

DR. HWANG MARINO - DENTAL CLINIC

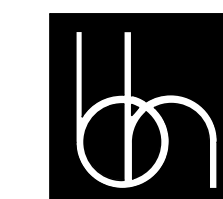
2045 Professional Center Drive
Orange Park, Florida 32073

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FOR CONSTRUCTION



DECEMBER 20, 2019

BHA # 19040

8.2 HARDWARE SCHEDULE:

GROUP 001: 100B, 101B, 103

QTY	DESCRIPTION	CAT. NO.	FINISH	MFR
3	HINGE	5BB1 4.5 X 4.5	652	IVE
1	STOREROOM LOCK	ND80PD SPA	626	SCH
3	SILENCER	SR64	GRAY	IVE
1	WALL STOP	WS406/407CVX	630	IVE

GROUP 002: 101A

QTY	DESCRIPTION	CAT. NO.	FINISH	MFR
3	HINGE	5BB1 4.5 X 4.5	652	IVE
1	PASSAGE SET	ND10S SPA	626	SCH
3	SILENCER	SR64	GRAY	IVE
1	WALL STOP	WS406/407CVX	630	IVE

GROUP 003: 121, 124

QTY	DESCRIPTION	CAT. NO.	FINISH	MFR
3	HINGE	5BB1 4.5 X 4.5	652	IVE
1	PRIVACY LOCKSET	ND40S SPA	626	SCH
1	SURFACE CLOSER	4040XP REG	689	LCN
3	SILENCER	SR64	GRAY	IVE
1	WALL STOP	WS406/407CVX	630	IVE

GROUP 004: 110, 111 (1HR DOORS)

QTY	DESCRIPTION	CAT. NO.	FINISH	MFR
3	HINGE	5BB1 4.5 X 4.5	652	IVE
1	PASSAGE SET	ND10S SPA	626	SCH
3	SILENCER	SR64	GRAY	IVE
1	SURFACE CLOSER	4040XP REG	689	LCN
1	WALL STOP	WS406/407CVX	630	IVE

GROUP 005: 112

QTY	DESCRIPTION	CAT. NO.	FINISH	MFR
3	HINGE	5BB1 4.5 X 4.5	652	IVE
1	PASSAGE SET	ND10S SPA	626	SCH
3	SILENCER	SR64	GRAY	IVE
1	WALL STOP	WS406/407CVX	630	IVE

GROUP 006: 108B

QTY	DESCRIPTION	CAT. NO.	FINISH	MFR
4	HINGE	5BB1HW 4.5 X 4.5	630	IVE
1	RIM EXIT DEVICE	991P	626	VON
1	RIM CYLINDER	20-057 ICX	606	SCH
1	FSIC CORE	23-030	626	SCH
1	SURFACE CLOSER	4040XP EDA TBSRT	689	LCN
1	GASKETING	139A-S	A	ZER
1	RAIN DRIP	142AA	AA	ZER
1	GASKETING	188SBK PSA	BK	ZER
1	THRESHOLD	566A-223	A	ZER

GROUP 007: 115A (1HR DOOR)

QTY	DESCRIPTION	CAT. NO.	FINISH	MFR
4	HINGE	5BB1 4.5 X 4.5	630	IVE
1	SURFACE CLOSER	4040XP EDA TBSRT	689	LCN
1	STOREROOM LOCK	ND80PD SPA	626	SCH
1	GASKETING	139A-S	A	ZER
1	GASKETING	188SBK PSA	BK	ZER

GROUP 008: 113, 114 (ACOUSTIC)

QTY	DESCRIPTION	CAT. NO.	FINISH	MFR
4	HINGE	5BB1 4.5 X 4.5	630	IVE
1	STOREROOM LOCK	ND80PD SPA	626	SCH
1	ACOUSTIC DOOR SET	PEMKOSTCSET 1B STC411_PK ACP112 S44	BLK	PEMKO PEMKO PEMKO

GROUP 009: 122

QTY	DESCRIPTION	CAT. NO.	FINISH	MFR
3	HINGE	5BB1 4.5 X 4.5	652	IVE
1	STOREROOM LOCKSET	ND80PD SPA	626	SCH
3	SILENCER	SR64	GRAY	IVE
1	WALL STOP	WS406/407CVX	630	IVE

GROUP 010: 116, 123A, 123B, 125

QTY	DESCRIPTION	CAT. NO.	FINISH	MFR
1	POCKET DOOR ASSEMBLY	LUCE 36X84	US32D	ECCUISE
2(EA)	FLUSH PULL	903.08.480		HAEFELE

GROUP 011: 126

HARDWARE BY MANUFACTURER	102000	CRL
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8.3 ALL GLASS DOOR/WALL SYSTEM
ALL GLASS WITH LOW PROFILE TRIM (TOP AND BOTTOM OF DOOR)
SYSTEM: CLEAR VIEW GLASS WALL OFFICE SYSTEM BY CR LAURENCE

- 8.3.1 SPECIFICATIONS
- DOOR HEIGHT: 7'-0"
 - DOOR WIDTH: 3'-0"
 - 1. CONFIGURATION: AS INDICATED ON DRAWINGS.
 - 2. FULL LENGTH TOP AND BOTTOM SIDELITE RAILS: 2-5/16 INCH (59 MM) HIGH BY 1-1/2 INCH (38 MM) DEEP WITH END CAPS.
 - 3. SIDELITE FITTINGS, CLAD FINISH: SATIN ANODIZED.
 - 4. GLASS THICKNESS: 1/2 INCH TEMPERED.
 - 5. DESIGNED TO WITHSTAND NORMAL OPERATION WITHOUT DAMAGE, RACKING, SAGGING, OR DEFLECTION.
 - 6. COORDINATE WALL AND DOOR ASSEMBLY PREPARATION AND PROVIDE HARDWARE AS NECESSARY FOR FULLY OPERABLE INSTALLATION.
 - 7. FINISHED METAL SURFACES PROTECTED WITH STRIPPABLE FILM.
 - 8. FACTORY ASSEMBLED TO GREATEST EXTENT PRACTICAL; MAY BE DISASSEMBLED TO ACCOMMODATE SHIPPING CONSTRAINTS.

- 8.3.2 SLIDING GLASS DOOR
TOP SUPPORTED WITHOUT HOLES REQUIRED IN GLASS.
- DOOR CONFIGURATION: AS INDICATED ON DRAWINGS.
 - 1. DOOR WEIGHT: 330 LB (150 KG), MAXIMUM.
 - 2. TRACK SIZE: 2-7/16 INCH (62 MM) HIGH BY 2-7/16 INCH (62 MM) DEEP WITH END CAPS.
 - 3. TRACK FINISH: SATIN ANODIZED AND BRUSHED STAINLESS ANODIZED
 - 4. GLASS THICKNESS: 1/2 INCH (12.7 MM), TEMPERED.
 - 5. DOOR HARDWARE: CENTER LOCKS, BRUSHED STAINLESS STEEL.
 - 6. PROVIDE ACCESSORIES AS REQUIRED FOR COMPLETE INSTALLATION.
 - 7. BASIS OF DESIGN: C.R. LAURENCE CO., INC; CRL490 SERIES TOP HUNG SLIDING DOOR SYSTEM: WWW.CRL-ARCH.COM.

- 8.3.3 FINISHES:
- 1. GLASS: FLAT GLASS MEETING REQUIREMENTS OF ASTM C1036, TRANSPARENT
 - A. THICKNESS: AS INDICATED
 - B. COLOR: LOW IRON
 - C. PREPARE PANELS FOR INDICATED FITTINGS AND HARDWARE PRIOR TO TEMPERING.
 - D. POLISH EDGES THAT WILL BE EXPOSED
 - E. TEMPER GLASS MATERIALS HORIZONTALLY, NO VISIBLE TONG MARKS OR DISTORTIONS.
 - 2. METAL: CLASS 1 NATURAL ANODIZED FINISH: AAMA 611 AA-M12C22A41 CLEAR ANODIC COATING (.7MILS)

ARCHITECTURAL WOOD WORK

- 6.1 QUALITY ASSURANCE:
- 6.1.1 MANUFACTURERS OF MILLWORK SHALL SHOW EVIDENCE OF AT LEAST 5 YEARS EXPERIENCE AND INSTALLATIONS FOR SIMILAR TYPES OF PROJECTS.
 - 6.1.2 QUALITY STANDARDS: THE QUALITY STANDARDS OF THE ARCHITECTURAL WOODWORK INSTITUTE (AWI) SHALL APPLY AND BY REFERENCE ARE MADE A PART OF THIS SPECIFICATION. ANY ITEM NOT GIVEN A SPECIFIC GRADE SHALL BE CONSIDERED AWI "CUSTOM"
- 6.2 SUBMITTALS:
- 6.2.1 SUBMIT SHOP DRAWINGS FOR CABINETS AND COUNTERTOPS SHOWING LAYOUT, ELEVATIONS, ENDS, CROSS-SECTIONS, SERVICE RUN-SPACES, AND LOCATIONS OF ALL IN-COUNTER EQUIPMENT AND SERVICES. SHOW DETAILS AND LOCATION OF ALL ANCHORAGES. INCLUDE LAYOUT OF UNITS WITH RELATION TO SURROUNDING WALLS, DOORS, WINDOWS, AND OTHER BUILDING COMPONENTS. A CASEWORK SAMPLE SHALL ONLY BE SUBMITTED UPON THE ARCHITECTS REQUEST.
- 6.3 MATERIALS
- 6.3.1 OPEN INTERIORS: ANY OPEN STORAGE UNIT WITHOUT SOLID DOORS OR DRAWER FRONTS SHALL RECEIVE: **PL-1 WITH COLOR TO MATCH CABINET FACES.**
 - 6.3.2 EXPOSED SURFACES: ANY UNIT DOOR/DRAWER/CABINET FACE SHALL RECEIVE: **MATERIAL PL-1**
 - 6.3.3 SEMI-EXPOSED SURFACES: TOPS OF CABINET UNITS, EXPOSED EDGES, EXTERIOR BOTTOMS OF CABINET UNITS SHALL RECEIVE: **PL-1 WITH COLOR TO MATCH CABINET FACE.**
 - 6.3.4 CONCEALED SURFACES: ANY SURFACE NOT NORMALLY VISIBLE AFTER INSTALLATION SUCH AS CABINET BACKS TO WALL AND CABINET SIDES TO CABINET SIDES SHALL BE CONSTRUCTED OF A BALANCED BACKER. THESE FLAT SURFACES SHALL BE LAMINATED AND NOT LEFT RAW OR BE PAINTED.
 - 6.3.5 CABINET CORE MATERIALS
 - A. FOR CONDITIONS WHERE THE CABINET BOX IS TO COME INTO CONTACT WITH THE FLOOR OR AN ADJACENT SURFACE, THE CORE MATERIAL SHALL BE MADE OF DIMENSIONALLY STABLE WET-RATED MDF
 - B. CORE DIMENSIONAL CRITERIA: 3/4" THICKNESS.
- 6.4 HARDWARE:
- 6.4.1 HINGES: COMPACT BLUMOTION BY BLUM - OVERLAY (OR APPROVED SUBSTITUTION)
 - 6.4.2 DOOR/DRAWER PULLS: DOUG MOCKETT DP241-17S (OR APPROVED SUBSTITUTION)
 - A. INSTALLED HORIZONTALLY CENTERED ON DOOR/DRAWER
 - 6.4.3 DRAWER SLIDES: KNAPE & VOGT #8450FM (OR APPROVED SUBSTITUTION)
 - 6.4.4 DOOR CATCHES: BLUM (OR APPROVED SUBSTITUTION)
 - 6.4.5 ADJUSTABLE SHELF SUPPORTS: TO BE TWIN PIN DESIGN WITH ANTI-TIP-UP SHELF RESTRAINTS FOR BOTH 3/4 INCH AND 1 INCH SHELVES. DESIGN TO INCLUDE KEEL TO RETARD SHELF SLIDE-OFF, AND SLOT FOR ABILITY TO MECHANICALLY ATTACH SHELF TO CLIP. LOAD RATING TO BE MINIMUM 300 LBS. EACH SUPPORT. **ALSO APPROVED: KNAPE & VOGT K-V 346.**
- 6.5 FABRICATION
- 6.5.1 CORE THICKNESS: 3/4" PARTICLEBOARD WITH EDGING AND SURFACE FINISHES AS INDICATED.
 - 6.5.2 UNIT BACKS OR CABINETS SHALL BE 1/2" THICK PARTICLEBOARD WITH FINISH AS INDICATED.
 - 6.5.3 ALL COUNTERTOP MOUNTED UNITS SHALL BE PROVIDED WITH FULL 2X4 PRESSURE TREATED PINE BACKING AT PERIMETER OF EQUIPMENT CUT-OUT.
 - 6.5.4 ALL EXPOSED AND SEMI-EXPOSED EDGES OF CABINETS SHALL BE FACTORY EDGED WITH MATERIAL TO MATCH LAMINATE. MACHINE APPLIED WITH WATERPROOF HOT-MELT ADHESIVE.
- 6.6 COUNTERTOPS:
- 6.6.1 HOMOGENOUS QUARTZ SURFACE MATERIAL 1 1/8" THICK SET ON 3/4" SOLID MDF OR PLYWOOD BASE LAYER.
 - 6.6.2 COLOR PER FINISH SCHEDULE
 - 6.6.3 EDGE STYLE SHALL BE TOP AND BOTTOM EASED EDGE
 - 6.6.4 TOTAL THICKNESS OF 1 1/2". PROVIDE MINIMUM 1/2" RADIUS FOR INSIDE CORNERS.
 - 6.6.5 USE COUNTERTOP MANUFACTURER'S RECOMMENDED SILICONE BASED CONSTRUCTION ADHESIVE FOR BACKSPASHES, END SPLASHES, AND OTHER APPLICATIONS ACCORDING TO THE MANUFACTURER'S PUBLISHED FABRICATION INSTRUCTIONS. FILL ALL GAPS BETWEEN COUNTERTOP AND SUBSTRATE WITH SPECIFIED SILICONE SEALANT.
 - 6.6.6 FABRICATE ALL COUNTERTOP COMPONENTS IN SHOP, TO GREATEST EXTENT PRACTICABLE, IN SIZES AND SHAPES INDICATED AND ACCORDING TO THE APPROVED SHOP DRAWINGS AND PER THE MANUFACTURER'S PUBLISHED FABRICATION REQUIREMENTS. INSTALL COUNTERTOPS PLUMB AND LEVEL AND TRUE ACCORDING TO THE APPROVED SHOP DRAWINGS AND MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS.
 - 6.6.7 FORM JOINT SEAMS BETWEEN SOLID SURFACING COMPONENTS WITH THE SPECIFIED SEAM ADHESIVE. COMPLETE JOINTS SHALL BE INCONSPICUOUS IN APPEARANCE AND WITHOUT VOIDS. PROVIDE JOINT REINFORCEMENT PER MANUFACTURER GUIDELINES FOR PARTICULAR INSTALLATIONS.
 - 6.6.8 AS PERMISSIBLE TO ARCHITECT, MINOR SURFACE MARRING WILL BE REPAIRED ACCORDING TO THE MANUFACTURERS PUBLISHED INSTALLATION INSTRUCTIONS.
- 6.7 PROTECTION:
- 6.7.1 CLEAN PLASTIC SURFACES, REPAIR MINOR DAMAGE PER LAMINATE MANUFACTURER'S RECOMMENDATIONS. REPLACE OTHER DAMAGED PARTS OR UNITS.
 - 6.7.2 CONTRACTOR SHALL PROTECT ALL FINISHED AND INSTALLED UNITS FROM DAMAGE PRIOR TO SUBSTANTIAL COMPLETION AND TURN-OVER TO OWNER (UNF).

SEALANTS AND CAULKING

- 7.1 PRODUCTS:
- 7.1.1 SEALANTS: (WALLS AND/OR CEILINGS):
 - A. EXPOSED LOCATIONS ON THE BUILDING INTERIOR WITH NO JOINT MOVEMENT: CAULKING - ACRYLIC LATEX CAULK. CAULKING SHALL BE APPLIED AS PART OF A PREP FOR INTERIOR PAINTING TO PROVIDE A SMOOTH JOINT AT DISSIMILAR MATERIALS OR AT INTERSECTION OF SURFACES.
 - B. BACKER ROD: OPEN CELL COMPRESSIBLE, RESILIENT, NON-WAXING, POLYURETHANE FOAM COMPATIBLE WITH SEALANT.
 - C. JOINT CLEANER: XYLLOL
 - 7.1.2 COUNTERTOPS
 - A. MOUNTING ADHESIVES: 100% SILICONE SEALANT - METHACRYLATE-BASED ADHESIVE FOR CHEMICALLY BONDING SOLID SURFACE SEAMS. COLOR SHALL BE COMPLEMENTARY TO THE SOLID SURFACE SHEET MATERIAL. SEALANT/ADHESIVE SHALL BE GREENGUARD GOLD CERTIFIED AND SHALL COMPLY WITH SCAQMD RULE 1168. (PROVIDE JOINT ADHESIVE AS RECOMMENDED BY MANUFACTURER)
 - B. ELASTOMERIC SEALANT: MILDEW-RESISTANT SILICONE SEALANT FOR FILLING GAPS BETWEEN COUNTERTOPS AND TERMINATING SUBSTRATES IN WET ENVIRONMENT APPLICATIONS. SHALL COMPLY WITH ASTM C 920, TYPE SI (SINGLE COMPONENT), GRADE NS (NON-SAG). PROVIDE PRODUCT AS ACCEPTABLE PER COUNTERTOP MANUFACTURER. COLOR SHALL BE COMPLEMENTARY TO COUNTERTOP MATERIAL.
 - C. SILICONIZED ACRYLIC SEALANT: SILICONIZED ACRYLIC LATEX SEALANT. FOR GENERAL APPLICATIONS TO FILL GAPS BETWEEN COUNTERTOPS AND AT TERMINATING SUBSTRATES. SHALL COMPLY WITH ASTM C934, TYPE OF, GRADE NF, AND SCAQMD RULE 1168. COLOR TO BE COMPLEMENTARY TO COUNTERTOP.
 - D. CONSTRUCTION ADHESIVE: COUNTERTOP MANUFACTURER'S RECOMMENDED SILICONE BASED CONSTRUCTION ADHESIVE FOR BACKSPASHES, END SPLASHES, AND OTHER APPLICATIONS ACCORDING TO THE MANUFACTURER'S PUBLISHED FABRICATION INSTRUCTIONS.

DOOR AND OPENINGS

- 8.1 DOORS
- 8.1.1 SOLID CORE DOORS - HPDL FINISH:
 - A. DOORS SHALL BE 1 3/4" SOLID STAVE LUMBER CORE DOOR. CORE: LOW DENSITY WOOD BLOCKS, KILN DRIED, NOT MORE THAN 2 1/4" WIDE; RANDOM LENGTHS; JOINTS WELL STAGGERED. HPDL FINISH TO MATCH PL-1 (REF: FINISH SCHEDULE).
 - B. DESIGN BASIS: MASONITE - ASPIRO SERIES DOORS, CONSTRUCTION SPECIALTIES, INC.
 - C. PROVIDE UL LABELS AS REQUIRED FOR RATED DOORS. LABELS SHALL BE EMBOSSED OR ENGRAVED METAL PLATES, CLEARLY IDENTIFYING TIME RATING SPECIFIED. PROTECT LABELS DURING SHIPPING AND CONSTRUCTION.
 - D. STORE DOORS IN A WELL-VENTILATED BUILDING, COVER TO KEEP CLEAN.
 - E. PROTECT DOORS FROM DAMAGE DURING AND FOLLOWING INSTALLATION. CONTRACTOR SHALL REPAIR OR REPLACE DOORS DAMAGED BY CONSTRUCTION. TRADE RESPONSIBLE FOR DAMAGE SHALL COMPENSATE CONTRACTOR FOR REPAIR WORK OR REPLACEMENT IN AMOUNT EQUAL TO THE COST OF THE REPAIR OR REPLACEMENT.
 - F. WARRANTY: PROVIDE FULL WARRANTY FOR THE LIFE OF THE ORIGINAL INSTALLATION, SUBJECT TO INDUSTRY REGULATIONS FOR STORAGE, HANGING, FINISHING, AND MAINTENANCE.
- 8.2 HARDWARE
- 8.2.1 PROCESS:
- A. SUBMIT MANUFACTURERS CATALOG SHEET ON DESIGN, GRADE AND FUNCTION OF ITEMS LISTED IN SCHEDULE. IDENTIFY SPECIFIC HARDWARE ITEM PER SHEET, PROVIDE INDEX, AND COVER SHEET.
 - B. COORDINATION: DISTRIBUTE DOOR HARDWARE TEMPLATES TO RELATED DIVISIONS WITHIN FOURTEEN DAYS OF RECEIVING APPROVED DOOR HARDWARE SUBMITTALS.
 - C. MAINTENANCE: FURNISH A COMPLETE SET OF SPECIALIZED TOOLS AND MAINTENANCE INSTRUCTIONS FOR OWNERS CONTINUED ADJUSTMENT, MAINTENANCE, AND REMOVAL OF DOOR HARDWARE.
 - D. CLOSEOUT: SUBMIT TO THE OWNER IN A THREE-RING BINDER OR CD IF REQUESTED:
 - 1. WARRANTIES
 - 5 YEARS FOR EXIT DEVICES
 - 10 YEARS FOR MANUAL DOOR CLOSERS
 - 5 YEARS FOR MORTISE, AUXILIARY AND BORED LOCKS
 - 2. MAINTENANCE SERVICE AGREEMENT
 - 3. COPY OF APPROVED HARDWARE SCHEDULE
 - 4. COPY OF APPROVED KEYING SCHEDULE WITH BITTING LIST
 - 5. DOOR HARDWARE SUPPLIER NAME, PHONE NUMBER, AND FAX NUMBER
 - E. FIRE RATED DOOR ASSEMBLIES: WHERE FIRE RATED DOOR ASSEMBLIES ARE REQUIRED, PROVIDE DOOR HARDWARE RATED FOR USE IN ASSEMBLIES COMPLYING WITH NFPA 80 THAT ARE LISTED AND LABELED BY A QUALIFIED TESTING AGENCY, FOR FIRE PROTECTION RATINGS INDICATED.
 - F. FURNISH HARWARE WITH EACH UNIT NUMBERS AND MARKED IN ACCORDANCE WITH THE APPROVED FINISH HARDWARE SCHEDULE. INCLUDE DOOR AND ITEM NUMBER FOR EACH TYPE OF HARDWARE.

PROJECT SUMMARY

THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING TO ASCERTAIN THE EXISTING CONDITIONS AND THE SCOPE OF THE WORK.

SUMMARY OF WORK:

THIS PROJECT IS FOR AN INTERIOR RENOVATION TO AN EXISTING 2 STORY OFFICE BUILDING (8-OCCUPANCY) CURRENTLY USED AS A DOCTORS OFFICE. THE SCOPE INCLUDES THE SPACES ON THE FIRST LEVEL OF THE BUILDING ONLY. DEMOLITION INCLUDES THE REMOVAL OF INTERIOR WALLS ON THE FIRST LEVEL AND INTERIOR FINISHES. MODIFICATIONS TO THE EXISTING INTERIOR PLUMBING WILL BE REQUIRED. ADJUSTMENTS TO THE EXISTING HVAC DISTRIBUTION AND CONTROLS FOR THE FIRST LEVEL WILL BE REQUIRED. THE NEW DESIGN INCLUDES THE ADDITION OF 11 NEW DENTAL CHAIRS FOR DENTAL EXAMS, QUIET TREATMENT ROOMS, AN EMPLOYEE FRONT OFFICE/RECEPTION AREA WITH WAITING ROOM, TWO STAFF WORK ROOMS AND A DEDICATED MECHANICAL EQUIPMENT ROOM AND A MED-GAS CONTAINER ROOM. ONE WINDOW IS INCLUDED FOR REMOVAL AND THE WALL IS TO BE INFILLED TO MATCH THE ADJACENT CONSTRUCTION. THE EXTERIOR SCOPE OF WORK INCLUDES RE-STRIPING THE PARKING LOT AND REPLACING A PORTION OF THE EXISTING CONCRETE SIDEWALKS TO INCREASE THE ACCESSIBILITY TO THE BUILDING.

BUILDING CODE SUMMARY:

- FLORIDA BUILDING CODE FAMILY 6TH EDITION (2017)
- FLORIDA PLUMBING CODE (2017)
- FLORIDA MECHANICAL CODE (2017)
- NATIONAL ELECTRIC CODE (2014) - NFPA 70
- FLORIDA FIRE PREVENTION CODE (2017)

EXISTING BUILDING TYPE: **TYPE V, NON-SPRINKLERED**

OCCUPANCY: **BUSINESS (B)**

ARCHITECTURAL SPECIFICATIONS

GENERAL PROJECT CONDITIONS:

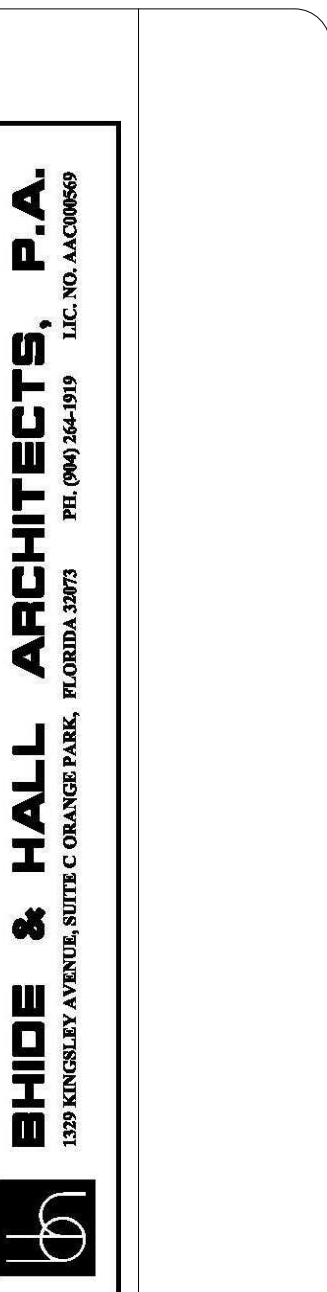
- 1.1 EXISTING DIMENSIONS INDICATED ARE APPROXIMATE. THE CONTRACTOR SHALL FIELD VERIFY FINAL DIMENSIONS FOR EQUIPMENT AND MILLWORK INSTALLATION.
- 1.2 PRIOR TO DEMOLITION, THE CONTRACTOR SHALL MEET WITH THE OWNER AND ARCHITECT TO DETERMINE ANY MATERIALS AND EQUIPMENT THAT ARE INTENDED FOR SALVAGE. THE CONTRACTOR SHALL REMOVE SALVAGED MATERIALS AND EQUIPMENT AS CAREFULLY AS POSSIBLE AND PLACE IN STORAGE LOCATION AS DIRECTED BY THE OWNER. THE CONTRACTOR SHALL REMOVE FROM THE SITE AND DISPOSE OF THE REMAINING MATERIALS OF DEMOLITION IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL ORDINANCES.
- 1.3 THE CONTRACTOR SHALL NOTIFY THE ARCHITECT UPON DISCOVERY, OF ANY CONDITIONS IN EXISTING MATERIALS OR STRUCTURE WHICH MAY ADVERSELY AFFECT THE EXECUTION, PERFORMANCE OR QUALITY OF THE FINAL RESULT.
- 1.4 THE CONTRACTOR SHALL PROVIDE BARRICADES TO RESTRICT AND PROTECT THE PUBLIC FROM THE AREAS OF THE WORK. THE CONTRACTOR SHALL PROTECT FROM DAMAGE ALL EXISTING IMPROVEMENTS, EQUIPMENT AND UTILITIES AT OR NEAR THE SITE OF THE WORK. THE CONTRACTOR SHALL REPAIR OR RESTORE ANY DAMAGE TO SUCH ITEMS AND UTILITIES RESULTING FROM THE PERFORMANCE OF THE WORK.
- 1.5 THE CONTRACTOR SHALL PROVIDE SECURE STORAGE FOR ALL MATERIALS AND EQUIPMENT INVOLVED IN THIS PROJECT. THE SECURE AREA SHALL PROTECT MATERIALS AND EQUIPMENT FROM THEFT, VANDALISM AND FROM CAUSING PERSONAL INJURY. NO EQUIPMENT OR MATERIALS WILL BE LEFT UNATTENDED OR UNSECURED.
- 1.6 THE WORK AREA AND ALL ADJACENT SPACES SHALL BE UN-OCCUPIED DURING THE COURSE OF CONSTRUCTION. THE CONTRACTOR SHALL MAINTAIN A SAFE WORKSITE AT ALL TIMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY AND THE SECURITY OF THE PROJECT SITE DURING THE COURSE OF CONSTRUCTION.
- 1.7 THE FIRE ALARM AND SECURITY SYSTEM SHALL NOT BE IN OPERABLE CONDITION DURING CONSTRUCTION. THE CONTRACTOR SHALL ONLY MAKE MODIFICATIONS TO THE FIRE ALARM SYSTEM THROUGH AN APPROVED FIRE ALARM CONTRACTOR THAT IS FAMILIAR WITH THE SYSTEM. THE CONTRACTOR SHALL UTILIZE THE OWNERS PROVIDED SECURITY SYSTEM VENDOR FOR ANY MODIFICATIONS TO THE EXISTING SYSTEM.
- 1.8 INTERRUPTION OF SERVICES: INTERRUPTION OF ANY UTILITIES WILL BE ALLOWED ONLY WITH PRIOR WRITTEN APPROVAL FROM THE OWNER OR ARCHITECT.
- 1.9 THE CONTRACTOR IS RESPONSIBLE FOR DAMAGE TO THE EXISTING BUILDING AND ITS CONTENTS AS A RESULT OF THE CONSTRUCTION AND SHALL MAKE GOOD ANY DAMAGE. THE CONTRACTOR SHALL MAKE A SURVEY OF THE INTERIOR CONDITIONS PRIOR TO THE START OF WORK AND SHALL INCLUDE THE OWNER AND ARCHITECT AS A PART OF THAT SURVEY. PROVIDE PHOTO DOCUMENTATION FOR PROOF OF EXISTING CONDITIONS.
- 1.10 CLEANING: THE CONSTRUCTION AREA SHALL BE CLEANED DAILY. MISCELLANEOUS MATERIALS SHALL BE REMOVED FROM THE CONSTRUCTION AREA AND THE AREA SHALL BE VACUUMED AT THE END OF EACH WORK SHIFT. THIS INCLUDES AREAS IN PUBLIC PASSAGE WAY THAT ARE AFFECTED DUE TO THE CONSTRUCTION ACTIVITY.
- 1.11 IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE SEQUENCE OF CONSTRUCTION, AND TO MAINTAIN PROJECT SAFETY.
- 1.12 REPAIR AND REPAINT ANY DAMAGE TO INTERIOR OR EXTERIOR FINISHES TO MATCH ADJACENT SURFACES. REPLACE DAMAGED CEILING TILES IF IMPACTED DURING MECHANICAL ADJUSTMENT TO EXISTING HOOD UNITS. ANY TILES THAT ARE DEEMED AS UNACCEPTABLE BY THE ARCHITECT SHALL BE REPLACED BEFORE FINAL ACCEPTANCE.
- 1.13 THE DRAWINGS ARE GRAPHIC REPRESENTATIONS OF EXISTING CONDITIONS, DIMENSIONS, SIZES, QUANTITIES AND LOCATIONS OF EXISTING WALLS, CEILINGS, FINISHES AND EQUIPMENT SHALL BE VERIFIED BY THE CONTRACTOR.
- 1.14 SUBMIT SHOP DRAWINGS FOR ALL MATERIALS AND EQUIPMENT FOR REVIEW AND APPROVAL.
- 1.15 THE CONTRACTOR SHALL MAINTAIN ACCURATE RECORDS OF ANY MODIFICATIONS TO SYSTEMS AND SHALL UPON COMPLETION, DELIVER MECHANICAL, PLUMBING AND ELECTRICAL "AS-BUILT" DRAWINGS TO THE OWNER, INDICATING ANY SUCH CHANGES.
- 1.16 PRIOR TO THE FINAL INSPECTION THE CONTRACTOR SHALL COMPLETE THE FOLLOWING:
 - A. REPAIR OR REPLACE DEFECTIVE OR DAMAGED PRODUCTS OR AREAS DAMAGED BY THE CONTRACTOR DUE TO THE CONSTRUCTION ACTIVITIES.
 - B. REMOVE ALL STAINS, SPOTS, MARKS, AND DIRT FROM FINISHED SURFACES. CLEAN IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
 - C. REPLACE MECHANICAL EQUIPMENT FILTERS.
 - E. REMOVE ALL DEBRIS FROM SITE AND FOLLOW ALL FEDERAL, STATE, AND LOCAL REQUIREMENTS FOR DISPOSAL OF DEBRIS AS REQUIRED, DRY AND/OR WET VACUUM AS REQUIRED, CLEAN INSIDE OF CABINETS, CLEAN BEHIND ALL EQUIPMENT.

EXISTING CONDITIONS

- 2.1 DEMOLITION:
 - 2.1.1 DEMOLISH ONLY THOSE ITEMS AND SYSTEMS AS NECESSARY TO COMPLETE THE WORK AS DESCRIBED IN THE CONTRACT DOCUMENTS.
 - 2.1.2 THE EXISTING FIRST FLOOR SPACE AND SECOND FLOOR (NOT IN CONTRACT) ARE NON-OPERATIONAL AND WILL NOT BE IN USE DURING CONSTRUCTION. THE CONTRACTOR ACTIVITIES SHALL BE COORDINATED AND SCHEDULED WITH THE OWNER AND ARCHITECT. CONTRACTOR SHALL MAINTAIN SECURITY AND SAFETY OF WORK SPACE AT ALL TIMES.
- 2.1.3 DEBRIS HANDLING:
 - A. ALL DEBRIS SHALL BE REMOVED FROM THE SITE ON A DAILY BASIS. COORDINATION OF A DUMPSTER AND ITS PLACEMENT SHALL BE COMPLETED PRIOR TO THE START OF WORK. COORDINATE WITH OWNER.
 - B. PROTECT ALL EXISTING CONDITIONS TO REMAIN.
 - C. ALL DUST GENERATING ACTIVITIES IN THE SPACE SHALL BE CONTROLLED. THE CONTRACTOR SHALL LIMIT DUST GENERATING ACTIVITIES, AS POSSIBLE.
 - D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING AND/OR REPLACING ITEMS, INCLUDING EQUIPMENT THAT IS DAMAGED DUE TO CONSTRUCTION AND/OR DEMOLITION ACTIVITIES.
 - E. THE CONTRACTOR SHALL ABIDE BY ALL FEDERAL, STATE, AND LOCAL HAULING AND DISPOSAL REGULATIONS.
 - F. UPON START OF DEMOLITION, THE OWNER SHALL BE GIVEN THE OPPORTUNITY TO SALVAGE ANY MATERIALS FOR THEIR USE. THE OWNER MAY DESIGNATE ITEMS TO BE STORED ON SITE IN SPECIFIC LOCATIONS. THE CONTRACTOR IS REQUIRED TO TRANSPORT SAID ITEMS AS REQUIRED.
 - G. AT THE CONCLUSION OF THE DEMOLITION ACTIVITIES, THE CONTRACTOR SHALL THOROUGHLY CLEAN THE AREA.

2.2 CUTTING AND PATCHING:

- 2.2.1 INCLUDES CUTTING INTO EXISTING CONSTRUCTION TO PROVIDE FOR THE INSTALLATION OR PERFORMANCE OF OTHER WORK AND SUBSEQUENT FITTING AND PATCHING REQUIRED TO RESTORE SURFACES TO THEIR ORIGINAL CONDITIONS.
 - A. CUTTING: CUT THE WORK USING METHODS THAT ARE LEAST LIKELY TO DAMAGE WORK TO BE RETAINED OR ADJOINING WORK. TEMPORARILY COVER OPENINGS WHEN NOT IN USE. CUT OFF CONDUIT IN WALLS TO BE REMOVED OR ABANDONED. AFTER BY-PASS AND CUTTING, CAP OR PLUG AND SEAL TIGHT EXISTING CONDUIT.
 - B. PATCHING: PATCH WITH SEAMS WHICH ARE DURABLE AND AS INVISIBLE AS POSSIBLE. COMPLY WITH SPECIFIED TOLERANCES FOR WORK. RESTORE EXPOSED FINISHES OF PATCHED AREAS TO MATCH THE ADJACENT SURFACE. PATCH FLOOR AND WALL SURFACES AS REQUIRED TO PROVIDE AN EVEN SURFACE OF UNIFORM COLOR AND APPEARANCE.



DR. HWANG MARINO
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Orange Park, Florida 32073

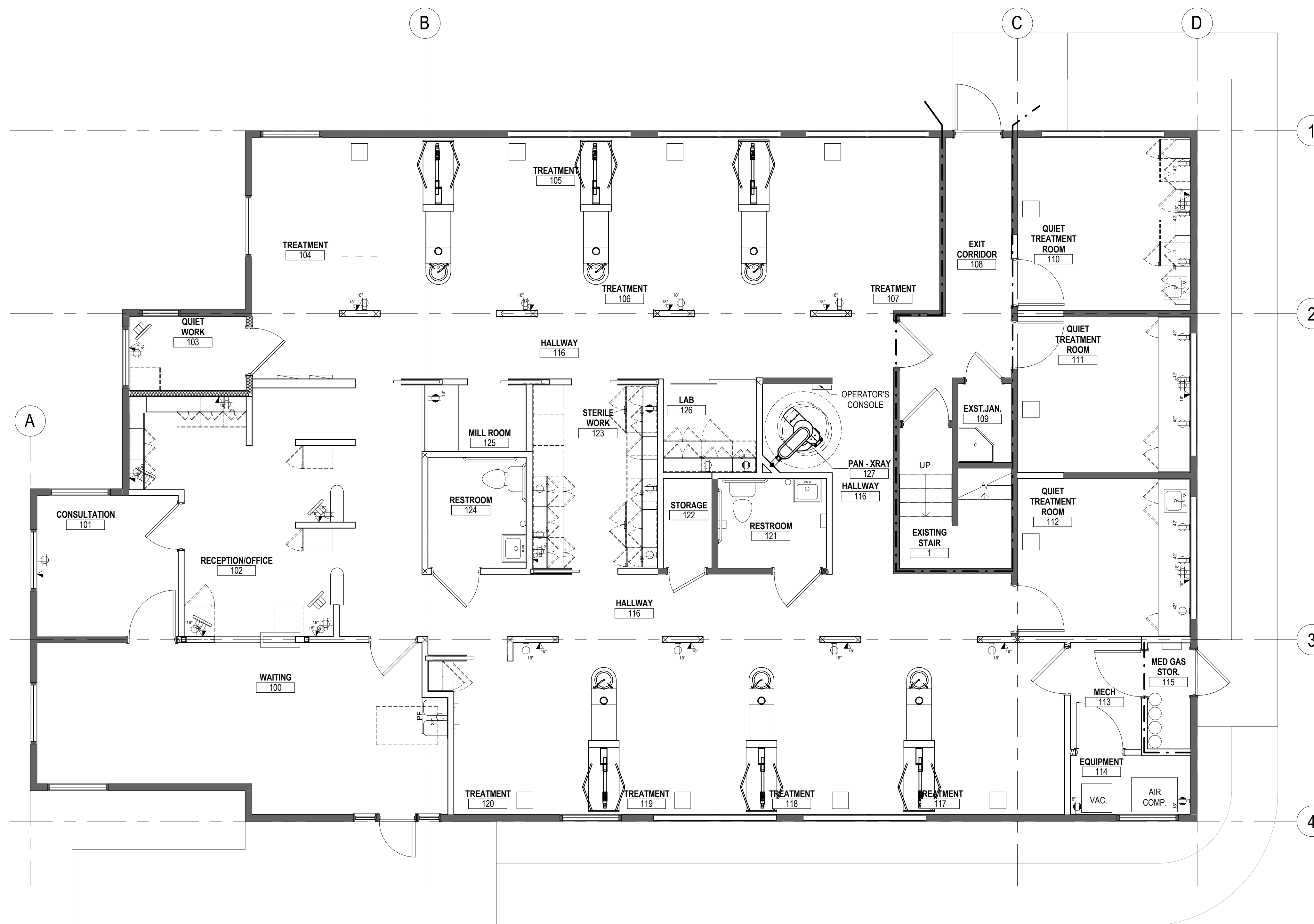
ARCHITECT	LICENSE NO.
DAVID S. SHIVELY	FL # 0099028

Date	Revision	Seal / Signature
12/20/2019	1 FOR CONSTRUCTION	

ARCHITECTURAL SPECIFICATIONS

DATE:	12/19/19
D.B.:	DSS
C.B.:	-
JOB NO.:	19404

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1 LEVEL 1 - SCHEMATIC DESIGN
 SCALE: 1/4" = 1'-0"

GENERAL CODE SUMMARY

ADDRESS: 2045 PROFESSIONAL CENTER DRIVE, ORANGE PARK, FL 32073
 PROJECT DESCRIPTION: THIS PROJECT IS FOR AN INTERIOR RENOVATION OF AN EXISTING B-OCCUPANCY MEDICAL CLINIC.

BUILDING CODES:

FLORIDA EXISTING BUILDING CODE 6TH EDITION (2017)
 FLORIDA PLUMBING CODE (2017)
 FLORIDA MECHANICAL CODE (2017)
 NATIONAL ELECTRIC CODE (2014) - NFPA 70
 FLORIDA FIRE PREVENTION CODE (2017)
 NFPA 1: FIRE CODE
 NFPA 101: LIFE SAFETY CODE
 ENERGY CONSERVATION CODE (2017)
 FLORIDA FUEL, GAS CODE (2017)

EXISTING BUILDING TYPE: **TYPE V-B, NON-SPRINKLERED**

OCCUPANCY: **BUSINESS (B)**

AREA OF WORK:
 LEVEL 1: 2,850 SF
 LEVEL 2: 813 SF (NOT IN SCOPE)

ALTERATION - LEVEL 3: > 50% OF THE AGGREGATE FLOOR AREA, FLORIDA EXISTING BUILDING CODE, SECTION 505

NOTE: NO EXTERIOR WORK TO THE EXISTING ROOF OR ROOF FRAMING IS IN THE PROJECT SCOPE.

NOTE: INTERIOR CEILING SUPPORTED TRACK ASSEMBLIES FOR EXAM LIGHTING AND MONITOR SUPPORTS ARE TO BE SUPPORTED BY CEILING AND NOT THE ROOF STRUCTURE. THE MANUFACTURED DESIGN DEAD LOAD FOR FULLY LOADED CEILING TRACKS IS 157LBS OR 25 PSF. THIS DOES NOT INCREASE THE FORCE IN THE ELEMENT BY MORE THAN 5% (SECTION 706.2 EXCEPTION 1).

ROOMS 2204, 2203A, 2203B, AND 2203C ARE LESS THAN 50 OF OCCUPANTS
 1 PATH OF EGRESS REQUIRED

COMPUTER LAB 2203A
 447 SF / 20 SF = 22
 1 PATH OF EGRESS REQUIRED
 1 PROVIDED

COMPUTER LAB 2203B
 235 SF / 20 SF = 11
 1 PATH OF EGRESS REQUIRED
 1 PROVIDED

SERVER ROOM 2203C
 ACCESSORY/EQUIPMENT 156 SF / 100SF = 1
 1 PATH OF EGRESS REQUIRED
 1 PROVIDED

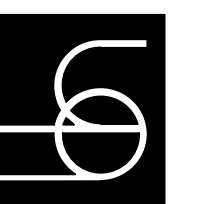
EXIT CAPACITY:
 VESTIBULE 2201:
 EXIT: 50% FROM CLASSROOM 2202, 50% FROM CLASSROOM 2203, 100% FROM WORKROOM 2204
 TOTAL CAPACITY = 34 + 18 + 9 = 61 TOTAL

CLASSROOM 2202
 EXIT A: 50% OF TOTAL = 34 TOTAL
 EXIT B: 50% OF TOTAL = 34 TOTAL
 (EXISTING DOOR HAS PANIC DEVICE FOR FREE EGRESS)

PATH OF TRAVEL:
 MAXIMUM TRAVEL DISTANCE TO EXIT: 150' NON-SPRINKLERED
 EGRESS WIDTH:
 OTHER EGRESS COMPONENTS: PER PERSON SERVED: 2 INCHES
 STAIRS: PER PERSON SERVED: 3 INCHES (MIN 44 INCHES)
 MINIMUM CORRIDOR WIDTH: 44 INCHES
 MINIMUM CLEAR OPENING OF EXIT DOORS: 32 INCHES
 MINIMUM STAIR WIDTH: 44 INCHES

PATH 1
 46' - 0" DISTANCE TO EXIT (<150'-0" OK)

PATH 2
 49' - 6" DISTANCE TO EXIT (<150'-0" OK)



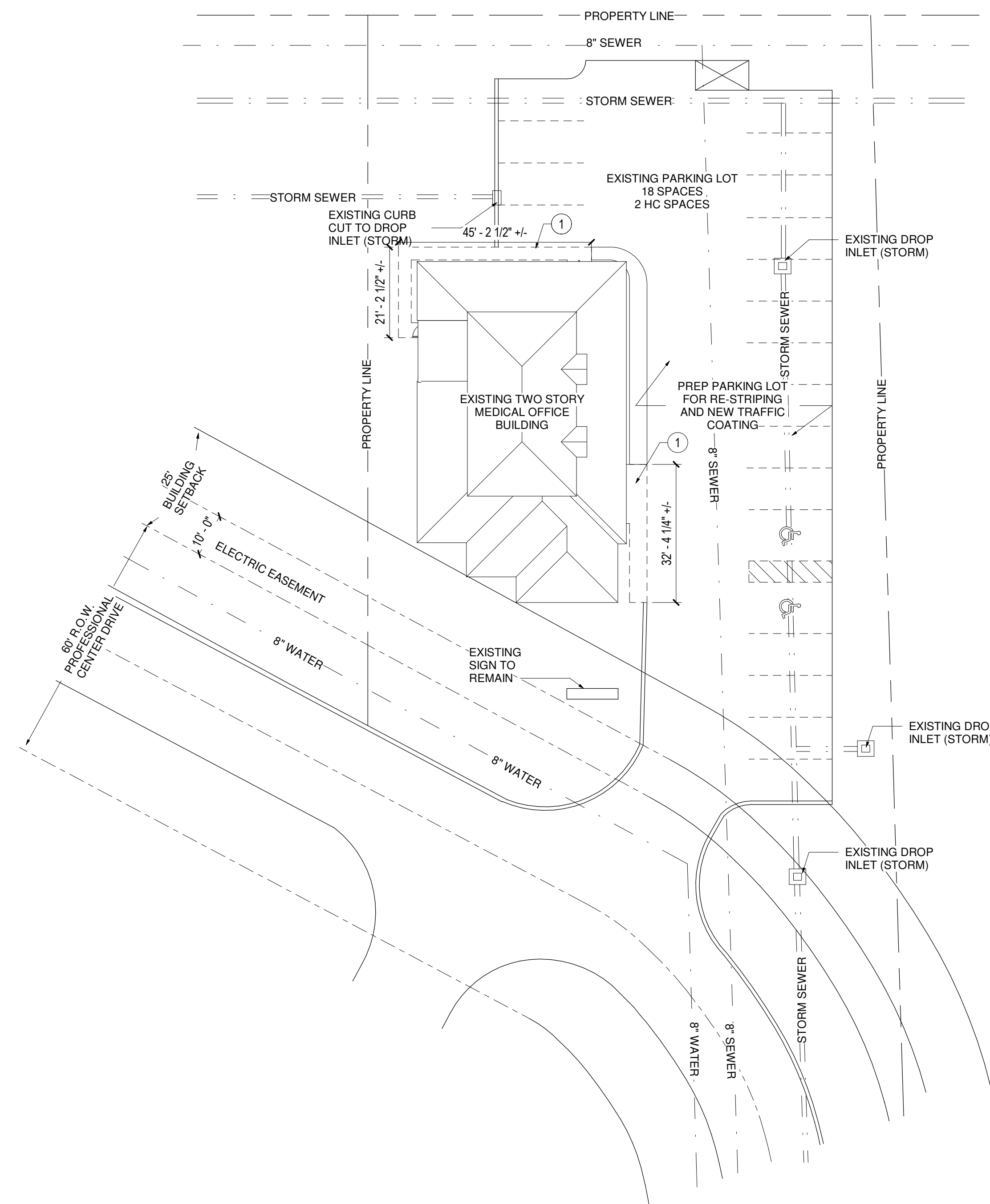
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LIFE SAFETY AND CODE COMPLIANCE

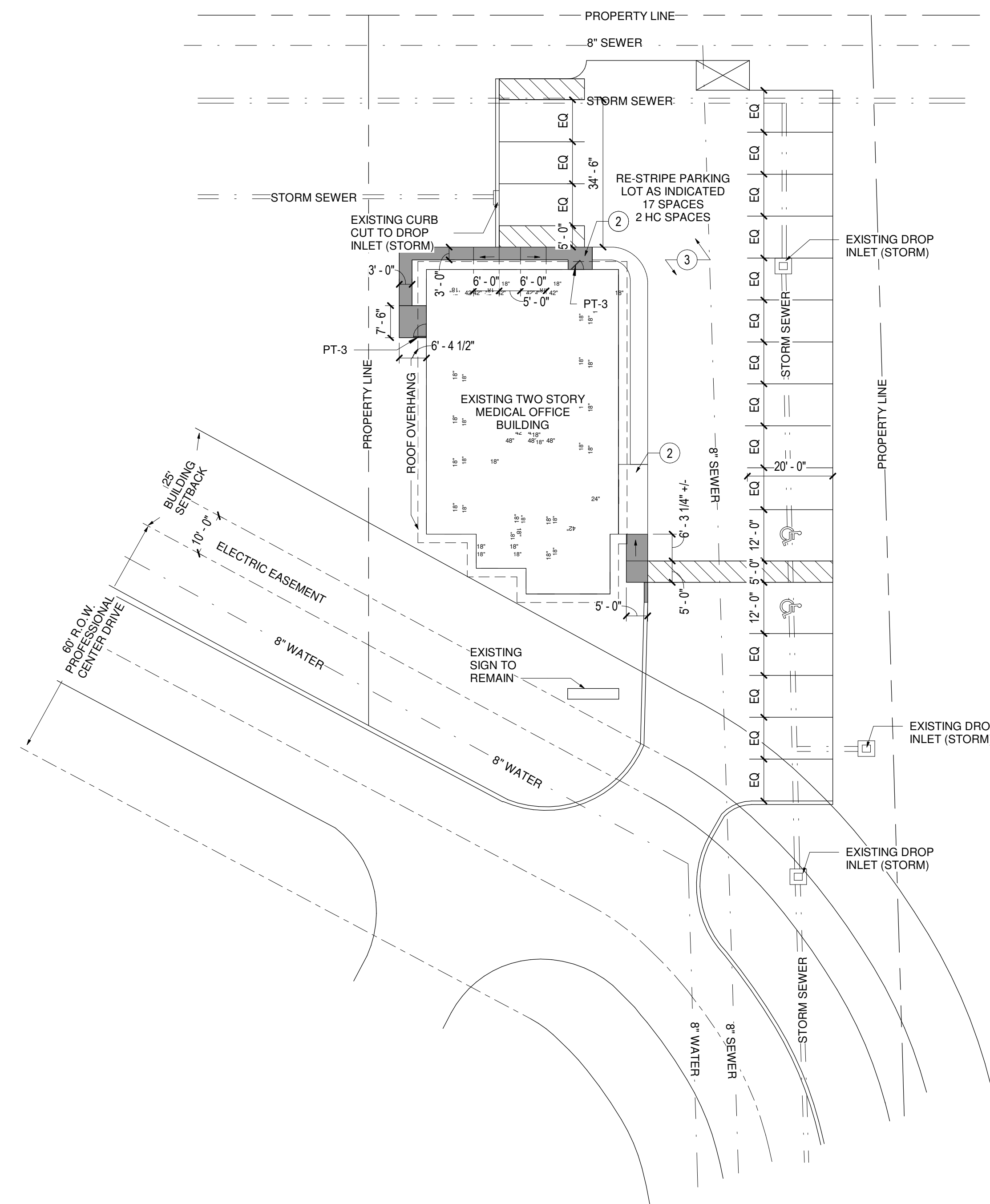
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C.B.:	EWI
JOB NO.:	19040

LS-1
 FOR CONSTRUCTION

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1 EXISTING ARCHITECTURAL SITE PLAN
SCALE: 1" = 20'-0"

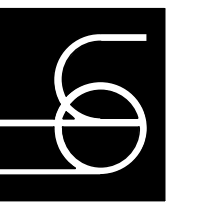


2 NEW ARCHITECTURAL SITE PLAN
SCALE: 1" = 20'-0"

GENERAL NOTES

1. EXISTING SIDEWALK TO BE REMOVED. PREP GRADE FOR NEW WALK, INCLUDING NEW CURB CUT AND ADA CURB RAMP.
2. NEW 4" SIDEWALK WITH CURB RAMP. POUR-BACK AND FORM CURB TO MATCH EXISTING AS REQUIRED.
3. EXISTING PARKING LOT TO RECEIVE NEW TRAFFIC COATING (SEAL COAT) AND NEW PARKING STRIPING.

