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ITAP - LEE'S SUMMIT

228 SW MAIN ST.
LEE'S SUMMIT, MO 64063

PERMIT DOCUMENTS

27 FEB 2023

COLLINS WEBB #: 22066

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OWNER

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ARCHITECT

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MEP ENGINEER

ENGINEER BUILDING SOLUTIONS
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SPECIFICATIONS - PRODUCT & INSTALLATION GENERAL REQUIREMENTS

GENERAL REQUIREMENTS APPLICABLE TO ALL MATERIALS FOR THE PROJECT.

1. NO SUBSTITUTIONS OF MATERIALS WITHOUT COMPLETION OF A SUBSTITUTION REQUEST FORM AND APPROVAL OF SUBSTITUTION BY PROJECT ARCHITECT. FORM CAN BE REQUESTED FROM ARCHITECT.
2. A CONDENSED SET OF SPECIFICATIONS ARE PROVIDED FOR THE PROJECT. STRICT ADHERANCE TO MANUFACTURER REQUIREMENTS AND INSTALLATION ARE REQUIRED TO BE FOLLOWED WITH SECTIONS PROVIDED WITHIN. IF REQUIRED THE ARCHITECT WILL ISSUE ADDITIONAL SECTIONS TO PROVIDE CLARITY TO PRODUCTS OR INSTALLATION REQUIREMENTS.

DIVISION 1 - GENERAL REQUIREMENTS

- 1.1. SEE ADMINISTRATIVE SPECIFICATION FOR GENERAL REQUIREMENTS RELATED TO ADMINISTRATION OF THIS CONTRACT.
- A. CONTRACTOR LICENSES
1. THE CONTRACTOR AND ALL SUBCONTRACTORS INVOLVED IN THE PROJECT SHALL BE REQUIRED TO OBTAIN AND PAY FOR ALL NECESSARY LICENSES AS REQUIRED BY ANY LAW OR AGENCIES HAVING JURISDICTION (AHJ) OVER THE PROJECT.
- B. BUILDING PERMITS
1. THE GENERAL CONTRACTOR WILL PAY FOR ALL PERMITS REQUIRED BY ANY AGENCY HAVING JURISDICTION (AHJ) OVER THE PROJECT FOR ALL WORK TO BE PERFORMED BY THE GENERAL CONTRACTOR.
- C. UTILITY FEES
1. THE CONTRACTOR SHALL PAY THE NECESSARY FEES TO CONNECT TO EXISTING UTILITIES AT THE PROPERTY LINE OR IN ADJACENT STREETS AND RIGHT OF WAY AS SPECIFIED. NECESSARY AND/OR INCLUDED IN THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL PAY ALL UTILITY COSTS (BILLS) DURING CONSTRUCTION UNTIL OWNER TAKES POSSESSION OF THE FACILITY OR THE FACILITY IS CERTIFIED AS SUBSTANTIALLY COMPLETE.
- D. PROTECTION OF EXISTING WORK
1. IT IS THE CONTRACTORS RESPONSIBILITY TO PROTECT FINISHED SURFACES. PROTECTION FOR FINISHES SUCH AS DOORS, WALLS AND FLOORS SHOULD BE PROVIDED AS REQUIRED. ANY DAMAGES TO THESE AREAS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR OR REPLACE.

- E. GENERAL CONDITIONS
1. ANY DISCREPANCY OR CONFLICT WITHIN OR BETWEEN DRAWINGS AND ANY DISCREPANCY OR CONFLICT BETWEEN ANY DRAWING AND ANY SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.
- NOTWITHSTANDING, DISCREPANCIES OR CONFLICTS NOT BROUGHT TO THE ARCHITECTS AND OWNERS ATTENTION AND CLARIFIED DURING THE BIDDING OF THE PROJECT WILL BE DEEMED TO HAVE BEEN DO OR PROPOSED IN THE MORE COSTLY OR DIFFICULT MANNER, AND THE BETTER QUALITY OR GREATER QUANTITY OF THE WORK SHALL BE PROVIDED BY THE CONTRACTOR IN ACCORDANCE WITH ARCHITECTS INTERPRETATION.
2. THE GENERAL CONTRACTOR SHALL KEEP A COMPLETE PROTOTYPE SET OF DOCUMENTS ON THE PROJECT SITE AT ALL TIMES FOR REFERENCE DURING CONSTRUCTION.
3. THE GENERAL CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK, USING THE CONTRACTORS BEST SKILLS AND ATTENTION. THE GENERAL CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR HAVE AND CONTROL OVER CONSTRUCTION MEANS AND METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
4. THE GENERAL CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR HAVE AND HAVE CONTROL OVER ALL JOB SITE SAFETY PROCEDURES AND POLICES. THE GENERAL CONTRACTOR SHALL HAVE A SAFETY COORDINATOR AND BE RESPONSIBLE TO HOLD REGULARLY SCHEDULED SAFETY TRAINING WITH ALL JOB SITE PERSONNEL, INCLUDING ALL SUB CONTRACTOR PERSONNEL.
5. NEITHER THE ARCHITECTS OR THE OWNERS SIGNIFICANT NON FAILURE TO INSPECT SHALL RELIEVE THE CONTRACTOR OF ANY OBLIGATION HEREUNDER. IF ANY WORK FAILS TO CONFORM TO THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL PROMPTLY REMEDY AND/OR REPLACE THE SAME AT THE CONTRACTORS OWNERS RISK AND ACCEPTANCE OR PAYMENT BY THE OWNER OR ARCHITECT SHALL CONSTITUTE A WAIVER OF THE FOREGOING AND NOTHING HEREIN SHALL EXCLUDE OR LIMIT ANY WARRANTIES IMPLIED BY LAW.
6. THE GENERAL CONTRACTOR SHALL CONDUCT ITS OPERATIONS AS NOT TO UNREASONABLY INTERFERE WITH TRAFFIC ON PUBLIC THORFAHRES ADJACENT OR NEAR TO THE PROJECT SITE.
7. DO NOT SCALE DRAWINGS.

- F. PROJECT REQUIREMENTS
1. THE GENERAL CONTRACTOR REPRESENTS THAT IT POSSESSES THE SKILLS REQUIRED FOR THE WORK, ASSUMES THE RESPONSIBILITIES OF AN EMPLOYER FOR PERFORMANCE OF THE WORK, AND ACTS AS AN EMPLOYER OF ONE MORE EMPLOYEES BY PAYING WAGES, DIRECTING ACTIVITIES AND PERFORMING OTHER SIMILAR FUNCTIONS. THE GENERAL CONTRACTOR IS AN INDEPENDENT CONTRACTOR, FREE TO DETERMINE THE MANNER IN WHICH THE WORK IS PERFORMED.
2. THE GENERAL CONTRACTOR SHALL PROVIDE, AND MAINTAIN IN GOOD WORKING ORDER, THE FOLLOWING ITEMS FOR USE BY THE PROJECT SUPERINTENDENT DAILY DURING THE ENTIRE DURATION OF THE PROJECT:
- A. LAPTOP WITH INTERNET ACCESS
- B. DIGITAL CAMERA WITH DATE STAMP CAPABILITY AND WITH PROPER CABLES TO ATTACH TO LAPTOP
- C. EMAIL ACCESS THROUGH THE LAPTOP
- D. A CELL PHONE
- E. A PRINTER/SCANNER/FAX MACHINE WITH PROPER CABLES TO ATTACH TO LAPTOP
3. THE GENERAL CONTRACTOR SHALL HAVE A CONSTRUCTION SUPERINTENDENT ASSIGNED TO THIS PROJECT, AND THIS SUPERINTENDENT SHALL BE ON SITE EVERY DAY THERE IS ANY CONSTRUCTION OCCURRING ON THE PROJECT.
4. THE SUPERINTENDENT SHALL BE REACHABLE BY PHONE DURING NORMAL BUSINESS HOURS, ONCE ASSIGNED, THE SUPERINTENDENT SHALL NOT BE REMOVED OR REPLACED WITHOUT WRITTEN APPROVAL FROM OWNER & ARCHITECT, UNLESS SPECIFICALLY REQUESTED TO DO SO BY OWNER.
5. THE SUPERINTENDENT WILL BE REQUIRED TO PROVIDE PHOTOGRAPHS (VIA EMAIL USING A DIGITAL CAMERA) TO THE OWNER & ARCHITECT EACH FRIDAY BY NOON CST, SHOWING THE PROGRESS OF CONSTRUCTION. THE GENERAL CONTRACTOR IS ENCOURAGED TO TAKE PHOTOS RECURRENTLY EACH WEEK TO HELP MAINTAIN PROGRESS. RECORD CONSTRUCTION PROGRESS, RECORD UNCOVERED CONDITIONS, RECORD CONDITION AND AMOUNTS OF VENDOR GOODS UPON RECEIPT, AND RECORD CONSTRUCTION THAT VARIES FROM THE CDS (AS PART OF THE AS-BUILTS). ALL PHOTOS WILL HAVE A DATE STAMP.

- G. INSPECTIONS/OBSERVATIONS
1. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO OVERSEE CONSTRUCTION OF THE PROJECT, CONTINUALLY INSPECTING THE WORK, MATERIALS, AND WORKMANSHIP PROVIDED BY ALL OF HIS TRADESMEN, SUBCONTRACTORS, SUPPLIERS. EXCELLENCE IN QUALITY OF CONSTRUCTION CAN ONLY BE ACHIEVED IF THE CONTRACTOR EMPHOSIS HIGH STANDARDS OF ACCEPTABILITY. THE GENERAL CONTRACTOR CANNOT DELEGATE RESPONSIBILITY TO THE SUBCONTRACTORS, BUT MUST CONTINUALLY MONITOR THE WORK OF EACH TRADE OR CONTRACTOR.
2. IF THE CONTRACTOR OBSERVES AND SCHEDULES ANY INSPECTIONS HAVING JURISDICTION (AHJ) INSPECTIONS NECESSARY TO OBTAIN THE CERTIFICATE OF OCCUPANCY (CERTIFICATE OF COMPLIANCE), PRIOR TO THE DATE OF THE AGENCY INSPECTION, THE GENERAL CONTRACTOR SHOULD INSPECT THE PROJECT TO INSURE THAT CONSTRUCTION COMPLY WITH ALL CODES. MONTHLY REVIEW WILL BE CAUSE TO SUSPEND FOLLOW-UP CHANGES. IF REPRESENTATIVES WHEN THE PROJECT IS NOT COMPLETE MUST BE AVOIDED. COPIES OF FINAL INSPECTIONS MUST BE PROVIDED TO OWNER & ARCHITECT AS THEY ARE AVAILABLE.
3. PRIOR TO REQUESTING THE SUBSTANTIAL COMPLETION INSPECTION, IT IS THE CONTRACTORS RESPONSIBILITY TO CONDUCT HIS OWN PRE-SUBSTANTIAL COMPLETION INSPECTION OF THE CONSTRUCTION FOR QUALITY OF CONSTRUCTION AND COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS.
- THE FOLLOWING PEOPLE SHOULD BE IN ATTENDANCE FOR THE SUBSTANTIAL COMPLETION INSPECTION:
- A. GENERAL CONTRACTOR
- B. GENERAL CONTRACTOR SUPERINTENDENT
- C. MECHANICAL CONTRACTOR
- D. ELECTRICAL CONTRACTOR
- E. PLUMBING CONTRACTOR
- F. PAINTING CONTRACTOR
- G. FLOORING CONTRACTOR
5. ITEMS TO BE SUBMITTED AS A PRE-REQUISITE TO THE REQUEST FOR THE CERTIFICATE OF SUBSTANTIAL COMPLETION AND OWNER ARCHITECT OBSERVATION AND ITEMS TO BE COMPLETED AND CORRECTED.
- A. GENERAL CONTRACTORS PUNCH LISTS
- B. HVAC TEST AND BALANCE REPORT
- C. SPRINKLER SYSTEM ACCEPTANCE INSPECTION REPORT
- D. COPY OF VIDEO OF COMPLETED SEWER SYSTEM
6. THE REVIEW TEAM SHOULD PROCEED IN AN ORGANIZED MANNER THROUGHOUT THE BUILDING INSPECTING EACH SPACE OR ROOM. THE PUNCH LIST GENERATED BY THE SUBSTANTIAL COMPLETION INSPECTION FOR REVIEW, IF THE CONTRACTOR FAILS TO COMPLETE ITS REQUIREMENTS WITHIN THIS TIMELINE ABOVE, THE CONTRACTOR SHALL BE SUBJECT TO ADDITIONAL ADMINISTRATION FEES.

- H. RECORD CLOSE-OUT DOCUMENTS
1. THE OWNER REQUESTS THE GENERAL CONTRACTOR AND SUBCONTRACTORS TO MAINTAIN AN ACCURATE, CURRENT SET OF RECORD DOCUMENTS (AS-BUILTS) AS CONSTRUCTION PROGRESSES, ALL PERTINENT INFORMATION RELATING TO THE PROJECT MUST BE TIMELY MAINTAINED ON THE AS-BUILTS. THE AS-BUILTS MUST BE MAINTAINED ONSITE IN THE GENERAL CONTRACTORS OFFICE AND WILL NOT BE USED FOR ANY OTHER PURPOSE, SINCE THE OWNER WILL OWN AND OPERATE THE FACILITY, IT IS IMPERATIVE THAT ALL PARTIES MAINTAIN ACCURATE INFORMATION REGARDING THE ACTUAL CONSTRUCTION OF THE PROJECT.
- ALL DEVIATIONS FROM THE CONTRACT SET OF DRAWINGS MUST BE NOTED ON THE AS-BUILTS IN RED WITH CLOUDS FOR CLEAR IDENTIFICATION. THE OWNER WILL REVIEW THE AS-BUILTS FOR ACCURACY AND COMPLETENESS MONTHLY, DURING THE PAYMENT APPLICATION REVIEW PROCESS. FAILURE TO POST CHANGES TO THE PROJECT ON THE AS-BUILTS AS IDENTIFIED THROUGH THE ON-SITE MONTHLY REVIEW WILL BE CAUSE TO SUSPEND FOLLOW-UP CHANGES. IT IS THE GENERAL CONTRACTORS RESPONSIBILITY TO ENFORCE THE TIMELY POSTING OF AS-BUILT CHANGES WITH THE SUBCONTRACTORS.

- I. FINAL CLOSE-OUT OF THE PROJECT
1. WITHIN TRITY (30) CALENDAR DAYS AFTER THE FINAL PROJECT SUBSTANTIAL COMPLETION, THE GENERAL CONTRACTOR SHALL COMPLETE ALL CLOSE-OUT DOCUMENTS AND SUBMIT THEM TO THE OWNER FOR REVIEW. IF THE CONTRACTOR FAILS TO COMPLETE ITS REQUIREMENTS WITHIN THIS TIMELINE ABOVE, THE CONTRACTOR SHALL BE SUBJECT TO ADDITIONAL ADMINISTRATION FEES.
- J. CLOSE-OUT DOCUMENTS
1. THE CATEGORIES LISTED BELOW SHOULD BE SUBMITTED AT THE SAME TIME.
- A. A DISK WITH ALL PHOTOS TAKEN DURING CONSTRUCTION
- B. CHANGE ORDERS AND ALL ADDENDAS ATTACHED AND POSTED TO THE AS-BUILT DRAWINGS
- C. AS-BUILT DRAWINGS: ONE HARD COPY TO REMAIN ON SITE AND IN PLAIN TYPE, ONE ELECTRONIC COPY TO BE SENT WITH CLOSE-OUT PAPERWORK
- D. MATERIALS SELLING DATA - PROVIDE ALL APPROPRIATE SITES
- E. OPERATION AND MAINTENANCE MANUALS (OMM) - PROVIDE OMM MANUALS BOXED AND BOUND. THIS ITEM IS OF SIGNIFICANT IMPORTANCE TO FACILITATE MAINTENANCE ACTIVITIES.
- F. ALL HVAC TEST AND BALANCE REPORTS
- G. RELEASE OF LIEN (IAA FORM 700A), PAYMENT OF DEBT (IAA FORM 700B)
- H. WARRANTIES, CERTIFICATES, AFFIDAVITS
2. ALL INFORMATION INCLUDED IN THIS CATEGORY WILL BE FURNISHED IN ONE (1) COPY AND BOUND IN A STURDY THREE-RING BINDER WITH A LABEL ON THE OUTSIDE READING "GENERAL CLOSE-OUT DOCUMENTS" TO INCLUDE AN INDEX OF THE CONTENTS. ALL AIA DOCUMENTS WILL BE ORIGINAL (WITH RED LETTERING ON THE BOTTOM OF THE FORM) AND NOTARIZED. IF THE ELECTRONIC VERSION IS USED A COPY WITH ORIGINAL SIGNATURES WILL BE SUBMITTED. THE GENERAL CONTRACTOR AND EACH SUBCONTRACTOR WILL HAVE SEPARATE TABS IDENTIFYING EACH BY NAME. THE GENERAL CONTRACTOR WILL LIST EACH SUBCONTRACTOR ALPHABETICALLY AND WILL CHECK TO INSURE THAT A "RELEASE OF LIEN" - IAA FORM 670A AND A "PAYMENT OF DEBT-IAA FORM 670B IS IDENTIFIED FOR A HIMSELF AND EACH SUBCONTRACTOR. THE GENERAL CONTRACTOR WILL INCLUDE A "CONSENT OF SURVEY" - IAA FORM 6701. IN ADDITION, THE CONTRACTOR WILL INCLUDE BEHIND THE FOLLOWING INFORMATION:
- A. A LIST OF NAMES, BUSINESS ADDRESSES, PHONE NUMBERS AND EMAIL ADDRESSES FOR THE GENERAL CONTRACTOR AND EACH SUBCONTRACTOR
- B. AN ANNOTATED COPY OF THE SUBSTANTIAL COMPLETION PUNCH LIST INDICATING ACTION TAKEN ON EACH ITEM
- C. WARRANTIES, CERTIFICATES AND AFFIDAVITS SHALL BE INCLUDED FOR ANY EQUIPMENT, MATERIALS OR SYSTEMS COMBINED WITH ALL OF THE ABOVE INFORMATION AND PLACED BEHIND THE TAB OF THE CONTRACTOR THAT ISSUED IT.

DIVISION 4 - MASONRY

04 0500 - MASONRY RESTORATION & TUCKPOINTING

- A. REFERENCES
1. AMERICAN CONCRETE INSTITUTE (ACI)
- A. ACI 503.1-02 - SPECIFICATION FOR MASONRY STRUCTURES
- B. ASTM INTERNATIONAL (ASTM)
- A. ASTM C 144 - STANDARD SPECIFICATION FOR AGGREGATE FOR MASONRY MORTAR
- B. ASTM C 150 - STANDARD SPECIFICATION FOR PORTLAND CEMENT
- C. ASTM C 207 - STANDARD SPECIFICATION FOR HYDRATED LIME FOR MASONRY PURPOSES
- D. ASTM C 260 - STANDARD SPECIFICATION FOR AIR-ENTRANING ADMIXTURES FOR CONCRETE
- E. ASTM C 270 - STANDARD SPECIFICATION FOR MASONRY MORTAR MIX FOR JOINT MASONRY
- F. ASTM C 595 - STANDARD SPECIFICATION FOR BLENDED HYDRAULIC CEMENTS
- G. ASTM C 760 - STANDARD TEST METHOD FOR PRECONSTRUCTION AND CONSTRUCTION EVALUATION OF MORTARS FOR PLAN AND NEW MASONRY CONSTRUCTION
- H. ASTM C 879 - STANDARD SPECIFICATION FOR PIGMENTS FOR INTEGRALLY COLORED CONCRETE
- I. ASTM C 1093 - STANDARD PRACTICE FOR ACCREDITATION OF TESTING AGENCIES FOR JOINT MASONRY
- J. ASTM C 1157 - STANDARD PERFORMANCE SPECIFICATION FOR PORTLAND GEMET
- K. ASTM C 1314 - STANDARD TEST METHOD FOR COMPRESSIVE STRENGTH OF MASONRY PRISMS
- L. ASTM C 1598 - STANDARD GUIDE FOR QUALITY ASSURANCE OF MORTARS
- M. ASTM C 1714 - STANDARD REQUIREMENTS FOR MASONRY MORTAR MIX FOR JOINT MASONRY
- N. ASTM C 329 - SPECIFICATION FOR MINIMUM REQUIREMENTS FOR AGGREGATES ENGAGED IN THE TESTING AND/OR INSPECTION OF MATERIALS USED IN CONSTRUCTION
- O. ASTM C 514 - STANDARD TEST METHOD FOR WATER PENETRATION AND LEAKAGE THROUGH MASONRY
- P. INTERNATIONAL MASONRY INDUSTRY ALL-WEATHER COUNCIL (IMAC)
1. IMAC - INTERNATIONAL MASONRY INDUSTRY ALL-WEATHER COUNCIL (IMAC); RECOMMENDED PRACTICES AND GUIDE SPECIFICATIONS FOR COLD WEATHER MASONRY CONSTRUCTION
2. IMAC - INTERNATIONAL MASONRY INDUSTRY ALL-WEATHER COUNCIL (IMAC); RECOMMENDED PRACTICES AND GUIDE SPECIFICATIONS FOR HOT WEATHER MASONRY CONSTRUCTION
3. THE BRICK INDUSTRY ASSOCIATION (BIA)
1. BIA TECHNICAL NOTE 20 - CLEANING BRICK

- B. SUBMITTALS
1. PRODUCT DATA: SUBMIT MANUFACTURERS PRODUCT DATA
2. QUALITY ASSURANCE/CONTROL SUBMITTALS
- A. SUBMIT MANUFACTURERS CERTIFICATION FOR PORTLAND CEMENT
- B. SUBMIT TEST RESULTS PREPARED BY A QUALIFIED INDEPENDENT TESTING LABORATORY

- C. QUALITY ASSURANCE
1. MANUFACTURER QUALIFICATIONS: FIRM SPECIALIZING IN MANUFACTURE OF MASONRY INSTALLATION MATERIALS, INCLUDING MORTARS, WITH MINIMUM 10 YEARS EXPERIENCE
2. QUALITY ASSURANCE/CONTROL: SUBMIT MANUFACTURERS CERTIFICATION FOR PORTLAND CEMENT, AND INDICATING COMPLIANCE WITH THE FOLLOWING PERFORMANCE REQUIREMENTS
3. PRE-INSTALLATION MEETING: AT LEAST ONE WEEKS PRIOR TO COMMENCING MASONRY WORK CONDUCT A MEETING AT THE PROJECT SITE TO DISCUSS CONTRACT REQUIREMENTS AND JOB CONDITIONS WITH THE MANUFACTURER OF MASONRY CONTRACTOR, AND INSTALLERS OF RELATED MATERIALS. NOTIFY ARCHITECT IN ADVANCE OF MEETING REVIEW DETAILING AND SEQUENCE OF WORK TO BE PERFORMED.
4. STORAGE AND PROTECTION: MASONRY MATERIALS SHALL BE MANUFACTURED AND STORED OFF THE GROUND, UNDER COVER AND SHALL BE KEPT DRY IN ACCORDANCE WITH ASTM C1714.

- D. PROJECT CONDITIONS
1. MAINTAIN ENVIRONMENTAL CONDITIONS AND PROTECT WORK DURING AND AFTER INSTALLATION TO COMPLY WITH REFERENCED STANDARDS AND MANUFACTURERS PRINTED RECOMMENDATIONS
2. DO NOT BUILD OR APPLY MORTAR PRODUCTS ON FROZEN SURFACES
1. REMOVE AND REPLACE MORTAR DAMAGED BY FROST OR BY FREEZING CONDITIONS
3. VENT TEMPORARY HEATERS TO EXTERIOR TO PREVENT DAMAGE TO MASONRY WORK FROM CARBON DIOXIDE BUILD-UP

- E. PRODUCTS
1. BASIS OF DESIGN: SPEC. M08X, INC. WEB: WWW.SPECMIX.COM WWW.SPECMIX.COM
2. REQUESTS FOR SUBSTITUTION WILL BE CONSIDERED IN ACCORDANCE WITH PROVISIONS OF SUBSTITUTION PROCEDURES
3. OBTAIN PRODUCTS FROM A SINGLE MANUFACTURER
4. DESIGN AND PERFORMANCE REQUIREMENTS: PROVIDE MORTAR MIXES THAT HAVE BEEN SELECTED, MANUFACTURED, MIXED AND INSTALLED TO COMPLY WITH THE FOLLOWING:
- A. ASTM C 270
- B. ASTM C 1714
- C. MORTAR
- A. TUCKPOINTING MORTAR, SPEC MIX TUCKPOINTING MORTAR, APPLICABLE STANDARDS: ASTM C 144, ASTM C 150, ASTM C 207
- B. ASTM C 270 FOR TUCKPOINT MORTAR, ASTM C 595, ASTM C 760, ASTM C 1093, ASTM C 1157, ASTM C 1314, ASTM C 1598, ASTM C 1714, ACI 503.1, IMAC

- F. EXECUTION
- EXAMINE SURFACES TO RECEIVE MASONRY WORK AND CONDITIONS UNDER WHICH MASONRY WILL BE INSTALLED. DO NOT PROCEED WITH MASONRY WORK UNTIL SURFACES AND CONDITIONS COMPLY WITH REQUIREMENTS INDICATED IN REFERENCED MASONRY INSTALLATION STANDARD AND MANUFACTURERS PRINTED INSTRUCTIONS.
1. REMOVAL OF EXISTING MORTAR
- A. REMOVAL OF EXISTING MORTAR: CUT OUT EXISTING MORTAR JOINTS (BOTH BED AND HEAD JOINTS) AND REMOVE BY MEANS OF A TOOTHING CHISEL OR A SPECIAL POINTERS GRINDER, TO A UNIFORM DEPTH OF TO 3/4-INCH (19 MM), OR UNLESS SPECIFICALLY REQUESTED TO DO SO BY OWNER.
1. TAKE CARE TO NOT DAMAGE EDGES OF EXISTING MASONRY UNITS TO REMAIN.
- B. REMOVE DUST AND DEBRIS FROM THE JOINTS BY BRUSHING, BLOWING WITH AIR OR RINSING WITH WATER. DO NOT RINSE WHEN TEMPERATURE IS BELOW FREEZING
2. REPLACEMENT OF MASONRY UNITS
- A. REMOVE DAMAGED, SPALLED, LOOSE OR DETERIORATED MASONRY UNITS. CAREFULLY REMOVE ENTIRE UNITS FROM JOINT TO JOINT, WITHOUT DAMAGING SURROUNDING MASONRY, IN A MANNER THAT PERMITS REPLACEMENT WITH FULL SIZE UNITS
- B. SUPPORT AND PROTECT REMAINING MASONRY THAT SURROUNDS REMOVAL AREA, MAINTAIN FLASHING, REINFORCEMENT, LINTELS, AND ADDJONING CONSTRUCTION IN AN UNDAUNAGED CONDITION
- C. CLEAN MASONRY UNITS SURROUNDING REMOVAL AREAS BY REMOVING MORTAR, DUST, AND LOOSE PARTICLES IN PREPARATION FOR REPLACEMENT
- D. REPLACE REMOVED UNITS WITH SALVAGED OR NEW UNITS THAT MATCH EXISTING SIZE AND TEXTURE. DO NOT USE BROKEN UNITS UNLESS THEY CAN BE CUT TO USABLE SIZE
- E. INSTALL REPLACEMENT UNITS INTO BONDING AND COURSEING PATTERN OF EXISTING UNITS. IF CUTTING IS REQUIRED, USE A MOTOR-DRIVEN SAW DESIGNED TO CUT MASONRY WITH CLEAN, SHARP UNCHIPPED EDGES
- F. MORTAR MUST BE TIGHTLY IN OR COURSEING SHALL MATCH SURROUNDING IN PLACE WORK
- G. LAY REPLACEMENT UNITS WITH COMPLETELY FILLED BED, HEAD, AND COLLAR JOINTS. BUTTER ENDS WITH SUFFICIENT MORTAR TO FILL HEAD JOINTS AND SHOVE INTO PLACE
- H. MORTAR
1. AS RECOMMENDED BY MANUFACTURER
2. RETEMPERING
- RETEMPER MORTAR AS RECOMMENDED BY MANUFACTURER

- G. INSTALLATION OF TUCK POINTING MORTAR
1. INSTALL MORTAR IN ACCORDANCE WITH AIA/CES 530.1
2. IMMEDIATELY PRIOR TO APPLICATION OF MORTAR, DAMPEN JOINTS TO BE TUCK POINTED. PRIOR TO APPLICATION OF POINTING MORTAR, ALLOW MASONRY UNITS TO ABSORB SURFACE WATER
3. TIGHTLY PACK MORTAR INTO JOINTS IN THIN LAYERS, APPROXIMATELY 1/4-INCH (6 MM) THICK MAXIMUM.
4. ALLOW LAYER TO BECOME "THUMBPRINT HARD" BEFORE APPLYING NEXT LAYER.
5. PACK FINAL LAYER FLUSH WITH SURFACES OF MASONRY UNITS, WHEN MORTAR BECOMES "THUMBPRINT HARD", TOOL JOINTS
6. MARLINE CRACKING WITHIN THE MORTAR OR MORTAR SEPARATION AT EDGE OF A JOINT IS UNACCEPTABLE. COMPLETELY REMOVE SUCH MORTAR AND REPOINT
7. TOOL JOINTS IN PATCH WORK WITH A JOINTING TOOL, TO MATCH THE EXISTING SURROUNDING JOINTS.
8. CLEANING
- A. COMPLY WITH CLEANING PROCEDURES AND RECOMMENDATIONS OF THE MANUFACTURERS OF BOTH THE LIME AND MORTAR
- B. REMOVE EFFLORESCENCES FROM MASONRY WALL EXPOSED IN THE FINISHED WORK IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATION, NMA TC BULLETIN #B-3A AND BIA TECHNICAL NOTE 20 - CLEANING BRICK
- C. REMOVE DIRT OR STAINS FROM MASONRY WALLS EXPOSED IN THE FINISHED WORK IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS, NMA TC BULLETIN #B-2A AND BIA TECHNICAL NOTE 20 - CLEANING BRICK
- D. COMPLY WITH APPLICABLE ENVIRONMENTAL LAWS AND RESTRICTIONS
- APPLIED AT MORTAR HAS FULLY HARDENED, THOROUGHLY CLEAN EXPOSED MASONRY SURFACES OF EXCESS MORTAR AND FOREIGN MATTER, USE WOOD SCRAPERS, STIFF-NON-OR -FIBER BRUSHES, AND CLEAN WATER, SPRAY APPLIED AT LOW PRESSURE
1. DO NOT USE METAL SCRAPERS OR BRUSHES
2. DO NOT USE ACIDIC OR ALKALINE CLEANERS

- H. PROTECTION
1. IN ADDITION TO PROTECT NEARLY POINTED JOINTS FROM WEATHER AND ELEMENTS AS RECOMMENDED BY MANUFACTURER AND INDUSTRY STANDARDS, UNTIL POINTED JOINTS ARE SUFFICIENTLY HARD ENOUGH TO PREVENT DAMAGE
2. PROTECT INSTALLED WORK FROM DAMAGE DUE TO SUBSEQUENT CONSTRUCTION ACTIVITY ON THE SITE.
- I. DIVISION 5 - METALS
- 5 0213 - PIPE AND TUBE RAILINGS
- A. SUBMITTALS
1. MATERIAL DATA AND SHOP DRAWINGS WITH PLANS, ELEVATIONS AND SECTIONS INDICATING MEMBER SIZES AND LAYOUT, VERTICAL AND HORIZONTAL, DIMENSIONS, EDGE CONDITIONS, AND CONNECTION DETAILS. INCLUDE DETAILS OF EQUIPMENT ASSEMBLIES, INDICATE DIMENSIONS, WEIGHTS, LOADS, REQUIRED CLEARANCES, METHOD OF FIELD ASSEMBLY, COMPONENTS, AND LOCATION AND SIZE OF EACH FIELD CONNECTION. SAMPLES FOR METAL SELECTION FOR EACH TYPE OF EXPOSED FINISH
2. DELETED-DESIGN SUBMITTALS: FOR HANDRAIL AND GUARDRAIL SYSTEMS, INCLUDING ANALYSIS DATA SIGNED AND SEALED BY THE QUALIFIED PROFESSIONAL ENGINEER RESPONSIBLE FOR THEIR PREPARATION
- B. DESIGN: METAL TUBE RAILINGS SHALL BE DESIGNED BY FABRICATOR TO SUPPORT CODE-REQUIRED LOADS AND TO MATCH THE CONFIGURATIONS INDICATED IN THE CONSTRUCTION DOCUMENTS. SEE DRAWINGS FOR REQUIRED RAILING ELEVATIONS
- C. FIELD CONDITIONS
1. FIELD MEASUREMENTS: VERIFY ACTUAL LOCATIONS OF WALLS AND OTHER CONSTRUCTION CONTIGUOUS WITH METAL FABRICATIONS BY FIELD MEASUREMENTS BEFORE FABRICATION
- D. PERFORMANCE REQUIREMENTS
1. A. DELEGATED DESIGN: ENGAGE A QUALIFIED PROFESSIONAL ENGINEER TO DESIGN RAILINGS, INCLUDING ATTACHMENT TO BUILDING CONSTRUCTION
2. DESIGN: METAL RAILINGS SHALL BE DESIGNED BY FABRICATOR, INCLUDING ATTACHMENT TO BUILDING CONSTRUCTION, SHALL WITHSTAND THE EFFECTS OF GRAVITY LOADS AND THE FOLLOWING LOADS AND STRESSES WITHIN LIMITS, INCLUDING UNDER CONDITIONS INDICATED:
2. HORIZONTAL AND TOP RAIL GUARDS
- A. UNIFORM LOAD OF 50 LB/FT (7.3 KN/M) APPLIED IN ANY DIRECTION
- B. CONCENTRATED LOAD OF 200 LBF (88.9N) APPLIED IN ANY DIRECTION
- C. UNIFORM AND CONCENTRATED LOADS NEED NOT BE ASSUMED TO ACT CONCURRENTLY
- E. FASTENERS
1. FASTENERS FOR ANCHORING RAILINGS TO SUBSTRUCTURE: SELECT FASTENERS OF TYPE, GRADE, AND CLASS REQUIRED TO PROVIDE CONNECTIONS SUITABLE FOR ANCHORING RAILINGS TO OTHER TYPES OF CONSTRUCTION INCLUDING AND CAPABLE OF WITHSTANDING DESIGN LOADS

- F. MISCELLANEOUS MATERIALS
1. METAL SURFACES: GENERAL: PROVIDE MATERIALS WITH SMOOTH SURFACES, WITHOUT SEAM MARKS, ROLLER MARKS, ROLLED TRADE MARKS, STAINS, DISCOLORATIONS, OR BLEMISHES
2. BRACKETS, FLANGES, AND ANCHORS: CAST OR FORMED METAL OF SAME TYPE OF METAL AND FINISH AS SUPPORTED RAILS UNLESS OTHERWISE INDICATED
3. PIPE: ASTM A 53A 53M, TYPE F OR TYPE S, GRADE 40, STANDARD WEIGHT (SCHEDULE 40), UNLESS ALTERNATE GRADE AND WEIGHT ARE REQUIRED BY STRUCTURAL LOADS

- G. FABRICATION
1. GENERAL: FABRICATE RAILINGS TO COMPLY WITH REQUIREMENTS INDICATED FOR DESIGN, DIMENSIONS, MEMBER SIZES AND SPACING, ORIENTATION, FINISH, AND ANCHORAGE, BUT NOT LESS THAN THAT REQUIRED TO SUPPORT STRUCTURAL LOADS
2. CUT, DRILL, AND PLUM ALUMINUM CLEANLY AND ACCURATELY. REMOVE BURRS AND EASE EDGES TO A RADIUS OF APPROXIMATELY 1/16 INCH (1.6 MM), UNLESS OTHERWISE INDICATED. REMOVE SHARP OR ROUGH AREAS ON EXPOSED SURFACES
3. WELDED CONNECTIONS THAT ARE EXPOSED TO WEATHER IN A MANNER THAT EXCLUDES WATER, PROVIDE WELDS. WELDS SHALL BE MADE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:
1. WELDED CONNECTIONS: USE FULLY WELDED JOINTS FOR PERMANENTLY CONNECTING RAILING COMPONENTS. COMPLY WITH REQUIREMENTS FOR WELDED CONNECTIONS IN "FABRICATION" ARTICLE WHERE WELDING IS PERFORMED IN THE SHOP OR IN THE FIELD
- H. FINISH
1. FOR NONGALVANIZED-STEEL RAILINGS: PROVIDE NONGALVANIZED FERROUS/METAL FITTINGS, BRACKETS, FASTENERS, AND SLEEVES; HOWEVER, GALVANIZE ANCHORS TO BE EMBEDDED IN EXTERIOR CONCRETE OR MASONRY
2. PREPARATION FOR SHOP PRIMING: PREPARE UNCOATED FERROUS/METAL SURFACES TO COMPLY WITH SSPC-SP 3 "POWER TOOL CLEANING"
3. PRIMER APPLICATION: APPLY SHOP PRIMER TO PREPARED SURFACES OF RAILINGS UNLESS OTHERWISE INDICATED. PREPARE SURFACES OF RAILING COMPONENTS THAT ARE COATED OR FINISHED WITH ANOTHER FINISH FOR SHOP PAINTING. PRIMER NEED NOT BE APPLIED TO SURFACES TO BE EMBEDDED IN CONCRETE OR MASONRY

- I. INSTALLATION
1. SUPPLY COMPONENTS REQUIRED FOR ANCHORAGE FABRICATED FROM SAME MATERIAL AND FINISH AS FABRICATION UNLESS NOTED OTHERWISE. SHIM AND LEVEL FABRICATIONS AS NECESSARY. COAT COATED SURFACES OF FABRICATIONS IN CONTACT WITH CONCRETE, GROUT, MASONRY, WOOD, OR DISSIMILAR METALS WITH BITUMINOUS PAINT
2. FIT EXPOSED CONNECTIONS TOGETHER TO FORM TIGHT, MARLINE JOINTS
3. PERFORM CUTTING, DRILLING, AND FITTING REQUIRED FOR INSTALLING RAILINGS. SET RAILINGS ACCURATELY IN LOCATION, ALIGNMENT, AND ELEVATION, MEASURED FROM ESTABLISHED LINES AND LEVELS AND FREE OF RACK
4. DO NOT WELD, CUT, OR ABRASE SURFACES OF RAILING COMPONENTS THAT ARE COATED OR FINISHED WITH FABRICATION AND THAT ARE INTENDED FOR FIELD CONNECTION BY MECHANICAL OR OTHER MEANS WITHOUT FURTHER CUTTING OR FITTING
5. SET POSTS PLUMB WITH A TOLERANCE OF 1/16 INCH IN 3 FEET
6. CONTROL OF CORROSION: PREVENT GALVANIC ACTION AND OTHER FORMS OF CORROSION BY INSULATING METALS AND OTHER MATERIALS FROM DIRECT CONTACT WITH INCOMPATIBLE MATERIALS
7. ADJUST RAILINGS BEFORE ANCHORING TO ENSURE MATCHING ALIGNMENT AT ABUTTING JOINTS
8. FASTENING TO IN-PLACE CONSTRUCTION: USE ANCHORAGE DEVICES AND FASTENERS WHERE NECESSARY FOR SECURING RAILINGS AND FOR PROPERLY TRANSFERRING LOADS TO IN-PLACE CONSTRUCTION
9. PROTECT FINISHED RAILINGS FROM DAMAGE DURING CONSTRUCTION PERIOD WITH TEMPORARY PROTECTIVE COVERINGS APPROVED BY RAILING MANUFACTURER. REMOVE PROTECTIVE COVERINGS AT TIME OF SUBSTANTIAL COMPLETION

- J. MANUFACTURERS
1. 3M/FABRICATION PRODUCTS: WWW.3M.COM/FABRISTOP.COM
2. HILL, INC.: WWW.US.HILL.COM
- K. MATERIALS
1. FIRESTOPPING MATERIALS: ANY MATERIALS MEETING REQUIREMENTS
2. FRAMES, SLEEVES, FORMS, INSULATION, PACKING, STUFFING, AND ACCESSORIES: PROVIDE TYPE OF MATERIALS AS REQUIRED FOR FIELD TESTED FIRESTOPPING ASSEMBLY
3. FIRE RATINGS: REFER TO DRAWINGS FOR REQUIRED SYSTEMS AND RATINGS
- L. ASSEMBLY REQUIREMENTS
1. HEAD-OF-WALL, JOINT SYSTEM FIRESTOPPING AT JOINTS BETWEEN FIRE-RATED WALL ASSEMBLIES AND NON-RATED HORIZONTAL ASSEMBLIES: USE SYSTEM THAT HAS BEEN TESTED ACCORDING TO ASTM E2607 TO HAVE A FIVE MINUTE FIRE RATING EQUIVALENT TO THE FIVE MINUTE FIRE RATING OF FLOOR OR WALL, WHICHEVER IS GREATER
2. FLOOR-TO-FLOOR, WALL-TO-WALL, AND WALL-TO-FLOOR JOINTS, EXCEPT PERIMETER, WHERE BOTH ARE FIRE-RATED: USE SYSTEM THAT HAS BEEN TESTED ACCORDING TO ASTM E1996 OR UL 2079 TO HAVE FIRE RESISTANCE
3. F RATING EQUIVALENT TO REQUIRED FIRE RATING OF THE ASSEMBLY IN WHICH THE JOINT OCCURS
4. THROUGH PENETRATION FIRESTOPPING: USE SYSTEM THAT HAS BEEN TESTED ACCORDING TO ASTM E814 TO HAVE A FIVE MINUTE FIRE RATING EQUIVALENT TO THE FIVE MINUTE FIRE RATING OF PENETRATED ASSEMBLY

05 0000 - STRUCTURAL METAL STUDS AND TRACK

THIS SECTION IS A DELEGATED DESIGN SUBMITTAL. CONTRACTOR SHALL ENGAGE A STRUCTURAL ENGINEER LICENSED IN THE JURISDICTION WHERE THIS PROJECT IS LOCATED. ALL FEES SUBJECT OF THIS SERVICE WILL BE PART OF BASE CONTRACT.

- A. SUBMITTALS: PRODUCT DATA: MANUFACTURERS DATA SHEETS ON EACH PRODUCT TO BE USED, INCLUDING:
1. SHOWING PLANS, SECTIONS, ELEVATIONS, LAYOUTS, PROFILES AND PRODUCT COMPONENT LOCATIONS
2. INCLUDING ANCHORAGE, BRACING, FASTENERS, ACCESSORIES AND FINISHES
3. IDENTIFY COMPONENT DETAILS, FRAMED OPENINGS, BEARING, ANCHORAGE, LOADING, WELDS, TYPE AND LOCATION OF FASTENERS, AND ACCESSORIES
3. INDICATE METHOD FOR SECURING STUDS AND OTHER COMPONENTS TO TRACKS AND FOR FRAMING CONNECTIONS
4. SUBMIT CALCULATIONS FOR LOADINGS AND STRESSES UNDER PROFESSIONAL ENGINEERS SEAL REGISTERED IN THE STATE OF THE PROJECT
- B. QUALITY ASSURANCE
1. MANUFACTURER QUALIFICATIONS: COMPANY SPECIALIZING IN MANUFACTURING PRODUCTS SPECIFIED IN THIS SECTION WITH MINIMUM FIVE YEARS DOCUMENTED EXPERIENCE
2. INSTALLER QUALIFICATIONS: COMPANY SPECIALIZING IN PERFORMING WORK OF THIS SECTION WITH MINIMUM 3 YEARS DOCUMENTED EXPERIENCE
3. DESIGN STRUCTURAL ELEMENTS UNDER DIRECT SUPERVISION OF PROFESSIONAL ENGINEER EXPERIENCED IN DESIGN OF THIS WORK AND REGISTERED IN THE STATE OF THE PROJECT

- C. EXECUTION
- EXAMINE SURFACES TO RECEIVE MASONRY WORK AND CONDITIONS UNDER WHICH MASONRY WILL BE INSTALLED. DO NOT PROCEED WITH MASONRY WORK UNTIL SURFACES AND CONDITIONS COMPLY WITH REQUIREMENTS INDICATED IN REFERENCED MASONRY INSTALLATION STANDARD AND MANUFACTURERS PRINTED INSTRUCTIONS.
1. REMOVAL OF EXISTING MORTAR
- A. REMOVAL OF EXISTING MORTAR: CUT OUT EXISTING MORTAR JOINTS (BOTH BED AND HEAD JOINTS) AND REMOVE BY MEANS OF A TOOTHING CHISEL OR A SPECIAL POINTERS GRINDER, TO A UNIFORM DEPTH OF TO 3/4-INCH (19 MM), OR UNLESS SPECIFICALLY REQUESTED TO DO SO BY OWNER.
1. TAKE CARE TO NOT DAMAGE EDGES OF EXISTING MASONRY UNITS TO REMAIN.
- B. REMOVE DUST AND DEBRIS FROM THE JOINTS BY BRUSHING, BLOWING WITH AIR OR RINSING WITH WATER. DO NOT RINSE WHEN TEMPERATURE IS BELOW FREEZING
2. REPLACEMENT OF MASONRY UNITS
- A. REMOVE DAMAGED, SPALLED, LOOSE OR DETERIORATED MASONRY UNITS. CAREFULLY REMOVE ENTIRE UNITS FROM JOINT TO JOINT, WITHOUT DAMAGING SURROUNDING MASONRY, IN A MANNER THAT PERMITS REPLACEMENT WITH FULL SIZE UNITS
- B. SUPPORT AND PROTECT REMAINING MASONRY THAT SURROUNDS REMOVAL AREA, MAINTAIN FLASHING, REINFORCEMENT, LINTELS, AND ADDJONING CONSTRUCTION IN AN UNDAUNAGED CONDITION
- C. CLEAN MASONRY UNITS SURROUNDING REMOVAL AREAS BY REMOVING MORTAR, DUST, AND LOOSE PARTICLES IN PREPARATION FOR REPLACEMENT
- D. REPLACE REMOVED UNITS WITH SALVAGED OR NEW UNITS THAT MATCH EXISTING SIZE AND TEXTURE. DO NOT USE BROKEN UNITS UNLESS THEY CAN BE CUT TO USABLE SIZE
- E. INSTALL REPLACEMENT UNITS INTO BONDING AND COURSEING PATTERN OF EXISTING UNITS. IF CUTTING IS REQUIRED, USE A MOTOR-DRIVEN SAW DESIGNED TO CUT MASONRY WITH CLEAN, SHARP UNCHIPPED EDGES
- F. MORTAR MUST BE TIGHTLY IN OR COURSEING SHALL MATCH SURROUNDING IN PLACE WORK
- G. LAY REPLACEMENT UNITS WITH COMPLETELY FILLED BED, HEAD, AND COLLAR JOINTS. BUTTER ENDS WITH SUFFICIENT MORTAR TO FILL HEAD JOINTS AND SHOVE INTO PLACE
- H. MORTAR
1. AS RECOMMENDED BY MANUFACTURER
2. RETEMPERING
- RETEMPER MORTAR AS RECOMMENDED BY MANUFACTURER

- G. INSTALLATION OF TUCK POINTING MORTAR
1. INSTALL MORTAR IN ACCORDANCE WITH AIA/CES 530.1
2. IMMEDIATELY PRIOR TO APPLICATION OF MORTAR, DAMPEN JOINTS TO BE TUCK POINTED. PRIOR TO APPLICATION OF POINTING MORTAR, ALLOW MASONRY UNITS TO ABSORB SURFACE WATER
3. TIGHTLY PACK MORTAR INTO JOINTS IN THIN LAYERS, APPROXIMATELY 1/4-INCH (6 MM) THICK MAXIMUM.
4. ALLOW LAYER TO BECOME "THUMBPRINT HARD" BEFORE APPLYING NEXT LAYER.
5. PACK FINAL LAYER FLUSH WITH SURFACES OF MASONRY UNITS, WHEN MORTAR BECOMES "THUMBPRINT HARD", TOOL JOINTS
6. MARLINE CRACKING WITHIN THE MORTAR OR MORTAR SEPARATION AT EDGE OF A JOINT IS UNACCEPTABLE. COMPLETELY REMOVE SUCH MORTAR AND REPOINT
7. TOOL JOINTS IN PATCH WORK WITH A JOINTING TOOL, TO MATCH THE EXISTING SURROUNDING JOINTS.
8. CLEANING
- A. COMPLY WITH CLEANING PROCEDURES AND RECOMMENDATIONS OF THE MANUFACTURERS OF BOTH THE LIME AND MORTAR
- B. REMOVE EFFLORESCENCES FROM MASONRY WALL EXPOSED IN THE FINISHED WORK IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATION, NMA TC BULLETIN #B-3A AND BIA TECHNICAL NOTE 20 - CLEANING BRICK
- C. REMOVE DIRT OR STAINS FROM MASONRY WALLS EXPOSED IN THE FINISHED WORK IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS, NMA TC BULLETIN #B-2A AND BIA TECHNICAL NOTE 20 - CLEANING BRICK
- D. COMPLY WITH APPLICABLE ENVIRONMENTAL LAWS AND RESTRICTIONS
- APPLIED AT MORTAR HAS FULLY HARDENED, THOROUGHLY CLEAN EXPOSED MASONRY SURFACES OF EXCESS MORTAR AND FOREIGN MATTER, USE WOOD SCRAPERS, STIFF-NON-OR -FIBER BRUSHES, AND CLEAN WATER, SPRAY APPLIED AT LOW PRESSURE
1. DO NOT USE METAL SCRAPERS OR BRUSHES
2. DO NOT USE ACIDIC OR ALKALINE CLEANERS

DIVISION 6 - WOOD AND PLASTICS

16 0000 - ROUGH CARPENTRY

1. PROVIDE SUFFICIENT FIRE RETARDANT TREATED WOOD BLOCKING AT ALL STUDS FOR SECURING OF WALL & CEILING LINTLS, WHETHER FURNISHED BY OWNER OR CONTRACTOR
2. CONCEALED WOOD IS TO BE FIRE RETARDANT TREATED UNLESS NOTED OTHERWISE
3. PROVIDE FIRE RETARDANT TREATED WOOD BLOCKING FOR ALL ITEMS TO REMAIN IN CONTACT WITH CONCRETE OR MASONRY TO CONFORM TO AIA/SPA STANDARD 5
4. PLYWOOD SHALL BE CD GRADE APA FIR OR YELLOW PINE. ALL PLYWOOD TO BE FIRE RATED WHERE WALLS ARE INDICATED AS RATED CONSTRUCTION
5. BLOCKING SHALL BE CLOSELY FITTED, ACCURATELY SET TO REQUIRED LEVELS, SECURELY CONNECTED & RIGIDLY FIXED IN PLACE USING NAILS, SCREWS, &/OR BOLTS AS INDICATED OR REQUIRED BY GOOD PRACTICE AND MANUFACTURERS RECOMMENDATIONS

6. 00200 - FINISH CARPENTRY
- A. SUBMITTALS: SAMPLES OF FINISH MATERIALS, CATALOG CUTS OF HARDWARE, AND SHOP DRAWINGS INCLUDING DIMENSIONAL PLANS, ELEVATIONS, AND SECTIONS
- B. QUALITY ASSURANCE: ARCHITECTURAL WOODWORK INSTITUTES' ARCHITECTURAL WOODWORK QUALITY MANUAL, AND THE FINISH CARPENTRY MANUALS
- C. MATERIALS
1. SOFTWOOD LUMBER: MAXIMUM MOISTURE CONTENT OF 6 PERCENT, WITH VERTICAL GRAIN, OF QUALITY SUITABLE FOR SCHEDULED FINISH
2. HARDWOOD LUMBER: MAXIMUM MOISTURE CONTENT OF 6 PERCENT, WITH VERTICAL GRAIN, OF QUALITY SUITABLE FOR SCHEDULED FINISH
3. SHEET MATERIALS: SOFTWOOD PLYWOOD, EXPOSED TO VIEW: FACE SPECIES AS INDICATED, PLAN SAWN, MEDIUM DENSITY FIBERBOARD CLASS 1, GRADE A-B, GLUE TYPE AS RECOMMENDED FOR APPLICATION
- D. INTERIOR WOODWORK
1. COMPLETE FABRICATION BEFORE SHIPPING TO PROJECT SITE TO MAXIMUM EXTENT FEASIBLE. DISASSEMBLE ONLY AS NEEDED FOR SHIPPING AND INSTALLING, WHERE NECESSARY FOR FITTING IN PLACE. PROVIDE FOR SCRUBING AND TRIMMING
2. BACKOUT AND GROOVE BACKS OF FLAT MEMBERS; KEUF BACKS OF OTHER WIDE FLAT MEMBERS, EXCEPT WHERE ENDS WILL BE EXPOSED IN FINISHED WORK

- F. INSTALLATION
1. DO NOT DELIVER OR INSTALL WOODWORK UNTIL BUILDING IS ENCLOSED, WET WORK IS COMPLETED, HVAC IS OPERATING, AND WOODWORK IS CONDITIONED TO PREVAILING CONDITIONS OF SPACE WHERE INSTALLED. MAINTAIN TEMPERATURE BETWEEN 55 F AND 75 F FOR 72 HOURS BEFORE BEGINNING INSTALLATION AND FOR DURATION OF PROJECT
2. INSTALL WOODWORK LEVEL AND PLUMB AND SHIM AS REQUIRED WITH CONCEALED SHIMS TO B TOLERANCE OF 1/16" AND TO COMPLY WITH REFERENCED QUALITY STANDARD FOR GRADE FINISH
3. SCRIBE AND CUT WOODWORK TO FIT ADJOINING WORK, SEAL CUT SURFACES, AND REPAIR DAMAGED FINISH AT JOINTS
4. INSTALL TRIM WITH MINIMUM NUMBER OF JOINTS POSSIBLE USING FULL-LENGTH PIECES TO GREATEST EXTENT POSSIBLE. STAGGER JOINTS IN ADJACENT AND RELATED MEMBERS
5. LUMBER FOR TRANSPARENT FINISH (STAINED OR CLEAR): USE PIECES MADE OF SOLID LUMBER
6. LUMBER FOR PAINTED FINISH: AT CONTRACTORS OPTION, USE PIECES WHICH ARE EITHER GLUED OR LAMBER OF SOLID LUMBER STOCK
7. DISCARD UNITS OF MATERIAL WHICH ARE UNSOUND, WARPED, BOWED, TWISTED, IMPROPERLY TREATED, NOT ADEQUATELY SEASONED, OR TOO SMALL TO FABRICATE WORK WITH MINIMUM OF JOINTS OR OPTIMUM JOINTING ARRANGEMENTS, OR WHICH ARE DEFECTIVELY MANUFACTURED WITH RESPECT TO SURFACES, SIZES OR PATTERNS
8. INSTALL THE WORK PLUMB, LEVEL, TRUE AND STRAIGHT WITH NO DISTORTIONS. SHIM AS REQUIRED USING CONCEALED SHIMS
9. SCRIBE AND CUT WORK TO FIT ADJOINING WORK, AND REFINISH CUT SURFACES OR REPAIR DAMAGED FINISH AT CUTS
10. SAND WORK SMOOTH AND SET EXPOSED NAILS AND SCREWS
11. APPLY WOOD FILLER IN EXPOSED NAIL AND SCREW INDENTATIONS
12. FINISH WORK SHALL BE SMOOTH, FREE FROM ABRASION, TOOL MARKS, RAISED GRAIN MARKINGS, OR SIMILAR EFFECTS ON EXPOSED SURFACES

- G. FINISH CARPENTRY
- A. SUBMITTALS: SAMPLES OF FINISH MATERIALS, CATALOG CUTS OF HARDWARE, AND SHOP DRAWINGS INCLUDING DIMENSIONAL PLANS, ELEVATIONS, AND SECTIONS. INDICATE COMPONENT PROFILES, FASTENING METHODS FOR JOINING DETAILS, AND ACCESSORIES
1. SCALE OF DRAWINGS: 1/12 INCH TO 1 FOOT
2. PROVIDE THE INFORMATION REQUIRED BY ANIA/AMCA (AWS) OR ANIA/AMCA (NAWS)
3. SAMPLES: SUBMIT ACTUAL SAMPLES OF ARCHITECTURAL CABINET CONSTRUCTION, MINIMUM 12 INCHES SQUARE, ILLUSTRATING PROPOSED CABINET, COUNTERTOP, AND SHELL UNIT SUBSTRATE AND FINISH
- B. QUALITY STANDARD: ARCHITECTURAL WOODWORK INSTITUTES' ARCHITECTURAL WOODWORK QUALITY STANDARDS
- C. QUALITY ASSURANCE
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1. Remove Mullions: 2 inches (51 mm) x 3 inches (76 mm) steel tube. Where scheduled as keyed removable mullion, provide type that can be removed by use of a keyless cylinder, which is self-locking when installed.
n. Provide factory drilled weep holes for exit devices used in full exterior application, highly corrosive areas, and where noted in hardware sets.
o. Provide egress options as scheduled.
o. Provide exit devices with optional trim designs to match other lever and pull designs used on the project.

2.5 KEYING
a. Keying System: Factory registered, complying with guidelines in BHMA A156.28, Appendix A.

2.6 OPERATING TRIM
a. Operating Trim: BHMA A156.6, brass, unless otherwise indicated.
a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. IJES Hardware, an Allegion company.
2. Rockwood Manufacturing Company.
c. Trimco.

2.7 SURFACE CLOSERS
a. Surface Closers: BHMA A156.4, rack-and-pinion hydraulic type with adjustable sweep and latch speeds controlled by key-operated valves, cast aluminum body, and forged steel main arm.
b. Comply with manufacturer's written recommendations for size of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Provide factory-sized closers, adjustable to meet field conditions and requirements for opening force.
c. Closer cylinders, arms, adjust plates, and metal covers shall have a powder coating finish which has been certified to exceed 100 hours salt spray testing as described in ANSI Standard A156.4 and ASTM B117.
D. Closers with pressure relief valves will not be acceptable.
E. Supplier to provide any brackets or plates required for proper installation of door closers.
a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. LCN Closers, 4400ZT Series, an Allegion company.
2. Corbin Russwin Closers, DC2000 Series.
3. Sargent Closers, 281 Series.

2.8 METAL PROTECTIVE TRIM UNITS
a. Metal Protective Trim Units: BHMA A156.6; fabricated from 0.050-inch (1.3-mm)-thick stainless steel, with manufacturer's standard machine or self-lapping screw fasteners.
a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. IJES Hardware, an Allegion company.
2. Rockwood Manufacturing Company.
c. Trimco.

