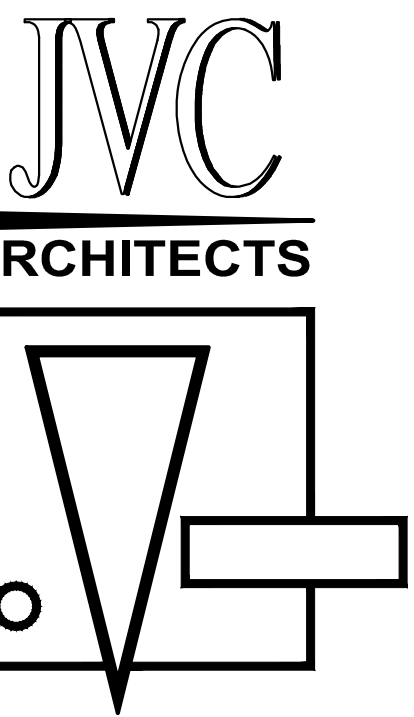


UNIVERSITY OF NEVADA, LAS VEGAS THOMAS BEAM ENGINEERING COLLEGE RENOVATION

4505 MARYLAND PARKWAY
LAS VEGAS, NEVADA 89154

AUGUST 19, 2016

CONSTRUCTION DOCUMENTS

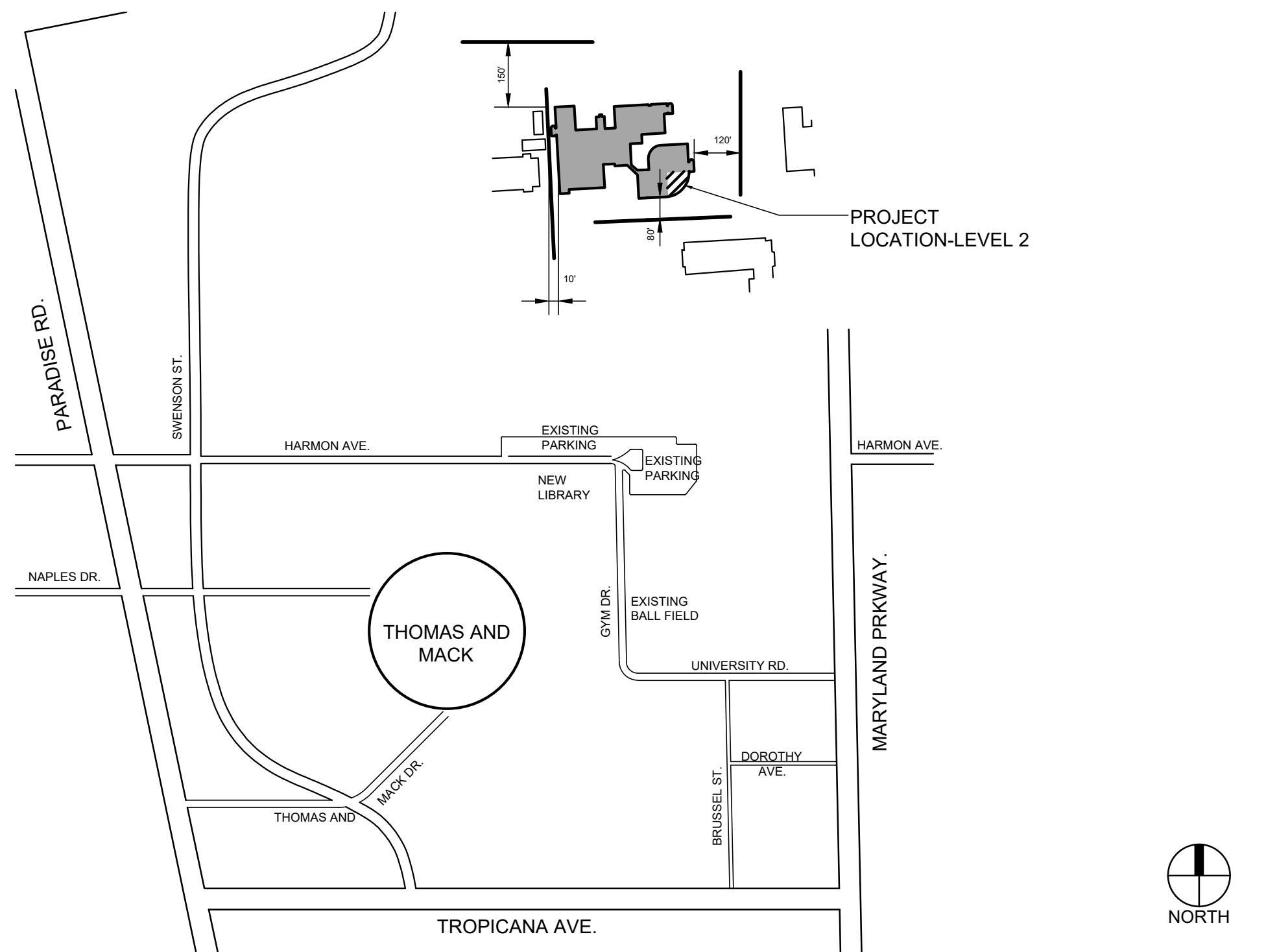


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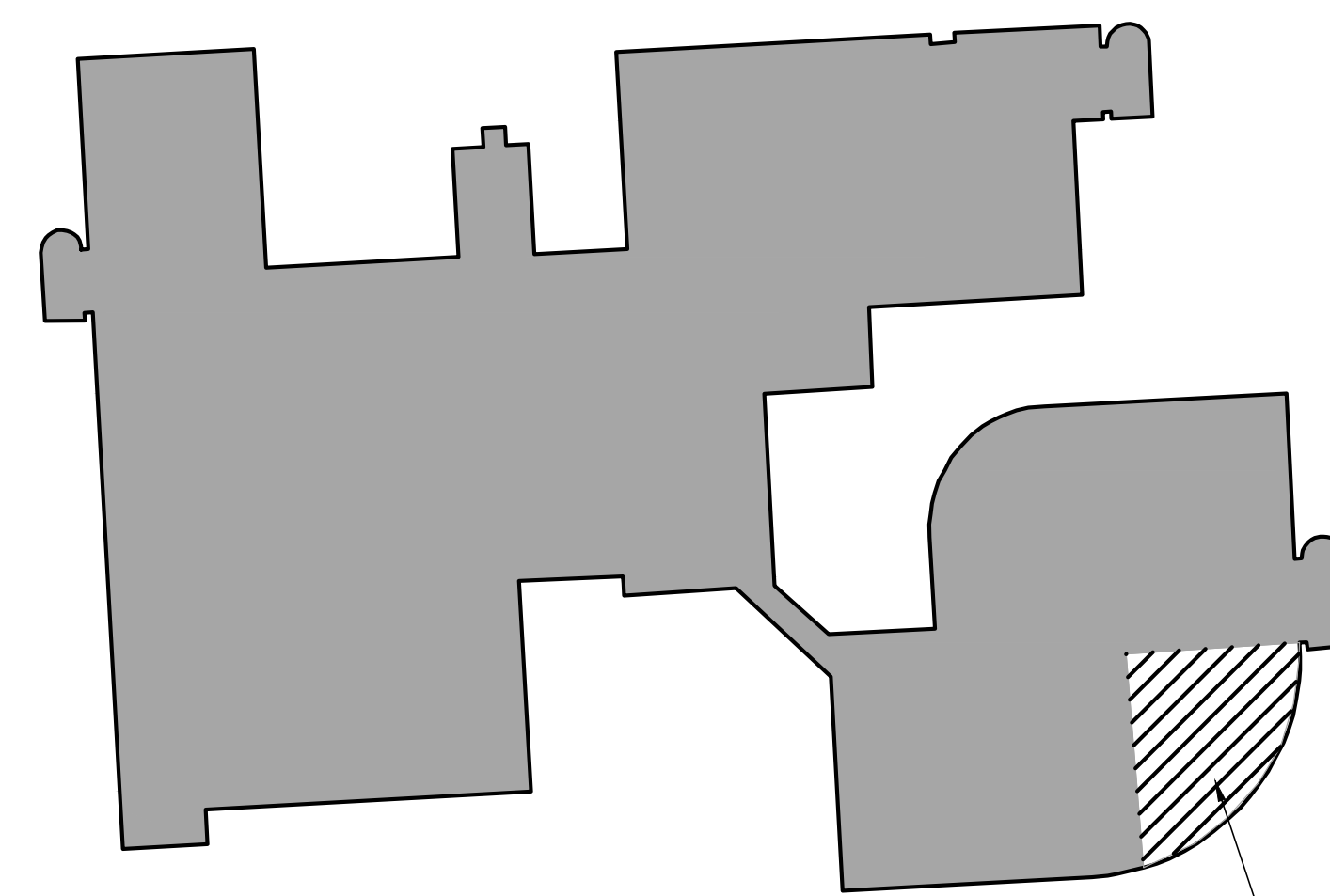
UNIVERSITY OF NEVADA, LAS VEGAS
THOMAS BEAM ENGINEERING COLLEGE RENOVATION

4505 MARYLAND PARKWAY
LAS VEGAS, NEVADA 89154

VICINITY MAP



LOCATION IN BUILDING



PROJECT LOCATION
LEVEL 2

SHEET INDEX

| | REVISION 01 OWNER CHANGES | REVISION 02 OWNER'S COMMENTS/ PLAN CHECK | REVISION 01 OWNER CHANGES | REVISION 02 OWNER'S COMMENTS/ PLAN CHECK |
|----------------------|------------------------------|--|------------------------------|--|
| GENERAL | | | | |
| CVR | | | | |
| G0.01 | | | | |
| G1.01 | | | | |
| ARCHITECTURAL | | | | |
| A0.01 | | | | |
| A1.01 | | | | |
| A2.01 | | | | |
| A3.01 | | | | |
| A4.01 | | | | |
| A5.01 | | | | |
| A5.02 | | | | |
| MECHANICAL | | | | |
| M0.01 | | | | |
| M0.02 | | | | |
| M1.01 | | | | |
| ELECTRICAL | | | | |
| E0.01 | | | | |
| E0.02 | | | | |
| E0.10 | | | | |
| E0.21 | | | | |
| E1.01 | | | | |
| E5.01 | | | | |

PROJECT TEAM

OWNER:

UNIVERSITY OF NEVADA LAS VEGAS
DIRECTOR OF PLANNING AND CONSTRUCTION
4505 MARYLAND PARKWAY
LAS VEGAS, NEVADA 89154

ARCHITECT:

JVC ARCHITECTS
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702.871.3416
ROY BURSON AIA, PROJECT ARCHITECT

MECHANICAL, PLUMBING, ELECTRICAL:

TJK CONSULTING ENGINEERS
5459 S. DURANGO DR., STE #100
LAS VEGAS, NEVADA 89113
702.871.3621
STEVE JONES, P.E. MECHANICAL/PLUMBING
TOM ANDERSON, P.E. ELECTRICAL

SCOPE OF WORK

PROJECT INCLUDES INTERIOR RENOVATION TO ADD TWO NEW OFFICES, STORAGE ROOM, AND RECONFIGURATION OF THE RECEPTION AND WAITING.

INTERIOR WORK INCLUDES PATCH AND REPAIR BUILDING INTERIOR, NEW PAINT, UPDATED FIRE ALARM, LIGHTING, NEW FLOOR FINISHES AS INDICATED.

1. SEPARATE PLANS AND PERMIT ARE REQUIRED FOR THE INSTALLATION AND MODIFICATIONS TO THE AUTOMATIC FIRE SPRINKLER SYSTEM.
2. SEPARATE PLANS AND PERMIT ARE REQUIRED FOR THE INSTALLATION AND MODIFICATIONS TO THE REQUIRED OCCUPANT ALERTING FIRE ALARM SYSTEM.

DEFERRED SUBMITTALS: DEFERRAL OF ANY SUBMITTAL ITEMS SHALL HAVE PRIOR APPROVAL OF THE BUILDING OFFICIAL.

1611-UNLV-TBE

08.19.16

COVER SHEET

CVR

CONSTRUCTION DOCUMENTS

ABBREVIATIONS

| | | | | | | | |
|----------|---|---------|--|-----------|--------------------------------------|------|----------------------------|
| & | AND | F | FEMALE | O' | OVER | VAR | VARIES |
| @ | AT | FA | FIRE ALARM | OA | OVER ALL | VB | VAPOR BARRIER |
| Ø | CENTERLINE DIAMETER | FAB | FABRICATE | OBS | OBSOLETE | VCG | VINYL CORNER GUARD |
| 0 | FOOT, FEET | FB | FLAT BAR | OC | ON CENTER | VCT | VINYL COMPOSITE TILE |
| " | INCH | FCU | FAN COIL UNIT | OD | OUTSIDE DIAMETER | VERT | VERTICAL |
| # | FOUND, NUMBER | FD | FLOOR DRAIN | OFCI | OWNER FURNISHED CONTRACTOR INSTALLED | VEST | VESTIBULE |
| # | FOUND, NUMBER | FE | FIRE EXTINGUISHER | OFD | OVERFLOW DRAIN | VTR | VERIFY |
| # | FOUND, NUMBER | FE | FIRE EXTINGUISHER | OFF | OFFICE | VW | VENT THROUGH ROOF |
| # | PROPERTY LINE | FEC | FIRE EXTINGUISHER CABINET | OFFOI | OWNER FURNISHED OWNER INSTALLED | W | WASHER, WIDE, WIDTH, WEST |
| ± | PLUS OR MINUS | FFE | FINISHED FLOOR ELEVATION | OH | OVERHANG | W/O | WITHOUT |
| A/C | AIR CONDITIONING | FHC | FIRE HOSE CABINET | OPNG | OPENING | WC | WALLCOVERING, WATER CLOSET |
| AB | ANCHOR BOLT | FIN | FINISH | OPP | OPPOSITE | WD | WOOD |
| ABV | ABOVE | FLR | FLOOR | OPR | OPERABLE | WDW | WINDOW |
| ABBREV | ABBREVIATION | FLASH | FLASHING | OSB | ORIENTED STRAND BOARD | WGL | WIRE GLASS |
| AC | ASPHALTIC CONCRETE, ASPHALTIC PAVING | FLOUR | FLOUR | OVD | OVERHEAD | WH | WATER HEATER |
| ACT | ACOUSTICAL CEILING TILE | FOC | FACE OF CONCRETE | PASS | PASSAGE | WI | WROUGHT IRON |
| ACOUS | ACOUSTICAL | FOF | FACE OF FINISH | PC | PIECE, POST CONTRACT | WP | WHERE OCCURS |
| AD | AREA DRAIN | FOM | FACE OF MASONRY | PD | PLANTER DRAIN | WR | WATERPROOFING |
| ADD | ADDENDUM | FOS | FACE OF STUDS | PERIM | PERIMETER | WR | WATER RESISTANT |
| ADJ | ADJUSTABLE | FRFR | FIREPROOF | PLM | PLASTIC LAMINATE | WSCT | WAINSCOT |
| ADJA | ADJACENT | FRP | FIBERGLASS REINFORCED | PLAM | PLASTER | WT | WEIGHT |
| AFF | ABOVE FINISH FLOOR | FRZ | FREEZER | PLAS | PLASTER | | |
| AGGR | AGGREGATE | FS | FULL SIZE | PLMBG | PLUMBING | | |
| AL, ALUM | ALUMINUM | FT | FEET OR FOOT | PLYWD | PLYWOOD | | |
| ALT | ALTERNATE | FTG | FOOTING | PNL | PANEL | | |
| ANOD | ANODIZED | FURF | FURRING, FURRED | PR | PAIR | | |
| APN | ASSESSOR'S PARCEL NUMBER | FUT | FUTURE | PREFAB | PREFABRICATE | | |
| APPROX | APPROXIMATE | GA | GAUGE | PREP | PREPARATION | | |
| ARCH | ARCHITECTURAL | GALV | GALVANIZED | PROR | PROPORTION | | |
| ASPH | ASPHALT | GB | GRAB BAR | PT | POINT, PAINT | | |
| AV | AUDIOVISUAL | GC | GENERAL CONTRACTOR | PTD | PAPER TOWEL DISPENSER, GLASS | | |
| BO | BOTTOM OF BOARD | GLU-LAM | GLU-LAMINATED WOOD | PTN | PARTITION | | |
| BD | BUILDING | GR | GRADE | PVC | POLYVINYL CHLORIDE | | |
| BLK | BLOCK | GRN | GRANITE | PVMT | PAVEMENT | | |
| BLKG | BLOCKING | GS | GYPSUM SHEATHING | RAD | RADIUS | | |
| BM | BEAM | GSB | GYPSUM SHEATHING BOARD | RB | RUBBER BASE | | |
| BOT | BOTTOM | GWB | GYPSUM WALLBOARD | R.D. | ROUGH DRAIN | | |
| BRG | BEARING | GYP | GYPSUM | REF. | REFERENCE | | |
| BS | BOTH SIDES | H | HIGH | REFR | REFRIGERATOR | | |
| BTWN | BETWEEN | HC | HOSE BIB | REINF. | REINFORCED | | |
| BUR | BUILT-UP ROOFING | HD | HEAD | REQ | REQUIRED | | |
| CAB | CABINET | HCB | HOLLOW CORE | RESIL | RESILIENT | | |
| CB | CATCH BASIN | HDCP | HANDICAPPED | RGTR | REGISTER | | |
| CEM | CEMENT | HDWE | HARDWARE | RM | ROOM | | |
| CFCI | CONTRACTOR FURNISHED CONTRACTOR INSTALLED | HM | HOLLOW METAL | R.O. | ROUGH OPENING | | |
| CFOI | CONTRACTOR FURNISHED OWNER INSTALLED | HORIZ | HORIZONTAL | R.W. | RAIN WATER LEADER | | |
| CG | CORNER GUARD | HR | HOUR | S | SOUTH | | |
| CJ | CONTROL JOINT | HS | HAND SINK | SC | SCALE, SOLID CORE | | |
| CL | CENTERLINE | HT | HEIGHT | SCHED | SCHEDULE | | |
| CLG | CEILING | HVAC | HEATING, VENTILATING, AND AIR-CONDITIONING | SCPP | SCUPPER | | |
| CLK | CAULKING | HW | HOT WATER | SCR | SCREEN | | |
| CLO | CLOSET | IN | INSIDE DIAMETER (DIMENSION) | SD | STORM DRAIN | | |
| CLR | CLEAR | INCH | INCH | SECT | SECTION | | |
| CMU | CONCRETE MASONRY UNIT | INCL | INCLUDING, INCLUDED, INCLUDING | SF | SQUARE FOOT | | |
| CNTR | COUNTER | INFO | INFORMATION | SH | SHelf | | |
| COL | COLUMN | INT | INTERIOR | SHR | SHOWER | | |
| CONC | CONCRETE | INTEG | INTEGRATED | SHT | SHEET | | |
| CONN | CONNECTION | INV | INVERT | SHTG | SHEATHING | | |
| CONSTR | CONSTRUCTION | JB | JANITOR | SIM | SIMILAR | | |
| CONT | CONTINUOUS | JC | JANITOR'S CLOSET | SJ | SCORE JOINT | | |
| CONTR | CONTRACTOR | JST | JOIST | SL | SLOPE | | |
| COORD | COORDINATE | JT | JOINT | SLDG | SLIDING | | |
| CORR | CORRIDOR | KD | KNOCK DOWN | SLANT | SLANT | | |
| CPT | CARPET | KIT | KITCHEN | SM | SHEET METAL | | |
| CR | CARPET RAIL, COLD-ROLLED | KO | KNOCK-OUT | SM | SHEET METAL | | |
| CT | CERAMIC TILE | LAB | LABORATORY | SPEC | SPECIFICATION | | |
| CTR | CENTER | LAM | LAMINATE, LAMINATED | SPKR | SPEAKER | | |
| CTRS | CENTERS | LAV | LAVATORY | SPRK | SPRINKLER | | |
| CTSK | COUNTERSINK | LB | POUND | SQ | SQUARE | | |
| CW | COLD WATER | LDG | LANDING | SSK | SERVICE SINK | | |
| D | DEEP, DEPTH, DRYER | LF | LINEAL FOOT | SST OR SS | STAINLESS STEEL | | |
| DBL | DOUBLE | LH | LEFT HAND | ST | STONE | | |
| DD | DECK DRAIN | LKR | LOOKER | STD | STANDARD | | |
| DEPT | DEPARTMENT | LOC | LOCATION | STD | STANDARD | | |
| DET | DETAIL | LT | LIGHT | STG | STAGGERED | | |
| DF | DRINKING FOUNTAIN | LVR | LOUVER | STL | STEEL | | |
| DIA | DIAMETER | M | MALE | STOR | STORAGE | | |
| DIAG | DIAGONAL | MAS | MASONRY | STRUC | STRUCTURAL | | |
| DIM | DIMENSION | MAX | MAXIMUM | STRUC | STRUCTURE | | |
| DISP | DISPENSER | MBR | MASTER BEDROOM | SURR | SURROUND | | |
| DN | DOWN | MC | MEDICINE CABINET | SUSP | SUSPENDED | | |
| DO | DOOR OPENING | MECH | MECHANICAL | SYM | SYMMETRICAL | | |
| DR | DOOR | MEMB | MEMBRANE | SYS | SYSTEM | | |
| DS | DOWN SPOUT | MET | METAL | T&G | TONGUE AND GROOVE | | |
| DSP | DRY STANDPIPE | MFR | MANUFACTURER | TACKBD | TACKBOARD | | |
| DWG | DRAWING | MH | MANHOLE | TBB | TILE BACKER BOARD | | |
| DWR | DRAWER | MIR | MIRROR | TD | TRENCH DRAIN | | |
| E | EAST | MISC | MISCELLANEOUS | TEL | TELEPHONE | | |
| EA | EACH | MLDG | MOULDING, MOLDING | TEMP | TEMPORARY | | |
| EC | ELASTOMERIC COATING | MO | MASONRY OPENING | THK | THICK | | |
| EFS | EXTERIOR FINISH SYSTEM | MR | MOISTURE RESISTANT | THR | THRESHOLD | | |
| EIFS | EXTERIOR INSULATION FINISH SYSTEM | MTD | MOUNTED | THRU | THROUGH | | |
| EJ | EXPANSION JOINT | MTG | MOUNTING | TLT | TOILET | | |
| EL | ELEVATION | MTL | MATERIAL | TO | TOP OF | | |
| ELAS | ELASTOMERIC | MUL | MULLION | TOC | TOP OF CURB | | |
| ELEC | ELECTRICAL | N | NORTH | TOP | TOP OF PARAPET | | |
| ELEV | ELEVATOR | NIC | NOT IN CONTRACT | TOW | TOP OF WALL | | |
| EMER | EMERGENCY | NO | NUMBER | TPT | TEXTURED PAINT | | |
| ENCL | ENCLOSURE | NOM | NOMINAL | TRN | TRANSITION | | |
| EP | ELECTRICAL PANELBOARD | NTS | NOT TO SCALE | TRD OR T | TREAD | | |
| EQ | EQUAL | | | TS | TUBE STEEL | | |
| EQUIP | EQUIPMENT | | | TV | TELEVISION | | |
| EW | EACH WAY | | | UBC | UNIFORM BUILDING CODE | | |
| EWC | ELECTRIC WATER COOLER | | | UC | UNDERCUT | | |
| EX | EXISTING | | | UL | UNDERWRITERS LABORATORY | | |
| EXP | EXPANSION | | | UNF | UNFINISHED | | |
| EXPO | EXPOSED | | | UNO | UNLESS NOTED OTHERWISE | | |
| EXT | EXTERIOR | | | UDN | UNLESS OTHERWISE NOTED | | |

SYMBOLS LEGEND

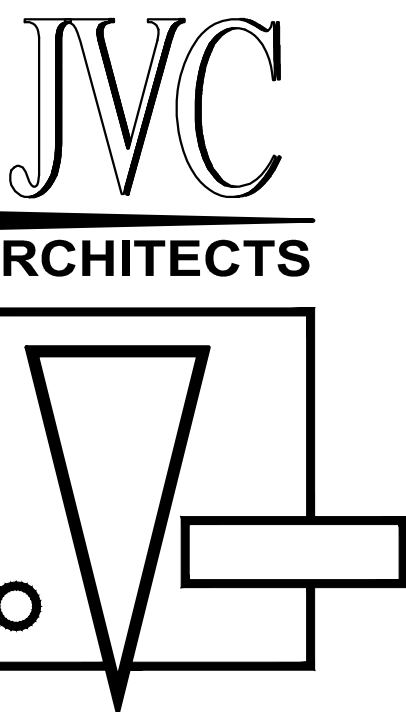
| | | | |
|--|--|--|--------------------|
| | NUMBER OF COMBINED OCCUPANTS USING EXIT | | BUILDING SECTION |
| | TOTAL NUMBER OF COMBINED OCCUPANTS USING EXIT | | WALL SECTION |
| | ROOM NUMBER | | BUILDING ELEVATION |
| | WINDOW NUMBER - REFER TO WINDOW SCHEDULE | | DETAIL NUMBER |
| | DOOR NUMBER - REFER TO DOOR SCHEDULE | | DATUM REFERENCE |
| | EQUIPMENT NUMBER - REFER TO EQUIPMENT SCHEDULE | | REVISION NUMBER |
| | ELEVATION REFERENCE | | GRID |
| | | | SLOPE |
| | | | WALL TYPE |

GENERAL NOTES

- GENERAL NOTES APPLY TO ALL DRAWINGS. SHEET NOTES PERTAIN TO SPECIFIC SHEETS.
- THE TERM "ARCHITECT/ENGINEER" REFERS TO THE RESPONSIBLE ENTITY WHOSE NAME APPEARS ON THE CONTRACT DOCUMENTS.
- THE TERM "CONTRACT DOCUMENTS" REFERS TO THE DRAWINGS, SPECIFICATIONS AND OTHER DOCUMENTS ISSUED BY THE ARCHITECT/ENGINEER.
- THE DRAWINGS ARE PREPARED TO SHOW THE ARCHITECT'S INTENT IN THE DESIGN AND CONSTRUCTION FOR THIS PROJECT. IN ALL MATTERS RELATED TO THE USE OR INTERPRETATION OF THESE VARIOUS DRAWINGS AND PROJECT MANUAL, THE ARCHITECT'S WRITTEN STATEMENT SHALL BE CONSIDERED FINAL. MAKE NO DEVIATIONS FROM THE DRAWINGS OR PROJECT MANUAL WITHOUT WRITTEN APPROVAL FROM THE ARCHITECT.
- ABSOLUTE ACCURACY OF DATA INDICATED IN THE DRAWINGS AND/OR SPECIFICATIONS IS NOT GUARANTEED. THE DOCUMENTS MAY REPRESENT IMPERFECT DATA AND MAY CONTAIN ERRORS, OMISSIONS, INCONSISTENCIES, CODE VIOLATIONS AND IMPROPER USE OF MATERIALS. SUCH DEFICIENCIES WILL BE CORRECTED WHEN IDENTIFIED. THE CONTRACTOR IS REQUIRED TO CAREFULLY STUDY AND COMPARE THE DRAWINGS AND SPECIFICATIONS AND IMMEDIATELY REPORT TO THE ARCHITECT ANY DEFICIENCIES DISCOVERED. THE CONTRACTOR MUST REQUIRE EACH SUBCONTRACTOR TO LIKEWISE STUDY THE DOCUMENTS AND REPORT ANY DEFICIENCIES DISCOVERED. THE CONTRACTOR IS REQUIRED TO RESOLVE ALL REPORTED DEFICIENCIES WITH THE ARCHITECT PRIOR TO STARTING THE WORK. IF THE CONTRACTOR PROCEEDS WITH THE WORK AFFECTED WITHOUT WRITTEN INSTRUCTION FROM THE ARCHITECT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY WORK RESULTING IN DAMAGE OR DEFECT AT NO ADDITIONAL COST TO THE OWNER.
- DO NOT SCALE DRAWINGS, WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS.
- DIMENSIONS AS SHOWN ON ARCHITECTURAL FLOOR PLANS ARE ACTUAL AND FACE TO FACE OF CMU, CENTERLINE OF COLUMN, FACE OF STUD, UNLESS NOTED OTHERWISE.
- DIMENSIONS FOR DOOR OPENINGS SHOWN NOMINAL ARE TO ALLOW FOR 1/4" SHIMMING AND SEALANT OF EXTERIOR FRAMES AS NOTED ON PLANS.
- NO PORTION OF THE WORK REQUIRING A SHOP DRAWING OR SAMPLE SUBMISSION SHALL BE COMMENCED UNTIL THE SUBMISSION HAS BEEN APPROVED BY THE ARCHITECT. THE AUTHOR OF, OR PARTY RESPONSIBLE FOR EACH SHOP DRAWING IS REQUIRED TO INSURE THAT SUCH DOCUMENTS ACCURATELY CONFORM WITH THE DESIGN CONCEPT AND COMPLY WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. ALL SUCH PORTIONS OF THE WORK SHALL BE IN ACCORDANCE WITH APPROVED SHOP DRAWINGS AND SAMPLES.
- THE GENERAL CONTRACTOR SHALL SUPERVISE AND DIRECT ALL WORK. HE SHALL BE RESPONSIBLE FOR ALL MEANS AND METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND COORDINATE ALL PORTIONS OF WORK UNDER THE CONTRACT. HE IS TO USE ADEQUATE NUMBERS OF SKILLED WORKMEN WHO ARE THOROUGHLY TRAINED AND EXPERIENCED IN THEIR TRADES AND WHO ARE COMPLETELY FAMILIAR WITH THE SPECIFIED REQUIREMENTS AND METHODS NECESSARY FOR PROPER PERFORMANCE OF THE WORK.
- THE GENERAL CONTRACTOR SHALL APPLY FOR AND OBTAIN ALL NECESSARY CONSTRUCTION PERMITS REQUIRED BY ALL APPLICABLE BUILDING CODES AND REGULATORY CITY AND COUNTY AGENCIES.
- THE GENERAL CONTRACTOR IS TO BE FAMILIAR WITH THE EXISTING JOB SITE AND CONDITIONS. THE GENERAL CONTRACTOR SHALL SUBMIT A WRITTEN DEFICIENCY LIST OF ALL EXISTING SYSTEMS PRIOR TO COMMENCEMENT OF SCOPE OF WORK. HE IS TO ACCEPT THOSE EXISTING CONDITIONS AS HE FINDS THEM. ALL TRADES ARE TO BE FAMILIAR WITH ALL DOCUMENTS AND INFORMATION SHOWN. INFORMATION ON ANY SHEET IS AS BINDING AND IS AS IF SHOWN ON ALL SHEETS.
- THE GENERAL CONTRACTOR SHALL MAINTAIN THE JOB SITE IN A CLEAN AND ORDERLY CONDITION, FREE OF DEBRIS AND LITTER. EACH SUBCONTRACTOR IMMEDIATELY UPON COMPLETION OF EACH PHASE OF HIS WORK SHALL REMOVE ALL TRASH AND DEBRIS AS A RESULT OF HIS OPERATION.
- THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK AND PROVIDE SAFE ACCESS TO AND FROM ALL LOCATIONS.
- THE GENERAL CONTRACTOR SHALL PROVIDE PUBLIC PROTECTION AND MAINTENANCE TO ALL AREAS AFFECTED BY THE WORK AS NECESSARY AND AS REQUIRED BY LOCAL, STATE AND FEDERAL CODES.
- THE CONTRACTOR SHALL PERFORM ALL WORK SHOWN AS NOTED ON THE DRAWINGS IN STRICT ACCORDANCE WITH, OR EXCEEDING, ALL LOCAL, STATE AND FEDERAL MINIMUM STANDARDS OF AGENCIES HAVING JURISDICTION OVER THE PROJECT, AND THE CURRENT AND APPLICABLE EDITIONS OF THE INTERNATIONAL BUILDING CODE, INTERNATIONAL MECHANICAL CODE, UNIFORM PLUMBING CODE AND NATIONAL ELECTRICAL CODE.
- THE CONTRACTOR SHALL BE FAMILIAR WITH ALL DRAWINGS AND SPECIFICATIONS OF THE VARIOUS BUILDING SYSTEMS. INFORMATION SHOWN ON ONE DOCUMENT MAY REPRESENT INFORMATION RELATIVE TO OTHER DOCUMENTS.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AND NOTIFY THE ARCHITECT OF ANY ERRORS, OMISSIONS, OR DISCREPANCIES PRIOR TO PROCEEDING WITH THE WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ACCURACY OF THE BUILDING LINES AND LEVELS AND FOR THE CAREFUL COMPARISON OF THE LINES AND LEVELS SHOWN ON THE DRAWINGS WITH EXISTING SITE CONDITIONS, AND CALL ANY DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT PRIOR TO PROCEEDING WITH THE WORK.
- THE CONTRACTOR SHALL REQUEST A CLARIFICATION FROM THE ARCHITECT IF UNCERTAIN OF EXACT REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. HE SHALL BE RESPONSIBLE TO CORRECT THE CONDITIONS CONSTRUCTED IN ERROR AT CONTRACTOR'S OWN EXPENSE AND SHALL BE RESPONSIBLE FOR THE EXPENSE AND REPAIR OF ANY RESULTING DAMAGE OR DEFECT TO THE WORK OR PROPERTY OF OTHERS.
- THE CONTRACTOR SHALL CONFINE OPERATION AT THE SITE TO AREAS PERMITTED BY LAW, ORDINANCES, PERMITS AND THE CONTRACT DOCUMENTS. HE SHALL NOT UNREASONABLY ENCUMBER THE SITE WITH ANY MATERIALS OR EQUIPMENT.
- THE CONTRACTOR SHALL PERFORM ALL CUTTING, FITTING OR PATCHING OF HIS WORK THAT MAY BE REQUIRED AND SHALL NOT ENDANGER ANY WORK BY CUTTING, EXCAVATING, OR OTHERWISE ALTERING THE WORK OR ANY PART OF IT.
- THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO BRACING, SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC.
- ALL PATCHING, REPAIRING AND REPLACING OF MATERIALS AND SURFACES CUT OR DAMAGED IN EXECUTION OF WORK SHALL BE REPAIRED WITH APPLICABLE MATERIALS SO THAT SURFACES REPLACED WILL UPON COMPLETION, MATCH SURROUNDING SIMILAR SURFACES.
- ALL CONSTRUCTION AND MATERIALS SHALL BE EQUAL TO OR EXCEED MINIMUM REQUIREMENTS OF THE CURRENT EDITION OF THE INTERNATIONAL BUILDING CODE AND ALL REQUIREMENTS OF THE VARIOUS GOVERNING AGENCIES HAVING JURISDICTION OVER THE PROJECT.
- ALL MATERIAL STORED ON THE SITE SHALL BE PROPERLY STACKED AND PROTECTED TO PREVENT DAMAGE AND DETERIORATION UNTIL USED. FAILURE TO PROTECT MATERIALS MAY BE CAUSE FOR REJECTION OF WORK.
- ALL FLOOR AND WALL PENETRATIONS REQUIRED FOR PIPES, CONDUIT, ETC., SHALL BE SEALED TO STOP THE PASSAGE OF FIRE AND/OR SMOKE AT RATED WALLS.
- INSTALL ALL MANUFACTURED ITEMS, MATERIALS AND EQUIPMENT IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED SPECIFICATIONS, UNLESS OTHERWISE SPECIFICALLY NOTED AND APPROVED BY THE ARCHITECT.
- ACCESS PANELS SHALL BE PROVIDED FOR ELECTRICAL, PLUMBING, MECHANICAL, AND ALL OTHERS WHICH MAY BE REQUIRED FOR SERVICING OF ALL SAID EQUIPMENT.
- ALL CONCRETE SLABS TO BE SEALED.

MATERIALS LEGEND

| | | | |
|--|----------|--|------------------|
| | EARTH | | FINISH WOOD |
| | CONCRETE | | BATT INSULATION |
| | MASONRY | | RIGID INSULATION |
| | STEEL | | |



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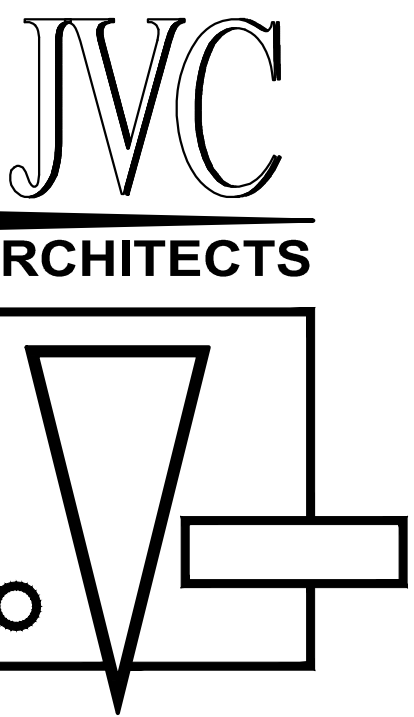
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GENERAL NOTES
G0.01
CONSTRUCTION DOCUMENTS

NOT FOR CONSTRUCTION. THIS DRAWING IS AN INSTRUMENT OF SERVICE AND SHALL NOT BE REPRODUCED WITHOUT THE WRITTEN PERMISSION OF THE ARCHITECT.

DEMOLITION NOTES

1. THE FULL EXTENT OF DEMOLITION SHALL BE DETERMINED IN THE FIELD BY THE CONTRACTOR. FAILURE OF THE CONTRACTOR TO FIELD VERIFY SHALL NOT RELIEVE THE CONTRACTOR OF ANY REQUIREMENTS TO COMPLETE THE WORK SHOWN.
2. ALL DEMOLITION SHALL BE TO THE EXTENT NECESSARY TO PROPERLY COMPLETE NEW CONSTRUCTION.
3. THE CONTRACTOR SHALL COORDINATE ALL DEMOLITION AND REMOVAL WITH THE OWNER PRIOR TO THE START OF ANY WORK.
4. ALL MATERIALS WHICH ARE NOT RELOCATED OR REUSED SHALL BE TURNED OVER TO THE OWNER OR REMOVED FROM THE SITE (WITH THE OWNERS APPROVAL) AT NO ADDITIONAL COST TO THE OWNER.
5. REMOVE ALL FLOORING WHERE INDICATED. PREPARE SLAB FOR NEW FLOORING.
6. REFER TO M&E DRAWINGS FOR ADDITIONAL DEMOLITION NOTES.



