C O N S T R U C T I O N D O C U M E N T S

RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
02/02/2021

Joe Frogge

D&A
ARCHITECTURE

Country Club Bank

Downtown Lee's Summit

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Oct. 20, 2020

Permit Set
Revision 1

STATE OF MISSOURI
JEFFREY A. DEGASPERI
A-6731
REGISTERED ARCHITECT

Country Club Bank
Lee's Summit

PROJECT SUMMARY

SHELL BUILDING SUMMARY:

BUILDING SHELL CODE SUMMARY:

Occupancy Type:	'Non-Separated Mixed Uses' (IBC 508.3) M (Mercantile), B-Business
Construction Type:	Type III-B, non-sprinklered
Actual Total Area:	7,160 sf - ground floor
Allowable:	12,500 sf/floor (per M)
Height, Actual:	40 ft., 2 story
Height, Allowable:	55 ft., 2 story (per M)

TENANT CODE SUMMARY:

TENANT CODE SUMMARY:

Occupancy Type:	~~B - Business~~
Construction Type:	III-B, non-sprinklered
Tenant Area:	2,400 sf
Max. Occupancy	16 occ (@150occ/sf; per table 1004.5)
Number of Exits:	2 (1 required, 1006.2)
Max. Travel to Exit:	75' (200' allowable,1017.2)
Max. Common Path:	45' (75' allowable, 1006.2.1)
Toilet Fixtures: 2902.1	2 actual, *2 reqd (1/25 occ for 1st 50, 1/50 after) (*separate facilities over 15 occ)

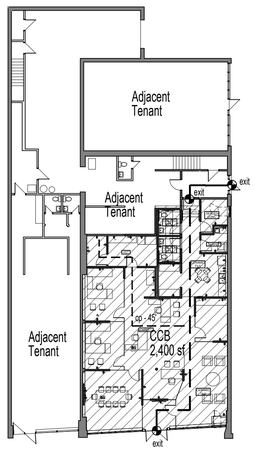
APPLICABLE CODES:

International Building Code (IBC), 2018
International Mechanical Code (IMC), 2018
International Plumbing Code (IPC), 2018
International Fire Code (IFC), 2018
International Fuel Gas Code (IFC), 2018
International Energy Conservation code (IECC), 2018
National Electric Code, 2017

KEY PLAN

Not to Scale

NORTH



PROJECT LOCATION

Not to Scale

NORTH

DRAWINGS

ARCHITECTURAL:

A01	Schedules & Int Dtls
A10	Floor Plan
A11	Ceiling Plan

MECH / ELEC / PLUMBING:

MP0	Mech/Elec Specs
M10	Mechanical Plan
M20	Mechanical Schedules
P11	Waste/Vent Plans
P12	Water/Gas Plans
E00	Electrical Notes
E10	Power/Lighting Plans
E20	Electrical Schedules

TOILET ACCESSORIES SCHEDULE

SYMB	DESCRIPTION	MODEL (Bobrick)	LOCATION / QTY.		
			WOMEN - 114	MEN - 115	
TTD	SGL. TOILET TISSUE DISPENSER	B7685	1	1	
GB	GRAB BARS; 1-36", 1-48", 1-18"	B6806.99	1	1	
PTT	PAPER TOWEL DISPENSER / TRASH	B39603	-	-	
SD	SOAP DISPENSER	B8226	-	-	
MIR 1	MIRROR	per elevs	1	1	

GENERAL NOTES:

1. INSTALL PER MANUFACTURER'S REQUIREMENTS & INSTRUCTIONS
2. INSTALL TO MEET ADA AND ANSI STANDARDS.
3. BOBRICK CATALOG NUMBERS HAVE BEEN USED
4. PROVIDE WOOD BLOCKING IN WALL FOR ANCHORING GRAB BARS.
5. PROVIDE PRODUCT DATA FOR TENANT APPROVAL PRIOR TO ORDERING

SUBMITTALS; GENERAL NOTES

GENERAL NOTES:

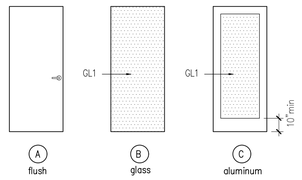
1. SUBMITTALS:
   Tenant shall be involved in selection and/or final approval of all materials, products and colors - prior to ordering and installation.
   Including, but not limited to:
   a. Flooring products
   b. Ceiling tile
   c. Door Hardware
   d. Door wood type/stain
   e. Laminates
   f. Paint and Stain colors
   g. Toilet Accessories
   h. Light fixtures
   i. Plumbing fixtures

2. CASEWORK DESIGN & FABRICATION:
   Casework Contractor shall provide shop drawings. Full shop drawings and samples shall be provided for approval by the Tenant & Contractor prior to fabrication.

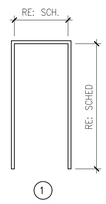
DOOR SCHEDULE

NO.	DOOR INFORMATION							FRAME INFO				MISC.			REMARKS
DOOR NUMBER	DOOR WIDTH	DOOR HEIGHT	DOOR THICKNESS	DOOR TYPE	DOOR MATERIAL	DOOR FINISH	DOOR GLASS	FRAME TYPE	FRAME MATERIAL	FRAME FINISH	SIDELITE GLASS	HARDWARE SET	CARD READER	FIRE LABEL	
X1	pr3'-0"	7'-0"													Exist; w/ paddle deadbolt
01	3'-0"	7'-0"	5/8"	B	GL2	–		–	–	–		1			
05	3'-0"	7'-0"	5/8"	B	GL2	–		–	–	–		1			
06	3'-0"	7'-0"	5/8"	B	GL2	–		–	–	–		1			
07	3'-0"	7'-0"	5/8"	B	GL2	–		–	–	–		1			
08	3'-0"	7'-0"	5/8"	B	GL2	–		–	–	–		1			
10	3'-0"	7'-0"	1 3/4"	A	WD	P2		1	HM	P4		5			
11	3'-0"	7'-0"	1 3/4"	A	WD	P2		1	HM	P4		5			
14	3'-0"	7'-0"													Exist; by Landlord
15	3'-0"	7'-0"													Exist; by Landlord
16	3'-0"	7'-0"													Exist; by Landlord
17	3'-0"	7'-0"	1 3/4"	A	WD	P2		1	HM	P4		3			
18	3'-0"	7'-0"	1 3/4"	A	WD	P2		1	HM	P4		5			

DOOR TYPES



FRAME TYPES



HARDWARE SETS

HARDWARE SET #1 (Glass Office)

HINGES	tbd	1	top pivot
CLOSER	tbd	1	recessed floor closer/pivot
PUSH/PULL	tbd	1	3/4" wire pull and push bar

HARDWARE SET #2 (Privacy)

HINGES	Hager	3	BB1191, 5 knuckle, 4.5 x 4.5	626
LOCKSET	Schlage	1	"privacy", AL-series, saturn lever	626
STOP	Hager	1	Wall Stop 236W, concave	626

HARDWARE SET #3 (Office)

HINGES	Hager	3	BB1191, 5 knuckle, 4.5 x 4.5	626
LOCKSET	Schlage	1	"office", AL-series, saturn lever	626
STOP	Hager	1	Wall Stop 236W, concave	626

HARDWARE SET #4 (Passage)

HINGES	Hager	3	BB1191, 5 knuckle, 4.5 x 4.5	626
LOCKSET	Schlage	1	"passage", AL-series, saturn lever	626
STOP	Hager	1	Wall Stop 236W, concave	626

HARDWARE NOTES:

1. Hardware supplier shall review hardward styles, functions and finishes with the Tenant prior to ordering.
2. Review keying system with Tenant and Landlord. Coordinate with existing system.
3. All interior doors with closers shall comply with opening force (5#) and closing speed (from 90d to 12d = 5 sec min) as required by ADA404.2.8 and 404.2.9

FINISH SCHEDULE

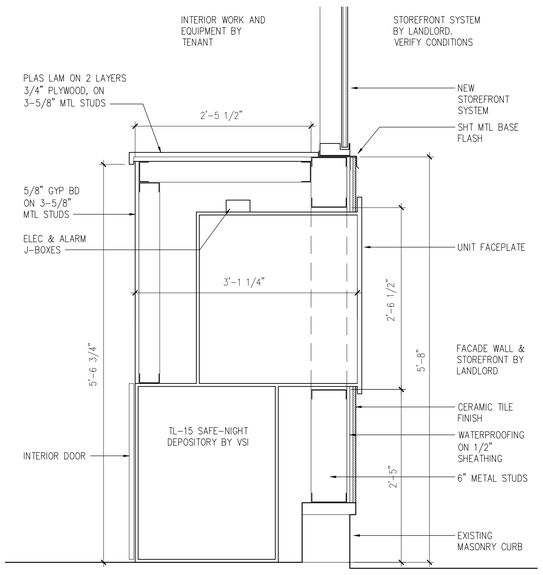
MARK	ROOM NAME	FLR.	BASE	WALLS		WAINSCOT		CEILING	CEIL'G HT.	REMARKS
				mat.	color	mat.	color			
101	VESTIBULE	CT	CT	P-1				P5	10'-6"	
102	LOBBY	CT	CT	P-1				ACT1	10'-6"	
103	OFFICE	CPT	RB	P-1				ACT1	10'-6"	
104	OPEN OFFICE	CPT	RB	P-1				ACT1	10'-6"	
105	PHONE ROOM	CPT	RB	P-1				ACT1	10'-0"	
106	CONFERENCE	CPT	RB	P-1				ACT1	10'-6"	
107	OFFICE	CPT	RB	P-1				ACT1	10'-0"	
108	OFFICE	CPT	RB	P-1				ACT1	10'-0"	
109	COPY AREA	CPT	RB	P-1				ACT1	10'-6"	
110	WORK ROOM	VCT	RB	P-1				ACT1	9'-0"	
111	DATA ROOM	VCT	RB	P-1				ACT1	9'-0"	
112	BREAK AREA	CT	CT	P-1				ACT1	9'-0"	
113	STORAGE	CT	CT	P-1				ACT1	9'-0"	
114	WOMEN'S ROOM	CT	CT	P-6		CT		P5	9'-0"	*FINISHES BY LANDLORD
115	MEN'S ROOM	CT	CT	P-6		CT		P5	9'-0"	*FINISHES BY LANDLORD
116	HALL	CT	CT	P-1				ACT1	9'-0"	
117	MOTHER'S ROOM	CPT	RB	P-1				ACT1	9'-0"	
118	ATM ROOM	SLC	RB	P-1				ACT1	9'-0"	

MATERIAL SELECTION SCHEDULE

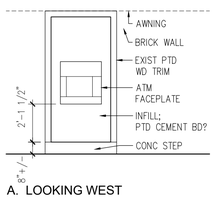
SYMBOL	DESCRIPTION	SELECTION / MANUFACTURER	NOTES/COLOR
SLC	SEALED CONCRETE	TYPE: TO BE SELECTED	COLOR: CLEAR
CPT	CARPET, BROADLOOM	TO BE SELECTED	COLOR: (to be selected)
CT	CERAMIC TILE	TO BE SELECTED	COLOR: (to be selected)
VCT	VINYL COMPOSITION TILE	ARMSTRONG, STD. EXCELON, 12x12	COLOR: (to be selected)
RB	RUBBER BASE	ROPPE, 4" COVE	COLOR: (to be selected)
WD	WOOD	PAINT GRADE (POPLAR)	COLOR: see below
		SHERWIN-WILLIAMS noted (or per finish plan):	
P-1	PAINT-new drywall for regular ptg.	Pro-Mar 200 Primer; Pro-Mar 200 Eggshell	COLORS: SEE BELOW
P-2	PAINT-wood doors & trim	Wood Primer; Color Accents (2)	COLORS: SEE BELOW
P-3	STAIN-wood doors & trim	Polyurethane Varnish, matte (no stain)	COLORS: SEE BELOW
P-4	PAINT-interior metals	Alkyd Metal Primer; Color Accents (2)	COLORS: SEE BELOW
P-5	PAINT-drywall ceilings	Style Perfect Latex Ceiling	COLORS: SEE BELOW
P-6	PAINT-drywall in restrooms	PrepRite 200 Primer; Pro-Ind Hi-Bild Epoxy(2)	COLORS: SEE BELOW
ACT1	2X2 ACOUSTIC CLG	TYPE: USG 'RADAR', tegular edge, white	W/ STD. 15/16" WHITE GRID
GL1	1/4" INTERIOR GLASS	1/4" TEMPERED GLASS	CLEAR
GL2	GLASS WALLS & DOORS	5/8" TEMPERED GLASS	CLEAR
PL1	PLASTIC LAMINATE (countertops)	TYPE: FORMICA	COLOR: TBD
PL2	PLASTIC LAMINATE (cbt. faces)	TYPE: FORMICA	COLOR: TBD

PAINT COLOR SELECTIONS

COLOR	LOCATIONS	COLOR SELECTION	FINISH	NOTES
color "A"	Wall Color	Color: To be selected	Eggshell	
color "B"	Wall Color	Color: To be selected	Eggshell	
color "C"	Drywall Ceiling Color	Color: To be selected	Flat	
color "D"	Door Frames & Doors	Color: To be selected	Semi-gloss	
color "E"	Painted wood trim	Color: To be selected	Semi-gloss	

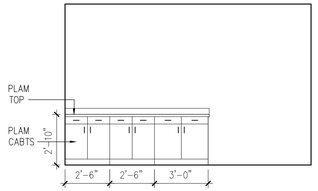


A6 | NIGHT DEPOSITORY
SCALE: 1" = 1' - 0"



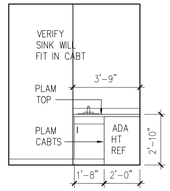
A. LOOKING WEST

B5 | ATM
SCALE: 1/4" = 1' - 0"



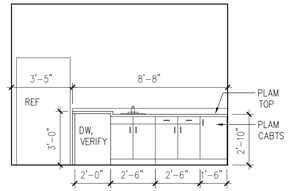
A. LOOKING NORTH

B4 | WORK ROOM
SCALE: 1/4" = 1' - 0"



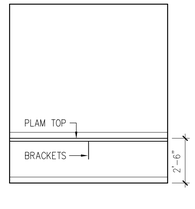
A. LOOKING NORTH

B3 | MOTHER'S RM
SCALE: 1/4" = 1' - 0"



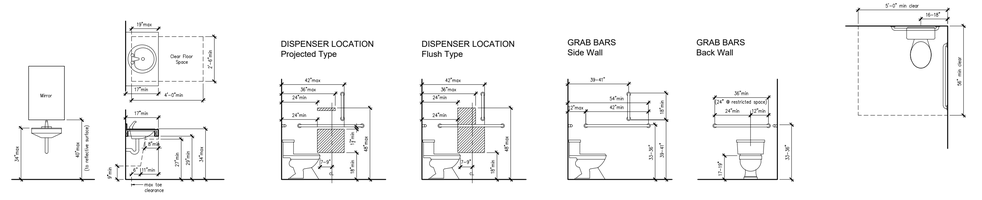
A. LOOKING EAST

B2 | BREAK ROOM
SCALE: 1/4" = 1' - 0"



A. LOOKING NORTH

B1 | PHONE ROOM
SCALE: 1/4" = 1' - 0"



A3 | ACCESSIBILITY GUIDELINES
SCALE: 1/4" = 1' - 0"

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Tenant Finishes

Country Club Bank

32 SE 3rd Street
Lee's Summit, MO

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Schedules & Int Elevs

A01

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UDO ARTICLE #9 REQUIREMENTS:

The following shall be provided or verified, in compliance with CPTED provisions of UDO Article 9 for Bank and Financial Services (Amendment #33):

a. Lighting Requirements-
Indoor-Lobby - Light levels of sufficient intensity to provide for high resolution video data recording from the digital video surveillance cameras in accordance with the camer manufacturer's specs.
Outdoor - Minimum lighting levels of 5 footcandles shall be maintained at the store's entrance or shall be sufficiently lit to provide for high resolution video data recording of outside activity within 50 feet of the entrance.

b. Provide signage banning disguises; i.e., no caps sunglasses or visors, etc.

c. Provide video surveillance camera(s), two-color digital high definition as folllows:
To maintain view of cash register counter;
To maintain view of all public and/or employee entrances into building/tenant space;
To maintain view of customers leaving via a door mounted pin hole camera to be positioned at a height of between 4 and 5 feet from the bottom of the door;
Capable of providing a min. storage of 30 days of data.

d. Provide an alarm system; as follows:
Alarm system shall be monitored off-site;
Silent panic alarm shall be provided at each cash register;
Each teller and each employee directly accessible to the public shall be provided a remote alarm to wear on their person;
Provide alarm activation inside walk-in vaults.

e. Provide automatic door locks on primary exits. Automatic door locks shall be capable of being locked from any cash transaction counter.

f. Provide unobstructed line of sight at all times from the cash register to the front door. Window areas shall be free from posters, flyers and other such visibility blockers.