2.9 FABRICATION
a. Manufacturer's Nameplate: Do not provide products that have manufacturer's name or trade name displayed in a visible location except in conjunction with required fire-rated labels and as otherwise approved by Architect.
a. Manufacturer's identification is permitted on rim of lock cylinders only.
b. Base Metals: Produce base hardware units of base metal indicated, fabricated by forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness. Furnish metals of a quality equal to or greater than that of specified door hardware units and BHMA A156.18.
c. Fasteners: Produce door hardware manufactured to comply with published technicals prepared for machine, wood, and steel metal screws. Provide screws that comply with commercially recognized industry standards for application indicated, except aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of door hardware, unless otherwise indicated.
a. Concealed Fasteners: For doors that are exposed when door is closed, except for units already specified with concealed fasteners. Do not use through bolts for installation where both head or nut on opposite face is exposed unless it is the only means of securely attaching the door hardware. Where through bolts are used on head and frame construction, provide sleeves for each through bolt.
b. Fire-Rated Applications
a. Wood or Machine Screws: For the following:
1. Hinges mortised to doors or frames; use threaded-to-the-head wood screws for wood doors and frames.
2. Strike plates to frames.
3. Closers to doors and frames.
c. Steel Through Bolts: For the following unless door blocking is provided:
1. Surface hinges to doors.
2. Closers to doors and frames.
3. Surface-mounted exit devices.
c. Spacers or Set Bolts: For through bolting of hollow-metal doors.
d. Fasteners for Wood Doors: Comply with requirements in DHI WDHS.2; Recommended Fasteners for Wood Doors.*
e. Gasketing Fasteners: Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.

2.10 FINISHES
a. Provide finishes complying with BHMA A156.18 as indicated in door hardware schedule.
b. Protect mechanical finishes on exposed surfaces from damage by applying a stripable, temporary protective covering before shipping.
c. Appearance of Finished Work: Variations in appearance of adjoining or adjacent pieces are acceptable if they are within one-half of the range of approved samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved shades and are assembled or installed to minimize contrast.

PART 3 - EXECUTION
3.1 EXAMINATION
A. Examine doors and frames, with installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance.
B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION
A. Steel Doors and Frames: For surface applied door hardware, drill and tap doors and frames according to ANSIS/DI A250.6.
B. Wood Doors: Comply with DHI WDHS.5 Recommended Hardware Reinforcement Locations for Mineral Core Wood Flush Doors.*

3.3 INSTALLATION
A. Mounting Heights: Mount door hardware units at heights to comply with the following unless otherwise indicated or required to comply with governing regulations.
a. Standard Steel Doors and Frames: ANSIS/DI A250.6.
b. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors.*"
c. Install each door hardware item to comply with manufacturer's 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. Do not install surface-mounted metal units until finishes have been completed on substrates involved.
a. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
b. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
c. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than the number recommended by manufacturer for application indicated or one hinge for every 30 inches (761 mm) of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.
D. Thresholds: Set thresholds for doors indicated in full bed of sealant complying with requirements specified in Section 07200 Joint Sealants.
E. Steps: Provide floor steps for doors unless wall or other type steps are indicated in door hardware schedule. Do not mount floor steps where they will impede traffic.
F. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame. Apply soft mounted seals prior to soffit mounted hardware.

3.4 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 hardware controls to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.
a. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.
B. Occupancy Adjustment: Approximately three days after date of Substantial Completion, Installer's Architectural Hardware Consultant shall examine and adjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors, door hardware, and electrified door hardware.

3.5 CLEANING AND PROTECTION
A. Clean adjacent surfaces soiled by door hardware installation.
B. Clean operations as necessary to restore proper function and finish.
C. Provide final protection and maintain conditions that ensure that door hardware is without damage or deterioration at time of Substantial Completion.

3.6 DEMONSTRATION
A. Contractor to instruct owner's personnel to adjust, operate, and maintain door hardware and door hardware finishes.

3.7 DOOR HARDWARE SCHEDULE
A. The hardware with listed below 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.

Hardware Group No. 1
For use on Door #s:
T105
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA CLASSROOM LOCK N070PND SPA 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA WALL STOP WS040607CVX 626 IVE
1 EA SILENCER SR64 GRAY

Hardware Group No. 2
For use on Door #s:
T101
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA CLASSROOM LOCK N070PND SPA 626 SCH
1 EA SURFACE CLOSER 4040XP RWIPA 689 LCN
1 EA MOUNTING PLATE 4040XP-18 SRT 689 LCN
1 EA BLADE STOP SPACER 4040XP-61 SRT 689 LCN
1 EA WALL STOP WS040607CVX 626 IVE
1 EA SILENCER SR64 GRAY

Hardware Group No. 3
For use on Door #s:
T108A, T109
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 1120Y 626 IVE
1 EA CLASSROOM LOCK N070PND SPA 626 SCH
1 EA SURFACE CLOSER 4040XP RWIPA 689 LCN
1 EA MOUNTING PLATE 4040XP-18 SRT 689 LCN
1 EA CUSH SHOE SUPPORT 4040XP-35SRT 689 LCN
1 EA BLADE STOP SPACER 4040XP-61 SRT 689 LCN
1 EA RAMP DRP 142AA A ZER
1 EA WEATHER STRIPPING BY DOOR AND FRAME MANUFACTURER
1 EA THRESHOLD 65A-223 A ZER

Hardware Group No. 4
For use on Door #s:
T104
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 NRP 626 IVE
1 EA PANIC HARDWARE 99-NAL-CP-110MD 626 VON
1 EA CYLINDER TO MATCH EXISTING SYSTEM 626 SCH
1 EA 90 DEG OFFSET PULL 8196ZHD 10" (MTG TYPE AS 630AA-316 IVE

Hardware Group No. 5
For use on Door #s:
T101
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 6
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 7
For use on Door #s:
T108B, 108C, 108D
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 8
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 9
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 10
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 11
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 12
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 13
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 14
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 15
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 16
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 17
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 18
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 19
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 20
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 21
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 22
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 23
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 24
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 25
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 26
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 27
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 28
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 29
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 30
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 31
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 32
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 33
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 34
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 35
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 36
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 37
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 38
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 39
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 40
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 41
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 42
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 43
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 44
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 45
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 46
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 47
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 48
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 49
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 50
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 51
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 52
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK 1300 17A (B) 544 1283-722 626 SCH
1 EA SURFACE CLOSER 4040XP CUSH 689 LCN
1 EA KICKPLATE 8400 8" X 2" LDW B-CS 630 IVE
1 EA GASKETING 4885BK PSA BK ZER

Hardware Group No. 53
For use on Door #s:
T103
PROVIDE EACH SGL. DOOR(S) WITH THE FOLLOWING:
QTY DESCRIPTION CATALOG NUMBER FINISH MFR
1 EA HINGE 58B1HW 4.5 X 4.5 652 IVE
1 EA PRIVACY LOCK

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<div>DIVISION 10 - SPECIALTIES</div> <div>10 2800 TOILET AND BATH ACCESSORIES</div> <div>A. REFERENCE CONSTRUCTION DRAWINGS & SCHEDULES FOR TYPE, QUANTITY, AND LOCATIONS OF TOILET AND BATH ACCESSORIES.</div> <div>B. SUBMITTALS</div> <div>1. PRODUCT DATA: MANUFACTURER'S DATA SHEETS ON EACH PRODUCT TO BE USED, INCLUDING:</div> <div>2. PREPARATION INSTRUCTIONS AND RECOMMENDATIONS.</div> <div>3. STORAGE AND HANDLING REQUIREMENTS AND RECOMMENDATIONS.</div> <div>4. INSTALLATION METHODS.</div> <div>B. INSTALLATION:</div> <div>1. INSTALLER MUST EXAMINE SUBSTRATES, PREVIOUSLY INSTALLED INSERTS AND ANCHORAGES NECESSARY FOR MOUNTING OF TOILET ACCESSORIES, AND OTHER CONDITIONS UNDER WHICH INSTALLATION IS TO OCCUR, AND MUST NOTIFY CONTRACTOR IN WRITING OF CONDITIONS DETRIMENTAL TO PROPER AND TIMELY COMPLETION OF WORK. DO NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED IN MANNER ACCEPTABLE TO INSTALLER.</div> <div>2. INSTALL ACCESSORIES ACCORDING TO RESPECTIVE MANUFACTURERS' WRITTEN INSTRUCTIONS, USING FASTENERS APPROPRIATE TO SUBSTRATE INDICATED AND RECOMMENDED BY UNIT MANUFACTURER. 1. INSTALL UNITS LEVEL, PLUMB, AND FIRMLY ANCHORED IN LOCATIONS AND AT HEIGHTS INDICATED. ADHESIVE INSTALLATIONS ARE NOT PERMITTED.</div> <div>3. MOUNTING HEIGHTS SHALL BE AS RECOMMENDED BY THE ACCESSORY MANUFACTURER AND AT HEIGHTS RECOMMENDED BY USE FOR PHYSICALLY HANDICAPPED TO COMPLY WITH THE AMERICANS WITH DISABILITIES ACT.</div> <div>4. GRAB BARS: INSTALL TO WITHSTAND A DOWNWARD LOAD OF AT LEAST 250 LBF, WHEN TESTED ACCORDING TO ASTM F 446.</div> <div>5. ADJUST ACCESSORIES FOR PROPER OPERATION AND VERIFY THAT MECHANISMS FUNCTION SMOOTHLY.</div> <div>6. CLEAN AND POLISH ALL EXPOSED SURFACES AFTER REMOVING PROTECTIVE COATINGS.</div> <div>10 3000 SOLID PLASTIC TOILET COMPARTMENTS</div> <div>A. REFERENCE CONSTRUCTION DRAWINGS & SCHEDULES FOR TYPE, QUANTITY, AND LOCATIONS OF TOILET AND BATH ACCESSORIES.</div> <div>B. PRODUCTS</div> <div>BASIS OF DESIGN: ECLIPSE TOILET PARTITIONS AS MANUFACTURED BY AND SUPPLIED BY SCRANTON</div> <div>1. STYLE: FLOOR MOUNTED OVERHEAD-BRACED TOILET COMPARTMENTS.</div> <div>2. DOORS AND PANELS: HIGH DENSITY POLYETHYLENE (HDPE), FABRICATED FROM SEQ CHAPTER 1 EXTRUDED POLYMER RESINS, FORMING SINGLE THICKNESS PANEL.</div> <div>A. WATERPROOF AND NONABSORBENT, WITH SELF-LUBRICATING SURFACE, RESISTANT TO MARKS BY PENS, PENCILS, MARKERS, AND OTHER WRITING INSTRUMENTS.</div> <div>B. THICKNESS: 1 INCH (25 MM).</div> <div>C. EDGES: SHIP-LAP.</div> <div>3. PANEL COLOR: TRADITIONAL SERIES: 1. SHALE - ORANGE PEEL.</div> <div>4. DOORS AND PANELS: HIGH PRIVACY: HEIGHT: 62 INCHES (1575 MM) HIGH AND MOUNTED AT 8 TO 14 INCHES (203 TO 356 MM) ABOVE THE FINISHED FLOOR.</div> <div>C. SUBMITTALS</div> <div>1. PRODUCT DATA: MANUFACTURER'S DATA SHEETS ON EACH PRODUCT TO BE USED, INCLUDING:</div> <div>2. PREPARATION INSTRUCTIONS AND RECOMMENDATIONS.</div> <div>3. STORAGE AND HANDLING REQUIREMENTS AND RECOMMENDATIONS.</div> <div>4. INSTALLATION METHODS.</div> <div>5. SHOP DRAWINGS: PROVIDE LAYOUT DRAWINGS AND INSTALLATION DETAILS WITH LOCATION AND TYPE OF HARDWARE REQUIRED.</div> <div>6. SELECTION SAMPLES: FOR EACH FINISH PRODUCT SPECIFIED, TWO COMPLETE SETS OF COLOR CHIPS REPRESENTING MANUFACTURER'S FULL RANGE OF AVAILABLE COLORS AND PATTERNS.</div> <div>D. POSTS, RAILS AND HARDWARE:</div> <div>1. METAL POSTS: 62.75 INCHES (2102 MM) HIGH, HEAVY DUTY EXTRUDED ALUMINUM, CLEAR ANODIZED FINISH, FASTENED TO FOOT WITH STAINLESS STEEL TAMPER RESISTANT SCREW.</div> <div>2. HIDDEN SHOE (FOOT): ONE-PIECE MOLDED POLYETHYLENE INVISIBLE SHOE INSERTED INTO METAL POST AND SECURED TO METAL POST WITH STAINLESS STEEL TAMPER RESISTANT SCREW.</div> <div>3. HEADRAL CAP AND CORNER CAP: ONE-PIECE MOLDED POLYETHYLENE SECURED TO METAL POST WITH STAINLESS STEEL TAMPER RESISTANT SCREW, ADJUSTABLE TO LEVEL HEADRAL TO FINISHED FLOOR.</div> <div>4. WALL BRACKETS: CONTINUOUS HEAVY DUTY EXTRUDED ALUMINUM, CLEAR ANODIZED FINISH, INSERTED INTO SLOTTED PANEL AND FASTENED TO PANELS WITH STAINLESS STEEL TAMPER RESISTANT SCREWS.</div> <div>5. HEADRAL: HEAVY DUTY EXTRUDED ALUMINUM, CLEAR ANODIZED FINISH, SECURED TO WALL WITH STAINLESS STEEL TAMPER SCREWS.</div> <div>6. DOOR HARDWARE:</div> <div>A. HINGES: EDGE-MOUNTED HELIX STYLE STAINLESS STEEL CONTINUOUS HINGE, CLOSING DEGREE: 5 DEGREES, COMES TO A FULL CLOSE ON ITS OWN WEIGHT.</div> <div>B. OCCUPANCY INDICATOR LATCH AND HOUSING: MATERIAL: SATIN STAINLESS STEEL, OCCUPANCY INDICATORS: GREEN FOR OCCUPIED AND RED NOT OCCUPIED, SLIDE BOLT AND BUTTON.</div> <div>C. COAT HOOK AND DOOR BUMPER COMBINATION: MATERIAL: CHROME PLATED ZAMAK, HANDICAP DOOR: EQUIP WITH SECOND DOOR PULL AND DOOR STOP.</div> <div>D. DOOR PULLS: CHROME PLATED ZAMAK.</div> <div>E. INSTALLATION:</div> <div>1. CLEAN SURFACES THOROUGHLY PRIOR TO INSTALLATION.</div> <div>2. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPROVED SHOP DRAWINGS.</div> <div>3. INSTALL PARTITIONS RIGID, STRAIGHT, PLUMB, AND LEVEL.</div> <div>4. LOCATE BOTTOM EDGE OF DOORS AND PANELS _____ INCHES ABOVE FINISHED FLOOR.</div> <div>5. CLEARANCE AT VERTICAL EDGES OF DOORS SHALL BE UNIFORM TOP TO BOTTOM AND SHALL NOT EXCEED 3/8 INCH (9.5 MM).</div> <div>6. NO EVIDENCE OF CUTTING, DRILLING, AND/OR PATCHING SHALL BE VISIBLE ON THE FINISHED WORK.</div> <div>7. FINISHED SURFACES SHALL BE CLEANED AFTER INSTALLATION AND BE LEFT FREE OF IMPERFECTIONS.</div> <div>8. ADJUST DOORS AND LATCHES TO OPERATE CORRECTLY.</div> <div>9. PROTECT INSTALLED PRODUCTS UNTIL COMPLETION OF PROJECT.</div> <div>10. TOUCH-UP: REPAIR OR REPLACE DAMAGED PRODUCTS BEFORE SUBSTANTIAL COMPLETION.</div> <div>DIVISION 11 - EQUIPMENT</div> <div>11 3000 - APPLIANCES</div> <div>A. REFERENCE CONSTRUCTION DRAWINGS FOR QUANTITY, AND LOCATION OF APPLIANCES TO BE FURNISHED BY OWNER.</div> <div>10 4400 - FIRE PROTECTION SPECIALTIES</div> <div>A. REFERENCE CONSTRUCTION DRAWINGS FOR TYPE, SIZE AND LOCATIONS OF FIRE EXTINGUISHERS AND CABINETS.</div>											
K	J	I	H	G	F	E	D	C	B	A	



PERMIT DOCUMENTS

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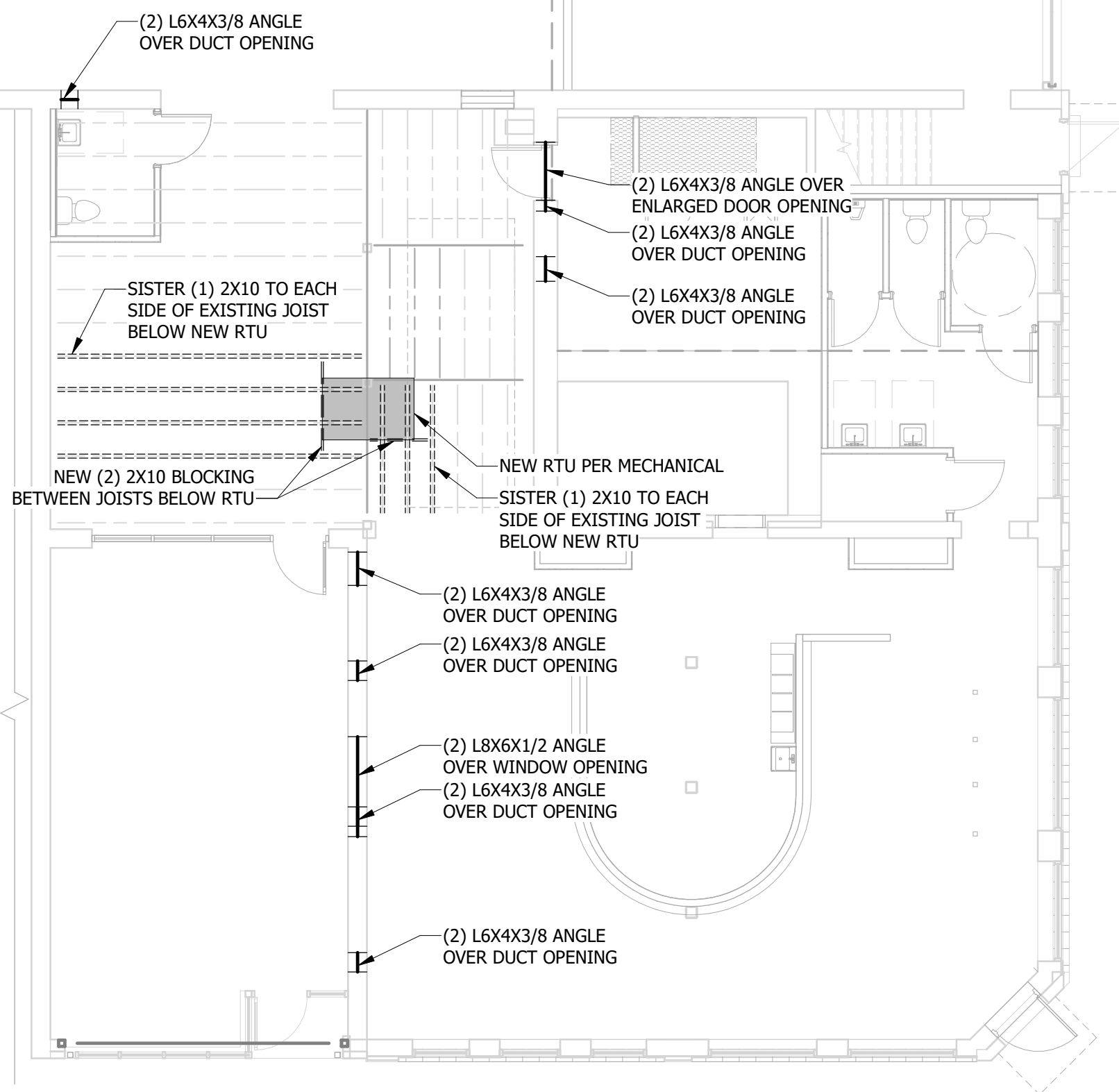
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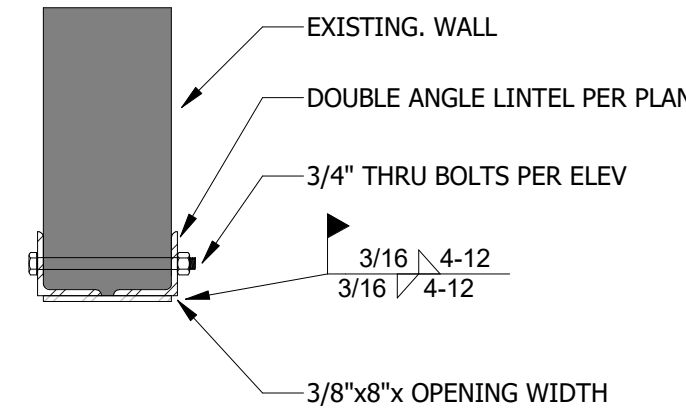
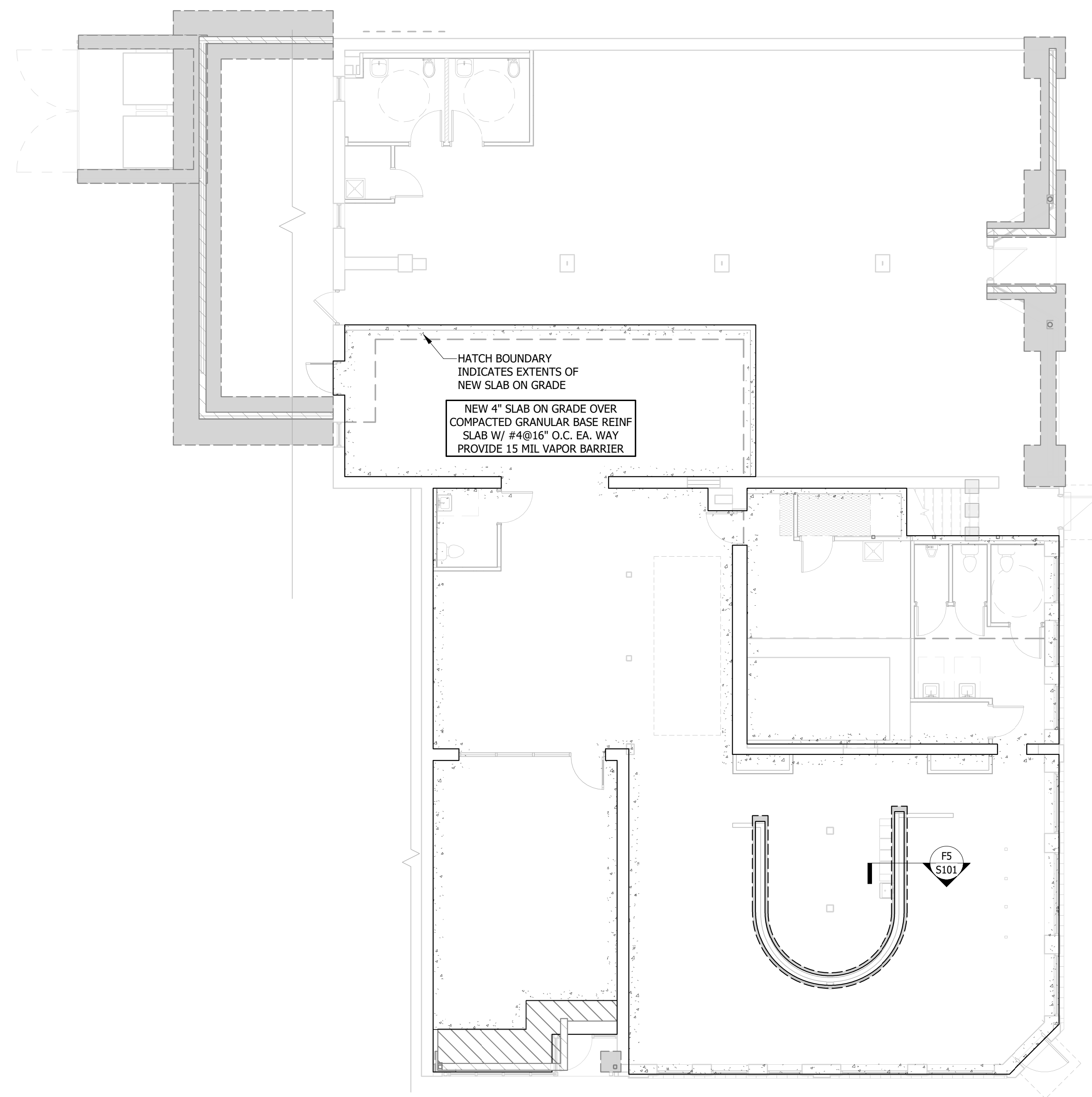
GENERAL PROJECT
SPECIFICATIONS

1. ALL WORK SHALL CONFORM TO 2018 INTERNATIONAL BUILDING CODE AS ADOPTED AND AMENDED BY THE CITY OF LEE'S SUMMIT, MISSOURI.
2. DESIGN LOADS
- A. OVERALL BUILDING CLASSIFICATIONS
1. RISK CATEGORY II
2. SNOW IMPORTANCE FACTOR, I_s 1.00
3. ICE IMPORTANCE FACTOR - WIND, I_w 1.00
4. SEISMIC IMPORTANCE FACTOR, I_e 1.00
- B. SLAB ON GRADE FLOOR LOADS
1. LIVE LOAD 100 PSF
2. CONCENTRATED LOAD 3000 LB ACTING ON AN AREA 4.5 IN. BY 4.5 IN.
- C. ROOF DEAD AND LIVE LOADS
1. DEAD LOAD TOP CHORD 20 PSF
2. DEAD LOAD BOT. CHORD 5 PSF
3. LIVE LOAD TOP CHORD 20 PSF
4. LIVE LOAD BOT. CHORD 0 PSF (U.N.O.)
- D. ROOF SNOW LOADS
1. GROUND SNOW LOAD, P_g 15 PSF
2. FLAT ROOF SNOW LOAD, P_f 11.34 PSF
3. SNOW EXPOSURE FACTOR, C_e 0.9
4. THERMAL FACTOR, C_t 1.2
5. SLOPE FACTOR, C_s 0.6
6. DRIFTING PER CODE
- E. WIND LOADS
1. BASIC WIND SPEED (3 SECOND GUST) 107 MPH
2. EXPOSURE CATEGORY C
3. INTERNAL PRESSURE COEFFICIENT, GCF_i +/- 0.18
- F. SEISMIC LOADS
1. S_s 0.189
2. S_i 0.105
3. SITE CLASS C
4. S_{DS} 0.164
5. S_{D1} 0.105
6. SEISMIC DESIGN CATEGORY B
7. SEISMIC FORCE RESISTING SYSTEM WOOD WALLS SHEATHED WITH WOOD STRUCTURAL PANELS RATED FOR SHEAR
8. DESIGN BASE SHEAR C_W
9. DESIGN RESPONSE COEFFICIENT, C_d 0.025
10. RESPONSE MODIFICATION COEFFICIENT, R 6.5
11. ANALYSIS PROCEDURE USED EQUIVALENT LATERAL FORCE (ELF) PROCEDURE
3. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS PRIOR TO FABRICATION. IF DISCREPANCIES EXIST BETWEEN CONTRACT DRAWINGS, AND/OR SHOP DRAWINGS NOTIFY THE ENGINEER OF RECORD.
4. THE CONTRACTOR SHALL REVIEW DRAWINGS FROM ALL OTHER DISCIPLINES FOR PERTINENT MISC. ITEMS OR INFORMATION RELATED TO THE STRUCTURAL WORK AND COORDINATE AS REQUIRED.
5. THE BUILDING IS NOT STRUCTURALLY STABLE UNTIL ALL CONNECTIONS, FRAMING, SHEAR WALLS, PERMANENT BRACING, AND EXTERIOR LOAD-BEARING WALLS ARE COMPLETE AND HAVE ACHIEVED THEIR RESPECTIVE DESIGN STRENGTHS. CONTRACTOR IS SOLELY RESPONSIBLE FOR MAINTAINING STRUCTURAL STABILITY DURING ERECTION AND CONSTRUCTION. TEMPORARY BRACING SYSTEMS ARE NOT TO BE REMOVED UNTIL STRUCTURAL WORK IS COMPLETE.
6. PROVIDE ADEQUATE SHORING DURING CONSTRUCTION TO RESIST FORCES SUCH AS WIND AND UNBALANCED LOADS DUE TO CONSTRUCTION. DO NOT BACKFILL UNTIL CONCRETE HAS CURED 14 DAYS.
7. CONCRETE
- A. CAST-IN-PLACE CONCRETE CONSTRUCTION SHALL CONFORM TO LATEST APPLICABLE AMERICAN CONCRETE INSTITUTE DOCUMENTS, ACI-301, 305, 306, 315, 318, AND 347 UNLESS NOTED OTHERWISE IN THESE CONTRACT DOCUMENTS.
- B. ALL CONCRETE, UNLESS NOTED OTHERWISE, SHALL DEVELOP A 28 DAY COMPRESSIVE STRENGTH AND HAVE MAXIMUM WATER/CEMENT RATIOS AS FOLLOWS:
1. FOOTINGS, GRADE BEAMS, WALLS, BEAMS, COLUMNS: 4000 PSI (w/c MAX 0.45)
2. SLAB ON GRADE: 4000 PSI (w/c MAX 0.42)
3. REFER TO THE SPECIFICATION FOR AIR-ENTRAINED CONCRETE.
- C. SLABS-ON-GRADE SHALL DEVELOP A 90 DAY COMPRESSIVE STRENGTH.
- D. IT IS THE INTENT OF THESE CONCRETE SPECIFICATIONS THAT THE CONTRACTOR SUPPLY CONCRETE MIXES WITH A MINIMUM AMOUNT OF WATER IN ORDER TO LIMIT PLASTIC SHRINKAGE CRACKING IN FRESHLY PLACED CONCRETE. IT IS EXPECTED THAT PRODUCING WORKABILITY FOR CONCRETE MIXES WILL REQUIRE THE ADDITION OF WATER-REDUCING CHEMICAL ADMIXTURES.
- E. CONCRETE MIX DESIGNS SHALL INCLUDE ALL APPLICABLE ADMIXTURES.
- F. CONCRETE SLUMP SHALL BE A MAXIMUM OF 4" +/- 1" (ASTM C-145) AS DELIVERED IN THE FIELD. CONTRACTOR MAY USE CHEMICAL ADMIXTURES TO ATTAIN A MAXIMUM SLUMP OF 8" FOR WORKABILITY IF ADMIXTURE IS TO BE ADDED IN THE FIELD IS SHALL BE ADDED THROUGH THE USE OF AN EXTERNAL MEASURING DEVICE (I.E. 5 GALLON BUCKET).
- G. CONCRETE EXPOSED TO WEATHER, PARKED VEHICLES, AND/OR DEICING CHEMICAL SHALL CONTAIN 6% (+/- 1%) ENTRAINED AIR BY VOLUME.
- H. CHAMFER ALL EXPOSED CORNERS OF CONCRETE WALLS, 3/4" UNLESS NOTED OTHERWISE.
- I. ALL CONTROL JOINTS IN CONCRETE SLABS-ON-GRADE SHALL BE CUT TO 1/3 OF DEPTH WHEN USING WET-CUTTING PROCESS AND 1/4 OF DEPTH WHEN USING EARLY-ENTRY DRY-CUT PROCESS. CUT JOINTS AS SOON AS APPLICABLE PER PROCESS USED AFTER CONCRETE HAS BEEN PLACED WITHOUT DISLODGING AGGREGATE, OR USE A KEYED COLD JOINT.
- J. CUT SLABS-ON-GRADE INTO AREAS OF APPROXIMATELY 225 SQUARE FEET MAINTAINING AS CLOSE TO SQUARE AREAS AS POSSIBLE. LENGTH TO WIDTH RATIOS OF JOINTED PANELS SHALL NOT EXCEED 1.5:1.
- K. COORDINATE LOCATIONS OF CONTROL JOINTS WITH ARCHITECT. CONTROL JOINTS IN WALLS SHALL BE PLACED AT 20'-0" O.C. MAXIMUM UNLESS NOTED OTHERWISE. LOCATE JOINTS BESIDE PIERS INTEGRAL WITH WALLS, NEAR CORNERS, AND IN CONCEALED LOCATIONS WHERE POSSIBLE. CONSTRUCTION JOINTS MAY BE PLACED IN LIEU OF CONTROL JOINTS AT CONTRACTOR'S DISCRETION. COORDINATE LOCATION OF CONTROL JOINTS WITH ARCHITECT.
- L. PRIOR TO PLACING CONCRETE IN ANY LOCATION, IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO HAVE THOROUGHLY CHECKED AND COORDINATED ALL DIMENSIONS, ELEVATIONS, OPENINGS, RECESS, AND BLOCKOUTS AS SHOWN ON ANY CONTRACT DRAWINGS. IN THE EVENT ERRORS, CONFLICTS, OR OMISSIONS EXIST, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE ARCHITECT OR ENGINEER FOR NECESSARY CORRECTIVE ACTION.
- M. EMBEDDED ITEMS ARE TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR PRIOR TO PLACING CONCRETE.
- N. ANCHOR RODS AND ANCHOR BOLTS SHALL BE HELD IN PLACE WITH A RIGID TEMPLATE.
- O. HORIZONTAL JOINTS BEYOND THOSE SHOWN IN THE CONTRACT DOCUMENTS SHALL NOT BE CONSTRUCTED WITHOUT THE APPROVAL OF THE ARCHITECT AND ENGINEER.
9. MASONRY
- A. MASONRY UNIT COMPRESSIVE STRENGTH (f'_m) = 1500 PSI. MORTAR - TYPE S.
- B. LINTELS SHALL BE STEEL BEAMS OR MASONRY BOND BEAMS AS SHOWN ON THE PLANS.
- C. OPENINGS LESS THAN 4'-0" WIDE SHALL BE A BOND BEAM WITH (2) #5 CONTINUOUS EXTENDING PAST OPENINGS A MIN. OF 2'-0".
- D. GROUT ALL REINFORCED CELLS AND CELLS BELOW GRADE SOLID.
- E. PLACE A BOND BEAM WITH (2) #5 CONTINUOUS AT THE TOP OF WALLS & 8'-0" O.C. VERTICALLY.
- F. REINFORCE 8" CMU WALLS WITH #5 @ 32" O.C. VERT. AND 12" CMU WALLS WITH #5 @ 24" O.C. VERT. UNLESS NOTED OTHERWISE. IN ADDITION, REINFORCE WALL CORNERS AND JAMBS OF WINDOWS AND DOORS WITH (2) #5 EXTENDING PAST OPENINGS A MIN. OF 2'-0".
- G. BRACE THE TOPS OF PARTITION WALLS TO THE UNDERSIDE OF DECK.
10. ROUGH CARPENTRY
- A. HEADERS, JOISTS, AND RAFTERS SHALL MEET OR EXCEED THE FOLLOWING MINIMUM REQUIREMENTS. (EXAMPLE SPECIES: #2 SPRUCE-PINE-FIR)
1. F_b 875 PSI
2. F_v 135 PSI
3. F_c 1150 PSI
4. E 1400 KSI
- B. TIMBER FRAMING MEMBERS SHALL MEET OR EXCEED THE FOLLOWING MINIMUM REQUIREMENTS. (EXAMPLE SPECIES: #2 SPRUCE-PINE-FIR)
1. F_b 875 PSI
2. F_v 135 PSI
3. F_c 1150 PSI
4. E 1400 KSI
- C. ALL LVL MEMBERS SHALL BE 2.0E MICROLAM OR APPROVED EQUAL.
- D. ALL WOOD FRAMING MEMBERS INDICATED ARE NOMINAL SIZES. PROVIDE ACTUAL DRESSED SIZES, KILN-DRIED, WITH MAXIMUM IN-PLACE MOISTURE CONTENT OF 19%.
- E. ALL BOLTS ARE A36 OR A307, GRADE 1, AND ALL NAILS ARE COMMON WIRE NAILS UNLESS NOTED OTHERWISE.
- F. LAY ALL STRUCTURAL PANELS WITH FACE GRAIN PERPENDICULAR TO SUPPORTING MEMBERS AND OFFSET END JOINTS 4'-0". PANELS TO BE APA RATED AND STAMPED FOR THE LOADING SHOWN IN SECTION 2 "DESIGN" AND SHOULD MATCH THE SUPPORT SPACING SHOWN ON THE PLANS.
- G. ROOF DECKING SHALL BE 3/4" THICK APA RATED EXTERIOR GRADE SHEATHING FASTENED WITH 10d NAILS AT 6" O.C. ON EDGES AND 12" O.C. IN FIELD UNLESS NOTED OTHERWISE.
- H. FASTENER QUALITY, QUANTITY, SIZE, AND SPACING SHALL COMPLY WITH IBC FASTENING SCHEDULE (TABLE 2304.9) UNLESS NOTED OTHERWISE.
- I. ALL WOOD IN CONTACT WITH CONCRETE OR EXPOSED TO WEATHER SHALL BE PRESERVATIVE TREATED.
11. STRUCTURAL STEEL
- A. ALL STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED, AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, LATEST APPLICABLE EDITION AND AISC CODE OF STANDARD PRACTICE.
- B. ALL STRUCTURAL STEEL FOR WIDE FLANGE SHALL BE A992 GRADE 50 UNLESS NOTED OTHERWISE. ALL ANGLES, PLATES AND CHANNELS SHALL BE ASTM A36 UNLESS NOTED OTHERWISE. ALL RECTANGULAR AND ROUND HSS SHAPES SHALL BE ASTM A500, GRADE B.
- C. ALL BOLTS SHALL BE 3/4" Ø A-325 BOLTS WITH HEAVY HEX HEADS UNLESS NOTED OTHERWISE. ALL CONNECTIONS SHALL HAVE A MINIMUM OF (2) 3/4" Ø BOLTS, BEARING TYPE CONNECTIONS ONLY.
- D. ALL STRUCTURAL STEEL WELDS IN THE SHOP OR IN THE FIELD SHALL BE PERFORMED BY A QUALIFIED WELDER AND SHALL CONFORM TO THE CURRENT REQUIREMENTS OF A.W.S. SHOP WELDED AND FIELD BOLTED CONNECTIONS ARE PREFERRED UNLESS NOTED OTHERWISE.
- E. THE CONTRACTOR SHALL PROVIDE SHELF ANGLES, GLASS SUPPORTS, LINTELS, AND OTHER MISC. STEEL AS SHOWN ON THESE DRAWINGS AS REQUIRED TO PROVIDE SUPPORT (STABILIZATION) AROUND AND THROUGHOUT THE BUILDING. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL MISC. STEEL DETAILS.

A9 2ND FLOOR PLAN
1/8" = 1'-0"

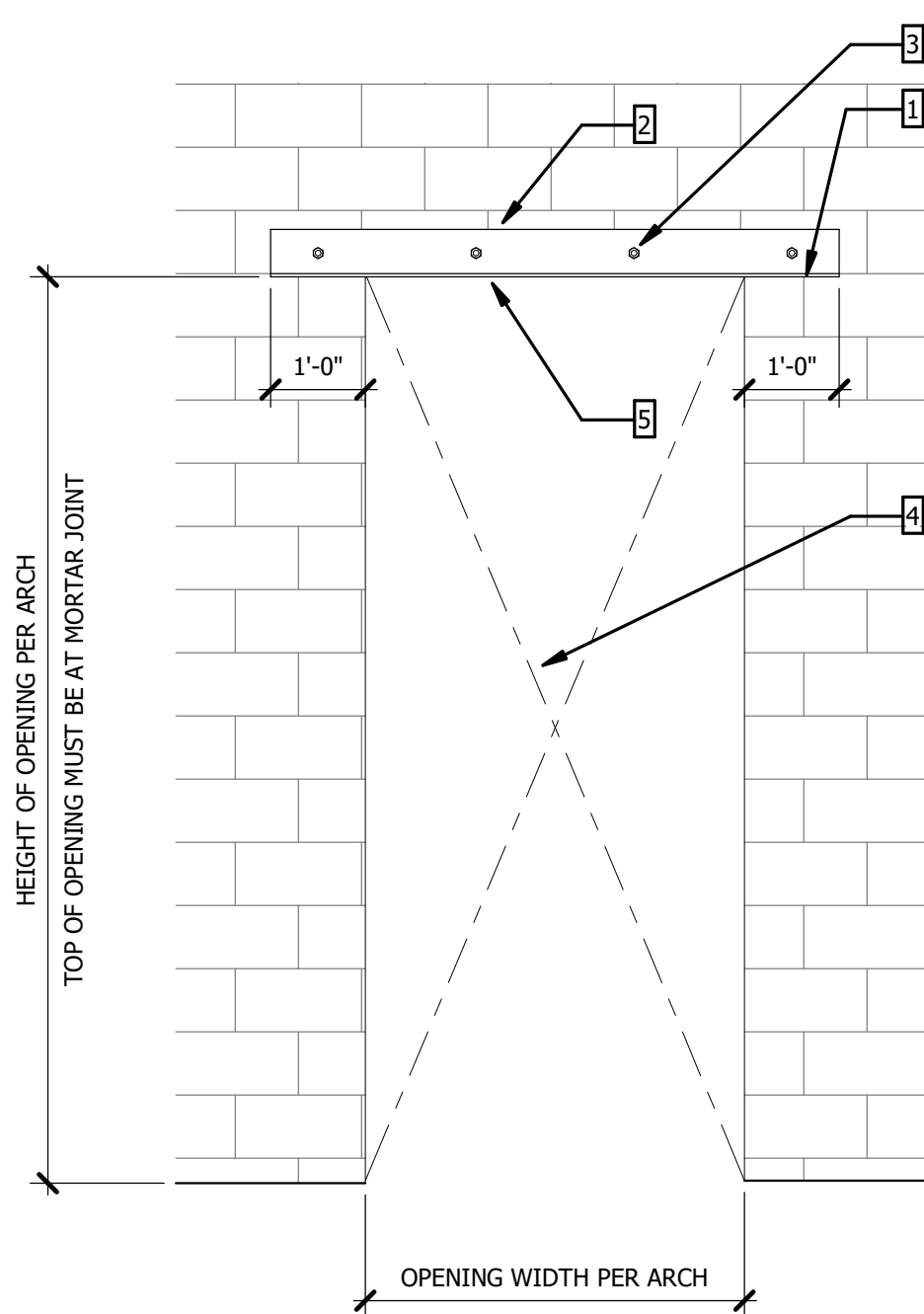


A5 LEVEL 1 FLOOR PLAN
1/8" = 1'-0"



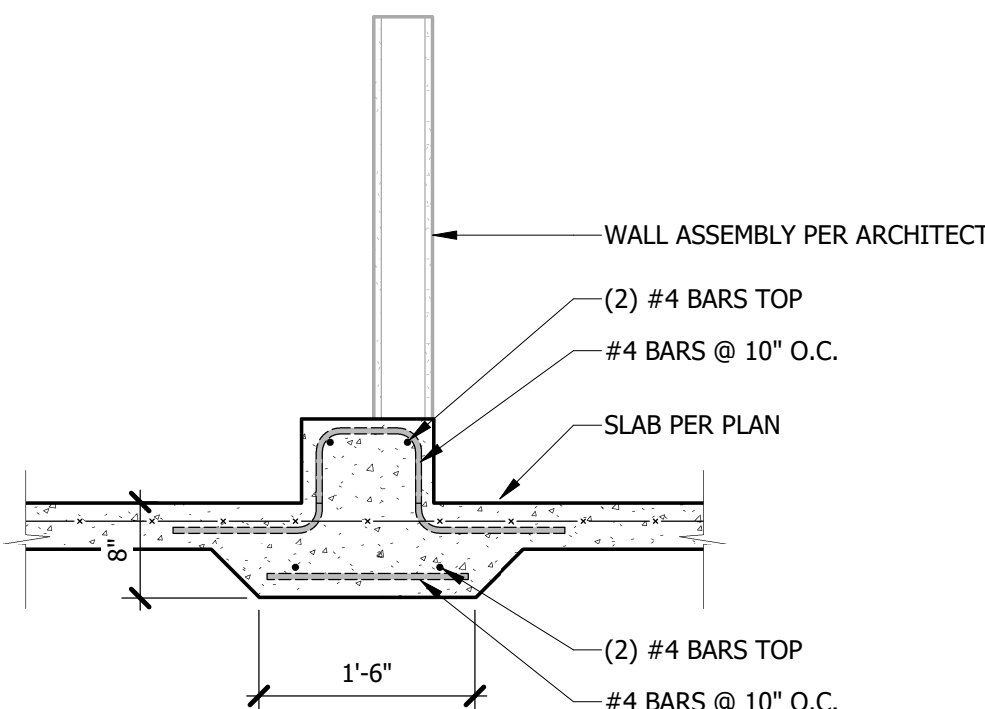
ALL STEEL TO BE HOT-DIPPED GALV.

K2 DOUBLE ANGLE LINTEL
1" = 1'-0"



- INSTALL SEQUENCE
- SAW-CUT EXISTING MORTAR JOINT AT OPENING HEIGHT FULL WIDTH OF OPENING PLUS 1'-0" EITHER SIDE
 - INSTALL ANGLES BOTH SIDES OF OPENING
 - INSTALL THRU-BOLTS FOR LENGTH OF LINTEL. TIGHTEN ALL NUTS AND WASHERS
 - INTERIOR MASONRY REMOVED FROM OPENING
 - WELD PLATE TO UNDERSIDE OF LINTEL

F3 DOUBLE ANGLE LINTEL ELEV.
1/2" = 1'-0"



F5 CONCRETE CURB AT BAR
3/4" = 1'-0"

PLAN NOTES

- 4" SLAB ON GRADE REINFORCED WITH 6x6 W2.9xW2.9 OVER 4" GRANULAR FILL AND 10 MIL VAPOR BARRIER, UNLESS NOTED OTHERWISE.
- #4x5'-0" LONG AT ALL RE-ENTRANT CORNERS.
- REFER TO DETAILS F3/S101 & K2/S101 FOR LINTELS REQUIRED OVER NEW WALL OPENINGS.
- CONTRACTOR TO COORDINATE ALL FLOOR AND SLAB PENETRATIONS WITH ALL OTHER DISCIPLINES.
- REFER TO ARCHITECTURAL FOR ALL DIMENSIONS NOT SHOWN ON THESE DRAWINGS.



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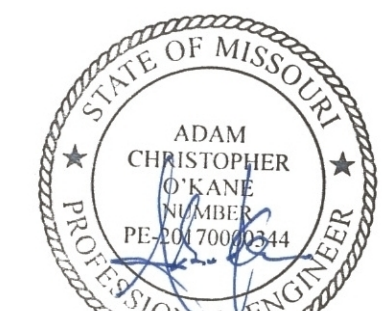
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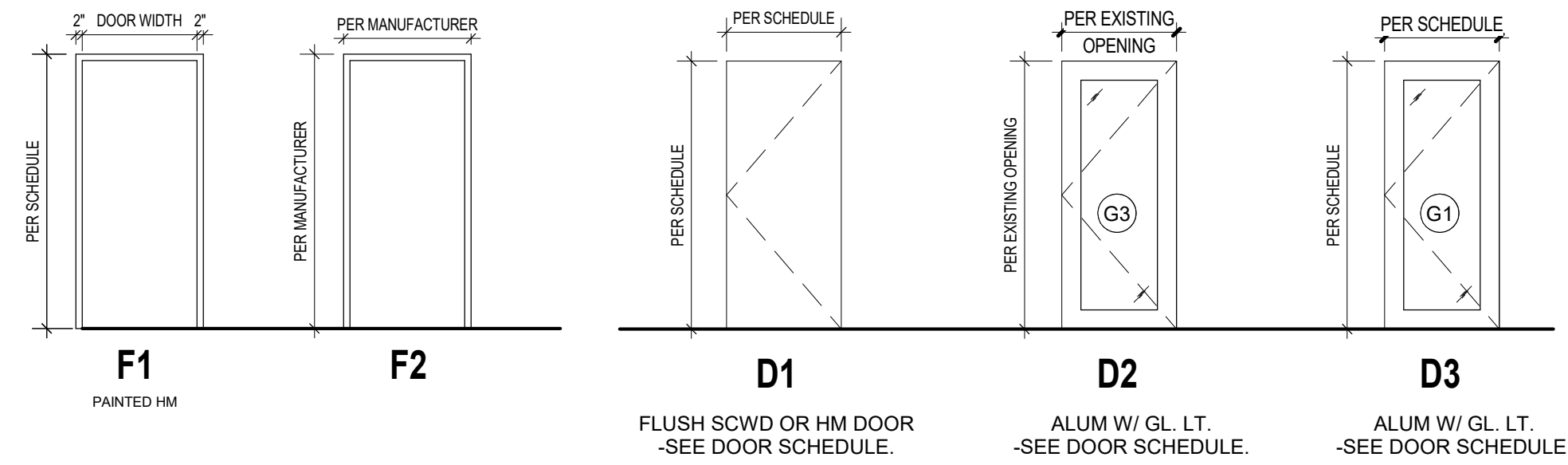
STRUCTURAL PLANS AND SECTIONS

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DOOR SCHEDULE									
DOOR #	WIDTH	HEIGHT	ROOM NAME	TYPE	DOOR		FRAME		REMARKS
					MATERIAL	FINISH	MATERIAL	FINISH	
T100	EXIST	EXIST	BAR/DINING	EXIST	EXIST	COORD. W/ OWNER	EXIST	COORD. W/ OWNER	1, 2, 3, 5, 8
T101	3'-2"	7'-0"	DELI	D3	ALUM/GLASS	MATCH EXISTING STOREFRONT	WD		1, 3, 6, 7
T103	3'-0"	7'-0"	ADA UNISEX RR	D1	SCWD				1, 3, 4
T104	PER EXISTING OPENING	PER EXISTING OPENING	POOL ROOM	D2	ALUM/GLASS	MATCH EXISTING STOREFRONT			3, 4, 5, 7
T105	3'-0"	7'-0"	MEP/ITAP STORAGE	D1	SCWD		HM	PAINT	1, 3, 4, 8
T108A	3'-0"	7'-0"	UTILITY	D1	SCWD		HM	PAINT	1, 3, 6, 8
T108B	2'-10"	7'-0"	RESTROOM	D1	SCWD		HM	PAINT	1, 3, 8
T108C	2'-10"	7'-0"	RESTROOM	D1	SCWD		HM	PAINT	1, 3, 8
T108D	3'-0"	7'-0"	RESTROOM	D1	SCWD		HM	PAINT	1, 3, 4, 8
T109	3'-0"	7'-0"	RESTROOM	D1	SCWD		HM	PAINT	1, 3, 8

DOOR SCHEDULE REMARKS:

1. MATCH EXISTING MASTER KEYING SYSTEM. COORDINATE WITH BUILDING OWNER.
2. MAINTAIN EXISTING HARDWARE.
3. PROTECT DOOR AND FRAME FROM DAMAGE THROUGHOUT CONSTRUCTION. ANY DAMAGE TO BE REPAIRED/REPLACED PER OWNER DISCRETION.
4. DOOR FRAME 2" OFF FINISHED FACE ON HINGE SIDE, U.N.O.
5. PROVIDE PANIC HARDWARE.
6. MANUALLY LOCKABLE FROM INSIDE OF ROOM. MASTER KEY LOCK ON OUTSIDE OF ROOM.
7. COORDINATE HARDWARE WITH MANUFACTURER.
8. COORDINATE PAINT FINISH WITH OWNER



FRAME TYPES

1/4" = 1'-0"

NOTE:

1. DOORS TO BE 1 3/4" THICK, UNLESS NOTED OTHERWISE ON DOOR SCHEDULE.

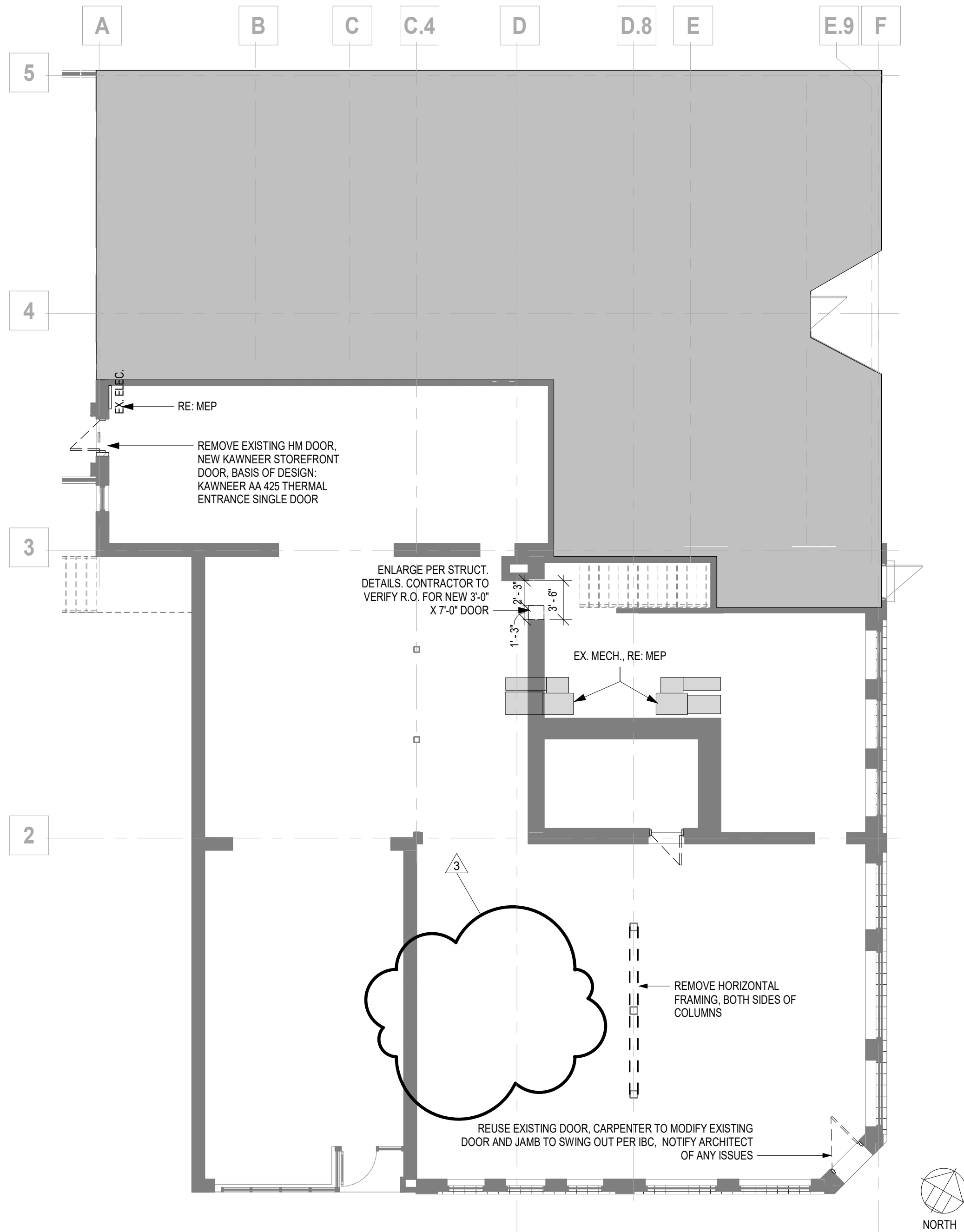
ACCESSORY SCHEDULE						
TYPE MARK	MANUFACTURER	DESCRIPTION	MODEL	WxHxD	FINISH	REMARKS
1	BOBRICK WASHROOM EQUIPMENT, INC.	SOAP DISPENSER - SURFACE MOUNTED	B-2012	4-3/16", 10-17/32", 4-7/32"	SATIN	
2	BOBRICK WASHROOM EQUIPMENT, INC.	SURFACE MOUNTED PAPER TOWEL DISPENSER	B-262	10-3/4", 14", 4"	SATIN	
3	BOBRICK WASHROOM EQUIPMENT, INC.	VERTICAL GRAB BAR, 1-1/2" DIA., SS, 18"	B-6806-18	1-1/2" DIA X 18"	SATIN, WITH PEENED GRIP	
4	BOBRICK WASHROOM EQUIPMENT, INC.	GRAB BAR, 1-1/4" DIA., SS, 42"	B-5806-42	1-1/2" DIA X 42"	SATIN	
5	BOBRICK WASHROOM EQUIPMENT, INC.	DOUBLE ROLL TOILET TISSUE DISPENSER	B-6909	12-3/8", 4-3/4", 6-3/16"	STAINLESS STEEL	
6	BOBRICK WASHROOM EQUIPMENT, INC.	GRAB BAR, 1-1/2" DIA., SS, 36"	B-5806-36	1-1/2" DIA X 36"	SATIN	
7		MIRROR		24"x48"	SATIN	1

ACCESSORY SCHEDULE GENERAL NOTES:

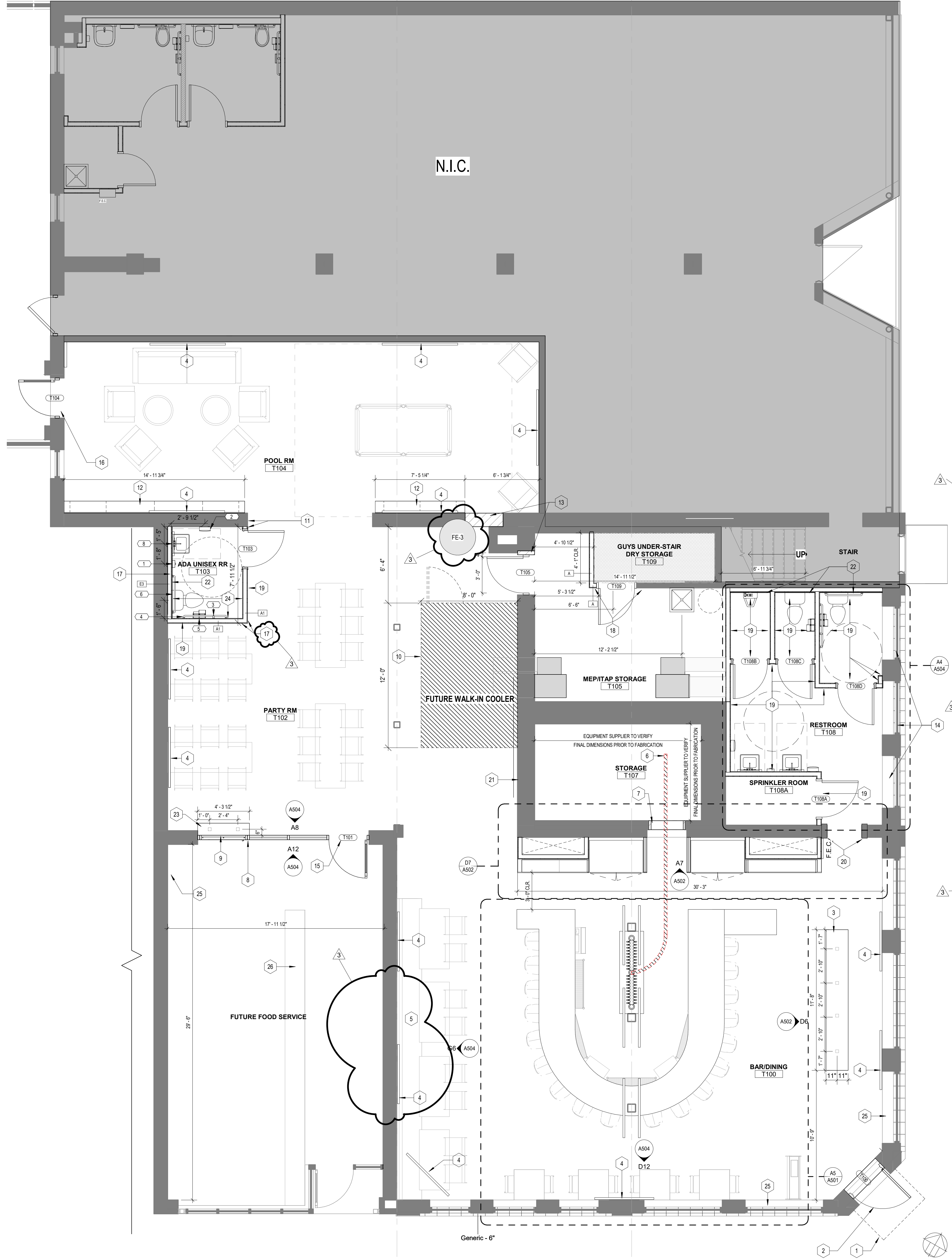
- A. ACCESSORIES SCHEDULE BASIS OF DESIGN, COORDINATE FINAL SELECTION WITH OWNER

ACCESSORY SCHEDULE REMARKS:

1. MIRRORS TO BE CENTERED AT SINKS TYP.



A8 1ST FLOOR PLAN - ITAP
1/4" = 1'-0"



GENERAL NOTES:
FLOOR PLANS

1. RE. GENERAL ARCHITECTURAL SHEETS FOR ADDITIONAL NOTES AND DETAILS THAT ARE APPLICABLE.
2. ARCHITECTURAL ELEVATION 100'-0".
3. DIMENSIONS SHOWN ON THE FLOOR PLAN ARE TO THE FACE OF GYP. BOARD WALL (FG), FACE OF MASONRY (FM), FACE OF CONCRETE WALLS (FC), AND COLUMN GRID LINES, UNLESS NOTED OR SHOWN OTHERWISE.
4. NOTE: WALL THICKNESSES ARE ACTUAL DIMENSIONS AND PER WALL TYPES. SEE GENERAL SHEETS.
5. DOOR OPENINGS NOT LOCATED BY DIMENSION SHALL BE CENTERED IN WALL SHOWN OR LOCATED 4 INCHES FROM FINISH WALL TO HINGE SIDE OF THE DOOR. ALWAYS ALLOWING A MINIMUM OF 18" FROM THE PULL SIDE (STRIKE SIDE) OF THE DOOR TO THE INTERSECTING WALL OR OTHER PROTRUDING OBJECTS.
6. ALL ALCOVES WITHOUT A SPACE IDENTIFICATION NUMBER SHALL HAVE THE SAME FINISHES AS THE ADJOINING SPACES.
7. PROVIDE FINISH LEVELS AS DESCRIBED:
LEVEL 4:
- ALL WALLS TO BE BROUGHT UP TO LEVEL 4 FINISH.
- AREAS FOR BACK OF HOUSE EMPLOYEE OPERATIONS WHERE ROOM SIDE WALLS AND/OR CEILINGS HAVE PAINTED SURFACES.
- CONCESSION AND CIRCULATION CORRIDORS WHERE ROOM SIDE WALLS AND/OR CEILINGS HAVE PAINTED SURFACES.
8. STAIR ENCLOSURES, SHAFT WALLS, EXIT PASSAGEWAYS AND EXTERIOR WALLS TO BE COORDINATED FOR PHASE OF WORK PER MATRIX AND PROJECT SCOPING.
9. MAINTAIN AND PROTECT EXISTING EXPANSION JOINTS DURING CONSTRUCTION. PATCH/REPAIR/REPLACE TO MATCH EXISTING RATINGS AS REQUIRED ON THE SHELL PORTION OF PROJECT.
10. CONSTRUCTION TO BE IN STRICT ACCORDANCE WITH ALL APPLICABLE BUILDING CODES, LOCAL RULES, AND REGULATIONS, AND ALL OTHER CODES, REGULATIONS AND GOVERNING AGENCIES HAVING JURISDICTION WITH ALL APPLICABLE AMENDMENTS UNLESS ALTERED OR CHANGED THROUGH VARIANCES OF OTHER LEGAL PROCEDURES.

