PRIME PHYSICAL THERAPY

ISSUED FOR PERMIT, LEE'S SUMMIT, MISSOURI - 2022.06.28

CLIENT

KYO HWANG
925 NE WOODS CHAPEL RD
LEE'S SUMMIT, MO 64064
816.914.7256

REAL ESTATE MANAGEMENT

COLLIERS
4520 MAIN ST, STE 1000
KANSAS CITY, MO 64111
816.556.1155

ARCHITECTURAL

JUSTIN BAE
15362 S CONSTANCE ST
OLATHE, KS 66062
816.267.1869

GENERAL CONTRACTOR

HAREN COMPANIES
8035 NIEMAN RD
LENEXA, KS 66214
913.495.9558

ELECTRICAL

JSC ENGINEERS
1925 CENTRAL ST #201
KANSAS CITY, MO 64108
816.272.5289

PLUMBING

AEC, INC
10233 MILLSTONE DR #4112
LENEXA, KS 66220
816.916.4675

ARCHITECTURAL

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A1-1	BASE FLOOR PLAN
A1-3	INTERIOR FINISH PLAN
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ELECTRICAL

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PLUMBING

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1

FIRE SPRINKLER

FS1	FIRE SPRINKLER PLAN

PROJECT NAME

PRIME PHYSICAL THERAPY

1161 NE Rice Rd, Lee's Summit, MO 64064

REVISIONS	DATE	DESCRIPTION
1	6/28/2022	REVISE FOR PERMIT

ISSUED NAME

PERMIT SET

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06/06/22	JUSTIN BAE

SHEET NAME

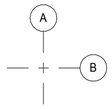
SHEET INDEX

SHEET NUMBER

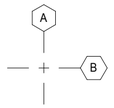
X-1

GRAPHIC SYMBOLS AND INDENTIFICATION

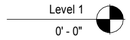
COLUMN AND / OR GRID LINES



EXISTING COLUMN AND / OR GRID LINES



FLOOR ELEVATION LEVEL



SPOT ELEVATION

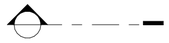
BUILDING ELEVATION

INTERIOR ELEVATION

EXTERIOR BUILDING SECTION

BUILDING / WALL SECTION

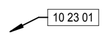
DETAIL SECTION



DETAIL REFERENCE

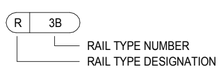
DEMOLITION KEYNOTE

MATERIAL KEYNOTE

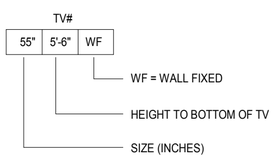


FLOOR PLAN MATCHLINE

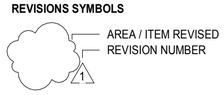
RAILING SYMBOL



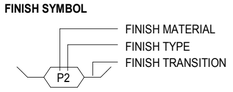
TELEVISION SYMBOL



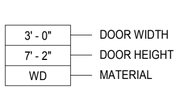
REVISIONS SYMBOLS



FINISH SYMBOL



DOOR NUMBER AND TYPE IDENTIFICATION



REFLECTED CEILING PLAN SYMBOLS

2' X 4' LAY-IN-GRID

2' X 2' LAY-IN-GRID

HIGH HUMIDITY GRID SYSTEM IS REQUIRED IN SPACE

CEILING-MOUNTED FIRE ALARM DEVICE

FIRE SPRINKLER HEAD

SPEAKER

2' X 4' FIXTURE IN GRID

1' X 4' FIXTURE IN GRID

2' X 2' FIXTURE IN GRID

STRIP LIGHT FIXTURE

RECESSED CAN LIGHT FIXTURE

SURFACE MOUNTED CAN LIGHT FIXTURE

PENDANT MOUNTED LIGHT FIXTURE

WALL MOUNTED LIGHT FIXTURE

SUPPLY DIFFUSER

RETURN AIR GRILLE OR EXHAUST

FIRE EXTINGUISHER SYMBOLS

FIRE EXTINGUISHER
& RECESSED CABINET

FIRE EXTINGUISHER
& SEMI-RECESSED CABINET

FIRE EXTINGUISHER
& SURFACE MOUNTED CABINET

FIRE EXTINGUISHER
& SURFACE MOUNTED BRACKET

FIRE & SMOKE RATED PARTITION IDENTIFICATION

1 HOUR FIRE RATED PARTITION

2 HOUR FIRE RATED PARTITION

3 HOUR FIRE RATED PARTITION

4 HOUR FIRE RATED PARTITION

PARTITION TO RESIST PASSAGE OF SMOKE

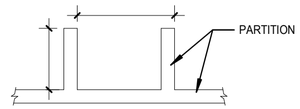
DIMENSION CRITERIA

ALL DRAWINGS ARE INTENDED TO BE COMPLEMENTARY. NOTIFY THE ARCHITECT OF ANY DIMENSIONING DISCREPANCY PRIOR TO PROCEEDING.

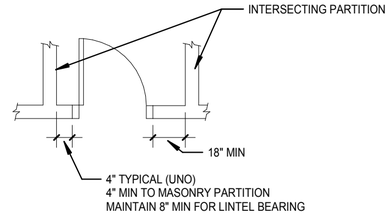
DIMENSIONS ARE AS IDENTIFIED ON THE DOCUMENTS OR AS ESTABLISHED BY CRITERIA AS FOLLOWS:

1. DIMENSIONS WILL NOT BE SHOWN FOR THE FOLLOWING CONDITIONS.
   - WHEN PARTITION IS CENTERED ON GRID LINE.
   - WHEN PARTITION IS SHOWN FLUSH WITH COLUMN FACE.
   - WHEN PARTITION IS SHOWN FLUSH WITH GRID LINE.
   - WHEN FACE OF PARTITION IS CENTERED ON GLAZING MULLION.

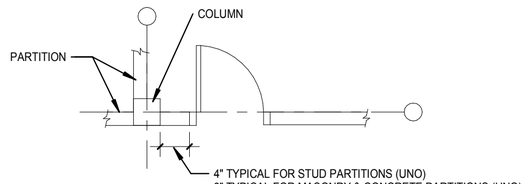
2. MASONRY / METAL STUD WALLS ARE DIMENSIONED FROM FINISHED FACE AS SHOWN IN THE FOLLOWING DIAGRAM.



3. FOR OPENINGS IN PARTITIONS OR WALLS:
   - WHEN ONE OCCURS AT GRIDLINE, NO DIMENSIONS WILL BE SHOWN AND WIDTH WILL BE ESTABLISHED BY EITHER CRITERIA OR SCHEDULES.
   - WHEN NEITHER JAMB OCCURS AT A PARTITION INTERSECTION, AT A COLUMN, OR AT A GRIDLINE, ONE JAMB WILL BE LOCATED DIMENSIONALLY BY THE DETAIL.
   - WHEN ONE JAMB IS LOCATED BY A PARTITION INTERSECTION, THE FOLLOWING DIAGRAM APPLIES:



   - WHEN ONE JAMB IS LOCATED BY A COLUMN, THE FOLLOWING DIAGRAM APPLIES:



MATERIAL PATTERNS

DRYWALL CEILING OR SOFFIT

SHOWER CEILING - TILE BACKING PANELS W/ SKIM COAT & PAINT

PORTLAND CEMENT STUCCO SOFFIT

EIFS OR DAFS SOFFIT

SUBROOF (INDICATING ORIENTATION)

EARTH

AGGREGATED FILL

CONCRETE

PRECAST CONCRETE

BRICK IN PLAN

CONCRETE MASONRY UNITS

CUT / CAST STONE

STEEL

MORTAR NET

DISCONTINUOUS ROUGH LUMBER

CONTINUOUS LUMBER

RIGID INSULTATION

BLANKET INSULATION

FIRE SAFING INSULATION

INSULATED METAL PANEL

GROUT

LATH & PLASTER

GYPSUM BOARD

MARBLE / GRANITE

ACOUSTICAL TILE / BOARD

WOOD GRAIN

PLYWOOD

FINISH LUMBER

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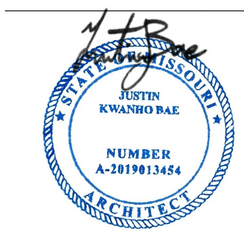


06/28/2022

15362 SOUTH CONSTANCE ST.
OLATHE, KS 66062
phone: 816-267-1869
email: justinbae88@gmail.com

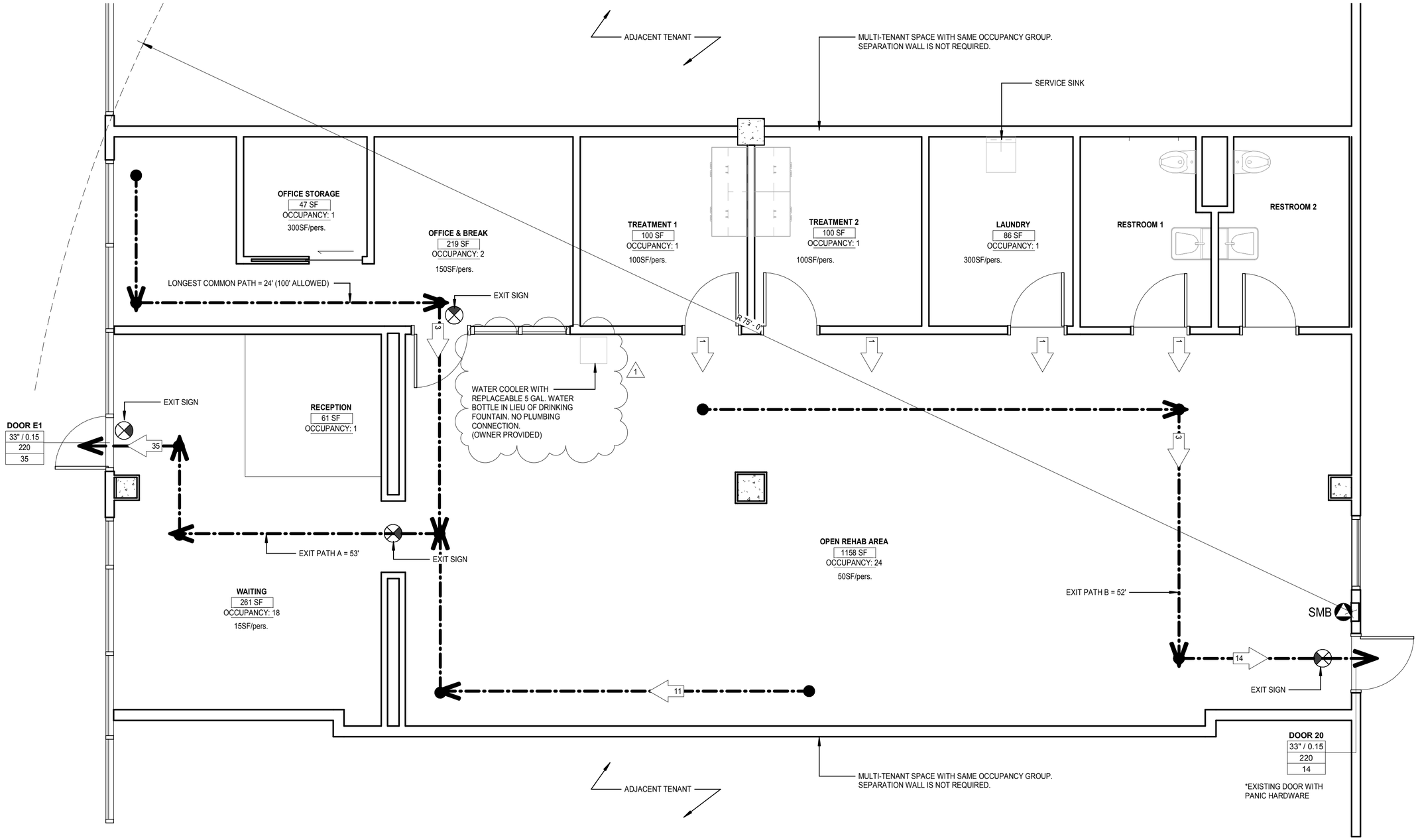
REVISIONS	DATE	DESCRIPTION

ISSUED NAME
PERMIT SET

ISSUED DATE	ISSUED BY
06/06/22	JUSTIN BAE

SHEET NAME
ARCHITECTURAL GRAPHICS STANDARD

SHEET NUMBER
A0-0



CODE ANALYSIS

OCCUPANCY CLASSIFICATION TYPE: BUSINESS GROUP B (CLINIC, OUTPATIENT)
TOTAL OCCUPANCY LOAD: 49
SPRINKLER: YES, EXISTING
CONSTRUCTION TYPE:
TOTAL LEASED SF: 2,330 SF

(BASED ON TABLE 1004.5 FROM IBC 2018)

OPEN REHAB AREA: 1100 SF X 50 OLF = 22
WAITING AREA: 264 SF X 15 OLF = 18
OFFICE & BREAK: 216 SF X 150 OLF = 2
RECEPTION: 2 FIXED SEATS = 2
TREATMENT 1: 96 SF X 100 OLF = 1
TREATMENT 2: 96 SF X 100 OLF = 1
TREATMENT 3: 97 SF X 100 OLF = 1
LAUNDRY: 78 SF X 300 OLF = 1
STORAGE: 46 SF X 300 OLF = 1

NO. OF EXITS: 2

PLUMBING FIXTURE SCHEDULE (BASED ON TABLE 403.1 FROM IPC 2018):

WATER CLOSETS: 2
(1 PER 25 FOR THE FIRST 50 AND 1 PER 50 FOR THE REMAINDER)

LAVATORIES: 2
(1 PER 40 FOR THE FIRST 80 AND 1 PER 80 FOR THE REMAINDER)

SERVICE SINK: 1

DRINKING FOUNTAIN: 1
(STANDALONE WATER COOLER WITH REPLACEABLE 5 GAL. WATER BOTTLE TO BE PLACED IN LIEU OF THE BUILT-IN DRINKING FOUNTAIN AS LOCATED IN A0-1 PLAN. NO PLUMBING CONNECTION IS REQUIRED.)

LIFE SAFETY SYSTEM:

- FIRE SPRINKLER
- FIRE ALARM
- EXIT SIGNS
- FIRE EXTINGUISHER

EXIT EGRESS SYMBOL

CLEAR WIDTH / EGRESS WIDTH FACTOR
MAXIMUM OCCUPANT LOAD
OCCUPANT LOAD

1 **LIFE SAFETY PLAN**
1/4" = 1'-0"

NORTH

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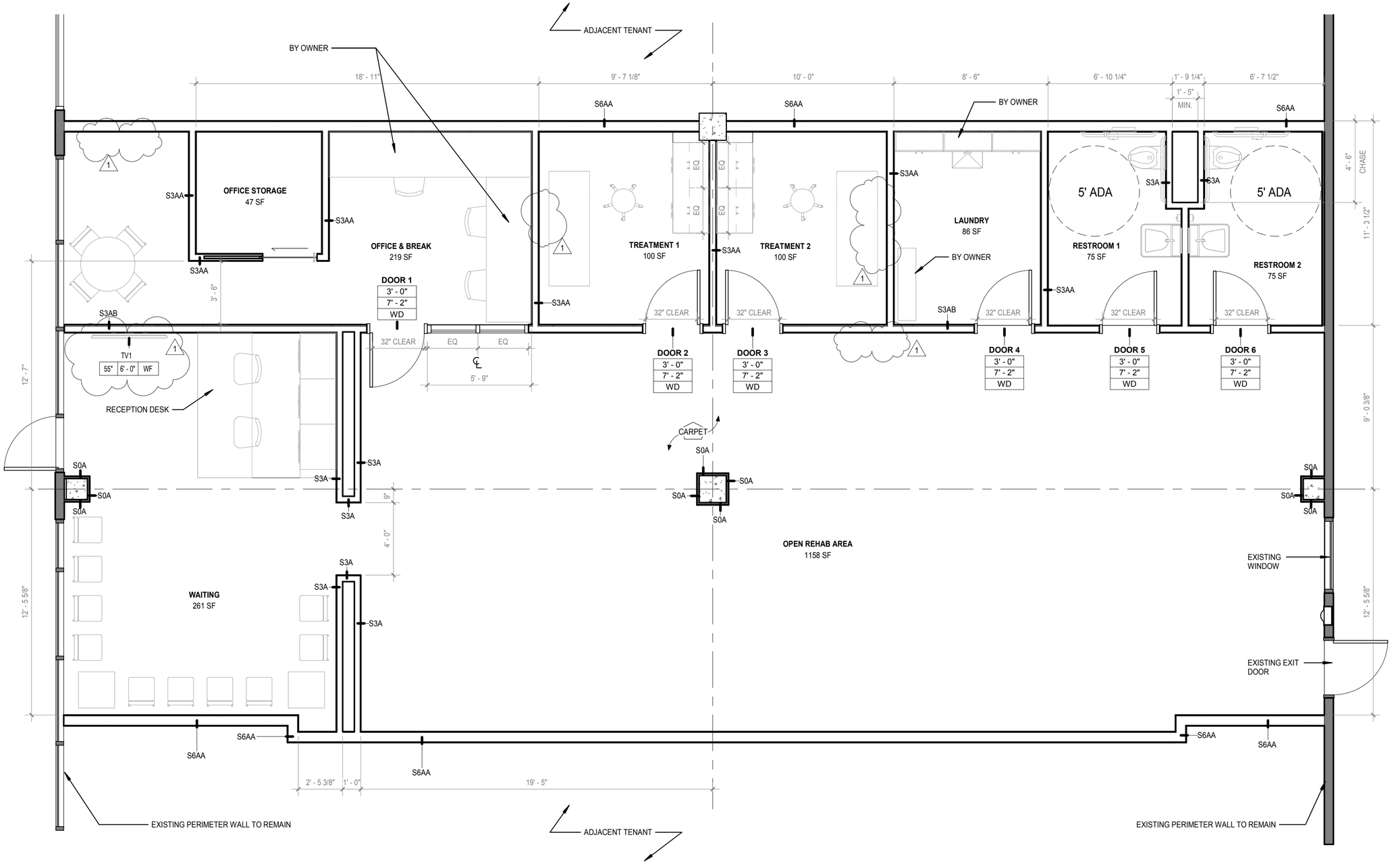
SHEET NAME
LIFE SAFETY PLAN

SHEET NUMBER
A0-1



GENERAL PARTITION NOTES

1. COMPLETE WALL ASSEMBLY IS CONTINUOUS TO UNDERSIDE OF STRUCTURE ABOVE.

PARTITION TYPE LEGEND

BASIC MATERIAL:
M MASONRY (CMU)
S STUD

BASIC SIZE:
0 7/8" FURRING CHANNEL
1 1 5/8" STUD
2 2 1/2" STUD
3 3 5/8" STUD
4 4" MASONRY OR STUD
6 6" MASONRY OR STUD

PARTITION TYPE SYMBOL

S3A
- BASIC MATERIAL
- BASIC SIZE
- APPLIED LAYERS CODE

APPLIED LAYERS

A 1 LAYER 5/8" GYP BD
B 2 LAYERS 5/8" GYP BD

TELEVISION SYMBOL

TV#
55" | 5'-6" | WF
- WF = WALL FIXED
- HEIGHT TO BOTTOM OF TV
- SIZE (INCHES)

