

BURNS AND WILCOX CENTER

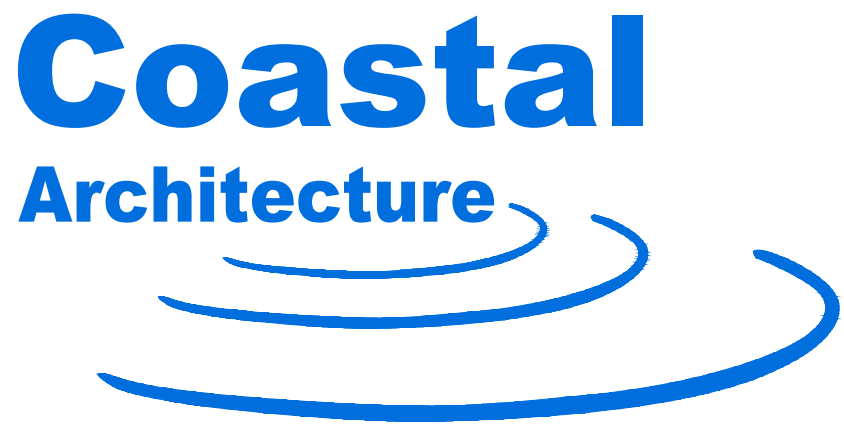
FIRST FLOOR RENOVATION

TENANT C

MOREHEAD CITY, NORTH CAROLINA

DRAWING LIST

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A-2	REFLECTED CEILING PLAN
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A-4	NOT USED
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A-6	ENLARGED PLANS AND INTERIOR ELEVATIONS
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Coastal
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• Architectural
Design

• Planning

• Interiors

AIA

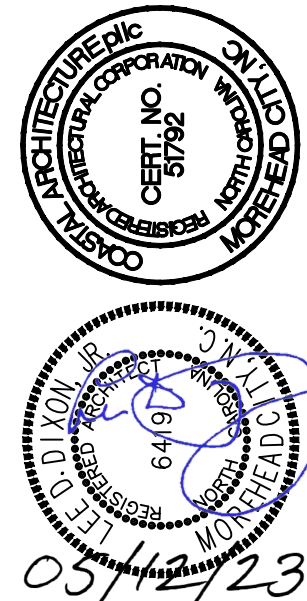
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Institute of Architects

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BURNS AND WILCOX CENTER
FIRST FLOOR RENOVATION TENANT C
MOREHEAD CITY, NORTH CAROLINA



COVER SHEET

23001

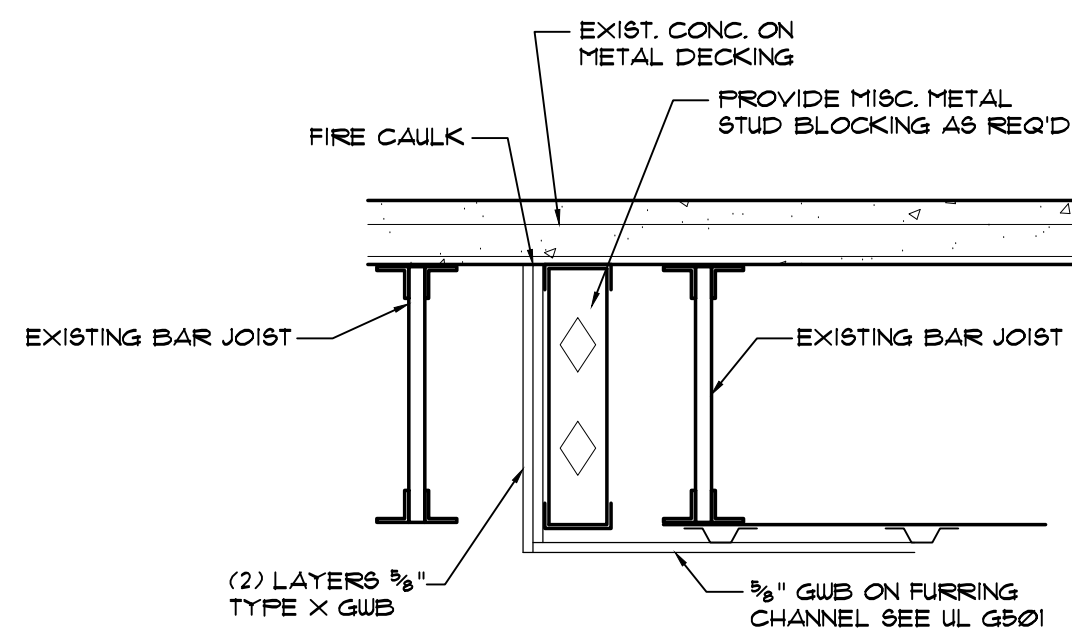
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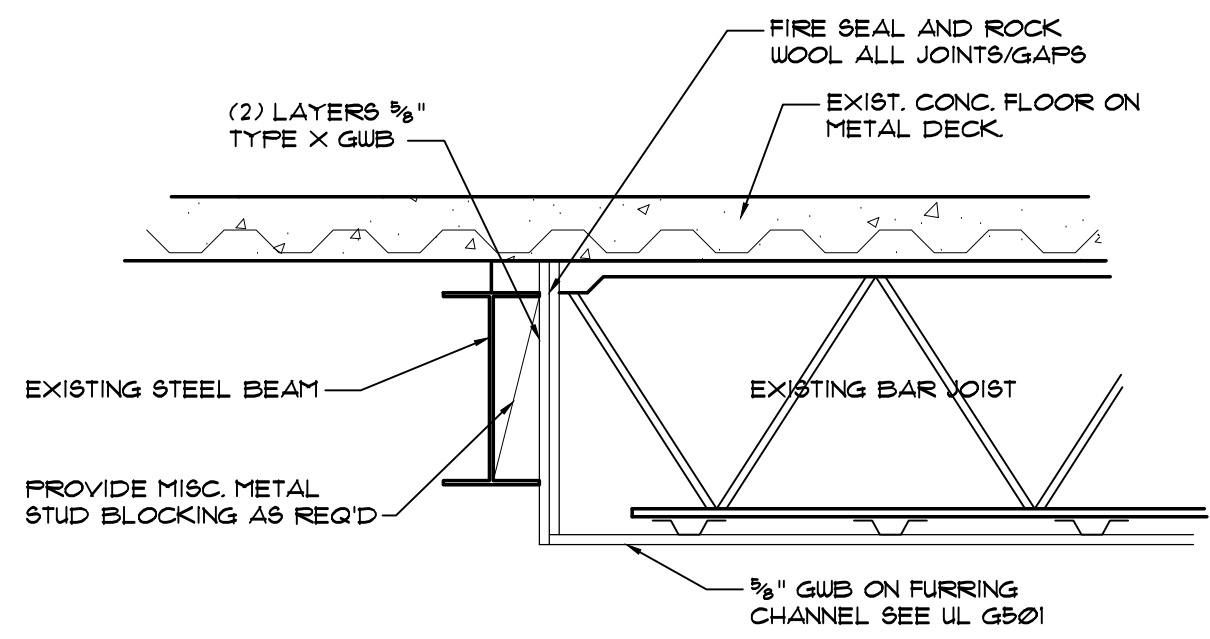
CKD BY: LDD

REVISIONS

SHEET NO.
CS-1
OF



3
G-2
DETAIL BETWEEN JOIST
SCALE: N.T.S.



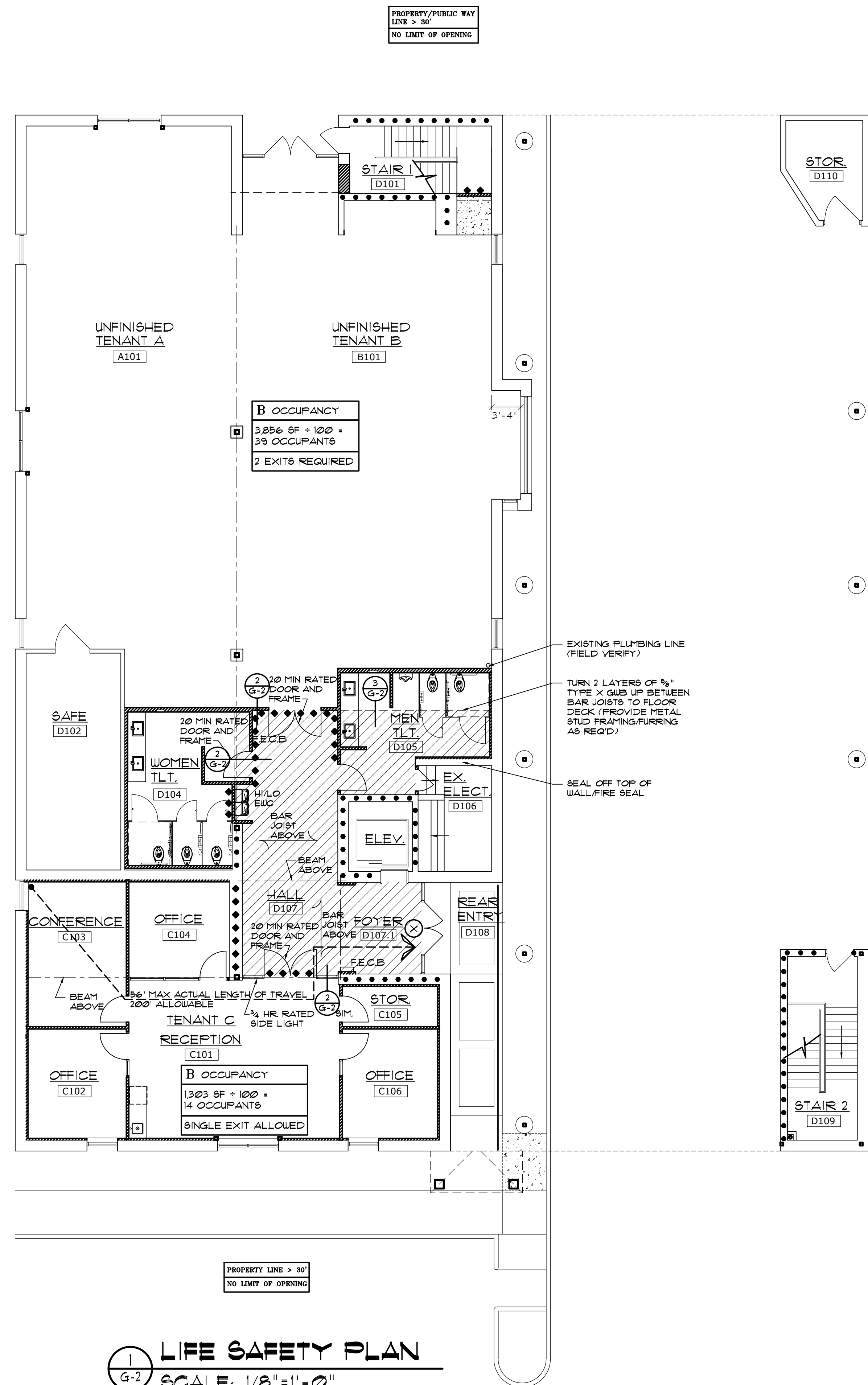
2
G-2
DETAIL AT BEAM
SCALE: N.T.S.

OCCUPANCY/LOAD TYPE KEYING:

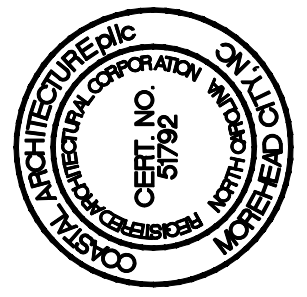
B = BUSINESS

LEGEND:

- NEW 1 HOUR RATED WALL TO 2ND FLOOR DECK UL U419 OR EQUAL
- EXISTING 1 HOUR WALL (FILL SEAL AT TOP OF EXISTING WALLS TO FLOOR DECK)
- NEW 1 HOUR RATED FLOOR/CEILING UL G501
- FIRE DEPARTMENT KNOX BOX (VERIFY LOCATION W/ FIRE DEPT.)
- BUILDING ADDRESS - CONFIRM LOCATION W/ TOWN
- FIRE EXTINGUISHER AND CABINET
- FIRE EXTINGUISHER W/ STANDARD HOOK
- CLEAR EXIT WIDTH
- EXIT
- PANIC HARDWARE
- EMERGENCY EXIT LIGHT
- EGRESS LIGHT
- NEW DOOR
- EXISTING DOOR



1
G-2
LIFE SAFETY PLAN
SCALE: 1/8" = 1'-0"



UL DETAILS

23001

ISSUED: 05/12/23

DWG BY: MES

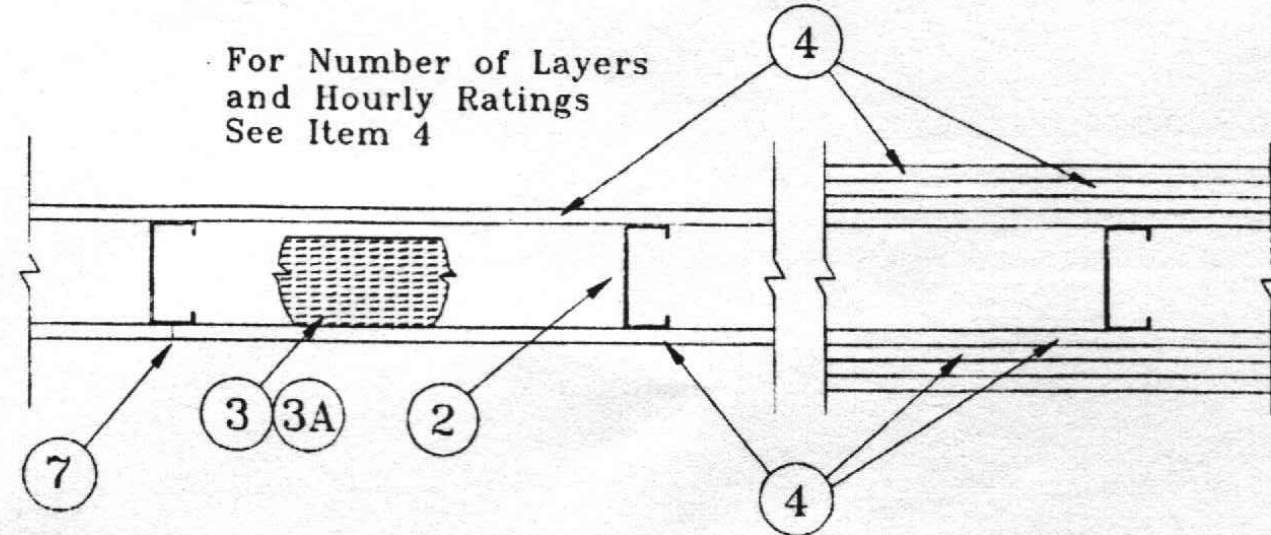
CKD BY: LDD

REVISIONS

SHEET NO.

G-3
OF

Design No. U419
Non Bearing Wall Ratings — 1, 2, 3 or 4 Hr (See Items 3 & 4)



- 1. Floor and Ceiling Runners** — (Not shown) — Channel shaped, fabricated from min 25 MSG (min 20 MSG when Item 4A is used) corrosion-protected steel, min width to accommodate stud size, with min 1 in. long legs, attached to floor and ceiling with fasteners 24 in. OC max.
- 2. Steel Studs** — Channel shaped, fabricated from min 25 MSG (min 20 MSG when Item 4A is used) corrosion-protected steel, min width as indicated under Item 4, min 1-1/4 in. flanges and 1/4 in. return, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.
- 3. Batts and Blankets*** — (Required as indicated under Item 4) — Mineral wool batts, friction fitted between studs and runners. Min nom thickness as indicated under Item 4. See **Batts and Blankets (BKNV or BZJZ) Categories** for names of Classified companies.
- 3A. Batts and Blankets*** — (Optional) — Placed in stud cavities, any glass fiber or mineral wool insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance. See **Batts and Blankets (BKNV or BZJZ) Categories** for names of Classified companies.
- 4. Wallboard, Gypsum*** — Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Vertical joints in adjacent layers (multilayer systems) staggered one stud cavity. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered. Horizontal edge joints and horizontal butt joints in adjacent layers (multilayer systems) staggered a min of 12 in. The thickness and number of layers for the 1 hr, 2 hr, 3 hr and 4 hr ratings are as follows:

Wallboard Protection on Each Side of Wall

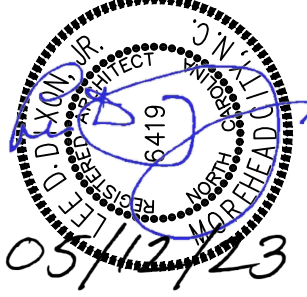
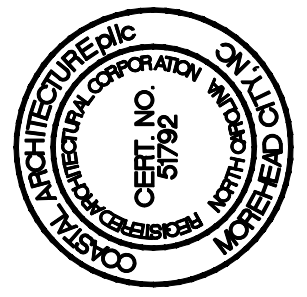
Rating	Min Stud Depth	No. of Layers & Thkns of Panel	Min Thkns of Insulation (Item 3)
1	3-1/2	1 layer, 5/8 in. thick	Optional
1	2-1/2	1 layer, 1/2 in. thick	1-1/2 in.
1	1-5/8	1 layer, 3/4 in. thick	Optional
2	1-5/8	2 layers, 1/2 in. thick	Optional
2	1-5/8	2 layers, 5/8 in. thick	Optional
2	3-1/2	1 layer, 3/4 in. thick	3 in.
3	1-5/8	3 layers, 1/2 in. thick	Optional
3	1-5/8	2 layers, 3/4 in. thick	Optional
3	1-5/8	3 layers, 5/8 in. thick	Optional
4	1-5/8	4 layers, 5/8 in. thick	Optional
4	1-5/8	4 layers, 1/2 in. thick	Optional
4	2-1/2	2 layers, 3/4 in. thick	2 in.

CANADIAN GYPSUM COMPANY — 1/2 in. thick Type C, WRC or IP-X2; 5/8 in. thick Type SCX, SHX, WRX, IP-X1, AR, C, WRC or IP-X2; 3/4 in. thick ULTRACODE or Type IP-X3
UNITED STATES GYPSUM CO — 1/2 in. thick Type C, WRC or IP-X2; 5/8 in. thick Type SCX, SHX, WRX, IP-X1, AR, C, WRC, FRX-G or IP-X2; 3/4 in. thick ULTRACODE or Type IP-X3
YESO PANAMERICANO S A DE C V — 1/2 in. thick Type C, WRC or IP-X2; 5/8 in. thick Type SCX, SHX, WRX, IP-X1, AR, C, WRC or IP-X2; 3/4 in. thick ULTRACODE or Type IP-X3.

- 4A. Wallboard, Gypsum*** — (As an alternate to Item 4) — 5/8 in. thick gypsum panels, installed as described in Item 4 with Type S-12 steel screws. The length and spacing of the screws as specified under Item 5. CANADIAN GYPSUM COMPANY — Type FRX
UNITED STATES GYPSUM CO — Type FRX
- 4B. Wallboard, Gypsum*** — (As an alternate to Items 4 and 4A) — 5/8 in. thick, 2 ft. wide, tongue and groove edge, applied horizontally as the outer layer to one side of the assembly. Secured as described in Item 5. Joint covering (Item 7) not required. UNITED STATES GYPSUM CO — Type SCX.
- 5. Fasteners** — (Not shown) — Type S or S-12 steel screws used to attach panels to studs (Item 2) or furring channels (Item 6). **Single layer systems:** 1 in. long for 1/2 and 5/8 in. thick panels or 1-1/4 in. long for 3/4 in. thick panels, spaced 8 in. OC when panels are applied horizontally, or 12 in. OC when panels are applied vertically. **Two layer systems:** First layer- 1 in. long for 1/2 and 5/8 in. thick panels or 1-1/4 in. long for 3/4 in. thick panels, spaced 16 in. OC. Second layer- 1-5/8 in. long for 1/2 in., 5/8 in. thick panels or 2-1/4 in. long for 3/4 in. thick panels, spaced 16 in. OC with screws offset 8 in. from first layer. **Three-layer systems:** First layer- 1 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Second layer- 1-5/8 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Third layer- 2-1/4 in. long for 1/2 in., 5/8 in. thick panels or 2-5/8 in. long for 5/8 in. thick panels, spaced 12 in. OC. Screws offset min 6 in. from layer below. **Four-layer systems:** First layer- 1 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Second layer- 1-5/8 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Third layer- 2-1/4 in. long for 1/2 in. thick panels or 2-5/8 in. long for 5/8 in. thick panels, spaced 24 in. OC. Fourth layer- 2-5/8 in. long for 1/2 in. thick panels or 3 in. long for 5/8 in. thick panels, spaced 12 in. OC. Screws offset min 6 in. from layer below.
- 6. Furring Channels** — (Optional, not shown, for single or double layer systems) — Resilient furring channels fabricated from min 25 MSG corrosion-protected steel, spaced vertically a max of 24 in. OC. Flange portion attached to each intersecting stud with 1/2 in. long Type S-12 steel screws. Not for use with Item 4A.
- 7. Joint Tape and Compound** — Vinyl or casein, dry or premixed joint compound applied in two coats to joints and screw heads of outer layers. Paper tape, nom 2 in. wide, embedded in first layer of compound over all joints of outer panels.
- 8. Siding, Brick or Stucco** — (Optional, not shown) — Aluminum, vinyl or steel siding, brick veneer or stucco, meeting the requirements of local code agencies, installed over gypsum panels. Brick veneer attached to studs with corrugated metal wall ties attached to each stud with steel screws, not more than each sixth course of brick.
- 9. Caulking and Sealants*** — (Optional, not shown) — A bead of acoustical sealant applied around the partition perimeter for sound control. UNITED STATES GYPSUM CO — Type AS

*Bearing the UL Classification Marking

DETAIL
SCALE: N.T.S.



UL DETAILS

23001

ISSUED: 05/12/23
DWG BY: MES
CKD BY: LDD

REVISIONS

SHEET NO.

G-3.1
OF

Design No. G501

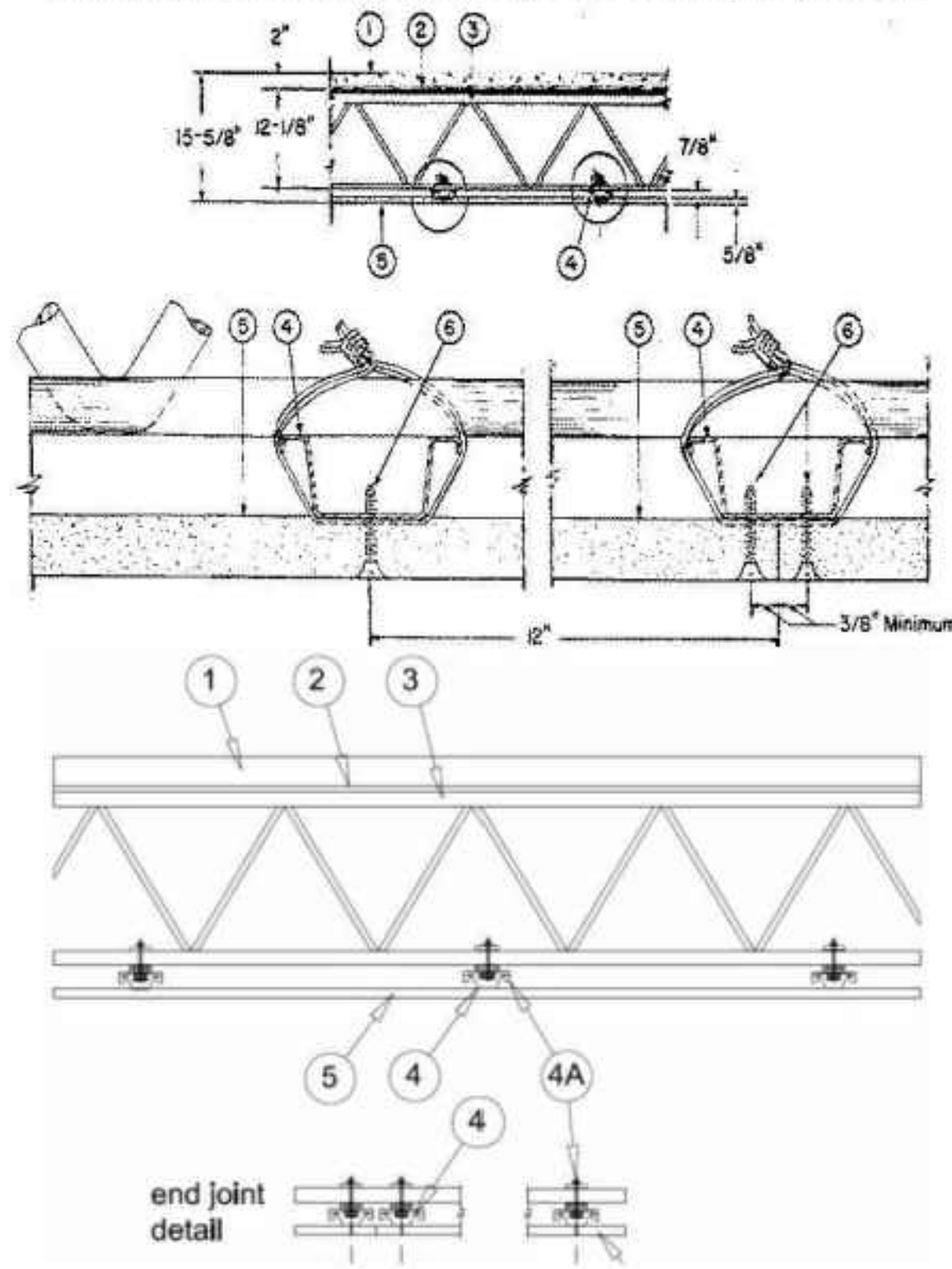
October 06, 2020

Restrained Assembly Rating — 1 Hr.

Unrestrained Assembly Rating — 1 Hr.

This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide [BXUV](#) or [BXUV7](#)

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



1. **Normal-Weight Concrete** — Carbonate or siliceous aggregate, 150 + or - 3 pcf unit weight, 3000 psi compressive strength.

2. **Metal Lath** — 3/8 in. rib, 3.4 lb/sq yd expanded steel; tied to each joist at every other rib, and midway between joists at side lap with 18 SWG galv steel wire.

As an alternate corrugated steel deck 9/16 in. deep, 28 MSG min galv may be used. Welded to supports 15 in. O.C. using welding washers. The concrete thickness is measured from the surface of the concrete to the top of the steel deck corrugations.

3. **Steel Joists** — Type 12J4 min size; spaced 24 in. O.C. and welded to end supports.

Bridging (Not Illustrated) — Steel bars, 1/2 in. diam. Welded to top and bottom chord of each joist.

4. **Furring Channel** — No. 26 MSG galv steel, 2-3/8 in. or 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced perpendicular to joists at 24 in. O.C. except at wallboard end joints as noted below. Channels, secured to joist with a double strand of 18 SWG galv steel wire. Additional pieces of channel 60 in. long located at each wallboard end joint, midway between continuous channels and attached to each joist with double strand 18 SWG galv steel wire. As an alternate, furring channels may be secured to 1-1/2 in. cold-rolled channels at every intersection with double strand 18 SWG galv steel wire. Cold-rolled channels spaced 24 in. O.C. and suspended perpendicular from lower chords of joists with 8 SWG galv steel wire spaced 48 in. O.C. along channels.

4A. **Steel Framing Members*** — (Optional, Not Shown) — Alternate method to attach furring channels (Item 4) to joists (Item 3). Clips spaced 48 in. O.C. and secured to alternating joists with cup washer installation kit provided by manufacturer. On underside of bottom chord, 1-1/2 in. dia x 3/8 in. deep No. 16 galv steel cup washer is placed to surround the rubber insert of RSIC-1 and RSIC-1 (2.75) clips. RSIC-1 and RSIC-1 (2.75) clips attached to the bottom chord with a 1/4 in. dia. zinc plated bolt inserted through the center grommet and between the chord members; depth of bolt determined as 1-1/2 in. plus the depth of the bottom chord of the joist. RSIC-V and RSIC-V (2.75) clips attached to the bottom chord with a 1/4 in. dia. zinc plated bolt inserted through the center hole and between the chord members; depth of bolt determined as 9/16 in. plus the depth of the bottom chord of the joist. Fastened on the top side of the bottom chord with a second cup washer placed open side up, and a 1/4 in. zinc plated "Nyloc" nut. Furring channels are friction fitted into clips. RSIC-1 and RSIC-V clips for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) and RSIC-V (2.75) clips for use with 2-23/32 in. wide furring channels. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping No. 6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Additional clips required to hold furring channel that supports the wallboard butt joints, as described in Item 5.

PAC INTERNATIONAL L L C — Types RSIC-1, RSIC-V, RSIC-1 (2.75), RSIC-V (2.75)

4B. **Steel Framing Members*** — (Optional, Not Shown) — Use as an alternate method to attach 2-3/8 in. wide furring channels (Item 4) to joists (Item 3). Clips spaced 48 in. O.C. and secured to alternating joists with cup washer installation kit provided by manufacturer. GenieClip clip attached to the bottom chord with a 1/4 in. dia. zinc plated bolt inserted through the center grommet and between the chord members; depth of bolt determined as 1-1/2 in. plus the depth of the bottom chord of the joist. Furring channels are friction fitted into clips. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. Additional clips required to hold furring channel that supports the wallboard butt joints, as described in Item 5.

PLITEQ INC — Type GenieClip

4C. **Steel Framing Members*** — (Optional, Not Shown) — Used as an alternate method to attach furring channels (Item 4) to joists (Item 3). Clips spaced at 48" OC and secured to the bottom of the joists with cup washer installation kit provided by manufacturer. Clip attached to the bottom chord with a 1/4 in. dia. zinc plated bolt inserted through the center grommet and between the chord members; depth of bolt determined as 1-1/2 in. plus the depth of the bottom chord of the joist. Furring channels are then friction fitted into clips. Ends of channels are overlapped 6" and tied together with double strand of No. 18 AWG galvanized steel wire. Additional clips are required to hold the Gypsum Butt joints as described in Item 5.

STUDCO BUILDING SYSTEMS — RESILMOUNT Sound Isolation Clips - Type A237 or A237R.

4D. **Steel Framing Members*** — (Optional, Not Shown) — Alternate method to attach 2-23/32 in. wide by 7/8 or 1-1/2 in. deep furring channels (Item 4) to joists (Item 3). Clips spaced 48 in. O.C. and secured to alternating joists with cup washer installation kit provided by manufacturer. On underside of bottom chord, 1-1/2 in. dia x 3/8 in. deep No. 16 galv steel cup washer is placed to surround the rubber insert of clips. Clips attached to the bottom chord with a 1/4 in. dia. zinc plated bolt inserted through the center grommet and between the chord members; depth of bolt determined as 1-1/2 in. plus the depth of the bottom chord of the joist. zinc plated "Nyloc" nut. Furring channels are friction fitted into clips. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping No. 6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Additional clips required to hold furring channel that supports the wallboard butt joints, as described in Item 5.

