MILAN LASER
HAIR REMOVAL
TENANT DEVELOPMENT

Construction Documents

Issued for Permit/Construction

March 04, 2020

1734 NW Chipman Road
Lees Summit, MO 64081

Project Number 5629-21

Index Of Drawings

Architect
WARMAN ARCHITECTURE & DESIGN
1735 SWIFT AVENUE
NORTH KANSAS CITY, MO 64116
T: 816.474.2233
F: 816.474.1051

Architectural Designer
KCD – KANSAS CITY DESIGN GROUP, LLC
4006 N. 126TH ST.
KANSAS CITY, KS 66109
T: 816.682.0329

MEP Engineer
LANKFORD, FENDLER & ASSOCIATES
1730 WALNUT ST.
KANSAS CITY, MO 64108
T: 816-221-1411

General Contractor
CONSTRUCTION DESIGNWORKS, LLC
6657 WOODLAND DRIVE
SHAWNEE, KS 66218
T: 913.745.4727

DIVISION 1

GENERAL REQUIREMENTS

1. Owner Representative reserves the right to consider and substitute materials due to untimely availability and/or faulty materials upon consultation with the Architect. Substituted material will be equal in aspects relating to flame spread, combustibility, quality and appearance and will not affect intent of Building Code for which permit was issued. The Tenant agrees to accept substitution(s) when requested by Owner and approved by Architect.

2. Contractor shall guarantee all materials and workmanship executed under this contract for a period of one (1) year after date of written acceptance by Owner, unless otherwise specifically provided in contract. Contractor shall replace with new materials, including installation thereof, all items giving indication of defective material or faulty workmanship during this period. Replacement and repair, as well as repair of any damage to adjacent areas or surfaces, shall be at no cost and with least inconvenience to Owner.

3. Contractor shall provide all insurance and certificates of insurance as required by the Owner before commencing work.

4. Contractor shall prior to commencement of the work, field verify all existing project conditions, including dimensions and utility locations.

5. Contractor shall verify and be responsible for all work and materials-including those furnished by sub-contractors.

6. Written dimensions take precedence over scaled sizes. Do not scale drawings. Notify the Owner of any discrepancies prior to continuing the work.

7. These documents were created referencing existing visual conditions as basis of planning. Contractor shall bring any variances and/or discrepancies to attention of the Owner prior to commencing construction.

8. Contractor shall carefully study, coordinate, and compare the contract documents and shall at once report to the Owner any error, inconsistency or omission.

9. Documents provided by Warman Architecture & Design, Inc consist of "Architectural" sheets as noted on cover.

10. Contractor is responsible for paying all fees and obtaining all permits required for construction and occupancy.

11. All work shall be in accordance with applicable codes, regulations and ordinances of the State of Missouri and the City of Lee's Summit.

12. Definitions: For purposes of this agreement, "provide" includes furnishing and installing complete and ready for the intended use; "furnishing" includes supply and deliver to project site, ready for unloading, unpacking, assembly, installation, and similar operation, not installing; "installing" includes unloading, temporarily storing, unpacking, assembly, installation, and similar operations, not furnishing.

13. A pre-bid meeting for all contractors will be scheduled with the Contractor, Building Owner, Mechanical, Electrical, and Plumbing Design Builders and data/power consultants at the job site to discuss project requirements and provide the opportunity to review existing field conditions.

14. Construction means, methods, sequencing, and safety are the sole responsibility of the Contractor. Neither the Owner or Architect shall be liable for these actions.

15. It is the intent of these documents and all subsequent construction to comply with The Americans with Disabilities Act.

16. Contractor to provide for the removal of trash, rubbish, surplus and sweeping of construction and demolition on a daily basis. Coordinate with the Owner.

17. Contractor is to locate and identify all penetrations, new or existing, through fire-rated assemblies and provide fire and smoke stopping/sealant where work occurs.

18. Contractor to provide FRT backing for support of all wall, ceiling and partition mounted items such as brackets, light fixtures, shelving and equipment. Coordinate with design build portions of the work.

19. Contractors shall take all necessary precautions to ensure the safety of the occupants and worker at all times.

20. Interior wall and ceiling finishes shall not exceed flame spread classifications of applicable codes.

21. Accurate As-built drawings shall be generated by the Contractor during construction and submitted to the Owner upon completion of final punchlist and prior to request for final payment.

22. Contractor to verify fire extinguisher requirements and locations with Fire Marshal and Owner.

23. To the best of our knowledge, the building is already compliant with the Americans with Disabilities Act (ADA) with respect to the path of travel to the altered area.

24. Mechanical, plumbing and electrical work indicated on architectural drawings are for design intent only. Coordinate with MEP engineered drawings for HVAC, plumbing and electrical system details. Any additional drawings required by the city to obtain permit are the responsibility of the general contractor. Variances between documents and any discrepancies shall be brought to the attention of the Owner and Architect prior to commencing work.

DIVISION 6

ARCHITECTURAL WOODWORK

1. Reference to Premium, Custom or Economy in this specification shall be as defined in the Seventh edition of Architectural Woodwork Institute (AWI) "Quality Standards". Construction shall be Custom.

2. Any item not given a specific quality grade shall be Custom.

3. Interiors of cabinets shall have poplar, pine or fir solid wood with medium density fiberboard (MDF) or plywood carcass: Interior to be Melamine. Color to match laminate.

4. Wall cabinets shall have 1/2" thick plywood back, 3/4" thick top, bottom, doors and ends. Base cabinets shall have 1/4" thick plywood back, 3/4" thick bottom, doors and ends. Doors and drawers to have square laminate edges, No PVC.

5. Countertops shall have general purpose grade plastic laminate surface over 3/4" "Medex" water-resistant (MDF) medium density fiber board, (minimum) unless noted otherwise. Reference finish schedule for color.

6. Plastic laminate surfaced casework (except countertops) shall be vertical grade over 3/4" (MDF). Reference finish schedule for color.

7. Maximum span for open counters shall be 3'-6" with 3/4" x 1-1/2" edge. Provide intermediate supports as shown for open counters in excess of 3'-6". Provide 27" high, 19" deep, and 30" wide knee clearance at ADA locations.

8. Countertops shall have 4" high backsplash U.N.O. Self edge all tops and splashes except where noted. Mechanically fasten back and end splashes where adjoining sinks.

9. Hardware: Except as noted shall be:
Hinges - Stanley 1503-9X self-closing
Shelf standards/supports - KV 255/256 for cabinets, KV 185/186 for projected supports, Stainless Steel
Pulls - 2-3/4" aluminum HAFELE 124.02.921 handles for all drawers and pulls
Counter supports - Centerline floating hidden in wall support brackets.

10. Provide continuous fire retardant treated wood blocking within stud space behind all wall-hung cabinets, white boards, toilet accessories, and at door frames with closers. Provide 3/4" F.R.T. plywood in-wall blocking as indicated in drawings.

11. Coordinate all millwork with Tenant equipment and appliances prior to final build-out.

DIVISION 7

JOINT SEALERS

1. Caulk all interior joints and openings at door frames, walls, partitions, etc., with paint grade Butyl Rubber sealant, and closed cell backer rod. Provide silicone at wet areas. Submit manufacturer's product data and color chart for review and color selection.

2. All penetrations through fire resistive wall and/or floor-ceiling construction shall be caulked with a fire resistive caulking as manufactured by 3M, Type 25, or equal, unless noted otherwise.

3. Install caulking in strict accordance with the manufacturer's recommendations. Take care to produce beads of proper width and depth. Tool as recommended by the manufacturer, and immediately remove all surplus caulking. All caulking shall be fully adhered to both surfaces. Mask all finished surfaces.

DIVISION 8

DOORS/ FRAMES

1. Provide flush wood solid core doors in 22 ga. hollow metal standard-profile welded hollow metal frames. Faces: Species and AWI Grades per door schedule. Construction PC5 or PC7. Comply with FGMA glazing manual for all tempered glazing in doors. Align and fit in frames with uniform clearance and bevel. Undercut 1/2" from substrate at carpet and hard surfaces. Prep doors for necessary hardware- No through-bolting of hardware allowed. Provide appropriate blocking in doors.

2. Install all doors in strict accordance with all applicable codes and regulations, the original design, and the referenced standards, hanging square, plumb and straight and firmly anchored for use intended

FINISH HARDWARE

1. Furnish all finish hardware described and all other finish hardware not described by a single manufacturer, as required for complete operation of build out meeting all applicable building codes. All hardware shall be in compliance with ADAAG requirements- "Accessibility guidelines for buildings and facilities."

2. Submit complete finish hardware schedule, per DHI format, to Owner for review and approval.

3. Install all finish hardware in strict accordance with the manufacturer's recommendations, eliminating all hinge-bound conditions and making all items smoothly operating and firmly anchored into position.

4. Follow the door hardware institute's recommendations for locations of Architectural hardware unless specifically indicated or required to comply with governing regulations.

5. Follow NFPA 101 for means of egress door requirements

6. Follow NFPA 80 for fire-rated door assemblies that are required to be listed or labeled.

DIVISION 9

RESILIENT FLOORING AND ACCESSORIES

1. Submittals: Product Data and Samples

2. Provide Luxury Vinyl Tile and/or Vinyl Composite Tile per Finish Legend and Plans. Install per manufacturer's instructions.

3. Adhesives: Water-resistant type recommended by manufacturer to suit resilient products and substrate conditions indicated.

4. Installation of Flooring: Prepare concrete substrates according to ASTM F 710. Verify that substrates are dry and free of curing compounds, sealers and hardeners.

5. Provide 4" rubber base (coil stock) throughout: Cove at all areas. Re: Finish Legend for manufacturers, Finish Plans for location. Install in accordance with manufacturer's instructions.

6. Provide appropriate aluminum transition strips at all floor covering changes.

7. Patch areas in dry wall where damaged to allow for smooth application of wall base without voids creating waves and indentions in the finish surface.

8. Installation of Wall Base: adhesively install resilient wall base and accessories using maximum lengths possible.

9. Provide Extra Materials: Deliver to Owner 1 box of each type and color of floor tile installed.

10. Provide Extra Materials: Deliver to Owner at least 20 linear feet of each type of color of resilient wall base to be installed.

ACCESSORIES

1. Submittals: Product Data and Samples

2. Provide materials per Finish Legend and Plans. Install per manufacturer's instructions. Apply protective top coat per manufacturer's instructions.

3. Adhesives: Water-resistant type recommended by manufacturer to suit resilient products and substrate conditions indicated.

4. Provide 4" rubber base (coil stock) throughout: Cove at all areas. Re: Finish Legend for manufacturers, Finish Plans for location. Install in accordance with manufacturer's instructions.

5. Installation of Wall Base: adhesively install resilient wall base and accessories using maximum lengths possible.

6. Provide Extra Materials: Deliver to Owner at least 20 linear feet of each type of color of resilient wall base to be installed.

ACOUSTICAL PANEL CEILINGS

1. Surface-Burning Characteristics of Panels: ASTM E 1264, Class A materials, tested per ASTM E 84

GYPSUM BOARD ASSEMBLIES

1. Comply with ASTM C645 Provide 3-5/8", 20 ga., steel studs 16" o.c. with 2" deep leg deflection track top runner and bottom. Runners anchored and/or bracing to substrate. Isolate from building structure vertical and horizontal. Frame both sides of building expansion joints; do not bridge. Frame openings per manufacturer's recommendation. Provide supplementary framing for support of other work where indicated and/or required. Construct to withstand 5 psf horizontal load applied from any direction.

2. Provide Type "X" gypsum board, 5/8" thick unless shown otherwise. All walls to be painted or receive wallcovering shall have 'Level 4' finish. Tape and float all joints, install cornerbeads, compound fill, feather and sand smooth ready for paint, 'Level 3' where exposed `Level 2' where concealed. `Level 5' with 3 separate coats of compound at all joints, angles, and surfaces at all curved surfaces and other surfaces required by MPI and wallcovering manufacturer. Provide smooth surface free of tool marks, ridges and visual defects. All fastening per USG or Gold Bond specifications. Provide water-resistant gypsum board in all "wet" areas.

a. Corners - Outside USG Durabead, or Gold Bond Standard Corner, Inside: taped.

b. Edges at ceilings, mullions, building expansion joints, and juncture with other materials, and other surfaces USG 200 series Casing.

3. All other materials, not specifically described, but required for a complete and proper installation or gypsum drywall, shall be provided.

4. Provide sound attenuation blankets, Type 1 (without membrane facing) where indicated.

5. Frame door openings to comply with GA-600.

6. Provide expansion joints at 30' max intervals with locations approved by the Architect. Expansion joints shall be details per USG standards.

PAINTING/STAINING

1. Except where prefinished or where noted to be painted, stain and varnish all exposed wood and plywood, except for existing ceiling/floor/columns. Repair, sand, clean and repaint any previously painted surface.

2. All unexposed wood such as cabinet interiors, closet and storage shelves, etc., except where prefinished, shall have sanding sealer. Sand shelves before and after application and apply finish coat.

3. Seal tops and bottoms of all wood doors.

4. Tint undercoats to match finish coats.

5. Paints, stains and varnishes shall not be applied at temperatures below 45 degrees F. or humidity above 75%.

6. Damaged areas, dents, cracks, holes and/or other irregularities shall be repaired and repainted to match finish in their entirety, including adjoining surfaces.

7. Allow paints to dry 24 hours, enamels and varnishes 48 hours between coats unless otherwise specified by manufacturer.

8. Sand between coats with 180-220 alum. oxide or equiv. garnet paper and dust prior to applying succeeding coats.

9. Apply paste wood filler (P&L Paste Filler Natural, mixed 2:1 with stain) to open grained woods as directed by manufacturer.

10. Fill nail holes to matching finish.

11. Paint products indicated in the finish schedule are based on Sherwin Williams as a quality standard. Refer to finish material list for actual products.

PAINTED WOOD - one coat each: Interior Trim Primer, Latex Enamel Eggshell Undercoating, Latex Enamel Eggshell.

STAINED & VARNISHED (HDPB) PARTICLE BOARD, WOOD FIBERBOARD AND PLYWOOD - one coat each stain (with filler as above), sanding sealer, Clear Finish Varnish Satin Base 30% sheen.

GYPSUM BOARD WALLS - Acrylic Latex Finish, 2 finish coats over 1 coat primer.
Primer: PrepRite 200 Interior Latex Primer
Finish and Second Coats: Promar 400 Interior Latex Eggshell

FERROUS METAL-
Primer Alkyd based: Kem Kromik Universal Metal Primer
Finish Coat: Promar 200 Alkyd Semi-Gloss

DIVISION 10 - SPECIALTIES

EXIT SIGNAGE:

1. Signage to be applicable to current building code
2. Color to match current building standard.
3. Ceiling or wall mount

WARMAN ARCHITECTURE+DESIGN
1735 SWIFT AVENUE
NORTH KANSAS CITY, MISSOURI 64116
V. 816.474.2233 F. 816.474.1051

KATHLEEN ANN WARMAN - ARCHITECT
MO # A-5819

MILAN LASER HAIR REMOVAL
TENANT DEVELOPMANT
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ARCHITECTURAL SPECIFICATIONS

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KCD-KANSAS CITY DESIGN GROUP, LLC
4006 N 126TH STREET
KANSAS CITY, KS 66109
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6657 WOODLAND DRIVE
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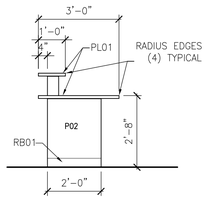
REVISIONS

#	BY	DATE	SOURCE

DATE: MARCH 04, 2021
DESIGNED BY: MSL
DRAWN BY: MSL
APPROVED BY: KW

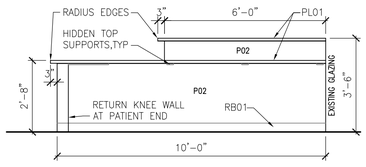
SHEET NUMBER
G100

JOB NUMBER
5629-21



G1 ELEVATIONS
RECEPTION CASEWORK

0 1'-4" 2'-8" 5'-4" SCALE: 3/8" = 1'-0"



D1 ELEVATIONS
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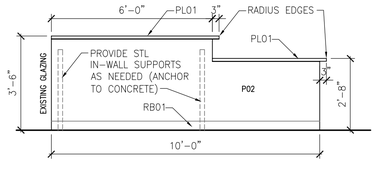

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RECEPTION CASEWORK

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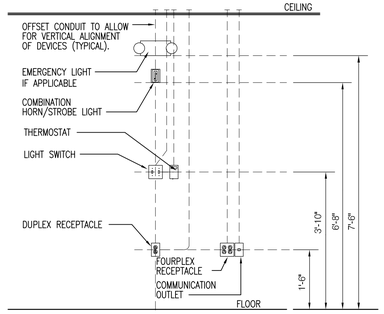
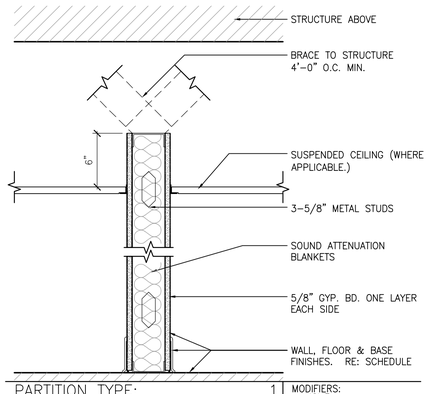


NOTE: ALIGN ALL NEW DEVICES VERTICALLY. IF ANY DEVICE(S) ARE FOUND NOT TO BE INSTALLED PER DETAIL, CONTRACTOR SHALL RELOCATE AND PAY FOR ALL ASSOCIATED COSTS WITH THE RELOCATION.

A17 TYPICAL DEVICE MOUNTING DETAIL

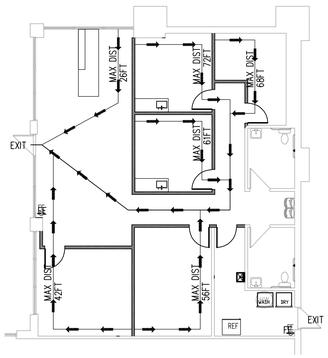
0 4" 8" 16" SCALE: 1/8" = 1'-0"



NOTE: ALL NEW WALLS ARE TYPE 1 UNLESS NOTED OTHERWISE

A6 WALL TYPES

0 4" 8" 1'-4" SCALE: 1½" = 1'-0"



M11 CODE PLAN AND CODE SUMMARY

0 5'-4" 10'-8" 21'-4" SCALE: 3/32" = 1'-0"

OCCUPANCY TYPE: B (BEAUTY SHOP)

CONSTRUCTION TYPE: EXISTING II B – SPRINKLED.
NEW CONSTRUCTION SHALL BE NON-LOAD BEARING, NON-COMBUSTIBLE.

NUMBER OF STORIES: (1) ONE
TOTAL TENANT AREA = 1,850 SF

BUSINESS AREA = 1:150 (1,850 SF/150 = 13 OCCUPANTS)
TOTAL NUMBER OF OCCUPANTS = 13
OR
NUMBER OF STATIONS/CONSULT/OFFICE = 4 (4 * 2 PER = 8 OCCUPANTS)
NUMBER OF RECEPTION WAITING = 4 (4 * 2 PER = 8 OCCUPANTS)
TOTAL NUMBER OF OCCUPANTS = 16

APPLICABLE BUILDING CODES:

CITY OF LEES SUMMIT, MISSOURI
BUILDING CODE – IBC 2018
PLUMBING CODE – IPC 2018
MECHANICAL CODE – IMC 2018
ELECTRICAL CODE – NEC 2017
FIRE/LIFE SAFETY CODE – IFC 2018

PLANS TO COMPLY WITH 2009 ANSI A117.1 AND 2010 ADA ACCESSIBILITY GUIDELINES

DOOR SCHEDULE

NO.	ROOM NAME	DOOR T	DOOR SIZE WIDTH X HEIGHT	DOOR HARDWARE	FRAME T	FRAME SIDELIGHT	NOTES:
101E	RECEPTION	EX	3'-0" X 7'-0"	EX 3-EX	EX	EX STOREFRONT	8
102	CONSULT	A	3'-0" X 7'-0"	SET 1	–	–	
104	OFFICE	A	3'-0" X 7'-0"	SET 1	–	–	
105	UTILITY	A-EX	3'-0" X 7'-0"	EX	–	–	6
105E	UTILITY	EX	3'-0" X 7'-0"	SET 3-EX	–	–	7
106E	MEN	A-EX	3'-0" X 7'-0"	SET 2-EX	–	–	
107E	WOMEN	A-EX	3'-0" X 7'-0"	SET 2-EX	–	–	
108	STORAGE	A	3'-0" X 7'-0"	SET 1	–	–	
109	LASER	A	3'-0" X 7'-0"	SET 1	–	–	
110	LASER	A	3'-0" X 7'-0"	SET 1	–	–	

KEY: T = Type, C = Construction, WD = Solid Core Wood, EX = Existing HM = Hollow Metal, REL = Existing to be relocated,

GENERAL NOTES:

1. ALL DOORS NEW AND RE-LOCATED SHALL HAVE ADA ACCEPTABLE LEVER OPERATED HARDWARE. REUSE ALL EXISTING APPLICABLE HARDWARE BEFORE ORDERING NEW. ANY NEW HARDWARE TO MATCH EXISTING HARDWARE IN SUITE BY MANUFACTURERS, MODEL NUMBERS, AND FINISH. REPLACE ANY DAMAGED HARDWARE.

2. KEY CYLINDERS TO MASTER KEY.

3. PROVIDE KEYS TO ANY EXISTING DOOR WITHIN THE SPACE.

4. REUSE ALL EXISTING DOORS PRIOR TO ORDERING NEW. ANY NEW DOORS SHALL MATCH EXISTING SUITE DOORS IN WOOD SPECIES, CUT AND FINISH. ALL EXISTING OR RELOCATED WOOD DOORS TO BE CLEANED AND TOUCHED UP TO LIKE NEW CONDITION

5. ALL NEW AND RELOCATED DOORS TO COMPLY WITH ANSI 117 404.2.8 404.2.8 AND 404.2.9.
– DOOR CLOSERS SHALL BE ADJUSTED SO THAT FROM AN OPEN POSITION OF 90 DEGREES, THE TIME REQUIRED TO MOVE THE DOOR TO A POSITION OF 12 DEGREES FROM THE LATCH IS 5 SECONDS MINIMUM.
– DOOR SPRING HINGES SHALL BE ADJUSTED SO THAT FROM THE OPEN POSITION OF 70 DEGREES, THE DOOR OR GATE SHALL MOVE TO THE CLOSED POSITION IN 1.5 SECONDS MINIMUM.
– THE FORCE FOR PUSHING OR PULLING OPEN A DOOR, OTHER THAN FIRE DOORS, SHALL BE 5 LBS MAX FOR INTERIOR HINGED, SLIDING OR FOLDING DOORS. THESE FORCES DO NOT APPLY TO THE FORCE REQUIRED TO RETRACT LATCH BOLTS OR DISENGAGE OTHER DEVICES THAT HOLD THE DOOR OR GATE IN A CLOSED POSITION.

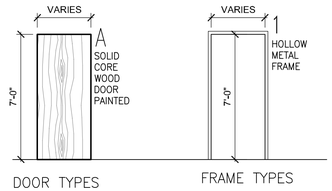
6. RELOCATE EXISTING DOOR AND FRAME FROM DEMOLITION.