FLOOR PLAN KEYED NOTES

MARK	DESCRIPTION
1	SIGNAGE BY OTHERS
2	CARPENTER TO MODIFY EXISTING DOOR AND JAMB TO SWING OUT PER IBC. NOTIFY ARCHITECT OF ANY ISSUES
3	BUILT-IN WOOD HIGHTOP, 42" H, COORD. TOP FINISH W/ OWNER, RE. DBA502.
4	TELEVISIONS BY OWNER, COORD. MOUNTING HT W/ OWNER. OUTLETS IN CEILING ABOVE TVS TYP. RE. ELECTRICAL
5	ALL DINING AND BAR FURNITURE BY OWNER
6	PROVIDE BENDS AND SWEEPS PER EQUIPMENT SUPPLIERS RECOMMENDATIONS, ENDPOINTS, BENDS/TURNS PER EQUIPMENT SUPPLIER RECOMMENDATIONS
7	EQUIPMENT SUPPLIER TO VERIFY FINAL OPENING DIMENSIONS PRIOR TO FABRICATION
8	BASIS OF DESIGN: QUIKSERV SC-4844 MANUAL SELF CLOSING SLIDER, 1/4" TEMPERED GLAZING, RE. A12A504 AND A8A504
9	FUTURE COOLER
10	ALIGN F.F.
11	12" DRINK RAIL, COORD. MATERIAL AND FINISH W/ OWNER. CONTRACTOR INSTALLED, CENTERLINE BRACKETS - COUNTERTOP SUPPORT BRACKET FRONT MOUNTING PLUS-10X8 BLACK, 4" MAX OFF CENTER
12	INFILL TO MATCH EXISTING
13	GLAZINGS TO BE BLACKED OUT
14	COORDINATE HARDWARE REQUIREMENTS W/ OWNER
15	NEW STOREFRONT DOOR, BASIS OF DESIGN: KAVNEER AA-625 THERMAL ENTRANCE SINGLE DOOR, FINISH TO MATCH EXISTING STREET STOREFRONT
16	NEW WALL TO GO TO ROOF DECK
17	EXTEND EXISTING WALL, ALIGN F.F.
18	BASIS OF DESIGN: ALL NEW GYP WALLS TO RECEIVE DALLTILE; PORTFOLIO 6"x12" P-36C9TB COVE BASE - IRON GREY
19	ALL EXISTING DOOR AND WINDOW TRIM TO BE PAINTED SW 6992 INKWELL - EGG SHELL FINISH
20	COORD. BRICK FINISH W/ OWNER
21	BASIS OF DESIGN: RESTROOM WET WALLS TO RECEIVE DALLTILE - BEVELED 3"x8" 0100 ARTIC WHITE SUBWAY TILE, FULL HT. HORIZONTAL RUNNING BOND INSTALLATION
22	12"D COUNTER, FLOOR MOUNTED, 3"x3" SQUARE SOCKET AND FLANGE, PAINTED TO MATCH STOREFRONT, COORD. COUNTER MATERIAL AND FINISH W/ OWNER, RE. A8A504
23	COORD. UTILITY STUB-INS FOR FUTURE TENANT W/ OWNER PRIOR TO INSTALLATION OF NEW SLAB
24	FUTURE FOOD SERVICE COUNTER
25	
26	

GLASS LITE SCHED.

GLAZING TYPE	DESCRIPTION
G1	1/4" TEMPERED CLEAR GLAZING
G2	1/4" CLEAR GLAZING
G3	1/2" TEMPERED INSULATED CLEAR GLAZING

DOOR SCHED. GENERAL NOTES

1. HM REFERS TO HOLLOW METAL.
2. AL REFERS TO ALUMINUM
3. WD REFERS TO WOOD
4. SCWD REFERS TO SOLID CORE WOOD
5. ALL EXTERIOR ALUMINUM DOORS & FRAMES ARE TO BE FINISHED TO MATCH ADJACENT ALUMINUM WINDOW FRAME, U.N.O.
6. REFER TO SPECIFICATION FOR DOOR HARDWARE SET DESIGNATIONS.
7. PROTECT ALL DOORS & FRAMES FROM DAMAGE THROUGHOUT CONSTRUCTION PHASES.

FLOOR PLANS, ENLARGED PLANS, AND DETAILS

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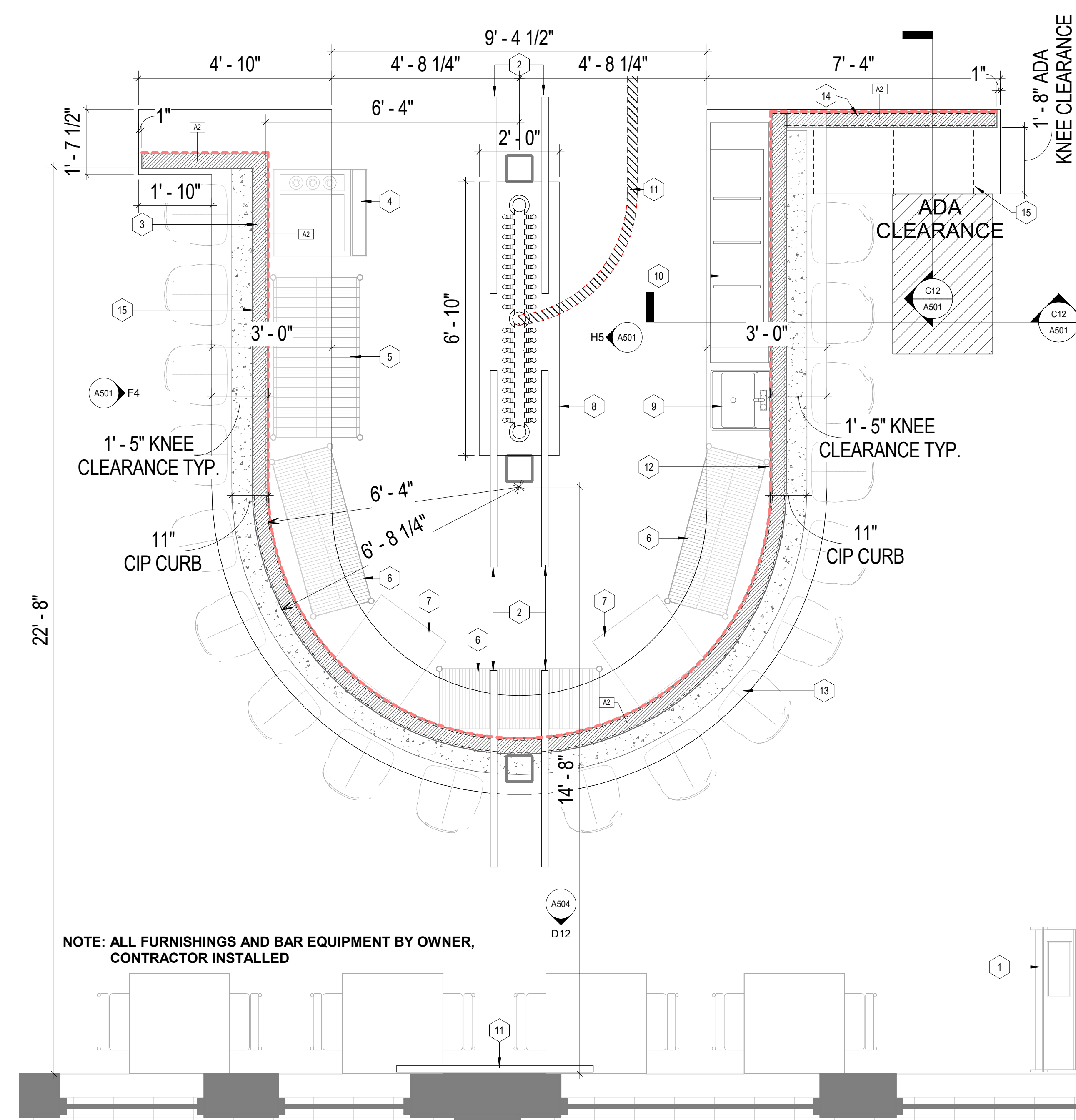
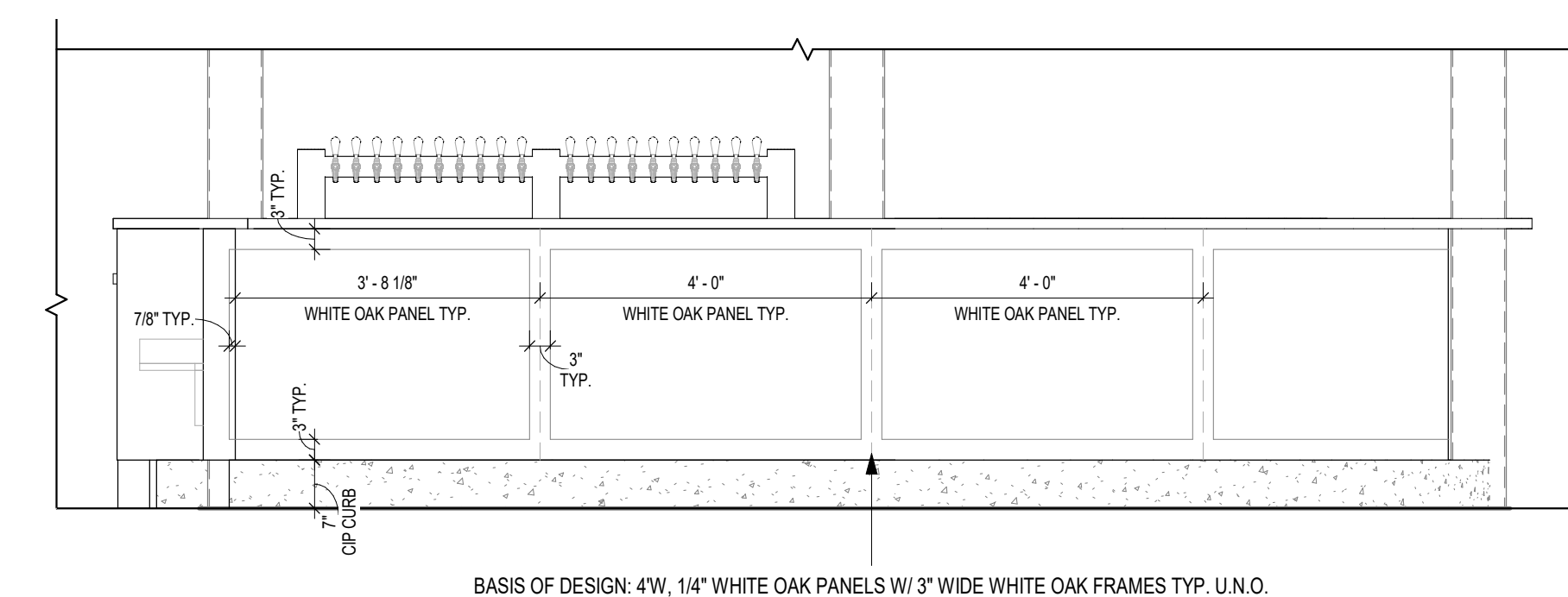
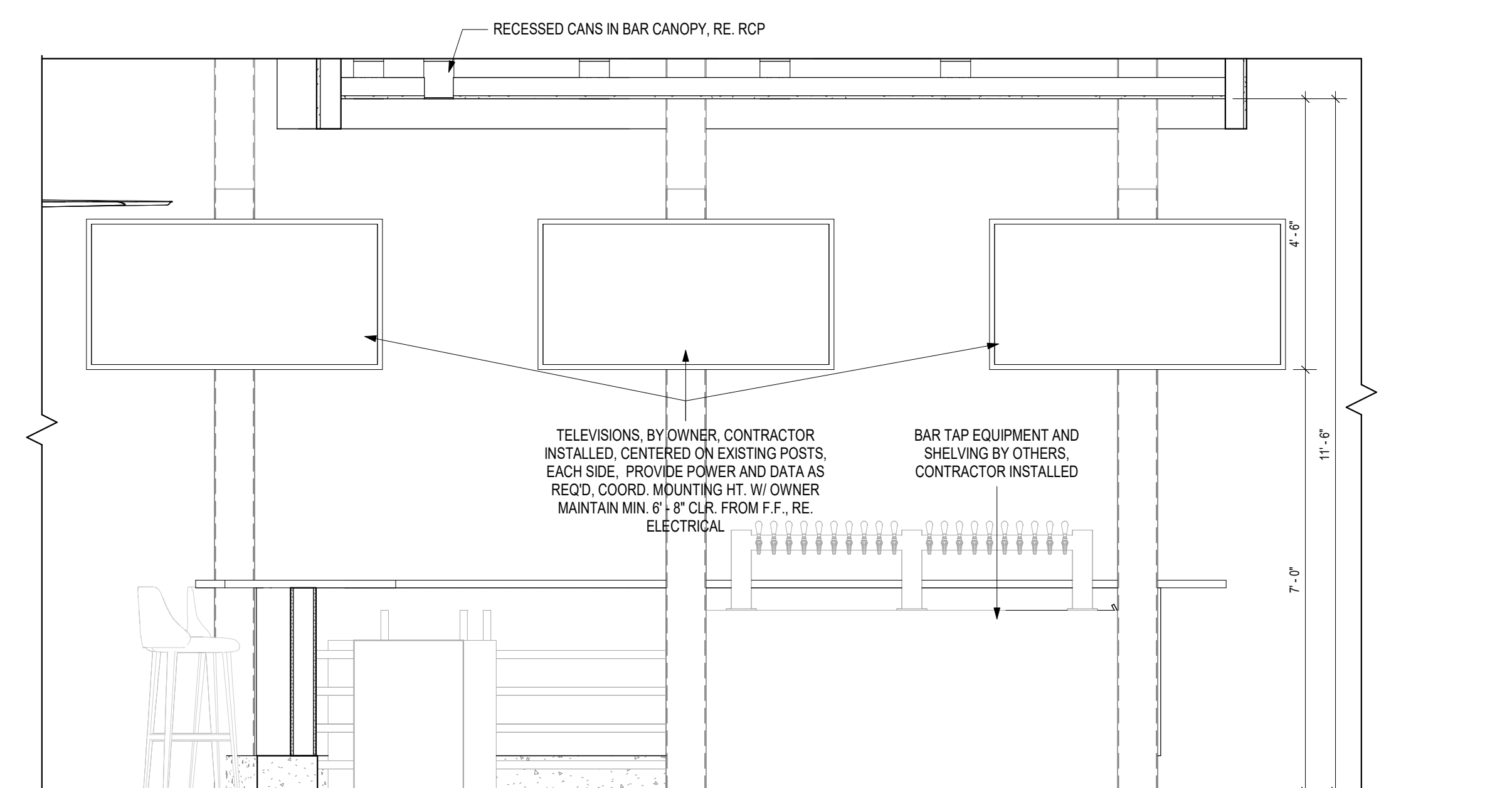
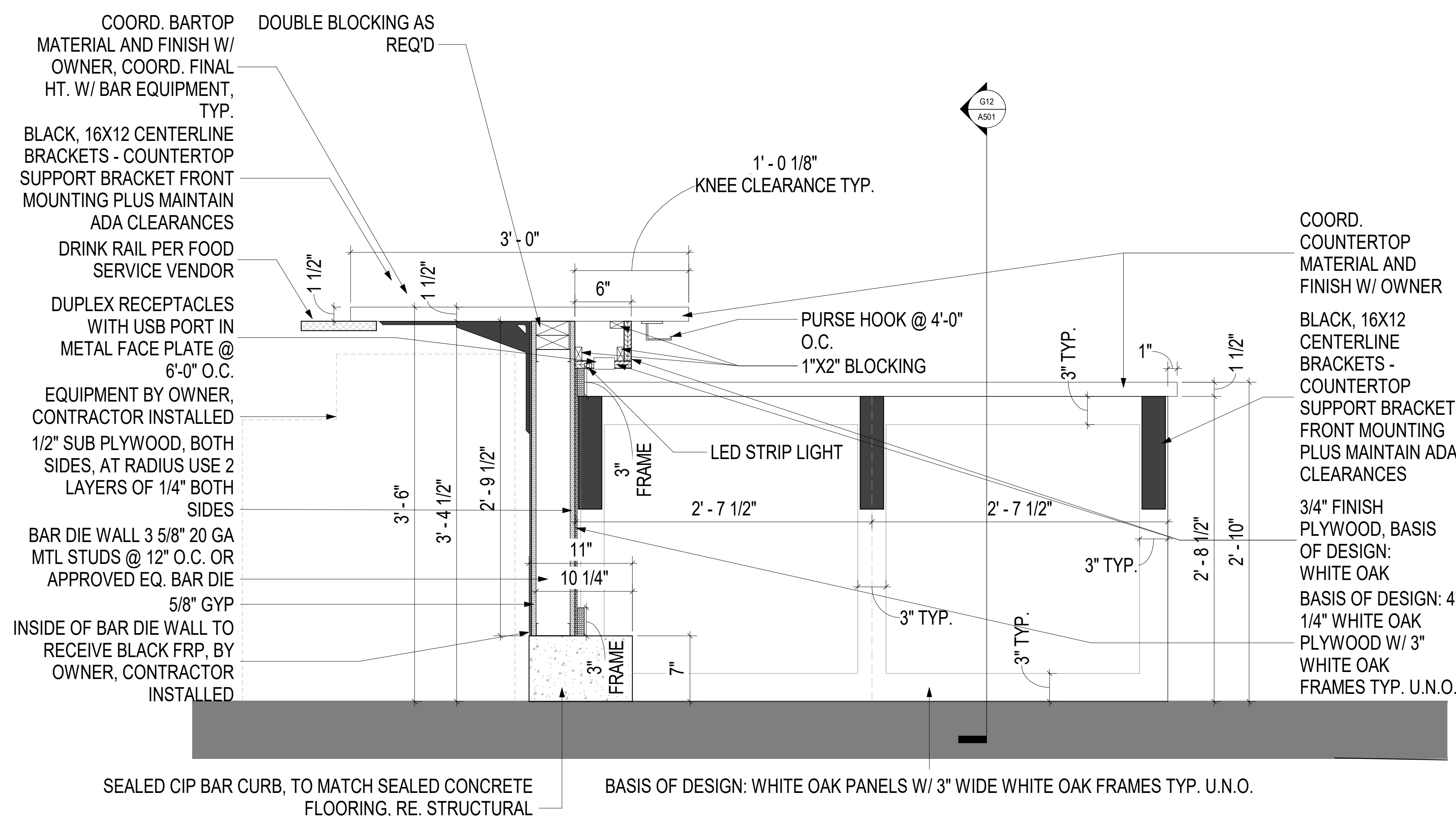
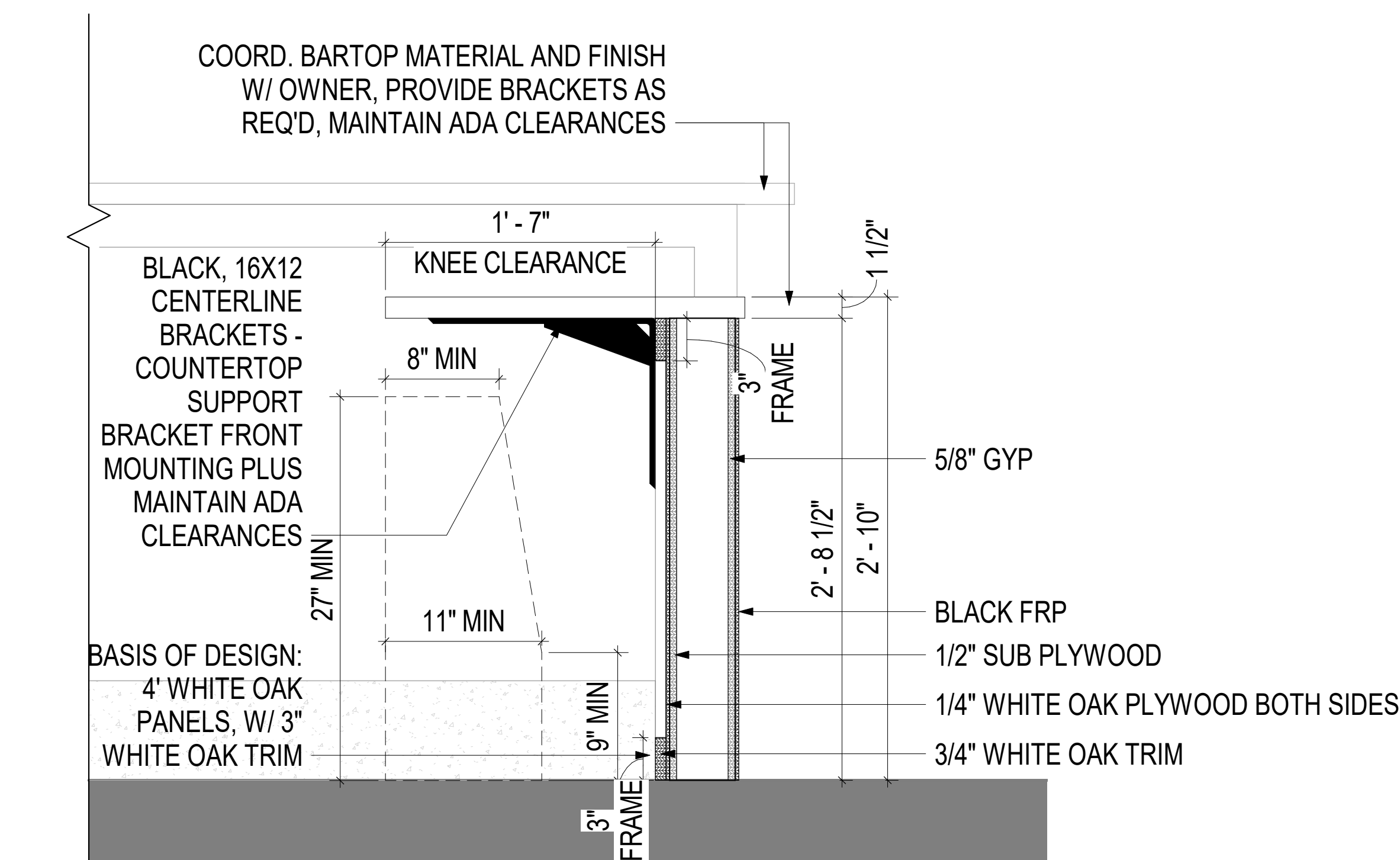
REVISION DATES:

1 City Comments	03/09/23
2 City Comments	03/22/23
3 Landlord Revisions	04/03/23

PROFESSIONAL SEAL

A101

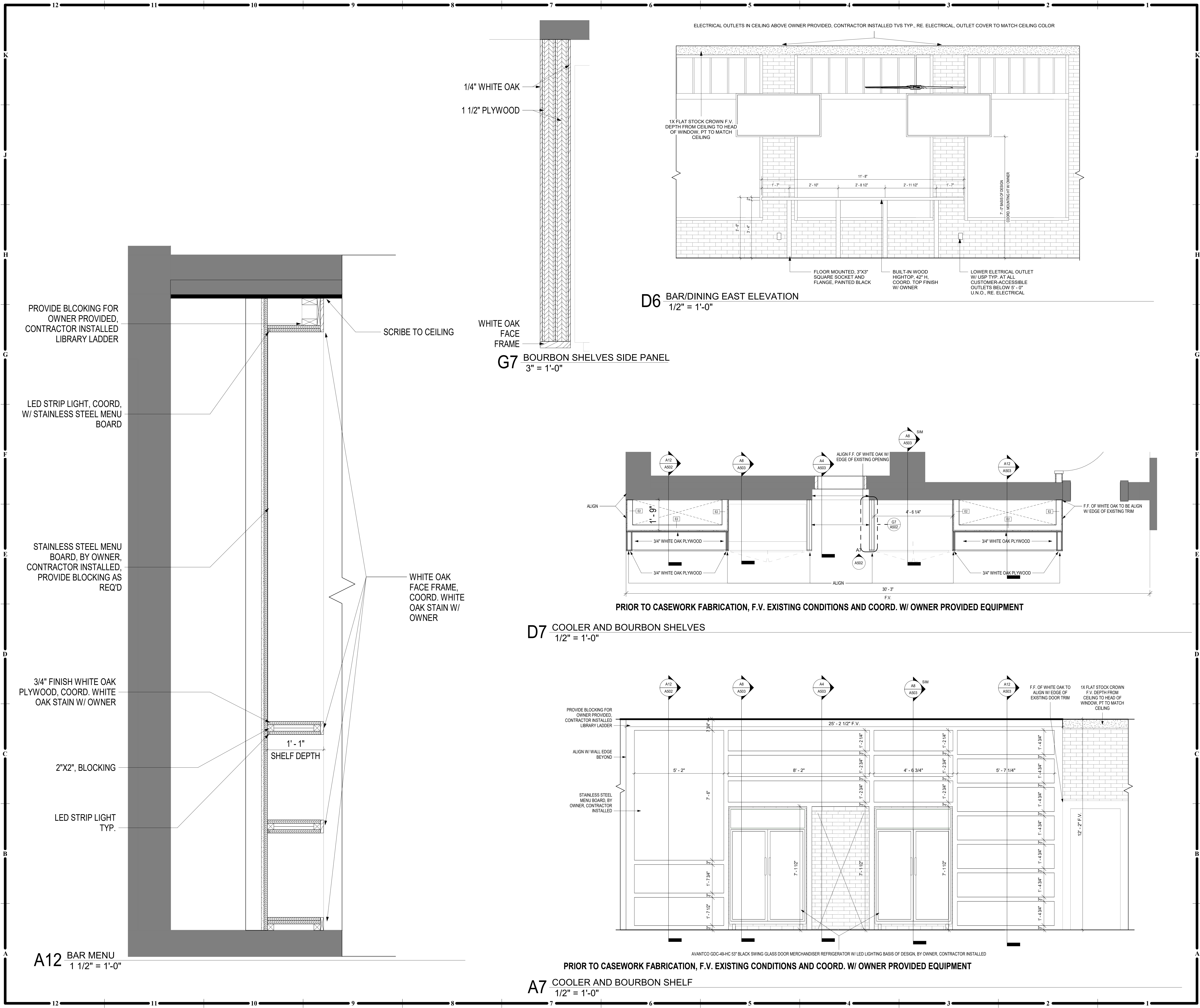
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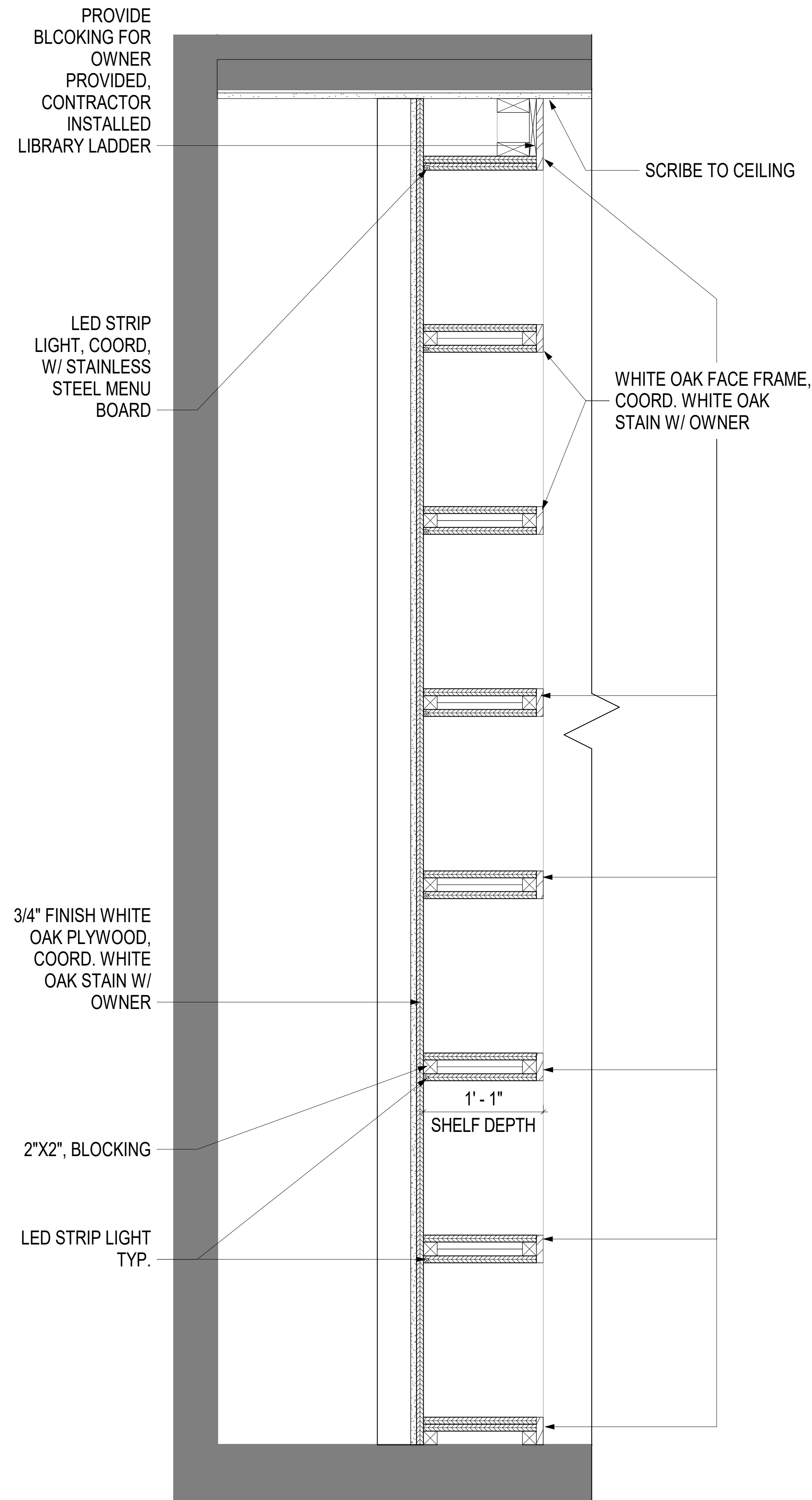
**ENLARGED BAR FLOOR
PLAN KEYED NOTES**

MARK	DESCRIPTION
K	
1	HOSTESS STAND
2	TELEVISIONS ABOVE. PROVIDE POWER AND DATA AS REQ'D, MOUNTED ON EXISTING POSTS, COORD. MOUNTING HT W/ OWNER, MOUNTING MIN. 6" - 8" CLR. FROM F.F., RE. H/A502
3	4" METAL STUD BAR DIE WALL
4	ICE MACHINE
5	WHISKEY SHELF
6	GLASSWARE SHELF
J	
7	POS STATION, PROVIDE POWER AND DATA AS REQ'D
8	BEER TAPS EQUIPMENT AND SHELVING BY OTHERS, CONTRACTOR INSTALLED
9	HAND SINK
10	DISHWASH SINK
11	PROVIDE BENDS AND SWEEPS PER EQUIPMENT SUPPLIERS RECOMMENDATIONS. ENDPOINTS, BENDS/TURNS PER EQUIPMENT SUPPLIERS RECOMMENDATIONS
H	
12	INSIDE OF BAR DIE WALL TO RECEIVE BLACK FRP. FROM TOP OF CIP CURB TO BOTTOM OF COUNTERTOP
13	COORD. BAR TOP MATERIAL AND FINISH W/ OWNER, CONTRACTOR INSTALLED
14	BAR FACE BASIS OF DESIGN: 4"W, 1/4" WHITE OAK PANELS W/ 3" WIDE WHITE OAK FRAME, TYP.
15	PROVIDE SLOD BULKING IN WALL FOR BRACKET LAGS
15	CENTRIZE BRACKETS - COUNTERTOP SHORT BRACKET FRONT MOUNTING PLUS- 1/2"X12" BLACK - MAINTAIN ADA CLEARANCES

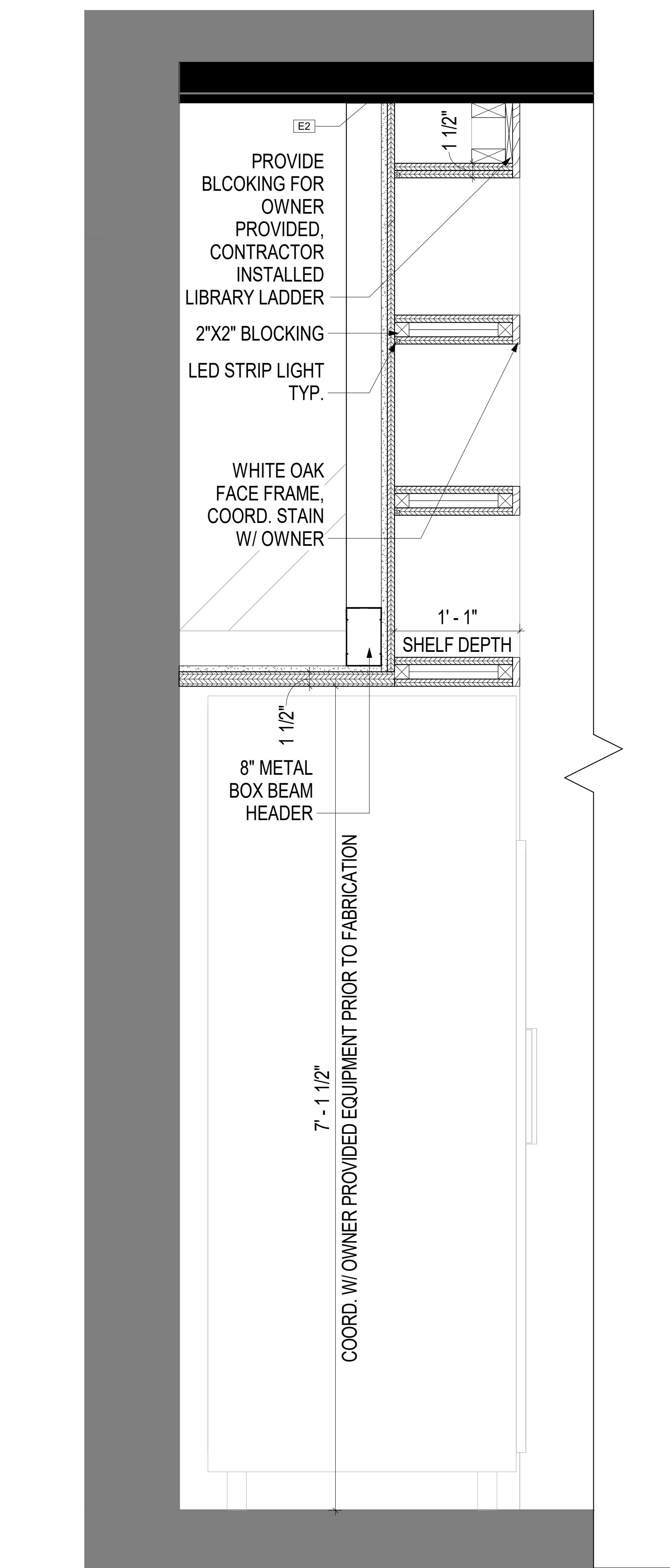
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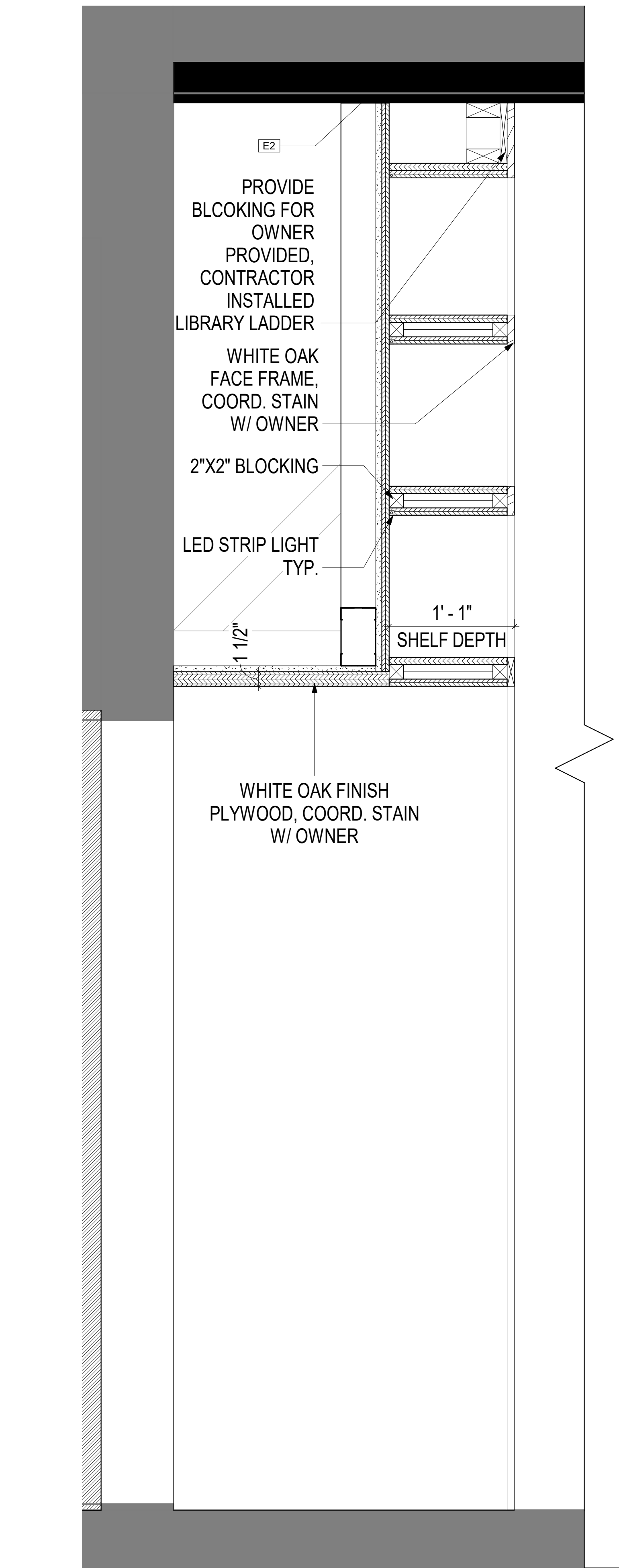
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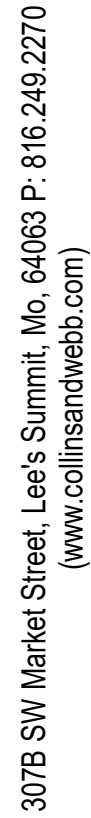
A12 Section 43
1 1/2" = 1'-0"



A8 REACH-IN COOLER W/ SHELVES ABOVE
1 1/2" = 1'-0"

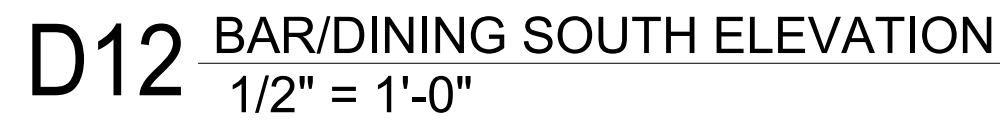
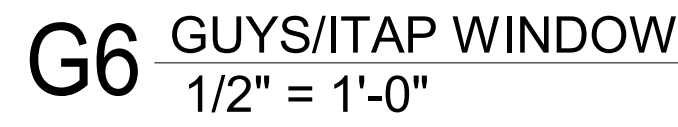
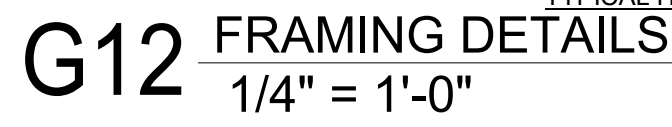


A4 WALK-IN COOLOR OPENING AND SHELVES
1 1/2" = 1'-0"



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FLOOR BLOCK FOR DETAIL

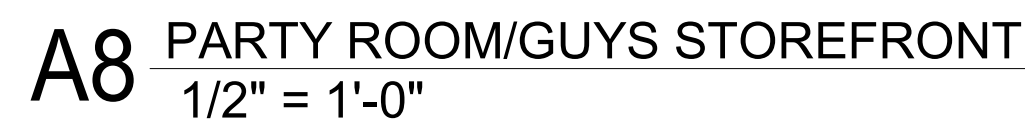


ACCESSORY SCHEDULE GENERAL NOTES:

A. ACCESSORIES SCHEDULE BASIS OF DESIGN, COORDINATE FINAL SELECTION WITH OWNER

ACCESSORY SCHEDULE REMARKS:

1. MIRRORS TO BE CENTERED AT SINKS TYP.



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A12 BAR CANOPY
1 1/2" = 1'-0"

A8 OVERALL RCP - UPPER LEVEL
1/4" = 1'-0"

REFLECTED CEILING PLAN

MTL. C-JOIST TO MATCH STUD LAYOUT AT 16" O.C.

BASIS OF DESIGN: 1/4"
WHITE OAK, COORD.
STAIN W/ OWNER

METAL RUNNER
TOP AND BTM
METAL STUD

BASIS OF DESIGN:
GYP TO BE PAINTED
TO MATCH CEILING

GENERAL NOTE: ALL EXPOSED CEILING CONDUIT TO BE PAINTED TO MATCH CEILING

GENERAL NOTES - REFLECTED CEILING PLANS:

- RE: SHEET G001 FOR ADDITIONAL GENERAL NOTES THAT ARE APPLICABLE.
- DIMENSIONS SHOWN ON THE REFLECTED CEILING PLANS ARE TO THE FACE OF GYP. BOARD (FOS), AND COLUMN GRID LINES, UNLESS NOTED OR SHOWN OTHERWISE.
- ALL CEILINGS TO BE 9'-0" A.F.F., UNLESS NOTED OTHERWISE.
- ALL CEILING HEIGHTS AS SHOWN ON PLANS AND DETAILS ARE FROM SLAB OR TILE FLOOR (FINISHED FLOOR) TO FINISH CEILING.
- AT ALL GYP. BD. SOFFITS: EXTEND GYP. BD. UP 6 INCHES ABOVE ADJACENT CEILING.
- RE: DETAILS FOR ADDITIONAL CONDITIONS AND CEILING HEIGHT INFORMATION.
- RE: FINISH LEGEND AND FINISH SCHEDULE FOR ROOM CEILING FINISHES.
- CEILING TILES/GRID TO BE CENTERED IN THE ROOM, UNLESS NOTED OTHERWISE.
- RECESSED LIGHTING, SPEAKERS, SMOKE DETECTORS, ETC. AND PENDANT LIGHT FIXTURES - SHALL BE CENTERED IN CEILING TILE OR GYP. BD. CEILING, UNLESS NOTED OTHERWISE.
- RE: INTERIOR ELEVATIONS FOR LOCATION OF WALL MOUNTED LIGHT FIXTURES.
- RE: ELECTRICAL SHEETS AND SPECIFICATIONS FOR DETAILED INFORMATION ON LIGHT FIXTURE SCHEDULE.
- RE: MECHANICAL SHEETS AND SPECIFICATIONS FOR DETAILED INFORMATION ON DIFFUSERS.
- COORDINATE ALL PENDANT MOUNTED LIGHT FIXTURES IN EQUIPMENT AREAS WITH EXPOSED STRUCTURE.
- COORDINATE ALL CEILING MOUNTED EQUIPMENT WITH CASEWORK BELOW.
- IF THERE IS A CONFLICT BETWEEN ANY ABOVE-CEILING MECHANICAL / ELECTRICAL / PLUMBING WORK & THE SCHEDULED OR SHOWN CEILING HEIGHT, CONTACT THE ARCHITECT IMMEDIATELY FOR CLARIFICATION.
- REF. MECH DWGS FOR LOCATIONS OF SOUND ISOLATION BELOW AND OR AROUND MECH. EQUIPMENT.
- PROVIDE OVERALL CEILING COORDINATION DRAWING SHOWING ALL DEVICES DURING SHOP SUBMITTAL PROCESS.

CEILING PLAN LEGEND

*SOME SYMBOLS MAY NOT BE USED IN THIS PROJECT.

WOOD VISUAL	WC-SA OR WC-SB / PRICE BOTH MATERIALS FOR CLIENT APPROVAL
	5/8" GYPSUM BOARD BULKHEAD, CEILING OR SOFFIT. SEE APPLICABLE DETAILS AND SECTIONS.
	RECESSED CAN LIGHT FIXTURE. SEE ELECTRICAL DRAWINGS FOR TYPE.
	BASIS OF DESIGN: CSL ENTITY - 25W LED CYLINDER, MATTE BLACK, SURFACE MOUNTED, CENTERED ON JOIST TYP. U.N.O., FINAL FIXTURE SELECTION BY OWNER, RE. ELECTRICAL FOR TYP.
	SUSPENDED OR MOUNTED SIGNIFY DAY-BRITE CFI LINEAR 4' SDS SELECTABLE STRIP LIGHT. SEE ELECTRICAL DRAWINGS FOR TYPE.
	LIGHT BAR WALL SCONCE, BASIS OF DESIGN: KUZCO - 30" L INTERLUX 20 LINEAR SURFACE, MODEL #WG-20LDL-SM, BLACK, FINAL FIXTURE SELECTION BY OWNER, MOUNTED HORIZONTALLY, CENTER ABOVE MIRROR AND SINKS.
	BASIS OF DESIGN: NEMO ZIRKOL-C, HOME 39 1/4" BLACK, BOTTOM OF FIXTURE @ 9'-0", FINAL FIXTURE SELECTION BY OWNER, RE. ELECTRICAL FOR TYP.
	BASIS OF DESIGN: NEMO ZIRKOL-C, HOME 39 1/4" BLACK, BOTTOM OF FIXTURE @ 9'-0", FINAL FIXTURE SELECTION BY OWNER, RE. ELECTRICAL FOR TYP.
	BASIS OF DESIGN: RP LIGHTING 7006 BLACK TRACK W/ 7554 BLACK LED TRACK HEADS, MOUNTED, FINAL FIXTURE SELECTION BY OWNER, RE. ELECTRICAL FOR TYP.
	EMERGENCY WALL MOUNTED LIGHT FIXTURE. SEE ELECTRICAL DRAWINGS FOR TYPE.
	EMERGENCY EXIT LIGHT FIXTURE (CEILING MOUNTED). SEE ELECTRICAL DRAWINGS FOR TYPE.
	EMERGENCY EXIT LIGHT FIXTURE (WALL MOUNTED). SEE ELECTRICAL DRAWINGS FOR TYPE.
	CEILING MOUNTED RETURN AIR GRILLE. SEE MECHANICAL DRAWINGS FOR TYPE.
	CEILING MOUNTED SUPPLY DIFFUSER. SEE MECHANICAL DRAWINGS FOR TYPE.
	EXHAUST DUCT. SEE MECHANICAL DRAWINGS FOR TYPE.
	CEILING MOUNTED SPEAKER GRILLE. SEE ELECTRICAL DRAWINGS FOR TYPE.
	SPRINKLER HEAD. SEE PLUMBING DRAWINGS FOR TYPE.

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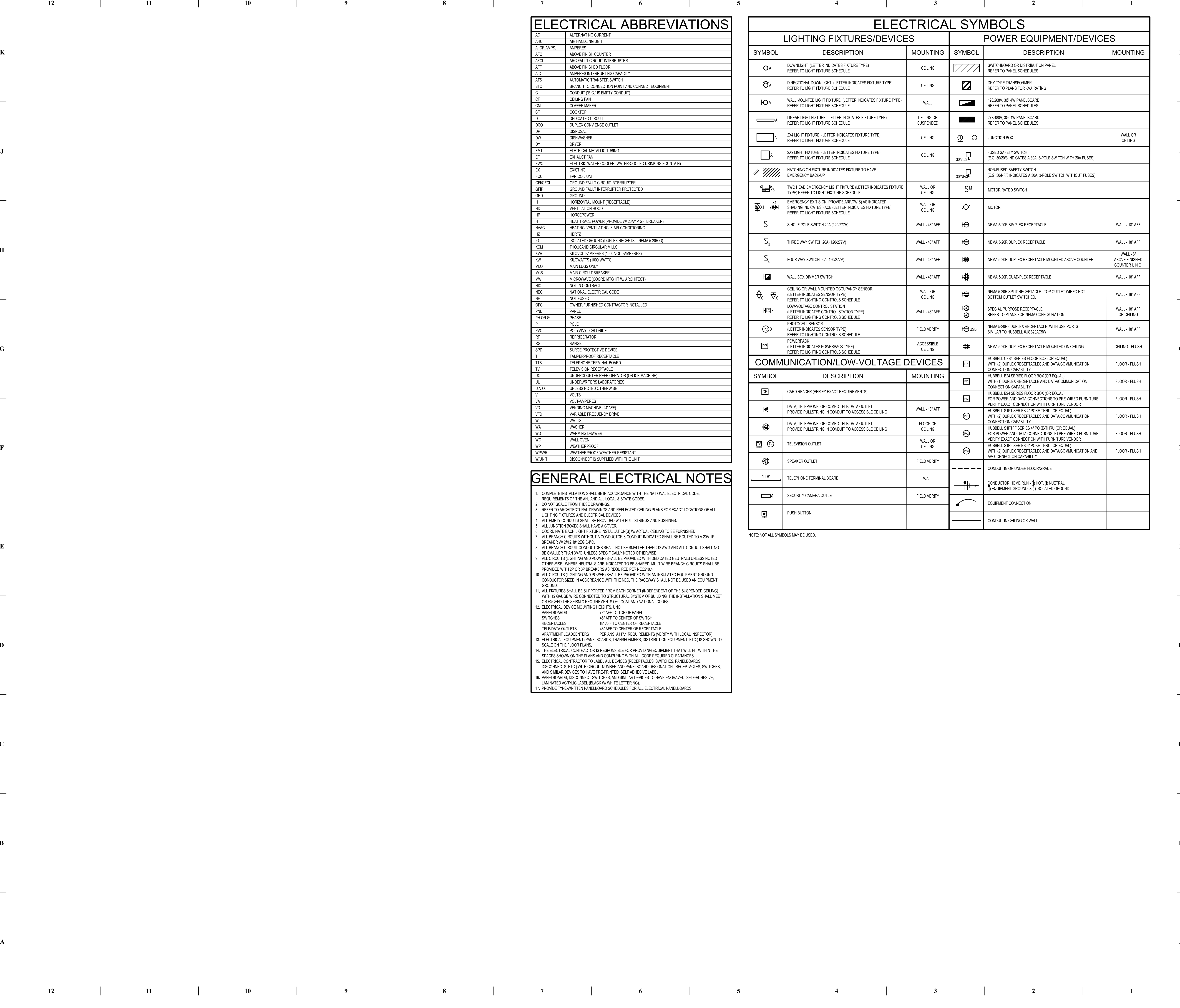
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ELECTRICAL ABBREVIATIONS	
AC	ALTERNATING CURRENT
AHU	AIR HANDLING UNIT
A OR AMPS	AMPERES
AFC	ABOVE FINISH COUNTER
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AFB	ABOVE FINISHED FLOOR
ANC	AMPERES INTERRUPTING CAPACITY
ATS	AUTOMATIC TRANSFER SWITCH
BTC	BRANCH TO CONNECTION POINT AND CONNECT EQUIPMENT
C	CONDUIT (E.G. "C" IS EMPTY CONDUIT)
CF	CEILING FAN
CM	COFFEE MAKER
CT	COOKTOP
D	DEDICATED CIRCUIT
DCO	DUPLEX CONVENIENCE OUTLET
DP	DISPOSAL
DW	DISHWASHER
DY	DRYER
EMT	ELECTRICAL METALLIC TUBING
EF	EXHAUST FAN
EW	ELECTRIC WATER COOLER (WATER-COOLED DRINKING FOUNTAIN)
EX	EXISTING
FCU	FAN COIL UNIT
GFICFI	GROUND FAULT CIRCUIT INTERRUPTER
GFIP	GROUND FAULT INTERRUPTER PROTECTED
GRD	GROUND
H	HORIZONTAL MOUNT (RECEPTACLE)
HO	VENTILATION HOOD
HP	HORSEPOWER
HT	HEAT TRACE POWER (PROVIDE W/ 20A/1P GFI BREAKER)
HVAC	HEATING, VENTILATING, & AIR CONDITIONING
HZ	HERTZ
IG	ISOLATED GROUND (DUPLEX RECEPTS. - NEMA 5-20IRIG)
KCM	THOUSAND CIRCULAR MILLS
KVA	KILOVOLT-AMPERES (1000 VOLT-AMPERES)
KW	KILOWATTS (1000 WATTS)
MLO	MAIN LUGS ONLY
MCB	MAIN CIRCUIT BREAKER
MW	MICROWAVE (COORD MTG HT W/ ARCHITECT)
N/C	NOT IN CONTRACT
NEC	NATIONAL ELECTRICAL CODE
NF	NOT FUSED
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
PNL	PANEL
PH OR Ø	PHASE
P	POLE
PVC	POLYVINYL CHLORIDE
RF	REFRIGERATOR
RG	RANGE
SPD	SURGE PROTECTIVE DEVICE
T	TAMPERPROOF RECEPTACLE
TB	TELEPHONE TERMINAL BOARD
TV	TELEVISION RECEPTACLE
UC	UNDERCOUNTER REFRIGERATOR (OR ICE MACHINE)
UL	UNDERWRITERS LABORATORIES
U.N.O.	UNLESS NOTED OTHERWISE
V	VOLTS
VA	VOLT-AMPERES
VD	VENDING MACHINE (24" AFF)
VFD	VARIABLE FREQUENCY DRIVE
W	WATTS
WA	WASHER
WD	WARMING DRAWER
WO	WALL OVEN
WP	WEATHERPROOF
WPWR	WEATHERPROOF/WEATHER RESISTANT
W/UNT	DISCONNECT IS SUPPLIED WITH THE UNIT

GENERAL ELECTRICAL NOTES	
1. COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, REQUIREMENTS OF THE AHJ AND ALL LOCAL & STATE CODES.	
2. DO NOT SCALE FROM THESE DRAWINGS.	
3. REFER TO ARCHITECTURAL DRAWINGS AND REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF ALL LIGHTING FIXTURES AND ELECTRICAL DEVICES.	
4. ALL EMPTY CONDUITS SHALL BE PROVIDED WITH PULL STRINGS AND BUSHINGS.	
5. ALL JUNCTION BOXES SHALL HAVE A COVER.	
6. COORDINATE EACH LIGHT FIXTURE INSTALLATION(S) W/ ACTUAL CEILING TO BE FURNISHED.	
7. ALL BRANCH CIRCUITS WITHOUT A CONDUCTOR & CONDUIT INDICATED SHALL BE ROUTED TO A 20A-1P BREAKER W/ 20/12, 10/25, 3/4"C.	
8. ALL BRANCH CIRCUIT CONDUCTORS SHALL NOT BE SMALLER THAN #12 AWG AND ALL CONDUIT SHALL NOT BE SMALLER THAN 3/4"C. UNLESS SPECIFICALLY NOTED OTHERWISE.	
9. ALL CIRCUITS (LIGHTING AND POWER) SHALL BE PROVIDED WITH DEDICATED NEUTRALS UNLESS NOTED OTHERWISE. WHERE NEUTRALS ARE INDICATED TO BE SHARED, MULTIWIRE BRANCH CIRCUITS SHALL BE PROVIDED WITH 2P OR 3P BREAKERS AS REQUIRED PER NEC210.4.	
10. ALL CIRCUITS (LIGHTING AND POWER) SHALL BE PROVIDED WITH AN INSULATED EQUIPMENT GROUND CONDUCTOR SIZED IN ACCORDANCE WITH THE NEC. THE RACEWAY SHALL NOT BE USED AN EQUIPMENT GROUND.	
11. ALL FIXTURES SHALL BE SUPPORTED FROM EACH CORNER, INDEPENDENT OF THE SUSPENDED CEILING) WITH 10 GAUGE WIRE CONNECTED TO STRUCTURAL SYSTEM OF BUILDING. THE INSTALLATION SHALL MEET OR EXCEED THE SEISMIC REQUIREMENTS OF LOCAL AND NATIONAL CODES.	
12. ELECTRICAL DEVICE MOUNTING HEIGHTS: UNO: PANELBOARDS 18" AFF TO TOP OF PANEL SWITCHES 48" AFF TO CENTER OF SWITCH RECEPTACLES 18" AFF TO CENTER OF RECEPTACLE TELEDATA OUTLETS 48" AFF TO CENTER OF RECEPTACLE APARTMENT LOADCENTERS PER ANSI A117.1 REQUIREMENTS (VERIFY WITH LOCAL INSPECTOR)	
13. ELECTRICAL EQUIPMENT (PANELBOARDS, TRANSFORMERS, DISTRIBUTION EQUIPMENT, ETC.) IS SHOWN TO SCALE ON THE FLOOR PLANS.	
14. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING EQUIPMENT THAT WILL FIT WITHIN THE SPACES SHOWN ON THE PLANS AND COMPLYING WITH ALL CODE REQUIRED CLEARANCES.	
15. ELECTRICAL CONTRACTOR TO LABEL ALL DEVICES (RECEPTACLES, SWITCHES, PANELBOARDS, DISCONNECTS, ETC.) WITH CIRCUIT NUMBER AND PANELBOARD DESIGNATION. RECEPTACLES, SWITCHES, AND SIMILAR DEVICES TO HAVE PRE-PRINTED, SELF ADHESIVE LABEL.	
16. PANELBOARDS, DISCONNECT SWITCHES, AND SIMILAR DEVICES TO HAVE ENGRAVED, SELF-ADHESIVE, LAMINATED ACRYLIC LABEL (BLACK W/ WHITE LETTERING).	
17. PROVIDE TYPE-WRITTEN PANELBOARD SCHEDULES FOR ALL ELECTRICAL PANELBOARDS.	