CLARKDIETRICH BUILDING SYSTEMS — Type ClarkDietrich Sound Clip

4E. **Steel Framing Members*** — (Optional, Not Shown) - Used as an alternate method to attach furring channels to joists. Clips spaced at 48" OC and secured to the bottom of the joists with cup washer installation kit provided by manufacturer. On underside of bottom chord, 1-1/2 in. dia x 3/8 in. deep No. 16 galv steel cup washer is placed to surround the rubber insert of clip. Clip attached to the bottom chord with a 1/4 in. dia zinc plated bolt inserted through the center grommet and between the chord members; depth of bolt determined as 1-1/2 in. plus the depth of the bottom chord of the joist. Fastened on the top side of the bottom chord with a second cup washer placed open side up, and a 1/4 in. zinc plated "Nyloc" nut. Furring channels are then friction fitted into clips. Ends of channels are overlapped 6" and tied together with double strand of No. 18 AWG galvanized steel wire. Additional clips are required to hold the Gypsum Butt joints as described in Item 5.

REGUPOL AMERICA — Type SonusClip

5. **Gypsum Board*** — 5/8 in. thick, attached with the long dimension at right angles to furring channels and secured to each channel with 1 in. long wallboard screws 12 in. O.C. One screw used to attach adjacent boards to each end of additional furring channel. For wallboard other than 48 in. wide, additional channel to extend min of 6 in. past the end of the end joint. Joint treatment not required for this rating except for tapered, rounded-edge wallboard where edge joints are covered with paper tape and joint compound. As an alternate, nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard. Joints reinforced.

When Steel Framing Members (Item 4A, 4D) are used, wallboard butt joints shall be staggered min. 2 ft. within the assembly, and occur between the main furring channels. Edge joints may occur beneath the joists. At the wallboard butt joints, each end of the gypsum board shall be supported by a single length of furring channel equal to the width of the wallboard plus 6 in. on each end. The furring channels shall be spaced approximately 3-1/2 in. O.C. and be attached to underside of the joist with one clip at each end of the channel. Gypsum board attached to the furring channels using 1 in. long Type 5 bugle-head steel screws spaced 8 in. O.C. along butted end joints and 12 in. O.C. in the field of the board. Wallboard joints covered with fiber tape and joint compound.

When Steel Framing Members (Item 4B) are used, one layer of nom 5/8 in. thick, 4 ft wide gypsum board is installed with long dimensions perpendicular to furring channels. Gypsum board secured to furring channels with nom 1 in. long No. 6 Type 5 bugle-head steel screws spaced 12 in. O.C. in the field of the board. Gypsum board butted end joints shall be staggered minimum 16 in. within the assembly. At the gypsum board butt joints, each end of each gypsum board shall be supported by a single length of furring channel equal to the width of the gypsum board plus 6 in. on

each end. These additional furring channels shall be attached to underside of the joist with Genie clips as described in Item 3E. Screw spacing along the gypsum board butt joint shall be 6 in. O.C.

When **Steel Framing Members** (Item 4C) are used, one layer of nom 5/8 in. thick, 4 ft wide gypsum board is installed with long dimensions perpendicular to furring channels. Gypsum board secured to furring channels with nom 1 in. long Type 5 bugle-head steel screws spaced 8 in. O.C. in the field of the board. Gypsum board butted end joints shall be staggered minimum 48 in. and centered over main furring channels. At the gypsum board butt joints, each end of each gypsum board shall be supported by a single length of furring channel equal to the width of the gypsum board plus 3 in. on each end. The two supporting furring channels shall be spaced approximately 3 in. in from end joint. Screw spacing along the gypsum board butt joint and along both additional furring channels shall be 8 in. O.C. Additional screws shall be placed in the adjacent section of gypsum board into the aforementioned 3 in. extension of the extra butt joint channels as well as into the main channel that runs between. Butt joint furring channels shall be attached with one RESILMOUNT Sound Isolation Clip at each end of the channel.

When Steel Framing Members (Item 4E) are used, gypsum board is installed with long dimensions perpendicular to furring channels. Gypsum board secured to furring channels with nom 1 in. long Type 5 bugle-head steel screws spaced 8 in. O.C. in the field of the board. Gypsum board butted end joints shall be staggered minimum 48 in. and centered over main furring channels. At the gypsum board butt joints, an additional single length of furring channel shall be installed and be spaced approximately 3 in. from the butt joint (6 in. from the continuous furring channels) to support the floating end of the gypsum board. Each of these shorter sections of furring channel shall extend one joist beyond the width of the gypsum panel and be attached to the joists with one SonusClip at every joist involved with the butt joint.

AMERICAN GYPSUM CO — Types AGX-1, AG-C, LightRoc

BEIJING NEW BUILDING MATERIALS PUBLIC LTD CO — Type DBX-1

CABOT MANUFACTURING ULC — Type X, 5/8 Type X, Type Blueglass Exterior Sheathing

CERTAINTED GYPSUM INC — Type X, Type X-1 or Type C

CGC INC — Types SCX, ULUX

CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C — Types LGFCA, LGFC-C/A

GEORGIA-PACIFIC GYPSUM L L C — Types 5, 9, C, GPFS1, GPFS6, DA, DAP, DAPC, DGG, DS, Type X, Veneer Plaster Base-Type X, Water Rated-Type X, Sheathing Type-X, Soffit-Type X, TG-C, GreenGlass Type X, Type LWX, Veneer Plaster Base-Type LWX, Water Rated-Type LWX, Sheathing Type-LWX, Soffit-Type LWX, Type LW2X, Veneer Plaster Base - Type LW2X, Water Rated - Type LW2X, Sheathing - Type LW2X, Soffit - Type LW2X

NATIONAL GYPSUM CO — Types eXP-C, FSX, FSK-C, FSL, FSLMR-C, FSW, FSW-C, FSW-G, FSW-3, FSW-6, FSW-8

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Types C, PG-3, PG-4, PG-6, PG-9, PG-11, PG-C, PGS-WRS or PGI

SIAM GYPSUM INDUSTRY (SARABURI) CO LTD — Type EX-1

THAI GYPSUM PRODUCTS PCL — Type X or Type C

UNITED STATES GYPSUM CO — Types SCX, ULUX

USG BORAL DRYWALL SFZ LLC — Type SCX

5A. **Gypsum Board*** — As an alternate to Items 5 and 6 - 5/8 in. thick, attached with the long dimension at right angles to furring channels and secured to each channel with 2 in. long No. 6 screws spaced 6 in. O.C. starting with a 3 in. stagger. One screw used to attach adjacent boards to each end of additional furring channel. For wallboard other than 48 in. wide, additional channel to extend min of 6 in. past the end of the end joint. Joint treatment not required for this rating except for tapered, rounded-edge wallboard where edge joints are covered with paper tape and joint compound. As an alternate, nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard. Joints reinforced.

CERTAINTED GYPSUM INC — Types EGRG, GlasRoc, GlasRoc-2, Easy-Lite Type X

6. **Wallboard Screw** — No. 6 flathead, self-tapping, sheet metal screws 1 in. long spaced 12 in. O.C. Screws shall be driven no farther than slightly indented (not deeper than 1/64 in.) into the exposed surface of the wallboard.

7. **Batts and Blankets*** — (Not Shown) — For use with Item 4B — Nom 3 in. thick mineral wool insulation held suspended in the concealed space with 0.090 in. diam galv steel wires attached to the steel joists at 18 in. O.C.

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

DETAIL
SCALE: N.T.S.

PARTITION LEGEND

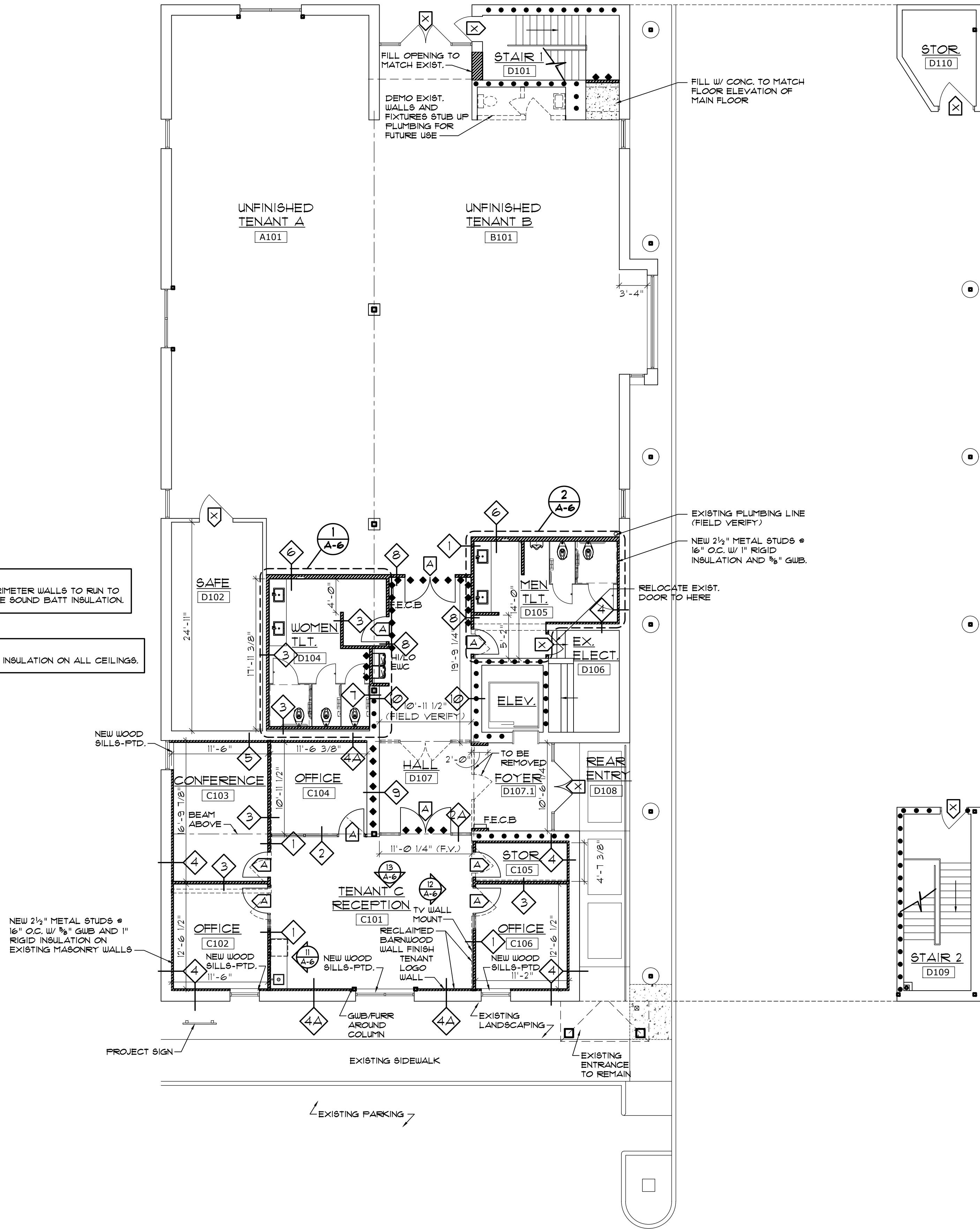
- 1 NEW 3 3/8" METAL STUD @ 16" O.C. W/ 3/8" GWB EACH SIDE RUN TO FLOOR DECK. PROVIDE SOUND BATT'S IN WALLS FROM FLOOR TO FLOOR DECK ABOVE.
- 2 NEW 3 3/8" METAL STUD @ 16" O.C. FROM TOP OF DOOR FRAMING TO UNDER SIDE OF FLOOR DECK ABOVE. PROVIDE 3/8" GWB AND SOUND BATT'S- EACH SIDE TO UNDERSIDE OF FLOOR DECKING ABOVE. PROVIDE L.G. HEADER AS REQ'D.
- 4A SIMILAR TO 4 EXCEPT 1 HOUR RATED.
- 3 NEW 3 3/8" METAL STUDS @ 16" O.C. W/ 3/8" GWB EACH SIDE TO 6" ABOVE CEILING. (PROVIDE SOUND BATT'S)
- 4 NEW 2 1/2" METAL STUDS @ 16" O.C. W/ 3/8" GWB TO 6" ABOVE CEILING. PROVIDE 1" RIGID INSULATION FLOOR TO FLOOR DECK ABOVE. (REMOVE ANY EXISTING GWB THAT REMAINS)
- 4A SAME AS 4 BUT RUN TO UNDERSIDE OF FLOOR DECK ABOVE.
- 5 SAME AS 4 EXCEPT WITHOUT RIGID INSULATION.
- 6 6" METAL STUDS @ 16" O.C. W/ 3/8" GWB EACH SIDE TO UNDERSIDE OF FLOOR DECK ABOVE. (PROVIDE SOUND BATT'S)
- 7 1 1/8" METAL FURRING CHANNELS @ 16" O.C. W/ 3/8" GWB.
- 2 SAME AS 4 EXCEPT 1 HOUR RATED.
- 3 EXISTING METAL STUDS REMOVE EXISTING GWB AND REPLACE W/ 3/8" TYPE X GWB EACH SIDE TO FLOOR DECK ABOVE FOR 1 HOUR RATING.
- 2 REPAIR/REPLACE EXISTING FINISHES AND PAINT.

LEGEND

- NEW DOOR
- EXISTING DOOR
- EXISTING DOOR TO BE REMOVED
- NEW METAL STUDS @ 16" O.C.
- EXISTING WALL TO REMAIN
- EXISTING WALL TO BE REMOVED
- NEW 1 HOUR RATED WALL
- EXISTING 1 HOUR WALL (SEAL OFF AT TOP) - (REPAIR AS REQ'D)

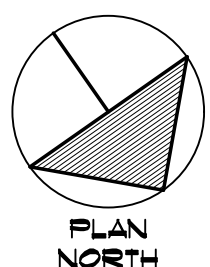
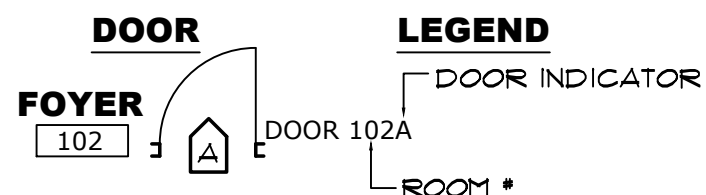
NOTE:
ALL TOILET ROOM PERIMETER WALLS TO RUN TO DECK ABOVE. PROVIDE SOUND BATT INSULATION.

NOTE:
PROVIDE SOUND BATT INSULATION ON ALL CEILINGS.



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

NOTE: G.C. TO FIELD VERIFY ALL DIMENSIONS.
SEE ALSO G-2 FOR FIRE RATING REQUIREMENTS.



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BURNS AND WILCOX CENTER
FIRST FLOOR RENOVATIONS TENANT C
MOREHEAD CITY, NORTH CAROLINA

Professional Engineer Seal: Lee D. Dixon, Jr., No. 14000, State of NC, Exp. 12/31/24.

Professional Architect Seal: Lee D. Dixon, Jr., No. 14000, State of NC, Exp. 12/31/24.

05/12/23

FIRST FLOOR RENOVATION PLAN - TENANT C

23001

ISSUED: 05/12/23
DWG BY: MES/SKC
CKD BY: LDD

REVISIONS

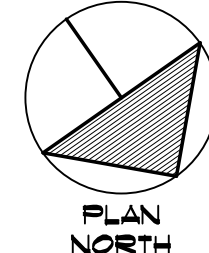
SHEET NO.
A-1
OF



1
A-2

FIRST FLOOR RENOVATION RCP PLAN

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



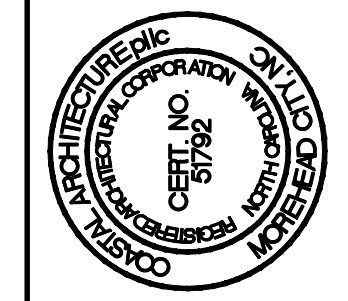
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**BURNS AND WILCOX CENTER
FIRST FLOOR RENOVATIONS TENANT C
MOREHEAD CITY, NORTH CAROLINA**



05/12/23

FIRST FLOOR
REFLECTED CEILING
PLAN - TENANT C

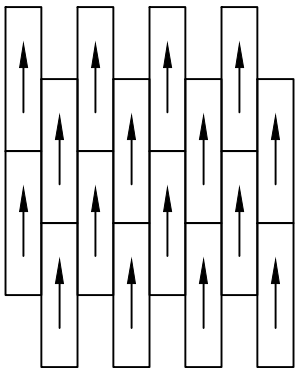
23001

ISSUED: 05/12/23
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CKD BY: LDD

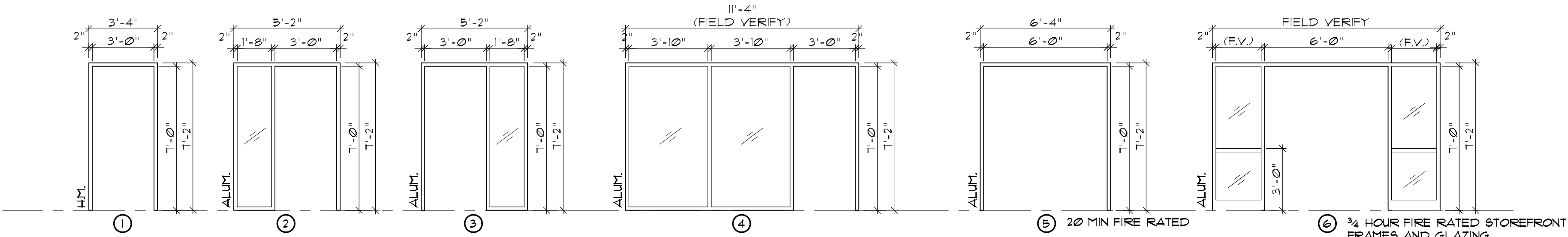
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A-2
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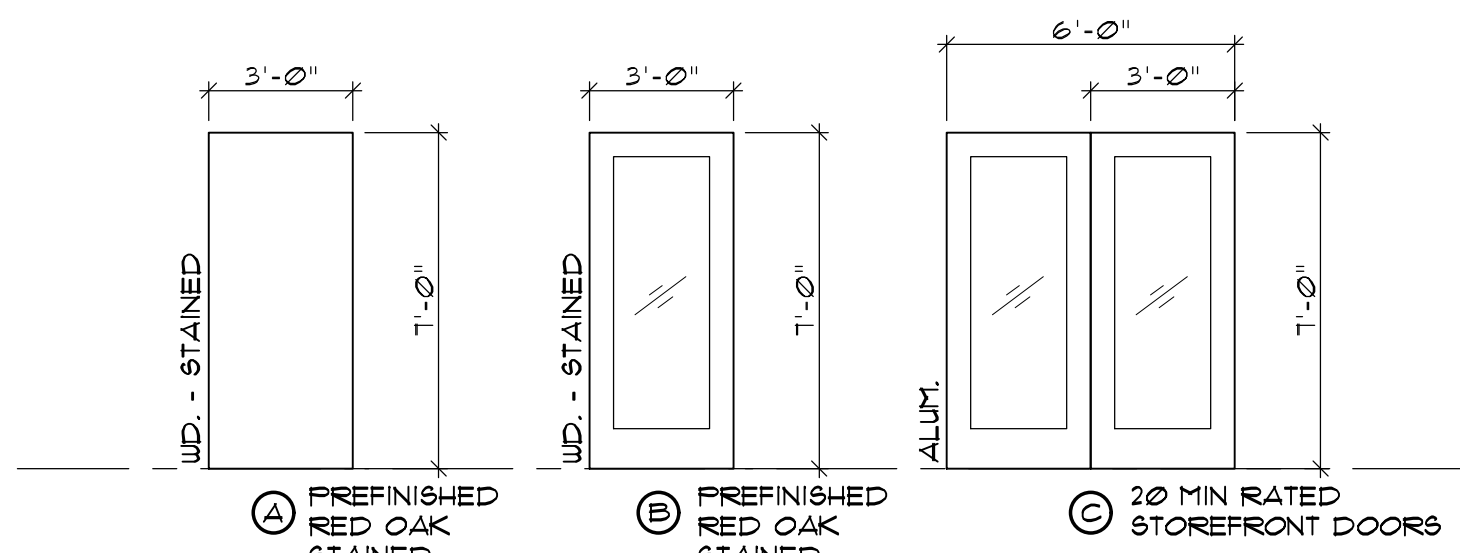
MATERIAL AND FINISHES LEGEND			
NO.	DESCRIPTION	COLOR & MATERIAL SPECIFICATIONS	MANUFACTURER /SUPPLIER
CPT-01	9"X36" OFFICE CARPET TILE	COLORFRAME/COLORFORM IMPLY 81485 ASHLAR INSTALLATION	SHAW CONTRACT GROUP NICHOLE PIKUR (248) 910-5235
RES-01	6"X48" VINYL PLANK	SHAW CONTRACT TERRAIN II, 411V COLOR: ALDER 01005	SHAW CONTRACT
T-01	12"X24" FLOOR TILE	HAPPY FLOORS STYLE: SILVER 12X24 COLOR: GREY / UNPOLISHED	HAPPY FLOORS WWW.HAPPYFLOORS.COM
WT-1	12"X22" WALL TILE	ARIZONA TILE - 3D SERIES 3D WHITE WAVE MATTE CERAMIC	ARIZONA TILE WWW.ARIZONATILE.COM
GT-01	GROUT	KERAKOLL FUGALITE ECO GROUT BRIGHT WHITE	KERAKOLL FUGALITE ECO GROUT
BA-01	CARPET BASE	DESIGN SERIES V, 4" BOUND COLOR: 32465 NET	SHAW CONTRACT GROUP NICHOLE PIKUR (248) 910-5235
BA-02	VINYL BASE A	4" RUBBER COVE BASE TOFFEE - 192	ROPPE
PT-01	WALL PAINT	OC-51 - WHITE HERON EGGSHELL FINISH	BENJAMIN MOORE
PT-04	CEILING PAINT	2133-40 - CHARCOAL LINEN EGGSHELL FINISH	BENJAMIN MOORE
WC-1	WALL COVERING	MIST M9T-003 FAGOSA SPRINGS	INNOVATIONS USA WWW.INNOVATIONSUSA.COM (800) 221-8053
G-1	GRANITE COUNTERTOPS	VISCOSE WHITE	COASTAL COUNTERTOPS
LA-03	PLASTIC LAMINATE	WILSONART PHANTOM CHARCOAL 8214K-28 GLOSS LINE FINISH	WILSONART
CL-01	2'X2' ACOUSTICAL CEILING TILE	STYLE: DUNE SECOND LOOK -2X2 COLOR: WHITE GRID: STANDARD 8" WHITE	ARMSTRONG



ASHLAR CARPET INSTALLATION



2
A-3 DOORS FRAME ELEVATIONS
SCALE: 1/4"=1'-0"



1
A-3 DOORS ELEVATIONS
SCALE: 1/4"=1'-0"

THESE DRAWING AND SPECIFICATIONS REPRESENT AN INSTRUMENT OF SERVICE AND AS SUCH SHALL REMAIN IN OWNERSHIP WITH THE ARCHITECT. USE OR REPRODUCTION BY ANY MEANS, IN WHOLE OR IN PART, WITHOUT THE ARCHITECT'S WRITTEN CONSENT, IS PROHIBITED.

DOOR SCHEDULE				
DOOR NO.	SIZE	DOOR		REMARKS
		TYPE	FRAME	
A101X	EXISTING	EXIST.	EXIST.	
C101A	(2) 3'-0" X 1'-0"	C	6	FIRE RATED ② ④
C102A	3'-0" X 1'-0"	B	2	
C103A	3'-0" X 1'-0"	B	1	
C104A	3'-0" X 1'-0"	B	4	
C105A	3'-0" X 1'-0"	A	1	
C106A	3'-0" X 1'-0"	B	3	
D101X	EXISTING	EXIST.	EXIST.	
D102X	EXISTING VAULT	EXIST.	EXIST.	
D104A	3'-0" X 1'-0"	A	1	② ③
D105A	3'-0" X 1'-0"	A	1	② ③
D106X	EXISTING	EXIST.	EXIST.	①
D107A	(2) 3'-0" X 1'-0"	C	5	FIRE RATED ② ④
D1071X	EXISTING	EXIST.	EXIST.	
D109X	EXISTING	EXIST.	EXIST.	
D110X	EXISTING	EXIST.	EXIST.	
DOOR SCHEDULE REMARKS ① PROVIDE NEW FRAME AND HARDWARE				
• ALL GLASS TO BE TEMPERED ② CLOSERS ③ 20 MIN. RATED				
• ALL HM. FRAMES TO BE PAINTED ④ DOORS AND GLAZING TO BE 20 MIN. RATED, SIDELIGHTS AND GLAZING TO BE ¾ HOUR RATED.				
• SUBMIT FIRE RATED STOREFRONT DOORS AND FRAMES FOR APPROVAL				
• IDENTIFY HARDWARE ALLOWANCE IN THE BID				

ROOM FINISH SCHEDULE							
ROOM NUMBERS	ROOM	FLOORS	BASE	WALLS	CEILING	HEIGHT (NOMINAL)	REMARKS
A101	TENANT A	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	
B101	TENANT B	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	
C101	RECEPTION	LVP/RES-01	VINYL/BA-02	GWB-PTD/PT-01/BARN WD.	EXPOSED STRUCT. PTD.	EXPOSED	
C102	OFFICE	CARPET/CPT-01	CARPET/BA-01	GWB-PTD/PT-01	S.A.T./CL-01	9'-0"	
C103	CONFERENCE					9'-0"	
C104	OFFICE					9'-0"	
C105	STORAGE					9'-0"	
C106	OFFICE					9'-0"	
D101	STAIR 1	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	
D102	SAFE	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	
D103	NOT USED	-	-	-	-	-	
D104	WOMENS TOILET	TILE/T-01	TILE	GWB-PTD/PT-01/WT-1/WC-1	SUSPENDED GWB-PTD/PT-01	9'-0"	4" TILE BASE CUT FROM T-01
D105	MENS TOILET	TILE/T-01	TILE	GWB-PTD/PT-01/WT-1/WC-1	SUSPENDED GWB-PTD/PT-01	9'-0"	4" TILE BASE CUT FROM T-01
D106	EXIST. ELECTRICAL	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	
D107	HALL	LVP/RES-01	VINYL/BA-02	GWB-PTD/PT-01	S.A.T./CL-01	9'-0"	ADDITION OF GWB REQ'D ON EXIST. WALLS
D1071	FOYER	LVP/RES-01	VINYL/BA-02	EXIST. REPAINT/PT-01	S.A.T./CL-01	9'-0"	APPLY LEVELING COMPOUND TO EXIST. BRICK FLOOR
D108	REAR ENTRY	EXIST.	-	-	-	-	
D109	STAIR 2	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	
D110	STORAGE	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	
ROOM FINISH SCHEDULE REMARKS							
• SEE MATERIAL AND FINISH LEGEND							
• SEE ALSO INTERIOR ELEVATIONS							
NOTE: ALL GWB TO BE MOLD/MILDEW RESISTANT							
NOTE: PROVIDE TRANSITION/THRESHOLD AT CHANGES IN FLOOR FINISHES.							