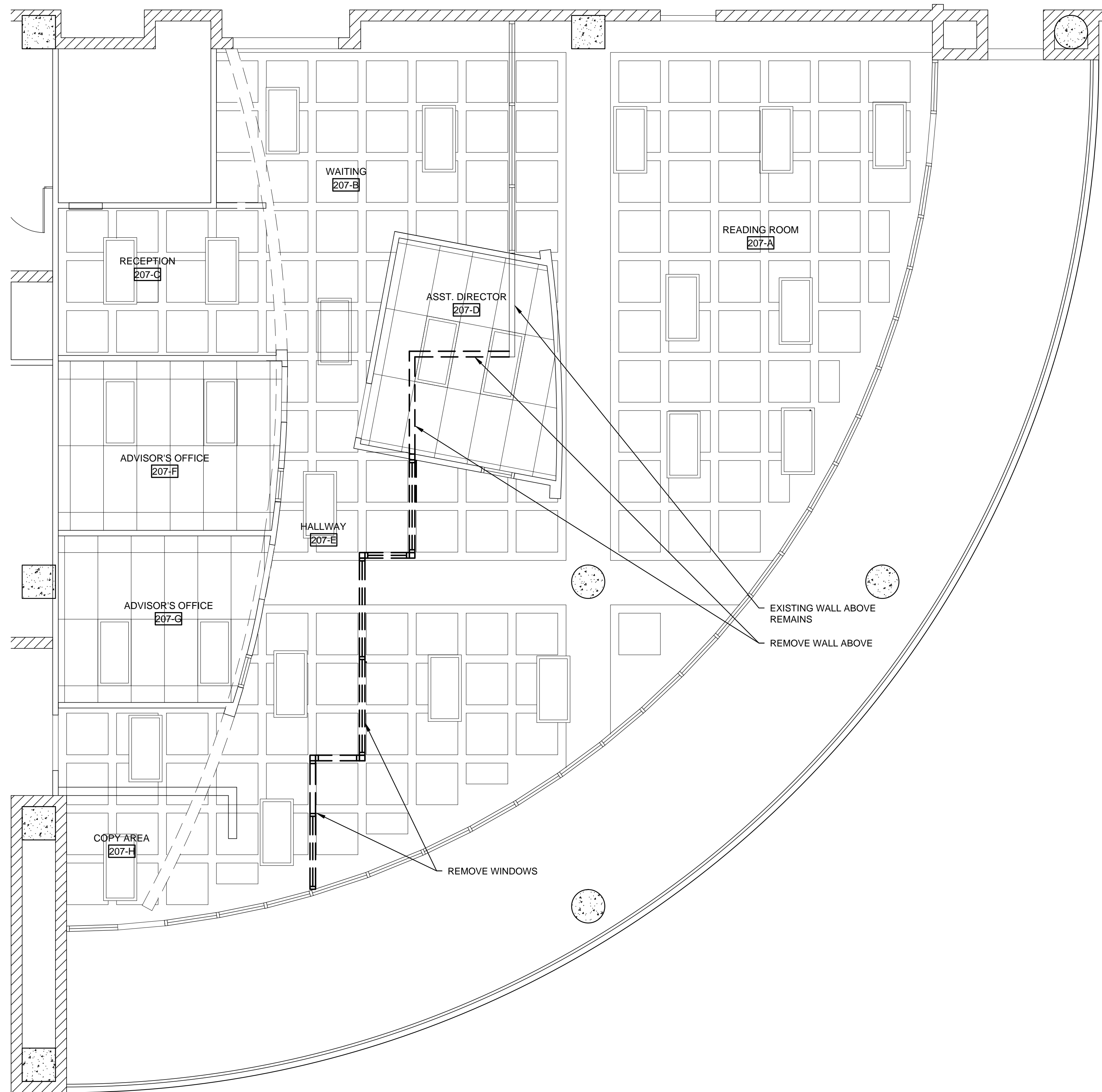
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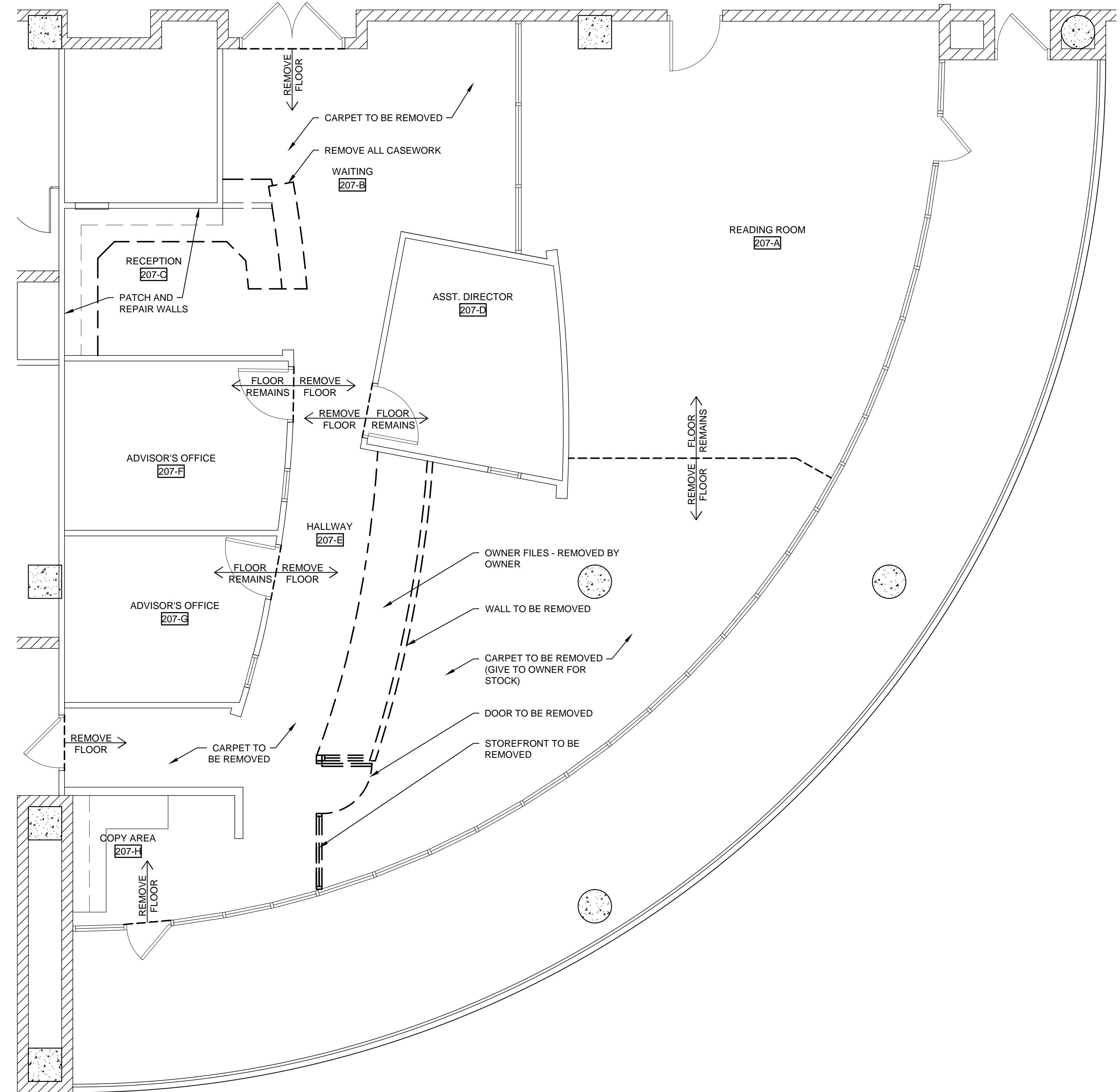
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DEMO CEILING & FLOOR PLAN
A0.01
CONSTRUCTION DOCUMENTS



= 02 = DEMOLITION REFLECTED CEILING PLAN
SCALE: 1/4" = 1'-0" NORTH



= 01 = DEMOLITION FLOOR PLAN
SCALE: 1/4" = 1'-0" NORTH

CEILING NOTES

- COORDINATE LOCATION OF ALL SPRINKLER HEADS, DOWN LIGHTS, EXIT LIGHTS, ETC. IN THE CENTER OF CEILING TILE MODULE - UNLESS OTHERWISE NOTED.
NOTE: ALL SPRINKLER HEADS TO BE FULLY RECESSED TYPE.
- INSTALL ACOUSTICAL CEILING TILE AND SUSPENDED CEILINGS IN ACCORDANCE WITH CODE REQUIREMENTS. SEE DETAIL 09, A4.01.
- ALL INTERIOR PAINT FINISH TO BE OVER LIGHT ORANGE PEEL FINISH 1/4" TYPE 'X' GYP. BD. UNLESS OTHERWISE NOTED.
- PATCH/REPAIR GYPSUM BOARD WHERE DAMAGED.
- 3 1/2" 20 GA. STEEL STUDS @ 16" OC W/ ONE LAYER OF 5/8" TYPE 'X' GYP BD ON EACH SIDE APPLIED AT RIGHT ANGLES TO STUDS W/ 1" TYPE 'S' DRYWALL SCREWS @ 8" OC TO VERTICAL EDGES AND @ 12" OC TO TOP AND BOTTOM RUNNERS AND ALL INTERMEDIATE STUDS. STAGGER ALL VERTICAL AND HORIZONTAL JOINTS @ 24" OC. TERMINATE WALL AS INDICATED ON PLANS, PER DETAIL 08/ A4.01.
- 3 1/2" 20 GA. STEEL STUDS @ 16" OC W/ ONE LAYER OF 5/8" TYPE 'X' GYP BD ON EACH SIDE APPLIED AT RIGHT ANGLES TO STUDS W/ 1" TYPE 'S' DRYWALL SCREWS @ 8" OC TO VERTICAL EDGES AND @ 12" OC TO TOP AND BOTTOM RUNNERS AND ALL INTERMEDIATE STUDS. STAGGER ALL VERTICAL AND HORIZONTAL JOINTS @ 24" OC. PROVIDE SOUND ATTENUATION BATTS UP ALONG WALL AND OVER CEILING. TERMINATE WALL 6" ABOVE CEILING, PER DETAIL 10/ A4.01.
- EXISTING WALLS TO REMAIN
- INDICATES NEW OPENINGS

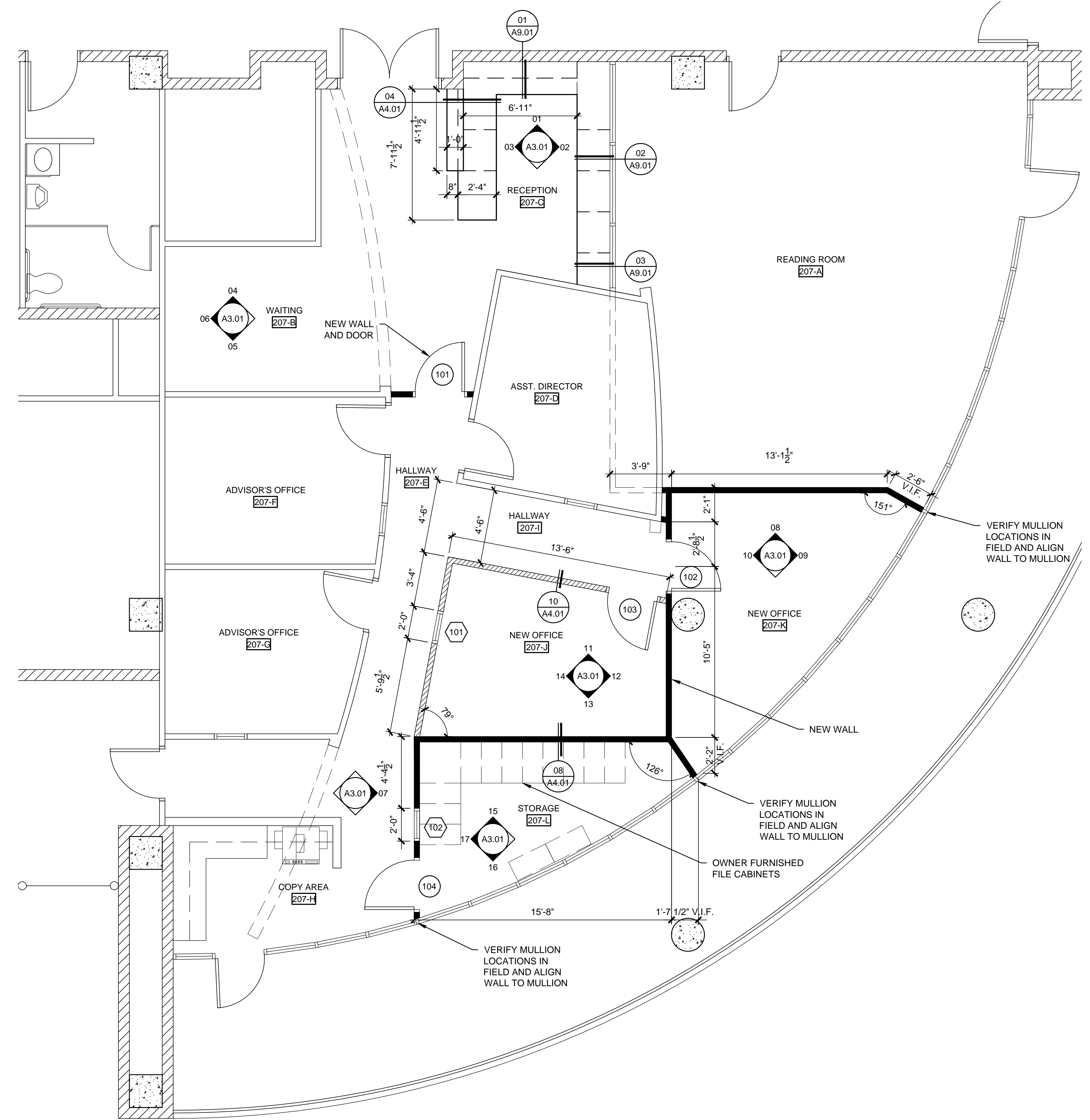


= 02 = REFLECTED CEILING PLAN

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

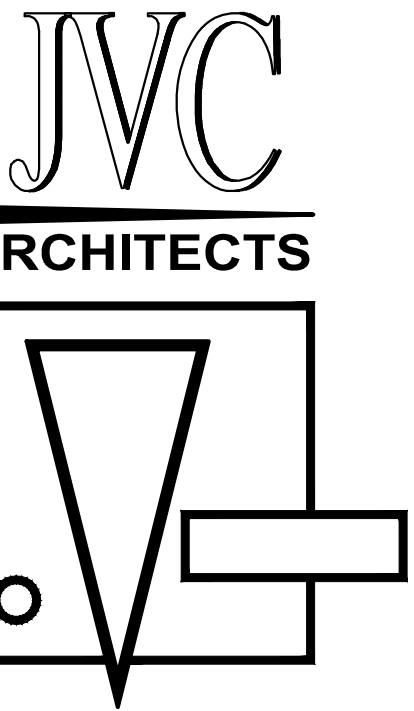
FLOOR PLAN NOTES

- REFER TO ARCHITECTURAL FINISH SCHEDULES AND INTERIOR ELEVATIONS FOR ADDITIONAL INFORMATION.
- ALL NEW GYPSUM BOARD TO BE 5/8" TYPE 'X' GYPSUM BOARD.
- PROVIDE TEMPERED GLASS PER LOCAL CODE REQUIREMENTS.
- REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL NOTES.
- 3 1/2" 20 GA. STEEL STUDS @ 16" OC W/ ONE LAYER OF 5/8" TYPE 'X' GYP BD ON EACH SIDE APPLIED AT RIGHT ANGLES TO STUDS W/ 1" TYPE 'S' DRYWALL SCREWS @ 8" OC TO VERTICAL EDGES AND @ 12" OC TO TOP AND BOTTOM RUNNERS AND ALL INTERMEDIATE STUDS. STAGGER ALL VERTICAL AND HORIZONTAL JOINTS @ 24" OC. TERMINATE WALL AS INDICATED ON PLANS, PER DETAIL 08/ A4.01.
- 3 1/2" 20 GA. STEEL STUDS @ 16" OC W/ ONE LAYER OF 5/8" TYPE 'X' GYP BD ON EACH SIDE APPLIED AT RIGHT ANGLES TO STUDS W/ 1" TYPE 'S' DRYWALL SCREWS @ 8" OC TO VERTICAL EDGES AND @ 12" OC TO TOP AND BOTTOM RUNNERS AND ALL INTERMEDIATE STUDS. STAGGER ALL VERTICAL AND HORIZONTAL JOINTS @ 24" OC. PROVIDE SOUND ATTENUATION BATTS UP ALONG WALL AND OVER CEILING. TERMINATE WALL 6" ABOVE CEILING, PER DETAIL 10/ A4.01.
- EXISTING WALLS TO REMAIN
- NEW ROOM SIGNAGE TO BE OFCI



= 01 = FLOOR PLAN

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



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1611-UNLV-TBE

08.19.16

□

□ FLOOR PLAN & REF CLG PLAN

□ A1.01

□ CONSTRUCTION DOCUMENTS

DOOR SCHEDULE

| MARK | DOOR | | | | | | DETAIL | FIRE RATING | HARDWARE SET | REMARKS | |
|------|------|---------------|--------|------|-----|-------|--------|-------------|--------------|---------|-------------------------|
| | TYPE | SIZE (WXH) | THICK | MATL | FIN | FRAME | | | | | |
| 101 | A | 3'-0" x 7'-0" | 1 1/2" | WD. | PT | STL. | PT | 06/ A4.01 | N/A | SET-01 | PAINT TO MATCH EXISTING |
| 102 | A | 3'-0" x 7'-0" | 1 1/2" | WD. | PT | STL. | PT | 06/ A4.01 | N/A | SET-01 | PAINT TO MATCH EXISTING |
| 103 | A | 3'-0" x 7'-0" | 1 1/2" | WD. | PT | STL. | PT | 06/ A4.01 | N/A | SET-01 | PAINT TO MATCH EXISTING |
| 104 | A | 3'-0" x 7'-0" | 1 1/2" | WD. | PT | STL. | PT | 06/ A4.01 | N/A | SET-01 | PAINT TO MATCH EXISTING |

DOOR NOTES

- ALL DOORS AND FRAMES ARE PAINT GRADE U.N.O.
- ALL DOORHEAD @ 107'-0" TO BE VERIFIED IN FIELD AND MATCH EXISTING.
- ALL HARDWARE TYPE AND FINISHES TO MATCH EXISTING.

Hardware Set 01

| | | | |
|-------------------|--------------------------|-------|-------------|
| 3 EA Hinges | TA2714 4.5 X 4.5 | US26D | Mc Kinney |
| 1 EA Office Lock | L9050L 06A Less Cylinder | US26D | Schlage |
| 1 EA Mortise Cyl. | 985 W.I.C. | US26D | Falcon Lock |
| 1 EA Wall Stop | 408 (Convex) | US32D | Rockwood |
| 3 EA Silencers | 608 | GRY | Rockwood |

Door Index

HW Set Door Number(s)

1 101, 102, 103, 104

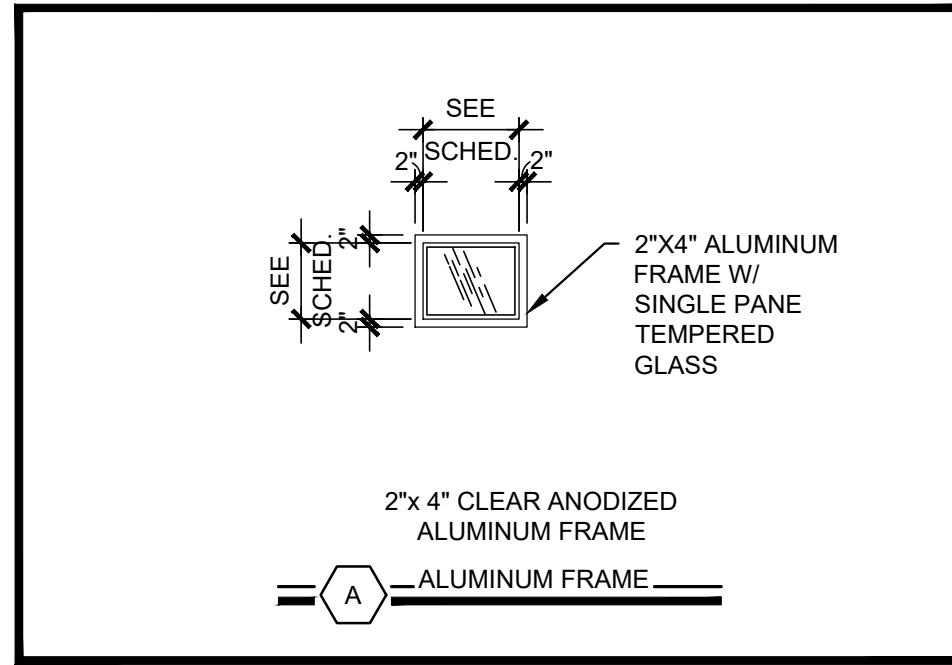
WINDOW SCHEDULE

| NO | TYPE | WINDOW | | | FRAME | | DETAIL | REMARKS |
|-----|------|---------------|-------|---------|-------|-------------|-----------|-------------------------|
| | | SIZE (WXH) | OPR | HD HT | MTL | FINISH | | |
| 101 | A | 2'-0" x 2'-0" | FIXED | 107'-0" | ALUM. | ANOD. ALUM. | 05/ A4.01 | PAINT TO MATCH EXISTING |
| 102 | A | 2'-0" x 2'-0" | FIXED | 107'-0" | ALUM. | ANOD. ALUM. | 05/ A4.01 | PAINT TO MATCH EXISTING |

WINDOW NOTES

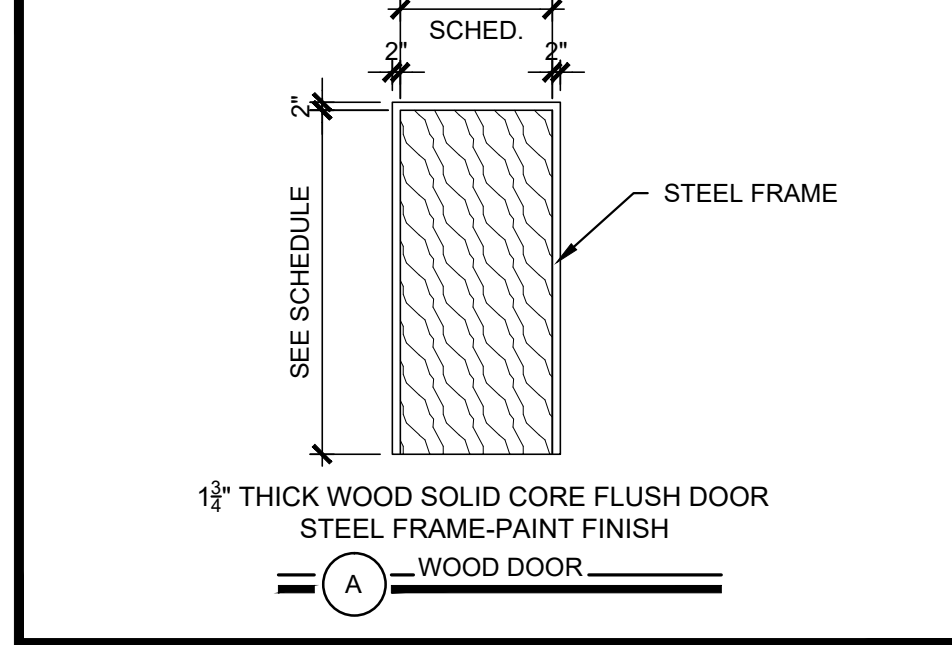
- COORDINATE ALL ROUGH OPENINGS SIZES WITH MANUFACTURER - FIELD VERIFY ALL DIMENSIONS.
- PROVIDE TEMPERED GLASS WHERE REQUIRED BY CODE AND/OR AS INDICATED HEREIN.
- SUBMIT SHOP DRAWINGS, PRODUCT DATA AND CERTIFICATIONS AS REQUIRED PRIOR TO FABRICATION.
- ALL WINDOWS WILL MEET AAMA / NWWDA 101/1.S.2 OR 101/1.S.2/NAFS.
- INDICATES UNITS TO RECEIVE TEMPERED GLASS FOR UNITS OTHER THAN THOSE REQUIRED BY 2006 IBC

WINDOW TYPES



| MATERIAL FINISHES | | | | | |
|--------------------|-------|----------------------|------------------------------|--------------------------|--|
| INTERIOR FINISHES | | | | | |
| ABBREV | SIZE | DESCRIPTION | MANUFACTURER (OR EQUIVALENT) | MODEL/STYLE/COLOR | REMARKS |
| FLOOR | | | | | |
| CPT1 | | CARPET TILE | | | MATCH EXISTING, NEW OFFICES |
| LVT1 | 12X24 | LUXURY VINYL TILE | THE AZROCK COLLECTION | V-280 RAW SILK | RECEPTION, HALLWAY, COPY AREA, STORAGE |
| BASE | | | | | |
| RB1 | 6" | RUBBER BASE | JOHNSONITE | 48 GREY WG | MATCH EXISTING |
| WALL | | | | | |
| PT1 | | PAINT | DUNN EDWARDS | DEW395 HEIRLOOM SHADE | MATCH EXISTING |
| PT2 | | PAINT | DUNN EDWARDS | DET618 INDUSTRIAL AGE | |
| CEILING | | | | | |
| GYP | | PAINT | DUNN EDWARDS | DEW395 HEIRLOOM SHADE | MATCH EXISTING |
| SPECIALTIES | | | | | |
| PL1 | | PLASTIC LAMINATE | FORMICA | 5488-NT SMOKY BROWN PEAR | |
| QS1 | | QUARTZ SOLID SURFACE | FORMICA | 733 MIRAGE | |

| ROOM SCHEDULE | | | | | | | | | | |
|--------------------|---------|--------------|------------|-------|------|-------|------|---------|-----------|-----------------------------|
| ROOM NAME | ROOM NO | FLOOR FINISH | FLOOR BASE | WALL | | | | CEILING | ROOM SIGN | REMARKS |
| | | | | NORTH | EAST | SOUTH | WEST | | | |
| READING ROOM | 207-A | (E) | (E) | (E) | (E) | (E) | (E) | PT1 | | |
| WAITING | 207-B | LVT1 | RB1 | PT1 | PT1 | PT1 | PT1 | PT1 | | |
| RECEPTION | 207-C | LVT1 | RB1 | PT1 | PT1 | PT1 | PT1 | PT1 | | CABINET PL1; COUNTERTOP QS1 |
| ASSISTANT DIRECTOR | 207-D | (E) | (E) | (E) | (E) | (E) | (E) | PT1 | | |
| HALLWAY | 207-E | LVT1 | RB1 | PT1 | PT1 | PT1 | PT2 | PT1 | | |
| ADVISOR'S OFFICE | 207-F | (E) | (E) | (E) | (E) | (E) | (E) | PT1 | | |
| ADVISOR'S OFFICE | 207-G | (E) | (E) | (E) | (E) | (E) | (E) | PT1 | | |
| COPY AREA | 207-H | LVT1 | RB1 | PT1 | PT1 | PT1 | PT1 | PT1 | | |
| HALLWAY | 207-I | LVT1 | RB1 | PT1 | PT1 | PT1 | PT1 | PT1 | | |
| NEW OFFICE | 207-J | CPT1 | RB1 | PT1 | PT1 | PT1 | PT1 | PT1 | • | |
| NEW OFFICE | 207-K | CPT1 | RB1 | PT1 | PT1 | PT1 | PT1 | PT1 | • | |
| STORAGE | 207-L | LVT1 | RB1 | PT1 | PT1 | PT1 | PT1 | PT1 | • | |



SHEET NOTES

- EXTEND FLOOR FINISH UNDER EQUIPMENT, KNEE SPACE AND TOE KICK.
- REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL NOTES.

FLOOR FINISH PLAN LEGEND

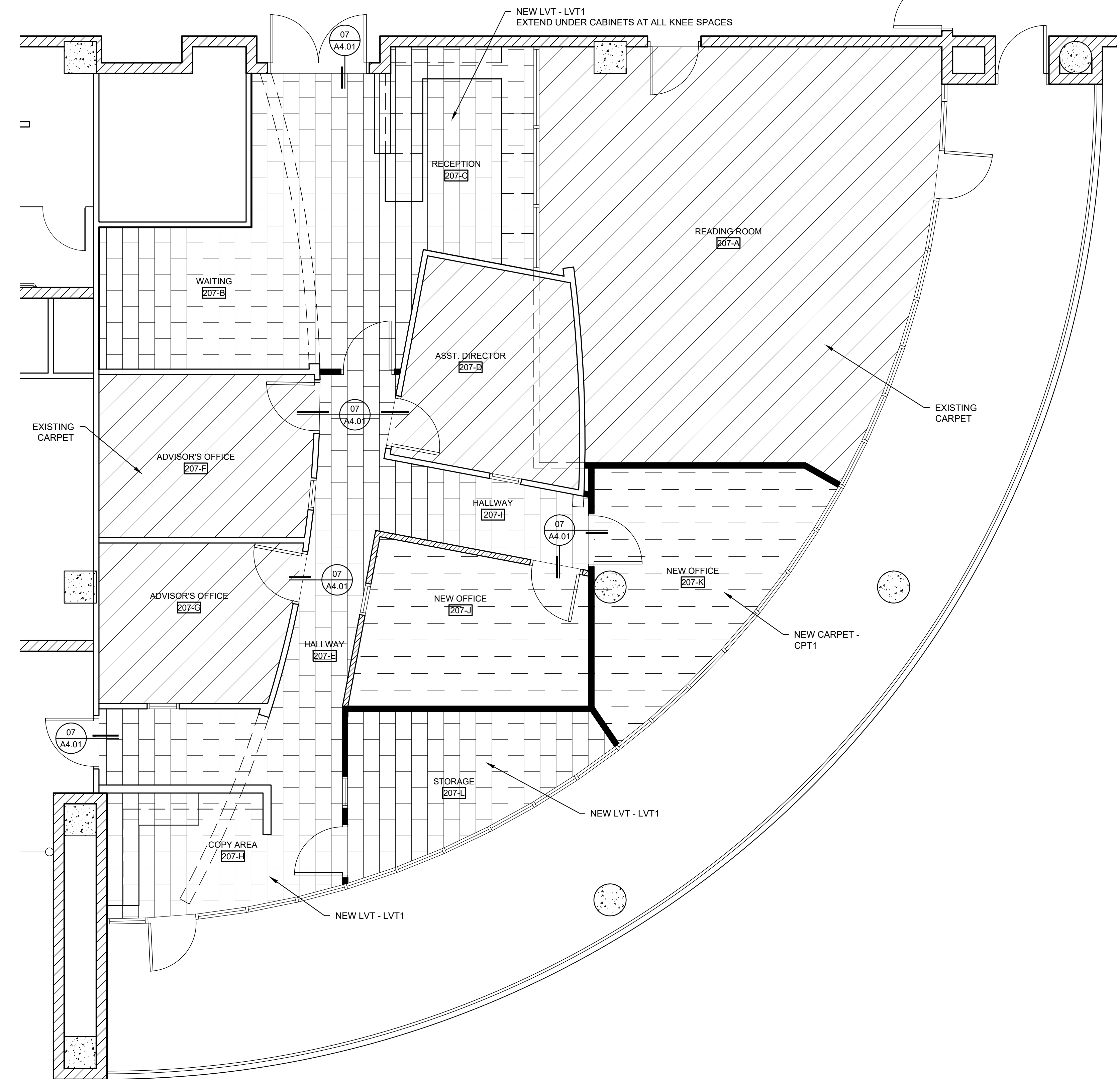
| HATCH | ABBREV | DESCRIPTION |
|-------|--------|--|
| | (E) | EXISTING CARPET TO REMAIN |
| | CPT1 | CARPET - REFER TO SCHEDULE FOR TYPE |
| | LVT1 | LUXURY VINYL TILE - REFER TO SCHEDULE FOR TYPE |

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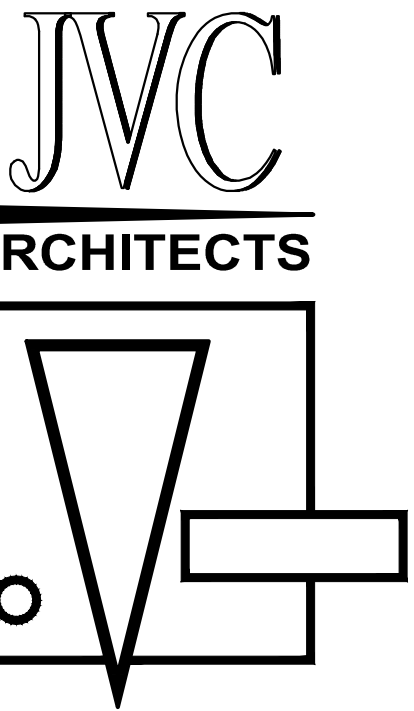


= 01 = FLOOR FINISH PLAN SCALE: 1/4" = 1'-0" NORTH

- FLOOR FINISH PLAN
- A2.01
- CONSTRUCTION DOCUMENTS

SHEET NOTES

1. REFER TO FINISH SCHEDULE FOR FINISHES OF ALL DOOR AND WINDOW FRAMES.
2. ALL ACCENT PAINT TO TERMINATE AT INTERIOR CORNERS UNO.
3. BASE CABINETS ARE 24" DEEP EXCEPT AS NOTED OTHERWISE.
4. UPPER CABINETS ARE 12" CLEAR INSIDE DEPTH EXCEPT AS NOTED OTHERWISE.
5. FIELD VERIFY ALL OVERALL ROOMSPACE DIMENSIONS.
6. CASEWORK SUBCONTRACTOR TO FIELD DRILL UP TO 2 1/2" DIAMETER HOLES PER KNEE SPACE FOR ELECTRICAL CORD AND ACCESS TO OUTLETS/RECEPTICLES BELOW COUNTER TOPS IN LOCATIONS DIRECTED BY OWNER.
7. ALL PENETRATIONS/HOLES IN FINISHED COUNTER TOPS TO BE TIGHTLY FITTED WITH PLASTIC GROMMET INSERTS. (ELECT. ACCESS, TRASH HOLES, ETC.)
8. CONTRACTOR IS RESPONSIBLE FOR BRACING, BLOCKING, FABRICATION DETAILS, ETC. ASSOCIATED WITH PROPER ASSEMBLY AND INSTALLATION OF CASEWORK/CABINERY.
9. PROVIDE "FULL" BULLNOSE CORNERS AT ALL COUNTER TOPS.
10. PROVIDE LOCKS ON ALL DRAWERS AND DOORS IN CASEWORK.
11. CASEWORK SHALL MEET THE MOST CURRENT REQUIREMENTS OF THE WOODWORK INSTITUTE AND/OR THE ARCHITECTURAL WOODWORK INSTITUTE (AWI) CUSTOM GRADE.