ELECTRICAL SYMBOLS					
LIGHTING FIXTURES/DEVICES			POWER EQUIPMENT/DEVICES		
SYMBOL	DESCRIPTION	MOUNTING	SYMBOL	DESCRIPTION	MOUNTING
	DOWNLIGHT (LETTER INDICATES FIXTURE TYPE) REFER TO LIGHT FIXTURE SCHEDULE	CEILING		SWITCHBOARD OR DISTRIBUTION PANEL REFER TO PANEL SCHEDULES	
	DIRECTIONAL DOWNLIGHT (LETTER INDICATES FIXTURE TYPE) REFER TO LIGHT FIXTURE SCHEDULE	CEILING		DRY-TYPE TRANSFORMER REFER TO PLANS FOR KVA RATING	
	WALL MOUNTED LIGHT FIXTURE (LETTER INDICATES FIXTURE TYPE) REFER TO LIGHT FIXTURE SCHEDULE	WALL		120/208V, 3Ø, 4W PANELBOARD REFER TO PANEL SCHEDULES	
	LINEAR LIGHT FIXTURE (LETTER INDICATES FIXTURE TYPE) REFER TO LIGHT FIXTURE SCHEDULE	CEILING OR SUSPENDED		277/480V, 3Ø, 4W PANELBOARD REFER TO PANEL SCHEDULES	
	2x4 LIGHT FIXTURE (LETTER INDICATES FIXTURE TYPE) REFER TO LIGHT FIXTURE SCHEDULE	CEILING		JUNCTION BOX	WALL OR CEILING
	2x2 LIGHT FIXTURE (LETTER INDICATES FIXTURE TYPE) REFER TO LIGHT FIXTURE SCHEDULE	CEILING		FUSED SAFETY SWITCH (E.G. 3Ø/2Ø/3 INDICATES A 3ØA, 3-POLE SWITCH WITH 2ØA FUSES)	
	HATCHING ON FIXTURE INDICATES FIXTURE TO HAVE EMERGENCY BACK-UP			NON-FUSED SAFETY SWITCH (E.G. 3Ø/NE/Ø INDICATES A 3ØA, 3-POLE SWITCH WITHOUT FUSES)	
	TWO HEAD EMERGENCY LIGHT FIXTURE (LETTER INDICATES FIXTURE TYPE) REFER TO LIGHT FIXTURE SCHEDULE	WALL OR CEILING		MOTOR RATED SWITCH	
	EMERGENCY EXIT SIGN (PROVIDE ARROWS) AS INDICATED. SHADING INDICATES FACE (LETTER INDICATES FIXTURE TYPE) REFER TO LIGHT FIXTURE SCHEDULE	WALL OR CEILING		MOTOR	
	SINGLE POLE SWITCH 2ØA (120/277V)	WALL - 48" AFF		NEMA 5-2ØR SIMPLEX RECEPTACLE	WALL - 18" AFF
	THREE WAY SWITCH 2ØA (120/277V)	WALL - 48" AFF		NEMA 5-2ØR DUPLEX RECEPTACLE	WALL - 18" AFF
	FOUR WAY SWITCH 2ØA (120/277V)	WALL - 48" AFF		NEMA 5-2ØR DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER	WALL - 6" ABOVE FINISHED COUNTER U.N.O.
	WALL BOX DIMMER SWITCH	WALL - 48" AFF		NEMA 5-2ØR QUAD-PLEX RECEPTACLE	WALL - 18" AFF
	CEILING OR WALL MOUNTED OCCUPANCY SENSOR (LETTER INDICATES SENSOR TYPE) REFER TO LIGHTING CONTROLS SCHEDULE	WALL OR CEILING		NEMA 5-2ØR SPLIT RECEPTACLE. TOP OUTLET WIRED HOT. BOTTOM OUTLET SWITCHED.	WALL - 18" AFF OR CEILING
	LOW-VOLTAGE CONTROL STATION (LETTER INDICATES CONTROL STATION TYPE) REFER TO LIGHTING CONTROLS SCHEDULE	WALL - 48" AFF		SPECIAL PURPOSE RECEPTACLE REFER TO PLANS FOR NEMA CONFIGURATION	WALL - 18" AFF OR CEILING
	PHOTOCELL SENSOR (LETTER INDICATES SENSOR TYPE) REFER TO LIGHTING CONTROLS SCHEDULE	FIELD VERIFY		NEMA 5-2ØR - DUPLEX RECEPTACLE WITH USB PORTS SIMILAR TO HUBBELL FUSEBOX/CSW	WALL - 18" AFF
	POWERPACK (LETTER INDICATES POWERPACK TYPE) REFER TO LIGHTING CONTROLS SCHEDULE	ACCESSIBLE CEILING		NEMA 5-2ØR DUPLEX RECEPTACLE MOUNTED ON CEILING	CEILING - FLUSH
COMMUNICATION/LOW-VOLTAGE DEVICES				HUBBELL CFB4 SERIES FLOOR BOX (OR EQUAL) WITH (2) DUPLEX RECEPTACLES AND DATA/COMMUNICATION CONNECTION CAPABILITY	FLOOR - FLUSH
	CARD READER (VERIFY EXACT REQUIREMENTS)			HUBBELL B24 SERIES FLOOR BOX (OR EQUAL) WITH (1) DUPLEX RECEPTACLE AND DATA/COMMUNICATION CONNECTION CAPABILITY	FLOOR - FLUSH
	DATA, TELEPHONE, OR COMBO TELE/ATA OUTLET PROVIDE PULLSTRING IN CONDUIT TO ACCESSIBLE CEILING	WALL - 18" AFF		HUBBELL B24 SERIES FLOOR BOX (OR EQUAL) FOR POWER AND DATA CONNECTIONS TO PRE-WIRED FURNITURE VERIFY EXACT CONNECTION WITH FURNITURE VENDOR	FLOOR - FLUSH
	DATA, TELEPHONE, OR COMBO TELE/ATA OUTLET PROVIDE PULLSTRING IN CONDUIT TO ACCESSIBLE CEILING	FLOOR OR CEILING		HUBBELL S1PT SERIES 4" POKE-THRU (OR EQUAL) WITH (2) DUPLEX RECEPTACLES AND DATA/COMMUNICATION CONNECTION CAPABILITY	FLOOR - FLUSH
	TELEVISION OUTLET	WALL OR CEILING		HUBBELL S1PTFF SERIES 4" POKE-THRU (OR EQUAL) FOR POWER AND DATA CONNECTIONS TO PRE-WIRED FURNITURE VERIFY EXACT CONNECTION WITH FURNITURE VENDOR	FLOOR - FLUSH
	SPEAKER OUTLET	FIELD VERIFY		HUBBELL S1R6 SERIES 6" POKE-THRU (OR EQUAL) WITH (2) DUPLEX RECEPTACLES AND DATA/COMMUNICATION AND AV CONNECTION CAPABILITY	FLOOR - FLUSH
	TELEPHONE TERMINAL BOARD	WALL		CONDUIT IN OR UNDER FLOOR/GRADE	
	SECURITY CAMERA OUTLET	FIELD VERIFY		CONDUCTOR HOME RUN - (H) HOT, (N) NEUTRAL, (E) EQUIPMENT GROUND, & (I) ISOLATED GROUND	
	PUSH BUTTON			EQUIPMENT CONNECTION	
				CONDUIT IN CEILING OR WALL	

NOTE: NOT ALL SYMBOLS MAY BE USED.



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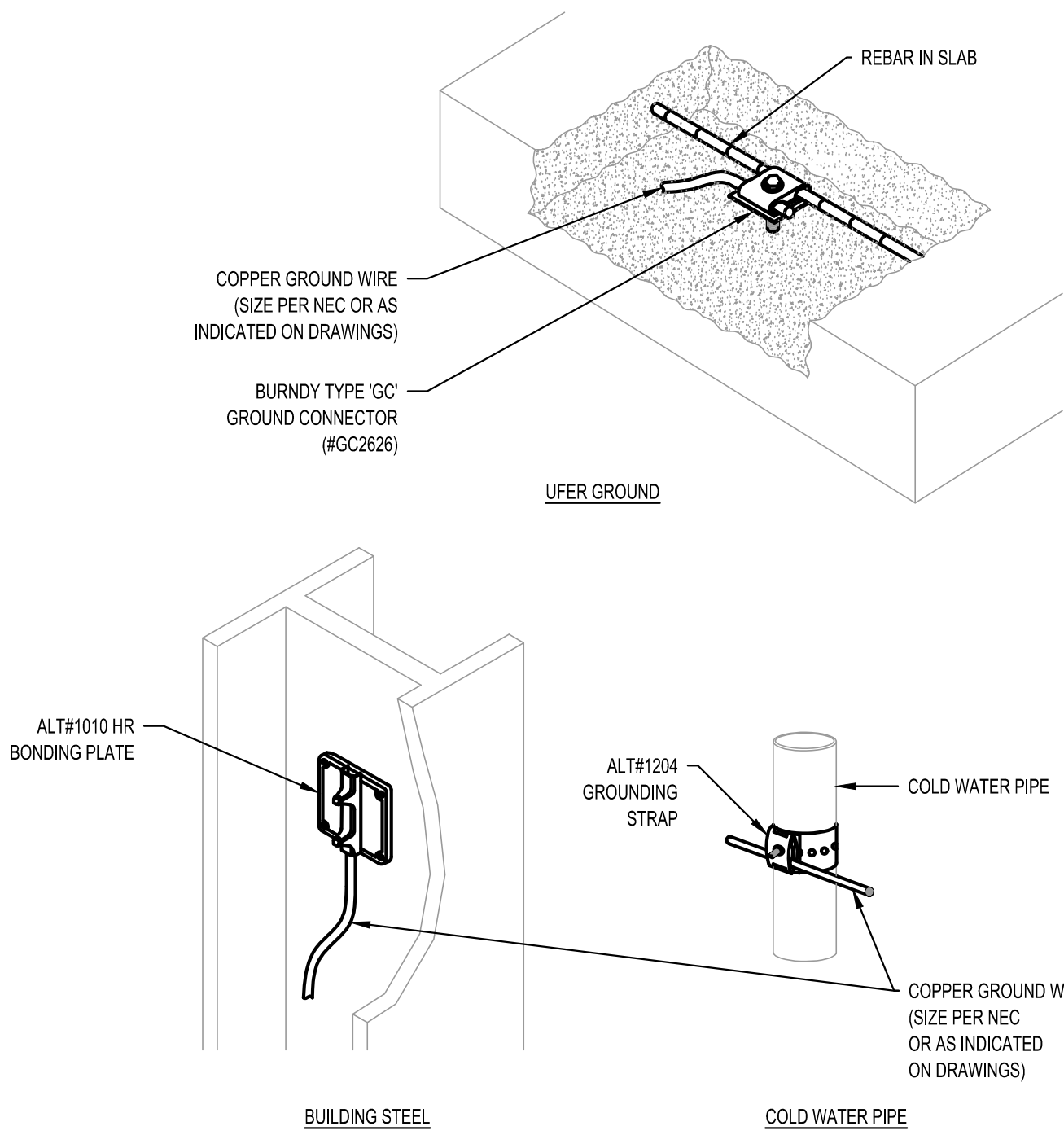
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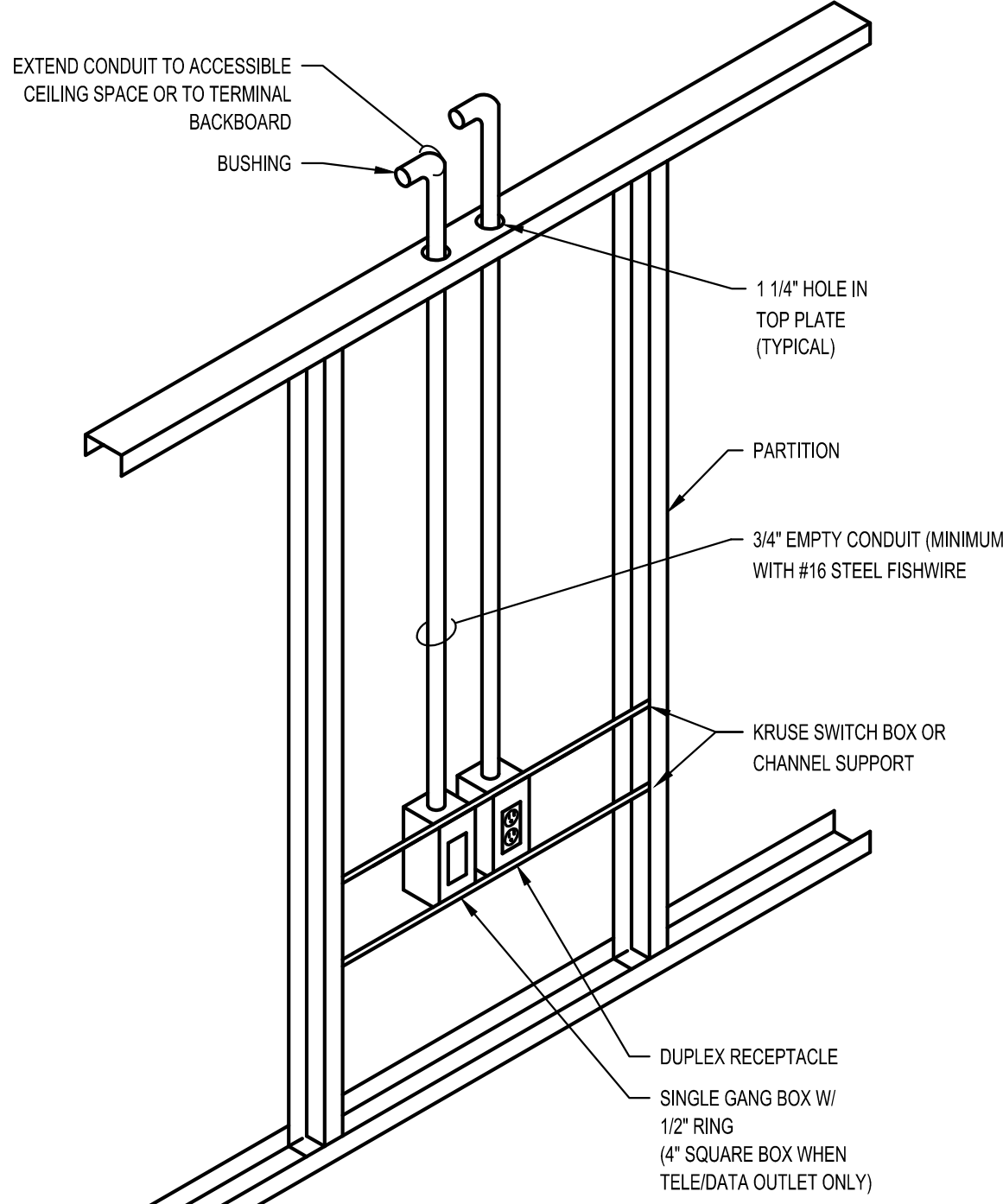
E101
ISSUE DATE: 27 FEB 2023
COLLINS WEBB #: 22066

ELECTRICAL NOTES,
SYMBOLS & ABBREVIATIONS



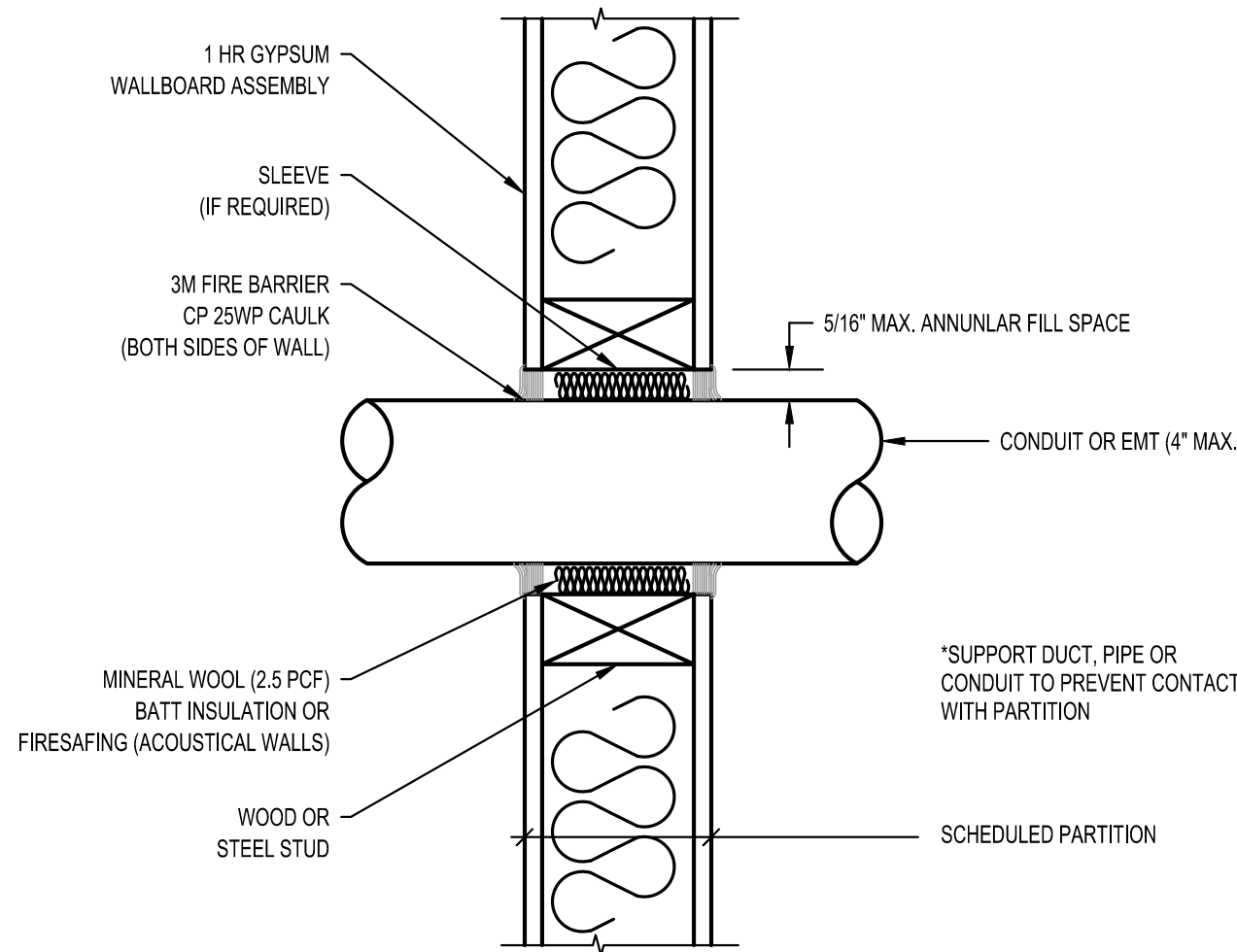
1 TYPICAL GROUND CONNECTION DETAILS

SCALE: NOT TO SCALE



2 OUTLET IN HOLLOW PARTITION

SCALE: NOT TO SCALE



3 TYPICAL FIRE RATED PENETRATION THROUGH A GYP WALL ASSEMBLY

SCALE: NOT TO SCALE

FIRE RATED PENETRATION NOTES:

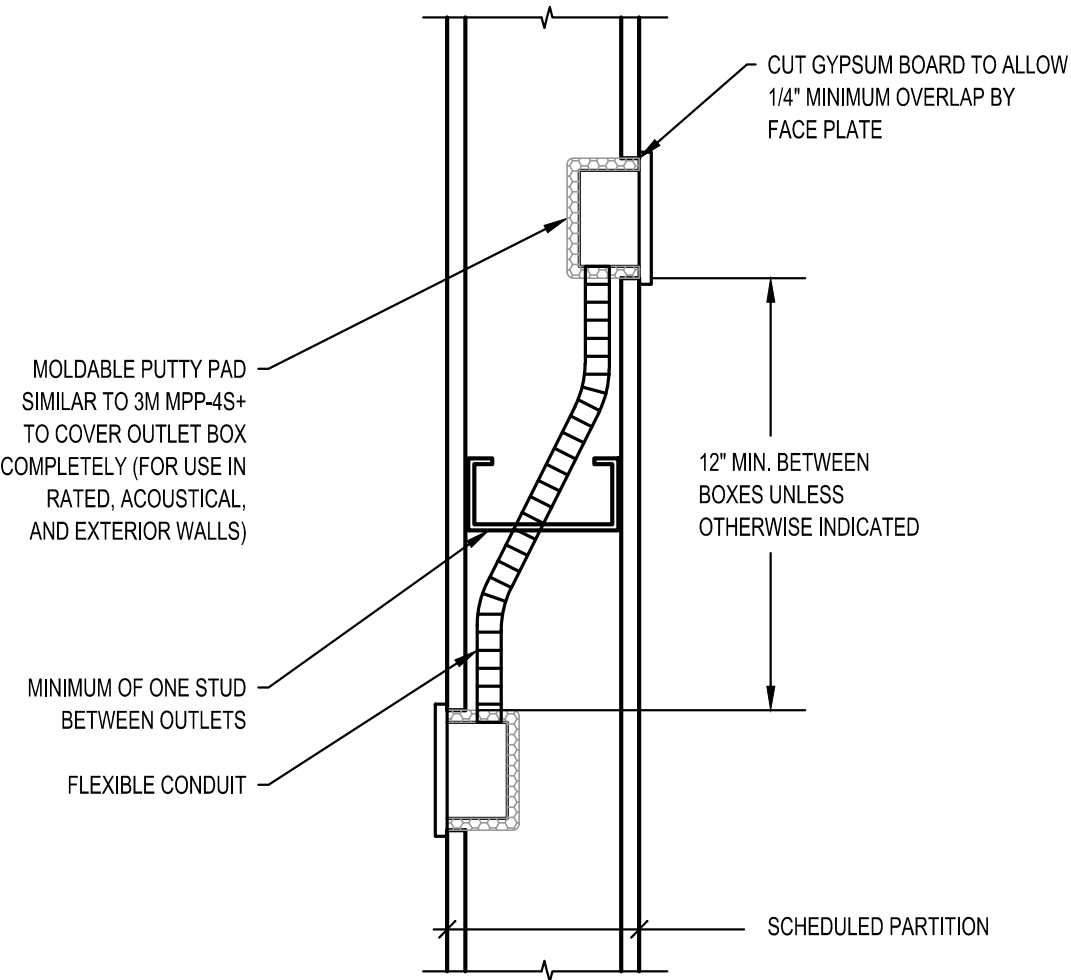
- FOR UL WALL SYSTEM NO. WL101 (FORMERLY NO. 101)
F-RATINGS - 1,2,3 & 4 HR. (SEE ITEMS #2 & #3)
T-RATINGS - 0,1,2,3,4 (SEE ITEM #4)
L-RATING @ 60°F - LESS THAN 1" (7/16) O.D., FT. (SEE ITEM #5)
- WALL ASSEMBLY - THE 1,2,3 OR 4 HR FIRE RATED GYPSUM WALL BOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL UL90 OR UL40 SERIES WALL OR PARTITION DESIGN IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:
 - STUDS - WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS (MAX. 2 HR FIRE RATED ASSEMBLIES) OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM. 2X4 IN. LUMBER SPACED 16 IN. O.C. WITH NOM. 2X4 IN. LUMBER AND PLATES AND CROSS BRACES. STEEL STUDS TO BE MIN. 3/8 IN. WIDE BY 13/16 IN. DEEP. CHANGES SPACED MAX. 24 IN. O.C.
 - WALLBOARD - GYPSUM - NOM. 1/2 OR 5/8 IN. THICK, 4 FT. WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM WALLBOARD RYPS. THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE SPECIFIED IN THE INDIVIDUAL UL90 OR UL40 SERIES DESIGN IN THE UL FIRE R RESISTANCE DIRECTORY. MAX. DIAM. OF OPENING IS 13-1/2 IN.
 - PIPE OR CONDUIT - NOM. 12 IN. DIAM. (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE, NOM. 6 IN. DIAM. (OR SMALLER) STEEL CONDUIT, NOM. 4 IN. DIAM. (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR TYPE L (OR (OR HEAVIER) COPPER TUBING NOM. 1 IN. DIAM. (OR SMALLER) FLEXIBLE STEEL CONDUIT. WHEN COPPER PIPE OR FLEXIBLE STEEL CONDUIT IS USED, MAX. F-RATING OF FIRESTOP SYSTEM (ITEM CONSTRUCTED USING STEEL CHANNEL STUDS, A MAX. OF ONE PIPE OR CONDUIT IS PERMITTED IN THE FIRESTOP SYSTEM. PIPE OR CONDUIT TO BE INSTALLED NEAR CENTER OF STUD CAVITY WIDTH AND TO BE RIDGELY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY.
 - FILL VOID OR CAVITY MATERIAL - CAULK - CAULK FILL MATERIAL INSTALLED TO COMPLETELY FILL ANULAR SPACE BETWEEN PIPE OR CONDUIT AND GYPSUM WALLBOARD AND WITH A MIN. 1/4 IN. DIAM. BOARD OF CAULK APPLIED TO PERIMETER OF PIPE OR CONDUIT AT ITS GRESS FROM THE WALL. CAULK INSTALLED SYMMETRICALLY ON BOTH SIDES OF WALL ASSEMBLY. THE HOURLY F-RATING OF THE FIRESTOP SYSTEM IS DEPENDENT UPON THE HOURLY F-RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED. AS SHOWN IN THE FOLLOWING TABLE, THE HOURLY T-RATING OF THE FIRESTOP SYSTEM IS DEPENDENT UPON THE TYPE OR SIZE OF THE PIPE OR CONDUIT AND THE HOURLY F-RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED. AS TABULATED BELOW.

MAX. PIPE OR CONDUIT DIAM. (IN)	ANULAR SPACE (IN)	F-RATING (HR)	T-RATING (HR)
1	0 TO 3/16	1 OR 2	0 + 1 OR 2
1	1/4 TO 1/2	3 OR 4	3 OR 4
4	0 TO 1/4	1 OR 2	0
6	1/4 TO 1/2	3 OR 4	0
12	1/2 TO 1	1 OR 2	0

*WHEN COPPER PIPE IS USED, T-RATING IS 0 NOM.
MINNESOTA WINING & MFG. CO. TYPES CP-25 SL, CP-25 NB, CP-25 WS, CP-25 WS+ (NOTE: L-RATINGS APPLY WHEN TYPE CP-25 WS+ CAULK IS USED).

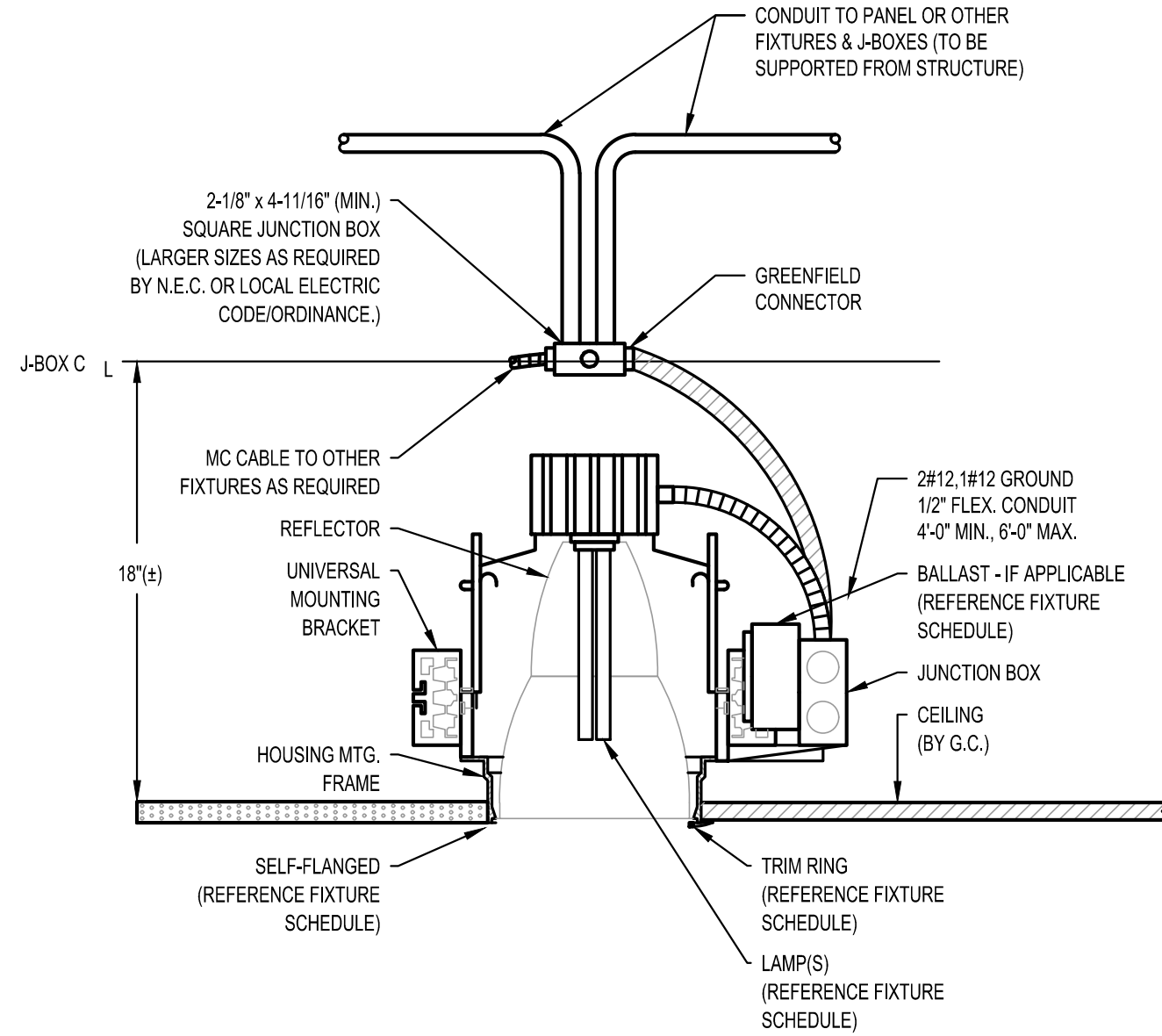
4 FIRE RATED PENETRATION NOTES

SCALE: NOT TO SCALE



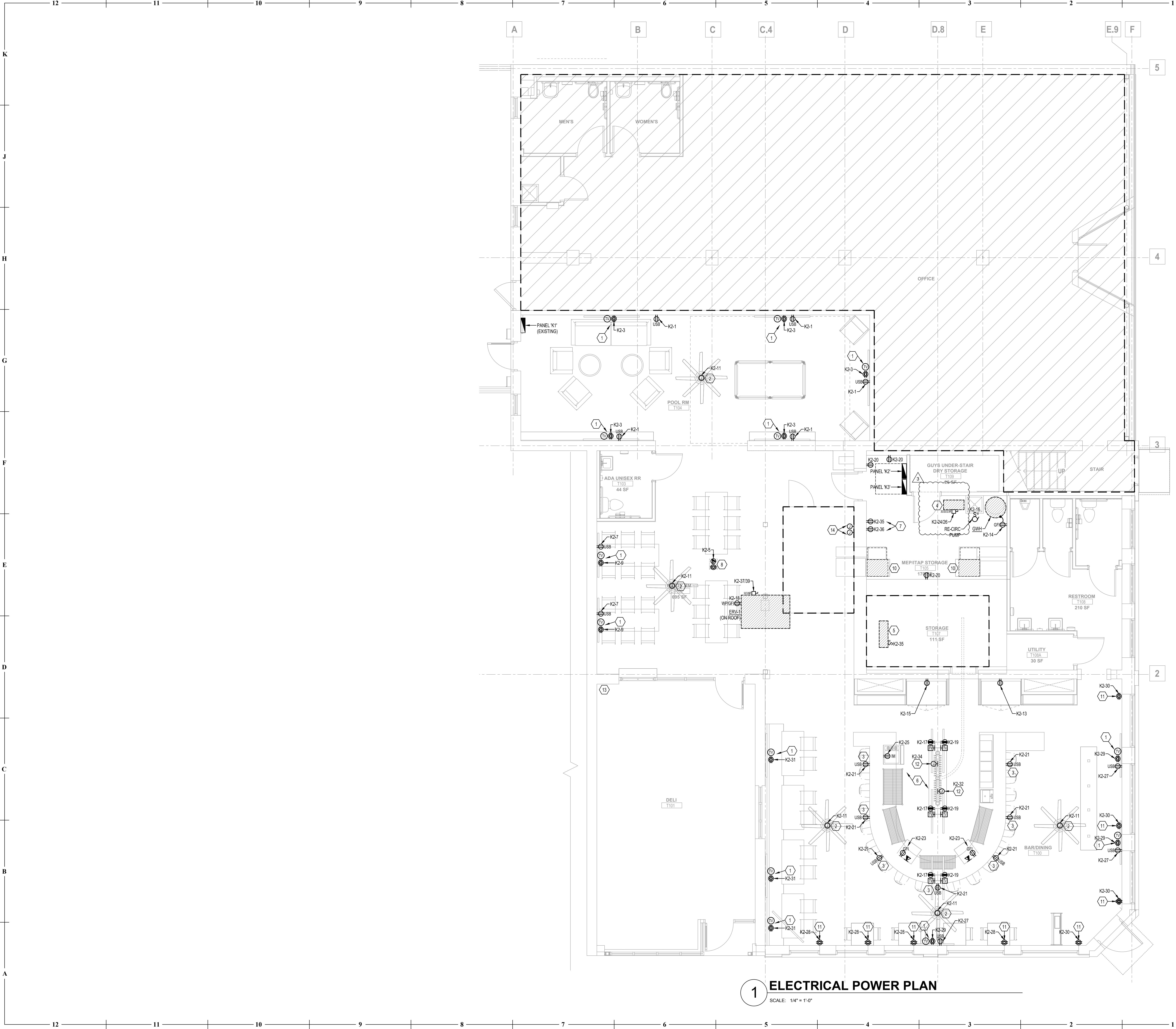
5 BACK-TO-BACK BOX ARRANGEMENT FOR NOISE CONTROL

SCALE: NOT TO SCALE



6 TYPICAL RECESSED DOWNLIGHT FIXTURE DETAIL

SCALE: NOT TO SCALE



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

GENERAL NOTES
(NOT ALL NOTES APPLY)

1. REFERENCE SHEET E101 FOR GENERAL NOTES, SYMBOLS, AND ABBREVIATIONS.
2. REFERENCE SHEET E102 FOR ELECTRICAL DETAILS.
3. COORDINATE MOUNTING HEIGHTS AND LOCATIONS FOR ALL DEVICES WITH ARCHITECT AND/OR INTERIOR ELEVATIONS PRIOR TO ROUGH-IN.

KEYED NOTES:

1. OVERHEAD POWER AND DATA FOR TV. FIELD VERIFY EXACT LOCATION PRIOR TO ROUGH-IN.
2. POWER FOR OVERHEAD FANS. VERIFY EXACT LOCATION AND EXACT CONTROL REQUIREMENTS WITH OWNER PRIOR TO ROUGH-IN.
3. RECEPTACLES TO BE MOUNTED ON FACE OF BAR BELOW COUNTER. COORDINATE EXACT LOCATION WITH BAR SUPPLIER AND OWNER PRIOR TO ROUGH-IN. RECEPTACLES TO BE SILVER COLOR WITH STAINLESS STEEL COVER PLATE.
4. CONDENSING UNIT FOR WALK-IN COOLER. FIELD VERIFY EXACT LOCATION AND ELECTRICAL REQUIREMENTS WITH EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN.
5. EVAPORATOR FOR WALK-IN COOLER. FIELD VERIFY EXACT ELECTRICAL REQUIREMENTS WITH EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN.
6. FIELD VERIFY EXACT CONNECTION REQUIREMENTS OF ALL BAR EQUIPMENT WITH OWNER PRIOR TO ROUGH-IN.
7. POWER FOR GLYCOL SYSTEM AND CO2/NITROGEN BLENDER. FIELD VERIFY EXACT ELECTRICAL REQUIREMENTS AND LOCATION PRIOR TO ROUGH-IN.
8. POWER AND DATA FOR OVERHEAD PROJECTOR. FIELD VERIFY EXACT LOCATION PRIOR TO ROUGH-IN.
9. FIELD VERIFY EXACT CONNECTION REQUIREMENTS OF ALL KITCHEN EQUIPMENT WITH OWNER PRIOR TO ROUGH-IN.
10. EXISTING FURNACE AND ASSOCIATED CONDENSING UNIT TO REMAIN.
11. PROVIDE CEILING MOUNTED SHOW WINDOW RECEPTACLE WITHIN 18" OF THE TOP OF THE WINDOW AS REQUIRED PER NEC 210.62. FIELD COORDINATE EXACT LOCATION WITH OWNER/ARCHITECT PRIOR TO ROUGH-IN. RECEPTACLES SHALL BE CONTROLLED ON A TIME-OF-DAY SCHEDULE. REFER TO DETAIL 2 ON SHEET E301 FOR ADDITIONAL INFORMATION.
12. POWER FOR UNDER COUNTER GLASS WASHER. FIELD VERIFY EXACT ELECTRICAL REQUIREMENTS AND LOCATION PRIOR TO ROUGH-IN.
13. STUB (20) 3/4" EMPTY CONDUITS WITH PULL STRINGS FROM PANEL K3' LOCATION INTO THIS SPACE FOR FUTURE TENANT BRANCH CIRCUITING.
14. PROVIDE JUNCTION BOX ON BRICK WALL WITH 3/4" CONDUITS AND PULL STRINGS STUBBED INTO THE MECHANICAL ROOM FOR WALK-IN COOLER CIRCUITS FOR FUTURE TENANT.



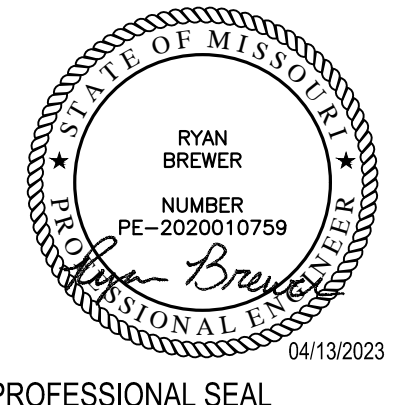
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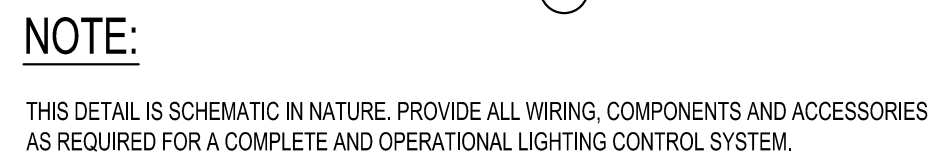
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2 CITY COMMENTS 03/22/23
3 LL COMMENTS 04/13/23

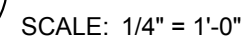
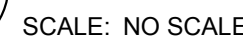


PROFESSIONAL SEAL
E201
ISSUE DATE: 27 FEB 2023
COLLINS WEBB #: 22066

ELECTRICAL POWER PLAN



SCALE: NO SCALE



(NOT ALL NOTES APPLY)

- KEYED NOTES:**

- LIGHTING CONTROL**
KEYED NOTES: ○

- # ELECTRICAL LIGHTING PLAN

18000 - ELECTRICAL

GENERAL

DESCRIPTION

DIVISION 16 OF THE SPECIFICATIONS COVERS ALL ELECTRICAL WORK FOR THE PROJECT. WORK SHALL INCLUDE LABOR, MATERIAL AND ACCESSORIES NECESSARY TO ACCOMPLISH THE WORK AS SPECIFIED AND SHOWN ON THE DRAWINGS, INCLUDING CONNECTION AND CHECKOUTS OF EQUIPMENT FURNISHED BY OTHERS (OTHER TRADES, THE OWNER AND OTHER CONTRACTORS), AND TO ALL EQUIPMENT ITEMS AND AS INDICATED ON DRAWINGS OR AS REQUIRED.

THE ARCHITECTURAL SPECIFICATIONS AND DRAWINGS INCLUDING THE GENERAL - CONDITIONS, INCLUDING ALL SUPPLEMENTS ISSUED THERETO, INSTRUCTIONS TO BIDDERS, AND OTHERS PERTINENT DOCUMENTS ISSUED BY THE ARCHITECT ARE A PART OF THESE SPECIFICATIONS AND ELECTRICAL DRAWINGS. THIS TRADE SHALL CONSULT THEM FOR INSTRUCTIONS WHICH APPLY. DRAWINGS INDICATE THE GENERAL ARRANGEMENT OF THE ELECTRICAL LAYOUT AND WORK INCLUDED. ELECTRICIAN SHALL FOLLOW DRAWINGS IN LAYOUT THE ELECTRICAL WORK AND CONSULT THE DRAWINGS AND LAYOUTS OF OTHER TRADES TO VERIFY LOCATION AND SPACES IN WHICH WORK WILL BE INSTALLED.

CODES, PERMITS, INSPECTION AND COMMISSIONING

INSTALLATION SHALL COMPLY WITH ALL LAWS PERTAINING TO ELECTRICAL WORK IN EFFECT, INCLUDING THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (N.E.C.), THE NATIONAL ELECTRICAL SAFETY CODE, ALL LOCAL GOVERNING CODES AND ORDINANCES, WITH THE REGULATIONS OF THE SERVING ELECTRICAL UTILITY COMPANY. PROVIDE ALL REQUIRED PERMITS AND INCLUDE THE COST OF SAME IN THE COST OF THE PROJECT. OBTAIN AND PAY FOR (WITHOUT ADDITIONAL EXPENSE TO THE OWNER) ALL REQUIRED INSPECTIONS AND REVIEWS. PROVIDE FOR AND PAY ALL EXPENSES (WITHOUT ADDITIONAL EXPENSE TO THE OWNER) ASSOCIATED WITH LIGHTING AND LIGHTING CONTROLS COMMISSIONING. ALL COMMISSIONING DOCUMENTATION SHALL BE CERTIFIED AND GIVEN TO OWNER AND DESIGN PROFESSIONAL.

QUALITY ASSURANCE

THE FOLLOWING INDUSTRY STANDARDS AS APPLICABLE TO ELECTRICAL WORK SHALL APPLY TO THE WORK OF THIS DIVISION EXCEPT THAT, WHERE THE REQUIREMENTS OF THESE SPECIFICATIONS ARE MORE THAN THE LISTED STANDARD, THESE SPECIFICATIONS SHALL TAKE PRECEDENCE:

UL - UNDERWRITERS' LABORATORIES

NEMA - NATIONAL ELECTRICAL MANUFACTURERS' ASSOCIATION
NECA - NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION
ANSI - AMERICAN NATIONAL STANDARDS INSTITUTE
ASTM - AMERICAN SOCIETY OF TESTING MATERIALS.

ALL MATERIALS SHALL BE NEW, UL LISTED AND LABELED WHERE LABELED MATERIALS ARE AVAILABLE, UNDAMAGED AND FREE OF DEFECTS AT TIME OF INSTALLATION. MATERIALS OR EQUIPMENT DAMAGED IN SHIPMENT OR OTHERWISE DAMAGED PRIOR TO OR DURING INSTALLATION SHALL NOT BE REPAIRED AT THE JOB SITE, BUT SHALL BE REPLACED WITH NEW MATERIALS. WHEN THE MANUFACTURERS NAME APPEARS IN THESE SPECIFICATIONS AND DRAWINGS, IT SHALL BE CONSTRUED THAT THE MANUFACTURER HAS TO MEET THE FULL REQUIREMENTS OF THE SPECIFICATIONS AND DRAWINGS.

SUBMITTALS

SUBMIT SHOP DRAWINGS AND PRODUCT DATA FOR EQUIPMENT TO THE ARCHITECT FOR ENGINEERS REVIEW ELECTRONICALLY OR HARD COPIES. INCLUDE SUFFICIENT INFORMATION TO INDICATE COMPLETE COMPLIANCE WITH SPECIFICATIONS. PROVIDE SUBMITTALS AS EARLY AS REQUIRED TO SUPPORT THE PROJECT SCHEDULE. ALLOW ONE WEEK FOR ENGINEER REVIEW TIME. THE ENGINEERS SUBMITTAL REVIEWS WILL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS IN DIMENSIONS, DETAILS, SIZE OF MEMBERS, OR QUANTITIES, OR FOR OMITTING COMPONENTS OR FITTINGS, OR FOR NOT COORDINATING ITEMS WITH ACTUAL BUILDING CONDITIONS AND/OR OTHER TRADES.

OWNER RECORDS

ACCUMULATE DURING THE PROGRESS OF THE JOB, THE FOLLOWING DATA IN DUPLICATE, AND PREPARE IN A NEAT BROCHURE OR PACKET FOLDER TO BE TURNED OVER TO THE OWNER AT SUBSTANTIAL COMPLETION. RECORD DRAWINGS PER ABOVE.

ALL WARRANTIES, GUARANTEES, AND MANUFACTURERS DIRECTION ON EQUIPMENT & MATERIAL FURNISHED.

COMPLETE PLAIN ENGLISH STEP-BY-STEP OPERATING INSTRUCTIONS FOR THE ELECTRICAL SYSTEM, ONE COPY OF THESE INSTRUCTIONS SHALL BE FRAMED AND POSTED AS DIRECTED ON THE PREMISES.

CERTIFIED LIGHTING AND LIGHTING CONTROLS COMMISSIONING AS REQUIRED BY CURRENTLY ADOPTED ENERGY CODE REQUIREMENTS.

MANUFACTURERS' NAMES AND CATALOG NUMBERS

IN SOME INSTANCES, SPECIFIC REFERENCES HAVE BEEN MADE TO ONE OR MORE MANUFACTURERS NAME AND MODEL OR CATALOG NUMBERS. USE OF NAMES AND CATALOG NUMBERS DOES NOT INDICATE THAT THE EQUIPMENT SPECIFIED IS NECESSARILY AN "OFF THE SHELF" ITEM. VARIANCES MAY BE DUE TO REQUIREMENT OF DESIRED FINISH, MATERIAL OR OTHER MODIFICATION.

IN THE CASE OF PANELBOARDS, SAFETY SWITCHES AND OTHER EQUIPMENT REQUIRING WIRE AND CABLE TERMINATIONS, ASCERTAIN THAT LUG SIZES AND WIRING OUTLETS OR WIRING SPACE ALLOWED IS PROPER FOR THE WIRES AND CABLES CONTAINED THEREIN.

WHEN APPROVAL IS GIVEN FOR THE USE OF EQUIPMENT DIFFERING FROM THAT SHOWN ON DRAWINGS IN REGARD TO FOUNDATIONS, SPACE FOR PIPING, DUCTWORK, WIRING, INSULATION, ETC., CHANGES REQUIRED TO ACCOMPLISH SUCH DIFFERENCES SHALL BE ACCOMPLISHED AT NO COST TO THE OWNER.

PROTECTION OF EQUIPMENT
ELECTRICAL EQUIPMENT SHALL BE PROTECTED FROM THE WEATHER, IN PARTICULAR, DRIPPING OR SPLASHING WATER, AT ALL TIMES DURING SHIPMENT, STORAGE AND CONSTRUCTION. MANUFACTURER'S RECOMMENDATIONS WITH REGARD TO STORAGE, PROTECTION, AND HANDLING SHALL BE FOLLOWED.

SHOULD ANY APPARATUS BE SUBJECTED TO POSSIBLE INJURY DUE TO WATER, IT SHALL BE THOROUGHLY DRIED AND PUT THROUGH A DIELECTRIC TEST, AT THE EXPENSE OF THE CONTRACTOR, TO ASCERTAIN THE SUITABILITY OF THE APPARATUS OR IT SHALL BE REPLACED WITHOUT ADDITIONAL COST TO THE OWNER.

DAMAGED OR DEFECTIVE EQUIPMENT: INSPECT ALL ELECTRICAL EQUIPMENT AND MATERIALS PRIOR TO INSTALLATION. INSTALLATION OR PLACEMENT INTO SERVICE OF DAMAGED MATERIALS WITHOUT THE PRIOR WRITTEN CONSENT OF THE OWNER IS PROHIBITED. REPLACE OR REPAIR TO NEW CONDITION, AS CERTIFIED BY THE MANUFACTURER, AND TEST DAMAGED EQUIPMENT IN COMPLIANCE WITH INDUSTRY STANDARDS AT NO ADDITIONAL COST TO THE OWNER. EQUIPMENT REQUIRED FOR THE TESTING SHALL BE PROVIDED BY THE CONTRACTOR.

WORKING CLEARANCE

THE SIZE OF ELECTRICAL EQUIPMENT SHOWN ON THE DRAWINGS IS BASED ON DIMENSIONS OF A PARTICULAR MANUFACTURER, (GENERALLY THE FIRST NAMED), WHILE OTHER MANUFACTURERS MAY BE ACCEPTABLE, IT IS THE RESPONSIBILITY OF THE TRADE TO DETERMINE IF THE EQUIPMENT PROPOSED WILL FIT IN THE ALLOCATED SPACE.

INSTALL ALL EQUIPMENT IN A MANNER TO PERMIT ACCESS TO ALL SURFACES, MAINTAIN PROPER CLEARANCE TO MEET ALL SAFETY AND OPERATING CODES, PARTICULARLY N.E.C. INCLUDE ALL REQUIREMENTS DICTATED BY OPERATION, CONTRACTOR INDICATED MAINTENANCE AND POSSIBLE REPLACEMENT OF EQUIPMENT IN DETERMINING CLEARANCE.

SHOULD THERE BE APPARENT VIOLATIONS OF N.E.C. CLEARANCE, NOTIFY THE ARCHITECT-ENGINEER BEFORE PROCEEDING WITH CONNECTION OR PLACEMENT OF EQUIPMENT.

COORDINATION

INSTALLATION STUDIES ARE REQUIRED TO COORDINATE THE ELECTRICAL WORK WITH THE WORK OF OTHER TRADES. PREPARE COORDINATION DRAWINGS AT ACCURATE SCALE WHERE SEVERAL ELEMENTS OF ELECTRICAL OR COMBINED MECHANICAL/STRUCTURALELECTRICAL WORK MUST BE SEQUENCED AND POSITIONED WITH PRECISION IN ORDER TO FIT INTO THE AVAILABLE SPACE.

SHOW THE ACTUAL PHYSICAL DIMENSIONS REQUIRED FOR PROPER INTEGRATION OF EQUIPMENT WITH BUILDING SYSTEMS.

PROVIDE APPROVED SHOP DRAWINGS TO ALL REQUIRED DISCIPLINES AND VERIFY FINAL ELECTRICAL CHARACTERISTICS BEFORE ROUGHING POWER FEEDS TO ANY EQUIPMENT. WHEN ELECTRICAL DATA ON APPROVED SHOP DRAWINGS DIFFERS FROM CONTEMPLATED DESIGN, MAKE NECESSARY ADJUSTMENTS TO THE WIRING, DISCONNECTS, AND BRANCH-CIRCUIT PROTECTION FOR THE EQUIPMENT ACTUALLY INSTALLED AT NO ADDITIONAL COST TO THE OWNER.

DAMAGE FROM INTERFERENCE CAUSED BY INADEQUATE COORDINATION SHALL BE RECTIFIED AT NO ADDITIONAL COST TO THE OWNER.

WORKMANSHIP

ALL WORK SHALL BE EXECUTED IN A WORKMANLIKE MANNER AND SHALL PRESENT A NEAT MECHANICAL APPEARANCE WHEN COMPLETED.

ANY MATERIAL ITEMS OR WORK NOT SHOWN ON THE DRAWINGS, BUT MENTIONED IN THESE SPECIFICATIONS OR VISA-VERSA, OR ANY ACCESSORIES NECESSARY TO MAKE THE WORK COMPLETE IN ALL RESPECTS AND READY FOR OPERATION SHALL BE PROVIDED WITHOUT ADDITIONAL COST TO THE OWNER.

THIS TRADE SHALL DO OR HAVE DONE BY COMPETENT TRADESMEN ALL CUTTING AND PATCHING NECESSARY FOR THE INSTALLATION OF THIS WORK, NO CUTTING IN CONSTRUCTIVE PARTS OF THE BUILDING LIKELY TO IMPAIR ITS STRENGTH SHALL BE DONE WITHOUT THE ARCHITECT-ENGINEERS WRITTEN APPROVAL.

EXCAVATION AND BACKFILL

EXCAVATION, TRENCHING AND BACKFILLING ARE SPECIFIED IN SECTION EXCAVATION - TRENCHING AND BACKFILLING FOR UTILITIES. CONDUIT SHALL BE INSTALLED AS SPECIFIED FOR PIPELINES. CONDUIT INSTALLED BENEATH FLOOR SLAB SHALL BE A MINIMUM OF 6" BELOW SLAB. BACKFILL OVER CONDUIT SHALL BE COMPACTED AS FOR SLAB BEDDING MATERIAL. REFER TO STRUCTURAL DRAWINGS FOR DETAILS OF CONDUIT (PIPE) PENETRATION OF EXTERIOR FOOTINGS. COMPLETE INSTALLATION SHALL CONFORM TO N.E.C.

PENETRATIONS

COORDINATE SLEEVE SELECTION AND APPLICATION WITH SELECTION AND APPLICATION OF FIRE-STOPPING SPECIFIED IN ARCHITECTURAL SPECIFICATIONS.

ROOFS: COORDINATE ALL ROOF PENETRATIONS WITH ENGINEER, OWNER, AND AS APPLICABLE, THE ROOFING CONTRACTOR PROVIDING A ROOF WARRANTY. KEEP ALL RACEWAY PENETRATIONS WITHIN MECHANICAL EQUIPMENT CURBS WHEREVER POSSIBLE. COORDINATE WITH DIVISION 15, FLASH AND COUNTERFLASH ALL OPENINGS THROUGH ROOF, AND/OR PROVIDE PRE-FABRICATED MOLDED SEALS COMPATIBLE WITH THE ROOF CONSTRUCTION INSTALLED, OR AS REQUIRED BY THE ENGINEER, OWNER, OR ROOFING CONTRACTOR. ALL ROOF PENETRATIONS SHALL BE LEAKTIGHT AT THE TERMINATING OF THE WORK AND SHALL NOT VOID ANY NEW OR EXISTING ROOF WARRANTIES.

WALLS AND FLOORS - SLEEVES FOR RACEWAYS AND CABLES, STEEL PIPE SLEEVES: ASTM A 334-33M, TYPE E, GRADE B, SCHEDULE 40, GALVANIZED STEEL, PLAIN ENDS AND DRIP RINGS.

CAST IRON PIPE SLEEVES: CAST OR FABRICATED "WALL PIPE," EQUIVALENT TO DUCTILE-IRON PRESSURE PIPE, WITH PLAIN ENDS AND INTEGRAL SATERSTOP, UNLESS OTHERWISE INDICATED.