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

NORTH

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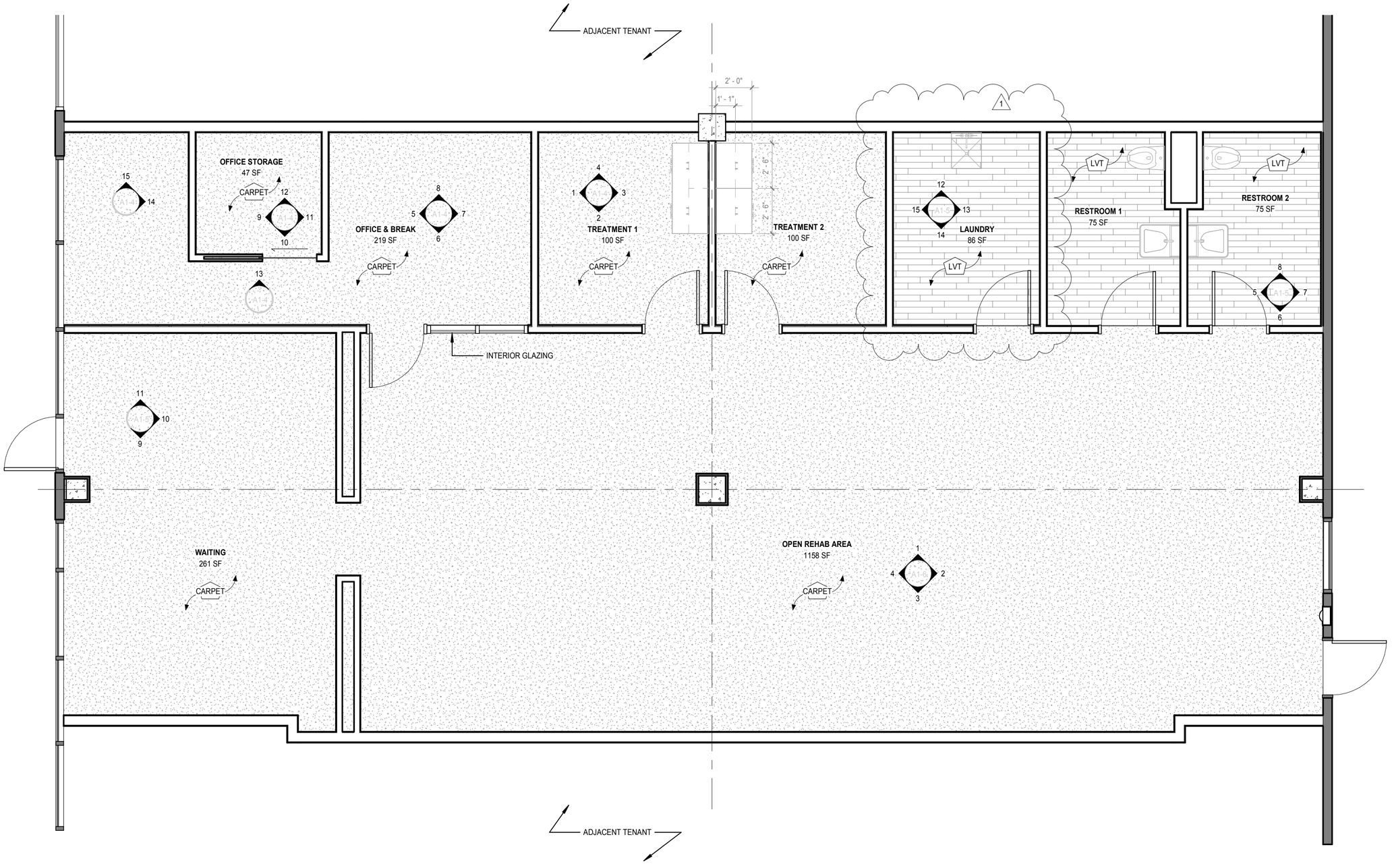
SHEET NAME
BASE FLOOR PLAN

SHEET NUMBER
A1-1



MILLWORK SCHEDULE (SEE A1-8 FOR DETAILS)

2 UPPER CABINETS PER TREATMENT ROOM (4 TOTAL)
2 LOWER CABINETS & COUNTERTOP PER TREATMENT ROOM (4 TOTAL)

1 INTERIOR FINISH PLAN
1/4" = 1'-0"

NORTH

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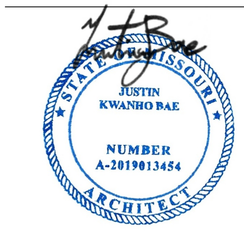

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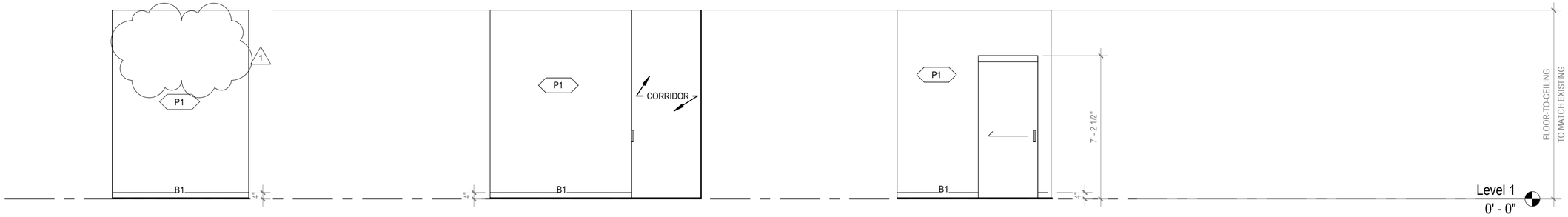
SHEET NAME
INTERIOR FINISH PLAN

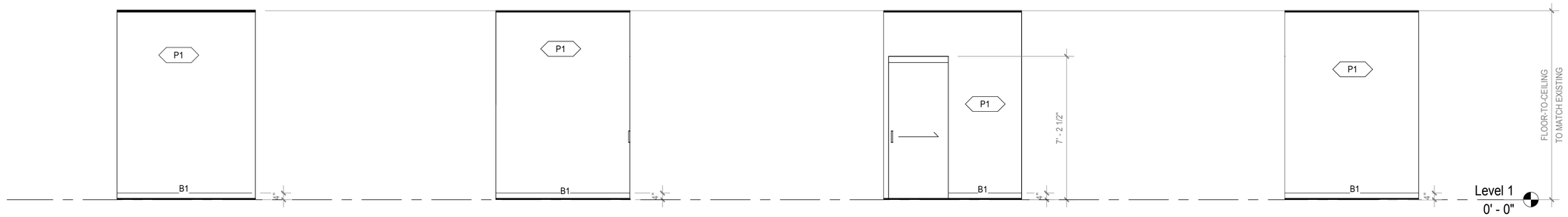
SHEET NUMBER
A1-3



15 **BREAK N**
1/4" = 1'-0"

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

13 **BREAK CORR N**
1/4" = 1'-0"

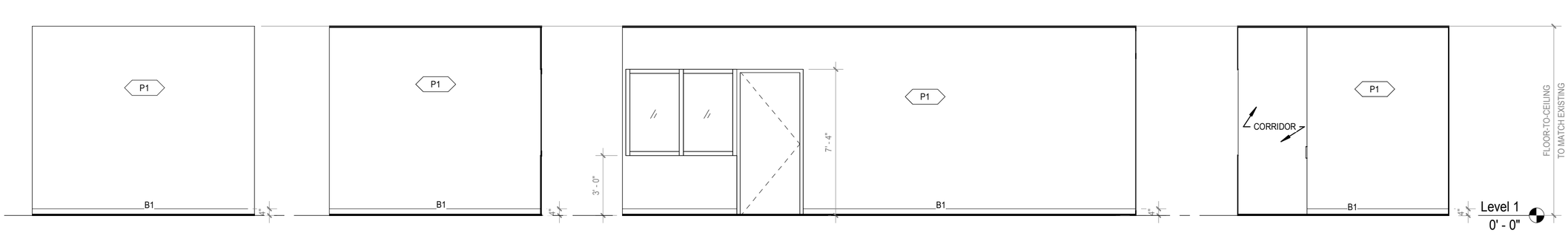


12 **STORAGE N**
1/4" = 1'-0"

11 **STORAGE E**
1/4" = 1'-0"

10 **STORAGE S**
1/4" = 1'-0"

9 **STORAGE W**
1/4" = 1'-0"

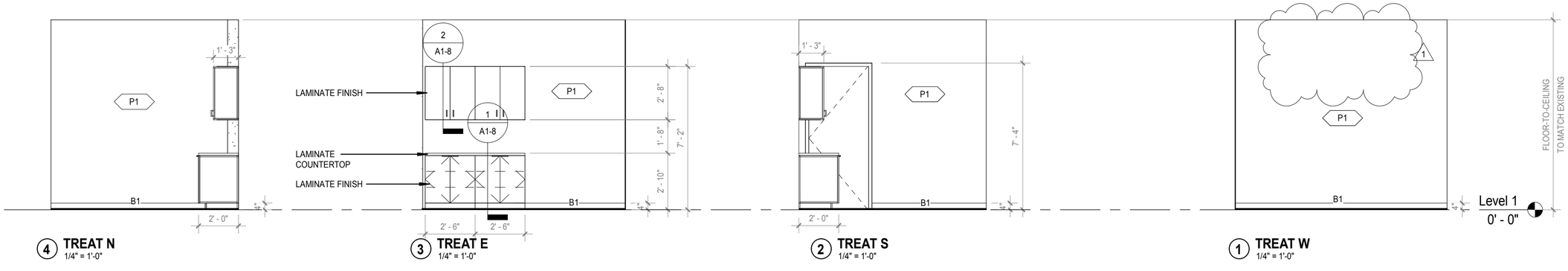


8 **OFFICE N**
1/4" = 1'-0"

7 **OFFICE E**
1/4" = 1'-0"

6 **OFFICE S**
1/4" = 1'-0"

5 **OFFICE - W**
1/4" = 1'-0"



4 **TREAT N**
1/4" = 1'-0"

3 **TREAT E**
1/4" = 1'-0"

2 **TREAT S**
1/4" = 1'-0"

1 **TREAT W**
1/4" = 1'-0"

B1: 4" RUBBER / VINYL BASE
P1: PAINT, WHITE SATIN FINISH
P2: FRP LINER PANEL FINISH
"TEXTURED": REFER TO RENDERING IMAGE FOR THE VISUAL EFFECT
ALL CEILINGS ARE LAY-IN 2' X 2' ACT

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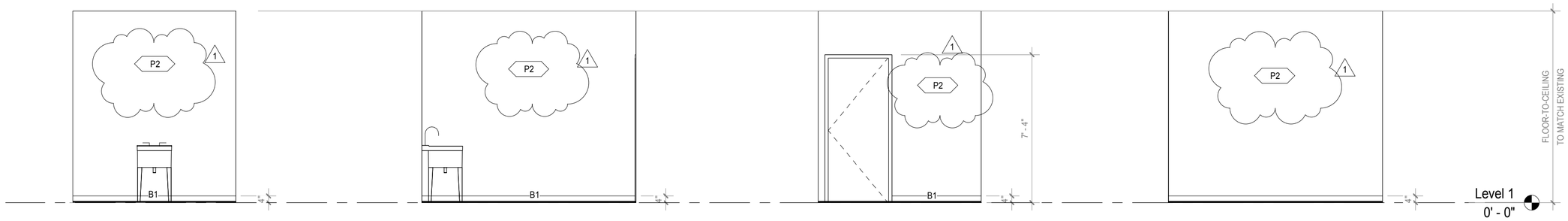
02/15/22	JUSTIN BAE

SHEET NAME
INTERIOR ELEVATIONS

SHEET NUMBER
A1-4

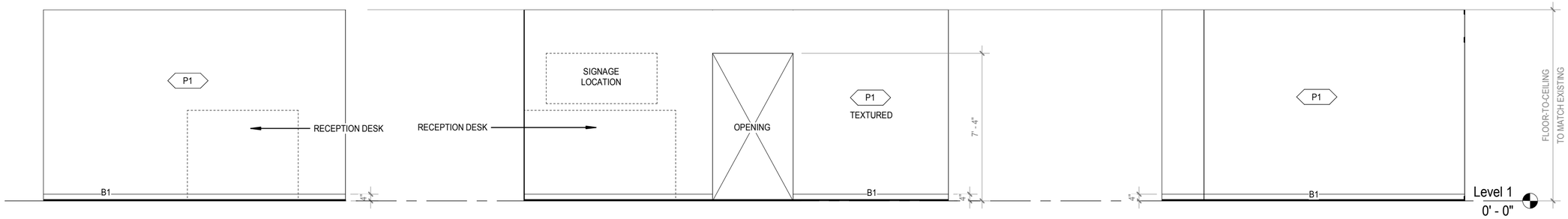


12 LAUNDRY N
1/4" = 1'-0"

13 LAUNDRY E
1/4" = 1'-0"

14 LAUNDRY S
1/4" = 1'-0"

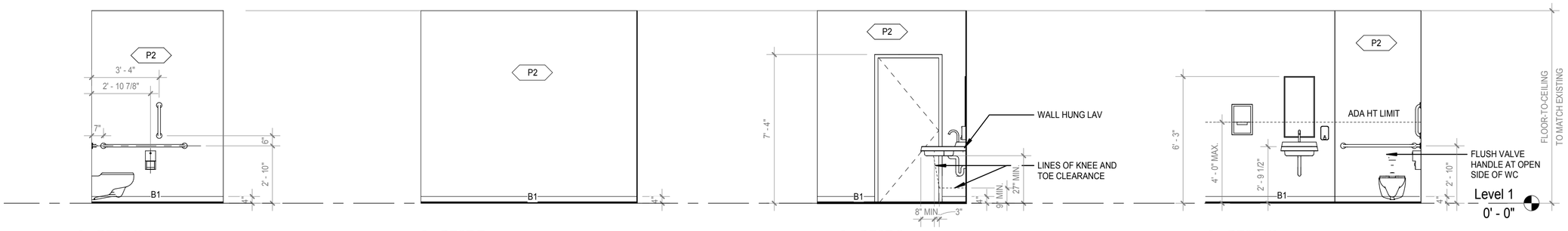
15 LAUNDRY W
1/4" = 1'-0"



11 WAIT N
1/4" = 1'-0"

10 WAIT E
1/4" = 1'-0"

9 WAIT S
1/4" = 1'-0"



8 REST N
1/4" = 1'-0"

7 REST E
1/4" = 1'-0"

6 REST S
1/4" = 1'-0"

5 REST W
1/4" = 1'-0"

B1: 4" RUBBER / VINYL BASE
P1: PAINT, WHITE SATIN FINISH
P2: FRP LINER PANEL FINISH
"TEXTURED": REFER TO RENDERING IMAGE FOR THE VISUAL EFFECT
ALL CEILINGS ARE LAY-IN 2' X 2' ACT

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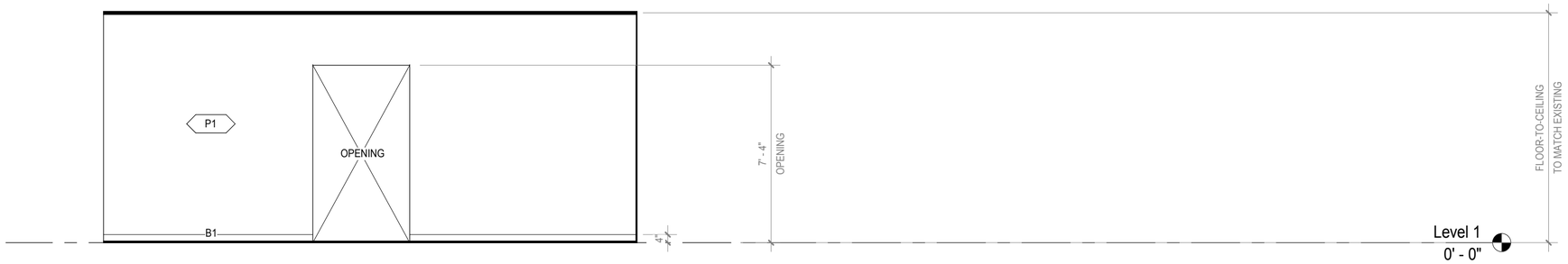
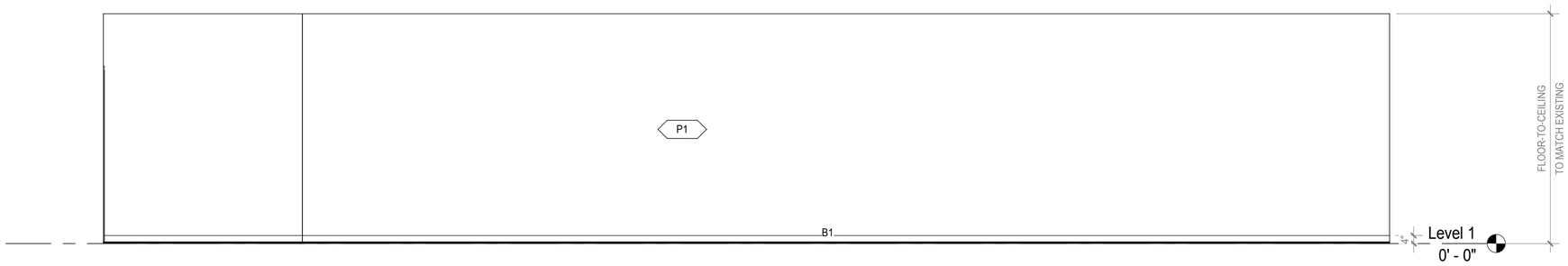
SHEET NAME
INTERIOR ELEVATIONS

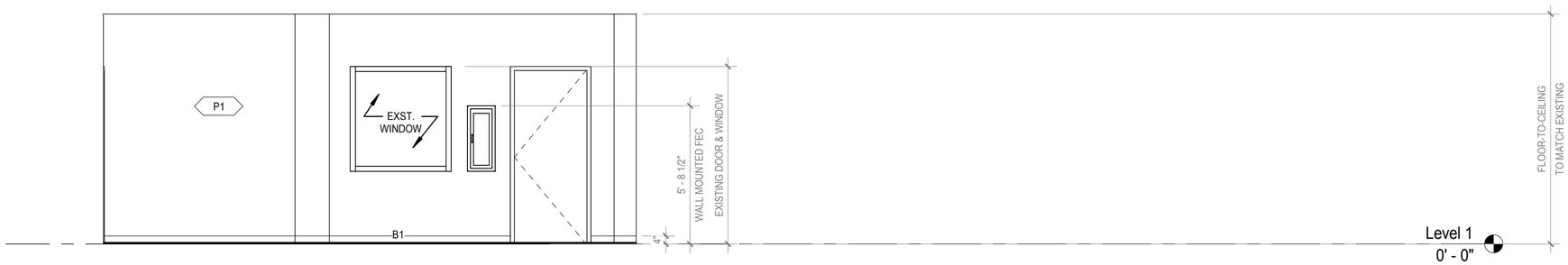
SHEET NUMBER
A1-5



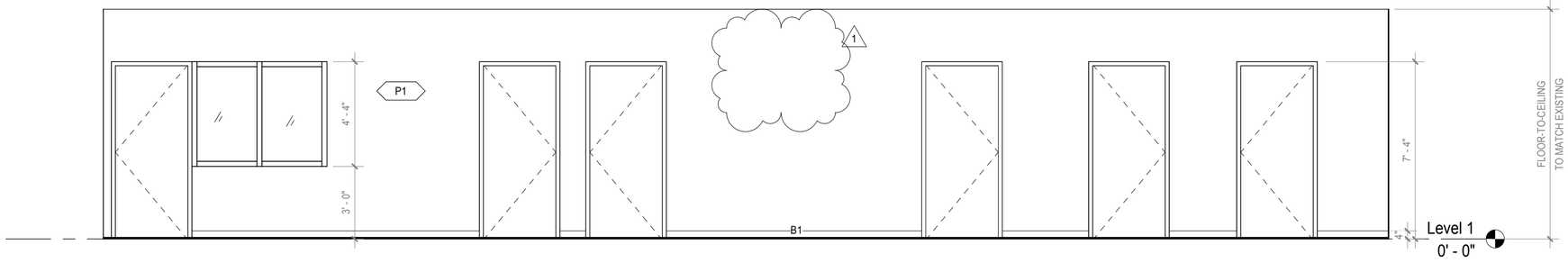
4 **OPEN W**
1/4" = 1'-0"



3 **OPEN S**
1/4" = 1'-0"



2 **OPEN E**
1/4" = 1'-0"



1 **OPEN N**
1/4" = 1'-0"

B1: 4" RUBBER / VINYL BASE
P1: PAINT, WHITE SATIN FINISH
P2: FRP LINER PANEL FINISH
"TEXTURED": REFER TO RENDERING IMAGE FOR THE VISUAL EFFECT
ALL CEILINGS ARE LAY-IN 2' X 2' ACT

