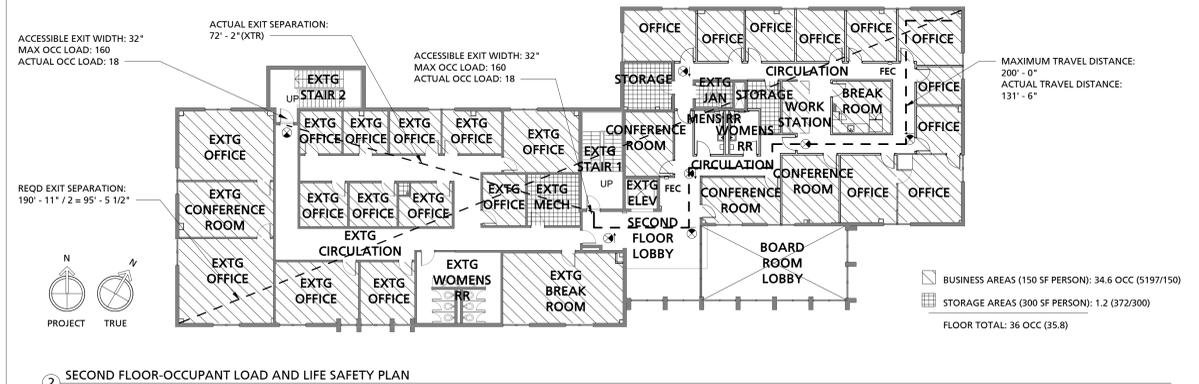
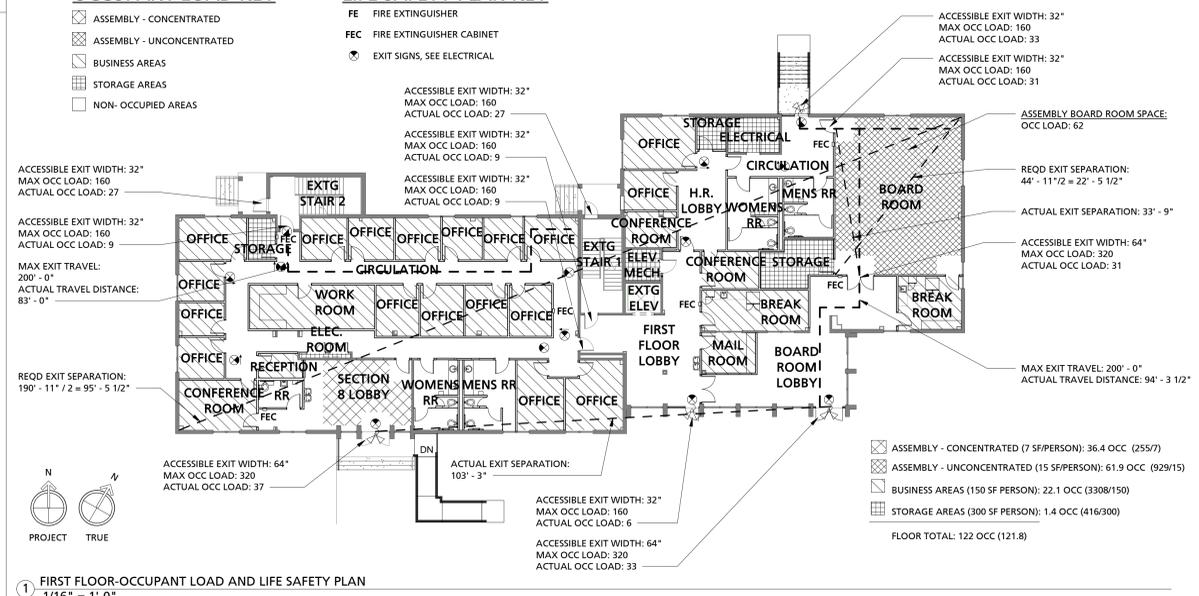
*ONE ADDITIONAL FIXTURE TO THIS NUMBER PROVIDED WITH AN ACCESSIBLE RESTROOM ON THE FIRST FLOOR, RR 119

OCCUPANT LOAD KEY

- ASSEMBLY - CONCENTRATED
- ASSEMBLY - UNCONCENTRATED
- BUSINESS AREAS
- STORAGE AREAS
- NON- OCCUPIED AREAS

LIFE SAFETY PLAN KEY

- FE FIRE EXTINGUISHER
- FEC FIRE EXTINGUISHER CABINET
- EXIT SIGNS, SEE ELECTRICAL



1X1 DESIGN

221 PICKENS STREET (29205)
 POST OFFICE BOX 3875
 COLUMBIA, SOUTH CAROLINA 29250
 803.834.4048 p
 803.834.4082 f
 WWW.1X1DESIGN.COM

COLUMBIA HOUSING AUTHORITY

COLUMBIA HOUSING AUTHORITY MAIN OFFICE BUILDING RENOVATION
 1917 HARDEN STREET, COLUMBIA, SOUTH CAROLINA 29204

CLIENT NAME: PROJECT NAME: PROJECT ADDRESS:

REVISIONS

| No. | Description | Date |
|-----|-------------|------|
| | | |

PROJECT NUMBER: C-19-066-1

G101

SHEET NAME: BUILDING CODE SUMMARY

DATE: 12.17.20

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DEMOLITION KEY NOTE LEGEND

FLOOR PLAN:

- D1 REMOVE AND DISPOSE OF ALL INTERIOR FINISHES AND DEBRIS, THIS ROOM. CLEAN AREA TO RECEIVE NEW CONSTRUCTION AND FINISHES
- D2 ALL REMAINING FURNITURE IN SPACE TO BE REMOVED AND DISPOSED BY GC. GC TO COORDINATE WITH OWNER ON REMOVAL OF ALL ITEMS PRIOR TO DISPOSAL
- D3 REMOVE EXISTING WALL FOR NEW INTERIOR OPENING. SEE RENOVATION PLANS AND INTERIOR ELEVATIONS FOR EXTENT
- D4 EXISTING PLUMBING FIXTURES, TO BE REMOVED THIS AREA
- D5 EXISTING STOREFRONT, TO BE PARTIALLY REMOVED FOR NEW EXTERIOR ENTRY, SEE RENO PLANS AND RENO ELEVATIONS FOR EXTENT
- D6 EXTG STAIR TREADS TO BE REMOVED AND DISPOSED, THIS STAIRCASE ONLY (STAIR 2), PREPARE SURFACE TO RECEIVE NEW TREAD FINISH, SEE RENOVATION NOTES
- D7 PREPARE EXTG WALLS AND CEILING TO RECEIVE NEW PAINT FINISH, SEE RENOVATION NOTES. EXTG FLOORING TO REMAIN.

REFLECTED CEILING PLAN:

- D8 EXTG MECHANICAL AND ELECTRICAL EQUIPMENT TO BE REMOVED AND DISPOSED, SEE MECHANICAL AND ELECTRICAL
- D9 EXTG CEILING TILES AND GRID TO BE REMOVED AND DISPOSED

DEMOLITION LEGEND

- NOTE: SEE DEMOLITION TAGS AND NOTES FOR MORE DETAILS.
- EXISTING ELEMENT TO BE REMOVED
 - EXISTING WALL TO REMAIN
 - EXISTING WALL TO BE REMOVED
 - ▨ HATCH INDICATES AREA NOT WITHIN SCOPE OF WORK
 - EXISTING DOOR TO BE REMOVED
 - EXISTING STOREFRONT, TO BE REMOVED
 - EXISTING ELECTRICAL PANEL, TO REMAIN

GENERAL DEMOLITION NOTES

1. EXISTING CONDITIONS BASED ON INFORMATION PROVIDED BY EXISTING PLANS, OWNER, CONSTRUCTION MANAGER, LANDLORD AND/OR INFORMATION GATHERED DURING GENERAL FIELD OBSERVATION. IF GC DISCOVERS EXISTING CONDITIONS DIFFER FROM THOSE SHOWN, CONTACT OWNER OR ARCHITECT IMMEDIATELY.
2. GENERAL CONTRACTOR TO PROTECT ALL ADJACENT SURFACES TO REMAIN FROM DAMAGE DURING CONSTRUCTION. GENERAL CONTRACTOR TO REPAIR/REPLACE ANY ADJACENT SURFACES DAMAGED DURING CONSTRUCTION TO MATCH ORIGINAL CONDITIONS.
3. GENERAL CONTRACTOR TO FIELD VERIFY CONDITIONS PRIOR TO START OF CONSTRUCTION.
4. ALL EXISTING EXTERIOR ALUMINUM STOREFRONT TO REMAIN, LINO.
5. DO NOT REMOVE MORE EXTERIOR WALL OR ROOF MATERIAL THAN WHAT CAN BE COVERED IN ONE DAY, OR PROVIDE TEMPORARY ENCLOSURE TO ENSURE BUILDING REMAINS WATER & WEATHER-TIGHT.

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. PROCEED WITH SELECTIVE DEMOLITION SYSTEMATICALLY, FROM HIGHER TO LOWER LEVEL, OR AS REQUIRED BY THE TIME FRAME OF THE PROJECT.
2. CUT OR DRILL FROM THE EXPOSED OR FINISHED SIDE INTO CONCEALED SURFACES TO AVOID MARRING EXISTING FINISHED SURFACES.
4. DO NOT USE CUTTING TORCHES UNTIL WORK AREA IS CLEARED OF FLAMMABLE MATERIALS. MAINTAIN PORTABLE FIRE SUPPRESSION DEVICES DURING FLAME-CUTTING OPERATIONS.
5. MAINTAIN ADEQUATE VENTILATION WHEN USING CUTTING TORCHES.
6. REMOVE DECAYED, VERMIN-INFESTED, OR OTHERWISE DANGEROUS OR UNSUITABLE MATERIALS AND PROMPTLY DISPOSE OF OFF-SITE. NOTIFY ARCHITECT IMMEDIATELY OF DAMAGED OR DANGEROUS CONDITIONS.
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. EXCEPT FOR ITEMS OR MATERIALS INDICATED TO BE REUSED, SALVAGED, REINSTALLED, OR OTHERWISE INDICATED TO REMAIN, REMOVE DEMOLISHED MATERIALS FROM SITE AND LEGALLY DISPOSE OF THEM IN AN EPA-APPROVED LANDFILL OR OTHER APPROPRIATE DISPOSAL/RECYCLING SERVICE. DO NOT ALLOW DEMOLISHED MATERIALS TO ACCUMULATE ON-SITE.
9. REMOVE AND LEGALLY DISPOSE ALL EXISTING PLANT MATERIAL.

UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

1. EXISTING SERVICES/SYSTEMS: MAINTAIN EXISTING SERVICES AND PROTECT THEM AGAINST DAMAGE DURING SELECTIVE DEMOLITION OPERATIONS.
2. SERVICES/SYSTEM REQUIREMENTS: LOCATE, IDENTIFY, DISCONNECT AND SEAL OR CAP OFF INDICATED UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS SERVING AREAS TO BE SELECTIVELY DEMOLISHED.

ELECTRICAL DEMOLITION NOTES

1. COORDINATE DEMOLITION WORK WITH FACILITY OPERATIONS AND ALL OTHER TRADES. IDENTIFY SALVAGE ITEMS IN COOPERATION WITH OWNER.
2. ERECT, AND MAINTAIN TEMPORARY SAFEGUARDS, INCLUDING WARNING SIGNS AND LIGHTS, BARRICADES, AND SIMILAR MEASURES, FOR PROTECTION OF THE OWNER, CONTRACTOR'S EMPLOYEES, AND EXISTING IMPROVEMENTS TO REMAIN.
3. PROVIDE TEMPORARY ELECTRICAL POWER AND EMERGENCY LIGHTING AS REQUIRED.
4. ENSURE ALL CIRCUITS AND EQUIPMENT TO BE DEMOLISHED ARE SAFELY DE-ENERGIZED PRIOR TO STARTING WORK. DISCONNECT ELECTRICAL SYSTEMS IN WALLS, FLOORS, AND CEILINGS SCHEDULED FOR REMOVAL. REMOVE EXPOSED WIRING AND CONDUIT IN CIRCUITS DESIGNATED TO BE ABANDONED. CUT CONCEALED CONDUIT FLUSH WITH WALLS AND FLOORS, PLUG CONDUITS AND PATCH SURFACES.
5. REMOVE ALL DISCARDED MATERIALS PER THESE SPECIFICATIONS AND OWNER'S INSTRUCTION. RELOCATE, AND EXTEND EXISTING INSTALLATIONS TO ACCOMMODATE NEW CONSTRUCTION.
6. KEEP ELECTRICAL POWER AND LIGHTING PANELS AS SPECIFIED ON THESE DRAWINGS. RING OUT CIRCUITS IN EXISTING PANELS WHERE ADDITIONAL CIRCUITS ARE NEEDED. REUSE AVAILABLE CIRCUITS, INSTALL NEW CIRCUIT BREAKERS AS REQUIRED - SEE ELECTRICAL DRAWINGS. CLEAN AND REPAIR EXISTING EQUIPMENT TO REMAIN, BE SALVAGED, OR TO BE REINSTALLED.
7. TESTING: TEST ALL MAIN SERVICE AND PANELBOARD FEEDER WIRING TO REMAIN IN ACCORDANCE WITH REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION. REMOVE ANY AND ALL EXISTING WIRE NO LONGER IN USE.
8. PERFORM VISUAL AND MECHANICAL TEST OF CIRCUIT BREAKERS PER REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION. CIRCUIT BREAKERS EXHIBITING ANY UNUSUAL CHARACTERISTIC SHALL BE SUBJECTED TO ELECTRICAL TESTS PER THE SAME REQUIREMENTS. REPLACE DEFECTIVE CIRCUIT BREAKERS WITH NEW OF SAME KIND, OR PER THE REQUIREMENTS OF THE ELECTRICAL ENGINEER, WHICHEVER IS MORE STRINGENT.

CONCRETE

1. DEMOLISH IN SECTIONS. CUT CONCRETE FULL DEPTH AT JUNCTURE WITH CONSTRUCTION TO REMAIN AND AT REGULAR INTERVALS, USING POWER-DRIVEN SAW, THEN REMOVE CONCRETE BETWEEN SAW CUTS.
2. AT SLAB ON GRADE, SAW-CUT PERIMETER OF AREA TO BE DEMOLISHED, THEN BREAK UP AND REMOVE.

MASONRY

1. DEMOLISH IN SMALL SECTIONS. CUT MASONRY AT JUNCTURES WITH CONSTRUCTION TO REMAIN, USING POWER-DRIVEN SAW, THEN REMOVE MASONRY BETWEEN SAW CUTS.

FLOOR COVERINGS

1. REMOVE FLOOR COVERINGS AND ADHESIVE ACCORDING TO RECOMMENDATIONS BY THE MANUFACTURER AND IN A MANNER IN WHICH PREPARES SURFACE FOR INSTALLATION OF NEW MATERIAL, PER THE MANUFACTURER'S RECOMMENDATIONS OF THE NEW MATERIAL.

CLEANING

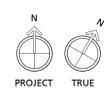
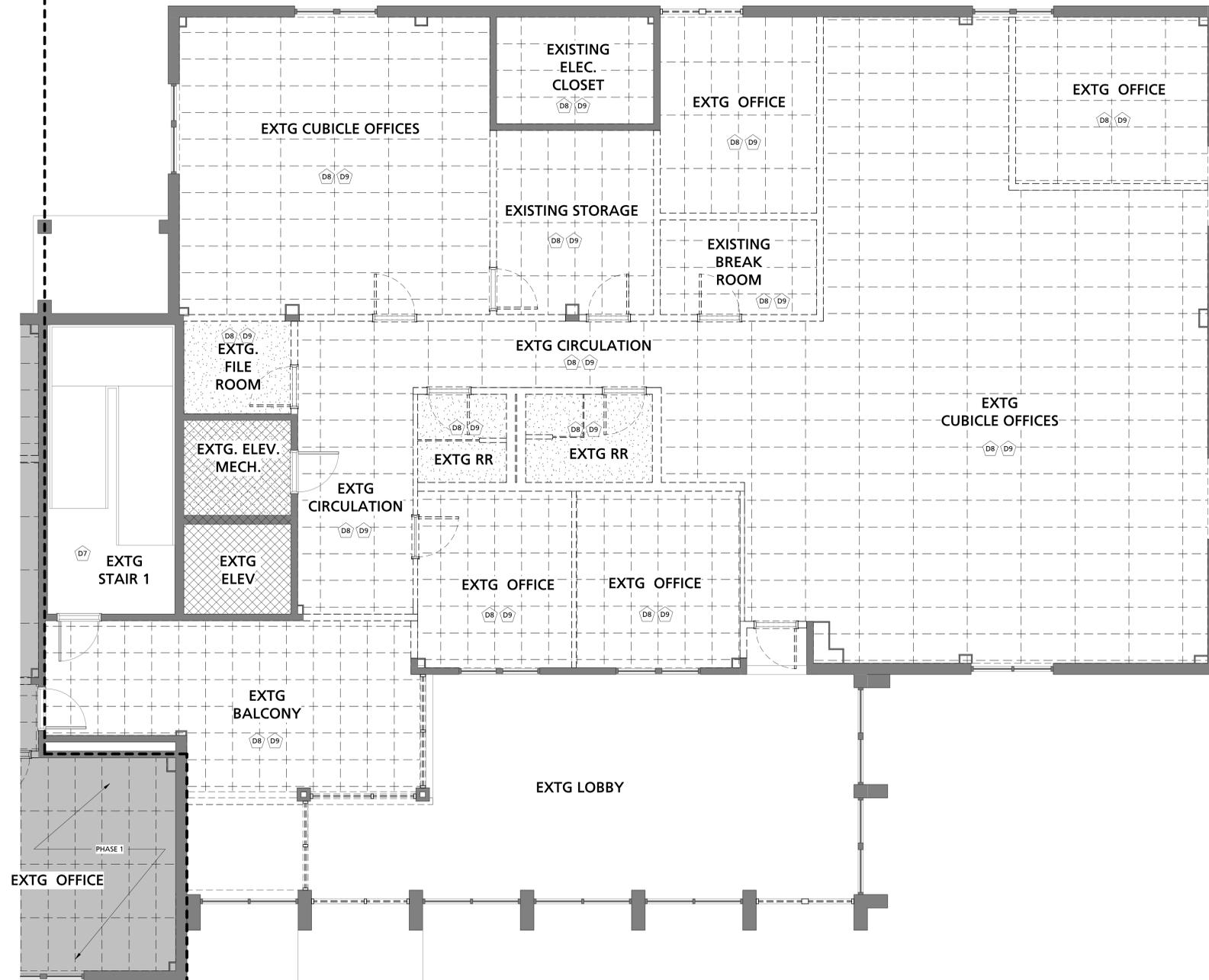
1. CLEAN ADJACENT STRUCTURES AND IMPROVEMENTS OF DUST, DIRT AND DEBRIS CAUSED BY SELECTIVE DEMOLITION OPERATIONS. RETURN ADJACENT AREAS TO CONDITION EXISTING BEFORE SELECTIVE DEMOLITION OPERATIONS BEGAN AND SUITABLE FOR OWNER OCCUPATION.

TEMPORARY SHORING

1. 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.

PHASE 1:
REFER TO
SHEET AD201.A

PHASE 2:
REFER TO
SHEET AD201.B



PHASE 1:
REFER TO
SHEET AD201.A

PHASE 2:
REFER TO
SHEET AD201.B

1 FIRST FLOOR- PHASE 2 DEMOLITION RCP
1/4" = 1'-0"

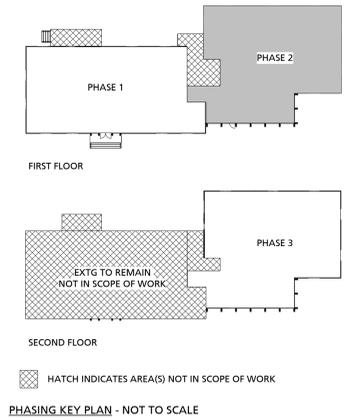


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COLUMBIA HOUSING AUTHORITY
 COLUMBIA HOUSING AUTHORITY MAIN OFFICE BUILDING RENOVATION
 1917 HARDEN STREET, COLUMBIA, SOUTH CAROLINA 29204

| | |
|-----------------|--|
| CLIENT NAME | COLUMBIA HOUSING AUTHORITY |
| PROJECT NAME | COLUMBIA HOUSING AUTHORITY MAIN OFFICE BUILDING RENOVATION |
| PROJECT ADDRESS | 1917 HARDEN STREET, COLUMBIA, SOUTH CAROLINA 29204 |
| PROJECT NUMBER | C-19-066-1 |
| SHEET NUMBER | AD201.B |
| SHEET NAME | DEMOLITION RCP |
| DATE | 12.17.20 |

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DEMOLITION KEY NOTE LEGEND

FLOOR PLAN:

- (D1) REMOVE AND DISPOSE OF ALL INTERIOR FINISHES AND DEBRIS, THIS ROOM. CLEAN AREA TO RECEIVE NEW CONSTRUCTION AND FINISHES
- (D2) ALL REMAINING FURNITURE IN SPACE TO BE REMOVED AND DISPOSED BY GC. GC TO COORDINATE WITH OWNER ON REMOVAL OF ALL ITEMS PRIOR TO DISPOSAL
- (D3) REMOVE EXISTING WALL FOR NEW INTERIOR OPENING. SEE RENOVATION PLANS AND INTERIOR ELEVATIONS FOR EXTENT
- (D4) EXISTING PLUMBING FIXTURES, TO BE REMOVED THIS AREA
- (D5) EXISTING STOREFRONT, TO BE PARTIALLY REMOVED FOR NEW EXTERIOR ENTRY, SEE RENO PLANS AND RENO ELEVATIONS FOR EXTENT
- (D6) EXTG STAIR TREADS TO BE REMOVED AND DISPOSED, THIS STAIRCASE ONLY (STAIR 2). PREPARE SURFACE TO RECEIVE NEW TREAD FINISH, SEE RENOVATION NOTES
- (D7) PREPARE EXTG WALLS AND CEILING TO RECEIVE NEW PAINT FINISH, SEE RENOVATION NOTES. EXTG FLOORING TO REMAIN.

REFLECTED CEILING PLAN:

- (D8) EXTG MECHANICAL AND ELECTRICAL EQUIPMENT TO BE REMOVED AND DISPOSED, SEE MECHANICAL AND ELECTRICAL
- (D9) EXTG CEILING TILES AND GRID TO BE REMOVED AND DISPOSED

DEMOLITION LEGEND

NOTE: SEE DEMOLITION TAGS AND NOTES FOR MORE DETAILS.

- EXISTING ELEMENT TO BE REMOVED
- EXISTING WALL TO REMAIN
- EXISTING WALL TO BE REMOVED
- HATCH INDICATES AREA NOT WITHIN SCOPE OF WORK
- EXISTING DOOR TO BE REMOVED
- EXISTING STOREFRONT, TO BE REMOVED
- EXISTING ELECTRICAL PANEL, TO REMAIN

GENERAL DEMOLITION NOTES

1. EXISTING CONDITIONS BASED ON INFORMATION PROVIDED BY EXISTING PLANS, OWNER, CONSTRUCTION MANAGER, LANDLORD AND/OR INFORMATION GATHERED DURING GENERAL FIELD OBSERVATION. IF GC DISCOVERS EXISTING CONDITIONS DIFFER FROM THOSE SHOWN, CONTACT OWNER OR ARCHITECT IMMEDIATELY.
2. GENERAL CONTRACTOR TO PROTECT ALL ADJACENT SURFACES TO REMAIN FROM DAMAGE DURING CONSTRUCTION. GENERAL CONTRACTOR TO REPAIR/REPLACE ANY ADJACENT SURFACES DAMAGED DURING CONSTRUCTION TO MATCH ORIGINAL CONDITIONS.
3. GENERAL CONTRACTOR TO FIELD VERIFY CONDITIONS PRIOR TO START OF CONSTRUCTION.
4. ALL EXISTING EXTERIOR ALUMINUM STOREFRONT TO REMAIN, UNO.
5. DO NOT REMOVE MORE EXTERIOR WALL OR ROOF MATERIAL THAN WHAT CAN BE COVERED IN ONE DAY, OR PROVIDE TEMPORARY ENCLOSURE TO ENSURE BUILDING REMAINS WATER & WEATHER-TIGHT.

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. PROCEED WITH SELECTIVE DEMOLITION SYSTEMATICALLY, FROM HIGHER TO LOWER LEVEL, OR AS REQUIRED BY THE TIME FRAME OF THE PROJECT.
2. CUT OR DRILL FROM THE EXPOSED OR FINISHED SIDE INTO CONCEALED SURFACES TO AVOID MARRING EXISTING FINISHED SURFACES.
3. DO NOT USE CUTTING TORCHES UNTIL WORK AREA IS CLEARED OF FLAMMABLE MATERIALS. MAINTAIN PORTABLE FIRE SUPPRESSION DEVICES DURING FLAME-CUTTING OPERATIONS.
4. MAINTAIN ADEQUATE VENTILATION WHEN USING CUTTING TORCHES.
5. REMOVE DECAYED, VERMIN-INFESTED, OR OTHERWISE DANGEROUS OR UNSUITABLE MATERIALS AND PROMPTLY DISPOSE OF OFF-SITE. NOTIFY ARCHITECT IMMEDIATELY OF DAMAGED OR DANGEROUS CONDITIONS.
6. LOCATE SELECTIVE DEMOLITION EQUIPMENT AND REMOVE DEBRIS AND MATERIALS SO AS NOT TO IMPOSE EXCESSIVE LOADS ON SUPPORTING WALLS, FLOORS OR FRAMING.
7. DISPOSE OF DEMOLISHED ITEMS AND MATERIALS PROMPTLY. EXCEPT FOR ITEMS OR MATERIALS INDICATED TO BE REUSED, SALVAGED, REINSTALLED, OR OTHERWISE INDICATED TO REMAIN, REMOVE DEMOLISHED MATERIALS FROM SITE AND LEGALLY DISPOSE OF THEM IN AN EPA-APPROVED LANDFILL OR OTHER APPROPRIATE DISPOSAL/RECYCLING SERVICE. DO NOT ALLOW DEMOLISHED MATERIALS TO ACCUMULATE ON-SITE.
8. REMOVE AND LEGALLY DISPOSE ALL EXISTING PLANT MATERIAL.

UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

1. EXISTING SERVICES/SYSTEMS: MAINTAIN EXISTING SERVICES AND PROTECT THEM AGAINST DAMAGE DURING SELECTIVE DEMOLITION OPERATIONS.
2. SERVICES/SYSTEM REQUIREMENTS: LOCATE, IDENTIFY, DISCONNECT AND SEAL OR CAP OFF INDICATED UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS SERVING AREAS TO BE SELECTIVELY DEMOLISHED.

ELECTRICAL DEMOLITION NOTES

1. COORDINATE DEMOLITION WORK WITH FACILITY OPERATIONS AND ALL OTHER TRADES. IDENTIFY SALVAGE ITEMS IN COOPERATION WITH OWNER.
2. ERECT, AND MAINTAIN TEMPORARY SAFEGUARDS, INCLUDING WARNING SIGNS AND LIGHTS, BARRICADES, AND SIMILAR MEASURES, FOR PROTECTION OF THE OWNER, CONTRACTOR'S EMPLOYEES, AND EXISTING IMPROVEMENTS TO REMAIN.
3. PROVIDE TEMPORARY ELECTRICAL POWER AND EMERGENCY LIGHTING AS REQUIRED.
4. ENSURE ALL CIRCUITS AND EQUIPMENT TO BE DEMOLISHED ARE SAFELY DE-ENERGIZED PRIOR TO STARTING WORK. DISCONNECT ELECTRICAL SYSTEMS IN WALLS, FLOORS, AND CEILINGS SCHEDULED FOR REMOVAL. REMOVE EXPOSED WIRING AND CONDUIT IN CIRCUITS DESIGNATED TO BE ABANDONED. CUT CONCEALED CONDUIT FLUSH WITH WALLS AND FLOORS, PLUG CONDUITS AND PATCH SURFACES.
5. REMOVE ALL DISCARDED MATERIALS PER THESE SPECIFICATIONS AND OWNER'S INSTRUCTION. RELOCATE, AND EXTEND EXISTING INSTALLATIONS TO ACCOMMODATE NEW CONSTRUCTION.
6. KEEP ELECTRICAL POWER AND LIGHTING PANELS AS SPECIFIED ON THESE DRAWINGS. RING OUT CIRCUITS IN EXISTING PANELS WHERE ADDITIONAL CIRCUITS ARE NEEDED. REUSE AVAILABLE CIRCUITS, INSTALL NEW CIRCUIT BREAKERS AS REQUIRED - SEE ELECTRICAL DRAWINGS. CLEAN AND REPAIR EXISTING EQUIPMENT TO REMAIN, BE SALVAGED, OR TO BE REINSTALLED.
7. TESTING: TEST ALL MAIN SERVICE AND PANELBOARD FEEDER WIRING TO REMAIN IN ACCORDANCE WITH REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION. REMOVE ANY AND ALL EXISTING WIRE NO LONGER IN USE.
8. PERFORM VISUAL AND MECHANICAL TEST OF CIRCUIT BREAKERS PER REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION. CIRCUIT BREAKERS EXHIBITING ANY UNUSUAL CHARACTERISTIC SHALL BE SUBJECTED TO ELECTRICAL TESTS PER THE SAME REQUIREMENTS. REPLACE DEFECTIVE CIRCUIT BREAKERS WITH NEW OF SAME KIND, OR PER THE REQUIREMENTS OF THE ELECTRICAL ENGINEER, WHICHEVER IS MORE STRINGENT.

CONCRETE

1. DEMOLISH IN SECTIONS. CUT CONCRETE FULL DEPTH AT JUNCTURE WITH CONSTRUCTION TO REMAIN AND AT REGULAR INTERVALS, USING POWER-DRIVEN SAW, THEN REMOVE CONCRETE BETWEEN SAW CUTS.
2. AT SLAB ON GRADE, SAW-CUT PERIMETER OF AREA TO BE DEMOLISHED, THEN BREAK UP AND REMOVE.

MASONRY

1. DEMOLISH IN SMALL SECTIONS. CUT MASONRY AT JUNCTURES WITH CONSTRUCTION TO REMAIN, USING POWER-DRIVEN SAW, THEN REMOVE MASONRY BETWEEN SAW CUTS.

FLOOR COVERINGS

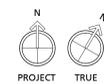
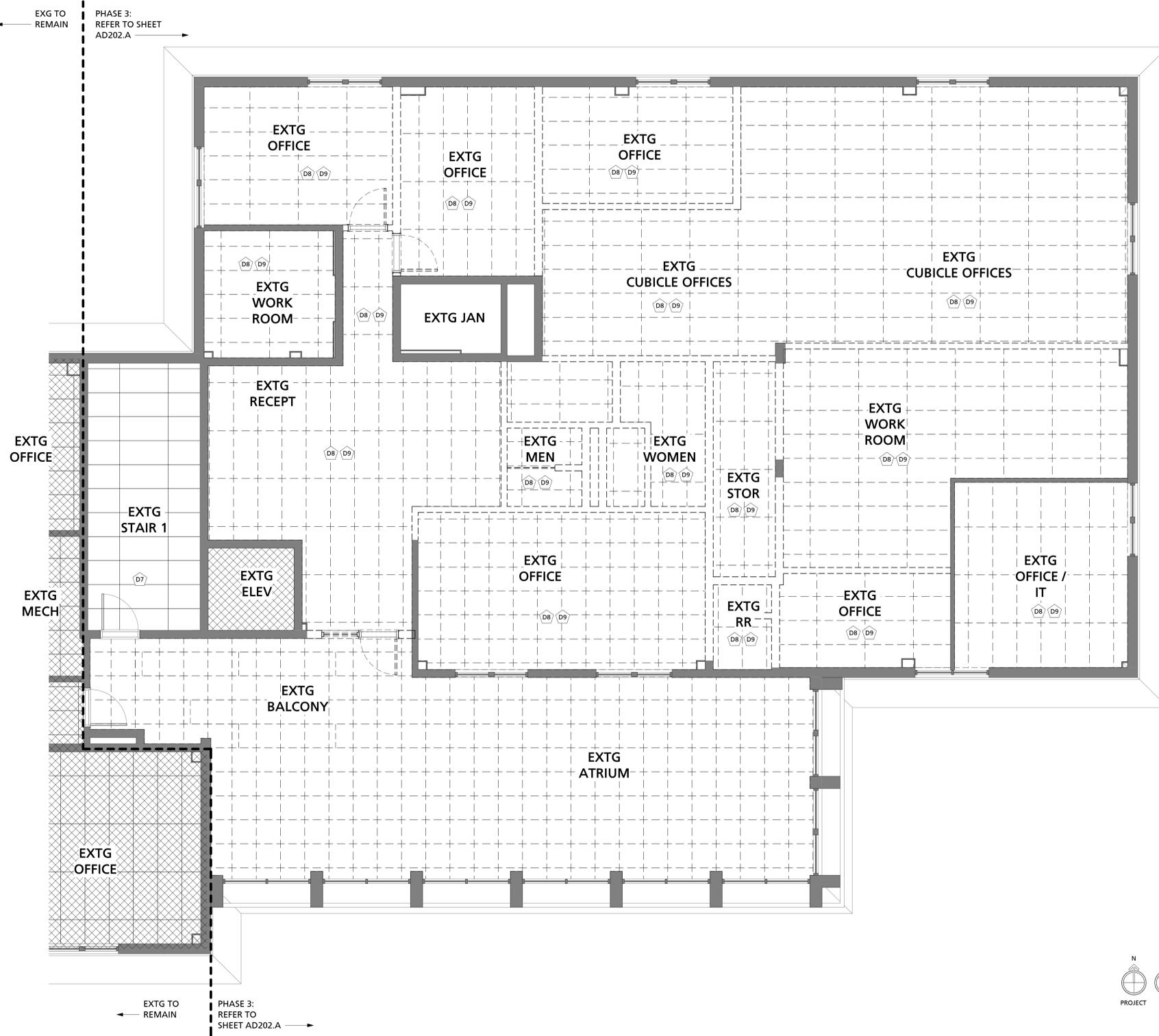
1. REMOVE FLOOR COVERINGS AND ADHESIVE ACCORDING TO RECOMMENDATIONS BY THE MANUFACTURER AND IN A MANNER IN WHICH PREPARES SURFACE FOR INSTALLATION OF NEW MATERIAL, PER THE MANUFACTURER'S RECOMMENDATIONS OF THE NEW MATERIAL.

CLEANING

1. CLEAN ADJACENT STRUCTURES AND IMPROVEMENTS OF DUST, DIRT AND DEBRIS CAUSED BY SELECTIVE DEMOLITION OPERATIONS. RETURN ADJACENT AREAS TO CONDITION EXISTING BEFORE SELECTIVE DEMOLITION OPERATIONS BEGAN AND SUITABLE FOR OWNER OCCUPATION.

TEMPORARY SHORING

1. 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.



1 SECOND FLOOR- PHASE 3 DEMOLITION RCP
1/4" = 1'-0"



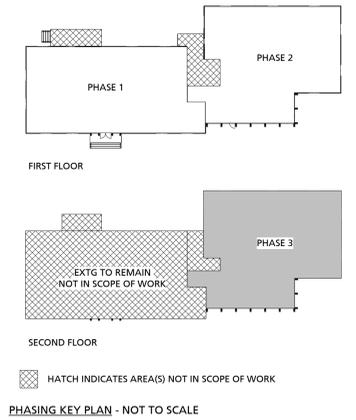
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| PROJECT NAME | |
| PROJECT ADDRESS | |

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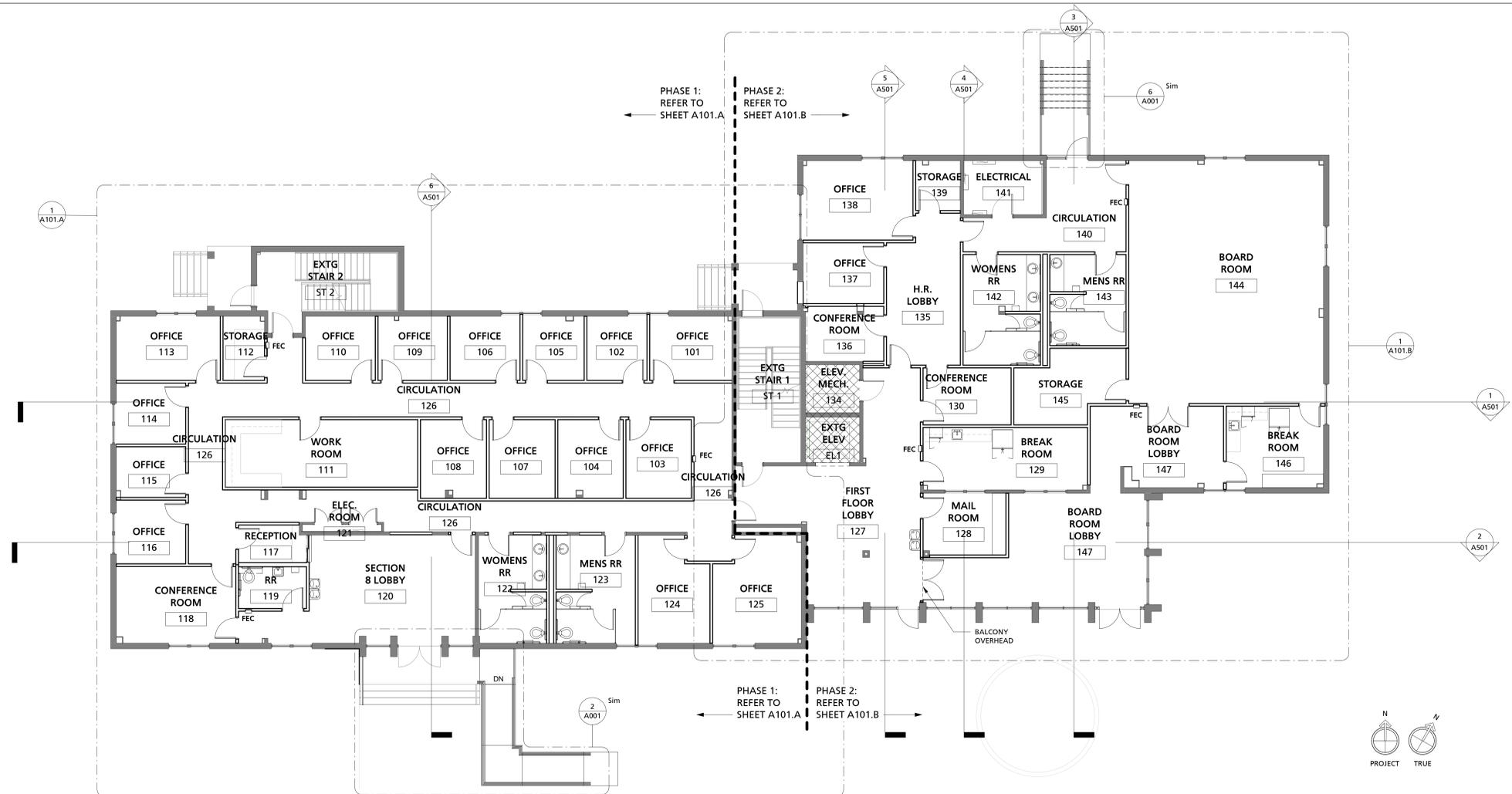
PROJECT NUMBER: C-19-066-1
SHEET NUMBER: AD202.A
SHEET NAME: DEMOLITION RCP
DATE: 12.17.20



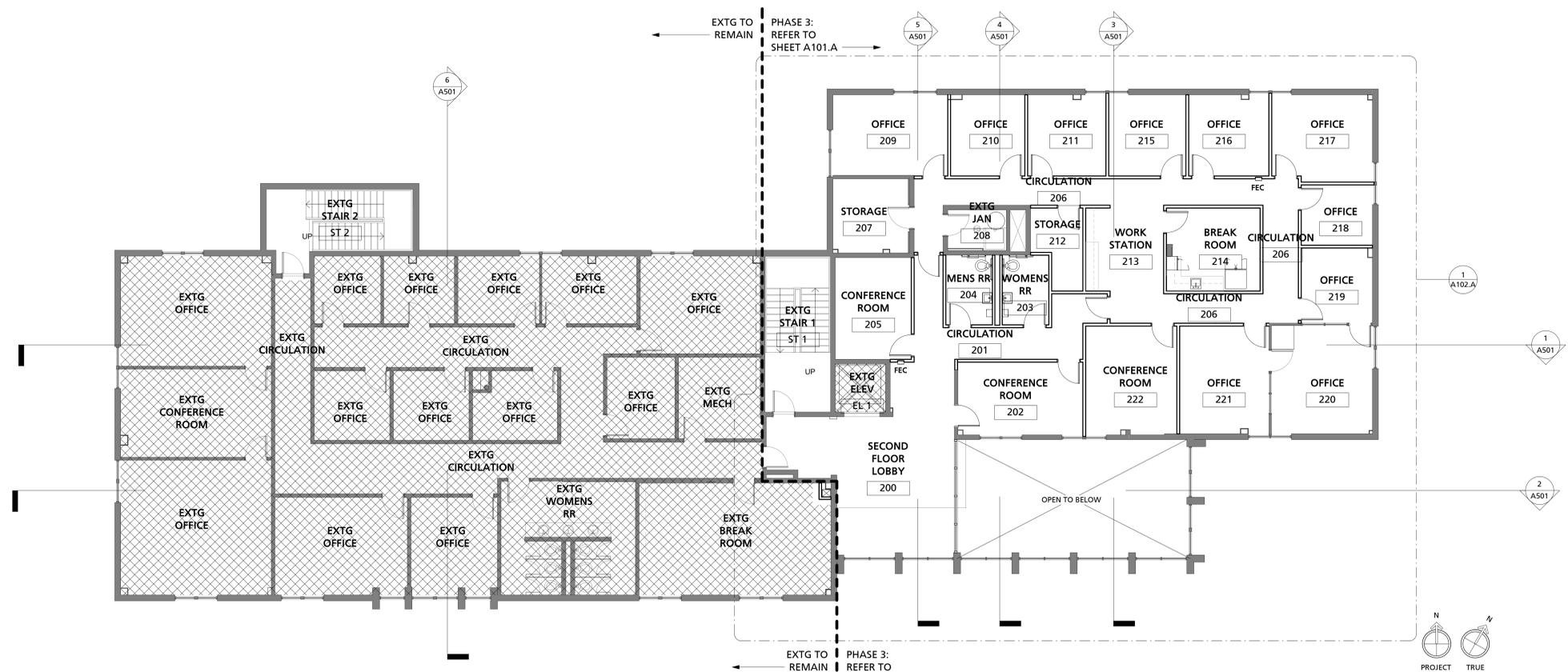
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1 FIRST FLOOR-RENOVATION PLAN
1/8" = 1'-0"



2 SECOND FLOOR-RENOVATION PLAN
1/8" = 1'-0"

GENERAL FLOOR PLAN NOTES

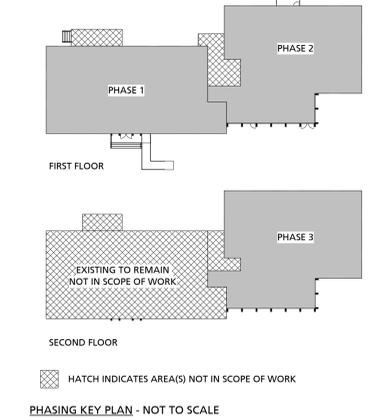
- EXISTING CONDITIONS BASED ON INFORMATION PROVIDED BY EXISTING PLANS, OWNER, CONSTRUCTION MANAGER, LANDLORD AND/OR INFORMATION GATHERED DURING GENERAL FIELD OBSERVATION. IF GC DISCOVERS EXISTING CONDITIONS DIFFER FROM THOSE SHOWN, CONTACT OWNER OR ARCHITECT IMMEDIATELY.
- ALL DIMENSIONS ARE TO FACE OF EXISTING ELEMENT OR FACE OF NEW STUD UNLESS NOTED OTHERWISE. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ARCHITECT'S ATTENTION IMMEDIATELY.
- DIMENSIONS TO FACE OF EXTERIOR ELEMENT ARE TO DOMINANT FACE OF BRICK, UNLESS NOTED OTHERWISE.
- SEE A300s FOR FINISH SELECTION AND DETAILS.
- ALL EXISTING FIRE-RATED CONSTRUCTION TO REMAIN SHALL NOT BE COMPROMISED.
- ALL ANGLED WALLS ARE AT 45 DEGREES, UNLESS NOTED OTHERWISE.
- FEC SHOWN FOR REFERENCE ONLY. COORDINATE WITH FIRE MARSHALL TO LOCATE ALL REQUIRED FEC IN FIELD. FOR PRICING, ASSUME 8 CABINETS AND EXTINGUISHERS WITHIN SCOPE OF WORK.
- GENERAL CONTRACTOR TO COORDINATE ALL AVV REQUIREMENTS WITH TENANT. SEE G102 FOR PARTITION TYPES AND NOTES.