BHIDE & HALL ARCHITECTS, P.A.
1205 BURNING TREE AVENUE, SUITE C, ORANGE PARK, FL 32066
TEL: 904-244-0889
FL LIC. NO. AA-000889



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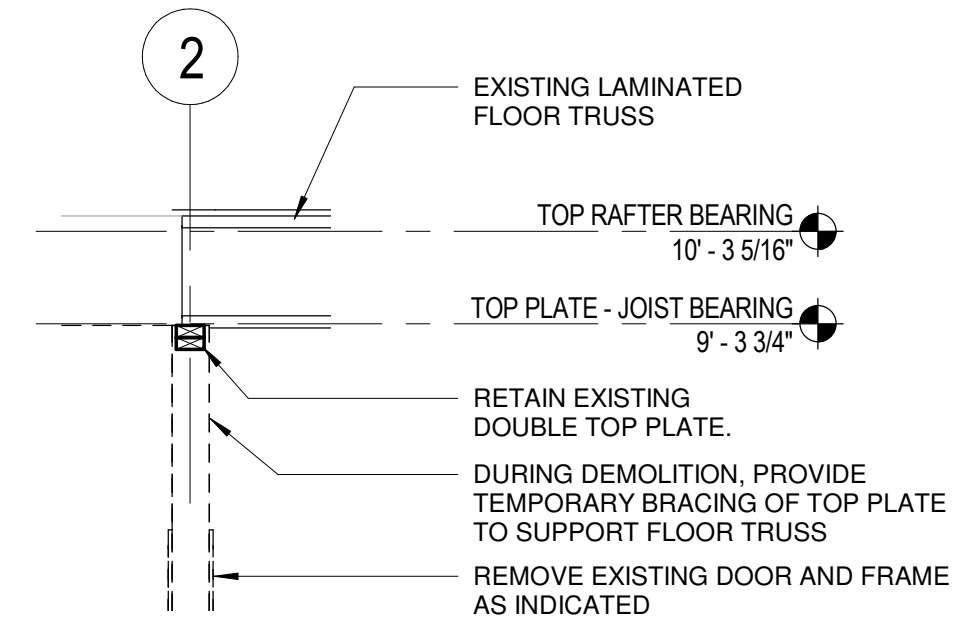
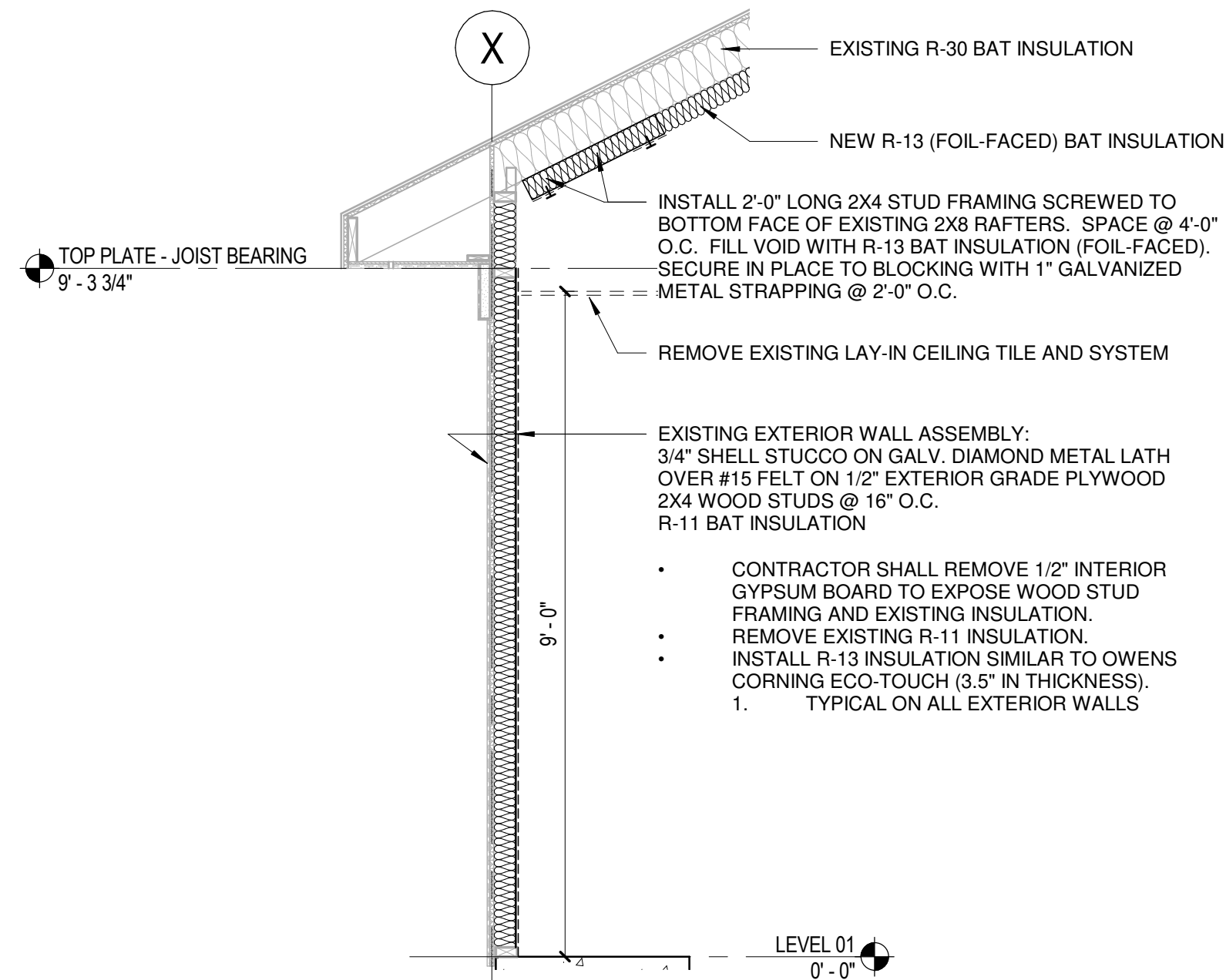
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ARCHITECTURAL SITE PLAN

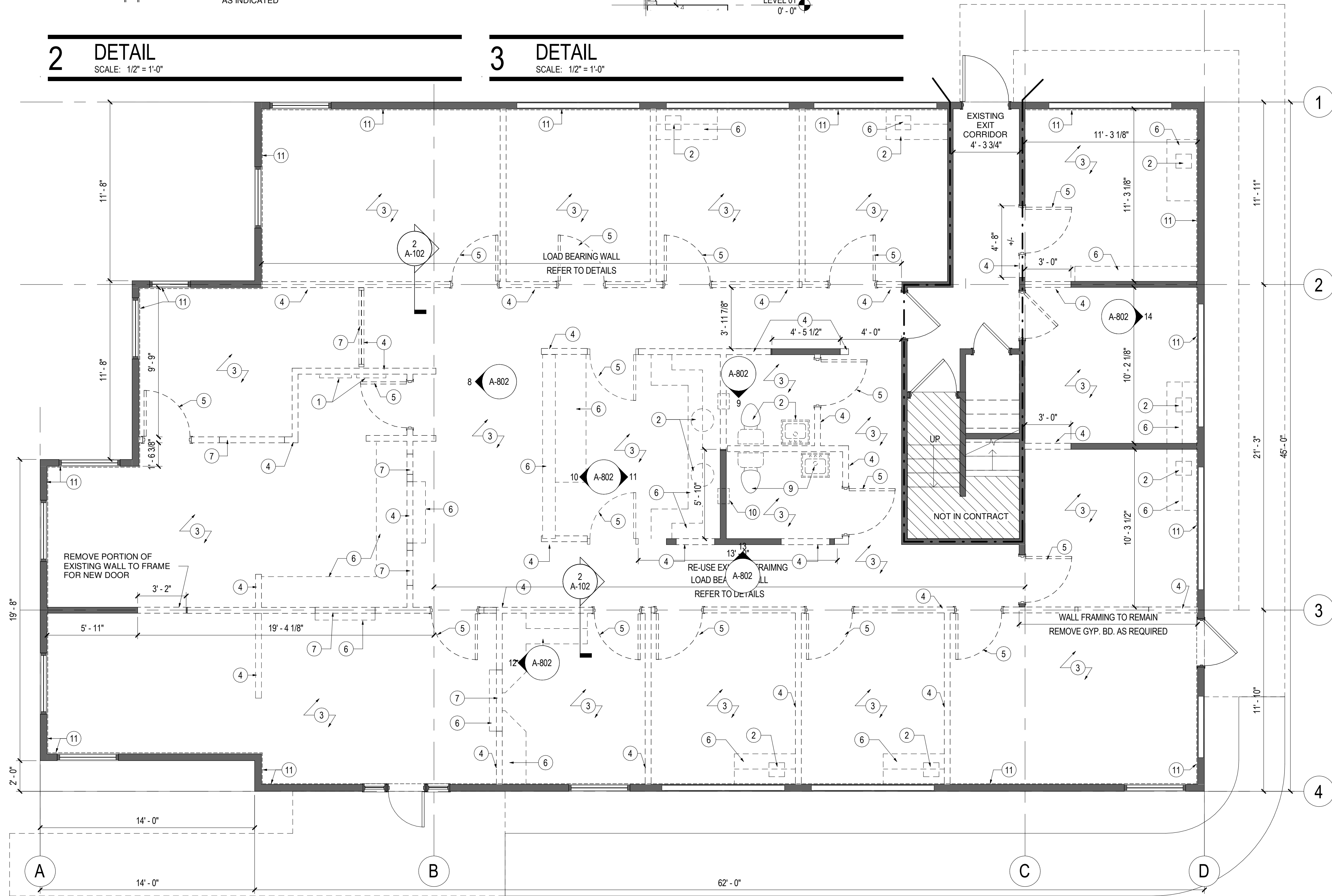
DATE: 10/25/19
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C.B.: DSS
JOB NO: 19040

AS-101
FOR CONSTRUCTION



2 DETAIL
SCALE: 1/2" = 1'-0"

3 DETAIL
SCALE: 1/2" = 1'-0"



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

- DEMOLITION KEY NOTES:**
- REMOVE AND RELOCATE EXISTING ELECTRICAL PANEL. REF: ELEC. DWGS.
 - REMOVE EXISTING PLUMBING FIXTURES. REF: PLBG. DWGS.
 - REMOVE EXISTING LIGHTING FIXTURES CEILING DIFFUSERS AND CEILING MOUNTED EQUIPMENT.
 - REMOVE EXISTING WALLS AS INDICATED.
 - REMOVE EXISTING DOOR AND FRAME.
 - REMOVE EXISTING CASEWORK AND COUNTERTOP.
 - REMOVE EXISTING WINDOW AND FRAME.
 - REMOVE EXISTING FLOOR FINISH AND PREP SLAB FOR NEW FINISHES AS SCHEDULED.
 - REMOVE EXISTING PLUMBING FIXTURES AND PREP EXISTING LINES FOR NEW ADA RESTROOM LAYOUT (SEE NEW PLAN)
 - EXISTING SPECIMEN PASS-TRU TO BE REMOVED AND VOID IN WALL SHALL BE PATCHED.
 - EXTERIOR WALLS - REMOVE DRYWALL AND INSULATION.

- LEGEND:**
- EXISTING TO BE REMOVED
 - EXISTING TO REMAIN
 - ⊗ DEMOLITION TAG, REFER TO DEMOLITION KEY NOTES
 - ≡ EXISTING 1-HOUR FIRE RATED WALL TO REMAIN

GENERAL NOTES

- REMOVE EXISTING FLOOR FINISHES. THIS INCLUDES REMOVAL OF ALL EXISTING FLOOR MASTIC. PREP FLOOR SURFACES TO RECEIVE THE SPECIFIED/SCHEDULED FINISHES. THIS INCLUDES PROVIDING LOCALIZED FLOOR PATCHING MATERIAL AS REQUIRED TO MEET THE MANUFACTURER'S MINIMUM TOLERANCE FOR INSTALLATION OF MATERIALS.
- COORDINATE WITH THE OWNER ON THE PLACEMENT OF THE DUMPSTER AND SCHEDULE FOR TRASH REMOVAL ON SITE.
- FOR THE REMOVAL OF PORTIONS OF INTERIOR LOAD BEARING WALL FRAMING, REFER TO THE DETAILS THIS PAGE.
- EXTERIOR WALLS: REMOVE EXISTING DRYWALL TO EXPOSE FRAMING. INSULATION SHALL BE REMOVED.



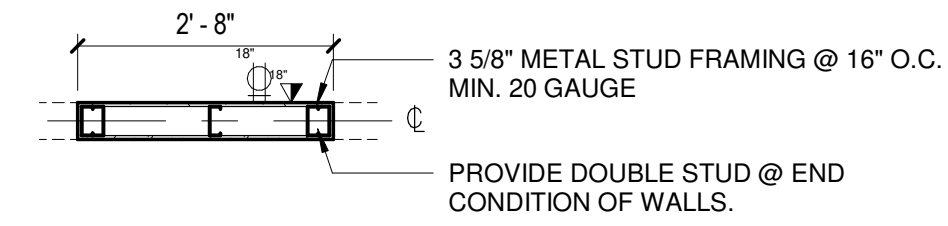
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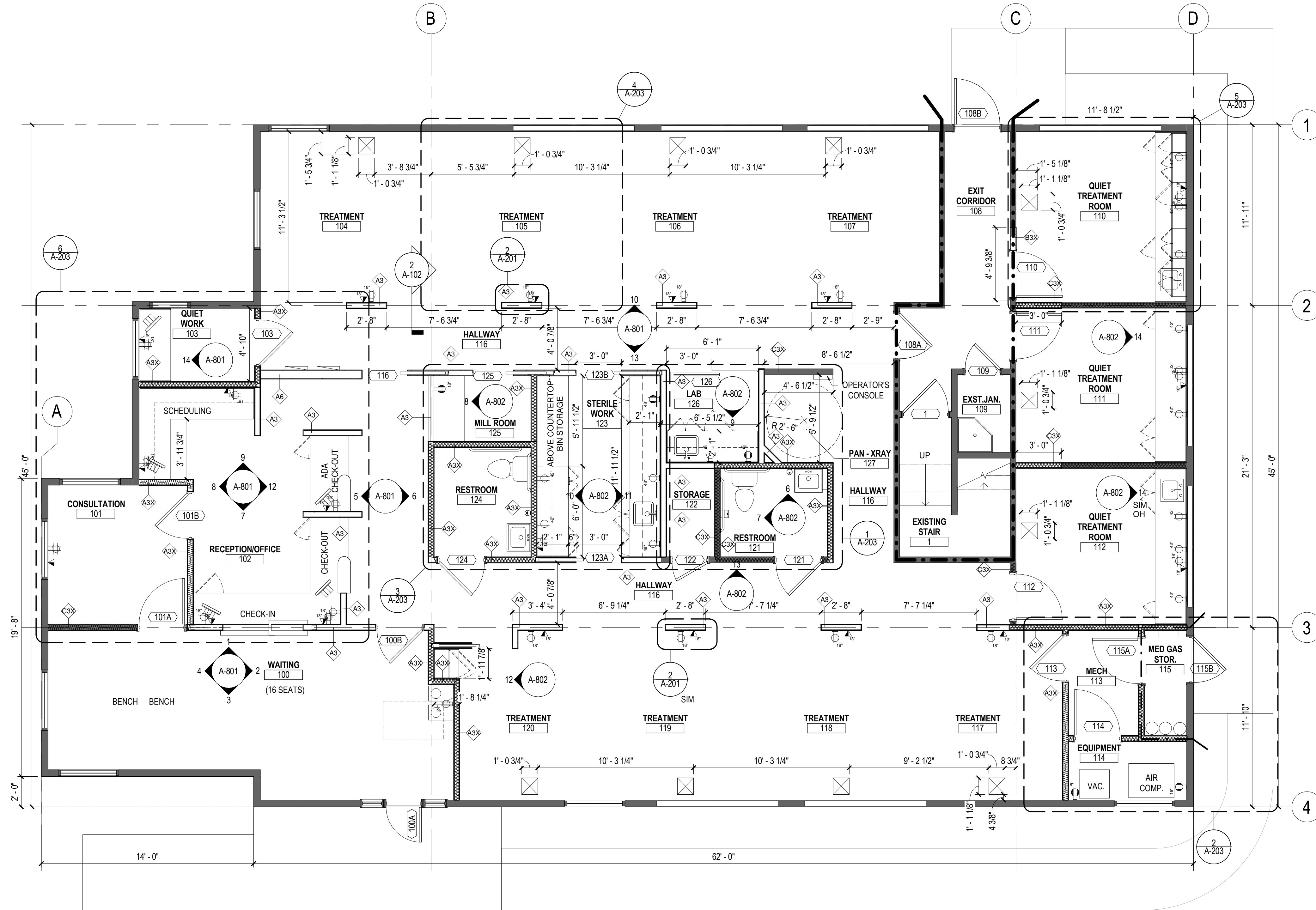
DEMOLITION FLOOR PLAN

DATE:	10/25/19
D.B.:	P.R.L.
C.B.:	D.S.S.
JOB NO.:	19040

SHEET NOTES



2 ENLARGED PLAN DETAIL
SCALE: 1/2" = 1'-0"



GENERAL NOTES

1. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES, LAWS, ORDINANCES, ORDERS, RULES, AND REGULATIONS OF AUTHORITIES HAVING JURISDICTION.
2. CONTRACTOR SHALL OBTAIN AND PAY FOR ANY/ALL PERMITS AND INSPECTIONS REQUIRED BY PUBLIC AUTHORITIES GOVERNING THE WORK EXCEPT AS PROVIDED OTHERWISE IN THE SPECIFICATIONS OR OWNER CONTRACTOR AGREEMENT.
3. REVIEW ALL DOCUMENTS, VERIFY DIMENSIONS AND FIELD CONDITIONS AND CONFIRM THAT WORK IS BUILDABLE AS SHOWN. REPORT ANY/ALL CONFLICTS OR OMISSIONS TO THE ARCHITECT FOR CLARIFICATION PRIOR TO PERFORMING ANY WORK IN QUESTION.
4. COORDINATE WORK WITH THE OWNER, INCLUDING SCHEDULING TIME AND LOCATIONS FOR DELIVERIES, SITE ACCESS, USE OF SERVICES AND FACILITIES. MINIMIZE DISTURBANCE TO SITE.
5. OWNER WILL PROVIDE WORK NOTED "BY OTHERS" OR "NIC" (NOT IN CONTRACT) UNDER SEPARATE CONTRACT. INCLUDE ANY SCHEDULE REQUIREMENTS FOR SUCH WORK IN THE CONSTRUCTION PROGRESS SCHEDULE AND COORDINATE IT WITH THE OWNER TO ASSURE AN ORDERLY SEQUENCE OF INSTALLATION.
6. MAINTAIN WORK AREAS SECURE AND LOCKABLE DURING CONSTRUCTION. COORDINATE THIS WITH THE OWNER TO ENSURE SECURITY.
7. DO NOT SCALE FROM DRAWINGS. THE WRITTEN DIMENSIONS GOVERN. IN THE INSTANCE OF A CONFLICT, CONSULT THE ARCHITECT.

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



LEGEND:

	NEW WALL
	EXISTING TO REMAIN
	NOTE - REFER TO KEY NOTES
	EXISTING 1-HOUR FIRE RATE WALL TO REMAIN



NOT FOR CONSTRUCTION
THESE DRAWINGS ARE RELEASED FOR INTERIM REVIEW ONLY AND ARE NOT INTENDED FOR BIDDING PURPOSES OR FOR REGULATORY REVIEW OR APPROVAL.

Date	Revision

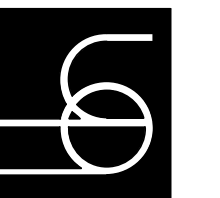
LEVEL 01
DIMENSIONAL CONTROL PLAN

DATE:	10/25/19
D.B.:	PL
C.B.:	DSS
JOB NO.:	19040

A-201
FOR CONSTRUCTION

SHEET NOTES

- EXISTING DRAIN AND SLAB PENETRATION TO BE RE-USED.
- NEW SLAB CUT TO PROVIDE INFRASTRUCTURE FOR DENTAL CHAIR. COORDINATE WITH EQUIPMENT PROVIDER PRIOR TO CUTTING SLAB.
- NEW DRAIN AND SUPPLY CONNECTION FOR DENTAL EXAM MILLWORK. COORDINATE WITH EQUIPMENT PROVIDER AND OR MILL WORK PROVIDER PRIOR TO CUTTING SLAB.
- ALL SLAB OPENINGS AROUND OR AFFECTED BY MECHANICAL, ELECTRICAL, OR PLUMBING EQUIPMENT SHALL BE VERIFIED WITH EQUIPMENT PURCHASED PRIOR TO PROCEEDING WITH WORK.
- COORDINATE LOCATION OF MEDGAS DROP WITH LOCATION OF MANIFOLD.
- FOR VACUUM LINE, COORDINATE LOCATION OF DROP WITH COMPRESSOR IN MECHANICAL EQUIPMENT ROOM.



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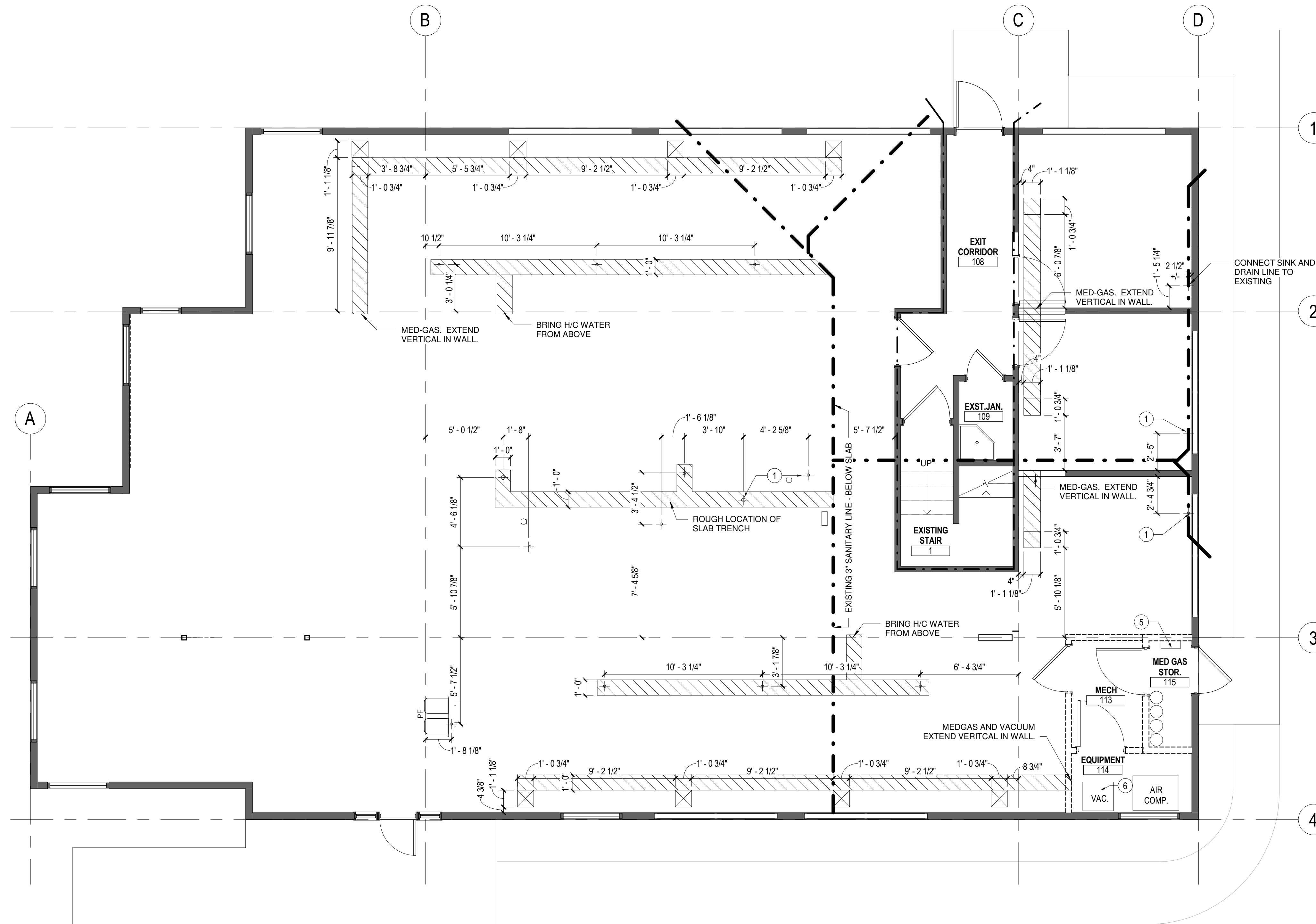
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FLOOR SLAB PLAN

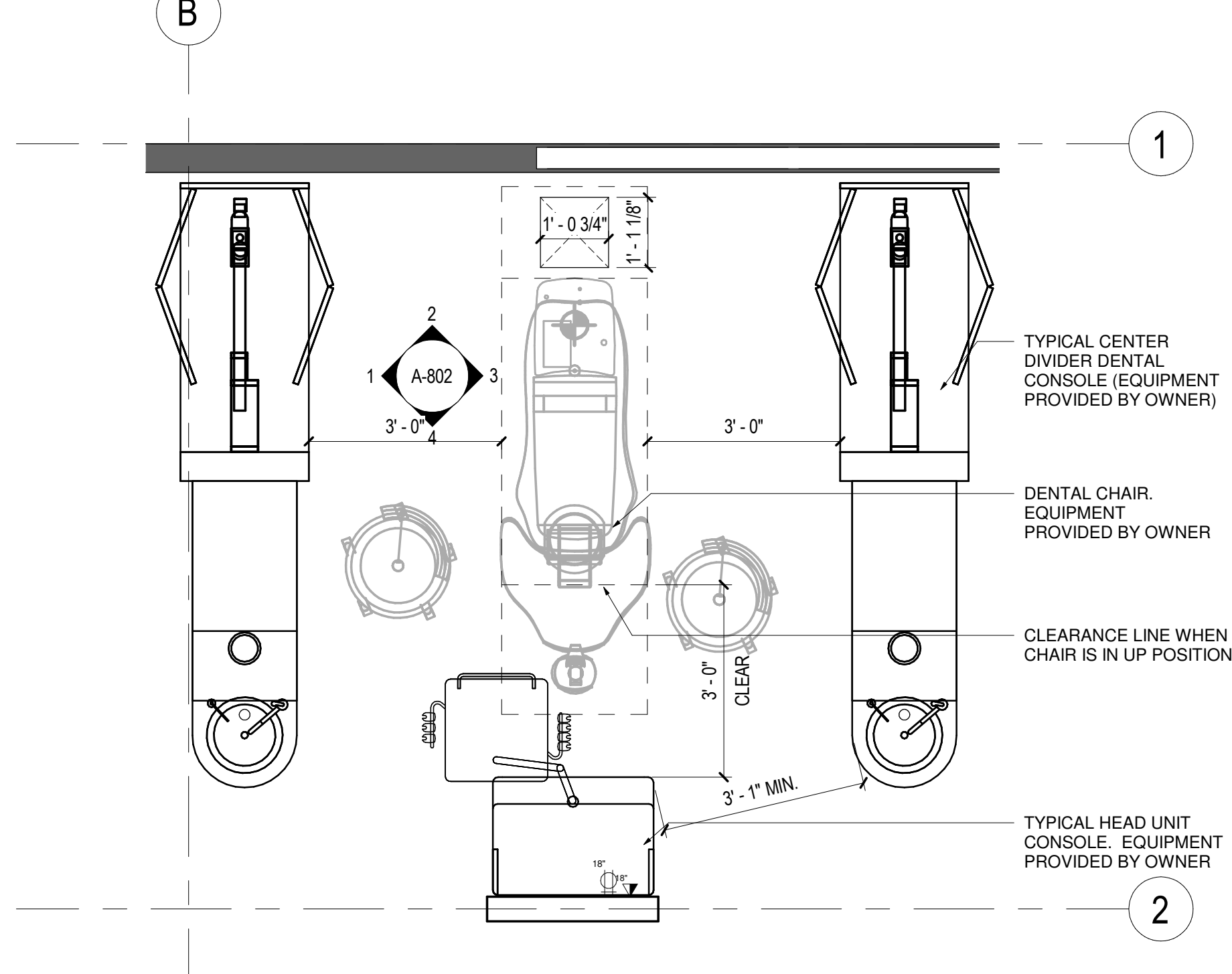
DATE: 10/25/19
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A-202
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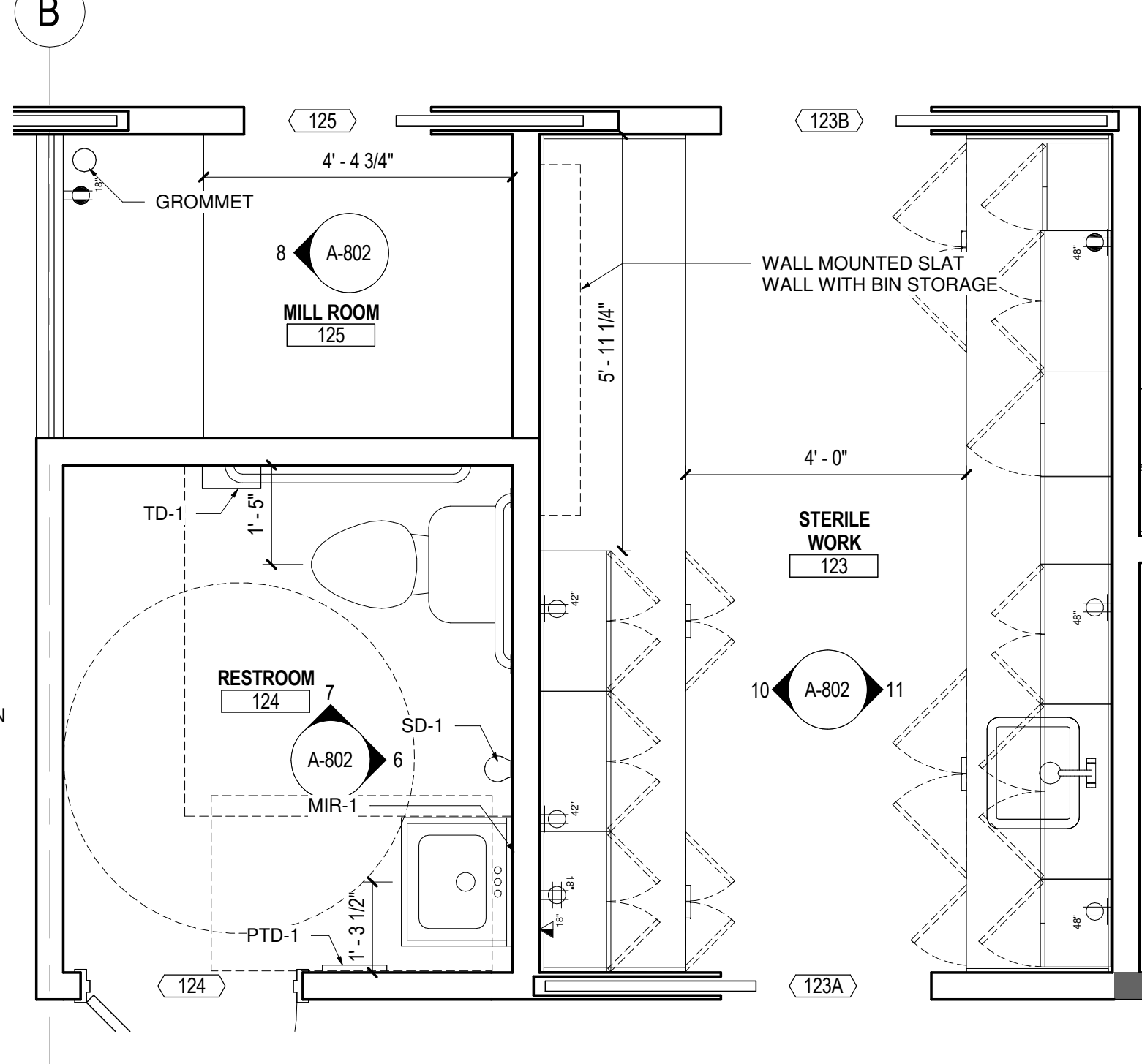


1 LEVEL 1 - SLAB PLAN

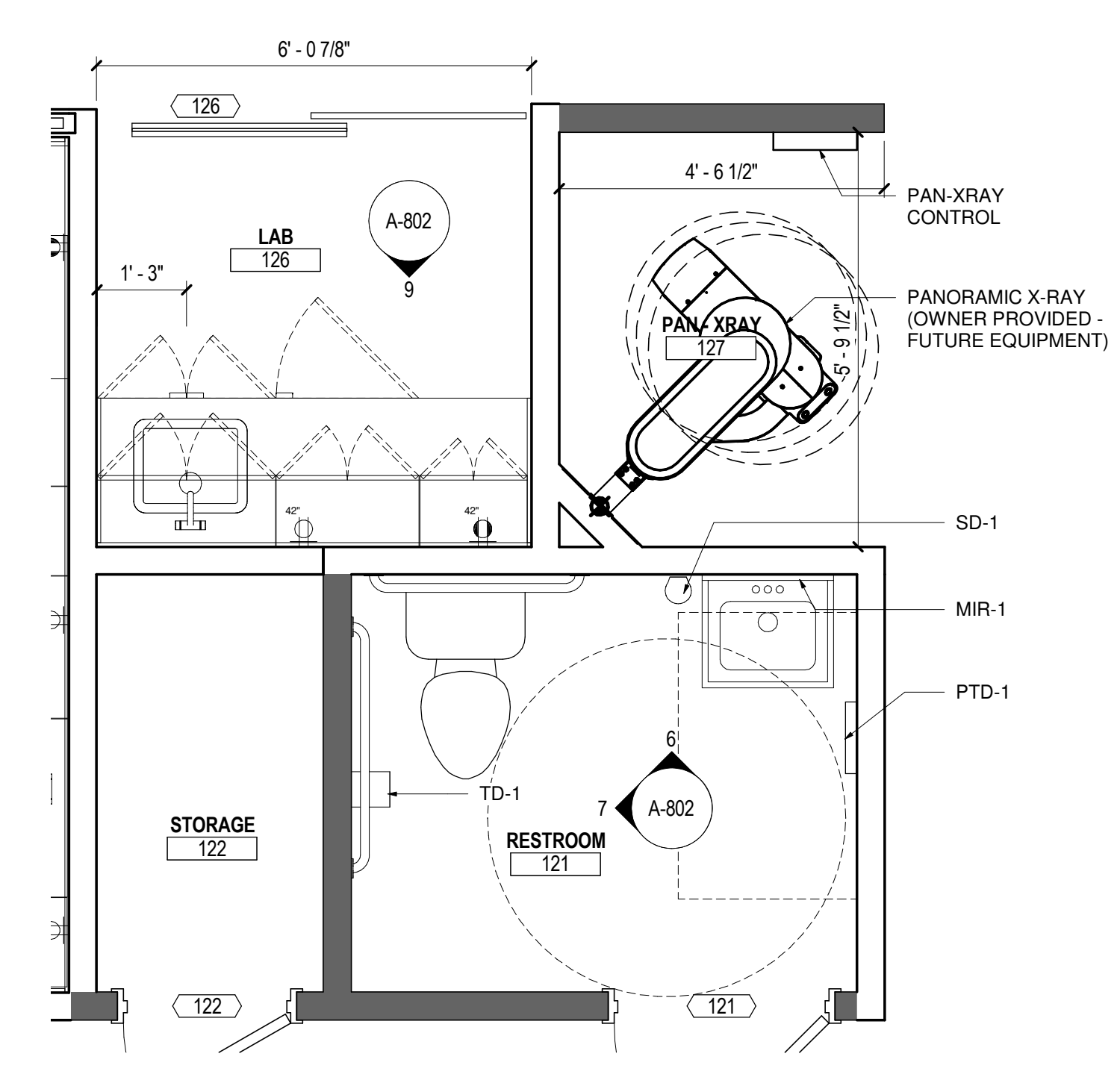
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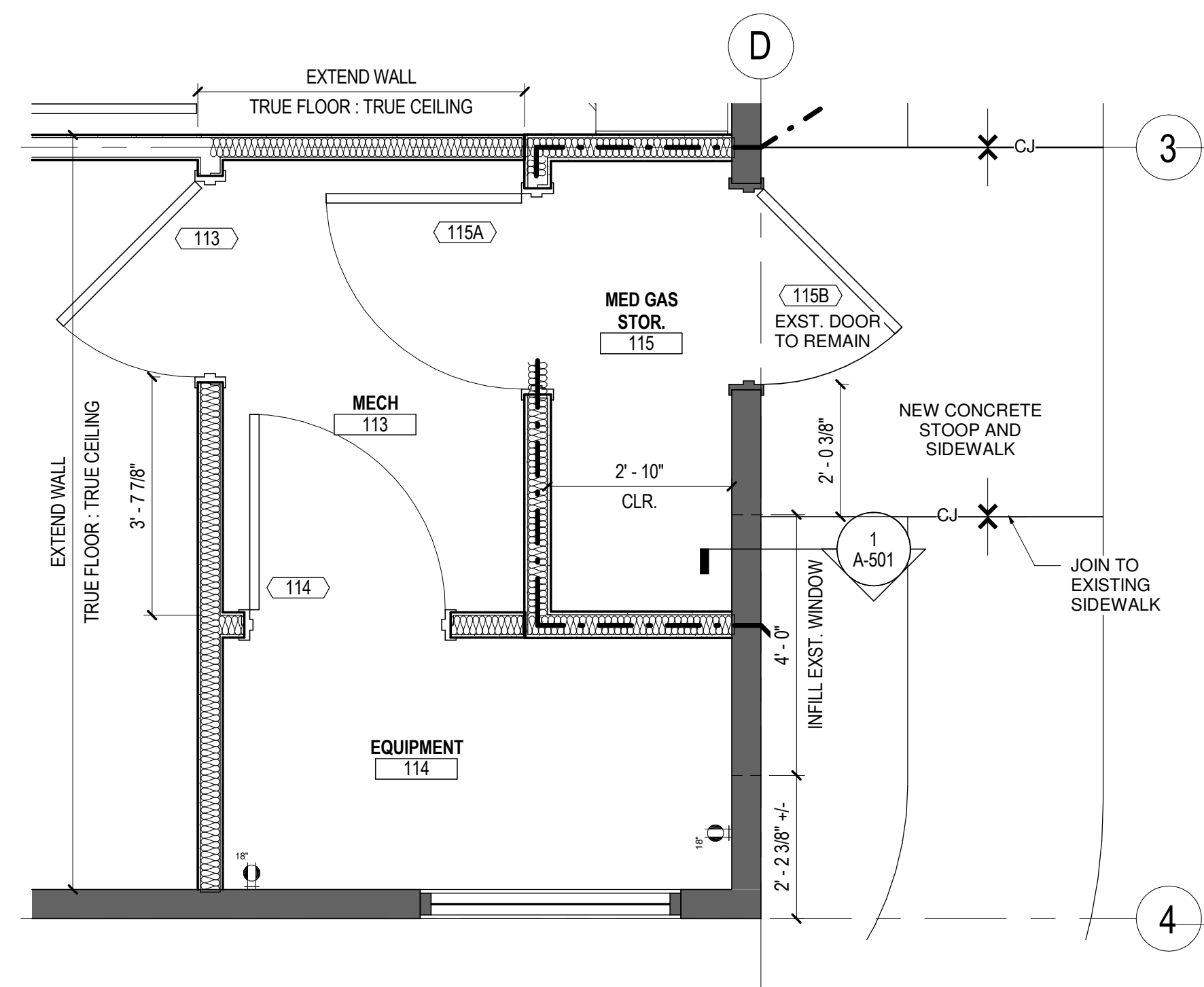
4 ENLARGED PLAN
SCALE: 1/2" = 1'-0"



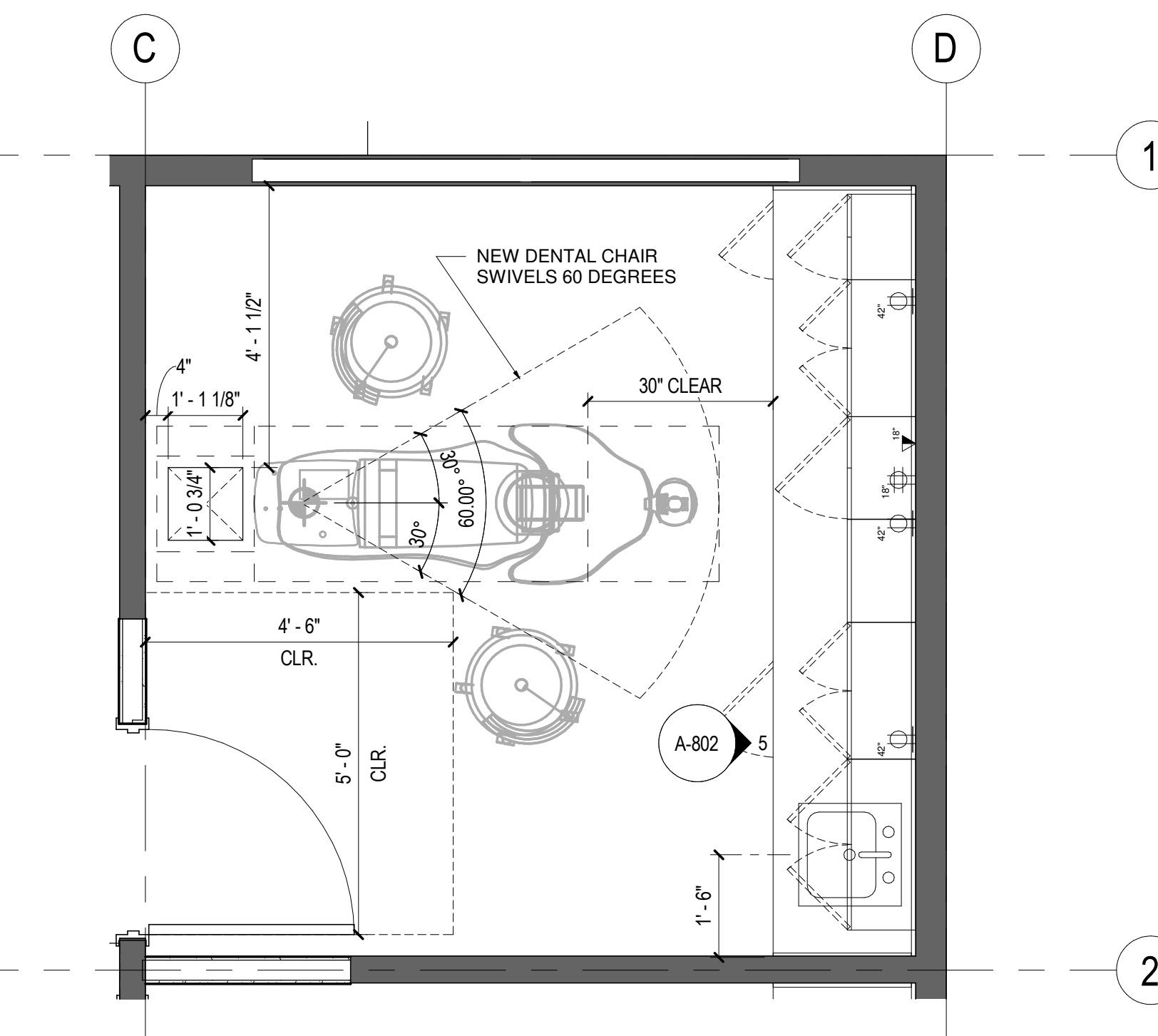
3 ENLARGED PLAN
SCALE: 1/2" = 1'-0"



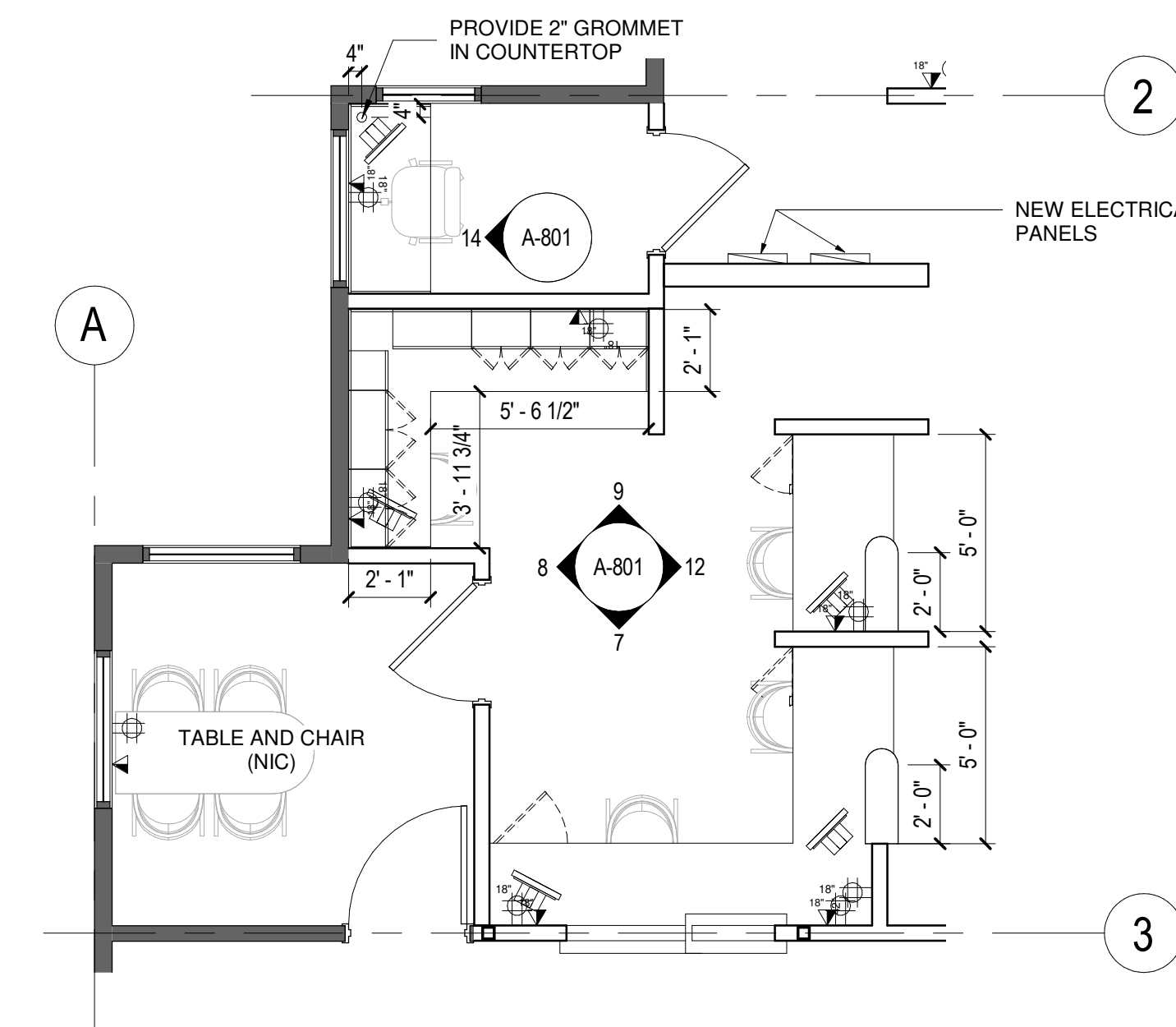
1 ENLARGED PLAN
SCALE: 1/2" = 1'-0"



2 ENLARGED PLAN
SCALE: 1/2" = 1'-0"



5 ENLARGED PLAN
SCALE: 1/2" = 1'-0"



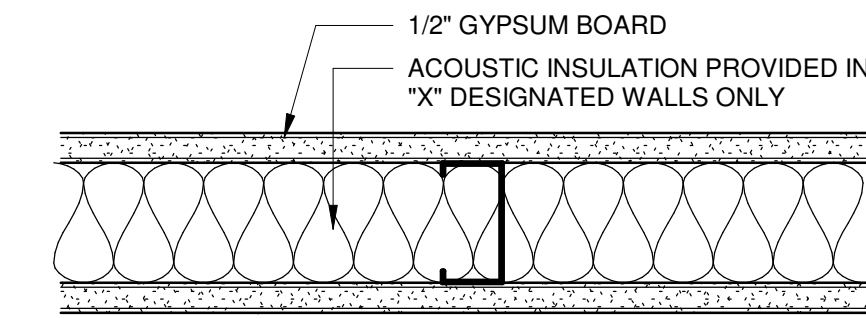
6 ENLARGED PLAN
SCALE: 1/4" = 1'-0"



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ENLARGED INTERIOR PLANS

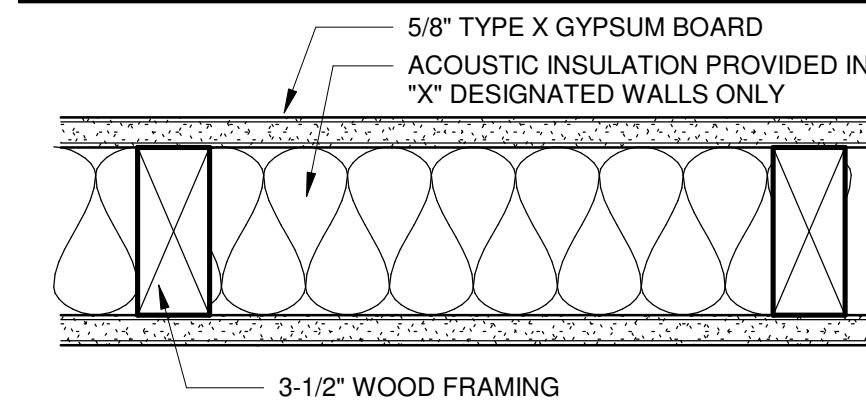
DATE: 10/25/19
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C.B.: DSS
JOB NO: 19040



PARTITION TYPE MARK	FRAMING			DETAILS			FIRE RTG	TESTED ASSEMBLY	STC RTG	SHEET NOTES
	THK (GA)	DEPTH	SPACING	TOP	BOT	ATTN THK				
A3	20	3 5/8"	24	5	6	N/A			45	
A3X	20	3 5/8"	24	5	6	3 1/2"				
A6	20	6"	24	5	6	N/A				

1 TYPE 'A' WALL (TYPICAL)

SCALE: 3" = 1'-0"



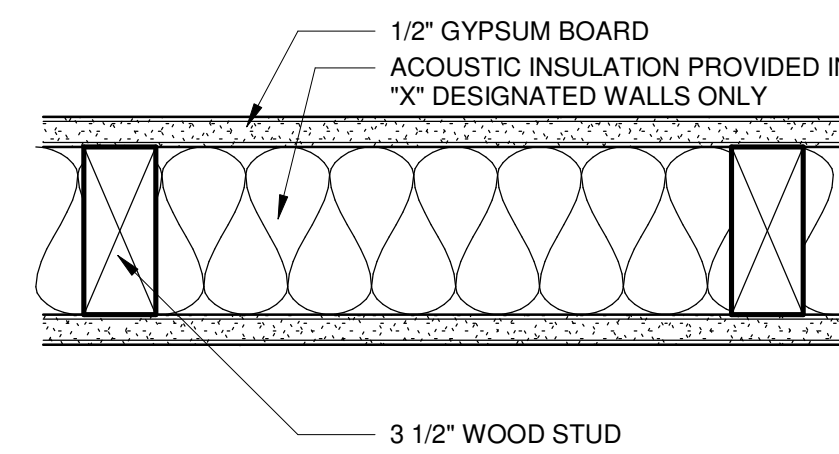
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	DEPTH	SPACING	TOP	BOT					
B3X	3 1/2"	16" O.C.	10	11	3 1/2"	1HR	UL U305 - 1HR	45	

ONE LAYER 5/8" TYPE X GYPSUM BOARD
3-1/2" WOOD STUDS (SPACED @ 16" O.C.)

ACCEPTABLE GYPSUM: CERTAINTED PRO-ROC (ULV450)
USG: FIRECODE CORE 5/8" (UL U419)

2 TYPE 'B' WALL (1 HR RATED)

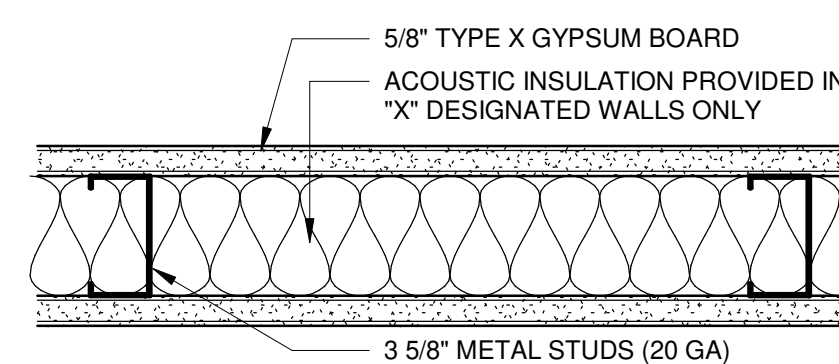
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PARTITION TYPE MARK	FRAMING		DETAILS		ATTN THK	FIRE RTG	TESTED ASSEMBLY	STC RTG	SHEET NOTES
	DEPTH	SPACING	TOP	BOT					
C3X	3 1/2"	24" O.C.	7	8	3 1/2"	NA		45	

3 TYPE 'C' WALL

SCALE: 3" = 1'-0"



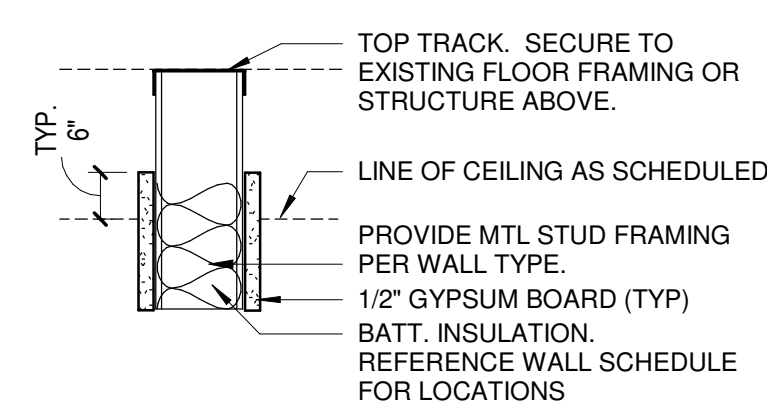
PARTITION TYPE MARK	FRAMING		DETAILS		ATTN THK	FIRE RTG	TESTED ASSEMBLY	STC RTG	SHEET NOTES
	DEPTH	SPACING	TOP	BOT					
D3X-1	3 5/8"	24	11	12	3 1/2"	1HR	UL U419 - 1HR	45	

ONE LAYER 5/8" TYPE X GYPSUM BOARD
3 5/8" 20 GA METAL STUDS (SPACED @ 24" O.C.)

ACCEPTABLE GYPSUM: CERTAINTED PRO-ROC (ULV450)
USG: FIRECODE CORE 5/8" (UL U419)

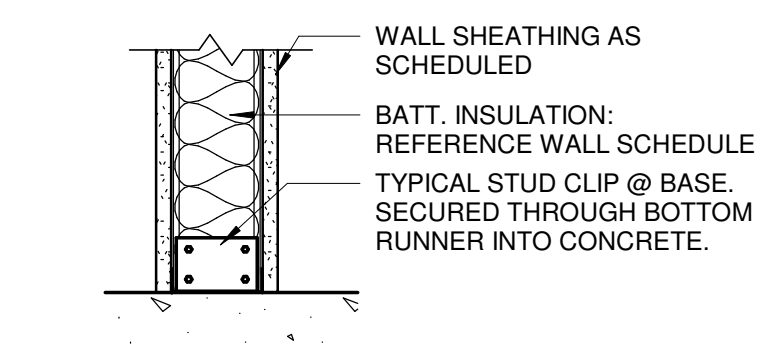
4 TYPE 'D' WALL (1 HR RATED)

SCALE: 3" = 1'-0"



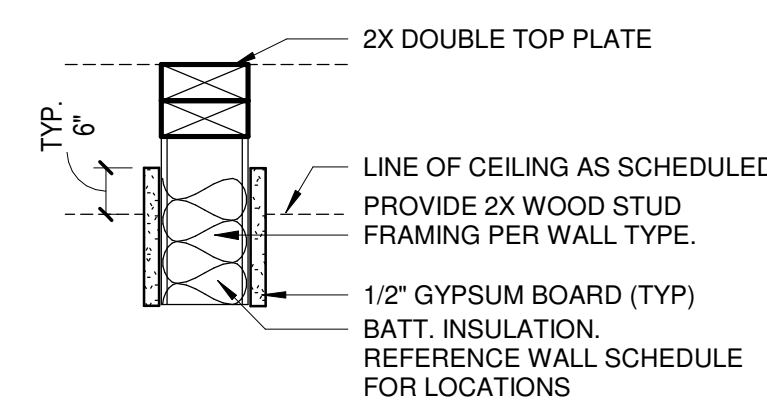
5 WALL HEAD DTL

SCALE: 1 1/2" = 1'-0"



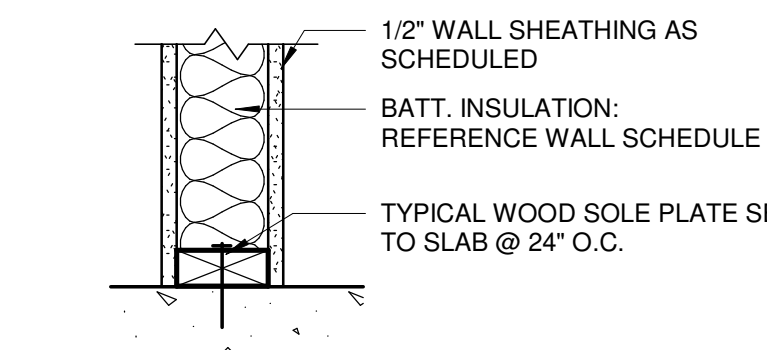
6 WALL BASE DETAIL

SCALE: 1 1/2" = 1'-0"



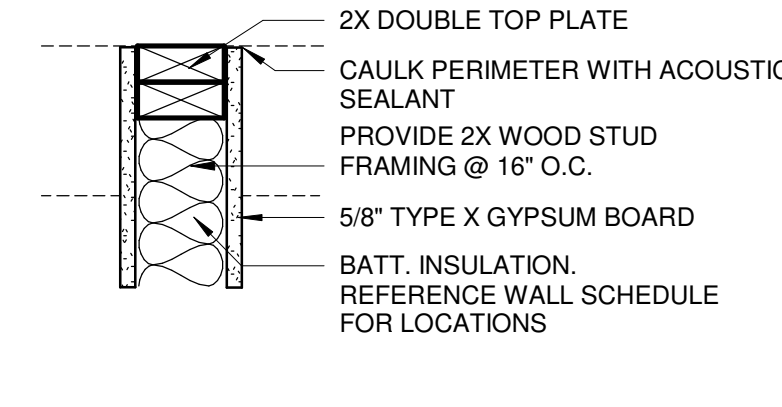
7 WALL HEAD DTL

SCALE: 1 1/2" = 1'-0"



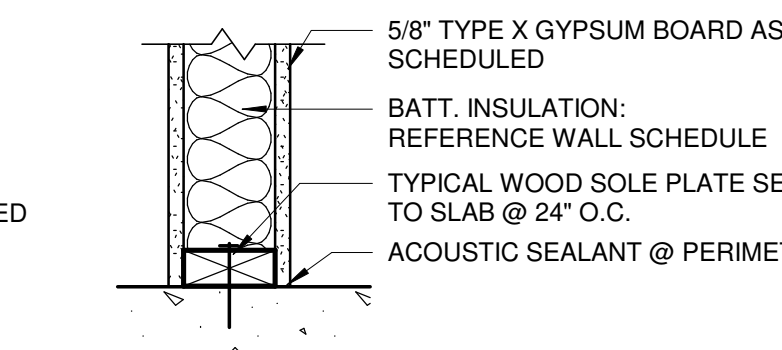
8 WALL BASE DETAIL

SCALE: 1 1/2" = 1'-0"



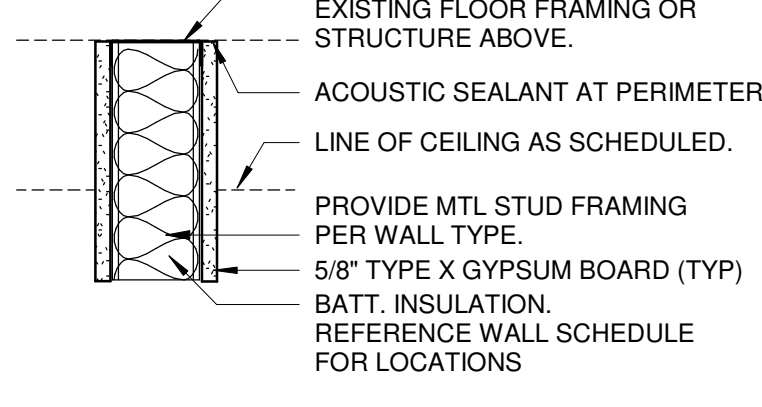
9 WALL HEAD DTL

SCALE: 1 1/2" = 1'-0"



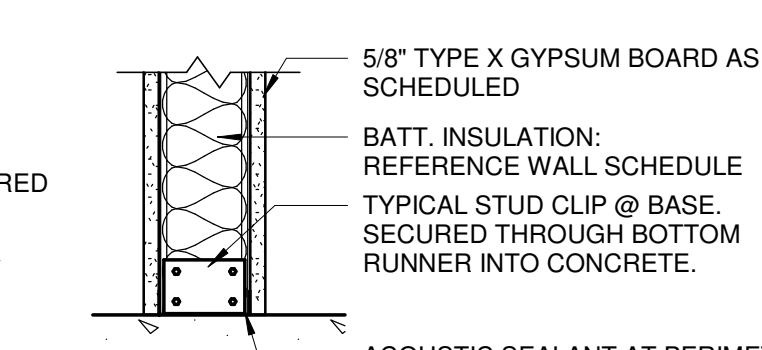
10 WALL BASE DETAIL

SCALE: 1 1/2" = 1'-0"



11 WALL HEAD DTL

SCALE: 1 1/2" = 1'-0"



12 WALL BASE DETAIL

SCALE: 1 1/2" = 1'-0"

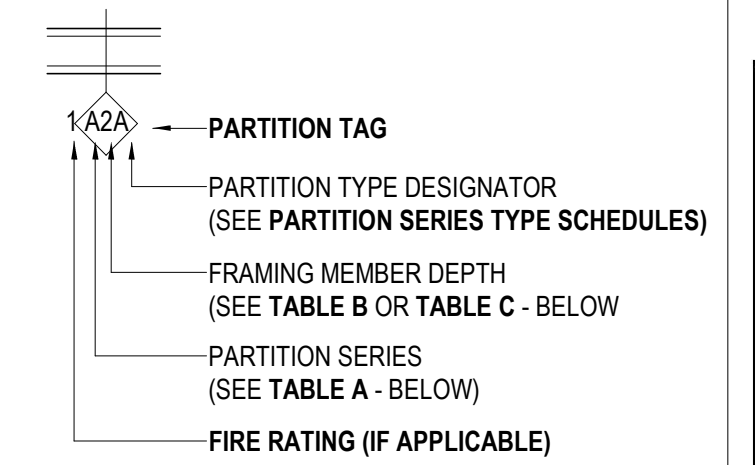


TABLE A- PARTITION SERIES CONSTRUCTION ASSEMBLY

SERIES	SHEATHING	FRAMING MEMBERS	SHEATHING
A	1-LAYER	METAL C-STUD	1-LAYER
B	1-LAYER	WOOD 2X	1-LAYER
C	1-LAYER	WOOD 2X	1-LAYER
D	1-LAYER	METAL C-STUD	1-LAYER

TABLE B- METAL STUD FRAMING DEPTH SCHEDULE

TAG NUMBER	MTL STUD DEPTH	MTL C-H STUD DEPTH	WOOD STUD DEPTH
-	NO FRAMING		
0	7/8" FURRING CHANNEL	N/A	N/A
1	1 5/8"	N/A	N/A
2	2 1/2"	2 1/2"	N/A
3	3 5/8"	N/A	N/A
4	4"	4"	4"
6	6"	6"	6"

STEEL SHEET THICKNESS FOR STUDS AND RUNNERS

GAGE*	MIN. STEEL BASE METAL THICKNESS (UNCOATED)		
	INCH	MILS	MM
12	0.1017	97	X
14	0.0713	68	X
16	0.0566	54	1.34
18	0.0451	43	1.09
20	0.0312	30	0.84
22	0.0270	27	0.68
25	0.0179	18	0.45

*GAGE 20 IS TYPICAL FOR ALL WALL TYPES UNO.