PROJECT NAME
PRIME PHYSICAL THERAPY
1161 NE Rice Rd, Lee's Summit, MO 64064

06/28/2022

15362 SOUTH CONSTANCE ST.
OLATHE, KS 66062
phone: 816-267-1869
email: justinbae88@gmail.com

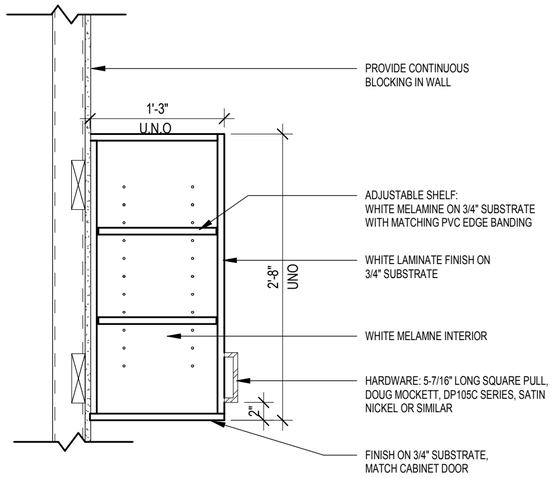
REVISIONS	DATE	DESCRIPTION
1	6/28/2022	REVISE FOR PERMIT

ISSUED NAME
PERMIT SET

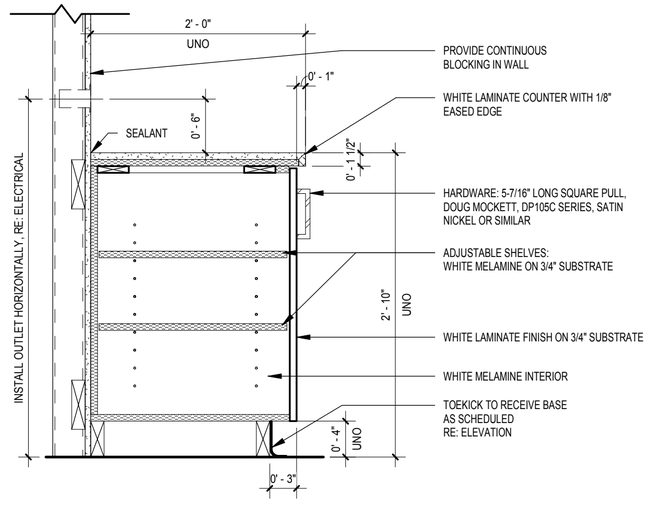
ISSUED DATE	ISSUED BY
06/06/22	JUSTIN BAE

SHEET NAME
INTERIOR ELEVATIONS

SHEET NUMBER
A1-6



UPPER CABINET W/ DOORS - TREATMENT ROOM
2 1" = 1'-0"



LOWER BASE CABINET W/ DOORS - TREATMENT ROOM
1 1" = 1'-0"

PROJECT NAME
PRIME PHYSICAL THERAPY
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06/28/2022

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email: justinbae88@gmail.com

REVISIONS	DATE	DESCRIPTION

ISSUED NAME
PERMIT SET

ISSUED DATE	ISSUED BY
06/06/22	JUSTIN BAE

SHEET NAME
MILLWORK DETAILS

SHEET NUMBER
A1-8

HEAT PUMP SCHEDULE

GENERAL DATA						ELECTRICAL					
TAG	MFR/MODEL	LOCATION	WEIGHT (LBS)	COOLING CAPACITY (MBH)	HEATING CAPACITY (MBH)	VOLTAGE (V)	PHASE	HZ	MOCP	MCA	SEER
HP-1	LENNOX / ML14XP1-060-230	SEE PLANS	295	60.0	60.0	230	1	60	50.0	29.6	14
HP-2	LENNOX / ML14XP1-036-230	SEE PLANS	229	36.0	36.0	230	1	60	30.0	18.6	14

NOTES:
- A. PROVIDE LIQUID LINE FILTER DRYER AND SIGHT GLASS.
- B. PROVIDE PREFABRICATED EQUIPMENT SUPPORT RAILS.
- C. PROVIDE FACTORY MOUNTED DISCONNECT SWITCH.
- D. STARTERS FOR ALL MOTORS SHALL BE FURNISHED INTEGRAL WITH UNIT.
- E. PROVIDE CONDENSER COIL HAIL GAURDS.
- F. PROVIDE HARD START KIT
- J. PROVIDE CRANK CASE HEATER.

GRILLE, REGISTER AND DIFFUSER SCHEDULE

MARK	MANUF.	MODEL	FACE TYPE	MOUNTING TYPE	FACE SIZE (IN.)	MAX NC	NOTES
SUPPLY							
CSD-1	TITUS	OMNI	PLAQUE FACE	LAY-IN	24x24	25	A,B,C
CSD-2	TITUS	OMNI	PLAQUE FACE	SURFACE	12x12	25	A,B,C
RETURN							
CRG-1	TITUS	50F	EGGCRATE	LAY-IN	24x24	25	A,B,C
CRG-2	TITUS	50F	EGGCRATE	LAY-IN	12x24	25	A,B,C

NOTES:
- A. NECK SIZE SHOWN ON DRAWINGS.
- B. BRANCH DUCT SIZE SHALL BE SAME AS NECK SIZE UNLESS OTHERWISE SHOWN ON DRAWINGS.
- C. BAKED ENAMEL FINISH, WHITE TO MATCH CEILING/WALL COLOR.

MECHANICAL SPECIFICATIONS

1. GENERAL PROVISIONS:
   - A. PROVIDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR THE COMPLETE INSTALLATION OF THE MECHANICAL SYSTEMS OUTLINED.
   - B. OBTAIN ALL PERMITS, FEES, LICENSES, INSPECTIONS, AND CERTIFICATIONS OF COMPLIANCE OR APPROVAL AS REQUIRED BY 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 DEFECT FOR A PERIOD OF ONE YEAR FROM FINAL ACCEPTANCE.
   - H. INSPECTION OF THE SITE: THIS CONTRACTOR SHALL THOROUGHLY ACQUAINT HIMSELF WITH THE MEP DRAWINGS, SPECIFICATIONS, DETAIL, AND THE SITE. THIS CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ANY SPECIAL OR UNUSUAL PROBLEMS, CONFLICTS, OR OBSTRUCTIONS THAT AFFECT HIS BID.
   - I. FOR THE PURPOSE OF CLEARNESS AND LEGIBILITY, THE MECHANICAL AND PLUMBING DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC AND DO NOT SHOW ALL OFFSETS AND FITTINGS REQUIRED FOR INSTALLATION. DO NOT SCALE DRAWINGS. THE SIZE AND LOCATION OF EQUIPMENT IS SHOWN TO SCALE WHEREVER POSSIBLE. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DATA AS INDICATED ON THE DRAWINGS AND IN THE SPECIFICATION SECTIONS WHERE MECHANICAL WORK INTERFACES WITH OTHER TRADES.
   - J. IN THE EVENT OF A CONFLICT OR INCONSISTENCY BETWEEN ITEMS INDICATED ON THE PLANS OR WITH CODE REQUIREMENTS, THE NOTE OR CODE WHICH PRESCRIBES AND ESTABLISHES THE MORE COMPLETE JOB OR HIGHER STANDARD SHALL PREVAIL.
   - K. INSTALL MATERIALS AND SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPROVED SUBMITTALS. INSTALL MATERIALS IN PROPER RELATION WITH ADJACENT CONSTRUCTION AND WITH UNIFORM APPEARANCE FOR EXPOSED WORK. COORDINATE WITH WORK OF OTHER SECTIONS. COMPLY WITH APPLICABLE REGULATIONS AND CODE REQUIREMENTS. PROVIDE PROPER CLEARANCES FOR SERVICING.
   - L. INCLUDE ALL BASIC MATERIALS AND CONSTRUCTION METHODS INCLUDING PIPES, PIPE FITTINGS, AND SPECIALTIES AND SUPPORTING DEVICES, VALVES, PIPE AND VALVE IDENTIFICATION, PUMPS, VIBRATION ISOLATION, ETC.
   - M. FURNISH ADEQUATE ACCESS PANELS AND DOORS TO ALLOW FOR FUTURE PIPING ALTERATIONS, REPLACEMENT, AND MAINTENANCE OF PIPING. PROPERLY IDENTIFY ALL ACCESS PANELS AND DOORS.

2. MOTORS:
   - A. PROVIDE THERMAL OVERLOAD PROTECTION FOR EACH MOTOR PROVIDED BY THIS WORK.

3. PIPING
   - A. CONDENSATE DRAIN AND INDIRECT WASTE (ABOVEGROUND)
     1. PVC DWV PIPE, SCHEDULE 40, SOLVENT JOINT.
     2. INSTALL AT 1/8" PER FOOT SLOPE.

4. 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 DEVELOPMENT RATING OF NOT OVER 50, IN ACCORDANCE WITH NFPA.
   - B. DUCTWORK 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. DUCT COVERING SHALL BE MINIMUM R-6.
        - a. SUPPLY AIR DUCT: 2"
        - b. RETURN AIR DUCT: 2"

5. TESTING, BALANCING AND CLEANING:
   - A. ALL PIPING SHALL BE TESTED FOR LEAKS BEFORE BEING CONCEALED IN WALL CONSTRUCTION OR COVERED WITH INSULATION.
   - B. DUCTWORK AND PIPING SHALL BE BALANCED BY QUALIFIED BALANCING PERSONNEL WHO HAVE PREVIOUS EXPERIENCE WITH BALANCING PROCEDURES AND ARE FAMILIAR WITH TESTING AND BALANCING PROCEDURES OF 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 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 LABELLED OR MAY BE AN ELECTRONIC PDF SUBMITTAL.

6. DUCTWORK:
   - A. ALL DUCTWORK UNLESS OTHERWISE INDICATED SHALL BE FABRICATED FROM GALVANIZED SHEET STEEL COMPLYING WITH ASTM A 527, LOCKFORMING QUALITY, WITH G60 ZINC COATING IN ACCORDANCE WITH ASTM A 525, AND MILL PHOSPHATIZED FOR EXPOSED LOCATIONS.
   - B. DUCTWORK METAL GAUGES, REINFORCING, ETC SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS," LATEST EDITION FOR A 2" WATER GAUGE STATIC PRESSURE.
   - C. ALL FITTINGS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS," LATEST EDITION.
   - D. RECTANGULAR DUCT:
     1. ELBOWS, UNLESS INDICATED OTHERWISE, SHALL BE CONSTRUCTED WITH CENTERLINE RADIUS OF NOT LESS THAN 1.5 DUCT WIDTH OR SQUARE ELBOWS WITH DOUBLE WALL STREAMLINE ELBOWS.
     2. TAKE-OFF FITTINGS: BRANCH DUCT TAKE-OFF FITTINGS FOR SUPPLY AND EXHAUST DIFFUSER/REGISTERS SHALL INCLUDE AN INTEGRAL MANUAL VOLUME DAMPER WITH LOCKING QUADRANT, DAMPER NOT REQUIRED ON RETURN AIR. FOR RECTANGULAR TO ROUND TAKE-OFFS, UTILIZE A "BUCKLEY" MODEL 3300 & 3300D OR EQUAL.
     3. RETURN AIR ACOUSTIC ELBOWS AND SOUND BOOTS SHALL BE A SQUARE ELBOW WITH NO TURNING VANES.
     4. SLOPES FOR TRANSITIONS OR OTHER CHANGES IN DIMENSIONS SHALL BE A MINIMUM 1 TO 3.
   - E. ROUND DUCT (SEE INSULATION SECTION FOR SPIRAL DUCT):
     1. 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.
     2. SLOPES FOR TRANSITIONS OR OTHER CHANGES IN DIMENSIONS SHALL BE MINIMUM 1 TO 3.
     3. ROUND LONGITUDINAL SEAM DUCT: USE FOR RIGID METAL DUCT ON LEAVING SIDE OF DUCT IN CONCEALED LOCATIONS FOR EXTENSION TO FLEX FOR DIFFUSERS.
   - F. SEAL ALL CONCEALED DUCTWORK JOINTS WITH NON-HARDENING, NON-MIGRATING MASTIC SEALANT, AS RECOMMENDED FOR SEALING SEAMS AND JOINTS IN DUCTWORK. OIL BASED CAULKING AND GLAZING COMPOUNDS SHALL NOT BE ACCEPTABLE. DUCTS SHALL BE SEALED TO THE CLASS LEVEL LISTED BELOW:

	SUPPLY 2"WC OR LESS	EXHAUST	RETURN
(1) UNCONDITIONED SPACES:	CLASS B	CLASS C	CLASS B
(2) CONDITIONED SPACES (PLENUM):	CLASS C	CLASS B	CLASS C

   - G. DUCT SIZES SHOWN ON THE DRAWINGS ARE SHEET METAL SIZES. INCREASE SHEET METAL SIZES ACCORDINGLY TO ACCOUNT FOR THICKNESS OF DUCT LINER.
   - H. WHETHER SHOWN ON PLANS OR NOT, PROVIDE MANUAL VOLUME DAMPERS IN EACH RUNOUT TO EACH SUPPLY DIFFUSER OR REGISTER. PROVIDE ACCESS PANELS TO DAMPERS LOCATED ABOVE HARD CEILINGS.
   - I. PROVIDE AUXILIARY STEEL AS REQUIRED TO ADEQUATELY SUPPORT DUCTWORK.
   - J. WHERE DUCTS PASS THROUGH FIRE-RATED FLOORS, WALLS, OR PARTITIONS, PROVIDE FIRESTOPPING BETWEEN DUCT AND WALL.
   - K. 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 GAUGE AS DUCT. OVERLAP OPENING ON 4 SIDES BY AT LEAST 1-1/2". FASTEN TO DUCT AND WALL.

7. FLEXIBLE DUCT:
   - A. ATCO #086 (R-6), OR EQUAL.
   - B. FACTORY APPLIED INSULATION AND VAPOR BARRIER, 1-1/2" THICK.
   - C. MAXIMUM LENGTH OF 6'-0".

8. SMOKE DETECTORS:
   - A. UNITS MOUNTED IN THE DUCTWORK SHALL BE A DUCT MOUNTED UL LISTED PHOTO-ELECTRIC SELF-CONTAINED SMOKE DETECTOR WITH HOUSING. UNITS SHALL BE EQUAL TO SIMPLEX #4098-4687. THE SAMPLING TUBE SHALL BE #2098-9804. LENGTH AS REQUIRED FOR DUCT.
   - B. DUCT DETECTOR REMOTE TEST STATION SHALL BE SIMPLEX #4098-9842 WITH REMOTE ALARM INDICATOR. POWER-ON INDICATOR, TONE-ALERT, TONE-ALERT SILENCE SWITCH, AND TEST/RESET SWITCH. DEVICES SHALL BE MOUNTED IN APPROVED LOCATION BY LOCAL AHJ. WHERE DUCT SMOKE DETECTORS ARE NOT RESETTABLE FROM THE PROTECTED PREMISES FIRE ALARM SYSTEM, A LISTED ALARM/SUPERVISORY INDICATOR WITH AN INTEGRAL RESET SWITCH SHALL BE PROVIDED.
   - C. PROVIDE AND INSTALL A PHOTO-ELECTRIC SMOKE DETECTOR IN THE RETURN AIR DUCT FOR EACH HVAC UNIT AS INDICATED ON THE FLOOR PLANS. DETECTORS ARE TO BE PROVIDED WITH A SUB-BASE CONTAINING AUXILIARY RELAY CONTACTS. RELAY CONTACTS SHALL BE WIRED INTO UNIT CONTROL WIRING SO AS TO SHUT DOWN UNIT IN THE CASE OF SMOKE DETECTION. PROVIDE ALL CONTROL WIRING. ELECTRICAL CONTRACTOR SHALL PROVIDE 120V POWER TO EACH DETECTOR.
   - D. SMOKE DETECTORS SHALL BE INTERLOCKED. IN ALARM CONDITION OF A SINGLE DETECTOR ALL UNITS SHALL SHUT DOWN.

9. REMODELING WORK:
   - A. THIS PROJECT INVOLVES CONSTRUCTION INSIDE AN EXISTING STRUCTURE. CONTRACTORS, BY SUBMITTING A BID ARE DEEMED TO BE COMPLETELY FAMILIAR WITH THE EXISTING CONDITIONS OF THE BUILDING AS IT INFLUENCES THE WORK DESCRIBED. NO CLAIMS FOR EXTRA COMPENSATION WILL BE CONSIDERED FOR EXISTING CONDITIONS VISIBLE OR REASONABLY INFERABLE FROM A CAREFUL EXAMINATION OF THE EXISTING BUILDING CONDITIONS.
   - B. CONTRACTOR SHALL INSPECT THE EXISTING FIELD CONDITIONS AT THE SITE AND THE CONTRACT DOCUMENTS PRIOR TO THE START OF ANY WORK TO DETERMINE WHAT EFFECT THE EXISTING CONDITIONS WILL HAVE ON THE WORK POTENTIAL. CONTRACTOR SHALL REPORT DISCREPANCIES TO THE ARCHITECT AND INCLUDE IN THE BID ALL COSTS REQUIRED TO MAKE THE WORK MEET EXISTING CONDITIONS.
   - C. CONTACT UTILITY LOCATING SERVICE TO LOCATE EXACT LOCATION OF UTILITIES BELOW GRADE.
   - D. DISPOSAL AND CLEANUP: REMOVE FROM THE SITE AND LEGALLY DISPOSE OF DEMOLISHED MATERIALS AND EQUIPMENT NOT INDICATED TO BE SALVAGED.
   - E. 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.
   - 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.
   - I. DEMOLITION: DISCONNECT, DEMOLISH, AND REMOVE ABANDONED MECHANICAL AND PLUMBING MATERIALS AND EQUIPMENT INDICATED TO BE REMOVED AND NOT INDICATED TO BE SALVAGED OR REMAIN. ALL WORK SHOWN DASHED IS TO BE DEMOLISHED. WORK SHOWN LIGHT IS EXISTING TO REMAIN. REFER TO ARCHITECTURAL PLANS FOR FURTHER EXTENT OF DEMOLITION REQUIRED.

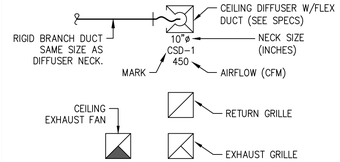
MECHANICAL SYMBOLS

THIS IS A MASTER LEGEND AND NOT ALL SYMBOLS, ETC, ARE NECESSARILY USED ON THE DRAWINGS.