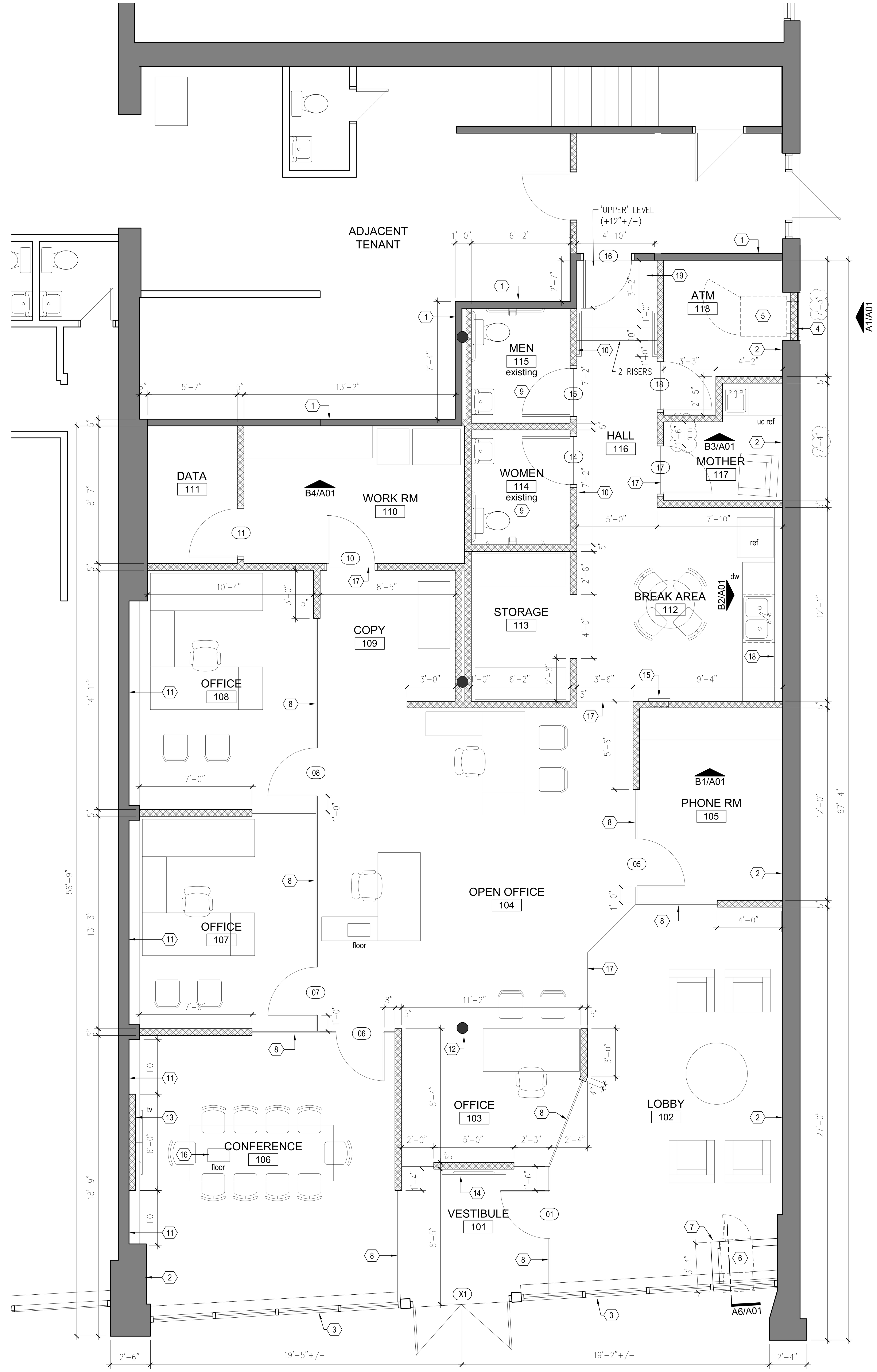
g. "Height Strips" shalol be required at each public entrance in direct view of employess.

h. "No Loitering/Trespass" sign shall be posted at the front entry to the building.

B3 UDO ARTICLE 9

1. Demise Wall; existing, constructed by Landlord. Floor level changes between tenant spaces occur at this location.
2. Existing exposed brick wall to remain.
3. Storefront, replaced by Landlord; with pair entry doors.
4. Replace existing door opening with exterior infill wall for new ATM. Modify door curb/threshold if required to provide faceplate of ATM at ADA required levels outside.
5. ATM unit: NCR SelfServ 84 Walk-Up Interactive Teller.
6. FL-15 Safe-Night Depository, by Vault Structures Inc. Mounted thru facade wall in the Storefront, provided by Landlord.
7. Construct partial height enclosure with cap, for Night Depository per details.
8. Full height "Herculite" glass wall system, butt-joints, with stainless steel connectors. Doors shall include floor closers, and stainless steel pulls and hinges.
9. Restroom. Existing, constructed by Landlord, including plumbing fixtures, ceiling, lights, exhaust fan, floor finish, epoxy painted walls, grab bars, mirror, toilet tissue dispenser.
Tenant Contractor to install 4'h (min) ceramic tile wainscot on all walls.
10. Restroom Signage: plastic 6x9 with raised symbols and braille per code. Next to door at 54"h centerline.
11. New drywall veneer on existing wall.
12. Existing steel column, to remain. Painted.
13. 5/8" gypsum board on 3-5/8" metal studs, for concealment of conduit for wall mounted TV monitor.
14. Wall-mounted electronic display. Coordinate power requirements.
15. 2A10BC 5lb.fire extinguisher, in semi-recessed cabinet. J.L. Industries 'Ambassador' 1017V10, or equal.
16. Provide flush floor box and underslab conduit routing for electrical and data below conference table.
17. Line of flooring finish change.
18. Half-wall with wood cap at 4' high, insulated, for routing sink plumbing. Exposed brick wall above.
19. Construct landing and steps, construction to match new floor by Landlord (1" gypcrete on plywood on 2x framing). Provide 1-1/2" od steel tube handrails at 36" above floor/tread, extend 12" beyond top and bottom.

A3 PLAN KEY NOTES



A2 FLOOR PLAN
Scale: 1/4" = 1' - 0"

0 1 2 4

north

GENERAL NOTES:

1. Dimensions are based on existing shell conditions, from a Base Plan provided by the Landlord. Dimensions shall be verified, and adjusted as necessary for actual conditions.
2. Interior dimensions are to face of finish wall, typical. Allow 5" for thickness of wall, UNO.
3. Existing exterior walls are primarily to remain as exposed brick. Assure walls are provided in satisfactory condition by Landlord, with portions of old plaster removed.
4. All new interior partitions shall be 3-5/8" metal studs @ 16"oc, with 5/8" gyp. bd. each side to 4" above ceiling; unless otherwise noted. Provide Sound Batt Insulation between offices and around toilet rooms.
5. Provide blocking in walls as required for anchorage of wall mounted equipment and devices (ie; casework, grab bars, toilet partitions, etc).
6. New restrooms are existing, provided by Landlord under separate 'white box' permit.
7. Provide moisture resistant gypsum board (greenboard) or cement board (dura-wall, etc) in the following locations:
   a. Toilet Rooms, on wet walls and walls adjacent to wet walls.
   b. Janitor Rooms with mop sinks.
   c. Walls adjacent to plumbing fixtures or equipment with water supply (to 4' from fixture).
   d. As substrate for tile or masonry finishes.
8. Painting requirements:
   a. Typical Walls: Sherwin-Williams 'Pro-mar 200' primer with 'Pro-mar 200' Eggshell, or equal.
   b. Painted Wood Trim & Doors: Sherwin-Williams 'Pro-mar 200' primer with 'Pro-mar 200' Alkyd semi-glossl, or equal
9. Interior finishes shall be as follows. Selections by the Tenant:
   a. Floor Finishes - Carpet Tile, Ceramic Tile, VCT, rubber base
   b. Walls - Painted
   c. Wainscot in Restrooms - Ceramic Tile
   d. Doors and trim - Painted
   e. Cabinetry types and finishes
   f. Door hardware types and finishes
10. Tenant to provide fixtures and furniture, including bank equipment (ie, ATM and Night Depository).
11. HVAC systems shall be 'design/build' by the Mechanical Contractor. Coordinate with base equipment and conditions provided by Landlord. Provide appropriate distribution to spaces based on the partition layout. All new work shall conform to applicable Building Codes. If required by the IMC, duct smoke detection shall be installed, and connected to the building fire alarm system.
12. Electrical and Lighting Systems shall be 'design/build' by the Electrical Contractor. Provide adequate power outlets, power for equipment, and light fixtures. Design the new circuits utilizing the existing Electric Panel provided by Landlord. All new work shall conform to applicable Building Codes.
13. The Electrical Contractor shall design and install the emergency lighting and exit signage, and provide appropriate locations, spec, or quantities as required for compliance with local Building Codes and requests of Fire Marshall.
14. Plumbing Systems shall be 'design/build' by the Plumbing Contractor. Provide new plumbing fixtures indicated on the drawings, and appropriate water and waste systems. Tie into existing building systems. All new work shall conform to applicable Building Codes. Review plumbing fixture selections with the tenant prior to ordering. (note: plumbing in the two restrooms shall be existing, constructed by Landlord).
15. Provide design and the modifications to the existing fire-sprinkler system to supply coverage to comply with NFPA-13, for any areas affected by the new work. Provide semi-recessed heads in ceiling tiles; and recessed heads that occur in drywall ceilings. Provide 1" signage at ceiling to indicate location of any concealed fire-sprinkler valves.
16. Provide exterior lighted wall sign(s), per Tenant's sign vendor. Coordinate electrical requirements.

A1 GENERAL NOTES

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ARCHITECTURE

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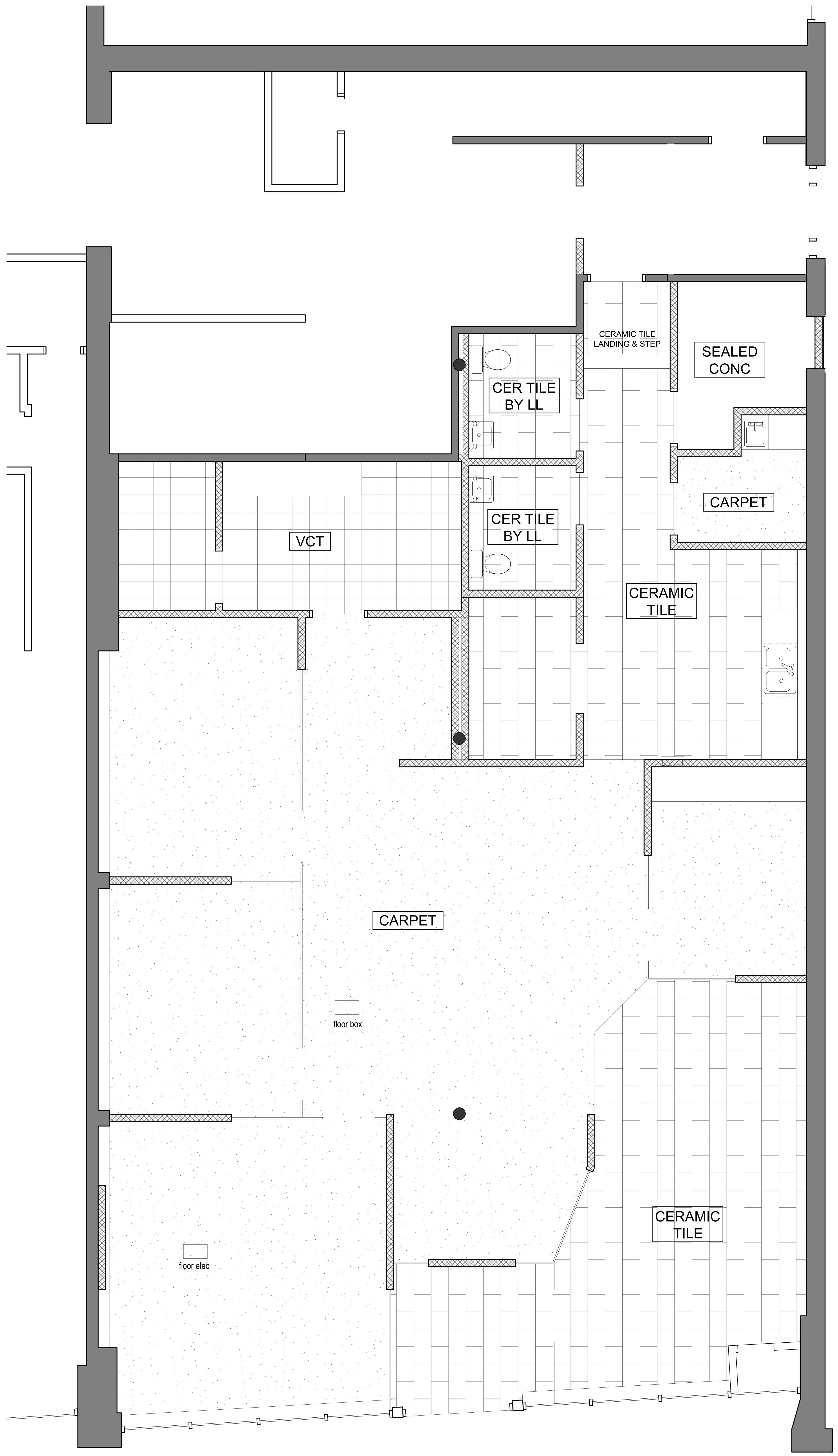
Tenant Finishes

Country Club Bank

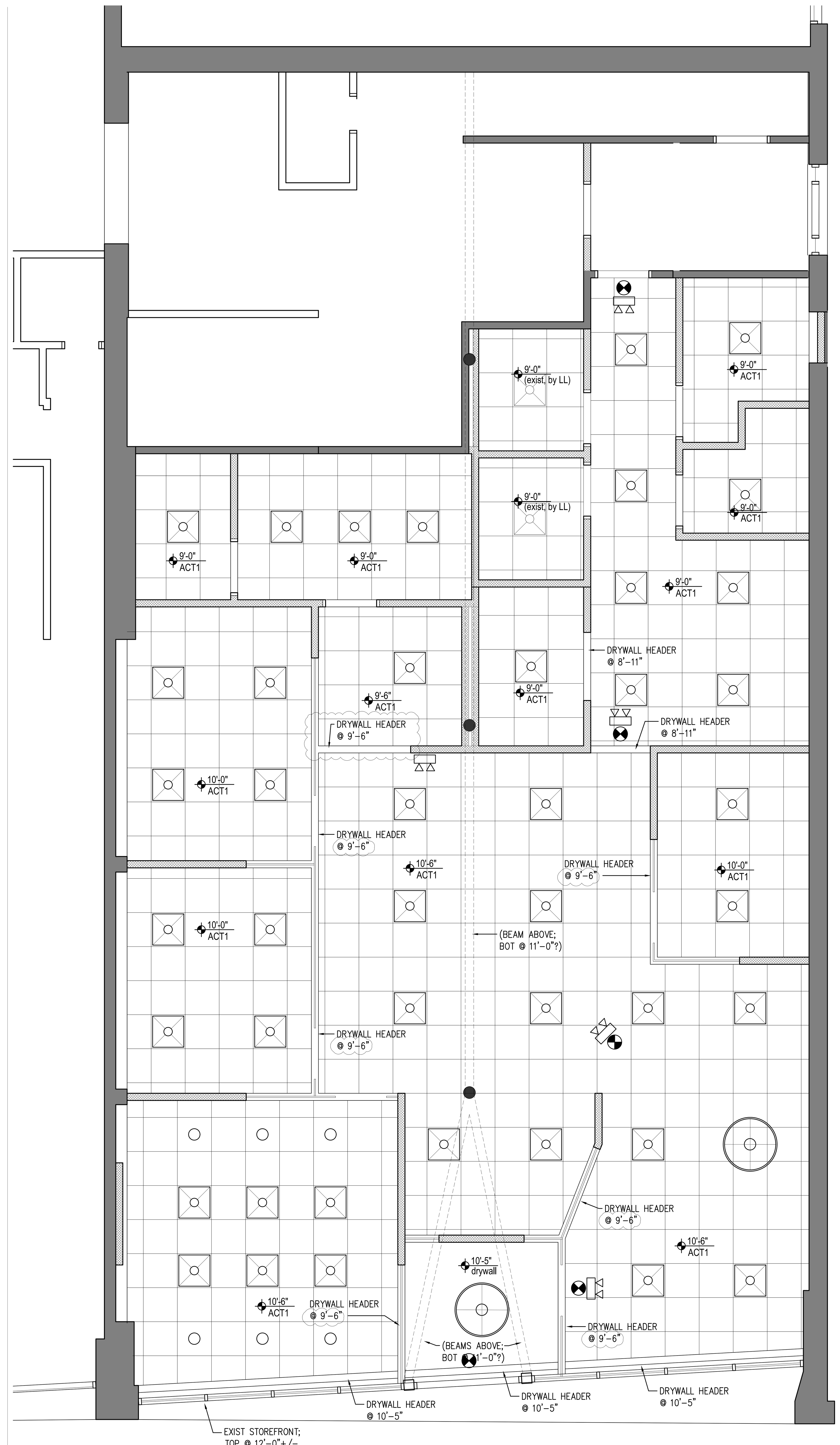
32 SE 3rd Street
Lee's Summit, MO

Issue	Date
Review Set	6. 12. 20
Review Set	7. 13. 20
Permit Set	7. 19. 20
Revision 1	10. 20. 20

Floor Plan
A10



A3 | FINISHES PLAN
Scale: 1/4" = 1' - 0"



A2 | CEILING PLAN
Scale: 1/4" = 1' - 0"

GENERAL CEILING NOTES:

1. SHELL BUILDING CONDITIONS:
   a. Tenant Contractor shall repair any damaged areas of existing ceiling to assure stability of surfaces.
2. CEILING TYPES AND HEIGHTS:
   a. Ceiling heights are noted on the plan.
   b. Refer to Architectural Finish Schedule for ceiling types.
   c. Approximate height of existing ceiling/structure above is 13'-4". Field Verify. Confirm adequate clearances are available for ceiling heights scheduled. Assure clearances for HVAC ducts and equipment, lights, structure, and other obstructions. Bring areas of conflict to attention of Architect and Engineer prior to installation of grid.
3. HEADERS AND SOFFITS:
   a. Headers shall be 5/8" gyp bd on 3-5/8" metal studs, suspended from structure. Bottom of header elevations are shown on Ceiling Plan.
   b Provide headers above Herculite glass walls, for installation of top glass receiver. Provide kickers to structure as required for wall stability.
   c. Provide 1/2" gyp bd on soffits and drywall ceilings, on metal framing or suspension systems.
4. GRID LAYOUT:
   a. Center the grid in the middle of rectangular rooms, unless shown otherwise.
   b. Move grid slightly to eliminate very narrow panels; or provide oversize panels.
5. LIGHT FIXTURE LOCATIONS:
   a. Suggested locations of light fixtures are shown on the ceiling plan.
   b. Fixture types shall be verified by Tenant.
   c. Electrical Contractor shall verify adequate lighting values for layout, and adjust locations and quantities as necessary.
   d. Suggested locations for exit signs and emergency lighting units are shown on the ceiling plan. Verify compliance with local codes and approval by Fire Marshall.
6. MECHANICAL DEVICES:
   a. Locations of diffusers, grilles and other devices shall be determined by the Mechanical Contractor.

RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
02/02/2021

D&A
ARCHITECTURE

ARCHITECT
DeGasperi & Associates
6240 W. 135th Street
Overland Park, Kansas 66223
tel: 913. 647.5300 fax: 913.647.5301
e: jeff@daikc.com

MEP ENGINEER
BC Engineers
5720 Reeder
Shawnee, Kansas 66203
tel: 913.262.1772 fax: 913.262.1773

OWNER/ TENANT
Country Club Bank
One Ward Parkway
Kansas City, Missouri 64112
tel: 816.931.4060
e: tandrews@countryclubbank.com

Tenant Finishes

Country Club Bank

32 SE 3rd Street
Lee's Summit, MO

Issue	Date
Review Set	6. 12. 20
Review Set	7. 13. 20
Permit Set	7. 19. 20
Revision 1	10. 20. 20

Finishes & Ceiling Plans

A11

MECHANICAL SPECIFICATIONS

1. GENERAL PROVISIONS:

   A. PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, NECESSARY FOR THE COMPLETE INSTALLATION OF THE PLUMBING AND MECHANICAL SYSTEMS OUTLINED.