- GENERAL NOTES**
- GN-01. ALL PARTITION SHEATHING SHALL BE 1/2" UNLESS OTHERWISE NOTED.
 - GN-02 REFER TO DETAILS THIS SHEET FOR TOP AND BOTTOM OF PARTITION CONDITIONS LISTED IN PARTITION SCHEDULE.
 - GN-03. ALL PARTITIONS SHALL BE COORDINATED WITH SCHEDULED FINISHES FOR PARTITION LAYOUT AND REQUIRED CLEARANCES.
 - GN-04. FOR INTERIOR FRAMING LIMITING HEIGHTS REFER TO SSMA TABLES FOR INTERIOR NON-STRUCTURAL NON-COMPOSITE PARTITIONS
 - GN-05. CONTRACTOR TO RE-CONFIRM STUD SIZING AND SUBMIT SELECTION CRITERIA FOR REVIEW INCLUDING DELINEATION OF SLAB TO UNDERSIDE OF ROOF INFORMATION
 - GN-05. TYPICAL WOOD FRAMING SHALL BE NOMINAL 2X4 FIR OR SELECT PINE.

REF: **FBC TABLE 2308.5.1**
MAXIMUM ALLOWABLE SPACING OF 2X4 WALL STUD FRAMING SUPPORTING CEILING AND ROOF SHALL BE AS FOLLOWS:
• 24" O.C.
• MAX 10'-0" HEIGHT

MAXIMUM ALLOWABLE SPACING OF 2X4 WALL STUDS SUPPORTING 1 FLOOR PLUS ROOF/CEILING:
• 16" O.C.
• MAX 10'-0" HEIGHT

MAXIMUM ALLOWABLE SPACING OF 2X4 NON-BEARING STUD WALLS:
• 24" O.C.
• MAX 10'-0" HEIGHT



ARCHITECT	LICENSE NO.
DAVID S SHIVELY	FL # 0099028

Date	Revision	Seal / Signature
12/20/2019	1 FOR CONSTRUCTION	

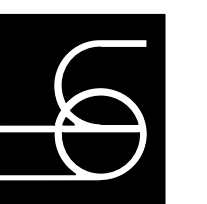
WALL TYPES AND DETAILS

DATE:	10/25/19
D.B.:	Author
C.B.:	Checker
JOB NO:	19040

SHEET NOTES

- 01 PROVIDE CEILING SUPPORTED TRACK ASSEMBLY WITH LED LIGHT AND MONITOR ARM. SIMILAR TO: MIDMARK LED 153906.

BHIDE & HALL ARCHITECTS, P.A.
 100 BENTLEY AVENUE, SUITE C, ORANGE PARK, FLORIDA 32067
 TEL: (904) 244-0889
 FAX: (904) 244-0119



DR. HWANG MARINO
DENTAL OFFICE REMODEL
 2045 Professional Center Drive
 Orange Park, Florida 32073

ARCHITECT LICENSE NO.
 DAVID S SHIVELY FL # 0099028

NOT FOR CONSTRUCTION
 THESE DRAWINGS ARE RELEASED FOR INTERIM REVIEW ONLY AND ARE NOT INTENDED FOR BIDDING PURPOSES OR FOR REGULATORY REVIEW OR APPROVAL.

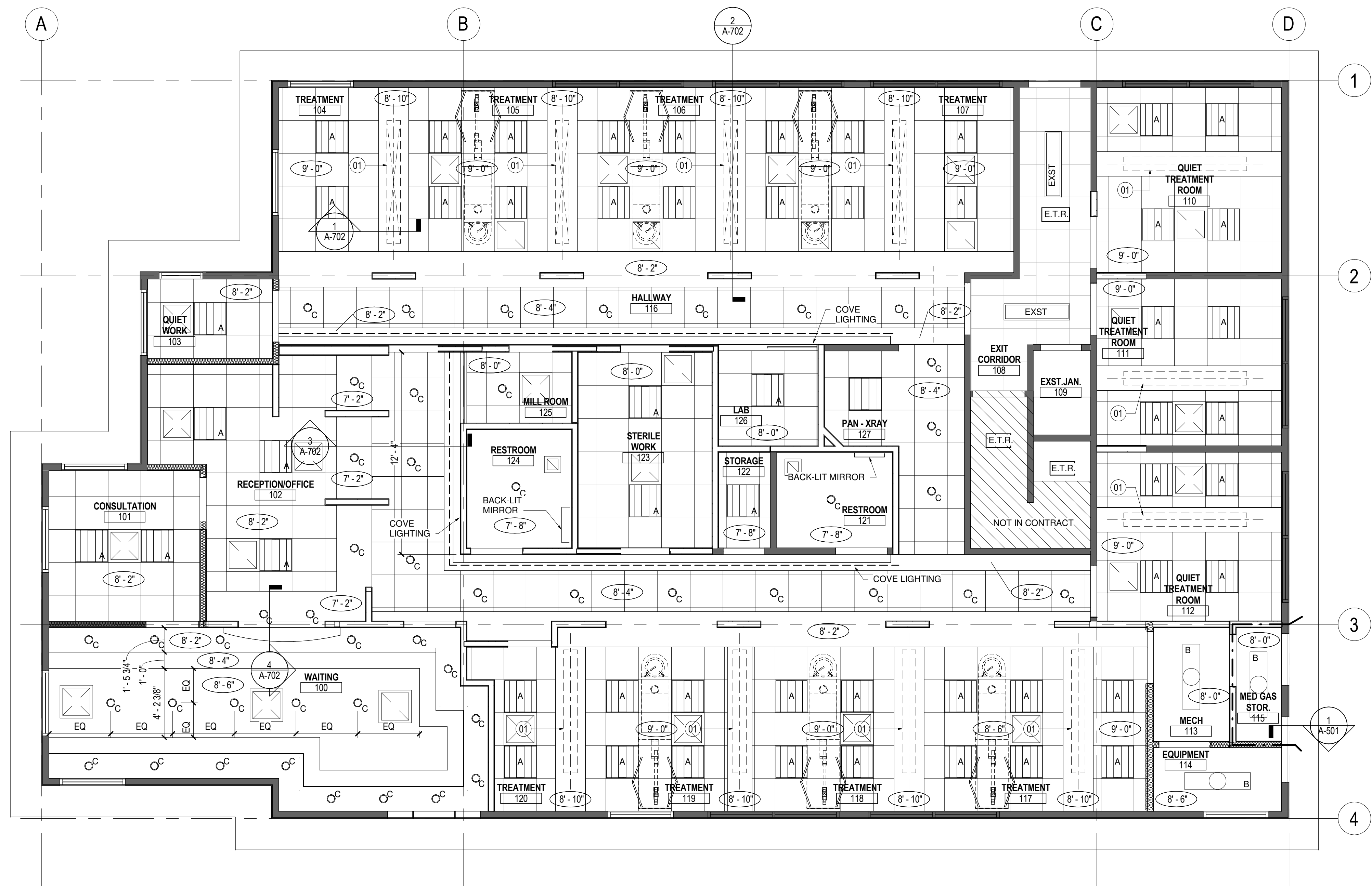
Seal / Signature

Date	Revision
12/20/2019	1 FOR CONSTRUCTION

NEW REFLECTED CEILING PLAN

DATE: 10/25/19
 D.B.:
 C.B.: DSS
 JOB NO: 19040

A-701
 FOR CONSTRUCTION

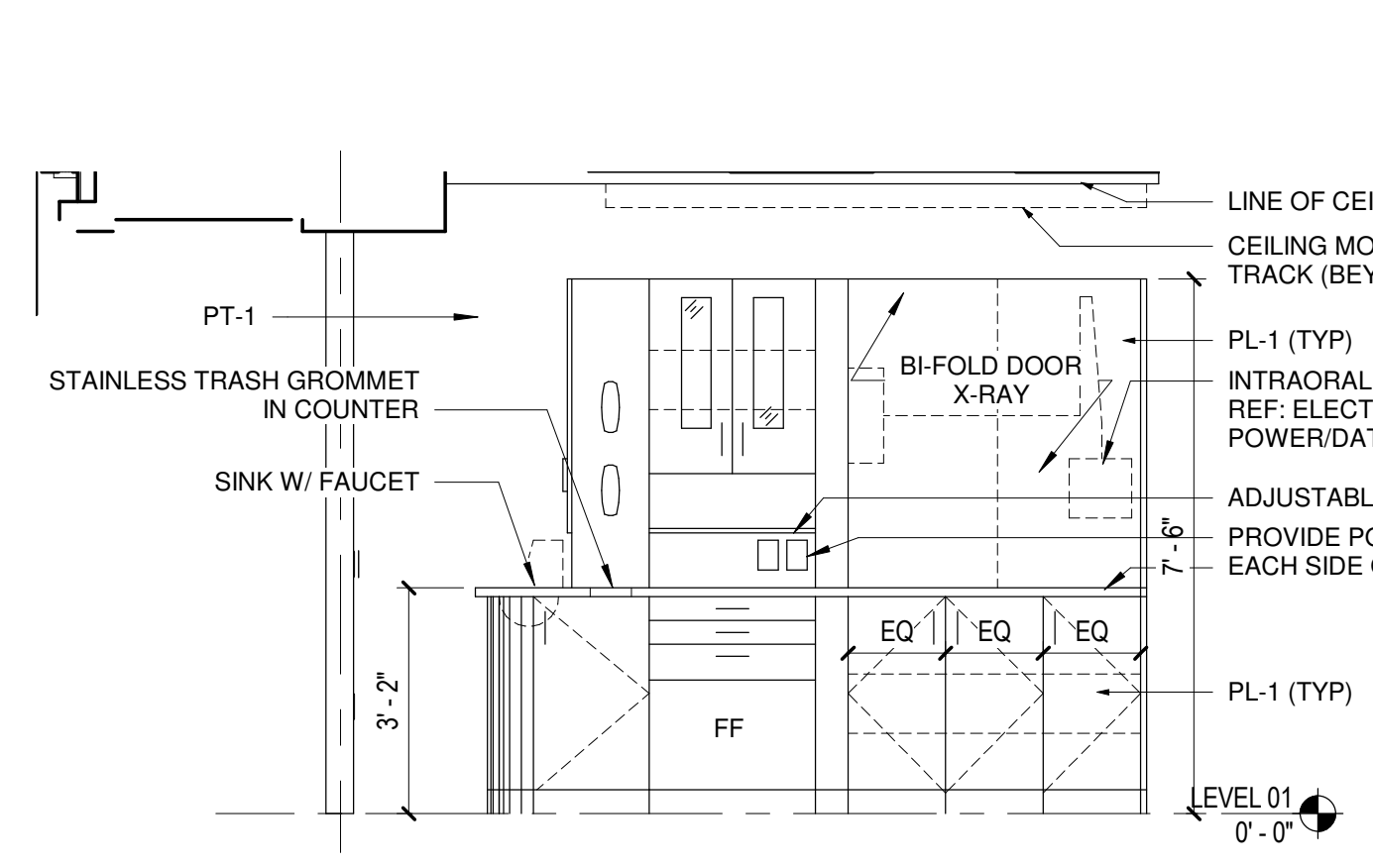


LEGEND

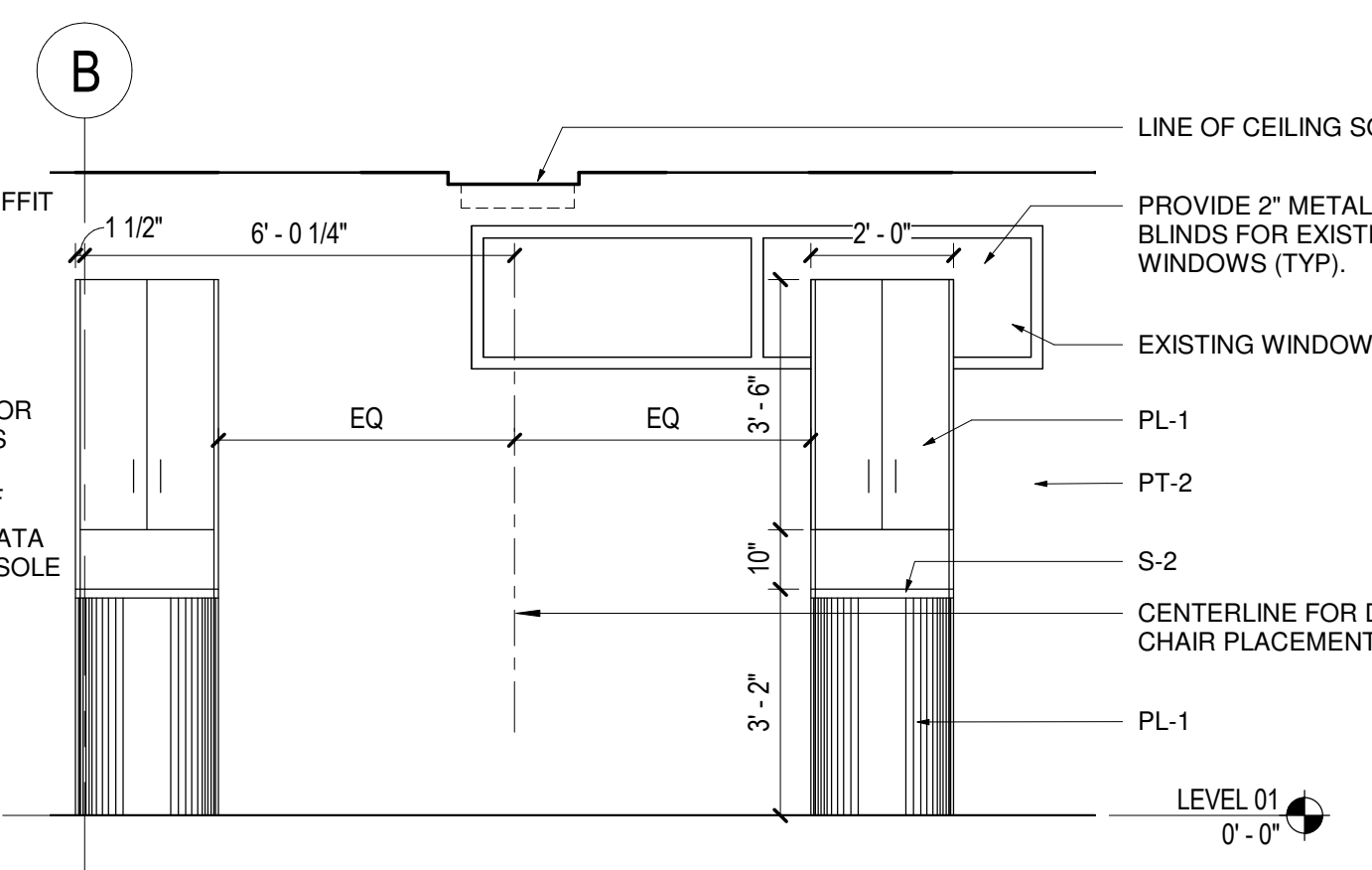
- 2x2' CEILING GRID
- 2x2' LED LIGHT FIXTURE
- 1' X 4' FLUORESCENT UTILITY LIGHT FIXTURE - PENDANT MOUNTED
- 6\"/> RECESSED DOWN-LIGHT
- RETURN AIR DIFFUSER
- SUPPLY AIR DIFFUSER
- E.T.R. EXISTING TO REMAIN

REFERENCE ELECTRICAL DRAWINGS FOR LIGHTING SCHEDULE

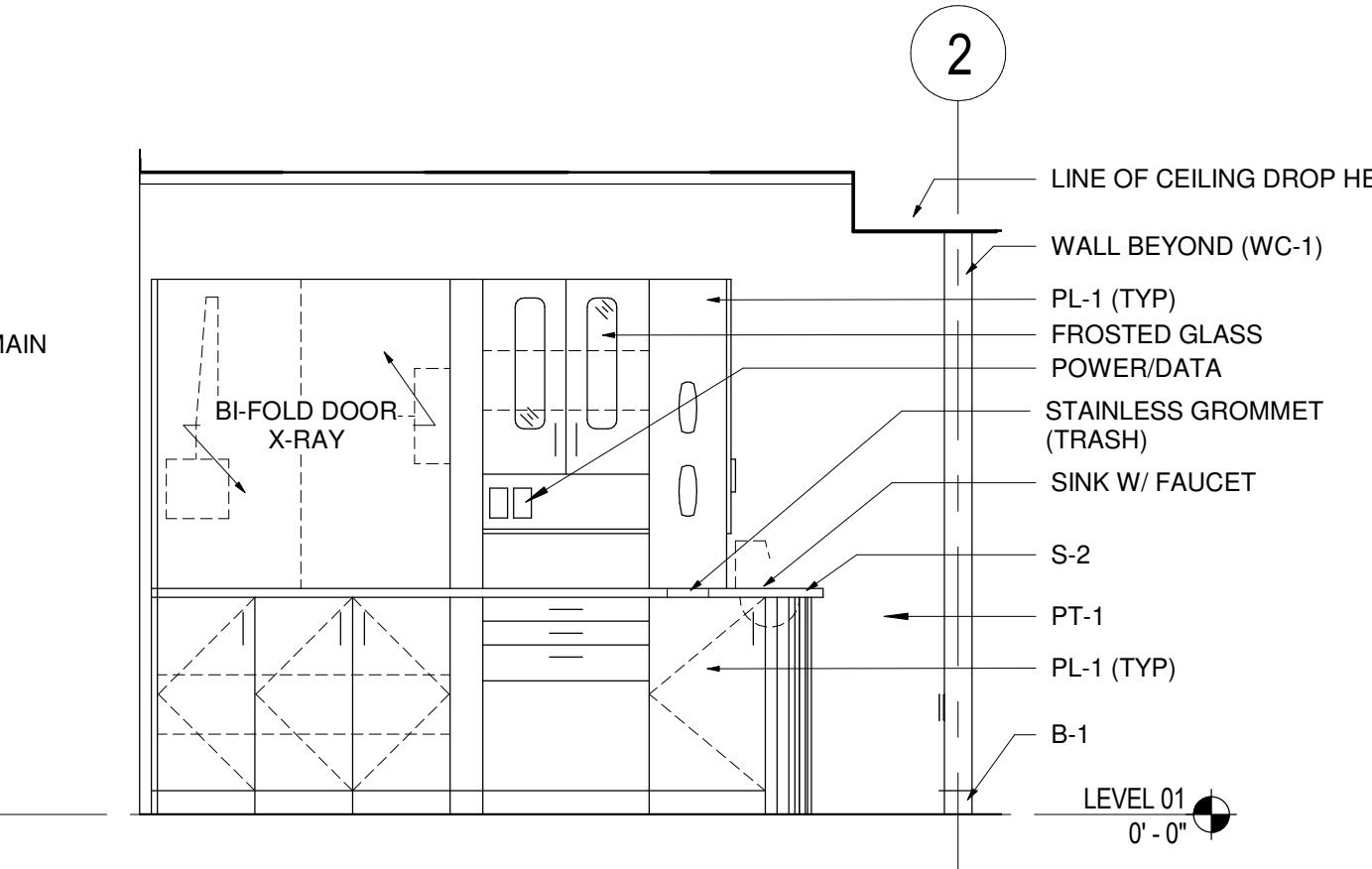
1 REFLECTED CEILING PLAN
 SCALE: 1/4" = 1'-0"



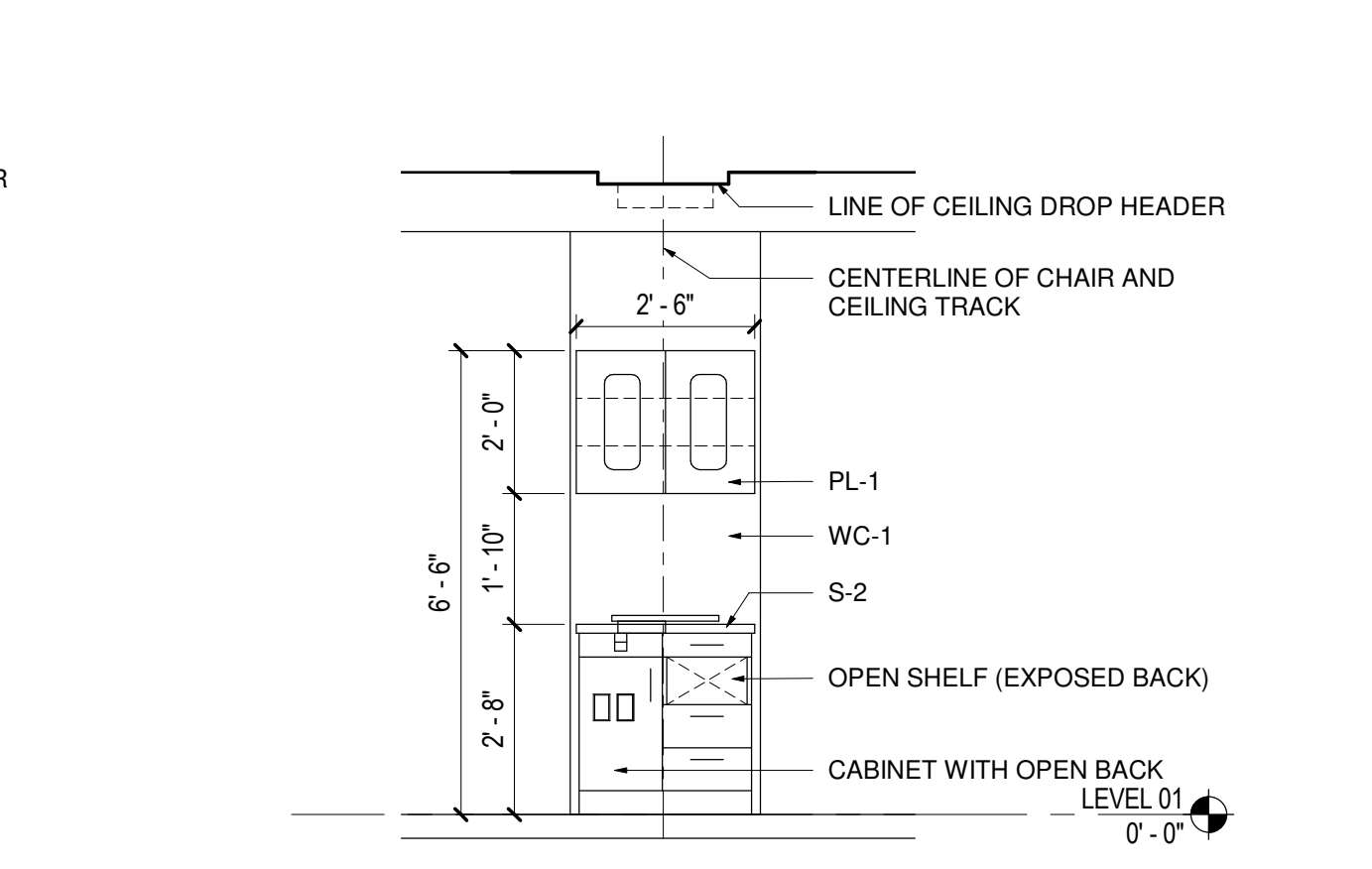
1 INTERIOR ELEVATION
SCALE: 3/8" = 1'-0"



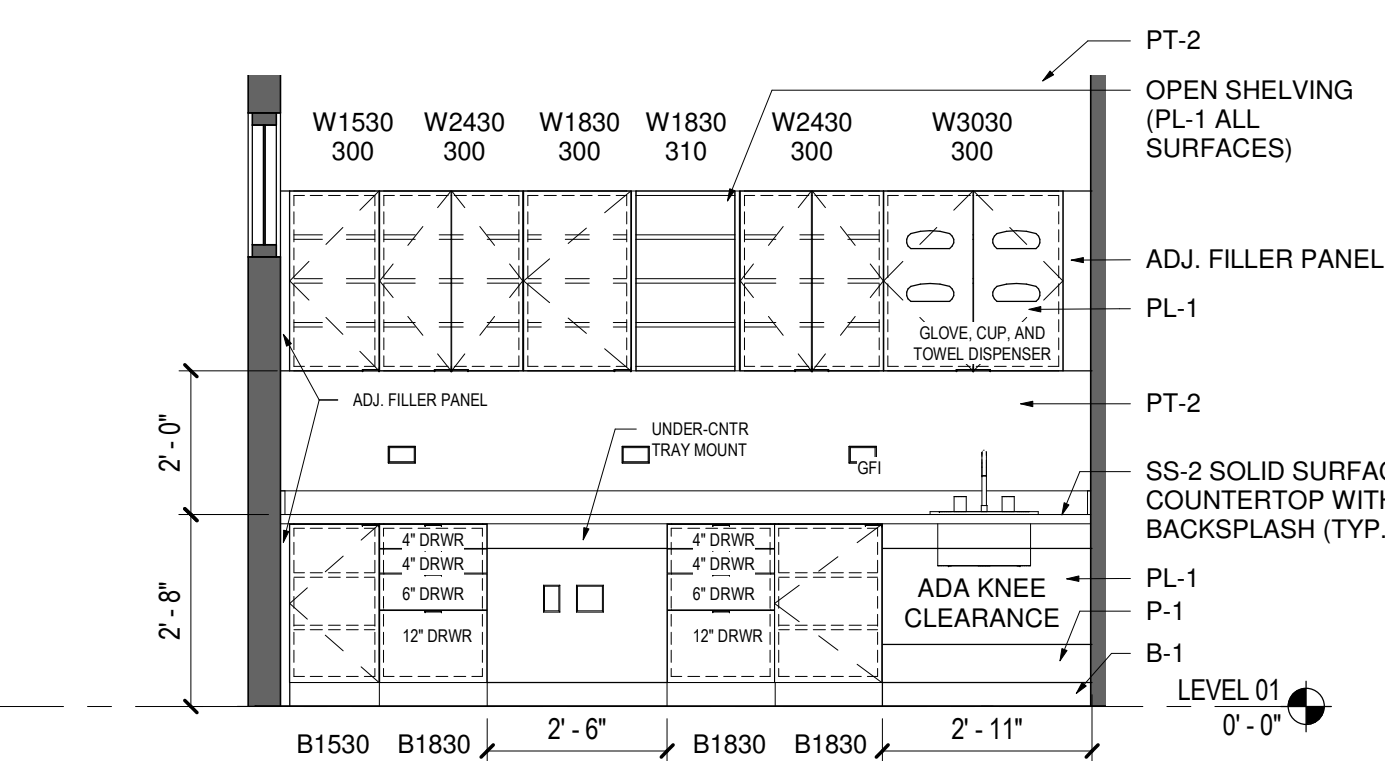
2 INTERIOR ELEVATION
SCALE: 3/8" = 1'-0"



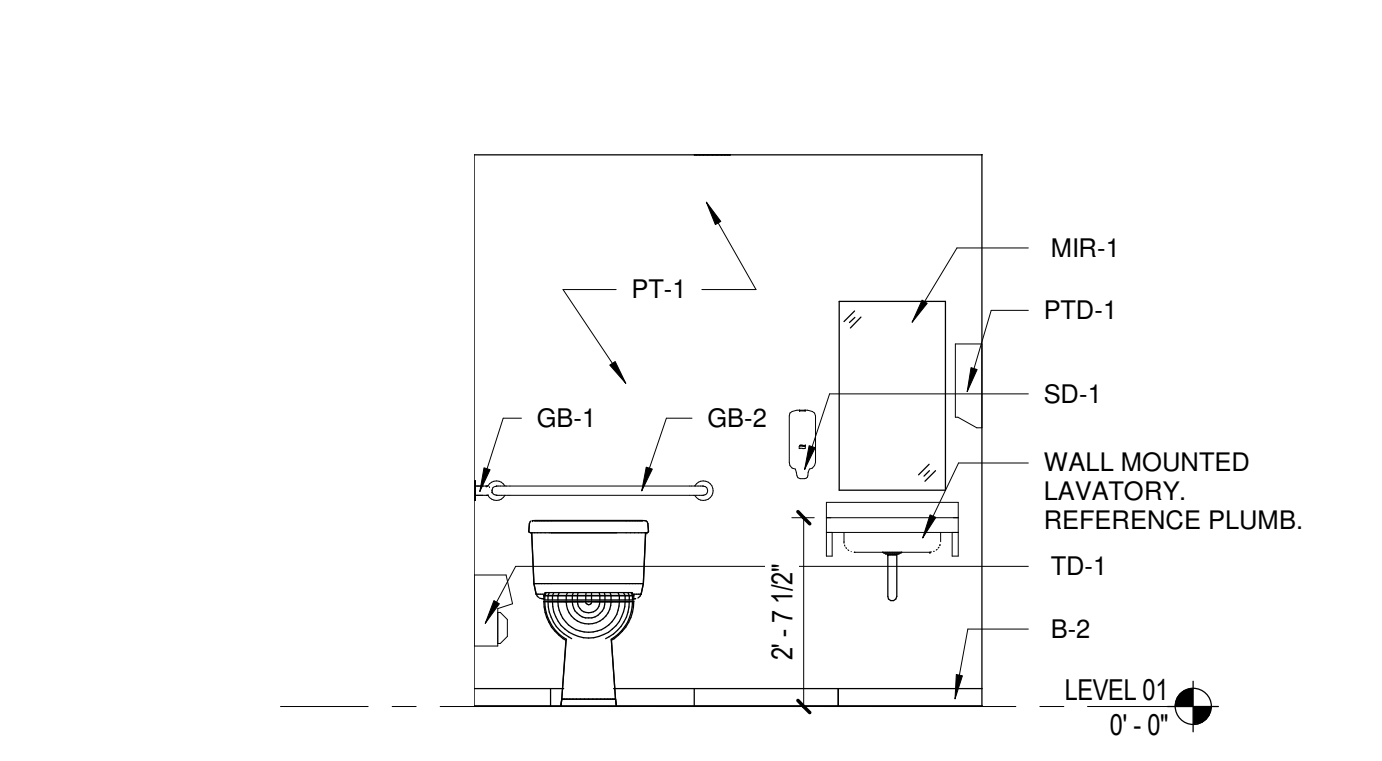
3 INTERIOR ELEVATION
SCALE: 3/8" = 1'-0"



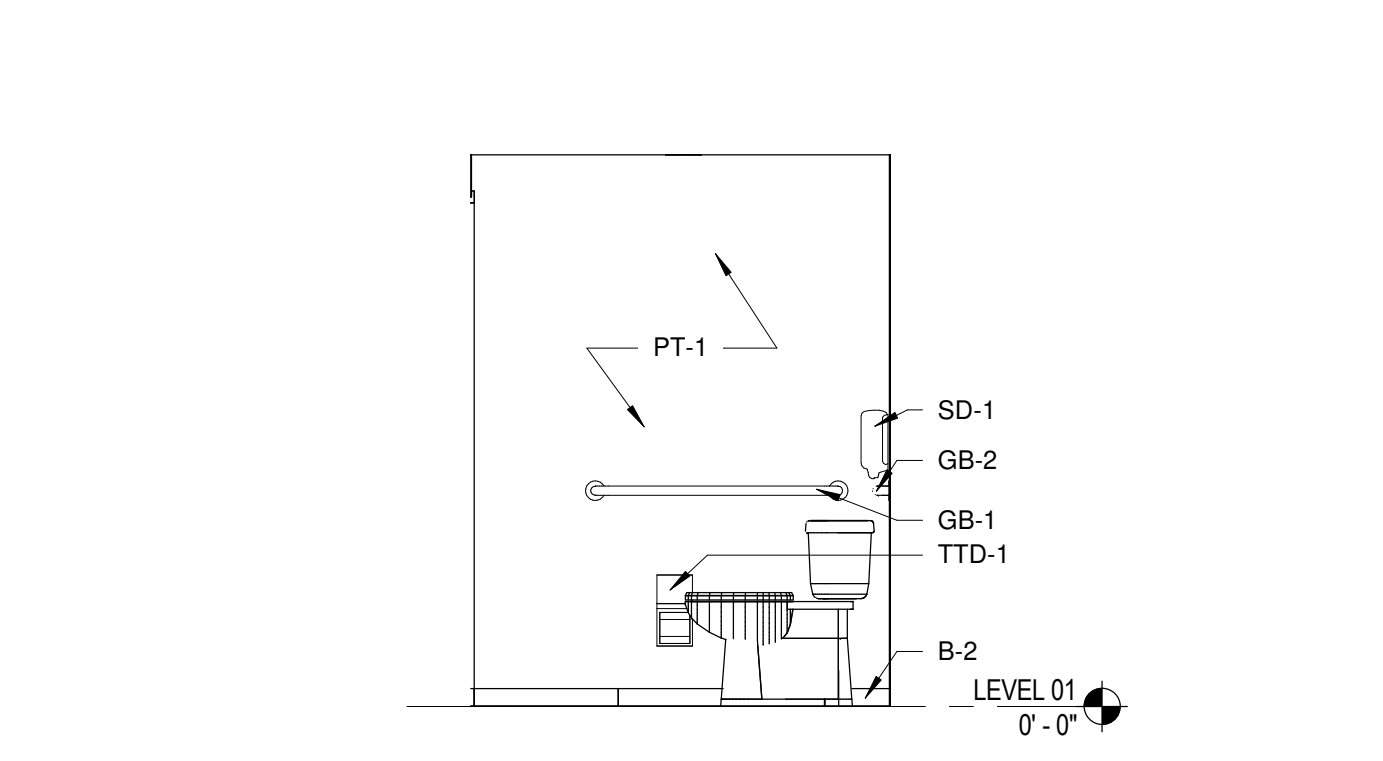
4 INTERIOR ELEVATION
SCALE: 3/8" = 1'-0"



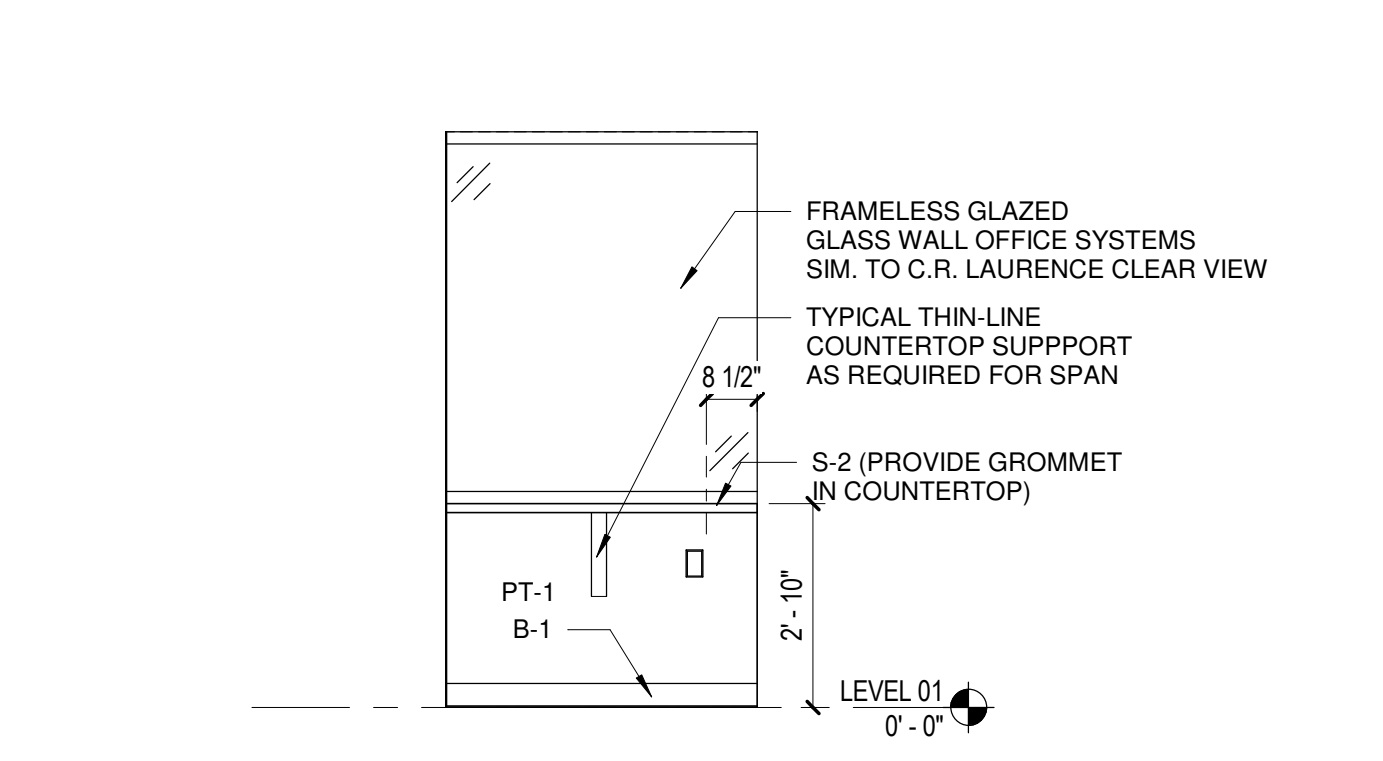
5 INTERIOR ELEVATION
SCALE: 3/8" = 1'-0"



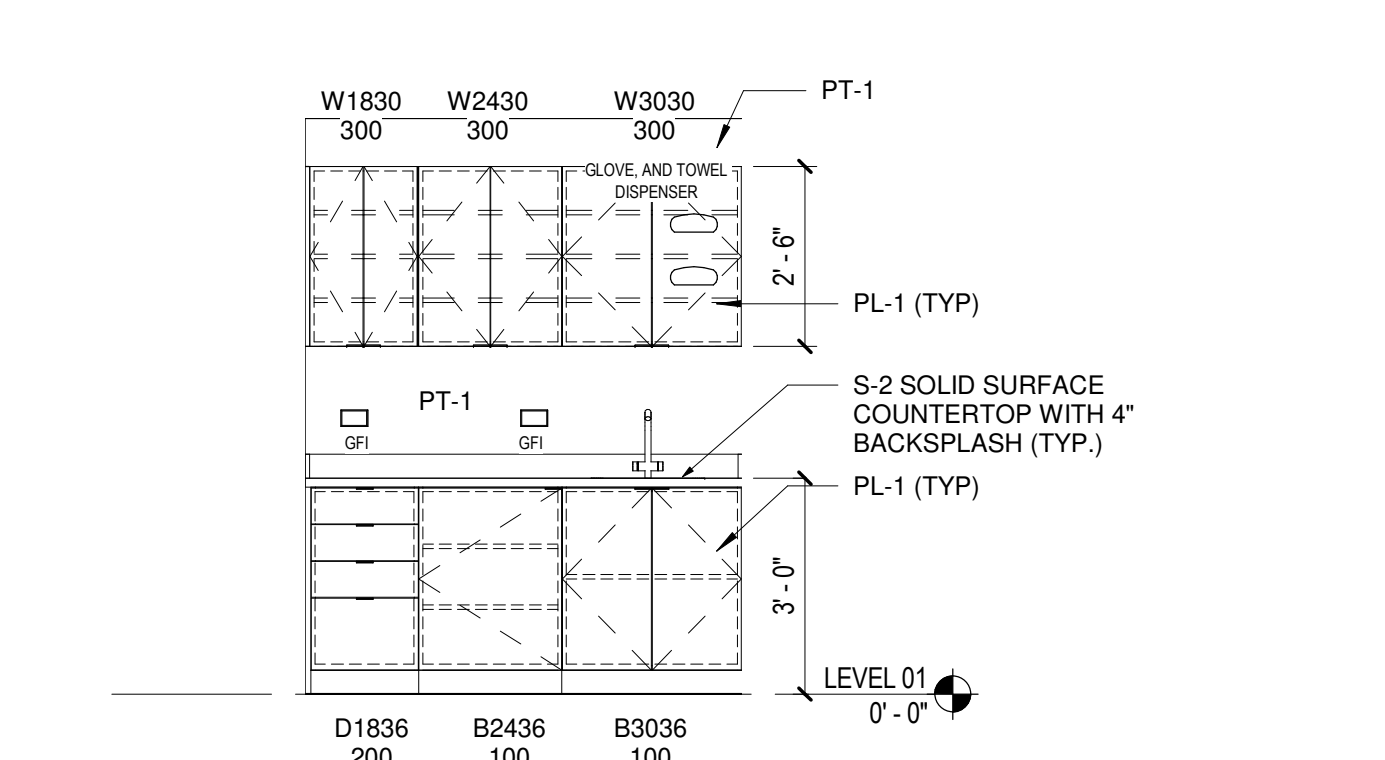
6 INTERIOR ELEVATION
SCALE: 3/8" = 1'-0"



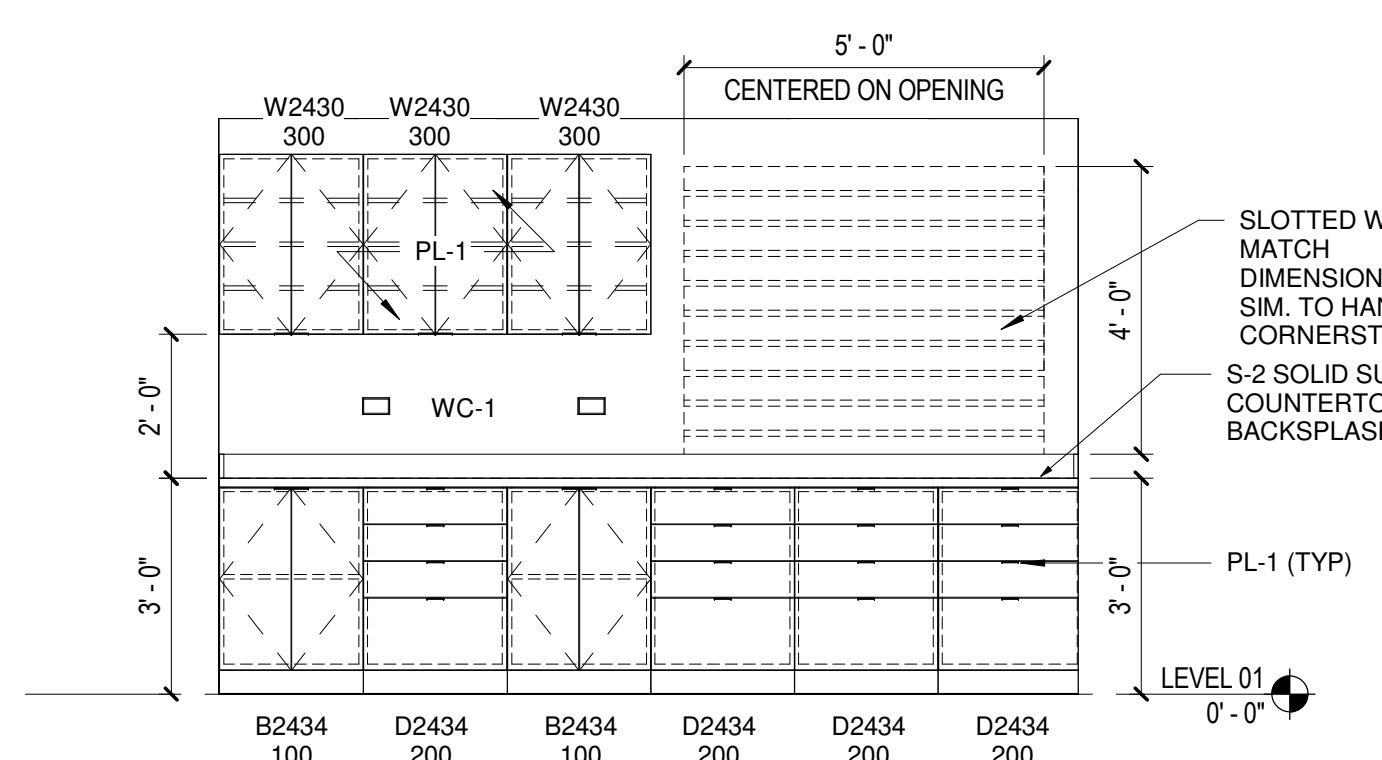
7 INTERIOR ELEVATION
SCALE: 3/8" = 1'-0"



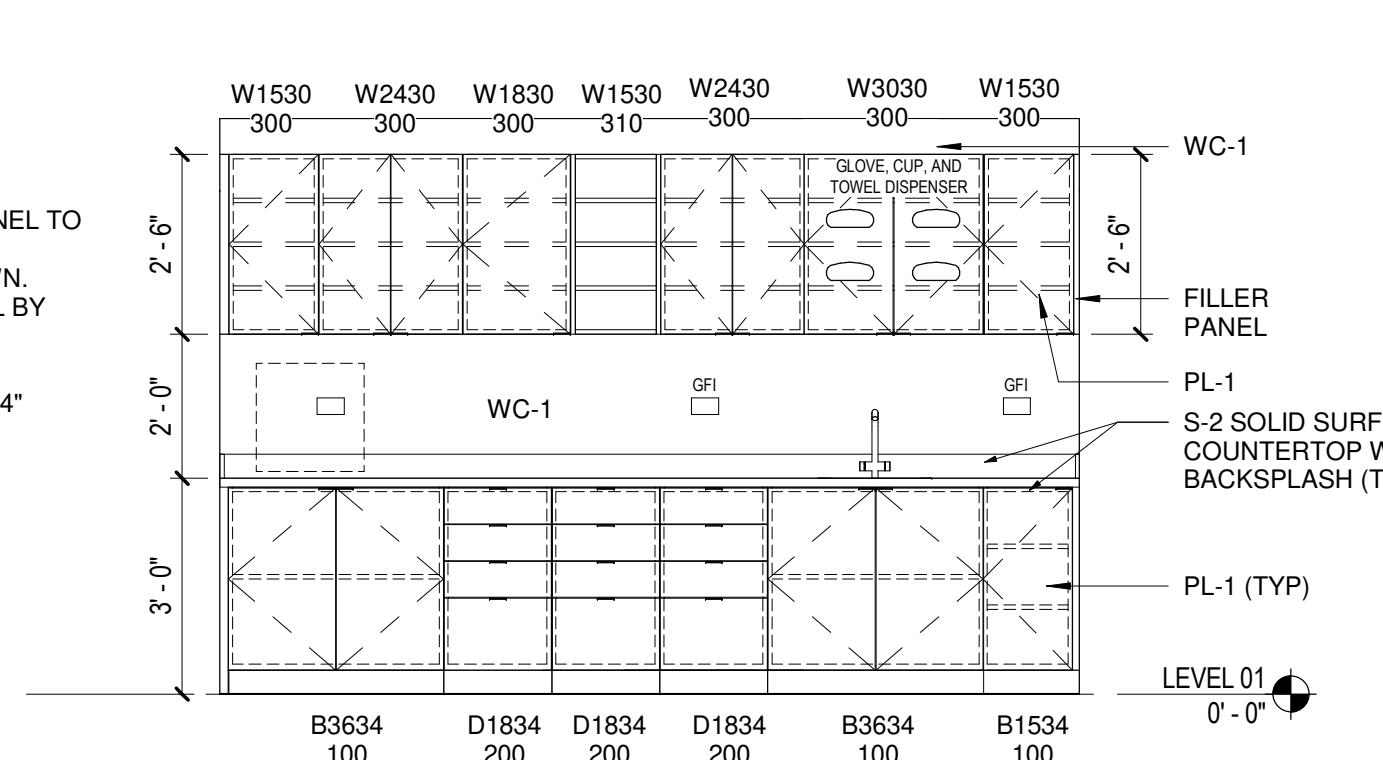
8 INTERIOR ELEVATION
SCALE: 3/8" = 1'-0"



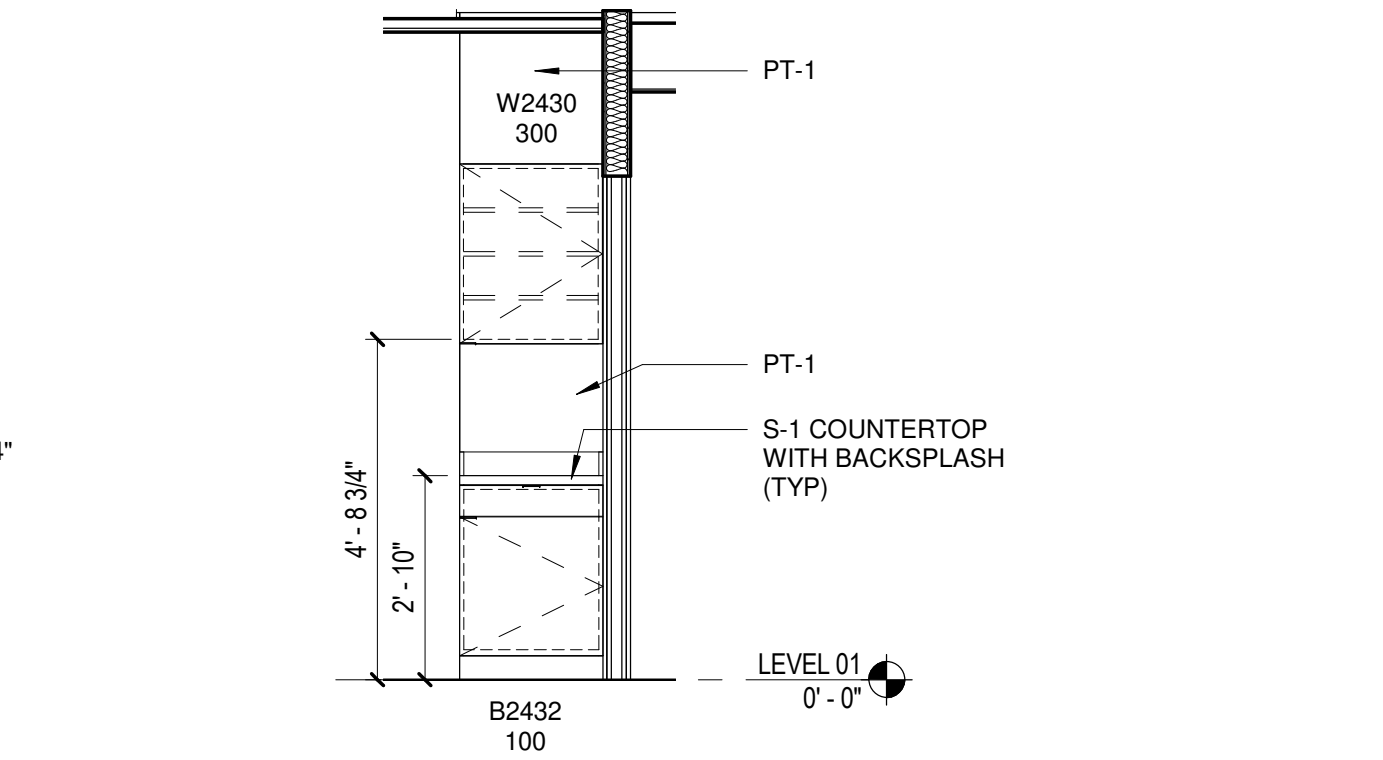
9 INTERIOR ELEVATION
SCALE: 3/8" = 1'-0"



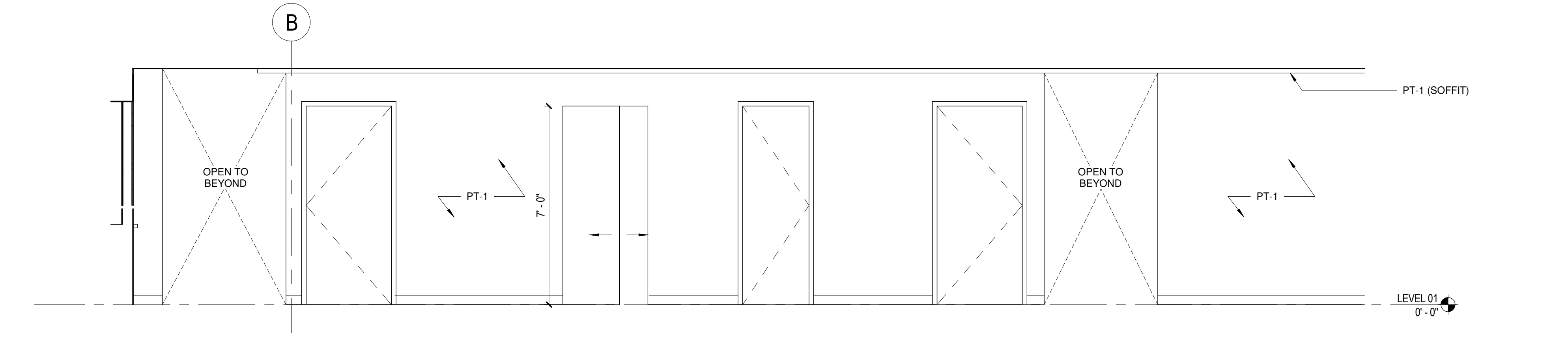
10 INTERIOR ELEVATION
SCALE: 3/8" = 1'-0"