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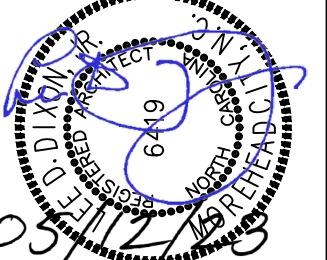
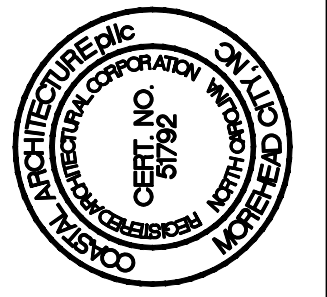
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DOOR AND ROOM
FINISH SCHEDULES

23001

ISSUED: 05/12/23

DWG BY: MES

CKD BY: LDD

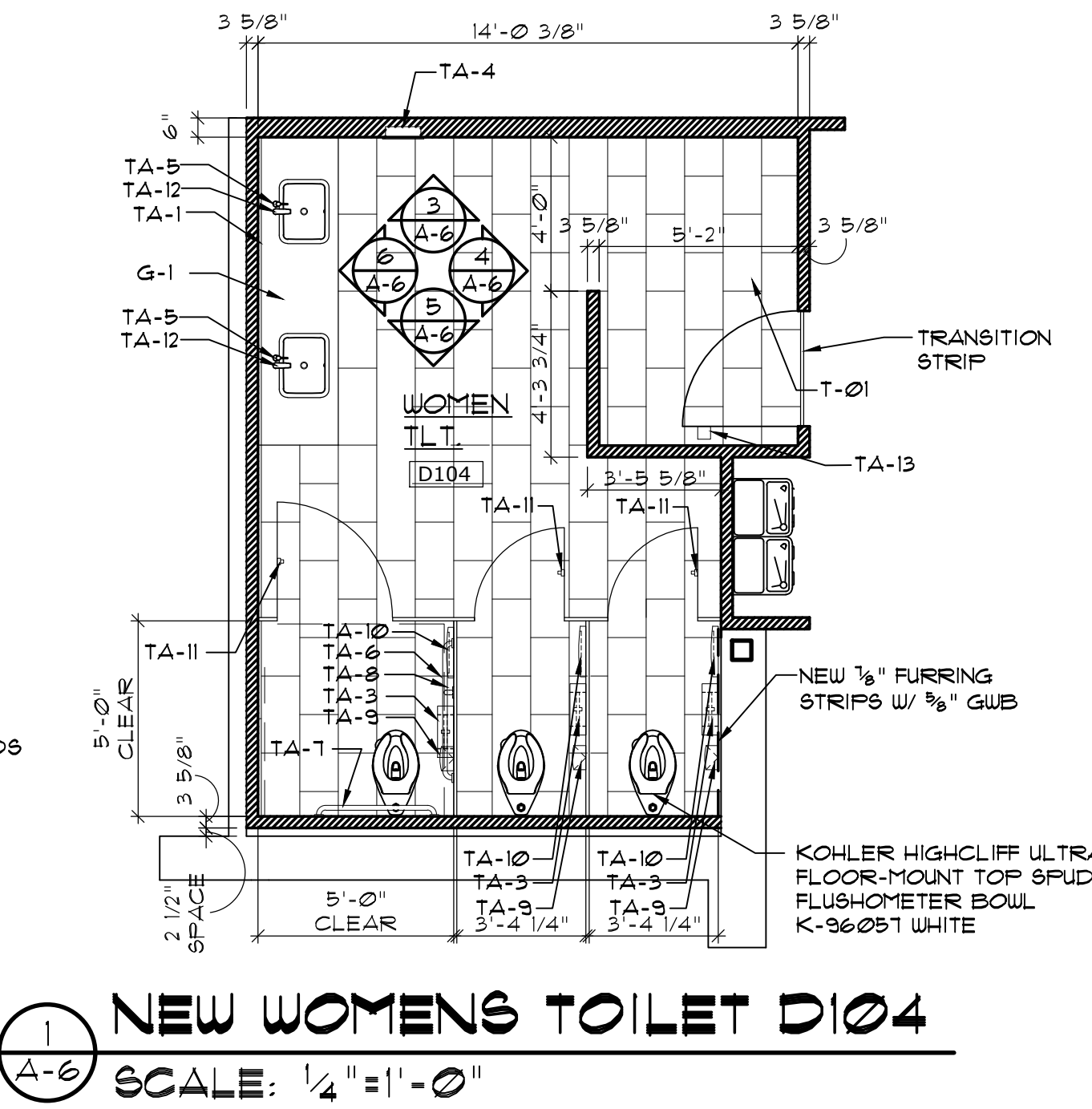
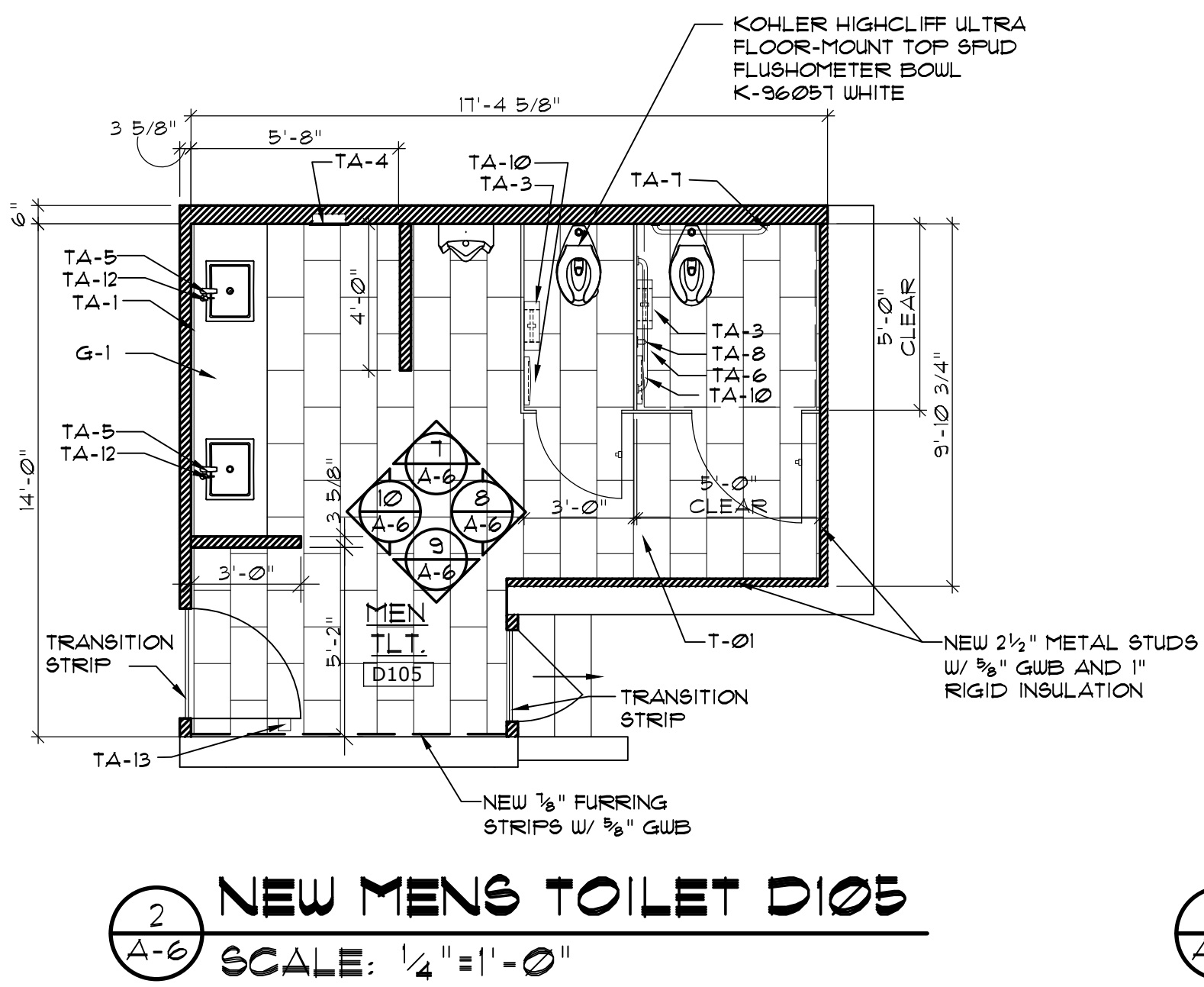
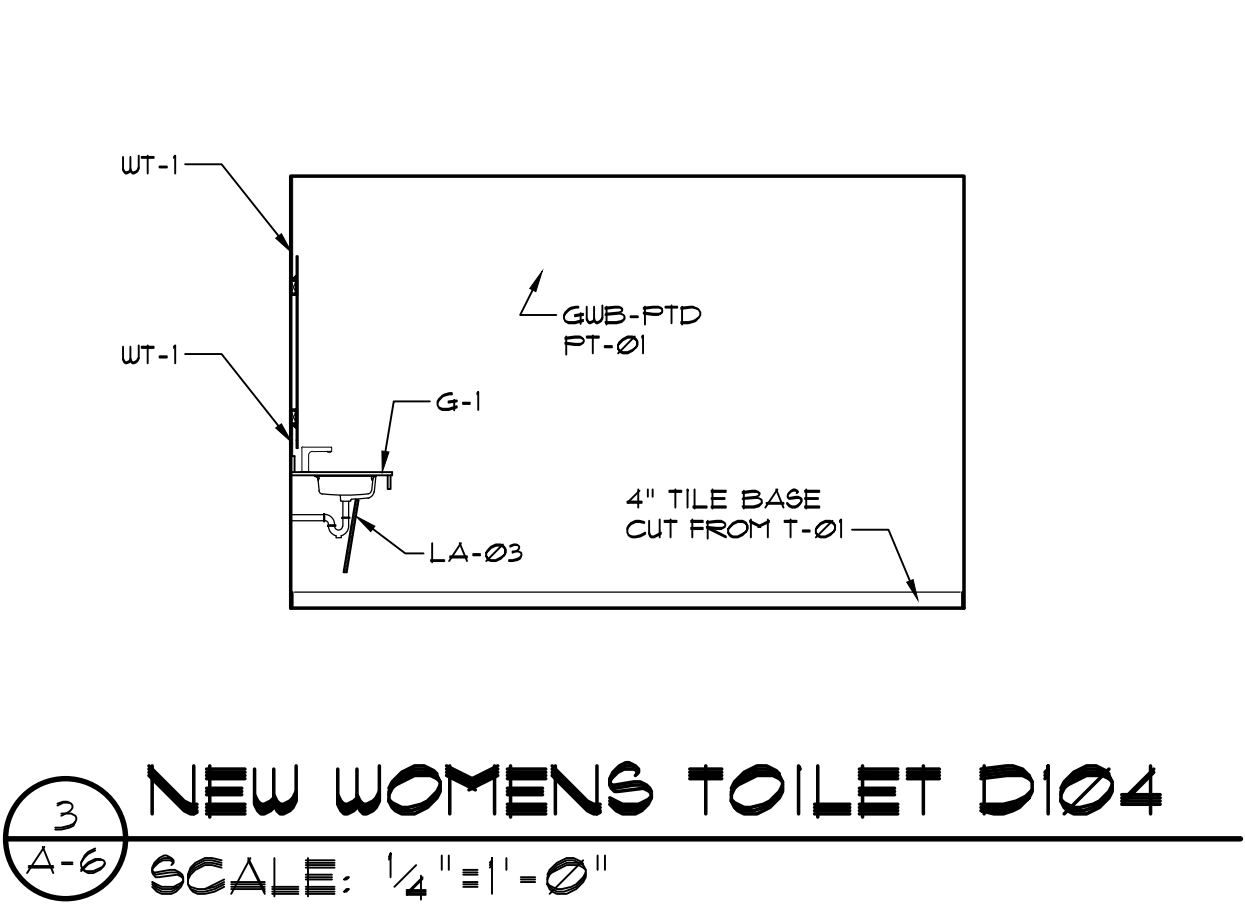
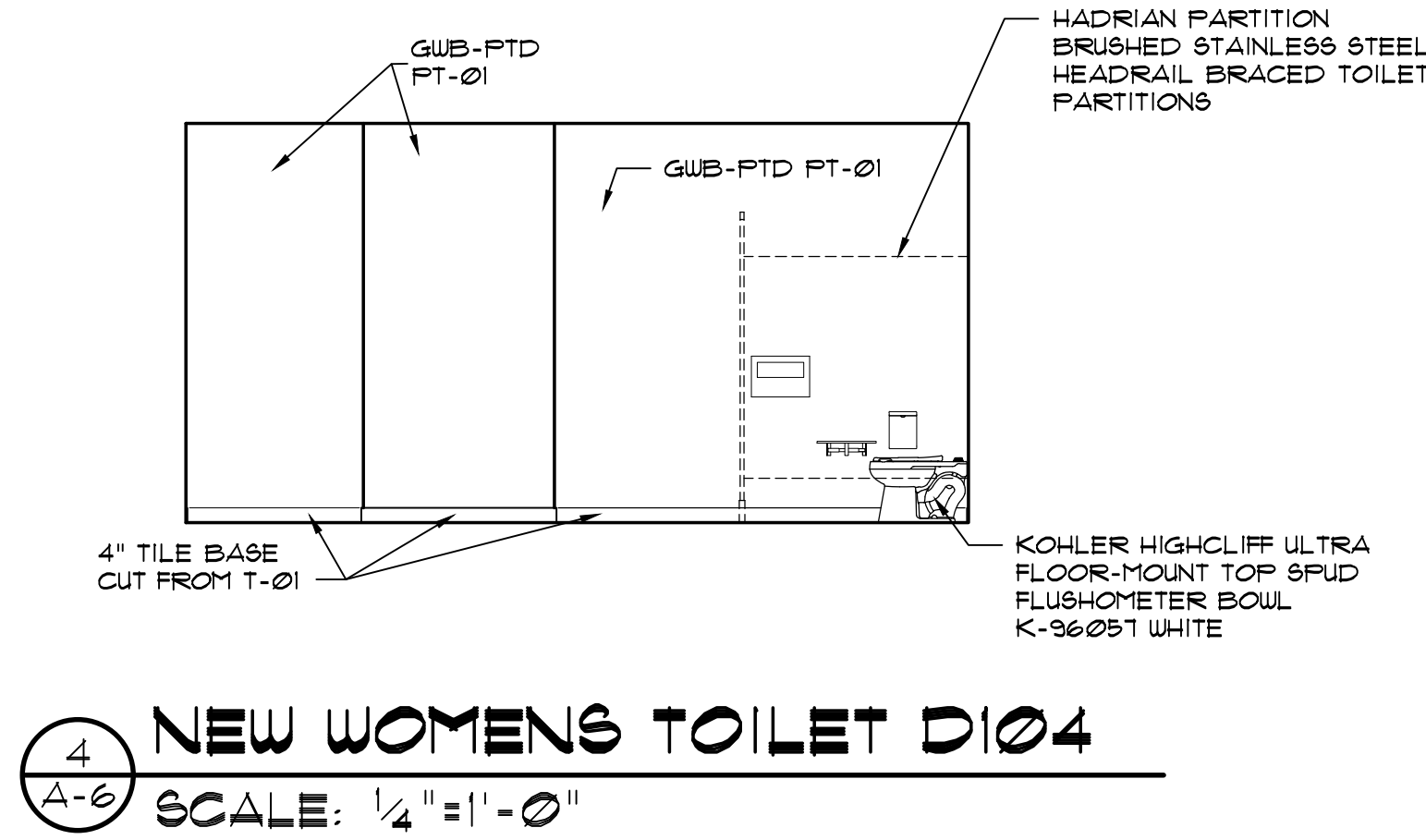
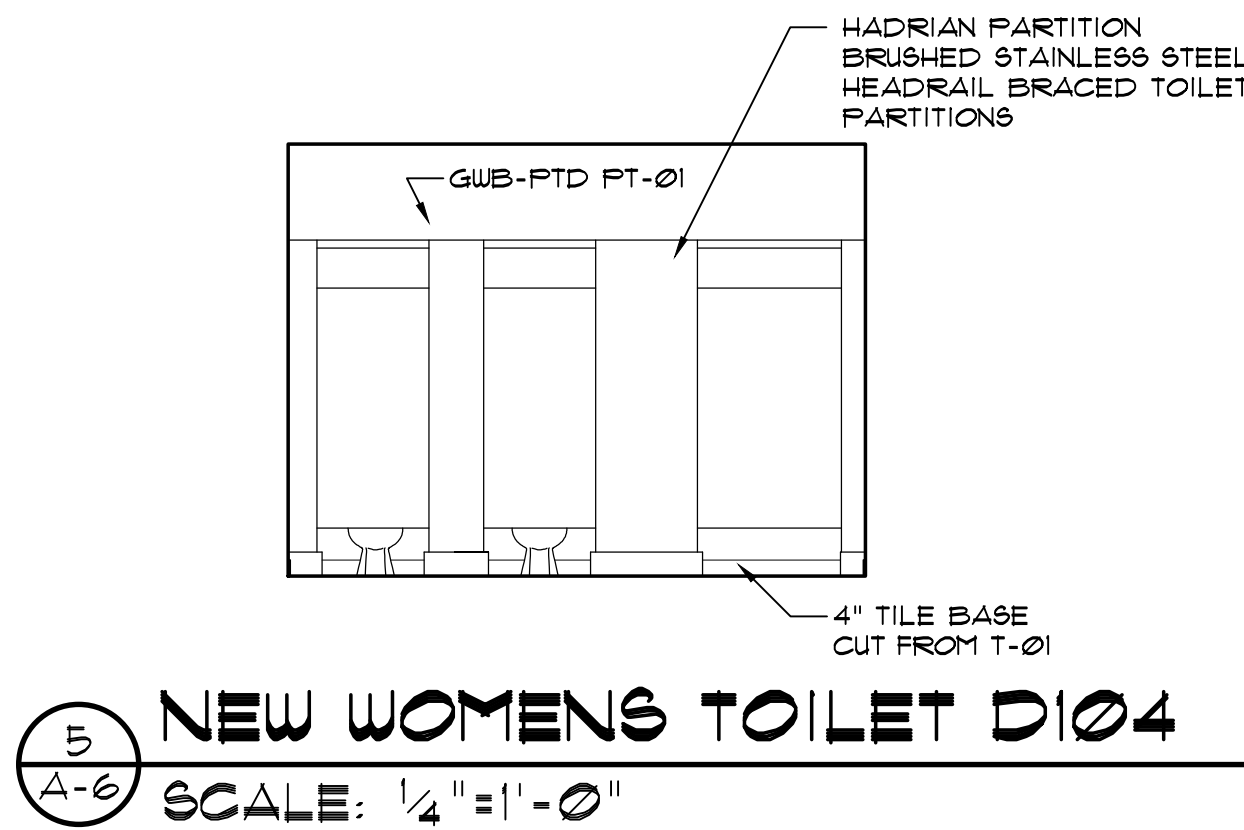
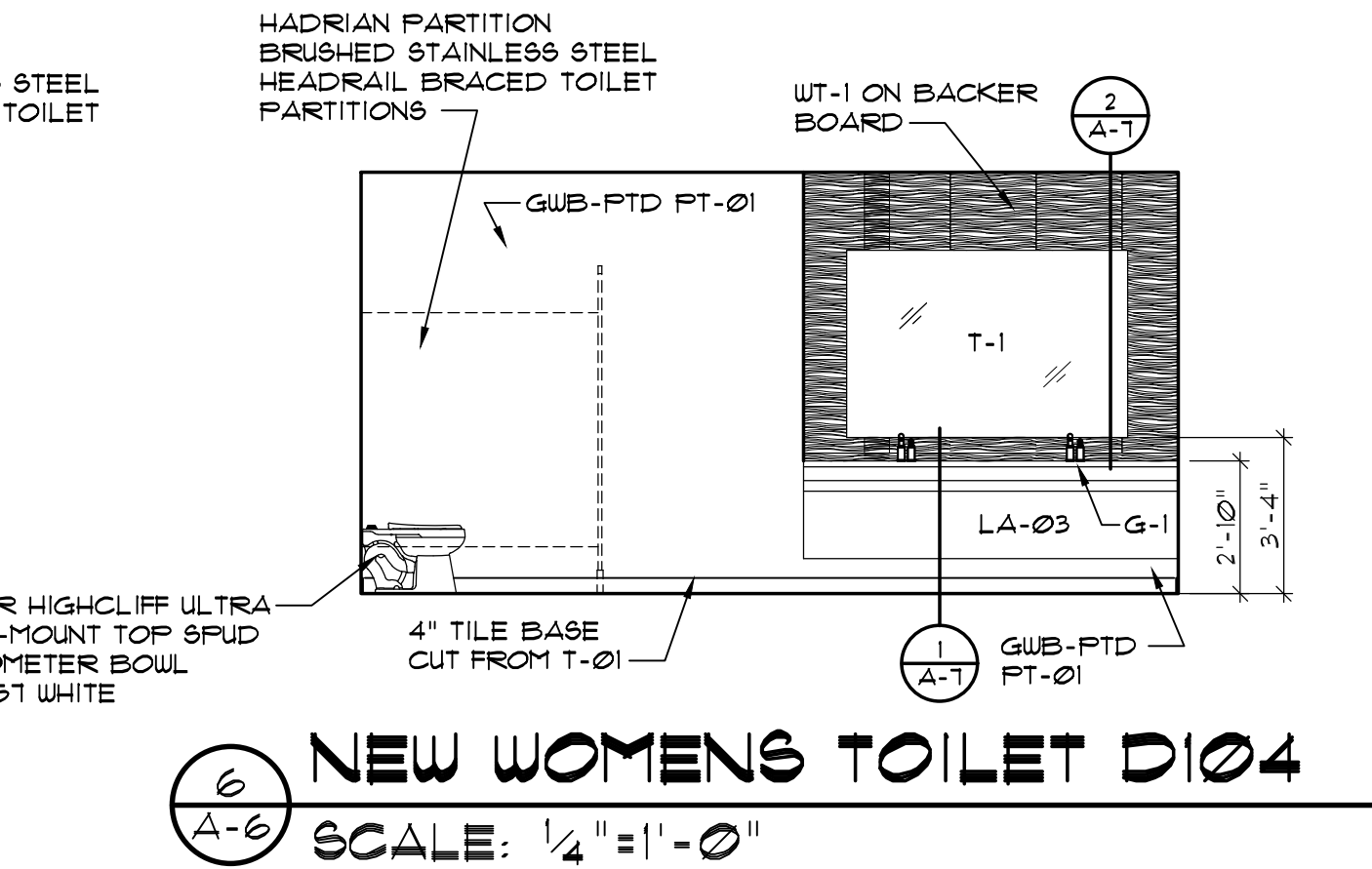
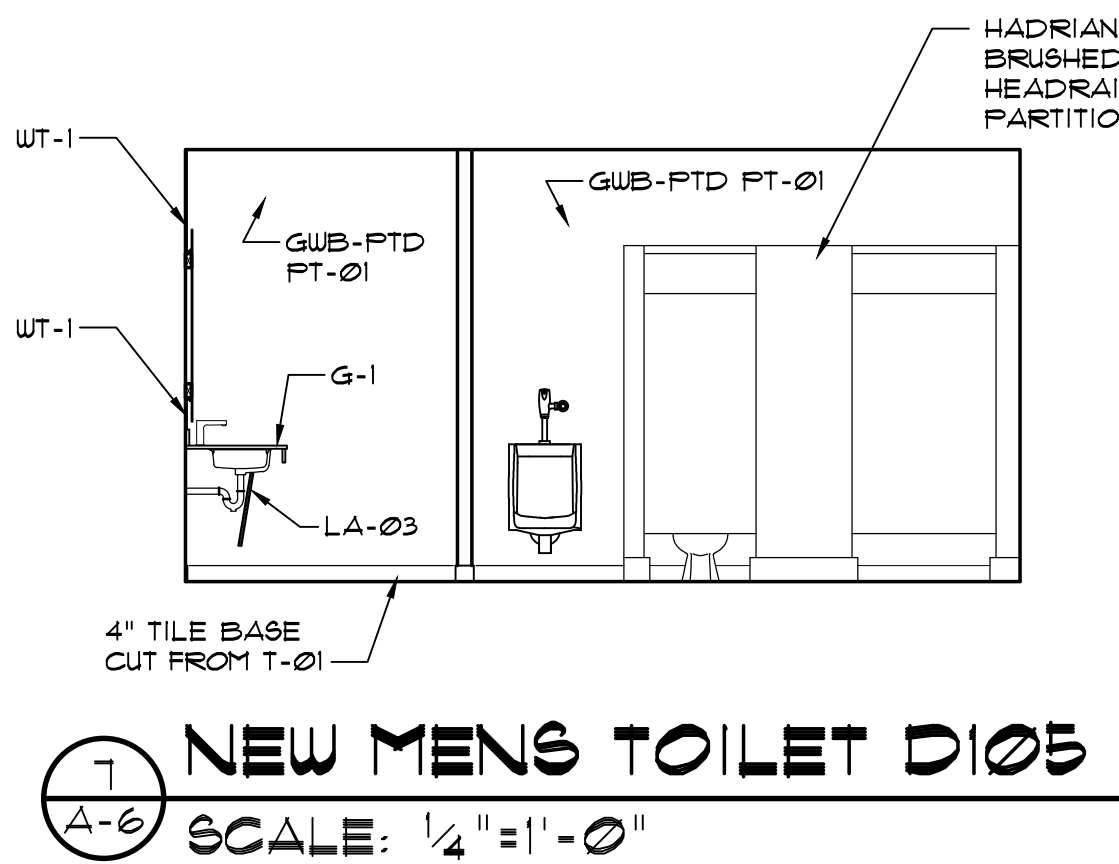
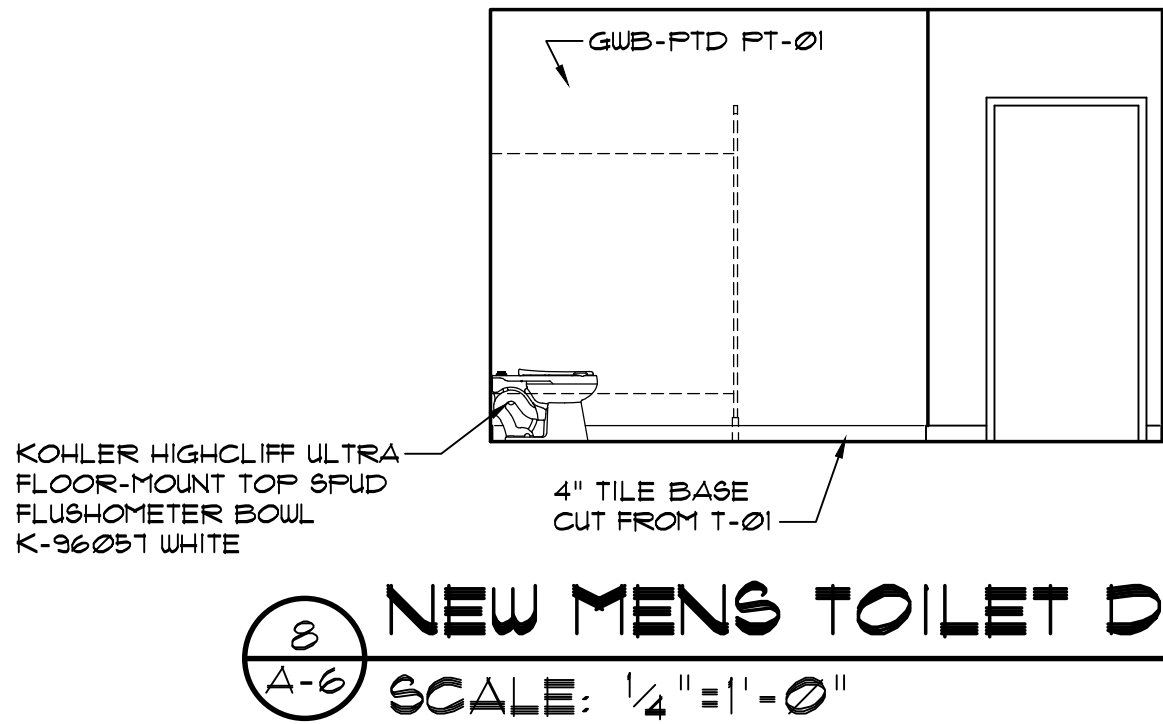
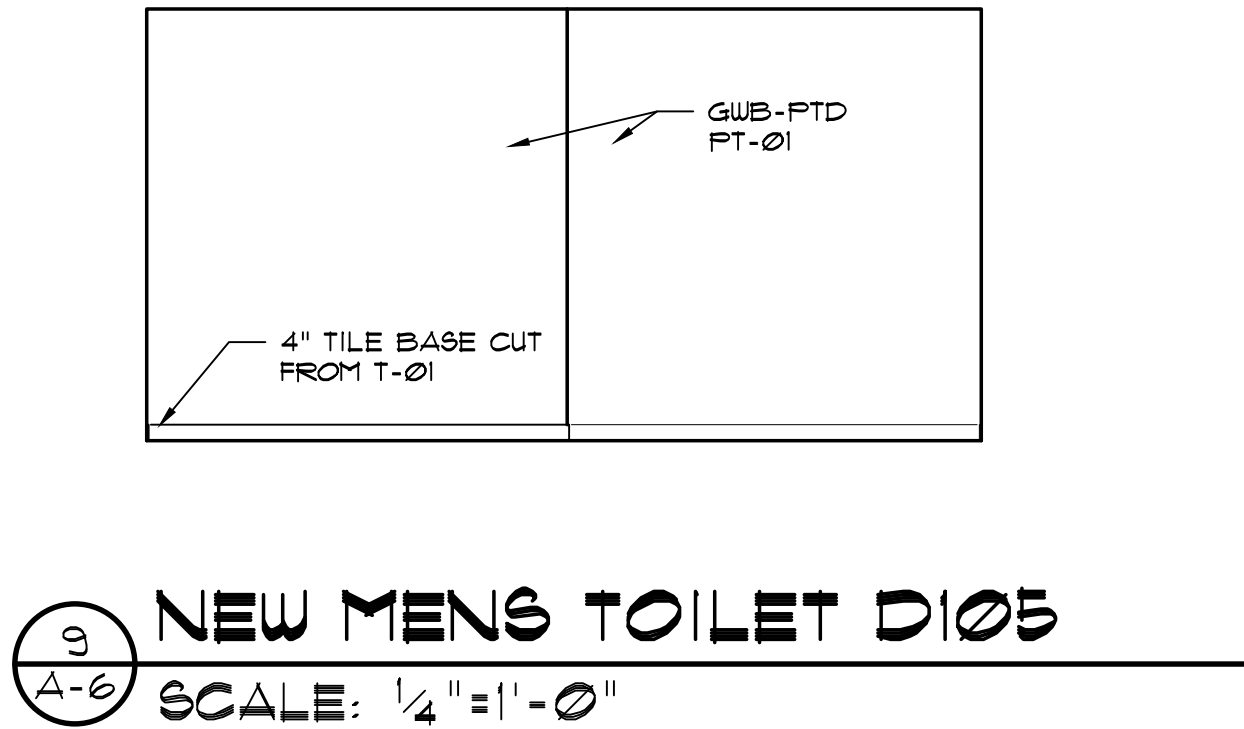
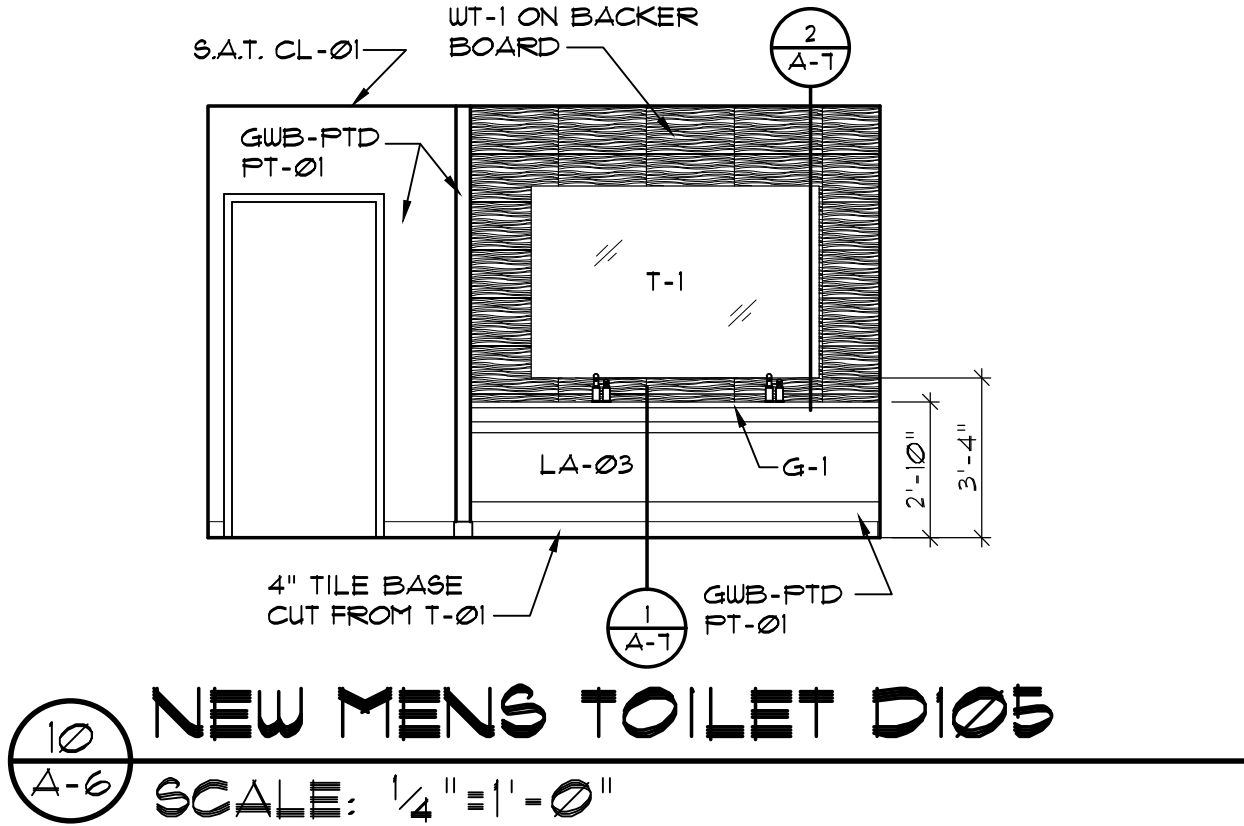
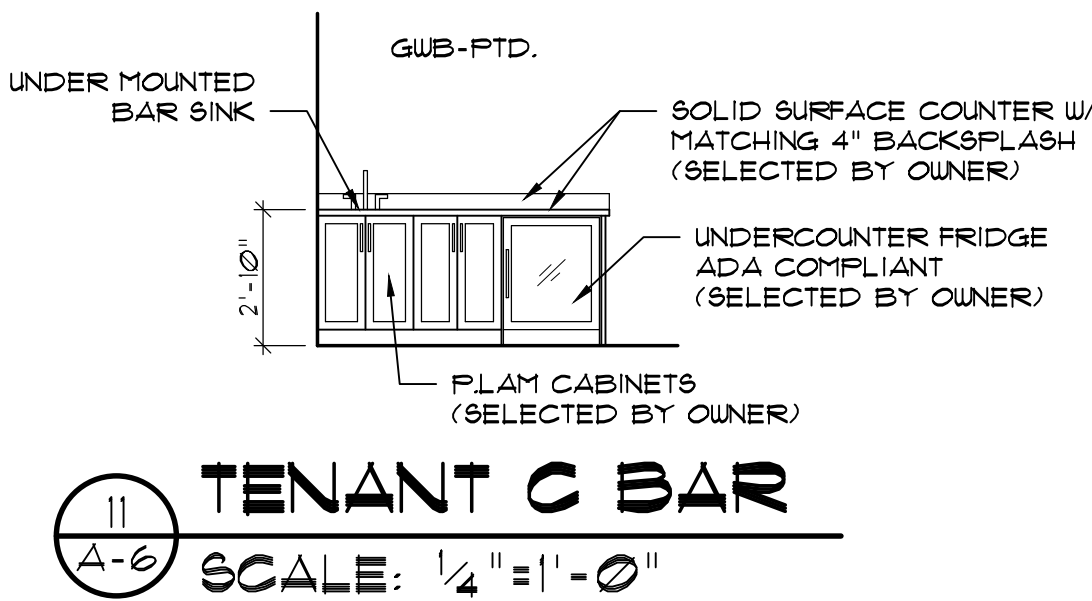
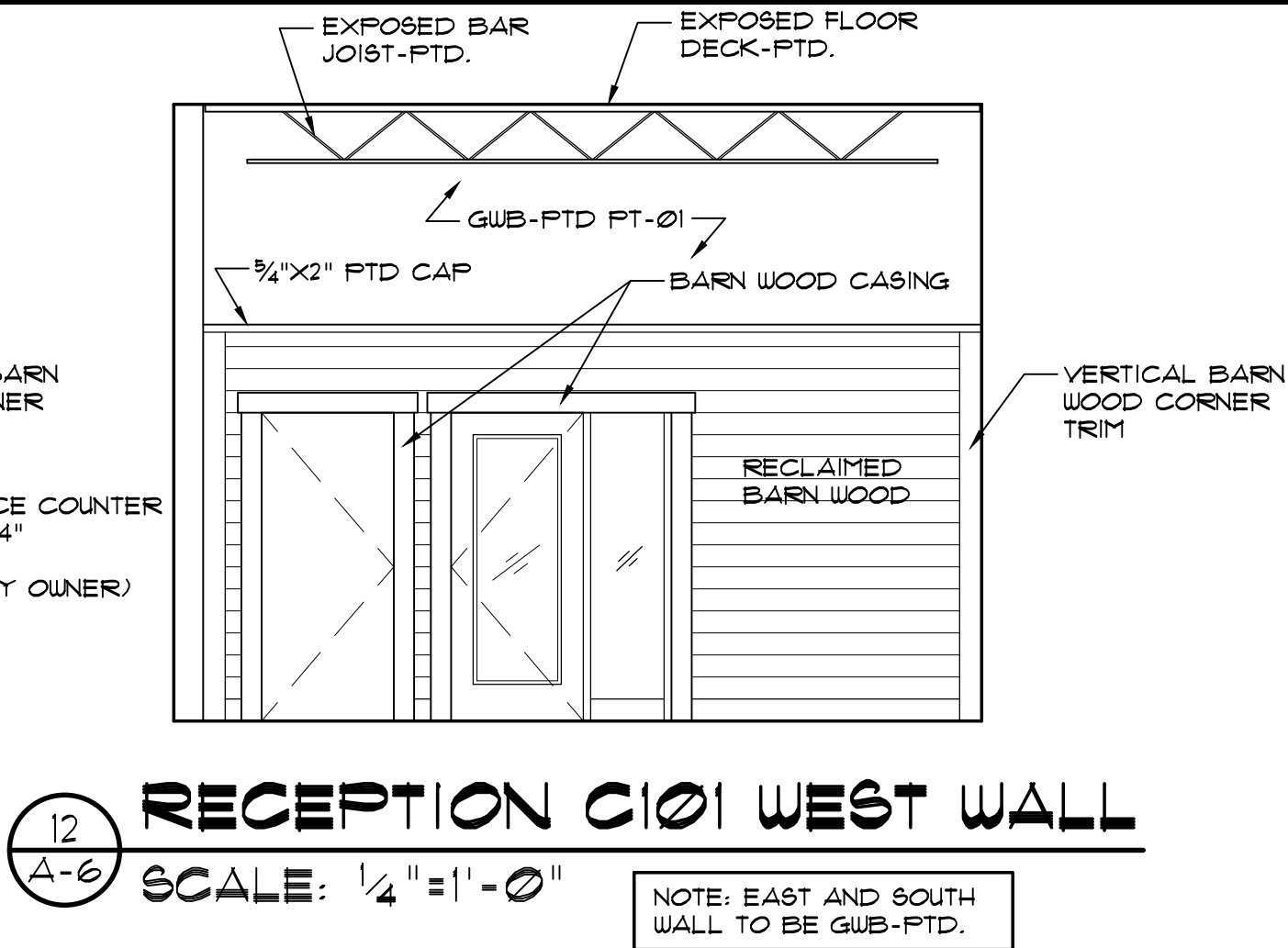
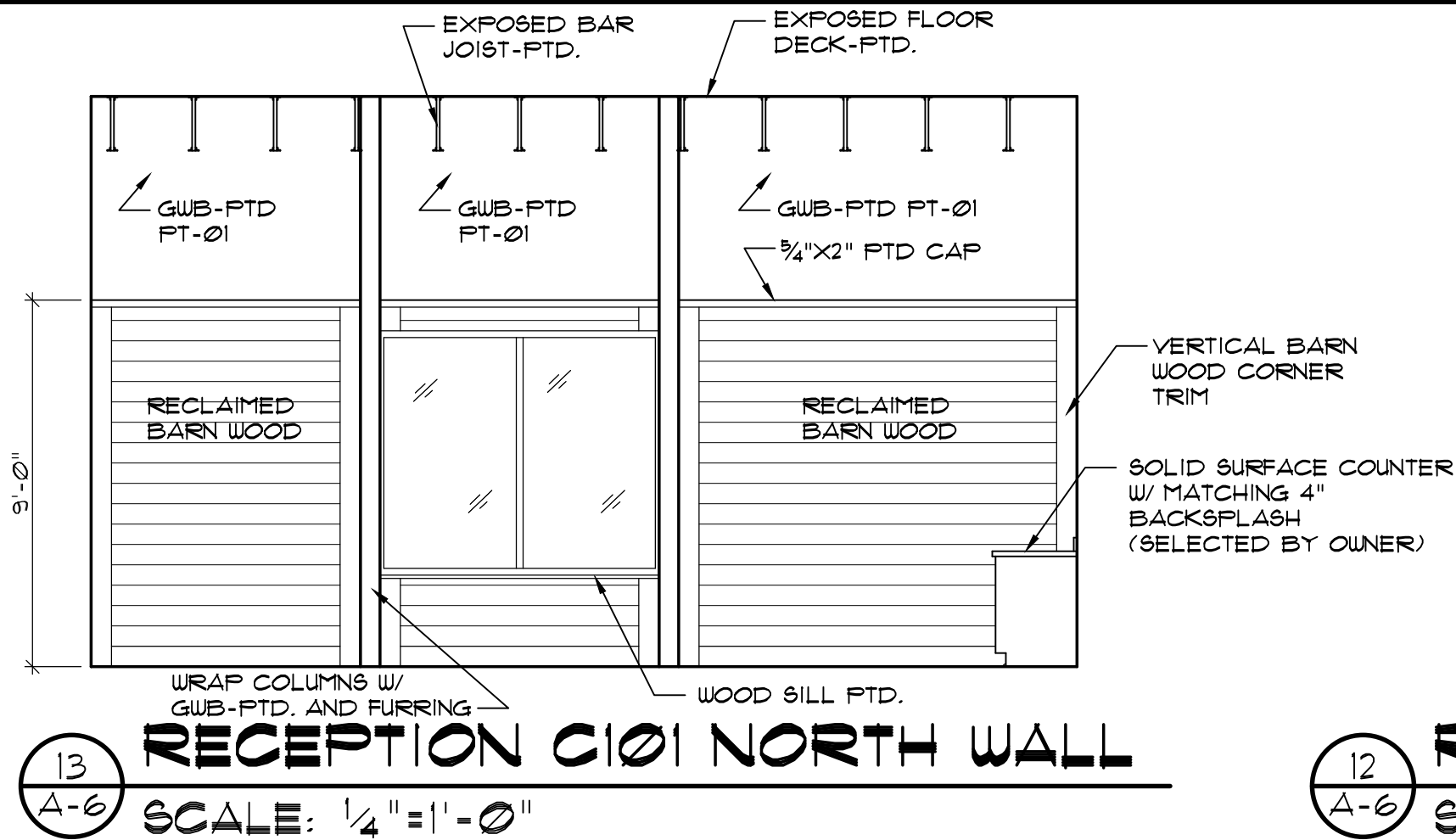
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A-3