   B. OBTAIN ALL PERMITS, FEES, LICENSES, INSPECTIONS, AND CERTIFICATES OF COMPLIANCE OR APPROVAL AS REQUIRED BY THE AUTHORITIES.

   C. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LAWS, CODES AND REGULATIONS OF THE GOVERNMENTAL BODIES HAVING JURISDICTION OVER THE SITE.

   D. ALL TESTING REQUIRED BY AUTHORITIES SHALL BE CONSIDERED PART OF THIS WORK.

   E. DURING CONSTRUCTION, ALL FIXTURES, EQUIPMENT, PIPE, DUCT, ETC. SHALL BE COVERED, PLUGGED, OR CAPPED AS REQUIRED TO KEEP CLEAN AND UNDAMAGED. ALL DAMAGED ITEMS SHALL BE RESTORED TO ORIGINAL CONDITION OR REPLACED. ALL PROTECTIVE COVERING SHALL BE REMOVED BEFORE FINAL ACCEPTANCE.

   F. PROVIDE ALL NECESSARY CUTTING AND PATCHING OF WALLS, FLOORS, CEILINGS, AND ROOFS AS NECESSARY. PATCH AROUND ALL OPENINGS SHALL MATCH ADJACENT AREA. COORDINATE ALL ROOFING WORK WITH OWNER OR RESPONSIBLE PARTY, SO THAT THE EXISTING ROOFING WARRANTY WILL BE MAINTAINED.

   G. CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS AGAINST DEFECTS FOR A PERIOD OF ONE YEAR FROM FINAL ACCEPTANCE.

2. OPERATION AND MAINTENANCE MANUALS:

   A. DURING THE COURSE OF CONSTRUCTION, COLLECT AND COMPILE OPERATING INSTRUCTIONS, WIRING DIAGRAMS, CATALOG CUTS, LUBRICATION AND PREVENTIVE MAINTENANCE INSTRUCTIONS, PARTS LISTS, ETC. FOR ALL EQUIPMENT FURNISHED UNDER THIS CONTRACT.

   B. ALL LITERATURE AND INSTRUCTIONS SHIPPED WITH THE EQUIPMENT SHALL BE SAVED FOR INCLUSION IN THE OPERATION AND MAINTENANCE MANUALS.

   C. ALL LITERATURE LISTED ABOVE AND ALL PAPERS LISTING WARRANTIES, ETC. SHALL BE BOUND IN A 3-RING BINDER AND LABELLED WITH THE PROJECT NAME, ADDRESS, ARCHITECT, ENGINEER, CONTRACTORS, ETC.

3. MANUFACTURERS:

   A. MANUFACTURERS, MODEL NUMBERS, ETC. INDICATED OR SCHEDULED ON THE DRAWINGS SHALL BE INTERPRETED AS HAVING ESTABLISHED A STANDARD OF QUALITY AND SHALL NOT BE CONSTRUED AS LIMITING COMPETITION. ARTICLES, FIXTURES, ETC. OF EQUAL QUALITY BY MANUFACTURERS SHALL BE ACCEPTABLE, SUBJECT TO STRUCTURAL AND ELECTRICAL CONSTRAINTS OF THE PROJECT DESIGN, UNLESS NOTED OTHERWISE.

4. MOTORS:

   A. PROVIDE THERMAL OVERLOAD PROTECTION FOR EACH MOTOR PROVIDED BY THIS WORK.

5. TESTING, BALANCING, AND CLEANING:

   A. ALL PIPING SHALL BE TESTED FOR LEAKS BEFORE BEING CONCEALED IN WALL CONSTRUCTION OR COVERED WITH INSULATION.

   B. SEWER AND VENT PIPING SHALL BE HYDROSTATICALLY TESTED WITH NO LESS THAN 10 FEET OF HEAD FOR A PERIOD OF NOT LESS THAN 15 MINUTES, PER THE LOCAL PLUMBING CODE, WITH NO LEAKS.

   C. DOMESTIC WATER PIPING SHALL BE HYDROSTATICALLY TESTED AT A PRESSURE OF NOT LESS THAN 1-1/2 TIMES THE OPERATING PRESSURE, BUT NOT LESS THAN 60 PSI, FOR A PERIOD OF NOT LESS THAN 2 HOURS, WITH NO LEAKS.

   D. NATURAL GAS PIPING SHALL BE PNEUMATICALLY TESTED AT A PRESSURE OF NOT LESS THAN 1-1/2 TIMES THE OPERATING PRESSURE, BUT NOT LESS THAN 50 PSI, FOR A PERIOD OF NOT LESS THAN 2 HOURS, WITH NO LEAKS.

   E. DUCTWORK AND PIPING SHALL BE BALANCED BY QUALIFIED BALANCING PERSONNEL WHO HAVE PREVIOUS EXPERIENCE WITH BALANCING PROCEDURES.

   F. BEFORE DOMESTIC WATER PIPING IS PLACED IN SERVICE, ALL DOMESTIC WATER DISTRIBUTION SYSTEMS, INCLUDING THOSE FOR COLD WATER AND HOT WATER SYSTEMS, SHALL BE FLUSHED, STERILIZED AND CHLORINATED IN ACCORDANCE WITH HEALTH DEPARTMENT REGULATIONS. THE SYSTEMS SHALL BE THOROUGHLY FLUSHED OF ALL DIRT AND FOREIGN MATTER, THEN FILLED WITH WATER TREATED WITH 50 PPM OF CHLORINE. DURING THE FILLING PROCESS, VALVES AND FAUCETS SHALL BE OPENED SEVERAL TIMES TO ASSURE TREATMENT OF THE ENTIRE SYSTEM. THE TREATED WATER SHALL BE LEFT IN THE SYSTEM FOR 24 HOURS AFTER WHICH TIME THE SYSTEM SHALL BE FLUSHED. IF THE RESIDUAL CHLORINE IS NOT LESS THAN 10 PPM, THE FLUSHING SHALL BE REPEATED. AFTER STERILIZATION, SAMPLES OF WATER IN THE SYSTEM SHALL BE APPROVED BY THE BOARD OF HEALTH.

6. PLUMBING:

   A. PROVIDE AN APPROVED WATER HAMMER ARRESTOR FOR EACH PLUMBING FIXTURE SUPPLY AS REQUIRED BY FIXTURE MANUFACTURER.

   B. ALL EXPOSED WASTE PIPE SHALL BE CHROME PLATED BRASS PIPE, NO FERROUS PIPE.

   C. PROVIDE CLEANOUTS AT EACH CHANGE OF DIRECTION AND AT 100 FOOT INTERVALS IN STRAIGHT RUNS.

   D. PROVIDE ACCESS PANELS FOR ALL CONCEALED VALVES AND TRAPS.

   E. CLEANOUTS:

      1) VINYL TILE FLOOR: JR SMITH #4140, OR EQUAL.
      2) QUARRY TILE FLOOR: JR SMITH #4200, OR EQUAL.
      3) CARPETED FLOOR: JR SMITH #4022-Y, OR EQUAL.
      4) UNFINISHED FLOOR: JR SMITH #4020, OR EQUAL.
      5) WALL: JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR.

   F. PROVIDE DIELECTRIC UNIONS WITH APPROPRIATE END CONNECTIONS TO MATCH THE PIPE SYSTEM IN WHICH INSTALLED (SCREWED, SOLDERED, OR FLANGED). PROVIDE DIELECTRIC UNIONS ON ALL PIPING CONNECTIONS TO HOT WATER HEATERS AND EXPANSION TANKS.

   G. WATER HEATERS:

      1) EVERY WATER HEATER SHALL HAVE AN APPROVED MEANS INSTALLED ON THE COLD WATER SUPPLY LINE ABOVE THE EQUIPMENT TO PREVENT SIPHONING OF AN STORAGE HEATER OR TANK.
      2) BOTTOM FED WATER HEATERS AND TANKS CONNECT TO WATER HEATERS SHALL HAVE A VACUUM RELIEF VALVE INSTALLED. ANSI Z21.22.
      3) STORAGE HEATERS OPERATING ABOVE ATMOSPHERIC PRESSURE SHALL HAVE AN APPROVED PRESSURE RELIEF VALVE AND/OR TEMPERATURE RELIEF VALVE.

   H. ALL SEWER PIPING LOCATED INSIDE THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES.

      1) INSTALL 2-1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL.
      2) INSTALL 3" AND LARGER PIPE AT 1/8" PER FOOT FALL.
      3) INSTALL ALL GREASE WASTE PIPING AT 1/4" PER FOOT FALL.

7. PIPING:

   A. DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING (ABOVEGROUND).

      1) TYPE L HARD DRAWN COPPER TUBING, ASTM B-88.
         a) WROUGHT COPPER SOLDERED FITTINGS, ASTM B75 ALLOY C12200, ANSI B16.22, MSS SP-104.
         b) MECHANICAL PRESS COPPER FITTINGS FOR USE IN PLUMBING OR MECHANICAL APPLICATIONS, ASME B16.22, ASME B16.51, OR ASME B16.18. MECHANICAL PRESS COPPER FITTINGS SHALL CONFORM TO IAPMO PS-117 OR ASME B16.51.
      2) PEX, HIGH-DENSITY CROSS-LINKED POLYETHYLENE TUBING SHALL BE MANUFACTURED TO THE REQUIREMENTS OF ASTM F876 AND MEET THE STANDARD GRADE HYDROSTATIC PRESSURE RATINGS FROM PLASTIC PIPE INSTITUTE IN ACCORDANCE WITH TR-4/03.

         a) PEX-A AND PEX-B MEETING ANSI/NSF61 AND ANSI/NSF372 STANDARDS FOR POTABLE WATER SAFETY AND LEAD-FREE STANDARDS AND MUST BE MARKED WITH "PW-S", "NSF-61-S" OR OTHER NSF-APPROVED MARKING. ASTM F2023 FOR USE WITH CHLORINATED WATER.

         b) PEX MECHANICAL, CRIMP/INSERT OR EXPANSION FITTINGS INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. PIPE SIZES GIVEN ON THE DRAWINGS ARE NOMINAL COPPER PIPE SIZE, INCREASE PEX PIPING SIZE TO EQUAL OR EXCEED COPPER PIPE INSIDE DIAMETER FOR SUPPLY MAINS.

      3) VALVES
         a) TO BE INSTALLED ON THE FIXTURE SUPPLY TO EACH PLUMBING FIXTURE.
         b) TO BE INSTALLED ON THE WATER SUPPLY SIDE TO EACH APPLIANCE OR MECHANICAL EQUIPMENT.
         c) TYPES:
            1. GATE VALVE: JOMAR T/S-3015 OR EQUAL. LEAD-FREE NSF 61, ANSI B1.20.1.
            2. GLOBE VALVE: JOMAR TGG OR EQUAL.
            3. BALL VALVE: JOMAR JP100FNP OR EQUAL COMPACT LEAD FREE BRASS BALL VALVE. UL842, CSA 3311-12 & 3311-92, FM, CALIFORNIA CODE AB1953, NSF61 ANNEX G APPROVED.
            4. BALL VALVE: JOMAR T-100NE OR EQUAL. UL842, FM, CSA, NSF 61-8, MSS SP-110

   B. LEAD CONTENT OF WATER SUPPLY PIPE AND FITTINGS:

      1) PIPE AND PIPE FITTINGS, INCLUDING VALVES AND FAUCETS, UTILIZED IN THE WATER SUPPLY SYSTEM SHALL NOT HAVE MORE THAN 8% LEAD CONTENT.
      2) PIPE, PIPE FITTINGS, JOINTS, VALVES, FAUCETS, AND FIXTURE FITTINGS UTILIZED TO SUPPLY WATER FOR DRINKING OR COOKING PURPOSES SHALL COMPLY WITH NSF 372 AND SHALL HAVE A WEIGHTED AVERAGE LEAD CONTENT OF 0.25% OR LESS.

   C. SANITARY SEWER AND VENTS.
   (UNDERGROUND, INTERIOR TO THE BUILDING).

      1) ABS SCHEDULE 40 CELLULAR CORE (FOAM CORE) PIPE AND DWV FITTING SYSTEM:
         PIPE AND FITTINGS SHALL BE MANUFACTURED FROM ABS COMPOUND WITH A CELL CLASS OF 42222 FOR PIPE AND 32222 FOR FITTINGS AS PER ASTM D 2965 AND CONFORM WITH NATIONAL SANITATION FOUNDATION (NSF) STANDARD 14. PIPE SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM F 628. FITTINGS SHALL CONFORM TO ASTM D 2661. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2235.

      2) PVC SCHEDULE 40 CELLULAR CORE (FOAM CORE) PIPE AND DWV FITTING SYSTEM:
         PIPE AND FITTINGS SHALL BE MANUFACTURED FROM PVC COMPOUND WITH A CELL CLASS OF 11432 PER ASTM D 4396 FOR PIPE AND 12454 PER ASTM D 1784 FOR FITTINGS AND CONFORM WITH NATIONAL SANITATION FOUNDATION (NSF) STANDARD 14. PIPE SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM F 891. INJECTION MOLDED FITTINGS SHALL CONFORM TO ASTM D 2665. FABRICATED FITTINGS SHALL CONFORM TO ASTM F 1866. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2564.

      3) PVC SCHEDULE 40 SOLID WALL PIPE AND DWV FITTING SYSTEM:
         PIPE AND FITTINGS SHALL BE MANUFACTURED FROM PVC COMPOUND WITH A CELL CLASS OF 12454 PER ASTM D 1784 AND CONFORM WITH NATIONAL SANITATION FOUNDATION (NSF) STANDARD 14. PIPE SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM D 1785 AND ASTM D 2665. INJECTION MOLDED FITTINGS SHALL CONFORM TO ASTM D 2665. FABRICATED FITTINGS SHALL CONFORM TO ASTM F 1866. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2564. (WHERE APPROVED BY LOCAL JURISDICTIONS)

      4) HUBLESS CAST IRON SOIL PIPE AND FITTINGS: HUBLESS CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 888 AND CISPI STANDARD 301. HUBLESS COUPLINGS SHALL CONFORM TO CISPI STANDARD 310 AND BE CERTIFIED BY NSF® INTERNATIONAL.
      5) HUB AND SPIGOT CAST IRON SOIL PIPE AND FITTINGS: HUB AND SPIGOT CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 74.

   D. SANITARY SEWER AND VENTS.
   (ABOVE GROUND, INTERIOR TO THE BUILDING).

      1) ABS SCHEDULE 40 CELLULAR CORE (FOAM CORE) PIPE AND DWV FITTING SYSTEM:
         PIPE AND FITTINGS SHALL BE MANUFACTURED FROM ABS COMPOUND WITH A CELL CLASS OF 42222 FOR PIPE AND 32222 FOR FITTINGS AS PER ASTM D 2965 AND CONFORM WITH NATIONAL SANITATION FOUNDATION (NSF) STANDARD 14. PIPE SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM F 628. FITTINGS SHALL CONFORM TO ASTM D 2661. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2235.

      2) PVC SCHEDULE 40 CELLULAR CORE (FOAM CORE) PIPE AND DWV FITTING SYSTEM:
         PIPE AND FITTINGS SHALL BE MANUFACTURED FROM PVC COMPOUND WITH A CELL CLASS OF 11432 PER ASTM D 4396 FOR PIPE AND 12454 PER ASTM D 1784 FOR FITTINGS AND CONFORM WITH NATIONAL SANITATION FOUNDATION (NSF) STANDARD 14. PIPE SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM F 891. INJECTION MOLDED FITTINGS SHALL CONFORM TO ASTM D 2665. FABRICATED FITTINGS SHALL CONFORM TO ASTM F 1866. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2564.

      3) PVC SCHEDULE 40 SOLID WALL PIPE AND DWV FITTING SYSTEM:
         PIPE AND FITTINGS SHALL BE MANUFACTURED FROM PVC COMPOUND WITH A CELL CLASS OF 12454 PER ASTM D 1784 AND CONFORM WITH NATIONAL SANITATION FOUNDATION (NSF) STANDARD 14. PIPE SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM D 1785 AND ASTM D 2665. INJECTION MOLDED FITTINGS SHALL CONFORM TO ASTM D 2665. FABRICATED FITTINGS SHALL CONFORM TO ASTM F 1866. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2564.

      4) HUBLESS CAST IRON SOIL PIPE AND FITTINGS: HUBLESS CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 888 AND CISPI STANDARD 301. HUBLESS COUPLINGS SHALL CONFORM TO CISPI STANDARD 310 AND BE CERTIFIED BY NSF® INTERNATIONAL.

      5) HUB AND SPIGOT CAST IRON SOIL PIPE AND FITTINGS: HUB AND SPIGOT CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 74.

   E. CONDENSATE DRAINS & INDIRECT WASTE (ABOVEGROUND).

      1) DWV, WROUGHT COPPER, ANSI B-16.29 (CONDENSATE INSIDE BUILDING).
      2) DWV, WROUGHT COPPER, ANSI B-16.29 (WATER HEATER TAP, INDIRECT WASTE FROM DISHWASHER/SINKS).

   F. REFRIGERANT.

      1) ASTM B 280, TYPE ACR, HARD-DRAWN STRAIGHT LENGTHS, AND SOFT-ANNEALED COILS, SEAMLESS COPPER TUBING.
      2) WROUGHT COPPER, ANSI B16.22, STREAMLINED PATTERN, FITTINGS. BRAZED JOINTS, AWS A 5.8, CLASSIFICATION BAG-1 (SILVER).
      3) TUBING SHALL BE FACTORY CLEANED, READY FOR INSTALLATION, AND HAVE ENDS CAPPED TO PROTECT CLEANLINESS OF PIPE INTERIORS PRIOR TO SHIPPING.
      4) SIZE AND INSTALLATION OF PIPE SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

   G. NATURAL GAS.

      1) BLACK STEEL PIPE, SCHEDULE 40, ASTM A53.
         a) PIPE 3" AND SMALLER: 150 LB. MALLEABLE IRON, THREADED FITTINGS.
         b) PIPE 4" AND SMALLER: VEGA MEGAPRESS G FOR WATER AND GAS, CSA LC4, T65A/ASME B31 FOR USE WITH ASTM A53 SCHEDULE 40 BLACK IRON PIPE.
         c) PIPE 2-1/2" AND LARGER, WELDED.
         d) PLUG VALVE: ROCKWELL NORDSTROM FIGURE NO. 142 OR 143.
         e) BALL VALVE: JOMAR T-100NE. APPROVALS- UL842, FM, CSA, NSF 61-8, MSS SP-110

   H. ALL PIPE HANGERS AND SUPPORTS SHALL BE STANDARD PRODUCTS OF GRINNELL, FEE AND MASON, OR ELGEN. HANGER SPACING SHALL BE IN ACCORDANCE WITH MSS-SP-69.

