INTERIOR RENOVATION

455 NW MURRAY ROAD
LEE'S SUMMIT, MO 64081

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STATE OF MISSOURI
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NUMBER A-2004020944
ARCHITECT

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PROJECT OVERVIEW:

SCOPE OF WORK: THE RENOVATION OF AN EXISTING TENANT SPACE

JURISDICTION: CITY OF LEE'S SUMMIT, MO

APPLICABLE BUILDING CODES:

All Applicable Codes: All Work Under This Contract Shall Comply With The Provisions Of The Specifications And Drawings, and Shall Satisfy All Applicable Codes, Ordinances And Regulations Of All Governing Bodies Involved. All Permits and Licenses Necessary For The Proper Executions Of The Work Shall Be Secured And Paid For By The Contractor Involved. Applicable Codes Include But Are Not Limited To The Following:

Applicable Building Code:	2018 International Existing Building Code
Applicable Building Code:	2018 International Building Code
Applicable Plumbing Code:	2018 International Plumbing Code
Applicable Mechanical Code:	2018 International Mechanical Code
Applicable Electrical Code:	2017 National Electrical Code
Applicable Gas Code:	2018 International Fuel Gas Code
Applicable Energy Code:	2018 International Energy Conservation Code
Accessible Code:	ICC/ANSI-A117.1 Providing Accessibility and Usability for Physically Handicapped People, 2009 Edition

[Note: Project Owner and Design Professional are responsible for compliance to the federal Americans with Disabilities Act (ADA)

BUILDING DETAILS:

ZONING:	CP-2
USE AND OCCUPANCY CLASSIFICATION:	B (BUSINESS) PER 2018 IBC, SECTION 304
EXISTING CONSTRUCTION TYPE:	VB (ASSUMED)
EXISTING BUILDING :	1 STORY; OVERALL APPROX. 10,029 SF
AREA OF WORK:	1 STORY; OVERALL APPROX. 5,220 SF
AUTOMATIC SPRINKLERS:	YES
ALARM SYSTEM:	YES

OCCUPANCY CALCS:

BUSINESS*-	3042 SF / 150 GROSS =	21 OCC
STORAGE/MECH-	231 SF / 300 GROSS =	1 OCC
NON-OCCUPIED-	1947 SF / 0 =	0 OCC
TOTAL -	5220 SF	22 OCC

* WAITING-100 INCLUDED AS ACCESSORY TO BUSINESS PER IBC2018 303.1.2

1

EGRESS NOTES:

EXITS REQUIRED: 22 OCC < 50 OCC = 1 EXIT REQUIRED
EXITS PROVIDED: 2 (1 NEW, 1 EXISTING)
MINIMUM EGRESS WIDTH REQUIRED: 22 OCC X 0.2" = 4.4"
MINIMUM EGRESS WIDTH PROVIDED: 34" MINIMUM

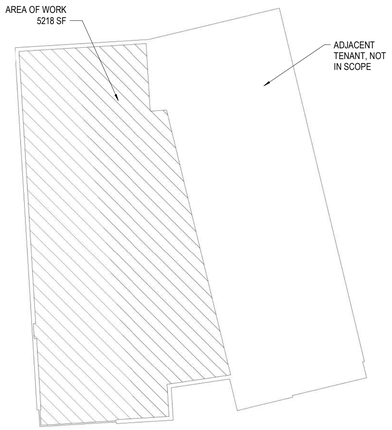
MAXIMUM EXIT TRAVEL DISTANCE: IBC 2018, TABLE 1017.2: BUSINESS OCCUPANCY = 300'-0" WITH SPRINKLER SYSTEM
PROVIDED MAXIMUM TRAVEL DISTANCE: 153'-1" (LESS THAN 300'-0")

MAXIMUM COMMON PATH OF TRAVEL DISTANCE: IBC 2018, TABLE 1006.2.1: BUSINESS OCCUPANCY = 100'-0" WITH SPRINKLER SYSTEM (LESS THAN 300'-0")
PROVIDED MAXIMUM COMMON PATH OF TRAVEL DISTANCE: 36'-10" (LESS THAN 100'-0")

PLUMBING REQUIREMENTS (IBC TABLE 2902.1):

TOILETS REQUIRED: 1 PER 25 FOR 1ST 50 OCC, 1 PER 50 EXCEEDING 50 = 1 REQ'D, 4 PROVIDED (3 ADA) + 1 URINAL
LAVATORIES REQUIRED: 1 PER 40 FOR 1ST 80 OCC, 1 PER 80 EXCEEDING 80 = 1 REQ'D, 6 PROVIDED (3 ADA)
DRINKING FOUNTAINS: 1 REQ'D, 1 PROVIDED
SERVICE SINKS : 1 REQ'D, 1 EXISTING PROVIDED

KEY PLAN:



VICINITY MAP:

SHEET INDEX:

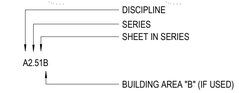
CVR	COVER SHEET
G001	GENERAL INFORMATION
G002	ACCESSIBILITY GUIDELINES
G101	LIFE SAFETY PLANS & WALL TYPES
D100	DEMOLITION FLOOR & REFLECTED CEILING PLANS
A101	OVERALL FLOOR PLAN
A150	ENLARGED TOILET PLANS
A400	DOOR & WINDOW INFO & SCHEDULE
A405	DOOR & FRAME DETAILS
A601	OVERALL REFLECTED CEILING PLAN
I100	INTERIOR FINISH PLAN & DETAILS
I200	INTERIOR ELEVATIONS
I201	INTERIOR ELEVATIONS
I202	INTERIOR ELEVATIONS
I300	INTERIOR FINISH SCHEDULE
MP000	MECHANICAL/PLUMBING SPECIFICATIONS
M100	MECHANICAL PLAN
M200	MECHANICAL SCHEDULES
M300	MECHANICAL DETAILS
P100	PLUMBING WASTE & VENT PLAN
P200	PLUMBING WATER PLAN
P300	PLUMBING DETAILS
E000	ELECTRICAL SPECIFICATIONS
E100	ELECTRICAL LIGHTING PLAN
E200	ELECTRICAL POWER PLAN
E300	ELECTRICAL SCHEDULES

GENERAL ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
ACT	ACOUSTICAL CEILING TILE
ACOU	ACOUSTICAL
ADJ	ADJUSTABLE
ALUM	ALUMINUM
AMB	AIR-MOISTURE BARRIER
ANC	ANCHOR
ANOD	ANODIZED
ARCH	ARCHITECT(URAL)
ASSY	ASSEMBLY
B.O.	BOTTOM OF
BD	BOARD
BFG	BELOW FINISHED GRADE
BFF	BELOW FINISHED FLOOR
BLDG	BUILDING
BLK	BLOCKING
BM	BEAM
BOT	BOTTOM
BRG	BEARING
BS	BOTH SIDES
B/T	BETWEEN
CAB	CABINET
CFCI	CONTRACTOR FURNISHED & INSTALLED
CJ	CONTROL JOINT
CL	CENTER LINE
CLG	CEILING
CLO	CLOSET
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONST	CONSTRUCT(ION)
CT	CERAMIC TILE
DBL	DOUBLE
DEMO	DEMOLITION
DIA	DIAMETER
DN	DOWN
DR	DOOR
DS	DOWNSPOUT
DTL	DETAIL
DWG	DRAWING
EA	EACH
EF	EXHAUST FAN
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
EQ	EQUAL
EQUIP	EQUIPMENT
ETR	EXISTING TO REMAIN
EW	EACH WAY
EWC	ELECTRIC WATER COOLER
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
EQ'D	FURNISHED BY OTHERS
FBD	FIBER BOARD
FBO	FURNISHED BY OTHERS
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER & CABINET
FFE	FURNITURE, FIXTURES & EQUIPMENT
FIN	FINISH
FLR	FLOOR
FLUOR	FLUORESCENT
FRP	FIBERGLASS REINFORCED PLASTIC
FRT	FIRE RETARDANT TREATED
FS	FLOOR SINK
FSE	FOOD SERVICE EQUIPMENT
FT	FEET
FV	FIELD VERIFY
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GL	GLASS
GWB	GYPSUM WALL BOARD
HC	HOLLOW CORE
HM	HOLLOW METAL
HT	HEIGHT
HDWD	HARDWOOD
HR	HOUR
HORZ	HORIZONTAL
HVAC	HEATING, VENTILATION, & AIR CONDITIONING
IN	INCH
INSUL	INSULATION, INSULATE
INT	INTERIOR
JST	JOIST
LAM	LAMINATED
LAV	LAVATORY
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
MFR	MANUFACTURER
MAX	MAXIMUM
MECH	MECHANICAL
MEP	MECHANICAL, ELECTRICAL, & PLUMBING
MILL	MILLWORK
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
MLD	MOLDING
MO	MASONRY OPENING
MTD	MOUNTED
MTL	METAL
MUL	MULLION
NIC	NOT IN CONTRACT
NOM	NOMINAL
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFCI	OWNER FINISHED, CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED, OWNER INSTALLED
OFVI	OWNER FINISHED, VENDOR INSTALLED
OPNG	OPENING
OPT	OPTIONAL
OTS	OPEN TO STRUCTURE
PBD	PARTICLE BOARD
PL	PLATE
PLAM	PLASTIC LAMINATE
PLYWD	PLYWOOD
PLUMB	PLUMBING
PNL	PANEL
PR	PAIR
PREP	PREPARATION
PREFIN	PREFINISHED
PTD	PAINTED
QT	QUARRY TILE
QTY	QUANTITY
RA	RETURN AIR
RAD	RADIUS
RCP	REFLECTED CEILING PLAN
RE:	REFER TO
REF	REFERENCE
RECPT	RECEPTACLE
REFL	REFLECTED, REFLECTING
REINF	REINFORCED, REINFORCING
RELOC	RELOCATE
REQ'D	REQUIRED
REV	REVISION, REVERSED
RO	ROUGH OPENING
RTU	ROOF TOP UNIT
SC	SOLID CORE
SF	SQUARE FOOT
SHT	SHEET
SHTH	SHEATHING
SS	STAINLESS STEEL
SCHED	SCHEDULE
SIM	SIMILAR
SM	SHEET METAL
SPEC'D	SPECIFIED
STD	STANDARD
STL	STEEL
STRUCT	STRUCTURAL
SUSP	SUSPENDED
T.O.	TOP OF
T&B	TOP & BOTTOM
TBD	TO BE DETERMINED
TEMP	TEMPERED
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VCT	VINYL COMPOSITION TILE
VWC	VINYL WALL COVERING
VERT	VERTICAL
W/	WITH
W/O	WITHOUT
WC	WATER CLOSET
WD	WOOD
WH	WATER HEATER
WDW	WINDOW
WP	WATERPROOFING, WATERPROOF
WT	WEIGHT
WWF	WELDED WIRE FABRIC

NOT USED

SHEET NUMBER GUIDE:



DISCPLINE ABBREVIATIONS:

A	ARCHITECTURAL	F	FURNITURE & EQUIPMENT
AS	ARCHITECTURAL SITE	G	GENERAL
C	CIVIL	K	KITCHEN
D	DEMOLITION	L	LANDSCAPE
E	ELECTRICAL	M	MECHANICAL
EL	ELECTRICAL - LIGHTING	P	PLUMBING
EP	ELECTRICAL - POWER	S	STRUCTURAL
		T	TECHNOLOGY

REVISIONS			
REV. #	DATE	DESCRIPTION	
1	2/2/2022	CITY COMMENTS	

BID SET

PROJ. NO.	SCALE:
2146	As indicated

DRAWING TITLE

COVER SHEET

DRAWING NUMBER

CVR

NOT USED

EARTH / COMPACT FILL

GRAVEL / GRANULAR FILL

CONCRETE

SAND/ MORTAR/ PLASTER/ CUT STONE

BRICK SECTION

CONCRETE MASONRY UNIT

STEEL/ METAL

FINISH WOOD

2 6 CONT. WOOD BLOCKING

DISCONTINUOUS WOOD BLOCKING / SHIM

PLYWOOD

BATT INSULATION

ROOF INSULATION

RIGID INSULATION

SPANDREL GLASS

GYPSUM BOARD

MATERIALS LEGEND

1. ADA UNOBSTRUCTED REACH RANGES (AFF.)
   A. ADA FORWARD REACH = 48" MAX. & 15" MIN.
   B. ADA SIDE REACH = 48" MAX. & 15" MIN.

2. DOOR HARDWARE
   (MEASURED AFF. TO C.L. OF HARDWARE)
   A. STANDARD MOUNTING HEIGHTS:
      1. PUSH PLATES = 42"
      2. PULL HANDLES = 42"
      3. KNOBS/ LEVERS = 40"
      4. PANIC EXIT = 42" CENTERLINE OF BAR
      5. KICK PLATES:
      WIDTH= DOOR WIDTH MINUS 2", CENTERED
      HEIGHT= 16" FROM B.O. DOOR
      6. THRESHOLDS: STANDARD = 1/2" MAX.
      AT EXT. SLIDING DOORS = 3/4" MAX.
   B. ADA HARDWARE = 34" MIN. TO 48" MAX.

3. DRINKING FOUNTAINS & EWC'S
   (MEASURED FROM FLOOR TO SPOUT)
   A. STD. FLOOR MOUNTING = 40" TYP., 42" MAX.
   B. ADA = 36" MAX. (27" MIN. CLEAR KNEE SPACE)

4. WATER CLOSETS (AFF. TO TOP OF SEAT)
   A. STANDARD MOUNTING = 14" TO 15"
   B. ADA (TO TOP OF SEAT) = 17" TO 19"
   C. ADA FLUSH CONTROLS = 44" MAX.

5. URINALS (MEASURED FROM FLOOR TO RIM)
   A. STANDARD MOUNTING = 24" MAX.
   B. ADA ACCESSIBLE =17" MAX.
   C. ADA FLUSH CONTROLS = 44" MAX.

6. LAVATORIES (AFF. TO RIM/ COUNTERTOP)
   A. STANDARD MOUNTING = 36" MAX.
   B. ADA= 34" MAX. (29" MIN. CLEAR KNEE SPACE)

7. MIRRORS (AFF. TO B.O. REFLECTIVE SURFACE)
   A. STANDARD MOUNTING = VARIES
   B. ADA ACCESSIBLE = 40" MAX.

8. ADA GRAB BARS (MEASURED TO TOP OF BAR)
   A. WATER CLOSETS: 33" MIN. TO 36" MAX. AFF.
   B. SHOWERS: 33" MIN.-36" MAX.(AT B.O. SHOWER)
   C. BATHTUBS:
      TOP OF BAR = 33" MIN.-36" MAX. AFF.
      BOT. BAR = 9" ABOVE T.O. TUB

9. SHOWER HEADS (MEASURED AFF. TO HEAD)
   A. STANDARD MOUNTING: 72" TO 84" (84" TYP.)
   B. ADA: SPRAY UNIT W/ HOSE 60" LONG MIN.
   C. ADA: FIXED SHOWER HEAD = 48" AFF.

10. SHOWER CONTROLS (CONTROL AREA)
    A. STANDARD MOUNTING = 48" MAX. (TO TOP)
    B. ADA ACCESSIBLE = 38" MIN. TO 48" MAX.

11. COUNTERTOPS:
    (MEASURED AFF. TO SINK RIM/ COUNTERTOP)
    A. STANDARD MOUNTING = 36" MAX.
    B. ADA ACCESSIBLE = 28" MIN. TO 34" MAX.

12. SHOWER ROD (MEASURED FROM FLOOR TO C.L.)
    A. STANDARD MOUNTING = 78" MAX.

13. TOILET ROOM PARTITIONS (MEASURED AFF.)
    A. AT W.C.'S = 12" TO BOT. & 70" TO TOP.
    B. AT URINALS = 18" TO BOT. & 60" TO TOP.

14. TOILET PAPER DISPENSERS (AFF.TO C.L. OUTLET)
    A. STANDARD MOUNTING = 24"
    B. ADA ACCESSIBLE = 19" MIN. TO 24" MAX.

15. WALL MOUNTED SOAP DISPENSERS
    (MEASURED AFF. TO C. L. OF PUSH BUTTON)
    A. STANDARD MOUNTING = 40"
    B. ADA ACCESSIBLE = 46" MAX.

16. PAPER TOWEL DISP / WASTE RECEPTACLE
    (MEASURED AFF. TO TOWEL SLOT)
    A. STANDARD MOUNTING = 40" MAX.
    B. ADA FORWARD REACH = 48" MAX. & 15" MIN.
    C. ADA SIDE REACH = 48" MAX. & 15" MIN.

17. WARM AIR HAND DRYER (AFF. TO PUSH SWITCH)
    A. STANDARD MOUNTING = 44" MAX.
    B. ADA FORWARD REACH = 48" MAX. & 15" MIN.
    C. ADA SIDE REACH = 48" MAX. & 15" MIN.

18. SANITARY NAPKIN DISPENSER
    (MEASURED AFF. TO C.L. OF COIN SLOT)
    A. STANDARD MOUNTING = 40" MAX.
    B. ADA FORWARD REACH = 48" MAX. & 15" MIN.
    C. ADA SIDE REACH = 48" MAX. & 15" MIN.

19. SANITARY NAPKIN DISPOSAL UNIT
    A. STANDARD MOUNTING = 28" MAX. (T.O. UNIT)
    B. ADA ACCESSIBLE = 19" MIN.-24" MAX. (OPNG.)

20. TOILET SEAT COVER DISPENSERS (TO OPNG.)
    A. STANDARD MOUNTING = 40" MAX.
    B. ADA FORWARD REACH = 48" MAX. & 15" MIN.
    C. ADA SIDE REACH = 48" MAX. & 15" MIN.

21. COAT HOOKS
    A. STANDARD = 68"
    B. ADA ACCESSIBLE = 48" MIN. TO 54" MAX.

22. CHALKBOARDS/TACK BOARDS,/MARKER BOARDS
    A. STANDARD MOUNTING = 32" TO 39" (TO BOT.)
    B. STANDARD MOUNTING = 80" (TO TOP)

23. THERMOSTATS & CONTROL DEVICES (TO TOP)
    A. STANDARD MOUNTING = 42 3/4" MAX.
    B. ADA FORWARD REACH = 48" MAX. & 15" MIN.
    C. ADA SIDE REACH = 54" MAX. & 15" MIN.

24. LIGHT SWITCHES & CARD READERS (TO C.L.)
    A. STANDARD = 42 3/4" & 6" FROM DOOR JAMB
    B. ADA ACCESSIBLE = 48" MAX.

25. CONVENIENCE RECEPTACLES
    (ELECTRICAL/ TELEPHONE/ DATA)
    A. STANDARD = 18 3/4"
    B. ADA ACCESSIBLE = 15" MIN.

26. EXIT LIGHTS - STANDARD WALL MOUNTED
    A. 2" MIN. BELOW CEILING.
    B. 2" MIN. ABOVE DOOR FRAME.
    C. EQUAL SPACE - CEILING TO TOP OF FRAME.

27. FIRE EXTINGUISHERS (MEASURED AFF.)
    A. GROSS WT. 40 LBS OR LESS = 60" MAX. TO TOP.
    B. GROSS WT. MORE THAN 40 LBS = 42" MAX. TO TOP.
    C. ADA REACH RANGES = 48" MAX. & 15" MIN.

28. FIRE ALARM PULL STATIONS (AFF. TO LEVER)
    A. STANDARD MOUNTING = 48" MAX.
    B. ADA FORWARD REACH = 48" MAX. & 15" MIN.
    C. ADA SIDE REACH = 48" MAX. & 15" MIN.

29. SMOKE AND/OR HEAT DETECTORS
    A. STANDARD = CEILING HEIGHT

30. HORN/ SPEAKER/ VISUAL SIGNALS
    A. STANDARD = 80" AFF. OR 6" BELOW CEILING
    - WHICHEVER IS LOWER.

ACCESSIBILITY GUIDELINES

NOT USED

GENERAL SYMBOLS LEGEND

COLUMN LINE REFERENCE
A — COLUMN LINE DESIGNATION; COLUMN GRID LINE

DRAWING REVISION
1 — REVISION NUMBER (SEE DESCRIPTION IN TITLE BLOCK PER SHEET); REVISION AREA

SHEET NOTE REFERENCE
(#) — SHEET NOTE; SEE NOTE LEGEND ON SAME SHEET

EQUIPMENT TAG
TAG ID

BUILDING SECTION REFERENCE
ARROW AND TAIL INDICATE DIRECTION OF VIEW
— SECTION NUMBER
X00-00 — SHEET WHERE SECTION IS DRAWN, SAME DISCIPLINE

ROOM / SPACE NAME
ROOM NAME
ROOM NUMBER
ROOM AREA (OPTIONAL)

WALL SECTION REFERENCE
SECTION NUMBER
XXX — WALL SECTION REFERENCE TYPE (WHERE APPLICABLE)*
/ X00-00 — SHEET WHERE SECTION IS DRAWN, SAME DISCIPLINE

NORTH ARROW
N — INDICATES DIRECTION OF TRUE NORTH; INDICATES DIRECTION OF PROJECT NORTH

DETAIL REFERENCE
DETAIL NUMBER
DETAIL REFERENCE TYPE (WHERE APPLICABLE)*
SHEET WHERE DETAIL IS DRAWN, SAME DISCIPLINE

LEVEL
LEVEL NAME
0'-0"

CALLOUT
DETAIL NUMBER
CALLOUT REFERENCE TYPE (WHERE APPLICABLE)*
SHEET WHERE DETAIL IS DRAWN, SAME DISCIPLINE

PLAN ELEVATION MARKER
+/- 4' - 0" — HEIGHT ABOVE / BELOW ESTABLISHED 0.0 ELEVATION
(LEADER OPTIONAL)

EXTERIOR ELEVATION REFERENCE
/ X00-00 — ELEVATION NUMBER; SHEET WHERE ELEVATION IS DRAWN, SAME DISCIPLINE

DEMOLITION LINEWORK
OBJECT TO BE REMOVED

INTERIOR ELEVATION REFERENCE (SINGLE AND MULTIPLE)
ELEVATION NUMBER
XXX — ELEVATION REFERENCE TYPE (WHERE APPLICABLE)*
X00-00 — SHEET WHERE ELEVATION IS DRAWN, SAME DISCIPLINE

DIMENSIONS
(E) X' - X" — (E) INDICATES A REFERENCE ONLY- DIMENSION BETWEEN TWO EXISTING POINTS. (+/-) INDICATE NEW WORK DIMENSIONED TO AN EXISTING POINT. CONTRACTOR SHALL FIELD VERIFY AND NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES
INDICATES DIMENSION IS TO CENTERLINE OF OBJECT
+/- X' - X" COORD; X' - X" HOLD — SET DIMENSIONS (NON +/- DIMENSIONS)
'HOLD' INDICATES CRITICAL DIMENSION
'COORD' INDICATES CONTRACTOR MUST VERIFY DIMENSION WITH FINAL APPROVED EQUIPMENT
ALIGN — INDICATES ALIGNMENT OF FINISHED FACE OF TWO ELEMENTS

*** REFERENCE TYPES (SECTION / DETAIL / CALLOUT / ELEVATION)**

"XXX"
OPP = (OPPOSITE) IDENTICAL TO REFERENCED VIEW EXCEPT OPPOSITE ORIENTATION
SIM = (SIMILAR) DOCUMENTED SCOPE IS IDENTICAL TO REFERENCED VIEW, WITH MINOR DIFFERENCES IN CONTEXTUAL ELEMENTS
TYP = (TYPICAL) REFERENCED VIEW DOCUMENTS A REPEATED CONDITION

MATCH LINE
MATCHLINE
RE:X00-00

BREAK LINE

GENERAL SYMBOLS LEGEND

GENERAL NOTES:

1. ALL WORK SHALL COMPLY WITH THE LOCAL BUILDING CODES AND OTHER APPLICABLE STATE AND LOCAL CODES, ORDINANCES AND STANDARDS. RE: CODE ANALYSIS ON SHEET G1.11.

PROJECT GENERAL NOTES

1. THE WORK UNDER THIS CONTRACT SHALL INCLUDE ALL LABOR, MATERIALS, TOOLS, FEES, INSURANCE, TAXES, ETC. FOR GENERAL CONSTRUCTION, INCLUDING MECHANICAL, ELECTRICAL AND PLUMBING WORK FOR THE COMPLETE CONSTRUCTION OF THIS PROJECT.
2. THE CONTRACT DOCUMENTS ARE COMPLIMENTARY - WHAT IS REQUIRED BY ONE SHALL BE AS BINDING AS IF REQUIRED BY ALL.WHILE PREPARED WITH DUE CARE AND DILIGENCE, PERFECTION IS NOT POSSIBLE. DESIGN AND CONSTRUCTION ARE COMPLEX - EVERY POSSIBLE CONDITION OR CONTINGENCY CANNOT BE ANTICIPATED OR FULLY INDICATED WITHIN THE DOCUMENTS.
3. CAREFULLY STUDY AND COMPARE ALL DRAWINGS (INCLUDING BUT NOT LIMITED TO ARCHITECTURAL, STRUCTURAL, MECHANICAL OR ELECTRICAL) AND OTHER CONTRACT DOCUMENTS WITH THE EXISTING CONDITIONS AT THE PROJECT-SITE. REPORT ERRORS, INCONSISTENCIES OR OMISSIONS DISCOVERED FOR CLARIFICATION BY THE ARCHITECT. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIR OR CORRECTION COSTS IF WORK IS EXECUTED WITH KNOWLEDGE THAT IT INVOLVES AN ERROR, INCONSISTENCY OR OMISSION - WITHOUT THE ABOVE NOTICE.
4. CONTRACTOR SHALL COORDINATE THE REQUIREMENTS OF ANY AND ALL DRAWINGS INCLUDING BUT NOT LIMITED TO ARCHITECTURAL, MECHANICAL, ELECTRICAL. ANY CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND ARCHITECT PRIOR TO EXECUTION OF WORK.
5. N THE EVENT OF CONFLICT OR AMBIGUITY WITHIN THE CONSTRUCTION DOCUMENTS, THE CONTRACTOR WILL BE DEEMED TO HAVE AGREED TO PROVIDE THE GREATER QUANTITY AND / OR BETTER QUALITY OF MATERIALS AND / OR WORK. OMISSIONS IN THE DESCRIPTION OF THE WORK DO NOT RELIEVE THE CONTRACTOR FROM PROVIDING A COMPLETE PROJECT.
6. TO ENSURE COORDINATION BETWEEN DISCIPLINES, CONTRACTOR SHALL SUPPLY EACH SUBCONTRACTOR OR AGENT WITH A FULL SET OF CONSTRUCTION DOCUMENTS FOR THEIR USE.
7. CONTRACTOR AND HIS SUBCONTRACTORS AND AGENTS SHALL HOLD ALL APPLICABLE AND REQUIRED LICENSES FOR THE JURISDICTION WHERE THE WORK WILL BE PERFORMED.
8. ALL WORK LISTED, SHOWN OR IMPLIED IN THE CONSTRUCTION DOCUMENTS SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR EXCEPT WHERE OTHERWISE NOTED. THE CONTRACTOR SHALL CLOSELY COORDINATE HIS WORK WITH THAT OF OTHER CONTRACTORS AND VENDORS FURNISHING LABOR, MATERIALS, ETC. ON THE PROJECT TO ASSURE THAT ALL SCHEDULES ARE MET WITHOUT CONFLICT OR DELAY. THE SEQUENCE OF INSTALLATION OF ALL ELEMENTS SHALL BE EFFICIENT AND ORDERLY WITH PROVISIONS FOR ACCOMMODATING ITEMS TO BE INSTALLED LATER. ALL WORK SHALL BE DONE IN CONFORMANCE WITH THE MANUFACTURER'S REQUIREMENTS.
9. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES.
10. DEVELOPER COORDINATION: OBTAIN AND COMPLY WITH THE DEVELOPER'S CONSTRUCTION RULES & REGULATIONS AND COMPLY WITH THEIR APPROVED DRAWINGS OF THIS WORK, IF APPLICABLE. MAINTAIN PRINTED COPIES OF RULES, REGULATIONS AND APPROVED DRAWINGS AT THE SITE AND ACKNOWLEDGE RECEIPT TO THE OWNER.
11. COMPLY WITH APPLICABLE LOCAL, STATE, AND NATIONAL LAWS OR REGULATIONS, CODES AND ORDINANCES, AND WITH ALL REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION (AHJ). PROVIDE ALL REQUIRED NOTICES TO THE AHJ'S FOR THEIR INSPECTION AND APPROVALS OF THE WORK. THE MOST RESTRICTIVE REQUIREMENTS WILL APPLY IN THE EVENT OF ANY CONFLICT.
12. UNLESS OTHERWISE INDICATED IN THE AGREEMENT, SECURE AND PAY FOR THE BUILDING PERMIT AND ALL OTHER PERMITS OR UTILITY HOOK-UP CHARGES REQUIRED TO PERFORM THE WORK - INCLUDING BUT NOT LIMITED TO SEPARATE TRADE PERMITS, SEWER AND WATER SERVICE TAP-FEES, UTILITY-SERVICE CONNECTION FEES, AS APPLICABLE. OBTAIN ALL LICENSES (BUSINESS OR TRADE) REQUIRED FOR EXECUTION OF THE WORK.
13. CONTRACTOR SHALL PROTECT THE EXISTING CONSTRUCTION AND REPAIR ANY DAMAGE OCCURRING AS A RESULT OF THEIR OPERATIONS AT NO COST TO THE TENANT OR LANDLORD. CONTRACTOR SHALL ALSO ENSURE THAT THEIR OPERATIONS DO NOT INTERFERE WITH THE OPERATION OF THE REMAINDER OF THE DEVELOPMENT/MALL. BARRIERS TO NOISE, DUST AND SECURITY BETWEEN CONSTRUCTION AREAS AND PUBLIC AREAS SHALL BE ERECTED, MAINTAINED AND REMOVED PER THE DEVELOPMENT CRITERIA BY THE CONTRACTOR.
14. CONTRACTOR SHALL PROVIDE ADEQUATE PROTECTION OF WORK, MATERIALS, FIXTURES, ETC. FROM LOSS, DAMAGE, FIRE, THEFT, ETC.
15. ALL AREAS OF EXISTING LANDSCAPING DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO ORIGINAL CONDITION.
16. VERIFY LOCATIONS OF EXISTING UTILITY SERVICE CONNECTIONS SERVING THE PROJECT BEFORE STARTING CONSTRUCTION AND PROVIDE ADDITIONAL UTILITY SERVICE AS REQUIRED TO MEET THE SCOPE AND INTENT OF THE WORK. LOCATIONS OF EXISTING UTILITIES NOTED ARE APPROXIMATE, AND MAY BE BASED ON UN-VERIFIED INFORMATION. PROVIDE ALL CONNECTIONS REQUIRED AT UTILITY CONNECTION POINTS AT NO ADDITIONAL COST TO THE OWNER. ANY AND ALL LOSSES OF BUSINESS TO THE LANDLORD, DEVELOPER OR OTHER PARTY RESULTING FROM DAMAGE CAUSED BY CONTRACTOR OPERATIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ANY UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED/REPLACED IMMEDIATELY AT THE SOLE EXPENSE OF THE CONTRACTOR.
17. CONTRACTOR SHALL VERIFY AND PROVIDE ALL UTILITY CONNECTIONS (PLUMBING, ELECTRICAL, GAS, ETC. IN THE FORM OF SUPPLY AND DRAINPIPES, CONDUIT AND PULLING WIRES, ETC.) RELATED TO EQUIPMENT AND APPLIANCES.
18. CONTRACTOR SHALL COORDINATE THE DELIVERY AND STORAGE OF EQUIPMENT WITH EQUIPMENT SUPPLIER AND TAKE MEASURES TO ENSURE THE PROTECTION OF EQUIPMENT FROM DAMAGE DURING THE CONSTRUCTION PHASE PRIOR TO AND AFTER EQUIPMENT INSTALLATION. CONTRACTOR SHALL REVIEW THE DIMENSIONS OF ALL EQUIPMENT IN THE PROJECT REGARDLESS OF THE SOURCE, COORDINATE ACCESS TO THE SPACE, VERIFY THAT EQUIPMENT HAS APPROPRIATE CLEARANCES DURING INSTALLATION INCLUDING MAINTENANCE CLEARANCES, AND VERIFY THOSE WHICH INVOLVE CONFLICTING UTILITIES.
19. NEW WORK AT EXISTING CONDITIONS SHALL ALIGN WITH AND MATCH EXISTING WORK EXCEPT WHERE OTHERWISE DIMENSIONED OR DETAILED.
20. CONTRACTOR SHALL NEVER SCALE DRAWINGS. LOCATIONS FOR ALL PARTITIONS, WALLS, CEILINGS, ETC. WILL BE DETERMINED BY DIMENSIONS ON THE DRAWINGS. ANY AREA OF THE PLANS MISSING REQUIRED DIMENSIONS MUST BE REPORTED TO THE ARCHITECT IMMEDIATELY.
21. WHERE A CONDITION IS NOTED "TYPICAL" (TYP.) IT IS UNDERSTOOD THAT ALL SIMILAR CONDITIONS BE CONSTRUCTED OF THE SAME MATERIAL AND/OR DIMENSIONS.PARTS OF DETAILS THAT MAY BE CONSIDERED TYPICAL CONSTRUCTION ARE NOT REPEATED.
22. NOT ALL MATERIALS ARE NOTED OR KEYED THROUGHOUT THE DRAWINGS. PLEASE CONTACT ARCHITECT FOR ANY MATERIALS NOT NOTED.
23. CONTRACTOR SHALL PROVIDE DRAFT/FIRE STOPS, AS REQD BY GOVERNING CODES AND JURISDICTIONS. NEW AND EXISTING PENETRATIONS IN FIRE-RATED PARTITIONS OR DRAFT STOPS SHALL BE PROTECTED BY A SYSTEM LISTED BY A RECOGNIZED TESTING AGENCY.
24. PROVIDE FIRE EXTINGUISHERS PER APPLICABLE CODES. VERIFY FINAL LOCATION WITH AHJ.
25. CONTRACTOR SHALL COORDINATE ALL WORK THAT AFFECTS THE ROOF WITH THE LANDLORD AND, IF REQUIRED BY THE LANDLORD, HIRE THE SHELL ROOFING SUBCONTRACTOR TO PERFORM ALL WORK OF PENETRATING THE ROOF FOR ANY AND ALL ITEMS ADDED ON THE ROOF AND PATCHING/SEALING OF SUCH PENETRATIONS DURING AND AFTER EQUIPMENT INSTALLATION.
26. ALL JOINTS AND OTHER OPENINGS IN THE BUILDING ENVELOPE SHALL BE SEALED IN ACCORDANCE WITH THE BUILDING CODE AND ENERGY CODE.
27. ALL CONSTRUCTION WORK MUST BE OF GOOD QUALITY - FREE FROM DEFECTS AND IN ACCORDANCE WITH REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS - OR THE WORK MAY BE CONSIDERED DEFECTIVE - AND SUBJECT TO CORRECTION OR REPLACEMENT BY THE CONTRACTOR.
28. FINISH ALL NEW EXPOSED SURFACES OF MATERIALS (UNLESS PRE-FINISHED) WITH PAINT OR OTHER FINISH COATING AS INDICATED, OR IF NOT INDICATED, PROVIDE A FINISH SIMILAR TO OTHER ADJACENT MATERIALS UNLESS OTHERWISE INDICATED. COMPLY WITH TYPICAL COMMERCIAL QUALITY INDUSTRY STANDARDS AND PROVIDE ALL APPLICABLE SURFACE PREPARATION OR TREATMENTS, SANDING, PRIMING, AND FINISHES IN STRICT ACCORDANCE WITH FINISH MANUFACTURER'S RECOMMENDATIONS.
29. AT PROJECTIONS OF FINISHED SURFACES, INCLUDING PILASTERS OR THICKENED WALLS, RETURN ALL EXPOSED SURFACE FINISHES BACK TO THE PRIMARY SURFACE EVEN IF NOT SPECIFICALLY NOTED.
30. PERFORM CUTTING AND PATCHING TO ACCOMMODATE CONSTRUCTION WORK AND TO ACHIEVE THE INTENT OF THE CONSTRUCTION DOCUMENTS. CUT & PATCH PARTITIONS FOR INSTALLATION OF PLUMBING OR ELECTRICAL SERVICES AND FOR INSTALLATION OF WALL BLOCKING, IF NECESSARY. PROVIDE ESCUTCHEONS, GROMMETS AND SIMILAR SURFACE CLOSURE OR FINISHED TRIMS AT EXPOSED PENETRATIONS OF FINISHED SURFACES.
31. CONTRACTOR SHALL KEEP ALL AREAS CLEAN OF CONSTRUCTION DEBRIS. DISPOSE OF CONSTRUCTION DEBRIS AT THE END OF EACH DAY AND LEAVE OCCUPIED SPACES CLEAN. CLEAN THE PROJECT SITE OF RUBBISH, LITTER AND OTHER FOREIGN SUBSTANCES. BROOM CLEAN PAVED AREAS AND REMOVE STAINS, SPILLS AND OTHER FOREIGN DEPOSITS. RAKE GROUNDS THAT ARE NEITHER PAVED NOR PLANTED, TO A SMOOTH EVEN-TEXTURED SURFACE.
32. EASE EXPOSED EDGES OF METAL WORK TO A RADIUS OF APPROX. 1/4" UNLESS OTHERWISE SHOWN. WELD ALL CORNERS AND SEAMS CONTINUOUSLY, COPING CONNECTIONS TYPICALLY, GRIND EXPOSED WELDS SMOOTH AND FLUSH TO MATCH AND BLEND WITH ADJOINING SURFACES.
33. FORM EXPOSED CONNECTIONS WITH HAIRLINE JOINTS, FLUSH AND SMOOTH, USING CONCEALED FASTENERS WHEREVER POSSIBLE AND WHEN NECESSARY USE PHILLIPS FLAT-HEADED (COUNTERSUNK) SCREWS OR BOLTS.
34. PROVIDE PRESERVATIVE-TREATED WOOD AT ROOFS OR WHEN WOOD IS IN DIRECT CONTACT WITH CONCRETE OR MASONRY
35. PROVIDE FIRE-RETARDANT TREATED PLYWOOD BACKING AT ALL ELECTRICAL, PHONE AND SECURITY SYSTEM PANELS.