7. EXISTING INSULATED METAL DOOR AND FRAME. PAINT INTERIOR SIDE OF DOOR AND FRAME ONLY.

8. ADJUST DOOR OR INVESTIGATE AND REPAIR ISSUES WITH DOOR DRAGGING ON EXTERIOR SIDEWALK.

HARDWARE SCHEDULE

HARDWARE SET 1	HARDWARE SET 2	HARDWARE SET 3	
3 BUTTS PER DOOR	3 BUTTS PER DOOR	3 BUTTS PER DOOR	
1 PASSAGE SET	1 PRIVACY LOCK SET	RIM PANIC DEVICE	
1 STOP	1 STOP	EXISTING DOOR	
DOOR SILENCERS	DOOR SILENCERS	DOOR SILENCERS	
		CLOSER	



A11 DOOR AND HARDWARE SCHEDULE

0 4" 8" 1'-4" SCALE: 1½" = 1'-0"

A17 SYMBOLS LEGEND

0 SCALE: NTS

LEGEND

- WALL OR ITEM TO BE REMOVED
- EXISTING PARTITIONS TO REMAIN
- NEW FULL HEIGHT PARTITIONS – RE: A1/G101
- EXISTING DOOR TO REMAIN
- NEW DOOR RE: DOOR/HARDWARE SCHEDULE A6/G101
- LVT FLOORING – RE: FINISH LEGEND
- XX/XXXX DRAWING ELEVATION
- XX / XXXX DETAIL REFERENCE
- XXX DOOR NUMBER. RE: SCHEDULE A6/G101
- 2X2 ACOUSTICAL CEILING GRID & TILE

NOTE: BELOW ARE FOR SHOWN FOR DESIGN INTENT AND/OR LOCATION ONLY

- NEW 8OHM CEILING MOUNTED AUDIO SPEAKERS
- NEW 2X4 TROFFER LED LIGHT FIXTURES.
- NEW OR RELOCATED HVAC SUPPLY, RETURN OR TRANSFER AIR GRILLES. REF: MEP DRAWINGS
- NEW PENDANT LIGHT FIXTURE
- EXISTING OR NEW EXIT SIGNAGE WITH BATTERY BACK UP SYSTEM
- EXISTING OR NEW EXIT SIGNAGE WITH EMERGENCY LIGHTS & BATTERY BACK UP SYSTEM
- EXISTING/RELOCATED EMERGENCY EGRESS LIGHT TIED INTO BUILDING SYSTEM. ALL OTHER EMERGENCY LIGHTS TO BE IN THE 2X2 OR 2X4 LIGHT FIXTURES. RECONFIGURE AS REQUIRED BY CURRENT CODE.
- EXISTING, NEW OR RELOCATED COMBINATION SPEAKER/VISUAL FIRE ALARM STROBE. CEILING OR WALL MOUNTED DEVICE SHALL COMPLY WITH NFPA 72 & NFPA 101. LOCATE 80" A.F.F. TO THE BOTTOM. # REFERS TO MINIMUM CANDELA RATING
- FE EXISTING TO REMAIN OR NEW FIRE EXTINGUISHER

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KATHLEEN ANN WARMAN - ARCHITECT
MO # A-5819

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TENANT DEVELOPMANT
1734 NW CHIPMAN ROAD
LEES SUMMIT, MO 64081

SYMBOLS LEGEND, CODE SUMMARY, WALL TYPES AND DOOR INFORMATION

REVISIONS

#	BY	DATE	SOURCE

DESIGNER:
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KANSAS CITY, KS 66109
T: 816.682.0329

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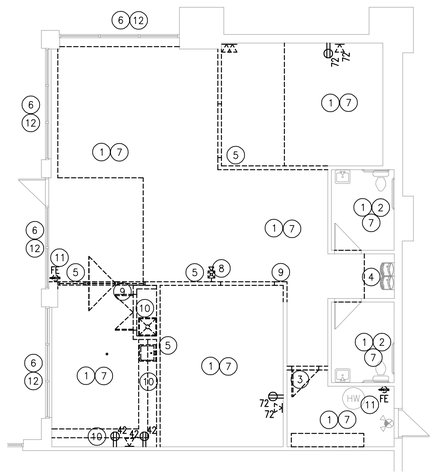
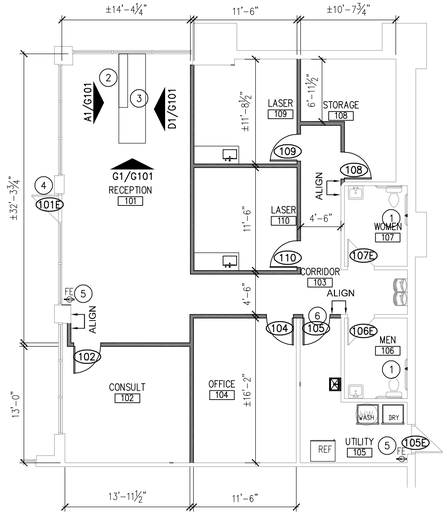


1. REMOVE AND DISPOSE OF FLOORING AND BASE THROUGHOUT.
2. REMOVE AND DISPOSE OF CERAMIC TILE WAINSCOT IN TOILET ROOMS. SALVAGE EXISTING FIXTURES AND ACCESSORIES FOR RE-INSTALLATION.
3. REMOVE AND SALVAGE DOOR, FRAME AND HARDWARE FOR RE-USE IN THIS PROJECT.
4. PROTECT EXISTING DRINKING FOUNTAIN THROUGHOUT DEMO AND RENOVATION.
5. REMOVE ALL EXISTING WALLS SHOWN DASHED ON FLOOR PLANS
6. PROTECT EXISTING STOREFRONT AND GLAZING THROUGHOUT DEMO AND RENOVATION.
7. REMOVE AND DISPOSE OF ALL CEILING GRID, TILE AND LIGHTING. TOILET ROOMS, REMOVE FIXTURE AND CEILING TILES ONLY (GRID TO REMAIN). REMOVE WIRING NOT TO BE RE-USED BACK TO SOURCE. SALVAGE AND CLEAN HVAC SUPPLY/RETURN EQUIPMENT FOR RE-USE IN THIS PROJECT
8. REMOVE AND SALVAGE ALL FIRE ALARM DEVICES FOR RE-USE IN THIS PROJECT.
9. REMOVE AND SALVAGE ALL HVAC THERMOSTATS FOR RE-USE IN THIS PROJECT.
10. REMOVE AND DISPOSE OF PLUMBING AND MILLWORK. CAP PLUMBING PER MEP DRAWING REQUIREMENTS.
11. SALVAGE FIRE EXTINGUISHER AND HANGER FOR RE-USE IN THIS PROJECT.
12. PROTECT EXISTING WINDOW COVERINGS THROUGHOUT DEMO AND RENOVATION.

E1 DEMOLITION PLAN AND NOTES

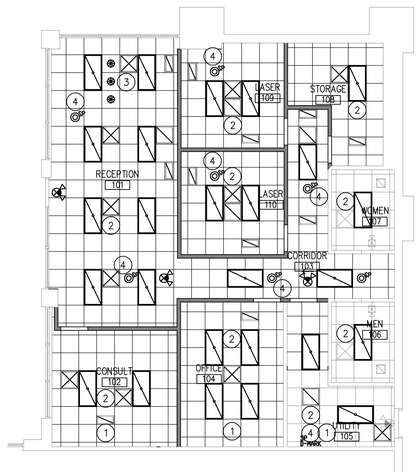
SCALE: 1/8" = 1'-0"



1. REFER TO ADA TOILET GUIDELINES FOR INSTALLATION ON NEW VERTICAL GRAB BAR. RE-INSTALL ALL OTHER EXISTING FIXTURES AND ACCESSORIES.
2. INSTALL NEW HALF HEIGHT WALL WITH PL01 COUNTER TOP.
3. COORDINATE FINAL LOCATION FOR NEW PHONE/DATA WITH TENANT PRIOR TO INSTALL.
4. VERIFY EXISTING EXTERIOR DOOR IS IN GOOD WORKING ORDER. REPAIR OR REPLACE PARTS AS REQUIRED.
5. RE-INSTALL FIRE EXTINGUISHER AND HANGER SALVAGED FROM DEMOLITION.
6. RE-INSTALL EXISTING UTILITY ROOM DOOR AND FRAME SALVAGED FROM DEMOLITION.
7. PROVIDE AND INSTALL CASEWORK "HOME DECORATORS NAPLES 60 IN CABINET IN DISTRESSED GREY COLOR" (CAN BE PURCHASED THROUGH HOME DEPOT). PROVIDE DROP-IN CHINA SINK WITH OILED BRONZE HARDWARE IN FORMICA PL01 TOP & BACKSPLASH.

E6 ARCHITECTURAL PLAN AND NOTES

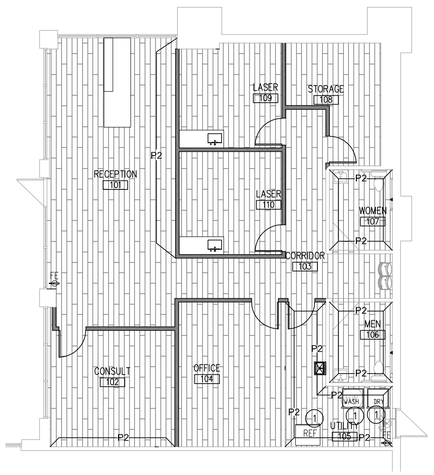
SCALE: 1/8" = 1'-0"



1. CAULK AND SEAL ANY AND ALL PENETRATIONS IN TENANT DEMISING WALL ABOVE CEILING.
2. INSTALL NEW 2X4 LED CEILING MOUNTED LIGHT PER MEP DRAWINGS
3. INSTALL (3) HANGING PENDANTS SELECTED BY TENANT,PER MEP DRAWINGS.
4. PROVIDE AND INSTALL 8 OHM CEILING SPEAKERS AS SHOWN. PROVIDE (2) VOLUME CONTROLS (LOCATION COORDINATED WITH TENANT). TERMINATE SPEAKER WIRE ABOVE REFRIGE IN UTILITY ROOM. INSTALL TENANT PROVIDED STEREO RECIEVER.

E11 REFLECTED CEILING PLAN AND NOTES

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



1. CONTRACTOR TO INSTALL TENANT'S EQUIPMENT. COORDINATE WITH TENANT FOR EXACT REQUIREMENTS/LOCATIONS.

DEMOLITION NOTES:

1. BEFORE BEGINNING WORK AT THE SITE INSPECT THE EXISTING BUILDING AND DETERMINE THE EXTENT OF EXISTING FINISHES, SPECIALTIES, CASEWORK, EQUIPMENT, AND OTHER ITEMS WHICH MUST BE REMOVED AND REINSTALLED IN ORDER TO PERFORM THE WORK UNDER THIS CONTRACT.
2. PROTECT THE EXISTING FACILITIES AT ALL TIMES. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE CAUSED BY CONSTRUCTION.
3. REMOVE EXISTING DATA AND PHONE OUTLETS THROUGHOUT DEMO AREA. PATCH AND REPAIR ALL HOLES, NOT BEING REUSED, IN WALLS AND AND FLOORS. PREPARE SURFACES FOR NEW FINISHES.
4. ALL EXISTING POWER OUTLETS TO REMAIN U.N.O.
5. PATCH ALL HOLES AND IMPERFECTIONS IN ALL EXISTING WALLS AND SURFACES TO REMAIN.
6. REMOVE ALL ACOUSTICAL CEILING TILE AND GRID. SALVAGE ALL 2X4 LIGHT FIXTURES FOR REUSE ON THIS PROJECT.
7. CONTRACTOR IS RESPONSIBLE FOR PATCHING OR REPAIRING ANY AND ALL FIREPROOFING TO MATCH EXISTING MATERIAL AND THICKNESS, WHETHER CAUSED BY DEMOLITION OR CONSTRUCTION.
8. ANY MATERIAL THAT IS REMOVED THAT LANDLORD DOES NOT WISH TO RETAIN SHALL BE REMOVED FROM THE PROJECT SITE AND DISPOSED OF BY THE CONTRACTOR.
9. COORDINATE ALL DEMOLITION WITH NEW ARCHITECTURAL PLAN.
10. PROTECT ALL EXISTING THERMOSTATS AND HOUSINGS DURING DEMOLITION AND CONSTRUCTION.
11. PROTECT EXISTING FIRE ALARM AND SPRINKLER DEVICES DURING DEMOLITION AND CONSTRUCTION.

ARCHITECTURAL NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADHERING TO THE CONSTRUCTION SCHEDULES ESTABLISHED BY THE BUILDING MANAGER AND TENANT.
2. THE DOCUMENTS REFLECT CONDITIONS REASONABLY INTERPRETED FROM THE EXISTING VISIBLE CONDITIONS, OR FROM DRAWINGS OR INFORMATION FURNISHED BY THE LEASING AGENT. THE CONTRACTOR SHALL VISIT THE SITE AND BE RESPONSIBLE FOR VERIFYING EXISTING CONDITIONS AND THEIR IMPACT ON THE SCOPE OF THE WORK.
3. ALL DIMENSIONS ARE TO FACE OF FINISHED WALL, UNLESS NOTED OTHERWISE.
4. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS ON THE JOB, INCLUDING MECHANICAL, ELECTRICAL, AND PLUMBING LAYOUTS.
5. COORDINATE WITH OWNER THE SHUT DOWN OF UTILITY SERVICE WITHIN THE EXISTING BUILDING SO AS TO MINIMIZE THE DISRUPTION OF SERVICE TO OTHER BUILDING TENANTS.
6. ALL COORDINATION OF WORK PERFORMED BY THE SUBCONTRACTORS SHALL BE BY THE GENERAL CONTRACTOR.
7. IN ACCORDANCE W/ SECTION 1008.1.9 OF IBC INTERNATIONAL BUILDING CODE, ALL DOOR HARDWARE ON EXIT DOORS SERVING AS A MEANS OF EGRESS SHALL MEET THE FOLLOWING REQUIREMENTS LISTED BELOW:

"ALL DOORS WILL BE READILY OPENABLE FROM THE SIDE FROM WHICH EGRESS IS TO BE MADE WITHOUT THE USE OF A KEY, SPECIAL KNOWLEDGE OR EFFORT."

8. ALL MATERIALS TO MEET THE REQUIREMENTS OF IBC CHAPTER 8 FOR MATERIALS AND TESTING.
9. THE GENERAL CONTRACTOR AND INDIVIDUAL SUBCONTRACTORS ARE RESPONSIBLE FOR THE APPROVAL, AND PERFORMANCE OF THE M.E.P. SYSTEMS AND DEVICES INCLUDING LIFE SAFETY. ALL WORK SHALL BE IN ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES OF THE LOCAL JURISDICTION. REFERENCE MEP DRAWINGS FOR COORDINATION.
10. THE HVAC CONTRACTOR SHALL BALANCE THE ENTIRE SPACE AND PROVIDE A WRITTEN REPORT TO THE BUILDING ENGINEER OR BUILDING OWNER INDICATING MEASURED RESULTS FOR FULL SPACE AIR DISTRIBUTION. INSTALLATION LOCATIONS OF NEW BUILDING STANDARD THERMOSTATS SHALL BE APPROVED BY TENANT. FINAL BALANCING AND ALL CONTROL DEVICES MUST BE COORDINATED WITH BUILDING MANAGEMENT BEFORE TURN OVER OF THE PROJECT.
11. VERIFY ELECTRIC & DATA RECEPTACLE LOCATIONS & CONFIGURATIONS WITH TENANT. ALL TELEPHONE AND DATA CABLES IN THE SPACE AND FROM THE DEMARK LOCATION ARE TO BE LABELED, BUNDLED AND STRAPPED TO THE FLOOR STRUCTURE ABOVE.
12. FIRE ALARM SCOPE: VERIFY EXISTING FIRE ALARM DEVICES AND SMOKE DETECTORS ARE TIED INTO THE EXISTING BUILDING FIRE ALARM SYSTEM AND ARE IN PROPER WORKING ORDER PER CODE.
13. VERIFY PROPER OPERATION OF ALL EXISTING DUCT SMOKE DETECTORS TO REMAIN WITHIN TENANT SPACES. PROVIDE NEW DUCT SMOKE DETECTORS OR FAN POWERED BOXES WHERE REQUIRED. PROVIDE NEW DUCT SMOKE DETECTORS OR FAN POWERED BOX SHUTDOWN FOR BOXES WITH CAPACITY GREATER THAN 2000 CFM WHERE NOT EXISTING. FAN POWERED BOXES SMALLER THAN 2000 CFM SHALL BE SHUT DOWN VIA BUILDING CONTROL SYSTEM UPON ACTUATION OF RETURN AIR DUCT SMOKE DETECTOR SERVING TENANT SPACE.
14. ALL LOCKS AND KEYS FOR ENTRY DOORS MUST BE COORDINATED WITH BUILDING MANAGEMENT FOR SPECIFICATION.
15. ALL ¾" PLYWOOD BLOCKING TO BE FIRE RETARDANT TREATED, EXCEPT IN FULL WALLS GOING TO STRUCTURE.

FINISH LEGEND			
CODE	TYPE	DESCRIPTION	NOTES;
ACT01	CEILING TILE	MATCH EXISTING BUILDING STANDARD	THROUGHOUT
RB01	RUBBER BASE	JOHNSONITE 4" BASE: #262 DRIZZLE	THROUGHOUT
VP1	VINYL FLOOR	MILAN – RASKINS ALPINE PLANK: STORMY #6002 12MIL WEAR LAYER: 48" X 7.25" PLANK	THROUGHOUT
P01	PAINT	SHERWIN WILLIAMS – 7506 LOGGIA	THROUGHOUT U.N.O.
P02	PAINT	SHERWIN WILLIAMS – AC-22 NANTUCKET FOG	EAST WALL RECEPTION SOUTH WALL CONSULT TOILET ROOMS AND UTILITY ROOM
P03	PAINT	SHERWIN WILLIAMS – 7005 PURE WHITE	ALL DOORS AND MTL FRAMES
PL01	LAMINATE	FORMICA 9285-58 WHITE TWILL: MATTE FINISH	ALL COUNTER TOPS

GENERAL NOTES
1. ALL MATERIALS / FINISHES TO COMPLY WITH IBC CHAPTER 8 REQUIREMENTS.
2. ALL WALL PAINT TO BE EGGSHELL FINISH U.N.O.
3. ALL HOLLOW METAL DOORS AND HOLLOW METAL FRAMES TO BE P03 SEMI-GLOSS FINISH, DOORS ARE PAINTED SATIN FINISH P03.
4. WET WALLS IN BOTH TOILETS, BEHIND DRINKING FOUNTAIN AND BEHIND UTILITY SINK TO BE PAINTED WITH OIL BASE ENAMEL AND ALL FIXTURES SEALED TO PREVENT FUTURE WATER DAMAGE TO SUBSTRATE.

A1 GENERAL NOTES

SCALE: NTS

A6 FURNITURE/FINISH PLAN AND NOTES

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

WARMAN ARCHITECTURE+DESIGN
1735 SWIFT AVENUE
NORTH KANSAS CITY, MISSOURI 64116
V. 816.474.2233 F. 816.474.1051

KATHLEEN ANN WARMAN - ARCHITECT
MO # A-5819

MILAN LASER HAIR REMOVAL
TENANT DEVELOPMENT
1734 NW CHIPMAN ROAD
LEES SUMMIT, MO 64081

PLANS AND NOTES

DESIGNER:
KCD-KANSAS CITY DESIGN GROUP, LLC
4006 N 126TH STREET
KANSAS CITY, KS 66109
T: 816.682.0329

MEP ENGINEER:
LANKFORD, FENDLER & ASSOCIATES
1730 WALNUT ST.
KANSAS CITY, MO 64108
T: 816-221-1411

GENERAL CONTRACTOR:
CONSTRUCTION DESIGNWORKS, LLC
6657 WOODLAND DRIVE
SHAWNEE, KS 66218
T: 913.745.4727

REVISIONS

#	BY	DATE	SOURCE

DATE: MARCH 04, 2021
DESIGNED BY: MSL
DRAWN BY: MSL
APPROVED BY: KW

SHEET NUMBER
A101

JOB NUMBER
5629-21

DIVISION 21, 22, 23 AND 26

GENERAL PROVISIONS

1.0 DESCRIPTION:

A. Divisions 21, 22, 23 and 26 shall be governed by all applicable provisions of the Contract Document.

B. The Contractor shall furnish, install and connect all materials, equipment, apparatuses, and incidentals required for a complete and working installation. For all systems shown and required, the Contractor shall supply all necessary labor, equipment, tools, insurance, and tax services, and shall assume full responsibility for all obligations associated with completion of work as provided by the Contract Documents.

2.0 STANDARDS, REGULATIONS AND CODES:

A. Work shall comply with the edition of the applicable standards, regulations and codes currently in force of all Federal, State and local authorities having jurisdiction. Where quantities, sizes, or other requirements indicated on the drawings or herein specified are in excess of the standard or code requirements, the specifications and/or drawings shall govern. In the absence of other applicable local codes, acceptable to the Architect/Engineer, the International Set of Codes and the National Electrical Code shall apply to this work.

B. The Contractor shall comply with rules and regulations of public utilities and municipal departments affected by connections of services. The Contractor shall pay all fees associated there with.

C. The Contractor shall be licensed to perform associated work in the municipality in which the project is located.

D. All products and types of construction shall meet or exceed the latest edition of applicable standards of manufacturer, testing, performance and installation.

E. Where indicated or required, comply with all provisions of the ADA and/or the ABA Accessibility Guidelines.

F. Where indicated or required, comply with all applicable provisions of energy and ventilation codes in force at the local jurisdiction.

3.0 GRAPHIC REPRESENTATION AND JOB CONDITIONS:

A. The Contract Documents shall serve as working drawings for the general layout of the various items of equipment; are diagrammatic unless specifically dimensioned, and do not necessarily indicate every required item. The contractor shall include all necessary components and accessories as required for a complete working system whether so specifically indicated or not.

B. Architectural and Structural drawings take precedence over all other drawings in the representation of the general construction work; any conflicts shall be resolved prior to commencing work. Failure to do so shall not be considered a basis for the granting of additional compensation.

C. Arrange work in a neat, well organized manner. Coordinate work with other trades involved, prior to commencing work. Sub-contractors shall work together to resolve any conflicts of space or routing.

4.0 GUARANTEES/WARRANTY:

A. The Contractor shall guarantee/warranty all work performed, including labor, materials and equipment furnished under this contract, against defects in materials and workmanship for a minimum period of one year from the date of the Owner's Representative Final Acceptance of the work. Provide extended warranties as noted in each section or specified for specific products.

5.0 WORKMANSHIP:

A. All work performed under this Contract shall provide a neat and "workmanlike" appearance when completed, to the satisfaction of the Owner's Representative. The complete installation shall function as designed and intended with respect to efficiency, capacity, and noise level, etc.

6.0 LOCAL CONDITIONS:

A. The Contractor shall carefully examine and become thoroughly familiar with local conditions, existing installations and all other conditions which may affect associated work. The Contractor shall locate all existing utilities and protect them during the execution of the work

B. The Contractor shall carefully examine all contract documents including project drawings and specifications to become familiar with the type of construction, materials, and equipment to be used for all work and how it will affect the installation of this contract.

C. By the act of submitting a bid, the Contractor will be deemed to have made such examination, to have accepted such conditions, to have made allowance therefore, and included all costs in his proposal. Failure to determine existing conditions will not be considered a basis for the granting of additional compensation.

7.0 OPERATION DURING CONSTRUCTION:

A. The Contractor is responsible for the installation and operation, service and maintenance of all new equipment during construction and prior to acceptance by the Owner of the completed project. Warranty periods shall not commence until final acceptance by the Owner or Owner Representative.

B. The Contractor shall provide, at his own expense, all temporary utilities required to provide for and protect the work and as necessary to maintain an adequate work force.

8.0 SAFETY REGULATIONS:

A. All work shall be performed in compliance with all applicable governing safety regulations, including OSHA regulations. Provide safety lights, guards and signs required.

9.0 HOUSEKEEPING:

A. The Contractor shall be responsible for keeping stocks of material and equipment stored on the premises in a neat and orderly manner.

B. The Contactor shall clean and maintain their specific portions of the work on a daily basis or as specified in the General Conditions.

C. The Contractor shall remove from the premises all waste material present as a result of his work.

10.0 CONNECTION AND ALTERATION TO EXISTING SYSTEMS:

A. Connection to the existing building systems must be accomplished under this contract. System "downtime" due to connection shall be kept to an absolute minimum. The Owner's Representative shall judge if at what time, and for what length of time a shut-down can be tolerated.

B. Provide all temporary piping and wiring systems required during construction in order to keep all existing systems functioning.

C. Demolition, cutting and patching to restore surfaces to original condition as necessitated for access to work performed by the Contractor or his subcontractors shall be the responsibility of the Contractor.

11.0 SUBSTITUTIONS:

A. Materials, products and equipment described in the Bidding Documents established a standard of quality to be met by any proposed substitution.

B. Contractor's bids shall be based on the material identified or specified in the contract documents. Any proposals for substitution shall be made in writing to the Architect/Engineer with all supporting documentation, allowing adequate time for appropriate action. The products of other manufacturers may be accepted, if in the opinion of the Architect/Engineer, the substitute material is of quality as good or better than the material specified, and will serve with equal efficiency and dependability the purpose for which the items specified were intended. The burden of proof of equality is entirely upon the proposer.

C. Refer to Division 1 requirements for additional substitution procedures.

D. Wherever substitutions alter the design or space requirements, the Contractor shall be responsible for confirming all substituted equipment and materials fit within the allocated space while maintaining code required access and clearance. He shall include all associated cost items of the revised design and of construction work required by his or other trades affected by the proposed substitution.

12.0 SHOP DRAWINGS AND PRODUCT DATA:

A. The checking of shop drawings is a gratuitous assistance and in no way relieves the Contractor of responsibility for deviations from the Contract Documents.

B. Shop drawings and catalog data on all major items of equipment and apparatus, and such other illustrative materials as may be considered necessary by the Owner's Representative shall be submitted by the Contractor in adequate time to prevent delay and changes during construction.

C. Refer to Architectural Documents for additional shop drawing submission procedures.

13.0 OPERATING AND MAINTENANCE BROCHURE:

A. On completion of the project, the Contractor shall provide manuals electronically (PDF format unless otherwise instructed) containing complete product information for all installed or provided equipment and components including cut sheets, parts lists, wiring and installation diagrams, operating, service and lubrication instructions. Provide manufacturer guarantee and warranty certificates.

14.0 RECORD DRAWINGS:

A. On completion of the project, the Contractor shall provide record drawings electronically in PDF format (unless otherwise instructed) with all field changes neatly noted. The original routing and layout shall be clearly marked out.

