GENERAL NOTES

1. MAINTAIN ACCESS TO EXISTING WALKWAYS, CORRIDORS, AND OTHER ADJACENT OCCUPIED OR USED FACILITIES. DO NOT CLOSE OR OBSTRUCT WALKWAYS, CORRIDORS, OR OTHER OCCUPIED OR USED FACILITIES WITHOUT PERMISSION FROM OWNER.

2. DEFINITIONS:
   - 2.1. REMOVE AND DISCARD: DETACH ITEMS FROM EXISTING CONSTRUCTION AND LEGALLY DISPOSE OF THEM OFF-SITE.
   - 2.2. REMOVE AND SALVAGE: DETACH ITEMS FROM EXISTING CONSTRUCTION AND TURN OVER TO OWNER UNDAMAGED.
   - 2.3. RELOCATE: DETACH ITEMS FROM EXISTING CONSTRUCTION, MOVE ITEMS INTACT AND UNDAMAGED, AND REINSTALL THEM WHERE INDICATED.
   - 2.4. EXISTING TO REMAIN: EXISTING ITEMS OF CONSTRUCTION THAT ARE NOT TO BE REMOVED, BUT ARE TO REMAIN IN PLACE AND BE UNDAMAGED.
   - 2.5. REMOVE AND RECLAIM: DETACH ITEMS FROM EXISTING CONSTRUCTION. AT CONTRACTORS OPTION ITEM MAY BE REUSED AS PART OF NEW WORK. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO INVENTORY ITEMS TO DETERMINE IF ITEMS WILL FUNCTION AND APPEAR LIKE THE NEW ITEMS SPECIFIED AND CALLED OUT ON THESE DOCUMENTS. IF ITEMS ARE REUSED, CONTRACTOR IS TO CLEAN, REPAIR, OR OTHERWISE BRING ITEMS TO LIKE NEW CONDITION. MODIFY REUSED ITEMS AS REQUIRED AND SUPPLEMENT WITH MATERIALS, AND INCIDENTALS NECESSARY TO EXECUTE A COMPLETE WORKMANLIKE JOB. IF CONTRACTOR CHOOSES TO NOT REUSE ITEM, LEGALLY DISPOSE OF ITEM OFF-SITE AND REPLACE WITH NEW TO MATCH EXISTING.
   - 2.6. PROVIDE: THE MEANING OF THE WORD "PROVIDED" INCLUDES, BUT IS NOT LIMITED TO, FURNISHED, DELIVERED, INSTALLED, FINISHED, MADE FULLY OPERABLE AND COMPLETE. UNLESS SPECIFICALLY NOTED OTHERWISE, ALL WORK DESCRIBED IN THESE DOCUMENTS IS TO BE PROVIDED BY THE CONTRACTOR.

3. CONTRACTOR IS TO INCLUDE AS PART OF HIS SCOPE ALL CUTTING AND PATCHING REQUIRED THROUGH CAREFUL EVALUATION OF THE EXISTING SITE AND THE CONSTRUCTION DOCUMENTS. CONTRACTOR SHALL COORDINATE THE CUTTING AND PATCHING OF EXISTING CONSTRUCTION NECESSARY TO PERMIT INSTALLATION OR PERFORMANCE OF THE WORK INDICATED IN THESE CONSTRUCTION DOCUMENTS. SAW-CUT CONC. SLAB AS REQUIRED FOR UTILITIES, FOR EQUIPMENT AND SINKS. VERIFY ROUTE AND TRENCH DEPTH IN FIELD. PATCH BACK WITH MATCHING SLAB THICKNESS OVER SAME MATERIAL, COMPACT UNDERLYING MATERIALS TO MEET BEST PRACTICES. DOWEL NEW TO EXISTING WITH #4 REBAR AT 30" OC.

4. WHERE WALLS, CASEWORK, FINISHES, EQUIPMENT OR OTHER ITEMS AND CONSTRUCTIONS HAVE BEEN REMOVED EXPOSING UNDERLYING WALL AND/OR FLOOR SURFACES, SUCH SURFACES ARE TO BE PATCHED AND REPAIRED AS REQUIRED TO ACCEPT NEW FINISHES. ALL HOLES, DAMAGES, DEFECTS, ETC. IN EXISTING SURFACES ARE TO BE PATCHED TO MATCH EXISTING CONDITIONS.

5. EXISTING CONDITIONS SHOWN ON THESE DRAWINGS ARE BASED UPON BASE BUILDING OR OTHER CONSTRUCTION DOCUMENTS MADE AVAILABLE TO THE DESIGNER BY THE BUILDING MANAGEMENT. ALL AS-BUILT ARCHITECTURAL CONDITIONS HAVE NOT BEEN FIELD VERIFIED AND MAY VARY FROM THOSE SHOWN.

6. PRIOR TO BID: FIELD VERIFY ALL EXISTING CONSTRUCTION TO REMAIN AND INCLUDE COSTS FOR REPAIR AND RECONDITION OF ALL EXISTING CONSTRUCTION TO REMAIN SO THAT IT MEETS THE AESTHETIC AND FUNCTIONAL STANDARD OF QUALITY FOR NEW CONSTRUCTION. BLEND AND MATCH EXISTING CONSTRUCTION WITH NEW CONSTRUCTION PRIOR TO BID, ADVISE TENANT OF ANY CONDITIONS WHICH CANNOT BE REPAIRED OR RECONDITIONED, BLENDED AND MATCHED. NOTE CONTRACT DOCUMENT REQUIREMENTS FOR EXISTING CONSTRUCTION AND INCLUDE COSTS FOR THIS WORK IN BID PROPOSAL.

7. THE GENERAL CONTRACTOR SHALL, IN THE BIDDING PROCESS, REQUIRE THAT MECHANICAL AND ELECTRICAL SUBCONTRACTORS MAKE A THOROUGH FIELD INSPECTION OF AS-BUILT CONDITIONS OF EXISTING SYSTEMS. AFTER SUCH FIELD VERIFICATION HAS BEEN COMPLETED, THE GENERAL CONTRACTOR AND SUBCONTRACTORS SHALL PROVIDE IN THEIR BIDS, ANY MODIFICATIONS TO THE EXISTING SYSTEMS WHICH MAY BE REQUIRED TO ACCOMMODATE THE PROPOSED REQUIREMENTS FOR THIS TENANT. IF A DETERMINATION OF SUCH MODIFICATIONS CANNOT BE MADE, THE GENERAL CONTRACTOR SHALL NOTIFY THE TENANT, AND AT THE DIRECTION OF THE TENANT, PROVIDE AN AGREED UPON ALLOWANCE TO COVER SUCH WORK.

8. COMMENCING WORK BY A CONTRACTOR OR SUBCONTRACTOR CONSTITUTES ACCEPTANCE OF THE UNDERLYING CONDITIONS AND SURFACES. PRIOR TO PROCEEDING WITH THE WORK, PREPARE EXISTING AND NEW UNDERLYING CONDITIONS AND SUBSTRATE TO COMPLY WITH THE CONTRACT DOCUMENTS, INDUSTRY STANDARDS AND MANUFACTURER'S RECOMMENDATION.

9. FIELD VERIFY ALL ROUGH OPENINGS AND WALL WIDTHS PRIOR TO ORDERING OR FABRICATION OF MATERIALS.

10. DIMENSIONS ARE NOMINAL AND TO THE FACE OF PARTITIONS

11. CLEAN-UP OF RUBBISH AND DEBRIS RESULTING FROM DEMOLITION AND NEW WORK SHALL BE COLLECTED REGULARLY FROM PROJECT SITE AND LEGALLY DISPOSED

12. ALL WEATHER EXPOSED SURFACES SHALL HAVE A WEATHER RESISTIVE BARRIER TO PROTECT THE INTERIOR WALL COVERING AND EXTERIOR OPENINGS SHALL BE FLASHED IN SUCH A MANNER AS TO MAKE THEM WEATHERPROOF

13. BUILDING ADDRESS NUMBERS TO BE PROVIDED ON THE FRONT AND STREET SIDE OF THE BUILDING. SAID NUMBERS SHALL BE A MIN. OF 7" HIGH WITH 1" WIDE STROKES CONTRASTING WITH THEIR BACKGROUND

14. CONTRACTORS ARE RESPONSIBLE FOR ALL MATERIALS AND QUANTITIES SHOWN IN THESE DRAWINGS GRAPHICALLY AS WELL AS THOSE CALLED FOR BY NOTE

15. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS TO COMPLETE THE PROPOSED WORK AND SHALL COMPLY WITH ALL LOCAL, STATIC, AND FEDERAL REGULATIONS

16. THE TENANT OR THE TENANT'S DESIGNATED REPRESENTATIVE WILL PROVIDE SERVICES IN CONNECTION WITH ADMINISTRATION OF THE CONTRACT

17. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL LOCAL LAWS, ORDINANCES, RULES AND REGULATIONS OF THE GOVERNING AGENCIES HAVING JURISDICTION

18. THE CONTRACTOR MUST TAKE ADEQUATE CARE TO PROTECT ALL AREAS OF THE BUILDING WHERE THE WORK OF THIS PROJECT IS LOCATED AS WELL AS THE AREAS ADJACENT TO THE AREA OF THE WORK OF THIS PROJECT SO AS TO PREVENT DAMAGE TO LIFE OR PROPERTY AS A RESULT OF THIS CONSTRUCTION PROJECT

19. ONLY MATERIALS THAT ARE NEW, UNUSED, FREE FROM DEFECTS, AND THE BEST OF THEIR RESPECTIVE KINDS SHALL BE USED. THE BASIS OF QUALITY SHALL BE THE LATEST STANDARDS OF ASTM, ASA OR ASHRA

20. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL OTHER TRADES INCLUDING THOSE OF THE TENANT WHO MAY BE ENGAGED UNDER A SEPARATE CONTRACT

21. INSTALL ALL WORK IN SUCH A MANNER AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND/OR REPAIRS

22. ALL WORK AND EQUIPMENT SHALL BE CLEANED TO THE SATISFACTION OF THE TENANT BEFORE BEING TURNED OVER FOR USE

23. A COPY OF THE LATEST SET OF CONSTRUCTION DOCUMENTS SHALL BE KEPT AT THE JOB SITE AT ALL TIMES

24. THE CONTRACTOR AND EACH SUBCONTRACTOR SHALL KEEP ACCURATE RECORDS OF ANY MODIFICATION OR DEVIATIONS FROM THE CONTRACT DRAWINGS

25. PROJECT CLOSE OUT DOCUMENTS SHALL BE PROVIDED TO THE TENANT. INCLUDE AS-BUILT DRAWINGS, WARRANTY/MAINTENANCE MANUALS AND TESTING AND SUPERVISION AS REQUIRED. PRESERVE ALL PRINTED INSTRUCTIONS AND WARRANTIES THAT ARE PROVIDED WITH EQUIPMENT OR MATERIALS USED, AND DELIVER SAID PRINTED MATTER TO THE TENANT AT THE TIME OF SUBSTANTIAL COMPLETION. IF REQUESTED BY THE TENANT, INSTRUCT THE MANAGEMENT IN THE PROPER USE AND MAINTENANCE OF ALL ITEMS OF WORK PROVIDED.

26. PROVIDE WORK IN ACCORDANCE WITH THE MANUFACTURE'S RECOMMENDATION, EXCEPT IN THE CASE WHERE THE CONTRACT DOCUMENTS ARE MORE STRINGENT. PROVIDE ANY MISCELLANEOUS ITEMS OR MATERIALS NOT SPECIFICALLY NOTED, BUT REQUIRED FOR PROPER INSTALLATION OF THE WORK.

27. ALL WORK SHALL BE WARRANTED BY THE CONTRACTOR TO BE SATISFACTORY, IN MATERIALS AND WORKMANSHIP, FOR A MINIMUM PERIOD OF ON (1) YEAR, OR FOR THE PERIOD OF WARRANTY CUSTOMARY, SPECIFIED FOR, THE TRADE, CRAFT OR PRODUCT, WHICHEVER IS LONGER.

28. SUBMIT REQUESTS FOR SUBSTITUTIONS OF SPECIFIED ITEMS IN WRITING, ACCOMPANIED BY THE ALTERNATIVE PRODUCT INFORMATION, TO THE TENANT. SUBSTITUTIONS MAY BE CONSIDERED ONLY IF THEY DO NOT SACRIFICE QUALITY, APPEARANCE AND FUNCTION. ACCEPTANCE OF SUBSTITUTIONS IS AT THE SOLE DISCRETION OF THE TENANT.

CONTACTS

GENERAL CONTRACTOR
WOOLERY CONSTRUCTION INC.
JOEL "BEN" WOOLERY JR.
BEN@WOOLERYCONSTRUCTIONKC.COM
913-271-7413

ARCHITECT OF RECORD
GUY GRONBERG ARCHITECTS P.C.
113 SE 3RD ST.
LEE'S SUMMIT, MO 64063
816-524-0878

MEP ENGINEER
BC ENGINEERS
5720 Reeder St.
Shawnee, KS 66203
913-262-1772

DEMOLITION PLAN NOTES

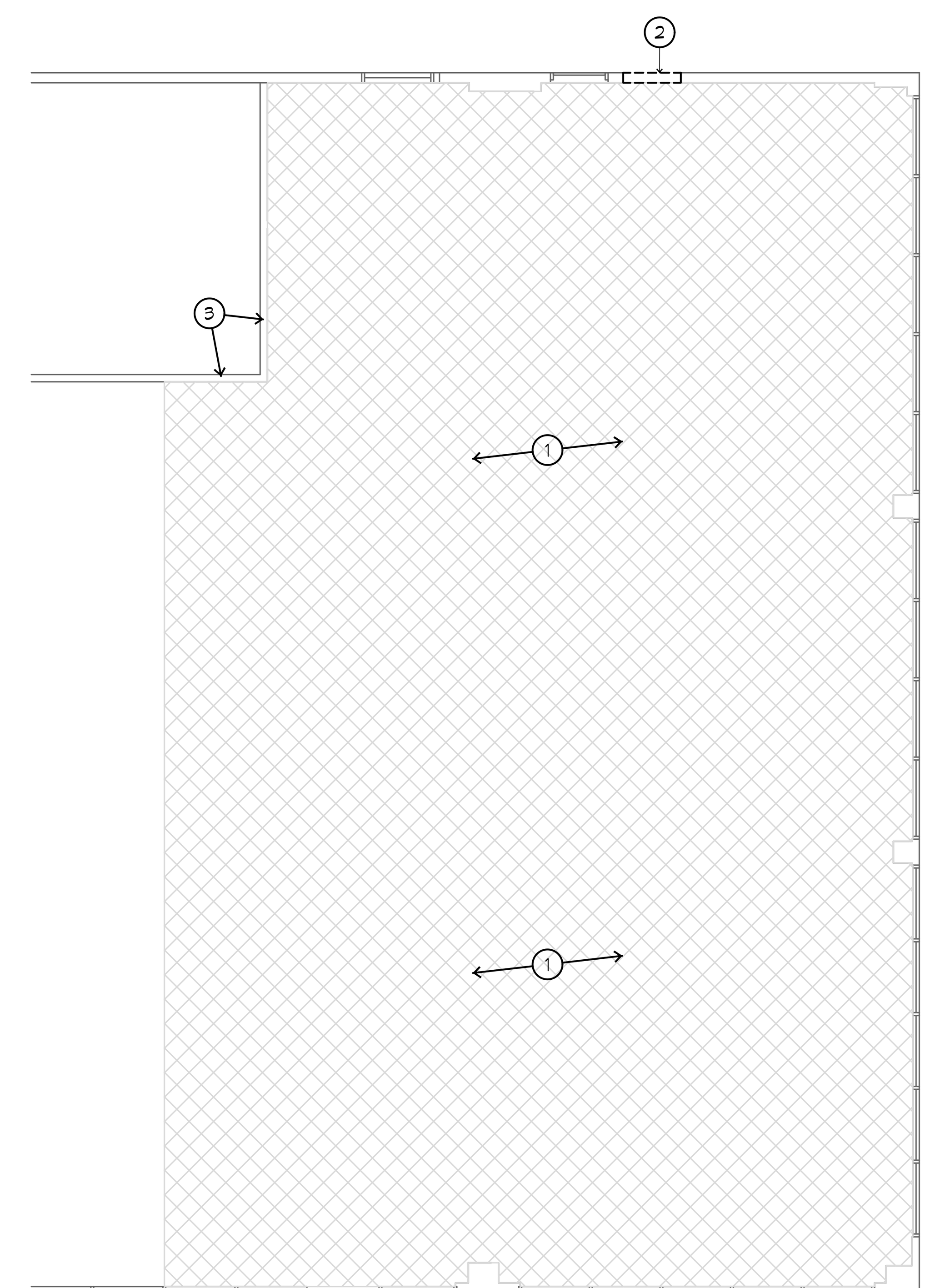
1. THROUGHOUT PROJECT AREA SHOWN REMOVE AND DISCARD ALL EXISTING CONSTRUCTION INCLUDING BUT NOT LIMITED TO PARTITIONS, DOORS, FRAMES, FLOOR FINISHES, CEILINGS, SOFFITS, DIFFUSERS, LIGHT FIXTURES, PLUMBING FIXTURES AND BUILT IN CASEWORK. REMOVE AND DISCARD ALL UNUSED CONDUIT AND WIRE BACK TO ELECTRICAL SERVICE. REMOVE AND DISCARD ALL UNUSED DUCTWORK BACK TO MAIN TRUNK. REMOVE AND DISCARD ALL UNUSED PLUMBING BACK TO MAIN LINE. EXTENTS AND QUANTITY OF DEMOLITION IS TO BE FIELD VERIFIED BY CONTRACTOR.