GENERAL NOTES

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STATE OF MISSOURI
RICHARD YS HU
NUMBER A-2004020944
ARCHITECT

INTERIOR RENOVATION

BLUE SKY FERTILITY
455 NW MURRAY ROAD
LEE'S SUMMIT, MO 64081

REVISIONS		
REV. #	DATE	DESCRIPTION

BID SET

PROJ. NO.	SCALE:
2146	As indicated

DRAWING TITLE
GENERAL INFORMATION

DRAWING NUMBER
G001

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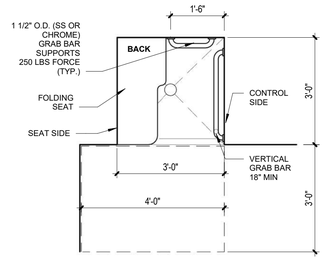
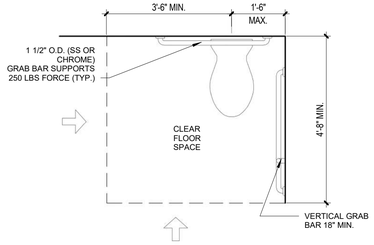
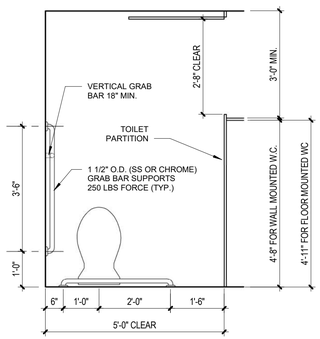


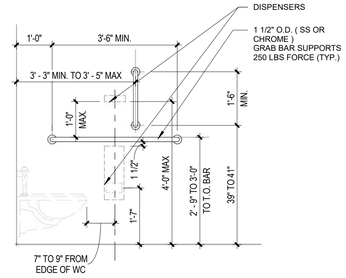
SHOWER CLEARANCES 1/2" = 1'-0" **16**



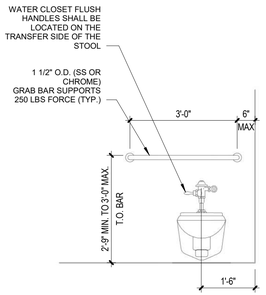
ACCESSIBLE CLEAR FLOOR SPACE 1/2" = 1'-0" **15**



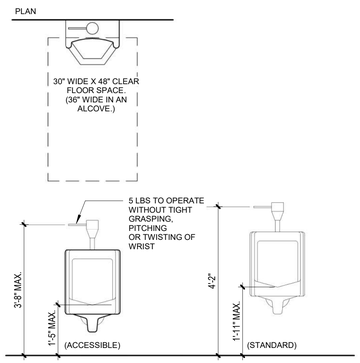
ACCESSIBLE TOILET STALL 1/2" = 1'-0" **14**



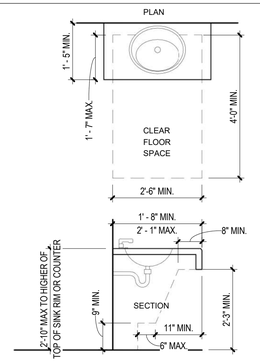
ELEVATION- WC SIDE 1/2" = 1'-0" **13**



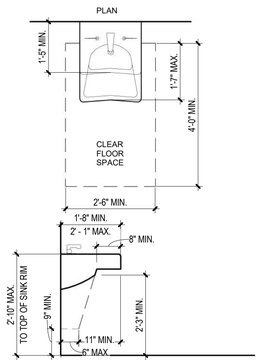
ELEVATION- WC 1/2" = 1'-0" **12**



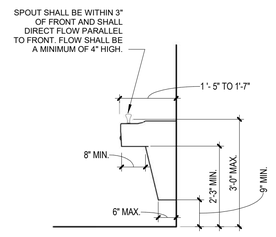
URINAL PLAN/ELEVATIONS 1/2" = 1'-0" **11**



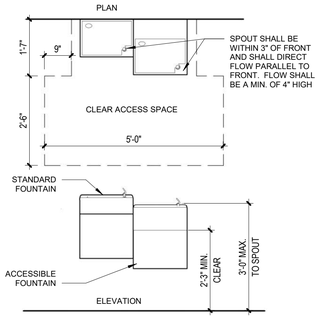
SINK IN COUNTER CLEARANCES 1/2" = 1'-0" **10**



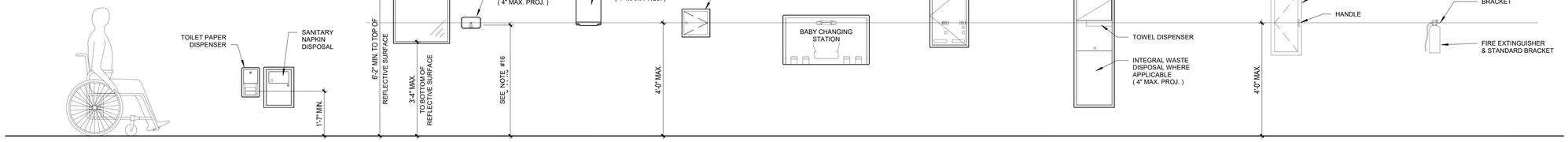
WALL HUNG SINK CLEARANCES 1/2" = 1'-0" **9**



E.W.C. - SECTION 1/2" = 1'-0" **8**

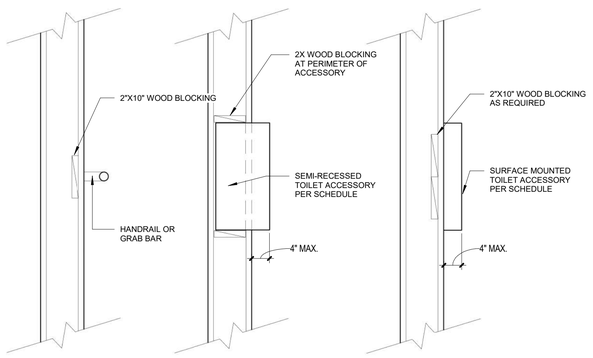


E.W.C. - PLAN/ELEVATION 1/2" = 1'-0" **7**

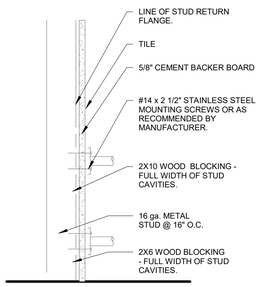


**RE: ACCESSIBILITY GUIDELINE NOTES, G001

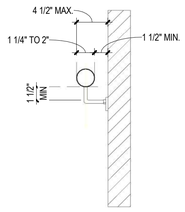
TOILET/LIFE SAFETY ACCESSORIES 1/2" = 1'-0" **6**



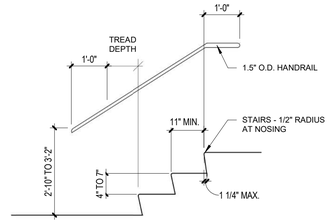
TYPICAL BLOCKING DETAILS 3/4" = 1'-0" **5**



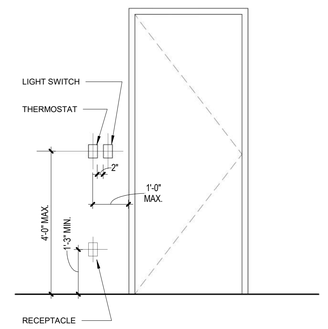
SHOWER BLOCKING 1 1/2" = 1'-0" **4**



HANDRAIL CLEARANCES 1 1/2" = 1'-0" **3**



HANDRAIL @ STAIRS 1/2" = 1'-0" **2**



SWITCH @ DOOR 1/2" = 1'-0" **1**

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STATE OF MISSOURI RICHARD YS HU NUMBER A-2004005944 ARCHITECT

INTERIOR RENOVATION

BLUE SKY FERTILITY
455 NW MURRAY ROAD
LEE'S SUMMIT, MO 64081

REVISIONS

REV. #	DATE	DESCRIPTION

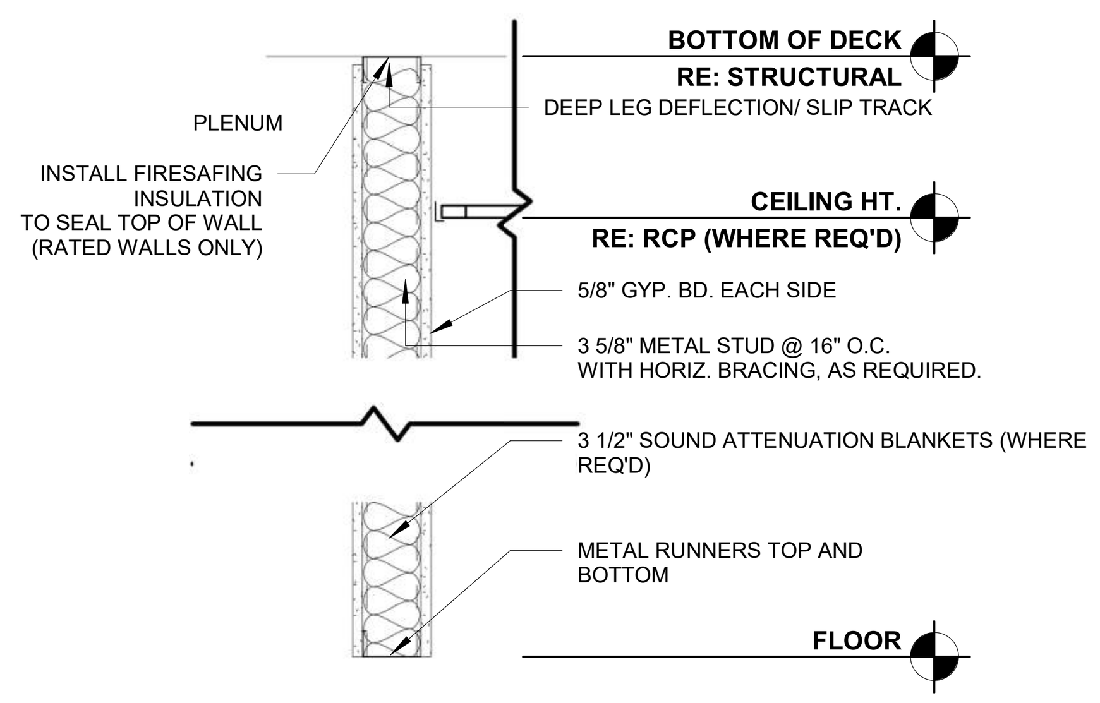
BID SET

PROJ. NO. 2146 | SCALE: As indicated

DRAWING TITLE
ACCESSIBILITY GUIDELINES

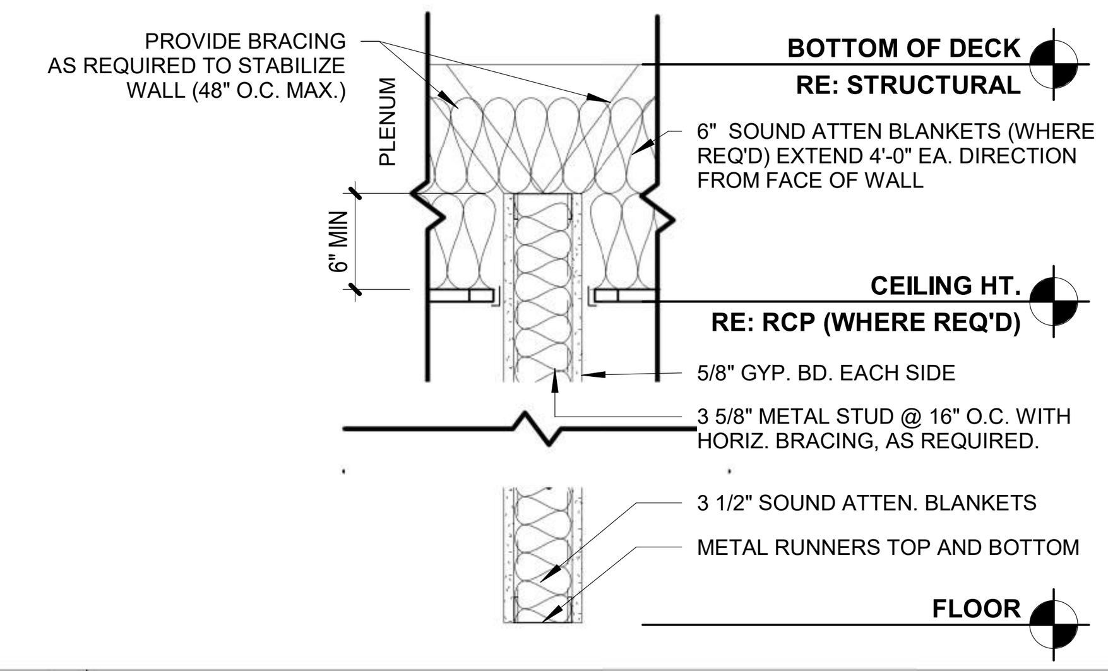
DRAWING NUMBER
G002

NOT USED



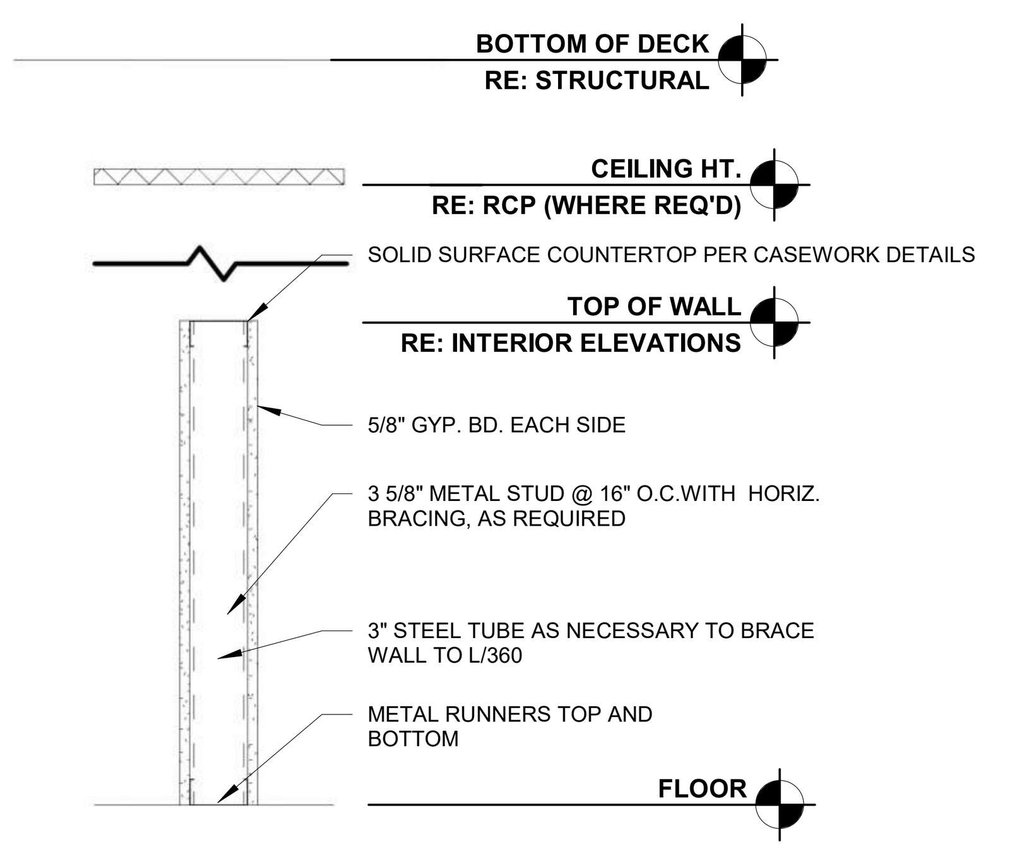
A1	• 3-5/8" METAL STUD @ 16" O.C. TO DECK ABOVE • 5/8" TYPE "X" GYP. BD. EACH SIDE • 3-1/2" SOUND BATT INSUL. TO FULL HEIGHT OF WALL • NON RATED
A2	• 3-5/8" METAL STUD @ 16" O.C. TO DECK ABOVE • 5/8" TYPE "X" GYP. BD. EACH SIDE • NO SOUND BATT INSULATION • NON RATED

WALL TYPE A



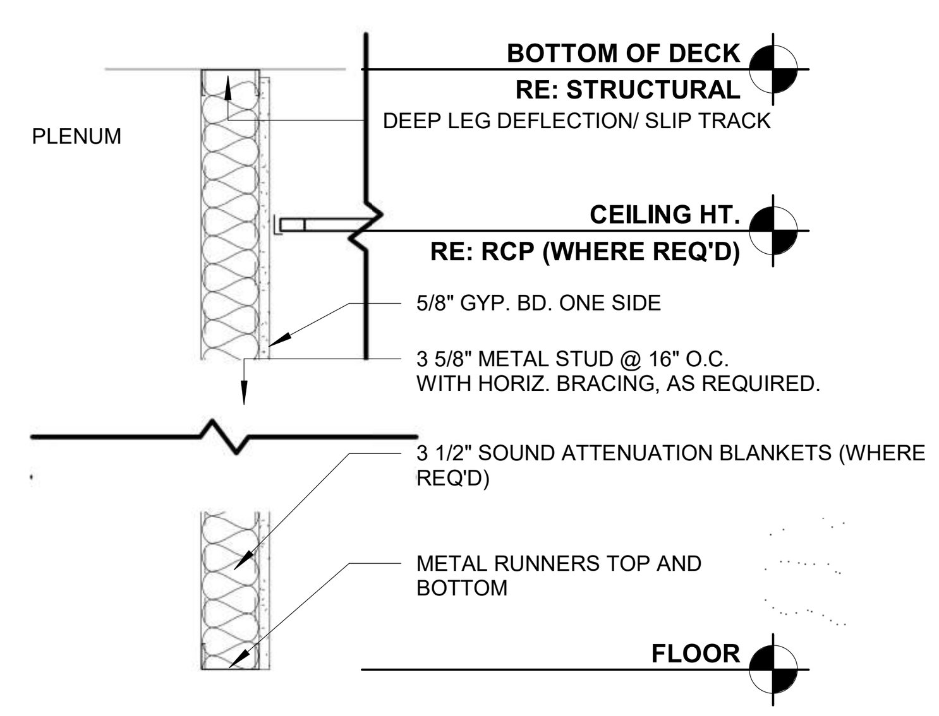
B1	• 3-5/8" METAL STUD @ 16" O.C. TO 6" MIN. ABOVE CEILING • 5/8" TYPE "X" GYP. BD. EACH SIDE • BRACE AS NECESSARY TO ACHEIVE L/360 DEFLECTION • 3-1/2" SOUND BATT INSUL. TO FULL HEIGHT OF WALL • NON RATED
B2	• 3-5/8" METAL STUD @ 16" O.C. TO 6" MIN. ABOVE CLG. • 5/8" TYPE "X" GYP. BD. EACH SIDE • BRACE AS NECESSARY TO ACHEIVE L/360 DEFLECTION • NO SOUND BATT INSULATION • NON RATED

WALL TYPE B



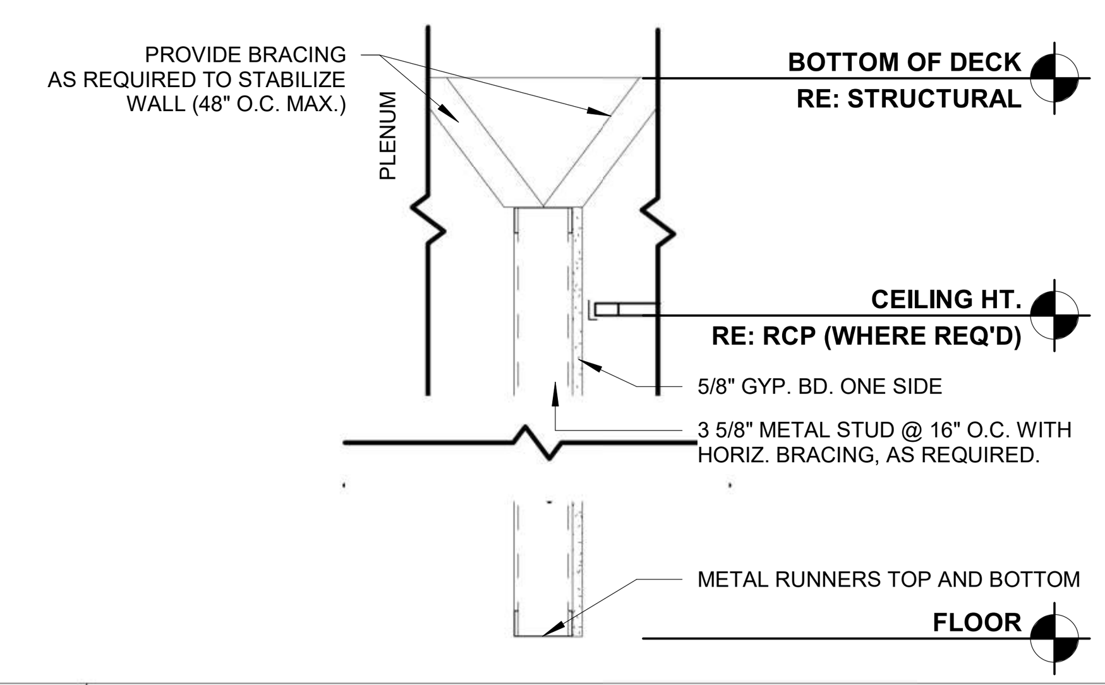
C	• 3-5/8" METAL STUD @ 16" O.C. TO HEIGHT NOTED. • 5/8" TYPE "X" GYP. BD. EACH SIDE • NO SOUND BATT INSUL. • NON RATED

WALL TYPE C



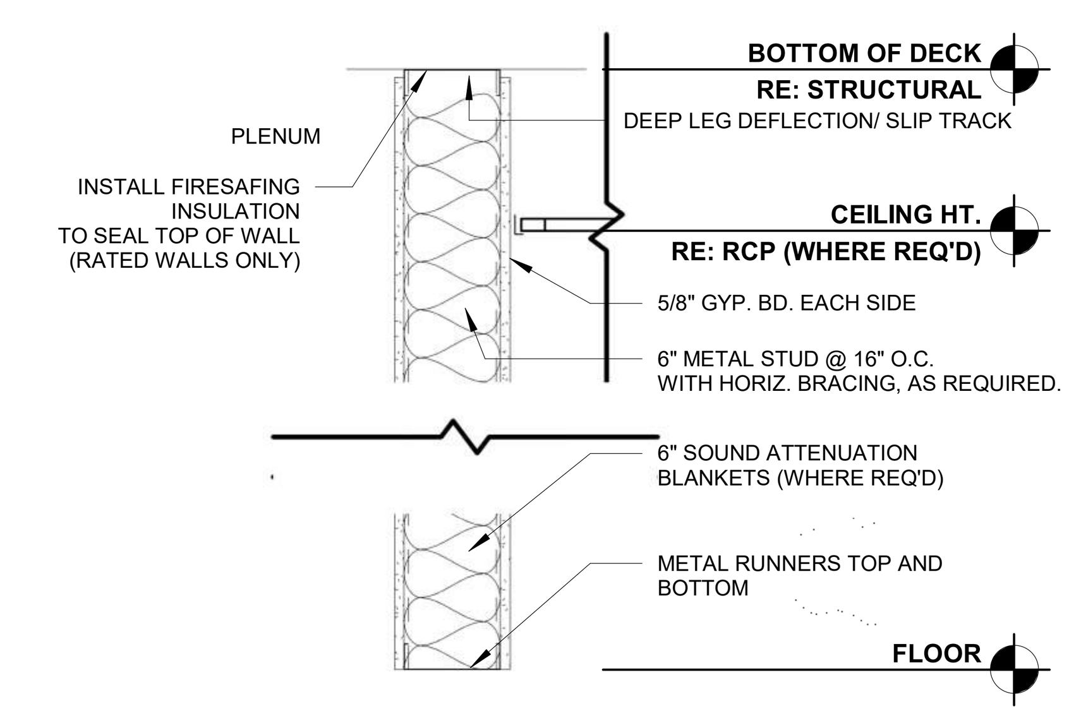
D	• 3-5/8" METAL STUD @ 16" O.C. TO DECK ABOVE • 5/8" TYPE "X" GYP. BD. ONE SIDE • 3-1/2" SOUND BATT INSUL. TO FULL HEIGHT OF WALL • NON RATED

WALL TYPE D



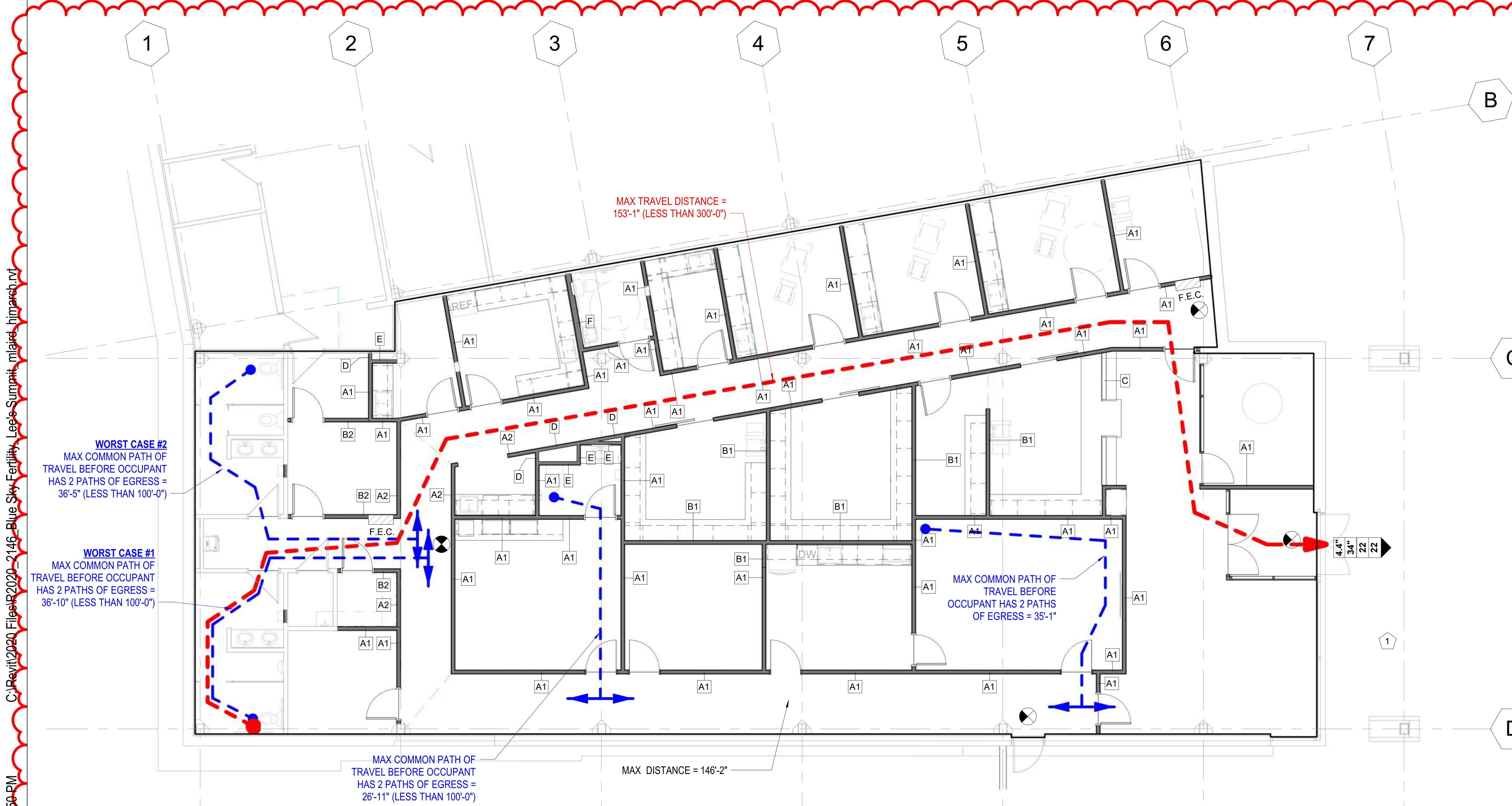
E	• 3-5/8" METAL STUD @ 16" O.C. TO 6" MIN. ABOVE CEILING • 5/8" TYPE "X" GYP. BD. ONE SIDE • BRACE AS NECESSARY TO ACHEIVE L/360 DEFLECTION • NON RATED