15.0 SITE WORK AND CONDITIONS:

A. The Contractor shall do all necessary excavating and backfilling for the installation of associated work. After the piping or conduit has been installed, tested and approved, the trenches shall be backfilled to grade with compacted sand, gravel or AB-3 material or other material as required by local authorities. Compact to 85% density for unpaved areas, 95% density for paved area or under slabs.

B. All water bearing piping shall be 48" minimum below grade, all gas piping shall be 24" minimum below grade, unless instructed otherwise.

16.0 SUPPORTS:

A. The Contractor shall provide hangers for all machinery and equipment specified or shown in this contract, including fans, air conditioning units, water heaters, pumps, motors, electrical gear, etc., unless specifically noted otherwise.

B. All hangers, brackets, clamps, etc., shall be of standard weight steel. Perforated strap hangers shall not be used in any work. When two (2) or more pipes or conduits are run parallel, or where ducts interfere with the proper location of hangers, they may be supported on trapeze hangers. Other hangers shall be hinged ring malleable iron, by Grinnell or Fee and Mason or approved equal with rods and hanger adjusters for adequate size to carry the loads imposed. All piping, ductwork and conduit systems shall each be independently supported from other systems and from equipment so that no weight is born by equipment.

C. The Contractor shall take all precautions against excessive noise or vibration by isolating the various items of equipment from the building structure. Provide flexible connectors where indicated and at all rotating equipment and for equipment mounted on vibration isolators.

17.0 CUTTING AND PATCHING:

A. All necessary cutting, drilling and patching shall be provided by this Contractor. Structural members shall not be disturbed without prior approval of the Structural Engineer and/or the Owner's Representative. All areas and surfaces disturbed by work performed under this Contract shall be neatly repaired and refinished to the condition of adjoining surfaces in a manner suitable to the Owner's Representative.

18.0 SLEEVES AND ESCUTCHEONS:

A. Penetrations thru walls and floors shall be as detailed.

B. Where not otherwise shown, penetrations shall conform to the following:

1. Where pipes or conduits pass through interior partitions, galvanized steel pipe sleeves or galvanized steel sheet sleeves shall be used.

2. Where pipes or conduits pass thru concrete floors and walls, slabs on grade, cast iron or steel pipe sleeves shall be used.

C. Sleeves through interior non-rated walls, including walls indicated as sound partitions, shall be packed with fiberglass or mineral wool and caulked.

D. Penetrations of fire rated construction shall be made with a UL listed fire penetration assembly suitable for the rating at each location. Where required, sleeves through fire rated structure shall be fire barrier caulked with putty strip or sheet by 3M, Hilti or acceptable equal.

E. Provide steel (dry locations) or brass (damp locations) escutcheons to completely cover pipe penetration holes in floors, walls, or ceilings. Provide pipe escutcheons with nickel or chrome finish for occupied areas, prime paint finish for unoccupied areas, brass for exterior.

19.0 MOTORS, CONTROLS AND FIRE ALARM INTERFACE:

A. All motors furnished under this specification shall be recognized manufacturer and of adequate capacity for the loads involved. All motors shall conform to the standards of manufacturer and performance of the National Electrical Manufacturers Association as shown in their latest publications.

B. Disconnects and motor starters for equipment shall be by the Electrical Contractor unless furnished integral with the equipment or as otherwise indicated. Installation shall be by the Electrical Contractor except for devices factory installed and shipped with equipment. Provide manual or magnetic starters with necessary auxiliary contacts to accomplish the specified or required sequence of operation.

C. All temperature controls unless noted otherwise shall be the responsibility of the Mechanical Contractor.

D. If no sequence of operation is included, submit a proposed sequence to the Engineer for approval.

E. All fire alarm devices including duct smoke detector and shut down/interlock wiring shall be the responsibility of the Electrical or Fire Alarm Contractor otherwise noted.

END OF SECTION

230 100

HEATING, VENTILATION AND AIR CONDITIONING

1.0 SCOPE:

A. The work included under this contract consists of providing all labor, materials, tools, transportation, services, etc., necessary to complete the installation of the heating, ventilating, and air conditioning systems and other items herein listed and as described in these specifications, as illustrated in the accompanying drawings or as directed by the Architect/Engineer.

2.0 SHEET METAL:

A. Ductwork shall be new prime grade galvanized steel sheets constructed per ASHRAE and SMACNA Standards. Duct system(s) installation shall be in accordance with SMACNA Duct Construction Standards Manual and industry standards. Provide round or rectangular duct as indicated.

1. Provide Duct System(s), including all necessary components such as dampers, turning vanes, offsets and takeoffs, etc. required by the project (whether shown or not), which shall be fabricated and installed for maximum efficiency and to minimize pressure drops and objectionable sound and to provide for complete system balancing.

2. All duct sizes shown are free area size and do not include liner.

B. Fabricate for the pressure and SMACNA seal class required by the application.

Leakage class minimum requirements are:

1. Up thru 2" WG pressure - rectangular - Class 24, round - Class 12.

Seal class minimum requirements are:

1. Up thru 2" WG pressure - class A for all duct joints.

C. Duct Sealants

1. Duct sealant shall have 25/50 flame and smoke rating with a static pressure class of 10" WG, mold and mildew resistant. Sealant shall be installed per manufacturer instructions.

2. Sealant for concealed ductwork shall be an externally applied solvent or water based joint and seam sealant with or without tape.

D. Duct Finishes

1. Concealed ductwork shall be manufacturer's standard mill finished.

E. Round or oval duct shall be factory built of galvanized steel, suitable for pressure class required or indicated. Snap lock duct and fittings shall be used for low pressure/velocity applications only. Fittings shall have 1.5 times diameter centerline radius. Spiral duct may be used for any pressure/velocity class. Spiral duct shall be Semco or acceptable equal by McGill Airflow or Lindab.

1. Single wall, 2.0" WG minimum.

F. Flexible air duct and accessories shall be UL-181 class 1 compliant, 25/50 smoke and flame plenum rated. Maximum length shall be 5' - 0". Flexible duct shall have ends banded and insulation ends sealed. Attach with nylon duct zip ties. Provide Thermaflex or equivalent flex tie supports. Supply air and return air flexible ducts and boots shall be insulated. Exhaust flexible duct shall not be insulated.

1. Insulated - Thermaflex G-KM, CPE core on helix wire with R4.2 insulation and polyethylene vapor barrier jacket, with maximum velocity of 5,000 FPM, pressure of 6" WG positive and 1" negative.

2. Flexible ducts shall be Thermaflex or acceptable equal by ATCO or Flexmaster.

3.0 DUCTWORK ACCESSORIES:

A. Provide single thickness turning vanes in all supply duct turns.

B. Provide duct access doors for all internal mounted equipment. Access doors shall be insulated double wall, constructed airtight in accordance with SMACNA standards for the appropriate pressure class where they are installed. They shall have butt or piano hinged with cam latches. Minimum size shall be 12"x12" or 12"x duct depth unless noted otherwise.

C. Branch take-offs to air terminal units shall be high efficiency type.

D. All take-offs to diffusers and grilles shall be made with high efficiency take-offs, 45º take-offs or conical fittings unless specifically indicated otherwise on drawings. Provide locking quadrant volume damper at take-offs in accessible ceilings, unless shown otherwise. Extractors and scoops are not permitted

E. Duct splits, elbows and reducing fittings shall be fabricated per SMACNA standards. "Ductmate" or acceptable equal flanged and gasketed joint systems are approved.

F. Provide dampers where shown and required. Dampers shall be by Greenheck or acceptable equal by Ruskin, American Warming & Ventilating, Air Balance, Inc., Carnes, Krueger, Nailor, United Enertech.

1. Balance and control dampers shall be rated in accordance with AMCA 500D. They shall be opposed blade except air mixing dampers shall be parallel blade.

a. Manual dampers shall have standoff and locking quadrant.

2. Damper Schedule:

a. Manual Damper Rectangular:
Greenheck MBD-15, Galv. Steel formed blade, manual locking quadrant actuator, 4" WG, 2000 fpm.

b. Manual Damper Round:
Greenheck MBDR-50, Galv. Steel formed blade, manual locking quadrant actuator, 1" WG, 2000 fpm.

4.0 DUCT SUPPORTS AND ROUTING

A. Hangers and Supports.

1. Ductwork shall be supported in accordance with all SMACNA standards including support methods, sizes and spacing.

2. All hanger and support parts shall be galvanized steel for non-corrosive environments or stainless steel for corrosive or damp environments.

3. Provide sheetmetal straps, adjustable hangers, clamps, channels, rods, flexible connectors, supplementary steel, etc. as required for proper support of all ductwork. Trapeze may be used for support of single or multiple ducts. Provide accompanying attachments including bolts and nuts, sheetmetal screws or rivets compatible with duct materials.

4. Upper attachments shall be manufactured items specific to the applicable structure. Include concrete inserts, wedge type drilled in inserts, steel beam and joist clamps, plates, rods, clips, straps and brackets as required by the application.

5. Cable systems may be used at contractor option. They shall be a complete assembly including cables, adjustable locking fasteners or clips and all upper and lower attachments by Gripple or acceptable equal.

B. Routing.

1. Ductwork shall be routed as shown on drawings, parallel to building lines unless otherwise shown, coordinated with building structure and other trades. Adjust ductwork routing and elevations with necessary offsets to accommodate beams and other obstructions.

5.0 GRILLES, REGISTERS, INLETS AND OUTLETS:

A. All supply, return and exhaust grilles, registers and diffusers shall be as scheduled on the drawings. Commercial quality - E.H. Price or acceptable equal by Titus, Carnes, Krueger or Nailor.

1. All air distribution devices shall be selected for throw and low noise (25 NC or less) performance characteristics unless otherwise indicated.

2. Unless otherwise indicated, louvered supply grilles shall be double deflection devices with front blades parallel to the long dimension.

3. A balancing damper shall be provided for each and every diffuser, register and grille where airflow control is required. Unless otherwise indicated, provide integral volume damper where a duct mounted damper would not be accessible.

4. Ceiling supply diffuser connection shall be made with hard elbow or flex duct with Thermaflex flex flow elbow support.

6.0 HEATING AND AIR CONDITIONING UNITS:

B. Air conditioning units shall be as scheduled or by acceptable equal. Units shall be standard catalogued products with the appropriate approval or certification by AGA, ARI and UL. Efficiencies shall conform to ASHRAE 90 standards.

C. Ductless Split System Units:

1. Provide wall mounted, indoor units with integral cabinet, fan, washable filter, cooling coil and wireless thermostat coupled with remote DC invertor condensing units with low ambient wind baffle. Provide heat pump configuration where shown. Provide all mounting hardware, refrigerant line set.

2. Ductless split systems shall be by Senville or acceptable equal by LG, Hitachi, Toshiba, or Sanyo.

D. Provide units with manufacturer's standard control package. Controls to include factory wired terminals with overload devices and transformers as required. Unit safety control to include high-low pressure switches, fan relays, short cycle safety and internal pressure relief, gas controls with hi limit and anti- cycle protection.

E. Provide unit accessories as noted on drawings and as required for a complete operating system.

F. Mount units to provide the required service, access and airflow space.

7.0 FANS:

A. Fans shall be as scheduled with all required accessories including vibration isolators, hangers, rate of rise thermostats, etc. Commercial quality fans shall be AMCA rated by Soler Palau or acceptable equal by Cook, Acme, Carnes, Penn Barry.

8.0 FILTERS:

A. Provide filters in air intake to each units A/C system with size and number of filters standard with air unit manufacturer. Provide 1" and/or 2" thick to suit equipment requirements, hi-velocity, throw-a-way MERV 8 filters, Farr 30/30 or acceptable equal by American Air Filter, Airguard, Air Filters, Inc., Purolator. Filters shall be new and clean at time of Owner's acceptance. Supply extra set of filters for each unit.

9.0 CONTROLS AND LOW VOLTAGE SYSTEMS:

B. All temperature controls unless otherwise noted shall be the responsibility of the Mechanical Contractor.

C. Controls system shall be electric/electronic with stand-alone programmable digital thermostats.

D. Provide control installation to accomplish the indicated or required sequence of operation including thermostats/ sensors, controllers, actuators, wiring, piping and tubing, software, graphics and other components as required for a complete operating system. Where no sequence is indicated, contractor shall submit a proposed sequence for approval.

E. Devices exposed to view and mounted in finished spaces shall be white in color unless otherwise noted or directed.

F. All occupant adjustable devices shall be mounted in accordance with ADA and ADAAG requirements.

10.0 PIPE, FITTINGS AND VALVES:

A. Provide service valves for each item of equipment, at branch piping and elsewhere as indicated or required. Provide control valves, balance valves, strainers, check valves and other valves as indicated or required by the application.

B. Provide a union or flanged connection between each item of equipment and its service valve. Copper to ferrous pipe connections shall have isolation coupling, flange or union.

C. Refrigerant:

1. Piping - ASTM B280 type ACR pre-charged copper tube, wrought copper or brass fittings, flared compression or brazed joints. Piping and fittings shall be rated for 700 PSIG at 170F. Soft annealed copper tubing or manufacturer's pre-charged line sets up thru 5/8" may only be used in concealed locations, on the exterior or as specifically indicated. Hard temper tubing shall be used in all areas exposed to view in finished spaces and for pipe sizes 3/4" and above.

2. All refrigerant piping work and accessories shall be in strict accordance with manufacturer's requirements, including but not limited to compliance with piping slopes, traps and risers, maximum permitted lengths and cleaning and purging.

3. All refrigerant piping systems shall be eddy current tested, nitrogen purged during brazing and ends capped. They shall be cleaned and triple evacuated in accordance with manufacturer and industry standards.

4. All systems shall be leak tested prior to insulation installation and prior to refrigerant charging and shall be certified leak free with report provided to the engineer. Contractor is responsible for repair of any system leaks including system evacuation and recharging.

5. Flame-free refrigerant fittings shall consist of a tube depth check feature and double crimp bands on each end of connection. Further, each Contractor employee tasked to install proposed refrigerant piping system shall perform factory certified training on the installation of said system. A copy of the factory certifications shall be submitted to the Engineer. For reference, and additional copy shall be delivered to the General Contractor and kept on site for the duration of construction.

D. Condensate drain piping:

1. Type "L" Copper Pipe - Indoor locations only, provide with wrought copper fittings, 50/50 solder joints.

2. Provide with plugged tee cleanouts unless otherwise accessible for cleaning. Trap all air unit condensate drains with deep traps.

3. Where indicated or where required for positive drainage, provide mechanical units with condensate pump.

4. Condensate drain piping:

a. Indoor units shall discharge indirectly to floor drains or to daylight or as otherwise indicated on drawings and shall be in accordance with local codes.

11.0 PIPE SUPPORTS AND ROUTING:

A. Hangers and Supports.

1. Piping shall be supported in accordance with industry standards including support methods, sizes and spacing. All supports shall conform to MSS SP58 and Fed Spec WW-H-171E and A-A-1192A.

2. Pipe Slopes: Install hangers and supports to provide indicated or required pipe slopes to provide for drainage and venting

3. Deflection: Maximum pipe deflections and stresses as allowed by ANSI B31 are not exceeded.

4. Each piping system shall be independently supported with no piping bearing on another and installed such that no weight of piping is borne by the equipment.

5. Space hangers and supports within maximum piping span length indicated in MSS SP-58. Install building attachments at required locations for proper piping support.

6. Provide adjustable hangers, inserts, brackets, rolls, clamps, channels, rods, guides, anchors, flexible connectors, supplementary steel, etc., as required for proper support of all pipe lines. Trapeze may be used for support of multiple pipes. Provide accompanying attachments including bolts and nuts, sheetmetal screws or rivets suitable for application.

7. Provide copper plated, plastic coated or felt lined hangers where required to prevent electrolysis or abrasion on copper or plastic piping systems.

8. Upper attachments shall be manufactured items specific to the applicable structure. Include concrete inserts, wedge type drilled in inserts, steel beam and joist clamps, plates, rods, clips, straps and brackets as required by the application.

9. Hangers shall be designed to allow for expansion and contraction of pipe lines and shall be of adequate size to permit covering when required. Provide protective saddles and blocking where supporting insulated piping to prevent crushing insulation.

10. All hanger and support parts shall be galvanized steel for non-corrosive environments or stainless steel for corrosive or damp environments.

11. Cable systems may be used at contractor option. They shall be a complete assembly including cables, adjustable locking fasteners or clips and all upper and lower attachments by Gripple or acceptable equal.

B. Routing.

1. Piping shall be routed as shown on drawings, parallel to building lines unless otherwise shown, coordinated with building structure and other trades. Adjust pipe routing and drop locations with necessary pipe offsets or changes in elevation to accommodate beams and other obstructions.

12.0 INSULATION:

C. Ductwork

1. Duct Liner

a. Line low velocity rectangular sheetmetal supply ductwork with mat faced 3 lb. density fiberglass or textile liner with anti-microbial coating. Apply with mastic and pins with erosion protection on all exposed edges.

1) Ducts in conditioned space or plenums utilized for return air -1/2" thick liner.
2) Supply ducts in unconditioned space or plenums not utilized for return air - 1" thick liner.

2. Interior Duct Wrap

a. Flexible Wrap - Provide sheetmetal duct wrap with 0.75 lb. density glass fiber insulation with FSK glass fiber reinforced laminated/bonded aluminum foil and kraft paper vapor barrier. Apply with all fasteners, mastics and sealants and joint tape.
1) Concealed low velocity round run-out duct to terminal devices - 1-1/2" thick wrap.

C. Piping

1. Pipe insulation shall run continuously thru hangers and supports with all joints sealed and vapor barriers preserved.

2. Metallic condensate drain piping: Insulate interior metallic condensate drain lines with Armaflex AP or Aerocel AC EPDM flexible elastomeric insulation. Do not split.

a. 1" thick for all pipe sizes.

13.0 VIBRATION ISOLATION:

A. Provide flexible connections at all motor driven equipment, where shown and where required to hold transmitted noise and vibration to an acceptable minimum at piping and duct connections.

B. Duct flexible connection shall be Durodyne non-combustible, 22 ounce (minimum) polymer coated woven fabric or acceptable equal.

14.0 SLEEVES AND SEALS, FLASHINGS, AND UV PROTECTION:

A. Flash all pipes and vents extending through roof. Flashing details shall be in accordance with roof manufacturer's requirements.

B. Continuous roof piping penetrations shall be thru a pipe portal assembly with roof curb, cap and pipe penetration boot(s), Pate PCA/PCC series or acceptable equal.

C. Provide sleeves where piping penetrations are required thru partitions, concrete floors, concrete slabs on or below grade or foundation walls. Where penetrations are through fire rated assemblies, sleeves shall be in accordance with UL listing requirements. Sleeves shall be galvanized steel pipe, sheet steel or cast iron. Sleeves are not required for core drilled penetrations of existing concrete slabs above grade. Penetrations of below grade structures and slabs on grade shall be water proofed with mechanical link seal system, Thunder Line or acceptable equivalent.

D. Provide escutcheons at all penetrations of exposed walls and ceilings. Escutcheons shall be chrome plated brass in occupied areas, prime paint finish for unoccupied areas unless otherwise noted. Escutcheons for exterior or moist areas shall be brass.

E. Plastic piping without UV inhibiters which is exposed to UV radiation from sunlight shall be protected by coating with a UV resistant paint.

15.0 MISCELLANEOUS

A. Provide escutcheons at all piping penetrations of finished wall, floor or ceiling construction. Escutcheons shall be chrome plated brass in occupied areas, prime paint finish for unoccupied areas unless otherwise noted. Escutcheons for exterior or moist areas shall be brass.

B. Where not provided by other trades and access to mechanical dampers, valves, controls and other items is required in inaccessible ceiling or wall spaces, provide an access door, minimum 12"x12" size with frame style suitable for the type of construction where installed, whether gypsum, concrete or masonry.

a. Access door shall be, 16 gauge steel, keyed cylinder lock, flush mounted, concealed hinge. Provide baked enamel finish in unfinished areas or with painted walls. Provide stainless steel where located in tile walls.

b. Standard door shall be Milcor type 'M'.

c. Fire rated door shall be Milcor type 'UFR', UL labeled 1-1/2 hour fire rated self-closing, insulated door panel where located in rated assemblies.

d. Acceptable manufacturers are Zurn, JL Industries and KARP.

16.0 CLEANING:

A. New Work

1. Clean air system by operating at least three hours prior to final acceptance with temporary filters. Remove all filters and replace with clean.

17.0 TESTING AND ADJUSTING:

A. Contractor shall operate and test the air conditioning and ventilation systems and instruct the Owner in its operation. Perform a series of general capacity and operating tests. The tests shall demonstrate the specified capacities of various pieces of equipment.

B. The entire temperature controls systems shall be adjusted and balanced and put in operating condition to cause the equipment to maintain the temperatures in accordance with the intent of these specifications. Operate and test equipment during summer and winter seasonal startup under this contract.

C. The test and balance contractor shall perform an initial test and balance noting any mechanical system deficiencies. The mechanical contractor shall review the preliminary report prior to final issue of the test and balance report and work with the test and balance contractor and the engineer as needed to make all system repairs and modifications necessary to achieve the design performance established by the contract document prior to the final reporting. The final test and balance report shall incorporate results of all mechanical system modifications.

D. Test condensate drain piping by filling with water to the drain pan connection(s) for a period of 2 hours with no observable leaks.

E. Submit the complete test and balance report for review to the Architect/Engineer in triplicate. Test procedure and report shall conform to NEBB or AABC standards. The report shall be signed by the responsible individual.

END OF SECTION

Lankford + Fendler + associates
1730 Walnut Street Kansas City, Missouri 64108
1915 Frederick Avenue, St. Joseph, Missouri 64501
Phone: 816.221.1411 | Fax: 816.221.1429
LANKFORD | FENDLER + ASSOCIATES, CONSULTING ENGINEERS, INC.

WARMAN ARCHITECTURE+DESIGN
1735 SWIFT AVENUE
NORTH KANSAS CITY, MISSOURI 64116
V. 816.474.2233 F. 816.474.1051

STATE OF MISSOURI · PROFESSIONAL ENGINEER · NUMBER PE-2006005139
03/4/2021

MILAN LASER HAIR REMOVAL TENANT DEVELOPMANT
1734 NW CHIPMAN ROAD
LEES SUMMIT, MO 64081

DESIGNER:
KCD-KANSAS CITY DESIGN GROUP, LLC
4006 N 126TH STREET
KANSAS CITY, KS 66109
T: 816.682.0329

MEP ENGINEER:
LANKFORD, FENDLER & ASSOCIATES
1730 WALNUT ST.
KANSAS CITY, MO 64108
T: 816-221-1411

GENERAL CONTRACTOR:
CONSTRUCTION DESIGNWORKS, LLC
6657 WOODLAND DRIVE
SHAWNEE, KS 66218
T: 913.745.4727

REVISIONS			
#	BY	DATE	SOURCE

DATE:	MARCH 04, 2021
DESIGNED BY:	PAM
DRAWN BY:	PAM
APPROVED BY:	BLH

SHEET NUMBER
MEP101

JOB NUMBER
#5629-21

220 100
PLUMBING

1.0 SCOPE:

A. The work included under this contract consists of providing all labor, materials, tools, transportation, services, etc., necessary to complete the installation and to provide complete working systems of the Plumbing Systems, including hot and cold water, waste and vent, storm drainage, fixtures, equipment and other items described in these specifications, as illustrated in the accompanying drawings or as directed by the Architect/Engineer.

B. Extend piping systems as indicated on contract documents or to point of connection as follows:

1. Points of connection within the existing building.

2.0 PIPING, FITTINGS AND VALVES:

A. Provide service valves for each item of equipment, at branch piping and elsewhere as indicated or required. Provide balance valves, strainers, check valves and other valves as indicated or required by the application.

B. Provide a union or flanged connection between each item of equipment and its service valve. Copper to ferrous pipe connections shall have isolation coupling, flange or union.

C. Domestic water, interior, above ground -

1. Pipe, copper tube -
   a. 2-1/2" and Smaller -Type "L" hard temper, wrought or cast copper fittings, Lead free 95/5 or Eagle Hard Silvabrite or "CB" solder joints, or pressure seal joint fittings with EPDM O-ring seals.
2. Valves -
   a. 1/4 turn Service -
      1) 1/2" thru 2" - Nibco 585-66-LF bronze lead free, 600 PSIG, full port, stainless steel ball and stem.
3. Provide valves where indicated on the drawings, where required by code or required for service.
4. Securely anchor and support piping, valves and fittings, with adequate provisions for expansion and contraction. Grade lines, free of traps, to low point at cut-off and drain valve.
5. Hot and cold supply lines to have manufactured pre-charged piston type water hammer arresters sized and installed in accordance with PDI-WH 201. Install at each solenoid actuated quick closing valve location including but not limited to dishwashers, clothes washers, ice makers, electronic faucets and similar items. An arrester shall also be required at each fixture, group or battery of fixtures to prevent water hammer. Sioux Chief, JR Smith or equal. Provide access panel where required.