OF

TOILET ACCESSORY SCHEDULE				
Mark	Item	Mtg. Ht.	Remarks	
TA-1	FRAMELESS MIRROR 6'-0" W X 4'-0" H	3'-4"	HEIGHT TO BOTTOM OF MIRROR	
TA-2	NOT USED	-	-	
TA-3	TOILET TISSUE DISPENSER AND UTILITY SHELF	B-2840	1'-10"	HEIGHT TO TOP OF DISPENSER
TA-4	RECESSED PAPER TOWEL DISPENSER	B-3803	4'-0" MAX.	HEIGHT TO DISP. OUTLET OR DISPENSER LEVER
TA-5	HANDICAP AUTOMATIC SOAP DISPENSER	GEORGIA PACIFIC ITEM ID 92065	-	ADD POWER UNDER SINK TO ACCOMMODATE
TA-6	GRAB BAR 42" CONCEALED MOUNTING W/ SNAP FLANGE	B-6806	3'-0" MAX.	HEIGHT TO CENTER
TA-7	GRAB BAR 36" CONCEALED MOUNTING W/ SNAP FLANGE	B-6806	3'-0" MAX.	HEIGHT TO CENTER
TA-8	GRAB BAR 18" CONCEALED MOUNTING W/ SNAP FLANGE (VERTICAL)	B-6806	3'-3"	HEIGHT TO BOTTOM, CENTER OF BAR @ 40" FROM REAR WALL
TA-9	SURFACE MOUNTED SANITARY NAPKIN DISPOSAL	B-2710	2'-6"	HEIGHT TO TOP OF DISPENSER
TA-10	SURFACE MOUNTED SEAT COVER DISPENSER	B-221	4'-0" MAX.	HEIGHT TO TOP OF DISPENSER
TA-11	COAT HOOK	B-542	4'-0" MAX.	HEIGHT TO TOP OF DISPENSER
TA-12	FAUCET SLOAN, OPTIMA PLUS, EBF-85			
TA-13	HANDS FREE DOOR OPENER BLACK FINISH			WWW.STEFPULL.COM
NOTES: • MODEL NUMBERS ARE BOBRICK, UON, BRADLEY, & FRANKLIN ARE APPROVED EQUALS. SUBMIT CUT SHEETS FOR APPROVAL. • SUBMIT SHOP DRAWINGS FOR ALL TOILET PARTITION CONFIGURATIONS • ALL HANDRAILS SHALL BE BLOCKED TO SUPPORT A 250 LB. LOAD MINIMUM				



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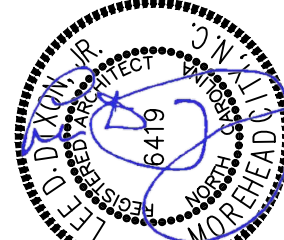
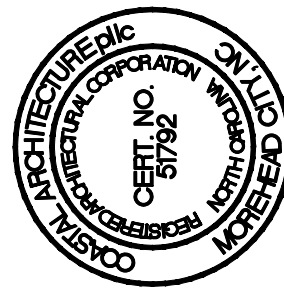
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BURNS AND WILCOX CENTER
FIRST FLOOR RENOVATIONS TENANT C
MOREHEAD CITY, NORTH CAROLINA

05/12/23
ENLARGED PLANS AND
INTERIOR ELEVATIONS

23001
ISSUED: 05/12/23
DWG BY: SKC/MES
CKD BY: LDD
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OF

BURNS AND WILCOX CENTER
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DETAILS

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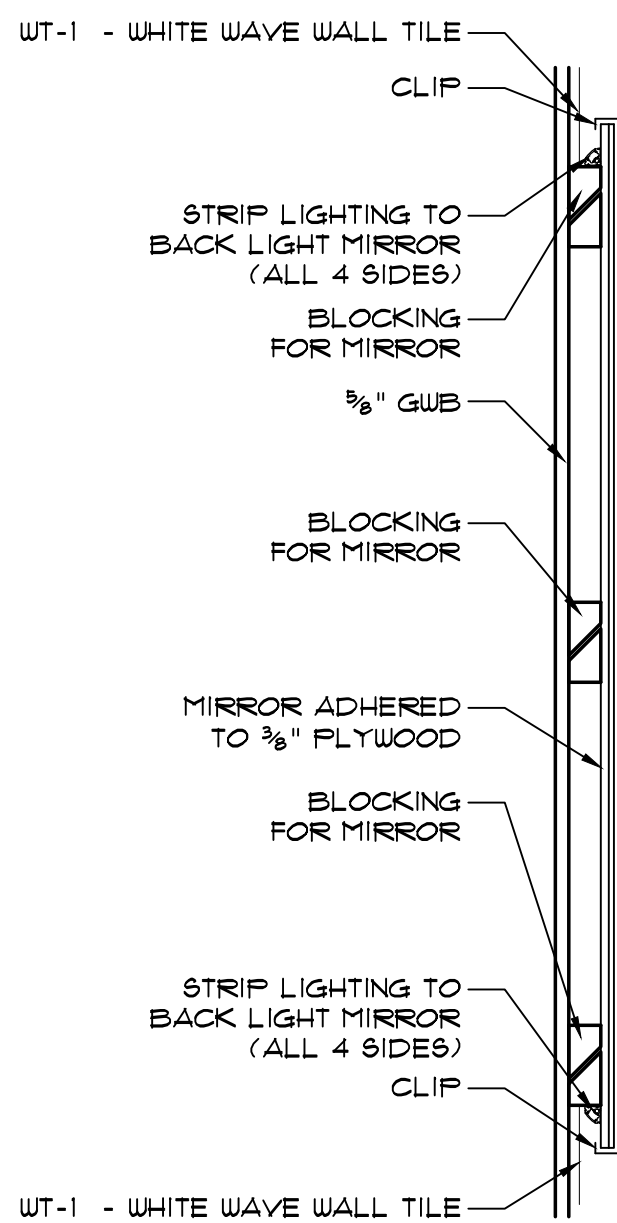
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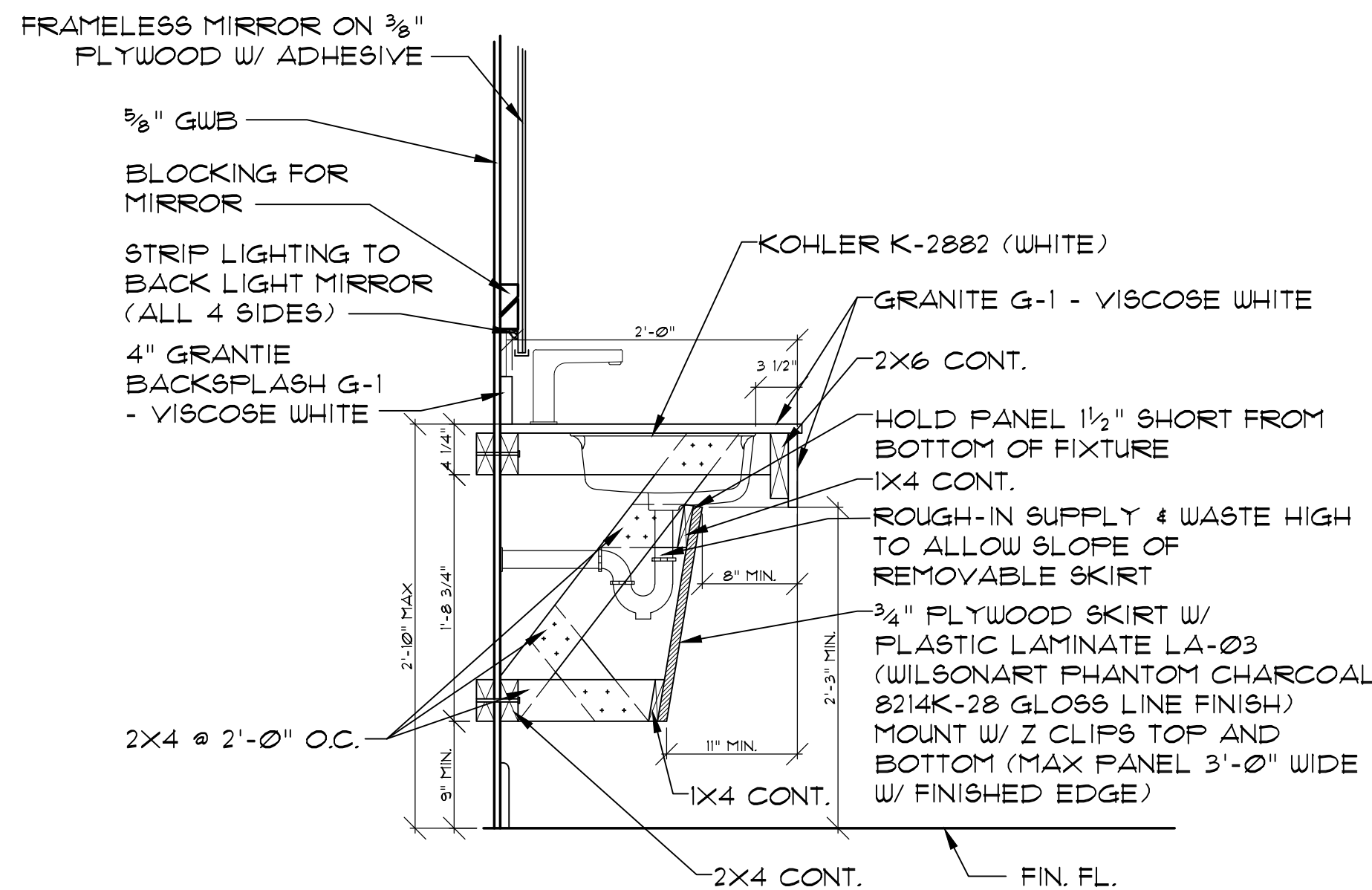
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A-7
OF



2
A-7 MIRROR DETAIL
SCALE: 1 1/2" = 1'-0"



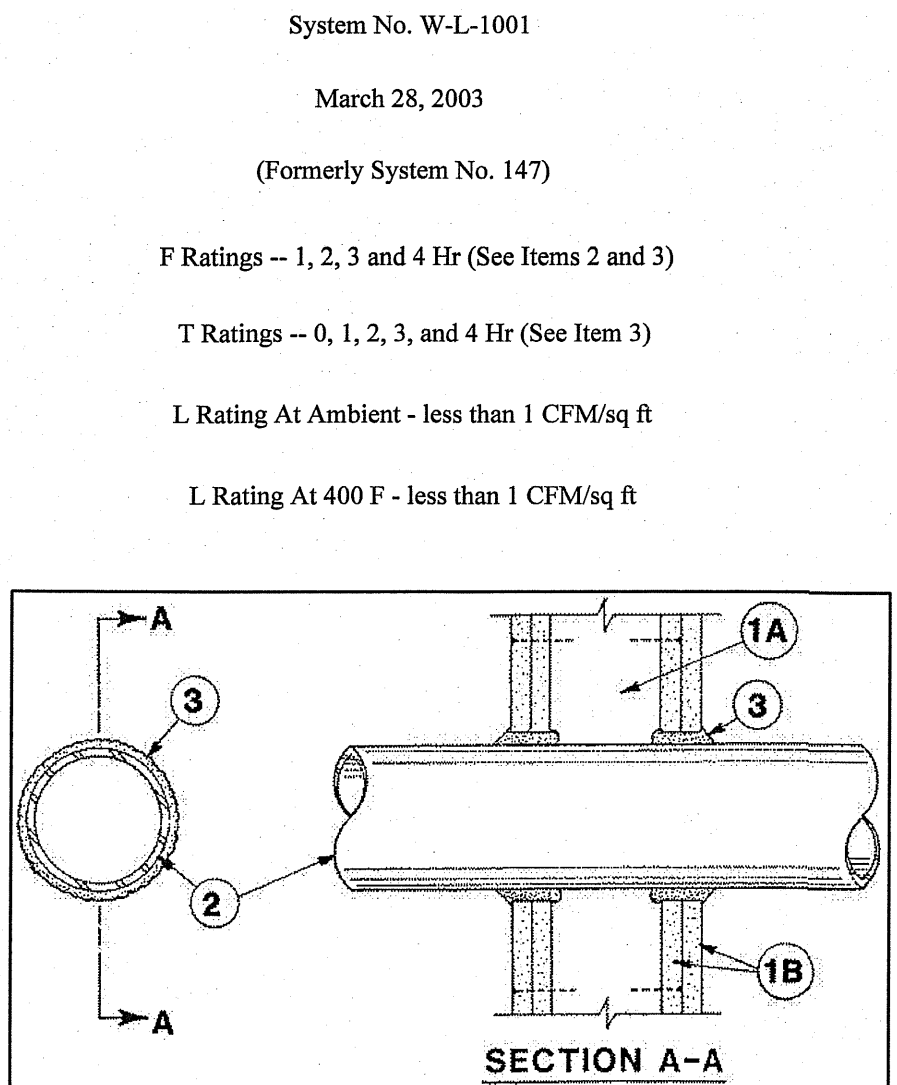
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A-7 VANITY DETAIL
SCALE: 1" = 1'-0"

DIVISION 15A – PLUMBING

- 1.1 DESCRIPTION OF THE WORK
- A. Work under this section includes, but is not necessarily limited to, furnishing and installing the following:
1. Plumbing fixtures, water heaters, and any other equipment necessary.
 2. Cold and hot water piping and insulation.
 3. DWV piping.
 4. Connection of all equipment; drain, vent, water.
- B. All work under this contract shall be installed in compliance with the latest edition of the following codes and standards insofar as they apply.
1. The National Electrical Code.
 2. 2018 N.C. Building Code: Plumbing, and all applicable category codes.
 3. American Society of Sanitary Engineering Standard 1010.
 4. All local codes and ordinances.
- C. These codes are minimum standards. If codes require a more stringent method of construction than the specifications require, the codes shall govern.
- D. The Plumbing Contractor shall be licensed in the State of North Carolina and have all local licenses required for the work.
- E. Obtain all permits, licenses, inspections, etc., required for the work, and pay for the same.
- 1.2 INTENT
- A. The intent of these specifications and accompanying drawings is to convey as reasonably as possible the requirements for a complete job ready for the building to operate. The Plumbing Contractor shall take this into consideration and include in his base bid allowance for contingencies as will allow him to provide minor pieces of equipment and labor not specifically indicated but required for the job to operate properly, at no additional cost to the Owner. The PC shall determine and coordinate with existing conditions.
- 1.3 COORDINATION
- A. Coordinate work with other contractors. Notify Architect of apparent conflicts early to expedite construction. If structural damage appears imminent, stop work and notify Architect for a decision before resuming operations.
- B. Locations shown are approximate. The Plumbing Contractor shall refer to the architectural drawings for placement of equipment, fixtures, etc. Where locations are not clear, the Contractor shall obtain the exact locations from the Architect.
- C. Coordinate all exterior piping connections w/Architect, site contractor/plans. Verify manhole elevations and provide backwater valves as required if flood level rims are below next upstream manhole cover elevation. Fixtures with flood level rims above upstream manhole shall not discharge thru be valve. Notify engineer of backwater valve requirement, any issue prior to bid.
- 1.4 SHOP DRAWINGS
- A. Shop drawings shall be submitted for plumbing fixtures and for pipe. These may consist of the manufacturer's standard catalog or tear sheets and shall have the exact items being offered clearly identified.
- PART 2 – PRODUCTS
- 2.1 FIXTURES
- A. Each fixture shall be properly supported from the building structure as required to the end effect that all fixtures and accessories will be held rigidly in place. Water pipes supplying the fixtures must also be held rigidly in place.
- B. Provide loose key angle stops and chrome plated supply pipe water supplies to fixtures.
- C. All exposed piping traps and accessories for fixtures shall be chrome plated. Provide chrome plated escutcheon plates where pipes enter walls.
- D. Provide shutoff valves for all sinks, water heaters, toilets, washing machines, refrigerator icemaker, exterior hose bibbs and all other plumbing fixtures.
- E. Provide trap primers for all floor drains in areas not served by hose bibbs.

- 2.2 PIPING
- A. Drain-Waste-Vent: All DWV piping shall be Schedule 40 PVC-DWV u.o.n., with the following exceptions: Use cast iron piping in all return air plenums, penetrations of rated walls/floors/ceilings, and in areas/walls adjacent to cooking equipment exhaust hoods. Review Arch. and Mech. drawings. ABS or cast iron piping shall be used for drainage/discharge with a temperature greater than 140 deg. F for a minimum distance of 10'-0".
- B. Hot and cold water piping above grade: Type "L" copper w/solder joints (ASTM-B88), hard drawn with wrought copper fittings (ANSI B16.22). PEX piping with copper fittings may be used with owner/tenant approval and as allowed per code. Copper piping shall be used in areas/walls adjacent to cooking equipment exhaust hoods. Review Arch. and Mech. drawings.
- C. Cold water piping below grade: Type "K" copper (ASTM-B88) soft drawn.
- D. Hangers: Use pipe hangers where required on 8-foot centers with saddles to avoid crushing insulation.
- E. Solder: 95/5. Lead free.
- F. Unions: Provide unions where indicated on drawings, in long runs of piping (except drainage) and all equipment to provide convenient disassembly. Provide dielectric unions when connecting copper tubing to equipment and piping made of ferrous materials.
- 2.3 CLEANOUTS
- A. Hex plugs in rough areas: Recessed plugs with cover plates in exposed locations.
- 2.4 SHOCK ARRESTERS
- A. Provide shock arresters as required by codes, manufacturer's recommendations and accepted industry standards for quality construction. Provide for all quick closing valves.
- PART 3 – EXECUTION
- 3.1 CONNECTIONS
- A. This contract includes complete connection of cold water, hot water, drainage, and vent piping as required. All fittings, valves, accessories, cutoffs, drains, etc., required to complete such connections shall be included.
- B. The connection to water closets shall be made watertight with gasket and wax ring. Floor flanges shall be caulked into position. Plastic caps shall be provided on the tie down bolts, and shall be secured in place by screwing down on threaded brass washers.
- C. Where water pipes connect to exposed chrome plated trim, use proper chrome plated escutcheons.
- 3.2 SERVICE ACCESS
- A. All valves and accessories shall be insulated so that they can be properly serviced. In no case shall the Plumbing Contractor install equipment or other components in situations that do not meet code requirements or manufacturer's requirements. Provide access doors as required to access valves, etc.
- 3.3 ROUTING OF PIPING
- A. Coordinate routing of piping with others, line up work true to or at right angle to adjacent surfaces and in a workmanlike manner. Support all interior piping from building structure by means of hanger or inserts to maintain pitch of lines, to prevent vibration, and to secure piping place.

- C. Pipe hangers for insulated lines shall have suitable saddles to protect insulation.
- 3.4 INSULATION
- A. All H/W and C/W piping shall be insulated with a min. of 1" inch elastomeric insulation (R=6.5 min.) in unconditioned areas. See NCSCB-Plumbing Sect. 305 for all protection requirements. All H/W piping of circulating systems shall be insulated with 1" insulation per Sect. C404.4 of the NCSCB 2018 Energy Conservation Code.
- B. Provide pre-fabricated insulation kits for all sink and lavatory exposed drain and supply piping.
- 3.5 INSPECTIONS AND TESTS
- A. Before being concealed, all water, soil and vent piping shall be tested to determine if they are water- and air-tight.
- B. Prior to placing into service, entire system shall be tested for leaks in strict accordance with state and local codes.
- 3.6 STERILIZATION OF PIPING
- A. Sterilize the new water piping thoroughly with a solution containing not less than 50 parts per million of available chlorine, using liquid chlorine, or sodium hydrochloride solution, introduced into the system in an approved manner. The sterilizing solution shall remain in the system in an approved manner. The sterilizing solution shall remain in the system for a period of 24 hours. After sterilization, flush the solution from the system with clean water until the residual chlorine content is not greater than 0.2 parts per million, unless otherwise directed.
- 3.7 SERVICE PRESSURE
- A. Provide approved water-pressure reducing valve (PRV) if service pressure exceeds 80 psi to reduce pressure to 80 psi static or less and as required per NCSCB-Plumbing Sect. 604.8.
- 3.8 DRAINDOWN
- A. Contractor to provide for complete plumbing system drain down.
- 3.9 CLEAN UP
- A. During construction, keep the site clear of debris and upon completion, and before final inspection, clean up the premises to remove all evidence of his work. In addition, upon completion of construction, clean, wash, and/or polish all fixtures, equipment and exposed material and leave them bright and clean.
- 3.10 GUARANTEES
- A. Guarantee all materials and labor included in the plumbing work for a period of one year from date of final acceptance by the Owner.
- B. Any defects in the system which become evident during the guarantee period shall be corrected without cost to the Owner. This shall include the replacing of defective materials where required, and the repair of damage caused by leaking pipes, etc., and damage to building surfaces caused in making repairs.