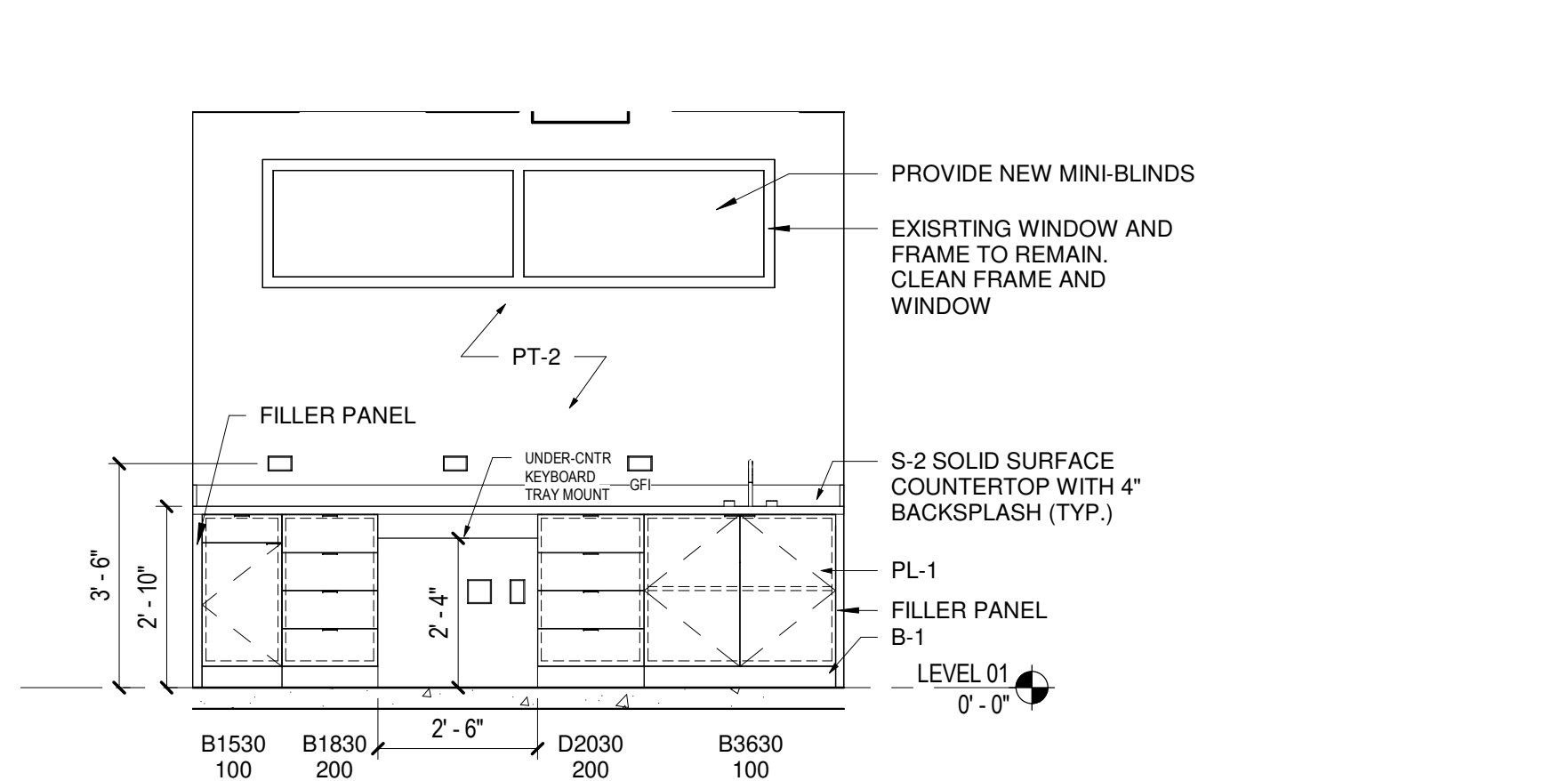
11 INTERIOR ELEVATION
SCALE: 3/8" = 1'-0"



12 INTERIOR ELEVATION
SCALE: 3/8" = 1'-0"



13 INTERIOR ELEVATION
SCALE: 3/8" = 1'-0"



14 INTERIOR ELEVATION
SCALE: 3/8" = 1'-0"

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Date	Revision	Seal / Signature
12/20/2019	1 FOR CONSTRUCTION	

Date:	10/25/19
D.B.:	
C.B.:	DSS
JOB NO.:	19040

FINISH SCHEDULE							
NO	ROOM NAME	FINISHES				FLOOR AREA	Comments
		FLOOR	BASE	WALL	CEILING		
1	EXISTING STAIR	EXST.	EXST.	EXST.	EXST.	56 SF	EXISTING TO REMAIN (NOT IN SCOPE)
100	WAITING	LVT-1	B-1	PT-1/PT-2/WC-1		137 SF	REFERENCE SHEET A-801
101	CONSULTATION	LVT-1	B-1	PT-1		85 SF	
102	RECEPTION/OFFICE	LVT-1	B-1	PT-1		182 SF	REFERENCE SHEET A-801
103	QUIET WORK	LVT-1	B-1	PT-1		37 SF	REFERENCE SHEET A-801
104	TREATMENT	LVT-1	B-1	PT-1/PT-2/WC-1		138 SF	REFERENCE SHEET A-802
105	TREATMENT	LVT-1	B-1	PT-1/PT-2/WC-1		116 SF	REFERENCE SHEET A-802
106	TREATMENT	LVT-1	B-1	PT-1/PT-2/WC-1		119 SF	REFERENCE SHEET A-802
107	TREATMENT	LVT-1	B-1	PT-1/PT-2/WC-1		137 SF	REFERENCE SHEET A-802
108	EXIT CORRIDOR	VCT-1	B-1	PT-1		89 SF	
109	EXST.JAN.	LVT-1	B-1	PT-1		18 SF	
110	QUIET TREATMENT ROOM	LVT-1	B-1	PT-1/PT-2		127 SF	REFERENCE SHEET A-802
111	QUIET TREATMENT ROOM	LVT-1	B-1	PT-1/PT-2		115 SF	REFERENCE SHEET A-802
112	QUIET TREATMENT ROOM	LVT-1	B-1	PT-1/PT-2		116 SF	REFERENCE SHEET A-802
113	MECH	CONC.	B-1	PT-1		32 SF	
114	EQUIPMENT	CONC.	B-1	PT-1		30 SF	
115	MED GAS STOR.	LVT-1	B-1	PT-1		19 SF	
116	HALLWAY	LVT-1	B-1	PT-1/WC-1		472 SF	
117	TREATMENT	LVT-1	B-1	PT-1/PT-2/WC-1		119 SF	REFERENCE SHEET A-802
118	TREATMENT	LVT-1	B-1	PT-1/PT-2/WC-1		110 SF	REFERENCE SHEET A-802
119	TREATMENT	LVT-1	B-1	PT-1/PT-2/WC-1		110 SF	REFERENCE SHEET A-802
120	TREATMENT	LVT-1	B-1	PT-1/PT-2/WC-1		113 SF	REFERENCE SHEET A-802
121	RESTROOM	CT-1	B-2	PT-1		41 SF	REFERENCE SHEET A-802
122	STORAGE	LVT-1	B-1	PT-1		18 SF	
123	STERILE WORK	LVT-1	B-1	PT-1/WC-1		98 SF	REFERENCE SHEET A-802
124	RESTROOM	CT-1	B-2	PT-1		46 SF	REFERENCE SHEET A-802
125	MILL ROOM	LVT-1	B-1	PT-1		28 SF	REFERENCE SHEET A-802
126	LAB	LVT-1	B-1	PT-1		36 SF	REFERENCE SHEET A-802
127	PAN - XRAY	LVT-1	B-1	PT-1		26 SF	

TOILET ACCESSORIES LEGEND

<p>PAPER TOWEL DISPENSER PTD-1: MFR: BOBRICK PRODUCT: RECESSED PAPER TOWEL DISPENSER MODEL #: B-35903 LINE: TRIMLINE SERIES FINISH: SATIN MATERIAL: STAINLESS STEEL SIZE: 11 1/2" W X 17 1/4" H X 3 3/4" D CONTACT: TEL: (518) 877-7444</p>	<p>MIRROR MIR-1 PRODUCT: FRACTAL LED BACKLIT MIRROR MODEL #: 4580 MFR: AAMSCO LINE: SPECTRUM WATTAGE: 26W LUMENS: 2580 COLOR TEMP: 2600-2800K SIZE: 17.17" X 31.49" CONTACT: TEL: 1-813-654-7339 https://www.aamsco.com/</p>
<p>GRAB BAR: (PROVIDE WOOD BLOCKING IN WALLS) GB-1 PRODUCT: GRAB BARS WITH SNAP FLANGE COVERS MFR: BOBRICK FINISH: SATIN MATERIAL: STAINLESS STEEL SIZE: 42" CONTACT: TEL: (518) 877-7444</p>	<p>TOILET TISSUE DISPENSER TD-1 PRODUCT: SURFACE MOUNTED MULT-ROLL TOILET TISSUE DISPENSER MODEL #: B-3588 MFR: BOBRICK LINE: CLASSIC SERIES FINISH: SATIN MATERIAL: STAINLESS STEEL CONTACT: TEL: (518) 877-7444</p>
<p>GB-2 PRODUCT: GRAB BARS WITH SNAP FLANGE COVERS MFR: BOBRICK FINISH: SATIN MATERIAL: STAINLESS STEEL SIZE: 36" CONTACT: TEL: (518) 877-7444</p>	<p>WALL MOUNTED SOAP DISPENSER SD-1 PRODUCT: BOBRICK MANUAL SOAP DISPENSER MODEL #: B-4112 MFR: BOBRICK LINE: CONTURA SERIES FINISH: SATIN MATERIAL: STAINLESS STEEL CONTACT: TEL: (518) 877-7444</p>

DOOR SCHEDULE

DOOR NO.	WIDTH	HEIGHT	FR. MATL	FIRE RATING	DOOR FINISH	HARDWARE SET	COMMENTS
100A	2'-4"	7'-0"	HM	-	PL-1	001	EXISTING EXTERIOR DOOR - TO REMAIN
100B	3'-0"	7'-0"	HM	-	PL-1	002	
101A	3'-0"	7'-0"	HM	-	PL-1	001	
101B	3'-0"	7'-0"	HM	-	PL-1	001	
103	3'-0"	7'-0"	HM	-	PL-1	001	
108A	3'-0"	7'-0"	HM	-	HM - PT1		EXISTING DOOR TO REMAIN - PAINT TO MATCH ADJACENT WALL
108B	3'-0"	7'-0"	HM	-	HM - PT3	006	NEW EXTERIOR DOOR - PAINT TO MATCH EXTERIOR TRIM
109	2'-4"	7'-0"					EXISTING TO REMAIN
110	3'-0"	7'-0"	HM	1HR	PL-1	004	NEW FIRE RATED DOOR
111	3'-0"	7'-0"	HM	1HR	PL-1	004	NEW FIRE RATED DOOR
112	3'-0"	7'-0"	HM	-	PL-1	005	
113	3'-0"	7'-0"	HM	-	PL-1	008	ACOUSTIC - PROVIDE AUTOMATIC DOOR BOTTOM
114	3'-0"	7'-0"	HM	-	HM - PT1	008	ACOUSTIC - PROVIDE AUTOMATIC DOOR BOTTOM
115A	3'-0"	7'-0"	HM	1HR	HM - PT1	007	NEW FIRE RATED DOOR
115B	3'-0"	7'-0"	HM	-	HM - PT3	013	NEW EXTERIOR DOOR - PAINT TO MATCH EXTERIOR TRIM
116	3'-0"	7'-0"			WOOD - ST-1	010	SLIDING POCKET DOOR - REF: SPECS FOR DESIGN BASIS SYSTEM
121	3'-0"	7'-0"	HM	-	WOOD - ST-1	003	
122	2'-4"	7'-0"	HM	-	WOOD - ST-1	009	
123A	3'-0"	7'-0"			WOOD - ST-1	010	SLIDING POCKET DOOR - REF: SPECS FOR DESIGN BASIS SYSTEM
123B	3'-0"	7'-0"			WOOD - ST-1	010	SLIDING POCKET DOOR - REF: SPECS FOR DESIGN BASIS SYSTEM
124	3'-0"	7'-0"	HM	-	WOOD - ST-1	003	
125	2'-8"	7'-0"	HM	-	WOOD - ST-1	010	SLIDING POCKET DOOR - REF: SPECS FOR DESIGN BASIS SYSTEM
126	3'-0"	7'-0"	ALUM	-	GLASS/ALUM	011	GLASS ENTRANCE SYSTEM: REF: SPECS

FINISH LEGEND

WALL FINISH

PAINT
 SHERWIN WILLIAMS (SW)
 PT-1 - 6259 (SW) SPATIAL WHITE (TYPICAL FIELD PAINT)
 PT-2 - 6213 (SW) HALCYON GREEN (DETAIL PAINT - AS INDICATED ON FINISH PLAN)
 PT-3 - EXTERIOR DOOR AND TRIM (MATCH EXISTING FINISH)

NOTE:
 1. SEE SHEET A-902 FOR ROOM FINISH PLAN.
 2. ALL WALLS AND CEILINGS/SOFFITS SHALL BE PAINTED (PT-1) WITH A FLAT FINISH/SHEN
 3. DOOR TRIM: SEMI-GLOSS
 PAINT DOOR FRAME TO MATCH WALL COLOR.

WALL COVERING

WC-1:
 MFR: MAHARAM
 916 Joseph E Lowery Boulevard NW
 SUITE 6
 ATLANTA GA, 30318
 PH:1-800-645-3943
 PRODUCT: VINYL WALL COVERING
 LINE: CASCADE 399852
 COLOR: 002 IGL00
 SIZE: REFERENCE DRAWINGS
 CONTACT: MAHARAM.COM

WALL BASE:

B-1
 PRODUCT: TRADITIONAL 4" VINYL (TYPE TV)
 MFR: TARKETT (Johnsontite)
 44 Dark Brown B
 COLOR: TOE
 FEATURES: PROVIDE FACTORY CORNERS
 CONTACT: ED XANDERS
 (904) 535-6791

B-2

PRODUCT: TILE BASE (BULLNOSE)
 MFR: LANDMARK CERAMICS
 LINE: INFINITY
 COLOR: SKY
 SIZE: 3" x 24"
 CONTACT: SHIRLEY FORD
 SHIRLEY@TILEMARKET.NET
 TEL: 904-854-0747
 1728 HENDRICKS AVE.
 JACKSONVILLE, FL 32207

MILLWORK & DOORS:

PL-1
 PRODUCT: PLASTIC LAMINATE
 WILSONART
 MFR: 6740 BROADWAY AVE #A,
 JACKSONVILLE, FL 32254
 TEL: 904-695-0268
 LINE: STANDARD LAMINATE
 COLOR: MORELIA MANGO (7985-38)
 FINISH: *SUBMIT SAMPLES FOR FINAL APPROVAL
 FINISH: FINE VELVET
 PATTERN: VERTICAL (REF: DWGS)
 CONTACT: SUZAN ZONA
 ZONA@WILSONART.COM
 TEL:904-759-3949

COUNTER TOP

SOLID SURFACE

S-1
 PRODUCT: COUNTER TOP
 WILSONART
 MFR: 6740 BROADWAY AVE #A,
 JACKSONVILLE, FL 32254
 TEL: 904-695-0268
 LINE: WILSONART QUARTZ
 Haida
 CONTACT: SUZAN ZONA
 ZONA@WILSONART.COM
 TEL:904-759-3949

S-2
 PRODUCT: COUNTER TOP
 DUPONT
 MFR: THE GLOBAL CORIAN COLOUR PORTFOLIO
 LINE: ARROWROOT
 COLOR: SUZAN ZONA
 CONTACT: SUZAN ZONA
 ZONA@WILSONART.COM
 TEL:904-759-3949

FLOOR FINISH

LUXURY VINYL TILE
 LVT-1
 PRODUCT: FLOOR TILE
 MFR: SHAW CONTRACT
 LINE: TERRAIN II
 COLOR: ROOT 00568
 SIZE: 6" X 48"
 INTALL: ASHLAR METHOD
 CONTACT: CINDY KAMPFE@SHAWINC.COM
 TEL: 904-316-8726

VINYL COMPOSITION TILE

VCT-1
 PRODUCT: FLOOR TILE
 MFR: ARMSTRONG FLOORING
 2500 COLUMBIA AVE. (BLDG 402)
 LANCASTER, PA 17603
 TEL: 1-888-276-7876
 WWW.ARMSTRONGFLOORING.COM
 LINE: STANDARD EXCELON IMPERIAL TEXTURE
 COLOR: 51941 POLAR WHITE
 SIZE: 12" X 12"
 PATTERN: NON-DIRECTIONAL
 INSTALL: PER MANUFACTURER RECOMMENDATIONS (REF: SPECS)
 CONTACT: DIXIE CONTRACT
 TEL: 904-296-0023

TILE

CT-1
 PRODUCT: FLOOR TILE CERAMICS
 MFR: LANDMARK CERAMICS
 LINE: INFINITY
 COLOR: SKY
 SIZE: 12" X 12"
 INTALL: NON-DIRECTIONAL
 CONTACT: SHIRLEY FORD
 SHIRLEY@TILEMARKET.NET
 TEL: 904-854-0747
 1728 HENDRICKS AVE.
 JACKSONVILLE, FL 32207

CEILING FINISH:

ACOUSTIC CEILING TILE

ACT-1
 PRODUCT: OPTIMA TEGULAR 3354
 MFR: ARMSTRONG CCEILINGS INC.
 COLOR: WHITE
 TRACK: PRELUDE XL (15/16" EXPOSED)
 NRC: .90
 CONTACT:

PAINTED GYP. BD. CLG./SOFFITS

PT-1
 FINISH: FLAT

FLOOR AND WALL TRANSITIONS:

FLOOR (T-1)

CERAMIC TILE TO LUXURY VINYL TILE
 PRODUCT: ALUMINUM FLOOR TRANSITION MATERIAL
 MFR: SCHLUTER
 PROFILE: RENO-U
 COLOR: BRUSHED ALUMINUM

FLOOR (T-2)

LVT TO VCT AND LVT TO CONCRETE
 PRODUCT: REDUCER STRIP
 MFR: TARKETT (JOHNSONITE)
 PROFILE: SSR-XX-B
 COLOR: 44 DARK BROWN B

VERTICAL CORNER GUARDS (CG)

PROVIDE SATIN ANODIZED ALUMINUM CORNER GUARDS AT OUTSIDE CORNERS AS INDICATED ON DRAWINGS.
 MFR: INPRO
 PRODUCT: ALUMINUM CORNER GUARD (6063-T6)
 SIZE: 3/4" 90 DEGREE PROTECTION, CUT TO LENGTH
 COLOR: BRUSHED ALUMINUM
 APPLICATION: INSTALL FROM TOP OF BASE TO 4'-0" HEIGHT, TYP.

MISCELLANEOUS EQUIPMENT

MINIBLINDS

SCOPE: ALL EXISTING WINDOWS ON LEVEL 1. CONTRACTOR SHALL FIELD MEASURE EXISTING WINDOWS PRIOR TO ORDERING

*DESIGN BASIS
 MANUFACTURER: VERTILUX LIMITED
 PRODUCT: 2" ALUMINUM WINDOW BLINDS
 LINE: LOUVERLUX BY VERTILUX LIMITED
 COLOR: AS SELECTED BY ARCHITECT1
 SUBSTITUTIONS WILL BE REVIEWED FOR COMPLIANCE

CONTACT INFORMATION:

VERTILUX
 7300 NW 35TH TERRACE
 MIAMI, FL 33122
 (800) 356-8837
 info@vertilux.com

GROMMETS

SCOPE: AS INDICATED ON DRAWINGS

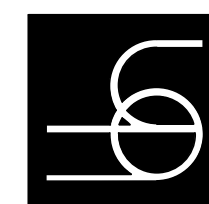
PRODUCT: CORDAWAY 2" DESKTOP GROMMET
 COLOR: BLACK
 SIZE: 2" DIAMETER

COUNTERTOP SUPPORT

*DESIGN BASIS
 MANUFACTURER: MOUNTING PLUS
 PRODUCT: 12"X10" COUNTERTOP SUPPORT BRACKET
 FMP
 PRODUCT CODE: AS SELECTED BY ARCHITECT1
 COLOR: SUBSTITUTIONS WILL BE REVIEWED FOR COMPLIANCE

CONTACT INFORMATION:

CENTERLINE STEEL LLC
 208 W Davis Industrial Dr.
 St. Augustine, FL 32084
 888-960-3854
 support@countertopbracket.com

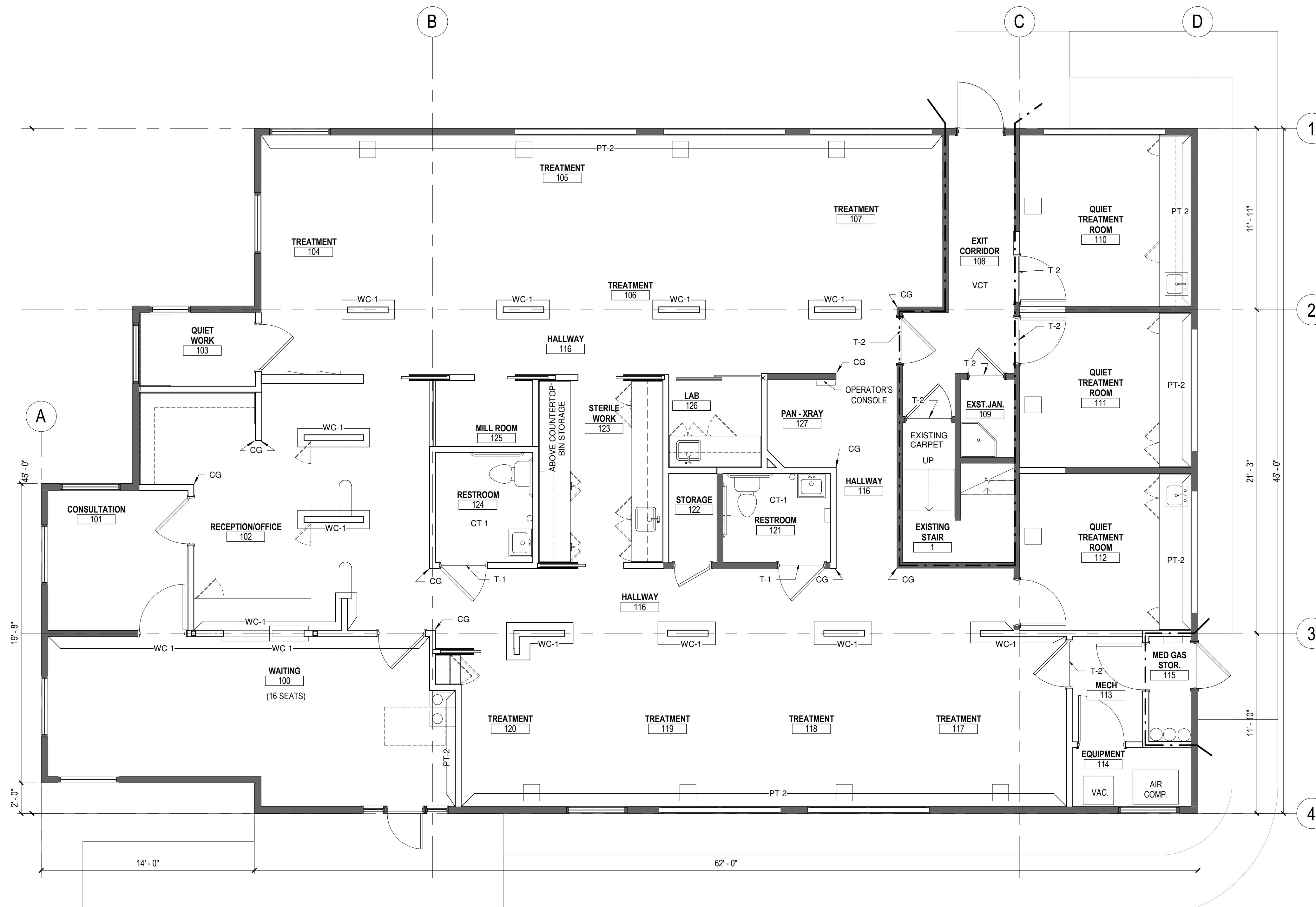


Date	Revision	Seal / Signature

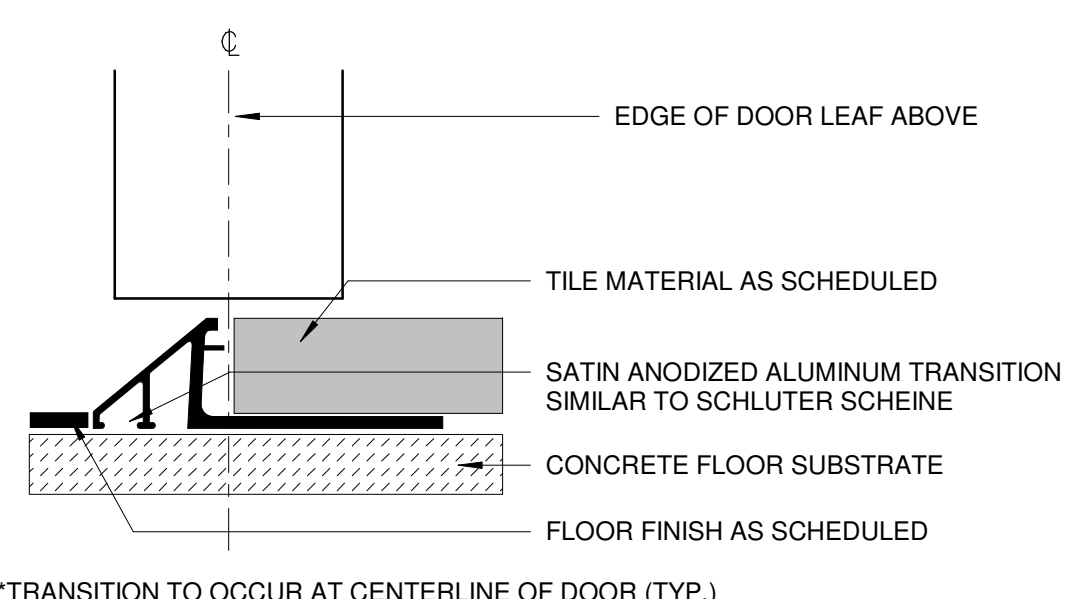
SCHEDULES AND DETAILS

GENERAL NOTES

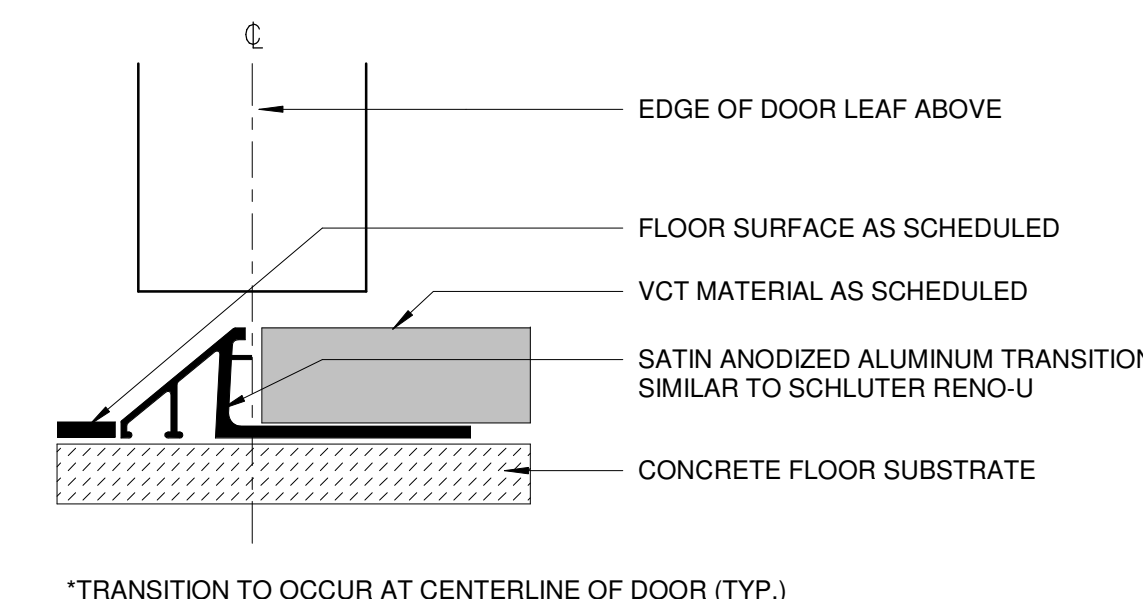
1. PROVIDE CORNER GUARDS AT OUTSIDE WALL CORNERS WHERE RECEIVING A FINAL PAINTED FINISH. DO NOT PROVIDE CORNER GUARDS AT WALLS RECEIVING FINISH WC-1.
2. PROVIDE FLOOR TRANSITIONS AS INDICATED ON DRAWINGS. ALL FLOOR TRANSITIONS SHALL BE APPLIED AT THE CENTERLINE OF THE DOOR. REFERENCE DETAILS THIS SHEET FOR ADDITIONAL INFORMATION.
3. PROVIDE MINI-BLINDS AT ALL EXISTING EXTERIOR WINDOWS. REF: SCHEDULE ON SHEET A901 FOR ADDITIONAL INFORMATION.
4. ALL CABINETRY SHALL RECEIVE FINISH PL-1 TYPICAL. REF: SCHEDULE ON SHEET A901 FOR ADDITIONAL INFORMATION.
- 5.



1 LEVEL 1 - FINISH PLAN
SCALE: 1/4" = 1'-0"

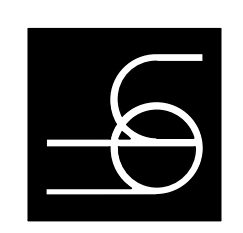


2 LVT TO CONCRETE TRANSITIONS (T-1)
SCALE: 3/4" = 1'-0"



3 LVT TO VCT TRANSITIONS (T-2)
SCALE: 3/4" = 1'-0"

BHIDE & HALL ARCHITECTS, P.A.
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ARCHITECT LICENSE NO.
DAVID S SHIVELY FL # 0099028

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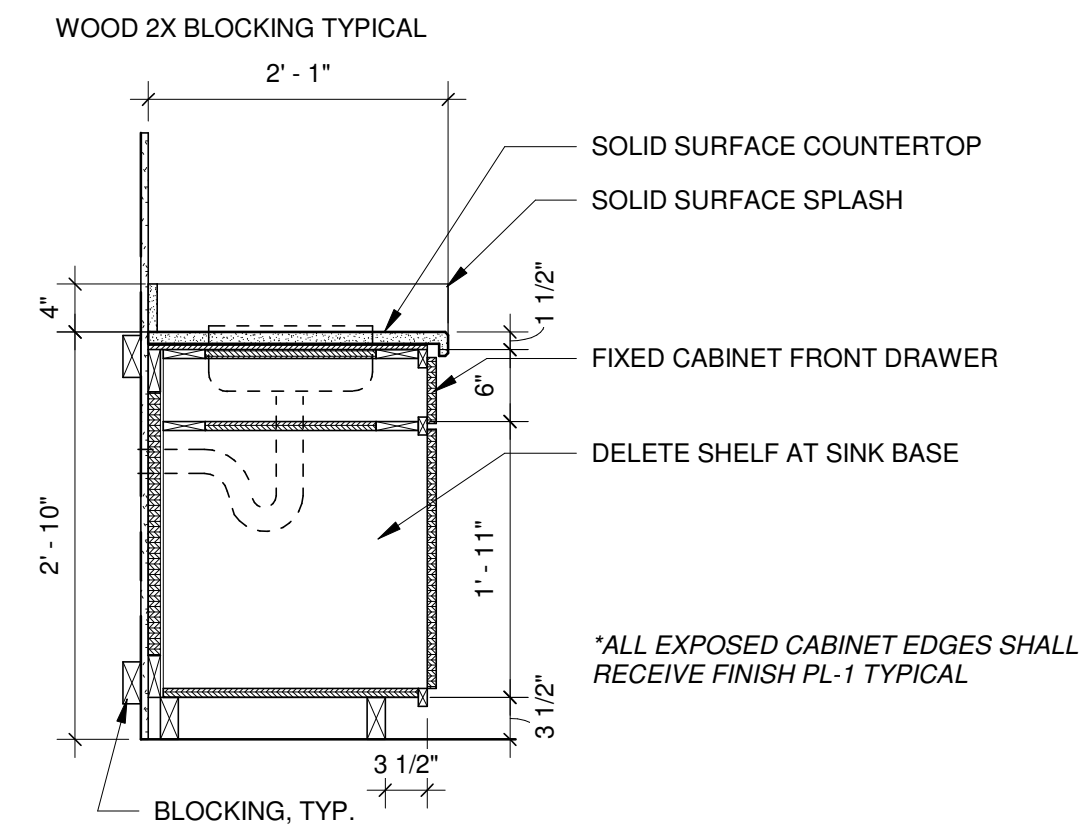
FINISH PLAN

DATE: 11/27/19
D.B.: Author
C.B.: Checker
JOB NO: 19040

A-902
FOR CONSTRUCTION

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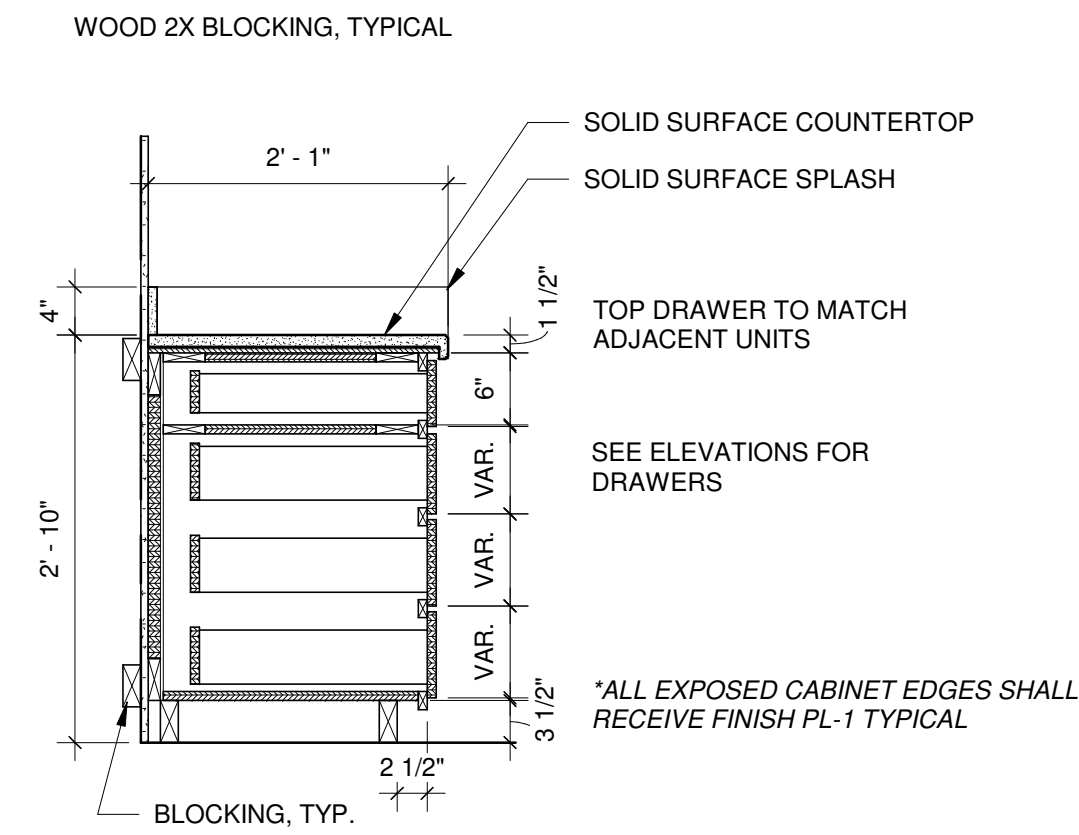
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MILLWORK SERIES 100

1 SINK BASE CABINET DETAIL

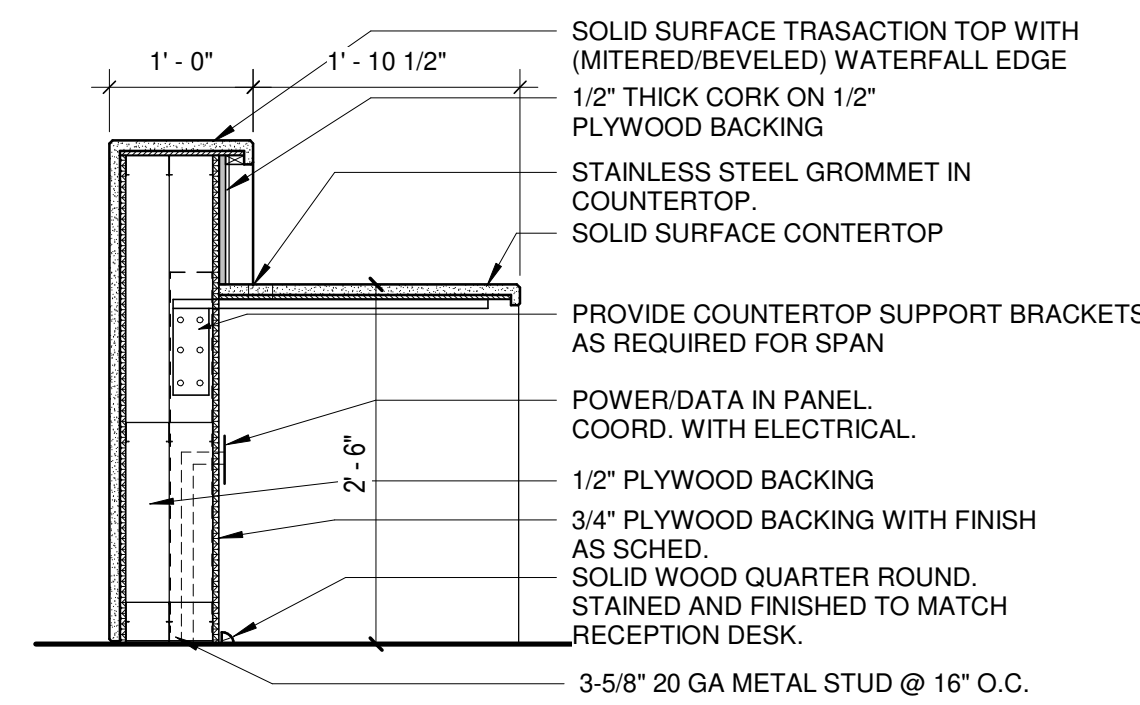
SCALE: 3/4" = 1'-0"



MILLWORK SERIES 200

2 BASE CABINET - DRAWERS

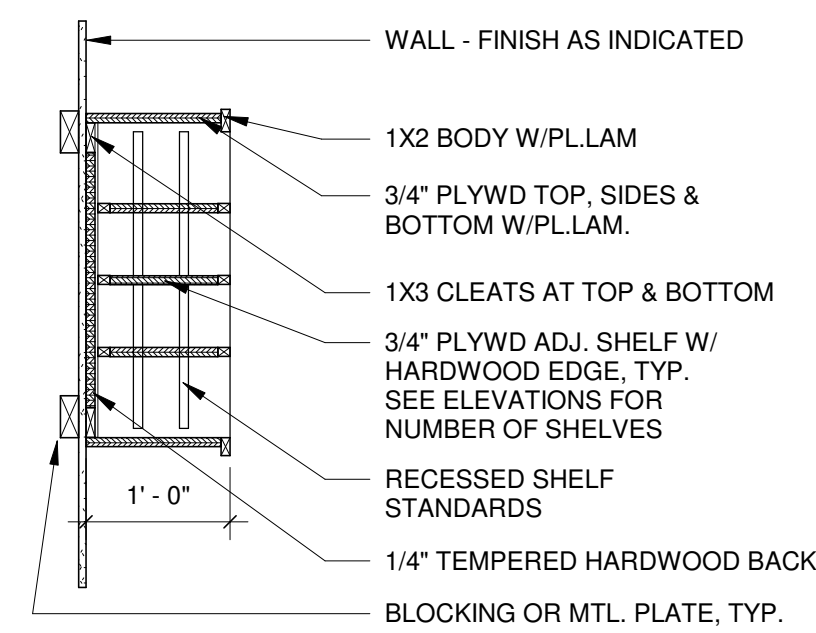
SCALE: 3/4" = 1'-0"



MILLWORK SERIES 300

6 OPEN COUNTERTOP

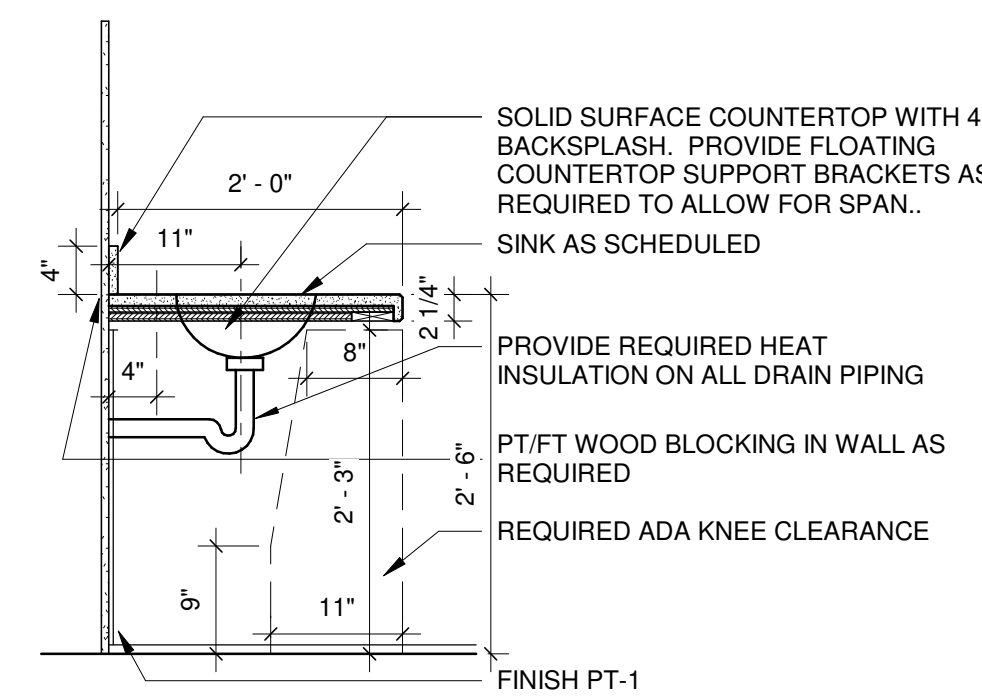
SCALE: 3/4" = 1'-0"



MILLWORK SERIES 300

3 WALL - OPEN SHELF

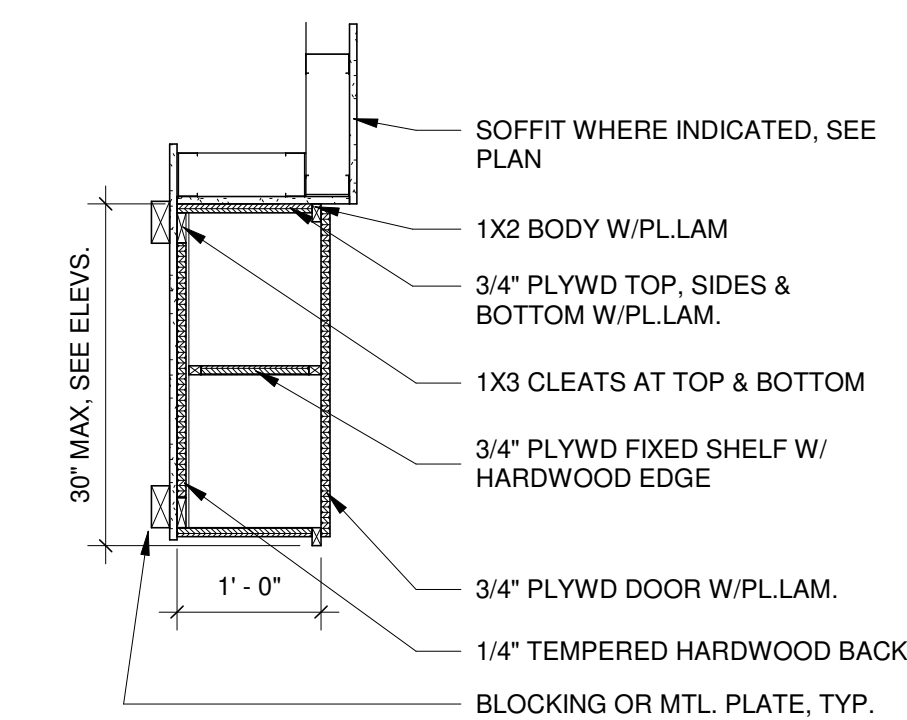
SCALE: 3/4" = 1'-0"



MILLWORK SERIES 300

5 BASE - ADA COMPLIANT SINK

SCALE: 3/4" = 1'-0"



MILLWORK SERIES 300

4 WALL - CABINET

SCALE: 3/4" = 1'-0"

GENERAL NOTES

- MILLWORK IDENTIFICATION
- W3030 CASE WIDTH
 - 200 CASE HEIGHT
 - 200 CASE SERIES INDICATOR
- CABINET DESIGNATOR:
- W= WALL
 - D= DRAWER BASE
 - B= CABINET BASE

BHIDE & HALL ARCHITECTS, P.A.
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MILLWORK DETAILS

DATE: 12/19/19
D.B.: Author
C.B.: Checker
JOB NO: 19040

A-903
FOR CONSTRUCTION

EQUIPMENT LIST

STERILIZER

ST-1
MANUFACTURER: MIDMARK
PRODUCT: PREVA
ELECTRICAL REQ: 115 VAC, 50/60Hz, 12 amp

DENTAL EXAM CHAIR

FST-1
MANUFACTURER: FOREST
PRODUCT: 3900 HYDRAULIC FOOT CONTROL
FEATURES: CONTOURED UTIL. CNTR. EURO-PIVOT CHAIR MOUNT HP ILLUMIN SYS 6-HOLE 9078 LED LIGHT UNIT MOUNT LIGHT POST SYS PIVOT CHAIR MT

ELECTRICAL: 1/2" CONDUIT AND QUAD RECEPTACLE PROVIDED BY CONTRACTOR TOP OF BOX SHALL BE NO HIGHER THAN 4" ABOVE FINISHED FLOOR

AIR: 1/2" MPT PROTRUDING 1" FROM FINISHED FLOOR. PRESSURE: 90-100 PSI

WATER: 1/2" MPT PROTRUDING 1" FROM FINISHED FLOOR. PRESSURE: 40-80 PSI

GRAVITY DRAIN: 3/4" I.D. PROTRUDING 1" FROM FINISHED FLOOR CONTRACTOR TO PROVIDE TRAP

VACUUM: 3/4" ID PROTRUDING 1" FROM FINISHED FLOOR REF: VACUUM FOR PLUMBING REQUIREMENTS.

X-RAY

XR-1
MANUFACTURER: PROGENY
MODEL: PREVA
ELECTRICAL REQ: 100-230VAC +/- 10% 50-60Hz MAX 5 amps

PAN XRAY

XR-2
MANUFACTURER: VATECH
MODEL: PAX-12D PANO
FEATURES: STANDING AND WHEELCHAIR ACCESSIBLE

ELECTRICAL: 50-90 kVp/4-10mA

EXAM LIGHTS

EXL-1
MANUFACTURER: MIDMARK
MODEL: LED
ELECTRICAL: 115 VAC, 50/60 Hz 1.3 amp
WEIGHT OF LIGHT & ARM: 19.5 LBS

MILLING MACHINE

MLL
EXST. MILLING MACHINE (RELOCATED AND INSTALLED BY OWNER)

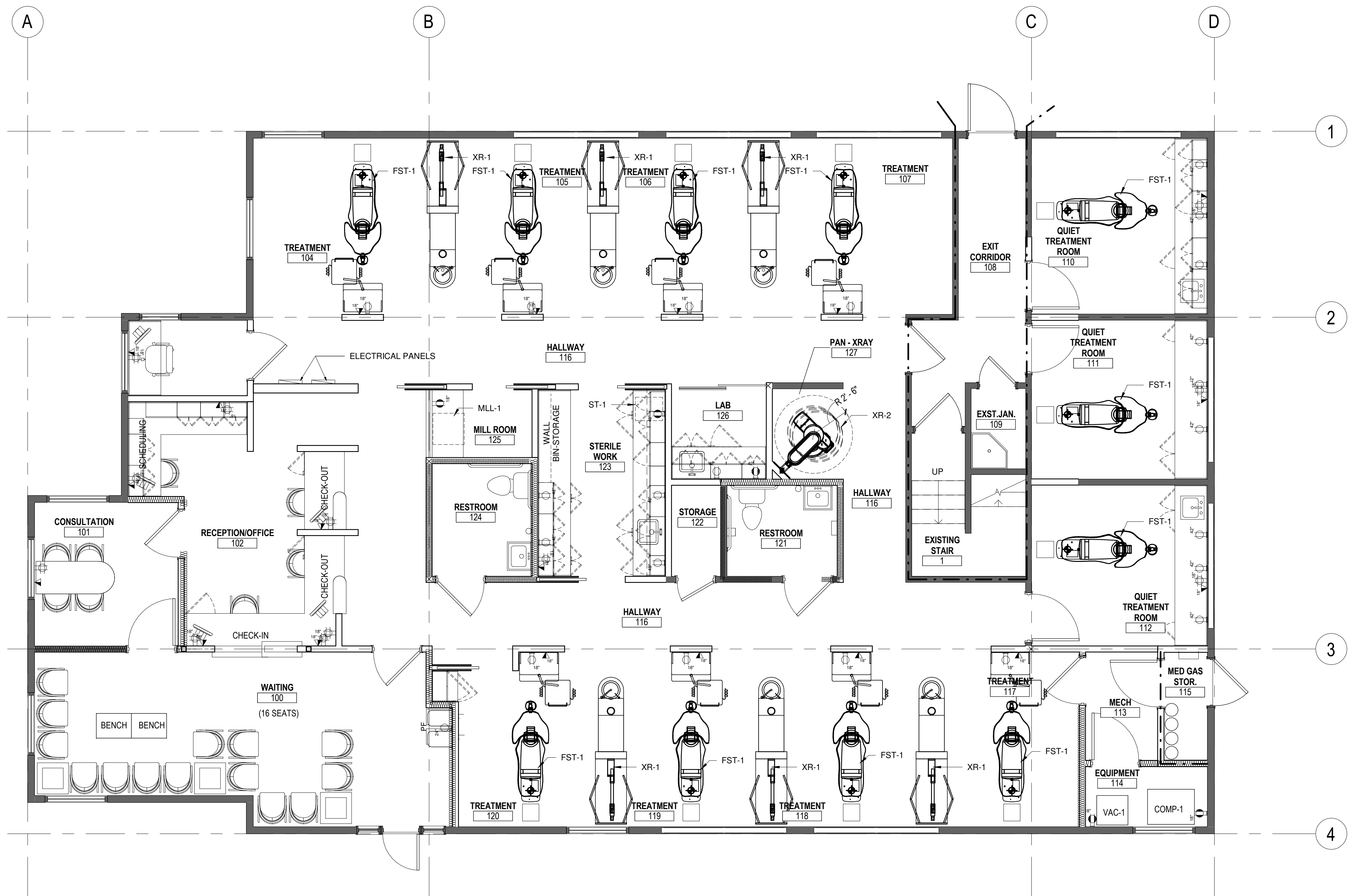
MECHANICAL EQUIPMENT

VAC-1
MANUFACTURER: MIDMARK
PRODUCT: POWERVAC
MODEL: P7
ELECTRICAL REQ: 208-230VAC, 60Hz 11.4 amps 30 amp BREAKER SIZE 2 HP 1 1/2" INLET HOSE CONNECT. 1 1/2" DRAIN

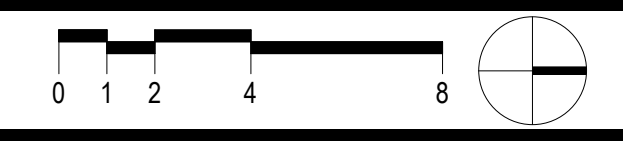
H/P MOTOR:
PLBG:

COMP-1
MANUFACTURER: MIDMARK
PRODUCT: POWERAIR
MODEL: P72
FEATURES: 7-10 USERS SOUND LEVEL: 68db W/COVER, 73db W/OUT TANK CAPACITY: 32 15.9 CFM @ 80PSI 1" PVC FRESH AIR INTAKE 3/8" TO 3/4" COPPER DELIVERY LINE (MAIN) 3/8" TO 3/4" COPPER DELIVERY LINE (BRANCH) TERMINATE LINE @ 1/2" TO 5/8" FPT

PLBG:



1 LEVEL 1 - EQUIPMENT PLAN
SCALE: 1/4" = 1'-0"



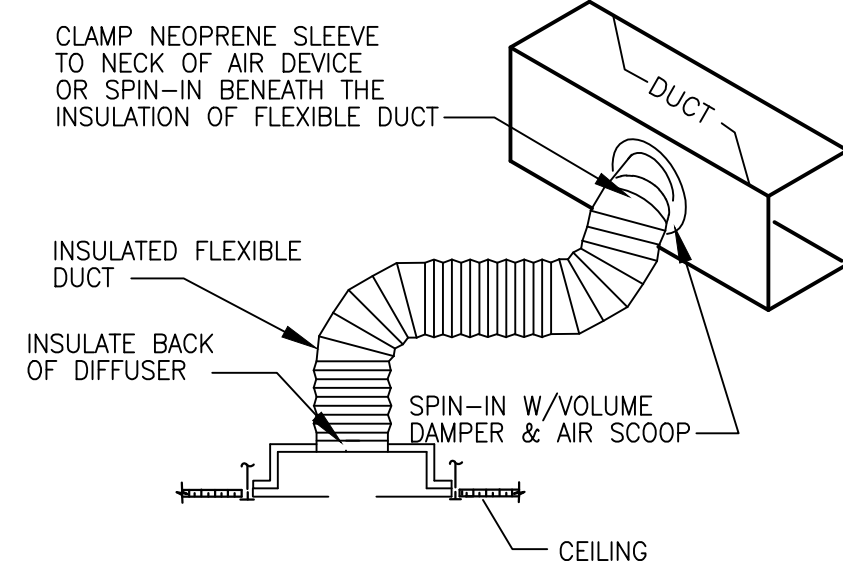
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Date	Revision	Seal / Signature
12/20/2019	1 FOR CONSTRUCTION	

EQUIPMENT PLAN

DATE: 10/25/19
D.B.:
C.B.: DSS
JOB NO: 19040

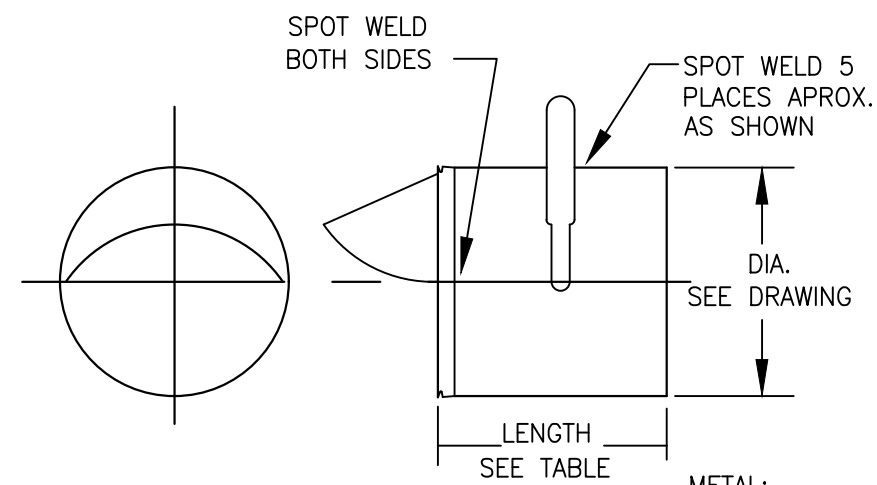
NOTE: WHEN RUNOUT LENGTH EXCEEDS 8 FEET, USE METAL DUCT TO LIMIT FLEX TO 8'-0" IN LENGTH.