   I. SLEEVES

      1) PROVIDE, SET, AND PROPERLY LOCATE PIPE SLEEVES AS REQUIRED FOR THIS WORK. ALL SLEEVES SHALL BE OF SUFFICIENT SIZE TO PERMIT PIPE MOVEMENT DUE TO EXPANSION AND CONTRACTION AND TO ACCOMMODATE PIPE INSULATION.

      2) INTERIOR PARTITIONS: 16 GAGE GALVANIZED STEEL, PACK BETWEEN PIPE AND SLEEVE WITH FIRE SAFING AND CAULK AT EACH END WITH FIRE RESISTANT SEALANT.

      3) ROOF: PROSET OR EQUAL, MANUFACTURED PVC SCHEDULE 40 PIPE SLEEVE WITH WATERPROOF SEAL. COORDINATE WITH ROOFING CONTRACTOR AND FLASH AS REQUIRED TO MAINTAIN ROOF WARRANTY.

      4) PROTECTION AGAINST CONTACT. METALLIC PIPING, EXCEPT FOR CAST IRON, DUCTILE IRON AND GALVANIZED STEEL SHALL NOT BE PLACED IN DIRECT CONTACT WITH STEEL FRAMING MEMBERS, CONCRETE, OR CINDER WALLS AND FLOORS OR OTHER MASONRY. METALLIC PIPING SHALL NOT BE PLACED IN DIRECT CONTACT WITH CORROSIVE SOIL. SHEATHING USED TO PREVENT DIRECT CONTACT SHALL HAVE A THICKNESS OF GREATER THAN .005, AND THE SHEATHING SHALL BE MADE OF PLASTIC. ANY PIPE THAT PASSES THROUGH A FOUNDATION WALL OR FOOTING SHALL BE PROVIDED WITH A RELIEVING ARCH, OR A PIPE SLEEVE SHALL BE BUILT INTO THE FOUNDATION WALL. THE SLEEVE SHALL BE TWO SIZES GREATER THAN THE PIPE PASSING THOUGH THE WALL OR FOOTING.

      5) PLUMBING VENTS: FLASH ROOF VENT INTO ROOFING SYSTEM AS REQUIRED BY THE ROOFING CONTRACTOR TO MAINTAIN EXISTING ROOF WARRANTY. ALL PLUMBING VENT TERMINALS SHALL TERMINATE A MINIMUM OF 12" ABOVE ROOF OR EQUAL TO HEIGHT OF PARAPET, WHICHEVER IS GREATER.

   J. PROVIDE CHROME PLATED ESCUTCHEONS ON ALL PIPE ENTERING FINISHED AREAS.

8. INSULATION AND DUCT LINING:

   A. ALL INSULATIONS AND ACCESSORIES SHALL HAVE A FIRE HAZARD CLASSIFICATION WITH A FLAME SPREAD RATING OF NOT OVER 25, A FUEL CONTRIBUTION RATING OF NOT OVER 50, AND A SMOKE DEVELOPED RATING OF NOT OVER 50, IN ACCORDANCE WITH NFPA.

   B. PIPE INSULATION - ABOVE GRADE:

      1) THE PIPING INSULATION USED SHALL HAVE A THERMAL CONDUCTIVITY OF 0.27 Btu PER in/hr*sqft*F° OR LESS.

      2) FIBERGLASS INSULATION WITH FACTORY APPLIED VAPOR BARRIER, ASJ JACKET, FACTORY APPLIED PRESSURE SEALING LONGITUDE LAP JOINT, NO STAPLES, ZESTON PREMOLDED PVC FITTING COVERS. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

      3) FLEXIBLE CLOSED CELL ELASTOMERIC THERMAL INSULATION, UNSLIT OR PRESLIT WITH PRESSURE SENSITIVE ADHESIVE SYSTEM FOR CLOSURE AND VAPOR SEALING, EQUAL TO ARMSTRONG AP ARMAFLEX OR ARMAFLEX 2000

      4) FOR NON CIRCULATING SYSTEMS, THE FIRST 8 FEET OF INLET AND OUTLET PIPING BETWEEN THE TANK AND THE HEAT TRAP (INCLUDING THE HEAT TRAP) MUST BE INSULATED.

      5) INSULATION SCHEDULE:

         a) DOMESTIC COLD WATER — 1/2"
         b) DOMESTIC HOT WATER — 1" FOR PIPING UP TO 1-1/4"Ø, & 1-1/2" FOR PIPING 1-1/2"Ø AND LARGER
         c) REFRIGERANT SUCTION — 3/4" FOR PIPING UP TO 1-1/4"Ø, & 1" FOR PIPING 1-1/2"Ø AND LARGER

   C. DUCTWORK: ACOUSTICAL INSULATION.

      1) DUCT LINING. 2 LB/CF, THICKNESS AS SCHEDULED, AIR STREAM SIDE COATED, INSTALL PER SMACNA STANDARDS.

         a) DUCT LINING SCHEDULE:

            (1) RECTANGULAR SUPPLY DUCT — 1/2" ; THROUGHOUT THE FIRST 10 FEET OF DUCT.
            (2) RETURN AIR DUCT — 1/2" ; THROUGHOUT THE FIRST 10 FEET OF DUCT.

   D. DUCTWORK: THERMAL INSULATION.

      1) DUCT COVERING. 3/4 LB/CF, FIBERGLASS BLANKET WITH FACTORY APPLIED VAPOR BARRIER AND FACING, THICKNESS AS SCHEDULED, INSTALLATION IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

         a) DUCT COVERING SCHEDULE: MINIMUM R-6

            (1) ROUND SUPPLY DUCT — 2"
            (2) RECTANGULAR SUPPLY DUCT — 2"
            (3) RETURN AIR DUCT — 2"
            (4) OUTDOOR AIR — 2"

9. DUCTWORK:

   A. ALL DUCTWORK, UNLESS OTHERWISE INDICATED, SHALL BE FABRICATED FROM GALVANIZED SHEET STEEL COMPLYING WITH ASTM A 527, LOCKFORMING QUALITY, WITH G 60 ZINC COATING IN ACCORDANCE WITH ASTM A 525, AND MILL PHOSPHATIZED FOR EXPOSED LOCATIONS.

   B. DUCTWORK, METAL GAUGES, REINFORGING, ETC. SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS," LATEST EDITION FOR A 2 INCH WATER GAUGE STATIC PRESSURE.

   C. ALL FITTINGS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS," LATEST EDITION.

   D. SEAL ALL CONCEALED DUCTWORK JOINTS WITH NON-HARDENING, NON-MIGRATING MASTIC SEALANT, AS RECOMMENDED FOR SEALING SEAMS AND JOINTS IN DUCTWORK. OIL BASE CAULKING AND GLAZING COMPOUNDS SHALL NOT BE ACCEPTABLE. DUCTS SHALL BE SEALED TO THE CLASS LEVEL LISTED BELOW.

1) UNCONDITIONED SPACES	CLASS B	CLASS A	CLASS C	CLASS B
1) CONDITIONED SPACES (PLENUM)	CLASS C	CLASS B	CLASS B	CLASS C
	SUPPLY ≤ 2" W.C.	SUPPLY > 2" W.C.	EXHAUST	RETURN

   E. DUCT SIZES SHOWN ON THE DRAWINGS ARE SHEETMETAL SIZES, ALLOWANCE FOR DUCT LINER HAS BEEN MADE WHERE APPLICABLE.

   F. ALUMINUM DUCTS WHERE INDICATED: ANSI/ASTM B209; ALUMINUM SHEET, ALLOY 3003-H14. ALUMINUM CONNECTORS AND BAR STOCK: ALLOY 6061-T6 OR OF EQUIVALENT STRENGTH.

10. FLEXIBLE DUCT.

   A. ATCO 906B (R-6), OR EQUAL.

   B. FACTORY APPLIED INSULATION AND VAPOR BARRIER, 1-1/2" THICK.

   C. MAXIMUM LENGTH OF 5'-0".

11. CONTROL WIRING:

   A. ELECTRICAL WIRING AND WIRING CONNECTIONS REQUIRED FOR THE INSTALLATION OF THE TEMPERATURE CONTROL SYSTEM, SHALL BE PROVIDED BY THIS CONTRACTOR, UNLESS SPECIFICALLY SHOWN ON THE ELECTRICAL DRAWINGS OR SPECIFICATIONS.

   B. INSTALL CONTROL WIRING, WITHOUT SPLICES BETWEEN TERMINAL POINTS, COLOR CODED. INSTALL IN NEAT WORKMANLIKE MANNER, SECURELY FASTENED. INSTALL IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE AND THE ELECTRICAL SPECIFICATIONS.

      1) INSTALL CIRCUITS OVER 25 VOLT WITH COLOR CODED NUMBER 12 WIRE.

      2) INSTALL CIRCUITS UNDER 25 VOLT WITH COLOR CODED NUMBER 18 WIRE WITH 0.031 INCH HIGH TEMPERATURE 105 DEGREES F PLASTIC INSULATION ON EACH CONDUCTOR AND PLASTIC SHEATH OVER ALL.

      3) INSTALL ELECTRONIC CIRCUITS WITH COLOR CODED NUMBER 22 WIRE WITH 0.023 INCH POLYETHYLENE INSULATION ON EACH CONDUCTOR WITH PLASTIC JACKETED COPPER SHIELD OVER ALL.

      4) INSTALL LOW VOLTAGE CIRCUITS, LOCATED IN CONCRETE SLABS AND MASONRY WALLS, OR EXPOSED IN OCCUPIED AREAS, IN ELECTRIC CONDUIT.

      5) ALL WIRING IN AREAS USED AS AIR PLENUMS SHALL BE IN ELECTRIC CONDUIT EXCEPT THAT LOW VOLTAGE WIRING MAY BE TEFLON COATED ALUMINUM SHEATHED CABLE OR OTHER WIRE SPECIFICALLY APPROVED FOR INSTALLATION IN AIR PLENUMS, WHERE ACCEPTABLE BY LOCAL CODES.

      6) ALL WIRING IN AREAS NOT USED FOR AIR MOVEMENT SHALL BE IN ELECTRIC METALLIC TUBING. EXCEPT LOW VOLTAGE WIRING MAY BE IN APPROVED SIGNAL CABLE WHERE ACCEPTED BY LOCAL CODES.

   C. THERMOSTATIC CONTROLS TO HAVE A 5°F DEADBAND AND SETPOINT OVERLAP RESTRICTIONS.

      1) TEMPERATURE CONTROLS SETBACK TO BE 55°F (HEAT) AND 85° (COOL), 2-HOUR OCCUPANT OVERRIDE, 10-HOUR BACKUP.

   D. THERMOSTATIC CONTROLS TO HAVE A 5°F DEADBAND AND SETPOINT OVERLAP RESTRICTIONS.

12. REMODELING WORK:

   A. DEMOLITION: DISCONNECT, DEMOLISH, AND REMOVE ABANDONED MECHANICAL MATERIALS AND EQUIPMENT INDICATED TO BE REMOVED AND NOT INDICATED TO BE SALVAGED OR REMAIN.

   B. EQUIPMENT TO BE SALVAGED:

      1) DISCONNECT AND REMOVE, EXISTING MECHANICAL EQUIPMENT INDICATED TO BE REMOVED AND SALVAGED. DELIVER EQUIPMENT TO THE LOCATION DESIGNATED BY THE OWNER FOR STORAGE.

      2) ALL MATERIALS AND EQUIPMENT DESIGNATED TO BE REUSED OR RELOCATED SHALL BE CAREFULLY REMOVED, AND STORED UNTIL NEEDED FOR REMODELING WORK. ALL ITEMS SHALL BE RESTORED TO "LIKE NEW" CONDITION WITH RUST OR CORROSION REMOVED, SURFACE PAINT TOUCHED UP OR REPAINTED AS REQUIRED TO MATCH NEW CONSTRUCTION, AND THOROUGHLY CLEANED AND INSPECTED. ANY ITEMS WHICH BECOME DAMAGED BEYOND REPAIR AS A RESULT OF CONSTRUCTION OR DEMOLITION ACTIVITY SHALL BE REPLACED WITH NEW MATERIAL EQUIVALENT IN EVERY RESPECT.

   C. DISPOSAL AND CLEANUP. REMOVE FROM THE SITE AND LEGALLY DISPOSE OF DEMOLISHED MATERIALS AND EQUIPMENT NOT INDICATED TO BE SALVAGED.

   D. PROTECT ADJACENT MATERIALS INDICATED TO REMAIN. INSTALL AND MAINTAIN DUST AND NOISE BARRIERS TO KEEP DIRT, DUST, AND NOISE FROM BEING TRANSMITTED TO ADJACENT AREAS. REMOVE PROTECTION AND BARRIERS AFTER REMODELING OPERATIONS ARE COMPLETE.

   E. LOCATE, IDENTIFY, AND PROTECT MECHANICAL SERVICES PASSING THROUGH REMODELING AREA AND SERVING OTHER AREAS OUTSIDE THE REMODELING LIMITS. MAINTAIN SERVICES TO AREAS OUTSIDE REMODELING LIMITS. WHERE MECHANICAL SERVICES ARE LOCATED IN A WALL, ETC. TO BE DEMOLISHED, REROUTE PIPING TO NEW OR EXISTING CONSTRUCTION TO MAINTAIN CONTINUITY OF THE SYSTEM. WHEN SERVICES MUST BE INTERRUPTED, INSTALL TEMPORARY SERVICES FOR AFFECTED AREAS.

   F. REMOVE ALL PIPING TO BE DEMOLISHED BACK TO PIPE MAIN OR EDGE OF PROJECT AREA, AND CAP PIPE.

   G. PIPING AND DUCTS EMBEDDED IN FLOORS, WALLS, AND CEILINGS MAY REMAIN IF SUCH MATERIALS DO NOT INTERFERE WITH NEW INSTALLATIONS. PIPING AND DUCTS TO REMAIN SHALL BE APPROVED BY THE ARCHITECT. REMOVE MATERIALS ABOVE ACCESSIBLE CEILINGS. DRAIN AND CAP PIPING AND DUCTS ALLOWED TO REMAIN ABOVE CEILING OR BELOW FLOOR, CONCEALED FROM VIEW, EXCEPT AS OTHERWISE NOTED. PATCH FLOOR TO MATCH EXISTING.

   H. PIPE AND DUCT SHALL BE CONCEALED WITH NEW OR EXISTING CONSTRUCTION WHENEVER POSSIBLE, UNLESS INDICATED OTHERWISE.

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10/20/2020

STATE OF MISSOURI — REGISTERED PROFESSIONAL ENGINEER — SUNIL KHADKA — NUMBER PE-2010-020042

Issue	Date
Review Set	6. 12. 20
Review Set	7. 13. 20
Permit Set	7. 19. 20
Revision 1	10. 20. 20

BC PROJECT #: 20740
MISSOURI PE COA #2009003629

BC ENGINEERS INCORPORATED
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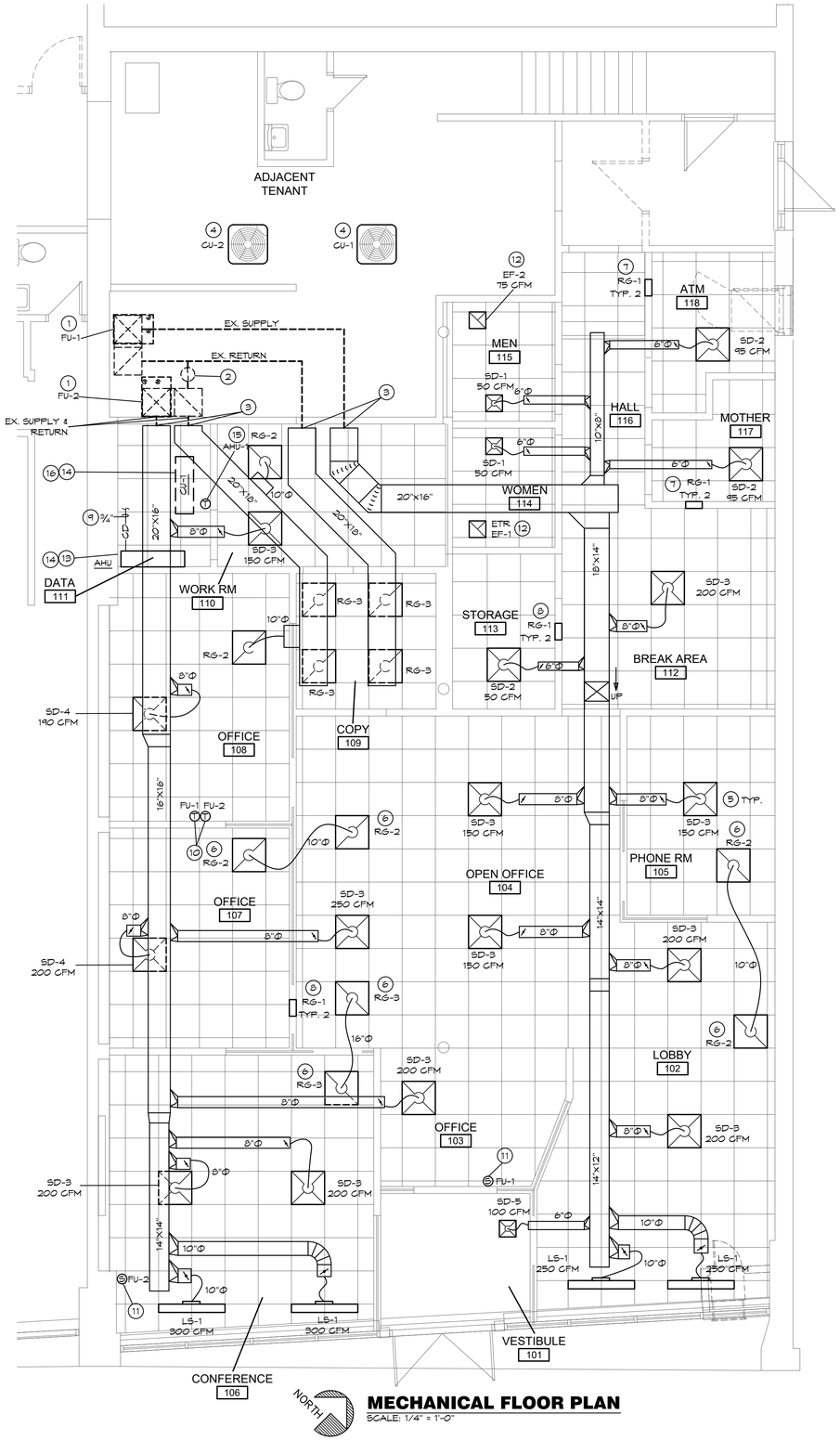
MP Spec.