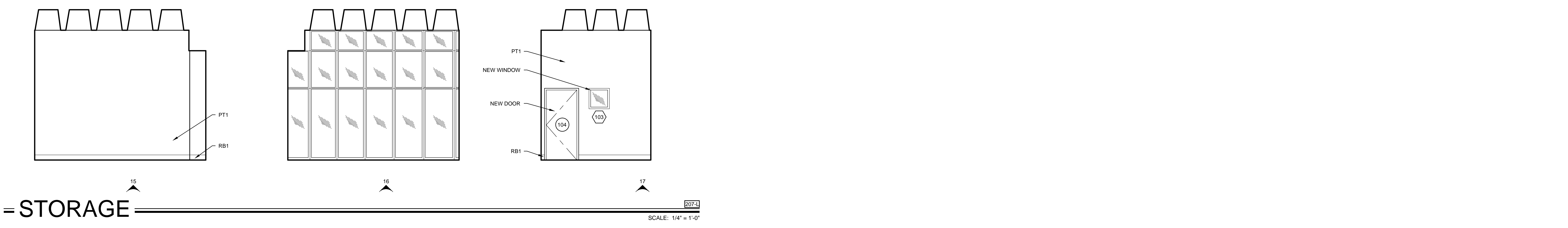
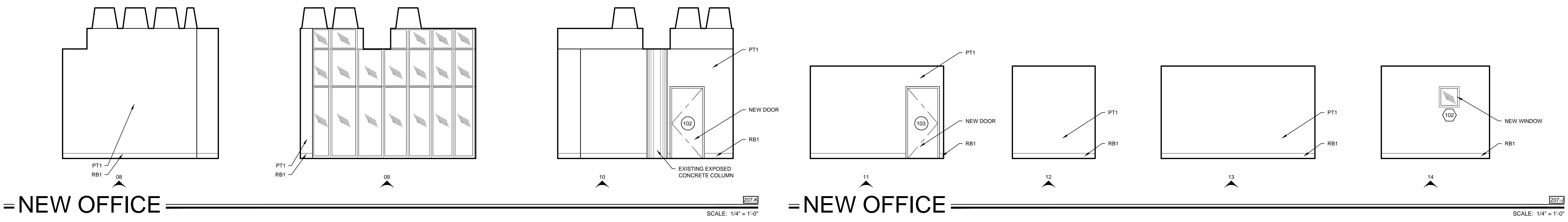
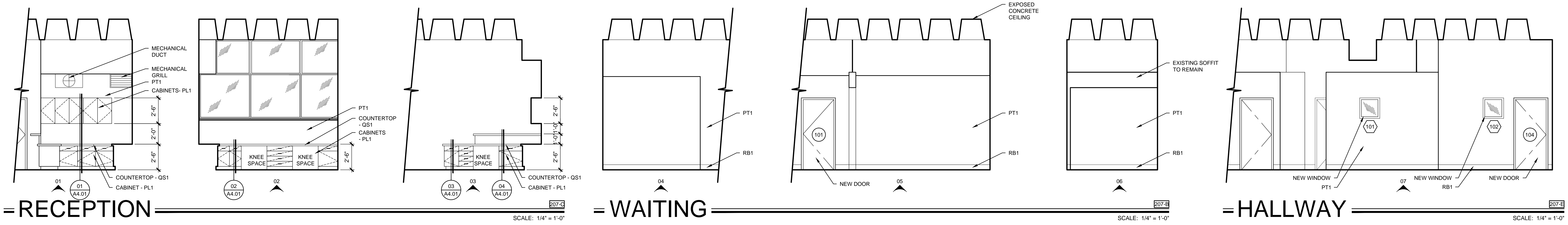
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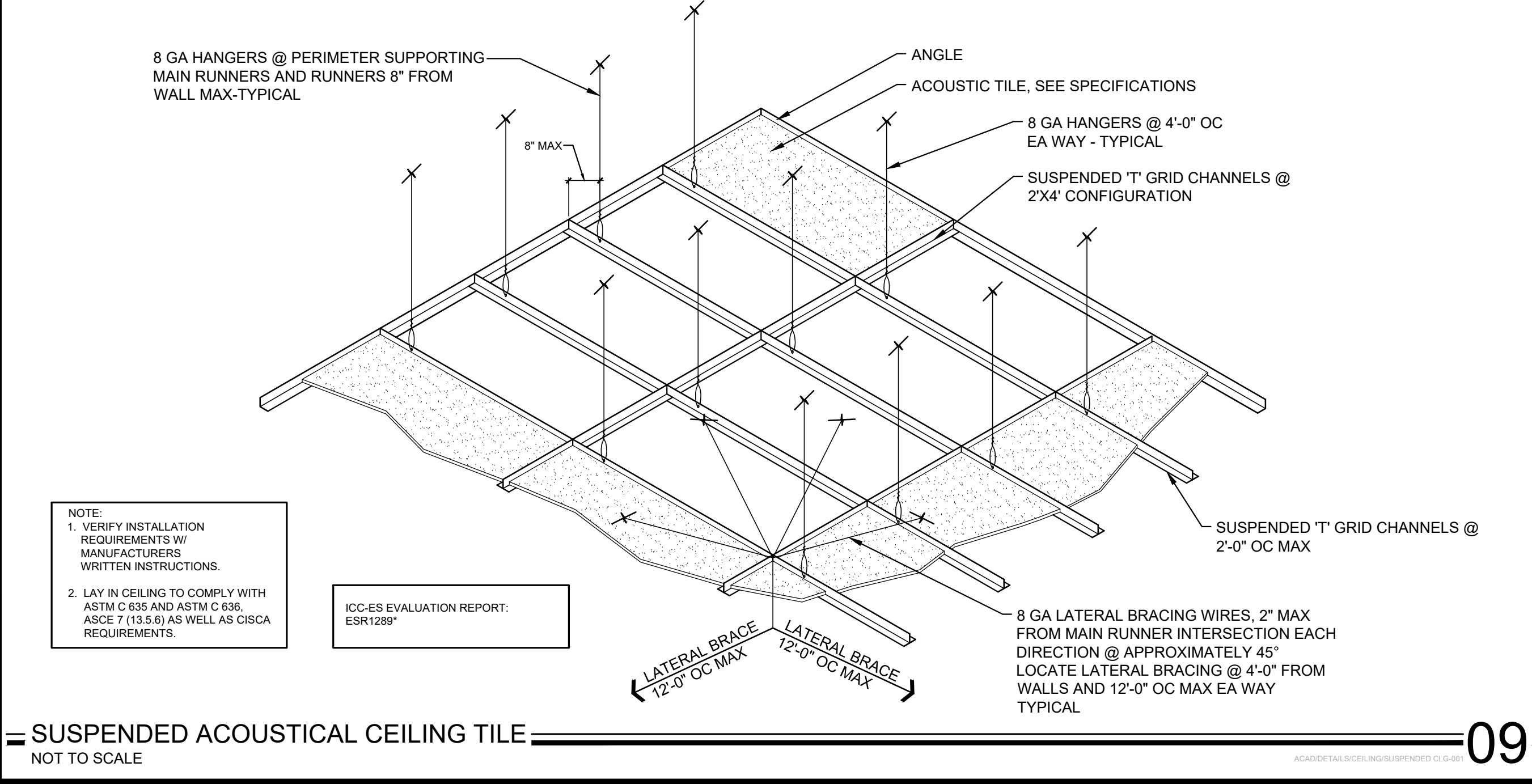
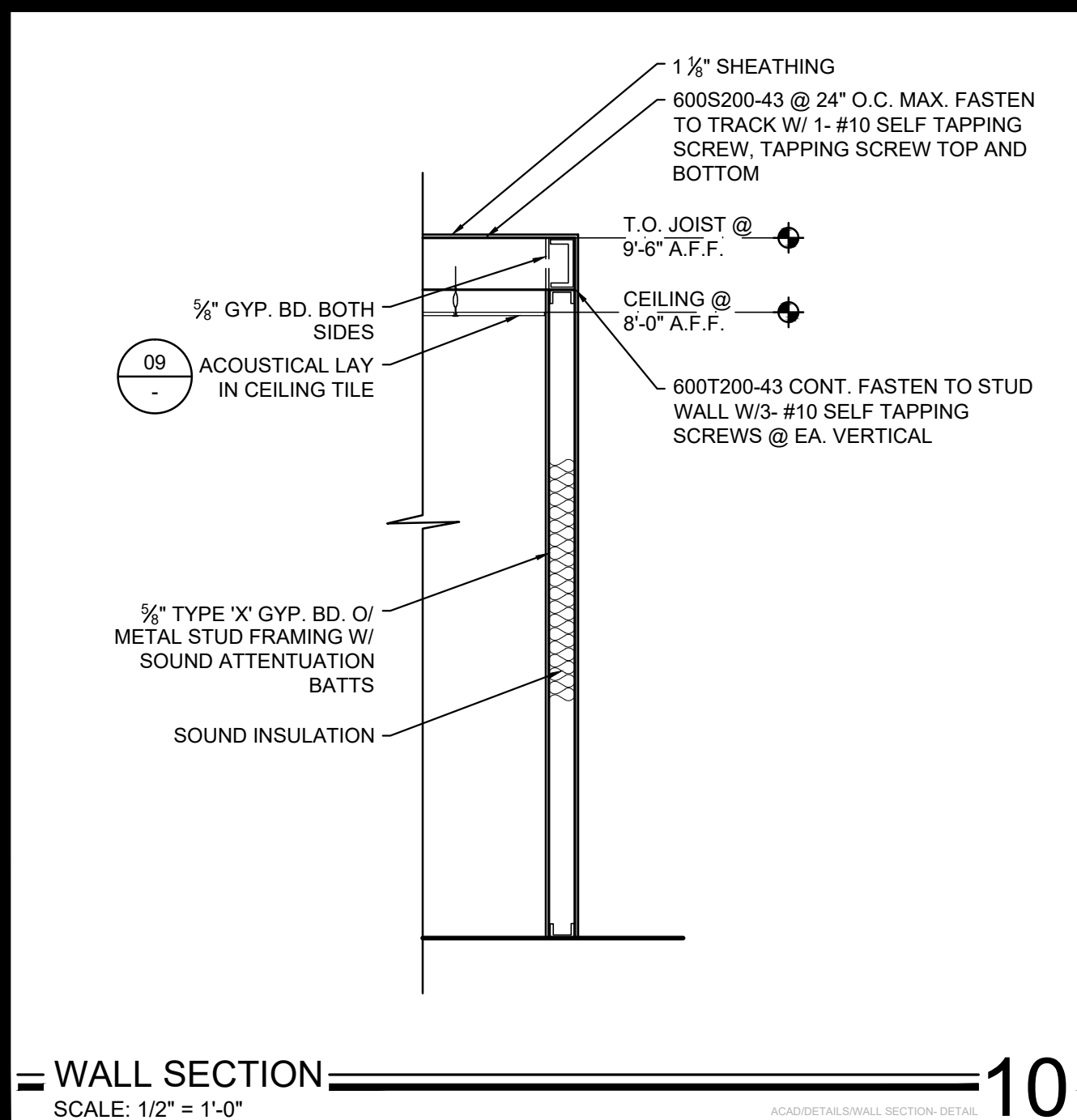
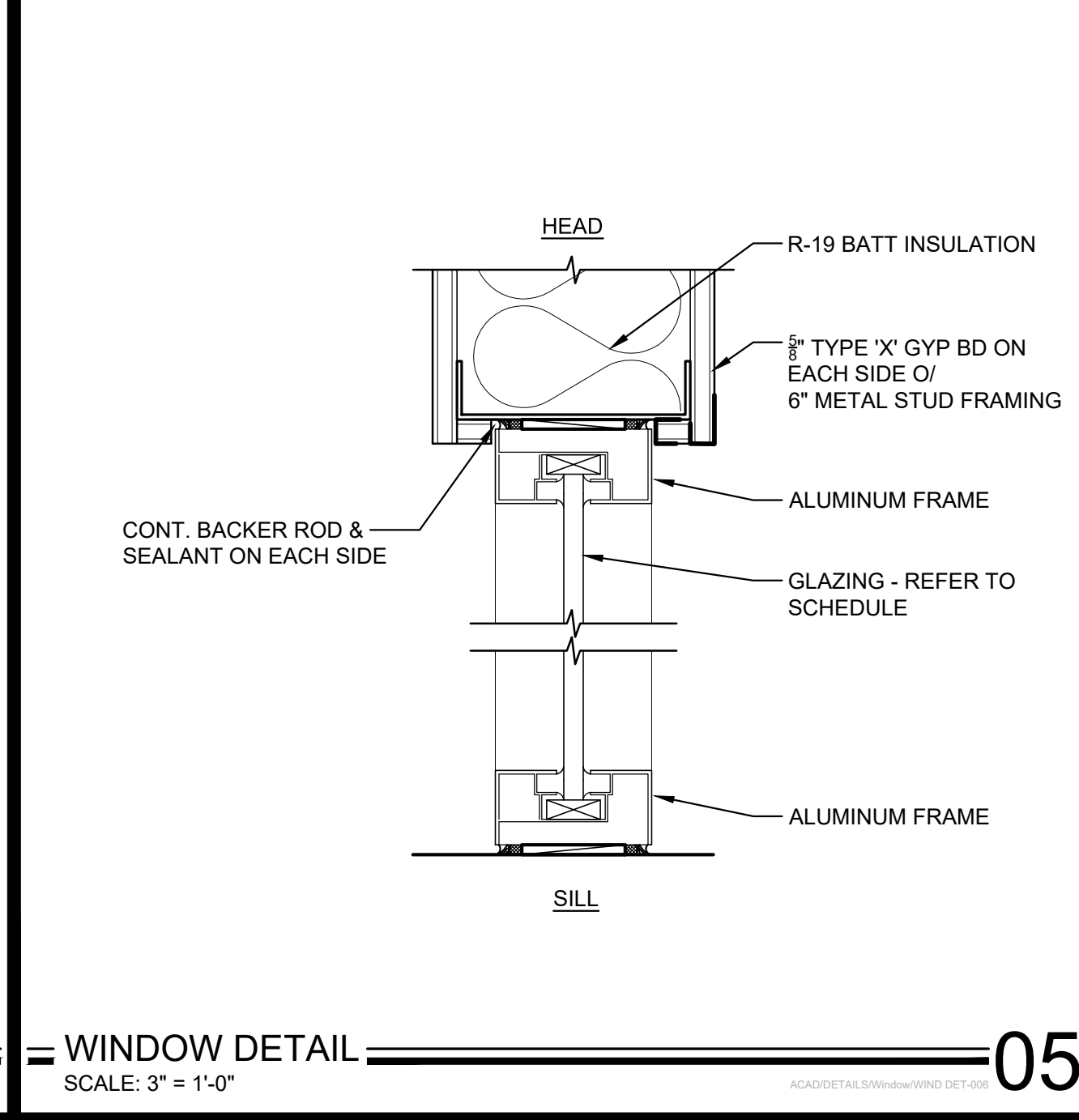
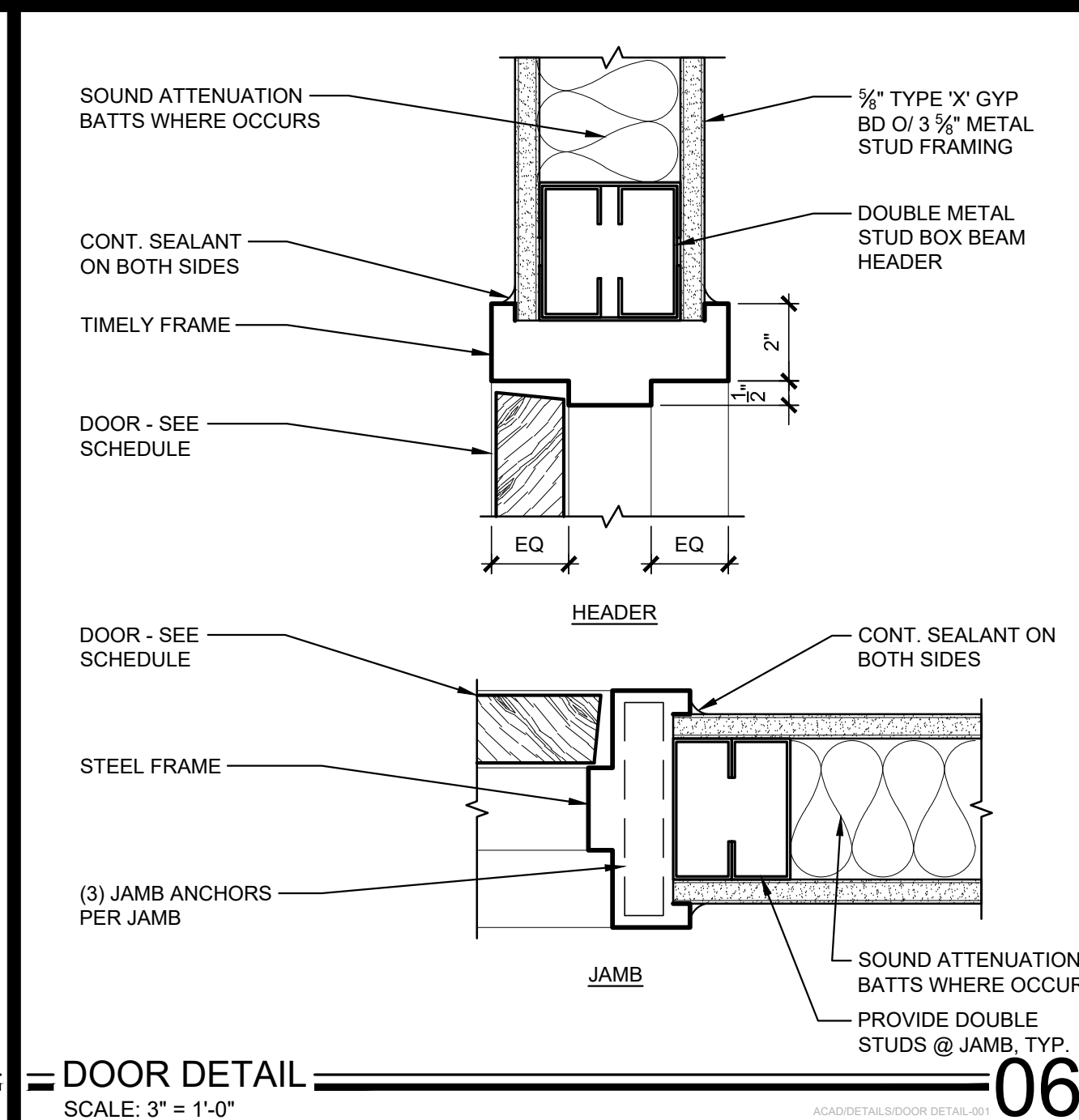
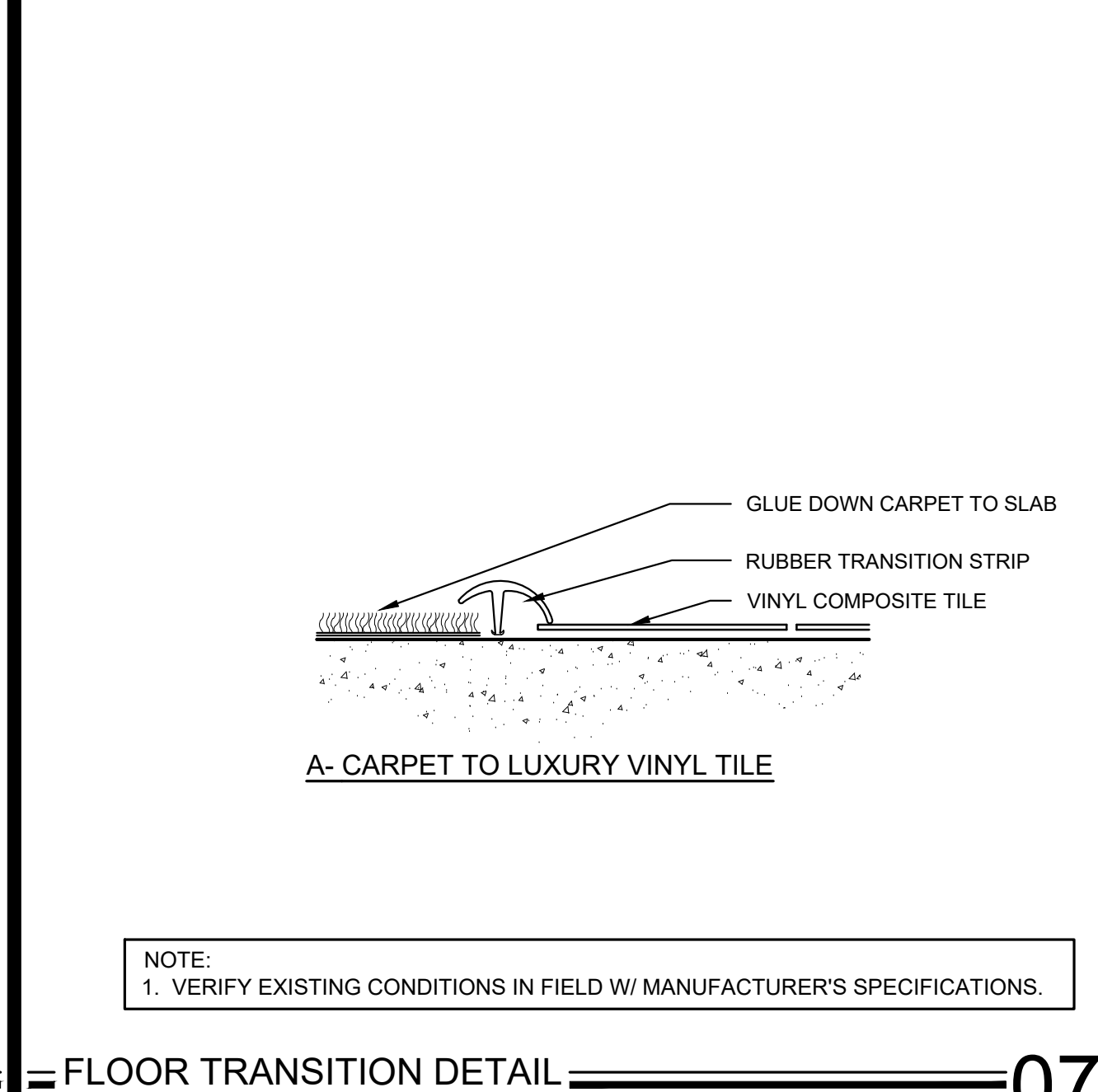
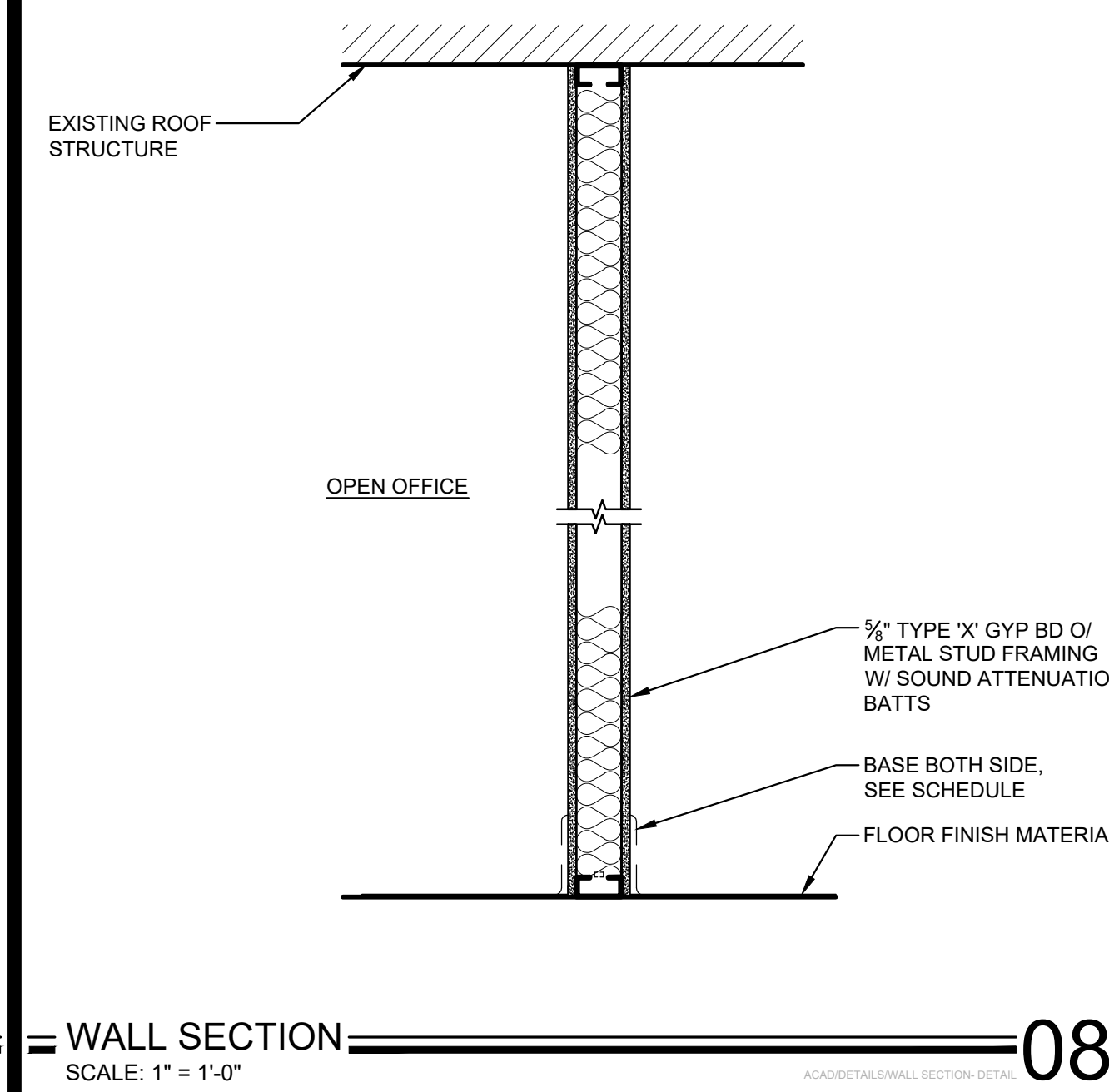
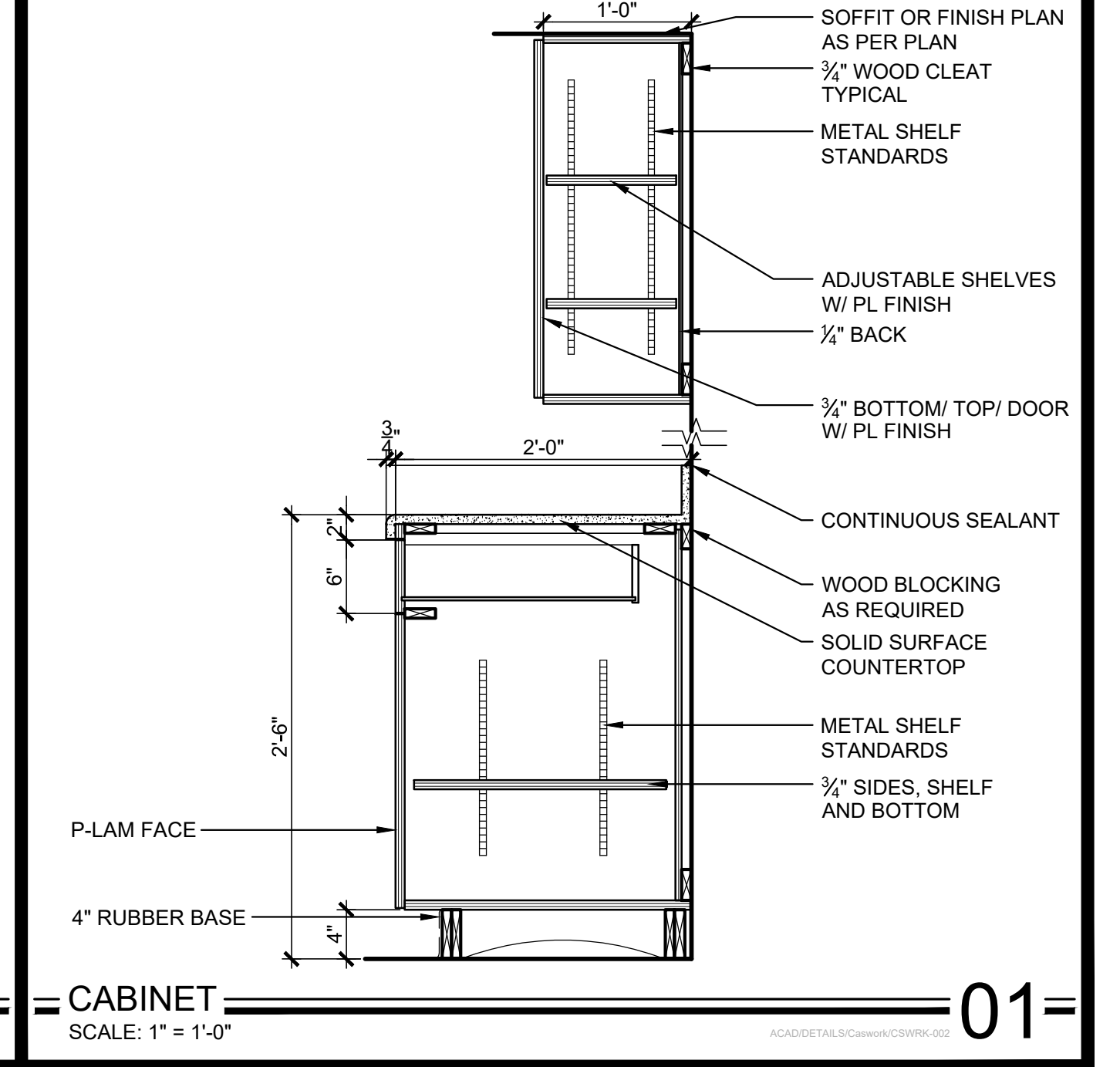
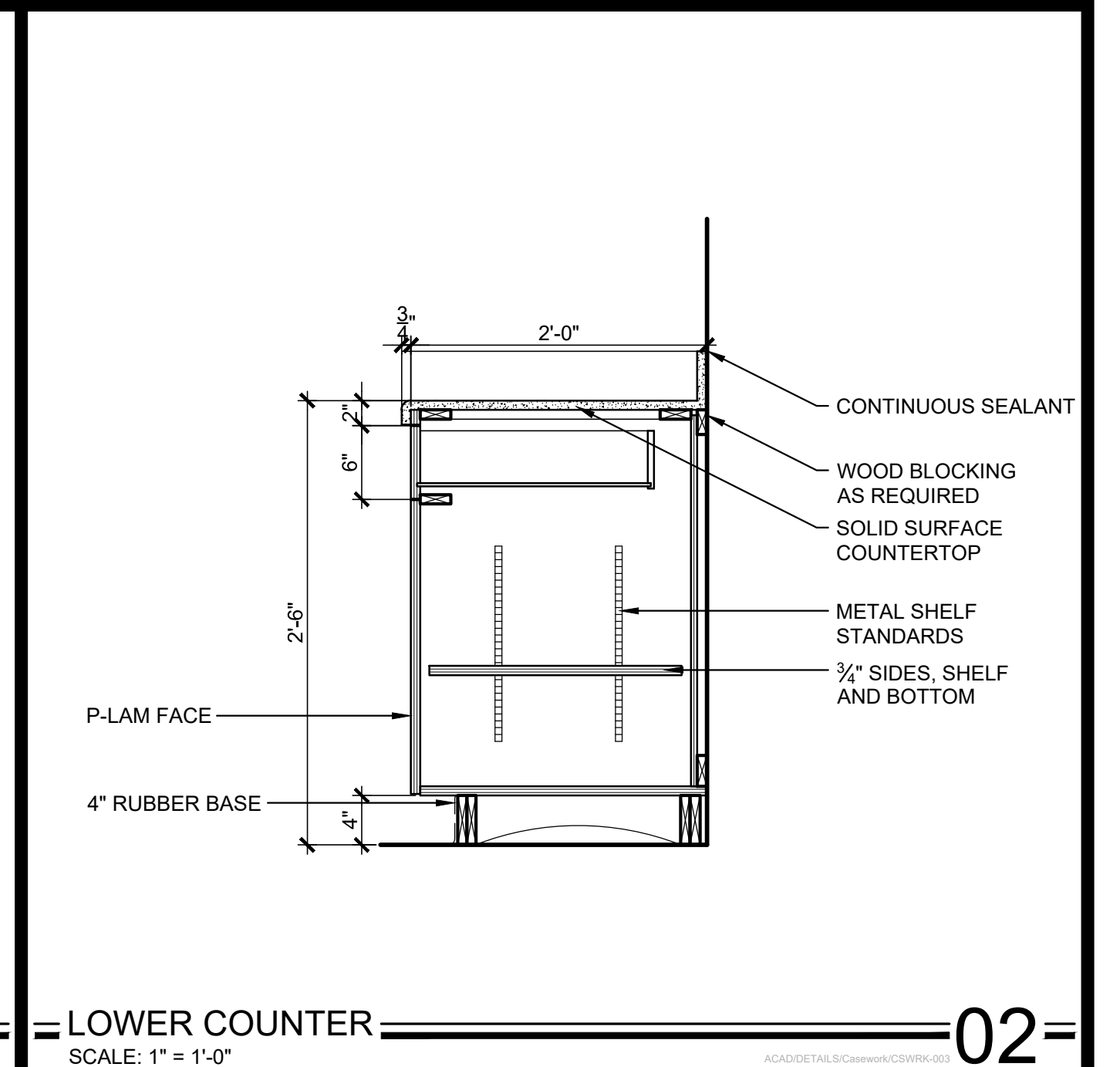
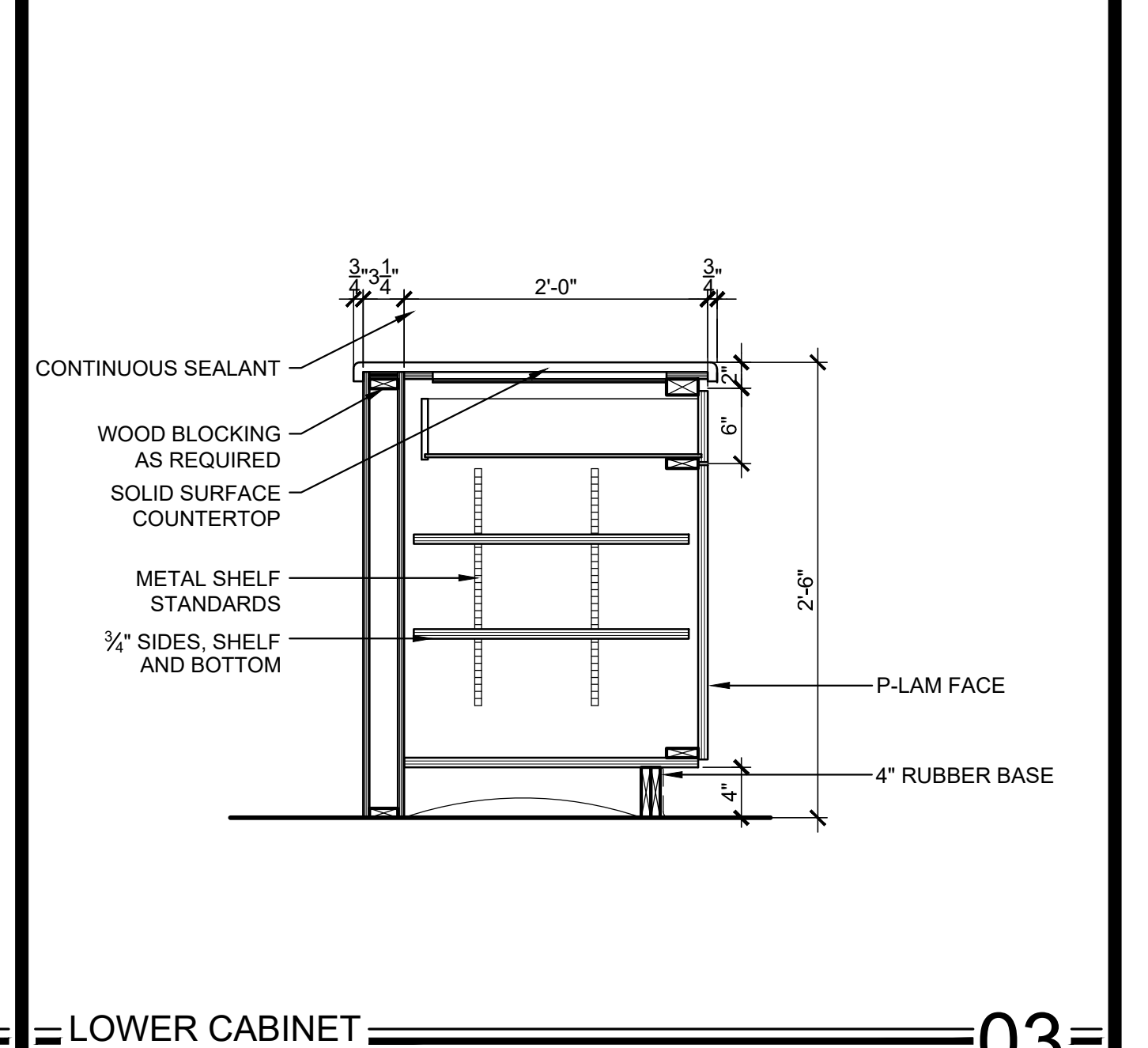
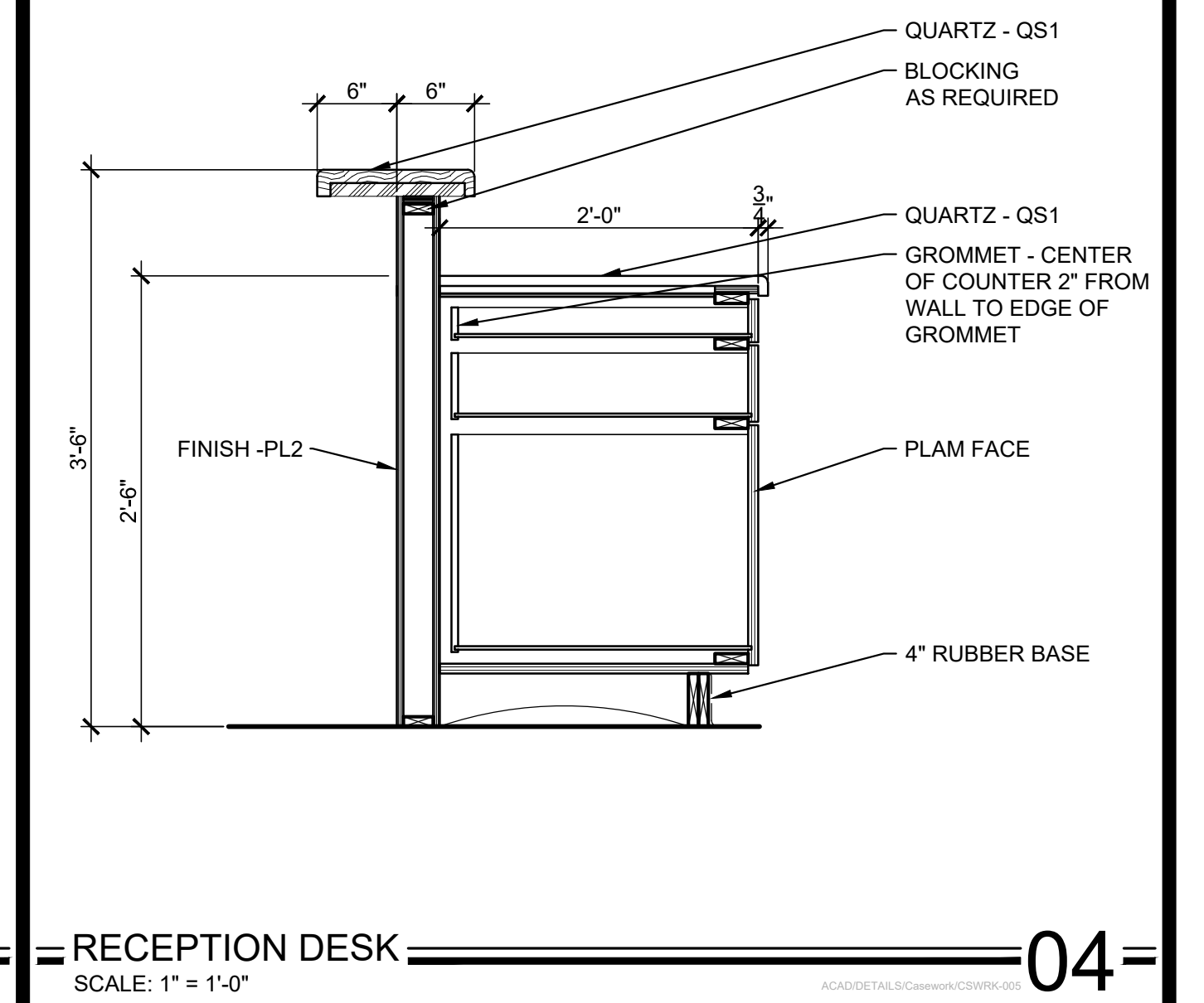
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INTERIOR ELEVATIONS
A3.01
CONSTRUCTION DOCUMENTS





NOT USED
SCALE: 3" = 1'-0"

NOT USED
SCALE: 3" = 1'-0"

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SCALE: 3" = 1'-0"

**SECTION 01.001
BASIC REQUIREMENTS**

PART 1 GENERAL

- 1.01 GOVERNING LAW
- A. All work shall be performed in accordance applicable requirements of the following:
 - ADA, latest edition
 - ANSI latest edition
 - 2012 International Building Code
 - 2012 International Mechanical Code
 - 2012 International Plumbing Code
 - 2011 National Electrical Code
 - Uniform Fire Code (and Local amendments)
- 1.02 COORDINATION
- A. Coordinate scheduling, submittals, the various areas of work to assure efficient & Orderly sequence of constructions with provisions for items installed later.
- B. Verify that utility requirements of operating equipment are compatible with building utilities. Coordinate work having interdependent responsibilities for installing, connecting, placing in service, such as equipment.
- 1.03 CUTTING AND PATCHING
- A. Employ experienced installer to perform cutting and patching new Work, & restore work with new Products.
- B. Submit written request in advance of cutting or altering structural or building enclosure elements.
- C. Fit Work tight to adjacent elements. Maintain integrity of wall, ceiling or floor construction completely seal voids.
- D. Finish surfaces to match adjacent finishes.
- 1.04 CONFERENCES (as required by Owner)
- 1.05 SUBMITTAL PROCEDURES
- A. Transmit submittal with a different sequential number, coordinate submittals of related items.
- 1.06 SHOP DRAWINGS
- A. Provide a minimum of (6) copies.
- 1.07 PRODUCT DATA
- A. Provide a minimum of (6) copies.
- B. Mark each copy to identify products, models, and other data. Supplement manufacturers standard data to provide information unique to this project.
- 1.08 SAMPLES
- A. Submit samples to illustrate functional and aesthetic characteristics of the Product.
- B. Submit samples of finishes from the full range of mfr's standard color, textures, and patterns unless otherwise indicated or specified herein.
- 1.09 MANUFACTURER'S INSTRUCTIONS
- A. When specified in individual specification Sections, submit mfr's printed instructions for storage, assembly storage, assembly, installation, start-up, and adjusting.
- B. Indicate materials or Product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- 1.10 MANUFACTURER'S CERTIFICATES
- A. Submit manufacturers' certificate to Owner for review, in quantities specified for Product data.
- B. Indicate material or Product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- 1.11 QUALITY ASSURANCE
- A. Monitor quality control over suppliers, mfr's, products, services, site conditions, & workmanship, to produce work specified quality.
- B. Comply fully with mfr's instructions, including each step in sequence.
- C. Should mfr's instructions conflict w/Contract Documents, request clarification from Architect before proceeding.
- D. Comply w/specified standards as a minimum quality for work when more stringent tolerances, codes, or spec'd requirements indicate higher standards or more precise workmanship.
- E. Perform work by persons qualified & experienced to produce workmanship of specified quality.
- F. Secure products in place w/ positive anchorage devices designed and sized to withstand stresses, physical distortion or disfigurement or match surrounding finishes.

1.12 REFERENCES

- A. Conform to reference standard by date of issue current as of date of Contract Documents.
- B. Should specified reference standard conflict w/ Construction Documents, request clarification from Architect before proceeding.
- 1.13 INSPECTION & TESTING LABORATORY SERVICES
- A. Owner will appoint and employ services of an independent firm to perform inspection and testing.
- B. The independent firm will perform inspections, tests, and other services as required.
- C. Cooperate with independent firm, furnish samples and access to work as requested.
- D. Retesting required because of non-conformance to specified requirements will be charged to the Contractor.
- 1.14 PROTECTION OF INSTALLED WORK
- A. Protect installed Work & provide protection where specifications in individual spec. sections.
- B. Prohibit traffic or storage upon waterproofed or roofed surfaces.
- 1.15 SECURITY (By contractor)
- A. Provide security and facilities to protect Work.
- 1.16 PROGRESS CLEANING
- A. Maintain areas free of waste materials, and debris.
- B. Maintain site in clean & orderly condition at all times.
- 1.17 PRODUCTS
- A. Products: Means new material, components, equipment, fixtures, and systems forming the work, but does not include machinery & equipment used for preparation, fabrication, conveying and erection of the Work.
- B. Use interchangeable components of the same mfr. for similar components.
- 1.18 STARTING SYSTEMS
- A. Provide seven (7) days notification to Owner & independent testing firm prior to start-up.
- B. Ensure that each piece of equipment of system is ready for operation.
- C. Execute start-up under supervision of responsible persons in accord with manufacturers' instructions.
- D. Submit a written report that equipment or system has been properly installed & is functioning correctly.
- 1.19 DEMONSTRATION AND INSTRUCTIONS
- A. Demonstrate operation & maintenance of Products to Owner's personnel two weeks prior to date of final inspection.
- B. For equipment or systems requiring seasonal operation perform demonstration for other season within (9) months.
- 1.20 TESTING, ADJUSTING, AND BALANCING
- *BY CONTRACTOR - COORDINATE WITH SHEET M0.00 PART 3B.
- 1.21 CONTRACT CLOSEOUT PROCEDURES
- A. Submit written that Contract Documents have been reviewed, Work has been inspected & Work is complete in accord with Contract Documents & ready for Owner inspection.
- B. Provide submittals to Owner/Contractor that are required by governing or other authorities.
- C. Submit final Application for Payment Identifying total adjusted Contract Sum, previous payments and sum remaining due.
- 1.22 FINAL CLEANING
- A. Execute final cleaning prior to final inspection.
- B. Clean interior & exterior glass & surfaces exposed to view, remove temporary labels, stains, foreign substances, polish transparent & glossy surface, vacuum carpeted and soft surfaces.
- C. Replace filter of operating equipment.
- 1.23 ADJUSTING
- A. Adjust operating products and equipment to ensure smooth and unhindered operation.
- 1.24 PROJECT RECORD DOCUMENTS
- A. Maintain on site, one set of the following record documents, record actual revisions to the Work:
 - 1. Contract Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders & other Modifications to Contract s
 - 5. Reviewed shop drawings, product data, and samples.
- B. Store Record Documents separate from documents used for construction.
- C. Record information concurrent w/construction progress.
- D. Specifications: Legibly mark & record at each Product section description of actual products
- E. Record Documents & Shop Drawings: Legibly mark each item to actual construction.
- F. Delete Architect/Engineer title block and seal from all documents.
- G. Submit all documents to Owner/Contractor w/claim for Final Application for Payment.