SUPPLY DIFFUSER DETAIL

NOT TO SCALE

1
M1.0

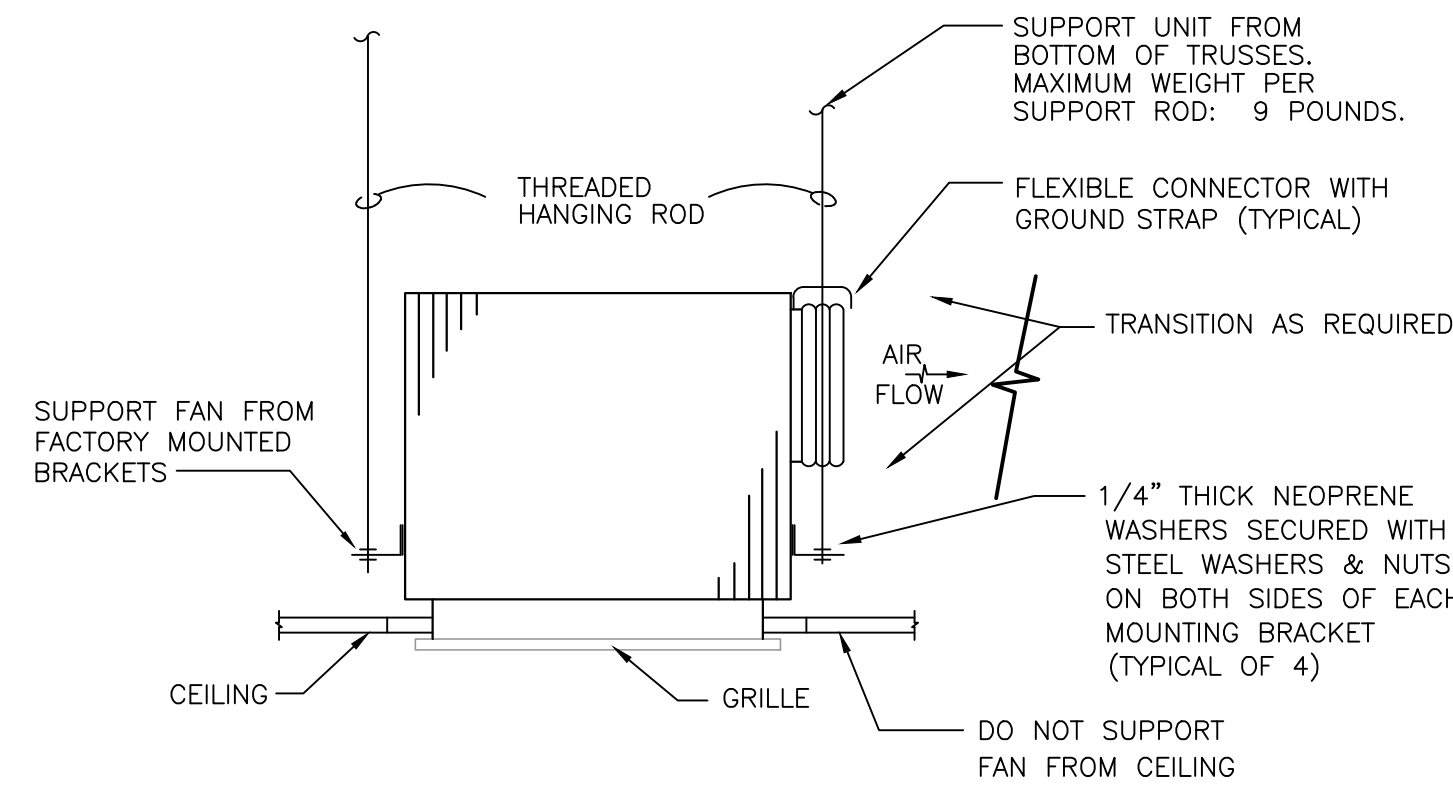


DIA.	LENGTH
4 IN	4 IN
5 IN	5 IN
6 IN	6 IN
7 IN	7 IN
8 IN	8 IN
9 IN	9 IN
10 IN	10 IN
12 IN	12 IN
14 IN	14 IN
16 IN	16 IN
18 IN	18 IN

SPIN-IN COLLAR DETAILS

NOT TO SCALE

2
M1.0



CABINET FAN MOUNTING DETAIL

NOT TO SCALE

3
M1.0

FAN SCHEDULE

UNIT NO.	EF-1
TYPE	CABINET
SERVES	TOILET
AIR FLOW (CFM)	70
EXTERNAL S.P. (IN. W.G.)	0.1
FAN DATA	
MAX. POWER	13 WATTS
DRIVE	DIRECT
SPEED (RPM)	808
MAXIMUM SONES	0.3
VOLTS/PHASE/HERTZ	115/1/60
MANUFACTURER	GREENHECK
MODEL NO.	SP-B80
NOTES	1, 2, 3
NOTES:	
1. PROVIDE BACKDRAFT DAMPER AND VIBRATION ISOLATION.	
2. PROVIDE SOLID STATE CONTROLLER.	
3. INTERLOCK WITH LIGHT SWITCH.	

SPLIT SYSTEM SCHEDULE

UNIT NO.	AHU-1/CU-1	AHU-3/CU-3	AHU-1/CU-1
NOMINAL TONNAGE	3	3	3
SUPPLY AIR (CFM)	1400	1150	1500
OUTSIDE AIR (CFM)	100	100	100
EXTERNAL S.P. (IN. W.G.)	0.5	0.5	0.5
FAN DATA			
MAX. POWER	1/2 HP	1/3 HP	3/4 HP
COOLING DATA			
TOTAL CAPACITY (MBH)	39.0	29.0	46.0
SENSIBLE CAPACITY (MBH)	27.3	20.3	32.2
HEATING DATA			
TOTAL CAPACITY (MBH)	39.0	31.0	50.0
ELECTRIC HEAT (kW)	5	5	5
MANUFACTURER	CARRIER	CARRIER	CARRIER
MODEL NO. (AHU/HPU)	FB4A036 / 38YKB036	FB4A036 / 38YKB036	FB4A036 / 38YKB036
NOTES	1	1	1
NOTES			
1. SPLIT SYSTEM IS EXISTING TO REMAIN. PROVIDE SMOKE DETECTORS IN SUPPLY DUCT.			

AIR DISTRIBUTION SCHEDULE

MARK	TYPE	FACE SIZE	BORDER TYPE	MANUFACTURER	MODEL NO.	NOTES
A	LOUVER FACED DIFFUSER	24X24	LAY-IN/SURFACE	PRICE	ASCD	1, 3
B	EGGCRATE FACE RETURNS	24X24	LAY-IN/SURFACE	PRICE	81DAL	1, 2, 3
C	LOUVER FACED DIFFUSER	12X12	LAY-IN/SURFACE	PRICE	ASCD	1, 2, 3
D	SIWALL SUPPLY	SEE DWGS.	SURFACE	PRICE	22DAL	1, 3
NOTES:						
1. PROVIDE OPPOSED BLADE DAMPER.						
2. EGGCRATE SHALL BE FULL FACE SIZE WITH 1/2" X 1/2" X 1" SINGLE LAYER GRID.						
3. PROVIDE DAMPER AT FITTING OF LOW PRESSURE DUCTWORK.						

HVAC GENERAL NOTES

- CONNECTION TO EQUIPMENT SHALL BE VERIFIED WITH MANUFACTURER CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DIMENSIONS BEFORE FABRICATION.
- VERIFY INSTALLED STRUCTURE PRIOR TO FABRICATION OF DUCTWORK AND THE HANGING OF DUCTWORK. COORDINATE ALL DUCTWORK WITH JOIST AND STEEL SPACING.
- SEE SPECIFICATIONS FOR GAGES AND BRACING REQUIREMENTS OF DUCTWORK. ALL DUCT SIZES SHOWN ARE INSIDE CLEAR DIMENSIONS.
- ALL DUCTS SHALL BE GROUNDED ACROSS FLEXIBLE CONNECTIONS WITH COPPER FLEXIBLE STRAP 1/8" BY 1/2" WIDE MULTI-STRANDED BRAID (#4 AWG) WITH FLAT LUG (3/16" HOLE DIAMETER) AT EACH END FOR ATTACHMENT. EACH FLEXIBLE STRAP SHALL BE 8" LONG.
- ACCESS PANELS IN DUCT WORK AND CEILINGS SHALL BE PROVIDED FOR OPERATION AND MAINTENANCE OF ALL FANS, HEATERS, VALVES, DAMPERS, AND MECHANICAL EQUIPMENT.
- ALL DUCTS AND PIPING SHALL BE INSTALLED AS TIGHT AS POSSIBLE TO WALLS AND BEAMS.
- FLEXIBLE DUCT CONNECTIONS SHALL BE PROVIDED ON ALL DUCT CONNECTIONS TO FANS. FLEX SHALL BE A MINIMUM OF 4".
- INSIDE OR OUTSIDE OF DUCT VISIBLE THROUGH GRILLES, REGISTERS, AND DIFFUSERS OR EXPOSED DUCT AND EQUIPMENT SHALL BE PAINTED FLAT BLACK.
- ALL EQUIPMENT, PIPING, AND DUCTWORK SHALL BE SUPPORTED AS DETAILED AND SPECIFIED. ADDITIONAL SUPPORTS SHALL BE PROVIDED AS REQUIRED TO PROVIDE A VIBRATION FREE INSTALLATION.
- INSULATE THE BACKS OF EACH RETURN REGISTER AND SUPPLY DIFFUSER WITH A 2" THICK DUCTWRAP INSULATION. MINIMUM R-VALUE = R-6.
- FLEXIBLE DUCT CONNECTING MAIN DUCT TO SUPPLY DIFFUSER SHALL NOT EXCEED 20 FEET IN LENGTH. IF THE DISTANCE EXCEEDS THIS LIMIT, AN INSULATED METAL DUCT OF REQUIRED LENGTH AND EQUAL DIAMETER SHALL BE INSTALLED WITH AIR SCOOP AND DAMPER AT MAIN DUCT TO REDUCE FLEXIBLE DUCT TO A MAXIMUM LENGTH OF 20 FEET. THE FLEXIBLE DUCT SHALL BE UL 181 RATED. MINIMUM INSTALLED R-VALUE = R-6.
- PROVIDE SPIN-IN CONE WITH LOCKING DAMPER AT EACH FLEXIBLE DUCT RUN OUT CONNECTING SUPPLY DUCT TO DIFFUSER. PROVIDE DAMPER EXTENSIONS TO ACCOMMODATE EXTERNAL INSULATION.
- COORDINATE WITH ALL TRADES INVOLVED. PROVIDE OFFSETS AND TRANSITIONS AROUND OBSTRUCTIONS AT NO ADDITIONAL COST TO THE OWNER.
- REFER TO TYPICAL DETAILS FOR INSTALLATION OF EQUIPMENT.
- ALL FINISHES DAMAGED OR REMOVED FOR THE INSTALLATION OF WORK SHALL BE REPLACED TO MATCH ADJACENT FINISHES.
- ALL PIPE PENETRATIONS THROUGH FIRE WALLS TO BE AIR TIGHT AND SEALED WITH FIRE-PROOF SEALANT. ALL DUCT PENETRATIONS THROUGH FIRE WALLS TO BE PROVIDED WITH FIRE DAMPERS INSTALLED IN ACCORDANCE WITH NFPA.
- OUTDOOR DESIGN AMBIENT FOR ALL EQUIPMENT IS 95 DEGREES FdB/ 77 DEGREES FwB IN SUMMER AND 32 DEGREES FAHRENHEIT IN WINTER.
- ALL PIPE PENETRATIONS OF FLOORS TO BE SEALED WITH UL LISTED INTUMESCENT CAULK.
- SET ALL HVAC SUPPLY, RETURN, AND EXHAUST SYSTEM AIR FLOW RATE TOLERANCES TO WITHIN PLUS 10 PERCENT (10%) OR MINUS ZERO PERCENT (0%).
- MECHANICAL CONTRACTOR SHALL COORDINATE ALL ELECTRICAL REQUIREMENTS AND ACCESSORIES WITH ELECTRICAL CONTRACTOR PRIOR TO PURCHASE AND INSTALLATION AND SHALL BRING ANY DISCREPANCIES TO THE ATTENTION OF ENGINEER.

HVAC LEGEND

AFF	ABOVE FINISHED FLOOR	LVG	LEAVING
AHU-1	AIR HANDLING UNIT #1	MBH	BTUH/1000
ASHRAE	AMERICAN SOCIETY OF HEATING REFRIGERATION AND AIR CONDITIONING ENGINEERS	MER	MECHANICAL EQUIPMENT ROOM
		MVD	MANUAL VOLUME DAMPER
		O.A.	OUTSIDE AIR
CD	CONDENSATE DRAIN	N.O.	NORMALLY OPEN
CFM	CUBIC FEET PER MINUTE	PD	PRESSURE DROP
HPU-1	HEAT PUMP UNIT #1	SP	STATIC PRESSURE
dB	DRY BULB	TYP.	TYPICAL
EF-1	EXHAUST FAN #1	UL	UNDERWRITERS LABRATORIES
ENT.	ENTERING	W/	WITH
ESP	EXTERNAL STATIC PRESSURE	WB	WET BULB
ETR	EXISTING TO REMAIN	WG	WATER GAUGE
F.	FAHRENHEIT	~	FLEX. RUN OUT
FD	FIRE DAMPER	Ⓢ	THERMOSTAT
FdB	DEGREES F. DRY BULB	ⓐ 10x4 / 410	NECK SIZE CFM
FLR. DR	FLOOR DRAIN	Ⓜ	MOTORIZED DAMPER
FwB	DEGREES F. WET BULB	Ⓡ	RECTANGULAR TO ROUND TRANSITION WITH FLEX
GPM	GALLONS PER MINUTE	⊗	POINT OF CONNECTION
HP	HORSEPOWER		
HVAC	HEATING, VENTILATION, AND AIR CONDITIONING		
kW	KILOWATTS		
LAT	LEAVING AIR TEMP.		

BHIDE & HALL ARCHITECTS, P.A.
1329 KINGSLEY AVENUE, SUITE C ORANGE PARK, FLORIDA 32073
PH: (904) 264-1919 LIC. NO. AAC000650

HADDAD ENGINEERING, INC.
9800 HARTLEY ROAD, SUITE 602 JACKSONVILLE, FLORIDA 32227
(904) 262-5066



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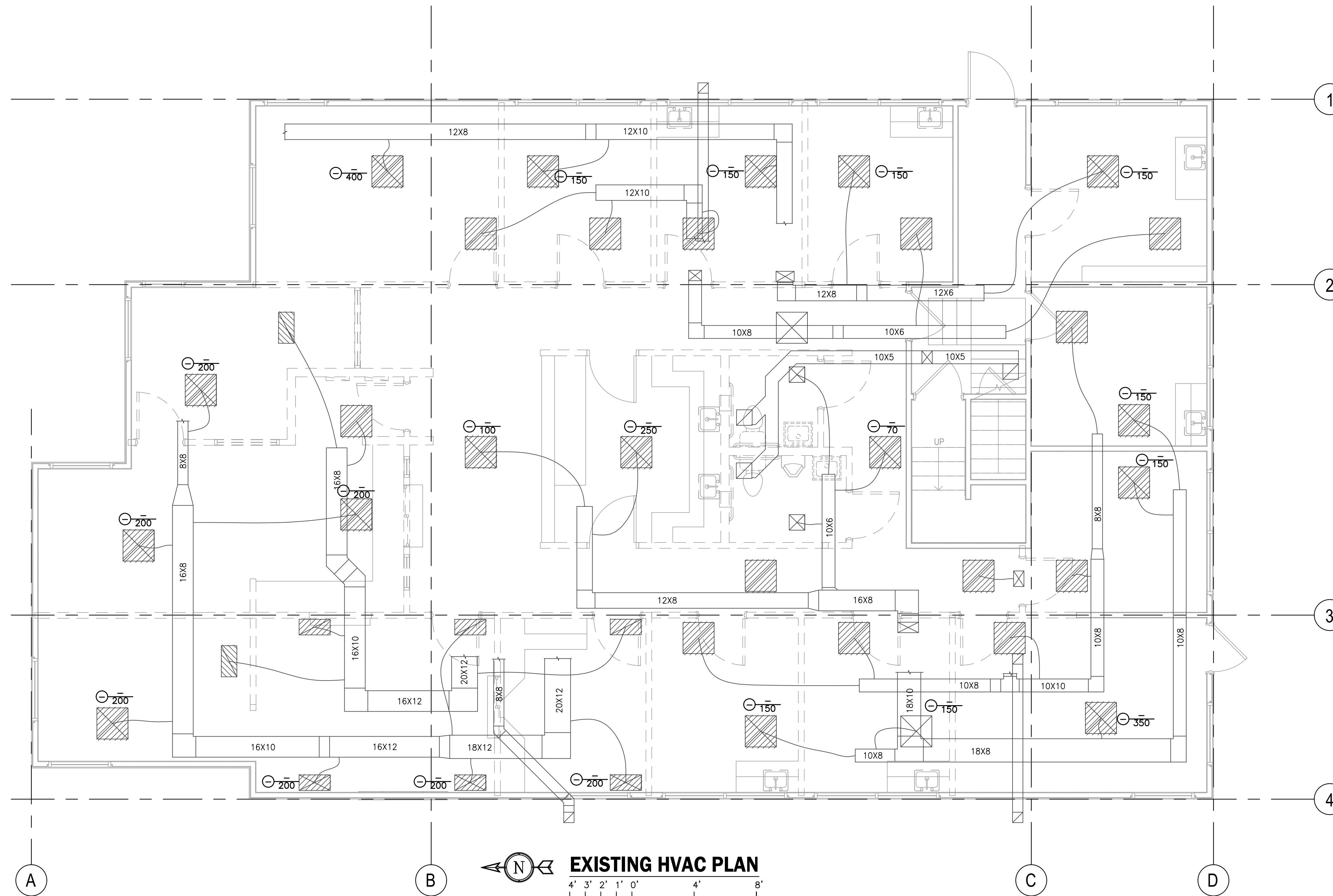
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H HADDAD ENGINEERING, INC.
HADDAD ENGINEERING, INC.
1329 KINGSLEY AVENUE, SUITE C ORANGE PARK, FLORIDA 32073
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Date	Revision
12/20/2019	1 FOR CONSTRUCTION

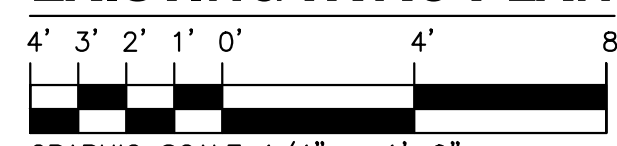
MECHANICAL LEGEND, NOTES, AND DETAILS

DATE: 12/19/19
D.B.: J.B.
C.B.: J.B.
JOB NO: 19040

M1.0
DESIGN DEVELOPMENT



EXISTING HVAC PLAN



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

HATCHING INDICATES HVAC ITEMS TO BE REMOVED.

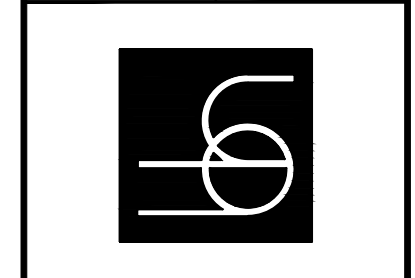
SPECIAL NOTE TO HVAC CONTRACTOR

NOTE: BEFORE WORK HAS BEEN COMPLETED, THE AIR CONDITIONING CONTRACTOR SHALL COMPLETE THE FOLLOWING:

1. THE EXISTING SYSTEMS SHALL BE CHARGED AND CHECKED FOR LEAKS. REPAIR ALL LEAKS AS NECESSARY AND RECHARGE AS REQUIRED.
2. CLEAN THOROUGHLY THE EXISTING EVAPORATOR AND CONDENSER COILS.
3. CLEAN THOROUGHLY THE INSIDE OF THE EXISTING DUCTWORK.
4. CLEAN THOROUGHLY DIFFUSERS. REPLACE ANY BROKEN PARTS AND REINSTALL.
5. REPLACE ALL BELTS.
6. REPLACE ALL FILTERS.
7. SERVICE AND ADJUST ALL MOTORS AS REQUIRED.
8. INSULATE AND SEAL AIR TIGHT ANY DAMAGED OR LEAKING DUCTWORK PER SMACNA STANDARDS.
9. ALL COMPONENTS SHALL BE SERVICED OR REPLACED SO ALL SYSTEMS LEFT ARE IN WORKING CONDITION.
10. CONTRACTOR SHALL SEND A COPY OF THIS LIST WITH DATE ITEMS WERE COMPLETED TO ENGINEER OF RECORD, AND CCPS CODE ENFORCEMENT.

HVAC CONTRACTOR TO VERIFY OPERATION OF EXISTING SPLIT SYSTEMS. CONTRACTOR TO CLEAN EVAPORATOR AND CONDENSER COIL. CHECK CONDENSATE DRAIN PAN AND CONDENSATE DRAIN LINE. SUPPLY TO THE OWNER / ENGINEER A WRITTEN REPORT ON THE OPERATING CONDITION OF THE UNIT WITHIN 7 DAYS OF COMPLETION. REPORT TO INCLUDE:

1. SUCTION AND DISCHARGE REFRIGERANT PRESSURE.
2. CONDENSING TEMPERATURE, EVAPORATOR TEMPERATURE, AND SUPERHEAT.
3. ENTERING AIR TEMP, DISCHARGE AIR TEMP, AND AMBIENT AIR TEMPERATURE AND TOTAL CFM.
4. SUPPLY VOLTAGE.
5. COMPRESSOR - FULL LOAD AMPS, VERIFY 1 ϕ OR 3 ϕ , CONDENSER FAN MOTOR - FULL LOAD AMPS, VERIFY 1 ϕ OR 3 ϕ , EVAPORATOR FAN MOTOR - FULL LOAD AMPS, VERIFY 1 ϕ OR 3 ϕ .
6. CHECK ELECTRICAL CONNECTIONS ON ALL CONTACTORS AND OTHER ELECTRICAL COMPONENTS.
7. VERIFY DISCONNECT SIZES AND FUSES. IF UNIT IS LOW ON REFRIGERANT, CONTRACTOR SHALL LEAK CHECK UNIT. REPORT ANY PHYSICAL DAMAGE TO UNIT. SUPPLY NEW FILTERS.



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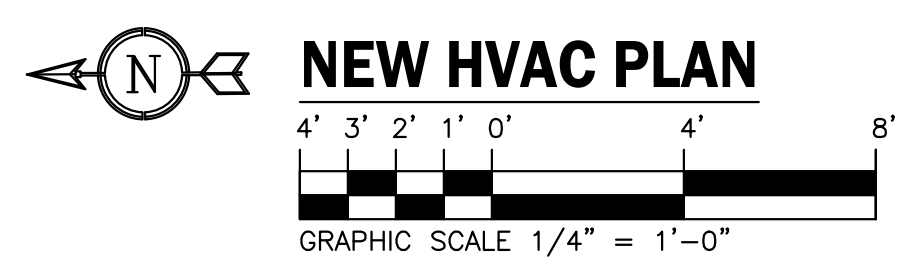
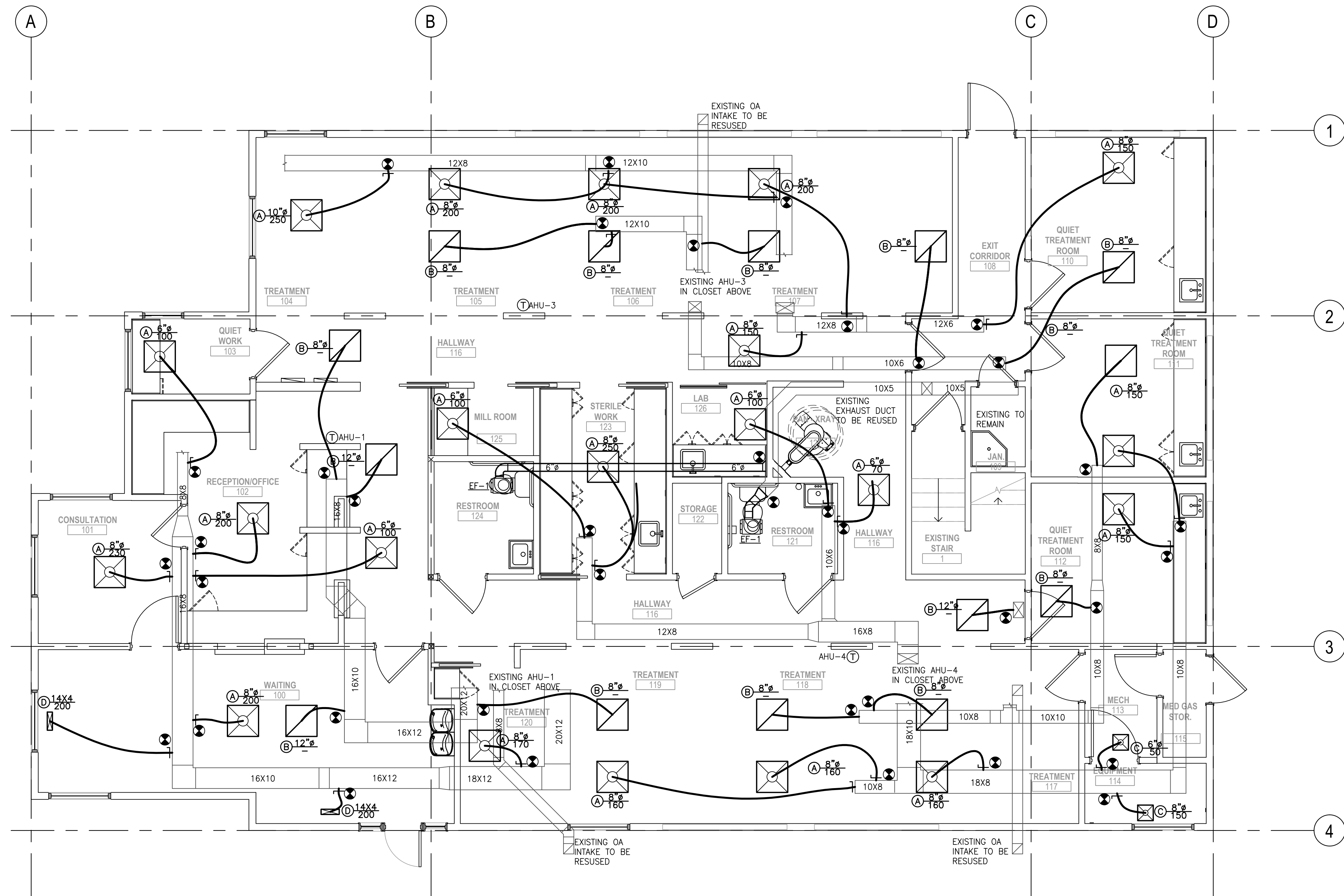
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HADDAD ENGINEERING INC.
 9830 HARTLEY ROAD, SUITE 200
 JACKSONVILLE, FLORIDA 32227
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 HADDAD ENGINEERING, INC. LICENSE NO. 12073

Date	Revision	Seal / Signature
12/20/2019	1 FOR CONSTRUCTION	

**EXISTING HVAC
 PLAN**

DATE: 12/19/19
 D.B.: J.B.
 C.B.: J.B.
 JOB NO: 19040

M2.0
 DESIGN DEVELOPMENT

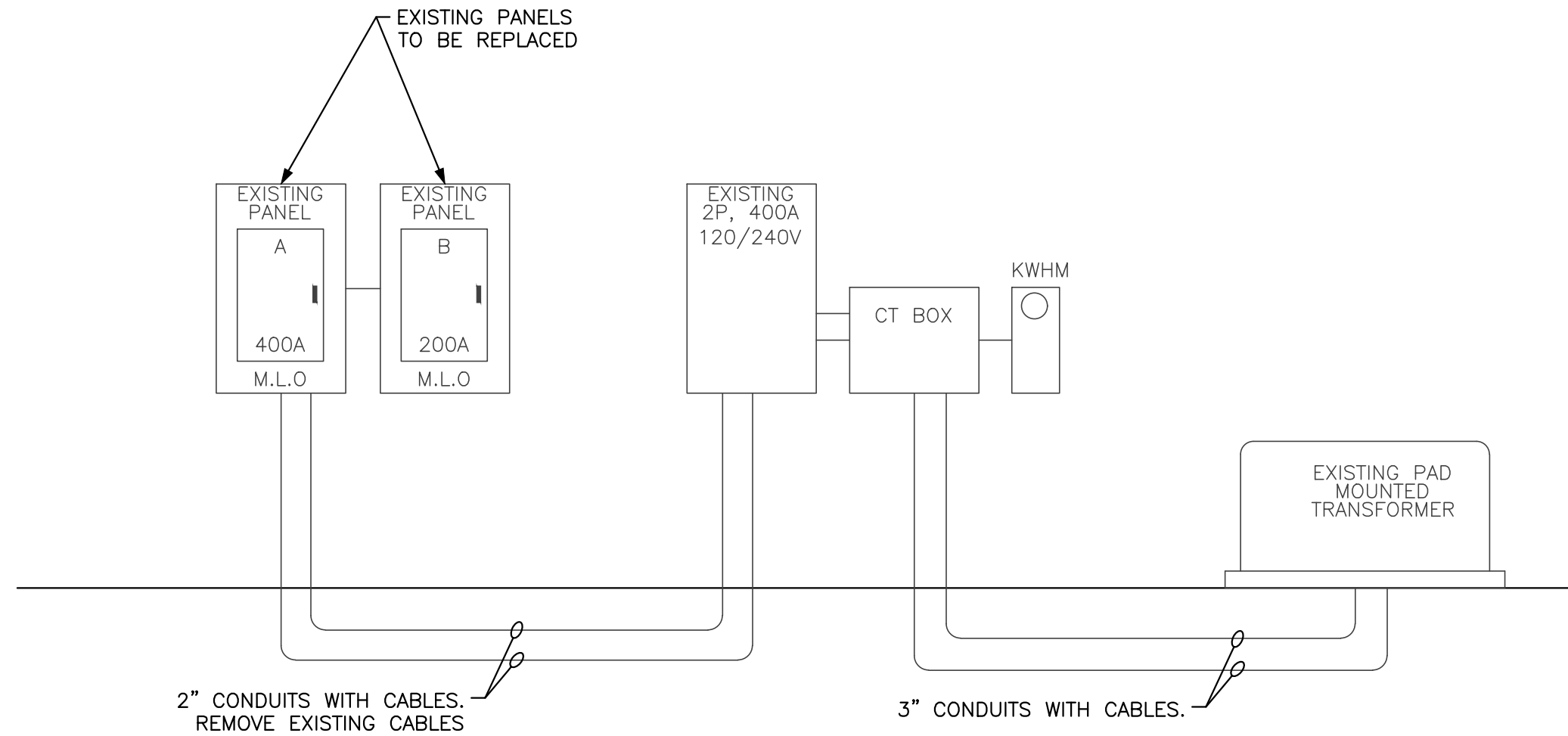


Date	Revision	Seal / Signature
12/20/2019	1 FOR CONSTRUCTION	

NEW HVAC PLAN

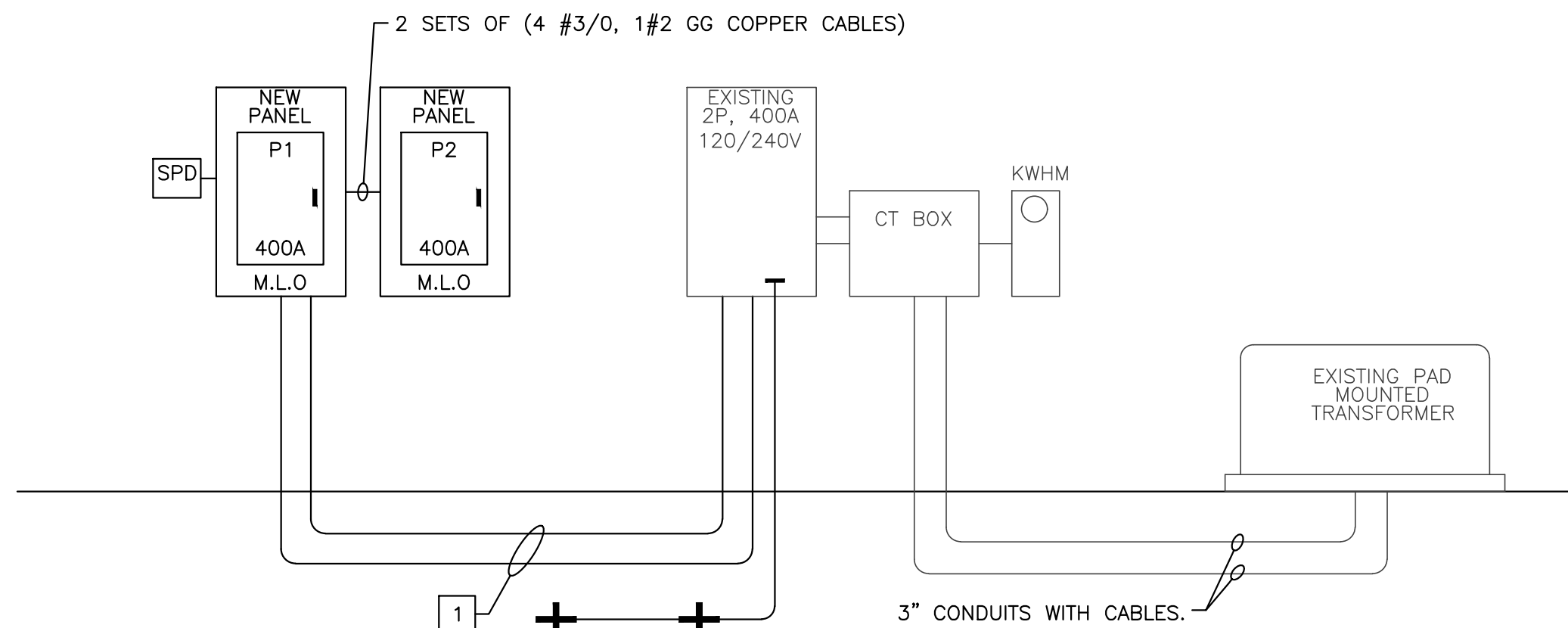
DATE: 12/19/19
 D.B.: J.B.
 C.B.: J.B.
 JOB NO: 19040

M3.0
 DESIGN DEVELOPMENT



EXISTING POWER RISER DIAGRAM

NOT TO SCALE



PROVIDE (2) ADDITIONAL GROUND RODS. 3/4" x 10' COPPER CLAD GROUND RODS. CONNECT TO EXISTING MAIN GROUNDING SYSTEM. NEW GROUNDING SYSTEM SHALL NOT EXCEED 5 OHMS AT MAIN CIRCUIT BREAKER.

MODIFIED POWER RISER DIAGRAM

NOT TO SCALE

POWER RISER DIAGRAM NOTES:

- 1 EXTEND EXISTING (2) 2" CONDUITS TO NEW LOCATION OF PANEL P1. PROVIDE (2) SETS OF (4 #3/0, 1 #2 GG COPPER CABLES) FROM MAIN BREAKER TO PANEL P1.

ELECTRICAL LEGEND

- LIGHTING FIXTURE – RECESSED WITH JUNCTION BOX AND FLEXIBLE METALLIC CONDUIT CONNECTION. WITH EMERGENCY POWER PACK.
- LIGHTING FIXTURE – RECESSED WITH JUNCTION BOX AND FLEXIBLE METALLIC CONDUIT CONNECTION. WITH EMERGENCY POWER PACK.
- LIGHTING FIXTURE – SURFACE MOUNTED.
- LIGHTING FIXTURE – RECESSED.
- LIGHTING FIXTURE – SURFACE OR WALL MOUNTED.
- EMERGENCY LIGHTING FIXTURE. DO NOT SWITCH.
- EXIT LIGHT – PROVIDE ARROWS AS INDICATED, SHADING DENOTES FACE OPERATION. DO NOT SWITCH.
- TOGGLE SWITCH – SINGLE POLE – QUIET TYPE 20 AMP, 120/277 VOLT, HUBBELL NO. HBL1221W WITH NO. NP1W COVERPLATE – 46" MOUNTING HEIGHT, U.N.O.
- TOGGLE SWITCH – THREE-WAY QUIET TYPE, 20 AMP, 120/277 VOLT, HUBBELL NO. HBL1223W WITH NO. NP1W COVERPLATE, 46" MOUNTING HEIGHT, U.N.O.
- TOGGLE SWITCH – SINGLE POLE, 20 AMP, 120/277V, MOTOR RATED, GROUNDING TYPE, MOUNT AT EQUIPMENT HOUSING.
- VACANCY SENSOR – SWITCH, 120/277 VOLT, ADJUSTABLE DELAY OFF. WATT STOPPER #DW-100-W, WHITE COVERPLATE. 46" MOUNTING HEIGHT, U.N.O.
- LOW VOLTAGE MANUAL ON SWITCH – 46" MOUNTING HT, U.N.O. WHITE SWITCH AND COVERPLATE
- DIMMER SWITCH – 0-10V, WHITE WITH WHITE COVERPLATE. 46" MOUNTING HEIGHT, U.N.O.
- DIGITAL DIMMING ROOM CONTROLLER. LOCATE IN ACCESSIBLE CEILING SPACE. PROVIDE 0-10V, 600V DIMMING CONTROL CABLE. SEE LIGHTING CONTROL DIAGRAMS.
- DIGITAL ON/OFF LIGHTING ROOM CONTROLLER. LOCATE IN ACCESSIBLE CEILING SPACE. SEE LIGHTING CONTROL DIAGRAMS.
- DIGITAL ON/OFF PLUG LOAD ROOM CONTROLLER. LOCATE IN ACCESSIBLE CEILING SPACE. SEE LIGHTING CONTROL DIAGRAMS.
- CEILING MOUNTED LOW VOLTAGE OCCUPANCY SENSOR. PROVIDE POWER PACKS AS REQUIRED.
- HOSPITAL GRADE SINGLE RECEPTACLE – 20 AMP, 125 V., 3 WIRE GROUNDING. HUBBELL NO. HBL8310W WITH WHITE COVERPLATE, 18" MOUNTING HEIGHT, U.N.O.
- HOSPITAL GRADE DUPLEX RECEPTACLE – 20 AMP, 120 VOLT, 3 WIRE GROUNDING, HUBBELL No. HBL8300W WITH WHITE COVERPLATE, 18" MOUNTING HEIGHT, U.N.O. FOR LOCATIONS OTHER THAN EXAM ROOMS, PROVIDE HUBBLE NO. HBL5352W
- DUPLEX RECEPTACLE – ONE OCCUPANCY SENSOR CONTROLLED FACE, 20 AMP, 120 VOLT, 3 WIRE 20 AMP, 120 VOLT, 3 WIRE GROUNDING, HUBBELL GROUNDING, HUBBELL NO. BR20C1WHTR WITH WHITE COVERPLATE, 18" MOUNTING HEIGHT, U.N.O. SEE LIGHTING CONTROLLED PLUG LOAD DIAGRAMS.
- HOSPITAL GRADE DUPLEX RECEPTACLE – 20 AMP, 120 VOLT, 3 WIRE GROUNDING, HUBBELL No. HBL8300W WITH WHITE COVERPLATE, ABOVE COUNTER, 42" MOUNTING HEIGHT IN PATIENT BEDROOMS.
- HOSPITAL GRADE DUPLEX RECEPTACLE – (2) TWO 20 AMP, 120 VOLT, 3 WIRE GROUNDING, HUBBELL NO. HBL8300W WITH WHITE COVERPLATE, 18" MOUNTING HEIGHT, U.N.O. FOR LOCATIONS OTHER THAN EXAM ROOMS, PROVIDE HUBBLE NO. HBL5352W.
- DOUBLE DUPLEX RECEPTACLES – ONE OCCUPANCY SENSOR CONTROLLED FACE, (2) TWO 20 AMP, 120 VOLT, 3 WIRE GROUNDING, HUBBELL NO. BR20C1WHTR WITH WHITE COVERPLATE, 18" MOUNTING HEIGHT, U.N.O. SEE LIGHTING CONTROLLED PLUG LOAD DIAGRAMS.
- SPECIAL PURPOSE RECEPTACLE. MATCH EQUIPMENT PLUG.
- HOSPITAL GRADE DUPLEX RECEPTACLE WITH GROUND FAULT INTERRUPTER, 20A., 120 VOLT, 3 WIRE GROUNDING. HUBBELL NO. GF8300W WITH WHITE COVERPLATE, 46" MOUNTING HEIGHT, U.N.O. EXTERIOR LOCATIONS SHALL BE MOUNTED AT 18" A.F.F.
- HOSPITAL GRADE DOUBLE DUPLEX RECEPTACLE WITH GROUND FAULT INTERRUPTER, (2) 20A., 120 VOLT, 3 WIRE GROUNDING. HUBBELL NO. GF8300W WITH WHITE COVERPLATE, 46" MOUNTING HEIGHT, U.N.O.
- WEATHER RESISTANT DUPLEX RECEPTACLE WITH GROUND FAULT INTERRUPTER, 20 AMP, 120 VOLT, 3 WIRE GROUNDING. HUBBELL NO. GFTR20W WITH WHILE IN USE COVER EXTERIOR LOCATIONS SHALL BE WEATHER RESISTANT LABELED "WR" PER NEC AND MOUNTED AT 18" A.F.F.
- TELEPHONE/DATA OUTLET – 4" SQUARE 2 1/8" DEEP JUNCTION BOX WITH 1-GANG EXTENSION RING AND CAT 6 RJ-45 CONNECTOR. NUMBER INDICATES THE QUANTITY OF RJ-45 JACKS. OUTLETS VOID OF NUMBER ARE (2) RJ-45 JACKS. 18" MOUNTING HEIGHT, U.N.O. (2) CAT6 CABLES TO MTR. PROVIDE 1" CONDUIT FROM BOX TO CEILING SPACE.
- JUNCTION BOX SIZE PER NEC.
- EQUIPMENT CONNECTION.
- PHOTOCCELL MOUNT FACING NORTH.
- MOTOR, FAN, PUMP OR AIR CONDITIONING UNIT CONNECTION PER NEC.
- LIGHTING AND/OR POWER PANELBOARD.
- WIRING IN CONDUIT, RUN CONCEALED IN SLAB OR UNDERGROUND.
- WIRING IN CONDUIT, RUN CONCEALED ABOVE CEILING OR IN WALLS.
- HOMERUN TO PANELBOARD – NUMBER OF ARROWS DENOTES QUANTITY OF CIRCUITS. CROSSMARKS INDICATE QUANTITY OF NO. 12 CONDUCTORS. RUNS VOID OF CROSSMARKS ARE 1/2 INCH CONDUIT, 3 NO. 12, U.N.O. DO NOT COMBINE HOMERUNS EXCEPT AS SPECIFICALLY INDICATED ON THE PLAN.
- WP DENOTES WEATHERPROOF – MOUNT RECEPTACLES HORIZONTALLY AND PROVIDE HUBBELL #ML500G COVERPLATE, U.N.O.
- U.N.O. UNLESS NOTED OTHERWISE.
- A.F.F. ABOVE FINISHED FLOOR.
- AC DENOTES MOUNTED ABOVE COUNTER HEIGHT.
- C DENOTES MOUNTED RECESSED IN CEILING SOFFIT.
- GG GREEN GROUND CONDUCTOR.
- E.C. EMPTY CONDUIT WITH PULL WIRE/CORD.
- ETR EXISTING TO REMAIN
- DISCONNECT SWITCH, "3 60/40" DENOTES 3 POLE, 60 AMP, 40 AMP FUSES.
- DOOR CONTACT SWITCH LOCATION, PROVIDE JUNCTION BOX IN CEILING SPACE.
- WALL MOUNTED SECURITY MOTION SENSOR.
- CEILING MOUNTED SECURITY MOTION SENSOR.
- SURVEILLANCE SYSTEM TV CAMERA J.BOX. PROVIDE 1/2" C. TO ACCESSIBLE CEILING SPACE, U.N.O. COORDINATE LOCATION AND MOUNTING HEIGHT WITH OWNER AND SYSTEM PROVIDER/INSTALLER.
- NEW CEILING MOUNTED SPEAKER, BACK BOX AND TRANSFORMER. WHITE ROUND GRILL. PROVIDE WIRING TO EXISTING AMPLIFIER. SUPPORT CABLES FROM BUILDING STRUCTURE AT INTERVALS NOT EXCEEDING 36".
- NEW VOLUME CONTROLLER. MOUNT AT 46".
- CABLE TV OUTLET – 4 INCH SQUARE JUNCTION BOX WITH 1-GANG EXTENTION RING, COAXIAL CABLE CONNECTOR AND IVORY COVERPLATE, 18" MOUNTING HEIGHT.
- CEILING MOUNTED CABLE TV CONNECTION. COORDINATE WITH DENTAL EQUIPMENT SUPPLIER FOR EXACT LOCATION.

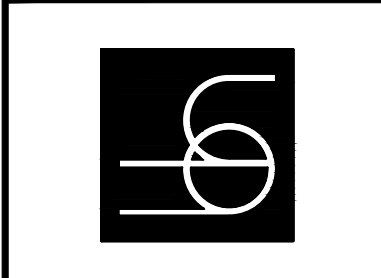
EXISTING ELECTRICAL LEGEND

- EXISTING FLUORESCENT LIGHTING FIXTURE – RECESSED
- FLUORESCENT LIGHTING FIXTURE – SURFACE MOUNTED.
- EXISTING PL FLUORESCENT, INCANDESCENT OR H.I.D. LIGHTING FIXTURE – RECESSED.
- EXISTING PL FLUORESCENT, H.I.D. OR INCANDESCENT LIGHTING FIXTURE – SURFACE OR WALL MOUNTED.
- EXISTING EMERGENCY LIGHTING FIXTURE. DO NOT SWITCH.
- EXISTING EXIT LIGHT
- EXISTING TOGGLE SWITCH – SINGLE POLE
- EXISTING DUPLEX RECEPTACLE – 20 AMP, 120 VOLT
- EXISTING DUPLEX RECEPTACLE – MOUNTED ABOVE COUNTER
- EXISTING DOUBLE DUPLEX RECEPTACLES
- EXISTING DUPLEX RECEPTACLE WITH GROUND FAULT INTERRUPTER
- EXISTING DATA/TELEPHONE OUTLET
- EXISTING JUNCTION BOX SIZE PER NEC.
- EXISTING CABLE TV OUTLET
- EXISTING LIGHTING AND/OR POWER PANELBOARD.
- EXISTING DISCONNECT SWITCH
- EXISTING PENDANT MOUNTED PADDLE FAN
- EXISTING SURVEILLANCE SYSTEM CAMERA
- EXISTING WALL MOUNTED SECURITY MOTION SENSOR.
- EXISTING CEILING MOUNTED SPEAKER.
- SECURITY PAD MOUNTED.
- VOLUME CONTROL.

EXISTING FIRE ALARM

- EXISTING CEILING MOUNTED HEAT DETECTOR.
- F.A.C.P. DENOTES FIRE ALARM CONTROL PANEL.
- EXISTING MANUAL FIRE ALARM PULL STATION
- EXISTING FIRE ALARM AUDIO/VISUAL WARNING DEVICE
- EXISTING DOOR HOLDING DEVICE
- EXISTING DUCT MOUNTED SMOKE DETECTOR
- EXISTING DUCT MOUNTED SMOKE DETECTOR REMOTE INDICATOR
- EXISTING CEILING MOUNTED SMOKE DETECTOR.
- EXISTING FIRE ALARM VISUAL WARNING DEVICE

BHIDE & HALL ARCHITECTS, P.A.
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 PH: (904) 364-1919 LIC. NO. AC 000869
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HADDAD ENGINEERING, INC.



DR. HWANG MARINO
DENTAL OFFICE REMODEL
 2045 Professional Center Drive
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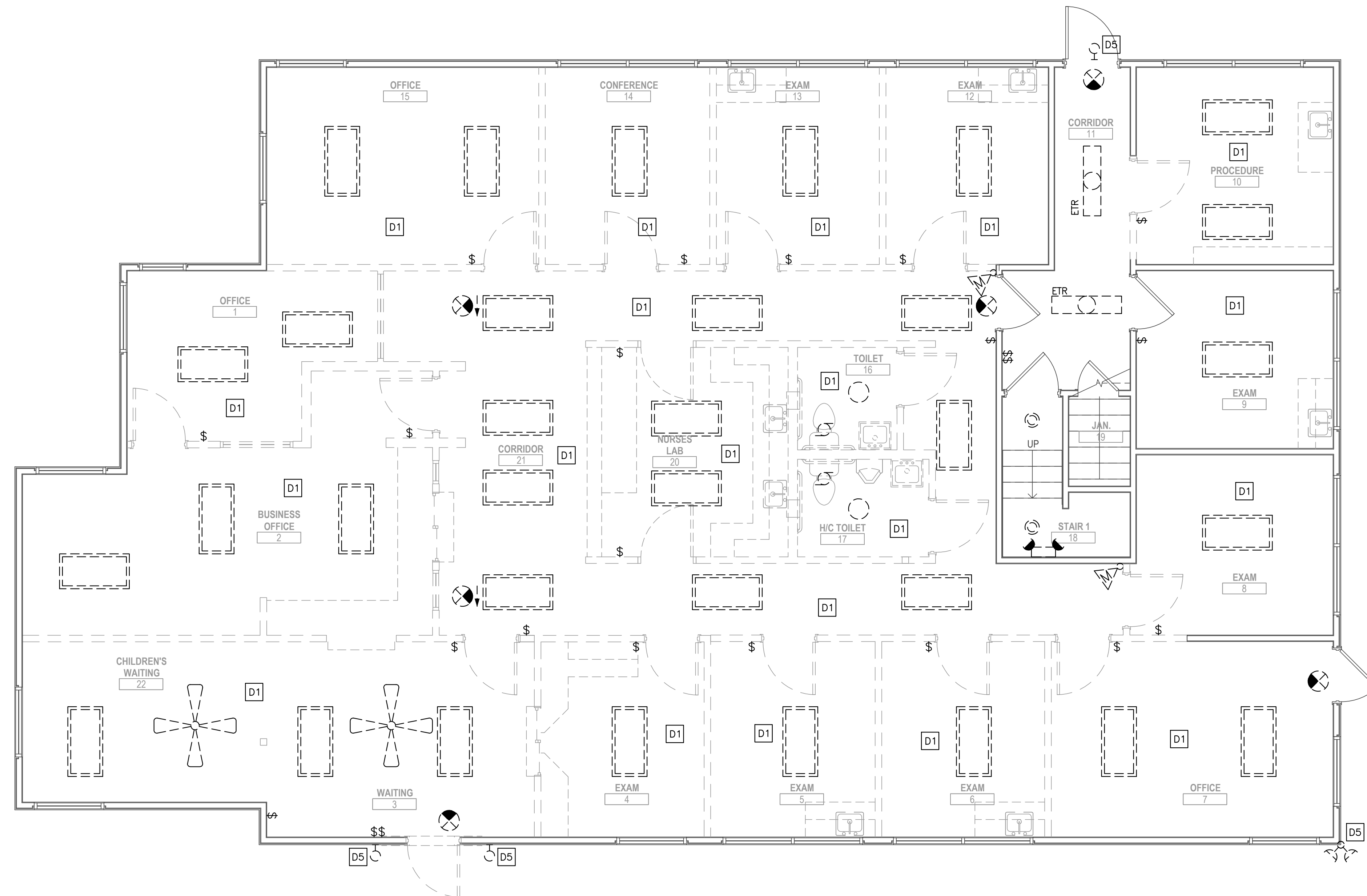
ENGINEER LICENSE NO. HADDAD ENGINEERING INC. ELECTRICAL
 3030 HARTLEY ROAD, SUITE 200 JACKSONVILLE, FLORIDA 32257
 (904) 265-3686
 CERTIFICATE OF AUTHORIZATION NO. 4503
 NAMIR A. HADDAD P.E. - LICENSE NO. 31987

Revision	Date	Signature
1 FOR CONSTRUCTION	12/20/19	

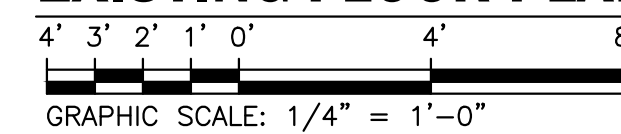
ELECTRICAL LEGEND AND RISER DIAGRAMS

DATE: 12/19/19
 D.B.: A.W.
 C.B.: N.A.H.
 JOB NO.: 19040

E1.1
 FOR CONSTRUCTION



EXISTING FLOOR PLAN - LIGHTING



DEMOLITION NOTES:

- D1 REMOVE EXISTING LIGHTING FIXTURES, SWITCHES, RECEPTACLES, FIRE ALARM DEVICES AND DATA OUTLETS EXCEPT OTHERWISE NOTED.
- D2 NOT USED.
- D3 NOT USED.
- D4 NOT USED.
- D5 MAINTAIN POWER AND CONTROL TO ALL EXISTING EXTERIOR LIGHTING. ALL EXISTING EXTERIOR LIGHTING TO REMAIN. CONNECT TO NEW PANELS.

GENERAL DEMOLITION NOTES:

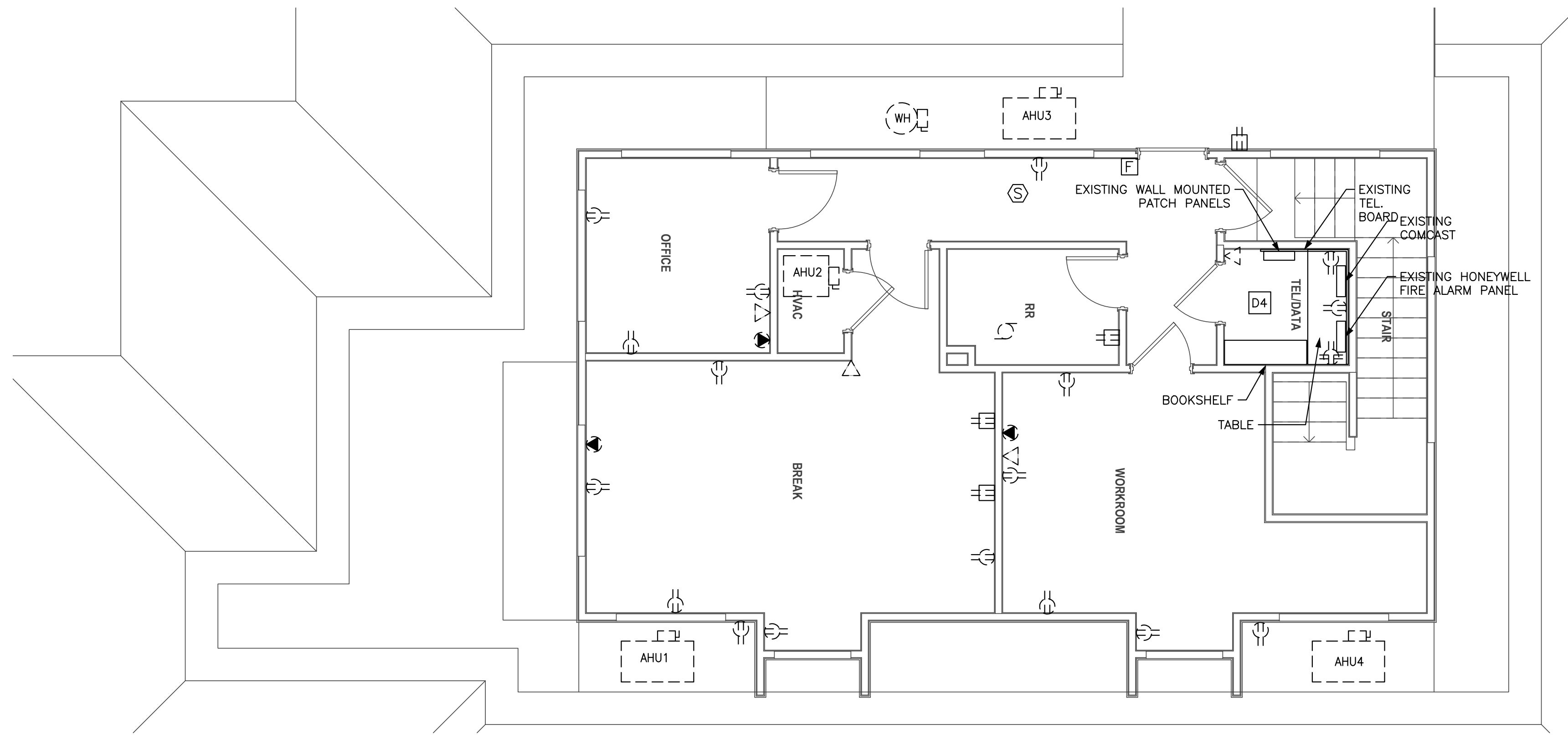
1. THERE SHALL NOT BE ANY INTERRUPTION TO SERVICES TO THE EXISTING BUILDINGS WITHOUT PRIOR SCHEDULING OF SUCH OUTAGES WITH THE OWNER'S REPRESENTATIVE.
2. THE CONTRACTOR SHALL NOT TAKE POSSESSION OF OR DISPOSE OF ANY SALVAGEABLE ITEMS IN ASSOCIATION WITH THE WORK. ALL SALVAGEABLE ITEMS SHALL BE THE OWNER'S PROPERTY AT HIS OPTION. ALL UNSALVAGEABLE EQUIPMENT AND MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.
3. MAINTAIN ACCURATE RECORDS OF ANY MODIFICATIONS TO EXISTING SYSTEMS AND SHALL UPON COMPLETION, DELIVER "AS-BUILT" DRAWINGS TO THE OWNER, INDICATING ALL CHANGES.
4. WHERE FEEDERS ARE ABANDONED, WIRE SHALL BE PULLED OUT AND ALL EXPOSED SECTIONS OF CONDUITS REMOVED. ALL SWITCHES, PANELS, ETC. SHALL BE REMOVED. ALL CONCEALED CONDUITS SHALL BE CAPPED AT POINT OF CONCEALMENT.
5. ALL EXISTING DEVICES AND FIXTURES IN THE PATH OF RENOVATION OR BUILDING ADDITIONS SHALL BE REMOVED BY THE CONTRACTOR. CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN EXISTING CIRCUITRY TO ALL REMAINING DEVICES AND FIXTURES. FOR EACH DEVICE OR FIXTURE REMOVED AT THE END OF A CIRCUIT, CONTRACTOR SHALL REMOVE WIRING FROM LAST REMAINING DEVICE, FOR EACH DEVICE OR FIXTURE REMOVED IN THE MIDDLE OF A CIRCUIT, CONTRACTOR SHALL REMOVE WIRING FROM FIRST DEVICE OR FIXTURE BEFORE AND AFTER REMOVED DEVICE AND FIXTURE. NEW WIRING, SIZED THE SAME AS EXISTING, SHALL BE PULLED BETWEEN THE TWO REMAINING DEVICES OR FIXTURES.
6. CONTRACTOR MAY REUSE EXISTING CONDUIT SYSTEM WHERE APPLICABLE, PROVIDING THE REUSED SYSTEMS MEET CURRENT CODES. REMOVE ALL UNUSED SURFACE MOUNTED CONDUIT. UNUSED CONDUITS STUBBING UP FROM FLOOR SHALL BE CUT FLUSH WITH FLOOR.
7. EXISTING EQUIPMENT NOT SHOWN ON THESE PLANS AND NOT REMOVED BY OTHER TRADES SHALL BE RECONNECTED TO PANELS. EXISTING ELECTRICAL OR MECHANICAL EQUIPMENT TO REMAIN THAT HAS TO BE DISCONNECTED FOR CONSTRUCTION SHALL BE REINSTALLED.
8. ELECTRICAL DRAWINGS DO NOT INDICATE ALL THE EXISTING INSTALLATIONS.
9. ALL EXISTING SWITCHES, RECEPTACLES, LIGHTING FIXTURES, TELEPHONE OUTLETS, ETC. THAT DO NOT INTERFERE WITH RENOVATIONS SHALL REMAIN.
10. CONTRACTOR SHALL VISIT THE SITE PRIOR TO PREPARING HIS BID AND DETERMINE THE EXTENT OF MODIFICATIONS TO EXISTING EQUIPMENT AND WIRING REQUIRED TO ACCOMMODATE CHANGES AND ADDITIONS. ALL THE NECESSARY REROUTING, RELOCATING, AND/OR REMOVAL OF EXISTING EQUIPMENT, WIRING, ETC. SHALL BE INCLUDED IN THE SCOPE OF THIS WORK. ANY VARIATION FROM EXISTING CONDITIONS SHALL BE INCLUDED UNDER THIS CONTRACT.
11. UPDATE PANELBOARD DIRECTORIES OF EXISTING PANELS.