HVAC EQUIPMENT & DUCTWORK

- SPIN-IN FITTING WITH MANUAL VOLUME DAMPER
- BRANCH DUCT WITH 45° RECTANGLE-ROUND BRANCH FITTING AND MANUAL VOLUME DAMPER
- ELBOW WITH TURNING VANES
- RETURN, EXHAUST, OR OUTSIDE AIR DUCT UP
- RETURN, EXHAUST, OR OUTSIDE AIR DUCT DOWN
- SUPPLY AIR DUCT UP
- SUPPLY AIR DUCT DOWN
- EQUIPMENT WITH FLEXIBLE DUCT CONNECTION
- MANUAL VOLUME DAMPER
- SQUARE TO ROUND TRANSITION
- DUCT TRANSITION
- BRANCH DUCT
- DUCT MOUNTED SMOKE DETECTOR

FD	FIRE DAMPER	CO2	CARBON DIOXIDE SENSOR
FSD	FIRE SMOKE DAMPER	HS	HUMIDITY SENSOR
SD	SMOKE DAMPER	SP	STATIC PRESSURE SENSOR
MD	MOTORIZED DAMPER	TS	TEMPERATURE SENSOR
BD	BACKDRAFT DAMPER	H	HUMIDISTAT
VD	VOLUME DAMPER	T	THERMOSTAT



ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	MC	MECHANICAL CONTRACTOR
BAS	BUILDING AUTOMATION SYSTEM	MIN	MINIMUM
BD	BACKDRAFT	NC	NOISE CRITERIA
CFM	CUBIC FEET PER MINUTE	OA	OUTSIDE AIR
DDC	DIRECT DIGITAL CONTROL	RA	RETURN AIR
DX	DIRECT EXPANSION	SA	SUPPLY AIR
EA	EXHAUST AIR	SD	SMOKE DUCT DETECTOR
FFA	FROM FLOOR ABOVE	TFA	TO FLOOR ABOVE
FFB	FROM FLOOR BELOW	TFB	TO FLOOR BELOW
GPM	GALLONS PER MINUTE	TYP	TYPICAL
IN WC	INCHES OF WATER COLUMN	UNO	UNLESS NOTED OTHERWISE
MAX	MAXIMUM	W/	WITH
MBH	1000 BTU PER HOUR	W/O	WITHOUT

STANDARD MOUNTING HEIGHTS

(AFF, UNLESS NOTES OTHERWISE)

THERMOSTATS (USER ADJUSTABLE) (TOP OF DEVICE)	48"
CONTROLS (TOP OF DEVICE)	48"

ANNOTATION

- (#) PLAN WORK NOTE
- (RTU 1) MECHANICAL EQUIPMENT DESIGNATION (CONTRACTOR FURNISHED AND INSTALLED UNLESS NOTED OTHERWISE)
- CONNECTION POINT OF NEW WORK TO EXISTING
- (A / M1) DETAIL REFERENCE UPPER NUMBER INDICATED DETAIL NUMBER LOWER NUMBER INDICATES SHEET NUMBER
- (1 / M1) SECTION CUT DESIGNATION

OOR AIR CALCULATIONS

UNIT	AREA (SQ-FT)	OCCUPANCY CLASSIFICATION	OCCUPANT DENSITY, PEOPLE/1000 SQ-FT	FIXED SEATING QUANTITY	OUTDOOR AIRFLOW RATE PER PERSON (Rp), CFM/PERSON	AREA OUTDOOR AIRFLOW RATE IN BREATHING ZONE (Ra), CFM/SQ-FT	ZONE DISTRIBUTION EFFECTIVENESS (Ez)	REQUIRED AIR FLOW, CFM
TOTAL	316	RECEPTION	30	-	5	0.06	0.8	83.0
	1170	HEALTH CLUB/WEIGHTS	10	-	20	0.06	0.8	380.3
	220	OFFICE LOBBY	10	-	5	0.06	0.8	30.3
	100	PATIENT ROOM 1	10	-	25	0.06	0.8	38.8
	100	PATIENT ROOM 2	10	-	25	0.06	0.8	38.8
	86	LAUNDRY	10	-	25	-	0.8	26.9
	45	STORAGE	-	-	-	0.12	0.8	6.8
							TOTAL	604.6

EXHAUST FAN SCHEDULE

MARK	AREA SERVED	MANUFACTURER	MODEL	MOUNTING	CFM	ESP (IN)	DRIVE	ELECTRICAL VOLTS	PHASE	WATTS	WEIGHT	NOTES
EF-1	RESTROOM	PANASONIC	FV-0511VF1	CEILING	110	0.4	DIRECT	120	1	10.2	15	A
EF-2	RESTROOM	PANASONIC	FV-0511VF1	CEILING	110	0.4	DIRECT	120	1	10.2	15	A

NOTES:
- A. PROVIDE INTERNAL CABINET BACKDRAFT DAMPER, CEILING GRILLE, ALL THREAD RODS AND VIBRATION ISOLATORS.

AIR HANDLING UNIT SCHEDULE

					FAN DATA					AHU ELECTRICAL					ELECTRIC HEAT STRIP									
																			MCA		MOCP			
MARK	AREA SERVED	MANUFACTURER	MODEL	FLOW	TYPE	QTY	HP	CFM	ESP (IN. WC)	VOLTAGE	PHASE	HZ	MOCP	MCA	RATED SIZE	VOLTAGE	PHASE	INPUT (kW)	Ckt 1	Ckt 2	Ckt 1	Ckt 2	WEIGHT (LBS)	NOTES
AHU-1	OFFICE	LENNOX	CBA25UH-060-230-10	HORIZONTAL	DIRECT	1	1	1550	0.5	240	1	60	15	9.5	20 KW	240	1	20.0	50.0	50.0	60	60	190	1,2
AHU-2	OFFICE	LENNOX	CBA25UH-036-230-10	HORIZONTAL	DIRECT	1	1/3	1200	0.5	240	1	60	15	4.9	10 KW	240	1	10.0	53.0	-	60	-	168	1,2

NOTES:
1. FURNISH ELECTRICAL CONTRACTOR WITH MANUFACUTER'S ELECTRIC HEAT STRIP REPLACEMENT CIRCUIT BREAKER.
2. PROVIDE UNIT WITH FACTORY MOUNTED DISCONNECT SWITCH AND STARTER.

JSC ENGINEERS
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1925 CENTRAL ST. SUITE #201
KANSAS CITY, MO 64108
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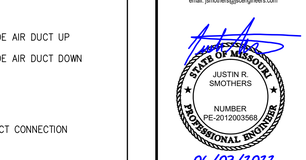


06/03/2022

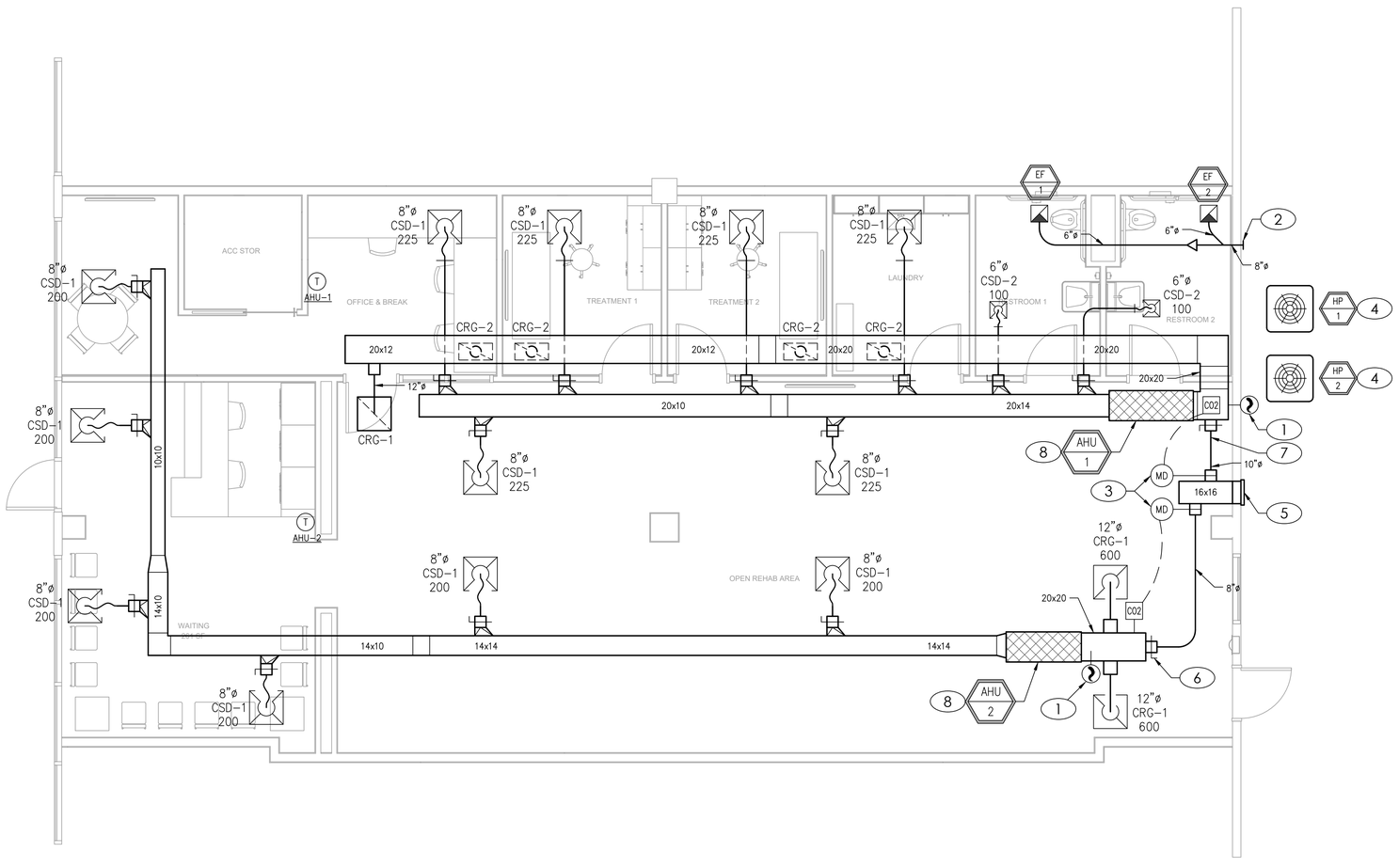
PROJECT:
PRIME PHYSICAL THERAPY
1161 NE RICE RD.
LEE'S SUMMIT, MO 64064

REVISIONS:	DATE / DESCRIPTION
1	
2	
3	
4	
5	

ISSUED:
PERMIT

SHEET TITLE:
MECHANICAL PLAN

DATE: 06-03-2022
JOB NO.: 22-162
SHEET:
M01



MECHANICAL PLAN

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

1

NORTH

GENERAL NOTES

A. DRAWINGS ARE DIAGRAMMATIC ONLY AND REPRESENT THE GENERAL SCOPE OF WORK. REVIEW THE GENERAL NOTES, SPECIFICATIONS AND PLANS FOR ADDITIONAL REQUIREMENTS THAT MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY ARCHITECT, ENGINEER AND/OR OWNER OF CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.

B. COORDINATE INSTALLATION OF MECHANICAL SYSTEMS WITH OTHER TRADES TO ENSURE A NEAT AND ORDERLY INSTALLATION AND AVOID CONFLICTS. INSTALL DUCTWORK AND PIPING AS TIGHT TO STRUCTURE AS POSSIBLE. COORDINATE INSTALLATION OF DUCTWORK AND PIPING TO AVOID CONFLICTS WITH ELECTRICAL PANELS, LIGHTING FIXTURES, ETC. VERIFY DUCT SPACE AVAILABLE ABOVE ALL CEILINGS PRIOR TO ANY FABRICATION OF INSTALLATION.

C. NEW MECHANICAL EQUIPMENT, DUCTWORK AND PIPING ARE SHOWN AT APPROXIMATE LOCATIONS. FIELD MEASURE FINAL DUCTWORK AND PIPING LOCATIONS PRIOR TO FABRICATION AND MAKE ADJUSTMENTS AS REQUIRED TO FIT THE DUCTWORK AND PIPING WITHIN THE AVAILABLE SPACE. VERIFY THAT FINAL EQUIPMENT LOCATIONS MEET MANUFACTURER'S RECOMMENDATIONS REGARDING SERVICE CLEARANCE AROUND EQUIPMENT.

D. INSTALL DUCTWORK AND PIPING PARALLEL TO BUILDING COLUMN LINES UNLESS OTHERWISE SHOWN OR NOTED.

E. OVERHEAD HANGERS AND SUPPORTS FOR EQUIPMENT, DUCTWORK AND PIPING SHALL BE FASTENED TO BUILDING JOISTS OR BEAMS. DO NOT ATTACH HANGERS AND SUPPORTS TO THE ABOVE ROOF.

F. ALL ROOF AND WALL PENETRATIONS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR. PROVIDE ALL REQUIRED SLEEVES, FLASHINGS, CURBS, REINFORCED ANGLES, SUPPORTING FRAMES, ETC. UNLESS THEY ARE SPECIFICALLY CALLED OUT TO BE FURNISHED BY OTHERS.

(#) KEYED PLAN NOTES

1. PROVIDE SMOKE DETECTOR IN RETURN AIR DUCT IN COMPLIANCE WITH NFPA 72. DUCT SMOKE DETECTOR SHALL BE CONNECTED TO THE FIRE ALARM SYSTEM. DUCT SMOKE DETECTORS SHALL BE INTERLOCKED TO SHUT DOWN ALL UNITS UPON DETECTION OF SMOKE.
2. 6"ø DUCT FROM EACH EXHAUST FAN. COMBINE AND ROUTE 8"ø EXHAUST DUCT TO WALL CAP. EXHAUST MUST DISCHARGE OUTDOORS. LOCATE A MINIMUM OF 10'-0" FROM ANY OUTSIDE AIR INTAKE. SEAL WALL PENETRATION WEATHER TIGHT. PAINT CAP COLOR TO MATCH BUILDING.
3. IN FRESH AIR INTAKE DUCT PROVIDE MODULATING OA DAMPER CONNECTED TO RETURN AIR CO2 SENSOR, YOUNG REGULATOR CO. DEMAND AIR KIT DA-CO2-XX OR EQUAL PRODUCT.
4. CONDENSING UNIT AT GRADE OR ON ROOF ON ELEVATED PAD. COORDINATE LOCATION WITH GC. INSTALL PER MANUFACTURER'S INSTRUCTIONS MAINTAINING RECOMMENDED CLEARANCES. ROUTE REFRIGERANT LINES THOUGH WALL 18" AFG. WEATHER SEAL REFRIGERANT LINE PENETRATIONS OF BUILDING. PROVIDE ALL RECOMMENDED VALVES, FILTERS, FITTINGS, ETC. AND MAKE ALL NECESSARY CONNECTIONS TO HEAT PUMP AND AIR HANDLER.
5. AT WALL PROVIDE 16x16 INTAKE LOUVER EQUAL TO RUSKIN ELF675DX, MIN FREE AREA OF 0.73 SQ-FT. EXTEND 16x16 DUCT INTO PLENUM SPACE TO CONNECT FRESH AIR DUCTS. PAINT LOUVER COLOR TO MATCH BUILDING.
6. SET MANUAL OUTSIDE AIR DAMPER TO 260 CFM.
7. SET MANUAL OUTSIDE AIR DAMPER TO 350 CFM.
8. ROUTE 3/4" CONDENSATE DRAIN TO TAILPIECE OF LAVATORY. COORDINATE WTIH PLUMBING CONTRACTOR TO PROVIDE Y-FITTING AT TAILPIECE.

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SHEET TITLE:
MECHANICAL PLAN

DATE: 06-03-2022
JOB NO.: 22-162
SHEET:
M11

ELECTRICAL SPECIFICATIONS

PART I – GENERAL

A. CONDITIONS

1. FURNISH AND INSTALL A COMPLETELY WIRED AND OPERATIONAL ELECTRICAL SYSTEM AS SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN, INCLUDING BUT NOT LIMITED TO, THESE MAJOR ITEMS.
   A. LIGHTING FIXTURES AS INDICATED AND SPECIFIED ON THE PLANS.
   B. ELECTRICAL PANELS, SERVICE, CONDUIT, WIRING, ETC., FOR ALL OUTLETS AND EQUIPMENT.
   C. TELEPHONE, TELEVISION, AND FIRE ALARM. OUTLETS AND CONDUIT AS INDICATED.
2. OBTAIN AND REVIEW ALL OTHER DRAWINGS INCLUDING REFLECTED CEILING PLAN, INTERIOR AND EXTERIOR ELEVATIONS, FURNITURE PLANS AND ALL MILL WORK DRAWINGS. COORDINATE INSTALLATION OF ALL ELECTRICAL DEVICES AND EQUIPMENT PRIOR TO ROUGH-IN.
3. OBTAIN SUBMITTAL AND SHOP DRAWINGS FROM OTHER TRADES AND EQUIPMENT TO COORDINATE INSTALLATION ACCORDINGLY.
4. INSTALLATION SHALL COMPLY WITH ALL CURRENT APPLICABLE CODES AND GOVERNING AGENCIES HAVING JURISDICTION.
5. FIRE ALARM SYSTEM, IF REQUIRED PER IBC, SHALL BE DESIGN-BUILD BY OWNER'S/GC'S FIRE ALARM CONTRACTOR. DESIGN SHALL BE IN ACCORDANCE WITH NFPA 72. FIRE ALARM CONTRACTOR SHALL SUBMIT STAMPED DRAWINGS TO AHJ FOR REVIEW AND APPROVAL. FIRE ALARM CONTRACTOR IS RESPONSIBLE FOR TESTING AND VERIFYING THAT THE AUDIBILITY OF THE FIRE ALARM SYSTEM MEETS A MINIMUM OF 15 DBA ABOVE AMBIENT NOISE LEVELS. ADD HORNS WHERE REQUIRED TO MAINTAIN MINIMUM LEVELS.
6. PROVIDE FIRE STOP ON ALL PIPING THAT PENETRATES RATED WALLS. METHOD OF FIRE STOP SHALL MEET WALL RATING. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION OF FIRE RATED WALLS. THIS CONTRACTOR SHALL PROVIDE FIRE RATED ENCLOSURES AROUND ALL ROUGH-IN BOXES, PANELS, ETC. THAT ARE LOCATED IN FIRE RATED WALLS AND SHALL FIRE CAULK ALL OPENINGS IN RATED ASSEMBLIES.

B. RELATED WORK BY OTHERS

1. THE ELECTRICAL CONTRACTOR SHALL PROVIDE CONDUIT, TRENCH, AND BACKFILL FOR ELECTRICAL SERVICE ENTRANCE FROM THE MAIN SERVICE TO UTILITY POINT OF ELECTRICAL SERVICE. ELECTRICAL CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE ELECTRICAL SERVICE ENTRANCE WITH SERVING UTILITY COMPANY.
2. THE ELECTRICAL CONTRACTOR SHALL PROVIDE CONDUIT, TRENCH, AND BACKFILL FOR PRIMARY PHONE AND CATV SERVICE FROM THE TELEPHONE TERMINAL BOARD OR CABINET TO THE PHONE COMPANY AND CATV COMPANY POINT OF SERVICE COORDINATE WITH LOCAL UTILITY COMPANIES.

C. CODES, REGULATIONS, AND STANDARDS

1. THE INSTALLATION SHALL COMPLY WITH APPLICABLE LOCAL AND STATE CODES AND ORDINANCES, WITH THE REGULATIONS OF THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE AND WITH THE REQUIREMENTS OF THE POWER, TELEPHONE, AND CATV COMPANIES FURNISHING SERVICES TO THIS INSTALLATION.
2. THE LATEST EDITIONS OF THE FOLLOWING INDUSTRY STANDARDS, SPECIFICATIONS, AND CODES ARE MINIMUM REQUIREMENTS:
   A. THE NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION STANDARDS.
   B. THE NATIONAL ELECTRICAL CODE, INCLUDING LOCAL AMENDMENTS.
   C. UNDERWRITER LABORATORIES INCORPORATED STANDARDS.
   D. AMERICAN NATIONAL STANDARDS INSTITUTE.
   E. INTERNATIONAL BUILDING CODE.

D. INSPECTION OF SITE

1. PRIOR TO SUBMITTING A BID FOR ELECTRICAL WORK, THE CONTRACTOR SHALL VISIT THE SITE OF THE PROPOSED CONSTRUCTION AND SHALL THOROUGHLY ACQUAINT HIMSELF WITH EXISTING UTILITIES, AND WORKING CONDITIONS TO BE ENCOUNTERED, ETC. ALLOWANCE WILL NOT BE MADE FOR NONCOMPLIANCE WITH THIS CONDITION AFTER BIDDING.
2. ELECTRICAL INSTALLATION SHALL MEET THE EXISTING CONDITIONS.

E. STORAGE AND HANDLING OF MATERIAL

1. DELIVER MATERIALS AND EQUIPMENT TO THE PROJECT IN THE MANUFACTURER'S ORIGINAL, UNOPENED, LABELED CONTAINERS. PROTECT AGAINST MOISTURE, TAMPERING, OR DAMAGE FROM IMPROPER HANDLING OR STORAGE. CONTRACTOR SHALL PROTECT AND BE RESPONSIBLE FOR ANY DAMAGE TO WORK OR MATERIALS UNTIL FINAL ACCEPTANCE BY THE OWNER, AND SHALL MAKE GOOD WITHOUT COST TO THE OWNER, ANY DAMAGE OR LOSS THAT MAY OCCUR DURING THIS PERIOD.
2. ARRANGE FOR TIMELY DELIVERY OF MATERIALS AND EQUIPMENT TO THE JOB SITE IN ORDER TO MINIMIZE THE LENGTH OF TIME BETWEEN DELIVERY AND INSTALLATION.
3. COVER AND PROTECT ANY MATERIAL WHICH MAY BE AFFECTED BY THE WEATHER WHILE IN TRANSIT OR STORED AT THE PROJECT SITE. ANY MATERIAL FOUND DEFECTIVE OR NOT INSTALLED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS MAY BE REJECTED BY THE ENGINEER.