FLOOR PLAN LEGEND

- NEW WALL, SEE PARTITION TYPES
- NEW DOOR, SEE DOOR SCHEDULE
- Room name**
101 ROOM TAG, SEE PLAN AND FINISH SCHEDULE
- A WINDOW TAG, SEE PLAN AND WINDOW SCHEDULE
- 101 DOOR TAG, SEE PLAN AND DOOR SCHEDULE
- 1i INTERIOR WALL TAG, SEE PARTITION TYPES
- 1i EXTERIOR WALL TAG, SEE EXTERIOR WALL SYSTEMS
- HATCH INDICATES AREA NOT WITHIN SCOPE OF WORK
- WCO WALL CLEAN OUT, SEE PLUMBING
- CO CLEAN OUT, SEE PLUMBING
- FD FLOOR DRAIN, SEE PLUMBING

FIRE EXTINGUISHER CABINETS

- FIRE EXTINGUISHER CABINET (FEC-1):
- MFR: LARSEN'S
 - STYLE: ARCHITECTURAL SERIES
 - DOOR STYLE: VERTICAL DUO WITH CLEAR ACRYLIC
 - LETTERING: TYPE A, COLOR TO BE SELECTED BY OWNER
 - MATERIAL: STAINLESS STEEL
 - TRIM: ROLLED, 4" MAXIMUM FROM WALL SURFACE TO OUTERMOST PROJECTION
 - FIRE EXTINGUISHER TYPE: 10 LBS CAPACITY



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PROJECT NUMBER: C-19-066-1

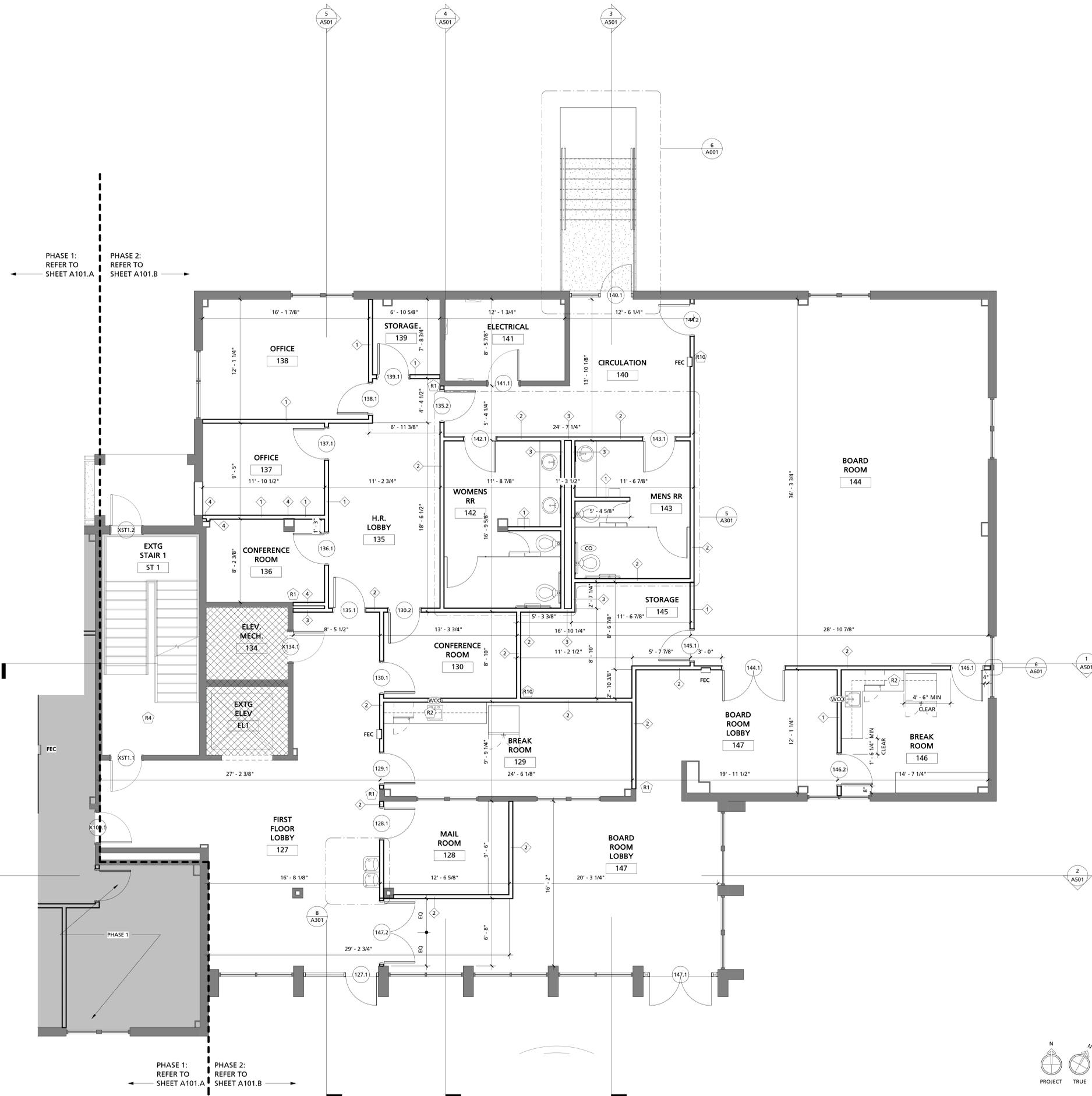
A101

FLOOR PLANS

DATE: 12.17.20

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1 FIRST FLOOR- PHASE 2 RENOVATION PLAN
1/4" = 1'-0"

GENERAL FLOOR PLAN NOTES

- EXISTING CONDITIONS BASED ON INFORMATION PROVIDED BY EXISTING PLANS, OWNER, CONSTRUCTION MANAGER, LANDLORD AND/OR INFORMATION GATHERED DURING GENERAL FIELD OBSERVATION. IF GC DISCOVERS EXISTING CONDITIONS DIFFER FROM THOSE SHOWN, CONTACT OWNER OR ARCHITECT IMMEDIATELY.
- ALL DIMENSIONS ARE TO FACE OF EXISTING ELEMENT OR FACE OF NEW STUD UNLESS NOTED OTHERWISE. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ARCHITECT'S ATTENTION IMMEDIATELY.
- DIMENSIONS TO FACE OF EXTERIOR ELEMENT ARE TO DOMINANT FACE OF BRICK, UNLESS NOTED OTHERWISE.
- SEE A500s FOR FINISH SELECTION AND DETAILS.
- ALL EXISTING FIRE-RATED CONSTRUCTION TO REMAIN SHALL NOT BE COMPROMISED.
- ALL ANGLED WALLS ARE AT 45 DEGREES, UNLESS NOTED OTHERWISE.
- FEC SHOWN FOR REFERENCE ONLY. COORDINATE WITH FIRE MARSHALL TO LOCATE ALL REQUIRED FEC IN FIELD. FOR PRICING, ASSUME B CABINETS AND EXTINGUISHERS WITHIN SCOPE OF WORK.
- GENERAL CONTRACTOR TO COORDINATE ALL A/V REQUIREMENTS WITH TENANT. SEE G102 FOR PARTITION TYPES AND NOTES.

FLOOR PLAN LEGEND

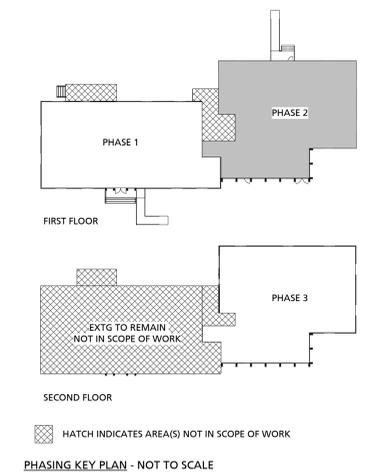
- NEW WALL, SEE PARTITION TYPES
- NEW DOOR, SEE DOOR SCHEDULE
- Room name**
- ROOM TAG, SEE PLAN AND FINISH SCHEDULE
- WINDOW TAG, SEE PLAN AND WINDOW SCHEDULE
- DOOR TAG, SEE PLAN AND DOOR SCHEDULE
- INTERIOR WALL TAG, SEE PARTITION TYPES
- EXTERIOR WALL TAG, SEE EXTERIOR WALL SYSTEMS
- HATCH INDICATES AREA NOT WITHIN SCOPE OF WORK
- WALL CLEAN OUT, SEE PLUMBING
- CLEAN OUT, SEE PLUMBING
- FLOOR DRAIN, SEE PLUMBING

FIRE EXTINGUISHER CABINETS

- FIRE EXTINGUISHER CABINET (FEC-1):
- MFR: LARSEN'S
 - STYLE: ARCHITECTURAL SERIES
 - DOOR STYLE: VERTICAL DUO WITH CLEAR ACRYLIC
 - LETTERING: TYPE A, COLOR TO BE SELECTED BY OWNER
 - MATERIAL: STAINLESS STEEL
 - TRIM: ROLLED, 4" MAXIMUM FROM WALL SURFACE TO OUTERMOST PROJECTION
 - FIRE EXTINGUISHER TYPE: 10 LBS CAPACITY

RENOVATION KEY NOTE LEGEND

- FLOOR PLAN:**
- ALIGN FINISHED FACE OF WALLS
 - CASEWORK PROVIDED BY OWNER. CASEWORK BLOCKING TO BE PROVIDED BY GC. LOCATIONS SHOWN FOR REFERENCE ONLY. GC TO COORDINATE FINAL BLOCKING LOCATIONS WITH OWNER.
 - PROVIDE NEW RUBBER STAIR TREADS, THIS STAIRCASE ONLY (STAIR 2).
 - PAINT WALLS AND CEILING, SEE FINISH SCHEDULE SHEET A901. EXTG FLOORING TO REMAIN.
- REFLECTED CEILING PLAN:**
- PROVIDE BULK HEAD ASSEMBLY AT 6" BELOW CEILING AND EXTEND TO 6" ABOVE CEILING. BULKHEAD ASSEMBLY TO INCLUDE (1) LAYER 5/8" GYPSUM BOARD EACH SIDE OF 3/8" METAL STUD. VERTICAL FACES PAINTED TO MATCH WALL COLOR. HORIZONTAL FACES TO BE PAINTED FLAT CEILING WHITE.



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| PROJECT NAME | COLUMBIA HOUSING AUTHORITY MAIN OFFICE BUILDING RENOVATION |
| PROJECT ADDRESS | 1917 HARDEN STREET, COLUMBIA, SOUTH CAROLINA 29204 |

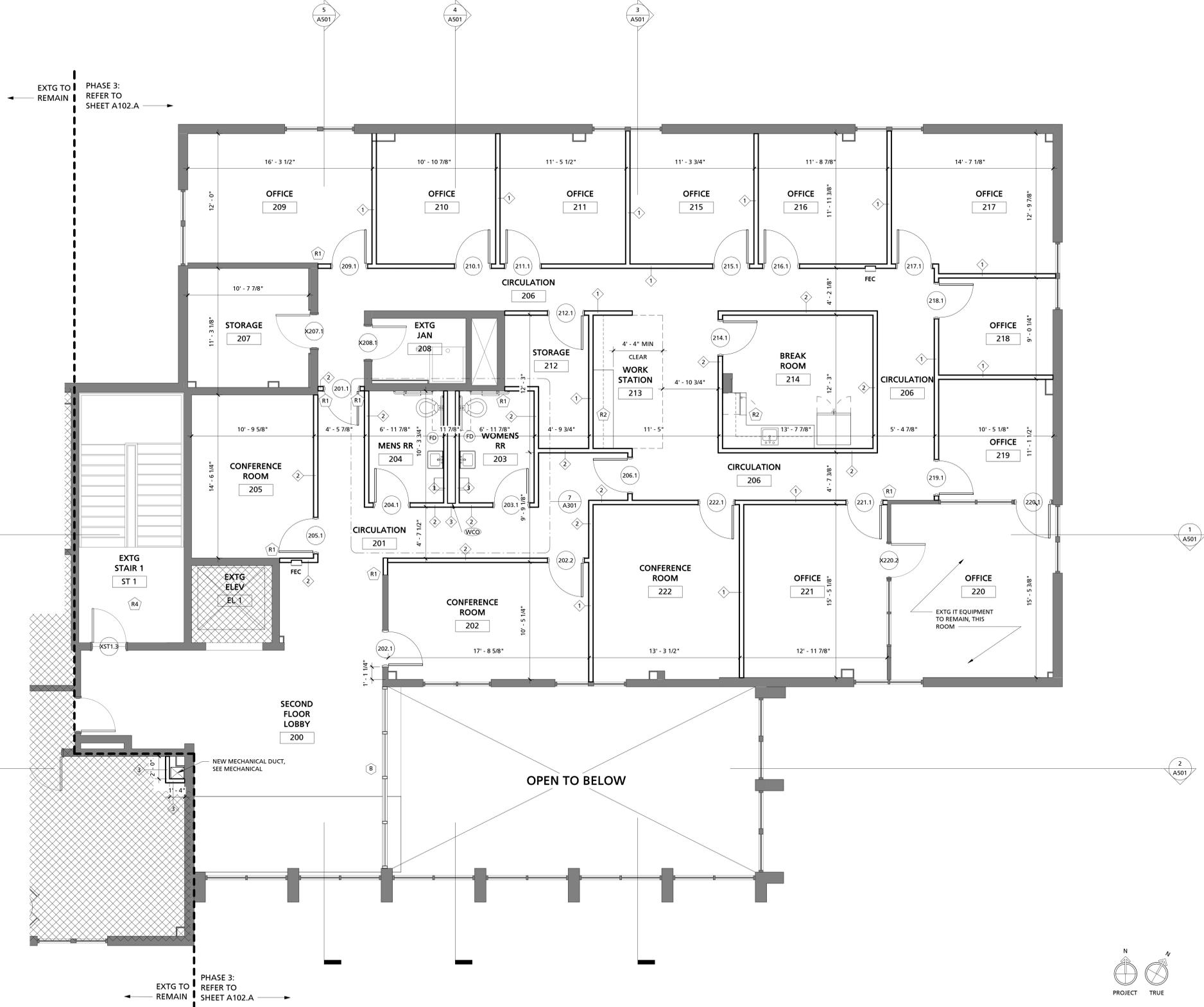
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PROJECT NUMBER: C-19-066-1
SHEET NUMBER: A101.B
SHEET NAME: FLOOR PLANS
DATE: 12.17.20

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1 SECOND FLOOR - PHASE 3 RENOVATION PLAN
1/4" = 1'-0"

GENERAL FLOOR PLAN NOTES

- EXISTING CONDITIONS BASED ON INFORMATION PROVIDED BY EXISTING PLANS, OWNER, CONSTRUCTION MANAGER, LANDLORD AND/OR INFORMATION GATHERED DURING GENERAL FIELD OBSERVATION. IF GC DISCOVERS EXISTING CONDITIONS DIFFER FROM THOSE SHOWN, CONTACT OWNER OR ARCHITECT IMMEDIATELY.
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- DIMENSIONS TO FACE OF EXTERIOR ELEMENT ARE TO DOMINANT FACE OF BRICK, UNLESS NOTED OTHERWISE.
- SEE A500 FOR FINISH SELECTION AND DETAILS.
- ALL EXISTING FIRE-RATED CONSTRUCTION TO REMAIN SHALL NOT BE COMPROMISED.
- ALL ANGLED WALLS ARE AT 45 DEGREES, UNLESS NOTED OTHERWISE.
- FEC SHOWN FOR REFERENCE ONLY. COORDINATE WITH FIRE MARSHALL TO LOCATE ALL REQUIRED FEC IN FIELD. FOR PRICING, ASSUME 8 CABINETS AND EXTINGUISHERS WITHIN SCOPE OF WORK.
- GENERAL CONTRACTOR TO COORDINATE ALL AVV REQUIREMENTS WITH TENANT. SEE G102 FOR PARTITION TYPES AND NOTES.

FLOOR PLAN LEGEND

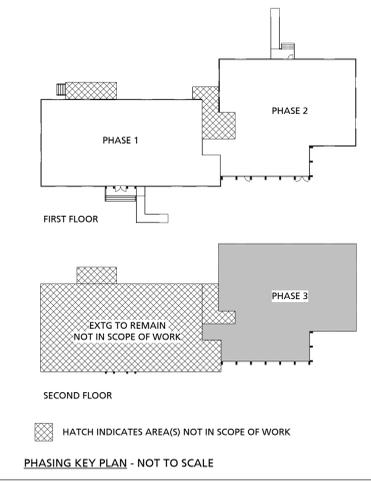
- NEW WALL, SEE PARTITION TYPES
- NEW DOOR, SEE DOOR SCHEDULE
- Room name**
- ROOM TAG, SEE PLAN AND FINISH SCHEDULE
- WINDOW TAG, SEE PLAN AND WINDOW SCHEDULE
- DOOR TAG, SEE PLAN AND DOOR SCHEDULE
- INTERIOR WALL TAG, SEE PARTITION TYPES
- EXTERIOR WALL TAG, SEE EXTERIOR WALL SYSTEMS
- HATCH INDICATES AREA NOT WITHIN SCOPE OF WORK
- WALL CLEAN OUT, SEE PLUMBING
- CLEAN OUT, SEE PLUMBING
- FLOOR DRAIN, SEE PLUMBING

FIRE EXTINGUISHER CABINETS

- FIRE EXTINGUISHER CABINET (FEC-1):
- MFR: LARSEN'S ARCHITECTURAL SERIES
 - STYLE: VERTICAL DUO WITH CLEAR ACRYLIC TYPE A, COLOR TO BE SELECTED BY OWNER
 - LETTERING: STAINLESS STEEL
 - MATERIAL: ROLLED, 4" MAXIMUM FROM WALL SURFACE TO OUTERMOST PROJECTION
 - TRIM: 10 LBS CAPACITY
 - FIRE EXTINGUISHER TYPE: 10 LBS CAPACITY

RENOVATION KEY NOTE LEGEND

- FLOOR PLAN:**
- ALIGN FINISHED FACE OF WALLS
 - CASEWORK PROVIDED BY OWNER. CASEWORK BLOCKING TO BE PROVIDED BY GC. LOCATIONS SHOWN FOR REFERENCE ONLY. GC TO COORDINATE FINAL BLOCKING LOCATIONS WITH OWNER.
 - PROVIDE NEW RUBBER STAIR TREADS, THIS STAIRCASE ONLY (STAIR 2).
 - PAINT WALLS AND CEILING, SEE FINISH SCHEDULE SHEET A901. EXTG FLOORING TO REMAIN.
- REFLECTED CEILING PLAN:**
- PROVIDE BULK HEAD ASSEMBLY AT 6" BELOW CEILING AND EXTEND TO 6" ABOVE CEILING. BULK HEAD ASSEMBLY TO INCLUDE (1) LAYER 5/8" GYPSUM BOARD EACH SIDE OF 3 5/8" METAL STUD, VERTICAL FACES PAINTED TO MATCH WALL COLOR. HORIZONTAL FACES TO BE PAINTED FLAT CEILING WHITE.



1x1 DESIGN
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COLUMBIA HOUSING AUTHORITY
COLUMBIA HOUSING AUTHORITY MAIN OFFICE BUILDING RENOVATION
1917 HARDEN STREET, COLUMBIA, SOUTH CAROLINA 29204

| REVISIONS | | |
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| No. | Description | Date |
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PROJECT NUMBER: C-19-066-1
SHEET NUMBER: **A102.A**
SHEET NAME: FLOOR PLANS
DATE: 12.17.20

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GENERAL REFLECTED CEILING PLAN NOTES

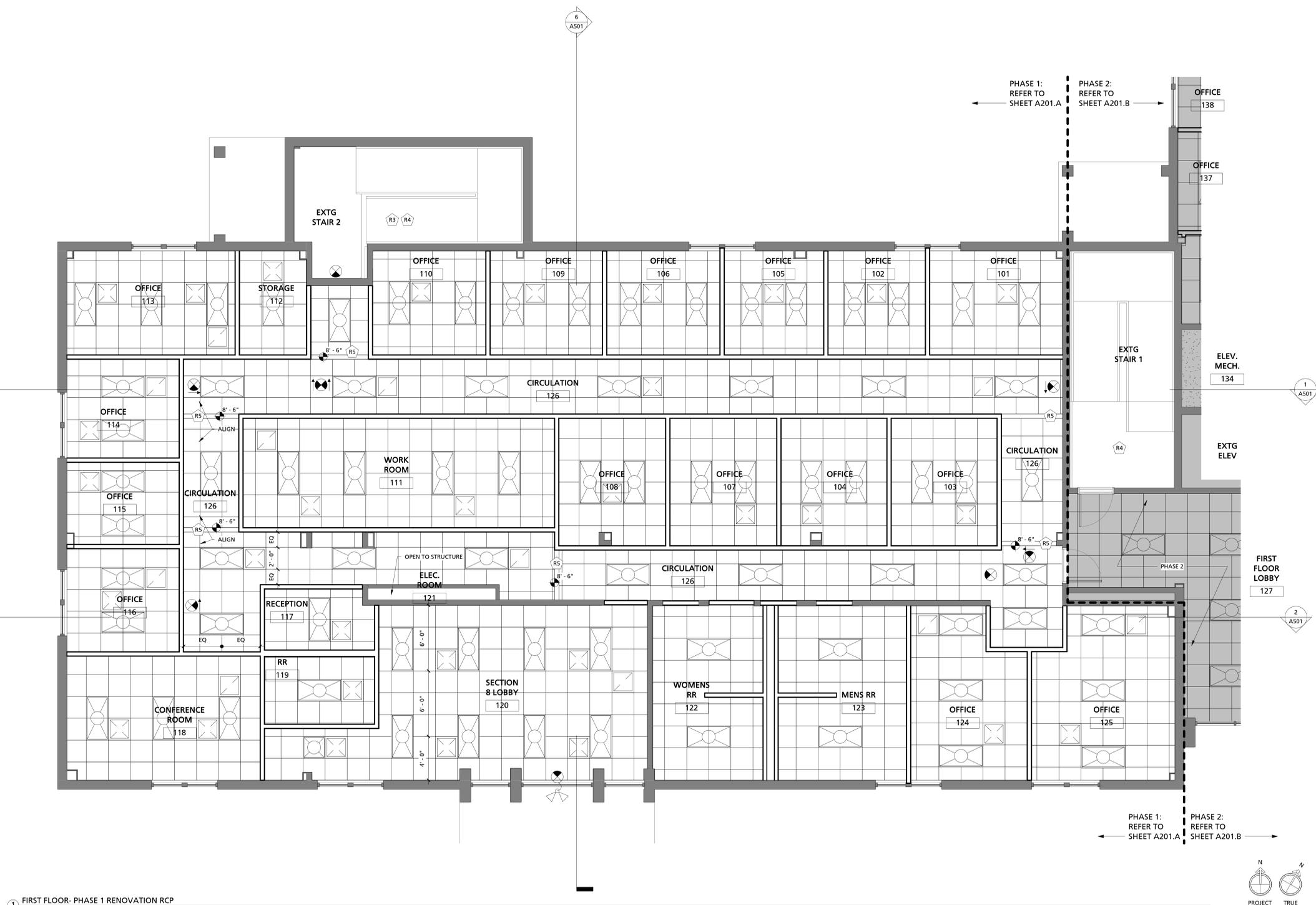
- EXISTING CONDITIONS BASED ON INFORMATION PROVIDED BY EXISTING PLANS, OWNER, CONSTRUCTION MANAGER, LANDLORD AND/OR INFORMATION GATHERED DURING GENERAL FIELD OBSERVATION. IF GC DISCOVERS EXISTING CONDITIONS DIFFER FROM THOSE SHOWN, CONTACT OWNER OR ARCHITECT IMMEDIATELY.
- ALL CEILING TILE TO BE CENTERED IN SPACE EXACTLY AS SHOWN UNLESS NOTED OTHERWISE. ALL APC TO BE INSTALLED PER SEISMIC REQUIREMENTS. SEE SPECS.
- ALL GWB CEILINGS TO BE PAINTED FLAT CEILING WHITE, UNLESS NOTED OTHERWISE.
- SEE ELECTRICAL FOR ALL LIGHT FIXTURES AND ELECTRICAL REQUIREMENTS.
- SEE ELECTRICAL FOR ALL EMERGENCY AND EGRESS FIXTURE LOCATIONS.
- SEE MECHANICAL FOR ALL MECHANICAL ELEMENTS.
- CEILING HEIGHT TO BE 9'-0" AFF UNLESS NOTED OTHERWISE.
- COORDINATE WITH ELECTRICAL AND MECHANICAL FOR ALL FIXTURES AND EQUIPMENT SPECIFICATIONS. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION. WHERE ENGINEERING DRAWINGS CALL FOR ROOF PENETRATIONS WITH EXISTING ROOFING SYSTEM OR ROOF SYSTEM TO BE REPLACED, FLASH AND SEAL AS REQUIRED.
- EXIT SIGNS

REFLECTED CEILING PLAN LEGEND

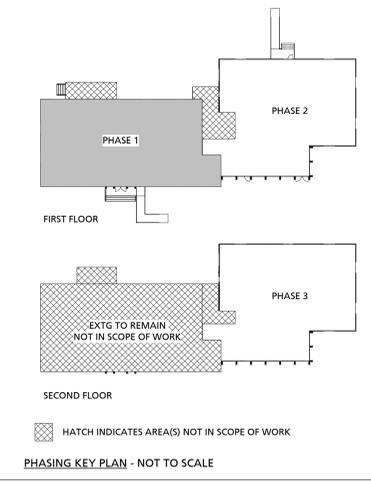
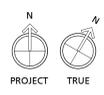
- 2'x2' ACOUSTICAL PANEL CEILING (APC) (NEW), HEIGHT VARIES.
- 2'x4' ACOUSTICAL PANEL CEILING (APC) (NEW), HEIGHT VARIES.
- SUPPLY DIFFUSER, SEE MECHANICAL.
- RETURN REGISTER, SEE MECHANICAL.
- 2'x4' LIGHTING FIXTURE, SEE ELECTRICAL.
- 2'x2' LIGHTING FIXTURE, SEE ELECTRICAL.
- 2'x4' DOWN LIGHTING FIXTURE, SEE ELECTRICAL.
- EXIT SIGN, SEE ELECTRICAL.
- HATCH INDICATES AREA NOT WITHIN SCOPE OF WORK

RENOVATION KEY NOTE LEGEND

- FLOOR PLAN:**
- R1 ALIGN FINISHED FACE OF WALLS
 - R2 CASEWORK PROVIDED BY OWNER. CASEWORK BLOCKING TO BE PROVIDED BY GC. LOCATIONS SHOWN FOR REFERENCE ONLY. GC TO COORDINATE FINAL BLOCKING LOCATIONS WITH OWNER.
 - R3 PROVIDE NEW RUBBER STAIR TREADS, THIS STAIRCASE ONLY (STAIR 2).
 - R4 PAINT WALLS AND CEILING. SEE FINISH SCHEDULE SHEET A901. EXTG FLOORING TO REMAIN.
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- R5 PROVIDE BULK HEAD ASSEMBLY AT 6' BELOW CEILING AND EXTEND TO 6' ABOVE CEILING. BULKHEAD ASSEMBLY TO INCLUDE (1) LAYER 5/8" GYPSUM BOARD EACH SIDE OF 3/8" METAL STUD. VERTICAL FACES PAINTED TO MATCH WALL COLOR. HORIZONTAL FACES TO BE PAINTED FLAT CEILING WHITE.



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



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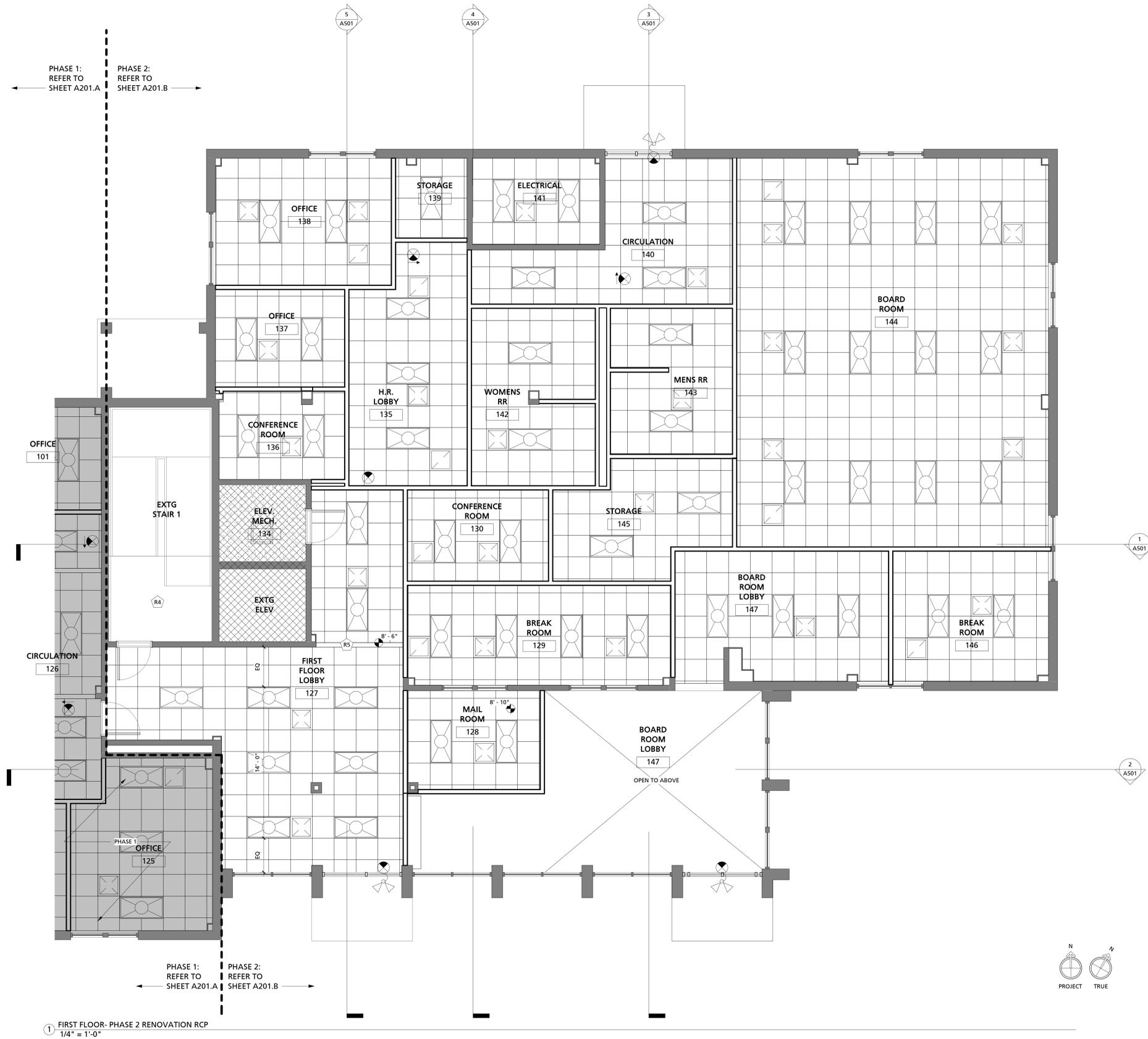
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COLUMBIA HOUSING AUTHORITY MAIN OFFICE BUILDING RENOVATION
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| CLIENT NAME | COLUMBIA HOUSING AUTHORITY | | |
| PROJECT NAME | COLUMBIA HOUSING AUTHORITY MAIN OFFICE BUILDING RENOVATION | | |
| PROJECT ADDRESS | 1917 HARDEN STREET, COLUMBIA, SOUTH CAROLINA 29204 | | |
| PROJECT NUMBER | C-19-066-1 | | |
| SHEET NUMBER | A201.A | | |
| SHEET NAME | REFLECTED CEILING PLAN | | |
| DATE | 12.17.20 | | |

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1 FIRST FLOOR- PHASE 2 RENOVATION RCP
1/4" = 1'-0"

GENERAL REFLECTED CEILING PLAN NOTES

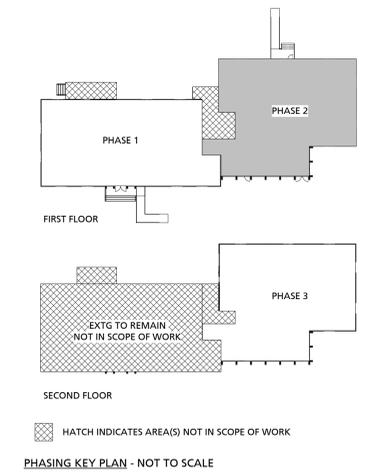
- EXISTING CONDITIONS BASED ON INFORMATION PROVIDED BY EXISTING PLANS, OWNER, CONSTRUCTION MANAGER, LANDLORD AND/OR INFORMATION GATHERED DURING GENERAL FIELD OBSERVATION. IF GC DISCOVERS EXISTING CONDITIONS DIFFER FROM THOSE SHOWN, CONTACT OWNER OR ARCHITECT IMMEDIATELY.
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- SEE ELECTRICAL FOR ALL LIGHT FIXTURES AND ELECTRICAL REQUIREMENTS.
- SEE ELECTRICAL FOR ALL EMERGENCY AND EGRESS FIXTURE LOCATIONS.
- SEE MECHANICAL FOR ALL MECHANICAL ELEMENTS.
- CEILING HEIGHT TO BE 9'-0" AFF UNLESS NOTED OTHERWISE.
- COORDINATE WITH ELECTRICAL AND MECHANICAL FOR ALL FIXTURES AND EQUIPMENT SPECIFICATIONS. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION. WHERE ENGINEERING DRAWINGS CALL FOR ROOF PENETRATIONS WITH EXISTING ROOFING SYSTEM OR ROOF SYSTEM TO BE REPLACED, FLASH AND SEAL AS REQUIRED.
- EXIT SIGNS

REFLECTED CEILING PLAN LEGEND

- 2'x2' ACOUSTICAL PANEL CEILING (APC) (NEW), HEIGHT VARIES.
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- EXIT SIGN, SEE ELECTRICAL.
- HATCH INDICATES AREA NOT WITHIN SCOPE OF WORK

RENOVATION KEY NOTE LEGEND

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| CLIENT NAME | PROJECT NAME | PROJECT ADDRESS |
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| PROJECT NUMBER | C-19-066-1 |
| SHEET NUMBER | A201.B |
| SHEET NAME | REFLECTED CEILING PLAN |
| DATE | 12.17.20 |

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GENERAL NOTES:

- CONTRACTOR SHALL BE RESPONSIBLE FOR SHORING AND BRACING ALL WORK DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL OSHA REGULATIONS ON THE PROJECT SITE. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND DIMENSIONS SHOWN AND NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO FABRICATION AND CONSTRUCTION.
- THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES OF CONSTRUCTION SELECTED BY THE CONTRACTOR OR THE SAFETY PRECAUTIONS AND PROGRAMS INCIDENTAL TO THE WORK OF THE CONTRACTOR. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE FAILURE OF THE CONTRACTOR TO PERFORM THE CONSTRUCTION WORK IN ACCORDANCE WITH DRAWINGS. THE COST OF ANY TESTS OR WORK REQUIRED BECAUSE OF CONTRACTOR'S FAILURE TO PERFORM IN ACCORDANCE WITH THE DRAWINGS SHALL BE BORNE BY THE CONTRACTOR.
- CONTRACTOR SHALL REFER TO OTHER DISCIPLINE'S DRAWINGS AND VISIT SITE TO OBSERVE (E) CONSTRUCTION AND AS-BUILT CONDITIONS. SURVEY PROJECT SITE TO LOCATE UNDERGROUND ITEMS & UTILITIES. REMOVE / RELOCATE EXISTING ITEMS IF REQUIRED FOR NEW CONSTRUCTION. COORDINATE ANY DISRUPTION OF SERVICES WITH OWNER.
- CONTRACTOR SHALL REFER TO ARCHITECTURAL TO COORDINATE ALL DIMENSIONS AND ELEVATIONS RELATED TO WORK SHOWN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE ALL DIMENSIONS WITH THE FABRICATOR. NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL COORDINATE ALL ROOF, FLOOR, AND WALL OPENINGS WITH STRUCTURAL, ARCHITECTURAL, AND MECHANICAL DRAWINGS.
- ALL MATERIAL, WORKMANSHIP, AND DESIGN SHALL CONFORM TO THE INTERNATIONAL BUILDING CODE, CURRENT EDITION.
- REFERENCE TO STANDARD SPECIFICATIONS OF ANY TECHNICAL SOCIETY, ORGANIZATION, OR ASSOCIATION, OR TO CODES OF LOCAL OR STATE AUTHORITIES, SHALL MEAN THE LATEST STANDARD, CODE, SPECIFICATION, UNLESS SPECIFICALLY STATED OTHERWISE.
- BOTH BAILEY AND SON ENGINEERING, INC. AND THE ENGINEER WHOSE PROFESSIONAL SEAL IS AFFIXED TO THESE CONTRACT DRAWINGS DISCLAIM ANY IMPLIED WARRANTIES OF ANY KIND WHATSOEVER INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY, THE IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE AND ANY IMPLIED WARRANTY OF FITNESS OF THESE DRAWINGS AND/OR SPECIFICATIONS.
- THE REHABILITATION OF AN EXISTING STRUCTURE REQUIRES ASSUMPTIONS TO BE MADE REGARDING EXISTING CONDITIONS. THESE ASSUMPTIONS MAY NOT BE VERIFIABLE WITHOUT ADDITIONAL COST OR WITHOUT DESTROYING OTHERWISE SERVICEABLE PORTIONS OF THE STRUCTURE. THE ENGINEER SHALL NOT BE LIABLE FOR ANY COST ARISING FROM THE DISCOVERY OF UNKNOWN CONDITIONS IN THE EXISTING STRUCTURE.

DESIGN LOADS AND CRITERIA:

INTERNATIONAL BUILDING CODE, 2018 EDITION
 SLAB DEAD LOAD = 45 PSF @ 2 1/2" SLAB; 60 PSF @ 5" LIGHT-WT SLAB
 SLAB LIVE LOAD = 100 PSF

SNOW LOADS:
 NOT APPLICABLE

WIND LOAD:
 NOT APPLICABLE

SEISMIC DESIGN DATA:
 NOT APPLICABLE

REFERENCED EXISTING BUILDING DRAWINGS:
 "CENTRAL OFFICE BLDG. - COLUMBIA HOUSING AUTHORITY, COLUMBIA, SOUTH CAROLINA" BY: LAFAYE ASSOCIATES, INC. (ARCHITECT) AND JOHNSON & KING (STRUCTURAL); DATED: JULY 31, 1980; COMMISSION: A-1381.

FOUNDATION NOTES:

- EXISTING FOUNDATIONS WHERE ANALYZED BASED ON AN ASSUMED ALLOWABLE SOIL BEARING PRESSURE OF 1,500 PSF AND A SOIL SUBGRADE MODULUS (K) OF 100 PCL.

CONCRETE AND REINFORCING NOTES:

- ALL CONCRETE WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH ACI 318, INCLUDING HOT WEATHER CONCRETING PROCEDURES IN ACI 305 AND COLD WEATHER CONCRETING PROCEDURES IN ACI 306.
- MATERIALS SHALL MEET THE FOLLOWING REQUIREMENTS, UNLESS NOTED OTHERWISE:
 ELEVATED SLAB CONCRETE..... 4000 PSI*
 - PROVIDE 6% AIR ENTRAINING IN CONCRETE EXPOSED TO WEATHER.
 * MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS.
 REINFORCING BARS..... ASTM A615, GRADE 60
 WELDABLE REINFORCING BARS..... ASTM A706, GRADE 60
 ANCHOR BOLTS, SLEEVES, AND OTHER EMBEDDED STEEL..... ASTM A36
 WELDED WIRE FABRIC..... ASTM A185
 CONCRETE AGGREGATE..... ASTM C33
 LIGHTWEIGHT CONCRETE AGGREGATE..... ASTM C330
 SYNTHETIC MICROFIBER REINFORCEMENT..... NYLO-MONO BY FORTA CORPORATION
 OR APPROVED EQUAL
 (DOSAGE RATE = 1.0 LBS./CY)
- CONCRETE FINISHES DETERMINED BY ARCHITECT. CURING COMPOUND SHALL MEET ASTM C1315 WITH A MIN. OF 25% SOLIDS CONTENT BY VOLUME.
- MINIMUM CONCRETE COVER OVER REINFORCING SHALL BE AS SCHEDULED BELOW (UNLESS NOTED OTHERWISE):
 - UNFORMED SURFACES IN CONTACT WITH GROUND = 3 INCHES
 - FORMED SURFACES EXPOSED TO EARTH OR WEATHER = 2 INCHES
 - FORMED SURFACES NOT EXPOSED TO EARTH OR WEATHER = 1 INCH
- REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS OF SLAB SLOPES, DEPRESSIONS, ETC.
- CONCRETE TEST CYLINDERS AND SLUMP TESTS ARE TO BE MADE FOR EACH 50 CUBIC YARDS OR FRACTION THEREOF, OR FOR EACH 5,000 SQUARE FOOT OF SURFACE AREA PLACED. TEST RESULTS SHALL BE REPORTED IN WRITING TO THE ENGINEER WITHIN 48 HOURS AFTER TESTS ARE MADE.
- ELEVATED FLOOR SLABS SHALL MEET A SPECIFIED OVERALL FLOOR FLATNESS VALUE OF 25 AND A MINIMUM LOCAL FLOOR FLATNESS VALUE OF 17 FOR UNSHORED CONSTRUCTION. FLOOR LEVELNESS CRITERIA FROM ACI 302 IS NOT APPLICABLE FOR ELEVATED FLOOR SLABS UNLESS NOTED OTHERWISE.
- LIMIT USE OF FLY ASH TO NOT EXCEED 20% OF CEMENTITIOUS MATERIAL BY WEIGHT (CEMENT + FLY ASH).
- JOINT SEALANT SHALL BE SELF-LEVELING, POLYURETHANE JOINT SEALANT SUCH AS MASTERSEAL SL 1 AS MANUFACTURED BY BASF, OR EQUIVALENT. UTILIZE A CLOSED CELL BACKER ROD WHERE REQUIRED. INSTALL IN STRICT CONFORMANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.