2. REMOVE AND DISCARD PORTION OF WALL AND REFRAME AS REQUIRED FOR NEW OPENING INDICATED ON FLOOR PLAN.

3. EXISTING TO REMAIN PARTITIONS AT TOILET ROOMS.

Comfort dental

1153 NORTHEAST
RICE ROAD
LEE'S SUMMIT
MISSOURI
64086



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

PLAN NORTH

CODE NOTES

A. TENANT FINISH

B. ALL CONSTRUCTION FOR THIS PROJECT SHALL CONFORM TO THE FOLLOWING BUILDING CODES AND REQUIREMENTS ADOPTED AND AS AMENDED BY THE CITY OF LEE'S SUMMIT, MO.
   - B.1. 2018 International Building Code
   - B.2. 2018 International Existing Building Code
   - B.3. 2018 International Fire Code
   - B.4. 2018 International Mechanical Code
   - B.5. 2018 International Plumbing Code
   - B.6. 2018 International Fuel Gas Code
   - B.7. 2017 National Electrical Code
   - B.8. 2010 ADA Accessibility Requirements

C. OCCUPANCY GROUP: B

D. CONSTRUCTION TYPE: IIB

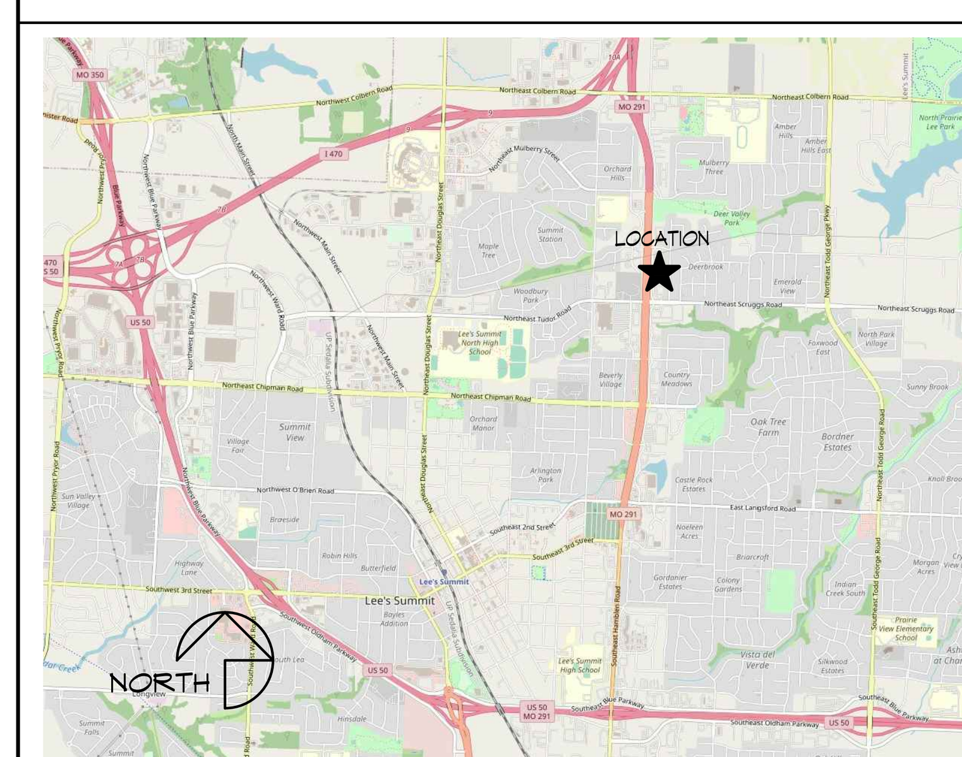
E. FULLY SPRINKLED BUILDING
FIRE ALARM FLOW CONTROL ONLY TO BE PROVIDED

F. SQUARE FOOTAGE TENANT INFILL = 2,988 SF

G. OCCUPANT LOAD = 2,988 / 150 sf/p = 19.92 ≈ 20 occupants

H. PLUMBING REQUIREMENTS (TABLE 2902.1):
   - H.1. USE GROUP B
   - H.2. 20 (OCCUPANT LOAD) / 2 = 10
   - H.3. WATER CLOSETS (MEN) = 10 / 25 = 0.4 ≈ 1
   - H.4. WATER CLOSETS (WOMEN) = 10 / 25 = 0.4 ≈ 1
   - H.5. LAVATORIES (MEN) = 10 / 40 = 0.25 ≈ 1
   - H.6. LAVATORIES (WOMEN) = 10 / 40 = 0.25 ≈ 1
   - H.7. SERVICE SINK = 1 REQUIRED / PROVIDED
   - H.8. DRINKING FOUNTAINS 1 REQUIRED - 1 WITH BOTTLE FILLER PROVIDED

AREA MAP



DRAWING INDEX

STATE OF MISSOURI KENNETH J. KLEFFNER NUMBER A-2001038809 REGISTERED ARCHITECT
6-22-2021

ARCHITECT
GUY GRONBERG ARCHITECTS, P.C.
113 SE 3rd St.
Lee's Summit, MO 64063
Phone 816.524.0878
Fax 816.524.8578

1153 NORTHEAST
RICE ROAD
LEE'S SUMMIT
MISSOURI
64086

REV#	DATE	DESCRIPTION

DATE: 06-22-2021
PROJECT# 21010

A1

DOOR AND FRAME SCHEDULE

DOOR #	DOOR OR OPN'G SIZE	FRAME	DOOR	HRDW #	NOTE
100	3'-0" x 7'-0" x 1-3/4"	D	4	08	
101	3'-0" x 6'-8" x 1-3/4"	C	1	06	
103	3'-0" x 6'-8" x 1-3/4"	A	2	02	
104	3'-0" x 6'-8" x 1-3/4"	A	1	02	
105	3'-0" x 6'-8" x 1-3/4"	A	1	01	
106	3'-0" x 6'-8" x 1-3/4"	A	2	01	
107	3'-0" x 6'-8" x 1-3/4"	A	1	03	
108	3'-0" x 6'-8" x 1-3/4"	A	2	01	
117	3'-0" x 6'-8" x 1-3/4"	A	1	04	
118A	3'-0" x 6'-8" x 1-3/4"	A	1	01	
118B	3'-0" x 6'-8" x 1-3/4"	B	3	07	
119	EXISTING	EXISTING	EXISTING	05	
122	3'-0" x 6'-8" x 1-3/4"	A	1	01	
123	3'-0" x 6'-8" x 1-3/4"	A	2	01	
124	3'-0" x 6'-8" x 1-3/4"	A	1	03	
125A	3'-0" x 6'-8" x 1-3/4"	A	2	01	
125B	3'-0" x 6'-8" x 1-3/4"	A	2	01	

DOOR, FRAME, & HARDWARE NOTES

1. FINISH HARDWARE TO MEET REQUIREMENTS OF ANSI/BHMA A156 STANDARDS FOR GRADE 2. PROVIDE PRODUCTS AS MANUFACTURED BY ALLEGION / SCHLAGE OR APPROVED EQUAL.
2. THE CONTRACTOR SHALL VERIFY LOCK/LATCH FUNCTIONS AND ALL KEYING REQUIREMENTS WITH OWNER PRIOR TO INSTALLATION.
3. FINISH TO BE US27 SATIN ALUMINUM CLEAR (CONFIRM W/ TENANT)
4. HARDWARE MOUNTING HEIGHTS BY THE DOOR AND HARDWARE INSTITUTE "RECOMMENDED LOCATIONS FOR BUILDERS HARDWARE". ALL DOOR HARDWARE IS TO COMPLY WITH THE AMERICANS WITH DISABILITIES ACT GUIDELINES AND HAVE LEVER HANDLES.
5. PROVIDE SIGN ABOVE DOOR 100 WITH 1" HIGH BLACK LETTERS ON WHITE BACKGROUND TO READ "THIS DOOR TO REMAIN UNLOCKED WHEN THIS SPACE IS OCCUPIED" IBC 1010.1.93. THESE DOORS SHALL BE OPENABLE FROM THE INSIDE WITHOUT THE USE OF KEY OR SPECIAL KNOWLEDGE OR EFFORT. THE UNLATCHING OF ANY DOOR SHALL NOT REQUIRE MORE THAN ONE OPERATION
6. COORDINATE ALARM REQUIREMENTS WITH TENANT .
7. DOOR FRAME FLOOR ANCHOR CLIPS SHALL BE SECURED WITH NOT LESS THAN 2 SUITABLE FASTENERS. DOOR JAMB ANCHOR CLIPS SHALL BE BOLTED OR SCREWED TO STUDS: THREE PER JAMB.

WALL TYPES

1. FURR-OUT AROUND THE STRUCTURAL COLUMNS AND MECHANICAL CHASES AS REQUIRED. MINIMIZE DEPTH OF FURRING.
2. PROVIDE SOLID BLOCKING FOR DOORS, WINDOWS, TOILET PARTITION, ACCESSORIES, HANDRAILS, LAVATORY BRACES, CASEWORK, SHELVING ETC. AS REQUIRED BY MANUFACTURER AND ALL WORK DONE BY CARPENTRY AND MILLWORK TRADES. ALL WOOD REQUIRED BY BUILDING CODES SHALL MEET ALL REQUIREMENTS TO THE CODE OF UNDERWRITERS LABORATORIES, INC. VERIFY THE DEPTH OF WALLS PRIOR TO INSTALLING RECESSED FIXTURES.
3. ALL EXPOSED EDGES AND / OR CORNER ON ALL GYPSUM WALL BOARD CONSTRUCTION SHALL HAVE A METAL CORNER TRIM, TAPED AND SPACKLED.
4. ALL NEW GYPSUM BOARD PARTITIONS TO BE PROPERLY PREPARED, PATCHED, SPACKLED AND SANDED, ETC., TO PROVIDE A SMOOTH FINISH AND AS REQUIRED TO RECEIVE NEW FINISHES.
5. ALL OPENINGS IN GYPSUM BOARD PARTITIONS SHALL BE DOUBLE STUDDED.
6. SET TOP OF ALL 10'-0" WALLS WITH A LASER LEVEL TO BE FLAT AND ALIGN WITH EXPOSED 'T' GRID.

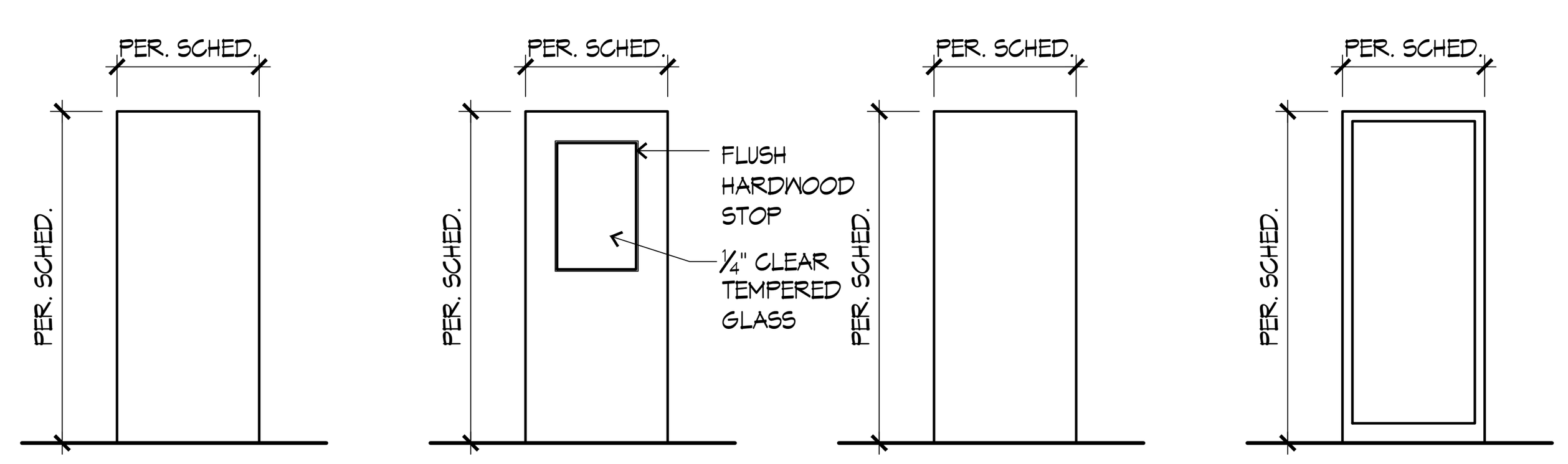
3⅝" 20 GAUGE MTL. STUDS @ 24" O.C. WITH ⅝" GYPSUM BOARD EACH SIDE. EXTEND ALL TO 10'-0"AFF PROVIDE 45° STUD KICKERS UP TO STRUCTURE AT 4'-0" O.C.

3⅝" 20 GAUGE MTL. STUDS @ 24" O.C. WITH ⅝" GYPSUM BOARD EACH SIDE AND 3½" UNFACED ACOUSTICAL BATTS. EXTEND ALL TO 10'-0" AFF. PROVIDE 45° STUD KICKERS UP TO STRUCTURE AT 4'-0" O.C.

3⅝" 20 GAUGE MTL. STUDS @ 24" O.C. WITH ⅝" GYPSUM BOARD EACH SIDE AND 3½" UNFACED ACOUSTICAL BATTS. EXTEND ALL TO UNDERSIDE OF ROOF DECK. PROVIDE DEEP LEG DEFLECTION TRACK INSTALLED PER MANUFACTURES INSTRUCTIONS. PROVIDE ACOUSTICAL SEALANT AT ALL PERIMETERS AND THRU WALL PENETRATIONS.

3⅝" 20 GAUGE MTL. STUDS @ 24" O.C. WITH ⅝" GYPSUM BOARD ON TENANT SIDE ONLY AND 3½" UNFACED ACOUSTICAL BATTS. EXTEND ALL TO UNDERSIDE OF ROOF DECK. PROVIDE DEEP LEG DEFLECTION TRACK INSTALLED PER MANUFACTURES INSTRUCTIONS. PROVIDE ACOUSTICAL SEALANT AT ALL PERIMETERS AND THRU WALL PENETRATIONS.

DOOR TYPES



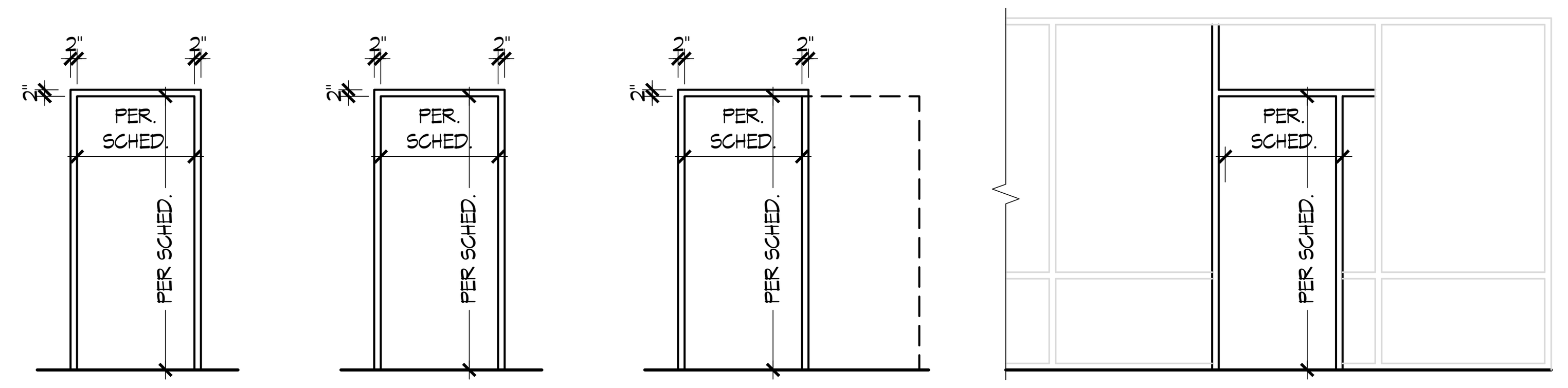
1 MASONITE PREFINISHED LEGACY DOOR - DARK WALNUT

2 MASONITE PREFINISHED LEGACY DOOR - DARK WALNUT STANDARD HALF-LITE

3 GALVANIZED HEAVY DUTY FLUSH METAL DOOR WITH POLYURETHANE CORE

4 EXTERIOR ALUMINUM STOREFRONT DOOR TO MATCH BUILDING STANDARD PROFILE AND FINISH

FRAME TYPES



FRAME A - TIMELY FRAME, PREFINISHED BLACK - THROAT DEPTH TO MATCH WALL THICKNESS

FRAME B - GALVANIZED HEAVY GAUGE FULLY WELDED HOLLOW METAL FRAME - PAINT

FRAME C - TIMELY POCKET DOOR FRAME, PREFINISHED BLACK - THROAT DEPTH TO MATCH WALL THICKNESS

FRAME D - EXISTING ALUMINUM STOREFRONT TO BE MODIFIED AND SUPPLEMENTED WITH MATCHING MATERIALS TO PROVIDE NEW CONFIGURATION AS SHOWN. REUSE EXISTING GLAZING AS MUCH AS POSSIBLE. PROVIDE NEW GLAZING TO MATCH EXISTING AS REQUIRED