1.25 OPERATION AND MAINTENANCE DATA

- A. Submit two (2) sets prior to final inspection.
- 1.26 WARRANTIES
- A. Provide duplicate notarized copies.
- B. Execute and assemble documents from suppliers and manufacturers.
- C. Submit prior to final Application for Payment.
- 1.27 SPARE PARTS AND MAINTENANCE MATERIALS
- A. Provide Products, spare parts, maintenance and extra materials in quantities specified in individual specification sections.
- B. Deliver to project site as directed by Owner: Owner obtain receipt prior to final payment.

**SECTION 02.220
SELECTIVE DEMOLITION**

PART 1 GENERAL

- 1.1 SUMMARY
- A. Section Includes: Removal of materials and equipment, including, but not limited to:
 - 1. Designated portions of building structure required to accommodate new construction.
 - 2. Removal of temporary partitions, fencing, and protections.
 - 3. Identification of utilities.
 - 4. Capping and removal of designated utilities.
 - 5. Relocation of existing utilities.
 - 6. Legal and environmentally safe off site disposal or recycling of construction debris.
- 1.2 QUALITY ASSURANCE
- A. Regulatory Requirements:
 - 1. Conform to applicable federal, state, and local codes for demolition work, safety of structure, dust control, and debris removal.
 - 2. Obtain required permits from authorities.
 - 3. ANSI 106 Safety Requirements for Demolition.
 - 4. Requirements of affected utility companies.
 - 5. Structural Integrity: Maintain structural integrity to existing building.
- 1.3 PROJECT CONDITIONS
- A. Occupancy: Owner will occupy adjacent portions of the building. Conduct work to minimize disruption of Owner's normal operations. Provide minimum of 72 hours prior written notice to Owner when activities affect Owner's normal operations.
- B. Condition of Structures: Owner assumes no responsibility for actual condition of items or structures to be demolished.
- C. Protections: Provide temporary barriers to protect Owner's personnel and public from injury from work.
- 1. Take required protective measures to provide free and safe passage to occupied portions of building.
- 2. Erect temporary passageways as required by authorities having jurisdiction.
- 3. Provide shoring, bracing, or support to prevent movement, settlement, or collapse of structure or element to be demolished and adjacent facilities or work to remain.
- 4. Protect existing work which becomes exposed during demolition operations.
- 5. Construct temporary partitions to separate areas from noisy or extensive dirt or dust operations are performed. Equip partitions with dustproof doors and security locks.
- 6. Provide temporary weather protection when exposing exterior conditions to prevent water leakage or damage to structure or interior areas of existing building.
- 7. Remove partitions at completion of work.
- D. Damages: Promptly repair damages caused to adjacent facilities by demolition work.
- E. Traffic: Conduct operations and debris removal to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities.
- 1. Do not close, block, or otherwise obstruct streets, walks, or occupied or used facilities without written permission of local authorities having jurisdiction. Provide alternate routes around obstructed traffic ways.
- F. Explosives: Explosives are not permitted at the site.
- G. Flame Cutting: Do not use cutting torches for removal until flammable materials are removed. At concealed spaces, verify conditions prior to flame cutting operations. Maintain portable fire suppression devices during flame cutting operations.
- H. Utility Services: Maintain existing utilities and protect against damage during demolition operations.
 - 1. Do not interrupt utilities serving occupied or used facilities, except when authorized in writing by the Owner and authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, acceptable to Owner and governing authorities.
- I. Fire Protection: Maintain fire protection services during selective demolition operations.
- J. Environmental Controls: Use water sprinkling, temporary enclosures, or other acceptable methods to limit dust and dirt migration. Comply with governing regulations pertaining to environmental protection.

PART 2 PRODUCTS

- Not used.
- PART 3 EXECUTION**
- 3.1 PREPARATION
- A. Provide shoring, bracing, or support to prevent movement, settlement, or collapse.
- B. Cover and protect equipment and fixtures from solage or damage as necessary.
- C. Temporary Partitions and Protections: Erect and maintain dust proof partitions and closures to prevent spread of dust or fumes to occupied portions of the building.
 - 1. Construct dust proof partitions of minimum 4 inch studs, 5/8 inch drywall (joints taped) on occupied side. 1/2 inch fire retardant plywood on demolition side. Fill partition cavity with sound deadening insulation.
 - 2. Provide weatherproof closures for exterior openings resulting from demolished work.
- D. Locate, identify, stub off, and disconnect or relocate utility services indicated to remain.
 - 1. Provide bypass connections to maintain services to occupied areas.
- 3.2 DEMOLITION REQUIREMENTS
- A. Conduct demolition to minimize interference with occupied building areas.
- B. Cease operations immediately if structure appears to be in danger and notify Architect. Do not resume operations until directed.
- C. Provide services for effective air and water pollution controls required by local authorities having jurisdiction.
- 3.3 DEMOLITION
- A. Perform demolition activities in a systematic manner.
- B. Completely fill below grade areas and voids resulting from demolition work. Provide fill consisting of approved earth, gravel, or sand, free of trash and debris, stones over 6 (150mm) inches in diameter, roots, or other organic matter.
- C. Cut existing exterior walls for new doors, windows, or other openings indicated. Leave openings ready to receive new work or patching.
- D. If unanticipated mechanical, electrical, or structural elements conflicting with intended function or design are encountered, investigate and measure both nature and extent of the conflict. Submit report to Owner in written, accurate detail. Pending receipt of directive from Owner, rearrange demolition schedule as necessary to continue overall job progress without undue delay.
- 3.4 DISPOSAL OF DEMOLISHED MATERIALS
- A. Remove from site, debris, rubbish, and other materials resulting from operations. Transport and legally dispose off site.
 - 1. If hazardous materials are encountered during demolition operations, comply with applicable regulations, laws, and ordinances concerning removal, handling, and protection against exposure or environmental pollution.
 - 2. Burning of removed materials is not permitted on project site.
 - 3. Where possible, make use of recycling services and centers for demolished materials.
- 3.5 CLEANUP AND REPAIR
- A. Upon completion of work, remove tools, equipment, and demolished materials from site. Remove protections and leave interior areas broom clean.
 - 1. Repair demolition performed in excess of required at no expense to Owner. Return construction and surfaces to condition existing prior to start operations. Repair adjacent construction or surfaces soiled or damaged by work.
- B. Do not permit rubbish and debris to accumulate. Clean and sweep building areas, roads, streets, drives, parking lots, sidewalks, adjoining properties, and areas affected by demolition operation on a daily basis.
- C. Remove temporary protections and barriers.

**SECTION 07.900
JOINT SEALERS**

PART 1 GENERAL

- 1.01 SECTION INCLUDES
- A. Preparing sealant substrate surfaces.
- B. Sealant and backing.
- PART 2 PRODUCTS**
- 2.01 SEALANTS
- A. See schedule below.
- 2.02 ACCESSORIES
- A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.
- B. Joint Cleaner: Non-corrosive & non-staining type, recommend by sealant mfr.: compatible with joint forming materials.
- C. Joint Backing: As recommended by sealant mfr.
- D. Bond Breaker: Pressure sensitive tape recommend by sealant mfr to suit application.
- PART 3 EXECUTION**
- 3.01 EXAMINATION
- A. Verify surfaces are ready to receive work.
- B. Beginning of installation means installer accepts existing surfaces.
- 3.02 PREPARATION
- A. Clean and prime joints in accordance with mfrs instructions.
- 3.03 INSTALLATION
- A. Install sealant in accord w/mfr's instructions.
- 3.04 CLEANING AND REPAIRING
- A. Clean adjacent soiled surfaces.
- B. Replace defaces or disfigured finishes caused by work of this Section.
- 3.05 PROTECTION OF FINISHED WORK
- A. Protect joints until cured.
- 3.06 SCHEDULE OF SEALANTS (products equal to the following):
- A. SEALANT TYPE I:
 - Polyurethane, single component chemical cure, non-sagging, movement class 25.
 - TYPICAL Uses: Small exterior/interior vert. & horiz. perimeter joints between metals, or between metals, or between metal masonry, reglets, flashing, and counter-flashing. (Minimum joint width ½", minimum depth ¾")
- B. SEALANT TYPE 2:
 - General purpose glazing silicone, one-component neutral curing, non-sag, movement class 50.
 - TYPICAL Uses: Interior joints at plumbing fixtures, etc; interior vertical joints in tile, plastic laminates in wet areas. (Limitations: glazing applications)
- C. SEALANT TYPE 3:
 - Fungus resistant, one component silicone, non-sag, movement class 25
 - TYPICAL Uses: Interior joints at plumbing fixtures, etc; interior vertical joints in tile, plastic laminates in wet areas. (Limitations: glazing applications)
- D. SEALANT TYPE 4:
 - One component acrylic latex, non-sag, paintable. USES: Interior joints, dry locations subject to not more than 5% movement. Such as non-moving joints in gyp/bd. Or plaster can be painted. (Limitations: Interior dry non-moving joints)
- E. SEALANT TYPE 5:
 - One component acrylic latex, solvent release curing, non-hardening, non-migrating polyisobutylene polymer base.

**SECTION 087100
DOOR HARDWARE**

PART 1 - GENERAL

- 1.1 RELATED DOCUMENTS
- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- 1.2 SUMMARY
- A. This Section includes commercial door hardware for the following:
 - 1. Swinging doors.
 - 2. Door hardware includes, but is not necessarily limited to, the following:
 - 1. Mechanical door hardware.
 - 2. Cylinders specified for doors in other sections.
- C. Related Sections:
 - 1. Division 08 Section "Door Hardware Schedule".
 - 2. Division 08 Section "Hollow Metal Doors and Frames".
 - 3. Division 08 Section "Aluminum-Framed Entrances and Storefronts".
 - 4. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.
 - 1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
 - 2. ICC/BC - International Building Code.
 - 3. NFPA 80 - Fire Doors and Windows.
 - 4. NFPA 101 - Life Safety Code.
 - 5. NFPA 105 - Installation of Smoke Door Assemblies.
 - 6. State Building Codes, Local Amendments.
 - E. Standards: All hardware specified herein shall comply with the following industry standards:
 - 1. ANSI/BHMA Certified Product Standards - A156 Series
 - 2. UL10C - Positive Pressure Fire Tests of Door Assemblies
 - 1.3 SUBMITTALS
 - A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.
 - B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
 - 1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule".
 - 2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.
 - 3. Content: include the following information:
 - a. Type, style, function, size, label, hand, and finish of each door hardware item.
 - b. Manufacturer of each item.
 - c. Fastenings and other pertinent information.
 - d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
 - e. Explanation of abbreviations, symbols, and codes contained in schedule.
 - f. Mounting locations for door hardware.
 - g. Door and frame sizes and materials.
 - 4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.
 - 5. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01. Closeout Submittals: The manual to include the name, address, and contact information of the manufacturers providing the hardware and their nearest service representatives. The final copies delivered after completion of the installation test to include "as built" modifications made during installation, checkout, and acceptance.
 - E. Warranties and Maintenance: Special warranties and maintenance agreements specified in this Section.

1.4 QUALITY ASSURANCE

- A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.
- B. Installer Qualifications: Installers, trained by the primary product manufacturers, with a minimum 3 years documented experience installing both standard and electrified builders hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- C. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor in good standing by the manufacturer of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.
- 1. Scheduling Responsibility: Preparation of door hardware and keying schedules.
- D. Source Limitations: Obtain each type and variety of Door Hardware specified in this Section from a single source, qualified supplier unless otherwise indicated.
 - 1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.
 - 2. Provide electromechanical door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated.
- E. Regulatory Requirements: Comply with NFPA 70, NFPA 80, NFPA 101 and ANSI A117.1 requirements and guidelines as directed in the model building code including, but not limited to, the following:
 - 1. NFPA 70 "National Electrical Code", including electrical components, devices, and accessories listed and labeled as defined in Article 100 by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
 - 2. Where indicated to comply with accessibility requirements, comply with Americans with Disabilities Act (ADA), "Accessibility Guidelines for Buildings and Facilities (ADAAG)", ANSI A117.1 as follows:
 - a. Handles, Pulls, Latches, Locks, and Other Operating Devices: Shape that is easy to grasp with one hand and does not require tight grasping, tight pinching, or twisting of the wrist.
 - b. Door Closers: Comply with the following maximum opening-force requirements indicated:
 - 1) Interior Hinged Doors: 5 lbf applied perpendicular to door.
 - 2) Fire Doors: Minimum opening force allowable by authorities having jurisdiction.
 - c. Thresholds: Not more than 1/2 inch high. Bevel raised thresholds with a slope of not more than 1:2.
 - 3. NFPA 101: Comply with the following for means of egress doors:
 - a. Latches, Locks, and Exit Devices: Not more than 15 lbf to release the latch. Locks shall not require the use of a key, tool, or special knowledge or operation.
 - b. Thresholds: Not more than 1/2 inch high.
 - 4. Fire-Rated Door Assemblies: Provide door hardware for assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to NFPA 252 (neutral pressure at 40" above sill) or UL-10C.
 - a. Test Pressure: Positive pressure labeling.
 - F. Each unit to bear third party permanent label demonstrating compliance with the referenced standards.
 - G. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:
 - 1. Function of building, purpose of each area and degree of security required.
 - 2. Plans for existing and future key system expansion.
 - 3. Requirements for key control storage and software.
 - 4. Address and requirements for delivery of keys.
 - H. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.
- B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.
- C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".
- 1.6 COORDINATION
- A. Templates: Obtain and distribute to the pactionaries involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.
- B. Door Hardware and Electrical Connections: Coordinate the layout and installation of scheduled electrified door hardware and related access control equipment with required connections to source power junction boxes, low voltage power supplies, detection and monitoring hardware, and fire and detection alarm systems.
- C. Door and Frame Preparation: Related Division 08 Sections (Steel, Aluminum and Wood) doors and corresponding frames are to be prepared, reinforced and primed (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.7 WARRANTY

- A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:
 - 1. Structural failures including excessive deflection, cracking, or breakage.
 - 2. Faulty operation of the hardware.
 - 3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - 4. Electrical component defects and failures within the systems operation.
- C. Standard Warranty Period: One year from date of Substantial Completion, unless otherwise indicated.
- D. Special Warranty Periods:
 - 1. Twenty five years for manual surface door closers.
- 1.8 MAINTENANCE SERVICE
- A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as their use is necessary for continued adjustment, maintenance, and removal and replacement of door hardware.
- B. Continuing Service: Beginning at Substantial Completion, and running concurrent with the specified warranty period, provide continuous (6) months full maintenance including repair and replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper door opening operation. Provide parts and supplies required in the manufacture and installation of original products.

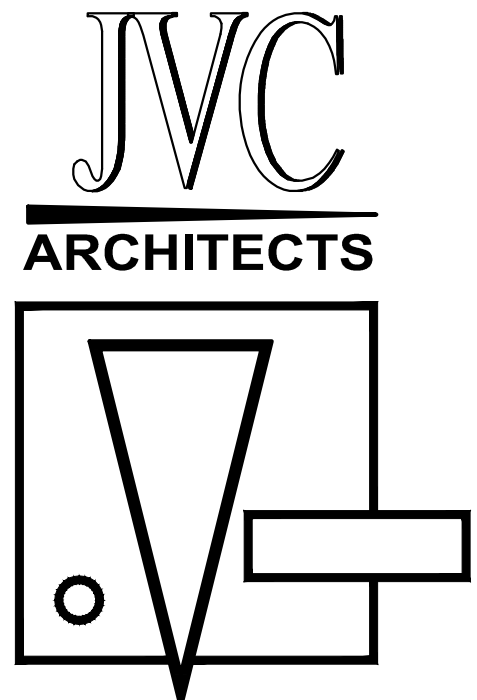
PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

- A. General: Provide door hardware for each door to comply with requirements in Door Hardware Sets and each referenced section that products are to be supplied under:
 - 1. Designations: Requirements for quantity, item, size, finish or color, grade, function, and other distinctive quantities of each type of door hardware are indicated in the Door Hardware Sets at the end of Part 3. Products are identified by using door hardware designations, as follows:
 - a. Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required for the purpose of establishing requirements. Manufacturers' names are abbreviated in the Door Hardware Schedule.
 - b. Substitutions: Requests for substitution and product approval for inclusive mechanical and electromechanical door hardware in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in Division 01, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated consultants.
- 2.2 HANGING DEVICES
- A. Hinges: ANSI/BHMA 1156.1 certified butt hinges with number of hinge knuckles as specified in the Door Hardware Sets.
 - 1. Quantity: Provide the following hinge quantity, unless otherwise indicated:
 - a. Two Hinges: For doors with heights up to 60 inches.
 - b. Three Hinges: For door with heights 61 to 90 inches.
 - c. Four hinges to be minimum 8" in length and 1 1/2" in height.
 - d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.
 - 2. Hinge Size: Provide the following unless otherwise indicated, with hinge widths sized for door thickness and accessories required:
 - a. Widths up to 3'-0" : 4-½" standard or heavy weight as specified.
 - b. Widths up to 3'-1" to 4'-0" : 5" standard or heavy weight as specified.
 - 3. Hinge Weight and Base Material: Unless otherwise indicated, provide as following:
 - a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.
 - b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.
 - 4. Keying Options: Comply with the following where indicated in the Hardware Set or on Drawings:
 - a. Non-removable Pins: Provide set screw in hinge barrel when tightened into a groove in hinge pins, prevents removal of pin while door is closed for the following applications:
 - 1) Out-swinging doors.
 - 2) Out-swinging recess controlled doors.
 - 3) Out-swinging lockable doors.
- 5. Acceptable Manufacturers:
 - a. Bommer Industries (BO).
 - b. McKinney Products (MK).
- 2.3 DOOR OPERATING TRIM
- A. Finish Bolts and Surface Bolts: ANSI/BHMA A156.3 and A156.16, Grade 1, certified automatic, self-latching and manual finish bolts and surface bolts. Manual finish bolts to be furnished with top rod of sufficient length to allow both lock assemblies approximately six feet from the floor. Furnish dust proof strikers for bottom bolts. Surface bolts to be minimum 8" in length and U.L. listed for labeled fire doors and U.L. listed for windstorm components where applicable. Provide related accessories (mounting brackets, strikers, coordinators, etc.) as required for appropriate installation and operations.
 - 1. Acceptable Manufacturers:
 - a. Rockwood Manufacturers (RO):
- 2.4 CYLINDERS AND KEYING
- A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.
- B. Source Limitations: Obtain each type of keyed cylinder and keys from the same source manufacturer as locksets and exit devices, unless otherwise indicated.
- C. Cylinders: Original manufacturer cylinders complying with the following:
 - 1. Mortise Type: Threaded cylinders with rings and straight- or clover-type cam.
 - 2. Rim Type: Cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
 - 3. Bored-Lock Type: Cylinders with tailpieces to suit locks.
 - 4. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
- 5. Keyway: Match Facility Standard.
- D. Keying System: Each type of lock and cylinders to be factory keyed. Conduct specified "Keying Conference" to define and document keying system instructions and requirements. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner. Incorporate decisions made in keying conference, as follows:
 - 1. Master Key System: Cylinders are operated by a change key and a master key.
 - 2. Grand Master Key System: Cylinders are operated by a change key, a master key, and a grand master key.
 - 3. Great-Grand Master Key System: Cylinders are operated by a change key, a master key, a grand master key, and a great-grand master key.
 - 4. Existing System: Master key or grand master key locks to Owner's existing system.
 - 5. Keyed Alike: Key all cylinders to same change key.
- E. Key Quantity: Provide the following minimum number of keys:
 - 1. Top Master Key: One (1)
 - 2. Change Keys per Cylinder: Two (2)
 - 3. Master Keys (per Master Key Group): Two (2)
 - 4. Grand Master Keys (per Grand Master Key Group): Two (2)
 - 5. Construction Keys (where required): Ten (10)
 - 6. Construction Control Keys (where required): Two (2)
 - 7. Permanent Control Keys (where required): Two (2)
- F. Construction Keying: Provide construction master keyed cylinders or temporary keyed construction cores where specified. Provide construction master keys in quantity as required by project Contractor. Replace construction cores with permanent cores. Furnish permanent cores for installation as directed under specified "Keying Conference".
- G. Key Registration List: Provide keying transcript list to Owner's representative in the proper format for importing into key control software.

2.5 MECHANICAL LOCKS AND LATCHING DEVICES

- A. Mortise Locksets, Grade 1 (Commercial Duty): ANSI/BHMA A156.13, Series 1000, Operational Grade 1 certified mortise locksets furnished as specified in the Hardware Sets. Locksets to be manufactured with a single sized steel case, closed on sides and back, and be field-reversible for handing without disassembly of the lock body. Locket trim (including knobs, levers, escutcheons, roses) to be the product of a single manufacturer. Furnish with standard 2-½" backset, ¾" one-piece stainless steel latchbolt and a full 1" throw hardened steel bolt for deadbolt functions.
- 1. Acceptable Manufacturers:
 - a. Schlage (SC) - L9000 Series.
- B. Lock Trim Design: As specified in Hardware Sets.
- 2.6 LOCK AND LATCH STRIKES
- A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to pre-set frame, finished to match door hardware set, unless otherwise indicated and as follows:
 - 1. Flat-Lip Strikes: For locks with three-piece anti-friction latchbolts, as recommended by manufacturer.
 - 2. Extra-Long-Lip Strikes: For locks used on frames with supplied wood casing trim.
 - 3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
- B. Standards: Comply with the following:
 - 1. Strikes for Mortise Locks and Latches: BHMA A156.13.
 - 2. Strikes for Bore Locks and Latches: BHMA A156.2.
 - 3. Strikes for Auxillary Deadlocks: BHMA A156.5.
 - 4. Dustproof Strikes: BHMA A156.16.



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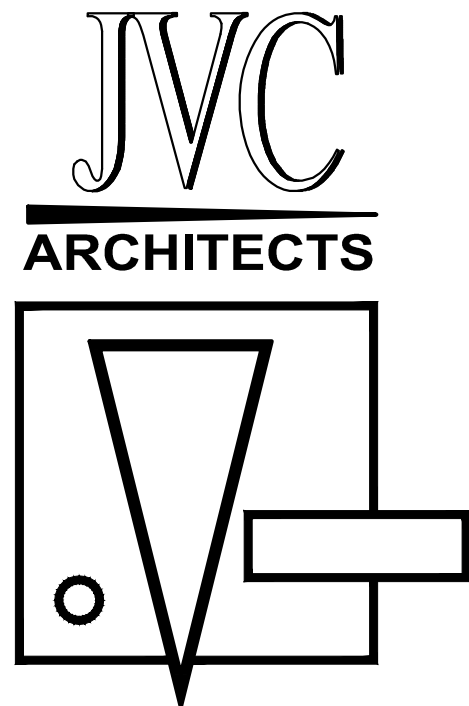
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SPECIFICATIONS

A5.01

CONSTRUCTION DOCUMENTS



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SPECIFICATIONS

A5.02

CONSTRUCTION DOCUMENTS

2016 JVC ARCHITECTS DRAWINGS ARE THE PROPERTY OF JVC ARCHITECTS AND SHALL NOT BE REPRODUCED WITHOUT PERMISSION OF THE ARCHITECTS

**SECTION 09511
 SUSPENDED ACOUSTICAL CEILINGS**

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Suspended metal grid ceiling system.
- B. Acoustical tile panels, standard type.

1.02 SUBMITTALS

- A. Provide product data on metal grid system components and acoustic units.
- B. Submit samples of ceiling panels for Owner selection.
- C. Submit samples illustrating material & finish of each acoustic unit.

1.03 SEQUENCING/SCHEDULING

- A. Do not install acoustical ceilings until bldg. is enclosed, heat is provided, dust generating activities have terminated, overhead work completed, tested and approved.
- B. Schedule installation of acoustic units after interior wet work is dry.

1.04 EXTRA MATERIALS

- A. Provide 2 cases of each size, color and style of acoustical units selected.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS - SUSPENSION

- A. Down
- B. Chicago Metallic
- C. Substitutions: Approved by Owner

2.02 SUSPENSION SYSTEM MATERIALS

- A. Standard Grid: ASTM C635, heavy duty, two directional exposed T components die cut and interlocking.
- B. Accessories: Stabilizer bars, splices w/ edge moldings required for suspended grid system.
- C. Grid Materials: Commercial quality cold rolled steel galvanized coating.
- D. Grid Finish: Custom & Standard colors as selected by Owner.
- E. Support Channels & Hangers: Galv. Steel, size & type to suit application, rigidly secure acoustic ceiling system mech. & elec. With maximum deflection of 1/360.
- F. Provide hold down clips in all entries, vestibules and for a 15 foot radius at the entrance each room.

2.03 ACCEPTABLE MANUF. - PANEL UNITS

- A. Armstrong
- B. Celotex
- C. USG Interior

2.04 ACOUSTIC PANEL UNIT MATERIALS

- A. Acoustic Panels: Standard sized units. Design and finish as selected by Owner.

PART 3 EXECUTION

3.01 INSPECTION

- A. Verify that existing conditions are ready to receive work.
- B. Verify that layout of hangers won't interfere with other work.
- C. Beginning of installation means acceptance of existing conditions.

3.02 INSTALLATION

- A. Install system in accord w/mfr's instructions.
- B. Install hangers & bracing in accord with ICBO Report 262.

**SECTION 10440
 INTERIOR SIGNAGE**

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Requirements including but not limited to:
 - 1. Interior panel signage for room identification.
 - 2. Accessories required for a complete installation.

1.2 QUALITY ASSURANCE

- A. Regulatory Requirements:
 - 1. Disability Requirements: Comply with applicable requirements for the American Disabilities Act: Accessibility Guidelines (ADAAG) for Buildings and Facilities; Final Guidelines and updates.

1.3 SUBMITTALS

- A. Samples:
 - 1. Panel Signs: Sign components for selection of color, pattern and surface texture as required and for verification of compliance with requirements indicated.
 - 2. Dimensional Letters: Provide full-size representative samples of each dimensional letter type required, showing letter style, color, and material finish and method of attachment.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Manufacturers: Provide products complying with requirements of one of the following:
 - Best Manufacturing Company
 - ASI Sign Systems, Inc.
 - Spanjer Brothers, Inc.
 - The Supersine Company.
 - Vomar Products, Inc.
- B. Cast Acrylic Sheet: Cast (not extruded or continuous cast) methyl methacrylate monomer plastic sheet, in sizes and thicknesses indicated, with a minimum flexural strength of 16,000 psi when tested according to ASTM D 790, and of the following general types:
 - 1. Transparent Sheet: Where sheet material is indicated as clear, provide colorless sheet in matte finish, with light transmittance of 92 percent, when tested according to the requirements of ASTM D 1003.
 - 2. White Translucent Sheet: Where sheet material is indicated as white, provide white translucent sheet of density required to produce uniform brightness and minimum halation effects.
 - 3. Opaque Sheet: Where sheet material is indicated as opaque, provide colored opaque acrylic sheet in colors and finishes indicated.
- C. Fasteners: Recommended by manufacturer for substrate.

2.2 FABRICATION

- A. Panel Signs: Fabricate one piece molded plastic frame, changeable plaques, edges mechanically and smoothly finished.
 - 1. Edge Condition: Bull nose.
 - 2. Corner Condition: Corners rounded to radius indicated.
 - 3. For signage at permanent public locations (i.e. toilet rooms), provide signage with characters, symbols, or pictographs raised 1/32 inch and bearing appropriate braille designations.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install units plumb and level, in locations and with mountings shown. Securely attach in accordance with the manufacturer's installation instructions.
 - B. Plastic Wall/Door Mounted Signs: Attach panel signs to wall surfaces.
- 1. Silicone Adhesive Mounting: Use liquid silicone adhesive recommended by the sign manufacturer to attach sign units to irregular, porous, or vinyl covered surfaces. Use double sided vinyl tape where recommended by the sign manufacturer to hold the sign in place until the adhesive has fully cured.

E3.8 DOOR HARDWARE SCHEDULE

A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.

B. Manufacturer's Abbreviations:

- 1. MK - McKinney
- 2. RO - Rockwood
- 3. SC - Schlage
- 4. FA - Falcon
- 5. LC - LCN Closers
- 6. PE - Pemco

**SECTION
 Hardware Schedule**

Set: 01

| | | | | |
|--------------------|------------------------|-------|----|--------|
| Doors: 211A, 211B | | | | |
| 3 Hinge | TA2714 4-1/2" X 4-1/2" | US26D | MK | 087100 |
| 1 Cylindrical Lock | BAU 54071N K600 | 626 | YA | 087100 |
| 1 Door Closer | R 7500 | 689 | NO | 087100 |
| 1 Door Stop | 406 | US32D | RO | 087100 |

**SECTION 09111
 METAL STUD FRAMING SYSTEM
 (OPTIONAL FOR WOOD STUDS)**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Formed metal stud framing.
- B. Framing accessories.

1.02 RELATED SECTIONS

- A. Section 09260 - Gypsum Board Systems

1.03 SYSTEM DESCRIPTION

- A. Metal stud framing system & accessories for interior walls.
- B. Design system to accommodate construction tolerances, deflection of building structural members & clearances of intended openings.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable manufacturers:
 - 1. Western Steel Framing Systems
 - 2. American Stucco, Inc.
 - 3. Angeles Stud

2.02 STUD FRAMING MATERIALS

- A. Studs: ANSI/ASTM A591, electrogalv., non-load bearing rolled steel, channel shaped, punched for utility access.
 - 1. Width: Indicated on drawings
 - 2. Thickness: 24 gage as required by Owner.
- B. Runners: Of same material and finish as studs, bent leg retainer notched to receive studs. Ceiling runners with extended legs.
- C. Furring & Bracing Members: Of same material and finish as stud thickness to suit purpose.
- D. Fasteners: Self-drilling, self-tapping screws.
- E. Anchorage Devices: Power Driven

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify conditions are ready to receive work.
- B. Verify field measurements.
- C. Verify rough-in utilities are in proper location.
- D. Beginning of installation means installer accepts existing conditions.

3.02 ERECTION

- A. Align and secure top and bottom runners at 16 inches o.c.
- B. Runners under & above openings: secure intermediate studs at spacing of wall studs.
- C. Install studs vert. at 16 inches o.c. Place two beads of acoustic sealant between studs & adjacent vertical surfaces.
- D. Connect studs to tracks using mechanical fastener method.
- E. Stud splicing not permissible.
- F. Construct corners using minimum three studs.
- G. Double studs at wall openings, door jams, & not more than 2 inches each side of openings.
- H. Brace stud framing system to substrate at 48" o.c. and make rigid.
- I. Coordinate erection of studs w/requirements of door frame supports and attachments.
- J. Align stud web openings.
- K. Coordinate installation of bucks, anchors & blocking for toilet room accessories, casework, railings & other required room accessories, casework, door stops, railings & required attachments, & with electrical & mechanical work to be placed in or behind stud framing.
- L. Blocking: Secure steel channels to studs. Install blocking for support of hardware and rigidity.
- M. Refer to dwgs for indication of partitions extending to structure above. Maintain clear under structural to structure above. Maintain clearance under structural building members to avoid deflection transfer to studs.

**SECTION 09260
 GYPSUM BOARD SYSTEMS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Gypsum board with taped & sanded joint treatment.
- B. See Drawings for drywall finish requirements.

1.02 QUALITY ASSURANCE

- A. Perform Work in accord w/GA201 and GA216.

PART 2 PRODUCTS

2.01 GYPSUM BOARD SYSTEM

- A. Manufacturers:
 - 1. Celotex Corp.
 - 2. Flintkote Company
 - 3. USG Corp.
- B. Fasteners: ASTM C646, screws.
- C. All Gypsum Board Types: 5/8" thick, Max. permissible length, ends square, cut & tapered edges.
 - 1. Fire Code core, Type X, ASTM C56
 - 2. "W/R" Moisture Resistant Type: ANSI/ASTM C630, "Green Board."

2.02 ACCESSORIES

- A. Corner Beads: Metal
- B. Edge Trim: According to mfr's recommendations.
- C. Joint Materials: According to mfr's recommendations.
- D. Adhesive: According to mfr's recommendation.

PART 3 EXECUTION

3.01 INSTALLATION - GYPSUM BOARD

- A. Install gypsum board in accord w/manufacturers instructions.
 - B. Fasten gypsum board to furring or framing with screws.
 - C. Place control joints consistent w/lines of building.
 - D. Place corner beads at external corners. Use longest length.
 - E. Place edges trim where gypsum bd. Abuts dissimilar materials.

3.02 JOINT TREATMENT

- A. Tape, fill, and sand exposed joints, edges & corners to produce smooth surface ready to receive finishes.

2.7 DOOR CLOSERS

- A. All door closers specified herein shall meet or exceed the following criteria:
 - 1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers including installation and adjusting information on inside of cover.
 - 2. Standards: Closers to comply with UL-10C and UBC 7-2 for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.
 - 3. Cycle Testing: Provide closers which have surpassed 15 million cycles in a test witnessed and verified by UL.
 - 4. Size of Units: Closers to be of manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the physically handicapped, provide units complying with ANSI ICC/A117.1.
 - 5. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.
 - a. Where closers are indicated to have mechanical dead-stop, provide heavy duty arms and brackets with an integral positive stop.
 - b. Where closers are indicated to have mechanical hold open, provide heavy duty units with an additional built-in mechanical holder assembly designed to hold open against normal wind and traffic conditions. Holder to be manually selectable to on-off position.
 - c. Where closers are indicated to have a cushion-type stop, provide heavy duty arms and brackets with spring stop mechanism to cushion door when opened to maximum degree.
 - d. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics. Provide drop plates or other accessories as required for proper mounting.
 - 6. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates, and through-bolt or security type fasteners as specified in the door Hardware Sets.
- B. Door Closers, Surface Mounted (Heavy Duty): ANSI/BHMA A156.4, Grade 1 surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control. Provide non-handed units standard.
 - 1. Acceptable Manufacturers:
 - a. Rockwood Manufacturing (RO).
 - b. LCN Closers (LC) - 4040XP Series.

2.8 DOOR STOPS AND HOLDERS

- A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.
- B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 certified door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.
 - 1. Acceptable Manufacturers:
 - a. Rockwood Manufacturing (RO).
 - C. Overhead Door Stops and Holders: ANSI/BHMA A156.6, Grade 1 certified overhead stops and holders to be surface or concealed types as indicated in Hardware Sets. Track, slide, arm and jamb bracket to be constructed of extruded bronze and shock absorber spring of heavy tempered steel. Provide non-handed design with mounting brackets as required for proper operation and function.
 - 1. Acceptable Manufacturers:
 - a. Rixson Manufacturing (RF).
 - b. Rockwood Manufacturing (RO).
 - c. Sargent Manufacturing (SA).

2.9 ARCHITECTURAL SEALS

- A. General Thresholds, weatherstripping and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstripping gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.
- B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.
 - 1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.
- C. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdictions, for fire ratings indicated, base on testing according to UL-10C.
 - 1. Provide intumescent seals as indicated to meet UL-10C. Standard for Positive Pressure Fire Tests of Door Assemblies and UBC 7-2, Fire Tests of Door Assemblies.
- D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated, based on testing according to ASTM 1408.
- E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.

2.10 FABRICATION

- A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

2.11 FINISHES

- A. Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.
- B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware.
- C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine scheduled openings, with installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.
- B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.2 PREPARATION

- A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.
- B. Wood Doors: Comply with ANSI/DHI A115-W series.

3.3 INSTALLATION

- A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.
 - 1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.
 - 2. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:
 - 1. Standard Steel Doors and Frame: DHIS "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
 - 2. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Finish Doors."
 - 3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
 - 4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.
- C. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.
- D. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."
- E. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

3.4 FIELD QUALITY CONTROL

- A. Field Inspection: Supplier will perform a final inspection of installed door hardware and state in report whether work complies with or deviates from requirements, including whether door hardware is properly installed, operating and adjusted.

3.5 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

3.6 CLEANING AND PROTECTION

- A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.