1. Wall Assembly -- The 1,2,3 or 4 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300 or U400 Series Wall or Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
- A. Studs -- Wall framing may consist of either wood studs (max 2 hr fire rated assemblies) or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC with nom 2 by 4 in. lumber end plates and cross braces. Steel studs to be min 3-5/8 in. wide by 1-3/8 in. deep channels spaced max 24 in. OC.
- B. Gypsum Board* -- Nom 1/2 or 5/8 in. thick, 4 ft. wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 26 in.
2. Through-Penetrant-- One metallic pipe, conduit or tubing installed either concentrically or eccentrically with the firestop system. The annular space between pipe, conduit, or tubing and periphery of opening shall be min of 0 in. (point contact) to max 2 in. Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:

- A. Steel Pipe -- Nom 24 in. diam (or smaller) Schedule 10 (or heavier) steel pipe.
- B. Iron Pipe -- Nom 24 in. diam (or smaller) service weight (or heavier) cast iron soil pipe, nom 12 in. diam (or smaller) or Class 50 (or heavier) ductile iron pressure pipe.
- C. Conduit -- Nom 6 in. diam (or smaller) steel conduit or nom 4 in diam (or smaller) steel electrical metallic tubing.
- D. Copper Tubing -- Nom 6 in. diam (or smaller) Type L (or heavier) copper tubing.
- E. Copper Pipe -- Nom 6 in. diam (or smaller) Regular (or heavier) copper tubing.
- F. through Penetrating Product* -- Flexible Metal Piping The following types of steel flexible metal gas piping may be used:
1. Nom 2 in diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly.
- OMEGA FLEX INC
2. Nom 1 in diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly.
- TITLEFLEX CORP
- A BUNDY CO
3. Nom 1 in diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly.
- WARD MFG INC

3. Fill, Void or Cavity Material* -- Caulk -- Min 5/8, 1-1/4, 1-7/8 and 2-1/2 in. thickness for caulk for 1,2,3 and 4 hr rated assemblies, respectively, applied within annulus, flush with both surfaces of wall. Min 1/4 in. dia bead of caulk applied to gypsum board/penetrant interface at point contact location on both sides of wall. The hourly F rating of the firestop system is dependent upon the hourly fire rating of the wall assembly in which it is installed, as shown in the following table. The hourly T rating of the firestop system is dependent upon the type or size of the pipe or conduit and the hourly fire rating of the wall assembly in which it is installed, as tabulated below:

Max Pipe or Conduit Diam In	F RATING Hr	T RATING Hr
1	1 or 2	0+; 1 or 2
1	3 or 4	3 or 4
4	1 or 2	0
6	3 or 4	0
12	1 or 2	0

*When copper pipe is used, T Rating is 0 h.

3M COMPANY-- CP 25WB+.

*Bearing the UL Classification Mark

3 PENETRATION DETAIL

SYMBOL LEGEND – PLUMBING

SYMBOL	DESCRIPTION (U.O.N.)
—————	SANITARY WASTE PIPING (W)
-----	VENT PIPING (V)
—————	COLD WATER PIPING (CW)
—————	HOT WATER PIPING (HW)
○ COFF	CLEANOUT FINISH FLOOR
⊥ WCO/HCO	WALL/HORIZONTAL CLEANOUT
□ COFG	CLEANOUT FINISH GRADE
— — —	DIELECTRIC UNION
— — —	SHUT-OFF VALVE
— — —	VENT THRU ROOF (VTR)
A.F.F.	ABOVE FINISHED FLOOR
U.O.N.	UNLESS OTHERWISE NOTED
— — —	1 HOUR FIRE BARRIER

LOAD SUMMARY – PLUMBING

WASTE DEMAND (FD)	WATER DEMAND (FD)	WATER DEMAND (GPM)
35.0	65.5	56.2

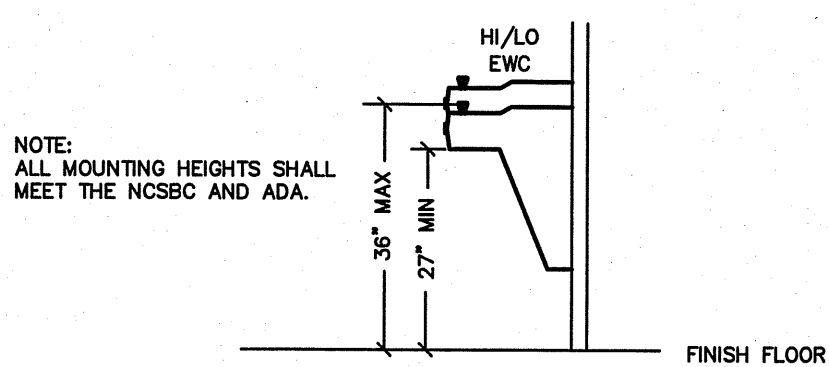
FIXTURE SCHEDULE – PLUMBING *

- ET* EXPANSION TANK
AMTROL MODEL ST-5, 2.0 GALLON, STEEL CONSTRUCTION, NON-ASME RATED.
- EW* ELECTRIC WATER HEATER
A.O. SMITH MODEL DEL-20, 20 GALLON, 2500 WATT, 208 V, 1 PH, 28 GPH RECOVERY AT 70 DEGREE (F) TEMP. RISE, 3/4" INLET/OUTLET, PROVIDE DRAIN PAN, EXPANSION TANK AND PRESSURE RELIEF VALVE. VERIFY INSTALLATION CLEARANCES PRIOR TO ORDERING.
- LAV* LAVATORY
KOHLER VERTICYL UNDERMOUNT LAVATORY, K-2882-0, WHITE COLOR, ADA COMPLIANT. PROVIDE K-8998 P--TRAP, DELTA FAUCET MODEL 523LF-HGMHDF, SHUT-OFF VALVES.
- SI* BREAK ROOM SINK (BY OWNER)
COORDINATE WITH FAUCET/SINK BY OWNER. PROVIDE DWV/SUPPLY AS REQUIRED.
- UR* URINAL
KOHLER MODEL K-5016-ET, 3/4" TOP SPUD, ADA COMPLIANT W/PROPER INSTALL, 0.5 GPF, 2" OUTLET DRAIN. PROVIDE SLOAN 02 8518-0.5 BATTERY SENSOR FLUSH VALVE, 0.5 GPF. PROVIDE/VERIFY VALVE WITH OVERRIDE BUTTON.
- WC* WATER CLOSET (FLOOR MOUNT FLUSH VALVE)
KOHLER HIGHLINE WATER CLOSET, K-4405, ADA COMPLANT 1.28 GPF. PROVIDE WITH K-4731-C SEAT, WAX SEAL, CLOSET BOLT KIT. FOR UNITS NOT REQUIRING ADA COMPLIANCE (COORDINATE W/ARCHITECT), USE KOHLER WELLWORTH K-4405 IF REQUIRED. PROVIDE SLOAN 02 8511-1.28 BATTERY POWERED SENSOR FLUSH VALVE. VERIFY MODEL FLUSH VALVE WITH OVERRIDE BUTTON.

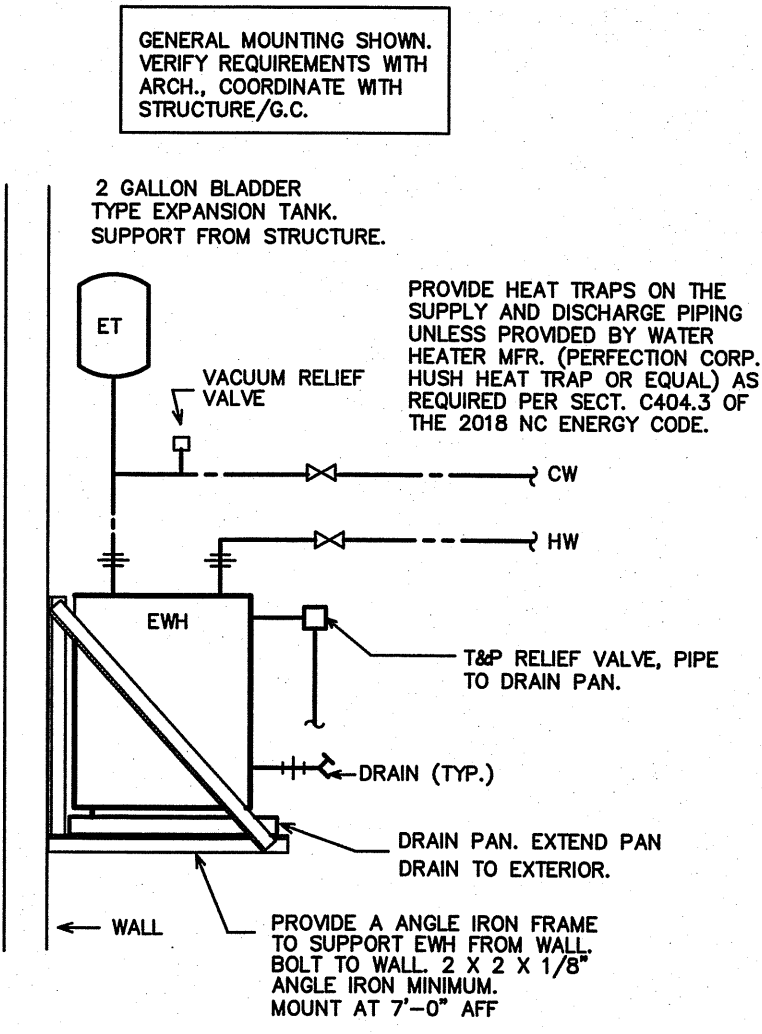
* OR APPROVED EQUAL. SUBMIT ALL ITEMS FOR APPROVAL BY TENANT AND ARCHITECT PRIOR TO ORDERING. ALL OTHER PLUMBING FIXTURES SHOWN ARE PROVIDED BY THE TENANT AND INSTALLED BY THE PLUMBING CONTRACTOR. SEE PLANS FOR NUMBER AND LOCATION. COORDINATE ALL REQUIREMENTS WITH EQUIPMENT SERVED.

GENERAL NOTES – PLUMBING

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE CODE, ALL LOCAL AND OTHER APPLICABLE CODES.
2. ALL WORK SHALL BE PERFORMED BY EXPERIENCED AND SKILLED CRAFTSMEN. THE PLUMBING CONTRACTOR (PC) SHALL COORDINATE ALL OF HIS WORK WITH THE GENERAL CONTRACTOR (GC).
3. THE PLUMBING PLANS AND SPECIFICATIONS SHALL BE THOROUGHLY REVIEWED PRIOR TO PURCHASING MATERIALS AND INSTALLATION AND ALL DISCREPANCIES OR INTERFERENCES BROUGHT TO THE ENGINEERS ATTENTION.
4. THESE PLANS ARE DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS. THE PC SHALL PROVIDE ALL MISC. ITEMS NEEDED FOR A COMPLETE SYSTEM REGARDLESS IF NOTED ON THE DRAWINGS OR NOT. FOR DIMENSIONS REFER TO ARCHITECTURAL PLANS.
5. THE GC SHALL PROVIDE ALL WALL, FLOOR AND ROOF OPENINGS OF THE SIZE AND LOCATION REQUIRED BY THE PC AND SHALL BE RESPONSIBLE FOR PAINTING AND FLOOR FINISHES. THE PC SHALL PROPERLY SEAL ALL PENETRATIONS AND PROVIDE ESCUTCHEON PLATES AT ALL FINISHED LOCATIONS.
6. ALL NEW WATER PIPING SHALL BE INSTALLED TIGHT TO STRUCTURE, ADEQUATELY SUPPORTED AND PROTECTED AND PROPERLY PITCHED TO ALLOW TOTAL DRAINAGE.
7. ALL WATER PIPING SHALL BE HYDROSTATICALLY TESTED FOR A MINIMUM OF 15 MINUTES AT A MINIMUM OF 100 PSIG BEFORE COVERING AND ALL LEAKS CORRECTED. THE ENTIRE WATER DISTRIBUTION SYSTEM SHALL BE DISINFECTED PRIOR TO PLACING IN SERVICE.
8. PROVIDE MIN. 18" SHOCK ABSORBERS WITH STOPS ON ALL HOT AND COLD WATER FIXTURE RUNS AS REQUIRED BY CODE.
9. VENT LINES SHALL SLOPE UP TO ALL STACKS AND TERMINATE A MIN. OF 12" ABOVE ROOF LINE.
10. PROVIDE CUT SHEETS ON ALL PLUMBING/GAS FIXTURES FOR ARCHITECT AND OWNER APPROVAL PRIOR TO ORDERING ANY FIXTURES.
11. PROVIDE/VERIFY HOT WATER TO FIXTURES AT 110 DEGREES (MAX) F. PROVIDE ASSE 1070 THERMOSTATIC MIXING VALVE (WATTS LFUSG-B 'LEAD FREE' GUARDIAN OR EQUAL) FOR ALL LAVATORIES AS REQUIRED. VERIFY VALVE LOCATION, INSTALL IN MAINTENANCE ACCESSIBLE AREA.
12. PROVIDE CLEANOUTS AS REQUIRED BY CODE. NOT MORE THAN 100 FEET FOR 4" DRAIN.
13. PROPERLY SEAL ALL PIPING PENETRATIONS PER APPLICABLE PENETRATION SYSTEM DETAIL (THIS SHEET) THROUGH FIRE BARRIER WALLS/FLOORS/CEILINGS-- ALL MAY NOT BE SHOWN, VERIFY RATINGS/BARRIERS W/ARCH. PROVIDE CAST IRON FOR ALL DWV PIPING THROUGH FIRE BARRIERS.



1 EWC DETAIL



NOTE: WATER HEATERS, PIPING, AND PIPING APPURTENANCES PROVIDED BY P.C. WATER HEATER SUPPORTS BY P.C.

2 EWH DETAIL

3 PENETRATION DETAIL

NOTE:
THE EXISTING INFORMATION SHOWN ON THIS SHEET IS FROM PREVIOUS PERMIT DRAWINGS.
THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE SITE AND FIELD VERIFYING ALL RELEVANT
INFORMATION. THE SUBMISSION OF A BID INDICATES ACCEPTANCE OF EXISTING CONDITIONS. NOTIFY THE
ENGINEER OF ANY DISCREPANCIES NOTED.

THE SCOPE OF DEMOLITION IS AS FOLLOWS--

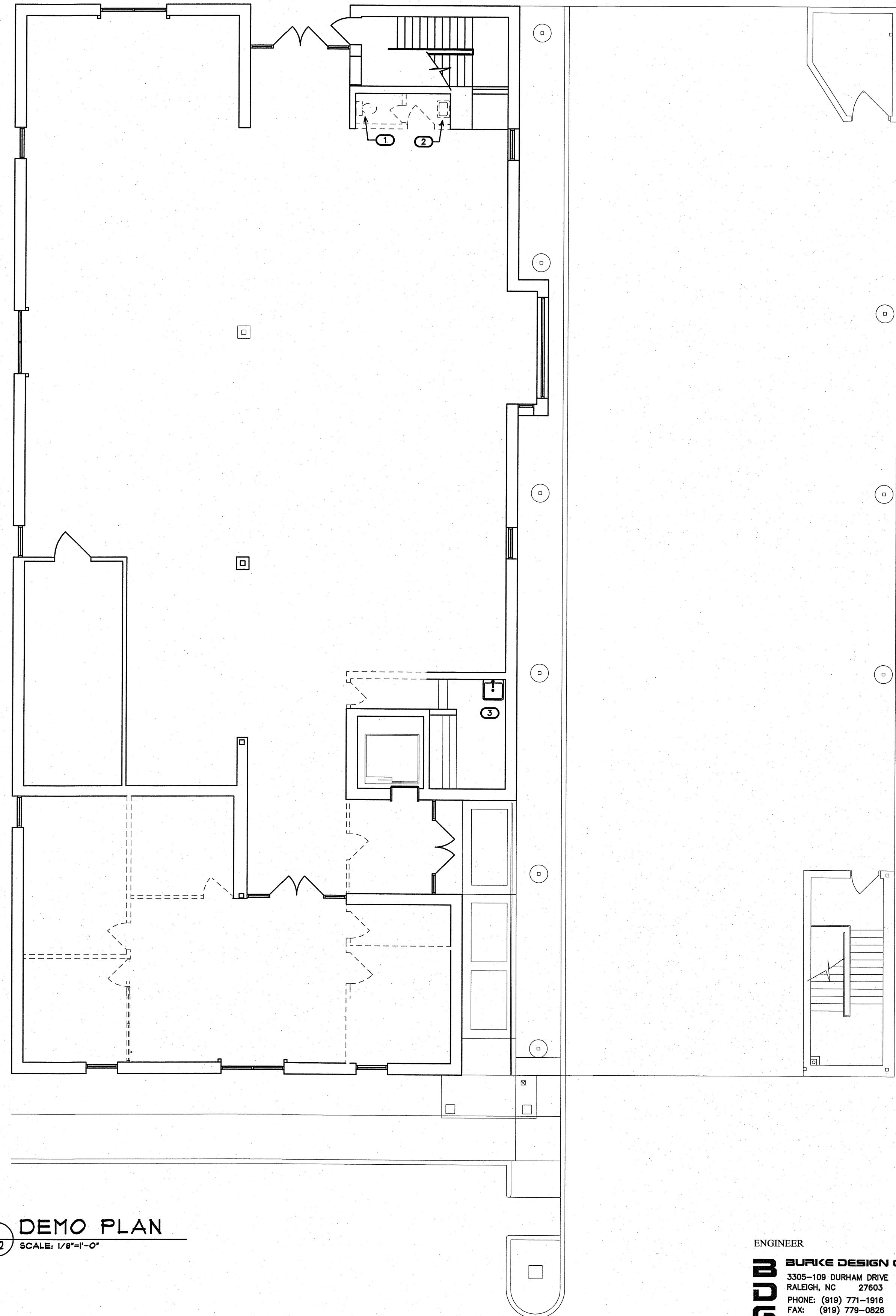
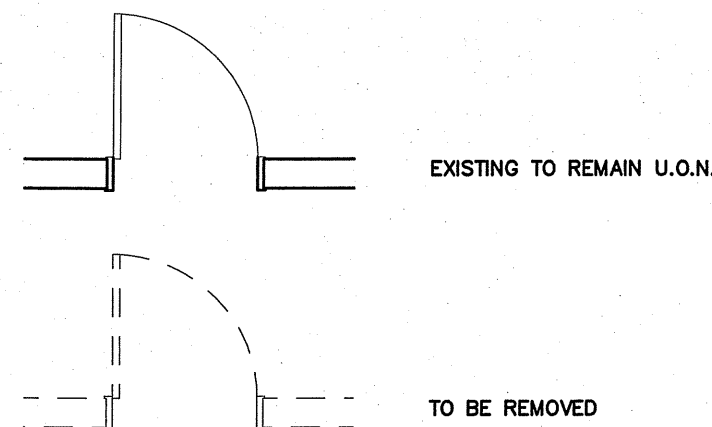
REMOVE EXISTING PLUMBING FIXTURES/EQUIPMENT AS SHOWN/NOTED. PROVIDE CLEANOUTS ON UNUSED
DRAIN LINES AT FINAL FINISHES TO PREVENT DEAD-ENDS PER CODE. REMOVE UNUSED VENT LINES TO
ABOVE CEILING AND CAP AT MAIN. REMOVE ALL UNUSED DW & HW LINES/STUB-OUTS, ETC., AND CAP
LINES BEHIND FINAL FINISHES. REMOVE AND REPLACE ALL CONCRETE, WALL BOARD AND CEILINGS AS
REQUIRED TO LOCATE EXISTING LINES/INSTALL NEW LINES. COORDINATE WITH PLANS FOR LINES TO BE
REUSED. ALL EXISTING DWV AND SUPPLY ITEMS/LINES NOT SHOWN.

IT IS THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR TO LOCATE ANY AND ALL EXISTING
BUILDING SYSTEMS IN CONCRETE, FLOORS, WALLS, CEILINGS, ETC., PRIOR TO START OF WORK,
THAT MAY BE ENCOUNTERED DURING CONSTRUCTION TO DETERMINE METHODS REQUIRED TO AVOID
AND/OR MAINTAIN EXISTING SYSTEMS OPERATION. COORDINATE WITH BLDG. OWNER, ARCH., E.C.
THE PLUMBING CONTRACTOR SHALL LOCATE, TRACE, AND INSPECT FOR PROPER DRAINAGE AND
CONDITION. ANY/ALL EXISTING BUILDING DRAINAGE LINES AND SYSTEMS (SANITARY, GREASE, ETC.)
THAT ARE TO BE UTILIZED BY THE OCCUPANT/NEW CONNECTIONS PER DESIGN DRAWINGS THROUGH
USE OF CAMERA, DYES, AND/OR ANY MEANS NECESSARY-- PRIOR TO THE START OF WORK. THE
CONTRACTOR SHALL REMEDY ANY ISSUES IN ORDER TO ENSURE A PROPER FUNCTIONING, CODE
COMPLIANT SYSTEM, WHICH INCLUDES BUT IS NOT LIMITED TO, JETTING OF LINES, REMOVAL OF
DEBRIS, REPLACEMENT OF ANY IMPROPER OR DAMAGED PIPING. VERIFY AVAILABLE DEPTH/INVERT
REQUIREMENTS, FLOW DIRECTION OF EXISTING LINES. PROVIDE DOCUMENTATION TO THE ENGINEER
FOR REVIEW. THE EXISTING AND NEW DRAINAGE SYSTEMS/CONNECTIONS SHALL BE TESTED FOR
PROPER OPERATION UPON COMPLETION OF WORK. ALL ISSUES AND SOLUTION OPTIONS ARE TO BE
COORDINATED WITH THE DRAINAGE SYSTEM/BUILDING OWNER, E.C., ARCHITECT, AND ENGINEER.
PROVIDE AS-BUILT DRAWINGS FOR ENGINEER REVIEW.

NOTE:
ALL PLUMBING FIXTURES (PIPING,
ETC.) TO REMAIN OR TO BE
REMOVED MAY NOT BE SHOWN.
COORDINATE WITH DEMO/NEW
PLANS, FIELD CONDITIONS. VERIFY
ITEMS/LINES TO BE REMOVED.

KEY NOTES FOR SHEET P2

- 1 WATER CLOSET TO BE REMOVED.
- 2 LAVATORY TO BE REMOVED.
- 3 UTILITY SINK TO BE REMAIN.
HW TO BE RE-ROUTED FROM
NEW SOURCE WATER HEATER,
SEE WATER PLAN.



1 DEMO PLAN
P-2 SCALE: 1/8"=1'-0"

ENGINEER

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Coastal
Architecture
P.L.L.C.

Architectural
Design
Planning
Interiors

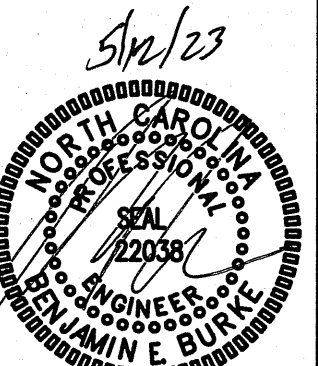


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**BURNS AND WILCOX CENTER
FIRST FLOOR RENOVATIONS TENANT C
MOREHEAD CITY, NORTH CAROLINA**



DEMO
PLAN

23001

ISSUED: 5-10-2023

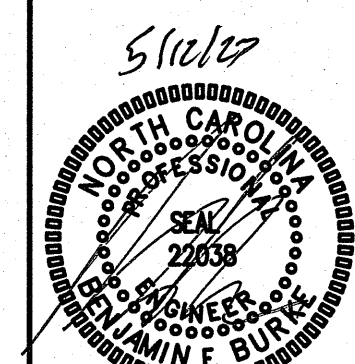
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CKD BY: BEB

REVISIONS

SHEET NO.

P-2

BURNS AND WILCOX CENTER
FIRST FLOOR RENOVATIONS TENANT C
MOREHEAD CITY, NORTH CAROLINADWV
PLAN

23001

ISSUED: 5-10-2023

DWG BY: -

CKD BY: BEB

REVISIONS

SHEET NO.

P-3

NOTE:
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THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE SITE AND FIELD VERIFYING ALL
RELEVANT INFORMATION. THE SUBMISSION OF A BID INDICATES ACCEPTANCE OF EXISTING CONDITIONS.
NOTIFY THE ENGINEER OF ANY DISCREPANCIES NOTED.
REMOVE AND REPLACE ALL CONCRETE, WALL BOARD AND CEILINGS AS REQUIRED TO LOCATE EXISTING
LINES AND INSTALL NEW LINES.

IT IS THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR TO LOCATE ANY AND ALL EXISTING
BUILDING SYSTEMS IN CONCRETE, FLOORS, WALLS, CEILINGS, ETC., PRIOR TO START OF WORK.
THAT MAY BE ENCOUNTERED DURING CONSTRUCTION TO DETERMINE METHODS REQUIRED TO AVOID
AND/OR MAINTAIN EXISTING SYSTEMS OPERATION. COORDINATE WITH BLDG. OWNER, ARCH., E.C.
THE PLUMBING CONTRACTOR SHALL LOCATE, TRACE, AND INSPECT FOR PROPER DRAINAGE AND
CONDITION. ANY/ALL EXISTING BUILDING DRAINAGE LINES AND SYSTEMS (SANITARY, GREASE, ETC.)
THAT ARE TO BE UTILIZED BY THE OCCUPANT/NEW CONNECTIONS PER DESIGN DRAWINGS THROUGH
USE OF CAMERA, DYES, AND/OR ANY MEANS NECESSARY- PRIOR TO THE START OF WORK. THE
CONTRACTOR SHALL REMEDY ANY ISSUES IN ORDER TO ENSURE A PROPER FUNCTIONING, CODE
COMPLIANT SYSTEM, WHICH INCLUDES BUT IS NOT LIMITED TO, JETTING OF LINES, REMOVAL OF
DEBRIS, REPLACEMENT OF ANY IMPROPER OR DAMAGED PIPING. VERIFY AVAILABLE DEPTH/INVERT
REQUIREMENTS, FLOW DIRECTION OF EXISTING LINES. PROVIDE DOCUMENTATION TO THE ENGINEER
FOR REVIEW. THE EXISTING AND NEW DRAINAGE SYSTEMS/CONNECTIONS SHALL BE TESTED FOR
PROPER OPERATION UPON COMPLETION OF WORK. ALL ISSUES AND SOLUTION OPTIONS ARE TO BE
COORDINATED WITH THE DRAINAGE SYSTEM/BUILDING OWNER, E.C., ARCHITECT, AND ENGINEER.
PROVIDE AS-BUILT DRAWINGS FOR ENGINEER REVIEW.

COORDINATE WORK WITH BUILDING OWNER SO AS NOT TO IMPACT OPERATION OF ANY ADJACENT
SPACES/LEVELS. NIGHT AND WEEKEND WORK MAY BE REQUIRED.