WALL TYPE E



F	• 6" METAL STUD @ 16" O.C. TO DECK ABOVE • 5/8" TYPE "X" GYP. BD. EACH SIDE • 6" SOUND BATT INSUL. TO FULL HEIGHT OF WALL • NON RATED

WALL TYPE F



LIFE SAFETY LEGEND

- PRIMARY BUILDING EXIT
- [TYPE #1] OCCUPANCY
- [TYPE #2] OCCUPANCY
- AREA NOT IN ARCHITECTURAL SCOPE
- AVAILABLE NUMBER OF OCCUPANTS EXITING
- NUMBER OF OCCUPANTS EXITING
- AVAILABLE EXIT WIDTH
- REQUIRED EXIT WIDTH
- F.E. — FIRE EXTINGUISHER
- F.E.C. — FIRE EXTINGUISHER & CABINET
- F.E.C. — FIRE EXTINGUISHER AND CABINET SEMI - RECESSED

LIFE SAFETY PLAN 1
1/8" = 1'-0"

PROJECT OVERVIEW

SCOPE OF WORK: THE RENOVATION OF AN EXISTING TENANT SPACE

JURISDICTION: CITY OF LEE'S SUMMIT, MO

APPLICABLE BUILDING CODES:

All Applicable Codes: All Work Under This Contract Shall Comply With The Provisions Of The Specifications And Drawings, and Shall Satisfy All Applicable Codes, Ordinances And Regulations Of All Governing Bodies Involved. All Permits and Licenses Necessary For The Proper Executions Of The Work Shall Be Secured And Paid For By The Contractor Involved. Applicable Codes Include But Are Not Limited To The Following:

Applicable Building Code:	2018 International Existing Building Code
Applicable Building Code:	2018 International Building Code
Applicable Plumbing Code:	2018 International Plumbing Code
Applicable Mechanical Code:	2018 International Mechanical Code
Applicable Electrical Code:	2017 National Electrical Code
Applicable Gas Code:	2018 International Fuel Gas Code
Applicable Energy Code:	2018 International Energy Conservation Code
Accessible Code:	ICC/ANSI-A117.1 Providing Accessibility and Usability for Physically Handicapped People, 2009 Edition

[Note: Project Owner and Design Professional are responsible for compliance to the federal Americans with Disabilities Act (ADA)

BUILDING DETAILS:

ZONING:	CP-2
USE AND OCCUPANCY CLASSIFICATION:	B (BUSINESS) PER 2018 IBC, SECTION 304
EXISTING CONSTRUCTION TYPE:	VB (ASSUMED)
EXISTING BUILDING :	1 STORY; OVERALL APPROX. 10,029 SF
AREA OF WORK:	1 STORY; OVERALL APPROX. 5,220 SF
AUTOMATIC SPRINKLERS:	YES
ALARM SYSTEM:	YES

OCCUPANCY CALCS:

BUSINESS*-	3042 SF / 150 GROSS =	21 OCC
STORAGE/MECH-	231 SF / 300 GROSS =	1 OCC
NON-OCCUPIED-	1947 SF / 0 =	0 OCC
TOTAL -	5220 SF	22 OCC

* WAITING-100 INCLUDED AS ACCESSORY TO BUSINESS PER IBC2018 303.1.2

1

EGRESS NOTES:

EXITS REQUIRED: 22 OCC < 50 OCC = 1 EXIT REQUIRED
EXITS PROVIDED: 2 (1 NEW, 1 EXISTING)
MINIMUM EGRESS WIDTH REQUIRED: 22 OCC X 0.2" = 4.4"
MINIMUM EGRESS WIDTH PROVIDED: 34" MINIMUM

MAXIMUM EXIT TRAVEL DISTANCE; IBC 2018, TABLE 1017.2: BUSINESS OCCUPANCY = 300'-0" WITH SPRINKLER SYSTEM
PROVIDED MAXIMUM TRAVEL DISTANCE: 153'-1" (LESS THAN 300'-0")

MAXIMUM COMMON PATH OF TRAVEL DISTANCE; IBC 2018, TABLE 1006.2.1: BUSINESS OCCUPANCY = 100'-0" WITH SPRINKLER SYSTEM (LESS THAN 300'-0")
PROVIDED MAXIMUM COMMON PATH OF TRAVEL DISTANCE: 36'-10" (LESS THAN 100'-0")

PLUMBING REQUIREMENTS (IBC TABLE 2902.1):

TOILETS REQUIRED: 1 PER 25 FOR 1ST 50 OCC, 1 PER 50 EXCEEDING 50 = 1 REQ'D, 4 PROVIDED (3 ADA) + 1 URINAL.
LAVATORIES REQUIRED: 1 PER 40 FOR 1ST 80 OCC, 1 PER 80 EXCEEDING 80 = 1 REQ'D, 6 PROVIDED (3 ADA)
DRINKING FOUNTAINS: 1 REQ'D, 1 PROVIDED.
SERVICE SINKS : 1 REQ'D, 1 EXISTING PROVIDED

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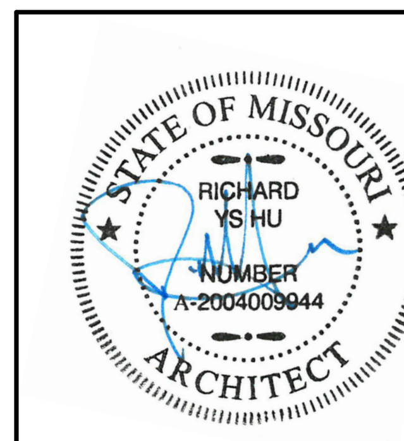


INTERIOR RENOVATION

BLUE SKY FERTILITY
455 NW MURRAY ROAD
LEE'S SUMMIT, MO 64081

REVISIONS

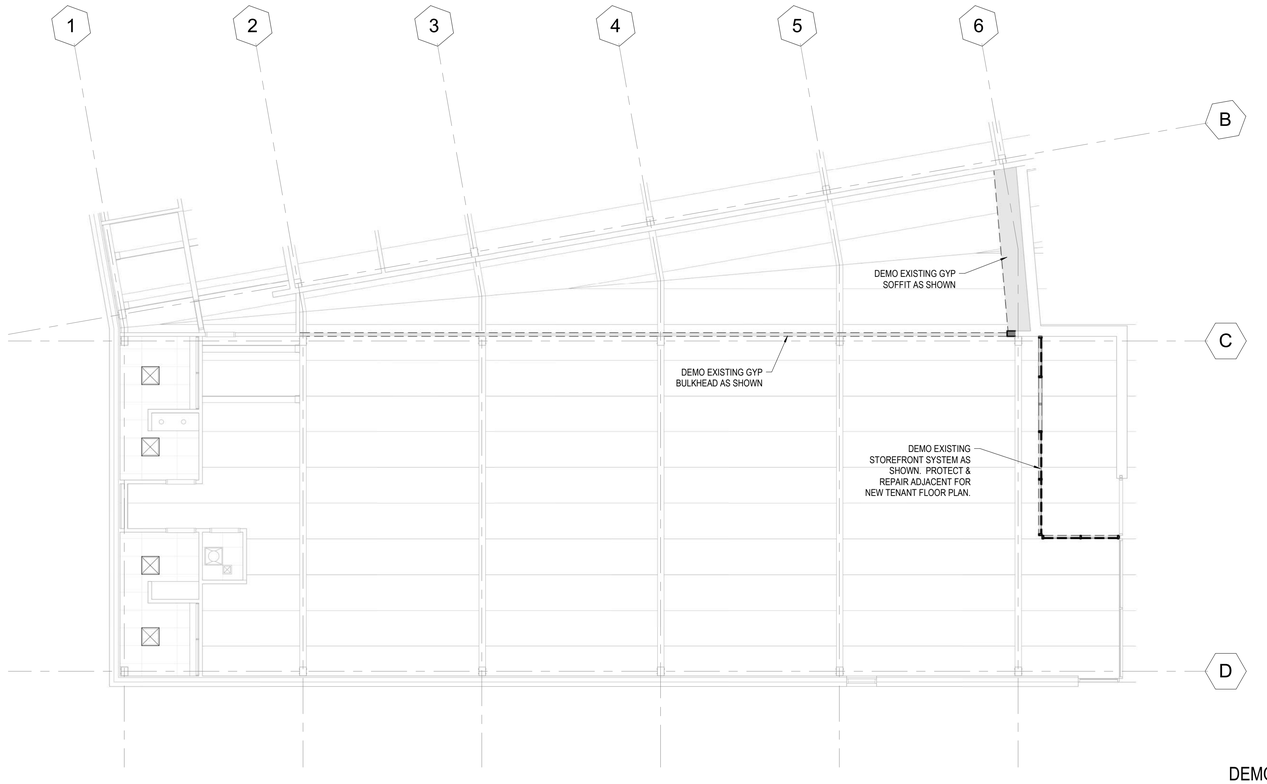
REV. #	DATE	DESCRIPTION
1	2/2/2022	CITY COMMENTS

BID SET

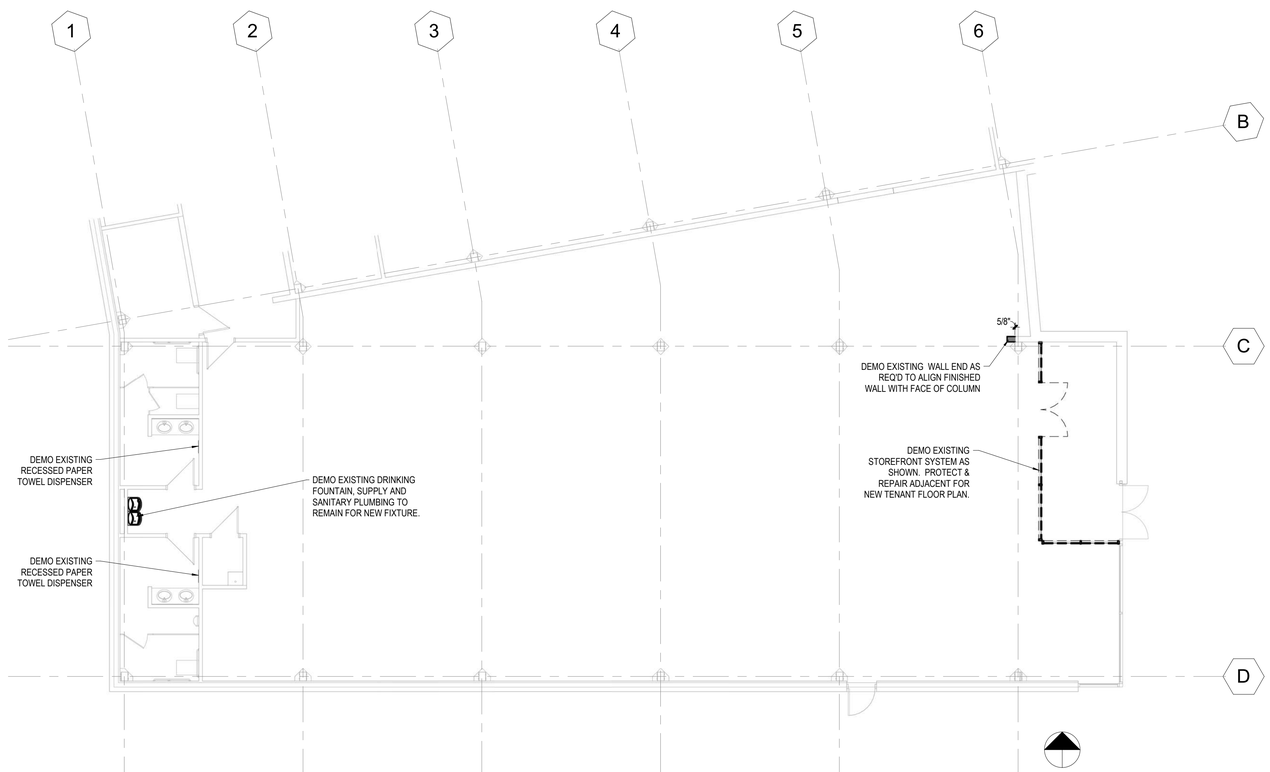
PROJ. NO. 2146	SCALE: As indicated

DRAWING TITLE
LIFE SAFETY PLANS & WALL TYPES

DRAWING NUMBER
G101



DEMO REFLECTED CEILING PLAN 2
1/8" = 1'-0"



DEMOLITION PLAN 1
1/8" = 1'-0"

	EXISTING WALL TO REMAIN
	EXISTING WALL TO BE DEMOLISHED
	EXISTING DOOR TO REMAIN
	EXISTING DOOR TO BE REMOVED
#	KEYNOTE, RE: DEMO KEYNOTE LEGEND

DEMOLITION PLAN LEGEND

1. COORDINATE W/ OWNER REGARDING SALVAGED EQUIPMENT & MATERIALS. RE SALVAGE NOTES ON DRAWINGS.
2. EXISTING CONDITIONS SHOWN ON DWGS ARE FOR INFORMATIONAL PURPOSES ONLY AND DO NOT SHOW ALL CONDITIONS THAT MAY AFFECT THE WORK OF THIS CONTRACT. FIELD VERIFY ALL EXISTING CONDITIONS.
3. REMOVE EXISTING (EXIST) CONSTRUCTION TO THE EXTENT INDICATED ON THE DRAWINGS AND TO THE EXTENT REQUIRED TO FACILITATE NEW CONSTRUCTION. PROTECT ALL OTHER EXISTING CONSTRUCTION FROM DAMAGE THROUGHOUT CONSTRUCTION.
4. SHOULD ANY DAMAGE OCCUR TO ANY EXIST CONSTRUCTION TO REMAIN ON SITE, THE CONTRACTOR SHALL REPAIR THE DAMAGE TO THE SATISFACTION OF THE OWNER. THE CONTRACTOR ALONE SHALL BE RESPONSIBLE FOR THE PROTECTION AND SAFETY OF THE EXISTING STRUCTURE AND ARCHITECTURAL ELEMENTS DURING THE ENTIRE DEMO AND SHALL TAKE ADEQUATE PRECAUTIONS TO PREVENT DAMAGE TO ANY PART OF THE REMAINING STRUCTURE OR ANY COMPONENTS THAT ARE TO BE SALVAGED FOR LATER REUSE. ANY DAMAGE, IF INCURRED, SHALL BE RECTIFIED TO THE SATISFACTION OF THE OWNER AT NO EXTRA COST TO THE OWNER.
5. PROTECT ALL EXISTING CONSTRUCTION NOTED TO REMAIN FROM DAMAGE AND SOILING DURING DEMO. REMOVE DEBRIS REGULARLY AS NECESSARY TO ELIMINATE INTERFERENCE WITH ROADS, STREETS, WALKS, OTHER ADJACENT FACILITIES AND AREAS TO REMAIN AS-IS AND/OR IN USE OR OCCUPIED BY THE OWNER.
6. EXCEPT FOR ITEMS OR MATERIALS INDICATED TO BE SALVAGED OR OTHERWISE INDICATED TO REMAIN THE OWNER'S PROPERTY, DEMO MATERIALS SHALL BECOME THE CONTRACTOR'S PROPERTY AND SHALL BE REMOVED FROM THE SITE.
7. ALL DEMO MATERIALS SHALL BE DISPOSED OF PROMPTLY OFF SITE IN ACCORDANCE W/ ALL RELEVANT LAWS AND REGULATIONS. DO NOT ALLOW DEMO MATERIALS TO ACCUMULATE ON SITE. BURNING IS NOT ALLOWED.
8. WHEN MECHANICAL, ELECTRICAL OR STRUCTURAL ELEMENTS CONFLICT W/ THE INTENDED FUNCTION OF DESIGN ARE ENCOUNTERED, DETERMINE THE NATURE AND EXTENT OF THE CONFLICT AND NOTIFY ARCHITECT IMMEDIATELY FOR RESOLUTION. THE CONTRACTOR SHALL PREPARE THE NECESSARY SKETCHES OF THE DISCREPANCIES AND SUBMIT TO THE ARCHITECT. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ARCH PRIOR TO PROCEEDING W/ THE DEMO TO THE AREA IN QUESTION.
9. ALL WORK MUST BE COORDINATED W/ THE OWNER REGARDING THE SCHEDULE AND DISRUPTION OF BUSINESS HOURS.
10. COORDINATE DEMO WORK W/ NEW CONSTRUCTION. NOTIFY ARCHITECT OF DISCREPANCIES IN THE CONTRACT DOCUMENTS THAT IMPACT THE DESIGN INTENT.
11. DO NOT INTERRUPT EXISTING UTILITIES EXCEPT WHEN AUTHORIZED IN WRITING BY THE OWNER. PROVIDE TEMPORARY SERVICES DURING INTERRUPTIONS TO EXIST UTILITIES, AS ACCEPTABLE TO THE OWNER. PROVIDE 72 HOUR NOTIFICATION.
12. WHEN UTILITY SERVICES ARE REQUIRED TO BE REMOVED, RELOCATED OR ABANDONED, PROVIDE BYPASS CONNECTIONS TO MAINTAIN CONTINUITY OF SERVICE BEFORE PROCEEDING WITH DEMO. CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGN AND PERMITTING OF ALL TEMPORARY UTILITY WORK.
13. CONTACT ALL UTILITY COMPANIES INCLUDING THE FOLLOWING: ELECTRICAL, GAS, WATER, TELEPHONE, STORM SEWER AND SANITARY SEWER FOR FIELD LOCATION OF ALL UNDERGROUND AND OVERHEAD UTILITY LINES.
14. UNLESS NOTED OTHERWISE, WALLS AND PARTITIONS INDICATED TO BE REMOVED ARE ASSUMED TO BE NON-STRUCTURAL. ALL NECESSARY SHORING, BRACING AND SUPPORT TO PREVENT MOVEMENT, SETTLEMENT OR COLLAPSE OF STRUCTURE OR ELEMENT TO BE DEMOLISHED AND ADJACENT STRUCTURE OR ELEMENT SHOWN TO REMAIN SHALL BE DESIGNED BY CONTRACTOR'S PROFESSIONAL ENGINEER LICENSED IN THE APPLICABLE JURISDICTION. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING, SHEETING, BRACING AND/OR TEMPORARY SUPPORT WHEREVER REQUIRED TO THE EXISTING STRUCTURE DURING THE ENTIRE DEMO AND CONSTRUCTION PERIOD.
15. WHERE FINISHES ARE SHOWN TO BE REMOVED FROM EXISTING CONSTRUCTION, REPAIR AND PATCH REMAINING SUBSTRATE AND PREPARE FOR NEW FINISH.
16. ALL INFILL OR REPLACEMENT WORK SHALL MATCH EXISTING CONDITIONS IN MATERIALS, CONSTRUCTION AND FINISH, UNLESS SPECIFICALLY NOTED ELSEWHERE IN THE CONSTRUCTION DOCUMENTS. PROVIDE ALL CUTTING AND PATCHING OF EXISTING CONSTRUCTION TO ACCOMMODATE NEW CONSTRUCTION WORK.
17. DO NOT REMOVE STRUCTURAL MEMBERS UNLESS NOTED OTHERWISE.
18. REMOVE EXISTING PARTITIONS, CEILINGS, SOFFITS AND ASSOCIATED FRAMING AND BRACING BACK TO STRUCTURE WHERE THESE ITEMS OCCUR AT AREAS SHOWN TO BE DEMO.
19. REMOVE ALL EXISTING FINISH MATERIALS BACK TO EXPOSED FRAMING OR STUDS, CONCRETE OR MASONRY WALLS OR STRUCTURAL ELEMENTS INDICATED TO REMAIN WHERE INDICATED.
20. MAINTAIN EXISTING EXITS TO REMAIN, EXIT ACCESS AND PROVIDE APPROPRIATE FIRE PREVENTION PROCEDURES DURING CONSTRUCTION.
21. PROVIDE TEMPORARY DUST PROOF ENCLOSURE BETWEEN THE CONSTRUCTION AREA AND EXISTING OCCUPIED SPACES.
22. REQUIREMENTS FOR DEMO INCLUDE ALL ITEMS NECESSARY TO MAINTAIN STABILITY OF THE FACILITY AND ITS COMPONENTS FROM THE TIME DEMO AND CONSTRUCTION BEGINS TO THE TIME OF COMPLETION OF RENOVATION CONSTRUCTION.
23. ALL INFORMATION RELATING TO THE EXISTING STRUCTURE SHOWN ON THE CONSTRUCTION DOCUMENTS IS BASED ON THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL PERFORM A COMPLETE SURVEY OF ALL THE NECESSARY ITEMS REQUIRED TO PERFORM THE WORK PROPERLY, SUCH AS LOCATIONS OF EXISTING COLUMNS, ETC.
24. EXACT EXTENT OF DEMO TO BE DONE SHALL BE FIELD VERIFIED AT THE SITE. DETERMINE THE NATURE AND EXTENT OF DEMO THAT WILL BE NECESSARY BY COMPARING THE DRAWINGS W/ THE EXISTING CONDITIONS.
25. THE CONTRACTOR IS FULLY RESPONSIBLE FOR THE MEANS AND METHODS OF DEMO AND THE SAFETY AND INTEGRITY OF THE EXISTING STRUCTURE.
26. MATERIALS AND EQUIPMENT SHALL BE STORED AND TRANSPORTED IN A MANNER COMPATIBLE W/ THE ALLOWABLE FLR DESIGN LIVE LOAD.
27. DO NOT DETAIL, ORDER OR FABRICATE ANY MATERIAL W/O COORDINATING THE SAME WITH ACTUAL FIELD CONDITIONS. THE CONTRACTOR ALONE IS RESPONSIBLE FOR THE PROPER FITTING AND CONSTRUCTION OF THE NEW CONSTRUCTION TO THE EXISTING CONSTRUCTION.
28. ALL EXISTING PIPES, DUCTS AND UTILITIES SHALL BE TEMPORARILY SUPPORTED, PROTECTED AND REPLACED, AS REQUIRED, IN THE AREAS WHERE EXISTING STRUCTURE IS TO BE REMOVED.
29. ALL SPECIAL INSPECTIONS SHALL BE BY AN INDEPENDENT TESTING AGENCY HIRED BY THE OWNER.
30. NO PORTIONS OF THE STRUCTURE SHALL BE PERMITTED TO FALL NOR SHALL ANY DEBRIS BE DROPPED EXCEPT BY METHODS WHICH WILL ENSURE SAFETY AND MINIMIZE DUST, NOISE AND OTHER NUISANCES.
31. EXISTING BUILDING ELEMENTS OR CONSTRUCTION TO REMAIN IS SHOWN W/ SCREENED LINES.
32. VERIFY ALL QUANTITIES OF ITEMS TO BE DEMOLISHED OR SALVAGED.

GENERAL NOTES- DEMOLITION

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STATE OF MISSOURI
RICHARD YS HU
NUMBER A-2004009944
ARCHITECT

INTERIOR RENOVATION

BLUE SKY FERTILITY
455 NW MURRAY ROAD
LEE'S SUMMIT, MO 64081

REVISIONS		
REV. #	DATE	DESCRIPTION

BID SET

PROJ. NO.	SCALE:
2146	As indicated

DRAWING TITLE
DEMOLITION FLOOR & REFLECTED CEILING PLANS

DRAWING NUMBER
D100

NOT USED

FIRST FLOOR 1
3/16" = 1'-0"

NOT USED

1. REFER TO SHEET CS FOR ADDITIONAL GENERAL NOTES THAT ARE APPLICABLE.
2. ARCHITECTURAL ELEVATION 100'-0" = CIVIL ELEVATION
3. DIMENSIONS SHOWN ON THE FLOOR PLAN ARE TO THE FACE OF GYP. BOARD AND COLUMN GRID LINES, UNLESS NOTED OTHERWISE (U.N.O.)
4. NOTE: WALL THICKNESSES ARE NOMINAL DIMENSIONS, NOT ACTUAL DIMENSIONS. ALL STUD WALL THICKNESSES ARE 5 INCHES, UNLESS DIMENSIONED OTHERWISE.
5. DOOR OPENINGS NOT LOCATED BY DIMENSION SHALL BE CENTERED IN WALL SHOWN OR LOCATED 4 INCHES FROM FINISH WALL TO FINISH JAMB, ALWAYS ALLOWING MINIMUM OF 18" FROM THE PULL SIDE OF THE DOOR TO THE INTERSECTING WALL.
6. ALL PUBLIC SPACES: THE WALLS WILL BE FINISHED WITH 5/8" GYP. BD. TO A LEVEL 4 FINISH AND PAINTED, UNLESS NOTED OTHERWISE.
7. REFER TO FINISH LEGEND, FINISH SCHEDULE AND SPECIFICATIONS FOR DOOR AND DOOR FRAME FINISHES.

GENERAL NOTES- FLOOR PLAN

	EXISTING WALL TO REMAIN
	PROPOSED WALL
	EXISTING DOOR TO REMAIN
	PROPOSED DOOR
#	KEYNOTE, RE: KEYNOTE LEGEND
#	EQUIPMENT TAG
W4A2	WALL TAG
	FLOOR DRAIN

FLOOR PLAN LEGEND

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STATE OF MISSOURI
RICHARD YS HU
NUMBER A-2004035944
ARCHITECT

INTERIOR RENOVATION

BLUE SKY FERTILITY
455 NW MURRAY ROAD
LEE'S SUMMIT, MO 64081

REVISIONS			
REV. #	DATE	DESCRIPTION	
1	2/2/2022	CITY COMMENTS	

BID SET

PROJ. NO.	SCALE:
2146	As indicated

DRAWING TITLE
OVERALL FLOOR PLAN

DRAWING NUMBER
A101

NOT USED

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INTERIOR RENOVATION

BLUE SKY FERTILITY
455 NW MURRAY ROAD
LEE'S SUMMIT, MO 64081

REVISIONS		
REV. #	DATE	DESCRIPTION

BID SET

PROJ. NO.	SCALE:
2146	As indicated

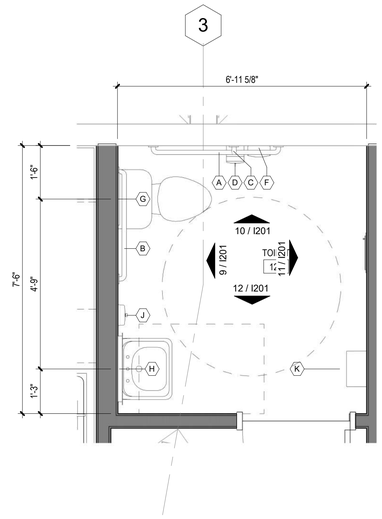
DRAWING TITLE

ENLARGED TOILET PLANS

DRAWING NUMBER

A150

NOT USED



ENLARGED TOILET PLAN-122 **3**
1/2" = 1'-0"

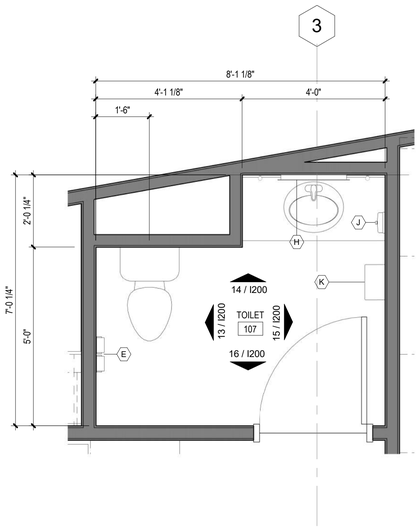
NOT USED

TOILET ACCESSORY SCHEDULE

TYPE MARK	MFG	DESRIPTION	MODEL	FINISH	COMMENTS
A	BOBRICK	42" GRAB BAR	B-6806x42	SATIN SS	3, 7
B	BOBRICK	36" GRAB BAR	B-6806x36	SATIN SS	3, 7
C	BOBRICK	18" GRAB BAR	B-6806x18	SATIN SS	3, 7
D	BOBRICK	SURFACE MOUNTED MULTI-ROLL TOILET TISSUE DISPENSER	B-4288	SATIN SS	3, 6, 7
E	BOBRICK	RECESSED MULTI-ROLL TOILET TISSUE DISPENSER	B-6997	SATIN SS	1, 6, 7
F	BOBRICK	SANITARY NAPKIN DISPOSAL	B-270	SATIN SS	3, 7
G	BOBRICK	RECESSED TOILET SEAT-COVER DISPENSER	B-3013	SATIN SS	1, 4
H	BOBRICK	LED BACKLIT MIRROR	B-164 2442	SATIN SS	3, 5, 7
J	BOBRICK	SURFACE MOUNTED SOAP DISPENSER	B-4112	SATIN SS	3, 7
K	EXCEL DRYER	XLERATOR HAND DRYER	XL-SB	SATIN SS	3, 7
L	BRADLEY	RECESSED SPECIMEN PASS-THROUGH CABINET	9813	SATIN SS	1, 7, 8

1. RECESSED
2. SEMI-RECESSED
3. SURFACE MOUNTED
4. INSTALL C/L OF UNIT AT 48" A.F.F.
5. CENTER ON SINK
6. TOILET PAPER DISPENSER SHALL BE 7" MIN. TO 9" MAX. IN FROM EDGE OF W.C.
7. MOUNT PER ACCESSIBILITY GUIDELINES, RE: G002
8. FOR WALL WITH 6" METAL STUDS

TOILET ACCESSORY SCHEDULE & REMARKS



ENLARGED TOILET PLAN-107 **1**
1/2" = 1'-0"

A. REFER TO G0.02 AND MANUFACTURER SPECIFICATIONS FOR MOUNTING HEIGHTS.

B. COORDINATE ALL MOUNTING HEIGHTS W/ PLUMBING FIXTURES TO ALLOW PROPER OPERATION & INFORM ARCHITECT IN WRITING OF ANY CONFLICTS.

C. REFER TO ELEVATIONS AND GUIDE SHEETS FOR ANY ACCESSORIES THAT MAY NOT SHOW UP ON THE PLANS.

D. G.C. TO COORDINATE DIRECTLY W/ OWNER TO DETERMINE IF ANY ITEMS WILL BE OWNER PROVIDED, CONTRACTOR INSTALLED; VERIFY ALL ITEMS W/ OWNER PRIOR TO PURCHASING.