3.7 DEMONSTRATION

- A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

| GENERAL NOTES | |
|---|--|
| 1. DO NOT SCALE FROM THESE DRAWINGS. DIMENSIONS SHALL BE TAKEN FROM ARCHITECTURAL DRAWINGS. | |
| 2. THESE DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED ONLY TO DEFINE THE BASIC FUNCTIONS REQUIRED. ACCESSORIES REQUIRED FOR PROPER OPERATION OF THE SYSTEMS, EVEN THOUGH NOT SPECIFICALLY INDICATED, SHALL BE INCLUDED AND INSTALLED. SUCH ACCESSORIES MAY INCLUDE, BUT ARE NOT LIMITED TO, FILTERS, CONDENSATE DRAINS, RELIEF VALVES, SERVICE VALVES, THERMOSTATS, VIBRATION ISOLATORS, MOTOR STARTERS, ETC. | |
| 3. SCOPE OF WORK CONSISTS OF FURNISHING LABOR, MATERIALS AND EQUIPMENT FOR THE INSTALLATION. IT ALSO INCLUDES PLACING INTO OPERATION COMPLETE AND OPERABLE HEATING, VENTILATING AND AIR CONDITIONING SYSTEMS AS SPECIFIED AND SHOWN. THIS INCLUDES, BUT IS NOT LIMITED TO, HVAC UNITS, EXHAUST FANS, DUCTLESS SPLIT-SYSTEMS, DUCTWORK, AIR DISTRIBUTION, CONTROLS AND ACCESSORIES. | |
| 4. ALL REQUIRED OFFSETS, RISES AND DROPS DUE TO POSSIBLE OBSTRUCTIONS OF DUCT AND PIPE RUNS ARE NOT NECESSARILY SHOWN. MECHANICAL CONTRACTOR SHALL INCLUDE A CONTINGENCY IN HIS BID TO OFFSET ANY COST REQUIRED FOR ADDITIONAL FITTINGS AND LABOR THAT MAY BE REQUIRED MINOR DEVIATIONS FROM THE DESIGN LAYOUT IN ROUTING OF DUCT AND/OR PIPING ARE ANTICIPATED AND SHALL BE CONSIDERED A PART OF THE WORK INCLUDED. THE CONTRACTOR SHALL VERIFY THE ACTUAL DIMENSIONS OF THE EQUIPMENT PROPOSED TO ENSURE THAT THE EQUIPMENT WILL FIT IN THE AVAILABLE SPACE. | |
| 5. HVAC LAYOUT IS BASED ON ARCHITECTURAL DRAWINGS AVAILABLE AT TIME OF DESIGN. AS STRUCTURAL OR OTHER FIELD CHANGES MAY OCCUR, CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY LOCATION OF ALL HVAC EQUIPMENT AND DUCTWORK BEFORE INSTALLATION. MECHANICAL CONTRACTOR SHALL NOTIFY BUILDER OF ANY REQUIRED ALTERATIONS. EITHER CONTRACTOR OR OWNER SHALL TAKE RESPONSIBILITY FOR VERIFYING THE INTEGRITY OF THE CHANGES WITH THE HVAC DESIGN ENGINEER. | |
| 6. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF ALL APPLICABLE CODES AND REGULATIONS INCLUDING BUT NOT LIMITED TO NATIONAL, CITY, STATE AND LOCAL ORDINANCES WHICH MAY BE IN EFFECT. ALL HVAC MATERIALS, INSTALLATION PROCEDURES AND SYSTEM LAYOUTS SHALL BE APPROVED BY ALL APPLICABLE CODE ENFORCEMENT AUTHORITIES HAVING JURISDICTION. THE MECHANICAL CONTRACTOR SHALL PROVIDE ALL MATERIALS AND LABOR NECESSARY TO COMPLY WITH THESE RULES, REGULATIONS AND ORDINANCES AT NO ADDITIONAL COST. THESE CODES REPRESENT THE MINIMUM ACCEPTABLE REQUIREMENTS, THEREFORE, WHERE DRAWINGS AND/OR SPECIFICATIONS INDICATE MATERIALS OR CONSTRUCTION IN EXCESS OF THESE CODE REQUIREMENTS, THE DRAWINGS AND/OR SPECIFICATIONS SHALL GOVERN. | |
| 7. IT IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO PAY FOR ALL NECESSARY PERMITS AND APPROVALS FOR THIS INSTALLATION. | |
| 8. IT IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO REVIEW THESE PLANS AND SPECIFICATIONS, AS WELL AS THE RELATED HVAC, FIRE PROTECTION, ELECTRICAL, STRUCTURAL, ARCHITECTURAL, INTERIOR DECOR AND SITE ENGINEERING DRAWINGS TO BECOME FAMILIAR WITH THE FULL PROJECT SCOPE. IN ADDITION, THE MECHANICAL CONTRACTOR MUST COORDINATE WITH AN OWNER REPRESENTATIVE TO FULLY UNDERSTAND ALL REQUIREMENTS WHICH MAY NOT BE SPECIFIED HEREIN AND WHICH THE OWNER MAY CONSIDER PART OF THIS CONTRACT. DURING THE COURSE OF CONSTRUCTION COORDINATION AND ACTUAL CONSTRUCTION, IT IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO WORK CLOSELY WITH ALL ACCOMPANYING CONTRACTORS AND TRADESMEN IN ORDER TO ENSURE A SMOOTH RUNNING AND CAREFULLY COORDINATED INSTALLATION. | |
| 9. ANY DISCREPANCIES OR INADEQUACIES WITHIN THESE BID DOCUMENTS OR BETWEEN THESE BID DOCUMENTS AND THE RELATED PLUMBING, FIRE PROTECTION, ELECTRICAL, STRUCTURAL, ARCHITECTURAL, INTERIOR DECOR AND SITE ENGINEERING DRAWINGS, OR BETWEEN THESE BID DOCUMENTS AND FIELD CONDITIONS MUST BE BROUGHT TO THE ATTENTION OF THE OWNER, ARCHITECT AND ENGINEER PRIOR TO BID SUBMISSION. | |
| 10. THE MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL NEW PRODUCTS OF ESTABLISHED AND REPUTABLE MANUFACTURERS. NO EQUIPMENT SUBSTITUTIONS SHALL BE MADE THAT WOULD LEAVE INADEQUATE OPERATING OR SERVICE SPACE. EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES AND IN AN ARRANGEMENT THAT WILL GIVE THE GREATEST PRACTICAL EASE OF OPERATION AND SERVICE TO THE OWNER. MATERIALS AND EQUIPMENT SHALL BE INSTALLED SQUARELY WITH THE BUILDING LINES. | |
| 11. CONSTRUCT AND BRACE EQUIPMENT, PIPING, ETC., SO THAT THERE WILL BE NO VIBRATION AND/OR RATTLING WHEN THE SYSTEM IS IN OPERATION. | |
| 12. SPECIFIC REFERENCE TO A MANUFACTURER'S PRODUCT IS ONLY TO ESTABLISH TYPE, QUALITY, AND PERFORMANCE REQUIRED. THESE QUALIFICATIONS ARE IN ADDITION TO THE REQUIREMENTS SHOWN ON THE PLANS. | |
| 13. FABRICATE, SUPPORT, TEST AND INSTALL ALL DUCTWORK IN STRICT ACCORDANCE WITH THE LATEST EDITION OF THE SMACNA H.V.A.C. DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE - SECOND EDITION AND ALL APPLICABLE BUILDING CODES. | |
| 14. RETURN AIR DUCT TO HAVE AT LEAST ONE (1) 90° ELBOW BETWEEN THE PLENUM ON THE FAN TO THE PLENUM AT THE RETURN AIR GRILLE. PLENUM BOX AT RETURN AIR GRILLE TO BE A MINIMUM 6" DEEP. RETURN AIR GRILLES TO BE A MINIMUM OF 3' DISTANCE FROM SMOKE DETECTORS. | |
| 15. ALL OUTSIDE AIR INTAKES SHALL BE LOCATED A MINIMUM OF 10' FROM ANY PLUMBING VENT, EXHAUST, AND FLUE OUTLETS. | |
| 16. EXHAUST DUCTS SHALL TERMINATE THREE (3) FEET FROM ANY BUILDING OPENING AND BE EQUIPPED WITH A BACKDRAFT DAMPER. SCREENS SHALL NOT BE INSTALLED AT THE DUCT TERMINATION. | |
| 17. ALLOW 24" TO 36" OF STRAIGHT RUN FROM FAN OUTLET POINT BEFORE ADDING AN ELBOW OR BEND TO EXHAUST DUCTWORK. | |
| 18. FLASH AND COUNTER FLASH ALL ROOF PENETRATIONS. COORDINATE INSTALLATION OF ALL ROOF FLASHING AT ROOF PENETRATION. | |
| 19. SEAL ALL REFRIGERATION LINE PENETRATIONS AIR AND WATER TIGHT w/ SILICONE SEALANT. | |
| 20. OWNER TO PROVIDED CONTRACTED WORK FOR TESTING, ADJUSTING, AND BALANCING (T.A.B.). T.A.B. WORK SHALL INCLUDE THE ENTIRE AIR-SIDE SYSTEM AND BE PERFORMED IN ACCORDANCE WITH NEBB OR AABC REQUIREMENTS. TOLERANCES FOR AIR INLETS AND OUTLETS SHALL BE +/- 5% UNLESS NOTED OTHERWISE. | |
| 21. CONTRACTOR SHALL INSPECT ANY EXISTING DUCTWORK FOR DEFECTS AND REPORT TO THE ARCHITECT/ENGINEER AND THE OWNER ANY DEFICIENCIES PRIOR TO PERFORMING ANY WORK. CONTRACTOR | |
| | SHALL CLEAN ALL EXISTING DUCTWORK, GRILLES, REGISTERS AND DIFFUSERS PRIOR TO INSTALLING THE NEW WORK. |
| | 22. CONTRACTOR SHALL PAINT BLACK BEHIND ALL GRILLES AND REGISTERS AND INSIDE OF DUCT WHERE VISIBLE. |
| | 23. UNLESS NOTED OTHERWISE, DUCTWORK BEYOND SA & RA PLENUMS MAY BE CONSTRUCTED OF METAL, OR FACTORY-MANUFACTURED INSULATED DUCTWORK. |
| | 24. ALL BRANCH DUCTS TO HAVE VOLUME DAMPERS WHETHER SHOWN OR NOT. |
| | 25. SMOOTH TURN RADIUS DUCTWORK OR TURNING VANES SHALL BE USED THROUGHOUT WHERE FLOW EXCEEDS 150 CFM. |
| | 26. ALL DUCT JOINTS TO BE SEALED IN ACCORDANCE WITH "SMACNA" STANDARDS AND ACCEPTED GOOD PRACTICE. |
| | 27. HVAC UNIT FLEXIBLE DUCT CONNECTIONS SHALL BE A MINIMUM OF 6 INCHES LONG AND HELD IN PLACE WITH HEAVY METAL BANDS, SECURELY ATTACHED TO PREVENT ANY LEAKAGE AT THE CONNECTION POINTS. FLEXIBLE CONNECTIONS SHALL BE FABRICATED FROM APPROVED FLAME PROOF FABRIC CONFORMING TO NFPA 90A. ASBESTOS CLOTH IS NOT ACCEPTABLE. |
| | 28. CONTRACTOR SHALL PROVIDE AND INSTALL REFRIGERANT PIPING IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND IN SUCH A WAY AS TO BE INCONSPICUOUS AND FREE FROM ANY POSSIBLE CONDENSATION. INSULATE REFRIGERANT LINES WITH ARMOUR- FLEX TYPE INSULATION. |
| | 29. REFRIGERANT PIPING OTHER THAN PRECHARGED TUBING SETS FURNISHED BY AIR CONDITIONING MANUFACTURER SHALL BE TYPE "A" HARD DRAWN COPPER TUBING WITH WROUGHT COPPER FITTINGS. PIPING SHALL BE INSTALLED IN ACCORDANCE WITH ARI STANDARDS. USE EASY-FLO OR SAFETY SILVER BRAZING ALLOY TO MAKE JOINTS. RUN ALL HORIZONTAL LINES DEAD LEVEL TO ENSURE PROPER GAS RETURN TO COMPRESSOR. |
| | 30. ALL MATERIALS OF INSULATION SHALL BE OF THE TYPE AND QUALITY AS MANUFACTURED BY ARMSTRONG, CERTAINTED, OWENS-CORNING OR MANVILLE. ALL MATERIAL AND EQUIPMENT SPECIFIED TO BE INSULATED SHALL BE THOROUGHLY TESTED AND APPROVED PRIOR TO APPLYING THE INSULATION. THE INSTALLATION OF ALL INSULATION SHALL BE PERFORMED BY AN EXPERIENCED CRAFTSMAN IN A NEAT WORKMANSHIP-LIKE MANNER AND SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN RECOMMENDATIONS FOR SERVICE INTENDED. |
| | 31. WRAPPED INSULATION ON DUCTWORK SHALL BE 1-1/2 INCH THICK GLASS FIBER FLEXIBLE DUCT INSULATION, ONE POUND DENSITY WITH UL APPROVED FOIL SCRIM KRAFT FRJ JACKET. SECURE WITH ADHESIVE APPLIED DIRECTLY TO THE DUCT IN 4 INCH WIDE STRIPS AROUND THE DUCT ON 12 INCH CENTERS AND TAPE ALL JOINTS. |
| | 32. ACOUSTICAL DUCT LINING SHALL BE 1 INCH THICK OWENS-CORNING AEROFLEX TYPE 300 COMPLYING WITH FIRE CLASSIFICATION REQUIREMENTS OF NFPA 90A AND 90B. ADHERE LINER TO DUCT WITH FIRE RESISTANT ADHESIVE AND WELDED PIN TYPE MECHANICAL FASTENERS AS INDICATED IN SMACNA STANDARDS. |
| | 33. WRAPPED INSULATION ON ROUND DUCTWORK SHALL BE 1-1/2 INCH THICK GLASS FIBER WITH LAMINATED KRAFT-FOIL VAPOR BARRIER 2PC COMPLYING WITH FIRE CLASSIFICATION REQUIREMENTS OF NFPA 90A AND 90B. |
| | 34. DUCTWORK DIMENSIONS SHOWN ON DRAWINGS ARE INSIDE CLEAR DIMENSIONS. DIMENSIONS SHALL BE INCREASED TO ACCOMMODATE LINING THICKNESS. ALL DUCT DIMENSIONS SHOWN ARE NET INSIDE VALUES. DIMENSIONS MAY BE CHANGED SO LONG AS THE NET FREE FACE AREA IS MAINTAINED. |
| | 35. CONTRACTOR SHALL PROVIDE ALL AIR TEMPERATURE CONTROLS INCLUDING WIRING, TUBING AND THERMOSTATS (WITH LOCKING COVERS) AND ALL MISCELLANEOUS APPURTENANCES TO MEET THE INTENT OF THESE DOCUMENTS. |
| | 36. CONTRACTOR SHALL FURNISH AND INSTALL UL LISTED DUCT SMOKE DETECTORS AS SHOWN ON DRAWINGS WITH AUXILIARY CONTACTS FOR CONNECTION TO THE FIRE ALARM SYSTEM. DETECTORS SHALL DE-ENERGIZE AIR HANDLING UNIT UPON ACTIVATION. |
| | 37. VIBRATION ISOLATORS FOR HANGING EQUIPMENT SHALL BE EQUAL TO MASON INDUSTRIES MODEL 30N, COMBINATION SPRING AND DOUBLE DEFLECTION NEOPRENE HANGER, OR DEFLECTION AS RECOMMENDED BY MANUFACTURER. |
| | 38. VIBRATION ISOLATORS FOR BASE MOUNTED EQUIPMENT SHALL BE EQUAL TO MASON INDUSTRIES MODEL SLF, DEFLECTION AS RECOMMENDED BY MANUFACTURER. |
| | 39. CONTRACTOR SHALL VISIT THE SITE AND VERIFY ALL DIMENSIONS IN THE FIELD, AND SHALL ADVISE THE ARCHITECT/ENGINEER AND THE OWNER OF ANY DISCREPANCIES BEFORE PERFORMING THE WORK. |
| | 40. CONTRACTOR SHALL SCHEDULE ALL SHUTDOWNS THAT AFFECT UTILITIES AND PORTIONS OF THE BUILDING THAT MUST REMAIN IN OPERATION WITH THE OWNER. |
| | 41. WHERE CONDUIT, CABLES, DUCTWORK OR PIPING PASSES THROUGH FIRE RATED FLOORS OR WALLS, THE SLEEVES SHALL BE COMPLETELY SEALED WITH A FIRE STOP MATERIAL THAT IS UL LISTED AND ACCEPTED BY THE BUILDING DEPARTMENT AND FIRE DEPARTMENT AS BEING SUITABLE FOR THIS SERVICE SUCH AS DOW CORNING CORP. SILICONE ELASTOMER, DOW CORNING 9454S SILICONE RTV FOAM, OR APPROVED EQUAL. THIS MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE MANUFACTURER TO MAINTAIN THE FIRE RATING OF THE PENETRATED WALL OR FLOOR. |
| | 42. CONTRACTOR SHALL PROVIDE AND INSTALL APPROVED FIRE DAMPERS AND ACCESS PANELS IN ANY AND ALL DUCTWORK WHICH PENETRATES A HORIZONTAL OR VERTICAL FIRE PARTITION, OR AS OTHERWISE SHOWN ON DRAWINGS. |
| | 43. THE CONTRACTOR SHALL PROVIDE MAINTENANCE INSTRUCTIONS FOR EQUIPMENT AND SYSTEM THAT REQUIRE PREVENTATIVE MAINTENANCE. INSTRUCTIONS SHALL BE CLEARLY STATED AND INCORPORATED ON A READILY ACCESSIBLE LABEL AND INCLUDE THE TITLE OR PUBLICATION NUMBER FOR THE OPERATION AND MAINTENANCE MANUAL FOR THAT PARTICULAR MODEL AND TYPE OF PRODUCT. |

| ABBREVIATIONS | | | |
|---------------|------------------------------|------|-----------------------------------|
| AC | AIR CONDITIONING UNIT | DWP | DOMESTIC WATER PUMP |
| AD | ACCESS DOOR | EAT | ENTERING AIR TEMPERATURE |
| AFF | ABOVE FINISHED FLOOR | EC | ELECTRICAL CONTRACTOR |
| AH | AIR HANDLER | EF | EXHAUST FAN |
| AHU | AIR HANDLING UNIT | EJ | EXPANSION JOINT |
| AL | ACOUSTICAL LINING | ER | EXHAUST REGISTER |
| AP | ACCESS PANEL | ESP | EXTERNAL STATIC PRESSURE |
| BB | ELECTRIC BASEBOARD RADIATION | ET | EXPANSION TANK |
| B | BOILER | EWT | ENTERING WATER TEMPERATURE |
| BDD | BACK DRAFT DAMPER | EWV | ELECTRIC WATER COOLER |
| BFC | BELOW FINISHED CEILING | FA | FREE AREA |
| BOB | BOTTOM OF BEAM | FX | FLEXIBLE CONNECTION |
| BOD | BOTTOM OF DUCT | FC | FAN COIL UNIT |
| BOP | BOTTOM OF PIPE | FD | FIRE DAMPER |
| C | CHILLER | FLR | FLOOR |
| CD | CEILING DIFFUSER | FOB | FLAT ON BOTTOM |
| CFM | CUBIC FEET PER MINUTE | FOT | FLAT ON TOP |
| CHWP | CHILLED WATER PUMP | FOP | FUEL OIL PUMP |
| CHWR | CHILLED WATER RETURN | FP | FIRE PUMP |
| CHWS | CHILLED WATER SUPPLY | FSM | FEET PER MINUTE |
| CO | CLEAN OUT | FTR | FINNED TUBE RADIATION |
| CP | CONDENSATE PUMP | GC | GENERAL CONTRACTOR |
| CWR | CONDENSER WATER RETURN | GPH | GALLONS PER HOUR |
| CWS | CONDENSER WATER SUPPLY | GPM | GALLONS PER MINUTE |
| CT | COOLING TOWER | HD | HAND DAMPER |
| CU | CONDENSING UNIT | HP | HEAT PUMP |
| CUH | CABINET UNIT HEATER | HV | HEATING AND VENTILATING UNIT |
| CVB | CONSTANT VOLUME BOX | HWC | HOT WATER CONVERTER |
| CWP | CONDENSER WATER PUMP | HWP | HOT WATER PUMP |
| DB | DRY BULB | HWR | HEATING HOT WATER RETURN |
| DS | DUCT SILENCER | HWS | HEATING HOT WATER SUPPLY |
| | | HX | HEAT EXCHANGER |
| | | HZ | HERTZ |
| | | ID | INSIDE DIAMETER |
| | | LAT | LEAVING AIR TEMPERATURE |
| | | LWT | LEAVING WATER TEMPERATURE |
| | | LD | LINEAR DIFFUSER |
| | | LF | LINEAR FEET |
| | | MAU | MAKE-UP AIR UNIT |
| | | MC | MECHANICAL CONTRACTOR |
| | | MTD | MOUNTED |
| | | MOD | MOTOR OPERATED DAMPER |
| | | NC | NORMALLY CLOSED |
| | | NO | NORMALLY OPEN |
| | | NIC | NOT IN CONTRACT |
| | | NK | NECK |
| | | OAI | OUTSIDE AIR INTAKE |
| | | OAT | OUTSIDE AIR TEMPERATURE |
| | | OC | ON CENTER |
| | | OD | OUTSIDE DIAMETER |
| | | ODB | OPPOSED BLADE DAMPER |
| | | PBD | PARALLEL BLADE DAMPER |
| | | PRV | PRESSURE REDUCING VALVE |
| | | PTAC | PACKAGED TERMINAL AIR CONDITIONER |
| | | RA | RETURN AIR |
| | | RAG | RETURN AIR GRILLE |
| | | RAR | RETURN AIR REGISTER |
| | | RCP | REFLECTED CEILING PLAN |
| | | RHC | REHEAT COIL |
| | | RF | RETURN FAN |
| | | SA | SUPPLY AIR |
| | | SAR | SUPPLY AIR REGISTER |
| | | SCG | SMOKE CONTROL GRILLE |
| | | SD | SMOKE DAMPER |
| | | SEF | SMOKE EXHAUST FAN |
| | | SF | SUPPLY FAN |
| | | SP | STATIC PRESSURE |
| | | TG | TRANSFER GRILLE |
| | | TYP | TYPICAL |
| | | UH | UNIT HEATER |
| | | UVN | UNLESS OTHERWISE NOTED |
| | | VAV | VARIABLE AIR VOLUME UNIT |
| | | VD | VOLUME DAMPER |
| | | VTR | VENT THRU ROOF |
| | | WB | WET BULB |
| | | WMS | WIRE MESH SCREEN |

| HVAC LEGEND | |
|-------------|--|
| SYMBOL | DESCRIPTION |
| | ELBOW UP DIMENSION DESCRIPTION: 14"Ø = ROUND DUCT 24x12 FO = FLAT OVAL DUCT |
| | ELBOW DOWN |
| | LONG RADIUS ELBOW RADIUS (R) = 1.5 TIMES DIAMETER OF DUCT DIMENSION DESCRIPTION: 1ST FIGURE = SIDE SHOWN 2ND FIGURE = SIDE NOT SHOWN |
| | SUPPLY AIR ELBOW UP |
| | SUPPLY AIR ELBOW DOWN |
| | EXHAUST/RETURN AIR ELBOW UP |
| | EXHAUST/RETURN AIR ELBOW DOWN |
| | DOUBLE SIDE TRANSITION SLOPE SLOPE SPECIFICATION: MINIMUM SLOPE = 15° MAXIMUM SLOPE = 45° |
| | SINGLE SIDE TRANSITION |
| | TOP TRANSITION (SLOPE ON TOP) |
| | BOTTOM TRANSITION (SLOPE ON BOTTOM) |
| | ACOUSTICALLY LINED SHEET METAL DUCT |
| | MANUAL BALANCING DAMPER |
| | FLEX CONNECTOR |
| | ACCESS DOORS |
| | FIRE DAMPER, FIRE/SMOKE DAMPER, SMOKE DAMPER |
| | MOTORIZED DAMPER |
| | TURNING VANE ELBOW |
| | 45° LOW-LOSS TAKE-OFF FITTING W/ DAMPER & FLEX DUCT |
| | 45° LOW-LOSS TAKE-OFF FITTING W/ DAMPER & RIGID DUCT |
| | 90° TEE TAKE-OFF FITTING |
| | CONICAL 90° TEE TAKE-OFF FITTING |
| | 45° TEE TAKE-OFF FITTING |
| | LOW LOSS TAKE-OFF FITTING |
| | SUPPLY AIR DUCT (SINGLE LINE) |
| | RETURN AIR DUCT (SINGLE LINE) |
| | EXHAUST AIR DUCT (SINGLE LINE) |
| | RETURN AIR GRILLE |
| | EXHAUST AIR GRILLE |
| | SIDE WALL SUPPLY AIR REGISTER |
| | DIFFUSER, REGISTER OR GRILLE 4-WAY THROW PATTERN UNLESS SHOWN OTHERWISE ON DRAWINGS |
| | THERMOSTAT - CONTROLLED EQUIPMENT NOTED |

| SHEET INDEX | | |
|--------------|---------------------|-------------------------|
| SHEET NUMBER | SHEET TITLE | PROGRESS SET 9/13/16 |
| M0.01 | GENERAL INFORMATION | ● |
| M0.02 | SPECIFICATIONS | ● |
| M1.01 | MECHANICAL PLANS | ● |

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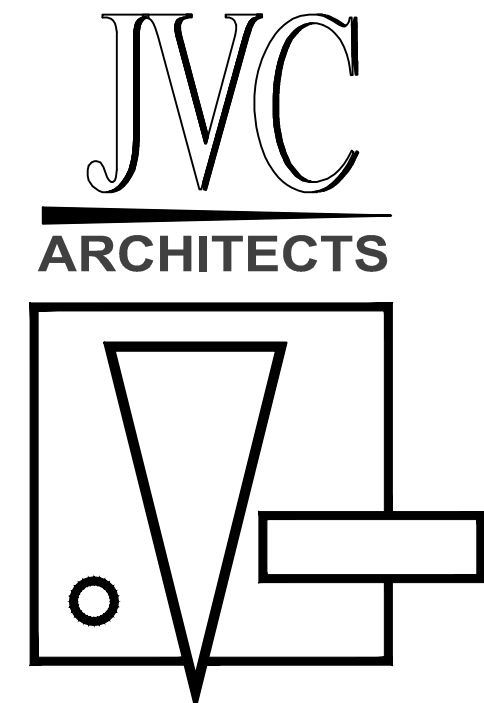
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GENERAL INFORMATION
MO.01
DESIGN DEVELOPMENT

MECHANICAL SPECIFICATIONS

| | | | |
|---|---|---|---|
| <p>PART I - GENERAL</p> <p>A. CONDITIONS</p> <p>1. GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS, SPECIAL CONDITIONS, AND OTHER RELATED PORTIONS OF DIVISION 1, APPLY TO THIS SECTION.</p> <p>B. SUMMARY OF WORK</p> <p>1. THE WORK INCLUDED CONSISTS OF FURNISHING LABOR, MATERIALS AND EQUIPMENT FOR THE INSTALLATION. IT ALSO INCLUDES PLACING INTO OPERATION A COMPLETE AND OPERABLE HEATING, VENTILATING AND AIR CONDITIONING SYSTEM AS SPECIFIED AND SHOWN. THIS INCLUDES, BUT IS NOT LIMITED TO: HVAC UNITS, EXHAUST FANS, DUCTLESS SPLIT SYSTEMS, DUCTWORK, AIR DISTRIBUTION, CONTROLS AND ACCESSORIES, EXCEPT AS OTHERWISE NOTED.</p> <p>C. REGULATIONS, CODES, PERMITS AND INSPECTIONS</p> <p>1. COMPLY WITH NATIONAL, STATE, COUNTY, AND CITY CODES, ORDINANCES, ETC., HAVING JURISDICTION. THIS INCLUDES RULES AND REQUIREMENTS OF UTILITY SERVING AGENCIES.</p> <p>2. INCORPORATE CODES, ORDINANCES, ETC., INTO THE BASE BID AND INSTALLATION OF WORK. NO ADDITIONAL FUNDS WILL BE ALLOCATED FOR WORK REQUIRED TO CONFORM TO REGULATIONS AND REQUIREMENTS OR TO OBTAIN APPROVAL OF WORK.</p> <p>3. OBTAIN AND PAY FOR REQUIRED PERMITS AND LICENSES. WHEN REQUIRED BY CODE, WORK MUST BE INSPECTED AND APPROVED BY LOCAL AUTHORITIES. PRIOR TO FINAL APPROVAL, FURNISH ARCHITECT WITH CERTIFICATES OF INSPECTION AND APPROVALS BY LOCAL AUTHORITIES.</p> <p>4. SUBMITTALS SHALL INCLUDE MANUFACTURER'S SPECIFICATIONS AND PUBLISHED STANDARDS SHALL BE ADHERED TO:</p> <ol style="list-style-type: none"> 4.1. 2012 INTERNATIONAL BUILDING CODE (IBC) 4.2. 2012 UNIFORM MECHANICAL CODE (UMC) 4.3. NFPA STANDARDS 4.4. ASHRAE HANDBOOKS 4.5. SMACNA DUCT CONSTRUCTION STANDARDS 4.6. 2012 UNIFORM PLUMBING CODE (UPC) 4.7. 2011 NATIONAL ELECTRIC CODE (NEC) 4.8. SOUTHERN NEVADA CODE AMENDMENTS 4.9. 2012 INTERNATIONAL ENERGY CONSERVATION CODE (IECC) <p>D. DESIGN DRAWINGS</p> <p>1. DESIGN DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED ONLY TO DEFINE THE BASIC FUNCTIONS REQUIRED. PROVIDE LABOR, MATERIAL, ETC., NECESSARY TO ACCOMPLISH THESE REQUIREMENTS. MINOR DEVIATIONS FROM THE DESIGN LAYOUT ARE ANTICIPATED AND SHALL BE CONSIDERED A PART OF THE WORK INCLUDED. NO CHANGES THAT ALTER THE CHARACTER OF THE WORK WILL BE PERMITTED. DO NOT SCALE THE DESIGN DRAWINGS. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS.</p> <p>2. IF A CONFLICT OCCURS BETWEEN THE DESIGN DRAWINGS AND SPECIFICATIONS, PROMPTLY NOTIFY THE ARCHITECT AND/OR ENGINEER. AT THAT POINT, AN INTERPRETATION WILL BE MADE BY THE ARCHITECT AND/OR ENGINEER AND SAID DECISION SHALL BE CONSIDERED PART OF THE CONTRACT DOCUMENTS.</p> <p>E. QUALIFICATIONS OF CONTRACTOR AND WORKMAN</p> <p>1. CONTRACTOR SHALL BE PROPERLY LICENSED TO PERFORM THE WORK.</p> <p>F. BASE BID</p> <p>1. BASE BID SHALL INCLUDE MATERIALS AND EQUIPMENT SPECIFIED OR SCHEDULED ON THE DRAWINGS. REQUESTS FOR SUBSTITUTION OF MATERIALS AND EQUIPMENT SHALL BE BY ADDITIVE OR DEDUCTIVE ALTERNATE BID ONLY. THE FOLLOWING DATA MUST BE CLEARLY WRITTEN AT THE BEGINNING OF THE ALTERNATE PROPOSAL:</p> <ol style="list-style-type: none"> 1.1. ADDITIVE OR DEDUCTIVE AMOUNT CLEARLY WRITTEN IN WORDS AND NUMERALS. 1.2. INCREASED OR REDUCED CONSTRUCTION TIME IN DAYS. 1.3. OTHER DEMONSTRABLE BENEFIT, FOR WHICH THE SUBSTITUTION OF SUCH ITEM WILL BE IN THE OWNER'S INTEREST. <p>2. ONLY THOSE MATERIALS AND EQUIPMENT WHICH ARE SUBMITTED AS AN ALTERNATE BID, WHICH ARE ACCOMPANIED BY THE SUPPORTING DATA INDICATED BELOW WILL BE REVIEWED AND CONSIDERED.</p> <p>G. SUBSTITUTIONS</p> <p>1. MATERIALS AND EQUIPMENT THAT ARE A SUBSTITUTE FROM THE LISTED MANUFACTURER MAY BE CONSIDERED. PRIOR TO PROPOSING ANY SUBSTITUTE ITEM, CONTRACTOR SHALL SATISFY HIMSELF THAT THE ITEM PROPOSED IS, IN FACT, EQUAL TO THAT SPECIFIED, THAT SUCH ITEM WILL FIT INTO THE SPACE ALLOCATED, THAT SUCH ITEM AFFORDS COMPARABLE EASE FOR OPERATION, MAINTENANCE AND SERVICE, THAT THE APPEARANCE, LONGEVITY, CAPACITY, SUITABILITY, AND ELECTRICAL CHARACTERISTICS ARE COMPARABLE, THAT BY REASON OF COST SAVINGS, REDUCED CONSTRUCTION TIME, OR SIMILAR DEMONSTRABLE BENEFIT, THE SUBSTITUTION OF SUCH ITEM WILL BE IN THE OWNER'S INTEREST.</p> <p>2. THE BURDEN OF PROOF OF EQUALITY OF A PROPOSED SUBSTITUTION FOR A SPECIFIED ITEM SHALL BE UPON THE CONTRACTOR. CONTRACTOR SHALL SUPPORT HIS REQUEST WITH SUFFICIENT TEST DATA AND OTHER MEANS TO PERMIT THE ENGINEER TO MAKE A FAIR AND EQUITABLE DECISION ON THE MERITS OF THE PROPOSED SUBSTITUTION. INSUFFICIENT SUBMITTAL DATA WILL RESULT IN REJECTION OF THE PROPOSED SUBSTITUTION. ANY ITEM BY A MANUFACTURER OTHER THAN THOSE SPECIFIED, OR OF BRAND NAME, MODEL NUMBER, OR OF GENERIC SPECIES OTHER THAN THOSE SPECIFIED, WILL BE CONSIDERED A SUBSTITUTION. ENGINEER WILL BE THE SOLE JUDGE OF WHETHER OR NOT THE SUBSTITUTION IS EQUAL IN QUALITY, UTILITY AND ECONOMY TO THAT SPECIFIED.</p> <p>3. APPROVAL OF A SUBSTITUTION SHALL NOT RELIEVE CONTRACTOR FROM RESPONSIBILITY FOR COMPLIANCE WITH ALL REQUIREMENTS OF THE CONTRACT. CONTRACTOR SHALL BEAR THE EXPENSE FOR ANY CHANGES IN</p> | <p>OTHER PARTS OF THIS WORK OR OTHER WORK CAUSED BY THE PROPOSED SUBSTITUTION, INCLUDING BUT NOT LIMITED TO STRUCTURAL, ELECTRICAL, PLUMBING, AND ACCESS REQUIREMENTS.</p> <p>4. IF ENGINEER REJECTS CONTRACTOR'S SUBSTITUTE ITEM ON THE FIRST SUBMITTAL, CONTRACTOR MAY MAKE ONLY ONE ADDITIONAL REQUEST FOR SUBSTITUTION IN THE SAME CATEGORY.</p> <p>5. ANY EQUIPMENT SUBSTITUTED WITHOUT THE ENGINEER'S WRITTEN APPROVAL, WILL BE REMOVED AND REPLACED WITH THE SPECIFIED EQUIPMENT AT THE CONTRACTOR'S EXPENSE AND AT NO ADDITIONAL COST TO THE OWNER.</p> <p>H. SUBMITTALS</p> <p>1. EQUIPMENT AND MATERIALS:</p> <ol style="list-style-type: none"> 1.1. CONTRACTOR SHALL HAVE APPROVED SUBMITTALS PRIOR TO FABRICATION OR DELIVERY OF ANY MATERIAL AND/OR EQUIPMENT TO THE JOB SITE. SUBMIT A MINIMUM OF 8 (EIGHT) COPIES, COMPREHENSIVELY INDEXED SUBMITTALS IN A 3-RING BINDER, COMPLETELY DESCRIBING EACH MAJOR SYSTEM, MATERIAL AND EQUIPMENT PROPOSED TO BE USED. ANY PIECE OF EQUIPMENT PLACED ON THE JOB WITHOUT PRIOR APPROVAL WILL BE SUBJECT TO REMOVAL AT THE SOLE EXPENSE OF THE CONTRACTOR. 1.2. SUBMITTALS ARE FOR INFORMATION AND COORDINATION ONLY. REVIEW OF MATERIAL AND/OR EQUIPMENT SUBMITTALS SHALL IN NO WAY RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO COMPLY WITH PLANS AND SPECIFICATIONS REQUIREMENTS. POINTS OF NON-COMPLIANCE WHICH ARE NOT NOTED SHALL NOT BE CONSTRUED TO BE AN APPROVAL OF THE NON-COMPLIANCE. SUBMITTALS SHALL CLEARLY STATE WHERE EQUIPMENT DOES NOT AGREE WITH THE CONTRACT DOCUMENTS. 1.3. SUBMITTALS SHALL INCLUDE MANUFACTURER'S SPECIFICATIONS, PHYSICAL DIMENSIONS, WEIGHTS AND RATINGS OF EQUIPMENT SUBMITTED. INDICATE EQUIPMENT LAYOUTS, ELECTRICAL CHARACTERISTICS, WIRING AND CONTROL DIAGRAMS, SIZES AND LOCATIONS OF PIPING, DUCT, CONDUITS, AND OTHER CONNECTION SIZES AND LOCATIONS. <p>2. SHOP DRAWINGS:</p> <ol style="list-style-type: none"> 2.1. CONTRACTOR SHALL PREPARE AND SUBMIT DETAILED 1/4"=1'-0" SCALE DRAWINGS THAT HAVE BEEN PROPERLY COORDINATED WITH OTHER TRADES. INDICATE LOCATION AND SIZES OF ACCESS PANELS IN HARD CEILINGS FOR EQUIPMENT AND DAMPER ACCESS. <p>3. AS BUILT DRAWINGS:</p> <ol style="list-style-type: none"> 3.1. MAINTAIN ACCURATE RECORDS OF ANY CHANGES FROM THE CONTRACT DOCUMENTS AND SHOP DRAWINGS. UPON COMPLETION OF THE PROJECT, DELIVER TO THE ENGINEER ONE (1) SET OF LEGIBLE, REPRODUCIBLE AND (3) BLUELINE SETS OF THESE RECORD DRAWINGS. <p>4. WARRANTY:</p> <ol style="list-style-type: none"> 4.1. UNLESS SPECIFIED OTHERWISE BY ARCHITECT, ENGINEER, OWNER OR OWNER'S REPRESENTATIVE, UPON COMPLETION OF THE PROJECT, DELIVER TO THE OWNER A WRITTEN ONE (1) YEAR WARRANTY ON THE SYSTEMS, MATERIALS AND ALL WORK PERFORMED. THIS INCLUDES THE ENTIRE COST, INCLUDING MATERIALS AND/OR LABOR, OF CORRECTIVE WORK REQUIRED AND NECESSITATED BY DEFECTS IN MATERIALS AND/OR WORKMANSHIP. CONTRACTOR SHALL ALSO PRESENT THE OWNER WITH A COPY OF ALL MANUFACTURER'S WARRANTIES THAT EXCEED THE WARRANTY PERIOD, SUCH AS AC UNIT COMPRESSORS. <p>5. OPERATION AND MAINTENANCE INSTRUCTIONS:</p> <ol style="list-style-type: none"> 5.1. UPON THE COMPLETION OF THE PROJECT, DELIVER TO THE OWNER THE REQUIRED NUMBER OF COPIES OF HARD BOUND O & M MANUALS INCLUDE IN THE MANUAL INSTRUCTIONS PREPARED SPECIFICALLY FOR THE SYSTEMS PROVIDED, ALONG WITH DESCRIPTIONS, PARTS LIST, INSTRUCTIONS, AND WARRANTIES. START-UP REPORTS FOR ALL EQUIPMENT WILL BE DELIVERED WITH THE MATERIALS AND EQUIPMENT UTILIZED IN THE PROJECT. IDENTIFY EACH ITEM BY THE DESIGNATION APPEARING ON THE DRAWINGS. <p>6. OWNER TRAINING:</p> <ol style="list-style-type: none"> 6.1. AT A TIME DESIGNATED BY THE OWNER, PROVIDE A SUITABLE TECHNICIAN, MECHANIC OR ENGINEER TO REVIEW THE SYSTEMS WITH OWNER'S REPRESENTATIVE TO THOROUGHLY FAMILIARIZE HIM WITH THE OPERATIONS AND MAINTENANCE OF THE SYSTEMS. UP TO (8) EIGHT HOURS TOTAL TRAINING TIME SHALL BE REQUIRED WITHOUT ADDITIONAL COST TO THE OWNER. PRIOR TO TRAINING THE OWNER SHALL HAVE TAKEN POSSESSION OF THE O & M MANUALS, AND SHALL HAVE HAD A REASONABLE AMOUNT OF TIME FOR THE PERSONNEL TO FAMILIARIZE THEMSELVES WITH THE CONTENTS OF THE MANUALS. | <p>D. DUCTWORK</p> <p>1. PROVIDE A COMPLETE SYSTEM OF DUCTWORK FABRICATED AND INSTALLED IN STRICT ACCORDANCE WITH LATEST VERSIONS OF THE ASHRAE FUNDAMENTALS HANDBOOK AND SMACNA DUCT CONSTRUCTION STANDARDS. DUCT SYSTEM SHALL BE CONSTRUCTED AS REPRESENTED ON THESE DRAWINGS AND AS COORDINATED IN DETAIL ON THE APPROVED DUCTWORK SHOP DRAWINGS. IF ADDITIONAL CHANGES IN DUCT ARRANGEMENT OR IN DUCT SIZES ARE REQUIRED, THEY SHALL BE MADE ONLY AFTER WRITTEN APPROVAL IS OBTAINED FROM THE ENGINEER.</p> <p>2. MAIN AND BRANCH DUCTS SHALL BE RECTANGULAR, ROUND, OR FLAT-OVAL, AND SHALL BE CONSTRUCTED OF GALVANIZED SHEET METAL UNLESS NOTED OTHERWISE. DUCT SIZES SHOWN ON THE DRAWINGS ARE NET OPENINGS AND SHALL BE INCREASED TO ACCOMMODATE DUCT LINING WHERE APPLICABLE.</p> <p>3. FLEXIBLE DUCT SHOWN AT CONNECTION TO AIR DISTRIBUTION DEVICES SHALL BE A FABRICATED ASSEMBLY WITH AN ACOUSTICALLY-RATED CORE CONSISTING OF AN INNER SLLEEVE, 2-INCH THICK FIBERGLASS INSULATION, WITH AN R-6.0 MINIMUM AND AN OUTER VAPOR BARRIER COVERING EQUAL TO THERMAFLEX M-KE.</p> <p>4. WHETHER SHOWN ON PLANS OR NOT, PROVIDE MANUAL VOLUME DAMPERS IN EXHAUST GRILLE AND ALSO AS REQUIRED FOR A PROPERLY BALANCED SYSTEM. PROVIDE ACCESS PANELS TO DAMPERS LOCATED ABOVE HARD CEILINGS.</p> <p>5. VOLUME DAMPERS FOR RECTANGULAR DUCTS SHALL BE CONSTRUCTED OF 18 GAUGE GALVANIZED STEEL, BE OF THE OPPOSED BLADE TYPE AND BE FURNISHED WITH LOCKING AND INDICATING QUADRANTS. DAMPERS FOR ROUND DUCTS SHALL BE SINGLE-BLADE TYPE UP TO 30". USE CONTINUOUS ROD ON 2" W.G. CLASS DAMPERS FROM 12"Ø-28"Ø, AND RECTANGULAR DUCTS FROM 18"X48" WIDE.</p> <p>6. ROUND TAPS FOR FACTORY-MADE AIR DUCTS IN SECTIONS OF ROUND SHEET METAL DUCTS SHALL BE MADE WITH ANY OF THE FITTINGS LISTED BELOW:</p> <ol style="list-style-type: none"> 6.1. CONICAL TEE. 6.2. CONICAL SADDLE TAP. 6.3. ELBOW (IF LAST FITTING). 6.4. 45° TEE OR SADDLE TAP. <p>7. ROUND TAPS FOR FACTORY-MADE AIR DUCTS IN SECTIONS OF RECTANGULAR SHEET METAL DUCTS SHALL BE MADE WITH ANY OF THE FITTINGS LISTED BELOW:</p> <ol style="list-style-type: none"> 7.1. COLLAR (CONICAL). 7.2. COLLAR (STRAIGHT, ONLY WHEN SHOWN ON DRAWINGS). <p>8. DOVETAILED CUTOFFS ARE NOT ACCEPTABLE. DUCT TAPE OR OTHER PRESSURE SENSITIVE TAPES ARE NOT ACCEPTABLE.</p> <p>9. TAPS IN SECTIONS OF ROUND FACTORY-MADE FLEXIBLE AIR DUCTS (WHEN ALLOWED) SHALL BE MADE BY INSERTING, IN THE FLEXIBLE DUCT SECTION, ANY OF THE SHEET METAL FITTINGS LISTED BELOW:</p> <ol style="list-style-type: none"> 9.1. 90 DEGREE CONICAL STRAIGHT TEE. 9.2. 45 DEGREE STRAIGHT LATERAL. 9.3. 45 DEGREE STRAIGHT LATERAL WITH 45 DEGREE ELBOW. 9.4. 45 DEGREE STRAIGHT LATERAL CROSS. 9.5. Y BRANCH WITH 45 DEGREE ELBOW. <p>10. BELOW GRADE DUCTWORK SHALL BE FABRICATED FROM PVS, GALVANIZED G-60 STEEL WHICH HAS BEEN HOT DIPPED AND FIRE TREATED, AND A 4 MIL. POLYVINYL CHLORIDE COATING. INSTALL AND BACKFILL AROUND DUCTWORK ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. MAXIMUM LOAD PER PIPE SIZE ARE AS FOLLOWS:</p> <ol style="list-style-type: none"> 10.1. 8" OR LESS - 400 (LBS./LINEAR FT.) 10.2. 10" TO 12" - 600 (LBS./LINEAR FT.) 10.3. 14" TO 36" - 1800 (LBS./LINEAR FT.) <p>E. DUCT INSULATION</p> <p>1. THERMAL INSULATION:</p> <ol style="list-style-type: none"> 1.1. CONCEALED SUPPLY DUCTS AND RETURN DUCTS ABOVE CEILING OR IN FURRED SPACES SHALL BE THERMALLY INSULATED. 1.2. THERMAL INSULATION SHALL BE FLEXIBLE BLANKET GLASS FIBER INSULATION WITH FACTORY APPLIED FLAME RETARDANT, FOL-SCRM-KRAFT VAPOR BARRIER (FSK), MAXIMUM K OF 0.30 AT 75 DEGREES F MEAN TEMPERATURE, MINIMUM .75 POUND DENSITY, INSULATION SHALL BE 2" THICK. 1.3. INSULATION SHALL BE APPLIED OVER SURFACES WHICH HAVE BEEN WIRED CLEAN AND DRY AND SHALL HAVE 3-INCH MINIMUM OVERLAP ON BOTH LONGITUDINAL AND TRANSVERSE SEAMS. 1.4. SUPPLY AND RETURN DUCTS LOCATED OUTSIDE SHALL BE LINED WITH 2" ACOUSTICAL LINER AND SEALED WATER TIGHT, OR INSULATED EXTERNALLY WITH 2" RIGID BOARD AND ALUMINUM LAGGING SEALED WATER TIGHT. <p>F. AIR FILTERS</p> <p>1. REPLACEABLE (THROWAWAY) PANEL FILTERS:</p> <ol style="list-style-type: none"> 1.1. PROVIDE FACTORY-FABRICATED, VISCOUS-COATED, FLAT PANEL TYPE REPLACEABLE AIR FILTERS WITH HOLDING FRAMES AS INDICATED, IN SIZES INDICATED, WITH 2" THICK UL CLASS 5 THROWAWAY MEDIA MATERIAL, CONSTRUCT MEDIA OF INTERLACED GLASS FIBERS, SPRAY WITH NON-FLAMMABLE ADHESIVE, FRAME IN THROWAWAY FIBERBOARD CASINGS, AND SANDWICH BETWEEN PERFORATED METAL GRILLES. CONSTRUCT DUCTWORK-HOLDING MEDIA OF 20-GA. GALVANIZED STEEL, CAPABLE OF HOLDING MEDIA AND MEDIA FRAME IN PLACE, AND GASKETED TO PREVENT UNFILTERED AIR BY-PASSING BETWEEN MEDIA FRAMES AND HOLDING MEMBERS. 1.2. PROVIDE FILTERS WITH RATED FACE VELOCITY OF 500 FPM, INITIAL RESISTANCE OF 0.7 GREATER THAN 0.30" W.G., FINAL RATED RESISTANCE OF 0.50" W.G., AND AVERAGE AERIAL RESISTANCE OF 80%. <p>G. LIST OF ACCEPTABLE MANUFACTURERS</p> <p>1. FOLLOWING IS A LIST OF MANUFACTURERS WHOSE EQUIPMENT IS ACCEPTABLE AS TO MANUFACTURE, SUBJECT TO CONFORMANCE WITH THE DRAWINGS AND SPECIFICATIONS. CAREFUL CHECKING MUST BE MADE TO VERIFY THAT EQUIPMENT WILL MEET CAPACITIES, REQUIREMENTS, SPACE AND WEIGHT ALLOCATIONS.</p> <ol style="list-style-type: none"> 1.1. AIR DEVICES: TITUS, KREUGER, METAL-AIRE, PRICE 1.2. INSULATION: CERTAINTED, OWENS-CORNING, MANVILLE, KNAUF 1.3. DUCT SEALANT: DESIGN POLYMERSICS, MCGILL AIRFLOW, CANVAS TAPE AND ARABOL 1.4. AIR FILTERS: AFF, FARR OR FLANDERS. <p>2. APPROVAL FOR SUBSTITUTIONS MUST BE MADE IN ACCORDANCE WITH PART 1, SECTION G "SUBSTITUTIONS" OF THESE SPECIFICATIONS.</p> | <p>PART III - EXECUTION</p> <p>A. GENERAL</p> <p>1. INSTALL MATERIALS AND EQUIPMENT IN AN ARRANGEMENT THAT WILL GIVE THE GREATEST PRACTICAL EASE OF OPERATION AND SERVICE TO THE OWNER.</p> <p>2. INSTALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES.</p> <p>3. PERFORM WORK IN ACCORDANCE WITH THE BEST TRADE PRACTICES. INSTALL MATERIALS AND EQUIPMENT SQUARELY WITH THE BUILDING LINES. PROVIDE RIGID PERMANENT BASES AND SUPPORTS FOR WORK.</p> <p>4. CONSTRUCT AND BRACE EQUIPMENT, PIPING, ETC., SO THAT THERE WILL BE NO VIBRATION AND/OR RATTLING WHEN THE SYSTEM IS IN OPERATION.</p> <p>5. COVER AND PROTECT EQUIPMENT AND MATERIALS FROM WEATHER, THEFT, ETC., UNTIL DATE OF COMPLETION. PLUS AND/OR CAP OPEN ENDS OF INSTALLED PIPING AND/OR DUCTWORK PENDING EXTENSION OR FINAL CONNECTION.</p> <p>B. DUCTWORK</p> <p>1. CONSTRUCT DUCTWORK WITH MATERIAL, GAUGES, JOINTS, BRACING AND SUPPORTS IN ACCORDANCE WITH LATEST SMACNA STANDARDS.</p> <p>2. DUCTWORK SHALL BE RIGIDLY CONSTRUCTED AND SUBSTANTIALLY AIR-TIGHT. SEAL ALL DUCTWORK WITH A WATER BASED DUCT SEALANT (DESIGN POLYMERSICS DP-1010 OR EQUAL) OR ARABOL AND CANVAS TAPE, DO NOT UTILIZE PRESSURE SENSITIVE TAPES. SEAL DUCTWORK IN ACCORDANCE WITH TABLE 4-1 "APPLICABLE LEAKAGE CLASSES" OF THE LATEST SMACNA HVAC LEAKAGE TEST MANUAL.</p> <p>3. MAKE CONNECTIONS BETWEEN FLEXIBLE DUCTS AND RIGID TRUNK DUCTS WITH FACTORY FABRICATED FITTINGS WITH DAMPER. SECURE FLEX DUCT TO FITTINGS WITH CLAMPS OR RANDOUT STRAPS INSTALLED TO FACTORY RECOMMENDED TENSION. INSTALL CLAMPS ON LOWER AND SECOND CLAMP OVER JACKET. JOB INSPECTION MAY REQUIRE REMOVAL AND REPLACEMENT OF A RANDOM SAMPLING OF CONNECTIONS.</p> <p>4. ELBOWS SHALL HAVE A THROAT RADIUS EQUAL TO 1-1/2 TIMES THE DUCT WIDTH. SQUARE ELBOWS SHALL HAVE TURNING VANES OR SPLITTER. TRANSITIONS SHALL NOT EXCEED 4 TO 1 ASPECT RATIO.</p> <p>C. AUTOMATIC TEMPERATURE CONTROLS & AUTOMATIC SHUT-OFF</p> <p>1. ROOFTOP AC UNITS SHALL BE TURNED ON/OFF WITH PROGRAMMABLE 7-DAY THERMOSTATS. THERMOSTATS SHALL BE SET FOR CONTINUOUS FAN OPERATION.</p> <p>2. EXHAUST FANS ARE CONTROLLED AS SPECIFIED IN THE EXHAUST FAN SCHEDULE.</p> <p>3. AIR CONDITIONING UNITS SHALL BE EQUIPPED WITH IONIZATION TYPE DUCT DETECTOR, UNLESS INDICATED OTHERWISE.</p> <p>4. DUCT SMOKE DETECTOR SHALL BE LOCATED IN THE MAIN SUPPLY - AIR DUCT AHEAD OF ANY BRANCH TAKE-OFFS, AND INSTALLED PER MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS.</p> <p>5. WHERE REQUIRED BY BUILDING OFFICIALS, ACTIVATION OF ANY SMOKE DETECTOR SHALL CAUSE THE AIR-MOVING EQUIPMENT TO AUTOMATICALLY SHUT DOWN, WHERE A SYSTEM CONSISTS OF MORE THAN ONE AIR CONDITIONER, ACTIVATION OF ANY OF THE SMOKE DETECTORS IN ANY OF THE AIR CONDITIONERS SERVING THE COMMON AREA SHALL CAUSE ALL AIR-MOVING EQUIPMENT SERVING THAT COMMON AREA TO SHUT DOWN.</p> <p>6. WIRING OF THE SMOKE DETECTORS SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR AND SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE NEC AND ELECTRICAL SECTIONS OF THE SPECIFICATION.</p> <p>7. FIRE ALARM CONTRACTOR SHALL CONNECT ALL FIRE/SMOKE DAMPERS TO THE FIRE CONTROL SYSTEM, AS REQUIRED BY LOCAL BUILDING AUTHORITY. THE FIRE ALARM CONTRACTOR SHALL PROVIDE AND INSTALL THE CEILING MOUNTED SMOKE DETECTOR STATUS LIGHTS.</p> <p>D. TESTING AND BALANCING</p> <p>1. THE TESTS SHALL INCLUDE THOSE COMPONENTS NORMALLY INCLUDED AS PART OF THE AIR DISTRIBUTION AND TRANSMISSION SYSTEM.</p> <p>2. A COMPLETE BALANCING REPORT SHALL BE SUBMITTED TO THE ENGINEER UPON COMPLETION. THE BALANCING REPORT SHALL INCLUDE DESIGN QUANTITIES AND ACTUAL (MEASURED) QUANTITIES FOLLOWING BALANCING. BALANCING SHALL BE COMPLETED TO THE SATISFACTION OF THE ENGINEER. T.A.B. CONTRACTOR SHALL BE A.A.B.C. OR N.E.E.B. CERTIFIED, OR COMPANY APPROVED BY ENGINEER.</p> <p>3. INCLUDE IN BID, AS PART OF THE WORK IN THIS CONTRACT, ANY ADJUSTMENTS TO OR REPLACEMENT OF PULLEYS, BELTS, MOTORS, DAMPERS, ETC., REQUIRED FOR CORRECT BALANCING OF SYSTEMS. CONTRACTOR OR EQUIPMENT SUPPLIER TO FURNISH THE ABOVE LISTED ITEMS TO T.A.B. CONTRACTOR TO INSTALL.</p> <p>4. TEST AND ADJUST AIR DEVICES TO WITHIN PLUS OR MINUS 5 PERCENT OF DESIGN REQUIREMENTS.</p> <p>5. T.A.B. CONTRACTOR SHALL ADJUST THE DEFLECTION OF ALL APPLICABLE SUPPLY AIR DISTRIBUTION FOR PROPER AIR FLOW DIRECTION AND CHARACTERISTICS AS RECOMMENDED BY THE MANUFACTURER AND/OR TO THE SATISFACTION OF THE ENGINEER AND OWNER.</p> |
|---|---|---|---|