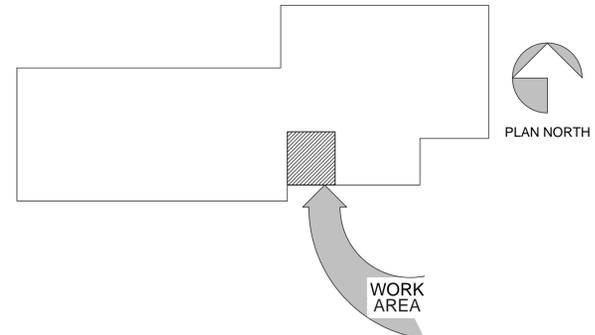
STRUCTURAL STEEL NOTES:

- DESIGN, FABRICATION, AND ERECTION OF ALL STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE AISC MANUAL OF STEEL CONSTRUCTION, FIFTEENTH EDITION, UNLESS NOTED OTHERWISE.
- MATERIALS SHALL MEET THE REQUIREMENTS OF THE FOLLOWING SPECIFICATIONS:
 WIDE FLANGE STRUCTURAL STEEL.....ASTM A992, GRADE 50
 CHANNELS.....ASTM A36
 STRUCTURAL TUBING.....ASTM A500, GRADE C, FY (MIN) = 50 KSI
 ANGLES AND PLATES.....ASTM A36
 HIGH-STRENGTH BOLTS.....ASTM A325-N
 WELDING ELECTRODES.....AWS-A5.1, E70XX LOW HYDROGEN (OR EQUAL)
 STEEL NOT PREVIOUSLY NOTED.....ASTM A36 (OR BETTER)
 EXISTING STEEL.....ASTM A36 (ASSUMED)
- ALL STRUCTURAL WELDING SHALL BE MADE BY A CERTIFIED WELDER IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS SPECIFICATIONS D1.1. MINIMUM SIZE OF FILLET WELD SHALL BE 1/16" SMALLER THAN MATERIAL THICKNESS OF THICKER PART JOINED, UNLESS NOTED OTHERWISE.
 ELECTRODE STORAGE FOR LOW-HYDROGEN ELECTRODES SHALL BE STORED @ 250' WHEN EXPOSURE EXCEEDS REQUIREMENTS OF COLUMN A, TABLE 51 OF AWS. WELD CLEANING AND PAINTING OF COMPLETED WELDS SHALL BE IN ACCORDANCE WITH AWS.
- ALL BOLTED CONNECTIONS SHALL BE BEARING-TYPE USING 3/4" DIAMETER AND BROUGHT TO A SNUG TIGHT CONDITION. A325-N BOLTS WITH THREADS INCLUDED IN SHEAR PLANE, UNLESS NOTED OTHERWISE.
- SHOP CONNECTIONS MAY BE BOLTED OR WELDED.
- FIELD CONNECTIONS SHALL BE BOLTED UNLESS NOTED OTHERWISE ON DRAWINGS.
- SURFACE PREPARATIONS FOR STRUCTURAL STEEL NOT SUBJECT TO EXTERIOR ENVIRONMENTAL CONDITIONS SHALL BE CLEANED IN ACCORDANCE WITH SSPC-SP6 (COMMERCIAL BLAST CLEANING). PRIME STEEL WITH STANDARD SHOP PRIMER AT 2.0 MILS DFT. SHOP PRIMER SHALL BE COMPATIBLE WITH OVERCOAT AS REQUIRED.
- PROVIDE MISCELLANEOUS STEEL & SUPPORT ANGLES AROUND FLOOR PENETRATIONS AND OPENINGS REQUIRED TO SUPPORT ENDS AND EDGES OF STEEL DECK.

PROJECT NOTES

S0.1

| STRUCTURAL DRAWING INDEX | |
|--------------------------|--------------------------------------|
| DWG. NO. | DRAWING TITLE |
| S0.1 | PROJECT NOTES & KEY PLAN |
| S1.0 | BALCONY PLANS, SECTIONS, AND DETAILS |



KEY PLAN
 N.T.S.



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Bailey and Son Engineering, Inc.
 124 Edinburgh Court, Suite 209
 Greenville, SC 29607
 Ph (864) 232-1264
 Fax (864) 232-3114
 www.BaSE91.com
 mailbox@BaSE91.com

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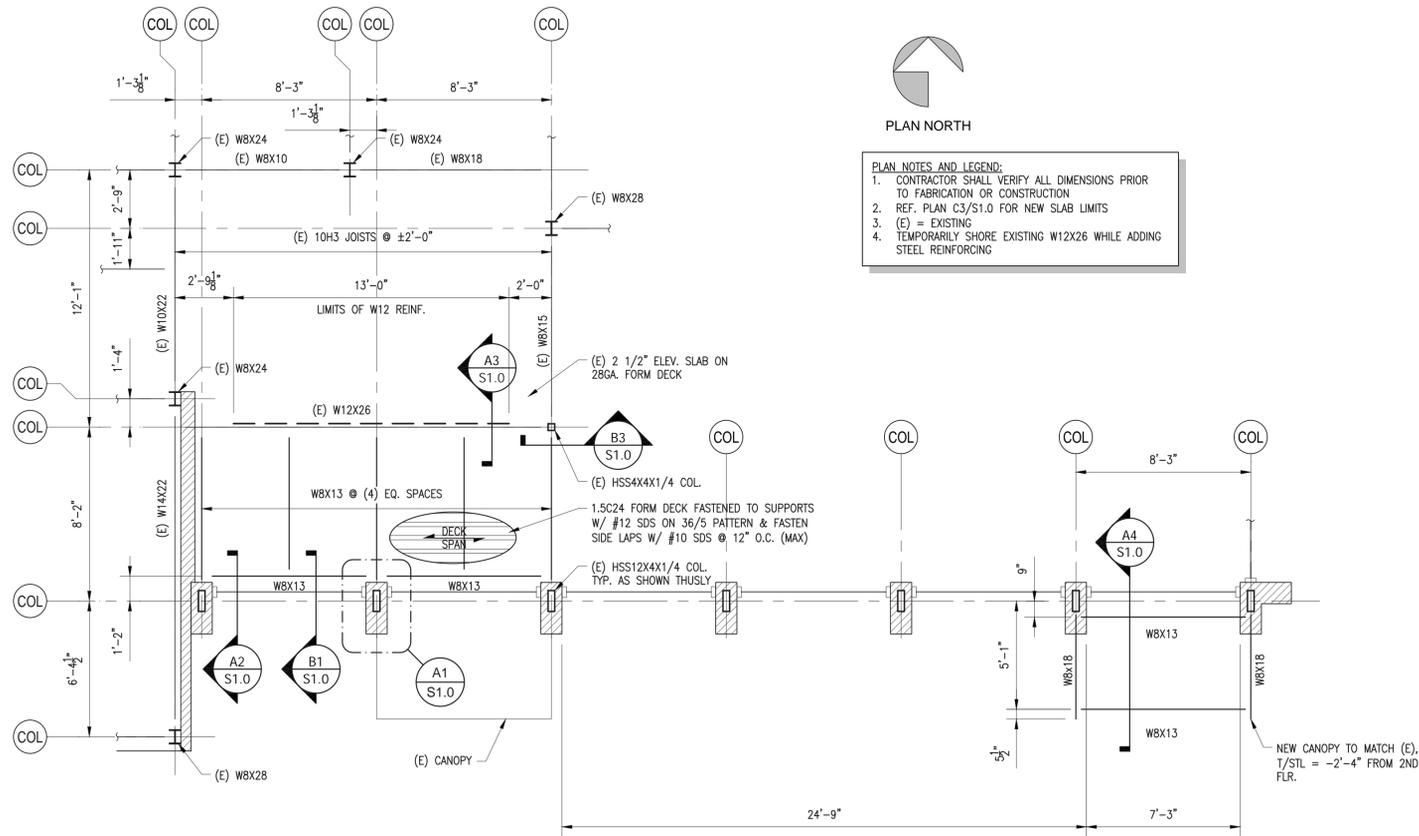
PROJECT NOTES & KEY PLAN

Date: 12.17.20 Approved By: CC

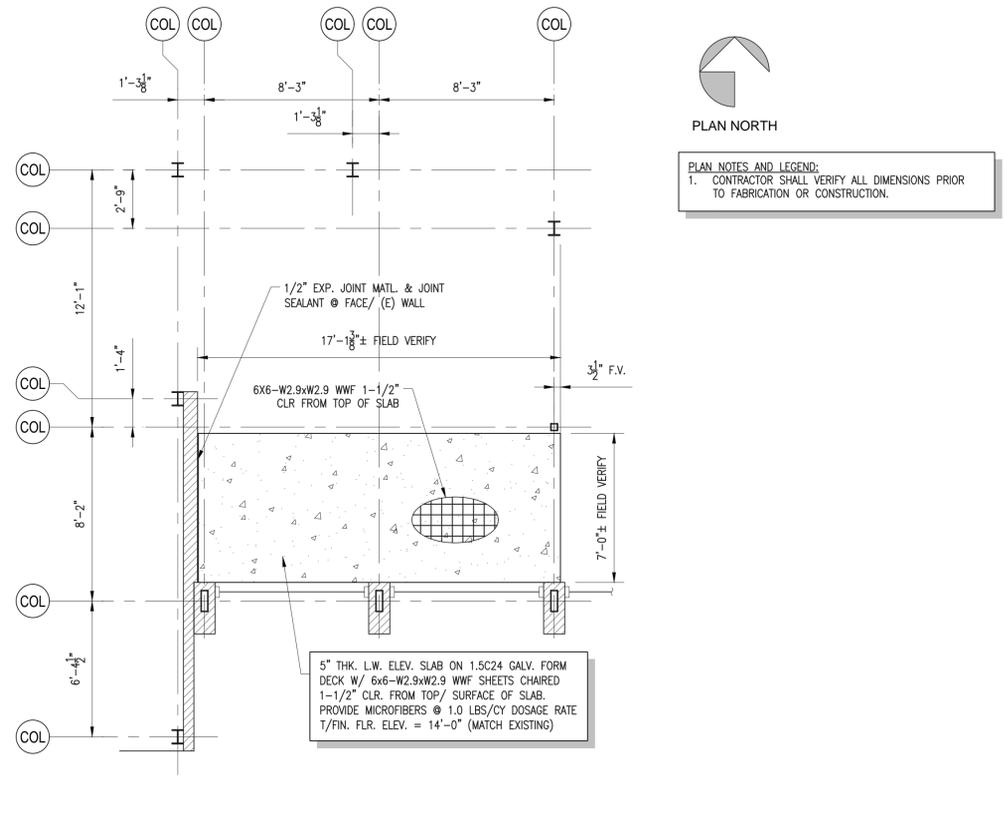
Drawn By: CC Checked By: AC

BaSE Project No: 20189

Sheet No: **S0.1**



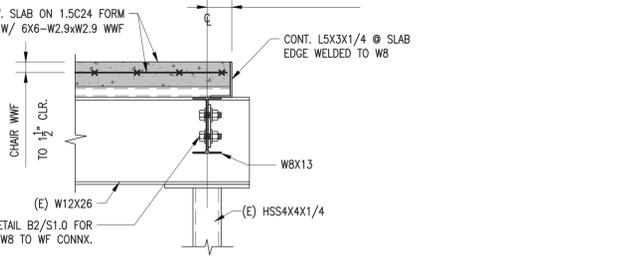
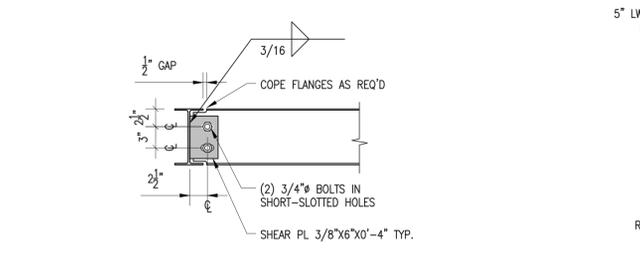
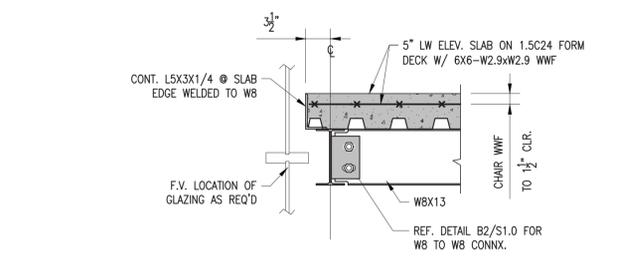
PLAN NOTES AND LEGEND:
 1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO FABRICATION OR CONSTRUCTION
 2. REF. PLAN C3/S1.0 FOR NEW SLAB LIMITS
 3. (E) = EXISTING
 4. TEMPORARILY SHORE EXISTING W12X26 WHILE ADDING STEEL REINFORCING



PLAN NOTES AND LEGEND:
 1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO FABRICATION OR CONSTRUCTION.

C1
S1.0
1/4"=1'-0"

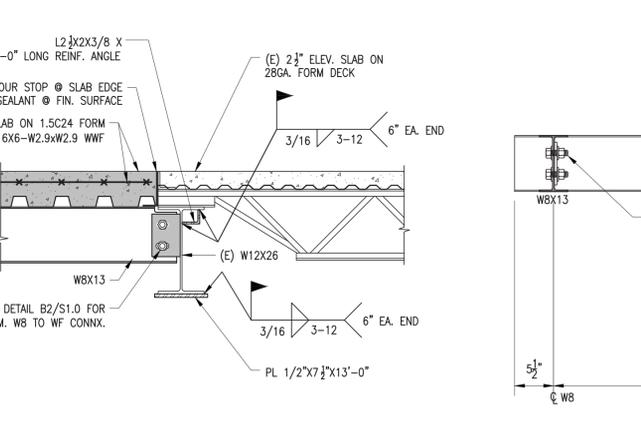
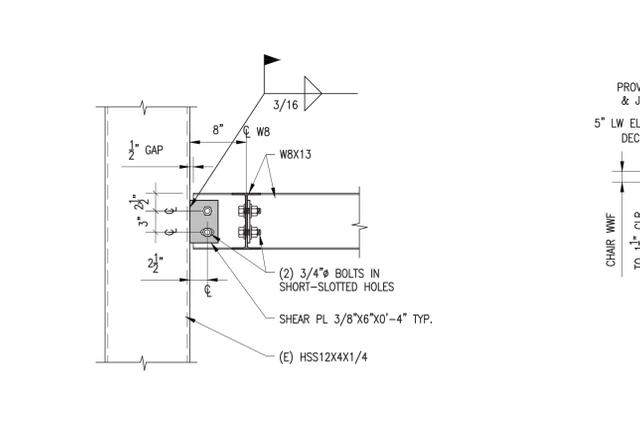
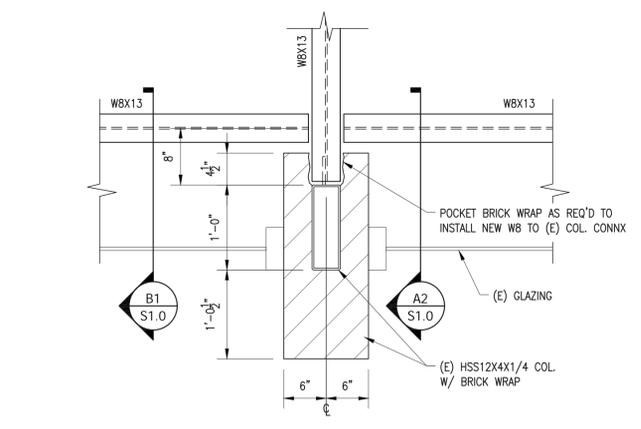
C3
S1.0
1/4"=1'-0"



B1
S1.0
1'-1'-0"

B2
S1.0
1'-1'-0"

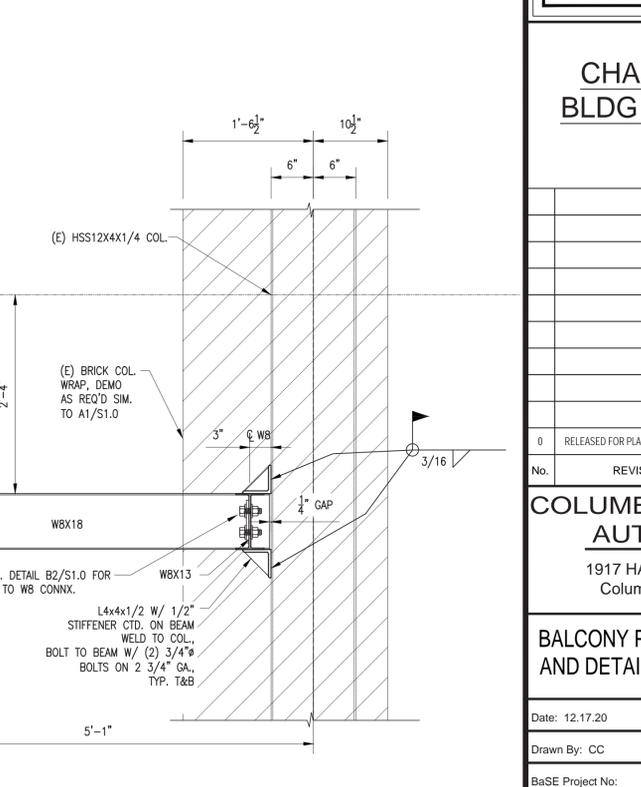
B3
S1.0
1'-1'-0"



A1
S1.0
1'-1'-0"

A2
S1.0
1'-1'-0"

A3
S1.0
1'-1'-0"



A4
S1.0
1'-1'-0"

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Professional Engineer
 No. 34978
 SOUTH CAROLINA
BAILEY AND SON ENGINEERING INC.
 No. 000523
 STATE OF AUTHORITY

Base
 Bailey and Son Engineering, Inc.
 124 Edinburg Court, Suite 209
 Greenville, SC 29607
 Ph (864) 232-1284
 Fax (864) 232-3114
 www.Base91.com
 mailbox@Base91.com

Columbia Housing

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 Columbia, SC 29204

BALCONY PLAN, SECTIONS, AND DETAILS

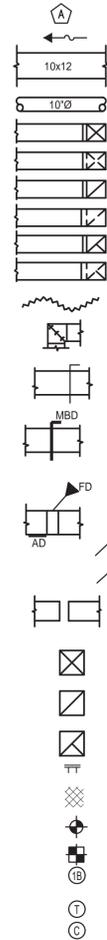
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HEATING VENTILATION AND AIR CONDITIONING SPECIFICATIONS

- ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE 2018 INTERNATIONAL MECHANICAL CODE, 2009 INTERNATIONAL ENERGY CONSERVATION CODE, 2018 EDITIONS OF THE INTERNATIONAL BUILDING AND FIRE CODES, AND APPLICABLE LOCAL ORDINANCES.
- THESE COMMON PROVISIONS APPLY TO ALL MECHANICAL WORK COVERED IN THIS CONTRACT, INCLUDING HVAC AND RELATED PIPING.
 - PROVIDE ALL LABOR, MATERIAL, EQUIPMENT, MACHINERY, SUPERVISION, MANAGEMENT, AND ALL OTHER ITEMS NECESSARY FOR THE COMPLETE MECHANICAL SYSTEM. THE ENTIRE MECHANICAL SYSTEM SHALL BE INSTALLED, STARTED, TESTED, ADJUSTED AND TURNED OVER TO THE OWNER IN PROPER OPERATING CONDITION.
 - ALL LABOR, EQUIPMENT, MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF ALL APPLICABLE NATIONAL AND LOCAL CODES.
 - ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. WHERE THIS MAY CONFLICT WITH CODE REQUIREMENTS THE CODES SHALL HAVE PRECEDENCE.
 - THE CONTRACTOR AND/OR THE APPROPRIATE SUBCONTRACTOR SHALL CONCURRENTLY HOLD ALL REQUIRED LICENSES TO PERFORM THE WORK SHOWN AND SPECIFIED ON THESE DRAWINGS. CONTRACTOR SHALL FURNISH AND PAY FOR ALL PERMITS, FEES AND TAXES ASSOCIATED WITH HIS WORK.
 - THE CONTRACTOR SHALL BE BOUND BY THE WARRANTY AS DESCRIBED UNDER THE GENERAL CONDITIONS OR BY THE DESCRIPTION THAT FOLLOWS, WHICHEVER IS MORE STRINGENT. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH ALL DOCUMENTATION WITH REGARD TO MANUFACTURER'S WARRANTIES ON ALL EQUIPMENT INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL GUARANTEE THAT ALL WORK SHALL BE FREE FROM DEFECTS DUE TO FAULTY MATERIALS AND/OR WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION AND SHALL REMEDY SUCH DEFECTS AND PAY FOR ANY DAMAGE RESULTING AT NO COST TO THE OWNER PROVIDED THAT DEFECTS ARE NOT DUE TO ABUSE BY THE OWNER, ACTS OF GOD, OR CIVIL UNREST.
 - UNDER NO CIRCUMSTANCES IS THE CONTRACTOR TO INSTALL ANY MATERIAL OR EQUIPMENT, FOREIGN OR DOMESTIC, WITH ASBESTOS CONTAINING MATERIAL.
- DIMENSIONS: DRAWINGS SHOULD BE INTERPRETED AS GENERAL LAYOUT AND ARRANGEMENT DRAWINGS. THE DRAWINGS ARE NOT INTENDED TO SHOW COMPLETE OR PRECISE MEASUREMENTS AND DETAILS OF THE BUILDING AND INSTALLATION IN EVERY RESPECT, AND THEY DO NOT INCLUDE ALL DETAILS OF MANUFACTURED EQUIPMENT, CONSTRUCTION, PIPING, DUCTWORK, ETC. MEASUREMENT FIGURES WRITTEN UPON THE DRAWINGS INDICATING DIMENSIONS SHALL BE USED INSTEAD OF SCALED MEASUREMENTS. NO SCALE MEASUREMENT TAKEN FROM A DRAWING SHALL BE RELIED UPON AS A DIMENSION FOR INSTALLATION PURPOSES. EXACT LOCATIONS AND MEASUREMENTS ARE TO BE DEFINED IN THE FIELD, AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR ACCURACY AND USE IN CONSTRUCTION OF THE WORK.
- INTERFERENCES: THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THAT OF ALL OTHER TRADES IN ORDER TO ELIMINATE INTERFERENCES. HE SHALL EXAMINE IN ADVANCE THE LOCATION OF ELECTRICAL SYSTEMS, DUCTS, PIPING, STRUCTURES, CONDUITS, AND OTHER EQUIPMENT AND COMPONENTS TO BE INSTALLED, AND PROPERLY COORDINATE THE INSTALLATION OF MECHANICAL WORK TO AVOID INTERFERENCES. THE ENGINEERS HAVE CONSIDERED EXISTING INTERFERENCES IN MAKING THE DRAWINGS, BUT IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MODIFY, OFFSET, OR OTHERWISE ACCOMMODATE ALL EQUIPMENT TO THE STRUCTURE, UTILITIES, AND OTHER EQUIPMENT.
- UTILITIES: UNLESS NOTED OTHERWISE THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL OF HIS UTILITY REQUIREMENTS.
- SUBSTITUTIONS: THE MATERIALS, PRODUCTS, AND EQUIPMENT DESCRIBED IN THE DOCUMENTS ESTABLISH A STANDARD OF REQUIRED FUNCTION, DIMENSION, APPEARANCE, SERVICEABILITY, AVAILABILITY OF SPARE PARTS AND QUALITY TO BE MET BY ANY PROPOSED SUBSTITUTION.
 - SUBSTITUTION OF EQUIPMENT, PRODUCTS, OR MATERIAL MUST BE APPROVED BY THE OWNER OR HIS REPRESENTATIVE. REVIEW OF PROPOSED SUBSTITUTIONS WILL BE MADE AS PART OF SUBMITTAL REVIEW AFTER THE PROJECT IS AWARDED.
 - THE SUBSTITUTION OF PRODUCTS, MATERIAL, OR EQUIPMENT WHICH REQUIRES REDESIGN OF ANY PORTION OF THE PACKAGE WILL BE PREPARED BY THE CONTRACTOR AT HIS EXPENSE AND APPROVED BY THE OWNER OR HIS REPRESENTATIVE.
- SUBMITTALS: THE CONTRACTOR SHALL PROVIDE SIX COPIES OF CERTIFIED DETAIL CATALOG CUT SHEETS OF ALL MATERIAL AND EQUIPMENT HE IS PROVIDING AS SUBMITTAL DOCUMENTATION TO THE OWNER.
 - THE CONTRACTOR SHALL PRESENT COMPLETE PERFORMANCE INFORMATION ON EACH PIECE OF EQUIPMENT ORGANIZED IN A MANNER RESEMBLING THAT ON THE CONTRACT DOCUMENTS. INCOMPLETE INFORMATION WILL NOT BE REVIEWED.
 - THE CONTRACTOR SHALL RECEIVE WRITTEN APPROVAL FROM THE OWNER OR HIS AUTHORIZED REPRESENTATIVE PRIOR TO PURCHASE AND INSTALLATION OF SAID MATERIAL AND EQUIPMENT.
- RECORD DRAWINGS AND MAINTENANCE MANUALS:
 - THE CONTRACTOR SHALL KEEP A RECORD SET OF DRAWINGS ON THE JOB AND SHALL, AS CONSTRUCTION PROGRESSES, RECORD ANY CHANGES WHERE CONSTRUCTION IS DIFFERENT FROM THE DESIGN DOCUMENTS. AT THE TIME OF FINAL INSPECTION, ONE SET OF RECORD DRAWINGS IN ADDITION TO ONE SET OF APPROVED SUBMITTAL DOCUMENTS SHALL BE TURNED OVER TO THE OWNER. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST ASSOCIATED WITH THESE DOCUMENTS.
 - AT THE TIME OF FINAL INSPECTION THE CONTRACTOR SHALL TURN OVER TO THE OWNER AN OPERATION AND MAINTENANCE MANUAL ENCOMPASSING ALL OF THE MECHANICAL COMPONENTS INSTALLED. THE MANUAL SHALL CLEARLY IDENTIFY THE CAPACITY OF THE EQUIPMENT INSTALLED, WIRING DIAGRAMS, CONTROL SEQUENCES.
 - THE MANUAL SHALL ALSO INCLUDE NAME, ADDRESS, AND TELEPHONE NUMBER OF SERVICE ORGANIZATIONS. THE MANUAL SHALL CLEARLY IDENTIFY SERVICE REQUIREMENTS, WARRANTY, AND RECOMMENDED SERVICE INTERVALS.
- PIPING: PIPING MATERIALS SHALL BE IN ACCORDANCE WITH THE PIPE SUPPORT TABLE THAT APPEARS IN THESE DOCUMENTS.
 - ALL PIPE SHALL BE ADEQUATELY BRACED AND SUPPORTED. PIPE HANGERS AND SUPPORTS SHALL CONFORM TO THE REQUIREMENTS OF MSS SP-58. SUPPORT SPANS SHALL NOT EXCEED THOSE NOTED IN THE PIPE SUPPORT TABLE APPEARING IN THESE DOCUMENTS. IN ADDITION TO THE MAXIMUM ALLOWABLE SPACING BETWEEN SUPPORTS, HORIZONTAL PIPING SHALL BE SUPPORTED AT TERMINATION OF ALL HORIZONTAL RUNS OR BRANCHES, AND AT EACH CHANGE OF DIRECTION.
 - OPEN PIPE ENDS SHALL BE COVERED AND FREE OF DEBRIS DURING CONSTRUCTION.
 - WHERE THE SIZE OF REFRIGERANT PIPE IS NOT NOTED ON THE DRAWINGS, THE PIPE SHALL BE SIZED BY THE CONTRACTOR IN ACCORDANCE WITH THE EQUIPMENT MANUFACTURERS RECOMMENDATIONS BASED ON THE LIFT AND RUN OF THE SPECIFIC INSTALLATION. THIS SHALL INCLUDE ACCUMULATORS AND/OR SOLENOID VALVES, IF REQUIRED.
 - REFRIGERANT PIPE AND ASSOCIATED AIR CONDITIONING EQUIPMENT SHALL BE EVACUATED AND CHARGED IN ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S STANDARDS.
 - REFRIGERANT PIPING SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE WITH HYDRA ZORB CUSHIONED CLAMPS OR EQUAL. INSULATION AT PIPE SUPPORTS SHALL BE COVERED WITH A PVC SLEEVE OR OTHER SUITABLE MATERIAL TO PREVENT THE CRUSHING OF THE INSULATION.
 - REFRIGERANT SUCTION PIPE SHALL BE INSULATED WITH 1" THICK ELASTOMERIC FOAM INSULATION.
 - PVC PIPING SHALL NOT BE INSTALLED IN ANY AREA USED AS A SUPPLY OR RETURN AIR PLENUM.
- INSULATION: PIPE AND DUCTWORK SHALL BE INSULATED IN ACCORDANCE WITH THE PIPE SUPPORT TABLE AND THE DUCTWORK SECTION OF THESE SPECIFICATIONS.
 - INSULATION SHALL HAVE A FLAME SPREAD RATING OF 25 OR LESS AND A SMOKE DEVELOPMENT RATING OF 50 OR LESS IN ACCORDANCE WITH UL 723.
 - FIBERGLASS PIPE INSULATION SHALL BE EQUAL TO CERTAINTED SNAP ON ASJ/SSL.
 - FIBERGLASS INSULATION ON PIPE FITTINGS SHALL BE MOLDED FIBERGLASS FITTING COVER WITH WHITE PVC JACKET.
 - FIBERGLASS DUCTWRAP SHALL HAVE A FACTORY APPLIED FSK OR FOIL VAPOR BARRIER AND EQUAL TO OWENS CORNING TYPE 75. THICKNESS SHALL BE AS DESCRIBED UNDER DUCTWORK.
 - FIBERGLASS DUCT LINER SHALL BE EQUAL TO CERTAINTED TOUGHGARD R. LINER SHALL BE TREATED WITH AN EPA RECOGNIZED ANTI-MICROBIAL AGENT AND SHALL NOT SUPPORT FUNGAL OR BACTERIAL GROWTH IN ACCORDANCE WITH ASTM G 21 AND G22 TEST METHODS. LINER SHALL BE CLEANABLE IN ACCORDANCE WITH NAIMA METHODS. THE LINER SHALL HAVE A TOUGH COMPOSITE SURFACE AND SHALL BE SUITABLE FOR VELOCITIES UP TO 6000 FPM. UNLESS NOTED OTHERWISE FIBERGLASS DUCT LINER SHALL BE 1" THICK.
 - INSULATED PIPE SHALL BE PROTECTED FROM DAMAGE OR COMPRESSION FROM HANGERS AT THE POINT OF SUPPORT USING HALF SLEEVE SHIELDS EQUAL TO GRINNEL FIG. 167 OR THE USE OF PRE-INSULATED PIPE SADDLES EQUAL TO ANVIL 260 ISS.
 - ARMAFLEX INSULATION SHALL BE EQUAL TO ARMSTRONG ARMAFLEX ELASTOMERIC FOAM INSULATION APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. OUTSIDE INSTALLATIONS SHALL RECEIVE TWO COATS OF WB ARMAFLEX FINISH.
- DUCTWORK:
 - UNLESS OTHERWISE NOTED ALL DUCT CONSTRUCTION AND SUPPORTS SHALL CONFORM TO THE REQUIREMENTS OF SMACNA HVAC DUCT CONSTRUCTION STANDARDS, LATEST EDITION, UL 181, AND LOCAL CODES.
 - SUPPLY AIR, OUTSIDE AIR, AND RETURN AIR DUCTWORK TO AIR HANDLING EQUIPMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF DUCT RATED FOR 1" W.G. DUCT MATERIAL SHALL BE LOCK FORMING QUALITY GALVANIZED STEEL, MINIMUM #24 GAUGE.
 - DUCTS SHALL BE SEALED IN THE LONGITUDINAL AND TRANSVERSE DIRECTION. TAPES AND MASTICS USED TO SEAL DUCTWORK SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL 181A OR 181B-M. DUCT CONNECTIONS TO FLANGES ON AIR DISTRIBUTION EQUIPMENT SHALL BE MECHANICALLY FASTENED AND SEALED. UNLISTED DUCT TAPE IS NOT PERMITTED TO BE USED AS A SEALANT.
 - DUCTWORK SHALL BE INSULATED AS DESCRIBED BELOW. INSULATION MATERIALS INSIDE THE BUILDING ENVELOPE OR IN THE AIRSTREAM, INCLUDING LININGS, COVERINGS, AND ADHESIVES, SHALL HAVE A FLAME SPREAD RATING NOT OVER 25 AND A SMOKE DEVELOPED RATING NOT OVER 50.
 - SUPPLY AND RETURN DUCT INSTALLED IN UNINSULATED ATTIC AND CRAWL SPACE AREAS SHALL BE INSULATED WITH FIBERGLASS DUCTWRAP WITH AN INSTALLED THICKNESS OF 2 1/8" (R8 MIN). OUTSIDE AIR DUCT AND SUPPLY METAL DUCT INSTALLED ABOVE SUSPENDED CEILINGS SHALL BE EXTERNALLY INSULATED WITH 1 1/2" THICK FIBERGLASS DUCT WRAP. THE INSULATION SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
 - DUCT SIZES NOTED ON THE DRAWINGS ARE BASED ON "FREE FLOW AREA". SHEET METAL SIZES WILL BE LARGER WHERE DUCT LINER IS SPECIFIED TO ACCOMMODATE THE LINER.
 - MITERED SQUARE ELBOWS SHALL BE EQUIPPED WITH SINGLE THICKNESS TURNING VANES.
 - INSULATED FLEXIBLE DUCTWORK SHALL BE CONSTRUCTED OF AN INNER AIR BARRIER OVER A COILED STEEL WIRE STRUCTURE, COVERED WITH INSULATION EQUIPPED TO A FOIL OR VAPOR BARRIER. INSULATED FLEXIBLE DUCTWORK SHALL CONFORM TO THE REQUIREMENTS OF UL 181, CLASS I, AIR DUCT. LENGTH SHALL NOT EXCEED 10 FEET. FLEXIBLE DUCT SHALL BE SUPPORTED WITH 1.5" WIDE GALVANIZED STRAPS OR 2" WIDE FABRIC STRIPS. SPACING INTERVALS FOR FLEXIBLE DUCT SUPPORTS SHALL NOT EXCEED 64" AND DROOP BETWEEN SUPPORTS SHALL NOT EXCEED 2.0". FLEXIBLE DUCT SHALL BE ROUTED SUCH THAT FULL FLOW AREA IS MAINTAINED AND TURNS HAVE A MINIMUM RADIUS OF 2 TIMES THE DUCT DIAMETER.
 - RECTANGULAR DAMPERS NOTED AS "MBD" SHALL BE OPPOSED BLADE BALANCING DAMPERS EQUAL TO RUSKIN MD-35. ROUND DAMPERS NOTED AS "MBD" SHALL BE EQUAL TO RUSKIN CDR25. MBD DAMPERS SHALL BE INSTALLED WITH LOCKING MANUAL OPERATOR.
 - FLEXIBLE DUCT TAKE-OFFS FROM RECTANGULAR DUCT SHALL BE SPIN IN TAPS WITH SINGLE BLADE DAMPER. TAKE-OFF SHALL NOT HAVE SCOOPS.
 - FLEXIBLE DUCT CONNECTORS SHALL BE EQUAL TO VENTFABRICS "VENTGLAS" FOR INTERIOR APPLICATIONS AND VENTFABRICS "VENTLON" WHERE EXPOSED TO WEATHER AND SHALL BE INSTALLED AT THE INLET AND OUTLET OF ALL AIR HANDLERS AND ROOF TOP AIR CONDITIONING UNITS. THE FLEXIBLE CONNECTOR SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
 - DUCTS SHALL BE ADEQUATELY SUPPORTED. WHERE METAL DUCTS ARE SUPPORTED WITH METAL STRAPS THE STRAPS SHALL BE A MINIMUM OF 1" WIDE AND OF THE SAME GAGE OR HEAVIER THAN THE DUCT SUPPORTED. METAL DUCT SHALL BE SUPPORTED WITH APPROVED HANGERS AT INTERVALS NOT EXCEEDING 10 FEET. FLEXIBLE DUCT SHALL BE SUPPORTED WITH 1.5" WIDE GALVANIZED STRAPS OR 2" WIDE FABRIC STRIPS. SPACING INTERVALS FOR FLEXIBLE DUCT SUPPORTS SHALL NOT EXCEED 64". MAXIMUM PERMISSIBLE SAG IS 1/2" PER FOOT.
- EQUIPMENT MISCELLANEOUS:
 - LABELS: ALL EQUIPMENT SHALL HAVE A PERMANENTLY AFFIXED LABEL FROM THE MANUFACTURER. LABEL SHALL INCLUDE THE EQUIPMENT'S ELECTRICAL REQUIREMENTS, MANUFACTURER AND MODEL NUMBER OF THE EQUIPMENT, HEATING FUEL INPUT, BTU RATING, AND A SEAL INDICATING APPROVAL BY AN APPROVED TESTING AGENCY.
 - REFRIGERANT ACCESS PORTS SHALL BE FITTED WITH LOCKING-TYPE TAMPER RESISTANT CAPS OR SHALL OTHERWISE BE SECURED AGAINST UNAUTHORIZED ACCESS.
- CONTROLS:
 - CONTROL COMPONENTS AND SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE.
 - CONTROL WIRING INSTALLED EXTERIOR TO THE BUILDING ENVELOPE SHALL BE INSTALLED IN WEATHER TIGHT GALVANIZED CONDUIT.
 - CONTROL WIRING INSTALLED INSIDE THE BUILDING WITHIN EIGHT FEET OF FINISHED FLOOR SHALL BE INSTALLED IN CONDUIT OR

- ROUTED INSIDE WALLS.
- CONTROL WIRING INSTALLED IN AIR PLENUMS SHALL HAVE INSULATION SUITABLE FOR PLENUM INSTALLATION IN ACCORDANCE WITH NFPA REQUIREMENTS.
- WALL MOUNTED THERMOSTATS OR SENSORS SHALL BE INSTALLED 4' 0" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED ON DRAWINGS. LOCATION OF WALL MOUNTED DEVICES SHALL BE COORDINATED WITH OTHER TRADES FOR A NEAT APPEARANCE.
- CLEANING:
 - CONTRACTOR SHALL REMOVE ANY DEBRIS OR LOOSE MATERIALS FROM INSIDE THE DUCTWORK AND AIR HANDLING EQUIPMENT PRIOR TO START-UP.
 - CONTRACTOR SHALL CLEAN THE EXTERIOR OF ALL EXPOSED DUCTS, FABRICATION MARKS AND MARKINGS SHALL BE REMOVED.
 - CONTRACTOR SHALL INSTALL FILTERS WHERE CALLED FOR ON THE PLANS PRIOR TO START-UP AND CLEANING. CONTRACTOR SHALL REPLACE FILTERS DURING THE CLEANING PROCESS AS REQUIRED TO CLEAN AND PROTECT THE EQUIPMENT AND SYSTEM. FILTERS AT THE TIME OF TURNOVER OF THE SYSTEM TO THE OWNER SHALL BE NEW AND CLEAN.
- START-UP:
 - ALL NEW PIPING SHALL BE TESTED AT 1.5 TIMES NORMAL WORKING PRESSURE. PIPES MAY BE TESTED HYDROSTATICALLY, WITH COMPRESSED AIR, OR WITH NITROGEN. CAST IRON AND PLASTIC PIPING SHALL BE TESTED HYDROSTATICALLY. REFRIGERANT PIPING SHALL BE TESTED WITH DRY NITROGEN. ALL TESTING SHALL BE DONE IN ACCORDANCE WITH CODE REQUIREMENTS. ALL LEAKS SHALL BE REPAIRED PRIOR TO PUTTING THE PIPING IN SERVICE.
 - EQUIPMENT SHALL BE CYCLED THROUGH ALL HEATING, COOLING, AND VENTILATION CYCLES TO INSURE PROPER OPERATION OF ALL COMPONENTS AND CONTROLS PRIOR TO TEST AND BALANCE.
 - DESIRED OR FIELD DETERMINED SET POINTS SHALL BE PERMANENTLY RECORDED ON CONTROL DRAWINGS, AT CONTROL DEVICES, OR IN DIGITAL PROGRAMMING COMMENTS.
- TEST AND BALANCE:
 - ACTUAL AIRFLOW VALUES SHALL BE SET TO WITHIN 10% OF THE DESIGN VALUES NOTED ON THE DRAWINGS.
 - THE FINAL SUPPLY, EXHAUST, AND RETURN AIRFLOW SHALL BE TESTED, ADJUSTED, BALANCED, AND RECORDED IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTERS 4 AND 6 OF THE IMC AND PROCEDURES OF THE NEBB OR AABC. THIS SHALL INCLUDE MAXIMUM AND MINIMUM VALUES WHERE NOTED ON THE DRAWINGS.
 - RECORD VOLTAGE, AMPERAGE, AND TOTAL AIRFLOW ON ALL AIR CONDITIONING AND HEATING EQUIPMENT. ADJUST FAN SPEED AS REQUIRED TO MEET MINIMUM AIRFLOW REQUIREMENTS.
 - BALANCE SCOPE SHALL INCLUDE ASSISTING THE MECHANICAL AND CONTROLS CONTRACTORS IN SETTING THE MINIMUM AND MAXIMUM POSITIONS ON OUTSIDE AIR DAMPER(S) TO ACHIEVE THE AIRFLOWS SPECIFIED ON THE SCHEDULE.
 - THE TEST AND BALANCE PERSONNEL SHALL ENDEAVOR TO FIRST REDUCE THROTTLING LOSSES THEN FAN SPEED OR IMPELLER SIZE SHALL BE ADJUSTED TO MEET DESIGN FLOW CONDITIONS.
 - CHECK AND RECORD OPERATING REFRIGERANT PRESSURES ON SPLIT SYSTEM AIR CONDITIONING EQUIPMENT OR HEAT PUMPS.
 - RECORDED DATA SHALL REPRESENT ACTUALLY MEASURED OR OBSERVED CONDITION. SET AND LOCK MEMORY STOPS. ADJUST AIR SYSTEMS TO PLUS OR MINUS 10 PERCENT FROM FIGURES INDICATED.
 - PROVIDE BALANCE REPORT IN SOFT COVER, LETTER SIZE, 3-RING BINDER, WITH INDEX PAGE AND TABS, AND COVER IDENTIFICATION. INCLUDE REDUCED SCALE DRAWINGS WITH AIR OUTLETS AND EQUIPMENT IDENTIFIED TO CORRESPOND WITH DATA SHEETS. DATA SHEETS SHALL BE IN THE FORMAT OF THE AABC OR NEBB.
 - OWNER RESERVES THE RIGHT TO HAVE BALANCE WORK SPOT-CHECKED BY AABC OR NEBB REGISTERED BALANCING FIRM. IF MORE THAN 10% OF THE GRILLES ARE FOUND TO DEVIATE FROM THE LEVELS NOTED IN THE REPORT THE CONTRACTOR WILL REBALANCE THE SYSTEM IN ITS ENTIRETY AT NO ADDITIONAL COST TO THE OWNER.