FIRESTOPPING: FIRE RESISTANT THROUGH PENETRAION SEALANTS - TWO PART, FOAMED-IN-PLACE, SILICONE SEALANT FORMULATED FOR USE IN THROUGH-PENETRAION FIRE-STOPPING AROUND CABLES, RACEWAYS, AND CABLE TRAY PENETRAIONS THROUGH FIRE-RATED WALLS AND FLOORS. SEALANTS AND ACCESSORIES SHALL HAVE FIRE-RESISTANCE RATINGS INDICATED, AS ESTABLISHED BY TESTING IDENTICAL ASSEMBLIES IN ACCORDANCE WITH ASTM E 814, BY UNDERWRITERS LABORATORIES, INC., OR OTHER NRTL ACCEPTABLE TO AHJ.

ACCEPTABLE MANUFACTURERS - HILTI, INC., 3M CORP., RECTORS&AL, SPECIFY TECHNOLOGY INC., UNITED STATES GYPSUM COMPANY.

ELECTRICAL SERVICE

SERVICE SHALL BE AS SHOWN ON DRAWINGS.

PROVIDE SECONDARY SERVICE INTO THE BUILDING WITH CONDUIT AND WIRING AS SHOWN ON THE PLANS, INCLUDING, BUT NOT LIMITED TO, UNDERGROUND RACEWAYS AND CABLES AND SECONDARY CONNECTIONS TO UTILITY TRANSFORMERS AS REQUIRED BY SERVING ELECTRICAL UTILITY COMPANY. COORDINATE ALL REQUIREMENTS WITH UTILITY COMPANY PRIOR TO BID.

PROVIDE ALL REQUIRED GROUNDING FOR A COMPLETE SERVICE ENTRANCE GROUNDING SYSTEM. PERMANENTLY AND EFFECTIVELY GROUND AND BOND THE ELECTRICAL INSTALLATION IN A THOROUGH AND EFFICIENT MANNER, AND IN CONFORMANCE (AT A MINIMUM) WITH N.E.C. OR THESE DOCUMENTS, WHERE THEY EXCEED CODE REQUIREMENTS. USE BARE OR INSULATED CONDUCTORS, AS SPECIFIED HEREIN, AND OTHER MATERIALS INDICATED ON THE DRAWINGS.

PROVIDE ALL NECESSARY ENCLOSURES REQUIRED BY THE OWNER FOR THE UTILITY COMPANY METERING. REFER TO DRAWINGS FOR MINIMUM REQUIREMENTS. COORDINATE WITH UTILITY COMPANY PRIOR TO BID FOR ALL REQUIREMENTS.

PRODUCTS

GENERAL

ALL EQUIPMENT OF A PARTICULAR KIND, SUCH AS WIRING DEVICES AND PANELBOARDS AND LIGHTING FIXTURES OF THE SAME TYPE, SHALL BE THE PRODUCT OF THE SAME MANUFACTURER.

PROVIDE ACCESS PANELS FOR ALL EQUIPMENT AND DEVICES REQUIRING SUCH PANELS. SIZE AS REQUIRED FOR PROPER ACCESS AND MAINTENANCE. MINIMUM ACCEPTABLE IS 12 IN BY 12 IN CLEAR OPENING WHERE HAND ACCESS ONLY IS REQUIRED.

PROVIDE LABELS FOR EACH MOTOR CONTROLLER, SAFETY SWITCH, RELAY, PANELBOARD, CONTACTOR, TIMER, CONTROL DEVICE, METER AND CIRCUIT BREAKER. LABELS SHALL BE LAMINATED, PHENOLIC STRIPS 1/16" THICK, AND ENGRAVED TO SHOW BLACK LETTERS ON A WHITE BACKGROUND NOT LESS THAN 1/4" HIGH. SIZE STRIPS TO PROPERLY FIT MANUFACTURER'S BRACKETS AND BE LEGIBLE. WHERE MANUFACTURER'S BRACKETS ARE NOT PROVIDED, MOUNT LABELS WITH PROPER SCREWS, OR AN APPROVED ADHESIVE.

RACEWAYS

CONDUIT, RIGID STEEL, GALVANIZED OR SHERADIZED AND MANUFACTURED IN ACCORDANCE WITH ANSI STANDARD C80.1. FITTINGS SHALL BE PIPE THREADED, MALLEABLE IRON. CONNECTORS SHALL BE INSULATED THROAT TYPE.

CONDUIT, P.V.C. POLYVINYLCHLORIDE SCHEDULE 40 PIPE SPECIFICALLY MANUFACTURED AND LABELED (UL STANDARD 651) FOR USE AS ELECTRICAL CONDUIT. FITTINGS SHALL BE EITHER SOCKET WELDED TYPE OR PIPE THREADED WITH INSULATED THROAT.

CONDUIT, FLEXIBLE METALLIC: GALVANIZED, INTERLOCKED SPIRALLY WOUND STEEL STRIP WITH GALVANIZED OR SHERADIZED FITTINGS. LISTED PER U.L. FITTINGS SHALL BE OF THE SQUEEZE TYPE WITH INSULATED THROATS.

CONDUIT, LIQUIDTIGHT FLEXIBLE METALLIC: GALVANIZED, INTERLOCKED SPIRALLY WOUND STEEL STRIP WITH OVERALL JACKET OF LIQUID TIGHT PVC, UL LISTED. FITTINGS SHALL BE STEEL OR MALLEABLE IRON INSULATED THROAT, WATERTIGHT.

ELECTRIC METALLIC TUBING: GALVANIZED OR SHERADIZED AND MANUFACTURED IN ACCORDANCE WITH ANSI STANDARD C80.3. FITTINGS 1/2 INCH THROUGH 2 INCH TRADE SIZE SHALL BE COMPRESSION TYPE, MANUFACTURED FROM MALLEABLE IRON OR STEEL, AND RAIN AND/OR CONCRETE-TIGHT AS REQUIRED BY INSTALLATION. POT METAL OR DIE CAST TYPE FITTINGS ARE PROHIBITED. CONNECTORS SHALL BE INSULATED THROAT TYPE.

CONDUCTORS AND CABLES

GENERAL: SERVICE LATERALS AND PANELBOARD FEEDERS SHALL BE OF ANNEALED (SOFT) COPPER COMPLYING WITH ICSA S-95-658NEMA WC70, SOLID CONDUCTOR FOR NO. 10 AWG AND SMALLER, CONCENTRIC, COMPRESSED STRANDED FOR NO. 8 AWG AND LARGER. ALL BRANCH CIRCUIT CONDUCTORS NO. 8 AWG AND LARGER, STRANDED, TYPE THWN-2 OR XHHW-2 INSULATION. ALL CONDUCTORS, NO. 10 AWG AND SMALLER, USED FOR POWER AND LIGHTING CIRCUITS; SOLID COPPER, TYPE THWN-2 INSULATION (WET OR DAMP LOCATIONS, OR IN CONDUIT BELOW GRADE OR SLAB), TYPE THHN INSULATION (DRY LOCATIONS ONLY ABOVE GRADE), OR DUAL RATED TYPE THHN/THWN-1. ALL BRANCH CIRCUIT WIRING SHALL NOT BE SMALLER THAN 12 AWG. IF NO CONDUCTOR SIZE IS INDICATED ON THE DRAWINGS FOR A BRANCH CIRCUIT, PROVIDE CONDUCTORS AND CONDUIT SIZED PER NFPA 70 AND BASED ON THE INDICATED BRANCH CIRCUIT OVERCURRENT PROTECTIVE DEVICE RATING AND NUMBER OF CIRCUITS.

CONDUCTOR INSULATION TYPES: 90-DEGREE CRATED, TYPE THHN/THWN-2 OR XHHW-2 COMPLYING WITH ICSA S-95-658NEMA WC70. COLORS FOR 208/120V CONDUCTORS
PHASE A: BLACK
PHASE B: RED
PHASE C: BLUE
NEUTRAL: WHITE
EQUIPMENT GROUND: GREEN
ISOLATED GROUND: GREEN WITH YELLOW STRIPE
COLORS FOR 480/277V CONDUCTORS
PHASE A: BROWN
PHASE B: ORANGE
PHASE C: YELLOW
NEUTRAL: WHITE
EQUIPMENT GROUND: GREEN
UNLESS NOTED OTHERWISE, SPECIAL PURPOSE CONDUCTORS AND CABLES, SUCH AS LOW VOLTAGE CONTROL AND SHIELDED INSTRUMENT WIRING, SHALL BE AS RECOMMENDED BY THE SYSTEM EQUIPMENT MANUFACTURER.

CONTROL WIRING: STRANDED COPPER CONDUCTORS, 600V INSULATION, OF THE PROPER TYPE, SIZE AND NUMBER AS REQUIRED TO ACCOMPLISH SPECIFIED FUNCTION. MINIMUM SIZE: NO. 14 AWG UNLESS NOTED OTHERWISE.

MC TYPE CABLE CAN BE USED IF ACCEPTED BY LOCAL AUTHORITY AND GOVERNING CODES FOR WHIPS FROM JUNCTION BOX TO LIGHT FIXTURES ONLY. TYPE MC CABLE 600V, UNJACKETED, ANSI E119 AND E814, UL STANDARDS 44 OR 83 (AS APPLICABLE), AND 1589. NFPA 70 ARTICLE 330, ALUMINUM OR GALVANIZED STEEL, INTERLOCKED ARMOR, THIN-OR XHHW-INSULATED CONDUCTORS, COLOR CODE: ICSA METHOD 1, WITH GREEN INSULATED GROUNDING CONDUCTOR.

PROVIDE A DEDICATED EQUIPMENT-GROUNDING CONDUCTOR, OR BONDING JUMPER, AS APPLICABLE, IN ALL BRANCH CIRCUITS AND FEEDERS, SIZED IN ACCORDANCE WITH NFPA 70, UNLESS INDICATED AS LARGER ON THE DRAWINGS.

PROVIDE A DEDICATED NEUTRAL (WHERE REQUIRED) AND DEDICATED GROUNDING CONDUCTOR FOR EACH BRANCH CIRCUIT.

VOLTAGE DROP IN BRANCH CIRCUITS SHALL NOT EXCEED 2%.

GFCI CIRCUITS: DO NOT USE MULTI-CONDUCTOR CIRCUITS, WITH A SHARED NEUTRAL, FOR ANY GFCI CIRCUIT BREAKER OR RECEPTACLE CIRCUIT. BRANCH CIRCUITS FED FROM GFCI CIRCUIT BREAKERS, LIMIT THE ONE-WAY CONDUCTOR LENGTH TO 100 FEET BETWEEN THE PANELBOARD AND THE MOST REMOTE RECEPTACLE OR LOAD ON THE GFCI CIRCUIT.

BOXES

OUTLET BOXES: GALVANIZED PRESSED STEEL WITH GALVANIZED EXPOSED EXTENSION RINGS OR PLASTER RINGS OR TILE RINGS TO PROVIDE EXPOSED SURFACE FLUSH WITH WALL OR CEILING FINISH. PROVIDE ALL CEILING OUTLET BOXES WITH "NO-BOLT" OR THROUGH AND LOCKMOUNTED TYPE FIXTURE STUDS.

JUNCTION AND PULL BOXES: FABRICATE IN ACCORDANCE WITH NEMA AND N.E.C. STANDARDS AND REQUIREMENTS INCSOP AS MATERIAL, GAUGES, DIMENSIONS, AND FABRICATION METHODS. BOXES SHALL BEAR THE UL LABEL. WHERE BOXES ARE NOT SIZED ON THE DRAWINGS, THEY SHALL BE SIZED IN ACCORDANCE WITH

N.E.C. REQUIREMENTS. FINISH IN STANDARD GRAY ENAMEL, WITH SIDES AND BACK SPOT-WELDED IN POSITION AND THE REMOVABLE SCREW COVER MOUNTED WITH BRASS MACHINE SCREWS.

WIRING DEVICES

SWITCHES: HEAVY DUTY AC, RATED 20 AMPERES, 120/277 VOLTS, SINGLE-POLE, DOUBLE-POLE, THREE-POLE, OR FOUR-WAY AS NOTED ON DRAWINGS OR AS REQUIRED FOR THE SWITCHING ARRANGEMENTS IN EACH SPACE. HUBBELL #HBL122" OR EQUAL. COORDINATE SWITCH COLORS WITH COVERPLATES AS DESCRIBED BELOW UNDER "PLATES".

SWITCHES, SPECIAL PURPOSE, KEY OPERATED, HEAVY-DUTY AC, RATED 20 AMPERES, 120/277 VOLTS, SINGLE OR MULTI-POLE AS NOTED OR AS REQUIRED, HUBBELL #HBL122" OR EQUAL.

RECEPTACLES: THREE WIRE GROUNDING TYPE, 120 VOLT RATED, SPECIFICATION GRADE, 20 AMPERES DUPLEX UNLESS NOTED OTHERWISE ON DRAWINGS. HUBBELL #R32 OR EQUAL. COORDINATE RECEPTACLE COLOR WITH COVERPLATE AS DESCRIBED BELOW UNDER "PLATES". SINGLE RECEPTACLE, 20 AMPERE, 120 VOLT, SPECIFICATION GRADE, HUBBELL #R361 OR EQUAL.

DUST AND MOISTURE RESISTANT, MELAMINE BODY, GRAY NYLON FACE BACKED BY FABRIC REINFORCED NEOPRENE GASKET SLIT TO PROVIDE WIPING ACTION ON CAP BLADES. PASS & SEYMOUR #R307 OR APPROVED EQUAL. GROUND FAULT CIRCUIT INTERRUPTER, NYLON FACE CLASS A, NEMA 5-20R, SPECIFICATION GRADE, HUBBELL #R5F-5362" OR EQUAL.

CORROSION RESISTANT, SIMILAR AND APPROVED EQUAL TO STANDARD RECEPTACLE, EXCEPT FABRICATED FROM YELLOW MELAMINE PLASTIC WITH YELLOW NYLON FACE AND EXPOSED METAL PARTS FINISHED TO RESIST CORROSION. (NEMA 5-11R - HUBBELL #52CM61).

ISOLATED GROUND, DUPLEX OR SIMPLEX THREE WIRE GROUNDING TYPE, SPECIFICATION GRADE, ORANGE FACE, GROUND CONTACT FULLY ISOLATED FROM STRAP AND EQUIPPED WITH SCREW TERMINAL. HUBBELL #IG-5362" OR EQUAL.

RECEPTABLES, SPECIAL PURPOSE: SPECIAL PURPOSE OUTLETS SHALL BE AS SCHEDULED ON DRAWINGS.

PLATES: PROVIDE PLATES FOR ALL OUTLET BOXES. PLATES SHALL BE OF SUITABLE CONFIGURATION FOR THE NUMBER AND TYPE OF DEVICES SERVED, SHALL BE ONE PIECE, SHALL OVERLAP OUTLET BOX EDGE AND ROOM SURFACES, AND SHALL BE SMOOTH FINISH NYLON TYPE OF SAME MANUFACTURER AS THE WIRING DEVICES. VERIFY DESIRED MATERIALS AND COLORS WITH ARCHITECT PRIOR TO INSTALLATION.

STANDARD INTERIOR: IVORY FINISHED ON LIGHT COLORED WALLS - COORDINATE ALL COLORS WITH ARCHITECT

INTERIOR DAMP LOCATIONS: STAINLESS STEEL.

EXTERIOR LOCATIONS: FOR UNATTENDED WET LOCATIONS, PROVIDE IN-USE NEMA 3R, UL LABELED PLATES MOLDED FROM A CLEAR HIGH IMPACT ULTRAVIOLET STABILIZED POLYCARBONATE MATERIAL FOR EASY VERIFICATION THAT CORDS ARE PLUGGED IN AND THAT THE GFCI IS FUNCTIONING. COVER PLATES SHALL BE BY THE SAME MANUFACTURER AS THE WIRING DEVICES. COMPLYING WITH NEMA 70-406.8 (A) OR (B) REQUIREMENTS FOR ATTENDED OR UNATTENDED USE AS APPLICABLE.

ACCEPTABLE MANUFACTURERS: HUBBELL, PASS & SEYMOUR, LEVITON AND COOPER.

CABINETS AND ENCLOSURES

FURNISH AND INSTALL FLUSH CABINETS AND ENCLOSURES AS SHOWN ON THE PLANS AND AS HEREIN SPECIFIED. UNIT SHALL BE PROVIDED WITH DEAD FRONT SUB PANEL, RECESSED AS REQUIRED, TO HOUSE CONTROLS. DOOR SHALL BE PROVIDED WITH CONCEALED HINGES AND FLUSH KEY OPERATED LOCK. DOOR AND TRIM SHALL BE PRIME PAINTED FOR FIELD PAINTING TO MATCH WALL FINISHES. PROVIDE KNOCK-OUTS, LOUVERS AND IDENTIFICATION ENGRAVINGS AS REQUIRED TO MEET FIELD CONDITIONS. EXACT BACKBOX SIZE TO BE COORDINATED WITH EQUIPMENT SUPPLIER.

CIRCUIT DISCONNECTS

SAFETY SWITCHES: SAFETY SWITCHES SHALL CONSIST OF A BOX, FRONT COVER, AND CIRCUIT PROTECTOR DEVICE ALL MANUFACTURED AND ASSEMBLED IN ACCORDANCE WITH NEMA STANDARDS

THE BOX SHALL BE FABRICATED FROM CODE GAUGE GALVANIZED SHEET STEEL IN ACCORDANCE WITH U.L. LISTING AND LABEL. THE CIRCUIT PROTECTOR DEVICE SHALL BE HEAVY DUTY, QUICK-MAKE, QUICK-BREAK FUSED OR UNFUSED SWITCH RATED FOR MOTOR CIRCUITS AND/OR SERVICE ENTRANCE DUTY. IF REQUIRED, UNITS SHALL BE FURNISHED FOR SURFACE OR FLUSH MOUNTING WITH EITHER GENERAL PURPOSE OR RAIN/IGHT ENCLOSURES, AS REQUIRED. FUSED UNITS SHALL BE FURNISHED COMPLETE WITH PROPER FUSES.

PANELBOARDS

SHALL CONSIST OF BOX, INTERIOR, FRONT, AND CIRCUIT PROTECTIVE DEVICES. THE ASSEMBLY SHALL BE UL LABELED AND BE LISTED FOR SERVICE. THE ASSEMBLY SHALL BE DESIGNED AND MANUFACTURED IN ACCORDANCE WITH NEMA STANDARD PB-1. THE LATEST UL STANDARD (UL-85) AND SHALL HAVE A TURNED EDGE AROUND THE FRONT FOR RIGIDITY AND FOR CLAMPING ON FRONT. PROVIDE STANDARD KNOCKOUTS ON REMOVABLE BOX ENDS. FABRICATE FROM SHEET STEEL AND FINISH WITH BAKED ON GRAY ENAMEL OVER RUST INHIBITOR. EACH FRONT SHALL HAVE A DOOR MOUNTED ON SEMI-CONCEALED HINGES WITH A CYLINDER LOCK, INDEX CARD CIRCUIT DIRECTORY MOUNTED BEHIND CLEAR PLASTIC AND HELD IN A METAL FRAME, AND CONCEALED TRIM CLAMPS FOR MOUNTING TO THE BOX. ALL LOCKS SHALL BE MASTER KEYED AND ALL PANEL DIRECTORIES SHALL BE TYPEWRITTEN.

ALL INTERIORS SHALL BE COMPLETELY FACTORY ASSEMBLED. THE DESIGN OF THE INTERIOR SHALL PERMIT REPLACEMENT OF INDIVIDUAL BRANCH BREAKERS WITHOUT DISTURBING ADJACENT UNITS AND WITHOUT MACHINE DRILLING OR TAPPING. BUS BARS FOR PANELS RATED 600 AMPERES OR MORE SHALL BE TIN PLATED 98% CONDUCTIVITY COPPER OR TIN FINISH ALUMINUM (5% CONDUCTIVITY) OF RECTANGULAR CROSS-SECTION. BUS BARS FOR PANELS RATED LESS THAN 600 AMPERES SHALL BE TIN PLATED 98% CONDUCTIVITY COPPER OR RECTANGULAR CROSS-SECTION. BUS BAR CONNECTIONS TO BRANOH CIRCUIT BREAKERS SHALL BE THE PHASE SEQUENCE TYPE AND ACCEPT

BUS BARS FOR PANELS RATED 600 AMPERES OR MORE SHALL BE TIN PLATED 98% CONDUCTIVITY COPPER OR TIN FINISH ALUMINUM (5% CONDUCTIVITY) OF RECTANGULAR CROSS-SECTION. BUS BARS FOR PANELS RATED LESS THAN 600 AMPERES SHALL BE TIN PLATED 98% CONDUCTIVITY COPPER OR RECTANGULAR CROSS-SECTION. BUS BAR CONNECTIONS TO BRANOH CIRCUIT BREAKERS SHALL BE THE PHASE SEQUENCE TYPE AND ACCEPT BOLT OR TRIM CLAMPS ONLY. PANELBOARD BUS STRUCTURE AND MAIN BREAKER OR MAIN LUGS SHALL BE RATED AS SCHEDULED ON DRAWING. SUCH RATINGS SHALL BE ESTABLISHED BASED ON HEAT RISE TESTS IN ACCORDANCE WITH UL STANDARDS. GROUP INCOMING CABLE LUGS AT ONE END FOR SEPARATION FROM LOW VOLTAGE CABLES. EQUIPMENT NEUTRAL BUSING WITH A LUG FOR EACH BRANCH BREAKER POSITION. INTERIOR SHALL MOUNT TO BOX WITHOUT TOOLS.

BREAKERS SHALL BE QUICK-MAKE, QUICK-BREAK, BOLT-ON THERMAL-MAGNETIC MOLDED CASE CIRCUIT BREAKERS ONE, TWO OR THREE POLE WITH INTEGRAL CROSSBAR FOR MULTI-POLE UNITS, EQUIPPED WITH AN OVERCENTER, TRIP-FREE, TOGGLE-TYPE OPERATING ACTION AND POSITIVE HANDLE INDICATION OF BREAKER STATUS. CIRCUIT BREAKERS SHALL BE UL LISTED IN ACCORDANCE WITH UL STANDARDS.

EACH PANELBOARD, AS A COMPLETE UNIT, SHALL HAVE A SHORT CIRCUIT RATING EQUAL TO OR GREATER THAN THE INTEGRATED EQUIPMENT RATING SHOWN ON DRAWINGS. THE RATING SHALL BE ESTABLISHED BY TESTING WITH THE OVERCURRENT DEVICES MOUNTED IN THE PANELBOARD, THE SHORT CIRCUIT TESTS ON THE OVERCURRENT DEVICES ON THE STRUCTURE SHALL BE MADE SIMULTANEOUSLY BY CONNECTING THE FAULT TO EACH OVERCURRENT DEVICE WITH THE PANELBOARD CONNECTED TO ITS RATED SUPPLY VOLTAGE.

REFER TO PANELBOARD SCHEDULES FOR FULLY RATED OR SERIES-RATED REQUIREMENTS. SERIES-RATED SYSTEMS ARE NOT ALLOWED UNLESS SPECIFICALLY INDICATED ON PANELBOARD SCHEDULES. WHERE ALLOWED, SERIES-RATED SYSTEMS SHALL BE PROPERLY LABELLED BY NEC REQUIREMENTS.

METHOD OF TESTING SHALL BE PER UL STANDARDS. PANELBOARDS SHALL BE MARKED WITH THEIR MAXIMUM SHORT CIRCUIT CURRENT RATINGS AT THE SUPPLY VOLTAGE.

APPROVED MANUFACTURERS: SQUARE-D CO. OR EQUAL, BY GE, SIEMENS AND/OR Eaton.

OVERCURRENT PROTECTIVE DEVICES
FUSES OF THE PROPER SIZE, RATING AND ELECTRICAL CHARACTERISTICS SHALL BE PROVIDED IN EACH FUSIBLE DEVICE. FUSES OF 800 VOLTS AND BELOW SHALL BE UL CLASS RK-1, CURRENT-LIMITING, TIME-DELAY, DUAL-ELEMENT, 200,000 AMPERE RMS SYMMETRICAL INTERRUPTING CAPACITY ON NON-MOTOR CIRCUITS AND UL CLASS RK-5, TIME-DELAY, DUAL-ELEMENT, 200,000 AMPERES RMS SYMMETRICAL INTERRUPTING CAPACITY ON MOTOR CIRCUITS.

APPROVED MANUFACTURERS: BUSSMANN, LITTELFUSE OR FERRAZ-SHAWMUT (ALL FUSES SHALL BE OF SAME MANUFACTURER TO ENSURE SERRAZE COORDINATION).

CIRCUIT BREAKERS: CIRCUIT BREAKERS OF THE PROPER SIZE, RATING, AND ELECTRICAL CHARACTERISTICS SHALL BE PROVIDED WHERE CALLED FOR ON DRAWINGS. BREAKERS SHALL BE THERMAL MAGNETIC MOLDED-CASE WITH QUICK-MAKE, QUICK-BREAK, OVER CENTER TOGGLE TYPE MECHANISM AND TRIP-FREE HANDLE MECHANISM. THE BREAKER SHALL BE ENCLOSED IN A SUITABLE NEMA RATED ENCLOSURE. BREAKERS SHALL BE OF SAME MANUFACTURER AS THOSE IN THE PANELBOARDS.

TIMESWITCHES
ELECTRONIC TIME SWITCHES: ELECTRONIC, SOLID STATE PROGRAMMABLE UNITS WITH ALPHANUMERIC DISPLAY, COMPLYING WITH UL917. SPST, 30 AMPERE INDUCTIVE OR RESISTIVE, 240VAC, CONTACT RATING, 2 PROGRAMMABLE ON-OFF SET POINTS ON A 24-HOUR SCHEDULE, ALLOWING DIFFERENT SET POINTS FOR EACH DAY OF THE WEEK. ALLOW CONNECTION OF A PHOTOELECTRIC RELAY AS SUBSTITUTE FOR ON-OFF FUNCTION OF A PROGRAM. ASTRONOMIC TIME ON ALL CHANNELS. BATTERY BACKUP FOR SCHEDULES AND TIME CLOCK.

OUTDOOR PHOTOELECTRIC SWITCHES
SOLID STATE, WITH SPST DRY CONTACT RATED FOR 1800-VA TUNGSTEN OR 1000-VA INDUCTIVE, TO OPERATE CONNECTED RELAY, CONTACTOR COILS OR MICROPROCESSOR INPUT, COMPLYING WITH UL 773A.

TELEPHONE AND DATA SYSTEMS

FURNISH AND INSTALL A SYSTEM OF PROPERLY SIZED AND PROPERLY LOCATED OUTLETS WITH ASSOCIATED CONNECTING CONDUIT RUNS, EXTENDING TO PULL BOXES AND TELEPHONE BACKBOARD. FURNISH AND INSTALL RACEWAYS, FOR INCONVENIENT SERVICE WHERE INDICATED.
OUTLET BOXES: UNLESS OTHERWISE INDICATED, ALL TELEPHONE OUTLETS AND JUNCTION BOXES SHALL BE PROVIDED AS REQUIRED TO ACCOMMODATE INTERNAL TERMINAL STRIPS BY TELEPHONE CO.

OUTLET COVER PLATES: TELEPHONE OUTLET COVER PLATES SHALL MATCH THOSE SPECIFIED FOR ADJACENT WIRING DEVICES, INCLUDING THOSE WITH SPECIAL FINISHES.

RACEWAYS: MATERIALS FOR TELEPHONE RACEWAY SYSTEM WORK SHALL BE IN ACCORDANCE WITH CORRESPONDING RACEWAYS SPECIFIED HEREIN AND IN OTHER SECTIONS.

VERIFY LOCATION OF WALL OUTLETS BEFORE ROUGHING IN TO ENSURE COORDINATION WITH OWNERS FINAL INTENDED FURNITURE LAYOUT. PLAN INDICATIONS SHALL NOT BE SCALED UNLESS DIRECTED. OUTLETS SHALL BE RELOCATED WITHIN ROOMS BEFORE ROUGH-IN WHERE DIRECTED BY ARCHITECT-ENGINEER WITHOUT ADDITIONAL COST TO OWNER.

TELEPHONE SERVICE CONDUIT LAYOUT SHALL HAVE THE JOB SITE APPROVAL OF AN AUTHORIZED REPRESENTATIVE OF THE TELEPHONE CO. COORDINATE WORK SO THAT BOTH TELEPHONE CO. AND OWNERS REPRESENTATIVES ARE PRESENT AT THE SAME TIME FOR APPROVAL OR CHANGES IN AMPLI TIME FOR ANY REQUIRED CORRECTIONS BEFORE COMPLETION OF PROJECT.

FROM EACH TELEPHONE OUTLET, PROVIDE 3/4" EMT CONDUIT CONCEALED IN WALL TO 6" ABOVE ACCESSIBLE CEILING OR UP TO STRUCTURE WHERE NO CEILING EXISTS, UNLESS SHOWN OTHERWISE ON DRAWINGS.

TELEPHONE TERMINAL BOARD: PRIOR TO INSTALLATION OF TELEPHONE TERMINAL BOARD, THE EXACT LOCATION SHALL BE VERIFIED WITH THE TELEPHONE CO. THE TELEPHONE TERMINAL BOARD SHALL BE PROVIDED WITH A DOUBLE DUPLEX RECEPTACLE LOCATED WHERE INDICATED ON THE DRAWINGS. THE TERMINAL BOARD SHALL BE CONSTRUCTED OF 4" X 8" X 3/4" PLYWOOD WITH TWO (2) COATS OF FLAME RETARDANT PAINT UNLESS NOTED OTHERWISE ON DRAWINGS.

LIGHTING

FIXTURES ARE SPECIFIED IN THE SCHEDULE BY MANUFACTURERS NAME AND CATALOG NUMBER.

ALL RECESSED LIGHT FIXTURES SHALL BE PROVIDED WITH FACTORY INSTALLED THERMAL PROTECTION.

ALL LAMPS USED ON THIS PROJECT SHALL BE NEW, DELIVERED TO THE JOB SITE IN THE ORIGINAL PACKING CASES AND SLEEVES AND SHALL BE OF THE SAME MANUFACTURER.

PROVIDE FLUORESCENT FIXTURES WITH ELECTRONIC BALLASTS SUITABLE FOR OPERATION OF LAMPS SPECIFIED, TOTAL HARMONIC DISTORTION LESS THAN 20%; FREQUENCY OF OPERATION OF 20 KHZ OR GREATER WITH NO VISIBLE FLICKER; LINE TRANSIENT WITHSTAND RATINGS AS DEFINED IN ANSI/ENEC CATEGORY A. APPROVED MANUFACTURERS: ADVANCE OR EQUAL, BY MAGNETEK, MOTOROLA OR OSRAM.

HID BALLASTS SHALL BE AUTO TRANSFORMER REACTOR, HIGH POWER FACTOR POTTED AND ENCASED TO MINIMIZE SOUND. APPROVED MANUFACTURERS: GE, SYLVANIA, OR OSRAM.

LED LIGHT FIXTURES ARE TO BE PROVIDED WITH COMPATIBLE DRIVER AND MUST BE COORDINATED WITH CONTROL TYPE INDICATED. CONTRACTOR IS RESPONSIBLE TO ENSURE CONTROLS ARE CAPABLE OF PROPERLY CONTROLLING LIGHT FIXTURES AS INDICATED WITHIN THESE DRAWINGS.



PERMIT DOCUMENTS

ITAP - LEE'S SUMMIT
228 SW MAIN ST.
LEE'S SUMMIT

MECHANICAL ABBREVIATIONS	
(ALPHABETICAL BY ABBREVIATION)	
ABBREVIATION	LONG FORM
ABV	ABOVE
AC OR ACU	AIR-CONDITIONING UNIT
AHAP	AS HIGH AS POSSIBLE
AHU	AIR-HANDLING UNIT
AUTO	AUTOMATIC
BLW	BELOW
C	CHILLER
CD	CONDENSATE
CF	CABINET FAN
CFM	CUBIC FEET PER MINUTE
CH	CABINET HEATER
CHP	CHILLED WATER PUMP
CLNG OR CLG	CEILING
CONC	CONCRETE
CP OR CWP	CONDENSER WATER PUMP
CS	CONDENSER WATER SUPPLY
CR	CONDENSER WATER RETURN
CRAC OR CACU	COMPUTER ROOM AIR-CONDITIONING UNIT
CHFF	CHILLER ROOM EXHAUST FAN
CRV	CONDENSATE (STEAM) RETURN UNIT
CT	COOLING TOWER CELL
CTU	CONDENSATE (STEAM) TRANSFER UNIT
CU	CONDENSING UNIT
DV	CONSTANT VOLUME TERMINAL BOX
DEF	DISHWASER EXHAUST FAN
DMPR	DAMPER
DN	DOWN
EA	EACH
EBH	ELECTRIC BASEBOARD HEATER
EDH	ELECTRIC DUCT-MOUNTED HEATER
EF	EXHAUST FAN
EG	EXHAUST GRILLE
ER	EXHAUST REGISTER
EUH	ELECTRIC UNIT HEATER
EXH	EXHAUST
FD	FIRE DAMPER
FCU	FAN-COIL UNIT
FF	FINAL FILTER
FFCH	FORCED-FLOW CABINET HEATER
FFU	FAN FILTER UNIT
FP	FAN POWERED TERMINAL BOX
GPM	GALLONS PER MINUTE
HC	HEATING COIL
HUM	HUMIDIFIER
HWP OR HP	HEATING WATER PUMP
HX	HEAT EXCHANGER
KEF	KITCHEN (GREASE HOOD) EXHAUST FAN
KW	KILOWATTS
LD	LINEAR SUPPLY DIFFUSER
MOT	MOTORIZED
MTD	MOUNTED
MJAF	MAKE-UP AIR FAN
MJAHU	MAKE-UP AIR-HANDLING UNIT
OA	OUTSIDE AIR
OAF	OUTSIDE AIR FAN
OPG OR OPNG	OPENING
NOT ALL ABBREVIATIONS ON THIS LIST ARE NECESSARILY USED ON THIS PROJECT	

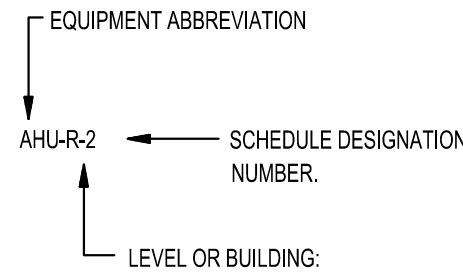
MECHANICAL ABBREVIATIONS	
CONT.	
(ALPHABETICAL BY ABBREVIATION)	
ABBREVIATION	LONG FORM
PF	PRE-FILTER
PLNM	PLENUM
RA	RETURN AIR
RAF	RETURN AIR FAN
RAG OR RG	RETURN AIR GRILLE
RAR OR RR	RETURN AIR REGISTER
RAS	RETURN AIR SILENCER
RE	IN REFERENCE TO
RTU	ROOFTOP UNIT
SA	SUPPLY AIR
SAF OR SF	SUPPLY AIR FAN
SAG OR SG	SUPPLY AIR GRILLE
SAR OR SR	SUPPLY AIR REGISTER
SAS	SUPPLY AIR SILENCER
SCHP	SECONDARY CHILLED WATER PUMP
SD	SMOKE DAMPER OR DETECTOR
SPCHP	SPECIAL PROCESS CHILLED WATER PUMP
TA	THROW AWAY (FILTER TYPE)
TDEF	TRUCK DOCK EXHAUST FAN
TEF	TOILET EXHAUST FAN
TRANS	TRANSITION OR TRANSFER
TYP	TYPICAL
UH	UNIT HEATER
UNO	UNLESS NOTED OTHERWISE
VF	VENTILATION FAN
VFD	VARIABLE FREQUENCY DRIVE
V V	VARIABLE VOLUME TERMINAL BOX
W	WITH
XFMR OR TFMR	TRANSFORMER
XT OR EX	EXPANSION TANK
NOT ALL ABBREVIATIONS ON THIS LIST ARE NECESSARILY USED ON THIS PROJECT	

DUCTWORK LEGEND		
(REFER TO SPECIFICATIONS SECTIONS 15815 AND 15820 FOR ADDITIONAL INFORMATION)		
SINGLE LINE	DESCRIPTION	DOUBLE LINE
	ROUND ELBOW DOWN	
	ROUND ELBOW UP	
	OFFSET TO CHANGE ELEVATION (AT 30" WHEN POSSIBLE. ARROW SLOPES DN, UN.O.)	
	ROUND RADIUS ELBOW	
	90° STRAIGHT TEE	
	90° CONICAL TEE	
	45° LATERAL TAP	
	45° LATERAL CONICAL TEE	
	SIZE OR SHAPE TRANSITION	
	ROUND FLEXIBLE DUCT	
	RECTANGULAR ELBOW DOWN	
	RECTANGULAR ELBOW UP	
	OFFSET TO CHANGE ELEVATION (AT 30" WHERE POSSIBLE. ARROW SLOPES DN, UN.O.)	
	RECTANGULAR RADIUS ELBOW	
	RECTANGULAR ELBOW WITH TURNING VANES	
	SPLIT BRANCH TAKE-OFF WITH SQUARE ELBOW & SPLITTER DAMPER	
	SPLIT BRANCH TAKE-OFF WITH RADIUS ELBOW & SPLITTER DAMPER	
	SPLIT BRANCH TAKE-OFF WITH STATIONARY SPLITTER DAMPER	
	BRANCH TAKE-OFF WITH 45° LEAD IN TAP	
	INSULATED LINED DUCTWORK (UN.O.)	
	SQUARE FACED CEILING DIFFUSER 4-WAY DIRECTIONAL THROW (UN.O.)	
	ROUND FACED CEILING DIFFUSER	
	CEILING RETURN OR EXHAUST AIR GRILLE OR REGISTER	
	SIDEALL SUPPLY GRILLE OR REGISTER	
	SUPPLY DUCT RISER	
	RETURN, EXHAUST OR OUTSIDE AIR DUCT RISER	
	MANUAL BALANCING DAMPER	
	AUTOMATIC (MOTOR-OPERATED) DAMPER	
	FIRE DAMPER	
	GRAVITY BACKDRAFT DAMPER	
	COMBINATION FIRE AND SMOKE DAMPER WITH SMOKE DETECTOR	
	SMOKE DAMPER (AUTOMATIC) WITH SMOKE DETECTOR	
	DUCT MOUNTED SMOKE DETECTOR	
NOT ALL SYMBOLS ON THIS LIST ARE NECESSARILY USED ON THIS PROJECT		

STANDARD MECHANICAL SYMBOLS	
SYMBOL	DESCRIPTION
	GATE VALVE
	BALL VALVE
	GLOBE VALVE
	BUTTERFLY VALVE
	PLUG VALVE
	ANGLE VALVE
	CHECK VALVE
	AUTOMATIC CONTROL VALVE (STRAIGHT THROUGH)
	AUTOMATIC CONTROL VALVE (3-WAY)
	AUTOMATIC CONTROL VALVE (ANGLE)
	AUTOMATIC CONTROL VALVE (STRAIGHT THROUGH)
	SOLENOID VALVE
	PRESSURE REDUCING VALVE
	PRESSURE RELIEF VALVE
	GAUGE COCK
	PRESSURE GAUGE WITH GAUGE COCK
	THERMOMETER
	THERMOMETER WELL
	TEST PLUG
	FLOW METER
	TEMPERATURE SENSOR
	PRESSURE SENSOR
	DIFFERENTIAL PRESSURE SWITCH
	IMMERSION THERMOSTAT
	MANUAL AIR VENT
	AUTOMATIC AIR VENT
	FLOW SWITCH
	ORIFICE
	PIPE SLEEVE THRU WALL OR FLOOR
	EXPANSION JOINT
	FLEXIBLE PIPE JOINT
	PIPE GUIDE
	ANCHOR
	STRAINER (Y-TYPE)
	STRAINER (BASKET TYPE)
	UNION
	CONCENTRIC REDUCER
	ECCENTRIC REDUCER
	DIRECTION OF FLOW
	DIRECTION OF SLOPE
	THERMOSTAT
	HUMIDISTAT
	FAN SPEED CONTROLLER
	CONDENSER WATER SUPPLY
	CONDENSER WATER RETURN
	CONDENSATE DRAIN
NOT ALL SYMBOLS ON THIS LIST ARE NECESSARILY USED ON THIS PROJECT	

OTHER SYMBOLS	
SYMBOL	DESCRIPTION
	INDICATES CONNECTION TO EXISTING DUCT OR PIPE

GENERAL EQUIPMENT DESIGNATION KEY:



MECHANICAL GENERAL NOTES	
1. PRIOR TO SUBMITTING BID, VISIT THE SITE AND BECOME FULLY ACQUAINTED WITH THE EXISTING CONDITIONS OF THE PROJECT. REVIEW GENERAL NOTES, SPECIFICATIONS AND ALL OTHER DRAWINGS FOR ADDITIONAL REQUIREMENTS WHICH MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY ARCHITECT, ENGINEER AND/OR OWNER OF ANY CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.	
2. COORDINATE THE INSTALLATION OF MECHANICAL SYSTEMS WITH OTHER TRADES TO ENSURE A NEAT AND ORDERLY INSTALLATION. DUCTWORK AND PIPING SHALL BE ROUTED TO AVOID CONFLICTS WITH ELECTRICAL PANELS, LIGHTING FIXTURES, ETC.	
3. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGING EXISTING SURFACES AND EQUIPMENT TO REMAIN FOR NEW INSTALLATION DURING WORK. REPAIR ANY DAMAGE CAUSED DURING CONSTRUCTION AT NO COST TO THE OWNER.	
4. ALL MECHANICAL EQUIPMENT SHOWN ON THE MECHANICAL PLANS SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR UNLESS OTHERWISE NOTED.	
5. NEW MECHANICAL EQUIPMENT, DUCTWORK AND PIPING IS SHOWN AT APPROXIMATE LOCATIONS. FIELD MEASURE FINAL DUCTWORK AND PIPING LOCATIONS PRIOR TO FABRICATION AND SHALL MAKE ADJUSTMENTS AS REQUIRED TO FIT THE DUCTWORK AND PIPING WITHIN THE AVAILABLE SPACE. FIELD VERIFY FINAL LOCATIONS TO INSTALL EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS REGARDING SERVICE CLEARANCE AND PROPER AIRFLOW CLEARANCE AROUND EQUIPMENT.	
6. REFER TO ARCHITECTURAL DRAWINGS FOR ALL RELATED CONSTRUCTION DETAILS AS APPLICABLE TO THE HVAC SYSTEM. CHASES AND PENETRATIONS INTENDED FOR DUCTWORK AND PIPING SHALL BE VERIFIED WITH ARCHITECTURAL DRAWINGS PRIOR TO INSTALLATION.	
7. COORDINATE LOCATION OF ROOF PENETRATIONS WITH THE EXISTING CONDITIONS AND ARCHITECTURAL DRAWINGS.	
8. SEAL ALL PENETRATIONS THROUGH THE BUILDING COMPONENTS IN ACCORDANCE WITH THE CONSTRUCTION SPECIFICATIONS. FIREPROOF ALL PENETRATIONS THROUGH FIRE RATED COMPONENTS IN ACCORDANCE WITH U.L. REQUIREMENTS.	
9. COORDINATE THE EXACT MOUNTING SIZE AND FRAME TYPE OF DIFFUSERS, REGISTERS AND GRILLES WITH THE SUPPLIER TO MEET THE CEILING, WALL, AND DUCT INSTALLATION REQUIREMENTS.	
10. LOCATION OF CEILING DIFFUSERS, REGISTERS, AND GRILLES SHALL BE ADJUSTED AS REQUIRED TO ACCOMMODATE FINAL CEILING AND LIGHTING LOCATIONS.	
11. DUCTWORK CROSSING FIRE RATED WALL OR OTHER FIRE RATED ASSEMBLIES SHALL BE MINIMUM 26 GAUGE SHEET METAL.	
12. PROVIDE FIRE AND/OR FIRE/SMOKE DAMPERS IN DUCTWORK AT CEILINGS AND WALLS AS REQUIRED BY BUILDING CODE AUTHORITY HAVING JURISDICTION. FIRE AND FIRE/SMOKE DAMPERS SHALL CONFORM TO NFPA AS APPLICABLE.	
13. PROVIDE WALL AND/OR DUCT ACCESS PANELS OR DOORS FOR ACCESS TO ALL FIRE AND/OR FIRE/SMOKE DAMPERS. ACCESS PANEL OR DOOR SHALL BE MINIMUM SIZE OF 6"6" AND SHALL BE INSTALLED WITH 12" OF DAMPER. PROVIDE A REMOVABLE DUCT SECTION WHERE DUCT SIZE IS TOO SMALL FOR 6"6" ACCESS DOOR.	
14. THERMOSTATS AND HUMIDISTATS SHALL BE LOCATED AND SET BY MECHANICAL CONTRACTOR AND WIRED IN CONDUIT BY ELECTRICAL CONTRACTOR. VERIFY EXACT LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION. MOUNTING HEIGHTS SHALL BE 48" AFF TO MEET ADA REQUIREMENTS UNLESS OTHERWISE NOTED ON PLANS.	
15. COORDINATE THE LOCATION AND ELEVATION OF WALL-MOUNTED DEVICES WITH ANY WALL MOUNTED ITEMS INDICATED ON THE ARCHITECTURAL DRAWINGS. CONTRACTOR WILL NOT BE REIMBURSED FOR RELOCATION OF ANY WALL-MOUNTED DEVICES CAUSED BY A LACK OF COORDINATION.	
16. ALL BRANCH DUCT CONNECTIONS AND TAKE-OFFS TO INDIVIDUAL DIFFUSERS, REGISTERS, AND GRILLES SHALL HAVE A PREFABRICATED 45 DEGREE, HIGH EFFICIENCY, RECTANGULAR AROUND BRANCH DUCT TAKE-OFF FITTING WITH MANUAL BALANCING DAMPER AND LOCKING QUADRANT.	
17. BRANCH DUCTWORK TO AIR OUTLETS SHALL BE SAME SIZE AS OUTLET NECK SIZE UNLESS OTHERWISE NOTED.	
18. RIGID DUCTWORK INSULATION. PROVIDE R-4 MINIMUM INSULATION WRAP ON ALL CONCEALED DUCTWORK. PROVIDE R-6 MINIMUM INTERNAL DUCT LINER ON ALL EXPOSED DUCTWORK. DUCT SIZES ON MECHANICAL PLANS INDICATE CLEAR INSIDE DIMENSIONS. SHEET METAL SIZES SHALL INCREASE ACCORDINGLY. PROVIDE R-12 MINIMUM INSULATION ON ALL DUCTWORK INSTALLED IN UNCONDITIONED SPACES. REFER TO SPECIFICATIONS FOR MORE INFORMATION.	
19. FLEXIBLE DUCT WORK SHALL BE THERMAFLEX TYPE MKE, FLEXMASTER TYPE BM, OR APPROVED EQUAL. SHALL BE LISTED UNDER 181 AS CLASS 1 AIR DUCT AND SHALL BE PROVIDED WITH INTEGRAL R-4 MINIMUM FIBERGLASS INSULATION. FLEXIBLE DUCTWORK SHALL NOT EXCEED 5'-0" IN LENGTH AND SHALL BE INSTALLED AND SUPPORT TO AVOID SHARP BENDS AND SAGGING.	
20. WALL MOUNTED DIFFUSERS AND GRILLES SHALL BE PROVIDED WITH SUITABLE MOUNTING FRAME TO MATCH WALL CONSTRUCTION. COORDINATE WITH ARCHITECTURAL DRAWINGS.	

GENERAL MECHANICAL NOTES:

- REFER TO ARCHITECTURAL PLANS FOR RATED WALLS AND PARTITIONS. VERIFY FIRE AND/OR SMOKE DAMPER LOCATIONS AT DUCTS OR OPENINGS PENETRATING THESE WALLS.
- REFER TO ARCHITECTURAL PLANS FOR ROOM NAMES AND NUMBERS.
- REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF CEILING DIFFUSERS, REGISTERS, AND GRILLES.
- VERIFY LOCATIONS OF THERMOSTATS WITH ARCHITECT AND OWNER PRIOR TO INSTALLATION.
- VERIFY LOCATIONS OF EXPOSED DUCTS WITH ARCHITECT PRIOR TO INSTALLATION.
- DUCT DIMENSIONS INDICATED ON PLANS ARE FREE AREA DIMENSIONS.
- SUPPLY AND RETURN AIR DUCT SHALL BE INTERNALLY LINED WHERE SPECIFIED.
- ALL COVER SIZES ON MECHANICAL PLANS ARE GIVEN IN FREE AREA REQUIRED. REFER TO ARCHITECTURAL PLANS FOR DIMENSIONS AND LOCATIONS. 9. COORDINATE TERMINAL BOX AND BALANCING DAMPER LOCATIONS CAREFULLY TO INSURE PROPER AND ADEQUATE ACCESS TO FILTERS, MOTORS, CONTROL VALVES, CONTROL PANELS, ETC. PROVIDE ACCESS PANELS AS SPECIFIED WHERE REQUIRED TO ASSURE THIS ACCESS. 10. CEILING PLENUM SPACE IS VERY TIGHT. WHERE REQUIRED, DUCTS OR PIPES SHALL BE ROUTED BETWEEN LIGHT FIXTURES AND UP AND OVER OTHER DUCTS OR PIPES USING THE SPACES BETWEEN STRUCTURAL JOISTS OR BEAMS WHERE APPLICABLE. CONTRACTOR SHALL BE RESPONSIBLE FOR CAREFULLY COORDINATING ALL TRADES. EXISTING UNKNOWN CONDITIONS MAY AFFECT EXACT DUCT OR PIPE ROUTING, OR EXISTING CONDITIONS MAY NEED TO BE MODIFIED TO ACCOMMODATE DUCTS AND PIPES.



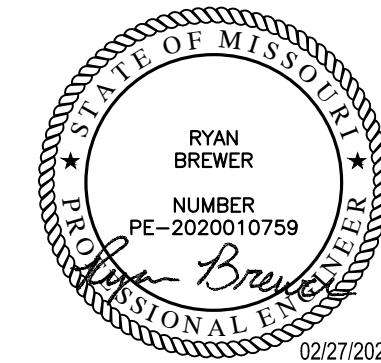
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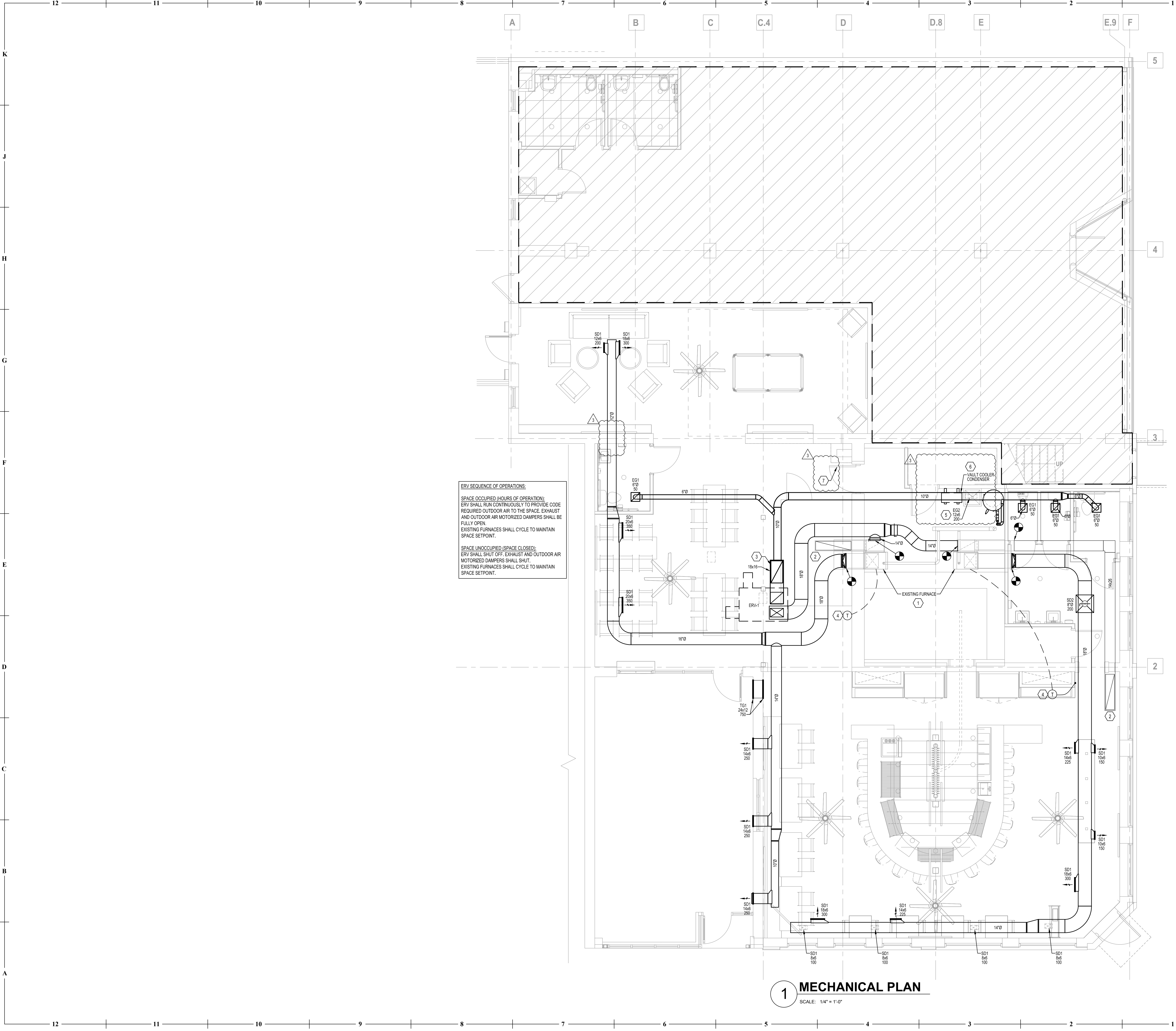


PROFESSIONAL SEAL

M101

ISSUE DATE: 27 FEB 2023
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MECHANICAL NOTES,
SYMBOLS & ABBREVIATIONS



ERV SEQUENCE OF OPERATIONS:

SPACE OCCUPIED (HOURS OF OPERATION):
ERV SHALL RUN CONTINUOUSLY TO PROVIDE CODE
REQUIRED OUTDOOR AIR TO THE SPACE. EXHAUST
AND OUTDOOR AIR MOTORIZED DAMPERS SHALL BE
FULLY OPEN.
EXISTING FURNACES SHALL CYCLE TO MAINTAIN
SPACE SETPOINT.

SPACE UNOCCUPIED (SPACE CLOSED):
ERV SHALL SHUT OFF. EXHAUST AND OUTDOOR AIR
MOTORIZED DAMPERS SHALL SHUT.
EXISTING FURNACES SHALL CYCLE TO MAINTAIN
SPACE SETPOINT.

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

GENERAL NOTES
(NOT ALL NOTES APPLY)

1. REFERENCE SHEET M101 FOR GENERAL NOTES, SYMBOLS,
AND ABBREVIATIONS.

KEYED NOTES:

- EXISTING FURNACE AND ASSOCIATED CONDENSING UNIT
ON ROOF TO REMAIN. BALANCE SUPPLY AIR TO 1950 CFM.
- PROVIDE 48"x12" OPENING IN TOP OF RETURN AIR DUCT.
COVER OPENING WITH 1/2"x1/2" GALVANIZED HARDWARE
CLOTH. MAINTAIN MINIMUM 5" UNOBSTRUCTED FREE
AREA ABOVE OPENING FOR AIRFLOW.
- PROVIDE 16"x30" OPENING IN TOP OF RETURN/EXHAUST
DUCT FOR ERV-1. MAINTAIN MINIMUM 5" UNOBSTRUCTED
FREE AREA ABOVE OPENING FOR AIRFLOW.
- PROVIDE 7-DAY PROGRAMMABLE THERMOSTAT WITH
AUTO-CHANGEOVER BETWEEN HEATING AND COOLING.
MOUNT THERMOSTAT AT 48" AFF. VERIFY FINAL
THERMOSTAT LOCATION WITH OWNER.
- MOUNT EXHAUST GRILLE ON BOTTOM OF DUCT.
- PROVIDE VAULT COOLER CONDENSER WITH WALL
BRACKETS. MAINTAIN ALL MANUFACTURER REQUIRED
CLEARANCES FOR OPERATION, SERVICE, AND AIRFLOW.
- PROVIDE LOUVERED GRILLE IN DOOR WITH MINIMUM FREE
AREA OF 0.35 FT².