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SPECIFICATIONS
M0.02
DESIGN DEVELOPMENT

| OUTSIDE AIR SCHEDULE - 2012 UMC | | | | | | | |
|---------------------------------|-------------------------|--------------------------------|----------------------|--------------------------------|-------------------------------|--------------------|---------------|
| ROOM NAME | AREA (FT ²) | OCCUPANCY (PEOPLE, CALCULATED) | CFMPERSON (PER CODE) | CFM/FT ² (PER CODE) | OSA REQUIRED (CFM CALCULATED) | OSA PROVIDED (CFM) | UNIT TAGS |
| 207-I HALLWAY | 57 | 0 | 0 | 0.06 | 4 | 5 | FTU-18 |
| 207-J NEW OFFICE | 132 | 1 | 5 | 0.06 | 16 | 20 | FTU-18 |
| 207-K NEW OFFICE | 116 | 1 | 5 | 0.06 | 15 | 15 | FTU-18 |
| 207-L NEW OFFICE | 164 | 2 | 5 | 0.06 | 25 | 25 | FTU-18 |
| TOT | 469 | | | | 60 | 65 | FTU-18 |

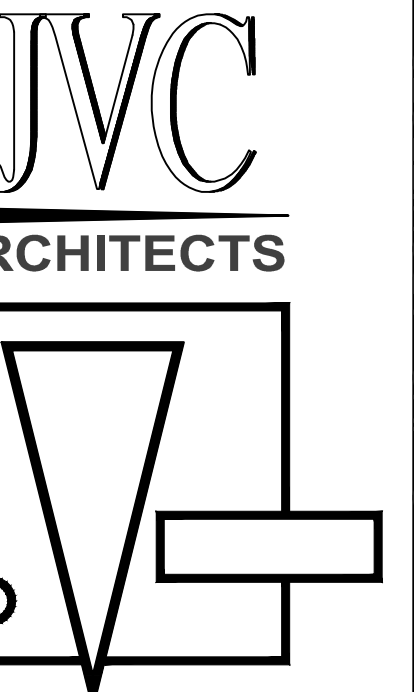
| AIR DEVICE SCHEDULE | | | | | | |
|---------------------|--------------|-------|-------------------------|------------|---|--|
| MARK | MANUFACTURER | MODEL | TYPE | PANEL SIZE | NOTES | |
| SA-1 | PRICE | 520 | SUPPLY REGISTER | 12x8 | DOUBLE DEFLECTION, 3/4" BLADE SPACING, 45° SPACING, PAINT INSIDE OF CAN FLAT BLACK, FOR SIDE WALL MOUNTING. | |
| SA-2 | PRICE | SCDA | CEILING SUPPLY DIFFUSER | 24x24 | ADJUSTABLE CONES, PAINT INSIDE OF CAN FLAT BLACK, FOR LAY-IN MOUNTING. PROVIDE OPPOSED BLADE DAMPER. | |
| SA-3 | PRICE | SCDA | SUPPLY DIFFUSER | 12x12 | ADJUSTABLE CONES, PAINT INSIDE OF CAN FLAT BLACK, FOR OPEN DUCT MOUNTING. PROVIDE OPPOSED BLADE DAMPER. | |
| RA-1 | PRICE | 530 | RETURN AIR GRILLE | 16x10 | LOUVERED FACE RETURN, PAINT INSIDE OF CAN FLAT BLACK, FOR SIDE WALL MOUNTING. | |
| RA-2 | PRICE | 80 | RETURN AIR GRILLE | 24x24 | 1/2" GRID, PAINT INSIDE OF CAN FLAT BLACK, FOR LAY-IN MOUNTING. PROVIDE OPPOSED BLADE DAMPER. | |

AIR DEVICE TAG

NOTES:

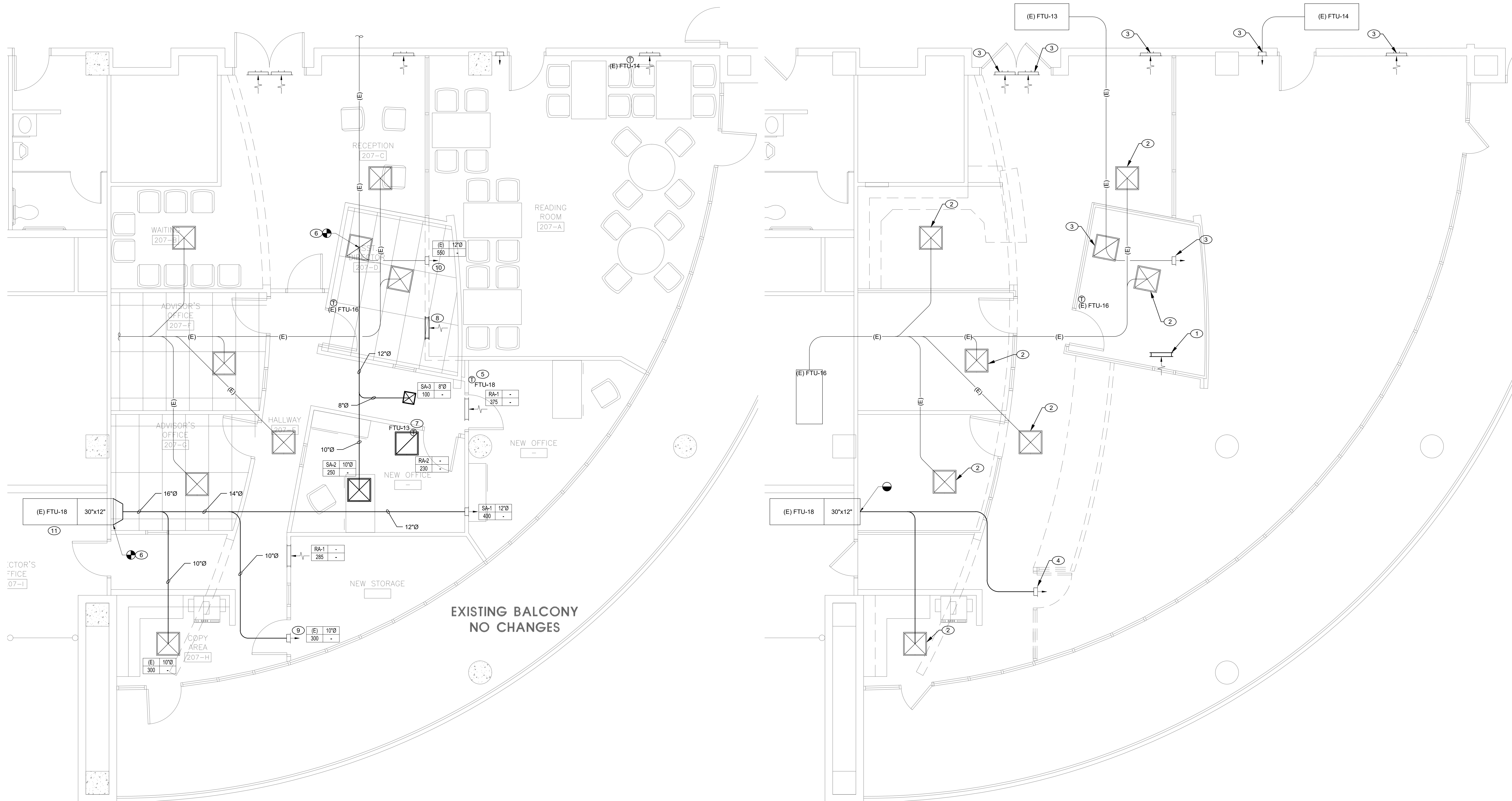
- SEE PLANS FOR NECK SIZES NOT SHOWN. DUCT RUNOUT TO BE THE SAME SIZE AS DIFFUSER NECK, UNLESS NOTED OTHERWISE.
- FRAME STYLES TO MATCH CEILING TYPE, SEE ARCHITECTURAL DRAWINGS FOR CEILING TYPES, COLORS AND EXACT LOCATIONS.

- GENERAL NOTES:**
- POSITION ALL UNITS & FANS TO PROVIDE ADEQUATE CLEARANCE FOR MAINTENANCE PER CODE.
 - COORDINATE ALL MECHANICAL WORK FOR POTENTIAL CONFLICTS WITH OTHER TRADES.
 - MAIN DUCT PENETRATIONS SHALL BE FULL SIZE RIGID SHEET METAL DOWN BELOW ROOF WITH ADEQUATE LENGTH TO ATTACH DUCT RUNS AND SMOKE DETECTOR.
 - ALL EXPOSED DUCTWORK SHALL BE RIGID SHEET METAL. ALL OTHER SUPPLY AND RETURN DUCTWORK MAY BE FLEXIBLE DUCTWORK. ALL EXHAUST DUCT SHALL BE RIGID SHEET METAL.



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- KEY NOTES:**
- EXISTING RETURN GRILLE TO BE RELOCATED. SEE MECHANICAL PLAN - NEW FOR NEW LOCATION OF GRILLE.
 - EXISTING DIFFUSER TO REMAIN.
 - EXISTING GRILLE TO REMAIN.
 - EXISTING SUPPLY GRILLE TO BE RELOCATED. SEE MECHANICAL PLAN - NEW FOR NEW LOCATION OF GRILLE. DEMOLISH DUCT BACK TO POINT OF DISCONNECT. PREPARE DUCT TO BE EXTENDED TO NEW LOCATION.
 - RELOCATE THERMOSTAT FOR FTU-18 TO NEW LOCATION AS SHOWN.
 - POINT OF CONNECTION OF NEW DUCT TO EXISTING DUCTWORK.
 - RELOCATE THERMOSTAT FOR FTU-13 TO NEW LOCATION AS SHOWN.
 - NEW LOCATION OF RETURN GRILLE, REFER TO KEYNOTE 1.
 - NEW LOCATION OF SUPPLY GRILLE, REFER TO KEYNOTE 4.
 - REBALANCE AIRFLOW AT EXISTING SUPPLY GRILLE FROM 900 CFM TO 400 CFM.
 - INCREASE AIRFLOW FROM FTU-18 TO BE 1000 CFM.



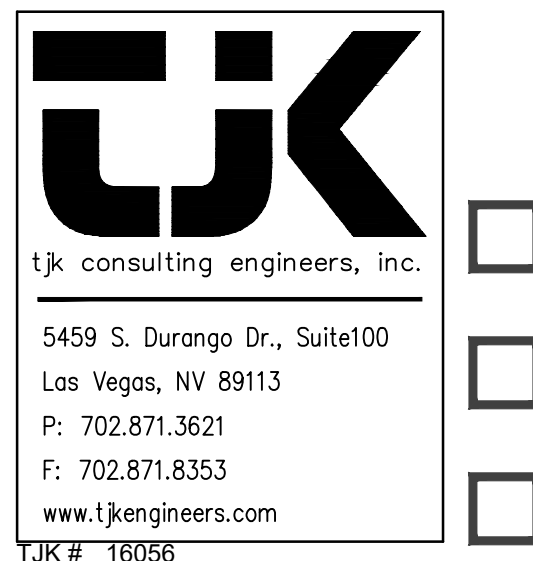
2 MECHANICAL PLAN - NEW
SCALE: 1/4" = 1'-0"

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

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MECHANICAL PLANS
M1.01
DESIGN DEVELOPMENT

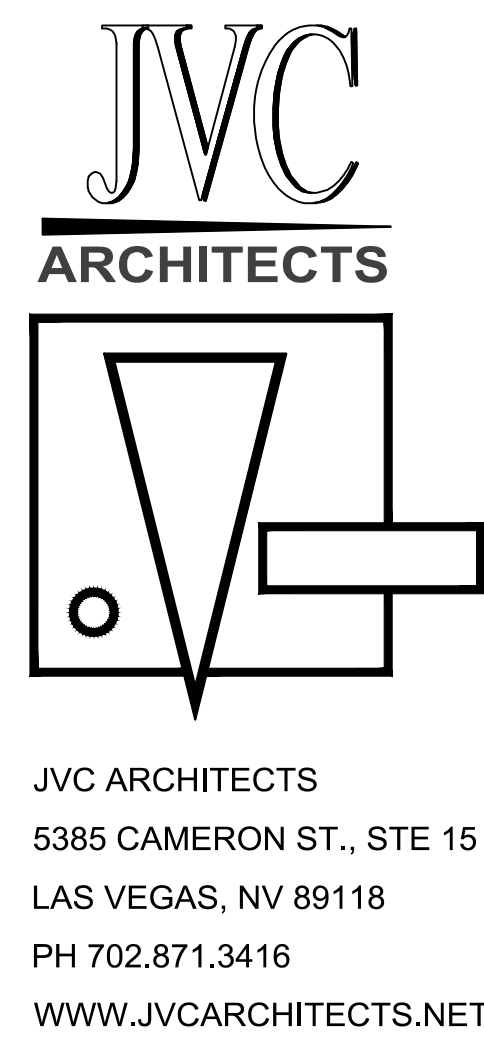
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TJK # 16056

- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOOK THROUGH ALL DRAWINGS ASSOCIATED WITH THIS PROJECT. WORK ASSOCIATED WITH THE ELECTRICAL CONTRACTOR'S TRADE MAY BE SHOWN ON OTHER DRAWINGS. ANY ADDITIONAL COST RESULTING FROM THE FAILURE TO INCLUDE THESE ITEMS SHOWN ON THE OTHER DRAWINGS WILL BE INCURRED BY CONTRACTOR.
- IT IS THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS TO ESTABLISH A STANDARD OF QUALITY. THE ENGINEER RESERVES THE RIGHT TO ALLOW OTHER METHODS AND MATERIALS NOT REFLECTED HEREIN. THE CONTRACTOR SHALL BE RESPONSIBLE TO REQUEST THE ENGINEER WAIVE THE STANDARDS TO ALLOW ALTERNATE MEANS AND METHODS PRIOR TO BEGINNING THE PROJECT. CONTRACT DOCUMENT REVISIONS TO ACCOMMODATE INSTALLED CONDITIONS, WITHOUT PRIOR APPROVAL, WILL RESULT IN ADDITIONAL DESIGN CHARGES TO THE CONTRACTOR.
- ELECTRICAL WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE NECA INSTALLATION STANDARDS TO THE SATISFACTION OF THE ARCHITECT AND ENGINEER.
- ALL WORK, MATERIALS AND EQUIPMENT SHALL CONFORM TO THE CURRENTLY ADOPTED EDITION OF ALL APPLICABLE NATIONAL, STATE AND CITY CODES AND ORDINANCES.
- ALL ELECTRICAL SYSTEM COMPONENTS SHALL BE LISTED OR LABELED BY UL OR OTHER RECOGNIZED TESTING FACILITY AS ALLOWED BY AUTHORITY HAVING JURISDICTION.
- WHERE AN APPARENT DISCREPANCY EXISTS BETWEEN THE REQUIREMENTS OF THE GENERAL NOTES AND INFORMATION PORTRAYED IN THE ELECTRICAL DRAWINGS, THE CONTRACTOR SHALL INCLUDE IN THE BID THE COST OF THE GREATER QUALITY OR QUANTITY.
- CONTRACTOR SHALL VISIT JOB SITE PRIOR TO BID AND VERIFY EXISTING CONDITIONS.
- CONTRACTOR SHALL INCLUDE IN BASE BID ALL COSTS REQUIRED FOR PERMITS AND INSPECTIONS.
- CONTRACTOR SHALL VERIFY, WITH OWNER'S REPRESENTATIVE PRIOR TO SUBMITTING BID, ALLOWABLE WORKING HOURS, EMPLOYEE PARKING AREAS, MATERIAL DELIVERY, STORAGE REQUIREMENTS, DEMOLITION AND REMOVAL OF CONSTRUCTION DEBRIS, AS WELL AS DAILY CLEAN UP REQUIREMENTS. INCLUDE ALL COSTS IN BID FOR DUST BARRIERS, DUMPS, ETC. AS REQUIRED FOR THE DURATION OF THE PROJECT. PERFORM ALL WORK AS DIRECTED BY OWNER'S REPRESENTATIVE AND ARCHITECT.
- ALL ELECTRICAL SYSTEMS SHALL BE TESTED FOR PROPER OPERATION. IF TESTS SHOW THAT WORK IS DEFECTIVE, CONTRACTOR SHALL MAKE ALL NECESSARY CORRECTIONS AT NO ADDITIONAL COST TO OWNER.
- CONTRACTOR SHALL GUARANTEE ALL WORK AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP WHICH MAY OCCUR UNDER NORMAL USE FOR A PERIOD OF ONE YEAR AFTER OWNER'S ACCEPTANCE. ALL DEFECTS SHALL BE PROMPTLY CORRECTED BY CONTRACTOR WITHOUT ADDITIONAL COST TO OWNER.
- PROVIDE AS-BUILT DRAWINGS TO ARCHITECT. DRAWINGS SHALL INCLUDE ACCURATE CONDUIT AND DEVICE LOCATIONS DIMENSIONED FROM PERMANENT LANDMARKS SUCH AS BUILDING WALLS.
- DO NOT SCALE ELECTRICAL DRAWINGS. VERIFY EXACT LOCATION OF ALL DEVICES, JUNCTION BOXES, LIGHTING FIXTURES, ETC. WITH ARCHITECTURAL AND INTERIOR DESIGN DRAWINGS PRIOR TO INSTALLATION. CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL MECHANICAL EQUIPMENT AND OTHER EQUIPMENT REQUIRING ELECTRICAL CONNECTION PRIOR TO ROUGH-IN. EVERY OUTLET HEIGHT SHALL BE VERIFIED ON EACH WALL WITH THE INTERIOR PLANNING AND DESIGN DRAWINGS. COORDINATE WITH CABINET SHOP DRAWINGS TO ENSURE PROPER HEIGHT AND LOCATION WITH RESPECT TO MILLWORK, EQUIPMENT, ETC.
- THESE DRAWINGS INDICATE THE FINISHED REQUIREMENTS FOR THE ELECTRICAL SYSTEMS, EQUIPMENT, LIGHTING FIXTURES, OUTLETS AND DEVICES. DUE TO STRUCTURAL CONDITIONS, MECHANICAL DUCT, PIPING CONFLICTS, OR OTHER LEGITIMATE REASONS, THE CONTRACTOR MAY DESIRE TO INSTALL THE WORK INDICATED IN A MANNER DIFFERENT FROM THAT SHOWN. SUCH CHANGES SHALL BE PRESENTED TO THE OWNER'S REPRESENTATIVE FOR REVIEW AND APPROVAL PRIOR TO PROCEEDING. UPON APPROVAL, THE WORK SHALL BE PERFORMED AND THE AS-BUILT DRAWINGS SHALL BE REVISED TO ACCURATELY REFLECT THE WORK AS ACTUALLY INSTALLED.
- ANY VARIANCE OR EXCEPTIONS TO THE DRAWINGS AND SPECIFICATIONS MUST BE REQUESTED AND APPROVED IN WRITING BY THE ARCHITECT. WHERE UNANTICIPATED CHANGES ARE FOUND, THE CONTRACTOR SHALL REMOVE THE INSTALLED WORK AND INSTALL ITS AS SHOWN ON THE DRAWINGS AT NO ADDITIONAL COST TO THE OWNER. COST SHALL INCLUDE ANY CUTTING, PATCHING, PAINTING AND REPAIR COST TO INSTALLED CEILINGS, WALLS ETC. AS REQUIRED FOR CORRECTING THE DEFICIENCY.
- RACEWAY SYSTEMS ARE SHOWN DIAGRAMMATICALLY. ACTUAL LOCATION AND ROUTING OF ALL SHALL BE DETERMINED BY CONTRACTOR TO SUIT FIELD CONDITIONS.
- RACEWAYS SHALL BE INSTALLED CONCEALED WHENEVER POSSIBLE. RACEWAYS INSTALLED EXPOSED (AS APPROVED BY ENGINEER IN WRITING PRIOR TO ROUGH-IN) SHALL BE ROUTED OUT OF PUBLIC VIEW AS MUCH AS POSSIBLE. RACEWAYS SHALL BE RUN PARALLEL WITH, OR AT RIGHT ANGLE TO WALLS.
- PROVIDE UL APPROVED EXPANSION FITTINGS WHERE RACEWAYS CROSS BUILDING EXPANSION JOINTS. PROVIDE BONDING JUMPER(S) SIZED PER CODE WHERE REQUIRED. PROVIDE ALL FITTINGS REQUIRED FOR A COMPLETE INSTALLATION. REFER TO ARCHITECTURAL DRAWINGS FOR EXPANSION JOINT LOCATIONS).
- CONTRACTOR SHALL PROVIDE ALL RACEWAY SYSTEMS INDICATED ON THE DRAWING PER NEC REQUIREMENTS AND GENERAL NOTES. ANY DEVIATION FROM THE WIRING METHODS INDICATED SHALL BE ALLOWED ONLY BY SPECIFIC WRITTEN APPROVAL FROM EITHER THE ARCHITECT, ENGINEER OR OWNER. CONTRACTOR'S BID SHALL INCLUDE ALL COSTS FOR RACEWAY SYSTEMS AS SPECIFIED UNLESS SPECIFIC WRITTEN APPROVAL FOR AN ALTERNATIVE WIRING METHOD IS OBTAINED FROM EITHER THE ARCHITECT, ENGINEER OR OWNER AND IS SUBMITTED AS PART OF CONTRACTOR'S FORMAL BID PROPOSAL.
- PRIOR TO INSTALLATION, CONTRACTOR SHALL REVIEW THE COMPLETE SET OF CONSTRUCTION DOCUMENTS FOR CONFLICTS WITH OTHER TRADES. CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE ALL WORK WITH OTHER TRADES TO AVOID CONFLICT DURING INSTALLATION. CONTRACTOR SHALL MAKE MINOR ADJUSTMENTS IN EQUIPMENT LOCATION AND ROUTING AS NECESSARY AT NO ADDITIONAL COST TO THE OWNER.
- CONTRACTOR SHALL BE RESPONSIBLE TO PROPERLY CUT AND PATCH EXISTING CONSTRUCTION AS REQUIRED TO INSTALL NEW ELECTRICAL WORK. ALL PATCHING SHALL BE OF THE SAME MATERIALS, WORKMANSHIP AND FINISH AS THE EXISTING WORK AND SHALL ACCURATELY MATCH ALL SURROUNDING WORK TO THE SATISFACTION OF THE ARCHITECT.
- ALL ELECTRICAL EQUIPMENT SHALL HAVE SUFFICIENT GUTTER SPACE AND LUGS TO ACCOMMODATE QUANTITY AND SIZE OF CONDUCTORS REQUIRED. CONTRACTORS SHALL PROVIDE EQUIPMENT WITH OVERSIZED ENCLOSURES WHERE REQUIRED.
- COORDINATE ELECTRICAL REQUIREMENTS FOR ALL PLUMBING AND MECHANICAL EQUIPMENT WITH FINAL CONTRACTOR SELECTION. THE CONTRACTOR SHALL SIZE DISCONNECTS BASED UPON CIRCUIT BREAKER RATINGS AND PROVIDE FUSING AS REQUIRED PER EQUIPMENT MANUFACTURER RECOMMENDATIONS AND U.L. LISTING REQUIREMENT
- SIZING OF MOTOR-RELATED ELECTRICAL COMPONENTS, INCLUDING FEEDER AND/OR BRANCH CIRCUITS (WIRE AND CONDUIT) AND OVERCURRENT PROTECTION (BREAKER AND/OR FUSES) IS BASED ON RATINGS INDICATED IN THE CONTRACT DOCUMENTS AS WELL AS NEC APPROXIMATED LOADS FOR A GIVEN MOTOR HORSEPOWER, VOLTAGE AND PHASE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ACTUAL MOTOR AND APPLIANCE RATING AND LOADS. CONTRACTOR TO PROVIDE CORRECTLY SIZED MOTOR OVERLOAD ELECTRICAL COMPONENTS BASED ON NAMEPLATE RATING. REFLECT ALL CHANGES IN THE AS-BUILT DRAWINGS.
- THE ELECTRICAL CONTRACTOR PRIOR TO ROUGH-IN, SHALL VERIFY ALL HVAC AMPERAGES, PHASES AND VOLTAGES AGAINST PLAN REQUIREMENTS AND NOTIFY ENGINEER/ARCHITECT OF ANY DISCREPANCIES. FAILURE TO VERIFY AND NOTIFY ENGINEER/ARCHITECT PRIOR TO ROUGH-IN SHALL RESULT IN THE ELECTRICAL CONTRACTOR ASSUMING RESPONSIBILITY FOR DESIGN AND INSTALLATION REQUIREMENTS.
- THE ELECTRICAL CONTRACTOR SHALL INSURE FINAL COORDINATION OF THE MANUFACTURERS RECOMMENDED FUSE SIZES FOR THE INSTALLED MECHANICAL EQUIPMENT WITH THE SIZE DISCONNECT PRIOR TO OR DURING ROUGH-IN. ADVISE ENGINEER IF CHANGES IN THE FINAL SELECTION OF MECHANICAL EQUIPMENT HAVE IMPACTED DISCONNECT SWITCH, BREAKER, OR CONDUCTOR SIZES.
- CONTRACTOR SHALL ENGAGE THE SERVICES FOR A STATE LICENSED FIRE ALARM MANUFACTURER/INSTALLER TO PREPARE ALL DESIGN DRAWINGS AND CALCULATIONS REQUIRED FOR SYSTEM APPROVAL BY THE AUTHORITY HAVING JURISDICTION. SUBMIT ALL PLANS AND PROVIDE ALL PERMITS REQUIRED FOR A COMPLETE AND OPERABLE APPROVED LIFE SAFETY SYSTEM.
- ALL PENETRATIONS OF FIRE RESISTIVE FLOORS OR WALLS SHALL BE PROTECTED BY MATERIALS AND INSTALLATION DIAGRAMS THAT CONFORM TO UL LISTING FOR "THROUGH-PENETRATION FIRE STOP SYSTEMS".
- WHERE MOTORS ARE INSTALLED IN SUSPENDED CEILINGS, CONTRACTOR SHALL PROVIDE DISCONNECT SWITCH IN SUSPENDED CEILING WITHIN REACH FROM ACCESS POINT.
- VERIFY DEVICE COLOR AND MOUNTING ORIENTATION (VERTICAL OR HORIZONTAL) WITH ARCHITECTURAL AND INTERIOR DESIGN DRAWINGS PRIOR TO ORDERING ANY EQUIPMENT AND PROVIDE DEVICES AS REQUIRED, UNLESS NOTED OTHERWISE, DEVICES AND DEVICE PLATES SHALL BE WHITE IN COLOR.