MECHANICAL SYMBOLS



- PLAN NOTE
DIRECTION OF AIR FLOW
- RECTANGULAR DUCT & SIZE
- ROUND DUCT AND SIZE
- RECT. SUPPLY DUCT TURNING UP
- RECT. SUPPLY DUCT TURNING DOWN
- RECT. RETURN DUCT TURNING UP
- RECT. RETURN DUCT TURNING DOWN
- RECT. EXHAUST DUCT TURNING UP
- RECT. EXHAUST DUCT TURNING DOWN
- FLEXIBLE DUCTWORK
- 90° ELBOWS HAVE TURNING VANES UNLESS NOTED OTHERWISE
- BUTTERFLY TYPE MANUAL VOLUME DAMPER
- FIRE DAMPER (FD)
- SMOKE DAMPER (SD)
- FIRE/SMOKE DAMPER (FSD)
- HORIZONTAL PLANE FIRE OR SMOKE DAMPER
- VERTICAL PLANE FIRE OR SMOKE DAMPER
- DUCT OR EQUIPMENT WITH FLEXIBLE CONNECTION
- CEILING SUPPLY DIFFUSER
- CEILING RETURN
- EXHAUST
- DOUBLE ROOF JOISTS
- ITEM TO BE REMOVED OR REPLACED
- CONNECTION POINT NEW TO EXISTING
- TERMINATION POINT OF DEMOLITION
- REFERENCE NUMBER - SEE ASSOCIATED NUMBER ON PLAN DRAWINGS
- THERMOSTAT
- CO2 SENSOR

MECHANICAL ABBREVIATIONS

- AD ACCESS DOOR
- ADJ ADJUSTABLE
- AFV ABOVE FINISHED FLOOR
- APPROX APPROXIMATELY
- AH or AHU AIR HANDLING UNIT
- C COMMON
- CD CONDENSATE DRAIN
- CFM CUBIC FEET PER MIN.
- CLG CEILING
- COND CONDENSATE
- CTWR COOLING TOWER WATER RETURN
- CTWS COOLING TOWER WATER SUPPLY
- CU CONDENSER UNIT
- DIA DIAMETER
- DN DOWN
- DWG DRAWING
- DX DIRECT EXPANSION
- EF EXHAUST FAN
- ENT ENTERING
- EXH EXHAUST
- EXIST EXISTING
- "F" DEGREES FAHRENHEIT
- FD FIRE DAMPER
- FL FLOOR
- FLEX FLEXIBLE
- FEET FEET
- GPM GALLONS PER MIN.
- HETO HIGH EFFICIENCY TAKE-OFF
- LVG LEAVING
- LBS POUNDS
- MAX MAXIMUM
- MECH MECHANICAL
- MFG MANUFACTURER
- MIN MINIMUM
- NTS NOT SCALE
- OA OUTSIDE AIR
- PSI PRESSURE PER SQUARE INCH
- PSIG PRESSURE PER SQUARE INCH GAUGE
- RA RETURN AIR
- RD RADIATION DAMPER
- REFG REFRIGERANT REQUIRED
- REQD REQUIRED
- SD SMOKE DETECTOR
- SF SUPPLY FAN
- TA TRANSFER AIR
- TG TRANSFER GRILLE
- TRANS TRANSFER
- TSTAT THERMOSTAT
- TYP TYPICAL
- UH UNIT HEATER
- WB WET BULB
- W/ WITH
- W/O WITHOUT
- VTR VENT THRU ROOF

| DESIGN CONDITIONS | |
|-------------------|---|
| SUMMER | OUTDOOR : 95°F db / 80°F wb INDOOR: 70°F db / 50% RH |
| WINTER | OUTDOOR : 95°F db / 80°F wb INDOOR: 68°F db |

| PIPING MATERIAL | MAX. HORIZ. SPACING (FT) | MAX. VERTICAL SPACING (FT) |
|--|--------------------------|----------------------------|
| STEEL, SCHEDULE 10 & GREATER | 12 | 15 |
| COPPER & BRASS PIPE | 12 | 10 |
| COPPER & COPPER-ALLOY TUBING | | |
| 1 1/4" & < | 6 | 10 |
| 1 1/2" & > | 10 | 10 |
| CPVC PIPE | | |
| 1" & < | 3 | 10 |
| 1 1/4" & > | 4 | 10 |
| PEX TUBING & POLYPROPYLENE PIPE 1" & SMALLER | 2'-8" | 10 |
| PVC (*), ABS | 4 | 10 |
| CAST & DUCTILE IRON | 5 (*) | 15 |

(*) SPACING AT 80°F. SEE MANUFACTURER'S REQUIREMENTS IF TEMPERATURES ARE ABOVE 80°F.
 (**) HANGER IS WITHIN 18" OF EACH JOINT WITH MAXIMUM HANGER SPACING NOT TO EXCEED 5' ON 5' LENGTHS AND 10' ON 10' LENGTHS OF PIPE.

- NOTES:
- PIPES 4" AND LARGER SHALL BE RESTRAINED AT ALL CHANGES IN DIRECTION.
 - ADDITIONAL SUPPORT SHALL BE PROVIDED AT INLET AND OUTLET OF VALVES, FILTERS, METERS, OR SIMILAR DEVICES, WHICH IMPOSE ADDITIONAL WEIGHT ON THE PIPE.
 - BASED ON 2015 INTERNATIONAL MECHANICAL CODE.
 - AS AN ALTERNATE PEX TUBING MAY BE SUPPORTED CONTINUOUSLY USING UPONOR PEX-a PIPE SUPPORT OR EQUAL.

| M.001 | MECHANICAL LEGEND AND SPECIFICATIONS |
|-------|---|
| M.101 | MECHANICAL FIRST FLOOR DEMOLITION PLAN |
| M.102 | MECHANICAL SECOND FLOOR DEMOLITION PLAN |
| M.103 | MECHANICAL FIRST FLOOR NEW WORK PLAN |
| M.104 | MECHANICAL SECOND FLOOR NEW WORK PLAN |
| M.501 | MECHANICAL DETAILS |
| M.601 | MECHANICAL SCHEDULES |

| CODE | DESCRIPTION |
|-----------------|--|
| SMACNA (2005) | HVAC DUCT CONSTRUCTION STANDARDS MANUAL, THIRD EDITION |
| IBC (2018) | INTERNATIONAL BUILDING CODE |
| IECC (2009) | INTERNATIONAL ENERGY CONSERVATION CODE |
| IMC (2018) | INTERNATIONAL MECHANICAL CODE |
| NFPA 90A (2009) | STANDARD FOR THE INSTALLATION AIR-CONDITIONING & VENTILATING SYSTEMS |

116 SOUTH PLEASANTBURG DRIVE
GREENVILLE, SOUTH CAROLINA 29607
(864) 233-8844 www.h2l.com

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H2L CONSULTING ENGINEERS
No. C00001

STATE OF SOUTH CAROLINA
REGISTERED PROFESSIONAL ENGINEER
No. 37487
JERRY S. PILGER

ELECTRONICALLY SEALED
12/17/2020



RELEASED FOR PLAN REVIEW AND PRICING 12/17/2020

| No. | REVISION | DATE | By |
|-----|----------------------------------|------------|-----|
| 0 | RELEASED FOR PLAN REVIEW/PRICING | 12/17/2020 | JSB |

COLUMBIA HOUSING AUTHORITY

MECHANICAL LEGENDS AND SPECIFICATIONS

Date: 12/17/2020 Approved By: WBS

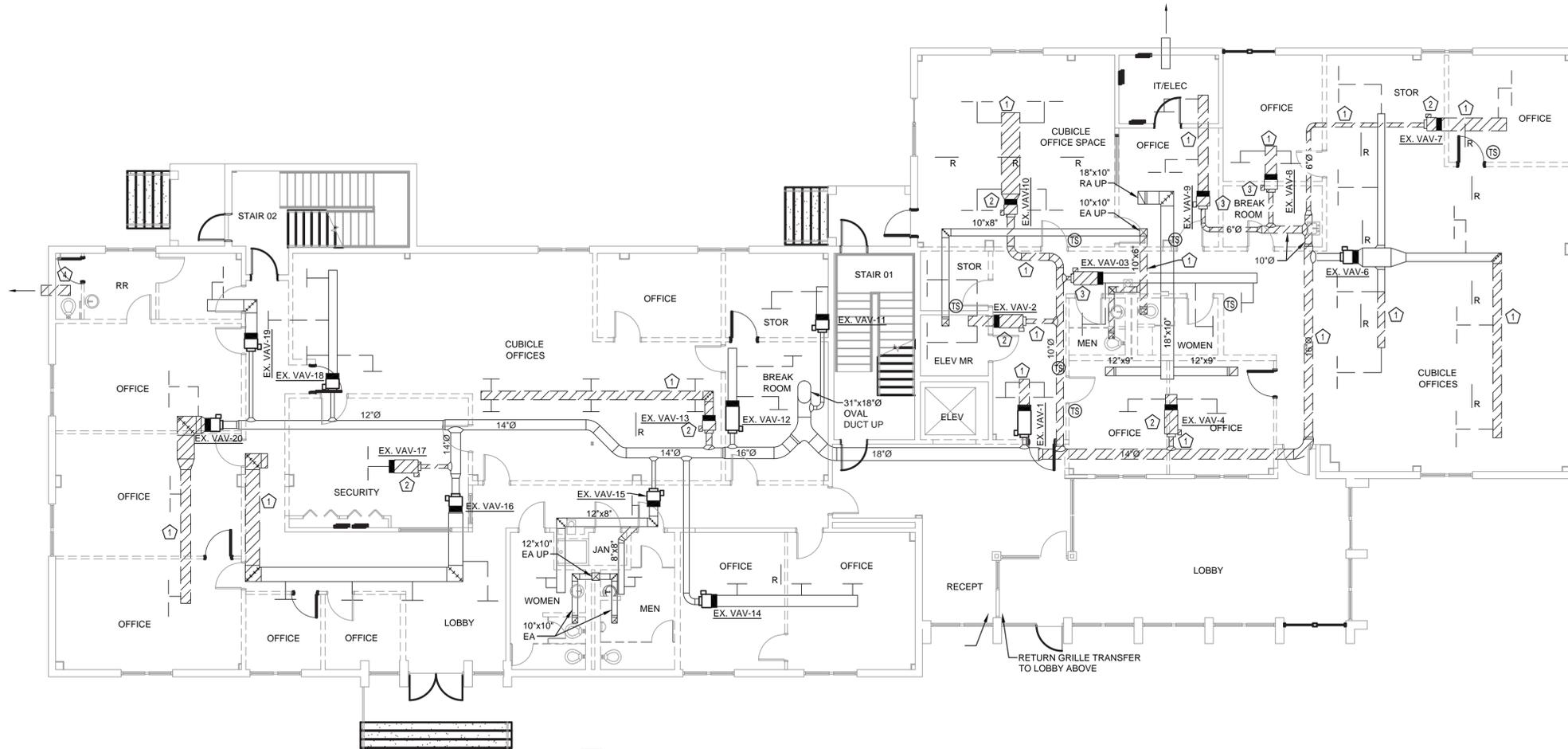
Drawn By: JSB Checked By: LC

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M001

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MECHANICAL FIRST FLOOR - DEMOLITION PLAN

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

DEMOLITION NOTES:

1. VERIFY ALL EXISTING CONDITIONS PRIOR TO BEGINNING WORK. BRING ANY DISCREPANCIES FROM THE DRAWINGS AND NOTES TO THE ARCHITECT IMMEDIATELY. MINOR CHANGES IN THE SCOPE OF THE DEMOLITION WORK SHALL NOT JUSTIFY AN ADDITIONAL COST.
2. REMOVE EXISTING THERMOSTAT, CONTROL WIRING AND ELECTRICAL RE-HEAT ASSOCIATED WITH TERMINAL UNIT TO BE REMOVED OR RELOCATED IN REMODEL AREA.
3. REMOVAL OF EXISTING MECHANICAL DUCTWORK OR EQUIPMENT, ETC., WILL REQUIRE CAPPING AND SEALING EXISTING MAINS OR BRANCHES AS NECESSARY AND REQUIRED TO ALLOW THE REMAINING SYSTEMS TO FULLY OPERATE WITHOUT DEGRADATION. CONTRACTOR SHALL PROVIDE PROTECTIVE PLASTIC DROP CLOTHS TO PROTECT THE EXISTING OCCUPIED AREAS AND EQUIPMENT FROM DUST AND DEBRIS DURING THE CONSTRUCTION WORK, AND SHALL CLEAN THE AREAS OF ALL CONSTRUCTION DIRT DAILY.
4. COORDINATE WITH GENERAL CONTRACTOR THE REMOVAL AND REPLACEMENT OF ALL EXISTING CEILINGS, WALLS, ETC., AS REQUIRED FOR MECHANICAL DEMOLITION WORK.
5. EXISTING PIPING AND EQUIPMENT, ETC., NOT TO BE UTILIZED IN THE COMPLETED BUILDING SHALL BE DISCONTINUED OR REMOVED AS REQUIRED. ALL ENDS OF DISCONTINUED DUCTWORK SHALL BE CAPPED AT THE NEAREST WALL, CEILING OR FLOOR. OPENINGS LEFT IN WALLS, CEILINGS, ETC., WHERE DUCTWORK AND PIPE, ETC., ARE REMOVED AND NOT REPLACED, SHALL BE PATCHED NEATLY WITH SIMILAR MATERIAL TO ADJACENT CONSTRUCTION. REFER TO DRAWINGS DELINEATING NEW WORK FOR ADDITIONAL INFORMATION REGARDING SYSTEMS OR PORTIONS OF SYSTEMS WHERE USE IS TO BE DISCONTINUED.
6. EXISTING FIXTURES AND EQUIPMENT THAT ARE NOT TO BE REUSED SHALL BE REMOVED AND SHALL REMAIN THE PROPERTY OF THE OWNER IF THEY WISH TO RETAIN OWNERSHIP OF SAME. IF NOT, EQUIPMENT SHALL BECOME THE PROPERTY OF THIS CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AS SOON AS PRACTICAL AND DISPOSED OF IN ACCORDANCE WITH APPLICABLE LAWS AND REGULATIONS.
7. ALL CUTTING AND CHANNELING OF EXISTING BUILDING SHALL BE ACCOMPLISHED IN A NEAT AND WORKMANLIKE MANNER WITHOUT REMOVAL OF EXCESS MATERIALS. THIS CONTRACTOR SHALL PATCH AND REPLACE WITH MATERIAL SIMILAR TO ADJACENT CONSTRUCTION.
8. WHERE EXISTING DUCTWORK AND EQUIPMENT, ETC., THAT ARE TO BE UTILIZED IN THE COMPLETED PROGRAM CONFLICT WITH NEW CONSTRUCTION AND THE REQUIRED DEMOLITION, THEY SHALL BE RELOCATED AND RECONNECTED TO MAINTAIN THE DESIRED SERVICE.
9. PORTIONS OF EXISTING SYSTEMS MAY BE SHOWN FOR CLARITY EVEN THOUGH IT MAY NOT BE NECESSARY TO MODIFY OR REVISE THEM. ALL EXISTING SYSTEMS ARE SHOWN BASED ON ORIGINAL OR REMODEL BUILDING DRAWINGS. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS.
10. ALL WORK MUST BE COORDINATED AND SCHEDULED WITH THE OWNER AND OCCUPANTS OF THIS BUILDING SO AS TO PROVIDE THE LEAST AMOUNT OF DISRUPTION OF BUILDING ACTIVITIES AS POSSIBLE.
11. ALL ACCESSIBLE ABANDONED PIPING AND DUCTWORK SHALL BE REMOVED AND PROPERLY DISPOSED OF.

DEMOLITION KEYED NOTES:

1. DISCONNECT AND REMOVE EXISTING SUPPLY DUCTS, AND ALL ASSOCIATED FITTINGS AND DAMPERS.
2. DISCONNECT EXISTING VAV BOX. BOXES SHALL BE REUSED AND RELOCATED IN NEW WORK PLAN. REFER TO M103 FOR NEW BOX LOCATIONS.
3. DISCONNECT EXISTING VAV BOX. BOX SHALL NOT BE REUSED AND SHALL BE RETURNED TO OWNER.
4. DISCONNECT AND REMOVE EXISTING EXHAUST DUCT. PATCH WALL PENETRATION.

DEMOLITION LEGEND:

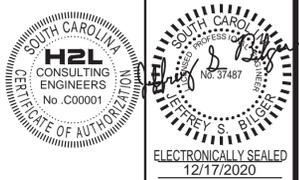
TO BE REMOVED

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Columbia Housing

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| No. | REVISION | DATE | By |

COLUMBIA HOUSING AUTHORITY
1917 HARDEN STREET
Columbia, SC 29204

MECHANICAL FIRST FLOOR DEMOLITION PLAN

Date: 12/17/2020 Approved By: WBS

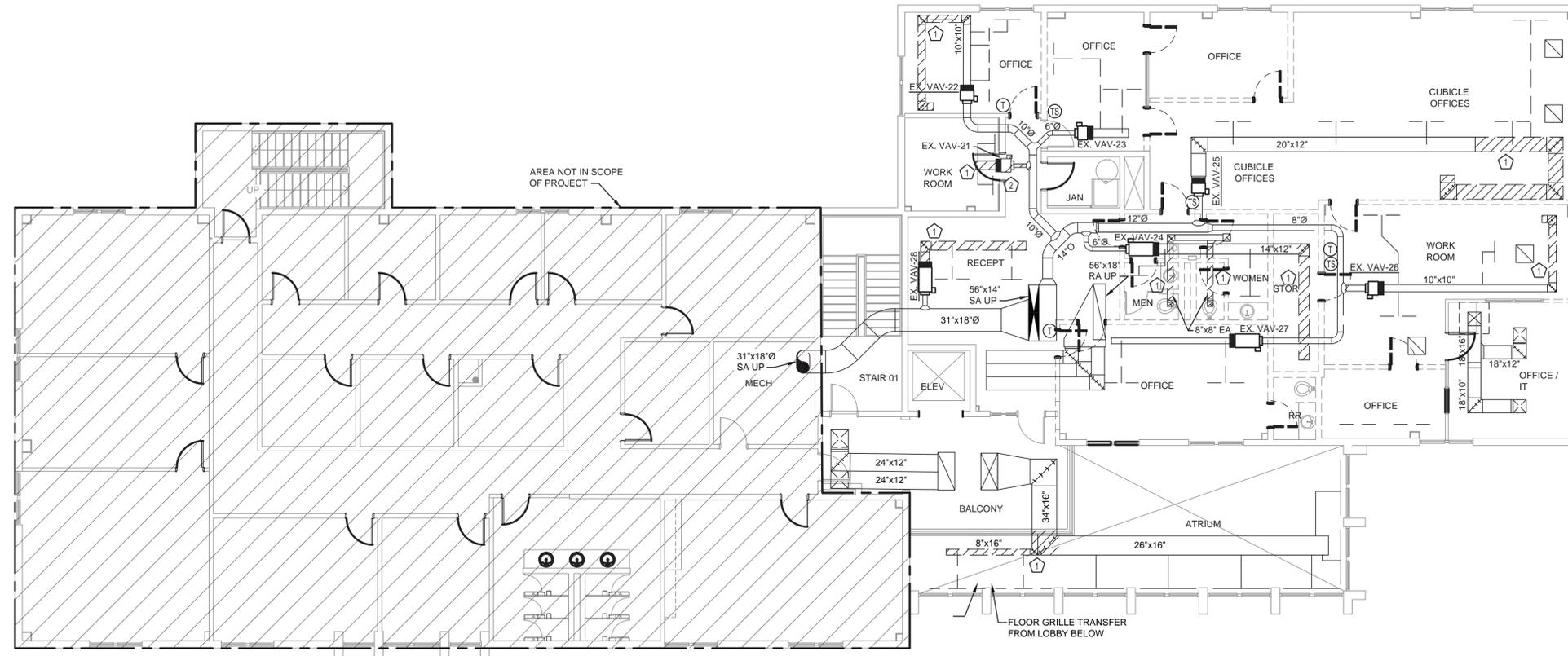
Drawn By: JSB Checked By: LC

Project No: 20002.01

Sheet No:

M101

Drawing File: M:\20200000\20002.01 - CHA Harden\Drawings\20002.01 - M102 Second Floor Demo.dwg --- Plotted by: jbliger --- Plotted Date: Dec 16, 2020 - 4:40pm



MECHANICAL SECOND FLOOR - DEMOLITION PLAN

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

DEMOLITION NOTES:

1. VERIFY ALL EXISTING CONDITIONS PRIOR TO BEGINNING WORK. BRING ANY DISCREPANCIES FROM THE DRAWINGS AND NOTES TO THE ARCHITECT IMMEDIATELY. MINOR CHANGES IN THE SCOPE OF THE DEMOLITION WORK SHALL NOT JUSTIFY AN ADDITIONAL COST.
2. REMOVE EXISTING THERMOSTAT, CONTROL WIRING AND ELECTRICAL RE-HEAT ASSOCIATED WITH TERMINAL UNIT TO BE REMOVED OR RELOCATED IN REMODEL AREA.
3. REMOVAL OF EXISTING MECHANICAL DUCTWORK OR EQUIPMENT, ETC. WILL REQUIRE CAPPING AND SEALING EXISTING MAINS OR BRANCHES AS NECESSARY AND REQUIRED TO ALLOW THE REMAINING SYSTEMS TO FULLY OPERATE WITHOUT DEGRADATION. CONTRACTOR SHALL PROVIDE PROTECTIVE PLASTIC DROP CLOTHS TO PROTECT THE EXISTING OCCUPIED AREAS AND EQUIPMENT FROM DUST AND DEBRIS DURING THE CONSTRUCTION WORK, AND SHALL CLEAN THE AREAS OF ALL CONSTRUCTION DIRT DAILY.
4. COORDINATE WITH GENERAL CONTRACTOR THE REMOVAL AND REPLACEMENT OF ALL EXISTING CEILINGS, WALLS, ETC. AS REQUIRED FOR MECHANICAL DEMOLITION WORK.
5. EXISTING PIPING AND EQUIPMENT, ETC., NOT TO BE UTILIZED IN THE COMPLETED BUILDING SHALL BE DISCONTINUED OR REMOVED AS REQUIRED. ALL ENDS OF DISCONTINUED DUCTWORK SHALL BE CAPPED AT THE NEAREST WALL, CEILING OR FLOOR. OPENINGS LEFT IN WALLS, CEILINGS, ETC., WHERE DUCTWORK AND PIPE, ETC., ARE REMOVED AND NOT REPLACED, SHALL BE PATCHED NEATLY WITH SIMILAR MATERIAL TO ADJACENT CONSTRUCTION. REFER TO DRAWINGS DELINEATING NEW WORK FOR ADDITIONAL INFORMATION REGARDING SYSTEMS OR PORTIONS OF SYSTEMS WHERE USE IS TO BE DISCONTINUED.
6. EXISTING FIXTURES AND EQUIPMENT THAT ARE NOT TO BE REUSED SHALL BE REMOVED AND SHALL REMAIN THE PROPERTY OF THE OWNER IF THEY WISH TO RETAIN OWNERSHIP OF SAME. IF NOT, EQUIPMENT SHALL BECOME THE PROPERTY OF THIS CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AS SOON AS PRACTICAL AND DISPOSED OF IN ACCORDANCE WITH APPLICABLE LAWS AND REGULATIONS.
7. ALL CUTTING AND CHANNELING OF EXISTING BUILDING SHALL BE ACCOMPLISHED IN A NEAT AND WORKMANLIKE MANNER WITHOUT REMOVAL OF EXCESS MATERIALS. THIS CONTRACTOR SHALL PATCH AND REPLACE WITH MATERIAL SIMILAR TO ADJACENT CONSTRUCTION.
8. WHERE EXISTING DUCTWORK AND EQUIPMENT, ETC., THAT ARE TO BE UTILIZED IN THE COMPLETED PROGRAM CONFLICT WITH NEW CONSTRUCTION AND THE REQUIRED DEMOLITION, THEY SHALL BE RELOCATED AND RECONNECTED TO MAINTAIN THE DESIRED SERVICE.
9. PORTIONS OF EXISTING SYSTEMS MAY BE SHOWN FOR CLARITY EVEN THOUGH IT MAY NOT BE NECESSARY TO MODIFY OR REVISE THEM. ALL EXISTING SYSTEMS ARE SHOWN BASED ON ORIGINAL OR REMODEL BUILDING DRAWINGS. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS.
10. ALL WORK MUST BE COORDINATED AND SCHEDULED WITH THE OWNER AND OCCUPANTS OF THIS BUILDING SO AS TO PROVIDE THE LEAST AMOUNT OF DISRUPTION OF BUILDING ACTIVITIES AS POSSIBLE.
11. ALL ACCESSIBLE ABANDONED PIPING AND DUCTWORK SHALL BE REMOVED AND PROPERLY DISPOSED OF.

DEMOLITION KEYED NOTES:

1. DISCONNECT AND REMOVE EXISTING SUPPLY DUCTS BACK TO MAIN AND TEMPORARILY CAP FOR NEW WORK.
2. DISCONNECT EXISTING VAV BOX. BOXES SHALL BE REUSED AND RELOCATED IN NEW WORK PLAN. REFER TO M104 FOR NEW BOX LOCATIONS.

DEMOLITION LEGEND:

TO BE REMOVED

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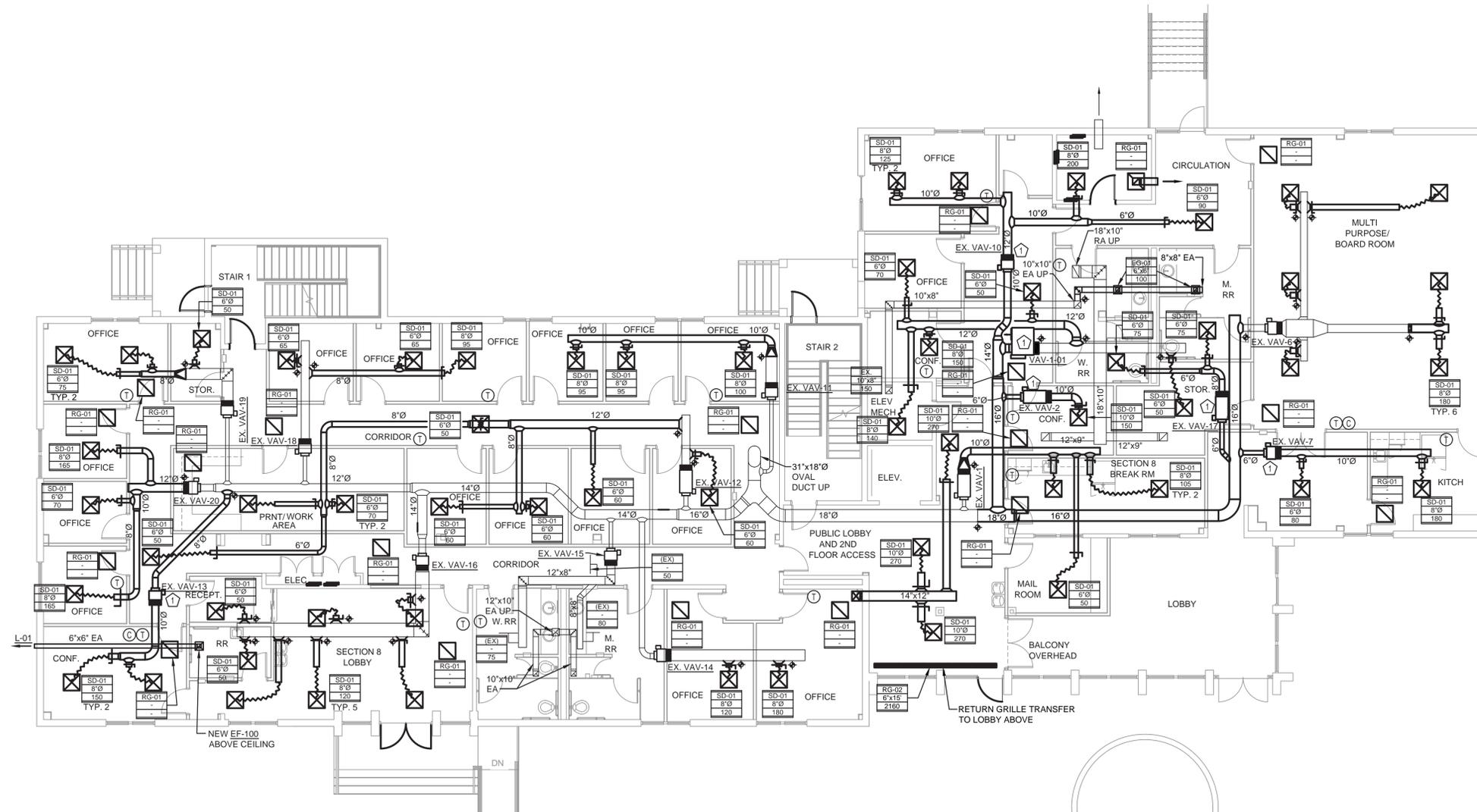
**COLUMBIA HOUSING
AUTHORITY**
1917 HARDEN STREET
Columbia, SC 29204

**MECHANICAL
SECOND FLOOR
DEMOLITION PLAN**

Date: 12/17/2020 Approved By: WBS
Drawn By: JSB Checked By: LC
Project No: 20002.01
Sheet No:

M102

Drawing File: M1-2020000200002.01 - CHA Harden Bldg Remodel - M103 First Floor Plan.dwg ... Plotted by: jbilger ... Plotted Date: Dec 16, 2020 - 4:40pm



MECHANICAL FIRST FLOOR - NEW WORK PLAN

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

GENERAL NOTES:

1. VERIFY JOB SITE CONDITIONS AND DIMENSIONS BEFORE BEGINNING WORK. PLANS ARE SCHEMATIC IN NATURE. LAYOUT IS BASED ON BEST AVAILABLE INFORMATION. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND DIMENSIONS.
2. NO PIPING, DUCTWORK, ETC. SHALL PENETRATE STRUCTURAL MEMBERS.
3. PROVIDE MISCELLANEOUS CUTTING, PATCHING AND REPAIRING OF FINISHES, ROOF, WALLS, ETC., AS REQUIRED TO ACCOMMODATE THE NEW WORK.
4. PATCH ANY OPENINGS IN CORRIDORS REQUIRED TO BE CONSTRUCTED TO LIMIT THE TRANSFER OF SMOKE AND IN SMOKE BARRIERS AS REQUIRED TO MEET CODE REQUIREMENTS. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY EXACT LOCATIONS, CONFIGURATION AND ROUTING OF EXISTING SYSTEMS REQUIRED TO REMAIN IN OPERATION DURING THE PROJECT TO PREVENT DAMAGE DURING DEMOLITION AND PHASING.
6. REMOVE ALL EXISTING EQUIPMENT, DUCTWORK AND PIPING THAT IS NOT REQUIRED FOR A WORKING INSTALLATION.
7. COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO INSTALLATION.
8. ALL CUTTING AND PATCHING SHALL BE CLOSELY COORDINATED WITH THE G.C.
9. COORDINATE ROUTING OF PLUMBING, AND HVAC PIPING WITH DUCTWORK, LIGHTS, ARCHITECTURAL CEILING AND STRUCTURAL ELEMENTS. PIPING SHALL RISE AND DROP. JOG OR OFFSET AS REQUIRED TO AVOID CONFLICTS. DUCTWORK SHALL TAKE PRECEDENCE OVER ALL PIPING, EXCEPT WHERE GRADE MUST BE MAINTAINED FOR DRAINAGE. REWORK OF INSTALLED WORK TO RESOLVE CONFLICTS ARISING FROM LACK OF COORDINATION SHALL NOT JUSTIFY AN INCREASE IN THE CONTRACT AMOUNT.
10. ALL PENETRATIONS THROUGH FIRE RATED ASSEMBLIES SHALL BE FIRE STOPPED BY THE TRADE MAKING THE PENETRATION. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR REQUIREMENTS.
11. DO NOT ROUTE PIPING OR DUCTWORK OVER ELECTRICAL PANELS OR EQUIPMENT. PIPING OR DUCTWORK SHALL NOT BE ROUTED THROUGH ELECTRICAL ROOMS, TELECOM ROOMS, OR ELEVATOR EQUIPMENT ROOMS UNLESS SPECIFICALLY SERVING THAT ROOM. COORDINATE WITH E.C. PROVIDE WATERTIGHT DRIP PAN WITH DRAIN TO NEAREST APPROVED RECEPTOR WHERE REQUIRED.
12. COORDINATE SIZE AND LOCATION OF ACCESS DOORS IN CONSTRUCTION REQUIRED FOR ACCESS TO MECHANICAL EQUIPMENT.
13. ALL WORK IS TO CONFORM WITH APPLICABLE CODES AND STANDARDS.
14. COORDINATE ACCESS TO EQUIPMENT AND VALVES INSTALLED ABOVE 'HARD' CEILINGS AND IN MASONRY CHASES. PROVIDE LOCKING ACCESS DOORS FOR INSTALLATION AS REQUIRED TO SERVICE CONCEALED DAMPERS, VALVES AND EQUIPMENT.
15. THESE DRAWINGS ARE ACCOMPANIED BY SPECIFICATIONS. REFER TO SPECIFICATIONS ON MECHANICAL COVER SHEET FOR FURTHER INFORMATION.

PLAN NOTES:

1. REINSTALL EXISTING VAV BOX REMAINING FROM DEMOLITION. REFER TO SCHEDULE FOR BOX PERFORMANCE DATA.

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H2L CONSULTING ENGINEERS
No. C00001

John S. Bilger
No. 37487
REGISTERED PROFESSIONAL ENGINEER
SOUTH CAROLINA
ELECTRONICALLY SEALED
12/17/2020



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12/17/2020

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| No. | REVISION | DATE | By |

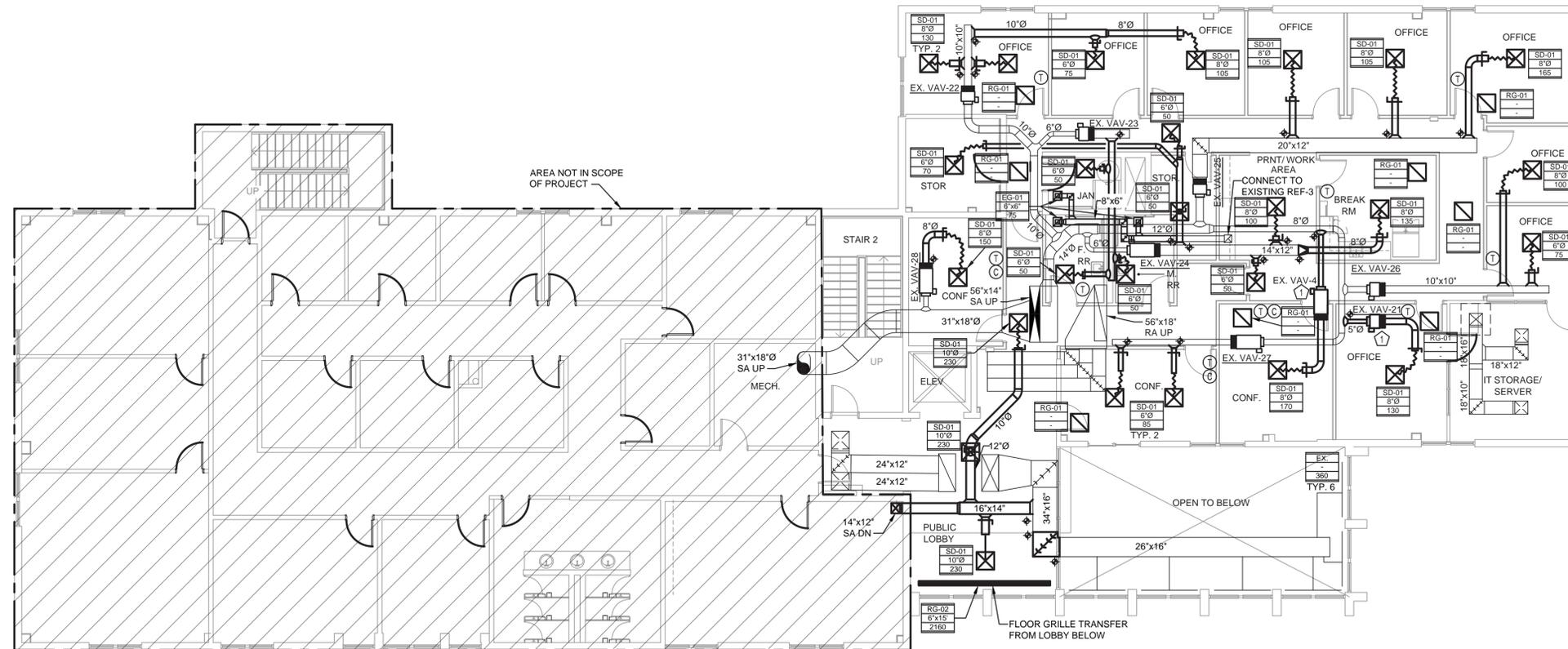
COLUMBIA HOUSING AUTHORITY
1917 HARDEN STREET
Columbia, SC 29204

MECHANICAL FIRST FLOOR NEW WORK PLAN

Date: 12/17/2020 Approved By: WBS
Drawn By: JSB Checked By: LC
Project No: 20002.01
Sheet No:

M103

Drawing File: M:\20200000\20002.01 CHA HardenDwgs\20002.01 - M104 Second Floor Plan.dwg ... Plotted Date: Dec 16, 2020 - 4:40pm



MECHANICAL SECOND FLOOR - NEW WORK PLAN

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

GENERAL NOTES:

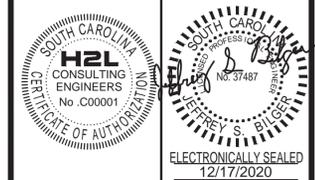
1. VERIFY JOB SITE CONDITIONS AND DIMENSIONS BEFORE BEGINNING WORK. PLANS ARE SCHEMATIC IN NATURE. LAYOUT IS BASED ON BEST AVAILABLE INFORMATION. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND DIMENSIONS.
2. NO PIPING, DUCTWORK, ETC. SHALL PENETRATE STRUCTURAL MEMBERS.
3. PROVIDE MISCELLANEOUS CUTTING, PATCHING AND REPAIRING OF FINISHES, ROOF, WALLS, ETC., AS REQUIRED TO ACCOMMODATE THE NEW WORK.
4. PATCH ANY OPENINGS IN CORRIDORS REQUIRED TO BE CONSTRUCTED TO LIMIT THE TRANSFER OF SMOKE AND IN SMOKE BARRIERS AS REQUIRED TO MEET CODE REQUIREMENTS. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY EXACT LOCATIONS, CONFIGURATION AND ROUTING OF EXISTING SYSTEMS REQUIRED TO REMAIN IN OPERATION DURING THE PROJECT TO PREVENT DAMAGE DURING DEMOLITION AND PHASING.
6. REMOVE ALL EXISTING EQUIPMENT, DUCTWORK AND PIPING THAT IS NOT REQUIRED FOR A WORKING INSTALLATION.
7. COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO INSTALLATION.
8. ALL CUTTING AND PATCHING SHALL BE CLOSELY COORDINATED WITH THE G.C.
9. COORDINATE ROUTING OF PLUMBING, AND HVAC PIPING WITH DUCTWORK, LIGHTS, ARCHITECTURAL CEILING AND STRUCTURAL ELEMENTS. PIPING SHALL RISE AND DROP, JOG OR OFFSET AS REQUIRED TO AVOID CONFLICTS. DUCTWORK SHALL TAKE PRECEDENCE OVER ALL PIPING, EXCEPT WHERE GRADE MUST BE MAINTAINED FOR DRAINAGE. REWORK OF INSTALLED WORK TO RESOLVE CONFLICTS ARISING FROM LACK OF COORDINATION SHALL NOT JUSTIFY AN INCREASE IN THE CONTRACT AMOUNT.
10. ALL PENETRATIONS THROUGH FIRE RATED ASSEMBLIES SHALL BE FIRE STOPPED BY THE TRADE MAKING THE PENETRATION. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR REQUIREMENTS.
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12. COORDINATE SIZE AND LOCATION OF ACCESS DOORS IN CONSTRUCTION REQUIRED FOR ACCESS TO MECHANICAL EQUIPMENT.
13. ALL WORK IS TO CONFORM WITH APPLICABLE CODES AND STANDARDS.
14. COORDINATE ACCESS TO EQUIPMENT AND VALVES INSTALLED ABOVE 'HARD' CEILINGS AND IN MASONRY CHASES. PROVIDE LOCKING ACCESS DOORS FOR INSTALLATION AS REQUIRED TO SERVICE CONCEALED DAMPERS, VALVES AND EQUIPMENT.
15. THESE DRAWINGS ARE ACCOMPANIED BY SPECIFICATIONS. REFER TO SPECIFICATIONS ON MECHANICAL COVER SHEET FOR FURTHER INFORMATION.