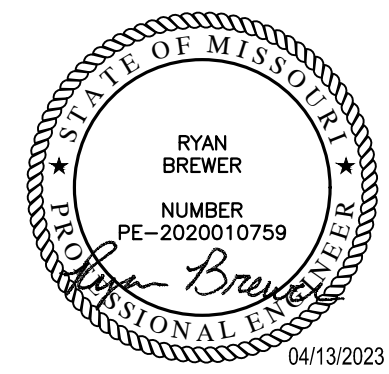


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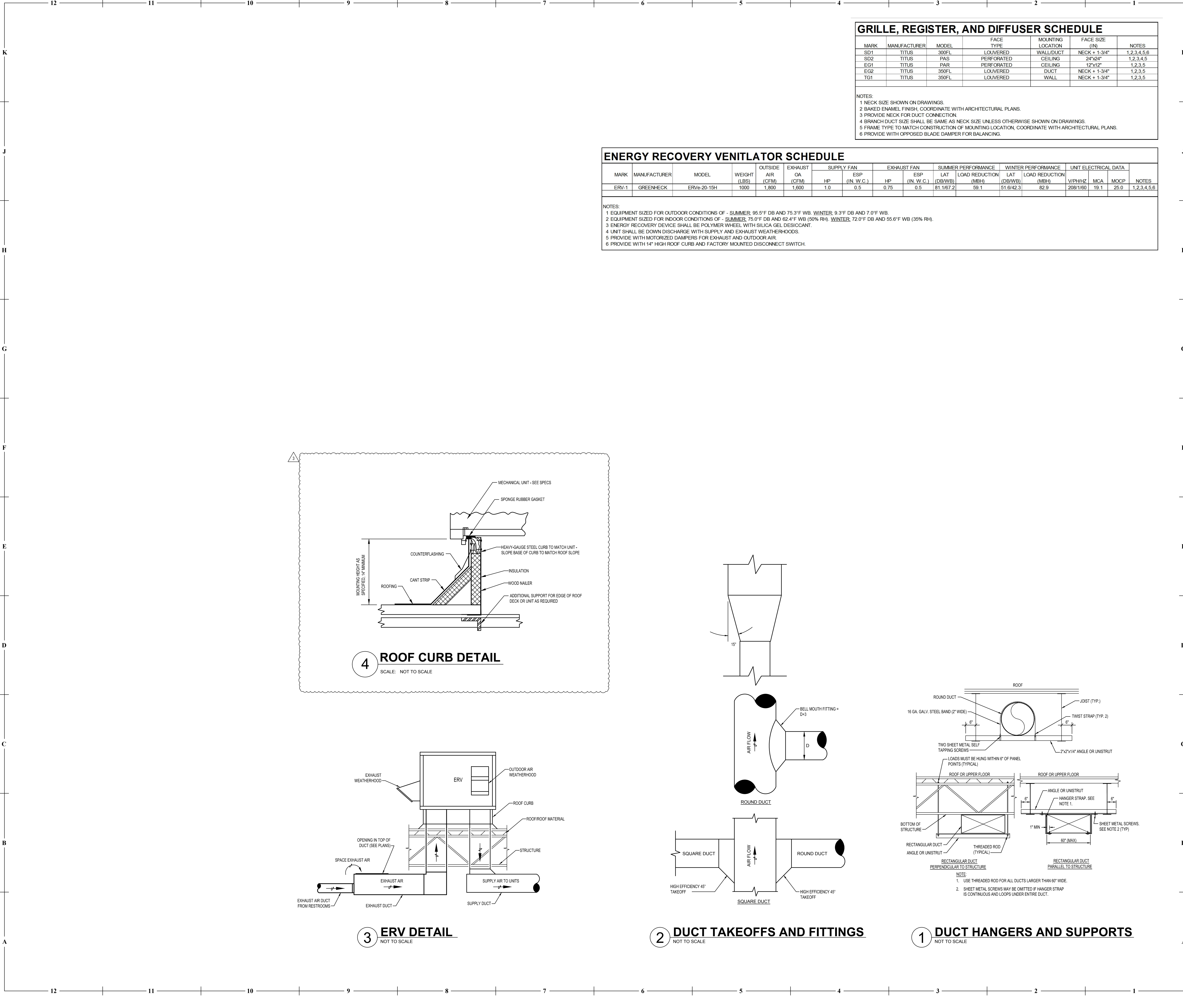
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MECHANICAL PLAN



GRILLE, REGISTER, AND DIFFUSER SCHEDULE

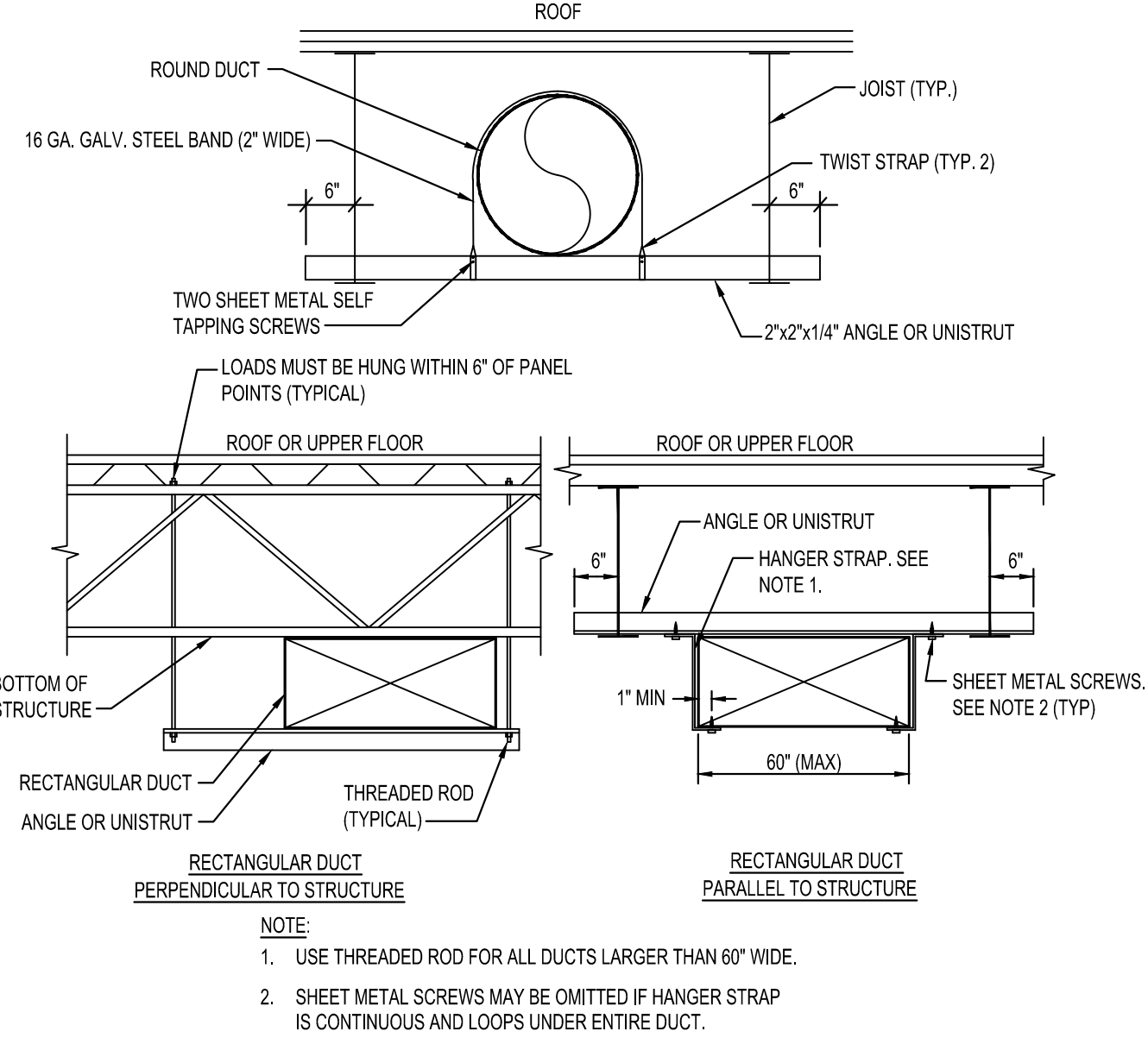
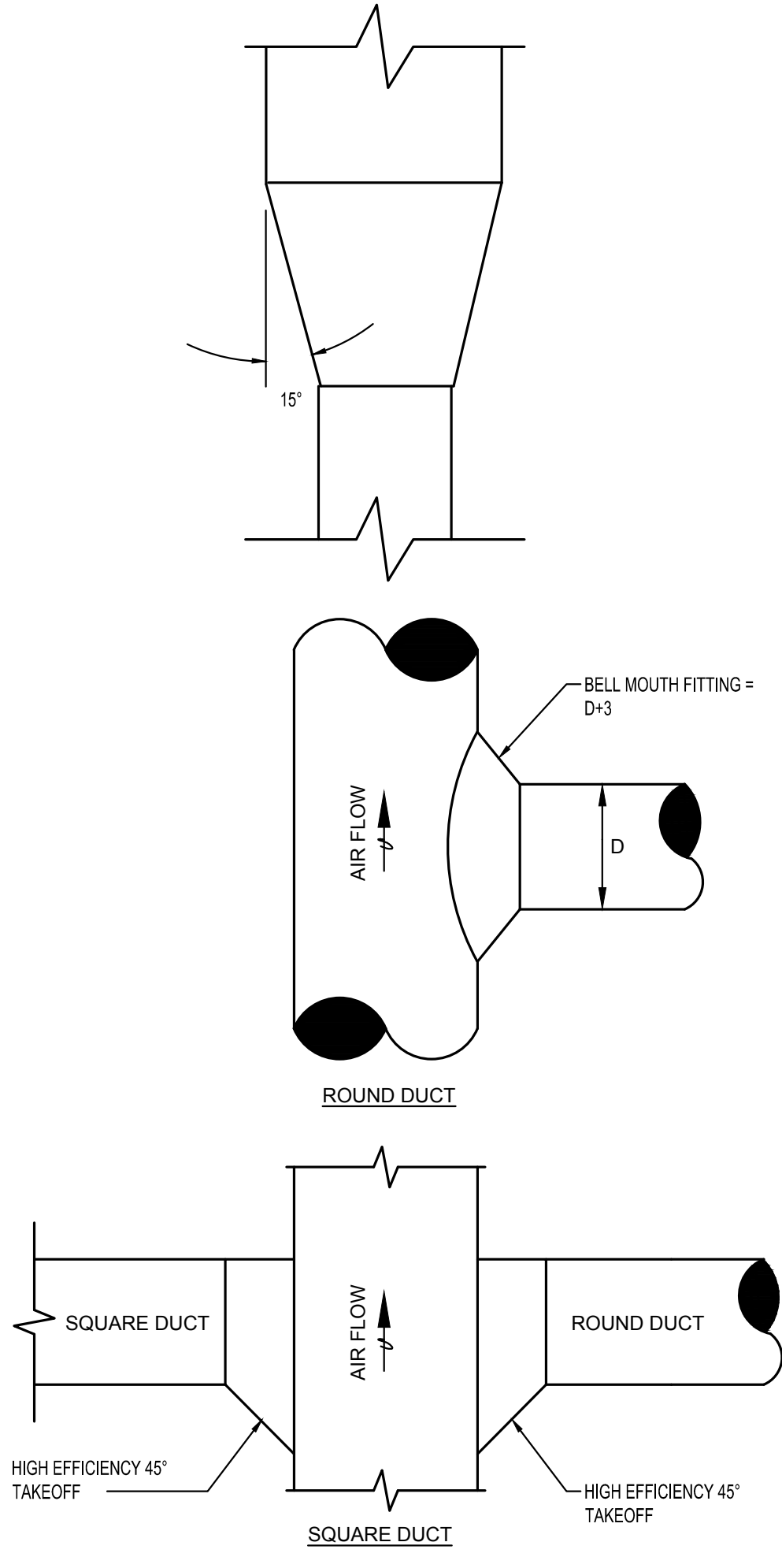
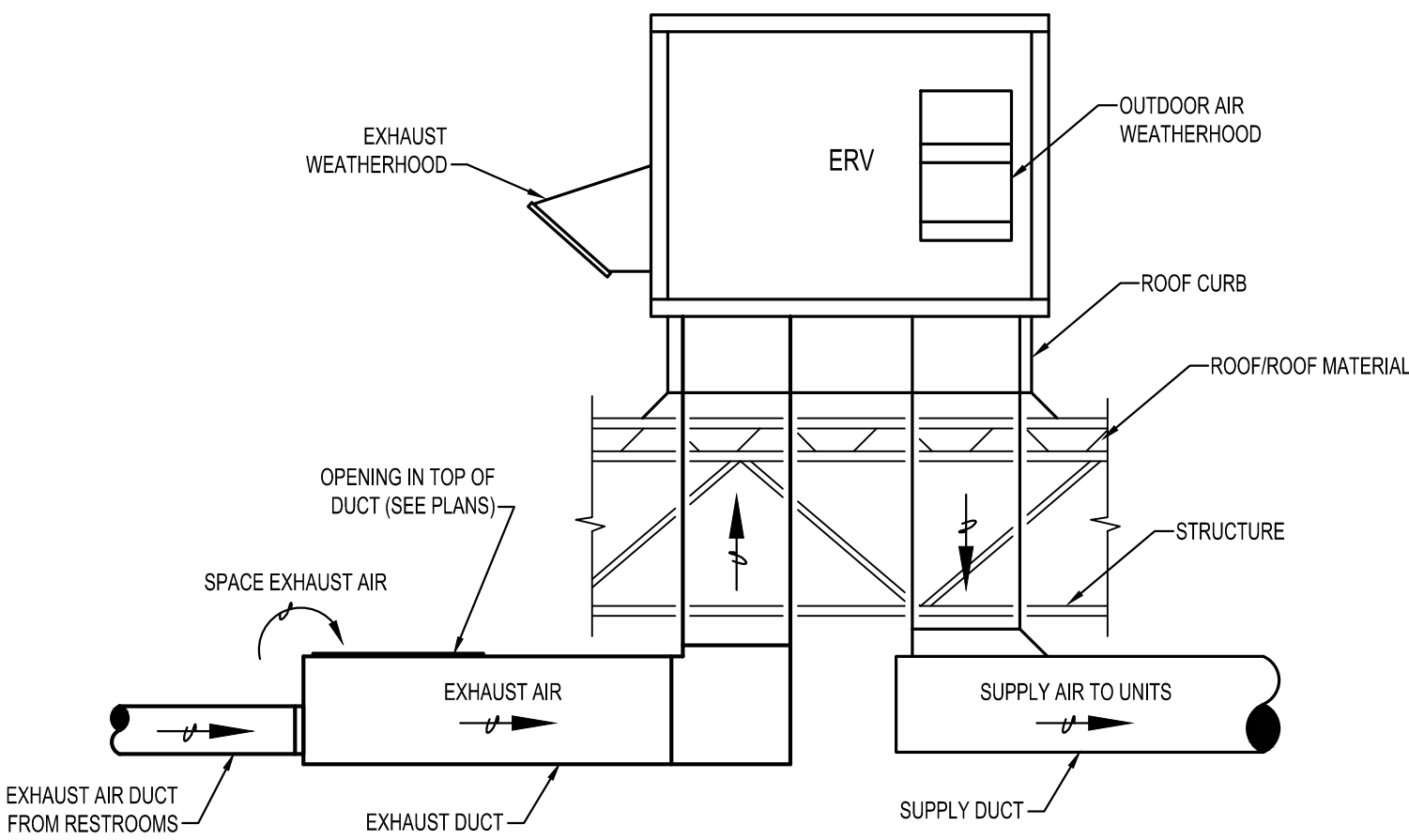
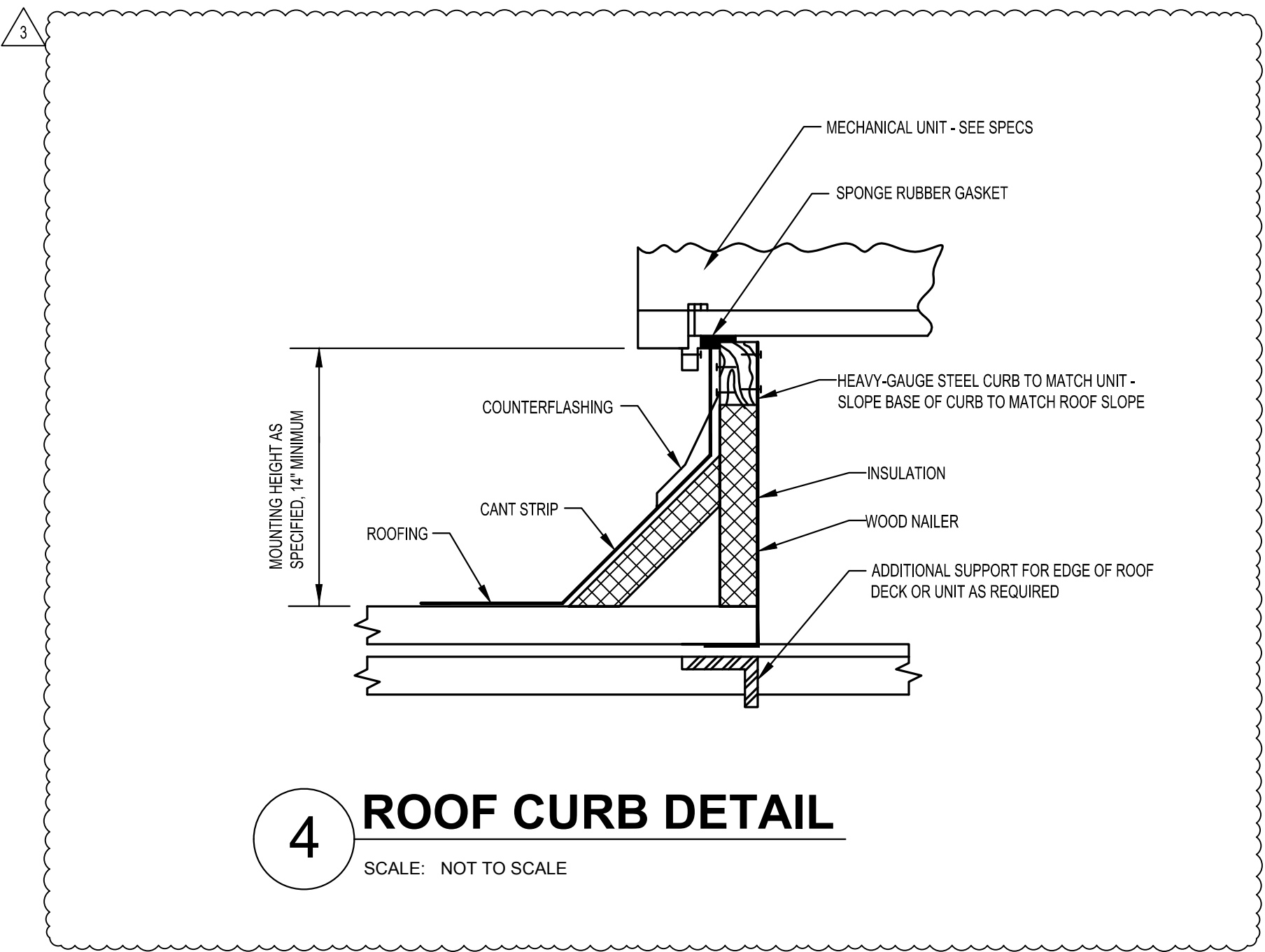
MARK	MANUFACTURER	MODEL	FACE TYPE	MOUNTING LOCATION	FACE SIZE (IN)	NOTES
SD1	TITUS	300FL	LOUVERED	WALL/DUCT	NECK + 1-3/4"	1,2,3,4,5,6
SD2	TITUS	PAS	PERFORATED	CEILING	24"x24"	1,2,3,4,5
EG1	TITUS	PAR	PERFORATED	CEILING	12"x12"	1,2,3,5
EG2	TITUS	350FL	LOUVERED	DUCT	NECK + 1-3/4"	1,2,3,5
TG1	TITUS	350FL	LOUVERED	WALL	NECK + 1-3/4"	1,2,3,5

NOTES:
1 NECK SIZE SHOWN ON DRAWINGS.
2 BAKED ENAMEL FINISH. COORDINATE WITH ARCHITECTURAL PLANS.
3 PROVIDE NECK FOR DUCT CONNECTION.
4 BRANCH DUCT SIZE SHALL BE SAME AS NECK SIZE UNLESS OTHERWISE SHOWN ON DRAWINGS.
5 FRAME TYPE TO MATCH CONSTRUCTION OF MOUNTING LOCATION, COORDINATE WITH ARCHITECTURAL PLANS.
6 PROVIDE WITH OPPOSED BLADE DAMPER FOR BALANCING.

ENERGY RECOVERY VENITLATOR SCHEDULE

MARK	MANUFACTURER	MODEL	WEIGHT (LBS)	OUTSIDE AIR (CFM)	EXHAUST OA (CFM)	SUPPLY FAN HP	ESP (IN. W.C.)	EXHAUST FAN HP	ESP (IN. W.C.)	SUMMER PERFORMANCE LAT (DB/WB)	LOAD REDUCTION (MBH)	WINTER PERFORMANCE LAT (DB/WB)	LOAD REDUCTION (MBH)	UNIT ELECTRICAL DATA V/PH/Hz	MCA	MCCP	NOTES
ERV-1	GREENHECK	ERVe-20-15H	1000	1,800	1,600	1.0	0.5	0.75	0.5	81.1/67.2	59.1	51.6/42.3	82.9	208/1/60	19.1	25.0	1,2,3,4,5,6

NOTES:
1 EQUIPMENT SIZED FOR OUTDOOR CONDITIONS OF - SUMMER: 95.5°F DB AND 75.3°F WB. WINTER: 9.3°F DB AND 7.0°F WB.
2 EQUIPMENT SIZED FOR INDOOR CONDITIONS OF - SUMMER: 75.0°F DB AND 62.4°F WB (50% RH). WINTER: 72.0°F DB AND 55.6°F WB (35% RH).
3 ENERGY RECOVERY DEVICE SHALL BE POLYMER WHEEL WITH SILICA GEL DESICCANT.
4 UNIT SHALL BE DOWN DISCHARGE WITH SUPPLY AND EXHAUST WEATHERHOODS.
5 PROVIDE WITH MOTORIZED DAMPERS FOR EXHAUST AND OUTDOOR AIR.
6 PROVIDE WITH 14" HIGH ROOF CURB AND FACTORY MOUNTED DISCONNECT SWITCH.



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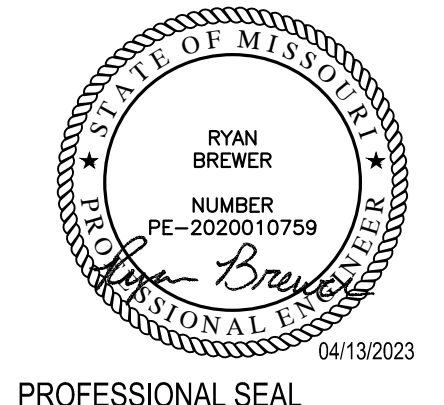
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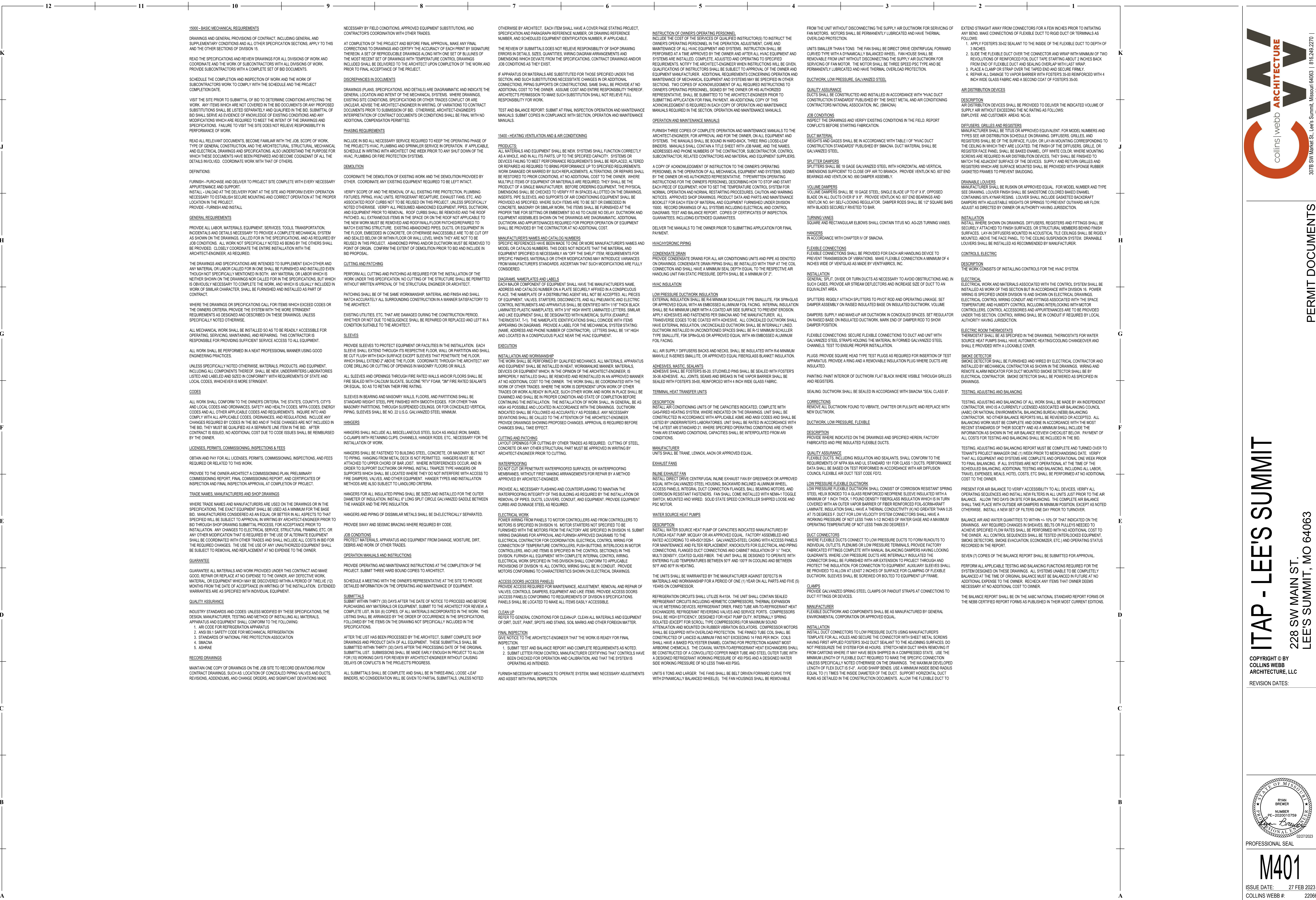
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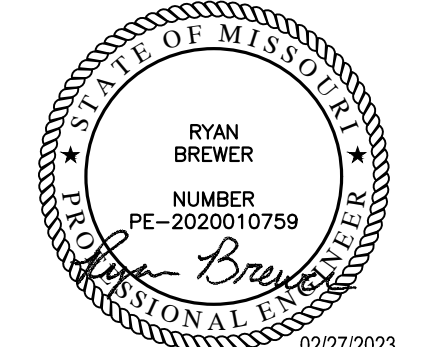
MECHANICAL
SCHEDULES AND DETAILS



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MECHANICAL
SPECIFICATIONS

15000 - BASIC MECHANICAL REQUIREMENTS

DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL, AND SUPPLEMENTARY CONDITIONS AND ALL OTHER SPECIFICATION SECTIONS, APPLY TO THIS AND THE OTHER SECTIONS OF DIVISION 15.

READ THE SPECIFICATIONS AND REVIEW DRAWINGS FOR ALL DIVISIONS OF WORK AND COORDINATE AND THE WORK OF SUBCONTRACTORS WITH ALL DIVISIONS OF WORK. PROVIDE SUBCONTRACTORS WITH A COMPLETE SET OF BID DOCUMENTS.

SCHEDULE THE COMPLETION AND INSPECTION OF WORK AND THE WORK OF SUBCONTRACTORS WORK TO COMPLY WITH THE SCHEDULE AND THE PROJECT COMPLETION DATE.

VISIT THE PROJECT PRIOR TO BID TO DETERMINE CONDITIONS AFFECTING THE WORK. ANY ITEMS WHICH ARE NOT COVERED IN THE BID DOCUMENTS OR ANY PROPOSED SUBSTITUTIONS SHALL BE LISTED SEPARATELY AND QUALIFIED IN THE BID. SUBMITTALS OF BID SHALL SERVE AS EVIDENCE OF KNOWLEDGE OF EXISTING CONDITIONS AND ANY MODIFICATIONS WHICH ARE REQUIRED TO MEET THE INTENT OF THE DRAWINGS AND SPECIFICATIONS. FAILURE TO VISIT THE SITE DOES NOT RELIEVE RESPONSIBILITY IN PERFORMANCE OF WORK.

READ ALL RELEVANT DOCUMENTS, BECOME FAMILIAR WITH THE JOB, SCOPE OF WORK, TYPE OF GENERAL CONSTRUCTION, AND THE ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL DRAWINGS AND SPECIFICATIONS. ALSO UNDERSTAND THE PURPOSE FOR WHICH THESE DOCUMENTS HAVE BEEN PREPARED AND BECOME COGNIZANT OF ALL THE DETAILS INVOLVED. COORDINATE WORK WITH THAT OF OTHERS.

DEFINITIONS:

FURNISH - PURCHASE AND DELIVER TO PROJECT SITE COMPLETE WITH EVERY NECESSARY APPURTENANCE AND SUPPORT.

INSTALL - UNLOAD AT THE DELIVERY POINT AT THE SITE AND PERFORM EVERY OPERATION NECESSARY TO ESTABLISH SECURE MOUNTING AND CORRECT ORIENTATION AT THE PROPER LOCATION IN THE PROJECT.

PROVIDE - FURNISH AND INSTALL.

GENERAL REQUIREMENTS

PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, SERVICES, TOOLS, TRANSPORTATION, INCIDENTALS AND DETAILS NECESSARY TO PROVIDE A COMPLETE MECHANICAL SYSTEM AS SHOWN ON THE DRAWINGS, CALLED FOR IN THE SPECIFICATIONS, AND AS REQUIRED BY JOB CONDITIONS. ALL WORK NOT SPECIFICALLY NOTED AS BEING BY THE OTHERS SHALL BE PROVIDED. CLOSELY COORDINATE THE ENTIRE INSTALLATION WITH THE ARCHITECT-ENGINEER, AS REQUIRED.

THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO SUPPLEMENT EACH OTHER AND ANY MATERIAL OR LABOR CALLED FOR IN ONE SHALL BE FURNISHED AND INSTALLED EVEN THOUGH NOT SPECIFICALLY MENTIONED IN BOTH. ANY MATERIAL OR LABOR WHICH IS NEITHER SHOWN ON THE DRAWINGS NOR CALLED FOR IN THE SPECIFICATIONS, BUT WHICH IS OBVIOUSLY NECESSARY TO COMPLETE THE WORK, AND WHICH IS USUALLY INCLUDED IN WORK OF SIMILAR CHARACTER, SHALL BE FURNISHED AND INSTALLED AS PART OF CONTRACT.

WHERE THE DRAWINGS OR SPECIFICATIONS CALL FOR ITEMS WHICH EXCEED CODES OR THE OTHERS CRITERIA, PROVIDE THE SYSTEM WITH THE MORE STRINGENT REQUIREMENTS AS DESIGNED AND DESCRIBED ON THESE DRAWINGS, UNLESS SPECIFICALLY NOTED OTHERWISE.

ALL MECHANICAL WORK SHALL BE INSTALLED SO AS TO BE READILY ACCESSIBLE FOR OPERATING, SERVICING, MAINTAINING, AND REPAIRING. THIS CONTRACTOR IS RESPONSIBLE FOR PROVIDING SUFFICIENT SERVICE ACCESS TO ALL EQUIPMENT.

ALL WORK SHALL BE PERFORMED IN A NEAT PROFESSIONAL MANNER USING GOOD ENGINEERING PRACTICES.

UNLESS SPECIFICALLY NOTED OTHERWISE, MATERIALS, PRODUCTS, AND EQUIPMENT, INCLUDING ALL COMPONENTS THEREOF, SHALL BE NEW, UNDEGRADED LABORATORIES LISTED AND LABELED AND SIZED IN CONFORMITY WITH REQUIREMENTS OF STATE AND LOCAL CODES, WHICHEVER IS MORE STRINGENT.

CODES

ALL WORK SHALL CONFORM TO THE OWNERS CRITERIA, THE STATE'S, COUNTY'S, CITY'S AND LOCAL CODES AND ORDINANCES, SAFETY AND HEALTH CODES, NFPA CODES, ENERGY CODES AND ALL OTHER APPLICABLE CODES AND REQUIREMENTS. INQUIRE INTO AND COMPLY WITH ALL APPLICABLE CODES, ORDINANCES, AND REGULATIONS, INCLUDING ANY CHANGES REQUIRED BY CODES IN THE BID AND IF THESE CHANGES ARE NOT INCLUDED IN THE BID, THEY MUST BE QUALIFIED AS A SEPARATE LINE ITEM IN THE BID. AFTER CONTRACT IS ISSUED, NO ADDITIONAL COST DUE TO CODE ISSUES SHALL BE REIMBURSED BY THE OWNER.

LICENSES, PERMITS, COMMISSIONING, INSPECTIONS & FEES

OBTAIN AND PAY FOR ALL LICENSES, PERMITS, COMMISSIONING, INSPECTIONS, AND FEES REQUIRED OR RELATED TO THIS WORK.

PROVIDE TO THE OWNER ARCHITECT A COMMISSIONING PLAN, PRELIMINARY COMMISSIONING REPORT, FINAL COMMISSIONING REPORT, AND CERTIFICATES OF INSTALLATION AND FINAL INSPECTION APPROVAL AT COMPLETION OF PROJECT.

TRADE NAMES, MANUFACTURERS AND SHOP DRAWINGS

WHERE TRADE NAMES AND MANUFACTURERS ARE USED ON THE DRAWINGS OR IN THE SPECIFICATIONS, THE EXACT EQUIPMENT SHALL BE USED AS A MINIMUM FOR THE BASE BID. MANUFACTURERS CONSIDERED AS AN EQUAL OR BETTER IN ALL ASPECTS TO THAT SPECIFIED WILL BE SUBJECT TO APPROVAL IN WRITING BY ARCHITECT-ENGINEER PRIOR TO BID THROUGH SHOP DRAWING SUBMITTAL PROCESS. FOR ACCEPTANCE PRIOR TO INSTALLATION, ANY CHANGES TO ELECTRICAL SERVICE, STRUCTURAL FRAMING, ETC. OR ANY OTHER MODIFICATION THAT IS REQUIRED BY THE USE OF ALTERNATE EQUIPMENT SHALL BE COORDINATED WITH OTHER TRADES AND SHALL INCLUDE ALL COSTS AND BID FOR THE REQUIRED CHANGES. THE USE OF THE USE OF ANY UNAUTHORIZED EQUIPMENT SHALL BE SUBJECT TO REMOVAL AND REPLACEMENT AT NO EXPENSE TO THE OWNER.

WARRANTY

WARRANTY ALL MATERIALS AND WORK PROVIDED UNDER THIS CONTRACT AND MAKE GOOD, REPAIR OR REPLACE AT NO EXPENSE TO THE OWNER, ANY DEFECTIVE WORK, MATERIAL, OR EQUIPMENT WHICH MAY BE DISCOVERED WITHIN A PERIOD OF TWELVE (12) MONTHS FROM THE DATE OF ACCEPTANCE (IN WRITING) OF THE INSTALLATION. EXTENDED WARRANTIES ARE AS SPECIFIED WITH INDIVIDUAL EQUIPMENT.

QUALITY ASSURANCE

INDUSTRY STANDARDS AND CODES, UNLESS MODIFIED BY THESE SPECIFICATIONS, THE DESIGN, MANUFACTURER, TESTING AND METHOD OF INSTALLING ALL MATERIALS, APPARATUS AND EQUIPMENT SHALL CONFORM TO THE FOLLOWING:

1. AIR CODE FOR REFRIGERATION APPARATUS
2. ANSI B8.1 SAFETY CODE FOR MECHANICAL REFRIGERATION
3. STANDARDS OF NATIONAL FIRE PROTECTION ASSOCIATION
4. SMACNA
5. ASHRAE

RECORD DRAWINGS

MAINTAIN ONE COPY OF DRAWINGS ON THE JOB SITE TO RECORD DEVIATIONS FROM CONTRACT DRAWINGS, SUCH AS LOCATION OF CONCEALED PIPING, VALVES AND DUCTS, REVISIONS, ADDENDUMS, AND CHANGE ORDERS, AND SIGNIFICANT DEVIATIONS MADE

NECESSARY BY FIELD CONDITIONS, APPROVED EQUIPMENT SUBSTITUTIONS, AND CONTRACTORS COORDINATION WITH OTHER TRADES.

AT COMPLETION OF THE PROJECT AND BEFORE FINAL APPROVAL, MAKE ANY FINAL CORRECTIONS TO DRAWINGS AND CERTIFY THE ACCURACY OF EACH PRINT BY SIGNATURE THEREON. A SET OF REPRODUCIBLE DRAWINGS ALONG WITH ONE SET OF BLUEPRINTS OF THE MOST RECENT SET OF DRAWINGS WITH TEMPERATURE CONTROL DRAWINGS INCLUDED SHALL BE DELIVERED TO THE ARCHITECT UPON COMPLETION OF THE WORK AND PRIOR TO FINAL ACCEPTANCE OF THE PROJECT.

DISCREPANCIES IN DOCUMENTS

DRAWINGS, PLANS, SPECIFICATIONS, AND DETAILS ARE DIAGRAMMATIC AND INDICATE THE GENERAL LOCATION AND INTENT OF THE MECHANICAL SYSTEMS. WHERE DRAWINGS, EXISTING SITE CONDITIONS, SPECIFICATIONS OR OTHER TRADES CONFLICT OR ARE UNCLEAR, ADVISE THE ARCHITECT-ENGINEER IN WRITING, OF VARIATIONS TO CONTRACT DOCUMENTS PRIOR TO SUBMISSION OF BID. OTHERWISE, ARCHITECT-ENGINEER'S INTERPRETATION OF CONTRACT DOCUMENTS OR CONDITIONS SHALL BE FINAL WITH NO ADDITIONAL COMPENSATION PERMITTED.

PHASING REQUIREMENTS

INCLUDE IN BID ALL NECESSARY SERVICE REQUIRED TO KEEP THE OPERATING PHASE OF THE PROJECT'S HVAC, PLUMBING AND SPRINKLER SERVICE IN OPERATION. IF APPLICABLE, SCHEDULE IN WRITING WITH ARCHITECT ONE WEEK PRIOR TO ANY SHUT DOWN OF THE HVAC, PLUMBING OR FIRE PROTECTION SYSTEMS.

DEMOLITION

COORDINATE THE DEMOLITION OF EXISTING WORK AND THE DEMOLITION PROVIDED BY OTHER. COORDINATE ANY EXISTING EQUIPMENT REQUIRED TO BE LEFT INTACT.

VERIFY SCOPE OF AND THE REMOVAL OF ALL EXISTING FIRE PROTECTION, PLUMBING FIXTURES, PIPING, HVAC UNITS, REFRIGERANT RECAPTURE, EXHAUST FANS, ETC. AND ASSOCIATED ROOF CURBS NOT TO BE REUSED ON THIS PROJECT, UNLESS SPECIFICALLY NOTED OTHERWISE. VERIFY ALL PRESUMED ABANDONED EQUIPMENT, PIPES, DUCTWORK, AND EQUIPMENT PRIOR TO REMOVAL. ROOF CURBS SHALL BE REMOVED AND THE ROOF PATCHED. ALL EXTRANEOUS ITEMS IN THE SPACE OR ON THE ROOF NOT APPLICABLE TO THE NEW WORK MUST BE REMOVED AND ROOF/FLOOR/FLOOR PATCHED/REPAIRED TO MATCH EXISTING STRUCTURE. EXISTING ABANDONED PIPES, DUCTS, OR EQUIPMENT IN THE FLOOR, EMBEDDED IN CONCRETE, OR OTHERWISE INACCESSIBLE ARE TO BE CUT OFF AND SEALED BELOW OR WITHIN FLOOR OR WALL LEVEL WHEN THEY ARE NOT TO BE REUSED IN THIS PROJECT. ABANDONED PIPING AND/OR DUCTWORK MUST BE REMOVED TO POINT OF ORIGIN. CONFIRM THE EXTENT OF DEMOLITION PRIOR TO BID AND INCLUDE IN BID PROPOSAL.

CUTTING AND PATCHING

PERFORM ALL CUTTING AND PATCHING AS REQUIRED FOR THE INSTALLATION OF THE WORK WITHOUT WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER OR ARCHITECT.

PATCHING SHALL BE OF THE SAME WORKMANSHIP, MATERIAL AND FINISH AND SHALL MATCH ACCURATELY ALL SURROUNDING CONSTRUCTION IN A MANNER SATISFACTORY TO THE ARCHITECT.

EXISTING UTILITIES, ETC. THAT ARE DAMAGED DURING THE CONSTRUCTION PERIOD, WHETHER OR NOT DUE TO NEGLIGENCE SHALL BE REPAIRED OR REPLACED AND LEFT IN A CONDITION SATISFACTORY TO THE ARCHITECT.

SLEEVES

PROVIDE SLEEVES TO PROTECT EQUIPMENT OR FACILITIES IN THE INSTALLATION. EACH SLEEVE SHALL EXTEND THROUGH ITS RESPECTIVE FLOOR, WALL OR PARTITION AND SHALL BE CUT FLUSH WITH EACH SURFACE EXCEPT SLEEVES THAT PENETRATE THE FLOOR, WHICH SHALL EXTEND 2" ABOVE THE FLOOR. COORDINATE THROUGH THE ARCHITECT ANY CORE DRILLING OR CUTTING OF OPENINGS IN MASONRY FLOORS OR WALLS.

ALL SLEEVES AND OPENINGS THROUGH FIRE RATED WALLS AND/OR FLOORS SHALL BE FIRE SEALED WITH CALCIUM SILICATE, SILICONE "RTV" FOAM, 3" FIRE RATED SEALANTS OR EQUAL, SO AS TO RETAIN THEIR FIRE RATING.

SLEEVES IN BEARING AND MASONRY WALLS, FLOORS, AND PARTITIONS SHALL BE STANDARD WEIGHT STEEL, PIPE FINISHED WITH SMOOTH EDGES. FOR OTHER THAN MASONRY PARTITIONS, SLEEVES SHALL BE REMOVED AND REINSTALLED IN AN APPROVED MANNER AT NO ADDITIONAL COST TO THE OWNER. THE WORK SHALL BE COORDINATED WITH THE WORK OF OTHER TRADES WHERE THE WORK IS DEPENDENT UPON WORK OF OTHER TRADES OR WORK ALREADY IN PLACE. SUCH OTHER WORK AND WORK IN PLACE SHALL BE EXAMINED AND SHALL BE IN PROPER CONDITION AND STATE OF COMPLETION BEFORE CONTINUING THE INSTALLATION. THE INSTALLATION OF WORK IN GENERAL, BE AS INDICATED BY THE DRAWINGS, AND COORDINATED WITH THE ARCHITECT-ENGINEER. INDICATED SHALL BE FOLLOWED AS ACCURATELY AS POSSIBLE, ANY NECESSARY DEVIATIONS SHALL BE CALLED TO THE ATTENTION OF THE ARCHITECT-ENGINEER. PROVIDE DRAWINGS SHOWING PROPOSED CHANGES. APPROVAL IS REQUIRED BEFORE CHANGES SHALL TAKE EFFECT.

CUTTING AND PATCHING

LAYOUT OPENINGS FOR CUTTING BY OTHER TRADES AS REQUIRED. CUTTING OF STEEL, CONCRETE OR ANY OTHER STRUCTURAL PART MUST BE APPROVED IN WRITING BY ARCHITECT-ENGINEER PRIOR TO CUTTING.

WATERPROOFING

DO NOT CUT OR PENETRATE WATERPROOFED SURFACES, OR WATERPROOFING MEMBRANES, WITHOUT FIRST MAKING ARRANGEMENTS FOR REPAIR BY A METHOD APPROVED BY ARCHITECT-ENGINEER.

PROVIDE ALL NECESSARY FLASHING AND COUNTERFLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THIS BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF PIPES, DUCTS, LOUVERS, CONDUIT, AND EQUIPMENT. PROVIDE EQUIPMENT CURBS AND DAMAGE STEEL AS REQUIRED.

ELECTRICAL WORK

POWER WIRING FROM PANELS TO MOTOR CONTROLLERS AND FROM CONTROLLERS TO MOTORS IS SPECIFIED IN DIVISION 16. MOTOR STARTERS NOT SPECIFIED TO BE FURNISHED WITH THE MOTORS FROM THE FACTORY ARE SPECIFIED IN DIVISION 16. SUBMIT WIRING DIAGRAMS FOR APPROVAL, AND FURNISH APPROVED DIAGRAMS TO THE ELECTRICAL CONTRACTOR FOR COORDINATION. ELECTRICAL CONTROL WIRING FOR CONNECTION OF TEMPERATURE CONTROLLERS, PUSH BUTTONS, INTERLOCKS IN MOTOR CONTROLLERS, AND LIKE ITEMS IS SPECIFIED IN THE CONTROL SECTIONS IN THIS DIVISION. FURNISH ALL EQUIPMENT WITH COMPLETE INTERNAL CONTROL WIRING. ELECTRICAL WORK SPECIFIED IN THIS DIVISION SHALL CONFORM TO APPLICABLE PROVISIONS OF DIVISION 16. ALL CONTROL WIRING SHALL BE IN CONDUIT. PROVIDE MOTORS CONFORMING TO CHARACTERISTICS SHOWN ON ELECTRICAL DRAWINGS.

JOB CONDITIONS

PROTECT MATERIALS, APPARATUS AND EQUIPMENT FROM DAMAGE, MOISTURE, DIRT, DEBRIS AND WORK OF OTHER TRADES.

OPERATION MANUALS AND INSTRUCTIONS

PROVIDE OPERATING AND MAINTENANCE INSTRUCTIONS AT THE COMPLETION OF THE PROJECT. SUBMIT THREE HARD BOUND COPIES TO ARCHITECT.

SCHEDULE A MEETING WITH THE OWNERS REPRESENTATIVE AT THE SITE TO PROVIDE DETAILED INFORMATION ON THE OPERATING AND MAINTENANCE OF EQUIPMENT.

SUBMITTALS

SUBMIT WITHIN THIRTY (30) DAYS AFTER THE DATE OF NOTICE TO PROCEED AND BEFORE PURCHASING ANY MATERIALS OR EQUIPMENT. SUBMIT TO THE ARCHITECT FOR REVIEW, A COMPLETE LIST, IN SIX (6) COPIES, OF ALL MATERIALS INCORPORATED IN THE WORK. THIS LISTING SHALL BE ARRANGED BY THE ORDER OF OCCURRENCE IN THE SPECIFICATIONS, FOLLOWED BY THE ITEMS ON THE DRAWING NOT SPECIFICALLY INCLUDED IN THE SPECIFICATIONS.

AFTER THE LIST HAS BEEN PROCESSED BY THE ARCHITECT, SUBMIT COMPLETE SHOP DRAWINGS AND PRODUCT DATA OF THE MATERIALS. THESE SUBMITTALS SHALL BE SUBMITTED WITHIN THIRTY (30) DAYS AFTER THE PROCESSING DATE OF THE ORIGINAL SUBMITTAL LIST. SUBMISSIONS SHALL BE MADE EARLY ENOUGH IN PROJECT TO ALLOW FOR (10) WORKING DAYS FOR REVIEW BY ARCHITECT-ENGINEER WITHOUT CAUSING DELAYS OR CONFLICTS IN THE PROJECT'S PROGRESS.

ALL SUBMITTALS SHALL BE COMPLETE AND SHALL BE IN THREERING, LOOSE-LEAF BINDERS. NO CONSIDERATION WILL BE GIVEN TO PARTIAL SUBMITTALS, UNLESS NOTED

OTHERWISE BY ARCHITECT. EACH ITEM SHALL HAVE A COVER PAGE STATING PROJECT, SPECIFICATION AND PARAGRAPH REFERENCE NUMBER, OR DRAWING REFERENCE NUMBER, AND SCHEDULED EQUIPMENT IDENTIFICATION NUMBER, IF APPLICABLE.

THE REVIEW OF SUBMITTALS DOES NOT RELIEVE RESPONSIBILITY OF SHOP DRAWING ERRORS IN DETAILS, SIZES, QUANTITIES, WIRING DIAGRAM ARRANGEMENTS AND DIMENSIONS WHICH DEVIATE FROM THE SPECIFICATIONS, CONTRACT DRAWINGS AND/OR JOB CONDITIONS AS THEY EXIST.

IF APPARATUS OR MATERIALS ARE SUBSTITUTED FOR THOSE SPECIFIED UNDER THIS SECTION, AND SUCH SUBSTITUTIONS NECESSITATE CHANGES IN OR ADDITIONAL CONNECTIONS, PIPING SUPPORTS OR CONSTRUCTIONS, SAME SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER. ASSURE COST AND ENTIRE RESPONSIBILITY THEREOF, ARCHITECT'S PERMISSION TO MAKE SUCH SUBSTITUTION SHALL NOT RELIEVE FULL RESPONSIBILITY FOR WORK.

TEST AND BALANCE REPORT: SUBMIT AT FINAL INSPECTION OPERATION AND MAINTENANCE MANUALS. SUBMIT COPIES IN COMPLIANCE WITH SECTION, OPERATION AND MAINTENANCE MANUALS.

15400 - HEATING VENTILATION AND AIR CONDITIONING

PRODUCTS

ALL MATERIALS AND EQUIPMENT SHALL BE NEW. SYSTEMS SHALL FUNCTION CORRECTLY AS A WHOLE, AND IN ALL ITS PARTS, UP TO THE SPECIFIED CAPACITY. SYSTEMS OR DEVICES FAILING TO MEET PERFORMANCE REQUIREMENTS SHALL BE REPLACED, ALTERED OR REPAIRED AS REQUIRED TO BRING PERFORMANCE UP TO SPECIFIED REQUIREMENTS. WORK DAMAGED OR HARMED BY SUCH REPAIRS, ALTERATIONS, OR REPAIRS SHALL BE RESTORED TO PRIOR CONDITIONS, AT NO ADDITIONAL COST TO THE OWNER. WHERE MULTIPLE ITEMS OF EQUIPMENT OR MATERIALS ARE REQUIRED, THEY SHALL BE THE PRODUCT OF A SINGLE MANUFACTURER. BEFORE ORDERING EQUIPMENT, THE PHYSICAL DIMENSIONS SHALL BE CHECKED TO VERIFY FIT IN SPACES ALLOTTED ON THE DRAWINGS. INSERTS, PIPE SLEEVES, AND SUPPORTS OF AIR CONDITIONING EQUIPMENT SHALL BE PROVIDED AS SPECIFIED. WHERE SUCH ITEMS ARE TO BE SET OR EMBEDDED IN CONCRETE, MASONRY OR SIMILAR WORK, THE ITEMS SHALL BE FINISHED AT THE PROPER TIME FOR SETTING OR EMBEDMENT SO AS TO CAUSE NO DELAY. DUCTWORK AND EQUIPMENT ASSEMBLIES SHOWN ON THE DRAWINGS ARE DIAGRAMMATIC. ADDITIONAL DUCTWORK AND APPURTENANCES REQUIRED FOR PROPER OPERATION OF EQUIPMENT SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST.

MANUFACTURER'S NAMES AND CATALOG NUMBERS

SPECIFIC REFERENCES HAVE BEEN MADE TO ONE OR MORE MANUFACTURER'S NAMES AND MODEL OR CATALOG NUMBERS. THIS DOES NOT INDICATE THAT THE MATERIAL AND EQUIPMENT SPECIFIED IS NECESSARILY AN "OFF THE SHELF" ITEM. REQUIREMENTS FOR SPECIFIC FINISHES, MATERIALS OR OTHER MODIFICATIONS ANY INTRODUCE VARIANCES FROM MANUFACTURER'S STANDARDS. ASCERTAIN THAT SUCH MODIFICATIONS ARE FULLY COMPLETED.

DIAGRAMS, NAMEPLATES AND LABELS

EACH MAJOR COMPONENT OF EQUIPMENT SHALL HAVE THE MANUFACTURER'S NAME, ADDRESS AND CATALOG NUMBER OR A PLATE NEARBY AFFIXED IN A CONSPICUOUS PLACE. THE NAMEPLATE OF A DISTRIBUTING AGENT WILL NOT BE ACCEPTED. ALL PIECES OF EQUIPMENT, VALVES, STARTERS, DISCONNECTS, AND ALL PNEUMATIC AND ELECTRIC CONTROL INSTRUMENTS AND APPARATUS SHALL BE IDENTIFIED WITH 1/2" THICK BLACK LAMINATED PLASTIC NAMEPLATES, WITH 1/8" HIGH WHITE LAMINATED LETTERS. SIMILAR AND LIKE EQUIPMENT SHALL BE DESIGNATED WITH NUMERICAL SUFFIX (EXAMPLE, THERMOSTAT, T-1). THE NAMEPLATE IDENTIFICATIONS SHALL COINCIDE WITH ITEMS HAVE EXTERNAL INSULATION. UNCONCEALED DUCTWORK SHALL BE INTERNALLY LINED (NAME, ADDRESS AND PHONE NUMBER OF CONTRACTOR). LETTERS SHALL BE 1/4" HIGH AND LOCATED IN A CONSPICUOUS PLACE NEAR THE HVAC EQUIPMENT.

EXECUTION

INSTALLATION AND WORKMANSHIP

THE WORK SHALL BE PERFORMED BY QUALIFIED MECHANICS. ALL MATERIALS, APPARATUS AND EQUIPMENT SHALL BE INSTALLED IN NEAT, WORKMANLIKE MANNER. MATERIALS, DEVICES OR EQUIPMENT WHICH, IN THE OPINION OF THE ARCHITECT-ENGINEER, IS IMPROPERLY INSTALLED SHALL BE REMOVED AND REINSTALLED IN AN APPROVED MANNER AT NO ADDITIONAL COST TO THE OWNER. THE WORK SHALL BE COORDINATED WITH THE WORK OF OTHER TRADES WHERE THE WORK IS DEPENDENT UPON WORK OF OTHER TRADES OR WORK ALREADY IN PLACE. SUCH OTHER WORK AND WORK IN PLACE SHALL BE EXAMINED AND SHALL BE IN PROPER CONDITION AND STATE OF COMPLETION BEFORE CONTINUING THE INSTALLATION. THE INSTALLATION OF WORK IN GENERAL, BE AS INDICATED BY THE DRAWINGS, AND COORDINATED WITH THE ARCHITECT-ENGINEER. INDICATED SHALL BE FOLLOWED AS ACCURATELY AS POSSIBLE, ANY NECESSARY DEVIATIONS SHALL BE CALLED TO THE ATTENTION OF THE ARCHITECT-ENGINEER. PROVIDE DRAWINGS SHOWING PROPOSED CHANGES. APPROVAL IS REQUIRED BEFORE CHANGES SHALL TAKE EFFECT.

CUTTING AND PATCHING

LAYOUT OPENINGS FOR CUTTING BY OTHER TRADES AS REQUIRED. CUTTING OF STEEL, CONCRETE OR ANY OTHER STRUCTURAL PART MUST BE APPROVED IN WRITING BY ARCHITECT-ENGINEER PRIOR TO CUTTING.

WATERPROOFING

DO NOT CUT OR PENETRATE WATERPROOFED SURFACES, OR WATERPROOFING MEMBRANES, WITHOUT FIRST MAKING ARRANGEMENTS FOR REPAIR BY A METHOD APPROVED BY ARCHITECT-ENGINEER.

PROVIDE ALL NECESSARY FLASHING AND COUNTERFLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THIS BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF PIPES, DUCTS, LOUVERS, CONDUIT, AND EQUIPMENT. PROVIDE EQUIPMENT CURBS AND DAMAGE STEEL AS REQUIRED.

ELECTRICAL WORK

POWER WIRING FROM PANELS TO MOTOR CONTROLLERS AND FROM CONTROLLERS TO MOTORS IS SPECIFIED IN DIVISION 16. MOTOR STARTERS NOT SPECIFIED TO BE FURNISHED WITH THE MOTORS FROM THE FACTORY ARE SPECIFIED IN DIVISION 16. SUBMIT WIRING DIAGRAMS FOR APPROVAL, AND FURNISH APPROVED DIAGRAMS TO THE ELECTRICAL CONTRACTOR FOR COORDINATION. ELECTRICAL CONTROL WIRING FOR CONNECTION OF TEMPERATURE CONTROLLERS, PUSH BUTTONS, INTERLOCKS IN MOTOR CONTROLLERS, AND LIKE ITEMS IS SPECIFIED IN THE CONTROL SECTIONS IN THIS DIVISION. FURNISH ALL EQUIPMENT WITH COMPLETE INTERNAL CONTROL WIRING. ELECTRICAL WORK SPECIFIED IN THIS DIVISION SHALL CONFORM TO APPLICABLE PROVISIONS OF DIVISION 16. ALL CONTROL WIRING SHALL BE IN CONDUIT. PROVIDE MOTORS CONFORMING TO CHARACTERISTICS SHOWN ON ELECTRICAL DRAWINGS.

ACCESS DOORS (ACCESS PANELS)

PROVIDE ACCESS REQUIRED FOR MAINTENANCE, ADJUSTMENT, REMOVAL AND REPAIR OF VALVES, CONTROLS, DAMPERS, EQUIPMENT AND LIKE ITEMS. PROVIDE ACCESS DOORS (ACCESS PANELS) CONFORMING TO REQUIREMENTS OF DIVISION 8 SPECIFICATIONS.

CLEAN UP

REFER TO GENERAL CONDITIONS FOR CLEAN-UP. CLEAN ALL MATERIALS AND EQUIPMENT OF DIRT, DUST, PAINT, SPOTS AND STAINS, SOIL MARKS AND OTHER FOREIGN MATTER.

FINAL INSPECTION

GIVE NOTICE TO THE ARCHITECT-ENGINEER THAT THE WORK IS READY FOR FINAL INSPECTION.

1. SUBMIT TEST AND BALANCE REPORT AND COMPLETE REQUIREMENTS AS NOTED.

2. SUBMIT LETTER FROM CONTROL MANUFACTURER CERTIFYING THAT CONTROLS HAVE BEEN CHECKED FOR OPERATION AND CALIBRATION, AND THAT THE SYSTEM IS OPERATING AS INTENDED.

FURNISH NECESSARY MECHANICS TO OPERATE SYSTEM, MAKE NECESSARY ADJUSTMENTS AND ASSIST WITH FINAL INSPECTION.

INSTRUCTION OF OWNER'S OPERATING PERSONNEL

INCLUDE THE COST OF THE SERVICES OF QUALIFIED INSTRUCTORS TO INSTRUCT THE OWNER'S OPERATING PERSONNEL IN THE OPERATION, ADJUSTMENT, CARE AND MAINTENANCE OF ALL HVAC EQUIPMENT AND SYSTEMS. INSTRUCTION SHALL BE PERFORMED AT A TIME APPROVED BY THE OWNER AND AFTER ALL HVAC EQUIPMENT AND SYSTEMS ARE INSTALLED, COMPLETE, ADJUSTED AND OPERATING TO SPECIFIED REQUIREMENTS. NOTIFY THE ARCHITECT-ENGINEER WHEN INSTRUCTIONS WILL BE GIVEN. QUALIFICATIONS OF INSTRUCTORS SHALL BE SUBJECT TO APPROVAL OF THE OWNER AND EQUIPMENT MANUFACTURER. ADDITIONAL REQUIREMENTS CONCERNING OPERATION AND MAINTENANCE OF MECHANICAL EQUIPMENT AND SYSTEMS MAY BE SPECIFIED IN OTHER SECTIONS. TWO COPIES OF ACKNOWLEDGEMENT OF ALL REQUIRED INSTRUCTIONS TO OWNER'S OPERATING PERSONNEL, SIGNED BY THE OWNER OR HIS AUTHORIZED REPRESENTATIVE, SHALL BE SUBMITTED TO THE ARCHITECT-ENGINEER PRIOR TO SUBMITTING APPLICATION FOR FINAL PAYMENT. AN ADDITIONAL COPY OF THIS ACKNOWLEDGEMENT IS REQUIRED IN EACH COPY OF OPERATION AND MAINTENANCE MANUALS REQUIRED IN THE SECTION, OPERATION AND MAINTENANCE MANUALS.