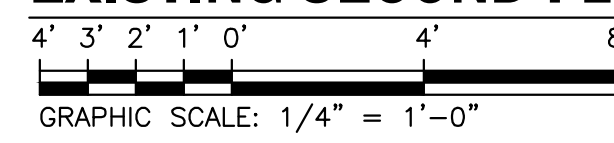
Revision	Date	Seal / Signature
1 FOR CONSTRUCTION	12/20/19	

**FLOOR PLANS
 DEMOLITION -
 LIGHTING**

DATE: 12/19/19
 D.B.: A.W.
 C.B.: N.A.H.
 JOB NO.: 19040

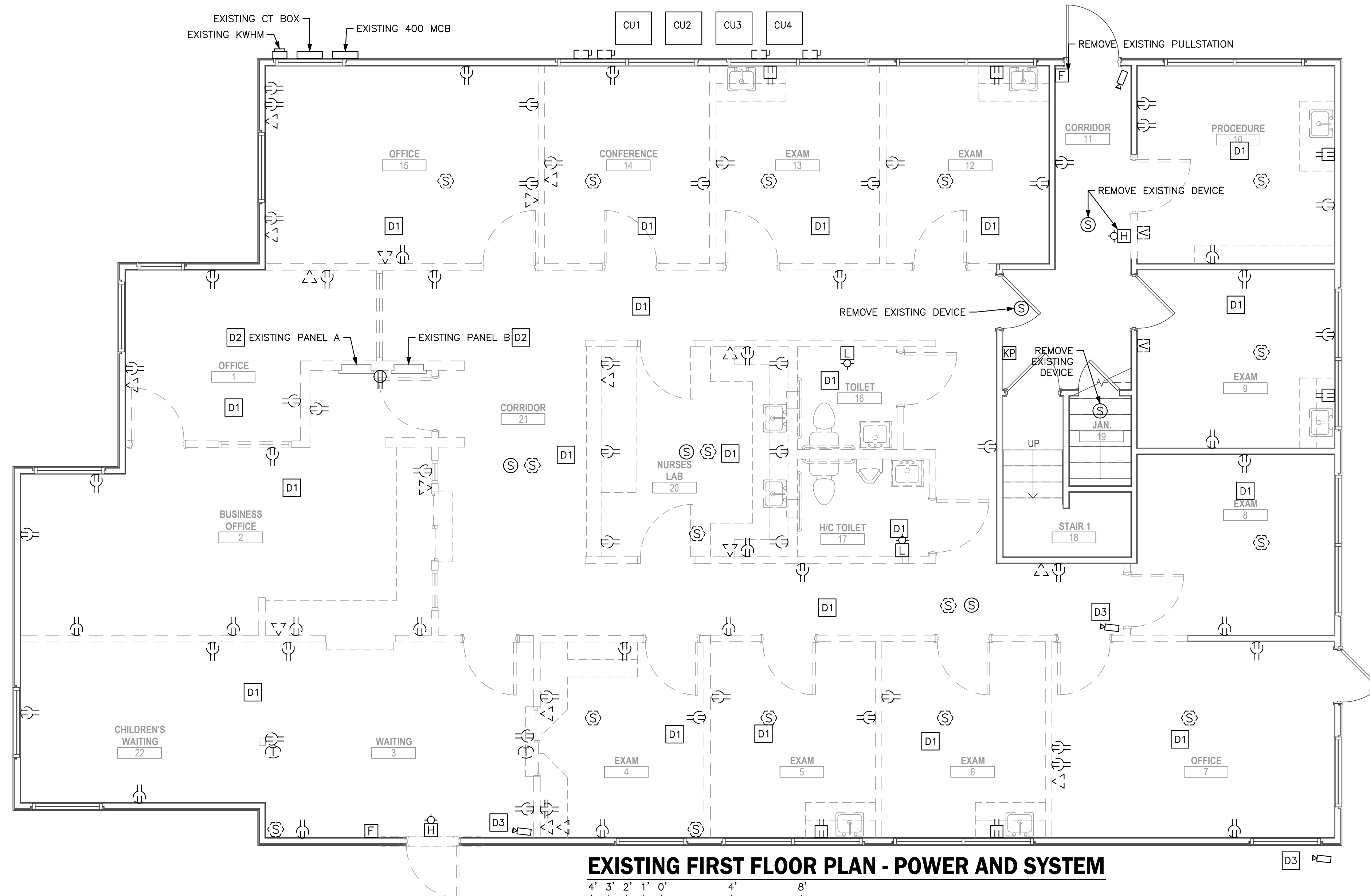


EXISTING SECOND FLOOR PLAN - POWER AND SYSTEM

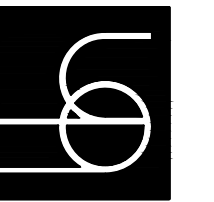
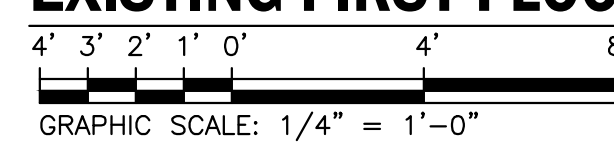


DEMOLITION NOTES:

- D1 REMOVE EXISTING LIGHTING FIXTURES, SWITCHES, RECEPTACLES, FIRE ALARM DEVICES AND DATA OUTLETS EXCEPT OTHERWISE NOTED.
- D2 REMOVE EXISTING PANELS A AND B. RELOCATE EXISTING CIRCUITS TO REMAIN TO NEW PANELS P1 AND P2. PROVIDE NEW CABLES IN CONDUIT.
- D3 RELOCATE EXISTING CAMERA. SEE NEW FLOOR PLAN FOR LOCATION. PROVIDE REQUIRED CABLES CONCEALED IN CEILING SPACE. SUPPORT CABLES FROM BUILDING STRUCTURE NOT TO EXCEED 36".
- D4 REMOVE ABANDONED (UNUSED) DATA/TELEPHONE WIRING. REMOVE FIRE ALARM PANELS, REMOVE TABLE AND BOOK SHELVES.



EXISTING FIRST FLOOR PLAN - POWER AND SYSTEM



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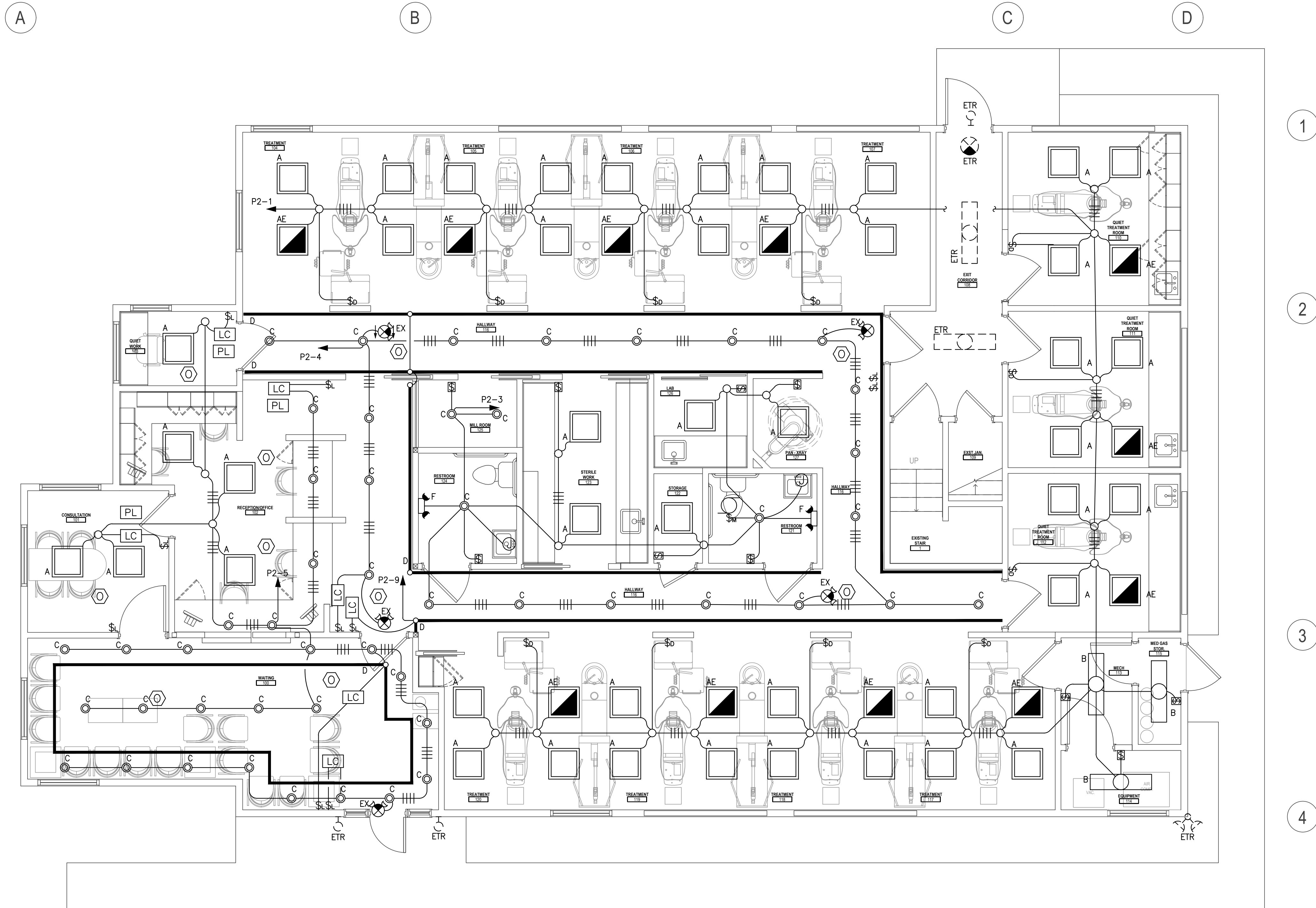
ENGINEER LICENSE NO. 31187
HADDAD ENGINEERING INC.
 ELECTRICAL
 3030 HARTLEY ROAD, SUITE 200
 JACKSONVILLE, FLORIDA 32257
 (904) 265-5666
 CERTIFICATE OF AUTHORIZATION NO. 4502
 NAMIR A. HADDAD P.E. - LICENSE NO. 31187

Date	Revision	Seal / Signature
12/20/19	1 FOR CONSTRUCTION	

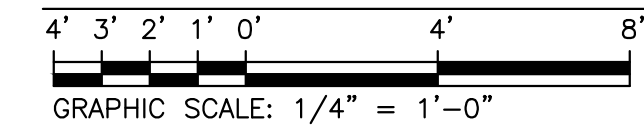
**FLOOR PLANS
 DEMOLITION -
 POWER AND
 SYSTEMS**

DATE: 12/19/19
 D.B.: A.W.
 C.B.: N.A.H.
 JOB NO: 19040

E2.2
 FOR CONSTRUCTION

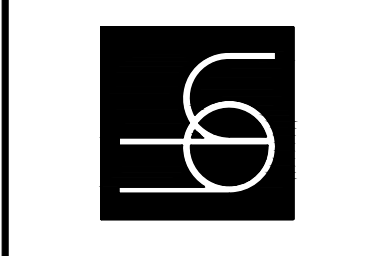


NEW FLOOR PLAN - LIGHTING

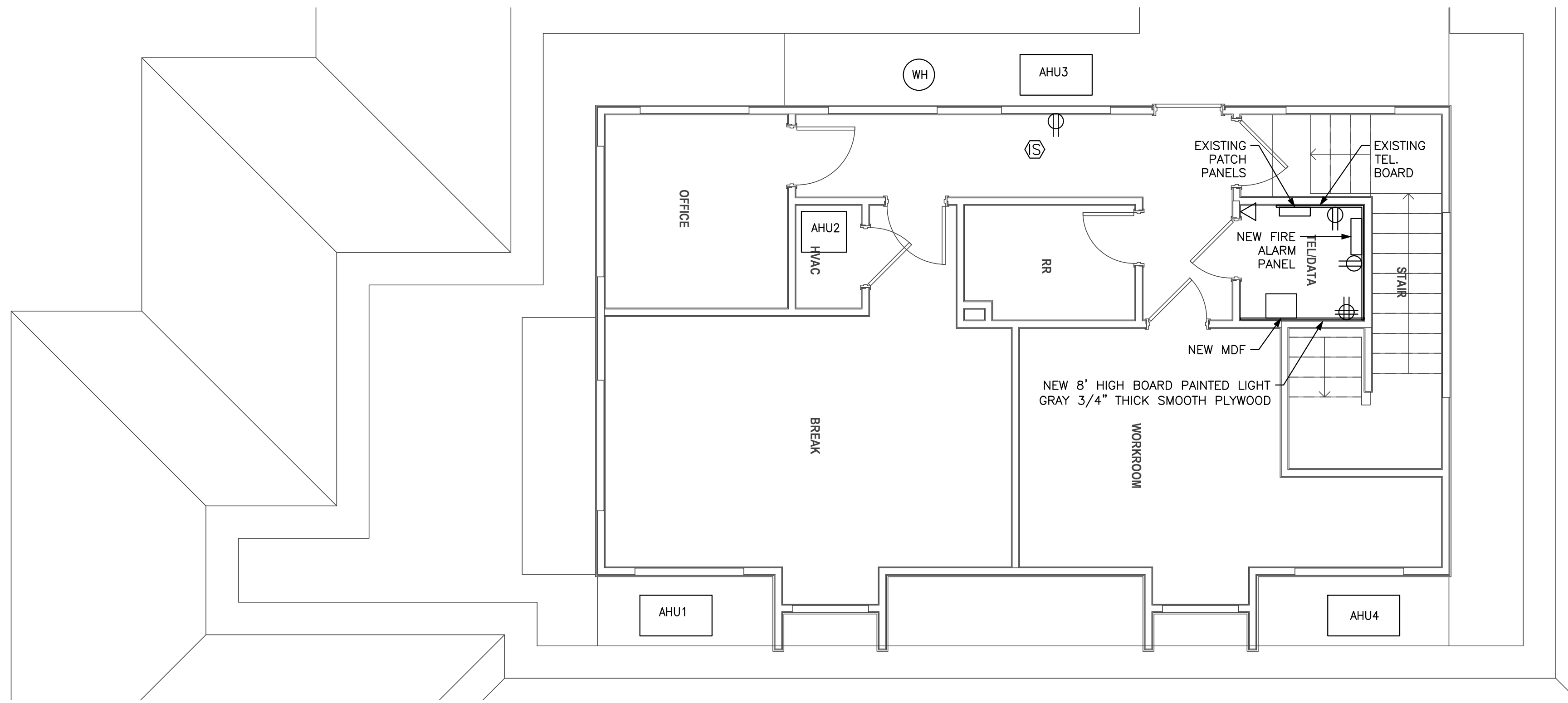


LIGHTING FIXTURE SCHEDULE									
TYPE	MANUFACTURER	CATALOGUE NUMBER	LIGHT SOURCE			VOLTS	MOUNTING HEIGHT	REMARKS	NOTES
			TYPE/TEMP	WATTS	LUMENS				
A	LITHONIA	2BLT2-20L-ADP-GZ10-LP840	4000	17	2000	120	CEILING	2X2 ARCHITECTURAL - 0-10V DIMMING	1,3
B	LITHONIA	BLWP4-48L-ADP-GZ10-LP840	4000	44	4800	120	CEILING	4' WRAPAROUND	
C	LITHONIA	LDN6-40/20-LO6AR-LD-MVOLT-GZ10	4000	21	2000	120	CEILING	6" RECESSED DOWNLIGHT	
D	LITHONIA	C3-S-LL-3-15-40-LG	4000	1.5/FT	220/FT	120	CEILING	COVE LIGHT	2
EX	LITHONIA	ECC R	4000	8	-	120	CEILING	COMBINATION EMERGENCY/EXIT LIGHT	
F	LITHONIA	EU2L	4000	8	-	120	7'-6"	EMERGENCY LIGHT	
G									
H									

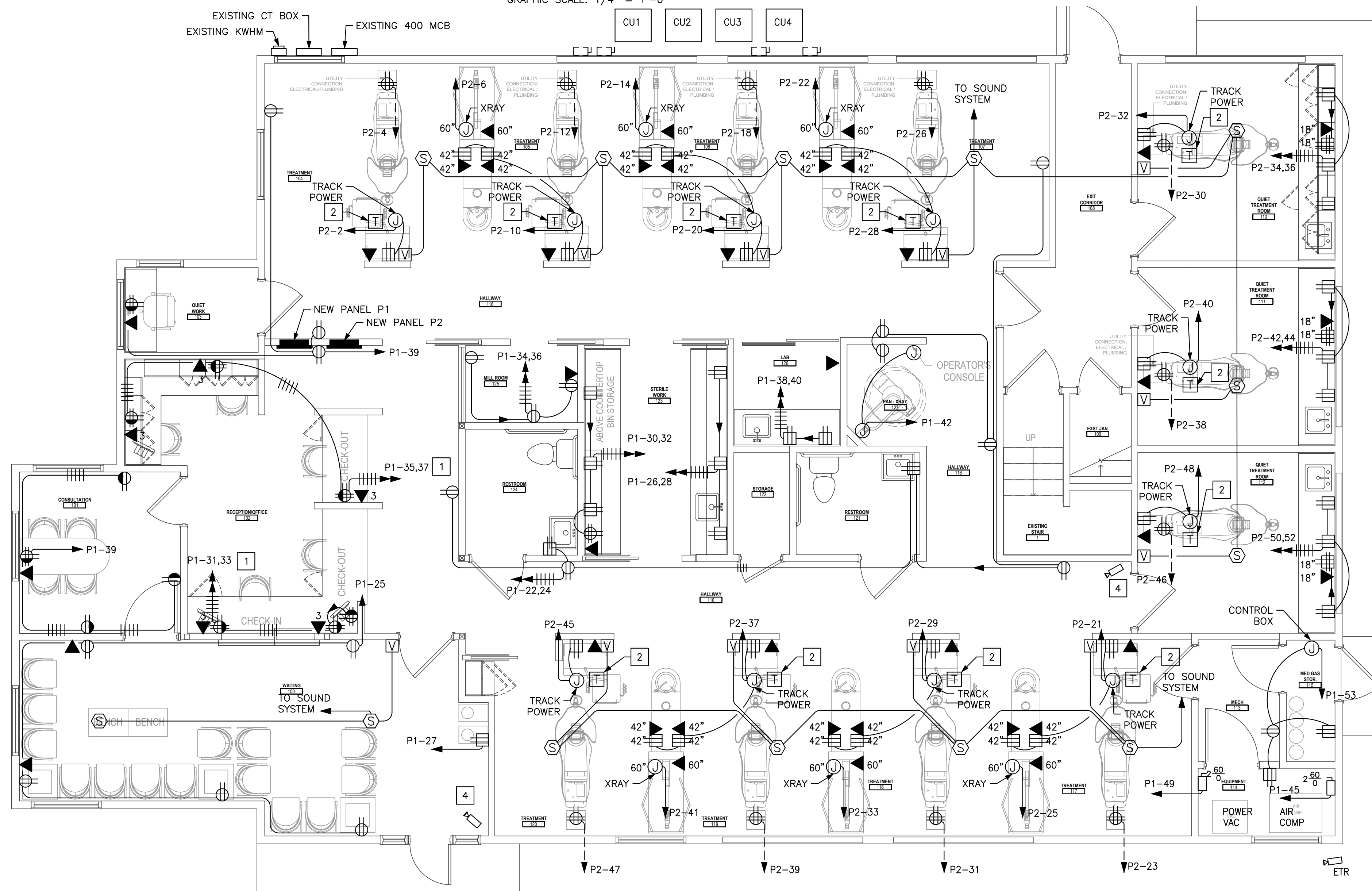
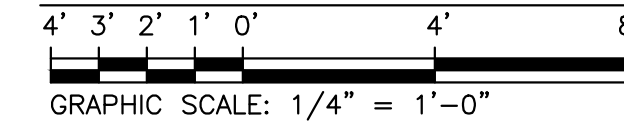
LIGHT FIXTURE SCHEDULE NOTES:
 1. PROVIDE 0-10 VOLT DIMMERS FOR ALL LIGHTING FIXTURES. PROVIDE POWER PACKS AS REQUIRED.
 2. PROVIDE REQUIRED TRANSFORMERS. LENGTHS TO COVER ENTIRE COVES. FIELD VERIFY EXACT LENGTHS.
 3. FIXTURE TYPE AE SHALL BE THE SAME AS TYPE A, EXCEPT EQUIPPED WITH EMERGENCY POWER PACK.



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NEW SECOND FLOOR PLAN - POWER

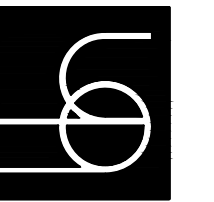


NEW FIRST FLOOR PLAN - POWER



NOTES:

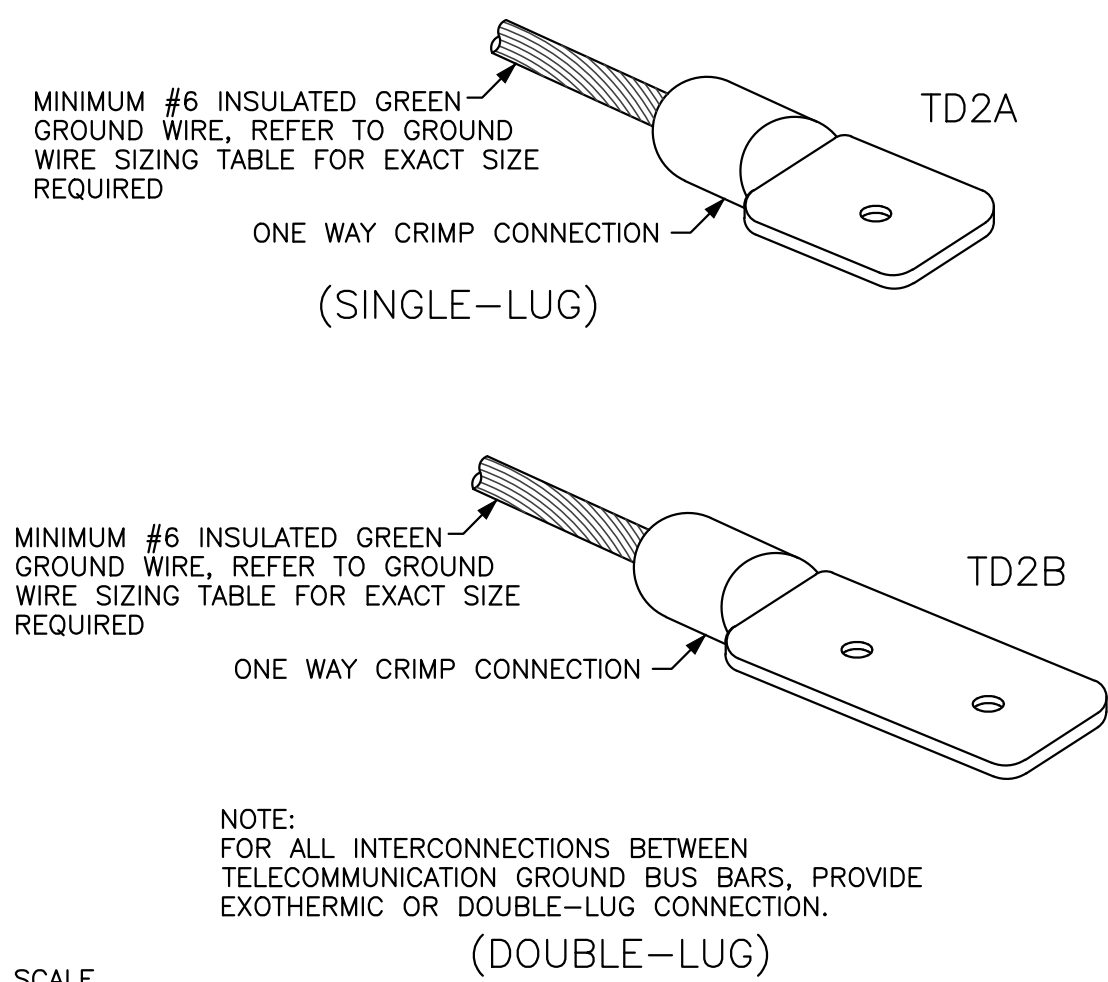
- 1 (1) CIRCUIT TO POWER NORMAL POWER RECEPTACLES
(1) CIRCUIT TO POWER OCCUPANCY CONTROL POWER RECEPTACLES
- 2 DENTAL LIGHT/MONITOR TRACK. COORDINATE WITH INSTALLER FOR EXACT LOCATION OF POWER AND MONITOR CONNECTION.
- 3 ALL POWER RECEPTACLES IN EXAM ROOMS SHALL BE HOSPITAL GRADE. NO PVC CONDUITS IN EXAM ROOMS.
- 4 NEW LOCATION OF EXISTING CAMERA. PROVIDE ALL REQUIRED WIRING AND TESTING.



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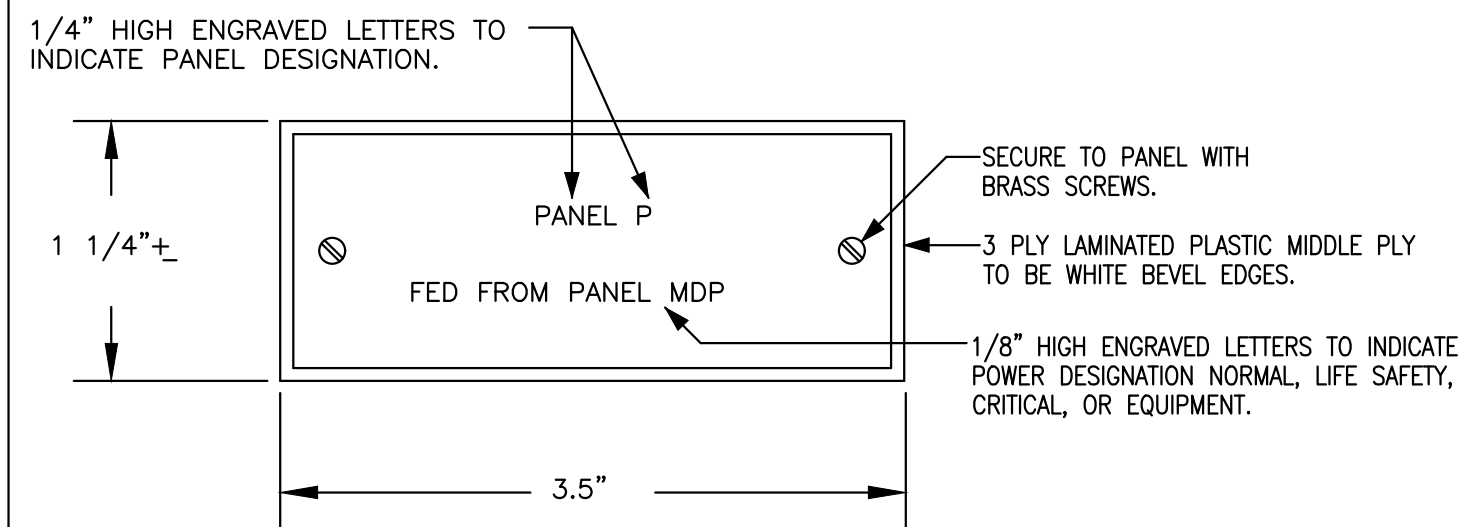
**NEW FLOOR PLANS
 POWER AND
 SYSTEMS**

DATE: 12/19/19
 D.B.: A.W.
 C.B.: N.A.H.
 JOB NO: 19040



NOT TO SCALE

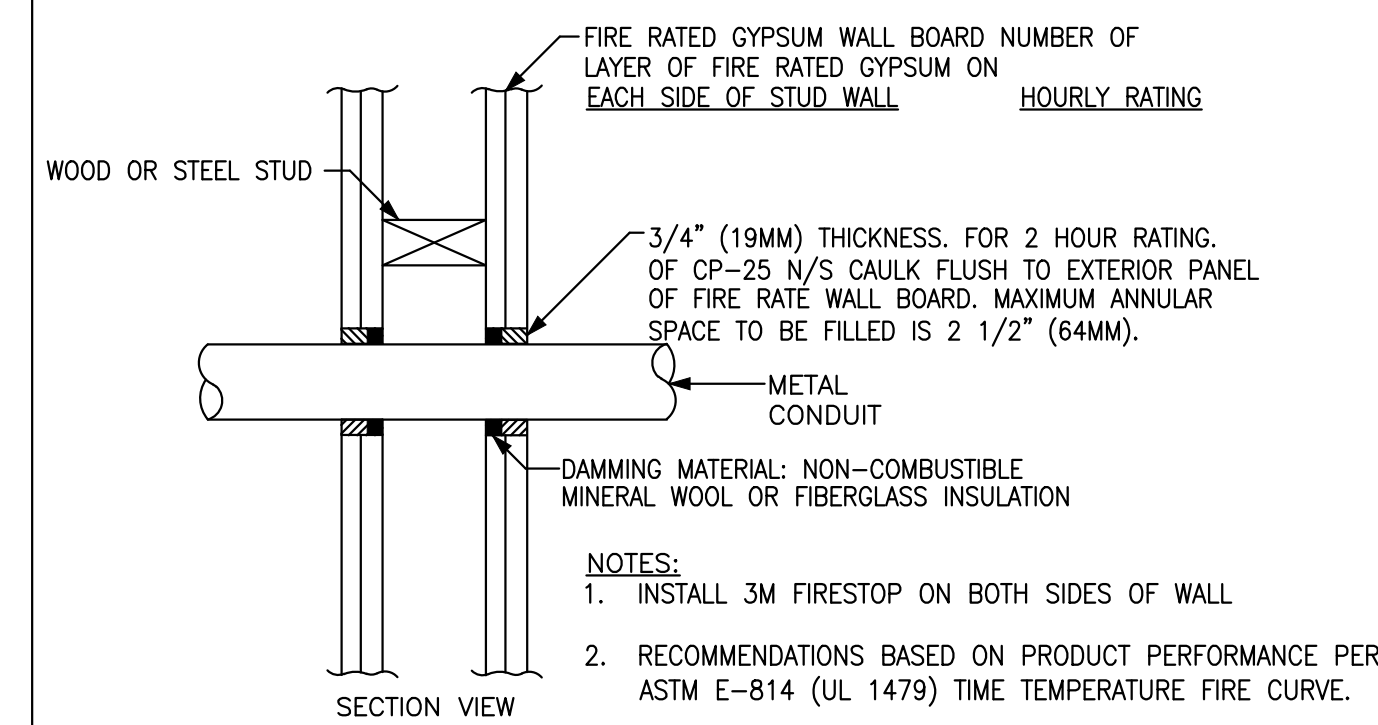
BONDING CONNECTOR DETAIL



- NOTES:
1. PROVIDE NAMEPLATES ON ALL PANELS AND DISCONNECT SWITCHES. NAMEPLATES SHALL INDICATE PANEL DESIGNATION AND TYPE OF POWER.
 2. BLACK WITH WHITE LETTERS

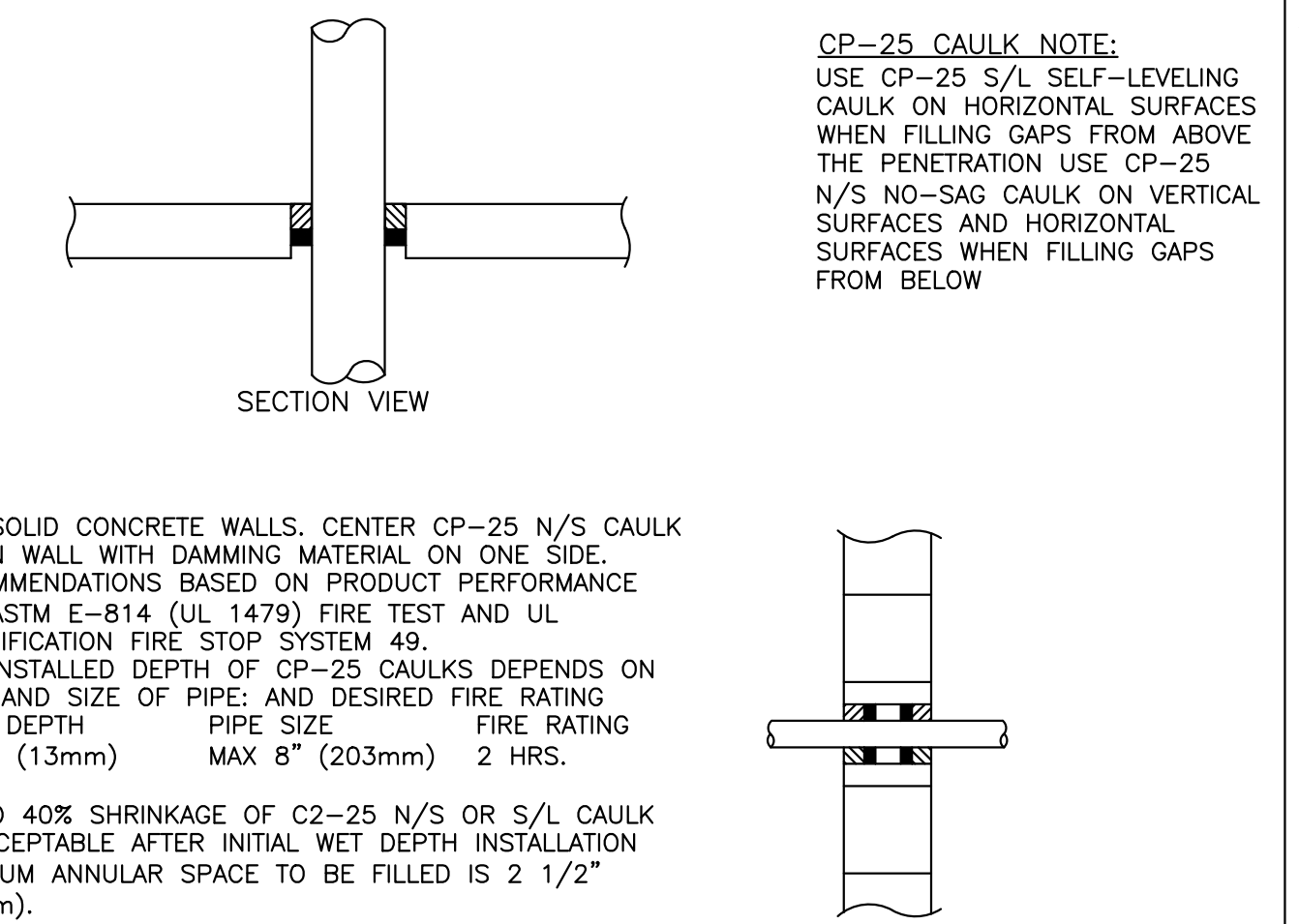
NOT TO SCALE

NAME PLATE DETAIL



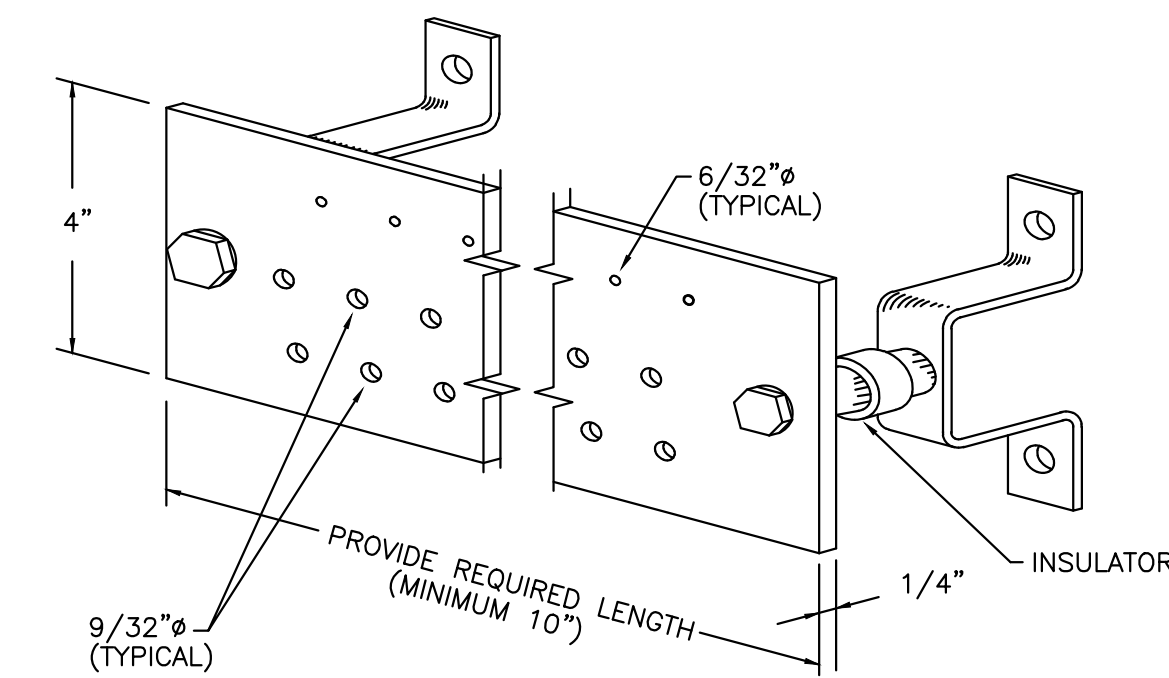
NOT TO SCALE

TYPICAL FIRESTOPPING DETAIL



NOT TO SCALE

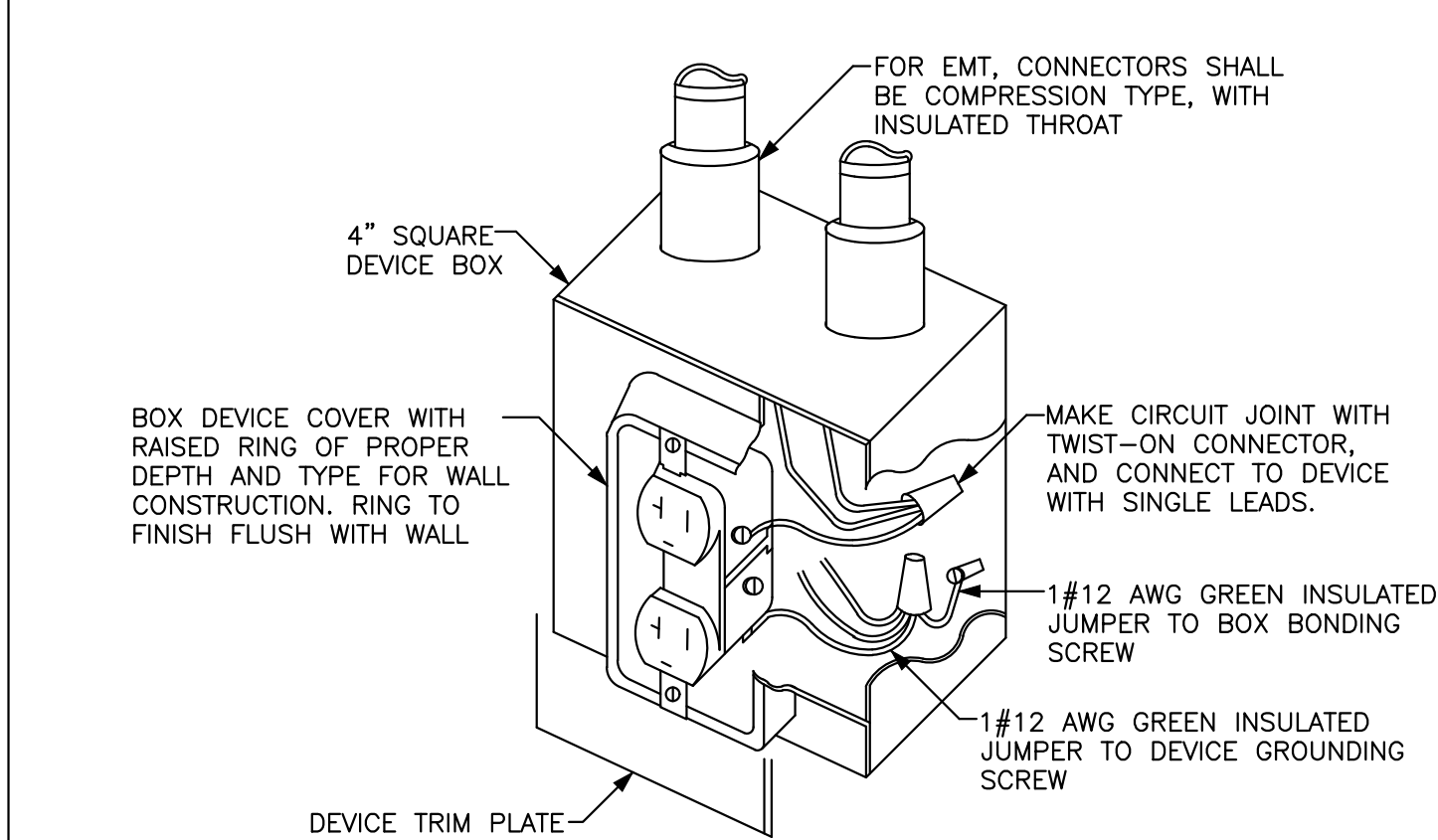
TYPICAL FIRESTOPPING DETAIL



1. ALL CONNECTIONS TO USE THROUGH BOLT WITH COMPRESSION WASHER AND NUT (OR CADWELD).
2. LENGTH TO BE DETERMINED BY THE REQUIRED NUMBER OF CONNECTIONS. FIELD DETERMINE PRIOR TO INSTALLATION. COORDINATE WITH DCPS TECHNOLOGY AND ENGINEER OF RECORD.
3. ALL CONNECTIONS MUST BE MADE TO THE FRONT SIDE OF THE BAR.

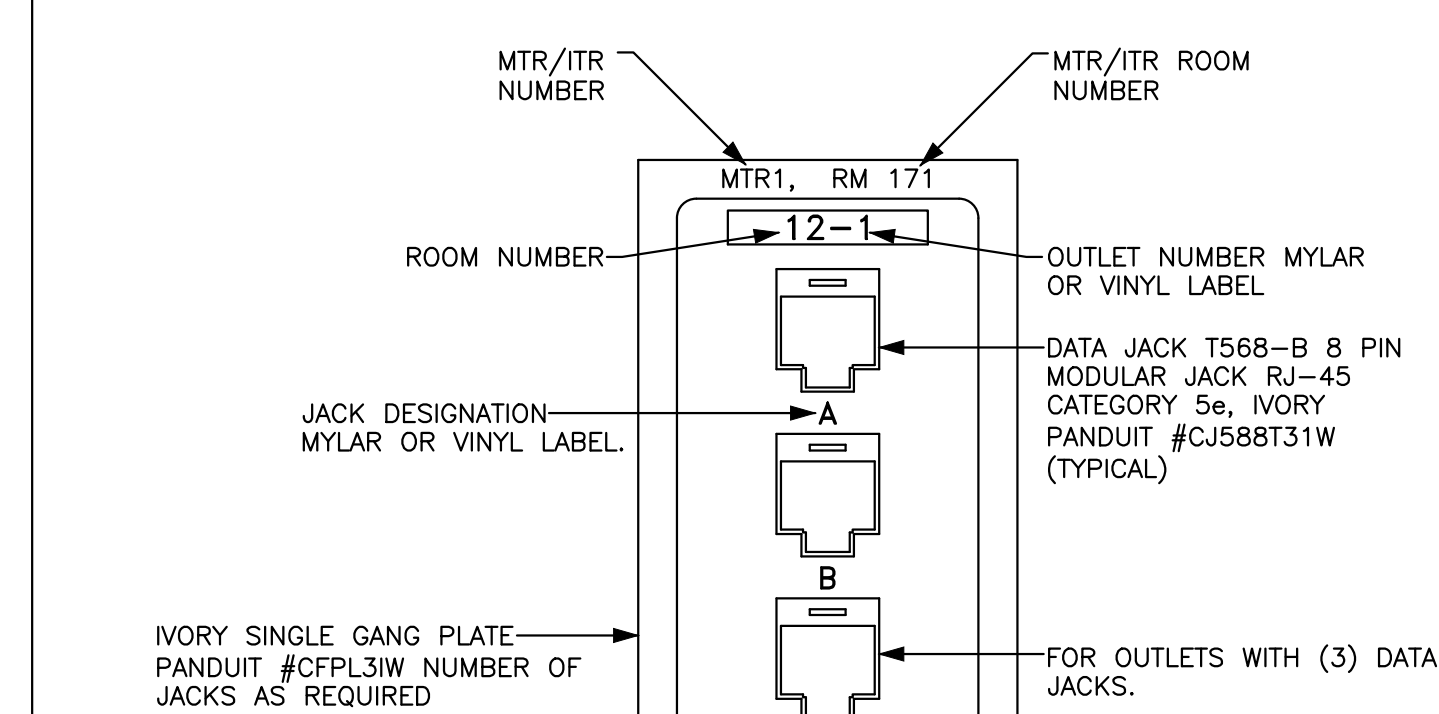
NOT TO SCALE

TELECOMMUNICATION GROUND BUS BAR (TGB/TMGB)



NOT TO SCALE

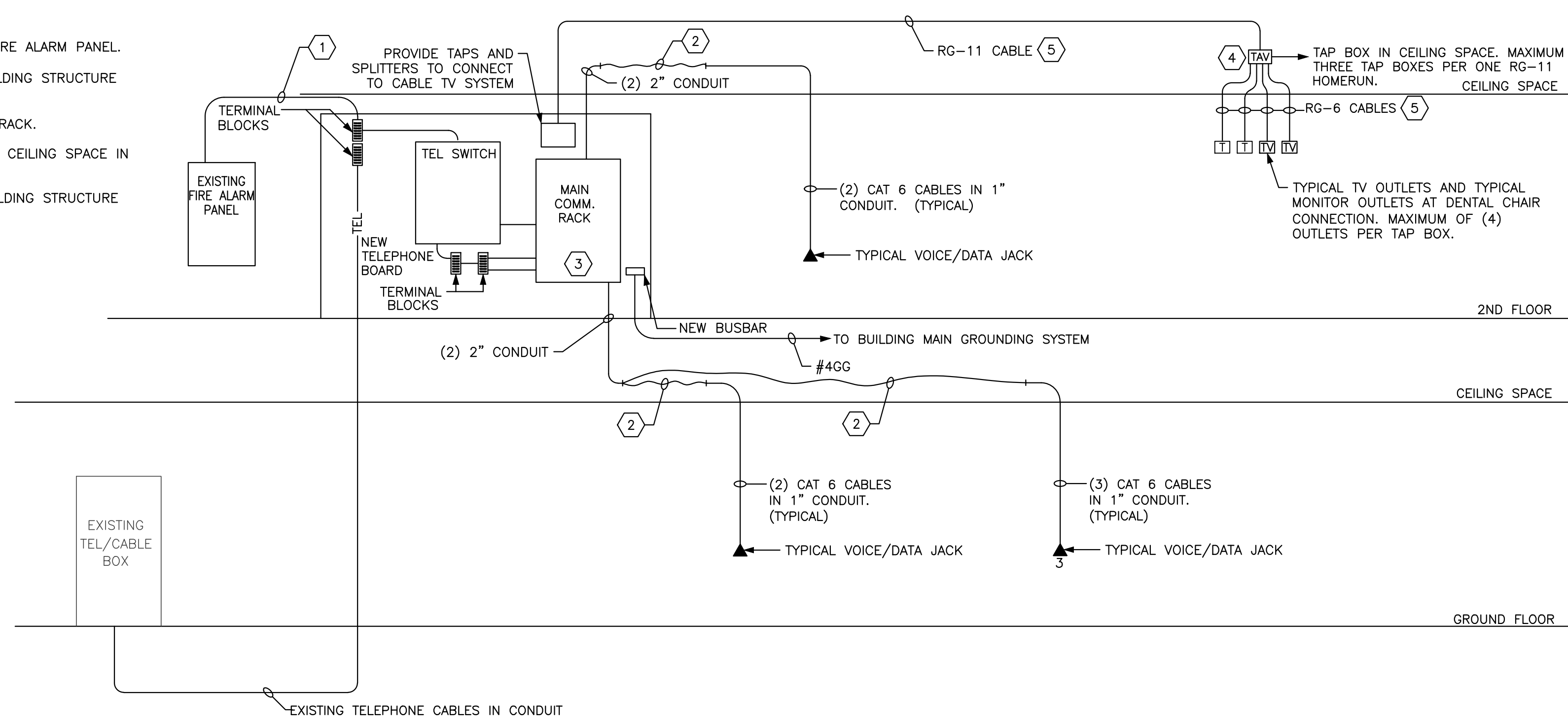
TYPICAL DUPLEX RECEPTACLE INSTALLATION



NOT TO SCALE

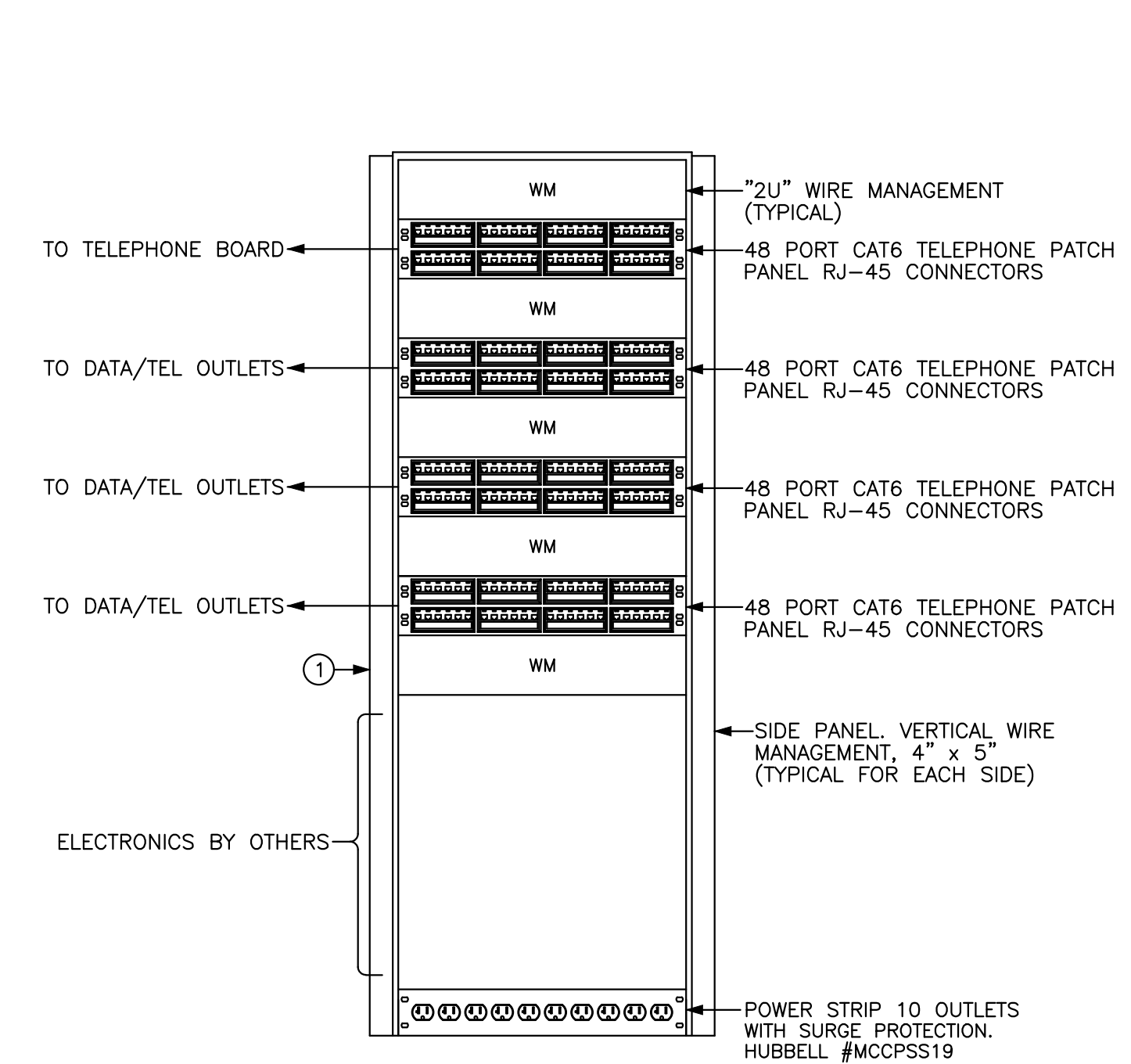
COMMUNICATION OUTLET DETAIL

- NOTES:
1. PROVIDE NEW WIRES IN CONDUIT TO FIRE ALARM PANEL.
 2. SUPPORT DATA/TEL CABLES FROM BUILDING STRUCTURE AT INTERVALS NOT TO EXCEED 36".
 3. PROVIDE NEW WALL MOUNTED HINGED RACK.
 4. LOCATE TAP BOXES ABOVE ACCESSIBLE CEILING SPACE IN CORRIDOR.
 5. SUPPORT CABLE TV CABLES FROM BUILDING STRUCTURE AT INTERVALS NOT TO EXCEED 36".