KEY NOTES FOR SHEET P-3

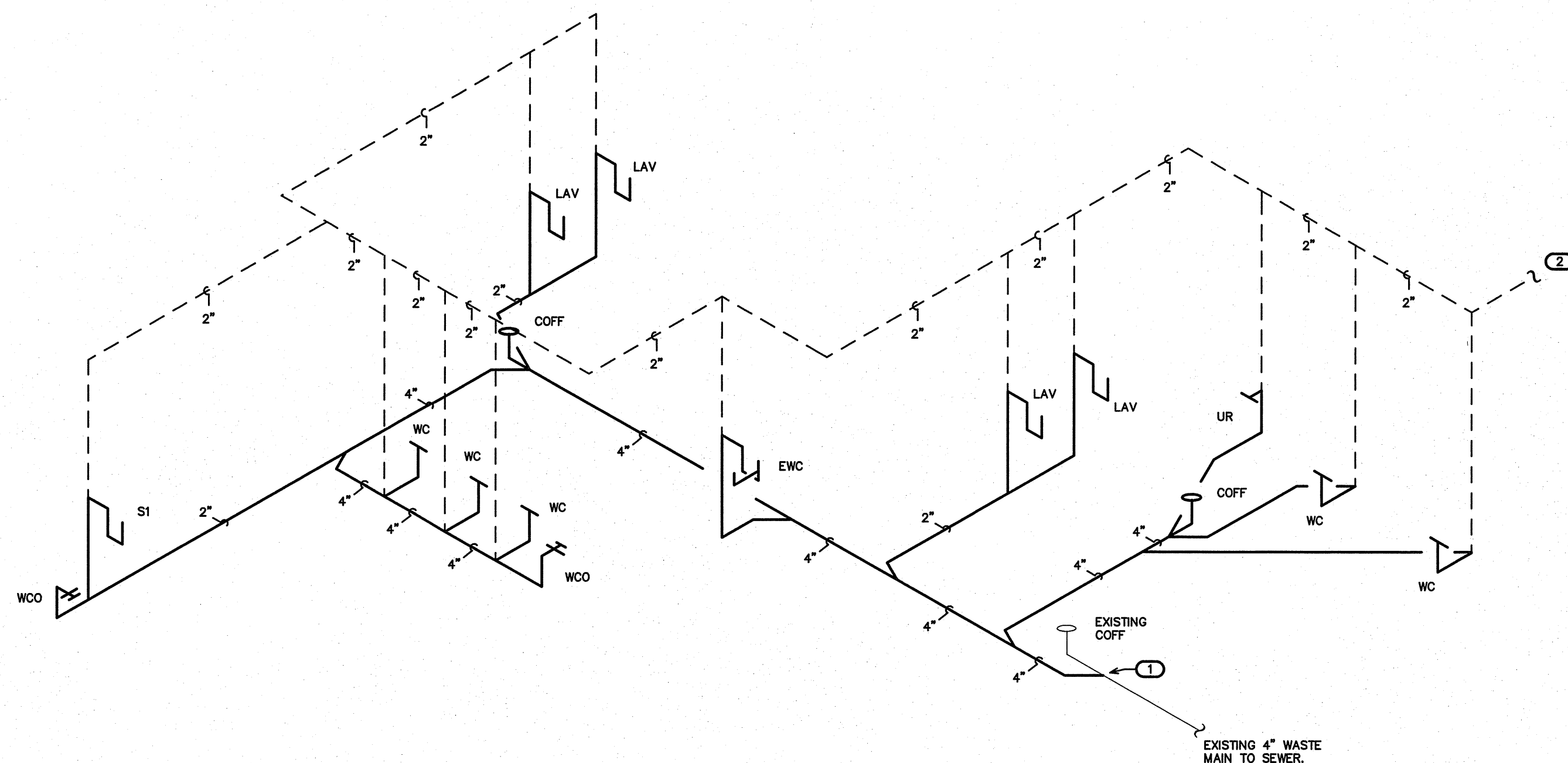
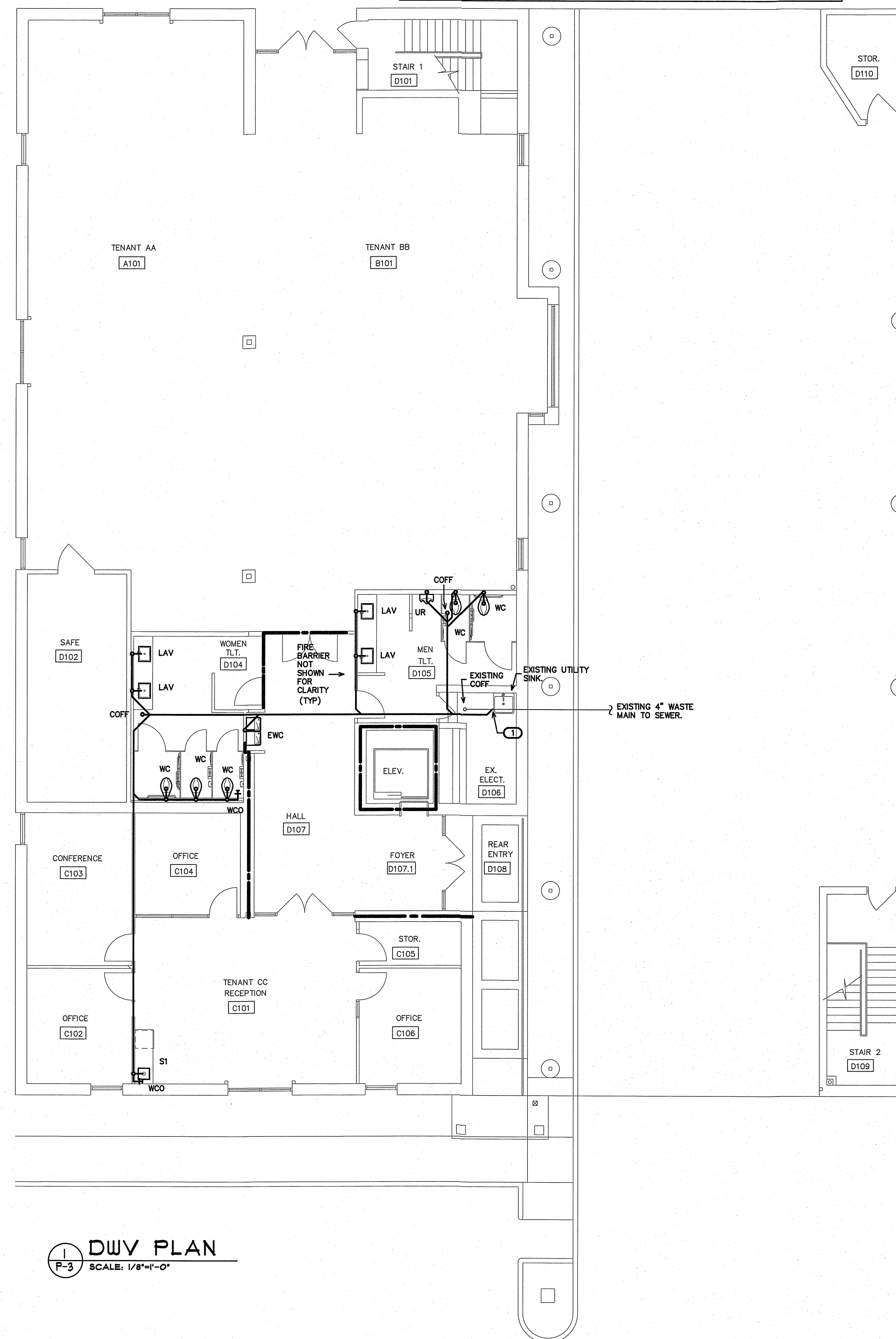
1. CONNECT TO EXISTING 4" SANITARY WASTE
MAIN IN AREA. VERIFY LOCATION.
2. CONNECT TO EXISTING 2" (MIN.) VENT
ABOVE CEILING/BELOW ROOF STRUCTURE.
VERIFY LOCATION/ROUTING.

(VERIFY ALL EQUIPMENT REQUIREMENTS PRIOR TO ROUGH-IN)

PIPE SIZING SCHEDULE		
FIXTURE TYPE	DRAIN	VENT
(EWC) ELECTRIC WATER COOLER	1 1/4"	1 1/4"
(LAV) LAVATORY	1 1/2"	1 1/4"
(SI) SINK	1 1/2"	1 1/4"
(UR) URINAL	2"	1 1/2"
(WC) FLUSH VALVE WATER CLOSET	3"	1 1/2"

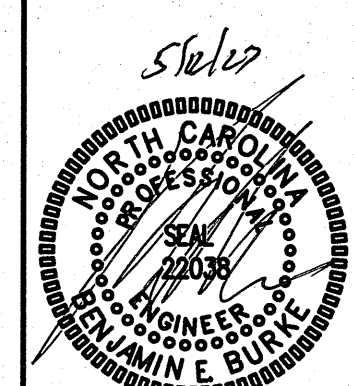
DWV RISER NOTES:

REPRESENTATIVE SIZES ARE GIVEN FOR EACH TYPE OF FIXTURE.
SEE PIPE SIZING SCHEDULE.
MINIMUM 2" DRAIN LINE SIZE UNDER SLAB.
MAINTAIN PIPE SIZES SHOWN UNTIL LARGER SIZE IS REACHED.
PIPE SIZES ARE MINIMUMS FOR INDIVIDUAL FIXTURES U.O.N.

2 DWV RISER
P-3 SCALE: NOT TO SCALE1 DWV PLAN
P-3 SCALE: 1/8"=1'-0"

ENGINEER

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WATER
PLAN

23001

ISSUED: 5-10-2023

DWG BY: -

CKD BY: BEB

REVISIONS

SHEET NO.

P-4

NOTE:
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THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE SITE AND FIELD VERIFYING ALL
RELEVANT INFORMATION. THE SUBMISSION OF A BID INDICATES ACCEPTANCE OF EXISTING CONDITIONS.
NOTIFY THE ENGINEER OF ANY DISCREPANCIES NOTED.

IT IS THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR TO LOCATE ANY AND ALL EXISTING
BUILDING SYSTEMS IN CONCRETE, FLOORS, WALLS, CEILINGS, ETC., PRIOR TO START OF WORK,
THAT MAY BE ENCOUNTERED DURING CONSTRUCTION TO DETERMINE METHODS REQUIRED TO AVOID
AND/OR MAINTAIN EXISTING SYSTEMS OPERATION. COORDINATE WITH BLDG. OWNER, ARCH., E.C.
REMOVE ALL UNUSED CW AND HW LINES/STUB-OUTS, ETC., AND CAP LINES BEHIND FINAL FINISHES.
REMOVE AND REPLACE ALL CONCRETE, WALL BOARD AND CEILINGS AS REQUIRED TO LOCATE EXISTING
LINES AND INSTALL NEW LINES. ALL EXISTING FIXTURES, ETC., MAY NOT BE SHOWN.

COORDINATE WORK WITH BUILDING OWNER SO AS NOT TO IMPACT OPERATION OF ANY ADJACENT
SPACES/LEVELS. NIGHT AND WEEKEND WORK MAY BE REQUIRED.

KEY NOTE FOR SHEET P-4

- 1 CONNECT TO EXISTING 2" BUILDING CW MAIN ABOVE
CEILING OR AS REQUIRED. VERIFY LOCATION/ROUTING.
- 2 RESUPPLY HW TO EXISTING UTILITY SINK (CW EXISTING).

(VERIFY ALL EQUIPMENT REQUIREMENTS PRIOR TO ROUGH-IN)

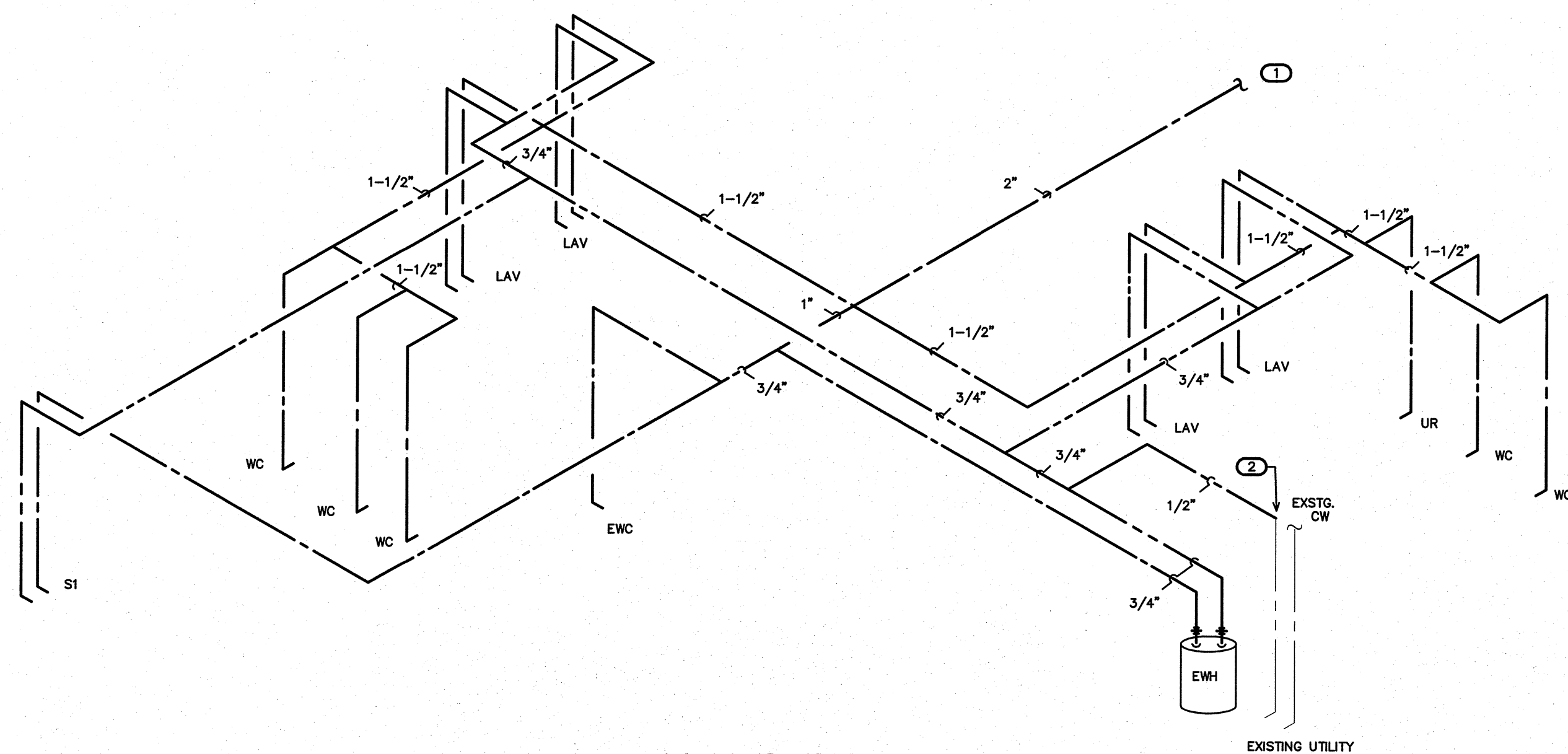
PIPE SIZING SCHEDULE		
FIXTURE TYPE	CW	HW
(EWC) ELECTRIC WATER COOLER	1/2" *	-
(LAV) LAVATORY	1/2"	1/2"
(S1) SINK	1/2"	1/2"
(UR) URINAL	3/4"	-
(WC) FLUSH VALVE WATER CLOSET	1"	-

* PROVIDE BACKFLOW PREVENTER PER NCSPC-PLUMBING SECT. 608.3.
EX: ASSE 1024 (WATTS SERIES 7 OR EQUAL) ASSE 1022 (WATTS
SERIES SD-3 EQUAL) ETC., WHERE REQUIRED IF NOT AN INTEGRAL
PART OF THE EQUIPMENT.

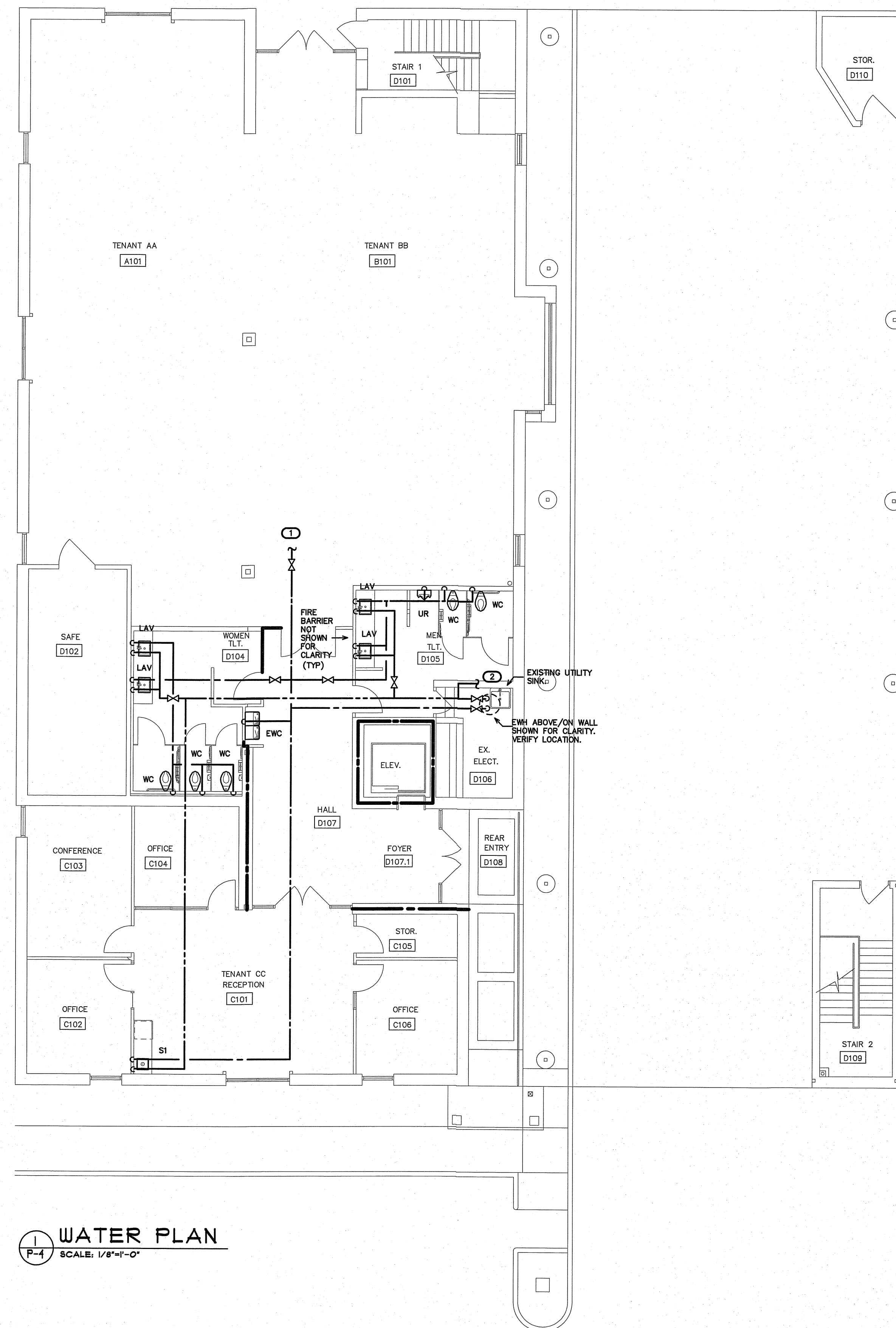
RISER NOTES:
REPRESENTATIVE SIZES ARE GIVEN FOR EACH TYPE OF FIXTURE.
SEE PIPE SIZING SCHEDULE.

MAINTAIN PIPE SIZES SHOWN UNTIL LARGER SIZE IS REACHED.
PIPE SIZES ARE MINIMUMS FOR INDIVIDUAL FIXTURES U.O.N.

NOTE:
SEE PLAN FOR SHUT-OFF VALVE LOCATIONS.
COORDINATE LOCATION AND NUMBER
WITH LOCAL INSPECTIONS DEPARTMENT.
PROVIDE ACCESS DOORS IF REQUIRED.



2 WATER RISER
P-4 SCALE: NOT TO SCALE



1 WATER PLAN
P-4 SCALE: 1/8"=1'-0"

ENGINEER

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email: ben@bdg-nc.com
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HVAC EQUIPMENT SCHEDULE	
HVAC SYSTEM #X	
AHU #X DIRECT EXPANSION FAN COIL UNIT	CARRIER MODEL #FX4CNF037, 4 WAY, MULTIPPOSE FAN COIL UNIT, 6 KW HEATER. * NOMINAL CAPACITY = 36,000 BTUH, 1200 CFM NOMINAL. PROVIDE HARD SHUT-OFF TXV VALVE. 3 TON NOMINAL. PROVIDE PROGRAMMABLE THERMOSTAT AND FILTER RACK WITH HINGED DOOR. 1/2HP, 4.1A MOTOR FLA, 28.9A HEAT FLA, 208V, 1 PH, 44.7A MCA, 45A MOCP AHU & HEAT.
HP #X OUTDOOR HEAT PUMP UNIT	CARRIER MODEL #25HCC536A0030, 3 TON OUTDOOR HEAT PUMP UNIT, 15 SEER, PROVIDE CYCLE * PROTECTOR, LOW PRESSURE SWITCH, CRANKCASE HEATER, 208 VOLT 1 PHASE. COMP 16.7A RLA, FAN 1.2A FLA, OUTDOOR HEAT PUMP 22.1A MCA, 35A MOCP.

* OR APPROVED EQUAL

AHU CONTROL NOTE:

FOR EACH SYSTEM PROVIDE "SIMPLE ENGINEERED SOLUTIONS" MODEL #HPM-XX HEAT PUMP
DEHUMIDIFICATION CONTROL MODULE. PROVIDE PROGRAMMABLE ELECTRONIC THERMOSTAT WITH AUTO
CHANGEOVER AND HUMIDISTAT FUNCTION. THERMOSTAT SHALL BE COMPATIBLE WITH DEHUMIDIFICATION
CONTROL MODULE. PURPOSE OF DEHUMIDIFICATION CONTROL MODULE IS TO INITIATE COOLING MODE
WHEN HUMIDISTAT SENSES HUMIDITY OVER SETPOINT AND ENERGIZE AND CONTROL ELECTRIC HEAT TO
MAINTAIN SPACE TEMPERATURE. CONTACT SIMPLE ENGINEERED SOLUTIONS FOR INFORMATION ON
DEHUMIDIFICATION CONTROL MODULE: (910) 231-9929, email: jmsuggs@ychoo.com.

AIR DISTRIBUTION SCHEDULE							
MARK	* MANUFACTURER	MODEL NO.	NECK SIZE	FACE SIZE	MATERIAL	SERVICE	NOTES
A	CARNES	SPAB224	SEE FLEXIBLE DUCT SCHEDULE	24" X 24"	STEEL	SUPPLY	LAY-IN CEILING, WHITE 4-WAY BLOW
B	CARNES	RTDBH	4" X 9"	6" X 11"	STEEL	SUPPLY	DUCT, SIDE WALL, OR CEILING MOUNTED
RA	CARNES	SPRB22	SEE FLEXIBLE DUCT SCHEDULE	24" X 24"	STEEL	RETURN	LAY-IN CEILING, WHITE
RB	CARNES	RSABH	24" X 16"	26" X 18"	STEEL	RETURN	WHITE, SIDEWALL MOUNTED

* OR APPROVED EQUAL

COORDINATE BORDER TYPE WITH THE CEILING TYPE. SEE ARCH SHEETS
PROVIDE CUT SHEETS TO OWNER/ARCH. PRIOR TO ORDERING.

EXHAUST FAN SCHEDULE	
EXHAUST FAN #1-2 (EF-1&2)	* CARNES MODEL# V000025C EXHAUST FAN, 250 CFM @ 1/4" SP, 830 RPM, 2.2 AMPS, 120V. THE ELECTRICAL CONTRACTOR SHALL PROVIDE THE SWITCH AND WIRE THE UNIT. THE HVAC CONTRACTOR SHALL PROVIDE UNIT, 8" RIGID DUCT TO EXTERIOR, FLASHING AND ROOF CAP. LOCATE EXHAUST TERMINATION A MINIMUM OF 10'-0" FROM ANY INTAKES.

* OR APPROVED EQUAL

NOTE: RUN EXHAUST DUCTS HORIZONTALLY AS REQUIRED TO MAINTAIN 10'-0" MINIMUM SEPARATION FROM ANY INTAKES.

FLEXIBLE DUCTWORK SIZES		
MAXIMUM CFM'S		
SIZES	SUPPLY	RETURN
6"	100	100
8"	175	175
10"	250	250
12"	400	350
14"	550	500
16"	NA	900

(CHANGE OUT EXISTING FLEX DUCTS AND COLLARS AS REQUIRED
TO GET NEW CFM'S SHOWN)

FLEXIBLE DUCTWORK NOTES	
1) INSTALL FLEXIBLE DUCTWORK RUNS AS STRAIGHT AS POSSIBLE.	
2) DO NOT ALLOW FLEXIBLE DUCT TO SAG BETWEEN SUPPORTS.	
3) DO NOT STRETCH A SHORT SECTION TO FIT A SLIGHTLY LONGER SECTION. THIS DISTORTS THE DUCT SHAPE AND IMPEDES AIR FLOW.	
4) DO NOT CRUSH DUCTWORK TO FIT IN A SPACE SMALLER THAN ITS ORIGINAL OUTSIDE DIAMETER. MAXIMUM ALLOWABLE DEFORMATION IS 15% OF ORIGINAL VOLUME.	
5) USE RIGID 90 DEGREE ELBOWS AT ANY LOCATION WHERE THE DUCTWORK BECOMES DISTORTED.	
6) EXTREME CARE SHALL BE TAKEN TO ELIMINATE ANY REDUCTION IN FLOW WITHIN THE FLEXIBLE DUCTS. THE MECH. CONTRACTOR WILL BE REQUIRED TO REPLACE THE FLEXIBLE DUCT WITH RIGID IF PROPER FLOW IS NOT OBTAINED.	
7) SIZE ALL FLEXIBLE DUCT SO AS NOT TO EXCEED MAXIMUM CFM'S GIVEN IN TABLE.	

GENERAL NOTES – MECHANICAL

- ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE CODE AND ALL LOCAL AND OTHER APPLICABLE CODES.
- ANY PERMITS AND INSPECTION FEES SHALL BE SECURED AND PAID FOR BY THE MECHANICAL CONTRACTOR (MC).
- ALL WORK SHALL BE PERFORMED BY EXPERIENCED AND SKILLED CRAFTSMEN. THE MC SHALL COORDINATE ALL OF HIS WORK WITH THE GENERAL CONTRACTOR (GC) AND OTHER TRADES.
- THE LOCATION OF ALL DUCT, PIPING AND EQUIPMENT SHALL BE ADJUSTED TO ACCOMMODATE ANTICIPATED OR ENCOUNTERED INTERFERENCES.
- THESE PLANS ARE DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS. FOR DIMENSIONS REFER TO THE ARCHITECTURAL PLANS.
- THE MC SHALL BE RESPONSIBLE FOR ALL ELECTRICAL STARTERS INTERLOCKS, CONTROL WIRING CONDUIT AND POWER WIRING FROM DISCONNECTS TO HIS EQUIPMENT, USING A LICENSED ELECTRICIAN.
- THE MC SHALL USE FIRE DAMPERS FOR PROTECTION OF THE OPENING IN ACCORDANCE WITH STATE AND LOCAL CODES IN ALL LOCATIONS WHERE PENETRATIONS OF RATED WALLS AND FLOORS OCCUR. SEE ARCHITECTURAL PLANS FOR RATED WALL AND FLOOR LOCATIONS. PROVIDE ACCESS DOORS AT ALL DAMPER LOCATIONS. LOCATE DOORS FOR EASY ACCESS.
- INSTALL FLEXIBLE CONNECTORS ON SUPPLY AND RETURN DUCTWORK AHU. ALL MECHANICAL EQUIPMENT SHALL OPERATE FREE OF OBJECTIONAL NOISE AND VIBRATION.
- INSTALL TURNING VANES IN SUPPLY DUCTS AT ALL ELBOWS AND SPLITTER DAMPERS. PROVIDE BALANCING DAMPERS IN ALL DUCTS WHERE SHOWN OR REQUIRED FOR SYSTEM BALANCING.
- DUCT DIMENSIONS ARE SHOWN INSIDE CLEAR.
- THE MC SHALL KEEP THE PREMISES CLEAR OF DEBRIS FROM HIS WORK DURING CONSTRUCTION AND LEAVE THE AREA AND BUILDING CLEAN AT THE COMPLETION OF HIS WORK. HE SHALL ALSO LEAVE CLEAN ALL EXPOSED EQUIPMENT IN HIS CONTRACT.
- PROVIDE ALL REQUIRED ROOF PENETRATIONS FOR THE INSTALLATION OF THE NEW EQUIPMENT. ALL FLASHINGS ARE BY THE MECHANICAL CONTRACTOR. ALL ROOFING WORK SHALL BE DONE BY A LICENSED ROOFING CONTRACTOR SO AS TO MAINTAIN ORIGINAL WARRANTY.
- THE M.C. SHALL COORDINATE WITH AND PROVIDE EQUIPMENT SPEC. SHEETS TO THE GENERAL AND ELECTRICAL CONTRACTORS FOR REVIEW PRIOR TO ORDERING EQUIPMENT.
- PROPERLY SUPPORT ALL DUCT WORK, AND EQUIP FROM STRUCTURE. PROVIDE ALL STRUCTURAL SUPPORTS FOR THE LOADS AS REQUIRED AT NO ADDITIONAL COST TO THE OWNER.

LEGEND – MECHANICAL

	RECTANGULAR DUCTWORK, INSIDE CLEAR DIMENSION INDICATED (WIDTH X HEIGHT)
	FLEXIBLE DUCTWORK
	ROUND GALVANIZED STEEL DUCT INSIDE CLEAR DIMENSION INDICATED.
	DOUBLE WALLED GALVANIZED STEEL SPIRAL DUCT INSIDE CLEAR DIMENSION INDICATED.
	DUCT MOUNTED SUPPLY AIR DIFFUSER
	SUPPLY DIFFUSER
	RETURN GRILLE
	WALL MOUNTED THERMOSTAT (UNIT SERVED IS INDICATED)
	GRILLE TYPE MIN. CFM
	1 HOUR FIRE BARRIER
	CONDENSATE PIPING
	REFRIGERANT PIPING

APPENDIX B

2018 BUILDING CODE SUMMARY
FOR ALL COMMERCIAL PROJECTS

MECHANICAL DESIGN
(PROVIDE ON THE MECHANICAL SHEETS IF APPLICABLE)
MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEM AND EQUIPMENT

Thermal Zone

winter dry bulb 18F
summer dry bulb 83F

Interior Design Conditions

winter dry bulb 72F
summer dry bulb 75F
relative humidity 50%

Building Heating Load 21,700 BTU/hr
(Tenant space only)

Building Cooling Load 33,600 BTU/hr
(Tenant space only)

Mechanical Spacing Conditioning System

Unitary – The tenant space is served the following systems:
(1) New 3 Ton split system heat pump unit

Boiler – Not applicable to this project.

Chiller – Not applicable to this project.

Equipment efficiencies

Efficiencies and outputs are listed on equipment
schedules – See drawings.

OA SCHEDULE OUTDOOR VENTILATION AIR PROVIDED PER TABLE 403.3 NCSCB MECHANICAL CODE.								
APPLICATION	SQUARE FOOTAGE (SF)	AREA OUTDOOR AIR FLOW RATE (CFM/SF)	PEOPLE OUTDOOR AIR FLOW RATE (CFM/PERSON)	OCCUPANCY DENSITY RATE (# PEOPLE/ 1000SF)	OCCUPANCY (# PEOPLE)	AREA OUTDOOR AIR FLOW (CFM)	PEOPLE OUTDOOR AIR FLOW (CFM)	TOTAL (CFM)
OFFICE	859	0.06	5	5	6	52	30	82
CORRIDOR	429	0.06	–	–	–	26	–	26
STORAGE	128	0.12	–	–	–	15	–	15
CONFERENCE	193	0.08	5	50	10	12	50	62
TOTAL REQUIRED								185
OUTDOOR AIR PROVIDED FROM EACH HVAC UNIT *								
HVAC UNIT		OUTDOOR AIR (CFM)						
AHU-3		200 – 8" DIA. O.A. DUCT						
TOTAL PROVIDED		200						
APPLICATION		CFM						
TOILETS		70 CFM/FLUSHING FIXTURE						
6 FLUSHING FIXTURE X 70 CFM = 420 CFM								
EXHAUST PROVIDED BY TWO EXHAUST FANS, MAKE UP AIR BY TRANSFER AIR								

* SET OUTDOOR AIR DAMPER CONTROLS TO PROVIDE OUTDOOR AIR AS INDICATED IN THIS SCHEDULE.