PLAN NOTES:

1. REINSTALL EXISTING VAV BOX REMAINING FROM DEMOLITION. REFER TO SCHEDULE FOR BOX PERFORMANCE DATA.

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| No. | REVISION | DATE | By |

COLUMBIA HOUSING AUTHORITY
1917 HARDEN STREET
Columbia, SC 29204

MECHANICAL SECOND FLOOR NEW WORK PLAN

Date: 12/17/2020 Approved By: WBS

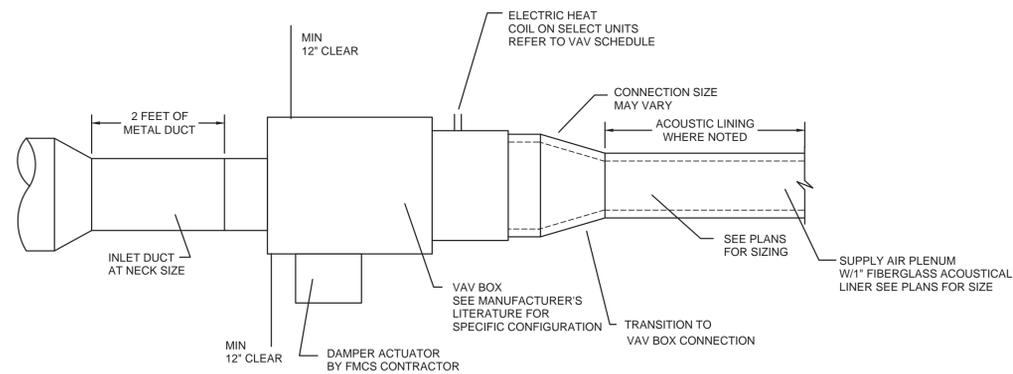
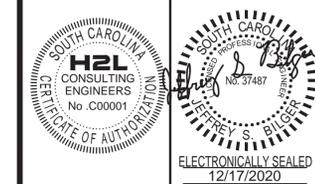
Drawn By: JSB Checked By: LC

Project No: 20002.01

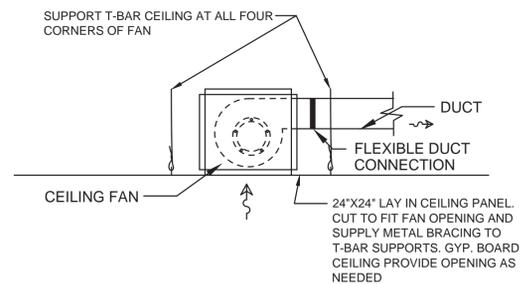
Sheet No:

M104

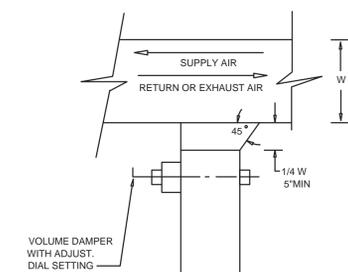
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TYP SINGLE DUCT VAV BOX W/ HEATING COIL DIAGRAM
NOT TO SCALE

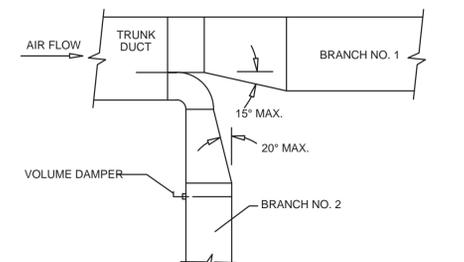


CEILING MOUNTED EXHAUST FAN DETAIL
NOT TO SCALE

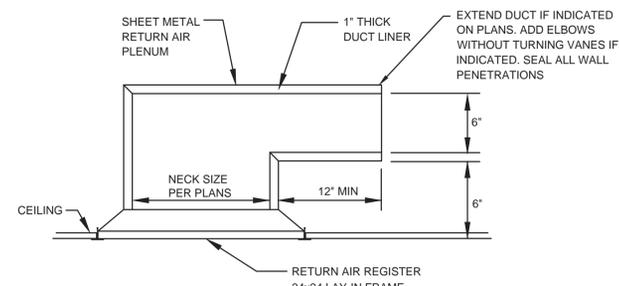


NOTE: PROVIDE VOLUME DAMPER AT EACH LOW PRESSURE SUPPLY, EXHAUST AND RETURN BRANCH DUCT.

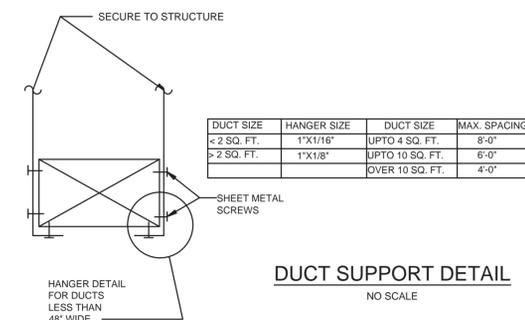
DUCT BRANCH TAKEOFF FOR LOW PRESSURE DUCTWORK
NO SCALE



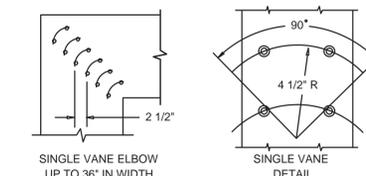
BRANCH DUCT WITH RADIUS ELBOW
NOT TO SCALE



PLENUM RETURN AIR REGISTER DETAIL
NOT TO SCALE



DUCT SUPPORT DETAIL
NO SCALE



LOW VELOCITY DUCTWORK ELBOWS
NOT TO SCALE



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|-----|----------------------------------|------------|-----|
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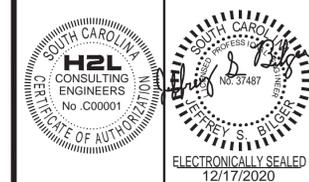
COLUMBIA HOUSING AUTHORITY
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Columbia, SC 29204

MECHANICAL DETAILS

Date: 12/17/2020 Approved By: WBS
Drawn By: JSB Checked By: LC
Project No: 20002.01

Sheet No: **M501**

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12/17/2020**

**CHA HARDEN
BLDG REMODEL**

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**COLUMBIA HOUSING
AUTHORITY**
1917 HARDEN STREET
Columbia, SC 29204

**MECHANICAL
SCHEDULES**

Date: 12/17/2020 Approved By: WBS

Drawn By: JSB Checked By: LC

Project No: 20002.01

Sheet No:

M601

DIFFUSER, REGISTER, AND GRILLE SCHEDULE

| MARK | DUTY | MATERIAL | DIFFUSER CRITERIA | | | | | REGISTER AND GRILLE CRITERIA | | | | | EQUAL TO | | REMARKS | |
|-------|-------------------|----------|-------------------|-------------------|-------------|--------|-----------|------------------------------|----------------------|---------------------|--------------|--------|----------|--------------|---------|-------|
| | | | NECK SIZE (In.) | MODULE SIZE (In.) | FRAME STYLE | DAMPER | FINISH | UNIT SIZE (In.) | PATTERN / DEFLECTION | BLADE SPACING (In.) | BORDER STYLE | DAMPER | FINISH | MANUFACTURER | | MODEL |
| SD-01 | CEILING SUPPLY | STEEL | SEE DWG. | 24x24 | 4-WAY | YES | OFF WHITE | ---- | ---- | ---- | ---- | ---- | ---- | NAILOR | UNI | ---- |
| RG-01 | CEILING RETURN | STEEL | ---- | ---- | ---- | ---- | ---- | 24x24 | EGG CRATE | 1/2" x 1/2" | SEE ARCH | YES | NOTE 1 | NAILOR | 4260 | ---- |
| RG-02 | BAR GRILLE RETURN | STEEL | ---- | ---- | ---- | ---- | ---- | 6"x15 LIN. FT. | 6-BAR SLOT | 1/4" PENCIL-PROOF | SEE ARCH | NO | NOTE 1 | NAILOR | 49-240 | 2 |
| EG-01 | CEILING EXHAUST | STEEL | ---- | ---- | ---- | ---- | ---- | 12x12 | EGG CRATE | 1/2" x 1/2" | SEE ARCH | YES | NOTE 1 | NAILOR | 61EC | ---- |

- NOTES:
1. COORDINATE FACTORY FINISH WITH ARCHITECT.
2. PROVIDE HEAVY DUTY MOUNTING FRAME FOR 2ND FLOOR GRILLE

EXISTING VAV/CAV TERMINAL BOX SCHEDULE

| MARK | MFR. | MODEL NUMBER | AREA SERVED | INLET DIAMETER (IN.) | COOLING | | | HEATING | | | COMMENTS | | |
|------------|-------|--------------|--------------------|----------------------|------------|----------|----------|------------|-------------|--------------|----------|----------|--------|
| | | | | | SENS. LOAD | MIN. CFM | MAX. CFM | LOAD (MBH) | HEATING CFM | AIR EAT (°F) | | LAT (°F) | AUX KW |
| EX. VAV-01 | TRANE | VCEC-02 | BREAK ROOM | 5 | 4.6 | 95 | 260 | 0.0 | 260 | 55 | 55 | 1.0 | -- |
| EX. VAV-02 | TRANE | VCEC-04 | CONFERENCE | 6 | 2.5 | 40 | 200 | 0.0 | 200 | 55 | 55 | 1.0 | A |
| EX. VAV-03 | TRANE | VCEC-02 | CONFERENCE | 5 | - | - | - | - | - | - | - | - | B |
| EX. VAV-04 | TRANE | VCEC-04 | CONFERENCE | 6 | 3.1 | 55 | 160 | 0.6 | 160 | 55 | 58 | 1.5 | A |
| EX. VAV-05 | TRANE | VCCC-02 | NEVER INSTALLED | - | - | - | - | - | - | - | - | - | C |
| EX. VAV-06 | TRANE | VCCC-12 | BOARD ROOM | 10 | 20.7 | 340 | 1080 | 7.3 | 1080 | 55 | 61 | - | -- |
| EX. VAV-07 | TRANE | VCCC-04 | LOBBY/KITCHEN | 6 | 4.9 | 160 | 260 | 4.2 | 260 | 55 | 70 | - | A |
| EX. VAV-08 | TRANE | VCCC-02 | - | 5 | - | - | - | - | - | - | - | - | B |
| EX. VAV-09 | TRANE | VCCC-04 | - | 6 | - | - | - | - | - | - | - | - | B |
| EX. VAV-10 | TRANE | VCCC-12 | OFFICES | 10 | 6.3 | 250 | 540 | 6.7 | 540 | 55 | 73 | - | A |
| EX. VAV-11 | TRANE | VCCC-02 | OFFICES | 5 | 5.4 | 140 | 290 | 3.7 | 290 | 55 | 67 | - | -- |
| EX. VAV-12 | TRANE | VCEC-04 | OFFICES | 6 | 8.5 | 175 | 480 | 0.0 | 480 | 55 | 55 | 1.0 | -- |
| EX. VAV-13 | TRANE | VCCC-08 | CONFERENCE | 8 | 5.5 | 115 | 300 | 3.0 | 300 | 55 | 64 | - | A |
| EX. VAV-14 | TRANE | VCCC-08 | OFFICES | 8 | 5.7 | 140 | 295 | 3.7 | 295 | 55 | 67 | - | -- |
| EX. VAV-15 | TRANE | VCCC-02 | RESTROOMS | 5 | 2.0 | 150 | 205 | 2.1 | 205 | 55 | 64 | - | -- |
| EX. VAV-16 | TRANE | VCCC-12 | SECTION 8 LOBBY | 10 | 12.2 | 280 | 680 | 7.4 | 680 | 55 | 65 | - | -- |
| EX. VAV-17 | TRANE | VCEC-02 | RESTROOMS | 5 | 0.6 | 150 | 180 | 0.0 | 180 | 55 | 55 | 1.0 | A |
| EX. VAV-18 | TRANE | VCCC-02 | OFFICES | 5 | 4.1 | 65 | 245 | 1.7 | 245 | 55 | 61 | - | -- |
| EX. VAV-19 | TRANE | VCCC-02 | OFFICES | 5 | 3.0 | 115 | 200 | 3.0 | 200 | 55 | 69 | - | -- |
| EX. VAV-20 | TRANE | VCCC-12 | OFFICES | 10 | 7.6 | 150 | 405 | 3.9 | 405 | 55 | 64 | - | -- |
| EX. VAV-21 | TRANE | VCCC-02 | OFFICE | 5 | 2.4 | 65 | 125 | 1.7 | 125 | 55 | 68 | - | A |
| EX. VAV-22 | TRANE | VCCC-04 | OFFICES | 6 | 8.1 | 245 | 425 | 6.6 | 425 | 55 | 69 | - | -- |
| EX. VAV-23 | TRANE | VCCC-04 | RESTROOMS | 6 | 0.4 | 110 | 150 | 0.5 | 150 | 55 | 58 | - | -- |
| EX. VAV-24 | TRANE | VCEC-04 | BREAK ROOM/STORAGE | 6 | 7.1 | 155 | 450 | 4.1 | 450 | 55 | 63 | 1.5 | -- |
| EX. VAV-25 | TRANE | VCCC-12 | OFFICES | 10 | 7.0 | 230 | 360 | 6.1 | 360 | 55 | 71 | - | -- |
| EX. VAV-26 | TRANE | VCCC-08 | OFFICES | 8 | 3.3 | 80 | 175 | 2.1 | 175 | 55 | 66 | - | -- |
| EX. VAV-27 | TRANE | VCEC-04 | CONFERENCE | 6 | 3.1 | 55 | 160 | 0.6 | 160 | 55 | 58 | 1.5 | -- |
| EX. VAV-28 | TRANE | VCEC-04 | CONFERENCE | 6 | 2.6 | 40 | 150 | 0.5 | 150 | 55 | 58 | 2.0 | -- |

- COMMENTS:
A. VAV BOX RELOCATED AND REUSED IN NEW WORK PHASE. REFER TO M103 OR M104 FOR NEW LOCATION
B. VAV BOX REMOVED DURING DEMOLITION PHASE AND SHALL NOT BE REUSED. BOX SHALL BE RETURNED TO OWNER.
C. VAV BOX WAS NEVER INSTALLED IN BUILDING.

NEW VAV TERMINAL BOX SCHEDULE

| MARK | MFR. | MODEL NUMBER | AREA SERVED | INLET DIAMETER (IN.) | COOLING | | | HEATING | | | COMMENTS | | |
|----------|---------|--------------|------------------|----------------------|------------|----------|----------|------------|-------------|--------------|----------|----------|--------|
| | | | | | SENS. LOAD | MIN. CFM | MAX. CFM | LOAD (MBH) | HEATING CFM | AIR EAT (°F) | | LAT (°F) | AUX KW |
| VAV-1-01 | CARRIER | 45JA3 | HR LOBBY/OFFICES | 12 | 7.2 | 90 | 460 | 1.1 | 460 | 55 | 63 | 8.0 | -- |

AHU & FAN COIL UNIT SCHEDULE

| MARK | AREA SERVED | MANUFACTURER | MODEL NUMBER | SUPPLY FAN DATA | | | | COOLING COIL | | | | AUX. HEATING COIL | | | | ELECTRICAL DATA | | | | COMMENTS |
|------------|--------------------------|--------------|--------------|-----------------------------|-------------------|-----------------------------------|-------------|---|--|------------------------------|-------------------------|-------------------|----------|------|-----|-----------------|-----|-------|---------------|----------|
| | | | | TOTAL AIRFLOW (CFM) MIN-MAX | OUTSIDE AIR (CFM) | EXTERNAL STATIC PRESSURE (In. WC) | HORSE POWER | ENTERING AIR CONDITIONS (°F db / °F wb) | LEAVING AIR CONDITIONS (°F db / °F wb) | TOTAL COOLING CAPACITY (MBH) | SENS COOLING CAP. (MBH) | QTY | MOTOR HP | KW | MCA | MOCPP | MCA | MOCPP | VOLTS / PHASE | |
| EX. RTU-01 | MAIN BUILDING VAV SYSTEM | CARRIER | 50AK-030 | 8085-1950 | 1950 | 2.0 | 15 | 81.9/66.6 | 53.3/52.0 | 300.4 | 215.9 | 4 | 1 | 0.75 | 184 | 200 | 160 | 175 | 208/3 | - |
| EX. AHU-02 | 2ND FLOOR VAV RENOVATION | CARRIER | 39ED08 | 2340-660 | 660 | 1.75 | 5 | 83.9/67.5 | 53.3/51.9 | 89.8 | 64.3 | - | - | - | - | - | - | - | 208/3 | - |

SPLIT SYSTEM HEAT PUMP SCHEDULE

| MARK | AREA SERVED SEE PLANS | BASIS OF DESIGN | | CAPACITY INFORMATION | | | | COOLING COIL | | | | HEATING @ 47°F AMBIENT | | INDOOR ELECTRICAL | | | OUTDOOR ELECTRICAL | | | REMARKS | | | |
|-------------|-----------------------|-----------------|-------------|----------------------|---------------|---------------------------|--------------------------------|----------------|----------------------------------|---------------------------------|-----------------------------|------------------------------|-----------------------------|--------------------------------|---------------------|----------------------------|--------------------------------------|---------------------|----------------------------|----------|--------------------------------------|----|---|
| | | MANUFACTURER | INDOOR UNIT | OUTDOOR UNIT | AIRFLOW (CFM) | OUTSIDE AIR MINIMUM (CFM) | EXTERNAL STATIC PRESSURE (In.) | FAN MOTOR (HP) | ENTERING AIR TEMPERATURE DB (°F) | LEAVING AIR TEMPERATURE WB (°F) | TOTAL MINIMUM COOLING (MBH) | TOTAL SENSIBLE COOLING (MBH) | TOTAL MINIMUM HEATING (MBH) | MINIMUM AUXILIARY HEATING (KW) | VOLTS/ PHASE/ HERTZ | MINIMUM CIRCUIT AMPS (MCA) | MAXIMUM OVERCURRENT PROTECTION (MOP) | VOLTS/ PHASE/ HERTZ | MINIMUM CIRCUIT AMPS (MCA) | | MAXIMUM OVERCURRENT PROTECTION (MOP) | | |
| | | | | | | | | | | | | | | | | | | | | | | | |
| AH-01/HP-01 | CEO OFFICE | GOODMAN | ARUF37C | GSZ14036 | 775 | 55 | 0.5 | 1/3 | 76.1 | 64.1 | 58.0 | 56.9 | 16.6 | 14.9 | 11.8 | - | 208/1/60 | 25.4 | 30 | 208/1/60 | 20.2 | 35 | - |

PLUMBING SPECIFICATIONS

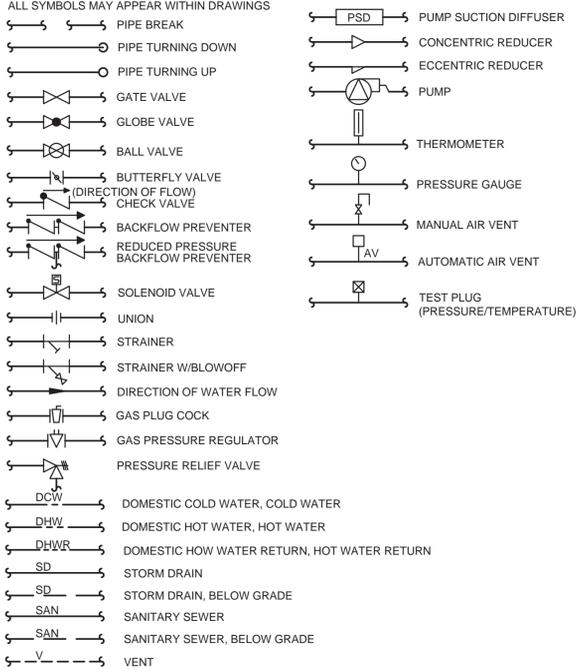
- ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE 2018 INTERNATIONAL PLUMBING CODE, THE 2009 INTERNATIONAL ENERGY CONSERVATION CODE, THE 2018 INTERNATIONAL BUILDING CODE AND FIRE CODES, AND LOCAL APPLICABLE ORDINANCES.
- THESE COMMON PROVISIONS APPLY TO ALL PLUMBING WORK COVERED IN THIS CONTRACT.
 - PROVIDE ALL LABOR, MATERIAL, EQUIPMENT, MACHINERY, SUPERVISION, MANAGEMENT, AND ALL OTHER ITEMS NECESSARY FOR THE COMPLETE PLUMBING SYSTEM. THE ENTIRE PLUMBING SYSTEMS SHALL BE INSTALLED, STARTED, TESTED, ADJUSTED AND TURNED OVER TO THE OWNER IN PROPER OPERATING CONDITION.
 - ALL FIXTURES AND EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. WHERE THIS MAY CONFLICT WITH CODE REQUIREMENTS THE CODES SHALL HAVE PRECEDENCE.
 - THE CONTRACTOR AND/OR THE APPROPRIATE SUBCONTRACTOR SHALL CONCURRENTLY HOLD ALL REQUIRED LICENSES TO PERFORM THE WORK SHOWN AND SPECIFIED ON THESE DRAWINGS.
 - UNDER NO CIRCUMSTANCES IS THE CONTRACTOR TO INSTALL ANY MATERIAL OR EQUIPMENT, FOREIGN OR DOMESTIC, WITH ASBESTOS CONTAINING MATERIAL.
- DIMENSIONS: DRAWINGS SHOULD BE INTERPRETED AS GENERAL LAYOUT AND ARRANGEMENT DRAWINGS. THE DRAWINGS ARE NOT INTENDED TO SHOW COMPLETE OR PRECISE MEASUREMENTS AND DETAILS OF THE BUILDING AND INSTALLATION IN EVERY RESPECT, AND THEY DO NOT INCLUDE ALL DETAILS OF MANUFACTURED EQUIPMENT, CONSTRUCTION, PIPING, DUCTWORK, ETC. MEASUREMENT FIGURES WRITTEN UPON THE DRAWINGS INDICATING DIMENSIONS SHALL BE USED INSTEAD OF SCALED MEASUREMENT. NO SCALE MEASUREMENT TAKEN FROM A DRAWING SHALL BE RELIED UPON AS A DIMENSION FOR INSTALLATION PURPOSES. EXACT LOCATIONS AND MEASUREMENTS ARE TO BE DEFINED IN THE FIELD, AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR ACCURACY AND USE IN CONSTRUCTION OF THE WORK.
- INTERFERENCES: THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THAT OF ALL OTHER TRADES IN ORDER TO ELIMINATE INTERFERENCES. HE SHALL EXAMINE IN ADVANCE THE LOCATION OF ELECTRICAL SYSTEMS, DUCTS, PIPING, STRUCTURES, CONDUITS, AND OTHER EQUIPMENT AND COMPONENTS TO BE INSTALLED, AND PROPERLY COORDINATE THE INSTALLATION OF MECHANICAL WORK TO AVOID INTERFERENCES. THE ENGINEERS HAVE CONSIDERED EXISTING INTERFERENCES IN MAKING THE DRAWINGS, BUT IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MODIFY, OFFSET, OR OTHERWISE ACCOMMODATE ALL EQUIPMENT TO THE STRUCTURE, UTILITIES AND OTHER EQUIPMENT.
- UTILITIES: THE CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR REGARDING ACCESS TO EXISTING UTILITIES PRIOR TO THE START OF WORK.
- SUBSTITUTIONS:
 - THE MATERIALS, PRODUCTS, AND EQUIPMENT DESCRIBED IN THE DOCUMENTS ESTABLISH A STANDARD OF REQUIRED FUNCTION, DIMENSION, APPEARANCE, SERVICEABILITY, AVAILABILITY OF SPARE PARTS AND QUALITY TO BE MET BY ANY PROPOSED SUBSTITUTION.
- RECORD DRAWINGS: THE CONTRACTOR SHALL KEEP A RECORD SET OF DRAWINGS ON THE JOB AND SHALL, AS CONSTRUCTION PROGRESSES, RECORD ANY CHANGES WHERE CONSTRUCTION IS DIFFERENT FROM DESIGN DOCUMENTS. AT THE TIME OF FINAL INSPECTION, ONE SET OF RECORD DRAWINGS, IN ADDITION TO ONE SET OF APPROVED SUBMITTAL DOCUMENTS SHALL BE TURNED OVER TO THE OWNER. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST ASSOCIATED WITH THESE DOCUMENTS.
- PIPING: PIPING MATERIALS SHALL BE IN ACCORDANCE WITH THE PIPING & INSULATION SCHEDULE THAT APPEARS ELSEWHERE IN THESE DOCUMENTS.
 - ALL PIPE SHALL BE ADEQUATELY BRACED AND SUPPORTED. PIPE SUPPORTS SHALL CONFORM TO THE REQUIREMENTS OF MSS SP-58. SUPPORT SPANS SHALL NOT EXCEED THOSE NOTED IN THE PIPE SUPPORT TABLE LOCATED ELSEWHERE IN THESE DOCUMENTS. IN ADDITION TO THE MAXIMUM ALLOWABLE SPACING BETWEEN SUPPORTS, PIPING SHALL BE SUPPORTED AT TERMINATION OF ALL HORIZONTAL RUNS OR BRANCHES, AND AT EACH CHANGE OF DIRECTION. SWAY BRACING SHALL BE PROVIDED AT EACH CHANGE OF DIRECTION FOR PIPE 4-INCHES AND LARGER.
 - PIPE SHALL BE SEISMICALLY SUPPORTED IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE.
 - ALL MATERIAL USED IN POTABLE WATER SUPPLY SHALL BE LISTED FOR SUCH APPLICATIONS BY THE INTERNATIONAL PLUMBING CODE IN FORCE AS OF THESE DRAWINGS.
 - UNDERGROUND STEEL PIPE SHALL HAVE A PROTECTIVE COAL-TAR EPOXY COATING APPLIED IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF AWWA SPECIFICATION C203.
 - STEEL PIPE INSTALLED EXTERIOR TO THE BUILDING ENVELOPE SHALL BE PAINTED WITH TWO COATS OF WEATHER RESISTANT ENAMEL, COLOR TO MATCH BUILDING OR GROUT.
 - ELECTRIC UNIONS SHALL BE USED TO JOIN COPPER PIPE TO STEEL PIPE.
 - SOLDERED/BRAZED POTABLE WATER PIPING SHALL BE JOINED WITH LEAD FREE 95-5 TIN ANTIMONY SOLDER.
 - THE CONTRACTOR SHALL INSURE THAT ONLY CHEMICALLY COMPATIBLE PRODUCTS COME IN CONTACT WITH CPVC PIPE. ONLY PRODUCTS BEARING THE LUBRIZOL FGG/BCMC SYSTEM COMPATIBLE LOGO OR OTHERWISE APPROVED BY THE CPVC PIPE MANUFACTURER SHALL COME IN CONTACT WITH CPVC PIPE.
 - OPEN PIPE ENDS SHALL BE COVERED AND PIPING SHALL BE FREE OF DEBRIS DURING CONSTRUCTION.
 - UNLESS NOTED OTHERWISE ALL PENETRATIONS OF EXTERIOR WALL, FLOOR, AND ROOF STRUCTURES WITH DUCTWORK, PIPING, OR RELATED COMPONENTS SHALL BE SEALED WEATHER TIGHT WITH APPROPRIATE FLASHING AND/OR SEALING MATERIALS. UNLESS NOTED OTHERWISE, PENETRATIONS OF ROOF STRUCTURES SHALL BE MADE IN ACCORDANCE WITH THE ROOF MANUFACTURER'S RECOMMENDATIONS. UNLESS NOTED OTHERWISE PENETRATIONS OF EXTERIOR WALLS SHALL BE SEALED WITH ONE PART URETHANE SEALANT INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. COLOR SHALL BE TO MATCH BUILDING FINISHES.
 - ALL PIPE SHALL BE PRESSURE TESTED IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF THE LATEST EDITION OF THE INTERNATIONAL PLUMBING CODE OR INTERNATIONAL FUEL GAS CODE.
 - PENETRATIONS OF CONCRETE FLOOR SLABS BY METALLIC PIPE SHALL BE PROTECTED WITH BITUMASTIC WRAP OR SLEEVES OF ARMAFLEX INSULATION. PENETRATION OF CONCRETE FLOOR SLABS BY PVC OR CPVC PIPE SHALL BE PROTECTED WITH SLEEVE OF NOMACO IMCOLOCK INSULATION. PENETRATION OF CONCRETE FLOOR SLABS BY PEX PIPE SHALL BE ROUTED THROUGH A CPVC SLEEVE.
 - THE ANNULAR SPACE BETWEEN PIPE AND WALL OR FLOOR PENETRATIONS SHALL BE SEALED. WHERE PIPES PASS THROUGH FIRE OR SMOKE RATED BUILDING COMPONENTS, THE PIPE ANNULUS SHALL BE SEALED WITH A UL RATED FIRE STOPPING MATERIAL. THE MATERIAL SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS BASED ON PIPE AND WALL CONSTRUCTION MATERIALS. SEALING MATERIALS SHALL BE CHEMICALLY COMPATIBLE WITH THE PIPE. SUBMIT CHEMICAL COMPATIBILITY FOR FIRE SEALS TO BE USED ON CPVC, PVC, AND PEX PIPE.
 - CREWS INSTALLING CPVC PIPE SHALL HAVE BEEN TRAINED BY THE PIPE MANUFACTURER WITHIN THE 24 MONTHS PREVIOUS TO STARTING THE PROJECT AND SHALL BE PROVIDING DOCUMENTATION OF THE TRAINING UPON REQUEST.
 - PIPE AND PIPE FITTINGS MANUFACTURED IN CHINA ARE NOT ACCEPTABLE AND SHALL NOT BE INSTALLED.
 - PLASTIC PIPE INSTALLED IN WOOD FRAME STRUCTURES SHALL BE PROTECTED WITH NAIL SHIELDS. PEX PIPE SHALL BE PROTECTED FROM METAL STUDS WITH PLASTIC GROMMETS.
- FIXTURES:
 - PLUMBING FIXTURES SHALL BE PROVIDED AS SPECIFIED IN THE PLUMBING FIXTURE TABLE THAT APPEARS ELSEWHERE IN THESE DOCUMENTS. ALL PLUMBING FIXTURES SHALL BE NEATLY CAULKED WITH SILICONE OR MILDEW RESISTANT ACRYLIC LATEX CAULKING COMPOUND WHERE THE FIXTURE MEETS THE WALL. FIXTURE LOCATIONS SHOWN ON THE PLUMBING DRAWINGS ARE APPROXIMATE - SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS.
 - WATER FAUCETS SHALL HAVE A LEAK CONTENT OF LESS THAN 0.2% IN ACCORDANCE WITH IAPCA REGULATIONS.
 - ISOLATION VALVES SHALL BE PROVIDED FOR ALL PLUMBING FIXTURES. CHROME PLATED ANGLE STOP VALVES SHALL BE INSTALLED TO SERVE LAVATORIES AND TANK TYPE TOILETS. CONNECTIONS BETWEEN ANGLE STOP VALVES AND THE FIXTURE OR FAUCET SHALL BE WITH STAINLESS STEEL BRAID CONNECTION HOSES. THE USE OF PEX TUBING CONNECTIONS IS EXPRESSLY FORBIDDEN.
 - WATER HEATERS SHALL BE EQUIPPED WITH HEAT TRAPS AND COMPLY WITH THE CURRENT ENERGY EFFICIENCY REQUIREMENTS.
 - WATER HEATER SHALL BE EQUIPPED WITH ANTI-SIPHON DEVICES.
 - WATER HEATERS SHALL BE EQUIPPED WITH A RELIEF DEVICE CONFORMING TO ANSI Z21.22. RELIEF VALVE DISCHARGE SHALL TERMINATE IN A SAFE LOCATION IN ACCORDANCE WITH CODE REQUIREMENTS. THE USE OF PVC PIPE FOR RELIEF VALVE DISCHARGE IS NOT ACCEPTABLE.
- PLUMBING:
 - PLUMBING PIPING SHALL BE IN ACCORDANCE WITH THE PIPING & INSULATION SCHEDULE THAT APPEARS ELSEWHERE IN THESE DOCUMENTS, AND SHALL BE IN ACCORDANCE WITH APPLICABLE CODES AND ORDINANCES.
 - ESCUTCHEON PLATES SHALL BE INSTALLED AT THE PENETRATION OF ALL FINISHED WALLS.
 - DRAINAGE AND VENT TESTING SHALL BE BY THE WATER TEST OR AIR TEST METHOD AS DEFINED BY CODE.
 - WATER SUPPLY SYSTEM TEST SHALL BE BY THE WATER PRESSURE OR AIR PRESSURE METHOD AS DEFINED BY CODE.
 - FORCED SEWER SYSTEMS AND STORM DRAINAGE SYSTEMS, IF REQUIRED ON THIS PROJECT, SHALL BE TESTED AS DEFINED BY CODE.
 - THE POTABLE WATER SYSTEM SHALL BE DISINFECTED AND FLUSHED IN ACCORDANCE WITH THE CURRENT INTERNATIONAL PLUMBING CODE, OR CURRENT GOVERNING GOVERNMENT AGENCY, WHICHEVER IS MORE STRINGENT, AND AWWA STANDARDS, PRIOR TO BEING TURNED OVER TO THE OWNER.
 - PVC PIPE SHALL NOT BE INSTALLED IN ANY AREA USED AS A SUPPLY OR RETURN AIR PLENUM. NO-HUB DUCTILE IRON PIPE SHALL BE USED FOR SANITARY SEWER AND VENT PIPE IN PLENUM AREAS. (SEE PIPE SERVICE TABLE.)
 - HORIZONTAL SANITARY SEWER PIPING 3" AND LARGER INSTALLED INSIDE THE BUILDING SHALL HAVE A SLOPE OF 1/8" PER LINEAR FOOT OF RUN. PIPE 2-1/2" AND SMALLER SHALL HAVE A MINIMUM SLOPE OF 1/4" PER LINEAR FOOT OF RUN, UNLESS SPECIFIED OTHERWISE ON THE DRAWINGS.
 - A PURPLE PRIMER CONFORMING TO ASTM F 656 SHALL BE USED TO PRIME PVC FOR SOLVENT.
- INSULATION: PIPE SHALL BE INSULATED IN ACCORDANCE WITH THE PIPING & INSULATION SCHEDULE THAT APPEARS ELSEWHERE IN THESE DOCUMENTS.
 - INSULATION SHALL HAVE A FLAME SPREAD RATING OF 25 OR LESS AND A SMOKE DEVELOPMENT RATING OF 50 OR LESS IN ACCORDANCE WITH UL 723.
 - PIPE INSULATION SHALL BE EQUAL TO AP ARMAFLEX.
 - INSULATED PIPE SHALL BE PROTECTED FROM DAMAGE OR COMPRESSION FROM HANGERS AT THE POINT OF SUPPORT USING ARMAFLEX PIPE HANGER INSULATION OR HALF SLEEVE SHIELDS EQUAL TO GRINNELL FIG. 167.
- TRENCHING AND BACKFILL:
 - GRADE TRENCH BOTTOMS TO PROVIDE A SMOOTH STABLE FOUNDATION, FREE FROM ROCK. THE WIDTH OF THE TRENCH SHALL BE SUFFICIENT TO ALLOW THOROUGH COMPACTING OF THE BACKFILL UNDER AND AROUND THE PIPE. WHERE ROCK IS ENCOUNTERED, THE ROCK SHALL BE REMOVED TO A DEPTH BELOW GRADE OF AT LEAST 6 INCHES (6"), AND THE TRENCH SHALL BE REFILLED TO GRADE WITH EARTH, SAND, GRAVEL, OR OTHER SUITABLE MATERIAL.
 - AT EACH PIPE JOINT DIG BELL HOLES TO RELIEVE THE BELL OF THE PIPE OF ALL LOADS, AND TO ENSURE CONTINUOUS BEARING OF THE PIPE BARREL ON THE FOUNDATION. THE TRENCH SHALL BE BACKFILLED AROUND THE BARREL OF THE PIPE WITH FINE MATERIALS, FREE FROM LARGE STONES DEPOSITED IN LEVEL LAYERS NO MORE THAN 6 INCHES (6") IN DEPTH, EACH LAYER TO BE THOROUGHLY TAMPED AND COMPACTED BEFORE THE NEXT LAYER IS DEPOSITED.
 - INSTALLATION OF UNDERGROUND PVC PIPE SHALL COMPLY WITH ASTM D2321 UNDERGROUND INSTALLATION OF THE THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS. THE SPACE BETWEEN THE PIPE AND TRENCH WALL MUST BE WIDER THAN THE COMPACTED EQUIPMENT USED IN THE COMPACTING OF THE BACKFILL. MINIMUM WIDTH SHALL BE NOT LESS THAN 16 INCHES. PROVIDE A MINIMUM OF 4 INCHES OF BEDDING UNLESS ROCK IS ENCOUNTERED, IN WHICH CASE A MINIMUM OF 6 INCHES OF BEDDING SHALL BE USED. BLOCKING SHALL NOT BE USED TO CHANGE PIPE GRADE OR TO INTERMITTENTLY SUPPORT PIPE OVER LOW SECTIONS IN THE TRENCH. THE MINIMUM DEPTH OF COVER SHALL BE 24" UNDER TRAFFIC AREAS OR IN ACCORDANCE WITH SECTION 7.6 IN ASTM D 2321 - WHICHEVER IS GREATER.
 - THE PVC PIPE SHALL BE INSTALLED WITH AN AGGREGATE MINIMUM WHICH IS EQUAL TO WORKED AROUND THE SIDES OF THE PIPE. BACKFILLING SHALL BE PERFORMED IN LAYERS OF 6 INCHES WITH EACH LAYER BEING SUFFICIENTLY COMPACTED TO 85% TO 95% COMPACTION. THE TRENCH SHALL BE COMPLETELY FILLED. THE BACKFILL SHALL BE PLACED AND SPREAD IN UNIFORM LAYERS. LARGE ROCKS, STONES, FROZEN CLOUDS, OR OTHER LARGE DEBRIS SHALL BE REMOVED. STONE BACKFILL SHALL BE ABLE TO PASS THROUGH AN 1-1/2" SIEVE AND THAT ROCK SIZE SHALL BE ABOUT 1/10TH OF THE PIPE OUTSIDE DIAMETER. HEAVY TAMPERS OR ROLLING EQUIPMENT SHALL ONLY BE USED TO CONSOLIDATE ONLY THE FINAL BACKFILL.