DOOR HARDWARE

HW SET: 01
EACH TO HAVE:
3 EA HINGE
1 EA ADA LEVER PASSAGE LATCHSET
3 EA SILENCER
1 EA WALL STOP -CONCAVE

HW SET: 02
EACH TO HAVE:
3 EA HINGE
1 EA ADA LEVER ENTRY LOCKSET
3 EA SILENCER
1 EA WALL STOP- CONCAVE

HW SET: 03
EACH TO HAVE:
3 EA HINGE
1 EA ADA LEVER PRIVACY LOCKSET
3 EA SILENCER
1 EA WALL STOP- CONCAVE

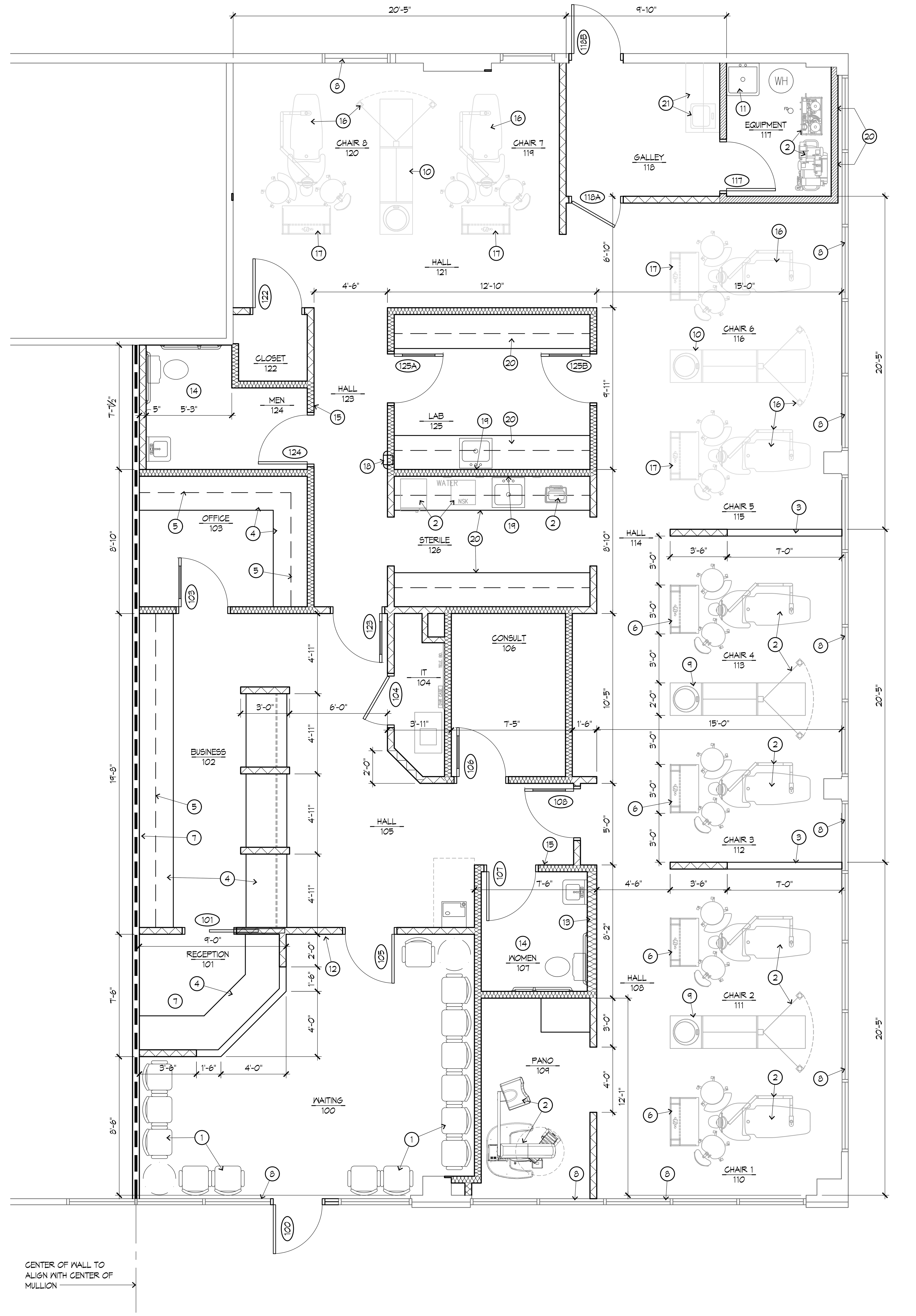
HW SET: 04
EACH TO HAVE:
3 EA HINGE
1 EA ADA LEVER ENTRY LOCKSET
1 EA CLOSER
1 EA SEALS
1 EA SURFACE AUTO DOOR BOTTOM
1 EA WALL STOP - CONCAVE

HW SET: 05
LOCK DOOR AND REMOVE ALL EXTERIOR HARDWARE. PROVIDE MATCHING BLANK PLATES AS REQUIRED.

HW SET: 06
EACH TO HAVE:
1 SET JOHNSON 1500HD POCKET DOOR FRAME KIT
2 EA REC

HW SET: 07
EACH TO HAVE:
3 EA HINGE
1 EA MORTISE LOCK WITH ANSI F20 FUNCTION
1 EA CLOSER
1 SET GASKETS
1 EA ADA THRESHOLD
1 EA DOOR SWEEP

HW SET: 08
EACH TO HAVE:
2 EA PIVOTS
1 EA INTERMEDIATE PIVOT
1 SET PUSH PULL BARS
1 EA DEADBOLT WITH OPTIONAL EZ-TURN L583-262 OR EQUAL
1 EA CLOSER 4031EDA 689 LCN
1 SET WEATHERTIGHT SEAL
1 EA THRESHOLD 2009APK PEMKO
1 EA DOOR SWEEP C627 NGP



1 FLOOR PLAN
1/4"=1'-0"

FLOOR PLAN NOTES

(1) OWNER PROVIDED FURNITURE AND EQUIPMENT NOT IN CONTRACT IS INDICATED THUS ——— · ——— · ———. CONTRACTOR IS TO COORDINATE ELECTRICAL AND LOW-VOLTAGE HOOK-UP REQUIREMENTS AND IS PROVIDE AND INSTALL BLOCKING FOR ALL MOUNTED ITEMS REGARDLESS OF WHO IS TO DO THE FINAL INSTALLATION. MOUNTING LOCATIONS INDICATED ON THESE DRAWINGS REPRESENT APPROXIMATE LOCATIONS. PRECISE MOUNTING LOCATIONS ARE TO BE VERIFIED IN FIELD WITH TENANT PRIOR TO INSTALLATION.

(2) DENTAL EQUIPMENT SUPPLIED BY OTHERS IS INDICATED THUS ═══════. COORDINATE REQUIREMENTS WITH DENTAL EQUIPMENT SUPPLIER DRAWINGS. CONTRACTOR IS TO COORDINATE ELECTRICAL AND LOW-VOLTAGE HOOK-UP REQUIREMENTS AND IS PROVIDE AND INSTALL BLOCKING FOR ALL MOUNTED ITEMS REGARDLESS OF WHO IS TO DO THE FINAL INSTALLATION. MOUNTING LOCATIONS INDICATED ON THESE DRAWINGS REPRESENT APPROXIMATE LOCATIONS. PRECISE MOUNTING LOCATIONS ARE TO BE VERIFIED IN FIELD WITH TENANT PRIOR TO INSTALLATION.

(3) PARTIAL HEIGHT WALL OF ⅝" GYP. BD. ON EACH SIDE OF 3⅝" METAL 20 GAUGE STUDS AT 24" O.C.. CAP AND FINISH TOP OF WALL WITH ⅝" GYPSUM BOARD AT 6'-0" AFF.

(4) 30" AFF PLASTIC LAMINATE TOP WITH 4" HIGH SIDE SPLASHES, SECURED TO WALLS. TO BE PROVIDED UNDER SEPARATE CONTRACT. SEE CASEWORK GENERAL NOTES ON SHEET A3.

(5) COORDINATE BACKING FOR SHELVING AND SHELVING REQUIREMENT WITH TENANT. TO BE PROVIDED UNDER SEPARATE CONTRACT. SEE CASEWORK GENERAL NOTES ON SHEET A3.

(6) 12 O'CLOCK DENTAL UNITS TO BE PROVIDED AND INSTALLED BY OWNERS VENDOR. PROVIDE UNITS WITH COMPRESSED AIR, VACUUM, AND 110V POWER SUPPLY. REFER TO DETAIL 14/A4

(7) INSTALL COMPRESSOR SWITCH AND VACUUM SWITCH AT 48" A.F.F. AT RECEPTION AS SHOWN. SWITCH BY SULLIVAN, INSTALLS IN A SINGLE GANG MUD RING, LIT AND LABELED.

(8) WINDOW COVERING BY TENANT

(9) CENTRAL DENTAL UNITS TO BE PROVIDED AND INSTALLED BY OWNERS VENDOR. PROVIDE UNITS WITH 110V POWER SUPPLY. PROVIDE AND INSTALL SINK AND PER PLUMBING DRAWINGS. REFER TO DETAIL 13/A4

(10) FUTURE CENTRAL DENTAL UNITS TO BE PROVIDED AND INSTALLED BY OWNERS VENDOR AT A LATER DATE. PROVIDE PLUMBING AND ELECTRICAL ROUGH INS JUST BELOW CONC. SLAB. BLOCK-OUT SLAB, CAP ALL ITEMS AND COVER WITH 2" RIGID INSULATION. INSULATION SHALL BE FLUSH WITH SLAB.

(11) SERVICE SINK REFER TO PLUMBING, PROVIDE FRP PANEL FROM FLOOR TO 48" AFF. EXTENDING 24" BEYOND EDGE OF SINK EACH WAY.

(12) WALL MOUNTED FLAT SCREEN PROVIDE SOLID BACKING, POWER AND DATA CONNECTION. CONNECTION BOX CENTER AT 6'-6" AFF. VERIFY EXACT LOCATION

(13) PROVIDE 6" METAL STUDS IN THIS WALL IN LIEU OF SIZE INDICATED IN WALL TYPES

(14) ALL FIXTURES AND ACCESSORIES IN TOILET ROOM ARE TO BE PROVIDED AS REQUIRED TO CONFORM TO THE REQUIREMENTS OF TYPICAL TOILET ROOM NOTES ON SHEET A2.

(15) PROVIDE ADA TOILET ROOM SIGN PER 2/A3.

(16) FUTURE DENTAL EQUIPMENT SUPPLIED BY OTHERS AT A LATER DATE IS INDICATED THUS ———————. COORDINATE REQUIREMENTS WITH DENTAL EQUIPMENT SUPPLIER DRAWINGS. PROVIDE PLUMBING AND ELECTRICAL ROUGH INS JUST BELOW CONC. SLAB. BLOCK-OUT SLAB, CAP ALL ITEMS AND COVER WITH 2" RIGID INSULATION. INSULATION SHALL BE FLUSH WITH SLAB.

(17) FUTURE 12 O'CLOCK DENTAL UNITS TO BE PROVIDED AND INSTALLED BY OWNERS VENDOR AT A LATER DATE. PROVIDE PLUMBING AND ELECTRICAL ROUGH INS JUST BELOW CONC. SLAB. BLOCK-OUT SLAB, CAP ALL ITEMS AND COVER WITH 2" RIGID INSULATION. INSULATION SHALL BE FLUSH WITH SLAB.

(18) PROVIDE FIRE EXTINGUISHER IN ACCORDANCE WITH NFPA 10-2018 (IFC-2018 906.1;906.2). PROVIDE SEMI RECESSED CABINET WITH 3" ROLLED EDGE.

(19) AT SINK LOCATION IN LIEU OF GYPSUM BOARD INDICATED IN WALL TYPES PROVIDE CEMENT BOARD FROM FLOOR TO 30" AFF AND EXTENDING MINIMUM OF 18" BEYOND EDGE OF SINK BASE CABINET EACH WAY.

(20) INSTALL AND CLOSE WINDOW COVERINGS PRIOR TO WALL INSTALLATION. CONSTRUCT WALL FLAT ON FLOOR AND FINISH FACE OF WALL FACING TOWARDS WINDOW PRIOR TO TILTING WALL INTO PLACE.

(20) CASEWORK TO BE SUPPLIED AS INDICATED IN CASEWORK GENERAL NOTES ON SHEET A3.

(21) FUTURE CASEWORK BY TENANT AT A LATER DATE. COORDINATE. PROVIDE PLUMBING AND ELECTRICAL ROUGH INS.

STATE OF MISSOURI
KENNETH J. KLEFFNER
NUMBER
A-2001038303
REGISTERED ARCHITECT
6-22-2021

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comfort dental®

1153 NORTHEAST RICE ROAD
LEE'S SUMMIT
MISSOURI
64086

REV#	DATE	DESCRIPTION

DATE: 06-22-2021
PROJECT# 21010

A2

FINISH SCHEDULE

NOTE: INTERIOR FINISHES TO BE COORDINATED WITH DESIGNER

RM. #	ROOM NAME	FLOOR	BASE	WALL				NOTES
				NORTH	EAST	SOUTH	WEST	
100	WAITING	LVT	RB	PT1	PT1	PT1	PT1	
101	RECEPTION	LVT	RB	PT1	PT1	PT1	PT1	
102	BUSINESS	LVT	RB	PT1	PT1	PT1	PT1	
103	OFFICE	LVT	RB	PT1	PT1	PT1	PT1	
104	I.T.	LVT	RB	PT2	PT2	PT2	PT2	
105	HALL	LVT	RB	PT1	PT1	PT1	PT1	
106	CONSULT	LVT	RB	PT1	PT1	PT1	PT1	
107	WOMEN	LVT	RB	PT2	PT2	PT2	PT2	1.
108	HALL	LVT	RB	PT1	PT1	PT1	PT1	
109	PANO	LVT	RB	PT1	PT1	PT1	PT1	
110	CHAIR 1	LVT	RB	PT1	PT1	PT1	PT1	
111	CHAIR 2	LVT	RB	PT1	PT1	PT1	PT1	
112	CHAIR 3	LVT	RB	PT1	PT1	PT1	PT1	
113	CHAIR 4	LVT	RB	PT1	PT1	PT1	PT1	
114	HALL	LVT	RB	PT1	PT1	PT1	PT1	
115	CHAIR 5	LVT	RB	PT1	PT1	PT1	PT1	
116	CHAIR 6	LVT	RB	PT1	PT1	PT1	PT1	
117	EQUIPMENT	LVT	RB	PT2	PT2	PT2	PT2	2.
118	GALLEY	LVT	RB	PT1	PT1	PT1	PT1	
119	CHAIR 7	LVT	RB	PT1	PT1	PT1	PT1	
120	CHAIR 8	LVT	RB	PT1	PT1	PT1	PT1	
121	HALL	LVT	RB	PT1	PT1	PT1	PT1	
122	CLOSET	LVT	RB	PT1	PT1	PT1	PT1	
123	HALL	LVT	RB	PT1	PT1	PT1	PT1	
124	MEN	LVT	RB	PT2	PT2	PT2	PT2	1.
125	LAB	LVT	RB	PT1	PT1	PT1	PT1	
126	STERILE	LVT	RB	PT1	PT1	PT1	PT1	

FINISH MATERIAL LEGEND

FLOORING

LVT LUXURY VINYL TILE - MOHAWK GROUP, CENTRATO STUDIO 659

BASE

RB COVED RUBBER BASE - ARMSTRONG JET BLACK - 60

WALLS

PT1 PAINT - SHERWIN WILLIAMS PROMAR 400 - NORTHSTAR 6246 - SEMI-GLOSS

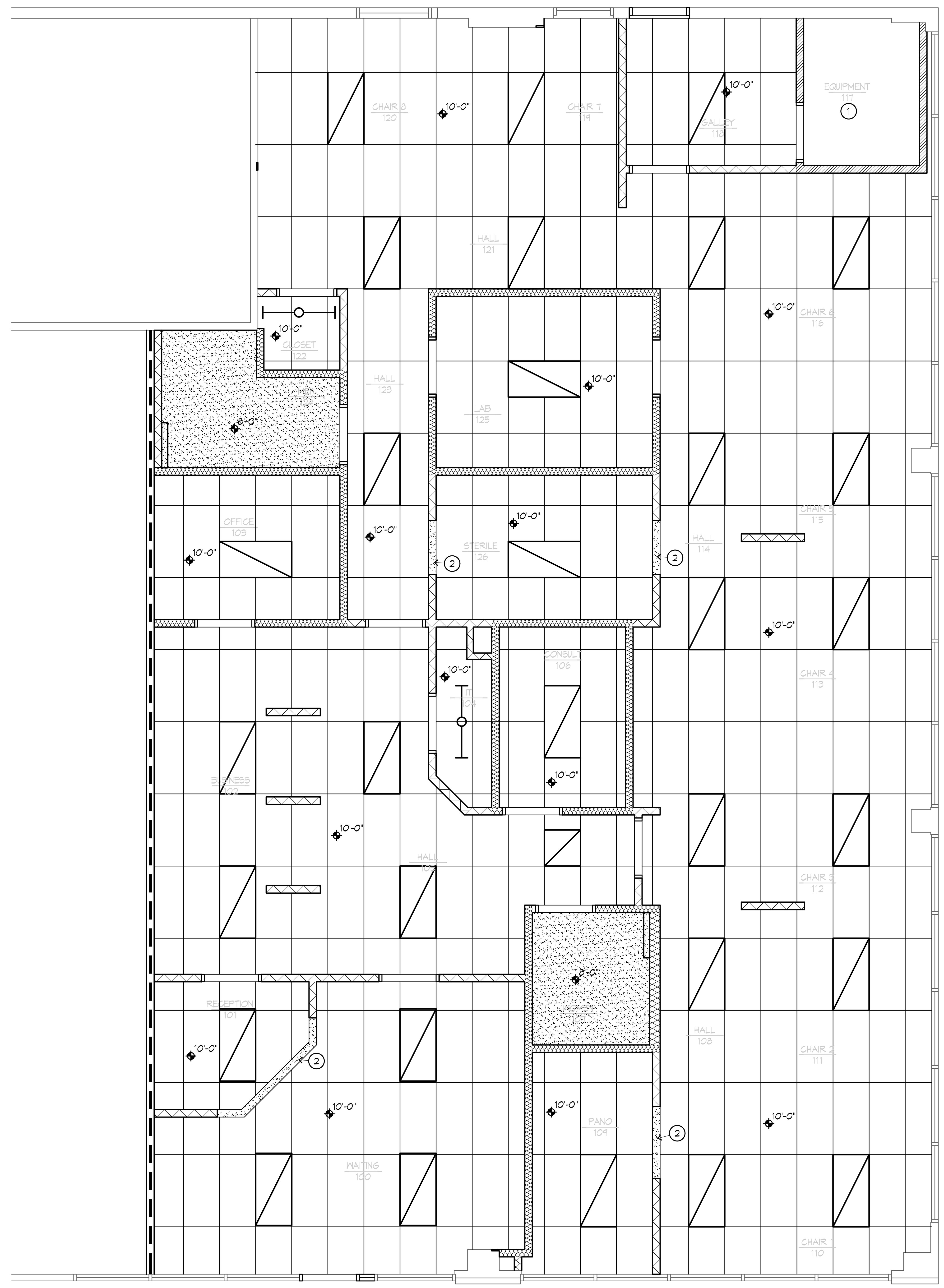
PT2 PAINT - SHERWIN WILLIAMS PROMAR 200 SW-7006 EXTRA WHITE - SEMI-GLOSS

FINISH SCHEDULE NOTES

1. PROVIDE ON ALL WALLS OF ROOM OR AREA FROM FLOOR TO 48" AFF 0.09" THICK FIBERGLASS REINFORCED PANEL (FRP) WITH WHITE PEBBLED FINISH. PROVIDE WHITE PVC TRIM AT SEAMS AND EDGES.
2. PROVIDE ON WALL BEHIND SERVICE SINK AND EXTENDING 24" BEYOND EDGE OF SINK EACH WAY, FROM FLOOR TO 48" AFF, 0.09" THICK FIBERGLASS REINFORCED PANEL (FRP) WITH WHITE PEBBLED FINISH. PROVIDE WHITE PVC TRIM AT SEAMS AND EDGES.