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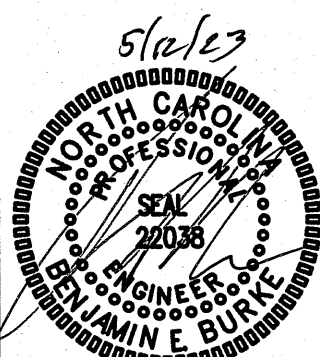


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BURNS AND WILCOX CENTER
FIRST FLOOR RENOVATIONS TENANT C
MOREHEAD CITY, NORTH CAROLINA



HVAC SCHED, NOTES,
LEGENDS

23001

ISSUED: 5-10-2023

DWG BY: CLS

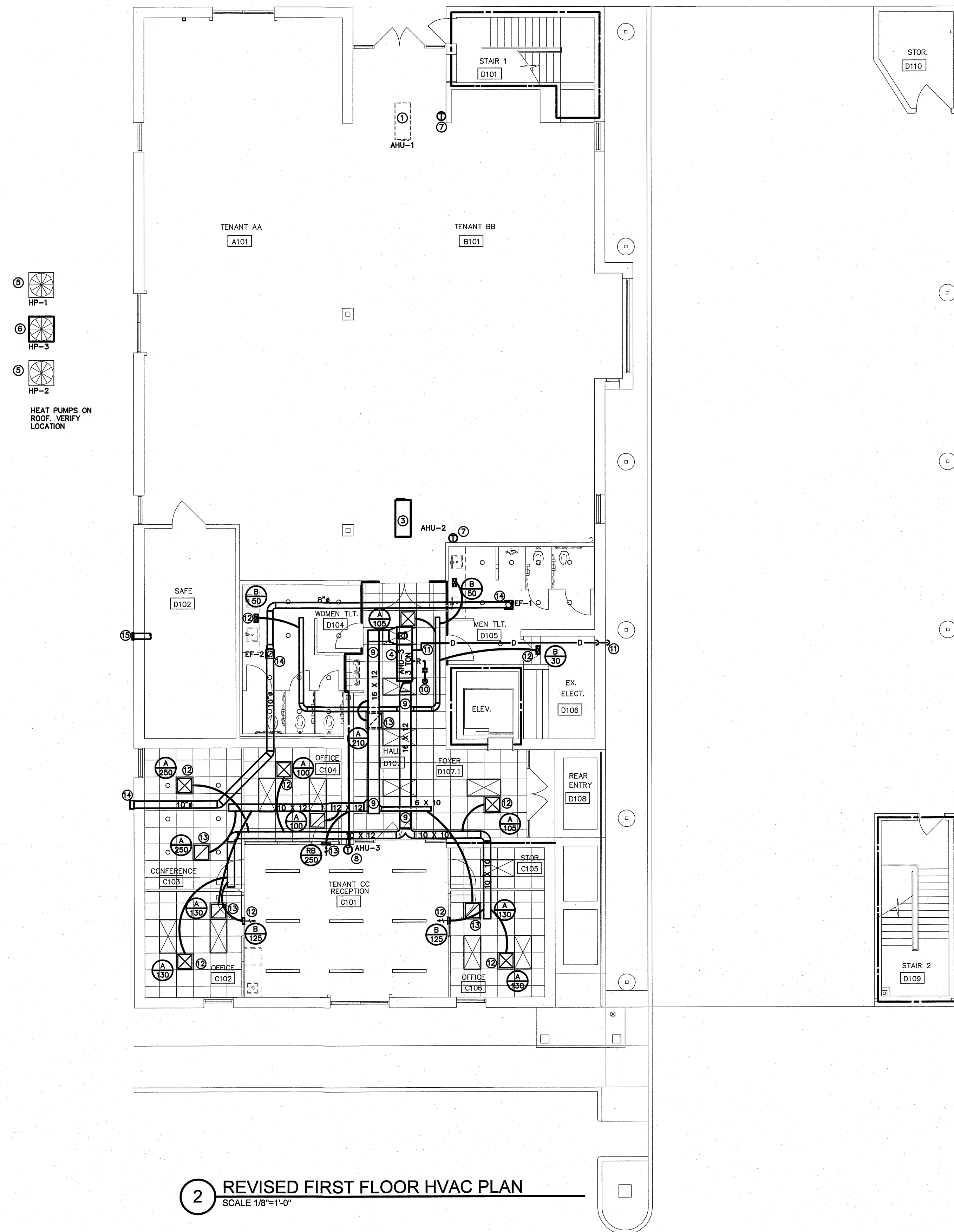
CKD BY: BEB

REVISIONS

SHEET NO.

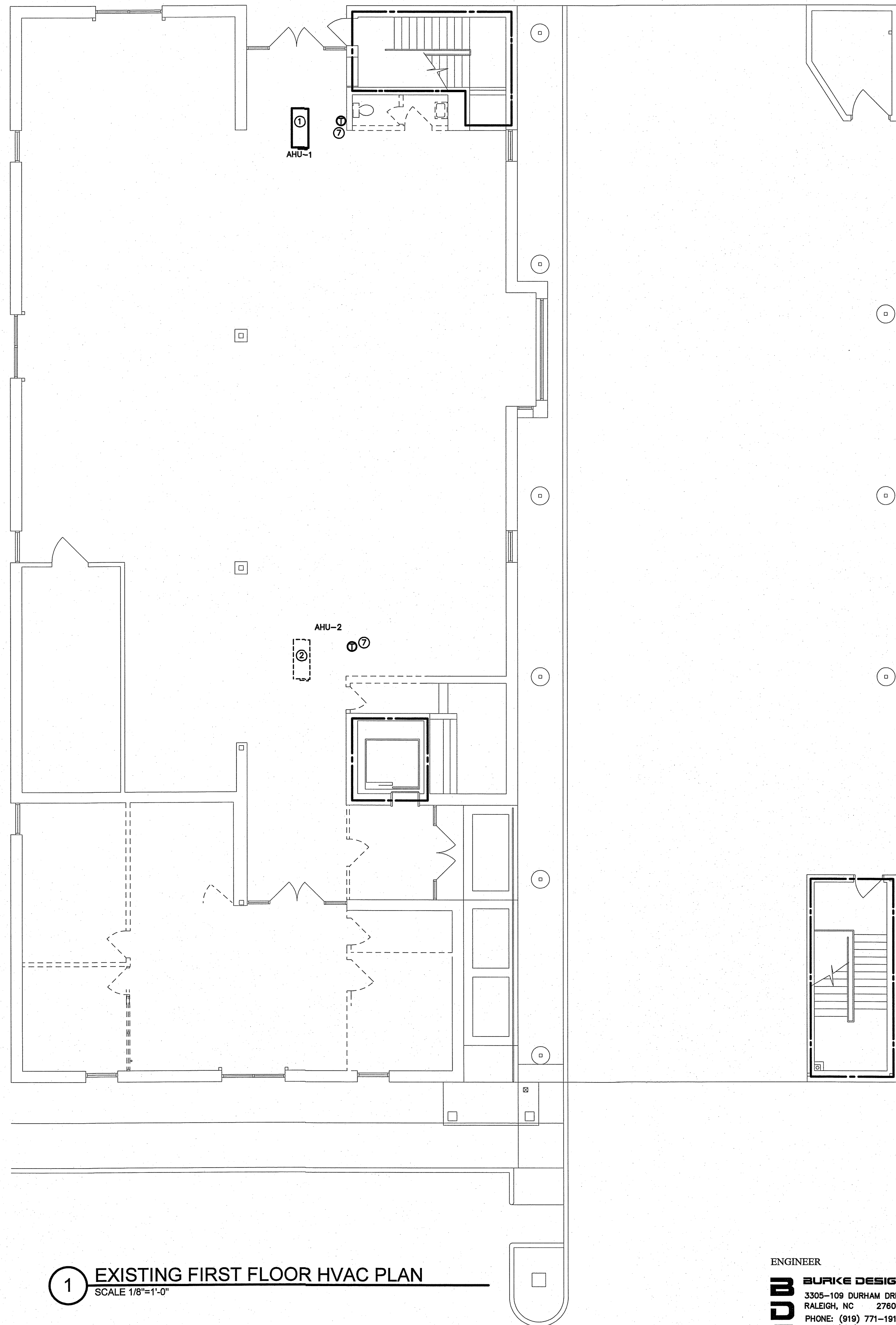
M-1

NOTE:
THE EXISTING INFORMATION SHOWN ON THIS DRAWING IS FROM PREVIOUS PERMIT DRAWINGS AND FIELD INVESTIGATION.
THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE SITE AND FIELD VERIFYING ALL RELEVANT INFORMATION.
THE SUBMISSION OF A BID INDICATES ACCEPTANCE OF EXISTING CONDITIONS. NOTIFY THE ENGINEER
OF ANY DISCREPANCIES NOTED.



2 REVISED FIRST FLOOR HVAC PLAN
SCALE 1/8"=1'-0"

- KEY NOTES FOR SHEET M2
- EXISTING AIR HANDLER TO REMAIN.
 - EXISTING AIR HANDLER TO BE RELOCATED
 - NEW LOCATION FOR EXISTING AIR HANDLER, EXTEND DRAIN & CONDENSATE LINES AS REQUIRED
 - NEW AIR HANDLER MOUNTED FROM STRUCTURAL FRAMING.
 - EXISTING HEAT PUMP ON ROOF.
 - NEW HEAT PUMP ON ROOF.
 - EXISTING THERMOSTAT TO REMAIN.
 - NEW THERMOSTAT. MOUNT AT 48" AFF.
 - NEW DUCTWORK, MOUNTED TO STRUCTURAL FRAMING. RUN ABOVE NEW LAY-IN CEILING. SEE DETAIL 1A3/M3.
 - RUN REFRIGERANT PIPING CONCEALED ABOVE NEW CEILING AND UP TO ROOF MOUNTED HEAT PUMP IN CHASE OR CONCEALED IN WALLS.
 - RUN CONDENSATE PIPING CONCEALED ABOVE NEW CEILING AND DOWN IN EXTERIOR WALL TO 6" ABOVE FINISH GRADE. TERMINATE IN ELBOW TURNED DOWN.
 - NEW SUPPLY AIR DIFFUSERS.
 - NEW RETURN AIR GRILLES.
 - FOR TWO EXHAUST FANS, RUN 8" DIAMETER RIGID EXHAUST DUCTS TO AN 10" EXHAUST DUCT AND TERMINATE AT A WALL MOUNTED LOW PROFILE EXHAUST CAP. COORDINATE WITH ARCH/OWNER. EXHAUST DISCHARGE SHALL BE 10'-0" MIN. FROM ANY OUTSIDE AIR INTAKE.
 - WALL MOUNTED OUTSIDE AIR INTAKE HOOD TO 8" DIA. RIGID DUCT SUPPLYING AHU-3. AIR INTAKE SHALL BE 10'-0" MIN. FROM ANY OUTSIDE EXHAUST DISCHARGE.



1 EXISTING FIRST FLOOR HVAC PLAN
SCALE 1/8"=1'-0"

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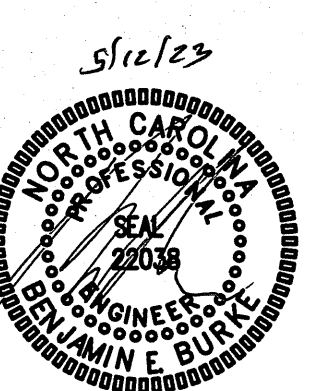
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**BURNS AND WILCOX CENTER
FIRST FLOOR RENOVATIONS TENANT C
MOREHEAD CITY, NORTH CAROLINA**



HVAC PLAN

23001

ISSUED: 5-10-2023

DWG BY: -

CKD BY: BEB

REVISIONS

SHEET NO.

M-2

DIVISION 15 B - HEATING, VENTILATING AND AIR CONDITIONING

1.1 DESCRIPTION OF THE WORK

- A. Work under this section includes, but is not necessarily limited to, furnishing and installing the following:

1. Heating, ventilation, and air conditioning equipment.
2. Ductwork.
3. Grilles and diffusers.
4. Controls and control wiring.
5. Condensate piping.

- B. All work under this contract shall be installed in compliance with the latest edition of the following codes and standards insofar as they apply:

1. ASHRAE Guide
2. National Electric Code.
3. 2018 NC State Building Code: Mech. Code.
4. The Electrical Specifications for this project.
5. SMACNA HVAC Duct Construction Standards.
6. All local codes and ordinances.
7. ARI rating.
8. 2018 NC State Building Code: Energy Conservation Code.

- C. These codes are minimum standards. If codes require a more stringent method of construction than the specifications require, the codes shall govern.

- D. The HVAC Contractor shall be licensed in North Carolina and have all local licenses required for the work.

1.2 INTENT

- A. The intent of these specification and the accompanying drawing is to convey as reasonably as possible the requirements for a complete job ready for the building to operate. The HVAC Contractor shall take this into consideration and include in his bid allowance for contingencies as will allow him to provide minor pieces of equipment and labor not specifically indicated but required for the job to operate properly, at no additional cost to the Owner.

1.3 COORDINATION

- A. Coordinate work with other contractors. Notify Owner of apparent conflicts early to expedite construction. If structural damage appears imminent, stop work and notify Owner for a decision before resuming operations.

- B. Locations shown are approximate. The HVAC Contractor shall verify with owner, the placement of equipment, fixtures, outlets, etc. The drawings do not give exact details as to elevations and locations of various pipes, fittings, ducts, conduit, etc., and do not show all offsets and other installation details which may be required.

- C. Changes in duct or piping design caused by obstructions shall be submitted to Engineer in sketch form for study and comment prior to execution. Additional cost will not be allowed for this type of work.

1.4 SHOP DRAWINGS

- A. Shop drawings shall be submitted for all major items of equipment. These may consist of the manufacturer's standard catalog or tear sheets and shall have the exact items being offered clearly identified. Shop drawings shall include but are not limited to the following:

1. All equipment and accessories.
2. Grilles and diffusers.
3. Unit sizes and requirements.

PART 2 - PRODUCTS

2.1 EQUIPMENT

- A. All air handling devices must have the manufacturer's recommended filter rack, for 1" thick filters.

2.2 PIPING

- A. Condensate drain piping shall be PVC pipe. Provide tee and plug at changes in direction. Route pipe to proper termination point. All condensate piping shall be insulated with flexible elastomeric insulation. Provide copper piping in plenum areas.

2.3 DUCTWORK

- A. Ductwork shall be built in accordance with SMACNA HVAC Duct construction standards. Furnish and install all supply, return, and ventilation ductwork shown, together with splitters, deflectors, dampers, etc. This work shall be constructed of new galvanized prime grade steel sheets. The gauges of metal to be used and the construction and bracing of joints shall be in accordance with the SMACNA recommendations.

- B. Seal all sheet metal joints with fiber impregnated mastic. Support from building structure on strap hangers not over 8 feet apart.

- D. Use manufactured turning vanes in each elbow where required or where indicated on drawings.

- E. Flexible connectors shall be 3 inches wide, of fireproof material and used to isolate noise between equipment and ductwork on supply and return side of all units.

- F. Round runouts, where used, shall be built in accordance with the above standards, and each runout shall also have manufactured side take off, adjustable quadrant damper at all accessible locations and shall be of Owens Corning INL-25 flexible duct with UL label. Flex duct lengths allowed up to 14 feet. Duct must be supported with sufficient hangers in order to prevent sags. Serpentine routing will not be permitted. Quadrant damper to be 22 gauge easily adjustable manually with exterior handle (similar to H&C Kwik-set) and is not to be mounted in side take-off.

2.4 DUCT INSULATION (LOW PRESSURE)

- A. All insulation, linings, coverings and adhesives shall have a flame spread classification of 25 or less and a smoke developed rating of not more than 50, exposed exterior piping.

- B. All duct insulation shall comply with Section 604, of the N. C. Building Code: Mechanical Code

- C. All supply and return ductwork shall be completely insulated, either internally or externally.

- D. Rectangular ductwork shall be lined with two-inch thick, 1.5 lb. per cubic foot density, duct liner, Armstrong, CSG Ultraliner, Johns Manville or approved equal.

- E. As an alternative to duct liner rectangular duct may be wrapped with Class I - 2" 3/4 lb. density (R-6.5) thick reinforced foil back fiberglass insulation, Owens-Corning Series ED or equal. Tape shall be Kraft reinforced foil tape or equal.

- F. Insulate all exhaust ductwork with with duct wrap insulation.

- G. Insulation shall be held in place with adhesive and welding pins 16" on center.

- H. Duct dimensions shown on the drawings are Net Inside Dimensions

2.5 THERMOSTATS

- A. Provide programmable electronic thermostats.

- B. Submit proposed thermostats for approval.

2.6 ROOF PENETRATIONS

- A. Provide pre-manufactured roof flashings compatible with equipment served.
- B. Coordinate roof work with roof system used. Provide proper flashing as required.
- C. Provide 1 year warranty on all roof work performed.

2.7 DUCT SMOKE DETECTORS

- A. Duct detectors are not required since units air flows are 2000 cfm or less per NCSCB: Mechanical Code, Section 606.2.

PART 3 - EXECUTION

3.1 PIPING

- A. The HVAC Contractor shall coordinate such routing with others, to line his work true to adjacent spaces and in a workmanlike manner and to use only short radius 90 degree elbows. Where required, piping to be sturdily supported and separated in a manner satisfactory to the Engineer.

- B. The HVAC Contractor shall paint all exterior refrigerant piping, with UV resistant paint as recommended by the closed cell insulation manufacturer.

- C. Insulate all condensate lines for their entire length with 1/2" closed cell insulation. Install insulation per the manufacturers recommendations.

3.2 ELECTRICAL WORK

- A. The electrical contractor shall provide all switches, starters, wire conduit for the air conditioning, heating and ventilation equipment. Control wiring shall be by the heating and air conditioning contractor.

- B. HVAC Contractor is responsible for verifying that power terminals have been properly grounded prior to operating equipment and must find connections to all equipment including control wiring.

- C. All materials and workmanship shall be in accordance with the electrical specifications for the project. All wiring shall be color coded, and as-built wiring diagram prepared showing all connections and colors of wiring and delivered to the Owner.

- D. Furnish certification for acceptance of control wiring from local electrical inspector prior to acceptance.

3.3 CLEAN UP

- A. During construction, keep the site clean of debris. Upon completion, and before final inspection, clean up the premises to remove all evidence of work. In addition upon completion of construction leave equipment clean.

- B. Furnish one box of clean filters, for each size required, at the time of final inspection to the owner.

3.4 OPERATOR'S MANUAL AND DIAGRAM

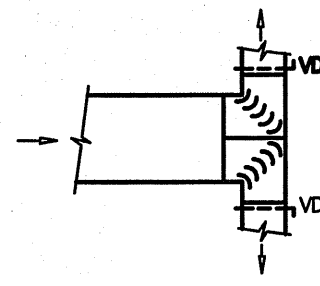
- A. The HVAC Contractor shall prepare in one copy a manual describing the proper maintenance and operation of the systems. This manual shall not consist of standard factory instructions (although these may be included) but shall be prepared to describe this particular job.

- B. The manual shall be bound, indexed, dated and signed by the HVAC Contractor.

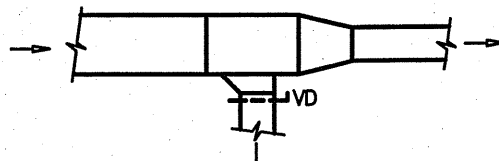
- C. Qualified representative of the HVAC contractor shall meet with the designated representatives of the Owner and the Owner's representative shall be instructed in the proper operation and maintenance of the control system and other systems.

3.5 GUARANTEE

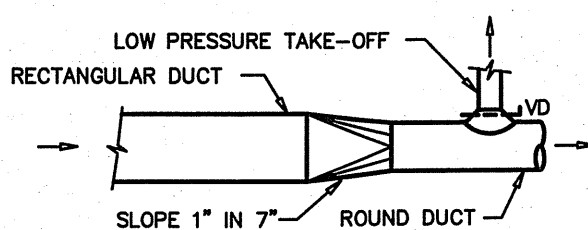
- A. Guarantee all materials and labor included in the HVAC work for a period of one year from date of final acceptance by the owner. In addition, motor compressors shall be a nonprorated five year warranty. Any part or parts of the work or equipment which prove to be defective during the guarantee period shall be replaced at no additional cost to the owner or tenant.
- B. All air flows must be measured and balanced to within 10% of design airflows. All equipment used must have a current certification. Provide two copies of the balance report to the owner at closeout. The HVAC contractor shall return and re-balance to occupant comfort after 90 days from close-out. Provide all balance dampers needed for satisfactory operation regardless if shown on the drawings or not, and shift location of thermostats if required for occupancy comfort.



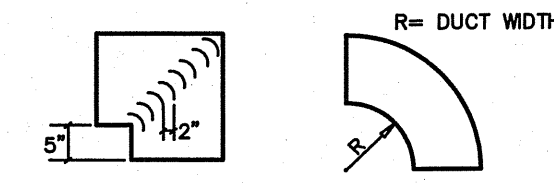
LOW PRESSURE TEE



LOW PRESSURE BRANCH TAKE-OFF



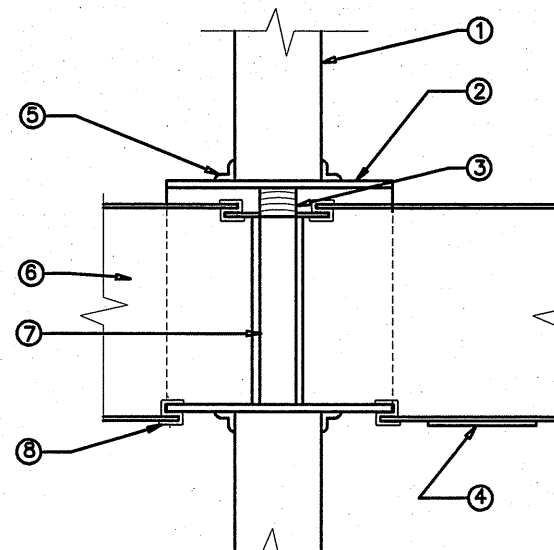
RECTANGULAR TO ROUND TRANSITION



SQUARE THROAT ELBOW FULL RADIUS ELBOW

LOW PRESSURE DUCT ELBOWS

2 DUCT CONSTRUCTION DETAIL
SCALE: NOT TO SCALE



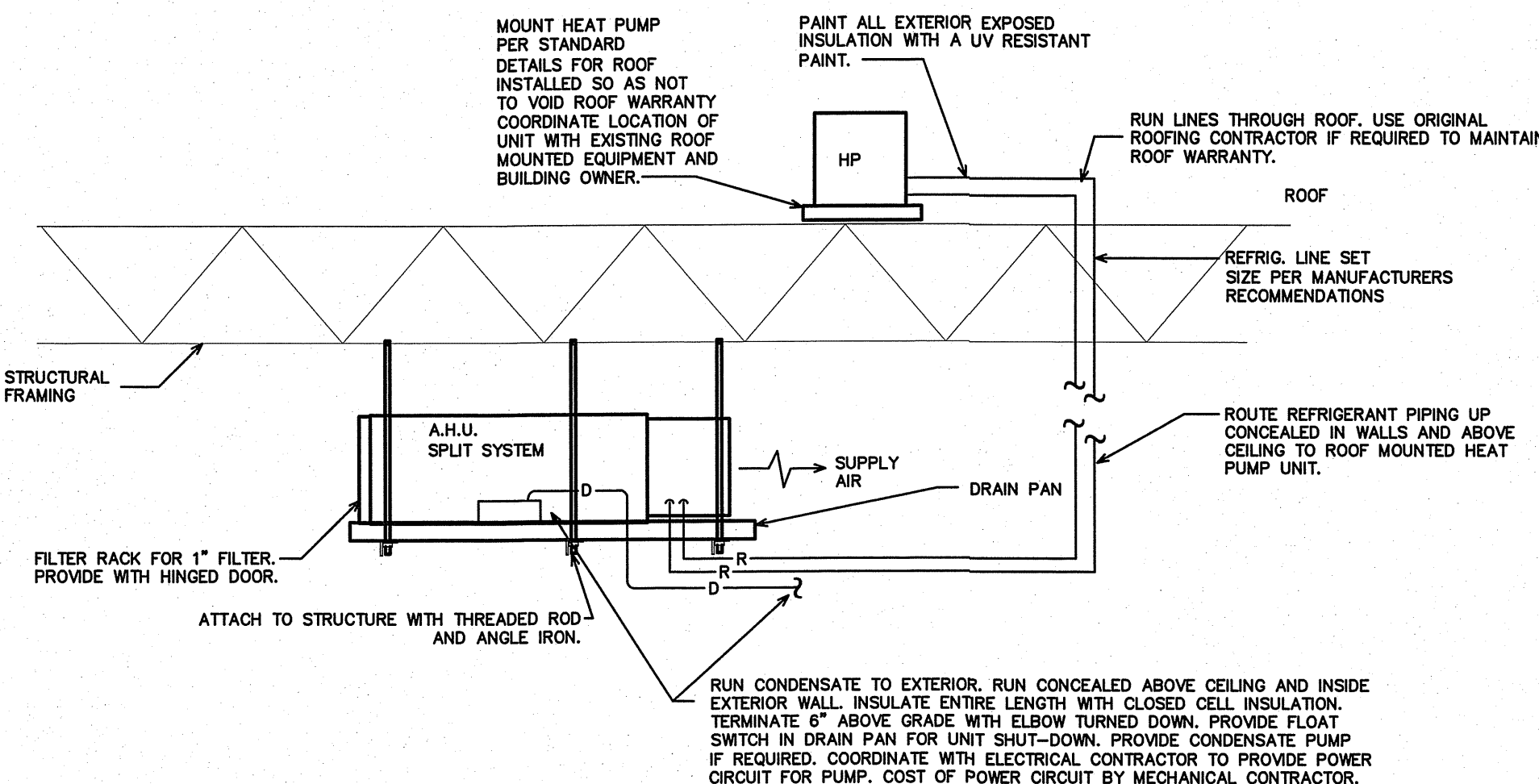
KEY NOTES FOR 03

1. 1-HOUR RATED GYPSUM BOARD WALL.
2. 14 GALVANIZED STEEL SLEEVE. FASTEN TO FIRE DAMPER FRAME.
3. CURTAIN
4. ACCESS DOOR. TYPICAL AT ALL FIRE DAMPERS.
5. 1-1/2" X 1-1/2" X 1/8" STEEL ANGLE. FASTEN TO SLEEVE.
6. DUCTWORK SIZE VARIES.
7. DYNAMIC FIRE DAMPER.
8. PROVIDE BREAK-AWAY JOINTS AT DUCT CONNECTIONS TO FIRE DAMPER AND SLEEVE.

RATED GYPSUM WALL PENETRATION

NOTE: THIS DETAIL IS FOR GENERAL DESIGN INTENT ONLY. INSTALL FIRE DAMPER PER MANUFACTURERS INSTRUCTIONS.

3 FIRE DAMPER DETAIL
SCALE: NOT TO SCALE



1 AIR HANDLING UNIT DETAIL
SCALE: NOT TO SCALE

ENGINEER

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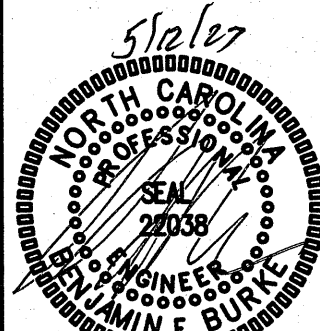
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BURNS AND WILCOX CENTER
FIRST FLOOR RENOVATIONS TENANT C
MOREHEAD CITY, NORTH CAROLINA



HVAC SPEC - 1 DETAILS

23001

ISSUED: 5-10-2023

DWG BY: -

CKD BY: BEB

REVISIONS

SHEET NO.

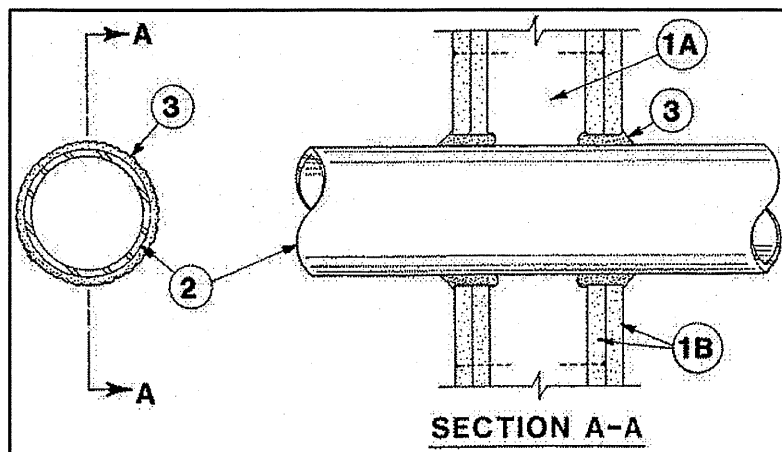
M-3

F Ratings --- 1, 2, 3 and 4 Hr (See Items 2 and 3)

T Ratings --- 0, 1, 2, 3, and 4 Hr (See Item 3)

L Rating At Ambient --- less than 1 CFM/sq ft

L Rating At 400 F --- less than 1 CFM/sq ft



1. **Wall Assembly** --- The 1, 2, 3 or 4 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300 or U400 Series Wall or Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

A. **Studs** --- Wall framing may consist of either wood studs (max 2 h fire rated assemblies) or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC with nom 2 by 4 in. lumber end plates and cross braces. Steel studs to be min 3-5/8 in. wide by 1-3/8 in. deep channels spaced max 24 in. OC.

B. **Gypsum Board** --- Nom 1/2 or 5/8 in. thick, 4 ft. wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 28 in.

2. **Through-Penetrant** --- One metallic pipe, conduit or tubing installed either concentrically or eccentrically within the firestop system. The annular space between pipe, conduit, or tubing and periphery of opening shall be min of 0 in. (point contact) to max 2 in. Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:

A. **Steel Pipe** --- Nom 24 in. diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. **Iron Pipe** --- Nom 24 in. diam (or smaller) service weight (or heavier) cast iron soil pipe, nom 12 in. diam (or smaller) or Class 50 (or heavier) ductile iron pressure pipe.

C. **Conduit** --- Nom 6 in. diam (or smaller) steel conduit or nom 4 in. diam (or smaller) steel electrical metallic tubing.

D. **Copper Tubing** --- Nom 6 in. diam (or smaller) Type L (or heavier) copper tubing.

E. **Copper Pipe** --- Nom 6 in. diam (or smaller) Regular (or heavier) copper pipe.

F. **Through Penetrating Products** --- **Flexible Metal Piping** --- The following types of steel flexible metal gas piping may be used:

1. Nom 2 in. diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly.

OMEGA FLEX INC

2. Nom 1 in. diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly.

GASTITE, DIV OF TITEFLEX

3. Nom 1 in. diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly.

WARD MFG LLC

Fill, Void or Cavity Materials --- **Caulk or Sealant** --- Min 5/8, 1-1/4, 1-7/8 and 2-1/2 in. thickness of caulk for 1, 2, 3 and 4 hr rated assemblies, respectively, applied with annulus, flush with both surfaces of wall. Min 1/4 in. diam bead of caulk applied to gypsum board/penetrant interface at point contact location on both sides of wall. The hourly F Rating of the firestop system is dependent upon the hourly fire rating of the wall assembly in which it is installed, as shown in the following table. The hourly T Rating of the firestop system is dependent upon the type or size of the pipe or conduit and the hourly fire rating of the wall assembly in which it is installed, as tabulated below:

Max Pipe or Conduit Diam In	F RATING Hr	T RATING Hr
1	1 or 2	0+, 1 or 2
4	3 or 4	3 or 4
1	1 or 2	0
6	3 or 4	0
12	1 or 2	0

+When copper pipe is used, T Rating is 0 hr.

3M COMPANY --- CP 25WB+ or FB-3000 WT.