PLUMBING ABBREVIATIONS

| ABBREVIATION | SERVICE / ITEM |
|--------------|--|
| AD | ACCESS DOOR |
| ASME | AMERICAN SOCIETY OF MECHANICAL ENGINEERS |
| AHU | AIR HANDLING UNIT |
| BFP | BACKFLOW PREVENTER |
| (BG) | BELOW GRADE |
| BR | BRONZE |
| C | CONDENSATE |
| CI | CAST IRON |
| CLG | CLEAN OUT |
| COE | CLEAN OUT (EXISTING) |
| CW | DOMESTIC COLD WATER |
| CD | DRAIN |
| DCV | DOUBLE CHECK VALVE / BACKFLOW ASSEMBLY |
| DN | DOWN |
| DWG | DRAWING |
| ELEC | ELECTRIC / ELECTRICAL |
| ELEV | ELEVATION OR ELEVATOR |
| ET | ELECTRIC WATER HEATER |
| EAH | FAHRENHEIT |
| FD | FLOOR DRAIN |
| FT | FOOT OR FEET |
| FS | FLOOR SINK |
| GAL | GALLON |
| GPH | GALLONS PER HOUR |
| GPM | GALLONS PER MINUTE |
| HP | HORSE POWER |
| HW | DOMESTIC HOT WATER (120°F) |
| HW(140) | DOMESTIC HOT WATER (140°F) |
| HZ | HERTZ |
| LAV | LAVATORY (ADA HANDICAP LAVATORY) |
| MFR | MANUFACTURER |
| MIN | MINIMUM |
| NIX | MAXIMUM |
| MECH | MECHANICAL |
| MER | MECHANICAL EQUIPMENT ROOM |
| MSB | MOP SERVICE BASIN |
| NB | NICKEL BRONZE |
| NC | NORMALLY CLOSED |
| NO | NORMALLY OPENED |
| NTS | NOT TO SCALE |
| PH | PHASE |
| PRV | PRESSURE REDUCING VALVE |
| PSI | POUND PER SQUARE INCH |
| RPZ | REDUCED PRESSURE ZONE BACKFLOW PREVENTER |
| R | REGULATOR |
| RM | ROOM |
| RPM | REVOLUTIONS PER MINUTE |
| SAN | SANITARY |
| ST, SW | STORM DRAIN OR STORM WATER |
| SQ FT. | SQUARE FEET |
| SS | STAINLESS STEEL |
| TEMP | TEMPERATURE |
| TW | TANKLESS WATER HEATER |
| UGS | UGS UNDERGROUND SANITARY |
| URINAL | URINAL (HUR HANDICAP URINAL) |
| VENT | VENT |
| WC | WATER CLOSET (ADA HANDICAP WATER CLOSET) |
| WH | WATER HEATER |
| WHA | WATER HAMMER ARRESTOR |
| WHB | HOSE BIBB |
| WM | WATER METER |

PLUMBING LEGEND

NOTE: THIS IS A GENERAL SYMBOL LEGEND, NOT ALL SYMBOLS MAY APPEAR WITHIN DRAWINGS



FIXTURE SCHEDULE

| TAG | TYPE | PIPE SIZES | | | | REMARKS |
|--|--|---|---|-------------------------|----------------|---|
| | | DCW, DHW, CONNECTION SIZE (SERVICE IS DCW U.N.O.) | INDIVIDUAL DISTRIBUTION LINE SIZE (SERVICE IS DCW U.N.O.) | MIN. TRAP OR SEWER SIZE | MIN. VENT SIZE | |
| WC-1 | WALL MOUNTED VALVE TOILET TOP INLET SPUD BACK DISCHARGE | 1" | 1" | 3" | 1 1/2" | VITREOUS CHINA TOILET, ELONGATED RIM, FULLY GLAZED TRAPWAY, 1.6 GPF WATER CLOSET, KOHLER "ANGLESEY" MODEL K-4325 OR EQUAL, SLOAN ROYAL MODEL G2-8111 ELECTRONIC SENSOR OPERATED FLUSH VALVE OR EQUAL, WITH OPEN FRONT SOLID PLASTIC ELONGATED ANTI-MICROBIAL SEAT AND COVER CHURCH MODEL 7650T OR EQUAL. SEAT HEIGHT OF 15", LEFT HAND FLUSH, WATTS ISCA-101, OR EQUAL STYLE CARRIER. |
| WC-1L | WALL MOUNTED VALVE TOILET TOP INLET SPUD BACK DISCHARGE (ADA) LEFT HAND FLUSH | 1" | 1" | 3" | 1 1/2" | VITREOUS CHINA TOILET, ELONGATED RIM, FULLY GLAZED TRAPWAY, 1.6 GPF WATER CLOSET, KOHLER "ANGLESEY" MODEL K-4352-O OR EQUAL, SLOAN ROYAL MODEL G2-8111 ELECTRONIC SENSOR OPERATED FLUSH VALVE OR EQUAL, WITH OPEN FRONT SOLID PLASTIC ELONGATED ANTI-MICROBIAL SEAT AND COVER CHURCH MODEL 7650T OR EQUAL. SEAT HEIGHT OF 17" TO MEET ADA REQUIREMENTS, LEFT HAND FLUSH, WATTS ISCA-101, OR EQUAL STYLE CARRIER. |
| WC-1R | WALL MOUNTED VALVE TOILET TOP INLET SPUD BACK DISCHARGE (ADA) RIGHT HAND FLUSH | 1" | 1" | 3" | 1 1/2" | VITREOUS CHINA TOILET, ELONGATED RIM, FULLY GLAZED TRAPWAY, 1.6 GPF WATER CLOSET, KOHLER "ANGLESEY" MODEL K-4352-O OR EQUAL, SLOAN ROYAL MODEL G2-8111 ELECTRONIC SENSOR OPERATED FLUSH VALVE OR EQUAL, WITH OPEN FRONT SOLID PLASTIC ELONGATED ANTI-MICROBIAL SEAT AND COVER CHURCH MODEL 7650T OR EQUAL. SEAT HEIGHT OF 17" TO MEET ADA REQUIREMENTS, RIGHT HAND FLUSH, WATTS ISCA-101, OR EQUAL STYLE CARRIER. |
| S-1 | SINK WALL HUNG (ADA) | 3/8" DCW & DHW | 1/2" DCW & DHW | 1 1/2" | 1 1/4" | VITREOUS CHINA 22"x18" WALL HUNG LAVATORY WITH 6.5" DEEP BOWL, KOHLER PINOIR K-2035-4-0 OR EQUAL, 3-HOLE 4" ON CENTER, FRONT OVERFLOW, W/1 1/4" CAST BRASS CHROME PLATED FITTINGS. CHROME PLATED GRID DRAIN, CHROME PLATED BRASS CW & HW ANGLE STOP VALVES; STAINLESS BRAIDED HOSE FAUCET CONNECTORS. CONCEALED ARM CARRIER. FAUCET SHALL BE CHROME PLATED BRASS GOOSENECK, SENSOR ACTIVATED WITH 4" ADAPTER PLATE OR SINGLE HOLE SINK INSTALLATION HARDWIRED 120V WITH TRANSFORMER. ADA COMPLIANT, ADJUSTABLE INFRARED SENSOR RANGE, FILTERED SOLENOID VALVE WITH SERVICEABLE STRAINER FILTER. SLOAN MODEL EBF-615 OR EQUAL. |
| S-2 | SINK SINGLE COMPARTMENT UNDER COUNTER STAINLESS STEEL | 3/8" DCW & DHW | 1/2" DCW & DHW | 1 1/2" | 1 1/4" | 18"X18"X9" DEEP 16GA. STAINLESS STEEL UNDERCOUNTER SINGLE COMPARTMENT SINK, KOHLER K-5287 OR EQUAL. 4" SS DRAIN WITH REMOVABLE STRAINERS. CW & HW ANGLE STOP VALVES, FAUCET SHALL HAVE HIGH ARC, CHROME PLATED SINGLE LEVER FAUCET WITH PULLDOWN SPRAY, MOEN "SLEEK" 7864 OR EQUAL, 1.5 GPM. |
| L-1 | LAVATORY UNDER-MOUNT | 3/8" DCW & DHW | 1/2" DCW & DHW | 1 1/2" | 1 1/4" | VITREOUS CHINA 20"x16" UNDERMOUNT SINK WITH 6.5" DEEP BOWL, KOHLER "CAXTON" K-2210 OR EQUAL, FRONT OVERFLOW, W/1 1/4" CAST BRASS CHROME PLATED FITTINGS. CHROME PLATED GRID DRAIN. FAUCET SHALL BE CHROME PLATED BRASS, SENSOR ACTIVATED WITH 4" ADAPTER PLATE OR SINGLE HOLE SINK INSTALLATION HARDWIRED 120V WITH TRANSFORMER. ADA COMPLIANT, ADJUSTABLE INFRARED SENSOR RANGE, FILTERED SOLENOID VALVE WITH SERVICEABLE STRAINER FILTER. WITH MATCHING SOAP DISPENSER. SLOAN MODEL ESD-601 OR EQUAL. |
| WF-1 | DUAL LEVEL WATER COOLER | 1/2" DCW | 1/2" DCW | 1 1/2" | 1 1/4" | ADA COMPLIANT 6 GPH. DUAL HEIGHT LEAD FREE WATER COOLER HANDSFREE WITH WATER BOTTLE FILLER, FLEXIBLE ANTI MICROBIAL SAFETY BUBBLER, 115/160 4.0 MAX FLA. EQUAL TO ELKAY EZ20TL8WSLK. |
| IMB | ICE MAKER BOX | 1/4" DCW | 1/4" DCW | N/A | N/A | COATED CAST IRON FLOOR CLEANOUT WITH ABS CLEANOUT PLUG, ADJUSTABLE CAST IRON HOUSING, WITH MEDIUM DUTY SECURED NIKALOY TOP. SQUARE OR ROUND TOP SHALL BE SELECTED TO MATCH FLOOR FINISH. EQUAL TO JOSAM SERIES 55000 |
| CO-2 | FLOOR CLEANOUT | N/A | N/A | SEE DWG. | N/A | CAST IRON CLEANOUT TEE WITH BRASS THREADED FITTING PLUG TAPPED FOR CENTER SCREW. JOSAM SERIES 58910 WITH SERIES 58600 COVER PLATE |
| WCO-2 | WALL CLEANOUT | N/A | N/A | SEE DWG. | N/A | COATED CAST IRON FLOOR CLEANOUT WITH CAST IRON TOP. FLANGED CAST IRON HOUSING, ROUND TOP. MOUNT IN 12" SQUARE 6" THICK POURED CONCRETE LEVEL TO GRADE. EQUAL TO JOSAM SERIES 58460A |
| YCO-1 | YARD CLEANOUT | N/A | N/A | SEE DWG. | N/A | COATED CAST IRON FLOOR DRAIN WITH ADJUSTABLE NICKLE-BRONZE STRAINER, FLASHING COLLAR, WEEP HOLES, & TRAP PRIMER CONNECTION. JOSAM MODEL 30000-A OR EQUAL. |
| FD-2 | FLOOR DRAIN | N/A | N/A | 2" | N/A | PPP MDL. PR-500 OR EQUAL. APPRESSURE DROP ACTIVATED TRAP PRIMER VALVE FOR FLOOR DRAINS. FURNISH AND INSTALL 1/4" COPPER TUBING FROM PRIMER TO FLOOR DRAIN. PRIMER TO BE INSTALLED AS TO ALLOW MAINTENANCE ACCESS ABOVE CEILING. |
| TP-2 | TRAP PRIMER VALVE | 1/2" DCW | 1/2" DCW | N/A | N/A | WATER HAMMER ARRESTORS SHALL BE SIOUX CHIEF HYDRARRESTER 652-A OR EQUAL. |
| WHA-2 | WATER HAMMER ARRESTOR | 1/2" CW | N/A | N/A | N/A | VARIABLE SPEED HOT WATER CIRCULATION PUMP WITH TEMP SENSORS. BRONZE CONSTRUCTION, INTEGRAL CHECK VALVE 1.5 GPM AT 4 FT HEAD EQUAL TO TACO 003 IFC 115V @ .45 AMPS. |
| WHP-1 | HW CIRCULATING PUMP | 1/2" DHWR | 1/2" DHWR | N/A | N/A | |
| ALL WATER SUPPLY LINES TO LAVATORIES, SINKS AND TANK TYPE WATER CLOSETS SHALL BE PROVIDED WITH SEPARATE WALL CUT-OFF VALVES AT EACH FIXTURE. | | | | | | INSTALL FIXTURE AND ACCESSORIES IN ACCORDANCE WITH ALL APPLICABLE CODES AND MANUFACTURER'S RECOMMENDATIONS. CODE SHALL GOVERN IF DIFFERENT FROM MANUFACTURER'S INSTRUCTIONS. |

PLUMBING SYMBOLS

NOTE: THIS IS A GENERAL LEGEND, NOT ALL SYMBOLS MAY APPEAR WITHIN DRAWINGS



EXISTING FIXTURE SCHEDULE

| TAG | TYPE | PIPE SIZES | | |
|------|------------------|---|---|-------------------------|
| | | DCW, DHW, CONNECTION SIZE (SERVICE IS DCW U.N.O.) | INDIVIDUAL DISTRIBUTION LINE SIZE (SERVICE IS DCW U.N.O.) | MIN. TRAP OR SEWER SIZE |
| P-1 | WATER CLOSET | 1" | 1" | 4" |
| P-2 | URINAL | 1" | 1" | 2" |
| P-3 | LAVATORY | 3/8" DCW & DHW | 1/2" DCW & DHW | 1 1/4" |
| P-4 | WATER COOLER | 3/8" DCW & DHW | 1/2" DCW & DHW | 1 1/4" |
| P-5 | MOP RECEPTOR | 3/8" DCW & DHW | 1/2" DCW & DHW | 3" |
| P-6 | WORK ROOM SINK | 3/8" DCW & DHW | 1/2" DCW & DHW | 1 1/2" |
| P-7 | MOP RECEPTOR | 3/8" DCW & DHW | 1/2" DCW & DHW | 3" |
| P-8 | KITCHENETTE SINK | 3/8" DCW & DHW | 1/2" DCW & DHW | 1 1/2" |
| P-9 | LAVATORY | 3/8" DCW & DHW | 1/2" DCW & DHW | 1 1/4" |
| P-10 | REFRIGERATOR | 1/2" | 1/2" | N/A |

FIXTURES INDICATED ARE FROM ORIGINAL PLANS. FIXTURES MAY HAVE BEEN REPLACED, RELOCATED OR REMOVED.

PLUMBING PIPE SUPPORT TABLE

| PIPING MATERIAL | MAX. HORIZ. SPACING (FT) | MAX. VERT. SPACING (FT) |
|---|--------------------------|-------------------------|
| STEEL, SCHEDULE 10 & GREATER | 12 | 15 |
| COPPER AND BRASS PIPE | 10 | 10 |
| COPPER AND COPPER-ALLOY TUBING | | |
| 1 1/4" < | 6 | 10 |
| 1 1/2" > | 10 | 10 |
| CPVC PIPE | | |
| 1" < | 3 | 10 |
| 1 1/4" & | 4 | 10 |
| PEX TUBING & POLYPROPYLENE PIPE 1" AND SMALLER (NOTE 4) | 32 | INCHES |
| PVC (1), ABS | 4 | 10 |
| CAST AND DUCTILE IRON | 5(1) | 15 |

(*) SPACING AT 80°F. SEE MANUFACTURER'S REQUIREMENTS IF TEMPERATURES ARE ABOVE 80°F.

(**) HANGER IS WITHIN 18" OF EACH JOINT WITH MAXIMUM HANGER SPACING NOT TO EXCEED 5' ON 5' LENGTHS AND 10' ON 10' LENGTHS OF PIPE.

- NOTES:**
- PIPES 4" AND LARGER SHALL BE RESTRAINED AT ALL CHANGES IN DIRECTION.
 - ADDITIONAL SUPPORT SHALL BE PROVIDED AT INLET AND OUTLET OF VALVES, FILTERS, METERS, OR SIMILAR DEVICES. WHICH IMPOSE ADDITIONAL WEIGHT ON THE PIPE.
 - BASED ON 2018 INTERNATIONAL MECHANICAL CODE.
 - AS AN ALTERNATE PIPE MAY BE SUPPORTED CONTINUOUSLY USING UPONOR PEX-a PIPE SUPPORT OR EQUAL.

NOTE:

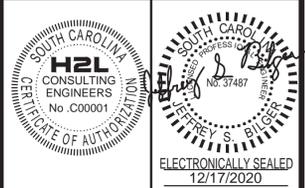
THIS PROJECT IS TO BE CONSTRUCTED IN PHASES. SEE ARCHITECTURAL DRAWINGS FOR DETAILS ON THE PHASED CONSTRUCTION

PLUMBING DRAWING LIST

| | |
|------|---------------------------------------|
| P001 | PLUMBING LEGEND AND SPECIFICATIONS |
| P101 | PLUMBING FIRST FLOOR DEMOLITION PLAN |
| P102 | PLUMBING SECOND FLOOR DEMOLITION PLAN |
| P103 | PLUMBING FIRST FLOOR PLAN |
| P104 | PLUMBING SECOND FLOOR PLAN |
| P401 | PLUMBING RISERS AND DETAILS |

H2L
CONSULTING ENGINEERS
116 SOUTH PLEASANTBURG DRIVE
GREENVILLE, SOUTH CAROLINA 29607
(864) 233-8844 www.h2l.com

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Columbia Housing

RELEASED FOR PLAN REVIEW AND PRICING 12/17/2020

CHA HARDEN BLDG REMODEL

| | | | |
|-----|----------------------------------|------------|-----|
| 0 | RELEASED FOR PLAN REVIEW/PRICING | 12/17/2020 | JSB |
| No. | REVISION | DATE | By |

COLUMBIA HOUSING AUTHORITY

1917 HARDEN STREET
Columbia, SC 29204

PLUMBING LEGEND, SCHEDULES AND SPECIFICATIONS

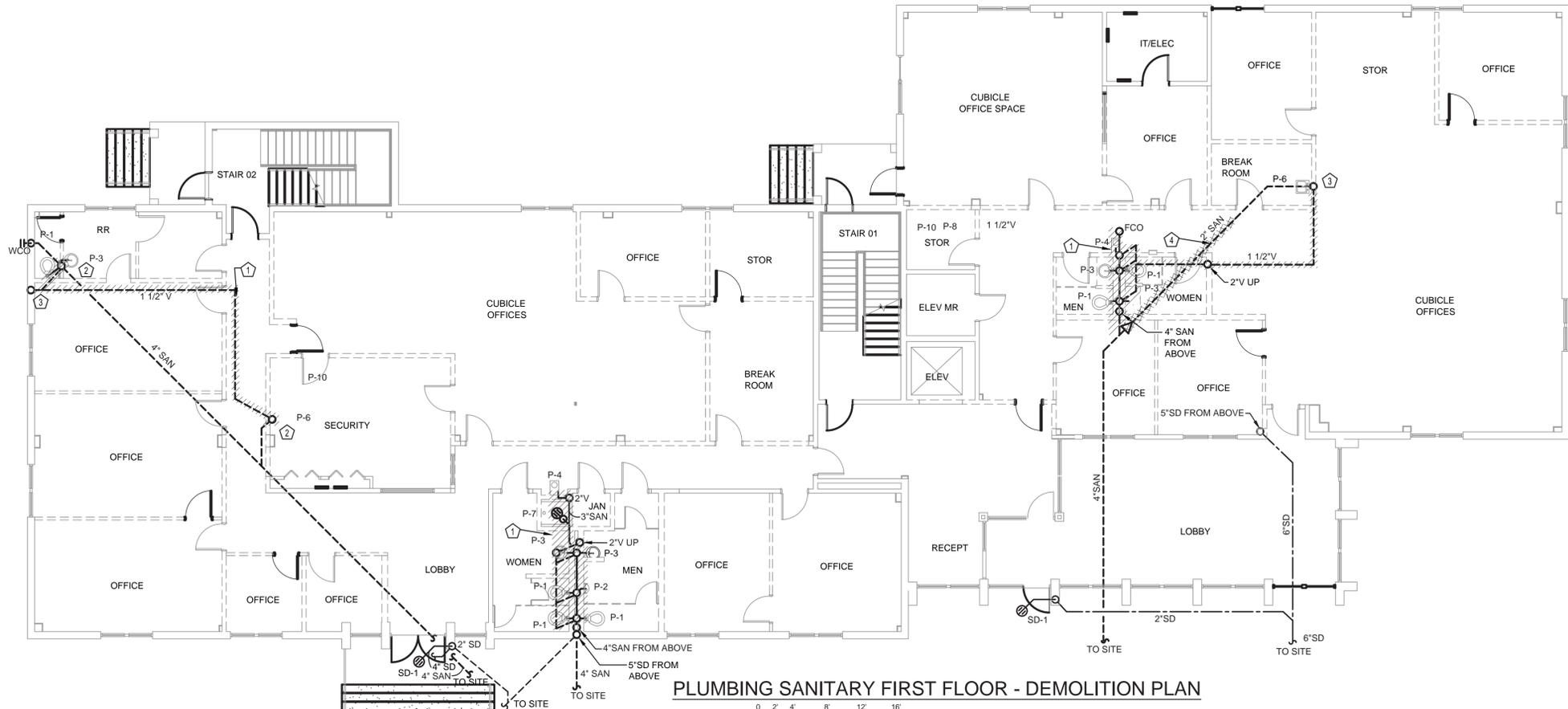
Date: 12/17/2020 Approved By: WBS

Drawn By: LC Checked By: JSB

Project No: 20002.01

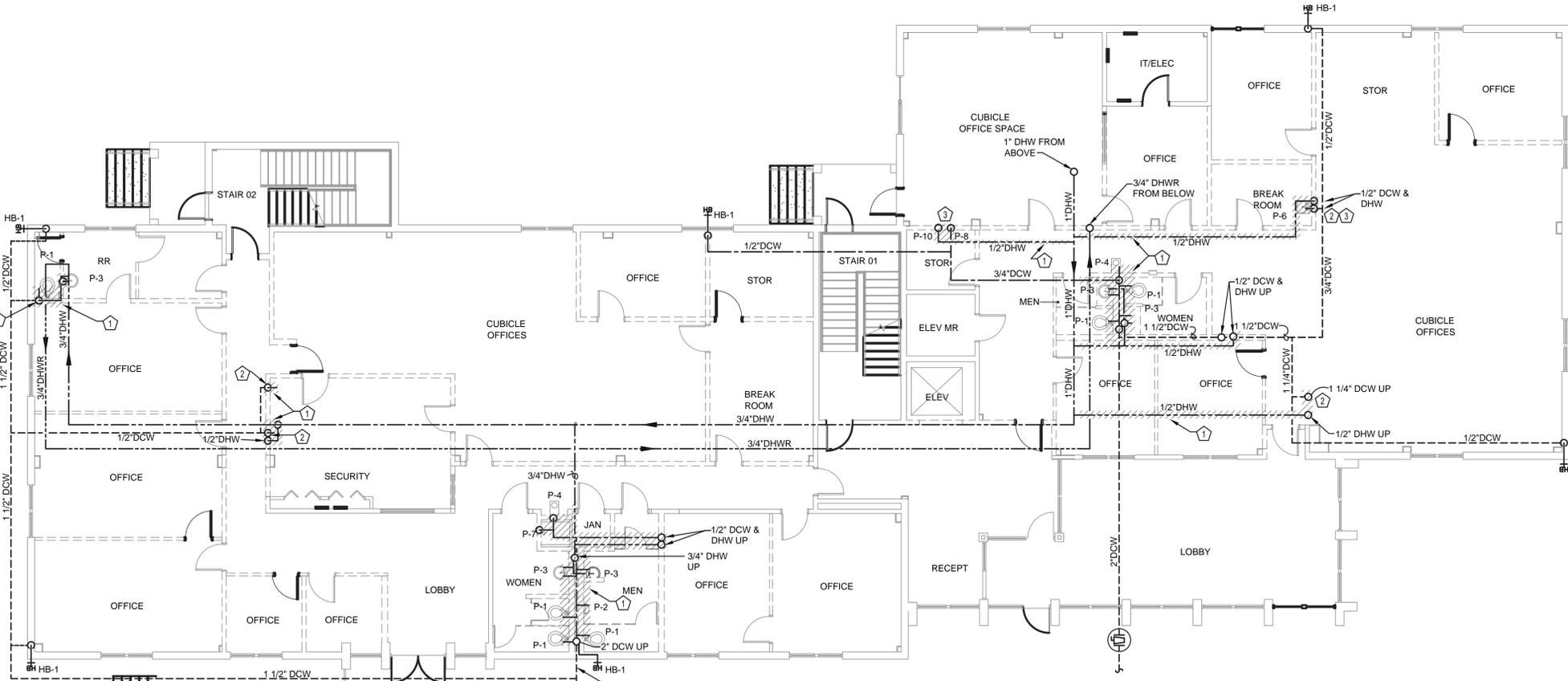
Sheet No: **P001**

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PLUMBING SANITARY FIRST FLOOR - DEMOLITION PLAN

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



PLUMBING DOMESTIC WATER FIRST FLOOR - DEMOLITION PLAN

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

GENERAL NOTES:

1. VERIFY JOB SITE CONDITIONS AND DIMENSIONS BEFORE BEGINNING WORK. PLANS ARE SCHEMATIC IN NATURE. LAYOUT IS BASED ON BEST AVAILABLE INFORMATION. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND DIMENSIONS.
2. NO PIPING, DUCTWORK, ETC. SHALL PENETRATE STRUCTURAL MEMBERS.
3. PROVIDE MISCELLANEOUS CUTTING, PATCHING AND REPAIRING OF FINISHES, ROOF, WALLS, ETC., AS REQUIRED TO ACCOMMODATE THE NEW WORK.
4. PATCH ANY OPENINGS IN CORRIDORS REQUIRED TO BE CONSTRUCTED TO LIMIT THE TRANSFER OF SMOKE AND IN SMOKE BARRIERS AS REQUIRED TO MEET CODE REQUIREMENTS. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY EXACT LOCATIONS, CONFIGURATION AND ROUTING OF EXISTING SYSTEMS REQUIRED TO REMAIN IN OPERATION DURING THE PROJECT TO PREVENT DAMAGE DURING DEMOLITION AND PHASING.
6. REMOVE ALL EXISTING EQUIPMENT, DUCTWORK AND PIPING THAT IS NOT REQUIRED FOR A WORKING INSTALLATION.
7. COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO INSTALLATION.
8. ALL CUTTING AND PATCHING SHALL BE CLOSELY COORDINATED WITH THE G.C.
9. COORDINATE ROUTING OF PLUMBING, AND HVAC PIPING WITH DUCTWORK, LIGHTS, ARCHITECTURAL CEILING AND STRUCTURAL ELEMENTS. PIPING SHALL RISE AND DROP, JOG OR OFFSET AS REQUIRED TO AVOID CONFLICTS. DUCTWORK SHALL TAKE PRECEDENCE OVER ALL PIPING, EXCEPT WHERE GRADE MUST BE MAINTAINED FOR DRAINAGE. REWORK OF INSTALLED WORK TO RESOLVE CONFLICTS ARISING FROM LACK OF COORDINATION SHALL NOT JUSTIFY AN INCREASE IN THE CONTRACT AMOUNT.
10. ALL PENETRATIONS THROUGH FIRE RATED ASSEMBLIES SHALL BE FIRE STOPPED BY THE TRADE MAKING THE PENETRATION. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR REQUIREMENTS.
11. DO NOT ROUTE PIPING OR DUCTWORK OVER ELECTRICAL PANELS OR EQUIPMENT. PIPING OR DUCTWORK SHALL NOT BE ROUTED THROUGH ELECTRICAL ROOMS, TELECOM ROOMS, OR ELEVATOR EQUIPMENT ROOMS UNLESS SPECIFICALLY SERVING THAT ROOM. COORDINATE WITH OTHER TRADES TO FURNISH AND INSTALL WATERTIGHT DRIP PAN WITH DRAIN TO NEAREST APPROVED RECEPTOR WHERE REQUIRED.
12. COORDINATE SIZE AND LOCATION OF ACCESS DOORS IN CONSTRUCTION REQUIRED FOR ACCESS TO MECHANICAL EQUIPMENT.
13. ALL WORK IS TO CONFORM WITH APPLICABLE CODES AND STANDARDS.
14. COORDINATE ACCESS TO EQUIPMENT AND VALVES INSTALLED ABOVE 'HARD' CEILINGS AND IN MASONRY CHASES WITH GENERAL CONTRACTOR. PROVIDE LOCKING ACCESS DOORS FOR INSTALLATION BY CONTRACTOR AS REQUIRED TO SERVICE CONCEALED DAMPERS, VALVES AND EQUIPMENT.
15. THESE DRAWINGS ARE ACCOMPANIED BY SPECIFICATIONS. REFER TO SPECIFICATIONS ON PLUMBING COVER SHEET FOR FURTHER INFORMATION.

DEMOLITION NOTES:

1. VERIFY ALL EXISTING CONDITIONS PRIOR TO BEGINNING WORK. BRING ANY DISCREPANCIES FROM THE DRAWINGS AND NOTES TO THE ARCHITECT IMMEDIATELY. MINOR CHANGES IN THE SCOPE OF THE DEMOLITION WORK SHALL NOT JUSTIFY AN ADDITIONAL COST.
2. REMOVAL OF EXISTING FIXTURES AND EQUIPMENT WILL REQUIRE ISOLATING THE PIPING RISERS OR MAINS VIA SHUT-OFF VALVES. INSTALL NEW ISOLATION VALVES WHERE REQUIRED FOR COMPLETION OF WORK.
3. REMOVAL OF EXISTING PLUMBING FIXTURES AND EQUIPMENT, ETC. WILL REQUIRE CAPPING AND SEALING EXISTING MAINS OR BRANCHES AS NECESSARY AND REQUIRED TO ALLOW THE REMAINING SYSTEMS TO FULLY OPERATE WITHOUT DEGRADATION. CONTRACTOR SHALL PROVIDE PROTECTIVE PLASTIC DROP CLOTHS TO PROTECT THE EXISTING OCCUPIED AREAS AND EQUIPMENT FROM DUST AND DEBRIS DURING THE CONSTRUCTION WORK, AND SHALL CLEAN THE AREAS OF ALL CONSTRUCTION DIRT DAILY.
4. ALL DRAINED PIPING RISERS AND MAINS SHALL BE REFILLED WITH PROPER FLUID AND PROPERLY VENTED BY THIS CONTRACTOR, ONCE NEW WORK HAS BEEN INSTALLED.
5. COORDINATE WITH GENERAL CONTRACTOR THE REMOVAL AND REPLACEMENT OF ALL EXISTING CEILINGS, WALLS, ETC. AS REQUIRED FOR MECHANICAL DEMOLITION WORK.
6. EXISTING PIPING AND EQUIPMENT, ETC., NOT TO BE UTILIZED IN THE COMPLETED BUILDING SHALL BE DISCONTINUED OR REMOVED AS REQUIRED. ALL ENDS OF DISCONTINUED PIPING SHALL BE CAPPED IN THE NEAREST WALL, CEILING OR FLOOR SO THAT THEY ARE COMPLETELY CONCEALED. OPENINGS LEFT IN WALLS, CEILINGS, ETC., WHERE EQUIPMENT AND PIPE, ETC., ARE REMOVED AND NOT REPLACED, SHALL BE PATCHED NEATLY WITH SIMILAR MATERIAL TO ADJACENT CONSTRUCTION. REFER TO DRAWINGS DELINEATING NEW WORK FOR ADDITIONAL INFORMATION REGARDING SYSTEMS OR PORTIONS OF SYSTEMS WHERE USE IS TO BE DISCONTINUED.
7. EXISTING PIPING, FIXTURES AND EQUIPMENT THAT ARE NOT TO BE REUSED SHALL BE REMOVED AND SHALL REMAIN THE PROPERTY OF THE OWNER IF THEY WISH TO RETAIN OWNERSHIP OF SAME. IF NOT, EQUIPMENT SHALL BECOME THE PROPERTY OF THIS CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AS SOON AS PRACTICAL AND DISPOSED OF IN ACCORDANCE WITH APPLICABLE LAWS AND REGULATIONS.
8. ALL CUTTING AND CHANNELING OF EXISTING BUILDING SHALL BE ACCOMPLISHED IN A NEAT AND WORKMANLIKE MANNER WITHOUT REMOVAL OF EXCESS MATERIALS. THIS CONTRACTOR SHALL PATCH AND REPLACE WITH MATERIAL SIMILAR TO ADJACENT CONSTRUCTION.
9. WHERE EXISTING PIPING AND EQUIPMENT, ETC., THAT ARE TO BE UTILIZED IN THE COMPLETED PROGRAM CONFLICT WITH NEW CONSTRUCTION AND THE REQUIRED DEMOLITION, THEY SHALL BE RELOCATED AND RECONNECTED TO MAINTAIN THE DESIRED SERVICE.
10. PORTIONS OF EXISTING SYSTEMS MAY BE SHOWN FOR CLARITY EVEN THOUGH IT MAY NOT BE NECESSARY TO MODIFY OR REVISE THEM. ALL EXISTING SYSTEMS ARE SHOWN BASED ON ORIGINAL OR REMODEL BUILDING DRAWINGS. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS.
11. ALL WORK MUST BE COORDINATED AND SCHEDULED WITH THE OWNER AND OCCUPANTS OF THIS BUILDING SO AS TO PROVIDE THE LEAST AMOUNT OF DISRUPTION OF BUILDING ACTIVITIES AS POSSIBLE.
12. ALL ACCESSIBLE ABANDONED PIPING AND DUCTWORK SHALL BE REMOVED AND PROPERLY DISPOSED OF.

DEMOLITION PLAN NOTES:

1. ABOVE SLAB PIPING SHOWN HATCHED SHALL BE REMOVED UNLESS REQUIRED FOR NEW WORK. COORDINATE PIPING TO REMAIN WITH PLUMBING PLANS P103 & P104
2. PIPING PENETRATION THRU SLAB. REMOVE PIPING TO A POINT BELOW SLAB. CAP AND ABANDON PIPE BELOW SLAB. PATCH SLAB TO MATCH EXISTING.
3. PIPE IN WALL TO BE ABANDONED. REMOVE PIPING TO A POINT BEHIND WALL. PATCH WALL TO MATCH EXISTING.
4. REMOVE INDICATED SECTION OF BELOW SLAB PIPING TO BE REPLACED WITH NEW 4" SANITARY PIPING. REMOVE PIPING FROM 4"x2" REDUCER BACK TO POINT REQUIRED FOR CONNECTION OF NEW TOILET DRAIN. CAP AND ABANDON REMAINING PIPING.

H2L
CONSULTING ENGINEERS
116 SOUTH PLEASANTBURG DRIVE
GREENVILLE, SOUTH CAROLINA 29607
(864) 233-8844 www.h2l.com

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SOUTH CAROLINA
STATE OF AUTHORITY
No. 37487
TERRY S. BIGLER
ELECTRONICALLY SEALED
12/17/2020

Columbia Housing

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12/17/2020

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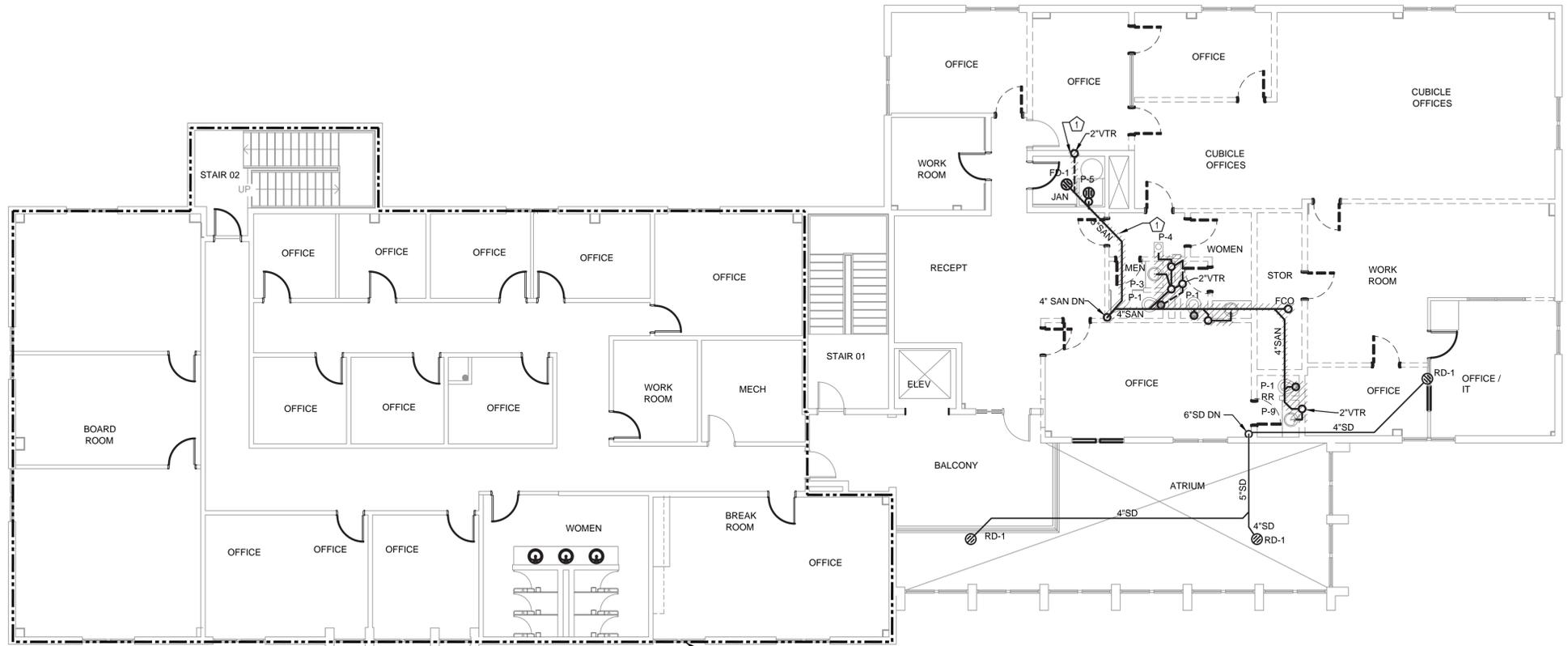
COLUMBIA HOUSING AUTHORITY
1917 HARDEN STREET
Columbia, SC 29204

PLUMBING FIRST FLOOR DEMOLITION PLAN

Date: 12/17/2020 Approved By: WBS
Drawn By: LC Checked By: JSB
Project No: 20002.01
Sheet No:

P101

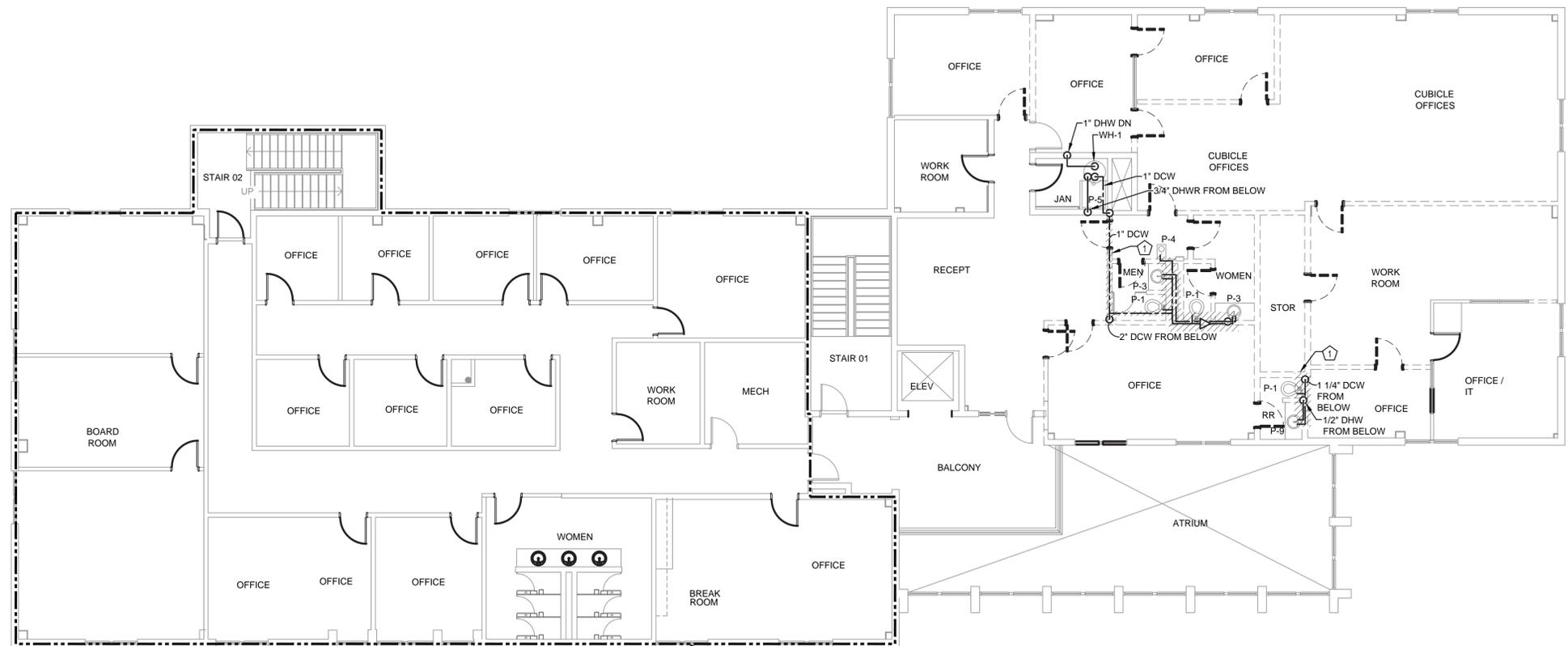
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PLUMBING SANITARY SECOND FLOOR - DEMOLITION PLAN

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

WORK IN THIS AREA HAS BEEN COMPLETED UNDER SEPARATE CONTRACT



PLUMBING DOMESTIC WATER SECOND FLOOR - DEMOLITION PLAN

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

WORK IN THIS AREA HAS BEEN COMPLETED UNDER SEPARATE CONTRACT

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4. PATCH ANY OPENINGS IN CORRIDORS REQUIRED TO BE CONSTRUCTED TO LIMIT THE TRANSFER OF SMOKE AND IN SMOKE BARRIERS AS REQUIRED TO MEET CODE REQUIREMENTS. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY EXACT LOCATIONS, CONFIGURATION AND ROUTING OF EXISTING SYSTEMS REQUIRED TO REMAIN IN OPERATION DURING THE PROJECT TO PREVENT DAMAGE DURING DEMOLITION AND PHASING.
6. REMOVE ALL EXISTING EQUIPMENT, DUCTWORK AND PIPING THAT IS NOT REQUIRED FOR A WORKING INSTALLATION.
7. COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO INSTALLATION.
8. ALL CUTTING AND PATCHING SHALL BE CLOSELY COORDINATED WITH THE G.C.
9. COORDINATE ROUTING OF PLUMBING, AND HVAC PIPING WITH DUCTWORK, LIGHTS, ARCHITECTURAL CEILING AND STRUCTURAL ELEMENTS. PIPING SHALL RISE AND DROP, JOG OR OFFSET AS REQUIRED TO AVOID CONFLICTS. DUCTWORK SHALL TAKE PRECEDENCE OVER ALL PIPING, EXCEPT WHERE GRADE MUST BE MAINTAINED FOR DRAINAGE. REWORK OF INSTALLED WORK TO RESOLVE CONFLICTS ARISING FROM LACK OF COORDINATION SHALL NOT JUSTIFY AN INCREASE IN THE CONTRACT AMOUNT.
10. ALL PENETRATIONS THROUGH FIRE RATED ASSEMBLIES SHALL BE FIRE STOPPED BY THE TRADE MAKING THE PENETRATION. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR REQUIREMENTS.
11. DO NOT ROUTE PIPING OR DUCTWORK OVER ELECTRICAL PANELS OR EQUIPMENT. PIPING OR DUCTWORK SHALL NOT BE ROUTED THROUGH ELECTRICAL ROOMS, TELECOM ROOMS, OR ELEVATOR EQUIPMENT ROOMS UNLESS SPECIFICALLY SERVING THAT ROOM. COORDINATE WITH OTHER TRADES TO FURNISH AND INSTALL WATERTIGHT DRIP PAN WITH DRAIN TO NEAREST APPROVED RECEPTOR WHERE REQUIRED.
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14. COORDINATE ACCESS TO EQUIPMENT AND VALVES INSTALLED ABOVE 'HARD' CEILINGS AND IN MASONRY CHASES WITH GENERAL CONTRACTOR. PROVIDE LOCKING ACCESS DOORS FOR INSTALLATION BY CONTRACTOR AS REQUIRED TO SERVICE CONCEALED DAMPERS, VALVES AND EQUIPMENT.
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DEMOLITION NOTES:

1. VERIFY ALL EXISTING CONDITIONS PRIOR TO BEGINNING WORK. BRING ANY DISCREPANCIES FROM THE DRAWINGS AND NOTES TO THE ARCHITECT IMMEDIATELY. MINOR CHANGES IN THE SCOPE OF THE DEMOLITION WORK SHALL NOT JUSTIFY AN ADDITIONAL COST.
2. REMOVAL OF EXISTING FIXTURES AND EQUIPMENT WILL REQUIRE ISOLATING THE PIPING RISERS OR MAINS VIA SHUT-OFF VALVES. INSTALL NEW ISOLATION VALVES WHERE REQUIRED FOR COMPLETION OF WORK.
3. REMOVAL OF EXISTING PLUMBING FIXTURES AND EQUIPMENT, ETC. WILL REQUIRE CAPPING AND SEALING EXISTING MAINS OR BRANCHES AS NECESSARY AND REQUIRED TO ALLOW THE REMAINING SYSTEMS TO FULLY OPERATE WITHOUT DEGRADATION. CONTRACTOR SHALL PROVIDE PROTECTIVE PLASTIC DROP CLOTHS TO PROTECT THE EXISTING OCCUPIED AREAS AND EQUIPMENT FROM DUST AND DEBRIS DURING THE CONSTRUCTION WORK, AND SHALL CLEAN THE AREAS OF ALL CONSTRUCTION DIRT DAILY.
4. ALL DRAINED PIPING RISERS AND MAINS SHALL BE REFILLED WITH PROPER FLUID AND PROPERLY VENTED BY THIS CONTRACTOR, ONCE NEW WORK HAS BEEN INSTALLED.
5. COORDINATE WITH GENERAL CONTRACTOR THE REMOVAL AND REPLACEMENT OF ALL EXISTING CEILINGS, WALLS, ETC. AS REQUIRED FOR MECHANICAL DEMOLITION WORK.
6. EXISTING PIPING AND EQUIPMENT, ETC., NOT TO BE UTILIZED IN THE COMPLETED BUILDING SHALL BE DISCONTINUED OR REMOVED AS REQUIRED. ALL ENDS OF DISCONTINUED PIPING SHALL BE CAPPED IN THE NEAREST WALL, CEILING OR FLOOR SO THAT THEY ARE COMPLETELY CONCEALED. OPENINGS LEFT IN WALLS, CEILINGS, ETC., WHERE EQUIPMENT AND PIPE, ETC., ARE REMOVED AND NOT REPLACED, SHALL BE PATCHED NEATLY WITH SIMILAR MATERIAL TO ADJACENT CONSTRUCTION. REFER TO DRAWINGS DELINEATING NEW WORK FOR ADDITIONAL INFORMATION REGARDING SYSTEMS OR PORTIONS OF SYSTEMS WHERE USE IS TO BE DISCONTINUED.
7. EXISTING PIPING, FIXTURES AND EQUIPMENT THAT ARE NOT TO BE REUSED SHALL BE REMOVED AND SHALL REMAIN THE PROPERTY OF THE OWNER IF THEY WISH TO RETAIN OWNERSHIP OF SAME. IF NOT, EQUIPMENT SHALL BECOME THE PROPERTY OF THIS CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AS SOON AS PRACTICAL AND DISPOSED OF IN ACCORDANCE WITH APPLICABLE LAWS AND REGULATIONS.
8. ALL CUTTING AND CHANNELING OF EXISTING BUILDING SHALL BE ACCOMPLISHED IN A NEAT AND WORKMANLIKE MANNER WITHOUT REMOVAL OF EXCESS MATERIALS. THIS CONTRACTOR SHALL PATCH AND REPLACE WITH MATERIAL SIMILAR TO ADJACENT CONSTRUCTION.
9. WHERE EXISTING PIPING AND EQUIPMENT, ETC., THAT ARE TO BE UTILIZED IN THE COMPLETED PROGRAM CONFLICT WITH NEW CONSTRUCTION AND THE REQUIRED DEMOLITION, THEY SHALL BE RELOCATED AND RECONNECTED TO MAINTAIN THE DESIRED SERVICE.
10. PORTIONS OF EXISTING SYSTEMS MAY BE SHOWN FOR CLARITY EVEN THOUGH IT MAY NOT BE NECESSARY TO MODIFY OR REVISE THEM. ALL EXISTING SYSTEMS ARE SHOWN BASED ON ORIGINAL OR REMODEL BUILDING DRAWINGS. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS.
11. ALL WORK MUST BE COORDINATED AND SCHEDULED WITH THE OWNER AND OCCUPANTS OF THIS BUILDING SO AS TO PROVIDE THE LEAST AMOUNT OF DISRUPTION OF BUILDING ACTIVITIES AS POSSIBLE.
12. ALL ACCESSIBLE ABANDONED PIPING AND DUCTWORK SHALL BE REMOVED AND PROPERLY DISPOSED OF.