FINISH GENERAL NOTES

1. PATCH, LEVEL AND PREPARE ALL FLOORS AS RECOMMENDED BY FLOORING MANUFACTURER FOR EACH TYPE OF FLOORING TO BE PLACED. USE TROWELABLE LEVELING AND PATCHING COMPOUND TO FILL CRACKS, HOLES, AND DEPRESSIONS IN SUBSTRATES. TROWELABLE LEVELING AND PATCHING COMPOUNDS SHALL BE OF LATEX-MODIFIED, PORTLAND CEMENT BASED OR BLENDED HYDRAULIC CEMENT BASED FORMULATION PROVIDED OR APPROVED BY FLOOR COVERING MANUFACTURER FOR APPLICATIONS INDICATED.
2. INTERIOR FINISHES MUST CONFORM TO THE GOVERNING CODE FOR "CLASS III" MAX. 25 FOR SMOKE DENSITY CLASSIFICATION. MAX. FLAME SPREAD OF 200
3. COLOR OF ALL LIGHT SWITCHES, RECEPTACLES AND PLATE COVERS TO BE SELECTED BY TENANT.
4. PAINTING CONTRACTOR SHALL EXAMINE ALL SURFACES AFTER COMPLETION OF WORK OF ALL TRADES AND PROVIDE NECESSARY "TOUCH UP" PAINTING AND PATCHING. HE SHALL IMMEDIATELY REMOVE ANY PAINT SPILLAGE OR SPLATTER.
5. ALL PAINTING WORK SHALL BE DONE BY SKILLED WORKERS USING EITHER BRUSHES OR ROLLERS. POOR WORKMANSHIP WILL NOT BE ACCEPTED. ALL MATERIALS SHALL BE EVENLY SPREAD, SMOOTHLY FLOWED ON AND FREE FROM RUNS, SAGS, CRAWLINGS OR OTHER DEFECTS. FINISHED SURFACES SHALL BE UNIFORM IN COLOR, GLOSS, SHEEN AND MATTE FINISH AND FREE FROM BRUSH MARKS, BRISTLES, LINT OR DUST PIMPLES.
6. PRIME AND PAINT ALL WALLS EXCEPT THOSE AREAS TO RECEIVE GLAZED CERAMIC TILE OR FRP MATERIAL. ALL NEW GYPSUM BOARD PARTITIONS TO BE PAINTED SHALL RECEIVE AN ALKYD PRIMER AND TWO COATS OF LATEX PAINT, WITH SEMI-GLOSS FINISH.



1 CEILING PLAN
1/4"=1'-0"

PLAN NORTH

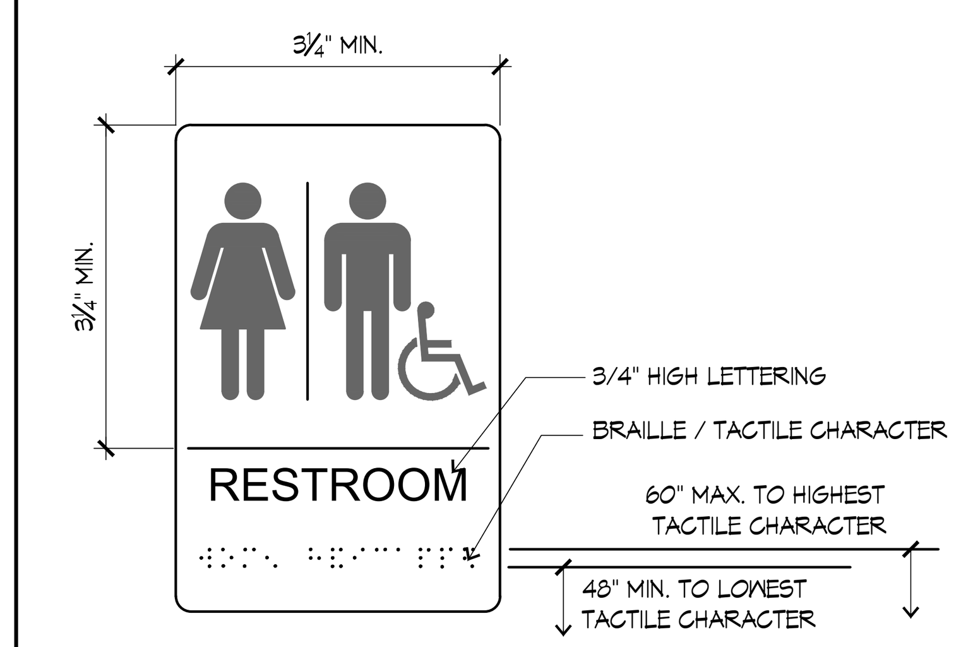
9'-8" ELEVATION OF CEILING ABOVE FINISHED FLOOR.

CERTAINTEED FINE FISSURED - HHF-197 2'X4' FLAT EDGE ACOUSTICAL CEILING TILE IN 15/16" EXPOSED 'T' GRID

5/8" GYPSUM BOARD ON 3 5/8" METAL STUD FRAMING AT 16" O.C. PAINT PT2.

CEILING NOTES

1. NO CEILING THIS ROOM. EXPOSED TO STRUCTURE ABOVE.
2. PROVIDE NOMINAL 5" GYPSUM BOARD HEADER AT 7'-0" AFF.



ROOM No.	ROOM NAME IN SIGNAGE	SIGNAGE TYPE
116	RESTROOM	A
117	RESTROOM	A

NOTE: ALL SIGNAGE TO MEET ICC/ANSI A117.1-2003 TACTILE CHARACTERS SHALL BE 48 INCHES (1220 MM) MINIMUM ABOVE THE FLOOR, MEASURED TO THE BASELINE OF THE LOWEST TACTILE CHARACTER AND 60 INCHES (1525 MM) MAXIMUM ABOVE THE FLOOR, MEASURED TO THE BASELINE OF THE HIGHEST TACTILE CHARACTER

2 TOILET ROOM SIGNS
N.T.S.

CASEWORK GENERAL NOTES

1. ALL CASEWORK AND COUNTERTOPS TO BE FABRICATED AND INSTALLED UNDER A SEPARATE CONTRACT. LAMINATE FINISHES AND HARDWARE BY THE FABRICATOR. REFER TO VENDORS ELEVATIONS FOR COORDINATION. CONTRACTOR IS TO COORDINATE PLUMBING, MECHANICAL, ELECTRICAL AND LOW-VOLTAGE HOOK-UP REQUIREMENTS AND IS TO PROVIDE AND INSTALL BLOCKING FOR ALL MOUNTED ITEMS REGARDLESS OF WHO IS TO DO THE FINAL INSTALLATION. MOUNTING LOCATIONS INDICATED ON THESE DRAWINGS REPRESENT APPROXIMATE LOCATIONS. PRECISE MOUNTING LOCATIONS ARE TO BE VERIFIED IN FIELD WITH TENANT PRIOR TO INSTALLATION.
2. CABINETS COLOR TO BE SILVER FROST
COUNTER TOPS COLOR TO BE FORMICA #9285-58 WHITE TWILL

TOILET ROOM TYPICAL NOTES

1. PROVIDE WATER CLOSET WITH SEAT HEIGHT BETWEEN 17 AND 19 INCHES MEASURED TO TOP OF THE SEAT. FLUSH CONTROLS SHALL BE LOCATED ON THE OPEN SIDE OF THE WATER CLOSET. CENTERLINE OF WATER CLOSET SHALL BE 16" TO 18" FROM THE SIDE WALL.
2. PROVIDE LAVATORY WITH RIM MOUNTED AT 34 INCHES MAXIMUM ABOVE THE FINISH FLOOR OR GROUND. BOTTOM OF APRON TO BE 29 INCHES MINIMUM ABOVE THE FINISH FLOOR OR GROUND. WATER SUPPLY AND DRAIN PIPES UNDER LAVATORY SHALL BE INSULATED OR OTHERWISE CONFIGURED TO PROTECT AGAINST CONTACT. THERE SHALL BE NO SHARP OF ABRASIVE SURFACES UNDER LAVATORY. THE CENTERLINE OF THE LAVATORY SHALL BE A MINIMUM OF 15" FROM THE SIDE WALL.
3. MIRROR TO BE 40" MAXIMUM TO REFLECTIVE SURFACE.
4. TOILET PAPER DISPENSER TO BE 7 INCHES FROM RIM OF TOILET TO CENTER OF TOILET PAPER ROLL(IN PLAN HORIZONTAL.) TOILET PAPER TO BE 19" MINIMUM ABOVE FINISHED FLOOR.
5. SIDE HORIZONTAL GRAB BAR TO BE 42" MIN LONG, 12" FROM BACK WALL, AND 33"-36" AFF. SIDE VERTICAL GRAB BAR TO BE 18" MIN. LONG, 40" FROM BACK WALL, AND 40" AFF TO BOTTOM OF BAR. REAR HORIZONTAL GRAB BAR TO BE 36" MIN LONG, 6" MAX FROM BACK WALL, AND 33"-36" AFF. ALL GRAB BARS TO HAVE 1 1/2" MAX DIA. AND 1 1/2" OFFSET FROM WALL.
6. SOAP AND PAPER TOWEL DISPENSERS (IF PROVIDED) TO BE INSTALLED AT 34" AFF TO SOAP SPOUT OR TOWEL DISPENSING LOCATION.
7. PROVIDE ON EXTERIOR LATCH SIDE OF DOOR MATTE FINISH TOILET ROOM SIGN. REFER TO 2/A3.

6-22-2021

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REV#	DATE	DESCRIPTION

DATE: 06-22-2021

PROJECT# 21010

A3

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.

   D. SUBMIT MEDICAL GAS CERTIFICATION REPORT TO OWNER.

3. MANUFACTURERS:

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

4. MOTORS:

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

5. TESTING, BALANCING, AND CLEANING:

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

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

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

   D. 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.

   E. 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.

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

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 AN STORAGE 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, HOT, AND HOT WATER RECIRCULATING (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: 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: PIPE AND FITTINGS SHALL BE MANUFACTURED FROM PVC COMPOUND WITH A CELL CLASS OF 11432 PER ASTM D 4396 FOR PIPE AND 12454 PER ASTM D 1784 FOR FITTINGS AND CONFORM WITH NATIONAL SANITATION FOUNDATION (NSF) STANDARD 14. PIPE SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM F 891. INJECTION MOLDED FITTINGS SHALL CONFORM TO ASTM D 2665. FABRICATED FITTINGS SHALL CONFORM TO ASTM F 1866. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2564.
      3) PVC SCHEDULE 40 SOLID WALL PIPE AND DWV FITTING SYSTEM: PIPE AND FITTINGS SHALL BE MANUFACTURED FROM PVC COMPOUND WITH A CELL CLASS OF 12454 PER ASTM D 1784 AND CONFORM WITH NATIONAL SANITATION FOUNDATION (NSF) STANDARD 14. PIPE SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM D 1785 AND ASTM D 2665. INJECTION MOLDED FITTINGS SHALL CONFORM TO ASTM D 2665. FABRICATED FITTINGS SHALL CONFORM TO ASTM F 1866. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2564.
      4) HUBLESS CAST IRON SOIL PIPE AND FITTINGS: HUBLESS CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 888 AND CISPI STANDARD 301. HUBLESS COUPLINGS SHALL CONFORM TO CISPI STANDARD 310 AND BE CERTIFIED BY NSF® INTERNATIONAL.
      5) HUB AND SPIGOT CAST IRON SOIL PIPE AND FITTINGS: HUB AND SPIGOT CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 74.

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

      1) ABS SCHEDULE 40 CELLULAR CORE (FOAM CORE) PIPE AND DWV FITTING SYSTEM: PIPE AND FITTINGS SHALL BE MANUFACTURED FROM ABS COMPOUND WITH A CELL CLASS OF 42222 FOR PIPE AND 32222 FOR FITTINGS AS PER ASTM D 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 IN PLENUM)
      2) PVC SCHEDULE 40 CELLULAR CORE (FOAM CORE) PIPE AND DWV FITTING SYSTEM: PIPE AND FITTINGS SHALL BE MANUFACTURED FROM PVC COMPOUND WITH A CELL CLASS OF 11432 PER ASTM D 4396 FOR PIPE AND 12454 PER ASTM D 1784 FOR FITTINGS AND CONFORM WITH NATIONAL SANITATION FOUNDATION (NSF) STANDARD 14. PIPE SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM F 891. INJECTION MOLDED FITTINGS SHALL CONFORM TO ASTM D 2665. FABRICATED FITTINGS SHALL CONFORM TO ASTM F 1866. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2564. (NOT IN PLENUM)
      3) PVC SCHEDULE 40 SOLID WALL PIPE AND DWV FITTING SYSTEM: PIPE AND FITTINGS SHALL BE MANUFACTURED FROM PVC COMPOUND WITH A CELL CLASS OF 12454 PER ASTM D 1784 AND CONFORM WITH NATIONAL SANITATION FOUNDATION (NSF) STANDARD 14. PIPE SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM D 1785 AND ASTM D 2665. INJECTION MOLDED FITTINGS SHALL CONFORM TO ASTM D 2665. FABRICATED FITTINGS SHALL CONFORM TO ASTM F 1866. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2564. (NOT IN 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. CONDENSATE DRAINS & INDIRECT WASTE (ABOVEGROUND).

      1) DWV, WROUGHT COPPER, ANSI B-16.29 (WATER HEATER T&P).
      2) POLYVINYLCHLORIDE (PVC) DWV PIPE, SCHEDULE 40, SOLVENT JOINT (CONDENSATE).

   G. COMPRESSED AIR.

      1) TYPE L HARD DRAWN COPPER TUBING, ASTM B-819.
      2) WROUGHT BRONZE SOLDERED FITTINGS.
      3) JOINTS: AWS A5.8, BCUP SILVER BRAZE (15% SILVER SOLDER).
      4) PIPING SHALL BE CLEANED AND INSTALLED IN ACCORDANCE WITH INSTALLATION OF MEDICAL GAS PIPING SECTION OF THIS SPECIFICATION.

   H. MEDICAL VACUUM. (PER NFPA 2018 CATEGORY 3)

      1) PIPING SHALL BE CLEANED AND INSTALLED IN ACCORDANCE WITH INSTALLATION OF MEDICAL GAS PIPING SECTION OF THIS SPECIFICATION.
      2) PVC PLASTIC PIPE SHALL BE SCHEDULE 40 OR SCHEDULE 80, COMPLYING WITH ASTM D 1785, STANDARD SPECIFICATION FOR POLY (VINYL CHLORIDE) (PVC) PLASTIC PIPE, SCHEDULES 40, 80, AND 120.
      3) PVC PLASTIC FITTINGS SHALL BE SCHEDULE 40 OR SCHEDULE 80 TO MATCH THE PIPE, COMPLYING WITH ASTM D 2466, STANDARD SPECIFICATION FOR POLY (VINYL CHLORIDE) (PVC) PLASTIC PIPE FITTINGS, SCHEDULE 40, OR ASTM D 2467, STANDARD SPECIFICATION POLY (VINYL CHLORIDE) (PVC) PLASTIC PIPE FITTINGS, SCHEDULE 80.
      4) JOINTS IN PVC PLASTIC PIPING SHALL BE SOLVENT-CEMENTED IN ACCORDANCE WITH ASTM D 2672, STANDARD SPECIFICATION FOR JOINTS FOR IPS PVC PIPE USING SOLVENT CEMENT.

   I. 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.

   J. 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.

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

8. MEDICAL GAS PIPING INSTALLATION:

   A. INSTALL NONFLAMMABLE MEDICAL GAS SYSTEMS, INHALATION ANESTHETIC SYSTEMS, AND VACUUM PIPING SYSTEMS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND NFPA 99.

   B. PRE-INSTALLATION CLEANING: DISASSEMBLE POSITIVE PRESSURE GAS SYSTEMS PIPE, FITTINGS, VALVES, AND COMPONENTS, EXCEPT THOSE SUPPLIED CLEANED AND PREPARED FOR INTENDED SERVICE, AND THOROUGHLY WASH IN HOT SOLUTION OF SODIUM CARBONATE OR TRISODIUM PHOSPHATE MIXED ONE POUND TO 3 GALLONS OF WATER. AFTER WASHING, RINSE WITH WATER, DRY AND CAP UNTIL INSTALLATION.

   C. BRAZE JOINTS IN PIPE AND TUBING. AVOID LEAVING EXCESS FLUX INSIDE OF PIPE AND FITTINGS. DURING BRAZING OF PIPE CONNECTIONS, PURGE INTERIOR OF PIPE CONTINUOUSLY WITH NITROGEN.

   D. EFFECT CHANGES IN SIZE WITH REDUCING FITTINGS. MAKE CHANGES IN DIRECTION OF REQUIRED TURNS OR OFFSETS WITH FITTINGS OR TUBING SHAPED BY BENDING TOOLS. BENDS SHALL BE FREE OF FLATTENING, BUCKLING OR THINNING OF TUBE WALL.

   E. GRADE PIPING DOWN IN DIRECTION OF FLOW.

   F. PROVIDE PIPE SLEEVES WHERE PIPES AND TUBING PASS THROUGH WALLS, FLOORS, ROOFS, AND PARTITIONS. FINISH FLUSH AT BOTH ENDS. EXTEND 2 INCHES (50MM) ABOVE FINISHED FLOORS. PACK SPACE BETWEEN PIPE OR TUBING AND SLEEVE, AND CALK.

   G. IDENTIFY PIPING IN ACCORDANCE WITH MIL-STD 101, WITH TAPE AND DECALS TO FSPPP-T-66. PROVIDE PIPING IDENTIFICATION CODE AND SCHEMATIC. LABELLING SHALL APPEAR ON PIPE AT INTERVALS OF NOT MORE THAN 20 FEET AND AT LEAST ONCE IN EACH ROOM AND EACH STORY TRAVERSED BY PIPELINE.