OPERATION AND MAINTENANCE MANUALS

FURNISH THREE COPIES OF COMPLETE OPERATION AND MAINTENANCE MANUALS TO THE ARCHITECT-ENGINEER, FOR APPROVAL AND FOR THE OWNER, ON ALL EQUIPMENT AND SYSTEMS. THE MANUALS SHALL BE BOUND IN HARD-BACK, THREE RING LOOSE-LEAF BINDERS. MANUALS SHALL CONTAIN A TITLE SHEET WITH JOB NAME, AND THE NAMES, ADDRESSES AND PHONE NUMBERS OF THE CONTRACTOR, SUBCONTRACTOR, CONTROL SUBCONTRACTOR, RELATED CONTRACTORS AND MATERIAL AND EQUIPMENT SUPPLIERS.

A COPY OF ACKNOWLEDGEMENT OF INSTRUCTION TO THE OWNER'S OPERATING PERSONNEL, IN THE OPERATION OF ALL MECHANICAL EQUIPMENT AND SYSTEMS, SIGNED BY THE OWNER OR HIS AUTHORIZED REPRESENTATIVE, TYPEWRITTEN OPERATING INSTRUCTIONS FOR THE OWNER'S PERSONNEL DESCRIBING HOW TO STOP AND START EACH PIECE OF EQUIPMENT; HOW TO SET THE TEMPERATURE CONTROL SYSTEM FOR NORMAL OPERATION AND NORMAL RESTARTING PROCEDURES; CAUTION AND WARNING NOTICES; APPROVED SHOP DRAWINGS, PRODUCT DATA AND PARTS AND MAINTENANCE BOOKLET FOR EACH ITEM OF MATERIAL, AND EQUIPMENT FURNISHED UNDER DIVISION 15000. RECORD DRAWINGS OF ALL SYSTEMS INCLUDING ELECTRICAL AND CONTROL DIAGRAMS, TEST AND BALANCE REPORT, COPIES OF CERTIFICATES OF INSPECTION, GUARANTEES, INCLUDING EXTENDED GUARANTEES.

DELIVER THE MANUALS TO THE OWNER PRIOR TO SUBMITTING APPLICATION FOR FINAL PAYMENT.

HYDRAULIC PIPING

CONDENSATE DRAIN

PROVIDE CONDENSATE DRAINS FOR ALL AIR CONDITIONING UNITS AND PIPE AS DENOTED ON DRAWINGS. CONDENSATE DRAIN PIPING SHALL BE INSTALLED WITH TRAP AT THE COIL CONNECTION AND SHALL HAVE A MINIMUM SEAL DEPTH EQUAL TO THE RESPECTIVE AIR HANDLING UNIT FAN STATIC PRESSURE. DEPTH SHALL BE A MINIMUM OF 2".

HVAC INSULATION

LOW PRESSURE DUCTWORK INSULATION

INTERNAL INSULATION SHALL BE R-8 MINIMUM SCHULLER TYPE SMALLTITE, FSK PINK-GLAS OR APPROVED EQUAL, WITH AN EMBOSSED ALUMINUM FOIL FACINGS. INTERNAL INSULATION SHALL BE R-4 MINIMUM LINER WITH A COATED AIR SIDE SURFACE TO PREVENT FRICTION. APPLY ADHESIVES AND FASTENERS PER SMACNA AND THE MANUFACTURER. ALL TRANSVERSE EDGES TO BE COATED WITH ADHESIVE. ALL CONCEALED DUCTWORK SHALL HAVE EXTERNAL INSULATION. UNCONCEALED DUCTWORK SHALL BE INTERNALLY LINED. DUCTWORK INSTALLED IN UNCONDITIONED SPACES SHALL BE R-12 MINIMUM SCHULLER TYPE SMALLTITE, FSK PINK-GLAS OR APPROVED EQUAL, WITH AN EMBOSSED ALUMINUM FOIL FACINGS.

ALL AIR SUPPLY DIFFUSERS BACKS AND NECKS, SHALL BE INSULATED WITH R-8 MINIMUM MANVILLE SERIES SMALLTITE, OR APPROVED EQUAL, FIBERGLASS BLANKET INSULATION.

ADHESIVES, MASTIC, SEALANTS

ADHESIVE SHALL BE FOSTERS 88-20, STUOWELD PINS SHALL BE SEALED WITH FOSTERS 30-50 ADHESIVE. ALL JOINTS, SEAMS AND BREAKS IN THE VAPOR BARRIER SHALL BE SEALED WITH FOSTERS 35-50, REINFORCED WITH 4 INCH WIDE GLASS FABRIC.

TERMINAL HEAT TRANSFER UNITS

DESCRIPTION

INSTALL AIR CONDITIONING UNITS OF THE CAPACITIES INDICATED. COMPLETE WITH GAS-FIRED HEATING SYSTEM, WHERE INDICATED ON THE DRAWINGS. UNIT SHALL BE CONSTRUCTED IN ACCORDANCE WITH APPLICABLE ASME AND ANSI CODES AND SHALL BE LISTED BY UNDERWRITERS LABORATORIES. UNIT SHALL BE DESIGNED IN ACCORDANCE WITH THE LATEST AIR STANDARD 21, WHERE SPECIFIED OPERATING CONDITIONS ARE OTHER THAN AIR STANDARD CONDITIONS, CAPACITIES SHALL BE INTERPOLATED FROM ARI CONDITIONS.

MANUFACTURER

UNITS SHALL BE TRADE LENOX, AOMX OR APPROVED EQUAL.

EXHAUST FANS

INLINE EXHAUST FAN

INSTALL DIRECT DRIVE CENTRIFUGAL INLINE EXHAUST FAN BY GREENHECK OR APPROVED EQUAL WITH GALVANIZED STEEL HOUSING, BACKWARD INCLINED ALUMINUM WHEEL, ACCESS PANELS, INTEGRAL DUCT CONNECTION FLANGES, BALL BEARING MOTORS, AND CORROSION RESISTANT FASTENERS. FAN SHALL COME INSTALLED WITH NEARLY TOGGLE SWITCH, MOUNTED AND WIRED. SOLID STATE SPEED CONTROLLER SHIPPED LOOSE AND PSC MOTOR.

WATER SOURCE HEAT PUMPS

DESCRIPTION

INSTALL WATER SOURCE HEAT PUMP OF CAPACITIES INDICATED MANUFACTURED BY FLORIDA HEAT PUMP, MCQUAY OR AN APPROVED EQUAL. FACTORY ASSEMBLED AND RATED ACCORDING TO AHRI 558-1-1. GALVANIZED STEEL CASING WITH ACCESS PANELS FOR MAINTENANCE AND FILTER REPLACEMENT, KNOCKOUTS FOR ELECTRICAL AND PIPING CONNECTIONS, FLANGED DUCT CONNECTIONS AND CABINET INSULATION OF 1/2" THICK, MULTI DENSITY, COATED GLASS FIBER. THE UNIT SHALL BE DESIGNED TO OPERATE WITH ENTERING FLUID TEMPERATURES BETWEEN 50° AND 100° F IN COOLING AND BETWEEN 50° AND 80° F IN HEATING.

THE UNITS SHALL BE WARRANTED BY THE MANUFACTURER AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR ON ALL PARTS AND FIVE (5) YEARS ON COMPRESSOR.

REFRIGERATION CIRCUITS SHALL UTILIZE R-410A. THE UNIT SHALL CONTAIN SEALED REFRIGERANT CIRCUITS INCLUDING HERMETIC COMPRESSORS, THERMAL EXPANSION VALVE, METERING DEVICES, REFRIGERANT DRAIN, FINED TUBE AIR TO REFRIGERANT HEAT EXCHANGERS, REFRIGERANT REVERSING VALVES AND SERVICE PORTS. COMPRESSORS SHALL BE HIGH EFFICIENCY, DESIGNED FOR HEAT PUMP DUTY. INTERNALLY SPRING ISOLATED (EXCEPT FOR SCKILL TYPE COMPRESSORS) FOR MAXIMUM SOUND ATTENUATION AND MOUNTED ON RUBBER VIBRATION ISOLATORS. COMPRESSOR MOTORS SHALL BE EQUIPPED WITH OVERLOAD PROTECTION. THE FINED TUBE COIL SHALL BE CONSTRUCTED OF LANCED ALUMINUM FINS NOT EXCEEDING 14 FINS PER INCH. COILS SHALL HAVE A BAKED POLYESTER ENAMEL COATING FOR PROTECTION AGAINST MOST AIRBORNE CHEMICALS. THE COILWATER-TO-REFRIGERANT HEAT EXCHANGERS SHALL BE CONSTRUCTED OF A CONVOLUTED COPPER INNER TUBE AND STEEL OUTER TUBE WITH A DESIGNED REFRIGERANT WORKING PRESSURE OF 450 PSIG AND A DESIGNED WATER SIDE WORKING PRESSURE OF NO LESS THAN 40 PSIG.

UNITS 5 TONS AND LARGER, THE FANS SHALL BE BELT DRIVEN FORWARD CURVE TYPE WITH DYNAMICALLY BALANCED WHEEL(S). THE FAN HOUSINGS SHALL BE REMOVABLE

FROM THE UNIT WITHOUT DISCONNECTING THE SUPPLY AIR DUCTWORK FOR SERVICING OF FAN MOTORS. MOTORS SHALL BE PERMANENTLY LUBRICATED AND HAVE THERMAL OVERLOAD PROTECTION.

UNITS SMALLER THAN 6 TONS: THE FAN SHALL BE DIRECT DRIVE CENTRIFUGAL FORWARD CURVED TYPE WITH A DYNAMICALLY BALANCED WHEEL. FAN HOUSING SHALL BE REMOVABLE FROM UNIT WITHOUT DISCONNECTING THE SUPPLY AIR DUCTWORK FOR SERVICING OF FAN MOTOR. THE MOTOR SHALL BE THREE SPEED PSC TYPE AND BE PERMANENTLY LUBRICATED AND HAVE THERMAL OVERLOAD PROTECTION.

DUCTWORK, LOW PRESSURE, GALVANIZED STEEL

QUALITY ASSURANCE

DUCTS SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH HVAC DUCT CONSTRUCTION STANDARDS PUBLISHED BY THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION, INC. (SMACNA)

JOB CONDITIONS

INSPECT THE DRAWINGS AND VERIFY EXISTING CONDITIONS IN THE FIELD. REPORT CONFLICTS BEFORE STARTING FABRICATION.

DUCT MATERIAL

WEIGHTS AND GAGES SHALL BE IN ACCORDANCE WITH TABLE OF "HVAC DUCT CONSTRUCTION STANDARDS" PUBLISHED BY SMACNA. DUCT MATERIAL SHALL BE GALVANIZED STEEL.

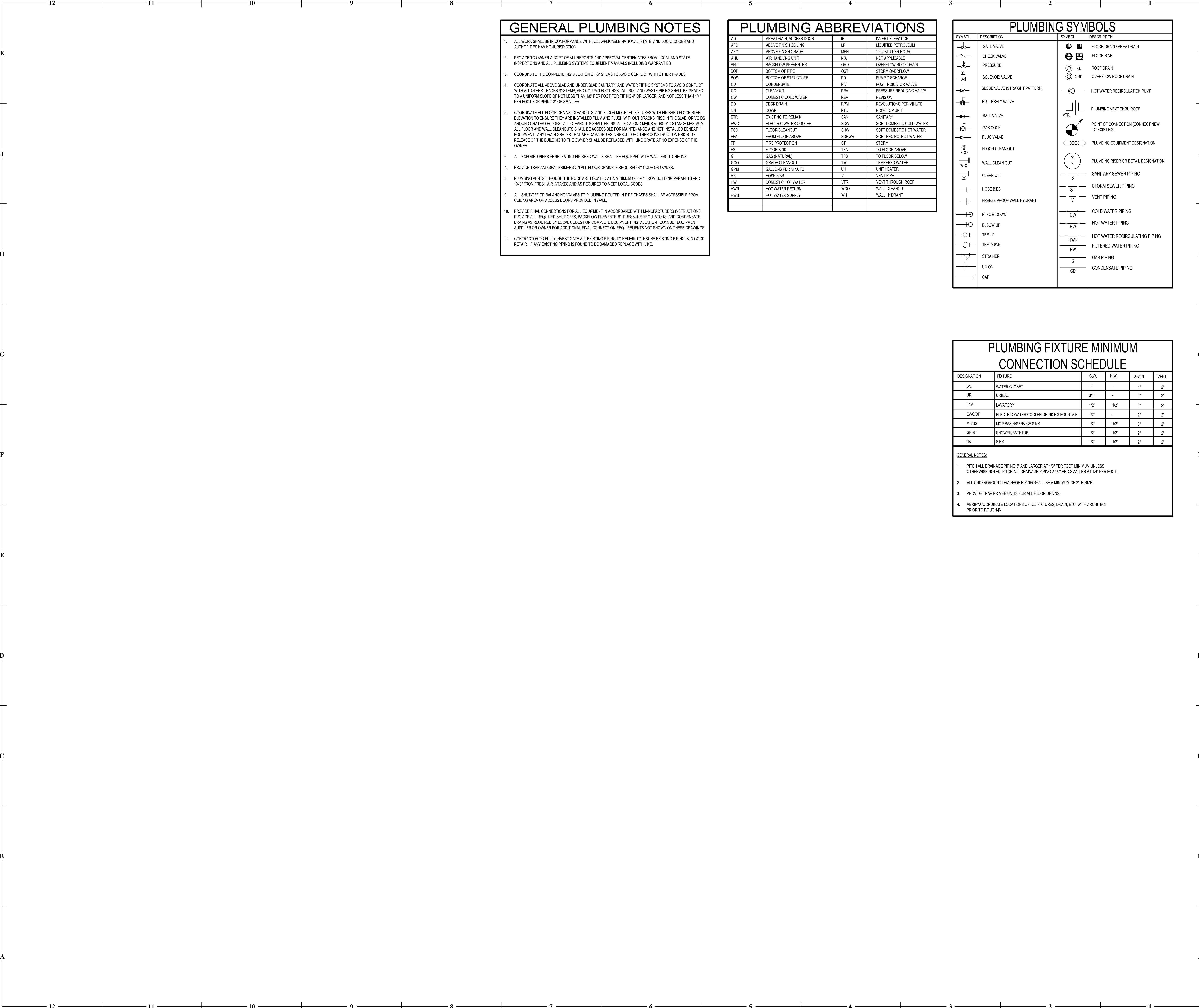
SPLITTER DAMPERS

SPLITTERS SHALL BE 18 GAGE GALVANIZED STEEL, WITH HORIZONTAL AND VERTICAL DIMENSIONS SUFFICIENT TO CLOSE OFF AIR TO BRANCH. PROVIDE VENTILON NO. 607 END BEARINGS AND VENTILON NO. 600 DAMPER ASSEMBLY.

VOLUME DAMPERS

VOLUME DAMPERS SHALL BE 18 GAGE STEEL, SINGLE BLADE UP TO 8" X 8", OPPOSED BLADE ON ALL DUCTS OVER 8" X 8". PROVIDE VENTILON NO. 607 END BEARINGS AND VENTILON NO. 641 SELF-CLOSING REGULATOR. DAMPER RODS SHALL BE 1/2" SQUARE BARS WITH BLADES SECURELY RIVETED TO BAR.

TURNING VANCES



GENERAL PLUMBING NOTES

- 1. ALL WORK SHALL BE IN CONFORMANCE WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AND AUTHORITIES HAVING JURISDICTION.
- 2. PROVIDE TO OWNER A COPY OF ALL REPORTS AND APPROVAL CERTIFICATES FROM LOCAL AND STATE INSPECTIONS AND ALL PLUMBING SYSTEMS EQUIPMENT MANUALS INCLUDING WARRANTIES.
- 3. COORDINATE THE COMPLETE INSTALLATION OF SYSTEMS TO AVOID CONFLICT WITH OTHER TRADES.
- 4. COORDINATE ALL ABOVE SLAB AND UNDER SLAB SANITARY, AND WATER PIPING SYSTEMS TO AVOID CONFLICT WITH ALL OTHER TRADES SYSTEMS, AND COLUMN FOOTINGS. ALL SOIL AND WASTE PIPING SHALL BE GRADED TO A UNIFORM SLOPE OF NOT LESS THAN 1/8" PER FOOT FOR PIPING 4" OR LARGER, AND NOT LESS THAN 1/4" PER FOOT FOR PIPING 3" OR SMALLER.
- 5. COORDINATE ALL FLOOR DRAINS, CLEANOUTS, AND FLOOR MOUNTED FIXTURES WITH FINISHED FLOOR SLAB ELEVATION TO ENSURE THEY ARE INSTALLED PLUM AND FLUSH WITHOUT CRACKS, RISE IN THE SLAB, OR VOIDS AROUND GRATES OR TOPS. ALL CLEANOUTS SHALL BE INSTALLED ALONG MAINS AT 5'-0" DISTANCE MAXIMUM. ALL FLOOR AND WALL CLEANOUTS SHALL BE ACCESSIBLE FOR MAINTENANCE AND NOT INSTALLED BENEATH EQUIPMENT. ANY DRAIN GRATES THAT ARE DAMAGED AS A RESULT OF OTHER CONSTRUCTION PRIOR TO RELEASE OF THE BUILDING TO THE OWNER SHALL BE REPLACED WITH LIKE GRATE AT NO EXPENSE OF THE OWNER.
- 6. ALL EXPOSED PIPES PENETRATING FINISHED WALLS SHALL BE EQUIPPED WITH WALL ESCUTCHEONS.
- 7. PROVIDE TRAP AND SEAL PRIMERS ON ALL FLOOR DRAINS IF REQUIRED BY CODE OR OWNER.
- 8. PLUMBING VENTS THROUGH THE ROOF ARE LOCATED AT A MINIMUM OF 5'-0" FROM BUILDING PARAPETS AND 10'-0" FROM FRESH AIR INTAKES AND AS REQUIRED TO MEET LOCAL CODES.
- 9. ALL SHUT-OFF OR BALANCING VALVES TO PLUMBING ROUTED IN PIPE CHASES SHALL BE ACCESSIBLE FROM CEILING AREA OR ACCESS DOORS PROVIDED IN WALL.
- 10. PROVIDE FINAL CONNECTIONS FOR ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS. PROVIDE ALL REQUIRED SHUT-OFFS, BACKFLOW PREVENTERS, PRESSURE REGULATORS, AND CONDENSATE DRAINS AS REQUIRED BY LOCAL CODES FOR COMPLETE EQUIPMENT INSTALLATION. CONSULT EQUIPMENT SUPPLIER OR OWNER FOR ADDITIONAL FINAL CONNECTION REQUIREMENTS NOT SHOWN ON THESE DRAWINGS.
- 11. CONTRACTOR TO FULLY INVESTIGATE ALL EXISTING PIPING TO REMAIN TO INSURE EXISTING PIPING IS IN GOOD REPAIR. IF ANY EXISTING PIPING IS FOUND TO BE DAMAGED REPLACE WITH LIKE.

PLUMBING ABBREVIATIONS

AD	AREA DRAIN, ACCESS DOOR	IE	INVERT ELEVATION
APC	ABOVE FINISH CEILING	LP	LIQUIDED PETROLEUM
AFG	ABOVE FINISH GRADE	MBH	1000 BTU PER HOUR
AHU	AIR HANDLING UNIT	NA	NOT APPLICABLE
BFP	BACKFLOW PREVENTER	ORD	OVERFLOW ROOF DRAIN
BOP	BOTTOM OF PIPE	OST	STORM OVERFLOW
BOS	BOTTOM OF STRUCTURE	PD	PUMP DISCHARGE
CD	CONDENSATE	PIV	PIST INDICATOR VALVE
CO	CLEANOUT	PRV	PRESSURE REDUCING VALVE
CW	DOMESTIC COLD WATER	REV	REVISION
DD	DECK DRAIN	RPM	REVOLUTIONS PER MINUTE
DN	DOWN	RTU	ROOF TOP UNIT
ETR	EXISTING TO REMAIN	SAN	SANITARY
EWIC	ELECTRIC WATER COOLER	SCW	SOFT DOMESTIC COLD WATER
FCD	FLOOR CLEANOUT	SHW	SOFT DOMESTIC HOT WATER
FFA	FROM FLOOR ABOVE	SDHWR	SOFT RECIRC. HOT WATER
FP	FIRE PROTECTION	ST	STORM
FS	FLOOR SINK	TFA	TO FLOOR ABOVE
GCO	GRADE CLEANOUT	TW	TEMPERED WATER
GPM	GALLONS PER MINUTE	UH	UNIT HEATER
HB	HOSE BIBB	V	VENT PIPE
HW	DOMESTIC HOT WATER	VTR	VENT THROUGH ROOF
HWR	HOT WATER RETURN	WCO	WALL CLEANOUT
HWS	HOT WATER SUPPLY	WH	WALL HYDRANT

PLUMBING SYMBOLS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	GATE VALVE		FLOOR DRAIN / AREA DRAIN
	CHECK VALVE		FLOOR SINK
	PRESSURE		ROOF DRAIN
	SOLENOID VALVE		OVERFLOW ROOF DRAIN
	GLOBE VALVE (STRAIGHT PATTERN)		HOT WATER RECIRCULATION PUMP
	BUTTERFLY VALVE		PLUMBING VENT THRU ROOF
	BALL VALVE		POINT OF CONNECTION (CONNECT NEW TO EXISTING)
	GAS COCK		PLUMBING EQUIPMENT DESIGNATION
	PLUG VALVE		PLUMBING RISER OR DETAIL DESIGNATION
	FLOOR CLEAN OUT		SANITARY SEWER PIPING
	WALL CLEAN OUT		STORM SEWER PIPING
	CLEAN OUT		VENT PIPING
	HOSE BIBB		COLD WATER PIPING
	FREEZE PROOF WALL HYDRANT		HOT WATER PIPING
	ELBOW DOWN		HOT WATER RECIRCULATING PIPING
	ELBOW UP		FILTERED WATER PIPING
	TEE UP		GAS PIPING
	TEE DOWN		CONDENSATE PIPING
	STRAINER		
	UNION		
	CAP		

PLUMBING FIXTURE MINIMUM CONNECTION SCHEDULE

DESIGNATION	FIXTURE	C.W.	H.W.	DRAIN	VENT
WC	WATER CLOSET	1"	-	4"	2"
UR	URNAL	3/4"	-	2"	2"
LAV.	LAVATORY	1/2"	1/2"	2"	2"
EWIC/DF	ELECTRIC WATER COOLER/DRINKING FOUNTAIN	1/2"	-	2"	2"
MBSS	MOP BASIN/SERVICE SINK	1/2"	1/2"	3"	2"
SHBT	SHOWER/BATH/TUB	1/2"	1/2"	2"	2"
SK	SINK	1/2"	1/2"	2"	2"

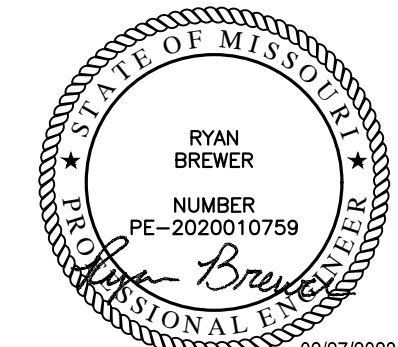
GENERAL NOTES:

- 1. PITCH ALL DRAINAGE PIPING 3" AND LARGER AT 1/8" PER FOOT MINIMUM UNLESS OTHERWISE NOTED. PITCH ALL DRAINAGE PIPING 2-1/2" AND SMALLER AT 1/4" PER FOOT.
- 2. ALL UNDERGROUND DRAINAGE PIPING SHALL BE A MINIMUM OF 2' IN SIZE.
- 3. PROVIDE TRAP PRIMER UNITS FOR ALL FLOOR DRAINS.
- 4. VERIFY/COORDINATE LOCATIONS OF ALL FIXTURES, DRAIN, ETC. WITH ARCHITECT PRIOR TO ROUGH-IN.

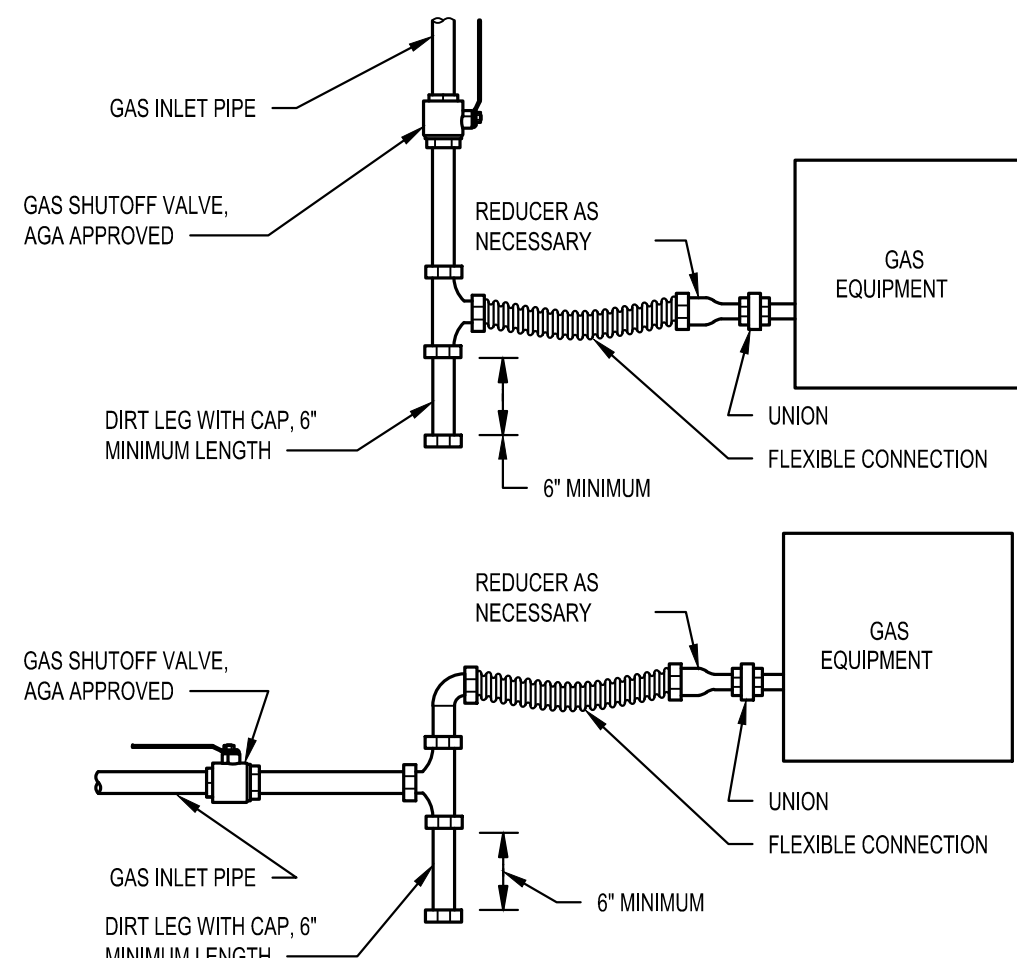


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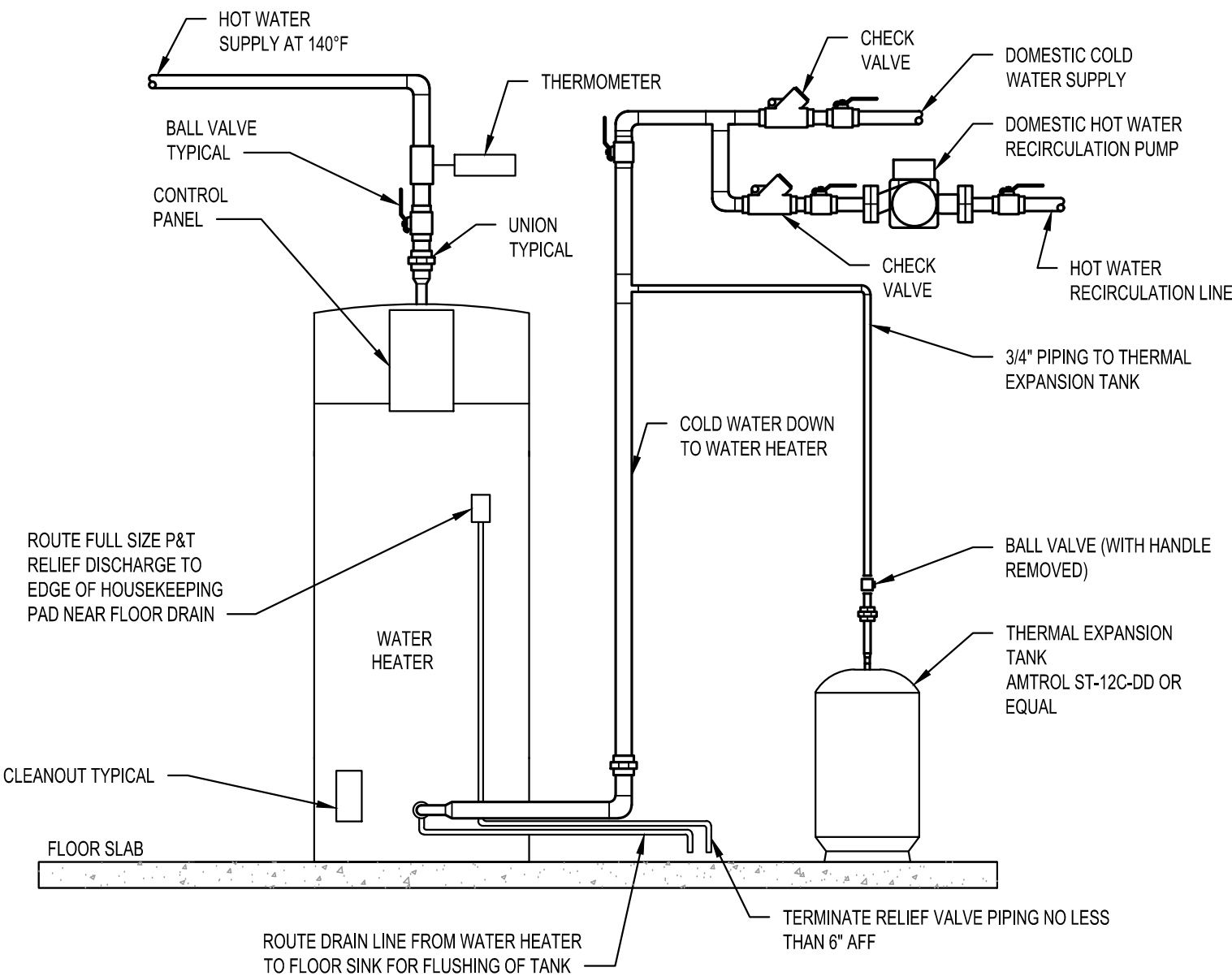
- NOTES:
1. HIGH TENSILE STRENGTH STAINLESS STEEL FLEXIBLE CONNECTION, 12\"/>

9 GAS EQUIPMENT PIPE CONNECTION

NOT TO SCALE

PLUMBING FIXTURE SCHEDULE									
TAG	MANUFACTURER	MODEL	DRAIN	VENT	COLD WATER	HOT WATER	ELECTRICAL REQUIREMENTS	DESCRIPTION	
FCO	SIoux CHIEF	834-4ANR	4"	---	---	---		FLOOR CLEANOUT ABS BODY AND NICKEL-BRONZE COVER	
FD	SIoux CHIEF	832-35ANR	2"	2"	---	---		ADJUSTABLE FLOOR DRAIN WITH GRAY ABS BODY AND ROUND NICKEL-BRONZE STRAINER AND TRAP PRIMER CONNECTION.	
FS	SIoux CHIEF	861-3PNJ2	3"	2"	---	---	---	SQUAREMAX PVC FLOOR SINK WITH 3" SCHEDULE 40 HUB CONNECTION AND HALF-OPEN NICKEL-BRONZE RING/STRAINER	
LAV	AMERICAN STANDARD	9024.001EC	2"	1-1/2"	1/2"	1/2"		WALL HUNG LAVATORY WITH SELECTRONIC BATTERY-POWERED CENTERSET SINGLE HOLE FAUCET 6055.105. PROVIDE WITH ASSE 1070 COMPLIANT MIXING VALVE AND TRUEBRO LAV GUARD PIPE WRAPS.	
RP	TACO	007-BF5	---	---	---	3/4"	115V 0.76 AMPS	IN-LINE CARTRIDGE STYLE CIRCULATOR PUMP. CAPABLE OF 10 FEET OF HEAD AT 3 GPM.	
UR	AMERICAN STANDARD	6002.001	2"	1-1/2"	3/4"	---	---	PINTBROOK URINAL 0.125 GPF WITH SELECTRONIC 6063.051.002 SENSOR OPERATED DC POWER FLUSH VALVE.	
WC1	AMERICAN STANDARD	2462.016	3"	2"	3/4"	---		1.6 GPF, FLUSH TANK WATER CLOSET PRESSURE-ASSISTED SIPHON JET. ELONGATED BOWL WITH CHURCH 9500C WHITE, SOLID PLASTIC, OPEN-FRONT SEAT.	
WC2	AMERICAN STANDARD	2467.016	3"	2"	3/4"	---		ADA-COMPLIANT, 1.6 GPF, FLUSH TANK WATER CLOSET PRESSURE-ASSISTED SIPHON JET, ELONGATED BOWL WITH CHURCH 9500C WHITE, SOLID PLASTIC, OPEN-FRONT SEAT.	
WCO	JAY R. SMITH	4531S	PER PLAN	---	---	---		CAST IRON CLEANOUT TEE AND COUNTERSUNK PLUG	
GWH	BRADFORD WHITE	EF60T-125E-3N			1"	1"	120V 15A SUPPLY	NATURAL GAS FIRED WATER HEATER 60 GALLON 145 GALLON RECOVERY AT 100 %WDF RISE. 95% EFFICIENT PROVIDE WITH AMTROL ST-12 THERMAL EXPANSION TANK.	

- NOTES:
1. MODELS IN SCHEDULE ARE A BASIS OF DESIGN CONFIRM FINAL FIXTURE MODELS WITH OWNER PRIOR TO PURCHASING.
 2. ALL LAVATORIES SHALL BE PROVIDED WITH ANTI-SCALD ASSE 1070 COMPLIANT VALVE.
 3. PROVIDE LOOSE KEY STOPS AND FLEXIBLE RISERS.
 4. ON LAVATORY INSULATE EXPOSED TAILPIECE, P-TRAP, AND WATER RISERS WITH TRU-BRO INSULATION KIT.
 5. PROVIDE FLUSH VALVE HANDLE ON WIDE SIDE OF ROOM.
 6. PROVIDE HANDLE STOPS AND FLEXIBLE RISERS.

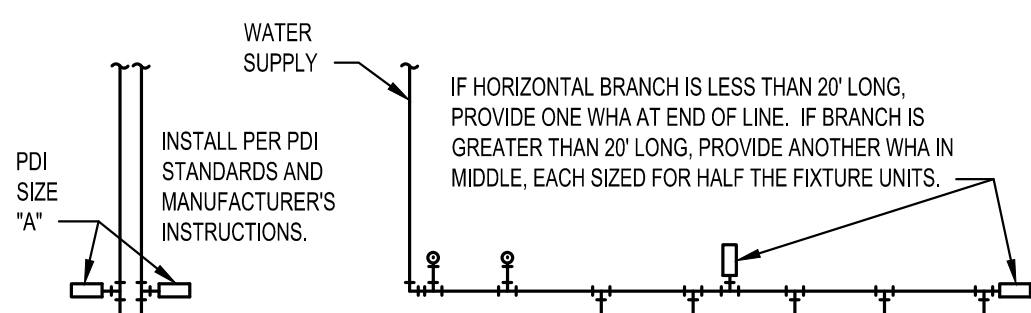


NOTES:

1. THERMOMETERS TO BE INSTALLED TO BE EASILY READABLE.
2. INSTALL PIPING & EQUIPMENT FOR WATER HEATER WITH REQUIRED CLEARANCES TO ALLOW SPACE FOR REMOVAL & SERVICING AS SHOWN.
3. PROVIDE SEPARATE SUPPORT FROM PIPING FOR RECIRCULATING PUMP.
4. INSTALL WATER HEATER PER MANUFACTURER'S WRITTEN INSTRUCTIONS/RECOMMENDATIONS.
5. ROUTE WATER HEATER P&H RELIEF AND DISCHARGE NEAR FLOOR SINK/DRAIN.
6. PROVIDE VACUUM RELIEF VALVE AS REQUIRED BY LOCAL CODE.
7. PIPE INSULATION NOT SHOWN FOR DRAWING CLARITY.

8 WATER HEATER PIPING

NOT TO SCALE



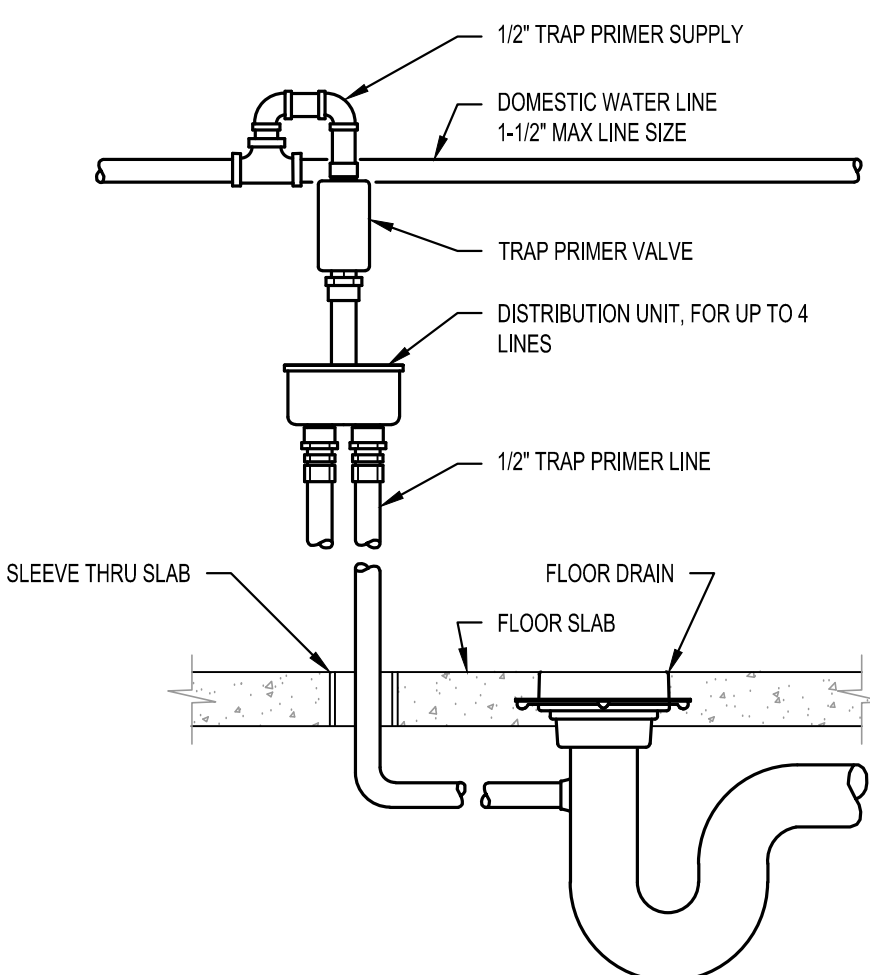
SINGLE FIXTURE

PDI SIZE	PIPE SIZE	FIXTURE UNIT LOAD
A	1/2"	1-11
B	3/4"	12-32
C	1"	33-60
D	1-1/4"	61-113
E	1-1/2"	114-154
F	2"	154-330

MULTIPLE FIXTURES

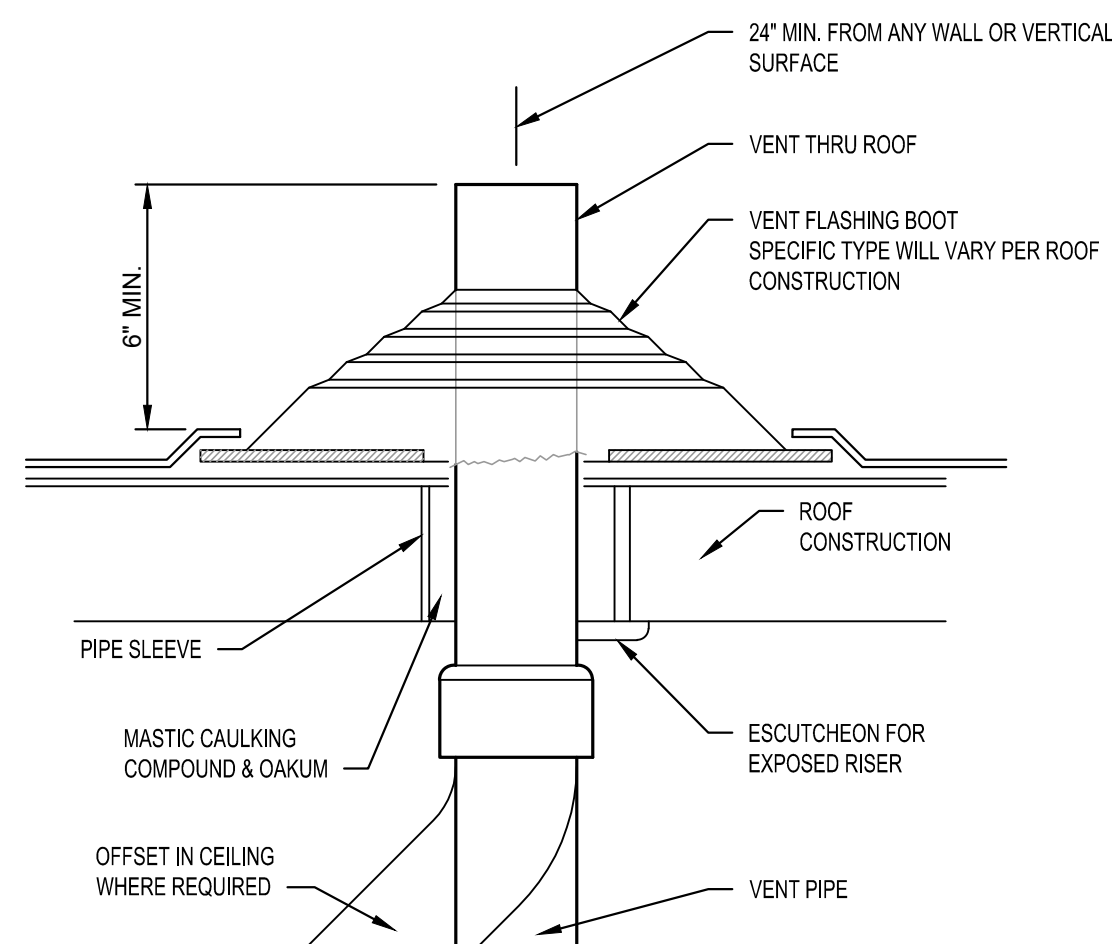
FIXTURE UNIT TABULATION		
FIXTURE	COLD	HOT
VALVE WATER CLOSET	10	--
TANK WATER CLOSET	5	--
URINAL	5	--
LAVATORY/SINK	1.5	1.5
JANITOR'S SINK	3	3
SHOWER/BATHTUB	2	2

PROVIDE WATER HAMMER ARRESTERS ON ALL QUICK CLOSING VALVES. INSTALLED AS CLOSE TO THE FIXTURES AS POSSIBLE TO CONTROL THE EFFECTS OF WATER HAMMER INSTALLATION SHALL COMPLY WITH ALL LOCAL CODES AND ORDINANCES. DO NOT PROVIDE AIR CHAMBERS. PROVIDE WATER HAMMER ARRESTERS BY SIOUX CHIEF, PRECISION PLUMBING PRODUCTS, WATTS OR APPROVED EQUIVALENT WITH PISTON AND O-RING CONSTRUCTION, HAVING PDI #WH-201, ASSE # 1010 AND ANSI # A112.28.1M CERTIFICATION. INSTALL IN HORIZONTAL OR VERTICAL POSITION, BUT NEVER UPSIDE DOWN. INSTALL IN LINE WITH WATER FLOW DIRECTION IF POSSIBLE. SIZE THE UNITS PER THE TABLES SHOWN ABOVE.



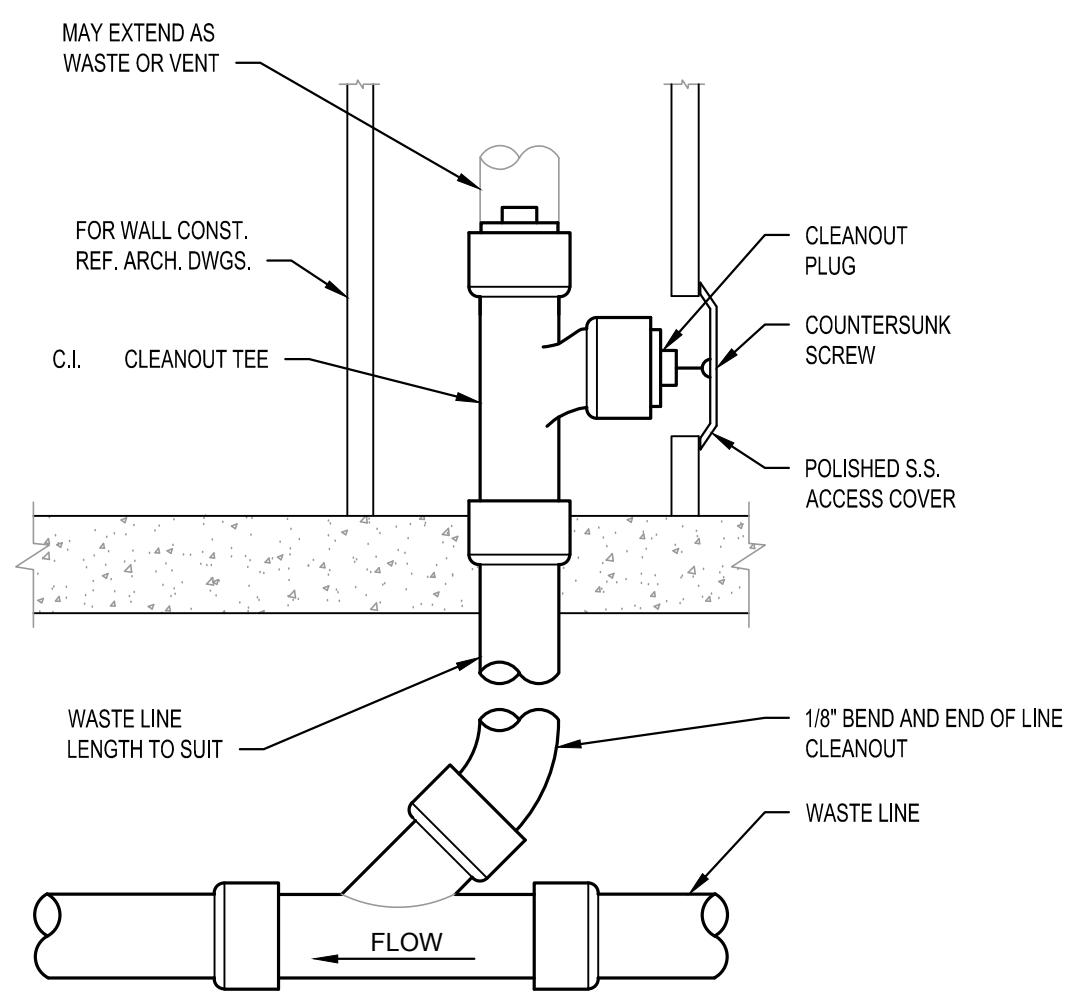
6 TRAP SEAL PRIMER DETAIL

NOT TO SCALE



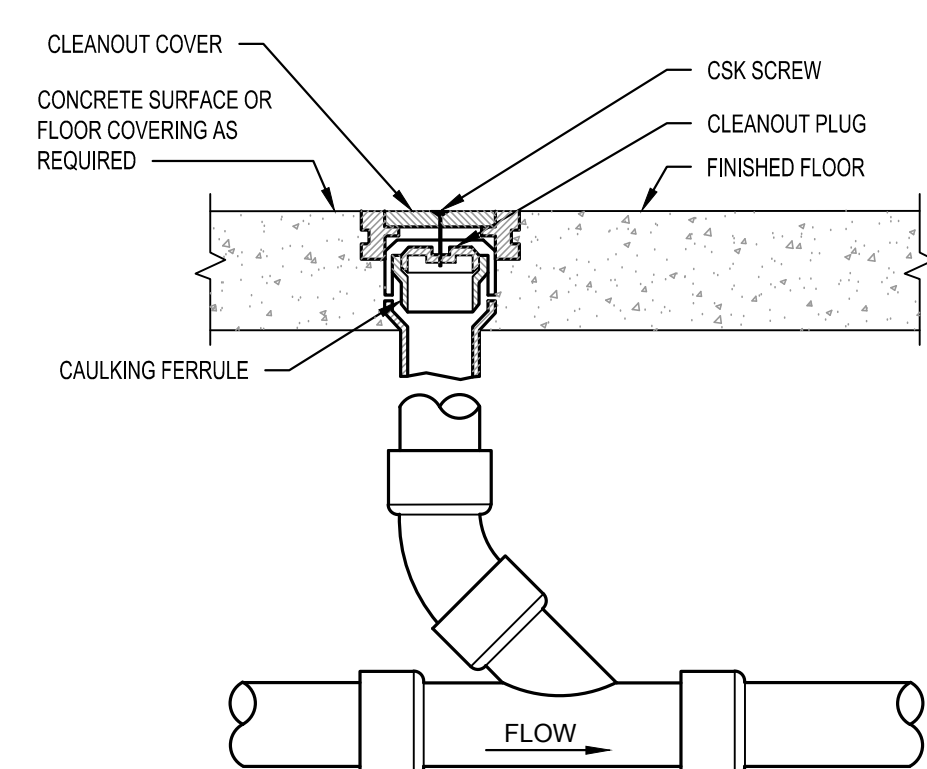
5 VENT THROUGH ROOF DETAIL (VTR)

NOT TO SCALE



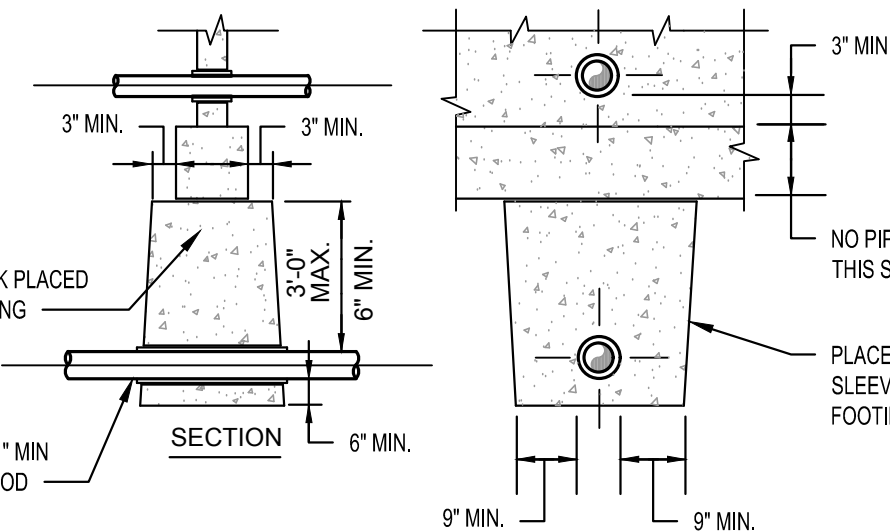
4 WALL CLEANOUT

NOT TO SCALE



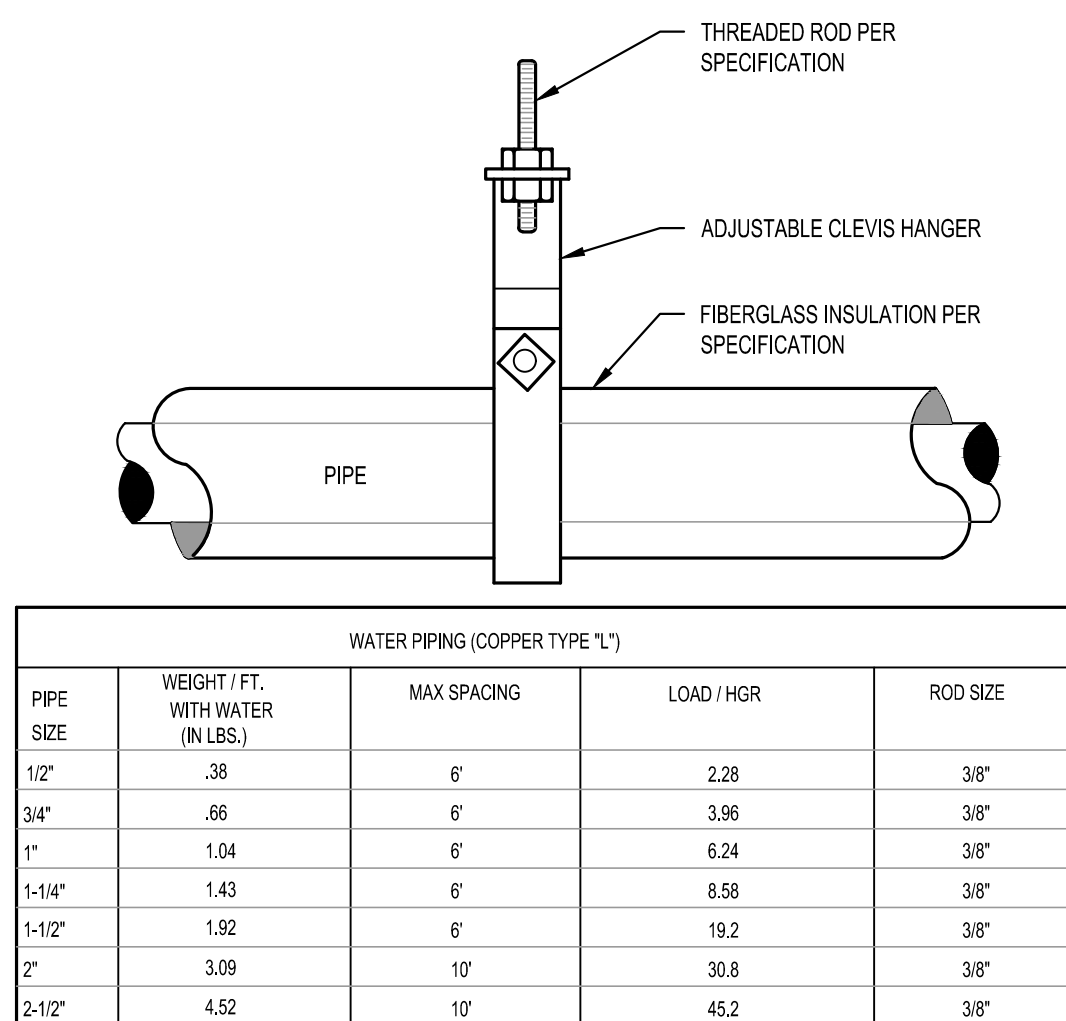
3 FLOOR CLEANOUT

NOT TO SCALE

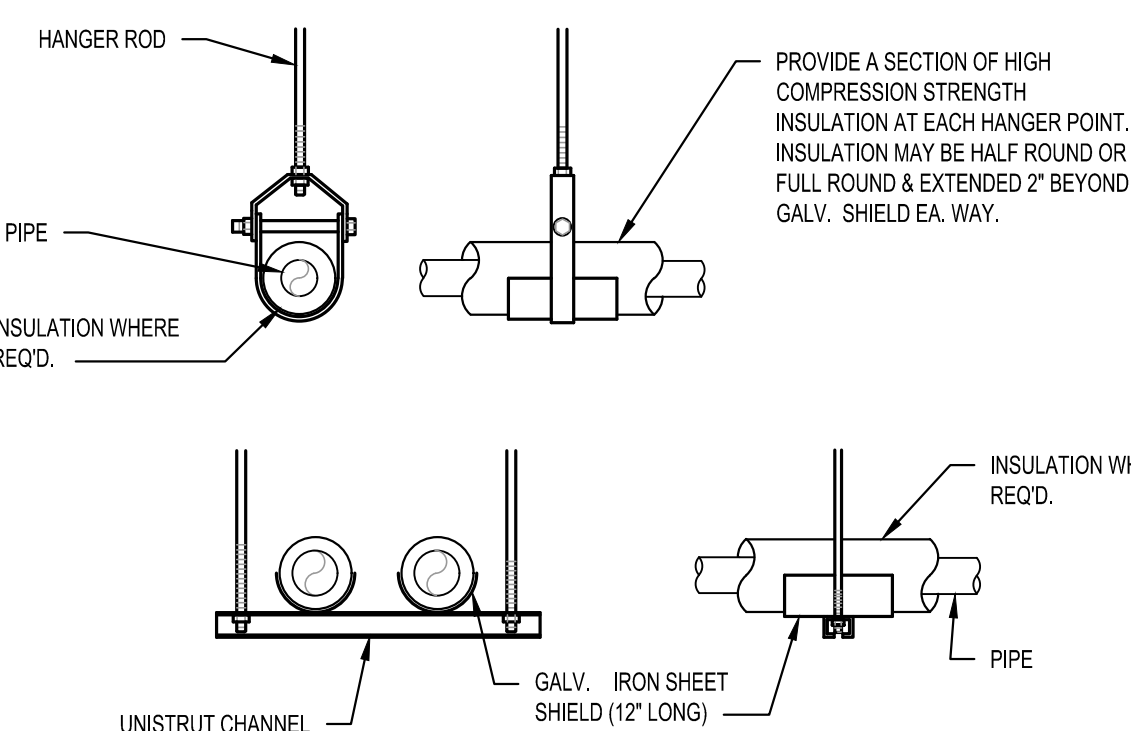


2 PIPE AT CONCRETE FOOTING

NOT TO SCALE



WATER PIPING (COPPER TYPE 1)				
PIPE SIZE	WEIGHT (FT. WITH WATER IN LBS.)	MAX SPACING	LOAD / HR	RCD SIZE
1/2"	.38	6'	2.28	3/8"
3/4"	.66	6'	3.96	3/8"
1"	1.04	6'	6.24	3/8"
1-1/4"	1.43	6'	8.58	3/8"
1-1/2"	1.92	6'	19.2	3/8"
2"	3.09	10'	30.8	3/8"
2-1/2"	4.52	10'	45.2	3/8"

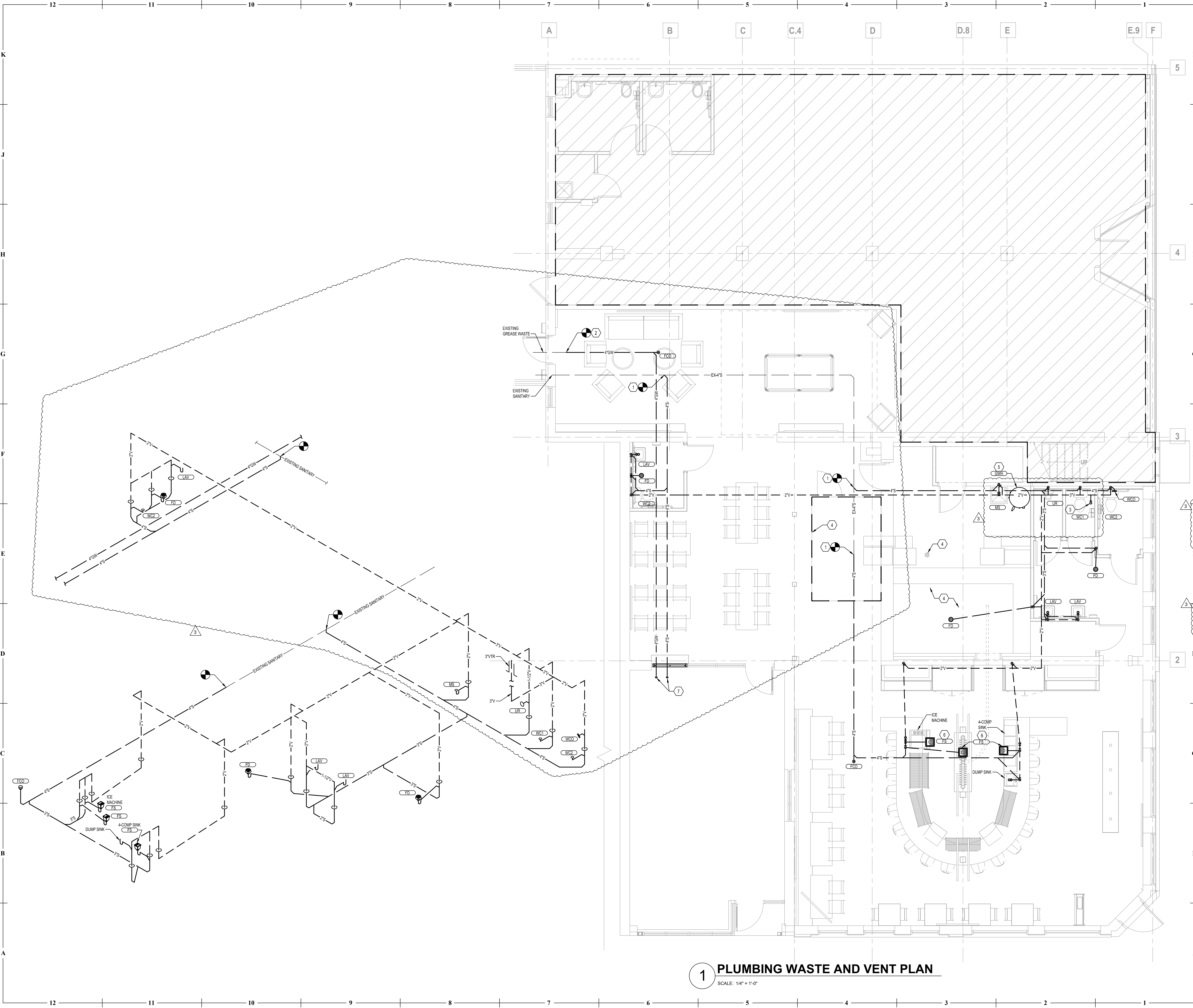


NOTES:

1. ATTACH SUPPORTS FOR ALL PIPING SUSPENDED FROM THE STEEL STRUCTURE TO THE TOP CORD OF JOISTS OR BEAMS.
2. PROVIDE COPPER OR PLASTIC COATED HANGERS FOR NON-INSULATED COPPER PIPE.