DEMOLITION PLAN NOTES:

1. ABOVE SLAB PIPING SHOWN HATCHED SHALL BE REMOVED UNLESS REQUIRED FOR NEW WORK. COORDINATE PIPING TO REMAIN WITH PLUMBING PLANS P103 & P104

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STATE OF SOUTH CAROLINA
H2L CONSULTING ENGINEERS
No. C00001

STATE OF SOUTH CAROLINA
REGISTERED PROFESSIONAL ENGINEER
No. 37487
TERRY S. BIGLER

ELECTRONICALLY SEALED
12/17/2020



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12/17/2020

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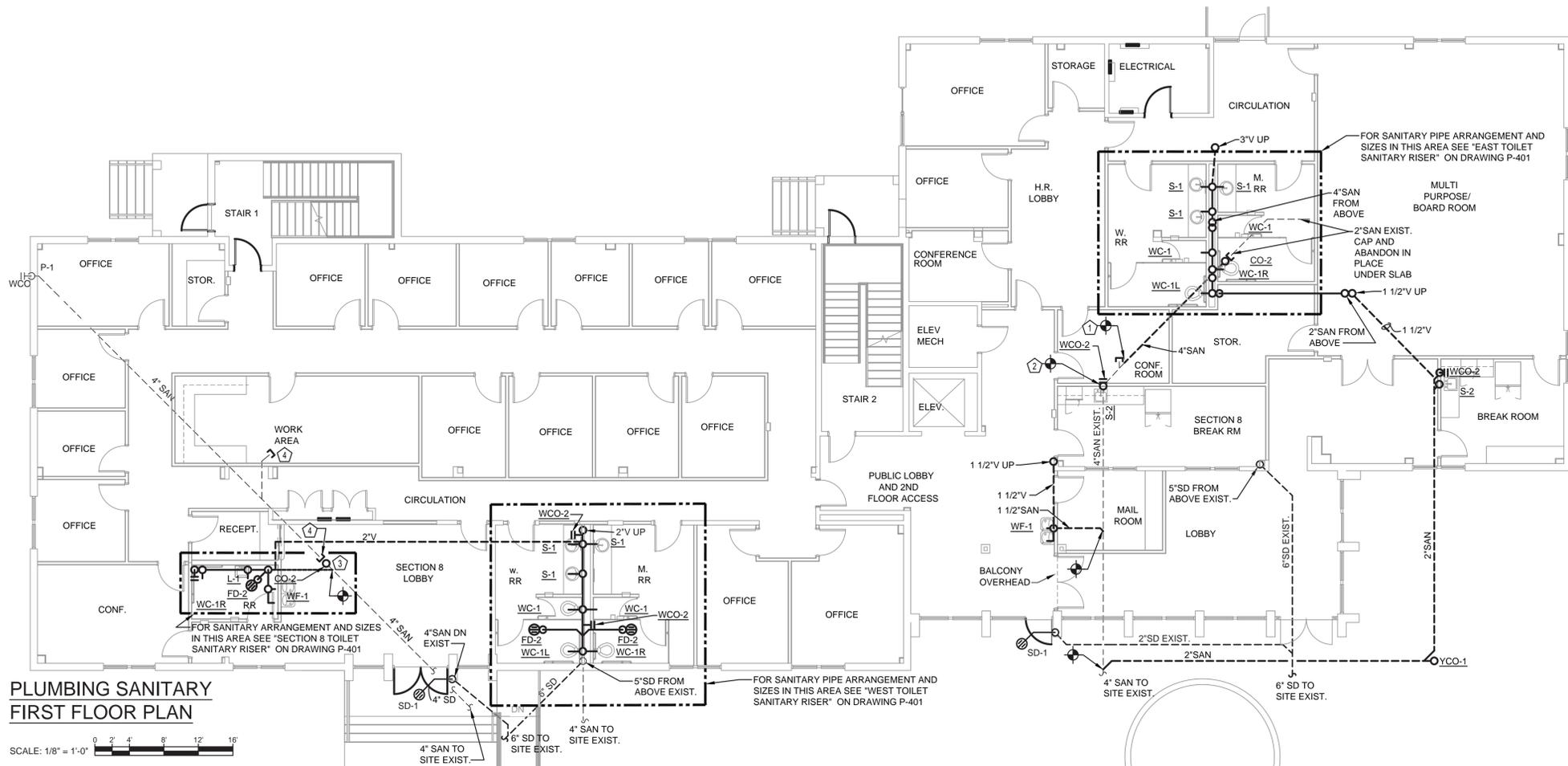
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COLUMBIA HOUSING AUTHORITY
1917 HARDEN STREET
Columbia, SC 29204

PLUMBING SECOND FLOOR DEMOLITION PLAN
Date: 12/17/2020 Approved By: WBS
Drawn By: LC Checked By: JSB
Project No: 20002.01
Sheet No:

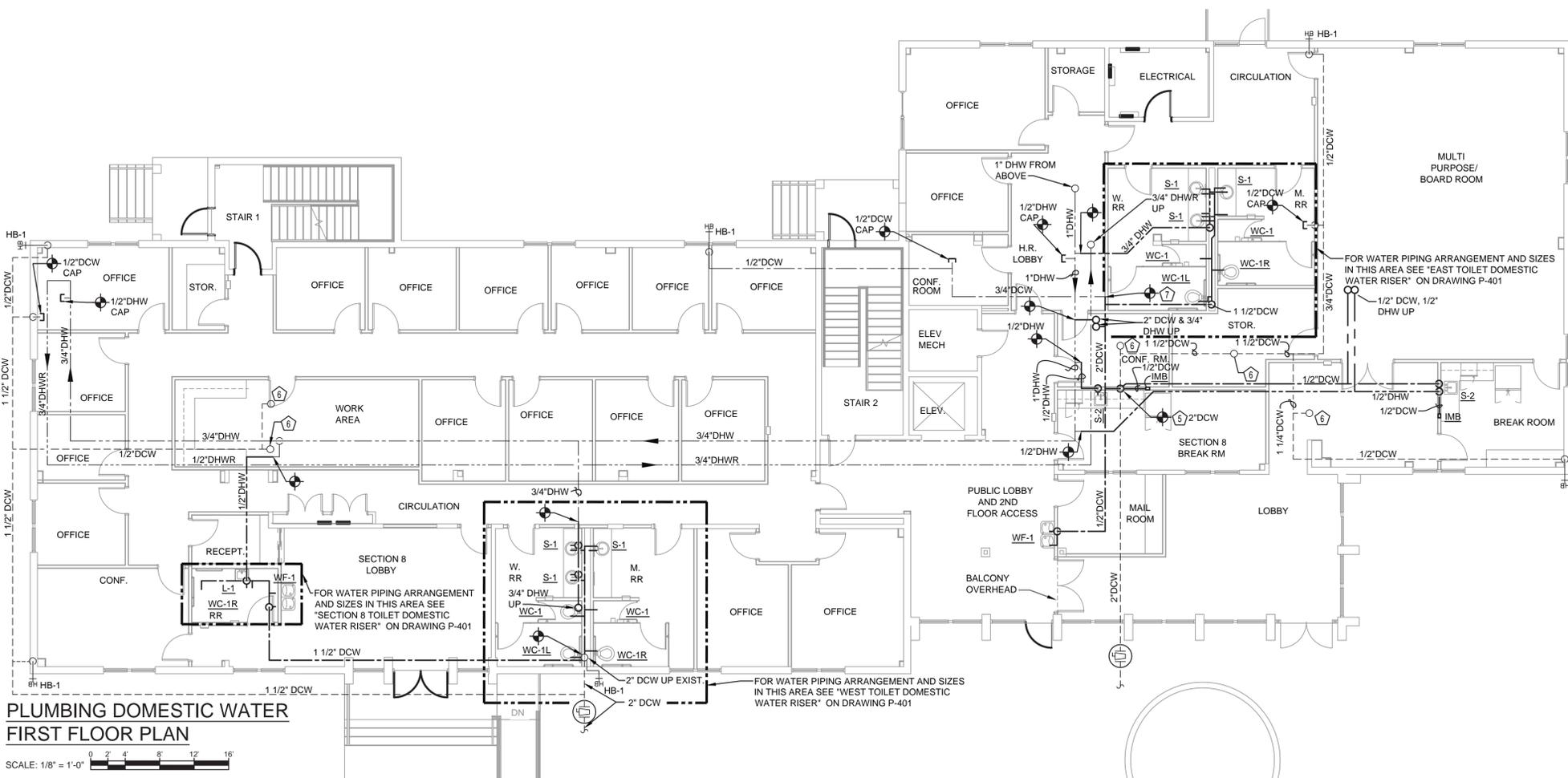
P102

Drawing File: M:\20200002\0002.01 - CHA Harden\Drawings\20002.01 - P102 Second Floor Demo.dwg --- Plotted by: jbilger --- Plotted Date: Dec 16, 2020 - 4:41 pm



**PLUMBING SANITARY
FIRST FLOOR PLAN**

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



**PLUMBING DOMESTIC WATER
FIRST FLOOR PLAN**

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

GENERAL NOTES:

1. VERIFY JOB SITE CONDITIONS AND DIMENSIONS BEFORE BEGINNING WORK. PLANS ARE SCHEMATIC IN NATURE. LAYOUT IS BASED ON BEST AVAILABLE INFORMATION. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND DIMENSIONS.
2. NO PIPING, DUCTWORK, ETC. SHALL PENETRATE STRUCTURAL MEMBERS.
3. PROVIDE MISCELLANEOUS CUTTING, PATCHING AND REPAIRING OF FINISHES, ROOF, WALLS, ETC., AS REQUIRED TO ACCOMMODATE THE NEW WORK.
4. PATCH ANY OPENINGS IN CORRIDORS REQUIRED TO BE CONSTRUCTED TO LIMIT THE TRANSFER OF SMOKE AND IN SMOKE BARRIERS AS REQUIRED TO MEET CODE REQUIREMENTS. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY EXACT LOCATIONS, CONFIGURATION AND ROUTING OF EXISTING SYSTEMS REQUIRED TO REMAIN IN OPERATION DURING THE PROJECT TO PREVENT DAMAGE DURING DEMOLITION AND PHASING.
6. REMOVE ALL EXISTING EQUIPMENT, DUCTWORK AND PIPING THAT IS NOT REQUIRED FOR A WORKING INSTALLATION.
7. COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO INSTALLATION.
8. ALL CUTTING AND PATCHING SHALL BE CLOSELY COORDINATED WITH THE G.C.
9. COORDINATE ROUTING OF PLUMBING, AND HVAC PIPING WITH DUCTWORK, LIGHTS, ARCHITECTURAL CEILING AND STRUCTURAL ELEMENTS. PIPING SHALL RISE AND DROP, JOG OR OFFSET AS REQUIRED TO AVOID CONFLICTS. DUCTWORK SHALL TAKE PRECEDENCE OVER ALL PIPING, EXCEPT WHERE GRADE MUST BE MAINTAINED FOR DRAINAGE. REWORK OF INSTALLED WORK TO RESOLVE CONFLICTS ARISING FROM LACK OF COORDINATION SHALL NOT JUSTIFY AN INCREASE IN THE CONTRACT AMOUNT.
10. ALL PENETRATIONS THROUGH FIRE RATED ASSEMBLIES SHALL BE FIRE STOPPED BY THE TRADE MAKING THE PENETRATION. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR REQUIREMENTS.
11. DO NOT ROUTE PIPING OR DUCTWORK OVER ELECTRICAL PANELS OR EQUIPMENT. PIPING OR DUCTWORK SHALL NOT BE ROUTED THROUGH ELECTRICAL ROOMS, TELECOM ROOMS, OR ELEVATOR EQUIPMENT ROOMS UNLESS SPECIFICALLY SERVING THAT ROOM. COORDINATE WITH E.C. PROVIDE WATERTIGHT DRIP PAN WITH DRAIN TO NEAREST APPROVED RECEPTOR WHERE REQUIRED.
12. COORDINATE SIZE AND LOCATION OF ACCESS DOORS IN CONSTRUCTION REQUIRED FOR ACCESS TO MECHANICAL EQUIPMENT.
13. ALL WORK IS TO CONFORM WITH APPLICABLE CODES AND STANDARDS.
14. COORDINATE ACCESS TO EQUIPMENT AND VALVES INSTALLED ABOVE 'HARD' CEILINGS AND IN MASONRY CHASES WITH GENERAL CONTRACTOR. PROVIDE LOCKING ACCESS DOORS FOR INSTALLATION BY CONTRACTOR AS REQUIRED TO SERVICE CONCEALED DAMPERS, VALVES AND EQUIPMENT.
15. THESE DRAWINGS ARE ACCOMPANIED BY SPECIFICATIONS. REFER TO SPECIFICATIONS ON PLUMBING COVER SHEET FOR FURTHER INFORMATION.

PLAN NOTES:

1. CONNECT NEW 4" SAN PIPING TO EXISTING AT THIS POINT. CAP PIPE FROM REMOVED TOILETS AT WYE.
2. INSTALL WALL CLEANOUT AT LOCATION INDICATED INTO EXISTING PIPING.
3. FURNISH AND INSTALL NEW FLOOR CLEANOUT AND SANITARY TEE IN EXISTING SANITARY DRAIN PIPE AT LOCATION INDICATED. PATCH FLOOR AS REQUIRED TO MATCH EXISTING.
4. SANITARY PIPING REMOVED FROM THIS LOCATION. CAP EXISTING PIPING UNDER SLAB. PATCH FLOOR AS REQUIRED TO MATCH EXISTING.
5. CONNECT NEW DOMESTIC COLD WATER PIPING TO EXISTING BELOW SLAB. PATCH SLAB AS REQUIRED. PROVIDE 1/2" DCW TO SINK S-2. PROVIDE 1/2" DCW TO IMB.
6. REMOVED PIPING FROM TEE BELOW SLAB. PATCH MAIN AS REQUIRED AND PATCH SLAB TO MATCH EXISTING.
7. TIE IN EXISTING PIPING TO NEW AT POINT INDICATED.

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No. C00001

STATE OF SOUTH CAROLINA
JERRY S. BIGLER
ELECTRONICALLY SEALED
12/17/2020



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12/17/2020**

**CHA HARDEN
BLDG REMODEL**

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AUTHORITY**
1917 HARDEN STREET
Columbia, SC 29204

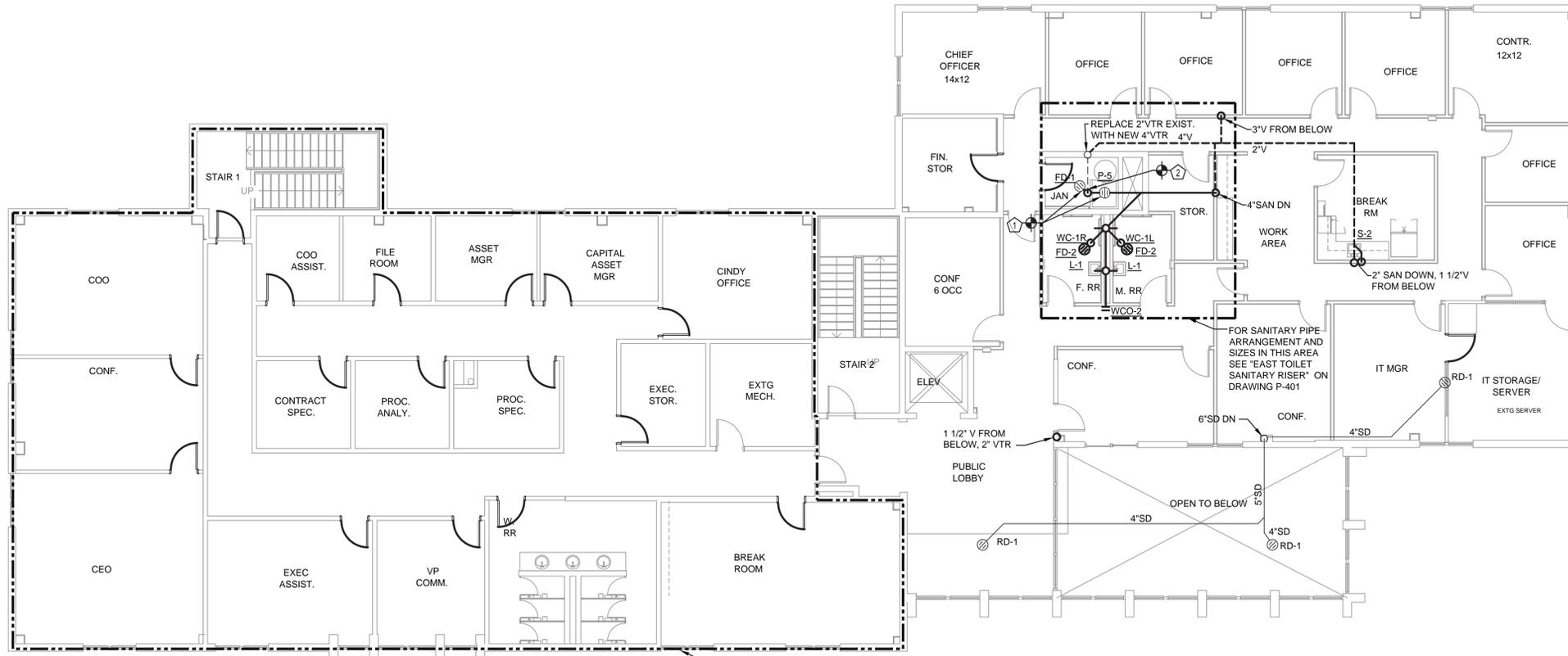
**PLUMBING
FIRST FLOOR
PLAN**

Date: 12/17/2020 Approved By: WBS
Drawn By: LC Checked By: JSB
Project No: 20002.01
Sheet No:

P103

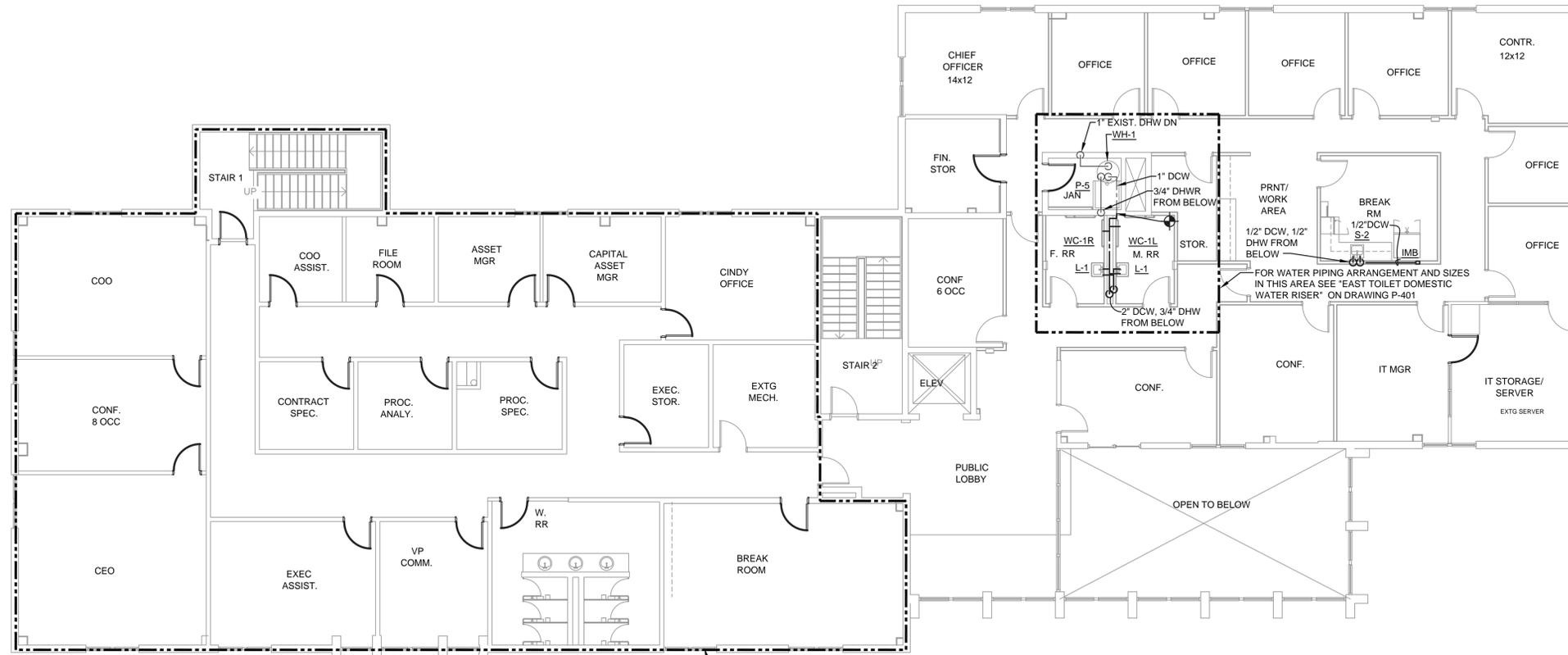
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PLUMBING SANITARY SECOND FLOOR PLAN

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



PLUMBING DOMESTIC WATER SECOND FLOOR PLAN

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

GENERAL NOTES:

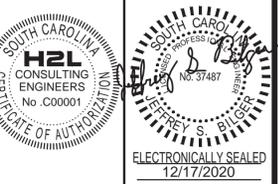
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2. NO PIPING, DUCTWORK, ETC. SHALL PENETRATE STRUCTURAL MEMBERS.
3. PROVIDE MISCELLANEOUS CUTTING, PATCHING AND REPAIRING OF FINISHES, ROOF, WALLS, ETC., AS REQUIRED TO ACCOMMODATE THE NEW WORK.
4. PATCH ANY OPENINGS IN CORRIDORS REQUIRED TO BE CONSTRUCTED TO LIMIT THE TRANSFER OF SMOKE AND IN SMOKE BARRIERS AS REQUIRED TO MEET CODE REQUIREMENTS. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY EXACT LOCATIONS, CONFIGURATION AND ROUTING OF EXISTING SYSTEMS REQUIRED TO REMAIN IN OPERATION DURING THE PROJECT TO PREVENT DAMAGE DURING DEMOLITION AND PHASING.
6. REMOVE ALL EXISTING EQUIPMENT, DUCTWORK AND PIPING THAT IS NOT REQUIRED FOR A WORKING INSTALLATION.
7. COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO INSTALLATION.
8. ALL CUTTING AND PATCHING SHALL BE CLOSELY COORDINATED WITH THE G.C. ARCHITECTURAL CEILING AND STRUCTURAL ELEMENTS. PIPING SHALL RISE AND DROP, JOG OR OFFSET AS REQUIRED TO AVOID CONFLICTS. DUCTWORK SHALL TAKE PRECEDENCE OVER ALL PIPING. EXCEPT WHERE GRADE MUST BE MAINTAINED FOR DRAINAGE, REWORK OF INSTALLED WORK TO RESOLVE CONFLICTS ARISING FROM LACK OF COORDINATION SHALL NOT JUSTIFY AN INCREASE IN THE CONTRACT AMOUNT.
9. COORDINATE ROUTING OF PLUMBING, AND HVAC PIPING WITH DUCTWORK, LIGHTS, ARCHITECTURAL CEILING AND STRUCTURAL ELEMENTS. PIPING SHALL RISE AND DROP, JOG OR OFFSET AS REQUIRED TO AVOID CONFLICTS. DUCTWORK SHALL TAKE PRECEDENCE OVER ALL PIPING. EXCEPT WHERE GRADE MUST BE MAINTAINED FOR DRAINAGE, REWORK OF INSTALLED WORK TO RESOLVE CONFLICTS ARISING FROM LACK OF COORDINATION SHALL NOT JUSTIFY AN INCREASE IN THE CONTRACT AMOUNT.
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12. COORDINATE SIZE AND LOCATION OF ACCESS DOORS IN CONSTRUCTION REQUIRED FOR ACCESS TO MECHANICAL EQUIPMENT.
13. ALL WORK IS TO CONFORM WITH APPLICABLE CODES AND STANDARDS.
14. COORDINATE ACCESS TO EQUIPMENT AND VALVES INSTALLED ABOVE 'HARD' CEILINGS AND IN MASONRY CHASES WITH GENERAL CONTRACTOR. PROVIDE LOCKING ACCESS DOORS FOR INSTALLATION BY CONTRACTOR AS REQUIRED TO SERVICE CONCEALED DAMPERS, VALVES AND EQUIPMENT.
15. THESE DRAWINGS ARE ACCOMPANIED BY SPECIFICATIONS. REFER TO SPECIFICATIONS ON PLUMBING COVER SHEET FOR FURTHER INFORMATION.

PLAN NOTES:

1. CONNECT NEW 4" SAN PIPING TO EXISTING FLOOR DRAINS AT THIS POINT.
2. TIE IN EXISTING VENT INTO NEW DRAIN PIPING AT THIS POINT.



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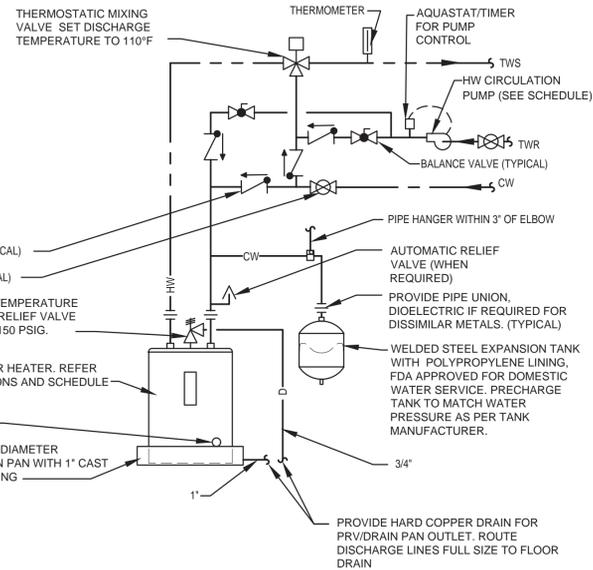
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PLUMBING SECOND FLOOR PLAN

Date: 12/17/2020 Approved By: WBS
Drawn By: LC Checked By: JSB
Project No: 20002.01
Sheet No:

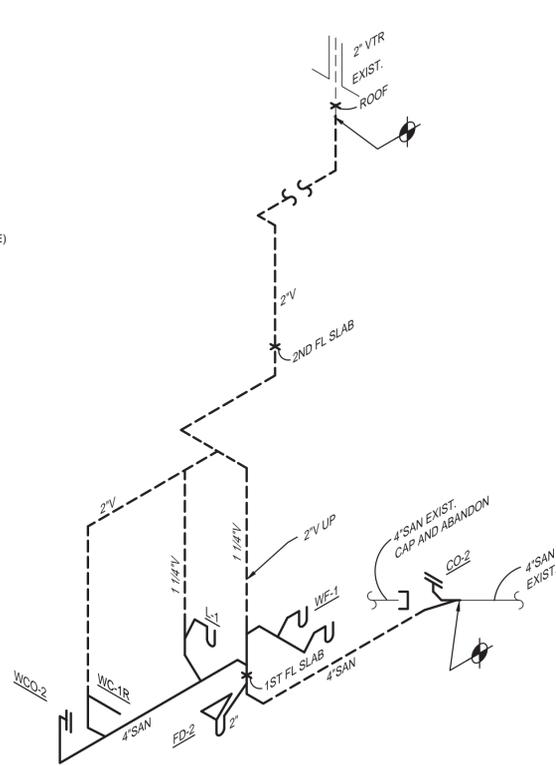
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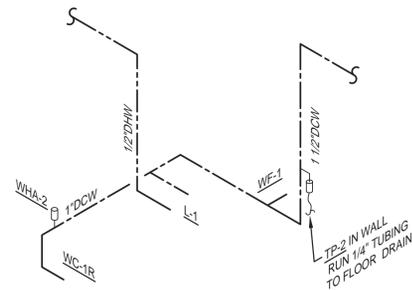


WATER HEATER DETAIL WITH CIRCULATING PUMP DETAIL
NOT TO SCALE

REFER TO SPECIFICATIONS, SCHEDULES AND NOTES FOR MORE INFORMATION. PIPING ARRANGEMENT SHOWN IS SCHEMATIC. VERIFY ALL CONNECTION SIZES AND LOCATIONS PER MANUFACTURERS REQUIREMENTS. ADJUST TO SUIT FIELD CONDITIONS. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION OF EXPANSION TANK. REFER TO FLOOR PLAN FOR PIPE SIZES. PROVIDE SEISMIC STRAPS OR BRACING, HEAT TRAP AND AUTOMATIC VACUUM RELIEF VALVE WHEN REQUIRED BY LOCAL AUTHORITIES.



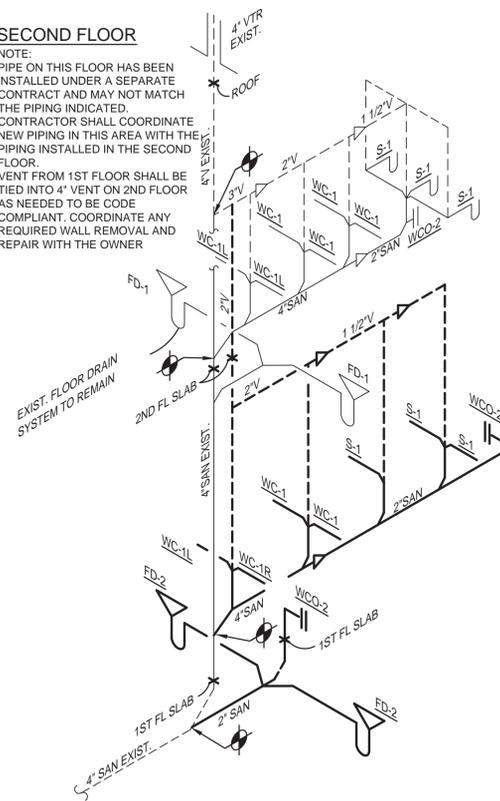
SECTION 8 TOILET SANITARY RISER
NOT TO SCALE



SECTION 8 TOILET WATER RISER
NOT TO SCALE

SECOND FLOOR

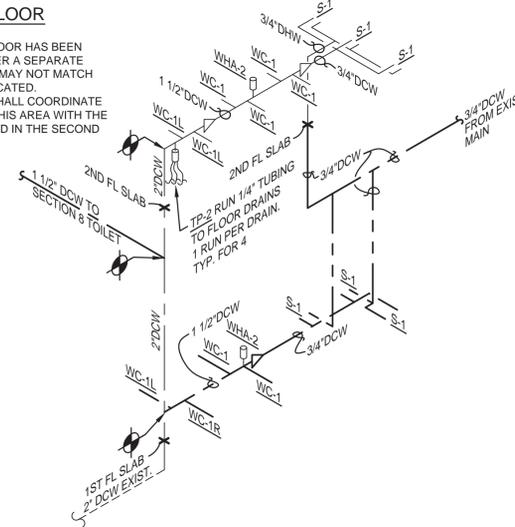
NOTE:
PIPE ON THIS FLOOR HAS BEEN INSTALLED UNDER A SEPARATE CONTRACT AND MAY NOT MATCH THE PIPING INDICATED. CONTRACTOR SHALL COORDINATE NEW PIPING IN THIS AREA WITH THE PIPING INSTALLED IN THE SECOND FLOOR.
VENT FROM 1ST FLOOR SHALL BE TIED INTO 4\"/>



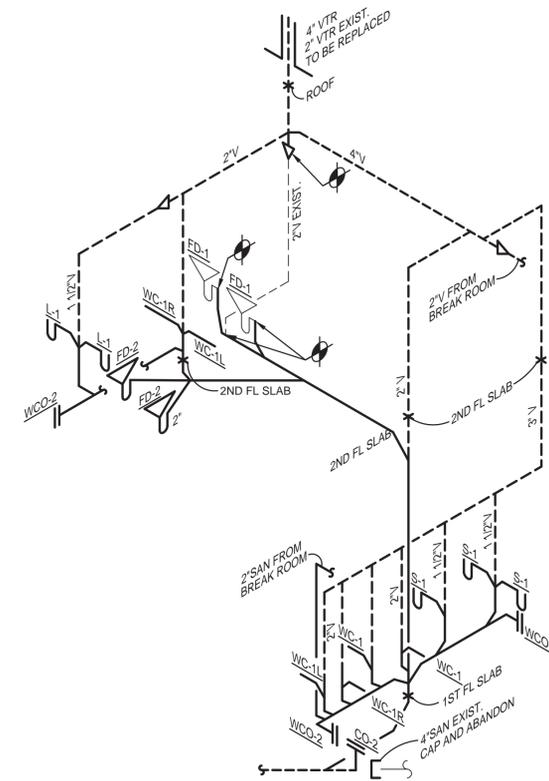
WEST TOILET SANITARY RISER
NOT TO SCALE

SECOND FLOOR

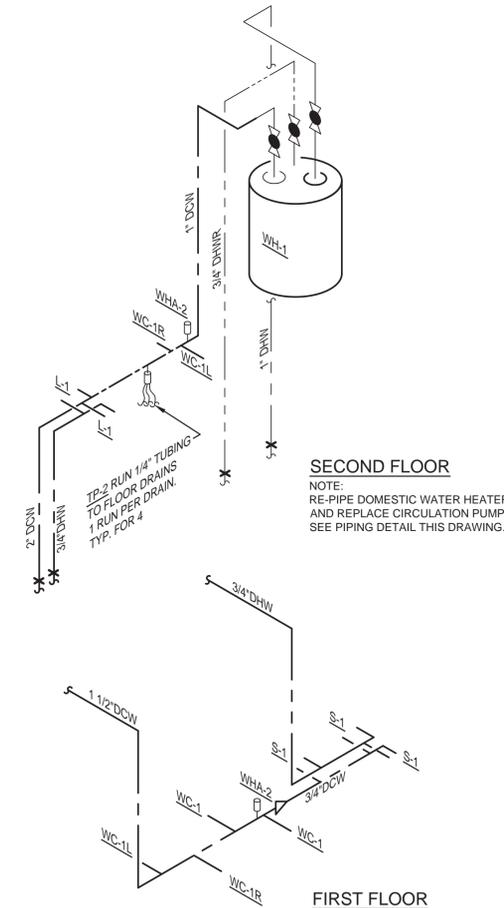
NOTE:
PIPE ON THIS FLOOR HAS BEEN INSTALLED UNDER A SEPARATE CONTRACT AND MAY NOT MATCH THE PIPING INDICATED. CONTRACTOR SHALL COORDINATE NEW PIPING IN THIS AREA WITH THE PIPING INSTALLED IN THE SECOND FLOOR.



WEST TOILET WATER RISER
NOT TO SCALE

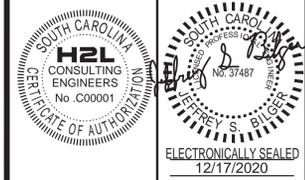


EAST TOILET SANITARY RISER
NOT TO SCALE



EAST TOILET WATER RISER
NOT TO SCALE

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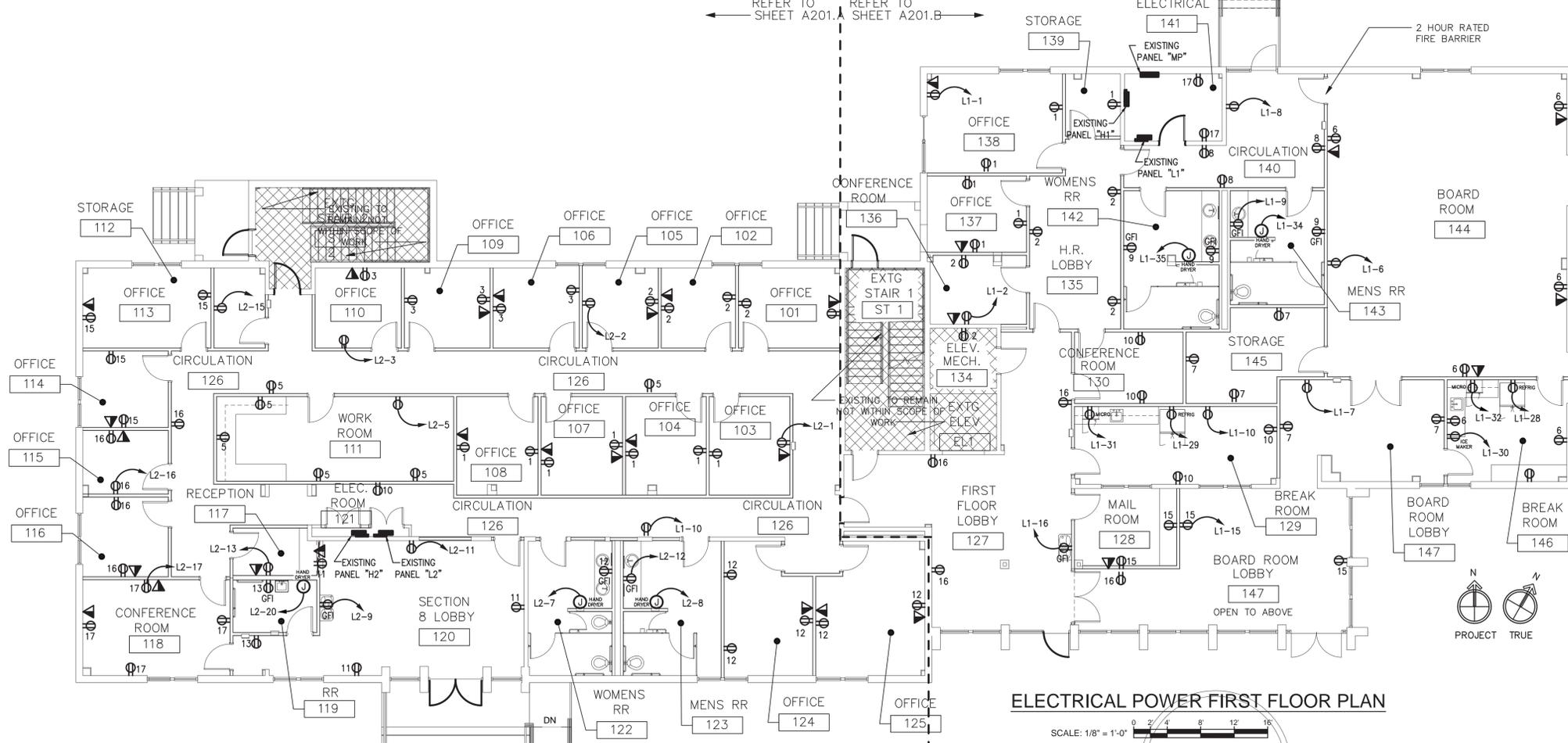
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Columbia, SC 29204

PLUMBING RISERS AND DETAILS

Date: 12/17/2020 Approved By: WBS
Drawn By: LC Checked By: JSB
Project No: 20002.01
Sheet No:

P401

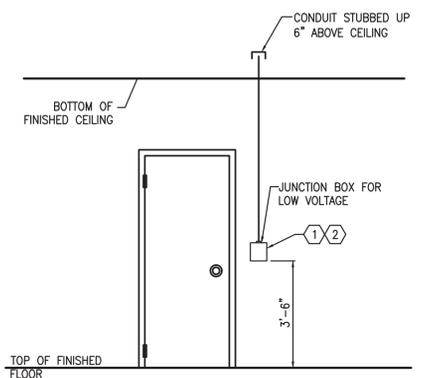


ELECTRICAL POWER FIRST FLOOR PLAN

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

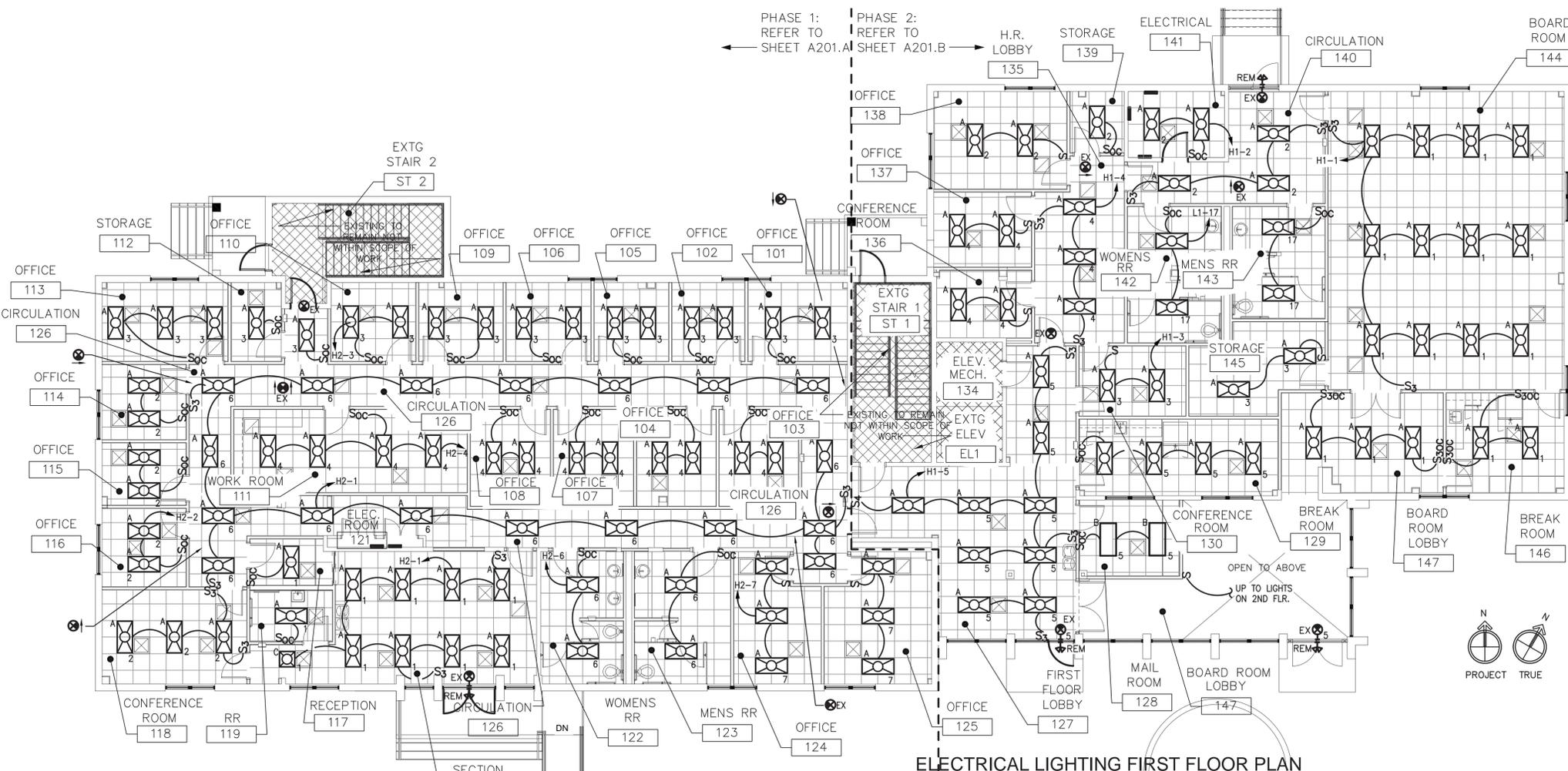
- POWER NOTES:**
- ALL OUTLETS AND EQUIPMENT SHALL BE WIRED TO PANEL CIRCUIT INDICATED ON PLAN, UNLESS NOTED OTHERWISE.
 - CONFIRM EXACT LOCATION OF ALL OUTLETS, SWITCHES AND EQUIPMENT PRIOR TO ROUGH-IN. ELECTRICAL CONTRACTOR SHALL MAKE NECESSARY ADJUSTMENTS PRIOR TO WIRE PULL.
 - ALL POWER WIRING SHALL BE ROUTED IN CONDUIT SUITABLE FOR THE AREA THROUGH WHICH IT IS ROUTED.
 - ALL BRANCH CIRCUIT WIRING SHALL BE #12 AWG UNLESS NOTED OTHERWISE. QUANTITY OF WIRES SHALL BE AS REQUIRED TO ACCOMPLISH THE CIRCUITRY AND SWITCHING INDICATED.
 - ELECTRICAL CONTRACTOR SHALL ROUTE HOMERUNS AS ECONOMICALLY AS POSSIBLE. ALL ASPECTS OF THE NATIONAL ELECTRICAL CODE SHALL BE ADHERED TO IN REGARD TO CONDUIT FILL AND DERATING OF WIRE.
 - COLOR OF OUTLETS, SWITCHES AND COVER PLATES SHALL BE AS DIRECTED BY ARCHITECT OR OWNER.
 - ALL ASPECTS OF THE NATIONAL ELECTRICAL CODE, 2014 EDITION SHALL BE ADHERED TO.
 - REFER TO DWG. E001 FOR PANEL SCHEDULES AND SPECS.
 - REFER TO ARCHITECTURAL DRAWINGS FOR DETAILS, DIMENSIONS INTERFERENCES, ETC.
 - COORDINATE INSTALLATION OF ELECTRICAL SYSTEM WITH GENERAL CONTRACTOR AND SUB-CONTRACTORS.
 - ANY 20 AMP, 120 VOLT CIRCUIT OVER 75' MUST BE #10 AWG.
 - PROVIDE 120V RECEPTACLE AND 100W KEYLESS INCANDESCENT LIGHT FIXTURE LOCATED AT HVAC AIR HANDLING UNIT IN ATTIC SPACE. CONNECT TO NEAREST NON-DEDICATED 120V CIRCUIT IN AREA. PROVIDE LIGHT SWITCH NEAR ATTIC ACCESS DOOR. COORDINATE LOCATIONS WITH OWNER.