D. Sanitary sewer, vent, interior --

1. Pipe - Standard weight cast iron hubless with no-hub shielded mechanical joints; solid wall schedule 40 PVC, ABS with solvent cement joints; vents may be galvanized malleable iron.
2. Plastic piping shall not be allowed in return air plenums.
3. Hub drains, where shown, shall be of material compatible with piping system, 2" minimum connection size, top flared out to accept indirect wastes required at each location. Hub drains shall be fitted with trap guards. Floor mounted hub drains shall extend 2" above finish floor.
4. All gravity drainage shall be graded per code but not less than 1/8" per foot unless noted otherwise. 3" and 4" piping shall be sloped at 1/4" per foot where possible and where required by local codes.
5. Indirect waste piping from fixtures or appliances shall be type 'L' copper hard temper with wrought or cast copper fittings, Lead free 95/5 or Eagle Hard Silvabrite or "CB" solder joints. Support piping from fixture supports and/or floor stanchions. Maintain minimum air gap discharge per code requirements.

E. Sanitary sewer, vent, below grade --

1. Pipe - Standard weight cast iron hubless with no-hub cast iron mechanical joint fittings; solid wall schedule 40 PVC, ABS with solvent cement joints.
2. All gravity drainage shall be graded per code but not less than 1/8" per foot unless noted otherwise. 3" and 4" piping shall be sloped at 1/4" per foot where possible and where required by local codes.

F. CLEANOUTS, TEST TEES, TRAPS AND TRAP SEALS:

A. Provide cleanout at the base of each stack or riser, at ends of runs greater than 10', each 135 degree aggregate change of direction in horizontal piping, where indicated on the drawings or as required by code. Plugs, extra heavy cast brass, screwed. Scoriated tops in unfinished areas, carpet markets in carpet floors, tile top in tile floors, stainless steel cover in finished walls. Cleanouts same size as pipe up to 4" diameter, 4" cleanouts for larger pipe unless otherwise noted.

B. All traps shall be deep seal type with liquid seal not less than specified by code.

C. Where trap primers are not specified provide all floor and hub drains with trap seal with EPDM diaphragm, Provent Proset Series SG22 or TG22, Rectorseal SS series or acceptable equal.

3.0 SLEEVES AND SEALS, FLASHINGS:

A. Provide sleeves where piping penetrations are required thru partitions, concrete floors, concrete slabs on or below grade or foundation walls. Where penetrations are through fire rated assemblies, sleeves shall be in accordance with UL listing requirements. Sleeves shall be galvanized steel pipe, sheet steel or cast iron. Sleeves are not required for core drilled penetrations of existing concrete slabs above grade. Penetrations of below grade structures and slabs on grade shall be water proofed with mechanical link seal system, Thunder Line or acceptable equivalent.

4.0 CROSS- CONNECTIONS AND INTERCONNECTIONS:

A. No plumbing device or piping shall be installed which will provide cross-connection or interconnection between a distributing supply or waste so as to make possible the backflow or back-siphonage of polluted water into the potable water supply system. Where the possibility of back-siphonage exists, water supply to the fixture shall be introduced through a suitable backflow preventer device suitable for the hazard protected. Installed backflow preventers must be approved through the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research.

1. They may be an air gap, anti-syphon valve, atmospheric vacuum breaker, pressure vacuum breaker, double check, reduced pressure backflow preventer or as otherwise required by the authority having jurisdiction.

5.0 INSULATION:

A. Pipe insulation shall conform to the International Energy Conservation Code.

B. Insulate all cold water, hot water piping, Owens Corning or acceptable equal.

1. Cold water piping insulation: 1" fiber glass sectional pipe covering with universal vapor barrier jacket.
2. Hot Water piping insulation: 1" fiber glass sectional pipe covering with universal all service jacket.

C. At Contractor's option, Armacell AP Armaflex unicellular insulation or acceptable equal with 25/50 flame and smoke rating with equal thermal performance may be substituted for fiberglass products.

D. Seal all joints on cold water insulation to maintain vapor barrier.

E. Insulation shall run continuously thru hangers and supports without interruption.

6.0 PIPE SUPPORTS AND ROUTING:

A. Hangers and Supports.

1. Piping shall be supported in accordance with industry standards including support methods, sizes and spacing. All supports and installation shall conform to MSS SP58 and 69 and Fed Spec WW-H-171E and A-A-1192A.
2. Pipe Slopes: Install hangers and supports to provide indicated or required pipe slopes to provide for drainage and venting
3. Deflection: Maximum pipe deflections and stresses as allowed by ANSI B31 are not exceeded.
4. Each piping system shall be independently supported with no piping bearing on another and installed such that no weight of piping is borne by the equipment.
5. Space hangers and supports within maximum piping span length indicated in MSS SP-58. Install building attachments at required locations for proper piping support.
6. Provide adjustable hangers, inserts, brackets, rolls, clamps, channels, rods, guides, anchors, flexible connectors, supplementary steel, etc., as required for proper support of all pipe lines. Trapeze may be used for support of multiple pipes. Provide accompanying attachments including bolts and nuts, sheetmetal screws or rivets suitable for application.
7. Provide copper plated, plastic coated or felt lined hangers where required to prevent electrolysis or abrasion on copper or plastic piping systems.
8. Upper attachments shall be manufactured items specific to the applicable structure. Include concrete inserts, wedge type drilled in inserts, steel beam and joist clamps, plates, rods, clips, straps and brackets as required by the application.
9. Hangers shall be designed to allow for expansion and contraction of pipe lines and shall be of adequate size to permit covering when required. Provide protective saddles and blocking where supporting insulated piping to prevent crushing insulation.
10. All hanger and support parts shall be galvanized steel for non-corrosive environments or stainless steel for corrosive or damp environments.
11. Cable systems may be used at contractor option. They shall be a complete assembly including cables, adjustable locking fasteners or clips and all upper and lower attachments by Gripple or acceptable equal.

B. Routing.

1. Piping shall be routed as shown on drawings, parallel to building lines unless otherwise shown, coordinated with building structure and other trades. Adjust pipe routing and drop locations with necessary pipe offsets or changes in elevation to accommodate beams and other obstructions.

7.0 MISCELLANEOUS

A. Indirect wastes shall discharge full size thru an air gap to a floor, equipment drain or sanitary floor sink. The floor or equipment drain grate shall be fitted with a funnel, the sanitary floor sink shall have a partial grate or the grate shall be omitted. Drains shall be located so they are accessible and not a tripping hazard.

B. Provide escutcheons at all penetrations of exposed walls and ceilings. Escutcheons shall be chrome plated brass in occupied areas, prime paint finish for unoccupied areas unless otherwise noted. Escutcheons for exterior or moist areas shall be brass.

C. Where not provided by other trades and access to plumbing valves and other items is required in inaccessible ceiling or wall spaces, provide an access door, minimum 12"x12" size with frame style suitable for the type of construction where installed, whether gypsum, concrete or masonry.

1. Access door shall be, 16 gage steel, keyed cylinder lock, flush mounted, concealed hinge. Provide baked enamel finish in unfinished areas or with painted walls. Provide stainless steel where located in tile walls.
2. Standard door shall be Milcor type 'M'.
3. Fire rated door shall be Milcor type 'UFR', UL labeled 1-1/2 hour fire rated self-closing, insulated door panel where located in rated assemblies.
4. Acceptable manufacturers are Zurn, JL Industries and KARP.

8.0 PROTECTION OF WORK

A. Protection

1. Protect and cover piping and fixture waste and water openings to prevent entry of dirt and debris.
2. Cover and protect fixtures and plumbing equipment to prevent damage.

9.0 TEST, ADJUSTMENTS AND CLEANING:

A. Soil, waste and vent piping testing:

1. Fill with water to the top of the highest point of the system extending through roof, but not less than 10 feet water column, and allow to remain for a period of two hours.

B. Water line testing:

1. Water piping shall be purged and tested with compressed air or water at 50 PSIG above the operating pressure but not to exceed the pressure rating of piping system materials for a period of 2 hours with no measurable pressure drop.
2. Sanitary sewer and vent piping components and installation shall be tested with no measurable drop during a 15 minute period or at a pressure not less than 10% above that the piping will be subjected to during normal operation as follows:
   a. Sanitary, Gravity Drain Piping: 10-foot head of water.
3. For renovation projects, isolate and protect fixtures, valves and equipment from over pressurization during testing.

C. After successful testing, sterilize water system with an approved solution in accordance with local health officials.

D. Contractor to submit all test data and other documentation for record.

10.0 FIXTURE BRANCH PIPING:

A. Fixture branch and connection sizes shall be as shown in the plumbing fixture schedule on the drawings and not less than required by code.

B. Minimum waste or vent size below slab on grade shall be 2".

11.0 PLUMBING FIXTURES:

A. Refer to plumbing fixture schedule for plumbing fixtures and accessories. Include all fittings and accessories as required for a complete working system.

B. At contractor option, flexible stainless steel braided hose, 125 PSIG rated, with non-toxic liner and compression fittings may be used in lieu of chrome plated brass riser tube.

END OF SECTION

210 100
FIRE PROTECTION

1.0 SCOPE:

A. Fire protection shall be governed by all applicable provisions of the Contract Document.

B. Provide a complete and operational fire protection system as required by NFPA, systems shall include:

1. Wet sprinkler system -- NFPA 13.
2. Systems shall be compliant with NFPA 70, 72, FM and UL as applicable.

C. All fire protection components shall be UL and FM approved devices where applicable as required by NFPA.

D. Upon completion of the work, system acceptance testing shall be performed by the sprinkler contractor in accordance with requirements of NFPA with a completed copy of 'Contractor's Material and Test Certificate' provided.

E. All cable ties for controls and other cable systems located in plenums utilized for air movement that are not installed in conduit shall be 25/50 flame and smoke rated, Hellermann Tyton T50R2C2UL or equivalent.

F. Provide permanent identification of all valves, piping, electrical components and equipment in accordance with NFPA 13 and 14.

G. Upon completion of the project, perform all flushing and testing of the system including pressure and flow tests and testing of all electrical, controls and safety components.

2.0 WET SPRINKLER SYSTEMS

A. Systems shall be in accordance with NFPA 13 complete in every respect to provide complete coverage of all areas in the entire building or throughout the area of work as indicated. Sprinkler system shall be hydraulically designed per appropriate hazard class.

B. Sprinkler system shall be a delegated design, contractor shall be responsible for layout and design of the fire sprinkler system. Submit all necessary documentation (plans, calculations, cut sheet literature and flow tests) and obtain necessary permits for approval and installation of the system. Provide PE or NICET stamp on submittal drawings.

C. As required by application, system shall include but not be limited to pipe and hangers, sprinklers, valves, inspector tests, fire department connection, audible and visible alarms, gages, wiring etc. Conform to the requirements of Division 16, FM and UL or IRI where required by owner.

1. System shall be an extension of and/or modifications to the existing building system.

D. Reconfigure existing building sprinkler piping and/or sprinklers within the scope of work area in order to provide proper coverage per NFPA and Local Authorities.

E. Upon final acceptance, the owner shall be responsible for proper maintenance as established by the latest edition of NFPA 25 'Standard for the inspection, Testing and Maintenance of Water Based Fire Protection Systems'.

3.0 PIPING, FITTING AND VALVES:

A. Fire protection above ground -

1. Pipe -
   a. All sizes - Schedule 40, black steel, malleable iron threaded, flanged or welded fittings; roll or cut groove mechanical joints with wrought or forged steel fittings or roll grooved end couplings.
   b. 1-1/2" and larger - Schedule 10, black steel; roll groove mechanical joints with roll grooved end couplings.
2. Sprinkler piping shall be independently supported from all other systems, no other system or component may bear on any sprinkler pipe or support. In accordance with NFPA 25 or where required by local authority, sprinkler piping shall not be subjected to external loads by materials either hung from or resting on sprinkler piping.
3. Valves -
   a. Shutoff -
      1) 1/2" thru 2"
         a) Nibco T-104-0 Bronze, UL and FM approved OS&Y Gate, 175 PSIG.
4. At contractor option, sprinklers may be supplied by UL 2443 listed 1" minimum 304 stainless steel (braided or unbraided corrugated) 175 PSIG rated flexible hoses with all associated UL listed fittings, threaded ends, brackets and other attachments, 6' maximum length. Victaulic Vic-Flex or acceptable equivalent.

4.0 SPRINKLERS

A. Provide quick response sprinklers, standard response, extended coverage or dry sprinklers as required by application.

B. Sprinklers shall be of the following styles, subject to application.

1. Recessed chrome plated brass with 2-piece adjustable escutcheon in gypsum and lay-in tile ceilings.

C. Locate sprinklers at center of 2 x 2 lay-in tiles or 2 x 2 portion of 2 x 4 lay-in tiles. Align sprinklers in a row when in gypsum board ceilings. All location tolerances shall be +/- 1/2".

D. Refer to reflected ceiling plans for coordination with lights, diffusers, exit signs, etc.

END OF SECTION

260 100
ELECTRICAL

1.0 SCOPE:

A. The work included under this contract consists of the furnishing of all labor, materials, tools, transportation, services, etc., necessary to complete the installation of the electrical systems and other items herein listed, all as directed by the Architect or Engineer, which work is comprised of, but not limited to the following principal items:

1. Electrical system for light and power:
   a. Electrical service and distribution system revisions.
   b. Switches and panel boards.
   c. Systems of conduit, conductors, and boxes.
   d. Receptacles and wiring devices.
   e. Lighting fixtures and lamps.
   f. Power service to the various motors.
   g. Complete lighting and power systems.
   h. All systems, wiring and conduit as required.
2. Control wiring and electrical installation and connections for items in other contracts as may be listed in the drawings.
3. Empty conduit and boxes for future installation of telephone wiring and miscellaneous systems.
4. Rough-in and final connection to equipment furnished by others.
5. All cable ties for low voltage cable systems located in plenums utilized for air movement that are not installed in conduit shall be 25/50 flame and smoke rated, Hellermann Tyton T50R2C2UL or equivalent.

B. Raceway wiring systems shall be concealed in all finished parts of the building, where possible. Where the raceways are exposed, they shall be run parallel with the building walls in a neat and workmanlike manner. Should it appear necessary to expose any conduit or wiring in finished spaces, it shall be brought to the Architect's attention immediately and this Contractor shall rearrange associated work as directed to facilitate an approved installation. Contractor to coordinate with mechanical trades to avoid ductwork and piping.

2.0 RACEWAYS:

A. All electrical conductors are to be installed in metal raceways, unless specifically specified or noted otherwise. Galvanized steel or intermediate steel conduit as permitted by code. No conduit smaller than 3/4" to be used. Use set screw or compression type fittings. Provide flexible conduit connection for final connection to each motor not to exceed 3' in length and recessed lighting fixtures not to exceed 6' in length. Provide pull wires in all empty conduit systems. Identify terminus of each pull wire. All exposed raceways shall be installed with runs parallel and/or perpendicular with building walls. Fasten all rigid/non-flexible conduit every 8' and 2' from each box. Conduit shall be EMT where not subject to mechanical damage as permitted by National Electric Code (N.E.C.). EMT connectors and couplings 4" and smaller shall be compression type. Type MC Cable with ground wire is allowed in concealed spaces only, behind walls and above ceiling. Fasten all MC and or FMC every 4.5' feet and within 12" inches of conduit termination.

B. Conduit bushings shall be provided and installed inside all disconnects, pull boxes, panelboards, switchboard or similar type equipment and where permitted by National Electric Code (N.E.C.).

3.0 WIRES AND CABLES:

A. Electrical conductors, soft annealed copper with conductivity 98% of that of pure, stranded copper, 90 degree - 600V insulation and equal to General Cable Company. Wire and cable for all feeders, subfeeders, motor circuits and high ambient location type shall be THHN. All other branch circuit wiring shall be type XHHN or THHN. Minimum wire size shall be #12 gauge AWG. Control wiring may be #14 gauge.

B. For conductors #4 or small use the following color-code:

- 208Y/120V, 3-phase: black, red, blue, white.
- Green shall be used for ground wire conductor.
- Contractor shall use the following color designations and be consistent throughout the project. Color designation for switch legs and or travelers: Violet, Pink or Purple may be used.

C. When using black insulated conductors, contractor shall color-code conductor inside all pullbox or similar type enclosures.

D. Conductor Material Applications:
   a. Branch Circuits: Copper. Solid for No. 12 AWG and smaller; stranded for No. 10 AWG and larger.
   b. Power-Limited Fire Alarm and Control: Solid for No. 12 AWG and smaller.

E. Conductor insulation and multi-conductor cable application and wiring methods:
   e. Exposed Branch Circuits, Including in Crawlspaces: Type THHN, single conductors in raceway.
   f. Branch Circuits Concealed in Ceilings, Walls, and Partitions: Type THHN, single conductors in raceway or Metal-clad cable, Type MC.

4.0 GROUNDING:

A. Ground all electrical apparatus in accordance with N.E.C. and as specified herein. Provide a separate grounding conductor for all lighting, receptacle and equipment circuits. All cabinets, switchboards, equipment cases, motor frames, interior metal cold water piping systems, and system neutral conductors shall be effectively grounded. Use solderless pressure type connectors, no perforated strap connectors will be allowed. Ensure continuous bond where flexible conduit is used. Provide bonding jumper inside all flexible conduit. Grounding per N.E.C. 250, and any local requirements.

5.0 SPLICE AND TAPS:

A. Make splices at junction boxes, pull boxes, or outlet boxes only.

6.0 CABINETS, JUNCTION AND PULL BOXES:

A. Flush or surface mounted as indicated on drawings. Provide where shown on drawings and where required by code. Construct of cold gauge steel for flush surface mounting.

7.0 OUTLET BOXES:

A. General Electric, Appleton, Steel City or Raco hot dipped galvanized steel boxes, or equal. Install at terminal of each conduit run, each outlet, or device. Provide size, type and design to suit structural conditions. Adequate to accommodate size and number of raceways, conductors, device or fixture served. Provide plaster rings or covers on boxes where required on exposed work, use approved cast ferrous alloy outlet, junction boxes and fittings. Fixture or device cover shall completely conceal the size outlet box used. Install 3/8" fixture stud for lighting fixtures where required. Locate ceiling outlets to work with architectural features as directed. Switches installed 48" above floor on strike side of door as finally hung. Receptacles and telephone outlets, 18" above finished floor unless otherwise noted. Verify all outlet locations on job with Architect.

8.0 DISCONNECT SWITCHES:

A. Heavy duty NEMA type 'HD' - same manufacturer as panelboards. Plastic nameplate properly engraved with name of equipment served, secured to switch cover. Fuses shall be Bussmann of sizes and types scheduled.

9.0 MOTOR AND CONTROL WIRING AND CONNECTIONS:

A. This Contractor to provide all necessary conduit, boxes and supports to equipment furnished by Owner and as indicated on drawings. Provide a disconnect switch and starter if required.

10.0 LABELING:

A. Contractor shall label each and every j-box above ceiling with a permanent marker with panel and circuit number.

B. Outlets, adhesive film label, machine printed clear background with black letters, by thermal transfer or equivalent process. Minimum letter height shall be 1/4 inch. Face plate shall be labeled with panel and circuit number.

C. Interior equipment self-adhesive, engraved, laminated acrylic or melamine label: adhesive backed, with white letters on a dark-gray background. Minimum letter height shall be 3/8 inch (10 mm).

11.0 WIRING DEVICES:

A. Duplex receptacles shall be Hubbell #5352-X grounding type, 20A., 125V.; G.F.C.I. shall be Hubbell GF-5352-X, 20A., 125V.; duplex, G.F.C.I. TYPE. Isolated ground receptacles shall be orange in color, Hubbell IG-5352, 20A, 125V, duplex. Isolated ground receptacles shall be equipped with a Hubbell IGP-8 plate, orange in color inscribed "Isolated Ground". Wall toggle switches shall be Hubbell Number 1221-X and Number 1223-X for single pole and three way types respectively. Other switch, receptacle, and outlet device variations shall be by Hubbell of "Spec. Grade" quality. Equivalent devices of P & S or Leviton will be acceptable in lieu of the above listed devices. Contractor to verify color of devices with Architect before purchase. Provide smooth plastic cover plates to mate and match device for each outlet.

B. Motion sensor: contactor shall verify with owner for proper time delay settings.

12.0 LIGHTING FIXTURES:

A. This Contractor shall furnish and install complete, unless otherwise specified, a lighting fixture on each and every lighting outlet shown on the drawings of each type scheduled by letter and description. All fixtures shall be equipped with lamps as scheduled or specified herein. All fixtures installed in suspended ceilings must be securely fastened to framing members per NEC 410-36b and local seismic code requirements.

13.0 FIRE ALARM SYSTEM:

A. Fire alarm system shall be a delegated design, contractor shall be responsible for layout and design of the fire alarm system. Submit all necessary documentation including stamped and signed drawings to the authority having jurisdiction and obtain necessary permits for approval and installation of the system prior to submitting shop drawings.

B. Engineer's drawings showing fire alarm devices are schematic, and only provide code intent, coordination, and all devices may not be indicated. Final layout shall be provided by the Fire Alarm contractor. Fire alarm contractor shall become the Designer of Record as such, the contractor shall be responsible to verify device layouts comply with all applicable codes and shall include in bid all cost associated with additional devices should they be required. Final layout shall be coordinated with the architect and plans.

C. Contractor shall include in bid all cost associated with Fire alarm modifications.

D. All detection devices shall be addressable, non-coded fire alarm protective type matching base building type and style. Overall system shall utilize the following:

1. Fire alarm horns and strobes shall be relocated and added throughout the facility per code requirements.
2. Manual pull stations shall be located at each exterior exit and stairwell and be per code requirements.
3. System signal wire shall be type THHN in conduit or shall be UL listed plenum cable.

E. All new equipment shall be ADA compliant, be by one manufacturer, and warranted for a minimum of one year.

F. Equipment shall match base-building manufacturer.

END OF SECTION

Lankford Fendler + associates
1730 Walnut Street Kansas City, Missouri 64108
1915 Frederick Avenue, St. Joseph, Missouri 64501
Phone: 816.221.1411 | Fax: 816.221.1429
LANKFORD | FENDLER + ASSOCIATES, CONSULTING ENGINEERS, INC.