NOT TO SCALE

COMMUNICATION RISER DIAGRAM



NOT TO SCALE

NEW MAIN COMMUNICATION RACK

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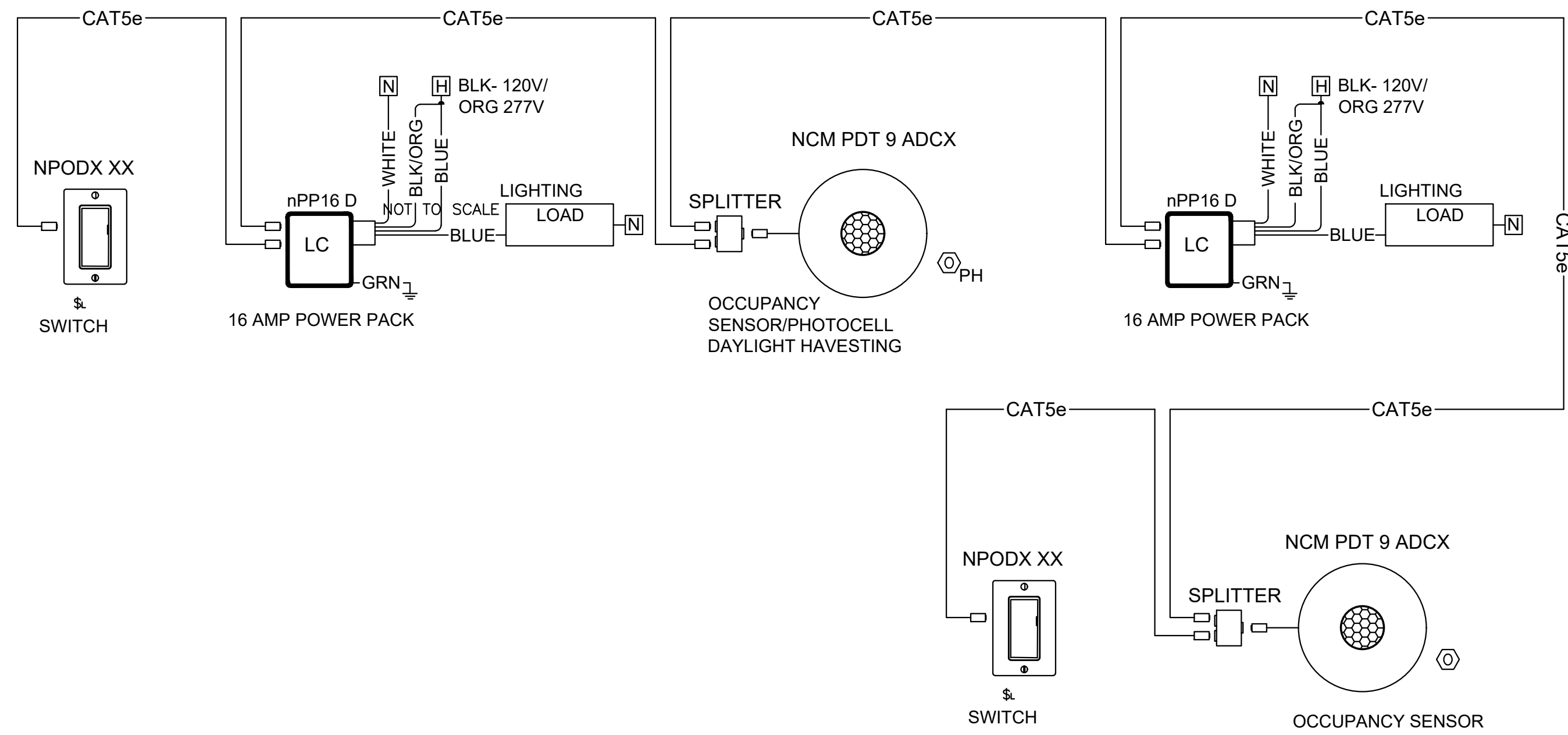
ENGINEER LICENSE NO.
H HADDAD ENGINEERING INC.
 ELECTRICAL
 3030 HARTLEY ROAD, SUITE 200 JACKSONVILLE, FLORIDA 32257
 (904) 265-5066
 CERTIFICATE OF AUTHORIZATION NO. 4553
 NAMIR A. HADDAD P.E. - LICENSE NO. 31987

Revision	Date	Seal / Signature
1 FOR CONSTRUCTION	12/20/19	

ELECTRICAL DETAILS

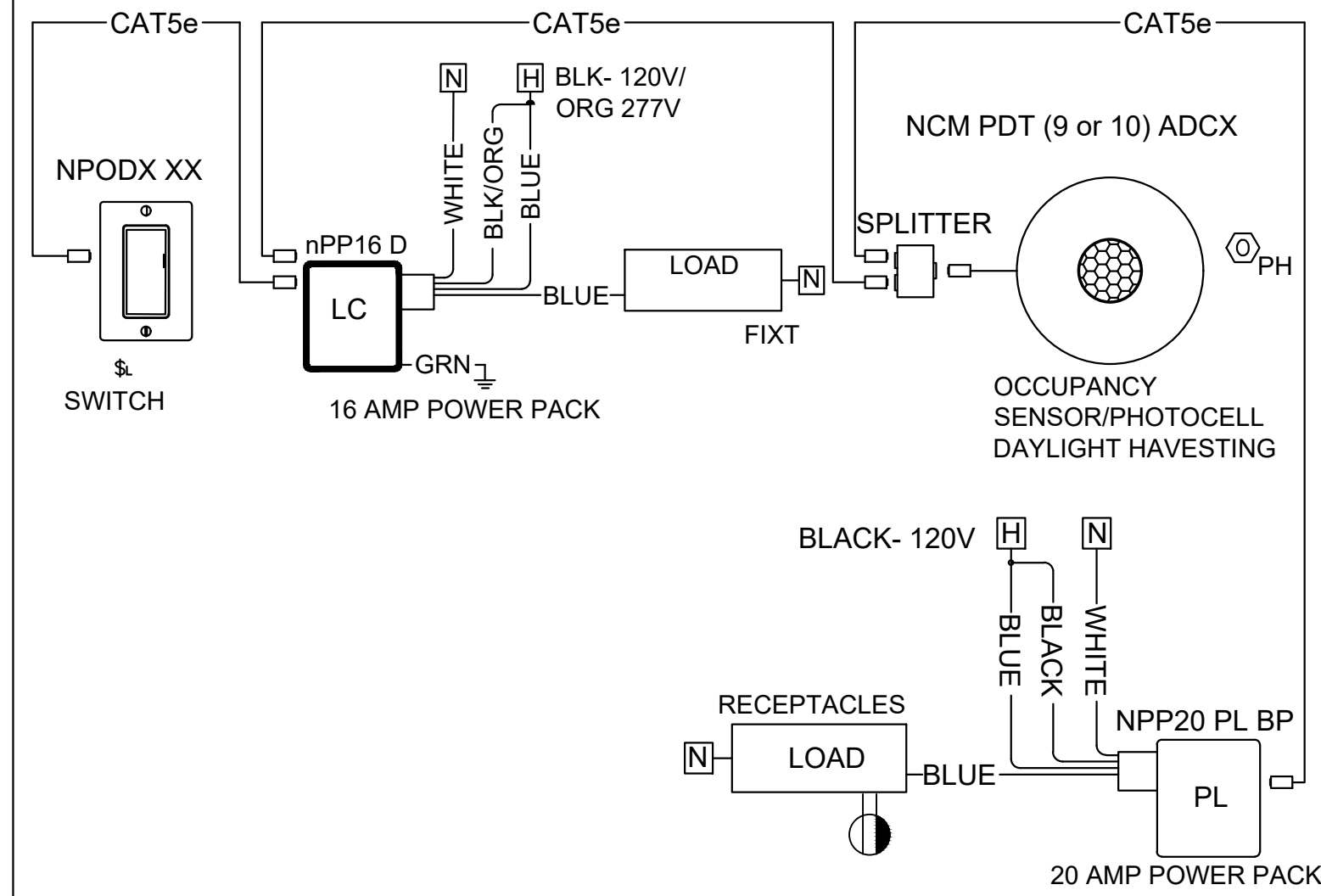
DATE: 12/19/19
 D.B.: A.W.
 C.B.: N.A.H.
 JOB NO.: 19040

E4.1
 FOR CONSTRUCTION



NOT TO SCALE

TYPICAL SPACE WITH MULTI LOCATION SWITCHING, AND OCCUPANCY/VACANCY CONTROL



NOT TO SCALE

TYPICAL OFFICE WITH PLUGLOAD, ON/OFF, WITH OCCUPANCY/VACANCY CONTROL

NOT TO SCALE

NOTES:

- 1 CAT 5e PLENUM RATED CONTROL CABLE. SUPPORT CONTROL CABLES IN CEILING SPACE AT INTERVALS NOT TO EXCEED 36" (TYPICAL).
- 2 PROVIDE 1/2" CONDUIT FROM WALL MOUNTED DEVICES UP TO ACCESSIBLE CEILING SPACE.
- 3 ALTERNATE EQUAL CONTROL MANUFACTURERS WILL BE CONSIDERED AS LONG AS THE SEQUENCE OF OPERATION IS SATISFIED PER THE ENERGY CODES AND STANDARDS.
- 4 ASHRAE RECEPTACLES SHALL BE PERMANENTLY MARKED WITH THE POWER SYMBOL.
- 5 LIGHTING CONTROL SHALL BE MANUAL ON AUTOMATIC OFF.
- 6 PROVIDE REQUIRED PROGRAMMING, ADJUSTING AND TRAINING.
- 7 DEVICE COLOR TO BE WHITE OR IVORY AS SELECTED BY ARCHITECT.
- 8 OCCUPANCY SENSOR FOR ROOMS NOT EXCEEDING 12' X 12' SHALL BE PDT9. PROVIDE OCCUPANCY SENSOR PDT10 FOR ROOMS EXCEEDING 12' X 12'.
- 9 SIMILAR LIGHTING CONTROL MEETING FLORIDA BUILDING CODE WILL BE ACCEPTABLE.



Revision	Date	Seal / Signature
1 FOR CONSTRUCTION	12/20/19	

ELECTRICAL DETAILS	
DATE:	12/19/19
D.B.:	A.W.
C.B.:	N.A.H.
JOB NO.:	19040

EXISTING PANEL A															
SURFACE MTD. CIRCUIT BREAKER TYPE															
120/240 VOLTS 1 PHASE 3 WIRE															
400 AMP MAIN LUGS ONLY															
CKT NO.	DESIGNATION	CIRCUIT			CIRCUIT BREAKER	KVA	CIRCUIT			DESIGNATION	CKT NO.				
		WIRE	GND	COND			POLE	TRIP	TRIP			POLE	COND	GND	WIRE
1	PANEL B				2	200							2		
3													4		
5	HEAT STRIPS #4				2	60							6		
7													8		
9	HEAT STRIPS #2				2	60							10		
11													12		
13	CU #4				2	30							14		
15													16		
17	CU #2				2	30							18		
19													20		
21	WATER HEATER				2	30							22		
23													24		
25	REC. NURSE STATION				1	20							26		
27	REC. TELEPHONE BRD				1	20							28		
29	REC. RM 104/RECEPTION				1	20							30		
31	LTG. RECEPTION				1	20							32		
33	REC. COMPUTER				1	20							34		
35	LTG. DOWNSTAIRS				1	20							36		
37	SPACE												38		
39	SPACE												40		
41	SPACE												42		
TOTAL KVA					-									10,000 AMP. RMS. SYMMETRICAL SHORT CIRCUIT CURRENT RATING	

EXISTING PANEL B															
SURFACE MTD. CIRCUIT BREAKER TYPE															
120/240 VOLTS 1 PHASE 3 WIRE															
200 AMP MAIN LUGS ONLY															
CKT NO.	DESIGNATION	CIRCUIT			CIRCUIT BREAKER	KVA	CIRCUIT			DESIGNATION	CKT NO.				
		WIRE	GND	COND			POLE	TRIP	TRIP			POLE	COND	GND	WIRE
1	LTG. 110,115, PROCEDURE				1	20							2		
3	LTG. 105,107				1	20							4		
5	LTG. STAIR 2ND FL				1	20							6		
7	LTG. 2ND FL				1	20							8		
9	REST RM/EWC/TIMER				1	20							10		
11	LTG. HALL/NURSE STATION				1	20							12		
13	REC RM 105				1	20							14		
15	FACP				1	20							16		
17	XRAY/VIEWER				1	20							18		
19	REC. FREEZER				1	20							20		
21	SPACE												22		
23	SPACE												24		
25	SPACE												26		
27	SPACE												28		
29	SPACE												30		
31	SPACE												32		
33	SPACE												34		
35	SPACE												36		
37	SPACE												38		
39	SPACE												40		
41	SPACE												42		
TOTAL KVA					-									10,000 AMP. RMS. SYMMETRICAL SHORT CIRCUIT CURRENT RATING	

NEW PANEL P1															
FLUSH MTD. CIRCUIT BREAKER TYPE															
120/240 VOLTS 3 PHASE 4 WIRE															
400 AMP MAIN CIRCUIT BREAKER															
CKT NO.	DESIGNATION	CIRCUIT			CIRCUIT BREAKER	KVA	CIRCUIT			DESIGNATION	CKT NO.				
		WIRE	GND	COND			POLE	TRIP	TRIP			POLE	COND	GND	WIRE
1	SPACE												2		
3	SPACE												4		
5	AHU #4	6	10	3/4	2	60	5.0	5.0	60	2	3/4	10	6		
7													8		
9	AHU #2	6	10	3/4	2	60	5.0	5.0	60	2	3/4	10	10		
11													12		
13	CU #4	10	10	3/4	2	30	3.0	3.0	30	2	3/4	10	14		
15													16		
17	CU #2	10	10	3/4	2	30	3.0	3.0	30	2	3/4	10	18		
19													20		
21	WATER HEATER	10	10	3/4	2	30	3.0	1.0	20	1	1/2	12	22		
23								1.2	20	1	1/2	12	24		
25	REC. WAITING	12	12	1/2	1	20	1.0	1.0	20	1	1/2	12	26		
27	REC. EWC	12	12	1/2	1	20	0.5	1.0	20	1	1/2	12	28		
29	SPACE							1.0	20	1	1/2	12	30		
31	REC. RECEPTION/OFFICE	12	12	1/2	1	20	1.0	1.0	20	1	1/2	12	32		
33	REC. RECEPTION/OFFICE	12						1.0	20	1	1/2	12	34		
35	REC. RECEPTION/OFFICE	12	12	1/2	1	20	1.0	1.0	20	1	1/2	12	36		
37	REC. RECEPTION/OFFICE	12						1.0	20	1	1/2	12	38		
39	REC. OFFICE/CORR	12	12	1/2	1	20	1.0	1.0	20	1	1/2	12	40		
41	REC. CONSULTATION	12	12	1/2	1	20	1.0	1.0	20	2	1/2	12	42		
43	SPARE												44		
45	AIR. COMP	8	10	3/4	2	40	6.0	0.4	20	1			46		
47								0.4	20	1			48		
49	VACUUM	10	10	3/4	2	30	2.4	1.0	20	1	1/2	12	50		
51								0.4	20	1	1/2	12	52		
53	REC. MECH RMS	12	12	1/2	1	20	1.0	0.4	20	1	1/2	12	54		
TOTAL KVA					65.5									10,000 AMP. RMS. SYMMETRICAL SHORT CIRCUIT CURRENT RATING	

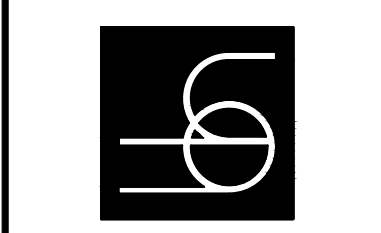
PANEL P2															
FLUSH MTD. CIRCUIT BREAKER TYPE															
120/208 VOLTS 3 PHASE 4 WIRE															
400 AMP MAIN LUGS ONLY															
CKT NO.	DESIGNATION	CIRCUIT			CIRCUIT BREAKER	KVA	CIRCUIT			DESIGNATION	CKT NO.				
		WIRE	GND	COND			POLE	TRIP	TRIP			POLE	COND	GND	WIRE
1	LTG. PROCEDURE RMS	12	12	1/2	1	20	1.2	1.2	20	1	1/2	12	2		
3	LTG. LABS/CORRIDORS	12	12	1/2	1	20	1.2	1.0	20	1	1/2	12	4		
5	LTG. RECEPTION/LOBBY	12	12	1/2	1	20	1.2	1.2	20	1	1/2	12	6		
7	SPACE												8		
9	LTG. COVE LTG.	12	12	3/4	1	20	1.5	1.2	20	1	1/2	12	10		
11	SPACE							1.0	20	1	1/2	12	12		
13	LTG. STAIR 2ND FL	12	12	1/2	1	20	1.2	1.2	20	1	1/2	12	14		
15	LTG. 2ND FL	12	12	1/2	1	20	1.2						16		
17	SPACE							1.2	20	1	1/2	12	18		
19	SPACE							1.0	20	1	1/2	12	20		
21	OVERHEAD TV/LGT	12	12	1/2	1	20	1.2	1.2	20	1	1/2	12	22		
23	TREATMENT CHAIR	12	12	1/2	1	20	1.0						24		
25	XRAY	12	12	1/2	1	20	1.2	1.2	20	1	1/2	12	26		
27	SPACE							1.0	20	1	1/2	12	28		
29	OVERHEAD TV/LGT	12	12	1/2	1	20	1.2	1.2	20	1	1/2	12	30		
31	TREATMENT CHAIR	12	12	1/2	1	20	1.0	1.0	20	1	1/2	12	32		
33	XRAY	12	12	1/2	1	20	1.2	1.2	20	1	1/2	12	34		
35	SPACE							1.2	20	1	1/2	12	36		
37	OVERHEAD TV/LGT	12	12	1/2	1	20	1.2	1.2	20	1	1/2	12	38		
39	TREATMENT CHAIR	12	12	1/2	1	20	1.0	1.0	20	1	1/2	12	40		
41	XRAY	12	12	1/2	1	20	1.2	1.2	20	1	1/2	12	42		
43	SPACE							1.2	20	1	1/2	12	44		
45	OVERHEAD TV/LGT	12	12	1/2	1	20	1.2	1.2	20	1	1/2	12	46		
47	TREATMENT CHAIR	12	12	1/2	1	20	1.0	1.2	20	1	1/2	12	48		
49	EXISTING UPS	12	12	1/2	1	20	1.0	1.2	20	1	1/2	12	50		
51	EXISTING UPS	12	12	1/2	1	20	1.0	1.2	20	1	1/2	12	52		
53	FACP	12	12	1/2	1	20	1.0						54		
TOTAL KVA					53.0									10,000 AMP. RMS. SYMMETRICAL SHORT CIRCUIT CURRENT RATING	

PANEL BOARDS NOTES:

- 1 RELOCATE EXISTING CIRCUIT FROM EXISTING PANEL A TO PANEL P1. PROVIDE REQUIRED WIRES IN CONDUIT. FOR UNDERGROUND FEEDS, EXTEND EXISTING CONDUITS TO NEW PANEL AND PROVIDE WIRES, SAME SIZE AS EXISTING, FROM EQUIPMENT TO NEW PANEL. FOR ABOVE PANEL FEEDS, PROVIDE JUNCTION BOXES IN CEILING AND EXTEND WIRES AND CONDUITS TO NEW PANEL.
- 1A RELOCATED CIRCUIT FROM PANEL A.
- 2 RELOCATE EXISTING CIRCUIT FROM EXISTING PANEL B TO PANEL P1. PROVIDE REQUIRED WIRES IN CONDUIT. FOR UNDERGROUND FEEDS, EXTEND EXISTING CONDUITS TO NEW PANEL AND PROVIDE WIRES, SAME SIZE AS EXISTING, FROM EQUIPMENT TO NEW PANEL. FOR ABOVE PANEL FEEDS, PROVIDE JUNCTION BOXES IN CEILING AND EXTEND WIRES AND CONDUITS TO NEW PANEL.
- 2B RELOCATED CIRCUIT FROM PANEL B.
- 3 COORDINATE REQUIRED WIRE AND CIRCUIT BREAKER SIZES WITH DENTAL EQUIPMENT SUPPLIER, PRIOR TO INSTALLING CONDUITS.

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 2045 Professional Center Drive
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 CERTIFICATE OF PROFESSIONAL DESIGN NO. 4553
 NAMIR A. HADDAD P.E. - LICENSE NO. 31987

Revision	Date	By	Check
1 FOR CONSTRUCTION	12/20/19		

ELECTRICAL PANEL SCHEDULES

DATE: 12/19/19
 D.B.: A.W.
 C.B.: N.A.H.
 JOB NO.: 19040

E4.3
 FOR CONSTRUCTION

ELECTRICAL SPECIFICATIONS

SECTION 16050 - BASIC ELECTRICAL MATERIALS AND METHODS PART 1 GENERAL

- 1.1 SUBMITTALS
A. PRODUCT DATA: FOR REVIEW; PROVIDE CATALOG DATA FOR GROUNDING AND BONDING DEVICES.
- 1.2 REGULATORY REQUIREMENTS
A. CONFORM TO REQUIREMENTS OF NFPA 70.
B. FURNISH PRODUCTS LISTED BY UL OR OTHER TESTING FIRM ACCEPTABLE TO AUTHORITY HAVING JURISDICTION.
C. FLORIDA BUILDING CODE 2017

PART 2 PRODUCTS

- 2.1 GROUNDING MATERIALS
A. GROUND ROD: COPPER-CLAD STEEL.
B. MECHANICAL CONNECTORS: BRONZE, ABOVE GRADE ONLY.
C. EXOTHERMIC WELDS: BELOW GRADE CONNECTORS.
- 2.2 BASIC MATERIALS
A. STEEL CHANNEL: GALVANIZED.
B. MISCELLANEOUS HARDWARE: TREAT FOR CORROSION RESISTANCE.
C. NAMEPLATES: ENGRAVED THREE-LAYER LAMINATED PLASTIC, BLACK LETTERS ON WHITE BACKGROUND.
D. WIRE AND CABLE MARKERS: CLOTH MARKERS, SPLIT SLEEVE OR TUBING TYPE.

PART 3 EXECUTION

- 3.1 INSTALLATION
A. INSTALL WORK ACCORDING TO NECA "STANDARD OF INSTALLATION."
B. PROVIDE BONDING TO MEET REGULATORY REQUIREMENTS.
C. MAKE ELECTRICAL CONNECTIONS TO UTILIZATION EQUIPMENT IN ACCORDANCE WITH EQUIPMENT MANUFACTURER'S INSTRUCTIONS.
1. MAKE CONDUIT CONNECTIONS TO EQUIPMENT USING FLEXIBLE CONDUIT. USE LIQUIDTIGHT FLEXIBLE CONDUIT IN DAMP OR WET LOCATIONS.
D. INSTALL SUPPORT SYSTEMS SIZED AND FASTENED TO ACCOMMODATE WEIGHT OF EQUIPMENT AND CONDUIT, INCLUDING WIRING, WHICH THEY CARRY.
1. FASTEN HANGER RODS, CONDUIT CLAMPS, AND OUTLET AND JUNCTION BOXES TO BUILDING STRUCTURE USING PRECAST INSERT SYSTEM BEAM CLAMPS.
2. USE TOGGLE BOLTS OR HOLLOW WALL FASTENERS IN HOLLOW MASONRY, PLASTER, OR GYPSUM BOARD PARTITIONS AND WALLS; EXPANSION ANCHORS OR PRESET INSERTS IN SOLID MASONRY WALLS; SELF-DRILLING ANCHORS OR EXPANSION ANCHOR ON CONCRETE SURFACES; SHEET METAL SCREWS IN SHEET METAL STUDS; AND WOOD SCREWS IN WOOD CONSTRUCTION.
3. DO NOT FASTEN SUPPORTS TO PIPING, CEILING SUPPORT WIRES, DUCTWORK, MECHANICAL EQUIPMENT, OR CONDUIT.
4. DO NOT USE POWDER-ACTUATED ANCHORS.
5. DO NOT DRILL STRUCTURAL STEEL MEMBERS.
6. FABRICATE SUPPORTS FROM STRUCTURAL STEEL OR STEEL CHANNEL.
E. IDENTIFY ELECTRICAL DISTRIBUTION AND CONTROL EQUIPMENT, AND LOADS SERVED, TO MEET REGULATORY REQUIREMENTS AND AS SCHEDULED.
1. SECURE NAMEPLATES TO EQUIPMENT FRONTS USING SCREWS, RIVETS, OR ADHESIVE, WITH EDGES PARALLEL TO EQUIPMENT LINES. SECURE NAMEPLATE TO INSIDE FACE OF RECESSED PANELBOARD DOORS IN FINISHED LOCATIONS.
2. USE NAMEPLATES WITH 1/8 INCH LETTERING TO IDENTIFY INDIVIDUAL SWITCHES AND CIRCUIT BREAKERS, RECEPTACLE CIRCUITS, AND LOADS SERVED.
3. USE NAMEPLATES WITH 1/4 INCH TO IDENTIFY DISTRIBUTION AND CONTROL EQUIPMENT.
F. INSTALL WIRE MARKERS ON EACH CONDUCTOR IN PANELBOARD GUTTERS, PULL BOXES, OUTLET AND JUNCTION BOXES, AND AT LOAD CONNECTIONS.
1. USE BRANCH CIRCUIT OR FEEDER NUMBER TO IDENTIFY POWER AND LIGHTING CIRCUITS.
2. USE CONTROL WIRE NUMBER AS INDICATED ON EQUIPMENT MANUFACTURER'S SHOP DRAWINGS TO IDENTIFY CONTROL WIRING.

SECTION 16100 - WIRING METHODS

PART 1 GENERAL

- 1.1 SUBMITTALS
A. PRODUCT DATA: FOR REVIEW.
1. PROVIDE WIRING DEVICE CONFIGURATIONS, RATINGS, DIMENSIONS, AND COLOR SELECTIONS.
2. PROVIDE SERVICE FITTING CONFIGURATIONS, DIMENSIONS, AND FINISH AND COLOR
- 1.2 REGULATORY REQUIREMENTS
A. CONFORM TO REQUIREMENTS OF NFPA 70.
B. FURNISH PRODUCTS LISTED BY UL OR OTHER TESTING FIRM ACCEPTABLE TO AUTHORITY HAVING JURISDICTION.

PART 2 PRODUCTS

- 2.1 PRODUCT REQUIREMENTS
A. USE ONLY SPECIFIED RACEWAY IN THE FOLLOWING LOCATIONS:
1. UNDERGROUND INSTALLATIONS: PVC SCHEDULE 40, RIGID GALVANIZED STEEL CONDUIT STUB-UP.
2. EXPOSED OUTDOOR LOCATIONS: RIGID STEEL CONDUIT OR ELECTRICAL METALLIC TUBING. USE THREADED OR RAINTIGHT FITTINGS.
3. CONCEALED DRY INTERIOR LOCATIONS: ELECTRICAL METALLIC TUBING.
4. EXPOSED DRY INTERIOR LOCATIONS: RIGID STEEL CONDUIT OR ELECTRICAL METALLIC TUBING.
B. WIRE AND CABLE SHALL BE ENCASED IN RACEWAYS SYSTEM.
C. USE 10 AWG CONDUCTOR FOR 20 AMPERE, 120 VOLT BRANCH CIRCUIT HOME RUNS LONGER THAN 75 FEET; AND FOR 20 AMPERE, 277 VOLT BRANCH CIRCUIT HOME RUNS LONGER THAN 200 FEET.
- 2.2 CONDUIT AND FITTINGS
A. CONDUIT:
1. METAL CONDUIT AND TUBING: GALVANIZED STEEL, ELECTRICAL METALLIC TUBING
2. FLEXIBLE CONDUIT: STEEL
3. LIQUID TIGHT FLEXIBLE CONDUIT: FLEXIBLE CONDUIT WITH PVC JACKET.
4. PLASTIC CONDUIT AND TUBING: NEMA 2, PVC. USE SCHEDULE 40 CONDUIT.
B. CONDUIT FITTINGS:
1. METAL FITTINGS AND CONDUIT BODIES: NEMA PB 1.
2. PLASTIC FITTINGS AND CONDUIT BODIES: NEMA 2 C.
3. EMT FITTINGS: STEEL COMPRESSION TYPE
- 2.3 ELECTRICAL BOXES
A. BOXES:
1. SHEET METAL: NEMA OS 1, GALVANIZED STEEL.
2. CAST METAL: CAST FERROUS, DEEP TYPE, GASKETED COVER, THREADED HUBS.
B. HINGED COVER ENCLOSURES: NEMA-1 INDOOR, NEMA-3R WET LOCATION HINGED.
C. LOCKABLE, LIGHT GRAY FINISH.
- 2.4 BUILDING WIRE AND CABLE
A. FEEDERS AND BRANCH CIRCUITS LARGER THAN 6 AWG: COPPER STRANDED CONDUCTOR, 600 VOLT INSULATION, THHN/THWN AND XHHW.
B. FEEDERS AND BRANCH CIRCUITS 6 AWG AND SMALLER: COPPER CONDUCTOR, 600 VOLT INSULATION, THHN/THWN, XHHW SOLID CONDUCTOR.
C. CONTROL CIRCUITS: COPPER, STRANDED CONDUCTOR, 600 VOLT INSULATION, THW.
D. MC CABLE: #12 AND #10 WITH GROUNDING CONDUCTOR.

PART 3 EXECUTION

- 3.1 EXAMINATION AND PREPARATION
A. VERIFY THAT INTERIOR OF BUILDING IS PHYSICALLY PROTECTED FROM WEATHER.
B. VERIFY THAT MECHANICAL WORK THAT IS LIKELY TO DAMAGE CONDUCTORS HAS BEEN COMPLETED.
C. COMPLETELY AND THOROUGHLY SWAB RACEWAY SYSTEM BEFORE INSTALLING CONDUCTORS.
D. ELECTRICAL BOXES ARE SHOWN ON DRAWINGS IN APPROXIMATE LOCATIONS UNLESS DIMENSIONED.
1. OBTAIN VERIFICATION FROM ENGINEER OF FLOOR BOX LOCATIONS, AND LOCATIONS OF OUTLETS IN OFFICES AND WORK AREAS, PRIOR TO ROUGH-IN.
2. IT SHALL BE UNDERSTOOD THAT ANY OUTLET MAY BE RELOCATED A DISTANCE NOT EXCEEDING 15FT FROM THE LOCATION SHOWN ON THE DRAWINGS PRIOR TO OR DURING ROUGH-IN, IF SO DIRECTED BY THE ARCHITECT-ENGINEER WITHOUT ADDITIONAL COST TO THE OWNER.
3. LOCAL SWITCHES WHICH ARE SHOWN NEAR DOORS SHALL BE LOCATED AT THE STRIKE SIDE OF THE DOOR AS FINALLY HUNG, REGARDLESS OF SWING ON THE DRAWINGS.
- 3.2 INSTALLATION
A. PERFORM WORK ACCORDING TO NECA STANDARD OF INSTALLATION.
B. ARRANGE CONDUIT TO MAINTAIN HEADROOM AND TO PRESENT NEAT APPEARANCE.
1. ROUTE EXPOSED RACEWAY PARALLEL AND PERPENDICULAR TO WALLS AND ADJACENT PIPING.
2. MAINTAIN MINIMUM 6-INCH CLEARANCE TO PIPING AND 12-INCH CLEARANCE TO HEAT SURFACES SUCH AS FLUES, STEAM PIPES, AND HEATING APPLIANCES.
3. MAINTAIN REQUIRED FIRE, ACOUSTIC, AND VAPOR BARRIER RATING WHEN PENETRATING WALLS, FLOORS, AND CEILINGS.
4. ROUTE CONDUIT THROUGH ROOF OPENINGS FOR PIPING AND DUCTWORK WHERE POSSIBLE; OTHERWISE, ROUTE THROUGH ROOF JACK WITH PITCH POCKET.
5. GROUP IN PARALLEL RUNS WHERE PRACTICAL. USE RACK CONSTRUCTED OF STEEL CHANNEL. MAINTAIN SPACING BETWEEN RACEWAYS OR DERATE CIRCUIT CAPACITIES TO NFPA 70 REQUIREMENTS.

6. USE CONDUIT HANGERS AND CLAMPS; DO NOT FASTEN WITH WIRE OR PERFORATED PIPE STRAPS.
7. USE CONDUIT BODIES TO MAKE SHARP CHANGES IN DIRECTION.
8. TERMINATE CONDUIT STUBS WITH INSULATED BUSHINGS.
9. USE SUITABLE CAPS TO PROTECT INSTALLED RACEWAY AGAINST ENTRANCE OF DIRT AND MOISTURE.
10. PROVIDE NO. 12 AWG INSULATED CONDUCTOR OR SUITABLE PULL STRING IN EMPTY RACEWAYS, EXCEPT SLEEVES AND NIPPLES.
11. INSTALL EXPANSION JOINTS WHERE RACEWAY CROSSES BUILDING EXPANSION OR SEISMIC JOINTS.
12. INSTALL PLASTIC CONDUIT AND TUBING ACCORDING TO MANUFACTURER'S INSTRUCTIONS.
C. INSTALL ELECTRICAL BOXES AS SHOWN ON THE DRAWINGS, AND AS REQUIRED FOR SPLICES, TAPS, WIRE PULLING, EQUIPMENT CONNECTIONS AND REGULATORY REQUIREMENTS.
1. USE CAST OUTLET BOX IN EXTERIOR LOCATIONS EXPOSED TO WEATHER AND WET LOCATIONS.
2. USE HINGED COVER ENCLOSURE FOR INTERIOR PULL AND JUNCTION BOX LARGER THAN 12 INCHES IN ANY DIMENSION.
3. LOCATE AND INSTALL ELECTRICAL BOXES TO ALLOW ACCESS. PROVIDE ACCESS PANELS IF REQUIRED.
4. LOCATE AND INSTALL ELECTRICAL BOXES TO MAINTAIN HEADROOM AND TO PRESENT NEAT MECHANICAL APPEARANCE.
5. INSTALL PULL BOXES AND JUNCTION BOXES ABOVE ACCESSIBLE CEILINGS OR IN UNFINISHED AREAS.
6. PROVIDE KNOCKOUT CLOSURES FOR UNUSED OPENINGS.
7. ALIGN WALL-MOUNTED OUTLET BOXES FOR SWITCHES, THERMOSTATS, AND SIMILAR DEVICES.
8. COORDINATE MOUNTING HEIGHTS AND LOCATIONS OF OUTLETS ABOVE COUNTERS AND BACKSPASHES.
9. USE RECESSED OUTLET BOXES IN FINISHED AREAS AND WHERE INDICATED.
10. SECURE BOXES TO INTERIOR WALL AND PARTITION STUDS, ACCURATELY POSITIONING TO ALLOW FOR SURFACE FINISH THICKNESS.
11. USE STAMPED STEEL STUD BRIDGES FOR FLUSH OUTLETS IN HOLLOW STUD WALL, AND ADJUSTABLE STEEL CHANNEL FASTENERS FOR FLUSH CEILING OUTLET BOXES.
12. LOCATE BOXES IN MASONRY WALLS TO REQUIRE CUTTING CORNER ONLY. COORDINATE MASONRY CUTTING TO ACHIEVE NEAT OPENINGS FOR BOXES.
13. DO NOT INSTALL BOXES BACK-TO-BACK IN WALLS; PROVIDE 6 INCHES SEPARATION, MINIMUM; EXCEPT PROVIDE 24 INCHES SEPARATION, MINIMUM IN ACOUSTIC-RATED WALLS.
14. DO NOT DAMAGE INSULATION.
D. INSTALL CABLE AND WIRE ACCORDING TO MANUFACTURER'S INSTRUCTIONS.
1. NEATLY TRAIN AND SECURE WIRING INSIDE BOXES, EQUIPMENT, AND PANELBOARDS.
2. USE WIRE PULLING LUBRICANT FOR PULLING 4 AWG AND LARGER WIRES.
3. SUPPORT CABLES ABOVE ACCESSIBLE CEILINGS TO KEEP THEM FROM RESTING ON CEILING TILES.
4. MAKE SPLICES, TAPS, AND TERMINATIONS TO CARRY FULL AMPACITY OF CONDUCTORS WITHOUT PERFORATING TEMPERATE RISE.
5. TERMINATE SPARE CONDUCTORS WITH ELECTRICAL TAPE.
E. INSTALL WALL PLATES FLUSH AND LEVEL.
F. BEFORE INSTALLING RACEWAYS AND PULLING WIRE TO ANY MECHANICAL EQUIPMENT OR KITCHEN EQUIPMENT, VERIFY ELECTRICAL CHARACTERISTICS WITH FINAL SUBMITTAL ON EQUIPMENT TO ASSURE PROPER NUMBER AND AWG OF CONDUCTORS.
G. THE CONTRACTOR SHALL PROMPTLY REPAIR ANY UTILITY LINES OR SYSTEM DAMAGED BY HIS OPERATION. THE TOP OF UNDERGROUND CONDUIT SHALL NOT BE LESS THAN 24 INCHES BELOW GRADE. THE BOTTOM OF CONDUITS TRENCH SHALL BE GRADED SMOOTH, WHERE ROCK AND SHARP EDGED MATERIAL ARE ENCOUNTERED, THE BOTTOM SHALL BE EXCAVATED FOR ADDITIONAL 3 INCHES, FILLED AND TAMPED LEVEL TO THE ORIGINAL BOTTOM WITH SAND OR EARTH FREE FROM ROCKS AND SHARP MATERIALS. PROVIDE MAGNETIC YELLOW WARNING TAPE ABOVE THE ENTIRE LENGTH OF UNDERGROUND CONDUITS TAPE SHALL BE BURIED 12" BELOW GRADE.
H. SURFACES DISTURBED DURING THE INSTALLATION OF UNDERGROUND CONDUITS SHALL BE RESTORED TO THEIR ORIGINAL CONDITIONS. PROVIDE SOG OF QUALITY EQUAL TO THAT REMOVED, PATCH PAVEMENT, SIDEWALK CURB, ETC. EXCAVATED MATERIAL NOT REQUIRED OR SUITABLE FOR BACKFILL SHALL BE REMOVED FROM PROJECT SITE.

SECTION 16715 - VOICE AND DATA COMMUNICATION CABLING

PART 1 - GENERAL

- 1.1 SUBMITTALS
A. PRODUCT DATA: FOR EACH COMPONENT SPECIFIED. INSTALLATION DATA FOR UTP AND FIBER CABLING ARE SPECIFIED IN THE REFERENCED TIA/EIA STANDARDS.
- 1.2 COORDINATION
A. COORDINATE LAYOUT AND INSTALLATION OF VOICE AND DATA COMMUNICATION CABLING WITH OWNER'S TELECOMMUNICATIONS AND LAN EQUIPMENT AND SERVICE SUPPLIERS.
- PART 2 - PRODUCTS
- 2.1 MOUNTING ELEMENTS
A. BACKBOARDS: 3/4-INCH (19-MM), INTERIOR-GRADE, FIRE-RETARDANT-TREATED PLYWOOD.
- 2.2 UNSHIELDED TWISTED-PAIR CABLING
A. 100-OHM UTP: COMPLY WITH UL 444.
B. HORIZONTAL COPPER CABLE:
1. NO. 24 AWG, 100 OHM, FOUR PAIR.
2. COMPLY WITH TIA/EIA-568-B.2, CATEGORY 6.
3. NFPA 70, TYPES CMG AND CMF.
4. CABLE JACKET COLOR: GRAY PLENUM RATED.
C. CABLE CONNECTING HARDWARE: COMPLY WITH TIA/EIA-568-B.2, IDC TYPE, USING MODULES DESIGNED FOR PUNCH-DOWN CAPS OR TOOLS.
1. IDC TERMINAL BLOCK MODULES: INTEGRAL WITH CONNECTOR BODIES, INCLUDING PLUGS AND JACKS WHERE INDICATED.
2. IDC CONNECTING HARDWARE: CONSISTENT THROUGHOUT PROJECT.
D. CROSS-CONNECT PANEL: MODULAR ARRAY OF IDC TERMINAL BLOCKS ARRANGED TO TERMINATE BUILDING CABLES AND PERMIT INTERCONNECTION BETWEEN CABLES.
1. NUMBER OF TERMINALS PER FIELD: ONE FOR EACH CONDUCTOR IN ASSIGNED CABLES PLUS 25 PERCENT SPARE.
E. PATCH PANEL: COMPLY WITH TIA/EIA-568-B.2, MEETING OR EXCEEDING CABLE PERFORMANCE. MODULAR PANELS HOUSING MULTIPLE-NUMBERED JACK UNITS WITH IDC-TYPE CONNECTORS AT EACH JACK FOR PERMANENT TERMINATION OF PAIR GROUPS OF INSTALLED CABLES.
1. NUMBER OF JACKS PER FIELD: ONE FOR EACH FOUR-PAIR
F. JACKS AND JACK ASSEMBLIES: MODULAR, COLOR-CODED, RJ-45 RECEPTACLE UNITS WITH INTEGRAL IDC-TYPE TERMINALS. USE KEYPAD JACKS FOR DATA SERVICE.
G. PATCH CORDS: FACTORY-MADE, FOUR-PAIR CABLES IN 48-INCH (1200-MM) LENGTHS; TERMINATED WITH RJ-45 PLUG AT EACH END. USE KEYPAD PLUGS FOR DATA SERVICE. PROVIDE 4' PATCH CORD FOR EVERY JACK.

SECTION 16400 - SERVICE AND DISTRIBUTION

PART 1 GENERAL

- 1.1 SUBMITTALS
A. SHOP DRAWINGS: FOR REVIEW; INDICATE CONSTRUCTION DETAILS FOR THE FOLLOWING:
1. PANELBOARDS.
B. PRODUCT DATA: FOR REVIEW; PROVIDE RATINGS AND COMPONENT DETAILS FOR THE FOLLOWING:
1. ENCLOSED SWITCHES.
2. FUSES.
3. CIRCUIT BREAKERS.
- 1.2 REGULATORY REQUIREMENTS
A. CONFORM TO REQUIREMENTS OF NFPA 70.
B. FURNISH PRODUCTS LISTED BY UL OR OTHER TESTING FIRM ACCEPTABLE TO AUTHORITY HAVING JURISDICTION.
C. CONFORM TO REQUIREMENTS OF UTILITY COMPANY.
- PART 2 PRODUCTS
- 2.1 ENCLOSED SWITCHES
A. MANUFACTURERS: SQUARE D, GE, EATON
B. ENCLOSED SWITCH ASSEMBLIES: HEAVY DUTY FUSE CLIPS DESIGNED TO ACCOMMODATE CLASS R OR J FUSES.
C. ENCLOSURES: NEMA-1 FOR INTERIOR LOCATIONS, NEMA-3R FOR EXTERIOR LOCATIONS.
- 2.2 FUSES
A. FUSES 600 AMPERES AND LESS: CURRENT LIMITING, ONE-TIME FUSE, 250 VOLT, UL CLASS RK 1, RK 5 OR J
- 2.3 PANELBOARDS
A. MANUFACTURERS: SQUARE D, GE, CUTLER HAMMER
B. DISTRIBUTION PANELBOARDS: NEMA PB 1; CIRCUIT BREAKER TYPE.
1. ENCLOSURE: TYPE 1
2. PROVIDE SURFACE CABINET FRONT WITH SCREW COVER AND HINGED DOOR.
3. BUS: COPPER.
C. LIGHTING AND APPLIANCE BRANCH CIRCUIT PANELBOARDS: NEMA PB 1; CIRCUIT BREAKER TYPE.
1. ENCLOSURE: NEMA PB 1; TYPE 1
2. PROVIDE FLUSH OR SURFACE CABINET FRONT WITH LOCKABLE DOOR, KEYPAD ALIKE.
3. BUS: COPPER BUS.

PART 3 EXECUTION

- 3.1 INSTALLATION
A. COORDINATE WITH UTILITY COMPANY TO OBTAIN PERMANENT ELECTRIC SERVICE TO THE PROJECT. PROVIDE CONCRETE PAD FOR UTILITY TRANSFORMER.
B. INSTALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
C. INSTALL PANELBOARDS TO NEMA PB 1.1.
D. CLEAN EQUIPMENT

SECTION 16510 - INTERIOR LUMINAIRES

PART 1 GENERAL

- 1.1 REGULATORY REQUIREMENTS
A. CONFORM TO REQUIREMENTS OF ANSI/NFPA 70.
B. CONFORM TO REQUIREMENTS OF NFPA 101.
C. FURNISH PRODUCTS LISTED AND CLASSIFIED BY UNDERWRITERS LABORATORIES, INC. AS SUITABLE FOR PURPOSE SPECIFIED AND SHOWN.
- PART 2 PRODUCTS
- 2.1 LUMINAIRES
A. FURNISH PRODUCTS AS SPECIFIED IN SCHEDULE ON DRAWINGS.
B. INSTALL BALLASTS, LAMPS, AND SPECIFIED ACCESSORIES AT FACTORY.
- PART 3 EXECUTION
- 3.1 INSTALLATION
A. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
B. INSTALL SUSPENDED LUMINAIRES USING PENDANTS SUPPORTED FROM SWMEL HANGERS. PROVIDE PENDANT LENGTH REQUIRED TO SUSPEND LUMINAIRE AT INDICATED HEIGHT.
C. LOCATE RECESSED LUMINAIRES AS INDICATED ON REFLECTED CEILING PLAN.
D. INSTALL SURFACE MOUNTED LUMINAIRES AND EXIT SIGNS PLUMB AND ADJUST TO ALIGN WITH BUILDING LINES AND WITH EACH OTHER. SECURE TO PROHIBIT MOVEMENT.
E. EXPOSED GRID CEILINGS: SUPPORT SURFACE MOUNTED LUMINAIRES ON GRID CEILING DIRECTLY FROM BUILDING STRUCTURE OR PROVIDE AUXILIARY MEMBERS SPANNING CEILING T(S) TO SUPPORT SURFACE MOUNTED LUMINAIRES.
F. INSTALL RECESSED LUMINAIRES TO PERMIT REMOVAL FROM BELOW.
G. INSTALL CLIPS TO SECURE RECESSED GRID-SUPPORTED LUMINAIRES IN PLACE. PROVIDE A MINIMUM OF 2 GALVANIZED STEEL WIRES TO SUPPORT LIGHTING FIXTURE FROM BUILDING STRUCTURE. PLACE WIRES DIAGONALLY AT LONG SIDES OF FIXTURE.
H. INSTALL SPECIFIED LAMPS IN EACH LUMINAIRE, EMERGENCY LIGHTING UNIT AND EXIT SIGN.
I. ADJUST EXIT SIGN DIRECTIONAL ARROWS AS INDICATED.
J. RELAMP LUMINAIRES THAT HAVE FAILED LAMPS AT SUBSTANTIAL COMPLETION.
K. CLEAN ELECTRICAL PARTS TO REMOVE CONDUCTIVE AND DELETTERIOUS MATERIALS. REMOVE DIRT AND DEBRIS FROM ENCLOSURE. CLEAN FINISHES AND TOUCHUP DAMAGE.

SECTION 16715 - VOICE AND DATA COMMUNICATION CABLING

PART 1 - GENERAL

- 1.1 SUBMITTALS
A. PRODUCT DATA: FOR EACH COMPONENT SPECIFIED. INSTALLATION DATA FOR UTP AND FIBER CABLING ARE SPECIFIED IN THE REFERENCED TIA/EIA STANDARDS.
- 1.2 COORDINATION
A. COORDINATE LAYOUT AND INSTALLATION OF VOICE AND DATA COMMUNICATION CABLING WITH OWNER'S TELECOMMUNICATIONS AND LAN EQUIPMENT AND SERVICE SUPPLIERS.
- PART 2 - PRODUCTS
- 2.1 MOUNTING ELEMENTS
A. BACKBOARDS: 3/4-INCH (19-MM), INTERIOR-GRADE, FIRE-RETARDANT-TREATED PLYWOOD.
- 2.2 UNSHIELDED TWISTED-PAIR CABLING
A. 100-OHM UTP: COMPLY WITH UL 444.
B. HORIZONTAL COPPER CABLE:
1. NO. 24 AWG, 100 OHM, FOUR PAIR.
2. COMPLY WITH TIA/EIA-568-B.2, CATEGORY 6.
3. NFPA 70, TYPES CMG AND CMF.
4. CABLE JACKET COLOR: GRAY PLENUM RATED.
C. CABLE CONNECTING HARDWARE: COMPLY WITH TIA/EIA-568-B.2, IDC TYPE, USING MODULES DESIGNED FOR PUNCH-DOWN CAPS OR TOOLS.
1. IDC TERMINAL BLOCK MODULES: INTEGRAL WITH CONNECTOR BODIES, INCLUDING PLUGS AND JACKS WHERE INDICATED.
2. IDC CONNECTING HARDWARE: CONSISTENT THROUGHOUT PROJECT.
D. CROSS-CONNECT PANEL: MODULAR ARRAY OF IDC TERMINAL BLOCKS ARRANGED TO TERMINATE BUILDING CABLES AND PERMIT INTERCONNECTION BETWEEN CABLES.
1. NUMBER OF TERMINALS PER FIELD: ONE FOR EACH CONDUCTOR IN ASSIGNED CABLES PLUS 25 PERCENT SPARE.
E. PATCH PANEL: COMPLY WITH TIA/EIA-568-B.2, MEETING OR EXCEEDING CABLE PERFORMANCE. MODULAR PANELS HOUSING MULTIPLE-NUMBERED JACK UNITS WITH IDC-TYPE CONNECTORS AT EACH JACK FOR PERMANENT TERMINATION OF PAIR GROUPS OF INSTALLED CABLES.
1. NUMBER OF JACKS PER FIELD: ONE FOR EACH FOUR-PAIR
F. JACKS AND JACK ASSEMBLIES: MODULAR, COLOR-CODED, RJ-45 RECEPTACLE UNITS WITH INTEGRAL IDC-TYPE TERMINALS. USE KEYPAD JACKS FOR DATA SERVICE.
G. PATCH CORDS: FACTORY-MADE, FOUR-PAIR CABLES IN 48-INCH (1200-MM) LENGTHS; TERMINATED WITH RJ-45 PLUG AT EACH END. USE KEYPAD PLUGS FOR DATA SERVICE. PROVIDE 4' PATCH CORD FOR EVERY JACK.
- 2.3 WORKSTATION OUTLETS
A. JACKS: 100-OHM, BALANCED, TWISTED-PAIR CONNECTOR; FOUR-PAIR, MODULAR, RJ-45. COMPLY WITH TIA/EIA-568-B.1.
B. WORKSTATION OUTLETS: MULTI JACK-CONNECTOR ASSEMBLIES MOUNTED IN SINGLE OR MULTIGANG FACEPLATE.
1. FACEPLATE: HIGH-IMPACT PLASTIC; COLOR AS SELECTED BY ARCHITECT.
2. MOUNTING: FLUSH, UNLESS OTHERWISE INDICATED.
3. LEGEND: FACTORY-LABELLED, BY SILK-SCREENING OR ENGRAVING.
4. LEGEND: MACHINE-PRINTED, ADHESIVE TAPE LABEL IDENTIFYING THE CIRCUIT.

2.4 BACKBOARDS

- A. A-C, VOID-FREE PLYWOOD, 84 INCHES (2130 MM) HIGH AND 3/4-INCH (19 MM) THICK, FIRE RATED.
2.5 GROUNDING AND BONDING
A. MATERIALS: COMPLY WITH NFPA 70, TIA/EIA-607, AND UL 467.
2.6 IDENTIFICATION PRODUCTS
A. COMPLY WITH TIA/EIA-606-A.
B. CABLE LABELS: SELF-ADHESIVE VINYL OR VINYL-CLOTH WRAPAROUND TAPE MARKERS, MACHINE PRINTED WITH ALPHANUMERIC CABLE DESIGNATIONS.

PART 3 - EXECUTION

- 3.1 INSTALLATION STANDARDS
A. COMPLY WITH BICSI TCl, TIA/EIA-568-B.1, TIA/EIA-568-B.2, TIA/EIA-568-B.3, AND TIA/EIA-569-A.
- 3.2 INSTALLATION
A. COMPLY WITH NECA 1.
B. WIRING METHOD: INSTALL CABLES IN RACEWAY EXCEPT IN ACCESSIBLE CEILING SPACES WHERE UNENCLOSED WIRING METHOD MAY BE USED. USE UL-LISTED PLENUM CABLE IN ENVIRONMENTAL AIR SPACES, INCLUDING PLENUM CEILINGS, CONCEAL RACEWAY AND CABLES EXCEPT IN UNFINISHED SPACES.
C. CABLE INSTALLATION:
1. INSTALL EXPOSED CABLES PARALLEL AND PERPENDICULAR TO SURFACES OR EXPOSED STRUCTURAL MEMBERS AND FOLLOW SURFACE CONTOURS WHERE POSSIBLE.
2. MAKE SPLICES, TAPS, AND TERMINATIONS ONLY AT INDICATED OUTLETS, TERMINALS, AND CROSS-CONNECT AND PATCH PANELS.
3. PULLING CABLE: DO NOT EXCEED MANUFACTURER'S WRITTEN RECOMMENDED PULLING TENSIONS. DO NOT INSTALL BRUISED, KINKED, SCORED, DEFORMED, OR ABRADED CABLE. DO NOT SPLICE CABLE BETWEEN TERMINATION, TAP, OR JUNCTION POINTS. REMOVE AND DISCARD CABLE IF DAMAGED DURING INSTALLATION AND REPLACE IT WITH NEW CABLE.
4. SECURE AND SUPPORT CABLES AT INTERVALS NOT EXCEEDING 30 INCHES (760 MM) AND NOT MORE THAN 6 INCHES (150 MM) FROM CABINETS, BOXES, FITTINGS, OUTLETS, FRAMES, AND TERMINALS.
5. INSTALL UTP CABLES USING TECHNIQUES, PRACTICES, AND METHODS THAT ARE CONSISTENT WITH CATEGORY 6 RATING OF COMPONENTS AND THAT ENSURE CATEGORY 6 PERFORMANCE OF COMPLETED AND LINKED SIGNAL PATHS, END TO END.
D. WIRING WITHIN WIRING CLOSETS AND ENCLOSURES:
1. INSTALL PLYWOOD BACKBOARDS ON WALLS OF EQUIPMENT ROOMS AND WIRING CLOSETS FROM FLOOR TO CEILING.
2. MOUNT PATCH PANELS, TERMINAL STRIPS, AND OTHER CONNECTING HARDWARE ON BACKBOARDS.
3. GROUP CONNECTING HARDWARE FOR CABLES INTO SEPARATE LOGICAL FIELDS.
4. TRAIN CONDUCTORS TO TERMINAL POINTS WITH NO EXCESS.
5. USE LACING BARS TO RESTRAIN CABLES, TO PREVENT STRAINING CONNECTIONS, AND TO PREVENT BENDING CABLES TO SMALLER RADIUS THAN MINIMUMS RECOMMENDED BY MANUFACTURER.
E. SEPARATION FROM EMI SOURCES: COMPLY WITH BICSI TDM AND TIA/EIA-569-A RECOMMENDATIONS FOR SEPARATING UNSHIELDED COPPER VOICE AND DATA COMMUNICATION CABLE FROM POTENTIAL EMI SOURCES, INCLUDING ELECTRICAL POWER LINES AND EQUIPMENT.
F. BACKBOARDS: INSTALL PLYWOOD WITH 84-INCH (2130-MM) DIMENSION FROM FLOOR UP TOWARD CEILING. BUTT ADJACENT SHEETS TIGHTLY, AND FORM SMOOTH GAP-FREE CORNERS.

3.3 GROUNDING

- A. COMPLY WITH DIVISION 16 SECTION "GROUNDING AND BONDING" AND WITH TIA/EIA 607.
B. GROUNDING POINTS:
1. LOCATE GROUNDING TERMINALS IN EACH EQUIPMENT ROOM, WIRING CLOSET, RACK, AND CABINET.
2. TELECOMMUNICATIONS GROUNDING BUSBARS: MOUNT ON WALL OF TELECOMMUNICATIONS ENTRANCE FACILITY, EQUIPMENT ROOM, AND CLOSET, WITH STANDOFF INSULATORS.
C. BONDING CONDUCTORS:
1. EXTEND FROM TELECOMMUNICATIONS ENTRANCE FACILITY TO ELECTRICAL ENTRANCE FACILITY AND CONNECT TO GROUNDING ELECTRODE.
2. WHERE A PANELBOARD FOR TELECOMMUNICATIONS IS LOCATED IN SAME ROOM OR SPACE AS A GROUNDING BUSBAR, BOND TO EQUIPMENT GROUND BUS OF ELECTRICAL PANELBOARD.
3. EXTEND FROM TELECOMMUNICATIONS ENTRANCE FACILITY TO GROUNDING BUSBARS.
4. EXTEND FROM GROUNDING BUSBARS TO GROUND TERMINALS IN EQUIPMENT RACKS AND CABINETS.
5. EXTEND FROM GROUNDING BUSBARS TO BUILDING METAL FRAME WITHIN ROOM, OR TO METAL FRAME EXTERNAL TO ROOM BUT READILY ACCESSIBLE.
D. SPECIAL REQUIREMENTS:
1. BONDING CONDUCTORS SHALL BE INSULATED COPPER, NO. 6 AWG MINIMUM.
2. INSTALL ONLY IN NONMETALLIC CONDUIT, UNLESS SPECIFICALLY REQUIRED FOR PROTECTION OF CONDUCTOR. METALLIC CONDUIT, IF USED, SHALL BE RMC. FOR RMC THAT EXCEEDS 36 INCHES (915 MM) IN LENGTH, CONDUCTORS SHALL BE BONDED AT EACH END OF CONDUIT.
3. BONDING CONDUCTORS SHALL BE INSTALLED WITHOUT SPLICES UNLESS APPROVED BY ARCHITECT BECAUSE OF CROSS-CONNECT FIELDS. APPLY COLORS TO VOICE AND DATA SERVICE. THEY SHALL BE ACCESSIBLE AND SHALL BE LOCATED IN TELECOMMUNICATIONS SPACES. SPLICES SHALL BE BY IRREVERSIBLE COMPRESSION CONNECTORS OR BY EXOTHERMIC WELDING.