E. ALL TOILET ACCESSORIES LOCATIONS BASED ON PLAN LAYOUT.

GENERAL NOTES - ENLARGED PLAN

	EXISTING WALL TO REMAIN
	PROPOSED WALL
	EXISTING DOOR TO REMAIN
	PROPOSED DOOR
#	KEYNOTE, RE: KEYNOTE LEGEND
#	EQUIPMENT TAG
W4A2	WALL TAG
	FLOOR DRAIN

FLOOR PLAN LEGEND

DOOR SCHEDULE- (HJM)

DOOR #	ROOM NAME	DOOR INFORMATION WIDTH	HEIGHT	ELEV.	MATL.	FIN	FRAME INFORMATION ELEV.	MATL.	FIN	FIN	GLAZING	DETAILS HEAD	JAMB	SILL	HARDWARE	REMARKS
FIRST FLOOR																
100	VESTIBULE	6' - 0"	7' - 0"	B	AL/GL	TBD	5	AL	TBD	TBD	T				1, CL	
101	WAITING	3' - 0"	7' - 0"	A	WD	PL2	1	STL	PL3	TBD	N/A	7	9	N/A	3, CL	
102	OFFICE MANAGER	3' - 0"	6' - 11 3/4"	B	AL/GL	TBD	4	AL	TBD	TBD	T				3, WS	
103	RECEP.	4' - 0"	7' - 0"	C	WD	WD	2	GB	N/A	TBD	N/A				BD	
104	MA	3' - 0"	7' - 0"	A	WD	PL2	1	STL	PL3	TBD	N/A	7	9	N/A	3, WS	
105	BULLPEN 1	4' - 0"	7' - 0"	C	WD	WD	2	GB	N/A	TBD	N/A				BD	
106	BULLPEN 2	4' - 0"	7' - 0"	C	WD	WD	2	GB	N/A	TBD	N/A				BD	
107	TOILET	3' - 0"	7' - 0"	A	WD	PL2	1	STL	PL3	TBD	N/A	7	9	N/A	2, ID	
109	OFFICE 1	3' - 0"	7' - 0"	A	WD	PL2	3	STL	PL3	TBD	N/A				3, WS	
110	OFFICE 2	3' - 0"	7' - 0"	A	WD	PL2	3	STL	PL3	TBD	N/A				3, WS	
111-1	BREAK	3' - 0"	7' - 0"	A	WD	PL2	3	STL	PL3	TBD	N/A				2. WS	
111-2	BREAK	3' - 0"	7' - 0"	A	WD	PL2	1	STL	PL3	TBD	N/A	7	9	N/A	3, WS	
112	CONFERENCE	3' - 0"	7' - 0"	A	WD	PL2	3	STL	PL3	TBD	N/A				3, WS	
113	CORRIDOR	3' - 0"	7' - 0"	A	WD	PL2	1	STL	PL3	TBD	N/A	7	9	N/A	3, CL	
114	BOOKKEEPER	3' - 0"	7' - 0"	A	WD	PL2	1	STL	PL3	TBD	N/A	7	9	N/A	3, WS	
117	NURSE PRACT.	3' - 0"	7' - 0"	A	WD	PL2	1	STL	PL3	TBD	N/A	7	9	N/A	3, WS	
118	EXAM 1 (ADA)	3' - 0"	7' - 0"	A	WD	PL2	1	STL	PL3	TBD	N/A	7	9	N/A	2, CL	
119	EXAM 2	3' - 0"	7' - 0"	A	WD	PL2	1	STL	PL3	TBD	N/A	7	9	N/A	2, CL	
120	EXAM 3	3' - 0"	7' - 0"	A	WD	PL2	1	STL	PL3	TBD	N/A	7	9	N/A	2, CL	
121	DIRTY	3' - 0"	7' - 0"	A	WD	PL2	1	STL	PL3	TBD	N/A	7	9	N/A	3, WS	
122	TOILET	3' - 0"	7' - 0"	A	WD	PL2	1	STL	PL3	TBD	N/A	7	9	N/A	2, ID, CL	
123	LAB	3' - 0"	7' - 0"	A	WD	PL2	1	STL	PL3	TBD	N/A	7	9	N/A	3, WS	
124	SA	3' - 0"	7' - 0"	A	WD	PL2	1	STL	PL3	TBD	N/A	7	9	N/A	2, ID, CL	
125	DATA/SERVER	3' - 0"	7' - 0"	A	WD	PL2	1	STL	PL3	TBD	N/A	7	9	N/A	3, CL	
126	ITS/TOR	3' - 0"	7' - 0"	A	WD	PL2	1	STL	PL3	TBD	N/A	7	9	N/A	3, CL	
127	CLOS.	3' - 0"	7' - 0"	A	WD	PL2	1	STL	PL3	TBD	N/A	7	9	N/A	3, CL	

ADDITIONAL HARDWARE

BD - FLAT TRACK SLIDING DOOR HARDWARE SYSTEM. PEMKO BLD-FT02, 'INDUSTRIAL STEEL' FINISH OR EQUAL. INCLUDE BOTTOM GUIDE/CHANNEL.

CL - DOOR CLOSER, PARALLEL ARM WITH INTEGRATED HOLD OPEN AND STOP, SATIN CHROME. NORTON 8501CLP 626 OR EQUAL.

ID - DEADBOLT WITH VACANT/OCCUPIED INDICATOR, SATIN CHROME. SCHLAGE B571 626 OR EQUAL.

WS- WALL MOUNTED DOOR STOP, SATIN CHROME, ROCKWOOD 403-US26D OR EQUAL.

DOOR FINISH

REFER TO FINISH SCHEDULE, SHEET I204

DOOR AND HARDWARE SCHEDULE

DOOR, FRAME, & HARDWARE SCHEDULE NOTES

1. **DOOR NUMBER AND LOCATION NOTES:**
   - A. THE DOOR NUMBER MATCHES THE ROOM NUMBER. WHEN MORE THAN ONE DOOR EXISTS PER ROOM, THE FIRST DOOR NUMBER IS FOLLOWED WITH '1', THE SECOND WITH '2', ETC.
   - B. ROOM NAMES ARE INCLUDED AS A REFERENCE AND DO NOT INDICATE DOOR SWING DIRECTION
2. **DOOR SIZE NOTES:**
   - A. OVERALL AND LEAF WIDTH AND HEIGHT ARE NOMINAL; FIELD VERIFY OPENINGS.
   - B. ALL SWINGING DOORS ARE 1-3/4" THICK WITH 3/4" UNDERCUT UNLESS OTHERWISE NOTED IN REMARKS COLUMN
   - C. ALL BARN SLIDING STYLE DOORS (TYPE 'C') ARE 1-3/4" THICK UNLESS OTHERWISE NOTED IN REMARKS COLUMN
3. **DOOR MATERIAL NOTES:**
   - A. INDICATES THE BASE DOOR CONSTRUCTION MATERIAL
   - B. ABBREVIATIONS:
     - a. (AL) ALUMINUM
     - b. (GL) GLASS
     - c. (WD) WOOD
4. **DOOR FINISH NOTES:**
   - A. INDICATES THE SPECIFIC VISIBLE DOOR FINISH; REFER TO FINISH MATERIAL SCHEDULE ON SHEET I204
   - B. ABBREVIATIONS:
     - a. (MFR) BY DOOR MANUFACTURER
5. **GLAZING NOTES:**
   - A. FOR GLASS DESCRIPTIONS, REFER TO INTERIOR GLAZING TYPE SCHEDULE ON SHEET A400
   - B. ABBREVIATIONS:
     - a. (IGU) INSULATED GLASS UNIT
     - b. (STD) STANDARD GLASS
     - c. (T) TEMPERED GLASS
6. **FRAME TYPE (FT-XX) NOTES:**
   - A. INDICATES FRAME CONFIGURATION; REFER TO FRAME TYPE SCHEDULE ON SHEET A400
7. **FRAME MATERIAL NOTES:**
   - A. INDICATES THE BASE FRAME CONSTRUCTION MATERIAL
   - B. ABBREVIATIONS:
     - a. (AL) ALUMINUM
     - b. (HM) HOLLOW METAL
     - c. (GB) GYP BOARD
8. **FRAME FINISH NOTES:**
   - A. INDICATES THE SPECIFIC VISIBLE FRAME FINISH; REFER TO FINISH MATERIAL SCHEDULE ON SHEET XXX (TBD)
9. **DETAIL NOTES:**
   - A. INDICATES DESIGNATIONS (H-X, J-X, S-X) FOR HEAD, JAMB AND SILL DETAILS; REFER TO SHEET A405
10. **SIGNAGE NOTES:**
    - A. SIGNAGE TO BE PROVIDED BY SIGNAGE VENDOR; COORDINATE INSTALLATION WITH DOOR, FRAME, AND HARDWARE CONTRACTOR.
    - B. ABBREVIATIONS:
      - a. (ADA) ACCESSIBILITY:
      - b. (EX) EXIT:
      - c. (MFR) BY DOOR MANUFACTURER
11. **MISCELLANEOUS NOTES:**
    - A. ABBREVIATIONS:
      - a. (FIRE) FIRE DETECTION DEVICE:
      - b. (SMK) SMOKE DETECTION DEVICE:
12. **REMARKS:**
    - A. DOOR FRAME TO HAVE 4" HIGH HOSPITAL/SANITARY STOPS
    - B. DOOR FRAME TO BE KNOCK-DOWN TYPE
    - C. DOOR FRAME TO BE FULLY WELDED
    - D. DOOR TO HAVE UNDERCUT OF 1"
    - E. AUTOMATIC DOOR
    - F. DOOR TO BE PROVIDED BY STOREFRONT MFR.
    - G. LEAF 2 IS AN 'INACTIVE' LEAF
    - H. FACE OF FRAME HEAD TO BE 4" DEEP

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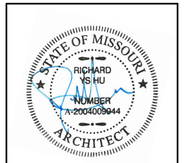


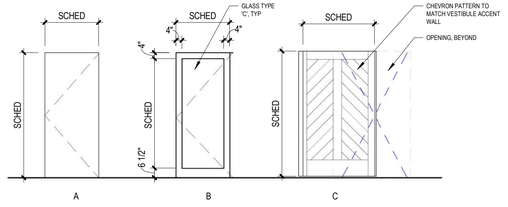
INTERIOR RENOVATION

BLUE SKY FERTILITY
455 NW MURRAY ROAD
LEE'S SUMMIT, MO 64081

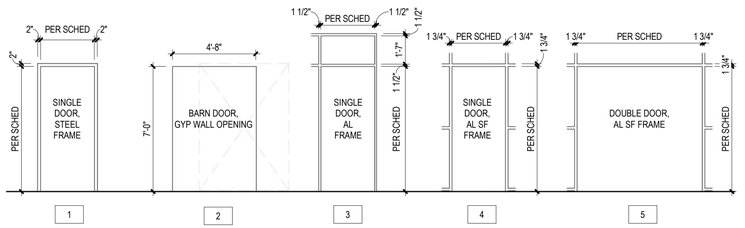
#	ROOM INTERIOR	ROOM EXTERIOR
1	PUSH/PULL FREE OPERATION	FREE OPERATION
2	PASSAGE FREE OPERATION	FREE OPERATION
3	KEYPAD FREE OPERATION W/ THUMB TURN LOCK	KEYPAD TO OPEN FIXED LEVER

NOTES:
1. MECHANICAL LOCKSETS TO BE SCHLAGE 'ND' SERIES, OR EQUAL. LEVER STYLE TO BE LATITUDE (LAT). FINISH TO BE 626 (US 26D), TYP.
2. KEYPAD LOCKSETS TO BE SCHLAGE 'TOUCH' KEYLESS TOUCHSCREEN LEVER SERIES. LEVER STYLE TO BE LATITUDE (LAT). FINISH TO BE 626 (US 26D), TYP.

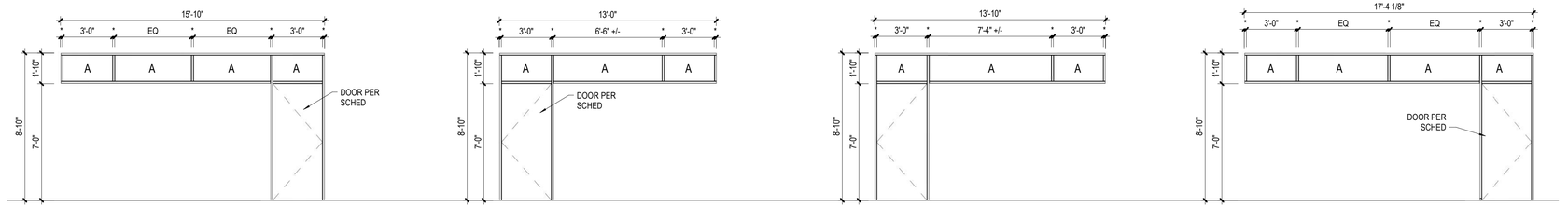
DOOR LOCKSET GUIDE

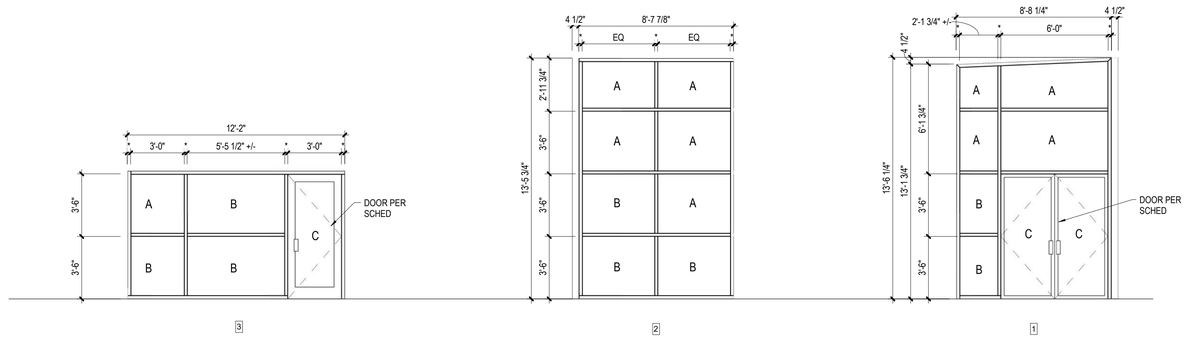


DOOR TYPE LEGEND



FRAME TYPE LEGEND





WINDOW TYPE LEGEND

GLASS TYPE LEGEND	
DESIGNATION LETTER	DESCRIPTION
A	INSULATED GLASS COLOR: CLEAR
B	INSULATED TEMPERED GLASS COLOR: CLEAR
C	TEMPERED GLASS COLOR: CLEAR

GLAZING TYPES

1. ALL DIMENSIONS ARE TO PRECAST OPENING, ROUGH OPENING, OR TO CENTERLINE, UNLESS SHOWN OTHERWISE.
2. RE: PLANS AND ELEVATIONS FOR WINDOW LOCATIONS.

WINDOW GENERAL NOTES

NOT USED

REVISIONS		
REV. #	DATE	DESCRIPTION

BID SET

PROJ. NO.	SCALE:
2146	1/4" = 1'-0"

DRAWING TITLE

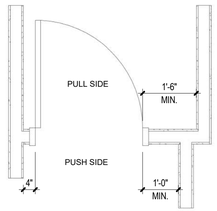
DOOR & WINDOW INFO & SCHEDULE

DRAWING NUMBER

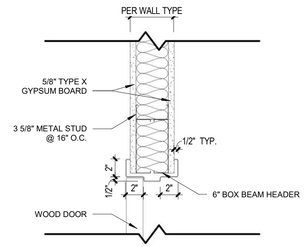
A400

2/17/2022 1:53:32 PM C:\Revit\2020 Files\R2020_2146_Blue Sky Fertility_Lee's Summit_mlaird_hjmarch.rvt

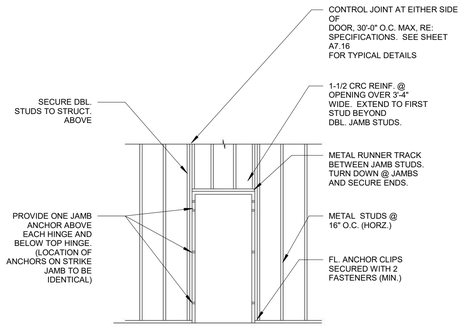
NOT USED



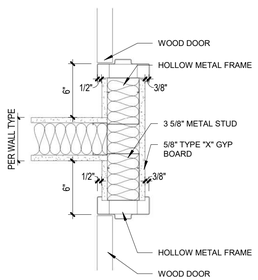
TYP. DOOR JAMB & FOOR APPROACH CLEARANCE 10
1/2" = 1'-0"



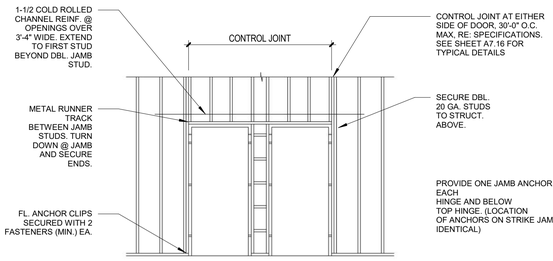
HEAD - HM DOOR - TYP. 7
1 1/2" = 1'-0"



SINGLE DOOR FRAMING DETAIL 3
1/4" = 1'-0"

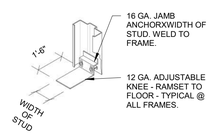


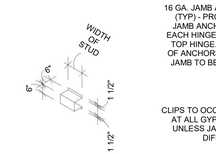
DOUBLE JAMB - TYP. 9
1 1/2" = 1'-0"



ADJACENT DOOR FRAMING 2
1/4" = 1'-0"

NOT USED

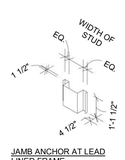




TYPICAL JAMB ANCHOR

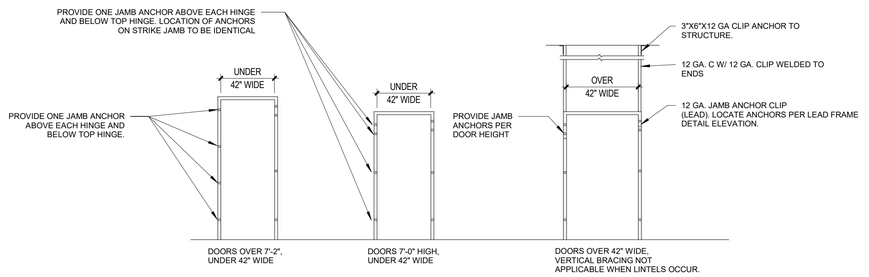
16 GA. JAMB ANCHOR CLIP (TYP) - PROVIDE ONE JAMB ANCHOR ABOVE EACH HINGE AND BELOW TOP HINGE. LOCATION OF ANCHORS ON STRIKE JAMB TO BE IDENTICAL

CLIPS TO OCCUR TYPICALLY AT ALL GYP. BD. WALLS UNLESS JAMB DETAILS DIFFER.



JAMB ANCHOR AT LEAD LINED FRAME

JAMB ANCHORS



FRAMING DETAILS 1
1/4" = 1'-0"

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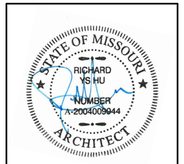

INTERIOR RENOVATION

BLUE SKY FERTILITY
455 NW MURRAY ROAD
LEE'S SUMMIT, MO 64081

REVISIONS

REV. #	DATE	DESCRIPTION

BID SET

PROJ. NO.	SCALE:
2146	As indicated

DRAWING TITLE

DOOR & FRAME DETAILS

DRAWING NUMBER

A405

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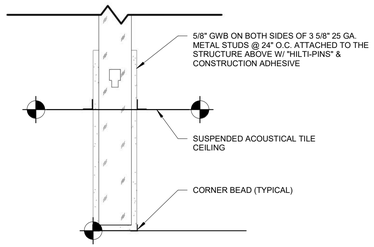
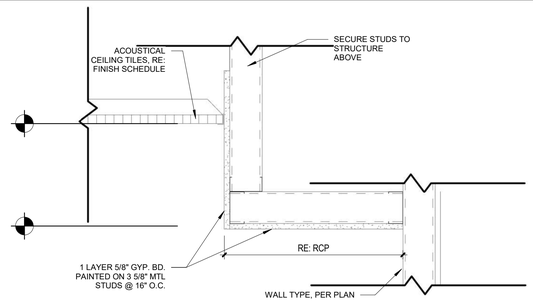


TYPICAL BULKHEAD SECTION 3
1 1/2" = 1'-0"



TYPICAL SOFFIT DETAIL 2
1 1/2" = 1'-0"

REFLECTED CEILING PLAN 1
3/16" = 1'-0"

- X'-X" — CEILING HEIGHT AFF
- PROPOSED WALL
- EXISTING WALL TO REMAIN
- 2 X 2 SUSP. CEILING SYSTEM
- 2 X 4 SUSP. CEILING SYSTEM
- GYP BD CEILING
- CONTROL JOINT IN GYP BD CEILING
- SUPPLY DIFFUSER, RE: MECH.
- RETURN GRILLE, RE: MECH.
- EXHAUST GRILLE, RE: MECH.
- 2X2 LIGHT FIXTURE, RE: ELEC.
- 2X4 LIGHT FIXTURE, RE: ELEC.
- 1x4 LIGHT FIXTURE, RE: ELEC.
- CAN LIGHT, RE: ELEC
- FIRE EXIT SIGN, RE: ELEC.
- (S) SPEAKER, RE: ELEC.
- SPRINKLER HEAD
- TRACK LIGHTING
- CONFERENCE ROOM WING PENDANT - LIGHTART - WING
- LG RING FIXTURE - LIGHTART - ACOUSTIC RING
- MD RING FIXTURE - EUREKA - CALDERA 4246
- PENDANT 1 FIXTURE - EUREKA - MILL 4277
- PENDANT 2 FIXTURE - EUREKA - MONK 4175
- PENDANT 3 FIXTURE - EUREKA - STELLA 4272D9
- PENDANT 4 FIXTURE - EUREKA - STELLA 4272D16

RCP LEGEND

1. REFER TO FINISH LEGEND AND FINISH SCHEDULE FOR ROOM CEILING FINISHES
2. ACOUSTICAL CEILING TILES, GRID, & LIGHTS TO BE CENTERED IN ROOM, U.N.O.
3. ALL ACT CEILINGS TO BE 9'-0" AFF, U.N.O.
4. REFER TO DETAILS FOR ADDITIONAL CONDITIONS AND CEILING HEIGHT INFORMATION.
5. REFER TO ELECTRICAL SHEETS FOR DETAILED INFORMATION ON LIGHT FIXTURES.
6. REFER TO MECHANICAL SHEETS FOR DETAILED INFORMATION ON DIFFUSERS.
7. COORDINATE ALL CEILING MOUNTED EQUIPMENT WITH CASEWORK BELOW.

RCP GENERAL NOTES

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STATE OF MISSOURI
RICHARD YS HU
NUMBER A-2004020944
ARCHITECT

INTERIOR RENOVATION

BLUE SKY FERTILITY
455 NW MURRAY ROAD
LEE'S SUMMIT, MO 64081

REVISIONS

REV. #	DATE	DESCRIPTION

BID SET

PROJ. NO.	SCALE:
2146	As indicated

DRAWING TITLE

OVERALL REFLECTED CEILING PLAN

DRAWING NUMBER

A601

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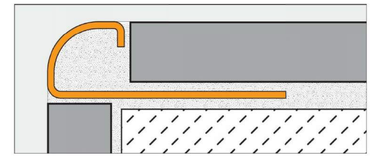
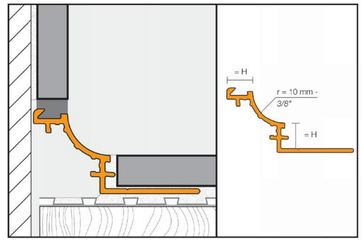


SCHLUTER - RONDEC

WALL TILE EDGE DETAIL 3
1/8" = 1'-0"



SCHLUTER - DILEX-AHK

TILE COVE DETAIL 2
1/8" = 1'-0"

FIRST FLOOR - FINISH PLAN 1
3/16" = 1'-0"

A. REFER TO SHEET I300 FOR SPECIFIC FINISH INFORMATION & LOCATIONS.

B. FLOOR FINISH PATTERN SHALL BE CENTERED IN ROOM U.N.O.

C. FLOOR FINISH MATERIAL TO BE INSTALLED UNDER TOE KICKS OF CASEWORK/MILLWORK, UNDER OPEN COUNTERTOPS & EQUIPMENT.

D. REFER TO SHEET I100 FOR FLOOR TRANSITION DETAILS.

E. FLOORING MATERIAL / COLOR TRANSITIONS SHALL OCCUR AT DOOR STOP, U.N.O.

F. ALIGN ALL WALL & FLOOR TILE JOINTS U.N.O.

G. TRANSTION WALL BASE AT INSIDE CORNERS U.N.O.

H. PROVIDE ALL NECESSARY BACKING FOR WALL PROTECTION ATTACHMENT. THIS INCLUDES, BUT IS NOT LIMITED TO CRASH RAIL, HANDRAIL, & BUMPER RAIL.

I. WHERE MULTIPLE FINISHES ARE LISTED IN ONE AREA ON FINISH SCHEDULE, REFER TO X000 SERIES SHEETS FOR SPECIFIC LOCATIONS.

J. INSTALL TRANSITION STRIPS AT ALL FLOOR FINISH MATERIAL CHANGES.

K. REFER TO SHEET FOR ADDITIONAL GENERAL NOTES THAT ARE APPLICABLE.

L. ALL CLOSETS & ALCOVES WITHOUT A SPACE IDENTIFICATION NUMBER SHALL HAVE THE SAME FLOOR FINISHES AS ADJOINING SPACES.

M. INCLUDE A 3% ATTIC STOCK OF FLOORING FINISHES PER OWNER'S REQUEST.

FLOOR FINISHES - GENERAL NOTES

	WOC
	LVT1
	LVT2
	CPT1
	CPT2
	CPT3
	CFT1
	CFT2
↔	INSTALLATION DIRECTION ARROW

FLOOR FINISH LEGEND

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STATE OF MISSOURI
RICHARD YS HU
NUMBER A-2004005944
ARCHITECT

INTERIOR RENOVATION

BLUE SKY FERTILITY
455 NW MURRAY ROAD
LEE'S SUMMIT, MO 64081

REVISIONS

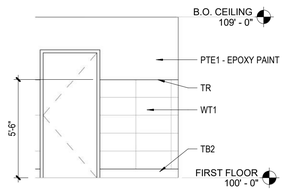
REV. #	DATE	DESCRIPTION

BID SET

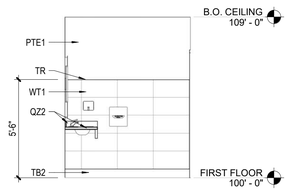
PROJ. NO.	SCALE:
2146	As indicated

DRAWING TITLE
INTERIOR FINISH PLAN & DETAILS

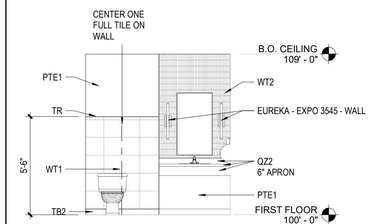
DRAWING NUMBER
I100



107-TOILET-W 1/4" = 1'-0" **16**

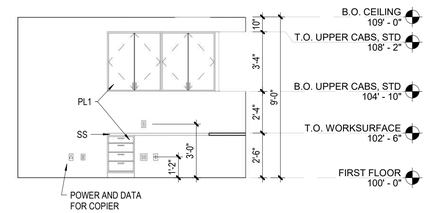


107-TOILET-S 1/4" = 1'-0" **15**

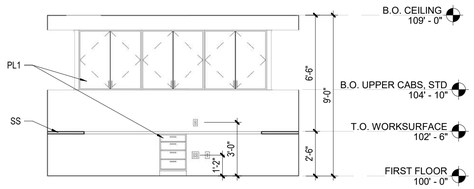


107-TOILET-E 1/4" = 1'-0" **14**

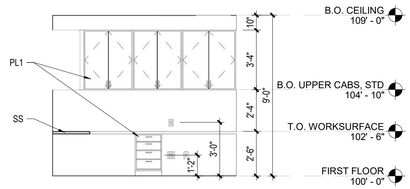
107-TOILET-N 1/4" = 1'-0" **13**



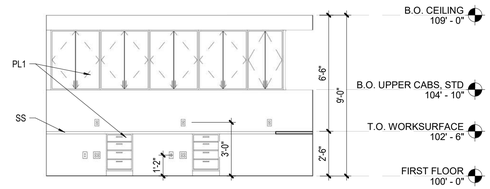
106-BULLPEN 2-S 1/4" = 1'-0" **12**



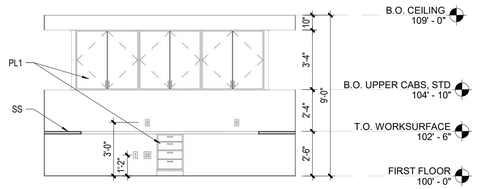
106-BULLPEN 2-W 1/4" = 1'-0" **11**



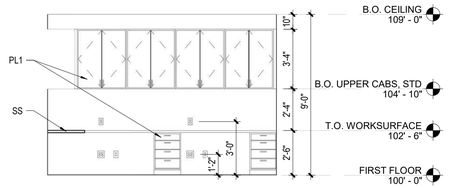
106-BULLPEN 2-N 1/4" = 1'-0" **10**



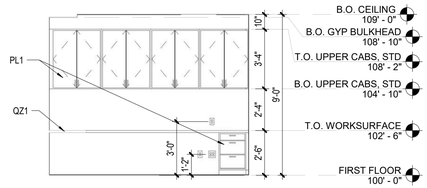
106-BULLPEN 1-S 1/4" = 1'-0" **9**



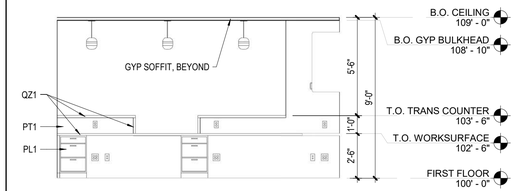
106-BULLPEN 1-W 1/4" = 1'-0" **8**



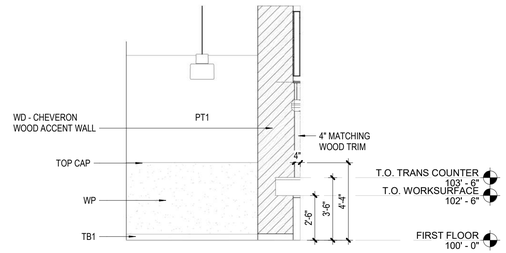
106-BULLPEN 1-N 1/4" = 1'-0" **7**



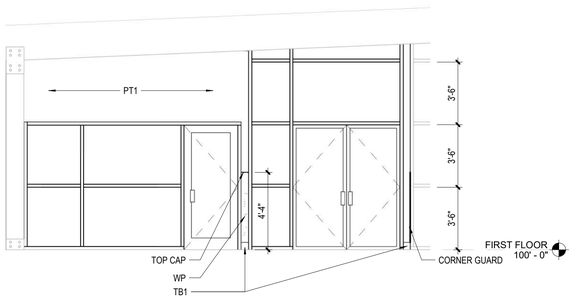
103-RECEP-W 1/4" = 1'-0" **6**



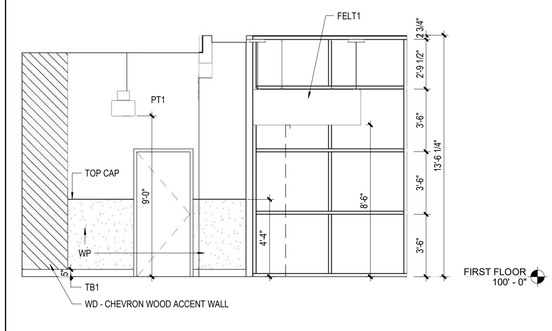
103-RECEP-S 1/4" = 1'-0" **5**



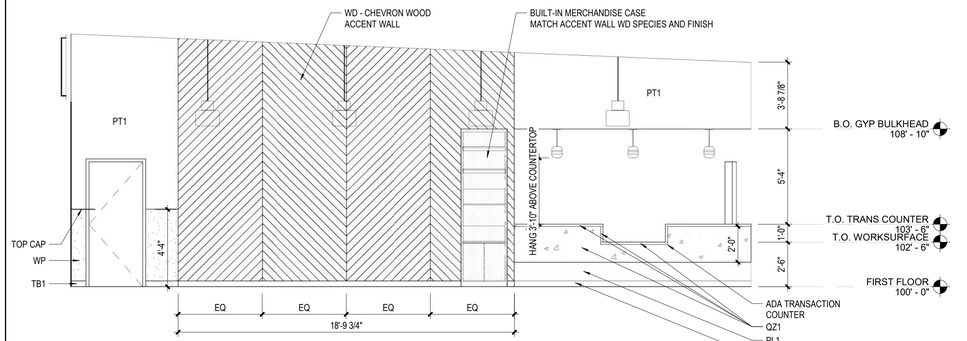
101-WAITING-W 1/4" = 1'-0" **4**



101-WAITING-S 1/4" = 1'-0" **3**



101-WAITING-E 1/4" = 1'-0" **2**



101-WAITING-N 1/4" = 1'-0" **1**

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STATE OF MISSOURI
RICHARD YS HU
NUMBER A-2004020944
ARCHITECT

INTERIOR RENOVATION

BLUE SKY FERTILITY
455 NW MURRAY ROAD
LEE'S SUMMIT, MO 64081

REVISIONS

REV. #	DATE	DESCRIPTION

BID SET

PROJ. NO. 2146 | SCALE: 1/4" = 1'-0"