   H. SUPPORT GAS PIPING WITH PIPE HOOKS OR HANGERS SUITABLE FOR SIZE OF PIPE, SPACED:

      1) 1/2 INCH PIPE OR TUBING: 72 INCHES.

      2) 3/4 INCH OR ONE INCH PIPE OR TUBING: 96 INCHES.

      3) 1-1/4 INCHES OR LARGER (HORIZONTAL): 120 INCHES.

      4) 1-1/4 INCHES OR LARGER (VERTICAL): EVERY FLOOR LEVEL.

   I. PIPING SYSTEMS CLEANING AND PRESSURE TESTING:

      1) AFTER ERECTION OF PIPE AND TUBING BUT PRIOR TO INSTALLATION OF SERVICE OUTLET VALVES, BLOW SYSTEMS CLEAR OF FREE MOISTURE AND FOREIGN MATTER WITH NITROGEN GAS.

      2) INSTALL SERVICE OUTLET VALVES, SUBJECT SYSTEM TO TEST PRESSURE OF 150 PSIG WITH NITROGEN OR DRY COMPRESSED AIR. CHECK WITH SOAPY WATER. PROVIDE 24-HOUR STANDING PRESSURE TEST.

   J. CROSS-CONNECTION TESTS:

      1) CROSS CONNECTION TESTING SHALL BE PERFORMED BY THE MEDICAL GAS EQUIPMENT SUPPLIER OR AN INDEPENDENT TESTING AGENCY. THE TESTING AGENCY SHALL BE CERTIFED TO PERFORM MEDICAL GAS TESTING PROCEDURES. THE TESTING AGENCY SHALL CERTIFY THAT SYSTEM IS COMPLETE, ZONE VALVES INSTALLED, ALARM SYSTEMS FUNCTIONAL, AND ALL TESTS REQUIRED BY NFPA 99 WERE PERFORMED. DOCUMENT TESTS AND SUBMIT CERTIFICATE TO THE HOSPITAL.

      2) REDUCE PRESSURE IN PIPING SYSTEMS OTHER THAN SYSTEM UNDER INVESTIGATION TO ATMOSPHERIC.

      3) TEST SYSTEM WITH DRY COMPRESSED AIR OR DRY NITROGEN WITH TEST PRESSURE IN PIPING SYSTEM AT 50 PSIG (345 KPA).

      4) CHECK EACH STATION OUTLET OF EVERY PIPING SYSTEM TO DETERMINE TEST GAS IS DISPENSED ONLY FROM OUTLET OF SYSTEM UNDER INVESTIGATION. MEASURE PRESSURE WITH GAGE ATTACHED TO SPECIFIC ADAPTOR. DO NOT USE UNIVERSAL ADAPTORS.

      5) DISCONNECT TEST GAS AND CONNECT PROPER GAS TO EACH SYSTEM. PURGE ENTIRE SYSTEM TO REMOVE TEST GAS. CHECK WITH ANALYZER SUITABLE FOR GAS INSTALLED.

MECHANICAL SPECIFICATIONS (CONTINUED)

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"

   C. PIPE INSULATION - BELOW GRADE:

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

      2) FLEXIBLE CLOSED CELL ELASTOMERIC THERMAL INSULATION, UNSLIT OR PRESLIT WITH PRESSURE SENSITIVE ADHESIVE SYSTEM FOR CLOSURE AND VAPOR SEALING, EQUAL TO KFLEX INSUL-TUBE OR EQUAL RATED FOR UNDERGROUND INSTALLATION ABOVE THE WATER TABLE. COVER PIPING WITH A CLEAN FILL SUCH AS SAND (3"-5" LAYER) TO PROTECT INSULATION FROM COMPACTION.

      3) PRE-INSULATED PIPE SYSTEMS WITH CLOSED CELL PEX-FOAM INSULATION AND COVERED BY A WATERPROOF CORRUGATED HDPE JACKET. UPONOR ECOFLEX OR EQUAL. ASTM F876, F877, CSA B137.5

      4) INSULATION SCHEDULE:

a) DOMESTIC HOT WATER	1-1/2"
b) HOT WATER RECIRCULATING	1-1/2"

   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"
(2) RETURN AIR DUCT	1/2"

   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.

(1) SUPPLY DUCT	1"

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. 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.

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

   F. 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.

   G. 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.

   H. 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.

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

MECHANICAL SPECIFICATIONS (CONTINUED)

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.

13. 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.

14. REMODELING WORK:

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

   B. EQUIPMENT TO BE SALVAGED:

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

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

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

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

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

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

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

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

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6/22/2021
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REV#	DATE	DESCRIPTION

DATE: 06-22-2021
PROJECT# 21010

MPO

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.

PLUMBING SYMBOLS

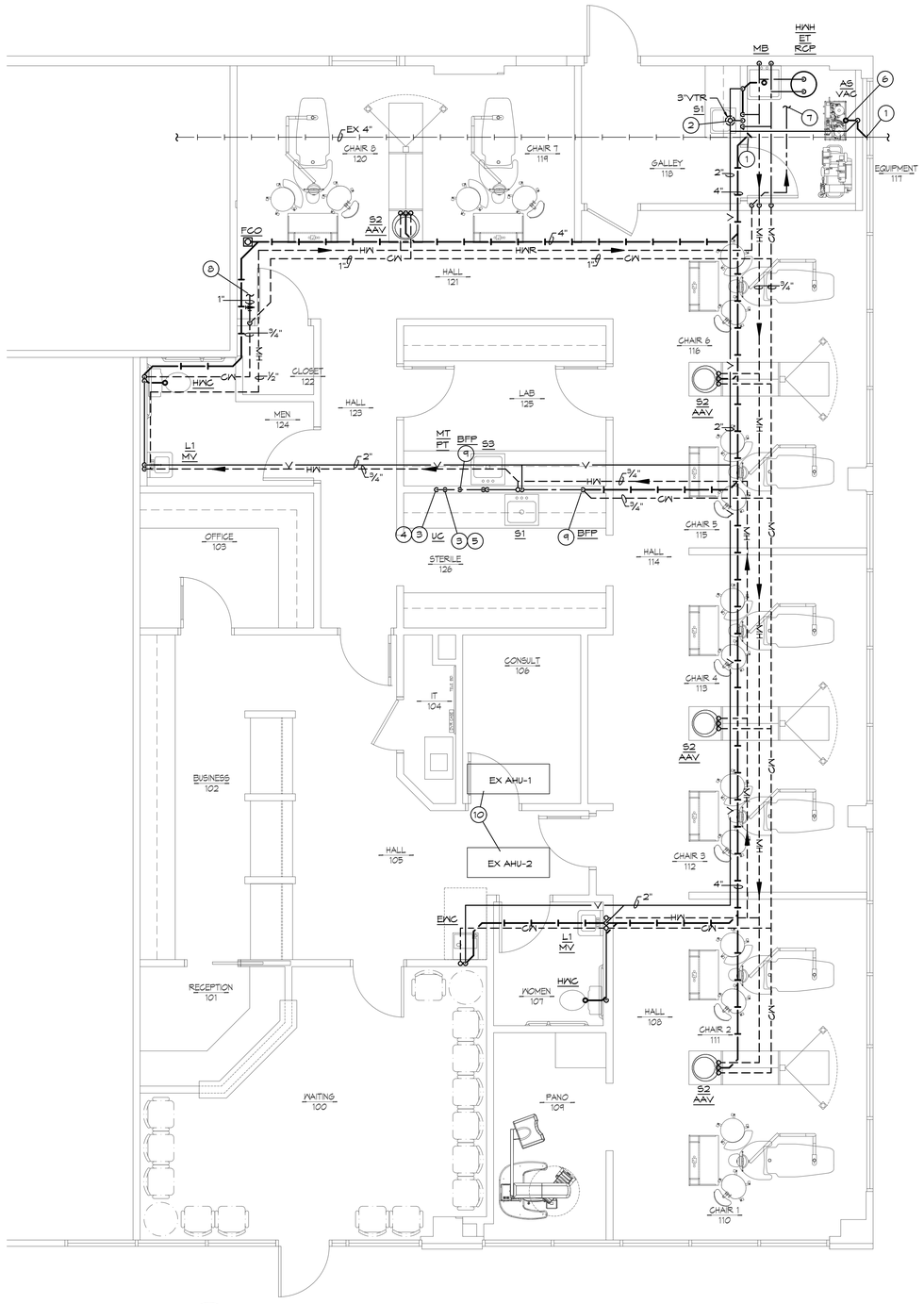
- SOIL AND WASTE PIPING BELOW FLOOR/GRADE
- SOIL AND WASTE PIPING ABOVE FLOOR/GRADE
- SANITARY VENT PIPING ABOVE GRADE
- SANITARY VENT PIPING BELOW GRADE
- DOMESTIC COLD WATER PIPING
- DOMESTIC HOT WATER PIPING
- DOMESTIC HOT WATER RECIRCULATION PIPING
- VAC — VACUUM PIPING BELOW FLOOR
- A — COMPRESSED AIR PIPING BELOW FLOOR
- PIPING TURNING DOWN
- PIPING TURNING UP
- TEE TOP CONNECTION
- UNION
- BACKFLOW PREVENTER
- VALVE
- CHECK VALVE
- CONNECT TO EXISTING
- (A) MATCH MARKS ON PLUMBING RISER DIAGRAM
- FCO FLOOR CLEAN OUT
- WCO WALL CLEAN OUT
- GCO GRADE CLEAN OUT
- FD FLOOR DRAIN

PLUMBING PLAN NOTES:

1. CONNECT WASTE TO EXISTING SANITARY SEWER AS REQUIRED. VERIFY EXACT LOCATION, DIRECTION OF FLOW, AND ELEVATION PRIOR TO INSTALLATION OF ANY PIPING.
2. LOCATION OF 3" VTR. VERIFY 10' CLEARANCE FROM ALL OUTDOOR AIR INTAKES. SEAL PENETRATION WEATHERTIGHT.
3. VERIFY IF EQUIPMENT HAS INTEGRAL AIR GAP. IF NO AIR GAP PROVIDE BFP AS SHOWN. IF EQUIPMENT HAS INTEGRAL AIR GAP BFP IS NOT REQUIRED.
4. CONNECT TO ULTRA SONIC CLEANER ¾" DRAIN HOSE TO "T" FITTING ON SINK DRAIN PIPE.
5. CONNECT TO MODEL TRIMMER ¾" DRAIN HOSE TO "T" FITTING ON SINK DRAIN PIPE.
6. DIRECT CONNECT VACUUM DRAIN TO VACUUM PUMP AND AMALGUM SEPARATOR PER MANUFACTURER'S REQUIREMENTS.
7. CONNECT HOT WATER RECIRC. PIPING BACK TO WATER HEATER AS REQUIRED. REFER TO RISER DIAGRAM FOR DETAILS.
8. CONNECT 1" CW WITH TO EXISTING DOMESTIC CW AS REQUIRED. VERIFY EXACT LOCATION PRIOR TO INSTALLATION OF ANY PIPING.
9. PROVIDE BFP AND ROUTE ½" CW WITH SHUT-OFF VALVE ABOVE COUNTER TOP.
10. REROUTE PUMPED CONDENSATE TO MOP BASIN WITH AIR GAP.

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.



NORTH

PLUMBING FLOOR PLAN

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

BC PROJECT #: 21131
MISSOURI PE COA #2009003629

6/22/2021

STATE OF MISSOURI
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NUMBER PE-2004020504
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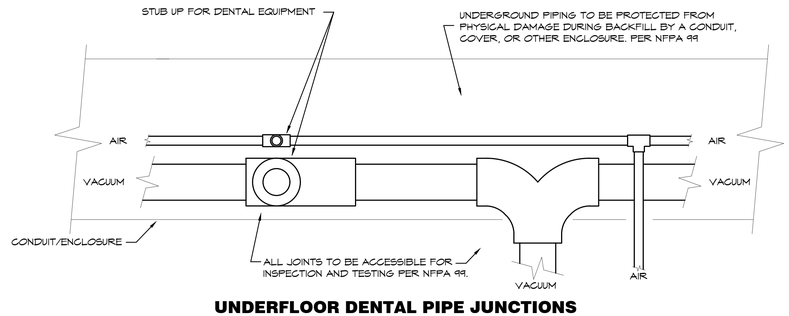
PLUMBING PLAN NOTES:

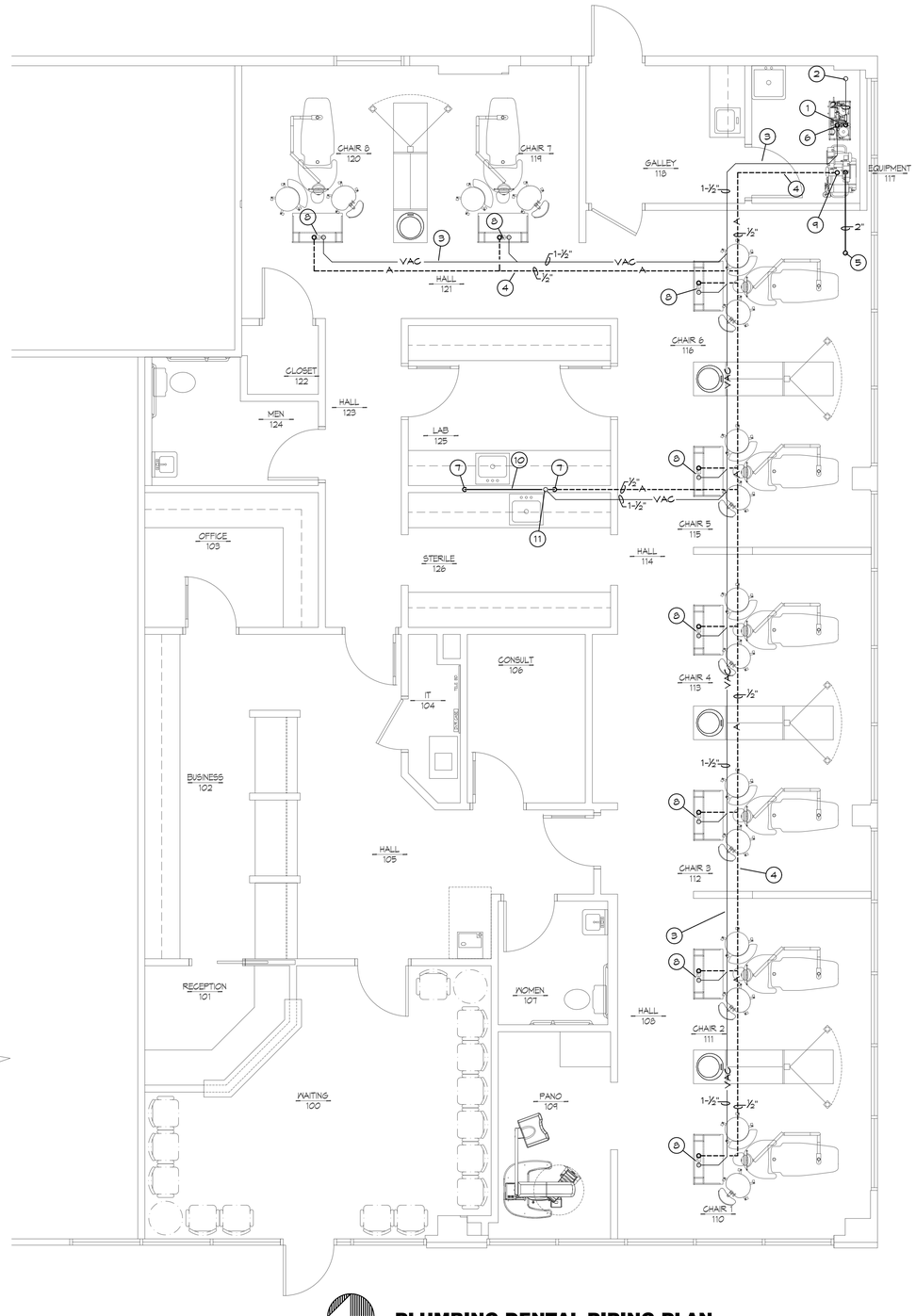
1. CONNECT 2" VACUUM EXHAUST PER MANUFACTURER'S INSTALLATION.
2. PROVIDE MUFFLER AND ROUTE 2" EXHAUST VENT UP THROUGH ROOF. TERMINATE OPENING WITH WEATHERHEAD, BACKDRAFT DAMPER, AND BIRD SCREEN. SEAL PENETRATION WEATHER TIGHT. MAINTAIN 10' CLEARANCE FROM ALL OUTDOOR AIR INTAKES.
3. INSTALL VACUUM PIPING WITH 45° LONG RADIUS ELBOWS. VACUUM PIPING MUST SLOPE 1/4"/10' BACK TO VACUUM PUMP.
4. INSTALL AIR PIPING MAIN WITH A SLOPE OF 1/4" / 10' BACK TO COMPRESSOR. TEST AIR LINES AT 150 PSI FOR 24 HOURS THERE SHALL BE NO LEAKS. PLUMBER TO TIE IN SYSTEM ON FINISH. SEE MANUFACTURERS SPECS FOR DETAILS.
5. PROVIDE 2" OUTSIDE AIR INTAKE WITH WEATHERHEAD AND BIRDSCREEN. TERMINATE 3'-0" ABOVE FLOOR OVER AIR COMPRESSOR. MAINTAIN 10' OF SEPARATION FROM ALL EXHAUST.
6. CENTRAL DENTAL VACUUM PUMP BY OTHERS. CONNECT VACUUM PIPING TO AMALGAM SEPARATOR PRIOR TO CONNECTION WITH VACUUM PUMP AS REQUIRED BY MANUFACTURER'S SPECIFICATIONS. AMALGAM SEPARATOR TO BE INSTALLED PER LOCAL REQUIREMENTS.
7. PROVIDE AIR SHUT-OFF VALVE ON WALL ABOVE COUNTER TO DENTAL EQUIPMENT.
8. PROVIDE ½" AIR AND 1-½" VACUUM FOR DENTAL CABINENT.
9. CONNECT ½" COMPRESSED AIR PIPE TO AIR COMPRESSOR FURNISHED BY OTHERS AIR AS REQUIRED BY MANUFACTURER.
10. ROUTE AIR PIPING IN WALL.
11. ROUTE 1-½" VACUUM TO SINK BASE CABINET IN STERILIZATION. STUB OUT AND CAP.