- PROVIDE TYPED UPDATED PANEL DIRECTORY TO BE MOUNTED ON INSIDE OF ALL PANEL DOOR COVERS. DIRECTORY SHALL REFLECT ALL ADDITIONS OR MODIFICATIONS TO EXISTING PANELS AND SHALL REFLECT ACTUAL "AS-BUILT" CONDITIONS.
- ALL NEW PANELBOARDS AND SWITCHBOARDS SHALL BE OF THE SAME MANUFACTURER AND HAVE LOCKING DOORS AND BE KEYPED THE SAME U.N.O.
- UPON COMPLETION OF THE INSTALLATION OF LIFE SAFETY SYSTEM WIRING AND DEVICES, A PERFORMANCE TEST OF THE ENTIRE LIFE SAFETY SHALL BE PERFORMED TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION.
- ALL EQUIPMENT ELECTRICAL TERMINATIONS TO UNDERGO A TORQUE TEST. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR MANUFACTURER'S RECOMMENDED TORQUE DOCUMENTATION AND TOOLS TO PERFORM TORQUE TEST.
- FLOOR MOUNTED ELECTRICAL EQUIPMENT SHALL BE MOUNTED ON A 4" HIGH CONCRETE PAD.
- INSTALL TRANSFORMER FOLLOWING MANUFACTURER'S RECOMMENDATIONS FOR VENTILATION CLEARANCES.
- FURNISH AND INSTALL A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM IN ACCORDANCE WITH PLANS AND SPECIFICATIONS.
- THE CONTRACTOR SHALL COORDINATE WITH THE OWNER, ARCHITECT AND ENGINEER AS REQUIRED SHUT-DOWNS OR TIE-INS RELATING TO THESE SYSTEMS. REQUESTS FOR SHUTDOWNS SHALL BE SUBMITTED IN WRITING AT LEAST ONE WEEK IN ADVANCE FOR APPROVAL BY THE OWNER.
- ALL EXPOSED RACEWAYS SHALL BE PAINTED TO MATCH ADJACENT SURFACES.
- THE ELECTRICAL CONTRACTOR ASSUMES ALL RESPONSIBILITY AND LIABILITY FOR ANY "VALUE ENGINEERING" OF THE MATERIALS, SPECIFICATIONS AND DESIGN OF THIS PROJECT, INCLUDING ANY AND ALL COST FOR ANY REVISIONS TO THE CONTRACT DOCUMENTS REQUIRED AS A RESULT IF THE "VALUE ENGINEERING".
- PROPOSED ALTERNATE LIGHT FIXTURES SHALL BE SUBMITTED WITH A PHOTOMETRIC STUDY SHOWING COMPLIANCE WITH ALL APPLICABLE LIGHTING CODES AND ORDINANCES.
- AFTER COMPLETION OF THE INSTALLATION, THE ENTIRE ELECTRICAL SYSTEM SHALL BE THOROUGHLY CLEANED. REMOVE ALL FOREIGN MATERIAL, DUST, PAINT, OIL, GREASE, UNNEEDED LABELS AND STICKERS FROM EQUIPMENTS. REMOVE ALL DEBRIS ACCUMULATED DURING CONSTRUCTION.
- ALL 120V AND 277V DEVICES SHALL HAVE A DEDICATED NEUTRAL.

| SHEET INDEX | | PROCESS SET SHEET |
|--------------|--------------------------------|----------------------|
| SHEET NUMBER | SHEET TITLE | |
| E0.01 | GENERAL INFORMATION | |
| E0.02 | ELECTRICAL SPECIFICATIONS | |
| E0.10 | IECC | |
| E0.21 | DEMOLITION PLANS | |
| E1.01 | ELECTRICAL PLANS | |
| E5.01 | ONE LINE DIAGRAM AND SCHEDULES | |

| ELECTRICAL LEGEND: | | | | ABBREVIATIONS: | | | |
|--------------------|------|-----|---|--|------|-----|---|
| EXT | DEMO | NEW | DEFINITION | EXT | DEMO | NEW | DEFINITION |
| | | | PANELBOARD SURFACE MOUNTED PANELBOARD FLUSH MOUNTED SWITCHBOARD | | | | CONDUIT SEALING FITTING (USED FOR CLARITY ONLY) INTERRUPTER SWITCH FUSE |
| | | | TERMINAL CABINET TRANSFORMER PULLBOX | | | | CIRCUIT BREAKER DRAWOUT CIRCUIT BREAKER METERING |
| | | | MOTOR STARTER COMBINATION MOTOR STARTER COMBINATION MOTOR STARTER VENDOR FURNISHED | | | | DISCONNECT SWITCH "F" INDICATES FUSIBLE DISCONNECT SWITCH VENDOR FURNISHED KILOWATT HOUR DEMAND METER |
| | | | CONTACTOR CONTACTOR VENDOR FURNISHED TELEPHONE TERMINAL BOARD 4 X 8 X 3/4" FIRE TREATED PLYWOOD | | | | TRANSFORMER MOTOR OUTLET GENERATOR |
| | | | TELEPHONE TERMINAL CABINET FLUORESCENT FIXTURE - LETTER DENOTES TYPE (LOWER CASE LETTER DENOTES SWITCHING), NUMBER DENOTES CIRCUIT WALL MOUNTED FIXTURE (FLUORESCENT SHOWN) - LETTER DENOTES TYPE | | | | GROUND ROD SOLENOID VALVE SPEAKER MOTION DETECTOR |
| | | | HID OR INCANDESCENT FIXTURE - LETTER DENOTES TYPE FLUORESCENT STRIP FIXTURE - LETTER DENOTES TYPE TRACK LIGHTING - LETTER DENOTES TYPE | | | | EMERGENCY LIGHTING UNIT - LETTER DENOTES TYPE EXIT FIXTURE - SHADED AREA DENOTES LIGHTED FACE, ARROWS DENOTE DIRECTION - LETTER DENOTES TYPE EMERGENCY OR NIGHT LIGHT CONNECTED FIXTURE (FLUORESCENT SHOWN) - LETTER DENOTES TYPE |
| | | | POLE MOUNTED HID AREA LIGHT - LETTER DENOTES TYPE SPORTS FIELD POLE ASSEMBLY SINGLE RECEPTACLE 18" AFF UNLESS NOTED OTHERWISE | | | | DUPLICATE RECEPTACLE 18" AFF UNLESS NOTED OTHERWISE FLOOR MOUNTED DUPLEX RECEPTACLE QUADRUPLX RECEPTACLE 18" AFF UNO |
| | | | ISOLATED GROUND TYPE (ORANGE) DUPLEX RECEPTACLE AT 18" AFF UNO. ISOLATED GROUND TYPE (ORANGE) QUADRUPLX RECEPTACLE AT 18" AFF UNO. COUNTER HEIGHT RECEPTACLE (VERIFY HEIGHT) | | | | ISOLATED GROUND TYPE (ORANGE) DUPLEX RECEPTACLE AT 18" AFF UNO. ISOLATED GROUND TYPE (ORANGE) QUADRUPLX RECEPTACLE AT 18" AFF UNO. GFI DUPLEX RECEPTACLE 18" AFF UNLESS NOTED OTHERWISE SWITCHED DUPLEX RECEPTACLE 18" AFF UNLESS NOTED OTHERWISE ELECTRIC SHEET NOTE DESIGNATION |
| | | | MECHANICAL EQUIPMENT CROSS REFERENCE SPECIAL PURPOSE RECEPTACLE - NUMBER REFERS TO RECEPTACLE SCHEDULE CLOCK OUTLET | | | | MULTIOUTLET ASSEMBLY - ARROW HEADS INDICATE EXTENT, NUMBERS INDICATE SPACINGS IN INCHES SINGLE POLE SWITCH 48" AFF UNO THREE WAY SWITCH 48" AFF UNO |
| | | | FOUR WAY SWITCH 48" AFF UNO KEY OPERATED SWITCH DIMMER OPERATED SWITCH | | | | SWITCH WITH PILOT LIGHT MOTION SENSING SWITCH CONTROL STATION |
| | | | TELEPHONE OUTLET 18" AFF UNO PAY TELEPHONE OUTLET 48" AFF UNO FLOOR MOUNTED TELEPHONE OUTLET | | | | COMPUTER OUTLET OR SPECIAL PURPOSE COMMUNICATIONS RADIO OUTLET PHOTOELECTRIC CELL |
| | | | TIME CLOCK BRANCH CIRCUIT CONSISTING OF 2#12 IN MINIMUM SIZE CONDUIT NOT INCLUDING GROUND WIRE HOME RUN TO PANELBOARD OR DEVICE - NUMBER OF ARROW HEADS INDICATES NUMBER OF CIRCUITS | | | | BRANCH CIRCUIT - SHORT SLASHES INDICATE NUMBER OF PHASE OR SWITCH LEGS, LONG SLASHES INDICATE NUMBER OF NEUTRALS, LONG SLASH W/ A DOT INDICATES A SEPARATE ISOLATED GROUND WIRE CONDUIT IN SLAB OR UNDERGROUND |
| | | | | AFF ABOVE FINISHED FLOOR AFG ABOVE FINISHED GRADE AL ALUMINUM BKR BREAKER C CONDUIT CKT CIRCUIT C.O. CONDUIT ONLY CU COPPER DWG DRAWING ELEC ELECTRICAL EXT EXISTING GFI GROUND FAULT INTERRUPT GND GROUND | | | |
| | | | | J-BOX JUNCTION BOX KVA KILOVOLT AMPS KW KILOWATT LTG LIGHTING NTS NOT TO SCALE PNL PANEL PWR POWER TYP TYPICAL UNO UNLESS NOTED OTHERWISE V VOLTS VA VOLT AMPS WP WEATHER PROOF XFMR TRANSFORMER | | | |



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TJK # 16056

GENERAL INFORMATION
E0.01
DESIGN DEVELOPMENT

ELECTRICAL SPECIFICATIONS
SECTION 16000
PROJECT NUMBER TJK#16056

PART 1 - GENERAL REQUIREMENTS:

1.1 DESCRIPTION

- A SCOPE: THE ELECTRICAL WORK CONSISTS OF FURNISHING EVERYTHING NECESSARY FOR AND INCIDENTAL TO THE EXECUTION AND COMPLETION OF ALL ELECTRICAL WORK INDICATED ON THE DRAWINGS AND SPECIFIED BELOW INCLUDING BUT NOT LIMITED TO:
- LIGHTING FIXTURES AS INDICATED AND SPECIFIED ON THE PLANS.
 - ELECTRICAL PANELS, CONTROLS SERVICE, DISCONNECTS, CONDUITS, WIRING, ETC. FOR ALL OUTLETS AND EQUIPMENT.
 - TELEPHONE OUTLETS AND CONDUIT AS INDICATED.
 - CONDUIT AND OUTLETS FOR ALARM, COMPUTER, CCTV, AND SECURITY SYSTEM AS INDICATED.
 - CONTROL WIRING FOR ELECTRICAL AND HVAC SYSTEMS.
 - TELEPHONE CONDUIT SYSTEM TO POINT OF CONNECTION WITH TELEPHONE COMPANY.
- B THE DRAWINGS ARE DIAGRAMMATIC UNLESS INDICATED OTHERWISE. THE DRAWINGS REFLECT CIRCUITING ONLY AND ARE NOT DEPICTING EXACT CONDUIT ROUTING UNLESS SPECIFICALLY NOTED OTHER WISE.
- DATA PRESENTED ON THESE DRAWINGS ARE AS ACCURATE AS PLANNING CAN DETERMINE, BUT FIELD VERIFICATION OF ALL DIMENSIONS, LOCATIONS, LEVELS, ETC. TO SUIT FIELD CONDITIONS IS REQUIRED. REVIEW ALL CIVIL, ARCHITECTURAL, STRUCTURAL AND MECHANICAL DRAWINGS AND ADJUST ALL WORK TO MEET THE REQUIREMENTS OF CONDITIONS SHOWN. DISCREPANCIES BETWEEN DIFFERENT PLANS, OR BETWEEN DRAWINGS AND SPECIFICATIONS, OR REGULATIONS AND CODES GOVERNING THE INSTALLATION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN WRITING BEFORE THE DATE OF BID OPENING. IF DISCREPANCIES ARE NOT REPORTED, THE CONTRACTOR SHALL BID THE GREATER QUANTITY OR BETTER QUALITY, AND APPROPRIATE ADJUSTMENTS WILL BE MADE AFTER CONTRACT AWARD. CONTRACTOR SHALL BE RESPONSIBLE TO FIELD MEASURE AND CONFIRM MOUNTING HEIGHTS AND LOCATION OF ELECTRICAL EQUIPMENT WITH RESPECT TO COUNTERS, ETC. DO NOT SCALE DISTANCES OFF THE ELECTRICAL DRAWINGS. USE ACTUAL BUILDING DIMENSIONS.
 - IN ALL CASES SWITCHES CONTROLLING LIGHTING ARE TO BE LOCATED ON THE STRIKE SIDE OF DOORS. LOCATION INDICATED FOR SWITCHES AND OUTLETS ARE APPROXIMATE. OWNER MAY MAKE MINOR RELOCATIONS AT NO ADDITIONAL CHARGE.

C EXAMINE ALL DRAWINGS FOR WORK REQUIRED BY THIS SUBCONTRACTOR.

1.2 CODES

- A ALL WORK SHALL BE IN ACCORDANCE WITH THE NEC AND LOCAL GOVERNING CODES.
- ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH REQUIREMENTS OF THE SERVING POWER AND TELEPHONE COMPANIES.
 - ALL OFF SITE WORK SHALL BE IN ACCORDANCE WITH THE UNIFORM STANDARD DRAWINGS FOR CLARK COUNTY AREA.
 - ALL FIRE ALARM WORK SHALL BE IN ACCORDANCE WITH STATE FIRE MARSHALL, NFPA AND NFC.
- B ALL DATA/TELECOMMUNICATIONS WORK SHALL BE IN ACCORDANCE WITH REQUIREMENTS OF THE TIA/EIA BUILDING TELECOMMUNICATIONS WIRING STANDARDS.

1.3 SUBSTITUTIONS

- A CONTRACTOR'S BID PRICE SHALL REFLECT THE COSTS OF ALL MATERIALS AS SPECIFIED. NO PRIOR APPROVAL OF MATERIALS WILL BE GIVEN PRIOR TO AWARD OF BID. ALL SWITCHGEAR AND PANELBOARDS SHALL BE FURNISHED BY A SINGLE MANUFACTURER.
- B SUBSTITUTIONS OF EQUAL QUALITY, COST AND OF BENEFIT TO THE OWNER WILL BE EVALUATED AT THE CONTRACTOR'S REQUEST. ANY ADDITIONAL COST TO THE OWNER FOR REVIEW OF SUBSTITUTIONS WILL BE AT THE CONTRACTOR'S EXPENSE. CONTRACTOR TO PROVIDE ALL NECESSARY PHOTOMETRIC POINT BY POINT LAYOUT FOR ALL SUBSTITUTED FIXTURES.
- C AFTER REVIEW OF SUBSTITUTES, THE DECISION OF THE ENGINEER IN DETERMINING EQUAL MATERIALS WILL BE FINAL.

1.4 SUBMITTALS

- A PROVIDE SUBMITTALS FOR THE FOLLOWING EQUIPMENT:
- WIRING DEVICES AND DIMMERS
 - LIGHTING FIXTURES
- B SHOP DRAWINGS AND APPROVALS
- THE CONTRACTOR SHALL SUBMIT SIX (6) IDENTICALLY BOUND SETS OF SHOP DRAWINGS ON THE FOLLOWING ITEMS:
 - OUTLINE DRAWINGS AND DATA SHEETS OF EACH CIRCUIT BREAKER, DISCONNECT, TRANSFER SWITCH, GENERATOR, TRANSFORMER, PANEL BOARD, AND SWITCHBOARD.
 - HIGHLIGHT SERVICE CONDITIONS OF EQUIPMENT AND THE APPROPRIATE DERATING TO MEET 2.1.B.
 - DATA SHEETS OF ALL WIRING DEVICES, LIGHTING FIXTURES, AND FUSES.

1.5 QUALITY ASSURANCE

- A ALL WORK SHALL BE COMPLETED IN A NEAT AND WORKMANLIKE MANNER AND IN ACCORDANCE WITH NECA STANDARDS.
- B ALL WORK SHALL BE SUBJECT TO INSPECTION AND POSSIBLE REJECTION IF NOT IN ACCORDANCE WITH THESE SPECIFICATIONS. THE DRAWINGS, AND INSTALLED IN NEAT AND WORKMANLIKE MANNER.
- C ANY REJECTED WORK SHALL BE REPLACED AT NO ADDITIONAL COST TO THE OWNER.

PART 2 - PRODUCTS:

2.1 MATERIAL AND EQUIPMENT

- A MATERIAL AND EQUIPMENT SHALL BE NEW AND OF CURRENT PRODUCTION BY MANUFACTURERS REGULARLY ENGAGED IN THE MANUFACTURE OF SUCH ITEMS. ELECTRICAL SWITCHGEAR AND COMPONENTS SHALL BE THE PRODUCT OF A SINGLE MANUFACTURER. ALL MATERIAL SHALL BE UL LISTED.

B SERVICE CONDITIONS

- ALTITUDE- 2100 FEET
- TEMPERATURE
 - INDOOR - 40 DEGREE C (100 DEGREE F)
 - OUTDOOR - 60 DEGREE C (140 DEGREE F)

C CONDUITS

- INTERIOR CONDUIT SHALL BE EMT WITH COMPRESSION OR SET SCREW FITTINGS.
- EXTERIOR CONDUIT EXPOSED TO DAMAGE SHALL BE TYPE RGS.
- EXTERIOR BURIED CONDUIT SHALL BE SCHEDULE 40 PVC WITH PVC COATED RGS BENDS WHEN PENETRATING THROUGH FLOOR SLABS.
- FMC SHALL BE USED FOR FINAL CONNECTION TO LIGHTING FIXTURES NOT TO EXCEED 72 INCHES.
 - FNC OR ALUMINUM FMC SHALL NOT BE USED.
 - FMC SHALL NOT BE USED EXCEPT AS NOTED ABOVE WITHOUT PRIOR APPROVAL OF THE ENGINEER.
- LIQUID-TITE FMC SHALL BE USED FOR FINAL CONNECTION TO MOTORS.
- MC CABLE MAY NOT BE USED.
- CONDUIT FITTINGS SHALL BE STEEL OR MALLEABLE IRON TYPE.

D CABLE

- CONDUCTORS SHALL BE TYPE THHN/THWN 75 DEGREE WIRE.
- CONDUCTORS SHALL BE COPPER.
 - EQUIVALENT ALUMINUM WIRE (8000 ALLOY) MAY BE USED IN LIEU OF COPPER FOR SIZES #10 AND LARGER. USE COMPRESSION FITTINGS ON ALL CONNECTIONS AND RESIZE CONDUIT AS REQUIRED. SUBMIT SIZING AND VOLTAGE DROP CALCULATIONS TO ENGINEER FOR REVIEW.
- MINIMUM WIRE SIZE SHALL BE #12 AWG.
 - 120V BRANCH CIRCUITS OVER 65 FEET IN LENGTH FROM THE CENTER OF THE LOAD TO THE PANEL SHALL BE #10 AWG AND BRANCH CIRCUITS OVER 130 FEET SHALL BE #8 AWG. INCREASE CONDUIT AND WIRE SIZES AS REQUIRED AT NO ADDITIONAL COST TO THE OWNER.
- UNLESS OTHERWISE REQUIRED BY LOCAL ORDINANCES GROUND WIRES SHALL BE GREEN, NEUTRAL WIRES SHALL BE WHITE (120V) OR GRAY (277V) AND PHASE WIRES SHALL BE BLACK (PHASE A), RED (PHASE B), AND BLUE (PHASE C) FOR A 120/208 VOLT SYSTEM AND BROWN (PHASE A), ORANGE (PHASE B), AND YELLOW (PHASE C) FOR A 277/480 VOLT SYSTEM.

E WIRING DEVICES

- WIRING DEVICES SHALL BE AS FOLLOWS:
 - RECEPTACLES - 120V, 20A, NEMA 5-20R, SPECIFICATION GRADE, SIDE AND BACK WIRED WITH CLAMP TYPE TERMINALS, NYLON, IVORY, 2 POLE, 3 WIRE GROUNDING.
 - PROVIDE GRAY COLOR FOR COMPUTER OUTLETS.
 - SWITCHES - 120V/277V, 20A, WHITE, HEAVY DUTY, SILENT TYPE SPECIFICATIONS GRADE.
 - DIMMERS - LUTRON NOVA T 2000W OR EQUIVELANT.
 - ISOLATED GROUND RECEPTACLES SHALL BE EQUAL TO PASS & SEYMOUR, CAT. # IG9300-HG, COLOR ORANGE.
- DEVICE PLATES SHALL BE NYLON, COLOR SHALL MATCH DEVICE WITH MATCHING SCREWS.
 - RECEPTACLES IN WET LOCATIONS SHALL BE INSTALLED WITH A HINGED OUTLET COVER/ENCLOSURE CLEARLY MARKED SUITABLE FOR WET LOCATIONS WHILE IN USE AND UL LISTED EQUAL TO:
 - TAY MAC - ML400G AND SINGLE GANG 5881-0.
 - INTERMATIC - WP1000RC.
 - PASS & SEYMOUR - WIUFC105.
- LIGHTING CONTROL
 - FURNISH AND INSTALL TIME SWITCHES, PHOTOCELLS AND CONTACTORS REQUIRED FOR LIGHTING CONTROL AS INDICATED ON THE DRAWINGS.
 - TIME SWITCHES SHALL BE INTERMATIC ET 7000 SERIES OR EQUAL BY PARAGON, GENERAL ELECTRIC, OR TORK, AND SHALL HAVE SIZE AND NUMBER OF POLES AS REQUIRED.
 - CONTACTORS SHALL BE ELECTRICALLY OPERATED AND HELD IN NEMA TYPE I ENCLOSURES HAVING AMPERAGE CAPACITY AND NUMBER POLES AND VOLTAGE CLASS INDICATED.

F PANELBOARDS

- SHALL BE GE 'A' SERIES WITH BOLT ON BREAKERS.
 - APPROVED SUBSTITUTE MANUFACTURERS ARE SQUARE D, EATON AND ITE.
- SHALL BE DEAD FRONT TYPE ONLY.
- GUTTER SPACE SHALL MEET APPLICABLE NEC REQUIREMENTS.
- SHALL BE FULLY BUSSED WHERE SPACE IS NOTED.
- WIRE TERMINATION FOR PANELBOARDS AND CIRCUIT BREAKERS SHALL BE LISTED AS SUITABLE FOR 75 DEGREE C.
- BUS BARS SHALL BE ALUMINUM.
- DO NOT USE LOAD CENTERS.

G SAFETY SWITCHES SHALL BE GENERAL DUTY TYPE, NEMA 1 INDOOR AND NEMA 3R OUTDOOR.

H OVERCURRENT PROTECTION DEVICES:

- CIRCUIT BREAKERS SHALL BE OF THE SAME MANUFACTURES AS PANELBOARDS AND SWITCHBOARDS. PROVIDE BREAKERS AS NOTED ON THE SCHEDULE.
 - FUSES USED TO PROTECT MOTORS SHALL BE BUSSMAN TYPE FRN-R. ALL FUSES INSTALLED IN FUSED DISCONNECTS SHALL BE CLASS R UNLESS NOTED OTHERWISE.
 - PROVIDE HACR RATED BREAKERS FOR MECHANICAL EQUIPMENT.
- I PROVIDE GROUNDING FOR ALL BRANCH CIRCUITS. CONDUIT, LISTED FOR USE, MAY BE USED FOR GROUNDING FOR 20A BRANCH CIRCUITS ONLY WHEN APPROVED FOR SUCH USE. ALL FMC AND NON-METALLIC CONDUIT SHALL HAVE A SEPARATE GROUND WIRE.

J LIGHTING FIXTURES AND ACCESSORIES:

- LIGHTING FIXTURES SHALL BE AS SHOWN ON THE LIGHTING FIXTURE SCHEDULE.
 - VERIFY CEILING CONSTRUCTION BEFORE ORDERING RECESSED UNITS.
 - PROVIDE PLASTER FRAMES AND HANGERS AS REQUIRED.
 - PROVIDE LAMPS FOR ALL FIXTURES.
 - LAMPS SHALL BE GUARANTEED AS FOLLOWS:
 - LED - 12 MONTHS FROM BENEFICIAL OCCUPANCY.
 - ELECTRONIC BALLASTS SHALL HAVE .95 POWER FACTOR, .875 BALLAST FACTOR AND LESS THAN 15% TOTAL HARMONIC DISTORTIONS.
- K OUTLET, PULL AND JUNCTION BOXES
- EACH SWITCH, LIGHT, RECEPTACLE OR OTHER OUTLET SHALL BE PROVIDED WITH A CODE GAUGE, GALVANIZED STEEL OUTLET BOX. JUNCTION AND PULLBOXES SHALL BE CODE GAUGE, GALVANIZED STEEL. OUTLET BOXES SHALL BE OF THE ONE PIECE, KNOCKOUT TYPE, IN GENERAL 4" SQUARE WITH PLASTER RING. PLASTER RINGS SHALL BE SET TO PROVIDE NOT MORE THAN 1/8" FROM WALL SURFACE TO RING. IN NO CASE SHALL PLASTER RING PROJECT BEYOND SURFACE OF WALL. SINGLE GANG RINGS SIMILAR TO STEEL CITY 52-C-60 SHALL BE USED FOR 4" BOXES IN UNFINISHED BRICK. RACO 3190 BOXES MAY BE USED FOR UNFINISHED MASONRY FLUSH WALL OUTLETS. CENTER ALL OUTLET BOXES IN BLOCK COURSE AND PROVIDE A SMOOTH FINISH BLOCK AT OUTLET LOCATIONS.
 - BOXES INSTALLED FOR TELEPHONE, ALARM, COMPUTER AND SECURITY SYSTEMS SHALL BE PROVIDED WITH APPROPRIATE COVERPLATES.

L TEMPERATURE CONTROL

- UNLESS OTHERWISE INDICATED ON THE PLANS ALL WIRING, ETC. SHALL BE FURNISHED AND INSTALLED BY THE TEMPERATURE CONTROL CONTRACTOR. PROVIDE CONDUIT FROM TEMPERATURE CONTROL DEVICES SHOWN ON MECHANICAL PLANS TO HVAC UNITS.

PART 3 - EXECUTION

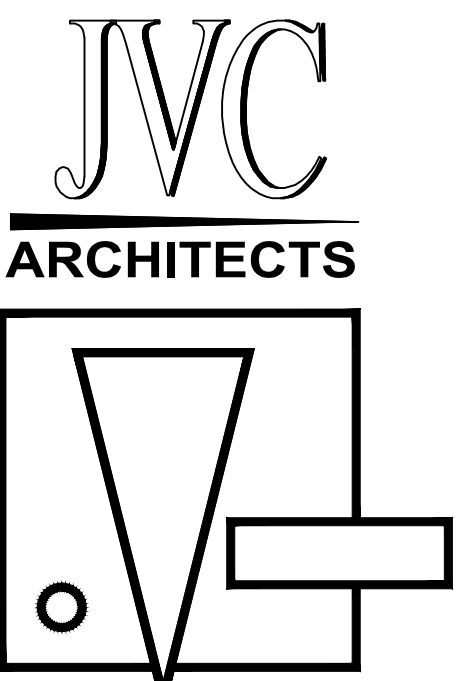
3.1 INSTALLATION

- A EQUIPMENT LOCATIONS SHALL BE AS CLOSE AS PRACTICAL TO LOCATIONS SHOWN ON THE PLAN DRAWINGS AND SUBJECT TO SUCH APPROVED REVISIONS AT NO COST TO THE OWNER AS MAY BE FOUND NECESSARY OR DESIRABLE AT THE TIME WORK IS INSTALLED.
- B CLOSE ALL OPENINGS IN WALLS, FLOORS, AND ROOFS TO THE APPROVAL OF THE ARCHITECT.
- C PAINT ALL CONDUITS AND BOXES THAT ARE REQUIRED TO BE EXPOSED TO MATCH BUILDING SURFACES. RUN ALL EXPOSED CONDUIT PARALLEL AND PERPENDICULAR TO BUILDING LINES.
- D PROVIDE ENGRAVED PHENOLIC NAMEPLATES ON ALL EQUIPMENT AND INSTALL TYPED DIRECTORY IN PANELBOARDS. FASTEN NAMEPLATES WITH SCREWS OR RIVETS, DO NOT USE ADHESIVE.
- E COORDINATE THE WORK WITH OTHER TRADES.
- F MEGGER TEST ALL FEEDER CIRCUITS AFTER INSTALLATION.
- G INSTALL 200 POUND TEST PULL NYLON PULL CORD IN ALL SIGNAL AND COMMUNICATION CONDUITS.
- H INSTALL SWITCHES AT 48" AFF AND RECEPTACLES AT 18" AFF UNLESS NOTED OTHERWISE.
- I LIGHTING FIXTURES SHALL BE FASTENED TO THE STRUCTURE INDEPENDENT OF THE CEILING SYSTEM.
- J CONDUITS AND OUTLETS SHALL BE CONCEALED WITHIN THE BUILDING STRUCTURE. EXCEPT THAT CERTAIN MOTOR AND LIGHTING FEEDER CONDUITS MAY BE RUN EXPOSED IN CERTAIN AREAS AS INDICATED ON THE DRAWINGS. CONDUIT AND OUTLETS SHOWN TO BE INSTALLED IN CABINETS, COUNTERS, AND CASEWORK SHALL BE RUN OR INSTALLED AS DIRECTED BY THE ARCHITECT.
- K FLOOR MOUNTED ELECTRICAL EQUIPMENT SHALL BE MOUNTED ON A 4" HIGH HOUSEKEEPING PAD EXTENDING 6" BEYOND EQUIPMENT.
- L PATCH AND REPAIR AREA WHERE ITEMS HAVE BEEN DEMOLISHED OR DAMAGED DURING CONSTRUCTION TO MATCH ADJACENT SURFACES TO OWNER'S APPROVAL.
- M INSTALL PULLBOXES SUCH THAT THEY ARE LOCATED AT THE HIGH POINT OF THE CONDUITS WITH 24" OF PEA GRAVEL INSTALLED BELOW.
- N CONDUITS PENETRATING FLOOR SLABS SHALL BE INSTALLED A MINIMUM OF 2" AFF.
- O LABEL ALL SPARE CONDUITS/PULLSTRINGS AT BOTH ENDS WITH IDENTIFICATION OF LOCATION AT THE OPPOSITE END.
- P A COMPLETELY AND THOROUGHLY SWAB RACEWAY BEFORE INSTALLING WIRE.
- Q REQUEST INSPECTIONS FROM LOCAL GOVERNING AUTHORITIES.

3.2 PROJECT COMPLETION

- A REMOVE ALL DISCARDED MATERIALS FROM DEMOLITION AND INSTALLATION FROM THE JOB SITE.
- B PROVIDE REPRODUCIBLE RECORD DRAWINGS OF ALL COMPLETED WORK.
- C GUARANTEE ALL MATERIAL FURNISHED AND ALL WORKMANSHIP PERFORMED FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE WORK. ANY DEFECTS DEVELOPING WITHIN THIS PERIOD, TRACEABLE TO MATERIAL FURNISHED AS A PART OF THIS SECTION OR WORKMANSHIP PERFORMED HEREUNDER, SHALL BE MADE GOOD AT NO ADDITIONAL EXPENSE TO THE OWNER.

"END OF SECTION"



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□ 08.19.16

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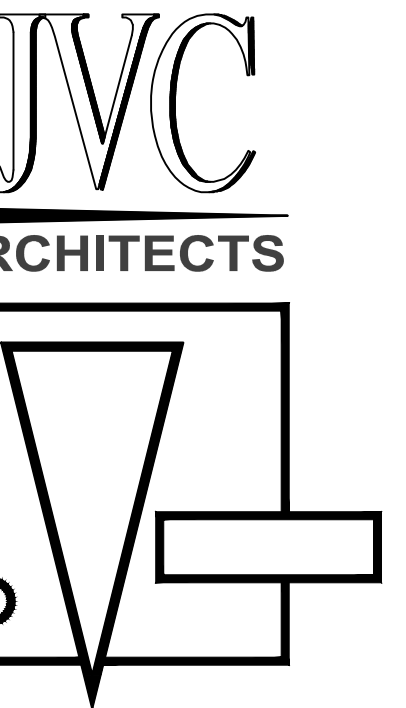


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□ ELECTRICAL
SPECIFICATIONS

□ E0.02

□ DESIGN
DEVELOPMENT



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08.19.16

COMcheck Software Version 4.0.3.0
Interior Lighting Compliance Certificate

Project Information
Energy Code: 2012 IECC
Project Title: UNLV Thomas Beam Complex Second Floor TI
Project Type: Alteration

Construction Site: 4505 S. Maryland Parkway Las Vegas, NV 89154
Owner/Agent: UNLV 4505 S. Maryland Parkway Las Vegas, NV 89154
Designer/Contractor: JVC Architects 5385 Cameron St. #15 Las Vegas, NV 89118 702.871.3416

Allowed Interior Lighting Power

| A Area Category | B Floor Area (ft ²) | C Allowed Watts / ft ² | D Allowed Watts (B X C) |
|--|------------------------------------|--------------------------------------|----------------------------|
| 1-WAITING/LOBBY (Common Space Types:Lobby): Exempt | | | |
| 2-RECEPTION (Common Space Types:Lobby) | 128 | 1.10 | 141 |
| 3-OFFICE 207K (Common Space Types:Office - Enclosed) | 175 | 1.10 | 192 |
| Total Allowed Watts = | | | 333 |

Area Category Exemption Qualifications

| Activity Area | # Fixtures | Total # Watts |
|--|------------|---------------|
| WAITING/LOBBY (Common Space Types:Lobby: 253 sq.ft.) Exemption: Replacement of bulbs and ballasts only. | | 384,000 |

Proposed Interior Lighting Power

| A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast | B Lamps/ Fixture | C # of Fixtures | D Fixture Watt. | E (C X D) |
|---|---------------------|--------------------|--------------------|--------------|
| WAITING/LOBBY (Common Space Types:Lobby: 253 sq.ft.): Exempt | | | | |
| RECEPTION (Common Space Types:Lobby: 128 sq.ft.) Linear Fluorescent 3: 48" T8 32W: Electronic | 3 | 2 | 84 | 168 |
| OFFICE 207K (Common Space Types:Office - Enclosed: 175 sq.ft.) Linear Fluorescent 6: 48" T8 20W (Super T8): Electronic | 3 | 1 | 84 | 84 |
| Linear Fluorescent 7: 24" T8U 32W: Electronic | 2 | 2 | 34 | 68 |
| Total Proposed Watts = | | | | 320 |

Interior Lighting PASSES

Interior Lighting Compliance Statement
Compliance Statement: The proposed interior lighting alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2012 IECC requirements in COMcheck version 4.0.3.0 and to comply with the mandatory requirements listed in the Inspection Checklist.

Name - Title _____ Signature _____ Date _____

Project Title: UNLV Thomas Beam Complex Second Floor TI Report date: 08/17/16
Data Filename: Untitled.cck Page 1 of 6

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: UNLV Thomas Beam Complex Second Floor TI Report date: 08/17/16
Data Filename: Untitled.cck Page 4 of 6

COMcheck Software Version 4.0.3.0
Inspection Checklist
Energy Code: 2012 IECC

Requirements: 100.0% were addressed directly in the COMcheck software
Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

| Section # & Req.ID | Plan Review | Complies? | Comments/Assumptions |
|---------------------------|---|--|--------------------------|
| C103.2 (PR4) ¹ | Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: UNLV Thomas Beam Complex Second Floor TI Report date: 08/17/16
Data Filename: Untitled.cck Page 2 of 6

| Section # & Req.ID | Final Inspection | Complies? | Comments/Assumptions |
|--------------------------------|---|--|--|
| C408.2.5.1 (F116) ¹ | Furnished as-built drawings for electric power systems within 30 days of system acceptance. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| C303.3 (F117) ² | Furnished O&M instructions for systems and equipment to the building owner or designated representative. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| C405.5.2 (F118) ¹ | Interior installed lamp and fixture lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | See the Interior Lighting fixture schedule for values. |
| C408.3 (F133) ¹ | Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| C406 (F134) ¹ | Efficient HVAC performance, efficient lighting system, or on-site supply of renewable energy consistent with what is shown the approved plans. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: UNLV Thomas Beam Complex Second Floor TI Report date: 08/17/16
Data Filename: Untitled.cck Page 5 of 6

| Section # & Req.ID | Rough-In Electrical Inspection | Complies? | Comments/Assumptions |
|--------------------------------|--|--|---|
| C405.2.2.1 (EL22) ¹ | Automatic controls to shut off all building lighting installed in all buildings. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| C405.2.1.1 (EL23) ¹ | Independent lighting controls installed per approved lighting plans and all manual controls readily accessible and visible to occupants. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| C405.2.1.2 (EL15) ¹ | Lighting controls installed to uniformly reduce the lighting load by at least 50%. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Areas that are controlled by an occupancy sensor. |
| C405.2.2.3 (EL17) ¹ | Daylight zones provided with individual controls that control the lights independent of general area lighting. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| C405.2.3 (EL17) ¹ | Sleeping units have at least one master switch at the main entry door that controls wired luminaires and switched receptacles. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |
| C405.2.2.2 (EL18) ¹ | Occupancy sensors installed in required spaces. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| C405.2.2.1 (EL20) ¹ | Primary sidelighted areas are equipped with required lighting controls. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |
| C405.2.2.2 (EL21) ¹ | Enclosed spaces with daylight area under skylights and rooftop monitors are equipped with required lighting controls. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |
| C405.2.3 (EL4) ¹ | Separate lighting control devices for specific uses installed per approved lighting plans. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| C405.3 (EL19) ¹ | Fluorescent luminaires with odd numbered lamp configurations that are within 10 feet center to center (if recess mounted) or are within 1 foot edge to edge (if pendant or surface mounted) shall be tandem wired. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Electronic high-frequency ballasts. |
| C405.4 (EL6) ¹ | Exit signs do not exceed 5 watts per face. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| C405.2.3 (EL8) ¹ | Additional interior lighting power allowed for special functions per the approved lighting plans and is automatically controlled and separated from general lighting. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |

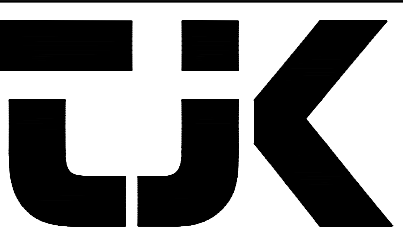
Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: UNLV Thomas Beam Complex Second Floor TI Report date: 08/17/16
Data Filename: Untitled.cck Page 3 of 6

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)


Project Title: UNLV Thomas Beam Complex Second Floor TI Report date: 08/17/16
Data Filename: Untitled.cck Page 6 of 6



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IECC
E0.10
DESIGN DEVELOPMENT

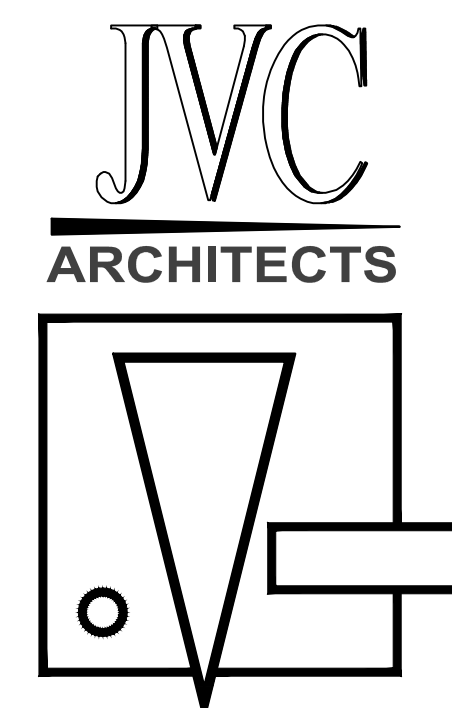
DEMOLITION GENERAL NOTES:

 HATCH INDICATES EXISTING AREAS - NO CHANGES.

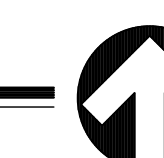
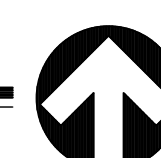
1. ALL CONDUIT AND WIRING FROM REMOVED DEVICES SHALL BE REMOVED BACK TO SOURCE.
2. PROVIDE POWER CONTINUATION TO DOWN STREAM DEVICES.
3. CONDUIT IN INACCESSIBLE LOCATIONS SHALL BE CAPPED OFF AND TO REMAIN IN PLACE.
4. WIRING SHALL NOT BE ABANDONED IN INACCESSIBLE CONDUITS.
5. PROVIDE UPDATED, TYPED PANEL DIRECTORIES FOR ALL PANEL BOARDS WITH CIRCUITS MODIFIED, ADDED OR REMOVED.
6. EXISTING CONTROLS TO REMAIN UNLESS NOTED OTHERWISE.

DEMOLITION KEY NOTES: 

1. EXISTING LIGHT FIXTURE TO BE RELOCATED. REFER TO LIGHTING PLAN FOR NEW LOCATION.
2. MAINTAIN EXISTING CIRCUIT IN SPACE FOR RE-USE. REFER TO LIGHTING PLAN FOR NEW LOCATION.