MP0



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

MECHANICAL GENERAL NOTES:

1. COORDINATE ALL WORK WITH OTHER TRADES AND EXISTING CONDITIONS AS REQUIRED TO PROPERLY INSTALL ALL SYSTEMS AS INTENDED, WITHIN THE CONFINES OF THE SPACES AVAILABLE, AND WITHOUT INTERFERENCES.
2. THIS CONTRACTOR SHALL PERFORM ALL WORK INDICATED AND/OR AS REQUIRED FOR THE PROPER INSTALLATION AND OPERATION OF THE MECHANICAL SYSTEMS.
3. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF DIFFUSERS.
4. INSTALL ALL DUCT, PIPE, ETC. AS HIGH AS POSSIBLE.
5. DUCT SIZES SHOWN ARE ACTUAL SHEET METAL SIZES AND INCLUDE AN ALLOWANCE FOR DUCT LINER WHERE APPLICABLE.
6. PROVIDE FLEXIBLE CONNECTION BETWEEN DUCTWORK AND ROOFTOP UNITS, EXHAUST FANS, AND OTHER MOTORIZED EQUIPMENT.
7. NO DUCT SHALL BE ROUTED OVER THE TOP OF ELECTRICAL PANELS.
8. ALL MECHANICAL SYSTEMS SHALL BE BALANCED BY A CERTIFIED BALANCING CONTRACTOR. REFER TO SPECIFICATIONS FOR DETAILS.

MECHANICAL PLAN NOTES:

1. LOCATION OF GAS FIRED DOWN FLOW FURNACE ON ON SECOND FLOOR BY LANDLORD. SUPPLY AND RETURN DUCTWORK UP TO CONNECTION POINT ON FIRST FLOOR BY LANDLORD.
2. ROOF JACK TO PROVIDE OUTDOOR AIR, OUTDOOR AIR DUCT CONNECTED TO RETURN AIR AND BALANCING DAMPER BY LAND LORD. SEE SCHEDULE FOR OUTDOOR AIR REQUIREMENTS. OUTDOOR AIR INTAKE SHALL BE MIN. 10'-0" CLEARANCE FROM ALL EXHAUST, FLUE AND PLUMBING VENT.
3. PROVIDE CONCEALED SUPPLY AND RETURN DUCTWORK AND CONNECT TO EXISTING SUPPLY & RETURN DROPS (BY LANDLORD). ROUTE DUCTWORK UP HIGH AND SUPPORT TO THE STRUCTURE. ALL DUCTWORK SHALL BE INSTALLED IN ACCORDANCE WITH SMACNA STANDARDS.
4. SPLIT SYSTEM CONDENSING UNIT ON ROOF BY LANDLORD. LOCATION OF CONDENSING UNIT SHOWN FOR INFORMATION PURPOSE ONLY. VERIFY EXACT LOCATION IN FIELD.
5. PROVIDE NEW CEILING MOUNTED SUPPLY DIFFUSER AS DETAILED.
6. PROVIDE DUCTED RETURN TRANSFER GRILLE.
7. PROVIDE HIGH LOW RETURN GRILLES - ENCLOSED ROOM SIDE GRILLE LOCATED AT 12" AFF OPEN AREA SIDE LOCATED AT 8' AFF.
8. PROVIDE RETURN TRANSFER GRILLE ON EACH SIDE OF WALL ABOVE DOOR.
9. ROUTE DISCHARGE TUBE UP TO CONDENSATE DRAIN IN FURNACE ROOM ON FLOOR ABOVE.
10. COORDINATE WITH LANDLORD TO PROVIDE PROGRAMMABLE THERMOSTAT WITH REMOTE SENSOR CAPABILITY. PROVIDE REMOTE SENSORS.
11. LOCATION OF REMOTE TEMPERATURE SENSOR. VERIFY EXACT LOCATION WITH OWNER AND ARCH.
12. EXHAUST FAN IN RESTROOM EXISTING TO REMAIN.
13. SUPPORT UNIT FROM WALL AS REQUIRED BY THE MANUFACTURER. MOUNT AS HIGH AS POSSIBLE PER MANUFACTURER'S REQUIREMENTS.
14. PROVIDE AND INSTALL REFRIGERANT PIPING FOR CONDENSING UNIT & COIL AS REQUIRED BY THE MANUFACTURER.
15. INSTALL THERMOSTAT FOR MINI SPLIT SYSTEM UNIT AT LOCATION SHOWN. THERMOSTAT SHALL BE PROGRAMMABLE AND SHALL HAVE CONTROL FOR COOLING. MOUNTING HEIGHT OF THERMOSTAT SHALL BE 48" ABOVE FINISHED FLOOR.
16. SUPPORT MINI SPLIT SYSTEM CONDENSING UNIT ON ROOF AS DETAILED.

MECHANICAL SYMBOLS

- NEW SUPPLY DIFFUSER
- NEW RETURN AIR GRILLE
- EXHAUST GRILLE/FAN
- TEMPERATURE SENSOR
- THERMOSTAT, MOUNTED AT 48" AFF
- BALANCING DAMPER/LOUVER
- NEW DUCTWORK
- 32"x14" — SIZE OF RECTANGULAR DUCT
- 6"Ø — SIZE OF ROUND DUCT
- FLEXIBLE DUCTWORK
- FLEXIBLE CONNECTION TO FAN
- (3) — FLOOR PLAN NOTE DESIGNATION
- S.A. — SUPPLY AIR
- R.A. — RETURN AIR
- EXH. — EXHAUST AIR
- TRANSITION IN DUCT SIZE
- ELBOW WITH TURNING VANES
- MANUAL VOLUME DAMPER
- MANUAL VOLUME DAMPER
- MOTORIZED CONTROL DAMPER
- SPLITTER DAMPER WITH HORIZONTAL REGULATOR
- SUPPLY AIR DUCT UP/DOWN
- RETURN AIR DUCT UP/DOWN
- EXHAUST AIR DUCT UP/DOWN
- UP — CHANGE IN ELEVATION UP (UP) DOWN (DN) IN DIRECTION OF FLOW
- RTU-1 — SCHEDULED MECHANICAL EQUIPMENT
- EXISTG DUCT TO REMAIN
- EXISTG DUCT TO BE REMOVED
- EXISTING FLEXIBLE DUCTWORK
- 32"x14"E — SIZE OF EXISTING DUCT
- EXISTING SUPPLY DIFFUSER

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SUNIL KHADKA
NUMBER PE-2010021004

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Mech Plan
M10

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CONDENSING UNIT SCHEDULE (FOR REFERENCE ONLY)

MARK	MFGR	MODEL NO.	COOLING				ELECTRICAL				NOTES
			TOTAL BTUH	SENS. BTUH	AMB.	EVAP. EAT DB/WB	VOLT/Φ/HZ	MCA (AMPS)	MOCP (AMPS)	EER /SEER	
CU-1	GOODMAN	GSX160601	54,000	43,070	96.7	80/67	208-230/1/60	29.6	50	-/16	1
CU-2	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓

NOTES: 1. CONDENSING UNIT PROVIDED BY LANDLORD. INFORMATION PROVIDED FOR REFERENCE ONLY.

FURNACE SCHEDULE (REFERENCE ONLY)

MARK	MFGR	MODEL NO.	CFM	EXT. STATIC P. IN. WG.	HEATING (GAS)		ELECTRICAL			OUTSIDE AIR (CFM)	NOTES
					BTUH INPUT	BTUH OUTPUT	VOLT/Φ/HZ	MCA (AMPS)	MOCP (AMPS)		
FU-1	GOODMAN	GCES801205DN	1990	0.7	120,000	96,200	120/1/60	15.3	20	200	1,2,3,4,5
FU-2	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓

NOTES: 1. FURNACE UNIT PROVIDED BY LANDLORD. INFORMATION PROVIDED FOR REFERENCE ONLY.

MINI SPLIT SYSTEM AIR CONDITIONING UNIT SCHEDULE

MARK	MFGR	INDOOR UNIT MODEL NO.	CONDENSING UNIT MODEL NO.	EVAP. CFM	NOMINAL TONS	ELECTRICAL			CU WEIGHT (LBS)	AHU WEIGHT (LBS)	SEER	NOTES
						MCA (A)	MOCP (A)	VOLT/Φ/HZ				
AHU-1/CU-1	MITSUBISHI	PKA-A18HA7	PUY-A18NKA7	425	1.5	11	20	230/1/60	99	29	18.5	1, 2

NOTES: 1. PROVIDE WIRED THERMOSTAT CONTROL, REFRIGERANT LINESETS, ELECTRICAL WHIPS. COORDINATE UNIT MOCP WITH ELECTRICAL CONTRACTOR.
2. PROVIDE MAXI ORANGE CONDENSATE PUMP.

DIFFUSER SCHEDULE

MARK	MFGR	MODEL	NECK SIZE	FACE SIZE	FINISH	NOTES
SD-1	TITUS	TMS/3	6"Φ	12"x12"	WHITE	1
SD-2	↓	TMS/3	↓	24"x24"	↓	-
SD-3	↓	↓	8"Φ	↓	↓	-
SD-4	↓	T35Q-4	6"Φ	24"x24"	↓	-
SD-5	↓	TMS/1	↓	12"x12"	↓	2
RG-1	↓	350RL	12"X10"	"	↓	-
RG-2	↓	PAR/3	10"Φ	24"X24"	↓	-
RG-3	↓	↓	16"Φ	↓	↓	-

NOTES: 1. PROVIDE TRM KIT.
2. PROVIDE WITH OPPOSED BLADE DAMPER.

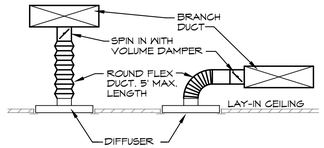
LINEAR DIFFUSER SCHEDULE

MARK	MFGR	MODEL	# SLOTS	SLOT WIDTH	LENGTH	FINISH	NOTES
LS-1	TITUS	FTI-20	1	2"	48"	WHITE	W/ FLANGE

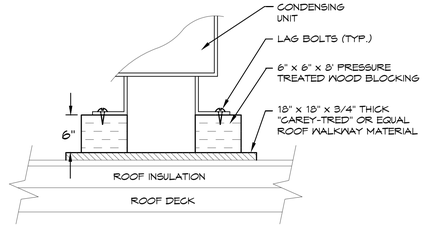
NOTES: 1. PROVIDE INSULATED PLENUM BOX FOR SUPPLY DIFFUSER.

OUTDOOR AIR CALCULATIONS

UNIT	Area (sqft)	OCCUPANCY CLASSIFICATION	Occupant Density #/1000 sqft	People outdoor airflow rate in breathing zone, (Rp) cfm/person	Area outdoor airflow rate in breathing zone, (Ra) cfm/sqft	Exhaust airflow rate cfm/sqft	Breathing zone outdoor airflow (Vbz)	Zone air distribution effectiveness (Ez)	Zone outdoor airflow (cfm)
FU-1	300	102 LOBBY	30	5	0.06		63	0.8	79
	325	104 OPEN OFFICE	5	5	0.06		28	0.8	35
	108	105 PHONE ROOM	4	5	0.06		9	0.8	11
	155	112 BREAK ROOM	25	5	0.06		29	0.8	36
	58	113 STORAGE	0	0	0.06		3	1.0	2
	78	116 HALL	0	0	0.06		5	0.8	6
	45	117 MOTHER	10	5	0.06		5	0.8	6
	60	118 TELLER	5	5	0.06		5	0.8	6
								Total	180
FU-2	65	101 VESTIBULE	10	5	0.06		7	0.8	9
	90	103 OFFICE	5	5	0.06		8	0.8	10
	258	106 CONFERENCE ROOM	50	5	0.06		80	0.8	100
	145	107 OFFICE	5	5	0.06		12	0.8	15
	170	108 OFFICE	5	5	0.06		14	0.8	18
	60	109 COPY	4	5	0.06		5	0.8	7
	118	110 WORK ROOM	5	5	0.06		10	0.8	13
	48	111 DATA	4	5	0.06		4	0.8	5
								Total	176

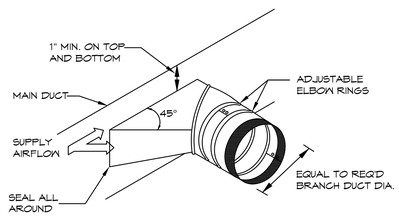


DIFFUSER DETAIL
SCALE: NONE

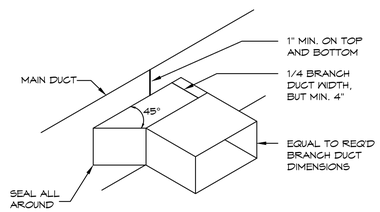


SET SUPPORT BLOCKS IN MASTIC ON WALKWAY MATERIAL.

CONDENSING UNIT SUPPORT DETAIL
SCALE: NONE



BRANCH DUCT TAKEOFF DETAIL
SCALE: NONE



BRANCH DUCT TAKEOFF DETAIL
SCALE: NONE

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STATE OF MISSOURI
SUNIL KHADKA
NUMBER PE-2014000043
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Revision 1	10. 20. 20

Mech Schedule

M20

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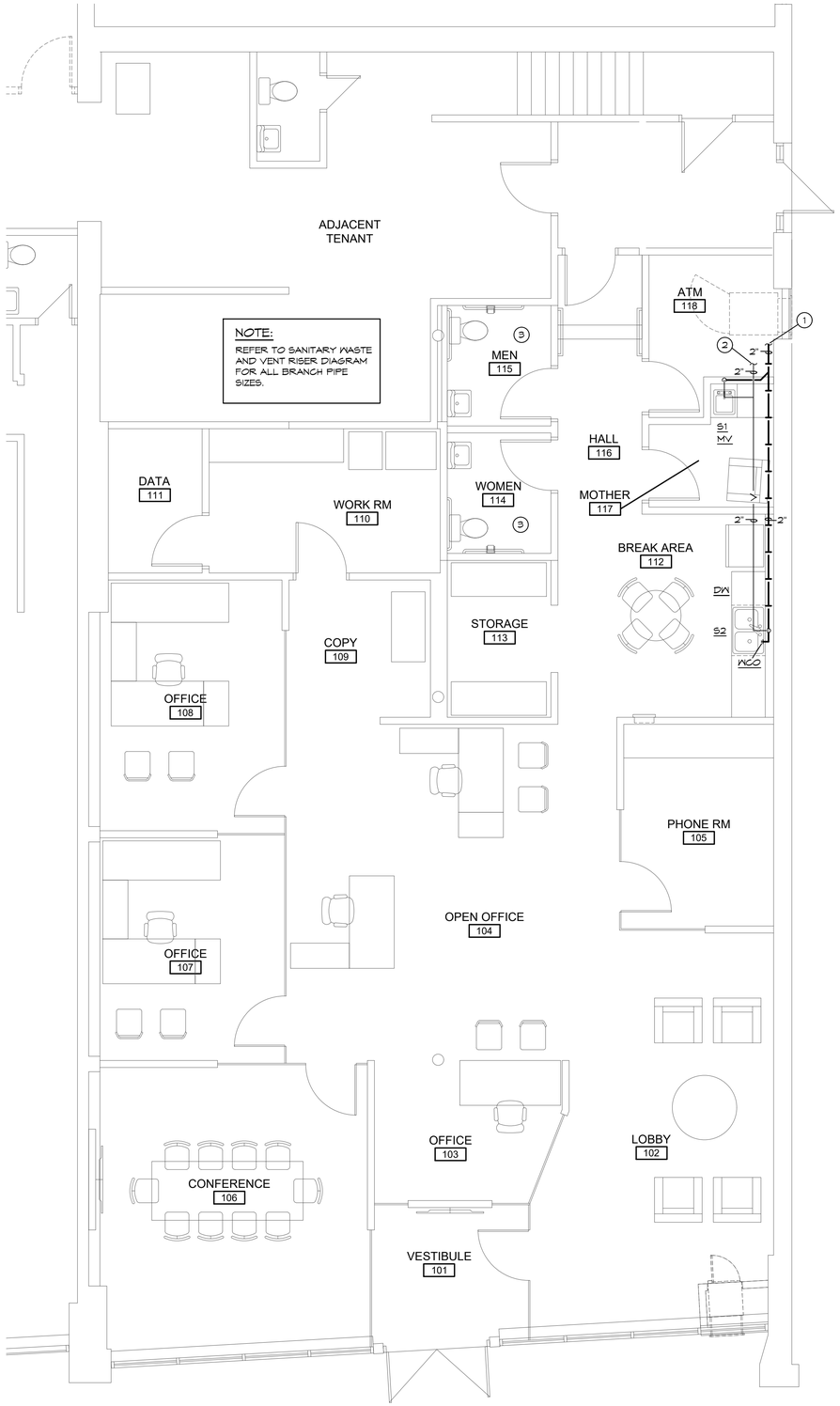


WASTE & VENT PLAN

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

PLUMBING DRAINAGE CALCULATIONS

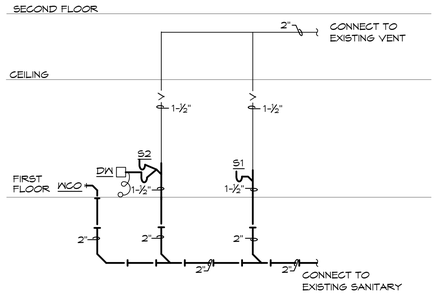
FIXTURE	QUANTITY	FU	TOTAL FU
WATER CLOSET (EXISTING)	2	4	8
LAVATORY (EXISTING)	2	1	2
1 COMP. SINK	1	2	2
2 COMP. SINK	1	2	2
FLOOR DRAIN (EXISTING)	2	2	4
DISH WASHER	1	2	2
TOTAL			20 FU

VENT MAINS - 2" REQUIRED
WASTE MAIN - 3" REQUIRED

PLUMBING FIXTURE BRANCH PIPING SCHEDULE

FIXTURE	WASTE	VENT	CW	HW
WATER CLOSET (TANK TYPE)	3"	2"	1/2"	- -
LAVATORY	1-1/4"	1-1/4"	1/2"	1/2"
SINK	1-1/2"	1-1/2"	1/2"	1/2"
FLOOR DRAIN	2"	2"	- -	- -
ICE BOX	-	-	1/2"	-

NOTE: INDIVIDUAL VENTS FOR FIXTURES ON PLANS AND RISER DIAGRAMS HAVE BEEN INCREASED WHERE HORIZONTAL VENT LENGTH IS IN EXCESS OF THE MAXIMUM DISTANCE INDICATED BY THE CODE.