REFER TO DENTAL EQUIPMENT DRAWINGS & SPEC BOOK FOR MORE INFORMATION OF DENTAL EQUIPMENT

AIR LINE SIZING CHART	
COMPRESSOR CFM @ 80 psig	MAIN HEADER LINE SIZE
5 – 20	1/2" ODT
20 – 30	5/8" ODT
30 – 40	3/4" ODT



UNDERFLOOR DENTAL PIPE JUNCTIONS
SCALE: 1/4"=1"



PLUMBING DENTAL PIPING PLAN
SCALE: 1/4" = 1'-0" F.F.E. = 100.0'

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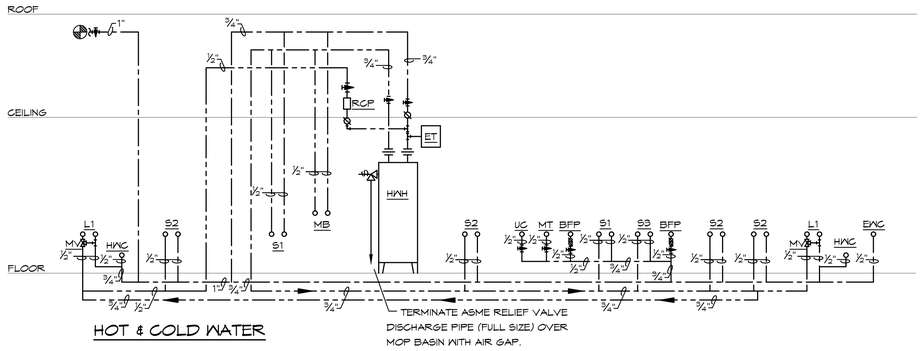
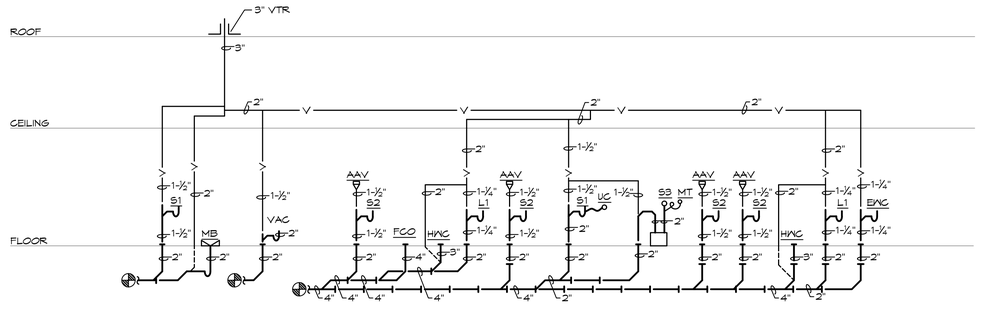
PEX PIPING REQUIREMENTS

PIPE SIZES GIVEN ON THE DRAWINGS ARE NOMINAL COPPER PIPE SIZE. IF PEX PIPING IS USED, INCREASE PEX PIPING ONE SIZE ABOVE LISTED SIZES AS REQUIRED TO EQUAL OR EXCEED COPPER PIPE INSIDE DIAMETER. ONLY WHERE NOT LOCATED IN CEILING PLENUM.



HOT & COLD WATER



WASTE & VENT

PLUMBING RISER DIAGRAMS

SCALE: NONE

PLUMBING FIXTURE SCHEDULE (OR EQUAL):

HWC HANDICAP WATER CLOSET: TOTO, #CST744SL, "DRAKE CLOSE COUPLED TOILET", 1.6 GALLON 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.

L1 HANDICAP LAVATORY, WALL HUNG: TOTO #LT30T, 20"X 18", VITREOUS CHINA,FRONT OVERFLOW, DELTA #501 FAUCET WITH SINGLE METAL LEVER FAUCET, 0.5 GPM ,OFFSET GRID ELBOW DRAIN AND 1-1/4" TAILPIECE, CHROME PLATED CAST BRASS P-TRAP WITH CLEANOUT (MOUNTED PARALLEL WITH WALL), CHROME PLATED LOOSE KEY ANGLE STOPS AND RISERS, FLOOR MOUNTED CONCEALED ARM LAVATORY SUPPORT, INSULATE EXPOSED DRAIN, WATER SUPPLIES, AND VALVES WITH PRONRAP SEAMLESS MOLDED CLOSED CELL VINYL INSULATION.

S1 SINK:ELKAY #LR1919, 19-1/2"X19"X7-1/2" DEEP BOWL, 18-7/8"X18-3/8" CUT-OUT, SELF-RIMMING STAINLESS STEEL SINK WITH SATIN FINISH AND SOUND DAMPENING UNDERCOATING, ELKAY MODEL LK-2442BH FAUCET WITH WRIST BLADE HANDLES AND 1.5 GPM NON-AERATED LAMINAR FLOW OUTLET (CHROME FINISH). PLUMBER PROVIDE ELKAY #LK-35 BASKET STRAINER WITH 1-1/2" TAILPIECE WITH CONNECTOR, CHROME PLATED CAST BRASS P-TRAP WITH CLEANOUT, CHROME PLATED ANGLE STOPS AND RISERS.

S2 HAND SINK: TOTO, #LT402, VITREOUS CHINA,19-1/2" ROUND BASIN, DELTA #2528LF-HD FAUCET WITH WRIST BLADE HANDLES, 0.5 GPM, 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 PRONRAP SEAMLESS MOLDED CLOSED CELL VINYL INSULATION.

S3 SINK:ELKAY #LR1919, 19-1/2"X19"X7-1/2" DEEP BOWL, 18-7/8"X18-3/8" CUT-OUT, SELF-RIMMING STAINLESS STEEL SINK WITH SATIN FINISH AND SOUND DAMPENING UNDERCOATING, ELKAY MODEL LK-2442BH FAUCET WITH WRIST BLADE HANDLES AND 1.5 GPM NON-AERATED LAMINAR FLOW OUTLET (CHROME FINISH). PLUMBER PROVIDE ELKAY #LK-35 BASKET STRAINER WITH 1-1/2" TAILPIECE WITH CONNECTOR, CHROME PLATED ANGLE STOPS AND RISERS.

EWC ELECTRIC WATER COOLER: ELKAY, #EZS-8, BARRIER FREE WATER COOLER, 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, FLOOR MOUNTED CARRIER AND CANE APRON.

MB MOP BASIN: FIAT, #MSB-2424, MOLDED STONE MOP BASIN, 2" DRAIN, 24"X 24" BASIN, VINYL BUMPER GUARD, STERN WILLIAMS #T-10-VB FAUCET, SPRING CHECKS, VACUUM BREAKER, INTEGRAL STOPS, WALL BRACE & PAIL HOOK, WALL BRACKET WITH 30" HOSE.

HWH HOT WATER HEATER: AO SMITH #DEL-40, 40 GALLON STORAGE, 208V/1Ø, (2) 4500 WATT ELEMENT, NON-SIMULTANEOUS, ASME TEMPERATURE AND PRESSURE RELIEF VALVE. SET TEMPERATURE TO 125°F.

ET HOT WATER EXPANSION TANK: AMTROL, #ST-8, 3.2 GALLON EXPANSION TANK WITH DIAPHRAGM.

RCP HOT WATER RECIRCULATING PUMP: TACO, 00 SERIES 005-SF2 STAINLESS STEEL HOUSING AND CARTRIDGE, NON METALLIC IMPELLER, 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, STAINLESS STEEL SPRINGS, INTEGRAL CHECK VALVES ON HOT AND COLD INLETS. (SET TO 110°F). ASSE 1070 LISTED.

BFP BACKFLOW PREVENTOR: WATTS #5D-3, DUAL CHECK VALVE WITH ATMOSPHERIC PORT & STRAINER FOR MODEL TRIMMER & ULTRA SONIC CLEANER.

PT PLASTER TRAP : FURNISHED BY OTHERS, INSTALLED BY PLUMBER. INSTALL AS REQUIRED BY THE MANUFACTURER.

UC ULTRASONIC CLEANER : FURNISHED AND INSTALLED BY OTHERS. CONTRACTOR TO CONNECT WATER LINE AND DRAIN HOSE TO SINK.

AS AMALGAM SEPARATOR FURNISHED BY DENTAL EQUIPMENT PROVIDER, INSTALLED BY PLUMBER. INSTALL ACCORDING TO MANUFACTURER'S SPECIFICATIONS.

MT MODEL TRIMMER : FURNISHED BY OWNER, INSTALLED BY PLUMBER. PROVIDE DRAIN HOSE, ¼" CHROME PLATED ANGLE STOP, AND INSTALL AS REQUIRED BY THE MANUFACTURER.

PLUMBING FIXTURE BRANCH PIPING SCHEDULE

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

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.

BC PROJECT #: 21131
MISSOURI PE COA #2009003629

6/22/2021

STATE OF MISSOURI REGISTERED ENGINEER ERIK B. KNUDSEN NUMBER PE-2004020504 PROFESSIONAL

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REV#	DATE	DESCRIPTION

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PROJECT# 21010

P3.0

MECHANICAL GENERAL NOTES:

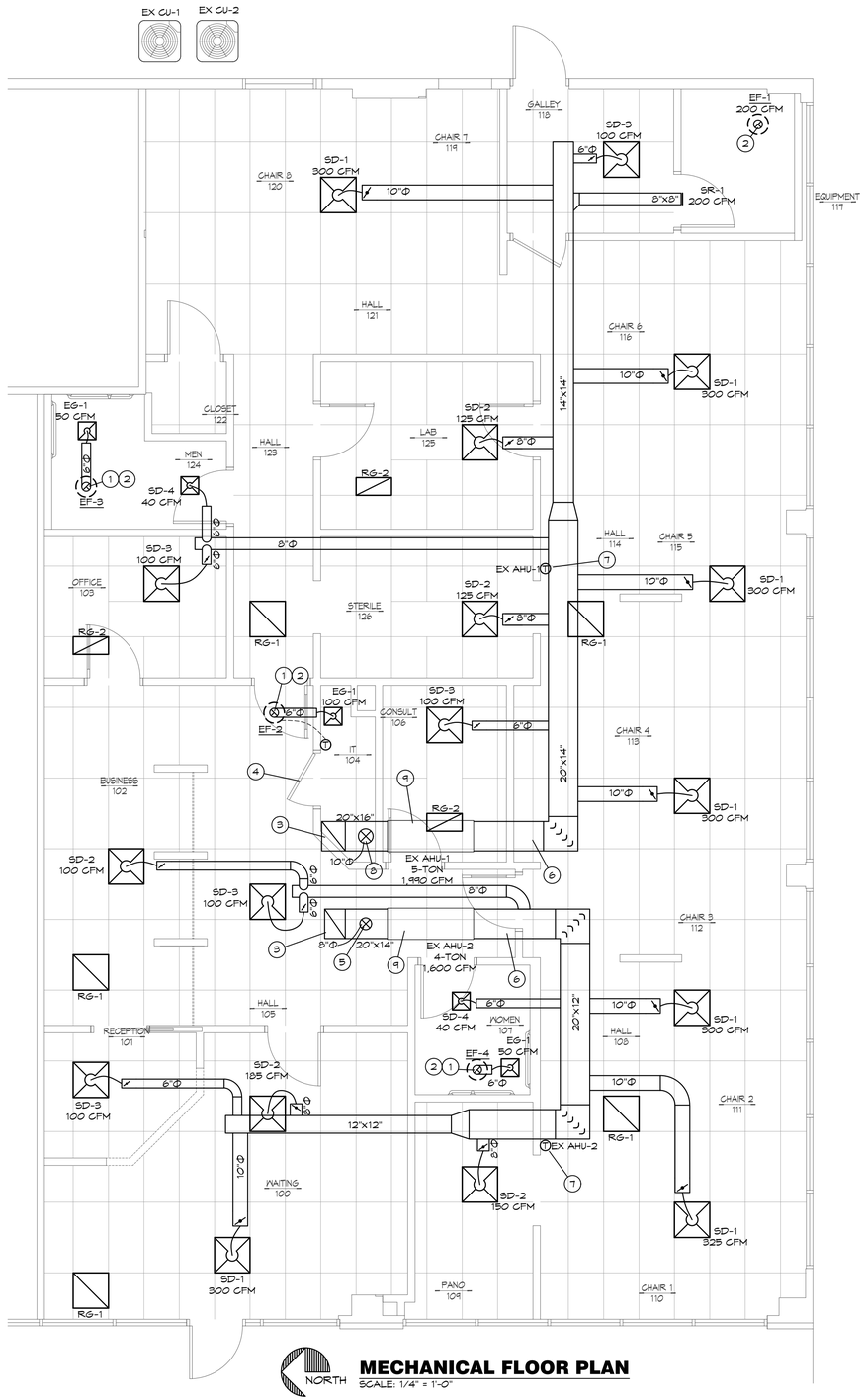
1. COORDINATE ALL WORK WITH OTHER TRADES AND EXISTING CONDITIONS AS REQUIRED TO PROPERLY INSTALL ALL SYSTEMS AS INTENDED, WITHIN THE CONFINES OF THE SPACES AVAILABLE, AND WITHOUT INTERFERENCES.
2. THIS CONTRACTOR SHALL PERFORM ALL WORK INDICATED AND/OR AS REQUIRED FOR THE PROPER INSTALLATION AND OPERATION OF THE MECHANICAL SYSTEMS.
3. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF DIFFUSERS.
4. INSTALL ALL DUCT, PIPE, ETC. AS HIGH AS POSSIBLE.
5. DUCT SIZES SHOWN ARE ACTUAL SHEET METAL SIZES AND INCLUDE AN ALLOWANCE FOR DUCT LINER WHERE APPLICABLE.
6. PROVIDE FLEXIBLE CONNECTION BETWEEN DUCTWORK AND AHUS, 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.

MECHANICAL SYMBOLS

	NEW SUPPLY DIFFUSER
	NEW RETURN AIR GRILLE
	EXHAUST GRILLE/FAN
T	THERMOSTAT, MOUNTED AT 48" AFF
DD	DUCT-MOUNTED SMOKE DETECTOR
	NEW DUCTWORK
32"x14"	SIZE OF RECTANGULAR DUCT
6"Φ	SIZE OF ROUND DUCT
	FLEXIBLE DUCTWORK
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
	SUPPLY AIR DUCT UP/DOWN
	RETURN AIR DUCT UP/DOWN
	EXHAUST AIR DUCT UP/DOWN
RTU-1	SCHEDULED MECHANICAL EQUIPMENT
	EXISTG DUCT TO REMAIN
32"x14"E	SIZE OF EXISTING DUCT

MECHANICAL PLAN NOTES:

1. TRANSITION AND CONNECT TO EXHAUST FAN ON ROOF AS REQUIRED.
2. 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. TURN RA DUCT UP TO WITHIN 16" OF STRUCTURE FOR SOUND ABATEMENT.
4. COORDINATE WITH G.C. TO UNDERCUT DOOR AS REQUIRED FOR TRANSFER AIR PATH.
5. PROVIDE NEW O.A. DUCT IF NONE FOUND TO BE EXISTING OR FOUND TO BE SMALLER THAN SIZE SHOWN ON PLANS. BALANCE TO 300 CFM.
6. REUSE EXISTING DUCT WHERE POSSIBLE AND WHERE ADEQUATELY SIZED.
7. RELOCATE EXISTING THERMOSTAT. VERIFY THERMOSTAT IS FUNCTIONAL AND PROGRAMMABLE PROVIDE NEW IF FOUND TO BE NOT FUNCTIONAL OR PROGRAMMABLE.
8. PROVIDE NEW O.A. DUCT IF NONE FOUND TO BE EXISTING OR FOUND TO BE SMALLER THAN SIZE SHOWN ON PLANS. BALANCE TO 200 CFM.
9. EXISTING AHU TO REMAIN. PERFORM PREVENTIVE MAINTENANCE AND BALANCE TO CFM SHOWN.



MECHANICAL FLOOR PLAN

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

BC PROJECT #: 21131
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M1.0

OUTDOOR AIR CALCULATIONS

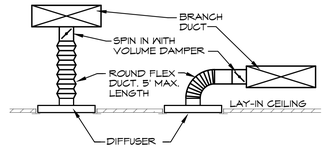
UNIT	Area (sqft)	OCCUPANCY CLASSIFICATION	Occupant Density #/1000 sqft	People outdoor airflow rate in breathing zone, (Rp) cfm/person	Area outdoor airflow rate in breathing zone, (Ra) cfm/sqft	Exhaust airflow rate cfm/sqft	Breathing zone outdoor airflow (Vbz)	Zone air distribution effectiveness (Ez)	Zone outdoor airflow (cfm)
EX AHU-1 EX AHU-2	863	Patient rooms	10	25	0		216	0.8	270
	744	Office spaces	5	5	0.06		63	0.8	79
	268	Main entry lobbies	10	5	0.06		29	0.8	37
	783	Corridors	0	0	0.06		47	0.8	59
								Total	444

EXHAUST FAN SCHEDULE

MARK	MFGR	MODEL	CFM	EXTERNAL STATIC P. IN. WG.	RPM	ELECTRICAL		FAN TYPE	CONTROLS	NOTES
						VOLT/Ø/HZ	PWR			
EF-1	COOK	90C15DH	200	0.25	1,081	120/1/60	1/8 HP	ROOF EXH.	TIME CLOCK	1
EF-2		70C15DH	100		1,485		1/20 HP		THERMOSTAT	1,2
EF-3		70C15DM	50		1,240				TIME CLOCK	1
EF-4									TIME CLOCK	1

NOTES: 1. PROVIDE INSULATED 18" HIGH (AT LOWEST POINT) PREFABRICATED ROOF CURB, BACKDRAFT DAMPER, BIRD SCREEN, UNIT MOUNTED VARIABLE SPEED CONTROLLER.