- KEYED NOTES:**
- REFER TO DOOR SCHEDULE ON THE ARCHITECTURAL DRAWINGS FOR LOCATIONS AND ADDITIONAL INFORMATION.
 - JUNCTION BOX TO BE INSTALLED AT ADA HEIGHT.



NETWORK ACCESS CONTROL MOUNTING DETAIL

SCALE: NONE



ELECTRICAL LIGHTING FIRST FLOOR PLAN

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

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REGISTERED PROFESSIONAL ENGINEER
 SOUTH CAROLINA
 No. C000001
 JAMES C. SLICE
 12-17-20



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 12/17/2020

CHA HARDEN BLDG REMODEL

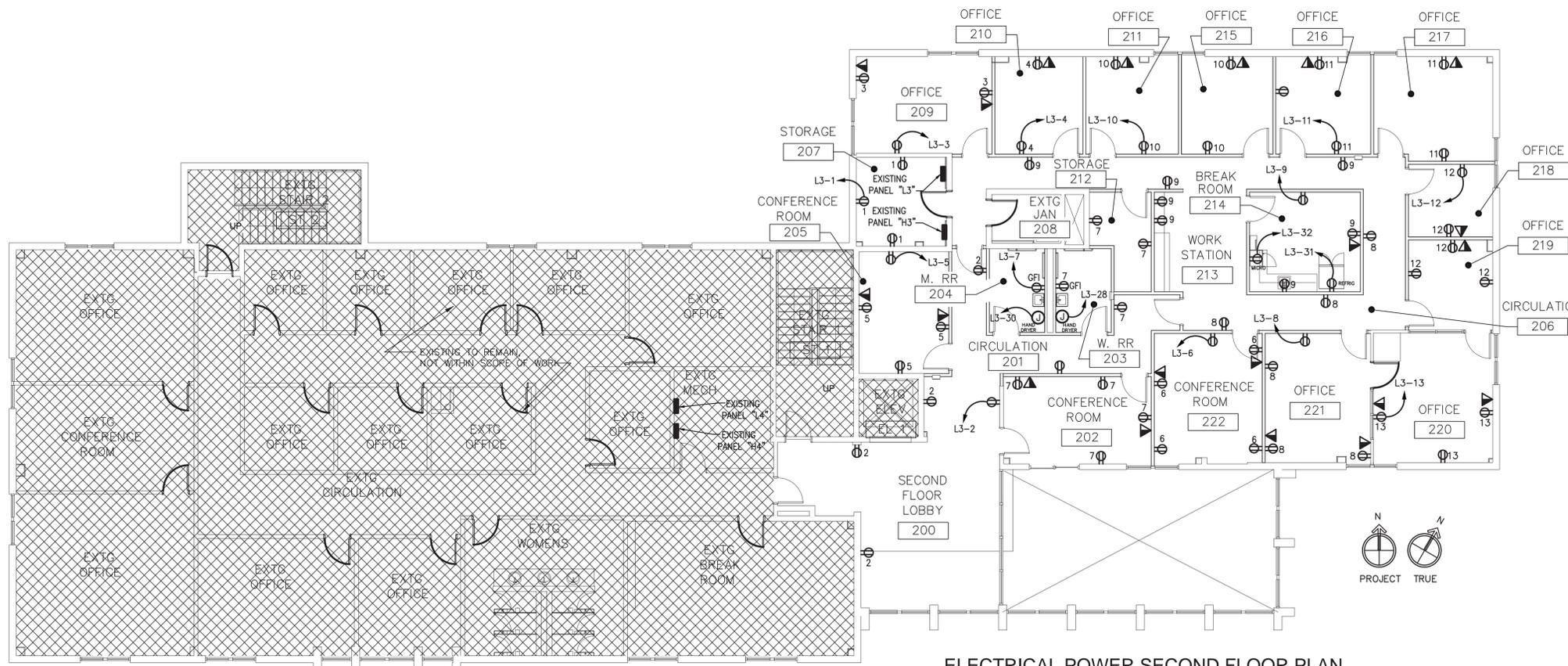
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| 0 | RELEASED FOR PLAN REVIEW/PRICING | 12/17/2020 | JSB |

COLUMBIA HOUSING AUTHORITY
 1917 HARDEN STREET
 Columbia, SC 29204

ELECTRICAL FIRST FLOOR PLAN
 Date: 12-17-20 Approved By: JCS
 Drawn By: TSB Checked By: JCS
 Project No: 20002.01
 Sheet No:

E101

Drawing File: M:\2020000\20002.01 CHA Harden\Drawings\20002.01 - E101 Electrical First Floor Plan.dwg --- Plotted by: blackston --- Plotted Date: Dec 16, 2020 - 4:47pm

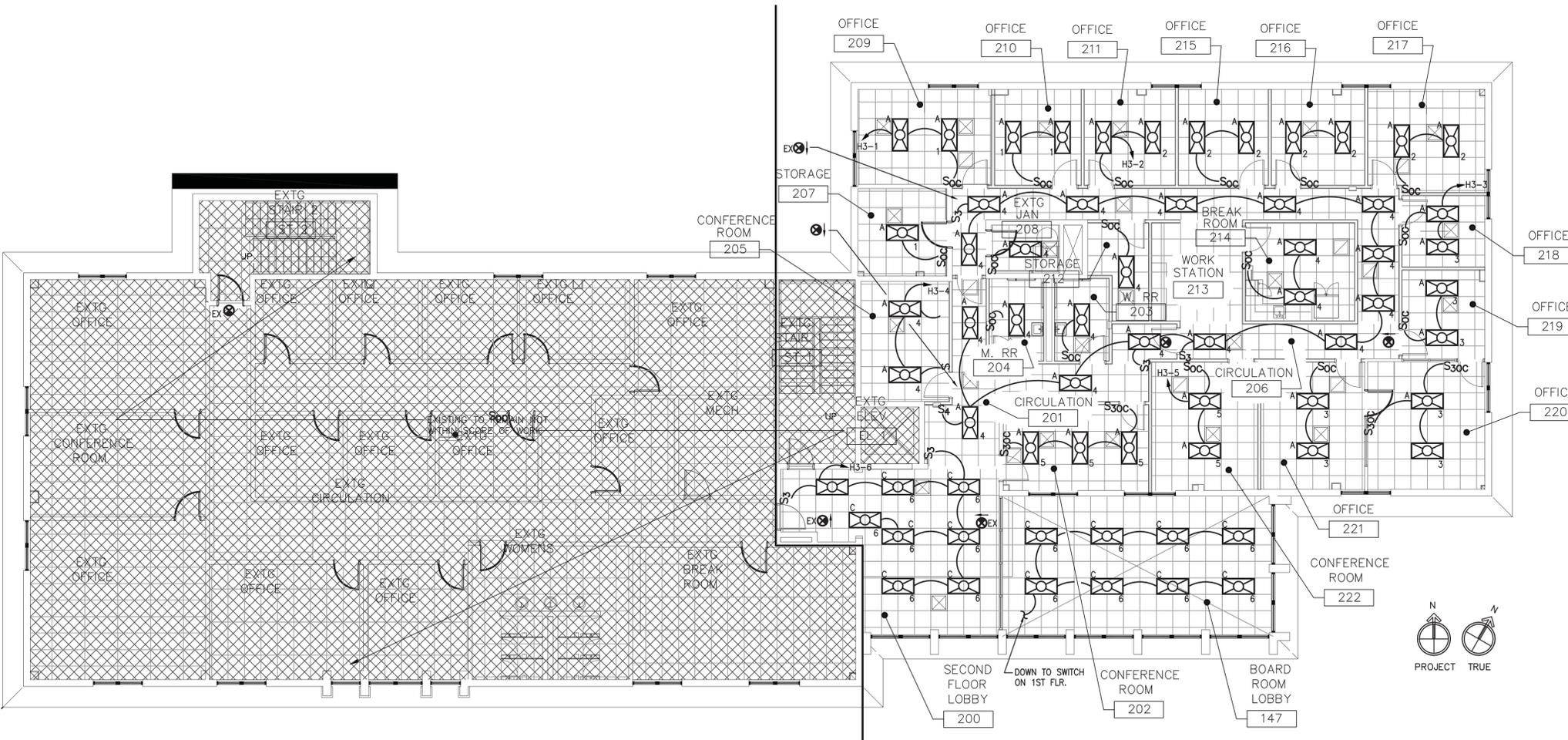


ELECTRICAL POWER SECOND FLOOR PLAN

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

POWER NOTES:

1. ALL OUTLETS AND EQUIPMENT SHALL BE WIRED TO PANEL CIRCUIT INDICATED ON PLAN, UNLESS NOTED OTHERWISE.
2. CONFIRM EXACT LOCATION OF ALL OUTLETS, SWITCHES AND EQUIPMENT PRIOR TO ROUGH-IN. ELECTRICAL CONTRACTOR SHALL MAKE NECESSARY ADJUSTMENTS PRIOR TO WIRE PULL.
3. ALL POWER WIRING SHALL BE ROUTED IN CONDUIT SUITABLE FOR THE AREA THROUGH WHICH IT IS ROUTED.
4. ALL BRANCH CIRCUIT WIRING SHALL BE #12 AWG UNLESS NOTED OTHERWISE. QUANTITY OF WIRES SHALL BE AS REQUIRED TO ACCOMPLISH THE CIRCUITRY AND SWITCHING INDICATED.
5. ELECTRICAL CONTRACTOR SHALL ROUTE HOMERUNS AS ECONOMICALLY AS POSSIBLE. ALL ASPECTS OF THE NATIONAL ELECTRICAL CODE SHALL BE ADHERED TO IN REGARD TO CONDUIT FILL AND DERATING OF WIRE.
6. COLOR OF OUTLETS, SWITCHES AND COVER PLATES SHALL BE AS DIRECTED BY ARCHITECT OR OWNER.
7. ALL ASPECTS OF THE NATIONAL ELECTRICAL CODE, 2017 EDITION SHALL BE ADHERED TO.
8. REFER TO DWG. E001 FOR PANEL SCHEDULES AND SPECS.
9. REFER TO ARCHITECTURAL DRAWINGS FOR DETAILS, DIMENSIONS INTERFERENCES, ETC.
10. COORDINATE INSTALLATION OF ELECTRICAL SYSTEM WITH GENERAL CONTRACTOR AND SUB-CONTRACTORS.
11. ANY 20 AMP, 120 VOLT CIRCUIT OVER 75' MUST BE #10 AWG.
12. PROVIDE 120V RECEPTACLE AND 100W KEYLESS INCANDESCENT LIGHT FIXTURE LOCATED AT HVAC AIR HANDLING UNIT IN ATTIC SPACE. CONNECT TO NEAREST NON-DEDICATED 120V CIRCUIT IN AREA. PROVIDE LIGHT SWITCH NEAR ATTIC ACCESS DOOR. COORDINATE LOCATIONS WITH OWNER.



ELECTRICAL LIGHTING SECOND FLOOR PLAN

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



116 SOUTH PLEASANTBURG DRIVE
GREENVILLE, SOUTH CAROLINA 29607
(864) 233-8844 www.h2l.com

NOTICE:

THIS DRAWING IS THE PROPERTY OF H2L CONSULTING ENGINEERS, AND IS FURNISHED WITH THE CONDITION THAT IT IS NOT TO BE CHANGED WITHOUT WRITTEN AUTHORIZATION OF H2L. FURTHERMORE, THIS DRAWING IS NOT TO BE COPIED, REPRODUCED OR USED BY OTHERS EXCEPT AS REQUIRED FOR THE WORK OF THIS SPECIFIC PROJECT.



RELEASED FOR PLAN REVIEW AND PRICING 12/17/2020

CHA HARDEN BLDG REMODEL

| No. | REVISION | DATE | By |
|-----|----------------------------------|------------|-----|
| 0 | RELEASED FOR PLAN REVIEW/PRICING | 12/17/2020 | JSB |

COLUMBIA HOUSING AUTHORITY

1917 HARDEN STREET
Columbia, SC 29204

ELECTRICAL SECOND FLOOR PLAN

Date: 10-09-2020 Approved By: JCS
Drawn By: TSB Checked By: JCS
Project No: 20002.01
Sheet No:

E102

| PANEL VOLTAGE: | | 'MP' (EXISTING) | | MOUNTING: FEEDER: | | SURFACE BOTTOM | | ENCLOSURE: MAINS: | | NEMA 1 1200A MCB | | | | | |
|---|-------|-----------------|-------------|-------------------|-----|------------------|-----|-------------------|-------------|------------------|-----------|-------------------|--|--|--|
| AMPS TRIP | POLES | NOTES | DESIGNATION | VOLT AMPS | NO. | PHASE LOAD (KVA) | NO. | VOLT AMPS | DESIGNATION | NOTES | AMPS TRIP | | | | |
| | | | | | | #A #B #C | | | | | | | | | |
| 100 | 3 | | HEAT PUMP | | 1 | | 2 | | PANEL H3 | | 350 | | | | |
| 300 | 3 | | PANEL H4 | | 3 | | 4 | | SPARE | | 20 | | | | |
| 20 | 3 | | SPARE | | 5 | | 6 | | HEAT PUMP | | 150 | | | | |
| 100 | 3 | | PANEL L1 | | 7 | | 8 | | SPARE | | 20 | | | | |
| 200 | 3 | | PANEL H2 | | 9 | | 10 | | ELEVATOR | | 150 | | | | |
| 150 | 3 | | PANEL H1 | | 11 | | 12 | | | | | | | | |
| | | | | | 13 | | 14 | | | | | | | | |
| INTEGRATED EQUIPMENT RATING: 65,000 AIC MINIMUM | | | | KVA TOTAL | | | | TOTAL KVA: _____ | | | | TOTAL AMPS: _____ | | | |

NOTES:
1. PANEL 'MDP' TO BE SERVICE ENTRANCE RATED

| PANEL VOLTAGE: | | 'H2' (EXISTING) | | MOUNTING: FEEDER: | | SURFACE TOP | | ENCLOSURE: MAINS: | | NEMA 1 200A MLO | |
|----------------|-------|-----------------|------------------------|-------------------|-----|------------------------|-----|-------------------|------------------------|-----------------|-----------|
| AMPS TRIP | POLES | NOTES | DESIGNATION | VOLT AMPS | NO. | PHASE LOAD (VOLT-AMPS) | NO. | VOLT AMPS | DESIGNATION | NOTES | AMPS TRIP |
| | | | | | | #A #B #C | | | | | |
| 20 | 1 | | LIGHTS RM. 121 | 640 | 1 | 1690 | 2 | 1050 | LIGHTS RM. 128 | | 20 |
| 20 | 1 | | LIGHTS RM. 123 | 720 | 3 | 1780 | 4 | 1060 | LIGHTS RM. 131 | | 20 |
| 20 | 1 | | LIGHTS RM. 129 | 5 | 5 | 780 | 6 | 780 | LIGHTS RM. 135-136-122 | | 20 |
| 20 | 1 | | LIGHTS RM. 134-133-132 | 980 | 7 | 980 | 8 | | HEAT RM. 135-136 | | 20 |
| 20 | 1 | | HEAT RM. 134 | 9 | 9 | | 10 | | SPARE | | 20 |
| 20 | 1 | | HEAT RM. 128 | 11 | 11 | | 12 | | HEAT RM. 128 | | 20 |
| 20 | 1 | | HEAT RM. 128 | 13 | 13 | | 14 | | HEAT RM. 128 | | 20 |
| 20 | 1 | | SPARE | 15 | 15 | | 16 | | HEAT RM. 127 | | 20 |
| 20 | 1 | | HEAT RM. 131 | 17 | 17 | | 18 | | HEAT RM. 131 | | 20 |
| 20 | 1 | | HEAT RM. 132 | 19 | 19 | | 20 | | HEAT RM. 130 | | 20 |
| 20 | 1 | | RECEPT. OFFICE | 21 | 21 | | 22 | | POWER POLE | | 20 |
| 20 | 1 | | SPARE | 23 | 23 | | 24 | | SPARE | | 20 |
| 40 | 3 | | HEATER RM. 121 | | 25 | | 26 | | HEATER RM. 129-131 | | 20 |
| 20 | 3 | | SPARE | | 27 | | 28 | | PANEL L2 | | 100 |
| 20 | 3 | | SPARE | | 29 | | 30 | | SPARE | | 20 |
| KVA TOTAL | | | | TOTAL KVA: _____ | | | | TOTAL AMPS: _____ | | | |

NOTES:
1. HACR RATED BREAKER
2. BREAKER TO BE SWITCHING DUTY RATED

| LOAD DESCRIPTION | DEMAND FACTOR | VOLT - AMPS | |
|-------------------|---------------|-------------|--------|
| | | CONNECTED | DEMAND |
| LIGHTING | 1.25 | - | - |
| RECEPTACLES | N.E.C. | - | - |
| HVAC EQUIPMENT | 1.00 | - | - |
| MISC. EQUIPMENT | 1.00 | - | - |
| WATER HEATER | 1.25 | - | - |
| KITCHEN EQUIPMENT | 0.65 | - | - |
| TOTAL- | | - | - |

DEMAND LOAD AMPS = . A

| PANEL VOLTAGE: | | 'H2' (EXISTING) | | MOUNTING: FEEDER: | | SURFACE TOP | | ENCLOSURE: MAINS: | | NEMA 1 200A MLO | |
|----------------|-------|-----------------|------------------------------------|-------------------|-----|------------------------|-----|-------------------|--------------------------------|-----------------|-----------|
| AMPS TRIP | POLES | NOTES | DESIGNATION | VOLT AMPS | NO. | PHASE LOAD (VOLT-AMPS) | NO. | VOLT AMPS | DESIGNATION | NOTES | AMPS TRIP |
| | | | | | | #A #B #C | | | | | |
| 20 | 1 | | LIGHTS RM. 120 | 332 | 1 | 602 | 2 | 270 | LIGHTS RM. 114-115-116-118 | | 20 |
| 20 | 1 | | LIGHTS RM. 101-102-105-106-109-113 | 510 | 3 | 870 | 4 | 360 | LIGHTS RM. 111-108-107-104-103 | | 20 |
| 20 | 1 | | LIGHTS RM. 129 | 5 | 5 | 660 | 6 | 660 | LIGHTS RM. 122-123-126 | | 20 |
| 20 | 1 | | LIGHTS RM. 124-125 | 180 | 7 | 180 | 8 | | HEAT RM. 135-136 | | 20 |
| 20 | 1 | | HEAT RM. 134 | | 9 | | 10 | | SPARE | | 20 |
| 20 | 1 | | HEAT RM. 128 | 11 | 11 | | 12 | | HEAT RM. 128 | | 20 |
| 20 | 1 | | HEAT RM. 128 | 13 | 13 | | 14 | | HEAT RM. 128 | | 20 |
| 20 | 1 | | SPARE | 15 | 15 | | 16 | | HEAT RM. 127 | | 20 |
| 20 | 1 | | HEAT RM. 131 | 17 | 17 | | 18 | | HEAT RM. 131 | | 20 |
| 20 | 1 | | HEAT RM. 132 | 19 | 19 | | 20 | | HEAT RM. 130 | | 20 |
| 20 | 1 | | RECEPT. OFFICE | 21 | 21 | | 22 | | POWER POLE | | 20 |
| 20 | 1 | | SPARE | 23 | 23 | | 24 | | SPARE | | 20 |
| 40 | 3 | | HEATER RM. 121 | | 25 | | 26 | | HEATER RM. 129-131 | | 20 |
| 20 | 3 | | SPARE | | 27 | | 28 | | PANEL L2 | | 100 |
| 20 | 3 | | SPARE | | 29 | | 30 | | SPARE | | 20 |
| KVA TOTAL | | | | TOTAL KVA: _____ | | | | TOTAL AMPS: _____ | | | |

NOTES:
1. HACR RATED BREAKER
2. BREAKER TO BE SWITCHING DUTY RATED

CIRCUITS SHOWN IN BOLD ARE NEW AND WILL REPLACE EXISTING CIRCUITS CURRENTLY SHOWN ON PANEL.

| LOAD DESCRIPTION | DEMAND FACTOR | VOLT - AMPS | |
|-------------------|---------------|-------------|--------|
| | | CONNECTED | DEMAND |
| LIGHTING | 1.25 | - | - |
| RECEPTACLES | N.E.C. | - | - |
| HVAC EQUIPMENT | 1.00 | - | - |
| MISC. EQUIPMENT | 1.00 | - | - |
| WATER HEATER | 1.25 | - | - |
| KITCHEN EQUIPMENT | 0.65 | - | - |
| TOTAL- | | - | - |

DEMAND LOAD AMPS = . A

| PANEL VOLTAGE: | | 'H1' (EXISTING) | | MOUNTING: FEEDER: | | SURFACE TOP | | ENCLOSURE: MAINS: | | NEMA 1 150A MLO | |
|----------------|-------|-----------------|-------------------------|-------------------|-----|------------------------|-----|-------------------|----------------|-----------------|-----------|
| AMPS TRIP | POLES | NOTES | DESIGNATION | VOLT AMPS | NO. | PHASE LOAD (VOLT-AMPS) | NO. | VOLT AMPS | DESIGNATION | NOTES | AMPS TRIP |
| | | | | | | #A #B #C | | | | | |
| 20 | 1 | | LIGHTS 113-114 | 490 | 1 | 1340 | 2 | 850 | LIGHTS 112-111 | | 20 |
| 20 | 1 | | LIGHTS 115 | 1120 | 3 | 2100 | 4 | 980 | LIGHTS CORR. | | 20 |
| 20 | 1 | | LIGHTS 119-LOBBY-STAIRS | 1120 | 5 | 1120 | 6 | | HEAT 113 | | 20 |
| 20 | 1 | | HEAT 115 | 7 | 7 | | 8 | | HEAT 114 | | 20 |
| 30 | 1 | | MINISPLIT HVAC BY LOBBY | 9 | 9 | | 10 | | HEAT CORR. 103 | | 20 |
| 20 | 1 | | PARKING LOT LIGHTS | 11 | 11 | | 12 | | SPARE | | 20 |
| 20 | 1 | | HEAT 112 | 13 | 13 | | 14 | | HEAT 112 | | 20 |
| 20 | 1 | | HEAT 112 | 15 | 15 | | 16 | | SPARE | | 20 |
| 20 | 1 | | HEAT 115 | 17 | 17 | | 18 | | HEAT 115 | | 20 |
| 20 | 1 | | SPARE | 19 | 19 | | 20 | | PHONES | | 20 |
| 20 | 1 | | HEAT 115 | 21 | 21 | | 22 | | HEATER 119 | | 20 |
| 20 | 1 | | SPARE | 23 | 23 | | 24 | | HEAT 114 | | 20 |
| 20 | 1 | | | 25 | 25 | | 26 | | | | 20 |
| 20 | 1 | | | 27 | 27 | | 28 | | | | 20 |
| 20 | 1 | | | 29 | 29 | | 30 | | | | 20 |
| 20 | 1 | | | 31 | 31 | | 32 | | | | 20 |
| 20 | 1 | | | 33 | 33 | | 34 | | | | 20 |
| 20 | 1 | | | 35 | 35 | | 36 | | | | 20 |
| 20 | 1 | | | 37 | 37 | | 38 | | | | 20 |
| 20 | 1 | | | 39 | 39 | | 40 | | | | 20 |
| 20 | 1 | | | 41 | 41 | | 42 | | | | 20 |
| KVA TOTAL | | | | TOTAL KVA: _____ | | | | TOTAL AMPS: _____ | | | |

NOTES:
1. HACR RATED BREAKER
2. BREAKER TO BE SWITCHING DUTY RATED

| LOAD DESCRIPTION | DEMAND FACTOR | VOLT - AMPS | |
|-------------------|---------------|-------------|--------|
| | | CONNECTED | DEMAND |
| LIGHTING | 1.25 | - | - |
| RECEPTACLES | N.E.C. | - | - |
| HVAC EQUIPMENT | 1.00 | - | - |
| MISC. EQUIPMENT | 1.00 | - | - |
| WATER HEATER | 1.25 | - | - |
| KITCHEN EQUIPMENT | 0.65 | - | - |
| TOTAL- | | - | - |

DEMAND LOAD AMPS = . A

| PANEL VOLTAGE: | | 'H1' (EXISTING) | | MOUNTING: FEEDER: | | SURFACE TOP | | ENCLOSURE: MAINS: | | NEMA 1 150A MLO | |
|----------------|-------|-----------------|-------------------------------------|-------------------|-----|------------------------|-----|-------------------|--------------------------|-----------------|-----------|
| AMPS TRIP | POLES | NOTES | DESIGNATION | VOLT AMPS | NO. | PHASE LOAD (VOLT-AMPS) | NO. | VOLT AMPS | DESIGNATION | NOTES | AMPS TRIP |
| | | | | | | #A #B #C | | | | | |
| 975.00 | | | | 507.00 | | | | | | | |
| 20 | 1 | | LIGHTS 144-146-147 | 510 | 1 | 975 | 2 | 240 | LIGHTS 138-139-140-141 | | 20 |
| 20 | 1 | | LIGHTS 130 & 145 | 120 | 3 | 507 | 4 | 210 | LIGHTS CORR. RM. 137-138 | | 20 |
| 20 | 1 | | LIGHTS 125-127-128-129-LOBBY-STAIRS | 454 | 5 | 468 | 6 | | HEAT 114 | | 20 |
| 20 | 1 | | HEAT 115 | 7 | 7 | | 8 | | HEAT 114 | | 20 |
| 20 | 1 | | MINISPLIT HVAC BY LOBBY | 9 | 9 | | 10 | | HEAT CORR. 103 | | 20 |
| 20 | 1 | | PARKING LOT LIGHTS | 11 | 11 | | 12 | | SPARE | | 20 |
| 20 | 1 | | HEAT 112 | 13 | 13 | | 14 | | HEAT 112 | | 20 |
| 20 | 1 | | HEAT 112 | 15 | 15 | | 16 | | SPARE | | 20 |
| 20 | 1 | | HEAT 115 | 17 | 17 | | 18 | | HEAT 115 | | 20 |
| 20 | 1 | | SPARE | 19 | 19 | | 20 | | PHONES | | 20 |
| 20 | 1 | | HEAT 115 | 21 | 21 | | 22 | | HEATER 119 | | 20 |
| 20 | 1 | | SPARE | 23 | 23 | | 24 | | HEAT 114 | | 20 |
| 20 | 1 | | | 25 | 25 | | 26 | | | | 20 |
| 20 | 1 | | | 27 | 27 | | 28 | | | | 20 |
| 20 | 1 | | | 29 | 29 | | 30 | | | | 20 |
| 20 | 1 | | | 31 | 31 | | 32 | | | | 20 |
| 20 | 1 | | | 33 | 33 | | 34 | | | | 20 |
| 20 | 1 | | | 35 | 35 | | 36 | | | | 20 |
| 20 | 1 | | | 37 | 37 | | 38 | | | | 20 |
| 20 | 1 | | | 39 | 39 | | 40 | | | | 20 |
| 20 | 1 | | | 41 | 41 | | 42 | | | | 20 |
| KVA TOTAL | | | | TOTAL KVA: _____ | | | | TOTAL AMPS: _____ | | | |

NOTES:
1. HACR RATED BREAKER
2. BREAKER TO BE SWITCHING DUTY RATED

| LOAD DESCRIPTION | DEMAND FACTOR | VOLT - AMPS | |
|-------------------|---------------|-------------|--------|
| | | CONNECTED | DEMAND |
| LIGHTING | 1.25 | - | - |
| RECEPTACLES | N.E.C. | - | - |
| HVAC EQUIPMENT | 1.00 | - | - |
| MISC. EQUIPMENT | 1.00 | - | - |
| WATER HEATER | 1.25 | - | - |
| KITCHEN EQUIPMENT | 0.65 | - | - |
| TOTAL- | | - | - |

DEMAND LOAD AMPS = . A

CIRCUITS SHOWN IN BOLD ARE NEW AND WILL REPLACE EXISTING CIRCUITS CURRENTLY SHOWN ON PANEL.

| PANEL VOLTAGE: | | 'L2' (EXISTING) | | MOUNTING: FEEDER: | | SURFACE TOP | | ENCLOSURE: MAINS: | | NEMA 1 100A MLO | |
|----------------|-------|-----------------|----------------|-------------------|-----|------------------------|-----|-------------------|----------------|-----------------|-----------|
| AMPS TRIP | POLES | NOTES | DESIGNATION | VOLT AMPS | NO. | PHASE LOAD (VOLT-AMPS) | NO. | VOLT AMPS | DESIGNATION | NOTES | AMPS TRIP |
| | | | | | | #A #B #C | | | | | |
| 20 | 1 | | OUTLET RM. 131 | 1080 | 1 | | 2 | 1440 | OUTLET RM. 131 | | 20 |
| 20 | 1 | | OUTLET RM. 131 | 1080 | 3 | | 4 | | OUTLET RM. 129 | | 20 |
| 20 | 1 | | OUTLET RM. 129 | 5 | 5 | | 6 | | | | |

| PANEL VOLTAGE: 'H3'(EXISTING) 208Y/120V-3P-4W | | MOUNTING: SURFACE FEEDER: TOP | | ENCLOSURE: NEMA 1 MAINS: 350A MLO | | | | | |
|--|--------------------------|----------------------------------|-----|--------------------------------------|----------------|-------------|----------------------------|-------|-----------|
| DEVICE | BRANCH CIRCUIT | PHASE LOAD (VOLT-AMPS) | | | BRANCH CIRCUIT | DEVICE | | | |
| AMPS TRIP | DESIGNATION | VOLT AMPS | #A | #B | #C | DESIGNATION | NOTES | POLES | AMPS TRIP |
| 20 1 | LIGHTS 207-208-209-217 | 950 | 1 | 2210 | 2 | 1260 | LIGHTS 210 | | 1 20 |
| 20 1 | LIGHTS 211-212 | 1120 | 3 | 2210 | 4 | 1090 | LIGHTS 203-204-205-206-214 | | 1 20 |
| 20 1 | LIGHTS 218 | 900 | 5 | | 6 | 1260 | LIGHTS LOBBY | | 1 20 |
| 20 3 | HEATER 206-218 | | 7 | | 8 | | HEATER 203 | | 3 20 |
| 20 3 | HEATER 210 | | 9 | | 10 | | HEATER 210 | | 3 20 |
| 20 3 | COMPUTER AIR HANDLER 212 | | 11 | | 12 | | SPARE | | 1 20 |
| 20 1 | SPARE | | 13 | | 14 | | T.V. OUTLET | | 1 20 |
| 20 1 | RECEPT. | | 15 | | 16 | | HEAT 209 | | 1 20 |
| 20 1 | HEAT 207 | | 17 | | 18 | | SPARE | | 1 20 |
| 20 3 | HEATER 208 | | 19 | | 20 | | ROOF UNIT COMPUTER | | 3 20 |
| 20 3 | SPARE | | 21 | | 22 | | PANEL L3 | | 3 100 |
| 20 1 | SPARE | | 22 | | 23 | | | | 1 20 |
| 20 1 | SPARE | | 23 | | 24 | | | | 1 20 |
| 20 1 | SPARE | | 24 | | 25 | | | | 1 20 |
| 20 1 | SPARE | | 25 | | 26 | | | | 1 20 |
| 20 1 | SPARE | | 26 | | 27 | | | | 1 20 |
| 20 1 | SPARE | | 27 | | 28 | | | | 1 20 |
| 20 1 | SPARE | | 28 | | 29 | | | | 1 20 |
| 20 1 | SPARE | | 29 | | 30 | | | | 1 20 |
| 20 1 | SPARE | | 30 | | 31 | | | | 1 20 |
| 20 1 | SPARE | | 31 | | 32 | | | | 1 20 |
| 20 1 | SPARE | | 32 | | 33 | | | | 1 20 |
| 20 1 | SPARE | | 33 | | 34 | | | | 1 20 |
| 20 1 | SPARE | | 34 | | 35 | | | | 1 20 |
| 20 1 | SPARE | | 35 | | 36 | | | | 1 20 |
| 20 1 | SPARE | | 36 | | 37 | | | | 1 20 |
| 20 1 | SPARE | | 37 | | 38 | | | | 1 20 |
| 20 1 | SPARE | | 38 | | 39 | | | | 1 20 |
| 20 1 | SPARE | | 39 | | 40 | | | | 1 20 |
| 20 1 | SPARE | | 40 | | 41 | | | | 1 20 |
| 20 1 | SPARE | | 41 | | 42 | | | | 1 20 |
| 20 1 | SPARE | | 42 | | 43 | | | | 1 20 |
| 20 1 | SPARE | | 43 | | 44 | | | | 1 20 |
| 20 1 | SPARE | | 44 | | 45 | | | | 1 20 |
| 20 1 | SPARE | | 45 | | 46 | | | | 1 20 |
| 20 1 | SPARE | | 46 | | 47 | | | | 1 20 |
| 20 1 | SPARE | | 47 | | 48 | | | | 1 20 |
| 20 1 | SPARE | | 48 | | 49 | | | | 1 20 |
| 20 1 | SPARE | | 49 | | 50 | | | | 1 20 |
| 20 1 | SPARE | | 50 | | 51 | | | | 1 20 |
| 20 1 | SPARE | | 51 | | 52 | | | | 1 20 |
| 20 1 | SPARE | | 52 | | 53 | | | | 1 20 |
| 20 1 | SPARE | | 53 | | 54 | | | | 1 20 |
| 20 1 | SPARE | | 54 | | 55 | | | | 1 20 |
| 20 1 | SPARE | | 55 | | 56 | | | | 1 20 |
| 20 1 | SPARE | | 56 | | 57 | | | | 1 20 |
| 20 1 | SPARE | | 57 | | 58 | | | | 1 20 |
| 20 1 | SPARE | | 58 | | 59 | | | | 1 20 |
| 20 1 | SPARE | | 59 | | 60 | | | | 1 20 |
| 20 1 | SPARE | | 60 | | 61 | | | | 1 20 |
| 20 1 | SPARE | | 61 | | 62 | | | | 1 20 |
| 20 1 | SPARE | | 62 | | 63 | | | | 1 20 |
| 20 1 | SPARE | | 63 | | 64 | | | | 1 20 |
| 20 1 | SPARE | | 64 | | 65 | | | | 1 20 |
| 20 1 | SPARE | | 65 | | 66 | | | | 1 20 |
| 20 1 | SPARE | | 66 | | 67 | | | | 1 20 |
| 20 1 | SPARE | | 67 | | 68 | | | | 1 20 |
| 20 1 | SPARE | | 68 | | 69 | | | | 1 20 |
| 20 1 | SPARE | | 69 | | 70 | | | | 1 20 |
| 20 1 | SPARE | | 70 | | 71 | | | | 1 20 |
| 20 1 | SPARE | | 71 | | 72 | | | | 1 20 |
| 20 1 | SPARE | | 72 | | 73 | | | | 1 20 |
| 20 1 | SPARE | | 73 | | 74 | | | | 1 20 |
| 20 1 | SPARE | | 74 | | 75 | | | | 1 20 |
| 20 1 | SPARE | | 75 | | 76 | | | | 1 20 |
| 20 1 | SPARE | | 76 | | 77 | | | | 1 20 |
| 20 1 | SPARE | | 77 | | 78 | | | | 1 20 |
| 20 1 | SPARE | | 78 | | 79 | | | | 1 20 |
| 20 1 | SPARE | | 79 | | 80 | | | | 1 20 |
| 20 1 | SPARE | | 80 | | 81 | | | | 1 20 |
| 20 1 | SPARE | | 81 | | 82 | | | | 1 20 |
| 20 1 | SPARE | | 82 | | 83 | | | | 1 20 |
| 20 1 | SPARE | | 83 | | 84 | | | | 1 20 |
| 20 1 | SPARE | | 84 | | 85 | | | | 1 20 |
| 20 1 | SPARE | | 85 | | 86 | | | | 1 20 |
| 20 1 | SPARE | | 86 | | 87 | | | | 1 20 |
| 20 1 | SPARE | | 87 | | 88 | | | | 1 20 |
| 20 1 | SPARE | | 88 | | 89 | | | | 1 20 |
| 20 1 | SPARE | | 89 | | 90 | | | | 1 20 |
| 20 1 | SPARE | | 90 | | 91 | | | | 1 20 |
| 20 1 | SPARE | | 91 | | 92 | | | | 1 20 |
| 20 1 | SPARE | | 92 | | 93 | | | | 1 20 |
| 20 1 | SPARE | | 93 | | 94 | | | | 1 20 |
| 20 1 | SPARE | | 94 | | 95 | | | | 1 20 |
| 20 1 | SPARE | | 95 | | 96 | | | | 1 20 |
| 20 1 | SPARE | | 96 | | 97 | | | | 1 20 |
| 20 1 | SPARE | | 97 | | 98 | | | | 1 20 |
| 20 1 | SPARE | | 98 | | 99 | | | | 1 20 |
| 20 1 | SPARE | | 99 | | 100 | | | | 1 20 |
| 20 1 | SPARE | | 100 | | 101 | | | | 1 20 |
| 20 1 | SPARE | | 101 | | 102 | | | | 1 20 |
| 20 1 | SPARE | | 102 | | 103 | | | | 1 20 |
| 20 1 | SPARE | | 103 | | 104 | | | | 1 20 |
| 20 1 | SPARE | | 104 | | 105 | | | | 1 20 |
| 20 1 | SPARE | | 105 | | 106 | | | | 1 20 |
| 20 1 | SPARE | | 106 | | 107 | | | | 1 20 |
| 20 1 | SPARE | | 107 | | 108 | | | | 1 20 |
| 20 1 | SPARE | | 108 | | 109 | | | | 1 20 |
| 20 1 | SPARE | | 109 | | 110 | | | | 1 20 |
| 20 1 | SPARE | | 110 | | 111 | | | | 1 20 |
| 20 1 | SPARE | | 111 | | 112 | | | | 1 20 |
| 20 1 | SPARE | | 112 | | 113 | | | | 1 20 |
| 20 1 | SPARE | | 113 | | 114 | | | | 1 20 |
| 20 1 | SPARE | | 114 | | 115 | | | | 1 20 |
| 20 1 | SPARE | | 115 | | 116 | | | | 1 20 |
| 20 1 | SPARE | | 116 | | 117 | | | | 1 20 |
| 20 1 | SPARE | | 117 | | 118 | | | | 1 20 |
| 20 1 | SPARE | | 118 | | 119 | | | | 1 20 |
| 20 1 | SPARE | | 119 | | 120 | | | | 1 20 |
| 20 1 | SPARE | | 120 | | 121 | | | | 1 20 |
| 20 1 | SPARE | | 121 | | 122 | | | | 1 20 |
| 20 1 | SPARE | | 122 | | 123 | | | | 1 20 |
| 20 1 | SPARE | | 123 | | 124 | | | | 1 20 |
| 20 1 | SPARE | | 124 | | 125 | | | | 1 20 |
| 20 1 | SPARE | | 125 | | 126 | | | | 1 20 |
| 20 1 | SPARE | | 126 | | 127 | | | | 1 20 |
| 20 1 | SPARE | | 127 | | 128 | | | | 1 20 |
| 20 1 | SPARE | | 128 | | 129 | | | | 1 20 |
| 20 1 | SPARE | | 129 | | 130 | | | | 1 20 |
| 20 1 | SPARE | | 130 | | 131 | | | | 1 20 |
| 20 1 | SPARE | | 131 | | 132 | | | | 1 20 |
| 20 1 | SPARE | | 132 | | 133 | | | | 1 20 |
| 20 1 | SPARE | | 133 | | 134 | | | | 1 20 |
| 20 1 | SPARE | | 134 | | 135 | | | | 1 20 |
| 20 1 | SPARE | | 135 | | 136 | | | | 1 20 |
| 20 1 | SPARE | | 136 | | 137 | | | | 1 20 |
| 20 1 | SPARE | | 137 | | 138 | | | | 1 20 |
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| 20 1 | SPARE | | 140 | | 141 | | | | 1 20 |
| 20 1 | SPARE | | 141 | | 142 | | | | 1 20 |
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| 20 1 | SPARE | | 149 | | 150 | | | | 1 20 |
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| 20 1 | SPARE | | 152 | | 153 | | | | 1 20 |
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