WASTE & VENT RISER

BREAK AREA 112 & MOTHER 117

PLUMBING GENERAL NOTES:

1. INSTALL ALL PIPE, ETC. AS HIGH AS POSSIBLE.
2. COORDINATE ALL WORK WITH OTHER TRADES AND EXISTING CONDITIONS AS REQUIRED TO PROPERLY INSTALL ALL SYSTEMS AS INTENDED, WITHIN THE CONFINES OF THE SPACES AVAILABLE, AND WITHOUT INTERFERENCES.
3. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND MOUNTING HEIGHTS OF FIXTURES.
4. SAWCUT EXISTING FLOOR AS REQUIRED FOR INSTALLATION OF UNDERFLOOR PIPING. PATCH FLOOR TO MATCH EXISTING.
5. NO PIPING SHALL BE ROUTED OVER THE TOP OF ELECTRICAL PANELS.
6. CONTRACTOR TO TEST WATER PRESSURE ON SITE AND PROVIDE PRESSURE REDUCING VALVE ON WATER SERVICE IF PRESSURE IS OVER 80 PSI.

PLUMBING PLAN NOTES:

1. CONNECT NEW SANITARY LINE TO EXISTING SANITARY LINE. PLUMBING CONTRACTOR SHALL VERIFY EXACT LOCATION AND ELEVATION OF EXISTING SANITARY LINE IN FIELD PRIOR TO INSTALLATION OF NEW PIPING.
2. PROVIDE VENT LINE TO EACH OF THE PLUMBING FIXTURE AND CONNECT TO EXISTING VENT LINE.
3. ALL SANITARY WASTE & VENT LINE AND PLUMBING FIXTURES IN RESTROOM EXISTING TO REMAIN, PROVIDED BY LANDLORD. NO NEW WORK IN THIS AREA.

PLUMBING FIXTURE SCHEDULE:

S1 SINK, ONE COMPARTMENT: ELKAY, #LRAD-2222, 19"X16"X 6-1/2" DEEP BOWL,21-3/8"X 21-3/8" CUT-OUT, ADA COMPLIANT, SINGLE COMPARTMENT, SELF-RIMMING STAINLESS STEEL SINK WITH SATIN FINISH AND SOUND DAMPENING UNDERCOATING, ELKAY #LKB-721C BATTERY OPERATED TOUCHLESS FAUCET, CHROME PLATED CAST BRASS P-TRAP WITH CLEANOUT, CHROME PLATED ANGLE STOPS AND RISERS. SINK CUT-OUT IN CASEWORK SHALL BE BY CASEWORK CONTRACTOR.

S2 SINK, DOUBLE COMPARTMENT: ELKAY, #LR-3322, TWO 13-1/2"X16"X8" DEEP BOWL, 32-3/8"X21-3/8" CUT-OUT, SELF-RIMMING STAINLESS STEEL SINK WITH SATIN FINISH AND SOUND DAMPENING UNDERCOATING, CHICAGO FAUCET#1100 FAUCET, SWING SPOUT, AERATOR, WING HANDLES, #LK-35 BASKET STRAINER WITH 1-1/2" TAILPIECE, CHROME PLATED CAST BRASS P-TRAP WITH CLEANOUT, CHROME PLATED ANGLE STOPS AND RISERS, IN-SINK-ERATOR#BADGER 5 DISPOSAL, 1/2 HP, 120 VOLT. SINK CUT-OUT IN CASEWORK SHALL BE BY CASEWORK CONTRACTOR.

MV MIXING VALVE: WATTS, #LFUSG-B, THERMOSTATIC CONTROLLED MIXING VALVE, LEAD FREE BRONZE BODY, LOCKED TEMPERATURE ADJUSTMENT CAP (VANDAL RESISTANT), COPPER ENCAPSULATED THERMOSTAT ASSEMBLY WITH BRASS SHUTTLE, STAINLESSSTEEL SPRINGS, INTEGRAL CHECK VALVES ON HOT AND COLD INLETS. (SET TO 110°F). ASSE 1070 LISTED.

DW DISHWASHER: PROVIDED BY OWNER, CONTRACTOR INSTALLED, CONNECT TO HW AND DRAIN PIPING UNDER SINK AS REQUIRED. PROVIDE HOSE, PIPING AND SHUT-OFF VALVES AS REQUIRED TO MAKE CONNECTIONS.

IB ICE BOX: SIOUX CHIEF #696-1000, ICE BOX WITH 1/2" INLET AND CONNECTION AND 1/4-TURN SHUT OFF VALVE.

WH WATER HAMMER ARRESTOR: JR SMITH 'HYDROTROL' #5000 LEAD-FREE WATER HAMMER ARRESTOR, SIZED AS PER MANUFACTURER'S RECOMMENDATIONS.

FCO/WCO WALL: JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR.

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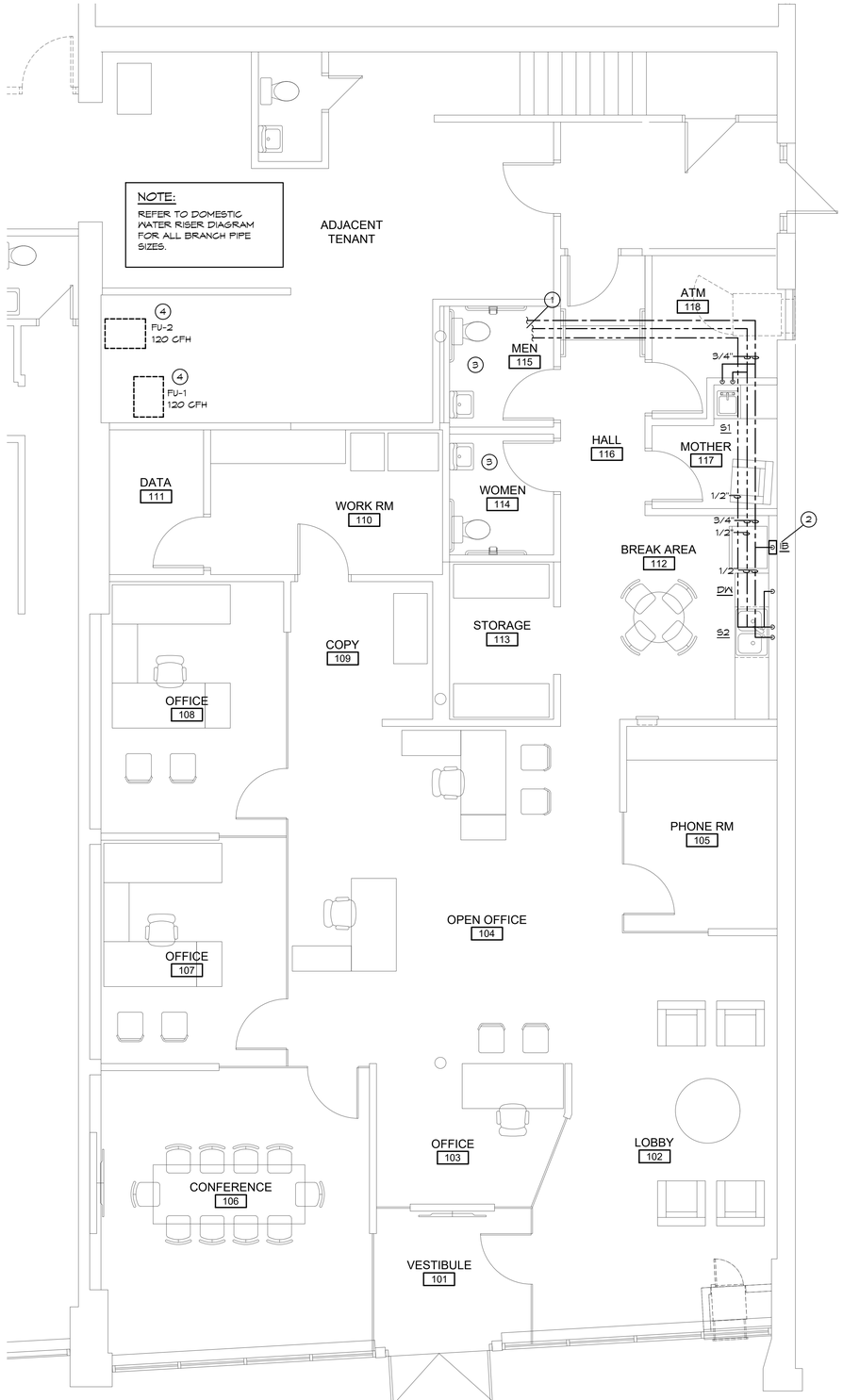
Waste & Vent

P11



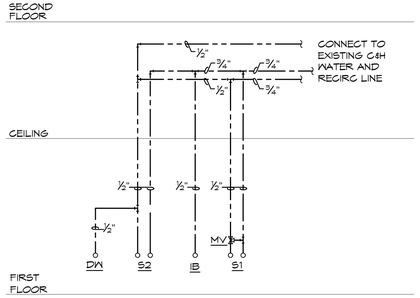
DOMESTIC WATER & NATURAL GAS PLAN

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

PLUMBING FIXTURE WATER COUNT

FIXTURE	QUANTITY	CW FU	CW TOTAL FU	HW FU	HW TOTAL FU	COMBINED FU	COMBINED TOTAL FU
WATER CLOSET (EXISTING)	2	5	10	0	0	5	10
LAVATORY (EXISTING)	2	1.5	3	1.5	3	2	4
1 COMP. SINK	1	2.25	2.25	2.25	2.25	3	3
2 COMP. SINK	1	2.25	2.25	2.25	2.25	3	3
DISH WASHER	1	0	0	1.4	1.4	1.4	1.4
ICE MAKER BOX	1	0.25	0.25	0	0	0.25	0.25
			17.75 FU		8.9 FU		21.65 FU

HOT WATER MAIN - 3/4"
COLD WATER MAIN - 1"



DOMESTIC WATER RISER

BREAK AREA 112 & MOTHER 117

PLUMBING PLAN NOTES:

1. CONNECT H&C WATER AND RECIRC TO EXISTING H&C WATER AND RECIRC AS REQUIRED. PROVIDE ISOLATION VALVE IN HOT WATER LINE DOWN STREAM OF CONNECTION POINT. VERIFY EXACT LOCATION AND SIZE OF EXISTING WATER LINE PRIOR TO INSTALLATION OF NEW PIPING. WATER HEATER LOCATED IN ADJACENT TENANT SPACE.
2. PROVIDE ICE MAKER BOX WITH VALVE FOR CONNECTION TO REFRIGERATOR BY OTHERS.
3. ALL DOMESTIC HOT & COLD WATER LINE AND PLUMBING FIXTURES IN RESTROOM EXISTING TO REMAIN, PROVIDED BY LANDLORD. NO NEW WORK IN THIS AREA.
4. GAS LINE TO FURNACES LOCATED ON SECOND FLOOR PROVIDED BY LANDLORD.

PLUMBING SYMBOLS

- SOIL AND WASTE PIPING BELOW FLOOR/GRADE
- SOIL AND WASTE PIPING ABOVE FLOOR/GRADE
- SANITARY VENT PIPING ABOVE GRADE
- SANITARY VENT PIPING BELOW GRADE
- DOMESTIC COLD WATER PIPING
- DOMESTIC HOT WATER PIPING
- DOMESTIC HOT WATER RECIRCULATION PIPING
- G — GAS PIPING
- D — EQUIPMENT DRAIN LINE
- PIPING TURNING DOWN
- PIPING TURNING UP
- TEE TOP CONNECTION
- UNION
- BACKFLOW PREVENTER
- WCO — WALL CLEAN OUT
- VALVE
- CONNECT TO EXISTING
- REFRIGERANT PIPING
- CHECK VALVE
- THERMOMETER
- PRESSURE GUAGE
- TEMPERATURE AND PRESSURE RELIEF VALVE
- PETE'S PLUG
- Y STRAINER
- VACUUM RELIEF VALVE

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10/20/2020

STATE OF MISSOURI · SUNIL KHADKA · NUMBER PE-2010020012 · REGISTERED PROFESSIONAL ENGINEER

Issue	Date
Review Set	6. 12. 20
Review Set	7. 13. 20
Permit Set	7. 19. 20
Revision 1	10. 20. 20

BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, Ks. 66203 (913)262-1772

Dom. Water & Nat. Gas

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ELECTRICAL SPECIFICATIONS

1. GENERAL PROVISIONS:
   - A. PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, NECESSARY FOR THE COMPLETE INSTALLATION OF THE ELECTRICAL SYSTEMS OUTLINED.
   - B. OBTAIN ALL PERMITS, FEES, LICENSES, INSPECTIONS, AND CERTIFICATES OF COMPLIANCE OR APPROVAL AS REQUIRED BY THE AUTHORITIES.
   - C. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST APPROVED EDITION OF THE NATIONAL ELECTRIC CODE (NEC), AND ALL APPLICABLE LAWS, CODES AND REGULATIONS OF THE GOVERNMENTAL BODIES HAVING JURISDICTION OVER THE SITE.
   - D. ALL TESTING REQUIRED BY AUTHORITIES SHALL BE CONSIDERED PART OF THIS WORK.
   - E. DURING CONSTRUCTION, ALL FIXTURES, EQUIPMENT, CONDUIT, ETC. SHALL BE COVERED, PLUGGED, OR CAPPED AS REQUIRED TO KEEP CLEAN AND UNDAMAGED. ALL DAMAGED ITEMS SHALL BE RESTORED TO ORIGINAL CONDITION OR REPLACED. ALL PROTECTIVE COVERING SHALL BE REMOVED BEFORE FINAL ACCEPTANCE.
   - F. PROVIDE ALL NECESSARY CUTTING AND PATCHING OF WALLS, FLOORS, CEILINGS, AND ROOFS AS NECESSARY. PATCH AROUND ALL OPENINGS SHALL MATCH ADJACENT AREA. COORDINATE ALL ROOFING WORK WITH OWNER OR RESPONSIBLE PARTY, SO THAT THE EXISTING ROOFING WARRANTY WILL BE MAINTAINED.
   - G. CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS AGAINST DEFECTS FOR A PERIOD OF ONE YEAR FROM FINAL ACCEPTANCE.
   - H. CONTRACTOR SHALL PROVIDE ACCESS PANELS WHERE NECESSARY FOR CONCEALED ELECTRIAL COMPONENTS.
   - I. CONTRACTOR SHALL PROMPTLY CALL ENGINEERS ATTENTION TO ANY APPARENT CONTRADICTIONS, AMBIGUITIES, ERRORS, DISCREPANCIES, OR OMISSIONS IN THE PLANS OR SPECIFICATIONS.
2. OPERATION AND MAINTENANCE MANUALS:
   - A. DURING THE COURSE OF CONSTRUCTION, COLLECT AND COMPILE OPERATING INSTRUCTIONS, WIRING DIAGRAMS, CATALOG CUTS, LUBRICATION AND PREVENTIVE MAINTENANCE INSTRUCTIONS, PARTS LISTS, ETC. FOR ALL EQUIPMENT FURNISHED UNDER THIS CONTRACT.
   - B. ALL LITERATURE AND INSTRUCTIONS SHIPPED WITH THE EQUIPMENT SHALL BE SAVED FOR INCLUSION IN THE OPERATION AND MAINTENANCE MANUALS.
   - C. ALL LITERATURE LISTED ABOVE AND ALL PAPERS LISTING WARRANTIES, ETC. SHALL BE COLLATED AND LABELED WITH THE PROJECT NAME, ADDRESS, ARCHITECT, ENGINEER, CONTRACTORS, ETC. CONTRACTORS, ETC. DOCUMENTS SHALL BE COMPILED AND BOUND IN DIGITAL FILE OR 3 RING BINDER.
3. MANUFACTURERS:
   - A. MANUFACTURERS, MODEL NUMBERS, ETC. INDICATED OR SCHEDULED ON THE DRAWINGS SHALL BE INTERPRETED AS HAVING ESTABLISHED A STANDARD OF QUALITY AND SHALL NOT BE CONSTRUED AS LIMITING COMPETITION. ARTICLES, FIXTURES, ETC. OF EQUAL QUALITY BY MANUFACTURERS SHALL BE ACCEPTABLE, SUBJECT TO STRUCTURAL AND ELECTRICAL CONSTRAINTS OF THE PROJECT DESIGN, UNLESS NOTED OTHERWISE.
4. TESTING, AND BALANCING:
   - A. ALL CIRCUITS SHALL BE TESTED FOR CONTINUITY, SHORTS, AND GROUNDS BEFORE CONNECTING TO THE PROPER PHASE AS DESIGNED TO BALANCE THE LOADING BETWEEN PHASES.
   - B. POWER AND LIGHTING PANELS SHALL BE PROPERLY PHASED TO DISTRIBUTE THE LOAD AND SHALL BE CONNECTED AND ADJUSTED TO OPERATE AS SPECIFIED.
   - C. ALL MOTORS AND SIMILAR EQUIPMENT SHALL BE CHECKED FOR PROPER PHASE ROTATION AND OPERATION.
5. RACEWAYS:
   - A. CONDUIT INSIDE THE BUILDING SHALL BE METALLIC TUBING (EMT), BEARING THE UL LABEL, WITH COMPRESSION TYPE FITTINGS OR SCREW SET FITTINGS.
   - B. CONDUIT EXPOSED TO THE WEATHER, INSTALLED UNDERGROUND, IN CONCRETE, OR USED FOR SERVICE ENTRANCE SHALL BE STANDARD RIGID CONDUIT (GALVANIZED) WITH THREADED FITTINGS.
   - C. UNDERGROUND CONDUIT MAY BE POLYVINYL CHLORIDE WITH A DEFLECTION TEMPERATURE, UNDER LOAD AT 264 PSI, OF 79 DEGREES C, AND A TENSILE STRENGTH OF 5,200 PSI. JOINTS SHALL BE FLUSH SOLVENT WELDED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. CONDUIT SHALL BE EQUAL TO CARLON POWER AND COMMUNICATIONS DUCT TYPE DB (DIRECT BURIAL). CONDUIT AND FITTINGS SHALL BE PRODUCED BY THE SAME MANUFACTURER.
   - D. FLEXIBLE METAL CONDUIT SHALL ONLY BE USED FOR CONNECTIONS TO MOTORS, TRANSFORMERS, AND LIGHT FIXTURES. MAXIMUM LENGTH SHALL BE 6'-0".
6. CONDUCTORS:
   - A. WIRES SHALL BE CONTINUOUS WITHOUT SPLICES OR TAPS IN CONDUIT RUNS. ALL SPLICES SHALL BE MADE IN JUNCTION, PULL, OR OUTLET BOXES. ALL WIRE SHALL BE INSTALLED IN CONDUIT, WIREWAYS, OR OTHER PROTECTIVE COVER SANCTIONED BY CODES.
   - B. CONDUCTORS FOR LIGHTING AND POWER SHALL BE COPPER, MINIMUM NO. 12 A.W.G., 600 VOLT.
   - C. NO. 10 GAUGE AND SMALLER CONDUCTORS SHALL BE TYPE THWN (WET LOCATIONS) OR THHN (DRY LOCATIONS), SOLID CONDUCTOR, UNLESS OTHERWISE INDICATED.
   - D. NO. 8 GAUGE AND LARGER CONDUCTORS SHALL BE TYPE THWN (WET LOCATIONS) OR THHN (DRY LOCATIONS), STRANDED, UNLESS OTHERWISE INDICATED.
   - E. SERVICE ENTRANCE AND PANEL FEEDER CONDUCTORS, NO. 3 GAUGE AND LARGER SHALL BE TYPE XHHW-2 (WET LOCATIONS) OR THHN (DRY LOCATIONS), STRANDED COPPER, UNLESS OTHERWISE INDICATED.
7. MC CABLE:
   - A. MC CABLE SHALL CONSIST OF INTERLOCK ARMORED CABLE MADE OF THREE OR FOUR TYPE THHN SOLID (#8 AWG AND LARGER MAY BE STRANDED) COPPER CONDUCTORS RATED 90°C FOR DRY LOCATIONS, WITH NYLON OR EQUIVALENT UL LISTED JACKET, PER UL STANDARD 83 THE THREE CONDUCTORS SHALL BE TWISTED TOGETHER WITH THE COPPER GROUNDING CONDUCTOR, SUITABLE FILLERS, AND WRAPPED IN BINDER TAPE. THE ASSEMBLY SHALL BE ARMORED WITH SPIRALLY WRAPPED INTERLOCKED ARMOR OF ALUMINUM OR GALVANIZED STEEL.
   - B. CABLES SHALL BE TESTED IN ACCORDANCE WITH UL STANDARD 1569 FOR TYPE MC CABLE AND RATED AT 600 VOLTS, 90 DEG. C FOR DRY LOCATIONS AND 75 DEG. C FOR WET LOCATIONS.
8. WIRING DEVICES:
   - A. WALL SWITCHES SHALL BE SPECIFICATION GRADE, QUIET TYPE, FLUSH TOGGLE SWITCH, RATED FOR 20 AMPS, WITH THERMOPLASTIC COVER PLATES.
     1) SINGLE POLE: HUBBELL #CS1221-X, OR EQUAL
     2) THREE WAY: HUBBELL #CS1223-X, OR EQUAL
     3) AS SPECIFIED ON PLANS
   - B. RECEPTACLES SHALL BE SPECIFICATION GRADE, DUPLEX, GROUNDING, THREE-WIRE TYPE, RATED FOR 20 AMPS, WITH THERMOPLASTIC COVER PLATES. HUBBELL #CR8352-X, OR EQUAL.
   - C. GROUND FAULT INTERRUPTER RECEPTACLES (GFI) SHALL BE HUBBELL #GF20-XL. DEVICE COVER PLATES SHALL BE AS HEREINBEFORE SPECIFIED.
   - D. ISOLATED GROUND RECEPTACLES (IG) SHALL BE HUBBELL #CR5352IG, ORANGE COLOR. DEVICE COVER PLATES SHALL BE AS HEREINBEFORE SPECIFIED.
   - E. RECEPTACLES OUTSIDE BUILDING AND WHERE NOTED AS WEATHERPROOF, SHALL BE LISTED WEATHER-RESISTANT HUBBEL #GFTR20-X OR EQUAL AND SHALL BE INSTALLED IN A WEATHERPROOF ENCLOSURE WHICH SHALL BE INTERMATIC #WP1010WHD OR #WP1010WHDD DIECAST METAL WEATHERPROOF RECEPTACLE COVER. COVER SHALL BE WEATHER PROOF RATED WHILE IN USE.
   - F. VERIFY DEVICES AND DEVICE COVERPLATES COLOR AND STYLE WITH ARCHITECT.
9. BOXES:
   - A. HOT DIPPED GALVANIZED STEEL BOXES. PROVIDE TYPE TO SUIT CONDITIONS FOR INSTALLATION.
   - B. ALL BOXES SHALL BE FLUSH MOUNTED, UNLESS INDICATED OTHERWISE.
10. PANELBOARDS:
    - A. PANELBOARDS ARE EXISTING AND SHALL BE REUSED. PROVIDE ADDITIONAL BREAKERS AS REQUIRED TO CONNECT CIRCUITS AS SHOWN ON THE DRAWINGS. ADDITIONAL BREAKERS SHALL BE THERMAL MAGNETIC, QUICK-BREAK BOLT ON CIRCUIT BREAKERS WITH ONE HANDLE FOR SINGLE OR MULTI-POLE RATINGS AND SHALL BE COMPATIBLE WITH EXISTING PANELS.
    - B. COMPLETE EXISTING DIRECTORY AS REQUIRED TO IDENTIFY NEW CIRCUIT, LISTING LOAD SERVED AND OTHER PERTINENT DATA.