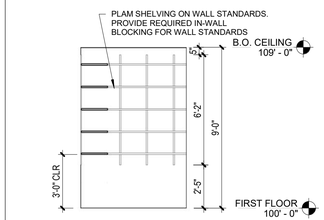
DRAWING TITLE

INTERIOR ELEVATIONS

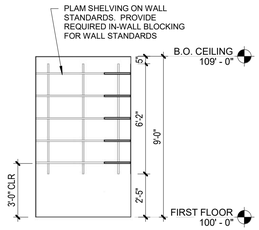
DRAWING NUMBER

I200

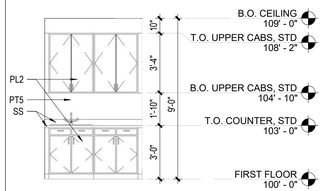
NOT USED



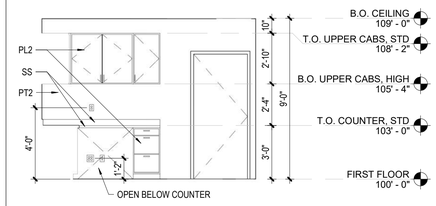
127-CLOS-W 1/4" = 1'-0" **18**



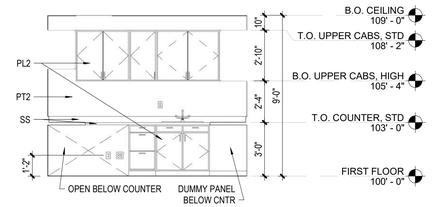
127-CLOS-S 1/4" = 1'-0" **17**



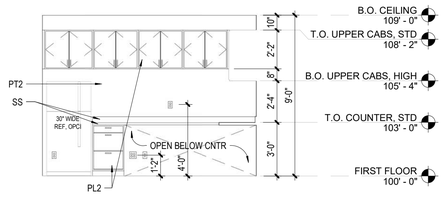
124-SA-N 1/4" = 1'-0" **16**



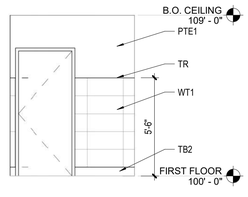
123-LAB-W 1/4" = 1'-0" **15**



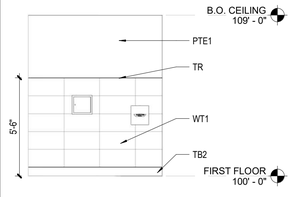
123-LAB-S 1/4" = 1'-0" **14**



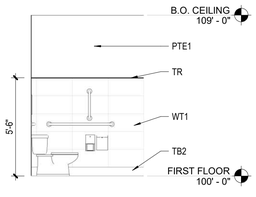
123-LAB-E 1/4" = 1'-0" **13**



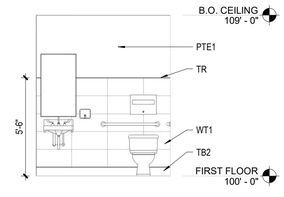
122-TOILET-W 1/4" = 1'-0" **12**



122-TOILET-S 1/4" = 1'-0" **11**

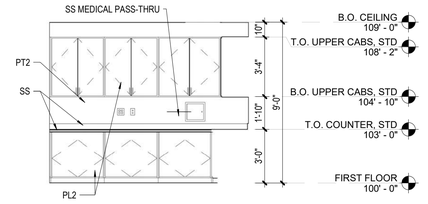


122-TOILET-E 1/4" = 1'-0" **10**

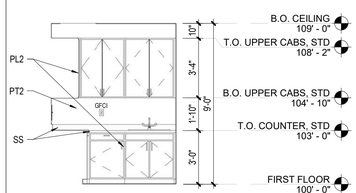


NOTE: REFER TO G002 FOR ACCESSIBILITY MOUNTING GUIDELINES

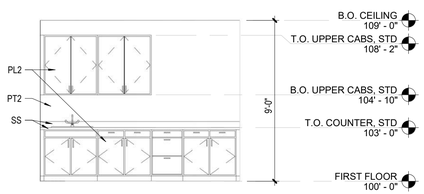
122-TOILET-N 1/4" = 1'-0" **9**



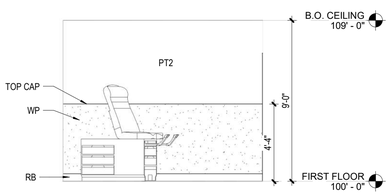
121-DIRTY-N 1/4" = 1'-0" **8**



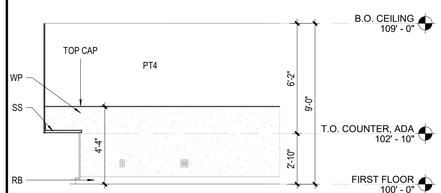
121-DIRTY-E 1/4" = 1'-0" **7**



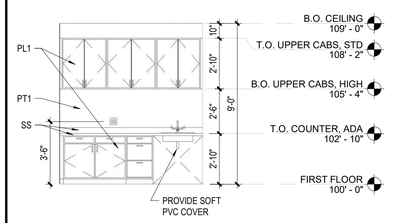
118-EXAM 1 (ADA) -N 1/4" = 1'-0" **6**



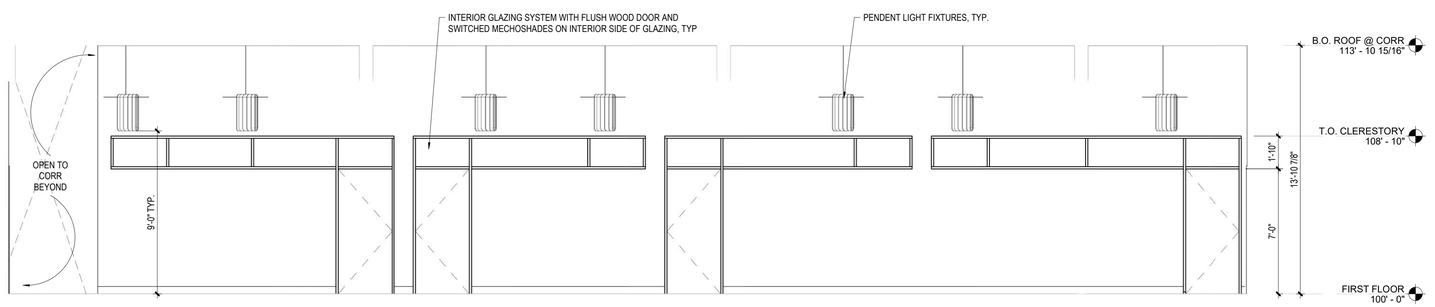
118-EXAM 1 (ADA) -S 1/4" = 1'-0" **5**



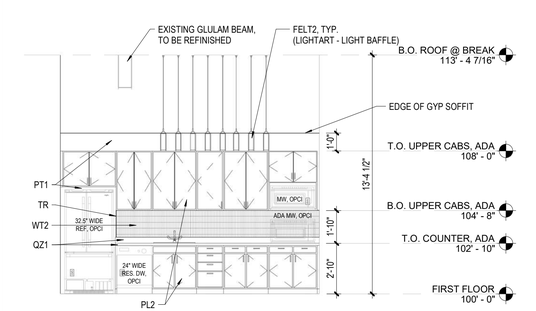
118-EXAM 1 (ADA)-E 1/4" = 1'-0" **4**



108-DRAW-W 1/4" = 1'-0" **3**



113-CORR-W 1/4" = 1'-0" **2**



111-BREAK-E 1/4" = 1'-0" **1**

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STATE OF MISSOURI RICHARD YS HU NUMBER A-2004029944 ARCHITECT

INTERIOR RENOVATION

BLUE SKY FERTILITY
455 NW MURRAY ROAD
LEE'S SUMMIT, MO 64081

REVISIONS

REV. #	DATE	DESCRIPTION

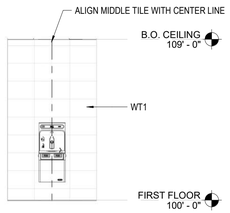
BID SET

PROJ. NO. 2146
SCALE: 1/4" = 1'-0"

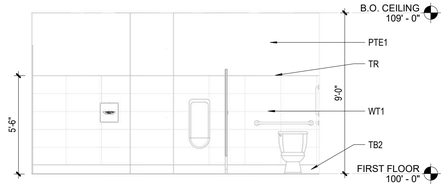
DRAWING TITLE
INTERIOR ELEVATIONS

DRAWING NUMBER
I201

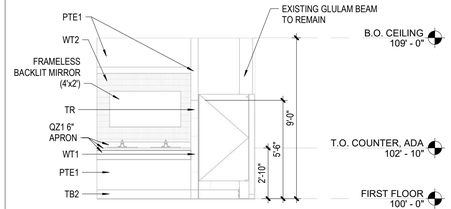
NOT USED



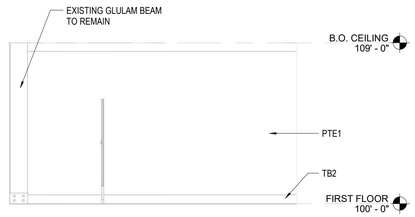
129 EX. CORRIDOR - N 9
1/4" = 1'-0"



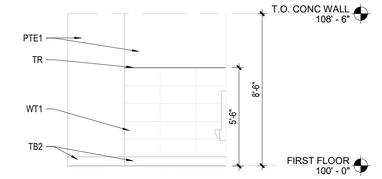
TYP. MEN & WOMAN'S RESTROOM - S 8
1/4" = 1'-0"



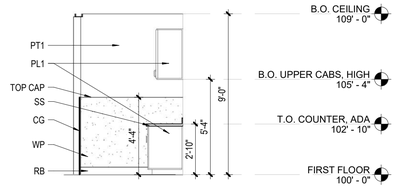
TYP. MEN & WOMAN'S RESTROOM - W 7
1/4" = 1'-0"



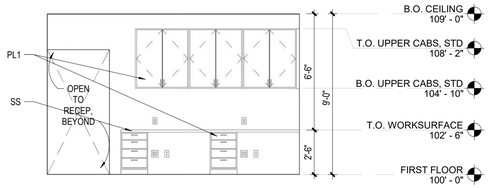
TYP. MEN & WOMAN'S RESTROOM - N 6
1/4" = 1'-0"



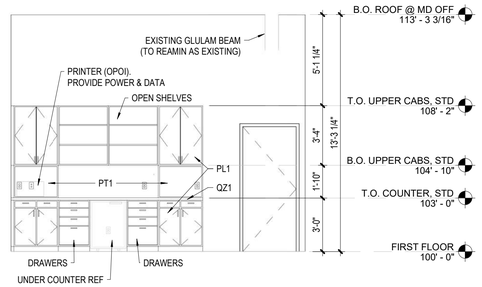
TYP. MEN & WOMAN'S RESTROOM - E 5
1/4" = 1'-0"



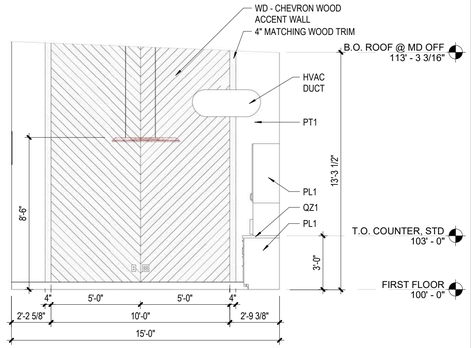
108-DRAW-S 4
1/4" = 1'-0"



104-MA-S 3
1/4" = 1'-0"



109-OFFICE-E 2
1/4" = 1'-0"



109-OFFICE-N 1
1/4" = 1'-0"

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STATE OF MISSOURI
RICHARD YS HU
NUMBER A-2004035944
ARCHITECT

INTERIOR RENOVATION

BLUE SKY FERTILITY
455 NW MURRAY ROAD
LEE'S SUMMIT, MO 64081

REVISIONS

REV. #	DATE	DESCRIPTION

BID SET

PROJ. NO. 2146
SCALE: 1/4" = 1'-0"

DRAWING TITLE
INTERIOR ELEVATIONS

DRAWING NUMBER
I202

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NOT USED

I204 - BASIS-OF-DESIGN INTERIOR FINISHES

KEY NAME	MATERIAL	MANUFACTURER	STYLE / COLOR / SIZE	REMARKS
FLOOR / BASE FINISH				
CFT1	CERAMIC FLOOR TILE	CROSSVILLE	MOONSTRUCK / GEMINI / HONED FINISH / 12"X24"	INSTALLATION METHOD: STACK BOND
CFT2	CERAMIC FLOOR TILE	CROSSVILLE	SHADES 2.0 / MIST / PTN FINISH / 12"X24"	INSTALLATION METHOD: STACK BOND
CPT1	CARPET TILE	J&J FLOORING GROUP	ATMOSPHEREIC 7713 / BLUE KASHI 2324 / 24"X24" / NEXUS BACKING	INSTALLATION METHOD: ASHLAR
CPT2	CARPET TILE	J&J FLOORING GROUP	ORGANIC RAKU 7062 / KILN 2345 / 18"X36" / NEXUS BACKING	INSTALLATION METHOD: ASHLAR
CPT3	CARPET TILE	J&J FLOORING GROUP	FRACTURED PLAID 7587 / MILLS 2874 / 24"X24" / NEXUS BACKING	INSTALLATION METHOD: ASHLAR
LVT1	LUXURY VINYL TILE	TARKETT	ID LATITUDE WOOD / HICKORY / PLWD3405 / 6"X48"	INSTALLATION METHOD: ASHLAR
LVT2	LUXURY VINYL TILE	TARKETT	ID LATITUDE STRIA MARBLE / NIMBUS / PLSM 5102 / 6"X36"	INSTALLATION METHOD: ASHLAR
RB	RUBBER BASE	TARKETT	MILLWORK / INFLECTION PROFILE / MOON ROCK WG	
SC	SEALED CONCREATE			
TB1	TILE BASE	CROSSVILLE	MOONSTRUCK / GEMINI / HONED FINISH / 4"X24" BULLNOSE BASE	
TB2	TILE BASE	CROSSVILLE	SHADES 2.0 / MIST / SPO FINISH / 6"X12" COVE BASE	
WOC	WALK-OFF CARPET TILE	J&J FLOORING GROUP	CATWALK II MODULAR 7268 / SPOTLIGHT 1427 / 24"X24" / NEXUS BACKING	INSTALLATION METHOD: MONOLITHIC
WALL FINISHES				
CG	CORNER GUARD	WOLFGORDON	RAMPART TRIM / 4' LENGTH X 3/4" WIDTH / CGT-34-4 / 483 HARVARD GRAY	
PT1	PAINT	SHERWIN WILLIAMS	SW 7029 AGREEABLE GRAY / FINISH: SATIN	FIELD PAINT
PT2	PAINT	SHERWIN WILLIAMS	SW 7014 EIIDER WHITE / FINISH: SATIN	
PT3	PAINT	SHERWIN WILLIAMS	SW 7048 URBANE BRONZE / FINISH: SEMI GLOSS	WINDOW MULLIONS / EXPOSED CELING ELEMENTS
PT4	PAINT	SHERWIN WILLIAMS	SW 9135 WHIRLPOOL / FINISH: SATIN	ACCENT PAINT
PT5	PAINT	SHERWIN WILLIAMS	SW 6229 TEMPE STAR / FINISH: SATIN	ACCENT PAINT
PTE1	PAINT - EPOXY	SHERWIN WILLIAMS	SW 7029 AGREEABLE GRAY / FINISH: SATIN	RESTROOMS
PTE2	PAINT - EPOXY-MODIFIED LATEX	SHERWIN WILLIAMS	SW 7014 EIIDER WHITE / FINISH: GLOSS	
PTE3	PAINT - EPOXY-MODIFIED LATEX	SHERWIN WILLIAMS	SW 6229 TEMPE STAR / FINISH: GLOSS	
WP	WALL PROTECTION	WOLFGORDON	RAMPART / SHIFT / STONE / GOH 13924247 / 52" WIDTH	
WP	WALL PROTECTION	WOLFGORDON	TOP/END CAPS: WC-98-8 / 483 HARVARD GRAY	
WT1	WALL TILE	CROSSVILLE	SHADES 2.0 / VAPOR / SPO FINISH / 12"X24"	INSTALLATION METHOD: STACK BOND
WT2	WALL TILE	CROSSVILLE	SHADES 2.0 / WHITES / MOSAIC / 1"X3"	INSTALLATION METHOD: VERTICAL (3" SIDE GOING VERTICAL)
CEILING FINISHES				
APC1	2X2 ACOUSTICAL PANEL CEILING	ARMSTRONG COMMERCIAL	OPTIMA HEALTH ZONE / WHITE / 24" x 24" / SQUARE EDGE	NRC .95
PT6	PAINT	SHERWIN WILLIAMS	SW 7047 PORPOISE / FINISH: MATTE	EXPOSED CEILING
MILLWORK FINISHES				
PL1	PLASTIC LAMINATE	WILSONART	HIGH LINE7970K-18 / LINEARITY FINISH / AEON SCRATCH RESISTANCE	CASEWORK
PL2	PLASTIC LAMINATE	WILSONART	FLORENCE WALNUT 7993-16 / CLASSIC RUSTIC FINISH 16 / AEON SCRATCH RESISTANCE	CASEWORK / DOORS
QZ1	QUARTZ	CAMBRIA	CLOVELLY	
QZ2	QUARTZ	CAMBRIA	ST. GILES	
SS	SOLID SURFACE	FORMICA	LUNA SAND 757	
WD	WOOD ACCENT	PINONEER MILLWORKS	WALNUT / MODERN FARMHOUSE CLEAN / ENGINEERED PANELING / WATER BASED POLY FINISH / 6" WIDTH	
WINDOW TREATMENTS				
PF1	ROLLER SHADES	MECHO SHADE SYSTEMS	ECOVEIL SHEER / 6750 SERIES / 3% OPEN / 6756 ADOBE	
MISC. FINISHES				
FELT1	SOLA FELT	LIGHTART	DUSK	
FELT2	SOLA FELT	LIGHTART	NICKEL	
TR	TRANSITION	SCHLUTER	DILEX-AHK / BRUSHED NICKLE ANODIZED / 10MM	
TS	TRANSITION STRIP	TARKETT	METALEDGE DUEX TRIM / MET02 / STEEL 00179	

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STATE OF MISSOURI
RICHARD YS HU
NUMBER A-2004035944
ARCHITECT

INTERIOR RENOVATION

BLUE SKY FERTILITY
455 NW MURRAY ROAD
LEE'S SUMMIT, MO 64081

REVISIONS

REV. #	DATE	DESCRIPTION

BID SET

PROJ. NO. 2146
SCALE:

DRAWING TITLE
INTERIOR FINISH SCHEDULE

DRAWING NUMBER
I300

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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 LABELED 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. FIRE PROTECTION PIPING SHALL BE TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA.

D. 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.

E. DUCTWORK AND PIPING SHALL BE BALANCED BY QUALIFIED INDEPENDENT BALANCING PERSONNEL WHO HAVE PREVIOUS EXPERIENCE WITH BALANCING PROCEDURES AND ARE CERTIFIED BY THE ASSOCIATED AIR BALANCE COUNCIL (AABC) OR NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB).

1) BALANCING SHALL INCLUDE THE BALANCING OF THE EQUIPMENT AND AIR DISTRIBUTION SYSTEMS TO PROVIDE DESIGN QUANTITIES INDICATED AND VERIFICATION OF PERFORMANCE OF ALL EQUIPMENT AND AUTOMATIC CONTROLS.

2) WITH IN 30 DAYS OF THE COMPLETION OF THE TESTING AND BALANCING WORK, SUBMIT THE TEST AND BALANCING REPORT BEARING THE SIGNATURE OF THE TEST AND BALANCE ENGINEER. THE REPORTS SHALL BE CERTIFIED PROOF THAT THE SYSTEMS HAVE BEEN TESTED, ADJUSTED, AND BALANCED IN ACCORDANCE WITH THE REFERENCED STANDARDS; ARE AN ACCURATE REPRESENTATION OF HOW THE SYSTEMS HAVE BEEN INSTALLED AND ARE OPERATING. REPORTS SHALL BE BOUND IN A VINYL BINDER AND THE BINDER LABELED OR MAY BE AN ELECTRONIC PDF SUBMITTAL.

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 #4020-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 A STORAGE WATER HEATER OR TANK.
2) BOTTOM FED WATER HEATERS AND TANKS CONNECT TO WATER HEATERS SHALL HAVE A VACCUM 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.

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. (MUST BE INSTALLED PER THE MANUFACTURERS REQUIREMENTS FOR PLENUM USE)
  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-G", "NSF-61-G" OR OTHER NSF-APPROVED MARKING. ASTM F2023 FOR USE WITH CHLORINATED WATER. (MUST BE INSTALLED PER THE MANUFACTURERS REQUIREMENTS FOR PLENUM USE)
  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. (MUST BE INSTALLED PER THE MANUFACTURERS REQUIREMENTS FOR PLENUM USE)
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-301G OR EQUAL. LEAD-FREE NSF 61, ANSI B1.20.1.
    2. GLOBE VALVE: JOMAR TGG OR EQUAL.
    3. BALL VALVE: JOMAR JP100PxP OR EQUAL COMPACT LEAD FREE BRASS BALL VALVE. UL842, CSA 3371-12 & 3371-92, 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. DOMESTIC COLD, AND HOT WATER (UNDERGROUND).

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-G", "NSF-61-G" 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.
  c) HDPE, PIGMENTED BLUE THROUGHOUT, CTS SIZES 1"-2" AWWA C901 4710 DR9 PC250 IPS SIZES 2"-3", AWWA C901 4710 DR11 PC200.

C. 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 FITINGS 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.

MECHANICAL SPECIFICATIONS (CONTINUED)

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

1) ABS SCHEDULE 40 CELLULAR CORE (FOAM CORE) PIPE AND DWV FITTING SYSTEM:(ASTM F1488) 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 3965 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:(ASTM F1488) 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:(ASTM D2665) 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. SANITARY SEWER AND VENTS.
(ABOVE GROUND, INTERIOR TO THE BUILDING).

1) ABS SCHEDULE 40 CELLULAR CORE (FOAM CORE) PIPE AND DWV FITTING SYSTEM:(ASTM F1488) 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 3965 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. (NOT FOR USE IN A RETURN AIR PLENUM)
2) PVC SCHEDULE 40 CELLULAR CORE (FOAM CORE) PIPE AND DWV FITTING SYSTEM:(ASTM F1488) 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. (NOT FOR USE IN A RETURN AIR PLENUM)
3) PVC SCHEDULE 40 SOLID WALL PIPE AND DWV FITTING SYSTEM: (ASTM D 2665) 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) (NOT FOR USE IN A RETURN AIR PLENUM)
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.

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

G. 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 .008: 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.

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

8. WATER HEATERS

A. COMMERCIAL, LIGHT-DUTY, STORAGE, ELECTRIC, DOMESTIC-WATER HEATERS:
  1. STANDARD: UL 174
  2. STORAGE-TANK CONSTRUCTION: STEEL, VERTICAL ARRANGEMENT.
    a. PRESSURE RATING: 150 PSIG.
    b. INTERIOR FINISH: COMPLY WITH NSF 61 AND NSF 372 BARRIER MATERIALS FOR POTABLE-WATER TANK LININGS, INCLUDING EXTENDING LINING MATERIAL INTO TAPPINGS.
  3. FACTORY-INSTALLED, STORAGE-TANK APPURTENANCES:
    a. ANODE ROD: REPLACEABLE MAGNESIUM.
    b. DIP TUBE: REQUIRED UNLESS COLD-WATER INLET IS NEAR BOTTOM OF TANK.
    c. DRAIN VALVE: CORROSION-RESISTANT METAL WITH HOSE-END CONNECTION.
    d. INSULATION: COMPLY WITH ASHRAE/IES 90.1
    e. JACKET: STEEL WITH ENAMELED FINISH OR HIGH-IMPACT COMPOSITE MATERIAL.
    f. HEAT-TRAP FITTINGS: INLET TYPE IN COLD-WATER INLET AND OUTLET TYPE IN HOT-WATER OUTLET.
    g. HEATING ELEMENTS: ELECTRIC, SCREW-IN IMMERSION TYPE.
    h. TEMPERATURE CONTROL: ADJUSTABLE THERMOSTAT.
    i. SAFETY CONTROL: HIGH-TEMPERATURE-LIMIT CUTOFF DEVICE OR SYSTEM.
    j. RELIEF VALVE: ASME RATED AND STAMPED FOR COMBINATION TEMPERATURE-AND-PRESSURE RELIEF VALVES. INCLUDE RELIEVING CAPACITY AT LEAST AS GREAT AS HEAT INPUT, AND INCLUDE PRESSURE SETTING LESS THAN WORKING-PRESSURE RATING OF DOMESTIC-WATER HEATER. SELECT RELIEF VALVE WITH SENSING ELEMENT THAT EXTENDS INTO STORAGE TANK.

B. DOMESTIC-WATER EXPANSION TANKS:
  1. DESCRIPTION: STEEL, PRESSURE-RATED TANK CONSTRUCTED WITH WELDED JOINTS AND FACTORY-INSTALLED, BUTYL-RUBBER DIAPHRAGM. INCLUDE AIR PRECHARGE TO MINIMUM SYSTEM-OPERATING PRESSURE AT TANK.
  2. CONSTRUCTION:
    a. TAPPINGS: FACTORY-FABRICATED STEEL, WELDED TO TANK BEFORE TESTING AND LABELING. INCLUDE ASME B1.20.1 PIPE THREAD.
    b. INTERIOR FINISH: COMPLY WITH NSF 61 AND NSF 372 BARRIER MATERIALS FOR POTABLE-WATER TANK LININGS, INCLUDING EXTENDING FINISH INTO AND THROUGH TANK FITTINGS AND OUTLETS.
    c. AIR-CHARGING VALVE: FACTORY INSTALLED.
  3. CAPACITY AND CHARACTERISTICS:
    a. WORKING-PRESSURE RATING: 150 PSIG .

9. 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) FOR CIRCULATING SYSTEMS, ALL HOT WATER PIPING IN THE CIRCULATION LOOP MUST BE INSULATED AS SPECIFIED BELOW.

6) INSULATION SCHEDULE:

a) DOMESTIC COLD WATER	1/2"
b) DOMESTIC HOT WATER	1"
c) HOT WATER RECIRCULATING	1"
d) CONDENSATE DRAINS INSIDE BUILDING	1/2"

C. EQUIPMENT INSULATION:

1) FLEXIBLE FIBERGLASS: GLASS FIBER INSULATION, ASTM C 553, TYPE 1, CLASS B-4, SEMI-RIGID BOARD, WITH FACTORY LAMINATED KRAFT ALUMINUM FOIL (ALL SERVICE JACKET), VAPOR BARRIER, OWENS/CORNING PIPE AND TANK INSULATION.

D. 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.

E. 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) BYPASS AIR DUCT	2"

MECHANICAL SPECIFICATIONS (CONTINUED)

2) EXPOSED SPIRAL DUCT.

a) DOUBLE WALL SPIRAL - DOUBLE WALL INSULATED SPIRAL DUCT AND FITTINGS WITH PERFORATED 1"LINER WITH A K VALUE OF 0.27.

10. DUCTWORK:

A. ALL DUCTWORK, UNLESS OTHERWISE INDICATED, SHALL BE FABRICATED FROM GALVANIZED SHEET STEEL COMPLYING WITH ASTM A 527, LOCKFORMING QUALITY, WITH G 90 ZINC COATING IN ACCORDANCE WITH ASTM A 525; AND MILL PHOSPHATIZED FOR EXPOSED LOCATIONS.

B. WHERE DUCTWORK IS INDICATED TO BE EXPOSED TO VIEW IN OCCUPIED SPACES, PROVIDE MATERIALS WHICH ARE FREE FROM VISUAL IMPERFECTIONS INCLUDING PITTING, SEAM MARKS, ROLLER MARKS, STAINS AND DISCOLORATIONS, AND OTHER IMPERFECTIONS, INCLUDING THOSE WHICH WOULD IMPAIR PAINTING.

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

1) RECTANGULAR DUCT:

a) ELBOWS, UNLESS INDICATED OTHERWISE SHALL BE CONSTRUCTED WITH CENTERLINE RADIUS OF NOT LESS THAN 1.5 DUCT WIDTH OR SQUARE ELBOW WITH DOUBLE WALL STREAMLINE VANES.

b) RETURN AIR ACOUSTICAL ELBOWS AND SOUND BOOTS SHALL BE A SQUARE ELBOW WITH NO TURNING VANES.

c) SLOPES FOR TRANSITIONS OR OTHER CHANGES IN DIMENSIONS SHALL BE MINIMUM 1 TO 3.

2) ROUND AND OVAL SPIRAL SEAM DUCT:

a) PROVIDE RADIUS TYPE FITTINGS FABRICATED OF MULTIPLE SECTIONS WITH MAXIMUM 15 DEGREE CHANGE OF DIRECTION PER SECTION. UNLESS SPECIFICALLY DETAILED OTHERWISE, USE 45 DEGREE LATERALS FOR BRANCH TAKEOFF CONNECTIONS. WHERE 90 DEGREE BRANCHES ARE INDICATED PROVIDE CONICAL TYPE TEES.

b) SLOPES FOR TRANSITIONS OR OTHER CHANGES IN DIMENSIONS SHALL BE MINIMUM 1 TO 3.

c) AS AN OPTION, PROVIDE FACTORY-FABRICATED DUCT AND FITTINGS, IN LIEU OF SHOP-FABRICATED DUCT AND FITTINGS.

(1) ELBOWS: ONE PIECE CONSTRUCTION FOR 90 DEGREES AND 45 DEGREE ELBOW 14" AND SMALLER. PROVIDE MULTIPLE GORE CONSTRUCTION FOR LARGER DIAMETERS WITH STANDING SEAM CIRCUMFERENTIAL JOINT.

(2) DIVIDED FLOW FITTINGS: 90 DEGREE TEES, CONSTRUCTED WITH SADDLE TAP SPOT WELDED AND BONDED TO DUCT FITTING BODY.

d) ROUND LONGITUDINAL SEAM DUCT. USE FOR RIGID METAL DUCT ON LEAVING SIDE OF DUCT IN CONCEALED LOCATIONS FOR EXTENSION TO FLEX FOR DIFFUSERS, UNLESS OTHERWISE INDICATED.

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

E. INSTALLATION OF METAL DUCTWORK:

1) GENERAL: ASSEMBLE AND INSTALL DUCTWORK IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES WHICH WILL ACHIEVE AIR-TIGHT SYSTEMS (MAXIMUM 5% LEAKAGE), WITH NO OBJECTIONABLE NOISE, AND CAPABLE OF PERFORMING INDICATED SERVICE. INSTALL EACH RUN WITH MINIMUM NUMBER OF JOINTS. ALIGN DUCTWORK ACCURATELY WITH INTERNAL SURFACES SMOOTH. SUPPORT DUCTS RIGIDLY WITH SUITABLE STRAPS, BRACES, HANGERS AND ANCHORS IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS" LATEST EDITION. DUCT HANGERS SHALL BE OF THE TYPE WHICH WILL HOLD DUCTS TRUE-TO-SHAPE AND TO PREVENT BUCKLING. SUPPORT VERTICAL DUCTS AT EVERY FLOOR.

2) AUXILIARY STEEL: PROVIDE AUXILIARY STEEL AS REQUIRED TO ADEQUATELY SUPPORT DUCTWORK.

3) ROUTING: LOCATE DUCTWORK RUNS, EXCEPT AS OTHERWISE INDICATED, VERTICALLY AND HORIZONTALLY AND AVOID DIAGONAL RUNS WHEREVER POSSIBLE. LOCATE RUNS AS INDICATED BY DIAGRAMS, DETAILS AND NOTATIONS OR, IF NOT OTHERWISE INDICATED, RUN DUCTWORK IN SHORTEST ROUTE WHICH DOES NOT OBSTRUCT USABLE SPACE OR BLOCK ACCESS FOR SERVICING BUILDING AND ITS EQUIPMENT. HOLD DUCTS CLOSE TO WALLS, OVERHEAD CONSTRUCTION, COLUMNS, AND OTHER STRUCTURAL AND PERMANENT ENCLOSURE ELEMENTS OF BUILDING. WHEREVER POSSIBLE IN FINISHED AND OCCUPIED SPACES, CONCEAL DUCTWORK FROM VIEW, BY LOCATING IN MECHANICAL SHAFTS, HOLLOW WALL CONSTRUCTION OR ABOVE SUSPENDED CEILINGS. DO NOT ENCASE HORIZONTAL RUNS IN SOLID PARTITIONS, EXCEPT AS SPECIFICALLY SHOWN. COORDINATE LAYOUT WITH SUSPENDED CEILING AND LIGHTING LAYOUTS AND SIMILAR FINISHED WORK.

4) DO NOT ROUTE DUCTWORK THROUGH ELECTRICAL EQUIPMENT SPACES AND ENCLOSURES, UNLESS INDICATED OTHERWISE.