WARMAN ARCHITECTURE+DESIGN
1735 SWIFT AVENUE
NORTH KANSAS CITY, MISSOURI 64116
V. 816.474.2233 F. 816.474.1051

03/4/2021

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1734 NW CHIPMAN ROAD
LEES SUMMIT, MO 64081

DESIGNER:
KCD-KANSAS CITY DESIGN GROUP, LLC
4006 N 126TH STREET
KANSAS CITY, KS 66109
T: 816.682.0329

MEP ENGINEER:
LANKFORD, FENDLER & ASSOCIATES
1730 WALNUT ST.
KANSAS CITY, MO 64108
T: 816-221-1411

GENERAL CONTRACTOR:
CONSTRUCTION DESIGNWORKS, LLC
6657 WOODLAND DRIVE
SHAWNEE, KS 66218
T: 913.745.4727

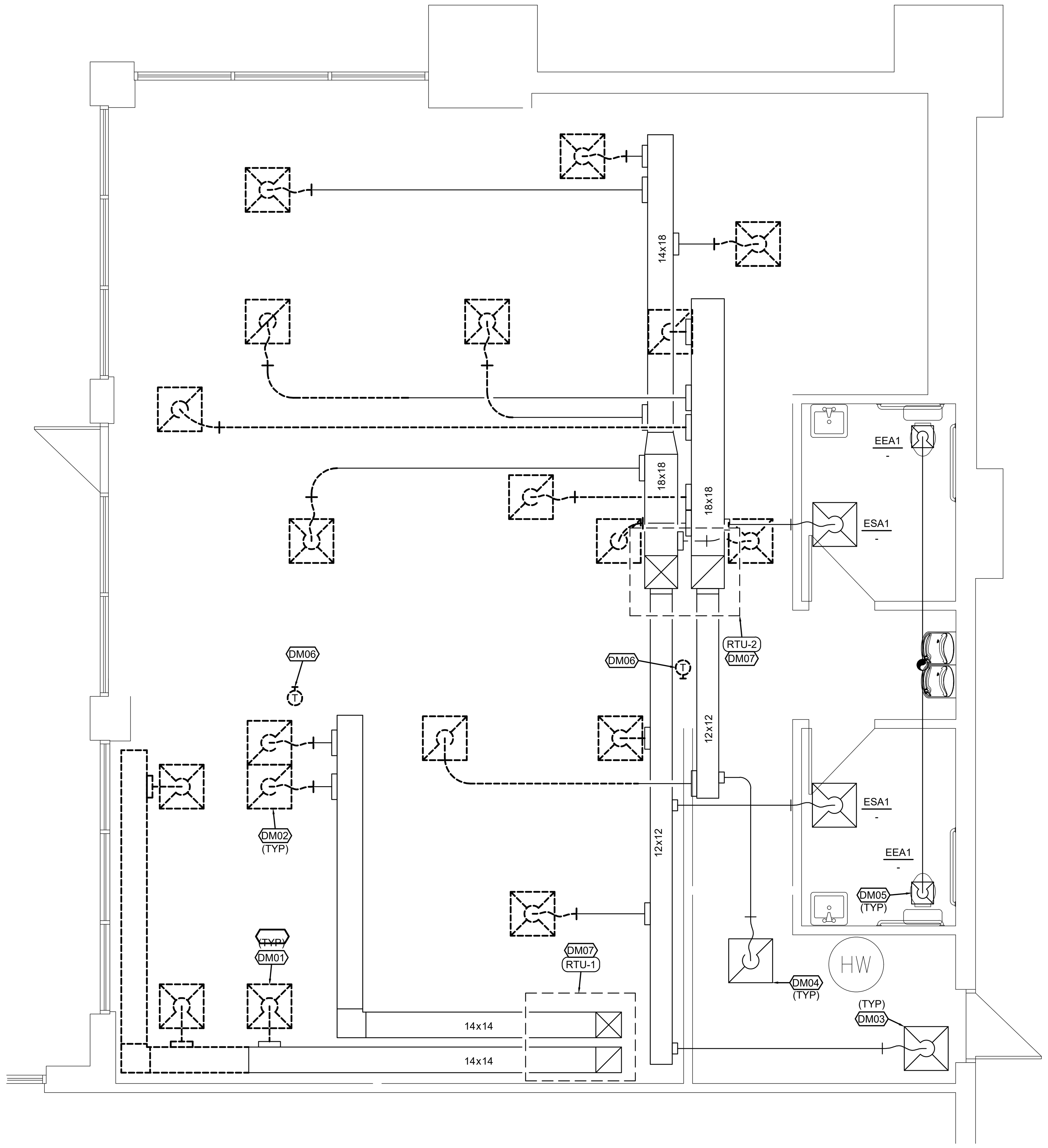
REVISIONS

#	BY	DATE	SOURCE

DATE:	MARCH 04, 2021
DESIGNED BY:	PAM
DRAWN BY:	PAM
APPROVED BY:	BLH

SHEET NUMBER
MEP102

JOB NUMBER
#5629-21

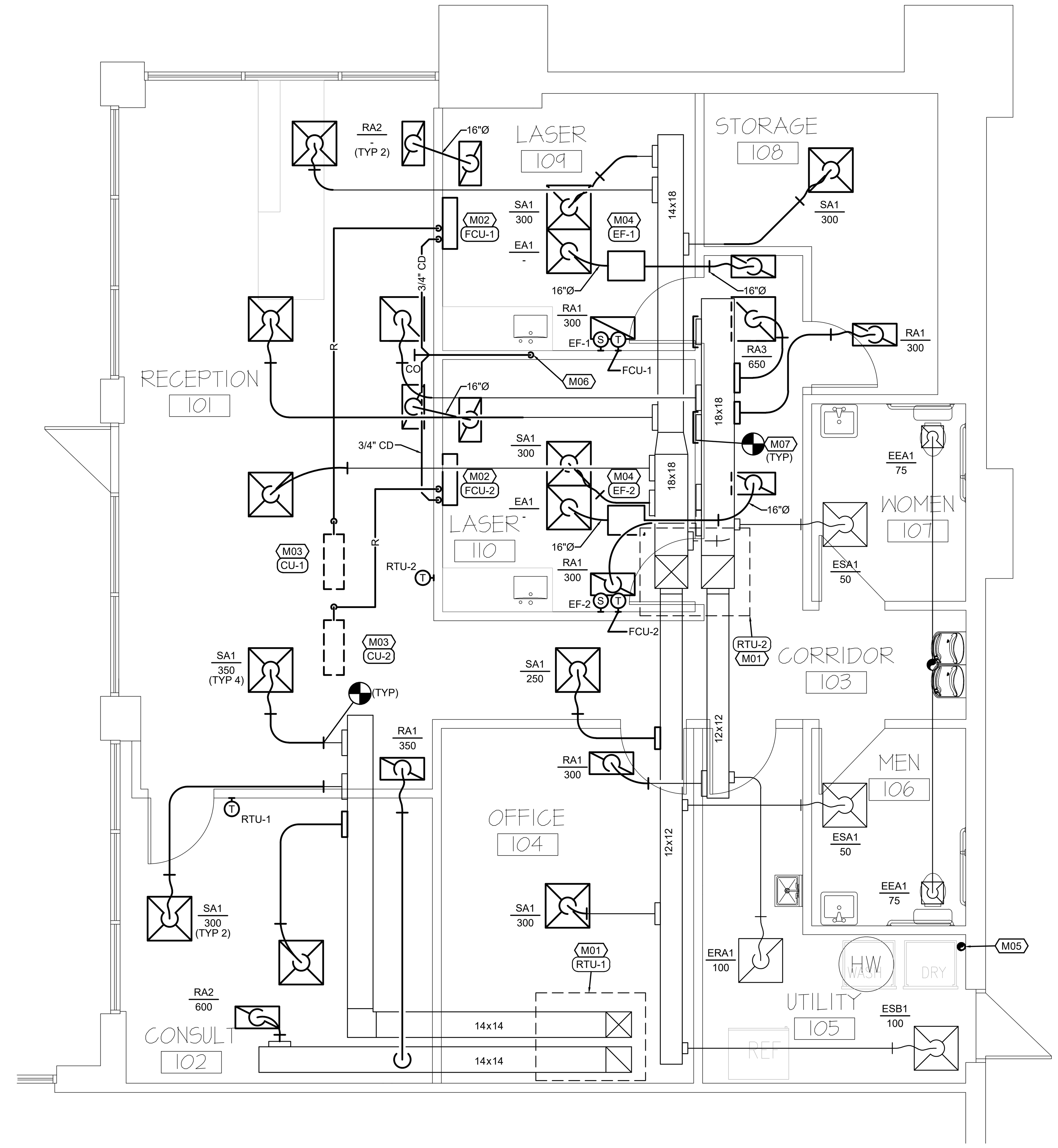


FLOOR PLAN-MECHANICAL DEMOLITION

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

DM## FLOOR PLAN NOTES

1. REMOVE EXISTING DIFFUSER AND DUCTWORK TO LOCATION INDICATED.
2. REMOVE EXISTING RETURN GRILLE AND DUCTWORK TO LOCATION INDICATED.
3. EXISTING SUPPLY DIFFUSER TO REMAIN.
4. EXISTING RETURN GRILLE TO REMAIN.
5. EXISTING EXHAUST GRILLE AND ASSOCIATED DUCTWORK TO REMAIN.
6. REMOVE EXISTING THERMOSTAT AND RETAIN FOR REINSTALLATION.
7. EXISTING ROOFTOP UNIT TO REMAIN.



FLOOR PLAN-MECHANICAL NEW WORK

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

M## FLOOR PLAN NOTES

1. REBALANCE EXISTING ROOFTOP UNIT TO CFM INDICATED IN SCHEDULE. REPLACE EXISTING FILTERS. REINSTALL EXISTING THERMOSTAT AND PROVIDE NEW CONTROL WIRING BACK TO ASSOCIATED ROOFTOP UNIT.
2. PROVIDE WALL MOUNTED FAN COIL UNIT INSTALLED PER MANUFACTURER'S REQUIREMENTS. CONDENSATE AND REFRIGERANT ROUTING PER PLANS.
3. PROVIDE CONDENSING UNIT INSTALLED ON ROOF ON 4X4 TIMBER BLOCKS PER MANUFACTURER'S REQUIREMENTS. ROUTE REFRIGERANT PIPING DOWN THROUGH ROOF THROUGH PRE-MANUFACTURERED ROOF CURB. CONTRACT LANDLORD APPROVED ROOFING CONTRACTOR TO FLASH AND SEAL PENETRATION TO MAINTAIN ROOFING WARRANTY.
4. PROVIDE EXHAUST FAN INSTALLED SUSPENDED FROM STRUCTURE UTILIZING ALL THREAD RODS PER MANUFACTURER'S REQUIREMENTS. INSTALL SPEED CONTROLLER FURNISHED WITH FAN IN LASER EQUIPMENT ROOM.
5. PROVIDE 4" DRYER VENT CONNECTION AND ROUTE UP TO ROOF AND TERMINATE WITH VENT CAP. CONTRACT LANDLORD APPROVED ROOFING CONTRACTOR TO FLASH AND SEAL ROOFING PENETRATION TO MAINTAIN ROOFING WARRANTY.
6. 3/4" CONDENSATE DRAIN PIPING DOWN TO HUB DRAIN BELOW SINK.
7. CAP ALL REMAINING TAPS AIRTIGHT. INSULATE TO MATCH ADJACENT TO MAINTAIN VAPOR BARRIER.

Lankford Fendler + associates
1730 Walnut Street Kansas City, Missouri 64108
1915 Frederick Avenue, St. Joseph, Missouri 64501
Phone: 816.221.1411 | Fax: 816.221.1429
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 Project No. 21.6685.00
COA No. 2006001168

WARMAN ARCHITECTURE+DESIGN
1735 SWIFT AVENUE
NORTH KANSAS CITY, MISSOURI 64116
V. 816.474.2233 F. 816.474.1051

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KANSAS CITY, KS 66109
T: 816.682.0329

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1730 WALNUT ST.
KANSAS CITY, MO 64108
T: 816-221-1411

GENERAL CONTRACTOR:
CONSTRUCTION DESIGNWORKS, LLC
6657 WOODLAND DRIVE
SHAWNEE, KS 66218
T: 913.745.4727

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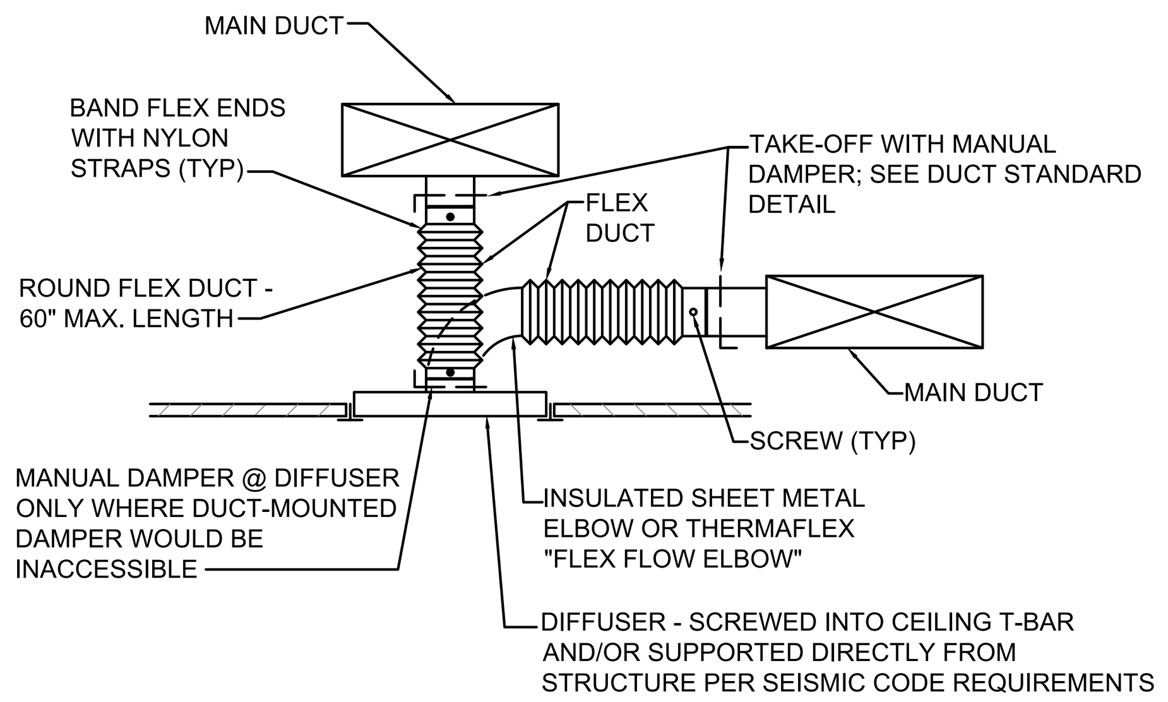
M101

JOB NUMBER
#5629-21



NOTE:
1. BRANCH DUCT RUNOUT TO DIFFUSER SHALL BE THE SAME SIZE AS THE DIFFUSER NECK UNLESS OTHERWISE INDICATED ON PLAN.
2. IN LOCATIONS WHERE TAKEOFFS ARE INSTALLED ABOVE HARD OR NON-ACCESSIBLE CEILINGS CONTRACTOR TO PROVIDE SCREWS TO PREVENT BRANCH DUCT FROM SLIDING OFF FITTING. INSPECT PRIOR TO CEILING INSTALLATION.

DIFFUSER DETAIL
NO SCALE

FAN COIL UNIT SCHEDULE

EVAPORATOR UNIT											CONDENSING UNIT						
					COOLING			ELECTRICAL						ELECTRICAL			
MARK NO.	MANUFACTURER	MODEL	CONFIGURATION	AIRFLOW CFM	E.D.B. (°F)	E.W.B (°F)	TOTAL MBH	VOLT	ø	HZ	MARK NO.	MANUFACTURER	MODEL	VOLT	ø	HZ	NOTES
FCU-1	SENVILLE	SENL-09CD	WALL	180	75	63	9	120	1	60	CU-1	SENVILLE	SENL-09CD	120	1	60	1,2,3,4
FCU-2	SENVILLE	SENL-09CD	WALL	180	75	63	9	120	1	60	CU-2	SENVILLE	SENL-09CD	120	1	60	1,2,3,4

NOTES:
1. PROVIDE WITH WALL MOUNTED THERMOSTAT.
2. PROVIDE WITH CONDENSATE PUMP.
3. REFRIGERANT ROUTING AND SIZING PER MANUFACTURER'S REQUIREMENTS.
4. PROVIDE CONDENSING UNIT WITH WIND BAFFLE FOR LOW AMBIENT CONDITIONS AND HAIL GUARDS.

*HEATING KW IS NET CAPACITY AT VOLTAGE AND PHASE INDICATED.

FAN SCHEDULE

MARK NO.	MANUFACTURER	MODEL	SERVES	TYPE	AIRFLOW (CFM)	S.P. (IN W.G.)	FAN TYPE	ELECTRICAL VOLT	ELECTRICAL ø	ELECTRICAL HZ	HP WATTS	NOTES
EF-1	SOLER PALAU	TD-316	LASER	INLINE	1050	0.3	CENT	120	1	60	335 W	1
EF-2	SOLER PALAU	TD-316	LASER	INLINE	1050	0.3	CENT	120	1	60	335 W	1

NOTES: 1. PROVIDE WITH SPEED CONTROLLER, HANGING HARDWARE AND WALL MOUNTED CONTROLLER.

DIFFUSER SCHEDULE

MARK	MANUFACTURER	MODEL	FACE SIZE (IN.)	NECK SIZE (IN.)	SLOT WIDTH (IN.)	NO. OF SLOTS	FRAME TYPE*	FINISH	NOTES
ESA1	EXISTING	EXISTING	24x24	8	-	-	EXISTING	EXISTING	-
ESB1	EXISTING	EXISTING	24x24	8	-	-	EXISTING	EXISTING	-
ERA1	EXISTING	EXISTING	24x24	10	-	-	EXISTING	EXISTING	-
EEA1	EXISTING	EXISTING	12x12	6	-	-	EXISTING	EXISTING	-
SA1	PRICE	SPD	24x24	10	-	-	LAY-IN	WHITE	-
RA1	PRICE	PDDR	24x12	12	-	-	LAY-IN	WHITE	-
RA2	PRICE	PDDR	24x12	16	-	-	LAY-IN	WHITE	1
RA3	PRICE	PDDR	24x24	16	-	-	LAY-IN	WHITE	-
EA1	PRICE	PDDR	24x24	16	-	-	LAY-IN	WHITE	-

NOTES: 1. PROVIDE SQUARE TO ROUND CONNECTION AS REQUIRED.

*CONTRACTOR SHALL VERIFY CEILING TYPE PRIOR TO ORDERING DIFFUSERS.

ROOFTOP UNIT SCHEDULE

MARK NO.	MANUFACTURER	MODEL	AIRFLOW CFM	MIN O.A. CFM	NOMINAL TONNAGE	ELECTRICAL VOLT	ELECTRICAL ø	ELECTRICAL HZ	NOTES
RTU-1	EXISTING	EXISTING	950	150	3	208	3	60	1
RTU-2	EXISTING	EXISTING	2700	450	7.5	208	3	60	1

NOTES: 1. REBALANCE RTU AND REPLACE FILTERS.

GENERAL NOTES (TYPICAL ALL SHEETS)

A. MECHANICAL CONTRACTOR IS RESPONSIBLE TO SEE THAT WORK MEETS AND IS IN ACCORDANCE WITH ALL REQUIREMENTS OF FEDERAL, STATE, AND LOCAL LAWS AND CODES AND/OR REQUIREMENTS, INCLUDING HEALTH CODES AND BUILDING OWNER.

B. ALL EXISTING DUCTWORK SHOWN ON DRAWINGS IS SCHEMATIC AND IS BASED ON EXISTING RECORD DRAWINGS PROVIDED BY THE OWNER AND DO NOT REFLECT EXACT EXISTING CONDITIONS. CONTRACTOR TO FIELD VERIFY EXACT DEPTH AND/OR LOCATIONS ON JOB SITE. CONTRACTOR SHALL REROUTE NEW WORK TO ACCOMMODATE EXACT LOCATIONS OF EXISTING UTILITIES, STUBOUTS AND/OR CONNECTIONS.

C. CUTTING AND PATCHING OF FLOORS, WALLS, CEILING, ETC., REQUIRED IN STRICT ACCORDANCE WITH THE RULES AND REGULATIONS OF THE ARCHITECT'S AND/OR BUILDING OWNER REQUIREMENTS.

D. COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO INSTALLATION TO AVOID ROUTING CONFLICTS.

E. ANY MATERIAL REMOVED THAT OWNER DOES NOT WISH TO RETAIN SHALL BE REMOVED FROM PROJECT SITE AND DISPOSED OF BY CONTRACTOR.

F. MECHANICAL CONTRACTOR SHALL REMOVE, PATCH AIR TIGHT AND REINSULATE ALL DUCTWORK TAPS NOT REUSED WITH SAME MATERIAL AS EXISTING DUCTWORK.

G. ALL REMOVED DEVICES THAT ARE BEING REUSED FOR NEW CONSTRUCTION SHALL BE CLEANED OF ALL DIRT AND STORED ON SITE.

H. MECHANICAL CONTRACTOR SHALL AIR BALANCE ALL GRILLES TO CFM'S SHOWN ON PLANS.

I. MECHANICAL CONTRACTOR SHALL PROVIDE NEW 1" FARR TYPE PLEATED FILTERS ON ALL RTUS WHICH ARE IN PROJECT SCOPE OF WORK PRIOR TO BALANCING. PROVIDE TEMPORARY FILTERS ON RETURN AIR OPENINGS DURING CONSTRUCTION.

J. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND RETAINING ALL TEMPERATURE CONTROLS FROM EXISTING EQUIPMENT FOR REINSTALLATION UNDER NEW WORK. UPON REINSTALLATION, CONTRACTOR SHALL VERIFY PROPER OPERATION AND NOTIFY THE OWNER'S REPRESENTATIVE IN WRITING IF PROBLEMS ARE FOUND.

K. ALL DUCTWORK, DIFFUSERS, TERMINAL UNITS, ETC. ARE EXISTING TO REMAIN, UNLESS NOTED OTHERWISE.

L. INSTALL ELASTOMERIC JOINT SEALER AROUND ALL DUCTS, PIPES, ETC. PASSING THRU INTERIOR NON-RATED CONCRETE AND MASONRY WALLS, GYPSUM-BOARD PARTITIONS, AND CONCRETE FLOOR/ROOF SLABS. FOR FIRE RATED INTERIOR CONCRETE AND MASONRY WALLS, GYPSUM-BOARD PARTITIONS, AND CONCRETE FLOOR/ROOF SLABS SEAL ALL DUCTS, PIPES, ETC. INSTALL FIRESTOP MATERIALS IN ALL GAPS PRIOR TO SEALANT APPLICATION. INSTALL SEALER ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

M. MECHANICAL CONTRACTOR SHALL BID AND SCHEDULE ALL CORE DRILLING AND HAMMER DRILLING FOR AFTER BUSINESS HOURS.

N. MECHANICAL CONTRACTOR SHALL COORDINATE ALL TEMPERATURE CONTROL WORK WITH BUILDING OWNER. BUILDING SYSTEM SHALL REMAIN OPERATIONAL AT ALL TIMES.

O. ALL CABLE TIES FOR LOW VOLTAGE SYSTEMS LOCATED IN PLENUMS UTILIZED FOR AIR MOVEMENT THAT ARE NOT INSTALLED IN CONDUIT SHALL BE 25/50 FLAME AND SMOKE RATED, HELLERMANN TYTON T50R2C2UL OR EQUIVALENT.

MECHANICAL SYMBOLS

OR — EXISTING DUCTWORK TO BE REMOVED
OR — EXISTING DUCTWORK TO REMAIN
OR — NEW DUCTWORK
SUPPLY DUCT
RETURN DUCT
EXHAUST DUCT
SUPPLY DIFFUSER
RETURN GRILLE
EXHAUST GRILLE
R R/D — RISE OR DROP IN DUCT
THERMOSTAT, MOUNT TOP AT 48" AFF.
MANUAL VOLUME DAMPER
SUPPLY DUCT DOWN
SUPPLY DUCT UP
RETURN DUCT DOWN
RETURN DUCT UP
EXHAUST DUCT DOWN
EXHAUST DUCT UP
WALL MOUNTED DIFFUSER/GRILLE
FLEXIBLE DUCT CONNECTION
CD — CONDENSATE DRAIN
R — REFRIGERANT PIPING
AHU-1 — EQUIPMENT TYPE AND DESIGNATION
SA 200 — MARK NO. SUPPLY (S_), RETURN (R_), EXHAUST (E_) CFM
CONNECT TO EXISTING

WARMAN ARCHITECTURE+DESIGN
1735 SWIFT AVENUE
NORTH KANSAS CITY, MISSOURI 64116
V. 816.474.2233 F. 816.474.1051

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T: 816.682.0329

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LANKFORD, FENDLER & ASSOCIATES
1730 WALNUT ST.
KANSAS CITY, MO 64108
T: 816-221-1411