ELECTRICAL SPECIFICATIONS (CONTINUED)

11. DISCONNECTS:
    - A. DISCONNECTS SHALL BE EXTERNALLY OPERATED, QUICK-MAKE, QUICK-BREAK, SAFETY, WITH PROVISIONS FOR PAD LOCKING. FUSED AND NON-FUSED DISCONNECT SWITCHES SHALL BE PROVIDED AS INDICATED.
    - B. INDOOR SWITCHES SHALL BE NEMA 1 AND OUTDOOR SWITCHES SHALL BE NEMA 3R, UNLESS INDICATED OTHERWISE.
12. FUSES:
    - A. FUSES PROTECTING CIRCUIT BREAKER PANELS SHALL BE CURRENT LIMITING U.L. CLASS RK-1 FUSES WITH 200,000 AMPERES RMS SYM INTERRUPTING CAPACITY. FUSING ELEMENTS SHALL BE SILVER FOR RATINGS ABOVE 60 AMPERES.
    - B. ALL OTHER FUSES SHALL BE U.L. CLASS RK-5, DUAL-ELEMENT WITH A MINIMUM TIME-DELAY OF 10 SECONDS AT 500% RATING. FUSES SHALL HAVE CURRENT-LIMITING SHORT-CIRCUIT LINKS AND 200,000 AMPERES RMS SYM INTERRUPTING CAPACITY. FUSING ELEMENTS SHALL BE COPPER.
13. LIGHT FIXTURES:
    - A. WHERE LIGHT FIXTURES ARE MOUNTED IN A LAY-IN CEILING, PROVIDE A MINIMUM OF 2 SUPPORT WIRES ATTACHED DIRECTLY BETWEEN EACH LIGHT FIXTURE AND THE BUILDING STRUCTURE. SUPPORT WIRES SHALL BE A MINIMUM OF 12 GAUGE GALVANIZED STEEL WIRE, SOFT ANNEALED.
    - B. FIXTURES ARE REQUIRED AT ALL LIGHTING OUTLETS SHOWN ON THE DRAWINGS. APPROVED LIGHTING FIXTURE WIRE IS REQUIRED IN ALL FIXTURES AND FIXTURE RACEWAYS. WEATHERPROOF WIRING IS REQUIRED FOR EXTERIOR FIXTURES. ALL PARTS OF FIXTURES AND WIRING SHALL BE IN ACCORDANCE WITH NEC REQUIREMENTS.
    - C. ALL FIXTURES SHALL CARRY UL AND ETL LABELS.
14. SLEEVES:
    - A. PROVIDE, SET, AND PROPERLY LOCATE PIPE SLEEVES AS REQUIRED FOR THIS WORK.
    - B. INTERIOR PARTITIONS: 16 GAGE GALVANIZED STEEL, PACK BETWEEN CONDUIT AND SLEEVE WITH FIRE SAFING AND CAULK AT EACH END WITH FIRE RESISTANT SEALANT.
    - C. ROOF: PROSET OR EQUAL, MANUFACTURED PVC SCHEDULE 40 PIPE SLEEVE WITH WEATHERPROOF SEAL. COORDINATE WITH ROOFING CONTRACTOR AND FLASH AS REQUIRED TO MAINTAIN ROOF WARRANTY.
15. GROUNDING:
    - A. GROUND ALL ELECTRICAL APPARATUS IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC) 250, AND ANY LOCAL REQUIREMENTS. INSURE CONTINUOUS BOND WHERE FLEXIBLE CONDUIT IS USED. PROVIDE BONDING JUMPER INSIDE ALL FLEXIBLE CONDUIT.
    - B. BOND METAL PIPING SYSTEMS IN COMPLIANCE WITH NEC 250.4(A)(4).
16. REMODELING WORK:
    - A. DEMOLITION: DISCONNECT, DEMOLISH AND REMOVE ABANDONED ELECTRICAL MATERIALS AND EQUIPMENT INDICATED TO BE REMOVED AND NOT INDICATED TO BE SALVAGED OR REMAIN.
    - B. EQUIPMENT TO BE SALVAGED:
      1) DISCONNECT AND REMOVE EXISTING ELECTRICAL EQUIPMENT INDICATED TO BE REMOVED AND SALVAGED. DELIVER EQUIPMENT TO THE LOCATION DESIGNATED BY THE OWNER FOR STORAGE.
      2) ALL MATERIALS AND EQUIPMENT DESIGNATED TO BE REUSED OR RELOCATED SHALL BE CAREFULLY REMOVED, AND STORED UNTIL NEEDED FOR REMODELING WORK. ALL ITEMS SHALL BE RESTORED TO "LIKE NEW" CONDITION WITH RUST OR CORROSION REMOVED, SURFACE PAINT TOUCHED UP OR REPAINTED AS REQUIRED TO MATCH NEW CONSTRUCTION, AND THOROUGHLY CLEANED AND INSPECTED. ANY ITEMS WHICH BECOME DAMAGED BEYOND REPAIR AS A RESULT OF CONSTRUCTION OR DEMOLITION ACTIVITY SHALL BE REPLACED WITH NEW MATERIAL EQUIVALENT IN EVERY RESPECT.
    - C. DISPOSAL AND CLEANUP: REMOVE FROM THE SITE AND LEGALLY DISPOSE OF DEMOLISHED MATERIALS AND EQUIPMENT NOT INDICATED TO BE SALVAGED.
    - D. PROTECT ADJACENT MATERIALS INDICATED TO REMAIN. INSTALL AND MAINTAIN DUST AND NOISE BARRIERS TO KEEP DIRT, DUST, AND NOISE FROM BEING TRANSMITTED TO ADJACENT AREAS. REMOVE PROTECTION AND BARRIERS AFTER REMODELING OPERATIONS ARE COMPLETE.
    - E. PROVIDE ALL ALTERATIONS AND REWORK INDICATED AND/OR REQUIRED FOR THE PROPER INSTALLATION AND OPERATION OF ALL EXISTING ELECTRICAL SYSTEMS, INTEGRATING THE NEW AND EXISTING AREAS. LOCATE, IDENTIFY, AND PROTECT ELECTRICAL SERVICES PASSING THROUGH REMODELING AREA AND SERVING OTHER AREAS OUTSIDE THE REMODELING LIMITS. MAINTAIN SERVICES TO AREAS OUTSIDE REMODELING LIMITS. WHEN SERVICES MUST BE INTERRUPTED, INSTALL TEMPORARY SERVICES FOR AFFECTED AREAS.
      1) ABANDONED CONDUIT SHALL HAVE WIRE REMOVED AND SHALL BE CAPPED. ABANDONED OUTLETS IN WALLS OR PARTITIONS SHALL HAVE DEVICES AND WIRE REMOVED, AND SHALL BE COVERED.
      2) WHERE EXISTING CONDUITS TERMINATE AT AN EXISTING OUTLET IN A WALL, CEILING, OR FLOOR TO BE REMOVED, DISCONNECT AND REMOVE DEVICE AND WIRE FROM CONDUIT. CONDUIT SHALL BE CUT BACK AND CAPPED (BELOW THE FLOOR OR ABOVE THE CEILING) SO NOT TO CREATE AN OBSTRUCTION. PATCH FLOOR TO MATCH EXISTING.
      3) WHERE EXISTING CIRCUITS EXTEND BEYOND THE OUTLET IN THE EXISTING WALL, CEILING, OR FLOOR TO BE REMOVED, FURNISH AND INSTALL NEW CONDUIT AND WIRE TO EITHER REROUTE THE CIRCUIT OR FEED THE REMAINING OUTLET(S) FROM ANOTHER ELECTRICAL SOURCE, BUT IN SUCH A MANNER AS NOT TO REVISE THE CIRCUIT. ALL REROUTED CONDUIT SHALL BE APPROVED BY THE ARCHITECT.
      4) WHERE EXISTING OUTLETS IN A WALL, CEILING, OR FLOOR TO BE REMOVED ARE ESSENTIAL TO MAINTAIN OPERATION OF OTHER REMAINING OUTLETS, RELOCATE THE OUTLET TO A NEW CONVENIENT LOCATION. EXISTING WIRING DEVICES SHALL NOT BE REUSED, UNLESS OTHERWISE INDICATED.
      5) WHERE LIGHTING FIXTURES ARE INDICATED TO BE DEMOLISHED, REMOVE ALL WIRE AND MODIFY THE EXISTING CONDUIT (IF APPLICABLE) FOR THE NEW LIGHTING. ALL UNUSED CONDUIT SHALL BE REMOVED.
      6) WHERE A TELEPHONE CIRCUIT EXTENDS BEYOND AN OUTLET IN AN EXISTING WALL, CEILING, OR FLOOR TO BE REMOVED, PROVIDE NECESSARY EMPTY CONDUIT AND NOTIFY THE OWNER WHO WILL REQUEST THE OWNER TO ARRANGE WITH THE TELEPHONE COMPANY FOR NEW WIRING TO OUTLETS THAT REMAIN.
      7) WHERE EXISTING CONDUIT AND WIRE RUNS ARE LOCATED IN OR ATTACHED TO AN EXISTING WALL, CEILING OR FLOOR TO BE REMOVED, THEY SHALL BE REROUTED IN EITHER NEW OR EXISTING CONSTRUCTION TO MAINTAIN CONTINUITY OF CIRCUITS UNLESS OTHERWISE INDICATED.
      8) CONDUIT SHALL BE CONCEALED WITHIN THE EXISTING BUILDING CONSTRUCTION WHEREVER POSSIBLE, EXCEPT WHERE OTHERWISE INDICATED.
      9) EXISTING WIRE SHALL BE DISCONNECTED AND REMOVED WHEREVER EXISTING CIRCUITS ARE ABANDONED.
17. BOXES IN FIRE RATED ASSEMBLIES:
    - A. OUTLET BOXES THAT DO NOT EXCEED 16 SQUARE INCHES AND INSTALLED IN FIRE RATED WALLS SHALL NOT BE INSTALLED CLOSER THAN 24" HORIZONTAL INCHES TO OTHER OUTLET BOXES.
    - B. IF BOXES MUST BE INSTALLED WITHIN 24" OF EACH OTHER THAN BOTH OUTLET BOXES SHALL BE PROTECTED WITH LISTED PUTTY PADS, 3M FIRE BARRIER MOLDABLE PUTTY + OR EQUAL.

ELECTRICAL SYMBOLS LIST

CIRCUITING & NOTES	
+46"	SPECIAL MOUNTING HEIGHT FOR ASSOCIATED DEVICE (CENTERLINE OF DEVICE)
GFI	GROUND FAULT CIRCUIT INTERRUPTER DEVICE
USB	COOPER #TR7156-X OR EQUAL DUPLEX RECEPTACLE WITH DUAL USB CHARGING PORTS. PROVIDE 2-1/2" DEEP BACK BOX.
(TIE)	PARTIAL HOMERUN. REFER TO PLANS FOR ADDITIONAL DEVICES CONNECTED TO THIS CIRCUIT.
X	ELECTRICAL FLOOR PLAN NOTE WITH DESIGNATION
2 LP	CONDUIT CONCEALED WHERE POSSIBLE OR AS NOTED, ARROWS INDICATE HOME RUN TO PANEL. CIRCUIT NUMBERS INDICATED
	#12 WIRE IN CONDUIT, UNLESS NOTED OTHERWISE ON DRAWINGS OR SPECIFICATION
	GROUNDING CONDUCTOR, #12 WIRE UNLESS NOTED OTHERWISE ON DRAWINGS OR SPECIFICATION
	CONDUIT ROUTED UNDER FLOOR/GRADE
LIGHTING	
	EMERGENCY TWIN HEAD LIGHT FIXTURE
	EXIT LIGHT WITH DIRECTIONAL ARROWS INDICATED
A	STRIP FIXTURE WITH TYPE DESIGNATION
A	RECESSED OR SURFACE MOUNTED FIXTURE WITH TYPE DESIGNATION
A NL	NIGHT LIGHT, CONNECT TO UNSWITCHED CIRCUIT
A	CEILING OR RECESSED FIXTURE WITH TYPE DESIGNATION
A	WALL MOUNTED FIXTURE WITH TYPE DESIGNATION
POWER DEVICES	
	DUPLEX RECEPTACLE, BOTTOM OF BOX AT 16" AFF, UNLESS NOTED OTHERWISE
	FOURPLEX RECEPTACLE, BOTTOM OF BOX AT 16" AFF, UNLESS NOTED OTHERWISE
	DEVICE MOUNTED ABOVE COUNTER AND/OR SPLASH GUARD
	HEAVY DUTY OUTLET - NEMA CONFIGURATION SIZE PER EQUIPMENT MANUFACTURER'S RECOMMENDATION
	PANEL BOARD, TOP OF BOX 6'-0" AFF
J	JUNCTION BOX
	NON-FUSED DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH
M	MOTOR WITH DESIGNATION
	FLOOR BOX
CONTROLS	
S	SINGLE POLE WALL SWITCH, TOP OF BOX AT 48" AFF
S_D	DIMMER SWITCH - TYPE AS REQUIRED FOR COMPATIBILITY WITH FIXTURES CONTROLLED.
OCCUPANCY SENSORS	
1. DUAL TECHNOLOGY/ULTRASONIC CEILING SENSORS SHALL BE MOUNTED 6' FROM SUPPLY/EXHAUST AIR DIFFUSERS. 2. LOW VOLTAGE CEILING SENSORS SHALL BE PROVIDED WITH 6' SLACK CONDUCTOR COILED AT SENSOR.	
S_O	WALL MOUNTED DUAL-TECHNOLOGY OCCUPANCY SENSOR, WATT STOPPER #DVA-100, TOP OF BOX AT 48" AFF
S_{OD}	WALL MOUNTED DUAL-TECHNOLOGY OCCUPANCY SENSOR WITH 0-10V DIMMING, WATT STOPPER #DVA-311 OR EQUAL TOP OF BOX AT 48" AFF
COMMUNICATIONS	
	DATA/TELEPHONE OUTLET WITH MINIMUM ¾" CONDUIT STUBBED UP TO ABOVE ACCESSIBLE CEILING, BOTTOM OF BOX AT 16", UNLESS NOTED OTHERWISE. PROVIDE WITH PULL STRING
TV	FLAT SCREEN TELEVISION - PROVIDE AND INSTALL ONE (1) HUBBELL #RR1510X RECESSED TAMPER-RESISTANT DUPLEX RECEPTACLE WITH COVERPLATE AND ONE(1) HUBBELL #HBL260 TWO GANG LARGE CAPACITY WALL BOX (UP TO 2" KNOCKOUT) W/ MUD RING AND COVERPLATE FOR DATA. PROVIDE 2"C WITH PULL STRING TO ABOVE ACCESSIBLE CEILING FOR DATA CABLES.
MISCELLANEOUS	
	COMBINATION POWER AND DATA FLOORBOX