5) PENETRATIONS:

a) WHERE DUCTS PASS THROUGH INTERIOR PARTITIONS OR EXTERIOR WALLS, AND ARE EXPOSED TO VIEW, CONCEAL SPACE BETWEEN OPENING AND DUCT OR DUCT INSULATION WITH SHEET METAL FLANGES OF SAME GAGE AS DUCT. OVERLAP OPENING ON 4 SIDES BY AT LEAST 1-1/2". FASTEN TO DUCT AND WALL.

b) WHERE DUCTS PASS THROUGH FIRE-RATED FLOORS, WALLS, OR PARTITIONS, PROVIDE FIRESTOPPING BETWEEN DUCT AND WALL.

6) COORDINATION: COORDINATE DUCT INSTALLATIONS WITH INSTALLATION OF ACCESSORIES, DAMPERS, COIL FRAMES, EQUIPMENT, CONTROLS, AND OTHER ASSOCIATED WORK OF THE DUCTWORK SYSTEM.

7) INSTALLATION: INSTALL METAL DUCTWORK IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS", LATEST EDITION.

F. EQUIPMENT CONNECTIONS:

1) CONNECT METAL DUCTWORK TO EQUIPMENT AS INDICATED, PROVIDE FLEXIBLE CONNECTION FOR EACH DUCTWORK CONNECTION TO EQUIPMENT MOUNTED ON VIBRATION ISOLATORS, AND/OR EQUIPMENT CONTAINING ROTATING MACHINERY. PROVIDE ACCESS DOORS AS REQUIRED.

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

11. FLEXIBLE DUCT:

A. ATCO #086 (R-6), OR EQUAL.

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

C. MAXIMUM LENGTH OF 5'-0".

12. EXHAUST FANS:

A. CENTRIFUGAL TYPE FAN WITH CHARACTERISTICS AND CAPACITY AS SCHEDULED, ELECTRICALLY POWERED, SUITABLE FOR MOUNTING ON ROOF CURB, DIRECT OR BELT DRIVEN, HEAVY GAUGE SPUN-ALUMINUM WEATHERPROOF HOUSINGS OF THE HOODED DOME OR UPBLAST TYPE. PROVIDE PERMANENT SPLIT-CAPACITOR TYPE MOTOR FOR DIRECT DRIVEN FANS, AND CAPACITOR-START, INDUCTION-RUN TYPE MOTOR FOR BELT DRIVEN FANS.

B. CENTRIFUGAL CEILING FANS SHALL BE ELECTRICALLY POWERED CENTRIFUGAL TYPE FAN SUITABLE FOR MOUNTING IN THE CEILING WITH A PERFORATED OFF-WHITE METAL GRILLE WITH A THUMBSCREW ATTACHMENT FOR EASY ACCESS TO FAN HOUSING. UNIT SHALL CONSIST OF A GALVANIZED STEEL HOUSING LINED WITH ACOUSTICAL INSULATION AND SHALL INCLUDE AN INTEGRAL BACKDRAFT DAMPER ON FAN DISCHARGE. MOTOR SHALL BE A PERMANENT SPLIT-CAPACITOR TYPE MOTOR, PERMANENTLY LUBRICATED, WITH THERMAL OVERLOAD PROTECTION. PROVIDE DISCONNECT SWITCH OR OTHER MEANS OF DISCONNECT AT MOTOR IN FAN HOUSING.

13. FAN POWERED TERMINALS - PARALLEL FLOW (VARIABLE)

A. FURNISH AND INSTALL PARALLEL FLOW PARALLEL FAN POWERED TERMINALS OF THE SIZES AND CAPACITIES SHOWN ON THE PLANS. SPACE LIMITATIONS SHALL BE REVIEWED CAREFULLY TO ENSURE THAT ALL TERMINALS WILL FIT THE AVAILABLE SPACE.

B. TERMINALS SHOULD BE CERTIFIED UNDER THE ARI STANDARD 880 CERTIFICATION PROGRAM AND CARRY THE ARI SEAL.

C. THE TERMINAL SHALL BE DESIGNED, BUILT, AND TESTED AS A SINGLE UNIT INCLUDING MOTOR AND FAN ASSEMBLY, PRIMARY AIR DAMPER ASSEMBLY, WATER OR ELECTRIC HEATING COILS, AND ACCESSORIES AS SHIPPED. ALL ELECTRICAL COMPONENTS SHALL BE UL LISTED AND INSTALLED IN ACCORDANCE WITH UL STANDARD 1995. ELECTRICAL CONNECTION SHALL BE SINGLE POINT. ALL ELECTRICAL COMPONENTS, INCLUDING LOW VOLTAGE CONTROLS, SHALL BE MOUNTED IN SHEET METAL CONTROL ENCLOSURES. THE ENTIRE TERMINAL SHALL BE ETL LISTED AS A COMPLETE ASSEMBLY.

D. THE TERMINAL CASING SHALL BE MINIMUM 22-GAUGE GALVANIZED STEEL, INTERNALLY LINED WITH DUAL DENSITY INSULATION WHICH COMPLIES WITH UL 181 AND NFPA 90A. ANY EXPOSED INSULATION EDGES SHALL BE COATED WITH NFPA 90A APPROVED SEALANT TO PREVENT ENTERTAINMENT OF FIBERS IN THE AIRSTREAM. THE TERMINAL SHALL HAVE A ROUND DUCT COLLAR FOR THE PRIMARY AIR CONNECTION AND A RECTANGULAR DISCHARGE SUITABLE FOR FLANGED DUCT CONNECTION. THE CASING SHALL BE DESIGNED FOR HANGING BY SHEET METAL STRAPS.

E. PROVIDE 1" THICK THROWAWAY TYPE FILTERS ON THE RETURN AIR OPENING OF THE UNIT.

F. THE FAN SHALL BE CONSTRUCTED OF STEEL AND HAVE A FORWARD CURVED, DYNAMICALLY BALANCED WHEEL WITH DIRECT DRIVE MOTOR. THE MOTOR SHALL BE SUITABLE FOR 120, 208, 240, OR 277 VOLT, 60 CYCLE, SINGLE PHASE POWER. THE MOTOR SHALL BE OF ENERGY EFFICIENT DESIGN, PERMANENT SPLIT CAPACITOR TYPE, WITH INTEGRAL THERMAL OVERLOAD PROTECTION AND PERMANENTLY LUBRICATED BEARINGS, AND BE SPECIFICALLY DESIGNED FOR USE WITH AN SCR FOR FAN SPEED ADJUSTMENT. FAN ASSEMBLY SHALL INCLUDE A TUNED SPRING STEEL SUSPENSION AND ISOLATION BETWEEN MOTOR AND FAN HOUSING.

G. THE TERMINALS SHALL UTILIZE A MANUAL SCR, WHICH ALLOWS CONTINUOUSLY ADJUSTABLE FAN SPEED FROM MAXIMUM TO MINIMUM, AS A MEANS OF SETTING FAN AIRFLOW. SETTING FAN AIRFLOW WITH ANY DEVICE THAT RAISES THE PRESSURE ACROSS THE FAN TO REDUCE AIRFLOW IS NOT ACCEPTABLE. THE SPEED CONTROL SHALL INCORPORATE A MINIMUM VOLTAGE STOP TO INSURE THAT THE MOTOR CANNOT OPERATE IN A STALL MODE.

H. THE TERMINALS SHALL INCLUDE A GASKETED BACKDRAFT DAMPER AT THE FAN SECTION DISCHARGE TO PREVENT PRIMARY AIR FROM FLOWING BACK THROUGH THE FAN SECTION INTO THE RETURN AIR PLENUM.

I. SOUND RATINGS FOR THE TERMINALS SHALL NOT EXCEED 30 NC AT 1.5" INLET STATIC PRESSURE, AND DISCHARGE STATIC PRESSURE OF 0.5". SOUND PERFORMANCE SHALL BE ARI CERTIFIED. THE RADIATED AND DISCHARGE PATH ATTENUATION FUNCTION FOR THE SPECIFIED NC SHALL BE BASED UPON FACTORS FOUND IN ARI STANDARD 885-98 AND IN THE PRECEDING TABLES. NO ADDITIONAL ATTENUATION FACTORS SHALL BE DEDUCTED FROM THE SOUND POWER.

MECHANICAL SPECIFICATIONS (CONTINUED)

J. ELECTRIC HEATING COILS

1. ELECTRIC COILS SHALL BE SUPPLIED AND INSTALLED ON THE TERMINAL BY THE TERMINAL MANUFACTURER. COIL SHALL BE INTEGRAL WITH THE TERMINAL. ELEMENTS SHALL BE 80/20 NICKEL CHROME, SUPPORTED BY CERAMIC ISOLATORS A MAXIMUM OF 3½ INCHES APART, STAGGERED FOR MAXIMUM THERMAL TRANSFER AND ELEMENT LIFE, AND BALANCED TO ENSURE EQUAL OUTPUT PER STEP. THE INTEGRAL CONTROL PANEL SHALL BE HOUSED IN A NEMA 1 ENCLOSURE, WITH HINGED ACCESS DOOR FOR ACCESS TO ALL CONTROLS AND SAFETY DEVICES.

2. ELECTRIC COILS SHALL CONTAIN A PRIMARY AUTOMATIC RESET THERMAL CUTOUT PER ELEMENT, DIFFERENTIAL PRESSURE AIRFLOW SWITCH FOR PROOF OF FLOW, AND LINE TERMINAL BLOCK. COIL SHALL INCLUDE AN INTEGRAL DOOR INTERLOCK TYPE DISCONNECT SWITCH, WHICH WILL NOT ALLOW THE ACCESS DOOR TO BE OPENED WHILE POWER IS ON. NON-INTERLOCKING TYPE DISCONNECTS ARE NOT ACCEPTABLE. ALL INDIVIDUAL COMPONENTS SHALL BE UL LISTED OR RECOGNIZED.

14. VARIABLE AIR VOLUME TERMINALS

A. FURNISH AND INSTALL SINGLE DUCT, VARIABLE AIR VOLUME TERMINALS OF THE SIZES AND CAPACITIES SHOWN IN THE PLANS.

B. TERMINALS SHALL BE CERTIFIED UNDER THE ARI STANDARD 880 CERTIFICATION PROGRAM AND CARRY THE ARI SEAL.

C. THE TERMINAL CASING SHALL BE MINIMUM 22-GAUGE GALVANIZED STEEL, INTERNALLY LINED WITH ½-INCH DUAL DENSITY INSULATION WHICH COMPLIES WITH UL 181 AND NFPA 90A. ALL EXPOSED INSULATION EDGES SHALL BE COATED WITH NFPA 90A APPROVED SEALANT TO PREVENT ENTRAINMENT OF FIBERS IN THE AIRSTREAM. THE DISCHARGE CONNECTION SHALL BE SLIP AND DRIVE CONSTRUCTION FOR ATTACHMENT TO METAL DUCTWORK. THE CASING SHALL BE CONSTRUCTED TO HOLD LEAKAGE TO THE MAXIMUM VALUES SHOWN IN THE CASING LEAKAGE TABLE.

D. THE DAMPER SHALL BE HEAVY GAUGE STEEL WITH SHAFT ROTATING IN DELRIN® SELF-LUBRICATING BEARINGS. NYLON BEARINGS ARE NOT ACCEPTABLE. SHAFT SHALL BE CLEARLY MARKED ON THE END TO INDICATE DAMPER POSITION. STICKERS OR OTHER REMOVABLE MARKINGS ARE NOT ACCEPTABLE. THE DAMPER SHALL INCORPORATE A MECHANICAL STOP TO PREVENT OVERSTROKING AND A SYNTHETIC SEAL TO LIMIT CLOSE-OFF LEAKAGE TO THE MAXIMUM VALUES SHOWN IN THE DAMPER LEAKAGE TABLE

E. ACTUATORS SHALL BE CAPABLE OF SUPPLYING AT LEAST 35-INCH LBS. OF TORQUE TO THE DAMPER SHAFT AND SHALL BE MOUNTED EXTERNALLY FOR SERVICE ACCESS. TERMINALS WITH INTERNAL ACTUATOR MOUNTING OR LINKAGE CONNECTION MUST INCLUDE GASKETED ACCESS PANEL, REMOVABLE WITHOUT DISTURBING DUCTWORK. CASING WITH ACCESS PANEL SHALL BE CONSTRUCTED TO HOLD LEAKAGE TO THE MAXIMUM VALUES SHOWN IN THE CASING LEAKAGE TABLE.

F. AT AN INLET VELOCITY OF 2000 FPM, THE MINUMUM STATIC PRESSURE REQUIRED TO OPERATE ANY TERMINAL SIZE SHALL NOT EXCEED 0.13-INCH WG FOR THE BASIC TERMINAL.

G. SOUND RATINGS FOR THE TERMINAL SHALL NOT EXCEED 30 NC AT 1.5" STATIC PRESSURE. SOUND PERFORMANCE SHALL BE ARI CERTIFIED.

15. SMOKE DETECTORS:

A. UNITS MOUNTED IN THE DUCTWORK SHALL BE A DUCT MOUNTED UL LISTED PHOTO-ELECTRIC SELF-CONTAINED SMOKE DETECTOR WITH HOUSING. UNITS SHALL BE EQUAL TO SIMPLEX #4098-9687. THE SAMPLING TUBE SHALL BE #2098-9804, LENGTH AS REQUIRED FOR DUCT.

B. DUCT DETECTOR REMOTE TEST STATION SHALL BE SIMPLEX #4098-9842 WITH REMOTE ALARM INDICATOR, POWER-ON INDICATOR, TONE-ALERT, TONE-ALERT SILENCE SWITCH, AND TEST/RESET SWITCH.

1) DEVICES SHALL BE MOUNTED IN APPROVED LOCATION AS INDICATED ON THE FLOOR PLANS OR AS DIRECTED BY LOCAL AUTHORITY HAVING JURISDICTION.

C. PROVIDE AND INSTALL A PHOTO-ELECTRIC SMOKE DETECTOR IN THE RETURN AIR DUCT FOR EACH HVAC UNIT AS INDICATED ON THE FLOOR PLANS. DETECTORS ARE TO BE PROVIDED WITH A SUB-BASE CONTAINING AUXILIARY RELAY CONTACTS. RELAY CONTACTS SHALL BE WIRED INTO UNIT CONTROL WIRING, SO AS TO SHUT UNIT DOWN IN THE CASE OF SMOKE DETECTION. PROVIDE ALL CONTROL WIRING. ELECTRICAL CONTRACTOR SHALL PROVIDE 120 VOLT POWER TO EACH DETECTOR.

D. SMOKE DETECTORS SHALL BE INTERLOCKED. IN ALARM CONDITION OF A SINGLE DETECTOR ALL UNITS SHALL SHUT DOWN.

16. 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.

17. 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.

BC PROJECT #: 21759
MISSOURI PE COA #2009003629

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2/15/2022
STEVEN S. POND
NUMBER PE-2004000070

TENANT SPACE RENOVATION
BLUE SKY FERTILITY
451 NW MURRAY ROAD
LEE'S SUMMIT, MO 64081

REVISIONS

REV. #	DATE	DESCRIPTION
1	2/2/2022	CITY COMMENTS

BID SET

PROJ. NO.
2146

SCALE:
As indicated

DRAWING TITLE
MECHANICAL/PLUMBING SPECIFICATIONS

DRAWING NUMBER
MP000

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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 MATERIALS 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 MECHANICAL SYSTEMS SHALL BE BALANCED BY A CERTIFIED BALANCING CONTRACTOR. REFER TO SPECIFICATIONS FOR DETAILS.
10. ALL EXPOSED DUCT TO BE DOUBLE-WALL INSULATED.

MECHANICAL PLAN NOTES:

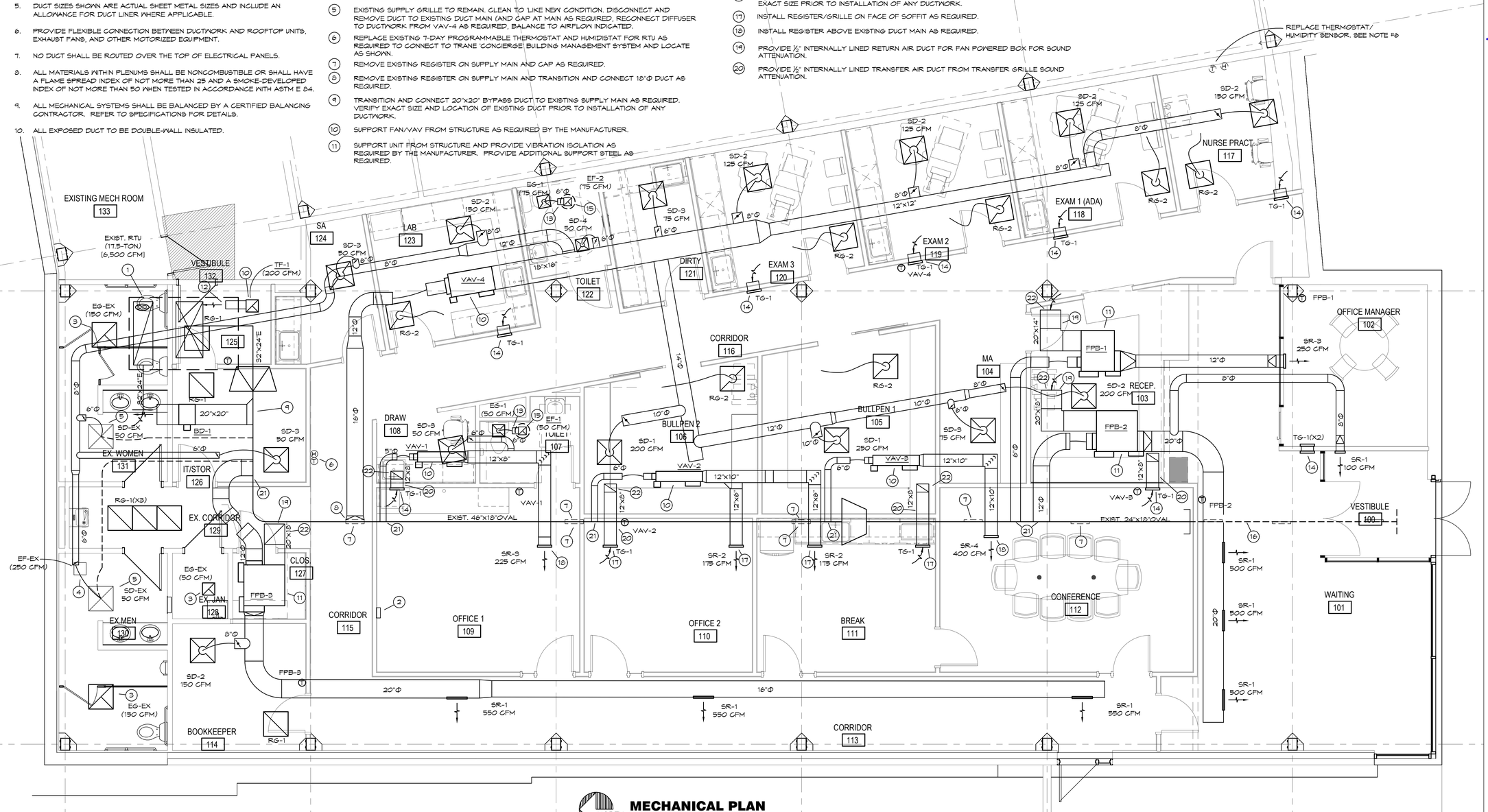
1. EXISTING ROOFTOP UNIT TO REMAIN. REFER TO PREVENTATIVE MAINTENANCE CHECK-UP FOR ADDITIONAL INFORMATION. ADJUST OUTDOOR AIR DAMPER ON UNIT AS PER SCHEDULE. PROVIDE TRANE 'UC 400' CONTROLLER TO CONNECT TO TRANE 'CONCIERGE' BUILDING MANAGEMENT SYSTEM. VERIFY SMOKE DETECTOR LOCATED IN RETURN AIR.
2. PROVIDE TRANE 'CONCIERGE' BUILDING MANAGEMENT SYSTEM AND CONNECT RTU, VAV, FPB, BYPASS DAMPERS AS REQUIRED FOR A COMPLETE OPERATIONAL SYSTEM. COORDINATE WITH TENANT FOR EXACT LOCATION OF TRANE 'CONCIERGE' CONTROL PANEL AND DISPLAY.
3. EXISTING EXHAUST GRILLE TO REMAIN. CLEAN TO 'LIKE NEW' CONDITION AND BALANCE TO AIRFLOW INDICATED.
4. EXISTING EXHAUST FAN TO REMAIN. VERIFY UNIT IS IN PROPER WORKING ORDER AND PROVIDES REQUIRED AIRFLOW.
5. EXISTING SUPPLY GRILLE TO REMAIN. CLEAN TO 'LIKE NEW' CONDITION. DISCONNECT AND REMOVE DUCT TO EXISTING DUCT MAIN (AND CAP AT MAIN AS REQUIRED, RECONNECT DIFFUSER TO DUCTWORK FROM VAV-4 AS REQUIRED, BALANCE TO AIRFLOW INDICATED.
6. REPLACE EXISTING 7-DAY PROGRAMMABLE THERMOSTAT AND HUMIDISTAT FOR RTU AS REQUIRED TO CONNECT TO TRANE 'CONCIERGE' BUILDING MANAGEMENT SYSTEM AND LOCATE AS SHOWN.
7. REMOVE EXISTING REGISTER ON SUPPLY MAIN AND CAP AS REQUIRED.
8. REMOVE EXISTING REGISTER ON SUPPLY MAIN AND TRANSITION AND CONNECT 18"Φ DUCT AS REQUIRED.
9. TRANSITION AND CONNECT 20"x20" BYPASS DUCT TO EXISTING SUPPLY MAIN AS REQUIRED. VERIFY EXACT SIZE AND LOCATION OF EXISTING DUCT PRIOR TO INSTALLATION OF ANY DUCTWORK.
10. SUPPORT FAN/VAV FROM STRUCTURE AS REQUIRED BY THE MANUFACTURER.
11. SUPPORT UNIT FROM STRUCTURE AND PROVIDE VIBRATION ISOLATION AS REQUIRED BY THE MANUFACTURER. PROVIDE ADDITIONAL SUPPORT STEEL AS REQUIRED.

MECHANICAL PLAN NOTES:

12. DISCHARGE 8"Φ TRANSFER AIR FROM FAN ABOVE CEILING AS REQUIRED.
13. CONNECT 6"Φ EXHAUST TO EXHAUST GRILLE AND ROUTE UP THRU ROOF TO EXHAUST FAN AS REQUIRED. VERIFY 10'-0" CLEARANCE FROM ALL OUTDOOR AIR INTAKES, SEAL PENETRATION WEATHERTIGHT.
14. INSTALL TRANSFER AIR GRILLES AS HIGH AS POSSIBLE.
15. CUT EXISTING ROOF AND FLASH INTO ROOF AS REQUIRED. ALL ROOFING WORK SHALL BE PERFORMED BY BUILDING OWNER'S ROOFING CONTRACTOR (AT THIS CONTRACTOR'S EXPENSE) TO MAINTAIN EXISTING ROOF WARRANTY. VERIFY APPROVED ROOFING CONTRACTOR WITH BUILDING OWNER PRIOR TO PERFORMING WORK.
16. REMOVE EXISTING SECTION OF SUPPLY DUCTWORK AND CAP MAIN AS REQUIRED. VERIFY EXACT SIZE PRIOR TO INSTALLATION OF ANY DUCTWORK.
17. INSTALL REGISTER/GRILLE ON FACE OF SOFFIT AS REQUIRED.
18. INSTALL REGISTER ABOVE EXISTING DUCT MAIN AS REQUIRED.
19. PROVIDE ½" INTERNALLY LINED RETURN AIR DUCT FOR FAN POWERED BOX FOR SOUND ATTENUATION.
20. PROVIDE ½" INTERNALLY LINED TRANSFER AIR DUCT FROM TRANSFER GRILLE SOUND ATTENUATION.

MECHANICAL PLAN NOTES:

21. CONNECT BRANCH DUCT TO EXISTING DUCT MAIN AS REQUIRED. VERIFY EXACT SIZE AND LOCATION OF EXISTING MAIN PRIOR TO INSTALLATION OF ANY DUCTWORK.
22. OPEN RA DUCT ABOVE CEILING.



NORTH

MECHANICAL PLAN

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

BC PROJECT #: 21759
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2/15/2022

STATE OF MISSOURI — STEVEN S. POND — NUMBER PE-2004000070 — PROFESSIONAL ENGINEER

TENANT SPACE RENOVATION

BLUE SKY FERTILITY
451 NW MURRAY ROAD
LEE'S SUMMIT, MO 64081

REVISIONS

REV. #	DATE	DESCRIPTION
1	2/2/2022	CITY COMMENTS

BID SET

PROJ. NO.	SCALE:
2146	As indicated

DRAWING TITLE

MECHANICAL PLAN

DRAWING NUMBER

M100

EXHAUST/TRANSFER FAN SCHEDULE

MARK	MFGR	MODEL	CFM	EXTERNAL STATIC P. IN. WG.	RPM	ELECTRICAL		FAN TYPE	CONTROLS	NOTES
						VOLT/Ø/HZ	PWR			
EF-1	COOK	70C10D	50	0.1	1160	120/1/60	69 W	ROOF EXHAUST	SWITCH	2
EF-2	"	70C10D	75	"	1160	"	69 W	"	SWITCH	2
TF-1	"	GC-182	200	"	1,400	"	167 W	CEILING EXHAUST	T-STAT	1

NOTES: 1. PROVIDE CEILING GRILLE, INTEGRAL BACK DRAFT DAMPER, AND VARI-SPEED CONTROLLER (NEAR FAN AND ABOVE CEILING) AND COOLING ONLY THERMOSTAT SET TO 80°F.

2. PROVIDE INSULATED 18" HIGH (AT LOWEST POINT) PREFABRICATED ROOF CURB, BACKDRAFT DAMPER, BIRD SCREEN, UNIT MOUNTED VARIABLE SPEED CONTROLLER.

FAN POWERED TERMINAL SCHEDULE

MARK	MFGR	MODEL NO.	INLET SIZE	BOX SIZE	MAX CFM	MIN CFM	Δ P (IN WG)	CFM RANGE	MAX S.P. SEE NOTE # 2	ELECTRIC HEATING COIL				ELECTRICAL		REMARKS
										FAN CFM	KW	MBH	STAGES	VOLT/Ø/HZ	FAN HP	
FPB-1	TRANE	VPEF	6"	02	250	80	0.05	60 - 500	0.5	150	2.0	6.8	1	208/1/60	1/8	-
FPB-2	"	"	12"	07	1600	240	"	240 - 2000	"	960	10.0	34.1	2	208/3/60	1	-
FPB-3	"	"	12"	07	1800	240	"	240 - 2000	"	1140	12.0	40.9	2	208/3/60	1	-

NOTES:
1. ALL BOXES SHALL BE PRESSURE INDEPENDENT.
2. MAXIMUM STATIC PRESSURE DOWNSTREAM OF BOX OUTLET.
3. ALL BOXES SHALL HAVE A MINIMUM OF 3 INLET DIAMETERS OF STRAIGHT DUCT AT BOX INLET.
4. REFER TO DETAIL FOR TEMPERATURE CONTROL SQUENCE.
5. PROVIDE 24 VOLT CONTROL TRANSFORMER & WALL MOUNTED TEMPERATURE SENSOR/THERMOSTAT FOR EACH UNIT.
6. MAXIMUM RADIATED SOUND PRESSURE LEVEL (Lp) NOT TO EXCEED THE FOLLOWING FOR RC 40N PER AHRI STANDARD 885-2008.

OCTAVE BAND	2	3	4	5	6	7
Lp (RC 40N)	55	50	45	40	35	30

7. ACOUSTICAL MATERIAL SHALL BE 3/4" DUAL DENSITY COATED TO PREVENT AIR EROSION & MEETS REQUIREMENTS OF UL 181 & NFPA-90A.
8. PROVIDE 1" THICK THROWAWAY TYPE FILTER WITH HOLDING FRAME ON RA INLET, WITH BOTTOM ACCESS, VIBRATION ISOLATORS & NON-FUSED DISCONNECT FOR EACH UNIT.
9. PROVIDE TRANE UC210 VAV CONTROLLER TO CONNECT TO 'TRANE CONGIERGE' BUILDING CONTROL SYSTEM.

SINGLE DUCT VAV TERMINAL SCHEDULE

MARK	MFGR	MODEL NO.	INLET SIZE	MAX CFM	MIN CFM	Δ P (IN WG)	CFM RANGE	DOWNSTREAM STATIC PRESS. (IN WG)	REMARKS
V-1	TRANE	VCEF	5"	275	60	0.02	40 - 350	0.5	1,2,3,4,5,6,7
V-2	"	"	6"	350	80	0.23	60 - 500	"	1,2,3,4,5,6,7
V-3	"	"	6"	400	120	0.23	60 - 500	"	1,2,3,4,5,6,7
V-4	"	"	12"	1600	482	0.08	240 - 2000	"	1,2,3,4,5,6,7
BD-1	"	VARA	20"x20"	5200	0	-	0 - 5600	0.1	1,2,3,4,5,6,8

NOTES:
1. ALL BOXES SHALL BE PRESSURE INDEPENDENT.
2. ALL BOXES SHALL HAVE A MINIMUM OF 3 INLET DIAMETERS OF STRAIGHT DUCT AT BOX INLET.
3. REFER TO DETAIL FOR TEMPERATURE CONTROL SQUENCE.
4. PROVIDE 24 VOLT CONTROL TRANSFORMER & WALL MOUNTED THERMOSTAT FOR EACH UNIT.
5. MAXIMUM RADIATED SOUND PRESSURE LEVEL (Lp) NOT TO EXCEED THE FOLLOWING FOR RC 40N PER AHRI STANDARD 885-2008.

OCTAVE BAND	2	3	4	5	6	7
Lp (RC 40N)	55	50	45	40	35	30

6. ACOUSTICAL MATERIAL SHALL BE 3/4" DUAL DENSITY COATED TO PREVENT AIR EROSION & MEETS REQUIREMENTS OF UL 181 & NFPA-90A.
7. PROVIDE TRANE UC210 VAV CONTROLLER TO CONNECT TO 'TRANE CONCIERGE' BUILDING CONTROL SYSTEM.
8. PROVIDE TRANE UC210 BYPASS DAMPER CONTROLLER TO CONNECT TO 'TRANE CONCIERGE' BUILDING CONTROL SYSTEM.

DIFFUSER SCHEDULE

MARK	MFGR	MODEL	BORDER TYPE	NECK SIZE	FACE SIZE	FINISH	DAMPER	ACCESSORIES	NOTES
SD-1	TITUS	TMS	3	10"Ø	24"x24"	WHITE	-	-	-
SD-2	"	"	"	8"Ø	"	"	-	-	-
SD-3	"	"	"	6"Ø	"	"	-	-	-
SD-4	"	TMS	"	"	12"x12"	"	-	TRM FRAME	-
RG-1	"	PAR	"	22"x22"	24"x24"	"	-	-	-
RG-2	"	"		10"Ø	24"x24"		-	-	1
SR-1	"	530OF	"	18"x10"	"	ANODIZED	AIR SCOOP	-	-
SR-2	"	300RL	1	12"x6"	"	"	OPPOSED BLADE	-	-
SR-3	"	"	"	12"x8"	"	"	"	-	-
SR-4	"	"	"	12"x10"	"	"	"	-	-
EG-1	"	PAR	3	6"Ø	12"x12"	WHITE	-	TRM FRAME	-
TG-1	"	350RL	1	12"x8"	"	WHITE	-	-	-

NOTES: 1. PROVIDE TITUS 10"Ø 'FLEXABOOT' (5' LENGTH) FOR SOUND ATTENUATION.