2. PROVIDE LINE VOLTAGE COOLING ONLY THERMOSTAT FOR CONTROL OF FAN. SET TO 80°F.



DIFFUSER DETAIL
SCALE: NONE

DIFFUSER SCHEDULE

MARK	MFGR	MODEL	NECK SIZE	FACE SIZE	FINISH	NOTES
SD-1	TITUS	OMNI/3	10"Ø	24"X24"	WHITE	-
SD-2			8"Ø			-
SD-3			6"Ø			-
SD-4				12"X12"		1
SR-1		300RS	8"X8"	"		2
RG-1		50F	"	24"X24"		-
RG-2			"	24"X12"		-
EG-1		PAR/3	6"Ø	12"X12"		1

NOTES: 1. PROVIDE #TRM FRAME AND O.B. DAMPER IN NECK.
2 PROVIDE O.B. DAMPER IN NECK.

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 ZERTS.
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. VERIFY ANY WORK REQUIRED BY THE LANDLORD PRIOR TO BID.
14. ALL FINDINGS AND VALUES TO BE NOTED AND PROVIDED TO TENANT'S CONSTRUCTION MANAGER & OR TENANT'S MAINTENANCE DIRECTOR.

BC PROJECT #: 21131
MISSOURI PE COA #2009003629

6/22/2021

STATE OF MISSOURI
ERIK B. KNUDSEN
NUMBER PE-2004026504
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comfort dental

REV#	DATE	DESCRIPTION

DATE: 06-22-2021
PROJECT# 21010

M2.0

COMFORT DENTAL 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. TURN MANUFACTURER DOCUMENTATION (INSTRUCTION MANUALS/WARRANTIES) OVER TO OWNER.
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.
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. 12 GAUGE AND SMALLER CONDUCTORS SHALL BE TYPE THWN (WET LOCATIONS) OR THHN (DRY LOCATIONS), SOLID CONDUCTOR, UNLESS OTHERWISE INDICATED.
   D. NO. 10 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 THHN/THWN-2.
7. ALUMINUM SERVICE WIRE:
   A. ALUMINUM SERVICE WIRE MAY BE USED FOR SERVICE ENTRANCE CONDUCTORS AND/OR PANEL FEEDERS ONLY. ALL OTHER WIRING SHALL BE COPPER CONDUCTORS AS HEREINBEFORE SPECIFIED.
   B. ALUMINUM CONDUCTORS SHALL BE TYPE 'XHHW-2', ALCAN, "STABILOY" TYPE ALLOY CONDUCTORS UTILIZING "AA-8030" ALUMINUM ALLOY. CONDUCTORS SHALL BE UL LISTED.
   C. ALL ALUMINUM CONDUCTORS SHALL BE TERMINATED IN CONNECTIONS OR LUGS WHICH ARE DUAL RATED (AL7CU OR AL9CU) AND ARE LISTED BY UL FOR USE WITH ALUMINUM OR COPPER CONDUCTORS AND SHALL BE SIZED TO ACCEPT ALUMINUM CONDUCTORS OF THE AMPACITY SPECIFIED.
8. 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.
9. WIRING DEVICES:
   A. WALL SWITCHES SHALL BE COMMERCIAL GRADE, QUIET TYPE, FLUSH TOGGLE SWITCH, RATED FOR 20 AMPS, WITH THERMOPLASTIC COVER PLATES.
   B. RECEPTACLES SHALL BE COMMERCIAL 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 COMMERCIAL GRADE. DEVICE COVER PLATES SHALL BE AS HEREINBEFORE SPECIFIED.
   E. RECEPTACLES OUTSIDE BUILDING AND WHERE NOTED AS WEATHERPROOF, SHALL BE LISTED 'WEATHER-RESISTANT' AND SHALL BE INSTALLED IN A WEATHERPROOF ENCLOSURE, COVER SHALL BE WEATHER PROOF RATED WHILE IN USE.
   F. ALL DEVICES SHALL BE WHITE EXCEPT DEDICATED RECEPTACLES SHALL BE GREY OR ANOTHER COLOR (NOT WHITE) APPROVED BY THE GENERAL CONTRACTOR.
10. BOXES:
    A. HOT DIPPED GALVANIZED STEEL BOXES. PROVIDE TYPE TO SUIT CONDITIONS FOR INSTALLATION.
    B. ALL BOXES SHALL BE FLUSH MOUNTED, UNLESS INDICATED OTHERWISE.
11. PANELBOARDS:
    A. PANELBOARDS ARE EXISTING AND SHALL BE REUSED. PROVIDE ADDITIONAL BREAKERS AS REQUIRED TO CONNECT CIRCUITS AS SHOWN ON THE DRAWINGS. ADDITIONAL BREAKERS SHALL BE THERMAL MAGNETIC, QUICK-BREAK BOLT ON CIRCUIT BREAKERS WITH ONE HANDLE FOR SINGLE OR MULTI-POLE RATINGS AND SHALL BE COMPATIBLE WITH EXISTING PANELS.
    B. COMPLETE EXISTING DIRECTORY AS REQUIRED TO IDENTIFY NEW CIRCUIT, LISTING LOAD SERVED AND OTHER PERTINENT DATA.

COMFORT DENTAL ELECTRICAL SPEC (CONTINUED)

12. 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.
13. 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).
14. 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.

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
TR	TAMPER RESISTANT OUTLET
ETR	EXISTING TO REMAIN
EM	EMERGENCY BATTERY BACKUP
(TIE)	PARTIAL HOMERUN. REFER TO PLANS FOR ADDITIONAL DEVICES CONNECTED TO THIS CIRCUIT.
X	ELECTRICAL FLOOR PLAN NOTE WITH DESIGNATION
P-1,3,5	EXISTING CIRCUIT DESIGNATION
2 LP	CONDUIT CONCEALED WHERE POSSIBLE OR AS NOTED, ARROWS INDICATE HOME RUN TO PANEL. CIRCUIT NUMBERS INDICATED
	#12 WIRE IN CONDUIT, UNLESS NOTED OTHERWISE ON DRAWINGS OR SPECIFICATION
	GROUNDING CONDUCTOR, #12 WIRE UNLESS NOTED OTHERWISE ON DRAWINGS OR SPECIFICATION
	CONDUIT ROUTED UNDER FLOOR/GRADE
LIGHTING	
	EMERGENCY TWIN HEAD LIGHT FIXTURE
	EXIT LIGHT WITH DIRECTIONAL ARROWS INDICATED
A	STRIP FIXTURE WITH TYPE DESIGNATION
A	RECESSED OR SURFACE MOUNTED FIXTURE WITH TYPE DESIGNATION
A NL	NIGHT LIGHT, CONNECT TO UNSWITCHED CIRCUIT
A	CEILING OR RECESSED FIXTURE WITH TYPE DESIGNATION
A	WALL MOUNTED FIXTURE WITH TYPE DESIGNATION
POWER DEVICES	
	DUPLEX RECEPTACLE, BOTTOM OF BOX AT 16" AFF, UNLESS NOTED OTHERWISE
	FOURPLEX RECEPTACLE, BOTTOM OF BOX AT 16" AFF, UNLESS NOTED OTHERWISE
	DEVICE MOUNTED ABOVE COUNTER AND/OR SPLASH GUARD
	HEAVY DUTY OUTLET - NEMA CONFIGURATION SIZE PER EQUIPMENT MANUFACTURER'S RECOMMENDATION
	PANEL BOARD, TOP OF BOX 6'-0" AFF
J	JUNCTION BOX
	FUSED DISCONNECT SWITCH
	MOTOR WITH DESIGNATION
CONTROLS	
S	SINGLE POLE WALL SWITCH, TOP OF BOX AT 48" AFF
S_m	MANUAL MOTOR STARTER WITH OVERLOADS
OCCUPANCY SENSORS 1. DUAL TECHNOLOGY/ULTRASONIC CEILING SENSORS SHALL BE MOUNTED 6' FROM SUPPLY/EXHAUST AIR DIFFUSERS. 2. LOW VOLTAGE CEILING SENSORS SHALL BE PROVIDED WITH 6' SLACK CONDUCTOR COILED AT SENSOR.	
S_O	WALL MOUNTED DUAL-TECHNOLOGY OCCUPANCY SENSOR, WATT STOPPER #DW-100 OR EQUAL, TOP OF BOX AT 48" AFF
OS	DUAL TECHNOLOGY CEILING MOUNT OCCUPANCY SENSORS, WATTSTOPPER DT-300 OR EQUAL
PP	OCCUPANCY SENSOR POWER PACK, WATTSTOPPER BZ-150 OR EQUAL, PROVIDE LOW VOLTAGE WIRING TO OCCUPANCY SENSORS AND MOMENTARY SWITCHES
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)
MISCELLANEOUS	
-PM-	PLUGMOLD
FIRE ALARM	
SD	CEILING MOUNT SMOKE DETECTOR
F	FIRE ALARM PULL STATION, TOP OF BOX AT 48" AFF
	FIRE ALARM HORN/STROBE COMBINATION SIGNAL, CENTERLINE AT 6'-8" AFF
	FIRE ALARM VISUAL STROBE, CENTERLINE AT 6'-8" AFF

LIGHT FIXTURE SCHEDULE

MARK NO.	MANUFACTURER & CATALOG NUMBER	VOLTS WATTS	LIGHT SOURCE	DESCRIPTION	EQUIVALENT MANUFACTURERS
A	LSI SFP24 LED 50L UE DIM 40	120 50	LED 5000 LUM 4000K	2'X4' EDGE-LIT LED PANEL, 0-10V DIMMING	OR APPROVED EQUIVALENT
B	LSI SFP24 LED 50L UE DIM 40	120 50	LED 5000 LUM 4000K	2'X4' EDGE-LIT LED PANEL, 0-10V DIMMING	OR APPROVED EQUIVALENT
S	LSI S4 LED 50 UNV DIM1 40 80CRI	120 35	LED 5000 LUM 4000K	4' LED STRIP LIGHT, 0-10V DIMMIMG	OR APPROVED EQUIVALENT
EM	LSI EAR LED UNV SD WHT	120 2	LED INTEGRAL	EMERGENCY LIGHT	OR APPROVED EQUIVALENT
X	LSI EX G U WB WH	120 1	LED INTEGRAL	EXIT SIGN WHITE HOUSING GREEN LETTERS, UNIVERSAL MOUNT, 1 OR 2 FACE, FIELD ADJUSTABLE DIRECTIONAL ARROWS	OR APPROVED EQUIVALENT
XE	LSI LPRX G U WH LD11	120 3	LED INTEGRAL	COMBINATION EXIT SIGN EGRESS LIGHT	OR APPROVED EQUIVALENT
XER	SURE-LITES APCH7R	120 3	LED INTEGRAL	COMBINATION EXIT SIGN EGRESS LIGHT WITH REMOTE HEAD BATTERY CAPACITY	OR APPROVED EQUIVALENT
EG	SURE-LITES APWR2	120 1	LED INTEGRAL	EMERGENCY EGRESS REMOTE - WET LOCATION RATED	OR APPROVED EQUIVALENT

NOTES:

ELECTRICAL GENERAL NOTES:

1. COORDINATE ALL WORK WITH OTHER TRADES AND EXISTING CONDITIONS AS REQUIRED TO PROPERLY INSTALL ALL SYSTEMS AS INTENDED, WITHIN THE CONFINES OF THE SPACES AVAILABLE, AND WITHOUT INTERFERENCES.
2. WHERE CONDUIT IS SHOWN UNDER FLOOR, VERIFY IF FLOOR IS STRUCTURAL SLAB OR SLAB ON GRADE. IF STRUCTURAL SLAB, CORE DRILL PENETRATION, AND ROUTE CONDUIT IN SPACE BELOW. IF SLAB ON GRADE, SAW CUT EXISTING FLOOR SLAB AS REQUIRED FOR INSTALLATION OF UNDER FLOOR CONDUIT. NO STRUCTURAL ELEMENTS SHALL BE CORE DRILLED OR SAW CUT. WHEN SAW CUTTING, PATCH FLOOR TO MATCH EXISTING SURFACE AS REQUIRED.
3. IT IS THE ELECTRICAL CONTRACTORS RESPONSIBILITY TO PROPERLY BALANCE ALL BRANCH CIRCUITS BETWEEN THE PHASES OF THE SYSTEM REGARDLESS OF CIRCUITING INDICATED.
4. ELECTRICAL CONTRACTOR SHALL REMOVE ALL EXISTING ELECTRICAL EQUIPMENT, FIXTURES, SYSTEMS, CONDUIT AND WIRE, ETC. NOT BEING REUSED. DO NOT JUST ABANDON.
5. 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.
6. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF LIGHT FIXTURES AND DEVICES.
7. ALL ELECTRICAL DEVICES ARE EXISTING AND TO REMAIN UNLESS NOTED OTHERWISE OR CONFLICT WITH NEW CONSTRUCTION. MAINTAIN PROPER OPERATION OF ALL EXISTING ELECTRICAL.
8. EACH BRANCH CIRCUIT SHALL BE INSTALLED PER NEC 210.4.
9. ALL BRANCH CIRCUITS SHALL BE SIZED TO ALLOW FOR A MAXIMUM OF 3% VOLTAGE DROP. ALL FEEDERS SHALL BE SIZED TO ALLOW FOR A MAXIMUM OF 2% VOLTAGE DROP. ELECTRICAL CONTRACTOR SHALL VERIFY WIRING INDICATED IS SUFFICIENT AND INCREASE CONDUCTOR SIZE AS REQUIRED BASED OFF ACTUAL INSTALLED LENGTH OF CONDUCTORS.

HEALTH CARE FACILITY NOTES:

1. PATIENT AREAS (ALL PATIENT CARE AREAS BRANCH CIRCUITS) SHALL COMPLY WITH NEC ARTICLE 517 FOR HEALTH CARE FACILITIES.
2. ALL BRANCH CIRCUITS SUPPLYING PATIENT AREAS (ALL PATIENT CARE AREAS BRANCH CIRCUITS) 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 (ALL PATIENT CARE AREAS BRANCH CIRCUITS) SHALL BE HOSPITAL GRADE, GROUNDING, THREE WIRE TYPE, RATED FOR 20 AMPS, WITH COVER PLATES. VERIFY COLOR WITH ARCHITECT.
4. REFER TO DENTAL EQUIPMENT SUPPLIER DRAWINGS FOR ADDITIONAL INFORMATION.
5. ALL RECEPTACLES INSTALLED IN BUSINESS OFFICES, CORRIDORS, WAITING ROOMS, AND SIMILAR ROOMS ACCESSIBLE TO THE PUBLIC SHALL BE TAMPER RESISTANT PER NEC 406.12(5)

BC PROJECT #: 21131
MISSOURI PE COA #2009003629

ELECTRICAL SPECIFICATIONS

6/22/2021
STATE OF MISSOURI
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NUMBER PE-23541
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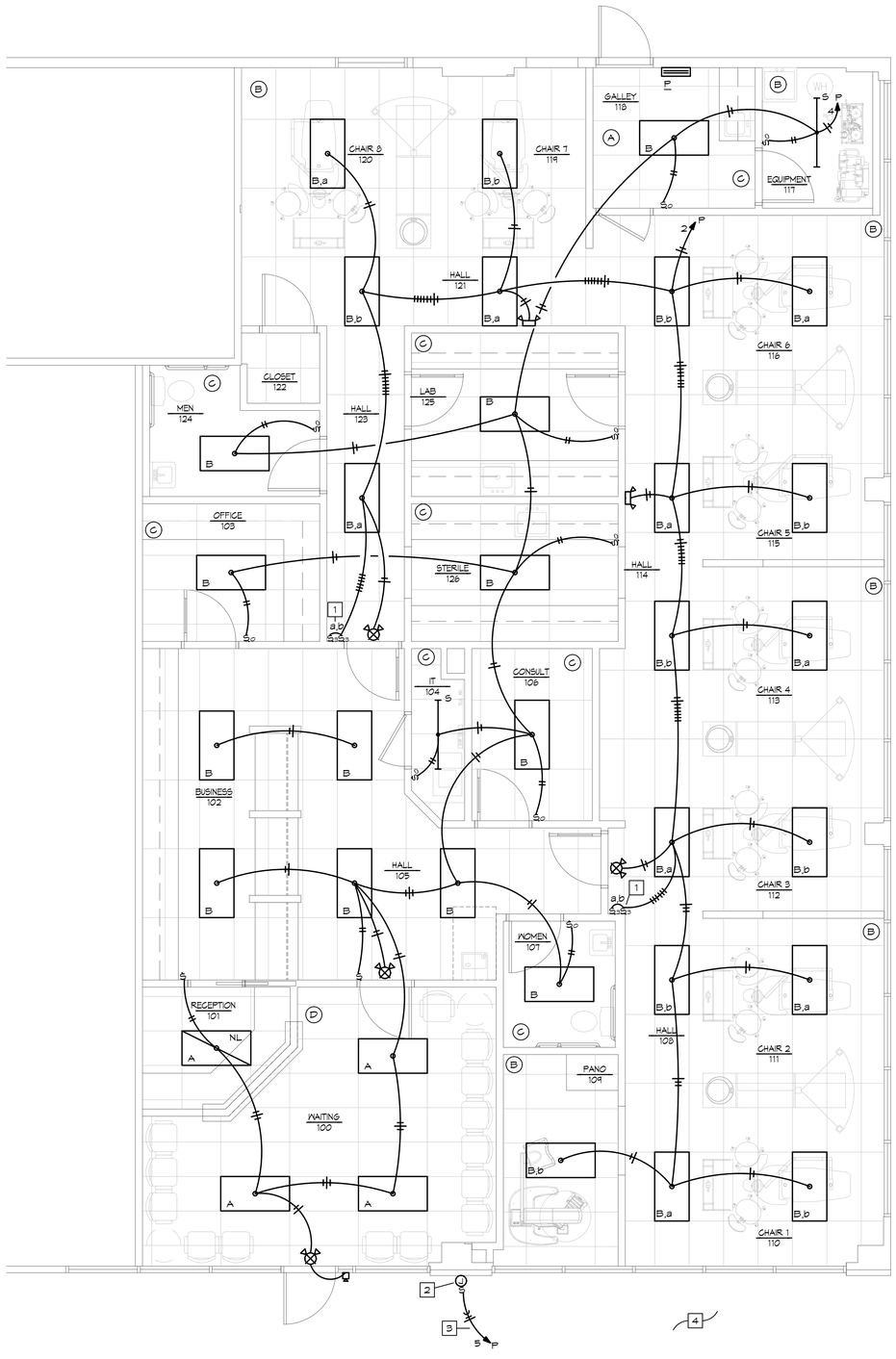

ELECTRICAL LIGHTING PLAN

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

LIGHTING PLAN NOTES:

1. OPERATORY AREA LIGHTING CONTROLS - VERIFY LOCATION WITH TENANT PRIOR TO ROUGH-IN.
2. COORDINATE FINAL LOCATION OF EXTERIOR BUILDING SIGNAGE WITH SIGNAGE INSTALLER. ROUTE THRU PHOTOCELL.
3. ROUTE CIRCUIT FOR BUILDING SIGNAGE THROUGH TIMECLOCK. SEE TIMECLOCK CONTROL DIAGRAM ON SHEET E2.
4. EXTERIOR LIGHTING TO REMAIN.