F. CLEANUP

1. KEEP THE PREMISES FREE FROM ACCUMULATION OF WASTE MATERIALS, OR RUBBISH CAUSED BY EMPLOYEES OR WORK UNDER THIS DIVISION OF THE SPECIFICATIONS. AT THE COMPLETION OF THE WORK REMOVE ALL SURPLUS MATERIALS, TOOLS, ETC., AND LEAVE THE PREMISES BROOM-CLEAN.

G. EXCAVATION, CUTTING, AND FITTING

1. PERFORM ALL EXCAVATION AND BACK FILLING REQUIRED FOR WORK PERFORMED UNDER THIS DIVISION OF THE SPECIFICATIONS. USE EXCAVATED MATERIALS FOR BACKFILL UNLESS OFF SITE MATERIALS ARE DEEMED NECESSARY.
2. PERFORM THE EXCAVATION, CUTTING, FITTING, REPAIRING, AND FINISHING OF THE WORK NECESSARY FOR THE INSTALLATION OF THE EQUIPMENT OF THIS SECTION. HOWEVER, NO CUTTING OF THE WORK OF OTHER TRADES OR OF ANY STRUCTURAL MEMBERS SHALL BE DONE WITHOUT THE CONSENT OF THE ARCHITECT.

H. DRAWINGS

1. THE DRAWINGS INDICATE THE GENERAL ARRANGEMENT AND LOCATIONS OF THE ELECTRICAL WORK DATA PRESENTED ON THESE DRAWINGS ARE AS ACCURATE AS PLANNING CAN DETERMINE, BUT FIELD VERIFICATION OF ALL DIMENSIONS, LOCATIONS, LEVELS, ETC., TO SUIT FIELD CONDITIONS IS REQUIRED. REVIEW ALL ARCHITECTURAL, STRUCTURAL, AND MECHANICAL DRAWINGS AND ADJUST ALL WORK TO MEET THE REQUIREMENTS OF CONDITIONS SHOWN. THE ARCHITECTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER ALL OTHER DRAWINGS. DISCREPANCIES BETWEEN DIFFERENT PLANS, OR BETWEEN DRAWINGS AND SPECIFICATIONS, OR REGULATIONS AND CODES GOVERNING THE INSTALLATION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN WRITING BEFORE THE DATE OF BID OPENING. IF DISCREPANCIES ARE NOT REPORTED, THE CONTRACTOR SHALL BID THE GREATER QUANTITY OR BETTER QUALITY, AND APPROPRIATE ADJUSTMENTS WILL BE MADE AFTER CONTRACT AWARD. CONTRACTOR SHALL BE RESPONSIBLE TO FIELD MEASURE AND CONFIRM MOUNTING HEIGHTS AND LOCATION OF ELECTRICAL EQUIPMENT WITH RESPECT TO COUNTERS, RADIATION, ETC. DO NOT SCALE DISTANCES OFF THE ELECTRICAL DRAWINGS, USE ACTUAL BUILDING DIMENSIONS.

I. COOPERATION WITH OTHER CONTRACTORS

1. COOPERATE WITH THE OTHER TRADES SO THAT THE INSTALLATION OF THE ELECTRICAL OUTLETS AND EQUIPMENT WILL BE PROPERLY COORDINATED. CONDUIT, LIGHTING FIXTURES, AND OTHER EQUIPMENT LOCATIONS SHALL BE VERIFIED WITH OTHER TRADES TO AVOID CONFLICT WITH THE PIPING, DUCTWORK, STEEL, BEAMS, OR OTHER OBSTRUCTIONS.
2. CAREFULLY VERIFY THE LOCATIONS OF THE OUTLET BOXES AND DETERMINE THAT THEY HAVE NOT BEEN DISTURBED DURING THE INSTALLATION OF MATERIALS OF OTHER TRADES.
3. COORDINATE THE LOCATION OF THE TRENCHES AND CONDUITS FOR ELECTRICAL AND TELEPHONE UTILITY SERVICES WITH THE GENERAL CONTRACTOR.
4. COORDINATE HVAC AND PLUMBING EQUIPMENT CONNECTION REQUIREMENTS WITH HVAC AND PLUMBING CONTRACTORS.

J. RECORD DRAWINGS

1. THE ELECTRICAL CONTRACTOR SHALL MAINTAIN A SET OF DRAWINGS AT THE JOB SITE FOR THE EXCLUSIVE PURPOSE OF MAINTAINING A RECORD OF ALL WORK INSTALLED AND TO SHOW ANY DEVIATIONS FROM THE WORK INDICATED ON THE DRAWINGS.
2. AT THE COMPLETION OF THE PROJECT, ONE SET OF REPRODUCIBLE DRAWINGS, SHOWING ALL RECORD CONDITIONS, SHALL BE DELIVERED TO THE OWNER FOR ACCEPTANCE PRIOR TO FINAL PAYMENT.

PART II – PRODUCTS AND EXECUTION

A. MATERIALS

1. ALL MATERIALS SHALL BE NEW AND OF QUALITY AS SPECIFIED ON THE PLANS OR SPECIFICATIONS AND MUST CARRY THE UNDERWRITER'S LABORATORIES APPROVAL COVERING THE PURPOSE FOR WHICH THEY ARE USED, IN ADDITION TO MEETING ALL REQUIREMENTS OF THE CURRENT APPLICABLE CODES AND REGULATIONS.

B. SHOP DRAWINGS AND APPROVALS

1. THE ITEMS SPECIFIED HEREIN AND ON DRAWINGS ARE USED AS A STANDARD OF QUALITY. ANY MATERIALS OF EQUAL QUALITY AND AESTHETIC VALUE WILL BE GIVEN CONSIDERATION AS A SUBSTITUTE FOR THE MATERIALS SPECIFIED. NO APPROVAL WILL BE GIVEN TO A SPECIFIC CATALOG NUMBER, MODEL, OR TYPE OF EQUIPMENT, PRIOR TO BIDDING. AFTER BIDDING, THE DECISION OF THE ARCHITECT AND/OR ENGINEER DETERMINING EQUAL MATERIALS WILL BE FINAL.
2. THE CONTRACTOR SHALL SUBMIT SEVEN (7) IDENTICAL BOUND SETS OF SHOP DRAWINGS ON THE FOLLOWING ITEMS:
   A. LIGHTING FIXTURE CUTS AND PERFORMANCE DATA.
   B. OUTLINE DRAWINGS AND DATA SHEETS OF EACH PANELBOARD, LOAD CENTERS, AND DISTRIBUTION PANELS.
   C. OUTLINE DRAWINGS OF ALL SWITCH GEAR COMPONENTS.
   D. WIRING DEVICES AND COVERPLATES.
   E. ALL CIRCUIT BREAKERS INSTALLED IN PANELBOARDS, LOAD CENTERS, AND DISTRIBUTION PANELS.
3. SUBMIT ITEMS AT ONE TIME IN A NEAT AND ORDERLY MANNER WITHIN 15 DAYS OF AWARD OF CONTRACT. PARTIAL SUBMITTALS WILL NOT BE ACCEPTABLE.

C. SYSTEM GROUNDING

1. GROUNDING SHALL COMPLY WITH REQUIREMENTS OF ARTICLE 250. ALL EXPOSED NONCURRENT CARRYING METALLIC PARTS OF ELECTRICAL EQUIPMENT, METALLIC RACEWAY SYSTEMS, METALLIC CABLE ARMOR, GROUNDING CONDUCTOR OF NONMETALLIC SHEATHED CABLES, GROUNDING CONDUCTOR IN NONMETALLIC RACEWAYS, AND GROUNDED CONDUCTORS OF THE WIRING SYSTEM SHALL BE GROUNDED.
2. GROUNDING CONDUCTOR (NEUTRAL) OF THE WIRING SYSTEM SHALL BE CONNECTED TO THE SYSTEM GROUNDING CONDUCTOR AT A SINGLE PLACE IN EACH SYSTEM BY REMOVABLE BONDING JUMPERS, SIZED ACCORDING TO THE APPLICABLE PROVISIONS OF THE NATIONAL ELECTRICAL CODE. THE GROUNDED CONDUCTOR (NEUTRAL) TO THE GROUNDING CONDUCTOR CONNECTION SHALL BE LOCATED IN THE ENCLOSURE FOR THE SYSTEM'S OVERCURRENT PROTECTION OR WHERE OTHERWISE INDICATED ON THE PLANS OR SPECIFICATIONS.
3. A GROUND BUS SEPARATE FROM THE NEUTRAL BUS SHALL BE PROVIDED IN ALL DISTRIBUTION PANELS AND PANELBOARDS. PROPER TORQUE ON GROUND BUS SHALL BE VERIFIED, PER MANUFACTURER'S RECOMMENDATIONS, PRIOR TO ENERGIZING EQUIPMENT.
4. GROUND BUSES AND NEUTRAL BUSES IN ALL DISTRIBUTION PANELS, LOAD CENTERS, PANELBOARDS, AND THOSE PROVIDED IN ANY EQUIPMENT SHALL BE ISOLATED EXCEPT WHERE REQUIRED TO BE CONNECTED AS SPECIFIED ABOVE FOR THE SERVICE ENTRANCE
5. WHEN INDICATED ON THE DRAWINGS, EQUIPMENT GROUNDING CONDUCTORS SHALL BE EXTENDED FROM THE GROUND BUS IN THE DISTRIBUTION EQUIPMENT TO THE RECEPTACLE, FIXTURE OR DEVICE LUGS WHERE THEY ARE PROVIDED. WHERE LUGS ARE NOT PROVIDED, EQUIPMENT GROUNDING CONDUCTORS SHALL BE CONNECTED TO EQUIPMENT ENCLOSURES. THE CONNECTIONS SHALL BE ARRANGED SUCH THAT REMOVAL OF THE RECEPTACLE, EQUIPMENT GROUND CONDUCTORS, OR GROUND JUMPERS FROM GROUND BUSING SHALL NOT AFFECT THE GROUND SYSTEM.
6. RACEWAYS MAY NOT BE USED AS A GROUNDING CONDUCTOR FOR POWER AND LIGHTING CIRCUITS. ALL CONDUIT SHALL HAVE SEPARATE CODE SIZED GREEN GROUND WIRE INSTALLED IN THE CONDUIT TO INSURE A CONTINUOUS GROUNDING PATH.
7. IN INACCESSIBLE LOCATIONS, MAKE CONNECTIONS BY EXOTHERMIC WELD PROCESS.
8. IN ACCESSIBLE LOCATIONS, CONNECTIONS SHALL BE MADE WITH BOLTED THROUGH, APPROVED SOLDERLESS BRONZE GROUNDING DEVICES.

D. WIRE

1. CONDUCTOR SIZES SHOWN ON THE DRAWINGS ARE BASED ON COPPER WIRE. UNLESS OTHERWISE SPECIFIED, ALL WIRE SHALL BE TYPE XHHW OR SE FOR FEEDERS OR BRANCH CIRCUITS LARGER THAN 4 AWG, TYPE THHN/THWN INSULATION FOR FEEDERS AND BRANCH CIRCUITS 4 AWG AND SMALLER. ALL BRANCH CIRCUIT WIRING SHALL BE COPPER.
2. ALUMINUM CONDUCTORS MAY BE UTILIZED FOR SERVICE ENTRANCE AND PANEL FEEDERS. CONDUCTORS SHALL BE ALUMINUM ALLOW AA-8000 SERIES.
3. THE WIRES SHALL BE MARKED WITH COLOR TO SIMPLIFY CIRCUIT IDENTIFICATION. UNLESS OTHERWISE REQUIRED BY LOCAL ORDINANCES GROUND WIRES SHALL BE GREEN, NEUTRAL WIRES SHALL BE 120V-WHITE, AND LIVE WIRES 208Y/120V AND 120/240 SHALL BE BLACK (PHASE A), RED (PHASE B), AND BLUE (PHASE C). CIRCUIT SHALL BE LABELED IN EACH J-BOX.
4. ALL CONDUCTORS SHALL BE RATED 600 VOLT.
5. SPLICES IN EXTERIOR PULL BOXES AND MANHOLES SHALL BE WEATHERPROOF USING "SCOTCHCAST" SPLICE KIT OR APPROVED EQUAL. SEAL ENDS OF CONDUITS AND DUCTS WITH "DUCTSEAL" OR APPROVED EQUAL.
6. PROVIDE SOLID CONDUCTOR FOR 12 AWG AND SMALLER.
7. ALL WIRING WITHIN RESIDENTIAL UNITS ONLY MAY BE TYPE NM CABLE.
8. NO WIRE SHALL BE INSTALLED IN THE CONDUIT SYSTEM UNTIL THE CONDUIT SYSTEM IS COMPLETE. USE MINERALAC NO. 100 OR EQUIVALENT AS A LUBRICANT TO FACILITATE THE INSTALLATION OF THE CONDUCTORS IN THE CONDUIT SYSTEM.
9. MC CABLE WITH COPPER CONDUCTORS AND GROUND WIRE MAY BE USED WHERE PERMITTED.

E. CONDUIT

1. ALL WIRING SHALL BE INSTALLED IN LISTED METALLIC CONDUIT EXCEPT AS PERMITTED IN OTHER SECTIONS. RGS, WITH A 20 MIL PVC COATING WILL BE USED WHEN IN CONTACT WITH EARTH. IMC MAY BE USED IN INDOOR LOCATIONS NOT IN CONTACT WITH THE EARTH. EMT MAY BE USED IN INDOOR LOCATIONS NOT IN CONTACT WITH EARTH, NOT IN CONCRETE SLABS OR WALLS AND NOT SUBJECT TO DAMAGE. PVC MAY BE USED IN OR BELOW CONCRETE AND DIRECT BURIED IN EARTH. FLEXIBLE STEEL CONDUIT SHALL BE USED FOR INDOOR FINAL CONNECTIONS TO EQUIPMENT IN LENGTHS NOT TO EXCEED 72". LIQUID-TIGHT FLEXIBLE STEEL CONDUIT SHALL BE FOR OUTDOOR FINAL CONNECTIONS TO EQUIPMENT NOT TO EXCEED 48".
2. WHERE CONDUIT ENTERS OUTLET BOXES, FIXTURES OR CABINETS, FIRMLY FASTEN WITH STEEL SET SCREW, COMPRESSION CONNECTORS, OR DOUBLE LOCKNUTS FOR GRC. ALL CONNECTIONS SHALL HAVE BUSHINGS OR INSULATED THROAT CONNECTORS. FIRMLY FASTEN CONDUIT TO THE BUILDING CONSTRUCTION. RUN EXPOSED CONDUIT PARALLEL TO THE BUILDING LINES, SUPPORTED BY APPROPRIATE HANGERS (UNISTRUT, T & B OR APPLETON, OR EQUAL).
3. COVER METALLIC CONDUIT IN CONTACT WITH EARTH WITH POLYETHYLENE TAPED SPIRAL WRAPPED, 1/2 LAPPED TO PROVIDE 20 MIL THICKNESS. TAPE SHALL BE SCOTCH NO. 50 TAPE. CONDUIT AND DUCTS NOT UNDER BUILDINGS AND FEEDER DUCTS SHALL BE INSTALLED PER N.E.C. 300-5. MAKE JOINTS WITH COMPOUND TO BE WATERTIGHT.
4. SCHEDULE 40 PVC CONDUIT SHALL BE PERMITTED UNDERGROUND WITH PROPER FITTINGS, ALL UL APPROVED AND CEMENTED JOINTS. PENETRATIONS THROUGH FLOOR SLABS AND BENDS GREATER THAN 22° SHALL BE WRAPPED RIGID GALVANIZED STEEL ELBOWS.
5. FITTINGS AND CONDUIT BODIES SHALL BE STEEL. DIECAST FITTINGS ARE NOT ACCEPTABLE.
6. CONDUIT SIZES SHALL BE AS REQUIRED BY CODE AND AS INDICATED OR SPECIFIED.
7. ALL EMPTY CONDUIT SYSTEMS SHALL HAVE A 200 LB. TEST NYLON PULL STRING TO FACILITATE INSTALLATION OF FUTURE WIRE.
8. WIRING, CONDUITS, AND OUTLETS SHALL BE CONCEALED WITH THE BUILDING STRUCTURE, EXCEPT THAT CERTAIN MOTOR AND LIGHTING FEEDER CONDUITS MAY BE RUN EXPOSED IN CERTAIN AREAS AS INDICATED ON THE DRAWINGS.
9. CONDUIT PENETRATION THROUGH ROOF SHALL HAVE ROOF FLASHING WITH CAULK TYPE COUNTER FLASHING SLEEVE. INSTALLATION SHALL BE WATERTIGHT.
10. CONDUITS SHALL BE ROUTED PARALLEL AND PERPENDICULAR TO THE STRUCTURE.

F. OUTLET, PULL, AND JUNCTION BOXES

1. EACH SWITCH, LIGHT, RECEPTACLE OR OTHER OUTLET, INSTALLED IN RESIDENTIAL UNITS, SHALL BE PROVIDED WITH A CODE SIZED, PLASTIC OUTLET BOX. JUNCTION AND PULL BOXES SHALL BE CODE SIZED, PLASTIC OR METAL OUTLET BOX. ALL OTHER OUTLET BOXES SHALL BE STEEL.
2. BOXES INSTALLED IN POURED CEMENT FLOORS SHALL BE FLUSH TYPE CAST IRON OR STEEL WITH WATERTIGHT GASKETED COVERS. WHERE BOXES ARE INSTALLED IN FLOORS WITH TILE OR CARPET FLOOR COVERING, COVERS SHALL BE OF THE RECESSED TYPE TO ACCOMMODATE THE FLOOR COVERING.
3. BOXES INSTALLED FOR THE ALARM, COMPUTER, AND SECURITY SYSTEM SHALL BE PROVIDED WITH APPROPRIATE COVER PLATES.
4. BOXES FOR TELEPHONE, COMPUTER, T.V., FIRE ALARM, SECURITY, AND SIMILAR SYSTEMS SHALL BE MINIMUM 2-1/8" DEEP.

G WIRING DEVICES

1. WALL SWITCHES SHALL BE SPECIFICATION GRADE AC SILENT TYPE SWITCHES, 20A 120/277 VOLT.
2. RECEPTACLES SHALL BE SPECIFICATION GRADE, DUPLEX TYPE. NEMA5-20R, 20 AMPERE, 120VOLT GROUNDED TYPE. SPECIAL APPLICATION RECEPTACLES SHALL BE INDICATED ON PLANS. MOUNT WITH THE GROUND DOWN.
3. DEVICE PLATES SHALL BE EQUAL TO SIERRA SMOOTH-LINE PLASTIC WALL PLATES. COLOR SHALL BE WHITE, UNLESS OTHERWISE NOTED.
4. RECEPTACLES IN OUTDOOR AND WET LOCATIONS SHALL BE INSTALLED WITH A HINGED OUTLET COVER/ENCLOSURE CLEARLY MARKED AND U.L. LISTED SUITABLE FOR WET LOCATIONS WHILE IN USE, EQUAL TO TAYMAC SPECIFICATION GRADE.

J. PANEL BOARDS

1. CIRCUIT BREAKER TYPE AS INDICATED ON DRAWINGS. UNLESS INDICATED OTHERWISE, ALL PANELS SHALL HAVE PANEL HAVE PANEL BOARD TYPE CONSTRUCTION WITH BOLT-ON CIRCUIT BREAKERS FOR 3Ø PANELS
2. MANUFACTURERS SHALL BE GENERAL ELECTRIC, SQUARE D, SEIMENS, CUTLER-HAMMER WITH VOLTAGE, SIZES, AND RATINGS AS INDICATED ON DRAWINGS.
3. THE CIRCUIT BREAKERS SHALL BE OPERABLE IN ANY POSITION AND BE REMOVABLE FROM THE FRONT OF THE PANEL BOARD WITHOUT DISTURBING THE ADJACENT UNITS. BRANCH BREAKERS SHALL BE OF SUCH DESIGN THAT COMBINATION OF SINGLE-POLE, DOUBLE-POLE, AND THREE-POLE BREAKERS CAN BE ASSEMBLED ON THE SAME PANEL. EACH BRANCH CIRCUIT SHALL BE CLEARLY NUMBERED. BRANCH AND MAN TERMINALS SHALL BE SOLDERLESS TYPE. HANDLE TIES TO FORM MULTI-POLE BREAKERS NOT ACCEPTABLE.