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 effectivene ss (Ez)	Zone outdoor airflow (cfm)
RTU-1		**Hospitals, nursing homes**							
	430	Patient rooms	10	25	0		108	0.8	134
		Offices							
	310	Conference rooms	50	5	0.06		96	0.8	120
	1300	Office spaces	5	5	0.06		111	0.8	138
	175	Reception areas	30	5	0.06		37	0.8	46
	190	Break Room	25	5	0.06		35	0.8	44
	610	Main entry lobbies	10	5	0.06		67	0.8	84
		Public spaces							
	1080	Corridors	0	0	0.06		65	0.8	81
	375	Toilet rooms public	0	0	0	50/10	0	0.8	0
		Storage							
	100	Storage	0	0	0.06		6	0.8	8
								Total	655

ALL EXISTING HVAC UNITS SHOULD HAVE A PREVENTATIVE MAINTENANCE CHECK-UP TO INCLUDE THE FOLLOWING CRITERIA

1. CHANGE ALL FILTERS.
2. CLEAN ALL CONDENSATE DRAIN PANS AND FLUSH ALL CONDENSATE DRAIN LINES.
3. CLEAN ALL EVAPORATOR AND CONDENSER COILS WITH A NON-ACID CLEANER.
4. CHECK REFRIGERANT CHARGE (GUAGES OR RETURN/SUPPLY TEMPERATURE VARIANCE).
5. PROVIDE COMPLETE LUBRICATION OF ALL SHAFTS AND BEARINGS THAT HAVE LUBRICATION ZERKS.
6. THE REPLACEMENT OF ALL BELTS, HOSES AND FABRIC/RUBBER COATED ITEMS THAT ARE SUBJECT TO WEAR.
7. CHECK AMPS OF THE INDOOR, OUTDOOR MOTORS, AND COMPRESSORS
8. TURN UNIT POWER OFF - TIGHTEN ALL ELECTRICAL CONNECTIONS, CONTACTORS, ETC.
9. EXAMINE AND REPAIR ALL ELECTRICAL WIRING, CONTROLS, STARTERS, RELAYS, CAPACITORS AND LIKE ITEMS THAT TEND TO DETERIORATE OVER TIME OR BECOME NON-OPERATIONAL. THIS INCLUDES SMOKE DETECTORS.
10. GREASE ALL FITTINGS
11. CHECK DUCTWORK CONNECTIONS AND REPAIR AS NEEDED.
12. NOTIFY GENERAL CONTRACTOR OF ANY REQUIRED PARTS OR REPAIRS NOT INCLUDED IN THIS LIST. ALL UNITS SHALL BE FUNCTIONING AND COOLING PROPERLY AT COMPLETION OF JOB.
13. CHECK THE ECONOMIZER FOR PROPER FUNCTION AND CORRECT OPERATION OF THE SYSTEM WHEN A CALL FOR COOLING COMES FROM THE THERMOSTAT. REPAIR AND ADJUST AS NEEDED.
14. VERIFY ANY WORK REQUIRED BY THE LANDLORD PRIOR TO BID.
15. ALL FINDINGS AND VALUES TO BE NOTED AND PROVIDED TO TENANT'S CONSTRUCTION MANAGER & OR TENANT'S MAINTENANCE DIRECTOR.

MECHANICAL SYMBOLS

- NEW SUPPLY DIFFUSER
- NEW RETURN AIR GRILLE
- EXHAUST GRILLE/FAN
- REMOTE TEMPERATURE SENSOR
- H — HUMIDISTAT, MOUNTED AT 48" AFF
- DSD — DUCT-MOUNTED SMOKE DETECTOR
- MOTORIZED 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
- EXIST'G DUCT TO REMAIN
- EXIST'G DUCT TO BE REMOVED
- EXISTING FLEXIBLE DUCTWORK
- 32"x14"E — SIZE OF EXISTING DUCT
- EXISTING SUPPLY DIFFUSER

EXISTING ROOFTOP UNIT SCHEDULE

MARK	MFGR.	MODEL NO.	NOM. TONS	EVAP. CFM	EXT. STATIC P. IN. WG.	COOLING					HOT GAS REHEAT	HEATING (GAS)			ELECTRICAL					UNIT CONTROLS	BLOWER DRIVE TYPE	ECONOMIZER + BAROMETRIC RELIEF		MINIMUM OUTDOOR AIR (CFM)	SEER /EER	TOTAL WEIGHT (LBS)	NOTES
						COOLING STAGES	TOTAL BTUH	SENS. BTUH	AMB.	EVAP. EAT DB/WB		BTUH INPUT	BTUH OUTPUT	HEATING STAGES	VOLT/Ø/HZ	BLOWER MOTOR	POWER EXHAUST	MCA (AMPS)	MOCP (AMPS)			TYPE	CONTROLLER				
RTU-1	TRANE	YHD210	17.5	6500	1.0	2	199,360	158,590	105	80/67	Y	350,000	280,000	2	208/3/60	5 HP	N	-	-	-	BELT	ENTHALPY	STANDARD	655	14.0/12.5	-	1,2

NOTES: 1. UNIT IS EXISTING, LISTED FOR REFERENCE ONLY. REFER TO PREVENTATIVE MAINTENANCE CHECK-UP FOR ADDITIONAL INFORMATION.
2. PROVIDE TRANE UC400 2H/2C CONTROLLER TO CONNECT TO TRANE CONCIERGE' BUILDING CONTROL SYSTEM.

HJM ARCHITECTS
7520 WASHINGTON ST.
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2/15/2022

STATE OF MISSOURI — STEVEN S. POND — NUMBER PE-2004000070 — REGISTERED PROFESSIONAL ENGINEER

TENANT SPACE RENOVATION

BLUE SKY FERTILITY
451 NW MURRAY ROAD
LEE'S SUMMIT, MO 64081

REVISIONS

REV. #	DATE	DESCRIPTION
1	2/2/2022	CITY COMMENTS

BID SET

PROJ. NO. 2146 | SCALE: As indicated

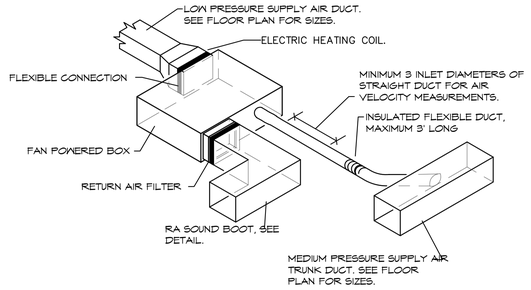
DRAWING TITLE

MECHANICAL SCHEDULES

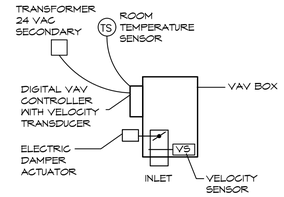
DRAWING NUMBER

M200

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



FAN POWERED VAV BOX DETAIL
SCALE: NONE



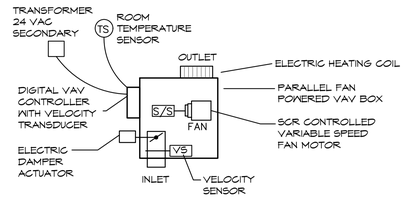
SINGLE DUCT VAV TERMINALS

COOLING ONLY

1. WITH ROOM TEMPERATURE AT SETPOINT, UNIT DELIVERS MINIMUM CFM. AN INCREASE IN ROOM TEMPERATURE CAUSES AIRFLOW TO INCREASE, REACHING MAXIMUM CFM 2°F ABOVE SETPOINT.

VAV BOX (PRESSURE INDEPENDENT) CONTROL SEQUENCE

SCALE: NONE



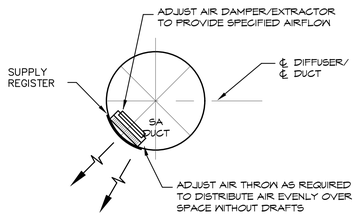
PARALLEL FAN POWERED FAN BOXES

VARIABLE VOLUME FAN VAV TERMINAL WITH ELECTRIC HEAT

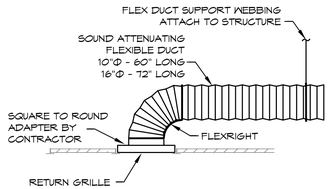
1. WITH ROOM TEMPERATURE AT COOLING SETPOINT, UNIT DELIVERS MINIMUM COOLING CFM. AN INCREASE IN ROOM TEMPERATURE CAUSES AIRFLOW TO INCREASE. ON A DECREASE IN ROOM TEMPERATURE BELOW HEATING SETPOINT OR ON A DECREASE IN COOLING CFM APPROACHING COOLING SETPOINT (SOFTWARE SELECTABLE), UNIT FAN IS ENERGIZED TO PROVIDE PLENUM AIR TO THE SPACE, AND STAGES OF HEAT ARE ENERGIZED.
2. ELECTRICAL CONTRACTOR SHALL PROVIDE INTERLOCK TO STOP ALL FPB BOX FANS UPON THE DETECTION OF SMOKE BY ANY DUCT SMOKE DETECTOR.

FAN POWERED VAV BOX (PRESSURE INDEPENDENT) CONTROL SEQUENCE

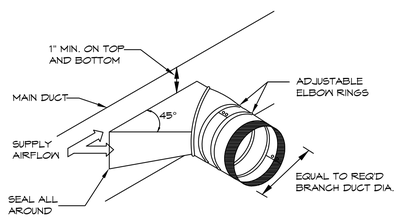
SCALE: NONE



SUPPLY REGISTER DETAIL
SCALE: NONE



ACOUSTICAL RETURN BOOT DETAIL
SCALE: NONE



BRANCH DUCT TAKEOFF DETAIL
SCALE: NONE

BC PROJECT #: 21759
MISSOURI PE COA #2009003629

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STATE OF MISSOURI STEVEN S. POND NUMBER 2009003629 REGISTERED PROFESSIONAL ENGINEER

TENANT SPACE RENOVATION

BLUE SKY FERTILITY
451 NW MURRAY ROAD
LEE'S SUMMIT, MO 64081

REVISIONS

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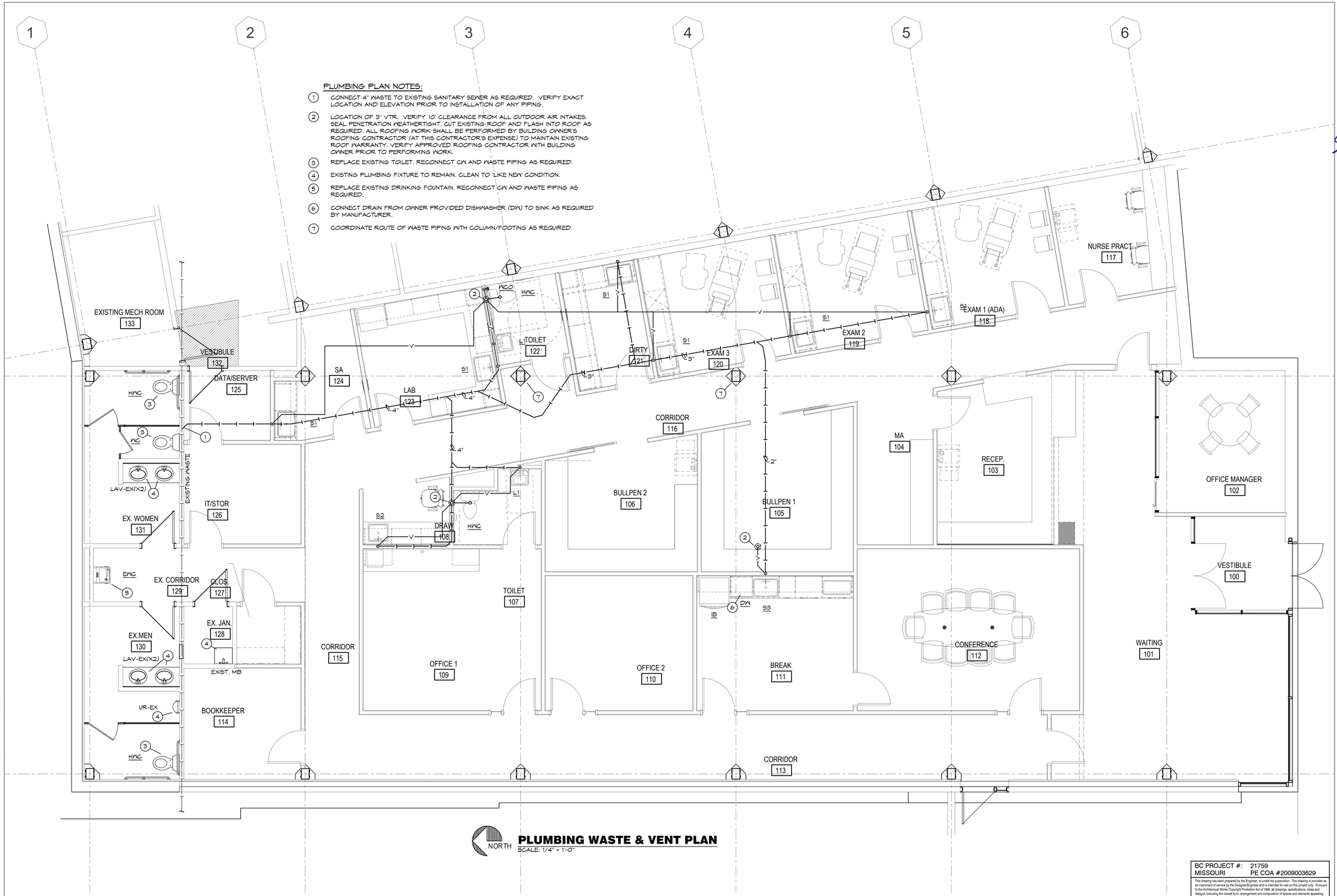
PROJ. NO. 2146
SCALE: As indicated

DRAWING TITLE
MECHANICAL DETAILS

DRAWING NUMBER
M300

PLUMBING PLAN NOTES:

1. CONNECT 4" WASTE TO EXISTING SANITARY SEWER AS REQUIRED. VERIFY EXACT LOCATION AND ELEVATION PRIOR TO INSTALLATION OF ANY PIPING.
2. LOCATION OF 3" VTR. VERIFY 10' CLEARANCE FROM ALL OUTDOOR AIR INTAKES. SEAL PENETRATION WEATHERTIGHT. CUT EXISTING ROOF AND FLASH INTO ROOF AS REQUIRED. ALL ROOFING WORK SHALL BE PERFORMED BY BUILDING OWNER'S ROOFING CONTRACTOR (AT THIS CONTRACTOR'S EXPENSE) TO MAINTAIN EXISTING ROOF WARRANTY. VERIFY APPROVED ROOFING CONTRACTOR WITH BUILDING OWNER PRIOR TO PERFORMING WORK.
3. REPLACE EXISTING TOILET. RECONNECT CW AND WASTE PIPING AS REQUIRED.
4. EXISTING PLUMBING FIXTURE TO REMAIN. CLEAN TO 'LIKE NEW' CONDITION.
5. REPLACE EXISTING DRINKING FOUNTAIN. RECONNECT CW AND WASTE PIPING AS REQUIRED.
6. CONNECT DRAIN FROM OWNER PROVIDED DISHWASHER (DW) TO SINK AS REQUIRED BY MANUFACTURER.
7. COORDINATE ROUTE OF WASTE PIPING WITH COLUMN/FOOTING AS REQUIRED.



NORTH

PLUMBING WASTE & VENT PLAN

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

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STATE OF MISSOURI
STEVEN S. POND
NUMBER 2004000370
REGISTERED PROFESSIONAL ENGINEER

TENANT SPACE RENOVATION

BLUE SKY FERTILITY
451 NW MURRAY ROAD
LEE'S SUMMIT, MO 64081

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PROJ. NO. 2146
SCALE: As indicated

DRAWING TITLE
PLUMBING WASTE & VENT PLAN

DRAWING NUMBER
P100

BC PROJECT #: 21759
MISSOURI PE COA #2009003629

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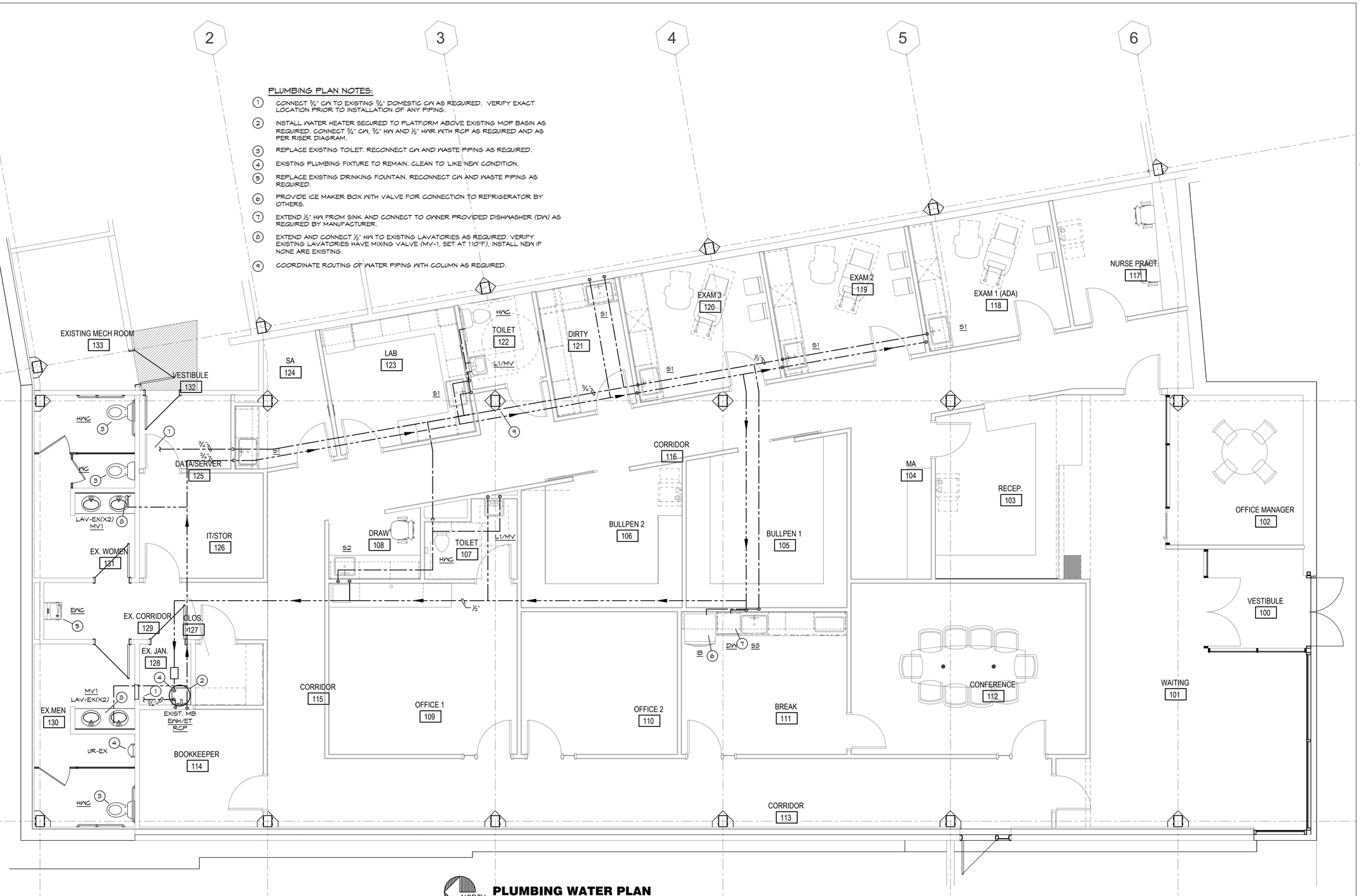
PLUMBING PLAN NOTES:

1. CONNECT ¾" CW TO EXISTING ¾" DOMESTIC CW AS REQUIRED. VERIFY EXACT LOCATION PRIOR TO INSTALLATION OF ANY PIPING.
2. INSTALL WATER HEATER SECURED TO PLATFORM ABOVE EXISTING MOP BASIN AS REQUIRED. CONNECT ¾" CW, ¾" HW AND ½" HWR WITH RCP AS REQUIRED AND AS PER RISER DIAGRAM.
3. REPLACE EXISTING TOILET. RECONNECT CW AND WASTE PIPING AS REQUIRED.
4. EXISTING PLUMBING FIXTURE TO REMAIN. CLEAN TO 'LIKE NEW' CONDITION.
5. REPLACE EXISTING DRINKING FOUNTAIN. RECONNECT CW AND WASTE PIPING AS REQUIRED.
6. PROVIDE ICE MAKER BOX WITH VALVE FOR CONNECTION TO REFRIGERATOR BY OTHERS.
7. EXTEND ½" HW FROM SINK AND CONNECT TO OWNER PROVIDED DISHWASHER (DW) AS REQUIRED BY MANUFACTURER.
8. EXTEND AND CONNECT ½" HW TO EXISTING LAVATORIES AS REQUIRED. VERIFY EXISTING LAVATORIES HAVE MIXING VALVE (MV-1, SET AT 110°F), INSTALL NEW IF NONE ARE EXISTING.
9. COORDINATE ROUTING OF WATER PIPING WITH COLUMN AS REQUIRED.



NORTH

PLUMBING WATER PLAN

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

BC PROJECT #: 21759
MISSOURI PE COA #2009003629

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STATE OF MISSOURI
STEVEN S. POND
NUMBER PE-2004000070
REGISTERED PROFESSIONAL ENGINEER

TENANT SPACE RENOVATION

BLUE SKY FERTILITY
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2146	As indicated

DRAWING TITLE
PLUMBING WATER PLAN

DRAWING NUMBER
P200

PLUMBING GENERAL NOTES:

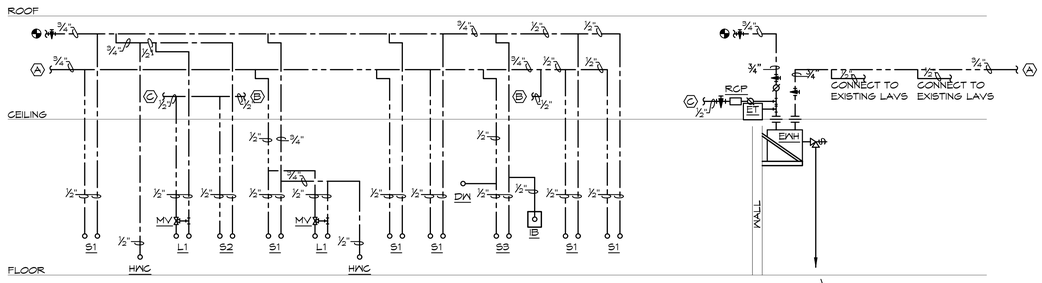
1. INSTALL ALL PIPE, ETC. AS HIGH AS POSSIBLE.
2. COORDINATE ALL WORK WITH OTHER TRADES AND EXISTING CONDITIONS AS REQUIRED TO PROPERLY INSTALL ALL SYSTEMS AS INTENDED, WITHIN THE CONFINES OF THE SPACES AVAILABLE, AND WITHOUT INTERFERENCES.
3. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND MOUNTING HEIGHTS OF FIXTURES.
4. REFER TO ARCHITECTURAL & STRUCTURAL DRAWINGS FOR REQUIREMENTS FOR SUPPORTING PIPING, EQUIPMENT, ETC. FROM THE STRUCTURE. PROVIDE ADDITIONAL STEEL AS REQUIRED TO PROPERLY SUPPORT SYSTEMS FROM THE STRUCTURE.
5. SAWCUT EXISTING FLOOR AS REQUIRED FOR INSTALLATION OF UNDERFLOOR PIPING. PATCH FLOOR TO MATCH EXISTING.
6. NO PIPING SHALL BE ROUTED OVER THE TOP OF ELECTRICAL PANELS.
7. ALL MATERIALS 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.
8. CONTRACTOR TO TEST WATER PRESSURE ON SITE AND PROVIDE PRESSURE REDUCING VALVE ON WATER SERVICE IF PRESSURE IS OVER 80 PSI.
9. ALL WATER SERVICE INSTALLATIONS INCLUDING BACKFLOW DEVICES ARE SUBJECT TO FIELD VERIFICATION AND APPROVAL BY THE WATER DEPARTMENT INSPECTOR.

PLUMBING SYMBOLS

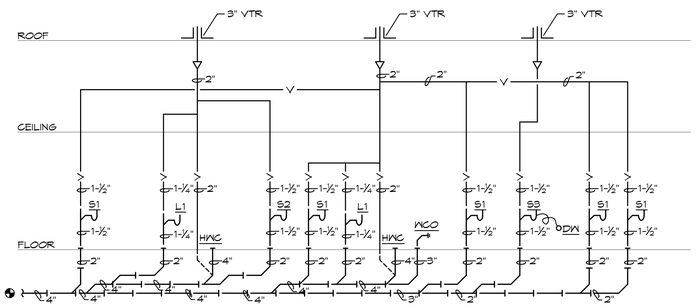
- SOIL AND WASTE PIPING BELOW FLOOR/GRADE
- SOIL AND WASTE PIPING ABOVE FLOOR/GRADE
- SANITARY VENT PIPING ABOVE GRADE
- SANITARY VENT PIPING BELOW GRADE
- DOMESTIC COLD WATER PIPING
- DOMESTIC HOT WATER PIPING
- DOMESTIC HOT WATER RECIRCULATION PIPING
- GAS PIPING
- EQUIPMENT DRAIN LINE
- PIPING TURNING DOWN
- PIPING TURNING UP
- TEE TOP CONNECTION
- UNION
- BACKFLOW PREVENTER
- FD — FLOOR DRAIN
- FCO — FLOOR CLEAN OUT
- WCO — WALL CLEAN OUT
- VALVE
- BALANCING VALVE
- SOLENOID VALVE
- PRESSURE REGULATOR
- CHECK VALVE
- CONNECT TO EXISTING
- I.E. — INVERT ELEVATION OF PIPE
- MATCH MARKS ON PLUMBING RISER DIAGRAM

FIRE PROTECTION NOTES:

1. THE EXISTING SPACE IS PROTECTED WITH AN EXISTING WET PIPE SPRINKLER SYSTEM. RELOCATE AND PROVIDE ADDITIONAL SPRINKLER HEADS AND PIPING AS REQUIRED FOR THE NEW CONSTRUCTION. SPRINKLER HEADS IN FINISHED CEILINGS SHALL BE SEMI-RECESSED PENDENT TYPE (VERIFY FINISH). SPRINKLER HEADS IN ROOMS WITHOUT CEILINGS SHALL BE UPRIGHT BRASS TYPE HEADS.
2. SPRINKLER WORK SHALL BE PERFORMED BY A LICENSED SPRINKLER CONTRACTOR PRE-APPROVED BY THE OWNER/LANDLORD.
3. REFER TO THE ARCHITECTURAL DRAWINGS FOR NEW WALL CONSTRUCTION.
4. SPRINKLER PIPING SHALL MATCH EXISTING AND COMPLY WITH NFPA 13.
5. SPRINKLER SYSTEM (SHOP DRAWINGS) SHALL BE APPROVED BY THE LOCAL FIRE AUTHORITY AND OWNERS/LANDLORD'S INSURANCE CARRIER PRIOR TO START OF WORK.



HOT & COLD WATER



WASTE & VENT

PLUMBING RISER DIAGRAMS

SCALE: NONE

PLUMBING FIXTURE SCHEDULE:

- HWC — HANDICAP WATER CLOSET: TOTO, #CST454CEF(R)(G), "DRAKE CLOSE COUPLED TOILET", 1.28 GALLON 'TORNADO' FLUSH, 16-1/2" HIGH ELONGATED BOWL, FLOOR MOUNTED, FLOOR OUTLET, TANK TYPE, VITREOUS CHINA, SIPHON-JET ACTION, #SC534 OPEN FRONT SEAT WITH CHECK HINGE AND LESS COVER, CHROME PLATED ANGLE STOP AND RISER. HANDLE ON WIDE SIDE OF FIXTURE. NO EXCEPTIONS
- WC — WATER CLOSET: TOTO, #CST776CEF(R)(G), "DRAKE CLOSE COUPLED TOILET", 1.28 GALLON 'TORNADO' FLUSH, ELONGATED BOWL, FLOOR MOUNTED, FLOOR OUTLET, TANK TYPE, VITREOUS CHINA, SIPHON-JET ACTION, #SC534 OPEN FRONT SEAT WITH CHECK HINGE AND LESS COVER, CHROME PLATED ANGLE STOP AND RISER. NO EXCEPTIONS
- L1 — HANDICAP LAVATORY, COUNTERTOP: TOTO, #LT501, VITREOUS CHINA,22"x 17" OVAL BASIN, DELTA #501 FAUCET WITH SINGLE METAL LEVER HANDLE, OFFSET GRID DRAIN WITH 1-1/4" TAILPIECE, CHROME PLATED P-TRAP(MOUNTED PARALLEL WITH WALL), CHROME PLATED ANGLE STOPS AND RISERS,INSULATE EXPOSED DRAIN, WATER SUPPLIES, AND VALVES WITH PROWRAP SEAMLESS MOLDED CLOSED CELL VINYL INSULATION.
- S1 — SINK (LAB): ELKAY, #DLR312210, 28"x16"x10-1/8" DEEP BOWL, SINGLE COMPARTMENT, SELF-RIMMING STAINLESS STEEL SINK WITH SATIN FINISH AND SOUND DAMPENING UNDERCOATING, DELTA TRINSIC #DSP-K-9154-DST FAUCET, SWING SPOUT, AERATOR, SINGLE LEVER HANDLE, CHROME PLATED CAST BRASS P-TRAP WITH CLEANOUT, CHROME PLATED ANGLE STOPS AND RISERS.
- S2 — SINK (EXAM): 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, #LK-1000CR FAUCET, SWING SPOUT, AERATOR, SINGLE LEVER HANDLE, CHROME PLATED CAST BRASS P-TRAP WITH CLEANOUT, CHROME PLATED ANGLE STOPS AND RISERS.
- S3 — 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, FAUCET #LKHA1041 PULL-DOWN FAUCET, SWING SPOUT, AERATOR, SINGLE HANDLE, #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 1HP DISPOSAL, 1 HP, 120 VOLT. SINK CUT-OUT IN CASEWORK SHALL BE BY CASEWORK CONTRACTOR.
- DW — DISHWASHER: OWNER FURNISHED AND INSTALLED BY PLUMBING CONTRACTOR. CONNECT TO HW AND DRAIN PIPING UNDER SINK AS REQUIRED. PROVIDE HOSE, PIPING AND SHUT-OFF VALVES AS REQUIRED TO MAKE CONNECTIONS.
- EWH — HOT WATER HEATER: AO SMITH #DEL-30, 30 GALLON STORAGE, 208 VOLT, 1 PHASE, (2) 4500 WATT ELEMENTS (NON-SIMULTANEOUS), ASME TEMPERATURE AND PRESSURE RELIEF VALVE. SET AT 140°F.
- ET — HOT WATER EXPANSION TANK: AMTROL, #ST-5, 2 GALLON EXPANSION TANK WITH DIAPHRAGM.
- RCP — HOT WATER RECIRCULATING PUMP: BELL & GOSSETT, #SERIES NBF-10, 3 GPM @ 7 FT. HEAD, 1/12 HP, 120 VOLT, WITH HONEYWELL #L6006C1018 AQUASTAT & TACO #265-3 7-DAY DIGITAL TIMER, 120°-125°F, ½"Ø PIPE.
- 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.
- MV1 — MIXING VALVE: WATTS, #LFMMV THERMOSTATIC CONTROLLED MIXING VALVE,LEAD FREE BRONZE BODY, LOCKED TEMPERATURE ADJUSTMENT CAP (VANDAL RESISTANT), SOLID WAX HYDRAULIC PRINCIPLE THERMOSTAT,INTEGRAL FILTER WASHERS AND CHECK VALVES ON HOT AND COLD INLETS.(SET TO 110°F) ASSE #1017,#1069,#1070
- IB — ICE BOX: GUY GRAY #AB-9100, ICE BOX WITH 1/2" CONNECTION AND 1/4-TURN SHUT OFF VALVE.
- FCO/WCO — VINYL TILE FLOOR: JR SMITH #4140, OR EQUAL.
  QUARRY TILE FLOOR: JR SMITH #4200, OR EQUAL.
  CARPETED FLOOR: JR SMITH #4020-Y, OR EQUAL.
  UNFINISHED FLOOR: JR SMITH #4020, OR EQUAL.
  WALL: JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR.
- EWC — HANDICAPPED ELECTRIC WATER COOLER WITH BOTTLE FILLER: ELKAY, #LZSG8WSLK, BARRIER FREE WATER COOLER WITH EXH20 BOTTLE FILLING STATION, 8.0 GPH, 50 DEGREES F WATER WITH 90 DEGREES F AIR TEMPERATURE, 120 VOLT, COLOR TO BE SELECTED BY ARCHITECT AFTER AWARD OF CONTRACT, FRONT AND SIDE PUSH BARS, CHROME PLATED CAST BRASS P-TRAP WITH CLEANOUT, CHROME PLATED LOOSE KEY ANGLE STOP, AND FLOOR MOUNTED CARRIER.

PLUMBING FIXTURE BRANCH PIPING SCHEDULE

FIXTURE	WASTE	VENT	CW	HW
WATER CLOSET (TANK TYPE)	4"	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"

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.