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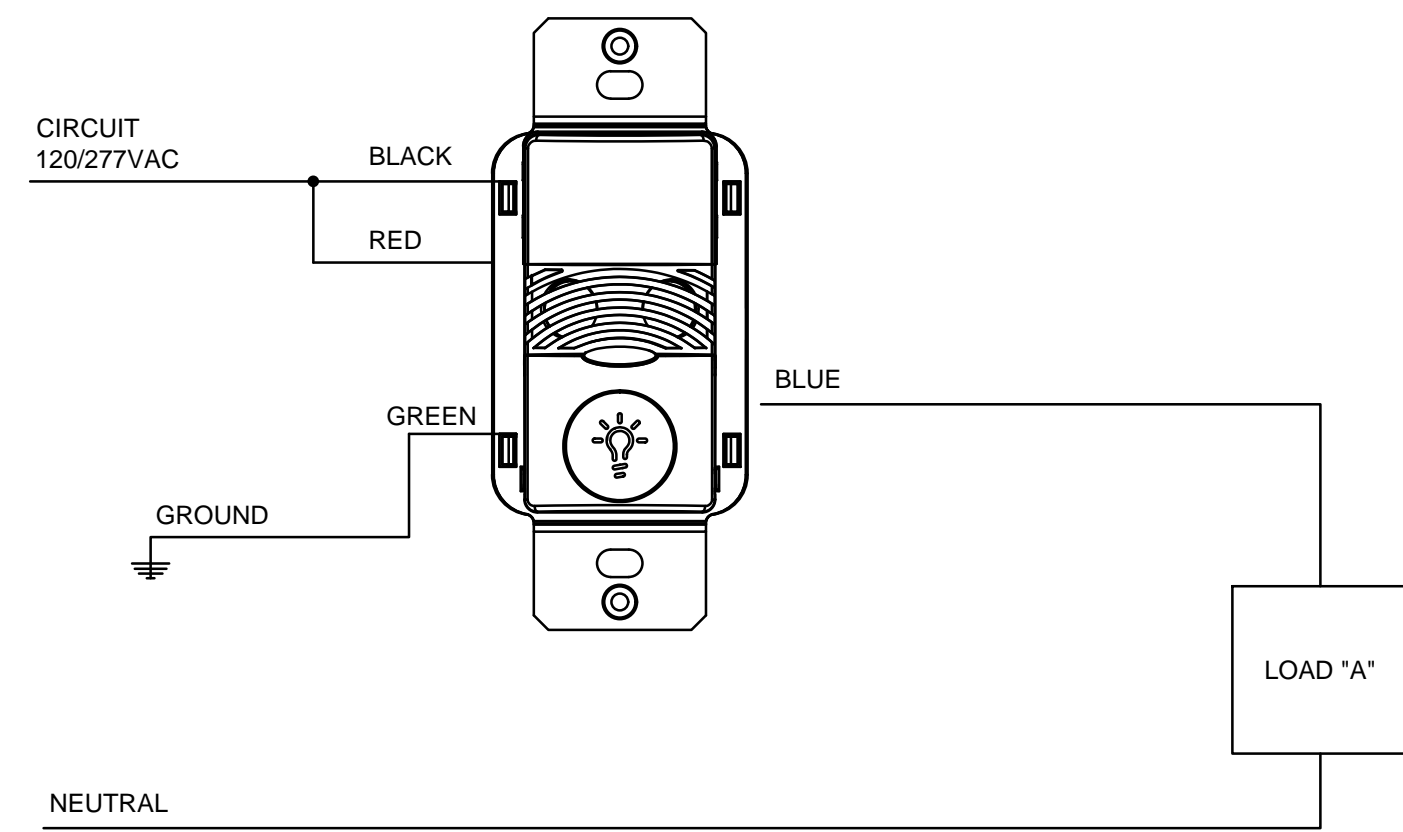
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- DEMOLITION PLANS
- E0.21
- DESIGN DEVELOPMENT



5 WALL SWITCH SENSOR WIRING DIAGRAM

E1.01

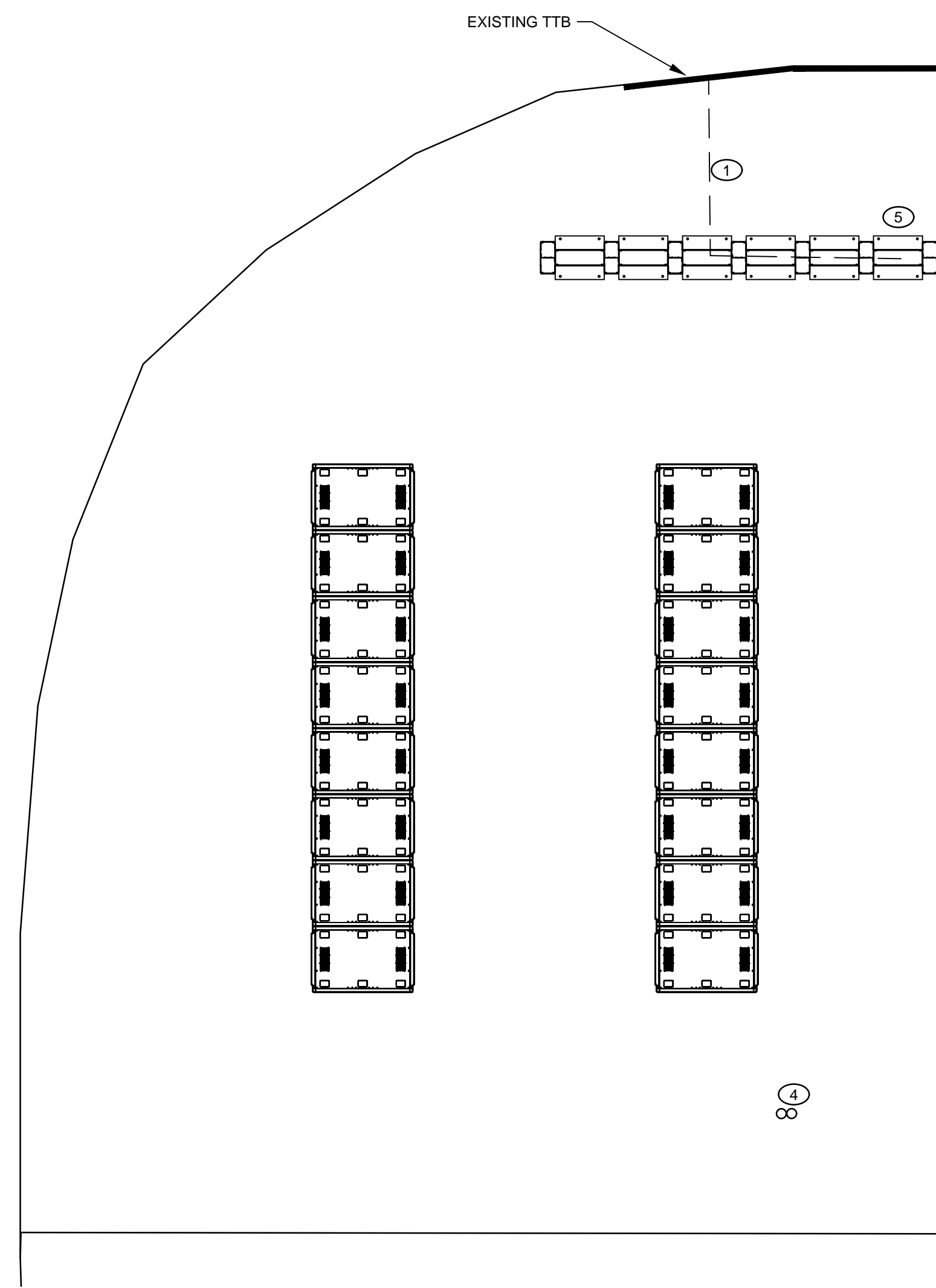
SCALE: NONE

ONW AND VNW - MANUAL MODE

1. SWITCHES IS REQUIRED TO TURN LOADS ON.
2. LOADS TURN OFF WHEN SENSOR TIMES OUT OR WITH SWITCHES.
3. IF DAYLIGHT SENSOR IS ENABLED AND LIGHT LEVEL IS ABOVE SETPOINT, LOADS WILL NOT TURN ON.

ONW - AUTOMATIC MODE

1. WHEN SENSOR ACTIVATES LOADS TURN ON.
2. SWITCHES CAN BE USED TO TURN LOADS ON OR OFF.
3. IF DAYLIGHT SENSOR IS ENABLED AND LIGHT LEVEL IS ABOVE SETPOINT, LOADS WILL NOT ON.



3 ELECTRICAL PLANS - 3RD FLOOR MDF A-305

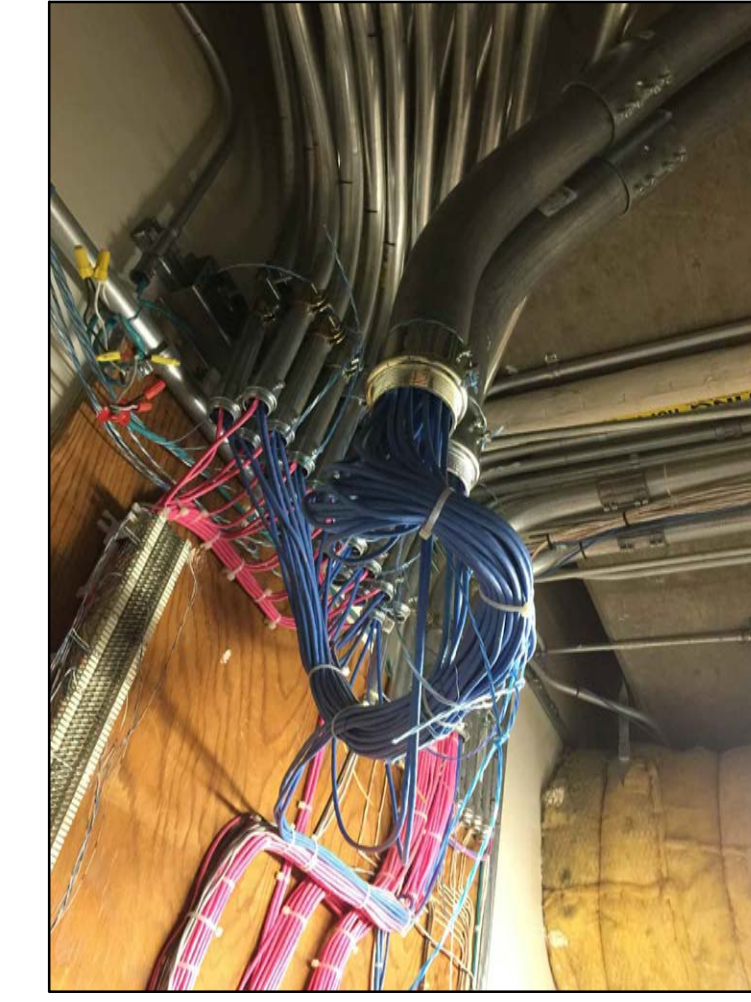
3

SCALE: NTS

4 ELECTRICAL PLANS - EXISTING DATA CONDUIT

4

SCALE: NTS



GENERAL NOTES:

HATCH INDICATES EXISTING AREAS - NO CHANGES.

1. LOCATE ALL DATA OUTLETS ADJACENT TO COMPUTER POWER RECEPTACLES SHOWN ON ELECTRICAL POWER PLANS.
2. PROVIDE AND INSTALL ADA HORN / STROBES IN LOCATIONS SHOWN. PROVIDE AND INSTALL ADDITIONAL DEVICES TO OBTAIN 80dB THROUGH OUT THE PROTECTED AREA.
3. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS SHOWING CONDUIT ROUTING AND CIRCUITING OF THE DEVICES FOR FIRE MARSHAL APPROVAL PRIOR TO START OF INSTALLATION.

LIGHTING GENERAL NOTES:

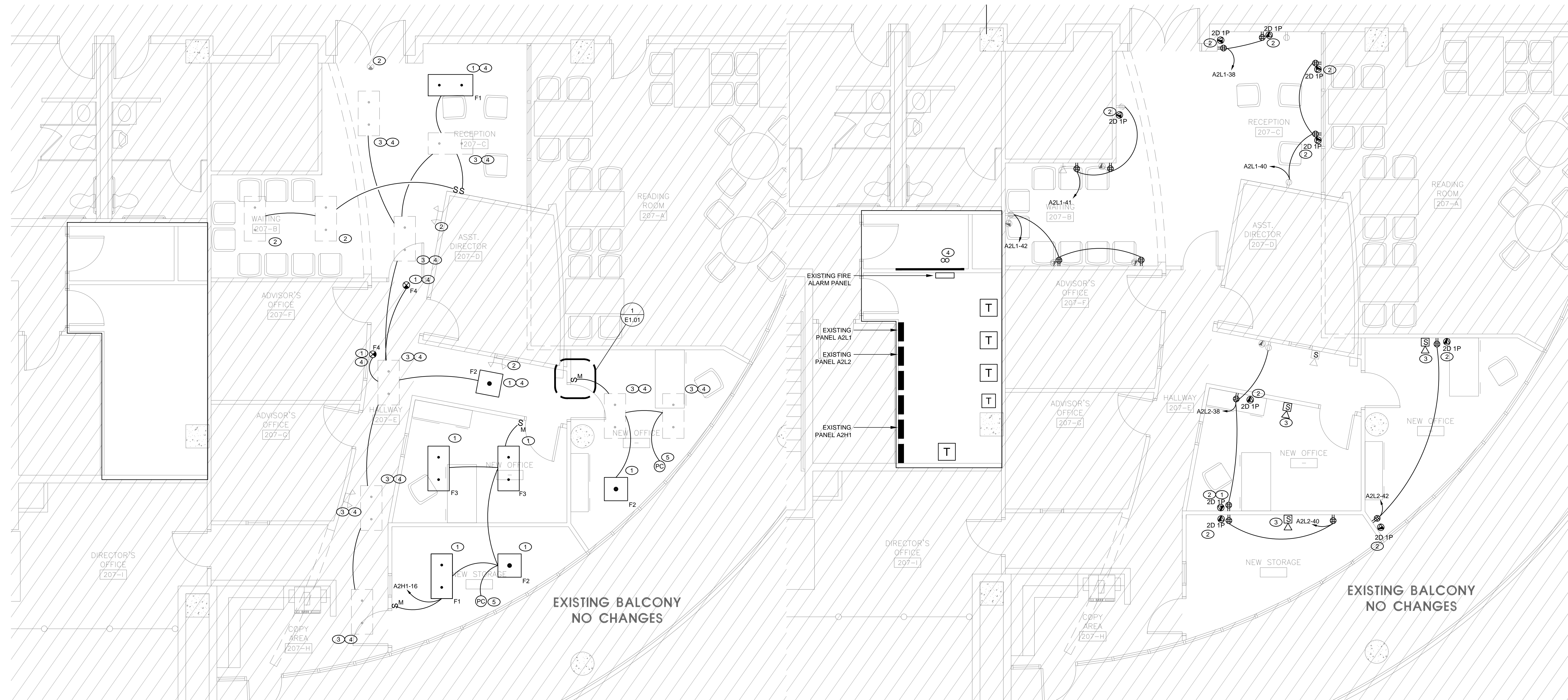
1. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF ALL LIGHTING FIXTURES.
2. VERIFY EXACT CEILING CONSTRUCTION WITH ARCHITECTURAL REFLECTED CEILING PLAN AND PROVIDE LIGHTING FIXTURES WITH ALL NECESSARY MOUNTING HARDWARE.
3. COORDINATE EXACT LIGHTING FIXTURE LOCATIONS WITH MECHANICAL EQUIPMENT AND DUCT WORK PRIOR TO ROUGH-IN.
4. ALL PENETRATIONS THROUGH FIRE RATED WALLS SHALL BE PROTECTED FROM THE SPREAD OF FIRE WITH AN APPROVED FIRESTOP SYSTEM EQUAL OR GREATER THAN THE FIRE RATING OF THE WALL.
5. ALL WALL SWITCHES SHALL BE RECESSED IN WALLS.
6. ALL CONDUIT/CABLE INSTALLATION SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER.
7. PROVIDE UNSWITCHED CONDUCTOR FOR ALL EMERGENCY BALLAST TO MAINTAIN CHARGING CIRCUIT REGARDLESS OF ON/OFF OF RELAY.

LIGHTING KEY NOTES:

1. CONTRACTOR TO PROVIDE NEW FIXTURE. FIXTURE TO MATCH EXISTING.
2. EXISTING FIXTURE TO REMAIN.
3. EXISTING FIXTURE TO BE RELOCATED TO NEW INDICATED LOCATION.
4. EXISTING CIRCUITS TO BE INTERCEPTED AND EXTENDED TO NEW PANEL AS INDICATED.

POWER/COMMUNICATION KEY NOTES:

1. PHONE CROSS CONNECT - CONTRACTOR TO PROVIDE ALL NECESSARY EQUIPMENT TO CROSS CONNECT 24 CAT 6 (SOLID CABLES) FROM THE EXISTING PHONE BACKBOARD TO A NEW 24 PORT PATCH PANEL PLACED IN THE EXISTING DATA RACKS. CONTRACTOR TO COORDINATE THE LOCATION OF THE PATCH PANEL IN THE RACK WITH THE UNLV OIT DEPARTMENT. CONTRACTOR SHALL TERMINATE THE PATCH PANEL SIDE AND LEAVE THE BACKBOARD SIDE UN-TERMINATED FOR FUTURE PUNCH DOWN BY UNLV.
2. DATA / PHONE OUTLETS - CONTRACTOR TO PROVIDE ALL NECESSARY EQUIPMENT TO RUN DATA/PHONE TO THE IDF PASS THRU TO THE MDF ROOM #TPE A305. PROVIDE NEW PATCH PANEL IN THE MDF (LEVITON QUICKPORT HIGH-DENSITY PATCH PANEL WITH CABLE MANAGEMENT BAR 48 PORTS, CAT-6, UTP, PART#49255-H48), OR APPROVED EQUIVALENT BY UNLV NDE. (WIRE MANAGEMENT JACKS FACEPLATES AND CABLE SUPPORTS) AS REQUIRED FOR ALL NEW NETWORK CABLES REFER TO THE OIT CABLING SPEC LOCATED HERE (http://oit.unlv.edu/sites/default/files/campus_wiring_standards_8-26-15_1.pdf) FOR ADDITIONAL INFORMATION.
3. ALL FIRE ALARM DEVICES, CONDUIT, AND WIRING ARE TO BE CONTRACTOR FURNISHED. CONTRACTOR INSTALLED CONDUIT AND WIRING SHALL BE PER CODE. ADDITIONAL DEVICES SHALL BE INSTALLED TO MEET LOCAL AND SPMB FIRE CODE. CONTRACTOR TO PROVIDE SHOP DRAWINGS PRIOR TO COMMENCING WORK.
4. EXISTING (2) 2" CONDUIT PATHWAY THAT ROUTE UP TO THE MDF ROOM #TPE A305 ON THE THIRD FLOOR APPROXIMATELY 80' AWAY FROM THE SECOND FLOOR CLOSED TO THE THIRD FLOOR DATA RACK.
5. EXISTING DATA RACK TO BE USED FOR THE NEW CONTRACTOR PROVIDED PATCH PANEL.



2 ELECTRICAL PLANS - LIGHTING

2

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

1 ELECTRICAL PLANS - POWER & COMM

1

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



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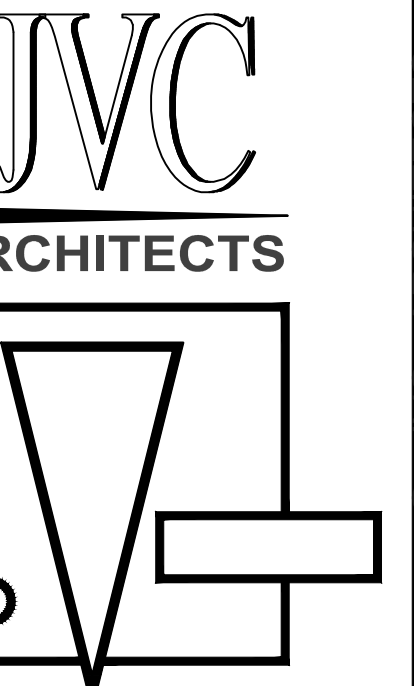
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- ELECTRICAL PLANS
- E1.01
- DESIGN DEVELOPMENT

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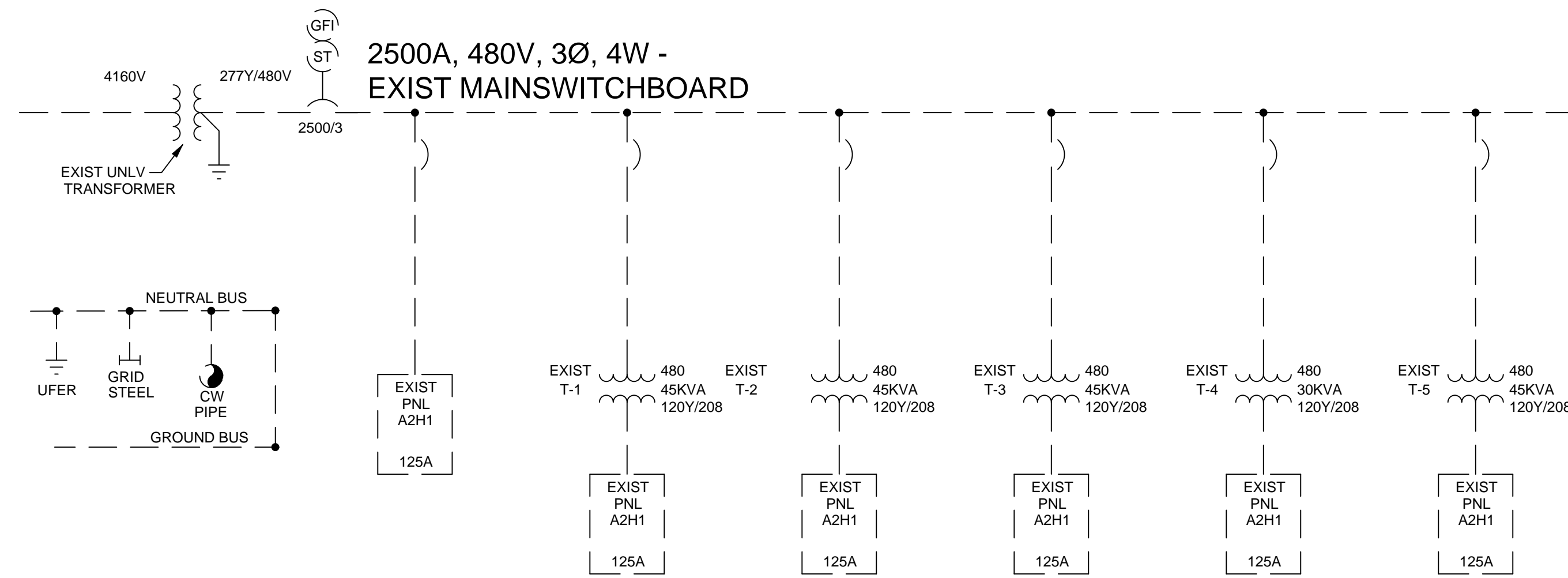
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ONE LINE DIAGRAM AND SCHEDULES
E5.01
DESIGN DEVELOPMENT



EXISTING PARTIAL ONE LINE DIAGRAM

NOT TO SCALE

ELECTRICAL LOAD CALCULATION
UNLV THOMAS BEAM SECOND FLOOR T1
TJK#16056
277/480

| | | | | | |
|-----------------------|-------------------|-------|------|--------|-------|
| EXISTING DEMAND | 67,613 VA | PF | 1.25 | DEMAND | 84520 |
| EQUIPMENT TO BE ADDED | 3 FXTURES | 90 VA | 1.00 | | 290 |
| | | | | TOTAL | 84810 |
| | 84810 (480*1.732) | | 100 | AMPS | |

EXISTING PANEL A2H1 TO REMAIN

ELECTRICAL LOAD CALCULATION
UNLV THOMAS BEAM SECOND FLOOR T1
TJK#16056
277/480

| | | | | | |
|-------------------------|-------------------|--------|------|--------|-------|
| EXISTING DEMAND | 28,265 VA | PF | 1.25 | DEMAND | 35330 |
| EQUIPMENT TO BE REMOVED | 3 RECEPTACLES* | 720 VA | 1.00 | | -2180 |
| EQUIPMENT TO BE ADDED | 3 FXTURES | 250 VA | 1.00 | | 750 |
| | | | | TOTAL | 33920 |
| | 33920 (208*1.732) | | 90 | AMPS | |

EXISTING PANEL A2L1 TO REMAIN

ELECTRICAL LOAD CALCULATION
UNLV THOMAS BEAM SECOND FLOOR T1
TJK#16056
277/480

| | | | | | |
|-------------------------|-------------------|--------|------|--------|-------|
| EXISTING DEMAND | 30,647 VA | PF | 1.25 | DEMAND | 47890 |
| EQUIPMENT TO BE REMOVED | 3 RECEPTACLES* | 360 VA | 1.00 | | -1800 |
| EQUIPMENT TO BE ADDED | 3 RECEPTACLES* | 360 VA | 1.00 | | 2160 |
| | | | | TOTAL | 48250 |
| | 48250 (208*1.732) | | 130 | AMPS | |

EXISTING PANEL A2L2 TO REMAIN

EXISTING A2H1
VOLTAGE 480V/277V
ENCLOSURE TYPE: NEMA 1
MOUNTING: EXISTING
SUPPLY FROM: ELECTRICAL ROOM 146 PHASES: THREE
WIRING: FOUR
AIC RATING (A): 50000.00
MIN. BUS CAPACITY (A): 125
MAIN BREAKER: NO

| NO. | LOAD DESCRIPTION | CKT BRK TRIP | CONNECTED LOAD (VA) | CKT BRK TRIP | LOAD DESCRIPTION | LOAD (VA) | NO. |
|-----|---------------------------------|--------------|---------------------|--------------|-----------------------------------|-----------|-----|
| 1 | LIGHTS RMS A112 - A130 | 20 4052 A | 3840 20 | | LIGHTS RMS A311 & A308 | L 2 | 1 |
| 3 | LIGHTS RMS A212 - A217 | 20 4044 B | 3840 20 | | LIGHTS RMS A311 & A308 | L 4 | 1 |
| 5 | LIGHTS RMS A211, A206 & A207 | 20 4080 C | 3696 20 | | LIGHTS RMS A310, A304, A307, A310 | L 6 | 1 |
| 7 | LIGHTS RMS A203, A206 & A207 | 20 3792 A | 2688 20 | | LIGHTS RMS A206 & A302 | L 8 | 1 |
| 9 | LIGHTS RMS A101 & A102 | 20 3792 B | 2112 20 | | LIGHTS RMS A308 | L 10 | 1 |
| 11 | LIGHTS RMS A101 & A102 | 20 2898 C | 3072 20 | | LIGHTS RMS A101 | L 12 | 1 |
| 13 | LIGHTS CORRIDOR & RM A109 | 20 2404 A | 2976 20 | | LIGHTS RMS A107, A108 & A101 | L 14 | 1 |
| 15 | LIGHTS CORR: A302 & BALCONY | 20 3372 B | 150 20 | | NEW OFFICE 207-L1 | L 16 | 1 |
| 17 | LIGHTS CORR: A302 & BALCONY | 20 2508 C | | | SPACE | 18 | 1 |
| 19 | LIGHTS RMS A207F, A207G & A207D | 20 1100 A | | | SPACE | 20 | 1 |
| 21 | SPACE | | | | SPACE | 22 | 1 |
| 23 | SPACE | | | | SPACE | 24 | 1 |
| 25 | SPACE | | | | SPACE | 26 | 1 |
| 27 | SPACE | | | | SPACE | 28 | 1 |
| 29 | SPACE | | | | SPACE | 30 | 1 |
| 31 | SPACE | | | | SPACE | 32 | 1 |
| 33 | SPACE | | | | SPACE | 34 | 1 |
| 35 | SPACE | | | | SPACE | 36 | 1 |
| 37 | SPACE | | | | SPACE | 38 | 1 |
| 39 | SPACE | | | | SPACE | 40 | 1 |
| 41 | SPACE | | | | SPACE | 42 | 1 |

| | | | |
|--------------------------------|-------|------|-------|
| TOTAL RECEPTACLE (R) | 0 | 0% | 0 |
| TOTAL MOTOR (M) LOAD | 0 | 0% | 0 |
| TOTAL LIGHTING (L) LOAD @ 125% | 54340 | 125% | 67925 |
| TOTAL KITCHEN (K) LOAD @ 100% | 0 | 0% | 0 |
| TOTAL FIXED (F) LOAD | 0 | 0% | 0 |
| TOTAL OTHER (O) LOAD | 0 | 0% | 0 |
| TOTAL ELEVATOR (E) LOAD @ 100% | 0 | 0% | 0 |
| TOTAL | 54340 | | 67925 |

NOTES:
1. EXISTING BREAKER
2. PROVIDE SHUNT TRIP DEVICE
3. PROVIDE GFCI DEVICE
4. PROVIDE RED CIRCUIT BREAKER
5. PROVIDE SUB-FEED BREAKER
6. CONTROLLED VIA RELAY
7. EXISTING LOAD REMOVED. REUSE EXISTING BREAKER
8. CIRCUIT BREAKER CONTROLLED BY OTHER EQUIPMENT.
9. PROVIDE NEW BREAKER. MOUNTING HARDWARE MATCH TYPE AND AIC RATING.

*CONNECTED PANEL (S) LOADS INCLUDED ABOVE ©2016 TJK CONSULTING ENGINEERS, INC.

EXISTING A2L1
VOLTAGE 208V/120V
ENCLOSURE TYPE: NEMA 1
MOUNTING: EXISTING
2ND FLR ELECTRICAL R PHASES: THREE
WIRING: FOUR
AIC RATING (A): 50000.00
MIN. BUS CAPACITY (A): 150
MAIN BREAKER: NO

| NO. | LOAD DESCRIPTION | CKT BRK TRIP | CONNECTED LOAD (VA) | CKT BRK TRIP | LOAD DESCRIPTION | LOAD (VA) | NO. |
|-----|---------------------------------|--------------|---------------------|--------------|-----------------------------|-----------|-----|
| 1 | R RECEPT CORR, MAIN, 3RD FLR | 20 1440 A | 1440 20 | | RECEPT ADULT & CONF | R 2 | 1 |
| 3 | R RECEPT CORR & MAIN | 20 1440 B | 1260 20 | | RECEPT ADULT & CONF | R 4 | 1 |
| 5 | R RECEPT CORR & MAIN | 20 1440 C | 1440 20 | | RECEPT ADULT & CONF | R 6 | 1 |
| 7 | R RECEPT ELEV. LUGS (LONG PROD) | 20 1105 A | 1260 20 | | RECEPT 1ST & ADMIN | R 8 | 1 |
| 9 | R RECEPT LOBBY, LOUNGE & PROD | 20 1105 B | 1350 20 | | RECEPT 1ST & ADMIN | R 10 | 1 |
| 11 | R RECEPT LOBBY, LOUNGE & PROD | 20 1105 C | 1350 20 | | RECEPT 1ST & ADMIN | R 12 | 1 |
| 13 | R RECEPT 1ST & ADMIN | 20 1105 A | 1350 20 | | RECEPT 1ST & COPY MACHINE | R 14 | 1 |
| 15 | R RECEPT 1ST & ADMIN | 20 1105 B | 1350 20 | | RECEPT 1ST & UNDERFL CAB | R 16 | 1 |
| 17 | R RECEPT 1ST & ADMIN | 20 1105 C | 1350 20 | | RECEPT 1ST & UNDERFL CAB | R 18 | 1 |
| 19 | R RECEPT VENDING | 20 180 A | 1350 20 | | RECEPT 1ST & UNDERFL CAB | R 20 | 1 |
| 21 | R RECEPT VENDING | 20 180 B | 1140 20 | | RECEPT 1ST & TLY (GPH) | R 22 | 1 |
| 23 | R RECEPT RMS 207-A & 207-B | 20 1080 C | 1140 20 | | RECEPT 2ND & ADMIN | R 24 | 1 |
| 25 | R RECEPT RMS 207-A & 207-B | 20 1080 A | 1140 20 | | RECEPT 2ND & ADMIN | R 26 | 1 |
| 27 | R RECEPT RMS 207-A & 207-B | 20 1080 B | 1140 20 | | RECEPT 2ND & ADMIN | R 28 | 1 |
| 29 | R RECEPT 2ND & ADMIN | 20 1440 C | 1140 20 | | RECEPT 2ND JAN & ELEC RM | R 30 | 1 |
| 31 | R RECEPT 2ND & ADMIN | 20 1440 A | 1140 20 | | RECEPT CORRIDOR'S 2ND FLOOR | R 32 | 1 |
| 33 | R RECEPT 2ND & ADMIN | 20 1440 B | 1140 20 | | RECEPT CORRIDOR'S 2ND FLOOR | R 34 | 1 |
| 35 | R RECEPT 2ND & ADMIN | 20 1440 C | 1140 20 | | RECEPT LIBRARY | R 36 | 1 |
| 37 | R RECEPT 2ND & ADMIN | 20 1440 A | 720 20 | | RECEPTION 207-C | R 38 | 1 |
| 39 | R RECEPT 2ND & ADMIN | 20 1440 B | 900 20 | | RECEPTION 207-C | R 40 | 1 |
| 41 | R WAITING 207-B | 20 1080 C | 1080 20 | | WAITING 207-B | R 42 | 1 |

| | | | |
|--------------------------------|-------|-----|-------|
| TOTAL RECEPTACLE (R) | 49560 | 60% | 29736 |
| TOTAL MOTOR (M) LOAD | 0 | 0% | 0 |
| TOTAL LIGHTING (L) LOAD @ 125% | 0 | 0% | 0 |
| TOTAL KITCHEN (K) LOAD @ 100% | 0 | 0% | 0 |
| TOTAL FIXED (F) LOAD | 0 | 0% | 0 |
| TOTAL OTHER (O) LOAD | 0 | 0% | 0 |
| TOTAL ELEVATOR (E) LOAD @ 100% | 0 | 0% | 0 |
| TOTAL | 49560 | | 29736 |

NOTES:
1. EXISTING BREAKER
2. PROVIDE SHUNT TRIP DEVICE
3. PROVIDE GFCI DEVICE
4. PROVIDE RED CIRCUIT BREAKER
5. PROVIDE SUB-FEED BREAKER
6. CONTROLLED VIA RELAY
7. EXISTING LOAD REMOVED. REUSE EXISTING BREAKER
8. CIRCUIT BREAKER CONTROLLED BY OTHER EQUIPMENT.
9. PROVIDE NEW BREAKER. MOUNTING HARDWARE MATCH TYPE AND AIC RATING.

*CONNECTED PANEL (S) LOADS INCLUDED ABOVE ©2016 TJK CONSULTING ENGINEERS, INC.

EXISTING A2L2
VOLTAGE 208V/120V
ENCLOSURE TYPE: NEMA 1
MOUNTING: EXISTING
2ND FLR ELECTRICAL R PHASES: THREE
WIRING: FOUR
AIC RATING (A): 50000.00
MIN. BUS CAPACITY (A): 150
MAIN BREAKER: NO

| NO. | LOAD DESCRIPTION | CKT BRK TRIP | CONNECTED LOAD (VA) | CKT BRK TRIP | LOAD DESCRIPTION | LOAD (VA) | NO. |
|-----|--------------------------|--------------|---------------------|--------------|---------------------------------|-----------|-----|
| 1 | R RECEPT LIBRARY & WORK | 20 1440 A | 180 20 | | RECEPT TELEPHONE ROOM | R 2 | 1 |
| 3 | R RECEPT LIBRARY & WORK | 20 1440 B | 1260 20 | | RECEPT COMP & EY ROOM | R 4 | 1 |
| 5 | R RECEPT LIBRARY & WORK | 20 1440 C | 1440 20 | | RECEPT COMP & EY ROOM | R 6 | 1 |
| 7 | R RECEPT GENERAL TERM RM | 20 1104 A | 1260 20 | | RECEPT COMP & EY ROOM | R 8 | 1 |
| 9 | R RECEPT GENERAL TERM RM | 20 1104 B | 1350 20 | | LIGHTS EY ROOM | L 10 | 1 |
| 11 | R RECEPT GENERAL TERM RM | 20 1104 C | 1350 20 | | LIGHTS EY ROOM | L 12 | 1 |
| 13 | R RECEPT GENERAL TERM RM | 20 1104 A | 1350 20 | | RECEPT EY ROOM | R 14 | 1 |
| 15 | R RECEPT GENERAL TERM RM | 20 1104 B | 1350 20 | | RECEPT EY ROOM | R 16 | 1 |
| 17 | R RECEPT GENERAL TERM RM | 20 1104 C | 1350 20 | | RECEPT EY ROOM | R 18 | 1 |
| 19 | R RECEPT VENDING | 20 180 A | 1350 20 | | RECEPT EY ROOM | R 20 | 1 |
| 21 | R RECEPT VENDING | 20 180 B | 1140 20 | | RECEPT PLUGMOLD & TEACHING | R 22 | 1 |
| 23 | R RECEPT VENDING | 20 180 C | 1140 20 | | RECEPT PLUGMOLD & TEACHING | R 24 | 1 |
| 25 | R RECEPT GENERAL TERM RM | 20 1260 A | 1140 20 | | RECEPT PLUGMOLD & TEACHING | R 26 | 1 |
| 27 | R RECEPT GENERAL TERM RM | 20 1260 B | 1140 20 | | RECEPT PLUGMOLD & TEACHING | R 28 | 1 |
| 29 | R RECEPT GENERAL TERM RM | 20 1440 C | 1140 20 | | RECEPT PLUGMOLD & TEACHING | R 30 | 1 |
| 31 | L LIGHTS PLANE LIGHTING | 20 1440 A | 360 20 | | RECEPT COPY MACHINE | R 32 | 1 |
| 33 | R RECEPT RM A207 | 20 1440 B | 1260 20 | | RECEPT RMS 207-F, 207-G & 207-E | R 34 | 1 |
| 35 | R RECEPT RM A207 | 20 1440 C | 360 20 | | RECEPT 207-G & 207-F | R 36 | 1 |
| 37 | L LIGHTS RM A207 | 20 1440 A | 540 20 | | STORAGE 207-L | R 38 | 1 |
| 39 | R RECEPT RM A207 | 20 360 B | 720 20 | | OFFICE 207-R | R 40 | 1 |
| 41 | SPACE | | 720 20 | | HALLWAY 207-L, OFFICE 207-J | R 42 | 1 |

| | | | |
|--------------------------------|-------|------|-------|
| TOTAL RECEPTACLE (R) | 37884 | 63% | 23942 |
| TOTAL MOTOR (M) LOAD | 0 | 0% | 0 |
| TOTAL LIGHTING (L) LOAD @ 125% | 5680 | 125% | 6975 |
| TOTAL KITCHEN (K) LOAD @ 100% | 0 | 0% | 0 |
| TOTAL FIXED (F) LOAD | 0 | 0% | 0 |
| TOTAL OTHER (O) LOAD | 0 | 0% | 0 |
| TOTAL ELEVATOR (E) LOAD @ 100% | 0 | 0% | 0 |
| TOTAL | 43464 | | 30917 |

NOTES:
1. EXISTING BREAKER
2. PROVIDE SHUNT TRIP DEVICE
3. PROVIDE GFCI DEVICE
4. PROVIDE RED CIRCUIT BREAKER
5. PROVIDE SUB-FEED BREAKER
6. CONTROLLED VIA RELAY
7. EXISTING LOAD REMOVED. REUSE EXISTING BREAKER
8. CIRCUIT BREAKER CONTROLLED BY OTHER EQUIPMENT.
9. PROVIDE NEW BREAKER. MOUNTING HARDWARE MATCH TYPE AND AIC RATING.

*CONNECTED PANEL (S) LOADS INCLUDED ABOVE ©2016 TJK CONSULTING ENGINEERS, INC.

LIGHTING FIXTURE SCHEDULE

| FIXT ID | TYPE | MANUFACTURER AND CATALOG NO. | No. | WATT | LAMPS TYPE | CKT VOLTS | REMARKS AND MOUNTING |
|---------|---|--|-----|------|--------------|-----------|----------------------|
| F1 | 2' x 4' LAMP FLOURESCENT GRID PARABOLIC | COLUMBIA P2-24-3-28-SM-LD-3-6-S-EP-U-F5835 | 3 | 28 | F5835 T5/835 | 277 | ELECTRONIC BALLAST |
| F2 | 2' x 2' LAMP FLOURESCENT GRID PARABOLIC | COLUMBIA P2-22-2-17-SM-LD-3-3-S-EPTT-U | 2 | 17 | T8 | 277 | ELECTRONIC BALLAST |
| F3 | 2' x 4' LAMP FLOURESCENT GRID PARABOLIC | COLUMBIA P2-24-3-28-G-LD-3-6-S-EP-U-F5835 | 3 | 28 | F5835 T5/835 | 277 | ELECTRONIC BALLAST |
| F4 | EXIT LIGHT WITH BATTERY BACKUP | LITHONIA SIGNATURE LE-P-HR-277-ELN | | | | 277 | |



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