ENERGY CODE COMPLIANCE NOTES:

- (A) THIS AREA IS EXEMPT FROM IECC AUTOMATIC CONTROL REQUIREMENTS BECAUSE IT CONTAINS AN ELECTRICAL PANEL PER NEC ARTICLE 110.
- (B) THIS AREA IS EXEMPT FROM AUTOMATIC TIMESWITCH CONTROL BECAUSE IT IS AN AREA WHERE PATIENT CARE IS DIRECTLY PROVIDED. LIGHTING REDUCTION CONTROLS ARE PROVIDED.
- (C) OCCUPANCY SENSOR CONTROL IS PROVIDED FOR ENERGY CODE COMPLIANCE. ALL OCCUPANCY SENSORS SHALL BE CODE COMPLIANT MANUAL-ON AUTO-OFF AFTER MAXIMUM 30 MIN OF NO OCCUPANCY SENSED. SET SENSORS AT MAXIMUM TIME, DISTANCE AND SENSITIVITY.
- (D) THIS AREA IS EXEMPT FROM OCCUPANCY SENSOR AND LIGHTING REDUCTION CONTROL REQUIREMENTS BECAUSE IT IS AN EXIT PASSAGEWAY.

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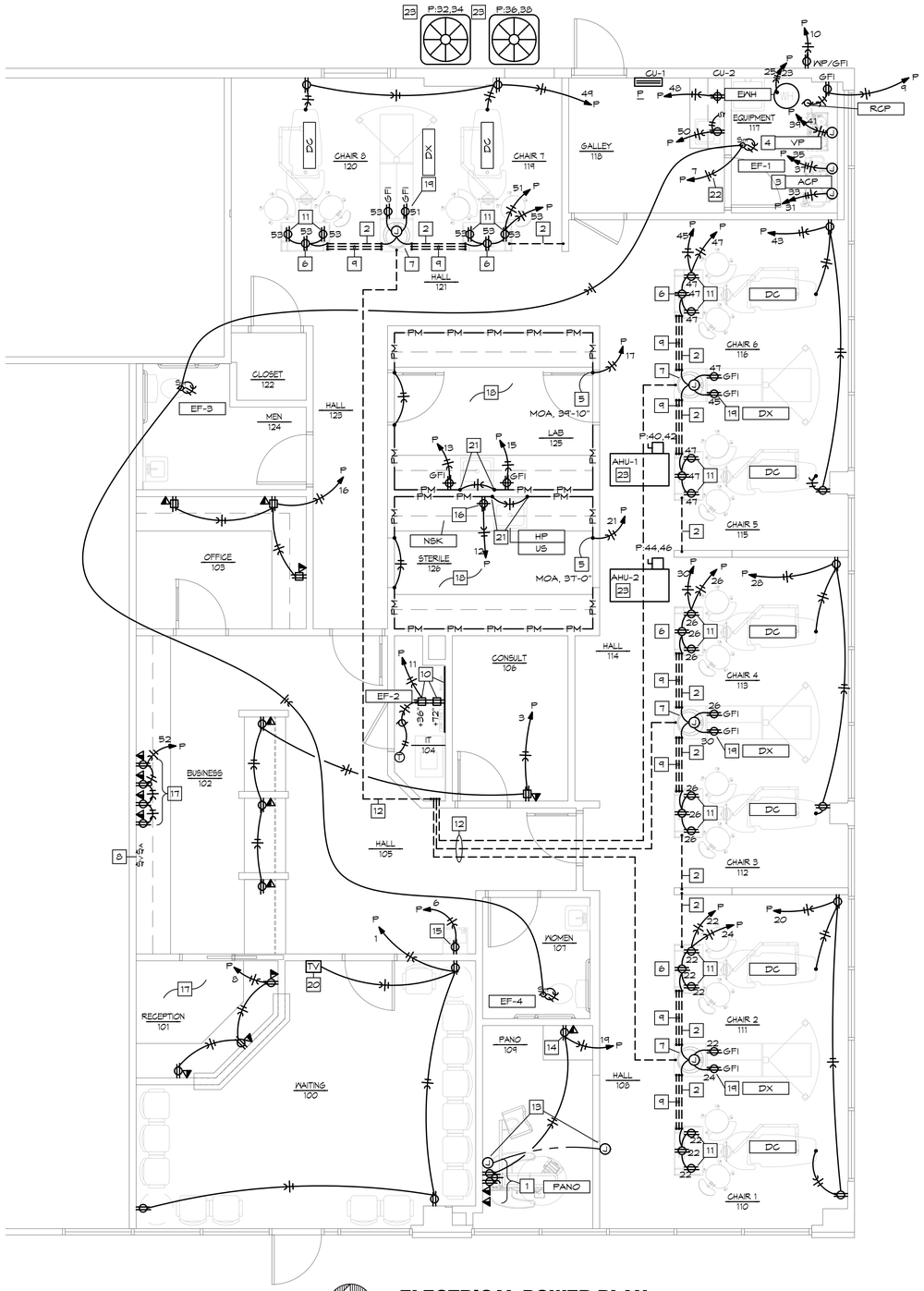
LIGHTING PLAN

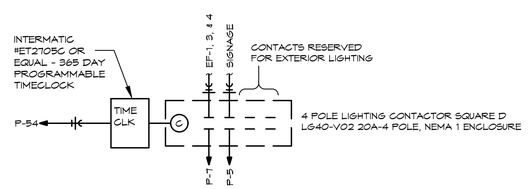
E1.0



ELECTRICAL POWER PLAN
SCALE: 1/4" = 1'-0"

POWER PLAN NOTES:

1. PROVIDE (2) SINGLE GANG DATA OUTLETS, (2) DUPLEX RECEPTACLES AND (1) J-BOX FOR X-RAY SIGNAL WIRING. COORDINATE EXACT LOCATIONS WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN.
2. 3/4" UNDER SLAB CONDUIT SHALL BE TYPE MC OR RMC INSTALLED IN COMPLIANCE WITH NEC 517.13 (FOR GROUNDING OF RECEPTACLES & FIXED ELECTRICAL EQUIPMENT IN PATIENT CARE SPACES.) WHEREVER POSSIBLE, ROUTING FOR THIS CIRCUITING SHALL FOLLOW THE PLUMBING PIPING TRENCH.
3. AIR COMPRESSOR CONNECTION. VERIFY ELECTRICAL REQUIREMENTS WITH MANUFACTURER. CONNECT LOW VOLTAGE AIR COMPRESSOR SOLENOID VALVE AND ASSOCIATED TRANSFORMER TO SWITCH INDICATED WITH NOTE #5.
4. VACUUM PUMP CONNECTION. VERIFY ELECTRICAL REQUIREMENTS WITH MANUFACTURER. CONNECT LOW VOLTAGE VACUUM LINE SOLENOID VALVE AND ASSOCIATED TRANSFORMER TO SWITCH INDICATED WITH NOTE #5.
5. MULTI-OUTLET ASSEMBLY (MOA) - NEMA 5-15 SIMPLEX OUTLETS 24" ON CENTER. LENGTH AS NOTED WITH ' MOA,##" '. MOUNT ON WALL IMMEDIATELY ADJACENT TO THE BOTTOM OF UPPER CABINETS. MOA SHALL BE GFCI PROTECTED VIA GFCI BREAKER IN PANEL INDICATED.
6. PROVIDE BLANK FACE GFI RECEPTACLE UPSTREAM OF RECEPTACLE ORIENTED VERTICALLY AND LOCATED SO IT IS CONCEALED BY THE FLOOR SERVICE BOX OR CABINET WALL. THIS RECEPTACLE FEEDS RECEPTACLES MOUNTED IN THE CHAIR HEAD CABINET PER KEY NOTE #11. VERIFY EXACT LOCATION OF BLANK FACE GFI RECEPTACLE PRIOR TO ROUGH-IN.
7. JUNCTION BOX MOUNTED IN BASE CABINET PROVIDES FEED POINT FOR CIRCUITS IN THIS AREA FOR RECEPTACLES IN FREESTANDING CABINETS. CIRCUITING TO THIS RECEPTACLE AND TO THE ASSOCIATED RECEPTACLES SHALL BE ROUTED BELOW SLAB OR CONCEALED WITH THE CABINETRY. ALL CIRCUITING THIS AREA SHALL COMPLY WITH NEC 517.13. AC-HCF IS NOT ALLOWED BELOW SLAB.
8. SWITCHES FOR CONTROL OF VACUUM AND AIR SHUTOFF VALVES, PROVIDE PLENUM RATED BELL WIRE TO LOW VOLTAGE SOLENOID VALVES IN UTILITY ROOM. ELECTRICAL CONTRACTOR TO PROVIDE SINGLE GANG BOX WITH MUD-RING AND BELL WIRE. THE SWITCHES, ASSOCIATED TRANSFORMER(S) AND THEIR INSTALLATION ARE BY THE DENTAL EQUIPMENT SUPPLIER. SEE NOTES #3 & #4.
9. PROVIDE (1) 3/4" PVC CONDUIT ROUTED BELOW SLAB FOR SIGNAL WIRING. FOLLOW THE SAME ROUTE AS THE PLUMBING TRENCH.
10. TENANT TELEPHONE TERMINAL BOARD. PROVIDE 48"X96" 3/4" PLYWOOD TELEPHONE BACKBOARD WITH SIEMENS EGSB-5 GROUND BAR AND #6 CU BOND TO BUILDING ELECTRODE SYSTEM. MOUNT (2) DOUBLE DUPLEX RECEPTACLE SHOWN ABOVE ONE ANOTHER AT +36" & +72" AFF. PROVIDE 1"C WITH PULL STRING TO EXISTING TELEPHONE SERVICE STUB-IN POINT.
11. RECEPTACLE MOUNTED ABOVE COUNTER LEVEL FLUSH IN CHASE AT SIDE OF CHAIR HEAD CABINET, FED FROM NEAREST J-BOX (SEE NOTE #6.) REFER TO CABINET ELEVATIONS FOR ADDITIONAL INFORMATION.
12. PROVIDE 3/4" PVC ROUTED IN/BELOW SLAB FOR DATA CABLES HOMERUN TO TELEPHONE TERMINAL BOARD (SEE NOTE #10.) FOLLOW SAME ROUTE AS PLUMBING PIPING TRENCH.
13. ROUTE 3/4" CONDUIT BETWEEN TWO BOXES INDICATED (EACH SINGLE GANG BOX WITH PLASTER RING) FOR X-RAY ACTIVATION SWITCH (SWITCH BY OTHERS.)
14. HOMERUN FOR PANO EQUIPMENT AND ASSOCIATED COMPUTER EQUIPMENT SHALL BE IN 3/4" EMT.
15. NEW GFI RECEPTACLE FOR ELECTRIC WATER COOLER, PER NEC. RECEPTACLE MUST REMAIN ACCESSIBLE AFTER WATER COOLERS ARE INSTALLED.
16. 20A DEDICATED RECEPTACLE FOR STERILIZATION UNIT. COORDINATE MOUNTING HEIGHT WITH TENANT PRIOR TO ROUGH-IN. PROTECTED BY GFI BREAKER IN PANEL.
17. MOUNT RECEPTACLES IN THIS AREA ABOVE COUNTER, EVENLY SPACED AS INDICATED.
18. STERILIZATION AND LAB. ALL RECEPTACLES IN THIS AREA SHALL BE MOUNTED ABOVE COUNTER. THESE SPACES ARE NOT PATIENT CARE AREAS.
19. 20A DEDICATED GFI RECEPTACLE FOR X-RAY EQUIPMENT.
20. PROVIDE RECEPTACLE AND (2) DATA OUTLETS FOR TV ON WALL AT +78" AFF. DATA OUTLETS TO BE IN SAME SINGLE GANG BOX. VERIFY HEIGHT WITH THE GENERAL CONTRACTOR PRIOR TO ROUGH-IN.
21. TWO MOA SECTIONS ON WALL SHALL BE CONNECTED BY CONDUIT AND WIRE CONCEALED IN THE WALL WITH NO MOA RECEPTACLES OVER THE SINK.
22. ROUTE CIRCUIT TO PANEL VIA 7-DAY PROGRAMMABLE TIMECLOCK. LOCATE TIMECLOCK ADJACENT TO PANEL AND PROGRAM AS DIRECTED BY OWNER. SEE TIMECLOCK CONTROL DIAGRAM ON THIS SHEET.
23. EXISTING HVAC UNITS TO REMAIN. VERIFY EXISTING CONDITIONS.



TIMECLOCK CONTROL DIAGRAM
SCALE: NONE

BC PROJECT #: 21131
MISSOURI PE COA #2009003629

6/22/2021

STATE OF MISSOURI REGISTERED PROFESSIONAL ENGINEER
LONNIE J. THOMPSON
NUMBER PE-23541

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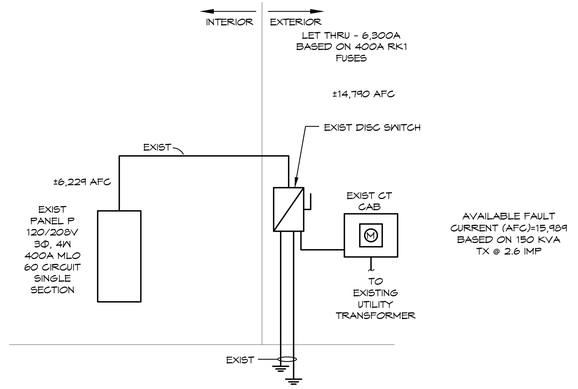
comfort dental

REV.#	DATE	DESCRIPTION

DATE: 06-22-2021
PROJECT# 21010

E2.0

EXIST PANEL: P		VOLTS: 120/208V			PH: 3Ø		WIRE: 4W			LOCATION: STORAGE					MOUNTING: FLUSH	
BUS: 400A		MAIN: 400A MLO			IC: 10,000 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	WAITING TV/RCPT	20	1	12	720			750			12	1	20	TREATMENT ROOM LTG	2
3	BUSINESS RCPTS	20	1	12		900			885		12	1	20	OFFICES/LOBBY LTG	4
5	FRONT BUILDING SIGNAGE	20	1	12			1,200			600	12	1	20	DRINKING FOUNTAIN [GFI]	6
7	EF1 / EF3 / EF4	20	1	12	250			1,440			12	1	20	RECEPTION DESK	8
9	RCP/RCPT	20	1	12		540			180		12	1	20	EXTERIOR EQUIP RECS	10
11	IT RCPTS/EF-2	20	1	12			720			360	12	1	20	STERILIZATION EQUIP [GFI]	12
13	LAB LATHE	20	1	12	1,000							1	20	SPARE	14
15	LAB TRIMMER	20	1	12		1,000			1,080		12	1	20	OFFICE RECEPT	16
17	LAB PLUGMOLD [GFI]	20	1	12			1,080					1	20	SPARE	18
19	PANO	20	1	12	900			888			12	1	20	DENTAL RCPTS 1,2	20
21	STERILE PLUGMOLD [GFI]	20	1	12		1,080			1,260		12	1	20	DENTAL CHAIR 1,2	22
23	WATER HEATER	30	2	10			2,250			600	12	1	20	DENTAL XRAY	24
25	[HL]				2,250			888			12	1	20	DENTAL CHAIR 3,4	26
27	SPARE	20	1						1,260		12	1	20	DENTAL RCPT 3,4	28
29	SPARE	20	1							600	12	1	20	DENTAL XRAY	30
31	AIR COMP	20	2	12	1,082			3,354			6	2	50	CU-1	32
33	[HL]					1,082			3,354						34
35	AIR COMP	20	2	12			1,082			2,208	6	2	50	CU-2	36
37	[HL]				1,082			2,208							38
39	VAC PUMP	30	2	10		1,924			3,000		6	2	50	AHU-1	40
41	[HL]						1,924			3,000					42
43	DENTAL RCPT 5,6	20	1	12	1,260			3,000			6	2	50	AHU-2	44
45	DENTAL XRAY	20	1	12		600			3,000						46
47	DENTAL CHAIR 5,6	20	1	12			888			1,080	12	1	20	GALLEY RECS	48
49	DENTAL RCPT 7	20	1	12	720			1,080			12	1	20	GALLEY RECS	50
51	DENTAL XRAY	20	1	12		600			1,440		12	1	20	BUSINESS RECS	52
53	DENTAL CHAR 7	20	1	12			444			150	12	1	20	TIMECLOCK	54
55	EXT LIGHTING	20	1	12	1,200							1	20	SPARE	56
57	EXT LIGHTING	20	1	12		1,200						1	20	SPARE	58
59	SPARE	20	1									1	20	SPARE	60
NOTES:					10,464	9,326	9,588	13,693	15,464	9,078					
[HL]-HANDLE LOCK, [GFI]-GFCI BRKR					24,157		24,790		18,666					TOTAL CONNECTED LOAD:	67,613 VA
NEW PANEL TO MATCH EXISTING AIC RATING														NEC DEMAND LOAD:	50,749 VA
[1] - FOR FUTURE SUB-PANEL														DEMAND AMPS @ 208 VOLT / 3Ø:	140.86 A



EXIST ELECTRICAL RISER DIAGRAM

SCALE: NONE

ELECTRICAL DIAGRAMS AND SCHEDULES

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