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STATE OF MISSOURI — STEVEN S. POND — NUMBER 2004000220 — REGISTERED PROFESSIONAL ENGINEER

TENANT SPACE RENOVATION

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451 NW MURRAY ROAD
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PROJ. NO. 2146 | SCALE: As indicated

DRAWING TITLE: **PLUMBING DETAILS**

DRAWING NUMBER: **P300**

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

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 78 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.
   - C. MC CABLE INSTALLED IN PATIENT CARE AREAS SHALL BE "HCF" TYPE WITH GREEN INSULATED COPPER GROUNDING CONDUCTOR, BARE ALUMINUM GROUNDING/BONDING CONDUCTOR AND INTERLOCKED GREEN ALUMINUM ARMOR LISTED FOR USE AS AN EQUIPMENT GROUNDING CONDUCTOR IN CONJUCTION WITH THE BARE ALUMINUM BONDING CONDUCTOR.
     - 1) CABLES SHALL MEET ALL NEC REQUIREMENTS FOR ARTICLE 517 AND SHALL BE UL LISTED FOR USE IN HEALTH CARE FACILITIES.
     - 2) HCF CABLE SHALL NOT BE USED IN HAZARDOUS ANESTHETIZING AREAS.
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 #CR5352-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 #WP1010MXD OR #WP1010HMXD 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. FURNISH AND INSTALL CIRCUIT BREAKER PANELBOARDS AS SHOWN ON THE DRAWINGS. PANELBOARDS SHALL BE LISTED BY UL AND SO LABELED, AND SHALL BE FULLY RATED FOR THE VOLTAGE AND CURRENT CAPACITY INDICATED ON THE PANEL SCHEDULE. PANELBOARDS SHALL BE EQUAL TO SQUARE D TYPE NQ OR NF WITH BOLT IN TYPE BREAKERS. PANELBOARD LUGS SHALL BE RATED AT 75°C.
      - 1) CIRCUIT BREAKER INTERRUPTING CAPACITIES SHALL MEET OR EXCEED THE AVAILABLE RMS SYMMETRICAL FAULT CURRENTS INDICATED AND AS REQUIRED TO MEET OR EXCEED THE AVAILABLE FAULT CURRENT FROM LOCAL UTILITY.
    - B. CIRCUIT BREAKERS SHALL MEET APPLICABLE PORTIONS OF UL STANDARD 489 AND NEMA AB-L. CIRCUIT BREAKERS SHALL BE BOLT-ON, GROUP MOUNTED, AMBIENT MAGNETIC, WITH COMMON TRIP, UL RATED TO CARRY 80% OF NAMEPLATE RATING CONTINUOUSLY IN FREE AIR AT 40° C. CIRCUIT BREAKERS SHALL BE TRIP INDICATING AND FULLY INTERCHANGEABLE WITHOUT DISTURBING ADJACENT UNITS. WIRE TERMINALS SHALL BE RATED 75 DEGREES C. THE OPERATING MECHANISM SHALL BE TRIP-FREE SO THAT CONTACTS CANNOT BE HELD CLOSED AGAINST ANY ABNORMAL OVERCURRENT OR SHORT CIRCUIT CONDITION.
      - a) BREAKERS SHALL MEET APPLICABLE NEMA AND/OR UL SPECIFICATIONS.
    - C. PANELBOARD BOXES SHALL BE GALVANIZED SHEET STEEL WITH AMPLE WIRING GUTTER SPACE IN ACCORDANCE WITH NEC. FRONTS SHALL BE OF SHEET STEEL PAINTED LIGHT GREY OVER A SUITABLE RUST INHIBITOR PRIMER. PANELBOARDS SHALL BE EQUIPPED WITH ONE PIECE DOOR, CYLINDER TUMBLER TYPE LOCK, DIRECTORY CARD-HOLDER AND QUARTER-TURN ADJUSTABLE TRIM CLAMPS.
    - D. PANELBOARD INTERIORS SHALL CONSIST OF REINFORCED GALVANIZED SHEET STEEL FRAMES WITH ALUMINUM BUS BARS AND CIRCUIT BREAKERS, PROPERLY SUPPORTED TO PREVENT VIBRATIONS AND BREAKAGE IN HANDLING. BUS BARS SHALL BE SEQUENCE PHASED. PANELBOARD SHALL HAVE A FULL SIZED SOLID ALUMINUM NEUTRAL AND GROUND BUS.

ELECTRICAL SPECIFICATIONS (CONTINUED)

    - E. BUS BAR BRACING SHALL BE UL LISTED AS INDICATED ON DRAWINGS. ADDITIONAL BRACING SHALL BE PROVIDED AS REQUIRED TO MEET OR EXCEED INDICATED AVAILABLE FAULT CURRENTS.
    - F. DIRECTORY CARDS SHALL BE COMPLETELY FILLED IN BY TYPEWRITER, LISTING CIRCUIT NUMBERS AND LOAD SERVED, INCLUDING EXISTING CIRCUITS. CIRCUIT BREAKERS SHALL BE IDENTIFIED BY CIRCUIT NUMBER LABELS AS HEREINBEFORE SPECIFIED.
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 I 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.
18. FIRE ALARM SYSTEM (AEGIS FIRE PROTECTION):

    ELECTRICAL CONTRACTOR SHALL PROVIDE DESIGN BUILD ENERGINEERED SHOP DRAWINGS OF FIRE ALARM SYSTEM TO BE INSTALLED. PROVIDE DEVICES, CONDUIT, WIRES, CABLE, PROGRAMMING AND TESTING AS DIRECTED BY EQUIPMENT MANUFACTURER AND LOCAL FIRE DEPARTMENT FOR A CODE COMPLIANT FIRE ALARM/DETECTION SYSTEM. MATERIALS, EQUIPMENT, AND WORKMANSHIP SHALL MEET PREVAILING CODES. THE SYSTEM SHALL BE COMPLETE AND OPERABLE. SUBMIT ONE LINE DIAGRAM OF SYSTEM WITH SIZES AND BATTERY CALCULATIONS. EQUIPMENT TO BE NEW AND SHALL BE STAMPED, SIGNED, CALIBRATION AND TESTED BY FACTORY CERTIFIED TECHNICIAN. FIRE ALARM DEVICES ARE SHOWN FOR INTENT ONLY FOR PERMITTING PROCESS. CONTRACTOR IS RESPONSIBLE FOR INCLUDING IN BID/DESIGN ALL NECESSARY DEVICES (ANNUNCIATOR(S), NOTIFICATION APPLICANCES, INITIATING DEVICES, AND ADDITIONAL COMPONENTS).

ELECTRICAL SYMBOLS LIST

CIRCUITING & NOTES

+46"	SPECIAL MOUNTING HEIGHT FOR ASSOCIATED DEVICE (CENTERLINE OF DEVICE)
GFI	GROUND FAULT CIRCUIT INTERRUPTER DEVICE
WP	WEATHERPROOF ENCLOSURE ON DEVICE
E	EXISTING DEVICE TO REMAIN
☒	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
Ⓙ	JUNCTION BOX
☐	NON-FUSED DISCONNECT SWITCH
⧄	FUSED DISCONNECT SWITCH
⊙	MOTOR WITH DESIGNATION

CONTROLS

S	SINGLE POLE WALL SWITCH, TOP OF BOX AT 48" AFF
S_2	TWO POLE WALL SWITCH, TOP OF BOX AT 48" AFF
S_3	THREE-WAY WALL SWITCH, TOP OF BOX AT 48" AFF
S_m	MANUAL MOTOR STARTER WITH OVERLOADS
$\$_D$	DIMMER SWITCH, TOP OF BOX AT 48" AFF. VERIFY DIMMER TYPE AND COMPATIBILITY WITH FIXTURE (0-10V, ELV, LINE VOLTAGE)
$\$_{3D}$	THREE WAY DIMMER SWITCH, TOP OF BOX AT 48" AFF. VERIFY DIMMER TYPE AND COMPATIBILITY WITH FIXTURE (0-10V, ELV, LINE VOLTAGE)

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. MOUNT BOX AT 7'-6" AFF UNLESS NOTED OTHERWISE (VERIFY)

FIRE ALARM - FIRE ALARM SYSTEM IS EXISTING TO REMAIN. PROVIDE ADDITIONAL COMPATIBLE DEVICES AND CONNECT TO EXISTING SYSTEM AS REQUIRED.

DD	DUCT MOUNT SMOKE DETECTOR
☒◁	FIRE ALARM HORN/STROBE COMBINATION SIGNAL, CENTERLINE AT 6'-8" AFF
☒	FIRE ALARM VISUAL STROBE, CENTERLINE AT 6'-8" AFF
R	RELAY TO SHUT DOWN FAN POWERED BOX IN ALARM CONDITION

MISCELLANEOUS

⊙▽	COMBINATION POWER AND DATA FLOORBOX
Ⓣ	LINE VOLTAGE THERMOSTAT

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, SAW CUT EXISTING FLOOR SLAB AS REQUIRED FOR INSTALLATION OF UNDER FLOOR CONDUIT. NO STRUCTURAL ELEMENTS SHALL BE 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. REFER TO ARCHITECTURAL & STRUCTURAL DRAWINGS FOR REQUIREMENTS FOR SUPPORTING TRANSFORMERS, EQUIPMENT, ETC. FROM THE STRUCTURE. PROVIDE ADDITIONAL STEEL AS REQUIRED TO PROPERLY SUPPORT SYSTEMS FROM THE STRUCTURE.
9. 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.
10. EACH BRANCH CIRCUIT SHALL HAVE A DEDICATED NEUTRAL PER NEC 210.4.
11. FIRE ALARM SYSTEM(AEGIS FIRE PROTECTIONS) IS SHOWN FOR SCHEMATIC PURPOSES. THE FIRE ALARM CONTRACTOR IS RESPONSIBLE FOR PROVIDING DESIGN AND SHOP DRAWINGS SUBMITTAL TO FIRE MARSHAL FOR APPROVAL AS REQUIRED BY THE FIRE MARSHAL. IT IS THE CONTRACTORS RESPONSIBILITY TO PROVIDE ADDITIONAL DEVICES, POWER SUPPLIES, ETC FOR COMPLIANCE WITH CODE.
12. 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.
13. PROVIDE LOW VOLTAGE WIRING BETWEEN ALL 0-10V DIMMING DRIVERS CONTROLLED BY 0-10V DIMMERS PER MANUFACTURER'S INSTRUCTIONS WHETHER INDICATED ON PLANS OR NOT.
14. REFER TO ARCHITECTURAL ELEVATIONS FOR MOUNTING HEIGHT OF POWER/DATA OUTLETS.

HEALTH CARE FACILITY NOTES:

1. PATIENT AREAS (DRAW AND ALL EXAM) SHALL COMPLY WITH NEC ARTICLE 517 FOR HEALTH CARE FACILITIES.
2. ALL BRANCH CIRCUITS SUPPLYING PATIENT AREAS (DRAW AND ALL EXAM) SHALL HAVE REDUNDANT GROUNDING PER NEC 517.13(a) & (b). ALL UNDER FLOOR CONDUITS FOR BRANCH CIRCUITS SHALL BE METALLIC.
3. ALL DEVICES IN PATIENT CARE AREAS (DRAW AND ALL EXAM) SHALL BE HOSPITAL GRADE, GROUNDING, THREE WIRE TYPE, RATED FOR 20 AMPS, WITH COVER PLATES. HUBBELL #HBL8300-H, OR EQUAL. VERIFY COLOR WITH ARCHITECT.

BC PROJECT #: 21759
MISSOURI PE COA #2009003629

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2/15/2022
BRETT M. HERMANN
NUMBER PE-2018035615

TENANT SPACE RENOVATION
BLUE SKY FERTILITY
451 NW MURRAY ROAD
LEE'S SUMMIT, MO 64081

REVISIONS

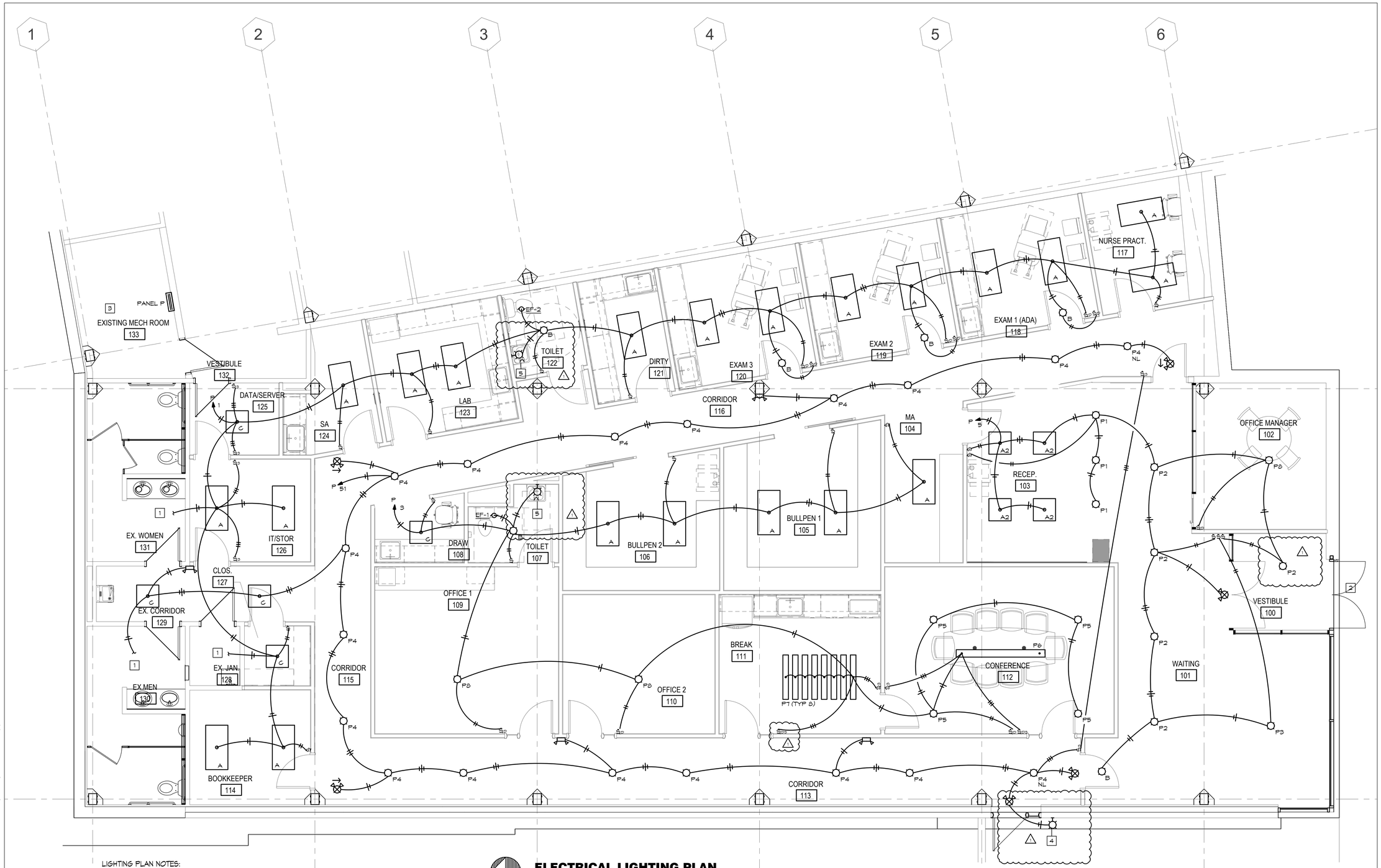
REV. #	DATE	DESCRIPTION
1	2/2/2022	CITY COMMENTS

BID SET

PROJ. NO.	SCALE:
2146	As indicated

DRAWING TITLE
ELECTRICAL SPECIFICATIONS

DRAWING NUMBER
E000



ELECTRICAL LIGHTING PLAN

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

LIGHTING PLAN NOTES:

1. CONNECT TO EXISTING LIGHTING IN THIS ROOM TO REMAIN.
2. EXTERIOR LIGHTING BY LANDLORD, VERIFY EXISTING EXTERIOR EGRESS EMERGENCY LIGHT TO REMAIN.
3. LIGHTS AND CONTROLS IN LANDLORD ROOM ARE EXISTING TO REMAIN. NO WORK TO BE DONE. VERIFY CODE COMPLIANT EMERGENCY LIGHT FOR PANEL AND PROVIDE AS REQUIRED.
4. EXTERIOR EGRESS EMERGENCY LIGHT ONLY TO MATCH EXISTING BUILDING STANDARD. VERIFY SPEC WITH LANDLORD.
5. SLIM LINE J-BOX PROVIDED WITH FIXTURE.

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2/15/2022

STATE OF MISSOURI
BRETT M. HERMANN
NUMBER PE-2018035615
REGISTERED PROFESSIONAL ENGINEER

TENANT SPACE RENOVATION

BLUE SKY FERTILITY

451 NW MURRAY ROAD
LEE'S SUMMIT, MO 64081

REVISIONS

REV. #	DATE	DESCRIPTION
1	2/2/2022	CITY COMMENTS

BID SET

PROJ. NO.	SCALE:
2146	As indicated

DRAWING TITLE

ELECTRICAL LIGHTING PLAN

DRAWING NUMBER

E100

BC PROJECT #: 21759
MISSOURI PE COA #2009003629

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

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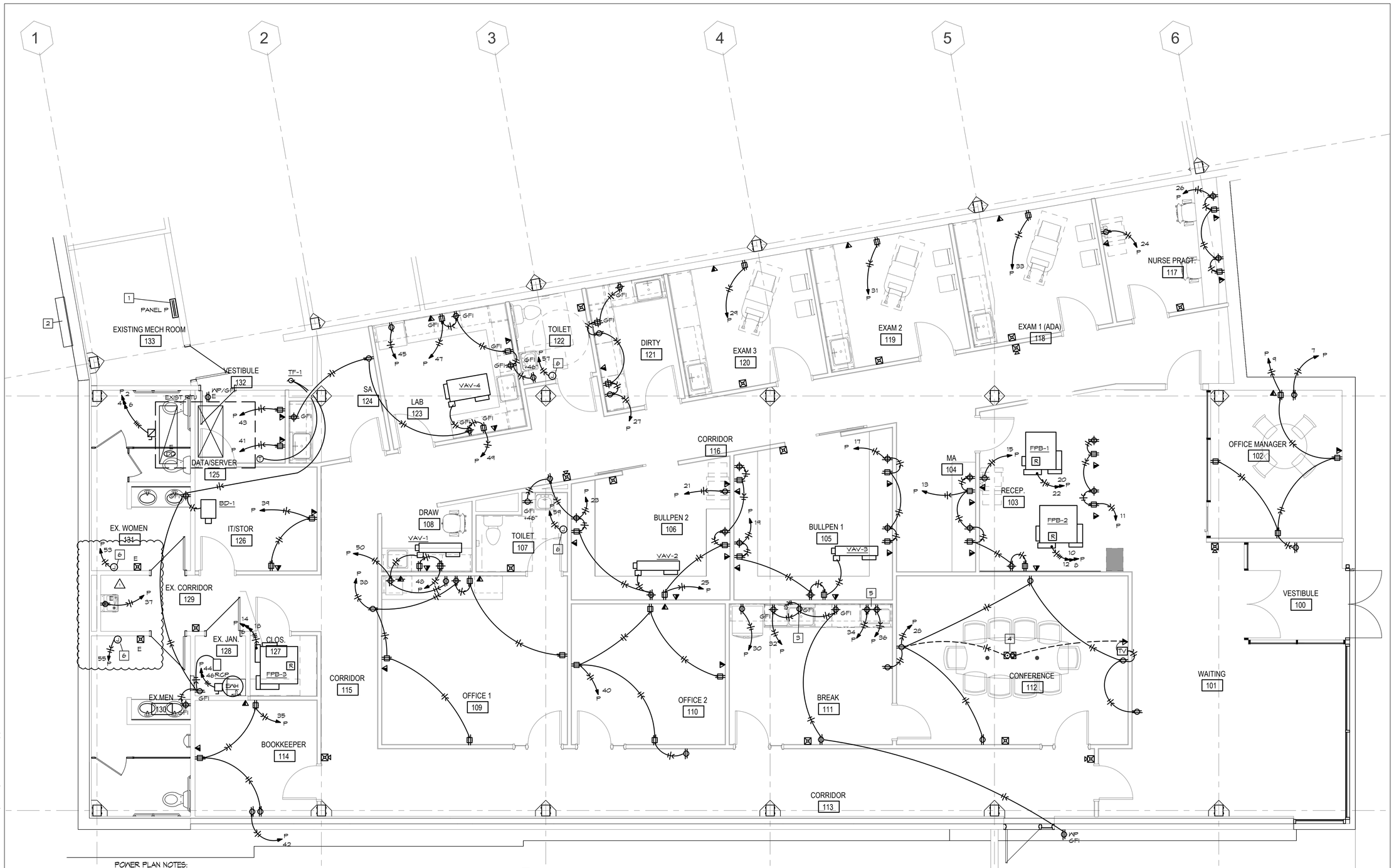

POWER PLAN NOTES:

1. INSTALL PANEL IN EXISTING COMMON MECHANICAL ROOM. FIELD VERIFY EXACT LOCATION TO INSTALL IN ROOM TO PROVIDE ADEQUATE CLEARANCES PER NEC.
2. APPROXIMATE LOCATION OF EXISTING ELECTRICAL SERVICE METER AND DISCONNECT, FIELD VERIFY LOCATION.
3. SWITCHED DUPLEX RECPETALCE FOR GARBAGE DISPOSAL
4. FLUSH SERVICE FLOOR BOX RATED FOR SLAB ON GRADE WITH FOURPLEX RECEPTPTACLE AND HDMI/DATA PROVISIONS. PROVIDE 1-1/2" CONDUIT FROM FLOOR BOX OVER TO WALL UP TO BOX AT +16" AND FROM BOX AT 16" PROVIDE 1-1/2" CONDUIT TUP TO TV BOX. PROVIDE WITH PULL STRING. VERIFY FINISH AND STYLE OF BOX COVER WITH ARCHITECT.
5. REFER TO ARCHITECTURAL ELEVATIONS FOR MOUNTING HEIGHT OF OUTLETS FOR STACKED MICROWAVE.
6. CONNECT TO HAND DRYER PER MFGR INSTRUCTIONS. VERIFY LOCATION WITH ARCH PLANS.

NORTH

ELECTRICAL POWER PLAN

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

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BLUE SKY FERTILITY
451 NW MURRAY ROAD
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REVISIONS

REV. #	DATE	DESCRIPTION
1	2/2/2022	CITY COMMENTS

BID SET

PROJ. NO. 2146 | SCALE: As indicated

DRAWING TITLE
ELECTRICAL POWER PLAN

DRAWING NUMBER
E200

BC PROJECT #: 21759
MISSOURI PE COA #2009003629

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

LIGHT FIXTURE SCHEDULE

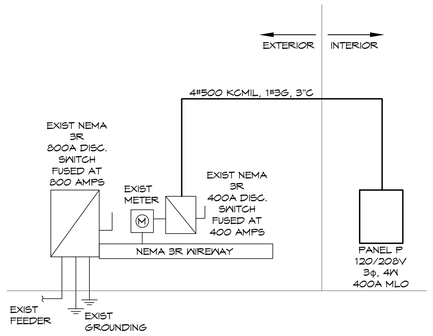
MARK NO.	MANUFACTURER & CATALOG NUMBER	VOLTS WATTS	LIGHT SOURCE	DESCRIPTION	EQUIVALENT MANUFACTURERS
A	H.E. WILLIAMS LP-24-L50/835-DIM- UNV	120 49	LED - 3500K 5000 LUMS	2'X4' GRID LAY-IN LED FLAP PANEL.	COLUMBIA, LITHONIA, SIGNIFY, OR EQUAL
B	H.E. WILLIAMS 6DR-TL-L15/835-DIM-UNV-O-W-OF-CS-N-F1	120 14	LED - 3500K 1500 LUMS	6" LED DOWN LIGHT WITH WIDE DISTRUBUTION, CLEAR SEMI-SPECULAR REFLECTOR/TRIM, AND 0-10V DIMMING.	PRESCOLITE, LITHONIA, SIGNIFY, OR EQUAL
C	H.E. WILLIAMS LP-22-L50/835-DIM- UNV	120 39	LED - 3500K 5000 LUMS	2'X2' GRID LAY-IN LED FLAP PANEL.	COLUMBIA, LITHONIA, SIGNIFY, OR EQUAL
P1	EUREKA MONK 4175-LED.13-35-120-C-60-ANTE-ANTE-CLR	120 13	LED -3500K 999 LUMENS	CABLE MOUNT DECORATIVE PENDANT, ANTHRACITE FINISH ON CANOPY AND SHADE. VERIFY MOUNTING HEIGHT WITH ARCHITECT	OR EQUAL APPROVED BY ARCHITECT
P2	EUREKA STELLA 4212D16-LED-35-80-120-AC-BLKE-BLKE-WH	120 35	LED - 3500K 2620 LUMENS	CABLE MOUNT 16" DIAMETER DIRECT ONLY DECORATIVE PENDANT, BLACK FINISH WITH WHITE DIFFUSER. VERIFY MOUNTING HEIGHT WITH ARCHITECT	OR EQUAL APPROVED BY ARCHITECT
P3	LIGHTART ACOUSTIC RING ACC-SHPE-RING-6D-24H-DK-STD-835-STM	120 135	LED - 3500K	6' DIAMETER, 24" HIGH AIRCRAFT CABLE MOUNT, DUSK FINISH, VERIFY MOUNTING HEIGHT WITH ARCHITECT	OR EQUAL APPROVED BY ARCHITECT
P4	EUREKA MILL 427TDI-25-LED.REG.LOW.-35-80-120-AC-60-RC1-BLKE-BLKE-NBF-WH	120 28	LED - 3500K 2000 LUMENS	DIRECT/INDIRECT DECORATIVE PENDANT, AIR CRAFT CABLE MOUNT, VERIFY MOUNTING HEIGHT WITH ARCHITECT. VERIFY COLOR FINISH WITH ARCHITECT REGULAR OUTPUT DIRECT, LOW OUTPUT INDIRECT	OR EQUAL APPROVED BY ARCHITECT
P5	EUREKA STELLA 4212D9-LED-35-80-120-DV-AC-BLKE-BLKE-WH	120 28	LED - 3500K 2050 LUMENS	CABLE MOUNT 9" DIAMETER DIRECT ONLY DECORATIVE PENDANT, BLACK FINISH WITH WHITE DIFFUSER. VERIFY MOUNTING HEIGHT WITH ARCHITECT, 0-10 VOLT DIMMING	OR EQUAL APPROVED BY ARCHITECT
P6	LIGHTART WING 2.0 ACC-SHPE-WING-96L-DK-DKT-STD-835-BPC-BK	120 74	LED - 3500K	CABLE MOUNT 8' WING FIXTURE, DUSK AND BLACK FINISH, VERIFY WITH ARCHITECT. VERIFY MOUNTING HEIGHT WITH ARCHITECT. 0-10 VOLT DIMMING	OR EQUAL APPROVED BY ARCHITECT
P7	LIGHTART ACC-STAT-BEAM-48L-12H-NI-WME-PM-CUSR-STD-ID835-IHE-DHE-PD1-SC-OS-BPC-BK-120	120 72	LED - 3500K	48"LX12"H LINEAR ACOUSTIC BAFFLE WITH DIRECT/INDIRECT LIGHT. HIGH EFFICIENCY OUTPUT, NICKEL/MAPLE WITH BLACK FINISH, VERIFY WITH ARCHITECT. VERIFY MOUNTING HEIGHT WITH ARCHITECT. 0-10 VOLT DIMMING	OR EQUAL APPROVED BY ARCHITECT
P8	EUREKA CALDERA 4246-46-LED-HO-35-80-120-DV-AC-60-RC1-BLKE-BLKE-	120 105	LED - 3500K 6900 LUMENS	46" DIAMETER LED, AIRCRAFT CABLE, VERIFY MOUNTING HEIGHT WITH ARCHITECT. BLACK FINISH, 0-10 VOLT DIMMING	OR EQUAL APPROVED BY ARCHITECT
W	EUREKA EXPO 3545-24-LED-35-80-120-SL-BLKE-WH-3980B-	120 9	LED - 3500K 1214 LUMENS	24" HORIZONTAL MOUNT LED ABOVE MIRROR, VERIFY ROUGH-IN HEIGHT WITH ARCHITECT. BLACK FINISH. PROVIDE WITH SLIM LINE COVER AND SLIM LINE INSTALL J-BOX	OR EQUAL APPROVED BY ARCHITECT
E	DUAL-LITE EV2	120 1	INCL	EMERGENCY LIGHT WITH TWIN ADJUSTABLE 1 WATT LED HEADS AND BATTERY, MOUNT AT 7'-6"±, TO CLEAR OBSTACLES. (PROVIDES 1 FC AVG. ON 2T CENTER FIXTURE SPACING)	SURE-LITES LITHONIA OR EQUAL
EX	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

△

PANEL: P		VOLTS: 120/208V		PH: 3Ø		WIRE: 4W		LOCATION: MECH RM					MOUNTING: SURFACE	
BUS: 400A		MAIN: 400A MLO		IC: 22,000 RMS SYM AMPS									FEEDER: SEE RISER DIAGRAM	
CKT	DESCRIPTION	AMPS	POLE	WIRE	ØA	ØB	ØC	ØA	ØB	ØC	WIRE	POLE	AMPS	DESCRIPTION	CKT NO
1	LIGHTS	20	1	12	1,500			10,560							2
3	LIGHTS	20	1	12		1,500			10,560		3	3	100	ROOFTOP UNIT	4
5	LIGHTS	20	1	12			1,500			10,560				(FIELD VERIFY RTU BRKR RQD)	6
7	OFFICE MANAGER OUTLET	20	1	12	100			3,600							8
9	OFFICE MANAGEAR OUTLETS	20	1	12		1,620			3,600		0	3	40	FAN POWERED BOX FPB-2	10
11	RECEPTION OUTLETS	20	1	12			1,080			3,600					12
13	RECEPTION OUTLETS	20	1	12	1,620			4,500							14
15	COPIER	20	1	12		1,200			4,500		6	3	50	FAN POWERED BOX FPB-3	16
17	BULLPEN 1 OUTLETS	20	1	12			1,080			4,500					18
19	BULLPEN 1 OUTLETS	20	1	12	1,080			1,400			12	2	20	FAN POWERED BOX FPB-1	20
21	COPIER	20	1	12		1,200			1,400						22
23	BULLPEN 2 OUTLETS	20	1	12			1,080			1,200	12	1	20	NURSE PRACT COPIER	24
25	BULLPEN 2 OUTLETS	20	1	12	900			1,000			12	1	20	NURSE PRACT OUTELTS	26
27	DIRTY OULTETS	20	1	12		1,260			1,440		12	1	20	CONF OUTLETS	28
29	EXAM 3 OUTLETS	20	1	12			360			1,000	12	1	20	REFRIGERATOR [GF]	30
31	EXAM 2 OUTLETS	20	1	12	360			1,200			12	1	20	BREAK COUNTER OUTLETS	32
33	EXAM 1 OUTLETS	20	1	12		360			1,200		12	1	20	MICROWAVE [GF]	34
35	BOOK KEEPER OUTLETS	20	1	12			900			1,200	12	1	20	MICROWAVE [GF]	36
37	DRINKING FOUNTAIN [GF]	20	1	12	200			1,000			12	1	20	OFFICE 1 OUTLETS	38
39	IT/STORAGE OUTLETS	20	1	12		720			1,620		12	1	20	OFFICE 2 OUTLETS	40
41	IT OUTLETS	20	1	12			000			100	12	1	20	BOOK KEEPER	42
43	IT OUTLETS	20	1	12	000			2,250			10	2	30	WATER HEATER	44
45	LAB REFRIGERATOR [GF]	20	1	12		1,000			2,250						46
47	LAB OUTELTS	20	1	12			1,260			720	12	1	20	DRAW OUTLETS	48
49	LAB OUTLETS	20	1	12	540			000			12	1	20	OFFICE 1 PRINTER/MC REFRIG	50
51	CORRIDOR LIGHTS	20	1	12		400						1	20	SPARE	52
53	HAND DRYER [HL]	20	1	12			1,500					1	20	SPARE	54
55	HAND DRYER [HL]	20	1	12	1,500							1	20	SPARE	56
57	HAND DRYER [HL]	20	1	12		1,500						1	20	SPARE	58
59	HAND DRYER [HL]	20	1	12			1,500					1	20	SPARE	60
					0,600	10,760	11,060	27,190	26,570	22,960					
					38,070		37,330		34,020						

NOTES:
[GF]-GFCI BRKR 5mA, [HL]-HANDLE LOCK

TOTAL CONNECTED LOAD: 107,220 VA
NEC DEMAND LOAD: 100,950 VA
DEMAND AMPS @ 208 VOLT / 3Ø: 280.21 A



ELECTRICAL RISER DIAGRAM

SCALE: NONE

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SCALE: As indicated

DRAWING TITLE
ELECTRICAL SCHEDULES

DRAWING NUMBER
E300

BC PROJECT #: 21759
MISSOURI PE COA #2009003629

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