3.4 IDENTIFICATION

- A. IN ADDITION TO REQUIREMENTS IN THIS ARTICLE, COMPLY WITH TIA/EIA-606-A AND WITH APPLICABLE REQUIREMENTS IN DIVISION 16 SECTION "ELECTRICAL IDENTIFICATION."
1. COLOR-CODE CROSS-CONNECT FIELDS. APPLY COLORS TO VOICE AND DATA SERVICE BACKBOARDS, CONNECTIONS, COVERS, AND LABELS.
B. USE LOGICAL AND SYSTEMATIC DESIGNATIONS FOR FACILITY'S ARCHITECTURAL ARRANGEMENT AND NOMENCLATURE, AND A CONSISTENT COLOR-CODED IDENTIFICATION OF INDIVIDUAL CONDUCTORS. CABLE AND WIRE IDENTIFICATION:
1. LABEL EACH CABLE WITHIN 4 INCHES (100 MM) OF EACH TERMINATION AND TAP, WHERE IT IS ACCESSIBLE IN A CABINET OR JUNCTION OR OUTLET BOX, AND ELSEWHERE AS INDICATED.
2. EACH WIRE CONNECTED TO BUILDING-MOUNTED DEVICES IS NOT REQUIRED TO BE NUMBERED AT DEVICE IF COLOR OF WIRE IS CONSISTENT WITH ASSOCIATED WIRE CONNECTED AND NUMBERED WITHIN PANEL OR CABINET.
3. EXPOSED CABLES AND CABLES IN CABLE TRAYS AND WIRE TROUGHS: LABEL EACH CABLE AT INTERVALS NOT EXCEEDING 15 FEET (4.5 M).
4. LABEL EACH TERMINAL STRIP AND SCREW TERMINAL IN EACH CABINET, RACK, OR PANEL.
C. ALL WIRING CONDUCTORS CONNECTED TO TERMINAL STRIPS SHALL BE INDIVIDUALLY NUMBERED, AND EACH CABLE OR WIRING GROUP BEING EXTENDED FROM A PANEL OR CABINET TO A BUILDING-MOUNTED DEVICE SHALL BE IDENTIFIED WITH NAME AND NUMBER OF PARTICULAR DEVICE AS SHOWN.
D. LABEL EACH UNIT AND FIELD WITHIN DISTRIBUTION RACKS AND FRAMES.
1. WITHIN CONNECTOR FIELDS IN EQUIPMENT ROOMS AND WIRING CLOSETS: LABEL EACH CONNECTOR AND EACH DISCRETE UNIT OF CABLE-TERMINATING AND CONNECTING HARDWARE. WHERE SIMILAR JACKS AND PLUGS ARE USED FOR BOTH VOICE AND DATA COMMUNICATION CABLING, USE A DIFFERENT COLOR FOR JACKS AND PLUGS OF EACH SERVICE.
2. AT WORKSTATIONS: LABEL CABLES WITHIN OUTLET BOXES.
E. CABLE SCHEDULE: POST IN PROMINENT LOCATION IN EACH EQUIPMENT ROOM AND WIRING CLOSET. LIST INCOMING AND OUTGOING CABLES AND THEIR DESIGNATIONS, ORIGINS, AND DESTINATIONS. PROTECT WITH RIGID FRAME AND CLEAR PLASTIC COVER. FURNISH AN ELECTRONIC COPY OF FINAL COMPREHENSIVE SCHEDULES FOR PROJECT.

3.5 FIELD QUALITY CONTROL

- A. PERFORM FIELD TESTS AND INSPECTIONS ACCORDING TO TIA/EIA-568-B.2 AND PREPARE TEST REPORTS.
B. REMOVE AND REPLACE CABLING WHERE TEST RESULTS INDICATE THAT THEY DO NOT COMPLY WITH SPECIFIED REQUIREMENTS.
C. RETEST AND INSPECT CABLING TO DETERMINE COMPLIANCE OF REPLACED OR ADDITIONAL WORK WITH SPECIFIED REQUIREMENTS.

3.6 DEMONSTRATION

- A. TRAIN OWNER'S MAINTENANCE PERSONNEL IN CABLE-PLANT MANAGEMENT OPERATIONS, INCLUDING CHANGING SIGNAL PATHWAYS FOR DIFFERENT WORKSTATIONS, REROUTING SIGNALS IN FAILED CABLES, AND KEEPING RECORDS OF CABLING ASSIGNMENTS AND REVISIONS WHEN EXTENDING WIRING TO ESTABLISH NEW WORKSTATION OUTLETS.



Seal / Signature

Revision	Date	By	Check

ELECTRICAL SPECIFICATIONS

DATE: 12/20/19
D.B.: A.W.
C.B.: N.A.H.
JOB NO.: 19040

SECTION 13851 - FIRE ALARM

PART 1 - GENERAL

1.1 SUMMARY

A. SYSTEM DESCRIPTION:

- 1. NONCODED, ADDRESSABLE SYSTEM; MULTIPLEXED SIGNAL TRANSMISSION DEDICATED TO FIRE ALARM SERVICE ONLY.

B. PERFORMANCE REQUIREMENTS:

- 1. COMPLY WITH NFPA 72.
- 2. FIRE ALARM SIGNAL INITIATION SHALL BE BY ONE OR MORE OF THE FOLLOWING DEVICES: MANUAL STATIONS, HEAT DETECTORS, SMOKE DETECTORS, SPRINKLER SYSTEM WATER FLOW.
- 3. FIRE ALARM SIGNAL SHALL INITIATE THE FOLLOWING ACTIONS:
 - a. ALARM NOTIFICATION APPLIANCES SHALL OPERATE CONTINUOUSLY.
 - b. IDENTIFY ALARM AT THE FACP AND REMOTE ANNUNCIATORS.
 - c. DE-ENERGIZE ELECTROMAGNETIC DOOR HOLDERS.
 - d. TRANSMIT AN ALARM SIGNAL TO THE REMOTE ALARM RECEIVING STATION.
 - e. UNLOCK ELECTRIC DOOR LOCKS IN DESIGNATED EGRESS PATHS.
 - f. RELEASE FIRE AND SMOKE DOORS HELD OPEN BY MAGNETIC DOOR HOLDERS.
 - g. SHUTDOWN HEATING, VENTILATING, AND AIR-CONDITIONING EQUIPMENT.
- 4. SYSTEM TROUBLE SIGNAL INITIATION SHALL BE BY ONE OR MORE OF THE FOLLOWING:
 - a. OPEN CIRCUITS, SHORTS AND GROUNDS OF WIRING FOR INITIATING DEVICE, SIGNALING LINE, AND NOTIFICATION-APPLIANCE CIRCUITS.
 - b. OPENING, TAMPERING, OR REMOVAL OF ALARM-INITIATING AND SUPERVISORY SIGNAL-INITIATING DEVICES.
 - c. LOSS OF PRIMARY POWER AT THE FACP.
 - d. GROUND OR A SINGLE BREAK IN FACP INTERNAL CIRCUITS.
 - e. ABNORMAL AC VOLTAGE AT THE FACP.
 - f. A BREAK IN STANDBY BATTERY CIRCUITRY.
 - g. FAILURE OF BATTERY CHARGING.
 - h. ABNORMAL POSITION OF ANY SWITCH AT THE FACP OR ANNUNCIATOR.
 - i. FIRE-PUMP POWER FAILURE, INCLUDING A DEAD-PHASE OR PHASE-REVERSAL CONDITION.
- 5. SYSTEM TROUBLE AND SUPERVISORY SIGNAL ACTIONS: RING TROUBLE BELL AND ANNUNCIATE AT THE FACP AND REMOTE ANNUNCIATORS AND THIRD PARTY MONITORING.

1.2 SUBMITTALS

A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.

B. SHOP DRAWINGS:

- 1. SYSTEM OPERATION DESCRIPTION: DETAILED DESCRIPTION FOR THIS PROJECT, INCLUDING METHOD OF OPERATION AND SUPERVISION OF EACH TYPE OF CIRCUIT AND SEQUENCE OF OPERATIONS FOR MANUALLY AND AUTOMATICALLY INITIATED SYSTEM INPUTS AND OUTPUTS.
 - 2. DEVICE ADDRESS LIST: COORDINATE WITH FINAL SYSTEM PROGRAMMING.
 - 3. SYSTEM RISER DIAGRAM WITH DEVICE ADDRESSES, CONDUIT SIZES, AND CABLE AND WIRE TYPES AND SIZES.
 - 4. WIRING DIAGRAMS: POWER, SIGNAL, AND CONTROL WIRING. INCLUDE DIAGRAMS FOR EQUIPMENT AND FOR SYSTEM WITH ALL TERMINALS AND INTERCONNECTIONS IDENTIFIED. SHOW WIRING COLOR CODE.
 - 5. BATTERIES: SIZE CALCULATIONS.
- C. FIELD QUALITY-CONTROL TEST REPORTS.**
- D. OPERATION AND MAINTENANCE DATA.**
- E. SUBMITTALS TO AUTHORITIES HAVING JURISDICTION:** SUBMIT TO AUTHORITIES HAVING JURISDICTION. TO FACILITATE REVIEW, INCLUDE COPIES OF ANNOTATED CONTRACT DRAWINGS AS NEEDED TO DEPICT COMPONENT LOCATIONS. RESUBMIT IF REQUIRED TO MAKE CLARIFICATIONS OR REVISIONS TO OBTAIN APPROVAL.
- F. DOCUMENTATION:**
- 1. APPROVAL AND ACCEPTANCE: PROVIDE THE "RECORD OF COMPLETION" FORM ACCORDING TO NFPA 72 TO OWNER, AND AUTHORITIES HAVING JURISDICTION.
 - 2. RECORD OF COMPLETION DOCUMENTS: PROVIDE THE "PERMANENT RECORDS" ACCORDING TO NFPA 72 TO OWNER, AND AUTHORITIES HAVING JURISDICTION.

PART 2 - PRODUCTS

2.1 MANUFACTURES

- SILENT KNIGHT
- EDWARDS
- SIMPLEX
- NOTIFIER

2.2 FACP

- A. GENERAL DESCRIPTION: MODULAR, POWER-LIMITED DESIGN WITH ELECTRONIC MODULES, UL 864 LISTED. ADDRESSABLE CONTROL CIRCUITS FOR OPERATION OF MECHANICAL EQUIPMENT.
- B. LIQUID CRYSTAL ALPHANUMERIC DISPLAY AND SYSTEM CONTROLS.
- C. CIRCUITS: SIGNALING CIRCUITS SHALL COMPLY WITH NFPA-72.
- D. NOTIFICATION-APPLIANCE CIRCUIT: OPERATION SHALL SOUND IN A TEMPORAL PATTERN, COMPLYING WITH ANSI S3.41.
- E. ELEVATOR CONTROLS: HEAT DETECTOR OPERATION SHUTS DOWN ELEVATOR POWER BY OPERATING A SHUNT TRIP IN A CIRCUIT BREAKER FEEDING THE ELEVATOR.
- F. ALARM SILENCING, TROUBLE, AND SUPERVISORY ALARM RESET: MANUAL RESET AT THE FACP AFTER INITIATING DEVICES ARE RESTORED TO NORMAL.
- G. TRANSMISSION TO REMOTE ALARM RECEIVING STATION: AUTOMATICALLY TRANSMIT ALARM, TROUBLE, AND SUPERVISORY SIGNALS TO A REMOTE ALARM STATION THROUGH A DIGITAL ALARM COMMUNICATOR TRANSMITTER AND TELEPHONE LINES.
- H. PRIMARY POWER: 24-V DC OBTAINED FROM 120-V AC SERVICE AND A POWER-SUPPLY MODULE.
- I. SECONDARY POWER: 24-V DC SUPPLY SYSTEM WITH BATTERIES AND AUTOMATIC BATTERY CHARGER AND AN AUTOMATIC TRANSFER SWITCH. BATTERY AND CHARGER CAPACITY: COMPLY WITH NFPA 72.
- J. SURGE PROTECTION: INSTALL SURGE PROTECTION ON NORMAL AC POWER FOR THE FACP AND ITS ACCESSORIES. INSTALL SURGE PROTECTORS RECOMMENDED BY FACP MANUFACTURER. INSTALL ON ALL SYSTEM WIRING EXTERNAL TO THE BUILDING HOUSING THE FACP.

2.3 MANUAL FIRE ALARM BOXES

- A. DESCRIPTION: UL 38 LISTED; FINISHED IN RED WITH MOLDED, RAISED-LETTER OPERATING INSTRUCTIONS IN CONTRASTING COLOR. STATION SHALL SHOW VISIBLE INDICATION OF OPERATION. MOUNTED ON RECESSED OUTLET BOX; IF INDICATED AS SURFACE MOUNTED, PROVIDE MANUFACTURER'S SURFACE BACK BOX. SINGLE-ACTION MECHANISM, PULL-LEVER TYPE. WITH INTEGRAL ADDRESSABLE MODULE, ARRANGED TO COMMUNICATE MANUAL-STATION STATUS (NORMAL, ALARM, OR TROUBLE) TO THE FACP.

2.4 SYSTEM SMOKE DETECTORS

A. GENERAL DESCRIPTION:

- 1. UL 268 LISTED, OPERATING AT 24-V DC, NOMINAL PHOTO ELECTRIC.
- 2. INTEGRAL ADDRESSABLE MODULE: ARRANGED TO COMMUNICATE DETECTOR STATUS (NORMAL, ALARM, OR TROUBLE) TO THE FACP.
- 3. PLUG-IN ARRANGEMENT: DETECTOR AND ASSOCIATED ELECTRONIC COMPONENTS SHALL BE MOUNTED IN A PLUG-IN MODULE THAT CONNECTS TO A FIXED BASE. PROVIDE TERMINALS IN THE FIXED BASE FOR CONNECTION OF BUILDING WIRING.
- 4. SELF-RESTORING: DETECTORS DO NOT REQUIRE RESETTING OR READJUSTMENT AFTER ACTUATION TO RESTORE THEM TO NORMAL OPERATION.
- 5. INTEGRAL VISUAL-INDICATING LIGHT: LED TYPE.

B. DUCT SMOKE DETECTORS:

- 1. PHOTOELECTRIC SMOKE DETECTORS:
 - a. SENSOR: LED OR INFRARED LIGHT SOURCE WITH MATCHING SILICON-CELL RECEIVER.
 - b. DETECTOR SENSITIVITY: BETWEEN 2.5 AND 3.5 PERCENT/FOOT SMOKE OBLSCURATION WHEN TESTED ACCORDING TO UL 268A.
- 2. UL 268A LISTED, OPERATING AT 24-V DC, NOMINAL.
- 3. INTEGRAL ADDRESSABLE MODULE: ARRANGED TO COMMUNICATE DETECTOR STATUS (NORMAL, ALARM, OR TROUBLE) TO THE FACP.
- 4. PLUG-IN ARRANGEMENT: DETECTOR AND ASSOCIATED ELECTRONIC COMPONENTS SHALL BE MOUNTED IN A PLUG-IN MODULE THAT CONNECTS TO A FIXED BASE. THE FIXED BASE SHALL BE DESIGNED FOR MOUNTING DIRECTLY TO THE AIR DUCT.
- 5. PROVIDE TERMINALS IN THE FIXED BASE FOR CONNECTION TO BUILDING WIRING.
- 6. SELF-RESTORING: DETECTORS SHALL NOT REQUIRE RESETTING OR READJUSTMENT AFTER ACTUATION TO RESTORE THEM TO NORMAL OPERATION.
- 7. INTEGRAL VISUAL-INDICATING LIGHT.
- 8. SAMPLING TUBES: DESIGN AND DIMENSIONS AS RECOMMENDED BY MANUFACTURER FOR THE SPECIFIC DUCT SIZE, AIR VELOCITY, AND INSTALLATION CONDITIONS WHERE APPLIED.
- 9. RELAY FAN SHUTDOWN: RATED TO INTERRUPT FAN MOTOR-CONTROL CIRCUIT.

2.5 HEAT DETECTORS

- A. GENERAL: UL 521 LISTED.
- B. HEAT DETECTOR, COMBINATION TYPE: ACTUATED BY EITHER A FIXED TEMPERATURE OF 135 DEG F (57 DEG C) OR RATE-OF-RISE OF TEMPERATURE THAT EXCEEDS 15 DEG F (8 DEG C) PER MINUTE, UNLESS OTHERWISE INDICATED.
 - 1. MOUNTING: PLUG-IN BASE, INTERCHANGEABLE WITH SMOKE-DETECTOR BASES.
 - 2. INTEGRAL ADDRESSABLE MODULE: ARRANGED TO COMMUNICATE DETECTOR STATUS (NORMAL, ALARM, OR TROUBLE) TO THE FACP.
- C. HEAT DETECTOR, FIXED-TEMPERATURE TYPE: ACTUATED BY TEMPERATURE THAT EXCEEDS A FIXED TEMPERATURE OF 190 DEG F (88 DEG C).
 - 1. MOUNTING: PLUG-IN BASE, INTERCHANGEABLE WITH SMOKE-DETECTOR BASES.
 - 2. INTEGRAL ADDRESSABLE MODULE: ARRANGED TO COMMUNICATE DETECTOR STATUS
 - 3. (NORMAL, ALARM, OR TROUBLE) TO THE FACP.
- D. WHITE COLOR FOR DEVICES.

2.6 NOTIFICATION APPLIANCES

- A. COMBINATION DEVICES: FACTORY-INTEGRATED AUDIBLE AND VISIBLE DEVICES IN A SINGLE-MOUNTING ASSEMBLY.
- B. HORNS: ELECTRIC-OPERATING-POLARIZED TYPE, 24-V DC, WITH PROVISION FOR HOUSING THE OPERATING MECHANISM BEHIND A GRILLE. HORNS SHALL PRODUCE A SOUND-PRESSURE LEVEL OF 90 DBA, MEASURED 10 FEET (3 M) FROM THE HORN.
- C. VISIBLE ALARM DEVICES: XENON STROBE LIGHTS LISTED UNDER UL 1971, WITH CLEAR OR NOMINAL WHITE POLYCARBONATE LENS MOUNTED ON AN ALUMINUM FACEPLATE. THE WORD "FIRE" IS ENGRAVED IN MINIMUM 1-INCH- (25-MM-) HIGH LETTERS ON THE LENS. RATED LIGHT OUTPUT: 75 CANDELA. PROVIDE 110 CANDELA UNITS IN ROOMS LARGER THAN 40' X 40'.

2.7 REMOTE ANNUNCIATOR

- A. DESCRIPTION: DUPLICATE ANNUNCIATOR FUNCTIONS OF THE FACP FOR ALARM, SUPERVISORY, AND TROUBLE INDICATIONS. ALSO DUPLICATE MANUAL SWITCHING FUNCTIONS OF THE FACP, INCLUDING ACKNOWLEDGING, SILENCING, RESETTING, AND TESTING. ALPHANUMERIC DISPLAY. CONTROLS WITH ASSOCIATED LED'S PERMIT ACKNOWLEDGING, SILENCING, RESETTING, AND TESTING FUNCTIONS FOR ALARM, SUPERVISORY, AND TROUBLE SIGNALS IDENTICAL TO THOSE IN THE FACP.

2.8 ADDRESSABLE INTERFACE DEVICE

- A. DESCRIPTION: MICROELECTRONIC MONITOR MODULE LISTED FOR USE IN PROVIDING A SYSTEM ADDRESS FOR LISTED ALARM-INITIATING DEVICES FOR WIRED APPLICATIONS WITH NORMALLY OPEN CONTACTS.

2.9 WIRE AND CABLE

- A. WIRE AND CABLE FOR FIRE ALARM SYSTEMS SHALL BE UL LISTED AND LABELED AS COMPLYING WITH NFPA 70, ARTICLE 760.
- B. SIGNALING LINE CIRCUITS: TWISTED, SHIELDED PAIR, NOT LESS THAN NO. 18 AWG.
- C. NON-POWER-LIMITED CIRCUITS: SOLID-COPPER CONDUCTORS WITH 600-V RATED, 75 DEG C, COLOR-CODED INSULATION. LOW-VOLTAGE CIRCUITS: NO. 16 AWG, MINIMUM. LINE-VOLTAGE CIRCUITS: NO. 12 AWG MINIMUM.

PART 3 - EXECUTION

3.1 EQUIPMENT INSTALLATION

- A. HVAC: LOCATE DETECTORS NOT CLOSER THAN 3 FEET FROM AIR-SUPPLY DIFFUSER OR RETURN-AIR OPENING.
 - B. DUCT SMOKE DETECTORS: COMPLY WITH NFPA 72 AND NFPA 90A. INSTALL SAMPLING TUBES SO THEY EXTEND THE FULL WIDTH OF THE DUCT.
 - C. HEAT DETECTORS IN ELEVATOR SHAFTS: COORDINATE TEMPERATURE RATING AND LOCATION WITH SPRINKLER RATING AND LOCATION.
 - D. FACP: SURFACE MOUNT WITH TOPS OF CABINETS NOT MORE THAN 72 INCHES ABOVE THE FINISHED FLOOR.
 - E. ANNUNCIATOR: INSTALL WITH TOP OF PANEL NOT MORE THAN 72" ABOVE THE FINISHED FLOOR.
- 3.2 WIRING INSTALLATION**
- A. WIRING METHOD: INSTALL FIRE ALARM CABLE IN CEILING SPACE.
 - B. WIRING WITHIN ENCLOSURES: SEPARATE POWER-LIMITED AND NON-POWER-LIMITED CONDUCTORS AS RECOMMENDED BY MANUFACTURER. INSTALL CONDUCTORS PARALLEL WITH OR AT RIGHT ANGLES TO SIDES AND BACK OF THE ENCLOSURE. BUNDLE, LACE, AND TRAP CONDUCTORS TO TERMINAL POINTS WITH NO EXCESS. CONNECT CONDUCTORS THAT ARE TERMINATED, SPLICED, OR INTERRUPTED IN ANY ENCLOSURE ASSOCIATED WITH THE FIRE ALARM SYSTEM TO TERMINAL BLOCKS. MARK EACH TERMINAL ACCORDING TO THE SYSTEM'S WIRING DIAGRAMS. MAKE ALL CONNECTIONS WITH APPROVED CRIMP-ON TERMINAL SPADE LUGS, PRESSURE-TYPE TERMINAL BLOCKS, OR PLUG CONNECTORS.
 - C. CABLE TAPS: USE NUMBERED TERMINAL STRIPS IN JUNCTION, PULL, AND OUTLET BOXES, CABINETS, OR EQUIPMENT ENCLOSURES WHERE CIRCUIT CONNECTIONS ARE MADE.
 - D. COLOR-CODING: COLOR-CODE FIRE ALARM CONDUCTORS DIFFERENTLY FROM THE NORMAL BUILDING POWER WIRING. USE ONE COLOR-CODE FOR ALARM CIRCUIT WIRING AND A DIFFERENT COLOR-CODE FOR SUPERVISORY CIRCUITS. COLOR-CODE AUDIBLE ALARM-INDICATING CIRCUITS DIFFERENTLY FROM ALARM-INITIATING CIRCUITS. USE DIFFERENT COLORS FOR VISIBLE ALARM-INDICATING DEVICES. PAINT FIRE ALARM SYSTEM JUNCTION BOXES AND COVERS RED.
 - E. RISERS: INSTALL AT LEAST TWO VERTICAL CABLE RISERS TO SERVE THE FIRE ALARM SYSTEM. SEPARATE RISERS IN CLOSE PROXIMITY TO EACH OTHER WITH A MINIMUM 1-HOUR-RATED WALL. SO THE LOSS OF ONE RISER DOES NOT PREVENT THE RECEIPT OR TRANSMISSION OF SIGNALS FROM OTHER FLOORS OR ZONES.
 - F. WIRING TO REMOTE ALARM TRANSMITTING DEVICE: 1-INCH (25-MM) CONDUIT BETWEEN THE FACP AND THE TRANSMITTER. INSTALL NUMBER OF CONDUCTORS AND ELECTRICAL SUPERVISION FOR CONNECTING WIRING AS NEEDED TO SUIT MONITORING FUNCTION.

3.3 GROUNDING

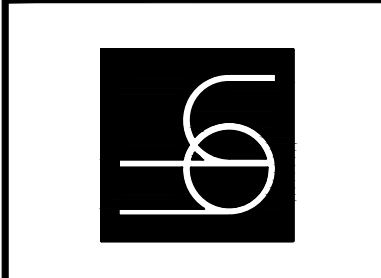
- A. GROUND THE FACP AND ASSOCIATED CIRCUITS; COMPLY WITH IEEE 1100. INSTALL A GROUND WIRE FROM MAIN SERVICE GROUND TO THE FACP.

3.4 FIELD QUALITY CONTROL

- A. PERFORM THE FOLLOWING FIELD TESTS AND INSPECTIONS AND PREPARE TEST REPORTS:
 - 1. BEFORE REQUESTING FINAL APPROVAL OF THE INSTALLATION, SUBMIT A WRITTEN STATEMENT USING THE FORM FOR RECORD OF COMPLETION SHOWN IN NFPA 72.
 - 2. PERFORM EACH ELECTRICAL TEST AND VISUAL AND MECHANICAL INSPECTION LISTED IN NFPA 72. CERTIFY COMPLIANCE WITH TEST PARAMETERS.
 - 3. VISUAL INSPECTION: CONDUCT A VISUAL INSPECTION BEFORE ANY TESTING. USE AS-BUILT DRAWINGS AND SYSTEM DOCUMENTATION FOR THE INSPECTION. IDENTIFY IMPROPERLY LOCATED, DAMAGED, OR NONFUNCTIONAL EQUIPMENT, AND CORRECT BEFORE BEGINNING TESTS.
 - 4. TESTING: FOLLOW PROCEDURE AND RECORD RESULTS COMPLYING WITH REQUIREMENTS IN NFPA 72.
 - a. DETECTORS THAT ARE OUTSIDE THEIR MARKED SENSITIVITY RANGE SHALL BE REPLACED.
- B. TEST AND INSPECTION RECORDS: PREPARE ACCORDING TO NFPA 72, INCLUDING DEMONSTRATION OF SEQUENCES OF OPERATION BY USING THE MATRIX-STYLE FORM IN APPENDIX A IN NFPA 70.

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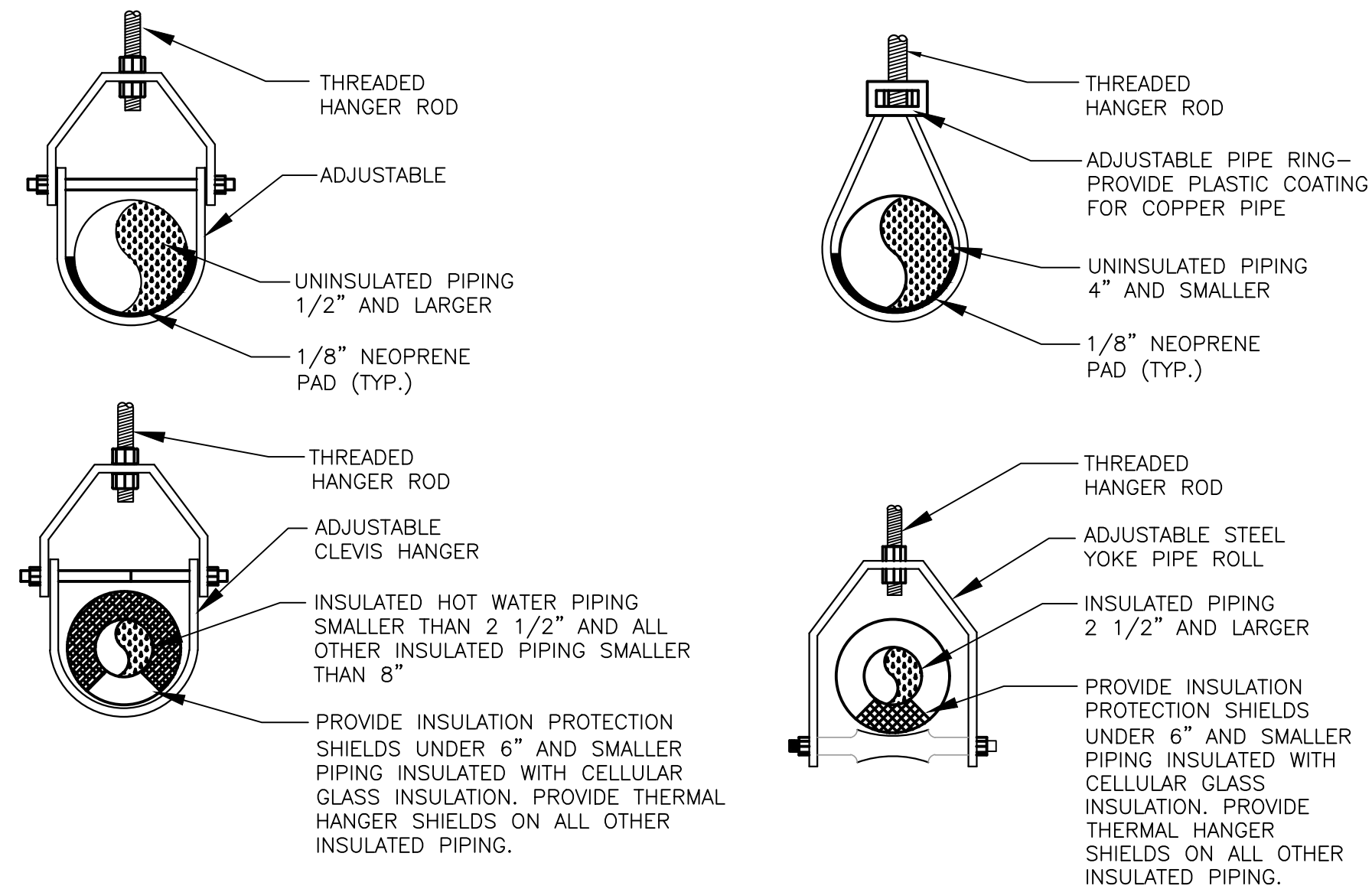
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Revision	Date	By	Check

DATE: 12/20/19
D.B.: A.W.
C.B.: N.A.H.
JOB NO: 19040

E5.2
DESIGN DEVELOPMENT



PIPE HANGER DETAILS

NOT TO SCALE

1
P.I.O.

BASIS OF DESIGN

- WC-1 WATER CLOSET (FLOOR MOUNTED, FLUSH VALVE, ACCESSIBLE) AMERICAN STANDARD 1.6 GPF MADERA MODEL 3043.001 WITH ELONGATED FRONT, CHURCH MODEL 9500-SSCT WHITE SOLID PLASTIC SEAT WITH STAINLESS STEEL SELF-SUSTAINING CHECK HINGE, SLOAN REGAL 111-DFB FLUSH VALVE WITH ATMOSPHERIC VACUUM BREAKER, BUMPER ON ANGLE STOP, AND CHROME FINISHED SUPPLY TUBE. FLUSH VALVE ON APPROACH SIDE OF FIXTURE.
- LAV-1 LAVATORY (WALL HUNG, ACCESSIBLE) AMERICAN STANDARD MODEL 0355.012 LUCERNE WITH 4" FAUCET CENTER. PROVIDE T&S B-0712-VF05 METERING FAUCET. PROVIDE STRAINER DRAIN WITH TAILPIECE AND BOCA FLOW REGULATORS FOR 1/2" GPM, ANGLE STOPS WITH LOOSE KEYS, ANNEALED CHROME PLATED VERTICAL COPPER SUPPLY TUBES AND 1-1/4" CAST BRASS P-TRAP AND TUBING OUTLET. PROVIDE ZURN MODEL Z-1231 CONCEALED ARM MOUNTING KIT. MOUNTING HEIGHT AS INDICATED ON THE ARCHITECTURAL DRAWINGS. PROVIDE TRUEBRO MODEL NUMBER 102W INSULATION KIT.
- EWC-1 ELECTRIC WATER COOLER (WALL HUNG) OASIS MODEL NO. PGVBCSL WITH STAINLESS STEEL FINISH. SPOUT HEIGHT AS INDICATED ON ARCHITECTURAL ELEVATIONS.
- S-1 SINK (19"x18"x5 1/2") ELKAY MODEL LRAD191855 - 16"x11 1/2"x8 3/8" SINGLE COMPARTMENT. SINK SHALL BE FABRICATED OF 18 GAUGE, TYPE 304 STAINLESS STEEL WITH INTERIOR AND TOP SURFACES POLISHED AND THE UNDERSIDE OF THE BOWLS SOUND DEADENED. SINK SHALL BE PROVIDED AND DRILLED FOR THE FOLLOWING ACCESSORY ITEMS:
 - A. PROVIDE DECK MOUNTED MIXING FAUCET SIMILAR TO DELTA MODEL NO. 501 WITH NON-SPLASH AERATOR.
 - B. 1-1/2" BASKET STRAINER WITH TAILPIECE.
 - C. LOOSE KEY STOPS AND VERTICAL SUPPLY TUBES.
 - D. 1-1/2" P-TRAP AND TUBING OUTLET.
- S-2 SINK (19"x18"x5 1/2") ELKAY MODEL LRAD191855 - 16"x11 1/2"x8 3/8" SINGLE COMPARTMENT. SINK SHALL BE FABRICATED OF 18 GAUGE, TYPE 304 STAINLESS STEEL WITH INTERIOR AND TOP SURFACES POLISHED AND THE UNDERSIDE OF THE BOWLS SOUND DEADENED. SINK SHALL BE PROVIDED AND DRILLED FOR THE FOLLOWING ACCESSORY ITEMS:
 - A. PROVIDE DECK MOUNTED MIXING FAUCET SIMILAR TO DELTA MODEL NO. 501 WITH NON-SPLASH AERATOR.
 - B. 1-1/2" BASKET STRAINER WITH TAILPIECE.
 - C. LOOSE KEY STOPS AND VERTICAL SUPPLY TUBES.
 - D. 1-1/2" P-TRAP AND TUBING OUTLET.
- S-3 SINK TO BE FURNISHED WITH CABINETRY. PROVIDE THE FOLLOWING ACCESSORIES:
 - A. 1-1/2" GRID WITH TAILPIECE.
 - B. LOOSE KEY STOPS AND VERTICAL SUPPLY TUBES.
 - C. 1-1/2" P-TRAP AND TUBING OUTLET.

PLUMBING GENERAL NOTES

1. THE DRAWINGS ARE PARTLY DIAGRAMMATIC AND ARE NOT INTENDED TO SHOW IN DETAIL ALL FEATURES OF THE WORK. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THESE SPECIFICATIONS, THE DRAWINGS AND LOCAL GOVERNING CODES.
2. CONTRACTORS SHALL REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS.
3. CONTRACTOR SHALL VISIT SITE AND VERIFY EXISTING ITEMS PRIOR TO BIDDING AND ADVISE ARCHITECT OF ANY DISCREPANCIES.
4. ITEMS SHOWN AS PROVIDED UNDER ANOTHER DIVISION SHALL BE CONNECTED IN THIS WORK. OBTAIN EXACT ROUGH-IN INFORMATION BEFORE CONSTRUCTION ON ALL ITEMS REQUIRING PLUMBING CONNECTIONS.
5. ALL CUTTING & PATCHING OF EXISTING FLOORS, WALL, CEILINGS, ETC. SHALL BE COORDINATED BY THE GENERAL CONTRACTOR OR AT HIS DIRECTION. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR CLEAN UP AFTER EACH SESSION.
6. THE WORK UNDER THIS SECTION OF THE SPECIFICATIONS INCLUDES ALL LABOR, MATERIALS, EQUIPMENT AND SERVICES NECESSARY TO COMPLETE THE PLUMBING SYSTEM AS SHOWN ON THE DRAWINGS & HEREIN SPECIFIED. ALL WORK SHALL BE DONE IN A WORKMANLIKE MANNER IN ACCORDANCE WITH GOOD PRACTICE, MANUFACTURER'S RECOMMENDATIONS AND THE DEPARTMENT OF PUBLIC HEALTH.
7. FURNISH (1) ONE YEAR SERVICE AND GUARANTEE ON ALL LABOR, MATERIALS AND EQUIPMENT.
8. OFFSET PIPING TO AVOID STRUCTURAL MEMBERS, CANTS, FLASHINGS, MECHANICAL AND ELECTRICAL EQUIPMENT, ETC.
9. ALL VENTS THRU ROOF SHALL BE INSTALLED A MINIMUM OF 10'-0". FROM ALL FRESH AIR INTAKE TO AIR HANDLING EQUIPMENT AND OFFSET MINIMUM OF 3'-0" FROM EDGE OF ROOF LINE AND PARAPETS.
10. INDIRECT WASTE PIPING FROM EQUIPMENT, WHICH PRODUCES A COLD WASTEWATER, (SUCH AS CONDENSATE DRAINS, ETC.) SHALL BE INSULATED WITH 1/2" ARMAFLEX INSULATION. SEAL ALL LONGITUDINAL AND BUTT JOINTS WITH ADHESIVE APPROVED BY THE INSULATION MANUFACTURER.
11. PROVIDE FLEX-LINE FOR FINAL CONNECTIONS TO EQUIPMENT ITEMS.
12. ALL TESTING & STERILIZATION SHALL COMPLY W/LOCAL GOVERNING CODES & RECOMMENDATION OF THE AMERICAN WATER WORKS ASSOC. ALL PLUMBING TESTS SHALL BE WITNESSED BY THE PLUMBING INSPECTOR, AND A COPY OF THE DISINFECTION REPORT SHALL BE PROVIDED TO THE PLUMBING INSPECTOR.
13. PROVIDE CHROME PLATED ESCUTCHEON PLATES FOR ALL EXPOSED PIPE PASSING THRU WALLS, FLOORS, OR CEILINGS. ALL EXPOSED PIPING AND FITTINGS SHALL BE CHROME PLATED AS WELL.
14. HOT & COLD WATER SUPPLIES TO EACH INDIVIDUAL OR GROUP OF PLUMBING FIXTURES SHALL BE FITTED WITH AIR CHAMBERS OF AMPLE SIZE TO PREVENT WATER HAMMER. AIR CHAMBERS SHALL NOT BE LESS THAN 12" LENGTH. WATER HAMMER ARRESTORS, ZURN SHOKTROL SIZED AND INSTALLED PER MANUFACTURER'S RECOMMENDATION, WILL ALSO BE ACCEPTABLE.
15. PIPE HANGERS SHALL BE ADJUSTABLE TEARDROP TYPE HANGER AND RODS. GRINNELL OR EQUAL.
16. PROVIDE ALL STOPS, TRAPS, ESCUTCHEONS, CONNECTIONS, CARRIERS, ETC., FOR ALL FIXTURES AS NECESSARY TO COMPLETE THE INSTALLATION OF EACH FIXTURE, WHETHER SUCH ITEMS ARE LISTED OR NOT.
17. ALL FURNISHED EXPOSED FAUCETS; TRAPS CONNECTING PIPING, STOPS AND OTHER FIXTURE TRIM SHALL BE CHROME-PLATED BRASS UNLESS OTHERWISE SPECIFIED. ALL FASTENING SHALL BE CHROME-PLATED BRASS OR MAY BE 302 STAINLESS STEEL IF OF MATCHING COLOR AND FINISH.
18. GENERAL CONTRACTOR SHALL HIRE A SURVEY/LOCATOR COMPANY TO LOCATE/IDENTIFY ALL UNDERGROUND PIPING, ETC.
19. ALL FITTINGS SHALL BE INSTALLED BY NO LESS THAN A JOURNEYMAN LEVEL PLUMBER.
20. NO HORIZONTAL DOUBLE-WYE FITTINGS ARE ACCEPTABLE.

PLUMBING FIXTURE CONNECTIONS SCHEDULE

SYMBOL	FIXTURE	SUPPLIES (INCH)		WASTE (INCH)	
		CW	HW	TRAP	VENT
LAV-1	LAVATORY	1/2	1/2	1-1/2	1-1/4
MS-1	MOP SINK	1/2	1/2	1-1/2	1-1/4
WC-1	WATER CLOSET	3/4	-	3	2
UR-1	URINAL	3/4	-	2	1-1/2
S-1	SINK	1/2	1/2	1-1/2	1-1/4

PLUMBING LEGEND

- DOMESTIC COLD WATER PIPING
 - DOMESTIC HOT WATER PIPING
 - VENT PIPING
 - WASTE PIPING (SANITARY SEWER)
 - |--- FULL PORT BALL VALVE
 - PIPE TURNING DOWN
 - PIPE TURNING UP
 - CO @----- FLOOR/FLUSH CLEAN-OUT
- P-1** FIXTURE DESIGNATION
- CW COLD WATER
 - CO CLEAN OUT
 - FD FLOOR DRAIN
 - HW HOT WATER
 - SAN SANITARY
 - V VENT
 - VTR VENT THRU ROOF
 - WH WALL HYDRANT
 - ⊗ POINT OF CONNECTION

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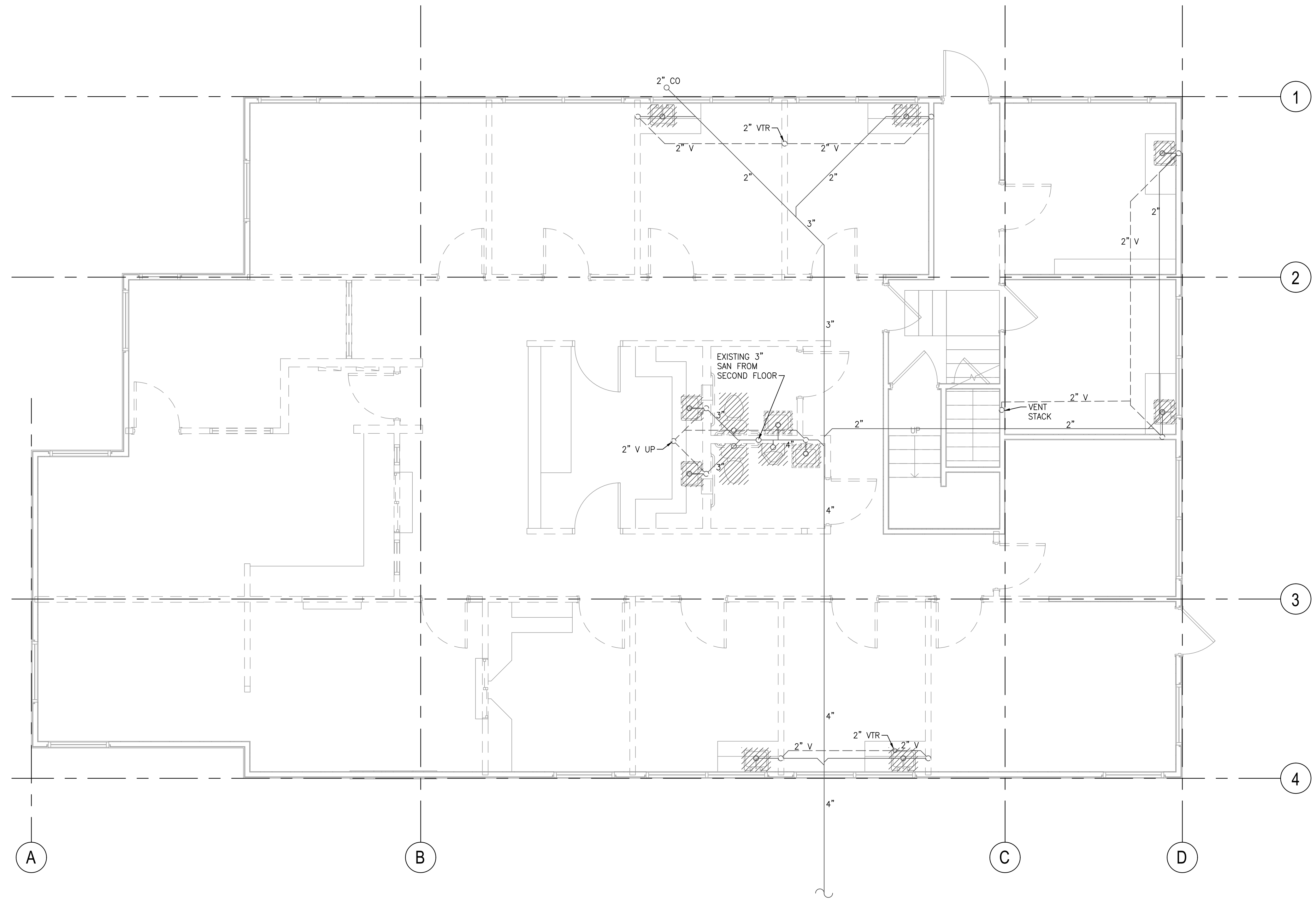
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Date	Revision
12/20/2019	1 FOR CONSTRUCTION

PLUMBING LEGEND, NOTES, AND DETAILS

DATE: 12/19/19
 D.B.: J.B.
 C.B.: J.B.
 JOB NO: 19040

P1.0
 DESIGN DEVELOPMENT



EXISTING SANITARY PLUMBING PLAN

4' 3' 2' 1' 0' 4' 8'

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

HATCHING INDICATES PLUMBING ITEMS TO BE REMOVED.

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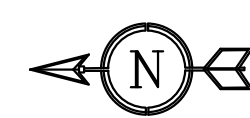
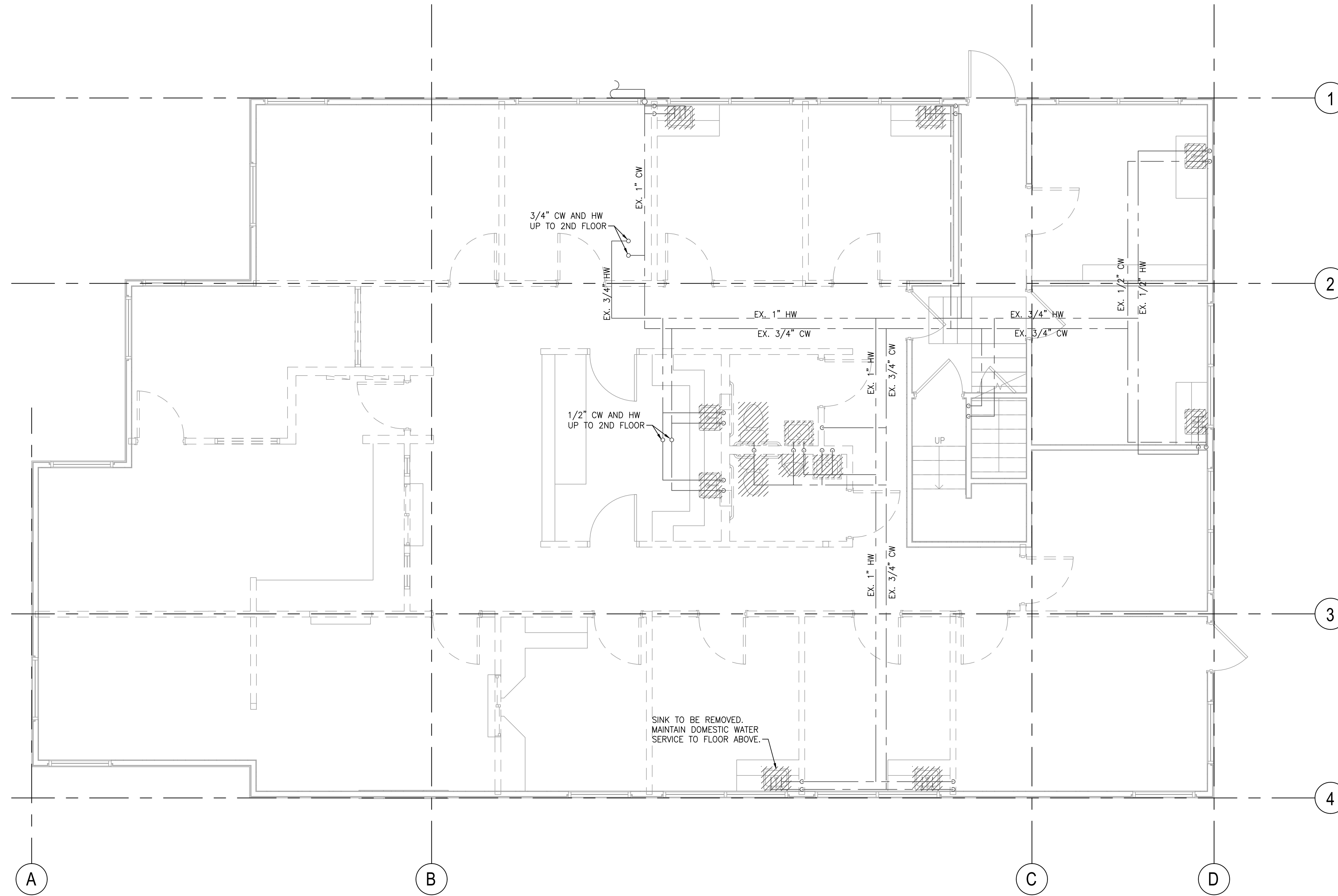
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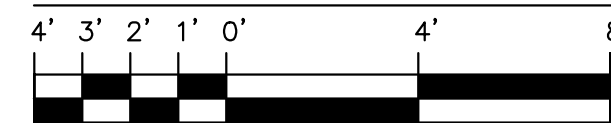
EXISTING SANITARY PLUMBING PLAN

DATE: 12/19/19
 D.B.: J.B.
 C.B.: J.B.
 JOB NO: 19040

P2.1
 DESIGN DEVELOPMENT

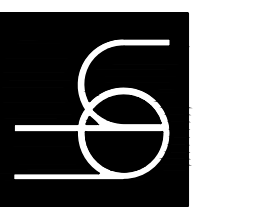


EXISTING DOMESTIC WATER PLUMBING PLAN



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

HATCHING INDICATES PLUMBING ITEMS TO BE REMOVED.



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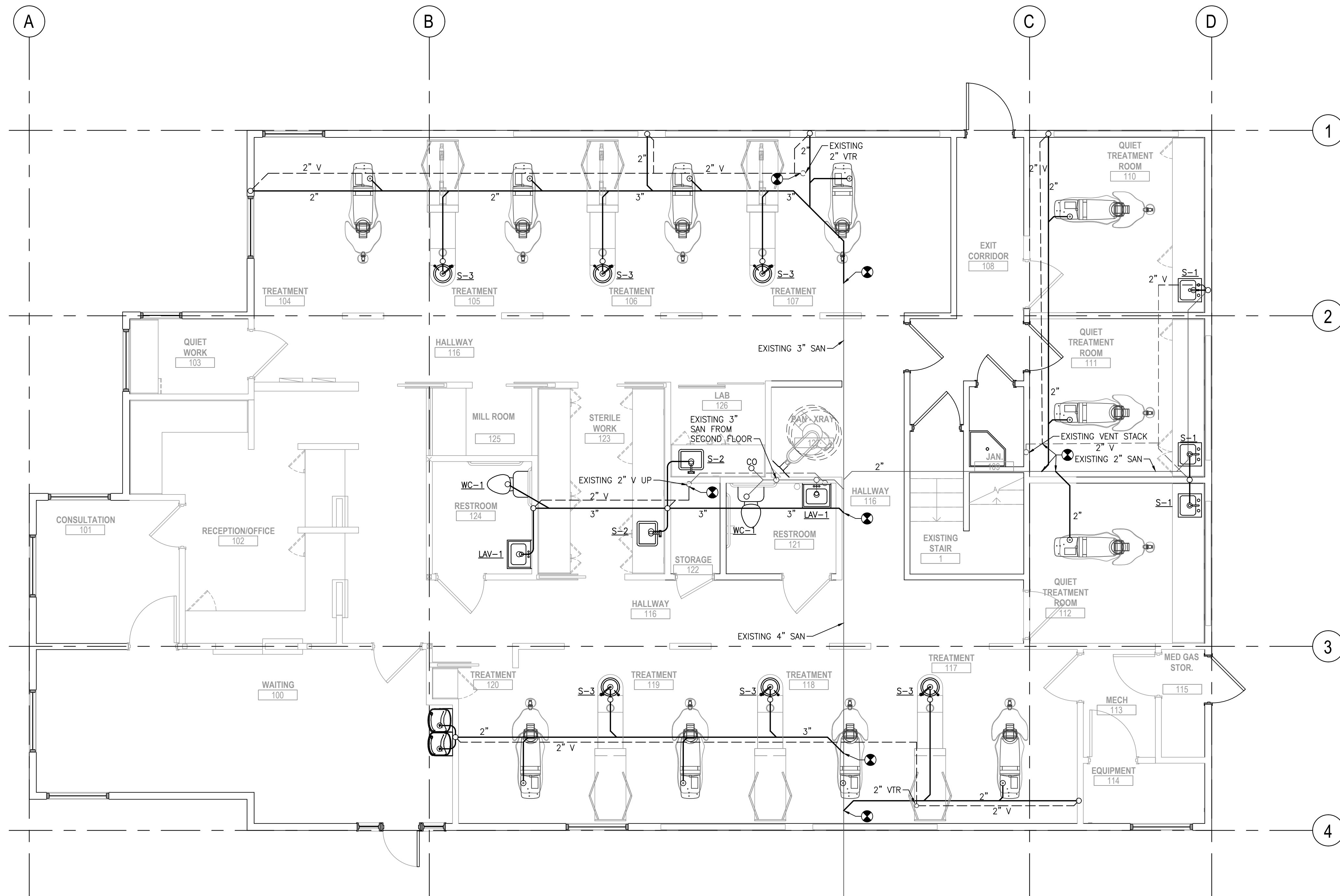
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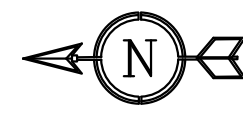
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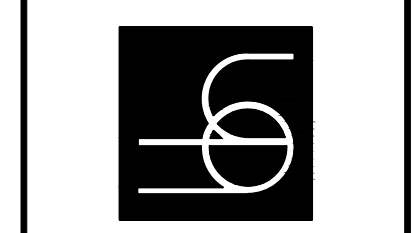
**EXISTING DOMESTIC
 WATER PLUMBING
 PLAN**

DATE: 12/19/19
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P2.2
 DESIGN DEVELOPMENT




NEW SANITARY PLUMBING PLAN
 4' 3' 2' 1' 0' 4' 8'
 GRAPHIC SCALE 1/4" = 1'-0"

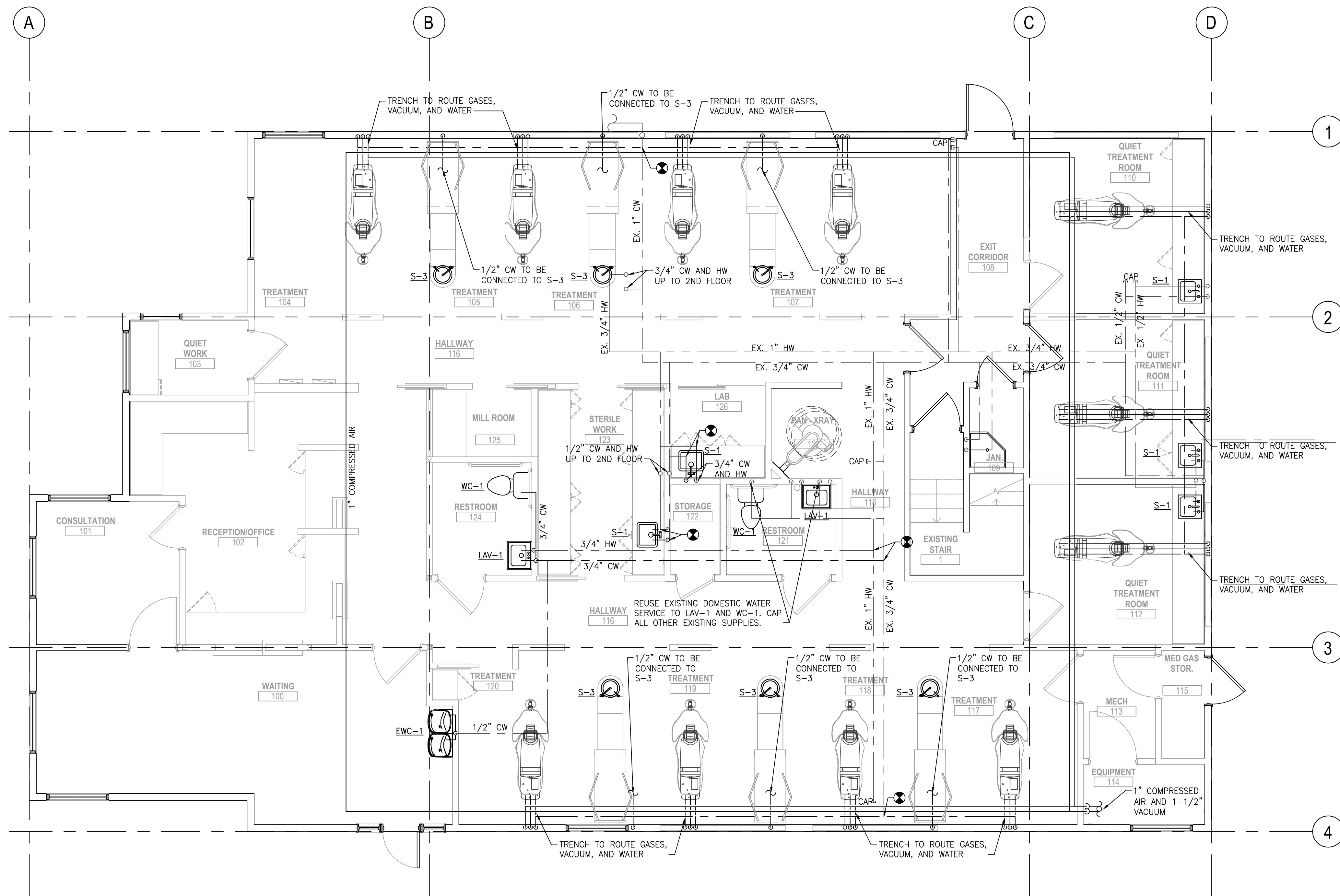



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12/20/2019	1 FOR CONSTRUCTION	

NEW SANITARY PLUMBING PLAN

DATE: 12/19/19
 D.B.: J.B.
 C.B.: J.B.
 JOB NO: 19040




NEW DOMESTIC WATER AND MEDICAL GAS PLAN
 4' 3' 2' 1' 0' 4' 8'
 GRAPHIC SCALE 1/4" = 1'-0"



DR. HWANG MARINO
DENTAL OFFICE REMODEL
 2045 Professional Center Drive
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Date	Revision	Seal / Signature
12/20/2019	1 FOR CONSTRUCTION	

NEW DOMESTIC WATER AND MEDICAL GAS PLAN

DATE: 12/19/19
 D.B.: J.B.
 C.B.: J.B.
 JOB NO: 19040

P3.2
 DESIGN DEVELOPMENT