L. LIGHTING FIXTURES

1. PROVIDE ALL LIGHTING FIXTURES, WIRED AND CONNECTED. THE DRAWINGS INDICATE THE FIXTURES FOR EACH LOCATION. PROVIDE LAMPS FOR ALL FIXTURES. THE LAMPS SHALL BE BY THE SAME MANUFACTURER. VERIFY CEILING CONSTRUCTION BEFORE ORDERING RECESSED UNITS. PROVIDE PLASTER FRAMES AND HANGERS AS REQUIRED. CEILING CONSTRUCTION, ARCHITECTURAL ACCESSORIES, VOLTAGE, AND BALLASTS TO MEET THE EXISTING CEILING CONDITION.

M. LIGHTING CONTROL

1. FURNISH AND INSTALL TIME SWITCHES, PHOTOCELLS, CONTRACTORS AND FULL LIGHTING CONTROL SYSTEMS AS REQUIRED FOR LIGHTING CONTROLS INDICATED ON THE DRAWINGS.
2. TIME SWITCHES SHALL BE EQUAL TO PARAGON, GENERAL ELECTRIC, TORK, OR INTERMATIC AND SHALL HAVE SIZE AND NUMBER OF POLES AS REQUIRED.
3. PHOTOCELLS SHALL BE EQUAL TO TORK OR INTERMATIC WITH VOLTAGE AS INDICATED.

N. TELEPHONE AND CABLE TELEVISION SYSTEMS

1. TELEPHONE WALL OUTLETS SHALL CONSIST OF STANDARD BOXES MOUNTED 18" ABOVE THE FLOOR UNLESS OTHERWISE INDICATED. PROVIDE A TERMINAL MOUNTING BOARD FOR THE INCOMING SERVICE CABLE.
2. CABLE TELEVISION OUTLETS SHALL CONSIST OF STANDARD BOXES MOUNTED 18" ABOVE THE FLOOR UNLESS OTHERWISE INDICATED. PROVIDE A TERMINAL MOUNTING BOARD FOR THE INCOMING SERVICE CABLE.

O. GUARANTEE

1. GUARANTEE ALL MATERIAL FURNISHED AND ALL WORKMANSHIP PERFORMED FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE OF WORK. ANY DEFECTS DEVELOPING WITHIN THIS PERIOD, TRACEABLE TO MATERIAL FURNISHED AS A PART OF THIS SECTION OR WORKMANSHIP PERFORMED HEREUNDER, SHALL BE MADE GOOD AT NO EXPENSE TO THE OWNER.

P. REMODELING WORK

1. THIS PROJECT INVOLVES CONSTRUCTION INSIDE AN EXISTING STRUCTURE. CONTRACTORS, BY SUBMITTING A BID ARE DEEMED TO BE COMPLETELY FAMILIAR WITH THE EXISTING CONDITIONS OF THE BUILDING AS IT INFLUENCES THE WORK DESCRIBED. NO CLAIMS FOR EXTRA COMPENSATION WILL BE CONSIDERED FOR EXISTING CONDITIONS VISIBLE OR REASONABLY INFERABLE FROM A CAREFUL EXAMINATION OF THE EXISTING BUILDING CONDITIONS.
2. CONTRACTOR SHALL INSPECT THE EXISTING FIELD CONDITIONS AT THE SITE AND THE CONTRACT DOCUMENTS PRIOR TO THE START OF ANY WORK TO DETERMINE WHAT EFFECT THE EXISTING CONDITIONS WILL HAVE ON THE WORK POTENTIAL. CONTRACTOR SHALL REPORT DISCREPANCIES TO THE ARCHITECT AND INCLUDE IN THE BID ALL COSTS REQUIRED TO MAKE THE WORK MEET EXISTING CONDITIONS.
3. DEMOLITION: DISCONNECT, DEMOLISH, AND REMOVE ABANDONED MATERIALS AND EQUIPMENT INDICATED TO BE REMOVED AND NOT INDICATED TO BE SALVAGED OR REMAIN.
4. DISPOSAL AND CLEANUP: REMOVE FROM THE SITE AND LEGALLY DISPOSE OF DEMOLISHED MATERIALS AND EQUIPMENT NOT INDICATED TO BE SALVAGED.
5. PROTECT MATERIALS INDICATED TO REMAIN.

SYMBOLS LEGEND

NOTE: THIS IS A MASTER LEGEND AND NOT ALL SYMBOLS, ETC, ARE NECESSARILY USED ON THE DRAWINGS.

LIGHTING FIXTURES – SYMBOL/LETTER INDICATES LIGHT FIXTURE AS INDICATED ON FIXTURE SCHEDULE

- LED FIXTURE (SEE LIGHTING FIXTURE SCHEDULE)
- FIXTURE WITH EMERGENCY BATTERY DRIVER UNIT
- TRACK LIGHT
- DOWNLIGHT FIXTURE WITH EMERGENCY BATTERY DRIVER UNIT
- WALL MOUNTED FIXTURE WITH EMERGENCY BATTERY DRIVER UNIT
- PENDANT MOUNTED FIXTURE WITH EMERGENCY BATTERY DRIVER UNIT
- DOWNLIGHT FIXTURE
- WALL MOUNTED FIXTURE
- PENDANT MOUNTED FIXTURE
- WALL WASHER
- SINGLE FACE EXIT SIGN – UNIVERSAL MOUNTED
- SINGLE FACE EXIT SIGN W/ DIRECTIONAL ARROWS – UNIVERSAL MTD
- DOUBLE FACE EXIT SIGN W/ DIRECTIONAL ARROWS – UNIVERSAL MTD
- DUAL HEADED EMERGENCY UNIT
- COMBO DUAL HEADED EMERGENCY AND EXIT SIGN UNIT

LIGHTING CONTROLS

- S — SINGLE POLE SWITCH @ +48" UNLESS NOTED
- Sabc — SWITCH BANK @ +48" UNLESS NOTED. LOWER CASE LETTER INDICATES FIXTURE CONTROLLED.
- S3 — 3-WAY SWITCH @ +48" UNLESS NOTED
- S4 — 4-WAY SWITCH @ +48" UNLESS NOTED
- SD — DIMMER SWITCH – SIZE AS REQUIRED @ +48" UNLESS NOTED
- SM — MANUAL MOTOR STARTER
- SOS — WALL SWITCH WITH OCCUPANCY SENSOR. DIGITAL LOW VOLTAGE WALL SWITCH. SWITCH @ +48" UNLESS NOTED.
- SD — TWO BUTTON DIGITAL LOW VOLTAGE WALL SWITCH. PROVIDES ON/OFF/0-10V DIMMING. SWITCH @ +48" UNLESS NOTED. PROVIDE EXTRA CONTROL CABLES NEEDED TO FIXTURE CONTROLLED.
- OS — LIGHTING CONTROLS CEILING MOUNT OCCUPANCY SENSOR
- PP — LIGHTING CONTROLS POWER PACK
- LC — LIGHTING CONTACTOR
- TC — TIMECLOCK

POWER DISTRIBUTION

- 120/208V, 3 PHASE, 4 WIRE PANELBOARD, UNO
- T — TRANSFORMER

POWER DEVICES

- SPECIAL HEAVY DUTY RECEPTACLE – SIZE AS NOTED. @ +18" UNLESS NOTED
- 1/2 SWITCHED RECEPTACLE @ +18" UNLESS NOTED
- FIRE RATED POKE THRU WITH TYPE INDICATED
- FLUSH FLOOR BOX WITH TYPE INDICATED
- SINGLE RECEPTACLE @ +18" UNLESS NOTED
- DUPLEX RECEPTACLE @ +18" UNLESS NOTED
- DOUBLE DUPLEX RECEPTACLE @ +18" UNLESS NOTED
- DUPLEX RECEPTACLE INSTALLED ABOVE COUNTERTOP
- GFCI — GFCI-RATED DUPLEX RECEPTACLE
- AF — ARC FAULT RATED DUPLEX RECEPTACLE
- TR — TAMPER RESISTANT RATED DUPLEX RECEPTACLE
- WP — DUPLEX RECEPTACLE WITH WEATHERPROOF COVERPLATE @ 18" UNLESS NOTED
- JUNCTION BOX
- DISCONNECT SWITCH – SIZE AND TYPE NOTED
- COMBINATION FUSED STARTER DISCONNECT SWITCH FUSE SIZE AS INDICATED, STARTER SIZE '1'

AUXILIARY SYSTEMS

- EF-1 — MECHANICAL EQUIP. CONNECTION, SEE SCHED. ON MECH. PLAN
- TELEPHONE OUTLET@ +18" UNLESS NOTED
- DATA OUTLET @ +18" UNLESS NOTED
- COMBINATION TELEPHONE/DATA OUTLET @ +18" UNLESS NOTED
- TV — TELEVISION OUTLET @ +60" UNLESS NOTED
- SMOKE DETECTOR
- HEAT DETECTOR
- DUCT SMOKE DETECTOR
- RT — REMOTE TEST STATION WITH INDICATING LIGHT. MOUNT AT 48" AFF UNO.
- AUXILIARY SYSTEM TERMINAL CABINET

GENERAL

- CONDUIT RUN CONCEALED IN WALL OR ABOVE CEILING
- CONDUIT RUN BELOW FLOOR OR GRADE
- P1-3,5,7 — HOMERUN TO PANELBOARD, INFORMATION AT ARROWS ARE CIRCUIT NUMBERS AND PANELBOARD FOR TERMINATION. REFER TO ASSOCIATED NOTE FOR BRANCH CIRCUIT CONDUCTOR SIZES.
- INDICATES 1/2" CONDUIT CONCEALED IN CEILING OR WALL WITH (3) CONDUCTORS. (1) PHASE, (1) NEUTRAL AND (1) GROUND WIRE. ALL ARE #12 AWG UNLESS NOTED OTHERWISE.
- (E) OR ETR: DENOTES EXISTING ITEM/EQUIPMENT TO REMAIN

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NUMBER PE-2019041526
PROFESSIONAL ENGINEER
06-23-2022

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REVISIONS:	DATE / DESCRIPTION
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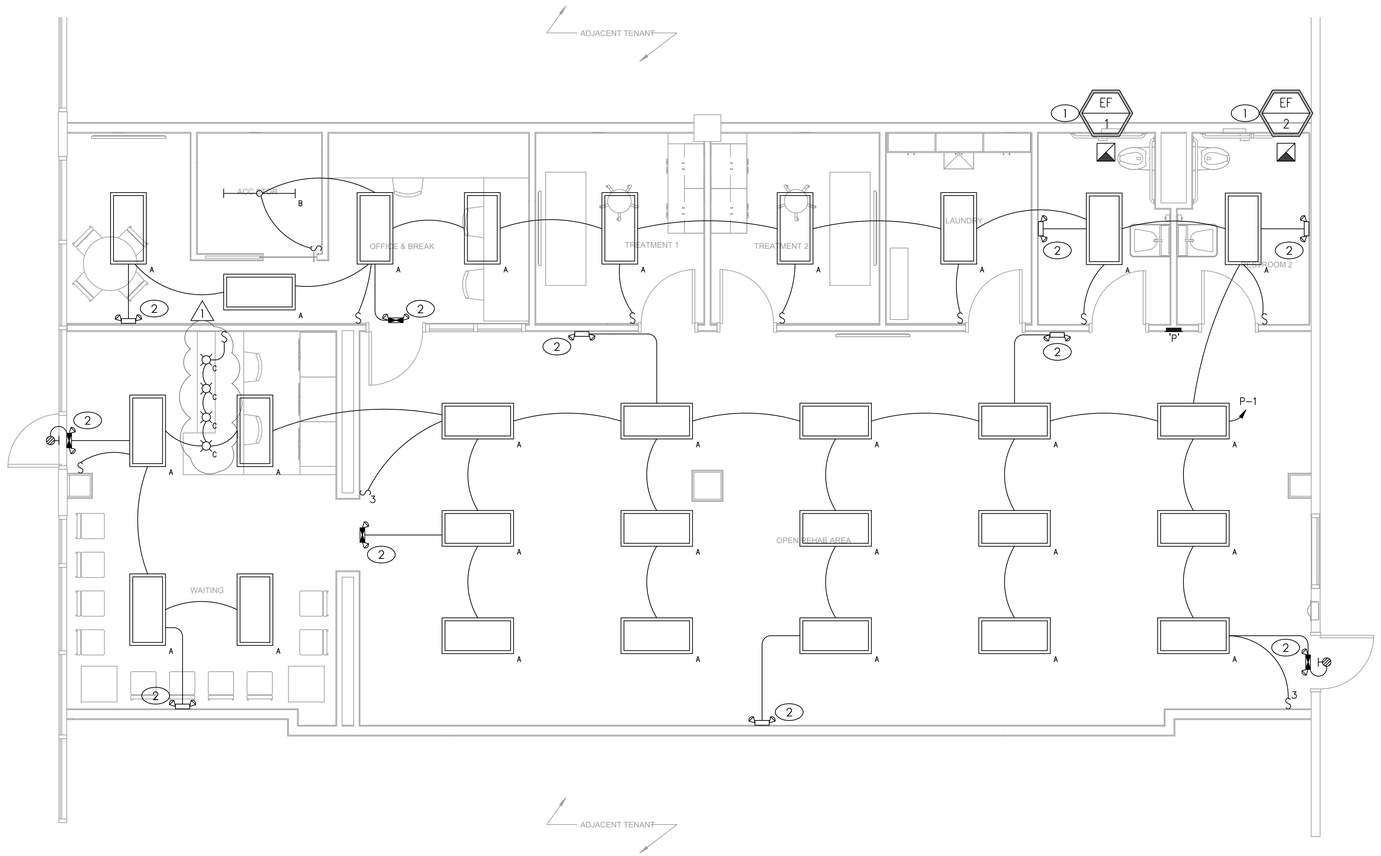
ISSUED: PERMIT

SHEET TITLE: ELECTRICAL SPECIFICATIONS

DATE: 05.06.2022
JOB NO.: 22-103
SHEET: E0.1



ELECTRICAL LIGHTING PLAN

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

1

NORTH

GENERAL NOTES

A. REFER TO LIGHTING FIXTURE SCHEDULE FOR LIGHT FIXTURE TYPES AND REQUIREMENTS.

B. CONNECT ALL EXIT SIGNS AND EMERGENCY LIGHTING UNITS TO THE INDICATED CIRCUIT WITH A SEPARATE AND UN-SWITCHED CONDUCTOR BYPASSING ALL CONTROLS AND CONTACTORS. REFER TO MANUFACTURER'S WRITTEN INSTRUCTIONS FOR PROPER INSTALLATION AND TESTING.

C. CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT COORDINATION AND CONFLICT ISSUES BE RESOLVED PRIOR TO INSTALLATION OF LIGHT FIXTURES.

D. ROUTE ALL EXPOSED, RIGID CONDUIT TIGHT TO STRUCTURE, PARALLEL TO BUILDING LINES AND IN UNISTRUT CABLE/PIPE TRAY WHERE POSSIBLE. COORDINATE CONDUIT ROUTING AND INSTALLATION WITH OTHER TRADES PRIOR TO ROUGH-IN. SUPPORT CONDUIT FROM STRUCTURE NOT ROOF DECK. MAINTAIN 2" MIN SPACING FROM BOTTOM OF ROOF DECK TO PREVENT ROOFING SCREWS FROM PENETRATING CONDUITS.

E. THROUGH WIRING OF RECESSED LIGHT FIXTURES, IN SUSPENDED CEILINGS, IS NOT PERMITTED. CONNECT EACH LIGHT FIXTURE BY A WHIP TO A JUNCTION BOX. PROVIDE CABLE WHIPS OF SUFFICIENT LENGTH TO ALLOW FOR RELOCATING EACH LIGHT FIXTURE WITHIN A 5-FOOT RADIUS OF ITS INSTALLED LOCATION, BUT NOT EXCEEDING 6 FEET IN UNSUPPORTED LENGTH.

F. ALL INTERNALLY ILLUMINATED SIGNS SHALL BE PROVIDED WITH AN ACCESSIBLE DISCONNECTION MEANS. VERIFY EACH SIGN IS FURNISHED WITH AN INTEGRAL DISCONNECT SWITCH. PROVIDE WEATHERPROOF DISCONNECT SWITCHES WITHIN SIGHT OF ALL SIGNS AS REQUIRED. MAKE FINAL CONNECTION AS REQUIRED.

1

G. ALL WIRING IN PATIENT CARE AREAS SHALL COMPLY WITH NEC 517.13(A)&(B).

(#) KEYED PLAN NOTES

1. EXHAUST FAN POWERED VIA CIRCUIT SERVING LIGHTING IN ROOM. WIRE SO THAT ON/OFF OPERATION OF FAN COORDINATES WITH LIGHTING FIXTURES.

2. MAKE CONNECTION TO EMERGENCY/EXIT LIGHT FIXTURE VIA UNSWITCHED HOT CONDUCTOR.

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SHEET TITLE:
ELECTRICAL PLANS

DATE: 05.06.2022
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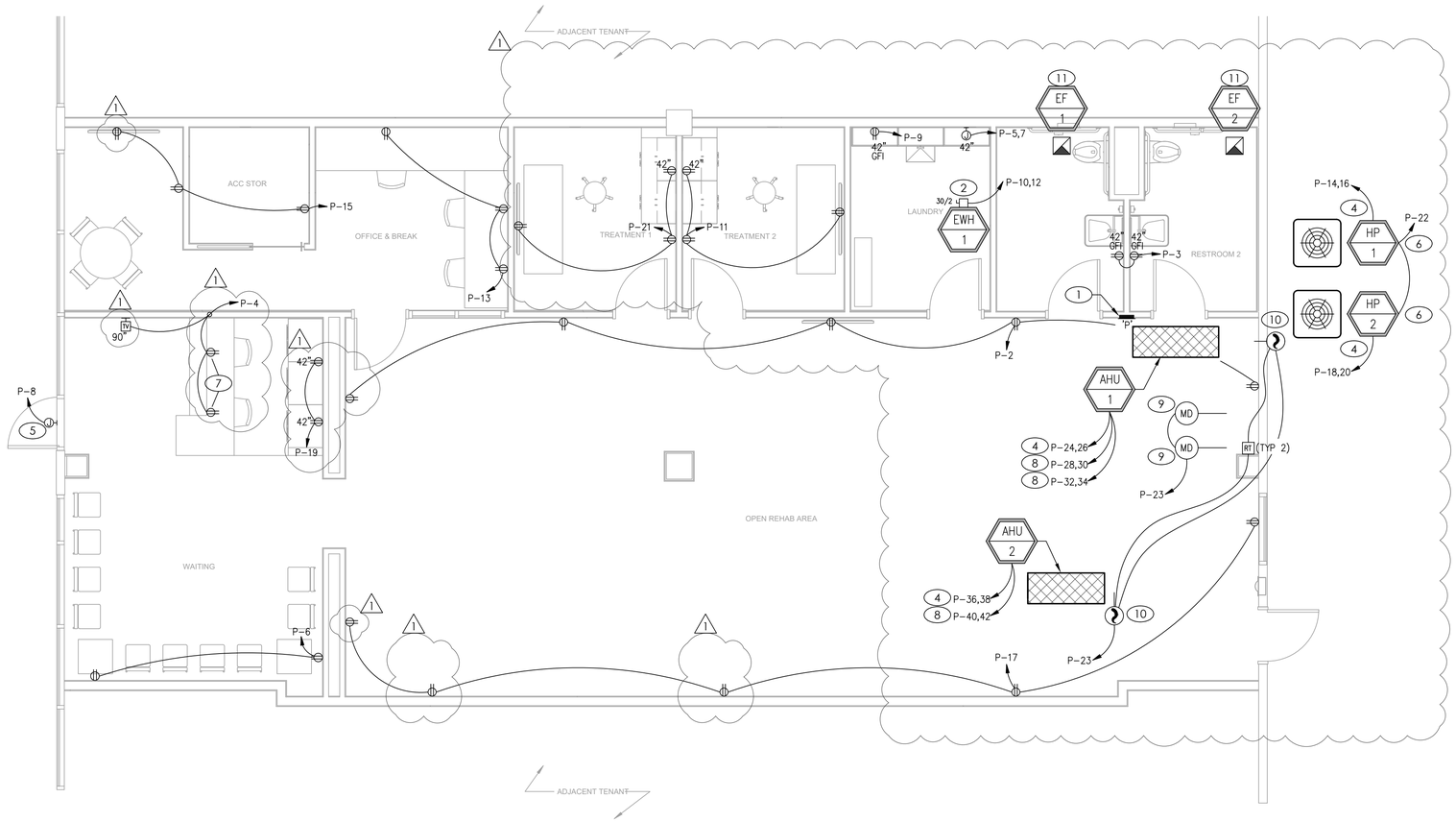
SHEET:
E1.1



ELECTRICAL POWER PLAN

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

GENERAL NOTES

A. REFER TO LIGHTING FIXTURE SCHEDULE FOR LIGHT FIXTURE TYPES AND REQUIREMENTS.

B. CONNECT ALL EXIT SIGNS AND EMERGENCY LIGHTING UNITS TO THE INDICATED CIRCUIT WITH A SEPARATE AND UN-SWITCHED CONDUCTOR BYPASSING ALL CONTROLS AND CONTACTORS. REFER TO MANUFACTURER'S WRITTEN INSTRUCTIONS FOR PROPER INSTALLATION AND TESTING.

C. CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT COORDINATION AND CONFLICT ISSUES BE RESOLVED PRIOR TO INSTALLATION OF LIGHT FIXTURES.

D. ROUTE ALL EXPOSED, RIGID CONDUIT TIGHT TO STRUCTURE, PARALLEL TO BUILDING LINES AND IN UNISTRUT CABLE/PIPE TRAY WHERE POSSIBLE. COORDINATE CONDUIT ROUTING AND INSTALLATION WITH OTHER TRADES PRIOR TO ROUGH-IN. SUPPORT CONDUIT FROM STRUCTURE NOT ROOF DECK. MAINTAIN 2" MIN SPACING FROM BOTTOM OF ROOF DECK TO PREVENT ROOFING SCREWS FROM PENETRATING CONDUITS.

E. THROUGH WIRING OF RECESSED LIGHT FIXTURES, IN SUSPENDED CEILINGS, IS NOT PERMITTED. CONNECT EACH LIGHT FIXTURE BY A WHIP TO A JUNCTION BOX. PROVIDE CABLE WHIPS OF SUFFICIENT LENGTH TO ALLOW FOR RELOCATING EACH LIGHT FIXTURE WITHIN A 5-FOOT RADIUS OF ITS INSTALLED LOCATION, BUT NOT EXCEEDING 6 FEET IN UNSUPPORTED LENGTH.

F. ALL INTERNALLY ILLUMINATED SIGNS SHALL BE PROVIDED WITH AN ACCESSIBLE DISCONNECTION MEANS. VERIFY EACH SIGN IS FURNISHED WITH AN INTEGRAL DISCONNECT SWITCH. PROVIDE WEATHERPROOF DISCONNECT SWITCHES WITHIN SIGHT OF ALL SIGNS AS REQUIRED. MAKE FINAL CONNECTION AS REQUIRED.

1 G. ALL WIRING IN PATIENT CARE AREAS SHALL COMPLY WITH NEC 517.13(A)&(B).

KEYED PLAN NOTES

1. NEW LOCATION OF EXISTING 120/208V, 3-PHASE, 4-WIRE, 200A M.L.O PANEL 'P' THAT PREVIOUSLY SERVED THIS TENANT SPACE.
2. PROVIDE 30A-2P, NEMA 1 DISCONNECT SWITCH FOR ELECTRIC WATER HEATER. VERIFY EXACT LOCATION OF WATER HEATER WITH TENANT PRIOR TO INSTALLATION.
3. MAKE CONNECTION TO DIVISION 22/23 EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS AND NEC REQUIREMENTS. COORDINATE WORK WITH DIVISION 22/23 CONTRACTOR PRIOR TO CONSTRUCTION.

1 4. MAKE CONNECTION TO DIV 23-PROVIDED DISCONNECT SWITCH FOR HVAC UNIT. VERIFY EXACT LOCATION OF HVAC EQUIPMENT WITH TENANT PRIOR TO INSTALLATION.

5. EXISTING JUNCTION BOX FOR EXTERIOR SIGNAGE TO REMAIN. EXTEND CIRCUIT AS NECESSARY TO LAND HOMERUN ON BREAKER IN RELOCATED PANELBOARD LOCATION.
6. MAKE CONNECTION TO INTEGRAL SERVICE RECEPTACLE ON AHU. COORDINATE EXACT LOCATION AND HOMERUN ROUTING WITH MANUFACTURER'S LITERATURE PRIOR TO CONSTRUCTION.

1 7. MOUNT RECEPTACLES IN CASEWORK. COORDINATE EXACT LOCATION WITH ARCHITECT PRIOR TO CONSTRUCTION. PROVIDE (1) 3/4" CONDUIT FOR POWER, ROUTE BACK TO NEAREST ACCESSIBLE WALL IN CASEWORK, AND HOMERUN BACK TO DESIGNATED PANEL AND BREAKER.

8. MAKE CONNECTION TO AHU HEAT STRIP PER MANUFACTURER'S LITERATURE AND NEC REQUIREMENTS. COORDINATE WORK WITH DIVISION 23 CONTRACTOR PRIOR TO CONSTRUCTION.
9. MAKE CONNECTION TO MOTORIZED DAMPER PER MANUFACTURER'S LITERATURE AND NEC REQUIREMENTS.
10. MAKE CONNECTION TO DUCT SMOKE DETECTOR AND ASSOCIATED REMOTE TEST STATION WITH INDICATING LIGHT ACCORDING TO MANUFACTURER'S LITERATURE AND NFPA REQUIREMENTS.
11. POWER EXHAUST FAN VIA CIRCUIT SERVING LIGHTING FIXTURES IN ROOM. WIRE SO THAT ON/OFF OPERATION OF EXHAUST FAN COORDINATES WITH GENERAL LIGHTING SWITCHING IN ASSOCAITED ROOM.

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SHEET TITLE:
ELECTRICAL PLANS

DATE: 05.06.2022
JOB NO.: 22-103
SHEET:
E1.2

ELECTRICAL LIGHTING SCHEDULE (VERIFY ALL SELECTIONS AND FINISHES WITH OWNER AND ARCHITECT PRIOR TO ORDERING).

FIXTURE TYPE	MANUFACTURER NAME	MANUFACTURER SERIES	VOLT AMPS	MOUNTING	LAMP TYPE	REMARKS	VOLT
A	LITHONIA	EPANL 2X4 OR EQUAL	49	RECESSED	LED INCLUDED	2X4 FLAT PANEL - 5400LM OUTPUT	MVOLT
B	LITHONIA	CSS L48 OR EQUAL	35	SURFACE/PENDANT	LED INCLUDED	4' LINEAR LED STRIP LIGHT	MVOLT
C	LITHONIA	LDN4CYL OR EQUAL	8.6	PENDANT	LED INCLUDED	4" ROUND LED CYLINDER - 750LM OUTPUT	MVOLT
	LITHONIA	ELM6L OR EQUAL	10.6	SURFACE	INCLUDED LED	EMERGENCY LIGHTING UNIT WITH 90 MIN. BATTERY PACK	120/277
	LITHONIA	LHQM OR EQUAL	5	SURFACE	INCLUDED LED	EMERGENCY EXIT EGRESS COMBO LIGHTING UNIT WITH RED FACE EXIT SIGN AND 90 MIN. BATTERY PACK	120/277
	LITHONIA	ERE OR EQUAL	5	SURFACE	INCLUDED LED	OUTDOOR EMERGENCY REMOTE EGRESS LIGHTING UNIT - PROVIDE 700 LUMEN BATTERY PACK	120/277

PANELBOARD: P (RELOCATED)
BUS AMPS: 225A
MAIN SIZE/TYPE: MLO
VOLTS/PHASE: 208Y/120V, 3PH, 4W
SECTION: 1

FED FROM: METER CENTER
AIC RATING: 10000 FULLY RATED
SERVES: PRIME PHYSICAL THERAPY
MOUNTING: RECESSED
LOCATION: OPEN/REHAB AREA

LINE-SIDE LUGS: MECHANICAL
EQUIPMENT GROUND BUS

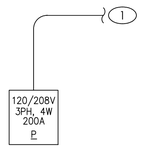
CKT NO.	DESCRIPTION	VOLTAMPS/PHASE A	B	C	MRE NO.	BKR AMP	P	P	BKR AMP	MRE NO.	VOLTAMPS/PHASE A	B	C	DESCRIPTION	CKT NO.
1	LTG - INTERIOR	1,900			12	20	1	1	20	12	900			RCPT - OPEN REHAB AREA 1	2
3	RCPT - RESTROOMS		360		12	20	1	1	20	12		1,000		RCPT - WAITING	4
5	PWR - DRYER			2,184	10	30	2	1	20	12			360	RCPT - WAITING	6
7		2,184						1	20	12	1,500			LTG - BUILDING SIGN	8
9	RCPT - WASHING MACHINE		1,250		12	20	1	2	30	10		2,250		WATER HEATER	10
11	RCPT - TREATMENT 2			540	12	20	1						2,250		12
13	RCPT - OFFICE & BREAK	1,500			12	20	1	2	50	6	3,404			PWR - HP-1 (HACR)	14
15	RCPT - STORAGE/BREAK		860		12	20	1					3,404			16
17	RCPT - OPEN REHAB AREA 2			900	12	20	1	2	30	10			2,139	PWR - HP-2 (HACR)	18
19	RCPT - WAITING BACK WALL	360			12	20	1				2,139				20
21	RCPT - TREATMENT 1		540		12	20	1	1	20	12		360		RCPT - HVAC MAINTENANCE	22
23	PWR - MOTORIZED DAMPERS			400	12	20	1	2	15	12			1,140	PWR - AHU-1 (HACR)	24
25	PWR - DUCT SMOKE DETECTOR	200			12	20	1				1,140				26
27	SPARE					20	1	2	60	4		6,000		PWR - AHU-1 HEAT 1 (HACR)	28
29	SPARE					20	1						6,000		30
31	SPARE					20	1	2	60	4	6,000			PWR - AHU-1 HEAT 2 (HACR)	32
33	SPARE					20	1					6,000			34
35	PROVISIONAL SPACE						1	2	15	12			588	PWR - AHU-2 (HACR)	36
37	PROVISIONAL SPACE						1				588				38
39	PROVISIONAL SPACE						1	2	60	4		6,360		PWR - AHU-2 HEAT 1 (HACR)	40
41	PROVISIONAL SPACE						1						6,360		42
	SUBTOTAL	6,144	3,010	4,024							15,671	25,374	18,837	SUBTOTAL	

		LOAD	CONN. VA	DF	LOAD	CONN. VA	DF	
TOTAL PHASE A - VA	21,815	COOLING	11,088	0	REFRIG		1.00	
AMPS	182	HEATING	36,720	1.00	SIGN/DISP		1.25	
TOTAL PHASE B - VA	28,384	LIGHTING	3,400	1.25	KITCHEN		1.00	
AMPS	237	RECEPTACLES	8,930	1.0/.5	EXISTING		1.00	
TOTAL PHASE C - VA	22,861	MOTORS	4,056	1.00	LRG MOTOR		1.25	TOTAL DEMAND
AMPS	191	SUPP HEAT	4,500	1.00	SHOW WNDW		1.25	62,824 VA
TOTAL PNLBD - VA	73,060	MISC EQUIP	4,368	1.00	LTG TRACK		1.00	174 A
AMPS	203							

PANELBOARD NOTES

PANELBOARD SCHEDULE 2

SCALE: NO SCALE



 # KEYED SLD NOTES

1. EXTEND EXISTING CONDUIT AND SERVICE CONDUCTORS FROM EXTERIOR METER CENTER TO NEW LOCATION OF EXISTING PANEL THAT WAS RELOCATED. INSPECT CONDUIT AND SERVICE CONDUCTORS FOR DEFECTS AND REPAIR AS NECESSARY FOR COMPLETE AND OPERATIONAL SYSTEM.

ELECTRICAL SINGLE LINE DIAGRAM 1

SCALE: NO SCALE

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SHEET TITLE:
ELECTRICAL SCHEDULES & DIAGRAMS

DATE: 05.06.2022
JOB NO.: 22-103
SHEET:
E2.1

GENERAL NOTES:

1. PRIOR TO SUBMITTING BID, VISIT THE JOB SITE AND BECOME FULLY ACQUAINTED WITH THE EXISTING CONDITIONS OF THE PROJECT. REVIEW GENERAL NOTES, SPECIFICATIONS AND OTHER DISCIPLINE'S DRAWINGS FOR ADDITIONAL REQUIREMENTS THAT MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY ARCHITECT, TENANT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO SUBMISSION OF BID.
2. EXISTING CONDITIONS WERE TAKEN FROM AS BUILT DRAWINGS AND SITE VISITS AND MAY NOT REFLECT EXACT "AS-BUILT" CONDITIONS. COORDINATE DEMOLITION WORK AND NEW WORK WITH EXISTING CONDITIONS AND OTHER TRADES PRIOR TO CONSTRUCTION.
3. REFER TO ARCHITECTURAL DRAWINGS FOR RELATED CONSTRUCTION DETAILS AS APPLICABLE TO THE PLUMBING SYSTEMS. VERIFY CHASE AND PENETRATION LOCATIONS SHOWN ON THE ARCHITECTURAL DRAWINGS THAT ARE INTENDED FOR PIPING MEET REQUIREMENTS.
4. INSTALL PIPING PARALLEL TO BUILDING LINES, UNLESS NOTED OTHERWISE.
5. COORDINATE LOCATION OF EQUIPMENT AND SUPPORTS WITH LOCATION OF ACCESS PANELS/DOORS TO ENABLE SERVICE OF EQUIPMENT. IF NO ACCESS PANEL IS SHOWN, PROVIDE ACCESS PANEL IN SIZE REQUIRED FOR MAINTENANCE OF EQUIPMENT. COORDINATE EXACT LOCATION WITH ARCHITECT PRIOR TO INSTALLATION.
6. SEAL PENETRATIONS THROUGH BUILDING COMPONENTS IN ACCORDANCE WITH LOCAL CODES. FIREPROOF PENETRATIONS THROUGH FIRE RATED COMPONENTS IN ACCORDANCE WITH U.L. REQUIREMENTS.

PLAN NOTES:

(1) REMOVE EXISTING SINK AND CAP ALL PLUMBING LINES.

(2) 3/4" CW, CONNECT TO EXISTING CW MAIN, FIELD VERIFY EXACT LOCATION.

(3) 3/4" CW AND 3/4" HW DOWN TO WATER HEATER MOUNTED ABOVE CEILING. ROUT DISCHARGE AND OVERFLOW PAN TO MOP SINK.

ELECTRIC WATER HEATER SCHEDULE

UNIT CALLOUT	UNIT INFORMATION								DWG NO.	NOTES
	MFG	MODEL NO.	CAP. (GAL)	EWT (°F)	LWT (°F)	NUM OF ELEM.	TOTAL INPUT (KW)	VOLT/ PH		
WH-1	AO SMITH	ECJN-20	20	40	120	1	4.5	120/1	RE:PLANS	----

PLUMBING FIXTURE CONN. SCHEDULE

FIXTURE	MARK	CW	HW	WASTE	VENT
LAVATORY (UNDER SLAB)	L-1	1/2"	1/2"	2"	1-1/2"
FLUSH TANK WATER CLOSET	WC-1	1/2"	--	3"	2"
JANITOR SINK	JS-1	3/4"	3/4"	3"	2"
FLOOR DRAIN	FD-1	--	--	2"	1-1/2"
WASHER BOX	WB-1	1/2"	1/2"	2"	1-1/2"

HENRY MILLER MECHANICAL

PLUMBING FIXTURE SCHEDULE

PLAN MARK	MANUFACTURER AND MODEL	FIXTURE DESCRIPTION	ACCESSORIES MANUFACTURER AND MODEL	ACCESSORIES DESCRIPTION	SIZE	NOTES
FD-1	WATTS FD-12.SQ	PVC SHALLOW SUMP FLOOR DRAIN WITH SQUARE TOP WITH PLASTIC STRAINER.	-		-	
JS-1	SWANSTONE MS2424	FLOOR MOUNTED, MOLDED STONE MOP SINK.	ACORN KFC	WALL MOUNTED SERVICE FAUCET WITH PAIL HOOK AND VACUUM BREAKER. SUPPLY SINK WITH 36" HOSE, MOP HANGER AND LINT BASKET STRAINER.	24" X 24"	
L-1	AMERICAN STANDARD LUCERNE 0356.041	VITREOUS CHINA, ADA COMPLIANT, D-SHAPED BOWL WALL HUNG LAVATORY.	DELTA 501-DST	SINGLE CONTROL CENTERSET FAUCET WITH METAL LEVER HANDLE.	-	PROVIDE CHROME PLATED BRASS TAILPIECE AND GRID DRAIN, CHROME PLATED BRASS P-TRAP, ANGLED STOP VALVES AND FLEXIBLE RISERS. INSULATE EXPOSED TAILPIECE, P-TRAP, AND WATER RISERS WITH ADA COMPLIANT INSULATION. SUPPLY WITH POINT OF USE MIXING VALVE THAT COMPLIES WITH ASSE1070. SET OUTLET TEMPERATURE TO 105° F.
WB-1	GUY GRAY #MWB	WASHING MACHINE CONNECTION BOX, RECESSED COLD ROLLED STEEL BOX WITH WHITE POWDER COAT FINISH, INTEGRAL SUPPLY VALVES AND PVC DRAIN.	-	-	-	
WC-1	AMERICAN STANDARD CADET 3 FLOWISE 3014.128	ADA COMPLIANT, FLOOR MOUNTED, FLUSH TANK, VITREOUS CHINA WATER CLOSET.	CHURCH 9500 C	SEAT: SOLID PLASTIC, OPEN FRONT, WHITE ELONGATED BOWL, INTEGRAL BUMPERS, EXTERNAL CHECK HINGES WITH STAINLESS STEEL POSTS.	-	