GENERAL CONTRACTOR:
CONSTRUCTION DESIGNWORKS, LLC
6657 WOODLAND DRIVE
SHAWNEE, KS 66218
T: 913.745.4727

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Lankford Fendler + associates
1730 Walnut Street Kansas City, Missouri 64108
1915 Frederick Avenue, St. Joseph, Missouri 64501
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DATE: MARCH 04, 2021
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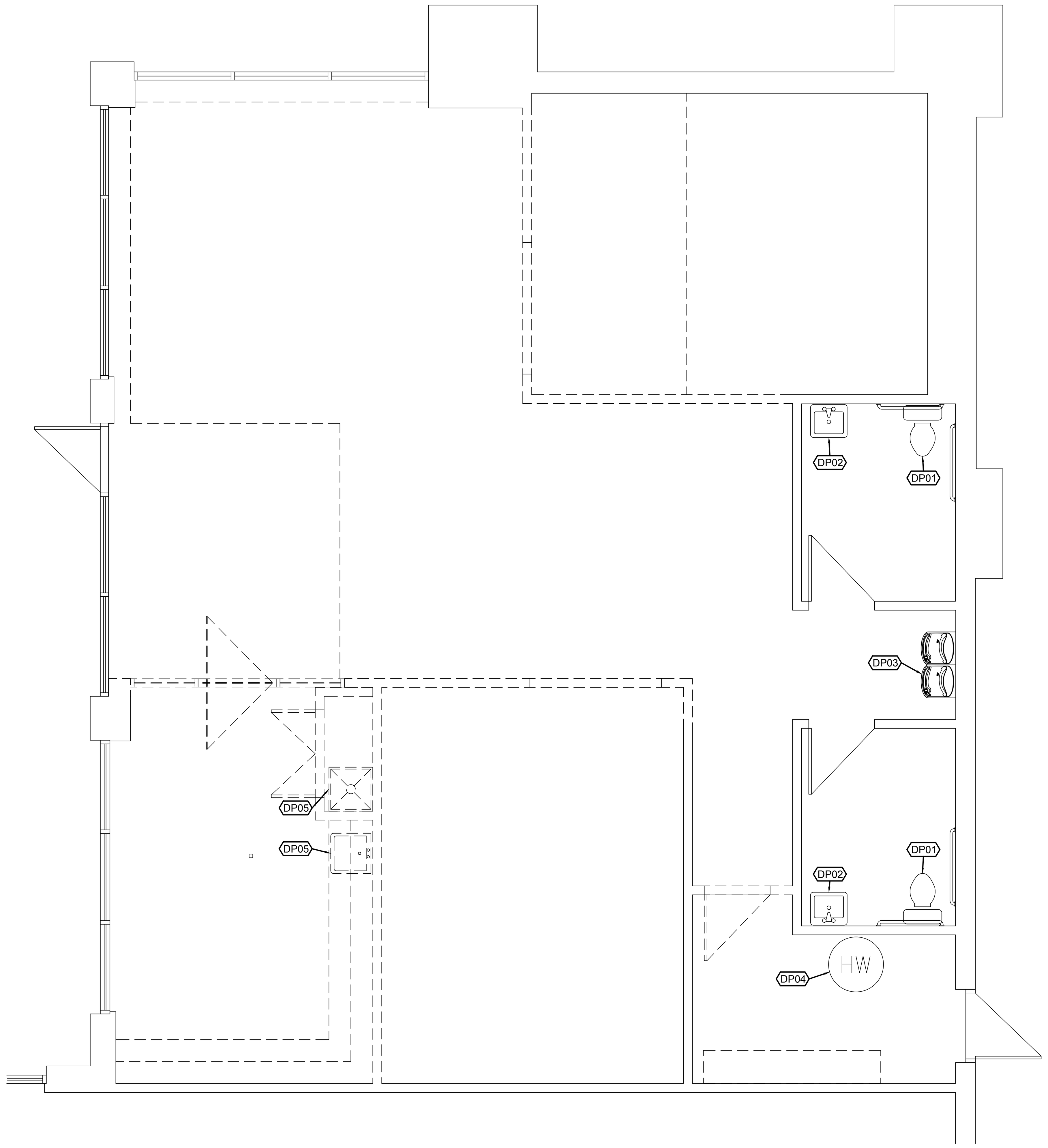
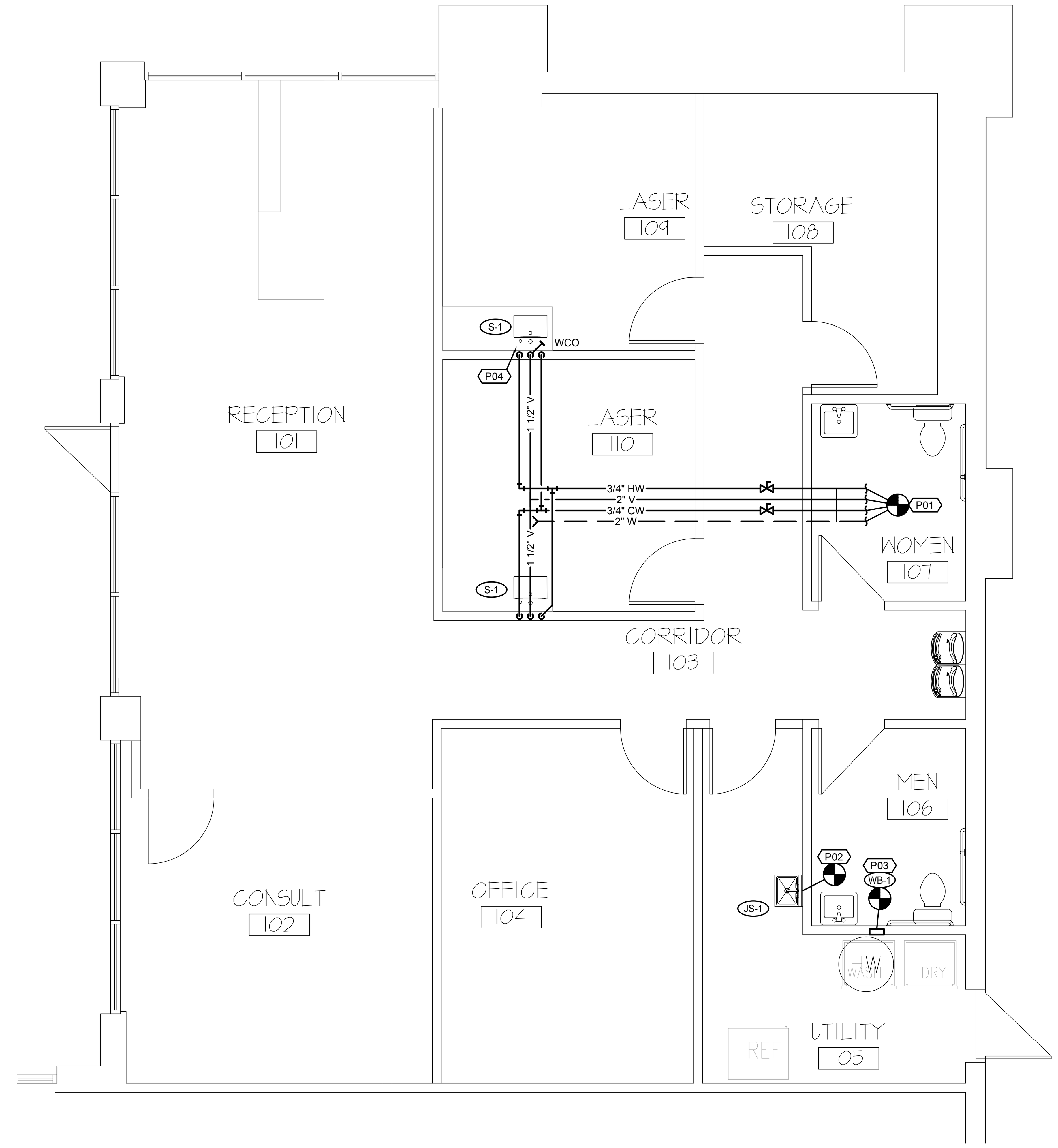


FLOOR PLAN-PLUMBING DEMOLITION

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

DP## FLOOR PLAN NOTES

1. EXISTING WATER CLOSET TO REMAIN.
2. EXISTING LAVATORY TO REMAIN.
3. EXISTING DRINKING FOUNTAIN TO REMAIN.
4. EXISTING WATER HEATER TO REMAIN.
5. REMOVE EXISTING SINK, FAUCET AND ALL APPURTENANCES. REMOVE WATER AND VENT PIPING TO ABOVE CEILING AND CAP AND INSULATE TO MATCH EXISTING. REMOVE WASTE PIPING TO BELOW FLOOR AND CAP AND PATCH FLOOR TO MATCH EXISTING.



FLOOR PLAN-PLUMBING NEW WORK

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

P## FLOOR PLAN NOTES

1. CONNECT INTO EXISTING COLD AND HOT WATER, VENT PIPING AND WASTE PIPING OF EQUAL OR GREATER SIZE, CONTRACTO TO FIELD VERIFY EXACT LOCATION PRIOR TO CONSTRUCTION.
2. CONNECT NEW SINK INTO EXISTING COLD AND HOT WATER, VENT PIPING AND WASTE PIPING OF EQUAL OR GREATER SIZE IN EXISTING RESTROOM, CONTRACTOR TO FIELD VERIFY EXACT LOCATION PRIOR TO CONSTRUCTION.
3. CONNECT NEW WASHER BOX INTO EXISTING COLD AND HOT WATER, VENT PIPING AND WASTE PIPING OF EQUAL OR GREATER SIZE IN EXISTING RESTROOM, CONTRACTOR TO FIELD VERIFY EXACT LOCATION PRIOR TO CONSTRUCTION.
4. PROVIDE 2" HUB DRAIN BELOW SINK.

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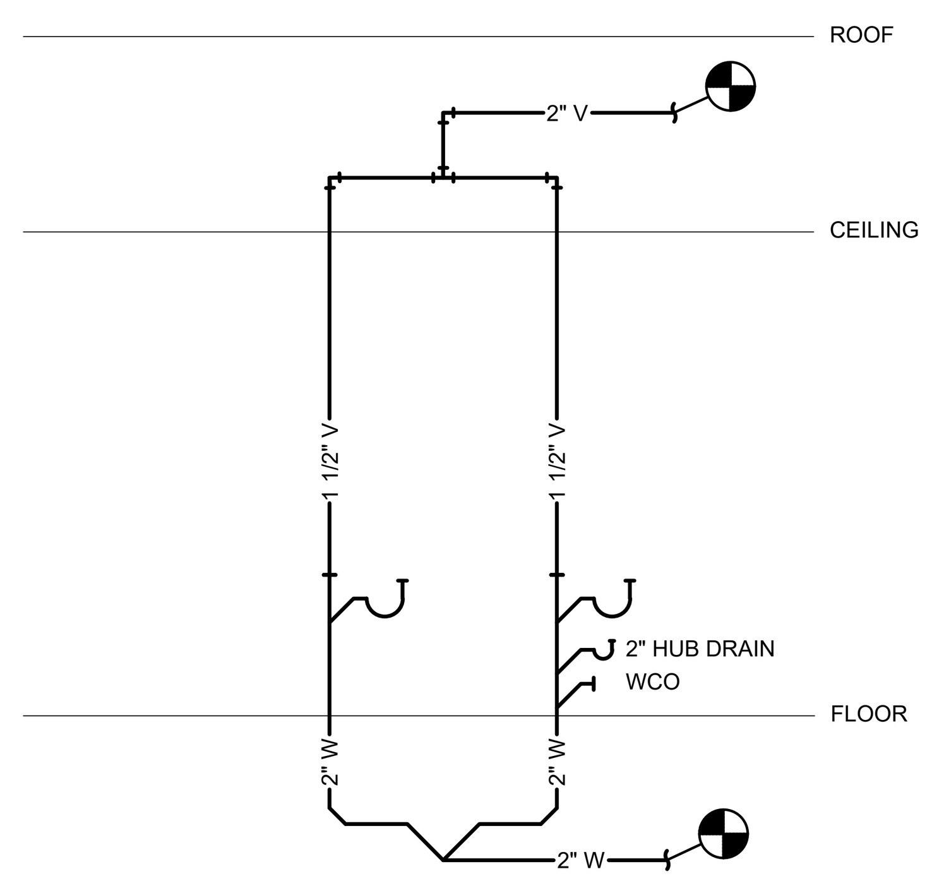


WASTE/VENT RISER DIAGRAM
NO SCALE

PLUMBING FIXTURE SCHEDULE

MARK NO.	FIXTURE TYPE	MANUFACTURER	MODEL NO.	DESCRIPTION	CONNECTION SIZE			
					CW	HW	WASTE	VENT
S-1	SINK	CONTRACTOR FURNISHED	CONTRACTOR FURNISHED	CONTRACTOR FURNISHED. ACCESSORIES: ELKAY LK-35 STRAINER WITH 1-1/2" TAILPIECE, 1-1/2" 17 GA. SEMI-CAST BRASS P-TRAP WITH CLEANOUT, CHROME-PLATED RISERS WITH LOOSE KEY ANGLE STOPS.	1/2"	1/2"	2"	1-1/2"
JS-1	JANITOR SINK	STERN-WILLIAMS	MTB-2424	SIZE 24" X 24" X 10", TERRAZZO SERVICE SINK WITH CAST BRASS DRAIN, STAINLESS STEEL STRAINER, 3" DRAIN CONNECTION. CHICAGO FAUCETS MODEL 897-CCP WITH QUATURN OPERATING CARTRIDGE, VACUUM BREAKER SPOUT WITH PAIL HOOK AND WALL BRACE, 3/4" MALE HOSE THREAD OUTLET, 369 LEVER HANDLES, FLANGED ADJUSTABLE SUPPLY ARM AND INTEGRAL SUPPLY STOPS AND CHECK VALVES. ACCESSORIES: V-70 EXTRUDED VINYL BUMPER GUARDS ON EXPOSED SIDES, T-35 36" RUBBER HOSE WITH STAINLESS STEEL WALL BRACKET.	1/2"	1/2"	3"	2"
WB-1	WASHER WALL BOX	SIOUX CHIEF	696-2313 SERIES	RECESSED SUPPLY AND DRAIN WALL BOXES WITH QUARTER TURN VALVES, MINI SHOCK ARRESTORS, SWEAT WATER CONNECTIONS, 2" DRAIN, ABS COVERS.	1/2"	1/2"	2"	1-1/2"

GENERAL NOTES (TYPICAL ALL SHEETS)

A. PLUMBING CONTRACTOR IS RESPONSIBLE TO SEE THAT WORK MEETS AND IS IN ACCORDANCE WITH ALL REQUIREMENTS OF FEDERAL, STATE, AND LOCAL LAWS AND CODES AND/OR REQUIREMENTS, INCLUDING HEALTH CODES AND BUILDING OWNER.

B. ALL EXISTING PIPING SHOWN ON DRAWINGS IS SCHEMATIC AND IS BASED ON EXISTING RECORD DRAWINGS PROVIDED BY THE OWNER AND DO NOT REFLECT EXACT EXISTING CONDITIONS. CONTRACTOR TO FIELD VERIFY EXACT DEPTH AND/OR LOCATIONS ON JOB SITE. CONTRACTOR SHALL REROUTE NEW WORK TO ACCOMMODATE EXACT LOCATIONS OF EXISTING UTILITIES, STUBOUTS AND/OR CONNECTIONS.

C. CUTTING AND PATCHING OF FLOORS, WALLS, CEILING, ETC., REQUIRED IN STRICT ACCORDANCE WITH THE RULES AND REGULATIONS OF THE ARCHITECT'S AND/OR BUILDING OWNER REQUIREMENTS.

D. COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO INSTALLATION TO AVOID ROUTING CONFLICTS.

E. ANY MATERIAL REMOVED THAT OWNER DOES NOT WISH TO RETAIN SHALL BE REMOVED FROM PROJECT SITE AND DISPOSED OF BY CONTRACTOR.

F. INSTALL ELASTOMERIC JOINT SEALER AROUND ALL PIPES PASSING THRU INTERIOR NON-RATED CONCRETE AND MASONRY WALLS, GYPSUM-BOARD PARTITIONS, AND CONCRETE FLOOR/ROOF SLABS. FOR FIRE RATED INTERIOR CONCRETE AND MASONRY WALLS, GYPSUM-BOARD PARTITIONS, AND CONCRETE FLOOR/ROOF SLABS SEAL ALL PIPES. INSTALL FIRESTOP MATERIALS IN ALL GAPS PRIOR TO SEALANT APPLICATION. INSTALL SEALER ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

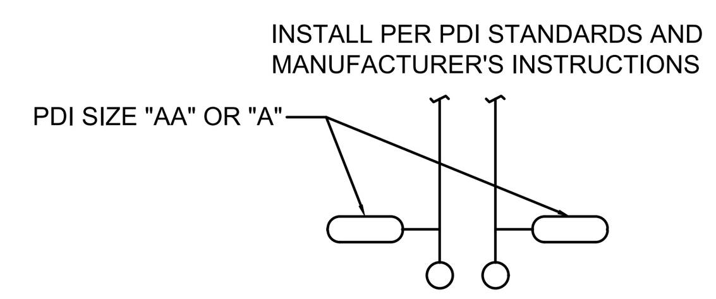
G. PLUMBING CONTRACTOR SHALL MAKE FINAL CONNECTION TO ALL EQUIPMENT BY OTHERS. VERIFY CONNECTIONS SIZES AND REQUIREMENTS.

H. PLUMBING CONTRACTOR SHALL SCAN FLOOR UTILIZING GROUND PENETRATING RADAR PRIOR TO ANY CORE DRILLING OR SAW CUTTING OF SLAB AND SHALL VERIFY PLACEMENT WITH BUILDING OWNER'S REPRESENTATIVE PRIOR TO DRILLING.

I. ALL CABLE TIES FOR LOW VOLTAGE SYSTEMS LOCATED IN PLENUMS UTILIZED FOR AIR MOVEMENT THAT ARE NOT INSTALLED IN CONDUIT SHALL BE 25/50 FLAME AND SMOKE RATED, HELLERMANN TYTON T50 R2C2UL OR EQUIVALENT.

PLUMBING SYMBOLS

	EXISTING TO REMAIN
	NEW PIPING
CW	COLD WATER
HW	HOT WATER
V	SANITARY VENT ABOVE GROUND/FLOOR
W	SANITARY WASTE BELOW GROUND/FLOOR
	SHUT OFF VALVE
	PIPE DROP/PIPE RISE
	BOTTOM OUTLET TEE
	TOP OUTLET TEE
	PLUMBING FIXTURE DESIGNATION
ETR	EXISTING TO REMAIN
	CONNECT TO EXISTING
WCO	WALL CLEAN OUT



SINGLE FIXTURE

PDI SIZE	PIPE SIZE	FIXTURE UNIT LOAD
AA	1/2"	1-3
A	1/2"	1-11
B	3/4"	12-32
C	1"	33-60
D	1 1/4"	61-113
E	1 1/2"	114-154
F	2"	155-330

FIXTURE	TYPE OF SUPPLY CONTROL	WEIGHT IN FIXTURE - UNITS					
		PUBLIC			PRIVATE		
		TOTAL	C.W.	H.W.	TOTAL	C.W.	H.W.
SERVICE SINK	FAUCET	3	3	3	-	-	-
WASHER	EQUIPMENT CONNECTION	4	3	3	3	2.25	2.25

DO NOT PROVIDE AIR CHAMBERS, PROVIDE WATER HAMMER ARRESTERS BY SIOUX CHIEF, PRECISION PLUMBING PRODUCTS, WATTS OR APPROVED EQUIVALENT WITH PISTON AND O-RING CONSTRUCTION, HAVING PDI #WH-201, ASSE # 1010, AND ANSI # A112.26.1M CERTIFICATION. INSTALL IN HORIZONTAL OR VERTICAL POSITION, BUT NEVER UPSIDE DOWN. INSTALL IN LINE WITH WATER FLOW DIRECTION IF POSSIBLE. SIZE THE UNITS PER THE TABLES SHOWN ABOVE.

WATER HAMMER ARRESTER DETAIL
NO SCALE

WARMAN ARCHITECTURE+DESIGN
1735 SWIFT AVENUE
NORTH KANSAS CITY, MISSOURI 64116
V. 816.474.2233 F. 816.474.1051

MILAN LASER HAIR REMOVAL TENANT DEVELOPMANT
1734 NW CHIPMAN ROAD
LEES SUMMIT, MO 64081

DESIGNER:
KCD-KANSAS CITY DESIGN GROUP, LLC
4006 N 126TH STREET
KANSAS CITY, KS 66109
T: 816.682.0329

MEP ENGINEER:
LANKFORD, FENDLER & ASSOCIATES
1730 WALNUT ST.
KANSAS CITY, MO 64108
T: 816-221-1411

GENERAL CONTRACTOR:
CONSTRUCTION DESIGNWORKS, LLC
6657 WOODLAND DRIVE
SHAWNEE, KS 66218
T: 913.745.4727

REVISIONS			
#	BY	DATE	SOURCE

Lankford Fendler + associates
1730 Walnut Street Kansas City, Missouri 64108
1915 Frederick Avenue, St. Joseph, Missouri 64501
Phone: 816.221.1411 | Fax: 816.221.1429
LANKFORD | FENDLER + ASSOCIATES, CONSULTING ENGINEERS, INC.

DATE:	MARCH 04, 2021
DESIGNED BY:	PAM
DRAWN BY:	PAM
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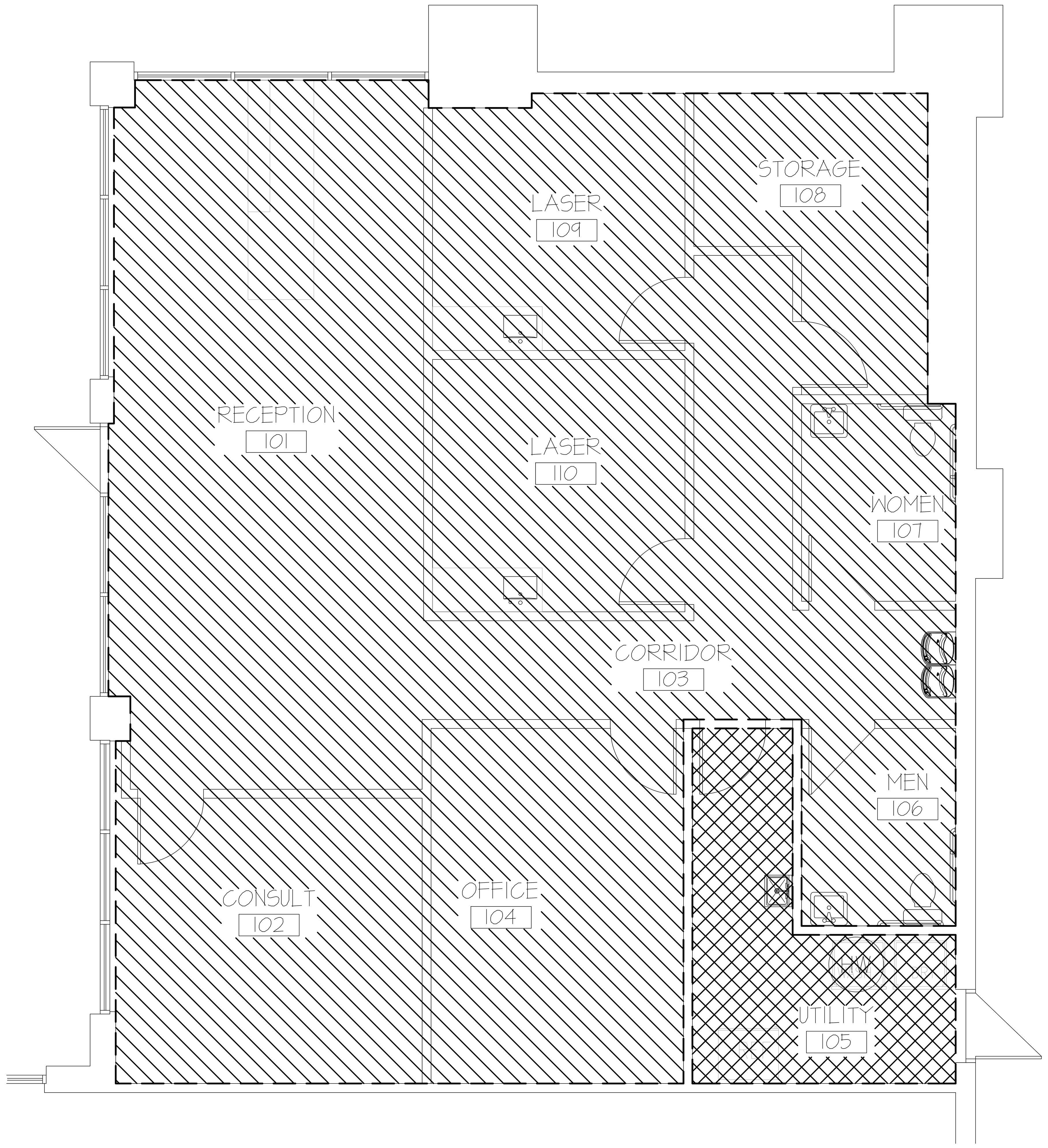
#5629-21



FLOOR PLAN-FIRE PROTECTION

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

N

FIRE PROTECTION DESIGN CRITERIA

A. ENTIRE BUILDING AS SHOWN ON DRAWINGS IS CURRENTLY PROVIDED WITH A WET TYPE SPRINKLER SYSTEM. MODIFY SYSTEM AS NECESSARY FOR NEW WALL LAYOUTS, CEILING LAYOUTS, AND IN COMPLIANCE WITH THE RULES AND REGULATIONS OF APPLICABLE FEDERAL, STATE AND LOCAL LAWS, CODES AND ORDINANCES, THE OWNER'S INSURANCE COMPANY AND NFPA 13.

B. FURNISH ALL MATERIALS, LABOR, TOOLS, TRANSPORTATION, INCIDENTALS AND APPURTENANCES TO COMPLETE IN EVERY DETAIL AND LEAVE IN WORKING ORDER ALL ITEMS OF WORK REQUIRED FOR STRICT COMPLIANCE.

C. NEW FIRE PROTECTION PIPING AND FITTINGS SHALL MATCH EXISTING, OR PROVIDE SCHEDULE 40 FOR 2" AND SMALLER WITH THREADED ENDS AND SCHEDULE 10 FOR 1-1/2" AND LARGER WITH ROLL-GROOVED ENDS AND GROOVED JOINTS. ALL PIPING IN AREAS WITH CEILINGS SHALL BE RUN CONCEALED WITH NO EXCEPTIONS UNLESS COORDINATED WITH ARCHITECT AND ENGINEER. PIPE SIZES SHOWN ON PLANS FOR INFORMATION ONLY. VERIFY BY HYDRAULIC CALCULATIONS.

D. NEW FIRE SPRINKLERS SHALL MATCH EXISTING IN TYPE, STYLE AND APPEARANCE. ANY REMOVED/RELOCATED FIRE SPRINKLERS MUST BE REPLACED WITH NEW PER NFPA 13. CONTRACTOR RESPONSIBLE FOR FIELD VERIFICATION OF ALL INFORMATION.

E. ALL SPRINKLERS IN LAY-IN CEILINGS ARE TO BE CENTERED ±1/2" IN 2'x2' PORTION OF TILE. ALL SPRINKLERS IN GYP-BOARD CEILINGS ARE TO BE CENTERED ±1/2" WITH LIGHT FIXTURES AND ALIGNED WITH ALL OTHER DEVICES IN CEILING IN BOTH DIRECTIONS. COORDINATE WITH ARCHITECT.

F. FIRE PROTECTION CONTRACTOR SHALL PREPARE DETAILED AND COORDINATED SHOP DRAWINGS SO AS TO AVOID CONFLICTS IN THE FIELD. CONTRACTOR SHALL COORDINATE WITH REFLECTED CEILING PLAN, DUCTWORK LAYOUT AND LIGHTING LAYOUT. ALL COORDINATION SHALL TAKE PLACE PRIOR TO INSTALLATION.