ELECTRICAL GENERAL NOTES:

1. COORDINATE ALL WORK WITH OTHER TRADES AND EXISTING CONDITIONS AS REQUIRED TO PROPERLY INSTALL ALL SYSTEMS AS INTENDED, WITHIN THE CONFINES OF THE SPACES AVAILABLE, AND WITHOUT INTERFERENCES.
2. WHERE CONDUIT IS SHOWN UNDER FLOOR, VERIFY IF FLOOR IS STRUCTURAL SLAB OR SLAB ON GRADE. IF STRUCTURAL SLAB, CORE DRILL PENETRATION, AND ROUTE CONDUIT IN SPACE BELOW. IF SLAB ON GRADE, SAW CUT EXISTING FLOOR SLAB AS REQUIRED FOR INSTALLATION OF UNDER FLOOR CONDUIT. NO STRUCTURAL ELEMENTS SHALL BE CORE DRILLED OR SAW CUT. WHEN SAW CUTTING, PATCH FLOOR TO MATCH EXISTING SURFACE AS REQUIRED.
3. IT IS THE ELECTRICAL CONTRACTORS RESPONSIBILITY TO PROPERLY BALANCE ALL BRANCH CIRCUITS BETWEEN THE PHASES OF THE SYSTEM REGARDLESS OF CIRCUITING INDICATED.
4. ALL EXPOSED RACEWAYS SHALL BE IN EMT CONDUIT, MC CABLE IS NOT PERMITTED IN EXPOSED AREAS.
5. ELECTRICAL CONTRACTOR SHALL REMOVE ALL EXISTING ELECTRICAL EQUIPMENT, FIXTURES, SYSTEMS, CONDUIT AND WIRE, ETC. NOT BEING REUSED. DO NOT JUST ABANDON.
6. ELECTRICAL CONTRACTOR TO COORDINATE MANUFACTURER ELECTRICAL REQUIREMENTS FOR HVAC EQUIPMENT BEING FURNISHED WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN. EQUIPMENT DISCONNECTS TO BE PROVIDED BY ELECTRICAL CONTRACTOR UNLESS NOTED OTHERWISE IN MECHANICAL SCHEDULES.
7. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF LIGHT FIXTURES AND DEVICES.
8. ALL MATERIALS EXPOSED WITHIN PLENUMS SHALL BE NONCOMBUSTIBLE OR SHALL HAVE A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84.
9. ALL BRANCH CIRCUITS SHALL BE SIZED TO ALLOW FOR A MAXIMUM OF 3% VOLTAGE DROP. ALL FEEDERS SHALL BE SIZED TO ALLOW FOR A MAXIMUM OF 2% VOLTAGE DROP. ELECTRICAL CONTRACTOR SHALL VERIFY WIRING INDICATED IS SUFFICIENT AND INCREASE CONDUCTOR SIZE AS REQUIRED BASED OFF ACTUAL INSTALLED LENGTH OF CONDUCTORS.

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OWNER / TENANT
Country Club Bank
One Ward Parkway
Kansas City, Missouri 64112
tel: 816.931.4060
e: tandrews@countryclubbank.com

Tenant Finishes

Country Club Bank

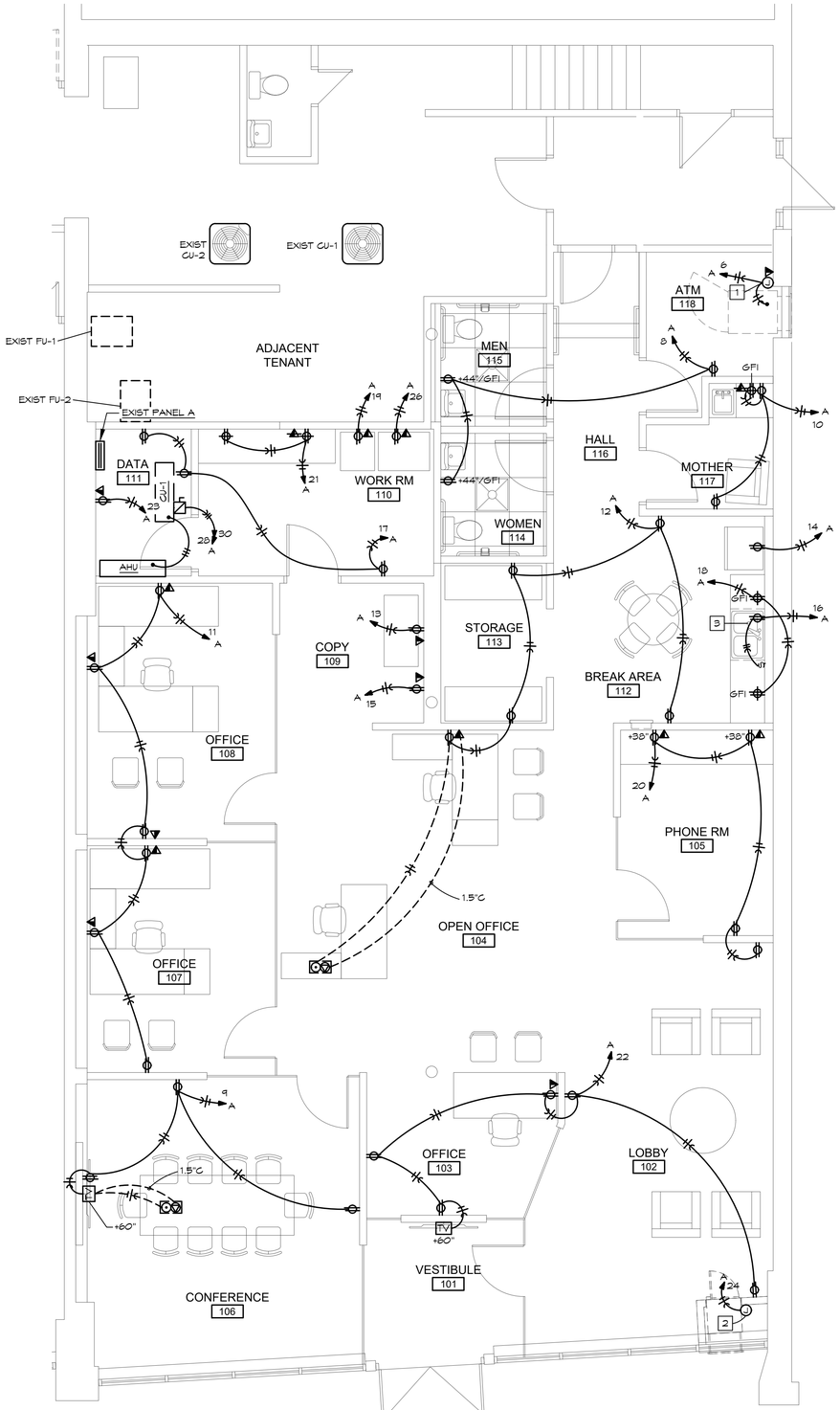
32 SE 3rd Street
Lee's Summit, MO

10/20/2020

Issue	Date
Review Set	6. 12. 20
Review Set	7. 13. 20
Permit Set	7. 19. 20
Revision 1	10. 20. 20

BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, Ks. 66203 (913)262-1772

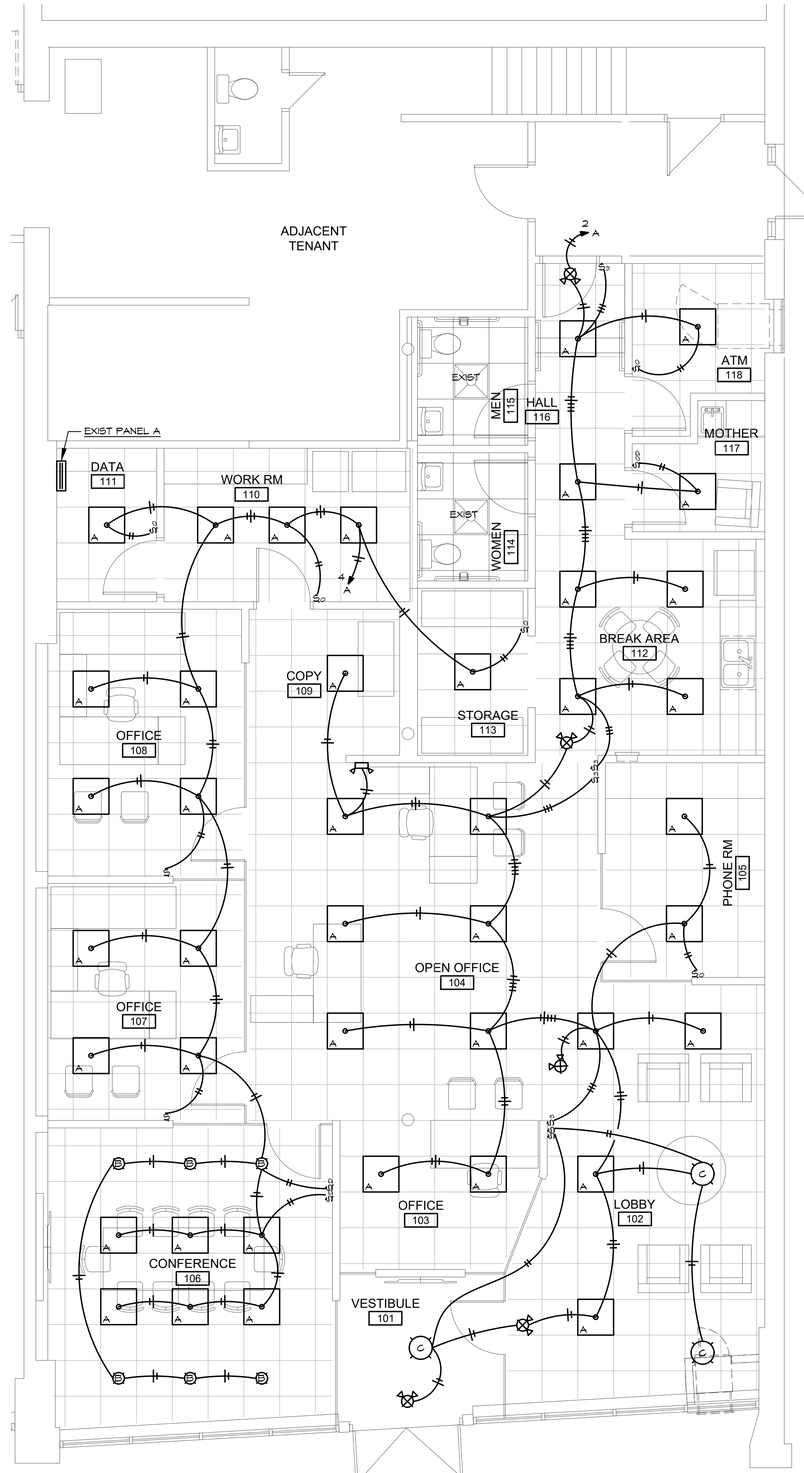
E00



NORTH

ELECTRICAL POWER PLAN

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



NORTH

ELECTRICAL LIGHTING PLAN

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

LIGHTING PLAN NOTES:

1. CONNECT TO ATM PER SUPPLIER'S INSTRUCTIONS. VERIFY ALL REQUIREMENTS.
2. CONNECT TO NIGHT DEPOSITORY PER SUPPLIER'S INSTRUCTIONS. VERIFY ALL REQUIREMENTS.
3. SPLIT WIRED RECEPTACLE FOR DISHWASHER AND SWITCHED RECEPTACLE FOR GARBAGE DISPOSAL.

BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, Ks. 66203 (913)262-1772

SHEET FILE LOCATION: N:\2020\20740\ELEC\20740E.DWG LAST SAVED: 10/13/2020 2:23 PM BY: RICH

RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
02/02/2021

D&A ARCHITECTURE

ARCHITECT
DeGasperi & Associates
6240 W. 135th Street
Overland Park, Kansas 66223
tel: 913. 647.5300 fax: 913.647.5301
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MEP ENGINEER
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5720 Reeder
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STATE OF MISSOURI
DARIN T. SEIDEL
NUMBER PE-2009003629
REGISTERED PROFESSIONAL ENGINEER

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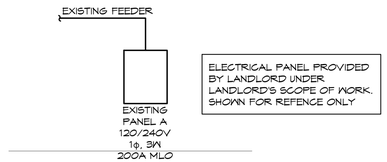
PANEL: A		VOLTS: 120/240V			PH: 1Ø		3W	LOCATION: REAR WALL			MOUNTING: SURFACE	
BUS: 225A		MAIN: 200A MLO									FEEDER: EXISTING	
CKT	DESCRIPTION	AMPS	POLE	WIRE	ØA	ØB	ØA	ØB	WIRE	POLE	AMPS	DESCRIPTION	CKT NO
1	EXIST CU	50	2	6	3,070		596		12	1	20	LIGHTS	2
3						3,070		659	12	1	20	LIGHTS	4
5	EXIST CU	50	2	6	3,070		1,200		12	1	20	ATM	6
7						3,070		540	12	1	20	RESTRM RECEPTS	8
9	CONF RM RECEPTS	20	1	12	900		540		12	1	20	MOTHER'S RM RECEPTS	10
11	OFFICE RECEPTS	20	1	12		1,000		1,000	12	1	20	BREAK/STORAGE RECEPTS	12
13	COPIER/PRINTER	20	1	12	1,200		600		12	1	20	REFRIGERATOR (GFI)	14
15	COPY RECEPTS	20	1	12		100		1,200	12	1	20	DISHWASHER (GFI)	16
17	WORK RM RECEPTS	20	1	12	540		1,500		12	1	20	BREAK COUNTER RECEPTS	18
19	WORK RM RECEPTS	20	1	12		100		720	12	1	20	PHONE RM RECEPTS	20
21	WORK RM RECEPTS	20	1	12	360		900		12	1	20	LOBBY RECEPTS	22
23	DATA RM RECEPT	20	1	12		100		250	12	1	20	NIGHT DEPOSITORY	24
25	EXIST FURNACE	15	1	12	1,200		100		12	1	20	WORK RM EQUIPMENT	26
27	EXIST FURNACE	15	1	12		1,200		1,560	12	2	20	DATA RM MINI-SPLIT	28
29		20	1	12			1,560						30
31		20	1	12					12	1	20		32
33		20	1	12					12	1	20		34
35		20	1	12					12	1	20		36
37		20	1	12					12	1	20		38
39		20	1	12					12	1	20		40
NOTES:					10,356	0,976	7,376	8,009					
[GFI]-GFCI BRKR 5mA					17,732		14,905		TOTAL CONNECTED LOAD:			32,717 VA	
									NEC DEMAND LOAD:			32,776 VA	
									DEMAND AMPS @ 240 VOLT / 1Ø:			136.57 A	

LIGHT FIXTURE SCHEDULE

MARK NO.	MANUFACTURER & CATALOG NUMBER	VOLTS WATTS	LIGHT SOURCE	DESCRIPTION	EQUIVALENT MANUFACTURERS
A	METALUX 2GEN-LD2-34-UNV-L835-GD1-U	120 29	LED 3400LUM 3500K	2'X2' RECESSED LED TROFFER WITH 0-10V DIMMING DRIVER	WILLIAMS LITHONIA OR EQUAL
B	PORTFOLIO LDS6B-15-D010-EU6B-1020-835-6LBS-1-H-HB26	120 18	LED 1500LUM 3500K	6"Ø RECESSED LED DOWNLIGHT WITH CLEAR SEMI-SPECULAR REFLECTOR AND UNIVERSAL VOLTAGE DRIVER	WILLIAMS LITHONIA OR EQUAL
C	TO BE SELECTED	120 100	VERIFY	DECORATIVE PENDANT FIXTURE TO BE SELECTED. VERIFY ALL REQUIREMENTS	N/A
	DUAL-LITE EV4D-02L	120 2	INCL	EMERGENCY LIGHT WITH TWIN ADJUSTABLE 2 WATT LED HEADS AND BATTERY, MOUNT AT 7'-6"±, TO CLEAR OBSTACLES. (PROVIDES 1 FC AVG. ON 9' CENTER FIXTURE SPACING) DAMP LOCATION RATED.	SURE-LITES LITHONIA OR EQUAL
	DUAL-LITE EVC-U-R-W	120 3	INCL	COMBINATION EMERGENCY/EXIT LIGHT WITH LED LAMPS, RED LETTERS ON WHITE BACKGROUND, TWIN LED EMERGENCY LIGHT HEADS, UNIVERSAL MOUNT, BATTERY BACKUP	SURE-LITES LITHONIA OR EQUAL
	DUAL-LITE EVC-U-R-W-D4 WITH EVO-D-X	120 5	INCL	COMBINATION EMERGENCY/EXIT LIGHT WITH LED LAMPS, RED LETTERS ON WHITE BACKGROUND, TWIN 6W EMERGENCY LIGHT HEADS, UNIVERSAL MOUNT, HIGH CAPACITY BATTERY BACKUP AND REMOTE TWIN HEAD OUTDOOR RATED FIXTURE	SURE-LITES LITHONIA OR EQUAL
EX	LITHONIA AFN-DB-EXT	120 21	LED INCL 4000K	ARCHITECTURAL EXTERIOR LED EMERGENCY LIGHT WITH COLD WEATHER BATTERY, COORDINATE FINISH TO MATCH BUILDING	SURE-LITES LITHONIA OR EQUAL



ELECTRICAL RISER DIAGRAM

SCALE: NONE

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