+Bearing the UL Classification Mark

DIVISION 16 - ELECTRICAL

PART 1 - GENERAL

1.1 DESCRIPTION OF THE WORK

A. Work under this section includes, but is not necessarily limited to, furnishing and installing the following:

1. Electrical service and service equipment.
 2. Lighting and power distribution system.
 3. Provide lighting fixtures selected by owner with lamps to match.
 4. Wiring devices, boxes, cover plates, etc.
 5. Source of power for all items of equipment.
 6. Grounding.
 7. Other requirements and/or systems where shown.
- B. All work shall be complete and items, equipment, etc., shall be electrically connected for proper and correct operation.
- C. All work under this contract shall be installed in accordance with the latest edition of the following codes and standards insofar as they apply:
1. The 2020 National Electrical Code.
 2. The National Electrical Safety Code.
 3. Underwriter's Laboratories, Inc., Standards and approved listings.
 4. Electrical Testing Laboratories standards.
 5. North Carolina Building Code, Latest Edition and Revisions.
 6. All local codes and ordinances.
- D. The Electrical Contractor shall be licensed in the State of North Carolina and have all local licenses required for the work.
- E. Obtain all permits, licenses, inspections, etc., required for the work and pay for the same. Furnish final certificate of inspection and approval from the electrical inspector having jurisdiction prior to acceptance of the work.
- F. All work shall be done by skilled mechanics and shall present a neat, trim, workmanlike condition when complete.

1.2 INTENT

- A. The intent of these specifications and the accompanying drawings is to convey as reasonably as possible the requirements for a complete job ready for the building to operate. The Electrical Contractor shall take this into consideration and include in his bid allowance for contingencies as will allow him to provide minor pieces of equipment and labor not specifically indicated but required for the job to operate properly, at no additional cost to the Owner.

1.3 COORDINATION

- A. Coordinate work with other contractors. Notify Architect of apparent conflicts early to expedite construction. If structural damage appears imminent, stop work and notify Architect for a decision before resuming operations.

- B. Locations shown are approximate. The drawings do not give exact details as to elevations and locations of various pipes, fittings, ducts, conduit, etc., and do not show all offsets and other installation details which may be required. Coordinate all locations with architect before any rough-in.

1.4 SHOP DRAWINGS

- A. Shop drawings shall be submitted for panels and service equipment, lighting, wiring devices, and cover plates. These may consist of the manufacturer's standard catalog or tear sheets and shall have the exact items being offered clearly identified.

PART 2 - PRODUCTS AND MATERIALS

2.1 GENERAL

- A. All material shall be new and shall bear the manufacturer's name, trade name, and UL label where such standard has been established for the particular material. Materials shall be the standard products of manufacturer's regularly engaged in the manufacture of the required type of equipment and the manufacturer's latest approved design.
1. Boxes installed in concealed locations shall be set flush with the finished surfaces.
 2. Provide rated boxes in all fire barriers & walls installed per code.

2.2 NOT USED

2.3 CONDUCTORS

- A. Conductors shall be color coded, sizes #8 and larger may be color taped on the job. Color coding shall be: Standard Practice.
- B. Conductors shall be manufactured by Dodge, Southwire or approved equal. Conductors shall meet the latest requirements of NEMA and IPCEA and shall be UL approved.
- C. Metallic sheathed "MC" cable may be used where allowed by N.E.C.
- D. Conductors shall be spliced and taped as follows:
1. Size #10 and #12, use Ideal "Wing Nuts" or TAB "Piggy" connectors. Connectors shall be rated for 150 degrees C for use in recessed lighting fixtures.
 2. Size #8 and larger shall be solderless screw and screw-clamping type, smoothly covered and shopped with rubber gum type with final cover vinyl plastic electrical type. In lieu of rubber gum and vinyl plastic type, factory fabricated approved preformed insulating covers may be used. All connectors shall be UL approved.
 3. No split-bolt type connectors may be used.
- E. All branch wire and connections shall be copper and sized per National Electric Code.
- F. All conductors shall be continuous without splice between junction, outlet, device boxes, etc. No splicing will be permitted in panelboard cabinets, safety switches, etc.
- G. All wiring in mechanical spaces shall be plenum rated.
- H. Provide GFI protection within 6'-0" of any sink.
- I. All multi-wire branch circuits shall comply with 2020 NEC, 210.4(B).
- J. All wiring at medical facilities shall comply with 2020 NEC, 517.1.

2.4 PANELBOARDS, SAFETY SWITCHES

- A. Panelboards shall comply with NEMA Standard PB 1 - Latest Edition and as manufactured by Square D or ITE-Siemens.
- B. The contractor shall be responsible for correctly phasing the circuits in the panelboards.
- C. Safety switches shall be general duty type, size and rating as required for load service. Safety switches shall be fused or unfused as shown and/or as required. Safety switches serving motor loads shall be horsepower rated for load served.

2.5 NOT USED

2.6 WIRING DEVICES

- A. Wiring devices shall be commercial grade by Bryant, Leviton, or approved equal. With matching cover. Color by Architect.
- B. Wiring devices installed under a Kitchen Hood shall have stainless steel covers.
- C. Wiring devices installed over counters shall comply with ANSI A117.1.

2.7 NOT USED

2.8 CONDUIT

- A. PVC conduit will be allowed where N.E.C. approved.
- B. All service conduit shall be rigid where exposed below 6'-0" AFF or exposed to the elements or hazardous conditions.

PART 3 - EXECUTION

3.1 CIRCUIT GROUNDING

- A. All circuits shall contain an insulated, green, copper grounding conductor, sized in accordance with Table 250-95 of the NEC. Grounding conductors shall be connected to equipment grounding bus in panelboard and securely attached and grounded to the device or enclosure at the other end.

3.2 GROUNDING TYPE CONVENIENCE OUTLETS AND SWITCHES

- A. Outlets and switches shall be solidly grounded to equipment grounding system with a green colored insulated conductor. Electrical connections shall be continuous from equipment ground bus in panelboard to the hex nut on the convenience outlet or switch.

3.3 MOTORS

- A. All motors shall be connected to conduit system with short length (minimum length 24" and maximum length 36") of flexible liquidtight conduit.

3.4 NOT USED

3.5 EQUIPMENT LABELING

- A. Provide permanent name plates for all panelboards, safety switches, wiring troughs, etc., for identification of equipment controlled, services, etc. Nameplates shall be securely and permanently attached to equipment with stainless steel screws. Nameplates shall include the name of the equipment and where it is fed from.
- B. All switch plates, receptacle plates and outlet covers shall be labeled with machine printed vinyl labels identifying the circuit(s) within.
- C. All empty conduit runs shall be identified and indicated where they terminate.
- D. Provide typewritten directory in each panelboard to clearly identify each circuit, service, etc.

3.6 NOT USED

3.7 NOT USED

3.8 JUNCTION AND/OR PULL BOXES

- A. Boxes shall be installed where necessary to avoid excessive runs and/or too many bends between outlets.

3.9 PULL WIRE

- A. Leave pull wire in each empty conduit run.

3.10 NOT USED

3.11 GROUNDING

- A. All grounding shall be in accordance with Article 250 of the NEC. In addition, the following requirements shall be met:
1. Grounding conductors shall be installed as to permit the shortest and most direct path from equipment to ground. All connections to grounding conductors shall be accessible.
 2. Equipment ground continuity shall be maintained through flexible metal conduit.
 3. All wiring devices equipped with grounding connection shall be solidly grounded to ground system with grounding conductors.
 4. The frame of all lighting fixtures shall be securely grounded to the equipment ground system with grounding conductors.
 5. All equipment enclosures, and non-current-carrying metallic parts of electrical equipment, raceway systems, etc., shall be effectively and adequately bonded to ground.
 6. All equipment enclosures, and non-current-carrying metallic parts of electrical equipment, raceway systems, etc., shall be effectively and adequately bonded to ground.

3.12 ELECTRICAL WORK IN CONNECTION WITH OTHER WORK

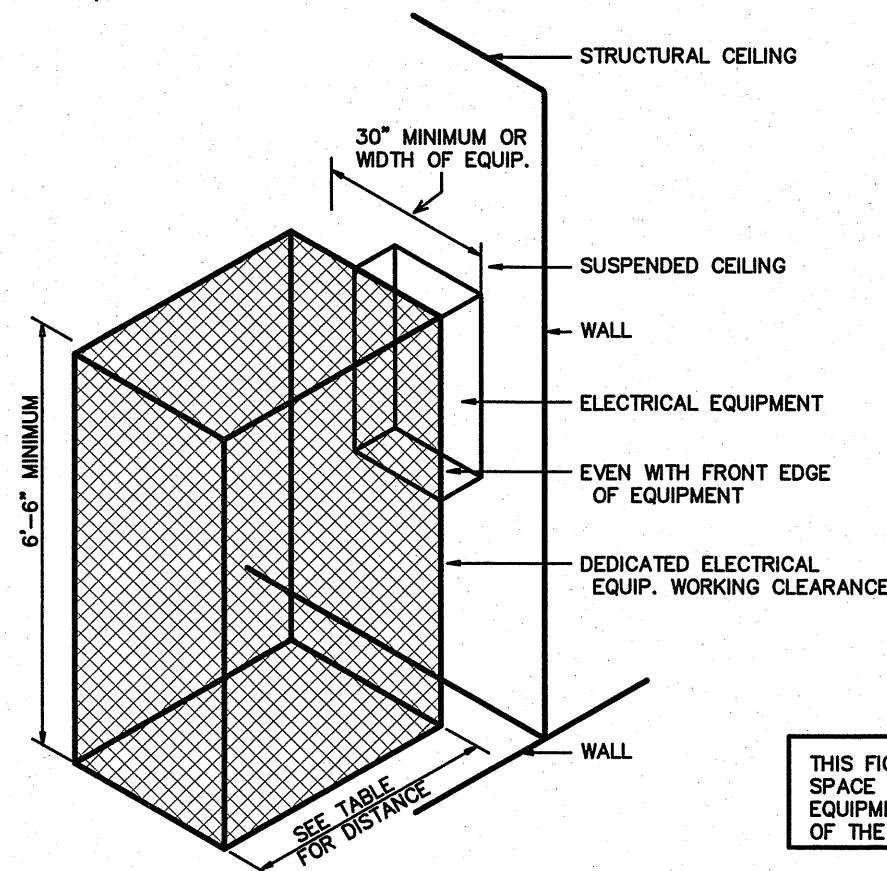
- A. **PLUMBING WORK:** The Electrical Contractor shall furnish and install switches and devices as shown and electrically connect electric water heaters, etc. All other electrical work required will be performed by the PLUMBING CONTRACTOR.
- B. **HEATING AND AIR CONDITIONING WORK:** The Electrical Contractor shall provide all disconnect switches, starters, and associated hardware for the equipment furnished including all line and load side wiring and conduit. Final connections to the equipment will be by the HVAC contractor. All control wiring will be accomplished by the HVAC contractor. Coordinate all work associated with the HVAC contractor.

3.13 CLEAN UP

- A. During construction, keep the site clean of debris. Upon completion, and before final inspection, clean up the premises to remove all evidence of work. In addition upon completion of construction leave equipment clean.

3.14 GUARANTEE

- A. Guarantee all materials and labor included in the electrical work for a period of one year from date of final acceptance by the Owner. Any part or parts of the work or equipment which prove to be defective during the guarantee period shall be replaced at no additional cost to the Owner.



ELECTRICAL EQUIPMENT WORKING CLEARANCE PER ARTICLE 110-26 OF N.E.C.

VOLTAGE TO GROUND NOMINAL	MIN. CLEAR DISTANCE IN FEET		
	CONDITION: 1	2	3
0-150	3	3	3
151-600	3	3-1/2	4

WHERE THE CONDITIONS ARE AS FOLLOWS:

1. EXPOSED LIVE PARTS ON ONE SIDE AND NO LIVE OR GROUNDING PARTS ON THE OTHER SIDE OF THE WORKING SPACE, OR EXPOSED LIVE PARTS ON BOTH SIDES EFFECTIVELY GUARDED BY SUITABLE WOOD OR INSULATED BUSBARS OPERATING AT NOT OVER 300V SHALL NOT BE CONSIDERED LIVE PARTS.
2. EXPOSED LIVE PARTS ON ONE SIDE AND GROUNDING PARTS ON THE OTHER SIDE.
3. EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORK SPACE (NOT GUARDED AS PROVIDED IN CONDITION 1) WITH THE OPERATOR BETWEEN.

GENERAL NOTES

1. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND ALL LOCAL CODES HAVING JURISDICTION.
2. ALL BRANCH CIRCUIT CONDUCTORS TO BE COPPER (SERVICE CONDUCTORS MAY BE ALUMINUM WITH SAME AMPACITY AS COPPER CONDUCTORS. RE-SIZE CONDUCTORS AND CONDUIT PER NEC.)
3. ALL CIRCUITS TO BE 2 #12, 1 #12 GND IN 1/2" EMT CONDUIT AS A MINIMUM. PROVIDE WIRING FOR LARGER CIRCUITS AS REQUIRED BY NEC. RIGID CONDUIT IS REQUIRED WHERE EXPOSED BELOW 6'-0" A.F.F.
4. ALL EMPTY CONDUIT RUNS IN EXCESS OF 10 FEET SHALL BE PROVIDED WITH A PULL WIRE OR FISH TAPE/CORD.
5. CONTRACTOR SHALL VERIFY THAT ALL DOOR SWINGS ARE CORRECT BEFORE INSTALLING LIGHT SWITCH OUTLETS.
6. ALL BRANCH CIRCUIT CONDUCTORS FROM THE PANEL TO THE FIRST OUTLET SHALL BE INCREASED TO THE NEXT LARGER SIZE WHERE THE LENGTH OF THE HOME RUN EXCEEDS 120 FEET ON 120V AND 208V CIRCUITS.
7. THE CORRECT NUMBER OF WIRES MAY NOT BE INDICATED FOR ALL CIRCUITS. ONLY THOSE WHERE CLARIFICATION IS NECESSARY. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL WIRES NECESSARY FOR THE PROPER FUNCTION OF THE SYSTEM WHETHER INDICATED ON DRAWINGS OR NOT.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTLY PHASING THE CIRCUITS IN THE PANELBOARDS.
9. THE ELECTRICAL CONTRACTOR SHALL VERIFY THE TYPE OF CEILING SYSTEM WITH THE GENERAL CONTRACTOR TO INSURE THAT ALL LIGHTING FIXTURES ARE COMPATIBLE WITH THE CEILING SYSTEM BEING INSTALLED. LIGHTING FIXTURES SHOULD NOT BE ORDERED UNTIL TYPE OF CEILING HAS BEEN VERIFIED.
10. ELECTRICAL REQUIREMENTS INDICATED ON DRAWINGS MAY DIFFER FROM ACTUAL EQUIPMENT FURNISHED. IF FURNISHED EQUIPMENT DIFFERS FROM RATINGS ON DRAWINGS CONTRACTOR SHALL NOTIFY ARCHITECT/ENGINEER FOR APPROPRIATE ACTION TO BE TAKEN.
11. IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO COORDINATE EXACT BREAKER REQUIREMENTS FOR ALL EQUIPMENT PRIOR TO ORDERING PANEL. ADJUST BREAKER AND WIRE SIZES AS REQUIRED.
12. PROVIDE BOXES, JACKS, WIRING AND CONDUIT FROM LOCATIONS SHOWN TO MTP LOCATION. VERIFY EXACT REQUIREMENTS WITH OWNER.
13. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL DISCONNECTS FOR MECHANICAL & PLUMBING EQUIPMENT. DISCONNECTS SHALL BE PER MANUFACTURER'S RECOMMENDATIONS AND FUSED PER NAME PLATE. PROVIDE NEMA 3R ENCLOSURES ON EXTERIOR. COORDINATE FUSE SIZES.
14. THE EC SHALL MEET WITH THE ARCHITECT AND TENANT PRIOR TO INSTALLING OUTLET BOXES TO VERIFY LOCATIONS AND MOUNTING HEIGHTS OF RECEPTACLES AND TELEPHONE OUTLETS.

APPENDIX B

2018 BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

ELECTRICAL DESIGN
(PROVIDE ON THE ELECTRICAL SHEETS IF APPLICABLE)
ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance

Energy Code: Prescriptive ☒ Energy Cost Budget ☐
ASHRAE 90.1: Prescriptive ☒ Energy Cost Budget ☐

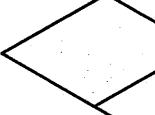
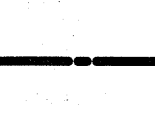
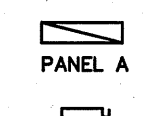
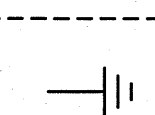
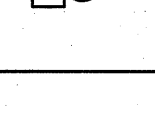
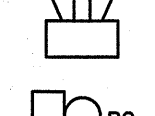
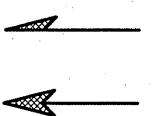
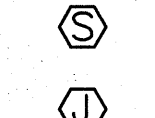
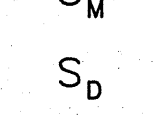
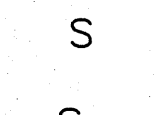
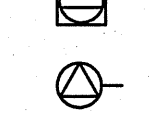
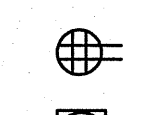
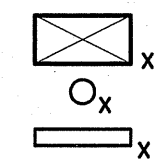
Lighting Schedule

Lamp type required in fixture
number of lamps in fixture
ballast type used in fixture
number of ballasts in fixture
total wattage in fixture
total exterior wattage specified vs. allowed
1822VA / 1887VA
---VA / ---VA

Additional Prescriptive Compliance

- ☒ 506.2.1 More Efficient Mechanical Equipment
- ☒ 506.2.2 Reduced Lighting Power Density
- ☒ 506.2.3 Energy Recovery Ventilation Systems
- ☒ 506.2.4 Higher Efficiency Service Water Heater
- ☒ 506.2.5 On-Site Supply of Renewable Energy
- ☒ 506.2.6 automatic Daylighting Control System

ELECTRICAL LEGEND



ELECTRICAL EQUIPMENT DEDICATED SPACE PER ARTICLE 110.26.F.1 OF N.E.C.

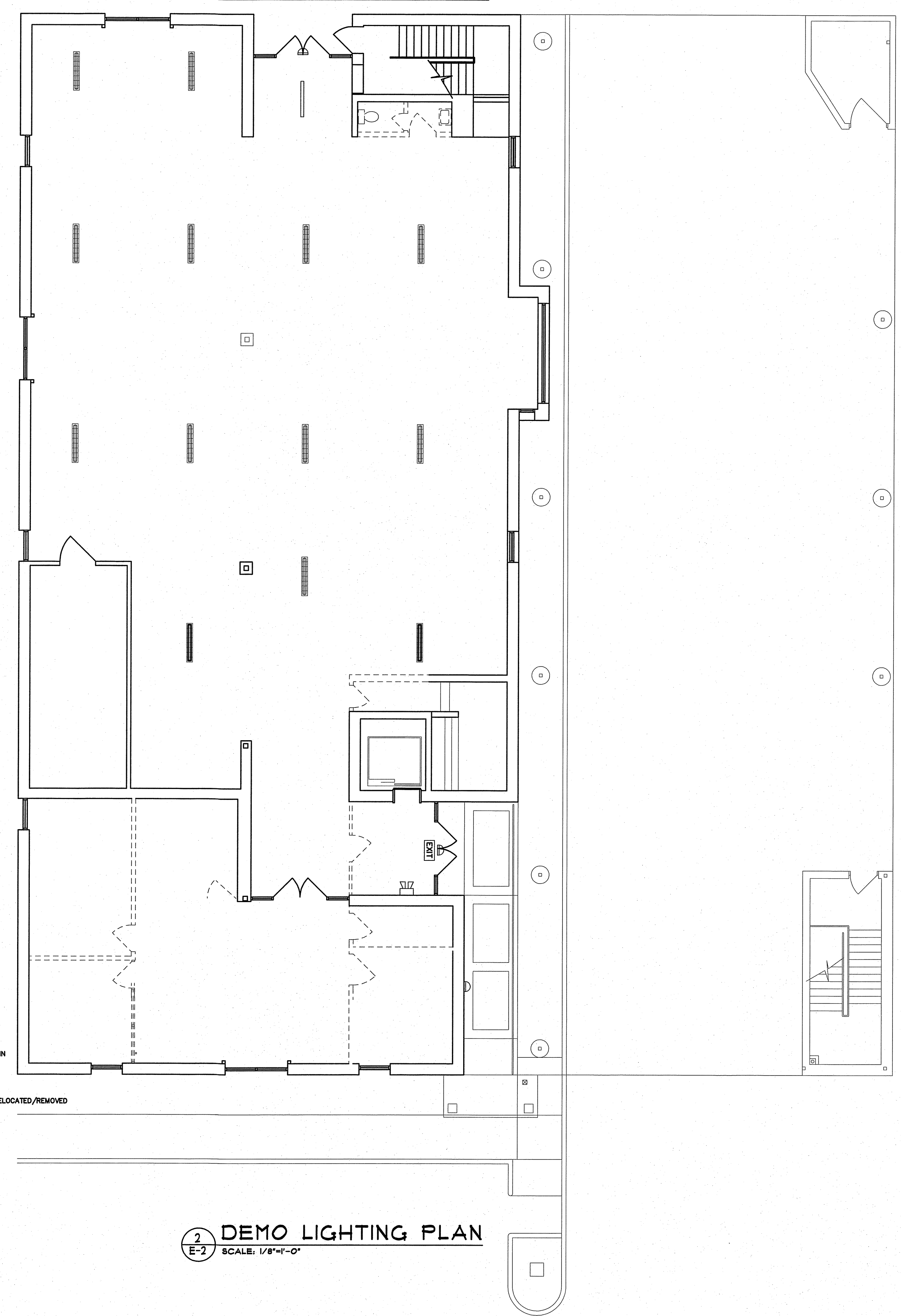
2 DEDICATED SPACE

SCALE: NTS

1 ELECTRICAL CLEARANCES

SCALE: NTS

NOTE:
THE INFORMATION SHOWN ON THIS DRAWING IS FROM PREVIOUS PERMIT DRAWINGS AND FIELD INVESTIGATION.
THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE SITE AND FIELD VERIFYING ALL RELEVANT INFORMATION.
THE SUBMISSION OF A BID INDICATES ACCEPTANCE OF EXISTING CONDITIONS. NOTIFY THE ENGINEER
OF ANY DISCREPANCIES NOTED.



LIGHTING SCHEDULE *									
MARK	MANUFACTURER	CATALOG NO.	VOLT.	LAMPS NO.	TYPE	W	BALLAST TYPE	W/FIXTURE	REMARKS
A	COLUMBIA	LCAT24-35LWG-EDU	120	-	LED	-	-	40	2X4 LAY-IN LED FIXTURE
B	COLUMBIA	CS4-228-EU (CSWG4 GUARD)	120	-	LED	-	-	28	4' LED STRIP WITH WIRE GUARD
C	JUNO	IC22LED-G4-14LM-35K	120	-	LED	-	-	15	6" LED RECESSED CAN FIXTURE
D	FLUXWERX	PF1-S-B-D-90-W-06-S-F1-M-12	120	-	LED	-	-	38	4' LED DECORATIVE STRIP
T	JESCO	DL-AC-FLEX2-UT	120	-	LED	-	-	5.5/FT	LED LINE VOLTAGE TAPE LIGHT
V	CHOSEN BY OWNER/ARCH, INSTALLED BY EC		120	-	LED	-	-	30	LED VANITY LIGHT FIXTURE
ED	COMPASS	CER	120	-	LED	-	-	2	LED EXIT SIGN, COLOR BY ARCH
TR	COMPASS	CU2	120	-	LED	-	-	10	EMERGENCY LIGHT, BATTERY BACKUP, BATTERY DIAGNOSTICS, COLOR BY ARCH

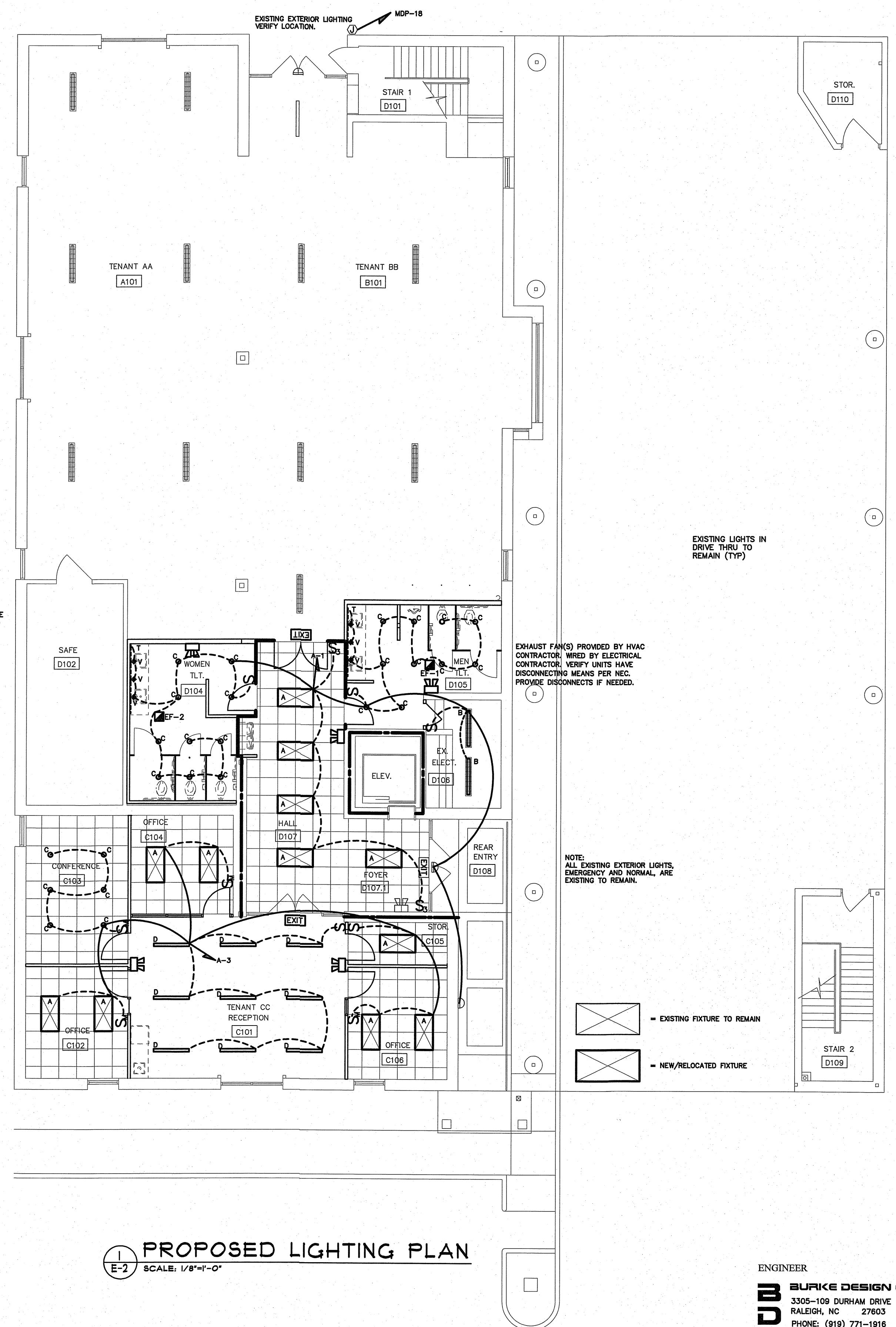
* OR APPROVED EQUAL. PROVIDE CUT SHEETS FOR OWNER APPROVAL PRIOR TO ORDERING FIXTURES.
CATALOG NUMBERS ARE FOR REFERENCE ONLY. ACTUAL NUMBERS MAY VARY. 'EB' DENOTES ELECTRONIC BALLAST. 'EDB' DENOTES ELECTRONIC DIMMING BALLAST.

NOTE:
PROVIDE LABELING ON EACH SWITCH NOTING CIRCUIT SERVED.

AUTOMATIC LIGHTING SHUTOFF IS NOT SHOWN IN THE EGRESS PATH LIGHTING AS ALLOWED PER 405.1-3 EXCEPTION #3, WHERE AUTOMATIC SHUTOFF WOULD ENDANGER OCCUPANT SAFETY.

TIE ALL EXIT AND EMERGENCY LIGHTS TO NEAREST AVAILABLE UNSWITCHED LIGHTING CIRCUIT IN THE AREA SERVED.

VERIFY HEIGHT/LOCATION OF ALL SWITCHES AND DEVICES PRIOR TO INSTALLATION.



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Coastal
Architecture
P.C.

Architectural
Design
Planning
Interiors

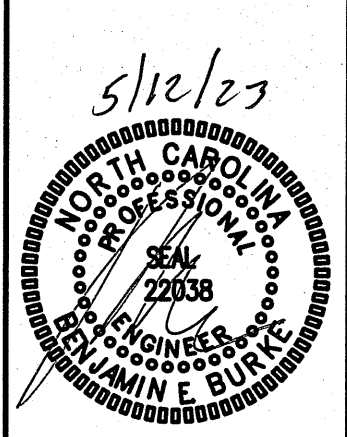


Member of the American
Institute of Architects

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**BURNS AND WILCOX CENTER
FIRST FLOOR RENOVATIONS TENANT C
MOREHEAD CITY, NORTH CAROLINA**



LIGHTING
PLANS

23001

ISSUED: 5-12-2023
DWG BY: SWB
CKD BY: BEB

REVISIONS

SHEET NO.

E-2

NEW PANEL- 'MDP'		MAKE: CUTLER HAMMER		RATING: 208/120V 3 PHASE 4 WIRE		M.L.O. MAIN CIRCUIT BREAKER	
		TYPE: PBL3A		MOUNTING: SURFACE		EQUIPMENT GROUND BUS <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
		OR APPROVED EQUAL		MINIMUM AIC: VERIFY		SERVICE ENTRY RATED <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
LOAD SERVICE		CTK BRKR	WATTS PER PHASE			CTK BRKR	LOAD SERVICE
			A	B	C		
PANEL 'A'		200A	11832	14290	15880	3	45A
						4	3680
SPARE		20A	----	5	6	2148	35A
				7	8	1250	20A
SPARE		20A	----	9	10	1250	20A
				11	12	750	20A
SPARE		20A	----	13	14	1200	20A
				15	16	1920	20A
SPARE		20A	----	17	18	----	20A
				19	20	----	20A
SPARE		20A	----	21	22	----	20A
				23	24	----	20A
SPARE		20A	----	25	26	----	20A
				27	28	----	20A
SPARE		20A	----	29	30	----	20A
				31	32	----	20A
SPARE		20A	----	33	34	----	20A
				35	36	----	20A
SPARE		20A	----	37	38	----	20A
				39	40	----	20A
SPARE		20A	----	41	42	----	20A
				43	44	----	20A
NOTES		SUB-TOTALS 'B'		11832 14290 15880		600A BUS 6858 7410 6318	
						SUB-TOTALS 'A'	
						SUB-TOTALS 'B'	
						GRAND TOTAL	
						TOTAL CONNECTED LOAD	