G. CONTRACTOR SHALL FILE ALL DRAWINGS, PAY ALL FEES AND OBTAIN PERMITS AND CERTIFICATES OF INSPECTIONS RELATIVE TO THIS WORK.

H. CONTRACTOR SHALL OBTAIN CURRENT FIRE HYDRANT FLOW TEST DATA AND USE FOR SYSTEM HYDRAULIC CALCULATIONS. USE DATA TO DESIGN SYSTEMS ACCORDINGLY BASED ON AVERAGE NUMBERS PLUS 10% SAFETY.

I. PREPARE AND SUBMIT SHOP DRAWINGS, PRODUCT DATA AND HYDRAULIC CALCULATIONS AS REQUIRED. ALL INFORMATION SHOWN ON FIRE PROTECTION DRAWINGS SHALL BE INCLUDED ON THE SHOP DRAWINGS.

J. CONTRACTOR TO BE RESPONSIBLE FOR MAKING FINAL COORDINATION WITH STRUCTURE AND ALL OTHER TRADES PRIOR TO SUBMITTING SHOP DRAWINGS. ALL ELEVATIONS OF PIPE MUST BE SHOWN ON SHOP DRAWINGS.

K. NFPA 13 - 2016 ED - 7.1.5 A SINGLE AIR VENT WITH A CONNECTION SHALL BE PROVIDED ON EACH WET PIPE SYSTEM. THE AIR VENT SHALL BE LOCATED NEAR A HIGH POINT IN THE SYSTEM TO ALLOW AIR TO BE REMOVED FROM THAT PORTION OF THE SYSTEM BY ONE OF THE FOLLOWING METHODS: MANUAL VALVE, MINIMUM 1/2 (15MM) SIZE; OR AUTOMATIC AIR VENT.

L. SPRINKLER SYSTEM SHALL BE TESTED AND DRAINED PER NFPA STANDARDS AND LOCAL AND STATE AUTHORITY HAVING JURISDICTION.COMPLETED CONTRACTOR MATERIAL TEST CERTIFICATES SHALL BE FORWARDED TO OWNER.

M. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

N. SPRINKLER HEAD PLACEMENT SHALL BE OUT OF THE SWING AREA OF DOORS TO AVOID CONFLICT WITH TALL DOORS.

FIRE PROTECTION LEGEND

RECONFIGURE EXISTING BASE BUILDING FIRE SPRINKLER LAYOUT WITHIN THIS AREA IN ORDER TO PROVIDE PROPER COVERAGE PER NFPA 13 AND LOCAL AUTHORITIES. ALL REMOVED / RELOCATED FIRE SPRINKLERS MUST BE REPLACED WITH NEW PER NFPA 13. NEW SPRINKLERS TO MATCH EXISTING. REFER TO REFLECTED CEILING PLANS FOR COORDINATION WITH LIGHTS, DIFFUSERS, EXIT SIGNS, ETC.

LIGHT HAZARD - PROVIDE PROPER COVERAGE PER NFPA 13 (0.1 GPM PER SQUARE FOOT OVER THE MOST REMOTE 1500 SQUARE FEET) PLUS 100 GPM HOSE STREAM ALLOWANCE.

ORDINARY HAZARD GROUP 2 - PROVIDE PROPER COVERAGE PER NFPA 13 (0.2 GPM PER SQUARE FOOT OVER THE MOST REMOTE 1500 SQUARE FEET) PLUS 250 GPM HOSE STREAM ALLOWANCE.

Lankford Fendler + associates
1730 Walnut Street Kansas City, Missouri 64108
1915 Frederick Avenue, St. Joseph, Missouri 64501
Phone: 816.221.1411 | Fax: 816.221.1429
LANKFORD | FENDLER + ASSOCIATES, CONSULTING ENGINEERS, INC.
 Project No. 21.6685.00
COA No. 2006001168

WARMAN ARCHITECTURE+DESIGN
1735 SWIFT AVENUE
NORTH KANSAS CITY, MISSOURI 64116
V. 816.474.2233 F. 816.474.1051

03/4/2021

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1734 NW CHIPMAN ROAD
LEES SUMMIT, MO 64081

DESIGNER:
KCD-KANSAS CITY DESIGN GROUP, LLC
4006 N 126TH STREET
KANSAS CITY, KS 66109
T: 816.682.0329

MEP ENGINEER:
LANKFORD, FENDLER & ASSOCIATES
1730 WALNUT ST.
KANSAS CITY, MO 64108
T: 816-221-1411

GENERAL CONTRACTOR:
CONSTRUCTION DESIGNWORKS, LLC
6657 WOODLAND DRIVE
SHAWNEE, KS 66218
T: 913.745.4727

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SHEET NUMBER
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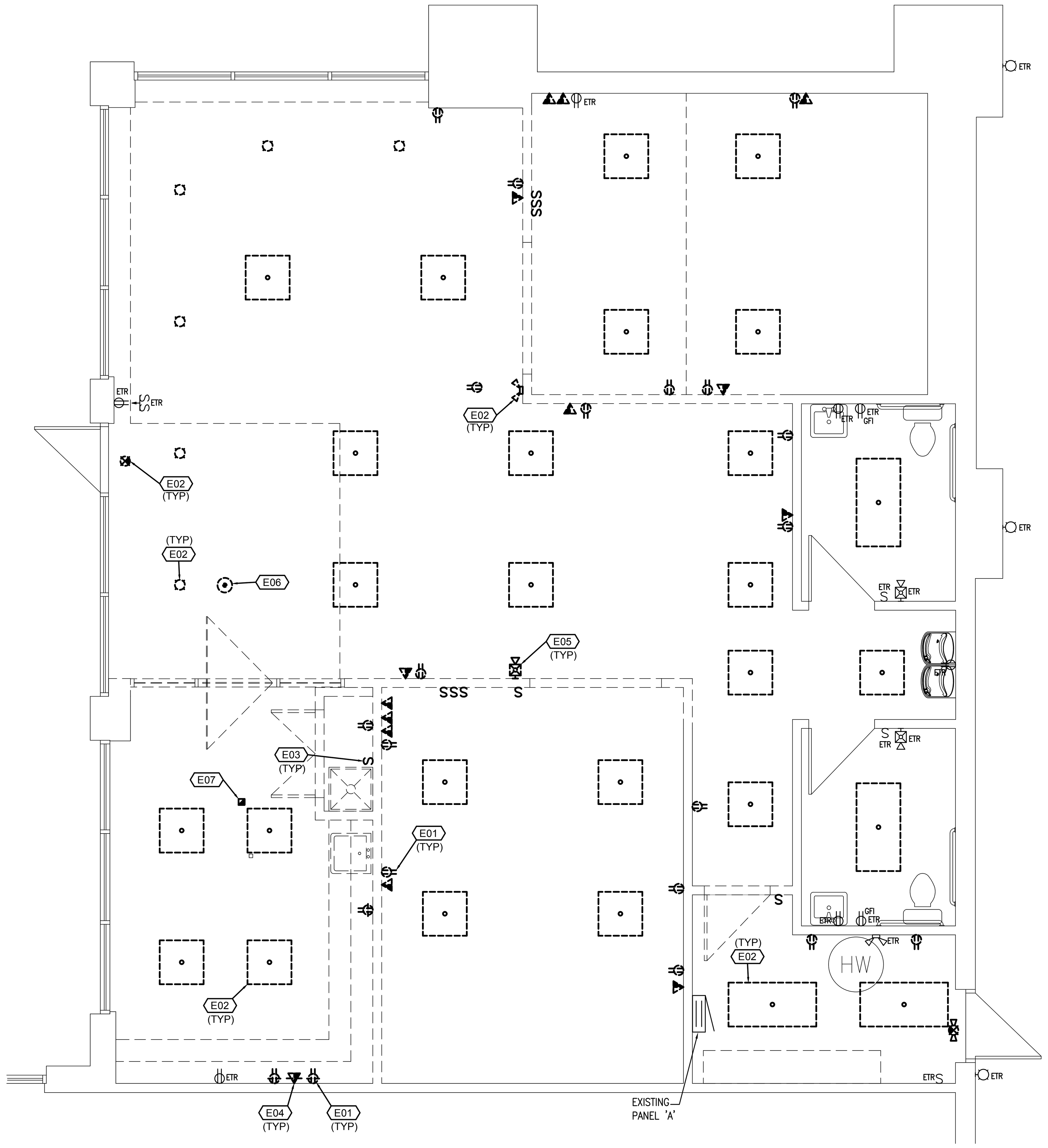
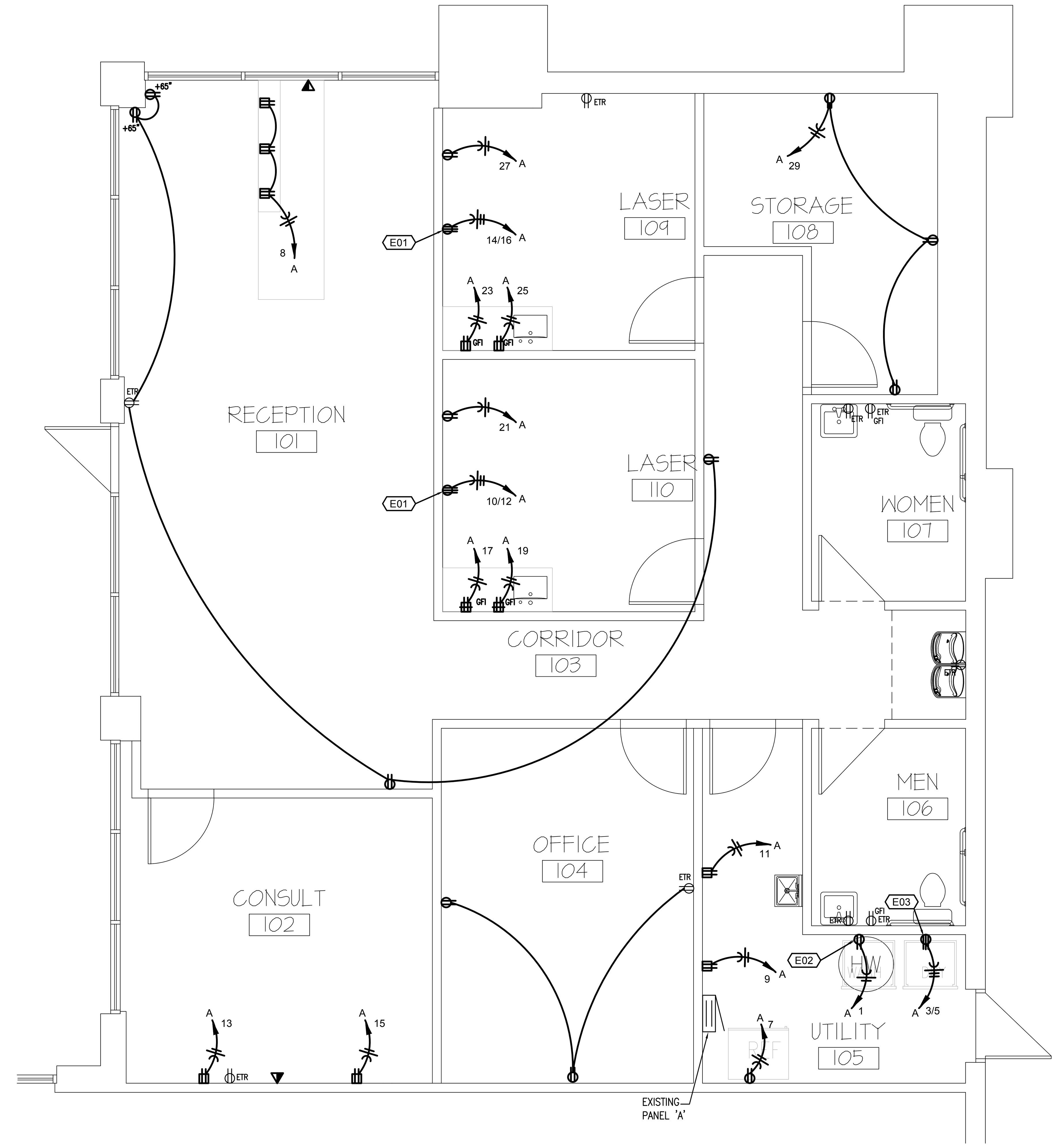


FLOOR PLAN-ELECTRICAL DEMOLITION

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



FLOOR PLAN-POWER

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

DE## FLOOR PLAN NOTES

1. EXISTING RECEPTACLE TO BE REMOVED. REMOVE ALL ASSOCIATED WIRING AND CONDUIT BACK TO NEAREST DEVICE TO REMAIN.
2. EXISTING LIGHT FIXTURE TO BE REMOVED. REMOVE ALL ASSOCIATED WIRING AND CONDUIT BACK TO NEAREST DEVICE TO REMAIN.
3. EXISTING LIGHT SWITCH TO BE REMOVED. REMOVE ALL ASSOCIATED WIRING AND CONDUIT BACK TO NEAREST DEVICE TO REMAIN.
4. EXISTING DATA DEVICE TO BE REMOVED. REMOVE ALL ASSOCIATED WIRING AND CONDUIT BACK TO NEAREST DEVICE TO REMAIN.
5. EXISTING FIRE ALARM DEVICE TO BE REMOVED. REMOVE ALL ASSOCIATED WIRING AND CONDUIT BACK TO NEAREST DEVICE TO REMAIN.
6. EXISTING FLOOR BOX TO BE REMOVED. REMOVE ALL ASSOCIATED WIRING AND CONDUIT BACK TO NEAREST DEVICE TO REMAIN. PATCH EXISTING FLOOR TO MATCH SURROUNDINGS.
7. EXISTING POWER POLE TO BE REMOVED. REMOVE ALL ASSOCIATED WIRING AND CONDUIT BACK TO NEAREST DEVICE TO REMAIN. PATCH AND REPAIR FLOOR TO MATCH SURROUNDINGS.

E## FLOOR PLAN NOTES

1. 30A / 208V / 2-POLE TWIST LOCK RECEPTACLE. CONFIRM RECEPTACLE VOLTAGE, AMPERAGE, AND LOCATION WITH OWNER PRIOR TO ROUGH-IN.
2. RECEPTACLE FOR WASHER. CONFIRM LOCATION WITH OWNER PRIOR TO ROUGH-IN.
3. 30A / 208V / 2-POLE RECEPTACLE FOR DRYER. CONFIRM VOLTAGE, AMPERAGE, AND LOCATION WITH OWNER PRIOR TO ROUGH-IN.

WARMAN ARCHITECTURE+DESIGN
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NORTH KANSAS CITY, MISSOURI 64116
V. 816.474.2233 F. 816.474.1051

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KCD-KANSAS CITY DESIGN GROUP, LLC
4006 N 126TH STREET
KANSAS CITY, KS 66109
T: 816.682.0329

MEP ENGINEER:
LANKFORD, FENDLER & ASSOCIATES
1730 WALNUT ST.
KANSAS CITY, MO 64108
T: 816-221-1411

GENERAL CONTRACTOR:
CONSTRUCTION DESIGNWORKS, LLC
6657 WOODLAND DRIVE
SHAWNEE, KS 66218
T: 913.745.4727

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SHEET NUMBER
E101

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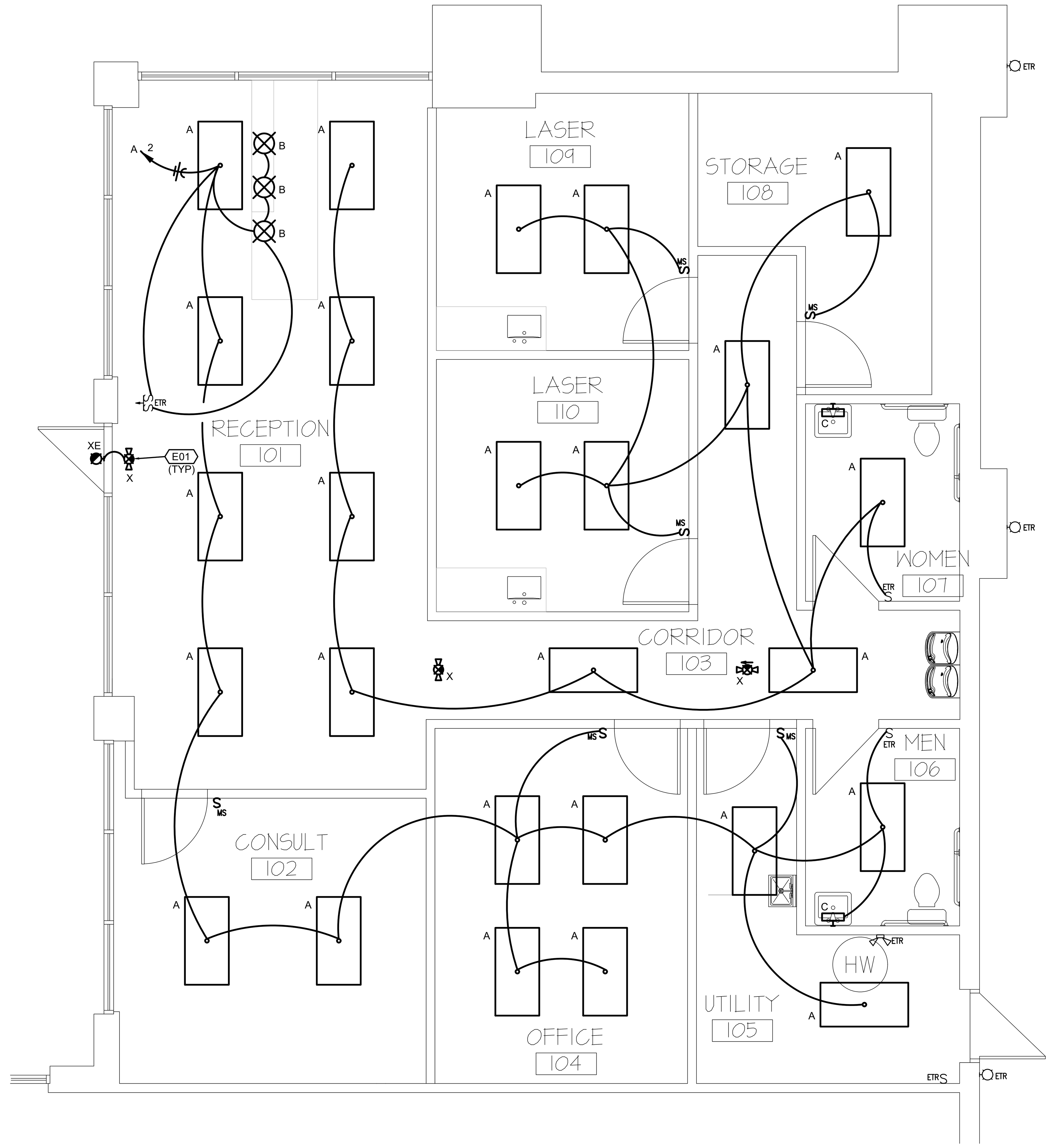
Lankford Fendler + associates
1730 Walnut Street Kansas City, Missouri 64108
1915 Frederick Avenue, St. Joseph, Missouri 64501
Phone: 816.221.1411 | Fax: 816.221.1429

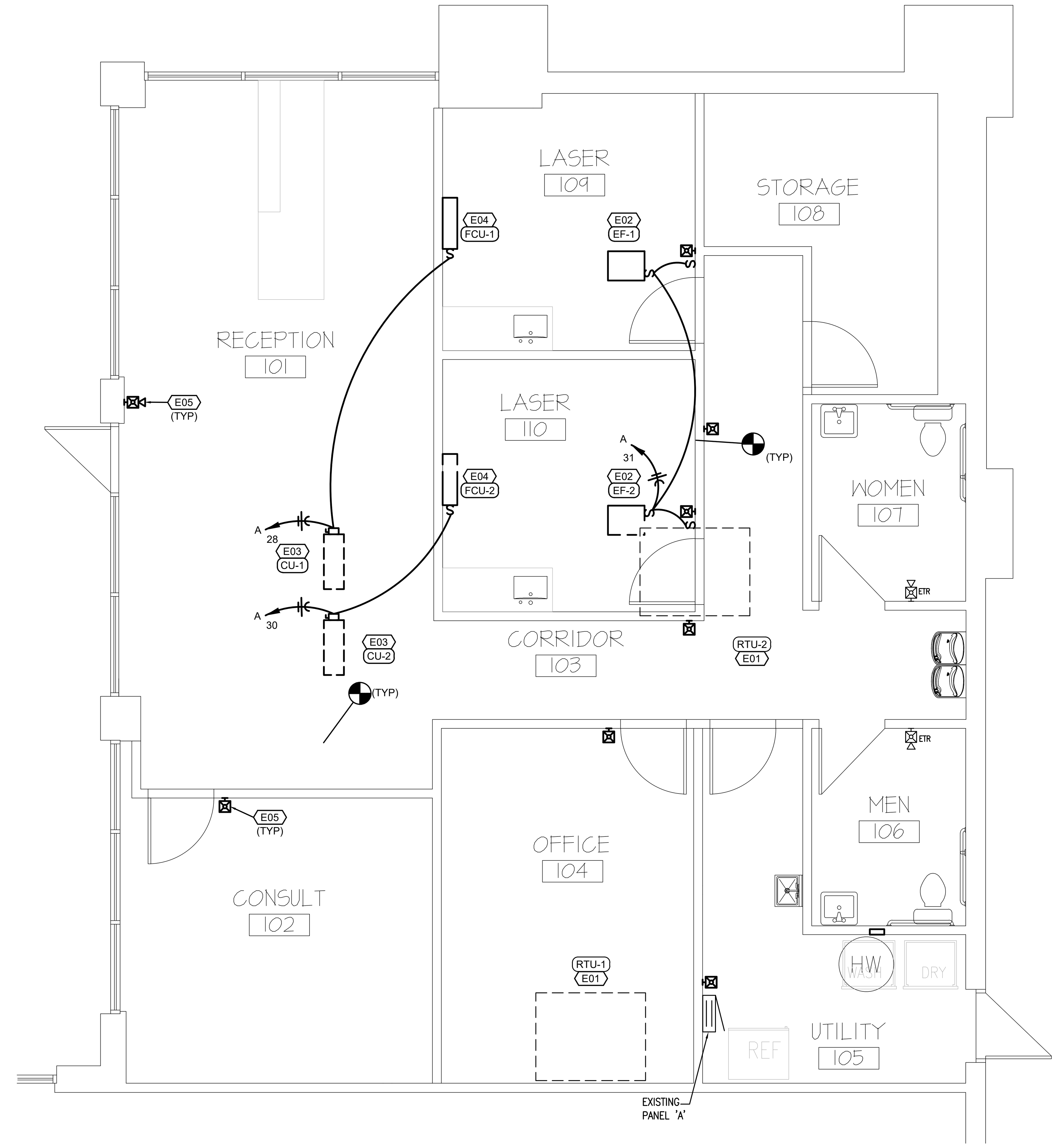


FLOOR PLAN-LIGHTING

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

E## FLOOR PLAN NOTES

1. CONNECT EXIT/EMERGENCY LIGHT TO UNSWITCHED LIGHTING CIRCUIT SERVING THIS AREA.
2. REMOTE EMERGENCY LIGHT. POWER FROM EXIT SIGN.



FLOOR PLAN-SYSTEMS

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

E## FLOOR PLAN NOTES

1. EXISTING ROOFTOP UNIT TO REMAIN.
2. PROVIDE 120V/20A/1-POLE MOTOR-RATED TOGGLE DISCONNECT AT UNIT AND MAKE POWER CONNECTION TO UNIT. INSTALL AND INTERCONNECT WITH FAN SPEED SWITCH FURNISHED WITH UNIT AS SHOWN..
3. PROVIDE 250V/30A/1-POLE/NEMA 3R DISCONNECT AT UNIT AND MAKE POWER CONNECTION TO UNIT. INTERCONNECT WITH INDOOR UNIT AS REQUIRED.
4. PROVIDE 120V/20A/1-POLE MOTOR-RATED TOGGLE DISCONNECT AT UNIT AND MAKE POWER CONNECTION TO UNIT. INTERCONNECT WITH OUTDOOR UNIT AS REQUIRED.
5. CONNECT NEW FIRE ALARM DEVICE TO EXISTING SYSTEM.

Lankford Fendler + associates
1730 Walnut Street Kansas City, Missouri 64108
1915 Frederick Avenue, St. Joseph, Missouri 64501
Phone: 816.221.1411 | Fax: 816.221.1429
LANKFORD | FENDLER + ASSOCIATES, CONSULTING ENGINEERS, INC.