1 PIPE HANGING DETAIL

SCALE: NTS



- GENERAL NOTES**
(NOT ALL NOTES APPLY)
1. REFERENCE SHEET P101 FOR GENERAL NOTES, SYMBOLS, AND ABBREVIATIONS.
 2. ALL SHUT-OFF OR BALANCING VALVES TO PLUMBING ROUTED IN PIPE CHASES SHALL BE ACCESSIBLE FROM CEILING AREA OR ACCESS DOORS PROVIDED IN WALL.
 3. ALL EXPOSED PIPES PENETRATING FINISHED WALLS SHALL BE EQUIPPED WITH WALL ESCUTCHEONS.
 4. PROVIDE FINAL CONNECTIONS FOR ALL EQUIPMENT SPECIFIED IN PLUMBING FIXTURES AND EQUIPMENT SCHEDULES ON THESE CONSTRUCTION DOCUMENTS IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS. PROVIDE ALL REQUIRED SHUT-OFFS, BACKFLOW PREVENTERS, PRESSURE REGULATORS, AND CONDENSATE DRAINS INDICATED ON PLUMBING SCHEDULES AND AS REQUIRED BY LOCAL CODES FOR COMPLETE EQUIPMENT INSTALLATION. CONSULT EQUIPMENT SUPPLIER OR OWNER FOR ADDITIONAL FINAL CONNECTION REQUIREMENTS NOT SHOWN ON THESE DRAWINGS.

- KEYED NOTES:**
1. ROUTE NEW 4" SANITARY LINE TO EXISTING SANITARY LINE IN THIS AREA. FIELD COORDINATE EXACT CONNECTION POINT, LINE SIZE, MATERIAL AND AVAILABLE INVERT.
 2. ROUTE NEW 4" GREASE WASTE LINE TO EXISTING GREASE WASTE LINE IN THIS AREA. FIELD COORDINATE EXACT CONNECTION POINT, LINE SIZE, MATERIAL AND AVAILABLE INVERT.
 3. 3"V UP THROUGH MECHANICAL ROOM ABOVE OFFSETTING AS REQUIRED FOR EXISTING CONDITIONS TO NEW 3"VTR. COORDINATE FINAL PLACEMENT AND ROUTING THROUGH FLOOR ABOVE WITH ALL EXISTING EQUIPMENT, ROOF TOP EQUIPMENT, AND EXISTING STRUCTURE. MAINTAIN A MINIMUM 10' FROM ALL FRESH AIR INTAKES AND 1' FROM ALL VERTICAL SURFACES. ALL VENT PIPING PENETRATIONS ARE TO BE PERFORMED BY THE LANDLORD'S ROOFING CONTRACTOR.
 4. INSTALL COOLER/FREEZER CONDENSATE DRAIN LINES ALONG COOLER WALLS AS HIGH AS POSSIBLE WHILE MAINTAINING A MINIMUM 1/4" PER FOOT FALL. ROUTE PIPING TO EXISTING FLOOR DRAIN AND TERMINATE OVER FLOOR DRAIN WITH AIR GAP PER CODE.
 5. ROUTE WATER HEATER TAP DRAIN LINE TO FLOOR DRAIN AND TERMINATE OVER FLOOR DRAIN WITH AIR GAP PER CODE.
 6. COORDINATE FINAL LOCATION OF FLOOR SINKS AT BAR WITH OWNER.
 7. CAP 4"GW AND 4"V LINE FOR CONTINUATION BY FUTURE TENANT.

1 PLUMBING WASTE AND VENT PLAN
SCALE: 1/4" = 1'-0"

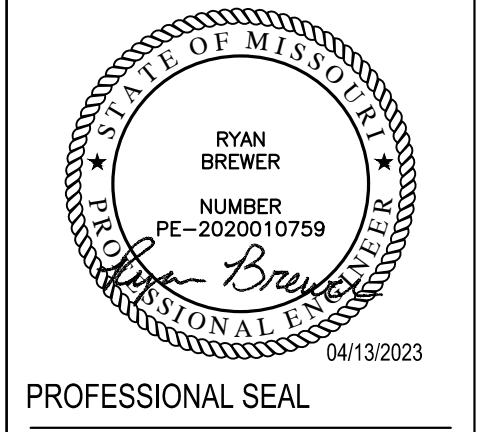


PERMIT DOCUMENTS

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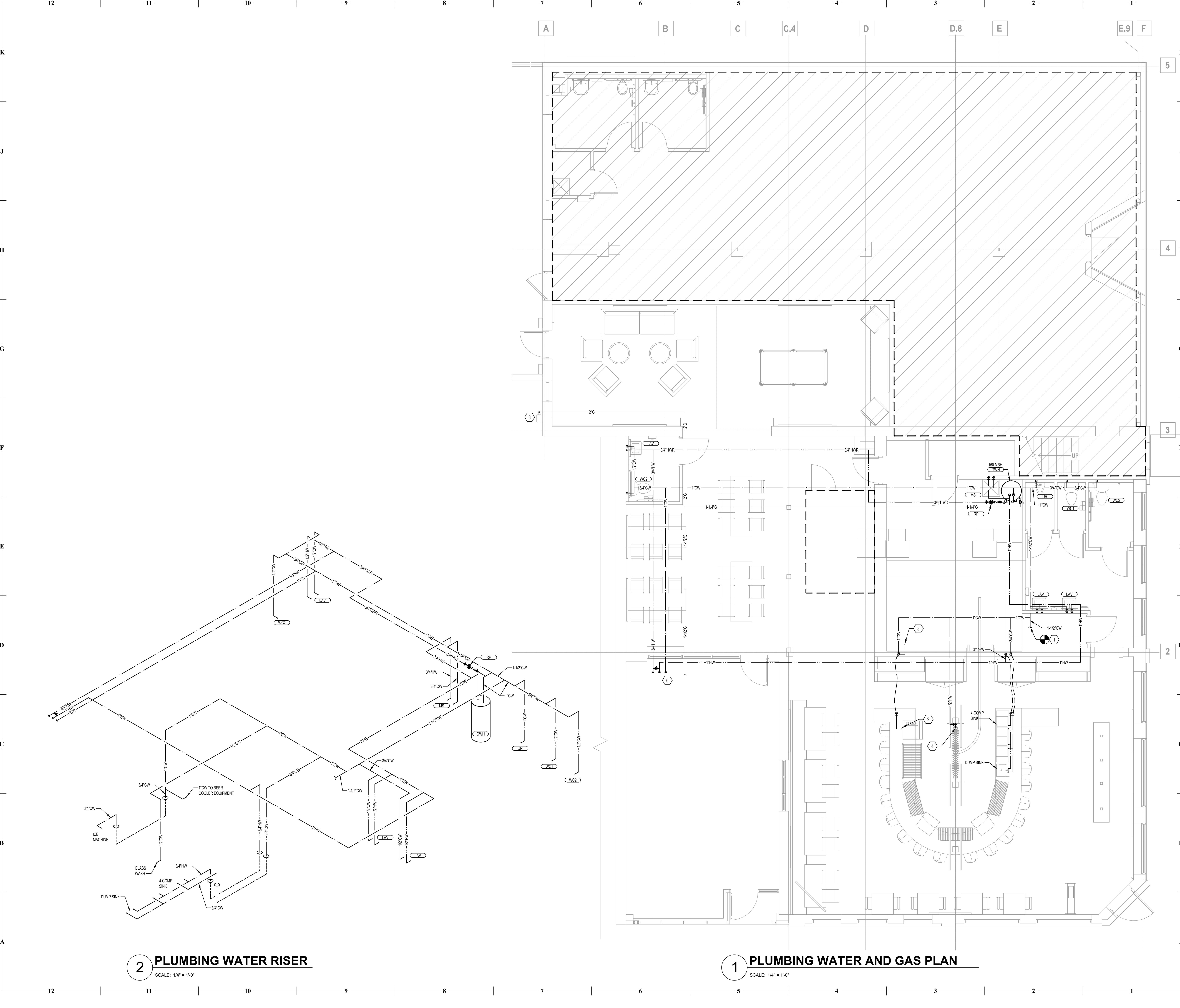
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PLUMBING WASTE AND VENT PLAN



2 PLUMBING WATER RISER
SCALE: 1/4" = 1'-0"

1 PLUMBING WATER AND GAS PLAN
SCALE: 1/4" = 1'-0"

GENERAL NOTES

(NOT ALL NOTES APPLY)

1. REFERENCE SHEET P101 FOR GENERAL NOTES, SYMBOLS, AND ABBREVIATIONS.
2. ALL SHUT-OFF OR BALANCING VALVES TO PLUMBING ROUTED IN PIPE CHASES SHALL BE ACCESSIBLE FROM CEILING AREA OR ACCESS DOORS PROVIDED IN WALL.
3. ALL EXPOSED PIPES PENETRATING FINISHED WALLS SHALL BE EQUIPPED WITH WALL ESCUTCHEONS.
4. PROVIDE FINAL CONNECTIONS FOR ALL EQUIPMENT SPECIFIED IN PLUMBING FIXTURES AND EQUIPMENT SCHEDULES ON THESE CONSTRUCTION DOCUMENTS IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS. PROVIDE ALL REQUIRED SHUT-OFFS, BACKFLOW PREVENTERS, PRESSURE REGULATORS, AND CONDENSATE DRAINS INDICATED ON PLUMBING SCHEDULES AND AS REQUIRED BY LOCAL CODES FOR COMPLETE EQUIPMENT INSTALLATION. CONSULT EQUIPMENT SUPPLIER OR OWNER FOR ADDITIONAL FINAL CONNECTION REQUIREMENTS NOT SHOWN ON THESE DRAWINGS.

KEYED NOTES:

1. ROUTE NEW 1-1/2" COLD WATER LINE TO EXISTING COLD WATER LINE IN THIS AREA. FIELD COORDINATE EXACT CONNECTION POINT, LINE SIZE, AND MATERIAL.
2. 3/4" CW UP THROUGH FLOOR TO ICE MACHINE. INSTALL ALL BACKFLOW PREVENTION, VALVING AND FILTERS AS PER MANUFACTURER'S RECOMMENDATIONS AND LOCAL CODES.
3. ROUTE NEW 2" G LINE BACK TO EXISTING GAS METER. FIELD VERIFY EXACT ROUTING WITH LANDLORD AND EXISTING CONDITIONS. ENSURE EXISTING METER IS LARGE ENOUGH FOR NEW TOTAL GAS LOAD. IF EXISTING METER IS FOUND TO NOT BE LARGE ENOUGH COORDINATE WITH UTILITY FOR INSTALLATION OF NEW. NEW PIPING LOAD OF 402 MBH SIZED FOR A DEVELOPED LENGTH OF 150' AT A PRESSURE OF 7" WATER COLUMN.
4. ROUTE 1/2" COLD WATER LINE DOWN TO GLASS WASH COORDINATE WITH OWNER FOR EXACT LOCATION AND REQUIREMENTS.
5. ROUTE 1" CW DOWN IN WALL. STUB 1" CW INTO BEER COOLER FOR CONNECTION TO EQUIPMENT. TERMINATE WITH ALL VALVING AND BACKFLOW PROTECTION AS PER MANUFACTURER'S RECOMMENDATIONS. CONTINUE 3/4" CW BELOW GRADE TO BAR EQUIPMENT.
6. CAP LINES FOR CONTINUATION BY FUTURE TENANT.

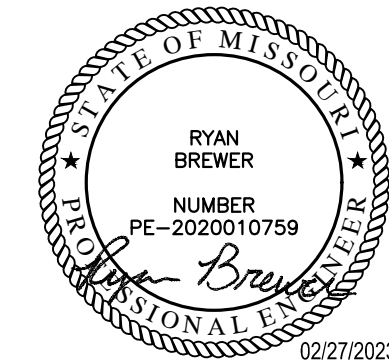


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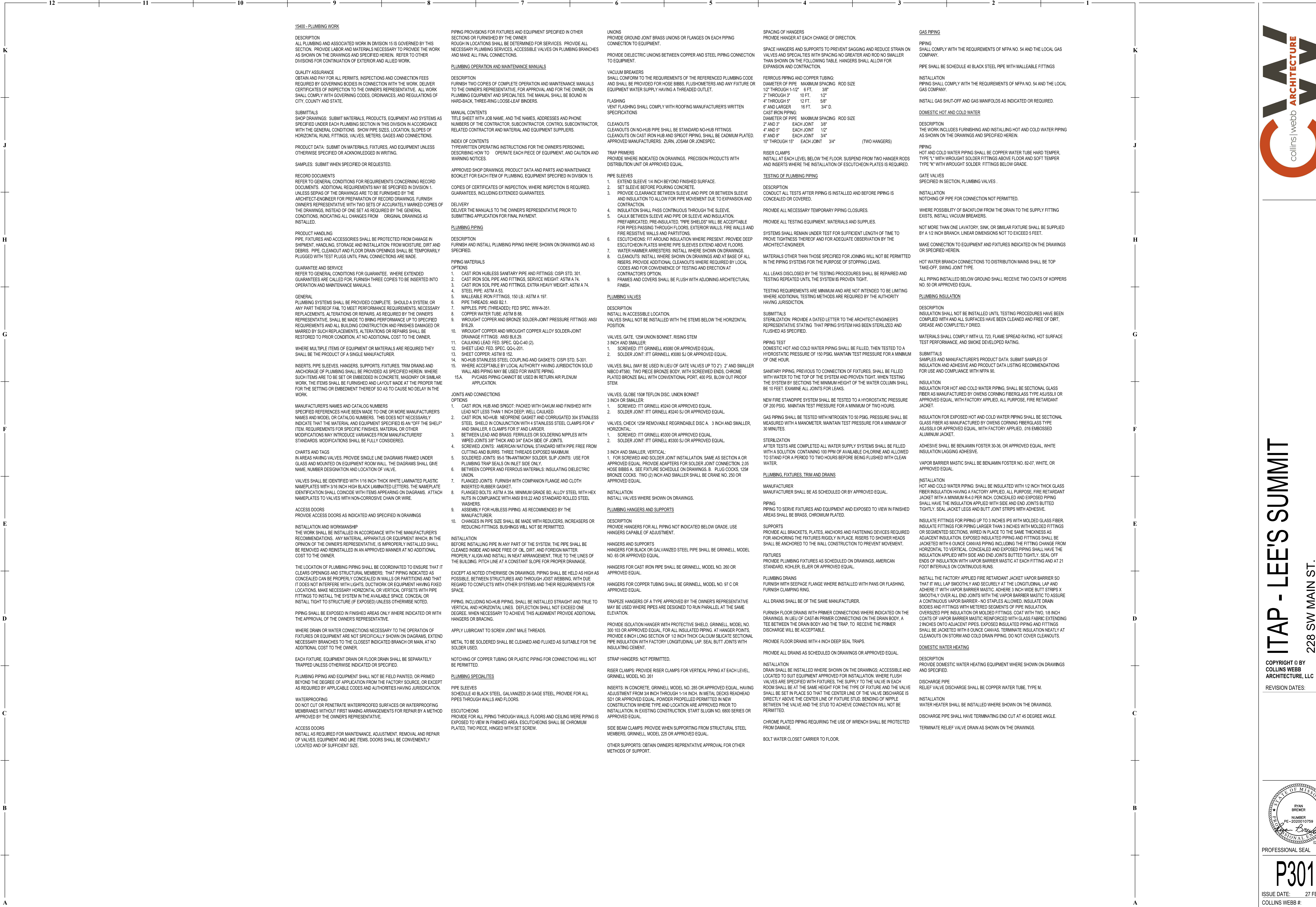
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**PLUMBING WATER
AND GAS PLAN**



15400 - PLUMBING WORK

DESCRIPTION
ALL PLUMBING AND ASSOCIATED WORK IN DIVISION 15 IS GOVERNED BY THIS SECTION. PROVIDE LABOR AND MATERIALS NECESSARY TO PROVIDE THE WORK AS SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN. REFER TO OTHER DIVISIONS FOR CONTINUATION OF EXTERIOR AND ALLIED WORK.

QUALITY ASSURANCE
OBTAIN AND PAY FOR ALL PERMITS, INSPECTIONS AND CONNECTION FEES REQUIRED BY GOVERNING BODIES IN CONNECTION WITH THE WORK. DELIVER CERTIFICATES OF INSPECTION TO THE OWNER'S REPRESENTATIVE. ALL WORK SHALL COMPLY WITH GOVERNING CODES, ORDINANCES, AND REGULATIONS OF CITY, COUNTY AND STATE.

SUBMITTALS
SHOP DRAWINGS: SUBMIT MATERIALS, PRODUCTS, EQUIPMENT AND SYSTEMS AS SPECIFIED UNDER EACH PLUMBING SECTION IN THIS DIVISION IN ACCORDANCE WITH THE GENERAL CONDITIONS. SHOW PIPE SIZES, LOCATION, SLOPES OF HORIZONTAL RUNS, FITTINGS, VALVES, METERS, GAGES AND CONNECTIONS.

PRODUCT DATA: SUBMIT ON MATERIALS, FIXTURES, AND EQUIPMENT UNLESS OTHERWISE SPECIFIED OR ACKNOWLEDGED IN WRITING.

SAMPLES: SUBMIT WHEN SPECIFIED OR REQUESTED.

RECORD DOCUMENTS
REFER TO GENERAL CONDITIONS FOR REQUIREMENTS CONCERNING RECORD DOCUMENTS. ADDITIONAL REQUIREMENTS MAY BE SPECIFIED IN DIVISION 1. UNLESS SEPARAS OF THE DRAWINGS ARE TO BE FURNISHED BY THE ARCHITECT-ENGINEER FOR PREPARATION OF RECORD DRAWINGS, FURNISH OWNER'S REPRESENTATIVE WITH TWO SETS OF ACCURATELY MARKED COPIES OF THE DRAWINGS, INSTEAD OF ONE SET AS REQUIRED BY THE GENERAL CONDITIONS, INDICATING ALL CHANGES FROM ORIGINAL DRAWINGS AS INSTALLED.

PRODUCT HANDLING
PIPE, FIXTURES AND ACCESSORIES SHALL BE PROTECTED FROM DAMAGE IN SHIPMENT, HANDLING, STORAGE AND INSTALLATION: FROM MOISTURE, DIRT AND DERRIS. PIPE, CLEANOUT AND FLOOR DRAIN OPENINGS SHALL BE TEMPORARILY PLUGGED WITH TEST PLUGS UNTIL FINAL CONNECTIONS ARE MADE.

GUARANTEE AND SERVICE
REFER TO GENERAL CONDITIONS FOR GUARANTEE. WHERE EXTENDED GUARANTEES ARE CALLED FOR, FURNISH THREE COPIES TO BE INSERTED INTO OPERATION AND MAINTENANCE MANUALS.

GENERAL
PLUMBING SYSTEMS SHALL BE PROVIDED COMPLETE. SHOULD A SYSTEM, OR ANY PART THEREOF FAIL TO MEET PERFORMANCE REQUIREMENTS, NECESSARY REPLACEMENTS, ALTERATIONS OR REPAIRS, AS REQUIRED BY THE OWNER'S REPRESENTATIVE, SHALL BE MADE TO BRING PERFORMANCE UP TO SPECIFIED REQUIREMENTS AND ALL BUILDING CONSTRUCTION AND FINISHES DAMAGED OR MARKED BY SUCH REPLACEMENTS, ALTERATIONS OR REPAIRS SHALL BE RESTORED TO PRIOR CONDITION, AT NO ADDITIONAL COST TO THE OWNER.

WHERE MULTIPLE ITEMS OF EQUIPMENT OR MATERIALS ARE REQUIRED THEY SHALL BE THE PRODUCT OF A SINGLE MANUFACTURER.

INSERTS, PIPE SLEEVES, HANGERS, SUPPORTS, FIXTURES, TRIM DRAINS AND ANCHORAGE OF PLUMBING SHALL BE PROVIDED AS SPECIFIED HEREIN. WHERE SUCH ITEMS ARE TO BE SET OR EMBEDDED IN CONCRETE, MASONRY OR SIMILAR WORK, THE ITEMS SHALL BE FURNISHED AND LAYOUT MADE AT THE PROPER TIME FOR THE SETTING OR EMBEDMENT THEREOF SO AS TO CAUSE NO DELAY IN THE WORK.

MANUFACTURER'S NAMES AND CATALOG NUMBERS
SPECIFIED REFERENCES HAVE BEEN MADE TO ONE OR MORE MANUFACTURERS' NAMES AND MODEL OR CATALOG NUMBERS. THIS DOES NOT NECESSARILY INDICATE THAT THE MATERIAL AND EQUIPMENT SPECIFIED IS AN "OFF THE SHELF" ITEM. REQUIREMENTS FOR SPECIFIC FINISHES, MATERIAL OR OTHER MODIFICATIONS MAY INTRODUCE VARIANCES FROM MANUFACTURERS' STANDARDS. MODIFICATIONS SHALL BE FULLY CONSIDERED.

CHARTS AND TAGS
IN AREAS HAVING VALVES, PROVIDE SINGLE LINE DIAGRAMS FRAMED UNDER GLASS AND MOUNTED ON EQUIPMENT ROOM WALL. THE DIAGRAMS SHALL GIVE NAME, NUMBER DESIGNATION AND LOCATION OF VALVE.

VALVES SHALL BE IDENTIFIED WITH 1/16 INCH THICK WHITE LAMINATED PLASTIC NAMEPLATES WITH 3/16 INCH HIGH BLACK LAMINATED LETTERS. THE NAMEPLATE IDENTIFICATION SHALL COINCIDE WITH ITEMS APPEARING ON DIAGRAMS. ATTACH NAMEPLATES TO VALVES WITH NON-CORROSIVE CHAIN OR WIRE.

ACCESS DOORS
PROVIDE ACCESS DOORS AS INDICATED AND SPECIFIED IN DRAWINGS

INSTALLATION AND WORKMANSHIP
THE WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. ANY MATERIAL, APPARATUS OR EQUIPMENT WHICH, IN THE OPINION OF THE OWNER'S REPRESENTATIVE, IS IMPROPERLY INSTALLED SHALL BE REMOVED AND REINSTALLED IN AN APPROVED MANNER AT NO ADDITIONAL COST TO THE OWNER.

THE LOCATION OF PLUMBING PIPING SHALL BE COORDINATED TO ENSURE THAT IT CLEARS OPENINGS AND STRUCTURAL MEMBERS, THAT PIPING INDICATED AS CONCEALED CAN BE PROPERLY CONCEALED IN WALLS OR PARTITIONS AND THAT IT DOES NOT INTERFERE WITH LIGHTS, DUCTWORK OR EQUIPMENT HAVING FIXED LOCATIONS, MAKE NECESSARY HORIZONTAL OR VERTICAL OFFSETS WITH PIPE FITTINGS TO INSTALL THE SYSTEM IN THE AVAILABLE SPACE. CONCEAL OR INSTALL TIGHT TO STRUCTURE (IF EXPOSED) UNLESS OTHERWISE NOTED.

PIPING SHALL BE EXPOSED IN FINISHED AREAS ONLY WHERE INDICATED OR WITH THE APPROVAL OF THE OWNER'S REPRESENTATIVE.

WHERE DRAIN OR WATER CONNECTIONS NECESSARY TO THE OPERATION OF FIXTURES OR EQUIPMENT ARE NOT SPECIFICALLY SHOWN ON DIAGRAMS, EXTEND NECESSARY BRANCHES TO THE CLOSEST INDICATED BRANCH OR MAIN, AT NO ADDITIONAL COST TO THE OWNER.

EACH FIXTURE, EQUIPMENT DRAIN OR FLOOR DRAIN SHALL BE SEPARATELY TRAPPED UNLESS OTHERWISE INDICATED OR SPECIFIED.

PLUMBING PIPING AND EQUIPMENT SHALL NOT BE FIELD PAINTED, OR PRIMED BEYOND THE DEGREE OF APPLICATION FROM THE FACTORY SOURCE, OR EXCEPT AS REQUIRED BY APPLICABLE CODES AND AUTHORITIES HAVING JURISDICTION.

WATERPROOFING
DO NOT CUT OR PENETRATE WATERPROOFED SURFACES OR WATERPROOFING MEMBRANES WITHOUT FIRST MAKING ARRANGEMENTS FOR REPAIR BY A METHOD APPROVED BY THE OWNER'S REPRESENTATIVE.

ACCESS DOORS
INSTALL AS REQUIRED FOR MAINTENANCE, ADJUSTMENT, REMOVAL AND REPAIR OF VALVES, EQUIPMENT AND LIKE ITEMS. DOORS SHALL BE CONVENIENTLY LOCATED AND OF SUFFICIENT SIZE.

PIPING PROVISIONS FOR FIXTURES AND EQUIPMENT SPECIFIED IN OTHER SECTIONS OR FURNISHED BY THE OWNER
ROUGH IN LOCATIONS SHALL BE DETERMINED FOR SERVICES. PROVIDE ALL NECESSARY PLUMBING SERVICES, ACCESSIBLE VALVES ON PLUMBING BRANCHES AND MAKE ALL FINAL CONNECTIONS.

PLUMBING OPERATION AND MAINTENANCE MANUALS

DESCRIPTION
FURNISH TWO COPIES OF COMPLETE OPERATION AND MAINTENANCE MANUALS TO THE OWNER'S REPRESENTATIVE, FOR APPROVAL AND FOR THE OWNER, ON PLUMBING EQUIPMENT AND SPECIALTIES. THE MANUAL SHALL BE BOUND IN HARD-BACK, THREE-RINGS LOOSE-LEAF BINDERS.

MANUAL CONTENTS
TITLE SHEET WITH JOB NAME, AND THE NAMES, ADDRESSES AND PHONE NUMBERS OF THE CONTRACTOR, SUBCONTRACTOR, CONTROL SUBCONTRACTOR, RELATED CONTRACTOR AND MATERIAL AND EQUIPMENT SUPPLIERS.

INDEX OF CONTENTS
TYPEWRITTEN OPERATING INSTRUCTIONS FOR THE OWNER'S PERSONNEL DESCRIBING HOW TO OPERATE EACH PIECE OF EQUIPMENT, AND CAUTION AND WARNING NOTICES.

APPROVED SHOP DRAWINGS, PRODUCT DATA AND PARTS AND MAINTENANCE BOOKLET FOR EACH ITEM OF PLUMBING, EQUIPMENT SPECIFIED IN DIVISION 15.

COPIES OF CERTIFICATES OF INSPECTION, WHERE INSPECTION IS REQUIRED, GUARANTEES, INCLUDING EXTENDED GUARANTEES.

DELIVERY
DELIVER THE MANUALS TO THE OWNER'S REPRESENTATIVE PRIOR TO SUBMITTING APPLICATION FOR FINAL PAYMENT.

PLUMBING PIPING

DESCRIPTION
FURNISH AND INSTALL PLUMBING PIPING WHERE SHOWN ON DRAWINGS AND AS SPECIFIED.

- PIPING MATERIALS
OPTIONS
1. CAST IRON HUBLESS SANITARY PIPE AND FITTINGS: CISPI STD. 301.
 2. CAST IRON SOIL PIPE AND FITTINGS, SERVICE WEIGHT: ASTM A 74.
 3. CAST IRON SOIL PIPE AND FITTINGS, EXTRA HEAVY WEIGHT: ASTM A 74.
 4. STEEL PIPE: ASTM A 53.
 5. MALLEABLE IRON FITTINGS, 150 LB.: ASTM A 197.
 6. PIPE THREADS: ANSI B2.1.
 7. NIPPLES, PIPE (THREADED): FED SPEC. WW-N-351.
 8. COPPER WATER TUBE: ASTM B 88.
 9. WROUGHT COPPER AND BRONZE SOLDER-JOINT PRESSURE FITTINGS: ANSI B16.29.
 10. WROUGHT COPPER AND WROUGHT COPPER ALLOY SOLDER-JOINT DRAINAGE FITTINGS: ANSI B16.29.
 11. CALCULING LEAD: FED. SPEC. QQ-C-40 (2).
 12. SHEET LEAD: FED. SPEC. QQ-C-201.
 13. SHEET COPPER: ASTM B 152.
 14. NO-HUB STAINLESS STEEL COUPLING AND GASKETS: CISPI STD. S-301.
 15. WHERE ACCEPTABLE BY LOCAL AUTHORITY HAVING JURISDICTION SOLID WALL ABS PIPING MAY BE USED FOR WASTE PIPING.
 - 15A. PVC/ABS PIPING CANNOT BE USED IN RETURN AIR PLENUM APPLICATION.

- JOINTS AND CONNECTIONS
OPTIONS
1. CAST IRON, HUB AND SPIGOT: PACKED WITH OAKUM AND FINISHED WITH LEAD NOT LESS THAN 1 INCH DEEP, WELL CAULKED.
 2. CAST IRON, NO-HUB: NEOPRENE GASKET AND CORRUGATED 304 STAINLESS STEEL SHIELD IN CONJUNCTION WITH 4 STAINLESS STEEL CLAMPS FOR 4" AND SMALLER, 6 CLAMPS FOR 6" AND LARGER.
 3. BETWEEN LEAD AND BRASS: FERRULES OR SOLDERING NIPPLES WITH WIRED JOINTS 3/8" THICK AND 3/4" EACH SIDE OF JOINTS.
 4. SCREWED JOINTS: AMERICAN NATIONAL STANDARD WITH PIPE FREE FROM CUTTING AND BURRS. THREE THREADS EXPOSED MAXIMUM.
 5. SOLDERED JOINTS: 95-5 TIN-ANTIMONY SOLDER, SLIP JOINTS. USE FOR PLUMBING TRAP SEALS ON INLET SIDE ONLY.
 6. BETWEEN COPPER AND FERROUS MATERIALS: INSULATING DIELECTRIC UNION.
 7. FLANGED JOINTS: FURNISH WITH COMPANION FLANGE AND CLOTH INSERTED RUBBER GASKET.
 8. FLANGED BOLTS: ASTM A 354, MINIMUM GRADE 80. ALLOY STEEL WITH HEX NUTS IN COMPLIANCE WITH ANSI B 18.22 AND STANDARD ROLLED STEEL WASHERS.
 9. ASSEMBLY FOR HUBLESS PIPING: AS RECOMMENDED BY THE MANUFACTURER.
 10. CHANGES IN PIPE SIZE SHALL BE MADE WITH REDUCERS, INCREASES OR REDUCING FITTINGS. BUSHINGS WILL NOT BE PERMITTED.

INSTALLATION
BEFORE INSTALLING PIPE IN ANY PART OF THE SYSTEM, THE PIPE SHALL BE CLEANED INSIDE AND MADE FREE OF OIL, DIRT, AND FOREIGN MATTER. PROPERLY ALIGN AND INSTALL IN NEAT ARRANGEMENT, TRUE TO THE LINES OF THE BUILDING, PITCH LINE AT A CONSTANT SLOPE FOR PROPER DRAINAGE.

EXCEPT AS NOTED OTHERWISE ON DRAWINGS, PIPING SHALL BE HELD AS HIGH AS POSSIBLE, BETWEEN STRUCTURES AND THROUGH JOIST WEBBING, WITH DUE REGARD TO CONFLICTS WITH OTHER SYSTEMS AND THEIR REQUIREMENTS FOR SPACE.

PIPING, INCLUDING NO-HUB PIPING, SHALL BE INSTALLED STRAIGHT AND TRUE TO VERTICAL AND HORIZONTAL LINES. DEFLECTION SHALL NOT EXCEED ONE DEGREE. WHEN NECESSARY TO ACHIEVE THIS ALIGNMENT PROVIDE ADDITIONAL HANGERS OR BRACING.

APPLY LUBRICANT TO SCREW JOINT MALE THREADS.

METAL TO BE SOLDERED SHALL BE CLEANED AND FLUXED AS SUITABLE FOR THE SOLDER USED.

NOTHING OF COPPER TUBING OR PLASTIC PIPING FOR CONNECTIONS WILL NOT BE PERMITTED.

PLUMBING SPECIALTIES

PIPE SLEEVES
SCHEDULE 40 BLACK STEEL, GALVANIZED 26 GAGE STEEL, PROVIDE FOR ALL PIPES THROUGH WALLS AND FLOORS.

ESCUTCHEONS
PROVIDE FOR ALL PIPING THROUGH WALLS, FLOORS AND CEILING WHERE PIPING IS EXPOSED TO VIEW IN FINISHED AREA. ESCUTCHEONS SHALL BE CHROMIUM PLATED, TWO PIECE, HINGED WITH SET SCREW.

UNIONS
PROVIDE GROUND JOINT BRASS UNIONS OR FLANGES ON EACH PIPING CONNECTION TO EQUIPMENT.

PROVIDE DIELECTRIC UNIONS BETWEEN COPPER AND STEEL PIPING CONNECTION TO EQUIPMENT.

VACUUM BREAKERS
SHALL CONFORM TO THE REQUIREMENTS OF THE REFERENCED PLUMBING CODE AND SHALL BE PROVIDED FOR HOSE BIBBS, FLOWMETERS AND ANY FIXTURE OR EQUIPMENT WATER SUPPLY HAVING A THREADED OUTLET.

FLASHING
VENT FLASHING SHALL COMPLY WITH ROOFING MANUFACTURER'S WRITTEN SPECIFICATIONS

CLEANOUTS
CLEANOUTS ON NO-HUB PIPE SHALL BE STANDARD NO-HUB FITTINGS. CLEANOUTS ON CAST IRON HUB AND SPIGOT PIPING, SHALL BE CADMIUM PLATED. APPROVED MANUFACTURERS: ZURN, JOSAM OR JONESPEC.

TRAP PRIMERS
PROVIDE WHERE INDICATED ON DRAWINGS. PRECISION PRODUCTS WITH DISTRIBUTION UNIT OR APPROVED EQUAL.

- PIPE SLEEVES
1. EXTEND SLEEVE 1/4 INCH BEYOND FINISHED SURFACE.
 2. SET SLEEVE BEFORE POURING CONCRETE.
 3. PROVIDE CLEARANCE BETWEEN SLEEVE AND PIPE OR BETWEEN SLEEVE AND INSULATION TO ALLOW FOR PIPE MOVEMENT DUE TO EXPANSION AND CONTRACTION.
 4. INSULATION SHALL PASS CONTINUOUS THROUGH THE SLEEVE.
 5. CAULK BETWEEN SLEEVE AND PIPE OR SLEEVE AND INSULATION. PREFABRICATED, PRE-INSULATED, "PIPE SHIELDS" WILL BE ACCEPTABLE FOR PIPES PASSING THROUGH FLOORS, EXTERIOR WALLS, FIRE WALLS AND FIRE RESISTIVE WALLS AND PARTITIONS.
 6. ESCUTCHEONS: FIT AROUND INSULATION WHERE PRESENT. PROVIDE DEEP ESCUTCHEON PLATES WHERE PIPE SLEEVES EXTEND ABOVE FLOORS.
 7. WATER HAMMER ARRESTERS: INSTALL WHERE SHOWN ON DRAWINGS.
 8. CLEANOUTS: INSTALL WHERE SHOWN ON DRAWINGS AND AT BASE OF ALL RISERS. PROVIDE ADDITIONAL CLEANOUTS WHERE REQUIRED BY LOCAL CODES AND FOR CONVENIENCE OF TESTING AND ERECTION AT CONTRACTOR'S OPTION.
 9. FRAMES AND COVERS SHALL BE FLUSH WITH ADJOINING ARCHITECTURAL FINISH.

PLUMBING VALVES

DESCRIPTION
INSTALL IN ACCESSIBLE LOCATION.
VALVES SHALL NOT BE INSTALLED WITH THE STEMS BELOW THE HORIZONTAL POSITION.

VALVES, GATE, 125# UNION BONNET, RISING STEM
3 INCH AND SMALLER:

1. SCREWED: ITT GRINNELL #3080 OR APPROVED EQUAL.
2. SOLDER JOINT: ITT GRINNELL #3080 SJ OR APPROVED EQUAL.

VALVES, BALL (MAY BE USED IN LIEU OF GATE VALVES UP TO 2"); 2" AND SMALLER NIBCO #1589, TWO PIECE BRONZE BODY, WITH SCREWED ENDS, CHROME PLATED BRONZE BALL WITH CONVENTIONAL PORT, 400 PSI, BLOW OUT PROOF STEM.

VALVES, GLOBE 150# TEFLON DISC, UNION BONNET
3 INCH OR SMALLER:

1. SCREWED: ITT GRINNELL #3240 OR APPROVED EQUAL.
2. SOLDER JOINT: ITT GRINNELL #3240 SJ OR APPROVED EQUAL.

VALVES, CHECK 125# REMOVABLE REGRINDABLE DISC A. 3 INCH AND SMALLER, HORIZONTAL:

1. SCREWED: ITT GRINNELL #3300 OR APPROVED EQUAL.
2. SOLDER JOINT: ITT GRINNELL #3300 SJ OR APPROVED EQUAL.

3 INCH AND SMALLER, VERTICAL:

1. FOR SCREWED AND SOLDER JOINT INSTALLATION, SAME AS SECTION A OR APPROVED EQUAL. PROVIDE ADAPTERS FOR SOLDER JOINT CONNECTION, 2.05 HOSE BIBBS A. SEE FUTURE SCHEDULE ON DRAWINGS. B. PLUG COCKS, 125# BRONZE COCKS. TWO (2) INCH AND SMALLER SHALL BE CRANE NO. 230 OR APPROVED EQUAL.

INSTALLATION
INSTALL VALVES WHERE SHOWN ON DRAWINGS.

PLUMBING HANGERS AND SUPPORTS

DESCRIPTION
PROVIDE HANGERS FOR ALL PIPING NOT INDICATED BELOW GRADE. USE HANGERS CAPABLE OF ADJUSTMENT.

HANGERS AND SUPPORTS
HANGERS FOR BLACK OR GALVANIZED STEEL PIPE SHALL BE GRINNELL, MODEL NO. 65 OR APPROVED EQUAL.

HANGERS FOR CAST IRON PIPE SHALL BE GRINNELL, MODEL NO. 260 OR APPROVED EQUAL.

HANGERS FOR COPPER TUBING SHALL BE GRINNELL, MODEL NO. 97 C OR APPROVED EQUAL.

TRAPEZIE HANGERS OF A TYPE APPROVED BY THE OWNER'S REPRESENTATIVE MAY BE USED WHERE PIPES ARE DESIGNED TO RUN PARALLEL AT THE SAME ELEVATION.

PROVIDE ISOLATION HANGER WITH PROTECTIVE SHIELD, GRINNELL, MODEL NO. 300 103 OR APPROVED EQUAL. FOR ALL INSULATED PIPING, AT HANGER POINTS, PROVIDE 6 INCH LONG SECTION OF 1/2 INCH THICK CALCIUM SILICATE SECTIONAL PIPE INSULATION WITH FACTORY LONGITUDINAL LAP. SEAL BUTT JOINTS WITH INSULATING CEMENT.

STRAP HANGERS: NOT PERMITTED.

RISER CLAMPS: PROVIDE RISER CLAMPS FOR VERTICAL PIPING AT EACH LEVEL, GRINNELL MODEL NO. 261

INSERTS: IN CONCRETE, GRINNELL MODEL NO. 285 OR APPROVED EQUAL, HAVING ADJUSTMENT FROM 3/4 INCH THROUGH 1-1/4 INCH. IN METAL DECKS READHEAD 551 OR APPROVED EQUAL, POWDER PROPELLED PERMITTED IN NEW CONSTRUCTION WHERE TYPE AND LOCATION ARE APPROVED PRIOR TO INSTALLATION, IN EXISTING CONSTRUCTION, START SLUGIN NO. 6800 SERIES OR APPROVED EQUAL.

SIDE BEAM CLAMPS: PROVIDE WHEN SUPPORTING FROM STRUCTURAL STEEL MEMBERS, GRINNELL, MODEL 225 OR APPROVED EQUAL.

OTHER SUPPORTS: OBTAIN OWNER'S REPRESENTATIVE APPROVAL FOR OTHER METHODS OF SUPPORT.

SPACING OF HANGERS
PROVIDE HANGER AT EACH CHANGE OF DIRECTION.

SPACE HANGERS AND SUPPORTS TO PREVENT SAGGING AND REDUCE STRAIN ON VALVES AND SPECIALTIES WITH SPACING NO GREATER AND ROD NO SMALLER THAN SHOWN ON THE FOLLOWING TABLE. HANGERS SHALL ALLOW FOR EXPANSION AND CONTRACTION.

FERROUS PIPING AND COPPER TUBING:			
DIAMETER OF PIPE	MAXIMUM SPACING	ROD SIZE	
1/2" THROUGH 1-1/2"	6 FT.	3/8"	
2" THROUGH 3"	10 FT.	1/2"	
4" THROUGH 6"	12 FT.	5/8"	
6" AND LARGER	16 FT.	3/4" D.	
CAST IRON PIPING:			
DIAMETER OF PIPE	MAXIMUM SPACING	ROD SIZE	
2" AND 3"	EACH JOINT	3/8"	
4" AND 5"	EACH JOINT	1/2"	
6" AND 8"	EACH JOINT	3/4"	
10" THROUGH 15"	EACH JOINT	3/4"	(TWO HANGERS)

TRAP CLAMPS
INSTALL AT EACH LEVEL BELOW THE FLOOR. SUSPEND FROM TWO HANGER RODS AND INSERTS WHERE THE INSTALLATION OF ESCUTCHEON PLATES IS REQUIRED.

TESTING OF PLUMBING PIPING

DESCRIPTION
CONDUCT ALL TESTS AFTER PIPING IS INSTALLED AND BEFORE PIPING IS CONCEALED OR COVERED.

PROVIDE ALL NECESSARY TEMPORARY PIPING CLOSURES.

SYSTEMS SHALL REMAIN UNDER TEST FOR SUFFICIENT LENGTH OF TIME TO PROVE TIGHTNESS THEREOF AND FOR ADEQUATE OBSERVATION BY THE ARCHITECT-ENGINEER.

MATERIALS OTHER THAN THOSE SPECIFIED FOR JOINING WILL NOT BE PERMITTED IN THE PIPING SYSTEMS FOR THE PURPOSE OF STOPPING LEAKS.

ALL LEAKS DISCLOSED BY THE TESTING PROCEDURES SHALL BE REPAIRED AND TESTING REPEATED UNTIL THE SYSTEM IS PROVEN TIGHT.

TESTING REQUIREMENTS ARE MINIMUM AND ARE NOT INTENDED TO BE LIMITING WHERE ADDITIONAL TESTING METHODS ARE REQUIRED BY THE AUTHORITY HAVING JURISDICTION.

SUBMITTALS
STERILIZATION: PROVIDE A DATED LETTER TO THE ARCHITECT-ENGINEERS REPRESENTATIVE STATING THAT PIPING SYSTEM HAS BEEN STERILIZED AND FLUSHED AS SPECIFIED.

PIPING TEST
DOMESTIC HOT AND COLD WATER PIPING SHALL BE FILLED, THEN TESTED TO A HYDROSTATIC PRESSURE OF 150 PSIG. MAINTAIN TEST PRESSURE FOR A MINIMUM OF ONE HOUR.

SANITARY PIPING, PREVIOUS TO CONNECTION OF FIXTURES, SHALL BE FILLED WITH WATER TO THE TOP OF THE SYSTEM AND PROVEN TIGHT. WHEN TESTING THE SYSTEM BY SECTIONS THE MINIMUM HEIGHT OF THE WATER COLUMN SHALL BE 10 FEET. EXAMINE ALL JOINTS FOR LEAKS.

NEW FIRE STANDPIPE SYSTEM SHALL BE TESTED TO A HYDROSTATIC PRESSURE OF 200 PSIG. MAINTAIN TEST PRESSURE FOR A MINIMUM OF TWO HOURS.

GAS PIPING SHALL BE TESTED WITH NITROGEN TO 50 PSIG. PRESSURE SHALL BE MEASURED WITH A MANOMETER. MAINTAIN TEST PRESSURE FOR A MINIMUM OF 30 MINUTES.

STERILIZATION
AFTER TESTS ARE COMPLETED ALL WATER SUPPLY SYSTEMS SHALL BE FILLED WITH A SOLUTION, CONTAINING 100 PPM OF AVAILABLE CHLORINE AND ALLOWED TO STAND FOR A PERIOD TO TWO HOURS BEFORE BEING FLUSHED WITH CLEAN WATER.

PLUMBING, FIXTURES, TRIM AND DRAINS

MANUFACTURER
MANUFACTURER SHALL BE AS SCHEDULED OR BY APPROVED EQUAL.

PIPING
PIPING TO SERVE FIXTURES AND EQUIPMENT AND EXPOSED TO VIEW IN FINISHED AREAS SHALL BE BRASS, CHROMIUM PLATED.

SUPPORTS
PROVIDE ALL BRACKETS, PLATES, ANCHORS AND FASTENING DEVICES REQUIRED FOR ANCHORING THE FIXTURES RIGIDLY IN PLACE. RISERS TO SHOWER HEADS SHALL BE ANCHORED TO THE WALL CONSTRUCTION TO PREVENT MOVEMENT.

FIXTURES
PROVIDE PLUMBING FIXTURES AS SCHEDULED ON DRAWINGS, AMERICAN STANDARD, KOHLER, ELJER OR APPROVED EQUAL.

PLUMBING DRAINS
FURNISH WITH SEEPAGE FLANGE WHERE INSTALLED WITH PANS OR FLASHING, FURNISH CLAMPING RING.

ALL DRAINS SHALL BE OF THE SAME MANUFACTURER.

FURNISH FLOOR DRAINS WITH PRIMER CONNECTIONS WHERE INDICATED ON THE DRAWINGS. IN LIEU OF CAST-IN PRIMER CONNECTIONS ON THE DRAIN BODY, A TEE BETWEEN THE DRAIN BODY AND THE TRAP, TO RECEIVE THE PRIMER DISCHARGE WILL BE ACCEPTABLE.

PROVIDE FLOOR DRAINS WITH 4 INCH DEEP SEAL TRAPS.

PROVIDE ALL DRAINS AS SCHEDULED ON DRAWINGS OR APPROVED EQUAL.

INSTALLATION
DRAIN SHALL BE INSTALLED WHERE SHOWN ON THE DRAWINGS; ACCESSIBLE AND LOCATED TO SUIT EQUIPMENT APPROVED FOR INSTALLATION, WHERE FLUSH VALVES ARE SPECIFIED WITH FIXTURES, THE SUPPLY TO THE VALVE IN EACH ROOM SHALL BE AT THE SAME HEIGHT FOR THE TYPE OF FIXTURE AND THE VALVE SHALL BE SET IN PLACE SO THAT THE CENTER LINE OF THE VALVE DISCHARGE IS DIRECTLY ABOVE THE CENTER LINE OF FIXTURE STUD. BENDING OF NIPPLE BETWEEN THE VALVE AND THE STUD TO ACHIEVE CONNECTION WILL NOT BE PERMITTED.

CHROME PLATED PIPING REQUIRING THE USE OF WRENCH SHALL BE PROTECTED FROM DAMAGE.

BOLT WATER CLOSET CARRIER TO FLOOR.

GAS PIPING

PIPING
SHALL COMPLY WITH THE REQUIREMENTS OF NFPA NO. 54 AND THE LOCAL GAS COMPANY.

PIPE SHALL BE SCHEDULE 40 BLACK STEEL PIPE WITH MALLEABLE FITTINGS

INSTALLATION
PIPING SHALL COMPLY WITH THE REQUIREMENTS OF NFPA NO. 54 AND THE LOCAL GAS COMPANY.

INSTALL GAS SHUT-OFF AND GAS MANIFOLDS AS INDICATED OR REQUIRED.

DOMESTIC HOT AND COLD WATER

DESCRIPTION
THE WORK INCLUDES FURNISHING AND INSTALLING HOT AND COLD WATER PIPING AS SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN.

PIPING
HOT AND COLD WATER PIPING SHALL BE COPPER WATER TUBE, HARD TEMPER, TYPE "L" WITH WROUGHT SOLDER FITTINGS ABOVE FLOOR AND SOFT TEMPER TYPE "K" WITH WROUGHT SOLDER FITTINGS BELOW GRADE.

GATE VALVES
SPECIFIED IN SECTION, PLUMBING VALVES.

INSTALLATION
NOTCHING OF PIPE FOR CONNECTION NOT PERMITTED.

WHERE POSSIBILITY OF BACKFLOW FROM THE DRAIN TO THE SUPPLY FITTING EXISTS, INSTALL VACUUM BREAKERS.

NOT MORE THAN ONE LAVATORY, SINK, OR SIMILAR FIXTURE SHALL BE SUPPLIED BY A 1/2 INCH BRANCH. LINEAR DIMENSIONS NOT TO EXCEED 5 FEET.

MAKE CONNECTION TO EQUIPMENT AND FIXTURES INDICATED ON THE DRAWINGS OR SPECIFIED HEREIN.

HOT WATER BRANCH CONNECTIONS TO DISTRIBUTION MAINS SHALL BE TOP TAKE-OFF, SWING JOINT TYPE.

ALL PIPING INSTALLED BELOW GROUND SHALL RECEIVE TWO COATS OF KOPPERS NO. 50 OR APPROVED EQUAL.

PLUMBING INSULATION

DESCRIPTION
INSULATION SHALL NOT BE INSTALLED UNTIL TESTING PROCEDURES HAVE BEEN COMPLETED WITH AND ALL SURFACES HAVE BEEN CLEANED AND FREE OF DIRT, GREASE AND COMPLETELY DRIED.

MATERIALS SHALL COMPLY WITH UL 723, FLAME SPREAD RATING, HOT SURFACE TEST PERFORMANCE, AND SMOKE DEVELOPED RATING.

SUBMITTALS
SAMPLES AND MANUFACTURER'S PRODUCT DATA. SUBMIT SAMPLES OF INSULATION AND ADHESIVE AND PRODUCT DATA LISTING RECOMMENDATIONS FOR USE AND COMPLIANCE WITH NFPA 90.

INSULATION
INSULATION FOR HOT AND COLD WATER PIPING, SHALL BE SECTIONAL GLASS FIBER AS MANUFACTURED BY OWENS CORNING FIBERGLASS TYPE ASJ35JLI OR APPROVED EQUAL, WITH FACTORY APPLIED, ALL PURPOSE, FIRE RETARDANT JACKET.

INSULATION FOR EXPOSED HOT AND COLD WATER PIPING SHALL BE SECTIONAL GLASS FIBER AS MANUFACTURED BY OWENS CORNING FIBERGLASS TYPE ASJ35JLI OR APPROVED EQUAL, WITH FACTORY APPLIED, .016 EMBOSSED ALUMINUM JACKET.

ADHESIVE SHALL BE BENJAMIN FOSTER 30-36, OR APPROVED EQUAL, WHITE INSULATION LAGGING ADHESIVE.

VAPOR BARRIER MASTIC SHALL BE BENJAMIN FOSTER NO. 82-47, WHITE, OR APPROVED EQUAL.

INSTALLATION
HOT AND COLD WATER PIPING, SHALL BE INSULATED WITH 1/2 INCH THICK GLASS FIBER INSULATION HAVING A FACTORY APPLIED, ALL PURPOSE, FIRE RETARDANT JACKET WITH A MINIMUM R-4.0 PER INCH, CONCEALED AND EXPOSED PIPING SHALL HAVE THE INSULATION APPLIED WITH SIDE AND END JOINTS BUTTED TIGHTLY. SEAL JACKET LEGS AND BUTT JOINT STRIPS WITH ADHESIVE.

INSULATE FITTINGS FOR PIPING UP TO 3 INCHES IPS WITH MOLDED GLASS FIBER. INSULATE FITTINGS FOR PIPING LARGER THAN 3 INCHES WITH MOLDED FITTINGS OR SEGMENTED SECTIONS, WIRED IN PLACE TO THE SAME THICKNESS AS ADJACENT INSULATION. EXPOSED INSULATED PIPING AND FITTINGS SHALL BE JACKETED WITH 6 OUNCE CANVAS PIPING INCLUDING THE FITTING CHANGE FROM HORIZONTAL TO VERTICAL, CONCEALED AND EXPOSED PIPING SHALL HAVE THE INSULATION APPLIED WITH SIDE AND END JOINTS BUTTED TIGHTLY. SEAL OFF ENDS OF INSULATION WITH VAPOR BARRIER MASTIC AT EACH FITTING AND AT 21 FOOT INTERVALS ON CONTINUOUS RUNS.

INSTALL THE FACTORY APPLIED FIRE RETARDANT JACKET (VAPOR BARRIER SO THAT IT WILL LAP SMOOTHLY AND SECURELY AT THE LONGITUDINAL LAP AND ADHERE IT WITH VAPOR BARRIER MASTIC. ADHERE 3 INCH WIDE BUTT STRIPS X SMOOTHLY OVER ALL END JOINTS WITH THE VAPOR BARRIER MASTIC TO ASSURE A CONTINUOUS VAPOR BARRIER - NO STAPLES ALLOWED. INSULATE DRAIN BODIES AND FITTINGS WITH METERED SEGMENTS OF PIPE INSULATION, OVERSIZED PIPE INSULATION OR MOLDED FITTINGS. COAT WITH TWO, 1/8 INCH COATS OF VAPOR BARRIER MASTIC REINFORCED WITH GLASS FABRIC EXTENDING 2 INCHES ONTO ADJACENT PIPES. EXPOSED INSULATED PIPING AND FITTINGS SHALL BE JACKETED WITH 8 OUNCE CANVAS. TERMINATE INSULATION NEATLY AT CLEANOUTS ON STORM AND COLD DRAIN PIPING. DO NOT COVER CLEANOUTS.

DOMESTIC WATER HEATING

DESCRIPTION
PROVIDE DOMESTIC WATER HEATING EQUIPMENT WHERE SHOWN ON DRAWINGS AND SPECIFIED.

DISCHARGE PIPE
RELIEF VALVE DISCHARGE SHALL BE COPPER WATER TUBE, TYPE M.

INSTALLATION
WATER HEATER SHALL BE INSTALLED WHERE SHOWN ON THE DRAWINGS.

DISCHARGE PIPE SHALL HAVE TERMINATING END CUT AT 45 DEGREE ANGLE.

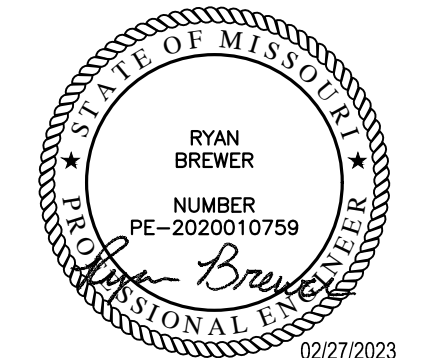
TERMINATE RELIEF VALVE DRAIN AS SHOWN ON THE DRAWINGS.



PERMIT DOCUMENTS

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PLUMBING
SPECIFICATIONS