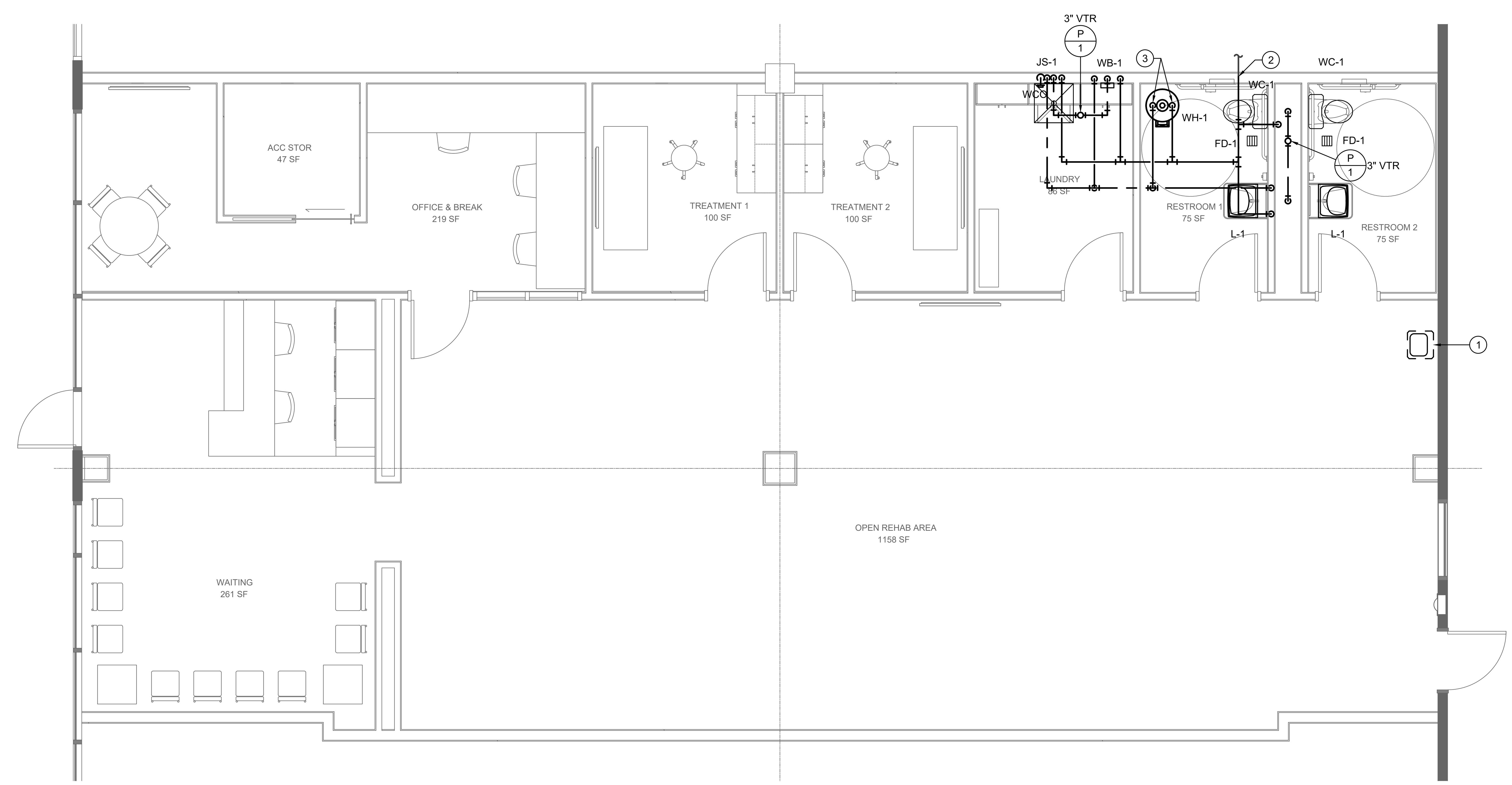
GENERAL

(1)	MECHANICAL NOTE REFERENCE
⟨2⟩	DEMOLITION NOTE REFERENCE
△3	REVISION NOTE REFERENCE
◕	CONNECT TO EXISTING WORK

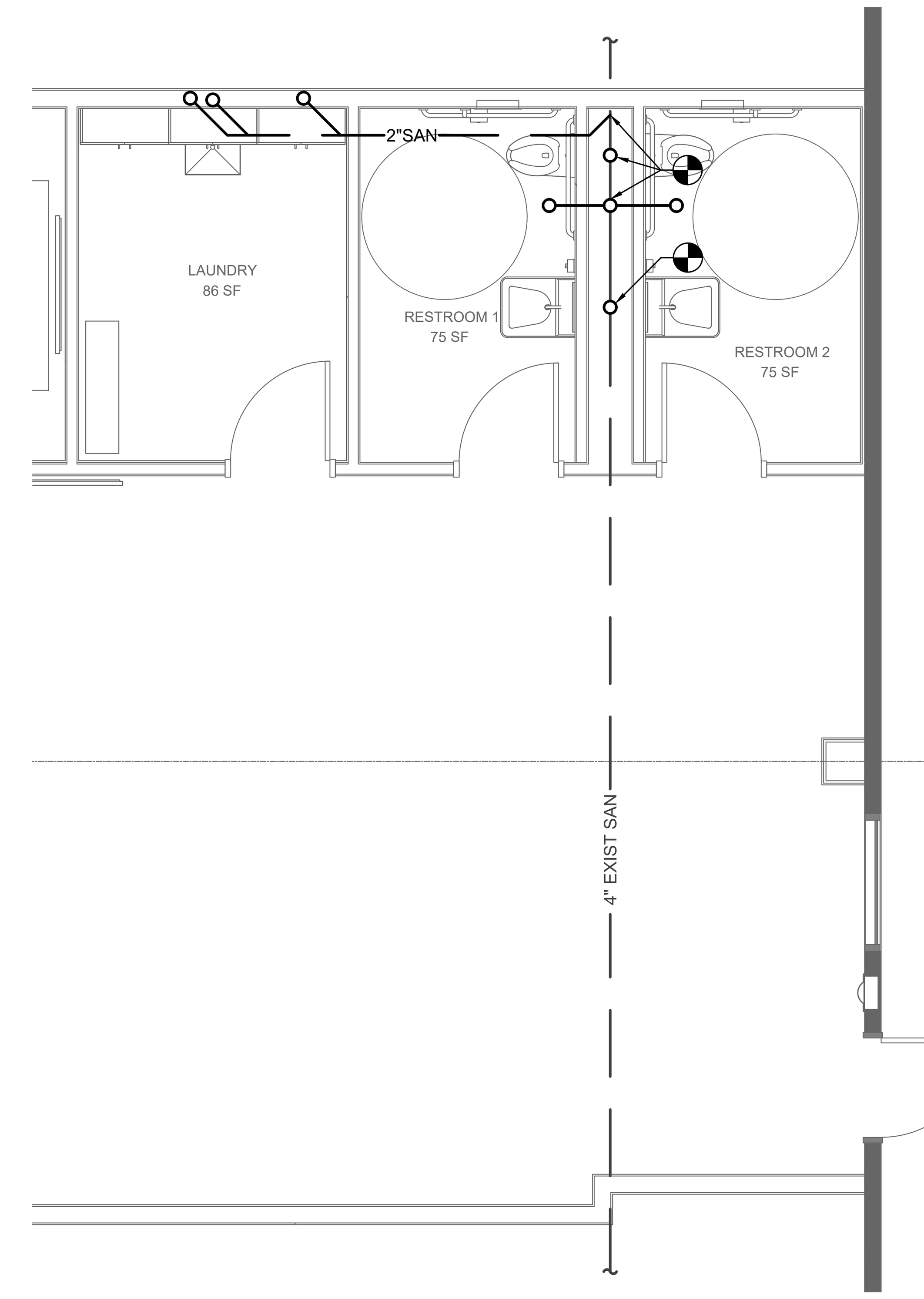
PLUMBING

—SAN—	SOIL OR WASTE ABOVE GRADE OR FLOOR
– –SAN– –	SOIL OR WASTE BELOW GRADE OR FLOOR
– – –V– – –	PLUMBING VENT
—— – ——	DOMESTIC COLD WATER
—— – – ——	DOMESTIC HOT WATER
—— G ——	GAS (NATURAL)
FCO	FLOOR CLEAN OUT
WCO	WALL CLEAN OUT
P/#	PLUMBING VENT RISER CALL-OUT
	ELBOW DOWN
	ELBOW UP
	TEE UP
	TEE DOWN

3 PLUMBING SYMBOLS
NO SCALE



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



2 UNDERSLAB PLAN - PLUMBING
1/4"=1'-0"

NUMBER
PE-2006029713
4-25-22

Prime Physical Therapy
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Lee's Summit, MO 64064

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JOB NO.:	2212300
DATE:	04/25/2022
REVISIONS:	
DESIGNED BY:	MBW
DRAWN BY:	MBW
CHECKED BY:	MBW
SHEET NO.	P101

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PLUMBING SPECIFICATIONS

1. HANGERS AND SUPPORTS FOR PIPING AND EQUIPMENT

DEFINITIONS
Terminology: As defined in MSS SP-90, "Guidelines on Terminology for Pipe Hangers and Supports."
PERFORMANCE REQUIREMENTS
Design supports for multiple pipes capable of supporting combined weight of supported systems, system contents, and test water.
Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.
PRODUCTS
STEEL PIPE HANGERS AND SUPPORTS
Description: MSS SP-58, Types 1 through 58, factory-fabricated components. Refer to Part 3 "Hanger and Support Applications" Article for where to use specific hanger and support types.
TRAPEZE PIPE HANGERS
Description: MSS SP-69, Type 59, shop- or field-fabricated pipe-support assembly made from structural-steel shapes with MSS SP-58 hanger rods, nuts, saddles, and U-bolts.
METAL FRAMING SYSTEMS
Description: MFMA-3, shop- or field-fabricated pipe-support assembly made of steel channels and other components.
EXECUTION
HANGER AND SUPPORT APPLICATIONS
Specific hanger and support requirements are specified in Sections specifying piping systems and equipment. Comply with MSS SP-69 for pipe hanger selections and applications that are not specified in piping system Sections. Use hangers and supports with galvanized, metallic coatings for piping and equipment that will not have field-applied finish. Use nonmetallic coatings on attachments for electrolytic protection where attachments are in direct contact with copper tubing.
Horizontal-Piping Hangers and Supports: Unless otherwise indicated and except as specified in piping system Sections, install the following types: Adjustable, Steel Clevis Hangers (MSS Type 1): For suspension of noninsulated or insulated stationary pipes, NPS 1/2 to NPS 30 (DN 15 to DN 750).
Adjustable, Steel Band Hangers (MSS Type 7): For suspension of noninsulated stationary pipes, NPS 1/2 to NPS 8 (DN 15 to DN 200).
Complete Pipe Rolls (MSS Type 44): For support of pipes, NPS 2 to NPS 42 (DN 50 to DN 1050), if longitudinal movement caused by expansion and contraction might occur but vertical adjustment is not necessary.
Vertical-Piping Clamps: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
Hanger-Rod Attachments: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
Steel Clevises (MSS Type 14): For 120 to 450 deg F (49 to 232 deg C) piping installations.
Building Attachments: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
Saddles and Shields: Unless otherwise indicated and except as specified in piping system Sections, install the following types: Steel Pipe-Covering Protection Saddles (MSS Type 39): To fill interior voids with insulation that matches adjoining insulation.
Protection Shields (MSS Type 40): Of length recommended in writing by manufacturer to prevent crushing insulation. Thermal-Hanger Shield Inserts: For supporting insulated pipe.
Comply with MSS SP-69 for trapeze pipe hanger selections and applications that are not specified in piping system Sections.

2. MECHANICAL INSULATION

PRODUCTS
INSULATION MATERIALS
Comply with requirements in Part 3 schedule articles for where insulating materials shall be applied.
FiberGlass: Inorganic, incombustible, foamed or cellulated glass with annealed, rigid, hermetically sealed cells, with factory applied All Service Jacket (ASJ) painted in color selected by architect.
INSULATING CEMENTS
Mineral-Fiber, Hydraulic-Setting Insulating and Finishing Cement: Comply with ASTM C 449/C 449M.
FACTORY-APPLIED JACKETS
Insulation system schedules indicate factory-applied jackets on various applications. When factory-applied jackets are indicated, comply with the following:
ASJ: White, kraft-paper, fiberglass-reinforced scrim with aluminum-foil backing; complying with ASTM C 1136, Type I.
EXECUTION
PREPARATION
Surface Preparation: Clean and dry surfaces to receive insulation. Remove materials that will adversely affect insulation application.
Coordinate insulation installation with the trade installing heat tracing. Comply with requirements for heat tracing that apply to insulation. Mix insulating cements with clean potable water; if insulating cements are to be in contact with stainless-steel surfaces, use demineralized water.
GENERAL INSTALLATION REQUIREMENTS
Install insulation materials, accessories, and finishes with smooth, straight, and even surfaces; free of voids throughout the length of equipment, ducts and fittings, and piping including fittings, valves, and specialties. Install insulation materials, forms, vapor barriers or retarders, jackets, and thicknesses required for each item of equipment, duct system, and pipe system as specified in insulation system schedules. Install accessories compatible with insulation materials and suitable for the service. Install accessories that do not corrode, soften, or otherwise attack insulation or jacket in either wet or dry state. Install insulation with longitudinal seams at top and bottom of horizontal runs. Install multiple layers of insulation with longitudinal and end seams staggered. Do not weld brackets, clips, or other attachment devices to piping, fittings, and specialties.
Keep insulation materials dry during application and finishing.
Install insulation with tight longitudinal seams and end joints. Bond seams and joints with adhesive recommended by insulation material manufacturer. Install insulation with least number of joints practical.
Where vapor barrier is indicated, seal joints, seams, and penetrations in insulation at hangers, supports, anchors, and other projections with vapor-barrier mastic. Install insulation continuously through hangers and around anchor attachments. For insulation application where vapor barriers are indicated, extend insulation on anchor legs from point of attachment to supported item to point of attachment to structure. Taper and seal ends at attachment to structure with vapor-barrier mastic. Install insert materials and install insulation to tightly join the insert. Seal insulation to insulation inserts with adhesive or sealing compound recommended by insulation material manufacturer. Cover inserts with jacket material matching adjacent pipe insulation. Install shields over jacket, arranged to protect jacket from tear or puncture by hanger, support, and shield. Apply adhesives, mastics, and sealants at manufacturer's recommended coverage rate and wet and dry film thicknesses. Apply mastic on seams and joints and at ends adjacent to duct and pipe flanges and fittings. Cut insulation in a manner to avoid compressing insulation more than 75 percent of its nominal thickness. Finish installation with systems at operating conditions. Repair joint separations and cracking due to thermal movement.
Repair damaged insulation facings by applying same facing material over damaged areas. Extend patches at least 4 inches (100 mm) beyond damaged areas. Adhere, staple, and seal patches similar to butt joints.
PENETRATIONS
Insulation Installation at Interior Wall and Partition Penetrations (That Are Not Fire Rated): Install insulation continuously through walls and partitions.
Insulation Installation at Fire-Rated Wall and Partition Penetrations: Install insulation continuously through penetrations of fire-rated walls and partitions. Terminate insulation at fire damper sleeves for fire-rated wall and partition penetrations. Externally insulate damper sleeves to match adjacent insulation and overlap duct insulation at least 2 inches (50 mm).
Pipe: Install insulation continuously through floor penetrations.
Seal penetrations through fire-rated assemblies.
PIPING INSULATION SCHEDULE, GENERAL
Acceptable preformed pipe and tubular insulation materials and thicknesses are identified for each piping system and pipe size range. If more than one material is listed for a piping system, selection from materials listed is Contractor's option.
INDOOR PIPING INSULATION SCHEDULE
Domestic Cold Water, Hot Water and Hot Water Recirc. Fiberglass: 3/4 inches thick.

3. DOMESTIC WATER PIPING

PRODUCTS
PIPING MATERIALS
Comply with requirements in "Piping Schedule" Article for applications of pipe, tube, fitting materials, and joining methods for specific services, service locations, and pipe sizes.
COPPER TUBE AND FITTINGS
Hard Copper Tube: ASTM B 88, Type L (ASTM B 88M, Type B)
PIPING JOINING MATERIALS
Solder Filler Metals: ASTM B 32, lead-free alloys. Include water-flushable flux according to ASTM B 813.
FLEXIBLE CONNECTORS
Stainless-Steel-Hose Flexible Connectors: Corrugated-stainless-steel tubing with stainless-steel wire-braid covering and ends welded to inner tubing.
EXECUTION
PIPING INSTALLATION
Install copper tubing under building slab according to CDA's "Copper Tube Handbook."
Install piping concealed from view and protected from physical contact by building occupants unless otherwise indicated and except in equipment rooms and service areas. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or Install piping above accessible ceilings to allow sufficient space for ceiling panel removal, and coordinate with other services occupying that space. Install piping adjacent to equipment and specialties to allow service and maintenance.Install piping to permit valve servicing. Install piping free of sags and bends. Install fittings for changes in direction and branch connections. Install shut off valves with unions in copper tubing at final connection to each piece of equipment, machine, and specialty.
JOINT CONSTRUCTION
Ream ends of pipes and tubes and remove burrs. Bevel plain ends o steel pipe. Remove scale, slag, dirt, and debris from inside and outside of pipes, tubes, and fittings before assembly.
Soldered Joints: Apply ASTM B 813, water-flushable flux to end of tube. Join copper tube and fittings according to ASTM B 828 or CDA's "Copper Tube Handbook."
VALVE INSTALLATION
Install shutoff (ball) valve close to water main on each branch and riser serving plumbing fixtures or equipment, on each water supply to equipment, and on each water supply to plumbing fixtures that do not have supply stops.
Install drain valves for equipment at base of each water riser, at low points in horizontal piping, and where required to drain water piping.
CONNECTIONS
Install piping adjacent to equipment and machines to allow service and maintenance. Connect domestic water piping to exterior water-service piping. Use transition fitting to join dissimilar piping materials.
ESCUTCHEON INSTALLATION
Install escutcheons for penetrations of walls, ceilings, and floors.
PIPING SCHEDULE
Transition and special fittings with pressure ratings at least equal to piping rating may be used in applications below unless otherwise indicated.
Aboveground domestic water piping, shall be Hard copper tube, ASTM B 88, Type L or PEX.

4. INTERIOR SANITARY WASTE AND VENT PIPING

PRODUCTS
PIPING MATERIALS
PVC Pipe: ASTM D 2665, solid-wall drain, waste, and vent.
EXECUTION
PIPING APPLICATIONS
Aboveground, Interior, soil, waste, and vent piping shall be PVC Pipe with socket fittings and solvent welded joints. Underground, soil, waste, and vent shall be PVC Pipe with socket fittings and solvent welded joints.
PIPING INSTALLATION
Make changes in direction for soil and waste drainage and vent piping using appropriate branches, bends, and long-sweep bends. Sanitary tees and short-sweep 1/4 bends may be used on vertical stacks if change in direction of flow is from horizontal to vertical. Use long-turn, double Y-branch and 1/8-bend fittings if 2 fixtures are installed back to back or side by side with common drain pipe. Straight tees, elbows, and crosses may be used on vent lines. Do not change direction of flow more than 90 degrees. Use proper size of standard increasers and reducers if pipes of different sizes are connected. Reducing size of drainage piping in direction of flow is prohibited. Lay buried building drainage piping beginning at low point of each system. Install true to grades and alignment indicated, with unbroken continuity of invert. Place hub ends of piping upstream. Install required gaskets according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements. Maintain swab in piping and pull past each joint as completed. Install soil and waste drainage and vent piping at the code required minimum slopes. Install PVC soil and waste drainage and vent piping according to ASTM D 2665. Do not enclose, cover, or put piping into operation until it is inspected and approved by authorities having jurisdiction.
JOINT CONSTRUCTION
PVC Nonpressure Piping Joints: Join piping according to ASTM D 2665.

5. FACILITY NATURAL-GAS PIPING

PRODUCTS
PIPES, TUBES, AND FITTINGS
Steel Pipe: ASTM A 53/A 53M, black steel, Schedule 40, Type E or S, Grade B.
JOINING MATERIALS
Joint Compound and Tape: Suitable for natural gas.
Welding Filler Metals: Comply with AWS D10.12/D10.12M for welding materials appropriate for wall thickness and chemical analysis of steel pipe being welded.
MANUAL GAS SHUTOFF VALVES
Bronze Plug Valves: MSS SP-78.
MOTORIZED GAS VALVES
Electrically Operated Valves: Comply with UL 429.
EXECUTION
OUTDOOR PIPING INSTALLATION
Comply with NFPA 54 for installation and purging of natural-gas piping.
INDOOR PIPING INSTALLATION
Comply with NFPA 54 for installation and purging of natural-gas piping. Arrange for pipe spaces, chases, slots, sleeves, and openings in building structure during progress of construction, to allow for mechanical installations. Install piping in concealed locations unless otherwise indicated and except in equipment rooms and service areas. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal. Locate valves for easy access. Install natural-gas piping at uniform grade of 2 percent down toward drip and sediment traps. Install piping free of sags and bends. Install fittings for changes in direction and branch connections. Fire-Barrier Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at pipe penetrations. Seal pipe penetrations with firestop materials. Verify final equipment locations for roughing-in. Drips and Sediment Traps: Install drips at points where condensate may collect, including service-meter outlets. Locate where accessible to permit cleaning and emptying. Do not install where condensate is subject to freezing. Extend relief vent connections for service regulators, line regulators, and verpressure protection devices to outdoors and terminate with weatherproof vent cap. Conceal pipe installations in walls, pipe spaces, utility spaces, above ceilings, below grade or floors, and in floor channels unless indicated to be exposed to view.
CONNECTIONS
Connect to utility's gas main according to utility's procedures and requirements. Install natural-gas piping electrically continuous, and bonded to gas appliance equipment grounding conductor of the circuit powering the appliance according to NFPA 70. Install piping adjacent to appliances to allow service and maintenance of appliances. Connect piping to appliances using manual gas shutoff valves and unions. Install valve within 72 inches (1800 mm) of each gas-fired appliance and equipment. Install union between valve and appliances or equipment. Sediment Traps: Install tee fitting with capped nipple in bottom to form drip, as close as practical to inlet of each appliance.
OUTDOOR & INDOOR PIPING SCHEDULE
Aboveground natural-gas piping shall be Steel pipe with wrought-steel fittings and welded joints.

HENRY MILLER
MECHANICAL

NUMBER PE-2006029713
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