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V. 816.474.2233 F. 816.474.1051

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KCD-KANSAS CITY DESIGN GROUP, LLC
4006 N 126TH STREET
KANSAS CITY, KS 66109
T: 816.682.0329

MEP ENGINEER:
LANKFORD, FENDLER & ASSOCIATES
1730 WALNUT ST.
KANSAS CITY, MO 64108
T: 816-221-1411

GENERAL CONTRACTOR:
CONSTRUCTION DESIGNWORKS, LLC
6657 WOODLAND DRIVE
SHAWNEE, KS 66218
T: 913.745.4727

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SHEET NUMBER
E102

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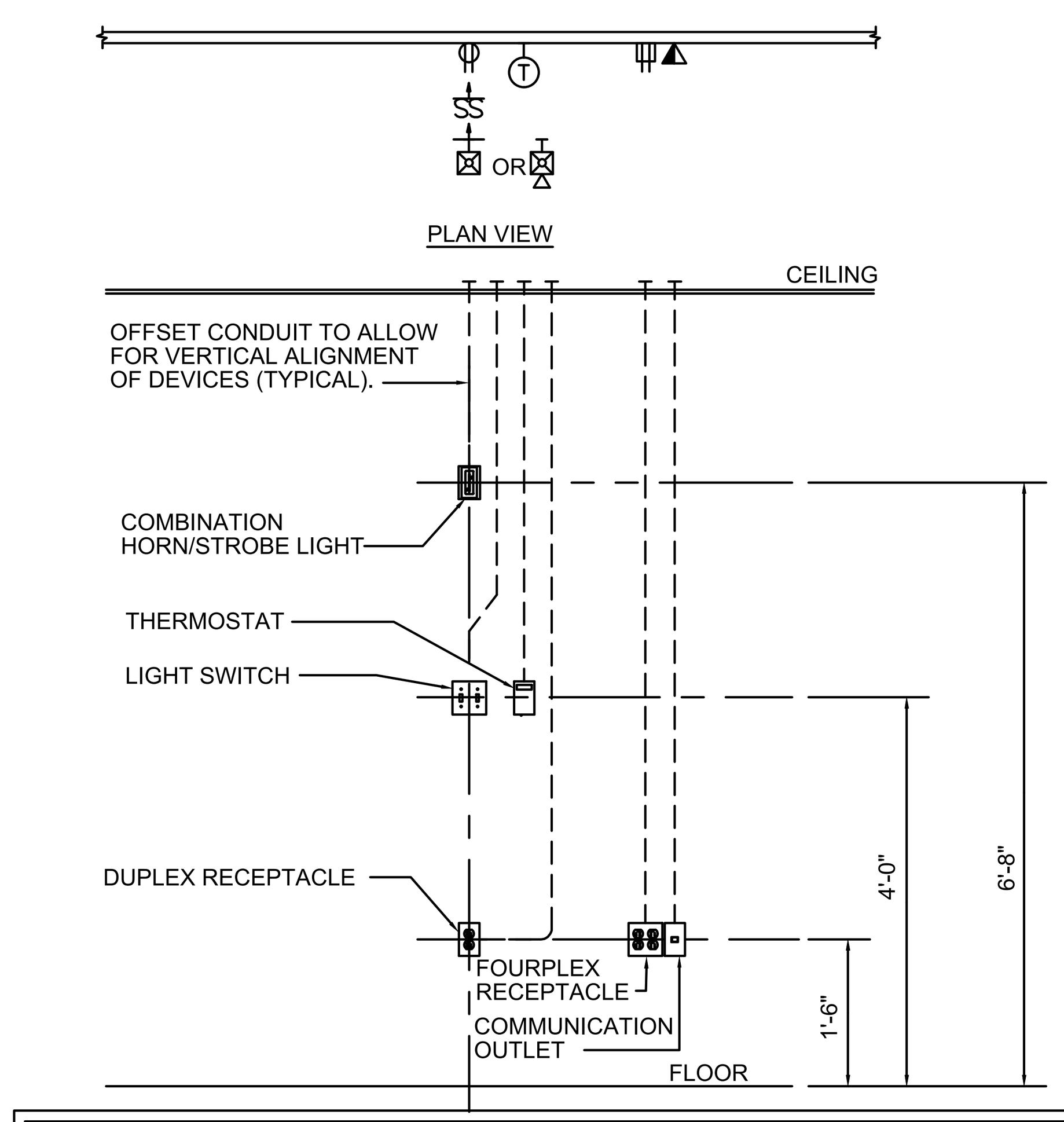
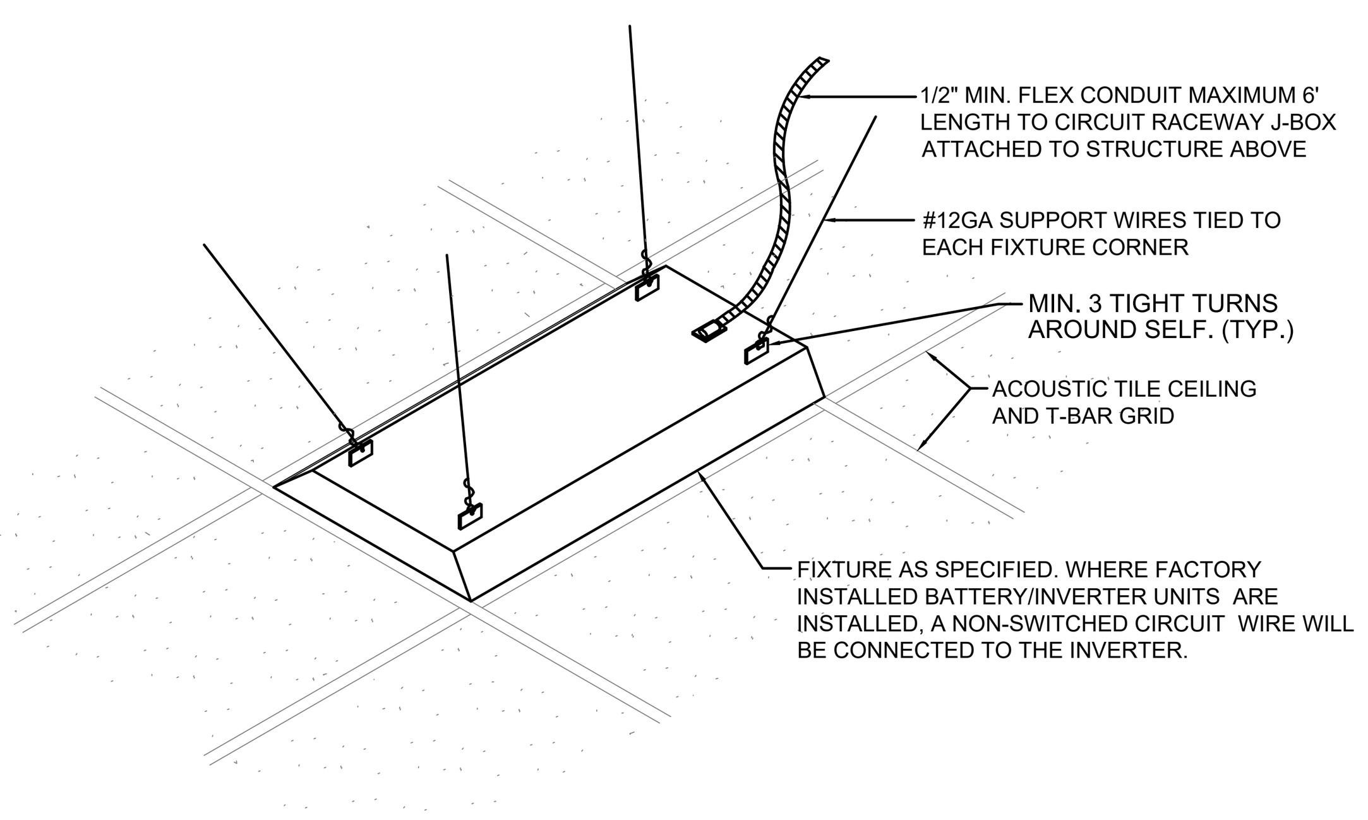


NOTE: ALIGN ALL DEVICES VERTICALLY. IF ANY DEVICE(S) ARE FOUND NOT TO BE INSTALLED PER DETAIL, CONTRACTOR SHALL RELOCATE AND PAY ALL ASSOCIATED COSTS ASSOCIATED WITH THE RELOCATION(S).

TYPICAL WALL MOUNTING DEVICE DETAIL

NO SCALE



LIGHT FIXTURE MOUNTING AND BRACING DETAIL

NO SCALE

EXISTING PANELBOARD A SCHEDULE

SERVICE: 208/120 VOLT , 3 - PHASE , 4 - WIRE
AMP FRAME: 225 AMP
MAINS: MLO
MOUNTING: SURFACE
RATING: VERIFY A.I.C.
LOCATION: _

REV NO.	NOTE NO.	CRT#	LOAD DESCRIPTION	BRKR P	BRKR AMP	LOAD KVA A	LOAD KVA B	LOAD KVA C	LOAD KVA 3PH	CRT#	LOAD DESCRIPTION	BRKR P	BRKR AMP	LOAD KVA A	LOAD KVA B	LOAD KVA C	LOAD KVA 3PH	NOTE NO.	REV NO.
	1	1	REC; WASHER	1	20	1				2	LTG; TENANT SUITE	1	20	1.42				2	
	2	3	REC; DRYER	2	30		2.5			4	SPARE	1	20					E	
		5						2.5		6	TIMECLOCK	1	20					E	
	2	7	REC; FRIDGE	1	20	0.8				8	REC; RECEPTION DESK QUADS	1	20	1.08				2	
	2	9	REC; LAUNDRY RM QUAD	1	20		0.36			10	REC; TREATMENT RM TWISTLOCK	2	30		2			1	
	2	11	REC; LAUNDRY RM QUAD	1	20			0.36		12						2			
	2	13	REC; SW RM QUAD	1	20	0.36				14	REC; TREATMENT RM TWISTLOCK	2	30	2				1	
	2	15	REC; SW RM QUAD	1	20		0.36			16					2				
	2	17	REC; TREATMENT RM QUAD	1	20			0.36		18	SPARE	1	20					E	
	2	19	REC; TREATMENT RM QUAD	1	20	0.36				20	WATER FOUNTAIN	1	20	0.72				E	
	2	21	REC; TREATMENT RM DUPLEX	1	20		0.18			22	SPARE	1	20					E	
	2	23	REC; TREATMENT RM QUAD	1	20			0.36		24	WATER HEATER	2	30			2.5		E	
	2	25	REC; TREATMENT RM QUAD	1	20	0.36				26				2.5					
	2	27	REC; TREATMENT RM DUPLEX	1	20		0.18			28	CU-1/FCU-1	1	20		0.93			2	
	2	29	REC; STORAGE RM	1	20			0.54		30	CU-2/FCU-2	1	20			0.93		2	
	2	31	EF-1/EF-2	1	20	0.7				32	SIGN	1	20	1.5				E	
	1	33	INSTANT WATER HEATER	1	40		3.5			34	SIGN	1	20		1.5			E	
	1	35	INSTANT WATER HEATER	1	40			3.5		36	SPARE	1	20					E	
		37								38									
	E	39	RTU	3	30				6.7	40	RTU	3	60				14.20	E	
		41								42									
			TOTAL:			3.58	7.08	7.62	6.7		TOTAL:			9.22	6.43	5.43	14.2		
														3.58	7.08	7.62	6.7		
											KVA / PHASE TOTAL:			12.8	13.51	13.05	20.9		
											AMP / PHASE TOTAL:			164.7	170.6	166.8			

NOTES:
1 PROVIDE NEW BREAKER IN EXISTING SPACE.
2 REUSE EXISTING BREAKER.

E = EXISTING BREAKER/INDEX/LOAD (ESTIMATED)
REV:

TOTAL CONNECTED LOAD:		60.26	KVA
TOTAL CONNECTED CURRENT:		167.27	AMPS
LIGHTS @	125%:	1.78	KVA
RECEPTACLES @	100%:	6.38	KVA
RECEPTACLES @	50%	0.00	KVA
LARGEST MOTOR LOAD @	125%:	0.00	KVA
CONTINUOUS LOAD @	125%:	0.00	KVA
OTHER AND NON-CONTINUOUS LOADS @	100%:	33.96	KVA
TOTAL DEMAND LOAD:		54.12	KVA
POWER FACTOR:		0.95	% PF
TOTAL DEMAND CURRENT:		158.12	AMPS

GENERAL NOTE:
CONDUCTOR & CONDUIT SIZING CHART FOR SIZING OF BRANCH CIRCUITS AND OR FEEDERS AT OR BELOW 100 AMPS

BRANCH CIRCUIT COPPER CONDUCTOR AND CONDUIT SIZING CHART*

OVERCURRENT PROTECTION DEVICE RATING (AMPS)	REQUIRED CONDUCTOR SIZE	EQUIPMENT GROUNDING CONDUCTOR SIZE	SINGLE PHASE 2 WIRE + GND. CONDUIT SIZE	SINGLE PHASE 3 WIRE + GND. CONDUIT SIZE	THREE PHASE 3 WIRE + GND. CONDUIT SIZE	THREE PHASE 4 WIRE + GND. CONDUIT SIZE
15	12 AWG	12 AWG	3/4"	3/4"	3/4"	3/4"
20	12 AWG	12 AWG	3/4"	3/4"	3/4"	3/4"
25	10 AWG	10 AWG	3/4"	3/4"	3/4"	3/4"
30	10 AWG	10 AWG	3/4"	3/4"	3/4"	3/4"
35	8 AWG	10 AWG	3/4"	3/4"	3/4"	3/4"
40	8 AWG	10 AWG	3/4"	3/4"	3/4"	3/4"
45	6 AWG	10 AWG	3/4"	3/4"	3/4"	1"
50	6 AWG	10 AWG	3/4"	3/4"	3/4"	1"
60	4 AWG	10 AWG	1"	1"	1"	1-1/4"
70	4 AWG	8 AWG	1"	1"	1"	1-1/4"
80	3 AWG	8 AWG	1"	1-1/4"	1-1/4"	1-1/4"
90	2 AWG	8 AWG	1"	1-1/4"	1-1/4"	1-1/4"
100	1 AWG	8 AWG	1-1/4"	1-1/2"	1-1/2"	1-1/2"

* = UNLESS OTHERWISE NOTED ON THE DRAWINGS.
* = UNLESS OTHERWISE NOTED ON THE DRAWINGS, ALL BRANCH CIRCUITS AND FEEDERS TO BE PROVIDED WITH A NEUTRAL WIRE.
* = ALL CONDUCTORS SIZED ON THE POWER RISER DIAGRAM OR IN BRANCH CIRCUIT CONDUCTOR TABLE ARE BASED ON 3 CURRENT CARRYING CONDUCTORS IN A RACEWAY OR CABLE. CONDUCTORS SHALL BE DERATED IN ACCORDANCE WITH THE NEC IF 4 OR MORE CONDUCTORS ARE PLACED IN A RACEWAY OR CABLE.

LIGHT FIXTURE SCHEDULE

TYPE	DESCRIPTION	LAMPS	WATTS / VOLTS	NOTES
A	RECESSED 2X4 FIXTURE WITH INTEGRAL DRIVER.	LED	50 / 120	
B	SUSPENDED PENDANT FIXTURE.	LED	50 / 120	
C	WALL-MOUNTED VANITY LIGHT.	LED	50 / 120	
X	EXIT SIGN WITH INTEGRAL EMERGENCY BUGEYE UNITS, INTEGRAL EMERGENCY BATTERY. PROVIDE WITH REMOTE HEAD AS INDICATED.	LED	10 / 120	
XE	WET-RATED REMOTE EMERGENCY LIGHT. POWER FROM INTERIOR EXIT SIGN.	LED	3 / 120	

GENERAL NOTES:
1. ALL FIXTURES TO BE SELECTED BY OWNER.

GENERAL NOTES (TYPICAL ALL SHEETS)

A. REFER TO ARCHITECTS REFLECTED CEILING PLANS FOR EXACT PLACEMENT OF LIGHT FIXTURES, SPEAKER AND F.A. DEVICES IN THE CEILING SYSTEM.

B. REFER TO ARCHITECTURAL DETAILS AND ELEVATIONS FOR COORDINATION OF LOCATION OF ALL WIRING DEVICES BEFORE ROUGH-IN OF J-BOXES.

C. REFER TO ARCHITECTURAL PLANS FOR DETAIL OF ALL CONDUIT THRU ROOF PENETRATIONS.

D. INSTALL BLANK COVERPLATE ON ALL OPEN OR ABANDONED DEVICE BOXES. VERIFY COLOR WITH ARCHITECT.

E. ANY MATERIAL REMOVED THAT OWNER DOES NOT WISH TO RETAIN SHALL BE REMOVED FROM PROJECT SITE AND DISPOSED OF BY THE CONTRACTOR.

F. NEW CIRCUITRY SHOWN FOR NEW/EXISTING POWER AND LIGHTING IS DIAGRAMMATIC AND IS INTENDED TO SHOW WHICH DEVICES ARE TO BE GROUPED ON INDIVIDUAL CIRCUITS. EXISTING WIRING THAT CONFORMS TO THE INTENT OF THE DRAWINGS MAY BE USED.

G. PROVIDE UPDATED, TYPEWRITTEN PANELBOARD DIRECTORY FOR EACH PANELBOARD WHICH CIRCUITS HAVE BEEN ADDED TO OR MODIFIED.

H. CONTRACTOR TO REFERENCE BRANCH CIRCUIT COPPER CONDUCTOR AND CONDUIT SIZING CHART FOR SIZING OF BRANCH CIRCUITS AND OR FEEDERS AT OR BELOW 100AMPS.

I. SUPPORT ALL LIGHT FIXTURES WITH A MINIMUM OF (4) 12 GA. HANGER WIRES TO STRUCTURE ABOVE.

J. CONNECT EXIT AND EMERGENCY LIGHTS TO HOT LEG, NOT SWITCH LEG.

K. THE ELECTRICAL CONTRACTOR SHALL INCLUDE IN BID ALL COSTS ASSOCIATED WITH FIRE ALARM MODIFICATIONS. THIS WORK SHALL INCLUDE POWER EXTENDER PANEL, SMOKE DETECTORS, HORN/STROBES, PULL STATIONS, REMOTE INDICATING LIGHTS AND ANY OTHER FIRE ALARM WORK SHOWN ON PLANS. ALL WIRING, PLENUM RATED CABLING, BETWEEN DEVICES SHALL BE INCLUDED IN WORK TO PROVIDE AN OPERATIONAL EXTENSION OF THE EXISTING FIRE ALARM SYSTEM.

L. CONDUIT SHALL BE USED FOR CONDUCTORS WHERE REQUIRED BY N.E.C.

M. OUTLETS INSTALLED IN FIRE RATED ASSEMBLES SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24".

N. CONTRACTOR SHALL CALCULATE VOLTAGE DROP AND SIZE WIRE ACCORDINGLY. PER N.E.C.

O. PROVIDE 3'-0" CLEARANCE IN FRONT OF DISCONNECTS TO CONDENSING UNITS.

P. CONTRACTOR SHALL PROVIDE FIRE RATED ENCLOSURES AROUND ALL ROUGH-IN BOXES, PANELS ETC. THAT ARE LOCATED IN FIRE RATED WALLS AND SHALL FIRE CAULK ALL OPENING IN RATED ASSEMBLES PER MANUFACTURERS RECOMMENDATIONS PER FIRE RATED ASSEMBLES.

Q. WHERE MORE THAN ONE SWITCH IS INDICATED ON DRAWINGS SIDE BY SIDE, CONTRACTOR SHALL INSTALL SWITCHES UNDER ONE COMMON FACE PLATE.

R. FIRE ALARM CONTRACTOR IS RESPONSIBLE OF TESTING AND VERIFYING THAT THE AUDIBILITY OF THE FIRE ALARM SYSTEM MEETS A MINIMUM OF 15 DBA ABOVE AMBIENT NOISE LEVELS. AFTER INSTALLATION AND BEFORE CERTIFICATE OF OCCUPANCY. ADD HORNS WHERE REQUIRED TO MAINTAIN MINIMUM LEVELS.

ELECTRICAL SYMBOLS

BRANCH CIRCUIT CONCEALED IN CEILING OR WALL. ARROWS INDICATE HOMERUNS TO PANEL. ALL CONDUCTORS ARE MINIMUM NO.12 UNLESS NOTED OTHERWISE.
PHASE CONDUCTORS
NEUTRAL CONDUCTOR
SWITCH-LEG AND OR TRAVELER
GROUND CONDUCTOR

LP1-10 — PANEL - BREAKER NUMBER (IDENTIFICATION)
1/3, 1/3/5 — INDICATES X/X= 2-POLE C.B., X/X/X = 3-POLE C.B.
HOMERUN INDICATED LIKE THIS INDICATED THREE SEPARATE CIRCUITS (3, 5, 1)
CONDUIT CONCEALED IN CEILING OR WALL WITH THREE CONDUCTORS: 1-PHASE; 1-NEUTRAL; 1-GROUND WIRE, MINIMUM NO.12 WIRE UNLESS OTHERWISE SPECIFIED ON DRAWINGS.
(OR) COMBINATION EXIT SIGN/EMERGENCY LIGHTING UNIT - CEILING OR WALL MOUNTED. SHADED SIDE(S) INDICATES FACE SIDE(S) OF EXIT.
A OR A — 2x4 / 2x2 LIGHT FIXTURE, LETTER DENOTES FIXTURE TYPE, REFER TO SCHEDULE
(OR) WALL WASH OR RECESSED CEILING LIGHT FIXTURE
WALL MOUNTED LIGHT FIXTURE, SIZE AND TYPE AS NOTED
PENDANT MOUNTED LIGHT FIXTURE, SIZE AND TYPE AS NOTED
208Y/120V OR 120/240V PANELBOARD (SURFACE) TOP MOUNTED 6'-0" AFF
POWER CONNECTION POINT
DISCONNECT SWITCH, SIZE AND TYPE AS NOTED TOP MOUNTED 5'-0" AFF
S — SINGLE POLE SWITCH. TOP OF DEVICE BOX AT +4'-0" AFF
S MS — WALL MOUNTED MOTION SENSOR, TOP OF DEVICE BOX AT +4'-0" AFF, TYPE AS INDICATED
DUPLEX RECEPTACLE. +1'-6" AFF OR AS NOTED
DUPLEX RECEPTACLE INSTALLED ABOVE COUNTERTOP
GFI — DUPLEX RECEPTACLE W/GROUND FAULT PROTECTION. +1'-6" AFF OR AS NOTED
DOUBLE DUPLEX RECEPTACLE. +1'-6" AFF OR AS NOTED
DOUBLE DUPLEX RECEPTACLE INSTALLED ABOVE COUNTERTOP.
FIRE RATED ROUND POKE-THRU WITH TYPE INDICATED. SEE SPECS.
HEAVY DUTY RECEPTACLE. VOLTAGE, PHASE AND AMPS AS NOTED. +1'-6" AFF OR AS NOTED.
J OR J — WALL MOUNTED OR CEILING MOUNTED JUNCTION BOX.
TV — RECESSED SHELF CONTAINED TV BOX, TYPE AS INDICATED
LOW VOLTAGE OUTLET, DOUBLE GANG BOX WITH SINGLE GANG PLASTER RING. INSTALL 1" CONDUIT STUBBED UP OUT OF TOP OF BOX TO ABOVE AN ACCESSIBLE CEILING. +1'-6" AFF OR AS NOTED.
FA VISUAL FIRE ALARM STROBE LIGHT +6'-8" A.F.F.
FA COMBINATION AUDIBLE/VISUAL WALL MOUNTED, +6'-8" AFF.
INDICATES WIRING DEVICE ABOVE RE: DRAWING
X — MECHANICAL EQUIPMENT CALL OUT BUBBLE
XX-X — ELECTRICAL EQUIPMENT PROVIDED BY AND INSTALLED BY E.C.
+4'-0" — HEIGHT TO TOP OF THE OUTLET BOX ABOVE FINISHED FLOOR
AFF — ABOVE FINISH FLOOR
ETR — EXISTING TO REMAIN
FA — FIRE ALARM

Lankford Fendler + associates
1730 Walnut Street Kansas City, Missouri 64108
1915 Frederick Avenue, St. Joseph, Missouri 64501
Phone: 816.221.1411 | Fax: 816.221.1429
LANKFORD | FENDLER + ASSOCIATES, CONSULTING ENGINEERS, INC.

WARMAN ARCHITECTURE+DESIGN
1735 SWIFT AVENUE
NORTH KANSAS CITY, MISSOURI 64116
V. 816.474.2233 F. 816.474.1051

MILAN LASER HAIR REMOVAL TENANT DEVELOPMANT

1734 NW CHIPMAN ROAD
LEES SUMMIT, MO 64081

DESIGNER:
KCD-KANSAS CITY DESIGN GROUP, LLC
4006 N 126TH STREET
KANSAS CITY, KS 66109
T: 816.682.0329

MEP ENGINEER:
LANKFORD, FENDLER & ASSOCIATES
1730 WALNUT ST.
KANSAS CITY, MO 64108
T: 816-221-1411

GENERAL CONTRACTOR:
CONSTRUCTION DESIGNWORKS, LLC
6657 WOODLAND DRIVE
SHAWNEE, KS 66218
T: 913.745.4727

REVISIONS

#	BY	DATE	SOURCE

DATE: MARCH 04, 2021
DESIGNED BY: JSV
DRAWN BY: JSV
APPROVED BY: LTD

SHEET NUMBER
E201

JOB NUMBER
#5629-21